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Data Validation Summary
Fourth Quarter 2019
Semiannual Compliance Groundwater Monitoring Event for HWMU 16 and
Corrective Action Semiannual Groundwater Monitoring Event for HWMU 5

Post Closure Care Permit Hazardous Waste Management Units 5 and 16
Radford Army Ammunition Plant, Radford, Virginia
EPA ID# VA1210020730

Draper Aden Associates performed data validation of the analytical results for the Fourth Quarter 2019 semiannual groundwater monitoring event at Hazardous Waste Management Units (HWMUs) 5 and 16 located at the Radford Army Ammunition Plant (RFAAP) in Radford, Virginia. Groundwater monitoring activities were conducted in accordance with the *Final Hazardous Waste Management Post-Closure Care Permit* (Permit) for HWMUs 5 and 16 (original effective date October 4, 2002, reissued August 16, 2014, Class 1 Permit Modification dated September 12, 2014 and Class 1 Permit Modification dated December 1, 2016). The Fourth Quarter 2019 event served as the semiannual Corrective Action (CA) groundwater monitoring event for HWMU-5 and semiannual compliance monitoring for HWMU-16 conducted in accordance with the Permit. The following information summarizes the findings of the Fourth Quarter 2019 semiannual activities at each Unit.

Sample Collection/Analytical Services

Draper Aden Associates, of Blacksburg, Virginia, collected groundwater samples during October 22 through October 24, 2019.

Samples were submitted for laboratory analysis via courier to Shealy Environmental Services (Shealy), of West Columbia, South Carolina; or Eurofins Lancaster Laboratories Environmental, (ELLE), of Lancaster, Pennsylvania. A summary table of the required analyses and identification of the analyzing laboratory is provided below. Each laboratory is accredited under the Virginia Environmental Laboratory Accreditation Program (VELAP) for the analytes, methods, and matrix as listed on each certificate of analysis, except if noted below.

Receipt of Monitoring Event Data

On behalf of BAE Systems, Ordnance Systems, Inc., each laboratory submitted results to Draper Aden Associates in a final certificate of analysis which included analytical results as well as relevant documentation to verify and validate the results as discussed below. The final certificate of analysis for this event was received at Draper Aden Associates on December 14, 2019.

Verification Events

No verification events were required.

Summary of Monitoring Event Data by Analytical Method

Certificates of analysis were received from each laboratory in the following sample delivery groups (SDGs):

Summary of Required Analytical Methods and SDGs

Analytical Method	Hazardous Waste Management Unit (HWMU)	
	HWMU 5 / Laboratory	**HWMU 16 / Laboratory**
8260C Volatiles	RAF53 / ELLE	RAF48 / ELLE
8270D Semivolatiles	NA	RAF48/ ELLE
6020A/B Inorganics, total	RAF54 / ELLE	UJ24097 / SHEALY
7470A Mercury, total	NA	UJ24097 / SHEALY

NA - Denotes analysis not applicable/analysis not required.

Each final certificate of analysis was complete in its presentation and the data were of acceptable quality. Chains of custody (COC) and permit required target analyte lists are provided in each SDG. For Unit 5, ELLE inadvertently reported the QL for cobalt as 4 ug/l instead of 5 ug/l as requested on the COC; however, a revision was not requested.

Data Analysis and Validation

Samples were analyzed by *SW-846 Method requirements (Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods, USEPA SW-846, 3rd edition - Final Update I, II/IIA, III and subsequent updates)*. Data, except where noted below, were evaluated in accordance with:

- *Test Methods for Evaluating Solid Wastes - Physical and Chemical Methods*, USEPA SW-846, 3rd edition - Final Update I, II/IIA, III and subsequent updates)
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017, where applicable.
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017, where applicable.

Draper Aden Associates, of Blacksburg, Virginia, performed data validation as detailed in the attached data validation reports. For each HWMU, data validation reports and a summary table of data validation results are provided as an attachment.

Reporting of Results

HWMU-5 - results were reported to at or above the permit detection limit for the target analytes (constituents) (i.e., five volatile organics and cobalt, total) listed in Appendix J to Permit Attachment 2 of Module VI-Groundwater Corrective Action & Monitoring Program for Unit-5. Results reported between the detection limit and quantitation limit should be considered estimated concentrations. Note December 2016 Class 1 Permit Modification included a revision

to the permit specified QL for total antimony, total lead, and total zinc. This permit modification was not applicable to the fourth quarter 2019 groundwater monitoring event.

HWMU 16 - For this event, point of compliance well and plume well results for HWMU 16 were reported to at or above the permit QL, except where noted.

All wells were analyzed for the constituents listed in the semiannual compliance monitoring lists (Attachment 3 Appendix E rev 12-1-2016 Class 1 Permit Modification) consisting of 12 inorganics, 20 volatile organics and three semivolatile organics. Note December 2016 Class 1 Permit Modification included a revision to the permit specified QL for total lead, and total zinc. Additionally, tetrahydrofuran (volatile organic) was added to the semiannual compliance monitoring list, Attachment 3 Appendix E, and the groundwater protection standards list, Appendix G to Attachment 3). The Fourth Quarter 2019 groundwater monitoring event was conducted using revised detection limits (DLs) and quantitation limits (QLs) for total antimony, total copper, total lead, total silver, and total vanadium (where applicable) as approved by the Virginia Department of Environmental Quality (VDEQ) in electronic correspondence dated March 29, 2019.

Additionally, a footnote presented in Appendix G of Permit Attachment 3 indicates that verification is required for constituents detected at concentrations less than the QL if their associated GPSs are equal to the QL and are greater than the applicable risk-based concentrations (i.e., ACL or RSL). In these instances, verification must be conducted using an alternate low-level analytical method in order to confirm or refute the observed initial detections if the QL achievable by that method is less than, or equal to, the ACL or RSL for the subject constituent. If a concentration greater than the low-level analytical method QL is observed, then the GPS for that constituent will be updated, if warranted. During Fourth Quarter 2019, no constituents with GPSs equal to their respective QLs and greater than the applicable risk-based concentrations were detected. This applied to 2,4-dinitrotoluene and 2,6-dinitrotoluene.

Summary of Data Validation Results

The data validation results are summarized below and on the attached reports and table. Each final certificate of analysis was complete in its presentation and the data were of acceptable quality. The chain of custody documentation was complete, except where noted below. The laboratory received the samples on ice and in good condition, with custody seals intact. Technical holding time and preservation criteria were met. The data set demonstrated the laboratory's ability to achieve the permit QL or DL, unless noted. The COC time of collection was incomplete for samples 5WC21 and 5WDUP. The laboratory reported the time collected as found on the container labels and no revision was requested.

SW-846 Method 8260C/5030C-Volatile Organic Analytes- 25 ml purge volume

Instrument calibration, blank, surrogate, MS/MSD, LCS, internal standards, sample/blind field sample duplicate results, and target analyte identification and quantitation were met, except where noted below. The MS/MSD samples were analyzed on project samples as noted on the chain of custody. A trip blank was analyzed for each day of sample collection. A blind field duplicate was collected and analyzed for the required target analytes. Target analytes detected in the sample/field duplicate

sample are noted below. Deviations from specific QA/QC criteria identified during the data review process are summarized below.

HWMU 5

- Sample/Blind Field Sample Duplicate results - 5WC21/5WDUP - Trichloroethene was reported above the QL in both the sample and blind field duplicate (2.0/2.0 μg/l). The relative percent difference (RPD) criteria were met.

HWMU 16

- Sample/Blind Field Sample Duplicate results – 16WC1A/16WDUP –chloroethane (1.7/1.8 μg/l), 1,1-dichloroethane (4.6/4.7μg/l) and diethyl ether (23/23 μg/l) were reported above the QL in both the sample and blind field duplicate. The RPD criteria were met.
- Samples 16C1 and 16MW9 were analyzed in dilution in order to obtain a result within the calibrated range for diethyl ether. The dilution analysis was within hold-time and those results were reported as the final results.
- Dichlorofluoromethane and trichlorofluoromethane did not meet the calibration verification (CV) standard percent difference/drift (%D) requirement of ±20%. Dichlorofluoromethane and trichlorofluoromethane were not detected at or above the QL in any project sample and sample results were qualified "UJ" to note that the QLs are estimated due to the QC deficiency.
- Dichlorofluoromethane recovered low in the MSD and LCS. This analyte was not detected at or above the QL in any project sample and results for dichlorofluoromethane were qualified "UJ" to note that the QL is estimated. The remaining MS/MD/LCS criteria were met.
- The permit required QL is 12.5 μg/l for both diethyl ether and dimethyl ether. The laboratory reported the QL as 13 μg/l for diethyl ether and dimethyl ether due to the laboratory rounding policy. Draper Aden Associates revised the QL to 12.5 μg/l and no revision was requested.

SW-846 Method 8270D/3510C- Semivolatile Organic Analytes (HWMU16 only)

Instrument calibration, blank, surrogate, MS/MSD, LCS, internal standards, sample/blind field sample duplicate results, and target analyte identification and quantitation criteria were met, except as noted below. The MS/MSD samples were analyzed on project samples as noted on the chain of custody. A blind field duplicate was collected and analyzed for the required target analytes. No target analytes were detected in the sample/field duplicate sample unless noted below. No deviations from specific QA/QC criteria were identified during the data review process.

HWMU 16

A footnote presented in Appendix G to Attachment 3, Groundwater Corrective Action Annual Monitoring List, of Permit Module V – *Groundwater Compliance Monitoring for Unit 16* indicates that verification is required for constituents detected at concentrations less than the Limit of Quantitation (LOQ)/QL if their associated groundwater protection standard (GPS) is based on the LOQ/QL. This footnote applies to 2,4-dinitrotoluene and 2,6-dinitrotoluene detected below the LOQ/QL only in compliance wells. During Fourth Quarter 2019, results for 2,4-dinitrotoluene and 2,6-dinitrotoluene were evaluated to the MDL (review of instrument quantitation report). These

two constituents were not detected at or above the MDL or QL and no additional evaluation was required.

SW-846 Method 6020A/3020A (Unit 5) / 6020B/3005A (Unit 16)–Inorganics-total

Calibration, blank, interference check sample, MS/MSD/DUP, LCS, internal standards, serial dilution, sample/field sample duplicate results, and target analyte quantitation were met, except where noted below or no data qualification was required. MS/MSD analyses were performed on project samples as noted on the chain of custody. Target analytes detected in the sample/field duplicate sample are noted below. Deviations from specific QA/QC criteria that were identified during the data review process are summarized below.

HWMU 5

- Sample/Blind Field Sample Duplicate results – 5WC21/5WDUP – Cobalt was reported above the QL in both the sample and blind field duplicate (22.2/22.0 µg/l). The RPD criteria were met.

HWMU 16

- Sample/Blind Field Sample Duplicate results – 16WC1A/16WDUP – Barium (420/470 µg/l, cobalt (11/11 µg/l) and nickel (11/11 µg/l) were reported above the QL in both the sample and blind field duplicate. The RPD criteria were met.
- Samples 16-3, 16MW9, 16Wc1A and 16WDUP were analyzed in dilution (1:10) in order to obtain a result within the calibrated range for barium. The dilution analysis was within hold-time and those results were reported as the final results.

Method 7470A– Mercury-total - (HWMU 16 only)

Calibration, blank, MS/MSD, LCS, sample/field sample duplicate results were within control limits. MS/MSD analyses were performed on the project sample noted on the chain of custody (16WC1A). Mercury was not detected in the sample/blind field duplicate sample (16WC1A/16WDUP). No deviations from specific QA/QC criteria were identified during the data review process.

A. QC DELIVERABLES PACKAGE – SAMPLE PAPERWORK:

1.	Was the chain of custody included in the data deliverable package?	☑ YES ☐ NO
2.	Was custody transfer between different parties dated and signed?	☑ YES ☐ NO
3.	Did the chain of custody document sampler signature, sample locations, date and time of sampling and analyses requested? *(see comment above*)	☑ YES ☐ NO
4.	Were the sample results included for each sample location?	☑ YES ☐ NO
5.	Did the laboratory report the required target analytes?	☑ YES ☐ NO

End of page

DATA EVALUATION FOR SW-846 METHOD 8260C (GC/MS) VOLATILE ORGANICS

A. QC DELIVERABLES PACKAGE:

- ☑ VELAP accredited (matrix, method and analyte)

B. TECHNICAL HOLDING TIME AND PRESERVATION REVIEW CRITERIA:

- ☑ 14-day sample holding time, pH <2
- ☑ Samples received at ≤ 6ºC, zero headspace
- ☑ Preparation Method 5030C, 25 ml purge volume

C. GC/MS INSTRUMENT PERFORMANCE CHECK REVIEW CRITERIA:

- ☑ Instrument performance check solution was analyzed at the beginning of each 12-hour period of standard and/or sample analysis

D. INITIAL GC/MS CALIBRATION REVIEW CRITERIA:

- ☑ Target analytes included in the ICAL
- ☑ ICAL consisted of 5 calibration standards (or more, as needed)
- ☑ Lowest concentration calibration standard at or below the associated MCL, regulatory compliance, action limit, or required QL
- ☑ No calibration standards were removed from curve that would negatively impact the data integrity
- ☑ Each target analyte %RSD ≤ 20%
- ☑ Correlation coefficient or coefficient of determination >0.99 for target analytes with ≥ 20% RSD
- ☑ Initial calibration verification analytes have % Difference/Drift within ± 30.0%

E. CALIBRATION VERIFICATION REVIEW CRITERIA:

- ☑ Calibration verification standard analyzed at the beginning of each 12-hour period following the instrument performance check analysis and prior to the method blank and sample analysis
- ☑ % Difference/Drift of target analytes within ± 20%

F. BLANK REVIEW CRITERIA:

- ☑ Method/extraction blank analyzed on each GC/MS system used for sample analysis
- ☑ Trip Blank-one per day of collection.

G. SURROGATE REVIEW CRITERIA:

- ☑ The following surrogates (or others as allowed) were used and within the specified range
  - dibromofluoromethane (77-114%), 4-bromofluorobenzene (78-110%)
  - toluene-d_8 (77-110%), 1,2-dichloroethane-d_4 (74-113%)

H. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD) / LABORATORY CONTROL SAMPLE (LCS) REVIEW CRITERIA:

- ☑ MS/MSD and LCS analyzed; MS/MSD and LCS within range
- ☑ Project specific analytes -%R 70-130%, RPD ≤20
- ☑ Independent source (confirmed via email from B. Weyandt, ELLE to K. Olsen 1/9/2015)

I. INTERNAL STANDARDS REVIEW CRITERIA:

- ☑ The following internal standards (or others as allowed) were used
  -t-butyl alcohol-d_{10}, fluorobenzene, chlorobenzene-d_5, 1,4-dichlorobenzene-d_4
- ☑ Internal standard areas within ± 50% of last calibration verification
- ☑ Internal standard retention times within ± 30 seconds of last calibration verification

J. TARGET ANALYTE IDENTIFICATION REVIEW CRITERIA:

- ☑ Results were consistent with historical data. New detections evaluated as follows:
- ☑ RRTs of the reported analytes within ± 0.06 RRT units of the standard RRT
- ☑ Sample spectra versus laboratory standard spectra criteria were evaluated:
  -Characteristic ions maximized in the same scan or within one scan of each other
  -Characteristic ions present in the standard spectra were present in the sample spectra for analytes detected above the QL
  -Relative intensities of the ions between the standard and sample spectra were within ±30%.

DATA EVALUATION FOR SW-846 METHOD 8260C (GC/MS) VOLATILE ORGANICS (Con't.)

K. TARGET ANALYTE QUANTITATION REVIEW CRITERIA:

- ☑ Results are consistent with historical data. New detections evaluated as follows:
  - If analyte %RSD was 20% or less, use average relative response factor for quantitation.
  - If analyte %RSD was greater than 20%, use first or higher order regression fit of five calibration points (6 calibration points for 2nd order)
- ☑ Results that exceed the initial calibration range were reanalyzed at a higher dilution
- ☑ Analyte concentrations recorded on the sample quantitation reports were accurately transferred to the sample summary sheets (laboratory report)

L. REPORTING:

- ☑ Detected analytes or results requiring validation are presented on the attached data validation report
- ☑ Results reported at or above permit QL (HWMU16)
- ☑ Results reported at or above permit DL and QL (HWMU5)
- ☑ Results reported within instrument calibration range
- ☑ Sample/blind field duplicate RPD <20, where applicable

A. QC DELIVERABLES PACKAGE:

- ☑ VELAP accredited (matrix, method, target analytes)
- ☑ Electronic data file reviewed

B. TECHNICAL HOLDING TIME AND PRESERVATION REVIEW CRITERIA:

- ☑ Holding time: 7-day sample collection to extraction / 40-day extraction to analysis
- ☑ Samples received at ≤6°C
- ☑ Extraction Method 3510C used

C. GC/MS INSTRUMENT PERFORMANCE CHECK REVIEW CRITERIA:

- ☑ Instrument performance check solution analyzed at the beginning of each 12-hour period of standard and/or sample analysis

D. INITIAL GC/MS CALIBRATION REVIEW CRITERIA:

- ☑ Target analytes included in the ICAL
- ☑ ICAL consisted of a minimum of 5 calibration standards (or more, as needed)
- ☑ Lowest concentration calibration standard at or below the associated MCL, regulatory compliance, action limit, or permit QL
- ☑ No calibration standards were dropped to meet calibration criteria
- ☑ Each target analyte RSD ≤ 20%
- ☑ Correlation coefficient or coefficient of determination >0.99 for target analytes with ≥20 % RSD
- ☑ Initial calibration verification analytes have % Difference/Drift within ± 30.0%

E. CALIBRATION VERIFICATION REVIEW CRITERIA:

- ☑ Calibration verification standard analyzed at the beginning of each 12-hour period following the instrument performance check analysis and prior to the method blank and sample analysis
- ☑ Analytes have % Difference/Drift within ± 20.0%

F. BLANK REVIEW CRITERIA:

- ☑ Method/extraction blank analyzed on each GC/MS system used for sample analysis

G. SURROGATE REVIEW CRITERIA:

- ☑ The following surrogates (or others, as allowed) were used and within the specified range
  - phenol - d_6 (10-94%), - 2-fluorophenol (21-100%), - 2,4,6-tribromophenol (10-123%), nitrobenzene – d_5 (43-108%), - 2-fluorobiphenyl (43-116%), - terphenyl - d_{14} (33-141%)
- ☑ Two base/neutral or acid surrogates out of specification or any one base/neutral or acid extractable surrogate have a recovery of less than 10%, if so corrective action needed

H. MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD) / LABORATORY CONTROL SAMPLE (LCS) REVIEW CRITERIA:

- ☑ MS/MSD and LCS analyzed with target analytes
- ☑ MS/MSD and LCS recovered at or above 45%, RPD <40

I. INTERNAL STANDARDS REVIEW CRITERIA:

- ☑ The following internal standards were used (or others as allowed)
  - -1,4-Dichlorobenzene-d_4, Naphthalene-d_8, Acenapththene-d_{10}, Phenanthrene-d_{10}, Pyrene-d_{10}, Perylene-d_{12}
- ☑ Internal standard areas within ± 50% of last calibration verification
- ☑ Internal standard retention times within ± 30 seconds of last calibration verification

J. TARGET ANALYTE IDENTIFICATION REVIEW CRITERIA:

☑ Results were consistent with historical data. New detections evaluated as follows:
☑ RRTs of the reported analytes within ± 0.06 RRT units of the standard RRT
☑ Sample spectra versus laboratory standard spectra criteria were evaluated:
Characteristic ions maximized in the same scan or within one scan of each other

- Characteristic ions present in the standard spectra were present in the sample spectra for analytes detected above the permit QL
- Relative intensities of the ions between the standard and sample spectra were within ±30%.

K. TARGET ANALYTE QUANTITATION REVIEW CRITERIA:

☑ Results were consistent with historical data. New detections evaluated as follows:
-If analyte %RSD was 20% or less, use average relative response factor for quantitation.
-If analyte %RSD was greater than 20%, use first or higher order regression fit of five calibration points (6 calibration points for 2nd order).
☑ Results that exceed the initial calibration range were reanalyzed at a higher dilution.
☑ Analyte concentrations recorded on the sample quantitation reports were accurately transferred to the sample summary sheets (laboratory report).

L. REPORTING:

☑ Detected analytes or results requiring validation are presented on the attached data validation report
☑ Results reported at or above permit QL (HWMU16). 2,4-DNT and 2,6-DNT instrument data reviewed and validated to at or above DL.

DATA EVALUATION FOR INORGANICS BY SW-846 METHODs 6020A/B (ICP/MS)

A. QC DELIVERABLES PACKAGE:

- ☑ Sample results included for sample locations
- ☑ Target analyte QLs reported at permit required QL
- ☑ Sample digestion method: 3005A
- ☑ Electronic data file reviewed
- ☑ VELAP accredited (matrix, method, target analyte)

B. TECHNICAL HOLDING TIMES / PRESERVATION REVIEW CRITERIA:

- ☑ 6 month holding time, pH<2 with Nitric Acid (HNO3)

C. INSTRUMENT CALIBRATION/TUNE CRITERIA:

- ☑ Target analytes, 1 calibration blank and at least 1 standard or according to instrument manufacturer's procedure
- ☑ Instrument calibrated for every analytical sequence, r>0.998
- ☑ Instrument tuned prior to analysis:
  - (%RSD <5%),
  - Resolution < 0.9 amu full width at 10% peak height (or lower)
  - Mass calibration </=0.1 amu difference from true value

D. INSTRUMENT CALIBRATION CRITERIA:

- ☑ Standard analyzed at or below the QL (LLQC), digested, analyzed after MDL determination and as needed
- ☑ QL standard recovery 70-130%
- ☑ 10 sample frequency
- ☑ Use of calibration blank and check standard
- ☑ Recovery within 90-110% (ICV/CCV)
- ☑ LLICV prior to analysis and at a concentration at or below LOQ/QL
- ☑ LLCCV within 70-130% recovery

E. BLANK CRITERIA:

- N/A Trip Blank (check only if analyzed)
- N/A Equipment Blank
- ☑ Method/Other Lab Blanks (check only if analyzed)
- ☑ Interference free
- ☑ CCB 10 sample frequency

F. INTERFERENCE CHECK SAMPLES (ICS) CRITERIA:

- ☑ At beginning of analytical run (80-120%)

G. MATRIX SPIKE DUPLICATE (MSD) CRITERIA:

- ☑ One MSD or sample duplicate per batch of 20 samples
- ☑ RPD ≤ 20 between MS and MSD results or sample and duplicate results
- ☑ Control limit is ± QL when sample values are less than 5 times QL (sample duplicate).

H. MATRIX SPIKE (MS) CRITERIA:

- ☑ 75-125% recovery, all analytes
- ☑ All analytes, spiked prior to digestion
- ☑ One matrix spike per analytical batch
- ☑ No more than 20 samples per analytical batch

I. BLIND FIELD SAMPLE DUPLICATE CRITERIA:

- ☑ 20% RPD for concentrations > QL

J. SAMPLE RESULTS CRITERIA:

- ☑ Results reported within instrument linear range

K. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

- ☑ All target analytes, 1 LCS per 20 samples, (80-120% Recovery)

L. INTERNAL STANDARDS (IS) CRITERIA:

- ☑ IS intensities; 70-125% RI

M. SERIAL DILUTION CRITERIA:

- ☑ Similar matrix
- ☑ If concentration >10 times QL, %Difference must be within 10%

N. REPORTING:

- ☑ Detected analytes or results requiring validation are presented on the attached data validation report
- ☑ Results reported at or above permit QL (HWMU16)
- ☑ Results reported at or above permit DL and QL (HWMU5)

A. QC DELIVERABLES PACKAGE:

- ☑ Mercury QL reported at permit required QL
- ☑ Electronic data file reviewed
- ☑ VELAP accredited (matrix, method, target analytes)

B. TECHNICAL HOLDING TIME / PRESERVATION REVIEW CRITERIA:

- ☑ 28 day holding time, Adjust pH <2 w/ HNO_3

C. INSTRUMENT CALIBRATION CRITERIA:

- ☑ 1 calibration blank and at least 5 standards
- ☑ ICAL standards within 30% of true value
- ☑ Instrument calibrated for every analytical sequence, r>0.995
- ☑ ICAL standard analyzed at the permit QL
- ☑ QL standard (LLQC) analyzed at or less than the permit required QL (70-130%R)
- ☑ QL standard analyzed at beginning of run, following ICV/ICB

D. INITIAL / CONTINUING CALIBRATION VERIFICATION CRITERIA:

- ☑ 10 sample frequency for CCV; recovery within 85-115%

E. BLANK CRITERIA:

- N/A Trip Blank (check only if analyzed)
- N/A Equipment Blank (check only if analyzed)
- ☑ Method/other laboratory blanks (check only if analyzed), Interference free

F. MATRIX SPIKE DUPLICATE (MSD) CRITERIA:

- ☑ One MSD or sample duplicate per batch of 20 samples
- ☑ RPD ≤ 20 between MS and MSD results or sample and duplicate results
- ☑ Control limit is ± QL when sample values are less than 5 times QL.

H. MATRIX SPIKE (MS) CRITERIA:

- ☑ 75-125% recovery
- ☑ MS spiked prior to digestion, One MS per analytical batch of 20 samples

H. FIELD SAMPLE DUPLICATE CRITERIA:

- ☑ Target analyte: mercury, Difference <10RPD

I. LABORATORY CONTROL SAMPLE (LCS) CRITERIA:

- ☑ Recovery within 80-120% range. Independent source from calibration standards.

J. SAMPLE RESULTS CRITERIA:

- ☑ Results reported within instrument calibration range

K. REPORTING:

- ☑ Detected analytes reported to at or above the permit QL. When applicable, results requiring validation are presented on the attached data validation report.

LIMITATIONS:

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Comprehensive Data Validation Report

Radford Army Ammunition Plant (RFAAP), Radford, Virginia

Facility: HWMU-5 Groundwater Monitoring Event: Fourth Quarter 2019

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services

Analyte	Sample ID	Lab Result	Q	Validated Result	Q	Lab QL	Lab DL	Permit QL	Permit DL	Units	Validation Notes
Method: 6020A											
Laboratory: ELLE, Lancaster, PA											
Cobalt	5W8B	1	U	U		4	1	5	1	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	1	U	U		4	1	5	1	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	3.2	J	3.2	J	4	1	5	1	ug/l	Result < QL.
	5WC21	22.2		22.2		4	1	5	1	ug/l	No action taken.
	5WC22	4.2		4.2		4	1	5	1	ug/l	No action taken.
	5WC23	1.5	J	1.5	J	4	1	5	1	ug/l	Result < QL.
	5WDUP	22		22.0		4	1	5	1	ug/l	No action taken. Blind field duplicate to 5WC21. RPD<20.
	5W12A	1	U	U		4	1	5	1	ug/l	Analyte not detected at or above the DL or QL.

Analyte	Sample ID	Lab Result	Q	Validated Result	Q	Lab QL	Lab DL	Permit QL	Permit DL	Units	Validation Notes
Method: 8260C											
Laboratory: ELLE, Lancaster, PA											
1,1-Dichloroethene	5W8B	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5WC21	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5WC22	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5WC23	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	5WDUP	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL. Blind field dupllicate 5WC21.
	5W12A	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 1	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 2	0.4	U	U		1	0.4	1	0.44	ug/l	Analyte not detected at or above the DL or QL.
cis-1,2-Dichloroethene	5W8B	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC21	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC22	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC23	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WDUP	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL. Blind field dupllicate 5WC21.
	5W12A	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 1	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 2	0.05	U	U		1	0.05	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
trans-1,2-Dichloroethene	5W8B	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	5WC21	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	5WC22	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.

Analyte	Sample ID	Lab Result	Q	Validated Result	Q	Lab QL	Lab DL	Permit QL	Permit DL	Units	Validation Notes
Method: 8260C											
Laboratory: ELLE, Lancaster, PA											
trans-1,2-Dichloroethene	5WC23	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	5WDUP	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL. Blind field dupllicate 5WC21.
	5W12A	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 1	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 2	0.8	U	U		1	0.8	1	0.8	ug/l	Analyte not detected at or above the DL or QL.
Trichloroethene	5W8B	0.2	U	U		1	0.2	1	0.177	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	0.2	U	U		1	0.2	1	0.177	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	0.2	J	0.2	J	1	0.2	1	0.177	ug/l	Result < QL.
	5WC21	2		2		1	0.2	1	0.177	ug/l	No action taken.
	5WC22	2.4		2.4		1	0.2	1	0.177	ug/l	No action taken.
	5WC23	4		4		1	0.2	1	0.177	ug/l	No action taken.
	5WDUP	2		2		1	0.2	1	0.177	ug/l	No action taken. Blind field dupllicate 5WC21.
	5W12A	0.2	U	U		1	0.2	1	0.177	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 1	0.2	U	U		1	0.2	1	0.177	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 2	0.2	U	U		1	0.2	1	0.177	ug/l	Analyte not detected at or above the DL or QL.
Vinyl chloride	5W8B	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5W5B	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5W7B	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC21	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC22	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WC23	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	5WDUP	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL. Blind field dupllicate 5WC21.
	5W12A	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 1	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.
	Trip Blank 2	0.1	U	U		1	0.1	1	0.1	ug/l	Analyte not detected at or above the DL or QL.

Analyte	Sample ID	Lab Result	Q	Validated Result	Q	Lab QL	Lab DL	Permit QL	Permit DL	Units	Validation Notes

Definitions:

QL Denotes quantitation limit.
DL Denotes detection limit
Q Denotes data qualifier.
U Denotes analyte not detected at or above Detection Limit (DL) or Quantitation Limit (QL).
UA Denotes analyte not detected at or above adjusted sample DL or QL.
J Denotes analyte reported at or above the DL and associated result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above **DL and QL and DL and QL are estimated.**
When used with "UA" (i.e., "**UAJ**"), denotes analyte not detected at or above adjusted **DL and QL and adjusted DL and QL are estimated.**
R Denotes result rejected.
Laboratory Data Qualifiers, "U" and "<"**, denote not detected at or above the DL or QL.**

Comprehensive Data Validation Report
Sample/Blind Field Duplicate Results Greater Than the Quantitation Limit
Radford Army Ammunition Plant (RFAAP), Radford, Virginia
Facility: HWMU-5 Monitoring Event: Fourth Quarter 2019

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020A							
Laboratory: ELLE, Lancaster, PA							
Cobalt	5WC21	22.2		22.2		4	No action taken.
	5WDUP	22		22.0		4	No action taken. Blind filed duplicate to 5WC21. RPD <20
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Trichloroethene	5WC21	2		2		1	No action taken.
	5WDUP	2		2		1	No action taken. Blind field duplicate to 5WC21. RPD<20.

Definitions:

Data Validation Qualifiers:
QL Denotes permit quantitation limit. Q Denotes data qualifier.
J Denotes analyte reported at or above quantitation limit and associated result is estimated.

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Type I Data Package

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Project: RAAP - Radford, VA - HWMU-5
Groundwater Samples
Collected on 10/23/19-10/24/19

SDG# RAF54

GROUP	SAMPLE NUMBERS
2071620	1187116-1187126

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-18-27
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date:** **11/19/2019**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt at (717) 556-7264.

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Sample Reference List for SDG Number RAF54
with a Data Package Type of I

11200 - Draper Aden Associates, Inc.

Project: RAAP - Radford, VA - HWMU-5

Lab Sample Number	Client Sample ID	Collection Date	Date Received
1187116	5W8B	10/23/2019 13:25	10/25/2019 11:42
1187117	5W5B	10/24/2019 09:55	10/25/2019 11:42
1187118	5W7B	10/24/2019 09:10	10/25/2019 11:42
1187119	5W7B MS	10/24/2019 09:10	10/25/2019 11:42
1187120	5W7B MSD	10/24/2019 09:10	10/25/2019 11:42
1187121	5W7B DUP	10/24/2019 09:10	10/25/2019 11:42
1187122	5WC21	10/24/2019 12:05	10/25/2019 11:42
1187123	5WDUP	10/24/2019 12:10	10/25/2019 11:42
1187124	5WC22	10/24/2019 10:50	10/25/2019 11:42
1187125	5WC23	10/24/2019 11:30	10/25/2019 11:42
1187126	5W12A	10/23/2019 14:05	10/25/2019 11:42

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Sample pH Log

SDG: RAF54

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1187116	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:58:29AM	16577
1187117	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:59:15AM	16577
1187118	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:55:19AM	16577
1187119	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:57:37AM	16577
1187120	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 10:01:17AM	16577
1187122	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:48:15AM	16577
1187123	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 10:02:08AM	16577
1187124	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:53:14AM	16577
1187125	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 9:54:22AM	16577
1187126	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/30/2019 10:03:15AM	16577

*pH Check Code Key	**Chlorine Present Code Key
PK = Original container checked - pH is within the correct range. (No preservative was added) **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) **PV** = Volatile container checked **PC** = pH checked (unpreserved container) **SPK** = Subsampled from an original container. Original container checked - pH is within correct range **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. **SPC** = Subsampled from an original container. pH checked (unpreserved container). **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. **UP** = Unable to preserve due to matrix of the sample. **NA** = Not applicable	**NA** = Chlorine Not Checked **Y** = Chlorine Present **N** = Chlorine Not Present

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06032 Cobalt

The solution resulting from the metals digestion is analyzed by ICP/MS.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

14047 ICPMS - Water, 3020A - U345

The sample is digested with nitric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3020A, July 1992

Analysis Reports / Field Chain of Custody

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Report Date: November 12, 2019 18:54

Project: RAAP - Radford, VA - HWMU-5

Account #: 11200
Group Number: 2071620
SDG: RAF54
State of Sample Origin: VA

Electronic Copy To	Draper Aden Associates, Inc.	Attn: Janet Frazier
Electronic Copy To	Draper Aden Associates, Inc.	Attn: Kathy Olsen

Respectfully Submitted,

Barbara Weyandt

Barbara A. Weyandt
Specialist

(717) 556-7264

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
5W8B Grab Groundwater	10/23/2019 13:25	1187116
5W5B Grab Groundwater	10/24/2019 09:55	1187117
5W7B Grab Groundwater	10/24/2019 09:10	1187118
5W7B MS Grab Groundwater	10/24/2019 09:10	1187119
5W7B MSD Grab Groundwater	10/24/2019 09:10	1187120
5W7B DUP Grab Groundwater	10/24/2019 09:10	1187121
5WC21 Grab Groundwater	10/24/2019 12:05	1187122
5WDUP Grab Groundwater	10/24/2019 12:10	1187123
5WC22 Grab Groundwater	10/24/2019 10:50	1187124
5WC23 Grab Groundwater	10/24/2019 11:30	1187125
5W12A Grab Groundwater	10/23/2019 14:05	1187126

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Project Name: RAAP - Radford, VA - HWMU-5
ELLE Group #: 2071620

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: **5W8B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019 13:25
SDG#: RAF54-01

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187116
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals		**SW-846 6020A**	**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	N.D.	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:23	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W5B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:55
SDG#: RAF54-02

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187117
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals		**SW-846 6020A**	**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	N.D.	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:24	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF54-03BKG

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187118
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**		**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	3.2	J	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193041404701A	11/05/2019 09:24	Choon Y Tian	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193041404701	11/01/2019 05:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B MS Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF54-03MS

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187119
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals		**SW-846 6020A**	**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	260	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193041404701A	11/05/2019 09:31	Choon Y Tian	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193041404701	11/01/2019 05:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B MSD Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF54-03MSD

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187120
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals		**SW-846 6020A**	**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	264	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193041404701A	11/05/2019 09:34	Choon Y Tian	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193041404701	11/01/2019 05:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B DUP Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF54-03DUP

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187121
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**		**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	3.4	J	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193041404701A	11/05/2019 09:29	Choon Y Tian	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193041404701	11/01/2019 05:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC21 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 12:05
SDG#: RAF54-04

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187122
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	22.2	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:26	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WDUP Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 12:10
SDG#: RAF54-05FD

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187123
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals		**SW-846 6020A**	**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	22.0	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:28	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC22 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 10:50
SDG#: RAF54-06

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187124
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	4.2	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:29	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC23 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 11:30
SDG#: RAF54-07

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187125
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**		**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	1.5	J	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:31	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W12A Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP, Radford, VA - HWMU 5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019 14:05
SDG#: RAF54-08

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187126
ELLE Group #: 2071620
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals	**SW-846 6020A**		**ug/l**	**ug/l**	**ug/l**	
06032	Cobalt	7440-48-4	N.D.	1.0	4.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06032	Cobalt	SW-846 6020A	1	193031404707A	11/06/2019 17:35	Bradley M Berlot	1
14047	ICPMS - Water, 3020A - U345	SW-846 3020A	1	193031404707	11/04/2019 04:13	James L Mertz	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2071620
Reported: 11/12/2019 18:54

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: 193031404707A	Sample number(s): 1187116-1187117,1187122-1187126		
Cobalt	N.D.	0.16	0.50
Batch number: 193041404701A	Sample number(s): 1187118-1187121		
Cobalt	N.D.	0.16	0.50

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 193031404707A	Sample number(s): 1187116-1187117,1187122-1187126								
Cobalt	250	255.15			102		86-113		
Batch number: 193041404701A	Sample number(s): 1187118-1187121								
Cobalt	250	255.49			102		86-113		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 193041404701A	Sample number(s): 1187118-1187121 UNSPK: 1187118									
Cobalt	3.19	250	260.24	250	264.44	103	105	80-120	2	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2071620
Reported: 11/12/2019 18:54

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	ug/l	ug/l		
Batch number: 193041404701A	Sample number(s): 1187118-1187121 BKG: 1187118			
Cobalt	3.19	3.36	5 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11200 | 207620 | 187116-26 **CHAIN OF CUSTODY RECORD**

Laboratory: ELLE, LLC, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Barb Weyandt, Manager/ (717) 656-2300

Client: Draper Aden Associates **Attn:** 0 **Address** 0 0 **Phone:** 0 **Fax:** 0 **Fax:** 0	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP, Radford, Virginia **Location:** HWMU5 2019- 2nd Semiannual Groundwater Corrective **Event:** Action Monitoring Event **DAA JN:** B03204-19A **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES UPS: **Carrier:** 12.75Y-02X-Y0-5716 0481 **Tracking Number:**		

Box 1: Matrix		Box 2: Preservative		Box 3: Filtered/Unfiltered	Box 4: Sample Type
SW Surface Water	T Trip Blank	A HCL	E NaOH	F Filtered	G Grab
GW Groundwater	E Equipment Blank	B HNO_3	F ZnAc	U Unfiltered	C Composite
L Leachate	P Product	C H_2SO_4	G Other (Specify)	**Box 5: Sample Container Type**	
S Soil	O Other	D $Na_2S_2O_3$	H None	P Plastic V VOA AG Amber Glass CG Clear Glass	

Invoice
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on Ice: YES

Box 4 - Sample Type					G	G							
Box 3 - Filtered/Unfiltered					U	U							
Required pH of Sample					<2	<2							
Box 2 - Preservative					A	B							
Box 5 - Sample Container Type					3-40ml V	1-500ml P							
Sample ID	**Date: 2019**	**Time**	**Box 1: Matrix**	**Number of Bottles**	**8260C/5030C 25 ml purge Appendix J Analyte List**	**Cobalt only-Total 6020A /3020A (appendix J)**							
5W8B	10/23	1325	GW	4	X	X							
5W5B	10/24	0955	GW	4	X	X							
5W7B	10/24	0910	GW	4	X	X							
5WC21	10/24	12	GW	4	X	X							
5WDUP	10/24	12	GW	4	X	X							
5WC22	10/24	1050	GW	4	X	X							
5WC23	10/24	1130	GW	4	X	X							
5W12A	10/23	1405	GW	4	X	X							
Trip Blank 1	10/23	—	T	2	X								
Trip Blank 2	10/23	—	T	2	X								

GENERAL NOTES:
1. See attached analyte list.
2. Report Results to MDL with "J" Flags.
3. 1 trip blank per day of sampling.
Delete Trip blank 2 if not required.

ERIS DELIVERABLE ALSO REQUIRED.
JCF 9/13/19

Cobalt QL = 5 ug/L / DL = 1 ug/L

USE FOR QC

1 Trip Blank per day - delete TB 2 if not needed.

Clients Special Instructions: level 1 with edd.

Received by lab in Good Condition ___ Yes ___ No Custody Seal Intact ___ Yes ___ No Temperature upon arrival ___ Received on Ice ___ Yes ___ No
Describe problems, if any

Sampler Name (Print): Ken Cwalina	Date: 10/23/19	#1 Relinquished by (Signature):	Date: 10/24/19	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature:	Time: 0700	Company Name: DAA	Time: 1700	Company Name:	Time:	
Sampler Name (Print): Ian McCreight	Date: 10-23-19	#1 Received by (Signature):	Date:	#2 Received by (Signature):	Date: 10/25/19	30 DYS ORG/6 MTHS INORG
Sampler Signature:	Time: 0700	Company Name:	Time:	Company Name: ELLE	Time: 1142	

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Sample Administration Receipt Documentation Log

Doc Log ID: 264321

Group Number(s): 2071620

Client: Draper Aden

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Date:	10/25/2019
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Tamara Lugardo

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	192050133	1.5	IR	Wet	Y	Loose/Bag	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
5WC21	10/24/2019 12:05	
5WDUP	10/24/2019 12:10	

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Lancaster, PA 17601-2425
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F | 717-656-2681
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Metals in Liquid Data

Case Narrative/Conformance Summary

Metals in Liquid

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF54

ICP Metals

Fraction: Metals in Liquid

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1187116	5W8B	X		1	
1187117	5W5B	X		1	
1187118	5W7B	X		1	Background/Unspiked
1187119	5W7B MS	X		1	Matrix Spike
1187120	5W7B MSD	X		1	Matrix Spike Duplicate
1187121	5W7B DUP	X		1	Duplicate
1187122	5WC21	X		1	
1187123	5WDUP	X		1	Field Duplicate Sample
1187124	5WC22	X		1	
1187125	5WC23	X		1	
1187126	5W12A	X		1	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF54

ICP Metals

Fraction: Metals in Liquid

The instrument detection limits (IDLs) are used for determining the U flags on the initial and continuing calibration blanks. The highest IDL is selected when multiple instruments are used for an analysis. The method detection limits (MDLs) are used for determining all other U flags.

Abbreviation Key

BKG – Background	AF - Cold Vapor Atomic Fluorescence
DUP – Duplicate	U - Below MDL
MS - Matrix Spike	B - Below LOQ
MSD - Matrix Spike Dup	N - Matrix Spike out of specifications
B – Blank	* - Duplicate out of specifications
Q - Laboratory Control Sample	E - Matrix Effects exist as proven by Serial Dilution or Spiked Dilution
Y - Laboratory Control Sample Duplicate	A - Post Digestion Spike
P - ICP Atomic Emission Spectrometer	L - Serial Dilution
MS - ICP Mass Spectrometry	R - Internal Standard Relative Intensity OOS
CV - Cold Vapor	NR - Not Required

Sample Data

Metals in Liquid

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187116 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	1.0	U		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187117 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	1.0	U		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187118BKG % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	3.2	B		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187119MS % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	260			MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187120MSD % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	264			MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187121DUP % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	3.4	B		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187122 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	22.2			MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187123 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	22.0			MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187124 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	4.2			MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187125 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	1.5	B		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

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QUALITY ASSURANCE SUMMARY
FORM 1
INORGANIC ANALYSIS DATA SHEET
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Lab Sample ID: 1187126 % Solids: 0.0
Concentration Units: UG/L Date Received: 10/25/2019

CAS No.	Analyte	Concentration	C	Q	M
7440-48-4	Cobalt	1.0	U		MS

Comments:

_____
_____
_____
_____

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence NR = Not Required	U = Below MDL, B = Below LOQ

Quality Control and Calibration Summary Forms

Metals in Liquid

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QUALITY CONTROL REFERENCE LIST

SDG No.: RAF54
Matrix: WATER

Analyte	Batch Number	Lab Sample ID
Cobalt	193031404707	*84601BKG
		1187116
		1187117
		1187122
		1187123
		1187124
		1187125
		1187126
		P30304GB
		P30304GQ

LEGEND:

BKG = Background	B = Blank
DUP = Duplicate	Q = Laboratory Control Sample
MS = Matrix Spike	Y = Laboratory Control Sample Duplicate
MSD = Matrix Spike Duplicate	

QUALITY CONTROL REFERENCE LIST

SDG No.: RAF54
Matrix: WATER

Analyte	Batch Number	Lab Sample ID
Cobalt	193041404701	1187118BKG
		1187119MS
		1187120MSD
		1187121DUP
		P30404AB
		P30404AQ

LEGEND:

BKG = Background	B = Blank
DUP = Duplicate	Q = Laboratory Control Sample
MS = Matrix Spike	Y = Laboratory Control Sample Duplicate
MSD = Matrix Spike Duplicate	

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: RAF54

Method: MS
Run Name: 1930905E05
Calibration Date(s): 11/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Cobalt	59	300.0	311.06	103.7	300.0	307.16	102.4	300.0	300.84	100.3

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: RAF54

Method: MS
Run Name: 1930905E05
Calibration Date(s): 11/05/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Cobalt	59				300.0	307.62	102.5			

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: RAF54

Method: MS
Run Name: 1931009E05
Calibration Date(s): 11/06/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Cobalt	59	300.0	301.73	100.6	300.0	295.01	98.3	300.0	314.94	105.0

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

QUALITY ASSURANCE SUMMARY
FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION
SDG No.: RAF54

Method: MS
Run Name: 1931009E05
Calibration Date(s): 11/06/2019
Concentration Units: UG/L

		Initial Calibration			Continuing Calibration					
Analyte	Mass	True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Cobalt	59				300.0	308.94	103.0	300.0	308.64	102.9

(1) Control Limits: 90 - 110
(2) Control Limits: 90 - 110
* Outside Limits. If Continuing Calibration is outside limits, high, only ND samples are accepted.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: RAF54

Method: MS
Run Name: 1930905E05
Calibration Date(s): 11/05/2019
Concentration Units: UG/L

Analyte	Mass	Initial True	Initial Found	Initial %R	Final Found	Final %R
Cobalt	59	0.5	0.55	110.0		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 2B
LOW LEVEL CHECK STANDARD
SDG No.: RAF54

Method: MS
Run Name: 1931009E05
Calibration Date(s): 11/06/2019
Concentration Units: UG/L

			Initial		Final	
Analyte	Mass	True	Found	%R	Found	%R
Cobalt	59	0.5	0.55	110.0		

Control limits: 70% - 130%

For 6010B - Control limits apply to values up to 10 times the true value of the low level check standard. If LLC is out of specification, high, results < RL are acceptable.
For 6010C - If Low Level Check (LLC) is out of specification, results > CCV are acceptable. If LLC is out of specification, high, results < RL are acceptable.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: RAF54

Method: MS
Run Name: 1930905E05
Calibration Date(s): 11/05/2019
Preparation Blank Matrix: WATER

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Cobalt	59	0.11	U	0.11	U	0.11	U	0.11	U	59	1.000	U	193041404701A

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: RAF54

Method: MS
Run Name: 1931009E05
Calibration Date(s): 11/06/2019
Preparation Blank Matrix: WATER

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)								Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Cobalt	59	0.11	U	0.11	U	0.11	U	0.11	U	59	1.000	U	193031404707A

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below IDL/MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: RAF54

Method: MS
Run Name: 1931009E05
Calibration Date(s): 11/06/2019

		Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
Analyte	Mass		C	1	C	2	C	3	C	Mass		C	Batch Number
Cobalt	59			0.11	U								

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer MS = ICP Mass Spectrometry CV = Cold Vapor AF = Cold Vapor Atomic Fluorescence	U= Below IDL/MDL B= Below LOQ

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: RAF54

Instrument ID: 19204
Run Name: 1930905E05
Concentration Units: ug/L

Analyte	Mass	True		Found			
		Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R
Aluminum	27	100000	100000	100444	100.4	100057.0	100.1
Calcium	44	300000	300000	278192	92.7	275390.6	91.8
Carbon	13	20000	20000	NA		NA	
Chloride	37	100000	100000	NA		NA	
Cobalt	59	1	205	1	100.0	202.5	98.8
Iron	57	250000	250000	250550	100.2	251730.9	100.7
Magnesium	24	100000	100000	94890	94.9	93419.4	93.4
Molybdenum	98	2000	2000	2083	104.2	2085.9	104.3
Phosphorus	31	10000	10000	NA		NA	
Potassium	39	100000	100000	96424	96.4	95506.7	95.5
Sodium	23	250000	250000	230390	92.2	228137.9	91.3
Sulfur	34	10000	10000	NA		NA	
Titanium	47	2000	2000	1948	97.4	1938.1	96.9

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY
FORM 4B
ICP-MS INTERFERENCE CHECK SAMPLE
SDG No.: RAF54

Instrument ID: 19204
Run Name: 1931009E05
Concentration Units: ug/L

Analyte	Mass	True		Found			
		Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R
Aluminum	27	100000	100000	96403	96.4	94863.1	94.9
Calcium	44	300000	300000	287856	96.0	278442.0	92.8
Carbon	13	20000	20000	NA		NA	
Chloride	37	100000	100000	NA		NA	
Cobalt	59	1	205	1	100.0	197.6	96.4
Iron	57	250000	250000	237512	95.0	230799.8	92.3
Magnesium	24	100000	100000	93716	93.7	92383.4	92.4
Molybdenum	98	2000	2000	2062	103.1	2022.1	101.1
Phosphorus	31	10000	10000	NA		NA	
Potassium	39	100000	100000	95898	95.9	93599.2	93.6
Sodium	23	250000	250000	226384	90.6	222039.8	88.8
Sulfur	34	10000	10000	NA		NA	
Titanium	47	2000	2000	1933	96.7	1918.1	95.9

Control Limits: All Metals 80%-120%

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QUALITY ASSURANCE SUMMARY
FORM 5A(MS/MSD)
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1187118BKG Matrix Spike Lab Sample ID: 1187119MS Matrix Spike Duplicate Lab Sample ID: 1187120MSD
Batch Number(s): 193041404701

		BKG Sample		MS Sample		MSD Sample		MS Spike	MSD Spike		MS		MSD				Control Limit		
Analyte	Mass	Result	C	Result	C	Result	C	Added	Added	Units	%R	Q	%R	Q	RPD	Q	%R	RPD	M
Cobalt	59	3.1873	B	260.2412		264.4392		250.0000	250.0000	UG/L	103		105		2		80 - 120	20	MS

Note: Results shown are reported on an as-received basis.
If Matrix Spike/ Matrix Spike Duplicate were out of specification, see Post Digestion Spike form.

METHODS:
P = ICP Atomic Emission Spectrometer CV = Cold Vapor
MS = ICP Mass Spectrometry AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL, B= Below LOQ
FLAGS:
N = Matrix Spike OOS, * = Duplicate OOS

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QUALITY ASSURANCE SUMMARY
FORM 6
DUPLICATES
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1187118BKG 1187121DUP
Batch Number(s): 1930414047
01
Concentration Units: UG/L

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Max RPD	Q	M
Cobalt	59		3.1873	B	3.3647	B	5	20		MS

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > Max OR |(S) - (D)| > LOQ for values < 5x LOQ).
The data are considered to be valid because the laboratory control sample is within the control limits. See the Laboratory Control Sample.

Note: Results shown are reported on an as-received basis.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
* = Duplicate Out of Spec

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: RAF54
Matrix: WATER

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Cobalt	59	193031404707	UG/L	250.000	255.150		86 - 113	102	MS	Yes

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: RAF54
Matrix: WATER

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Cobalt	59	193041404701	UG/L	250.000	255.489		86 - 113	102	MS	Yes

METHODS:	CONCENTRATION QUALIFIERS:
P = ICP Atomic Emission Spectrometer	U= Below MDL
MS = ICP Mass Spectrometry	B= Below LOQ
CV = Cold Vapor	
AF = Cold Vapor Atomic Fluorescence	

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: *84601BKG Serial Dilution Lab Sample ID: *84601L
Batch Number(s): 193031404707
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Cobalt	59	1.0000	U	5.0000	U			MS

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

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QUALITY ASSURANCE SUMMARY
FORM 9
SERIAL DILUTIONS
SDG No.: RAF54
Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 1187118BKG Serial Dilution Lab Sample ID: 1187118L
Batch Number(s): 193041404701
Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Cobalt	59	3.1873	B	5.0000	U	100		MS

NOTE: An E in column Q indicates the presence of a chemical or physical interference in the matrix when the % difference is greater than 10%. This applies only when (I) is greater than or equal to 50x MDL for ICP, 100x MDL for ICP-MS (6020), 50x MDL for ICP-MS (200.8), or 25x MDL for GFAA.

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry

CONCENTRATION QUALIFIERS:
U= Below MDL
B= Below LOQ
FLAGS:
E = Matrix Effects exist as proven by Serial Dilution or Spiked Dilution

QUALITY ASSURANCE SUMMARY
FORM 10
INSTRUMENT DETECTION LIMITS
SDG No.: RAF54

Method: MS
Instrument ID: 19204
Date: 09/2019

Analyte	MASS (amu)	Background	IDL (UG/L)
Cobalt	59		0.11

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

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QUALITY ASSURANCE SUMMARY
FORM 10 MDL
METHOD DETECTION LIMITS (ANNUALLY)
SDG No.: RAF54
Matrix: WATER

Method: MS
Date: 04/2016

Analyte	Mass	Background	LOQ (UG/L)	MDL (UG/L)
Cobalt	59		4.0	1.0

The LOQ/MDL must be adjusted for % Solids and Sample Weight for samples reporting in mg/kg and ug/L.

Comments:

_____
_____
_____
_____

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

Method: MS
Batch Number: 193031404707

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
1187116	11/04/2019	50.00	50
1187117	11/04/2019	50.00	50
1187122	11/04/2019	50.00	50
1187123	11/04/2019	50.00	50
1187124	11/04/2019	50.00	50
1187125	11/04/2019	50.00	50
1187126	11/04/2019	50.00	50
*84601BKG	11/04/2019	50.00	50
P30304GB	11/04/2019	50.00	50
P30304GQ	11/04/2019	1.00	1

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

Method: MS
Batch Number: 193041404701

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
1187118BKG	11/01/2019	50.00	50
1187121DUP	11/01/2019	50.00	50
1187120MSD	11/01/2019	50.00	50
1187119MS	11/01/2019	50.00	50
P30404AB	11/01/2019	50.00	50
P30404AQ	11/01/2019	1.00	1

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: RAF54

Method: MS
Instrument ID: 19204
Run Name: 1930905E05

Run Start Date: 11/05/2019
Run End Date: 11/05/2019

Lab Sample ID	D/F	Time	Analytes																																				
			CO																																						
S0	1.00	05:25	X																																				
S	1.00	05:28	X																																				
ICV	1.00	05:31	X																																				
ICB	1.00	05:33	X																																				
LLC	1.00	05:36	X																																				
ICSA	1.00	05:38	X																																				
ICSAB	1.00	05:40	X																																				
LRS3	1.00	05:43	X																																				
CCS	1.00	05:45	X																																				
CCS	1.00	05:48	X																																				
CCV	1.00	05:50	X																																				
CCB	1.00	05:53	X																																				
CCV	1.00	09:14	X																																				
CCB	1.00	09:17	X																																				
P30404AB	1.00	09:19	X																																				
P30404AQ	1.00	09:22	X																																				
1187118BKG	1.00	09:24	X																																				
1187118A	1.00	09:26																																					
1187121DUP	1.00	09:29	X																																				
1187119MS	1.00	09:31	X																																				
1187120MSD	1.00	09:34	X																																				
1187118L	5.00	09:36	X																																				
ZZZZZZ	1.00	09:39																																					
ZZZZZZ	1.00	09:41																																					
CCV	1.00	09:44	X																																				
CCB	1.00	09:46	X																																				

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: RAF54

Method: MS
Instrument ID: 19204
Run Name: 1931009E05

Run Start Date: 11/06/2019
Run End Date: 11/06/2019

Lab Sample ID	D/F	Time	Analytes
			CO
S0	1.00	16:40	X
S	1.00	16:41	X
ICV	1.00	16:43	X
ICB	1.00	16:45	X
LLC	1.00	16:46	X
ICSA	1.00	16:48	X
ICSAB	1.00	16:49	X
LRS3	1.00	16:51	X
CCS	1.00	16:52	X
CCS	1.00	16:54	X
CCV	1.00	16:55	X
CCB	1.00	16:57	X
P30304GB	1.00	16:58	X
P30304GQ	1.00	17:00	X
*84601BKG	1.00	17:01	X
ZZZZZZ	1.00	17:03	
ZZZZZZ	1.00	17:04	
ZZZZZZ	1.00	17:06	
ZZZZZZ	1.00	17:08	
*84601L	5.00	17:09	X
ZZZZZZ	1.00	17:11	
ZZZZZZ	1.00	17:12	
CCV	1.00	17:14	X
CCB	1.00	17:15	X
ZZZZZZ	1.00	17:17	
ZZZZZZ	1.00	17:18	
ZZZZZZ	1.00	17:20	
ZZZZZZ	1.00	17:21	
1187116	1.00	17:23	X
1187117	1.00	17:24	X
1187122	1.00	17:26	X
1187123	1.00	17:28	X
1187124	1.00	17:29	X
1187125	1.00	17:31	X
CCV	1.00	17:32	X
CCB	1.00	17:34	X
1187126	1.00	17:35	X
ZZZZZZ	1.00	17:37	

METHODS:
- P = ICP Atomic Emission Spectrometer
- MS = ICP Mass Spectrometry
- CV = Cold Vapor
- AF = Cold Vapor Atomic Fluorescence

LEGEND:
- BKG = Background
- DUP = Duplicate
- MS = Matrix Spike
- MSD = Matrix Spike Duplicate
- A = Post Digest Spike
- L = Serial Dilution
- B = Blank
- Q = Laboratory Control Sample
- Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: RAF54

Method: MS
Instrument ID: 19204
Run Name: 1931009E05

Run Start Date: 11/06/2019
Run End Date: 11/06/2019

Lab Sample ID	D/F	Time	Analytes																															
			CO																																	
ZZZZZZ	1.00	17:38																																	
ZZZZZZ	1.00	17:40																																	
ZZZZZZ	1.00	17:41																																	
ZZZZZZ	1.00	17:43																																	
ZZZZZZ	1.00	17:44																																	
CCV	1.00	17:46	X																																
CCB	1.00	17:47	X																																

METHODS:
P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence

LEGEND:
BKG = Background
DUP = Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: RAF54

Instrument ID: 19204
Run Name: 1930905E05

Start Date: 11/05/2019
End Date: 11/05/2019

Standard	Elements Applies to	Standard	Elements Applies to
IN-3-115	CO		

Lab Sample ID	Time	Internal Standards %RI For: Element IN-3-115	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
S0	05:25	100													
S	05:28	102													
ICV	05:31	98													
ICB	05:33	99													
LLC	05:36	99													
ICSA	05:38	91													
ICSAB	05:40	92													
LRS3	05:43	97													
CCS	05:45	100													
CCS	05:48	97													
CCV	05:50	99													
CCB	05:53	97													
CCV	09:14	99													
CCB	09:17	99													
P30404AB	09:19	101													
P30404AQ	09:22	102													
1187118BKG	09:24	104													
1187118A	09:26	102													
1187121DUP	09:29	103													
1187119MS	09:31	102													
1187120MSD	09:34	100													
1187118L	09:36	104													
ZZZZZZ	09:39														
ZZZZZZ	09:41														
CCV	09:44	102													
CCB	09:46	102													

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: RAF54

Instrument ID: 19204
Run Name: 1931009E05

Start Date: 11/06/2019
End Date: 11/06/2019

Standard	Elements Applies to	Standard	Elements Applies to
IN-1-115	CO		

Lab Sample ID	Time	Internal Standards %RI For: Element IN-1-115	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
S0	16:40	100													
S	16:41	104													
ICV	16:43	103													
ICB	16:45	106													
LLC	16:46	104													
ICSA	16:48	98													
ICSAB	16:49	98													
LRS3	16:51	102													
CCS	16:52	103													
CCS	16:54	102													
CCV	16:55	105													
CCB	16:57	103													
P30304GB	16:58	106													
P30304GQ	17:00	107													
*84601BKG	17:01	87													
ZZZZZZ	17:03														
ZZZZZZ	17:04														
ZZZZZZ	17:06														
ZZZZZZ	17:08														
*84601L	17:09	105													
ZZZZZZ	17:11														
ZZZZZZ	17:12														
CCV	17:14	116													
CCB	17:15	118													
ZZZZZZ	17:17														
ZZZZZZ	17:18														
ZZZZZZ	17:20														
ZZZZZZ	17:21														
1187116	17:23	117													
1187117	17:24	116													
1187122	17:26	115													
1187123	17:28	118													
1187124	17:29	118													

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike
FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

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QUALITY ASSURANCE SUMMARY
FORM 16
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
SDG No.: RAF54

Instrument ID:
Run Name: 15151

Start Date:
End Date:

Standard	Elements Applies to	Standard	Elements Applies to
IN-1-115	CO		

Lab Sample ID	Time	Internal Standards %RI For: Element IN-1-115	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
1187125	17:31	117													
CCV	17:32	117													
CCB	17:34	116													
1187126	17:35	115													
ZZZZZZ	17:37														
ZZZZZZ	17:38														
ZZZZZZ	17:40														
ZZZZZZ	17:41														
ZZZZZZ	17:43														
ZZZZZZ	17:44														
CCV	17:46	113													
CCB	17:47	112													

LEGEND:
BKG = Background
DUP = Duplicate
L = Serial Dilution
B = Blank
Q = Laboratory Control Sample
Y = Laboratory Control Sample Duplicate
MS = Matrix Spike
MSD = Matrix Spike Duplicate
A = Post Digest Spike

FLAG:
R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:
BE = Beryllium
BI = Bismuth
GE = Germanium
HO = Holmium
IN = Indium
LI = Lithium
SC = Scandium
TB = Terbium
Y = Yttrium

Raw Data

Metals in Liquid

ICP-MS Data

Metals in Liquid

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ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 19K05A08.E05

Run Name: 1930905E05

Analyst: 1242

Reviewed By: Janeyah Rivers-Hamilton

Reviewed Date: 11/05/2019 14:06

Verified By: Parker D Lindstrom

Verified Date: 11/07/2019 15:04

Instrument Parameters:

Rinse Time (sec): 25.00

INTERNAL STD.	ELEMENT	MASS
SC-1		45
	BE	9
	B	11
SC-3		45
	NA	23
	MG	24
	AL	27
	K	39
	CA	44
	TI	47
GE-3		72
	V	51
	CR	52
	MN	55
	FE	57
	SB	121
IN-2		115
	SE	78
IN-3		115
	CO	59
	NI	60
	CU	63
	ZN	66
	AS	75
	SR	88
	MO	98
	AG	107
	CD	111
	SN	120
	BA	137
BI-3		209
	TL	203
	PB	208
	U	238

Run Name: 1930905E05 Date/Time: 11/05/2019 5:25:46
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
BE	9	0.00000	15.33300	0.000	-0.00207	0.00301	-0.00094
B	11	0.00000	8700.32300	0.000	-0.18730	0.16249	0.02481
NA	23	0.00000	22145.53300	0.000	-5.33532	5.43267	-0.09735
MG	24	0.00000	36.66700	0.000	-0.10276	-0.10053	0.20329
AL	27	0.00000	10.00000	0.000	-0.54881	1.09762	-0.54881
K	39	0.00000	7322.02300	0.000	0.73687	-0.88103	0.14416
CA	44	0.00000	13.33300	0.000	-4.59006	2.40321	2.18685
SC-1	45	3002354	0	0.000	2981511	2992298	3033252
SC-2	45	652106.31700	0.00000	0.000	655342.37000	656087.80000	644888.78000
SC-3	45	51539.98000	0.00000	0.000	51151.81000	50921.22000	52546.91000
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CR	52	0.00000	143.34000	0.000	-0.02750	-0.00083	0.02833
MN	55	0.00000	26.66700	0.000	-0.01039	-0.01104	0.02144
FE	57	0.00000	20.00000	0.000	-0.36330	0.01440	0.34890
CO	59	0.00000	33.33300	0.000	0.00307	-0.00500	0.00192
NI	60	0.00000	36.66700	0.000	-0.03543	-0.00773	0.04316
CU	63	0.00000	380.02300	0.000	0.02944	-0.00343	-0.02602
ZN	66	0.00000	60.00000	0.000	0.09464	0.04332	-0.13796
GE-1	72	2595281	0	0.000	2615184	2569164	2601496
GE-2	72	1178105	0	0.000	1170870	1195200	1168245
GE-3	72	185881.10300	0.00000	0.000	180892.24000	184187.17000	192563.90000
AS	75	0.00000	2.66700	0.000	-0.00313	-0.01514	0.01827
SE	78	0.00000	3.33700	0.000	-0.00490	0.00978	-0.00487
SR	88	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
MO	98	0.00000	196.67700	0.000	-0.01789	-0.04484	0.06274
AG	107	0.00000	50.00000	0.000	0.00376	-0.00611	0.00235
CD	111	0.00000	2.00000	0.000	0.00609	-0.00009	-0.00601
IN-2	115	586280.99300	0.00000	0.000	584160.57000	591399.13000	583283.28000
IN-3	115	74951.44000	0.00000	0.000	72522.02000	74123.22000	78209.08000
SN	120	0.00000	900.06700	0.000	-0.07932	-0.06678	0.14610
SB	121	0.00000	113.34300	0.000	-0.00044	0.00827	-0.00783
BA	137	0.00000	10.00000	0.000	0.00049	0.03300	-0.03349
TB-3	159	290893.82300	0.00000	0.000	283535.58000	286104.96000	303040.93000
TL	203	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
PB	208	0.00000	130.00000	0.000	-0.00130	-0.00135	0.00265
BI-3	209	195362.38700	0.00000	0.000	194039.08000	194592.75000	197455.33000
U	238	0.00000	10.00000	0.000	0.00000	0.00141	-0.00141

Run Name: 1930905E05 Date/Time: 11/05/2019 5:28:24
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3046831	0	0.000	3027094	3035190	3078209
SC-3	45	53091.90000	0.00000	0.000	51543.02000	54513.43000	53219.25000
AL	27	10000.00000	189912.17300	2.600	10160.63108	9698.16300	10141.20592
B	11	1000.00000	769808.29300	1.600	986.79655	996.01957	1017.18388
BE	9	100.00000	159516.63000	0.000	99.94291	100.02557	100.03152
CA	44	10000.00000	29832.19000	2.900	9846.29715	9819.94611	10333.75673
K	39	10000.00000	504827.02300	2.000	9949.60328	9834.99312	10215.40360
MG	24	10000.00000	633041.68300	2.400	10167.95899	9719.03256	10113.00845
NA	23	10000.00000	1395643.88700	0.600	10039.55910	9929.99149	10030.44942
TI	47	1000.00000	25374.27700	1.500	1010.73695	1006.80348	982.45956
GE-3	72	187317.02300	0.00000	0.000	180747.69000	187784.18000	193419.20000
CR	52	1000.00000	1455340.55000	2.100	1021.98608	997.74886	980.26507
FE	57	10000.00000	264221.37000	2.500	10277.81327	9944.29215	9777.89459
MN	55	1000.00000	571675.94300	0.900	1010.78810	994.97092	994.24098
SB	121	100.00000	93503.27700	2.500	101.50560	101.41368	97.08072
V	51	1000.00000	1121688.60300	1.100	1011.38939	998.91016	989.70045
IN-2	115	592661.00300	0.00000	0.000	595152.78000	584408.27000	598421.96000
IN-3	115	76490.26700	0.00000	0.000	73717.67000	76699.27000	79053.86000
AG	107	100.00000	327483.73700	3.300	102.51832	101.24293	96.23874
AS	75	1000.00000	175583.10300	1.800	1012.95223	1007.57006	979.47771
BA	137	1000.00000	310413.56300	0.800	1006.86602	991.77848	1001.35550
CD	111	100.00000	34859.82700	1.400	101.43411	100.01880	98.54709
CO	59	1000.00000	2667698.29300	3.200	1036.68003	983.54285	979.77712
CU	63	1000.00000	2180909.55000	2.800	1027.40667	1000.97227	971.62106
MO	98	100.00000	166855.75300	2.100	102.31263	99.42561	98.26176
NI	60	1000.00000	736602.72300	2.100	1023.64801	993.14785	983.20414
SE	78	100.00000	13428.56000	1.200	99.34237	101.36588	99.29175
SN	120	100.00000	104137.53000	3.000	102.77954	100.41173	96.80873
SR	88	100.00000	64872.42000	2.000	101.88854	100.18167	97.92980
ZN	66	1000.00000	236547.97300	2.400	1026.26310	995.40323	978.33366
BI-3	209	202562.97000	0.00000	0.000	198482.38000	205236.85000	203969.68000
PB	208	100.00000	724199.97300	1.200	101.22362	98.73428	100.04210
TL	203	100.00000	228010.45700	1.100	100.02729	98.86306	101.10965
U	238	100.00000	739680.74300	1.100	101.24206	99.14276	99.61519
SC-2	45	661964.18300	0.00000	0.000	673973.43000	658206.32000	653712.80000
GE-1	72	2546953	0	0.000	2491265	2566828	2582767
GE-2	72	1188000	0	0.000	1193363	1179362	1191275
TB-3	159	301790.79000	0.00000	0.000	291710.17000	302755.43000	310906.77000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:31:06
Tube Number: 3
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3050605	0	0.000	3074473	3059925	3017416
SC-3	45	50677.03700	0.00000	0.000	48744.33000	51051.65000	52235.13000
AL	27	5080.52747	92112.75300	1.700	5173.58875	4998.11430	5069.87935
B	11	388.71634	304970.56300	0.700	387.17623	386.99214	391.98065
BE	9	30.78151	49172.00300	1.000	30.92056	30.44170	30.98228
CA	44	4955.34824	14116.89000	2.700	4903.44110	5107.44969	4855.15392
K	39	5009.43372	244941.09300	1.500	5086.74049	4938.91285	5002.64781
MG	24	5097.94885	308148.49700	0.500	5122.51453	5103.05440	5068.27761
NA	23	4862.49241	658748.48300	1.800	4963.35245	4824.98204	4799.14274
TI	47	310.05409	7505.39700	6.100	325.44343	289.00249	315.71634
GE-3	72	181397.85700	0.00000	0.000	174279.86000	182539.24000	187374.47000
CR	52	302.71967	426747.41700	2.100	307.34707	305.36548	295.44645
FE	57	5012.20487	128301.67000	1.100	5073.96576	4974.61990	4988.02896
MN	55	310.14231	171816.44300	1.700	305.35852	309.42067	315.64774
SB	121	31.99305	29061.91700	3.500	31.35705	33.28892	31.33319
V	51	303.55186	329713.17300	1.300	308.25508	301.08820	301.31231
IN-2	115	592048.39000	0.00000	0.000	598325.10000	591325.70000	586494.37000
IN-3	115	73152.80700	0.00000	0.000	70751.31000	73523.33000	75183.78000
AG	107	30.88898	96822.58700	1.200	31.23010	30.94005	30.49677
AS	75	312.04101	52418.69300	1.400	314.32048	307.10389	314.69865
BA	137	310.46688	92194.00700	1.600	310.27737	305.59595	315.52733
CD	111	31.61249	10543.68300	0.800	31.57366	31.89369	31.37011
CO	59	311.06445	793953.73700	1.500	316.52739	308.42325	308.24271
CU	63	309.38721	645784.10700	2.000	316.05410	303.98082	308.12671
MO	98	30.99258	49613.69700	1.900	31.15670	30.35333	31.46770
NI	60	321.57185	226608.46000	1.700	327.57529	316.69792	320.44235
SE	78	31.10933	4176.11000	1.400	31.49078	30.65924	31.17798
SN	120	30.41336	30932.38000	2.100	29.76924	30.41982	31.05102
SR	88	30.83054	19149.06000	3.500	29.95213	30.52384	32.01565
ZN	66	310.84214	70376.59000	3.000	319.77523	301.43763	311.31355
BI-3	209	196927.82300	0.00000	0.000	191153.73000	199049.92000	200579.82000
PB	208	30.66628	215999.77000	0.800	30.94645	30.45069	30.60172
TL	203	30.62473	67883.71700	1.600	30.80448	30.05756	31.01215
U	238	49.92966	358976.70000	2.000	51.06396	49.43554	49.28949
SC-2	45	662248.15700	0.00000	0.000	683389.68000	660915.62000	642439.17000
GE-1	72	2574902	0	0.000	2587651	2579073	2557981
GE-2	72	1190419	0	0.000	1207596	1187626	1176035
TB-3	159	291243.04300	0.00000	0.000	281402.59000	291812.91000	300513.63000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:33:32
Tube Number: 4
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3028198	0	0.000	3058013	3055922	2970661
SC-3	45	51727.42300	0.00000	0.000	48393.64000	52195.48000	54593.15000
AL	27	0.74873	23.33300	122.900	1.76108	0.52201	-0.03691
B	11	58.05966	52688.00000	1.300	58.84867	57.96883	57.36147
BE	9	0.00710	26.66700	83.700	0.01023	0.00024	0.01082
CA	44	17.50844	63.33300	97.400	32.20257	-1.17879	21.50155
K	39	9.13122	7728.88000	384.100	49.59154	-12.54477	-9.65311
MG	24	1.21025	110.00700	45.400	1.83112	1.01195	0.78767
NA	23	4.28413	22776.65700	116.800	7.91376	6.36481	-1.42619
TI	47	0.25549	6.66700	173.200	0.00000	0.00000	0.76648
GE-3	72	182397.02700	0.00000	0.000	175766.09000	184310.66000	187114.33000
CR	52	0.42026	736.71300	9.800	0.38453	0.41100	0.46525
FE	57	4.15291	126.67700	24.100	3.67995	3.47435	5.30444
MN	55	0.03554	46.66700	222.300	-0.04662	0.04226	0.11096
SB	121	0.15668	253.34700	29.600	0.19703	0.10607	0.16694
V	51	0.02163	23.33300	68.600	0.03799	0.00906	0.01785
IN-2	115	587304.79000	0.00000	0.000	585478.45000	587099.20000	589336.72000
IN-3	115	74167.51300	0.00000	0.000	71471.80000	75046.84000	75983.90000
AG	107	-0.00077	46.66700	0.000	0.00404	0.00000	-0.00634
AS	75	0.01223	4.66700	53.000	0.00923	0.01968	0.00779
BA	137	-0.03349	0.00000	0.000	-0.03349	-0.03349	-0.03349
CD	111	-0.00211	1.33300	0.000	-0.00601	0.00569	-0.00601
CO	59	0.01314	66.66700	40.900	0.01934	0.01018	0.00990
CU	63	-0.10467	156.67300	0.000	-0.11957	-0.10368	-0.09076
MO	98	0.21003	533.36300	21.500	0.17616	0.19266	0.26127
NI	60	0.09988	106.67300	34.200	0.12455	0.06091	0.11420
SE	78	0.01167	4.88700	90.400	0.02016	0.01499	-0.00014
SN	120	-0.36090	526.70700	0.000	-0.39903	-0.35316	-0.33050
SR	88	0.01067	6.66700	86.700	0.01649	0.00000	0.01551
ZN	66	0.72225	226.68000	30.600	0.55222	0.64266	0.97189
BI-3	209	193865.22000	0.00000	0.000	186314.14000	197031.70000	198249.82000
PB	208	0.00450	160.00700	63.900	0.00542	0.00128	0.00680
TL	203	0.00636	13.33300	173.200	0.01907	0.00000	0.00000
U	238	0.03014	223.34300	20.500	0.03093	0.02361	0.03588
SC-2	45	652041.70000	0.00000	0.000	662826.40000	645511.83000	647786.87000
GE-1	72	2577379	0	0.000	2575109	2614887	2542140
GE-2	72	1178471	0	0.000	1182589	1172135	1180690
TB-3	159	286783.46000	0.00000	0.000	280182.46000	283329.90000	296838.02000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:36:00
Tube Number: 5
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3023209	0	0.000	3030268	2990067	3049292
SC-3	45	50158.99000	0.00000	0.000	49105.85000	50329.12000	51042.00000
AL	27	28.49084	520.03300	21.700	32.46108	31.65876	21.35267
B	11	21.93930	25323.20000	1.500	21.83771	22.31418	21.66602
BE	9	0.51231	826.69300	9.400	0.54878	0.45790	0.53026
CA	44	89.64538	266.68700	47.800	42.55027	126.31810	100.06775
K	39	211.22369	17046.30700	3.000	218.56355	208.28822	206.81930
MG	24	49.77192	3010.41300	9.600	52.51024	52.55266	44.25285
NA	23	197.74406	47205.45000	3.800	199.35311	189.54472	204.33436
TI	47	9.84834	236.67700	19.400	8.09567	9.56174	11.88762
GE-3	72	180576.09000	0.00000	0.000	176168.90000	178433.86000	187125.51000
CR	52	1.99957	2940.39700	10.500	1.98308	2.21633	1.79931
FE	57	47.86058	1240.10700	4.600	46.30929	46.90282	50.36963
MN	55	1.94442	1096.76000	8.600	1.85039	2.13851	1.84436
SB	121	0.91845	936.74300	7.100	0.90191	0.99006	0.86339
V	51	0.51145	553.37000	35.700	0.66343	0.30879	0.56213
IN-2	115	587922.30300	0.00000	0.000	598274.89000	594959.19000	570532.83000
IN-3	115	73857.18700	0.00000	0.000	71405.56000	74884.07000	75281.93000
AG	107	0.48750	1590.15300	9.500	0.51084	0.51757	0.43411
AS	75	2.13468	364.01000	9.100	2.33900	2.11334	1.95169
BA	137	2.16473	656.71300	20.400	2.62381	1.74350	2.12688
CD	111	0.60018	204.00000	5.100	0.61455	0.62088	0.56511
CO	59	0.55371	1460.14000	8.700	0.55713	0.50388	0.60013
CU	63	0.94329	2363.60700	12.100	0.92141	1.06698	0.84149
MO	98	0.44111	900.06300	13.700	0.51054	0.41390	0.39889
NI	60	0.97102	726.72000	3.100	0.93880	0.97605	0.99821
SE	78	1.04533	142.66300	7.500	1.13571	0.99380	1.00647
SN	120	2.93481	3814.01300	11.300	2.71314	3.31754	2.77377
SR	88	0.85911	540.03300	17.900	0.70975	0.84993	1.01765
ZN	66	10.19590	2390.29300	3.000	9.92524	10.53158	10.13088
BI-3	209	193427.64700	0.00000	0.000	189188.57000	194001.85000	197092.52000
PB	208	0.51410	3683.69700	2.300	0.50781	0.52791	0.50657
TL	203	0.51833	1130.10000	12.800	0.48369	0.47628	0.59503
U	238	1.00486	7105.45700	3.400	1.04389	0.98124	0.98945
SC-2	45	664832.80300	0.00000	0.000	689046.71000	662596.08000	642855.62000
GE-1	72	2540517	0	0.000	2560486	2512682	2548383
GE-2	72	1183376	0	0.000	1201338	1184167	1164622
TB-3	159	287468.34700	0.00000	0.000	277295.07000	290536.38000	294573.59000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:38:26
Tube Number: 6
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2864476	0	0.000	2879815	2892986	2820628
SC-3	45	49132.25300	0.00000	0.000	47671.15000	49416.33000	50309.28000
AL	27	100443.60236	1765838.46300	1.800	101440.80443	98300.04137	101589.96129
B	11	22.77651	24596.17700	2.500	23.42335	22.58749	22.31870
BE	9	0.01025	30.00000	13.600	0.01147	0.00873	0.01056
CA	44	278192.33488	767795.64000	1.000	275253.52875	278861.98289	280461.49301
K	39	96423.65208	4445410.56000	0.800	95530.22743	96600.25898	97140.46984
MG	24	94890.21989	5560535.33300	0.400	95229.49125	94912.66052	94528.50790
NA	23	230389.53984	29288380.39700	1.200	233513.34724	228044.97869	229610.29360
TI	47	1947.98143	45756.35000	1.800	1926.76834	1929.63705	1987.53889
GE-3	72	169858.99000	0.00000	0.000	161949.38000	171607.07000	176020.52000
CR	52	1.13212	1626.99700	24.000	0.97399	1.44640	0.97596
FE	57	250549.75168	6001074.70000	2.900	258636.70541	248772.80340	244239.74622
MN	55	3.75156	1966.87300	10.800	4.06043	3.29463	3.89960
SB	121	0.42196	463.36300	21.700	0.32332	0.43844	0.50411
V	51	0.07518	76.67000	25.700	0.06185	0.09730	0.06639
IN-2	115	557570.54700	0.00000	0.000	561268.04000	552995.96000	558447.64000
IN-3	115	67921.21300	0.00000	0.000	64432.21000	68599.68000	70731.75000
AG	107	0.09085	310.01700	41.400	0.07140	0.13418	0.06696
AS	75	0.33346	54.00000	24.600	0.40390	0.35305	0.24344
BA	137	1.09857	310.02000	21.500	1.34331	1.08008	0.87233
CD	111	0.20948	66.66700	4.800	0.21869	0.19865	0.21109
CO	59	1.37919	3290.49700	9.800	1.48618	1.42434	1.22706
CU	63	0.98471	2253.60700	5.200	0.96427	1.04308	0.94677
MO	98	2082.78915	3081133.39000	3.000	2141.87136	2087.30111	2019.19497
NI	60	1.06041	730.05000	16.500	0.86855	1.10028	1.21239
SE	78	0.07516	12.66300	31.900	0.09548	0.08132	0.04867
SN	120	-0.42498	423.36000	0.000	-0.46078	-0.36786	-0.44630
SR	88	8.76199	5051.03700	3.700	8.79985	8.41992	9.06621
ZN	66	2.15825	510.03300	11.600	1.94572	2.09438	2.43464
BI-3	209	173349.04700	0.00000	0.000	170483.88000	171784.84000	177778.42000
PB	208	0.14882	1036.73300	5.900	0.15533	0.15239	0.13875
TL	203	0.00850	16.66700	92.500	0.00000	0.01551	0.00999
U	238	0.01544	106.67300	4.800	0.01465	0.01613	0.01554
SC-2	45	671824.86000	0.00000	0.000	698685.15000	658784.21000	658005.22000
GE-1	72	2371209	0	0.000	2409600	2357620	2346408
GE-2	72	1132619	0	0.000	1137393	1135272	1125191
TB-3	159	283574.12000	0.00000	0.000	276680.89000	281963.04000	292078.43000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:40:53
Tube Number: 7
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2921725	0	0.000	2983258	2861607	2920310
SC-3	45	49195.80700	0.00000	0.000	48343.58000	48804.45000	50439.39000
AL	27	100057.00950	1761963.67300	2.200	98063.79127	99735.24933	102371.98788
B	11	15.20766	19559.51300	2.600	14.74684	15.41306	15.46309
BE	9	0.00296	19.33300	188.000	-0.00207	0.00893	0.00202
CA	44	275390.58294	760898.16300	1.500	272096.84229	280112.79899	273962.10753
K	39	95506.71057	4407762.64300	1.700	94713.48713	97415.18108	94391.46351
MG	24	93419.42999	5481970.96000	0.400	93498.57880	93036.31806	93723.39310
NA	23	228137.89694	29043365.40300	0.900	227277.14018	230482.48692	226654.06373
TI	47	1938.05321	45565.65300	0.800	1955.51333	1934.46285	1924.18346
GE-3	72	168607.75700	0.00000	0.000	161810.99000	168266.99000	175745.29000
CR	52	202.27728	264996.37000	2.900	207.67890	203.13009	196.02285
FE	57	251730.92098	5985720.53700	2.500	257966.42885	252055.57336	245170.76074
MN	55	207.51501	106832.20700	0.900	205.70530	209.54818	207.29154
SB	121	0.48281	510.03700	10.200	0.44761	0.46149	0.53932
V	51	209.03017	210948.80700	2.700	213.29284	211.21904	202.57864
IN-2	115	556036.51000	0.00000	0.000	555880.37000	553454.50000	558774.66000
IN-3	115	68583.46700	0.00000	0.000	66542.10000	69423.31000	69784.99000
AG	107	50.63955	148781.94300	1.800	51.61272	49.75506	50.55086
AS	75	106.48037	16774.26000	2.200	105.79653	104.50690	109.13768
BA	137	0.89030	256.68000	12.400	1.00342	0.78289	0.88458
CD	111	101.30832	31673.71000	0.900	101.87459	100.21072	101.83964
CO	59	202.48730	484597.53300	1.400	205.33148	199.67392	202.45651
CU	63	197.82469	387315.89300	1.100	199.83934	195.66083	197.97392
MO	98	2085.94885	3118010.79000	1.400	2118.14325	2059.75445	2079.94884
NI	60	204.21733	134956.68000	0.500	205.40233	203.56765	203.68201
SE	78	105.37673	13277.31300	2.100	107.93073	103.74769	104.45176
SN	120	-0.49465	363.35700	0.000	-0.55216	-0.51268	-0.41911
SR	88	9.13582	5317.82300	1.600	8.98142	9.15229	9.27374
ZN	66	104.58740	22239.63000	3.000	106.54597	100.99480	106.22143
BI-3	209	174633.19300	0.00000	0.000	169955.47000	174305.54000	179638.57000
PB	208	0.14110	996.72700	12.400	0.13283	0.16115	0.12934
TL	203	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
U	238	0.01220	86.67300	42.100	0.01632	0.00645	0.01384
SC-2	45	665212.16300	0.00000	0.000	689340.61000	652378.23000	653917.65000
GE-1	72	2400002	0	0.000	2432178	2347244	2420585
GE-2	72	1133425	0	0.000	1139080	1118584	1142611
TB-3	159	283481.10300	0.00000	0.000	273448.22000	282822.95000	294172.14000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:43:17
Tube Number: 8
Sample Number: **LRS3**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3078766	0	0.000	3056674	3061762	3117863
SC-3	45	52379.40700	0.00000	0.000	49927.88000	51814.32000	55396.02000
AL	27	49605.27219	928885.01300	2.700	50719.72405	49967.08351	48129.00901
B	11	512.18961	402686.94700	2.000	512.84907	521.98610	501.73364
BE	9	483.38588	779017.66300	1.500	488.25650	486.59372	475.30742
CA	44	48181.02667	141684.02000	1.400	48898.22922	48098.26090	47546.58989
K	39	49308.58842	2424795.69300	2.400	50043.68820	49952.81699	47929.26008
MG	24	48111.26980	3001407.35300	4.200	50030.00530	48299.85626	46003.94783
NA	23	46664.54009	6338116.36300	2.500	47401.94796	47252.57678	45339.09553
TI	47	502.45743	12575.50000	1.100	508.94065	498.90631	499.52533
GE-3	72	181429.65700	0.00000	0.000	176017.18000	182533.30000	185738.49000
CR	52	482.36340	680388.27300	1.100	481.74250	477.58371	487.76400
FE	57	50914.26173	1303774.85000	2.500	51070.60111	49590.49100	52081.69308
MN	55	501.99555	278012.37300	0.300	503.66341	500.96584	501.35740
SB	121	454.76892	411676.10000	0.600	454.93561	452.04736	457.32379
V	51	502.47518	546120.36700	1.900	501.30184	493.53383	512.58987
IN-2	115	572393.22700	0.00000	0.000	564288.37000	570131.35000	582759.96000
IN-3	115	73057.71000	0.00000	0.000	72050.56000	73266.21000	73856.36000
AG	107	942.00786	2946800.37300	5.900	1006.01155	909.51443	910.49760
AS	75	515.21259	86447.87000	2.000	509.24158	509.47952	526.91665
BA	137	495.17235	146862.63300	3.100	481.42101	492.00609	512.08995
CD	111	499.53131	166391.35000	1.600	490.67004	501.82393	506.09996
CO	59	498.39279	1271008.29000	2.900	490.56848	489.39541	515.21449
CU	63	491.30531	1024336.49700	0.900	486.91773	491.15982	495.83836
MO	98	514.13933	819032.95700	1.100	511.39120	510.19030	520.83649
NI	60	500.97713	352673.94000	1.800	498.94608	493.30161	510.68370
SE	78	504.78341	65456.89300	1.200	511.07826	498.96314	504.30883
SN	120	512.84620	506941.38700	2.400	499.80621	513.94486	524.78752
SR	88	502.26098	311410.82300	2.400	490.45837	501.68669	514.63788
ZN	66	504.99603	114206.10700	2.400	497.91473	498.13612	518.93724
BI-3	209	189973.04000	0.00000	0.000	184264.61000	190141.33000	195513.18000
PB	208	497.36343	3377343.80300	1.000	502.73737	496.30534	493.04759
TL	203	506.30423	1082738.13300	1.000	502.76437	512.00653	504.14180
U	238	503.33365	3491696.40700	0.900	508.02952	499.31470	502.65671
SC-2	45	652534.47000	0.00000	0.000	660348.12000	643396.51000	653858.78000
GE-1	72	2562973	0	0.000	2551469	2575407	2562044
GE-2	72	1163248	0	0.000	1155603	1150991	1183148
TB-3	159	292974.24000	0.00000	0.000	283855.23000	294758.08000	300309.41000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:45:44
Tube Number: 9
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3016506	0	0.000	3043975	3012966	2992578
SC-3	45	51212.79700	0.00000	0.000	48874.90000	51634.40000	53129.09000
AL	27	2.65799	60.00000	90.200	0.02298	3.23979	4.71121
B	11	33.83275	34235.73300	5.000	35.47189	33.96149	32.06488
BE	9	0.04718	90.00000	20.900	0.05802	0.04477	0.03875
CA	44	6.93719	33.33300	74.100	2.69601	12.65164	5.46392
K	39	8.61850	7658.84000	258.600	32.53069	4.89545	-11.57064
MG	24	1.28782	116.67300	80.500	0.09169	1.84125	1.93053
NA	23	32.70534	26335.19700	4.200	32.90293	33.96304	31.25005
TI	47	0.26253	6.66700	173.200	0.00000	0.00000	0.78760
GE-3	72	186709.48700	0.00000	0.000	177363.75000	189863.38000	192901.33000
CR	52	0.42429	763.38300	27.600	0.29312	0.51808	0.46168
FE	57	7.59555	223.34300	64.000	3.24009	6.70955	12.83700
MN	55	0.04640	53.33300	50.100	0.02727	0.03966	0.07227
SB	121	3.98322	3823.97700	7.100	4.02666	3.67954	4.24346
V	51	0.02945	33.33300	66.200	0.01883	0.01759	0.05193
IN-2	115	589623.72300	0.00000	0.000	589756.39000	589714.74000	589400.04000
IN-3	115	74881.26300	0.00000	0.000	70846.36000	76223.92000	77573.51000
AG	107	0.27566	936.73700	11.800	0.25136	0.26316	0.31248
AS	75	0.04723	10.66700	115.500	0.07092	-0.01514	0.08591
BA	137	-0.01231	6.66700	0.000	-0.03349	-0.03349	0.03004
CD	111	0.01199	6.00000	134.100	0.02496	0.01702	-0.00601
CO	59	0.03615	130.00700	78.600	0.00345	0.05494	0.05007
CU	63	-0.04318	290.01700	0.000	-0.05472	-0.07264	-0.00217
MO	98	3.91927	6601.72700	5.400	3.68277	4.08894	3.98610
NI	60	0.09767	106.67000	14.900	0.08212	0.10005	0.11084
SE	78	0.05143	10.22000	36.700	0.05972	0.06474	0.02982
SN	120	1.99729	2913.74000	5.200	2.08286	1.88310	2.02590
SR	88	0.04663	30.00000	84.900	0.03327	0.01546	0.09116
ZN	66	0.47286	170.01000	10.600	0.51378	0.41664	0.48818
BI-3	209	192331.69300	0.00000	0.000	185187.99000	196637.97000	195169.12000
PB	208	0.04632	446.68300	35.500	0.04182	0.03261	0.06453
TL	203	0.02482	53.33300	41.300	0.03358	0.01355	0.02731
U	238	0.18150	1283.45700	5.400	0.19083	0.17128	0.18240
SC-2	45	656939.78300	0.00000	0.000	674344.76000	648064.95000	648409.64000
GE-1	72	2572618	0	0.000	2616288	2552814	2548751
GE-2	72	1192228	0	0.000	1195664	1191432	1189587
TB-3	159	289106.03000	0.00000	0.000	280836.83000	289167.85000	297313.41000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:48:13
Tube Number: 10
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3022261	0	0.000	3043121	2980682	3042980
SC-3	45	51988.62700	0.00000	0.000	49406.71000	53008.44000	53550.73000
AL	27	0.53868	20.00000	175.300	1.14809	-0.54881	1.01677
B	11	10.77257	16886.57300	3.600	10.39524	11.16265	10.75982
BE	9	0.02268	51.33300	5.700	0.02163	0.02229	0.02414
CA	44	10.22387	43.33300	48.400	9.82522	5.48680	15.35958
K	39	7.69764	7725.56300	344.700	37.46807	-13.46731	-0.90784
MG	24	0.05911	40.00000	595.100	0.42368	-0.27814	0.03178
NA	23	23.36219	25487.42000	13.800	21.66533	21.32803	27.09320
TI	47	0.27272	6.66700	86.800	0.42347	0.39470	0.00000
GE-3	72	184053.79000	0.00000	0.000	175611.89000	186434.37000	190115.11000
CR	52	0.39285	703.37700	2.200	0.38494	0.39138	0.40221
FE	57	2.94437	96.67000	28.200	2.06946	3.04572	3.71794
MN	55	0.03593	46.66700	144.200	0.02801	-0.01147	0.09124
SB	121	0.63637	696.71300	7.300	0.64257	0.58742	0.67913
V	51	0.01835	20.00000	53.500	0.02852	0.00896	0.01756
IN-2	115	586770.20300	0.00000	0.000	582680.16000	584290.42000	593340.03000
IN-3	115	73058.68000	0.00000	0.000	69921.46000	74882.03000	74372.55000
AG	107	0.17613	600.04000	21.000	0.17810	0.21203	0.13825
AS	75	0.01755	5.33300	207.400	0.05960	-0.00351	-0.00343
BA	137	-0.01140	6.66700	0.000	-0.03349	-0.03349	0.03277
CD	111	0.01022	5.33300	137.700	0.01909	-0.00601	0.01759
CO	59	0.01841	80.00300	58.700	0.00776	0.02937	0.01809
CU	63	-0.06437	236.68000	0.000	-0.04305	-0.08947	-0.06058
MO	98	0.85567	1550.15000	7.600	0.91762	0.78767	0.86173
NI	60	0.05518	73.33300	99.600	0.08386	-0.00816	0.08982
SE	78	0.00824	4.44300	241.400	0.00522	-0.00997	0.02945
SN	120	-0.00907	866.73300	0.000	-0.08109	0.02383	0.03006
SR	88	0.00562	3.33300	173.200	0.01686	0.00000	0.00000
ZN	66	0.29802	126.67300	57.500	0.29288	0.47197	0.12923
BI-3	209	191969.58000	0.00000	0.000	186822.67000	194329.57000	194756.50000
PB	208	0.01575	236.67300	57.300	0.00536	0.02027	0.02162
TL	203	0.00919	20.00000	48.600	0.00476	0.00914	0.01368
U	238	0.02758	203.34700	3.600	0.02644	0.02818	0.02812
SC-2	45	653880.86000	0.00000	0.000	661293.19000	643336.51000	657012.88000
GE-1	72	2558689	0	0.000	2545637	2558151	2572278
GE-2	72	1183663	0	0.000	1171917	1175124	1203950
TB-3	159	291149.66300	0.00000	0.000	279882.03000	295048.94000	298518.02000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:50:41
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3053274	0	0.000	3106974	3025652	3027195
SC-3	45	51720.67000	0.00000	0.000	50319.75000	51472.49000	53369.77000
AL	27	5053.69010	93541.06700	0.600	5032.83261	5085.55480	5042.68287
B	11	305.77441	241980.24300	1.100	301.91817	307.66853	307.73652
BE	9	30.21428	48310.16700	0.200	30.26038	30.13564	30.24681
CA	44	4870.71164	14170.05700	3.100	4707.15209	4899.39122	5005.59160
K	39	5068.32519	252955.91300	2.100	4952.49593	5156.67140	5095.80824
MG	24	5023.58106	309874.26000	1.700	5028.52284	5107.97130	4934.24905
NA	23	4928.87612	681423.29700	0.900	4915.16243	4975.91661	4895.54934
TI	47	311.33098	7695.55300	3.300	305.27342	323.24353	305.47599
GE-3	72	183888.42000	0.00000	0.000	178958.14000	182568.45000	190138.67000
CR	52	299.58875	428224.55000	1.500	300.39506	303.49402	294.87716
FE	57	5046.79906	130980.02700	1.300	5017.51812	5120.57094	5002.30811
MN	55	307.33262	172545.56300	0.800	304.62618	309.33299	308.03869
SB	121	32.47477	29876.85700	3.900	33.17155	33.22878	31.02398
V	51	305.20140	336087.46700	2.400	302.82122	313.34844	299.43455
IN-2	115	594138.55000	0.00000	0.000	605938.22000	590240.20000	586237.23000
IN-3	115	74250.76000	0.00000	0.000	70179.74000	73748.39000	78824.15000
AG	107	31.33564	99580.78700	4.900	31.66546	32.69028	29.65119
AS	75	308.58906	52581.93700	1.800	312.63491	311.07250	302.05977
BA	137	303.66630	91439.83000	2.500	307.22503	308.73046	295.04342
CD	111	30.57275	10335.52300	3.800	31.48037	30.96290	29.27499
CO	59	307.15824	794885.40300	3.500	317.66141	307.84299	295.97032
CU	63	304.74564	644766.34300	4.300	315.88820	308.10207	290.24666
MO	98	30.76308	49877.80000	5.700	32.06737	31.43305	28.78882
NI	60	313.08554	223654.70300	4.000	322.95804	317.41608	298.88248
SE	78	30.59656	4120.54300	3.200	29.94841	30.10228	31.73899
SN	120	30.22167	31156.14700	3.400	30.73758	30.88813	29.03931
SR	88	29.84962	18781.94700	3.400	30.53229	30.35074	28.66584
ZN	66	316.68098	72686.38700	4.000	327.88395	319.13771	303.02126
BI-3	209	197644.47700	0.00000	0.000	192262.50000	196843.32000	203827.61000
PB	208	29.95311	211740.04700	2.000	29.80550	30.60953	29.44431
TL	203	29.91841	66564.46300	2.900	29.28574	30.88906	29.58043
U	238	49.64354	358286.25700	0.900	49.84400	49.93458	49.15204
SC-2	45	661212.85300	0.00000	0.000	680860.85000	655341.24000	647436.47000
GE-1	72	2567685	0	0.000	2561916	2565888	2575251
GE-2	72	1193780	0	0.000	1211971	1191345	1178024
TB-3	159	290557.04000	0.00000	0.000	278819.41000	295900.44000	296951.27000

Run Name: 1930905E05 Date/Time: 11/05/2019 5:53:07
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3008639	0	0.000	3022886	2987950	3015082
SC-3	45	51469.59700	0.00000	0.000	49256.40000	51924.32000	53228.07000
AL	27	0.54797	20.00000	106.500	1.15326	-0.01060	0.50124
B	11	31.34400	32269.15700	3.900	32.35195	31.67877	30.00128
BE	9	0.01353	36.66700	43.600	0.01678	0.01709	0.00671
CA	44	21.79109	76.66700	28.600	17.09885	19.41354	28.86089
K	39	6.96850	7625.41300	276.300	29.15026	-5.44210	-2.80267
MG	24	2.08806	163.34300	46.600	2.80989	2.47351	0.98078
NA	23	15.26787	24148.49300	5.500	15.00578	16.21429	14.58356
TI	47	0.26205	6.66700	173.200	0.00000	0.00000	0.78614
GE-3	72	179800.74000	0.00000	0.000	172975.19000	179192.79000	187234.24000
CR	52	0.42036	723.38000	15.200	0.44440	0.46863	0.34806
FE	57	4.57480	133.34000	86.600	9.07734	1.61758	3.02948
MN	55	0.02108	36.66700	349.800	0.01020	0.09965	-0.04662
SB	121	0.22207	310.01700	58.900	0.09786	0.35875	0.20959
V	51	0.01895	20.00000	89.900	0.03861	0.00932	0.00892
IN-2	115	584761.94700	0.00000	0.000	591906.09000	581997.70000	580382.05000
IN-3	115	72751.90300	0.00000	0.000	70106.53000	73470.54000	74678.64000
AG	107	0.04611	193.34300	38.000	0.02773	0.04799	0.06259
AS	75	0.01283	4.66700	192.300	0.02213	-0.01514	0.03151
BA	137	-0.02177	3.33300	0.000	0.00166	-0.03349	-0.03349
CD	111	0.01833	8.00000	88.100	0.02528	0.02982	-0.00013
CO	59	0.01069	60.00300	153.800	0.00362	-0.00103	0.02948
CU	63	-0.08406	196.67700	0.000	-0.10342	-0.08299	-0.06576
MO	98	0.41761	850.07700	14.900	0.43714	0.46789	0.34779
NI	60	0.07982	90.00700	81.500	0.12794	0.10568	0.00586
SE	78	0.01021	4.66700	101.300	-0.00025	0.02043	0.01044
SN	120	-0.31624	560.03700	0.000	-0.30505	-0.40221	-0.24146
SR	88	0.01647	10.00000	102.100	0.03362	0.00000	0.01578
ZN	66	0.48907	170.01000	43.200	0.24530	0.61807	0.60383
BI-3	209	190409.56700	0.00000	0.000	183261.27000	190641.83000	197325.60000
PB	208	0.00402	153.33700	104.900	0.00887	0.00194	0.00125
TL	203	0.01705	36.66700	56.500	0.00970	0.02796	0.01351
U	238	0.03462	250.01300	16.900	0.04043	0.02876	0.03467
SC-2	45	647037.58000	0.00000	0.000	664635.69000	632830.85000	643646.20000
GE-1	72	2573467	0	0.000	2601708	2580673	2538021
GE-2	72	1185554	0	0.000	1186438	1175929	1194295
TB-3	159	279727.75300	0.00000	0.000	272830.80000	278166.25000	288186.21000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:14:38
Tube Number: 13
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2978502	0	0.000	2996467	2959772	2979267
SC-3	45	52660.15000	0.00000	0.000	50378.93000	52948.08000	54653.44000
AL	27	5019.87708	94569.69700	1.300	5096.03970	4990.98790	4972.60363
B	11	305.98759	236229.06300	1.300	301.32468	307.49023	309.14785
BE	9	31.67522	49401.93000	1.500	31.45087	32.20603	31.36876
CA	44	4816.94736	14263.47700	2.200	4814.85182	4712.24192	4923.74834
K	39	5016.74894	254848.88000	1.700	5075.89967	5053.78536	4920.56178
MG	24	4998.03653	313869.39000	1.200	5065.00547	4977.68948	4951.41465
NA	23	4832.20920	680248.58300	2.600	4934.36259	4868.63003	4693.63497
TI	47	295.58022	7432.05300	4.000	305.32886	298.81652	282.59527
GE-3	72	181893.10300	0.00000	0.000	177192.48000	181528.12000	186958.71000
CR	52	295.26439	417499.56300	1.300	295.75214	298.92528	291.11576
FE	57	5010.57630	128640.83300	0.200	5001.81343	5022.00058	5007.91490
MN	55	306.12577	169980.78000	0.400	306.21914	307.27589	304.88227
SB	121	30.80568	28060.06300	1.400	30.55615	31.30643	30.55445
V	51	305.41390	332714.67700	1.100	304.76310	309.05316	302.42545
IN-2	115	570876.33000	0.00000	0.000	571386.41000	569379.80000	571862.78000
IN-3	115	73986.64000	0.00000	0.000	69643.38000	74285.17000	78031.37000
AG	107	30.06287	95196.65700	3.700	31.28204	29.84505	29.06153
AS	75	307.38400	52199.51300	1.400	311.15626	308.33100	302.66474
BA	137	296.87704	89062.04700	2.700	304.25745	298.12134	288.25233
CD	111	30.42083	10246.12700	4.300	31.89301	29.98263	29.38686
CO	59	300.83506	775677.35700	3.900	312.68209	300.60742	289.21567
CU	63	297.53252	627703.48000	2.800	304.16395	300.08914	288.34448
MO	98	30.44424	49236.11000	3.000	31.35717	30.46843	29.50711
NI	60	307.79074	219101.31300	3.900	319.86847	307.93924	295.56452
SE	78	30.55274	3954.72300	2.200	30.33907	30.01705	31.30210
SN	120	28.65684	29479.46000	4.100	30.01183	27.85119	28.10750
SR	88	30.38718	19058.98000	6.800	30.15750	32.54598	28.45807
ZN	66	311.23227	71200.13700	3.500	323.41991	308.00334	302.27355
BI-3	209	191010.67300	0.00000	0.000	184542.61000	190850.17000	197639.24000
PB	208	30.41367	207748.35700	1.400	30.86576	30.31923	30.05603
TL	203	30.00305	64468.57300	3.400	30.50587	30.67104	28.83223
U	238	49.86273	347698.73300	1.900	50.90744	49.56654	49.11420
SC-2	45	635272.98700	0.00000	0.000	632700.07000	636968.55000	636150.34000
GE-1	72	2503865	0	0.000	2495794	2465713	2550087
GE-2	72	1172165	0	0.000	1175313	1163693	1177489
TB-3	159	283791.92300	0.00000	0.000	272569.90000	286942.57000	291863.30000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:17:07
Tube Number: 14
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2979905	0	0.000	2988077	2963406	2988231
SC-3	45	52567.01000	0.00000	0.000	50349.81000	53398.86000	53952.36000
AL	27	3.18336	70.00300	66.200	3.33645	5.20850	1.00512
B	11	27.83475	29349.12700	3.900	28.81998	28.00868	26.67559
BE	9	-0.00079	14.00000	0.000	0.00431	-0.00202	-0.00464
CA	44	18.31239	66.67000	80.300	34.31297	5.41313	15.21107
K	39	15.30000	8192.40700	168.600	44.10621	-5.67981	7.47359
MG	24	1.53702	133.34300	15.600	1.73688	1.60376	1.27042
NA	23	9.06963	23811.34300	32.400	12.45613	7.18949	7.56327
TI	47	0.13060	3.33300	173.200	0.00000	0.39181	0.00000
GE-3	72	184443.05000	0.00000	0.000	178535.33000	185029.06000	189764.76000
CR	52	0.41747	740.05700	12.200	0.43470	0.36034	0.45738
FE	57	3.34127	106.67300	47.100	4.00805	1.54274	4.47300
MN	55	0.04168	50.00300	69.200	0.00843	0.05962	0.05699
SB	121	0.06985	176.67700	37.900	0.09101	0.04018	0.07838
V	51	0.02695	30.00000	66.400	0.00935	0.04512	0.02639
IN-2	115	575492.57000	0.00000	0.000	564218.78000	582056.18000	580202.75000
IN-3	115	74504.95000	0.00000	0.000	71423.56000	75412.92000	76678.37000
AG	107	-0.00936	20.00000	0.000	-0.01229	-0.00937	-0.00642
AS	75	0.04398	10.00000	74.000	0.07022	0.05416	0.00758
BA	137	-0.01188	6.66700	0.000	-0.03349	-0.00081	-0.00135
CD	111	0.00402	3.33300	232.100	0.01242	0.00563	-0.00601
CO	59	0.03093	113.33700	16.700	0.03542	0.02527	0.03211
CU	63	-0.06866	230.01700	0.000	0.00319	-0.09475	-0.11442
MO	98	0.05338	280.01700	74.300	0.06717	0.00864	0.08432
NI	60	0.09463	103.34000	21.100	0.11013	0.10167	0.07209
SE	78	0.01231	4.89000	100.500	0.00097	0.02550	0.01045
SN	120	-0.55710	330.02000	0.000	-0.50241	-0.62089	-0.54801
SR	88	0.02675	16.66700	93.400	0.04950	0.00000	0.03074
ZN	66	0.67776	216.67700	34.100	0.59803	0.93832	0.49693
BI-3	209	188248.70700	0.00000	0.000	183081.36000	189381.95000	192282.81000
PB	208	-0.00418	96.66700	0.000	-0.00179	-0.00088	-0.00987
TL	203	0.00478	10.00000	101.700	0.00970	0.00000	0.00462
U	238	0.02760	200.01000	25.200	0.02402	0.02317	0.03562
SC-2	45	641659.48300	0.00000	0.000	637668.43000	637984.52000	649325.50000
GE-1	72	2502792	0	0.000	2529089	2473867	2505420
GE-2	72	1169244	0	0.000	1158493	1175480	1173758
TB-3	159	281095.76700	0.00000	0.000	268874.06000	284955.80000	289457.44000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:19:33
Tube Number: 15 Batch: 193041404701A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U345

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2993649	0	0.000	2993101	2947353	3040494
SC-3	45	53215.67000	0.00000	0.000	51554.44000	54522.78000	53569.79000
AL	27	4.03534	86.67300	54.500	5.41448	1.50142	5.19013
B	11	10.27027	16350.71000	3.100	10.24060	10.60413	9.96607
BE	9	-0.00080	14.00000	0.000	-0.00082	0.00191	-0.00347
CA	44	83.37104	263.35000	14.200	71.39452	83.58933	95.12928
K	39	30.70717	9072.88700	61.600	52.17017	16.38697	23.56436
MG	24	2.92173	223.34700	12.000	2.65814	2.78860	3.31845
NA	23	24.37911	26201.65700	50.500	29.31486	10.36300	33.45947
TI	47	0.25582	6.66700	173.200	0.00000	0.76747	0.00000
GE-3	72	186167.51700	0.00000	0.000	176502.54000	188702.38000	193297.63000
CR	52	0.45273	793.39300	21.700	0.56477	0.41278	0.38065
FE	57	5.86792	173.34300	15.000	6.87314	5.25345	5.47719
MN	55	0.43582	270.01300	55.400	0.71444	0.30063	0.29238
SB	121	-0.04333	73.33300	0.000	-0.03149	-0.07986	-0.01864
V	51	0.03586	40.00000	23.700	0.03784	0.02654	0.04319
IN-2	115	590783.14700	0.00000	0.000	577800.04000	584782.59000	609766.81000
IN-3	115	75829.01300	0.00000	0.000	73354.78000	74477.97000	79654.29000
AG	107	-0.00926	20.00000	0.000	-0.00919	-0.00302	-0.01556
AS	75	0.03036	8.00000	69.800	0.03235	0.00825	0.05047
BA	137	0.13879	53.33300	30.500	0.13447	0.09885	0.18305
CD	111	-0.00401	0.66700	0.000	-0.00003	-0.00601	-0.00601
CO	59	0.05710	183.34300	37.100	0.06149	0.07576	0.03404
CU	63	0.22309	870.05700	12.200	0.19436	0.22640	0.24850
MO	98	-0.05607	103.33700	0.000	-0.08159	-0.00207	-0.08456
NI	60	0.52399	416.69000	21.700	0.60119	0.57745	0.39334
SE	78	0.00486	4.00000	212.100	0.01564	-0.00493	0.00388
SN	120	-0.63929	253.34700	0.000	-0.62356	-0.68717	-0.60712
SR	88	0.13377	86.67300	37.500	0.14461	0.07912	0.17756
ZN	66	7.40381	1793.51000	10.600	7.53886	8.11585	6.55672
BI-3	209	196438.96000	0.00000	0.000	193130.09000	195533.06000	200653.73000
PB	208	0.04268	430.02300	13.500	0.04223	0.04864	0.03717
TL	203	0.00295	6.66700	173.200	0.00000	0.00000	0.00885
U	238	0.00140	20.00000	264.800	0.00001	0.00559	-0.00141
SC-2	45	654154.57300	0.00000	0.000	648958.66000	649297.41000	664207.65000
GE-1	72	2572094	0	0.000	2574755	2566403	2575124
GE-2	72	1197882	0	0.000	1176334	1191057	1226256
TB-3	159	290477.81700	0.00000	0.000	281740.78000	289746.27000	299946.40000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:22:01
Tube Number: 16 Batch: 193041404701A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: SW846-U345

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3004177	0	0.000	3028317	2995753	2988460
SC-3	45	54559.90000	0.00000	0.000	53960.95000	54142.14000	55576.61000
AL	27	221.03386	4324.09700	6.200	236.69005	214.72738	211.68414
B	11	268.61230	210227.24300	0.800	266.36512	270.57641	268.89538
BE	9	4.31141	6795.43000	1.700	4.24266	4.38966	4.30192
CA	44	4041.80864	12405.27300	6.700	3732.04701	4163.93995	4229.43896
K	39	10267.77506	532631.34700	3.800	9813.36452	10513.87260	10476.08807
MG	24	2057.46343	133930.34700	2.700	2008.28925	2116.26854	2047.83250
NA	23	10176.19599	1459476.59000	2.100	9941.17911	10243.63226	10343.77660
TI	47	259.52494	6768.36700	1.600	254.80096	262.06760	261.70627
GE-3	72	191561.30000	0.00000	0.000	186760.62000	192188.38000	195734.90000
CR	52	49.47427	73824.14700	1.700	48.93711	49.05205	50.43364
FE	57	300.62230	8152.43300	6.500	281.22373	320.10945	300.53372
MN	55	52.61141	30780.66300	2.000	53.54433	52.81624	51.47367
SB	121	5.87196	5724.65000	3.400	6.09445	5.81447	5.70695
V	51	50.88385	58376.87000	0.800	51.18981	51.03510	50.42662
IN-2	115	597933.51300	0.00000	0.000	603777.68000	583326.46000	606696.40000
IN-3	115	76421.47000	0.00000	0.000	72294.34000	78033.47000	78936.60000
AG	107	50.46722	165155.30700	2.100	51.70200	49.99645	49.70322
AS	75	9.99408	1755.44300	2.100	10.22570	9.82974	9.92679
BA	137	50.37532	15622.06700	3.800	52.00653	48.27358	50.84584
CD	111	4.75027	1656.77000	0.600	4.77631	4.72262	4.75189
CO	59	255.48879	680692.54000	3.600	265.58369	252.90542	247.97727
CU	63	52.05162	113760.44700	2.800	53.74149	51.20924	51.20413
MO	98	50.26479	83886.75700	2.000	51.20427	50.40861	49.18149
NI	60	53.27993	39229.54000	2.900	55.06515	52.14551	52.62914
SE	78	10.19267	1384.06700	0.700	10.26420	10.19610	10.11771
SN	120	51.01290	53524.70700	2.100	52.25379	50.56467	50.22025
SR	88	40.29059	26139.33700	2.900	39.67858	39.54412	41.64907
ZN	66	535.60935	126584.71700	2.800	551.86382	522.10696	532.85728
BI-3	209	196324.17000	0.00000	0.000	188180.23000	199818.30000	200973.98000
PB	208	4.98973	35155.19300	0.500	4.96496	4.99291	5.01130
TL	203	2.02841	4477.58000	5.500	2.14371	1.92100	2.02051
U	238	0.00462	43.33300	73.600	0.00441	0.00133	0.00813
SC-2	45	667578.74000	0.00000	0.000	674710.46000	658042.96000	669982.80000
GE-1	72	2548454	0	0.000	2555957	2536974	2552432
GE-2	72	1204427	0	0.000	1213031	1191698	1208553
TB-3	159	297403.57700	0.00000	0.000	286381.32000	302018.63000	303810.78000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:24:27
Tube Number: 17 Batch: 193041404701A
Sample Number: **1187118** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3012320	0	0.000	3036516	3048348	2952097
SC-3	45	54850.95000	0.00000	0.000	53168.82000	54051.80000	57332.23000
AL	27	709.03303	13926.56700	2.900	692.51583	731.90101	702.68225
B	11	34.58831	34752.08000	3.700	36.04730	33.64321	34.07441
BE	9	0.16182	270.67000	4.300	0.16010	0.16947	0.15589
CA	44	10179.46577	31354.82000	3.100	10158.97209	10501.19462	9878.23061
K	39	1485.19257	84095.47000	0.700	1481.21904	1496.42992	1477.92876
MG	24	5775.19502	377617.45700	3.000	5808.73586	5931.09842	5585.75076
NA	23	8622.33876	1245628.39300	3.700	8662.44589	8918.32578	8286.24459
TI	47	0.25067	6.66700	86.700	0.00000	0.38708	0.36493
GE-3	72	195338.92000	0.00000	0.000	188875.29000	194661.77000	202479.70000
CR	52	1.85020	2960.40000	2.800	1.82259	1.81838	1.90963
FE	57	9.89613	293.35000	9.400	9.75027	10.89403	9.04408
MN	55	125.86864	75060.20000	2.100	128.50437	123.31624	125.78533
SB	121	-0.01576	103.33700	0.000	0.01564	-0.02967	-0.03325
V	51	0.05401	63.33700	39.400	0.03536	0.07720	0.04947
IN-2	115	611743.49300	0.00000	0.000	609028.06000	608919.47000	617282.95000
IN-3	115	77902.86000	0.00000	0.000	75059.45000	77268.66000	81380.47000
AG	107	-0.00858	23.33300	0.000	-0.01245	-0.00347	-0.00982
AS	75	0.06373	14.00000	50.900	0.10090	0.04122	0.04907
BA	137	36.90080	11674.99300	4.300	35.96024	38.72943	36.01274
CD	111	0.05755	22.66700	25.500	0.04075	0.06781	0.06408
CO	59	3.18732	8706.07700	3.000	3.16053	3.10691	3.29451
CU	63	2.21962	5321.11300	6.000	2.35819	2.20848	2.09219
MO	98	0.11621	400.02700	30.900	0.08259	0.15401	0.11203
NI	60	3.37973	2570.31700	5.900	3.46319	3.52396	3.15204
SE	78	0.32934	49.11000	21.500	0.26483	0.40501	0.31816
SN	120	-0.29000	626.71000	0.000	-0.33352	-0.20555	-0.33094
SR	88	28.07821	18561.79300	3.400	27.27426	29.15138	27.80901
ZN	66	19.88370	4844.27700	8.300	21.57796	19.78119	18.29195
BI-3	209	201121.28700	0.00000	0.000	195210.88000	204021.09000	204131.89000
PB	208	1.12297	8207.92700	1.400	1.12360	1.10719	1.13811
TL	203	0.09446	213.34700	16.400	0.10923	0.09580	0.07834
U	238	0.05546	416.69300	17.200	0.06452	0.05631	0.04554
SC-2	45	679079.80700	0.00000	0.000	678288.97000	674579.91000	684370.54000
GE-1	72	2596036	0	0.000	2608913	2599882	2579314
GE-2	72	1233899	0	0.000	1237238	1226457	1238001
TB-3	159	300410.38000	0.00000	0.000	290949.19000	301220.27000	309061.68000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:26:55
Tube Number: 18 Batch: 193041404701A
Sample Number: **1187118** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3090262	0	0.000	3078349	3103633	3088805
SC-3	45	54346.48700	0.00000	0.000	50971.70000	55667.07000	56400.69000
AL	27	767.81553	14924.05700	3.400	798.10936	752.85663	752.48059
B	11	16.94474	22031.23300	3.300	17.56651	16.75790	16.50983
BE	9	1.22302	1994.13700	4.200	1.28229	1.19174	1.19504
CA	44	10429.93246	31808.78300	3.900	10873.45970	10071.20971	10345.12796
K	39	1842.89168	101443.38700	3.300	1906.43891	1785.53046	1836.70565
MG	24	5792.33752	375088.27700	3.200	6003.24600	5684.99363	5688.77292
NA	23	8938.48336	1278044.80000	3.700	9302.81498	8662.88528	8849.74980
TI	47	22.15460	570.04000	28.400	29.14535	16.91425	20.40419
GE-3	72	191764.78700	0.00000	0.000	185351.83000	192027.73000	197914.80000
CR	52	3.76472	5751.31300	6.200	4.03252	3.64090	3.62073
FE	57	116.07492	3160.46300	1.900	118.53788	115.49837	114.18852
MN	55	127.78282	74818.76000	0.300	128.21391	127.59382	127.54074
SB	121	2.00556	2033.57000	12.800	1.96543	2.27917	1.77209
V	51	1.22555	1410.13000	13.400	1.05395	1.38253	1.24016
IN-2	115	606885.50700	0.00000	0.000	597444.52000	612585.43000	610626.57000
IN-3	115	76662.42300	0.00000	0.000	74459.48000	76575.87000	78951.92000
AG	107	1.00748	3360.51700	10.100	1.05682	0.88997	1.07566
AS	75	4.07649	720.69000	8.600	3.76312	4.45491	4.01145
BA	137	39.62041	12335.54300	2.500	40.48953	38.53216	39.83954
CD	111	1.08137	380.67700	9.000	0.98390	1.08258	1.17763
CO	59	4.22979	11341.14000	4.900	4.35285	4.34830	3.98821
CU	63	4.45342	10133.59700	4.100	4.44181	4.27746	4.64099
MO	98	0.89398	1690.16700	10.000	0.96534	0.92340	0.79322
NI	60	5.73884	4277.43700	9.500	5.27623	6.33589	5.60440
SE	78	2.39321	332.45000	1.300	2.42297	2.36247	2.39420
SN	120	3.41985	4457.55700	4.100	3.34147	3.58257	3.33551
SR	88	29.07277	18905.48300	2.200	29.25295	29.59989	28.36547
ZN	66	42.84656	10220.40700	4.900	44.68875	40.53140	43.31954
BI-3	209	199027.12300	0.00000	0.000	193088.55000	199134.74000	204858.08000
PB	208	2.08221	14930.30000	7.600	2.26218	1.96807	2.01639
TL	203	1.14571	2567.01300	1.500	1.13196	1.16452	1.14066
U	238	1.97823	14387.97000	0.500	1.98925	1.97152	1.97392
SC-2	45	673405.98000	0.00000	0.000	670511.32000	682038.66000	667667.96000
GE-1	72	2586085	0	0.000	2596485	2601269	2560501
GE-2	72	1232401	0	0.000	1219733	1246660	1230810
TB-3	159	296280.87000	0.00000	0.000	289268.75000	296316.54000	303257.32000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:29:20
Tube Number: 19 Batch: 193041404701A
Sample Number: **1187121** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3122491	0	0.000	3205954	3082009	3079510
SC-3	45	55586.88000	0.00000	0.000	52395.82000	56700.08000	57664.74000
AL	27	716.81761	14260.16300	2.800	734.76538	695.71912	719.96834
B	11	12.59503	18868.02300	2.000	12.42381	12.47685	12.88442
BE	9	0.15527	270.00300	7.300	0.16662	0.15511	0.14408
CA	44	10402.47713	32470.36000	1.900	10608.46638	10372.38007	10226.58495
K	39	1492.76913	85569.84300	2.800	1533.96381	1449.91836	1494.42521
MG	24	5830.32969	386271.12700	2.700	6008.46460	5719.49341	5763.03105
NA	23	8847.99020	1294898.75300	2.100	9049.33978	8798.42243	8696.20841
TI	47	0.25405	6.66700	86.900	0.39931	0.00000	0.36283
GE-3	72	195661.97300	0.00000	0.000	188125.76000	196769.25000	202090.91000
CR	52	1.83467	2940.42000	0.600	1.82344	1.83710	1.84346
FE	57	10.97091	323.35000	39.800	9.79175	15.81119	7.30979
MN	55	127.88839	76416.35700	1.500	126.37712	130.08931	127.19876
SB	121	-0.03437	86.67000	0.000	-0.05842	-0.06123	0.01653
V	51	0.06483	76.67000	39.500	0.03550	0.07636	0.08262
IN-2	115	628548.06700	0.00000	0.000	627417.68000	626218.18000	632008.34000
IN-3	115	77378.36300	0.00000	0.000	74296.27000	77854.04000	79984.78000
AG	107	-0.01258	10.00000	0.000	-0.01556	-0.00956	-0.01264
AS	75	0.05748	12.66700	93.600	0.11381	0.05198	0.00664
BA	137	37.14474	11684.98700	3.400	35.73270	37.48716	38.21436
CD	111	0.05427	21.33300	24.000	0.04123	0.06725	0.05433
CO	59	3.36470	9122.99700	4.900	3.25873	3.55481	3.28056
CU	63	2.54614	6014.71300	1.200	2.54002	2.51936	2.57904
MO	98	-0.07726	70.00700	0.000	-0.06971	-0.06018	-0.10190
NI	60	4.38315	3300.48700	12.700	4.84075	3.76382	4.54486
SE	78	0.27164	42.22300	22.900	0.27512	0.33209	0.20771
SN	120	-0.60871	290.01700	0.000	-0.61691	-0.61019	-0.59902
SR	88	28.73717	18872.11000	3.200	28.80880	27.79559	29.60713
ZN	66	20.09753	4874.34700	6.700	20.49670	18.59237	21.20351
BI-3	209	199270.42700	0.00000	0.000	189331.27000	202204.37000	206275.64000
PB	208	1.08728	7874.53700	7.000	1.12656	0.99970	1.13558
TL	203	0.11032	246.68300	23.300	0.11731	0.13181	0.08183
U	238	0.04904	366.68700	8.000	0.05211	0.04464	0.05036
SC-2	45	699421.99700	0.00000	0.000	702031.32000	695872.10000	700362.57000
GE-1	72	2622258	0	0.000	2646384	2617647	2602741
GE-2	72	1281149	0	0.000	1315021	1249481	1278945
TB-3	159	301847.44000	0.00000	0.000	294092.96000	301232.61000	310216.75000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:31:48
Tube Number: 20 Batch: 193041404701A
Sample Number: **1187119** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3054438	0	0.000	3109983	3018207	3035126
SC-3	45	55797.22000	0.00000	0.000	53720.61000	56318.78000	57352.27000
AL	27	901.90087	18013.85000	2.500	919.69998	876.26240	909.74022
B	11	294.72592	233666.77700	0.200	294.22450	295.16610	294.78717
BE	9	4.43046	7099.54700	2.300	4.42962	4.53167	4.33007
CA	44	13762.05894	43145.33000	0.500	13701.83692	13757.34739	13826.99250
K	39	11489.53275	608439.80700	1.200	11539.20916	11333.90663	11595.48246
MG	24	7611.81613	506531.54000	0.900	7687.29840	7580.59096	7567.55904
NA	23	18344.10487	2669656.42000	2.700	18865.37071	17901.45557	18265.48832
TI	47	251.97488	6715.03300	4.000	259.05936	256.39926	240.46602
GE-3	72	191430.98700	0.00000	0.000	185625.99000	190775.90000	197891.07000
CR	52	52.28302	77936.62300	0.100	52.25119	52.33692	52.26094
FE	57	318.08557	8612.71000	6.800	334.12881	293.49873	326.62918
MN	55	179.42582	104858.77300	0.500	180.40709	179.11490	178.75546
SB	121	6.08371	5934.75000	7.200	5.63546	6.11084	6.50485
V	51	50.95815	58427.07700	2.300	51.81877	49.60335	51.45233
IN-2	115	610556.78300	0.00000	0.000	603922.39000	608672.82000	619075.14000
IN-3	115	76652.08700	0.00000	0.000	73200.55000	76807.68000	79948.03000
AG	107	50.89910	167095.48700	1.800	51.89855	50.70763	50.09113
AS	75	10.68038	1880.79700	3.300	11.02716	10.69001	10.32398
BA	137	85.17830	26524.25700	2.600	82.64119	86.79359	86.10011
CD	111	5.11555	1788.78700	1.600	5.20266	5.10656	5.03744
CO	59	260.24119	695772.20300	2.200	266.63802	258.62131	255.46424
CU	63	53.67944	117685.51000	2.300	55.00854	53.41392	52.61588
MO	98	49.72537	83225.81700	2.500	51.09745	49.37111	48.70753
NI	60	55.63304	41077.41700	3.700	57.95056	54.92912	54.01944
SE	78	10.64207	1475.63000	1.600	10.44205	10.72782	10.75633
SN	120	49.69015	52303.91300	3.300	51.51517	49.19909	48.35618
SR	88	67.66198	44002.90300	1.000	68.21414	66.93356	67.83824
ZN	66	549.97691	130377.79000	2.600	565.86137	545.12483	538.94452
BI-3	209	195983.86300	0.00000	0.000	188848.65000	197192.32000	201910.62000
PB	208	6.31852	44375.20000	3.000	6.45237	6.40006	6.10312
TL	203	2.14029	4720.98300	1.000	2.15022	2.15391	2.11674
U	238	0.04981	366.69000	19.700	0.04499	0.06108	0.04335
SC-2	45	683749.78000	0.00000	0.000	675103.19000	679566.86000	696579.29000
GE-1	72	2533505	0	0.000	2586943	2477604	2535969
GE-2	72	1244999	0	0.000	1230863	1235630	1268504
TB-3	159	294608.36300	0.00000	0.000	280855.80000	297491.79000	305477.50000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:34:14
Tube Number: 21 Batch: 193041404701A
Sample Number: **1187120** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3012596	0	0.000	3010786	2986446	3040558
SC-3	45	53151.76700	0.00000	0.000	51131.92000	52797.09000	55526.29000
AL	27	956.10945	18184.05000	2.200	976.70011	956.99569	934.63256
B	11	310.59909	242401.01000	0.800	312.00751	312.22948	307.56028
BE	9	4.35773	6886.80300	2.700	4.35119	4.47761	4.24439
CA	44	14721.46708	43974.77300	1.400	14483.26278	14810.63877	14870.49969
K	39	11860.65684	598169.52000	1.000	11728.26601	11964.15919	11889.54533
MG	24	7971.84193	505356.32300	0.600	7998.22164	7999.31901	7917.98513
NA	23	18857.51242	2614244.23000	0.900	18955.29189	18949.17845	18668.06693
TI	47	266.95445	6785.06300	2.800	266.85433	259.62366	274.38537
GE-3	72	187533.53300	0.00000	0.000	181154.00000	186180.02000	195266.58000
CR	52	52.16033	76174.08700	2.500	51.13870	53.61689	51.72541
FE	57	315.47579	8372.54300	1.500	311.47557	314.08967	320.86215
MN	55	181.06421	103634.73300	2.100	181.22478	184.79515	177.17270
SB	121	5.56269	5321.17700	2.700	5.40111	5.59675	5.69019
V	51	51.81043	58199.69300	1.500	51.16464	52.64559	51.62105
IN-2	115	596673.71700	0.00000	0.000	595162.00000	588162.55000	606696.60000
IN-3	115	74709.83300	0.00000	0.000	72741.21000	74250.33000	77137.96000
AG	107	51.36533	164462.09300	1.700	50.45659	52.19148	51.44790
AS	75	10.64248	1829.45300	4.200	10.12693	10.95309	10.84741
BA	137	87.28028	26474.13300	1.200	86.42122	88.45411	86.96550
CD	111	5.34707	1822.12300	4.600	5.33206	5.60175	5.10742
CO	59	264.43918	689620.40300	0.700	262.64200	264.17827	266.49728
CU	63	55.36657	118364.87700	0.500	55.42127	55.63064	55.04780
MO	98	51.43589	83940.81300	1.600	51.52987	52.22495	50.55285
NI	60	56.69558	40853.15700	1.500	56.50000	55.93933	57.64740
SE	78	10.42239	1412.06700	1.700	10.59612	10.42727	10.24380
SN	120	51.04831	52418.02300	2.100	50.16076	50.71387	52.27031
SR	88	69.80953	44253.60000	0.500	70.04134	69.41494	69.97231
ZN	66	554.14833	128163.59300	1.600	544.16771	558.28945	559.98784
BI-3	209	194980.43700	0.00000	0.000	186607.83000	196009.24000	202324.24000
PB	208	6.09883	42643.27000	0.100	6.09345	6.09445	6.10858
TL	203	2.08584	4577.60000	2.700	2.11891	2.02181	2.11682
U	238	0.05047	370.02300	8.600	0.04848	0.04749	0.05544
SC-2	45	666387.20300	0.00000	0.000	676270.69000	659253.43000	663637.49000
GE-1	72	2542759	0	0.000	2536054	2516080	2576143
GE-2	72	1206703	0	0.000	1202751	1204269	1213090
TB-3	159	295091.65000	0.00000	0.000	281955.97000	297780.23000	305538.75000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:36:42
Tube Number: 22 Batch: 193041404701A
Sample Number: **1187118** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2973117	0	0.000	3039525	2947570	2932257
SC-3	45	55851.17300	0.00000	0.000	52346.01000	57272.97000	57934.54000
AL	27	143.37908	2880.37700	3.800	137.20628	145.85428	147.07669
B	11	21.61940	24670.91000	2.000	21.95231	21.76644	21.13944
BE	9	0.02708	57.33300	16.500	0.02669	0.03172	0.02282
CA	44	2016.09516	6331.48300	3.600	2080.97182	2029.09058	1938.22308
K	39	312.10316	24208.86300	10.000	346.14563	285.21348	304.95038
MG	24	1186.54729	79054.58300	1.400	1201.80011	1169.82721	1188.01455
NA	23	1733.00527	274160.87300	1.600	1762.36125	1730.41052	1706.24403
TI	47	0.24076	6.66700	173.200	0.00000	0.00000	0.72227
GE-3	72	194221.44000	0.00000	0.000	182892.34000	197141.42000	202630.56000
CR	52	0.67921	1173.42300	4.400	0.70341	0.64543	0.68878
FE	57	1.53884	63.33300	48.200	1.18215	1.04214	2.39223
MN	55	25.68811	15254.62700	4.400	26.13751	24.39466	26.53215
SB	121	-0.02955	90.00000	0.000	-0.03467	-0.02067	-0.03332
V	51	0.02568	30.00000	64.000	0.02739	0.00847	0.04120
IN-2	115	602784.87700	0.00000	0.000	601118.54000	598101.88000	609134.21000
IN-3	115	77728.37300	0.00000	0.000	72838.53000	78454.47000	81892.12000
AG	107	-0.01350	6.66700	0.000	-0.01235	-0.01258	-0.01556
AS	75	0.02166	6.66700	69.000	0.00878	0.01816	0.03804
BA	137	8.19412	2590.35000	6.800	8.79707	7.69370	8.09158
CD	111	0.00152	2.66700	210.400	0.00002	0.00518	-0.00065
CO	59	0.69604	1926.87300	5.700	0.65215	0.70684	0.72913
CU	63	0.41877	1316.78000	20.800	0.50025	0.42933	0.32674
MO	98	0.22619	586.71000	18.700	0.21471	0.19082	0.27305
NI	60	0.76823	610.04000	11.500	0.84810	0.78382	0.67276
SE	78	0.07417	13.55300	51.300	0.11686	0.04378	0.06188
SN	120	-0.41484	493.36300	0.000	-0.37768	-0.43295	-0.43388
SR	88	6.01040	3954.03000	9.300	6.24667	6.41562	5.36891
ZN	66	4.59823	1166.77700	15.600	5.10865	3.77635	4.90968
BI-3	209	200757.34300	0.00000	0.000	191051.40000	199798.84000	211421.79000
PB	208	0.21526	1676.78300	5.300	0.21567	0.22642	0.20369
TL	203	0.01462	33.33300	41.600	0.01395	0.00889	0.02101
U	238	0.00760	66.67000	49.400	0.00719	0.00407	0.01154
SC-2	45	673047.93300	0.00000	0.000	670158.43000	670347.33000	678638.04000
GE-1	72	2508686	0	0.000	2573680	2476656	2475722
GE-2	72	1223382	0	0.000	1207816	1216910	1245420
TB-3	159	294573.20000	0.00000	0.000	280609.16000	299886.95000	303223.49000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:39:08
Tube Number: 23 Batch: 193041404701A
Sample Number: **1187557** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3099672	0	0.000	3151906	3067257	3079854
SC-3	45	53857.83000	0.00000	0.000	51603.65000	54543.38000	55426.46000
AL	27	6.03489	126.67300	73.100	5.40879	10.72368	1.97219
B	11	79.19519	70286.29300	1.700	79.22336	80.50282	77.85938
BE	9	-0.00359	10.00000	0.000	-0.00491	-0.00478	-0.00107
CA	44	34151.85008	103313.08000	0.900	34290.67924	33795.54863	34369.32236
K	39	3385.19412	178450.72300	1.000	3378.57803	3353.50791	3423.49641
MG	24	6243.66880	400931.58000	2.200	6368.20437	6267.26457	6095.53745
NA	23	133422.72615	18597708.05700	2.300	135586.09566	134812.53398	129869.54882
TI	47	0.27029	6.66700	173.200	0.81088	0.00000	0.00000
GE-3	72	187556.35700	0.00000	0.000	179223.63000	188468.18000	194977.26000
CR	52	0.44736	800.06000	33.200	0.28905	0.58410	0.46892
FE	57	30.43440	826.71700	15.300	30.87621	25.56456	34.86244
MN	55	78.30363	44856.94700	0.200	78.15059	78.34074	78.41956
SB	121	0.10763	213.34700	64.100	0.17969	0.10103	0.04217
V	51	0.13730	153.34300	20.700	0.16769	0.13289	0.11132
IN-2	115	593524.97000	0.00000	0.000	596427.69000	595210.17000	588937.05000
IN-3	115	75533.06700	0.00000	0.000	72529.95000	75853.43000	78215.82000
AG	107	-0.00929	20.00000	0.000	-0.00590	-0.00940	-0.01257
AS	75	0.26377	48.66700	34.100	0.16498	0.34080	0.28551
BA	137	21.47626	6591.73300	6.300	21.10242	22.97185	20.35450
CD	111	-0.00399	0.66700	0.000	0.00004	-0.00601	-0.00601
CO	59	0.08484	256.68300	19.300	0.08604	0.10060	0.06787
CU	63	0.15651	720.05000	24.000	0.19860	0.12662	0.14430
MO	98	1.49222	2647.02300	10.700	1.61417	1.55032	1.31217
NI	60	1.31442	990.07700	12.000	1.49597	1.22296	1.22433
SE	78	0.00642	4.22300	316.100	-0.00532	-0.00528	0.02986
SN	120	-0.60820	283.34700	0.000	-0.64099	-0.52481	-0.65881
SR	88	487.18009	312145.50700	1.100	492.63801	487.20685	481.69540
ZN	66	6.25578	1523.48000	15.000	6.60243	5.19346	6.97147
BI-3	209	190031.53000	0.00000	0.000	183364.96000	191581.66000	195147.97000
PB	208	0.00063	130.00000	1141.200	0.00733	-0.00692	0.00147
TL	203	0.00780	16.66700	123.400	0.00484	0.01855	0.00000
U	238	0.24905	1740.19300	5.600	0.23456	0.25017	0.26241
SC-2	45	666350.92700	0.00000	0.000	668766.01000	663696.47000	666590.30000
GE-1	72	2584476	0	0.000	2608036	2561916	2583475
GE-2	72	1217452	0	0.000	1216771	1214621	1220963
TB-3	159	293087.91300	0.00000	0.000	282480.56000	296853.73000	299929.45000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:41:36
Tube Number: 24 Batch: 193041404701A
Sample Number: **1186826** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U5

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3001559	0	0.000	3027731	3007190	2969755
SC-3	45	53078.60700	0.00000	0.000	51142.06000	53008.74000	55085.02000
AL	27	3.47186	76.67000	27.900	3.27626	2.61489	4.52444
B	11	17.65216	21925.77700	5.300	17.20135	17.03558	18.71954
BE	9	-0.00044	14.66700	0.000	0.00286	-0.00086	-0.00333
CA	44	31242.49167	93179.22000	1.700	30622.28243	31651.89526	31453.29734
K	39	10845.54803	546822.44000	0.700	10768.43971	10928.98425	10839.22013
MG	24	6854.92967	433911.84000	1.600	6874.76786	6953.84640	6736.17475
NA	23	13721.40725	1906025.91000	1.500	13663.68334	13949.60449	13550.93390
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	188412.78300	0.00000	0.000	181486.95000	187300.02000	196451.38000
CR	52	0.42291	763.38700	4.600	0.41893	0.44409	0.40570
FE	57	17301.13801	459890.29300	2.100	17322.21346	17649.24533	16931.95523
MN	55	559.40139	321738.48300	0.400	557.92245	562.07935	558.20238
SB	121	-0.02265	93.33700	0.000	-0.04503	0.03821	-0.06113
V	51	0.02401	26.66700	59.700	0.03680	0.02674	0.00850
IN-2	115	601218.33000	0.00000	0.000	608682.96000	599081.91000	595890.12000
IN-3	115	76632.16700	0.00000	0.000	74358.92000	76335.65000	79201.93000
AG	107	-0.01346	6.66700	0.000	-0.00928	-0.01556	-0.01556
AS	75	0.80570	144.66700	10.700	0.79305	0.72648	0.89758
BA	137	142.78752	44409.70300	1.200	143.16251	144.21124	140.98881
CD	111	0.00742	4.66700	50.000	0.01169	0.00549	0.00507
CO	59	0.30762	856.73000	14.200	0.33796	0.25755	0.32737
CU	63	0.15716	730.05000	55.900	0.19876	0.21655	0.05617
MO	98	1.49621	2697.02300	10.300	1.42959	1.67200	1.38705
NI	60	0.63032	500.03000	20.800	0.74596	0.65738	0.48761
SE	78	0.00583	4.22300	288.900	0.02329	-0.01034	0.00455
SN	120	-0.61792	276.68000	0.000	-0.60719	-0.57560	-0.67099
SR	88	255.05118	165898.45300	1.800	249.82946	256.75567	258.56843
ZN	66	5.75966	1430.13700	12.100	4.95532	6.21790	6.10576
BI-3	209	195293.42000	0.00000	0.000	189990.66000	196109.47000	199780.13000
PB	208	-0.00080	123.33700	0.000	0.00938	-0.00719	-0.00460
TL	203	0.00754	16.66700	32.900	0.00468	0.00906	0.00889
U	238	0.01071	86.67000	61.100	0.00580	0.01814	0.00819
SC-2	45	665275.90300	0.00000	0.000	667796.40000	656418.27000	671613.04000
GE-1	72	2535251	0	0.000	2574727	2511026	2520001
GE-2	72	1209854	0	0.000	1203084	1208810	1217668
TB-3	159	291717.60000	0.00000	0.000	280320.87000	292478.32000	302353.61000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:44:02
Tube Number: 25
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3009532	0	0.000	3024544	3032092	2971961
SC-3	45	54556.67700	0.00000	0.000	52517.06000	56078.26000	55074.71000
AL	27	5128.02612	100091.87300	3.600	5147.03284	4932.95870	5304.08682
B	11	303.22024	236623.91700	0.900	300.90746	306.14598	302.60730
BE	9	31.52115	49676.15000	0.500	31.35523	31.64611	31.56209
CA	44	4890.83089	15010.85700	5.700	4642.33639	4839.88597	5190.27031
K	39	5058.28854	266193.57300	2.200	5083.98482	4936.64975	5154.23105
MG	24	5088.78451	331105.93000	1.800	5122.68948	4984.27964	5159.38441
NA	23	4954.31270	722246.11000	2.200	4985.04403	4831.96698	5045.92709
TI	47	303.49949	7915.63300	6.200	294.48996	290.71975	325.28876
GE-3	72	188874.64300	0.00000	0.000	182825.92000	185929.26000	197868.75000
CR	52	302.04148	443191.06000	2.900	306.41276	307.79255	291.91912
FE	57	5075.48686	135251.40300	2.500	5044.19620	5214.70596	4967.55843
MN	55	307.36657	177139.13000	2.400	307.41082	314.62628	300.06262
SB	121	30.29966	28671.19700	1.400	30.14907	29.96827	30.78166
V	51	309.13279	349608.00300	1.500	309.18610	313.76799	304.44427
IN-2	115	600754.67700	0.00000	0.000	598258.15000	597186.76000	606819.12000
IN-3	115	76217.18000	0.00000	0.000	73375.09000	76217.64000	79058.81000
AG	107	30.57470	99832.21000	2.600	30.79143	31.22385	29.70881
AS	75	309.50824	54168.53700	1.300	308.15286	314.15633	306.21551
BA	137	300.76812	93027.07300	2.100	299.52424	307.51168	295.26844
CD	111	30.80704	10703.10000	1.800	30.87510	31.33621	30.20980
CO	59	307.61616	817996.21000	1.700	310.33372	310.78129	301.73348
CU	63	303.89767	660924.71700	1.100	306.85459	304.64819	300.19022
MO	98	30.03693	50078.42000	2.300	30.82251	29.59581	29.69247
NI	60	316.81600	232516.32700	2.800	324.06809	319.24749	307.13242
SE	78	29.90619	4073.42300	1.500	29.60997	30.40739	29.70122
SN	120	30.07981	31860.73300	1.700	30.66491	29.75103	29.82350
SR	88	29.45810	19042.34700	2.100	29.78181	29.84742	28.74507
ZN	66	310.07508	73158.38000	0.600	312.30771	309.43138	308.48616
BI-3	209	197504.02000	0.00000	0.000	190171.23000	197065.97000	205274.86000
PB	208	30.12861	212811.77300	0.900	30.39304	30.16597	29.82683
TL	203	30.09220	66862.31300	2.500	30.92632	29.83031	29.51997
U	238	50.10929	361307.09000	1.600	50.67643	50.43562	49.21581
SC-2	45	663442.41300	0.00000	0.000	669108.74000	654640.46000	666578.04000
GE-1	72	2544316	0	0.000	2532614	2570056	2530278
GE-2	72	1219308	0	0.000	1208230	1215145	1234548
TB-3	159	292806.44700	0.00000	0.000	280894.16000	294413.35000	303111.83000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:46:31
Tube Number: 26
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3000802	0	0.000	3023128	2983640	2995638
SC-3	45	54386.51300	0.00000	0.000	52476.34000	56059.06000	54624.14000
AL	27	2.35305	56.67000	74.400	2.64646	3.93828	0.47440
B	11	29.00331	30433.69700	3.900	30.14805	28.97956	27.88231
BE	9	-0.00127	13.33300	0.000	-0.00091	-0.00207	-0.00083
CA	44	17.24057	66.66700	21.700	15.76802	14.46694	21.48675
K	39	11.56892	8295.82700	158.200	32.50804	-1.36424	3.56297
MG	24	0.68330	83.33700	65.700	0.20436	0.75153	1.09401
NA	23	1.26520	23547.50000	8.400	1.38010	1.17136	1.24414
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	189635.79000	0.00000	0.000	180193.57000	189316.89000	199396.91000
CR	52	0.38779	716.72000	10.100	0.41551	0.34315	0.40470
FE	57	3.36251	110.00700	39.300	4.35746	1.86499	3.86509
MN	55	0.07423	70.00000	60.300	0.09883	0.02260	0.10126
SB	121	0.07939	190.01000	48.900	0.12242	0.04709	0.06868
V	51	0.02043	23.33300	65.500	0.00927	0.03528	0.01675
IN-2	115	593463.62700	0.00000	0.000	585034.21000	594442.65000	600914.02000
IN-3	115	76195.04700	0.00000	0.000	74055.44000	76245.22000	78284.48000
AG	107	-0.00840	23.33300	0.000	-0.00610	-0.01250	-0.00661
AS	75	0.06493	14.00000	30.900	0.07895	0.04198	0.07386
BA	137	0.03062	20.00000	99.900	-0.00021	0.03115	0.06094
CD	111	0.00167	2.66700	198.500	-0.00008	0.00550	-0.00040
CO	59	0.02112	90.00300	61.600	0.01435	0.03613	0.01289
CU	63	-0.07881	216.67700	0.000	-0.08375	-0.07727	-0.07543
MO	98	0.09954	363.35300	7.000	0.09152	0.10352	0.10358
NI	60	0.03670	63.33700	58.300	0.03436	0.05918	0.01655
SE	78	0.01143	4.89000	136.400	0.02525	0.01450	-0.00547
SN	120	-0.52052	373.35700	0.000	-0.33603	-0.60436	-0.62117
SR	88	0.04656	30.00000	34.100	0.04774	0.06183	0.03011
ZN	66	0.50052	180.01000	19.700	0.39286	0.58604	0.52266
BI-3	209	195250.48300	0.00000	0.000	188815.11000	196515.99000	200420.35000
PB	208	-0.01050	56.66700	0.000	-0.01119	-0.01148	-0.00883
TL	203	0.00157	3.33300	173.200	0.00470	0.00000	0.00000
U	238	0.02464	186.67700	38.400	0.02035	0.01810	0.03548
SC-2	45	663169.31300	0.00000	0.000	658952.65000	663243.58000	667311.71000
GE-1	72	2549535	0	0.000	2523710	2553069	2571825
GE-2	72	1213500	0	0.000	1200827	1202121	1237551
TB-3	159	292825.99700	0.00000	0.000	281283.90000	288888.90000	308305.19000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:48:57
Tube Number: 27 Batch: 193041404701A
Sample Number: **1180745** Class: **********

Initial Vol: 5.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U5

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3057549	0	0.000	3088091	3109919	2974639
SC-3	45	55008.56700	0.00000	0.000	52386.45000	55627.50000	57011.75000
AL	27	34.24195	683.38300	7.800	37.32992	32.61009	32.78584
B	11	19.64367	23853.07300	3.300	19.78579	18.94140	20.20382
BE	9	0.02597	57.33300	46.500	0.03973	0.02095	0.01721
CA	44	9987.19764	30877.33700	1.800	9936.12063	9841.17795	10184.29434
K	39	943.49856	56388.67000	3.100	976.39327	931.84081	922.26159
MG	24	2971.22125	194876.27300	2.000	3038.77283	2947.27424	2927.61668
NA	23	3710.39871	551187.51700	2.100	3795.51297	3648.37086	3687.31229
TI	47	0.13313	3.33300	173.200	0.39938	0.00000	0.00000
GE-3	72	186138.71300	0.00000	0.000	178390.78000	188218.61000	191806.75000
CR	52	0.89178	1433.46700	10.100	0.84628	0.99521	0.83384
FE	57	615.37894	16172.10700	3.500	639.89831	601.17112	605.06739
MN	55	822.95327	467536.47700	1.700	831.71885	807.03556	830.10542
SB	121	0.09169	200.01000	64.700	0.02375	0.13329	0.11805
V	51	0.61917	690.04300	18.700	0.66453	0.48789	0.70509
IN-2	115	602744.62700	0.00000	0.000	592538.17000	604953.72000	610741.99000
IN-3	115	75382.64300	0.00000	0.000	73152.36000	75190.39000	77805.18000
AG	107	-0.00630	30.00000	0.000	-0.00598	-0.00935	-0.00356
AS	75	1.73475	302.67700	3.800	1.79464	1.74558	1.66402
BA	137	175.21719	53616.28300	0.500	174.41239	176.19685	175.04233
CD	111	0.00941	5.33300	93.200	-0.00001	0.01733	0.01091
CO	59	0.33258	906.74300	9.500	0.36333	0.33408	0.30033
CU	63	1.90867	4494.18300	7.400	1.77714	1.89203	2.05682
MO	98	0.15818	456.69300	19.700	0.12548	0.16156	0.18750
NI	60	2.16034	1603.48000	5.800	2.30588	2.09016	2.08497
SE	78	0.02515	6.89000	96.700	0.00472	0.01870	0.05204
SN	120	-0.48648	406.69000	0.000	-0.48110	-0.49208	-0.48627
SR	88	26.55779	16983.38000	3.500	26.24347	27.60363	25.82628
ZN	66	11.58735	2757.01700	11.300	12.64331	11.99256	10.12618
BI-3	209	196155.73300	0.00000	0.000	189279.63000	197722.73000	201464.84000
PB	208	0.14950	1176.74000	12.900	0.16023	0.16108	0.12719
TL	203	0.00300	6.66700	173.200	0.00000	0.00899	0.00000
U	238	0.12973	940.07300	3.400	0.12590	0.12878	0.13452
SC-2	45	675356.60300	0.00000	0.000	675850.54000	669808.66000	680410.61000
GE-1	72	2580564	0	0.000	2649583	2575449	2516660
GE-2	72	1219838	0	0.000	1215117	1213381	1231015
TB-3	159	290273.03300	0.00000	0.000	283878.82000	285534.78000	301405.50000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:51:25
Tube Number: 28 Batch: 193041404701A
Sample Number: **1187558** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2973963	0	0.000	2955858	2979229	2986802
SC-3	45	52683.76300	0.00000	0.000	50269.45000	52777.59000	55004.25000
AL	27	4.97710	103.34000	45.000	5.56691	6.86479	2.49961
B	11	87.33187	73478.53000	0.800	87.90850	87.53823	86.54887
BE	9	0.00224	18.66700	90.700	0.00446	0.00178	0.00048
CA	44	132947.23449	393307.97700	1.300	133099.20682	134562.13256	131180.36410
K	39	5844.81193	295842.27000	1.100	5917.30712	5812.42659	5804.70210
MG	24	24489.24199	1537497.84300	3.100	25265.90915	24447.33242	23754.48441
NA	23	198668.11877	27068206.26300	2.700	203247.66190	199973.41896	192783.27544
TI	47	0.13873	3.33300	173.200	0.41620	0.00000	0.00000
GE-3	72	182714.32700	0.00000	0.000	174924.39000	182756.91000	190461.68000
CR	52	0.53644	896.73300	26.300	0.62960	0.60543	0.37427
FE	57	94.50064	2450.31000	8.600	102.14939	95.41166	85.94086
MN	55	226.18153	126059.54300	4.000	229.86295	232.82256	215.85909
SB	121	0.04428	153.34000	201.000	0.02664	-0.03460	0.14080
V	51	0.24215	266.68300	22.800	0.18135	0.25581	0.28929
IN-2	115	567814.95000	0.00000	0.000	566877.88000	566112.84000	570454.13000
IN-3	115	72637.33300	0.00000	0.000	68572.99000	73243.96000	76095.05000
AG	107	-0.01238	10.00000	0.000	-0.01215	-0.01556	-0.00942
AS	75	0.21214	38.00000	11.000	0.18808	0.23457	0.21377
BA	137	17.58577	5197.81300	2.900	17.03842	18.03597	17.68293
CD	111	0.00575	4.00000	177.200	-0.00601	0.01196	0.01129
CO	59	0.20510	553.37000	14.500	0.17950	0.23766	0.19815
CU	63	0.19327	766.72300	25.000	0.24081	0.19493	0.14408
MO	98	0.30691	676.72000	34.600	0.22210	0.42585	0.27277
NI	60	2.58695	1840.19700	9.100	2.85683	2.41635	2.48766
SE	78	0.02845	6.89000	45.100	0.02686	0.01648	0.04201
SN	120	-0.68174	200.01000	0.000	-0.68085	-0.65349	-0.71086
SR	88	1981.24369	1220396.69700	1.700	2019.51982	1967.24962	1956.96163
ZN	66	12.58092	2887.07000	3.500	12.23217	13.06892	12.44166
BI-3	209	179922.25700	0.00000	0.000	175487.81000	181190.37000	183088.59000
PB	208	0.00170	130.00300	347.400	0.00850	-0.00162	-0.00179
TL	203	0.00163	3.33300	173.200	0.00000	0.00490	0.00000
U	238	0.37680	2487.01700	7.400	0.34971	0.40517	0.37553
SC-2	45	639296.56300	0.00000	0.000	638911.20000	634277.84000	644700.65000
GE-1	72	2450113	0	0.000	2443687	2501329	2405322
GE-2	72	1153385	0	0.000	1157040	1153443	1149671
TB-3	159	281124.17000	0.00000	0.000	273501.46000	279633.16000	290237.89000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:53:51
Tube Number: 29 Batch: 193041404701A
Sample Number: **1186824** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U5

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2936231	0	0.000	2930548	2869589	3008554
SC-3	45	52750.44300	0.00000	0.000	50890.90000	53759.47000	53600.96000
AL	27	4.54838	96.67000	51.500	3.29514	7.24922	3.10079
B	11	231.16161	177971.07700	1.700	232.23085	234.48483	226.76916
BE	9	0.00509	22.66700	122.300	0.00458	0.01154	-0.00087
CA	44	130006.95282	385200.42700	1.800	129400.55722	127969.99363	132650.30762
K	39	1431.79943	78222.32000	2.400	1453.76319	1392.40300	1449.23211
MG	24	14389.92172	905393.55300	0.900	14419.11470	14252.18210	14498.46836
NA	23	83263.60087	11379167.33000	0.800	83987.94304	82603.43535	83199.42420
TI	47	0.39688	10.00000	3.100	0.41112	0.38918	0.39033
GE-3	72	183386.35300	0.00000	0.000	177570.31000	182945.04000	189643.71000
CR	52	0.67466	1103.42000	7.100	0.65499	0.63987	0.72913
FE	57	61726.57359	1597072.58000	1.500	62797.35963	61262.58538	61119.77574
MN	55	7297.16885	4084567.23000	1.400	7242.41611	7415.60068	7233.48975
SB	121	-0.00930	103.34300	0.000	-0.00945	-0.00181	-0.01664
V	51	0.99257	1090.08300	15.800	1.10014	0.81226	1.06532
IN-2	115	576714.96000	0.00000	0.000	570404.73000	573565.20000	586174.95000
IN-3	115	73913.47700	0.00000	0.000	70972.70000	72390.01000	78377.72000
AG	107	-0.00573	30.00000	0.000	0.00747	-0.00911	-0.01556
AS	75	13.08300	2218.83700	6.100	13.92660	12.97975	12.34265
BA	137	104.32237	31279.91300	2.800	104.29632	107.26837	101.40240
CD	111	-0.00395	0.66700	0.000	0.00018	-0.00601	-0.00601
CO	59	2.34730	6084.73700	5.500	2.48288	2.22415	2.33486
CU	63	0.24965	900.07700	23.600	0.23157	0.31558	0.20179
MO	98	0.00476	200.01300	983.100	-0.04154	0.05201	0.00381
NI	60	1.24078	920.06300	16.500	1.03259	1.44156	1.24819
SE	78	0.18294	27.11300	28.600	0.22774	0.19556	0.12553
SN	120	-0.67919	206.67700	0.000	-0.70865	-0.65075	-0.67817
SR	88	233.91124	146639.58000	1.200	236.23618	234.55189	230.94566
ZN	66	4.20612	1023.41300	8.500	3.79204	4.42725	4.39905
BI-3	209	182024.71700	0.00000	0.000	174387.38000	183530.15000	188156.62000
PB	208	-0.00587	83.33300	0.000	-0.01058	-0.00031	-0.00671
TL	203	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
U	238	0.02460	173.34300	11.500	0.02215	0.02396	0.02770
SC-2	45	643150.58700	0.00000	0.000	636220.65000	637599.87000	655631.24000
GE-1	72	2434939	0	0.000	2434273	2429064	2441479
GE-2	72	1159718	0	0.000	1160705	1140875	1177574
TB-3	159	282817.58000	0.00000	0.000	278204.96000	281085.48000	289162.30000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:56:19
Tube Number: 30 Batch: 193041404701A
Sample Number: **1187554** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2976194	0	0.000	3060206	2979866	2888511
SC-3	45	54961.35700	0.00000	0.000	53680.42000	57132.04000	54071.61000
AL	27	1.47991	40.00000	91.400	2.57479	1.89693	-0.03198
B	11	59.16593	52601.84300	1.400	59.77758	58.20254	59.51768
BE	9	0.00323	20.00000	256.100	-0.00227	-0.00078	0.01273
CA	44	180252.13465	556127.50700	2.300	183000.95833	175564.39197	182191.05364
K	39	3508.97302	188358.17300	2.500	3569.57049	3407.30587	3550.04269
MG	24	45825.34042	3001815.16300	3.400	46758.18652	44018.18031	46699.65442
NA	23	82051.81815	11678675.66000	2.600	83710.05240	79592.01385	82853.38821
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	190284.73000	0.00000	0.000	186479.67000	190005.99000	194368.53000
CR	52	0.53561	936.74700	20.700	0.53618	0.64630	0.42435
FE	57	9.98473	286.68700	52.000	12.92546	13.04412	3.98461
MN	55	12.56766	7322.01000	5.300	12.90481	12.99231	11.80587
SB	121	-0.01696	100.00700	0.000	-0.01484	-0.01685	-0.01921
V	51	0.13170	150.00700	57.900	0.08953	0.21969	0.08590
IN-2	115	585645.01000	0.00000	0.000	575939.84000	590373.89000	590621.30000
IN-3	115	75627.85300	0.00000	0.000	74469.36000	75744.36000	76669.84000
AG	107	-0.01454	3.33300	0.000	-0.01556	-0.01556	-0.01251
AS	75	0.16884	32.00000	23.600	0.12521	0.20333	0.17798
BA	137	17.17470	5281.14700	4.800	17.73861	16.23522	17.55027
CD	111	0.02118	9.33300	64.400	0.02934	0.02875	0.00544
CO	59	2.12610	5644.58000	4.100	2.19253	2.02667	2.15909
CU	63	1.95317	4595.85300	7.600	2.05333	2.02273	1.78345
MO	98	3.16431	5414.51300	3.100	3.05408	3.19453	3.24432
NI	60	4.64211	3417.20000	5.200	4.91306	4.44572	4.56754
SE	78	89.53043	11882.89700	1.100	88.52877	90.57885	89.48367
SN	120	-0.58584	306.68700	0.000	-0.56782	-0.65139	-0.53830
SR	88	2071.72774	1329502.76700	0.700	2055.07193	2085.60364	2074.50765
ZN	66	7.49331	1813.51000	12.500	7.46556	8.44524	6.56912
BI-3	209	185580.81700	0.00000	0.000	187294.49000	182432.73000	187015.23000
PB	208	0.11499	886.72300	7.900	0.11284	0.10714	0.12500
TL	203	0.01283	26.67000	58.300	0.00474	0.01948	0.01425
U	238	23.59267	159884.78700	1.600	23.24529	23.99066	23.54205
SC-2	45	661975.72000	0.00000	0.000	652013.19000	659929.76000	673984.21000
GE-1	72	2473197	0	0.000	2549742	2451642	2418207
GE-2	72	1196737	0	0.000	1171692	1198178	1220340
TB-3	159	292466.77000	0.00000	0.000	288979.31000	292858.88000	295562.12000

Run Name: 1930905E05 Date/Time: 11/05/2019 9:58:54
Tube Number: 31 Batch: 193041404701A
Sample Number: **1187556** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2814053	0	0.000	2808286	2835444	2798430
SC-3	45	50403.16000	0.00000	0.000	48463.91000	50319.10000	52426.47000
AL	27	7.76961	150.01000	6.100	8.10129	7.22700	7.98054
B	11	73.41486	59747.01000	0.900	73.05932	72.99741	74.18784
BE	9	-0.00025	14.00000	0.000	-0.00023	-0.00167	0.00116
CA	44	15818.82774	44810.08700	2.300	15767.01148	15479.94794	16209.52379
K	39	2706.46912	134902.00000	1.500	2726.11388	2732.33195	2660.96155
MG	24	3180.49356	191110.45300	2.900	3241.23842	3225.55526	3074.68700
NA	23	85542.12208	11162597.75000	3.000	88138.98352	85566.19065	82921.19206
TI	47	0.14390	3.33300	173.200	0.43171	0.00000	0.00000
GE-3	72	174580.35000	0.00000	0.000	169388.83000	174502.89000	179849.33000
CR	52	0.50956	826.73000	25.400	0.52427	0.37328	0.63112
FE	57	23.60166	600.03700	4.500	23.09094	24.82846	22.88557
MN	55	23.82993	12725.56000	1.700	23.83038	23.43139	24.22803
SB	121	-0.08046	36.66700	0.000	-0.07502	-0.11087	-0.05548
V	51	0.02919	30.00000	122.300	0.06899	0.00000	0.01857
IN-2	115	551504.83700	0.00000	0.000	545397.54000	551954.84000	557162.13000
IN-3	115	69242.56700	0.00000	0.000	65578.20000	70101.31000	72048.19000
AG	107	-0.00877	20.00000	0.000	-0.00844	-0.00557	-0.01232
AS	75	0.31675	52.66700	58.600	0.27705	0.51910	0.15410
BA	137	26.25529	7388.82300	3.900	25.74921	27.42691	25.58976
CD	111	-0.00155	1.33300	0.000	0.00737	-0.00601	-0.00601
CO	59	0.02063	80.00700	56.700	0.02660	0.02815	0.00715
CU	63	0.00776	370.02300	477.800	-0.02874	0.00661	0.04541
MO	98	1.08760	1823.52000	4.200	1.03524	1.11130	1.11627
NI	60	0.46355	340.01700	36.700	0.63089	0.29083	0.46893
SE	78	0.00332	3.55300	401.800	-0.00889	0.01755	0.00130
SN	120	-0.65525	216.68000	0.000	-0.68277	-0.66420	-0.61879
SR	88	221.72393	130225.86000	1.700	225.20341	217.85591	222.11248
ZN	66	3.83236	880.06700	16.400	3.18889	4.44201	3.86617
BI-3	209	178418.82000	0.00000	0.000	173058.32000	177817.85000	184380.29000
PB	208	0.00482	150.00300	258.300	-0.00728	0.01758	0.00416
TL	203	0.00488	10.00000	98.800	0.00000	0.00500	0.00964
U	238	0.13419	883.40700	3.900	0.13151	0.14027	0.13077
SC-2	45	612105.42300	0.00000	0.000	611405.15000	608544.68000	616366.44000
GE-1	72	2385304	0	0.000	2405820	2402338	2347753
GE-2	72	1116441	0	0.000	1112793	1116678	1119853
TB-3	159	268984.23300	0.00000	0.000	260626.71000	269228.47000	277097.52000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:01:22
Tube Number: 32 Batch: 193041404701A
Sample Number: **1186666** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2846239	0	0.000	2893050	2838695	2806973
SC-3	45	50945.21300	0.00000	0.000	49767.86000	49968.14000	53099.64000
AL	27	62661.76204	1142304.43700	0.600	62313.01490	63093.29010	62578.98111
B	11	192.37048	144984.65700	1.300	193.05392	189.53941	194.51809
BE	9	39.14611	58352.08300	1.800	39.96044	38.72697	38.75091
CA	44	288804.67346	826559.67300	1.800	282910.60416	291542.46773	291960.94850
K	39	22010.82177	1057804.77700	0.700	21861.11751	21991.29661	22180.05118
MG	24	98972.99607	6012282.82700	1.300	99476.25117	99966.36230	97476.37473
NA	23	757064.85638	99753721.85000	0.400	756442.19933	760624.58727	754127.78254
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	180779.60000	0.00000	0.000	173761.52000	180760.82000	187816.46000
CR	52	10.83109	15347.97300	4.200	10.85822	11.27456	10.36048
FE	57	74.94040	1936.86700	11.700	67.35266	72.94987	84.51869
MN	55	72136.97428	39801680.24000	1.700	73088.70300	70782.34044	72539.87942
SB	121	0.02567	133.34300	55.600	0.03918	0.01074	0.02709
V	51	0.14693	160.01000	49.400	0.07687	0.22169	0.14224
IN-2	115	517090.74300	0.00000	0.000	509983.41000	519872.12000	521416.70000
IN-3	115	66558.34700	0.00000	0.000	62323.90000	67346.80000	70004.34000
AG	107	0.00808	66.67000	82.600	0.01441	0.00871	0.00112
AS	75	31.95238	4877.45000	4.500	33.40348	31.92008	30.53356
BA	137	8.47225	2293.61000	7.000	9.06086	7.87017	8.48571
CD	111	122.28395	37063.66300	3.300	126.87203	119.25030	120.72951
CO	59	1538.84024	3568614.21700	4.300	1615.32104	1509.93384	1491.26585
CU	63	80.10691	152236.27700	3.900	83.60906	77.70030	79.01139
MO	98	1.18438	1876.87700	21.400	1.44890	1.16164	0.94261
NI	60	1310.30006	838785.01300	4.700	1382.00800	1273.61206	1275.28012
SE	78	9.38660	1102.93000	5.200	8.86144	9.83026	9.46811
SN	120	-0.41054	426.69700	0.000	-0.36321	-0.49018	-0.37825
SR	88	279.04561	157408.64000	3.600	290.22286	270.96128	275.95271
ZN	66	3891.36177	800174.15300	3.800	4062.42991	3795.88292	3815.77247
BI-3	209	169019.60000	0.00000	0.000	164504.72000	164785.23000	177768.85000
PB	208	0.50532	3160.29000	7.500	0.54598	0.49918	0.47081
TL	203	6.07688	11565.16700	1.600	5.96445	6.12154	6.14464
U	238	2.99894	18519.54000	1.900	3.05842	2.94173	2.99667
SC-2	45	620170.57700	0.00000	0.000	614972.69000	622061.16000	623477.88000
GE-1	72	2256585	0	0.000	2316355	2225815	2227586
GE-2	72	1062632	0	0.000	1039302	1080441	1068151
TB-3	159	1332625	0	0.000	1297699	1320907	1379270

Run Name: 1930905E05 Date/Time: 11/05/2019 10:03:47
Tube Number: 33 Batch: 193041404701A
Sample Number: **1186601** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	2957983	0	0.000	2967996	2940226	2965726
SC-3	45	53563.49300	0.00000	0.000	50901.29000	54663.92000	55125.27000
AL	27	63759.38196	1222329.82700	1.200	63292.35901	63380.48670	64605.30018
B	11	201.61585	157503.84300	1.100	199.86617	203.97457	201.00682
BE	9	39.93668	61855.20300	0.800	39.74958	40.29604	39.76441
CA	44	293117.59601	881837.87700	0.200	292622.90167	292873.68100	293856.20535
K	39	21865.32701	1104892.63700	0.800	21714.02557	21814.22572	22067.72973
MG	24	100207.36631	6400838.86300	1.700	101203.88754	98186.17450	101232.03690
NA	23	748983.15775	103742728.45300	1.500	757653.97872	736273.44958	753022.04494
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	190687.31700	0.00000	0.000	180285.41000	193317.79000	198458.75000
CR	52	10.91723	16302.26000	5.700	11.59038	10.34926	10.81204
FE	57	68.56375	1873.54000	18.900	55.45480	81.35966	68.87677
MN	55	72370.98782	42109916.87000	1.000	73084.95634	72412.64240	71615.36471
SB	121	0.01894	133.34300	178.900	0.05557	0.01247	-0.01123
V	51	0.14949	170.00700	32.100	0.18522	0.09500	0.16826
IN-2	115	549843.67700	0.00000	0.000	541968.17000	547025.49000	560537.37000
IN-3	115	71292.90000	0.00000	0.000	68720.96000	70950.76000	74206.98000
AG	107	-0.00561	30.00000	0.000	0.00143	-0.00898	-0.00927
AS	75	31.76413	5200.21300	2.800	31.85201	32.59411	30.84626
BA	137	9.33466	2713.71300	8.700	8.46546	10.07410	9.46442
CD	111	120.60895	39182.74700	2.100	121.54357	122.52157	117.76170
CO	59	1504.84540	3743579.73700	1.400	1501.87698	1527.36097	1485.29826
CU	63	79.30083	161575.37700	1.400	80.29009	79.55784	78.05457
MO	98	1.11410	1916.85700	4.900	1.14269	1.05130	1.14833
NI	60	1289.80754	885609.80300	1.800	1297.23324	1308.38703	1263.80236
SE	78	9.59137	1198.93700	7.900	9.14608	9.15813	10.46991
SN	120	-0.56325	310.02000	0.000	-0.55197	-0.53116	-0.60661
SR	88	274.04590	165801.71700	0.700	271.90740	274.88658	275.34372
ZN	66	3852.99433	849749.18000	0.900	3839.64211	3891.50627	3827.83461
BI-3	209	176558.15700	0.00000	0.000	171645.27000	177981.76000	180047.44000
PB	208	0.50944	3333.64300	4.200	0.50782	0.48908	0.53143
TL	203	6.18593	12295.79300	1.000	6.14106	6.15720	6.25953
U	238	3.08519	19894.87300	4.700	3.19788	2.92073	3.13696
SC-2	45	647802.08700	0.00000	0.000	634699.64000	644036.55000	664670.07000
GE-1	72	2366977	0	0.000	2361527	2355043	2384360
GE-2	72	1127221	0	0.000	1114826	1130321	1136517
TB-3	159	1410324	0	0.000	1369339	1416320	1445314

Run Name: 1930905E05 Date/Time: 11/05/2019 10:06:14
Tube Number: 34 Batch: 193041404701A
Sample Number: **1187555** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3157490	0	0.000	3141387	3133698	3197386
SC-3	45	56958.81700	0.00000	0.000	55638.18000	55807.99000	59430.28000
AL	27	1.44759	40.00000	105.200	2.96716	1.45420	-0.07858
B	11	69.62856	64058.22700	0.900	69.16386	69.40042	70.32139
BE	9	0.01597	42.66700	69.500	0.01213	0.00731	0.02848
CA	44	395098.44863	1263790.06000	4.000	380926.65083	411962.45886	392406.23622
K	39	6132.77473	335281.38000	1.400	6059.92819	6229.26937	6109.12662
MG	24	108116.81560	7342446.14000	1.700	108583.36298	109624.29237	106142.79145
NA	23	130751.08512	19275752.21700	1.600	131861.57448	132117.33321	128274.34765
TI	47	0.25070	6.66700	173.200	0.75208	0.00000	0.00000
GE-3	72	193596.56000	0.00000	0.000	186011.13000	193819.08000	200959.47000
CR	52	1.05604	1764.88000	74.900	0.53086	0.67149	1.96579
FE	57	397.78337	10874.17700	5.500	423.01435	388.01497	382.32078
MN	55	39.35961	23274.45700	3.500	39.50544	40.67125	37.90215
SB	121	0.08146	196.67700	84.900	0.12554	0.00177	0.11708
V	51	0.11144	130.00700	24.500	0.08078	0.12060	0.13293
IN-2	115	615872.70300	0.00000	0.000	606707.78000	616139.62000	624770.71000
IN-3	115	76791.47700	0.00000	0.000	75364.62000	76228.55000	78781.26000
AG	107	-0.01144	13.33300	0.000	-0.00626	-0.01249	-0.01556
AS	75	0.73321	132.00000	15.700	0.81693	0.60184	0.78085
BA	137	13.51648	4224.14300	5.300	12.75257	14.15971	13.63717
CD	111	0.03961	16.00000	23.500	0.02892	0.04579	0.04411
CO	59	3.10995	8369.19000	2.700	3.03356	3.19836	3.09792
CU	63	0.34546	1146.76700	21.000	0.42167	0.27689	0.33780
MO	98	0.31529	726.72000	10.100	0.30702	0.35033	0.28853
NI	60	19.32498	14333.67700	1.300	19.54449	19.04995	19.38048
SE	78	0.08925	16.00000	44.700	0.06223	0.07042	0.13509
SN	120	-0.71197	180.01000	0.000	-0.70917	-0.67231	-0.75443
SR	88	4823.46989	3143191.20300	1.100	4764.43672	4856.95765	4849.01532
ZN	66	27.06315	6491.62000	1.900	27.36795	26.46132	27.36017
BI-3	209	189810.93000	0.00000	0.000	188581.27000	186888.73000	193962.79000
PB	208	0.13184	1020.06000	6.900	0.13715	0.13707	0.12130
TL	203	0.01720	36.66700	17.400	0.01884	0.01901	0.01374
U	238	45.83102	317723.25000	0.900	45.37974	46.00227	46.11106
SC-2	45	693061.63300	0.00000	0.000	692857.26000	694707.49000	691620.15000
GE-1	72	2573972	0	0.000	2538134	2583999	2599783
GE-2	72	1229534	0	0.000	1220341	1226462	1241799
TB-3	159	299959.54700	0.00000	0.000	294676.62000	296389.80000	308812.22000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:08:40
Tube Number: 35 Batch: 193041404701A
Sample Number: **1187553** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3323155	0	0.000	3328612	3337078	3303774
SC-3	45	59872.43700	0.00000	0.000	59099.80000	60574.55000	59942.96000
AL	27	2.42012	63.33700	91.600	3.23408	-0.08746	4.11375
B	11	69.16468	67029.65700	0.500	68.97815	68.94700	69.56889
BE	9	0.00290	22.00000	107.400	0.00172	0.00055	0.00643
CA	44	34166.28738	114916.44000	3.000	33236.72817	34004.79919	35257.33477
K	39	4343.75717	252125.18700	1.100	4309.97874	4320.55331	4400.73946
MG	24	7841.52873	560036.30700	0.600	7814.50152	7812.77066	7897.31400
NA	23	64987.09855	10087871.09700	1.800	64301.37999	64287.38456	66372.53109
TI	47	0.11801	3.33300	173.200	0.35402	0.00000	0.00000
GE-3	72	209180.16700	0.00000	0.000	204291.56000	211766.38000	211482.56000
CR	52	0.49025	956.74300	6.300	0.52491	0.46645	0.47939
FE	57	104.56153	3110.43700	7.100	100.19235	100.31052	113.18170
MN	55	27.73985	17743.93300	1.500	27.42404	28.20455	27.59097
SB	121	-0.08716	36.66700	0.000	-0.08311	-0.10343	-0.07496
V	51	0.04011	50.00000	41.900	0.05721	0.02365	0.03947
IN-2	115	639813.59300	0.00000	0.000	634934.98000	636364.78000	648141.02000
IN-3	115	83184.12300	0.00000	0.000	80398.42000	85527.80000	83626.15000
AG	107	-0.01097	16.66700	0.000	-0.01556	-0.00737	-0.00997
AS	75	0.26646	54.00000	21.100	0.20152	0.30054	0.29731
BA	137	20.30558	6858.54300	7.200	21.08869	18.61140	21.21664
CD	111	0.00455	4.00000	7.300	0.00491	0.00425	0.00449
CO	59	0.03754	146.67700	46.800	0.03004	0.05763	0.02496
CU	63	0.14958	776.72000	29.100	0.19659	0.14130	0.11084
MO	98	0.87666	1803.51700	6.500	0.94230	0.83575	0.85195
NI	60	0.35085	320.01700	19.000	0.42797	0.31435	0.31023
SE	78	-0.00832	2.44300	0.000	-0.01583	-0.01585	0.00673
SN	120	-0.75826	143.34300	0.000	-0.73866	-0.74750	-0.78862
SR	88	537.80262	379560.89700	1.800	536.13126	529.32937	547.94723
ZN	66	5.24425	1420.13300	12.000	4.52315	5.67262	5.53698
BI-3	209	206370.87300	0.00000	0.000	202661.07000	206907.30000	209544.25000
PB	208	0.01305	233.34300	19.300	0.01591	0.01114	0.01210
TL	203	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
U	238	0.16943	1286.80300	5.300	0.17966	0.16536	0.16326
SC-2	45	708613.09000	0.00000	0.000	709798.74000	694669.99000	721370.54000
GE-1	72	2758672	0	0.000	2778571	2760437	2737009
GE-2	72	1303977	0	0.000	1281405	1299715	1330810
TB-3	159	314380.68700	0.00000	0.000	307744.94000	316335.37000	319061.75000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:11:08
Tube Number: 36 Batch: 193041404701A
Sample Number: **1186827** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U5

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3423920	0	0.000	3487735	3431086	3352940
SC-3	45	61033.13300	0.00000	0.000	59690.49000	61006.33000	62402.58000
AL	27	10.14925	233.34300	9.200	11.15620	9.98757	9.30398
B	11	6.49455	15475.90000	1.200	6.56352	6.50838	6.41173
BE	9	-0.00271	12.66700	0.000	-0.00319	0.00026	-0.00520
CA	44	129.52845	460.03000	16.100	135.61690	106.32249	146.64596
K	39	20.73089	9846.74300	71.900	37.45391	8.85816	15.88060
MG	24	10.18645	786.72000	17.300	8.53575	9.98807	12.03554
NA	23	420.92330	92674.54700	1.300	415.23690	421.05156	426.48143
TI	47	0.23116	6.66700	86.600	0.35051	0.34295	0.00000
GE-3	72	213117.45000	0.00000	0.000	205480.23000	212042.85000	221829.27000
CR	52	0.51855	1020.09000	10.300	0.55889	0.53854	0.45823
FE	57	2.11565	86.67000	28.100	2.00374	1.58418	2.75902
MN	55	0.28573	216.67700	20.300	0.22445	0.33966	0.29308
SB	121	-0.07558	50.00000	0.000	-0.10285	-0.04672	-0.07717
V	51	0.04717	60.00000	18.800	0.04875	0.05512	0.03763
IN-2	115	662736.62000	0.00000	0.000	653521.73000	668242.15000	666445.98000
IN-3	115	84641.65300	0.00000	0.000	83363.41000	83671.56000	86889.99000
AG	107	-0.00259	46.66700	0.000	-0.00436	0.00676	-0.01018
AS	75	0.03997	10.66700	61.700	0.06844	0.02650	0.02496
BA	137	0.11179	50.00000	44.200	0.14386	0.05486	0.13666
CD	111	-0.00250	1.33300	0.000	-0.00074	-0.00076	-0.00601
CO	59	0.01875	93.34000	66.200	0.00446	0.02494	0.02685
CU	63	0.06979	596.70300	105.300	0.09493	0.12745	-0.01300
MO	98	-0.09172	50.00000	0.000	-0.08609	-0.07525	-0.11383
NI	60	0.02353	60.00000	97.400	0.00006	0.02469	0.04582
SE	78	0.01498	6.00000	92.000	0.02896	0.01455	0.00141
SN	120	-0.46886	476.69700	0.000	-0.45075	-0.47890	-0.47694
SR	88	0.33848	243.34700	8.300	0.33931	0.30991	0.36623
ZN	66	3.18832	903.40000	8.900	2.91803	3.48588	3.16104
BI-3	209	213758.32700	0.00000	0.000	208513.83000	213411.68000	219349.47000
PB	208	-0.00461	106.66700	0.000	-0.00250	-0.00549	-0.00585
TL	203	0.00270	6.66700	173.200	0.00000	0.00000	0.00810
U	238	0.00283	33.33300	110.100	0.00253	-0.00013	0.00608
SC-2	45	744280.61300	0.00000	0.000	732252.41000	753213.66000	747375.77000
GE-1	72	2842201	0	0.000	2873641	2853398	2799563
GE-2	72	1372256	0	0.000	1328893	1401420	1386457
TB-3	159	321479.54000	0.00000	0.000	316627.09000	321131.89000	326679.64000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:13:34
Tube Number: 37
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3295529	0	0.000	3287059	3286102	3313427
SC-3	45	60266.76700	0.00000	0.000	58346.27000	60062.69000	62391.34000
AL	27	5089.03732	109723.41000	1.500	5146.03930	5118.95284	5002.11981
B	11	324.54600	276656.83300	0.000	324.51688	324.60912	324.51201
BE	9	32.84283	56674.90700	1.700	33.40814	32.79837	32.32198
CA	44	4857.62951	16459.03700	1.900	4899.03273	4749.98710	4923.86871
K	39	5019.74489	291924.46700	1.300	4990.06948	5097.01112	4972.15406
MG	24	5096.84031	366315.95700	1.400	5141.10208	5136.48843	5012.93043
NA	23	4969.07835	800190.90000	0.900	4991.59514	5000.19698	4915.44292
TI	47	302.85216	8729.45000	3.400	297.71815	296.18087	314.65747
GE-3	72	211155.08700	0.00000	0.000	202772.48000	211089.37000	219603.41000
CR	52	295.34215	484616.05000	2.000	301.56835	294.38270	290.07540
FE	57	5019.00106	149488.27000	2.800	5099.08586	5103.81040	4854.10693
MN	55	303.46926	195559.67700	1.300	306.20218	305.33588	298.86971
SB	121	30.04149	31764.13000	3.400	29.65788	31.20653	29.26007
V	51	303.54428	383802.91300	1.600	304.37503	307.99549	298.26231
IN-2	115	658673.76300	0.00000	0.000	649240.43000	660538.36000	666242.50000
IN-3	115	83255.84300	0.00000	0.000	81230.15000	80881.93000	87655.45000
AG	107	31.30491	111577.42000	3.800	31.68875	32.24968	29.97631
AS	75	315.41419	60261.62700	2.700	315.08425	324.03955	307.11876
BA	137	308.32977	104115.15000	3.600	303.70149	320.99306	300.29476
CD	111	30.68940	11647.12000	0.900	30.69395	30.96720	30.40706
CO	59	313.43303	909888.94300	3.300	315.08184	322.80052	302.41674
CU	63	305.48026	725126.57700	3.800	306.78690	316.50448	293.14941
MO	98	30.28015	55119.08300	3.400	30.31808	31.28010	29.24227
NI	60	320.80624	257064.15300	4.100	321.72876	333.46907	307.22091
SE	78	30.54853	4562.00000	1.100	30.58344	30.87098	30.19118
SN	120	29.73906	34406.40000	3.200	29.51421	30.78290	28.92007
SR	88	30.32575	21405.42700	4.800	29.51635	32.00750	29.45338
ZN	66	317.00878	81599.40000	4.800	319.71341	330.64454	300.66840
BI-3	209	215049.72300	0.00000	0.000	209777.36000	215098.34000	220273.47000
PB	208	30.36025	233547.00300	1.100	30.22140	30.75588	30.10348
TL	203	31.29436	75769.82300	1.400	31.05266	31.01947	31.81097
U	238	50.40926	395890.07000	0.300	50.55555	50.42116	50.25106
SC-2	45	723870.66300	0.00000	0.000	709551.08000	725374.36000	736686.55000
GE-1	72	2775541	0	0.000	2771139	2787319	2768166
GE-2	72	1322439	0	0.000	1303779	1315919	1347618
TB-3	159	320825.19700	0.00000	0.000	311817.94000	323130.31000	327527.34000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:16:03
Tube Number: 38
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3319521	0	0.000	3297590	3378453	3282520
SC-3	45	59437.14700	0.00000	0.000	55917.94000	59972.84000	62420.66000
AL	27	2.54717	66.67000	63.400	1.95003	1.31510	4.37638
B	11	26.27218	31398.09700	0.400	26.34931	26.14160	26.32564
BE	9	-0.00016	16.66700	0.000	-0.00281	-0.00071	0.00305
CA	44	26.78378	103.33700	43.300	39.99168	22.12997	18.22968
K	39	4.50416	8636.04700	680.500	39.89558	-12.95364	-13.42946
MG	24	0.94327	110.00700	45.000	0.45506	1.22301	1.15174
NA	23	33.06471	30599.29300	13.500	36.64278	34.49573	28.05561
TI	47	0.48202	13.33300	86.800	0.74832	0.69773	0.00000
GE-3	72	209398.07000	0.00000	0.000	203754.72000	212082.46000	212357.03000
CR	52	0.38672	790.05700	8.600	0.38132	0.35640	0.42246
FE	57	2.08722	83.33700	84.600	3.76628	0.24731	2.24808
MN	55	0.10518	96.67000	34.700	0.14635	0.07696	0.09223
SB	121	0.03378	163.34300	49.200	0.01540	0.04780	0.03814
V	51	0.03443	43.33300	73.000	0.02458	0.06298	0.01572
IN-2	115	661682.18000	0.00000	0.000	658187.01000	652005.10000	674854.43000
IN-3	115	82356.92300	0.00000	0.000	79994.35000	82990.34000	84086.08000
AG	107	-0.00798	26.66700	0.000	-0.00680	-0.00712	-0.01000
AS	75	0.01673	6.00000	67.500	0.02841	0.00585	0.01593
BA	137	0.00721	13.33300	654.100	0.05892	-0.00380	-0.03349
CD	111	0.00470	4.00000	197.500	0.01045	-0.00601	0.00965
CO	59	0.02891	120.00300	33.900	0.01951	0.03906	0.02816
CU	63	-0.04653	310.01700	0.000	-0.04695	-0.06015	-0.03250
MO	98	0.07930	356.68700	64.200	0.07588	0.03014	0.13187
NI	60	0.01309	50.00000	84.700	0.00216	0.01279	0.02432
SE	78	0.02529	7.55300	6.800	0.02408	0.02455	0.02725
SN	120	-0.56708	353.35700	0.000	-0.48795	-0.58264	-0.63064
SR	88	0.03834	26.66700	57.300	0.04420	0.05680	0.01402
ZN	66	0.68450	240.01700	38.000	0.95044	0.67296	0.43008
BI-3	209	212345.61000	0.00000	0.000	208364.10000	212247.95000	216424.78000
PB	208	-0.00890	73.33300	0.000	-0.00786	-0.00542	-0.01343
TL	203	0.00140	3.33300	173.200	0.00000	0.00419	0.00000
U	238	0.01953	163.34000	58.700	0.01305	0.01278	0.03275
SC-2	45	728831.94300	0.00000	0.000	728460.46000	715169.52000	742865.85000
GE-1	72	2825629	0	0.000	2806047	2831414	2839426
GE-2	72	1364493	0	0.000	1375548	1342970	1374961
TB-3	159	318872.90300	0.00000	0.000	313919.60000	317064.68000	325634.43000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:18:29
Tube Number: 39
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3349544	0	0.000	3371746	3341949	3334936
SC-3	45	60213.76700	0.00000	0.000	57062.31000	60564.50000	63014.49000
AL	27	36.39279	796.72000	12.100	33.24555	41.44364	34.48917
B	11	6.19492	14890.04300	8.900	6.82473	5.97931	5.78072
BE	9	0.54655	975.37000	3.900	0.52621	0.56872	0.54473
CA	44	110.68063	390.02000	10.000	113.98852	98.31195	119.74143
K	39	209.52137	20350.21300	6.000	219.57004	213.46049	195.53358
MG	24	52.56442	3817.28700	6.200	54.36440	48.83237	54.49648
NA	23	216.18883	59545.37300	4.900	219.56149	204.24106	224.76393
TI	47	15.31551	440.03000	25.900	14.30036	19.69266	11.95352
GE-3	72	210085.00300	0.00000	0.000	200067.05000	210412.67000	219775.29000
CR	52	1.93890	3317.17000	10.500	2.17186	1.85226	1.79257
FE	57	53.03719	1596.81000	9.200	48.47964	58.18362	52.44831
MN	55	2.24731	1466.79700	9.300	2.45901	2.24241	2.04052
SB	121	0.92542	1100.09000	7.200	0.86976	0.90675	0.99976
V	51	0.54884	686.71300	19.000	0.66764	0.50785	0.47102
IN-2	115	657557.01000	0.00000	0.000	652741.92000	653374.67000	666554.44000
IN-3	115	83523.79300	0.00000	0.000	80157.14000	84595.70000	85818.54000
AG	107	0.52517	1936.87700	6.400	0.49123	0.55848	0.52581
AS	75	2.16747	417.34300	13.600	2.46227	2.16756	1.87259
BA	137	1.93074	666.71000	9.800	1.84178	1.80164	2.14878
CD	111	0.52910	203.33300	9.300	0.58511	0.49186	0.51033
CO	59	0.48676	1453.46000	7.800	0.53067	0.46151	0.46810
CU	63	0.87965	2523.65300	6.300	0.83195	0.86599	0.94100
MO	98	0.38188	913.40700	13.600	0.33877	0.43949	0.36737
NI	60	1.04619	883.41300	14.700	0.98627	0.93193	1.22036
SE	78	1.04978	160.22300	13.800	1.10648	0.88474	1.15813
SN	120	2.87977	4257.46000	13.600	2.43103	3.15019	3.05808
SR	88	1.01080	716.72000	25.100	0.92636	1.29573	0.81030
ZN	66	10.95931	2907.07300	12.000	9.61989	11.01239	12.24565
BI-3	209	215406.56000	0.00000	0.000	207875.25000	216547.71000	221796.72000
PB	208	0.53384	4257.13000	3.300	0.51432	0.53949	0.54772
TL	203	0.49901	1210.11700	0.600	0.49578	0.50055	0.50071
U	238	0.99168	7809.22300	5.100	1.03164	0.93459	1.00881
SC-2	45	728457.30700	0.00000	0.000	734640.38000	719047.72000	731683.82000
GE-1	72	2803329	0	0.000	2880039	2786272	2743677
GE-2	72	1342937	0	0.000	1360509	1321331	1346970
TB-3	159	317842.80000	0.00000	0.000	305982.77000	315749.62000	331796.01000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:20:57
Tube Number: 40
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3329526	0	0.000	3348234	3337614	3302729
SC-3	45	60530.96000	0.00000	0.000	58426.47000	60504.47000	62661.94000
AL	27	5168.78897	111930.93300	1.500	5223.71651	5204.20631	5078.44410
B	11	324.35100	279334.28300	2.200	326.57637	316.46958	330.00705
BE	9	32.59445	56824.69000	2.300	32.63263	31.82807	33.32265
CA	44	4914.89946	16699.28000	6.500	5197.34129	4980.36785	4566.98923
K	39	5096.79173	297535.74700	0.900	5148.88572	5077.41575	5064.07373
MG	24	5137.74789	370788.39300	2.400	5279.50881	5087.06925	5046.66562
NA	23	4961.53356	802414.77700	1.400	5021.63203	4975.03342	4887.93524
TI	47	307.86867	8899.46000	4.000	315.93909	314.08492	293.58200
GE-3	72	210824.96700	0.00000	0.000	203660.41000	211106.99000	217707.50000
CR	52	295.47741	484083.21000	2.300	301.61130	296.85397	287.96696
FE	57	5012.81143	149122.60700	1.800	5051.21780	5076.05944	4911.15706
MN	55	303.51259	195314.56000	1.300	303.78071	307.42968	299.32738
SB	121	30.26503	31937.75300	3.000	31.30346	29.65284	29.83878
V	51	305.29309	385375.55300	1.900	308.79710	308.38989	298.69226
IN-2	115	676698.89300	0.00000	0.000	674646.25000	672502.53000	682947.90000
IN-3	115	84581.93300	0.00000	0.000	78498.15000	86558.36000	88689.29000
AG	107	30.59906	110739.17300	4.000	32.02589	29.90559	29.86569
AS	75	311.66745	60432.32700	4.100	326.29870	306.19163	302.51203
BA	137	303.93596	104171.05000	4.100	318.16149	295.29285	298.35354
CD	111	30.61986	11793.91700	3.000	31.67852	30.14330	30.03775
CO	59	306.89249	903889.02300	5.400	325.18492	302.53586	292.95668
CU	63	301.20583	725320.53300	6.000	322.13143	292.18968	289.29638
MO	98	29.87198	55159.22000	5.900	31.82289	29.39100	28.40203
NI	60	313.82990	255050.89300	6.700	338.04004	303.56057	299.88909
SE	78	30.55449	4687.36700	2.400	30.56957	31.27549	29.81841
SN	120	29.58204	34747.21300	3.900	30.90289	28.85214	28.99109
SR	88	30.45456	21839.30300	2.600	31.22036	29.66288	30.48044
ZN	66	308.43066	80685.03700	2.900	318.18216	300.27741	306.83240
BI-3	209	218638.83000	0.00000	0.000	214325.27000	221124.68000	220466.54000
PB	208	30.24579	236567.07000	0.700	30.10152	30.14927	30.48657
TL	203	30.39706	74814.10700	0.900	30.23974	30.22590	30.72553
U	238	49.67990	396658.62300	1.200	50.07316	49.01654	49.94999
SC-2	45	756109.99000	0.00000	0.000	771480.38000	736057.65000	760791.94000
GE-1	72	2816744	0	0.000	2830593	2815163	2804476
GE-2	72	1396962	0	0.000	1424198	1394073	1372615
TB-3	159	329440.81300	0.00000	0.000	319286.40000	333412.92000	335623.12000

Run Name: 1930905E05 Date/Time: 11/05/2019 10:23:23
Tube Number: 41
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	3378168	0	0.000	3361610	3395092	3377802
SC-3	45	61686.08000	0.00000	0.000	58638.64000	62602.92000	63816.68000
AL	27	2.80684	73.33300	63.100	3.74041	3.91520	0.76492
B	11	27.80089	33242.34000	1.600	28.32867	27.49982	27.57419
BE	9	-0.00107	15.33300	0.000	0.00502	-0.00751	-0.00071
CA	44	16.54351	73.33300	38.500	13.62860	23.85157	12.15035
K	39	1.77246	8826.17000	1378.500	29.91683	-14.00310	-10.59635
MG	24	0.95887	113.34000	49.800	1.40734	1.01273	0.45653
NA	23	5.83109	27416.89300	78.500	11.05012	2.48909	3.95405
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
GE-3	72	213858.51300	0.00000	0.000	206057.03000	213375.37000	222143.14000
CR	52	0.42156	866.73700	21.300	0.32600	0.50440	0.43426
FE	57	3.75922	136.67300	66.800	4.74740	0.90540	5.62486
MN	55	0.17394	143.34300	24.900	0.22369	0.15300	0.14512
SB	121	0.06941	203.34300	83.000	0.09170	0.11254	0.00400
V	51	0.03194	40.00000	92.600	0.06482	0.02347	0.00752
IN-2	115	675418.23700	0.00000	0.000	672089.55000	674669.02000	679496.14000
IN-3	115	86785.15700	0.00000	0.000	83625.18000	88621.32000	88108.97000
AG	107	-0.01114	16.66700	0.000	-0.01556	-0.01556	-0.00231
AS	75	0.05092	13.33300	79.200	0.00569	0.08314	0.06394
BA	137	0.06102	33.33300	24.000	0.05491	0.07773	0.05041
CD	111	-0.00104	2.00000	0.000	-0.00601	-0.00106	0.00395
CO	59	0.02453	113.33700	53.100	0.01468	0.01960	0.03931
CU	63	-0.09309	210.01000	0.000	-0.06524	-0.10722	-0.10681
MO	98	0.06573	350.02300	16.500	0.05644	0.07761	0.06313
NI	60	0.05389	86.67000	44.700	0.04956	0.03225	0.07986
SE	78	0.00684	4.88700	131.500	0.00993	-0.00329	0.01390
SN	120	-0.53908	403.35700	0.000	-0.39011	-0.65206	-0.57505
SR	88	0.02296	16.66700	93.100	0.04228	0.02660	0.00000
ZN	66	0.61900	236.68300	9.500	0.58852	0.68655	0.58192
BI-3	209	217121.99000	0.00000	0.000	211919.63000	217362.34000	222084.00000
PB	208	-0.00573	100.00000	0.000	-0.00672	-0.00573	-0.00474
TL	203	0.00406	10.00000	100.700	0.00000	0.00817	0.00400
U	238	0.02587	216.68300	36.700	0.01797	0.03639	0.02325
SC-2	45	748018.34700	0.00000	0.000	748386.08000	743514.91000	752154.05000
GE-1	72	2864005	0	0.000	2841507	2884342	2866167
GE-2	72	1390535	0	0.000	1368987	1395539	1407079
TB-3	159	327295.69000	0.00000	0.000	320935.07000	327487.28000	333464.72000

US EPA Tune Check Report

Operator Name	US19_USR_INS07697
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\~EPATUNEaa.b
Acq. Date-Time	11/5/2019 4:00:21 AM
Report Comment	ICP-MS #19204 (E05) Daily Tune Check
Instrument Name	G3281A JP12071581

[No Gas]

Sensitivity

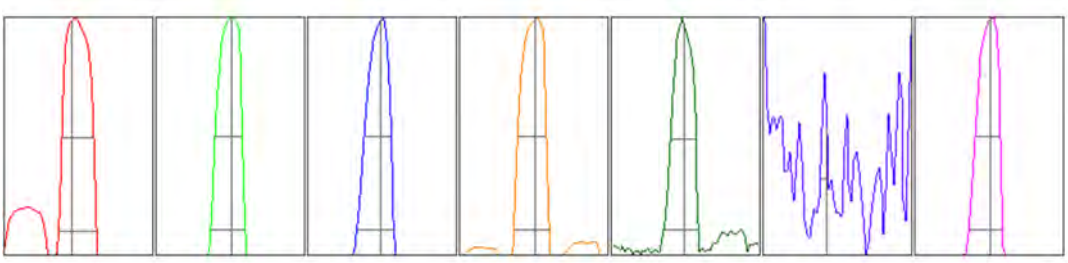
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
7	10.00	1753	17527.66			1.590	5.000
89	10.00	6429	64289.65			1.775	5.000
205	10.00	2512	25123.93			1.904	5.000
70	1.00	285	2847.69	0.00		7.100	
156	1.00	15	154.71	0.00		7.890	
220	1.00	2	19.30	0.00		17.437	
140	10.00	4903	49030.39	0.00		2.365	

Mass	RSD% (Flag)
7	
89	
205	
70	
156	
220	
140	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	1718	1729	1763	1769	1784
89	6271	6360	6448	6522	6544
205	2448	2486	2516	2542	2570
70	253	277	294	298	302
156	14	15	15	16	17
220	2	2	2	3	2
140	4752	4832	4900	4995	5036

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	2787.12	6.90	6.90 - 7.10	
89	11822.19	89.05	88.90 - 89.10	
205	4802.63	205.00	204.90 - 205.10	
70	499.36	70.05	-	
156	29.75	156.00	-	
220	2.45	219.80	-	
140	9664.99	140.05	-	

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
7	0.65	0.766	0.800	
89	0.56	0.705	0.800	
205	0.54	0.753	0.800	
70	0.59	0.719		
156	0.52	0.706		
220	0.18			
140	0.52	0.687		

Integration Time [sec]	0.1
Acquisition Time [sec]	260.3
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.25 L/min	Dilution Gas	0.70 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.60 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	20 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.7 V	Deflect	10.0 V
Extract 2	-155.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-75 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9987	QP Bias	-3.0 V
Mass Offset	126	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.0 mm	Torch V	-1.5 mm

EM

Discriminator	4.5 mV	Analog HV	1607 V	Pulse HV	1230 V

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ICP-MS Run Data Report

Method Reference Name(s):

Date File Name: 19K06I00.E05

Run Name: 1931009E05

Analyst: 25839

Reviewed By: Huyen Dao-Kendig
Reviewed Date: 11/06/2019 19:20

Verified By: Parker D Lindstrom
Verified Date: 11/12/2019 14:34

Instrument Parameters:

Rinse Time (sec): 25.00

INTERNAL STD.	ELEMENT	MASS
SC-1		45
	NA	23
	MG	24
	AL	27
	K	39
	CA	44
	TI	47
	V	51
	CR	52
	MN	55
	FE	57
GE-1		72
	SB	121
IN-1		115
	CO	59
	NI	60
	CU	63
	ZN	66
	AS	75
	SR	88
	MO	98
	AG	107
	CD	111
	SN	120
	BA	137
BI-1		209
	TL	203
	PB	208
	U	238

Run Name: 1931009E05 Date/Time: 11/06/2019 16:40:02
Tube Number: 1
Sample Number: **S0**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
NA	23	0.00000	57568.53000	0.000	-3.24554	3.11697	0.12857
MG	24	0.00000	126.67700	0.000	-0.18178	-0.14702	0.32880
AL	27	0.00000	23.33300	0.000	0.22128	-0.77022	0.54895
K	39	0.00000	9493.22700	0.000	0.91797	0.54179	-1.45976
CA	44	0.00000	110.01000	0.000	-0.22063	0.49078	-0.27016
SC-1	45	83533.19300	0.00000	0.000	84310.72000	81797.40000	84491.46000
TI	47	0.00000	6.66700	0.000	-0.17383	0.34766	-0.17383
V	51	0.00000	33.33300	0.000	-0.00832	0.01667	-0.00835
CR	52	0.00000	520.03300	0.000	-0.07596	0.07475	0.00121
MN	55	0.00000	140.00700	0.000	0.02241	-0.04442	0.02201
FE	57	0.00000	140.01000	0.000	-0.58347	0.63327	-0.04980
CO	59	0.00000	70.00300	0.000	0.00302	-0.00310	0.00008
NI	60	0.00000	50.00300	0.000	-0.01106	0.04445	-0.03339
CU	63	0.00000	526.70000	0.000	-0.02592	0.01978	0.00615
ZN	66	0.00000	90.00000	0.000	0.03271	-0.06665	0.03394
GE-1	72	268807.10700	0.00000	0.000	268025.43000	271240.02000	267155.87000
AS	75	0.00000	4.00000	0.000	-0.01677	-0.01677	0.03353
SR	88	0.00000	10.00000	0.000	-0.01049	-0.00006	0.01056
MO	98	0.00000	10.00000	0.000	-0.00509	-0.00509	0.01018
AG	107	0.00000	26.66700	0.000	0.00093	0.00088	-0.00181
CD	111	0.00000	2.00000	0.000	0.00470	-0.00471	0.00001
IN-1	115	106234.91300	0.00000	0.000	106177.71000	106748.96000	105778.07000
SN	120	0.00000	1020.07700	0.000	-0.00687	-0.01794	0.02482
SB	121	0.00000	53.33300	0.000	-0.01765	0.00466	0.01299
BA	137	0.00000	10.00000	0.000	0.04702	-0.02351	-0.02351
TB-1	159	353490.92000	0.00000	0.000	350720.97000	356074.72000	353677.07000
TL	203	0.00000	16.66700	0.000	-0.00242	0.00495	-0.00253
PB	208	0.00000	230.01000	0.000	0.00629	-0.00018	-0.00611
BI-1	209	248525.46700	0.00000	0.000	244264.02000	249622.87000	251689.51000
U	238	0.00000	6.66700	0.000	0.00038	-0.00072	0.00034

Run Name: 1931009E05 Date/Time: 11/06/2019 16:41:46
Tube Number: 2
Sample Number: **S1**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS #1	#2	#3
SC-1	45	82993.18700	0.00000	0.000	82871.82000	82611.59000	83496.15000
AL	27	10000.00000	297868.08000	0.400	9956.87659	10020.59443	10022.52898
CA	44	10000.00000	46879.08000	0.900	10033.53119	10071.79859	9894.67023
CR	52	1000.00000	2026981.06300	2.200	1002.88765	1020.44783	976.66452
FE	57	10000.00000	363511.44300	1.000	10049.85087	10070.49984	9879.64929
K	39	10000.00000	880657.15000	0.500	10043.39561	10008.16272	9948.44167
MG	24	10000.00000	957508.99700	0.200	9986.71333	10028.27008	9985.01659
MN	55	1000.00000	838780.25000	1.400	1000.69191	1013.75332	985.55477
NA	23	10000.00000	2208855.02000	1.100	10068.62896	10057.86523	9873.50582
TI	47	1000.00000	38921.39000	3.100	965.31082	1009.24918	1025.44000
V	51	1000.00000	1647953.83000	2.000	987.84863	1023.24356	988.90781
GE-1	72	270725.88000	0.00000	0.000	268793.49000	272676.99000	270707.16000
SB	121	100.00000	132675.33000	0.700	100.15467	99.27926	100.56607
IN-1	115	110911.14000	0.00000	0.000	111967.82000	111068.83000	109696.77000
AG	107	100.00000	379181.07700	2.200	97.52001	100.71516	101.76483
AS	75	1000.00000	250127.39700	0.800	991.96075	1001.11512	1006.92413
BA	137	1000.00000	444277.23000	1.000	989.62909	1008.48544	1001.88547
CD	111	100.00000	44387.40300	1.800	98.01587	100.64608	101.33805
CO	59	1000.00000	3470251.40300	1.300	987.05310	1013.31285	999.63405
CU	63	1000.00000	2672529.44300	1.100	991.82193	995.60668	1012.57139
MO	98	100.00000	205940.81000	2.300	98.54795	98.85485	102.59720
NI	60	1000.00000	932007.64300	0.700	993.76426	1006.96436	999.27139
SN	120	100.00000	145988.65000	1.100	98.87142	100.04640	101.08218
SR	88	100.00000	99617.08000	0.500	100.05371	99.51476	100.43153
ZN	66	1000.00000	319447.80000	0.500	994.53111	1004.66140	1000.80749
BI-1	209	265511.81300	0.00000	0.000	263940.74000	268964.00000	263630.70000
PB	208	100.00000	923275.91300	0.500	100.00196	99.49223	100.50581
TL	203	100.00000	285479.85300	1.000	101.18699	99.53951	99.27350
U	238	100.00000	992813.45000	0.900	100.07655	99.02393	100.89951
TB-1	159	368675.52700	0.00000	0.000	367536.44000	373367.57000	365122.57000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:43:26
Tube Number: 3
Sample Number: **ICV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS #1	#2	#3
SC-1	45	83489.68700	0.00000	0.000	81847.10000	84482.13000	84139.83000
AL	27	4812.20950	144191.41000	1.700	4863.92832	4720.49336	4852.20681
CA	44	4888.66525	23107.52700	1.700	4982.03755	4863.70688	4820.25132
CR	52	292.51014	596824.26000	1.200	294.67569	288.44039	294.41434
FE	57	4825.83882	176523.82000	1.500	4905.87075	4770.24128	4801.40442
K	39	4865.77229	435915.78700	0.900	4900.08359	4819.15697	4878.07629
MG	24	4885.68749	470560.63000	2.100	5003.46558	4802.38747	4851.20943
MN	55	303.46314	256146.37700	0.900	306.35146	300.76413	303.27382
NA	23	4802.38249	1096897.58700	2.700	4898.13087	4854.86707	4654.14951
TI	47	305.14938	11941.65700	8.300	330.13124	279.65786	305.65906
V	51	290.19928	481110.34700	1.000	291.97698	286.83983	291.78103
GE-1	72	277273.91700	0.00000	0.000	274266.52000	280325.23000	277230.00000
SB	121	31.31963	42600.47000	1.100	30.91963	31.59432	31.44493
IN-1	115	109933.83000	0.00000	0.000	107024.78000	111031.86000	111744.85000
AG	107	30.71904	115467.73000	1.200	31.15540	30.52742	30.47430
AS	75	306.03620	75850.22000	2.600	315.10190	301.99678	301.00992
BA	137	300.12215	132134.74700	1.900	306.83873	297.40865	296.11909
CD	111	30.13552	13256.44300	2.800	31.03977	29.35630	30.01048
CO	59	301.72695	1037754.43700	1.400	305.88699	297.43324	301.86062
CU	63	304.38028	806516.73000	1.800	310.49410	302.19600	300.45073
MO	98	30.98950	63249.53700	2.700	31.92572	30.35479	30.68798
NI	60	307.42898	283986.61700	1.400	311.52850	307.56110	303.19733
SN	120	30.60577	45007.73300	3.000	31.30337	30.94191	29.57201
SR	88	31.21316	30814.63300	2.700	32.12882	31.07914	30.43153
ZN	66	307.47067	97391.54300	2.100	314.88334	302.37168	305.15698
BI-1	209	264704.48000	0.00000	0.000	262417.98000	263349.08000	268346.38000
PB	208	30.09727	277213.94000	0.400	30.03718	30.22089	30.03374
TL	203	30.63434	87193.55300	1.600	31.14388	30.58583	30.17330
U	238	48.99047	484918.54700	1.300	48.68767	49.69695	48.58678
TB-1	159	367399.38700	0.00000	0.000	367005.35000	366880.78000	368312.03000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:45:00
Tube Number: 4
Sample Number: **ICB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	85788.50300	0.00000	0.000	82792.76000	88583.37000	85989.38000
AL	27	-0.22180	16.66700	0.000	-0.09710	-0.77022	0.20192
CA	44	6.17421	143.34000	174.200	6.63359	16.69084	-4.80181
CR	52	0.36293	1296.78000	5.000	0.34286	0.37771	0.36824
FE	57	-1.09614	103.33700	0.000	-1.62756	-0.48245	-1.17840
K	39	-0.83561	9663.33300	0.000	7.40873	-3.38000	-6.53556
MG	24	-0.00532	130.01000	0.000	-0.37044	0.15510	0.19939
MN	55	-0.00750	136.67700	0.000	0.00195	-0.02016	-0.00427
NA	23	-4.74267	58033.32700	0.000	4.88570	-11.41613	-7.69757
TI	47	-0.00847	6.66700	0.000	-0.17383	-0.17383	0.32224
V	51	0.00689	46.66700	163.300	-0.00202	0.01953	0.00316
GE-1	72	279342.47000	0.00000	0.000	276407.63000	280734.06000	280885.72000
SB	121	0.18106	303.35300	11.300	0.15892	0.18493	0.19934
IN-1	115	112125.78300	0.00000	0.000	112173.41000	112507.24000	111696.70000
AG	107	0.00224	36.67000	471.500	0.01352	-0.00734	0.00052
AS	75	0.03069	12.00000	0.600	0.03067	0.03053	0.03087
BA	137	-0.01611	3.33300	0.000	-0.02351	-0.00132	-0.02351
CD	111	0.00422	4.00000	183.400	0.00865	-0.00471	0.00871
CO	59	0.01317	120.00700	156.300	0.03022	-0.00970	0.01900
CU	63	-0.09475	300.01300	0.000	-0.10215	-0.06925	-0.11285
MO	98	0.14549	313.35300	43.200	0.08133	0.14808	0.20705
NI	60	0.04681	96.67000	137.500	-0.01346	0.03931	0.11459
SN	120	-0.46393	396.69300	0.000	-0.55748	-0.48999	-0.34432
SR	88	0.00275	13.33300	417.200	-0.01049	0.00930	0.00944
ZN	66	0.24199	173.34000	89.200	0.26294	0.44649	0.01654
BI-1	209	260191.80300	0.00000	0.000	256164.31000	261188.45000	263222.65000
PB	208	-0.01050	146.67000	0.000	-0.01433	-0.00906	-0.00811
TL	203	0.00576	33.33300	159.700	0.01556	-0.00267	0.00437
U	238	0.01540	156.67300	27.300	0.01807	0.01054	0.01757
TB-1	159	368520.16300	0.00000	0.000	367914.84000	363758.43000	373887.22000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:46:31
Tube Number: 5
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	85825.02300	0.00000	0.000	86391.40000	85074.19000	86009.48000
AL	27	25.93008	823.39300	24.000	31.48599	19.21063	27.09361
CA	44	95.17101	573.36700	12.700	85.49219	91.34930	108.67156
CR	52	1.96659	4657.54000	4.300	1.91099	1.92527	2.06351
FE	57	42.72994	1750.17700	8.700	41.64061	39.65985	46.88937
K	39	190.81612	26946.56300	6.300	182.08696	185.90854	204.45287
MG	24	50.88685	5167.69000	5.600	52.48182	52.60034	47.57841
MN	55	2.02560	1900.18300	8.600	1.87369	1.98669	2.21643
NA	23	181.74520	99593.85700	1.000	180.58190	183.94226	180.71145
TI	47	8.76548	360.02000	16.500	9.70179	7.09699	9.49767
V	51	0.46355	823.39000	30.400	0.39946	0.62501	0.36620
GE-1	72	276753.54300	0.00000	0.000	277469.39000	273394.76000	279396.48000
SB	121	1.00487	1416.78700	5.200	0.97484	1.06464	0.97513
IN-1	115	110509.82300	0.00000	0.000	110305.99000	109348.96000	111874.52000
AG	107	0.48071	1843.52300	3.400	0.48325	0.49557	0.46330
AS	75	2.12832	534.67700	1.400	2.11375	2.10806	2.16314
BA	137	1.97411	883.40000	14.200	2.12666	2.14547	1.65020
CD	111	0.45640	204.00000	16.200	0.37130	0.49340	0.50449
CO	59	0.55038	1976.87000	6.600	0.54109	0.51970	0.59035
CU	63	0.91568	2987.08700	6.800	0.91573	0.85339	0.97792
MO	98	0.43796	910.07000	13.300	0.40502	0.40369	0.50518
NI	60	1.06590	1040.07000	23.500	0.97990	1.34816	0.86963
SN	120	2.91935	5277.85000	12.500	2.49869	3.10804	3.15133
SR	88	1.01422	1016.74700	3.900	0.99903	1.05879	0.98486
ZN	66	10.93421	3570.58300	10.100	10.50645	12.18946	10.10671
BI-1	209	263481.93700	0.00000	0.000	258579.98000	264250.78000	267615.05000
PB	208	0.48677	4703.83000	1.300	0.48173	0.48497	0.49360
TL	203	0.50608	1450.13700	8.600	0.53336	0.52882	0.45605
U	238	1.02586	10110.78300	4.700	1.07735	0.98129	1.01895
TB-1	159	363389.21700	0.00000	0.000	361902.03000	363353.67000	364911.95000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:48:04
Tube Number: 6
Sample Number: **ICSA**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	81556.54700	0.00000	0.000	80631.15000	82209.93000	81828.56000
AL	27	96402.74995	2821503.50000	2.000	96566.69878	94398.96552	98242.58556
CA	44	287855.59628	1323092.22000	1.200	288824.60537	284069.23755	290672.94593
CR	52	0.80492	2113.57000	14.100	0.67892	0.83534	0.90049
FE	57	237511.74234	8481118.41300	0.800	239797.67187	236531.25493	236206.30022
K	39	95898.34058	8218939.87700	1.500	97082.20547	94243.74986	96369.06641
MG	24	93716.13564	8816895.28300	0.500	93982.99472	93179.94397	93985.46824
MN	55	3.12465	2712.02700	2.900	3.01976	3.16935	3.18485
NA	23	226383.90621	47921779.28700	1.100	228405.76990	223650.64989	227095.29884
TI	47	1933.29949	73936.91300	2.800	1906.49521	1898.81308	1994.59018
V	51	0.06409	136.67700	52.700	0.04844	0.04099	0.10282
GE-1	72	259493.90300	0.00000	0.000	259668.22000	259895.35000	258918.14000
SB	121	0.47345	653.38000	13.300	0.41548	0.54076	0.46412
IN-1	115	103812.91000	0.00000	0.000	102730.17000	104701.75000	104006.81000
AG	107	0.08201	316.68000	29.600	0.10940	0.07368	0.06297
AS	75	0.32489	80.00000	14.400	0.33716	0.36438	0.27313
BA	137	1.04428	443.36700	24.200	1.31312	0.81107	1.00866
CD	111	0.25689	108.66700	15.300	0.28228	0.27688	0.21149
CO	59	1.19252	3940.65300	8.000	1.23290	1.08411	1.26056
CU	63	0.97028	2940.38700	6.800	1.03882	0.90833	0.96368
MO	98	2062.35176	3975455.67000	1.300	2090.30510	2035.06274	2061.68744
NI	60	1.29401	1176.76300	12.000	1.47338	1.21725	1.19141
SN	120	-0.29277	600.04000	0.000	-0.33258	-0.26707	-0.27866
SR	88	8.70981	8129.14300	2.200	8.93437	8.59560	8.59947
ZN	66	2.41625	810.06000	10.100	2.44416	2.16034	2.64425
BI-1	209	240998.26300	0.00000	0.000	240424.88000	241688.39000	240881.52000
PB	208	0.14678	1453.44000	4.300	0.13963	0.15185	0.14887
TL	203	0.00536	30.00000	72.600	0.00925	0.00147	0.00536
U	238	0.01186	113.34000	42.400	0.01708	0.01145	0.00705
TB-1	159	362027.25700	0.00000	0.000	362978.39000	358843.35000	364260.03000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:49:33
Tube Number: 7
Sample Number: **ICSAB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	83600.02300	0.00000	0.000	83626.70000	82118.98000	85054.39000
AL	27	94863.08387	2845274.43700	3.000	93061.57005	98156.86233	93370.81922
CA	44	278442.02132	1311679.07000	1.800	276735.56230	284062.18888	274528.31278
CR	52	185.41964	378978.39000	1.500	185.35141	188.26728	182.64022
FE	57	230799.75848	8446776.12000	1.600	230878.27600	234549.60434	226971.39508
K	39	93599.18690	8222615.08700	1.900	92019.57622	95552.82734	93225.15713
MG	24	92383.42441	8907929.66000	1.700	91420.89184	94235.86165	91493.51972
MN	55	193.63089	163698.72000	2.500	188.81877	198.35243	193.72145
NA	23	222039.78067	48178759.28000	1.600	218815.87089	225673.01413	221630.45699
TI	47	1918.06681	75189.87700	0.900	1938.16664	1907.16910	1908.86469
V	51	187.40127	311051.37700	2.500	184.70487	192.77552	184.72342
GE-1	72	258983.96000	0.00000	0.000	255764.23000	256025.72000	265161.93000
SB	121	0.41611	580.03700	29.000	0.50226	0.27844	0.46762
IN-1	115	104546.69700	0.00000	0.000	104358.29000	103079.67000	106202.13000
AG	107	49.86348	178228.95700	1.800	49.94112	50.72746	48.92186
AS	75	104.10921	24551.69300	0.700	103.25054	104.34149	104.73560
BA	137	1.30759	556.71000	16.100	1.19658	1.55080	1.17540
CD	111	98.40715	41176.58300	0.600	97.99485	99.07915	98.14746
CO	59	197.56070	646282.76300	1.200	195.28173	200.08327	197.31709
CU	63	195.84071	493711.01000	2.000	196.81460	199.19208	191.51546
MO	98	2022.07870	3924969.31700	1.900	2018.15977	2062.68637	1985.38995
NI	60	196.30325	172481.20300	1.100	195.87663	198.63144	194.40169
SN	120	-0.50290	316.68300	0.000	-0.48553	-0.49728	-0.52589
SR	88	9.05178	8502.65300	7.700	9.42459	9.48755	8.24320
ZN	66	98.37906	29695.55700	3.700	96.07244	102.56790	96.49684
BI-1	209	244565.21700	0.00000	0.000	241566.66000	245531.73000	246597.26000
PB	208	0.11793	1230.08000	8.300	0.10907	0.11625	0.12846
TL	203	0.01026	43.33300	43.300	0.01302	0.00514	0.01263
U	238	0.00585	60.00000	33.100	0.00703	0.00690	0.00362
TB-1	159	366512.89700	0.00000	0.000	367596.79000	363776.48000	368165.42000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:51:04
Tube Number: 8
Sample Number: **LRS3**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS #1	#2	#3
SC-1	45	87594.49000	0.00000	0.000	84983.26000	90151.56000	87648.65000
AL	27	49071.61033	1541782.84300	3.400	49889.23479	47128.34051	50197.25570
CA	44	47847.89532	236178.75300	3.200	48884.39430	46078.83007	48580.46159
CR	52	457.81548	979268.70700	2.800	471.06570	445.49100	456.88973
FE	57	49084.60325	1881675.49300	3.000	50137.85163	47397.76124	49718.19689
K	39	48483.26039	4466524.72300	3.900	48473.69400	46578.44939	50397.63778
MG	24	46787.12019	4724839.09700	3.500	47934.85699	44904.41913	47522.08446
MN	55	474.06336	419584.03300	2.600	482.72689	460.17942	479.28378
NA	23	45761.97409	10447647.97000	2.900	46650.96119	44209.56618	46425.39489
TI	47	491.03679	20160.05300	3.500	509.13167	474.72016	489.25855
V	51	459.85416	799567.17700	2.200	467.61341	448.38506	463.56401
GE-1	72	273913.51000	0.00000	0.000	268705.56000	274839.78000	278195.19000
SB	121	428.67681	575209.89700	1.000	433.16899	428.50759	424.35384
IN-1	115	108416.88300	0.00000	0.000	106554.37000	109097.79000	109598.49000
AG	107	619.96303	2297952.20300	1.000	625.27376	612.88391	621.73142
AS	75	510.10464	124731.66000	1.000	510.25876	504.90482	515.15035
BA	137	494.67277	214819.15000	1.100	500.79611	492.06677	491.15544
CD	111	492.18404	213571.27700	1.200	492.83973	486.07041	497.64198
CO	59	519.99469	1764107.21300	1.200	518.22788	514.86726	526.88892
CU	63	498.67582	1303242.17000	1.300	492.58827	505.34375	498.09543
MO	98	510.06107	1026778.94300	1.300	517.72691	505.54369	506.91262
NI	60	500.11891	455662.79300	0.700	500.87734	496.40981	503.06959
SN	120	502.99379	713613.24700	0.600	506.45252	502.44464	500.08422
SR	88	506.78363	493431.45000	1.200	510.65115	499.81536	509.88440
ZN	66	495.41672	154763.19000	1.600	491.76433	489.93276	504.55308
BI-1	209	255524.08300	0.00000	0.000	252389.84000	256266.36000	257916.05000
PB	208	501.10856	4451693.50000	0.300	502.26372	501.56843	499.49352
TL	203	507.31897	1393754.87300	0.700	509.85908	503.05867	509.03915
U	238	493.78595	4717878.15700	1.100	499.94746	490.79763	490.61275
TB-1	159	370600.24000	0.00000	0.000	361763.78000	379762.88000	370274.06000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:52:35
Tube Number: 9
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS #1	#2	#3
SC-1	45	85028.05300	0.00000	0.000	85517.23000	85829.29000	83737.64000
AL	27	1.94744	83.33700	129.700	4.76932	1.17769	-0.10470
CA	44	1.68539	120.00700	222.300	-2.62431	3.50455	4.17593
CR	52	0.35738	1273.44300	10.400	0.39562	0.35509	0.32143
FE	57	2.35722	230.01300	64.200	1.77427	1.22169	4.07569
K	39	-0.05497	9659.92300	0.000	-1.40395	2.64932	-1.41029
MG	24	0.62704	190.01000	52.800	0.61321	0.30321	0.96471
MN	55	0.17509	293.35000	59.600	0.20492	0.26122	0.05915
NA	23	18.01974	62576.69300	6.600	18.75623	16.64407	18.65892
TI	47	-0.00403	6.66700	0.000	-0.17383	-0.17383	0.33557
V	51	-0.00244	30.00000	0.000	0.00329	-0.01440	0.00379
GE-1	72	275859.64300	0.00000	0.000	275066.58000	272437.12000	280075.23000
SB	121	2.68190	3680.62000	11.300	2.34206	2.77726	2.92639
IN-1	115	109663.01000	0.00000	0.000	107551.10000	110261.98000	111175.95000
AG	107	0.03378	153.34000	62.300	0.05793	0.01919	0.02423
AS	75	0.03165	12.00000	66.500	0.01621	0.05562	0.02312
BA	137	-0.00854	6.66700	0.000	-0.02351	-0.02351	0.02140
CD	111	0.00434	4.00000	178.100	-0.00007	-0.00018	0.01327
CO	59	0.02056	143.34000	79.900	0.00865	0.01372	0.03931
CU	63	-0.02426	480.02700	0.000	-0.04366	-0.01753	-0.01161
MO	98	2.07062	4237.45000	22.700	1.61239	2.04651	2.55295
NI	60	0.12516	166.67700	35.800	0.15436	0.07363	0.14750
SN	120	1.09251	2627.03300	53.300	0.60294	0.93794	1.73665
SR	88	-0.00716	3.33300	0.000	-0.01049	-0.01049	-0.00048
ZN	66	0.16921	146.67300	62.600	0.06082	0.27260	0.17422
BI-1	209	259367.52700	0.00000	0.000	260152.61000	259728.20000	258221.77000
PB	208	0.02247	443.36000	29.100	0.02307	0.02869	0.01565
TL	203	0.07024	213.34700	20.200	0.08316	0.07256	0.05501
U	238	0.08423	823.39700	28.200	0.05890	0.08783	0.10596
TB-1	159	365693.96700	0.00000	0.000	360670.54000	365883.51000	370527.85000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:54:07
Tube Number: 10
Sample Number: **CCS**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	84916.81000	0.00000	0.000	83808.25000	85446.09000	85496.09000
AL	27	1.85980	80.00300	77.300	2.55459	2.81729	0.20753
CA	44	1.66461	120.00700	363.400	-4.31847	7.77846	1.53383
CR	52	0.36028	1276.76300	9.900	0.39913	0.32905	0.35267
FE	57	0.91173	176.67700	237.100	-0.01895	3.38268	-0.62854
K	39	0.73346	9716.64000	244.900	0.31966	2.70058	-0.81987
MG	24	0.42405	170.01000	128.300	0.65248	-0.19681	0.81647
MN	55	0.08299	213.34700	40.000	0.04715	0.11258	0.08925
NA	23	20.58595	63051.45000	29.400	27.28511	18.99355	15.47917
TI	47	0.16219	13.33300	92.400	0.33515	0.07578	0.07563
V	51	-0.00645	23.33300	0.000	-0.00825	-0.02027	0.00918
GE-1	72	274004.25300	0.00000	0.000	275033.98000	275983.49000	270995.29000
SB	121	0.69991	993.41000	7.300	0.67949	0.66222	0.75803
IN-1	115	108640.23700	0.00000	0.000	107420.09000	109240.95000	109259.67000
AG	107	0.01428	80.00300	106.300	0.02806	0.01676	-0.00198
AS	75	0.03226	12.00000	26.700	0.04102	0.02382	0.03193
BA	137	-0.02351	0.00000	0.000	-0.02351	-0.02351	-0.02351
CD	111	0.00144	2.66700	370.400	0.00459	-0.00471	0.00443
CO	59	0.00338	83.33700	324.300	-0.00916	0.01112	0.00819
CU	63	-0.05787	386.69000	0.000	-0.03187	-0.04997	-0.09178
MO	98	0.56468	1150.10000	25.800	0.51130	0.45340	0.72935
NI	60	0.12334	163.34300	41.500	0.17677	0.07485	0.11839
SN	120	-0.25369	683.38000	0.000	-0.28603	-0.38458	-0.09045
SR	88	0.00649	16.66700	239.800	-0.01049	0.02008	0.00989
ZN	66	0.46394	236.68000	67.000	0.77258	0.15073	0.46851
BI-1	209	255527.15700	0.00000	0.000	257467.18000	254809.35000	254304.94000
PB	208	0.00900	316.68300	125.500	0.00125	0.00380	0.02196
TL	203	0.00103	20.00000	607.900	0.00822	-0.00258	-0.00257
U	238	0.01599	160.00700	55.200	0.02525	0.00768	0.01506
TB-1	159	361146.96000	0.00000	0.000	362736.36000	357293.78000	363410.74000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:55:38
Tube Number: 11
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	86602.96000	0.00000	0.000	86784.55000	84954.15000	88070.18000
AL	27	4773.10167	148348.89700	1.400	4729.54261	4851.31497	4738.44742
CA	44	4783.38990	23461.07300	3.600	4588.64957	4840.70577	4920.81435
CR	52	278.16943	588634.95300	2.500	275.42363	286.03672	273.04792
FE	57	4796.20240	181959.60700	2.600	4823.08171	4902.83688	4662.68860
K	39	4776.00269	443971.59700	1.600	4810.99865	4827.87556	4689.13384
MG	24	4803.55231	479888.92700	2.300	4766.94887	4928.90904	4714.79904
MN	55	284.16074	248796.05000	1.300	282.27525	288.31951	281.88746
NA	23	4882.24289	1155538.73300	3.600	4743.68837	5078.04469	4824.99563
TI	47	297.36624	12071.60000	7.200	287.96959	321.81497	282.31418
V	51	276.39503	475261.66000	1.700	273.70879	281.66647	273.80982
GE-1	72	272157.50700	0.00000	0.000	270868.28000	270492.12000	275112.12000
SB	121	29.87480	39879.91000	2.100	30.44651	29.99720	29.18068
IN-1	115	111110.00300	0.00000	0.000	109844.38000	111764.34000	111721.29000
AG	107	29.50324	112109.68000	0.600	29.36334	29.69436	29.45201
AS	75	297.20448	74475.79000	0.800	299.40498	294.91501	297.29344
BA	137	293.99717	130867.17000	0.900	292.20683	296.91967	292.86501
CD	111	29.20213	12987.51300	1.700	29.46424	28.61343	29.52871
CO	59	295.01147	1025639.04700	0.700	297.35690	293.75513	293.92237
CU	63	294.61372	789130.92700	1.800	300.59430	290.73380	292.51305
MO	98	29.97050	61851.22000	2.100	29.75773	30.66373	29.49004
NI	60	298.28465	278525.45000	1.200	301.44372	294.53551	298.87473
SN	120	28.95624	43104.97300	2.200	29.53030	28.24815	29.09027
SR	88	29.76016	29706.15000	0.600	29.94300	29.55812	29.77938
ZN	66	297.91075	95403.01300	1.300	299.31608	301.01343	293.40274
BI-1	209	265125.99300	0.00000	0.000	261941.23000	268587.42000	264849.33000
PB	208	29.38781	271105.66300	0.700	29.49912	29.16272	29.50158
TL	203	29.52116	84155.19300	2.600	29.76798	28.66576	30.12975
U	238	48.72529	483014.95700	1.700	49.47198	47.83808	48.86581
TB-1	159	366632.97700	0.00000	0.000	366137.10000	365049.45000	368712.38000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:57:12
Tube Number: 12
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	85145.67700	0.00000	0.000	85236.13000	84311.28000	85889.62000
AL	27	0.09822	26.66700	765.700	0.53742	-0.77022	0.52747
CA	44	7.24487	146.67700	139.900	-0.47200	18.72094	3.48567
CR	52	0.37279	1306.77700	6.900	0.40257	0.35637	0.35942
FE	57	-0.88495	110.00300	0.000	-1.42288	-0.85465	-0.37732
K	39	-1.22193	9566.54300	0.000	-0.71614	0.91510	-3.86473
MG	24	0.52377	180.01000	162.400	-0.19416	1.46340	0.30207
MN	55	-0.01061	133.34000	0.000	0.00876	-0.04803	0.00744
NA	23	14.13194	61806.50000	8.500	15.51850	13.45992	13.41739
TI	47	-0.00828	6.66700	0.000	-0.17383	-0.17383	0.32281
V	51	0.00733	46.66700	92.800	0.01518	0.00362	0.00318
GE-1	72	274968.26000	0.00000	0.000	276070.74000	272602.36000	276231.68000
SB	121	0.35533	533.36700	13.400	0.32923	0.32645	0.41031
IN-1	115	109353.61300	0.00000	0.000	111931.76000	108065.45000	108063.63000
AG	107	0.00330	40.00000	155.600	0.00834	0.00349	-0.00192
AS	75	0.02955	11.33300	132.000	-0.00092	0.01606	0.07350
BA	137	0.01472	16.66700	327.500	-0.00121	0.06889	-0.02351
CD	111	-0.00163	1.33300	0.000	-0.00471	-0.00009	-0.00009
CO	59	0.01572	126.67300	118.200	0.03605	-0.00036	0.01147
CU	63	-0.08819	310.01700	0.000	-0.07967	-0.07900	-0.10589
MO	98	0.29237	603.37000	11.300	0.26434	0.28395	0.32881
NI	60	0.07436	120.00700	74.800	0.10360	0.01018	0.10931
SN	120	-0.40454	470.03000	0.000	-0.52291	-0.31703	-0.37369
SR	88	0.00632	16.66700	241.700	0.01935	0.01011	-0.01049
ZN	66	0.30737	190.00700	61.900	0.45030	0.09127	0.38054
BI-1	209	253529.75700	0.00000	0.000	252730.82000	254102.22000	253756.23000
PB	208	-0.00474	193.34300	0.000	0.00177	-0.00744	-0.00855
TL	203	0.01577	60.00300	61.200	0.00849	0.02672	0.01210
U	238	0.01333	133.34000	43.300	0.00775	0.01928	0.01298
TB-1	159	363392.74300	0.00000	0.000	363351.21000	363026.28000	363800.74000

Run Name: 1931009E05 Date/Time: 11/06/2019 16:58:43
Tube Number: 13 Batch: 193031404707A
Sample Number: **PBW** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U345

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	85919.27000	0.00000	0.000	86783.53000	86322.01000	84652.27000
AL	27	0.95613	53.33700	136.000	0.19302	2.45809	0.21728
CA	44	-4.78195	90.00000	0.000	1.16228	-13.09582	-2.41230
CR	52	0.42259	1423.46700	21.500	0.36252	0.52716	0.37809
FE	57	-1.17631	100.00300	0.000	-0.93927	-1.45321	-1.13645
K	39	1.58483	9903.44300	362.000	-3.29141	0.13857	7.90734
MG	24	0.43303	173.34300	110.600	0.98466	0.19356	0.12087
MN	55	0.10294	233.34700	77.500	0.08547	0.19000	0.03334
NA	23	15.41234	62646.39700	23.400	11.88235	15.25062	19.10405
TI	47	0.07650	10.00000	329.400	-0.17383	0.07325	0.33007
V	51	0.00907	50.00000	193.300	-0.00866	0.02640	0.00948
GE-1	72	276895.91300	0.00000	0.000	275977.22000	275639.47000	279071.05000
SB	121	0.23228	370.02300	12.700	0.26278	0.20391	0.23017
IN-1	115	112549.82700	0.00000	0.000	113595.22000	111920.04000	112134.22000
AG	107	-0.00215	20.00000	0.000	0.00039	-0.00211	-0.00473
AS	75	-0.00101	4.00000	0.000	-0.00115	-0.00884	0.00696
BA	137	0.05006	33.33300	140.600	0.13032	0.02110	-0.00125
CD	111	-0.00027	2.00000	0.000	-0.00031	-0.00025	-0.00026
CO	59	0.00639	96.67000	68.100	0.00707	0.01035	0.00174
CU	63	-0.06568	380.02300	0.000	-0.04863	-0.06482	-0.08360
MO	98	0.10999	240.01300	44.200	0.06128	0.15851	0.11017
NI	60	0.10941	156.67700	62.900	0.18508	0.05045	0.09270
SN	120	0.21533	1396.80000	47.300	0.10729	0.22932	0.30937
SR	88	0.00599	16.66700	253.200	0.00911	0.01935	-0.01049
ZN	66	3.05843	1086.75300	4.900	3.19119	3.08821	2.89589
BI-1	209	263778.11300	0.00000	0.000	259875.58000	265981.48000	265477.28000
PB	208	-0.01000	153.34000	0.000	-0.01451	-0.00722	-0.00826
TL	203	0.00793	40.00000	91.200	0.01525	0.00776	0.00078
U	238	0.00199	26.66700	77.700	0.00237	0.00330	0.00029
TB-1	159	357715.82700	0.00000	0.000	359436.24000	359292.81000	354418.43000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:00:16
Tube Number: 14 Batch: 193031404707A
Sample Number: **LCSW** Class: **********

Initial Vol: 1.00 Final Vol: 1.00 DF: 1.00 Protocol: SW846-U345

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	86573.59700	0.00000	0.000	86956.19000	84783.49000	87981.11000
AL	27	195.78343	6104.74700	2.900	191.85799	202.38909	193.10322
CA	44	4009.55383	19676.15300	0.300	3995.20029	4016.49567	4016.96552
CR	52	49.67389	105556.06300	0.400	49.47447	49.65450	49.89269
FE	57	303.35551	11638.06700	4.400	302.00996	317.40104	290.65553
K	39	10176.46036	934462.82300	2.200	10025.16101	10436.24042	10067.97964
MG	24	2034.79059	203304.21300	2.100	1995.05431	2079.98659	2029.33087
MN	55	50.73441	44519.49000	3.900	48.55063	52.45561	51.19699
NA	23	10038.99171	2312619.65300	1.500	9912.19101	10211.46437	9993.31976
TI	47	257.01829	10443.91700	3.300	261.63596	247.19731	262.22159
V	51	49.43025	85005.30300	0.800	49.71062	49.58736	48.99277
GE-1	72	276927.14300	0.00000	0.000	272688.02000	277976.52000	280116.89000
SB	121	5.89640	8052.48000	4.000	5.97996	6.07849	5.63074
IN-1	115	113478.28300	0.00000	0.000	113188.84000	113027.03000	114218.98000
AG	107	51.36729	199320.60300	1.800	50.58704	52.36565	51.14918
AS	75	10.58104	2712.25700	1.400	10.42011	10.70966	10.61333
BA	137	51.48865	23415.85300	2.600	50.01531	52.65361	51.79705
CD	111	5.21635	2370.87000	6.000	5.54084	5.19502	4.91321
CO	59	255.14974	906005.79700	0.700	253.59084	257.15618	254.70221
CU	63	51.79788	142170.82000	1.800	52.59420	52.00180	50.79765
MO	98	50.44031	106298.87000	1.000	50.34854	50.99657	49.97582
NI	60	51.95164	49587.89300	2.000	52.81968	52.20846	50.82680
SN	120	51.99956	78197.43000	1.400	51.47008	52.83696	51.69163
SR	88	40.80818	41599.59700	0.400	40.67234	40.99712	40.75507
ZN	66	522.46732	170806.59300	1.000	523.49688	527.30178	516.60329
BI-1	209	261696.55300	0.00000	0.000	262088.79000	258647.44000	264353.43000
PB	208	5.22178	47756.76000	1.900	5.25485	5.11254	5.29796
TL	203	2.10288	5934.83300	1.700	2.07389	2.09073	2.14403
U	238	0.00371	43.33300	57.000	0.00132	0.00445	0.00535
TB-1	159	365376.02300	0.00000	0.000	365470.93000	366839.14000	363818.00000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:01:47
Tube Number: 15 Batch: 193031404707A
Sample Number: **1184601** Class: U*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	92834.29700	0.00000	0.000	91046.40000	91370.01000	96086.48000
AL	27	9.27095	336.68700	37.300	5.96316	8.98926	12.86043
CA	44	651554.27161	3409246.93000	2.500	634107.99405	666084.44063	654470.38016
CR	52	3.52494	8569.32000	3.900	3.41117	3.67618	3.48748
FE	57	720.82077	29448.03300	1.300	729.08640	722.72742	710.64851
K	39	307455.37681	29976570.39000	2.800	298190.56361	315484.01728	308691.54953
MG	24	1409429	150916781	2.500	1382576	1449759	1395951
MN	55	1902.06940	1784534.55300	1.300	1879.56567	1927.02611	1899.61643
NA	23	12315359	2963338516	2.900	12127182	12733484	12085412
TI	47	14.87819	656.70700	12.000	14.11671	13.59901	16.91883
V	51	6.47110	11964.93700	3.500	6.28223	6.71782	6.41325
GE-1	72	242829.88300	0.00000	0.000	241464.27000	240436.95000	246588.43000
SB	121	1.36385	1670.17000	13.000	1.19388	1.54729	1.35038
IN-1	115	92738.40300	0.00000	0.000	93183.42000	92428.45000	92603.34000
AG	107	0.03787	143.34300	25.500	0.03975	0.04646	0.02741
AS	75	12.94290	2710.25300	3.700	12.38471	13.18655	13.25743
BA	137	355.91489	132220.93700	1.800	348.96906	356.93993	361.83569
CD	111	0.03480	14.66700	17.800	0.03819	0.03854	0.02767
CO	59	0.62815	1883.52700	6.200	0.58950	0.66711	0.62785
CU	63	0.58554	1766.85300	33.900	0.39562	0.79127	0.56973
MO	98	0.74987	1300.11300	1.500	0.74047	0.74655	0.76258
NI	60	3.83226	3030.41300	6.300	4.06983	3.58840	3.83857
SN	120	0.04928	950.07700	155.500	-0.02855	0.05174	0.12463
SR	88	11294.05876	9405487.98700	4.300	10740.89914	11481.70460	11659.57256
ZN	66	6.36088	1776.83300	9.700	5.96750	7.07091	6.04423
BI-1	209	158375.18300	0.00000	0.000	160206.22000	158659.64000	156259.69000
PB	208	0.16748	1070.07000	14.800	0.17981	0.18363	0.13900
TL	203	0.01343	33.33300	68.900	0.00538	0.01136	0.02353
U	238	0.65543	3884.06000	6.000	0.61366	0.66011	0.69252
TB-1	159	281341.04700	0.00000	0.000	287501.58000	281997.44000	274524.12000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:03:23
Tube Number: 16 Batch: 193031404707A
Sample Number: **1184601** Class: UP********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	100217.14700	0.00000	0.000	100310.77000	97523.70000	102816.97000
AL	27	66.73283	2423.60700	11.600	71.18422	71.23937	57.77489
CA	44	631873.97243	3567779.53000	2.200	620540.10830	647813.60457	627268.20442
CR	52	4.89889	12612.15300	3.900	5.10705	4.85256	4.73707
FE	57	767.03792	33816.74700	2.400	750.13474	786.94774	764.03127
K	39	287219.77771	30220614.55000	1.900	282851.89540	293439.45707	285367.98065
MG	24	1360502	157232074	2.800	1326887	1402546	1352074
MN	55	1852.20914	1875405.86000	1.800	1840.98665	1889.36747	1826.27329
NA	23	7865791	2042781303	3.100	7758617	8146108	7692648
TI	47	30.47682	1440.13000	3.100	29.38279	31.10269	30.94498
V	51	7.28283	14533.76300	2.700	7.05680	7.37791	7.41378
GE-1	72	253862.76300	0.00000	0.000	250580.33000	255101.32000	255906.64000
SB	121	3.04833	3840.65300	3.900	3.12082	3.11278	2.91138
IN-1	115	96334.68300	0.00000	0.000	97116.35000	95340.97000	96546.73000
AG	107	0.83838	2783.74300	10.300	0.76677	0.93461	0.81376
AS	75	17.07391	3712.46700	3.000	16.73231	17.66749	16.82194
BA	137	355.59448	137242.54700	1.800	356.69457	348.62542	361.46344
CD	111	0.95297	369.34300	10.600	0.91636	0.87585	1.06671
CO	59	1.67823	5121.04000	3.500	1.65106	1.74590	1.63774
CU	63	2.35089	5931.38300	7.500	2.21377	2.55063	2.28828
MO	98	1.65523	2970.44300	2.600	1.64756	1.61617	1.70194
NI	60	5.74365	4694.25300	5.100	5.45952	5.72453	6.04690
SN	120	3.61755	5477.92700	5.300	3.39505	3.73689	3.72072
SR	88	11464.95810	9918411.31000	2.000	11205.58694	11554.95669	11634.33067
ZN	66	25.53811	7165.28000	0.900	25.45990	25.79417	25.36026
BI-1	209	162689.47300	0.00000	0.000	163643.45000	161183.44000	163241.53000
PB	208	1.15445	6680.89700	3.300	1.13358	1.13166	1.19812
TL	203	1.12778	1983.56000	2.700	1.15337	1.13643	1.09353
U	238	2.79120	16987.50700	2.600	2.85766	2.71524	2.80071
TB-1	159	293897.64300	0.00000	0.000	297465.19000	290457.28000	293770.46000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:04:56
Tube Number: 17 Batch: 193031404707A
Sample Number: **1184604** Class: D*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	96978.57300	0.00000	0.000	96812.67000	97020.73000	97102.32000
AL	27	7.46523	286.68000	23.000	5.84993	7.27175	9.27401
CA	44	658985.17656	3601734.01000	2.200	643839.74791	672758.82576	660356.95600
CR	52	3.56272	9042.88300	4.800	3.42130	3.51475	3.75211
FE	57	723.64261	30890.67000	1.500	710.95640	728.05042	731.92103
K	39	315436.09402	32124634.52000	1.900	308631.32762	318229.93201	319447.02242
MG	24	1402285	156880301	2.200	1367100	1415820	1423934
MN	55	1907.43380	1869454.35000	1.200	1930.92762	1886.01640	1905.35737
NA	23	14272232	3588642827	2.000	13946823	14433200	14436672
TI	47	14.56120	670.04300	15.900	12.82494	17.19390	13.66475
V	51	6.23431	12045.07000	4.400	5.94856	6.26302	6.49135
GE-1	72	239814.01700	0.00000	0.000	239504.57000	243822.44000	236115.04000
SB	121	1.07314	1306.78700	13.700	1.17842	0.90562	1.13538
IN-1	115	88993.36000	0.00000	0.000	90492.91000	87253.26000	89233.91000
AG	107	0.00907	50.00000	70.600	0.01529	0.00942	0.00250
AS	75	13.33956	2678.91700	5.400	12.75343	14.15267	13.11259
BA	137	375.36669	133758.09000	3.900	363.38041	391.59190	371.12776
CD	111	0.02526	10.66700	34.200	0.01738	0.02392	0.03449
CO	59	0.66022	1896.86000	3.500	0.63944	0.65665	0.68458
CU	63	0.34369	1176.77000	15.100	0.30799	0.40319	0.31990
MO	98	0.66760	1110.08700	14.900	0.63765	0.77879	0.58636
NI	60	3.90381	2963.75700	7.600	4.19250	3.59993	3.91899
SN	120	-0.27599	533.36700	0.000	-0.32893	-0.27877	-0.22028
SR	88	12282.65306	9814314.64700	3.000	11866.33433	12438.61907	12543.00576
ZN	66	6.07322	1630.15300	8.100	5.61635	6.59214	6.01117
BI-1	209	143312.25000	0.00000	0.000	146295.81000	143309.01000	140331.93000
PB	208	0.10051	633.36700	16.900	0.10506	0.08171	0.11476
TL	203	0.00243	13.33300	308.700	0.00649	-0.00623	0.00703
U	238	0.70845	3800.70000	2.300	0.70133	0.72717	0.69686
TB-1	159	267699.02000	0.00000	0.000	271554.59000	269530.58000	262011.89000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:06:32
Tube Number: 18 Batch: 193031404707A
Sample Number: **1184602** Class: R*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	99949.11000	0.00000	0.000	99476.13000	99747.87000	100623.33000
AL	27	212.30665	7645.44000	8.600	203.76666	199.85500	233.29830
CA	44	638602.89869	3597221.71300	0.700	633698.71149	642970.07491	639139.90966
CR	52	42.80710	105105.52700	0.800	42.59741	42.62174	43.20215
FE	57	793.38809	34889.25300	2.200	805.24715	772.97817	801.93894
K	39	303811.43163	31889642.02700	1.000	301518.61560	302470.90790	307444.77139
MG	24	1371817	158170768	0.300	1369782	1369794	1375875
MN	55	1772.20911	1790239.61000	1.200	1756.70379	1763.40495	1796.51859
NA	23	9537474	2471668337	1.300	9406806	9559810	9645807
TI	47	261.17469	12248.51000	5.200	246.27253	272.99797	264.25356
V	51	48.93074	97160.14300	2.900	49.19350	47.38455	50.21417
GE-1	72	254459.89300	0.00000	0.000	251448.65000	252398.61000	259532.42000
SB	121	6.26286	7862.36700	6.300	5.83865	6.32641	6.62351
IN-1	115	92737.34300	0.00000	0.000	94129.47000	90489.16000	93593.40000
AG	107	41.76612	132398.40000	3.100	40.41595	43.02095	41.86145
AS	75	22.32203	4672.72300	3.400	21.79653	21.97801	23.19156
BA	137	369.66544	137319.95700	0.800	369.08597	372.74560	367.16475
CD	111	4.18869	1555.43000	4.600	4.04611	4.40790	4.11205
CO	59	257.35357	746680.06700	1.600	252.83844	260.66310	258.55917
CU	63	48.20508	108159.62300	1.600	47.39178	48.28610	48.93737
MO	98	50.10916	86270.08000	2.700	49.09629	51.63422	49.59698
NI	60	53.11773	41425.02700	3.400	51.06324	54.01542	54.27453
SN	120	48.00947	59048.49000	3.200	46.32878	49.39355	48.30608
SR	88	11719.63007	9759304.64700	2.100	11437.58670	11840.75861	11880.54492
ZN	66	503.74230	134539.74700	2.800	491.50935	519.40823	500.30932
BI-1	209	147302.86700	0.00000	0.000	149854.96000	146400.62000	145653.02000
PB	208	5.36632	27605.11300	4.600	5.09470	5.43572	5.56853
TL	203	2.17446	3453.90700	1.600	2.19748	2.13510	2.19080
U	238	0.55273	3047.15000	8.000	0.53115	0.52360	0.60343
TB-1	159	272225.62300	0.00000	0.000	272906.99000	267036.29000	276733.59000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:08:05
Tube Number: 19 Batch: 193031404707A
Sample Number: **1184603** Class: M*********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	102306.36700	0.00000	0.000	102132.71000	101437.15000	103349.24000
AL	27	219.91629	8105.69300	6.200	220.82950	205.86134	233.05802
CA	44	625575.46997	3606969.63300	1.000	618289.72254	628712.06617	629724.62120
CR	52	43.87169	110240.38000	2.100	42.80730	44.56532	44.24245
FE	57	848.21034	38159.84700	3.500	836.41389	882.13430	826.08285
K	39	300647.03493	32302197.85300	1.300	296686.67050	300678.45927	304575.97501
MG	24	1364710	161066244	0.600	1365130	1357002	1371999
MN	55	1788.29797	1849007.42000	0.100	1786.23589	1789.58274	1789.07529
NA	23	9313200	2470403217	0.800	9229190	9339606	9370805
TI	47	267.68731	12845.82000	7.300	249.89825	288.65215	264.51153
V	51	48.77798	99141.19000	1.400	48.19658	48.59176	49.54559
GE-1	72	264580.77000	0.00000	0.000	265990.15000	262620.39000	265131.77000
SB	121	6.37321	8312.63000	2.100	6.22366	6.42859	6.46738
IN-1	115	92976.21000	0.00000	0.000	91309.68000	92793.16000	94825.79000
AG	107	42.03172	133604.71700	2.000	42.92494	41.85997	41.31026
AS	75	22.32006	4684.06000	1.900	22.47982	21.84302	22.63734
BA	137	365.28704	136058.56300	1.000	367.21606	361.07300	367.57207
CD	111	4.47136	1665.44000	1.700	4.55435	4.40066	4.45908
CO	59	266.76732	776055.12000	0.800	269.14559	265.80137	265.35500
CU	63	50.07967	112588.43700	3.900	51.74432	50.54020	47.95450
MO	98	52.21229	90142.39000	1.800	53.28738	51.44973	51.89974
NI	60	53.56577	41899.85000	2.200	52.27603	54.53798	53.88331
SN	120	49.39880	60898.98300	1.600	50.08694	49.59856	48.51091
SR	88	11824.58057	9872954.64300	0.600	11881.40990	11842.04941	11750.28239
ZN	66	515.55769	138084.77300	1.700	525.32371	507.78947	513.55988
BI-1	209	147071.96000	0.00000	0.000	147208.37000	147478.32000	146529.19000
PB	208	5.50040	28258.99300	3.000	5.32166	5.53445	5.64509
TL	203	2.13397	3383.91300	4.300	2.11072	2.05637	2.23483
U	238	0.51883	2857.08300	6.500	0.53889	0.47986	0.53774
TB-1	159	274433.01700	0.00000	0.000	275630.68000	265755.68000	281912.69000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:09:40
Tube Number: 20 Batch: 193031404707A
Sample Number: **1184601** Class: UL********

Initial Vol: 50.00 Final Vol: 50.00 DF: 5.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	111715.60700	0.00000	0.000	110044.19000	111372.22000	113730.41000
AL	27	4.63487	216.68300	11.200	4.29429	5.23493	4.37539
CA	44	127616.01034	803686.26700	1.000	126427.52519	127360.42532	129060.08050
CR	52	1.02220	3487.20300	4.500	1.00976	0.98365	1.07319
FE	57	148.35606	7445.37700	6.500	153.52715	137.28839	154.25263
K	39	59633.59077	7006518.22700	1.000	59874.49248	58944.95309	60081.32674
MG	24	284640.86409	36678995.29000	1.000	287839.53204	283552.20573	282530.85451
MN	55	382.49860	431980.97300	0.600	384.96597	381.48824	381.04158
NA	23	1669155	483550953	0.400	1665707	1665502	1676256
TI	47	2.49982	140.00700	20.500	2.92739	1.93271	2.63935
V	51	1.42887	3213.79700	3.600	1.43522	1.47665	1.37474
GE-1	72	309870.61300	0.00000	0.000	304684.02000	305946.07000	318981.75000
SB	121	0.26764	466.69300	16.200	0.30791	0.27311	0.22189
IN-1	115	111537.74700	0.00000	0.000	111568.05000	110016.50000	113028.69000
AG	107	0.01010	66.66700	58.300	0.01363	0.00330	0.01336
AS	75	2.63854	668.02000	6.200	2.45532	2.69170	2.76859
BA	137	69.62865	31113.13700	2.800	70.62541	70.87168	67.38887
CD	111	0.00572	4.66700	42.800	0.00425	0.00437	0.00855
CO	59	0.14822	590.03700	16.100	0.15082	0.17068	0.12315
CU	63	0.13168	906.73300	30.200	0.17746	0.11118	0.10641
MO	98	0.33909	713.38000	7.900	0.33763	0.31309	0.36655
NI	60	1.14960	1130.08700	16.300	1.36292	1.01508	1.07079
SN	120	-0.49447	350.01700	0.000	-0.54280	-0.44271	-0.49789
SR	88	2330.16457	2334059.18700	0.800	2313.18833	2349.54954	2327.75584
ZN	66	16.48106	5387.78700	2.800	15.95777	16.69239	16.79301
BI-1	209	184045.93700	0.00000	0.000	181264.47000	183506.58000	187366.76000
PB	208	0.01281	253.34300	75.700	0.00664	0.00780	0.02398
TL	203	0.00226	16.66700	342.900	0.00404	0.00898	-0.00623
U	238	0.12088	836.73700	15.700	0.13649	0.09984	0.12632
TB-1	159	312944.01300	0.00000	0.000	308878.96000	308520.21000	321432.87000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:11:10
Tube Number: 21 Batch: 193031404707A
Sample Number: **1186640** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	116159.93000	0.00000	0.000	114546.24000	118311.21000	115622.34000
AL	27	7.57655	346.68700	50.000	7.74440	3.70489	11.28035
CA	44	75.28712	646.70700	15.900	68.02970	89.11949	68.71216
CR	52	0.95531	3433.87300	4.400	1.00294	0.92135	0.94164
FE	57	6.45058	523.37000	11.900	6.53444	7.16968	5.64762
K	39	145.92633	30987.28300	4.600	152.46032	138.91922	146.39944
MG	24	22.58005	3200.45700	9.700	24.87576	22.35671	20.50769
MN	55	0.20788	436.69300	54.600	0.30978	0.08554	0.22833
NA	23	3216.32603	1048123.29000	8.100	3515.64297	3086.54003	3046.79509
TI	47	-0.05085	6.66700	0.000	-0.17383	-0.17383	0.19510
V	51	0.08548	243.34700	40.000	0.12482	0.06912	0.06249
GE-1	72	334948.49700	0.00000	0.000	336859.21000	338730.23000	329256.05000
SB	121	0.17492	353.35700	16.700	0.14131	0.19455	0.18891
IN-1	115	123188.98700	0.00000	0.000	124024.18000	123153.22000	122389.56000
AG	107	0.00771	63.33300	47.400	0.00445	0.01166	0.00700
AS	75	0.05522	20.00000	45.200	0.06904	0.02644	0.07018
BA	137	0.19946	110.00300	10.600	0.19790	0.17920	0.22128
CD	111	0.01289	8.66700	65.900	0.00335	0.01963	0.01570
CO	59	0.01445	136.67300	82.600	0.00213	0.01527	0.02594
CU	63	0.22428	1276.77700	38.000	0.21595	0.31332	0.14358
MO	98	0.18023	423.35700	32.200	0.12083	0.18294	0.23692
NI	60	0.20505	270.01300	19.200	0.16481	0.24369	0.20665
SN	120	0.79564	2463.65000	6.200	0.75234	0.84986	0.78471
SR	88	0.15844	186.67700	29.400	0.11520	0.15226	0.20786
ZN	66	3.63312	1393.45700	19.100	3.48625	4.38727	3.02584
BI-1	209	212660.30700	0.00000	0.000	212955.43000	212940.02000	212085.47000
PB	208	0.00534	236.67000	145.600	0.00303	-0.00102	0.01401
TL	203	0.00105	16.66700	863.800	-0.00186	0.01124	-0.00623
U	238	0.00012	6.66700	606.500	0.00054	-0.00072	0.00054
TB-1	159	331949.43700	0.00000	0.000	334336.13000	328937.81000	332574.37000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:12:43
Tube Number: 22 Batch: 193031404707A
Sample Number: **1186690** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	115374.30000	0.00000	0.000	116478.98000	115853.84000	113790.08000
AL	27	7.35061	336.68300	20.700	9.03847	6.92675	6.08659
CA	44	74.48868	636.71000	12.400	84.79541	71.59294	67.07770
CR	52	0.33826	1673.51000	4.600	0.33150	0.35590	0.32738
FE	57	0.50957	220.01000	271.100	1.65595	0.89703	-1.02426
K	39	103.95201	25701.40700	2.000	103.97630	101.82380	106.05592
MG	24	17.76533	2540.31300	6.700	18.11371	18.74283	16.43946
MN	55	0.10107	310.02000	84.000	0.08949	0.02253	0.19118
NA	23	2483.22198	822366.96700	0.900	2508.56412	2476.78085	2464.32096
TI	47	0.01361	10.00000	2386.200	-0.17383	-0.17383	0.38847
V	51	0.03795	133.34300	13.900	0.04026	0.03190	0.04169
GE-1	72	338201.50300	0.00000	0.000	335354.17000	338464.02000	340786.32000
SB	121	0.10850	246.68000	18.100	0.12995	0.10426	0.09129
IN-1	115	126044.55300	0.00000	0.000	123206.16000	126714.75000	128212.75000
AG	107	0.01204	83.33700	41.900	0.01640	0.00651	0.01319
AS	75	0.04889	18.66700	43.400	0.05521	0.02522	0.06623
BA	137	0.28678	156.67700	25.800	0.26018	0.37053	0.22963
CD	111	0.00834	6.66700	143.000	-0.00471	0.01106	0.01867
CO	59	0.00950	120.00700	129.100	0.02304	-0.00089	0.00636
CU	63	0.16500	1126.76000	37.200	0.16148	0.10545	0.22808
MO	98	0.04606	120.00700	22.500	0.03862	0.04166	0.05791
NI	60	0.37638	456.69300	25.100	0.44641	0.41372	0.26900
SN	120	0.30198	1706.84700	14.000	0.34600	0.29793	0.26200
SR	88	0.20482	243.34300	17.600	0.22449	0.22677	0.16321
ZN	66	3.68681	1443.46300	8.100	3.99060	3.68002	3.38980
BI-1	209	216485.09300	0.00000	0.000	215193.98000	215616.77000	218644.53000
PB	208	0.03275	446.69300	48.300	0.04951	0.03068	0.01805
TL	203	-0.00479	3.33300	0.000	-0.00190	-0.00623	-0.00623
U	238	0.00133	16.66700	140.500	0.00177	-0.00072	0.00295
TB-1	159	335601.15300	0.00000	0.000	335644.33000	334086.17000	337072.96000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:14:14
Tube Number: 23
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	115958.00700	0.00000	0.000	115561.70000	113919.44000	118392.88000
AL	27	5093.70287	211945.80300	3.300	4964.20813	5286.70458	5030.19589
CA	44	4985.30952	32734.01000	1.100	5029.09567	4923.97877	5002.85411
CR	52	256.40541	726633.89700	1.900	253.11178	261.98438	254.12006
FE	57	4389.02674	222980.03300	2.200	4351.94512	4497.19504	4317.94007
K	39	5290.95988	657106.02000	2.200	5216.27432	5425.64342	5230.96189
MG	24	4894.51080	654769.86000	2.300	4812.47512	5020.19514	4850.86213
MN	55	279.81580	328049.63300	1.500	276.03860	284.51020	278.89862
NA	23	6606.12243	2065380.44000	2.400	6679.14418	6717.20467	6422.01843
TI	47	290.64140	15808.29300	1.400	290.84679	294.66713	286.41027
V	51	261.64375	602393.03700	1.400	262.14941	265.12946	257.65238
GE-1	72	335856.82000	0.00000	0.000	335818.71000	332890.97000	338860.78000
SB	121	25.45400	41941.86300	2.300	25.06809	26.11313	25.18080
IN-1	115	122961.20300	0.00000	0.000	120368.40000	124378.42000	124136.79000
AG	107	27.27507	114691.67700	0.400	27.38738	27.18431	27.25352
AS	75	328.98182	91233.16000	0.300	329.75726	329.43754	327.75065
BA	137	287.53168	141623.07700	1.400	289.79740	282.92631	289.87133
CD	111	28.08157	13821.57000	0.300	28.18413	28.07149	27.98909
CO	59	314.94423	1211629.82300	1.000	318.54497	313.52317	312.76454
CU	63	301.76100	894544.33700	0.300	302.75409	300.84380	301.68512
MO	98	28.64448	65401.97300	2.300	29.27119	27.94459	28.71765
NI	60	314.14532	324619.20000	0.700	315.95818	311.71273	314.76505
SN	120	27.64688	45595.48700	1.600	28.15286	27.37569	27.41210
SR	88	33.60720	37121.89000	0.600	33.80389	33.59359	33.42411
ZN	66	320.68425	113634.02700	0.800	323.58973	320.20182	318.26119
BI-1	209	220423.55300	0.00000	0.000	214871.15000	218954.08000	227445.43000
PB	208	29.66720	227457.42700	2.400	29.91130	30.21828	28.87202
TL	203	29.68554	70352.33700	1.200	29.87246	29.89545	29.28870
U	238	45.40303	374152.95300	1.300	45.96000	45.46946	44.77964
TB-1	159	341495.75300	0.00000	0.000	334995.00000	341718.20000	347774.06000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:15:48
Tube Number: 24
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	113127.71000	0.00000	0.000	112319.04000	111986.21000	115077.88000
AL	27	0.46697	50.00000	232.300	1.71062	-0.02376	-0.28595
CA	44	8.01877	200.01000	37.700	6.64439	11.48717	5.92474
CR	52	0.30948	1560.14700	21.100	0.38242	0.28923	0.25679
FE	57	-1.41189	120.00700	0.000	-0.78412	-1.99892	-1.45264
K	39	51.76445	19005.19000	3.300	53.31565	49.96480	52.01289
MG	24	8.41987	1270.10000	5.900	8.95280	7.97677	8.33005
MN	55	0.01832	210.01000	96.000	0.03725	0.00251	0.01519
NA	23	1476.13353	510805.34700	3.200	1518.50916	1483.54393	1426.34751
TI	47	0.07954	13.33300	364.600	0.39584	0.01662	-0.17383
V	51	0.08686	240.01300	33.600	0.09631	0.11015	0.05413
GE-1	72	333487.70000	0.00000	0.000	331432.10000	332624.33000	336406.67000
SB	121	0.12071	263.34700	21.300	0.10117	0.14976	0.11121
IN-1	115	124982.80300	0.00000	0.000	126172.38000	123641.28000	125134.75000
AG	107	0.00669	60.00000	103.600	0.01353	0.00686	-0.00033
AS	75	0.03061	13.33300	36.900	0.01838	0.04061	0.03284
BA	137	-0.01032	6.66700	0.000	0.01606	-0.02351	-0.02351
CD	111	0.00734	6.00000	146.300	0.00321	0.01954	-0.00072
CO	59	0.01049	123.34000	125.200	-0.00080	0.00737	0.02491
CU	63	0.03963	740.05300	171.700	0.06731	-0.03790	0.08947
MO	98	0.09554	233.34300	27.600	0.06747	0.09944	0.11971
NI	60	0.12833	193.34300	19.800	0.12333	0.15587	0.10579
SN	120	-0.56772	273.34700	0.000	-0.57716	-0.62964	-0.49635
SR	88	0.01020	23.33300	181.400	0.01598	-0.01049	0.02510
ZN	66	0.31723	220.01000	18.800	0.31120	0.37978	0.26072
BI-1	209	215246.65300	0.00000	0.000	215758.65000	211466.72000	218514.59000
PB	208	-0.01866	60.00000	0.000	-0.01868	-0.01852	-0.01879
TL	203	0.00096	16.66700	679.600	-0.00623	0.00257	0.00654
U	238	0.01298	110.00700	39.700	0.00796	0.01825	0.01274
TB-1	159	337730.13700	0.00000	0.000	340126.05000	335279.64000	337784.72000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:17:19
Tube Number: 25 Batch: 193031404707A
Sample Number: **1186713** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	114839.69700	0.00000	0.000	113668.01000	115621.35000	115229.73000
AL	27	4.48121	216.68000	29.100	3.15227	4.53200	5.75935
CA	44	49942.43967	323355.05300	1.300	50535.14256	50003.25276	49288.92370
CR	52	0.70234	2687.00700	4.400	0.67032	0.70427	0.73242
FE	57	5929.89693	298362.85300	0.200	5933.44055	5936.61797	5919.63227
K	39	1331.92153	173626.19300	1.000	1327.70938	1346.63372	1321.42150
MG	24	19671.86257	2606180.89700	0.500	19758.66793	19688.53898	19568.38078
MN	55	565.55562	656516.29000	1.400	568.49576	571.84720	556.32389
NA	23	36983.69091	11090876.50300	0.800	36931.37537	37300.78358	36718.91379
TI	47	0.07381	13.33300	382.700	0.01381	-0.17383	0.38145
V	51	0.11558	310.01300	26.800	0.09050	0.10605	0.15018
GE-1	72	332127.01300	0.00000	0.000	328941.17000	332627.26000	334812.61000
SB	121	0.25885	486.70000	16.600	0.28843	0.27865	0.20949
IN-1	115	123423.30000	0.00000	0.000	121648.48000	124109.61000	124511.81000
AG	107	0.00766	63.33300	46.200	0.00709	0.00445	0.01145
AS	75	0.21754	65.33300	25.300	0.16548	0.21188	0.27525
BA	137	45.55646	22537.78000	3.500	44.54303	47.38442	44.74192
CD	111	0.03705	20.66700	53.200	0.02404	0.05971	0.02739
CO	59	2.00939	7842.24300	3.400	1.98147	1.95981	2.08690
CU	63	0.20100	1210.10300	11.900	0.17642	0.20229	0.22430
MO	98	0.50549	1170.10700	5.800	0.50846	0.53299	0.47503
NI	60	1.28170	1386.79300	18.500	1.30404	1.50726	1.03380
SN	120	0.66393	2256.93700	14.800	0.59891	0.61562	0.77726
SR	88	186.97101	207248.13000	1.300	188.14917	188.62718	184.13668
ZN	66	9.14151	3353.84000	7.500	9.07101	8.49339	9.86013
BI-1	209	222822.26000	0.00000	0.000	221641.75000	225575.80000	221249.23000
PB	208	0.98585	7844.52000	1.900	0.97016	1.00635	0.98104
TL	203	0.01196	43.33700	203.100	-0.00203	-0.00210	0.04002
U	238	0.41840	3493.93300	8.100	0.38543	0.45341	0.41635
TB-1	159	344849.22700	0.00000	0.000	345035.70000	341666.01000	347845.97000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:18:52
Tube Number: 26 Batch: 193031404707A
Sample Number: **1186715** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	114357.20000	0.00000	0.000	116418.78000	113568.59000	113084.23000
AL	27	3.28719	166.67700	17.300	3.77764	2.66500	3.41893
CA	44	38089.64429	245564.73000	2.400	37043.46646	38562.84366	38662.62275
CR	52	0.94996	3370.51000	14.100	1.08826	0.94164	0.81998
FE	57	2.22347	303.35000	8.500	2.24752	2.40015	2.02273
K	39	1102.90829	145381.75000	1.700	1084.81602	1121.68540	1102.22346
MG	24	21269.36707	2805682.04300	1.300	21010.32397	21222.66240	21575.11485
MN	55	57.06472	66100.89700	5.200	53.61939	58.69621	58.87857
NA	23	73929.92071	21997073.83700	0.500	73490.00198	74089.26425	74210.49588
TI	47	-0.05169	6.66700	0.000	0.19257	-0.17383	-0.17383
V	51	1.20137	2773.69000	3.200	1.18677	1.17271	1.24462
GE-1	72	333376.30000	0.00000	0.000	339109.88000	330126.95000	330892.07000
SB	121	0.16366	333.35000	3.400	0.15816	0.16356	0.16926
IN-1	115	122118.08000	0.00000	0.000	123677.17000	122041.49000	120635.58000
AG	107	0.01191	80.00300	106.800	0.00449	0.00464	0.02661
AS	75	0.13061	40.66700	26.600	0.16249	0.13583	0.09350
BA	137	60.46797	29583.43300	3.800	59.31958	58.96724	63.11708
CD	111	0.04148	22.66700	52.900	0.06398	0.04033	0.02014
CO	59	0.86967	3400.51000	12.100	0.80081	0.81707	0.99114
CU	63	0.85556	3123.77700	5.700	0.90861	0.84529	0.81280
MO	98	1.17428	2673.67700	7.400	1.17068	1.08934	1.26283
NI	60	0.92199	1003.41000	4.300	0.89681	0.96807	0.90108
SN	120	1.47764	3530.56700	2.400	1.44967	1.51658	1.46668
SR	88	93.00827	101995.65300	2.800	91.30592	91.72253	95.99637
ZN	66	5.09947	1896.87300	4.500	5.06962	5.34066	4.88813
BI-1	209	223626.16000	0.00000	0.000	227535.66000	223239.76000	220103.06000
PB	208	0.03802	503.36300	13.500	0.04032	0.04161	0.03213
TL	203	0.01743	56.66700	96.900	0.00195	0.03544	0.01490
U	238	0.13567	1140.10300	4.500	0.13328	0.13106	0.14266
TB-1	159	345197.05000	0.00000	0.000	352166.75000	340865.07000	342559.33000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:20:22
Tube Number: 27 Batch: 193031404707A
Sample Number: **1186717** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	113346.33300	0.00000	0.000	113719.82000	112962.62000	113356.56000
AL	27	4.39361	210.01300	35.100	4.86569	5.64373	2.67142
CA	44	97378.76249	622152.51700	1.700	95813.33733	99129.63998	97193.31016
CR	52	0.98502	3433.84000	6.800	0.98326	1.05321	0.91858
FE	57	4037.32723	200554.57700	0.900	3997.25777	4053.17616	4061.54777
K	39	14078.91884	1688048.83000	2.300	13739.92697	14115.89965	14380.92991
MG	24	26255.79221	3433248.28300	1.200	26552.95991	26291.31537	25923.10135
MN	55	312.97570	358663.90000	1.700	307.25522	317.52325	314.14864
NA	23	61967.31696	18288817.22700	1.400	62950.63086	61601.89557	61349.42443
TI	47	0.01476	10.00000	1279.200	-0.17383	0.20379	0.01432
V	51	0.24632	600.03700	14.100	0.22774	0.22494	0.28629
GE-1	72	327915.84700	0.00000	0.000	324311.93000	325534.33000	333901.28000
SB	121	0.12556	266.68000	10.900	0.11687	0.14136	0.11846
IN-1	115	122058.43000	0.00000	0.000	122194.27000	121329.65000	122651.37000
AG	107	0.00705	60.00000	68.200	0.01181	0.00713	0.00220
AS	75	1.52371	424.01000	3.100	1.50731	1.57665	1.48717
BA	137	33.81491	16543.06000	3.200	34.17561	34.68744	32.58167
CD	111	0.00757	6.00000	142.900	-0.00471	0.01176	0.01566
CO	59	1.62285	6278.17300	4.000	1.54862	1.65465	1.66528
CU	63	0.04714	743.38300	99.700	0.08299	0.06452	-0.00608
MO	98	0.48183	1103.42700	10.600	0.52379	0.49649	0.42521
NI	60	0.92884	1010.08300	13.000	0.80122	0.94467	1.04062
SN	120	1.55790	3657.28700	3.500	1.54508	1.51090	1.61773
SR	88	582.50040	638537.54700	0.400	580.85378	585.13428	581.51315
ZN	66	5.10362	1896.87000	4.900	5.16317	5.31644	4.83125
BI-1	209	220429.90700	0.00000	0.000	219527.16000	220498.34000	221264.22000
PB	208	0.00116	213.34300	131.300	0.00214	-0.00059	0.00192
TL	203	0.00643	30.00000	113.600	0.00225	0.01486	0.00218
U	238	1.22838	10130.84700	2.100	1.24719	1.23928	1.19869
TB-1	159	346027.13300	0.00000	0.000	344659.06000	348284.49000	345137.85000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:21:54
Tube Number: 28 Batch: 193031404707A
Sample Number: **1186719** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	112531.45000	0.00000	0.000	113527.99000	113074.89000	110991.47000
AL	27	4.18284	200.01000	1.400	4.13888	4.15855	4.25107
CA	44	60584.05752	384303.78000	1.800	59752.93722	60181.75198	61817.48338
CR	52	0.81253	2933.72000	11.200	0.71115	0.83819	0.88824
FE	57	34741.88410	1711876.22700	0.800	34588.02059	34562.29367	35075.33805
K	39	8127.80370	972845.76700	1.300	8027.04012	8116.48668	8239.88430
MG	24	32141.80248	4172115.77000	1.500	31821.70112	31909.67452	32694.03180
MN	55	473.23884	538306.24000	1.000	468.23502	473.58320	477.89829
NA	23	112407.34542	32869047.84700	1.800	112008.17011	110649.82174	114564.04442
TI	47	0.01454	10.00000	1297.300	0.01404	0.20341	-0.17383
V	51	0.03641	126.67300	54.900	0.05515	0.01536	0.03872
GE-1	72	330686.72700	0.00000	0.000	329981.56000	329698.47000	332380.15000
SB	121	0.13840	290.01700	57.800	0.18840	0.04619	0.18061
IN-1	115	122063.02000	0.00000	0.000	120545.48000	122665.23000	122978.35000
AG	107	-0.00094	26.66700	0.000	-0.00006	-0.00257	-0.00020
AS	75	0.63283	178.66700	12.800	0.72625	0.58328	0.58896
BA	137	50.82554	24861.53700	1.400	51.33845	50.02268	51.11550
CD	111	0.00760	6.00000	55.700	0.01187	0.00751	0.00341
CO	59	1.17245	4560.85700	10.300	1.05555	1.29757	1.16423
CU	63	0.07917	836.72700	72.100	0.14203	0.06496	0.03052
MO	98	0.24955	576.70300	21.700	0.28977	0.18808	0.27080
NI	60	0.69184	766.73000	12.300	0.73396	0.59418	0.74738
SN	120	0.45226	1893.53300	18.400	0.46509	0.36323	0.52846
SR	88	247.74185	271572.87700	1.200	251.10112	245.42930	246.69515
ZN	66	4.47568	1676.82700	5.300	4.31566	4.74570	4.36566
BI-1	209	220778.80700	0.00000	0.000	219582.93000	220160.31000	222593.18000
PB	208	0.15052	1360.09000	3.300	0.14755	0.15624	0.14778
TL	203	-0.00341	6.66700	0.000	-0.00199	-0.00200	-0.00623
U	238	0.37429	3097.14300	9.100	0.37322	0.34065	0.40902
TB-1	159	350670.66000	0.00000	0.000	344718.94000	354781.21000	352511.83000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:23:24
Tube Number: 29 Batch: 193031404707A
Sample Number: **1187116** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	115472.06300	0.00000	0.000	117174.71000	114071.40000	115170.08000
AL	27	110.85227	4624.20000	4.000	105.78581	112.83829	113.93272
CA	44	1860.03940	12251.90300	6.200	1814.31837	1990.43417	1775.36567
CR	52	0.69512	2680.35000	6.000	0.65312	0.69577	0.73649
FE	57	7.25542	560.03300	19.900	5.71691	8.57975	7.46960
K	39	1635.74157	211373.48300	1.900	1601.67783	1659.95174	1645.59515
MG	24	1681.03479	224105.17000	0.400	1688.22714	1678.43151	1676.44572
MN	55	44.87818	52550.24300	3.500	44.23715	46.68095	43.71643
NA	23	4407.51469	1399131.33700	2.700	4464.25819	4489.92499	4268.36090
TI	47	-0.05037	6.66700	0.000	-0.17383	-0.17383	0.19655
V	51	0.04373	146.67300	25.800	0.04420	0.05479	0.03220
GE-1	72	336090.09000	0.00000	0.000	336370.78000	341267.03000	330632.46000
SB	121	0.05652	160.01000	34.700	0.04447	0.07914	0.04594
IN-1	115	124226.15700	0.00000	0.000	123480.58000	126935.76000	122262.13000
AG	107	0.00896	70.00300	184.500	-0.00497	0.02723	0.00462
AS	75	0.05011	18.66700	45.200	0.06941	0.02515	0.05577
BA	137	86.28970	42945.29300	1.100	86.89435	85.19779	86.77696
CD	111	0.03395	19.33300	52.000	0.02362	0.05434	0.02390
CO	59	0.93663	3720.62300	12.700	1.07399	0.86282	0.87309
CU	63	0.26781	1416.79300	7.200	0.25815	0.25534	0.28993
MO	98	0.05271	133.34300	9.200	0.04725	0.05431	0.05658
NI	60	1.46706	1590.15000	9.100	1.60196	1.46307	1.33616
SN	120	-0.48816	400.02300	0.000	-0.53034	-0.49973	-0.43441
SR	88	11.67010	13029.33000	1.500	11.81676	11.46847	11.72508
ZN	66	6.14429	2303.59000	5.700	6.48459	6.16322	5.78506
BI-1	209	230346.52700	0.00000	0.000	231417.95000	230816.79000	228804.84000
PB	208	0.03162	466.70000	50.700	0.03920	0.01320	0.04247
TL	203	0.02602	80.00300	80.000	0.05004	0.01392	0.01410
U	238	0.01517	136.67300	42.700	0.01546	0.00855	0.02149
TB-1	159	346790.91700	0.00000	0.000	347022.18000	345782.65000	347567.92000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:24:57
Tube Number: 30 Batch: 193031404707A
Sample Number: **1187117** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	114047.59000	0.00000	0.000	114030.01000	113890.32000	114222.44000
AL	27	14.62171	630.03700	13.600	12.91480	14.15514	16.79520
CA	44	24895.12159	160157.91300	0.800	24979.46576	24664.94788	25040.95115
CR	52	0.66842	2573.66700	4.400	0.66738	0.63975	0.69812
FE	57	4.37468	410.02700	48.200	3.57665	2.78361	6.76378
K	39	2231.12617	280080.81700	0.800	2250.97834	2215.66112	2226.73906
MG	24	11138.69974	1465625.70700	2.100	11347.70475	10886.66842	11181.72606
MN	55	22.32403	25918.52300	5.400	21.14788	23.54976	22.27446
NA	23	6922.99506	2125662.83000	1.000	6878.11344	6891.51805	6999.35369
TI	47	0.01336	10.00000	1401.300	0.01321	0.20071	-0.17383
V	51	0.05923	180.01000	41.700	0.03715	0.08586	0.05469
GE-1	72	336103.40300	0.00000	0.000	333200.50000	337867.18000	337242.53000
SB	121	0.08934	213.34700	58.400	0.14943	0.06222	0.05636
IN-1	115	123646.35300	0.00000	0.000	122717.15000	124167.20000	124054.71000
AG	107	0.00844	66.66700	43.700	0.01173	0.00915	0.00445
AS	75	0.08596	28.66700	56.300	0.06995	0.14036	0.04757
BA	137	23.99394	11895.18300	1.200	24.29692	23.71091	23.97399
CD	111	0.03979	22.00000	44.600	0.05230	0.04761	0.01946
CO	59	0.09610	453.36000	4.800	0.09093	0.09992	0.09745
CU	63	1.05337	3750.60000	5.400	1.07972	0.98778	1.09261
MO	98	0.04132	106.67000	25.900	0.03001	0.05129	0.04266
NI	60	0.62367	706.71300	24.000	0.45811	0.74926	0.66364
SN	120	-0.53889	316.68300	0.000	-0.54154	-0.50682	-0.56830
SR	88	60.21948	66886.99300	2.200	59.29125	61.76870	59.59849
ZN	66	7.09988	2633.67300	12.100	6.24371	7.09064	7.96529
BI-1	209	229619.30000	0.00000	0.000	228671.05000	224123.28000	236063.57000
PB	208	0.13105	1260.09000	11.000	0.14440	0.11579	0.13295
TL	203	0.00329	23.33300	396.800	0.01818	-0.00208	-0.00623
U	238	0.01595	143.34300	16.400	0.01332	0.01599	0.01854
TB-1	159	349101.38700	0.00000	0.000	348450.97000	348430.58000	350422.61000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:26:28
Tube Number: 31 Batch: 193031404707A
Sample Number: **1187122** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	113601.65300	0.00000	0.000	114505.05000	114241.75000	112058.16000
AL	27	1181.97075	48205.30000	3.700	1146.34720	1168.31573	1231.24930
CA	44	81971.05686	524885.33000	1.200	81165.14784	81637.25752	83110.76524
CR	52	1.51052	4900.95700	5.000	1.51498	1.58360	1.43298
FE	57	7.48749	563.37000	14.500	8.73220	6.76199	6.96827
K	39	2636.44675	327298.15700	1.300	2597.87777	2648.56483	2662.89765
MG	24	28203.79445	3695564.42700	2.300	27789.78867	27877.62665	28943.96803
MN	55	2303.00238	2643715.79300	1.700	2297.61214	2266.53046	2344.86454
NA	23	19167.31140	5723262.20700	1.000	18989.04850	19154.97627	19357.90943
TI	47	0.20034	20.00000	92.000	0.38496	0.19956	0.01650
V	51	0.08017	226.67700	15.100	0.09408	0.07231	0.07411
GE-1	72	332438.74300	0.00000	0.000	331649.76000	335487.92000	330178.55000
SB	121	0.01679	93.34000	40.400	0.02106	0.02036	0.00896
IN-1	115	122187.78000	0.00000	0.000	120225.63000	122887.53000	123450.18000
AG	107	0.00775	63.33700	137.900	-0.00247	0.01885	0.00688
AS	75	0.34139	98.66700	16.100	0.34467	0.39457	0.28494
BA	137	11.96403	5868.08000	1.900	11.75265	12.20883	11.93062
CD	111	0.15904	80.00000	11.700	0.17817	0.15794	0.14101
CO	59	22.24801	85114.28300	2.900	22.98330	21.99555	21.76517
CU	63	0.73202	2760.37300	15.800	0.72305	0.85158	0.62143
MO	98	0.08763	210.01000	29.100	0.11137	0.06065	0.09088
NI	60	12.17617	12558.79700	0.500	12.18414	12.22908	12.11528
SN	120	-0.56205	276.68300	0.000	-0.62028	-0.53558	-0.53029
SR	88	89.62369	98348.38300	1.600	91.13171	88.28963	89.44971
ZN	66	11.51533	4154.08700	2.600	11.81138	11.52078	11.21382
BI-1	209	224078.54700	0.00000	0.000	225219.04000	222618.20000	224398.40000
PB	208	-0.00313	183.33300	0.000	-0.00625	0.00303	-0.00617
TL	203	0.06982	183.34700	20.300	0.08463	0.05645	0.06838
U	238	0.11426	963.41700	10.900	0.10378	0.11101	0.12800
TB-1	159	348827.19700	0.00000	0.000	343055.78000	350744.76000	352681.05000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:28:01
Tube Number: 32 Batch: 193031404707A
Sample Number: **1187123** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	114437.17700	0.00000	0.000	113546.78000	113688.22000	116076.53000
AL	27	1171.46392	48135.91700	1.700	1187.78966	1176.98919	1149.61292
CA	44	82157.90056	529922.58300	1.900	82685.41130	83366.64459	80421.64579
CR	52	1.59841	5181.05700	7.400	1.71752	1.48084	1.59688
FE	57	8.26490	606.71300	44.000	4.21182	11.23377	9.34909
K	39	2653.51657	331752.24000	1.600	2639.95936	2701.05402	2619.53632
MG	24	28205.80905	3723398.38300	0.900	28387.23420	28319.18570	27911.00725
MN	55	2277.67587	2634102.20300	1.500	2251.62808	2315.72475	2265.67479
NA	23	19373.06672	5826264.08000	1.200	19576.88181	19419.79313	19122.52521
TI	47	-0.11122	3.33300	0.000	0.01401	-0.17383	-0.17383
V	51	0.07517	216.67700	23.100	0.06844	0.09491	0.06217
GE-1	72	335861.90000	0.00000	0.000	333379.14000	335642.46000	338564.10000
SB	121	0.04247	136.67300	70.800	0.03911	0.01424	0.07407
IN-1	115	124902.77000	0.00000	0.000	126535.38000	124620.17000	123552.76000
AG	107	0.00512	53.33700	92.900	0.00884	0.00674	-0.00024
AS	75	0.30733	91.33300	8.400	0.33365	0.28211	0.30622
BA	137	12.38216	6204.92300	4.000	11.83658	12.49982	12.81009
CD	111	0.14303	74.00000	35.600	0.19670	0.09553	0.13685
CO	59	22.04770	86232.75000	2.000	21.54121	22.23089	22.37101
CU	63	0.69460	2710.34000	5.700	0.73905	0.68030	0.66443
MO	98	0.05936	150.00700	56.100	0.09705	0.03380	0.04722
NI	60	12.12498	12782.31000	5.200	12.11028	11.50399	12.76067
SN	120	-0.60159	216.68000	0.000	-0.65624	-0.63047	-0.51807
SR	88	89.66803	100593.15000	0.500	89.18123	90.13885	89.68401
ZN	66	11.20060	4134.04000	2.800	11.29000	10.85466	11.45713
BI-1	209	227592.12300	0.00000	0.000	226108.82000	226560.56000	230106.99000
PB	208	0.01885	360.01700	53.600	0.01403	0.03045	0.01207
TL	203	0.05508	150.01000	14.800	0.04725	0.06357	0.05441
U	238	0.11776	1010.08300	28.700	0.10455	0.09253	0.15619
TB-1	159	353630.81300	0.00000	0.000	350494.06000	350806.71000	359591.67000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:29:31
Tube Number: 33 Batch: 193031404707A
Sample Number: **1187124** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	112081.80000	0.00000	0.000	110708.47000	110618.26000	114918.67000
AL	27	9.69710	420.03000	18.100	11.06014	10.31435	7.71681
CA	44	132202.22511	835064.72700	1.100	132493.32078	133533.64358	130579.71097
CR	52	0.38872	1763.51000	10.500	0.43240	0.35150	0.38225
FE	57	3.42266	356.68700	29.000	2.35492	3.59876	4.31430
K	39	3899.84123	471366.11300	3.400	3968.95188	3983.44558	3747.12622
MG	24	37215.46703	4810738.88700	1.900	37844.46322	37326.09480	36475.84305
MN	55	2511.23846	2844110.48000	1.100	2512.18465	2537.93334	2483.59740
NA	23	21535.99236	6333117.19700	2.500	21861.06449	21832.61701	20914.29558
TI	47	-0.04540	6.66700	0.000	0.21147	-0.17383	-0.17383
V	51	0.24700	593.37300	20.200	0.29363	0.25290	0.19447
GE-1	72	337959.11000	0.00000	0.000	338640.74000	336046.52000	339190.07000
SB	121	0.03004	116.67300	104.000	-0.00433	0.05670	0.03775
IN-1	115	125031.32000	0.00000	0.000	123316.64000	124184.05000	127593.27000
AG	107	0.00836	66.67000	101.100	0.01638	0.00915	-0.00046
AS	75	0.08008	27.33300	35.300	0.09829	0.04750	0.09444
BA	137	26.15409	13112.84000	1.800	25.61716	26.40343	26.44166
CD	111	0.13910	72.00000	9.400	0.14522	0.12405	0.14803
CO	59	4.24952	16706.12700	1.400	4.21353	4.31795	4.21708
CU	63	0.13098	1013.41000	33.200	0.12075	0.17864	0.09354
MO	98	0.12714	306.68700	9.600	0.13466	0.13368	0.11309
NI	60	3.29321	3517.19000	3.600	3.40918	3.29872	3.17175
SN	120	-0.44499	473.36300	0.000	-0.38733	-0.50069	-0.44696
SR	88	130.98702	147078.80300	1.000	131.98892	131.45416	129.51799
ZN	66	3.51965	1373.46300	9.200	3.73324	3.14574	3.67996
BI-1	209	225967.21000	0.00000	0.000	224904.49000	226698.45000	226298.69000
PB	208	-0.01227	113.33300	0.000	-0.01901	-0.00638	-0.01143
TL	203	0.03769	106.67300	13.100	0.04340	0.03480	0.03487
U	238	0.64522	5457.94700	4.200	0.66292	0.65885	0.61390
TB-1	159	352249.90300	0.00000	0.000	349923.00000	349606.83000	357219.88000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:31:04
Tube Number: 34 Batch: 193031404707A
Sample Number: **1187125** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	114266.37300	0.00000	0.000	113144.92000	113992.77000	115661.43000
AL	27	5.08246	240.01000	4.600	4.89432	5.34108	5.01199
CA	44	144756.12672	932251.94000	0.900	145813.77131	145190.04012	143264.56872
CR	52	0.46448	2010.23000	8.900	0.41758	0.48085	0.49502
FE	57	7.22317	553.36700	8.500	7.26822	6.58458	7.81670
K	39	3891.71684	479740.64300	2.000	3956.11405	3915.04221	3803.99425
MG	24	48080.27766	6336390.73700	3.100	49390.22331	48416.22813	46434.38153
MN	55	972.29547	1122887.32700	0.300	974.73261	973.35828	968.79554
NA	23	27013.56373	8080010.71300	2.900	27472.39116	27450.14365	26118.15639
TI	47	0.32428	26.66700	88.600	0.58018	0.01327	0.37938
V	51	0.28982	703.37700	6.100	0.29131	0.30667	0.27147
GE-1	72	333226.14000	0.00000	0.000	333328.90000	331217.69000	335131.83000
SB	121	0.05534	156.67300	66.700	0.06362	0.01497	0.08742
IN-1	115	124617.04300	0.00000	0.000	125729.39000	125911.84000	122209.90000
AG	107	0.00682	60.00000	95.400	0.00197	0.00428	0.01420
AS	75	0.10432	34.00000	31.500	0.13135	0.06775	0.11385
BA	137	18.20165	9089.79000	7.900	17.57440	17.19171	19.83884
CD	111	0.08765	46.00000	15.400	0.08670	0.07466	0.10160
CO	59	1.49293	5904.72000	6.900	1.41040	1.60892	1.45947
CU	63	0.13751	1030.07700	29.100	0.09138	0.16347	0.15768
MO	98	0.17489	416.69300	4.700	0.17481	0.18310	0.16677
NI	60	1.75322	1893.54300	5.900	1.79007	1.63612	1.83348
SN	120	-0.51397	360.02300	0.000	-0.47921	-0.52821	-0.53447
SR	88	123.27970	137954.15300	2.100	123.07637	120.85380	125.90893
ZN	66	3.58471	1390.12300	13.800	3.13105	3.51226	4.11082
BI-1	209	224753.89000	0.00000	0.000	224037.11000	226474.66000	223749.90000
PB	208	-0.00960	133.33700	0.000	-0.01513	-0.01398	0.00031
TL	203	0.06138	163.34300	34.800	0.08511	0.05538	0.04366
U	238	1.02215	8596.35700	1.600	1.01662	1.00920	1.04064
TB-1	159	349260.25300	0.00000	0.000	348488.04000	350094.17000	349198.55000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:32:34
Tube Number: 35
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	111768.83300	0.00000	0.000	111724.96000	112994.18000	110587.36000
AL	27	5041.59739	202249.51300	0.500	5052.59641	5013.27608	5058.91969
CA	44	4827.42782	30556.72700	1.500	4772.98541	4907.91417	4801.38386
CR	52	261.33902	713915.82300	1.400	264.27187	257.13508	262.61012
FE	57	4477.21140	219301.79000	1.400	4542.62276	4470.18780	4418.82365
K	39	5131.10947	614717.10000	1.400	5204.70073	5065.09974	5123.52793
MG	24	4864.11909	627336.07000	1.900	4970.43141	4832.30830	4789.61754
MN	55	283.74765	320668.41300	0.300	284.70979	282.76661	283.76654
NA	23	5365.14706	1631654.14000	2.000	5477.91338	5269.17461	5348.35318
TI	47	301.62373	15818.42700	2.800	305.62062	307.47427	291.77628
V	51	264.32812	586637.71000	1.600	267.05363	259.32329	266.60743
GE-1	72	329193.52300	0.00000	0.000	329329.80000	329447.81000	328802.96000
SB	121	26.71345	43145.42700	0.700	26.79369	26.83374	26.51290
IN-1	115	124637.92700	0.00000	0.000	126045.05000	124845.90000	123022.83000
AG	107	28.09807	119773.20000	0.500	28.25080	28.09992	27.94349
AS	75	318.80986	89617.17000	0.800	319.04472	316.27981	321.10504
BA	137	284.92747	142254.79000	1.400	280.46527	287.25136	287.06579
CD	111	28.58009	14257.31300	1.800	28.28756	28.26685	29.18587
CO	59	308.94468	1204862.64000	0.700	306.67328	310.64228	309.51848
CU	63	297.01552	892536.75700	0.700	296.01974	299.49732	295.52950
MO	98	28.01178	64850.02700	1.000	28.33890	27.88775	27.80869
NI	60	307.03932	321621.13000	0.600	305.40828	309.05569	306.65401
SN	120	27.68380	46281.20700	1.300	27.38182	27.57194	28.09763
SR	88	32.69324	36607.38700	2.100	32.21943	33.49384	32.36645
ZN	66	313.11805	112476.12300	0.400	312.63770	312.30758	314.40887
BI-1	209	233510.07700	0.00000	0.000	232251.27000	233151.50000	235127.46000
PB	208	29.48062	239546.93700	0.500	29.39913	29.38550	29.65724
TL	203	29.39189	73813.03300	1.800	28.81535	29.46600	29.89433
U	238	46.11450	402702.38000	2.100	45.00239	46.77732	46.56377
TB-1	159	353751.14000	0.00000	0.000	354287.57000	354116.91000	352848.94000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:34:07
Tube Number: 36
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS #1	#2	#3
SC-1	45	111164.53700	0.00000	0.000	113173.98000	110023.02000	110296.61000
AL	27	0.06630	33.33300	231.000	-0.03159	0.24283	-0.01232
CA	44	0.60906	150.01000	1179.900	-2.98972	8.88363	-4.06674
CR	52	0.29517	1496.81000	23.900	0.35950	0.30640	0.21960
FE	57	-1.22205	126.67000	0.000	-2.42179	-1.75858	0.51422
K	39	15.79613	14477.02300	14.300	15.10591	13.95874	18.32375
MG	24	4.53631	750.05300	0.900	4.50881	4.51796	4.58217
MN	55	-0.02567	156.67700	0.000	-0.05172	0.00550	-0.03081
NA	23	428.67222	200177.33300	2.300	432.83076	435.99034	417.19556
TI	47	-0.04492	6.66700	0.000	-0.17383	-0.17383	0.21291
V	51	0.01903	86.67000	16.800	0.01533	0.02093	0.02083
GE-1	72	328369.90300	0.00000	0.000	329656.87000	326969.60000	328483.24000
SB	121	0.09012	210.01300	25.500	0.07097	0.11559	0.08380
IN-1	115	123211.00000	0.00000	0.000	122956.31000	124347.92000	122328.77000
AG	107	0.00615	56.66700	119.700	0.00456	-0.00028	0.01418
AS	75	0.05511	20.00000	33.300	0.04814	0.07594	0.04123
BA	137	-0.00994	6.66700	0.000	-0.00321	-0.02351	-0.00310
CD	111	0.00609	5.33300	153.600	-0.00471	0.01136	0.01163
CO	59	0.01189	126.67300	146.900	0.02053	-0.00821	0.02335
CU	63	-0.02954	523.36300	0.000	-0.02008	-0.01548	-0.05306
MO	98	0.07801	190.01300	34.100	0.05185	0.07720	0.10497
NI	60	0.06644	126.67000	82.900	0.12801	0.04938	0.02193
SN	120	-0.51711	350.02000	0.000	-0.52324	-0.58100	-0.44708
SR	88	0.01667	30.00000	55.500	0.01667	0.00741	0.02591
ZN	66	0.18468	170.01000	39.600	0.10108	0.23630	0.21667
BI-1	209	228710.74700	0.00000	0.000	229265.68000	226670.41000	230196.15000
PB	208	-0.01285	110.00000	0.000	-0.00786	-0.01399	-0.01669
TL	203	0.00461	26.66700	333.200	0.02217	-0.00212	-0.00623
U	238	0.01563	140.00300	51.700	0.00978	0.01226	0.02484
TB-1	159	354133.65000	0.00000	0.000	355901.71000	354187.57000	352311.67000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:35:38
Tube Number: 37 Batch: 193031404707A
Sample Number: **1187126** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: RAAP RADFORD, DA

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	111017.02300	0.00000	0.000	110809.29000	110336.21000	111905.57000
AL	27	87.07243	3500.62300	7.100	80.96691	86.88014	93.37022
CA	44	59216.08492	370611.15300	1.000	59209.78197	59787.29881	58651.17398
CR	52	1.16226	3843.97700	1.600	1.14150	1.17720	1.16807
FE	57	47.51072	2496.95300	12.300	42.54480	46.05700	53.93035
K	39	2069.83456	253830.39300	0.900	2080.41402	2080.93231	2048.15736
MG	24	26748.13558	3425466.09300	1.600	27031.56259	26956.13863	26256.70553
MN	55	3.26565	3850.63300	8.000	3.18404	3.05484	3.55809
NA	23	8057.00976	2395358.76700	2.000	8021.43565	8233.90450	7915.68914
TI	47	1.10526	66.66700	71.900	0.21112	1.37258	1.73208
V	51	0.29719	700.05000	13.600	0.25244	0.30838	0.33077
GE-1	72	333007.02700	0.00000	0.000	333823.55000	334689.88000	330507.65000
SB	121	0.04942	146.67700	18.900	0.03900	0.05709	0.05215
IN-1	115	122285.39000	0.00000	0.000	121887.22000	125104.21000	119864.74000
AG	107	0.02447	133.34300	28.700	0.01906	0.03241	0.02195
AS	75	0.09461	30.66700	14.200	0.09237	0.08247	0.10901
BA	137	53.20557	26070.14300	2.500	51.88064	53.16454	54.57154
CD	111	0.01155	8.00000	57.800	0.00759	0.01925	0.00779
CO	59	0.12192	546.70000	19.800	0.14938	0.10412	0.11226
CU	63	0.12309	970.07300	41.700	0.07009	0.17249	0.12669
MO	98	0.04792	120.00300	26.600	0.04351	0.03795	0.06230
NI	60	0.37230	440.02700	15.600	0.30538	0.40074	0.41077
SN	120	-0.52644	333.35000	0.000	-0.57162	-0.49629	-0.51140
SR	88	76.65439	84180.24000	1.700	77.78794	75.21483	76.96040
ZN	66	3.76271	1430.14300	14.700	4.23651	3.89780	3.15381
BI-1	209	237197.65000	0.00000	0.000	232310.11000	241000.50000	238282.34000
PB	208	0.09546	1006.73300	6.300	0.10210	0.09387	0.09042
TL	203	0.00287	23.33300	153.700	-0.00222	0.00535	0.00548
U	238	0.13697	1220.11000	12.500	0.15355	0.13800	0.11937
TB-1	159	357088.70700	0.00000	0.000	354959.57000	355297.73000	361008.82000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:37:11
Tube Number: 38 Batch: 193031404707A
Sample Number: **1185958** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	108368.19700	0.00000	0.000	108996.18000	108441.94000	107666.47000
AL	27	259.48584	10123.60700	5.200	274.41118	255.50228	248.54406
CA	44	91479.90885	558814.60000	0.700	90764.17245	91984.46433	91691.08976
CR	52	1.04057	3430.51700	3.900	1.08582	1.00580	1.03009
FE	57	274.50208	13205.92700	2.000	268.05653	277.87999	277.56972
K	39	5314.42040	616887.10000	0.300	5293.56035	5327.75735	5321.94351
MG	24	33527.14365	4191473.58300	0.300	33631.81611	33509.56145	33440.05339
MN	55	45.81296	50350.06300	0.700	45.65602	45.58833	46.19451
NA	23	201578.14525	56711275.82300	0.400	202390.58951	201308.02600	201035.82023
TI	47	4.34826	230.01700	31.100	5.89277	3.75993	3.39207
V	51	3.39451	7348.72300	2.100	3.47835	3.35214	3.35305
GE-1	72	319400.43700	0.00000	0.000	323017.92000	315781.34000	319402.05000
SB	121	2.90633	4610.87700	5.700	2.81010	2.81079	3.09810
IN-1	115	120367.12700	0.00000	0.000	118623.36000	121316.49000	121161.53000
AG	107	0.04293	206.67700	19.200	0.04937	0.03365	0.04577
AS	75	196.17236	53250.00300	1.900	200.04943	192.49181	195.97582
BA	137	117.41753	56623.77700	1.400	117.81631	115.65521	118.78105
CD	111	1.15959	560.68000	4.700	1.22119	1.11981	1.13775
CO	59	0.43413	1713.50300	7.300	0.46395	0.40049	0.43796
CU	63	7.22079	21531.97300	3.300	7.46608	7.21355	6.98275
MO	98	39.82074	89005.94000	1.700	40.61084	39.41833	39.43305
NI	60	3.57852	3673.91300	9.300	3.86742	3.65276	3.21537
SN	120	-0.49578	376.68700	0.000	-0.55423	-0.51407	-0.41905
SR	88	859.84083	929421.70300	1.100	870.26318	852.42134	856.83798
ZN	66	13.93619	4930.97300	3.900	14.37630	13.33475	14.09752
BI-1	209	225395.61300	0.00000	0.000	220630.19000	225646.95000	229909.70000
PB	208	32.38857	253961.41000	1.300	32.74488	32.48574	31.93510
TL	203	0.01046	40.00000	141.100	0.02750	0.00202	0.00186
U	238	3.01186	25476.58700	29.300	2.52235	2.48168	4.03156
TB-1	159	348549.73300	0.00000	0.000	345121.28000	353023.90000	347504.02000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:38:41
Tube Number: 39 Batch: 193031404707A
Sample Number: **1185959** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U4

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	110419.43700	0.00000	0.000	109862.47000	112489.83000	108906.01000
AL	27	2.83771	143.34000	48.000	3.79541	3.44106	1.27665
CA	44	81.58385	653.38000	14.400	92.92510	82.32163	69.50481
CR	52	0.54387	2153.56000	16.700	0.62037	0.44335	0.56789
FE	57	9.19691	630.03700	5.400	8.63937	9.36338	9.58798
K	39	72.01320	20894.28700	5.800	76.72529	68.67204	70.64227
MG	24	22.85441	3077.09000	8.500	25.04501	21.34644	22.17177
MN	55	0.17287	376.68700	88.700	0.34806	0.06333	0.10721
NA	23	767.48644	295765.50300	3.300	792.48110	742.28313	767.69509
TI	47	-0.10912	3.33300	0.000	0.02031	-0.17383	-0.17383
V	51	0.07108	200.01000	18.900	0.06683	0.06032	0.08609
GE-1	72	327253.83300	0.00000	0.000	328285.85000	326894.25000	326581.40000
SB	121	0.05521	153.34000	85.200	0.02790	0.02820	0.10952
IN-1	115	123395.87700	0.00000	0.000	124638.27000	120868.30000	124681.06000
AG	107	0.00058	33.33300	262.400	-0.00030	0.00234	-0.00030
AS	75	0.03348	14.00000	35.700	0.02592	0.02725	0.04725
BA	137	0.12524	73.33700	35.200	0.13674	0.16237	0.07660
CD	111	0.00602	5.33300	191.700	0.01934	-0.00058	-0.00070
CO	59	0.01259	130.00700	33.300	0.00971	0.01067	0.01739
CU	63	0.05564	776.72000	21.000	0.05068	0.06899	0.04727
MO	98	0.12874	306.68300	20.100	0.10293	0.12858	0.15472
NI	60	0.14072	203.34300	33.400	0.09689	0.19027	0.13501
SN	120	-0.55881	283.35000	0.000	-0.61206	-0.52592	-0.53845
SR	88	0.36916	420.02700	17.600	0.37367	0.43173	0.30209
ZN	66	4.09575	1560.14300	3.200	4.02490	4.01596	4.24637
BI-1	209	233647.18300	0.00000	0.000	231348.81000	233764.74000	235828.00000
PB	208	0.01149	310.01700	3.200	0.01186	0.01146	0.01113
TL	203	0.00443	26.66700	189.900	0.01387	-0.00225	0.00166
U	238	0.00117	16.66700	200.900	-0.00072	0.00042	0.00382
TB-1	159	351280.10000	0.00000	0.000	351069.29000	349536.13000	353234.88000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:40:15
Tube Number: 40 Batch: 193031404707A
Sample Number: **1186046** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846-U5

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	108090.68700	0.00000	0.000	108836.45000	106358.80000	109076.81000
AL	27	7.65585	326.68700	11.500	8.19110	8.13786	6.63860
CA	44	274575.64277	1672440.85700	1.900	270503.63967	280509.16730	272714.12133
CR	52	0.61734	2303.59700	8.600	0.55713	0.65694	0.63795
FE	57	129870.58648	6145370.74000	2.200	128694.26092	133159.03768	127758.46083
K	39	6578.65724	758660.06700	1.600	6504.39314	6697.35472	6534.22384
MG	24	33760.49350	4209264.10300	1.400	33396.38230	34294.40850	33590.68968
MN	55	4147.93886	4530271.28300	2.100	4058.22685	4235.21231	4150.37741
NA	23	166335.30723	46689185.97300	0.300	165954.56016	166184.06577	166867.29577
TI	47	0.35164	26.66700	115.700	0.80600	0.22723	0.02170
V	51	1.51630	3297.15000	3.100	1.51152	1.56616	1.47121
GE-1	72	315237.56700	0.00000	0.000	311825.97000	319546.44000	314340.29000
SB	121	0.09141	203.34700	30.300	0.11663	0.06172	0.09588
IN-1	115	117453.96300	0.00000	0.000	116295.73000	119823.28000	116242.88000
AG	107	-0.00236	20.00000	0.000	-0.00231	-0.00246	-0.00231
AS	75	27.30062	7236.37000	1.200	26.93776	27.38818	27.57593
BA	137	59.96611	28210.52700	5.700	59.10739	57.03188	63.75907
CD	111	0.00519	4.66700	93.600	-0.00042	0.00780	0.00818
CO	59	0.36724	1426.79300	15.400	0.42693	0.36039	0.31439
CU	63	0.23606	1250.11000	7.000	0.25469	0.23074	0.22276
MO	98	0.11860	270.02000	15.900	0.09679	0.12974	0.12926
NI	60	1.15051	1190.10000	12.700	1.03914	1.09631	1.31610
SN	120	-0.43495	460.03000	0.000	-0.43215	-0.45384	-0.41885
SR	88	596.82007	629381.71000	2.500	602.23283	579.86774	608.35962
ZN	66	6.47637	2286.93300	11.500	6.84377	5.61891	6.96643
BI-1	209	224442.19000	0.00000	0.000	219501.44000	222989.72000	230835.41000
PB	208	-0.00398	176.67000	0.000	-0.00703	0.00557	-0.01048
TL	203	0.00322	23.33300	401.100	-0.00623	-0.00206	0.01795
U	238	0.05166	440.02700	8.200	0.04680	0.05445	0.05373
TB-1	159	349779.04700	0.00000	0.000	349377.42000	347948.20000	352011.52000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:41:44
Tube Number: 41 Batch: 193031404707A
Sample Number: **1186599** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	109393.52300	0.00000	0.000	109591.67000	107919.73000	110669.17000
AL	27	15304.73328	600882.23000	0.200	15266.60897	15304.65144	15342.93944
CA	44	72737.83291	448546.88300	2.000	71101.40258	73800.40230	73311.69384
CR	52	3.05602	8846.18000	1.400	3.00750	3.09227	3.06829
FE	57	187.87275	9186.37300	5.300	187.12261	178.22263	198.27302
K	39	17101.05764	1976124.70700	1.000	17147.46451	17247.32644	16908.38198
MG	24	112252.25112	14164683.95700	1.300	110911.27089	113739.81491	112105.66756
MN	55	9173.82245	10141137.55700	0.900	9091.49735	9253.98873	9175.98127
NA	23	9588.68537	2794780.27300	0.800	9546.51785	9675.41719	9544.12108
TI	47	2.03817	113.34000	53.000	0.79924	2.79081	2.52444
V	51	0.23579	556.70300	16.900	0.27384	0.19440	0.23913
GE-1	72	435490.81000	0.00000	0.000	437164.56000	434013.31000	435294.56000
SB	121	0.05170	196.67700	11.000	0.04823	0.05828	0.04861
IN-1	115	120417.61700	0.00000	0.000	120299.21000	120567.46000	120386.18000
AG	107	0.02424	130.01000	26.600	0.03157	0.02178	0.01939
AS	75	136.05100	36952.84000	0.600	135.28411	136.85544	136.01346
BA	137	23.45439	11324.85000	1.300	23.74736	23.48721	23.12859
CD	111	25.80810	12440.41300	3.900	25.18623	25.27949	26.95858
CO	59	108.13577	407508.00000	0.300	107.92796	108.51488	107.96448
CU	63	2.44325	7685.51300	3.800	2.40335	2.54908	2.37732
MO	98	0.32141	730.05300	15.600	0.31276	0.27632	0.37515
NI	60	199.39102	201811.54000	1.100	196.97185	200.60897	200.59225
SN	120	0.13798	1373.47000	30.900	0.11763	0.10938	0.18694
SR	88	283.06254	306133.46300	2.200	276.90507	282.85761	289.42494
ZN	66	1030.15840	357292.64700	0.800	1021.64237	1031.70298	1037.12985
BI-1	209	229517.11300	0.00000	0.000	228611.15000	225457.93000	234482.26000
PB	208	1.60367	13002.85000	3.600	1.60811	1.65904	1.54385
TL	203	0.74635	1856.87700	1.300	0.74245	0.75705	0.73957
U	238	0.46922	4034.13300	4.300	0.48951	0.44890	0.46925
TB-1	159	3237058	0	0.000	3277074	3172006	3262096

Run Name: 1931009E05 Date/Time: 11/06/2019 17:43:16
Tube Number: 42 Batch: 193031404707A
Sample Number: **1186600** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	105366.13300	0.00000	0.000	106339.31000	105725.46000	104033.63000
AL	27	45.11326	1733.50000	12.200	41.94570	41.92990	51.46418
CA	44	25255.51135	150121.65300	2.400	25148.19253	25912.63530	24705.70622
CR	52	0.95599	3117.11300	12.700	0.83814	1.08084	0.94900
FE	57	5.35731	423.35700	37.500	3.68309	4.80684	7.58199
K	39	8435.68254	944941.54700	1.800	8260.86811	8496.04162	8550.13789
MG	24	12432.63921	1511295.55300	0.800	12483.79493	12324.66718	12489.45553
MN	55	4566.46116	4861978.88300	1.700	4478.18783	4609.41069	4611.78497
NA	23	56548.47696	15520429.77000	0.600	56262.66799	56910.58829	56472.17461
TI	47	0.09843	13.33300	318.500	-0.17383	0.02790	0.44121
V	51	0.03375	113.34000	62.200	0.05551	0.03213	0.01362
GE-1	72	317380.38000	0.00000	0.000	316969.51000	322180.17000	312991.46000
SB	121	0.05212	143.34000	84.400	0.06255	0.00385	0.08995
IN-1	115	118708.38700	0.00000	0.000	119841.54000	118812.02000	117471.60000
AG	107	0.07228	323.35000	20.100	0.08785	0.05913	0.06985
AS	75	0.19716	57.33300	19.800	0.24223	0.17730	0.17196
BA	137	41.33654	19663.63300	2.900	40.01993	41.56632	42.42337
CD	111	9.74483	4631.40300	3.300	9.69151	9.45581	10.08716
CO	59	5.07364	18925.24000	4.000	5.03848	5.28977	4.89268
CU	63	0.59486	2290.27000	13.600	0.57014	0.68518	0.52925
MO	98	0.07192	170.01000	34.600	0.07580	0.09463	0.04534
NI	60	59.75513	59665.93300	1.600	60.13838	60.45821	58.66880
SN	120	-0.19582	836.72700	0.000	-0.16651	-0.15514	-0.26580
SR	88	60.44771	64450.89000	1.000	59.85735	60.45951	61.02628
ZN	66	190.77212	65297.86000	2.700	185.08375	192.44218	194.79042
BI-1	209	231842.23300	0.00000	0.000	231833.45000	231156.36000	232536.89000
PB	208	0.15320	1450.10000	12.000	0.16813	0.13261	0.15888
TL	203	0.34421	873.40000	14.700	0.39499	0.34386	0.29377
U	238	0.00466	46.66700	62.000	0.00505	0.00159	0.00733
TB-1	159	352752.88700	0.00000	0.000	357540.85000	356762.42000	343955.39000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:44:47
Tube Number: 43 Batch: 193031404707A
Sample Number: **1186602** Class: **********

Initial Vol: 50.00 Final Vol: 50.00 DF: 1.00 Protocol: SW846

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	107029.30700	0.00000	0.000	109004.63000	108403.00000	103680.29000
AL	27	1.48886	86.66700	12.900	1.27480	1.54320	1.64858
CA	44	92453.36280	557429.82300	3.600	90472.17084	90599.75771	96288.15985
CR	52	6.45647	17540.17300	1.400	6.48816	6.35531	6.52595
FE	57	167.36956	8019.05000	7.000	154.18959	176.35821	171.56090
K	39	4097.43324	472206.94700	4.000	4011.70474	3995.21097	4285.38400
MG	24	32639.42832	4027802.85700	3.100	32092.91958	32025.23123	33800.13414
MN	55	39.02720	42366.75000	3.100	38.03167	38.69289	40.35704
NA	23	77982.21524	21701419.68000	3.000	76412.60597	76884.47477	80649.56496
TI	47	0.03188	10.00000	1117.600	-0.17383	-0.17383	0.44330
V	51	0.08978	233.34300	15.700	0.08137	0.08194	0.10602
GE-1	72	318325.85700	0.00000	0.000	319049.96000	319183.61000	316744.00000
SB	121	0.04076	126.67700	24.700	0.04268	0.02986	0.04973
IN-1	115	119749.84700	0.00000	0.000	118248.14000	120868.17000	120133.23000
AG	107	0.02364	126.67700	23.100	0.02977	0.01928	0.02188
AS	75	0.11152	34.66700	38.000	0.08823	0.08595	0.16040
BA	137	77.01202	36946.34700	2.500	79.24630	75.91179	75.87799
CD	111	0.06624	34.00000	6.700	0.06713	0.06144	0.07016
CO	59	0.10615	476.69700	2.800	0.10327	0.10586	0.10930
CU	63	67.33222	194822.21700	2.600	68.79410	65.41190	67.79066
MO	98	0.15844	363.35300	11.200	0.17708	0.14194	0.15629
NI	60	3.32061	3397.17000	1.600	3.37650	3.27256	3.31275
SN	120	3.67381	6898.54000	4.600	3.65402	3.51458	3.85282
SR	88	96.91267	104235.73700	0.400	97.00461	96.48780	97.24559
ZN	66	40.48256	14063.43700	4.100	38.78548	40.58402	42.07820
BI-1	209	238462.67000	0.00000	0.000	238651.56000	235195.48000	241540.97000
PB	208	1.00047	8511.36700	6.400	0.95818	1.07420	0.96904
TL	203	0.04709	136.67300	19.300	0.03664	0.05309	0.05154
U	238	0.33904	3030.47300	4.900	0.35567	0.32224	0.33923
TB-1	159	347582.82000	0.00000	0.000	345039.72000	348041.83000	349666.91000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:46:20
Tube Number: 44
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	106087.68300	0.00000	0.000	107043.79000	108724.29000	102494.97000
AL	27	5028.18549	191364.85700	2.600	4975.39252	4932.38588	5176.77807
CA	44	4801.22769	28836.57300	2.700	4907.94874	4655.09960	4840.63472
CR	52	262.10987	679344.21000	2.700	263.92075	254.22024	268.18862
FE	57	4532.88194	210602.23700	3.200	4532.73905	4389.42824	4676.47854
K	39	5040.12170	573026.28300	3.000	5013.28748	4905.13602	5201.94161
MG	24	4871.43388	595992.34700	2.900	4868.98035	4733.13840	5012.18287
MN	55	282.40004	302805.30700	2.000	281.12098	277.47044	288.60872
NA	23	5274.10020	1522626.69300	3.900	5195.48938	5121.01087	5505.80036
TI	47	293.98799	14617.22000	5.200	283.89071	286.37081	311.70245
V	51	266.85588	561967.14000	2.100	266.96007	261.12262	272.48493
GE-1	72	315606.42000	0.00000	0.000	315448.57000	314263.94000	317106.75000
SB	121	27.59788	42731.33700	0.700	27.79310	27.60445	27.39610
IN-1	115	120398.90000	0.00000	0.000	121072.35000	120240.06000	119884.29000
AG	107	27.97436	115181.10700	1.200	27.58582	28.24445	28.09282
AS	75	318.56573	86505.34000	0.900	317.08642	321.89917	316.71160
BA	137	286.57607	138217.01000	1.400	281.88822	288.30106	289.53891
CD	111	28.60086	13783.54300	1.800	28.02430	28.95042	28.82785
CO	59	308.63920	1162736.44000	1.200	304.83515	311.87934	309.20310
CU	63	297.50985	863563.37300	1.500	292.45685	300.46832	299.60439
MO	98	28.53449	63808.73000	0.800	28.48892	28.77175	28.34281
NI	60	308.78449	312441.93700	1.100	305.05370	311.62528	309.67448
SN	120	28.53770	46053.95300	1.400	28.35265	28.27972	28.98072
SR	88	31.29097	33847.42000	1.300	31.69867	31.25946	30.91479
ZN	66	315.51732	109485.41000	0.500	316.27223	313.54913	316.73060
BI-1	209	235678.69700	0.00000	0.000	231516.95000	240555.41000	234963.73000
PB	208	29.89009	245090.70000	1.100	30.07626	29.52760	30.06642
TL	203	30.14946	76396.60000	2.100	30.32842	29.45631	30.66366
U	238	47.61342	419554.46000	1.400	48.13838	46.87108	47.83081
TB-1	159	346957.09000	0.00000	0.000	348523.16000	346039.37000	346308.74000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:47:51
Tube Number: 45
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	102810.25300	0.00000	0.000	103863.41000	102534.78000	102032.57000
AL	27	0.40454	43.33300	39.500	0.30290	0.58857	0.32216
CA	44	7.71301	180.01000	98.900	2.25445	16.43117	4.45341
CR	52	0.36724	1563.48700	7.500	0.33579	0.37940	0.38655
FE	57	-1.09682	123.34000	0.000	-0.31590	-2.49795	-0.47660
K	39	15.64848	13372.61700	18.400	14.78040	13.30766	18.85738
MG	24	3.37954	556.70300	20.700	3.86212	2.57639	3.70010
MN	55	0.01388	186.67700	487.700	0.09186	-0.02062	-0.02961
NA	23	323.64435	157138.16300	1.600	328.50740	324.39928	318.02637
TI	47	0.03329	10.00000	624.800	0.03152	0.24219	-0.17383
V	51	0.00586	53.33300	49.500	0.00397	0.00920	0.00441
GE-1	72	311073.22300	0.00000	0.000	314680.87000	312565.19000	305973.61000
SB	121	0.16707	316.68700	23.600	0.21251	0.14238	0.14632
IN-1	115	118632.10000	0.00000	0.000	118662.22000	117272.24000	119961.84000
AG	107	0.00414	46.66700	88.100	0.00499	0.00014	0.00729
AS	75	0.00580	6.00000	346.500	-0.00182	0.02860	-0.00937
BA	137	0.01125	16.66700	384.800	-0.00247	-0.02351	0.05973
CD	111	0.00226	3.33300	281.900	0.00371	-0.00471	0.00778
CO	59	0.00136	83.33700	402.700	0.00587	-0.00471	0.00291
CU	63	0.00035	590.04000	14084.100	0.02862	-0.05709	0.02954
MO	98	0.08861	206.68000	32.900	0.11745	0.05920	0.08918
NI	60	0.11468	170.01000	30.400	0.07449	0.13693	0.13260
SN	120	-0.50278	360.02300	0.000	-0.50914	-0.51951	-0.47968
SR	88	0.02090	33.33300	70.500	0.01766	0.03698	0.00807
ZN	66	0.28147	196.67700	60.200	0.08612	0.38678	0.37150
BI-1	209	227152.93300	0.00000	0.000	226319.63000	226722.98000	228416.19000
PB	208	-0.01275	110.00000	0.000	-0.01779	-0.00385	-0.01661
TL	203	0.00464	26.66700	332.000	-0.00623	-0.00212	0.02228
U	238	0.01497	133.34000	44.600	0.00755	0.02051	0.01684
TB-1	159	344898.34300	0.00000	0.000	342884.96000	343613.90000	348196.17000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:49:24
Tube Number: 46
Sample Number: **LLC**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	105362.20300	0.00000	0.000	103792.16000	105432.69000	106861.76000
AL	27	22.95244	896.73300	3.200	23.66177	23.01759	22.17796
CA	44	106.37910	770.05700	8.400	109.98627	112.96022	96.19081
CR	52	1.72979	5111.03700	6.900	1.65036	1.67124	1.86779
FE	57	44.87709	2246.92300	1.600	45.68126	44.47756	44.47244
K	39	226.41541	37009.65700	3.800	236.40249	220.89744	221.94632
MG	24	52.91279	6591.63300	2.000	51.73510	53.87034	53.13294
MN	55	1.66976	1953.52300	5.800	1.66532	1.76826	1.57570
NA	23	475.17826	202393.39000	2.600	488.80271	471.28661	465.44546
TI	47	8.25897	416.69300	14.600	8.66261	6.90678	9.20753
V	51	0.48610	1060.08300	6.900	0.45526	0.48130	0.52173
GE-1	72	314688.56300	0.00000	0.000	313420.76000	309079.25000	321565.68000
SB	121	0.94920	1523.47300	13.000	0.90396	1.08898	0.85465
IN-1	115	118064.86700	0.00000	0.000	119625.93000	116613.65000	117955.02000
AG	107	0.49426	2023.55700	7.700	0.46459	0.53699	0.48120
AS	75	2.12864	570.68000	13.100	1.92552	2.44722	2.01318
BA	137	2.04249	976.74700	6.900	1.89653	2.05317	2.17776
CD	111	0.52276	249.33300	6.900	0.52998	0.48380	0.55450
CO	59	0.51846	1993.54700	4.500	0.54272	0.51617	0.49651
CU	63	1.03244	3520.54700	6.700	0.95328	1.07579	1.06825
MO	98	0.44035	976.74300	5.200	0.45861	0.44749	0.41496
NI	60	0.99990	1046.76000	8.100	0.90917	1.06680	1.02374
SN	120	2.72815	5344.50300	5.200	2.82906	2.56664	2.78874
SR	88	1.13665	1216.76700	4.100	1.18104	1.08765	1.14126
ZN	66	10.67304	3730.60000	9.400	11.78480	10.39889	9.83544
BI-1	209	232552.42000	0.00000	0.000	234762.11000	232178.32000	230716.83000
PB	208	0.52425	4453.81700	1.500	0.51739	0.52220	0.53316
TL	203	0.50571	1280.11700	3.500	0.52074	0.48655	0.50983
U	238	0.92265	8029.37300	2.800	0.92454	0.89566	0.94774
TB-1	159	345929.38000	0.00000	0.000	344574.72000	346406.32000	346807.10000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:50:55
Tube Number: 47
Sample Number: **CCV**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	102919.02000	0.00000	0.000	103683.78000	102164.57000	102908.71000
AL	27	5008.24210	185000.01700	1.100	4960.77596	5066.63035	4997.31998
CA	44	4894.72573	28526.22700	1.900	4877.48121	4811.16340	4995.53257
CR	52	266.37646	670070.04000	0.900	263.81171	268.51132	266.80636
FE	57	4527.28957	204176.59700	1.000	4479.07891	4568.32741	4534.46239
K	39	5079.92083	560501.63300	1.300	5013.58666	5149.61219	5076.56364
MG	24	4933.60019	585876.96000	0.900	4914.57597	4984.75401	4901.47057
MN	55	283.11966	294607.10700	1.500	279.05805	287.54598	282.75495
NA	23	5245.65325	1470533.67700	1.900	5165.60596	5354.16591	5217.18788
TI	47	282.75947	13653.04700	0.500	282.39157	281.57578	284.31105
V	51	269.75793	551327.35000	0.700	269.31979	271.71918	268.23482
GE-1	72	309250.83300	0.00000	0.000	312608.43000	312529.66000	302614.41000
SB	121	28.33869	42988.58700	1.600	27.82992	28.53738	28.64877
IN-1	115	116601.46300	0.00000	0.000	115276.75000	116619.40000	117908.24000
AG	107	28.72187	114527.64000	0.600	28.92736	28.61919	28.61905
AS	75	320.75069	84340.53300	1.800	325.89129	322.00064	314.36013
BA	137	291.15175	135990.41300	1.200	295.12054	289.30744	289.02726
CD	111	29.09052	13577.36000	0.900	29.37280	28.91014	28.98860
CO	59	311.15328	1135191.93700	1.000	313.39472	312.34229	307.72284
CU	63	302.40858	850074.02300	1.100	303.72597	304.79451	298.70527
MO	98	28.88166	62537.39700	2.500	29.33547	29.24807	28.06145
NI	60	312.64690	306375.20700	1.200	311.39709	316.79874	309.74487
SN	120	28.48254	44509.39300	3.600	29.64885	27.75262	28.04615
SR	88	32.04569	33567.37000	1.200	32.04508	32.42187	31.67012
ZN	66	317.82289	106804.25300	1.100	316.66306	321.67413	315.13147
BI-1	209	237820.33000	0.00000	0.000	233175.27000	242916.62000	237369.10000
PB	208	29.20263	241639.75300	1.100	29.27642	28.86222	29.46926
TL	203	29.90080	76436.73700	3.400	30.68615	28.75835	30.25790
U	238	47.00945	418004.49700	1.200	47.37980	46.33259	47.31594
TB-1	159	349537.32700	0.00000	0.000	344666.21000	353145.54000	350800.23000

Run Name: 1931009E05 Date/Time: 11/06/2019 17:52:29
Tube Number: 48
Sample Number: **CCB**

Note: All Analyte values are in ppb, except Internal Standards, C, P, S and CL are in counts per second.

					INTEGRATIONS		
Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	#1	#2	#3
SC-1	45	104453.43300	0.00000	0.000	104608.14000	101769.48000	106982.68000
AL	27	0.02151	30.00000	2390.300	0.02889	-0.49642	0.53207
CA	44	-0.68838	133.34000	0.000	-11.49993	6.26894	3.16584
CR	52	0.29775	1413.46300	14.500	0.29635	0.25539	0.34151
FE	57	-1.14429	123.34000	0.000	-0.55927	-1.81465	-1.05893
K	39	11.78864	13165.95700	53.900	4.61146	14.03477	16.71970
MG	24	3.01041	520.03300	22.700	3.57668	3.20198	2.25255
MN	55	-0.02687	146.67700	0.000	-0.01403	-0.05843	-0.00814
NA	23	268.62036	144673.18000	5.600	269.80014	282.98327	253.07765
TI	47	0.03574	10.00000	1015.500	-0.17383	0.45489	-0.17383
V	51	0.02460	93.33700	99.800	0.05195	0.00447	0.01739
GE-1	72	310146.44300	0.00000	0.000	310215.76000	310476.56000	309747.01000
SB	121	0.10433	220.01300	22.900	0.09770	0.08443	0.13086
IN-1	115	119425.92000	0.00000	0.000	117424.87000	119953.19000	120899.70000
AG	107	0.01067	73.33700	71.900	0.01757	0.00242	0.01202
AS	75	0.06234	21.33300	44.400	0.04365	0.09413	0.04925
BA	137	-0.00954	6.66700	0.000	-0.00225	-0.02351	-0.00286
CD	111	0.01348	8.66700	118.300	0.02508	-0.00471	0.02009
CO	59	0.01016	116.67300	54.600	0.00888	0.01624	0.00537
CU	63	-0.01253	556.70000	0.000	-0.02901	-0.05004	0.04144
MO	98	0.09388	220.01300	55.400	0.08205	0.04879	0.15081
NI	60	0.06376	120.00700	27.900	0.07587	0.04332	0.07208
SN	120	-0.52750	323.35000	0.000	-0.49372	-0.58813	-0.50065
SR	88	0.00800	20.00000	200.200	-0.01049	0.01735	0.01714
ZN	66	0.32500	213.34300	41.700	0.23801	0.25574	0.48124
BI-1	209	229591.11700	0.00000	0.000	226338.47000	231181.21000	231253.67000
PB	208	-0.01875	63.33300	0.000	-0.01906	-0.02295	-0.01425
TL	203	0.00053	16.66700	1153.200	0.00199	-0.00623	0.00584
U	238	0.01365	123.34000	21.200	0.01346	0.01663	0.01084
TB-1	159	345450.23000	0.00000	0.000	347837.38000	336865.15000	351648.16000

US EPA Tune Check Report

Operator Name	US19_USR_INS07697
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\~EPATUNEaa.b
Acq. Date-Time	11/6/2019 1:17:06 PM
Report Comment	ICP-MS #19204 (E05) Daily Tune Check
Instrument Name	G3281A JP12071581

[No Gas]

Sensitivity

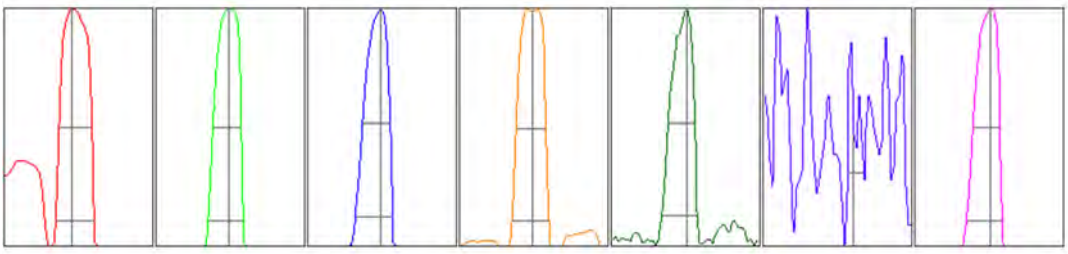
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
7	10.00	2759	27588.75			1.346	5.000
89	10.00	9691	96910.58			2.220	5.000
205	10.00	4604	46038.34			2.029	5.000
70	1.00	238	2379.04	0.00		4.977	
156	1.00	21	212.61	0.00		2.953	
220	1.00	2	16.20	0.00		11.042	
140	10.00	8097	80971.60	0.00		2.197	

Mass	RSD% (Flag)
7	
89	
205	
70	
156	
220	
140	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	2700	2797	2755	2760	2783
89	9316	9754	9754	9763	9869
205	4453	4621	4602	4634	4709
70	221	230	244	249	246
156	21	21	21	22	21
220	2	2	2	1	2
140	7807	8145	8083	8167	8284

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	4269.24	6.90	6.90 - 7.10	
89	17028.75	89.00	88.90 - 89.10	
205	8605.99	205.00	204.90 - 205.10	
70	393.49	70.00	-	
156	41.10	156.05	-	
220	1.70	220.35	-	
140	15155.55	140.05	-	

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
7	0.67	0.774	0.800	
89	0.58	0.714	0.800	
205	0.55	0.754	0.800	
70	0.61	0.752		
156	0.53	0.720		
220	0.33			
140	0.55	0.729		

Integration Time [sec]	0.1
Acquisition Time [sec]	260.3
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.25 L/min	Dilution Gas	0.70 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.60 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	20 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.1 V	Deflect	10.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-90 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9987	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	0.03		

Hardware Settings

Torch

Torch H	-0.1 mm	Torch V	-1.4 mm

EM

Discriminator	4.5 mV	Analog HV	1609 V	Pulse HV	1230 V

Extraction/Distillation/Digestion Logs

Metals in Liquid

LLENS Worksheet for ICP/MS SW846 Water Update V

Batch# 19 303 14047 07

Start Time: 11/4/19 4:13 **End Time:** 11/4/19 9:02 **Hot Block:** 15

Pipette ID: R34046G
Reflux Cap Lot#: 18121149106KF

Spike/Reagent	Lot#	Volume Added(mL)
HNO3	234822	3.00
ICP/MS Spike	1926917-IL	0.50
LCS	1926917-IL	0.50

Method Ref:

	SampleID	Date Due	ST	P	H	Method	PH<2	BC	Vessel Lot#	Location ID	Comments
1)	PBW	.							1904119		
2)	LCSW	.							1904119		
3)	**1184601U**	11/05/19 11:07	WW	N7		SW-846 6020	Y	802A	1904119	WMET34/B9	
4)	**1184604D**	11/05/19 11:07	WW	N7		SW-846 6020	Y	802A	1904119	WMET34/A9	
5)	**1184602R**	11/05/19 11:07	WW	N7		SW-846 6020	Y	802A	1904119	WMET42/C1	
6)	**1184603M**	11/05/19 11:07	WW	N7		SW-846 6020	Y	802A	1904119	WMET34/F8	
7)	1186640	11/05/19 17:08	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/C6	
8)	1186690	11/05/19 17:08	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/D6	
9)	1186713	11/05/19 17:18	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/E6	
10)	1186715	11/05/19 17:18	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/B7	
11)	1186717	11/05/19 17:18	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/A7	
12)	1186719	11/05/19 17:18	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/F6	
13)	1187116	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/A2	
14)	1187117	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/B2	
15)	1187122	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/A1	
16)	1187123FD	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/D2	
17)	1187124	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/B1	
18)	1187125	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/C1	
19)	1187126	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/E2	
20)	1185958	11/06/19 20:45	WW	N7		SW-846 6020A	Y	802A	1904119	WMET42/E1	
21)	1185959	11/06/19 20:45	WW	N7		SW-846 6020A	Y	802A	1904119	WMET42/D1	
22)	1186046	11/06/19 20:31	GW	N7		SW-846 6020B Rev.2, July 2014	Y	802A	1904119	WMET34/D8	
23)	1186599	11/06/19 14:30	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/F4	

Prep Employee:1184 D/I _____

11/4/2019

v 1.2.0

	SampleID	Date Due	ST	P	H	Method	PH<2	BC	Vessel Lot#	Location ID	Comments
24)	1186600	11/06/19 14:30	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/E4	
25)	1186602	11/06/19 14:30	GW	N7		SW-846 6020	Y	802A	1904119	WMET31/A5	

Batch# 19 303 1404 707

LLENS Batch Chronology and Change Log - ICP/MS SW846 Water Update V

	Operation	Instrument	Operation Date	ANALYST
1)	Batch Creation		10/30/19 21:00	1184
2)	Sample Vol		11/4/19 4:14	1184
3)	Final Vol	CLEAR	11/4/19 4:14	1184
4)	Trial		11/4/19 4:14	1184
5)	Upload Prep	US19PCC0672	11/4/19 9:02	1184

Sample ID	Analysis	D	Operation	Measurement	Original Entry Date/Time	Data	Units	Analyst	Data Changed Date/Time	Analyst	Reason

Analysis: 4047 ICP/MS SW846 Water Update V Batch# 19 303 1404 707

Sample ID	Due Date	P	EPA#	SDG#	Initial Volume	Final Volume	Trial
PBW					50.0000	50.0000	1
LCSW					1.0000	1.0000	1
1184601U	11/05/19	N7	74T02	TFG74-02BKG	50.0000	50.0000	1
1184604D	11/05/19	N7	74T02	TFG74-02DUP	50.0000	50.0000	1
1184602R	11/05/19	N7	74T02	TFG74-02MS	50.0000	50.0000	1
1184603M	11/05/19	N7	74T02	TFG74-02MSD	50.0000	50.0000	1
1186640	11/05/19	N7	20247	EB	50.0000	50.0000	1
1186690	11/05/19	N7	50539	EB	50.0000	50.0000	1
1186713	11/05/19	N7			50.0000	50.0000	1
1186715	11/05/19	N7			50.0000	50.0000	1
1186717	11/05/19	N7			50.0000	50.0000	1
1186719	11/05/19	N7			50.0000	50.0000	1
1187116	11/05/19	N7	54R01	RAF54-01	50.0000	50.0000	1
1187117	11/05/19	N7	54R02	RAF54-02	50.0000	50.0000	1
1187122	11/05/19	N7	54R04	RAF54-04	50.0000	50.0000	1
1187123FD	11/05/19	N7	54R05	RAF54-05FD	50.0000	50.0000	1
1187124	11/05/19	N7	54R06	RAF54-06	50.0000	50.0000	1
1187125	11/05/19	N7	54R07	RAF54-07	50.0000	50.0000	1
1187126	11/05/19	N7	54R08	RAF54-08	50.0000	50.0000	1
1185958	11/06/19	N7			50.0000	50.0000	1
1185959	11/06/19	N7		RB	50.0000	50.0000	1
1186046	11/06/19	N7	574-5	CR574-05	50.0000	50.0000	1
1186599	11/06/19	N7	EPM01	EPM36-01	50.0000	50.0000	1
1186600	11/06/19	N7	EPM02	EPM36-02	50.0000	50.0000	1
1186602	11/06/19	N7	EPM04	EPM36-04	50.0000	50.0000	1

LLENS Worksheet for ICP/MS SW846 Water Update V

Batch# 19 304 14047 01

Start Time: 11/1/19 5:30 **End Time:** 11/1/19 9:30 **Hot Block:** 15

Pipette ID: S/500
Reflux Cap Lot#: 18121149106KF

Spike/Reagent	Lot#	Volume Added(mL)
HNO3	234822	3.00
ICP/MS Spike	1926917-IL	0.50
LCS ICP/MS Spike	1926917-IL	0.50

Method Ref:

	SampleID	Date Due	ST	P	H	Method	PH<2	BC	Vessel Lot#	Location ID	Comments
1)	PBW	.							1901119		
2)	LCSW	.							1901119		
3)	**1187118U**	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/E1	
4)	**1187121D**	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/D1	
5)	**1187119R**	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/F1	
6)	**1187120M**	11/05/19 11:42	GW	N7		SW-846 6020A	Y	802A	1904119	WMET31/C2	
7)	1187557	11/08/19 11:27	GW	P7		SW-846 6020	Y	802A	1904119	WMET31/F10	
8)	1186826	11/07/19 19:37	GW	N7		SW-846 6020B Rev.2, July 2014	Y	802A	1904119	WMET31/B6	
9)	1187558	11/08/19 11:27	GW	P7		SW-846 6020	Y	802A	1904119	WMET31/E10	
10)	1186827FB	11/07/19 19:37	GW	N7		SW-846 6020B Rev.2, July 2014	Y	802A	1904119	WMET31/E5	
11)	1186824	11/07/19 19:37	GW	N7		SW-846 6020B Rev.2, July 2014	Y	802A	1904119	WMET31/A6	
12)	1187554	11/08/19 11:27	GW	P7		SW-846 6020	Y	802A	1904119	WMET42/B1	
13)	1180745	10/31/19 20:40	GW	P7		SW-846 6020B Rev.2, July 2014	Y	802A	1904119	WMET30/A1	Bad matrix oily 5/50
14)	1187556	11/08/19 11:27	GW	P7		SW-846 6020	Y	802A	1904119	WMET42/A1	
15)	1186666	11/06/19 14:30	GW	N7		SW-846 6020	Y	802a	1904119	WMET31/F2	
16)	1186601	11/06/19 14:30	GW	N7		SW-846 6020	Y	802a	1904119	WMET31/D3	
17)	1187555	11/08/19 11:27	GW	P7		SW-846 6020	Y	802a	1904119	WMET31/C9	
18)	1187553	11/08/19 11:27	GW	P7		SW-846 6020	Y	802a	1904119	WMET31/A10	

Prep Employee:862 D/I _____

11/1/2019

v 1.2.0

Batch# 19 304 1404 701

LLENS Batch Chronology and Change Log - ICP/MS SW846 Water Update V

	Operation	Instrument	Operation Date	ANALYST
1)	Batch Creation		10/31/19 5:05	862
2)	Sample Vol		11/1/19 8:51	862
3)	Final Vol	CLEAR	11/1/19 8:51	862
4)	Trial		11/1/19 8:51	862
5)	Upload Prep	US19PCC0669	11/1/19 12:08	862

					Original Entry				Data Changed		
Sample ID	Analysis	D	Operation	Measurement	Date/Time	Data	Units	Analyst	Date/Time	Analyst	Reason
1180745	14047	1	Sample Vol	Initial Volume	11/1/19 8:50	50	(mL)	862	11/1/19 8:51	862	Bad matrix oily 5/50
1187555	14047	1	Sample Vol	Initial Volume	11/1/19 8:49	25	(mL)	862	11/1/19 8:51	862	Wrong entry
1187555	14047	1	Final Vol	Final Volume	11/1/19 8:50	25	(mL)	862	11/1/19 8:51	862	Wrong entry

Analysis: 4047 ICP/MS SW846 Water Update V Batch# 19 304 1404 701

Sample ID	Due Date	P	EPA#	SDG#	Initial Volume	Final Volume	Trial
PBW					50.0000	50.0000	1
LCSW					1.0000	1.0000	1
1187118U	11/05/19	N7	54R03	RAF54-03BKG	50.0000	50.0000	1
1187121D	11/05/19	N7	54R03	RAF54-03DUP	50.0000	50.0000	1
1187119R	11/05/19	N7	54R03	RAF54-03MS	50.0000	50.0000	1
1187120M	11/05/19	N7	54R03	RAF54-03MSD	50.0000	50.0000	1
1187557	11/08/19	P7	05BLO	BLO74-05	50.0000	50.0000	1
1186826	11/07/19	N7	57708	CR577-08	50.0000	50.0000	1
1187558	11/08/19	P7	06BLO	BLO74-06	50.0000	50.0000	1
1186827FB	11/07/19	N7	57709	CR577-09FB	50.0000	50.0000	1
1186824	11/07/19	N7	57706	CR577-06	50.0000	50.0000	1
1187554	11/08/19	P7	02BLO	BLO74-02	50.0000	50.0000	1
1180745	10/31/19	P7	I3---	XOS33-15	5.0000	50.0000	1
1187556	11/08/19	P7	04BLO	BLO74-04	50.0000	50.0000	1
1186666	11/06/19	N7	EPM09	EPM36-09	50.0000	50.0000	1
1186601	11/06/19	N7	EPM03	EPM36-03	50.0000	50.0000	1
1187555	11/08/19	P7	03BLO	BLO74-03	50.0000	50.0000	1
1187553	11/08/19	P7	01BLO	BLO74-01	50.0000	50.0000	1

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Type I Data Package

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Project: RAAP - Radford, VA - HWMU-5
Groundwater and Water Samples
Collected on 10/23/19-10/24/19

SDG# RAF53

GROUP	SAMPLE NUMBERS
2071619	1187104-1187115

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-18-27
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date:** **11/26/2019**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt at (717) 556-7264.

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Sample Reference List for SDG Number RAF53
with a Data Package Type of I

11200 - Draper Aden Associates, Inc.
Project: RAAP - Radford, VA - HWMU-5

Lab Sample Number	Client Sample ID	Collection Date	Date Received
1187104	5W8B	10/23/2019 13:25	10/25/2019 11:42
1187105	5W5B	10/24/2019 09:55	10/25/2019 11:42
1187106	5W7B	10/24/2019 09:10	10/25/2019 11:42
1187107	5W7B Matrix Spike	10/24/2019 09:10	10/25/2019 11:42
1187108	5W7B Matrix Spike Dup	10/24/2019 09:10	10/25/2019 11:42
1187109	5WC21	10/24/2019 12:05	10/25/2019 11:42
1187110	5WDUP	10/24/2019 12:10	10/25/2019 11:42
1187111	5WC22	10/24/2019 10:50	10/25/2019 11:42
1187112	5WC23	10/24/2019 11:30	10/25/2019 11:42
1187113	5W12A	10/23/2019 14:05	10/25/2019 11:42
1187114	Trip Blank 1	10/23/2019 00:00	10/25/2019 11:42
1187115	Trip Blank 2	10/23/2019 00:00	10/25/2019 11:42

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Sample pH Log

SDG: RAF53

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1187104	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:48PM	9052
1187105	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:45PM	9052
1187106	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:45PM	9052
1187107	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:45PM	9052
1187108	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:45PM	9052
1187109	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:45PM	9052
1187110	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:46PM	9052
1187111	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:46PM	9052
1187112	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:46PM	9052
1187113	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:46PM	9052
1187114	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:46PM	9052
1187115	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	11/6/2019 2:13:47PM	9052

*pH Check Code Key	**Chlorine Present Code Key
PK = Original container checked - pH is within the correct range. (No preservative was added) **PA** = Original container checked - pH adjusted to correct range. (Preservative was added) **PV** = Volatile container checked **PC** = pH checked (unpreserved container) **SPK** = Subsampled from an original container. Original container checked - pH is within correct range **SPA** = Subsampled from an original container. Subsample container checked - pH adjusted to correct range. **SPC** = Subsampled from an original container. pH checked (unpreserved container). **SUP** = Subsampled from original container. Unable to be preserved due to the matrix of the sample. **UP** = Unable to preserve due to matrix of the sample. **NA** = Not applicable	**NA** = Chlorine Not Checked **Y** = Chlorine Present **N** = Chlorine Not Present

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01163 GC/MS VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

11996 VOCs- 25ml Water by 8260C/D

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

Analysis Reports / Field Chain of Custody

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Report Date: November 07, 2019 14:12

Project: RAAP - Radford, VA - HWMU-5

Account #: 11200
Group Number: 2071619
SDG: RAF53
State of Sample Origin: VA

Electronic Copy To	Draper Aden Associates, Inc.	Attn: Janet Frazier
Electronic Copy To	Draper Aden Associates, Inc.	Attn: Kathy Olsen

Respectfully Submitted,

Barbara Weyandt

Barbara A. Weyandt
Specialist

(717) 556-7264

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
5W8B Grab Groundwater	10/23/2019 13:25	1187104
5W5B Grab Groundwater	10/24/2019 09:55	1187105
5W7B Grab Groundwater	10/24/2019 09:10	1187106
5W7B Matrix Spike Grab Groundwater	10/24/2019 09:10	1187107
5W7B Matrix Spike Dup Grab Groundwater	10/24/2019 09:10	1187108
5WC21 Grab Groundwater	10/24/2019 12:05	1187109
5WDUP Grab Groundwater	10/24/2019 12:10	1187110
5WC22 Grab Groundwater	10/24/2019 10:50	1187111
5WC23 Grab Groundwater	10/24/2019 11:30	1187112
5W12A Grab Groundwater	10/23/2019 14:05	1187113
Trip Blank 1 Water	10/23/2019	1187114
Trip Blank 2 Water	10/23/2019	1187115

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Project Name: RAAP - Radford, VA - HWMU-5
ELLE Group #: 2071619

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Batch #: G193091AA (Sample number(s): 1187104-1187115 UNSPK: 1187106)

The recovery(ies) for the following analyte(s) in the MS and/or MSD exceeded the acceptance window indicating a positive bias: cis-1,2-Dichloroethene

Sample Description: **5W8B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019 13:25
SDG#: RAF53-01

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187104
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 10:00	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 09:59	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W5B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:55
SDG#: RAF53-02

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187105
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 10:22	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 10:21	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF53-03BKG

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187106
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	0.2 J	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 12:36	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 12:35	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B Matrix Spike Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF53-03MS

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187107
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	5.7	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	6.0	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	5.5	0.8	1.0	1
11996	Trichloroethene	79-01-6	5.7	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	5.9	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 12:58	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 12:57	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W7B Matrix Spike Dup Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 09:10
SDG#: RAF53-03MSD

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187108
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	5.9	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	6.1	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	5.6	0.8	1.0	1
11996	Trichloroethene	79-01-6	6.0	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	6.3	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 13:20	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 13:19	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC21 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 12:05
SDG#: RAF53-04

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187109
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	2.0	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 10:44	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 10:43	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WDUP Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 12:10
SDG#: RAF53-05FD

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187110
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	2.0	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 11:07	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 11:06	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC22 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 10:50
SDG#: RAF53-06

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187111
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	2.4	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 11:29	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 11:28	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5WC23 Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/24/2019 11:30
SDG#: RAF53-07

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187112
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	4.0	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 11:52	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 11:51	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **5W12A Grab Groundwater**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019 14:05
SDG#: RAF53-08

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187113
ELLE Group #: 2071619
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 12:14	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 12:13	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **Trip Blank 1 Water**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019
SDG#: RAF53-09TB

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187114
ELLE Group #: 2071619
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 09:15	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 09:14	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Sample Description: **Trip Blank 2 Water**
2019-2nd Semiannual Groundwater Corrective Action
RAAP - Radford, VA - HWMU-5

Project Name: **RAAP - Radford, VA - HWMU-5**

Submittal Date/Time: 10/25/2019 11:42
Collection Date/Time: 10/23/2019
SDG#: RAF53-10TB

Draper Aden Associates, Inc.
ELLE Sample #: GW 1187115
ELLE Group #: 2071619
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	**ug/l**	
11996	1,1-Dichloroethene	75-35-4	N.D.	0.4	1.0	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.05	1.0	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	1.0	1
11996	Trichloroethene	79-01-6	N.D.	0.2	1.0	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	1.0	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	RAAP Unit 5 "J" list	SW-846 8260C 25mL purge	1	G193091AA	11/05/2019 09:38	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G193091AA	11/05/2019 09:37	Jennifer K Howe	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2071619
Reported: 11/07/2019 14:12

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: G193091AA	Sample number(s): 1187104-1187115		
1,1-Dichloroethene	N.D.	0.4	1.0
cis-1,2-Dichloroethene	N.D.	0.05	1.0
trans-1,2-Dichloroethene	N.D.	0.8	1.0
Trichloroethene	N.D.	0.2	1.0
Vinyl Chloride	N.D.	0.1	1.0

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: G193091AA	Sample number(s): 1187104-1187115								
1,1-Dichloroethene	5.00	5.20			104		80-131		
cis-1,2-Dichloroethene	5.00	5.61			112		80-122		
trans-1,2-Dichloroethene	5.00	5.11			102		80-122		
Trichloroethene	5.00	5.14			103		80-120		
Vinyl Chloride	5.00	5.57			111		60-125		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: G193091AA	Sample number(s): 1187104-1187115 UNSPK: 1187106									
1,1-Dichloroethene	N.D.	5.00	5.71	5.00	5.91	114	118	80-131	3	30
cis-1,2-Dichloroethene	N.D.	5.00	5.97	5.00	6.08	119	122*	80-120	2	30
trans-1,2-Dichloroethene	N.D.	5.00	5.48	5.00	5.63	110	113	80-120	3	30
Trichloroethene	0.204	5.00	5.71	5.00	5.95	110	115	80-120	4	30
Vinyl Chloride	N.D.	5.00	5.95	5.00	6.25	119	125	60-125	5	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2071619
Reported: 11/07/2019 14:12

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: RAAP Unit 5 "J" list
Batch number: G193091AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1187104	97	103	101	99
1187105	99	103	100	98
1187106	99	94	102	98
1187107	99	104	101	99
1187108	99	103	101	98
1187109	99	103	101	99
1187110	99	101	101	98
1187111	98	102	101	98
1187112	99	102	101	99
1187113	98	91	100	98
1187114	99	102	101	98
1187115	98	93	100	98
Blank	98	102	101	97
LCS	99	101	101	98
MS	99	104	101	99
MSD	99	103	101	98
Limits:	80-120	80-120	80-120	80-120

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11200|207619|1187104-15

CHAIN OF CUSTODY RECORD

Laboratory: ELLE, LLC, 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Barb Weyandt, Manager/ (717) 656-2300

Client:	Draper Aden Associates	**Consultant:**	Draper Aden Associates	**Sample Site:**	RFAAP, Radford, Virginia
Attn:	0	**Attn:**	Janet C. Frazier	**Location:**	HWMU5
Address	0	**Address:**	2206 South Main Street		2019- 2nd Semiannual Groundwater Corrective
	0		Blacksburg, Virginia 24060	**Event:**	Action Monitoring Event
Phone:	0	**Phone:**	(540) 552-0444	**DAA JN:**	B03204-19A
Fax:	0	**Fax:**	(540) 552-0291	**Lab JN:**	
Fax:	0				

Project Specific (PS) or Batch (B) QC: PS
Sample Collection for Project Complete? YES
Carrier: UPS: 12.75Y-02X-Y0-5716-0481
Tracking Number:

Box 1: Matrix		Box 2: Preservative		Box 3: Filtered/Unfiltered	Box 4: Sample Type
SW Surface Water	T Trip Blank	A HCL	E NaOH	F Filtered	G Grab
GW Groundwater	E Equipment Blank	B HNO_3	F ZnAc	U Unfiltered	C Composite
L Leachate	P Product	C H_2SO_4	G Other (Specify)	**Box 5: Sample Container Type**	
S Soil	O Other	D $Na_2S_2O_3$	H None	P Plastic V VOA	
				AG Amber Glass CG Clear Glass	

Invoice
Copy to Consultant: YES
Bill: CLIENT OTHER
Preserved and shipped on ice: YES

Box 4 - Sample Type				G	G								
Box 3 - Filtered/Unfiltered				U	U								
Required pH of Sample				<2	<2								
Box 2 - Preservative				A	B								
Box 5 - Sample Container Type				3-40ml V	1-500ml P								
Sample ID	**Date: 2019**	**Time**	**Box 1: Matrix**	**Number of Bottles**	**8260C/5030C 25 ml purge Appendix J Analyte List**	**Cobalt only-Total 6020A /3020A (appendix J)**							
5W8B	10/23	1325	GW	4	X	X							
5W5B	10/24	0955	GW	4	X	X							
5W7B	10/24	0910	GW	4	X	X							
5WC21	10/24	12	GW	4	X	X							
5WDUP	10/24	12	GW	4	X	X							
5WC22	10/24	1050	GW	4	X	X							
5WC23	10/24	1130	GW	4	X	X							
5W12A	10/23	1405	GW	4	X	X							
Trip Blank 1	10/23	—	T	2	X								
Trip Blank 2	10/23	—	T	2	X								

GENERAL NOTES:

1. See attached analyte list.
2. Report Results to MDL with "J" Flags. 3. 1 trip blank per day of sampling.

Delete Trip blank 2 if not required.

ERIS DELIVERABLE ALSO REQUIRED. JCF 9/13/19

Cobalt QL = 5 ug/L / DL = 1 ug/L JCF 9/12/19

USE FOR QC

1 Trip Blank per day - delete TB 2 if not needed. JCF 9/13/19

Clients Special Instructions: level 1 with edd.

Received by lab in Good Condition ____ Yes ____ No Custody Seal Intact ____ Yes ____ No Temperature upon arrival ____ Received on Ice ____ Yes ____ No
Describe problems, If any:

Sampler Name (Print): Ken Coolidge	Date: 10/23/19	#1 Relinquished by (Signature): Ken Coolidge	Date: 10/24/19	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature:	Time: 0700	Company Name: SAA	Time: 1700	Company Name:	Time:	
Sampler Name (Print): Ian McGregor	Date: 10-23-19	#1 Received by (Signature):	Date:	#2 Received by (Signature):	Date: 10/25/19	30 DYS ORG/6 MTHS INORG
Sampler Signature:	Time: 0700	Company Name:	Time:	Company Name: ELLE	Time: 1142	

1/2 JCF 9/13/19

2071619

ANALYTICAL METHOD: 8260C/5030C
TYPE METHOD: GCMS
CLASS: VOLATILE

Appendix – J Target Analyte List

No.	ANALYTE	CAS RN	Required QL (µg/l)	Required MDL*
1.	Trichloroethene	79-01-6	1	0.177
2.	1,1-Dichloroethene	75-35-4	1	0.44
3.	Cis-1,2-Dichloroethene	156-59-2	1	0.1
4.	Trans-1,2-Dichloroethene	156-60-5	1	0.8
5.	Vinyl Chloride	75-01-4	1	0.1

Note: *Report current lab MDL if higher.

25 ml purge volume

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Sample Administration Receipt Documentation Log

Doc Log ID: 264321

Group Number(s): 2071619

Client: Draper Aden

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Date:	10/25/2019
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Tamara Lugardo

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	192050133	1.5	IR	Wet	Y	Loose/Bag	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
5WC21	10/24/2019 12:05	
5WDUP	10/24/2019 12:10	

2425 New Holland Pike
T 717-656-2300
F 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Volatiles by GC/MS Data

Case Narrative/Conformance Summary

Volatiles by GC/MS

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF53

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1187104	5W8B	X		1	
1187105	5W5B	X		1	
1187106	5W7B	X		1	Unspiked
1187107	5W7B Matrix Spike	X		1	Matrix Spike
1187108	5W7B Matrix Spike Dup	X		1	Matrix Spike Duplicate
1187109	5WC21	X		1	
1187110	5WDUP	X		1	Field Duplicate Sample
1187111	5WC22	X		1	
1187112	5WC23	X		1	
1187113	5W12A	X		1	
1187114	Trip Blank 1	X		1	Trip Blank
1187115	Trip Blank 2	X		1	Trip Blank

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Batch#: G193091AA (Sample number(s): 1187104-1187115, UNSPK: 1187106)

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF53

GC/MS Volatiles

Fraction: Volatiles by GC/MS

The recovery(ies) for the following analyte(s) in the MSD exceeded the acceptance window indicating a positive bias:cis-1,2-Dichloroethene

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatiles by GC/MS

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Quality Control Reference List
GC/MS Volatiles

CLIENT: Draper Aden Associates, Inc.
SDG: RAF53

Fraction: Volatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
RAAP Unit 5 "J" list	G193091AA	VBLKG47	11/05/2019 08:41
		LCSG47	11/05/2019 08:19
		1187104	11/05/2019 10:00
		1187105	11/05/2019 10:22
		1187106 UNSPK	11/05/2019 12:36
		1187107 MS	11/05/2019 12:58
		1187108 MSD	11/05/2019 13:20
		1187109	11/05/2019 10:44
		1187110	11/05/2019 11:07
		1187111	11/05/2019 11:29
		1187112	11/05/2019 11:52
		1187113	11/05/2019 12:14
		1187114	11/05/2019 09:15
		1187115	11/05/2019 09:38

Quality Control Summary
Method Blank
GC/MS Volatiles
SDG: RAF53
Matrix: LIQUID

Fraction: Volatiles by GC/MS

G193091AA / VBLKG47 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Vinyl Chloride	11/05/19	N.D.	ug/l	0.1	1.0
1,1-Dichloroethene	11/05/19	N.D.	ug/l	0.4	1.0
trans-1,2-Dichloroethene	11/05/19	N.D.	ug/l	0.8	1.0
cis-1,2-Dichloroethene	11/05/19	N.D.	ug/l	0.05	1.0
Trichloroethene	11/05/19	N.D.	ug/l	0.2	1.0

Quality Control Summary
Surrogates
GC/MS Volatiles
SDG: RAF53
Matrix: LIQUID

Fraction: Volatiles by GC/MS

G193091AA	1,2-Dichloroethane-d4		4-Bromofluorobenzene		Dibromofluoromethane		Toluene-d8	
	Spike Added	10 ug/l	Spike Added	10 ug/l	Spike Added	10 ug/l	Spike Added	10 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
VBLKG47	102	80 - 120	97	80 - 120	98	80 - 120	101	80 - 120
LCSG47	101	80 - 120	98	80 - 120	99	80 - 120	101	80 - 120
1187104	103	80 - 120	99	80 - 120	97	80 - 120	101	80 - 120
1187105	103	80 - 120	98	80 - 120	99	80 - 120	100	80 - 120
1187106 UNSPK	94	80 - 120	98	80 - 120	99	80 - 120	102	80 - 120
1187107 MS	104	80 - 120	99	80 - 120	99	80 - 120	101	80 - 120
1187108 MSD	103	80 - 120	98	80 - 120	99	80 - 120	101	80 - 120
1187109	103	80 - 120	99	80 - 120	99	80 - 120	101	80 - 120
1187110	101	80 - 120	98	80 - 120	99	80 - 120	101	80 - 120
1187111	102	80 - 120	98	80 - 120	98	80 - 120	101	80 - 120
1187112	102	80 - 120	99	80 - 120	99	80 - 120	101	80 - 120
1187113	91	80 - 120	98	80 - 120	98	80 - 120	100	80 - 120
1187114	102	80 - 120	98	80 - 120	99	80 - 120	101	80 - 120
1187115	93	80 - 120	98	80 - 120	98	80 - 120	100	80 - 120

GC/MS Volatiles

Fraction: Volatiles by GC/MS

UNSPK: 1187106 MS: 1187107 MSD: 1187108 **Analyte**	Batch: **G193091AA** (Sample number(s): 1187104-1187115)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Vinyl Chloride	5.00	N.D.	5.95	6.25	119	125	60-125	5	30
1,1-Dichloroethene	5.00	N.D.	5.71	5.91	114	118	80-131	3	30
trans-1,2-Dichloroethene	5.00	N.D.	5.48	5.63	110	113	80-120	3	30
cis-1,2-Dichloroethene	5.00	N.D.	5.97	6.08	119	122 *	80-120	2	30
Trichloroethene	5.00	0.204 J	5.71	5.95	110	115	80-120	4	30

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: RAF53
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSG47	Batch: **G193091AA** (Sample number(s): 1187104-1187115)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Vinyl Chloride	5.00	5.57	NA	111	NA	60-125	NA	NA
1,1-Dichloroethene	5.00	5.20	NA	104	NA	80-131	NA	NA
trans-1,2-Dichloroethene	5.00	5.11	NA	102	NA	80-122	NA	NA
cis-1,2-Dichloroethene	5.00	5.61	NA	112	NA	80-122	NA	NA
Trichloroethene	5.00	5.14	NA	103	NA	80-120	NA	NA

LOQ/MDL Summary
GC/MS Volatiles

SDG: RAF53

Fraction: Volatiles by GC/MS

11996: RAAP Unit 5 "J" list Analyte Name	Default MDL	Default LOQ	Units
Vinyl Chloride	0.1	1.0	ug/l
1,1-Dichloroethene	0.4	1.0	ug/l
trans-1,2-Dichloroethene	0.8	1.0	ug/l
cis-1,2-Dichloroethene	0.05	1.0	ug/l
Trichloroethene	0.2	1.0	ug/l

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: gc21t02.d BFB Injection Date: 10/21/19

Instrument ID: HP16334 BFB Injection Time: 15:45

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.49
75	30.0 - 60.0% of mass 95	47.51
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.82
173	Less than 2.0% of mass 174	0.87 (0.89)1
174	Greater than 50.0% of mass 95	97.08
175	5.0 - 9.0% of mass 174	7.04 (7.25)1
176	Greater than 95.0%, but less than 101.0% of mass 174	94.48 (97.33)1
177	5.0 - 9.0% of mass 176	6.18 (6.54)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD25	gc21i01.d	10/21/19	16:39
02	VSTD10	gc21i02.d	10/21/19	17:01
03	VSTD5	gc21i03.d	10/21/19	17:24
04	VSTD2	gc21i04.d	10/21/19	17:46
05	VSTD1	gc21i05.d	10/21/19	18:08
06	VSTD.5	gc21i06.d	10/21/19	18:30
07	VSTD.2	gc21i07.d	10/21/19	18:52
08	LCSG01	gc21v01.d	10/21/19	19:14

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: gn05t01.d BFB Injection Date: 11/05/19

Instrument ID: HP16334 BFB Injection Time: 07:20

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.13
75	30.0 - 60.0% of mass 95	45.19
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.03
173	Less than 2.0% of mass 174	0.93 (0.97)1
174	Greater than 50.0% of mass 95	95.27
175	5.0 - 9.0% of mass 174	7.02 (7.36)1
176	Greater than 95.0%, but less than 101.0% of mass 174	92.19 (96.77)1
177	5.0 - 9.0% of mass 176	6.15 (6.67)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD10	gn05c01.d	11/05/19	07:57
02	LCSG47	gn05l01.d	11/05/19	08:19
03	LCSG48	gn05l31.d	11/05/19	08:19
04	VBLKG47	gn05b01.d	11/05/19	08:41
05	VBLKG48	gn05b30.d	11/05/19	08:41
06	1187114	gn05s02.d	11/05/19	09:15
07	1187115	gn05s03.d	11/05/19	09:38
08	1187104	gn05s04.d	11/05/19	10:00
09	1187105	gn05s05.d	11/05/19	10:22
10	1187109	gn05s06.d	11/05/19	10:44
11	1187110	gn05s07.d	11/05/19	11:07
12	1187111	gn05s08.d	11/05/19	11:29
13	1187112	gn05s09.d	11/05/19	11:52
14	1187113	gn05s10.d	11/05/19	12:14
15	1187106	gn05s11.d	11/05/19	12:36
16	1187107MS	gn05s12.d	11/05/19	12:58
17	1187108MSD	gn05s13.d	11/05/19	13:20
18	1187275DL	gn05s32.d	11/05/19	14:04
19	1187275DL2	gn05s33.d	11/05/19	14:26
20	1188941RE	gn05s35.d	11/05/19	15:10
21	1188950DL	gn05s36.d	11/05/19	15:32
22	1188962	gn05s41.d	11/05/19	17:46

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date(s): 10/21/19 10/21/19

Heated Purge: (Y/N) Y Calibration Times: 16:39 18:52

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF0.2= gc21i07.d RRF0.5= gc21i06.d RRF 1 = gc21i05.d
RRF 2 = gc21i04.d RRF 5 = gc21i03.d RRF 10= gc21i02.d RRF 25= gc21i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Dichlorodifluoromethane	#0.2984	0.3068	0.3235	0.3466	0.3302	0.3440	0.3230	0.3246	5	AVG #
Chloromethane	#0.3133	0.3179	0.2964	0.3161	0.3010	0.3021	0.2827	0.3042	4	AVG #
Vinyl Chloride	#0.2836	0.2992	0.2972	0.3219	0.3071	0.3155	0.2956	0.3029	4	AVG #
1,3-Butadiene	0.2981	0.2996	0.2691	0.2664	0.2429	0.2496	0.2341	0.2657	10	AVG
Bromomethane	#0.2240	0.2324	0.2215	0.2362	0.2273	0.2357	0.2249	0.2289	3	AVG #
Chloroethane	#0.1743	0.1836	0.1749	0.1857	0.1774	0.1842	0.1739	0.1791	3	AVG #
Dichlorofluoromethane	0.4182	0.4299	0.4025	0.4294	0.4042	0.4180	0.3953	0.4139	3	AVG
Trichlorofluoromethane	#0.3817	0.4126	0.4006	0.4223	0.4078	0.4191	0.3990	0.4062	3	AVG #
Ethyl ether	0.1675	0.1882	0.1874	0.1932	0.1835	0.1935	0.1840	0.1853	5	AVG
Freon 123a	0.2414	0.2777	0.2679	0.2806	0.2631	0.2711	0.2654	0.2667	5	AVG
Acrolein	2.3442	2.2916	2.4343	2.3800	2.3648	2.3725	2.2673	2.3507	2	AVG
1,1-Dichloroethene	#0.1884	0.2085	0.2029	0.2203	0.2044	0.2103	0.2039	0.2055	5	AVG #
Freon 113	#0.1970	0.2447	0.2414	0.2573	0.2387	0.2527	0.2444	0.2395	8	AVG #
Acetone	#2.8887	2.5718	2.5910	2.5368	2.5231	2.3377	2.3047	2.5363	8	AVG #
Methyl Iodide	0.4213	0.4512	0.4415	0.4625	0.4417	0.4613	0.4408	0.4457	3	AVG
Carbon Disulfide	#0.7003	0.7877	0.7481	0.7974	0.7462	0.7755	0.7508	0.7580	4	AVG #
Allyl Chloride	0.3083	0.3068	0.2968	0.3153	0.2884	0.3021	0.2909	0.3012	3	AVG
Methyl Acetate	#7.2971	5.4400	6.0767	6.0279	6.1782	5.9416	6.2881	6.1785	9	AVG #
Methylene Chloride	#0.2582	0.2522	0.2330	0.2443	0.2292	0.2372	0.2260	0.2400	5	AVG #
t-Butyl Alcohol	0.8807	0.8740	0.9022	0.8903	0.8887	0.8211	0.8520	0.8727	3	AVG
Acrylonitrile	1.8149	2.8039	3.4493	3.6038	3.6254	3.6398	3.5789	3.2166	21	2NDDEG
trans-1,2-Dichloroethene	#0.2324	0.2399	0.2342	0.2457	0.2330	0.2409	0.2341	0.2372	2	AVG #
Methyl Tertiary Butyl Ether	#0.5980	0.6292	0.6233	0.6486	0.6251	0.6408	0.5985	0.6234	3	AVG #
n-Hexane	0.2500	0.3219	0.3252	0.3421	0.3226	0.3356	0.3377	0.3193	10	AVG
1,1-Dichloroethane	#0.3820	0.4216	0.4007	0.4189	0.3958	0.4126	0.4002	0.4045	3	AVG #
di-Isopropyl Ether	0.6824	0.7441	0.7299	0.7711	0.7288	0.7520	0.7271	0.7336	4	AVG
2-Chloro-1,3-Butadiene	0.3051	0.3784	0.3615	0.3898	0.3619	0.3729	0.3630	0.3618	7	AVG
Ethyl t-butyl ether	0.7229	0.7772	0.7332	0.7898	0.7246	0.7504	0.7034	0.7431	4	AVG
cis-1,2-Dichloroethene	#0.2253	0.2658	0.2547	0.2734	0.2581	0.2709	0.2608	0.2584	6	AVG #
2,2-Dichloropropane	0.2620	0.2784	0.2689	0.2875	0.2780	0.2956	0.2936	0.2806	4	AVG
2-Butanone	#4.3144	3.9230	4.9597	5.4633	5.1939	5.0541	4.9635	4.8388	11	AVG #
Propionitrile	0.3442	0.4687	0.6640	0.8419	0.8610	0.9090	0.9830	0.7245	33	2NDDEG
Methacrylonitrile	4.8995	5.2039	5.8293	5.8272	5.3922	5.3858	5.2584	5.3995	6	AVG
Bromochloromethane	0.1207	0.1223	0.1282	0.1364	0.1273	0.1348	0.1281	0.1283	5	AVG
Tetrahydrofuran	1.1930	1.4253	1.6409	1.6094	1.6378	1.6090	1.5816	1.5281	11	AVG
Chloroform	#0.3847	0.4161	0.4099	0.4345	0.4014	0.4218	0.4088	0.4110	4	AVG #
1,1,1-Trichloroethane	#0.3222	0.3760	0.3626	0.3761	0.3598	0.3699	0.3649	0.3617	5	AVG #
Cyclohexane	#0.3256	0.4005	0.4076	0.4274	0.3921	0.4075	0.4031	0.3948	8	AVG #
Cyclohexane(2)	#0.3073	0.3752	0.3679	0.3946	0.3660	0.3820	0.3782	0.3673	8	AVG #
Cyclohexane(3)	#0.1099	0.1229	0.1264	0.1353	0.1247	0.1298	0.1281	0.1253	6	AVG #
1,1-Dichloropropene	0.3018	0.3477	0.3252	0.3415	0.3154	0.3284	0.3250	0.3264	5	AVG
Carbon Tetrachloride	#0.2645	0.3313	0.3255	0.3443	0.3259	0.3462	0.3423	0.3257	9	AVG #
Isobutyl Alcohol	0.2158	0.2555	0.2812	0.2503	0.2763	0.2955	0.3005	0.2679	11	AVG
Benzene	#0.9049	0.9817	0.9208	0.9931	0.9096	0.9556	0.9346	0.9429	4	AVG #
1,2-Dichloroethane	#0.2839	0.2752	0.2646	0.2707	0.2517	0.2631	0.2556	0.2664	4	AVG #
1,2-Dichloroethane(2)	#0.0124	0.0250	0.0256	0.0274	0.0245	0.0256	0.0245	0.0236	21	AVG #<-
t-Amyl methyl ether	0.6408	0.6979	0.6746	0.7275	0.6825	0.7024	0.6668	0.6846	4	AVG
n-Heptane	0.3082	0.3611	0.3318	0.3503	0.3164	0.3259	0.3362	0.3328	6	AVG
n-Butanol	0.1181	0.1752	0.2175	0.2492	0.2827	0.3088	0.3176	0.2384	31	2NDDEG
Trichloroethene	#0.2365	0.2589	0.2461	0.2637	0.2490	0.2606	0.2555	0.2529	4	AVG #
Methylcyclohexane	#0.3583	0.4205	0.4269	0.4610	0.4233	0.4408	0.4363	0.4239	8	AVG #
1,2-Dichloropropane	#0.2180	0.2381	0.2275	0.2446	0.2337	0.2410	0.2390	0.2346	4	AVG #

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date(s): 10/21/19 10/21/19

Heated Purge: (Y/N) Y Calibration Times: 16:39 18:52

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF0.2= gc21i07.d RRF0.5= gc21i06.d RRF 1 = gc21i05.d
RRF 2 = gc21i04.d RRF 5 = gc21i03.d RRF 10= gc21i02.d RRF 25= gc21i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Methyl Methacrylate	9.2486	10.116	11.375	12.262	11.124	11.345	11.142	10.944	9	AVG
Dibromomethane	0.1102	0.1240	0.1243	0.1337	0.1257	0.1309	0.1283	0.1253	6	AVG
1,4-Dioxane			0.0661	0.0695	0.0698	0.0735	0.0758	0.0709	5	AVG
1,4-Dioxane(2)		0.0149	0.0328	0.0453	0.0460	0.0474	0.0488	0.0392	34	AVG
Bromodichloromethane	#0.2693	0.2981	0.2925	0.3135	0.3036	0.3226	0.3163	0.3023	6	AVG #
2-Nitropropane	2.8679	2.8641	3.1264	3.2044	2.9939	3.0569	3.0542	3.0240	4	AVG
cis-1,3-Dichloropropene	#0.3182	0.3405	0.3448	0.3799	0.3627	0.3850	0.3822	0.3591	7	AVG #
4-Methyl-2-Pentanone	#13.463	13.487	14.679	14.820	14.008	13.930	13.555	13.991	4	AVG #
Toluene	#0.7869	0.8202	0.7890	0.8258	0.7723	0.8089	0.7749	0.7969	3	AVG #
trans-1,3-Dichloropropene	#0.3195	0.3737	0.3785	0.4166	0.4059	0.4378	0.4271	0.3942	10	AVG #
Ethyl Methacrylate	0.3313	0.3684	0.3652	0.4030	0.3932	0.4155	0.3984	0.3821	8	AVG
1,1,2-Trichloroethane	#0.2246	0.2394	0.2401	0.2452	0.2345	0.2462	0.2374	0.2382	3	AVG #
Tetrachloroethene	#0.3565	0.3870	0.3770	0.3937	0.3742	0.3942	0.3824	0.3807	3	AVG #
1,3-Dichloropropane	0.3810	0.4074	0.4123	0.4293	0.4064	0.4234	0.4063	0.4094	4	AVG
2-Hexanone	#10.025	10.284	10.984	10.994	10.199	9.9661	9.7905	10.320	5	AVG #
Dibromochloromethane	#0.2566	0.2882	0.2938	0.3221	0.3151	0.3348	0.3255	0.3052	9	AVG #
1,2-Dibromoethane	#0.2219	0.2372	0.2353	0.2539	0.2432	0.2539	0.2443	0.2414	5	AVG #
1-Chlorohexane	0.4828	0.5067	0.4707	0.4905	0.4510	0.4715	0.4626	0.4766	4	AVG
Chlorobenzene	#0.8825	0.9584	0.9227	0.9679	0.9116	0.9534	0.9244	0.9315	3	AVG #
1,1,1,2-Tetrachloroethane	0.3017	0.3225	0.3288	0.3478	0.3328	0.3567	0.3462	0.3338	6	AVG
Ethylbenzene	#1.4618	1.6111	1.5589	1.6275	1.5328	1.6003	1.5444	1.5624	4	AVG #
m+p-Xylene	#0.5688	0.6118	0.6021	0.6301	0.5956	0.6272	0.6073	0.6061	3	AVG #
o-Xylene	#0.5507	0.6231	0.5950	0.6182	0.5863	0.6225	0.6085	0.6006	4	AVG #
Styrene	#0.9183	1.0104	0.9881	1.0519	1.0037	1.0565	1.0241	1.0076	5	AVG #
Bromoform	#0.1432	0.1737	0.1739	0.1963	0.1997	0.2161	0.2151	0.1883	14	AVG #
Isopropylbenzene	#1.4264	1.6075	1.5452	1.6268	1.5342	1.6239	1.5673	1.5616	4	AVG #
1,1,2,2-Tetrachloroethane	#0.5143	0.5548	0.5459	0.5871	0.5549	0.5909	0.5710	0.5598	5	AVG #
Bromobenzene	0.7012	0.7278	0.7180	0.7649	0.7181	0.7666	0.7436	0.7343	3	AVG
trans-1,4-Dichloro-2-butene	4.2150	4.3347	4.8752	4.9657	4.8003	4.8693	4.9634	4.7176	7	AVG
1,2,3-Trichloropropane	0.1465	0.1570	0.1481	0.1553	0.1528	0.1570	0.1483	0.1521	3	AVG
n-Propylbenzene	3.0469	3.4279	3.2669	3.4576	3.2468	3.3653	3.2212	3.2904	4	AVG
2-Chlorotoluene	0.6320	0.7182	0.6878	0.7261	0.6885	0.7189	0.6979	0.6956	5	AVG
1,3,5-Trimethylbenzene	2.2507	2.4566	2.3186	2.4719	2.3249	2.4513	2.3737	2.3782	4	AVG
4-Chlorotoluene	0.6753	0.7623	0.7178	0.7680	0.7178	0.7474	0.7227	0.7302	4	AVG
tert-Butylbenzene	0.4829	0.5688	0.5077	0.5444	0.5051	0.5555	0.5499	0.5306	6	AVG
Pentachloroethane	0.4237	0.4425	0.4765	0.5161	0.5060	0.5416	0.5312	0.4911	9	AVG
1,2,4-Trimethylbenzene	2.3387	2.5722	2.4596	2.6073	2.4409	2.5834	2.5052	2.5010	4	AVG
sec-Butylbenzene	2.8999	3.2300	3.0663	3.2598	3.0536	3.1867	3.1158	3.1160	4	AVG
1,3-Dichlorobenzene	#1.4068	1.5053	1.4284	1.5020	1.4077	1.4876	1.4644	1.4575	3	AVG #
p-Isopropyltoluene	2.4328	2.7966	2.6371	2.8280	2.6588	2.7965	2.7547	2.7007	5	AVG
1,4-Dichlorobenzene	#1.4779	1.5735	1.4475	1.5480	1.4315	1.4897	1.4790	1.4924	3	AVG #
1,2,3-Trimethylbenzene	1.1621	1.1771	1.1472	1.2027	1.1352	1.1929	1.1697	1.1696	2	AVG
Benzyl Chloride	0.1119	0.1365	0.1508	0.1724	0.1890	0.2164	0.2264	0.1719	24	2NDDEG
n-Butylbenzene	1.2742	1.4179	1.3461	1.4385	1.3389	1.4053	1.3950	1.3737	4	AVG
1,2-Dichlorobenzene	#1.3252	1.3895	1.3331	1.4139	1.3252	1.3990	1.3554	1.3630	3	AVG #
1,2-Dibromo-3-chloropropane	#2.7756	2.8364	2.8454	3.0572	3.0292	3.0475	3.2859	2.9825	6	AVG #
1,3,5-Trichlorobenzene	1.1856	1.2915	1.2020	1.2717	1.2076	1.2608	1.2561	1.2393	3	AVG
1,2,4-Trichlorobenzene	#1.1109	1.2154	1.1253	1.1770	1.1157	1.1594	1.1524	1.1509	3	AVG #
Hexachlorobutadiene	0.5277	0.6299	0.5606	0.6105	0.5700	0.5921	0.5885	0.5828	6	AVG
Naphthalene	1.8311	1.9808	1.8441	1.9774	1.9035	2.0143	1.9483	1.9285	4	AVG
1,2,3-Trichlorobenzene	0.9647	1.0603	0.9861	1.0328	0.9832	1.0141	1.0112	1.0075	3	AVG
Dibromofluoromethane	0.2504	0.2541	0.2527	0.2538	0.2525	0.2543	0.2519	0.2528	1	AVG

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date(s): 10/21/19 10/21/19

Heated Purge: (Y/N) Y Calibration Times: 16:39 18:52

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

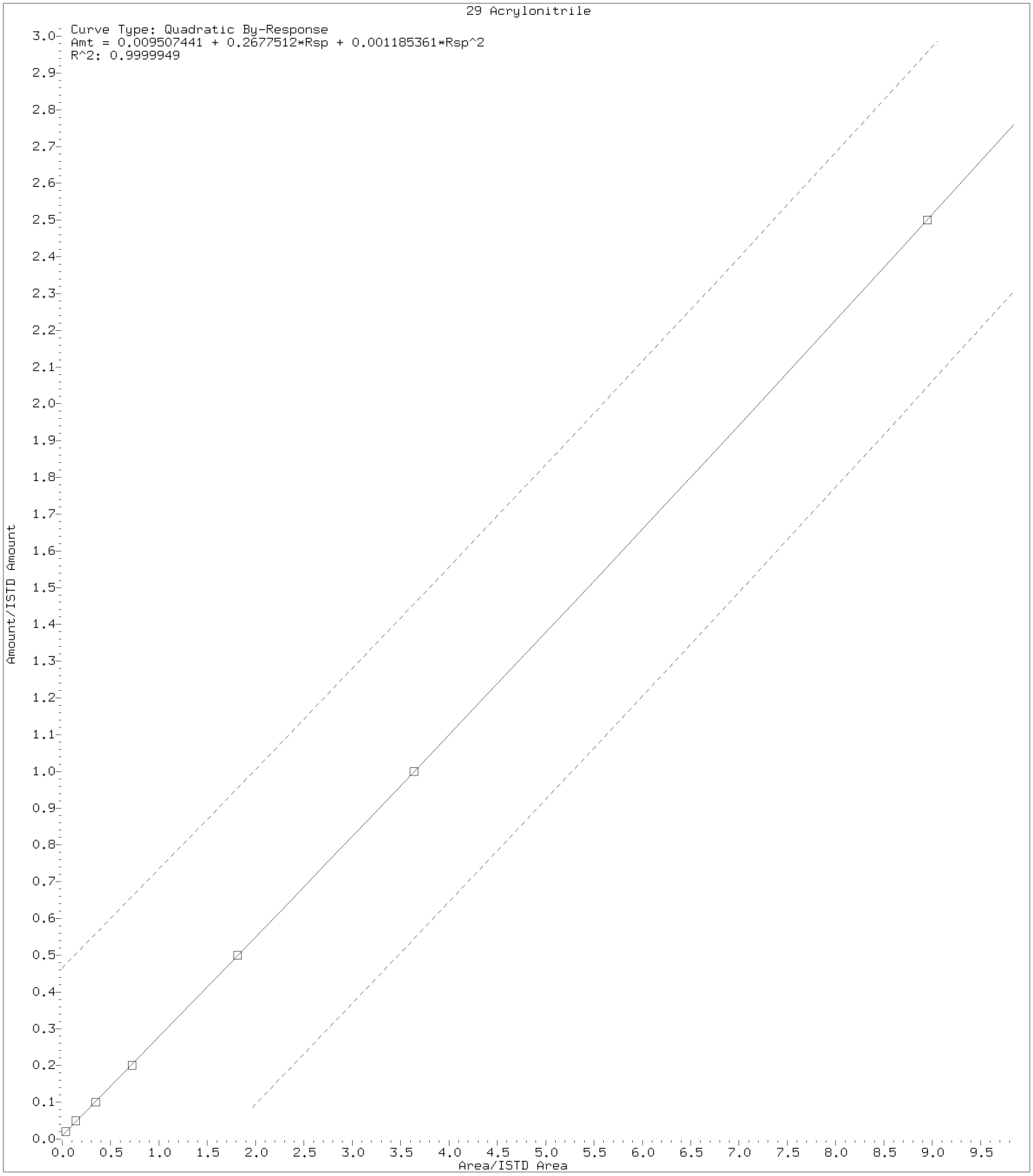
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RRF 2 = gc21i04.d RRF 5 = gc21i03.d RRF 10= gc21i02.d RRF 25= gc21i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Dibromofluoromethane(2)	0.2588	0.2629	0.2595	0.2593	0.2609	0.2591	0.2582	0.2598	1	AVG
1,2-Dichloroethane-d4	0.0511	0.0512	0.0519	0.0515	0.0506	0.0515	0.0507	0.0512	1	AVG
1,2-Dichloroethane-d4(2)	0.2360	0.2391	0.2378	0.2375	0.2322	0.2292	0.2303	0.2346	2	AVG
1,2-Dichloroethane-d4(3)	0.0327	0.0294	0.0327	0.0322	0.0323	0.0327	0.0325	0.0321	4	AVG
Toluene-d8	1.2876	1.2866	1.2906	1.2868	1.2777	1.2848	1.2635	1.2825	1	AVG
Toluene-d8(2)	0.8214	0.8214	0.8272	0.8238	0.8291	0.8379	0.8475	0.8298	1	AVG
4-Bromofluorobenzene	0.4815	0.4790	0.4825	0.4763	0.4755	0.4846	0.4759	0.4793	1	AVG
4-Bromofluorobenzene(2)	0.4318	0.4326	0.4359	0.4325	0.4336	0.4384	0.4331	0.4340	1	AVG

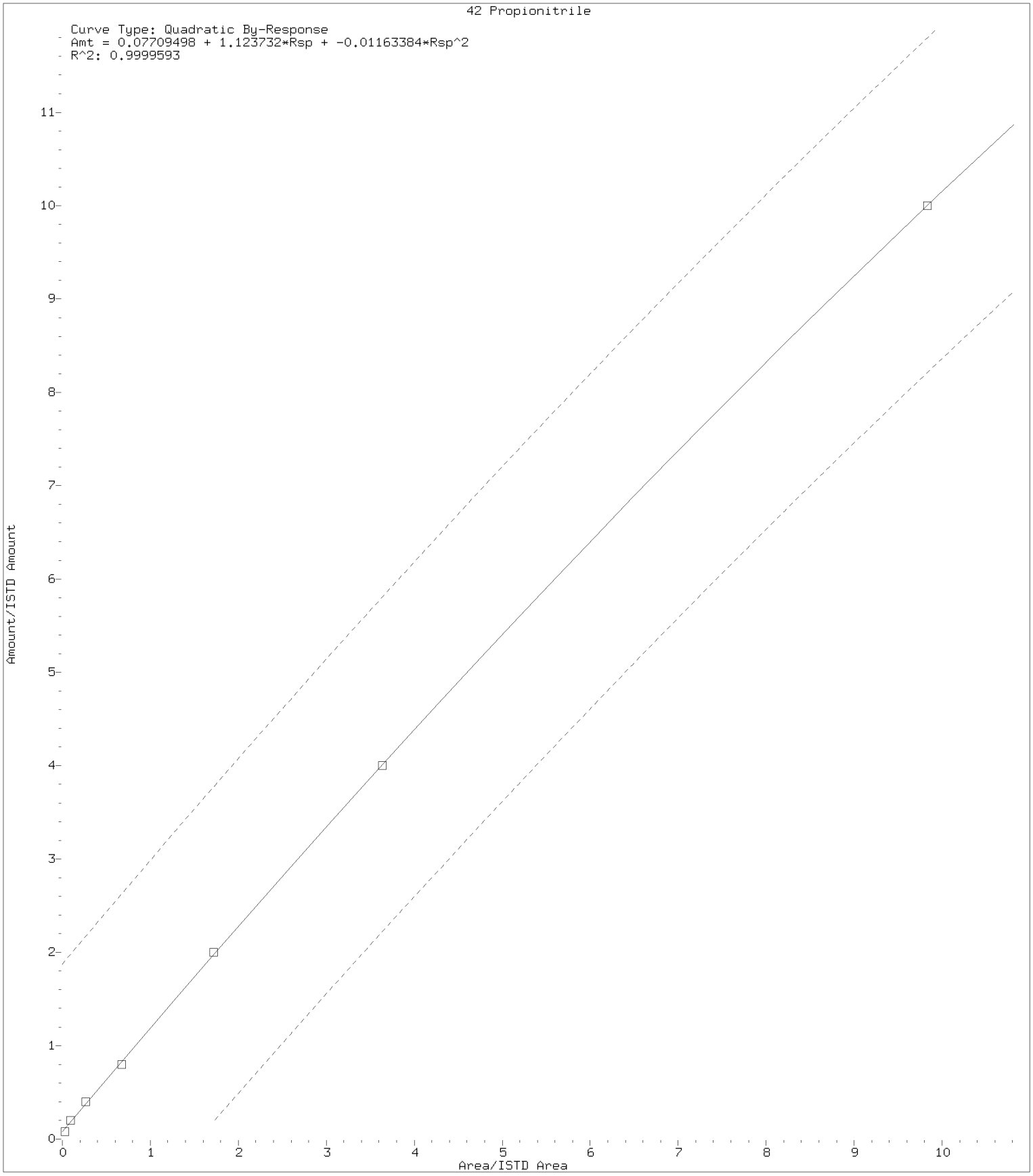
Average %RSD 6

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

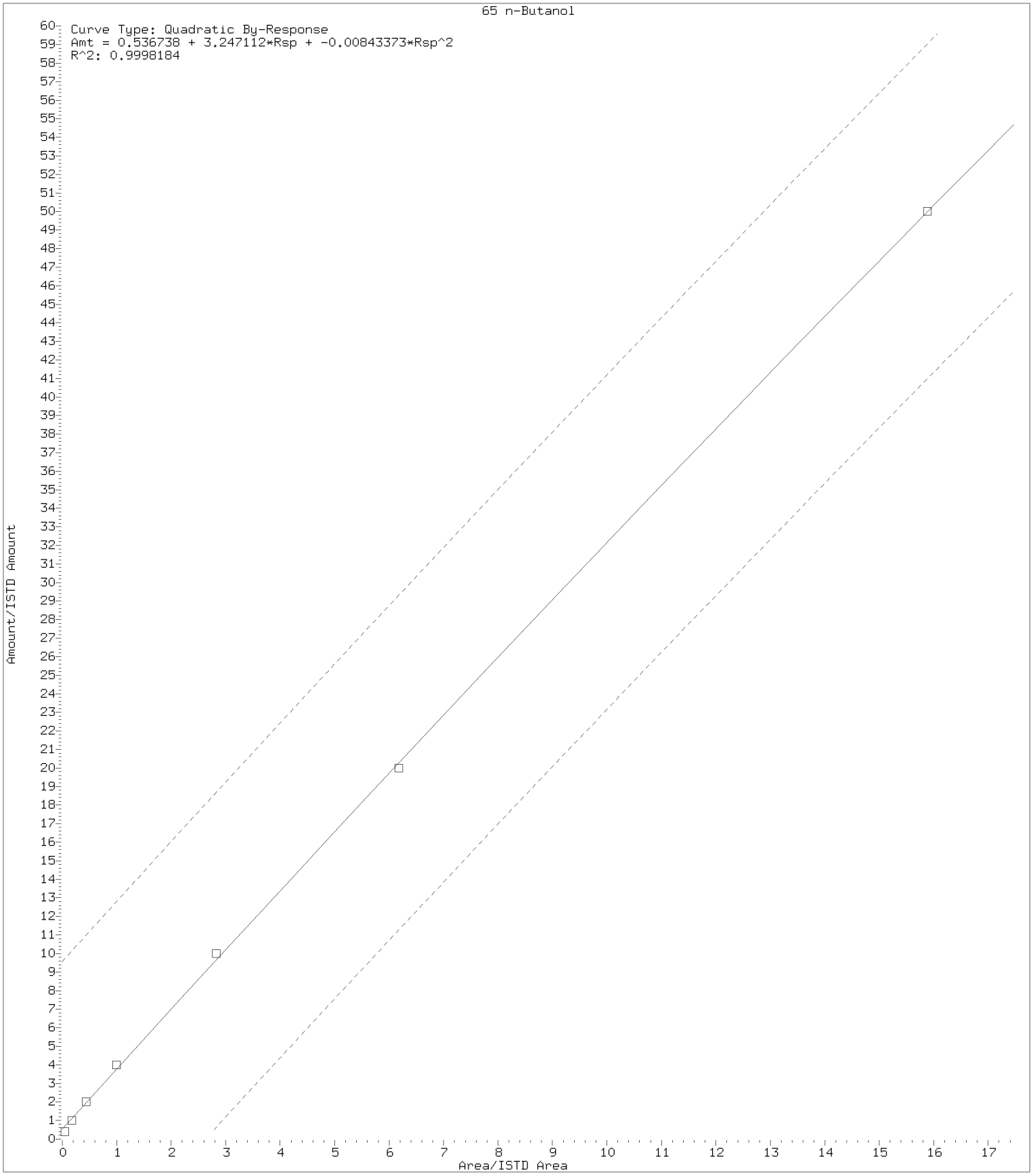
FORM VI VOA



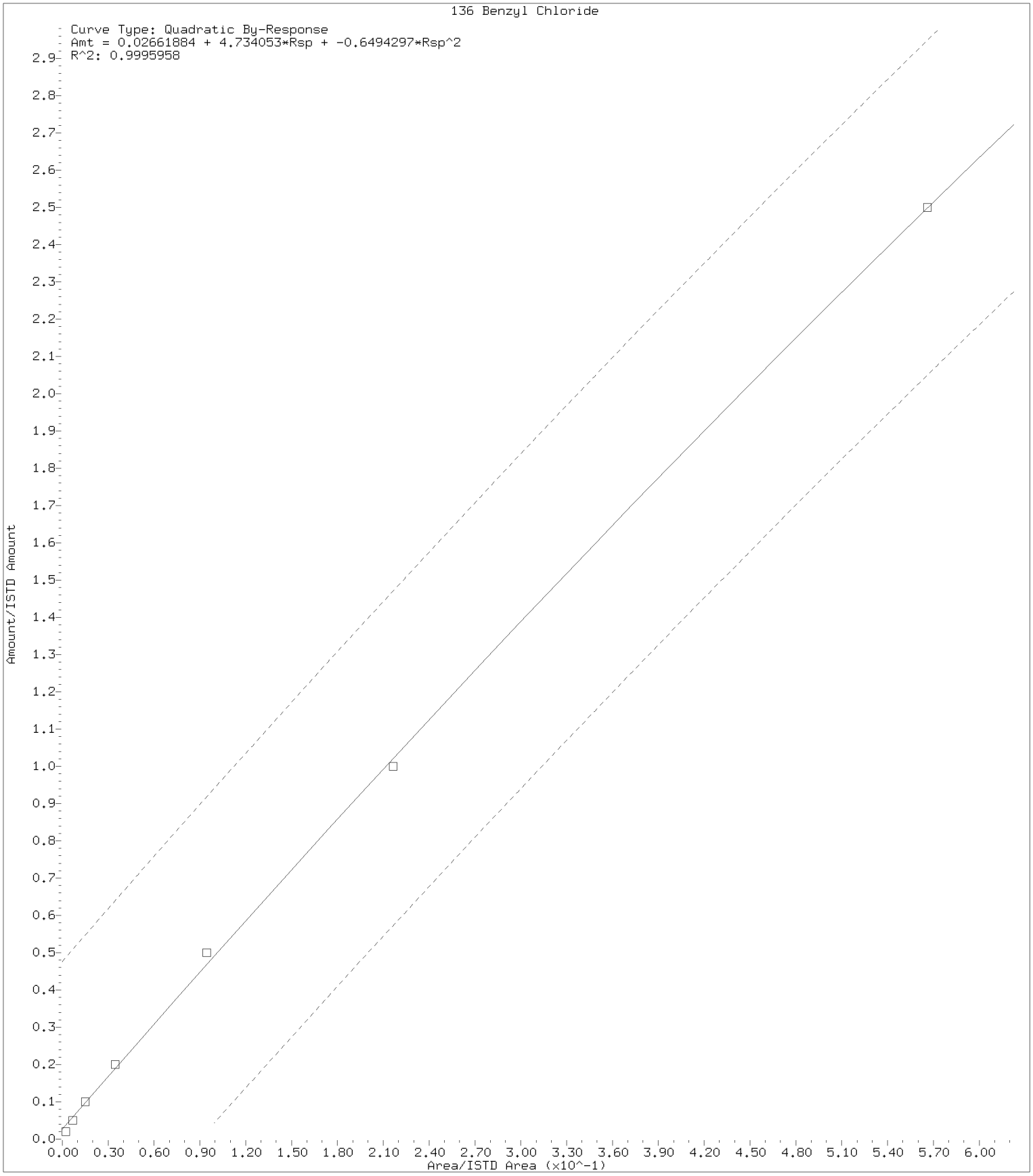
Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem2/HP16334.i/19oct21i.b/gc21i01.d	VSTD025
/chem2/HP16334.i/19oct21i.b/gc21i02.d	VSTD010
/chem2/HP16334.i/19oct21i.b/gc21i03.d	VSTD005
/chem2/HP16334.i/19oct21i.b/gc21i04.d	VSTD002
/chem2/HP16334.i/19oct21i.b/gc21i05.d	VSTD001
/chem2/HP16334.i/19oct21i.b/gc21i06.d	VSTD0.5
/chem2/HP16334.i/19oct21i.b/gc21i07.d	VSTD0.2

Area Summary

File ID:

Internal Standard Name	gc21i01.d	gc21i02.d	gc21i03.d	gc21i04.d	gc21i05.d	gc21i06.d	gc21i07.d	Avg. Area	%RSD	In Spec
t-Butyl Alcohol-d10	145345	148600	144981	130788	131247	136968	127722	137950	6	Yes
Fluorobenzene	2226640	2231798	2310014	2174054	2290961	2176593	2243741	2236257	2	Yes
Chlorobenzene-d5	1741783	1707464	1774449	1671566	1745972	1664260	1705633	1715875	2	Yes
1,4-Dichlorobenzene-d4	983623	958416	999158	936920	986509	930830	953234	964099	3	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	gc21i01.d	gc21i02.d	gc21i03.d	gc21i04.d	gc21i05.d	gc21i06.d	gc21i07.d	Avg. RT
t-Butyl Alcohol-d10	3.885	3.897	3.897	3.885	3.903	3.891	3.897	3.894
Fluorobenzene	7.391	7.391	7.385	7.391	7.391	7.391	7.391	7.390
Chlorobenzene-d5	10.951	10.951	10.951	10.951	10.951	10.951	10.951	10.951
1,4-Dichlorobenzene-d4	12.847	12.847	12.847	12.847	12.847	12.847	12.847	12.847

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 10/22/2019 at 07:21.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 ICV Date: 10/21/19 Time: 19:14

Lab File ID: gc21v01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
# Dichlorodifluoromethane	0.3246	0.3184	4.90	5	-2	#
# Chloromethane	0.3042	0.2968	4.88	5	-2	#
# Vinyl Chloride	0.3029	0.3063	5.06	5	1	#
1,3-Butadiene	0.2657	0.2481	4.67	5	-7	
# Bromomethane	0.2289	0.2275	4.97	5	-1	#
# Chloroethane	0.1791	0.1788	4.99	5	0	#
Dichlorofluoromethane	0.4139	0.4135	5.00	5	0	
# Trichlorofluoromethane	0.4062	0.4443	5.47	5	9	#
Ethyl ether	0.1853	0.1655	4.47	5	-11	
Freon 123a	0.2667	0.2676	5.02	5	0	
Acrolein	2.3507	2.4356	38.86	37.5	4	
# 1,1-Dichloroethene	0.2055	0.2131	5.19	5	4	#
# Freon 113	0.2395	0.2352	4.91	5	-2	#
# Acetone	2.5363	2.6517	39.21	37.5	5	#
Methyl Iodide	0.4457	0.4253	4.77	5	-5	
# Carbon Disulfide	0.7580	0.7116	4.69	5	-6	#
Allyl Chloride	0.3012	0.3082	5.12	5	2	
# Methyl Acetate	6.1785	6.6252	5.36	5	7	#
# Methylene Chloride	0.2400	0.2473	5.15	5	3	#
t-Butyl Alcohol	0.8727	0.9151	52.43	50	5	
Acrylonitrile	3.2166	3.9126	26.89	25	8	
# trans-1,2-Dichloroethene	0.2372	0.2415	5.09	5	2	#
# Methyl Tertiary Butyl Ether	0.6234	0.6240	5.00	5	0	#
n-Hexane	0.3193	0.3083	4.83	5	-3	
# 1,1-Dichloroethane	0.4045	0.4178	5.16	5	3	#
di-Isopropyl Ether	0.7336	0.7447	5.08	5	2	
2-Chloro-1,3-Butadiene	0.3618	0.3706	5.12	5	2	
Ethyl t-butyl ether	0.7431	0.7406	4.98	5	0	
# cis-1,2-Dichloroethene	0.2584	0.2909	5.63	5	13	#
2,2-Dichloropropane	0.2806	0.2845	5.07	5	1	
# 2-Butanone	4.8388	5.1958	40.27	37.5	7	#
Propionitrile	0.7245	0.7573	35.58	37.5	-5	
Methacrylonitrile	5.3995	6.0957	42.34	37.5	13	
Bromochloromethane	0.1283	0.1334	5.20	5	4	
Tetrahydrofuran	1.5281	1.7337	28.36	25	13	
# Chloroform	0.4110	0.4401	5.35	5	7	#

Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 ICV Date: 10/21/19 Time: 19:14

Lab File ID: gc21v01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
# 1,1,1-Trichloroethane	0.3617	0.3830	5.30	5	6	#
# Cyclohexane	0.3948	0.3811	4.83	5	-3	#
1,1-Dichloropropene	0.3264	0.3349	5.13	5	3	
# Carbon Tetrachloride	0.3257	0.3464	5.32	5	6	#
Isobutyl Alcohol	0.2679	0.2541	118.58	125	-5	
# Benzene	0.9429	0.9761	5.18	5	4	#
# 1,2-Dichloroethane	0.2664	0.2837	5.32	5	6	#
t-Amyl methyl ether	0.6846	0.6875	5.02	5	0	
n-Heptane	0.3328	0.2976	4.47	5	-11	
n-Butanol	0.2384	0.2742	248.66	250	-1	
# Trichloroethene	0.2529	0.2650	5.24	5	5	#
# Methylcyclohexane	0.4239	0.4403	5.19	5	4	#
# 1,2-Dichloropropane	0.2346	0.2548	5.43	5	9	#
Methyl Methacrylate	10.944	12.4773	5.70	5	14	
Dibromomethane	0.1253	0.1361	5.43	5	9	
1,4-Dioxane	0.0709	0.0775	136.63	125	9	
# Bromodichloromethane	0.3023	0.3337	5.52	5	10	#
2-Nitropropane	3.0240	2.8189	4.66	5	-7	
# cis-1,3-Dichloropropene	0.3591	0.3845	5.35	5	7	#
# 4-Methyl-2-Pentanone	13.991	015.4947	27.69	25	11	#
# Toluene	0.7969	0.8314	5.22	5	4	#
# trans-1,3-Dichloropropene	0.3942	0.4239	5.38	5	8	#
Ethyl Methacrylate	0.3821	0.3916	5.12	5	2	
# 1,1,2-Trichloroethane	0.2382	0.2674	5.61	5	12	#
# Tetrachloroethene	0.3807	0.3993	5.24	5	5	#
1,3-Dichloropropane	0.4094	0.4417	5.39	5	8	
# 2-Hexanone	10.320	011.4038	27.62	25	10	#
# Dibromochloromethane	0.3052	0.3375	5.53	5	11	#
# 1,2-Dibromoethane	0.2414	0.2611	5.41	5	8	#
1-Chlorohexane	0.4766	0.4732	4.97	5	-1	
# Chlorobenzene	0.9315	0.9881	5.30	5	6	#
1,1,1,2-Tetrachloroethane	0.3338	0.3632	5.44	5	9	
# Ethylbenzene	1.5624	1.6410	5.25	5	5	#
# m+p-Xylene	0.6061	0.6425	10.60	10	6	#
# o-Xylene	0.6006	0.6371	5.30	5	6	#
# Styrene	1.0076	1.0873	5.40	5	8	#

Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 ICV Date: 10/21/19 Time: 19:14

Lab File ID: gc21v01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
# Bromoform	0.1883	0.2080	5.52	5	10	#
# Isopropylbenzene	1.5616	1.6657	5.33	5	7	#
# 1,1,2,2-Tetrachloroethane	0.5598	0.5992	5.35	5	7	#
Bromobenzene	0.7343	0.7828	5.33	5	7	
trans-1,4-Dichloro-2-butene	4.7176	5.2145	27.63	25	11	
1,2,3-Trichloropropane	0.1521	0.1654	5.44	5	9	
n-Propylbenzene	3.2904	3.5146	5.34	5	7	
2-Chlorotoluene	0.6956	0.7407	5.32	5	6	
1,3,5-Trimethylbenzene	2.3782	2.5253	5.31	5	6	
4-Chlorotoluene	0.7302	0.7783	5.33	5	7	
tert-Butylbenzene	0.5306	0.5463	5.15	5	3	
Pentachloroethane	0.4911	0.5228	5.32	5	6	
1,2,4-Trimethylbenzene	2.5010	2.6144	5.23	5	5	
sec-Butylbenzene	3.1160	3.2854	5.27	5	5	
# 1,3-Dichlorobenzene	1.4575	1.5207	5.22	5	4	#
p-Isopropyltoluene	2.7007	2.8774	5.33	5	7	
# 1,4-Dichlorobenzene	1.4924	1.5746	5.28	5	6	#
1,2,3-Trimethylbenzene	1.1696	1.2417	5.31	5	6	
Benzyl Chloride	0.1719	0.1659	4.15	5	-17	
n-Butylbenzene	1.3737	1.4353	5.22	5	4	
# 1,2-Dichlorobenzene	1.3630	1.4544	5.34	5	7	#
# 1,2-Dibromo-3-chloropropane	2.9825	3.4788	5.83	5	17	#
1,3,5-Trichlorobenzene	1.2393	1.2991	5.24	5	5	
# 1,2,4-Trichlorobenzene	1.1509	1.2037	5.23	5	5	#
Hexachlorobutadiene	0.5828	0.6201	5.32	5	6	
Naphthalene	1.9285	2.0329	5.27	5	5	
1,2,3-Trichlorobenzene	1.0075	1.0535	5.23	5	5	
			Average %Drift		6	

Compounds with required minimum RRF.
Maximum % Drift = 30 %

^

Lancaster Laboratories
Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP16334.i/19oct21i.b/gc21i07.d
/chem2/HP16334.i/19oct21i.b/gc21i06.d
/chem2/HP16334.i/19oct21i.b/gc21i05.d
/chem2/HP16334.i/19oct21i.b/gc21i04.d
/chem2/HP16334.i/19oct21i.b/gc21i03.d
/chem2/HP16334.i/19oct21i.b/gc21i02.d
/chem2/HP16334.i/19oct21i.b/gc21i01.d

File /chem2/HP16334.i/19oct21i.b/gc21i02.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP16334.i/19nov05a.b/gn05c01.d

RT Summary

Internal Standard Name	File ID: gn05c01.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	3.867	3.897	Yes
Fluorobenzene	7.384	7.391	Yes
Chlorobenzene-d5	10.951	10.951	Yes
1,4-Dichlorobenzene-d4	12.847	12.847	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: gn05c01.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	149876	148600	74300	297200	Yes
Fluorobenzene	2162828	2231798	1115899	4463596	Yes
Chlorobenzene-d5	1702027	1707464	853732	3414928	Yes
1,4-Dichlorobenzene-d4	950648	958416	479208	1916832	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 11/05/2019 at 08:21

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date: 11/05/19 Time: 07:57

Lab File ID: gn05c01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF10	CONC.	CONC.	DRIFT	
# Dichlorodifluoromethane	0.3246	0.3300	10.16	10	2	#
# Chloromethane	0.3042	0.2975	9.78	10	-2	#
# Vinyl Chloride	0.3029	0.3142	10.37	10	4	#
1,3-Butadiene	0.2657	0.2447	9.21	10	-8	
# Bromomethane	0.2289	0.2307	10.08	10	1	#
# Chloroethane	0.1791	0.1751	9.78	10	-2	#
Dichlorofluoromethane	0.4139	0.4145	10.01	10	0	
# Trichlorofluoromethane	0.4062	0.3814	9.39	10	-6	#
Ethyl ether	0.1853	0.1745	9.42	10	-6	
Freon 123a	0.2667	0.2532	9.49	10	-5	
Acrolein	2.3507	1.9684	418.68	500	-16	
# 1,1-Dichloroethene	0.2055	0.1892	9.21	10	-8	#
# Freon 113	0.2395	0.2239	9.35	10	-6	#
# Acetone	2.5363	2.0412	80.48	100	-20	#
Methyl Iodide	0.4457	0.4138	9.28	10	-7	
# Carbon Disulfide	0.7580	0.6929	9.14	10	-9	#
Allyl Chloride	0.3012	0.2847	9.45	10	-5	
# Methyl Acetate	6.1785	5.3546	8.67	10	-13	#
# Methylene Chloride	0.2400	0.2171	9.05	10	-10	#
t-Butyl Alcohol	0.8727	0.7547	172.95	200	-14	
Acrylonitrile	3.2166	3.2005	43.93	50	-12	
# trans-1,2-Dichloroethene	0.2372	0.2215	9.34	10	-7	#
# Methyl Tertiary Butyl Ether	0.6234	0.5848	9.38	10	-6	#
n-Hexane	0.3193	0.3231	10.12	10	1	
# 1,1-Dichloroethane	0.4045	0.3760	9.30	10	-7	#
di-Isopropyl Ether	0.7336	0.6709	9.14	10	-9	
2-Chloro-1,3-Butadiene	0.3618	0.3236	8.94	10	-11	
Ethyl t-butyl ether	0.7431	0.6745	9.08	10	-9	
# cis-1,2-Dichloroethene	0.2584	0.2533	9.80	10	-2	#
2,2-Dichloropropane	0.2806	0.3069	10.94	10	9	
# 2-Butanone	4.8388	4.3259	89.40	100	-11	#
Propionitrile	0.7245	0.8630	190.87	200	-5	
Methacrylonitrile	5.3995	4.7023	87.09	100	-13	
Bromochloromethane	0.1283	0.1274	9.93	10	-1	
Tetrahydrofuran	1.5281	1.4384	94.12	100	-6	
# Chloroform	0.4110	0.3819	9.29	10	-7	#

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date: 11/05/19 Time: 07:57

Lab File ID: gn05c01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF10	CONC.	CONC.	DRIFT	
# 1,1,1-Trichloroethane	0.3617	0.3372	9.32	10	-7	#
# Cyclohexane	0.3948	0.3826	9.69	10	-3	#
# Cyclohexane(2)	0.3673	0.3603	9.81	10	-2	#
# Cyclohexane(3)	0.1253	0.1242	9.92	10	-1	#
1,1-Dichloropropene	0.3264	0.3044	9.32	10	-7	
# Carbon Tetrachloride	0.3257	0.3120	9.58	10	-4	#
Isobutyl Alcohol	0.2679	0.2541	474.27	500	-5	
# Benzene	0.9429	0.8964	9.51	10	-5	#
# 1,2-Dichloroethane	0.2664	0.2313	8.68	10	-13	#
# 1,2-Dichloroethane(2)	0.0236	0.0237	10.07	10	1	#<-
t-Amyl methyl ether	0.6846	0.6581	9.61	10	-4	
n-Heptane	0.3328	0.3251	9.77	10	-2	
n-Butanol	0.2384	0.2786	918.25	1000	-8	
# Trichloroethene	0.2529	0.2400	9.49	10	-5	#
# Methylcyclohexane	0.4239	0.4398	10.38	10	4	#
# 1,2-Dichloropropane	0.2346	0.2268	9.67	10	-3	#
Methyl Methacrylate	10.9440	9.6300	8.80	10	-12	
Dibromomethane	0.1253	0.1177	9.40	10	-6	
1,4-Dioxane	0.0709	0.0645	454.76	500	-9	
1,4-Dioxane(2)	0.0392	0.0411	523.98	500	5	
# Bromodichloromethane	0.3023	0.2925	9.68	10	-3	#
2-Nitropropane	3.0240	2.5153	83.18	100	-17	
# cis-1,3-Dichloropropene	0.3591	0.3651	10.17	10	2	#
# 4-Methyl-2-Pentanone	13.9910	11.6108	82.98	100	-17	#
# Toluene	0.7969	0.7393	9.28	10	-7	#
# trans-1,3-Dichloropropene	0.3942	0.3979	10.10	10	1	#
Ethyl Methacrylate	0.3821	0.3683	9.64	10	-4	
# 1,1,2-Trichloroethane	0.2382	0.2274	9.55	10	-5	#
# Tetrachloroethene	0.3807	0.3660	9.61	10	-4	#
1,3-Dichloropropane	0.4094	0.3836	9.37	10	-6	
# 2-Hexanone	10.3200	8.2907	80.33	100	-20	#
# Dibromochloromethane	0.3052	0.2999	9.83	10	-2	#
# 1,2-Dibromoethane	0.2414	0.2310	9.57	10	-4	#
1-Chlorohexane	0.4766	0.4296	9.02	10	-10	
# Chlorobenzene	0.9315	0.8770	9.41	10	-6	#
1,1,1,2-Tetrachloroethane	0.3338	0.3217	9.64	10	-4	

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date: 11/05/19 Time: 07:57

Lab File ID: gn05c01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF10	CONC.	CONC.	DRIFT	
# Ethylbenzene	1.5624	1.4674	9.39	10	-6	#
# m+p-Xylene	0.6061	0.5867	19.36	20	-3	#
# o-Xylene	0.6006	0.5842	9.73	10	-3	#
# Styrene	1.0076	0.9814	9.74	10	-3	#
# Bromoform	0.1883	0.1947	10.34	10	3	#
# Isopropylbenzene	1.5616	1.5147	9.70	10	-3	#
# 1,1,2,2-Tetrachloroethane	0.5598	0.5334	9.53	10	-5	#
Bromobenzene	0.7343	0.7165	9.76	10	-2	
trans-1,4-Dichloro-2-butene	4.7176	3.9339	83.39	100	-17	
1,2,3-Trichloropropane	0.1521	0.1450	9.53	10	-5	
n-Propylbenzene	3.2904	3.1125	9.46	10	-5	
2-Chlorotoluene	0.6956	0.6599	9.49	10	-5	
1,3,5-Trimethylbenzene	2.3782	2.3267	9.78	10	-2	
4-Chlorotoluene	0.7302	0.6876	9.42	10	-6	
tert-Butylbenzene	0.5306	0.4972	9.37	10	-6	
Pentachloroethane	0.4911	0.5141	10.47	10	5	
1,2,4-Trimethylbenzene	2.5010	2.4434	9.77	10	-2	
sec-Butylbenzene	3.1160	3.0275	9.72	10	-3	
# 1,3-Dichlorobenzene	1.4575	1.4014	9.62	10	-4	#
p-Isopropyltoluene	2.7007	2.6158	9.69	10	-3	
# 1,4-Dichlorobenzene	1.4924	1.4049	9.41	10	-6	#
1,2,3-Trimethylbenzene	1.1696	1.1472	9.81	10	-2	
Benzyl Chloride	0.1719	0.2553	11.93	10	19	
n-Butylbenzene	1.3737	1.3196	9.61	10	-4	
# 1,2-Dichlorobenzene	1.3630	1.3110	9.62	10	-4	#
# 1,2-Dibromo-3-chloropropane	2.9825	2.7761	9.31	10	-7	#
1,3,5-Trichlorobenzene	1.2393	1.1744	9.48	10	-5	
# 1,2,4-Trichlorobenzene	1.1509	1.0745	9.34	10	-7	#
Hexachlorobutadiene	0.5828	0.5445	9.34	10	-7	
Naphthalene	1.9285	1.8662	9.68	10	-3	
1,2,3-Trichlorobenzene	1.0075	0.9285	9.22	10	-8	
Dibromofluoromethane	0.2528	0.2513	9.94	10	-1	
Dibromofluoromethane(2)	0.2598	0.2536	9.76	10	-2	
1,2-Dichloroethane-d4	0.0512	0.0518	10.13	10	1	
1,2-Dichloroethane-d4(2)	0.2346	0.2223	9.48	10	-5	

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP16334 Calibration Date: 11/05/19 Time: 07:57

Lab File ID: gn05c01.d Init. Calib. Date(s): 10/21/19 10/21/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT
1,2-Dichloroethane-d4(3)	0.0321	0.0334	10.40	10	4
Toluene-d8	1.2825	1.2734	9.93	10	-1
Toluene-d8(2)	0.8298	0.8265	9.96	10	0
4-Bromofluorobenzene	0.4793	0.4668	9.74	10	-3
4-Bromofluorobenzene(2)	0.4340	0.4396	10.13	10	1

Average %Drift 6

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): gn05c01.d Date Analyzed: 11/05/19

Instrument ID: HP16334 Time Analyzed: 07:57

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	149876	3.867	2162828	7.384	1702027	10.951	950648	12.847
UPPER LIMIT	299752	4.367	4325656	7.884	3404054	11.451	1901296	13.347
LOWER LIMIT	74938	3.367	1081414	6.884	851014	10.451	475324	12.347
LAB SAMPLE ID								
01 LCSG47	131239	3.879	2079278	7.391	1616261	10.951	908242	12.847
02 LCSG48	131239	3.879	2079278	7.391	1616261	10.951	908242	12.847
03 VBLKG47	139130	3.873	2075333	7.384	1614161	10.951	908229	12.847
04 VBLKG48	139130	3.873	2075333	7.384	1614161	10.951	908229	12.847
05 1187114	140853	3.873	2111299	7.384	1635035	10.945	919420	12.847
06 1187115	143654	3.873	2055345	7.390	1592955	10.951	891462	12.847
07 1187104	137955	3.885	1988076	7.390	1539106	10.951	861891	12.847
08 1187105	142293	3.879	2069671	7.390	1621721	10.951	904975	12.847
09 1187109	137693	3.879	2021867	7.390	1571222	10.951	883967	12.847
10 1187110	137345	3.891	2030290	7.396	1576845	10.951	884039	12.847
11 1187111	142733	3.879	2044851	7.390	1582456	10.951	885731	12.846
12 1187112	141408	3.867	2019344	7.390	1569825	10.951	877847	12.847
13 1187113	138780	3.879	1984502	7.390	1546969	10.951	867829	12.847
14 1187106	125271	3.903	1896766	7.390	1468657	10.951	826446	12.847
15 1187107MS	141180	3.897	2029405	7.396	1589809	10.951	890990	12.847
16 1187108MSD	122694	3.891	1974867	7.390	1543980	10.951	874950	12.847
17 1187275DL	134331	3.873	2027548	7.384	1579906	10.951	888838	12.847
18 1187275DL2	109200	3.891	1973479	7.390	1528340	10.951	853163	12.847
19 1188941RE	99265	3.873	1946253	7.390	1518558	10.951	849455	12.847
20 1188950DL	104915	3.891	1990432	7.391	1545091	10.951	861734	12.847
21 1188962	134555	3.873	1925018	7.391	1497731	10.951	827635	12.847

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

^

Sample Data

Volatiles by GC/MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s04.d Injection date and time: **05-NOV-2019 10:00**
Data file Sample Info. Line: 53R01;1187104;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 10:18 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.885	(-0.018)	377	65	137955	(-8)	50.00	
63) Fluorobenzene	7.390	(-0.006)	952	96	1988076	(-8)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1539106	(-10)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	861891	(-9)	10.00	

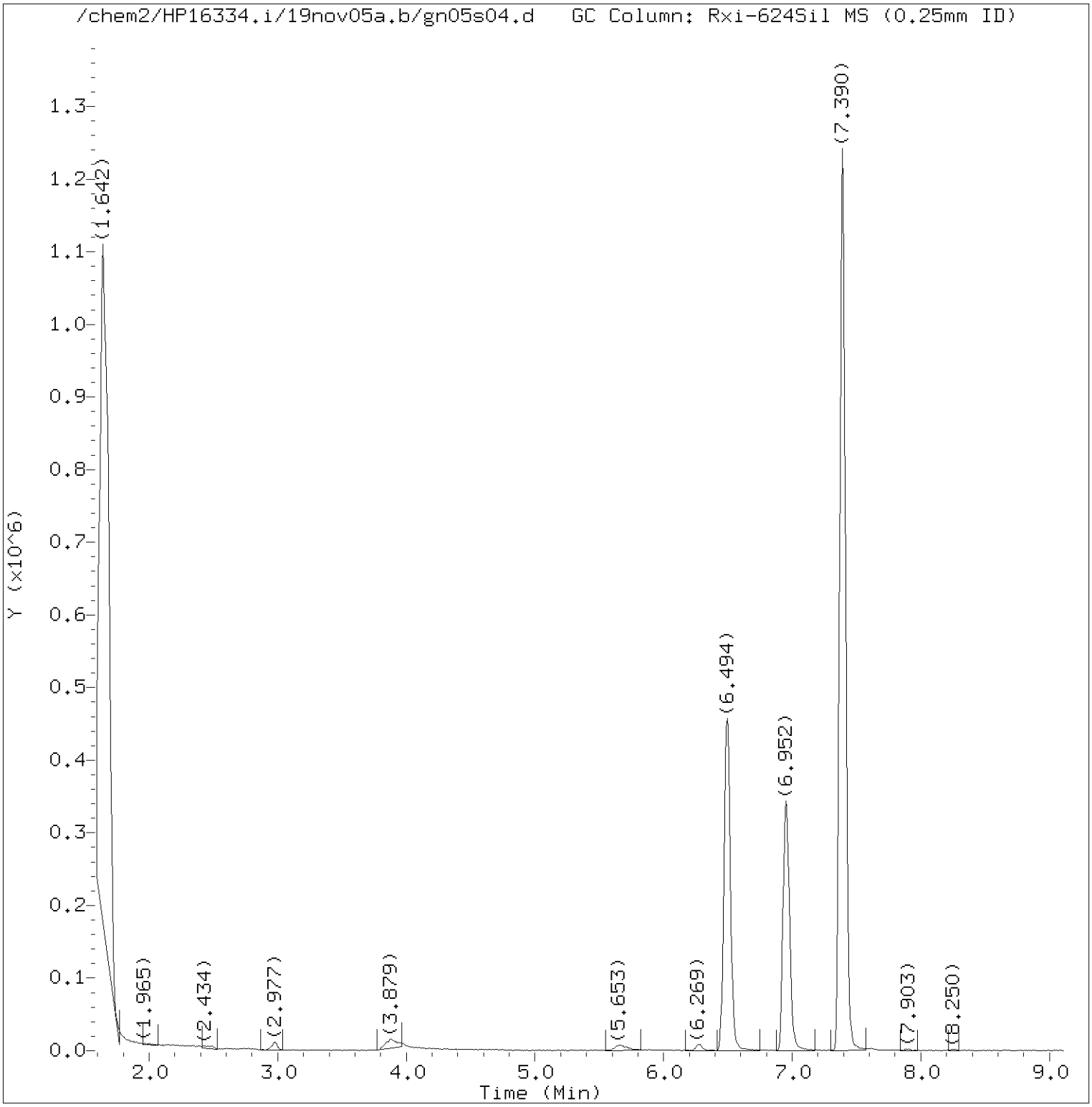
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	489786	9.745	97%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952	(0.001)	102	104971	10.313	103%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	1989682	10.080	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	726792	9.852	99%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:26. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:59. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

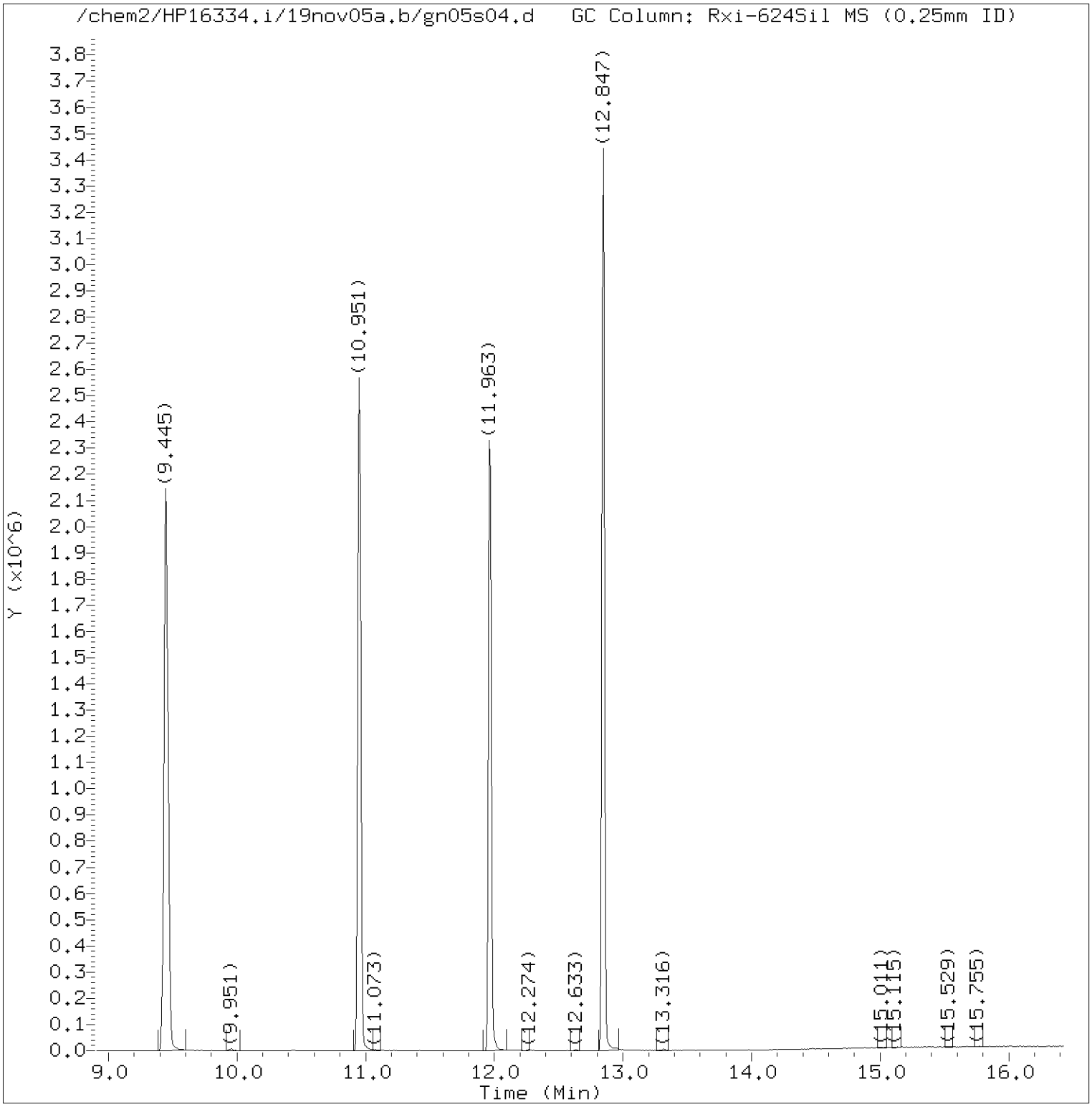
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s04.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:00 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:18 Automation

Sample Name: 53R01 Lab Sample ID: 1187104

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s04.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:00 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:18 Automation

Sample Name: 53R01 Lab Sample ID: 1187104

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s04.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:00 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:18 Automation

Sample Name: 53R01 Lab Sample ID: 1187104

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.885	65	137955	50.000
50)$Dibromofluoromethane	(2)	6.494	113	489786	9.745
57)$1,2-Dichloroethane-d4	(2)	6.952	102	104971	10.313
63)*Fluorobenzene	(2)	7.390	96	1988076	10.000
82)$Toluene-d8	(3)	9.445	98	1989682	10.080
97)*Chlorobenzene-d5	(3)	10.951	117	1539106	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	726792	9.852
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	861891	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1187105

Data file: /chem2/HP16334.i/19nov05a.b/gn05s05.d Injection date and time: **05-NOV-2019 10:22**
Data file Sample Info. Line: 53R02;1187105;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 10:40 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.879	(-0.012)	376	65	142293	(-5)	50.00	
63) Fluorobenzene	7.391	(-0.006)	952	96	2069671	(-4)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1621721	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	904975	(-5)	10.00	

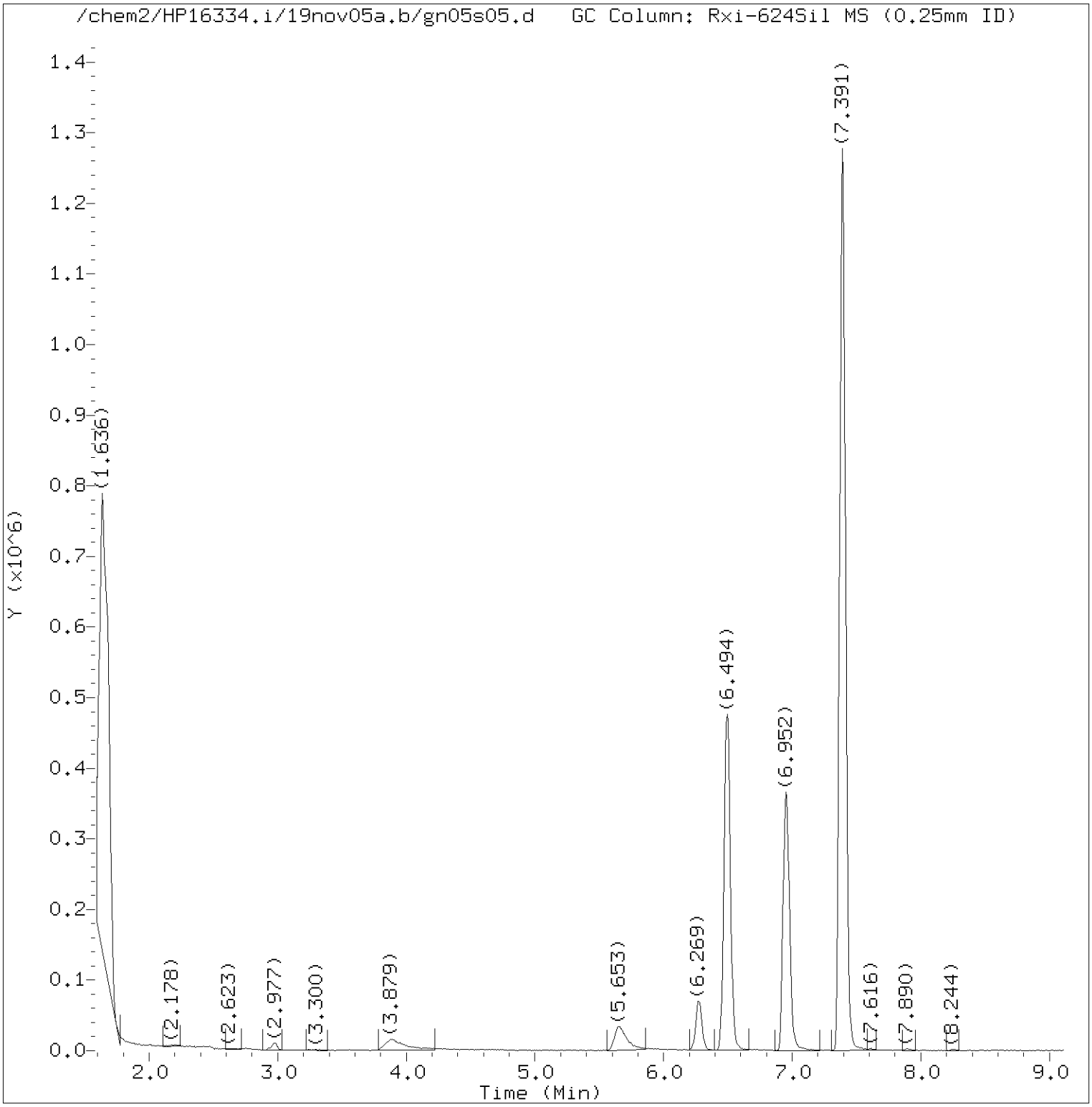
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	515504	9.852	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.958	(0.000)	102	109010	10.287	103%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2080520	10.003	100%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	761287	9.793	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:59. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

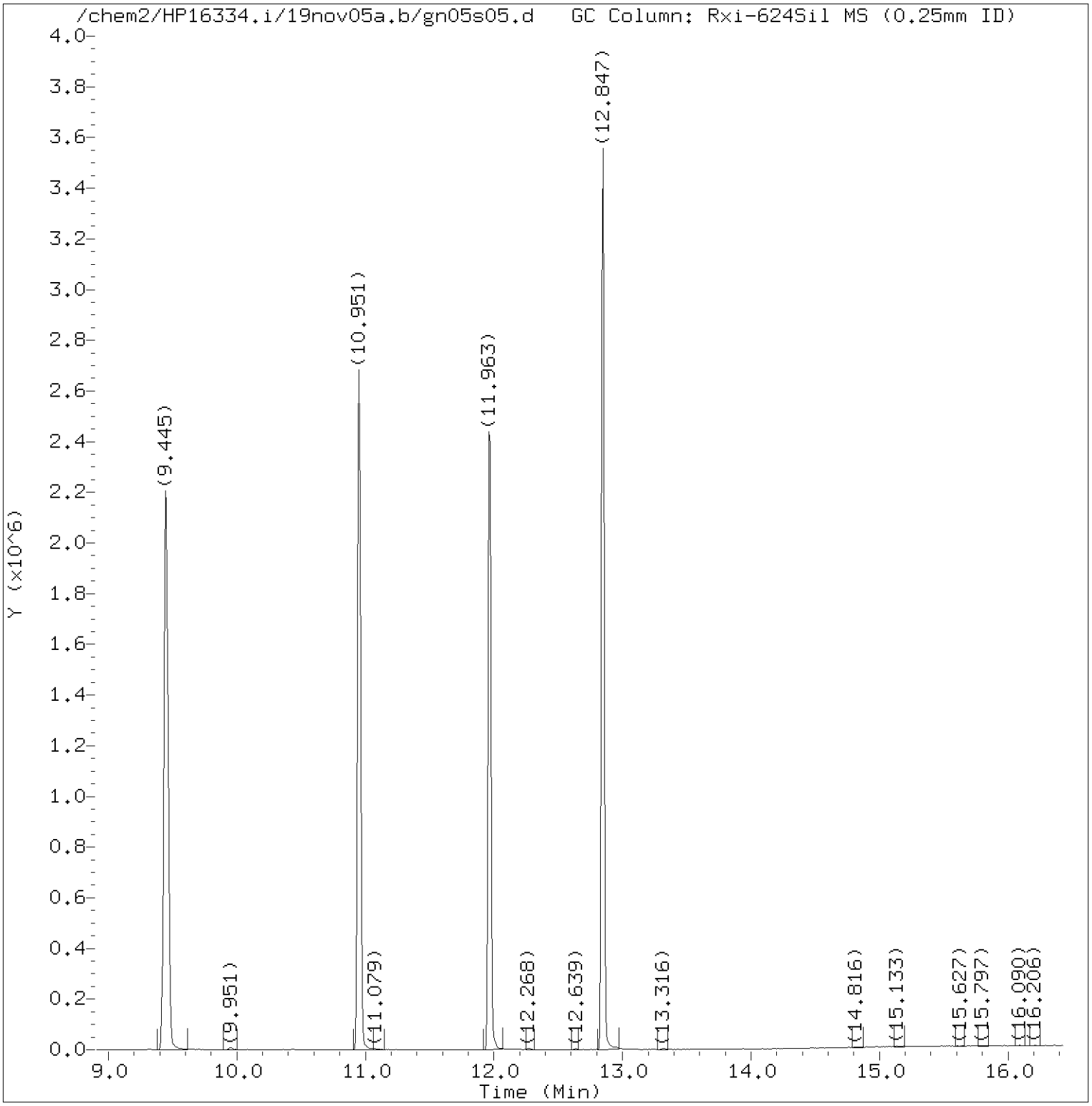
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s05.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:22 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:40 Automation

Sample Name: 53R02 Lab Sample ID: 1187105

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s05.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:22 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:40 Automation

Sample Name: 53R02 Lab Sample ID: 1187105

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s05.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:22 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 10:40 Automation

Sample Name: 53R02 Lab Sample ID: 1187105

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.879	65	142293	50.000
50)$Dibromofluoromethane	(2)	6.494	113	515504	9.852
57)$1,2-Dichloroethane-d4	(2)	6.958	102	109010	10.287
63)*Fluorobenzene	(2)	7.391	96	2069671	10.000
82)$Toluene-d8	(3)	9.445	98	2080520	10.003
97)*Chlorobenzene-d5	(3)	10.951	117	1621721	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	761287	9.793
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	904975	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

53R03 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1187106

Data file: /chem2/HP16334.i/19nov05a.b/gn05s11.d Injection date and time: **05-NOV-2019 12:36**
Data file Sample Info. Line: 53R03;1187106;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 12:54 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.903	(-0.037)	380	65	125271	(-16)	50.00	
63) Fluorobenzene	7.391	(-0.006)	952	96	1896766	(-12)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1468657	(-14)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	826446	(-13)	10.00	

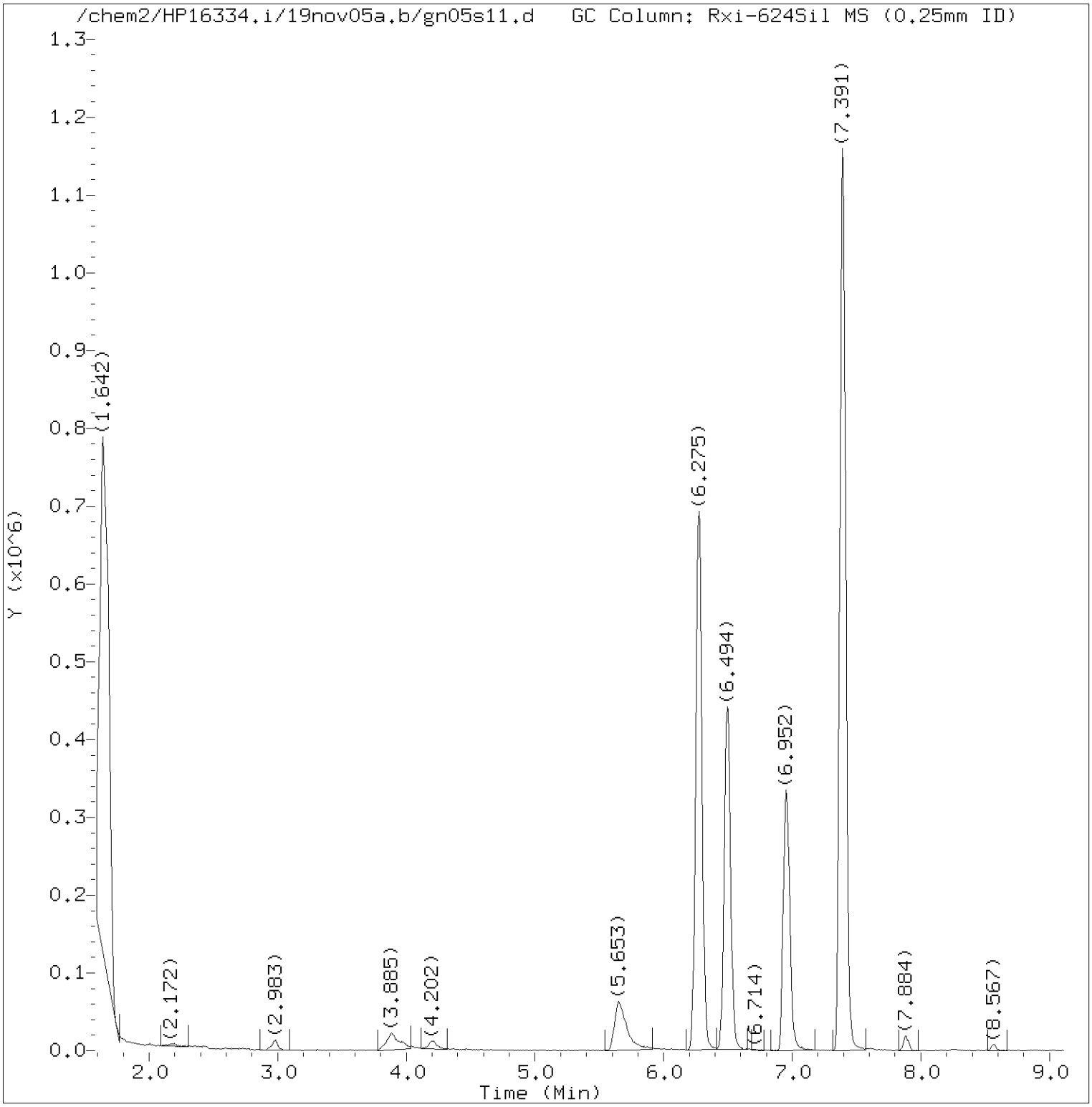
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	476205	9.930	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952	(0.001)	102	91253	9.397	94%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	1915089	10.167	102%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	691998	9.830	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)	7.884	(-0.000)	95	9801	0.204	0.20		J	0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 13:36. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

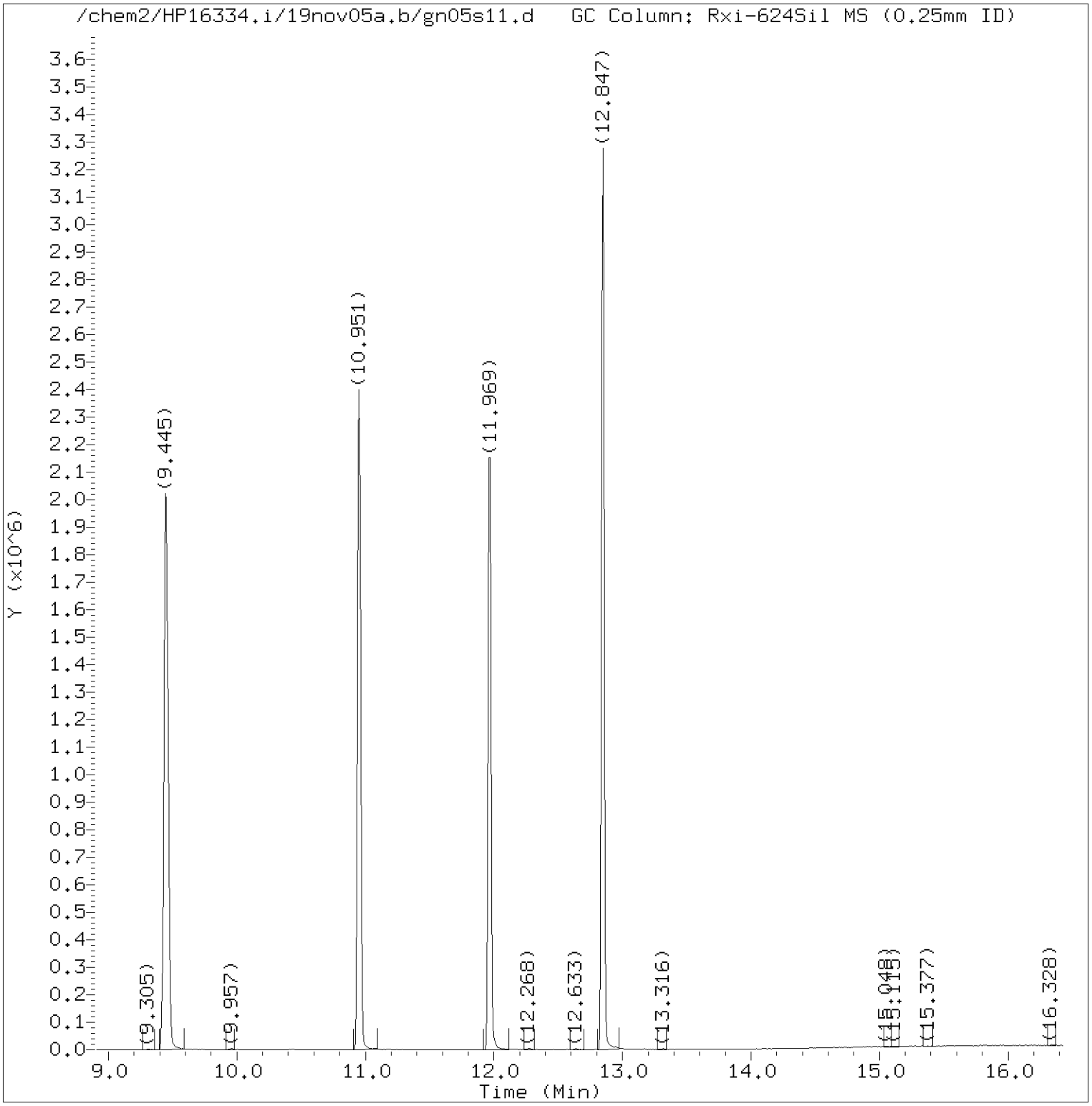
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s11.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:36 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:54 Automation

Sample Name: 53R03 Lab Sample ID: 1187106

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s11.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:36 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:54 Automation

Sample Name: 53R03 Lab Sample ID: 1187106

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s11.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:36 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:54 Automation

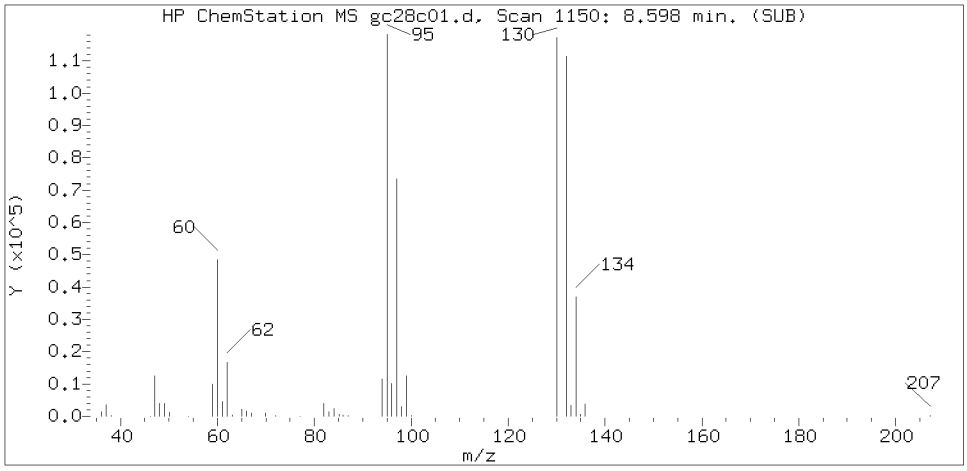
Sample Name: 53R03 Lab Sample ID: 1187106

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.903	65	125271	50.000
50)$Dibromofluoromethane	(2)	6.494	113	476205	9.930
57)$1,2-Dichloroethane-d4	(2)	6.952	102	91253	9.397
63)*Fluorobenzene	(2)	7.391	96	1896766	10.000
67) Trichloroethene	(2)	7.884	95	9801	0.204
82)$Toluene-d8	(3)	9.445	98	1915089	10.167
97)*Chlorobenzene-d5	(3)	10.951	117	1468657	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	691998	9.830
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	826446	10.000

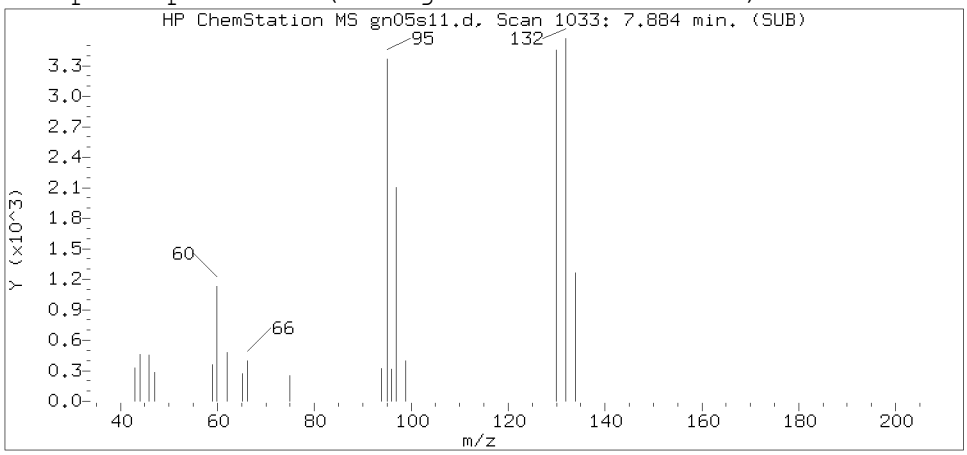
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

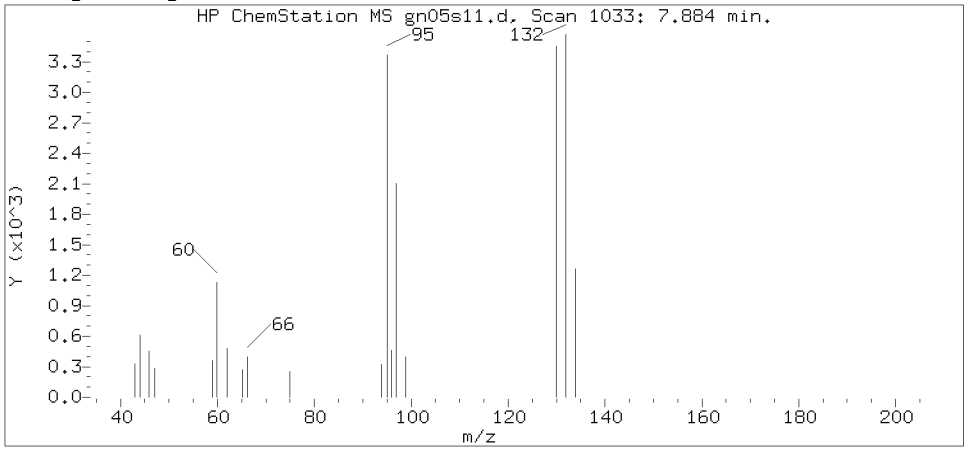
Reference Standard Spectrum for Trichloroethene

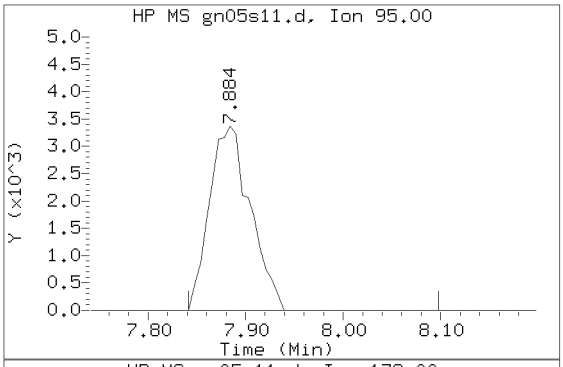


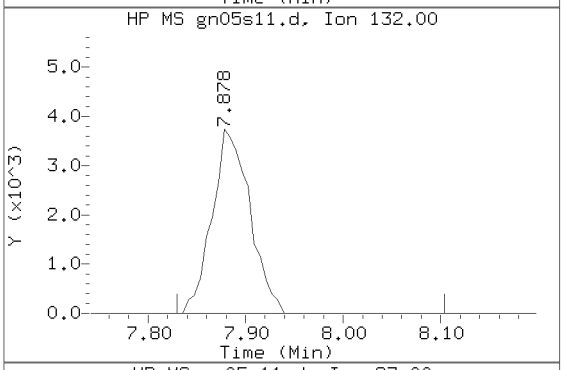
Sample Spectrum (Background Subtracted)

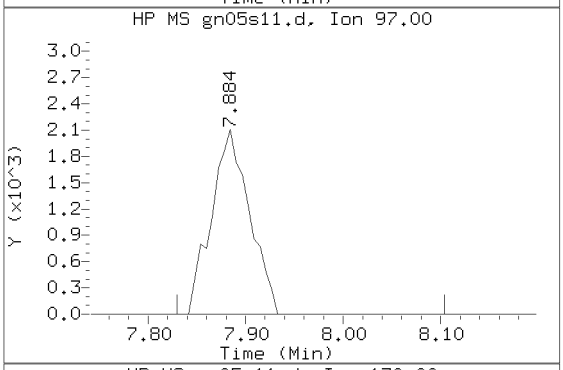


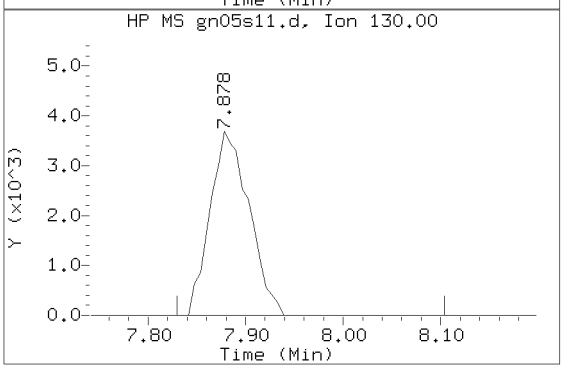
Sample Spectrum (Unaltered)











Data File: /chem2/HP16334.i/19nov05a.b/gn05s11.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:36 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:54 Automation

Sample Name: 53R03 Lab Sample ID: 1187106

Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1033
Retention Time (minutes): 7.884
Relative Retention Time :-0.00077
Quant Ion : 95.00
Area (flag) : 9801
On-Column Amount (ng) : 0.2043

Digitally signed by Jennifer K. Howe on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1187109

Data file: /chem2/HP16334.i/19nov05a.b/gn05s06.d Injection date and time: **05-NOV-2019 10:44**
Data file Sample Info. Line: 53R04;1187109;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 11:02 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.879	(-0.012)	376	65	137693	(-8)	50.00	
63) Fluorobenzene	7.390	(-0.006)	952	96	2021867	(-7)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1571222	(-8)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	883967	(-7)	10.00	

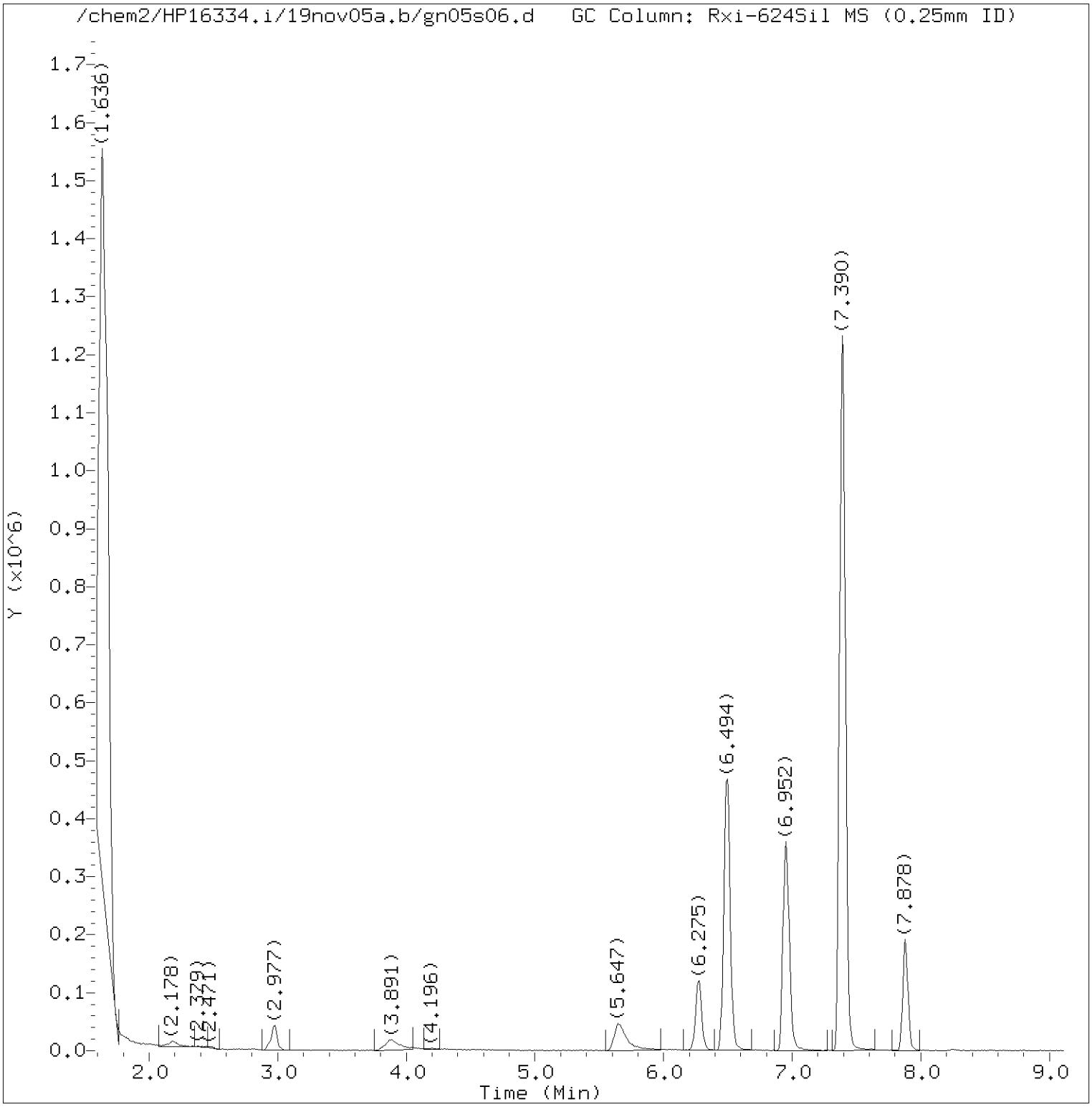
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.488	(0.001)	113	504335	9.866	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.945	(0.002)	102	106194	10.259	103%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2028105	10.065	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	742004	9.852	99%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	100705	1.970	1.97			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:59. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

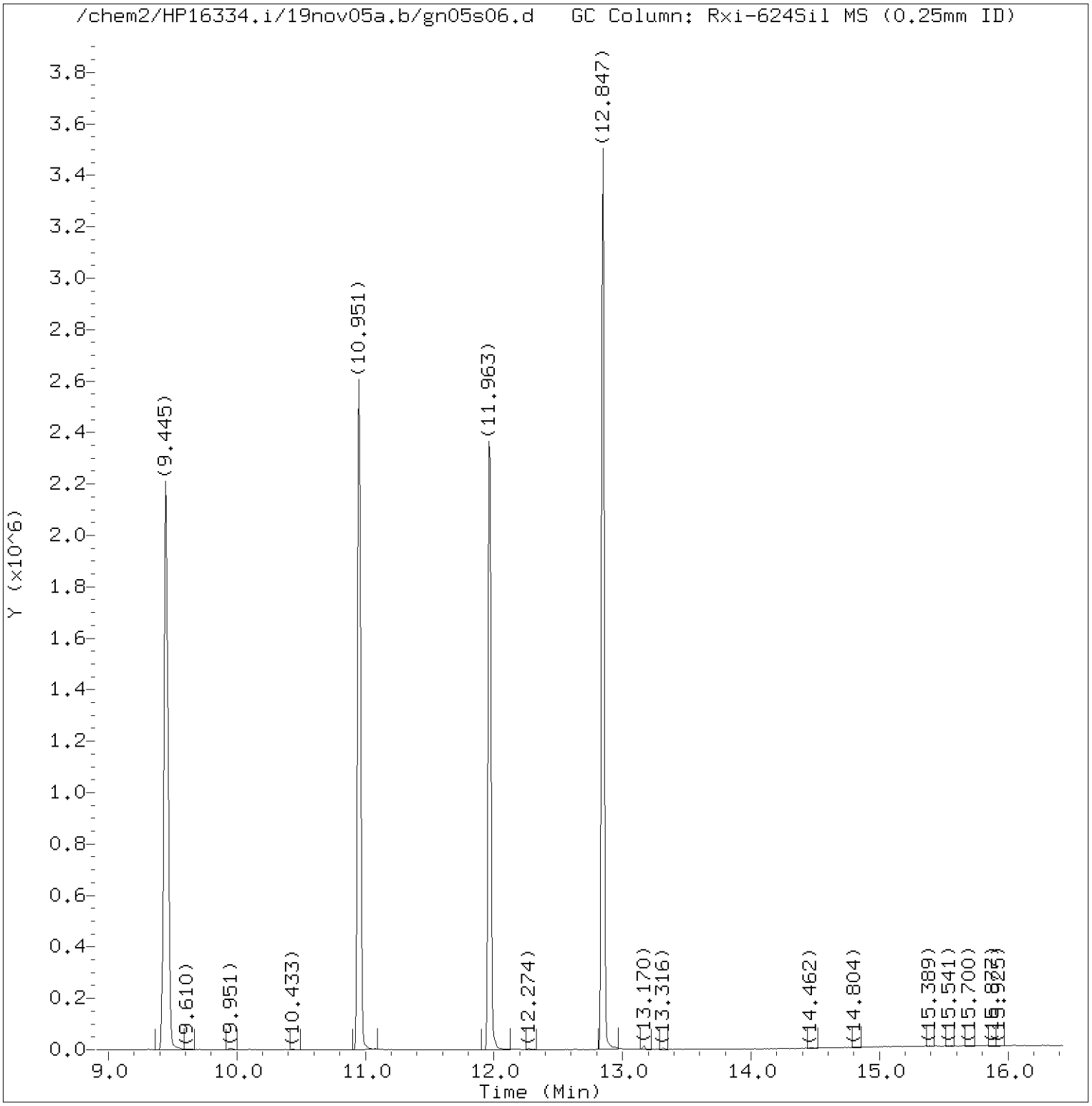
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s06.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:02 Automation

Sample Name: 53R04 Lab Sample ID: 1187109

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s06.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:02 Automation

Sample Name: 53R04 Lab Sample ID: 1187109

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s06.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:02 Automation

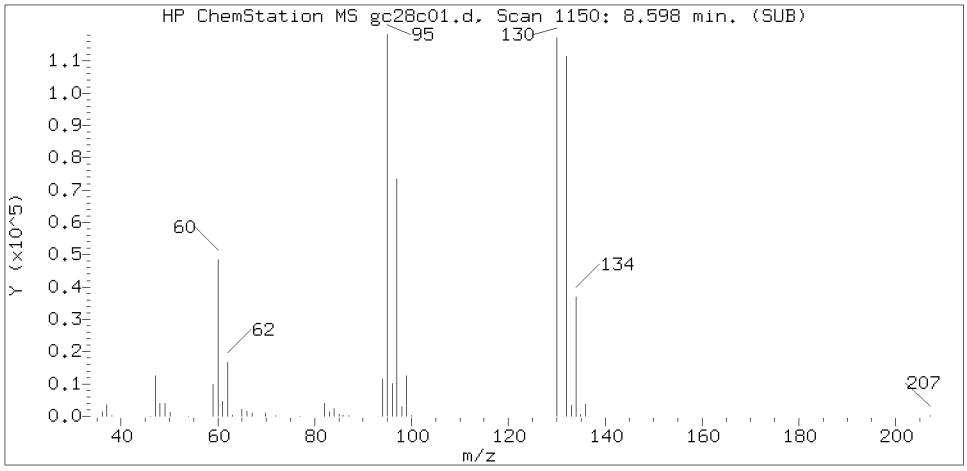
Sample Name: 53R04 Lab Sample ID: 1187109

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.879	65	137693	50.000
50)$Dibromofluoromethane	(2)	6.488	113	504335	9.866
57)$1,2-Dichloroethane-d4	(2)	6.945	102	106194	10.259
63)*Fluorobenzene	(2)	7.390	96	2021867	10.000
67) Trichloroethene	(2)	7.878	95	100705	1.970
82)$Toluene-d8	(3)	9.445	98	2028105	10.065
97)*Chlorobenzene-d5	(3)	10.951	117	1571222	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	742004	9.852
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	883967	10.000

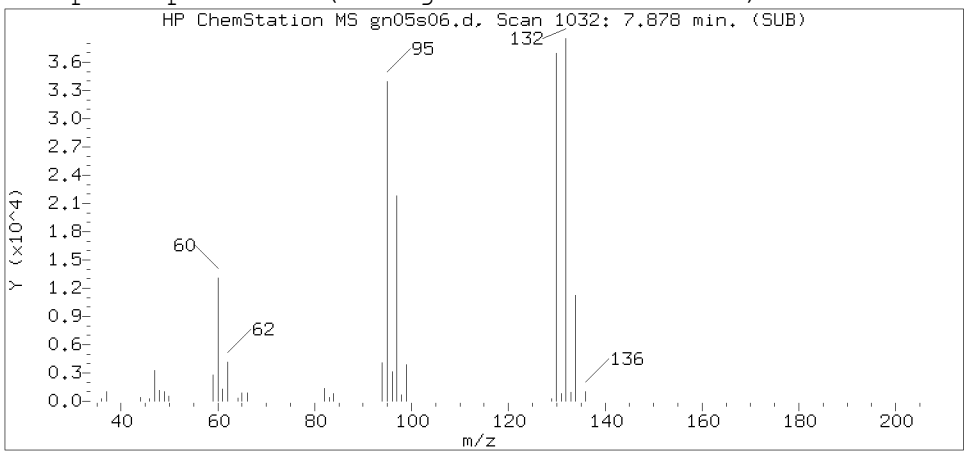
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

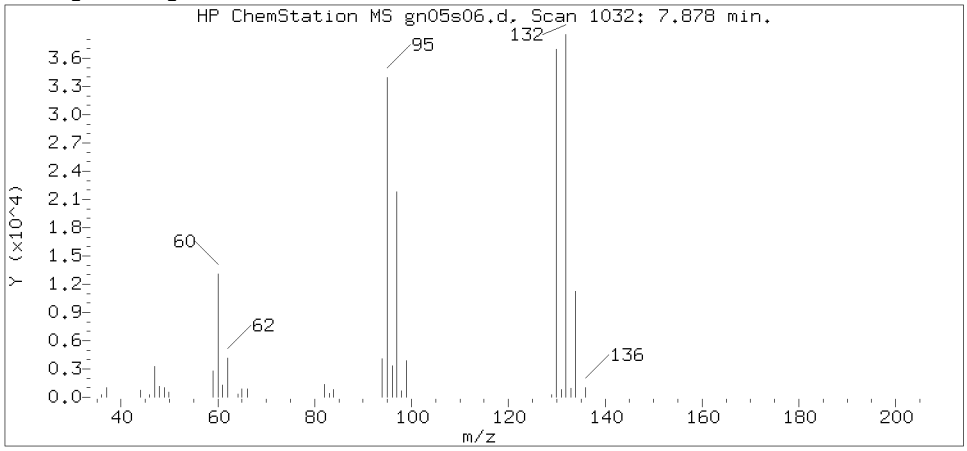
Reference Standard Spectrum for Trichloroethene

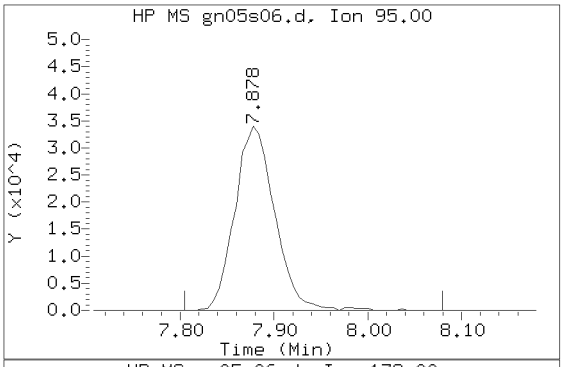


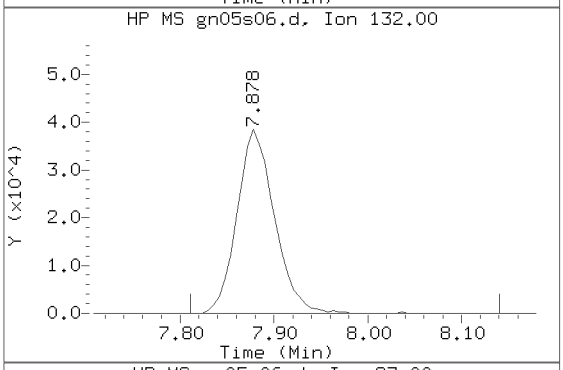
Sample Spectrum (Background Subtracted)

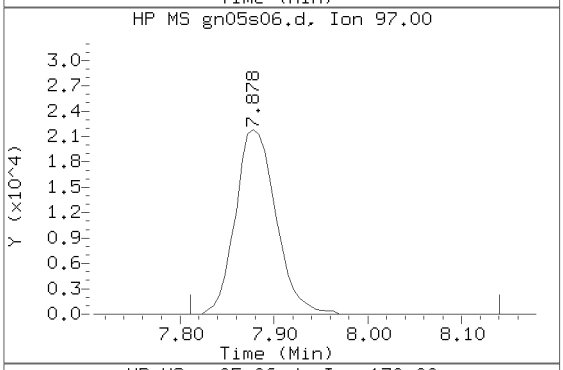


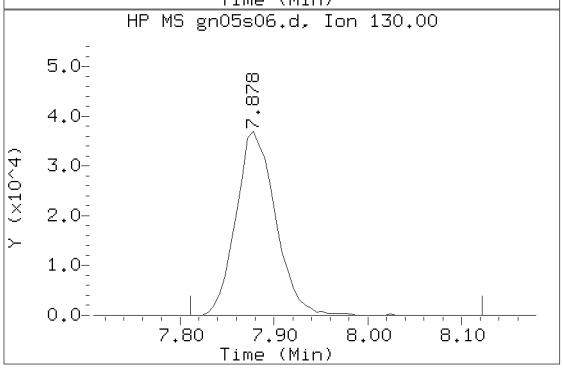
Sample Spectrum (Unaltered)











Data File: /chem2/HP16334.i/19nov05a.b/gn05s06.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:02 Automation

Sample Name: 53R04 Lab Sample ID: 1187109

Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1032
Retention Time (minutes)	: 7.878
Relative Retention Time	: 0.00005
Quant Ion	: 95.00
Area (flag)	: 100705
On-Column Amount (ng)	: 1.9695

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1187110

Data file: /chem2/HP16334.i/19nov05a.b/gn05s07.d Injection date and time: **05-NOV-2019 11:07**
Data file Sample Info. Line: 53R05;1187110;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 11:25 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.891	(-0.024)	378	65	137345	(-8)	50.00	
63) Fluorobenzene	7.397	(-0.012)	953	96	2030290	(-6)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1576845	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	884039	(-7)	10.00	

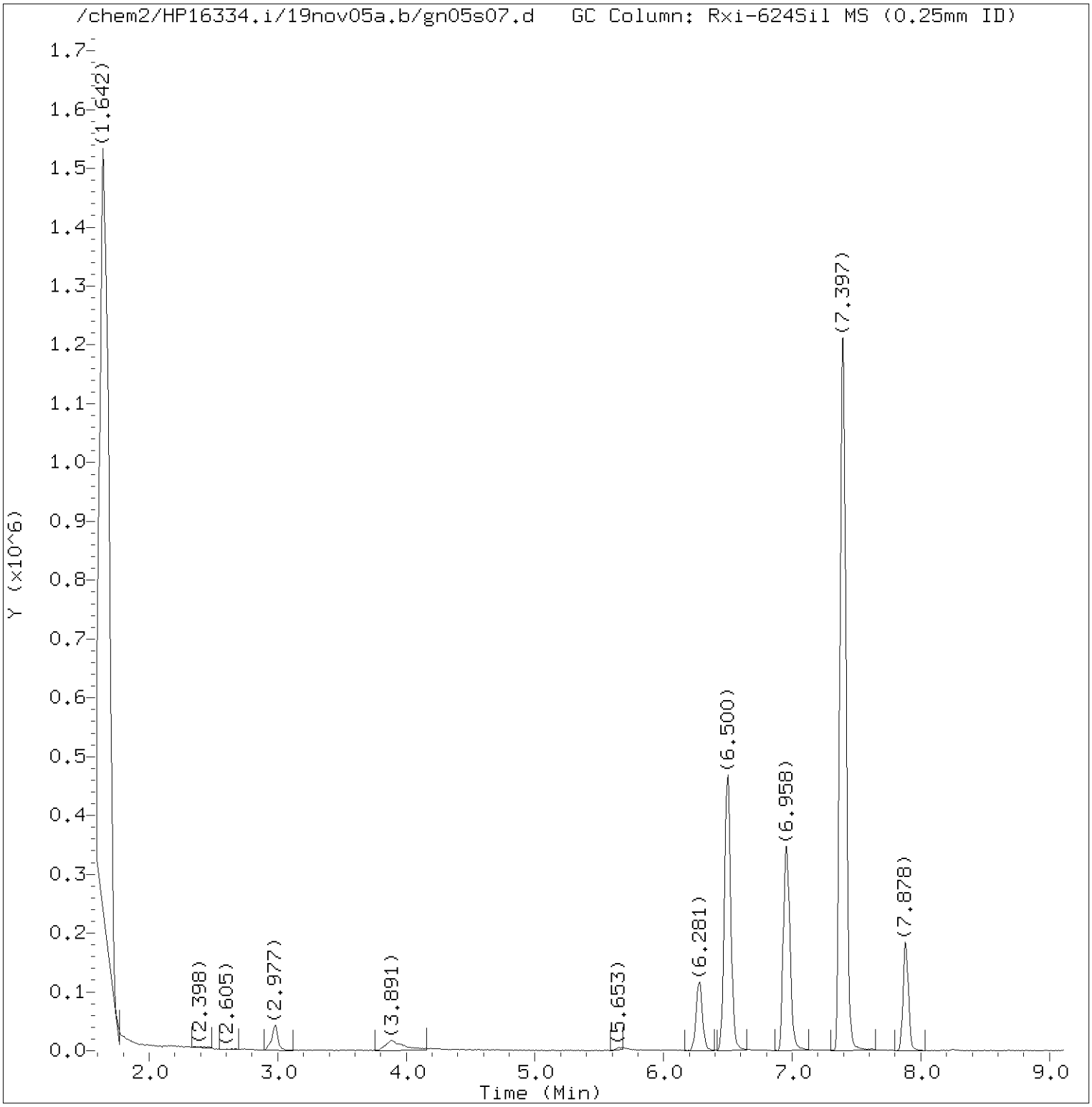
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.500	(0.000)	113	505603	9.850	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.958	(0.001)	102	104628	10.065	101%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2043445	10.105	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	742446	9.823	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	100253	1.953	1.95			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

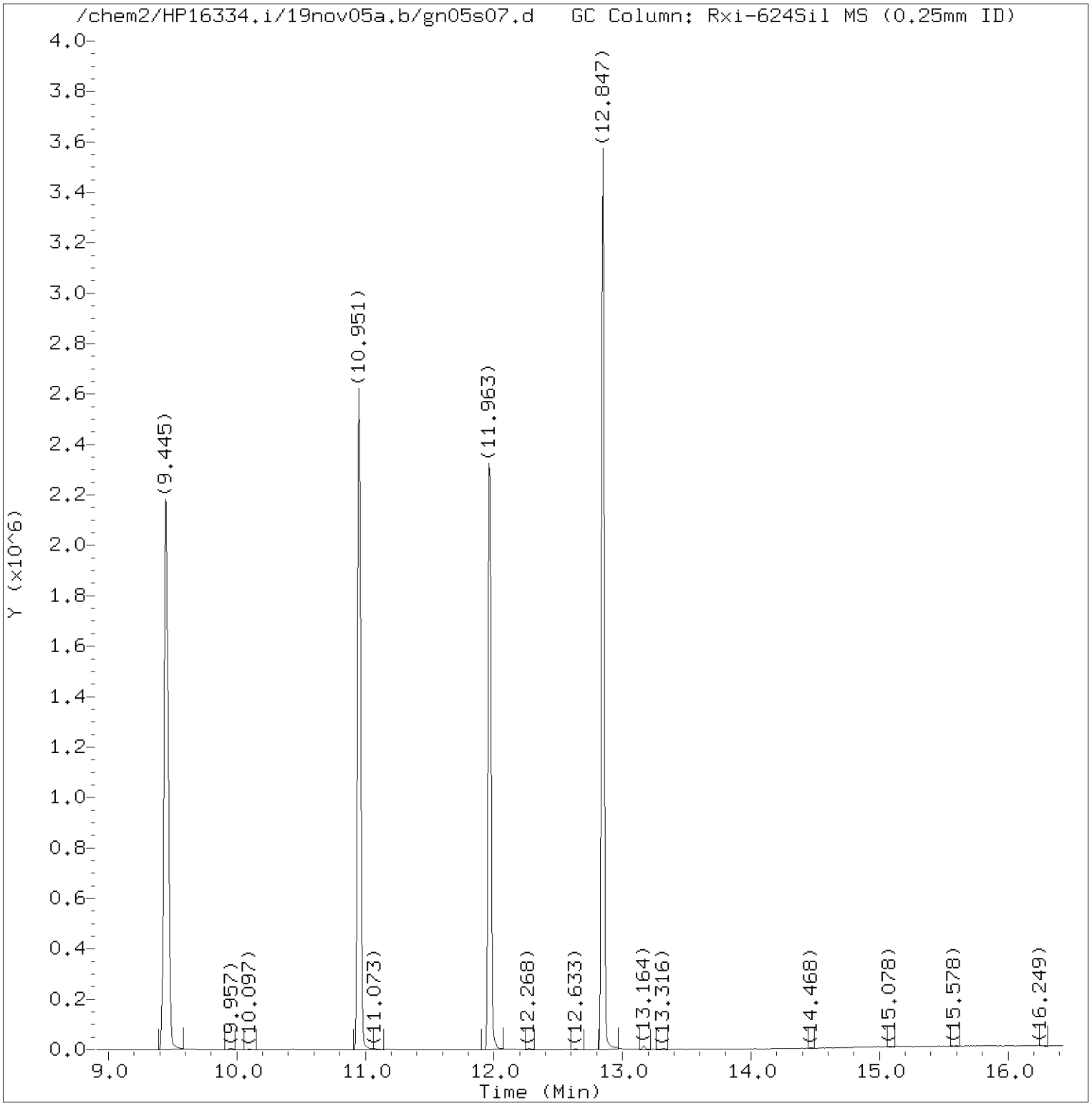
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s07.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:07 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:25 Automation

Sample Name: 53R05 Lab Sample ID: 1187110

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s07.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:07 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:25 Automation

Sample Name: 53R05 Lab Sample ID: 1187110

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s07.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:07 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:25 Automation

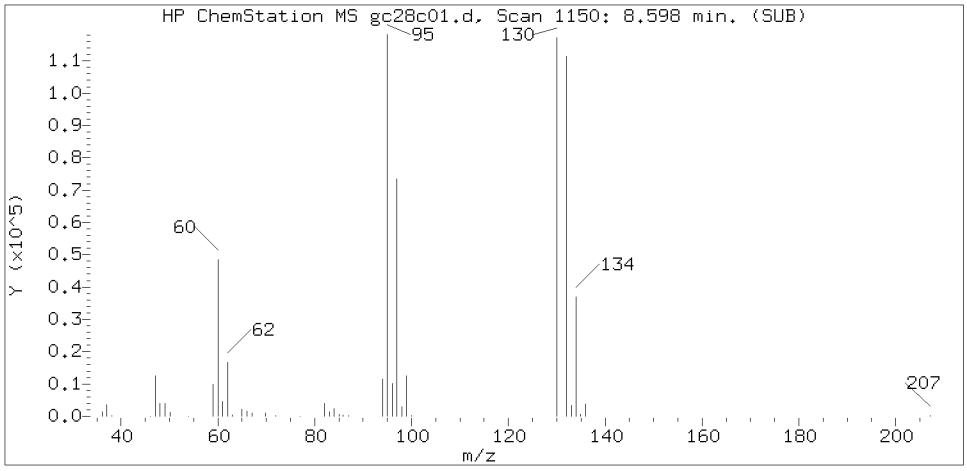
Sample Name: 53R05 Lab Sample ID: 1187110

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.891	65	137345	50.000
50)$Dibromofluoromethane	(2)	6.500	113	505603	9.850
57)$1,2-Dichloroethane-d4	(2)	6.958	102	104628	10.065
63)*Fluorobenzene	(2)	7.397	96	2030290	10.000
67) Trichloroethene	(2)	7.878	95	100253	1.953
82)$Toluene-d8	(3)	9.445	98	2043445	10.105
97)*Chlorobenzene-d5	(3)	10.951	117	1576845	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	742446	9.823
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	884039	10.000

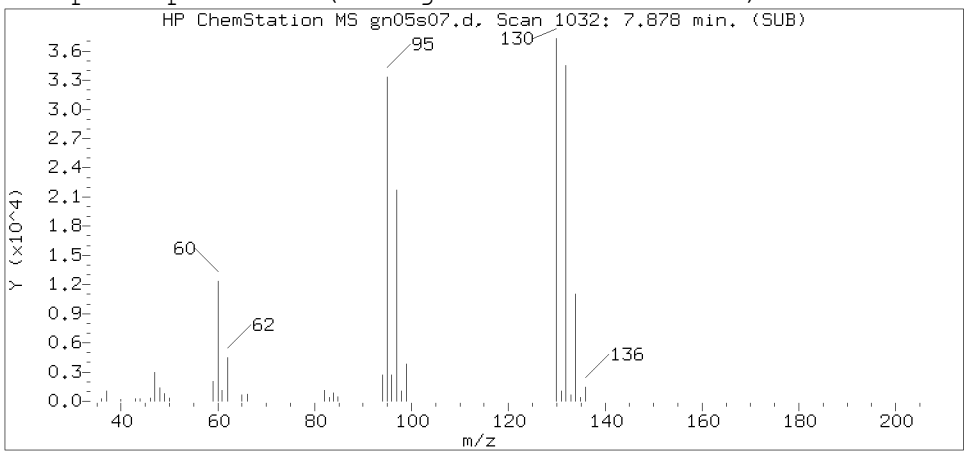
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

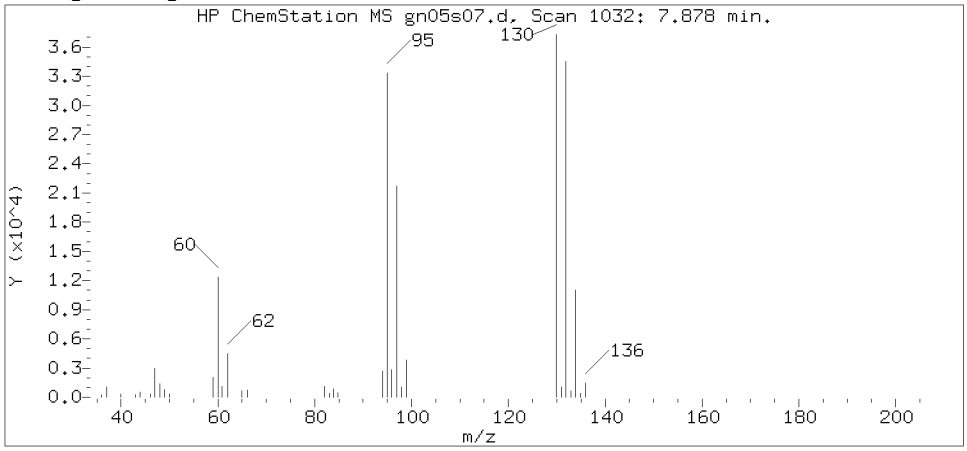
Reference Standard Spectrum for Trichloroethene

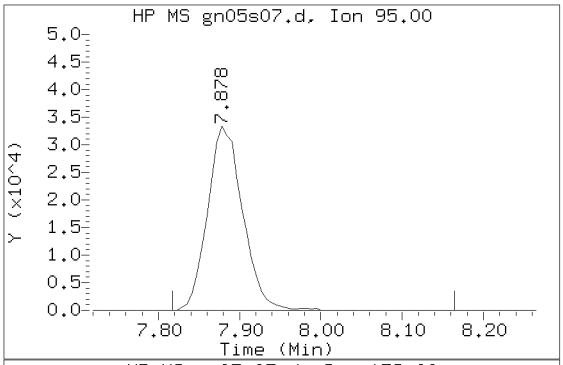


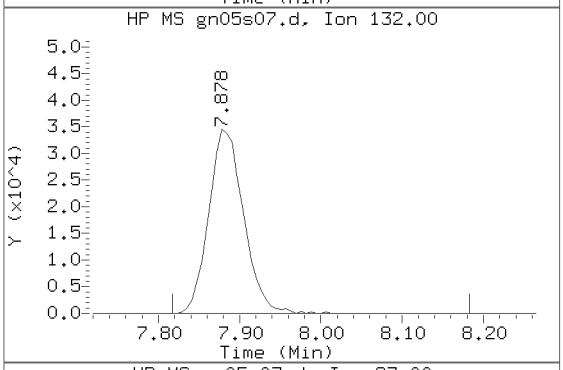
Sample Spectrum (Background Subtracted)

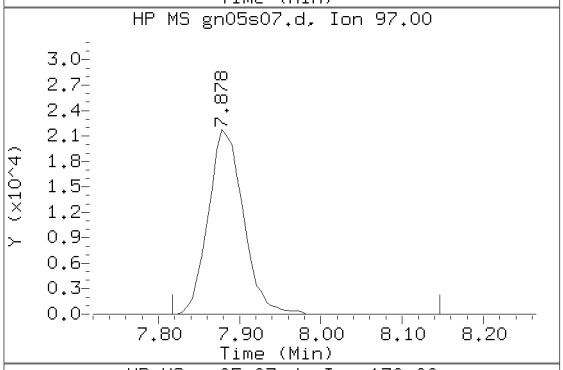


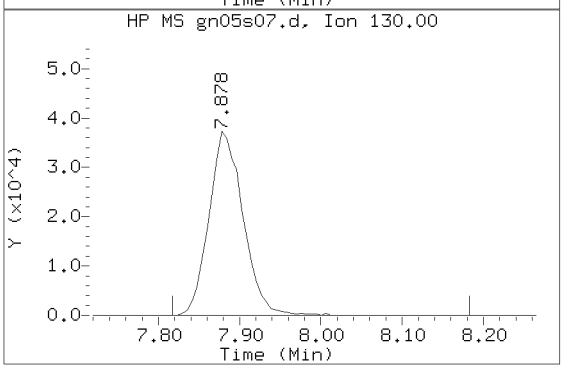
Sample Spectrum (Unaltered)











Data File: /chem2/HP16334.i/19nov05a.b/gn05s07.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:07 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:25 Automation

Sample Name: 53R05 Lab Sample ID: 1187110

Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1032
Retention Time (minutes): 7.878
Relative Retention Time : 0.00093
Quant Ion : 95.00
Area (flag) : 100253
On-Column Amount (ng) : 1.9526

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s08.d Injection date and time: **05-NOV-2019 11:29**
Data file Sample Info. Line: 53R06;1187111;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 11:47 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.879	(-0.012)	376	65	142733	(-5)	50.00	
63) Fluorobenzene	7.390	(-0.006)	952	96	2044851	(-5)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1582456	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	885731	(-7)	10.00	

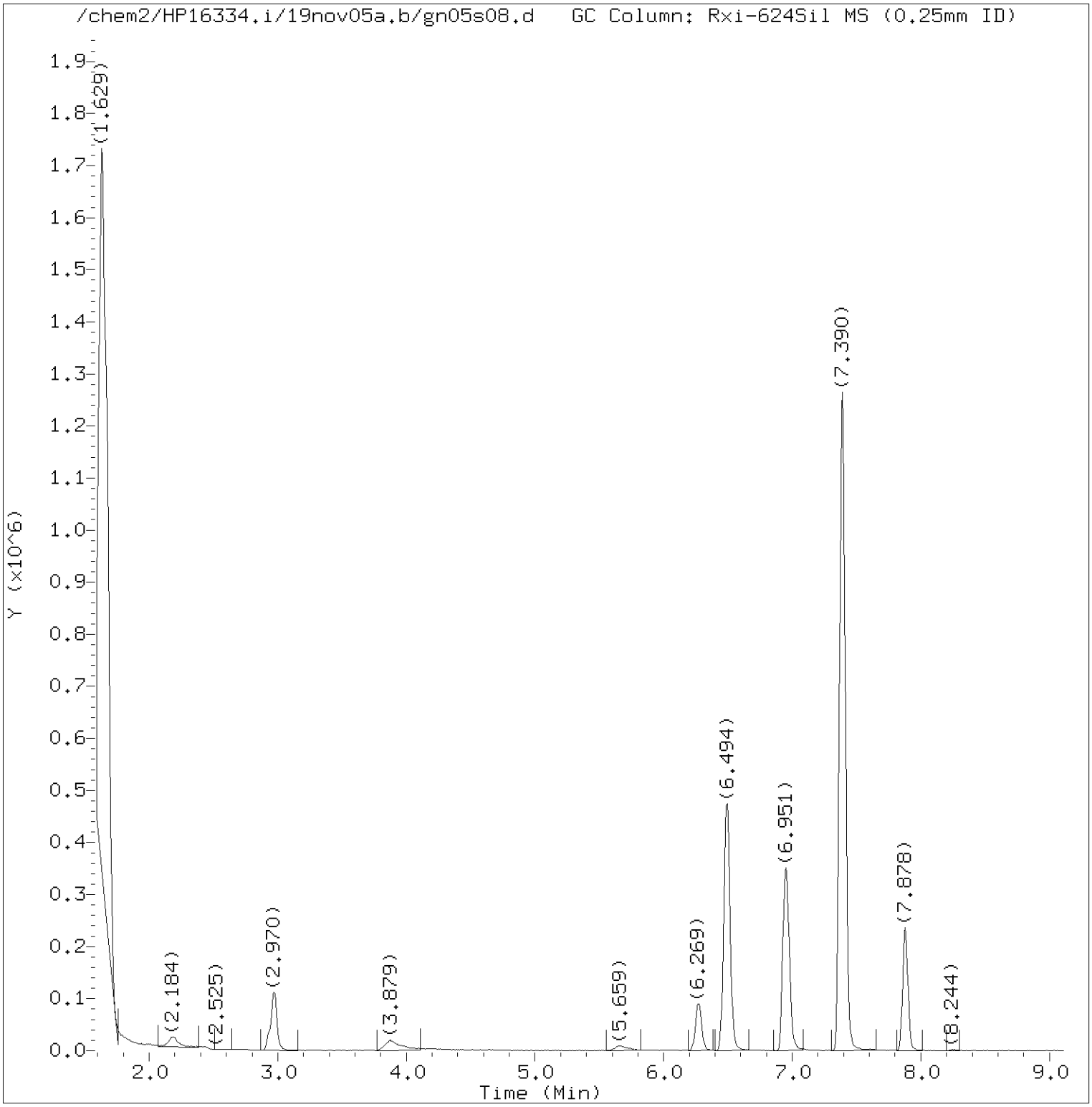
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	506619	9.800	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.945	(0.002)	102	106721	10.194	102%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2045958	10.081	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	741606	9.777	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	125854	2.434	2.43			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

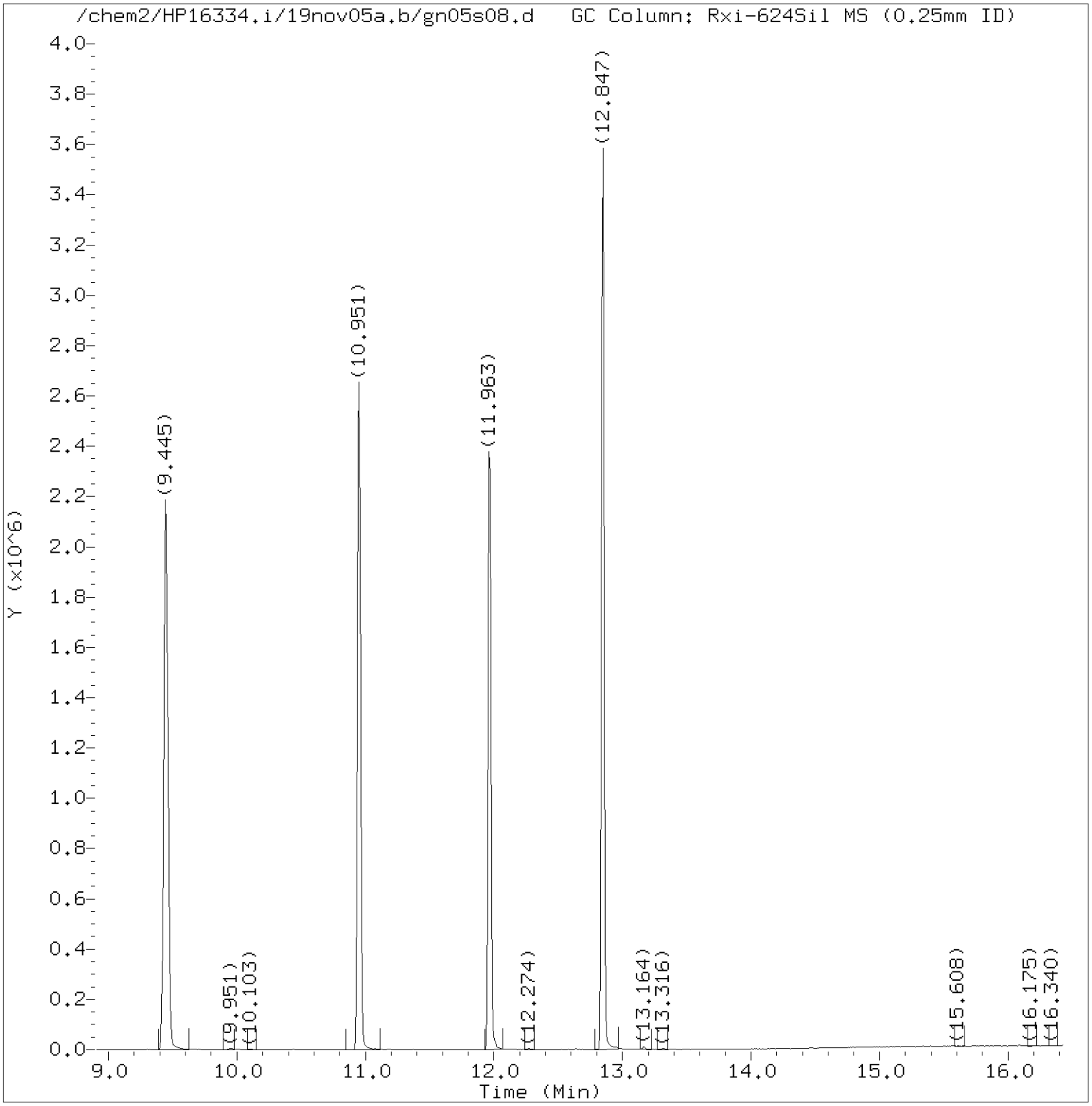
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s08.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:29 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:47 Automation

Sample Name: 53R06 Lab Sample ID: 1187111

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s08.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:29 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:47 Automation

Sample Name: 53R06 Lab Sample ID: 1187111

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s08.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:29 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:47 Automation

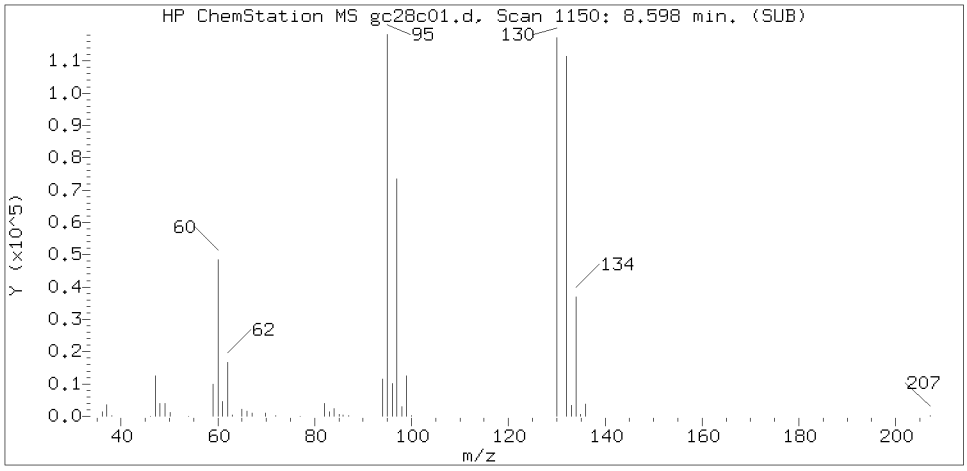
Sample Name: 53R06 Lab Sample ID: 1187111

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.879	65	142733	50.000
50)$Dibromofluoromethane	(2)	6.494	113	506619	9.800
57)$1,2-Dichloroethane-d4	(2)	6.945	102	106721	10.194
63)*Fluorobenzene	(2)	7.390	96	2044851	10.000
67) Trichloroethene	(2)	7.878	95	125854	2.434
82)$Toluene-d8	(3)	9.445	98	2045958	10.081
97)*Chlorobenzene-d5	(3)	10.951	117	1582456	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	741606	9.777
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	885731	10.000

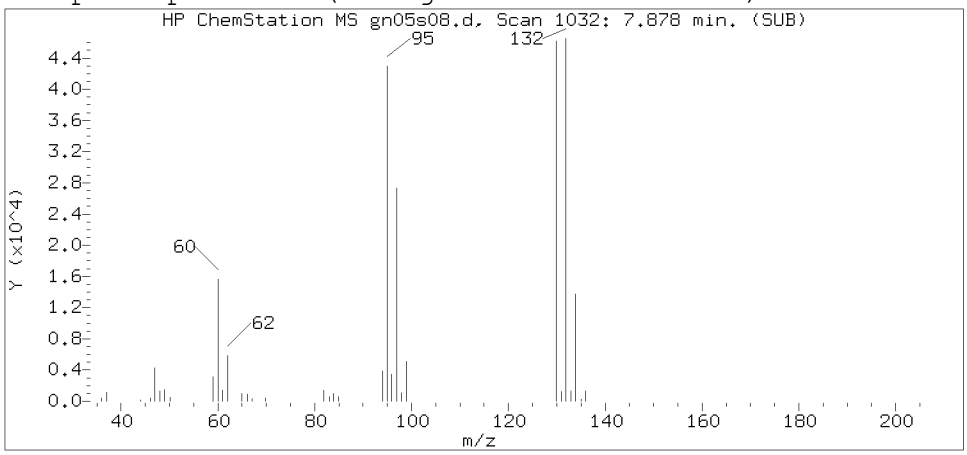
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

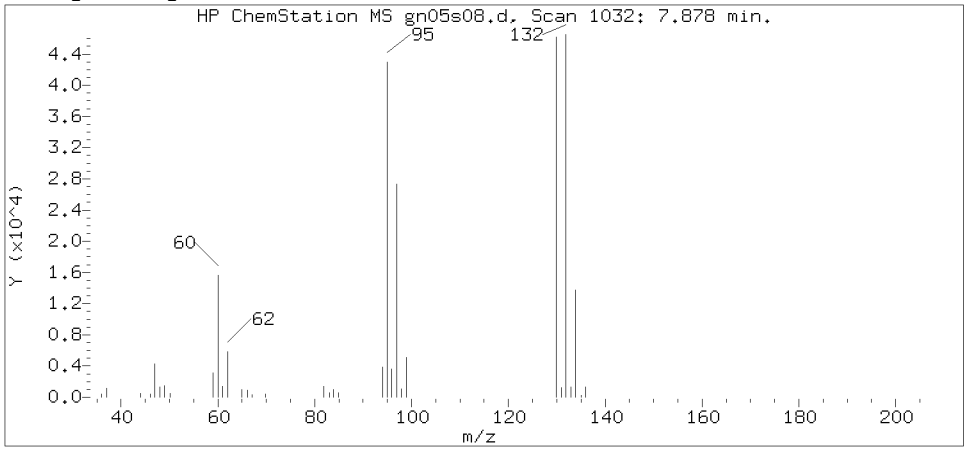
Reference Standard Spectrum for Trichloroethene

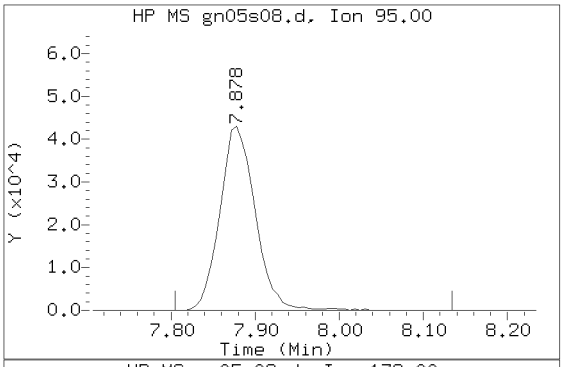


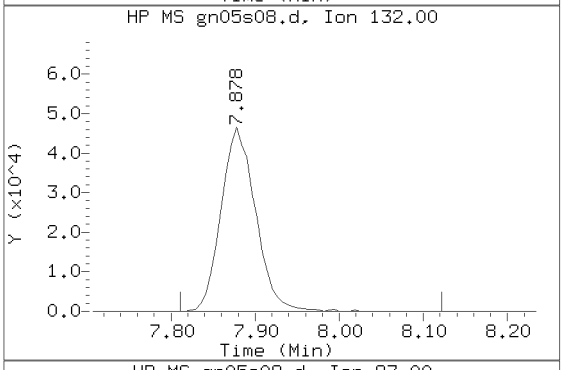
Sample Spectrum (Background Subtracted)

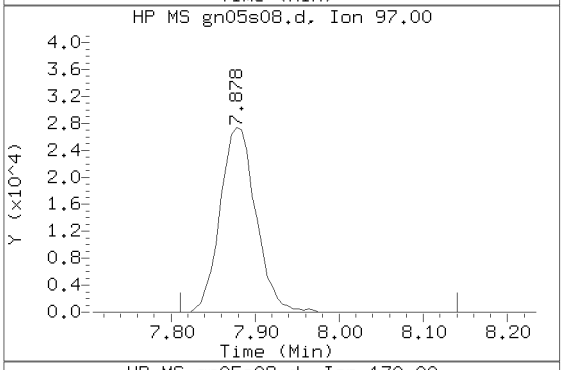


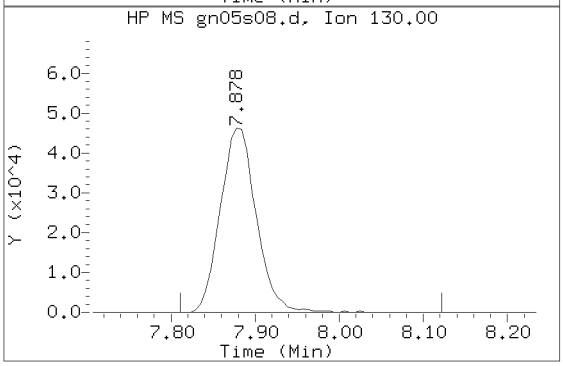
Sample Spectrum (Unaltered)











Data File: /chem2/HP16334.i/19nov05a.b/gn05s08.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:29 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 11:47 Automation

Sample Name: 53R06 Lab Sample ID: 1187111

Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1032
Retention Time (minutes)	: 7.878
Relative Retention Time	: 0.00005
Quant Ion	: 95.00
Area (flag)	: 125854
On-Column Amount (ng)	: 2.4337

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1187112

Data file: /chem2/HP16334.i/19nov05a.b/gn05s09.d Injection date and time: **05-NOV-2019 11:52**
Data file Sample Info. Line: 53R07;1187112;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 12:09 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.867	(0.000)	374	65	141408	(-6)	50.00	
63) Fluorobenzene	7.391	(-0.006)	952	96	2019344	(-7)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1569825	(-8)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	877847	(-8)	10.00	

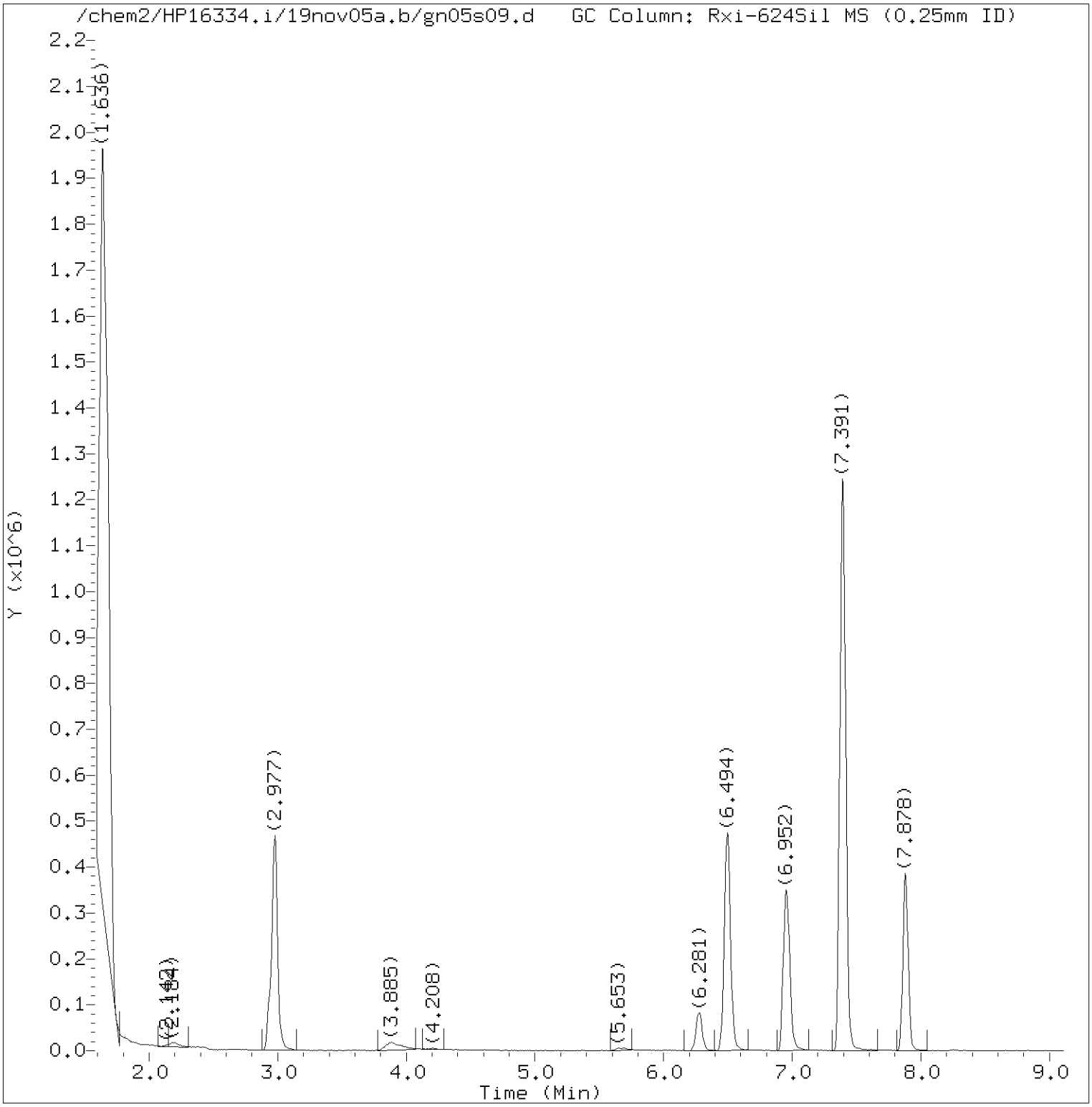
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	503486	9.862	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.958	(0.000)	102	105211	10.176	102%		80 - 120
82) Toluene-d8	(3)	9.451	(-0.001)	98	2038271	10.124	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	741786	9.858	99%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	205948	4.033	4.03			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

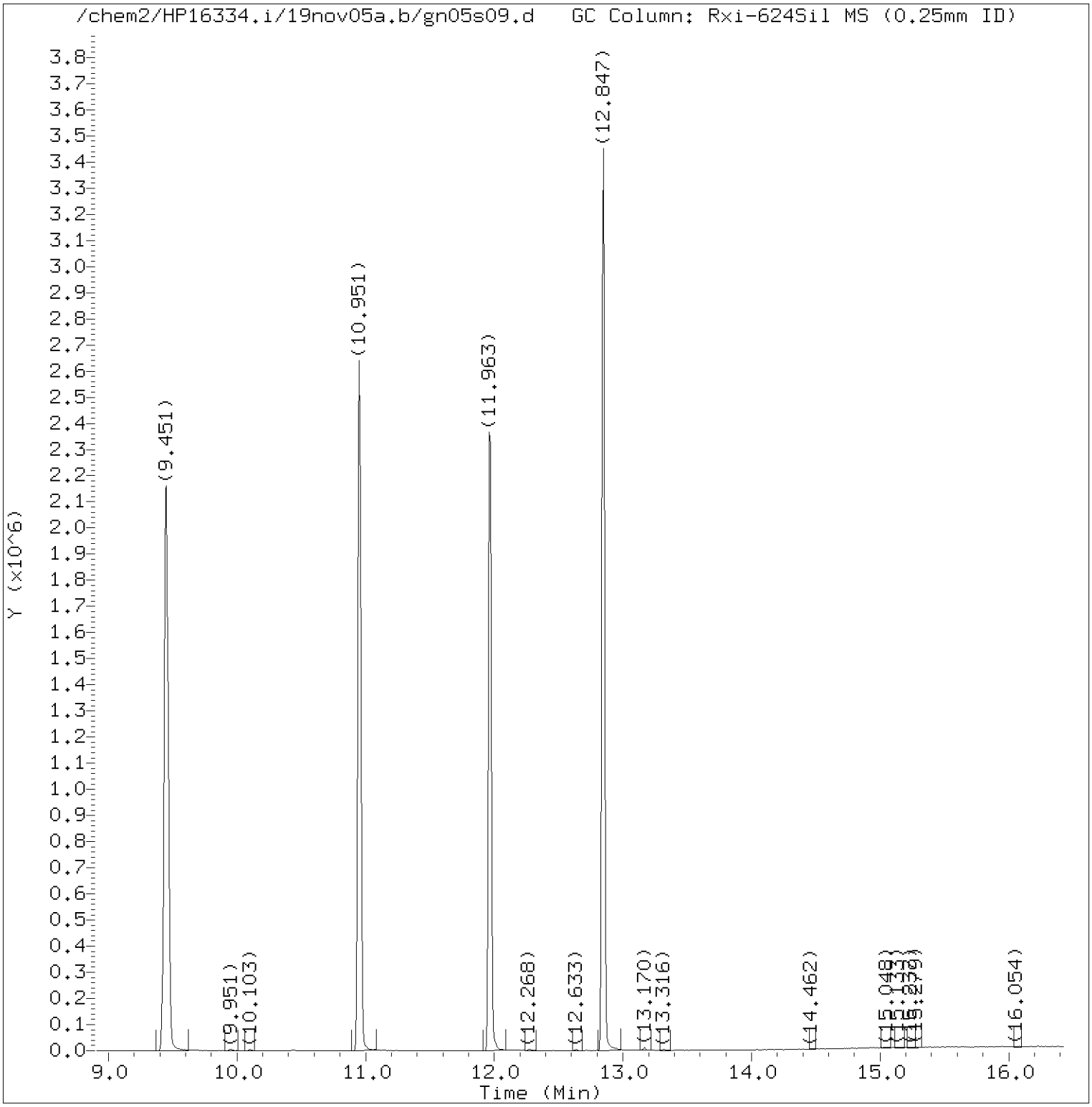
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s09.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:52 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:09 Automation

Sample Name: 53R07 Lab Sample ID: 1187112

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s09.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:52 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:09 Automation

Sample Name: 53R07 Lab Sample ID: 1187112

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s09.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:52 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:09 Automation

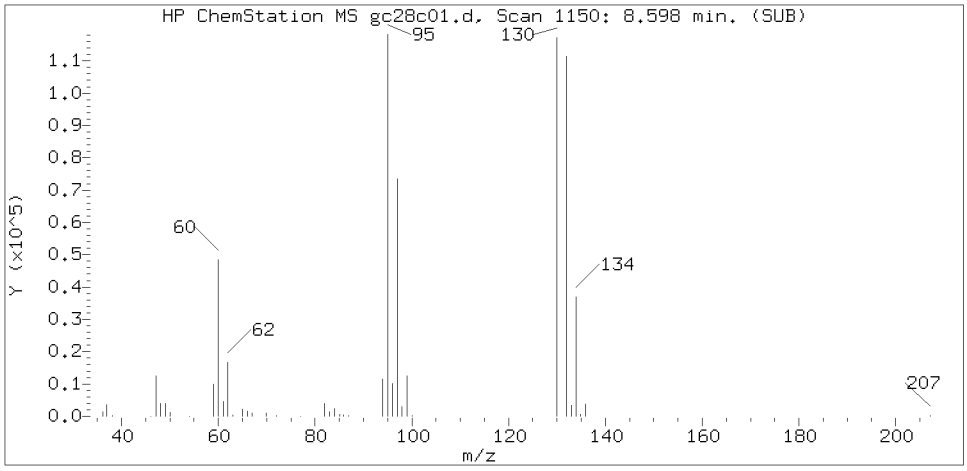
Sample Name: 53R07 Lab Sample ID: 1187112

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.867	65	141408	50.000
50)$Dibromofluoromethane	(2)	6.494	113	503486	9.862
57)$1,2-Dichloroethane-d4	(2)	6.958	102	105211	10.176
63)*Fluorobenzene	(2)	7.391	96	2019344	10.000
67) Trichloroethene	(2)	7.878	95	205948	4.033
82)$Toluene-d8	(3)	9.451	98	2038271	10.124
97)*Chlorobenzene-d5	(3)	10.951	117	1569825	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	741786	9.858
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	877847	10.000

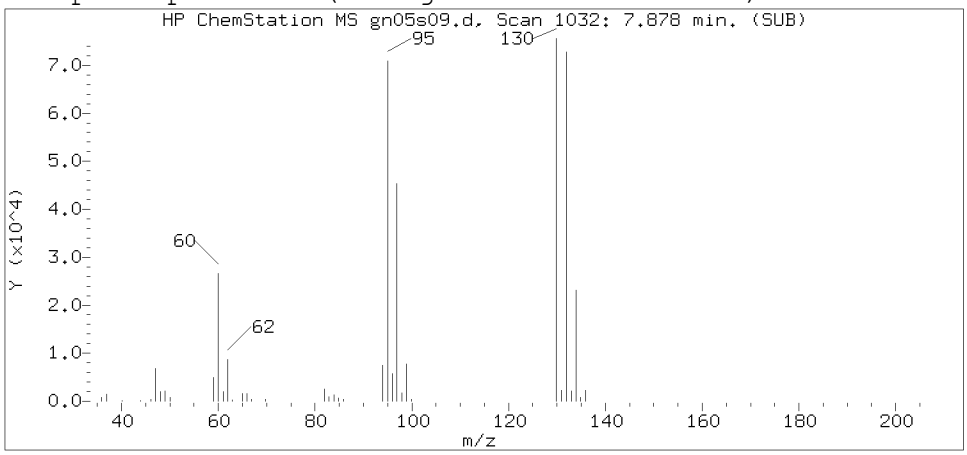
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

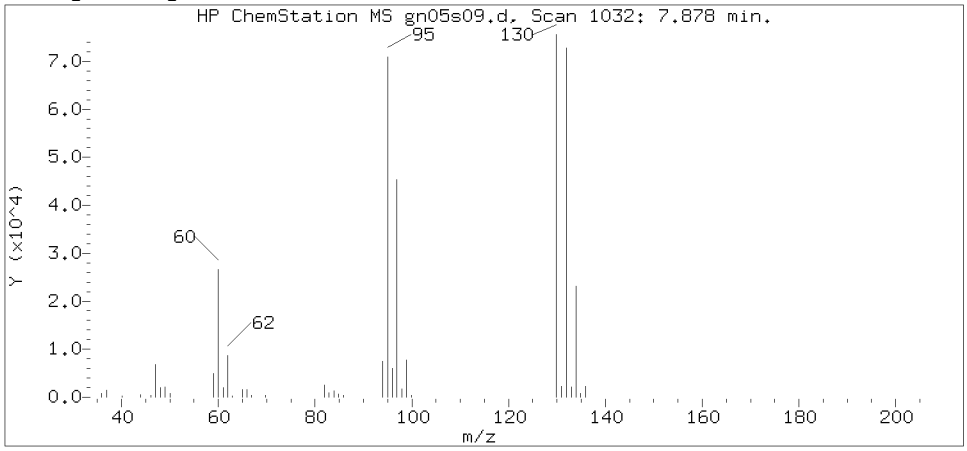
Reference Standard Spectrum for Trichloroethene

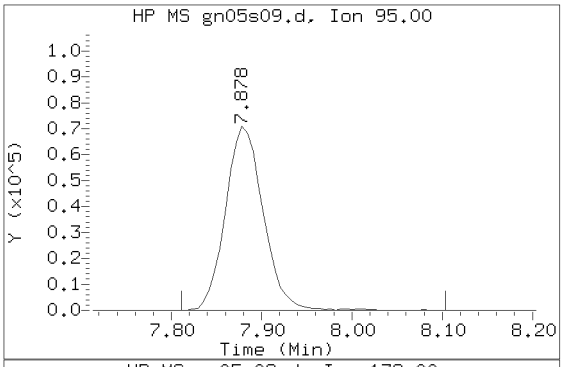


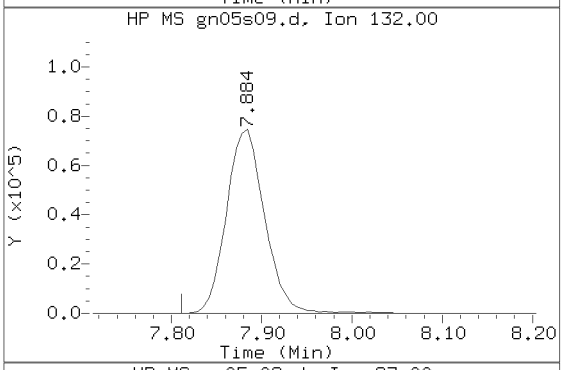
Sample Spectrum (Background Subtracted)

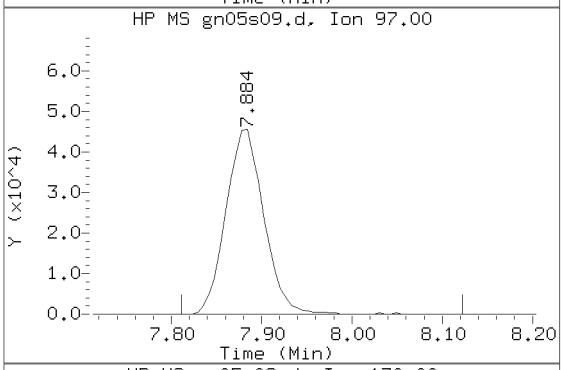


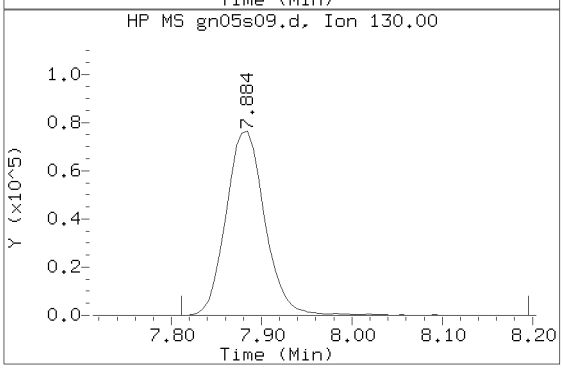
Sample Spectrum (Unaltered)











Data File: /chem2/HP16334.i/19nov05a.b/gn05s09.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 11:52 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:09 Automation

Sample Name: 53R07 Lab Sample ID: 1187112

Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1032
Retention Time (minutes)	: 7.878
Relative Retention Time	: 0.00005
Quant Ion	: 95.00
Area (flag)	: 205948
On-Column Amount (ng)	: 4.0329

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:27.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s10.d Injection date and time: **05-NOV-2019 12:14**
Data file Sample Info. Line: 53R08;1187113;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 12:32 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.879	(-0.012)	376	65	138780	(-7)	50.00	
63) Fluorobenzene	7.390	(-0.006)	952	96	1984502	(-8)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1546969	(-9)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	867829	(-9)	10.00	

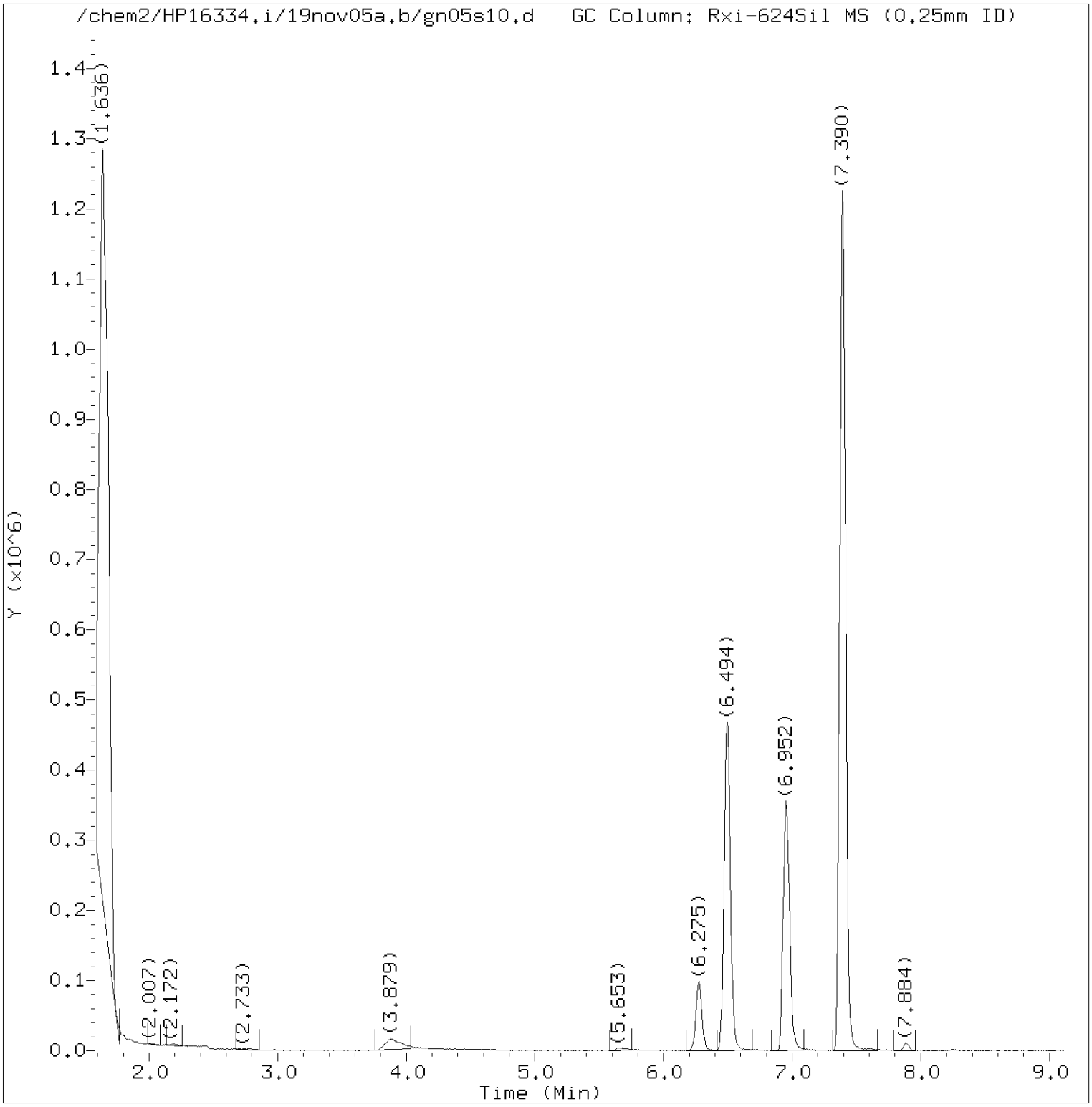
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	490091	9.768	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.945	(0.002)	102	92955	9.149	91%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	1987208	10.016	100%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	723229	9.753	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 13:36. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

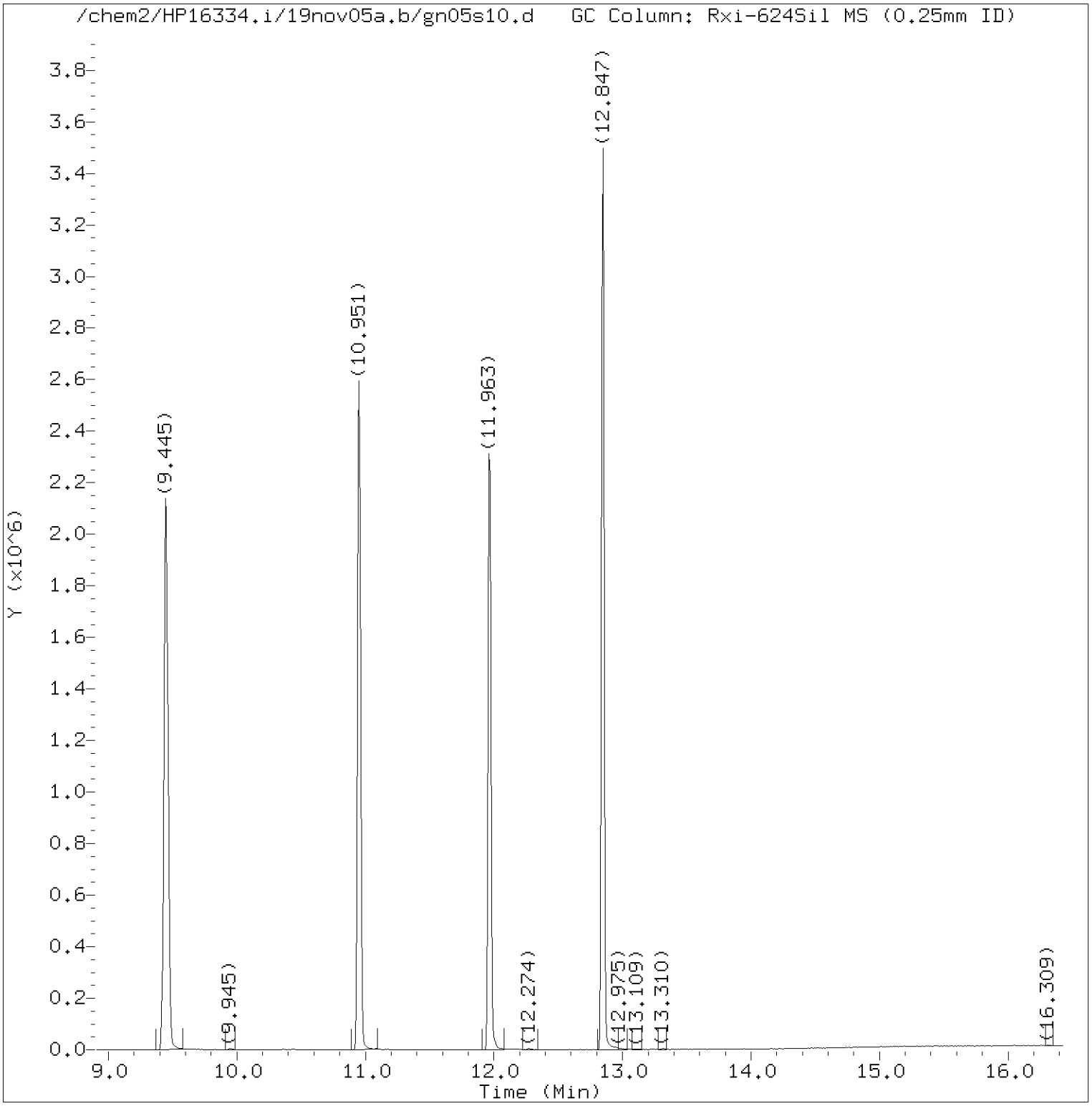
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s10.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:14 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:32 Automation

Sample Name: 53R08 Lab Sample ID: 1187113

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s10.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:14 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:32 Automation

Sample Name: 53R08 Lab Sample ID: 1187113

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s10.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:14 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 12:32 Automation

Sample Name: 53R08 Lab Sample ID: 1187113

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.879	65	138780	50.000
50)$Dibromofluoromethane	(2)	6.494	113	490091	9.768
57)$1,2-Dichloroethane-d4	(2)	6.945	102	92955	9.149
63)*Fluorobenzene	(2)	7.390	96	1984502	10.000
82)$Toluene-d8	(3)	9.445	98	1987208	10.016
97)*Chlorobenzene-d5	(3)	10.951	117	1546969	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	723229	9.753
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	867829	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s02.d Injection date and time: **05-NOV-2019 09:15**
Data file Sample Info. Line: 53R09;1187114;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 09:33 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.873	(-0.006)	375	65	140853	(-6)	50.00	
63) Fluorobenzene	7.385	(0.000)	951	96	2111299	(-2)	10.00	
97) Chlorobenzene-d5	10.945	(0.006)	1535	117	1635035	(-4)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	919420	(-3)	10.00	

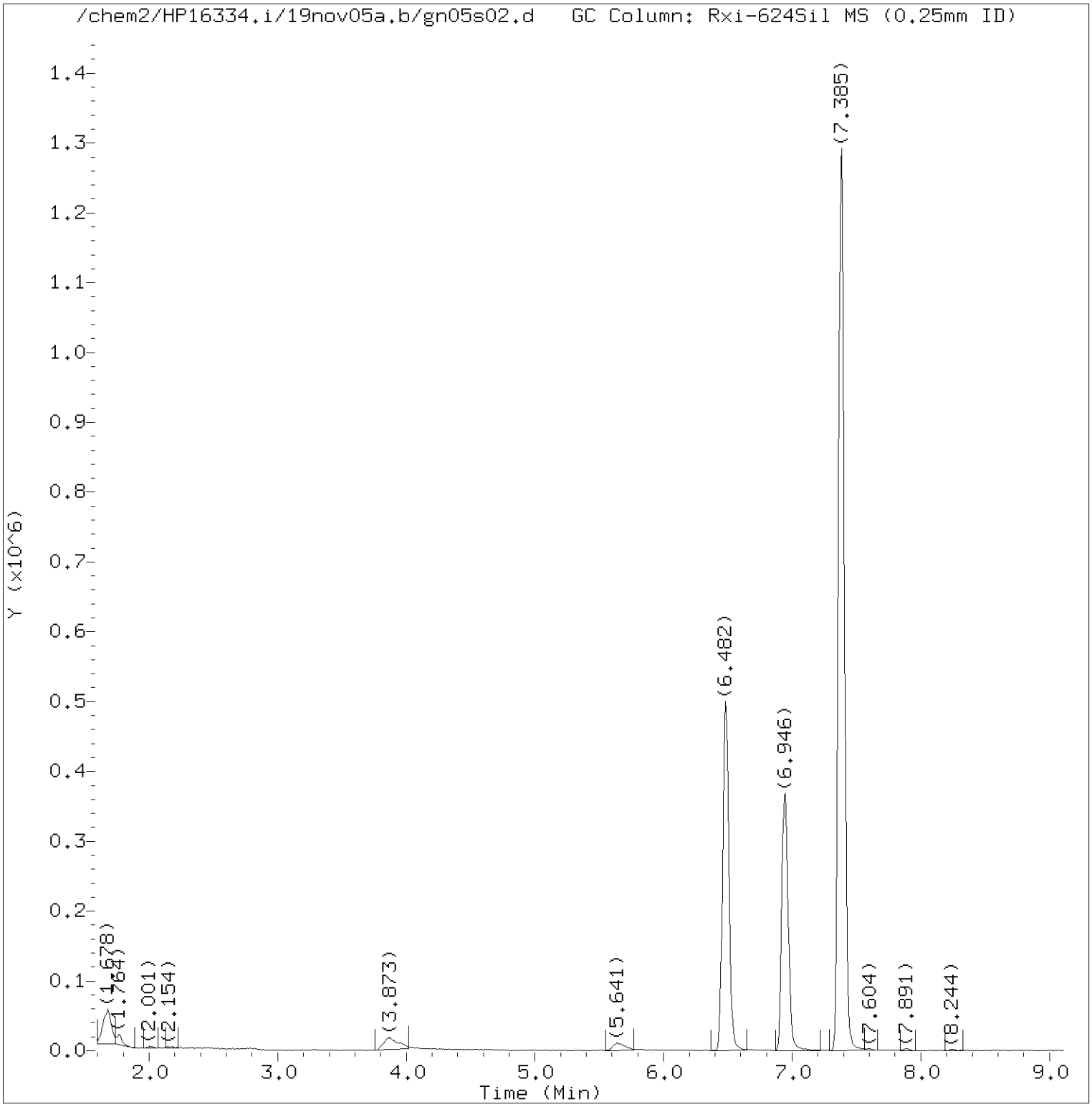
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.482	(0.001)	113	526563	9.865	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.946	(0.001)	102	110665	10.238	102%		80 - 120
82) Toluene-d8	(3)	9.439	(0.000)	98	2116891	10.095	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(-0.001)	95	765304	9.765	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:26. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:59. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

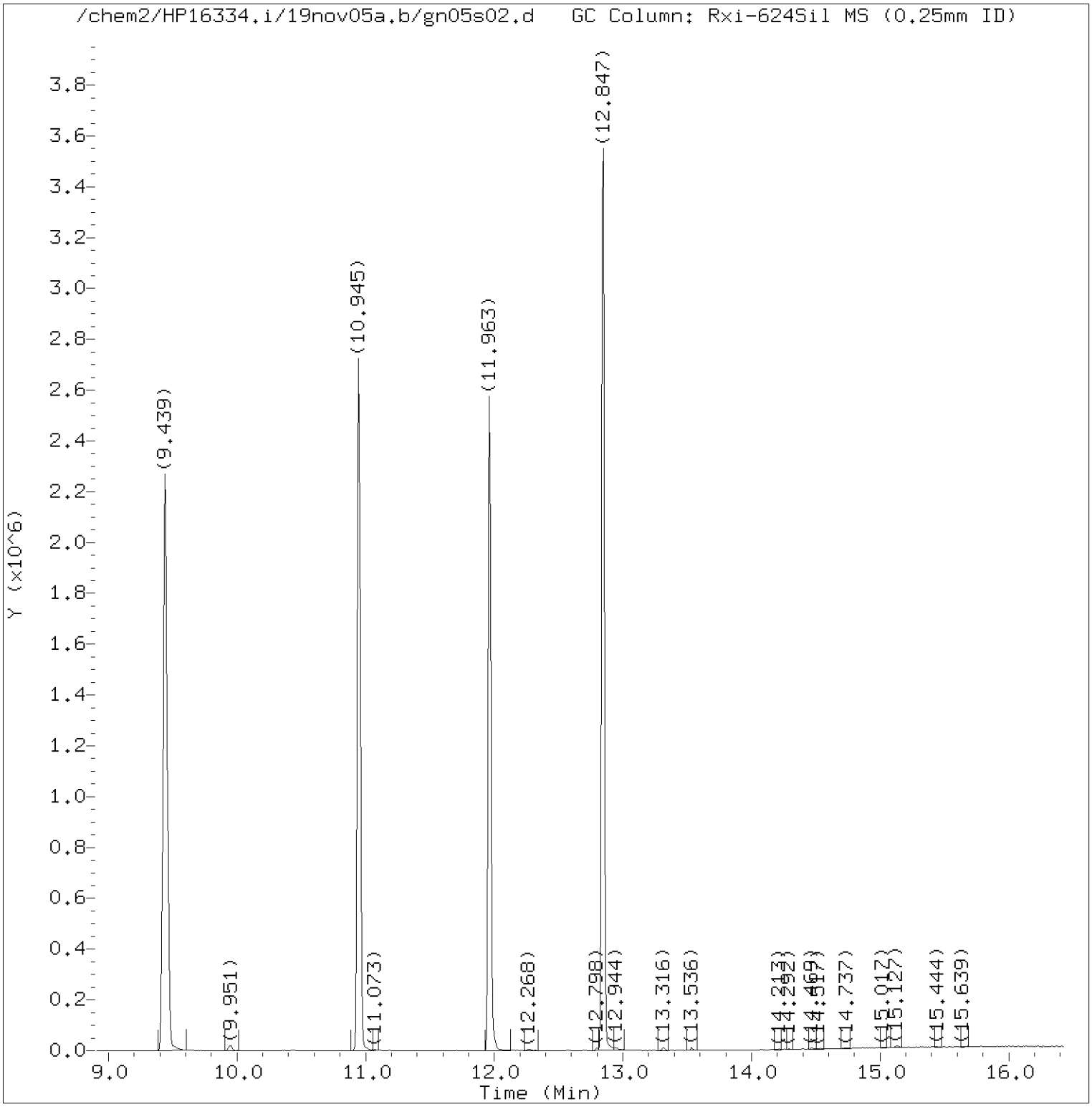
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s02.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:15 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:33 Automation

Sample Name: 53R09 Lab Sample ID: 1187114

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s02.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:15 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:33 Automation

Sample Name: 53R09 Lab Sample ID: 1187114

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s02.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:15 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:33 Automation

Sample Name: 53R09 Lab Sample ID: 1187114

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.873	65	140853	50.000
50)$Dibromofluoromethane	(2)	6.482	113	526563	9.865
57)$1,2-Dichloroethane-d4	(2)	6.946	102	110665	10.238
63)*Fluorobenzene	(2)	7.385	96	2111299	10.000
82)$Toluene-d8	(3)	9.439	98	2116891	10.095
97)*Chlorobenzene-d5	(3)	10.945	117	1635035	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	765304	9.765
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	919420	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP16334.i/19nov05a.b/gn05s03.d Injection date and time: **05-NOV-2019 09:38**
Data file Sample Info. Line: 53R10;1187115;1;0;;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 09:56 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.873	(-0.006)	375	65	143654	(-4)	50.00	
63) Fluorobenzene	7.391	(-0.006)	952	96	2055345	(-5)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1592955	(-6)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	891462	(-6)	10.00	

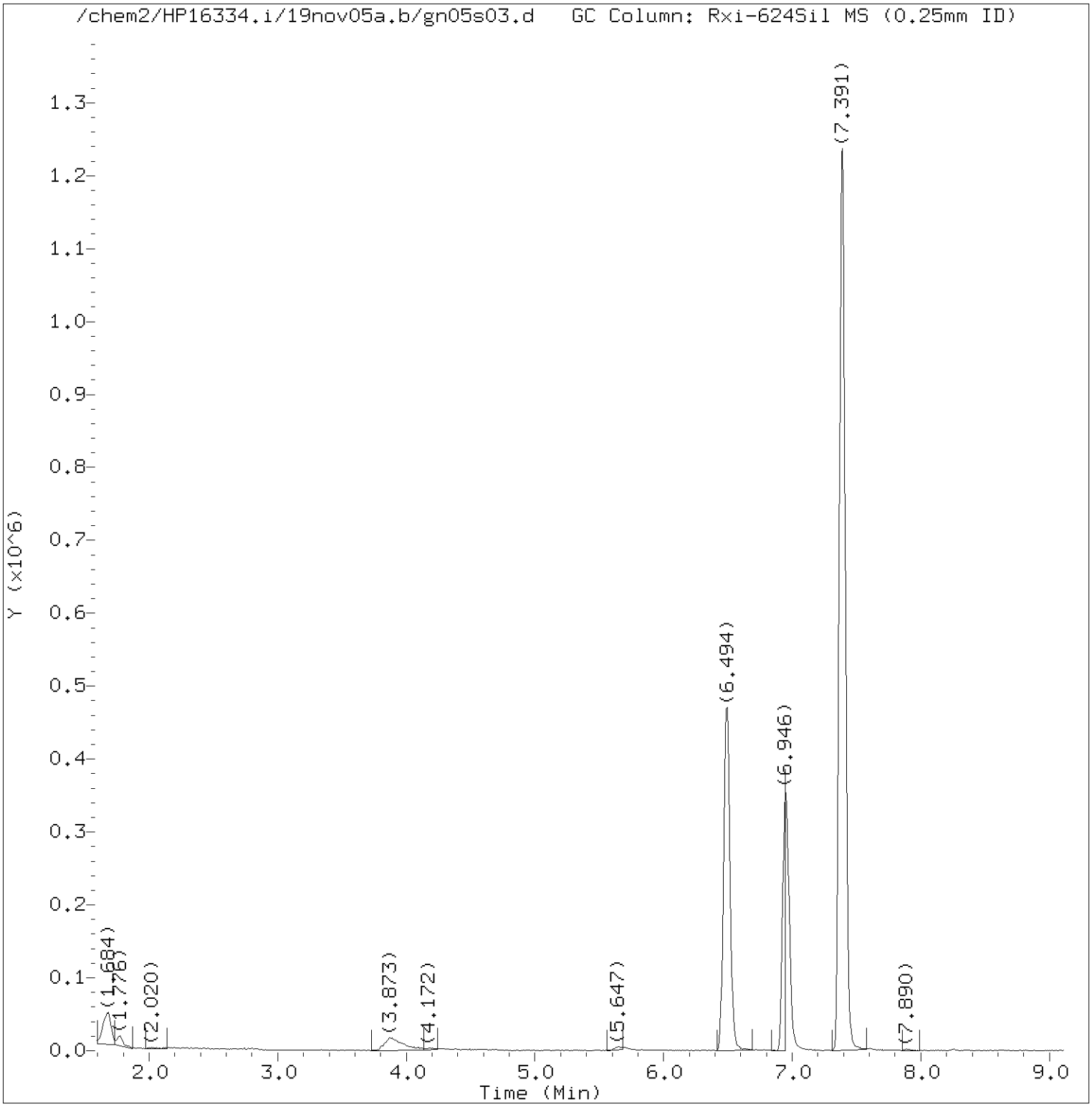
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	508181	9.780	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.946	(0.002)	102	97995	9.312	93%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2052618	10.047	100%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	748902	9.808	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 12:26. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:59. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

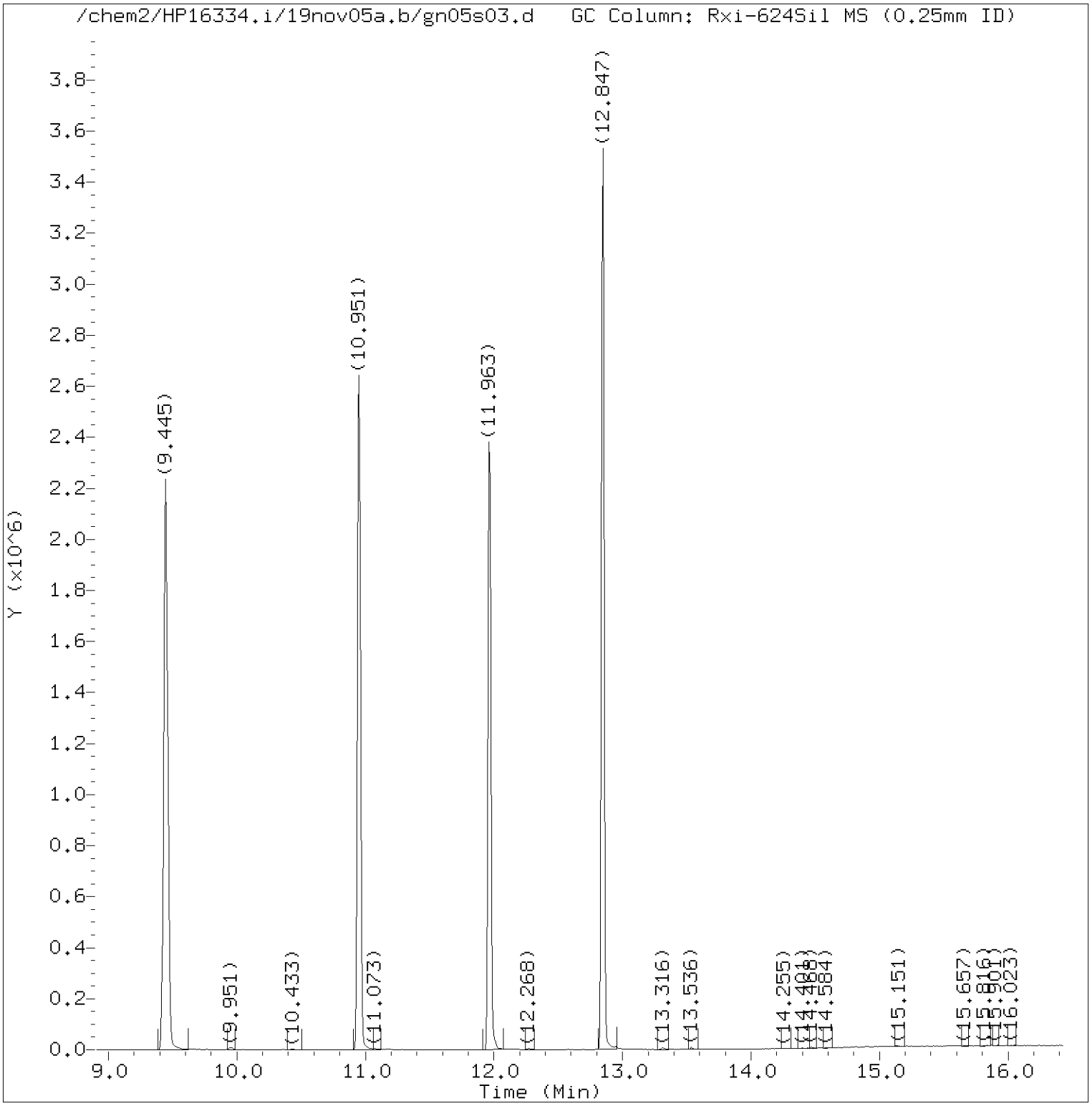
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s03.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:38 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:56 Automation

Sample Name: 53R10 Lab Sample ID: 1187115

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s03.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:38 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:56 Automation

Sample Name: 53R10 Lab Sample ID: 1187115

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s03.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 09:38 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:56 Automation

Sample Name: 53R10 Lab Sample ID: 1187115

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.873	65	143654	50.000
50)$Dibromofluoromethane	(2)	6.494	113	508181	9.780
57)$1,2-Dichloroethane-d4	(2)	6.946	102	97995	9.312
63)*Fluorobenzene	(2)	7.391	96	2055345	10.000
82)$Toluene-d8	(3)	9.445	98	2052618	10.047
97)*Chlorobenzene-d5	(3)	10.951	117	1592955	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	748902	9.808
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	891462	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 12:26.
Target 3.5 esignature user ID: jkh09052

Standards Data

Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP16334 **HP #29**

Data Directory Path is - D:\DATA\19oct21i\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	GC21T01.D	50NGBFB	10/21/2019	14:16	G182901AA	
JKH09052	GC21T02.D	50NGBFB	10/21/2019	15:45	G182901AA	
JKH09052	GC21X00.D	BLK	10/21/2019	15:55		
JKH09052	GC21X01.D	BLK	10/21/2019	16:17		
JKH09052	GC21I01.D	VSTD025	10/21/2019	16:39		
JKH09052	GC21I02.D	VSTD010	10/21/2019	17:01		
JKH09052	GC21I03.D	VSTD005	10/21/2019	17:24		
JKH09052	GC21I04.D	VSTD002	10/21/2019	17:46		
JKH09052	GC21I05.D	VSTD001	10/21/2019	18:08		
JKH09052	GC21I06.D	VSTD0.5	10/21/2019	18:30		
JKH09052	GC21I07.D	VSTD0.2	10/21/2019	18:52		
JKH09052	GC21V01.D	LCSG01	10/21/2019	19:14		

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP16334 **HP #29**

Data Directory Path is - D:\DATA\19NOV05a\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	GN05T01.D	50NGBFB	11/05/2019	07:20	G182901AA	
jkh09052	GN05x00.D	VBLKG47	11/05/2019	07:35	G193091AA	
jkh09052	GN05C01.D	VSTD010	11/05/2019	07:57	G193091AA	
jkh09052	GN05L01.D	LCSG47	11/05/2019	08:19	G193091AA	
jkh09052	GN05B01.D	VBLKG47	11/05/2019	08:41	G193091AA	
jkh09052	GN05S02.D	1187114	11/05/2019	09:15	G193091AA	
jkh09052	GN05S03.D	1187115	11/05/2019	09:38	G193091AA	
jkh09052	GN05S04.D	1187104	11/05/2019	10:00	G193091AA	
jkh09052	GN05S05.D	1187105	11/05/2019	10:22	G193091AA	
jkh09052	GN05S06.D	1187109	11/05/2019	10:44	G193091AA	
jkh09052	GN05S07.D	1187110	11/05/2019	11:07	G193091AA	
jkh09052	GN05S08.D	1187111	11/05/2019	11:29	G193091AA	
jkh09052	GN05S09.D	1187112	11/05/2019	11:52	G193091AA	
jkh09052	GN05S10.D	1187113	11/05/2019	12:14	G193091AA	
jkh09052	GN05S11.D	1187106	11/05/2019	12:36	G193091AA	
jkh09052	GN05S12.D	1187107MS	11/05/2019	12:58	G193091AA	
jkh09052	GN05S13.D	1187108MSD	11/05/2019	13:20	G193091AA	
jkh09052	GN05x05.D	VBLKG48	11/05/2019	13:42	G193092AA	
jkh09052	GN05S32.D	1187275DL	11/05/2019	14:04	G193092AA	20
jkh09052	GN05S33.D	1187275DL2	11/05/2019	14:26	G193092AA	200
jkh09052	GN05S34.D	1187281DL2	11/05/2019	14:48	G193092AA	100
jkh09052	GN05S35.D	1188941RE	11/05/2019	15:10	G193092AA	
jkh09052	GN05S36.D	1188950DL	11/05/2019	15:32	G193092AA	200
jkh09052	GN05S37.D	1188959	11/05/2019	15:55	G193092AA	10
jkh09052	GN05S38.D	1188960MS	11/05/2019	16:17	G193092AA	10
jkh09052	GN05S39.D	1188961MSD	11/05/2019	16:39	G193092AA	10
jkh09052	GN05x07.D	VBLKG48	11/05/2019	17:01	G193092AA	
jkh09052	GN05S40.D	1188959DL	11/05/2019	17:23	G193092AA	100
jkh09052	GN05S41.D	1188962	11/05/2019	17:46	G193092AA	

Data File: /chem2/HP16334.i/19oct21i.b/gc21t02.d

Date : 21-OCT-2019 15:45

Client ID: AUG02-19

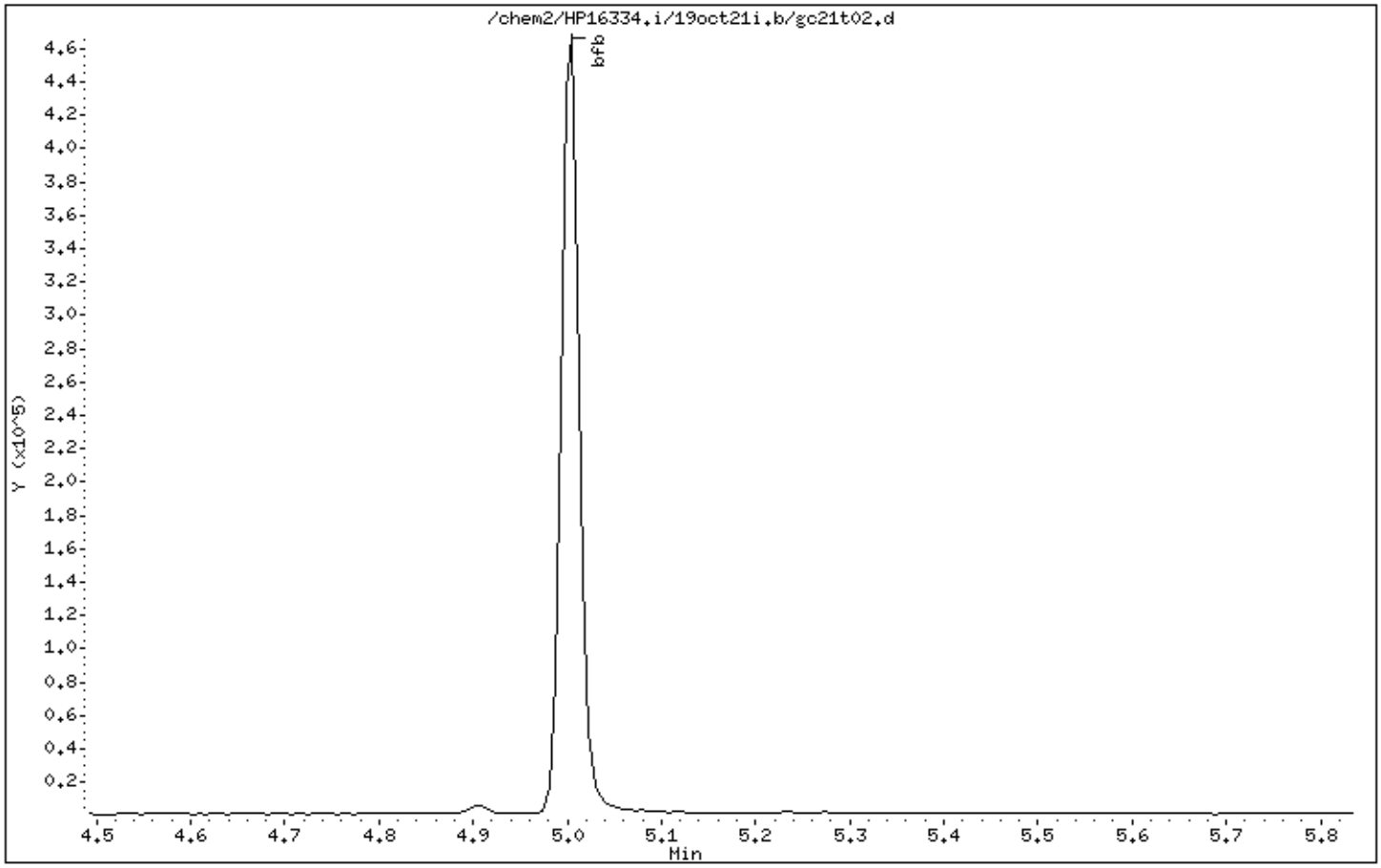
Instrument: HP16334.i

Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP16334.i/19oct21i.b/gc21t02.d

Date : 21-OCT-2019 15:45

Client ID: AUG02-19

Instrument: HP16334.i

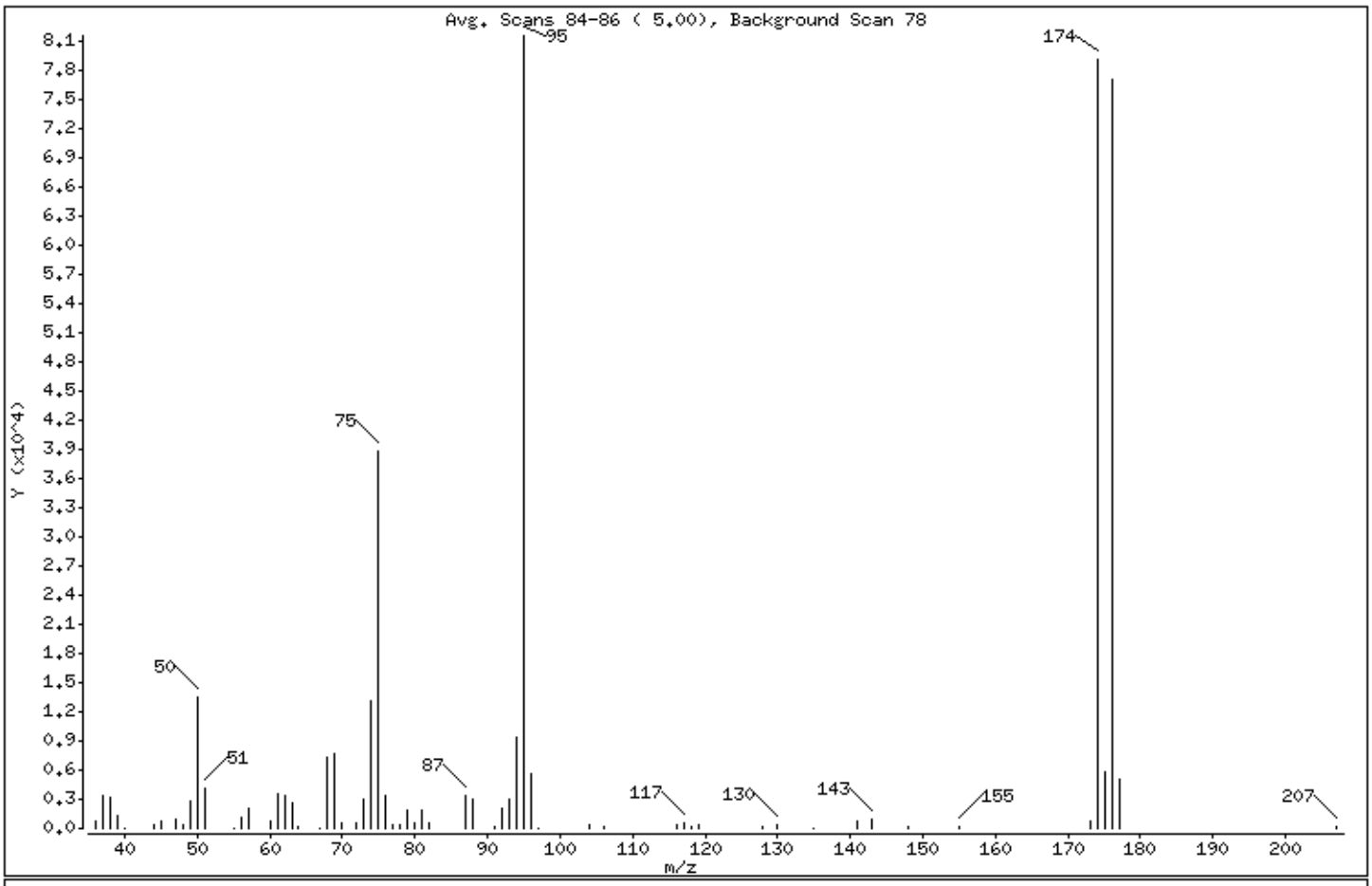
Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.49
75	30.00 - 60.00% of mass 95	47.51
96	5.00 - 9.00% of mass 95	6.82
173	Less than 2.00% of mass 174	0.87 (0.89)
174	50.00 - 100.00% of mass 95	97.08
175	5.00 - 9.00% of mass 174	7.04 (7.25)
176	95.00 - 101.00% of mass 174	94.48 (97.33)
177	5.00 - 9.00% of mass 176	6.18 (6.54)

Date : 21-OCT-2019 15:45

Client ID: AUG02-19 Instrument: HP16334.i

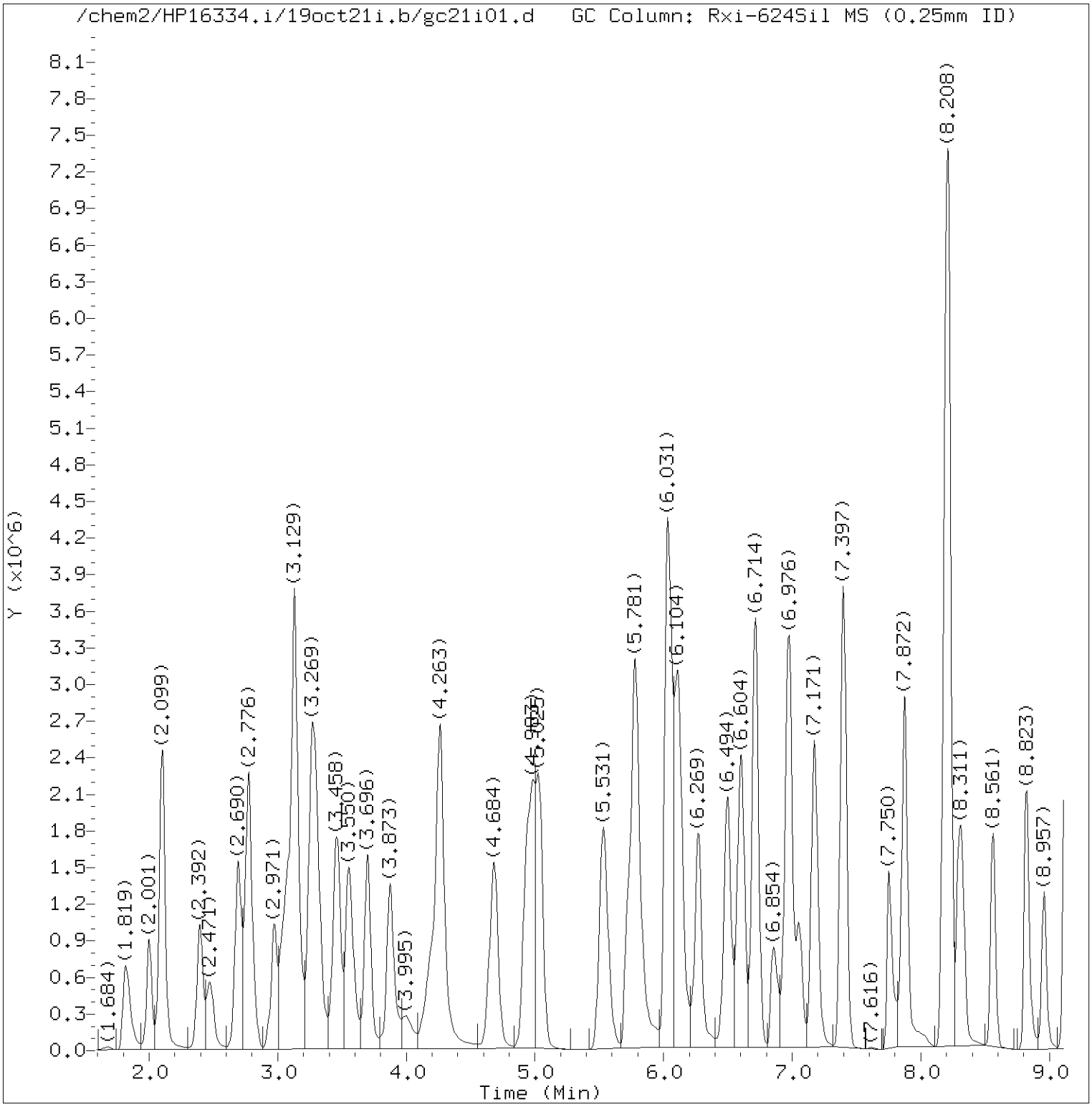
Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: gc21t02.d
Spectrum: Avg. Scans 84-86 (5.00), Background Scan 78
Location of Maximum: 95.00
Number of points: 63

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	661	61.00	3504	80.00	584	118.00	245
37.00	3340	62.00	3427	81.00	1808	119.00	438
38.00	3266	63.00	2607	82.00	483	128.00	188
39.00	1221	64.00	173	87.00	3315	130.00	368
40.00	23	67.00	92	88.00	3081	135.00	85
44.00	459	68.00	7300	91.00	233	141.00	818
45.00	708	69.00	7759	92.00	2031	143.00	979
47.00	863	70.00	592	93.00	2934	148.00	213
48.00	388	72.00	532	94.00	9440	155.00	191
49.00	2839	73.00	2951	95.00	81520	173.00	708
50.00	13444	74.00	13171	96.00	5561	174.00	79136
51.00	4114	75.00	38728	97.00	84	175.00	5735
55.00	93	76.00	3281	104.00	318	176.00	77024
56.00	1037	77.00	317	106.00	230	177.00	5035
57.00	2075	78.00	467	116.00	388	207.00	98
60.00	739	79.00	1935	117.00	522		



Total Ion Chromatogram (TIC)

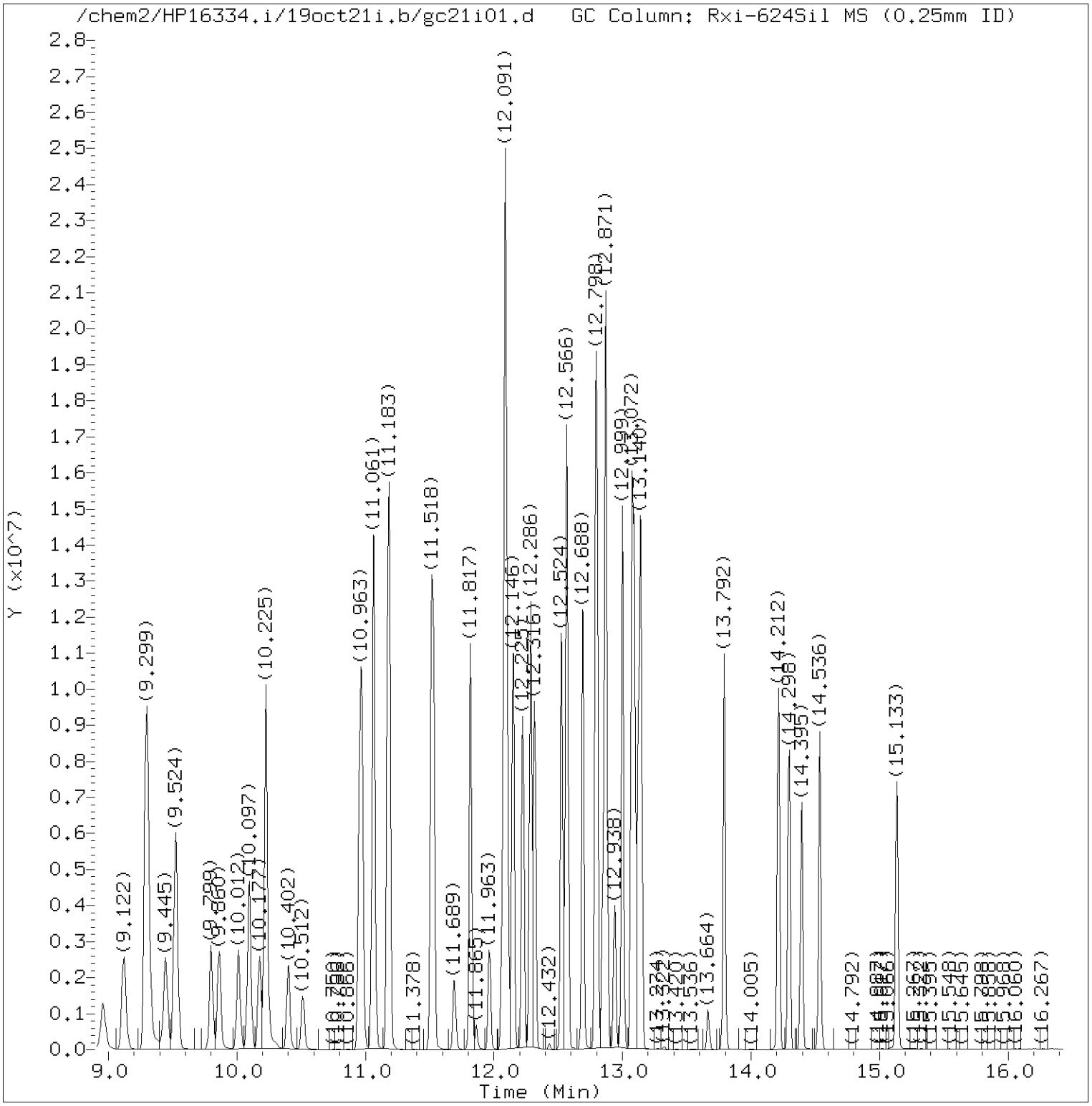
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.819	85	1797819M	24.872
2) Chloromethane	(2)	2.001	50	1573456	23.230
6) 1,3-Butadiene	(2)	2.099	39	1303249M	22.028
5) Vinyl Chloride	(2)	2.105	62	1645253	24.397
7) Bromomethane	(2)	2.398	94	1252010	24.567
8) Chloroethane	(2)	2.471	64	967820	24.264
9) Dichlorofluoromethane	(2)	2.690	67	2200509	23.874
10) Trichlorofluoromethane	(2)	2.757	101	2221267	24.562
11) Ethyl ether	(2)	2.971	59	1024296	24.822
12) Freon 123a	(2)	3.050	67	1477099	24.870
13) Acrolein	(1)	3.129	56	8238478	1205.658
15) 1,1-Dichloroethene	(2)	3.263	96	1134831	24.799
14) Acetone	(1)	3.282	43	1674915	227.178
16) Freon 113	(2)	3.300	101	1360625	25.518
17) Methyl Iodide	(2)	3.446	142	2453817	24.723
18) Carbon Disulfide	(2)	3.556	76	4179375	24.762
21) Methyl Acetate	(1)	3.672	43	456974M	25.444
22) Allyl Chloride	(2)	3.702	41	1619435	24.144
23) Methylene Chloride	(2)	3.873	84	1258165	23.544
26)*t-Butyl Alcohol-d10	(1)	3.885	65	145345M	50.000
28) t-Butyl Alcohol	(1)	4.001	59	1238347M	488.130
29) Acrylonitrile	(1)	4.178	53	1300453	125.003
30) Methyl Tertiary Butyl Ether	(2)	4.245	73	3331523	24.002
31) trans-1,2-Dichloroethene	(2)	4.263	96	1302942	24.673
32) n-Hexane	(2)	4.684	57	1879908M	26.441
33) 1,1-Dichloroethane	(2)	4.928	63	2227501	24.729
34) di-Isopropyl Ether	(2)	4.983	45	4047261	24.776
35) 2-Chloro-1,3-Butadiene	(2)	5.037	53	2020941	25.086
37) Ethyl t-butyl ether	(2)	5.531	59	3915680	23.666
38) 2-Butanone	(1)	5.720	43	3607095	256.440
39) cis-1,2-Dichloroethene	(2)	5.775	96	1451595	25.228
41) 2,2-Dichloropropane	(2)	5.793	77	1634389	26.160
42) Propionitrile	(1)	5.812	54	1428757M	499.966
45) Methacrylonitrile	(1)	6.031	67	3821377	243.466
40) 1,2-Dichloroethene (Total)	(2)		96	2754537	49.901
47) Bromochloromethane	(2)	6.116	128	713200	24.973
48) Tetrahydrofuran	(1)	6.116	71	1149358	258.739
49) Chloroform	(2)	6.269	83	2275658	24.864

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.494	113	560960	9.965
50)$Dibromofluoromethane	(2)	6.494	111	574893	9.938
51) 1,1,1-Trichloroethane	(2)	6.501	97	2031525	25.227
52) Cyclohexane	(2)	6.604	56	2243717	25.523
52) Cyclohexane	(2)	6.598	84	2105179	25.740
52) Cyclohexane	(2)	6.604	69	713075	25.561
54) Carbon Tetrachloride	(2)	6.714	117	1905359	26.272
55) 1,1-Dichloropropene	(2)	6.714	75	1808919	24.889
56) Isobutyl Alcohol	(1)	6.860	41	1091874	1402.183
57)$1,2-Dichloroethane-d4	(2)	6.952	102	112952	9.908
57)$1,2-Dichloroethane-d4	(2)	6.946	65	512755	9.817
57)$1,2-Dichloroethane-d4	(2)	6.946	104	72385	10.134
58) Benzene	(2)	6.976	78	5202359	24.779
59) 1,2-Dichloroethane	(2)	7.055	62	1422652M	23.984
59) 1,2-Dichloroethane	(2)	7.055	98	136616	26.033
60) t-Amyl methyl ether	(2)	7.171	73	3711583	24.347
63)*Fluorobenzene	(2)	7.391	96	2226640	10.000
62) n-Heptane	(2)	7.403	43	1871539	25.254
65) n-Butanol	(1)	7.750	56	2307927	2498.550
67) Trichloroethene	(2)	7.872	95	1422197	25.257
69) Methylcyclohexane	(2)	8.189	83	2428846	25.735
70) 1,2-Dichloropropane	(2)	8.214	63	1330545	25.475
71) Methyl Methacrylate	(1)	8.293	69	809726	25.451
72) 1,4-Dioxane	(1)	8.299	88	275345M	1335.653
72) 1,4-Dioxane	(1)	8.299	58	177365M	1556.603
73) Dibromomethane	(2)	8.323	93	714182	25.599
74) Bromodichloromethane	(2)	8.561	83	1760567	26.158
76) 2-Nitropropane	(1)	8.823	41	2219562	252.497
80) cis-1,3-Dichloropropene	(2)	9.122	75	2127357	26.609
81) 4-Methyl-2-Pentanone	(1)	9.299	43	9850399	242.191
82)$Toluene-d8	(3)	9.445	98	2200775	9.852
82)$Toluene-d8	(3)	9.445	100	1476165	10.214
83) Toluene	(3)	9.524	92	3374274	24.311
84) trans-1,3-Dichloropropene	(3)	9.799	75	1859802	27.089
86) Ethyl Methacrylate	(3)	9.860	69	1734825	26.063
88) 1,1,2-Trichloroethane	(3)	10.012	97	1033771	24.918
89) Tetrachloroethene	(3)	10.097	166	1664980	25.108
85) 1,3-Dichloropropene (total)	(3)		75	3987159	53.698

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	1769385	24.810
91) 2-Hexanone	(1)	10.225	43	7114999	237.163
93) Dibromochloromethane	(3)	10.402	129	1417338	26.665
95) 1,2-Dibromoethane	(3)	10.512	107	1063769	25.302
97)*Chlorobenzene-d5	(3)	10.951	117	1741783A	10.000
96) 1-Chlorohexane	(3)	10.963	91	2014440MA	24.269
98) Chlorobenzene	(3)	10.975	112	4025070	24.808
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	1507581	25.932
100) Ethylbenzene	(3)	11.067	91	6724865MA	24.711
101) m+p-Xylene	(3)	11.183	106	5289297	50.099
104) o-Xylene	(3)	11.512	106	2649607	25.328
106) Styrene	(3)	11.530	104	4459479	25.411
107) Bromoform	(3)	11.695	173	936773M	28.565
105) Xylene (Total)	(3)		106	7938904	75.426
108) Isopropylbenzene	(3)	11.817	105	6824656	25.091
111)$4-Bromofluorobenzene	(3)	11.963	95	828928	9.929
111)$4-Bromofluorobenzene	(3)	11.963	174	754421	9.980
113) 1,1,2,2-Tetrachloroethane	(4)	12.067	83	1404164	25.499
114) Bromobenzene	(4)	12.079	156	1828506	25.315
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	3607031	263.023
116) 1,2,3-Trichloropropane	(4)	12.109	110	364646	24.369
117) n-Propylbenzene	(4)	12.152	91	7921156	24.475
119) 2-Chlorotoluene	(4)	12.225	126	1716157	25.082
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	5837027	24.952
122) 4-Chlorotoluene	(4)	12.316	126	1777224	24.745
125) tert-Butylbenzene	(4)	12.530	134	1352213M	25.908
126) Pentachloroethane	(4)	12.560	167	1306211	27.041
127) 1,2,4-Trimethylbenzene	(4)	12.573	105	6160346	25.041
128) sec-Butylbenzene	(4)	12.694	105	7661821	24.998
131) 1,3-Dichlorobenzene	(4)	12.792	146	3600929	25.118
132) p-Isopropyltoluene	(4)	12.798	119	6773994	25.500
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	983623	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	3637056	24.775
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	2876306	25.002
136) Benzyl Chloride	(4)	12.938	126	556689	24.979
138) n-Butylbenzene	(4)	13.091	92	3430501	25.388
139) 1,2-Dichlorobenzene	(4)	13.121	146	3333028	24.860
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	238795	27.544

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

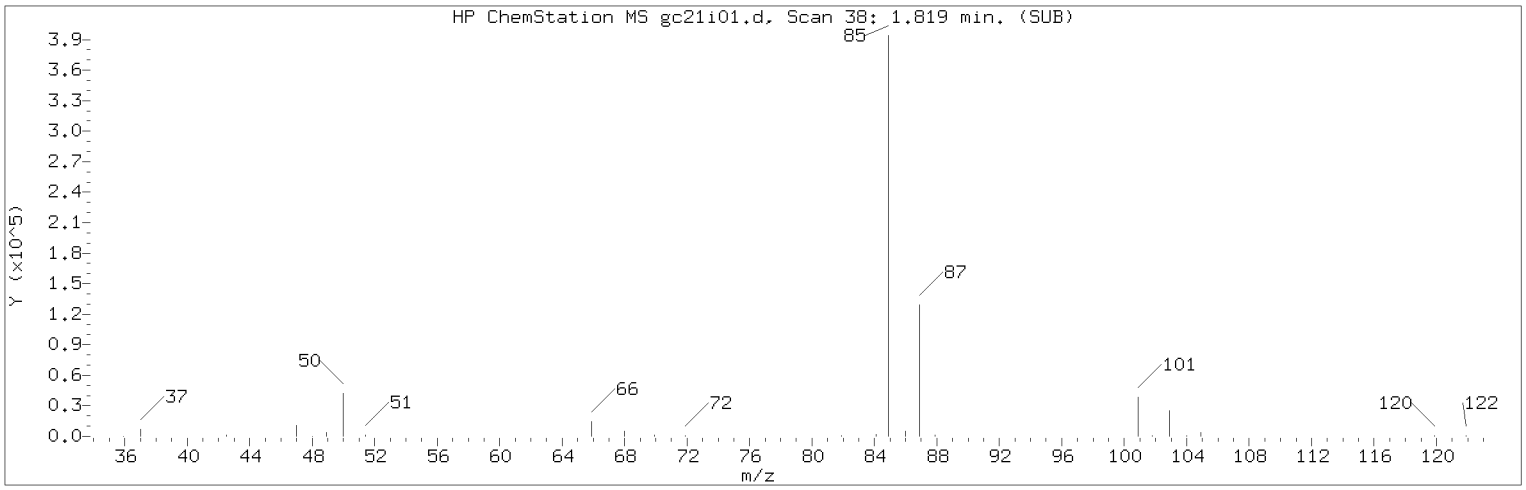
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

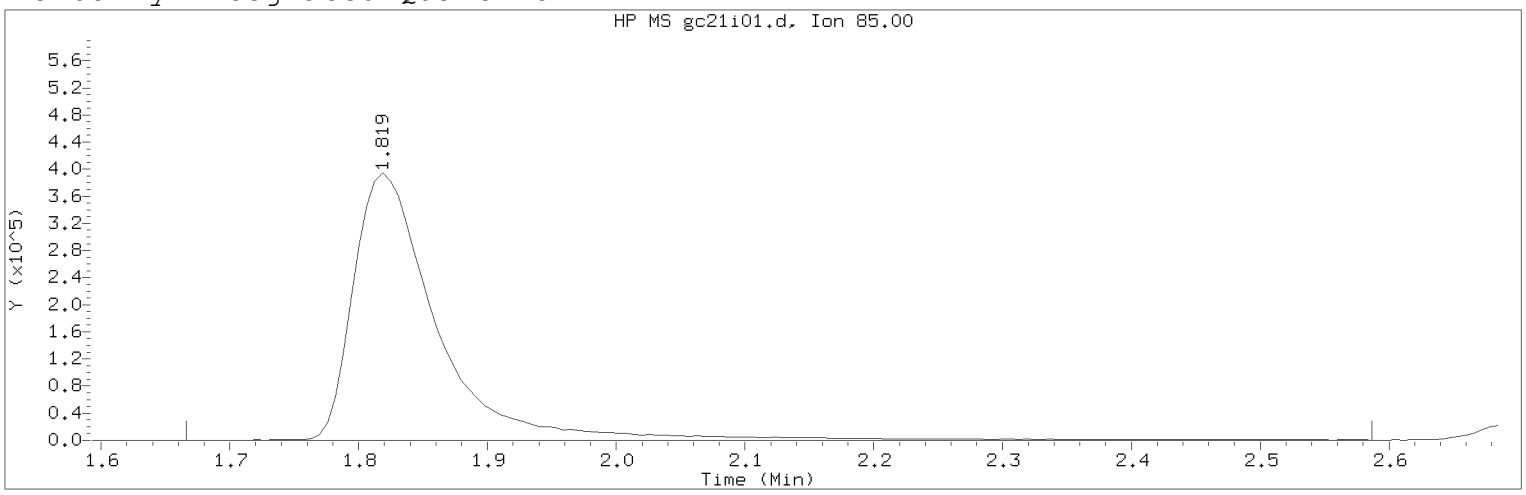
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	3088907	25.339
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	2833877	25.033
146) Hexachlorobutadiene	(4)	14.298	225	1447227	25.247
147) Naphthalene	(4)	14.395	128	4790875	25.256
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	2486654	25.093

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on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

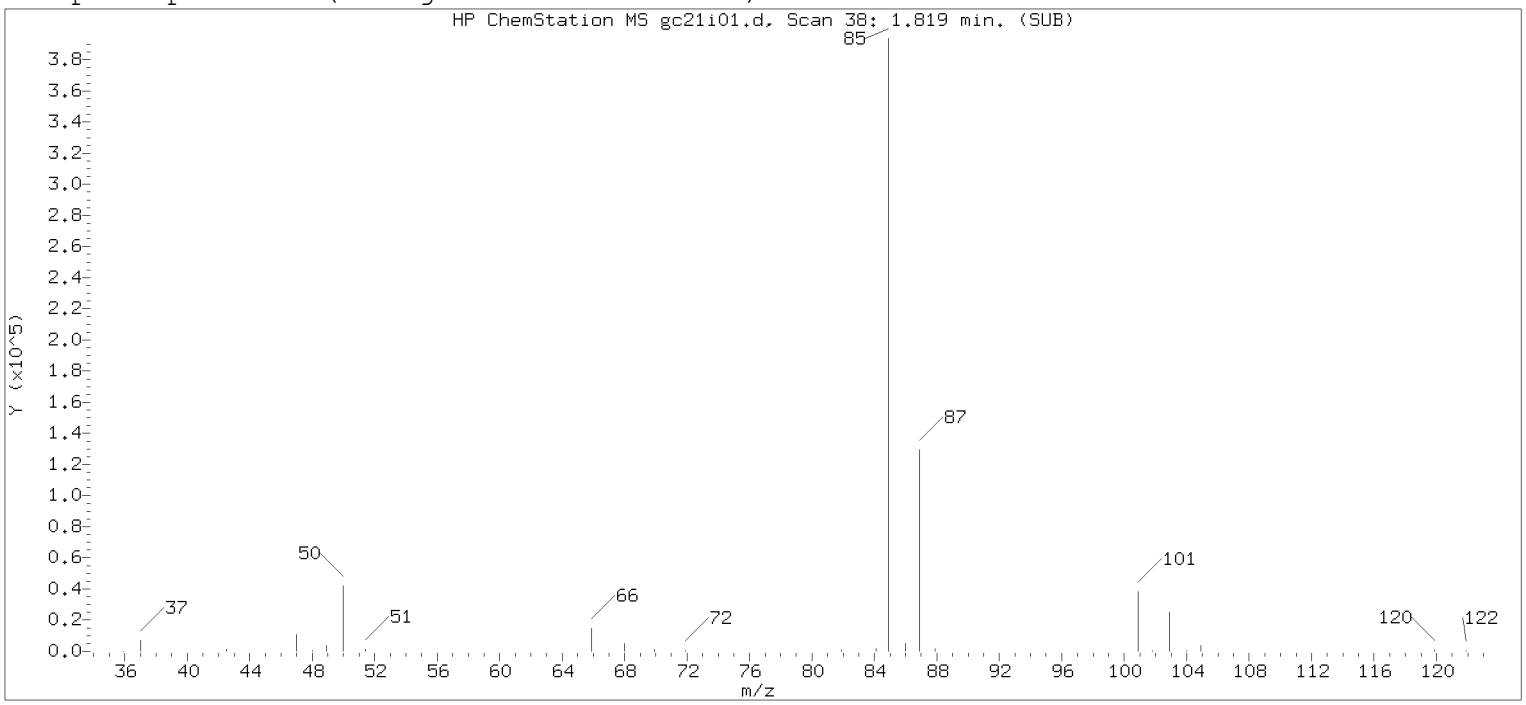
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 38
Retention Time (minutes): 1.819
Quant Ion : 85.00
Area (flag) : 1797819M
On-Column Amount (ng) : 24.8717
Integration start scan : 12 Integration stop scan: 163
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

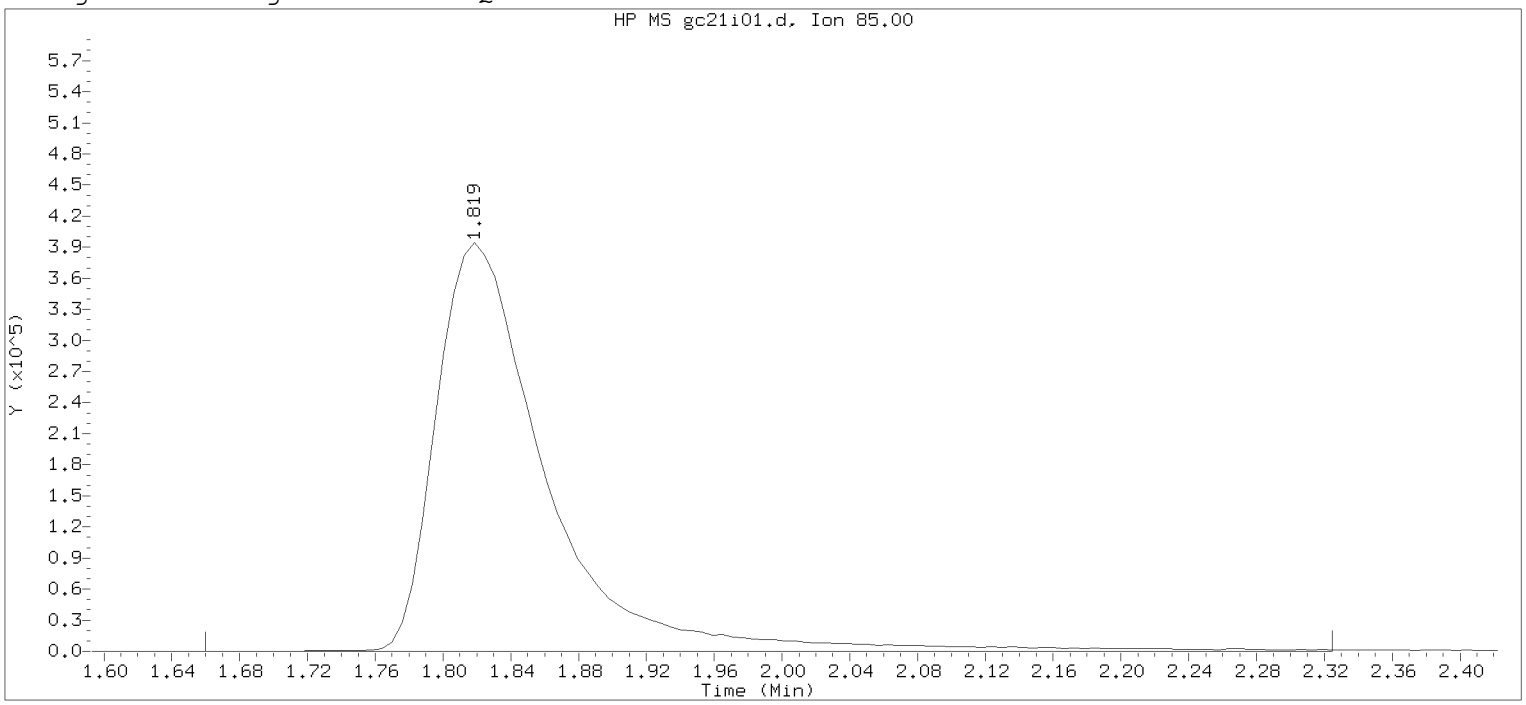
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

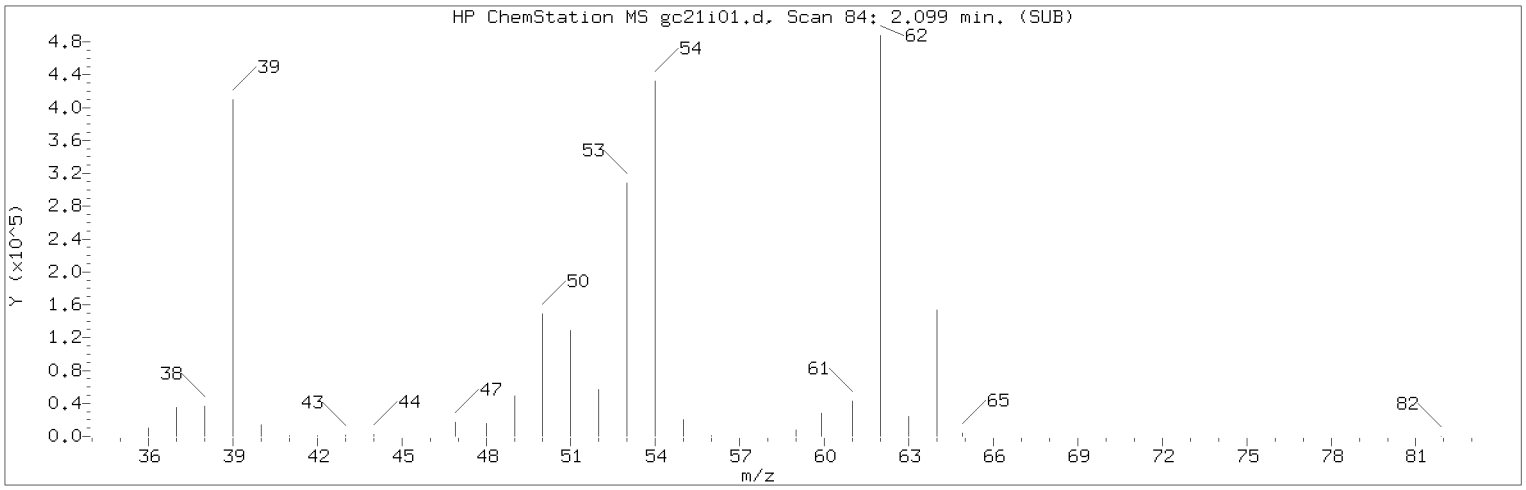
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

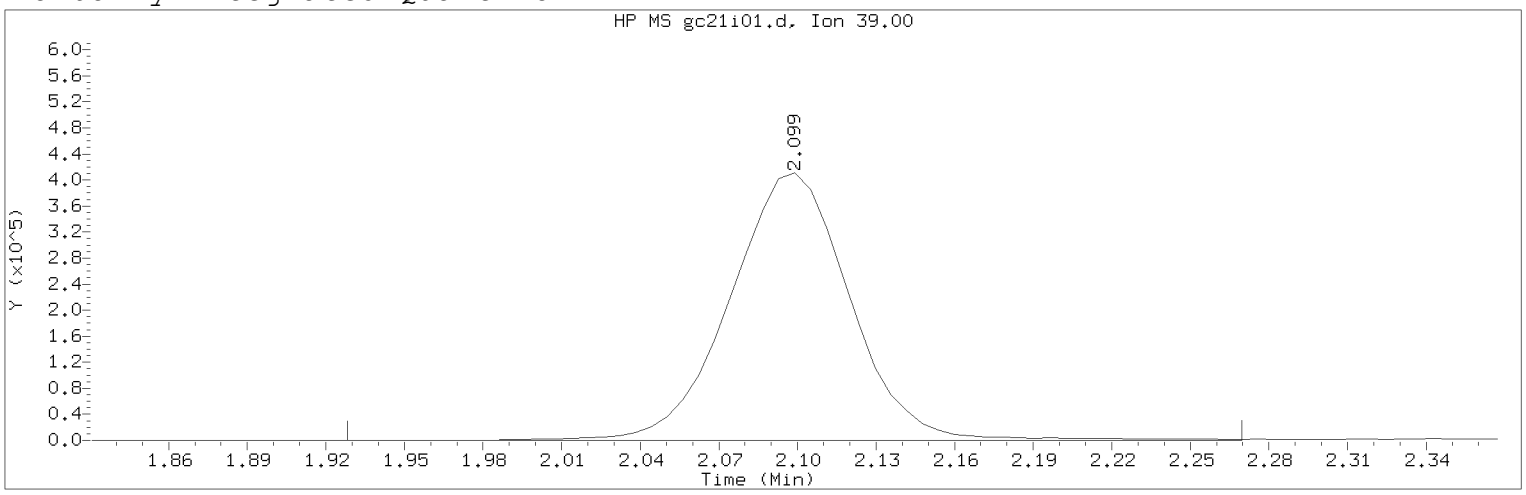
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 38
Retention Time (minutes): 1.819
Quant Ion : 85.00
Area : 1784540
On-column Amount (ng) : 24.1185
Integration start scan : 11 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

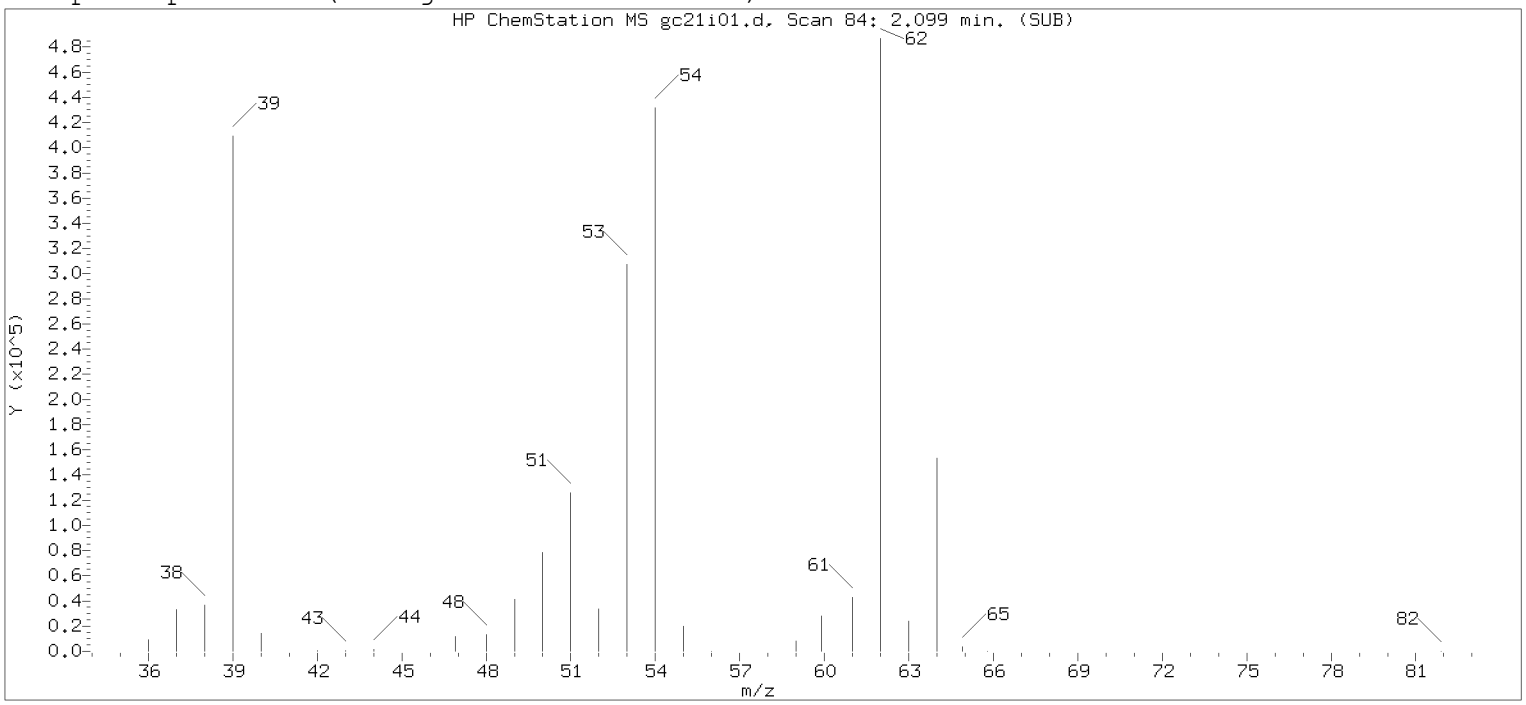
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 84
Retention Time (minutes): 2.099
Quant Ion : 39.00
Area (flag) : 1303249M
On-Column Amount (ng) : 22.0283
Integration start scan : 55 Integration stop scan: 111
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

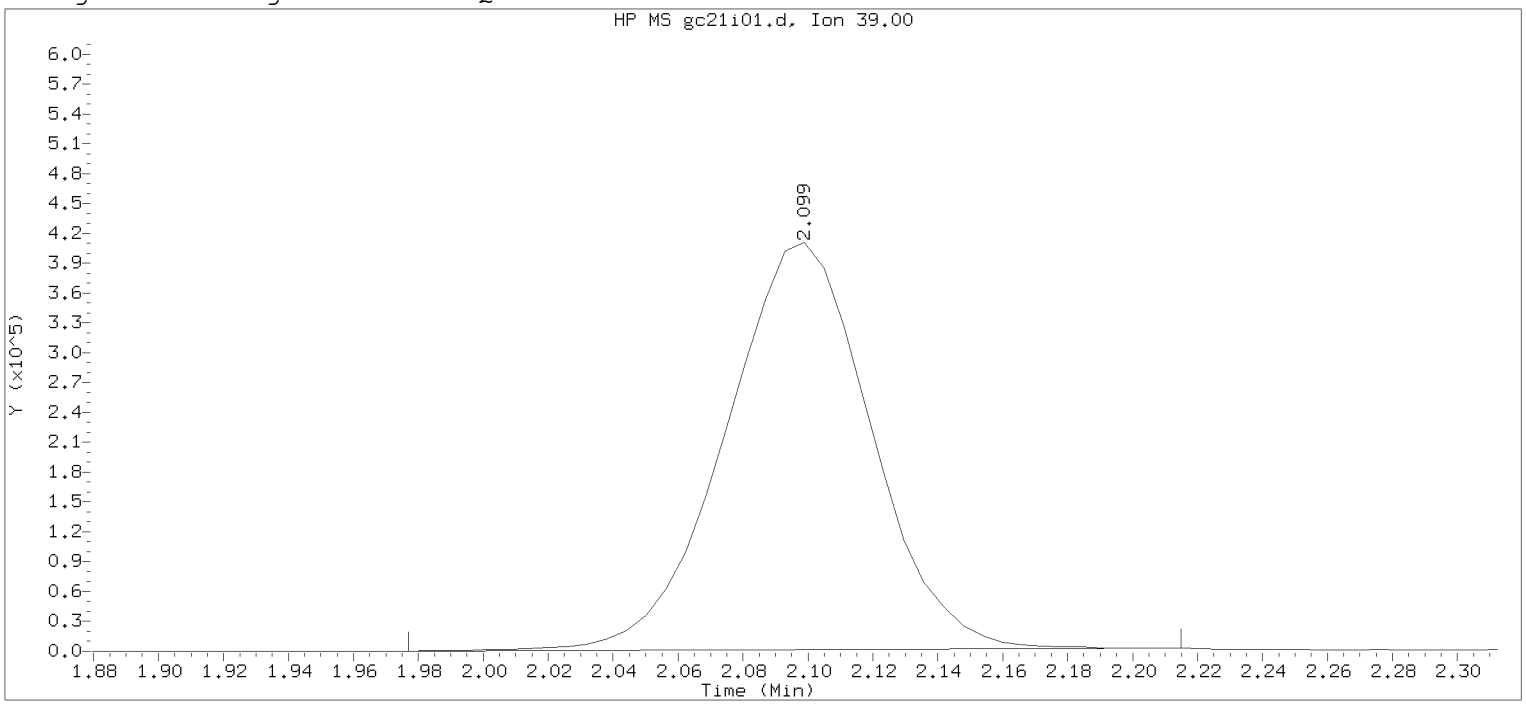
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

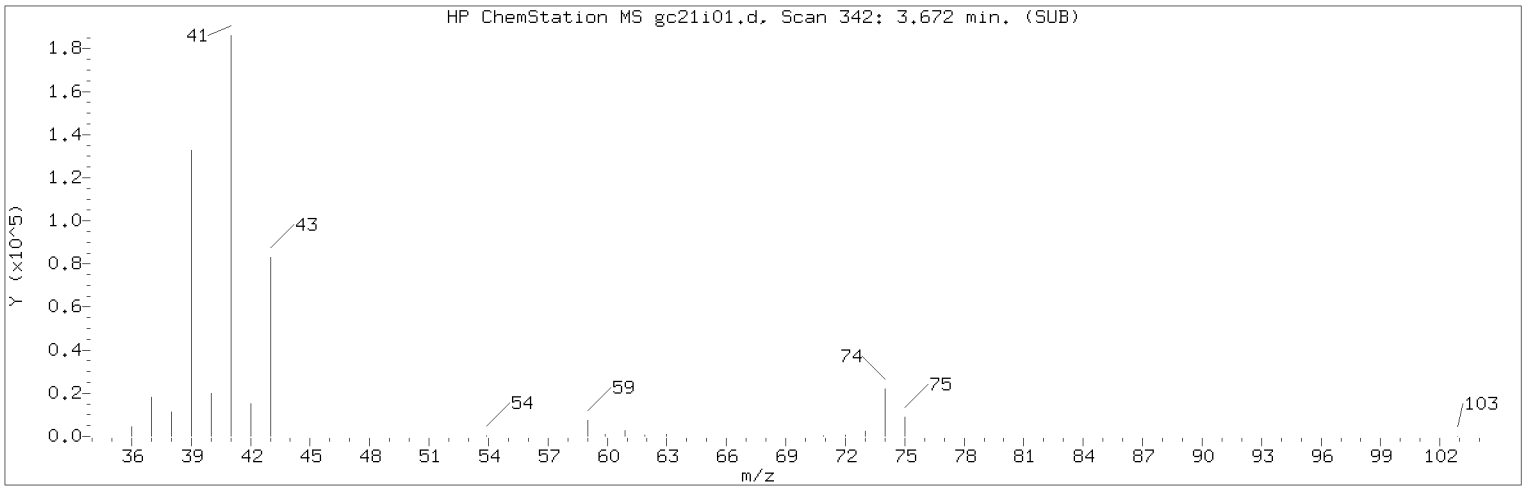
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

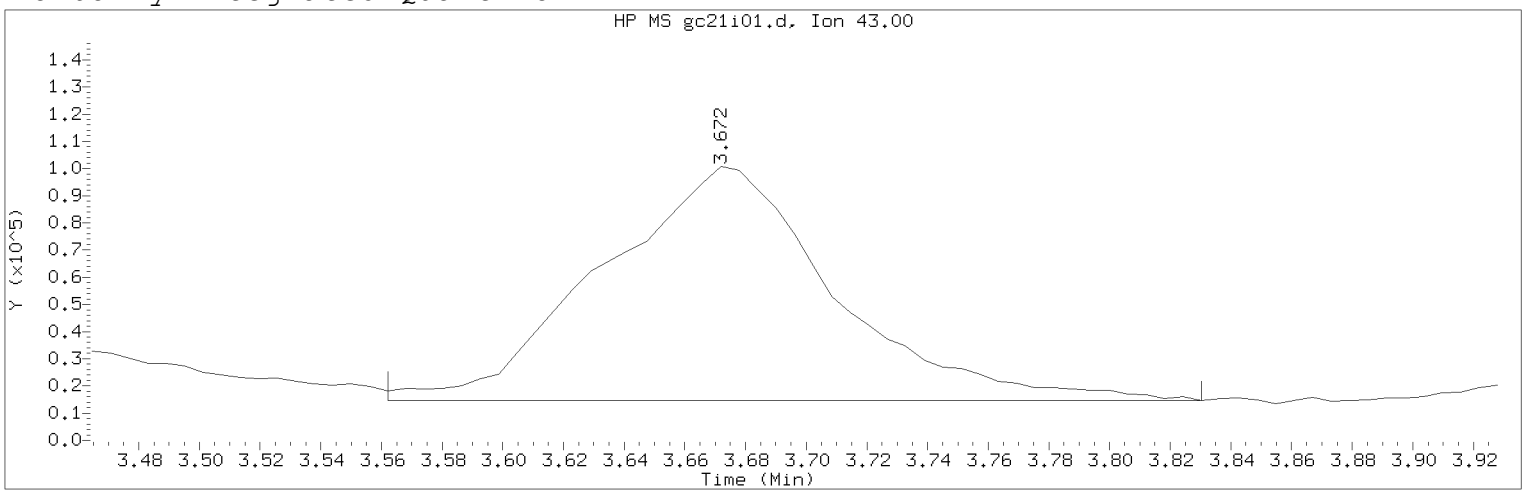
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 84
Retention Time (minutes): 2.099
Quant Ion : 39.00
Area : 1273542
On-column Amount (ng) : 23.9116
Integration start scan : 63 Integration stop scan: 102
Y at integration start : 275 Y at integration end: 2915

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Target 3.5 esignature user: JKH09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

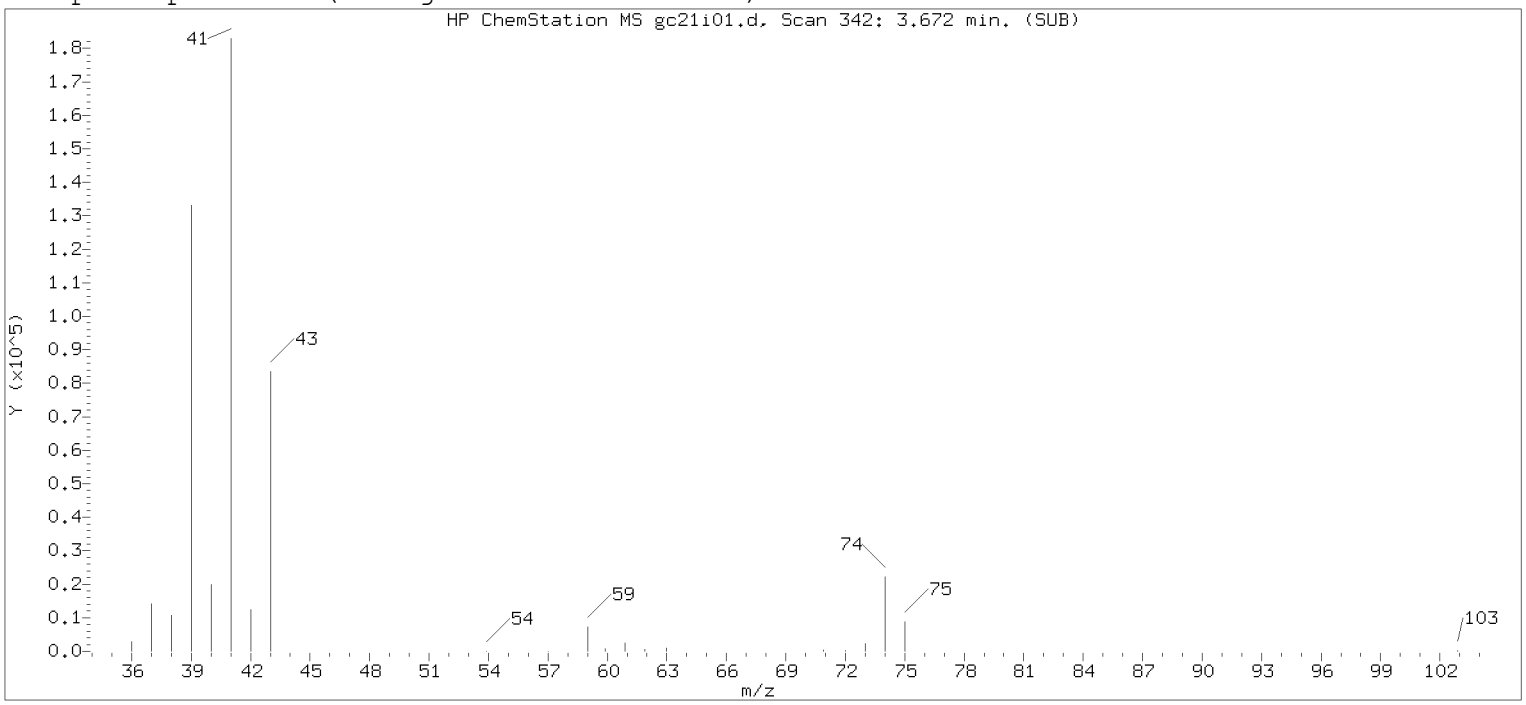
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 342
Retention Time (minutes): 3.672
Quant Ion : 43.00
Area (flag) : 456974M
On-Column Amount (ng) : 25.4436
Integration start scan : 323 Integration stop scan: 367
Y at integration start : 14661 Y at integration end: 14661

Reason for manual integration: improper integration

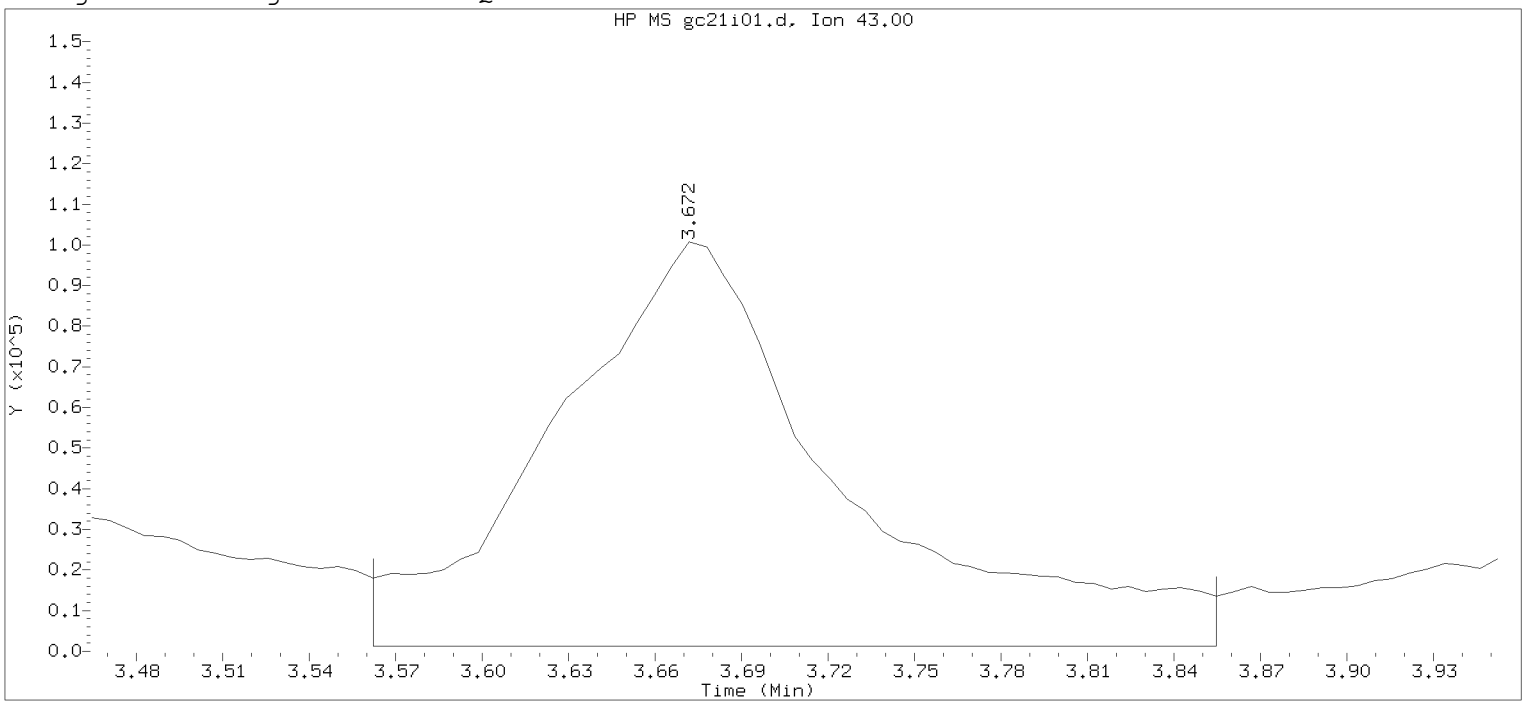
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

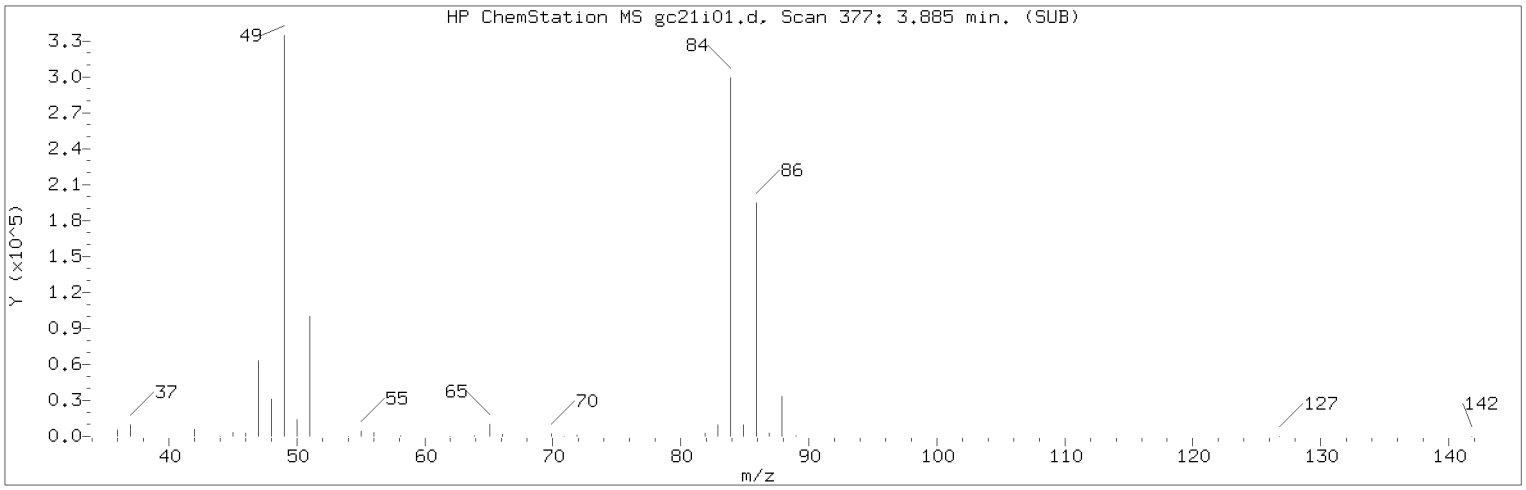
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

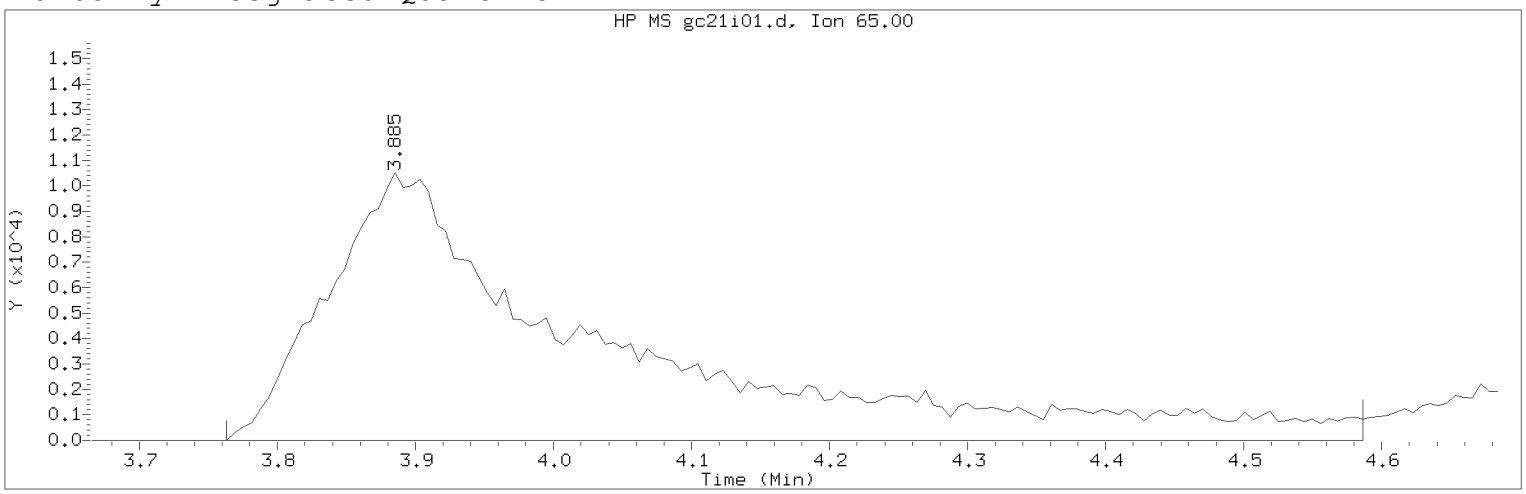
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 342
Retention Time (minutes): 3.672
Quant Ion : 43.00
Area : 690840
On-column Amount (ng) : 29.6603
Integration start scan : 323 Integration stop scan: 371
Y at integration start : 1328 Y at integration end: 1328

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

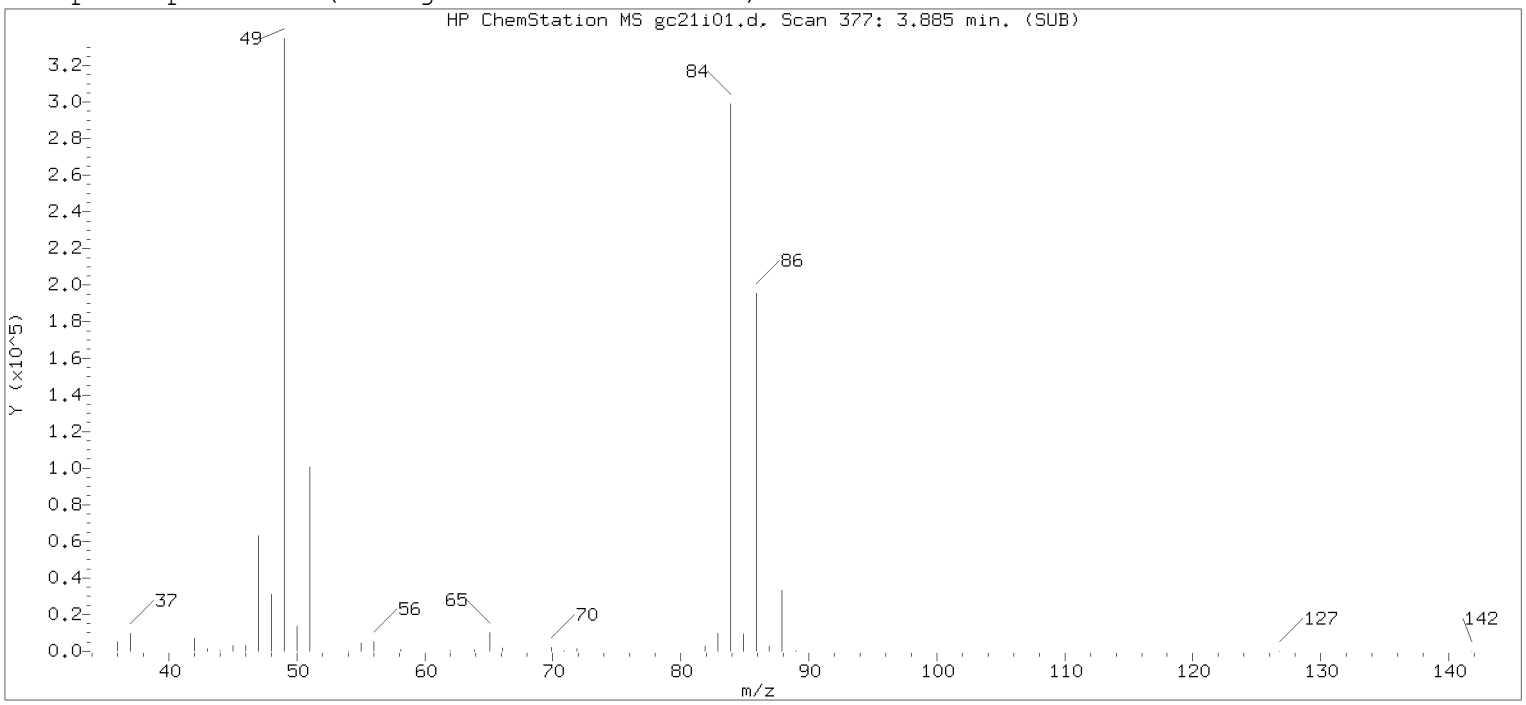
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 377
Retention Time (minutes): 3.885
Quant Ion : 65.00
Area (flag) : 145345M
On-Column Amount (ng) : 50.0000
Integration start scan : 356 Integration stop scan: 491
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

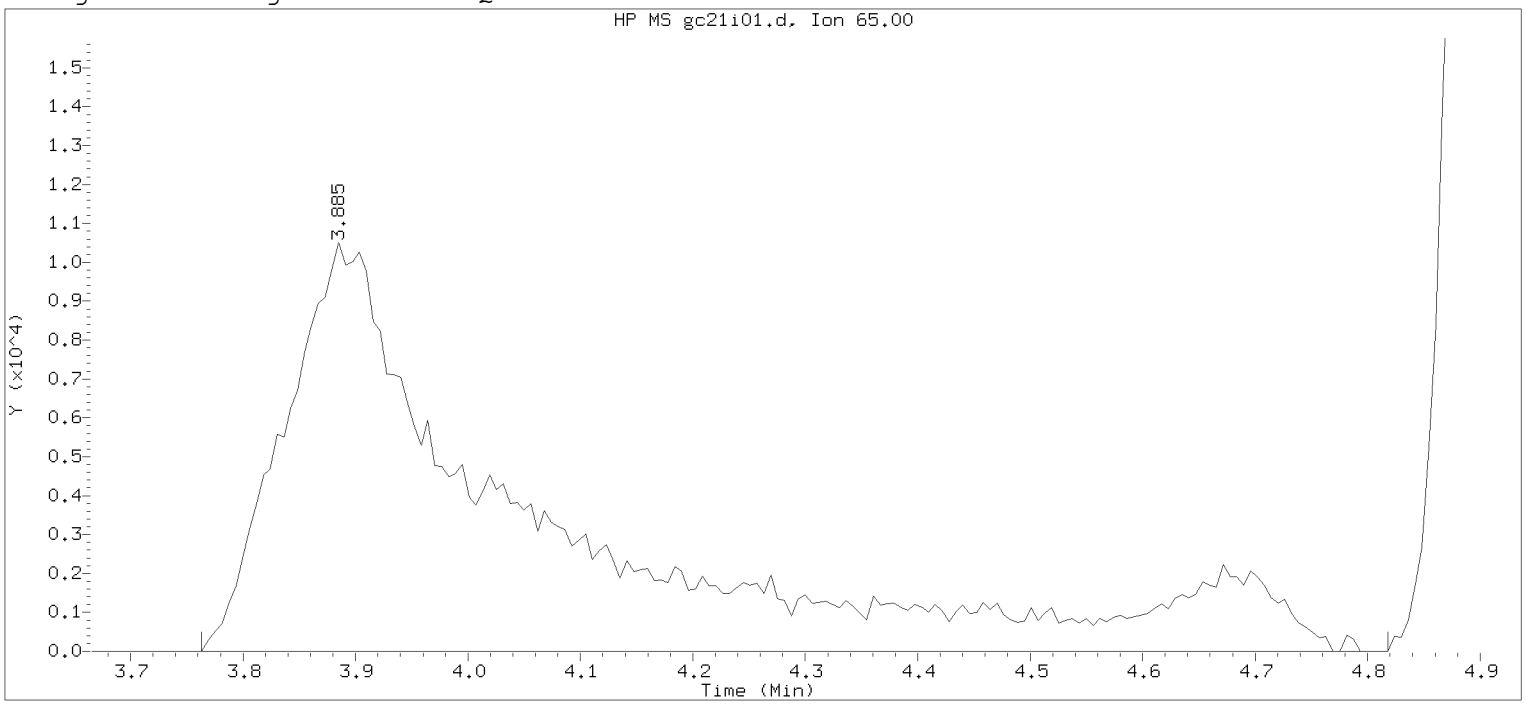
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

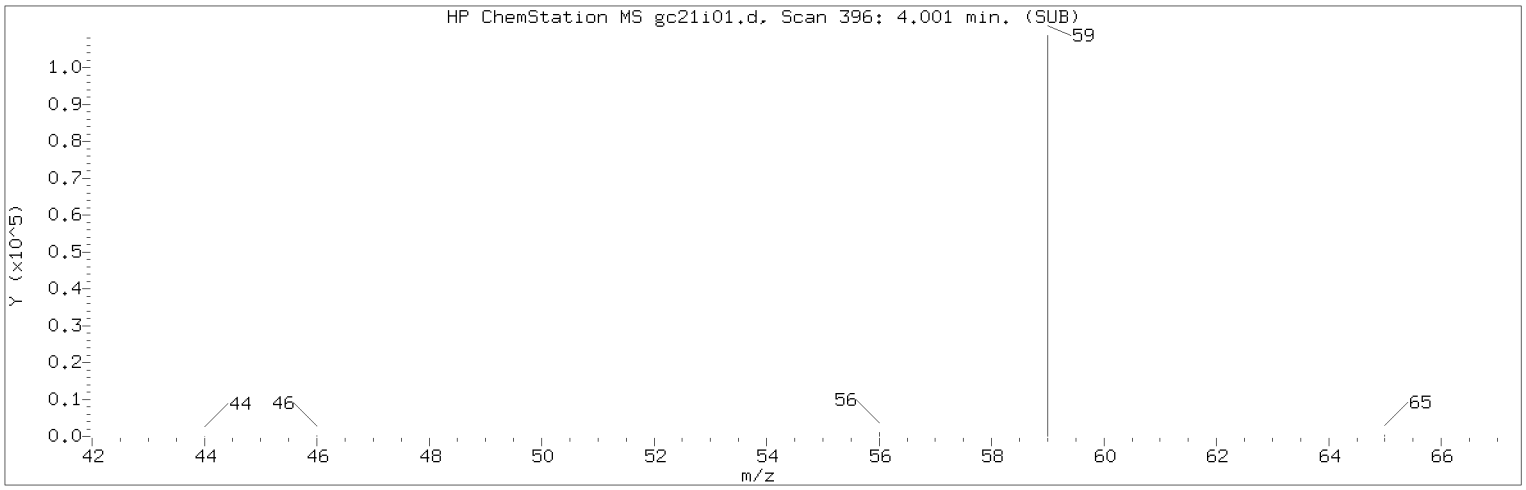
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

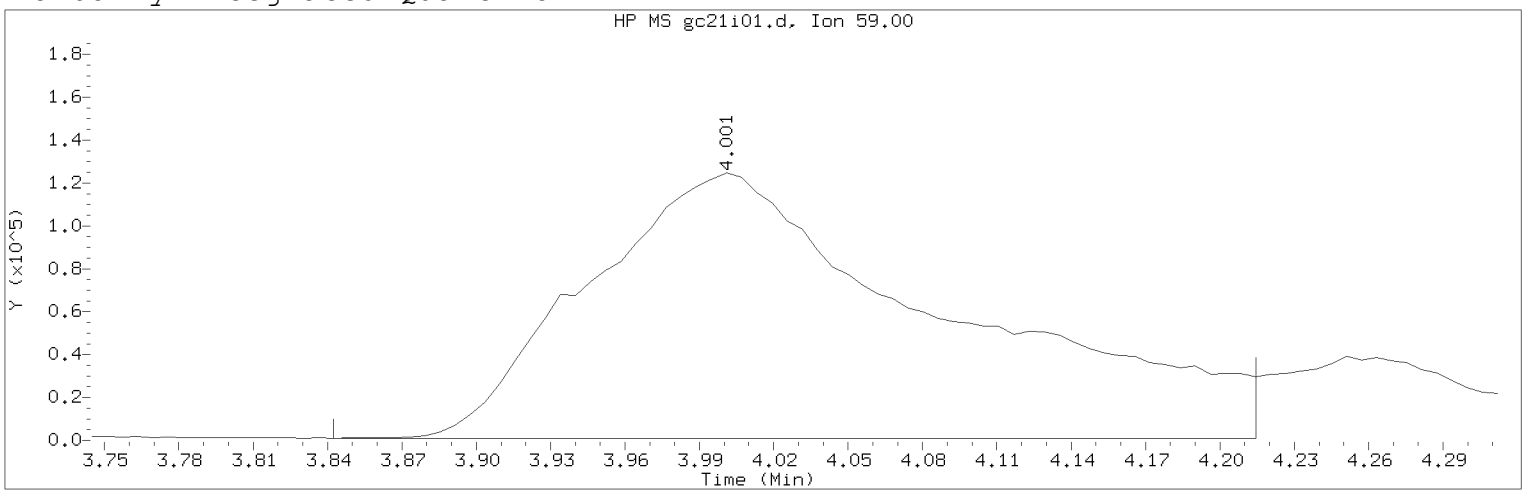
Compound Number	: 26		
Compound Name	: t-Butyl Alcohol-d10		
Scan Number	: 377		
Retention Time (minutes)	: 3.885		
Quant Ion	: 65.00		
Area	: 159467		
On-column Amount (ng)	: 50.0000		
Integration start scan	: 356	Integration stop scan:	529
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

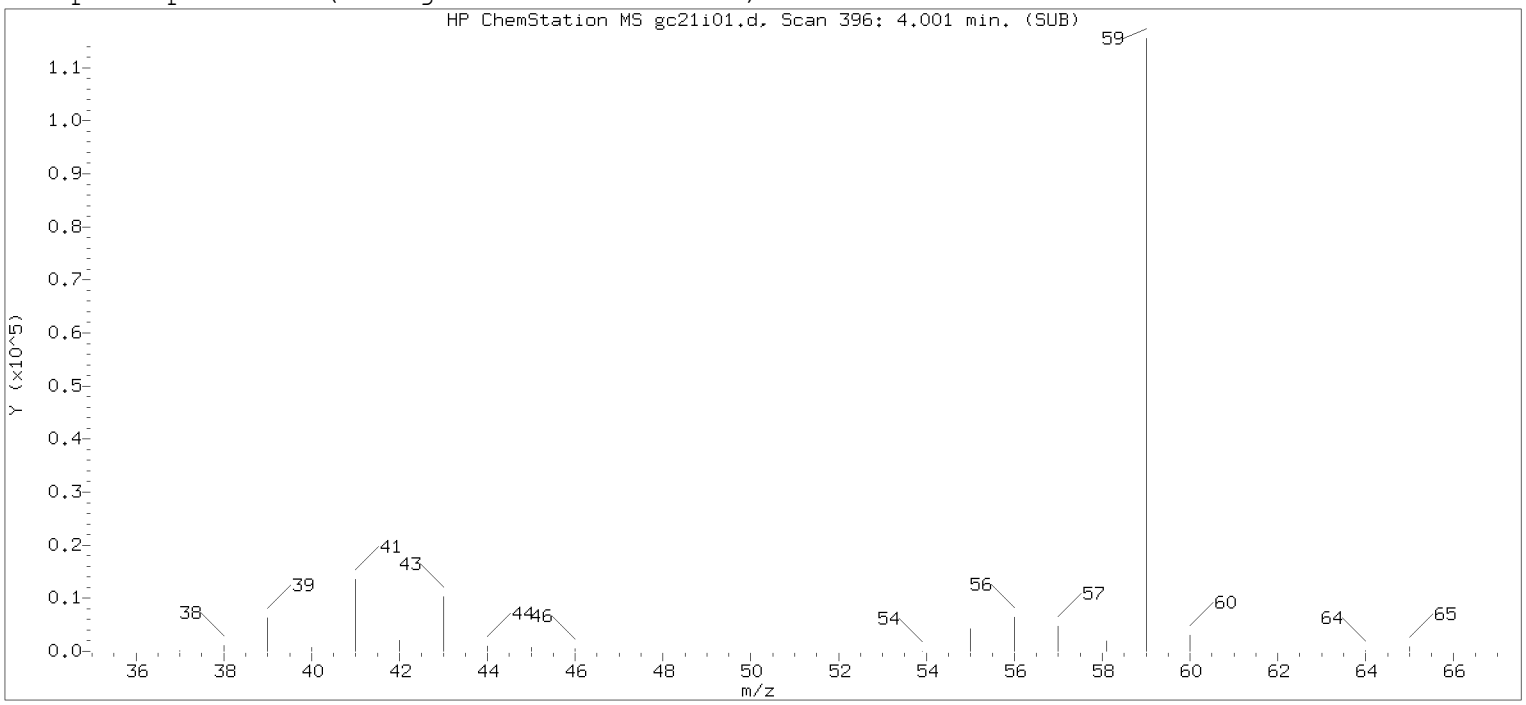
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 396
Retention Time (minutes): 4.001
Quant Ion : 59.00
Area (flag) : 1238347M
On-Column Amount (ng) : 488.1304
Integration start scan : 369 Integration stop scan: 430
Y at integration start : 821 Y at integration end: 821

Reason for manual integration: improper integration

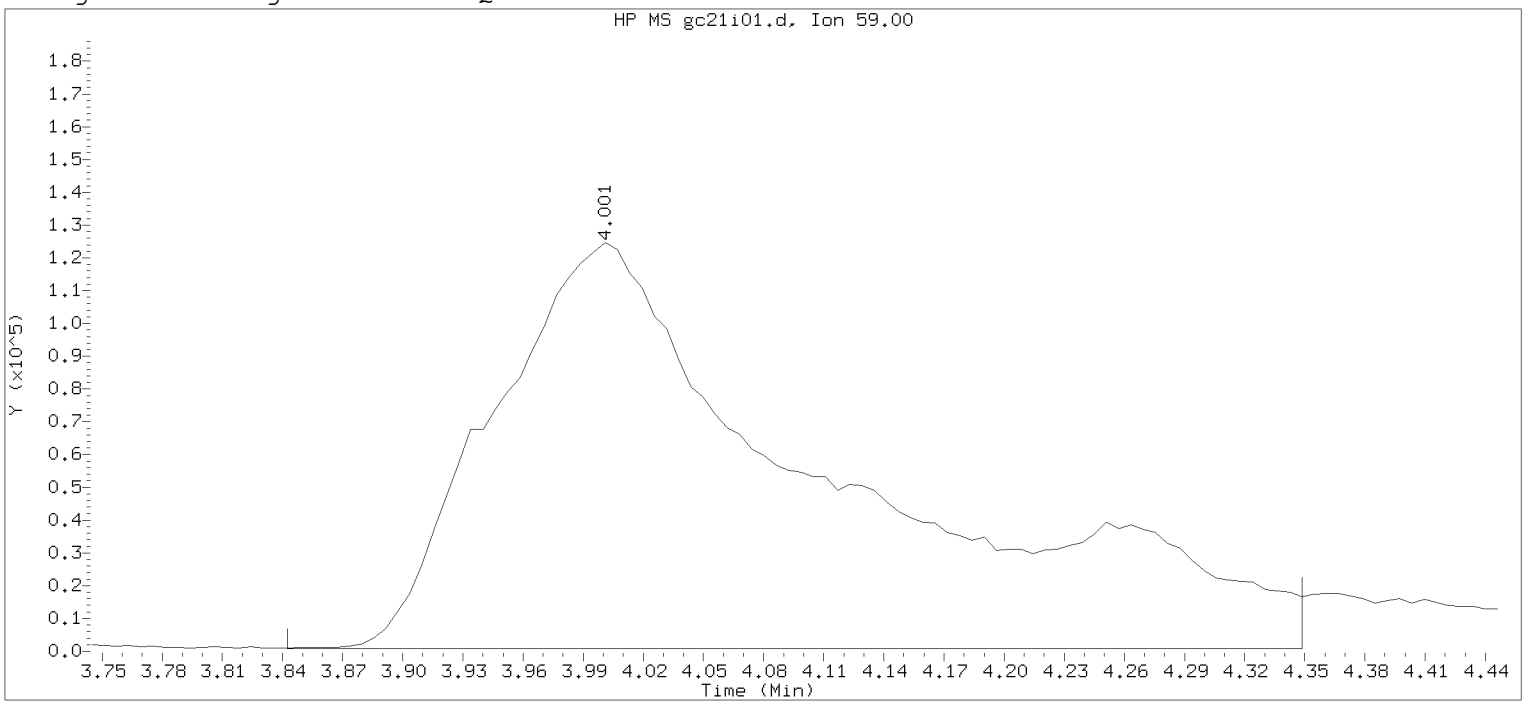
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

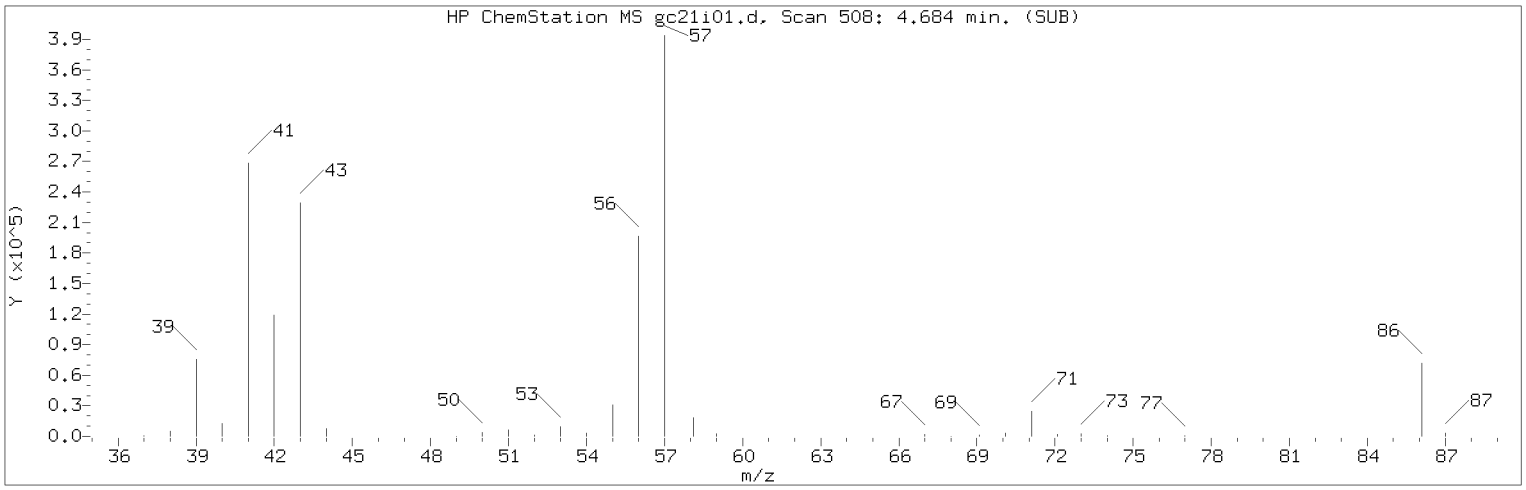
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

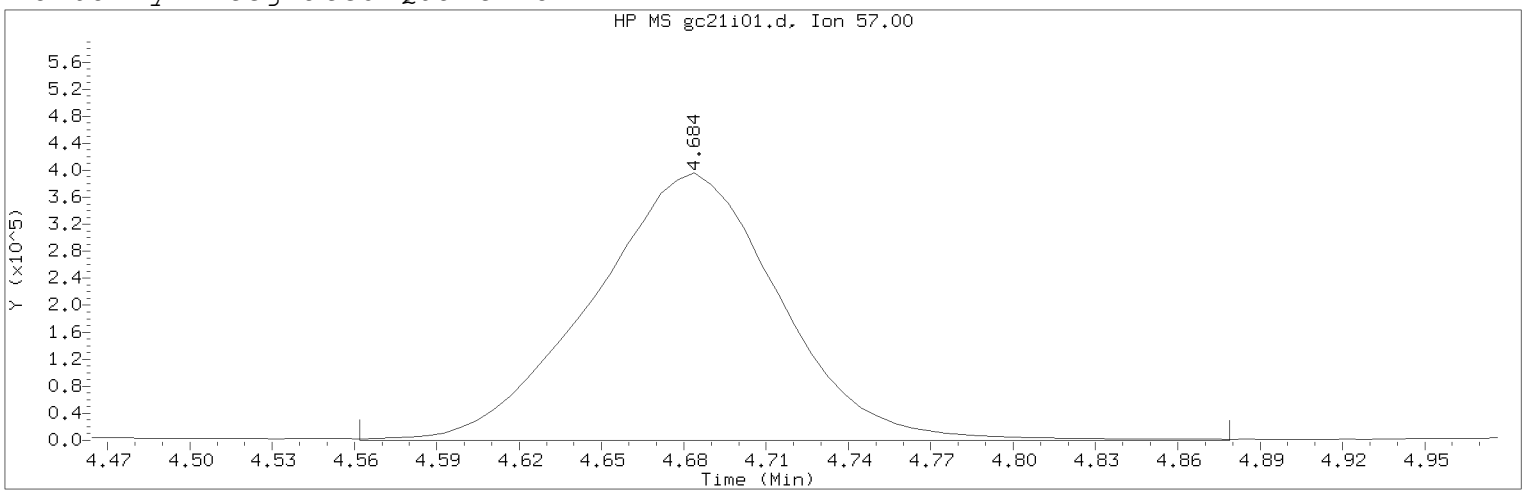
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 396
Retention Time (minutes): 4.001
Quant Ion : 59.00
Area : 1458249
On-column Amount (ng) : 526.8955
Integration start scan : 369 Integration stop scan: 452
Y at integration start : 821 Y at integration end: 821

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

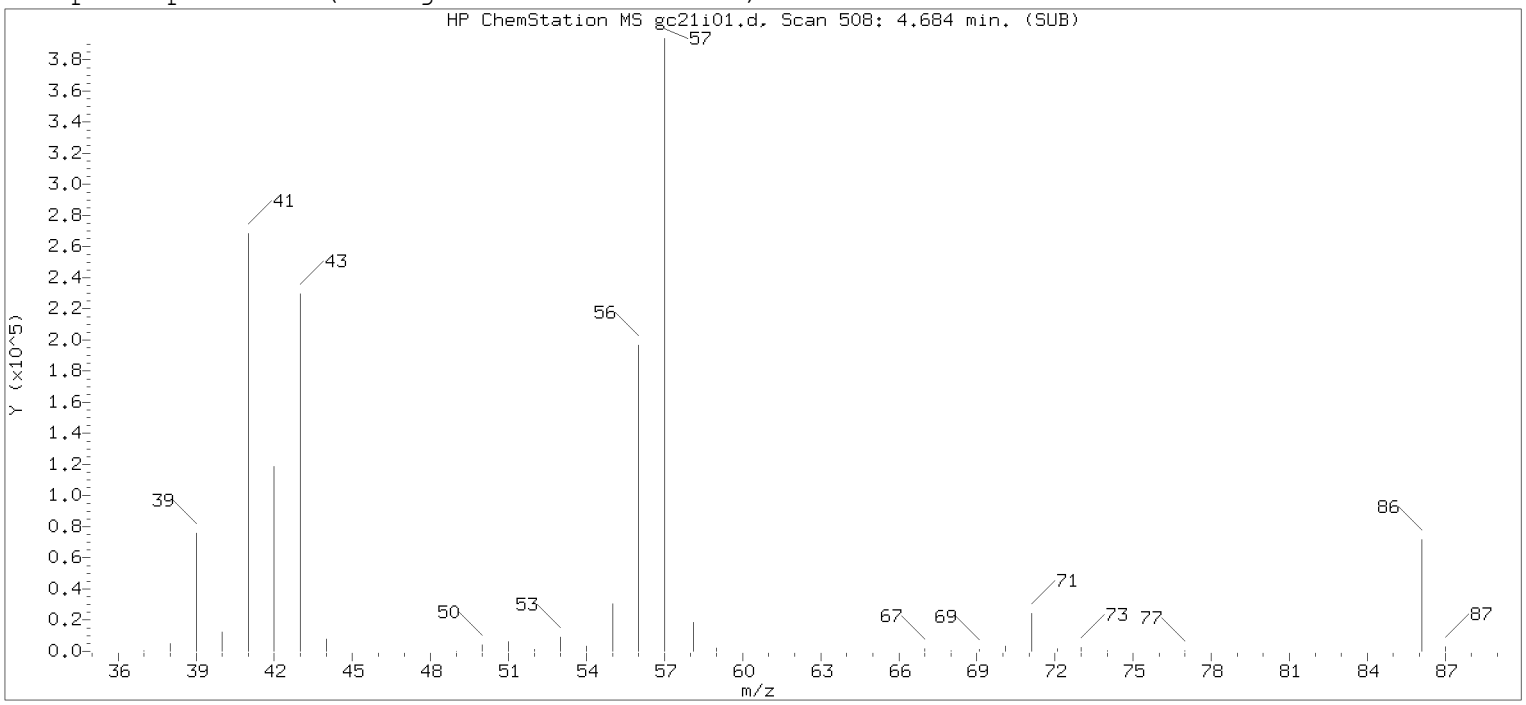
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 508
Retention Time (minutes): 4.684
Quant Ion : 57.00
Area (flag) : 1879908M
On-Column Amount (ng) : 26.4413
Integration start scan : 487 Integration stop scan: 539
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

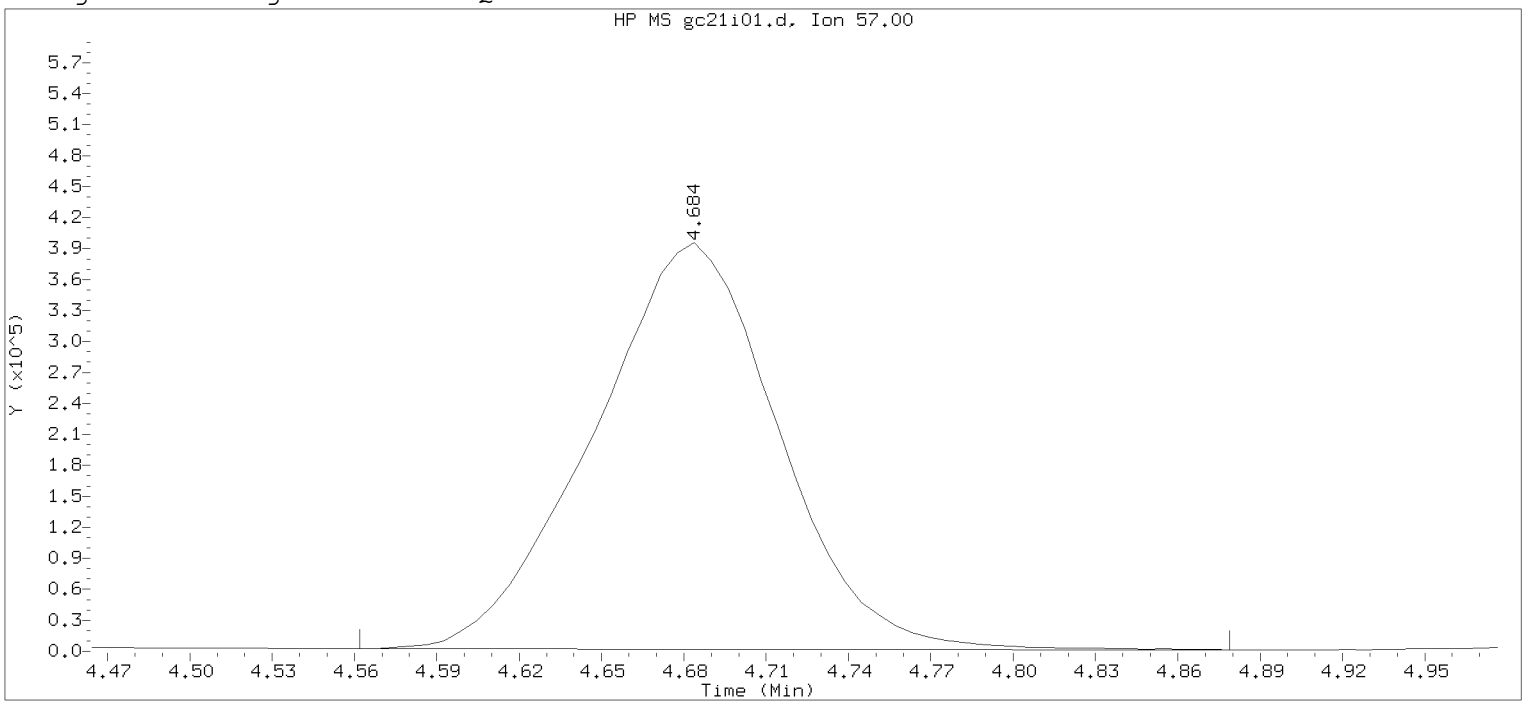
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

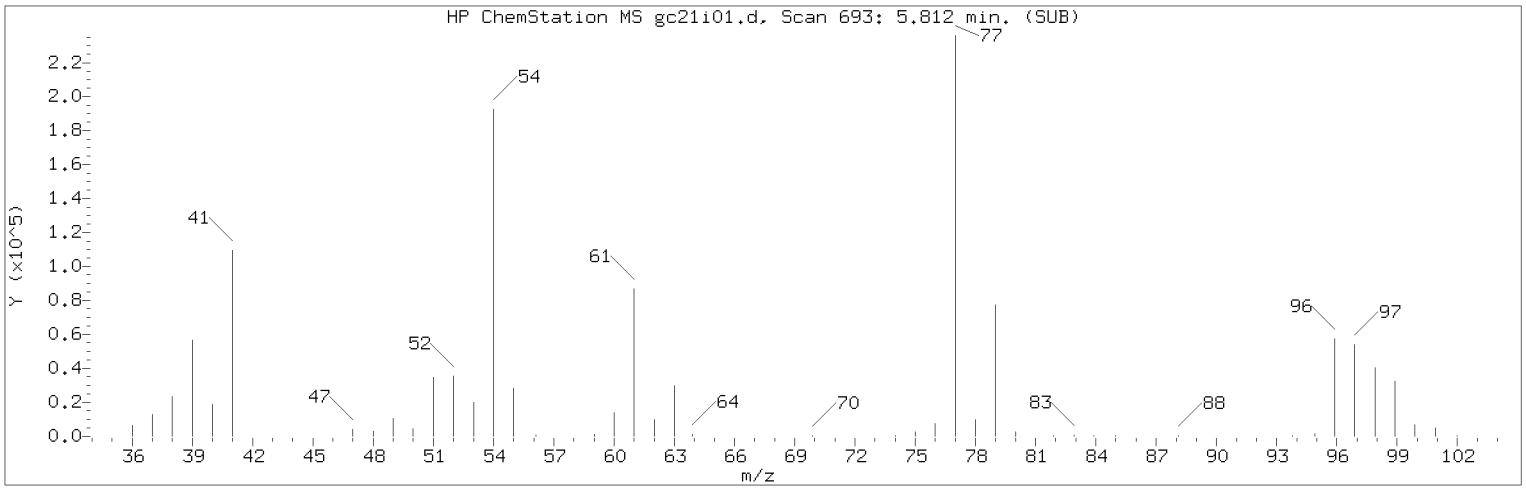
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

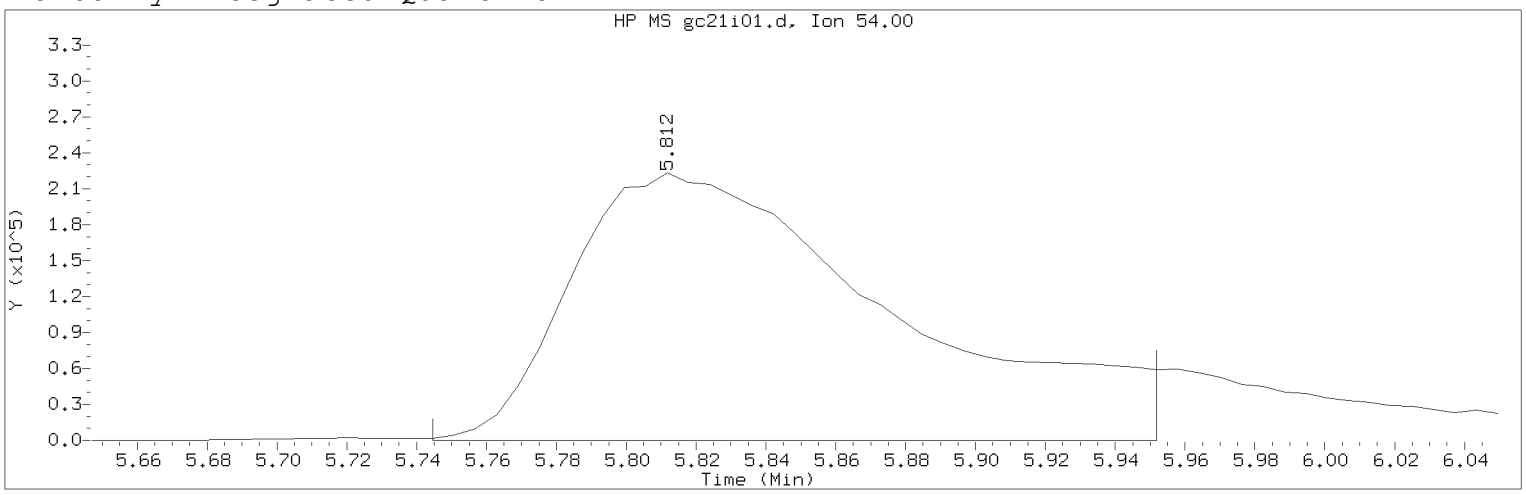
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 508
Retention Time (minutes): 4.684
Quant Ion : 57.00
Area : 1847760
On-column Amount (ng) : 24.8633
Integration start scan : 487 Integration stop scan: 539
Y at integration start : 2181 Y at integration end: 1133

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Target 3.5 esignature user: JKH09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

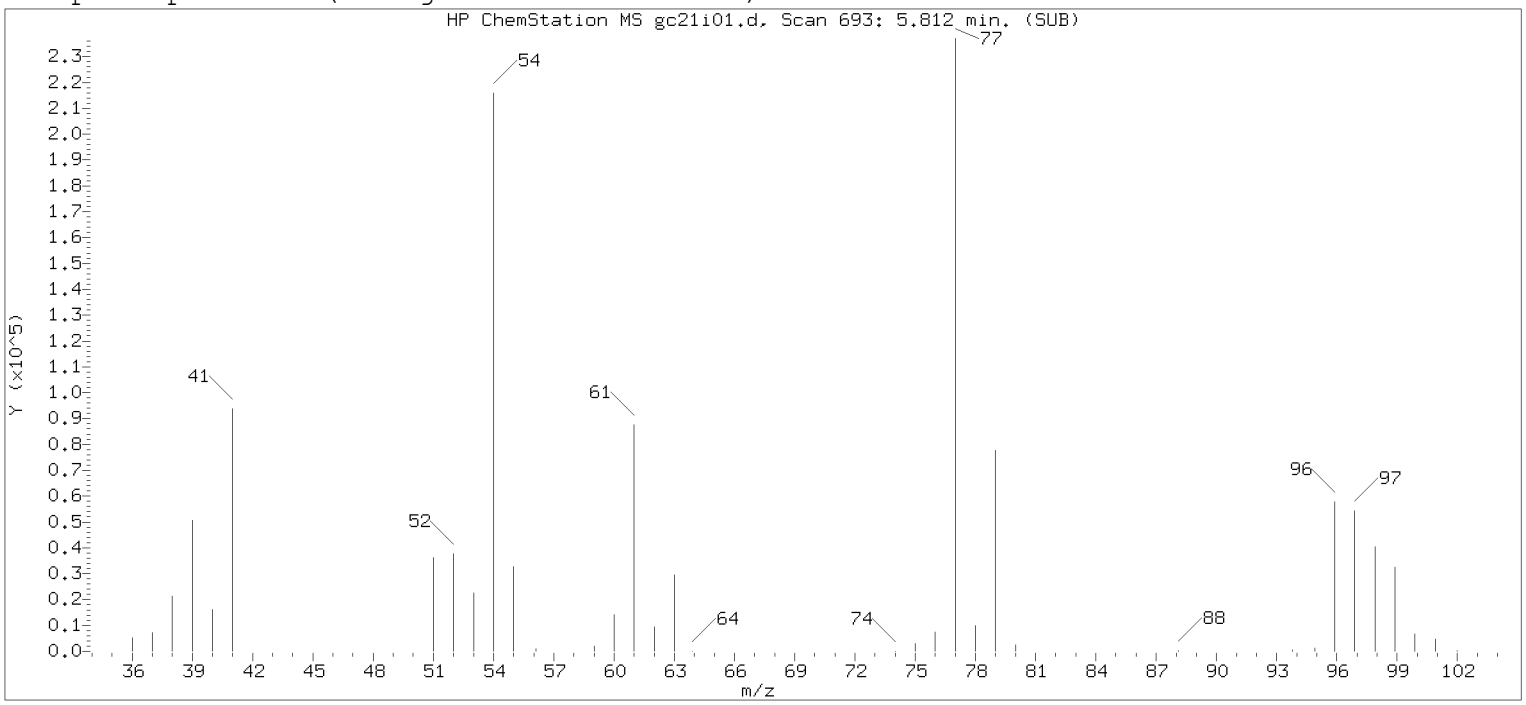
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 693
Retention Time (minutes): 5.812
Quant Ion : 54.00
Area (flag) : 1428757M
On-Column Amount (ng) : 499.9657
Integration start scan : 681 Integration stop scan: 715
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

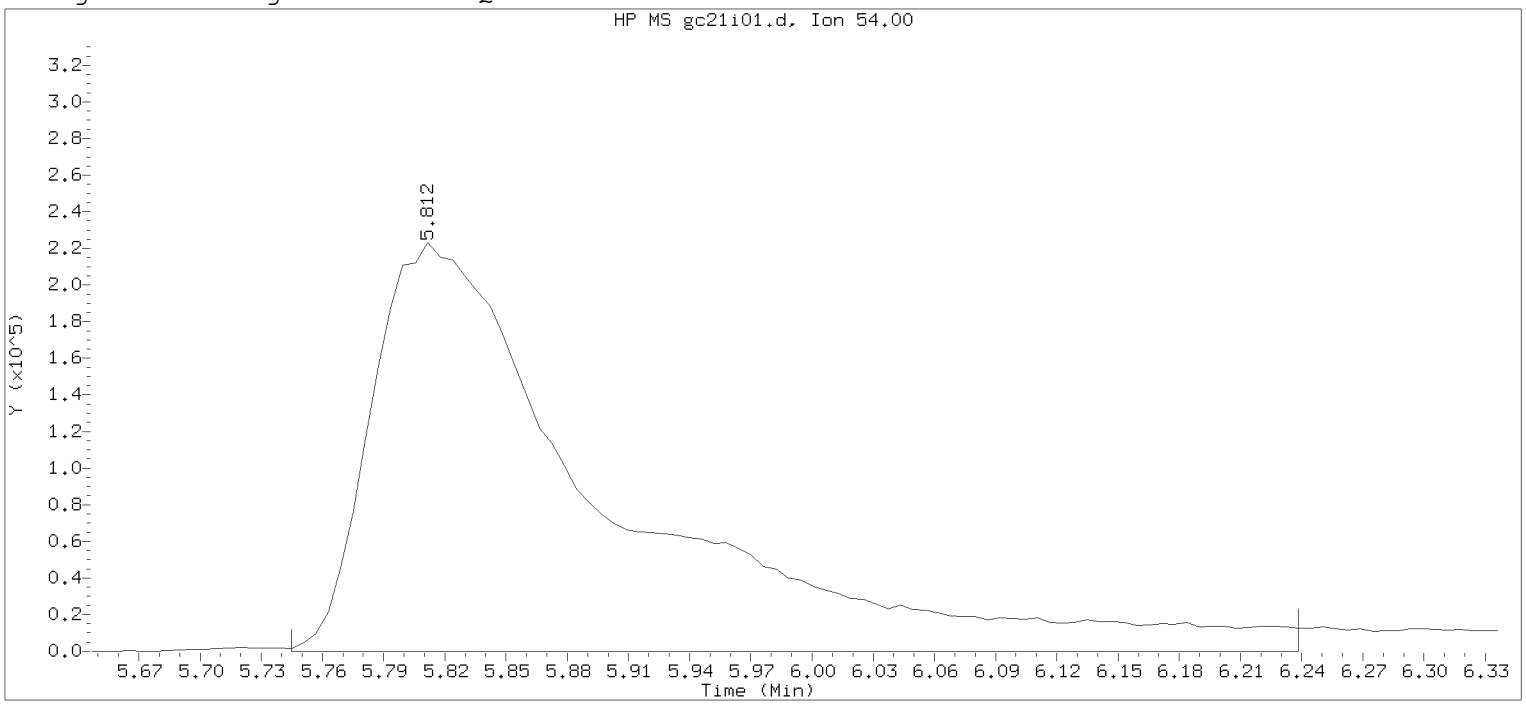
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

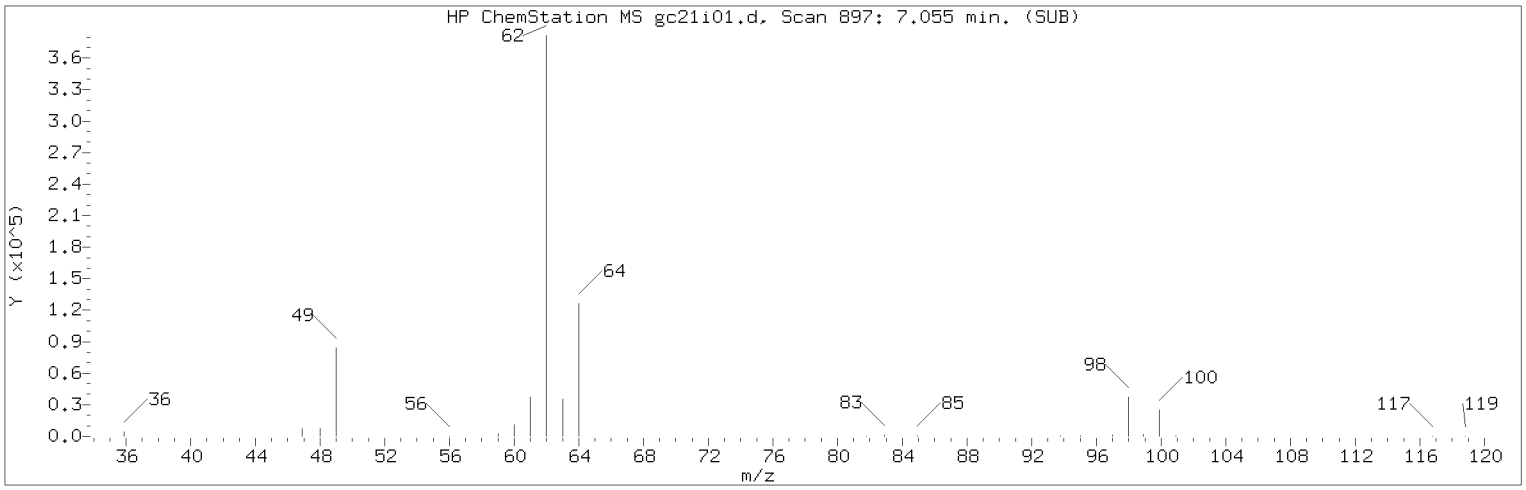
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

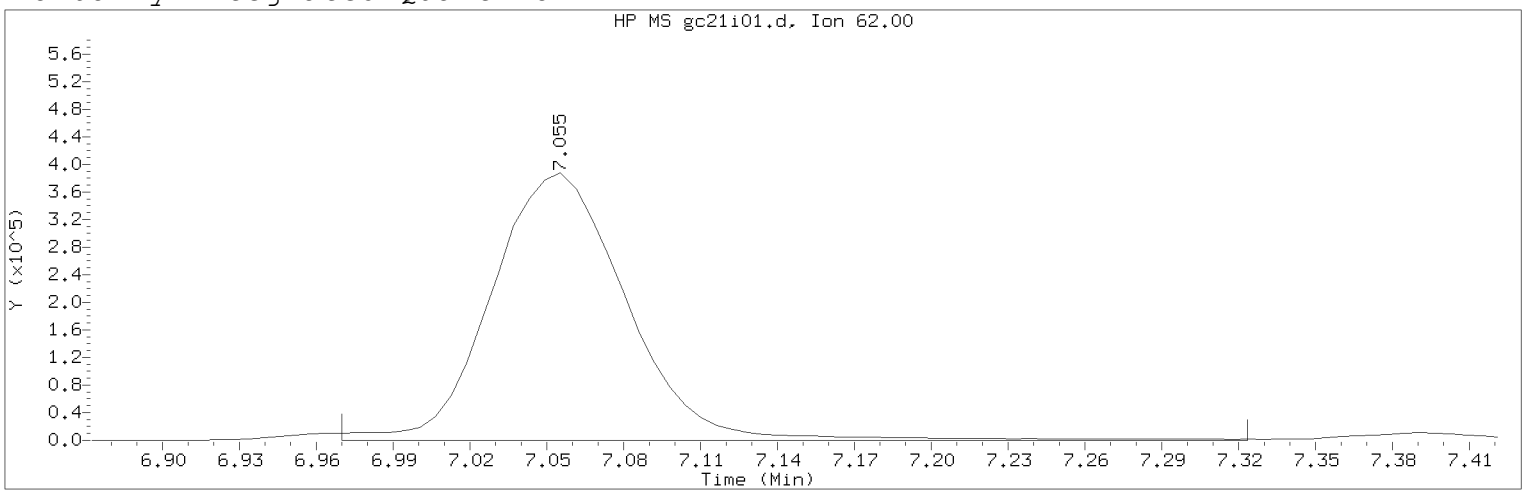
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 693
Retention Time (minutes): 5.812
Quant Ion : 54.00
Area : 1823696
On-column Amount (ng) : 500.9649
Integration start scan : 681 Integration stop scan: 762
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

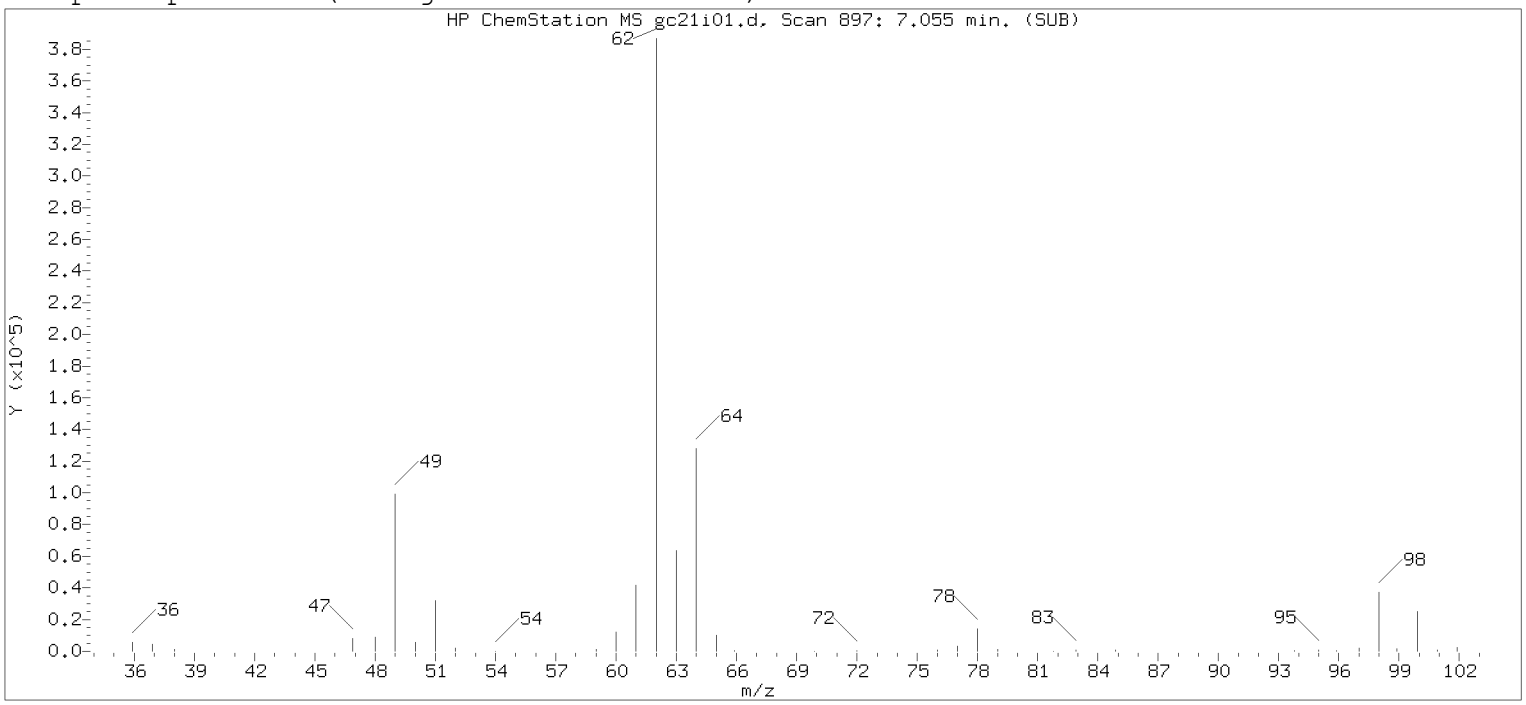
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 897
Retention Time (minutes): 7.055
Quant Ion : 62.00
Area (flag) : 1422652M
On-Column Amount (ng) : 23.9836
Integration start scan : 882 Integration stop scan: 940
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

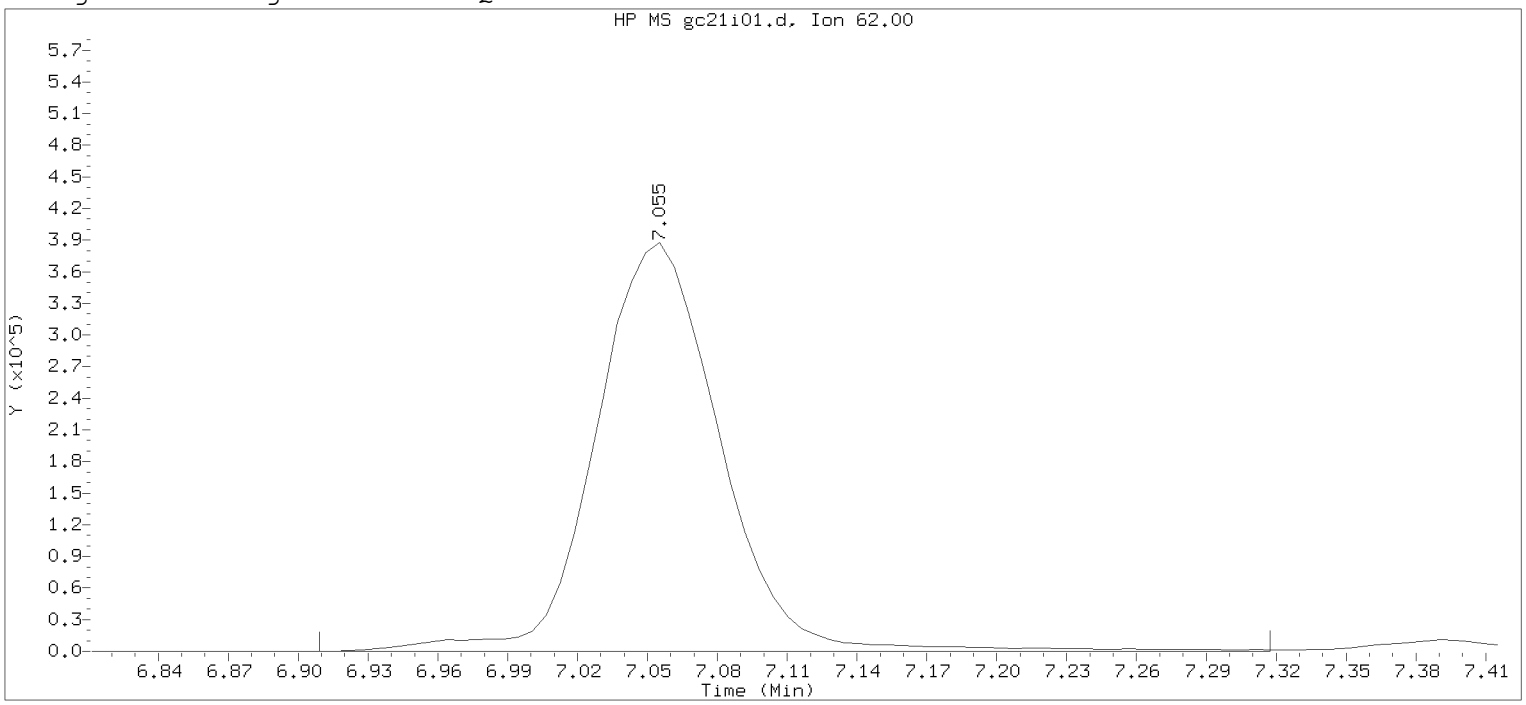
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

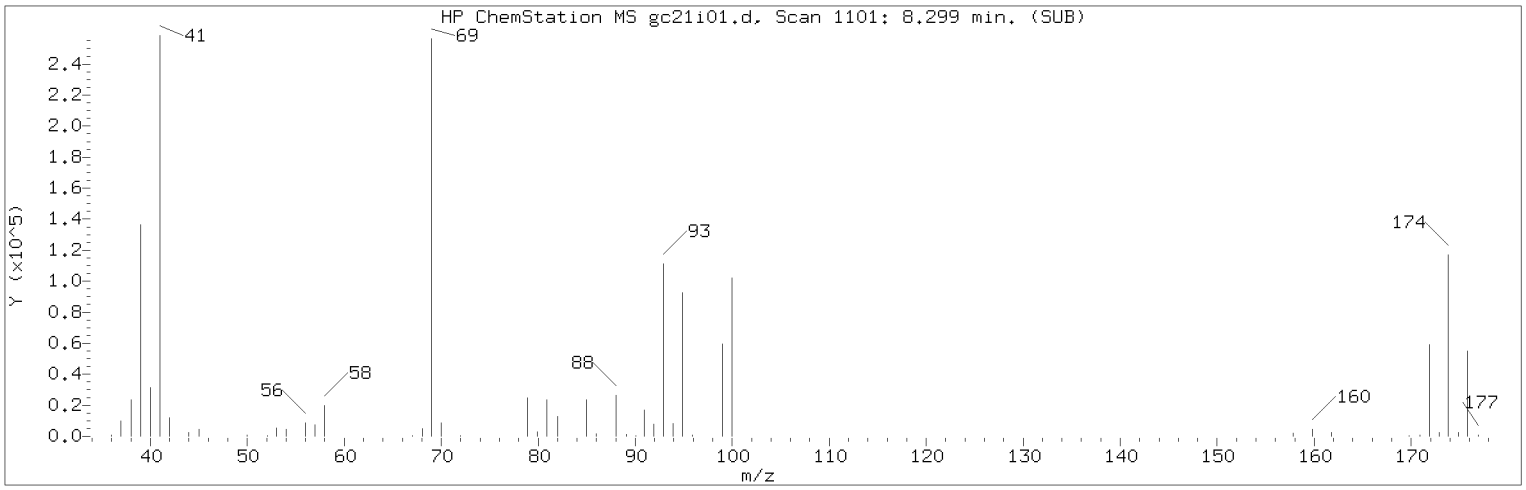
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

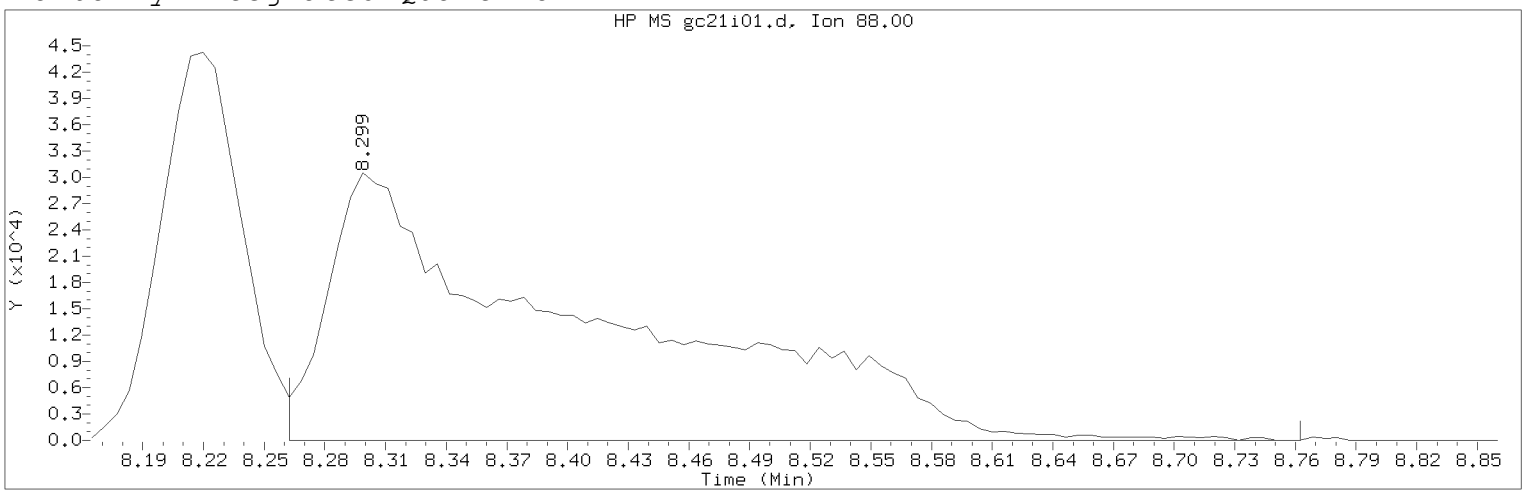
Compound Number	: 59		
Compound Name	: 1,2-Dichloroethane		
Scan Number	: 897		
Retention Time (minutes)	: 7.055		
Quant Ion	: 62.00		
Area	: 1436922		
On-column Amount (ng)	: 24.7603		
Integration start scan	: 872	Integration stop scan:	939
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

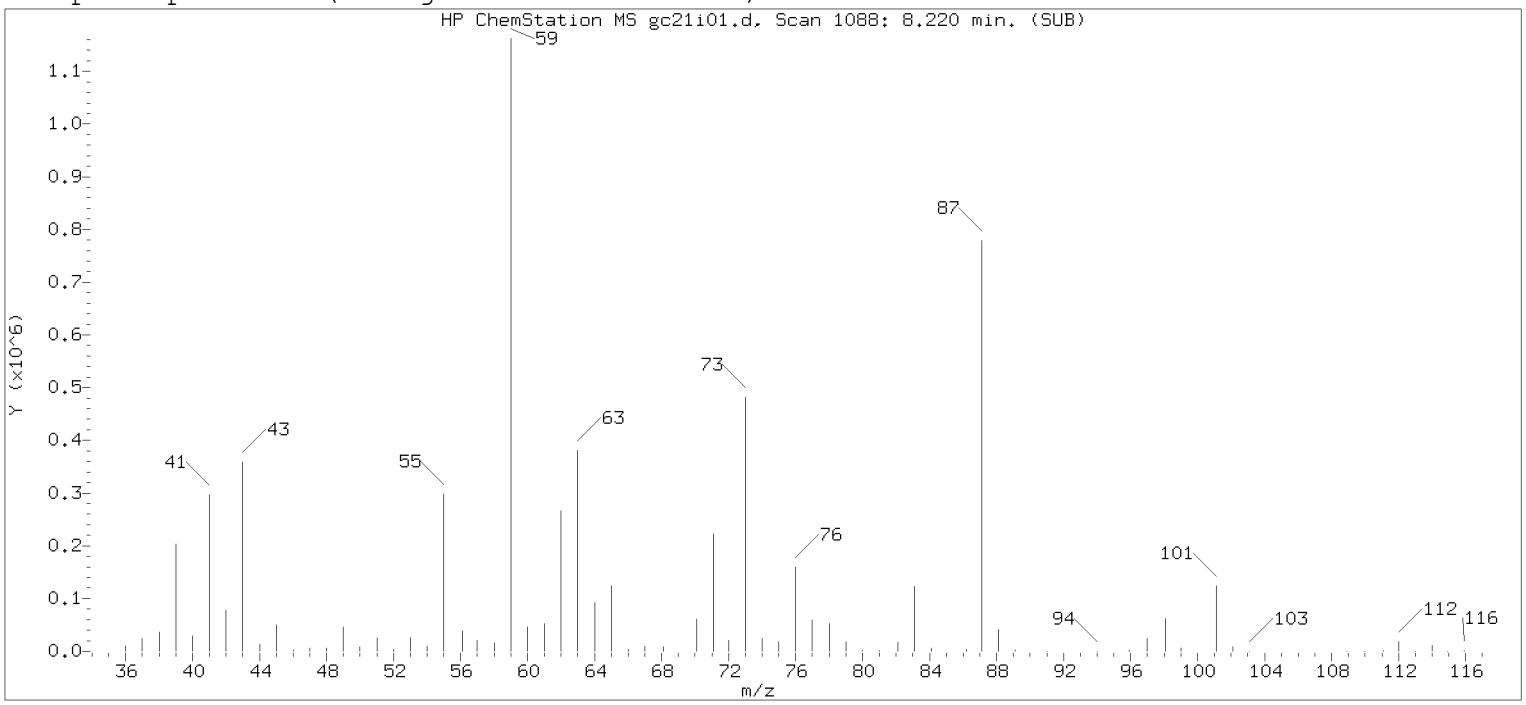
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1101
Retention Time (minutes): 8.299
Quant Ion : 88.00
Area (flag) : 275345M
On-Column Amount (ng) : 1335.6530
Integration start scan : 1094 Integration stop scan: 1176
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

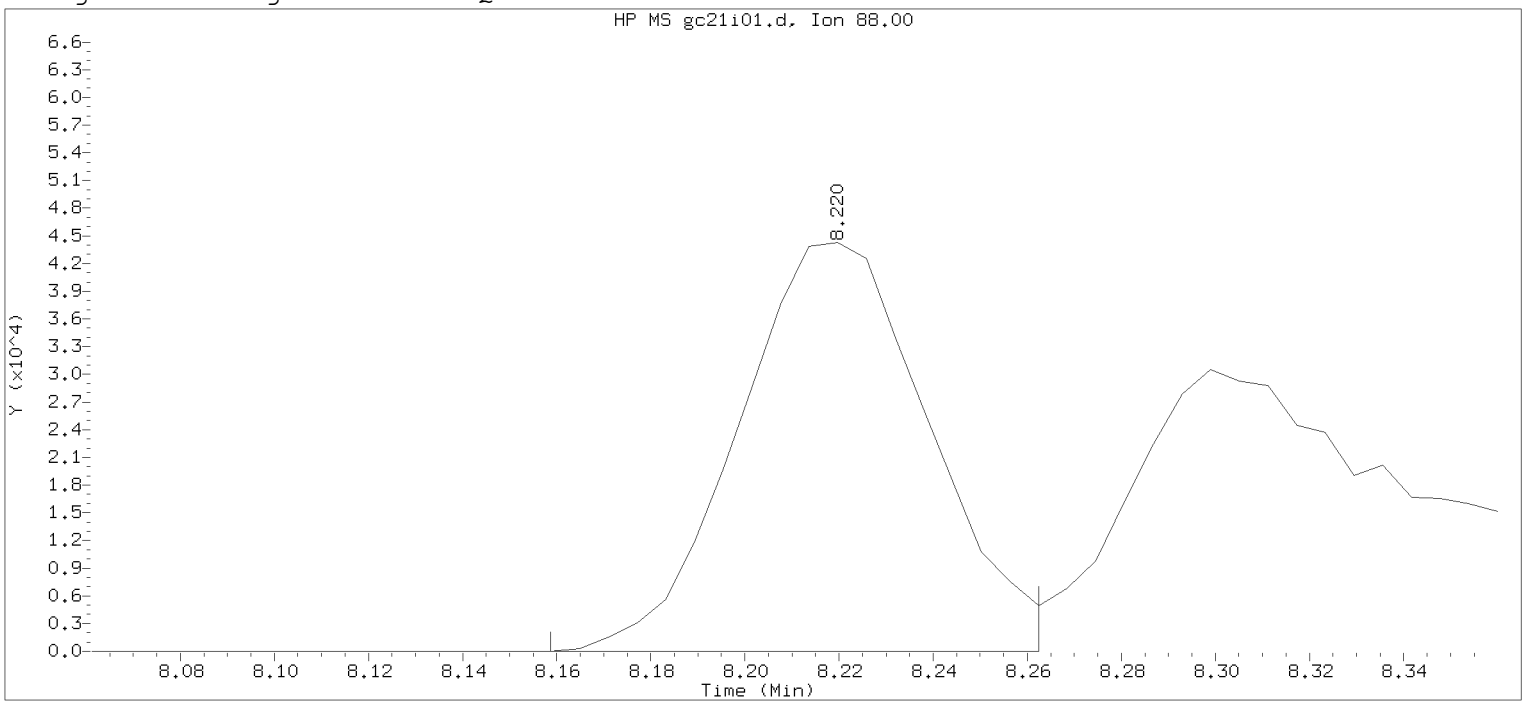
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

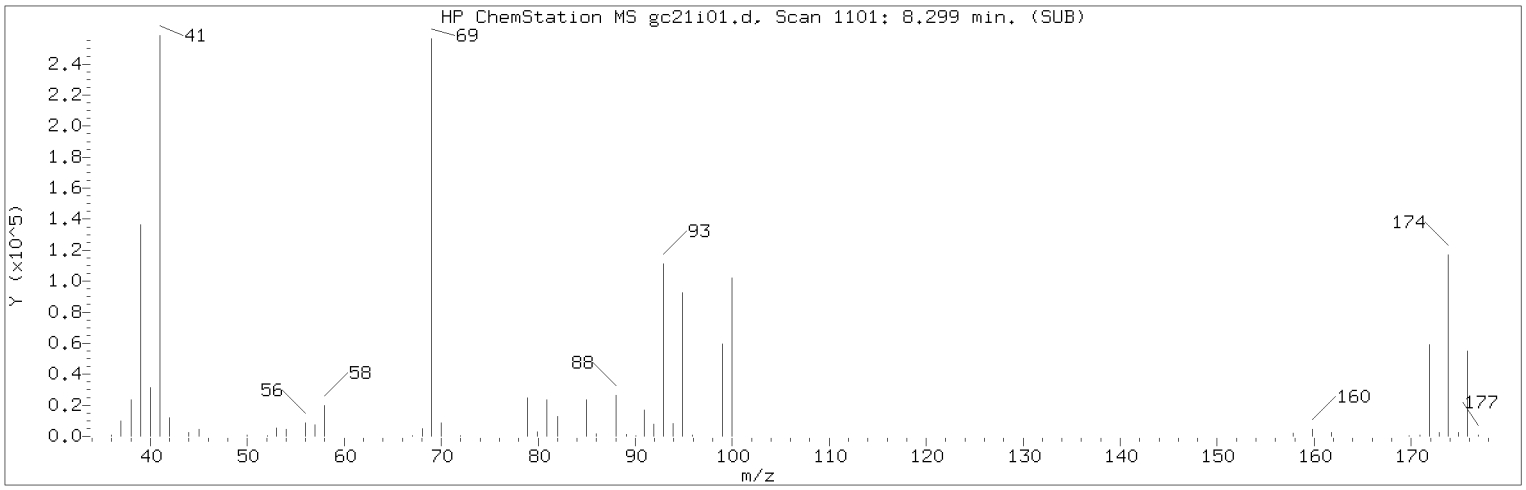
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

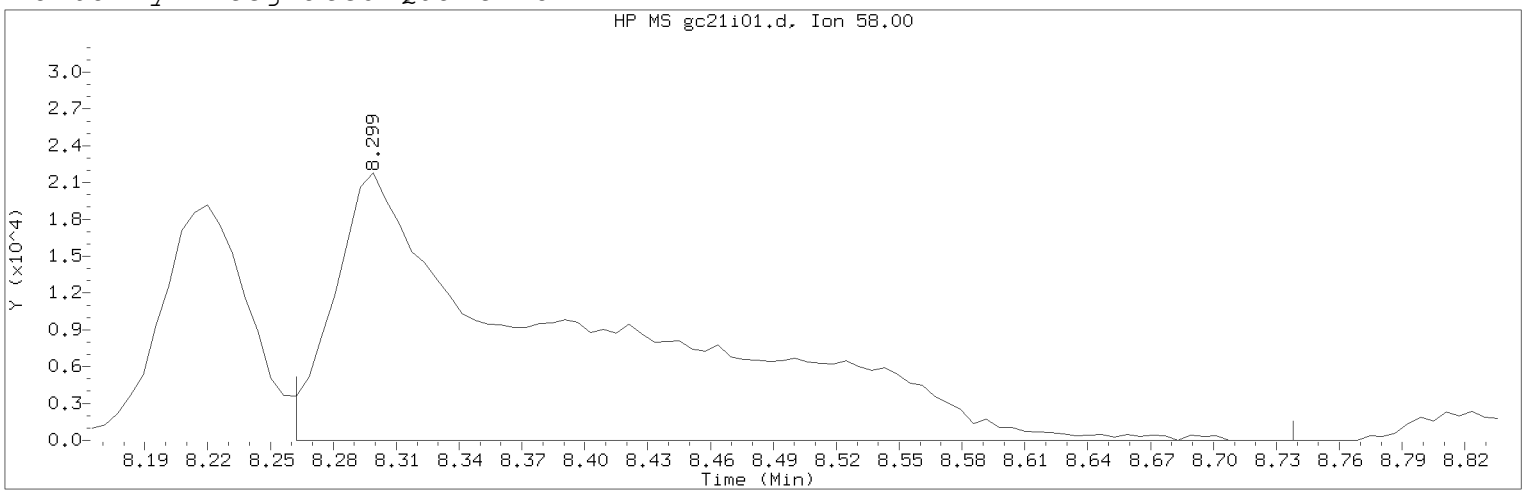
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 88.00		
Area	: 123659		
On-column Amount (ng)	: 741.8300		
Integration start scan	: 1077	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

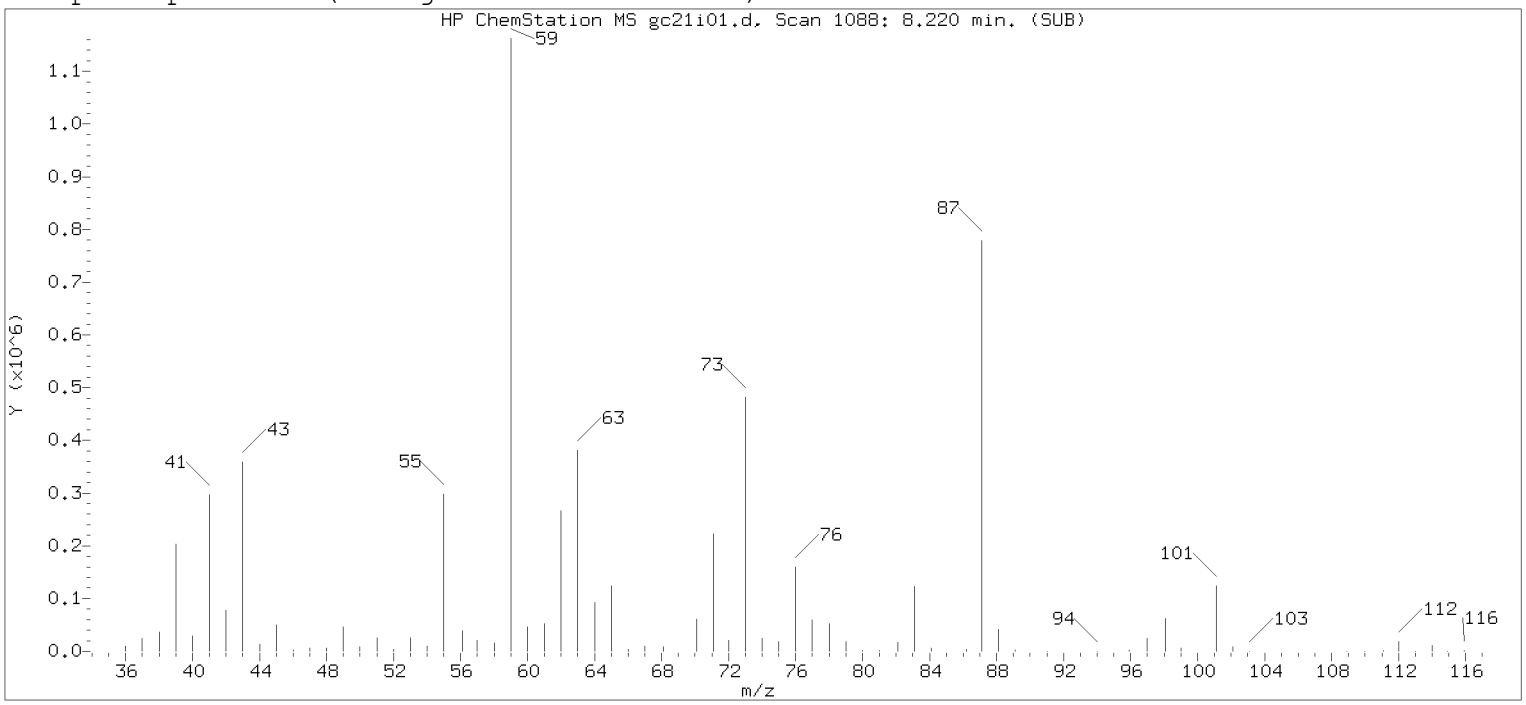
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1101
Retention Time (minutes): 8.299
Quant Ion : 58.00
Area (flag) : 177365M
On-Column Amount (ng) : 1556.6028
Integration start scan : 1094 Integration stop scan: 1172
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

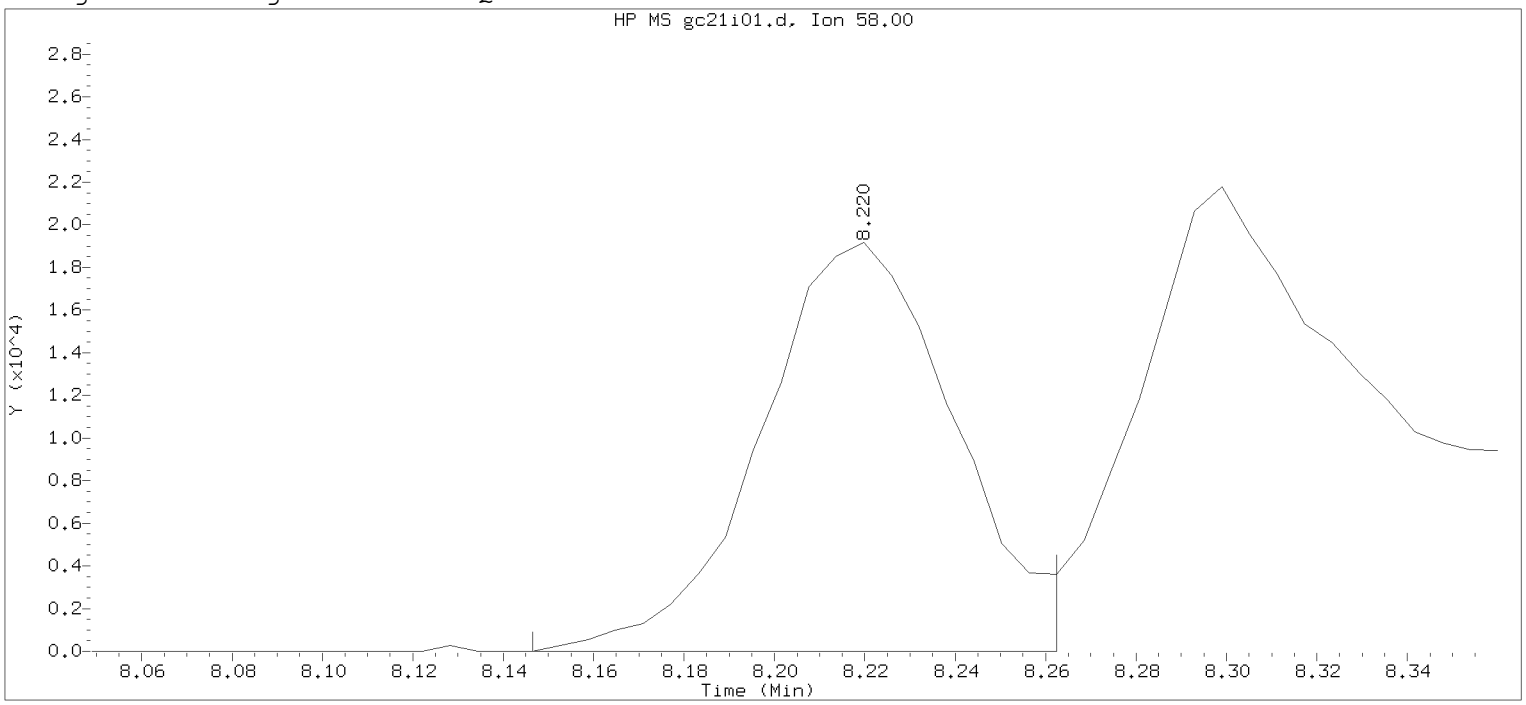
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

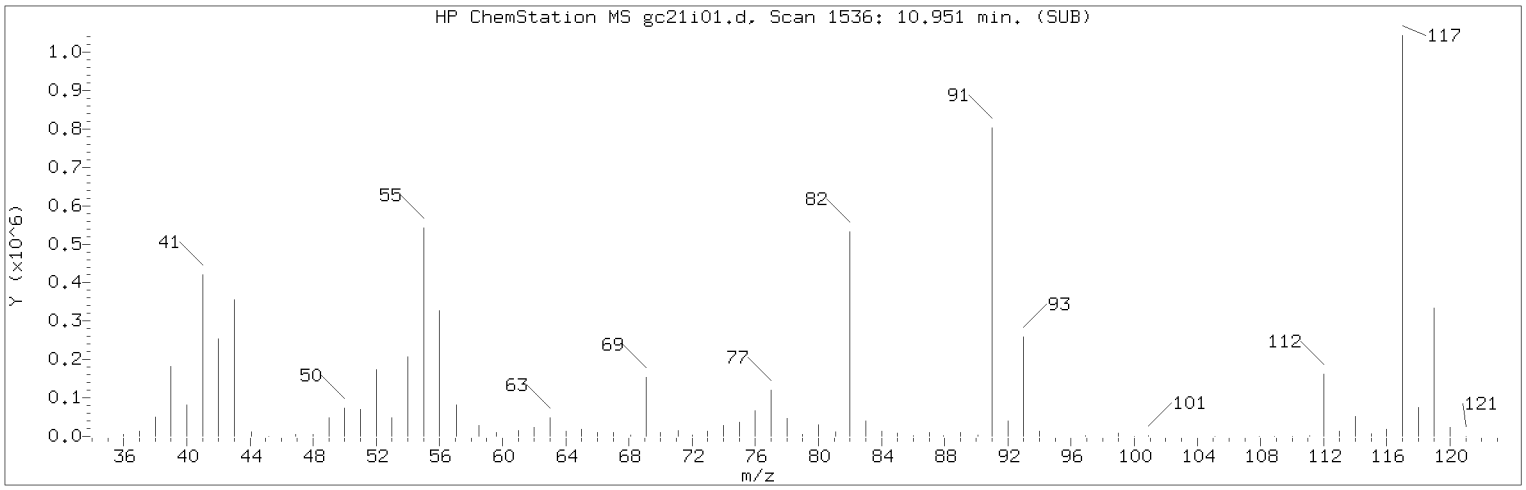
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

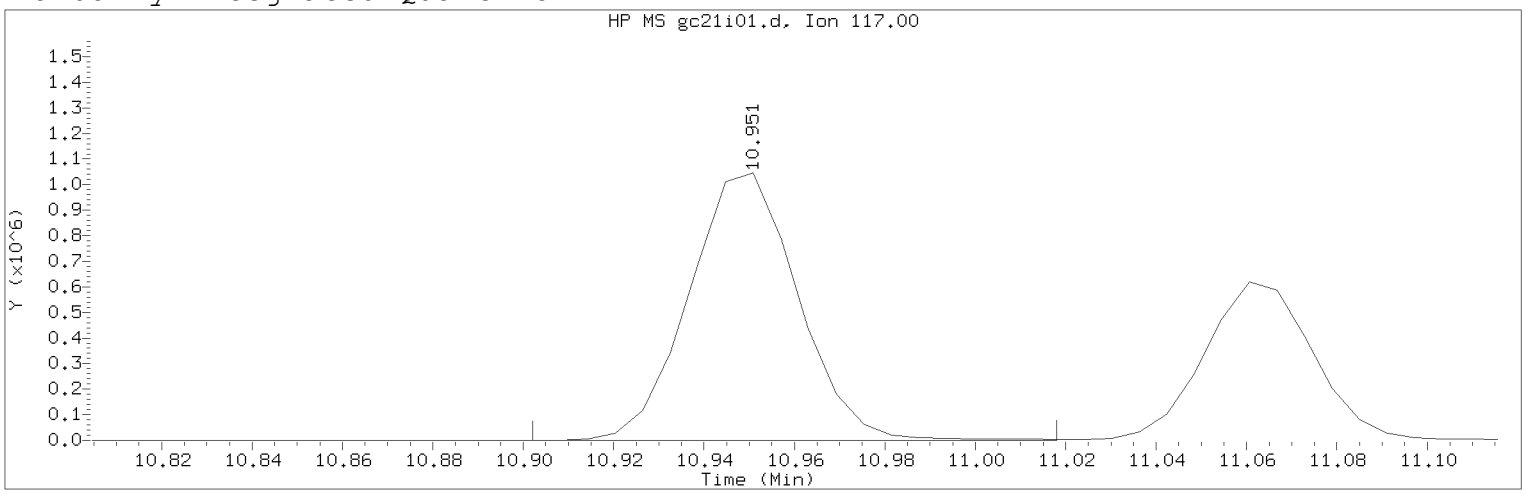
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 58.00		
Area	: 56700		
On-column Amount (ng)	: 576.7593		
Integration start scan	: 1075	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

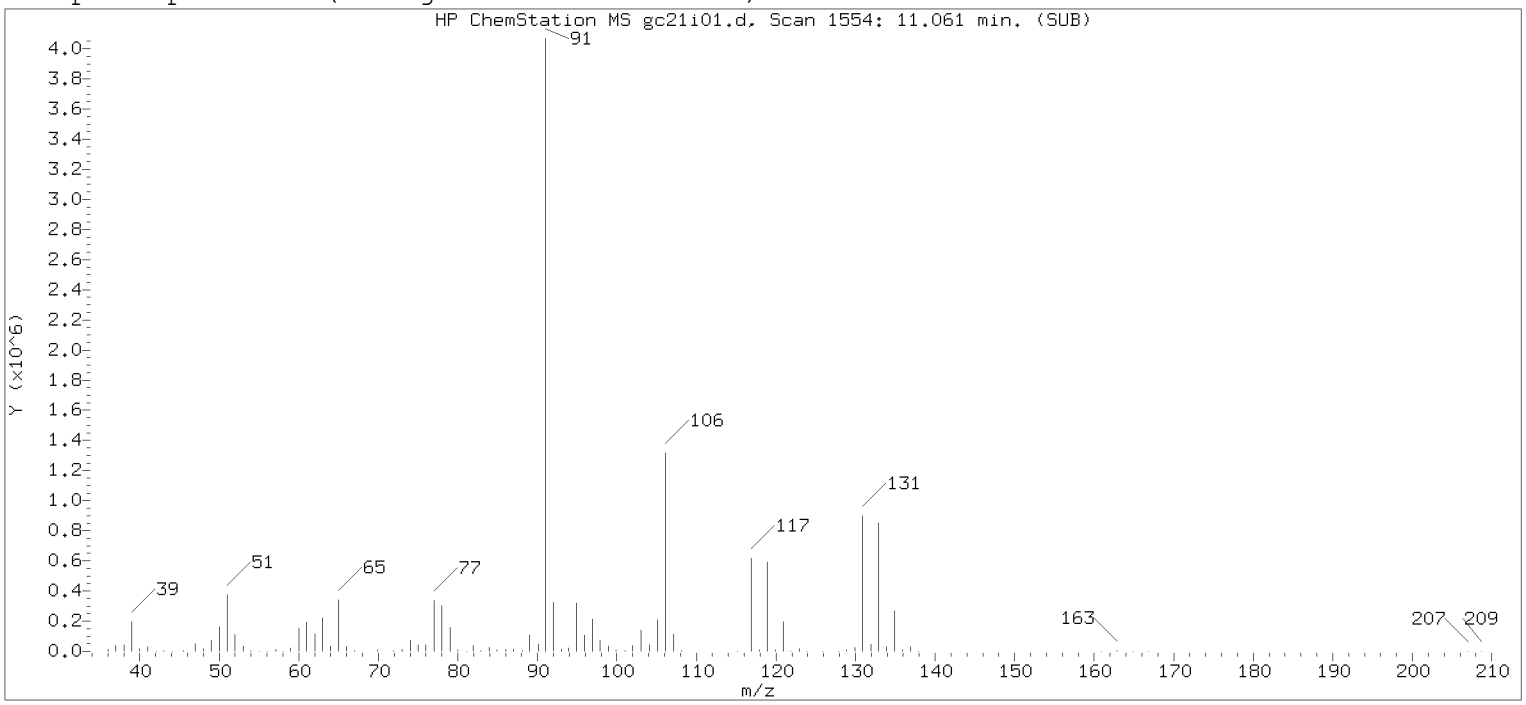
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1741783A
On-Column Amount (ng) : 10.0000
Integration start scan : 1527 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

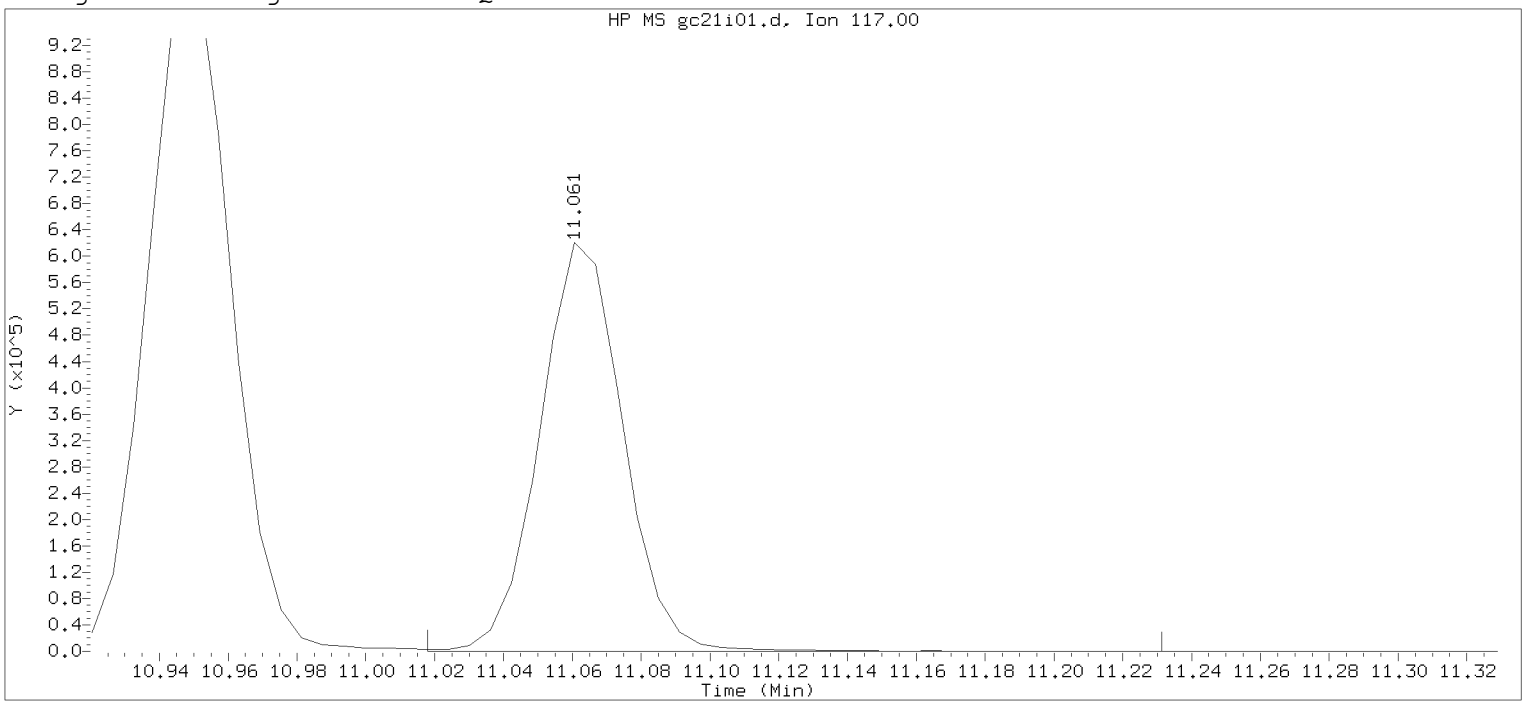
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

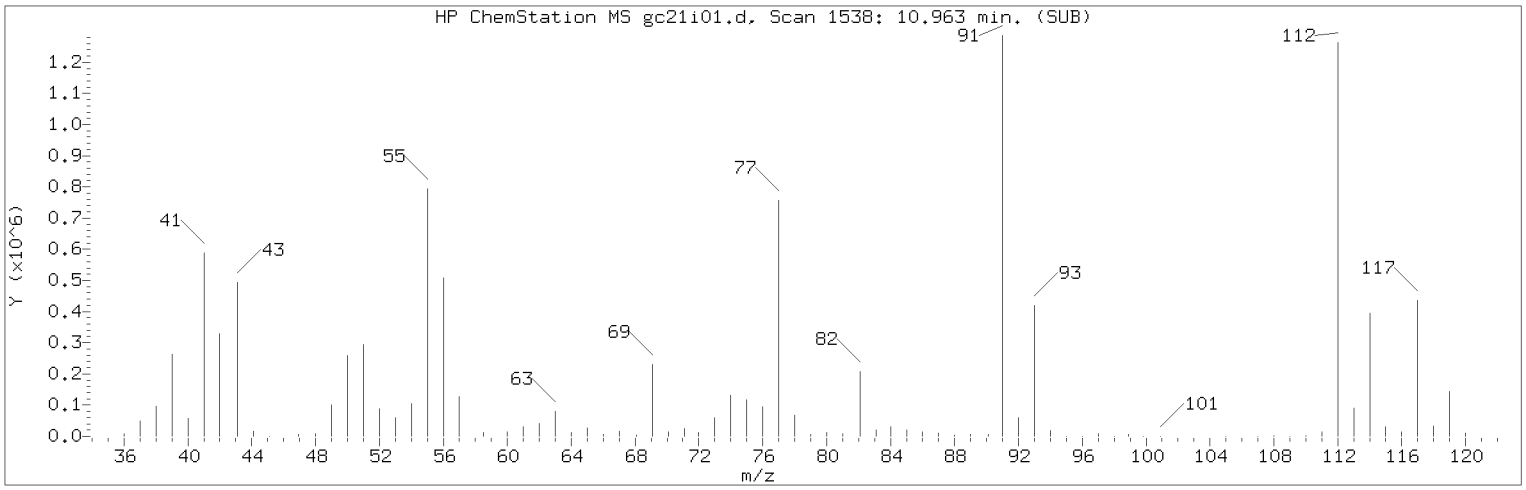
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

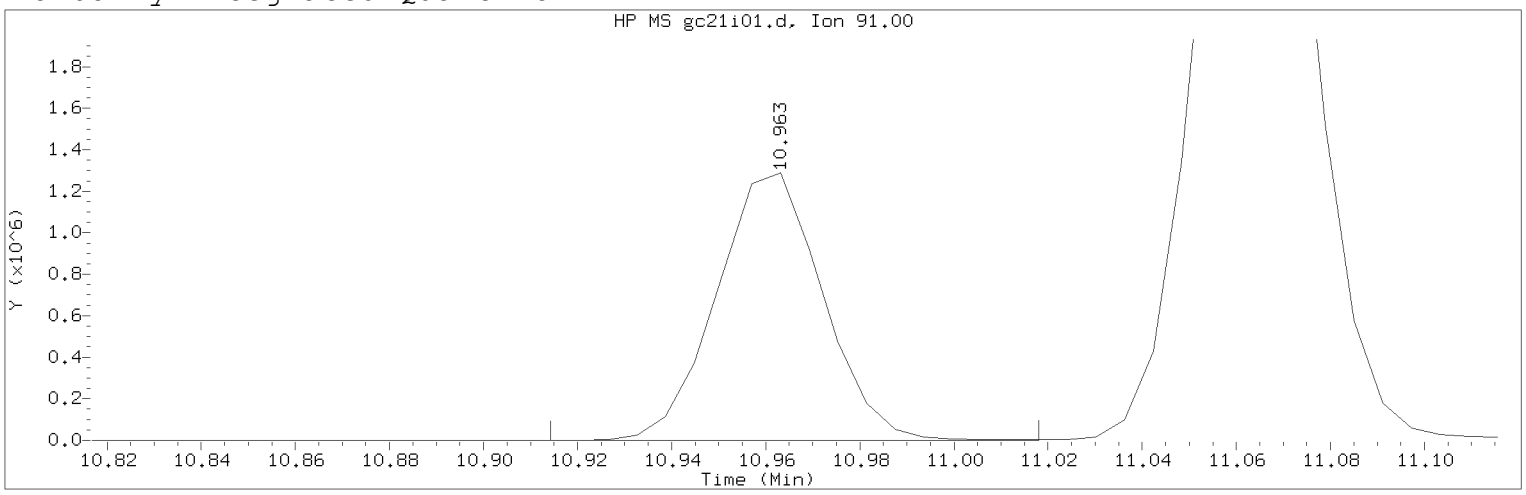
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1554
Retention Time (minutes): 11.061
Quant Ion : 117.00
Area : 1041522
On-column Amount (ng) : 10.0000
Integration start scan : 1546 Integration stop scan: 1581
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

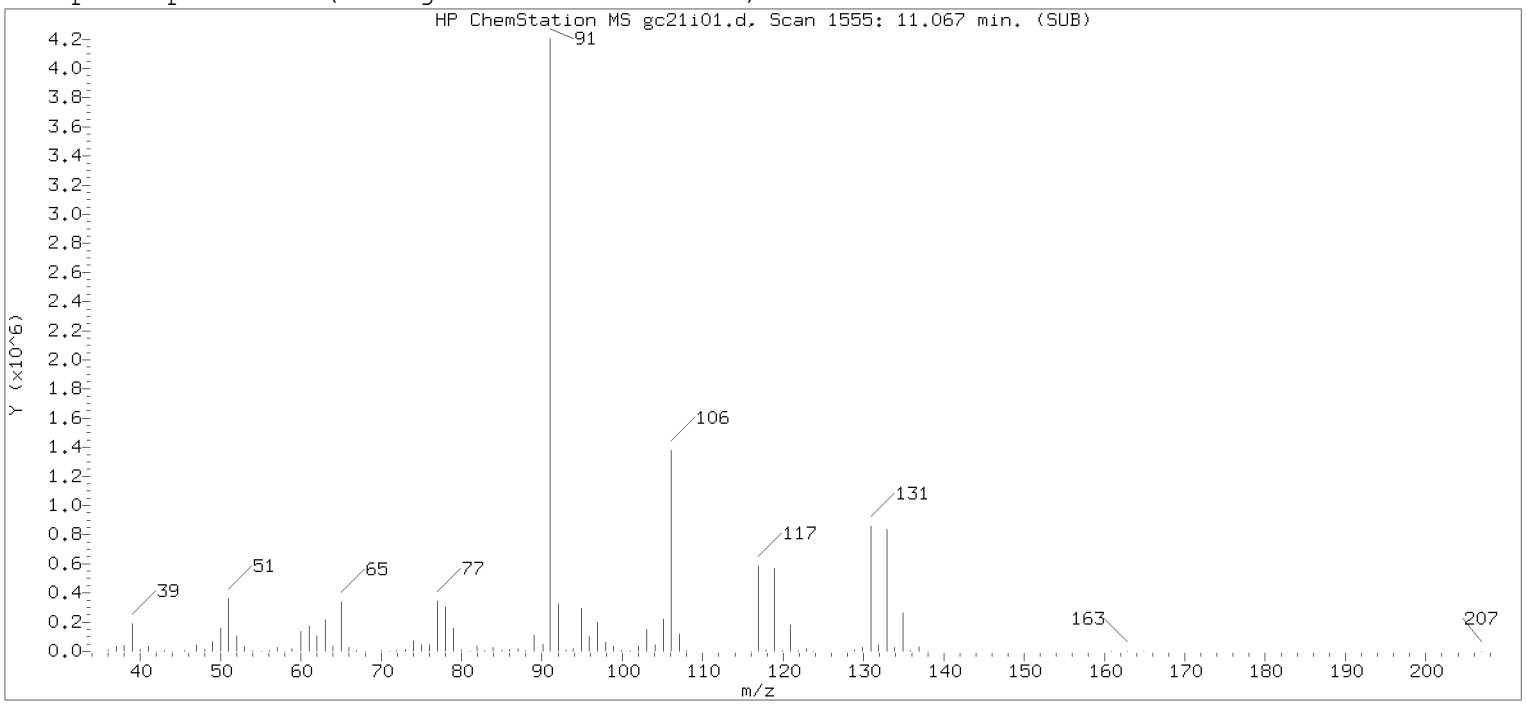
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 2014440MA
On-Column Amount (ng) : 24.2688
Integration start scan : 1529 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

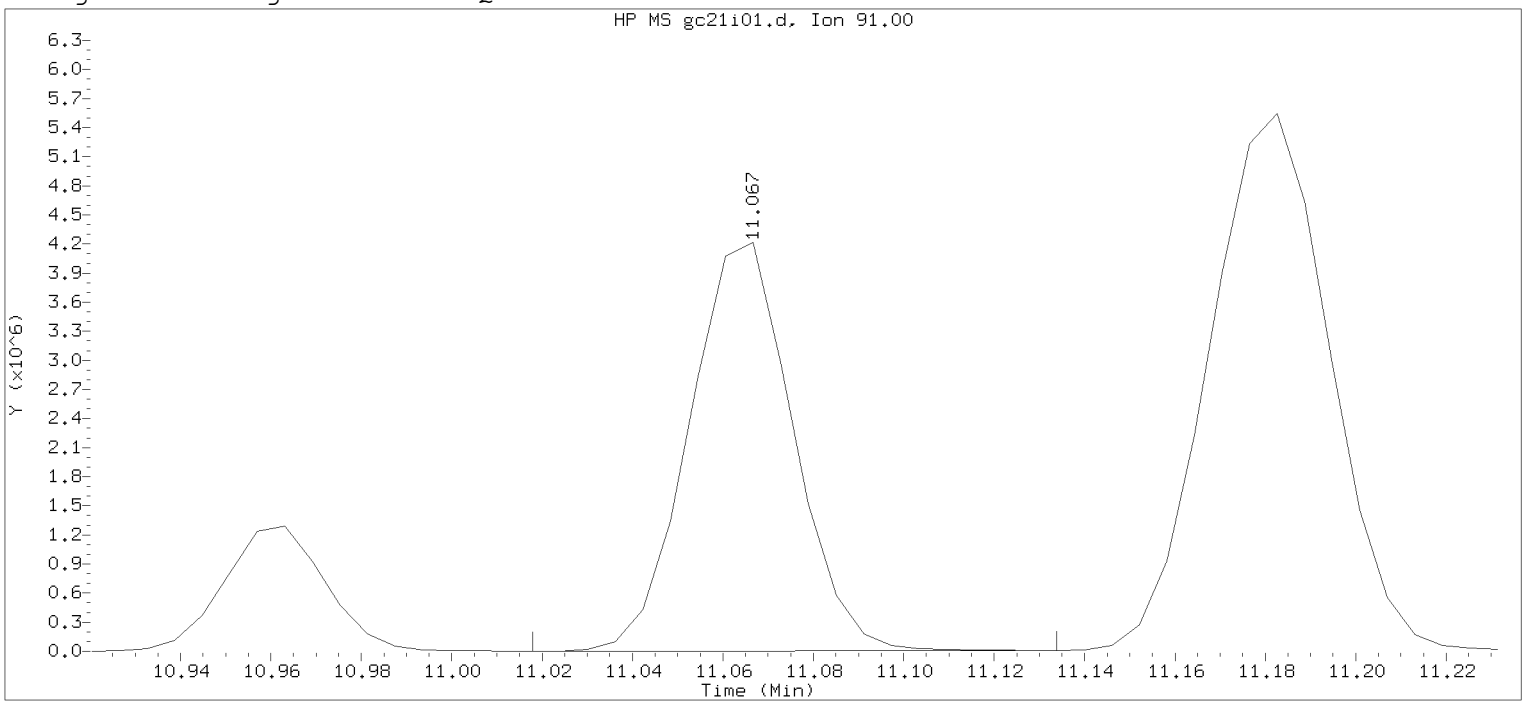
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

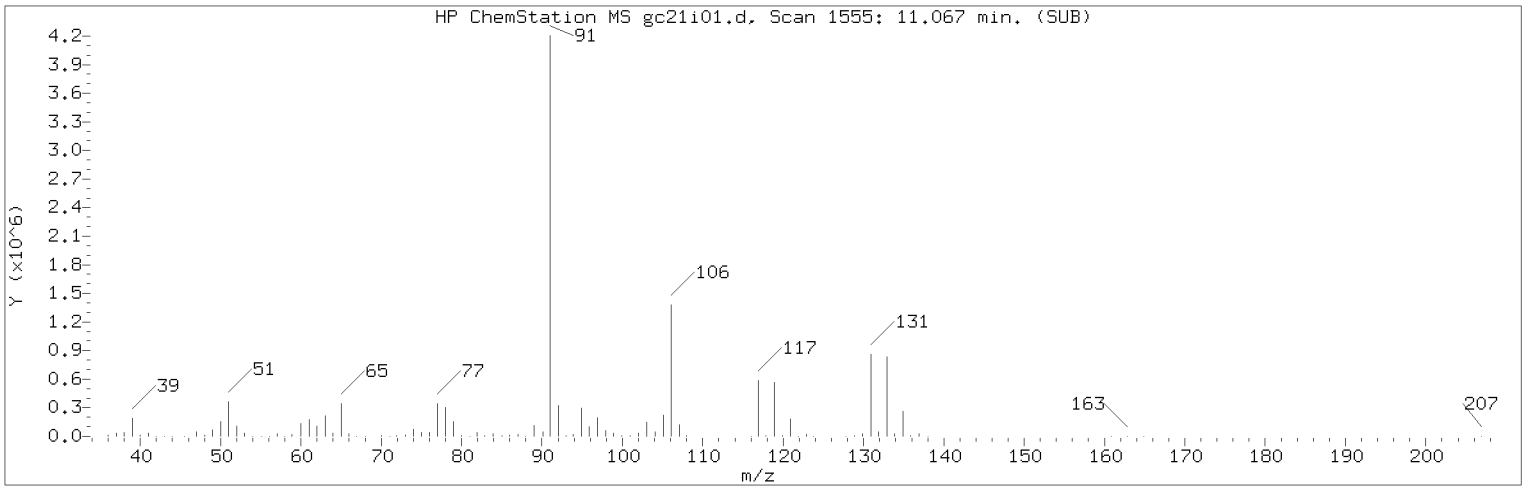
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

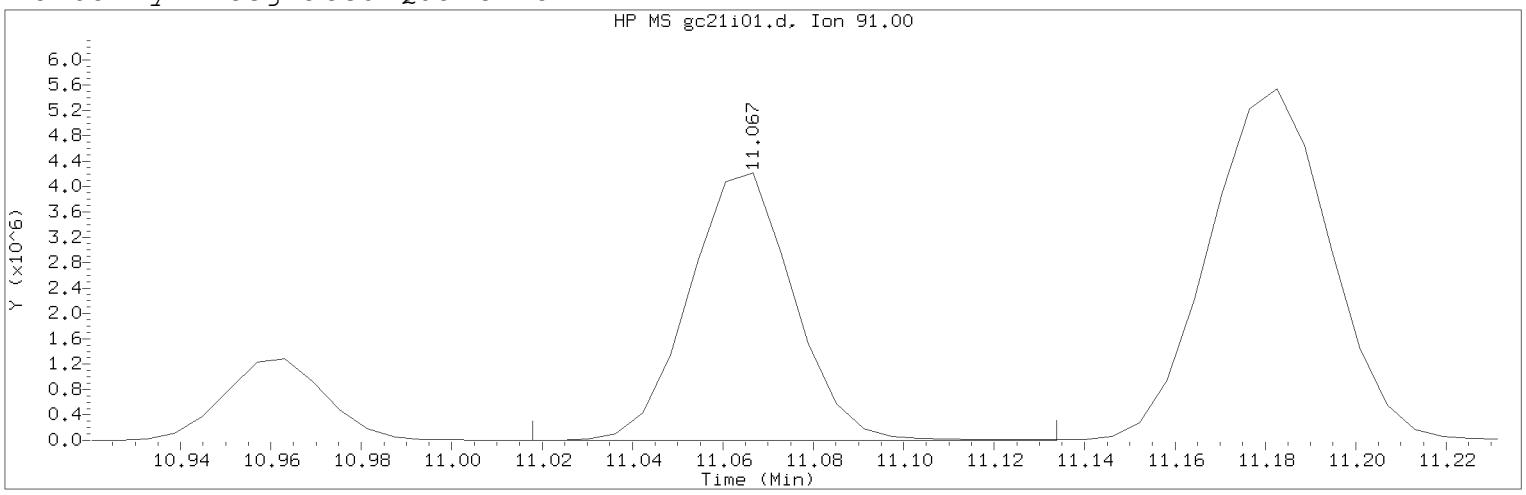
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 6716907
On-column Amount (ng) : 14.1528
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 2308 Y at integration end: 3902

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

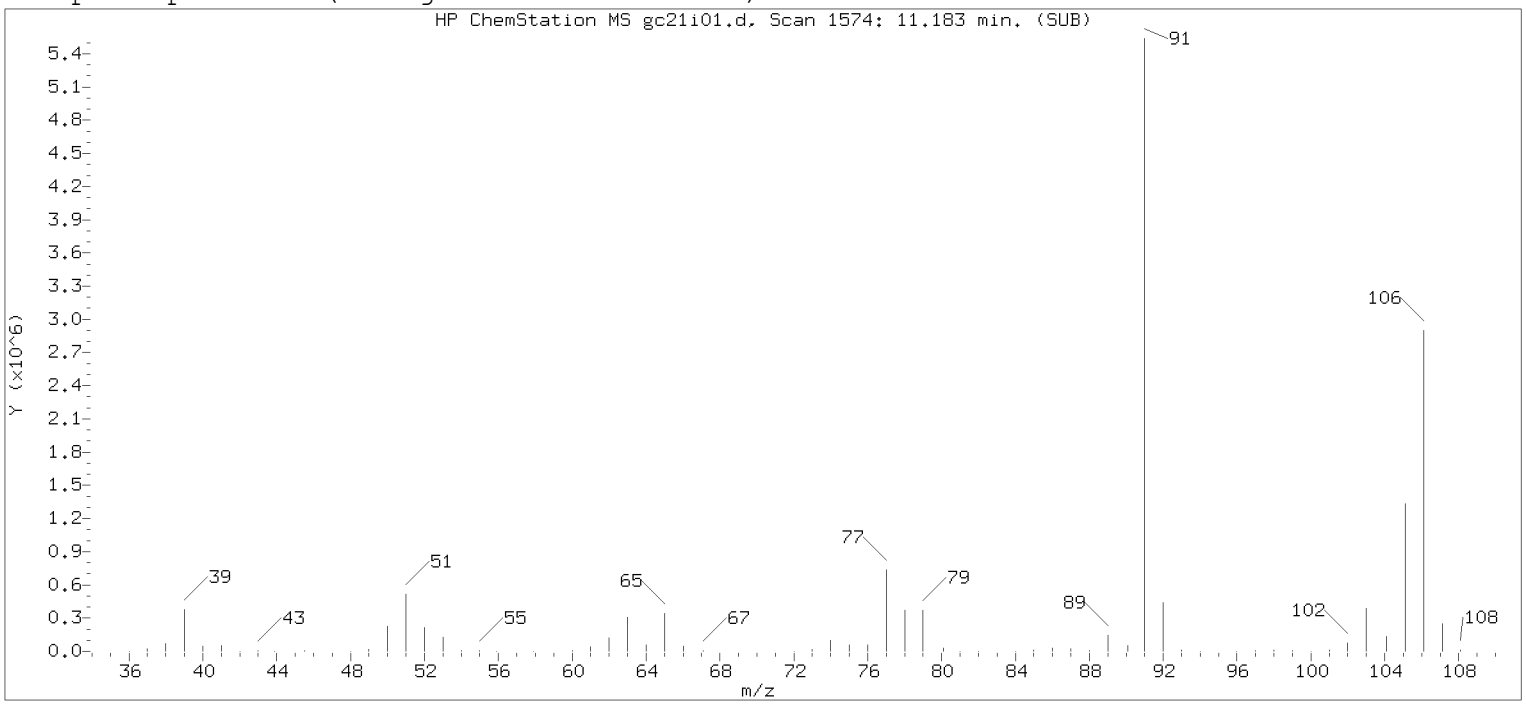
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 6724865MA
On-Column Amount (ng) : 24.7114
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 2121 Y at integration end: 2121

Reason for manual integration: improper integration

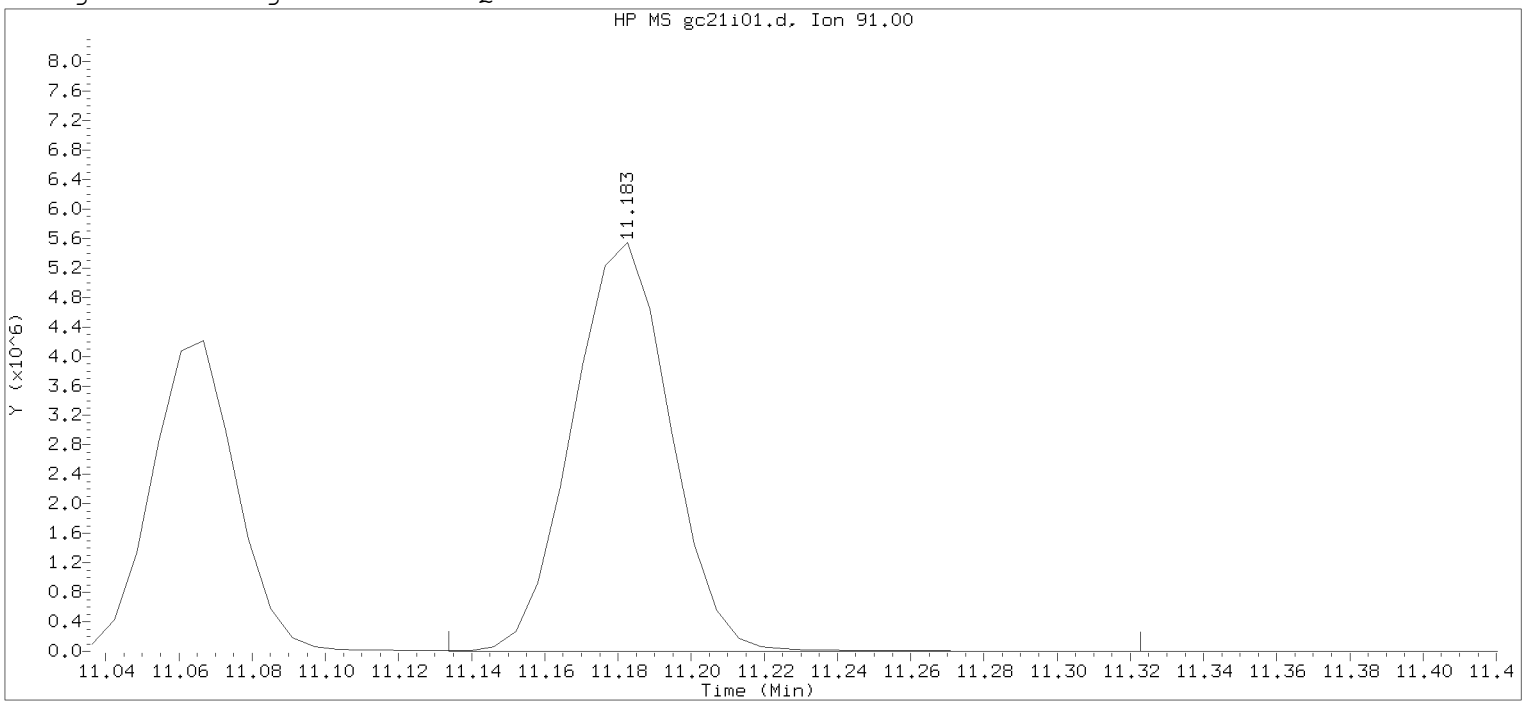
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

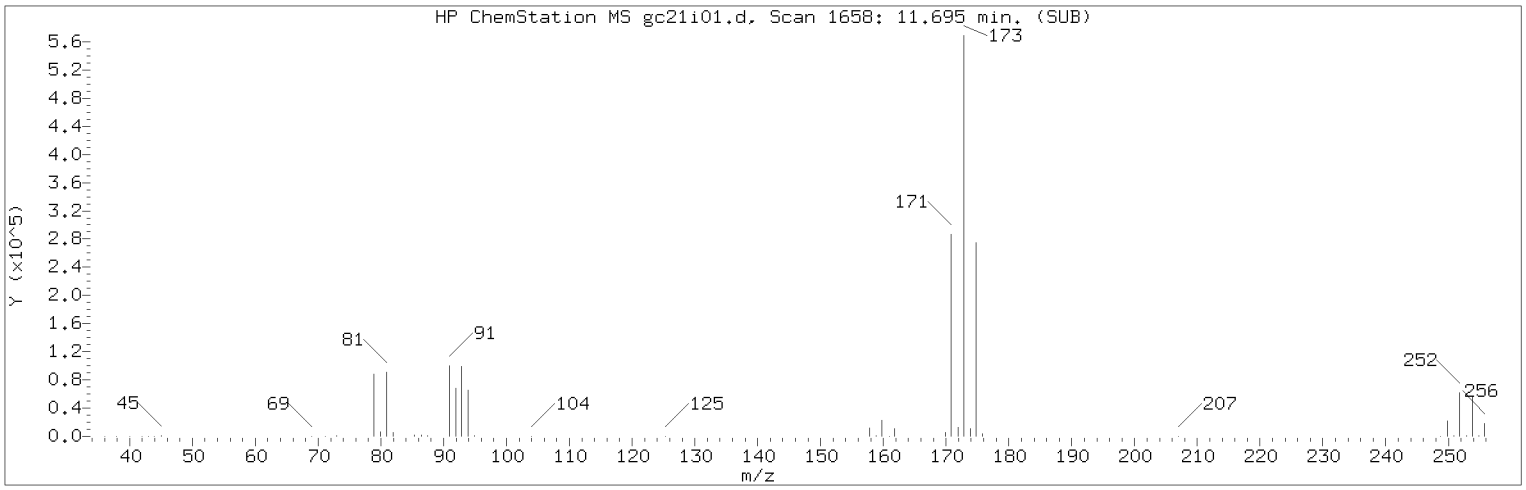
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

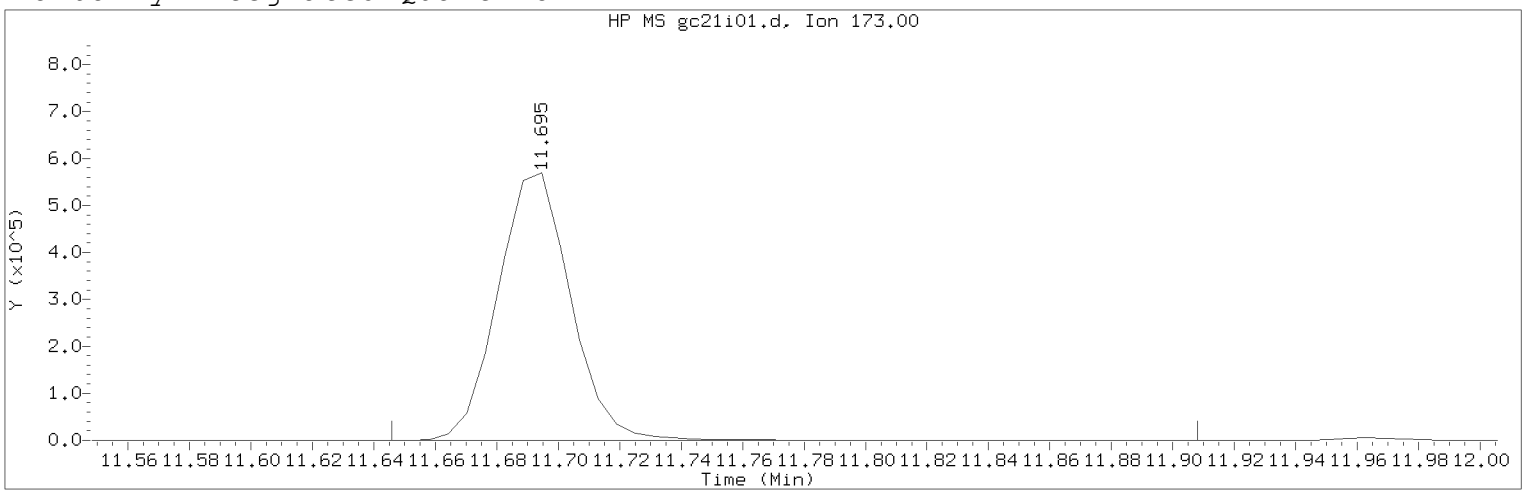
Compound Number	: 100		
Compound Name	: Ethylbenzene		
Scan Number	: 1574		
Retention Time (minutes)	: 11.183		
Quant Ion	: 91.00		
Area	: 10271031		
On-column Amount (ng)	: 14.0573		
Integration start scan	: 1565	Integration stop scan:	1596
Y at integration start	: 3887	Y at integration end:	1781

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

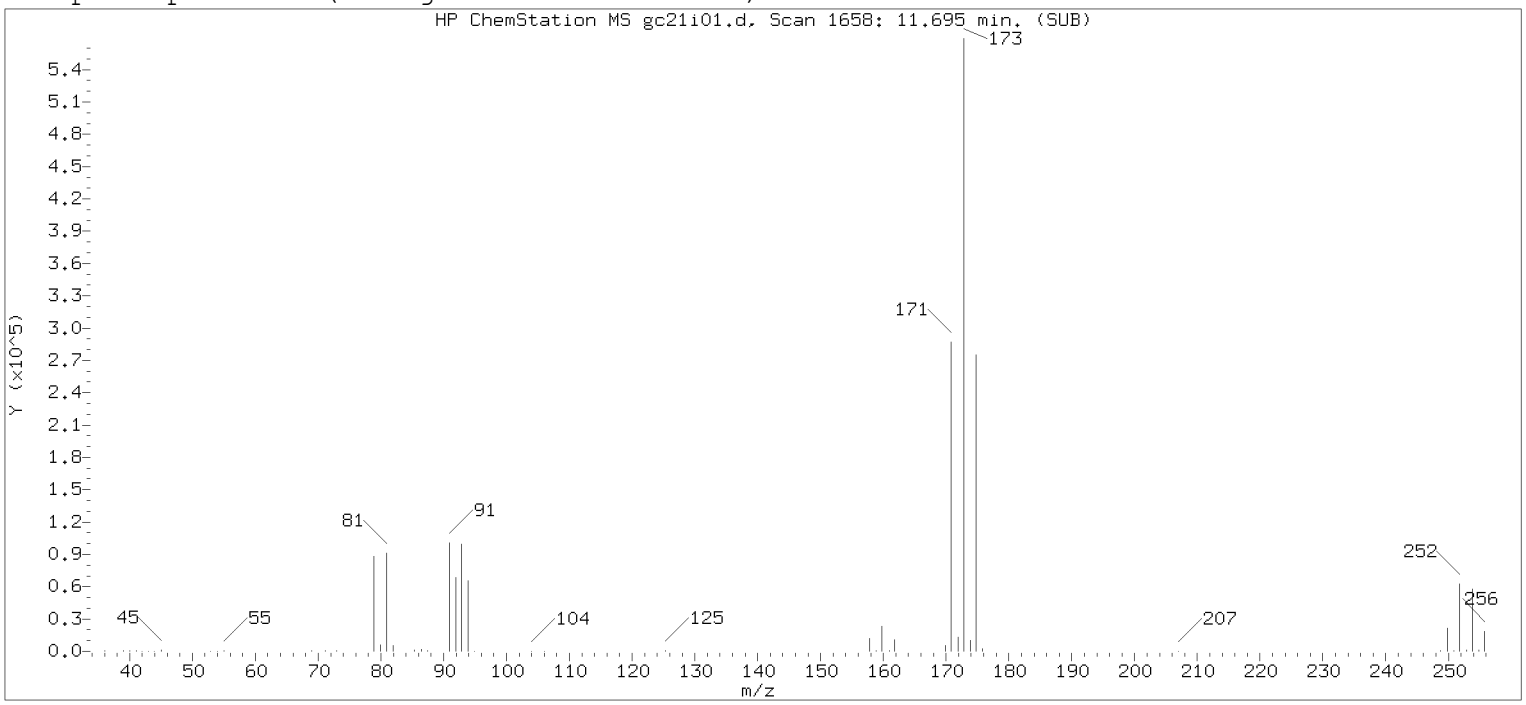
Compound Number : 107
Compound Name : Bromoform
Scan Number : 1658
Retention Time (minutes): 11.695
Quant Ion : 173.00
Area (flag) : 936773M
On-Column Amount (ng) : 28.5650
Integration start scan : 1649 Integration stop scan: 1692
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

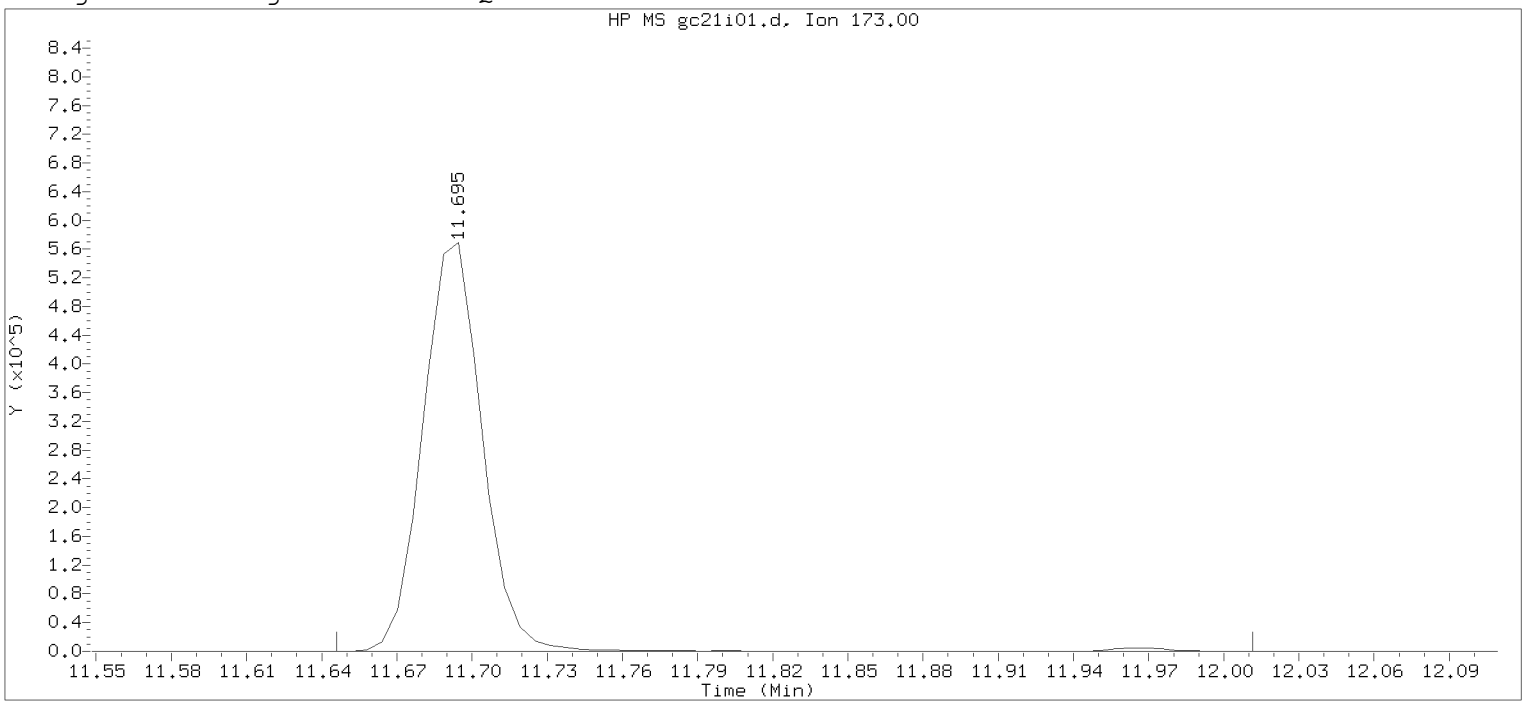
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

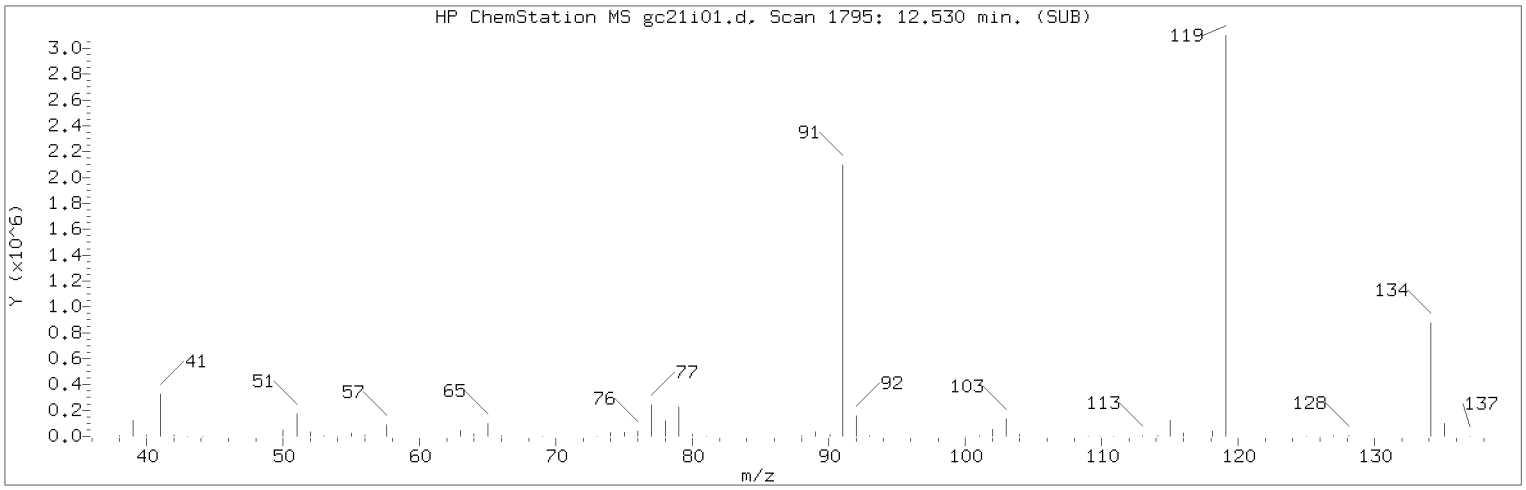
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

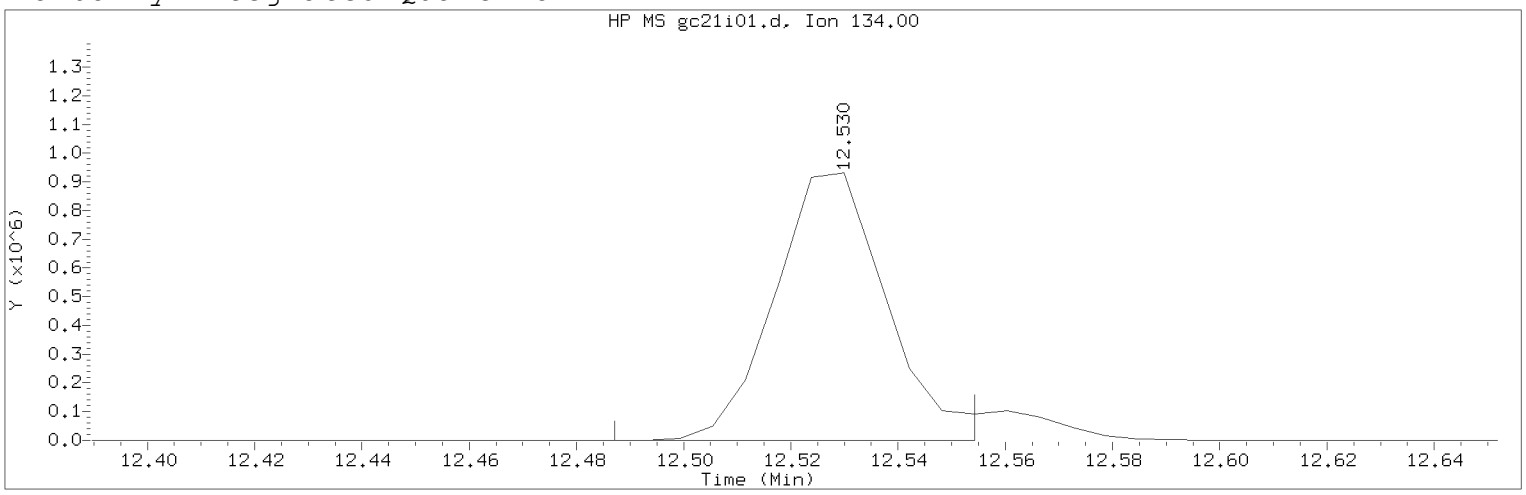
Compound Number : 107
Compound Name : Bromoform
Scan Number : 1658
Retention Time (minutes): 11.695
Quant Ion : 173.00
Area : 944109
On-column Amount (ng) : 14.5557
Integration start scan : 1649 Integration stop scan: 1709
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

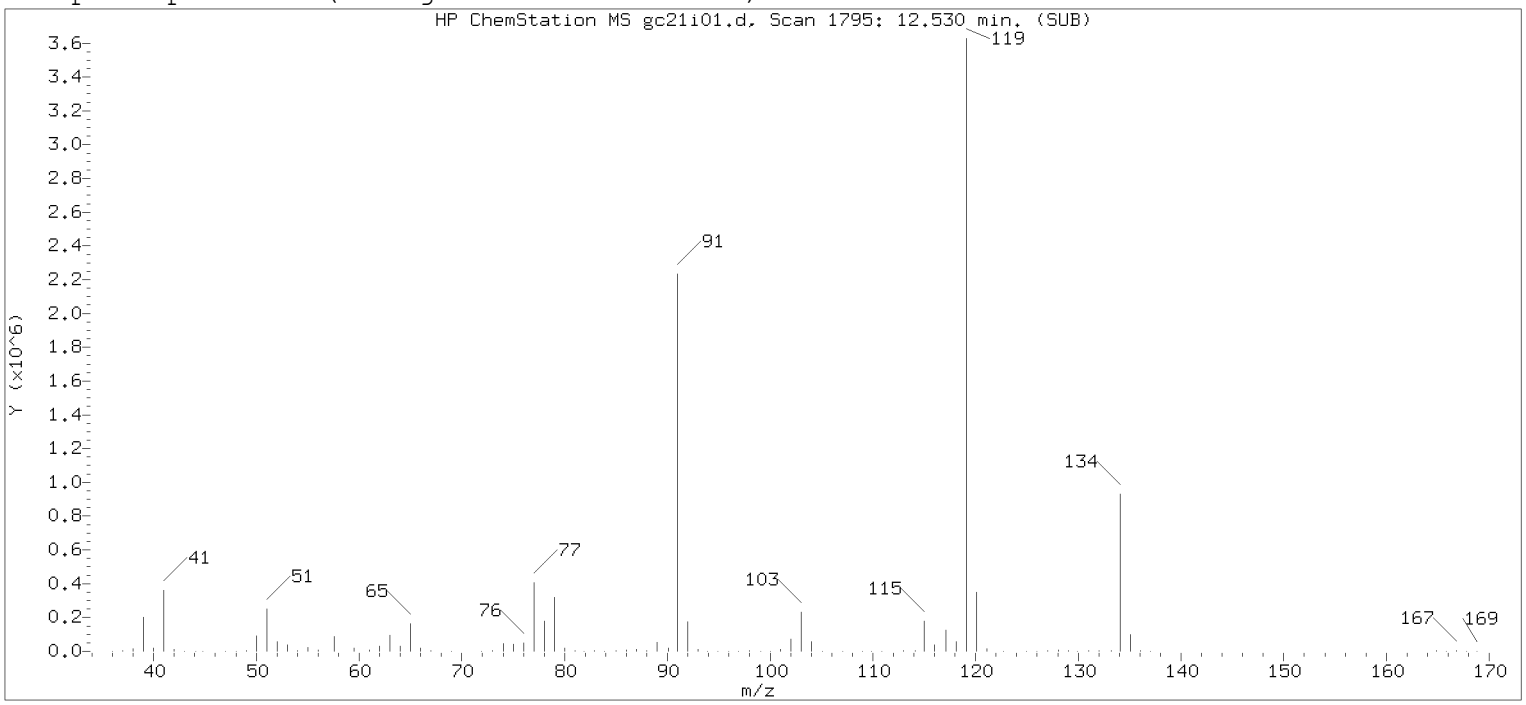
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area (flag) : 1352213M
On-Column Amount (ng) : 25.9076
Integration start scan : 1787 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

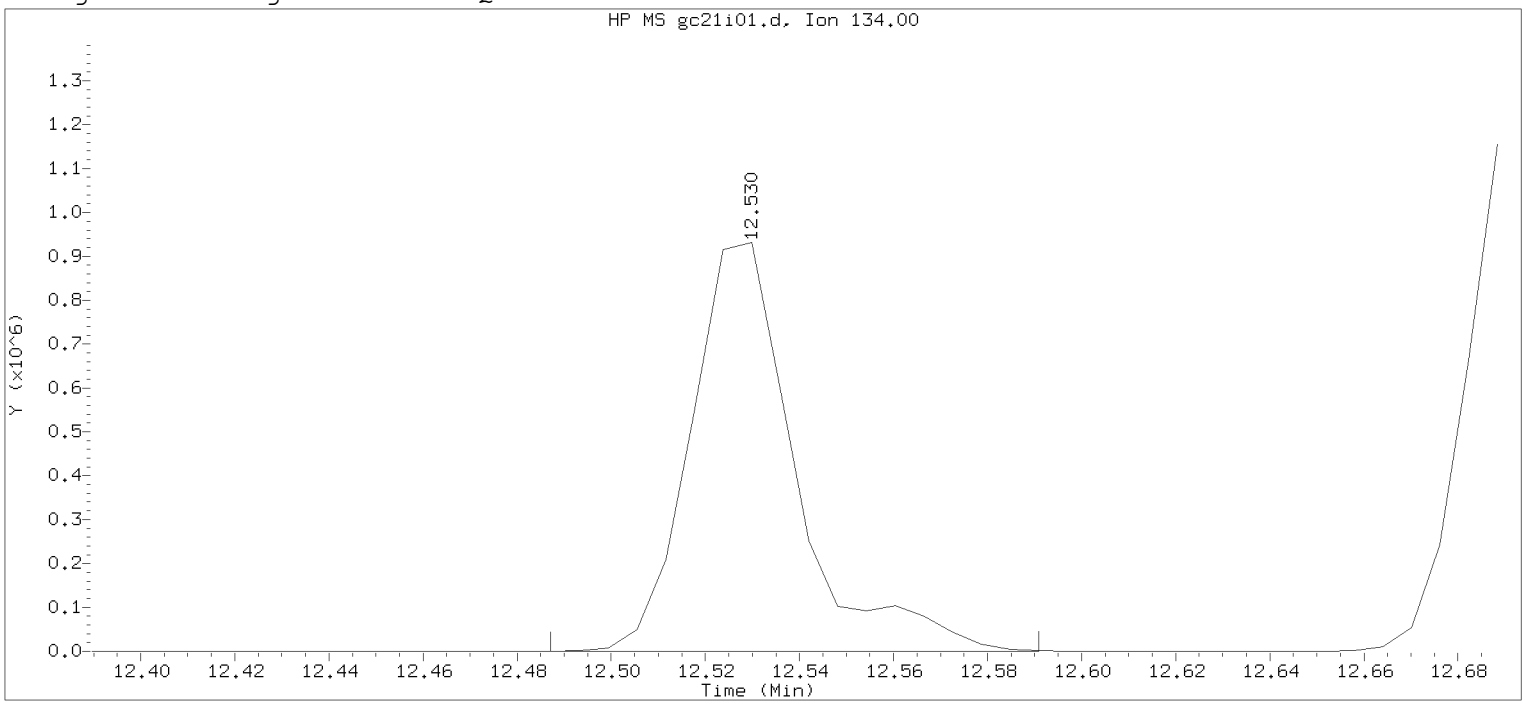
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



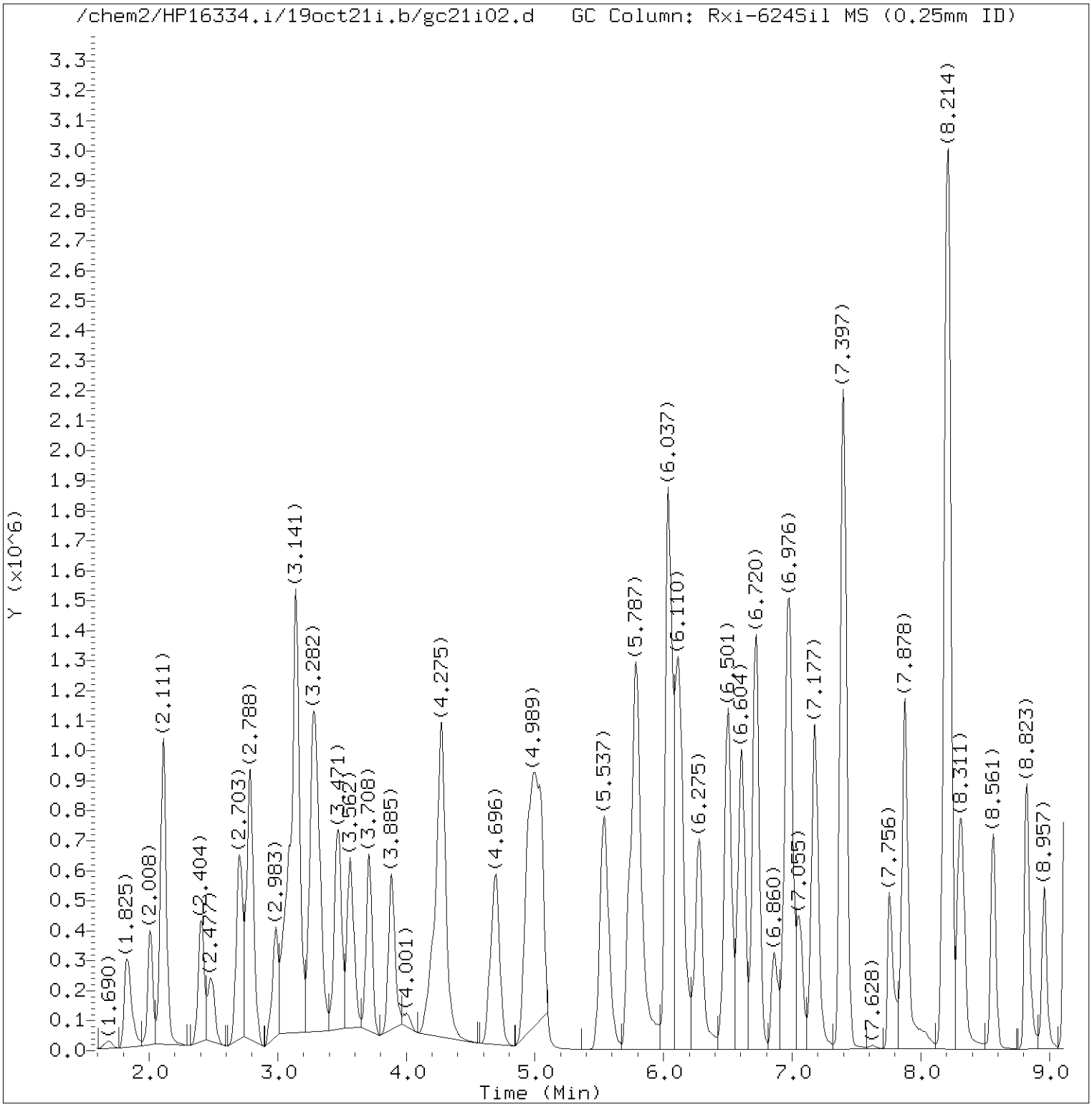
Data File: /chem2/HP16334.i/19oct21i.b/gc21i01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 16:39 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area : 1443175
On-column Amount (ng) : 25.6861
Integration start scan : 1787 Integration stop scan: 1804
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

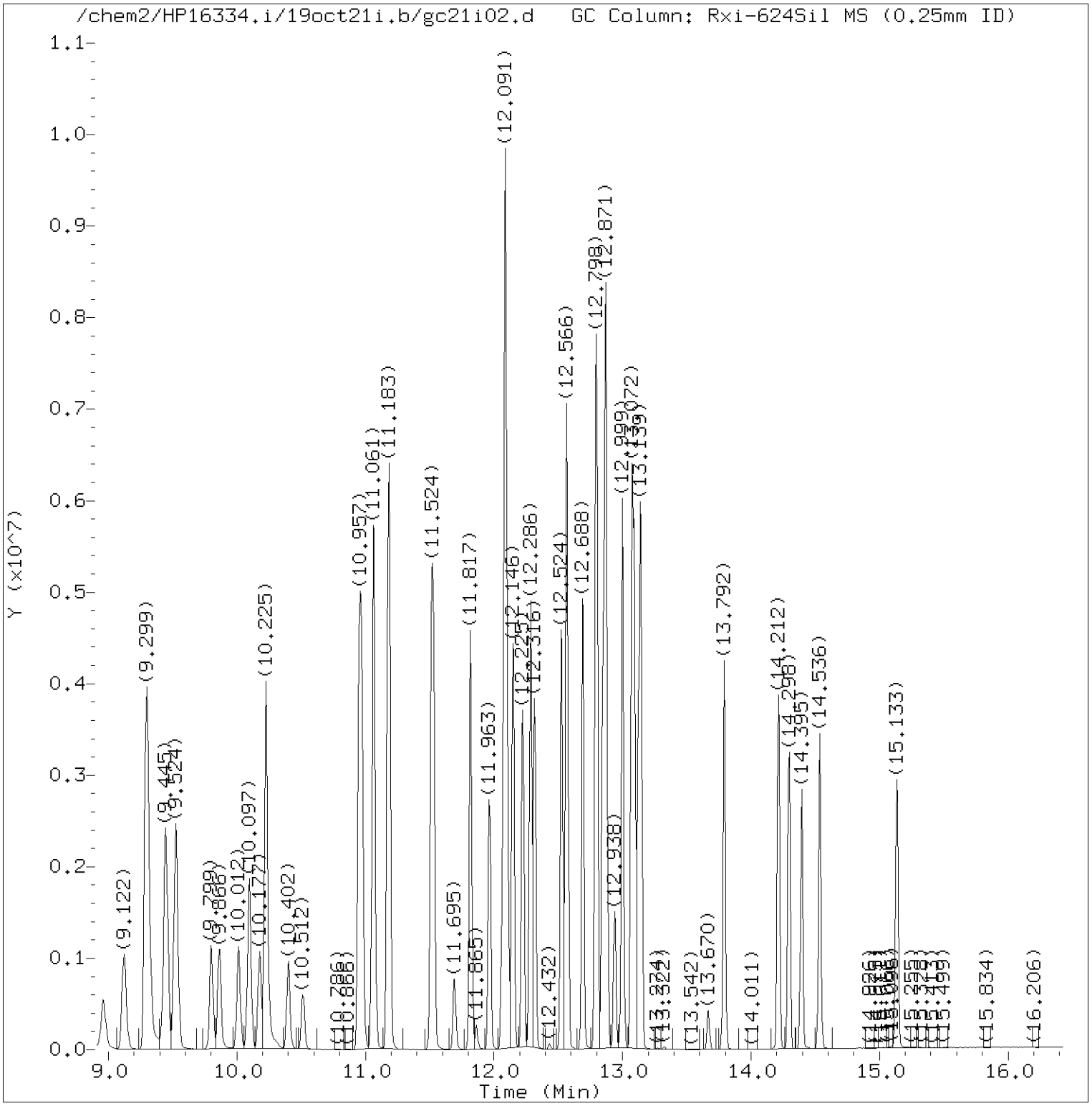
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

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on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.831	85	767769M	10.597
2) Chloromethane	(2)	2.008	50	674287	9.932
6) 1,3-Butadiene	(2)	2.105	39	557081M	9.394
5) Vinyl Chloride	(2)	2.117	62	704064	10.416
7) Bromomethane	(2)	2.404	94	526020	10.298
8) Chloroethane	(2)	2.489	64	411140	10.284
9) Dichlorofluoromethane	(2)	2.696	67	932871	10.098
10) Trichlorofluoromethane	(2)	2.770	101	935261	10.318
11) Ethyl ether	(2)	2.983	59	431917	10.442
12) Freon 123a	(2)	3.056	67	605070	10.164
13) Acrolein	(1)	3.141	56	3525472	504.633
15) 1,1-Dichloroethene	(2)	3.276	96	469298	10.232
14) Acetone	(1)	3.294	43	694769	92.171
16) Freon 113	(2)	3.312	101	564071	10.555
17) Methyl Iodide	(2)	3.458	142	1029592	10.349
18) Carbon Disulfide	(2)	3.562	76	1730802	10.231
21) Methyl Acetate	(1)	3.684	43	176584M	9.617
22) Allyl Chloride	(2)	3.708	41	674253	10.029
23) Methylene Chloride	(2)	3.885	84	529275	9.881
26)*t-Butyl Alcohol-d10	(1)	3.897	65	148600M	50.000
28) t-Butyl Alcohol	(1)	4.001	59	488057	188.168
29) Acrylonitrile	(1)	4.196	53	540876	49.989
30) Methyl Tertiary Butyl Ether	(2)	4.257	73	1430088	10.279
31) trans-1,2-Dichloroethene	(2)	4.275	96	537622	10.157
32) n-Hexane	(2)	4.696	57	748961M	10.510
33) 1,1-Dichloroethane	(2)	4.940	63	920867	10.200
34) di-Isopropyl Ether	(2)	4.989	45	1678306	10.250
35) 2-Chloro-1,3-Butadiene	(2)	5.050	53	832152	10.306
37) Ethyl t-butyl ether	(2)	5.537	59	1674757	10.099
38) 2-Butanone	(1)	5.726	43	1502073	104.448
39) cis-1,2-Dichloroethene	(2)	5.781	96	604524	10.482
41) 2,2-Dichloropropane	(2)	5.799	77	659730	10.535
42) Propionitrile	(1)	5.818	54	540309M	200.459
45) Methacrylonitrile	(1)	6.037	67	1600674M	99.748
40) 1,2-Dichloroethene (Total)	(2)		96	1142146	20.639
48) Tetrahydrofuran	(1)	6.116	71	478204	105.293
47) Bromochloromethane	(2)	6.123	128	300915	10.512
49) Chloroform	(2)	6.275	83	941459	10.262

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
51) 1,1,1-Trichloroethane	(2)	6.501	97	825597	10.228
50)$Dibromofluoromethane	(2)	6.501	113	567537	10.058
50)$Dibromofluoromethane	(2)	6.501	111	578229	9.972
52) Cyclohexane	(2)	6.604	56	909348	10.320
52) Cyclohexane	(2)	6.610	84	852644	10.401
52) Cyclohexane	(2)	6.604	69	289766	10.363
55) 1,1-Dichloropropene	(2)	6.720	75	732889	10.060
54) Carbon Tetrachloride	(2)	6.726	117	772706	10.630
56) Isobutyl Alcohol	(1)	6.860	41	439135	551.584
57)$1,2-Dichloroethane-d4	(2)	6.952	102	114847	10.051
57)$1,2-Dichloroethane-d4	(2)	6.952	65	511501	9.770
57)$1,2-Dichloroethane-d4	(2)	6.952	104	73086	10.209
58) Benzene	(2)	6.976	78	2132721	10.135
59) 1,2-Dichloroethane	(2)	7.055	62	587253M	9.877
59) 1,2-Dichloroethane	(2)	7.055	98	57122	10.860
60) t-Amyl methyl ether	(2)	7.177	73	1567676	10.260
63)*Fluorobenzene	(2)	7.391	96	2231798	10.000
62) n-Heptane	(2)	7.403	43	727245	9.791
65) n-Butanol	(1)	7.756	56	917855	1013.568
67) Trichloroethene	(2)	7.878	95	581555	10.304
69) Methylcyclohexane	(2)	8.189	83	983799	10.400
70) 1,2-Dichloropropane	(2)	8.214	63	537950	10.276
71) Methyl Methacrylate	(1)	8.299	69	337162	10.365
72) 1,4-Dioxane	(1)	8.305	88	109242M	518.307
72) 1,4-Dioxane	(1)	8.299	58	70475M	604.959
73) Dibromomethane	(2)	8.323	93	292176	10.448
74) Bromodichloromethane	(2)	8.561	83	720024	10.673
76) 2-Nitropropane	(1)	8.823	41	908522	101.089
80) cis-1,3-Dichloropropene	(2)	9.122	75	859348	10.724
81) 4-Methyl-2-Pentanone	(1)	9.299	43	4139946	99.559
82)$Toluene-d8	(3)	9.445	98	2193669	10.018
82)$Toluene-d8	(3)	9.445	100	1430675	10.098
83) Toluene	(3)	9.524	92	1381214	10.151
84) trans-1,3-Dichloropropene	(3)	9.799	75	747578	11.108
86) Ethyl Methacrylate	(3)	9.866	69	709496	10.873
88) 1,1,2-Trichloroethane	(3)	10.012	97	420330A	10.335
89) Tetrachloroethene	(3)	10.097	166	673026	10.353
85) 1,3-Dichloropropene (total)	(3)		75	1606926	21.832

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	722920	10.341
91) 2-Hexanone	(1)	10.225	43	2961934M	96.567
93) Dibromochloromethane	(3)	10.402	129	571709	10.972
95) 1,2-Dibromoethane	(3)	10.512	107	433453	10.517
97)*Chlorobenzene-d5	(3)	10.951	117	1707464A	10.000
96) 1-Chlorohexane	(3)	10.963	91	805122MA	9.895
98) Chlorobenzene	(3)	10.975	112	1627874	10.235
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	609001	10.686
100) Ethylbenzene	(3)	11.067	91	2732530MA	10.243
101) m+p-Xylene	(3)	11.183	106	2141932MA	20.696
104) o-Xylene	(3)	11.512	106	1062961	10.365
106) Styrene	(3)	11.530	104	1803875	10.485
107) Bromoform	(3)	11.695	173	368903	11.475
105) Xylene (Total)	(3)		106	3204893	31.061
108) Isopropylbenzene	(3)	11.817	105	2772777MA	10.399
111)$4-Bromofluorobenzene	(3)	11.963	95	827370MA	10.109
111)$4-Bromofluorobenzene	(3)	11.963	174	748601A	10.102
113) 1,1,2,2-Tetrachloroethane	(4)	12.067	83	566326	10.555
114) Bromobenzene	(4)	12.079	156	734742	10.440
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	1447143	103.214
116) 1,2,3-Trichloropropane	(4)	12.115	110	150425M	10.317
117) n-Propylbenzene	(4)	12.146	91	3225355	10.228
119) 2-Chlorotoluene	(4)	12.225	126	688979	10.334
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	2349405	10.307
122) 4-Chlorotoluene	(4)	12.316	126	716279	10.235
125) tert-Butylbenzene	(4)	12.530	134	532426M	10.469
126) Pentachloroethane	(4)	12.560	167	519104	11.029
127) 1,2,4-Trimethylbenzene	(4)	12.566	105	2475982	10.329
128) sec-Butylbenzene	(4)	12.688	105	3054181	10.227
131) 1,3-Dichlorobenzene	(4)	12.792	146	1425786	10.207
132) p-Isopropyltoluene	(4)	12.798	119	2680190	10.355
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	958416	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	1427749	9.982
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	1143281	10.199
136) Benzyl Chloride	(4)	12.938	126	207447	10.209
138) n-Butylbenzene	(4)	13.091	92	1346840	10.230
139) 1,2-Dichlorobenzene	(4)	13.121	146	1340785	10.264
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	90573	10.218

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

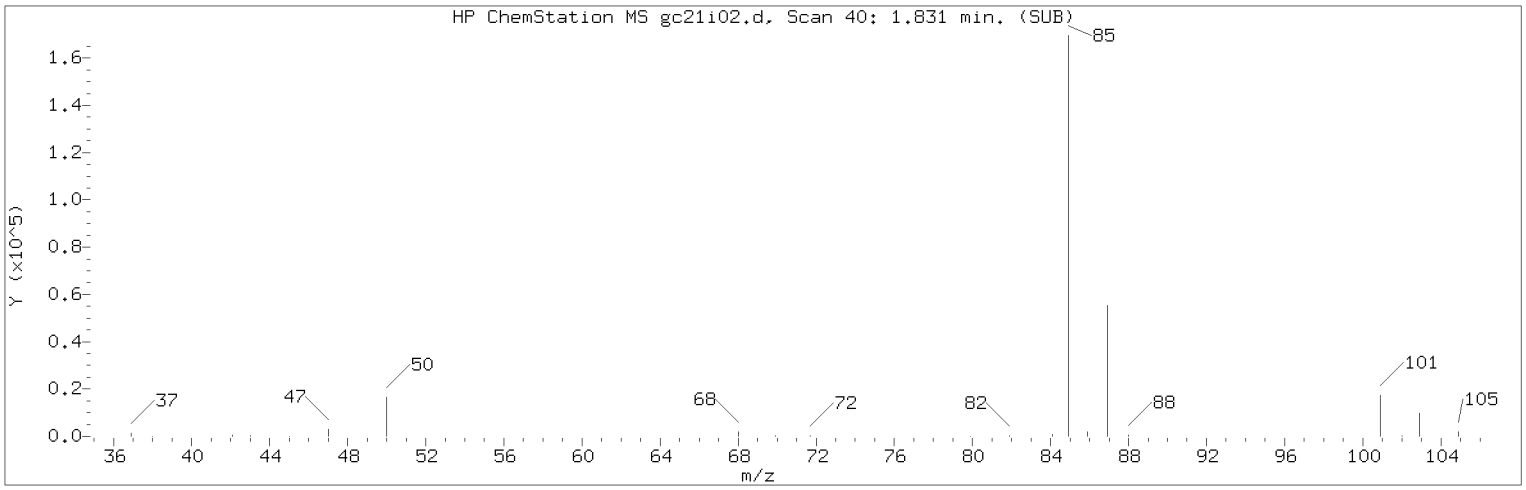
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

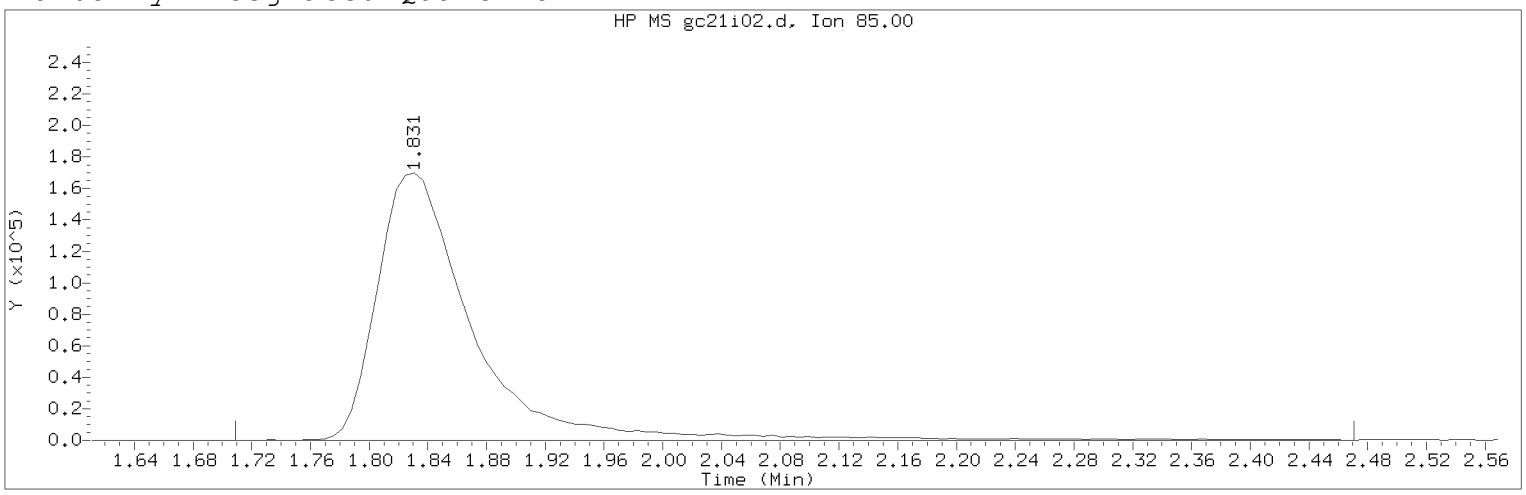
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	1208336	10.173
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	1111215	10.074
146) Hexachlorobutadiene	(4)	14.298	225	567430	10.159
147) Naphthalene	(4)	14.395	128	1930516	10.445
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	971914	10.066

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

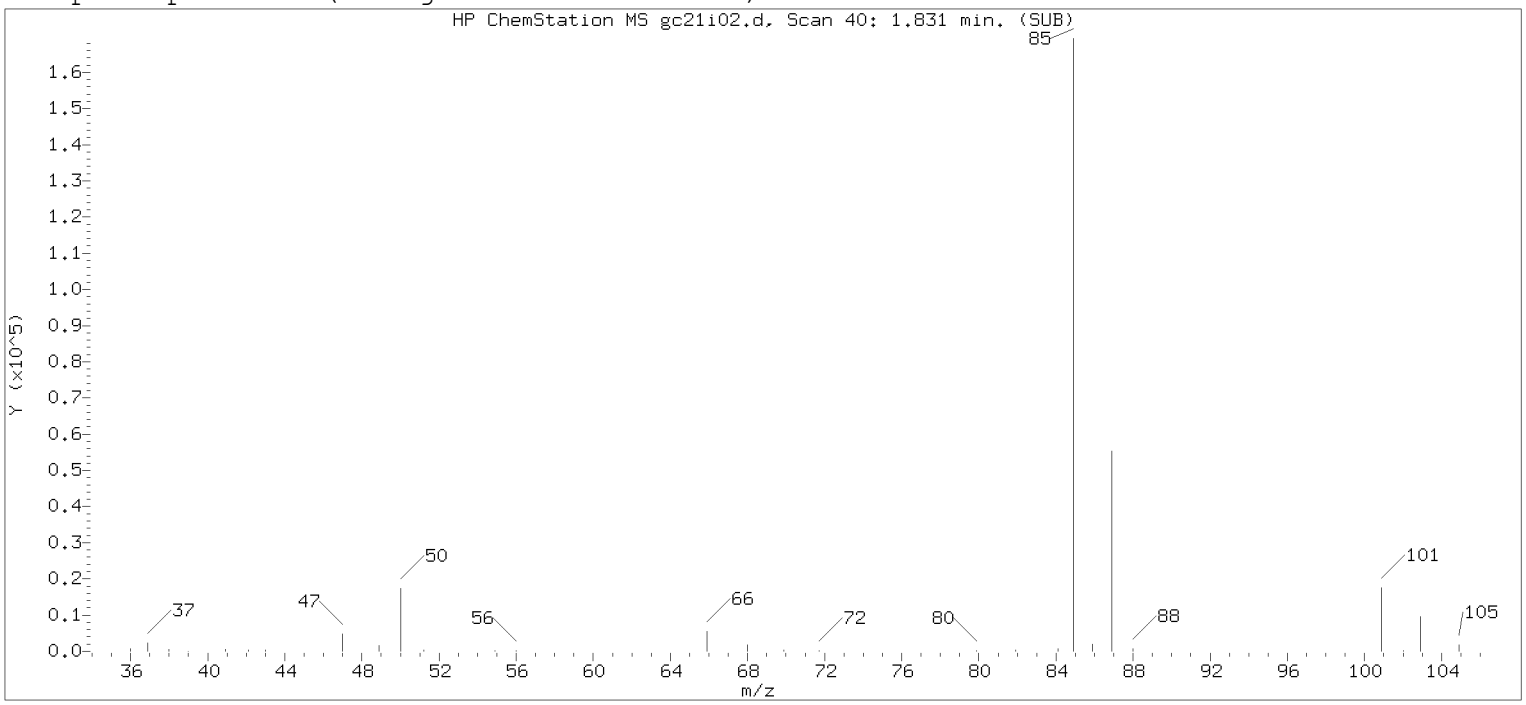
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 40
Retention Time (minutes): 1.831
Quant Ion : 85.00
Area (flag) : 767769M
On-Column Amount (ng) : 10.5970
Integration start scan : 19 Integration stop scan: 144
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

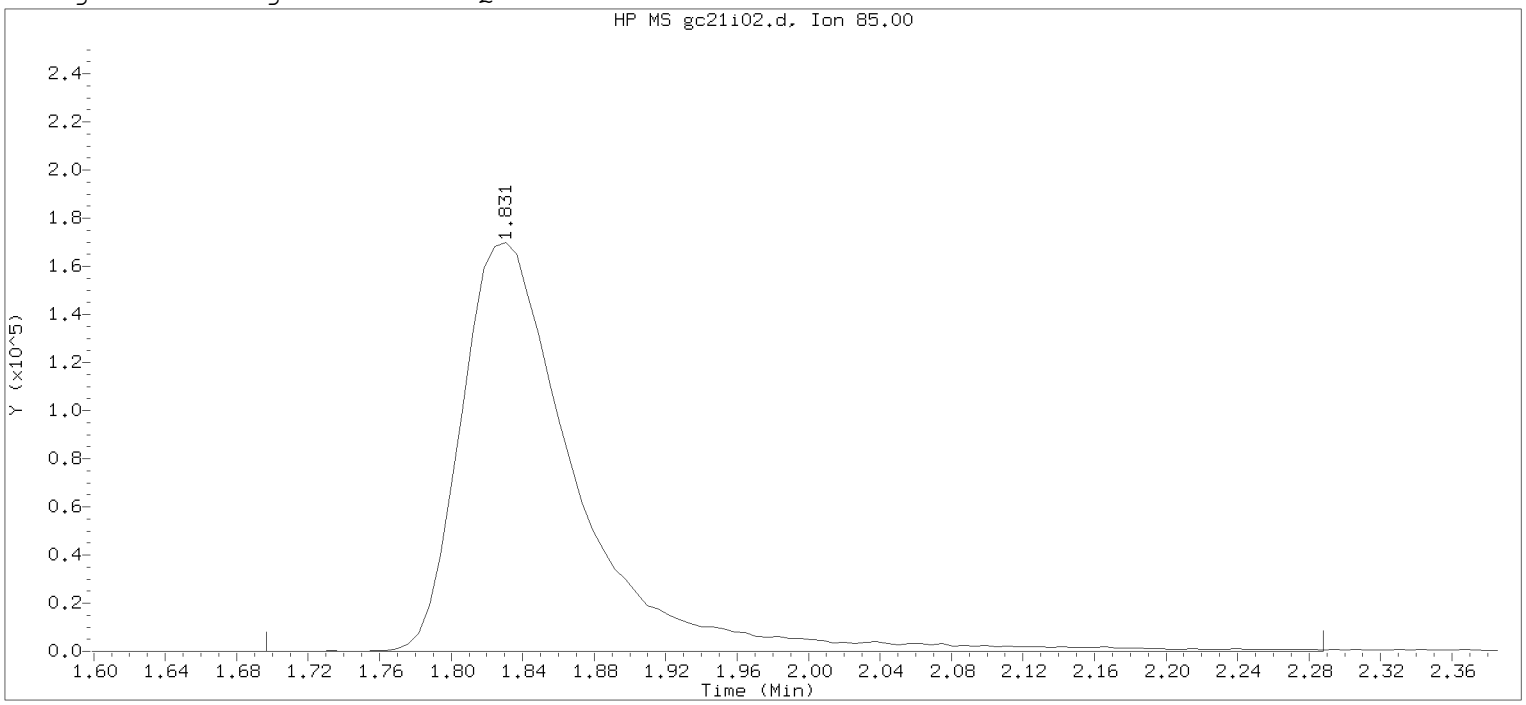
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

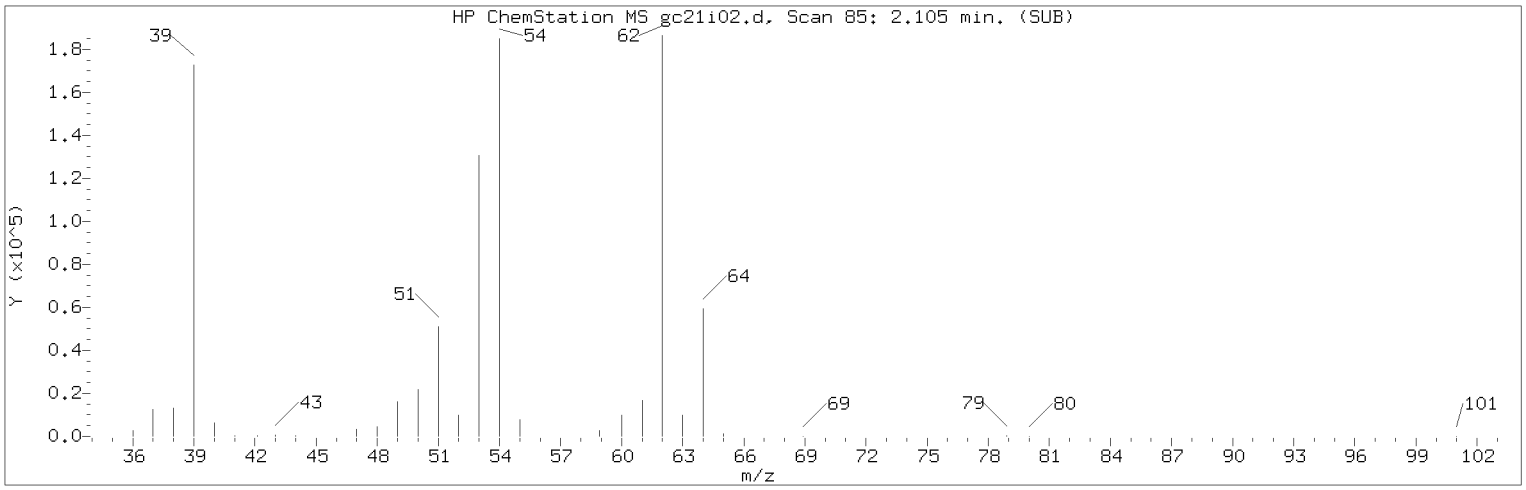
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

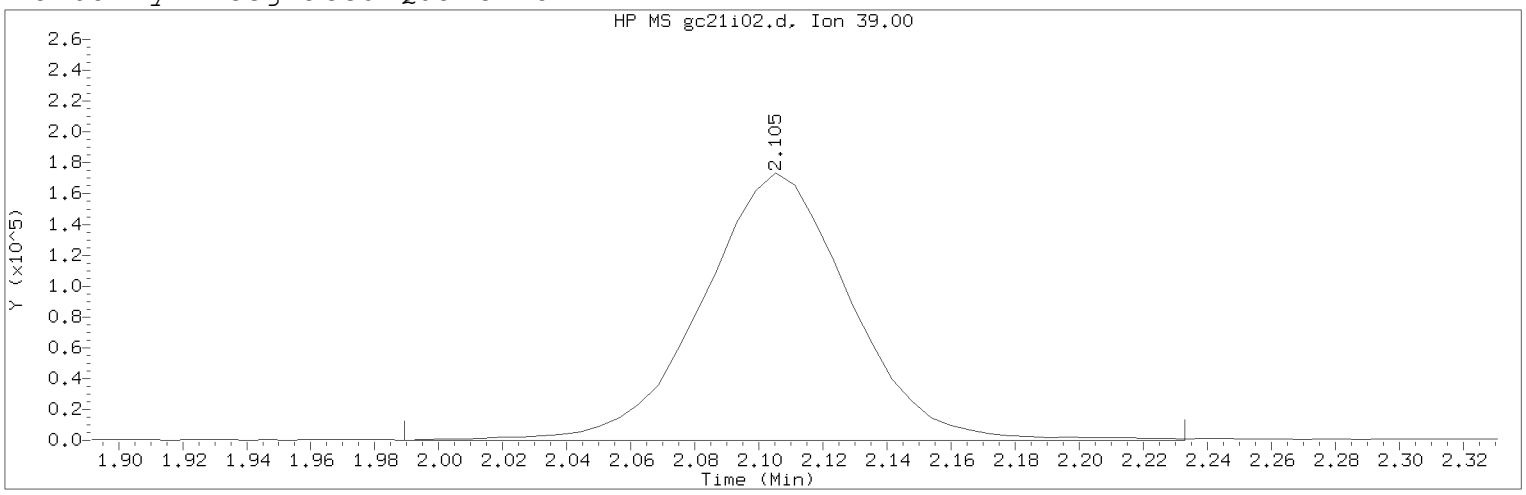
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 40
Retention Time (minutes): 1.831
Quant Ion : 85.00
Area : 762498
On-column Amount (ng) : 8.2143
Integration start scan : 17 Integration stop scan: 114
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkhowe155

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

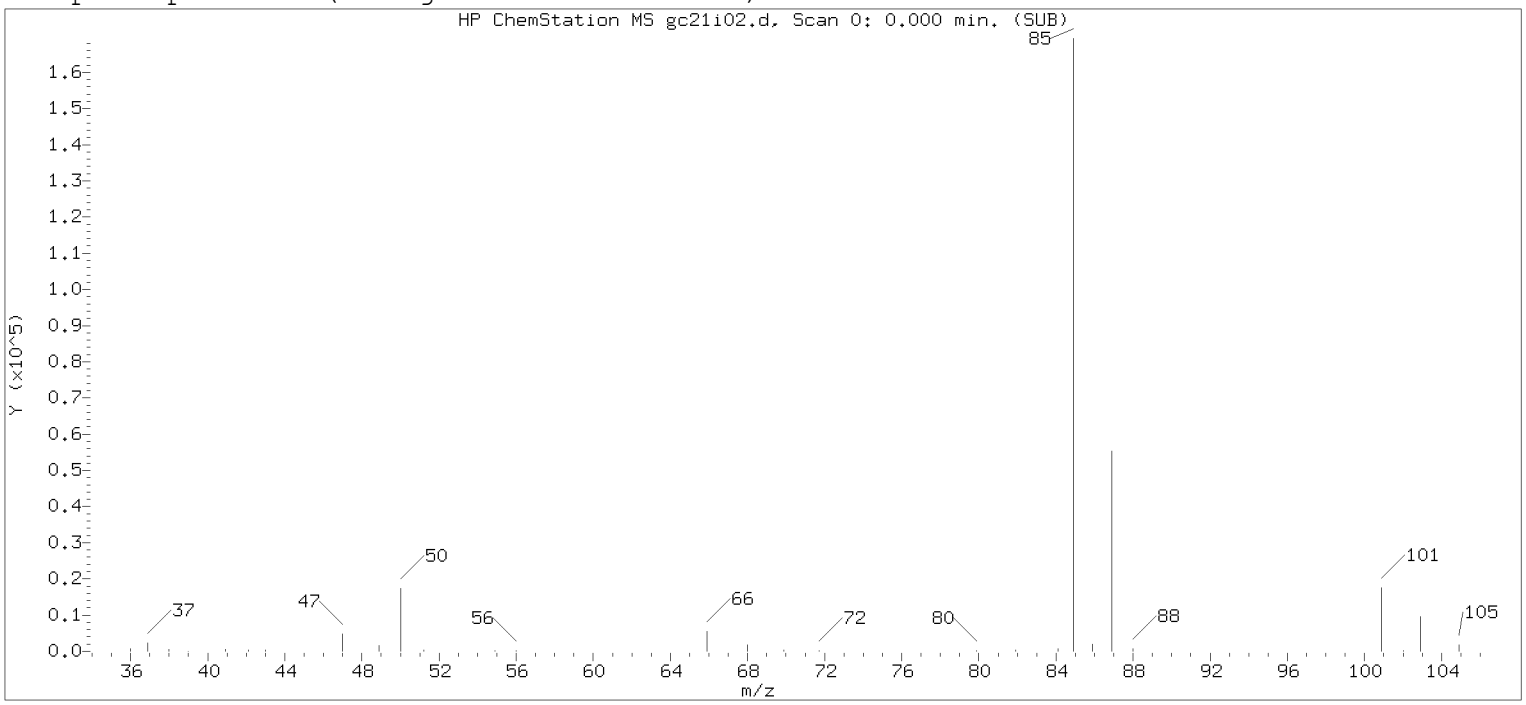
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area (flag) : 557081M
On-Column Amount (ng) : 9.3944
Integration start scan : 65 Integration stop scan: 105
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

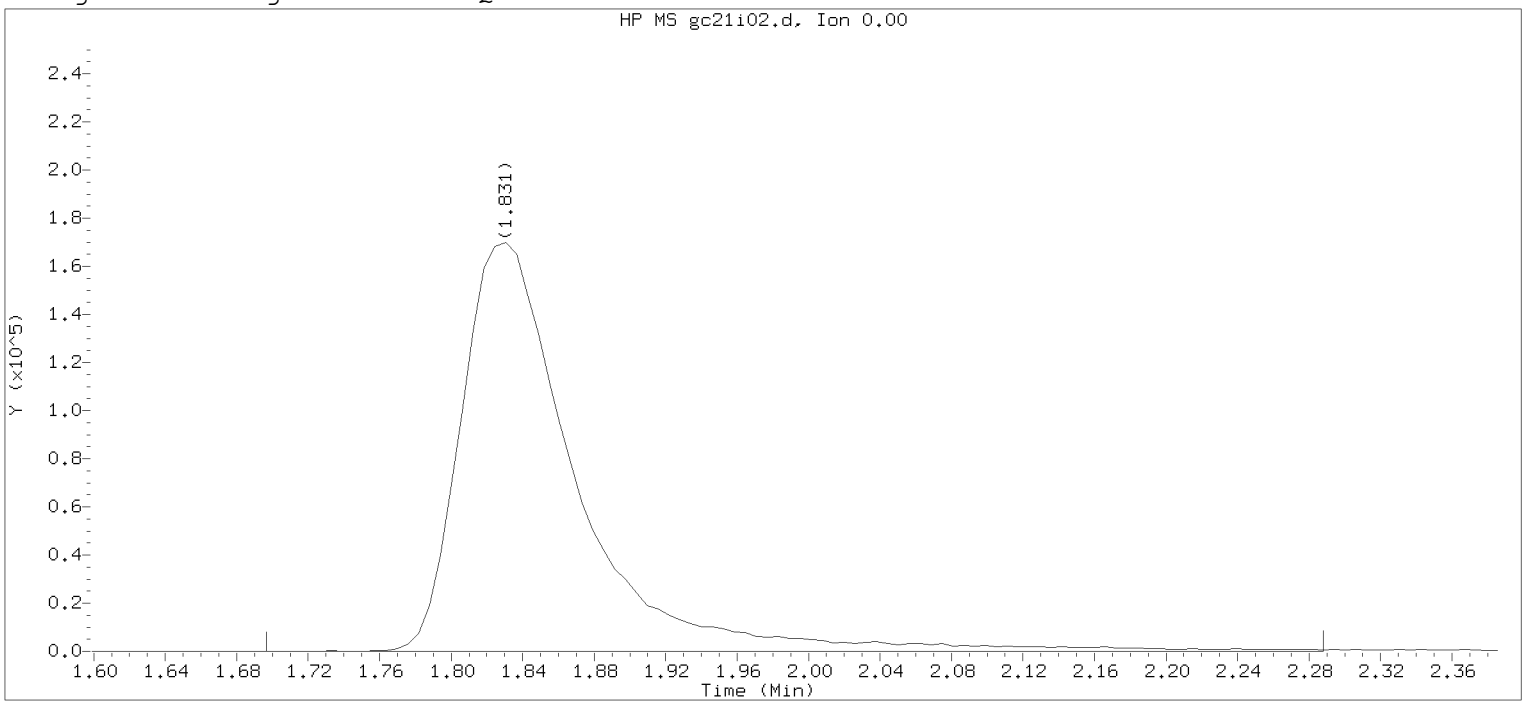
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

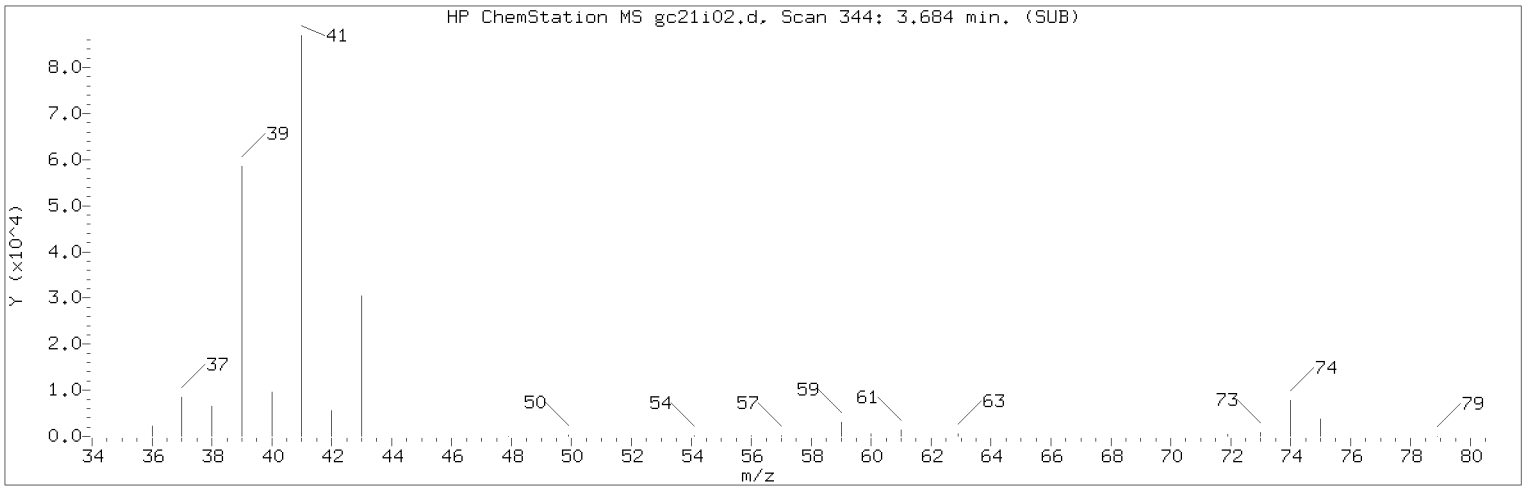
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Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

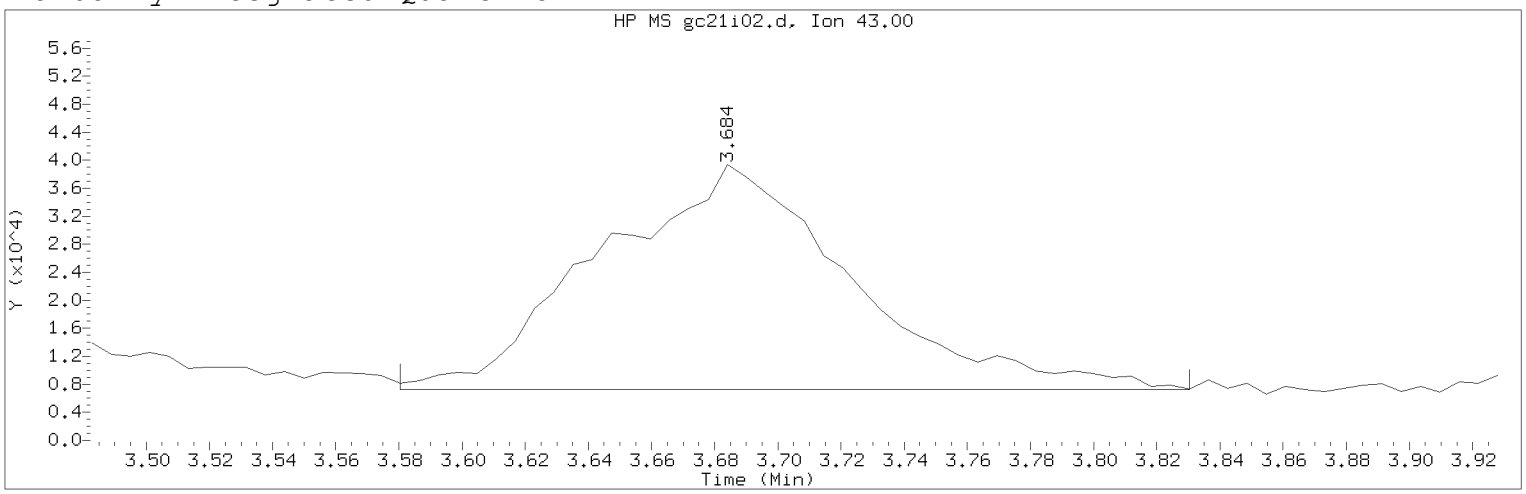
Compound Number : 0
Compound Name : 1,3-Butadiene
Scan Number : 0
Retention Time (minutes): 0.000
Quant Ion : 0.00
Area : 0
On-column Amount (ng) : 0.0000
Integration start scan : 0 Integration stop scan: 0
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

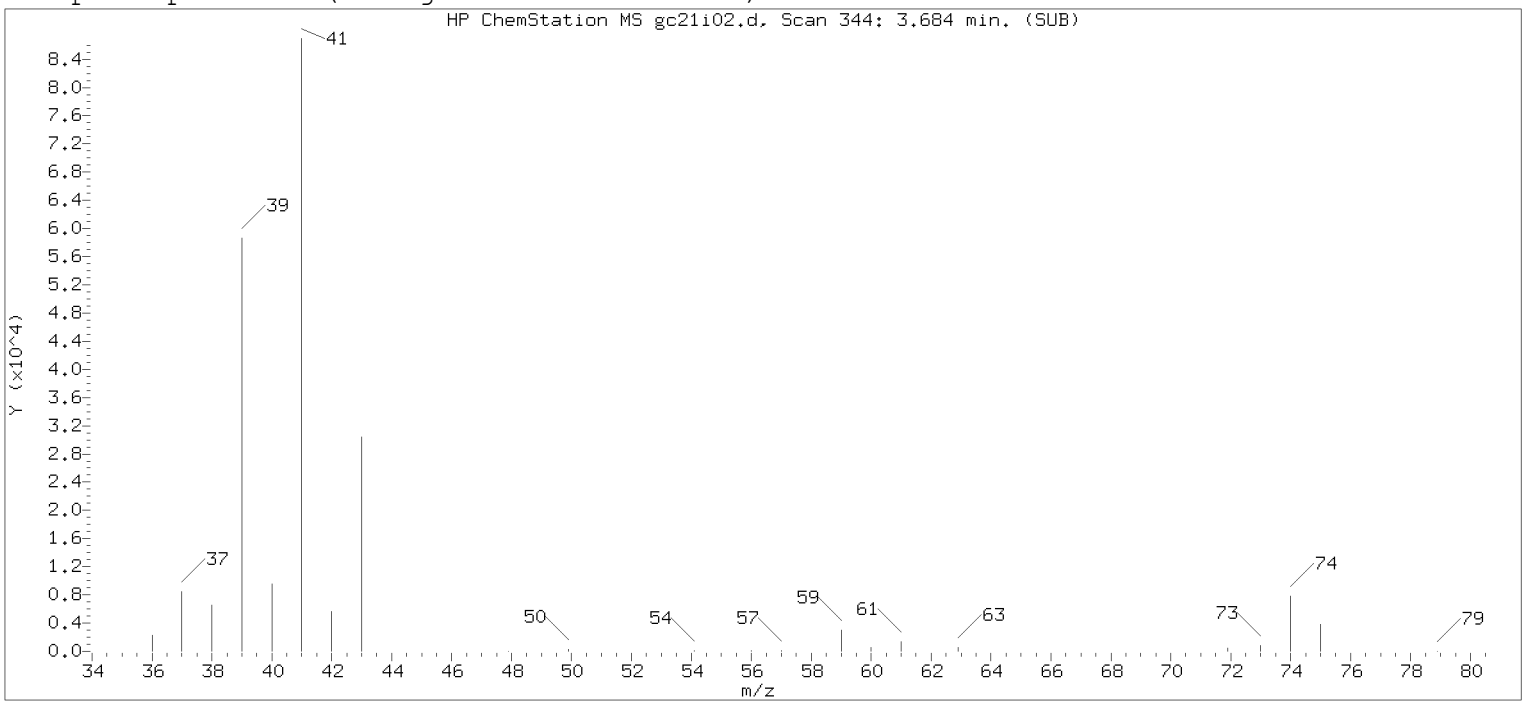
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 344
Retention Time (minutes): 3.684
Quant Ion : 43.00
Area (flag) : 176584M
On-Column Amount (ng) : 9.6165
Integration start scan : 326 Integration stop scan: 367
Y at integration start : 7269 Y at integration end: 7269

Reason for manual integration: improper integration

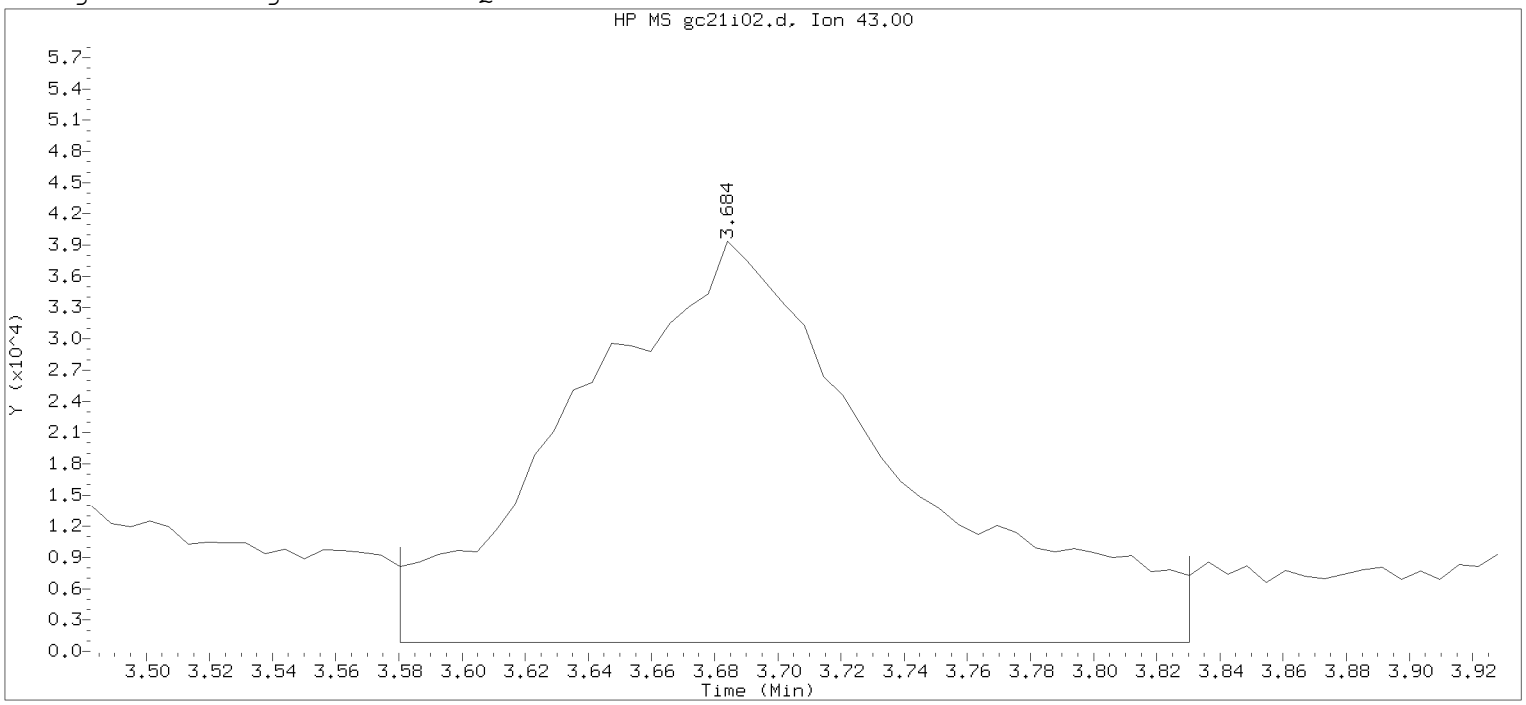
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

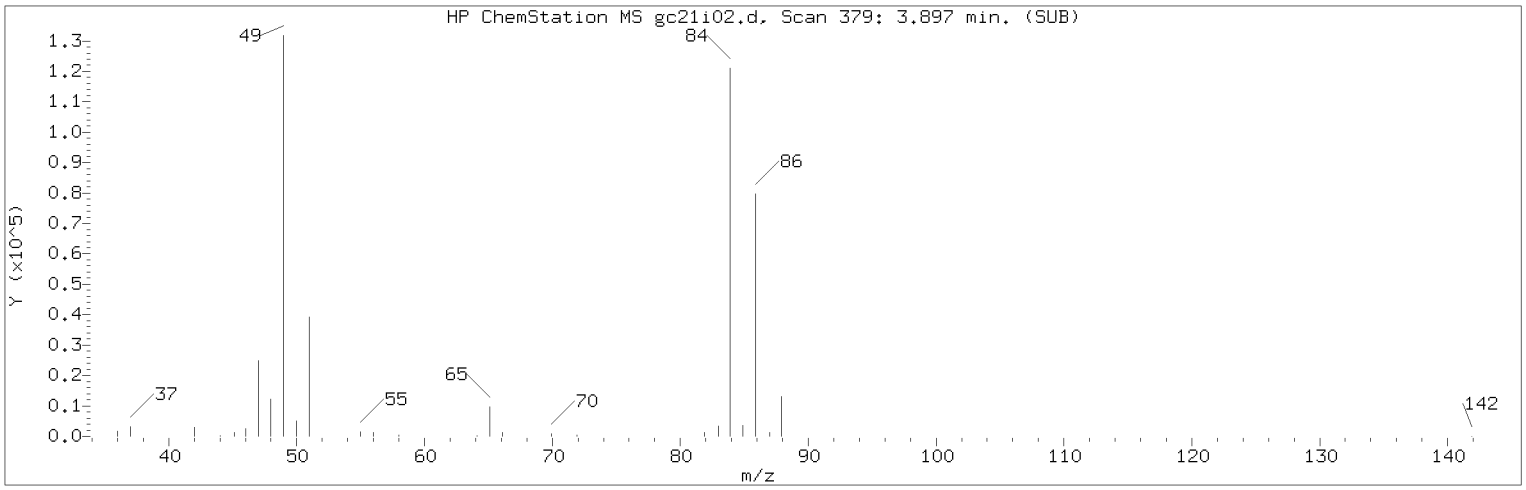
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

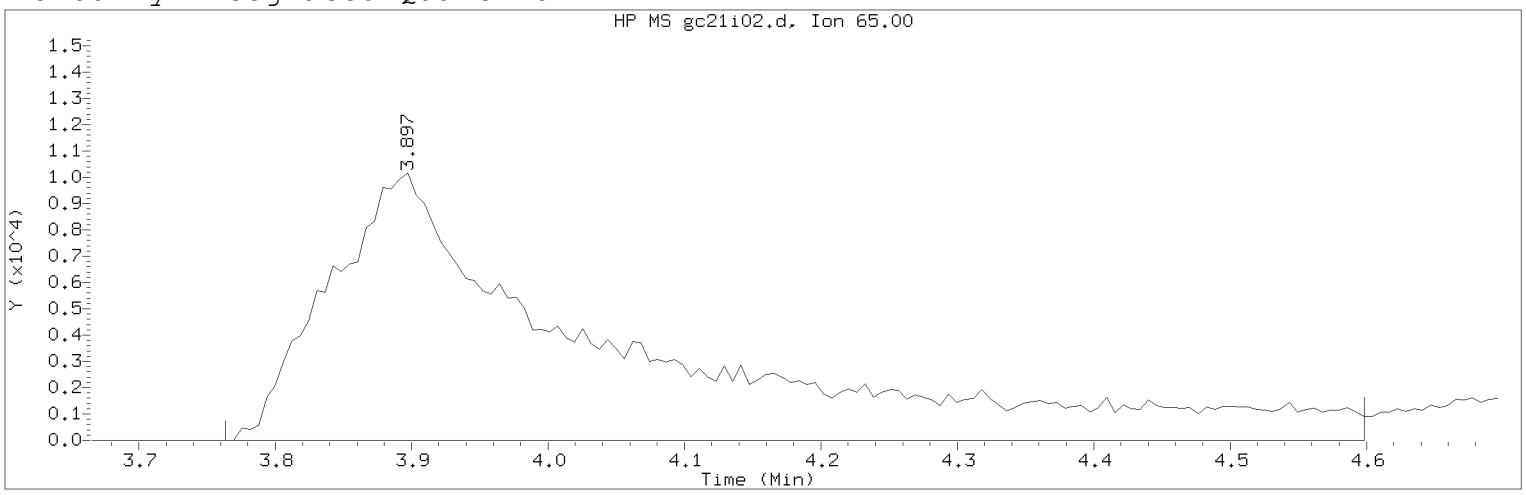
Compound Number	: 21		
Compound Name	: Methyl Acetate		
Scan Number	: 344		
Retention Time (minutes)	: 3.684		
Quant Ion	: 43.00		
Area	: 272676		
On-column Amount (ng)	: 9.4147		
Integration start scan	: 326	Integration stop scan:	367
Y at integration start	: 851	Y at integration end:	851

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

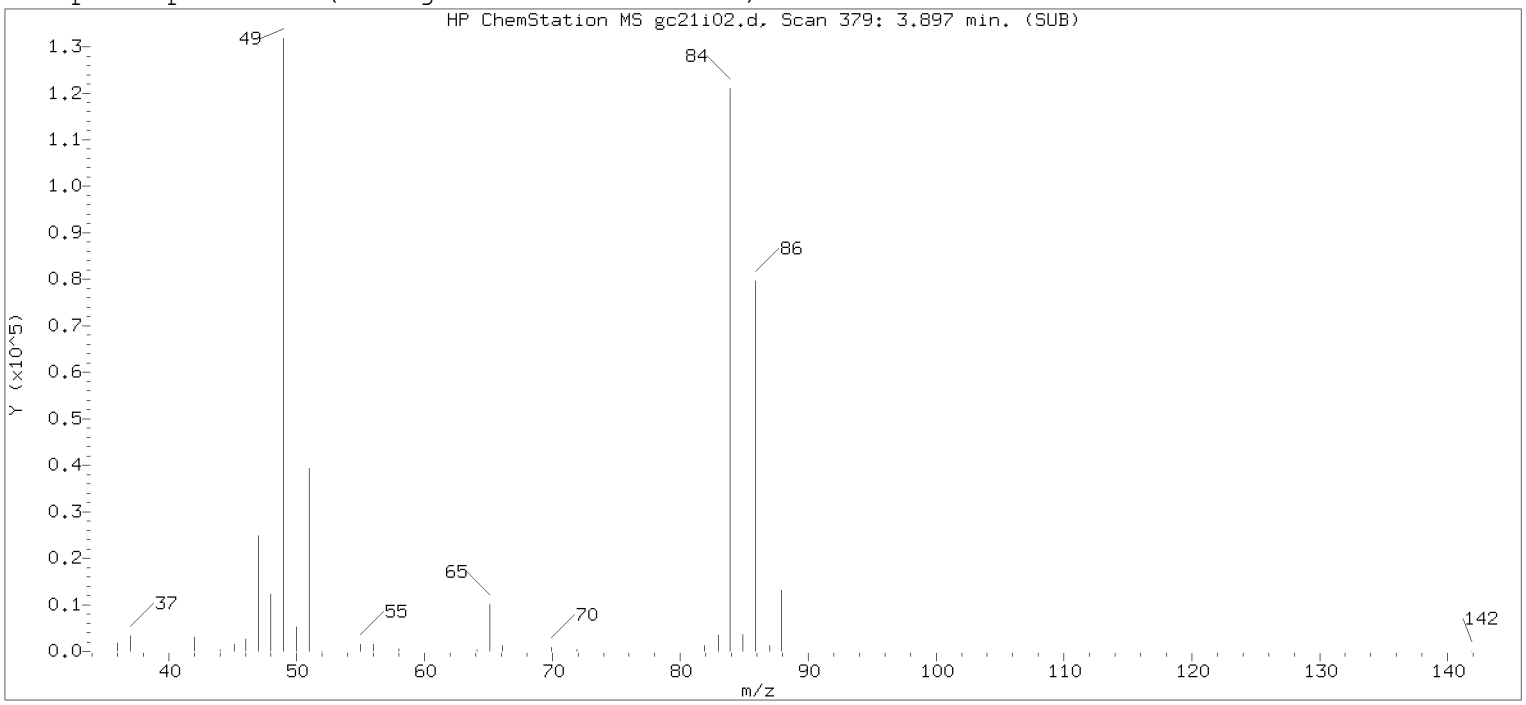
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 379
Retention Time (minutes): 3.897
Quant Ion : 65.00
Area (flag) : 148600M
On-Column Amount (ng) : 50.0000
Integration start scan : 356 Integration stop scan: 493
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

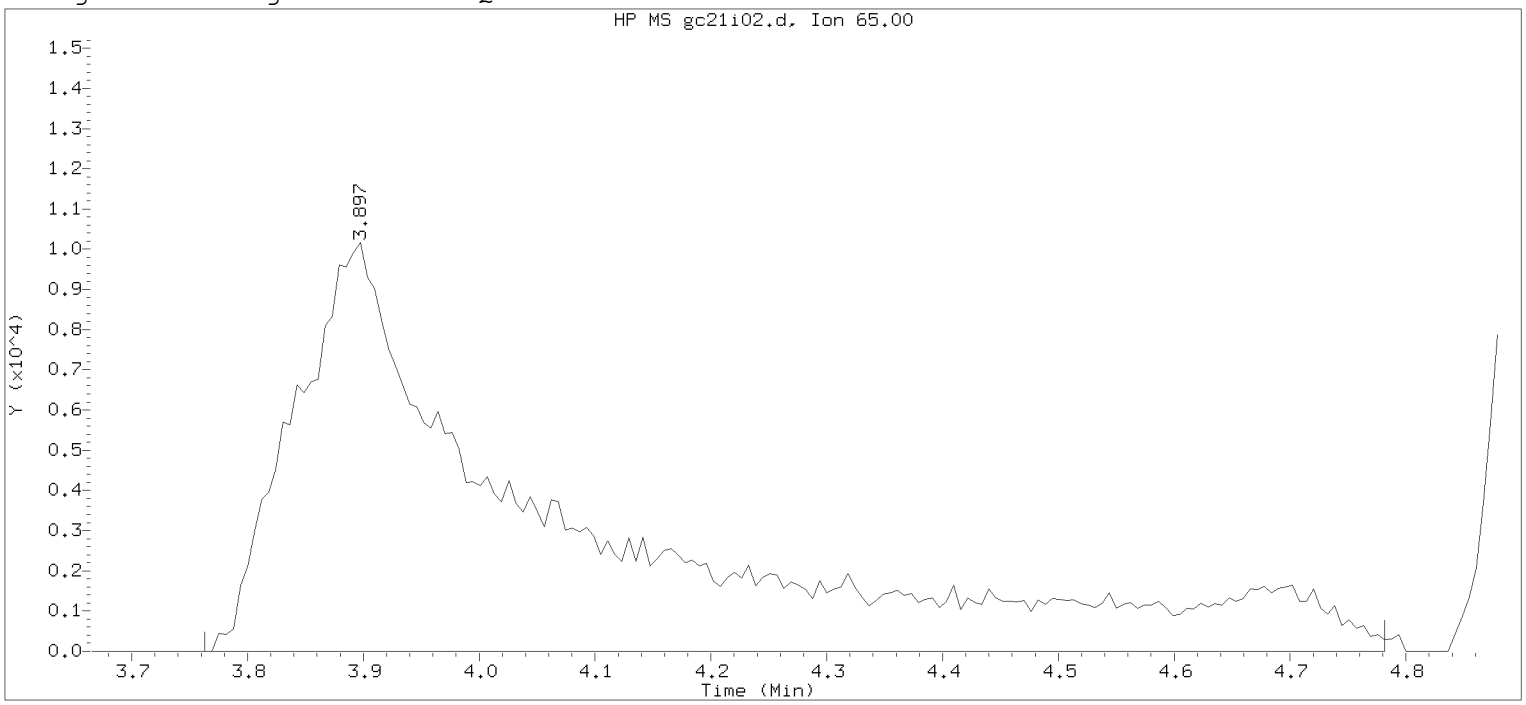
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

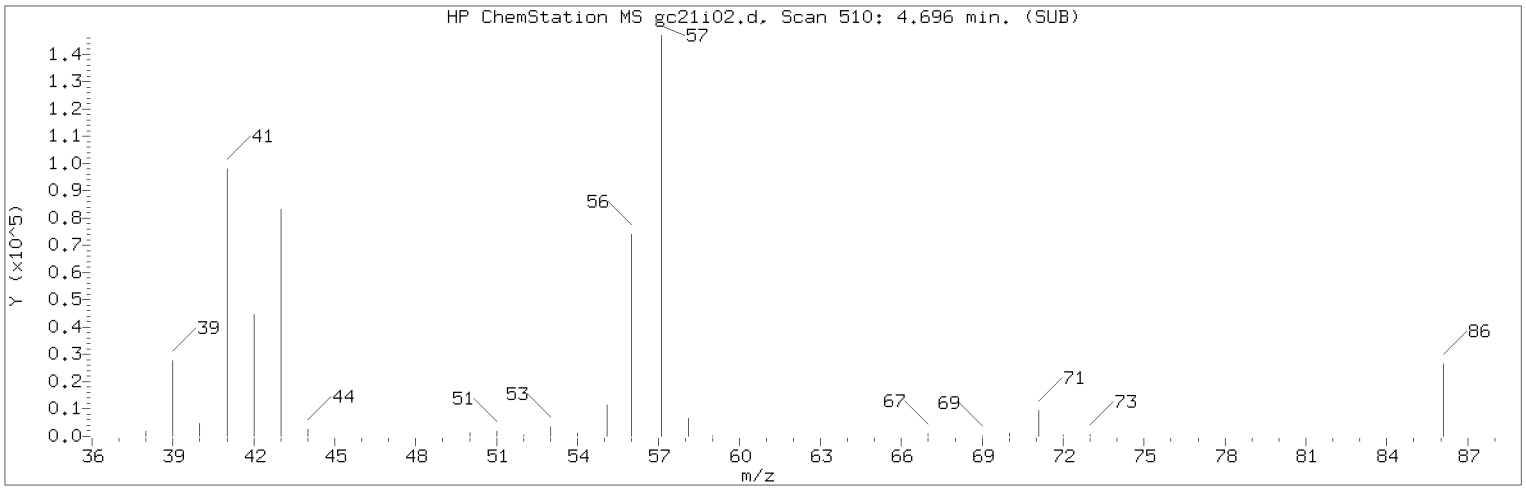
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

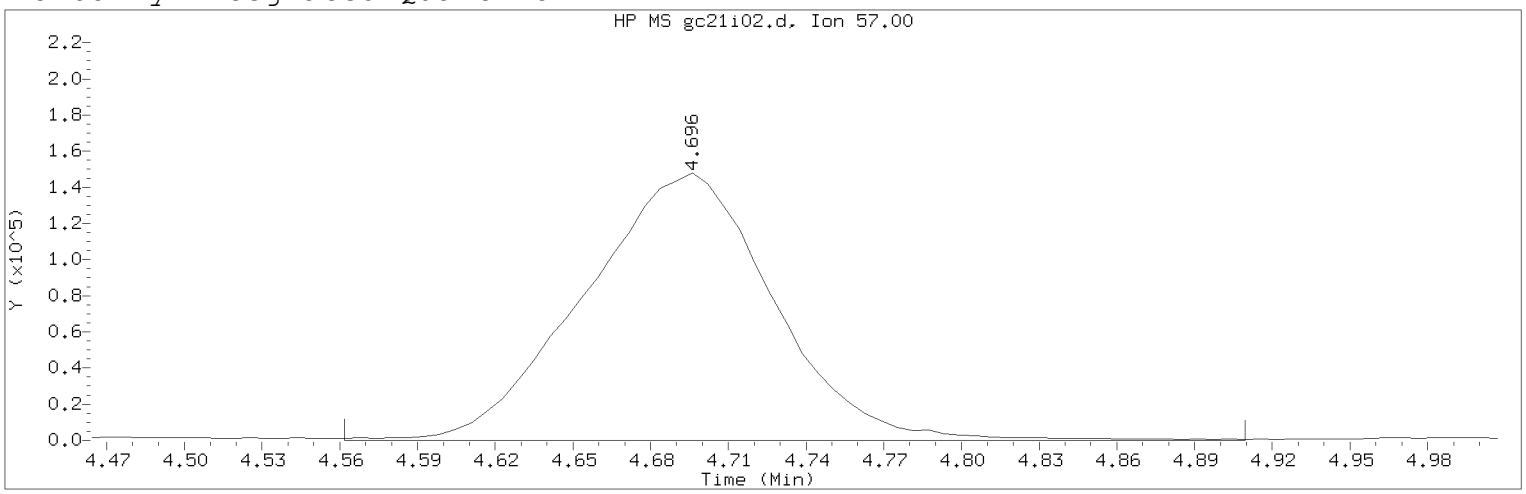
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 379
Retention Time (minutes): 3.897
Quant Ion : 65.00
Area : 160750
On-column Amount (ng) : 50.0000
Integration start scan : 356 Integration stop scan: 523
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

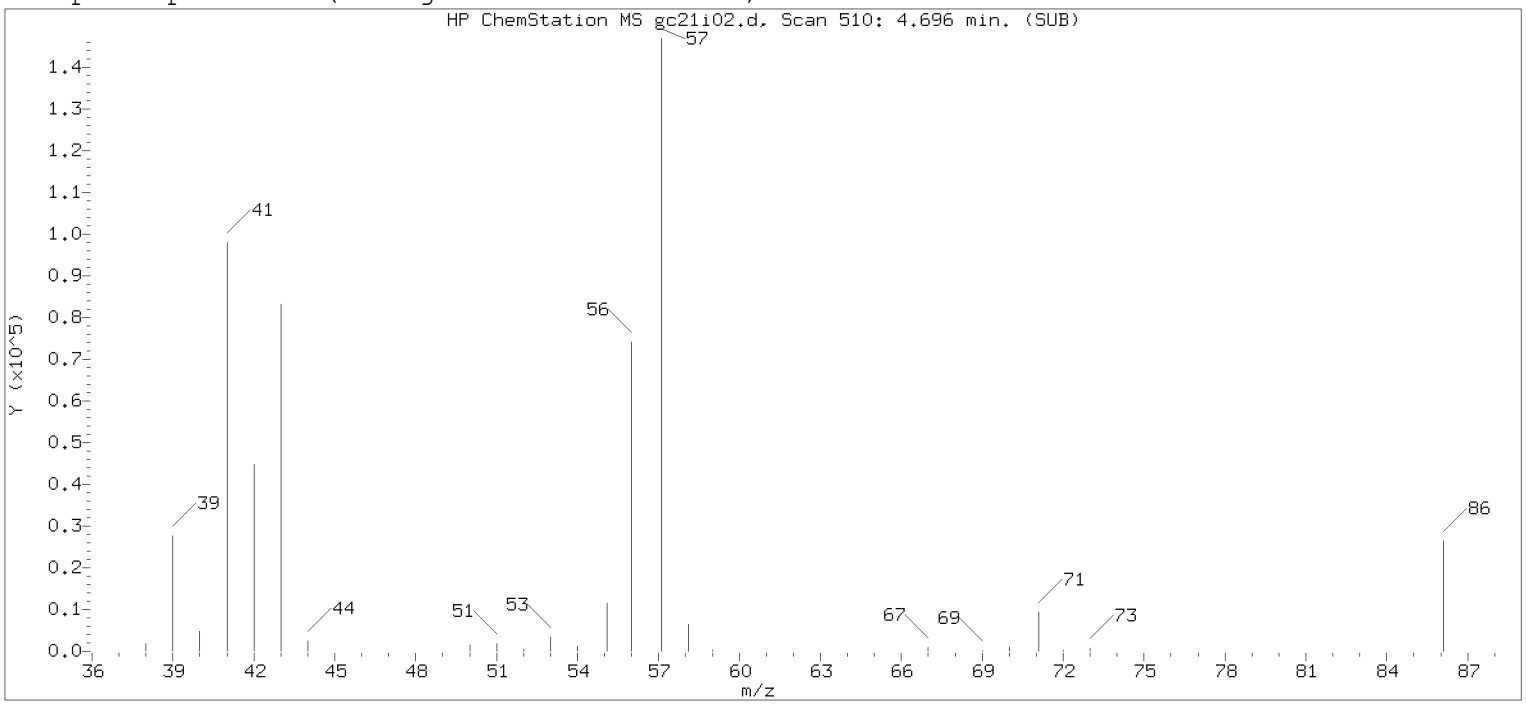
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 510
Retention Time (minutes): 4.696
Quant Ion : 57.00
Area (flag) : 748961M
On-Column Amount (ng) : 10.5100
Integration start scan : 487 Integration stop scan: 544
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

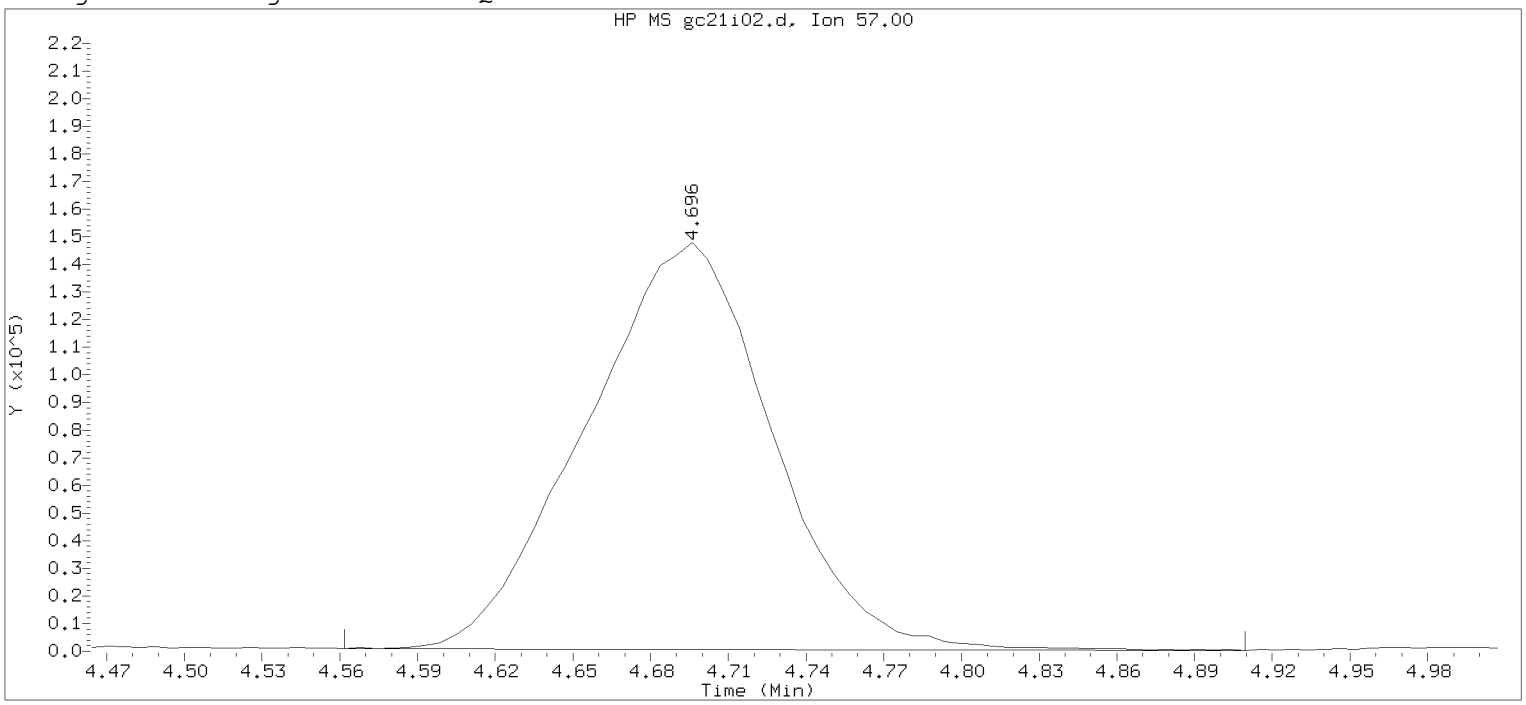
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

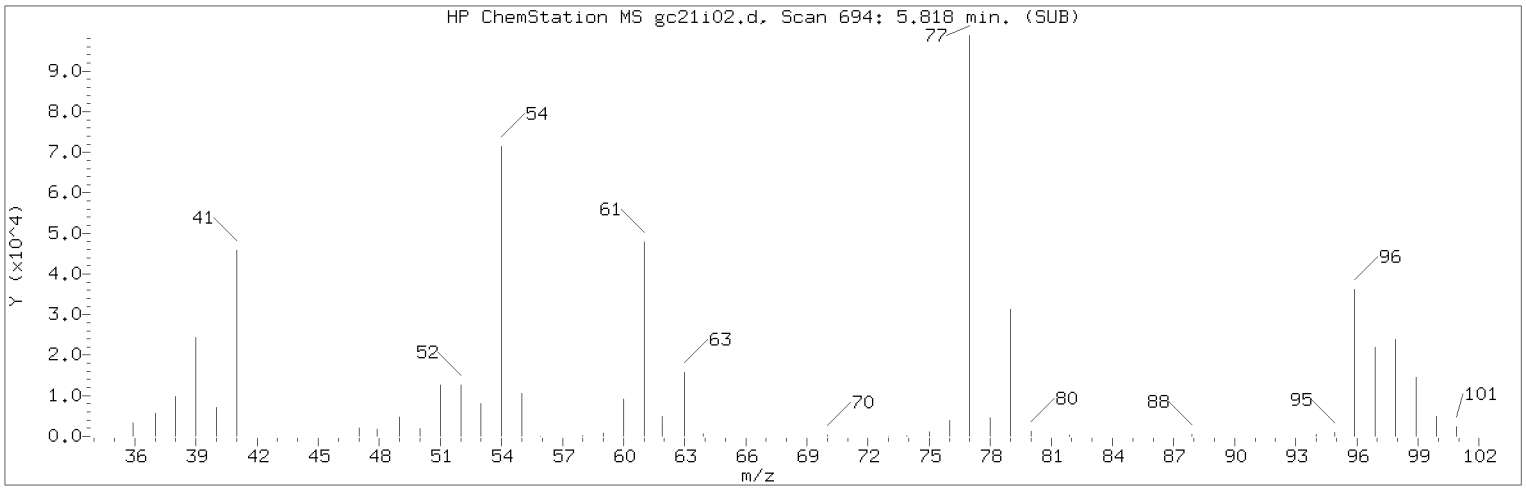
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

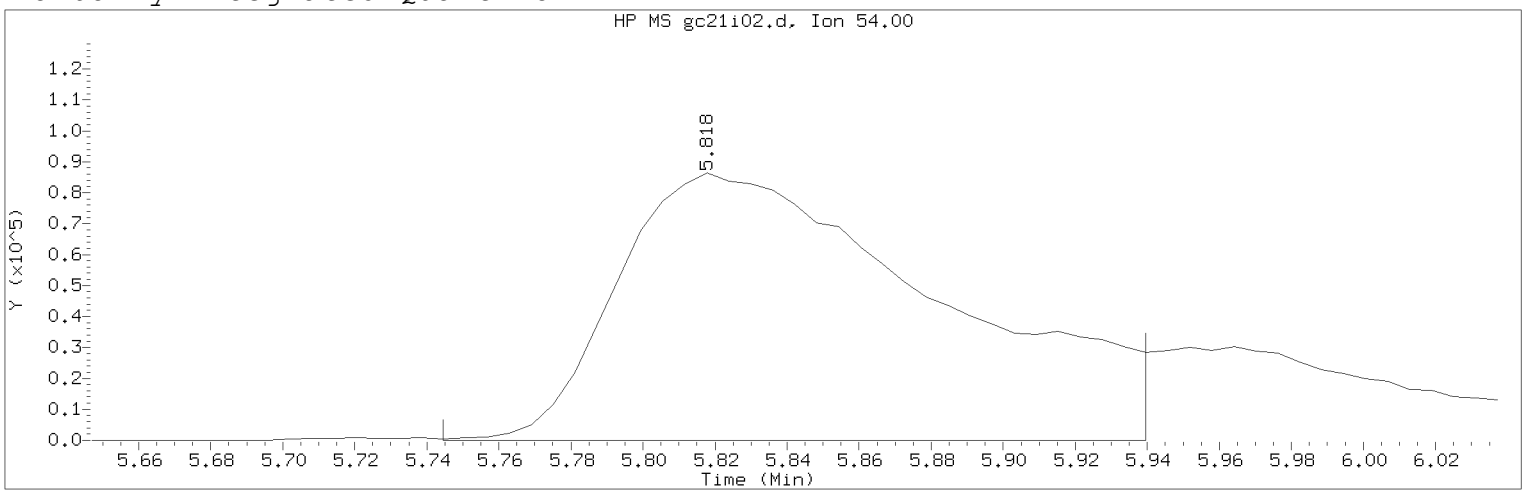
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 510
Retention Time (minutes): 4.696
Quant Ion : 57.00
Area : 735429
On-column Amount (ng) : 8.6352
Integration start scan : 487 Integration stop scan: 544
Y at integration start : 957 Y at integration end: 319

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

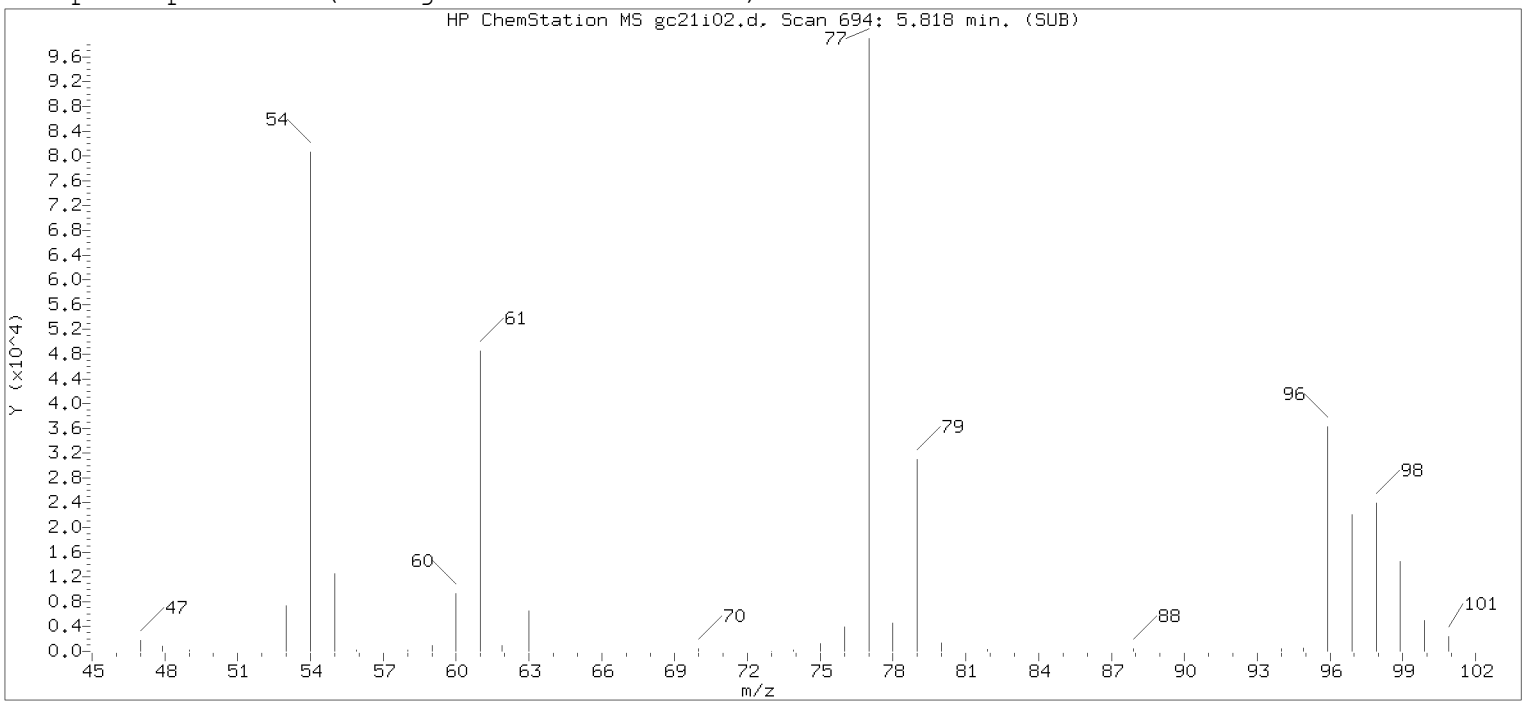
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 694
Retention Time (minutes): 5.818
Quant Ion : 54.00
Area (flag) : 540309M
On-Column Amount (ng) : 200.4588
Integration start scan : 681 Integration stop scan: 713
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

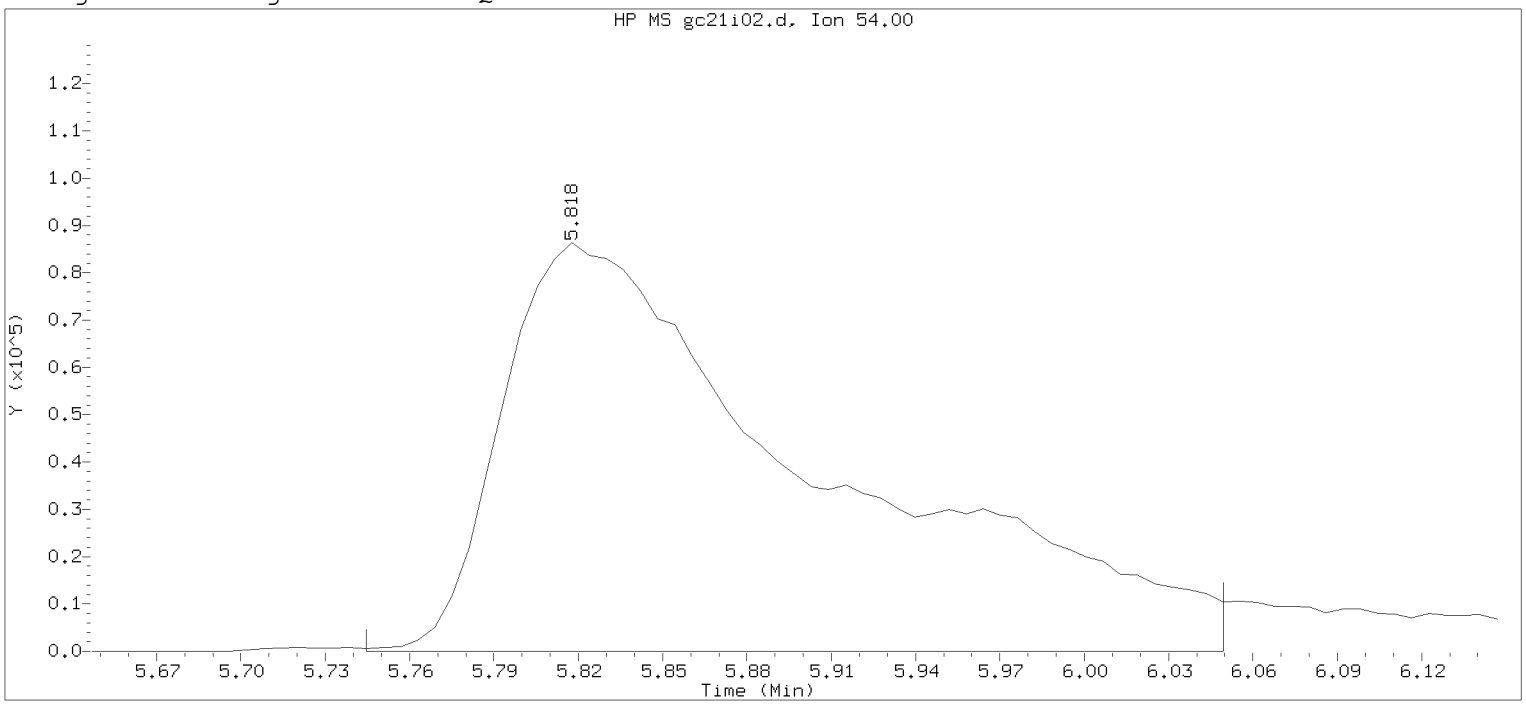
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

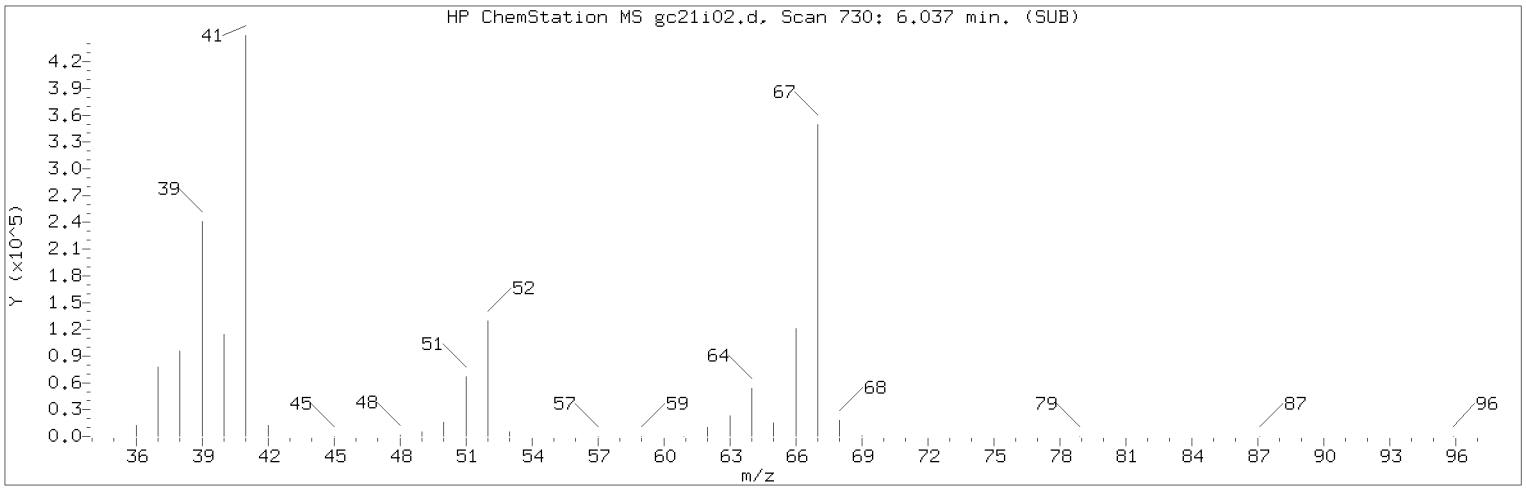
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

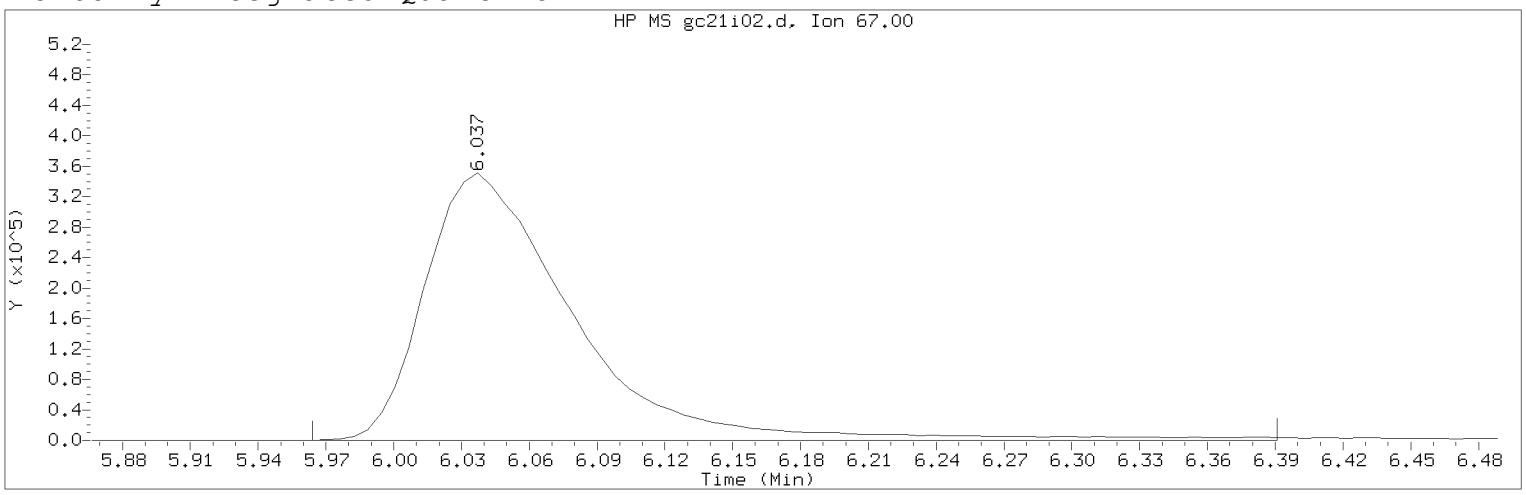
Compound Number	: 42		
Compound Name	: Propionitrile		
Scan Number	: 694		
Retention Time (minutes)	: 5.818		
Quant Ion	: 54.00		
Area	: 677146		
On-column Amount (ng)	: 185.8856		
Integration start scan	: 681	Integration stop scan:	731
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

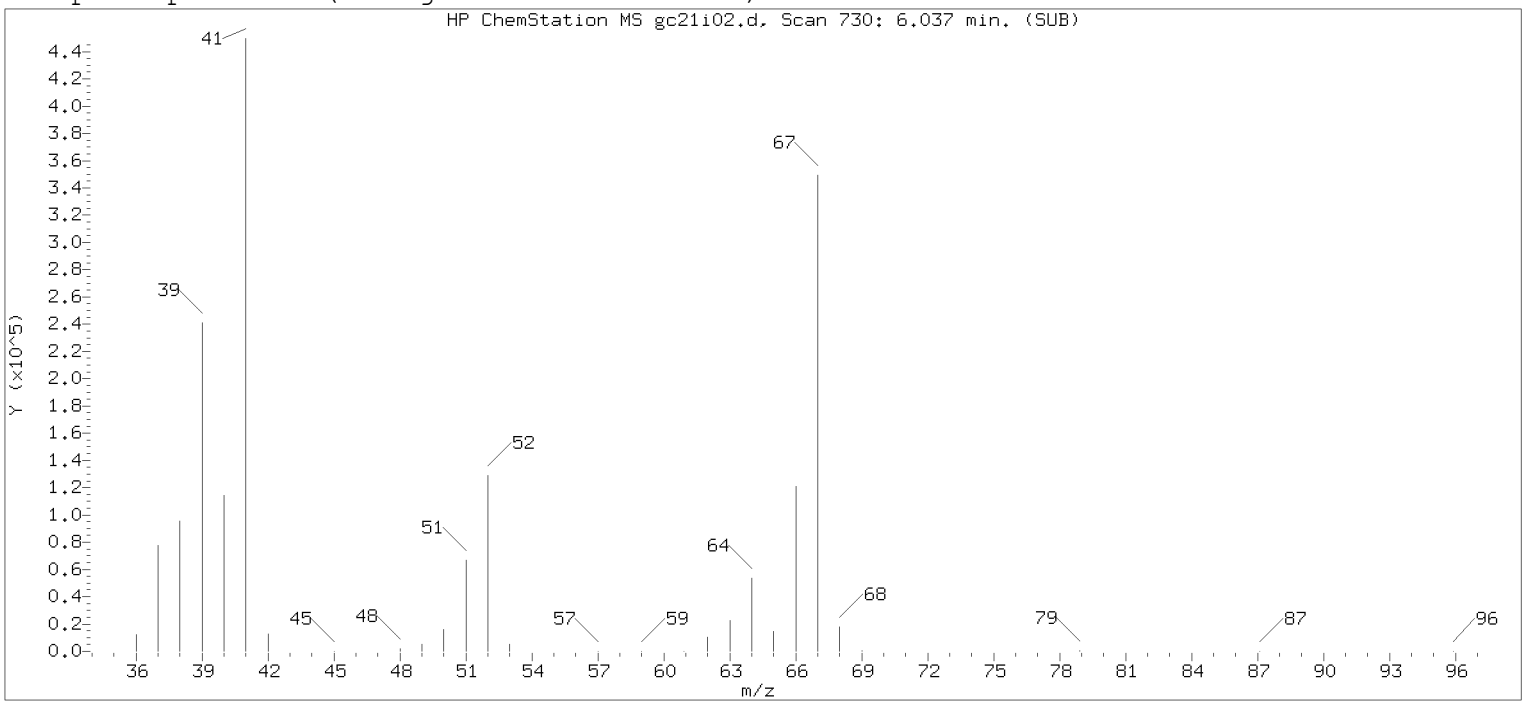
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 730
Retention Time (minutes): 6.037
Quant Ion : 67.00
Area (flag) : 1600674M
On-Column Amount (ng) : 99.7477
Integration start scan : 717 Integration stop scan: 787
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

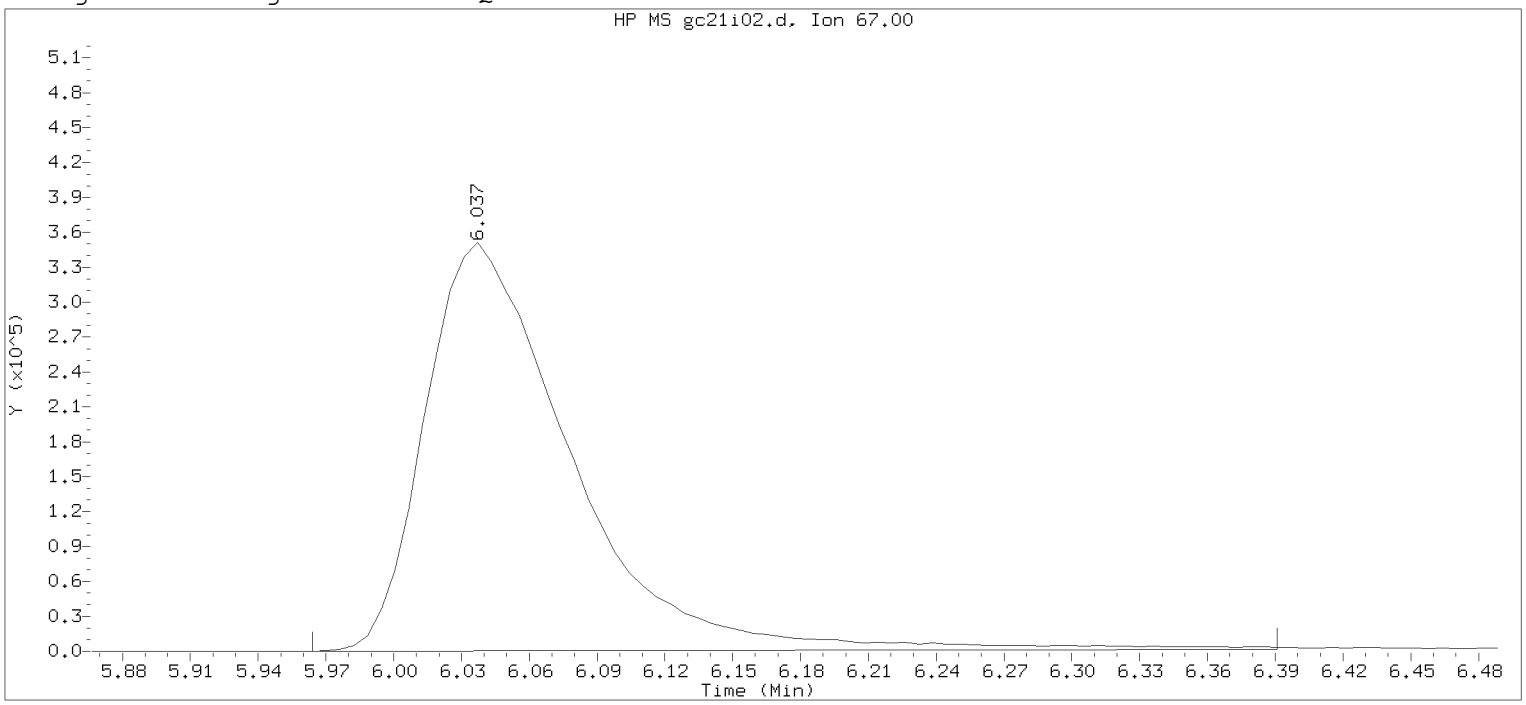
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

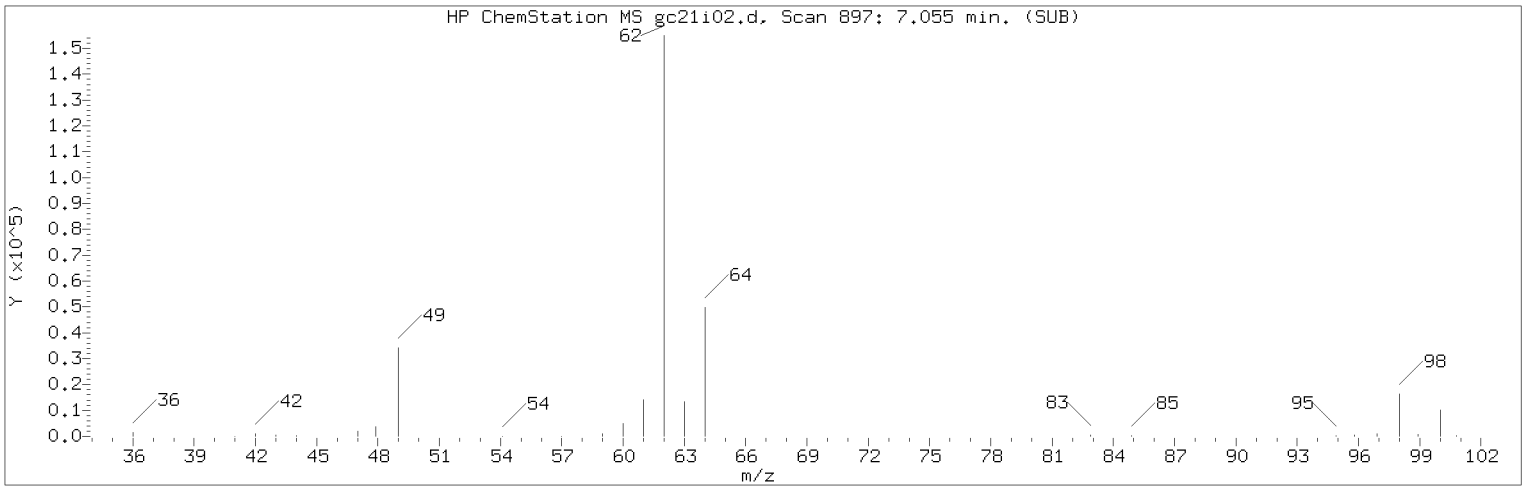
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

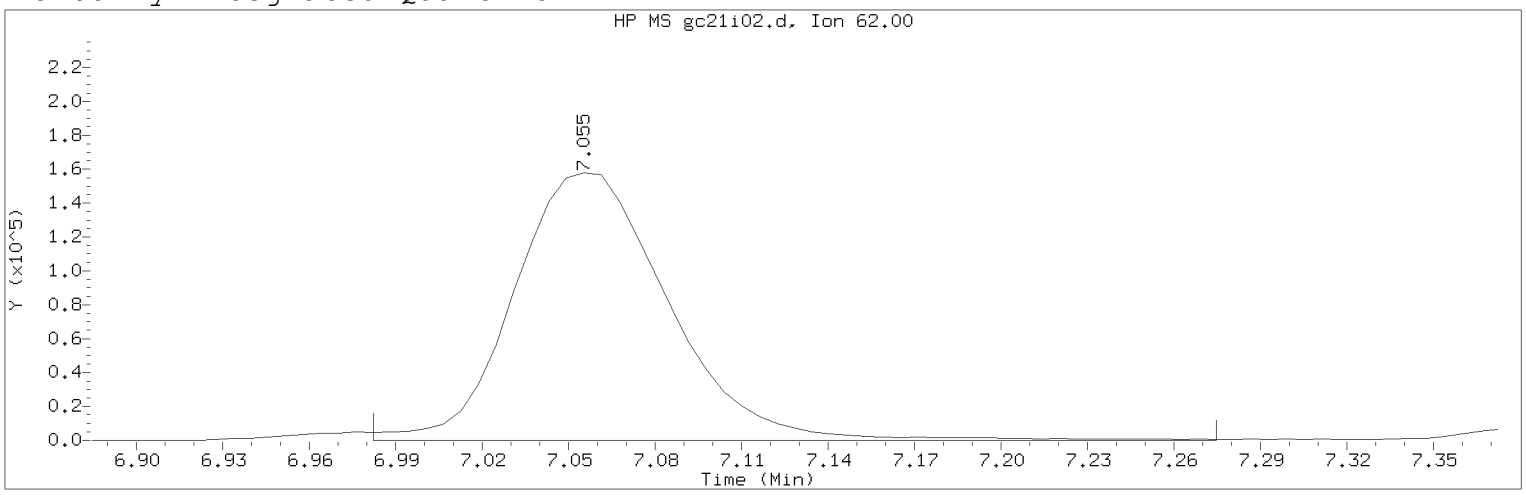
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 730
Retention Time (minutes): 6.037
Quant Ion : 67.00
Area : 1578254
On-column Amount (ng) : 107.8178
Integration start scan : 717 Integration stop scan: 787
Y at integration start : 0 Y at integration end: 1703

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

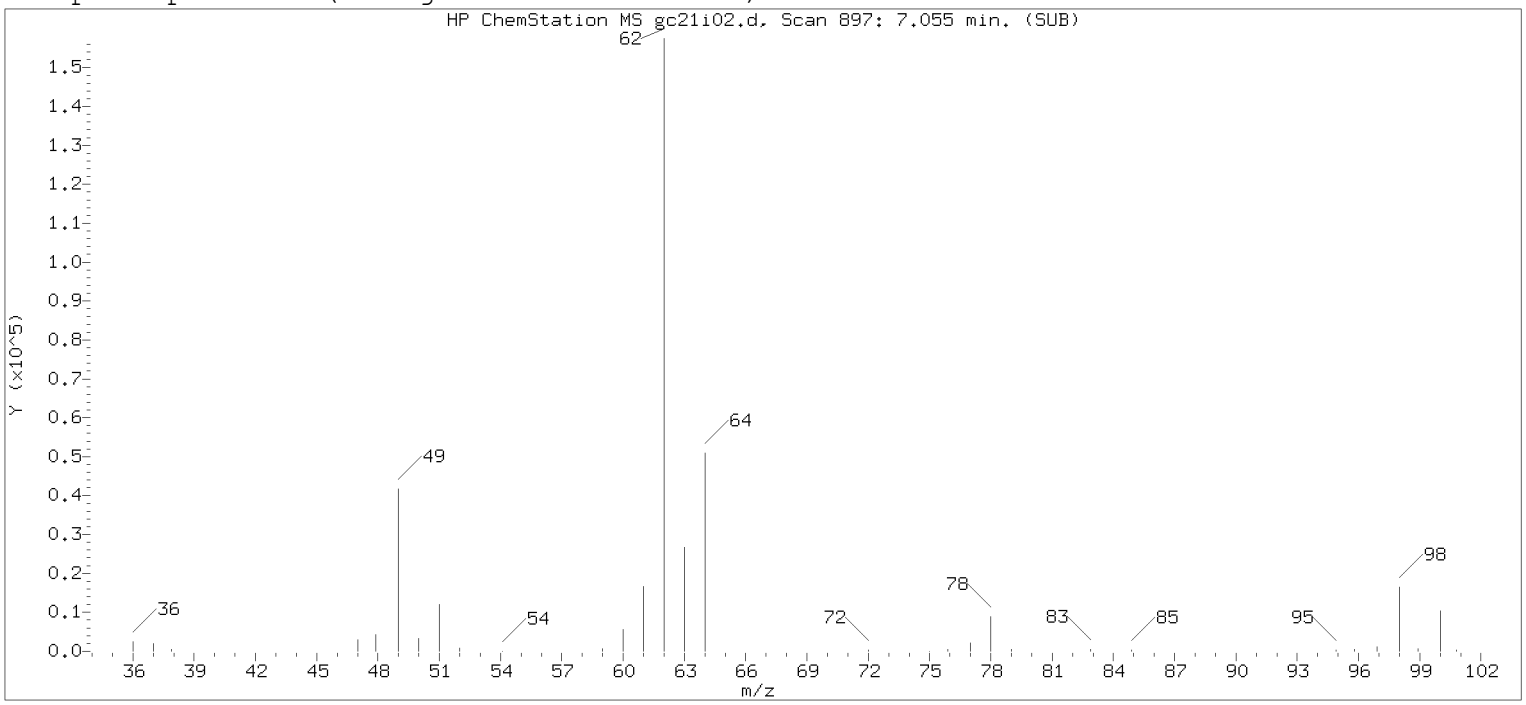
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 897
Retention Time (minutes): 7.055
Quant Ion : 62.00
Area (flag) : 587253M
On-Column Amount (ng) : 9.8772
Integration start scan : 884 Integration stop scan: 932
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

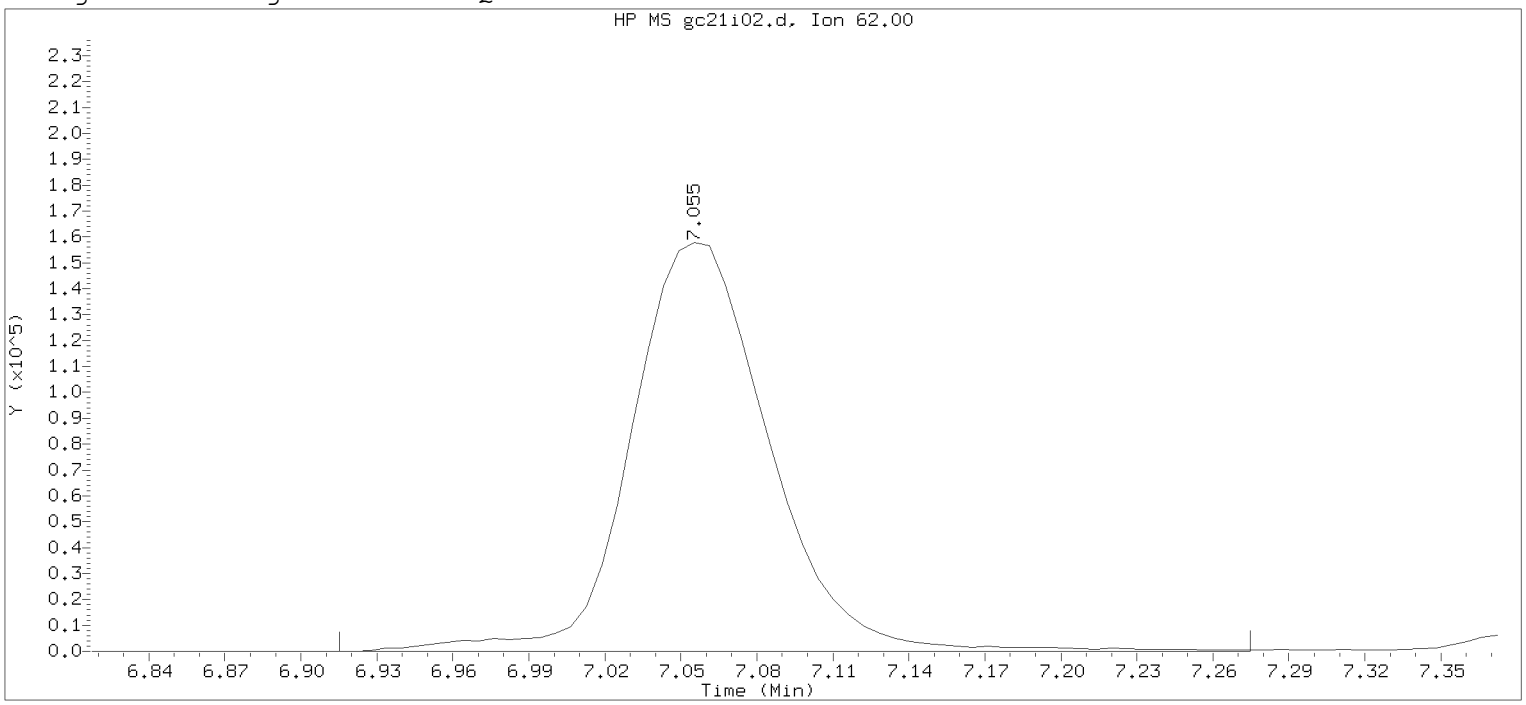
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

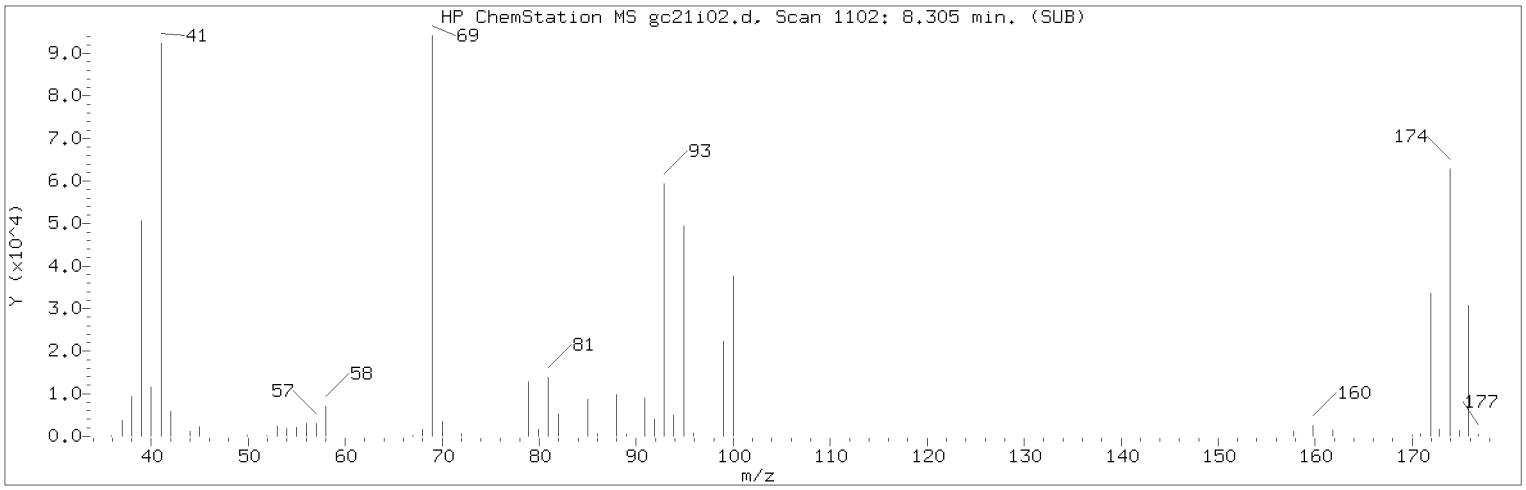
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

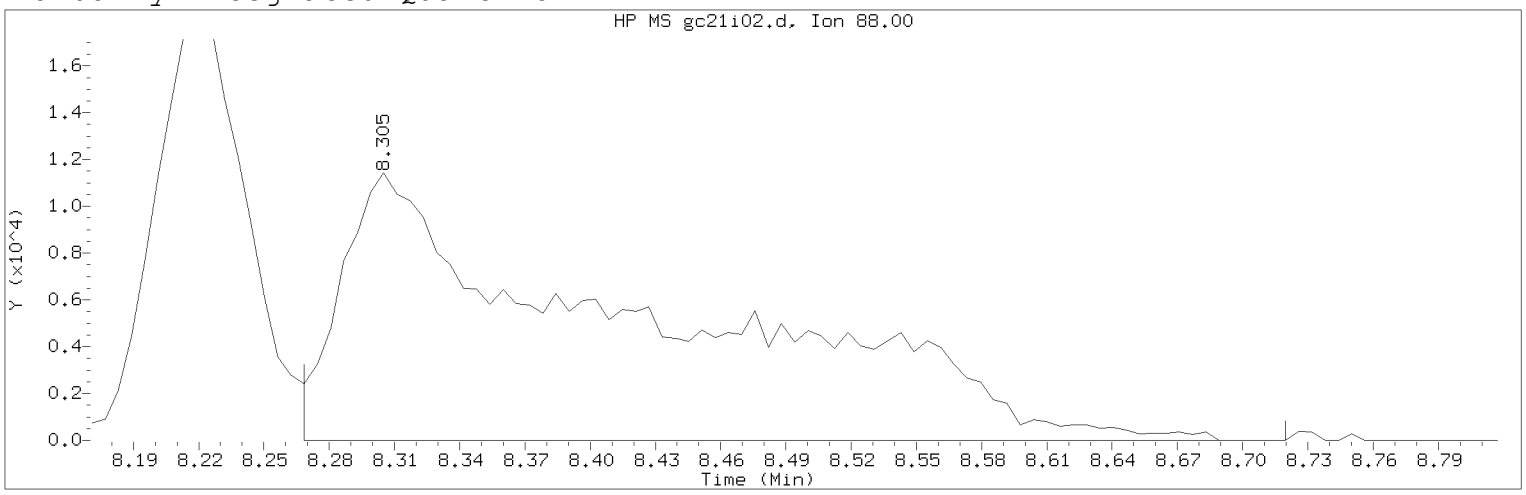
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 897
Retention Time (minutes): 7.055
Quant Ion : 62.00
Area : 595921
On-column Amount (ng) : 9.1421
Integration start scan : 873 Integration stop scan: 932
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

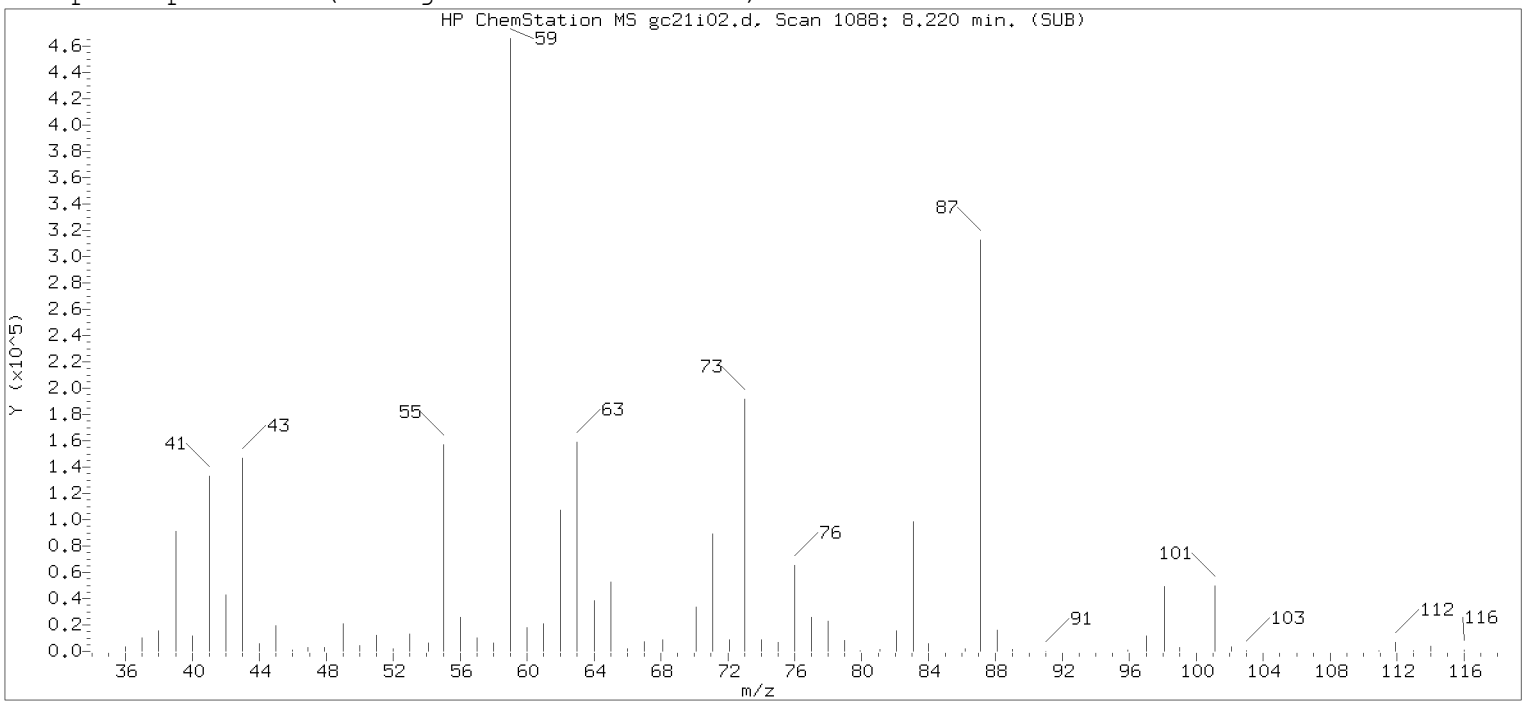
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1102
Retention Time (minutes): 8.305
Quant Ion : 88.00
Area (flag) : 109242M
On-Column Amount (ng) : 518.3074
Integration start scan : 1095 Integration stop scan: 1169
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

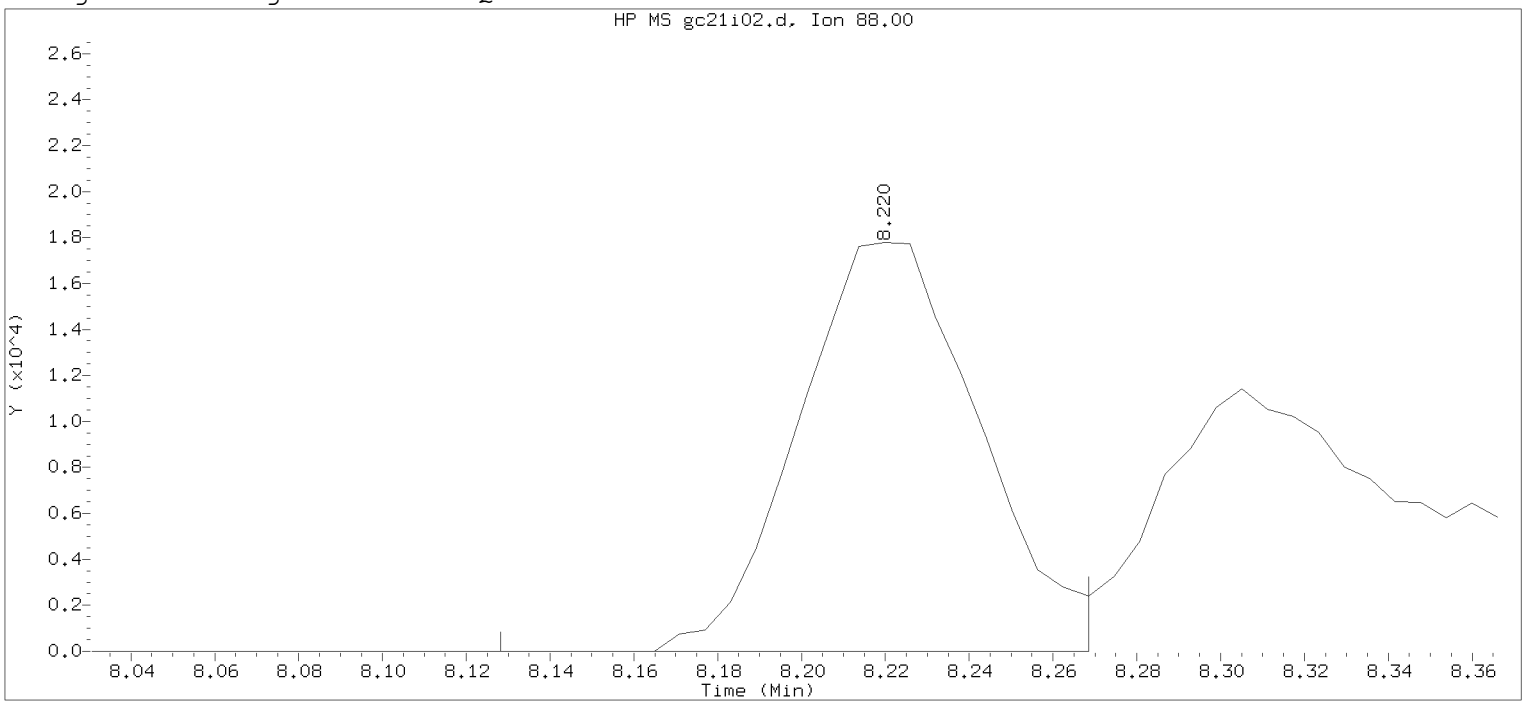
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

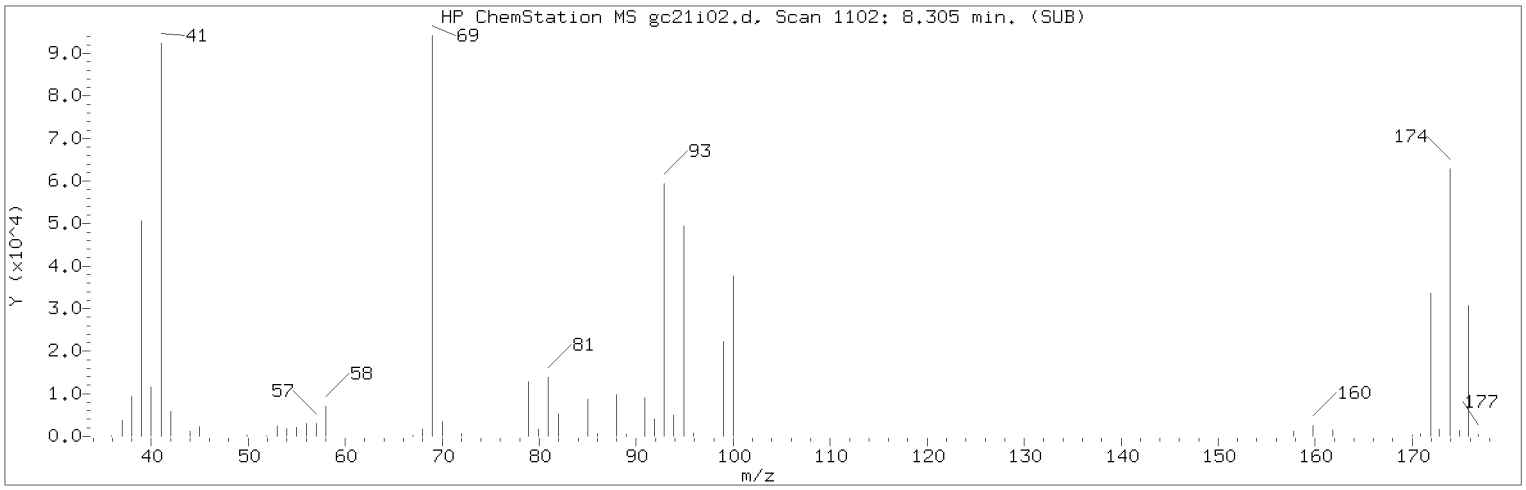
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

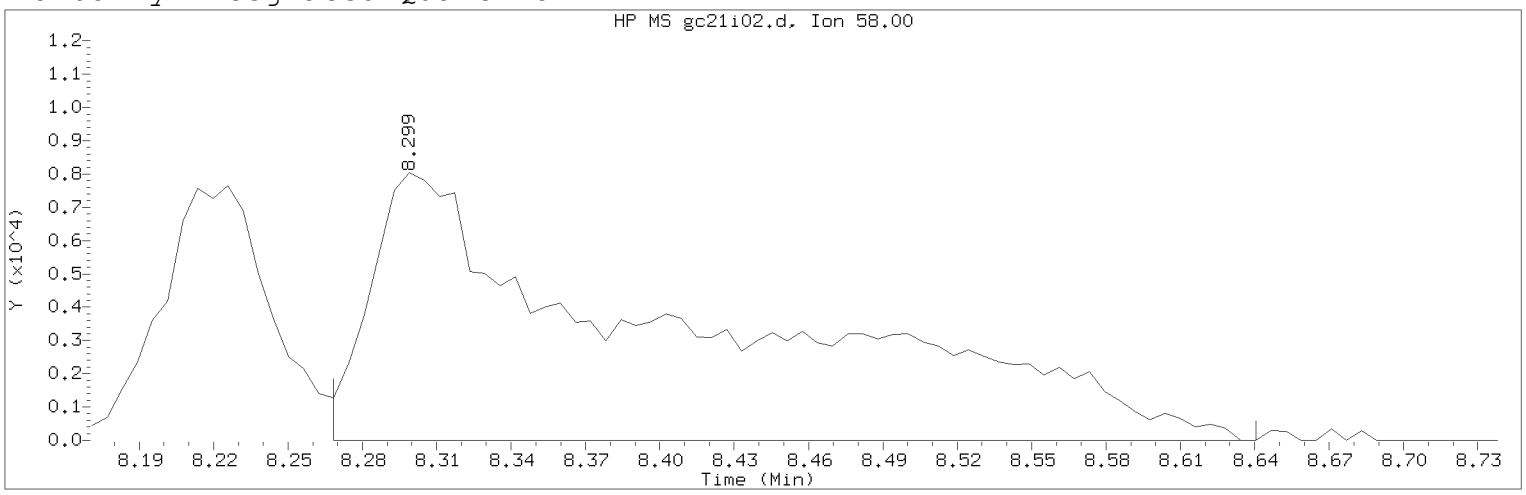
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 88.00		
Area	: 52901		
On-column Amount (ng)	: 317.7541		
Integration start scan	: 1072	Integration stop scan:	1095
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

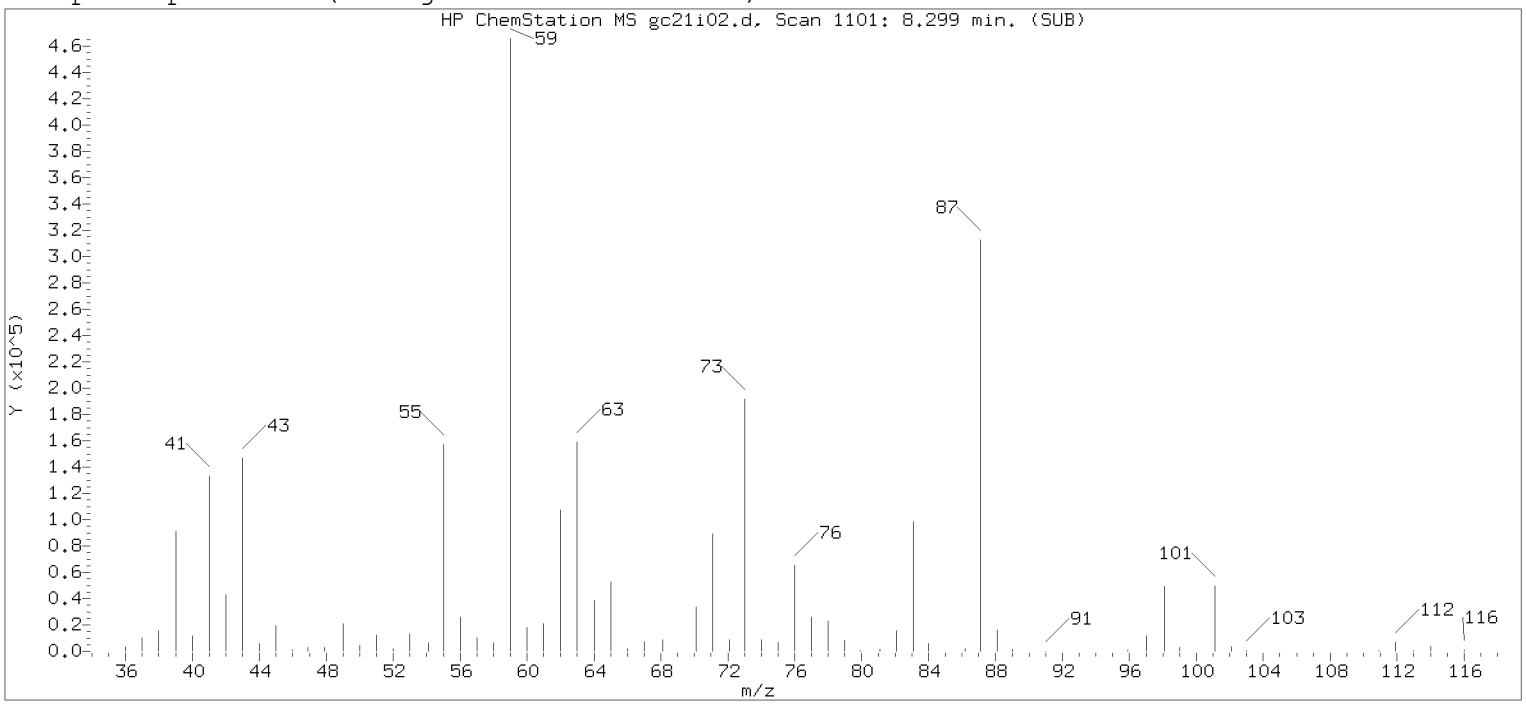
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1101
Retention Time (minutes): 8.299
Quant Ion : 58.00
Area (flag) : 70475M
On-Column Amount (ng) : 604.9595
Integration start scan : 1095 Integration stop scan: 1156
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

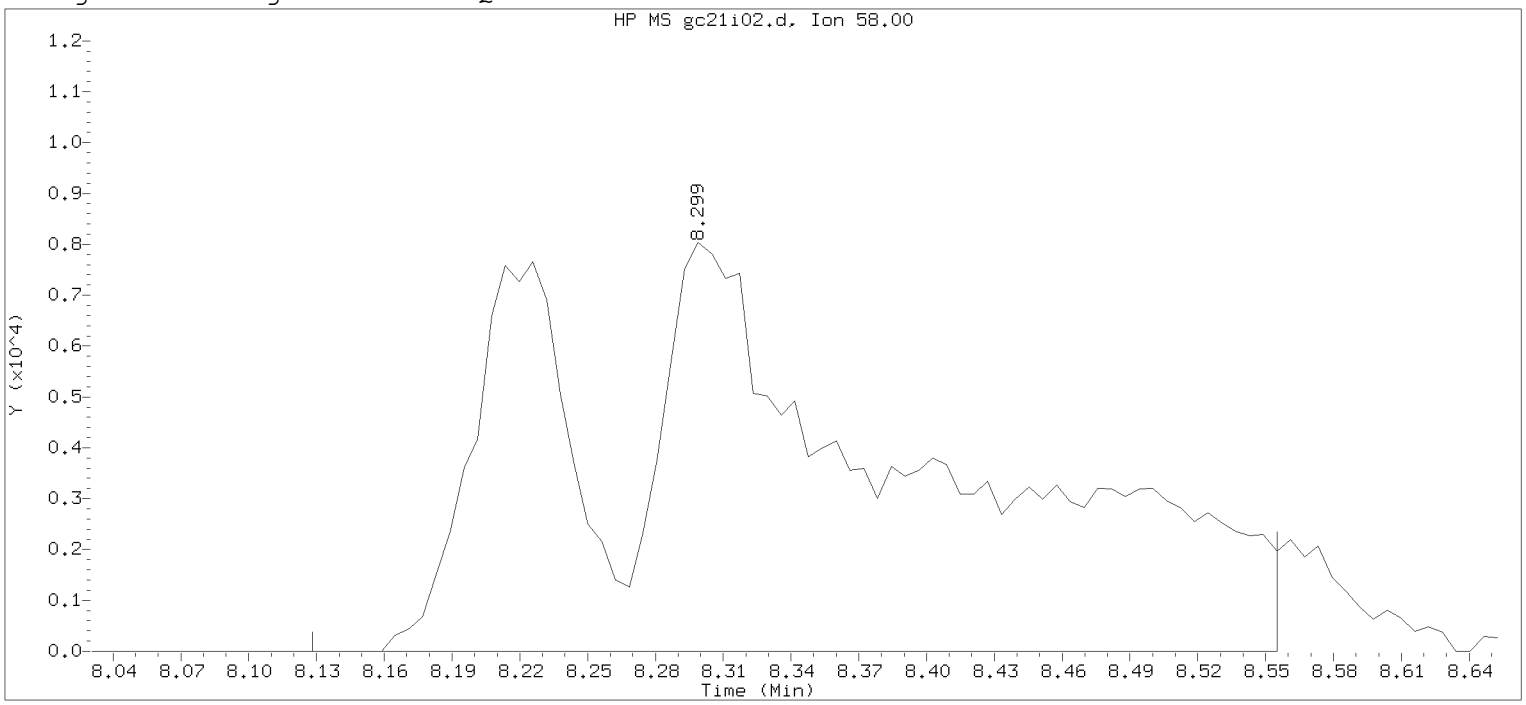
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

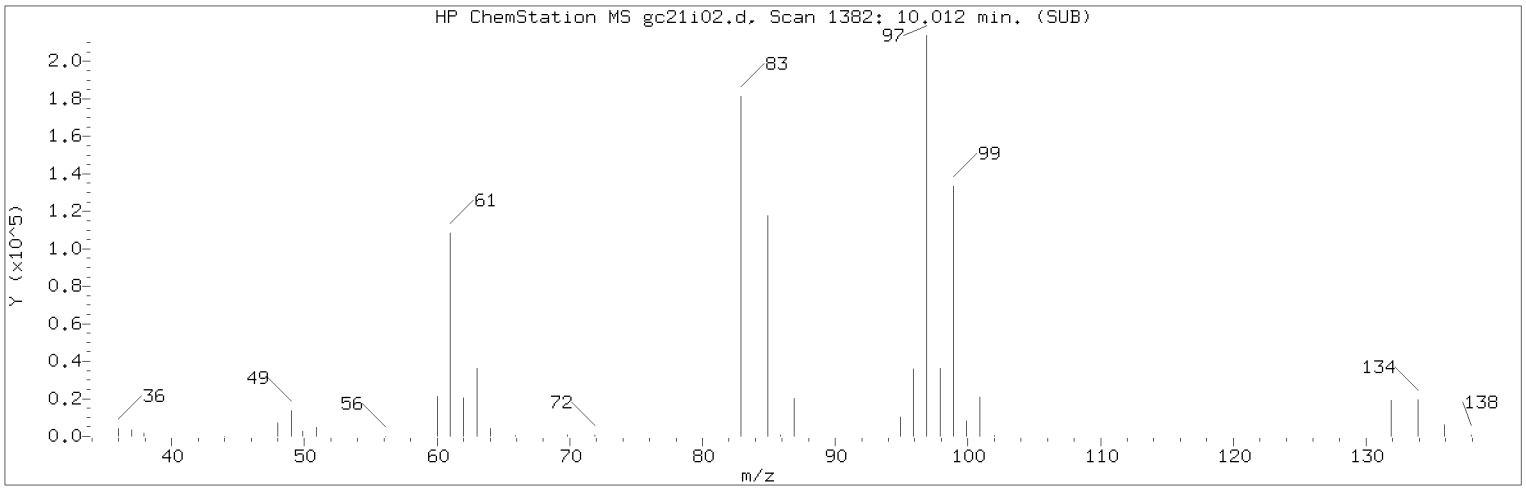
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

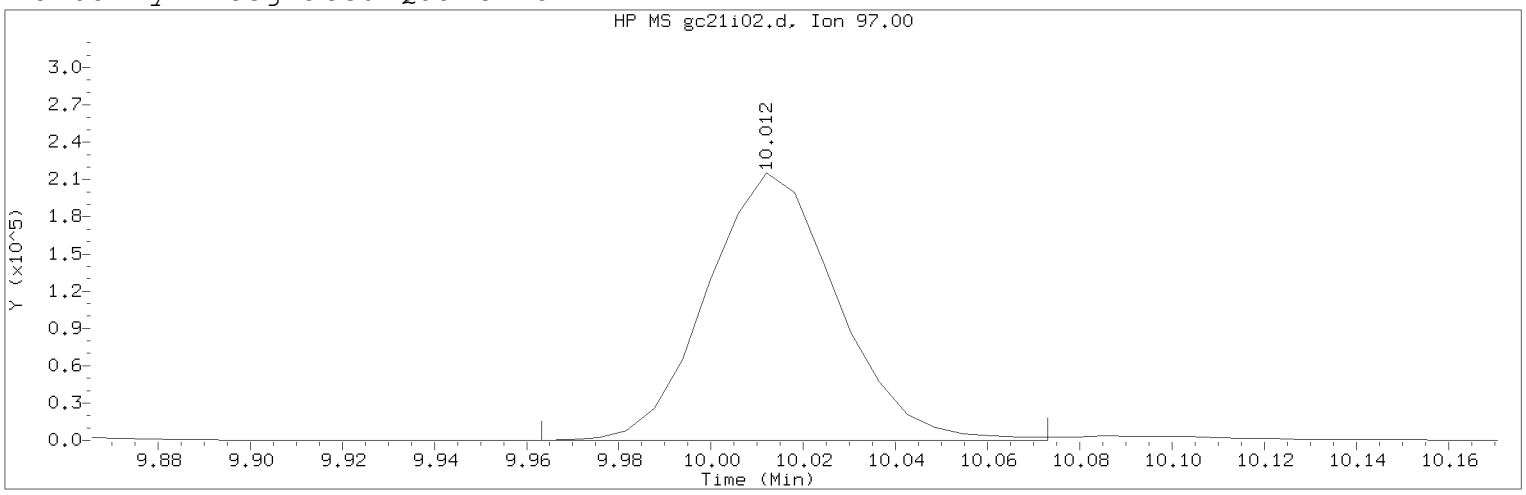
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1101		
Retention Time (minutes)	: 8.299		
Quant Ion	: 58.00		
Area	: 88742		
On-column Amount (ng)	: 652.6081		
Integration start scan	: 1072	Integration stop scan:	1142
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

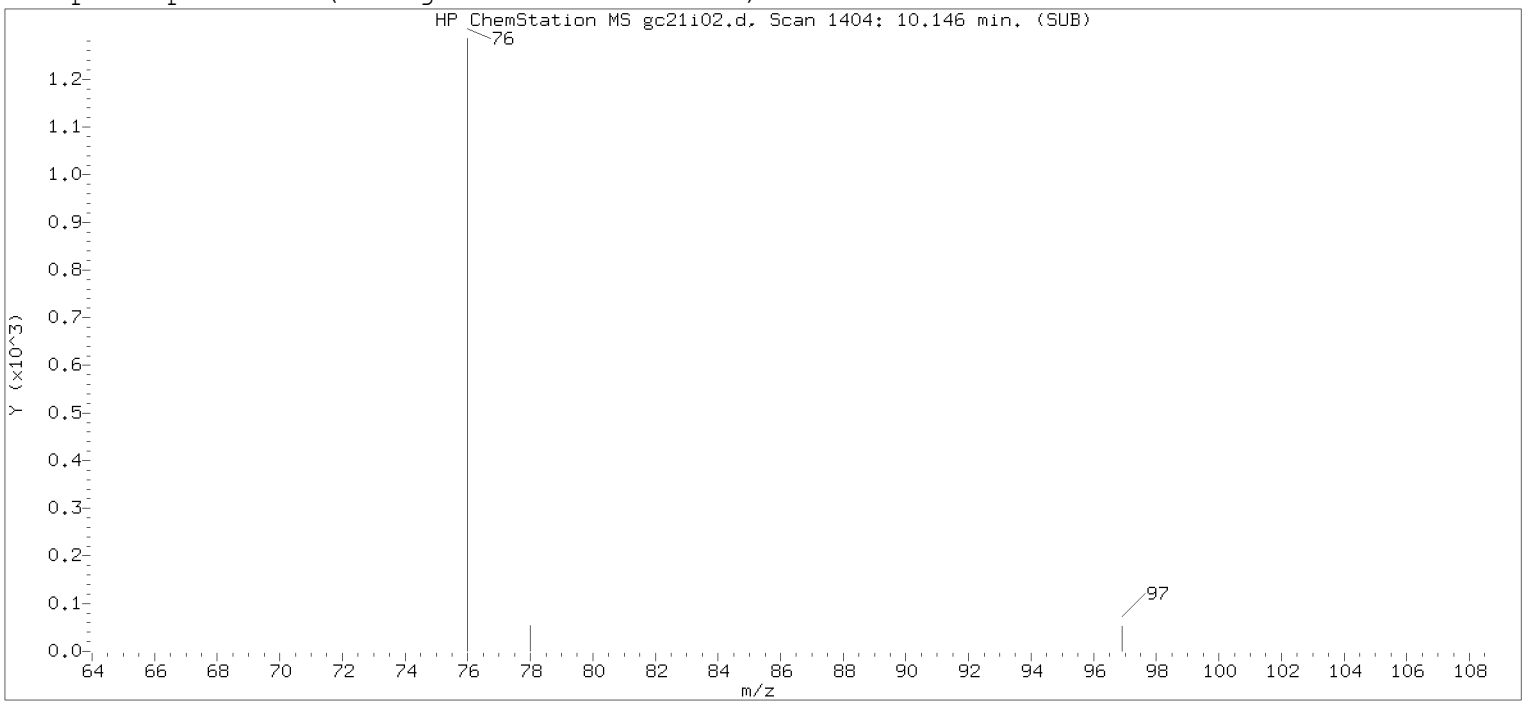
Compound Number : 88
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1382
Retention Time (minutes): 10.012
Quant Ion : 97.00
Area (flag) : 420330A
On-Column Amount (ng) : 10.3352
Integration start scan : 1373 Integration stop scan: 1391
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

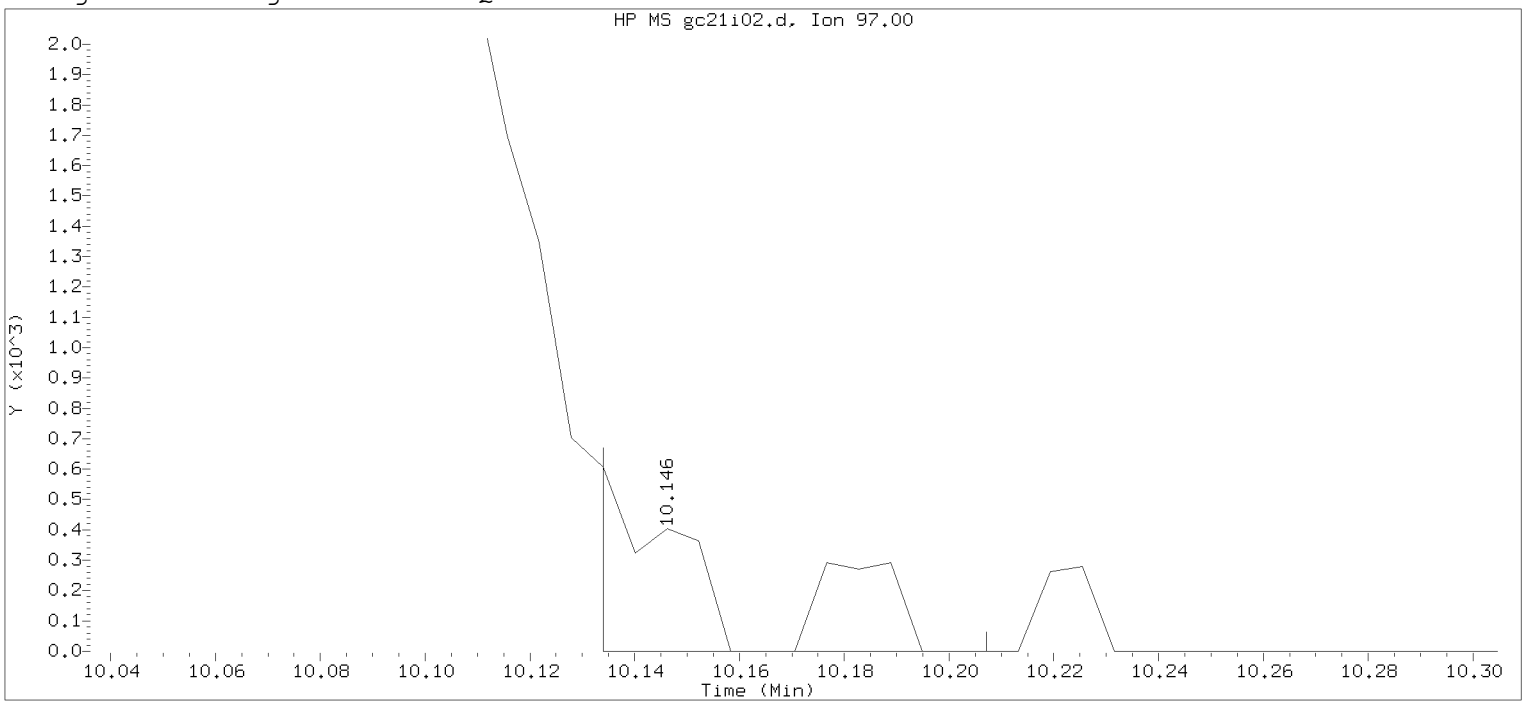
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

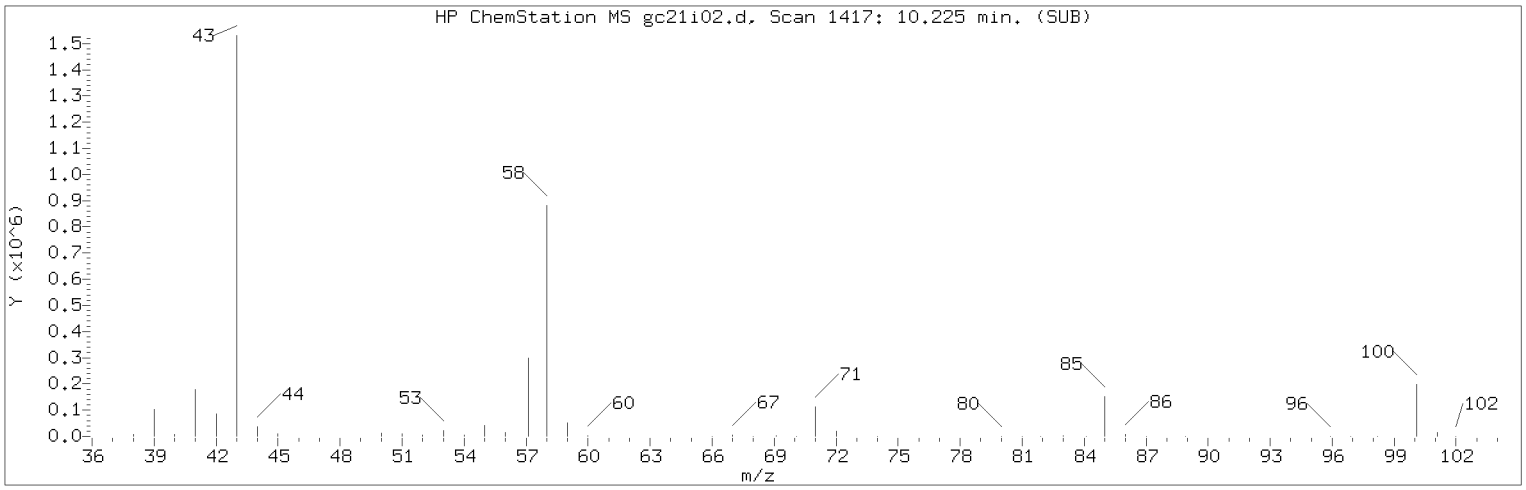
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

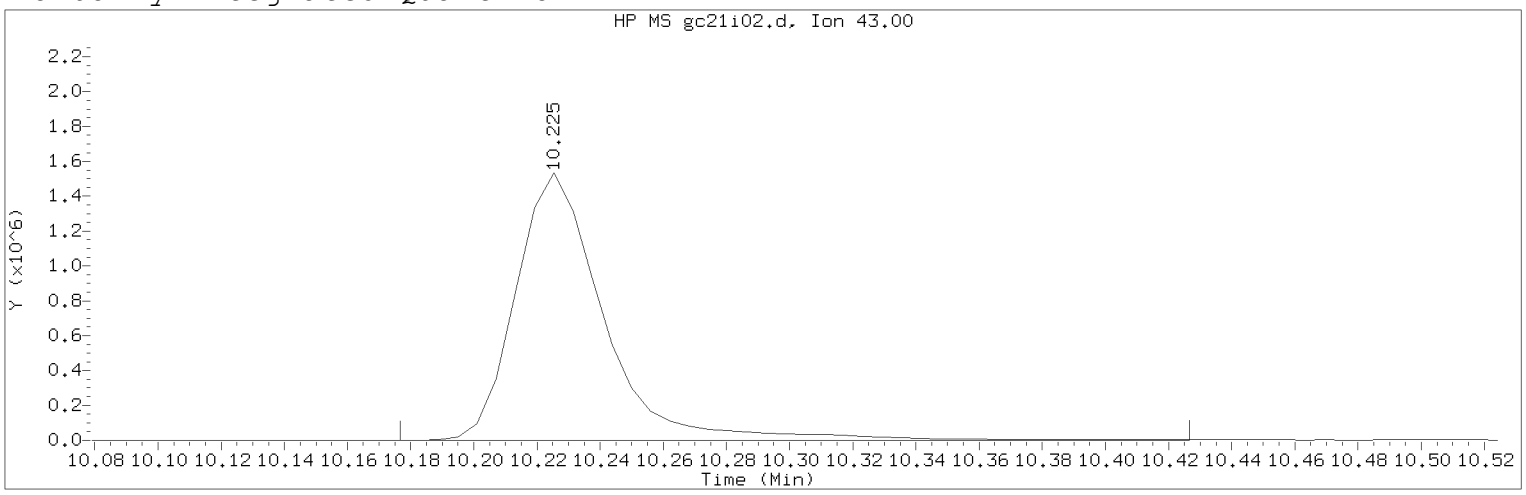
Compound Number : 88
Compound Name : 1,1,2-Trichloroethane
Scan Number : 1404
Retention Time (minutes): 10.146
Quant Ion : 97.00
Area : 821
On-column Amount (ng) : 0.1097
Integration start scan : 1401 Integration stop scan: 1413
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkhowe175

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

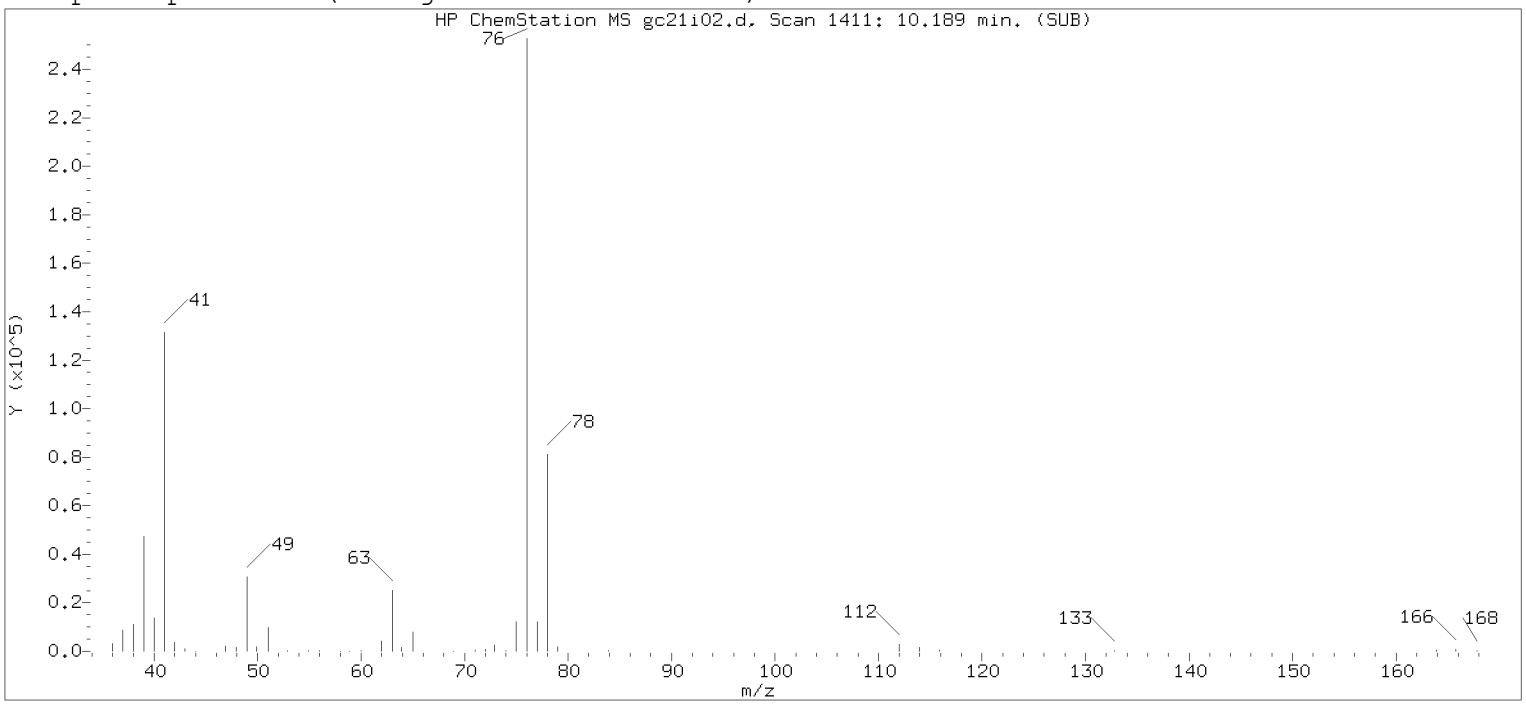
Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1417
Retention Time (minutes): 10.225
Quant Ion : 43.00
Area (flag) : 2961934M
On-Column Amount (ng) : 96.5669
Integration start scan : 1408 Integration stop scan: 1449
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

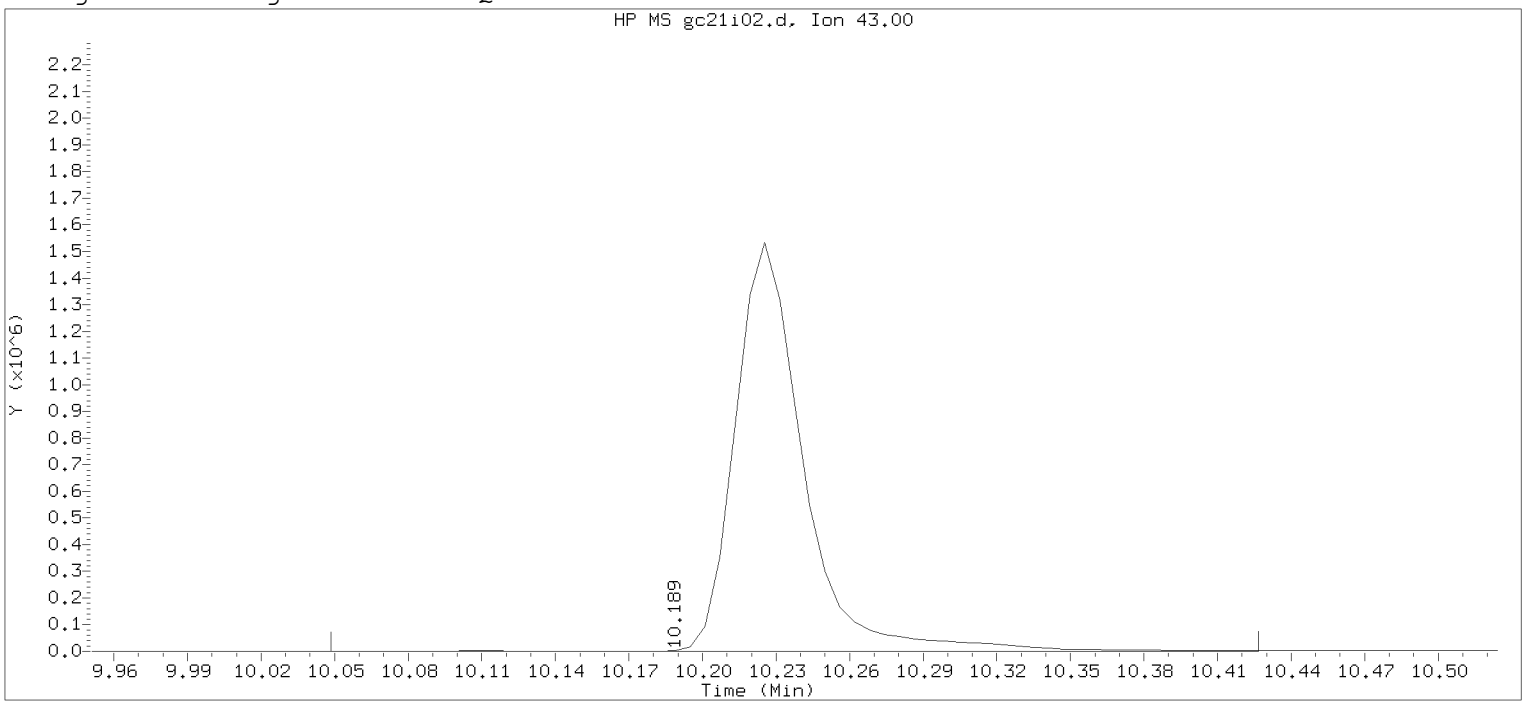
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

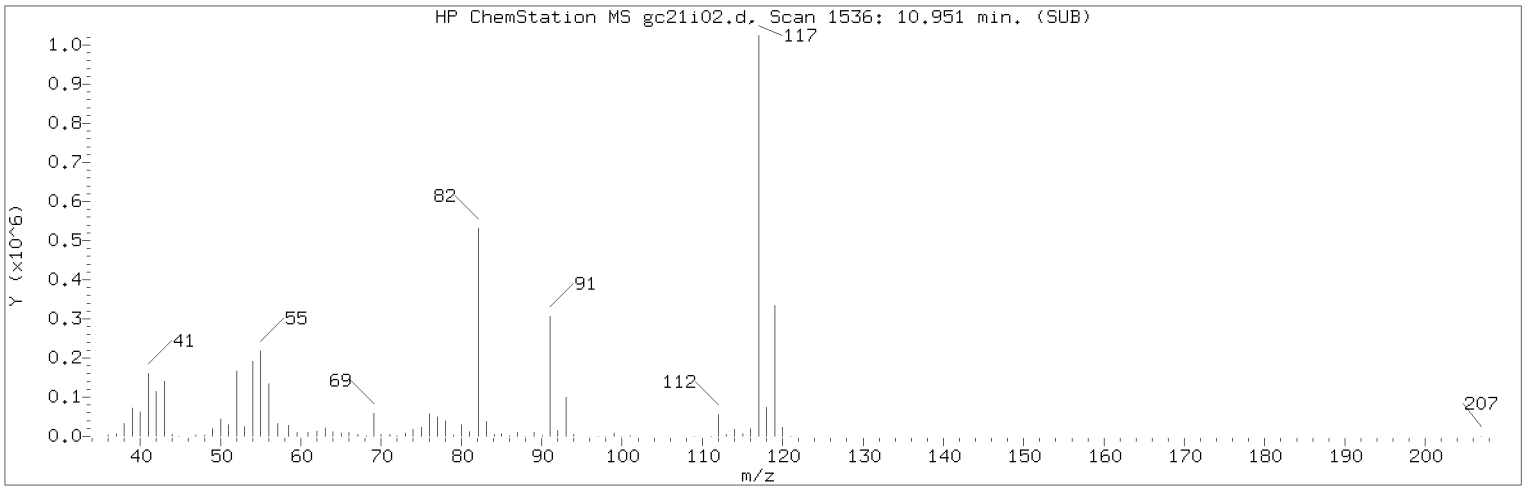
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

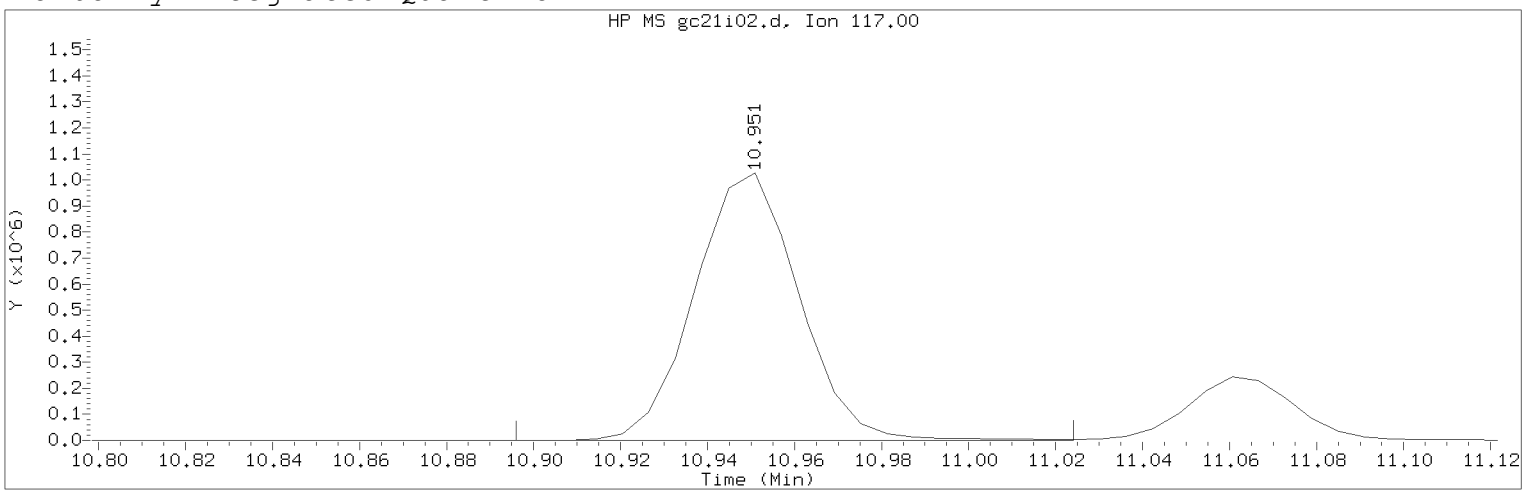
Compound Number	: 91		
Compound Name	: 2-Hexanone		
Scan Number	: 1411		
Retention Time (minutes)	: 10.189		
Quant Ion	: 43.00		
Area	: 2954552		
On-column Amount (ng)	: 111.7585		
Integration start scan	: 1387	Integration stop scan:	1449
Y at integration start	: 623	Y at integration end:	623

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe177

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

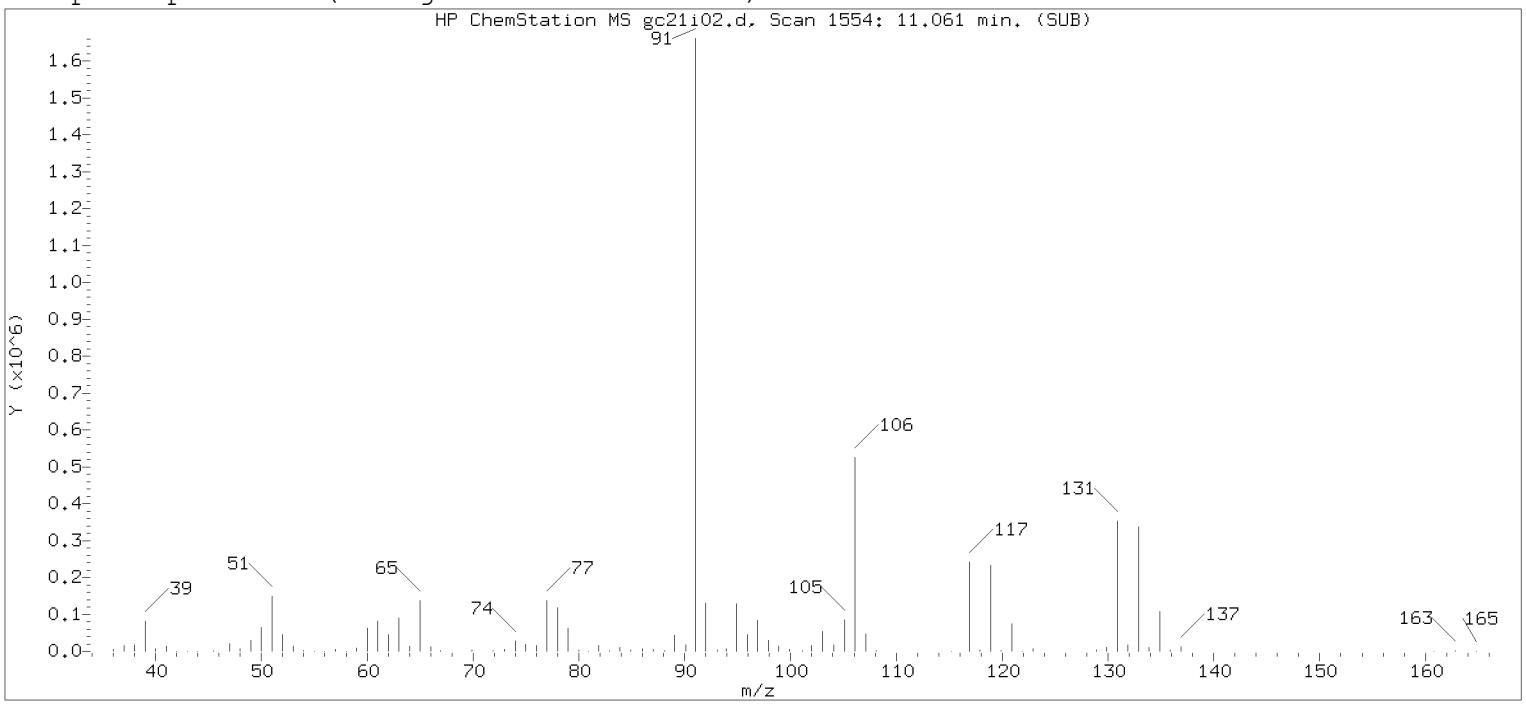
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1707464A
On-Column Amount (ng) : 10.0000
Integration start scan : 1526 Integration stop scan: 1547
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

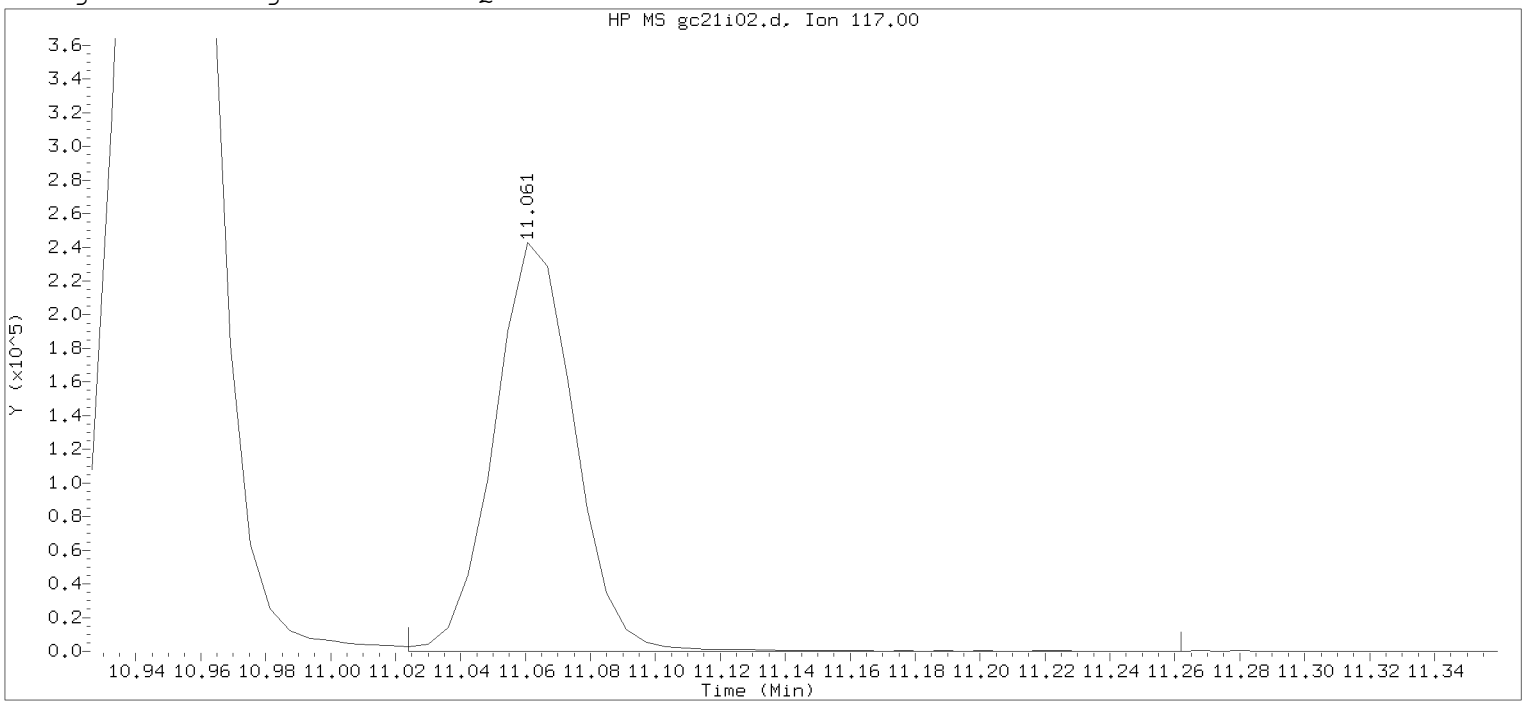
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

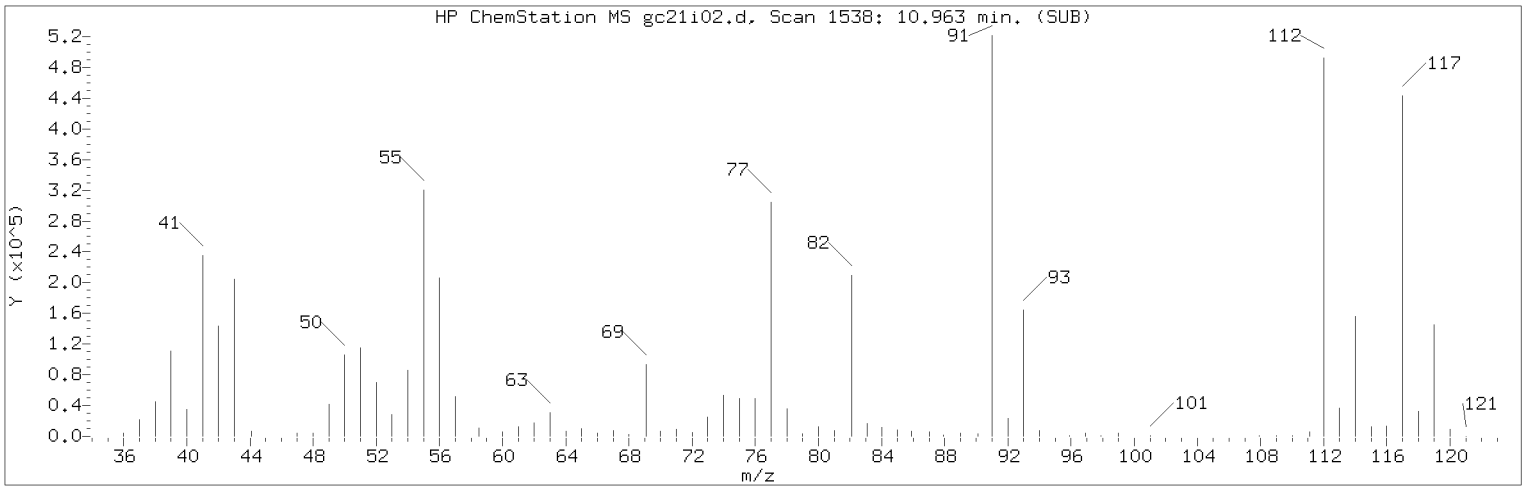
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

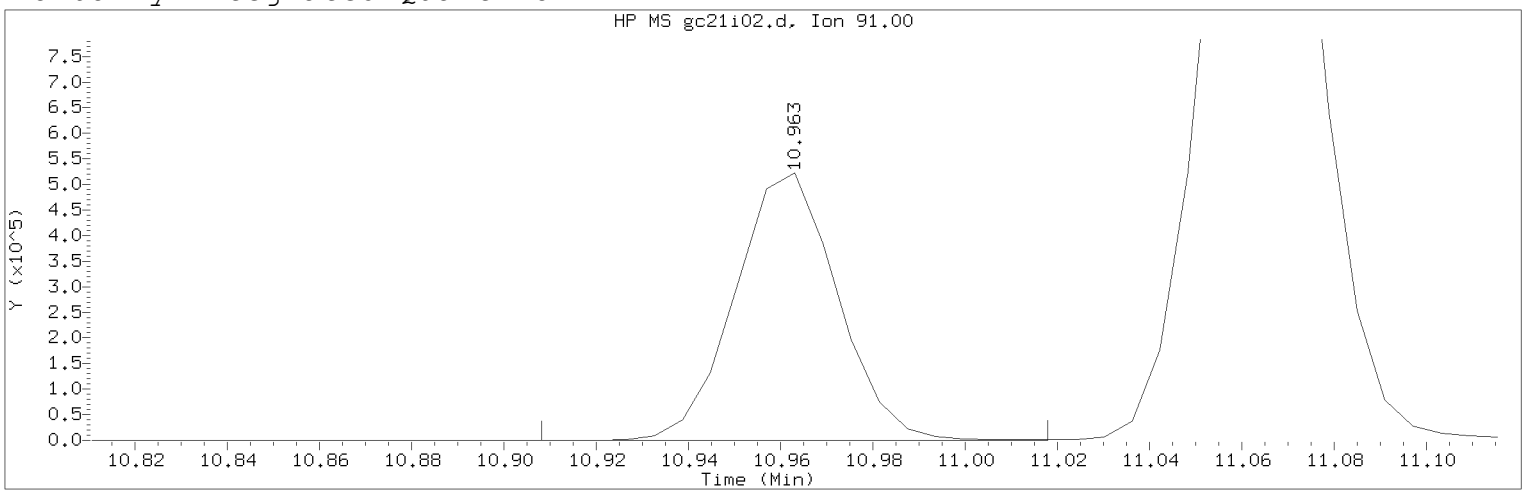
Compound Number	: 97		
Compound Name	: Chlorobenzene-d5		
Scan Number	: 1554		
Retention Time (minutes)	: 11.061		
Quant Ion	: 117.00		
Area	: 417817		
On-column Amount (ng)	: 10.0000		
Integration start scan	: 1547	Integration stop scan:	1586
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

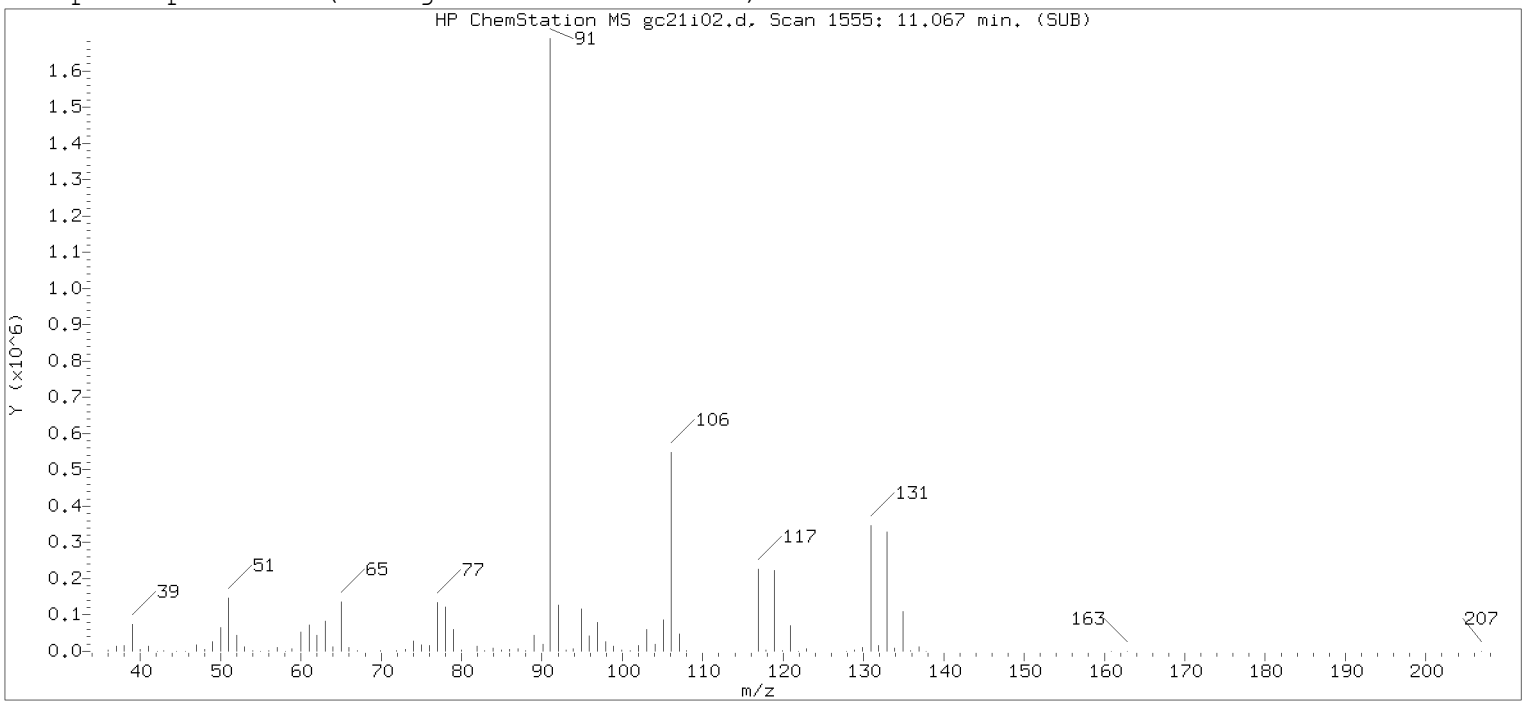
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 805122MA
On-Column Amount (ng) : 9.8946
Integration start scan : 1528 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

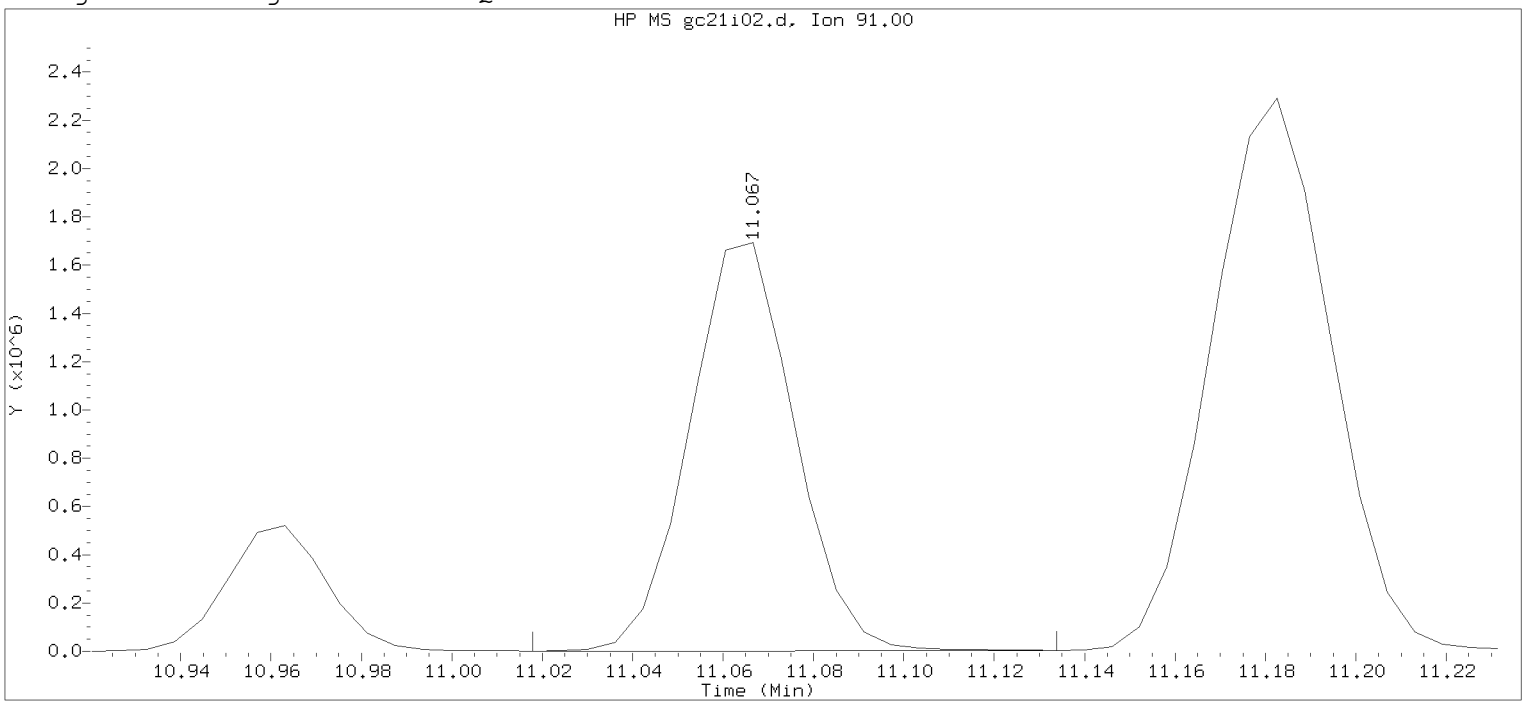
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

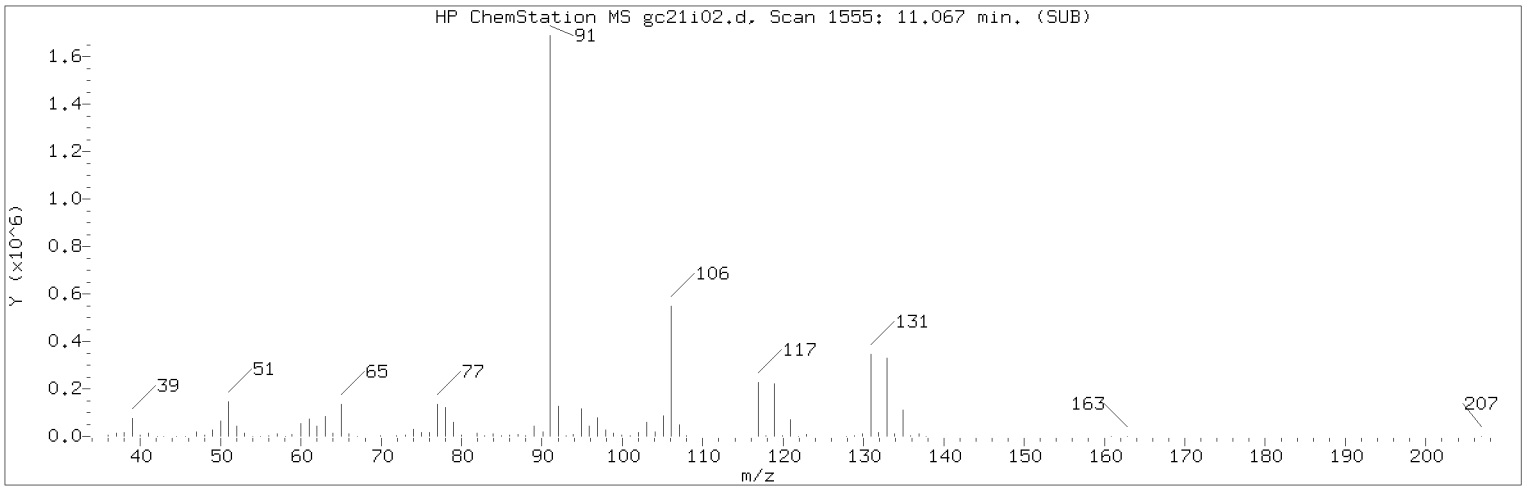
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

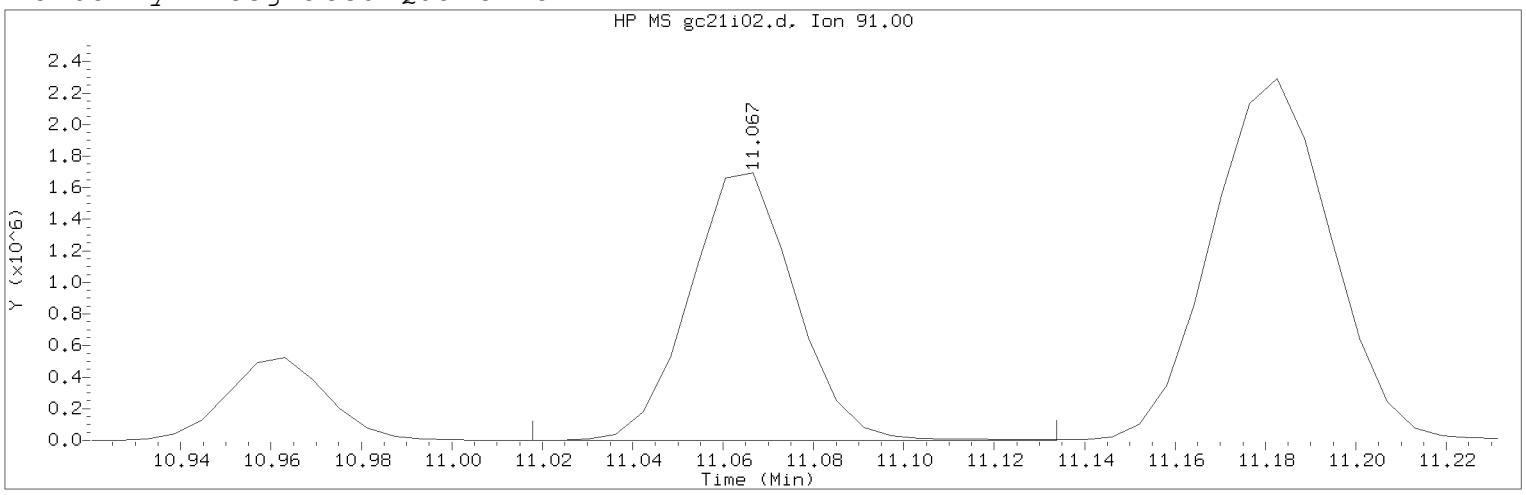
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 2729992
On-column Amount (ng) : 39.1521
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 1174 Y at integration end: 1818

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Target 3.5 esignature user ID: jkhowe01

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

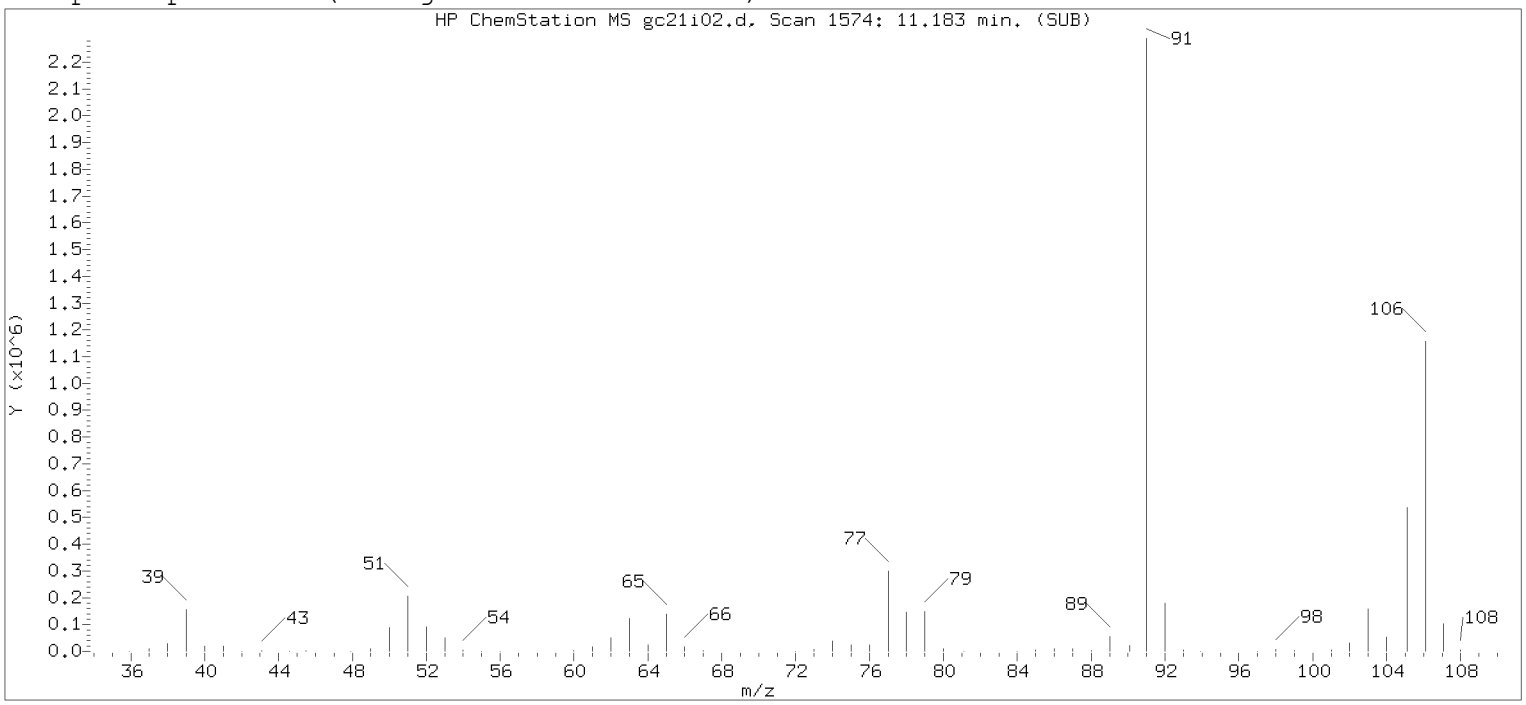
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 2732530MA
On-Column Amount (ng) : 10.2429
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 1196 Y at integration end: 1196

Reason for manual integration: improper integration

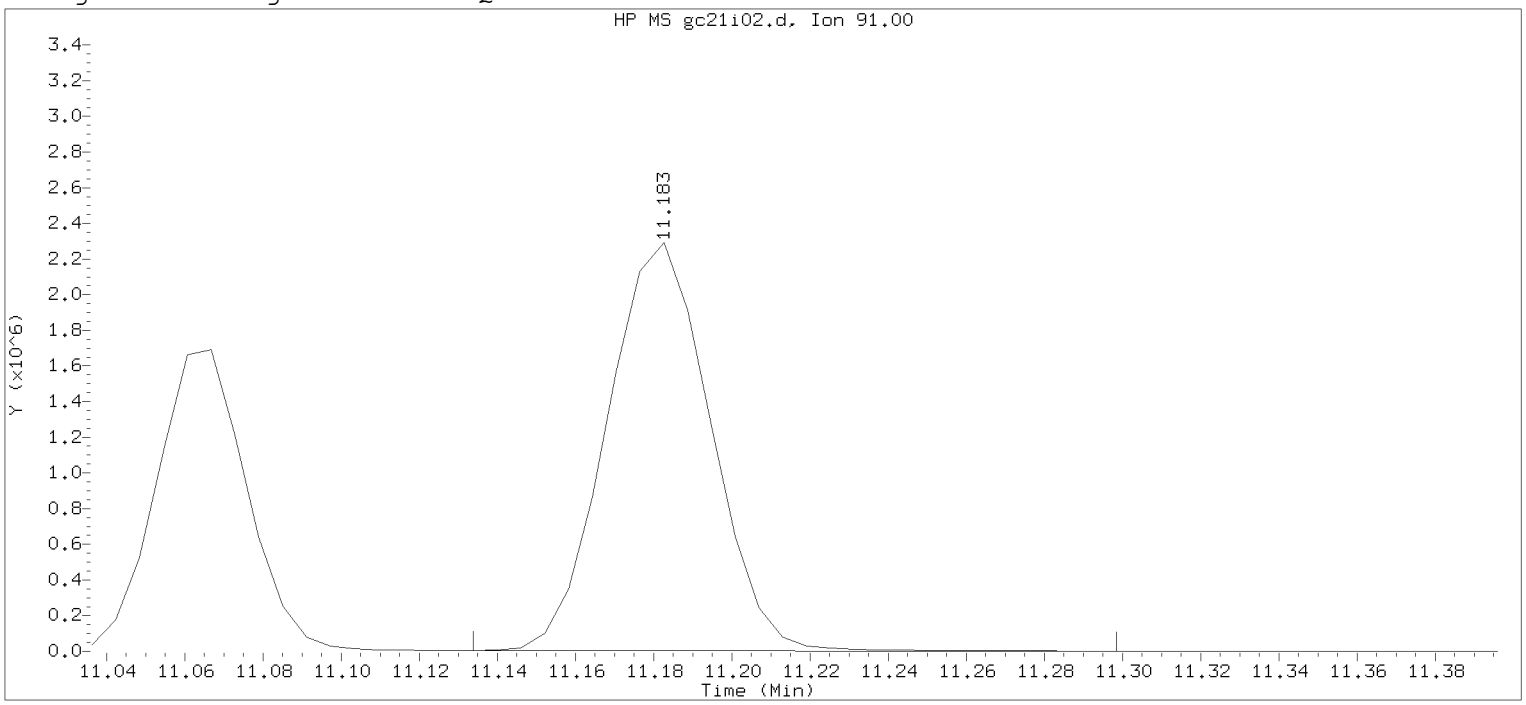
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

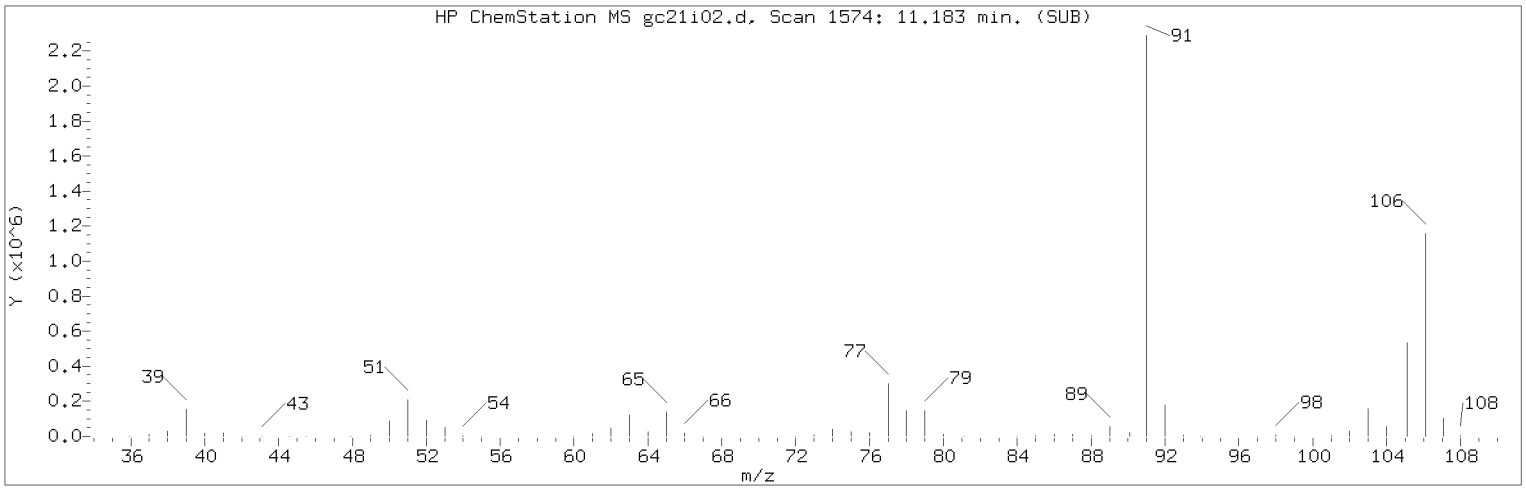
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

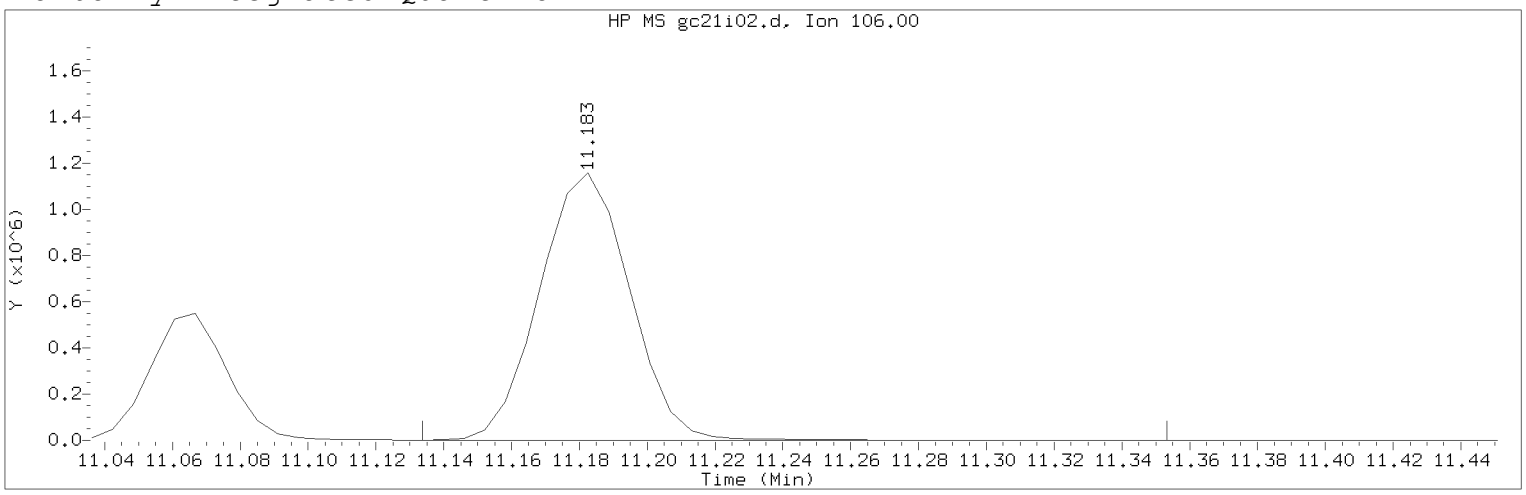
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1574
Retention Time (minutes): 11.183
Quant Ion : 91.00
Area : 4214061
On-column Amount (ng) : 31.4552
Integration start scan : 1565 Integration stop scan: 1592
Y at integration start : 1928 Y at integration end: 1283

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

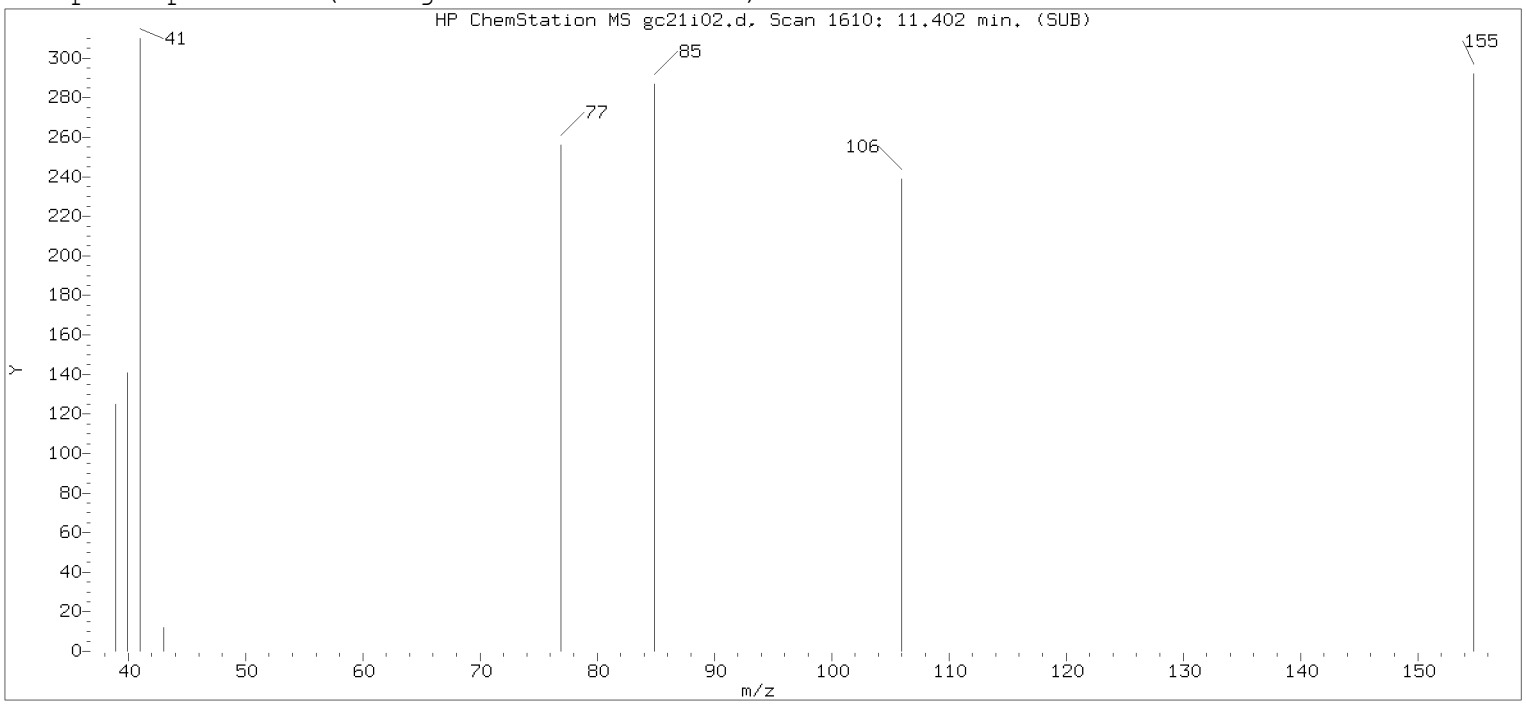
Compound Number : 101
Compound Name : m+p-Xylene
Scan Number : 1574
Retention Time (minutes): 11.183
Quant Ion : 106.00
Area (flag) : 2141932MA
On-Column Amount (ng) : 20.6956
Integration start scan : 1565 Integration stop scan: 1601
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

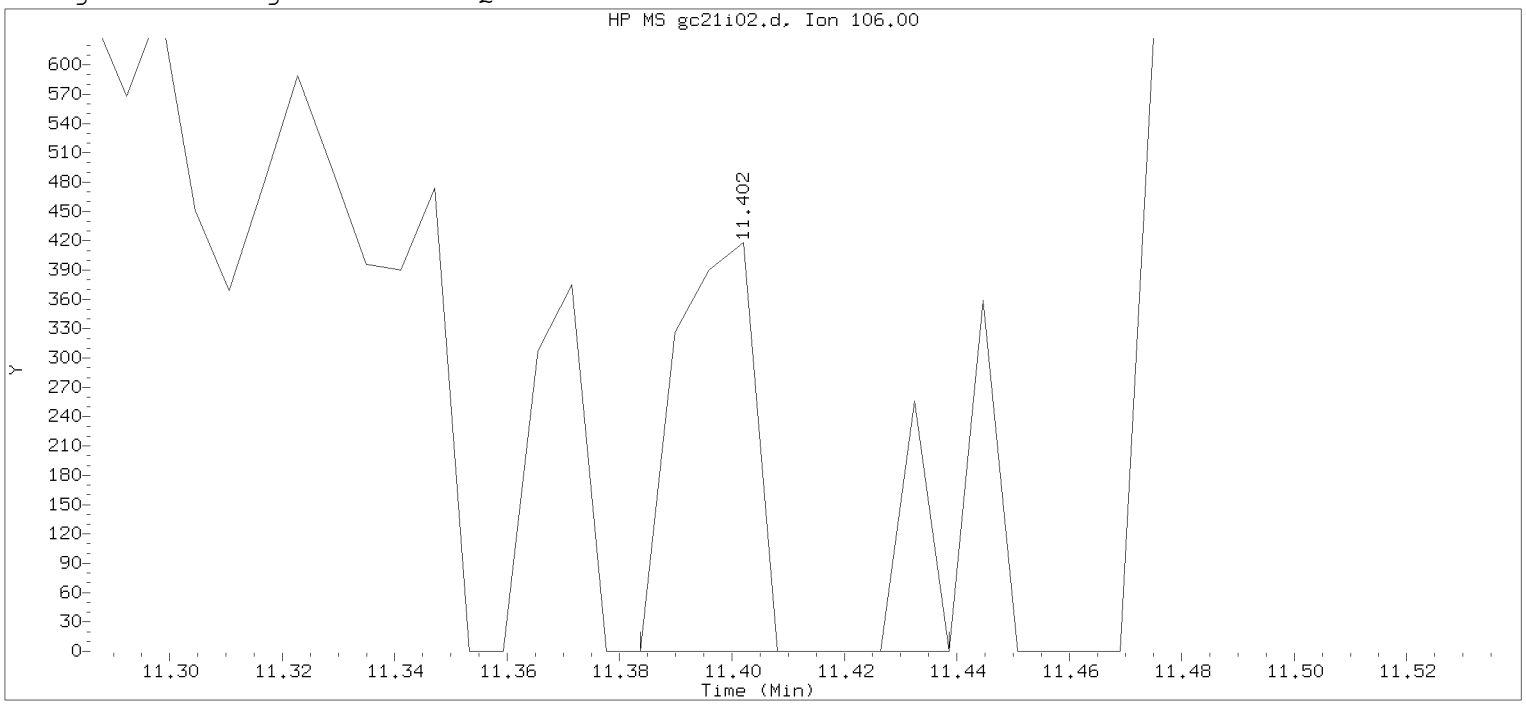
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

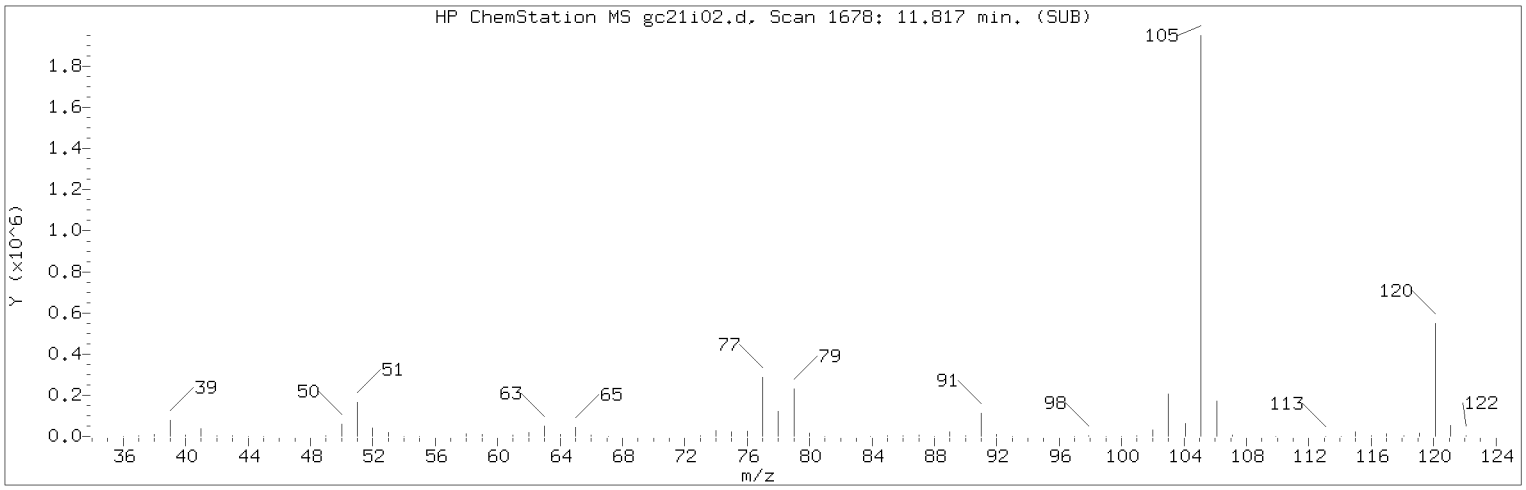
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Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

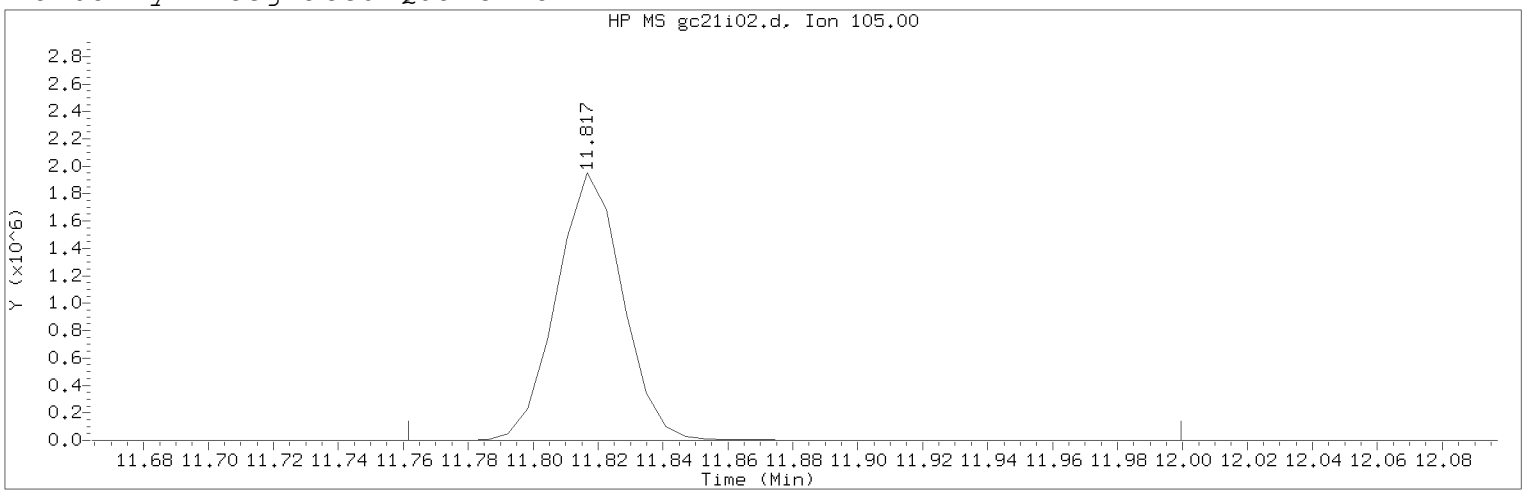
Compound Number : 101
Compound Name : m+p-Xylene
Scan Number : 1610
Retention Time (minutes): 11.402
Quant Ion : 106.00
Area : 508
On-column Amount (ng) : 0.0199
Integration start scan : 1606 Integration stop scan: 1615
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

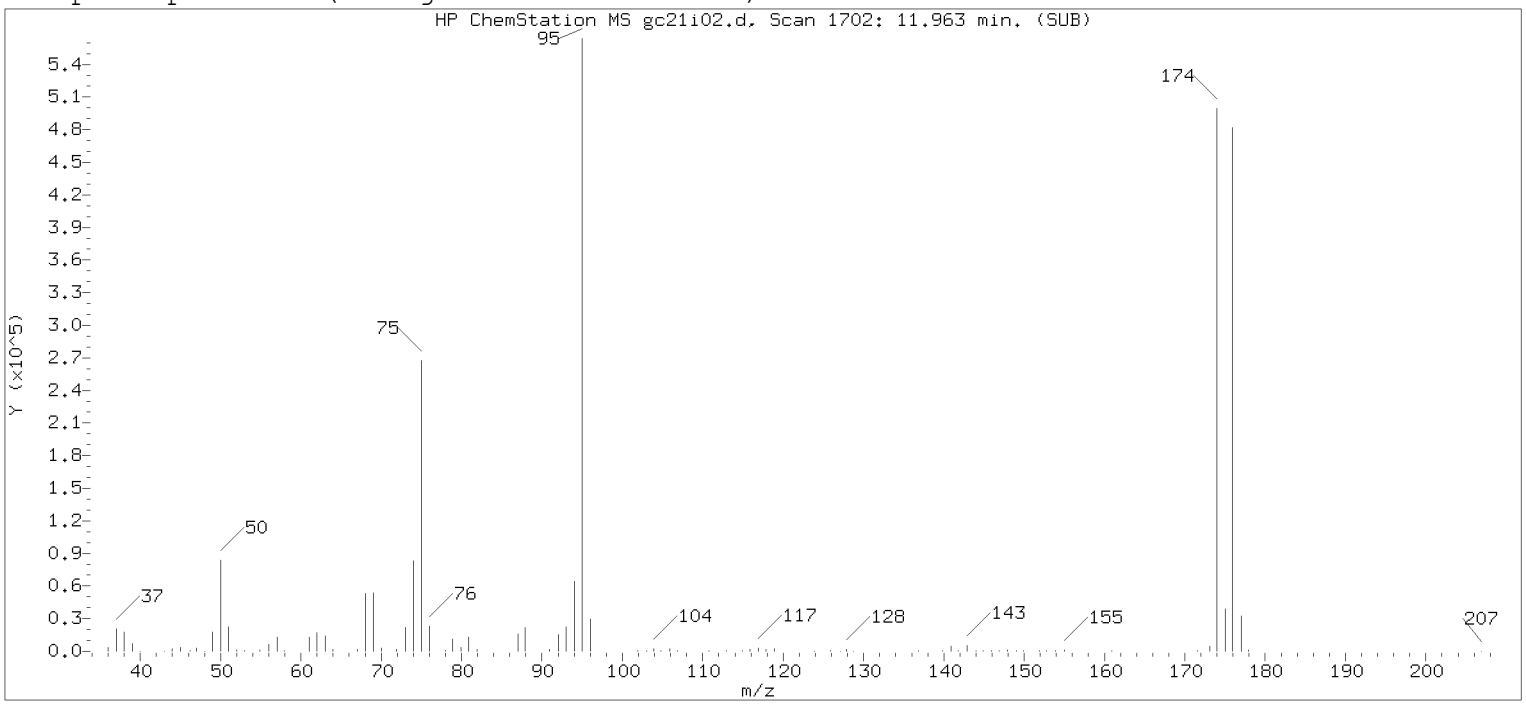
Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1678
Retention Time (minutes): 11.817
Quant Ion : 105.00
Area (flag) : 2772777MA
On-Column Amount (ng) : 10.3990
Integration start scan : 1668 Integration stop scan: 1707
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

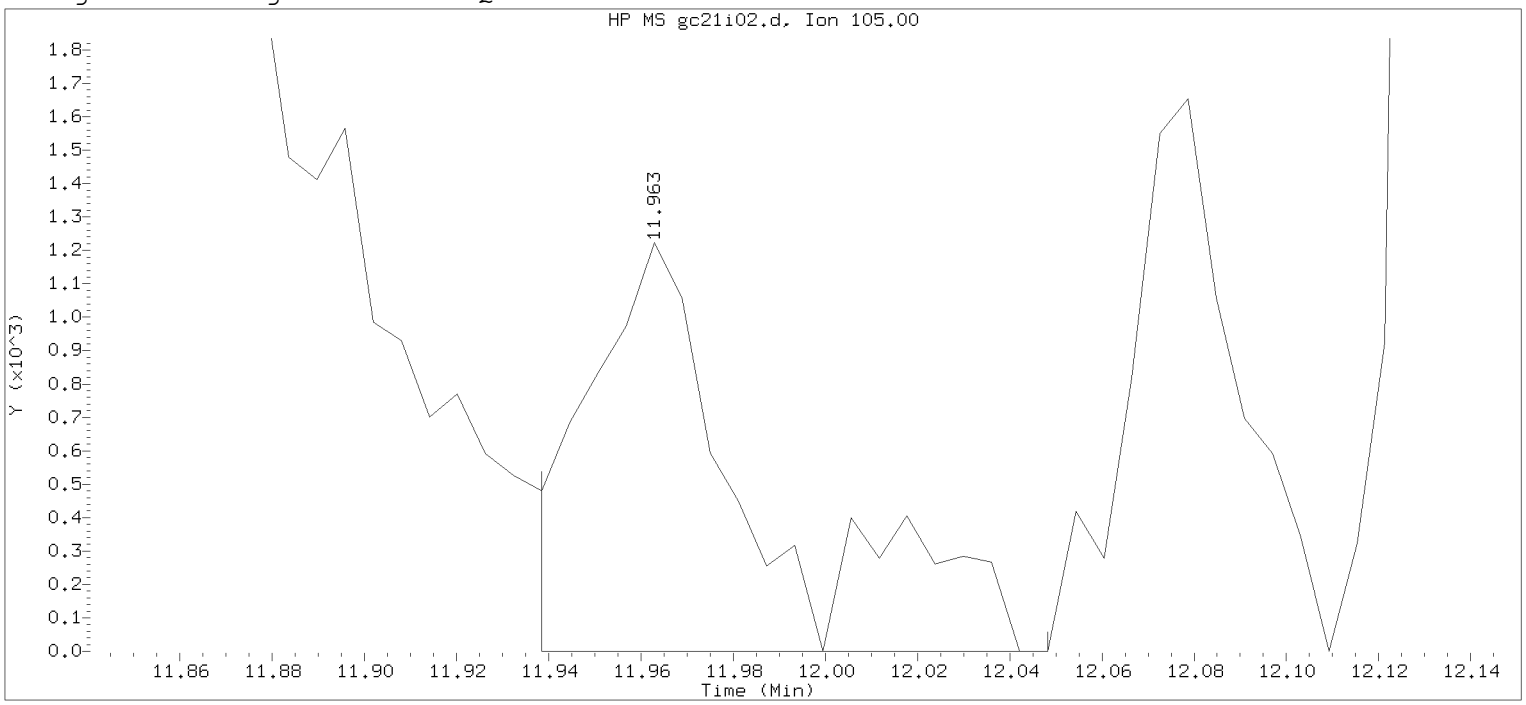
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

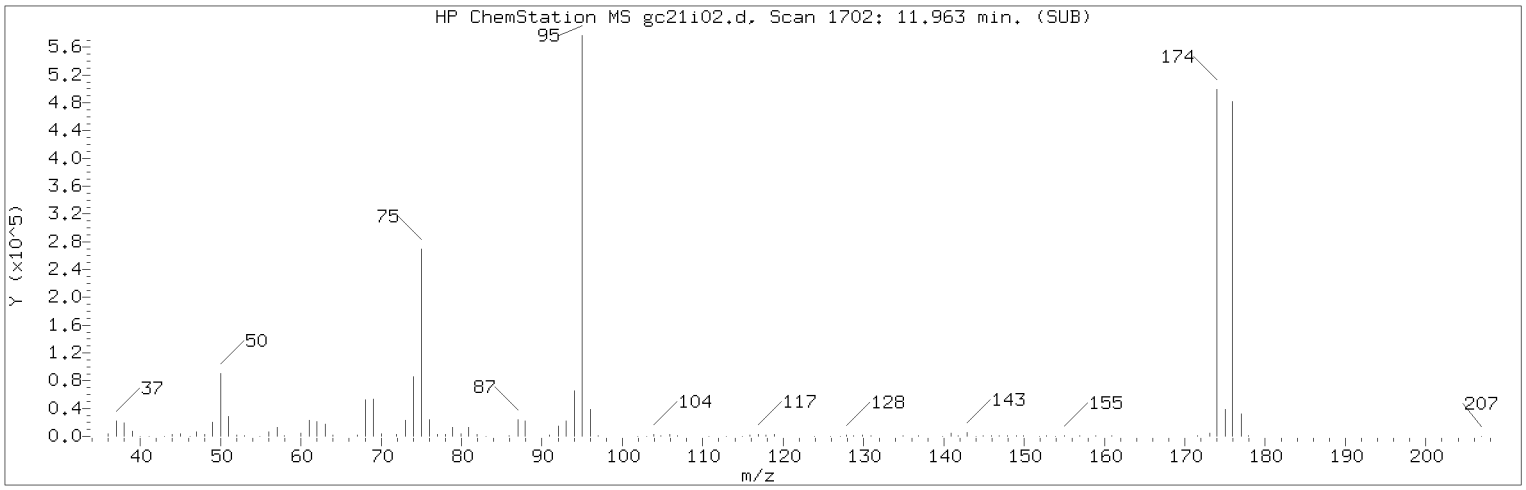
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

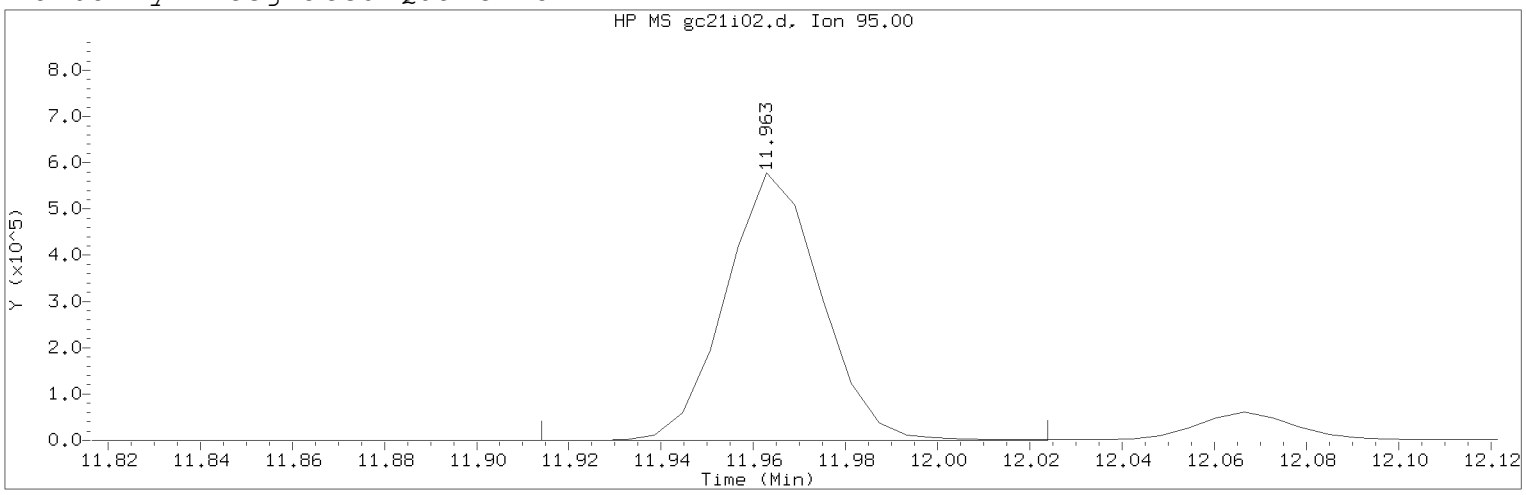
Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1702
Retention Time (minutes): 11.963
Quant Ion : 105.00
Area : 3119
On-column Amount (ng) : 0.0627
Integration start scan : 1697 Integration stop scan: 1715
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

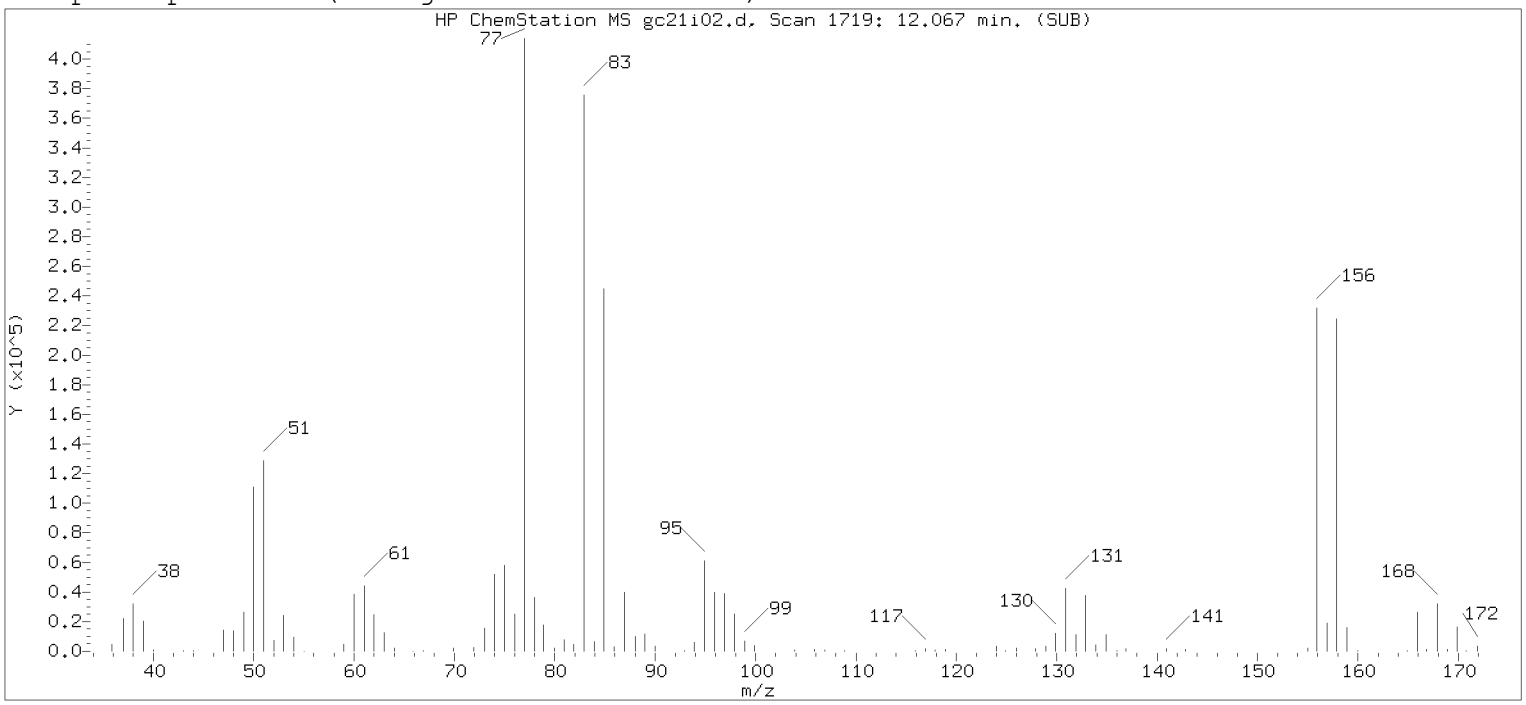
Compound Number : 111
Compound Name : 4-Bromofluorobenzene
Scan Number : 1702
Retention Time (minutes): 11.963
Quant Ion : 95.00
Area (flag) : 827370MA
On-Column Amount (ng) : 10.1091
Integration start scan : 1693 Integration stop scan: 1711
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

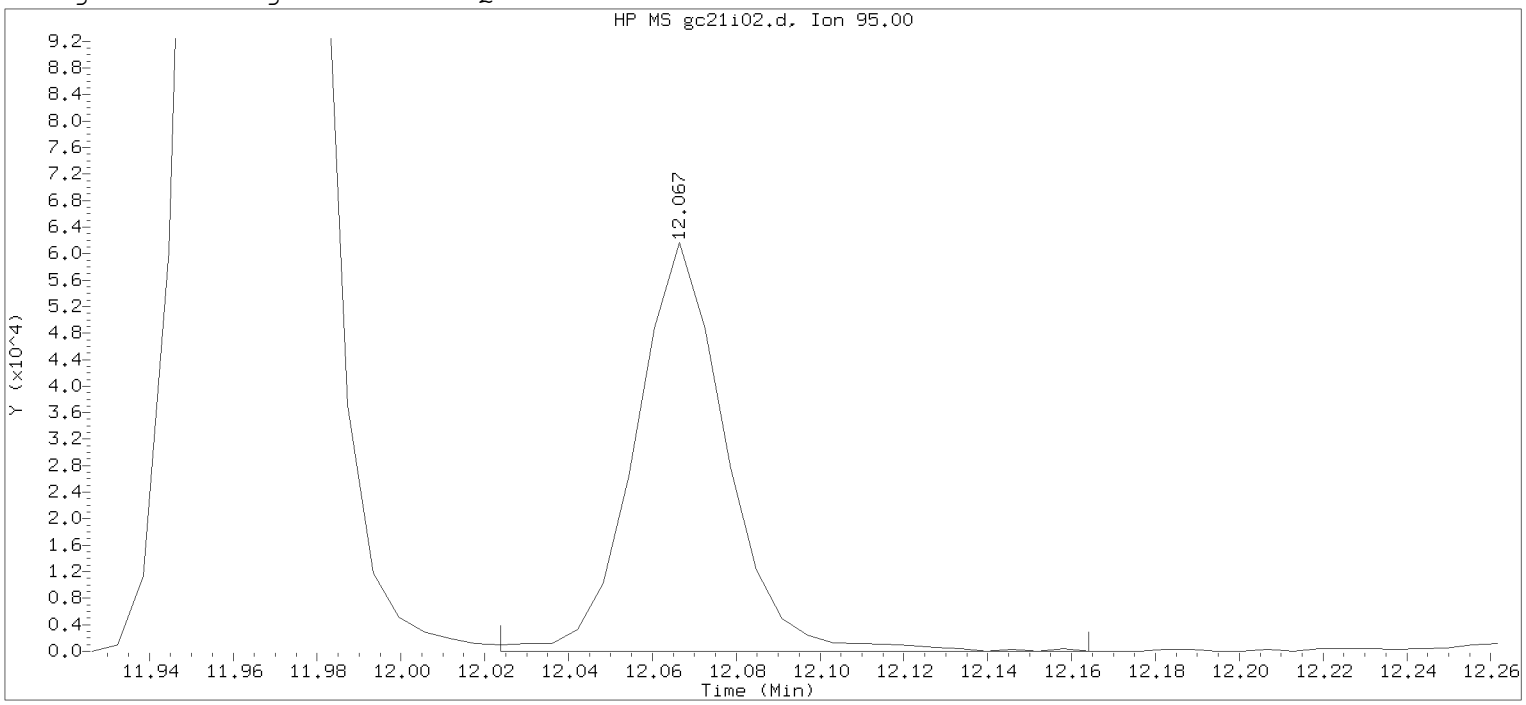
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

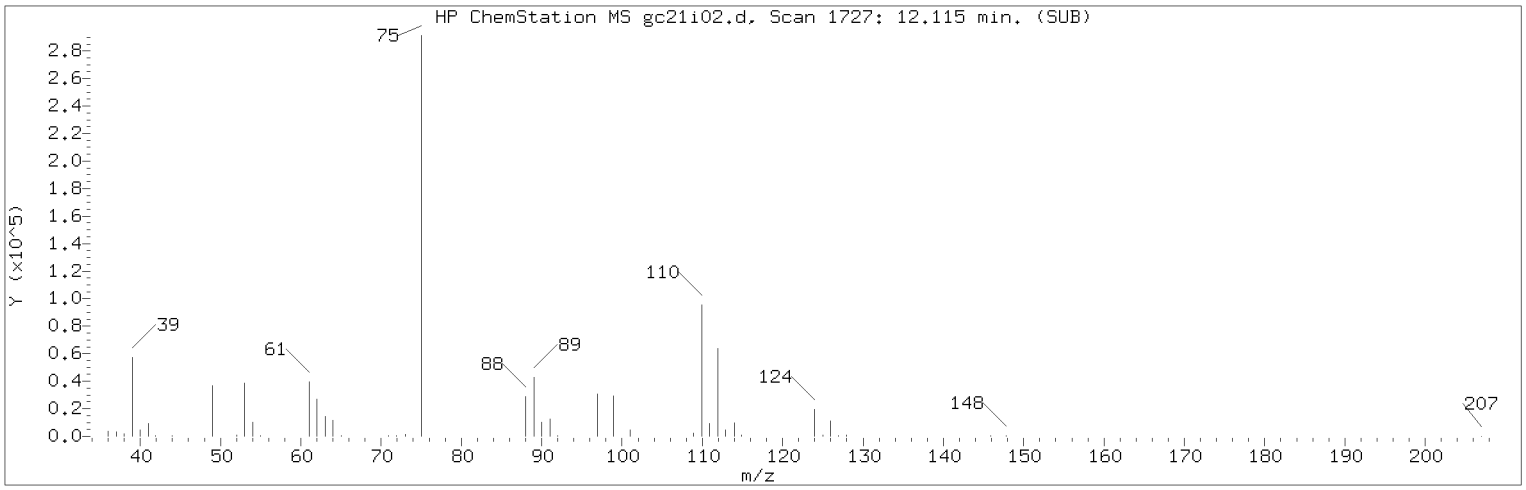
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

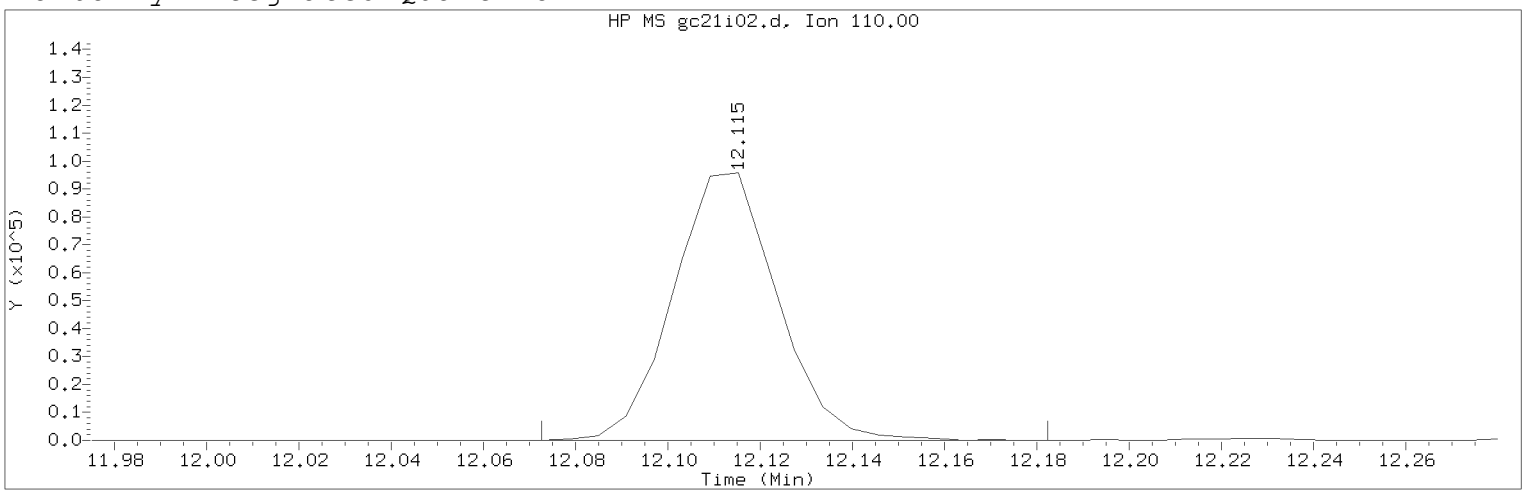
Compound Number : 111
Compound Name : 4-Bromofluorobenzene
Scan Number : 1719
Retention Time (minutes): 12.067
Quant Ion : 95.00
Area : 93310
On-column Amount (ng) : 5.3417
Integration start scan : 1711 Integration stop scan: 1734
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

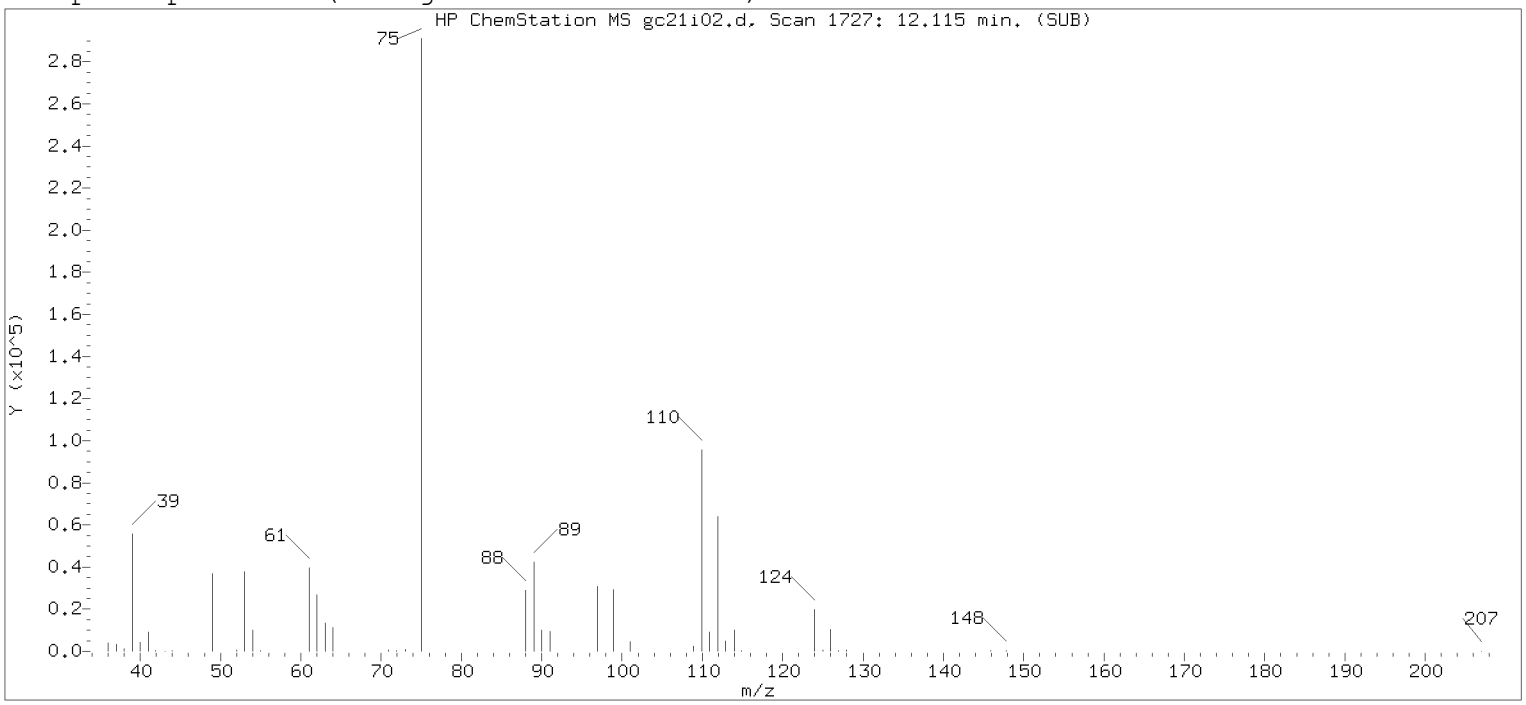
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1727
Retention Time (minutes): 12.115
Quant Ion : 110.00
Area (flag) : 150425M
On-Column Amount (ng) : 10.3174
Integration start scan : 1719 Integration stop scan: 1737
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

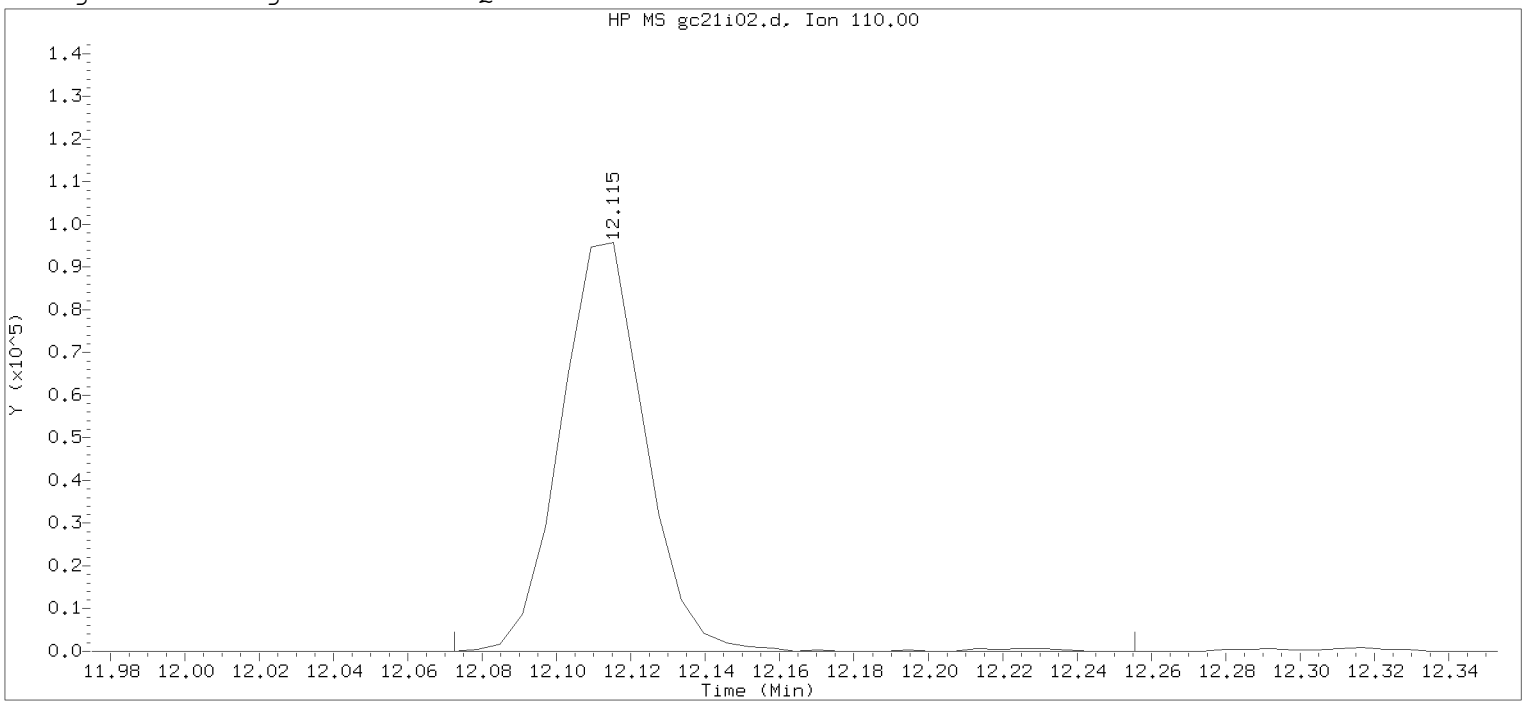
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

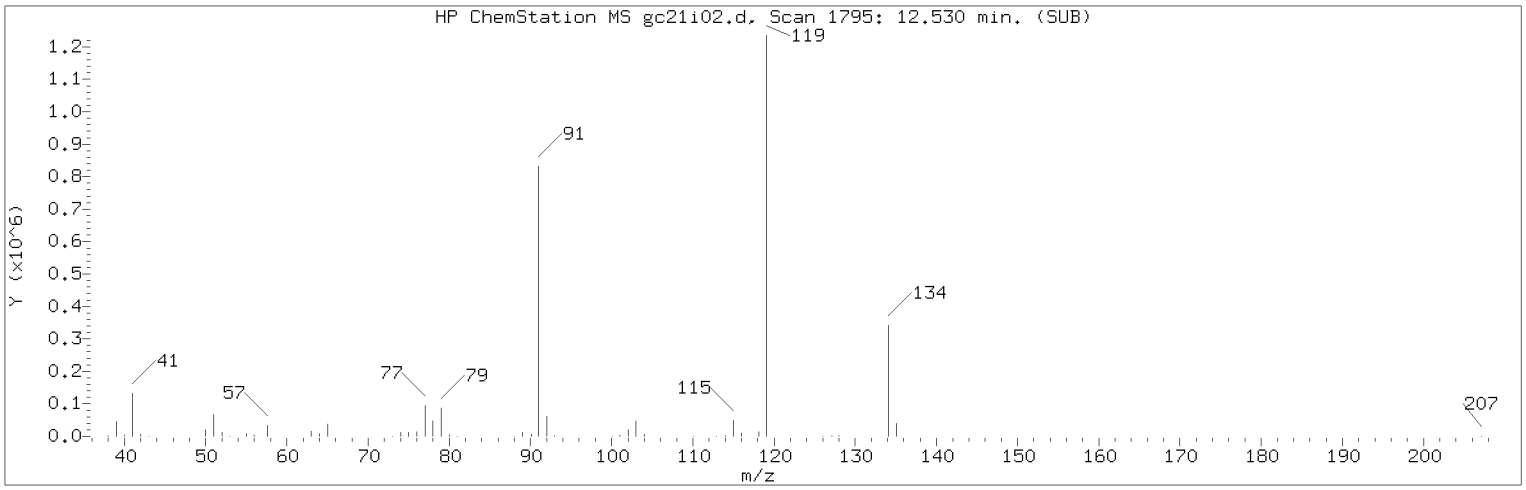
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

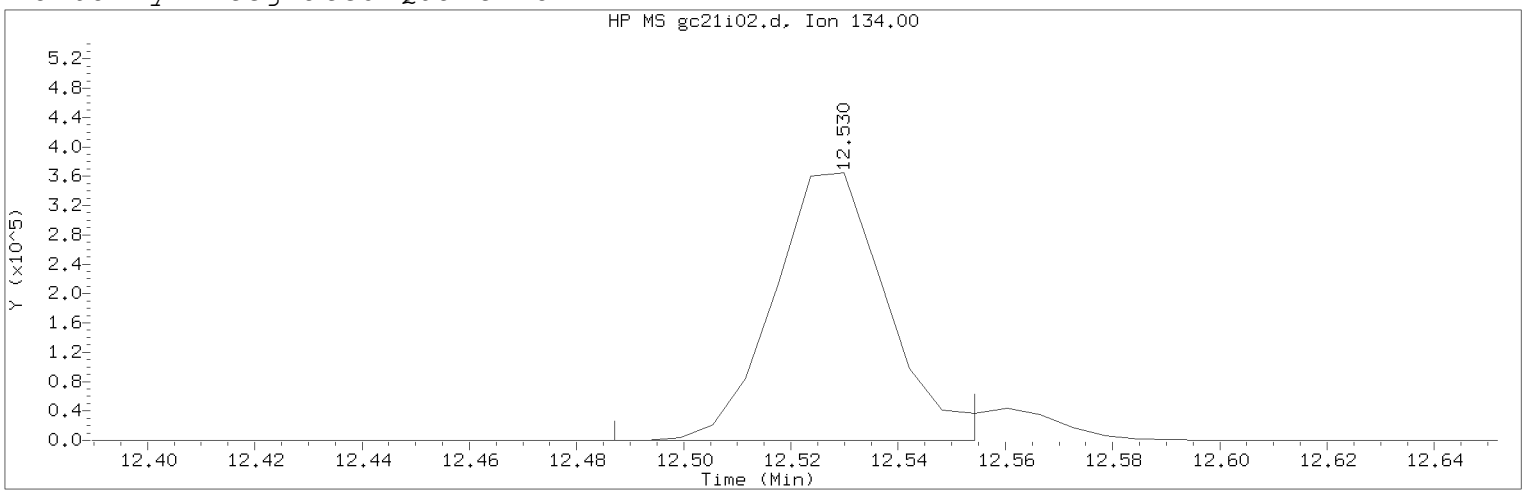
Compound Number	: 116		
Compound Name	: 1,2,3-Trichloropropane		
Scan Number	: 1727		
Retention Time (minutes)	: 12.115		
Quant Ion	: 110.00		
Area	: 151419		
On-column Amount (ng)	: 10.0646		
Integration start scan	: 1719	Integration stop scan:	1749
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe01

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

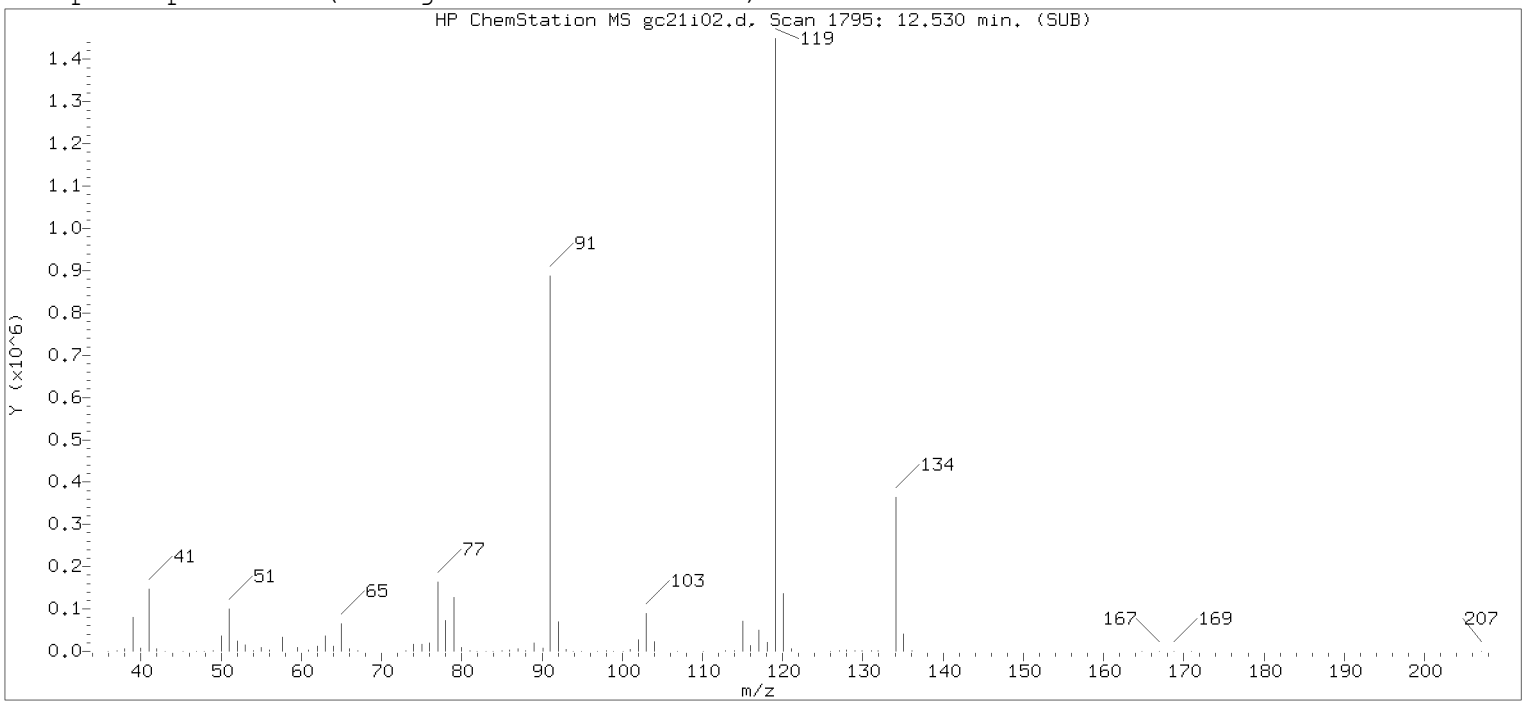
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area (flag) : 532426M
On-Column Amount (ng) : 10.4693
Integration start scan : 1787 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

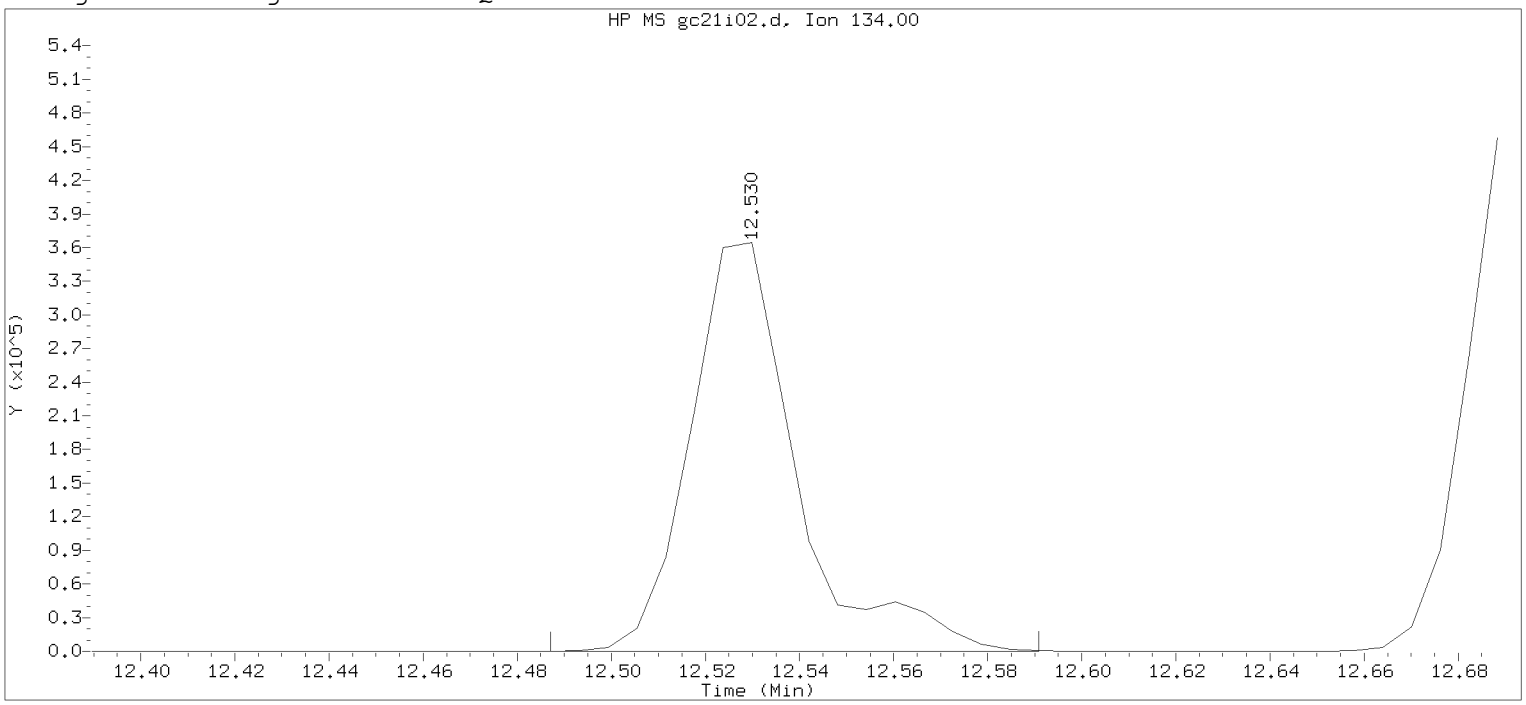
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



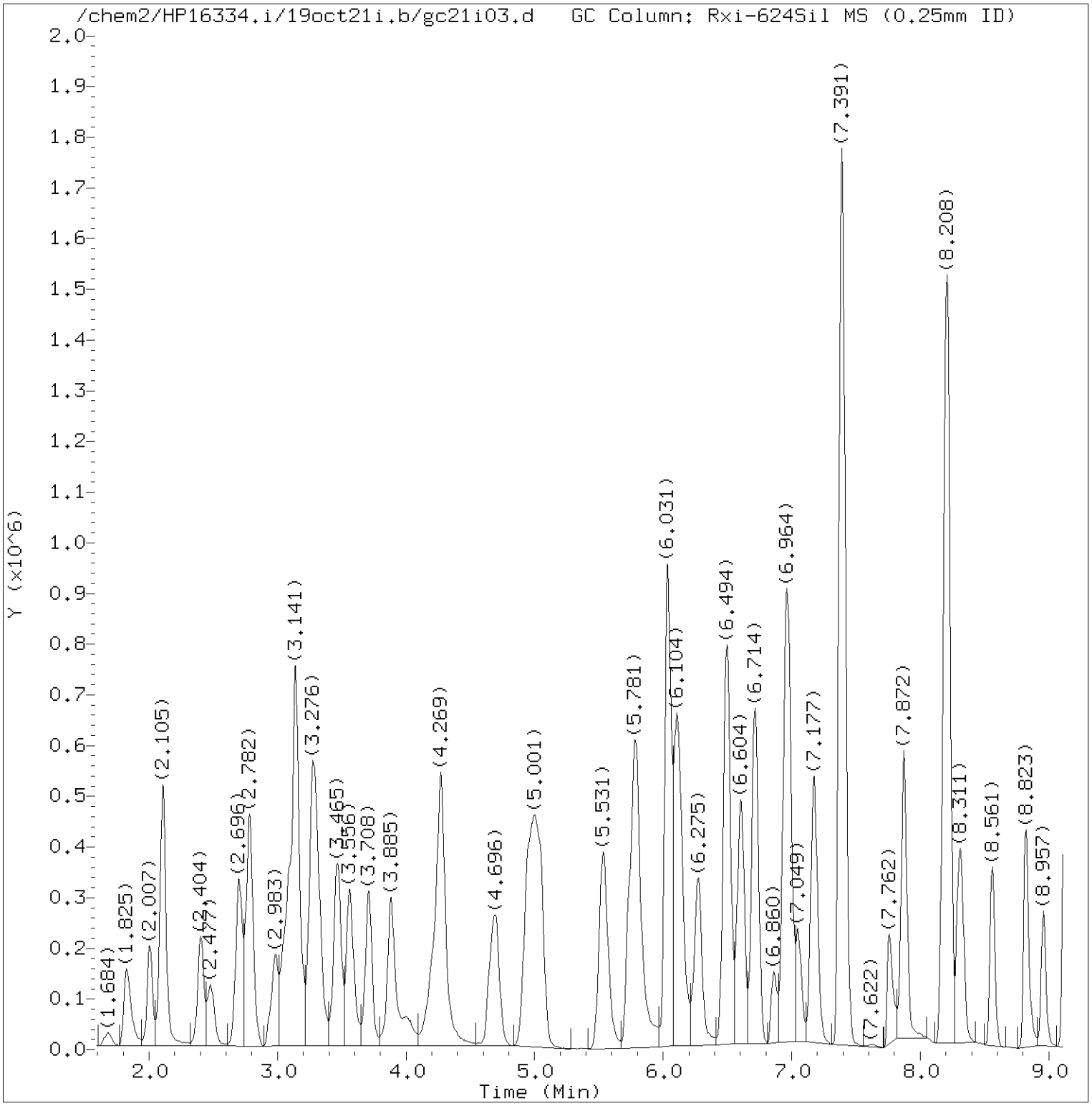
Data File: /chem2/HP16334.i/19oct21i.b/gc21i02.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:01 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 21-OCT-2019 17:19
Date, time and analyst ID of latest file update: 21-Oct-2019 17:19 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number	: 125		
Compound Name	: tert-Butylbenzene		
Scan Number	: 1795		
Retention Time (minutes)	: 12.530		
Quant Ion	: 134.00		
Area	: 570727		
On-column Amount (ng)	: 10.4967		
Integration start scan	: 1787	Integration stop scan:	1804
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkhowe



Total Ion Chromatogram (TIC)

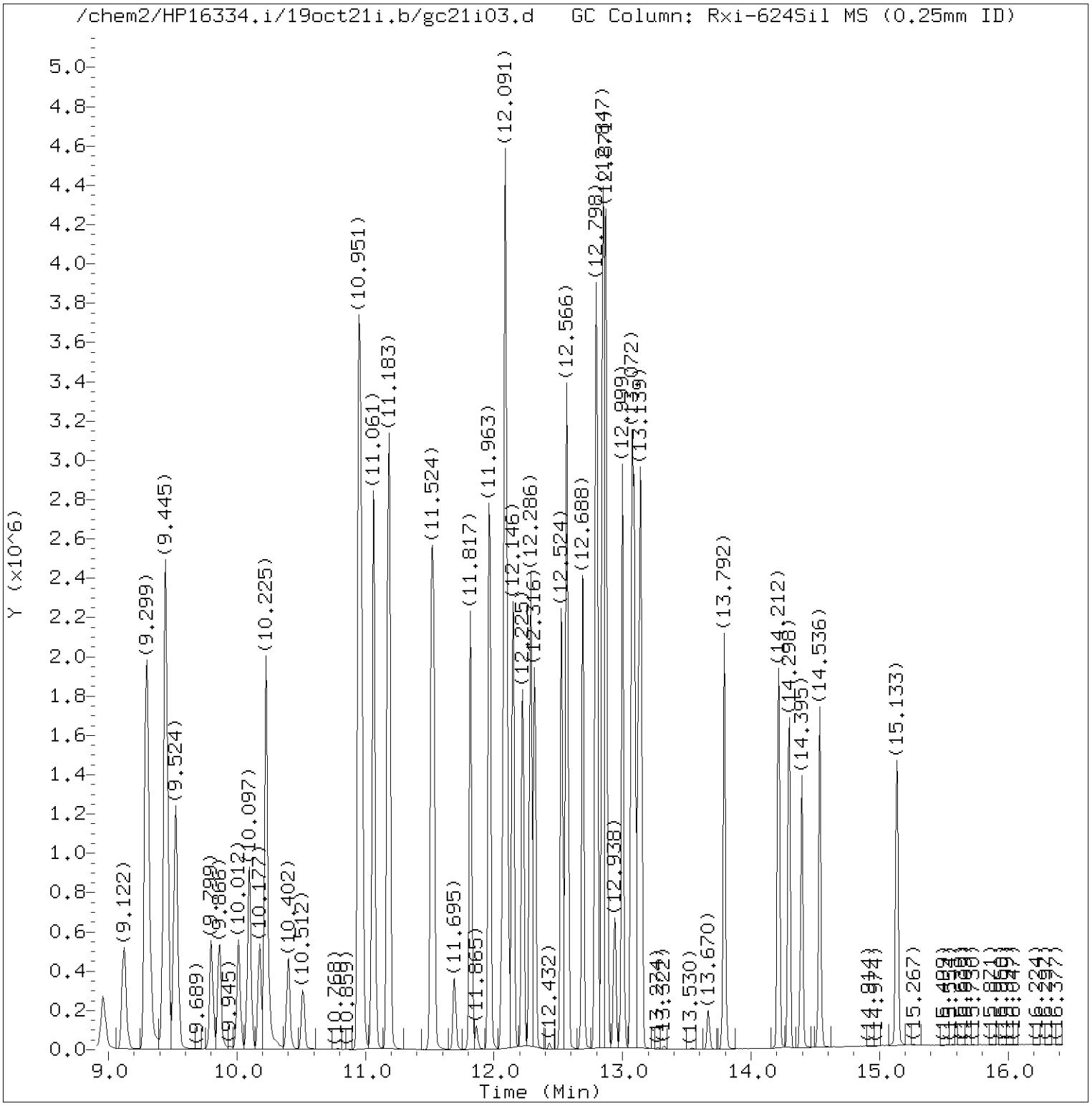
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.825	85	381403M	5.086
2) Chloromethane	(2)	2.001	50	347611	4.947
6) 1,3-Butadiene	(2)	2.105	39	280571M	4.571
5) Vinyl Chloride	(2)	2.117	62	354737	5.070
7) Bromomethane	(2)	2.404	94	262583	4.967
8) Chloroethane	(2)	2.483	64	204851	4.950
9) Dichlorofluoromethane	(2)	2.696	67	466855	4.882
10) Trichlorofluoromethane	(2)	2.763	101	471037	5.020
11) Ethyl ether	(2)	2.977	59	211910	4.950
12) Freon 123a	(2)	3.062	67	303898	4.932
13) Acrolein	(1)	3.141	56	1714227	251.498
15) 1,1-Dichloroethene	(2)	3.269	96	236097	4.973
14) Acetone	(1)	3.294	43	365804	49.741
16) Freon 113	(2)	3.300	101	275697	4.984
17) Methyl Iodide	(2)	3.458	142	510168	4.955
18) Carbon Disulfide	(2)	3.562	76	861857	4.922
21) Methyl Acetate	(1)	3.684	43	89572M	5.000
22) Allyl Chloride	(2)	3.708	41	333153	4.788
23) Methylene Chloride	(2)	3.885	84	264686	4.774
26)*t-Butyl Alcohol-d10	(1)	3.897	65	144981M	50.000
28) t-Butyl Alcohol	(1)	4.007	59	257702M	101.836
29) Acrylonitrile	(1)	4.184	53	262804M	24.937
30) Methyl Tertiary Butyl Ether	(2)	4.251	73	721943	5.014
31) trans-1,2-Dichloroethene	(2)	4.275	96	269092	4.912
32) n-Hexane	(2)	4.702	57	372601M	5.052
33) 1,1-Dichloroethane	(2)	4.940	63	457186	4.892
34) di-Isopropyl Ether	(2)	4.989	45	841805	4.967
35) 2-Chloro-1,3-Butadiene	(2)	5.043	53	417968	5.001
37) Ethyl t-butyl ether	(2)	5.531	59	836944	4.876
38) 2-Butanone	(1)	5.726	43	753015	53.669
39) cis-1,2-Dichloroethene	(2)	5.781	96	298133	4.994
41) 2,2-Dichloropropane	(2)	5.793	77	321136	4.955
42) Propionitrile	(1)	5.824	54	249666M	98.886
45) Methacrylonitrile	(1)	6.037	67	781762	49.932
40) 1,2-Dichloroethene (Total)	(2)		96	567225	9.906
47) Bromochloromethane	(2)	6.116	128	147039	4.963
48) Tetrahydrofuran	(1)	6.116	71	237456	53.589
49) Chloroform	(2)	6.275	83	463646	4.883

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.494	113	583176	9.986
50)$Dibromofluoromethane	(2)	6.488	111	602702	10.043
51) 1,1,1-Trichloroethane	(2)	6.501	97	415604	4.975
52) Cyclohexane	(2)	6.604	56	452849	4.965
52) Cyclohexane	(2)	6.604	84	422738	4.982
52) Cyclohexane	(2)	6.604	69	143994	4.975
55) 1,1-Dichloropropene	(2)	6.708	75	364301	4.831
54) Carbon Tetrachloride	(2)	6.714	117	376397	5.003
56) Isobutyl Alcohol	(1)	6.866	41	200283	257.849
57)$1,2-Dichloroethane-d4	(2)	6.946	102	116816M	9.877
57)$1,2-Dichloroethane-d4	(2)	6.946	65	536332	9.898
57)$1,2-Dichloroethane-d4	(2)	6.952	104	74532	10.058
58) Benzene	(2)	6.970	78	1050550	4.823
59) 1,2-Dichloroethane	(2)	7.049	62	290761M	4.725
59) 1,2-Dichloroethane	(2)	7.049	98	28272	5.193
60) t-Amyl methyl ether	(2)	7.177	73	788303	4.984
63)*Fluorobenzene	(2)	7.385	96	2310014	10.000
62) n-Heptane	(2)	7.403	43	365398	4.753
65) n-Butanol	(1)	7.762	56	409891	482.479
67) Trichloroethene	(2)	7.872	95	287649	4.924
69) Methylcyclohexane	(2)	8.189	83	488966	4.994
70) 1,2-Dichloropropane	(2)	8.208	63	269914	4.981
71) Methyl Methacrylate	(1)	8.293	69	161280	5.082
72) 1,4-Dioxane	(1)	8.311	88	50588M	246.010
72) 1,4-Dioxane	(1)	8.311	58	33362M	293.529
73) Dibromomethane	(2)	8.323	93	145188	5.016
74) Bromodichloromethane	(2)	8.561	83	350620	5.021
76) 2-Nitropropane	(1)	8.823	41	434062	49.503
80) cis-1,3-Dichloropropene	(2)	9.122	75	418965	5.051
81) 4-Methyl-2-Pentanone	(1)	9.299	43	2030940	50.060
82)$Toluene-d8	(3)	9.445	98	2267226	9.963
82)$Toluene-d8	(3)	9.445	100	1471200	9.992
83) Toluene	(3)	9.524	92	685227	4.846
84) trans-1,3-Dichloropropene	(3)	9.799	75	360146	5.149
86) Ethyl Methacrylate	(3)	9.866	69	348850	5.145
88) 1,1,2-Trichloroethane	(3)	10.012	97	208025	4.922
89) Tetrachloroethene	(3)	10.097	166	332042	4.915
85) 1,3-Dichloropropene (total)	(3)		75	779111	10.200

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	360531	4.962
91) 2-Hexanone	(1)	10.225	43	1478649M	49.411
93) Dibromochloromethane	(3)	10.402	129	279549	5.163
95) 1,2-Dibromoethane	(3)	10.512	107	215801	5.038
97)*Chlorobenzene-d5	(3)	10.951	117	1774449A	10.000
96) 1-Chlorohexane	(3)	10.963	91	400143MA	4.732
98) Chlorobenzene	(3)	10.975	112	808753	4.893
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	295260	4.985
100) Ethylbenzene	(3)	11.067	91	1359921MA	4.905
101) m+p-Xylene	(3)	11.183	106	1056896	9.826
104) o-Xylene	(3)	11.512	106	520176	4.881
106) Styrene	(3)	11.530	104	890495	4.981
107) Bromoform	(3)	11.695	173	177188	5.304
105) Xylene (Total)	(3)		106	1577072	14.707
108) Isopropylbenzene	(3)	11.817	105	1361146	4.912
111)$4-Bromofluorobenzene	(3)	11.963	95	843796	9.921
111)$4-Bromofluorobenzene	(3)	11.963	174	769314	9.990
113) 1,1,2,2-Tetrachloroethane	(4)	12.067	83	277215	4.956
114) Bromobenzene	(4)	12.079	156	358729	4.889
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	695945	50.875
116) 1,2,3-Trichloropropane	(4)	12.109	110	76355M	5.023
117) n-Propylbenzene	(4)	12.146	91	1622017	4.934
119) 2-Chlorotoluene	(4)	12.225	126	343962	4.949
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	1161470	4.888
122) 4-Chlorotoluene	(4)	12.316	126	358598	4.915
125) tert-Butylbenzene	(4)	12.524	134	252331	4.759
126) Pentachloroethane	(4)	12.560	167	252766	5.151
127) 1,2,4-Trimethylbenzene	(4)	12.573	105	1219431	4.880
128) sec-Butylbenzene	(4)	12.694	105	1525529	4.900
131) 1,3-Dichlorobenzene	(4)	12.792	146	703248	4.829
132) p-Isopropyltoluene	(4)	12.798	119	1328302	4.923
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	999158	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	715169	4.796
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	567100	4.853
136) Benzyl Chloride	(4)	12.938	126	94424	4.682
138) n-Butylbenzene	(4)	13.091	92	668867	4.873
139) 1,2-Dichlorobenzene	(4)	13.121	146	662061	4.861
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	43917	5.078

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

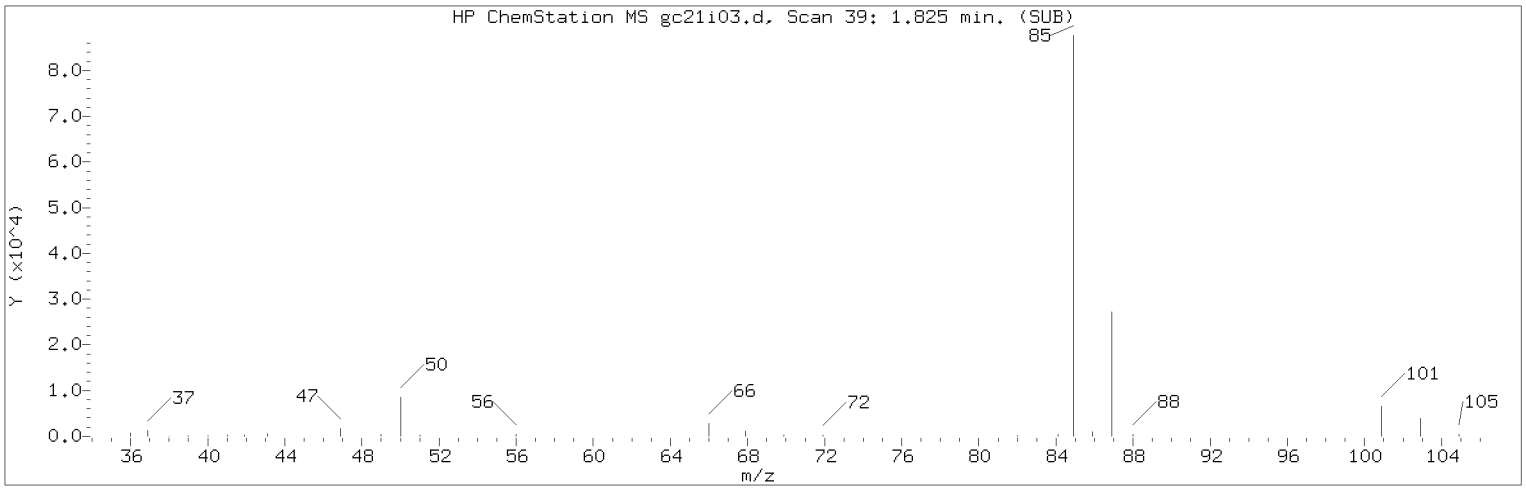
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

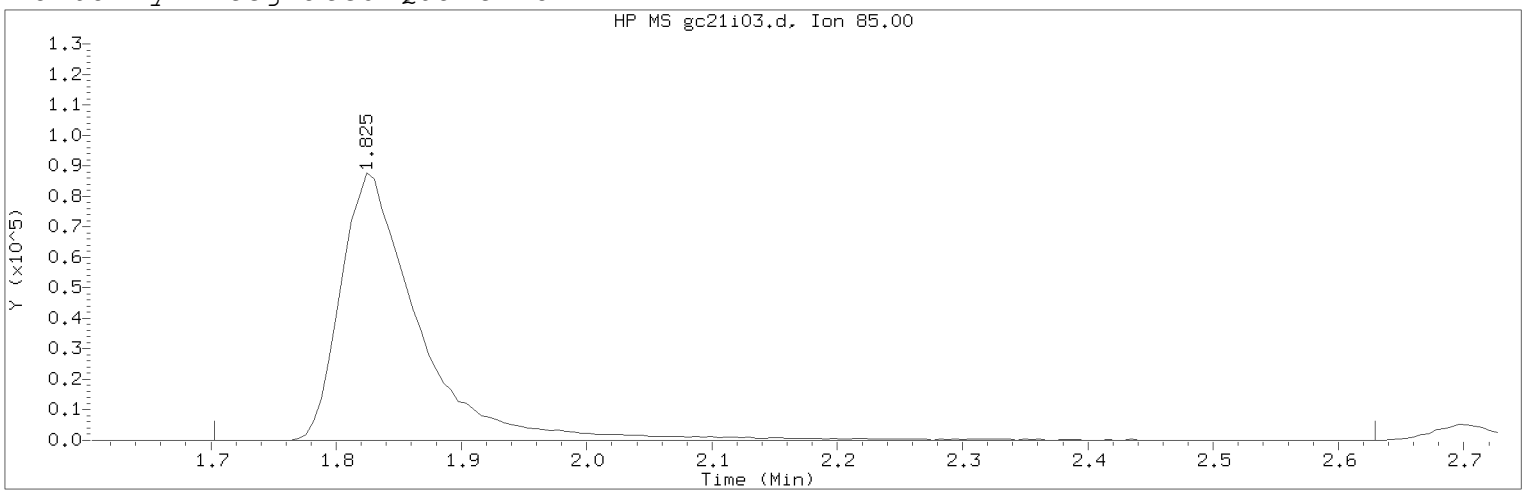
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	603294	4.872
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	557371	4.847
146) Hexachlorobutadiene	(4)	14.298	225	284760	4.890
147) Naphthalene	(4)	14.395	128	950941	4.935
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	491172	4.879

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

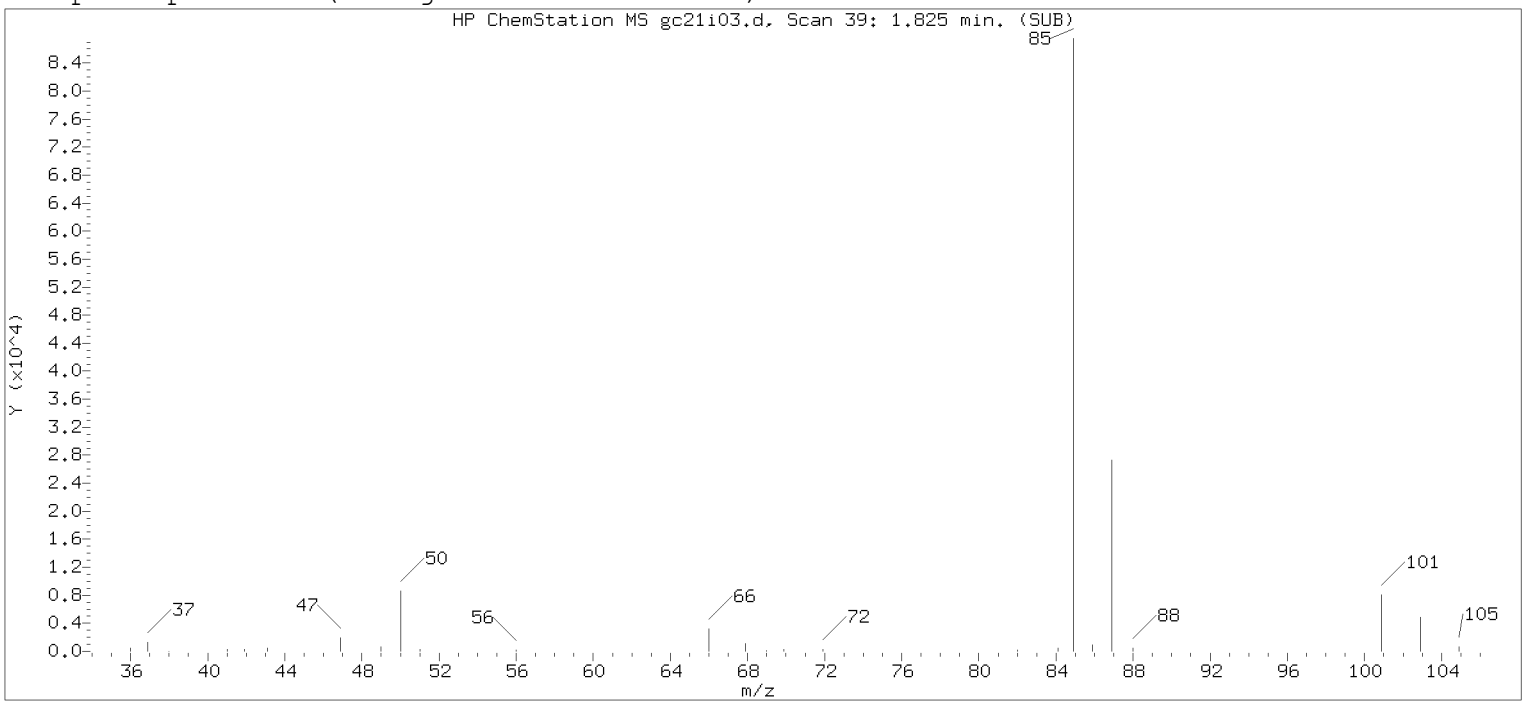
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 39
Retention Time (minutes): 1.825
Quant Ion : 85.00
Area (flag) : 381403M
On-Column Amount (ng) : 5.0860
Integration start scan : 18 Integration stop scan: 170
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

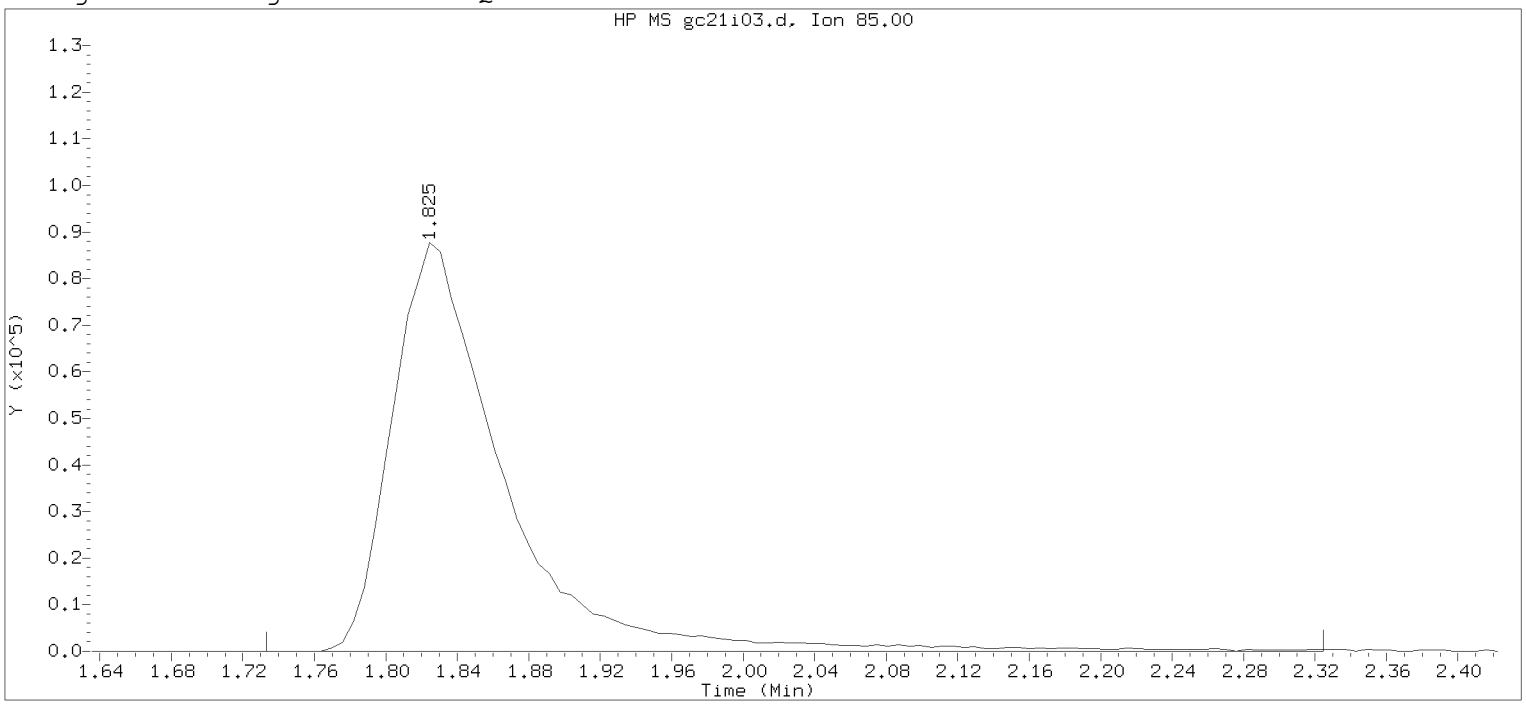
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

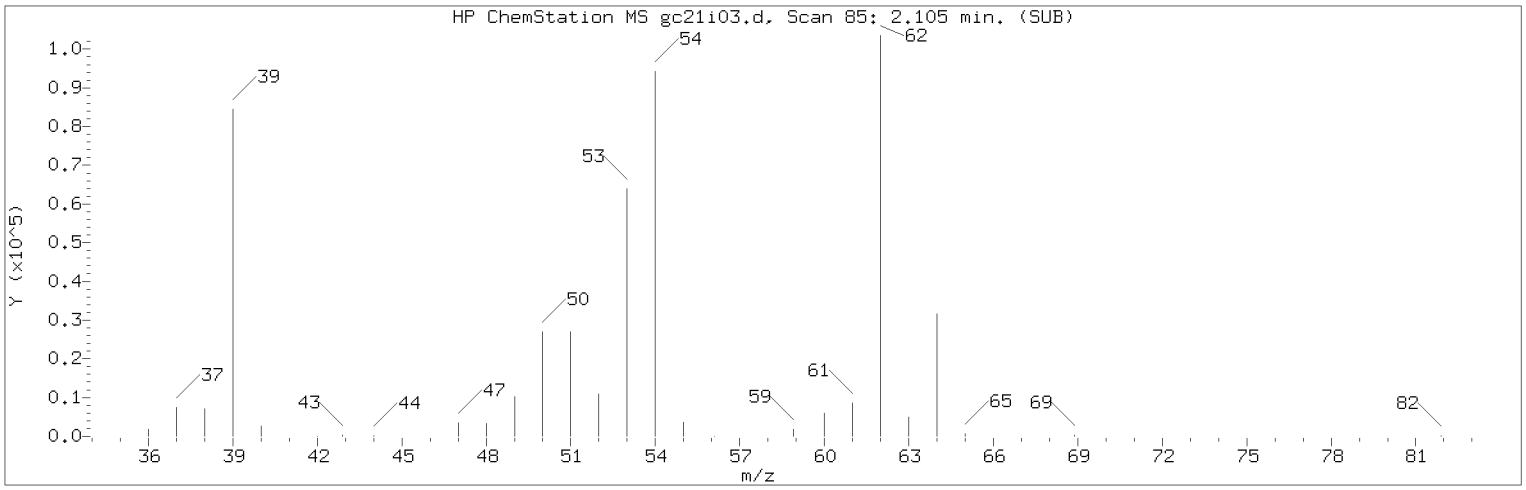
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

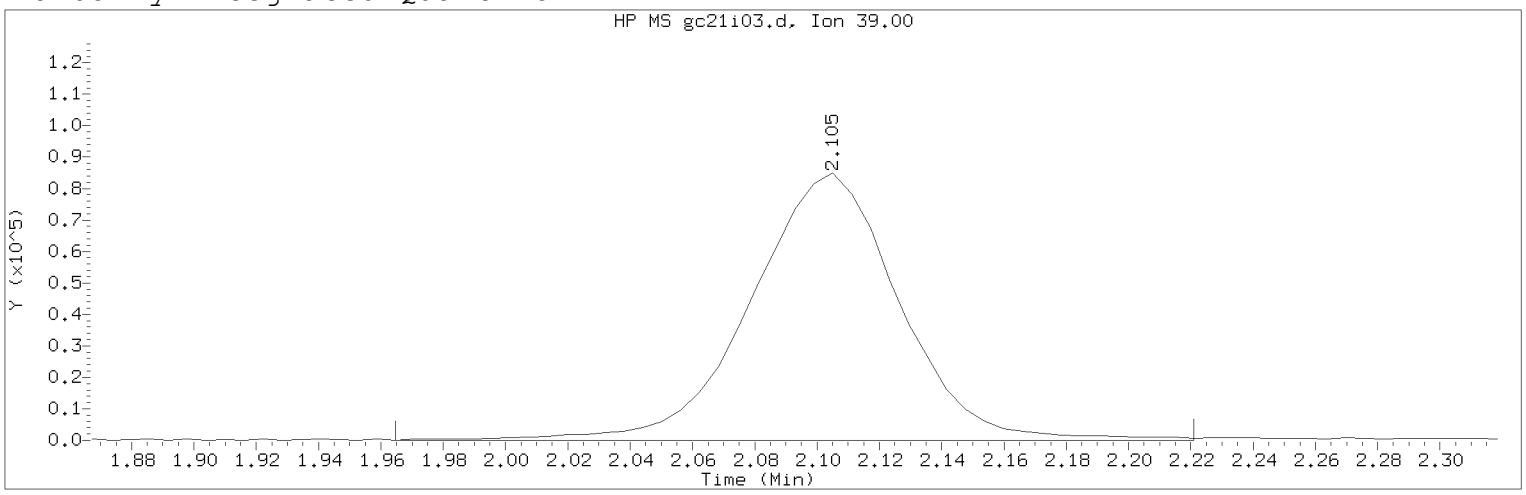
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 39
Retention Time (minutes): 1.825
Quant Ion : 85.00
Area : 380160
On-column Amount (ng) : 4.9682
Integration start scan : 23 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

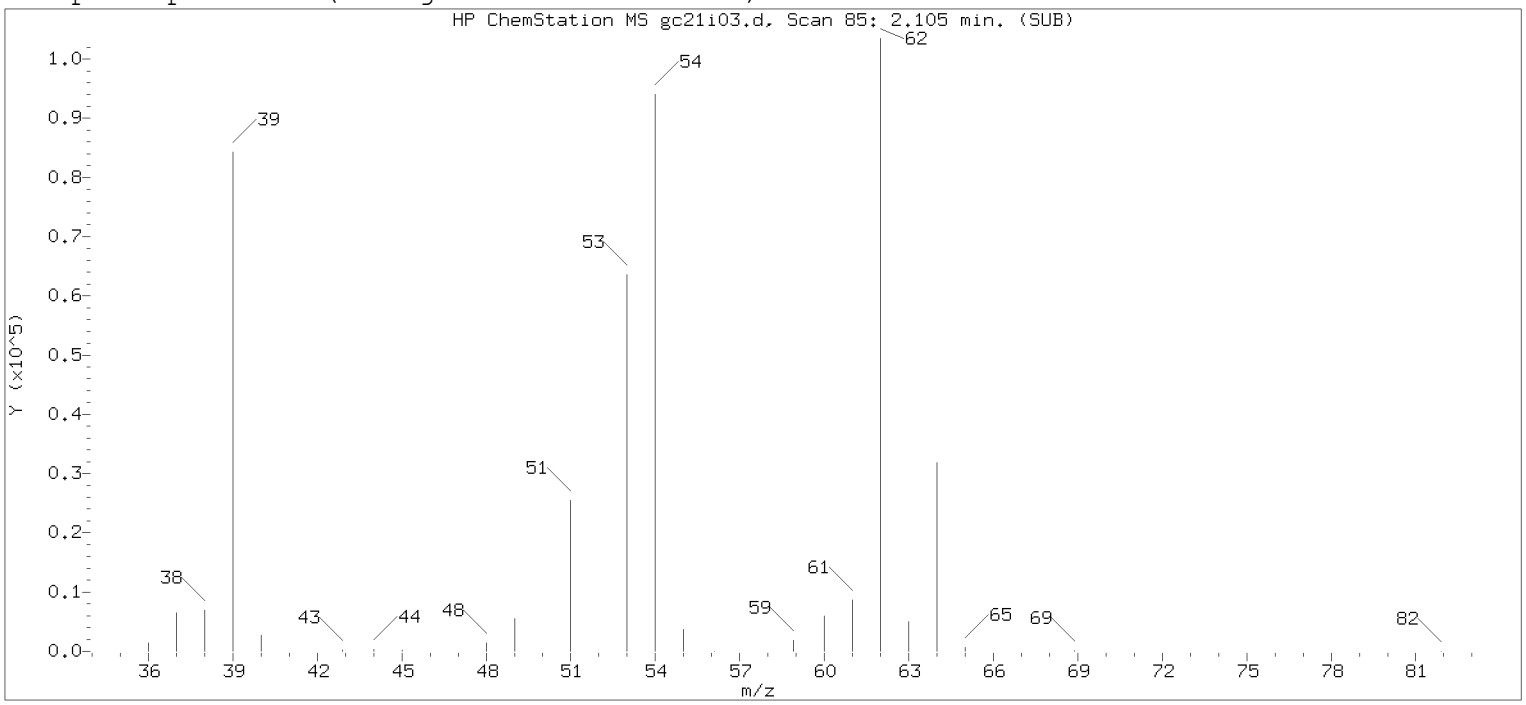
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area (flag) : 280571M
On-Column Amount (ng) : 4.5712
Integration start scan : 61 Integration stop scan: 103
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

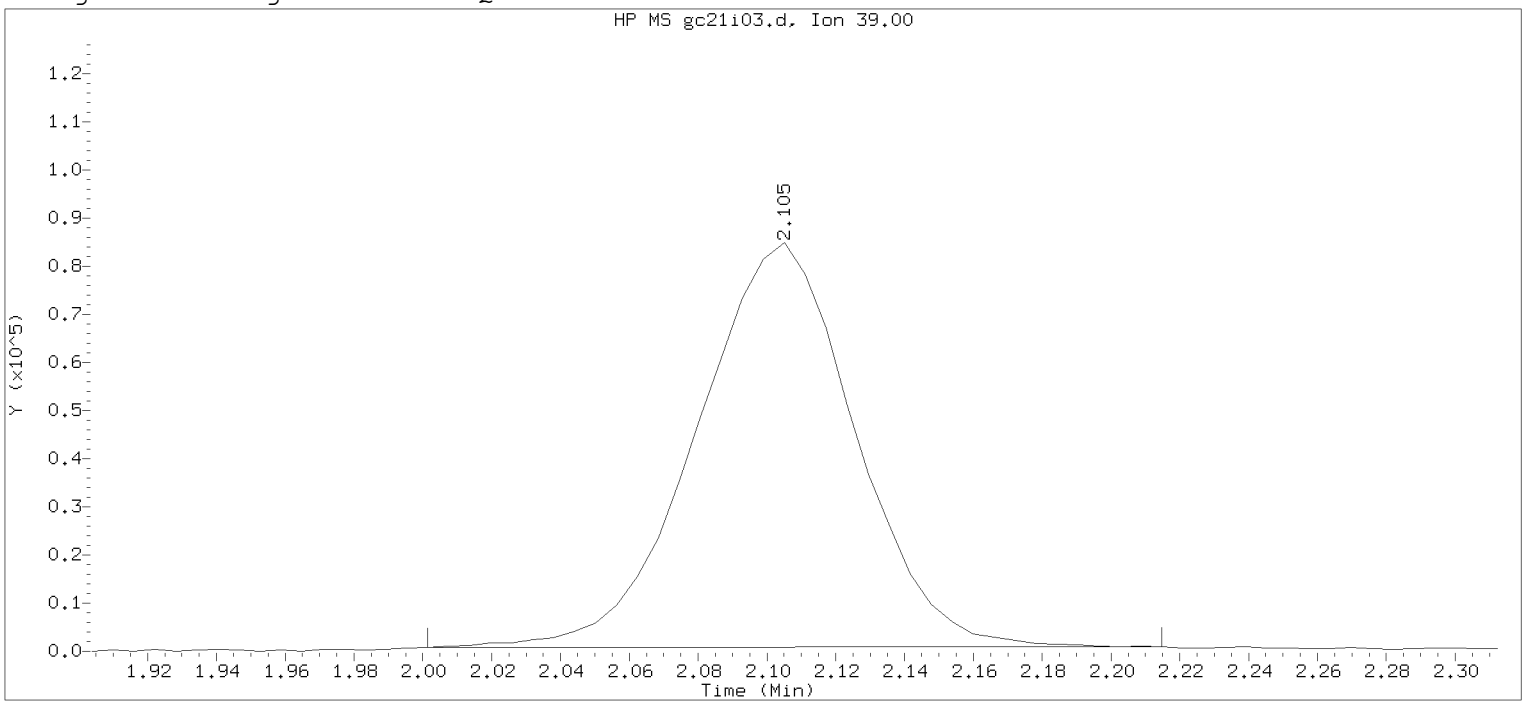
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

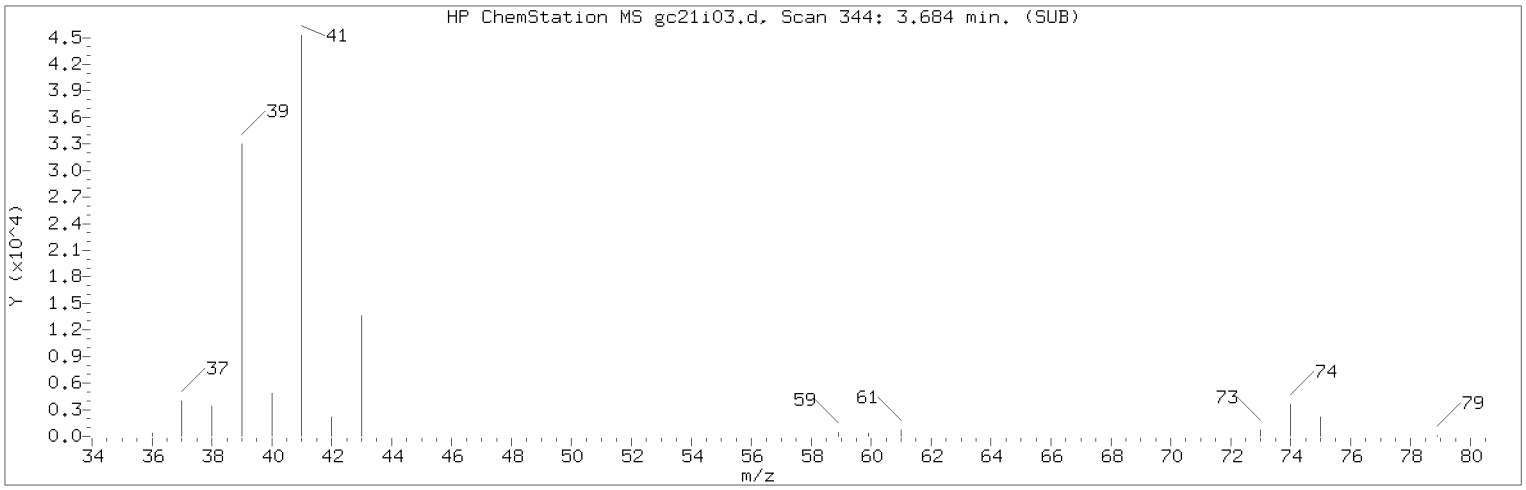
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

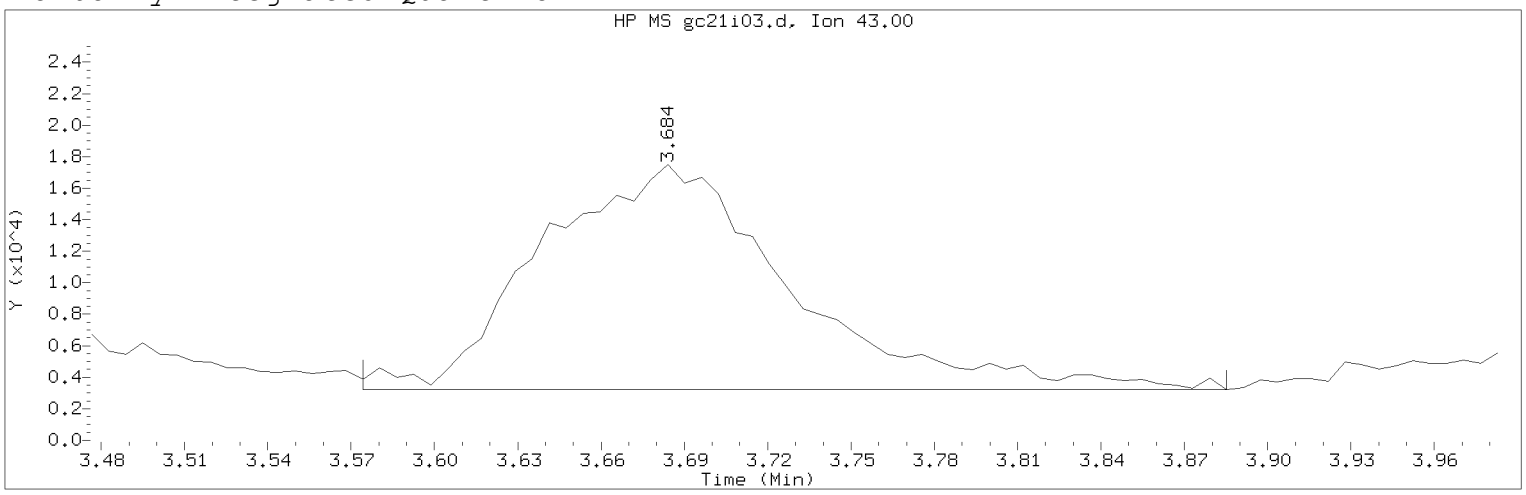
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area : 267916
On-column Amount (ng) : 4.8981
Integration start scan : 67 Integration stop scan: 102
Y at integration start : 828 Y at integration end: 951

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

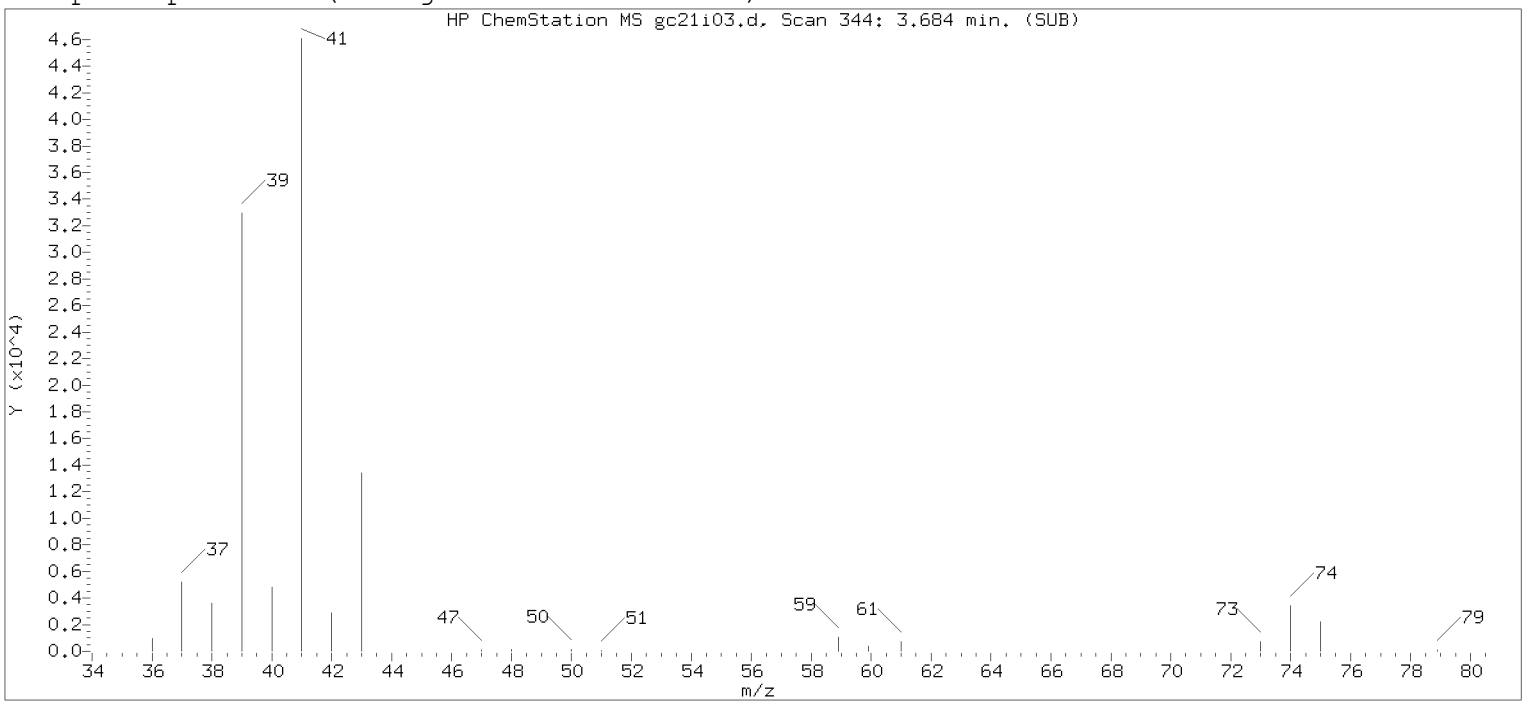
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 344
Retention Time (minutes): 3.684
Quant Ion : 43.00
Area (flag) : 89572M
On-Column Amount (ng) : 4.9997
Integration start scan : 325 Integration stop scan: 376
Y at integration start : 3199 Y at integration end: 3199

Reason for manual integration: improper integration

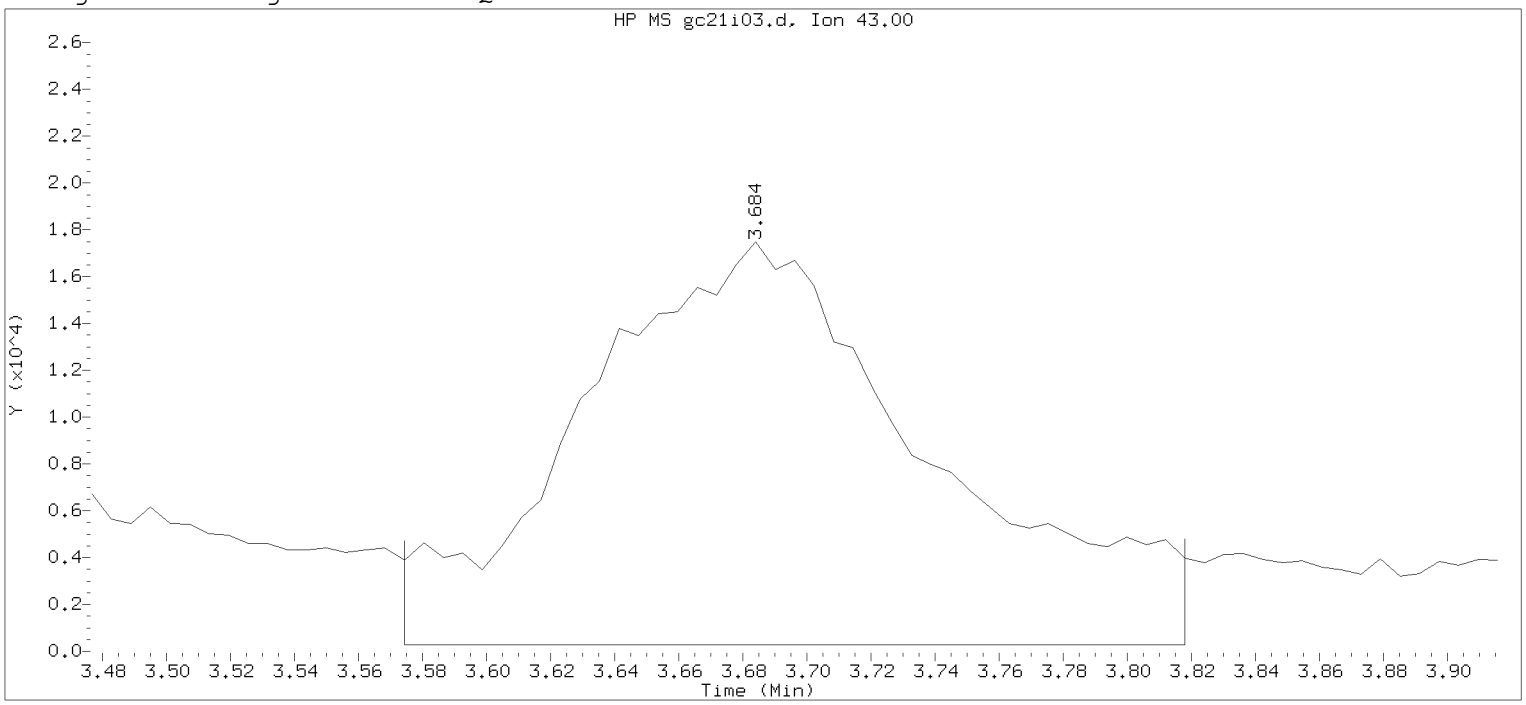
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

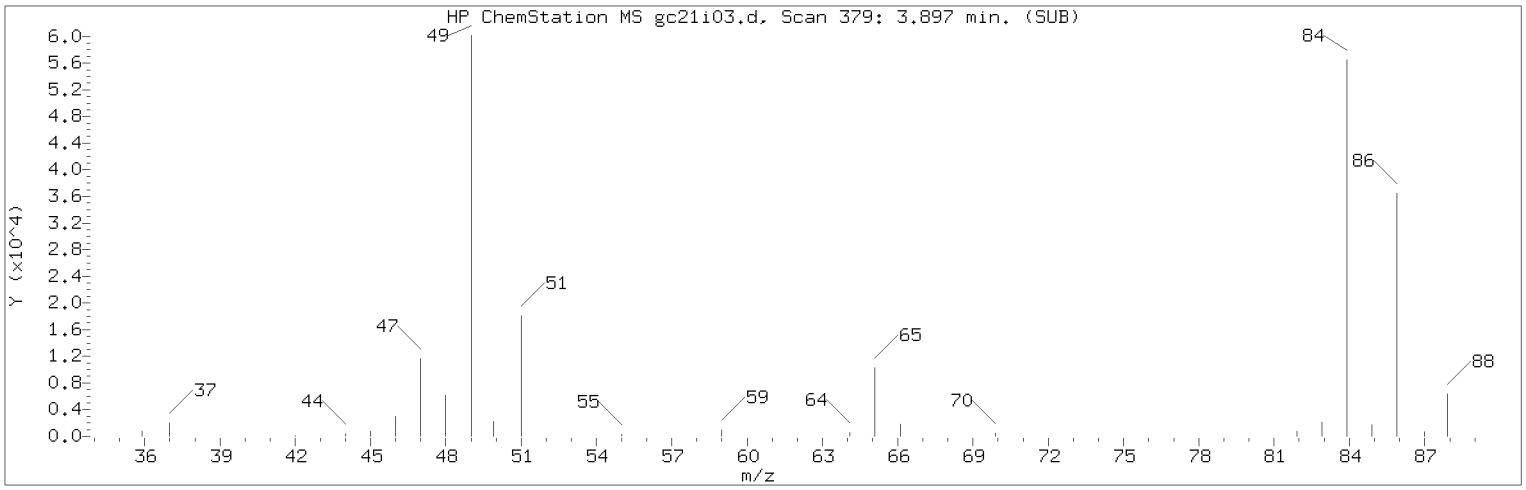
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

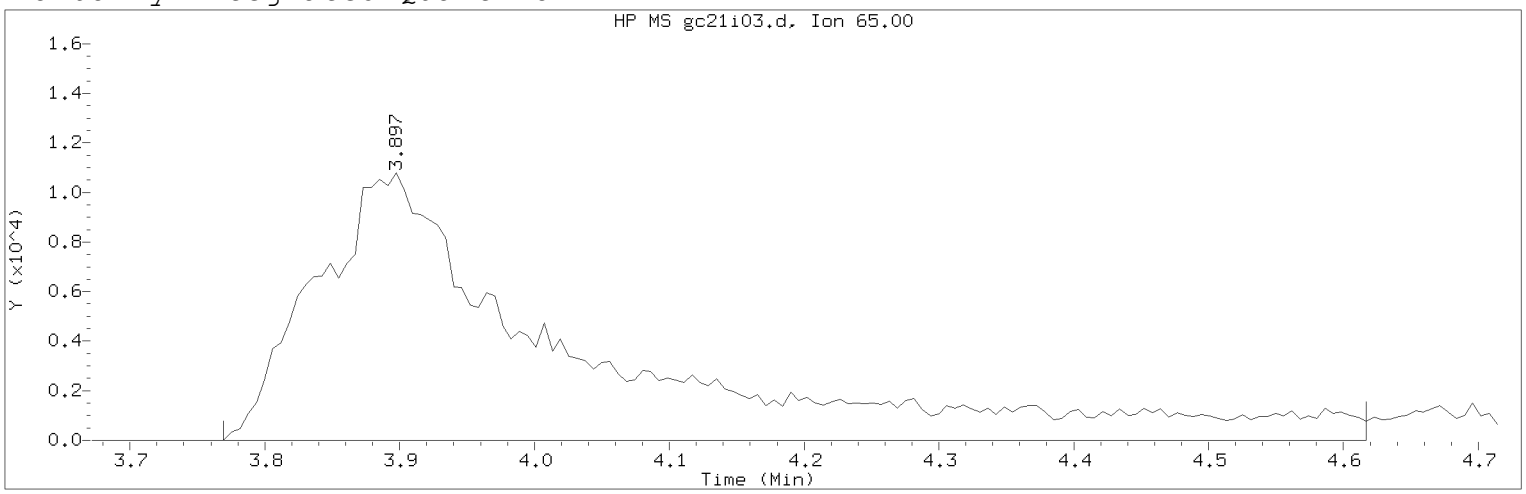
Compound Number	: 21		
Compound Name	: Methyl Acetate		
Scan Number	: 344		
Retention Time (minutes)	: 3.684		
Quant Ion	: 43.00		
Area	: 129875		
On-column Amount (ng)	: 5.4780		
Integration start scan	: 325	Integration stop scan:	365
Y at integration start	: 277	Y at integration end:	277

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

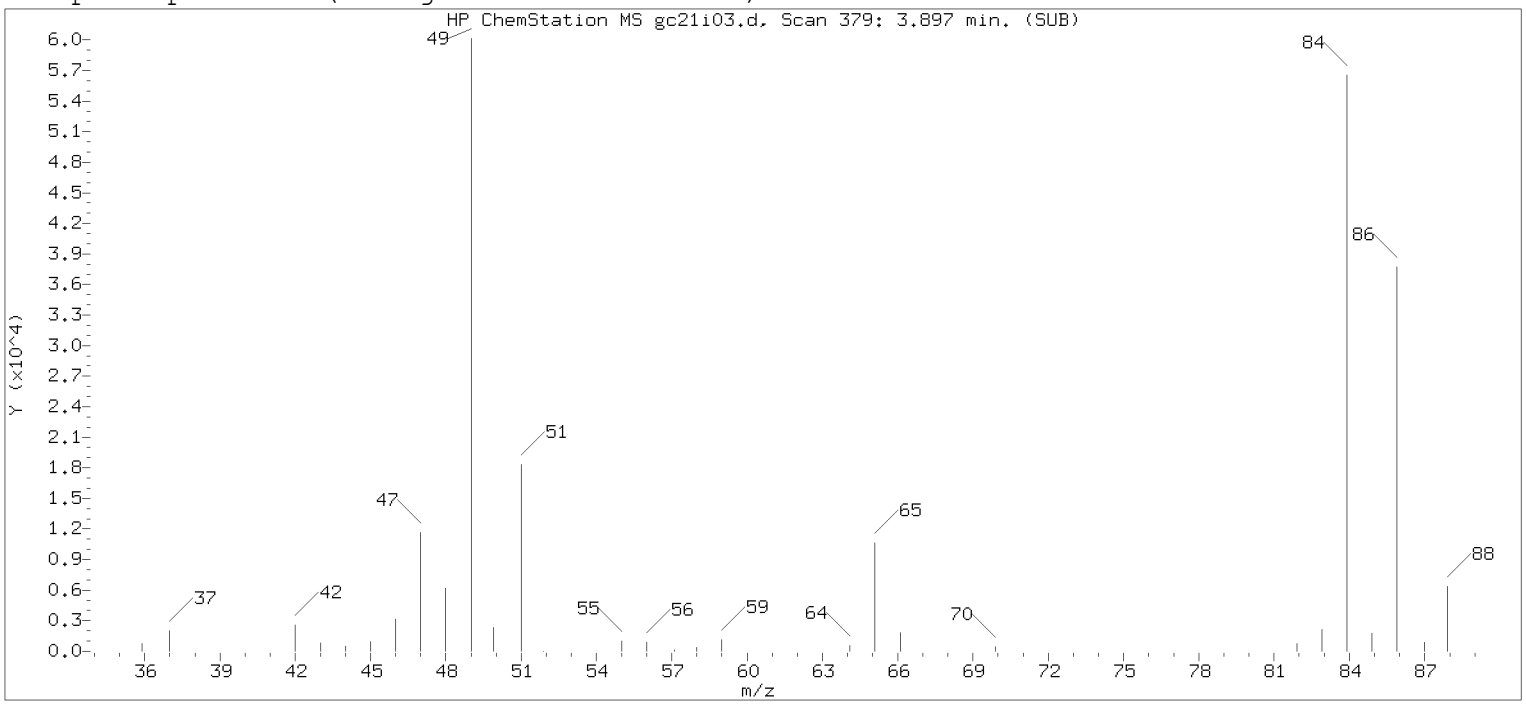
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 379
Retention Time (minutes): 3.897
Quant Ion : 65.00
Area (flag) : 144981M
On-Column Amount (ng) : 50.0000
Integration start scan : 357 Integration stop scan: 496
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

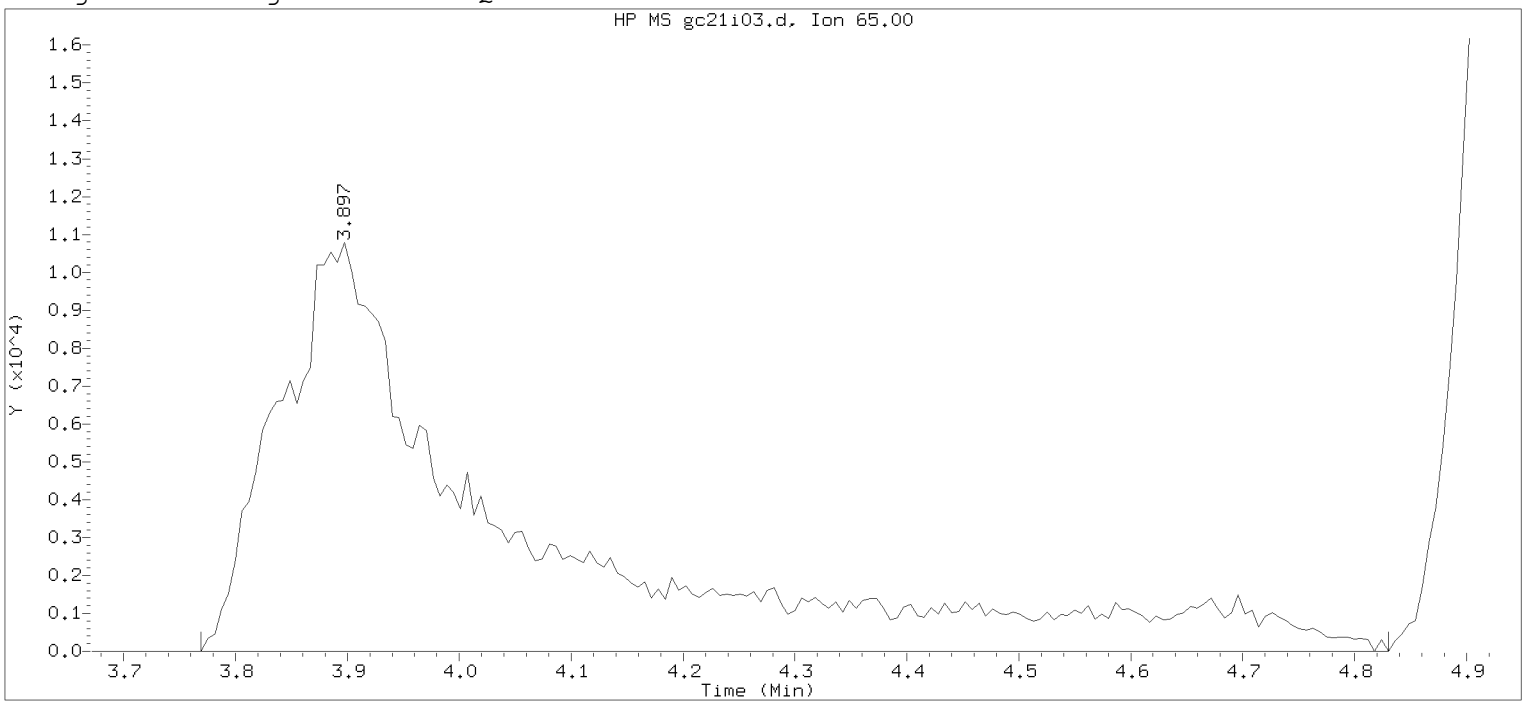
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

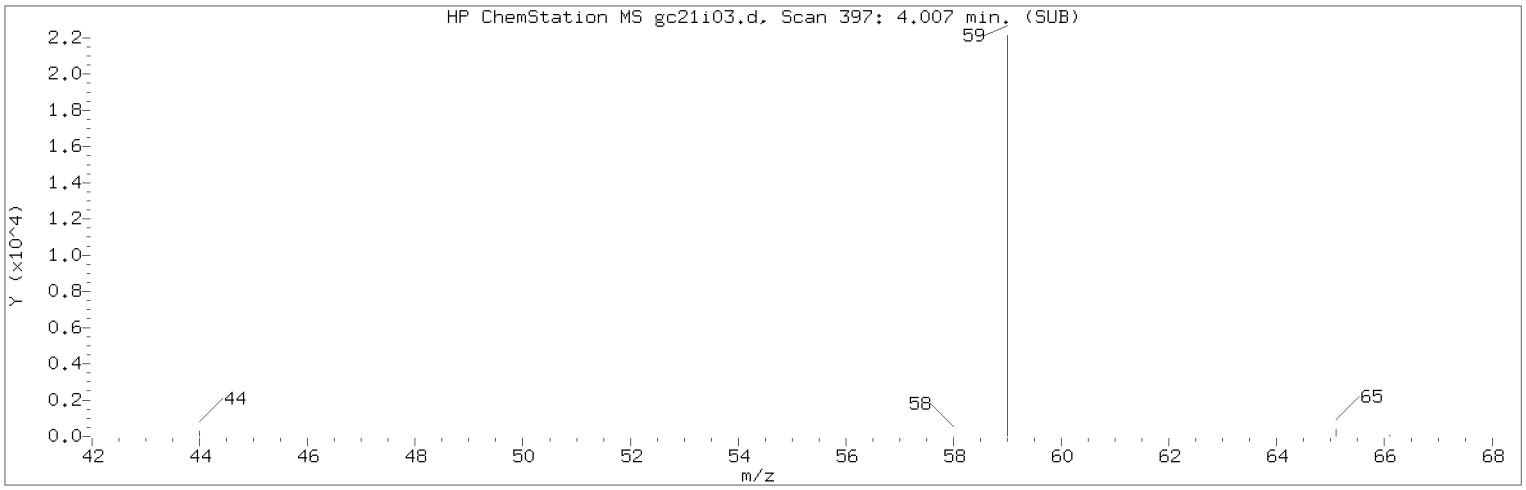
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

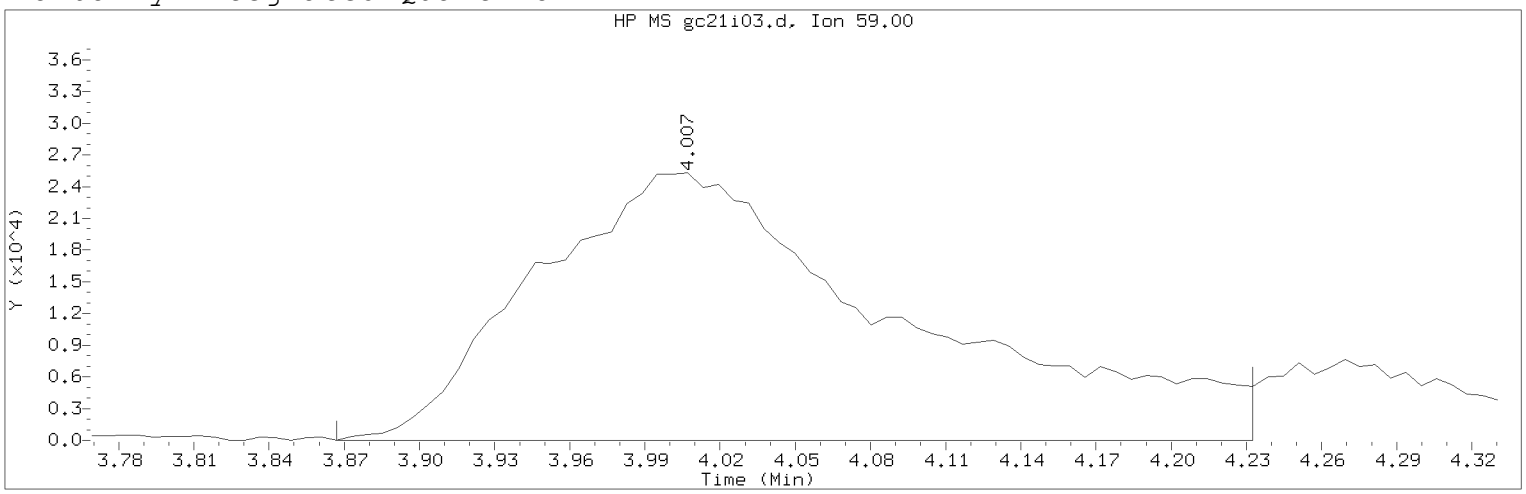
Compound Number	: 26		
Compound Name	: t-Butyl Alcohol-d10		
Scan Number	: 379		
Retention Time (minutes)	: 3.897		
Quant Ion	: 65.00		
Area	: 154564		
On-column Amount (ng)	: 50.0000		
Integration start scan	: 357	Integration stop scan:	531
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

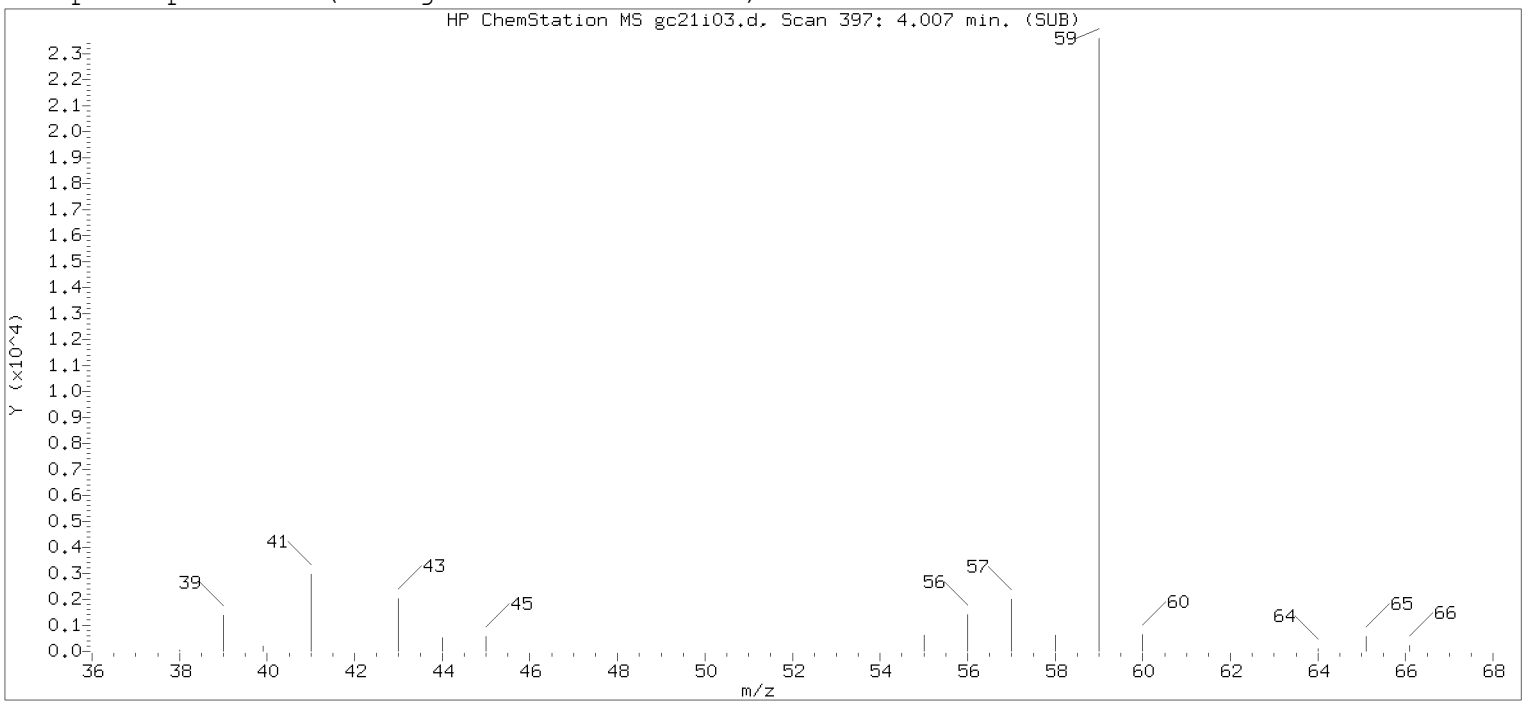
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 397
Retention Time (minutes): 4.007
Quant Ion : 59.00
Area (flag) : 257702M
On-Column Amount (ng) : 101.8358
Integration start scan : 373 Integration stop scan: 433
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

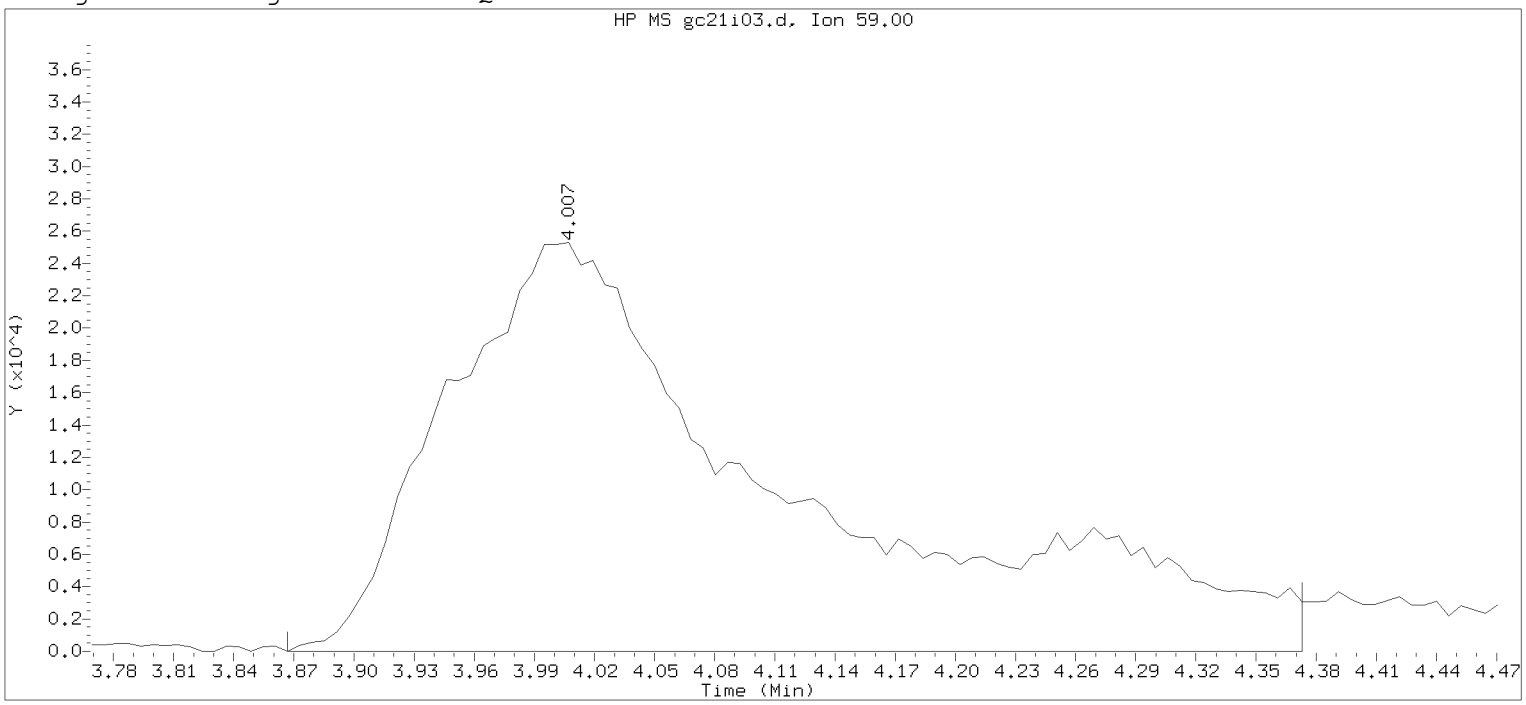
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

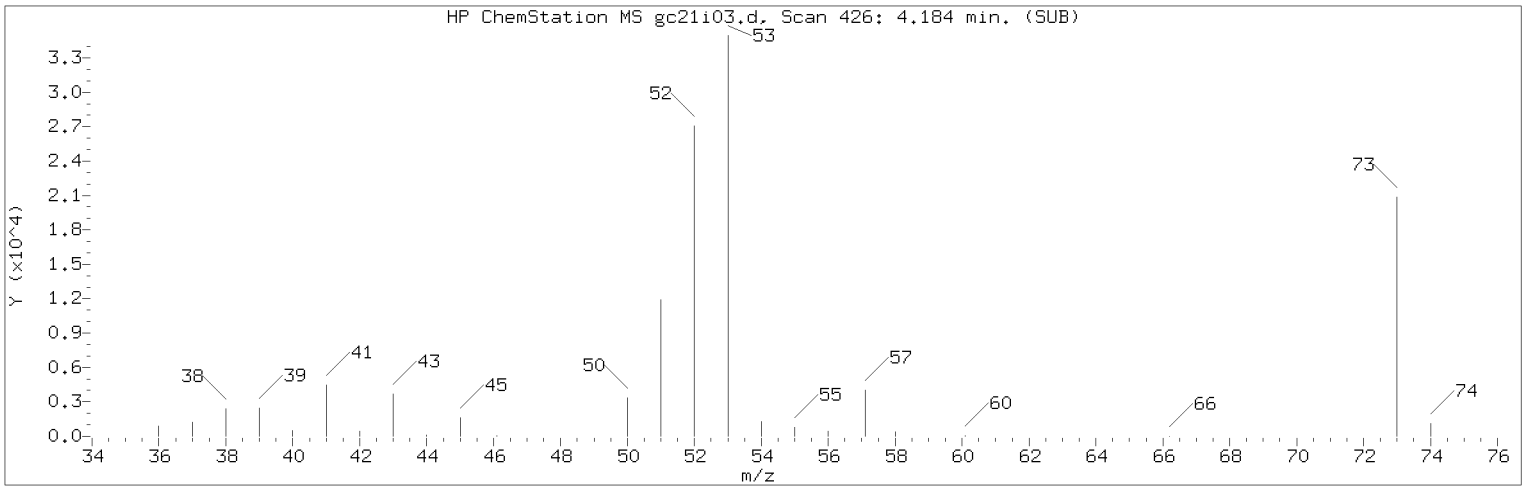
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

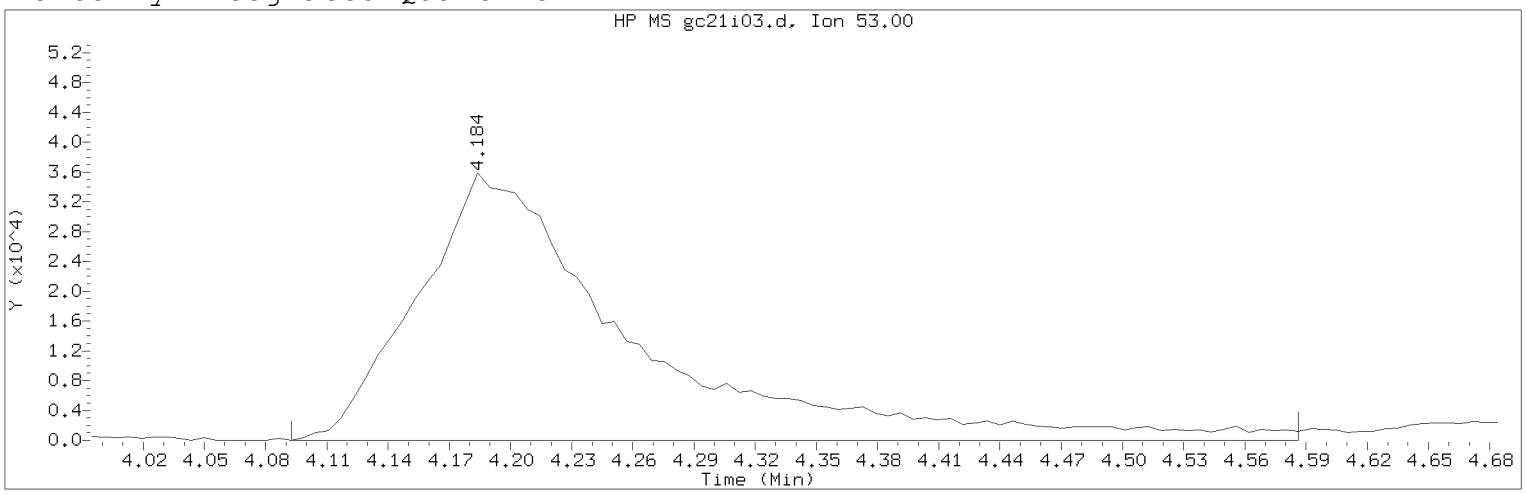
Compound Number	: 28		
Compound Name	: t-Butyl Alcohol		
Scan Number	: 397		
Retention Time (minutes)	: 4.007		
Quant Ion	: 59.00		
Area	: 301175		
On-column Amount (ng)	: 107.8605		
Integration start scan	: 373	Integration stop scan:	456
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

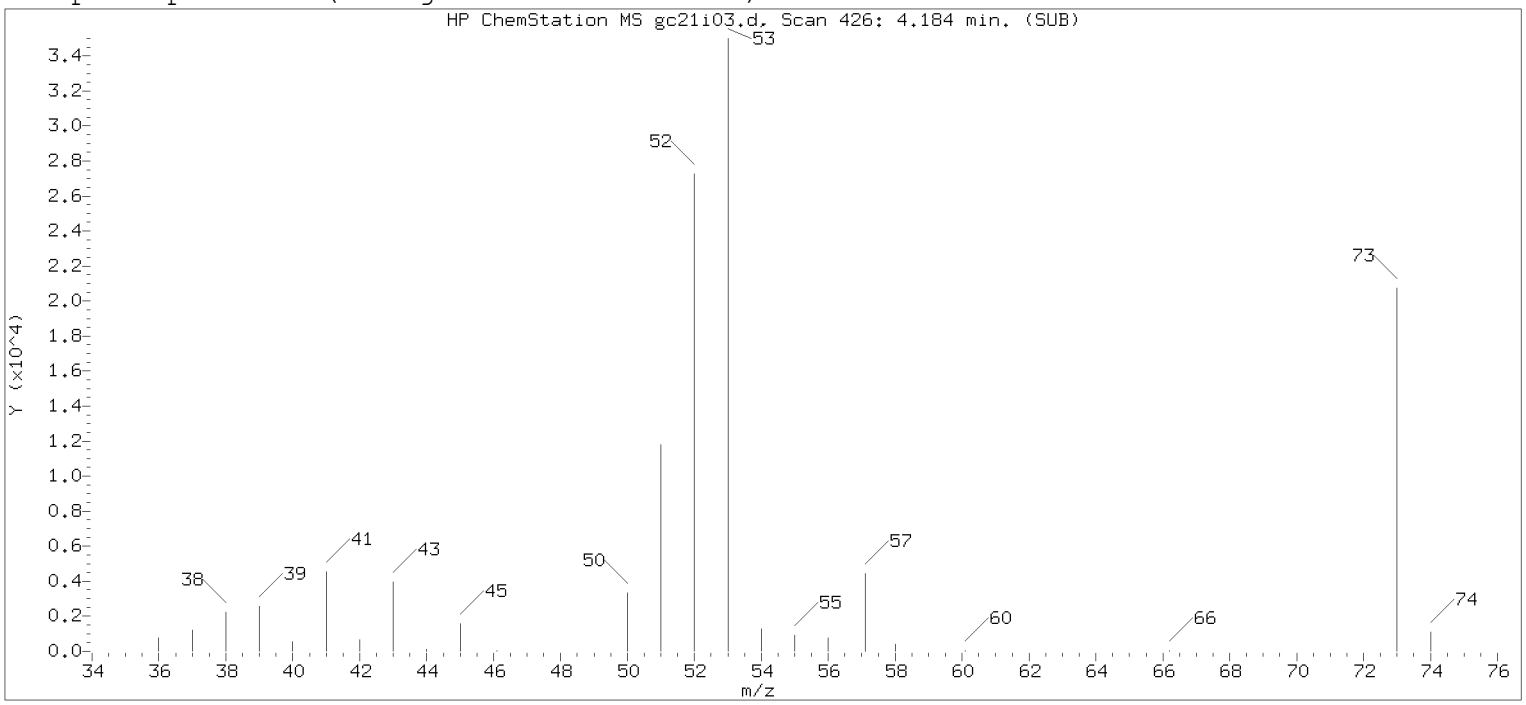
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 426
Retention Time (minutes): 4.184
Quant Ion : 53.00
Area (flag) : 262804M
On-Column Amount (ng) : 24.9375
Integration start scan : 410 Integration stop scan: 491
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

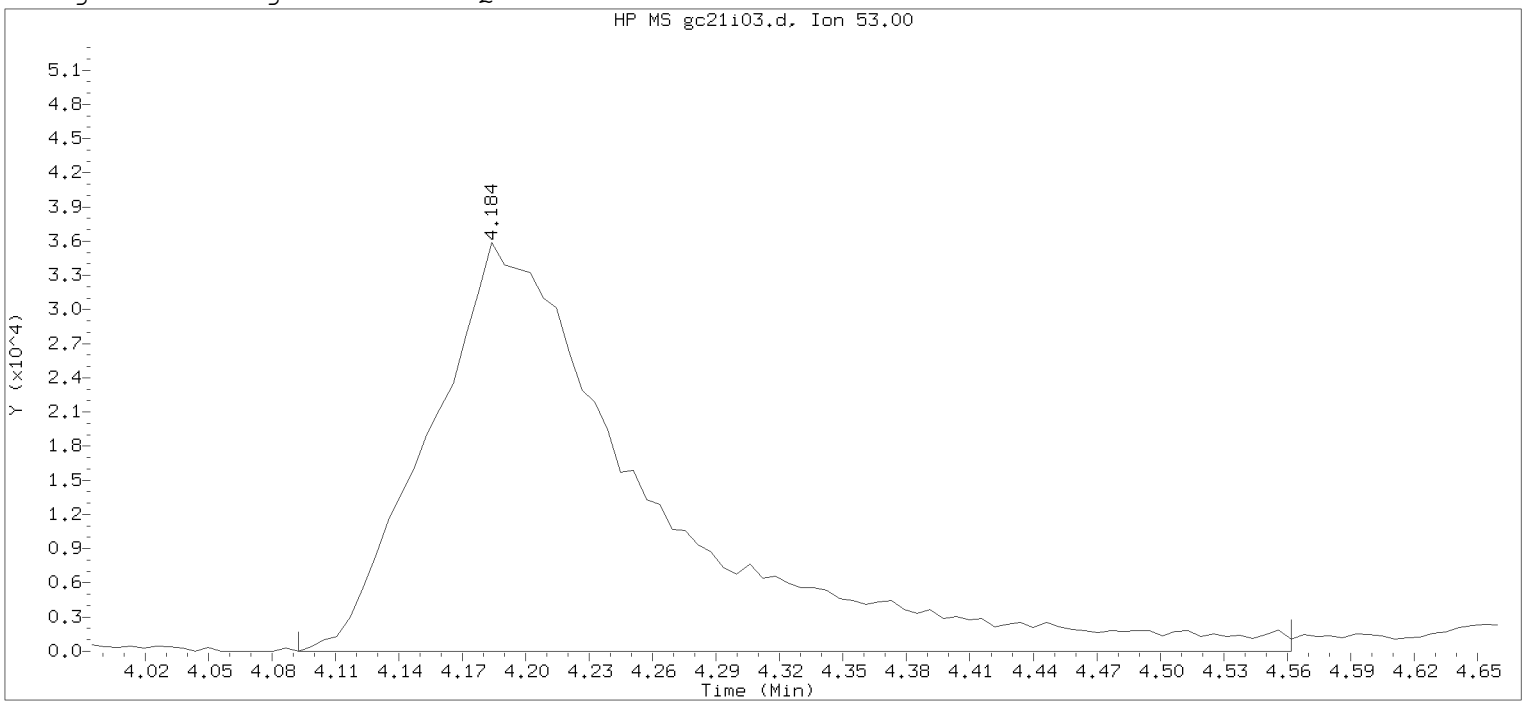
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

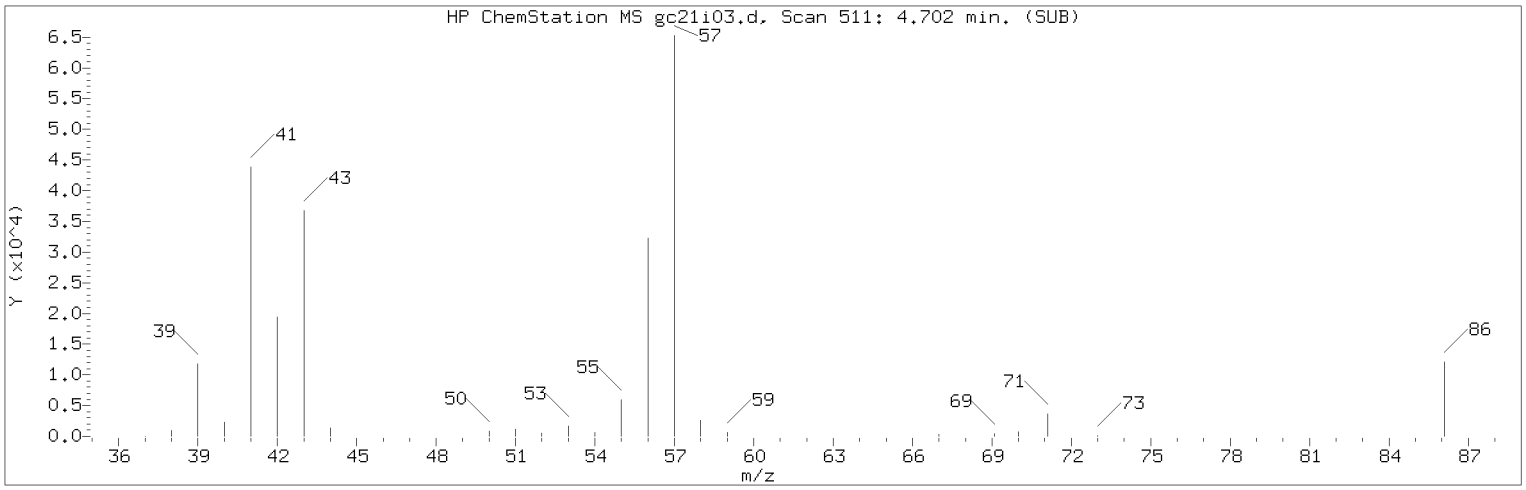
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

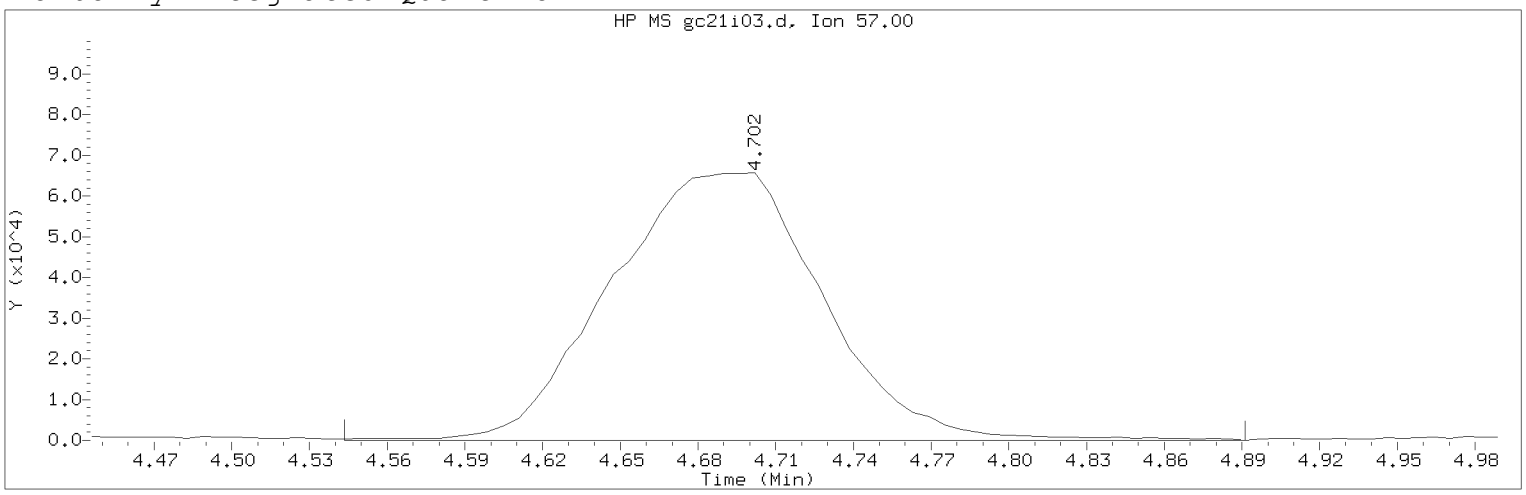
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 426
Retention Time (minutes): 4.184
Quant Ion : 53.00
Area : 260692
On-column Amount (ng) : 24.6222
Integration start scan : 410 Integration stop scan: 487
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

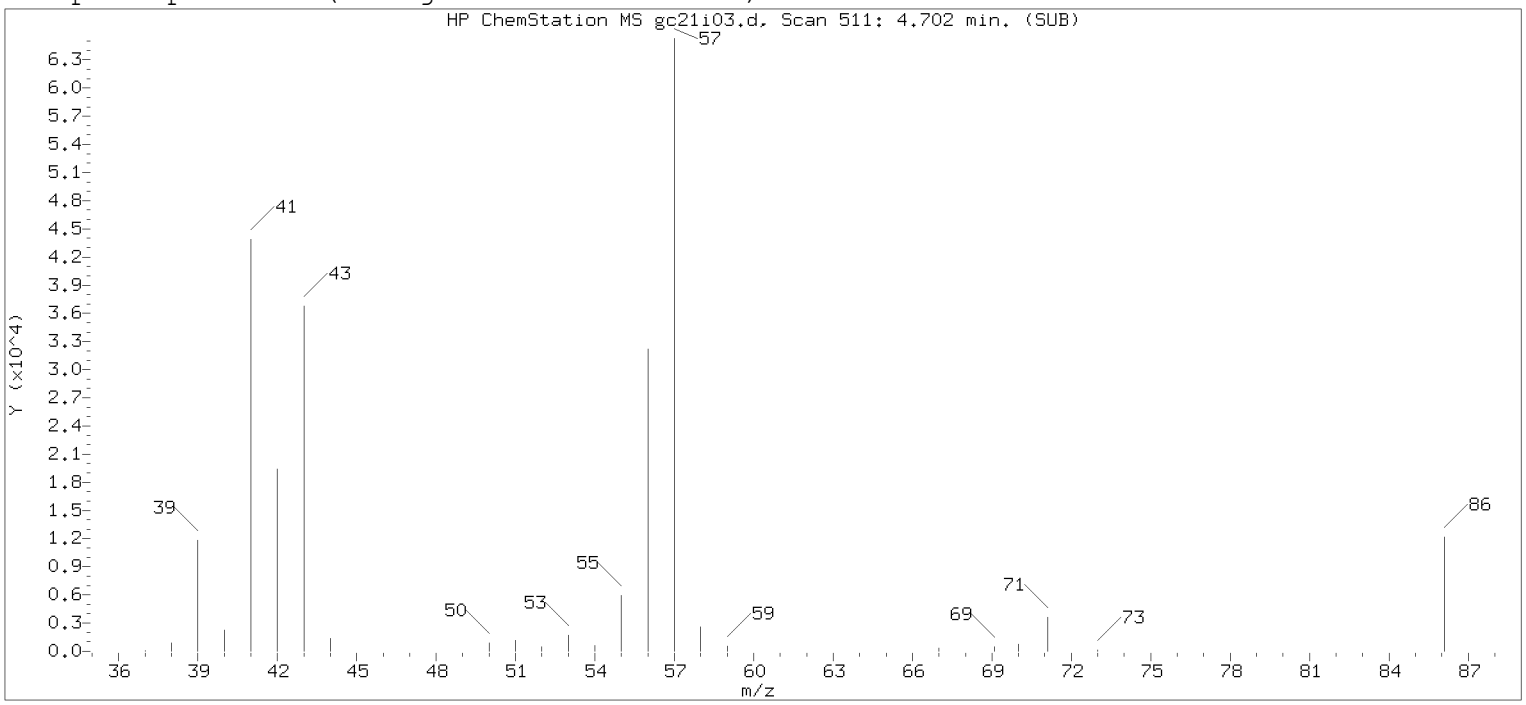
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 511
Retention Time (minutes): 4.702
Quant Ion : 57.00
Area (flag) : 372601M
On-Column Amount (ng) : 5.0516
Integration start scan : 484 Integration stop scan: 541
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

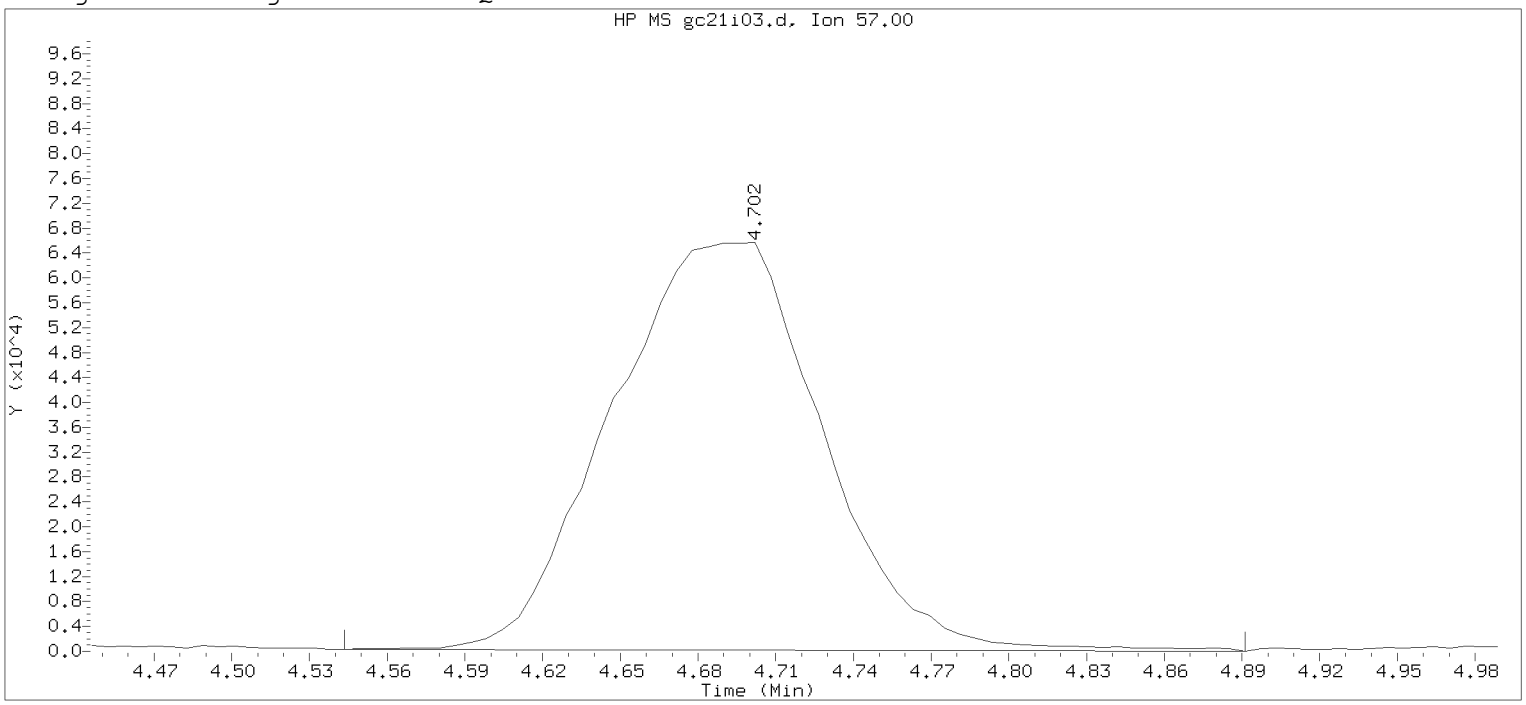
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

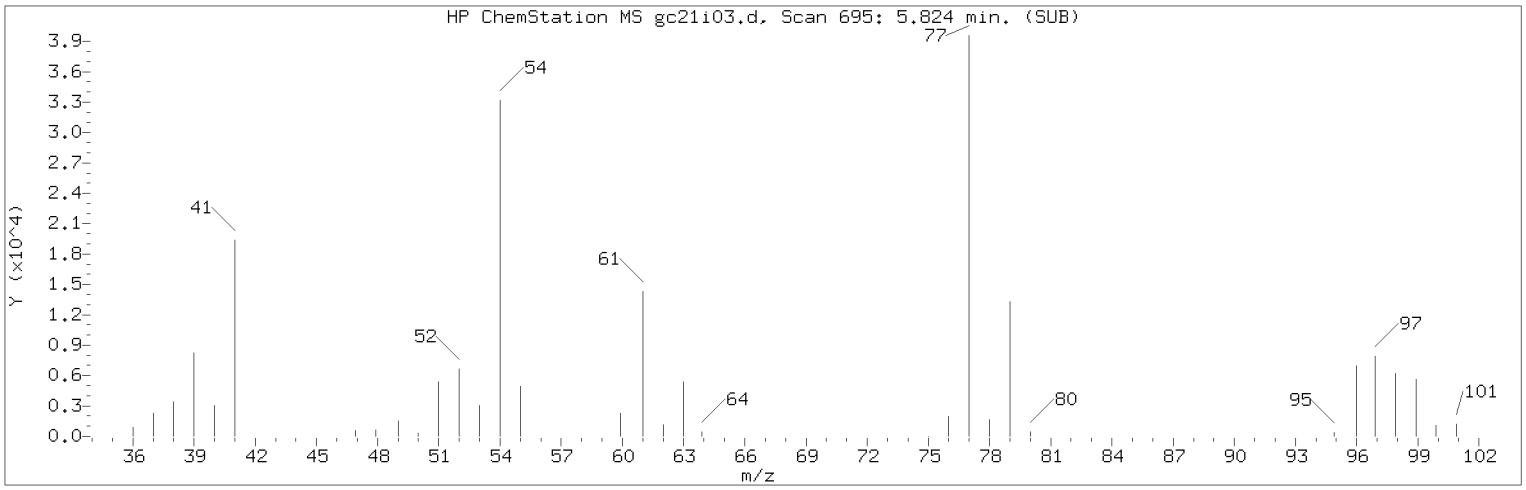
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

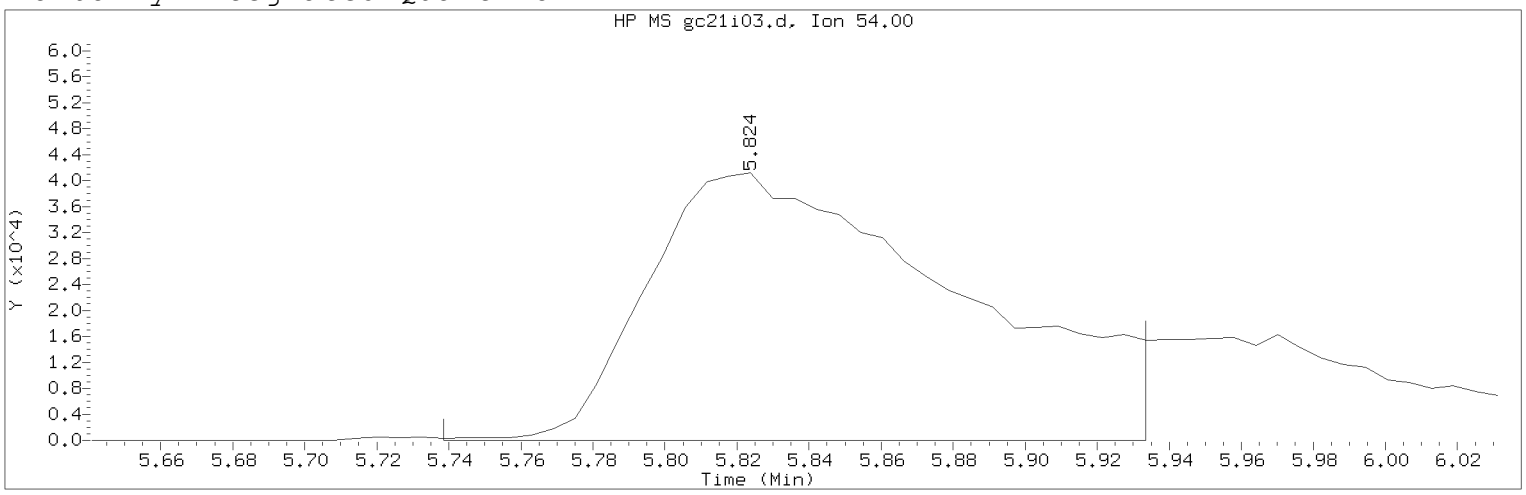
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 511
Retention Time (minutes): 4.702
Quant Ion : 57.00
Area : 369166
On-column Amount (ng) : 4.8568
Integration start scan : 484 Integration stop scan: 541
Y at integration start : 324 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

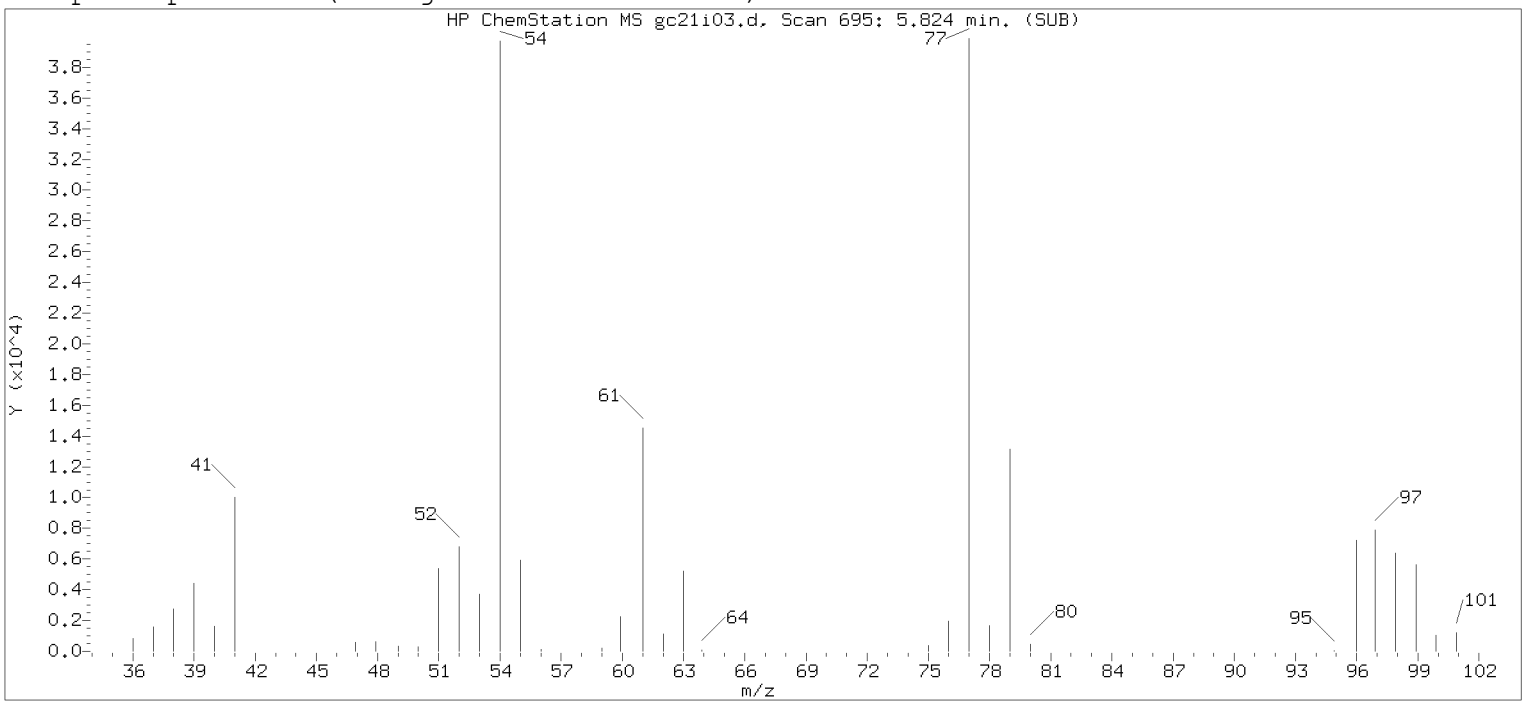
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 695
Retention Time (minutes): 5.824
Quant Ion : 54.00
Area (flag) : 249666M
On-Column Amount (ng) : 98.8865
Integration start scan : 680 Integration stop scan: 712
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

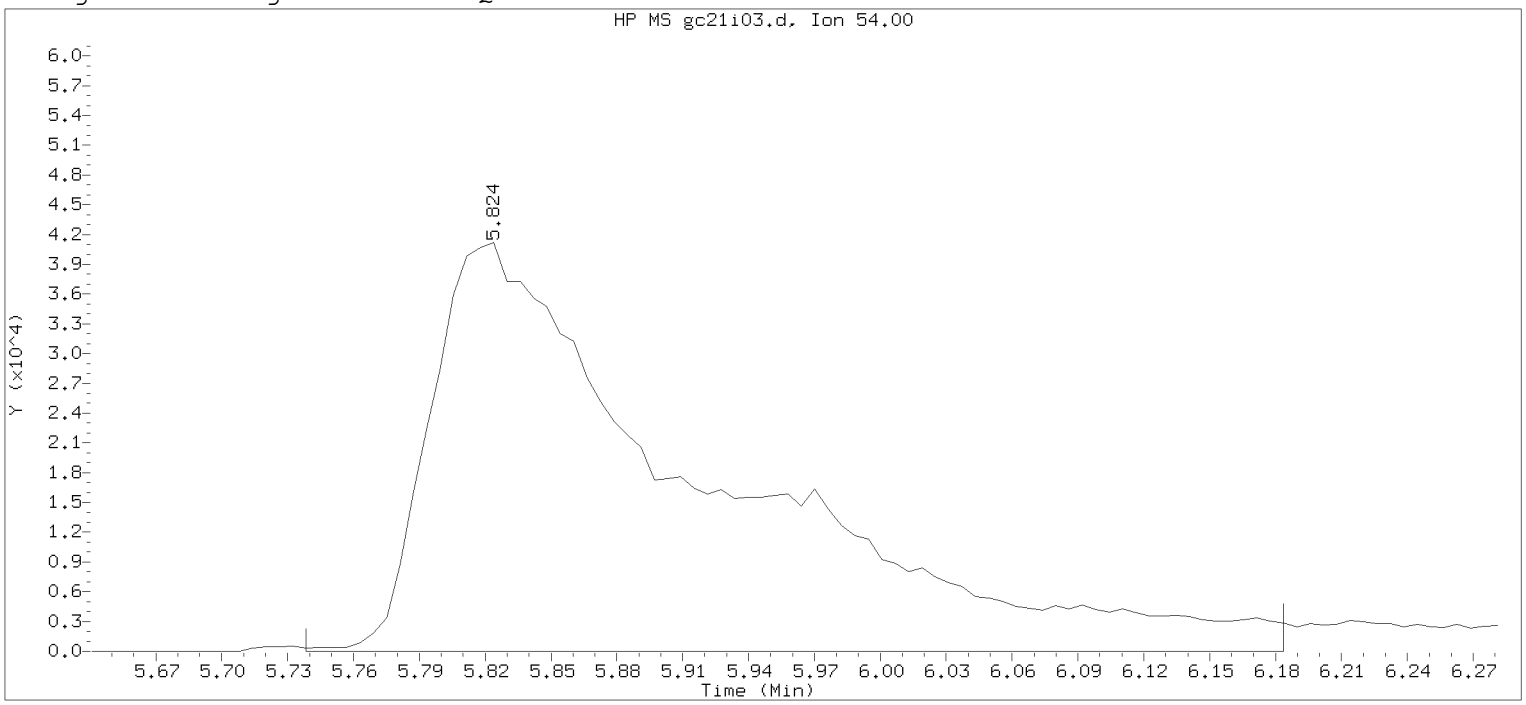
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

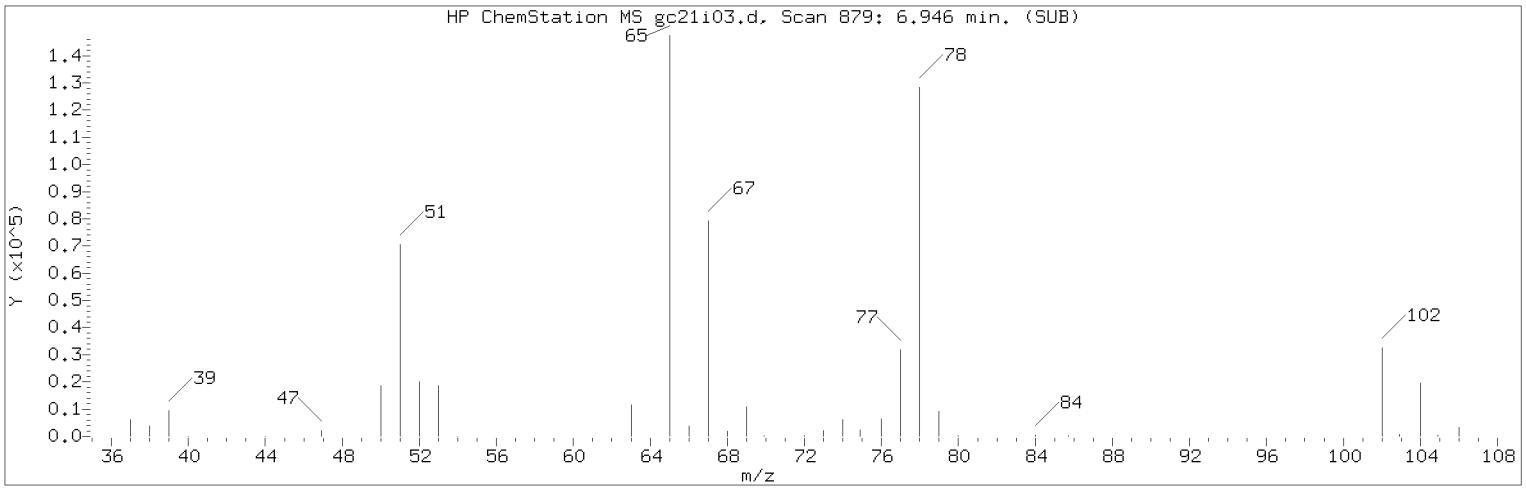
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

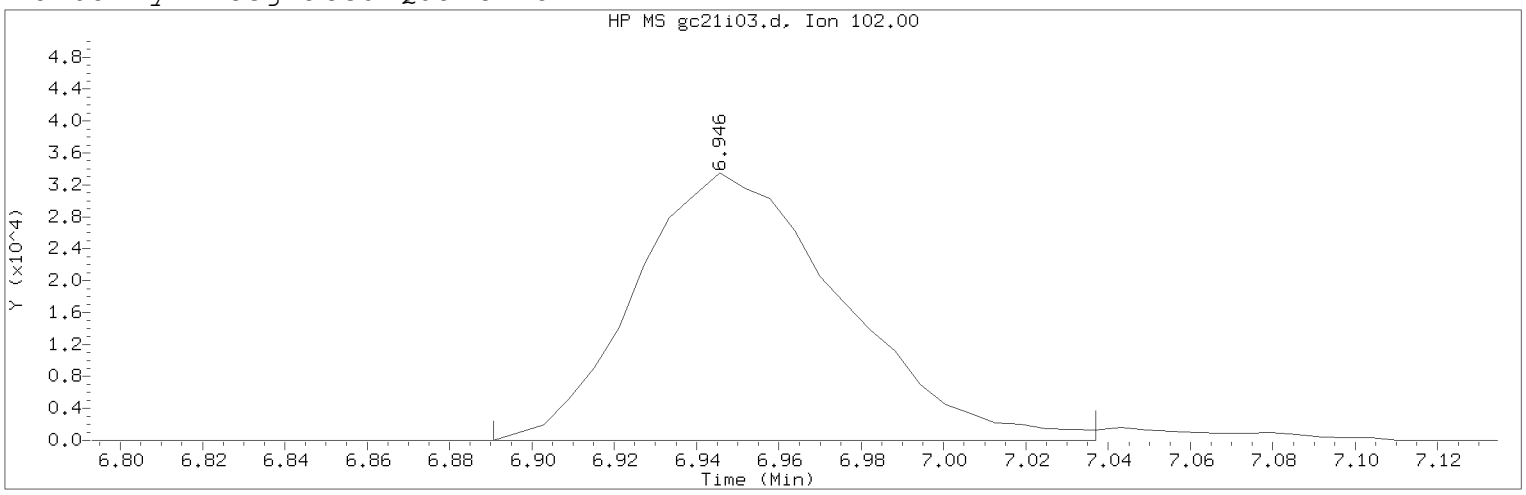
Compound Number	: 42		
Compound Name	: Propionitrile		
Scan Number	: 695		
Retention Time (minutes)	: 5.824		
Quant Ion	: 54.00		
Area	: 356493		
On-column Amount (ng)	: 100.6872		
Integration start scan	: 680	Integration stop scan:	753
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

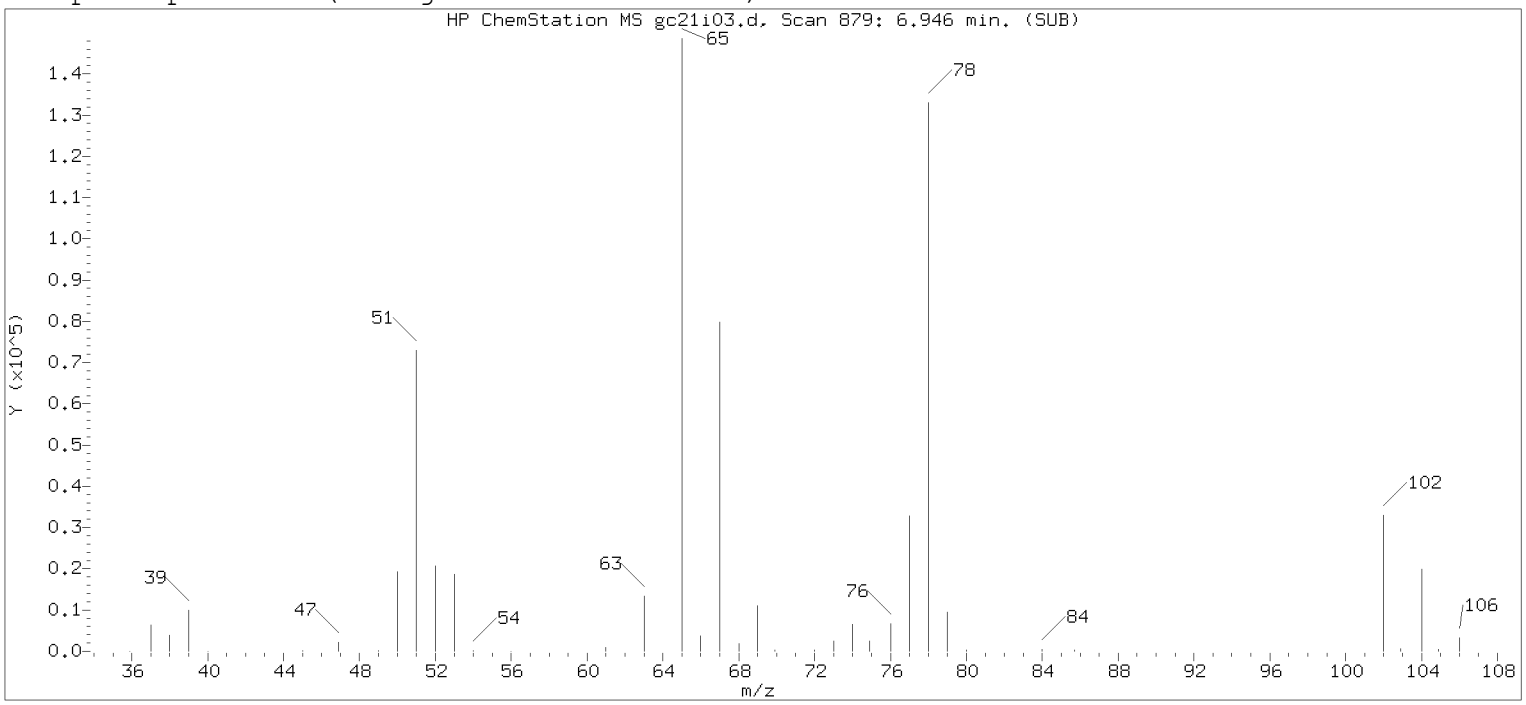
Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 879
Retention Time (minutes): 6.946
Quant Ion : 102.00
Area (flag) : 116816M
On-Column Amount (ng) : 9.8771
Integration start scan : 869 Integration stop scan: 893
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

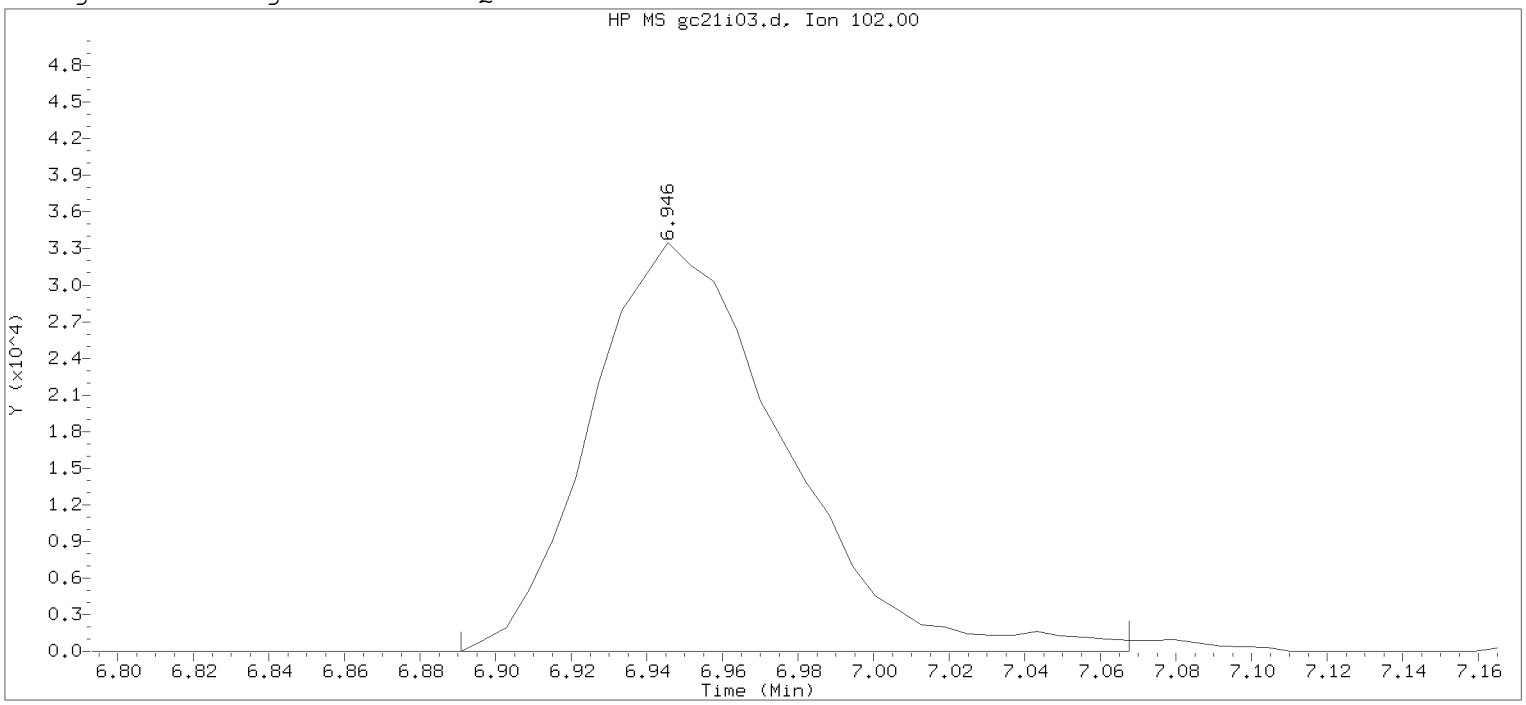
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

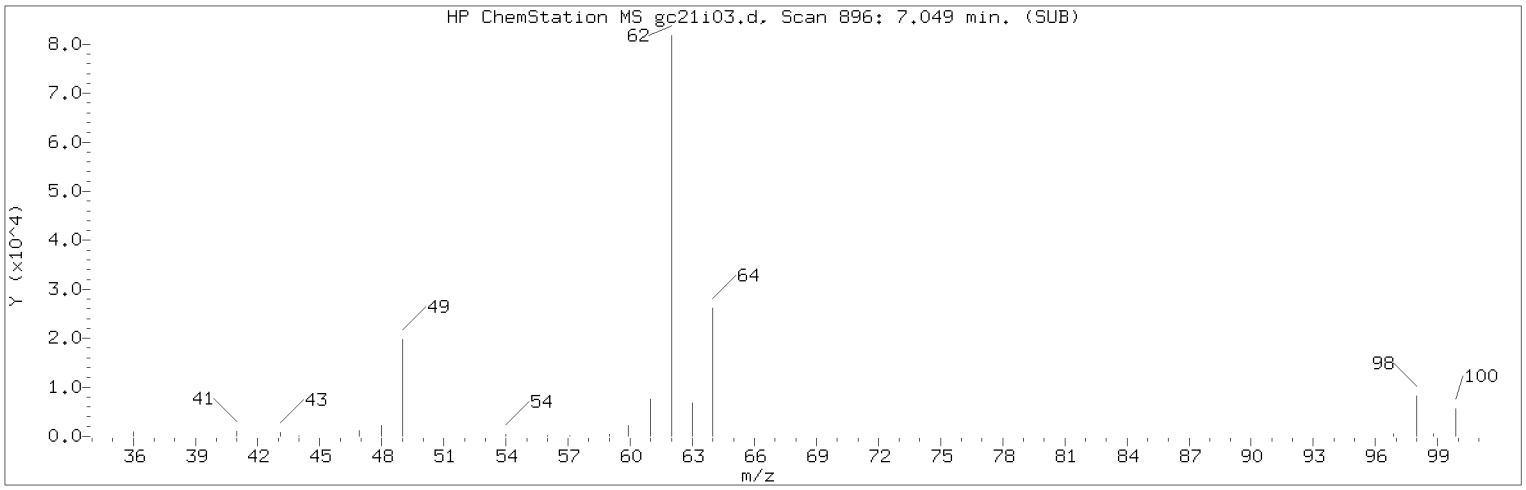
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

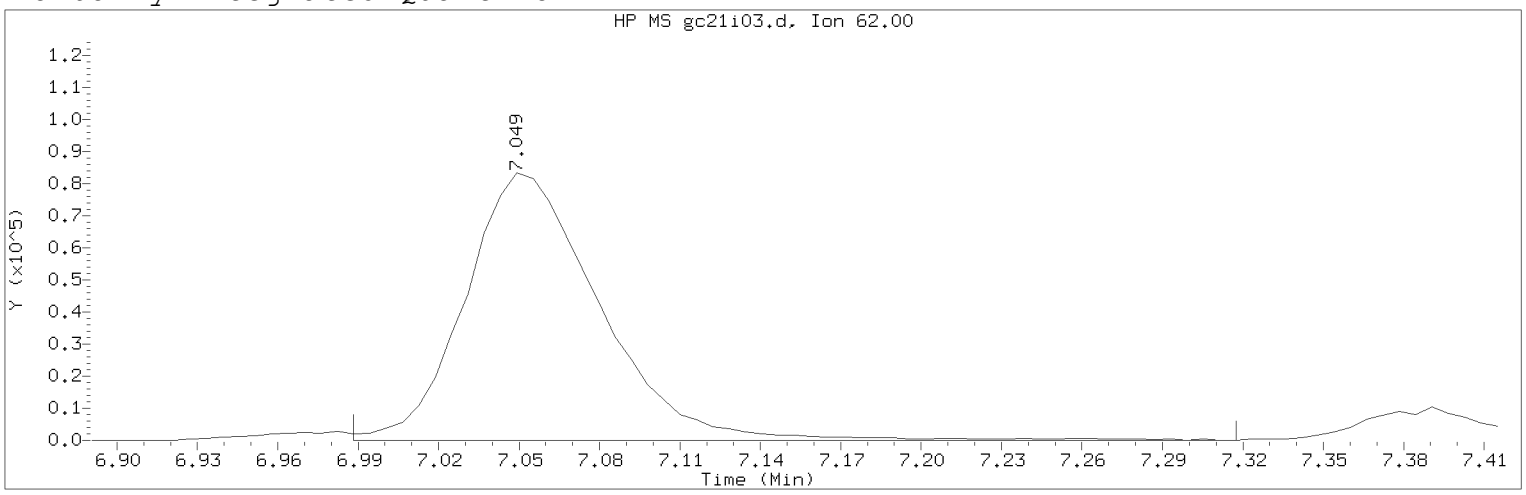
Compound Number	: 57		
Compound Name	: 1,2-Dichloroethane-d4		
Scan Number	: 879		
Retention Time (minutes)	: 6.946		
Quant Ion	: 102.00		
Area	: 118812		
On-column Amount (ng)	: 10.0443		
Integration start scan	: 869	Integration stop scan:	898
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

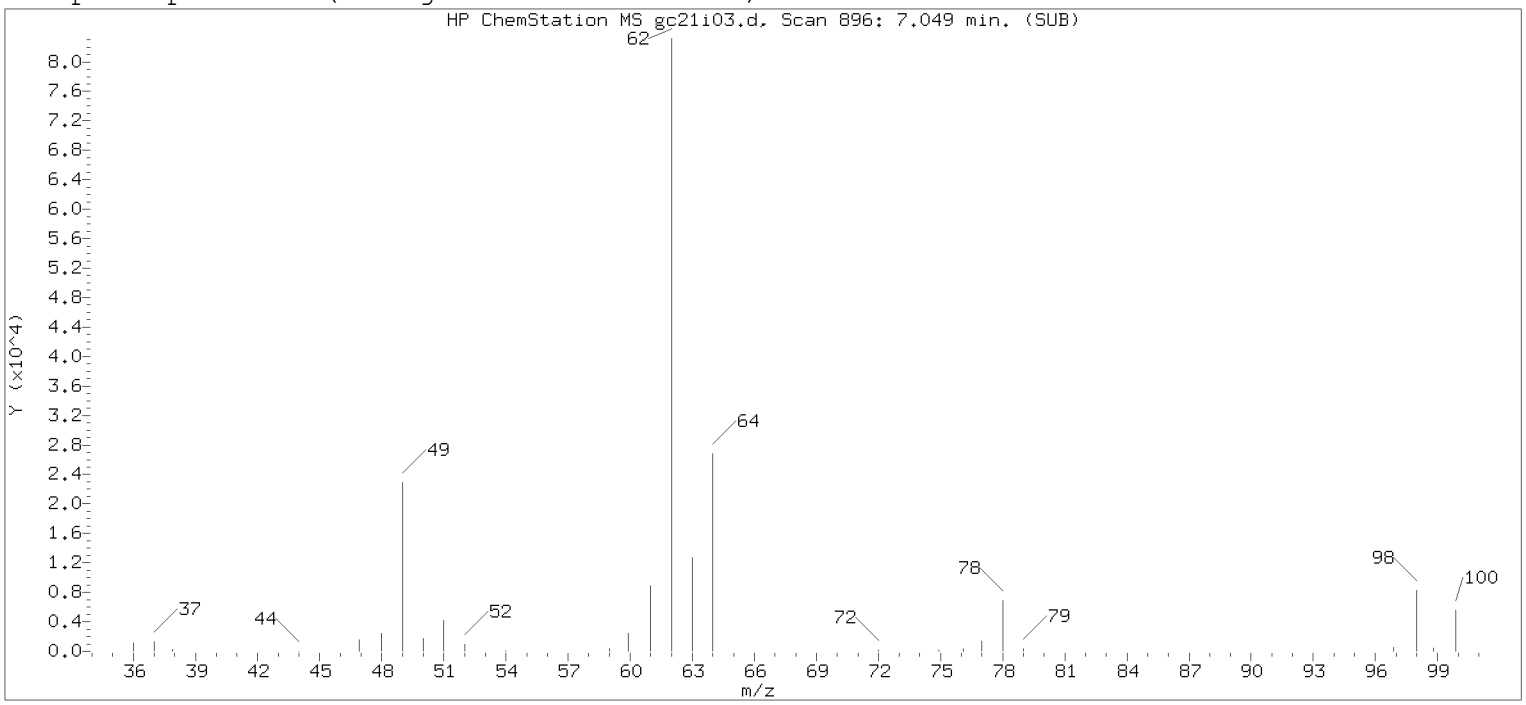
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 896
Retention Time (minutes): 7.049
Quant Ion : 62.00
Area (flag) : 290761M
On-Column Amount (ng) : 4.7248
Integration start scan : 885 Integration stop scan: 939
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

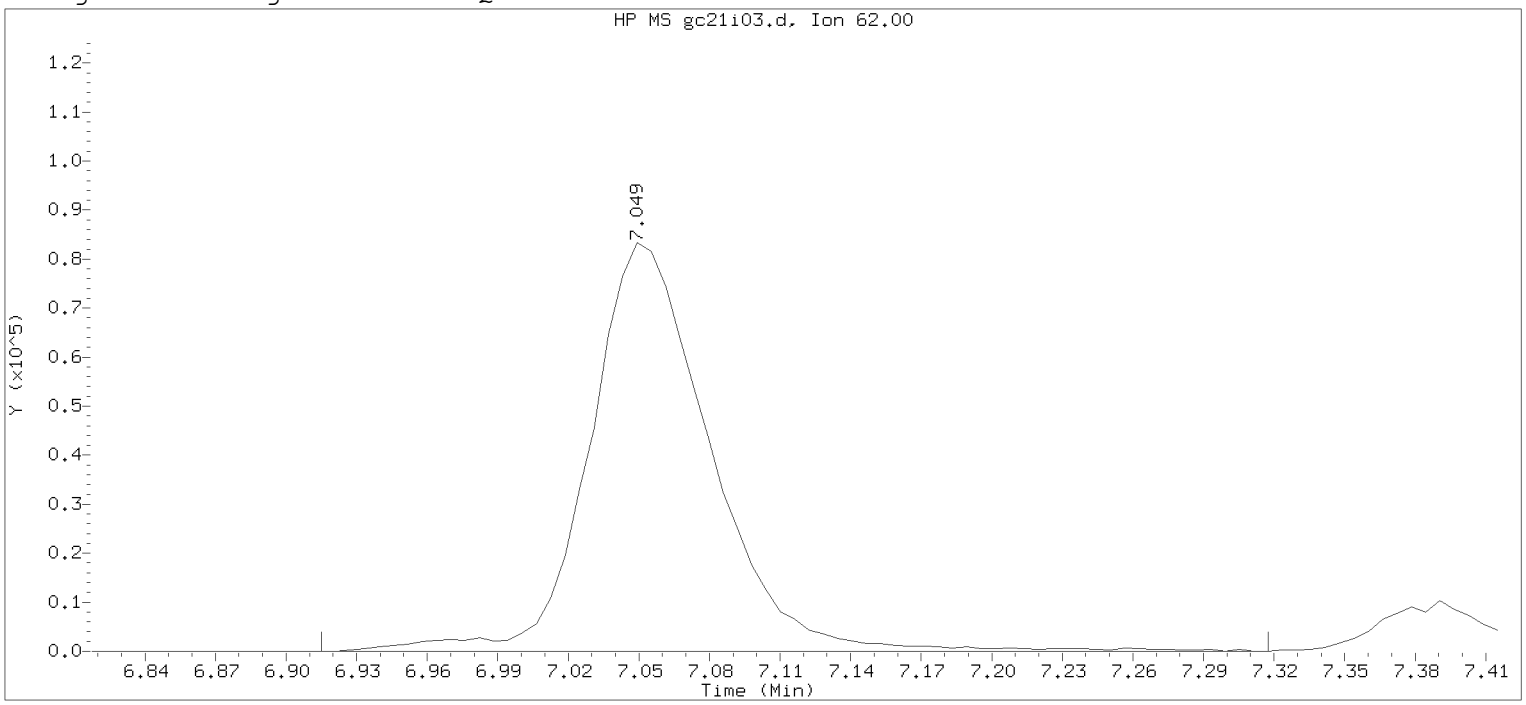
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

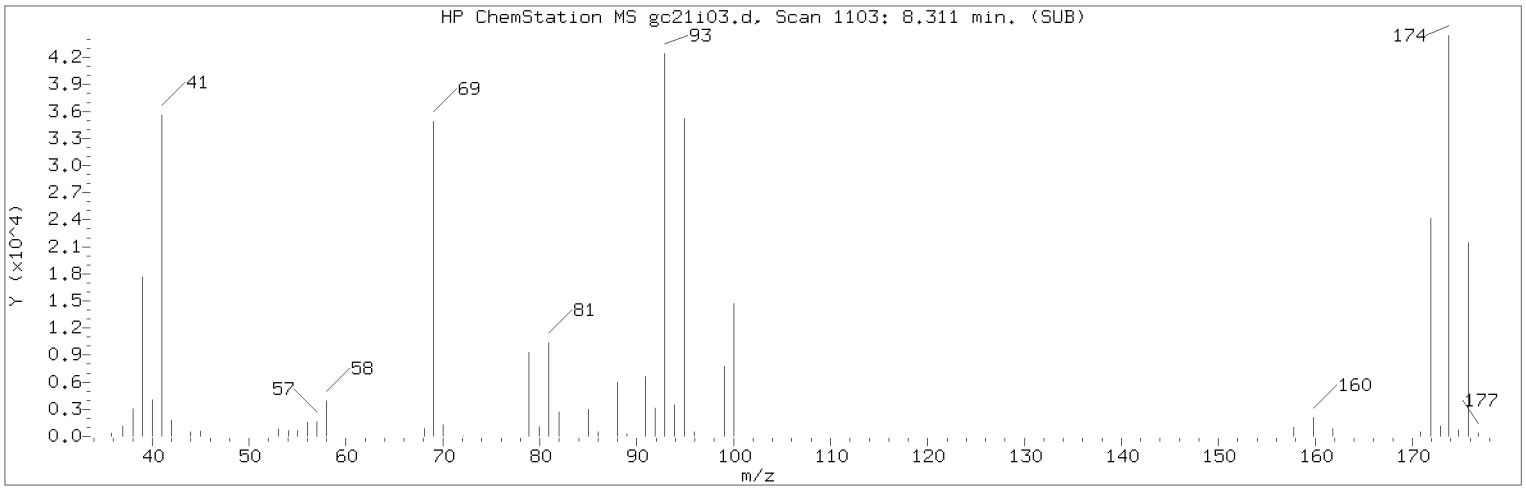
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

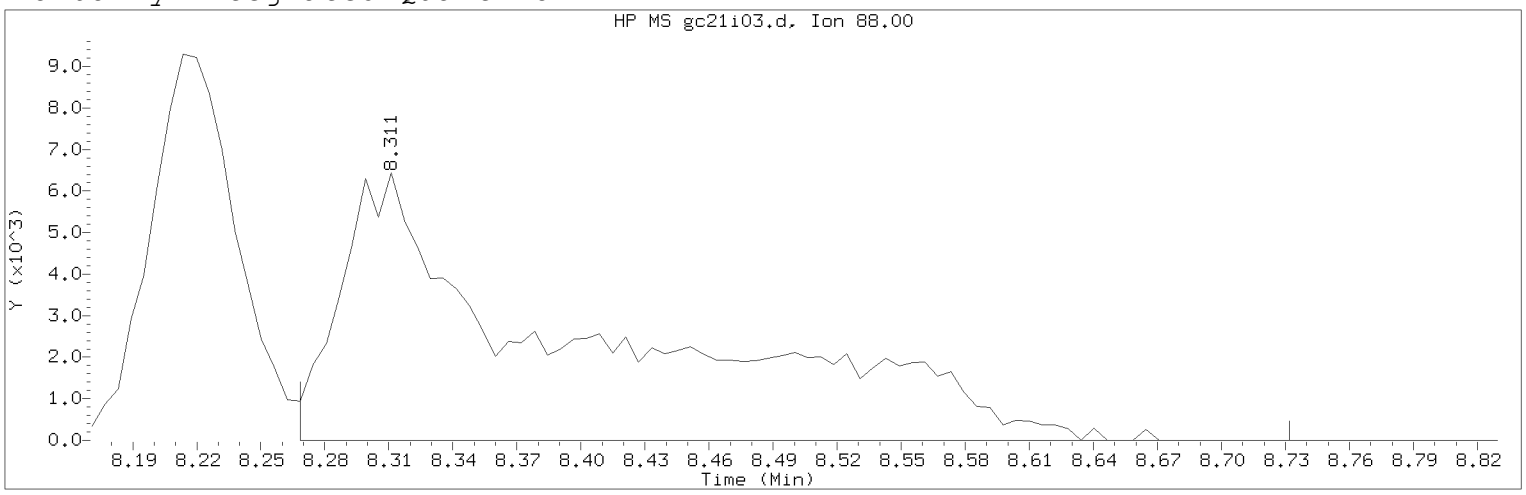
Compound Number	: 59		
Compound Name	: 1,2-Dichloroethane		
Scan Number	: 896		
Retention Time (minutes)	: 7.049		
Quant Ion	: 62.00		
Area	: 296666		
On-column Amount (ng)	: 4.9514		
Integration start scan	: 873	Integration stop scan:	939
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

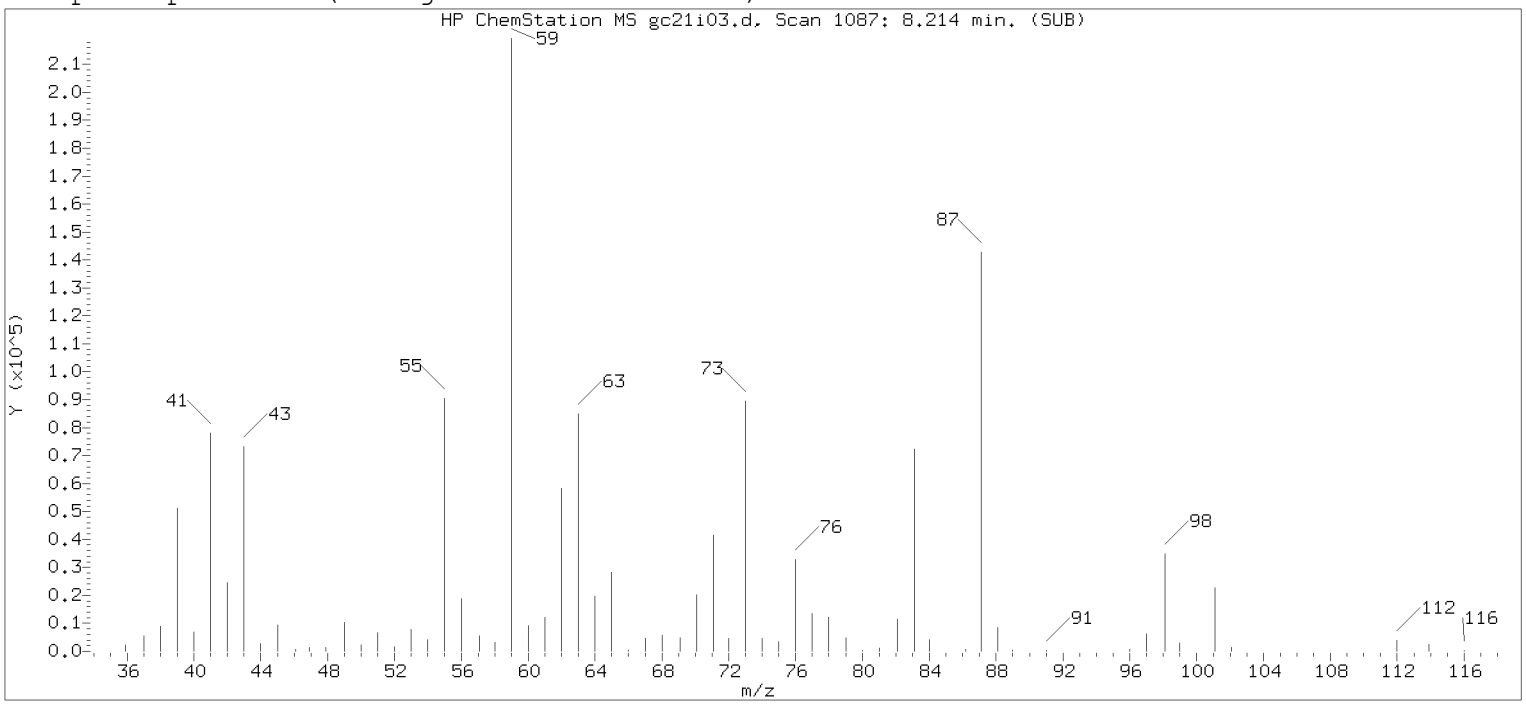
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1103
Retention Time (minutes): 8.311
Quant Ion : 88.00
Area (flag) : 50588M
On-Column Amount (ng) : 246.0101
Integration start scan : 1095 Integration stop scan: 1171
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

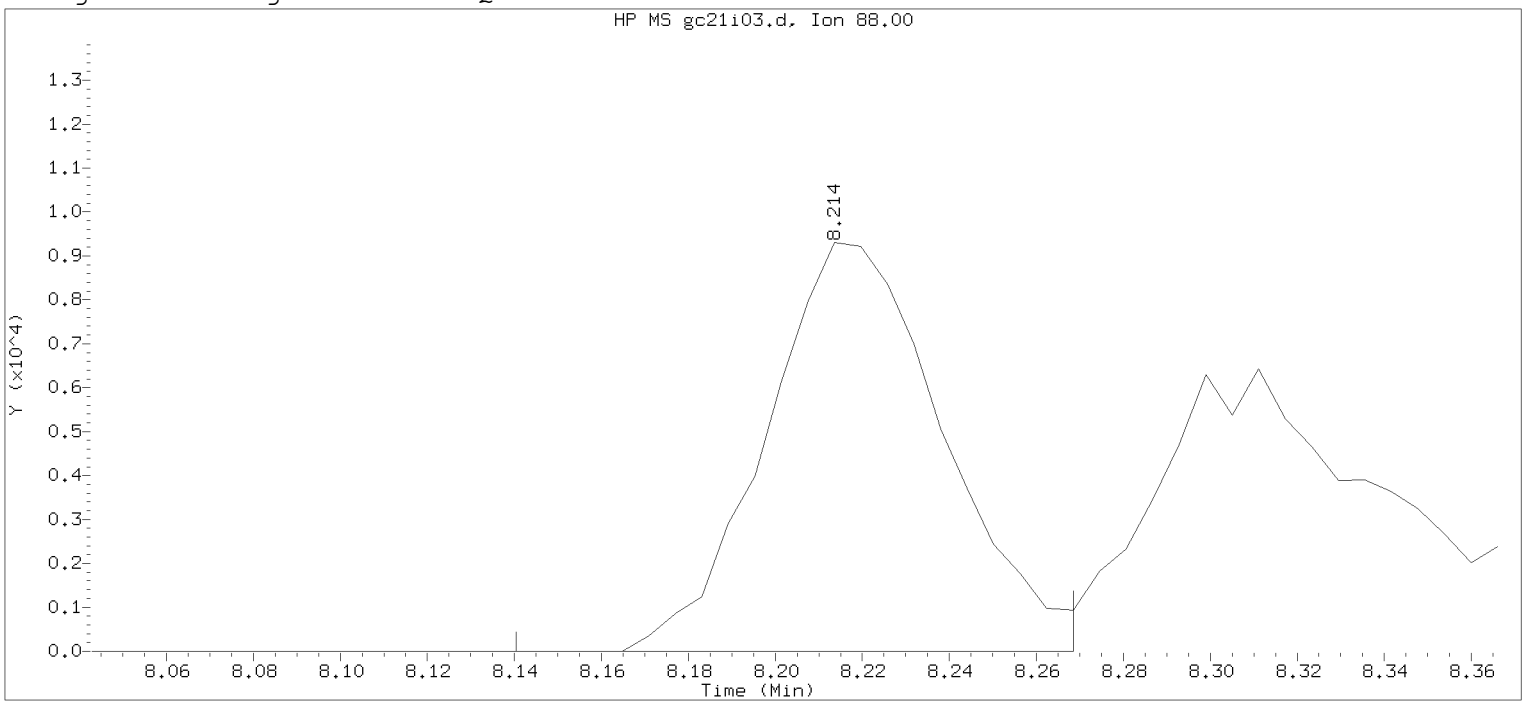
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

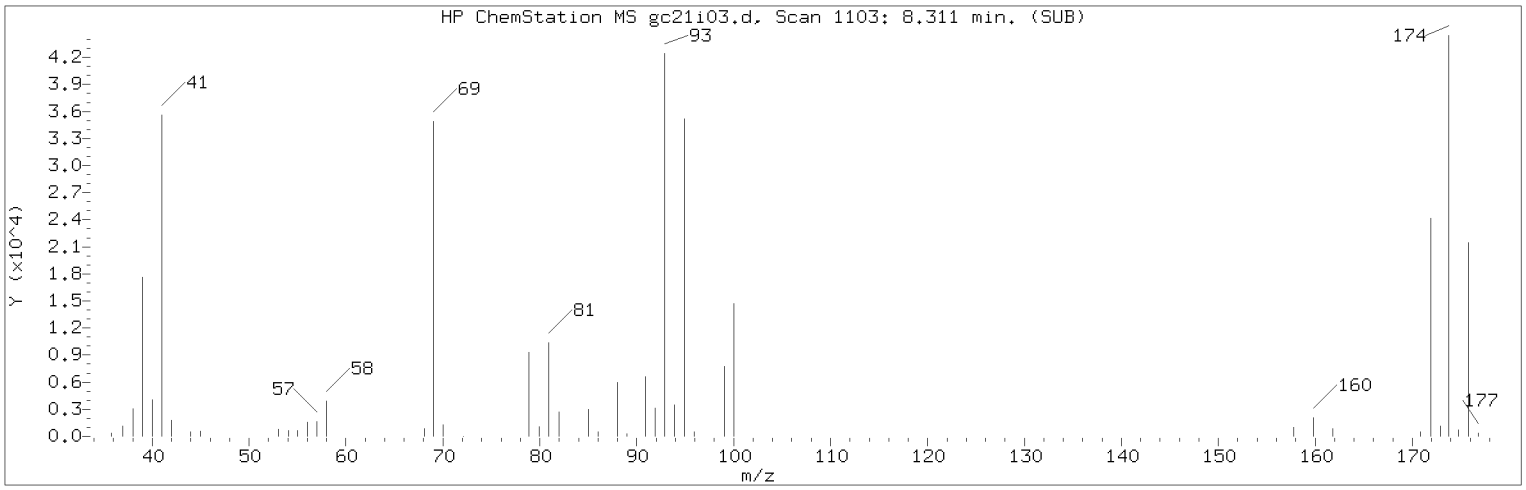
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

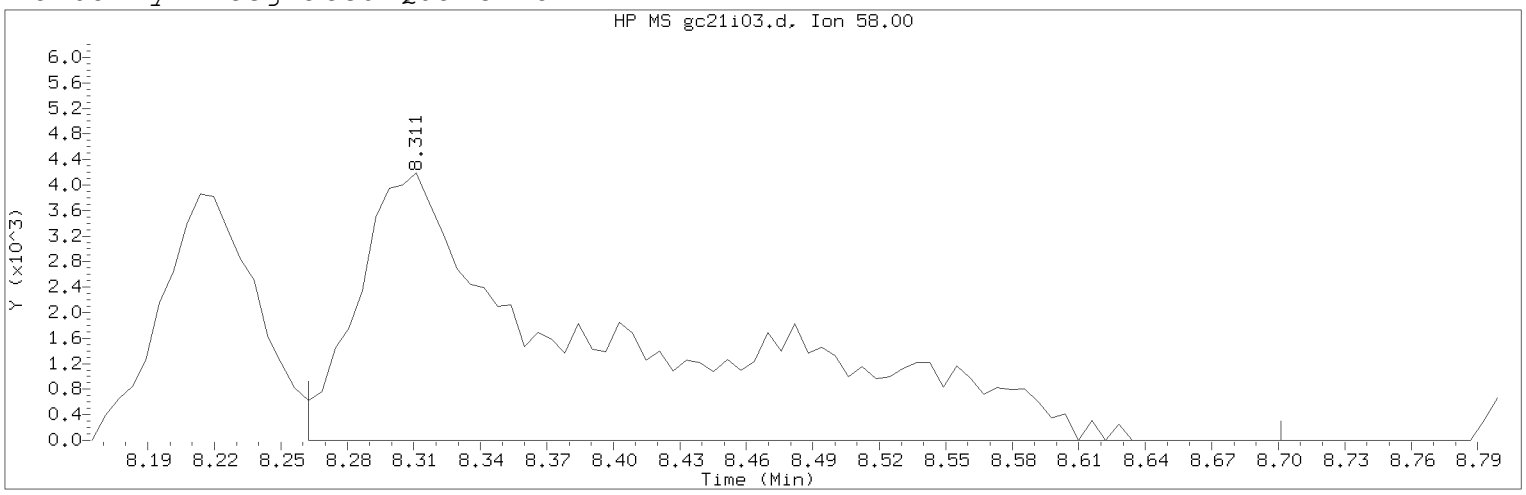
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1087		
Retention Time (minutes)	: 8.214		
Quant Ion	: 88.00		
Area	: 26238		
On-column Amount (ng)	: 183.8771		
Integration start scan	: 1074	Integration stop scan:	1095
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

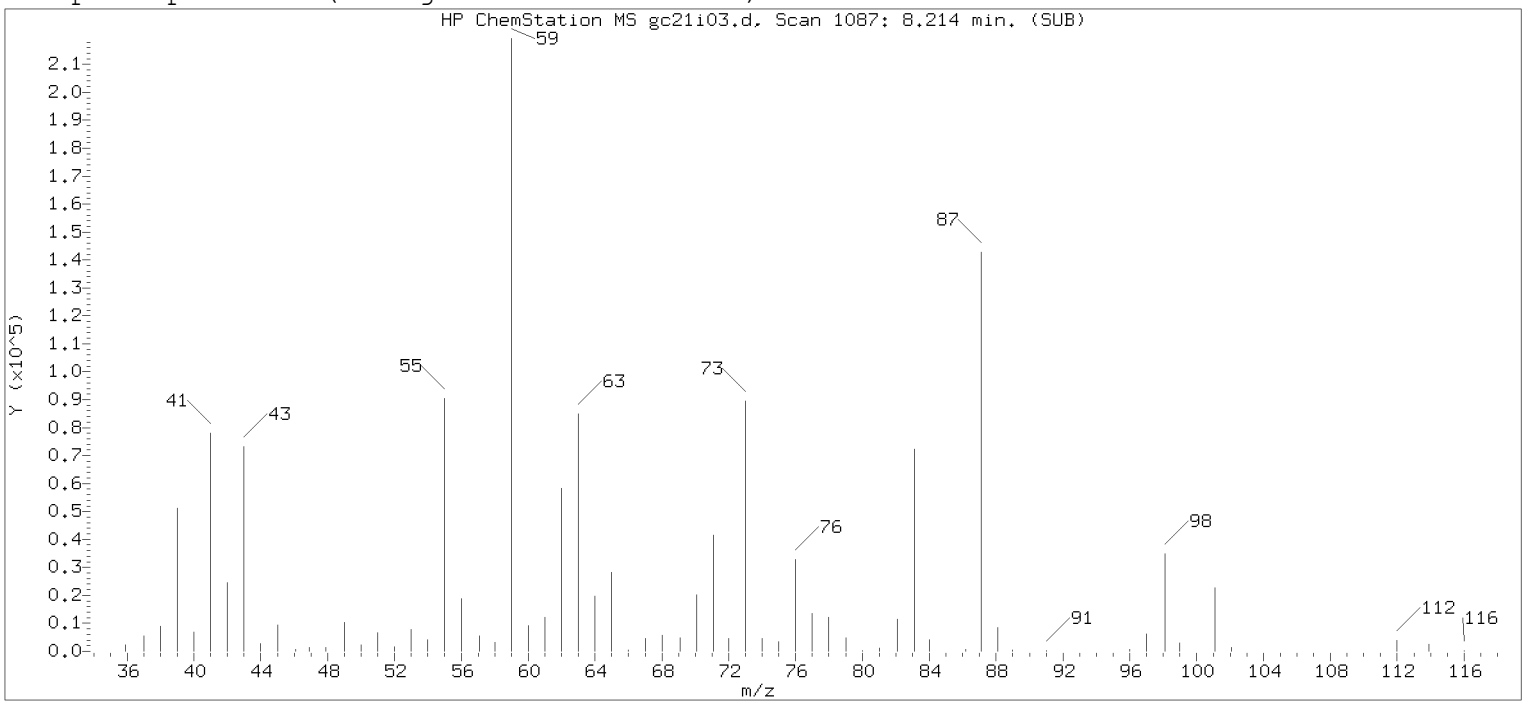
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1103
Retention Time (minutes): 8.311
Quant Ion : 58.00
Area (flag) : 33362M
On-Column Amount (ng) : 293.5290
Integration start scan : 1094 Integration stop scan: 1166
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

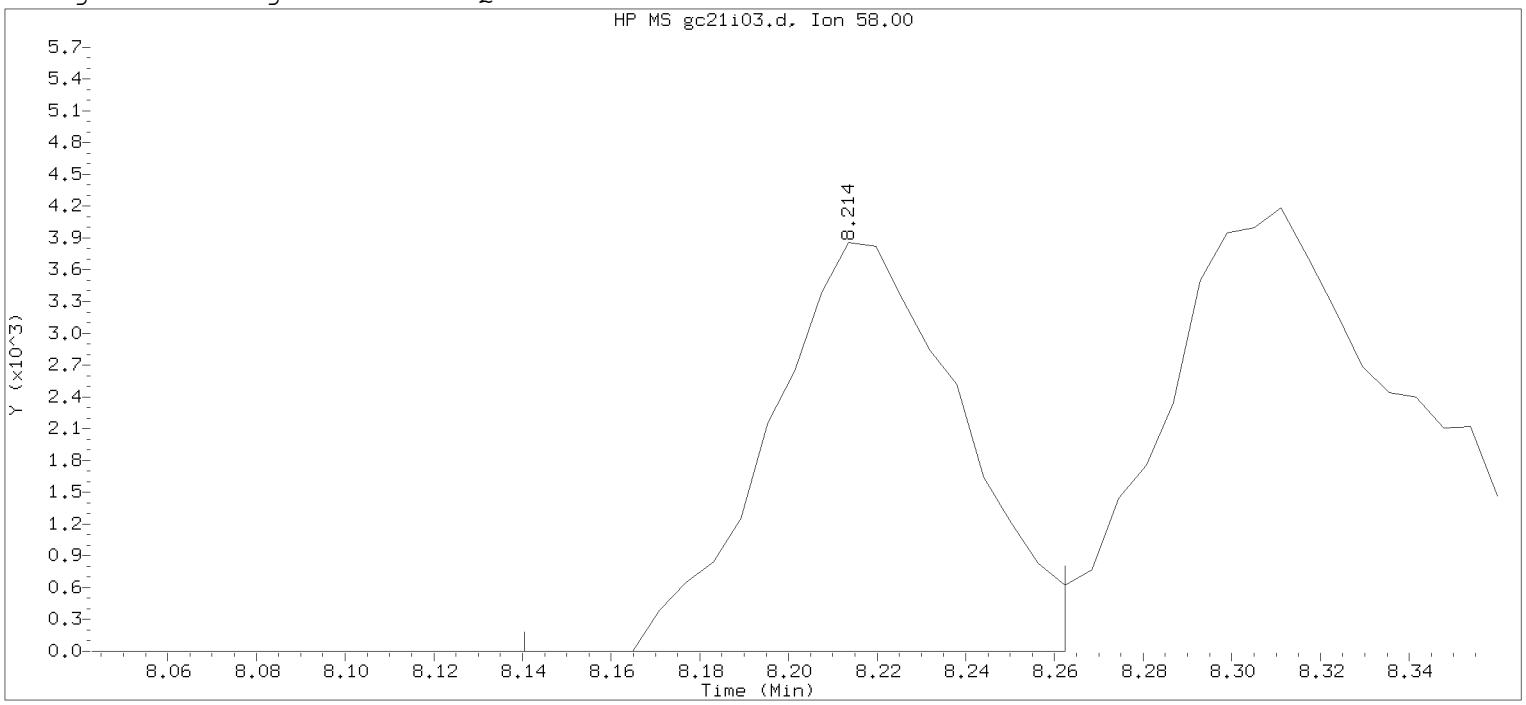
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

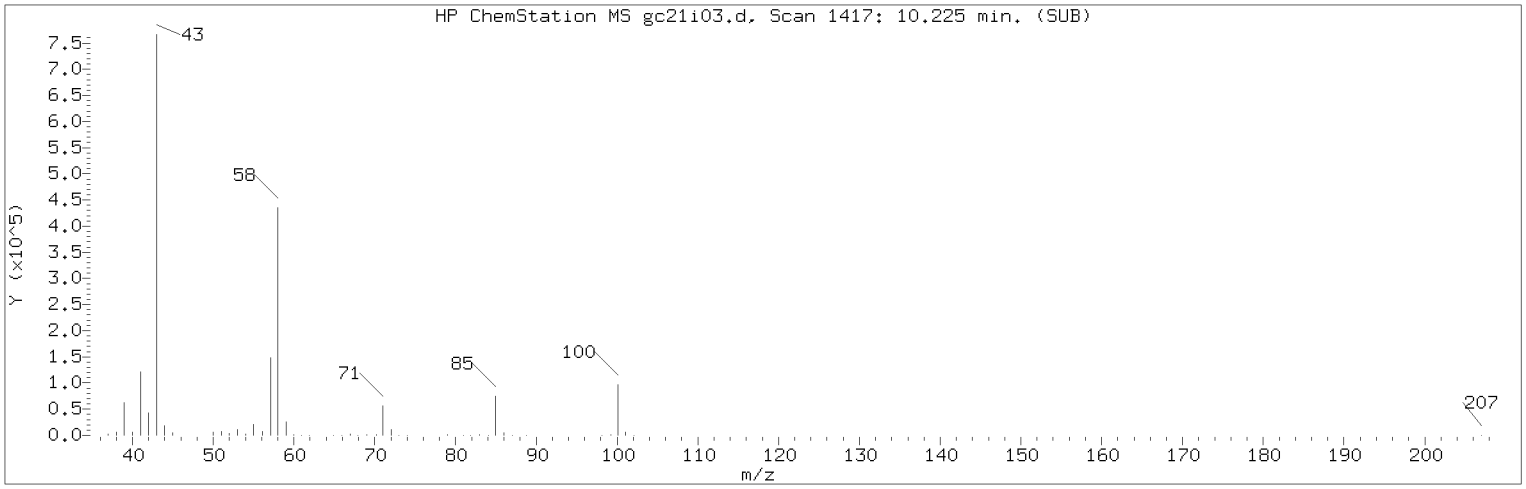
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

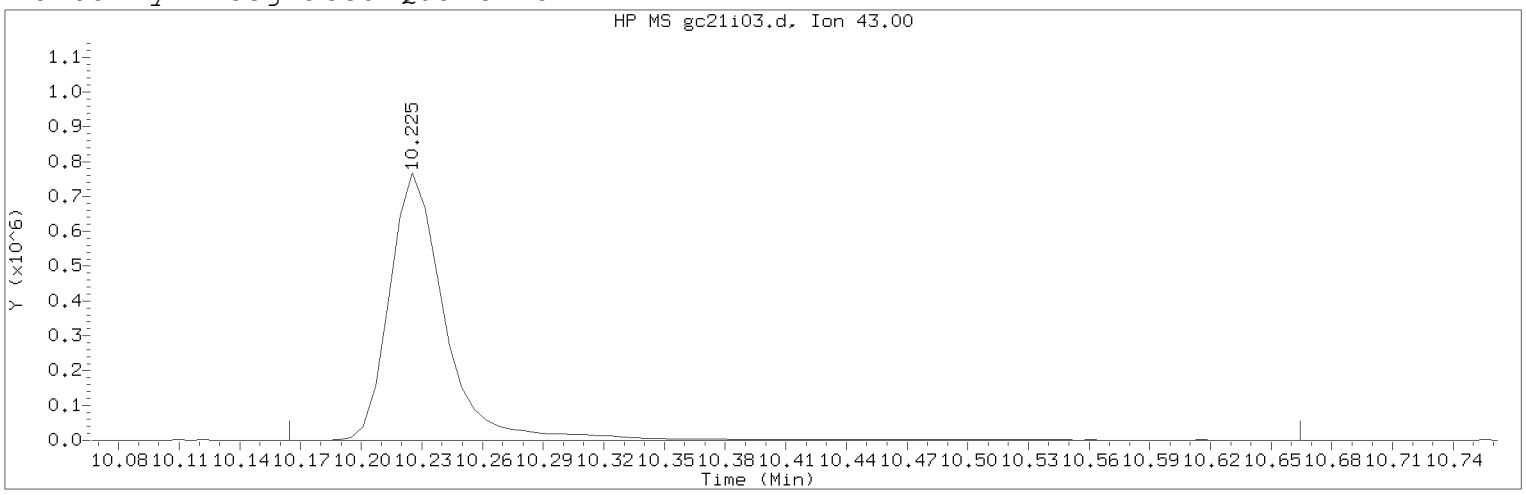
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1087		
Retention Time (minutes)	: 8.214		
Quant Ion	: 58.00		
Area	: 11577		
On-column Amount (ng)	: 146.6197		
Integration start scan	: 1074	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

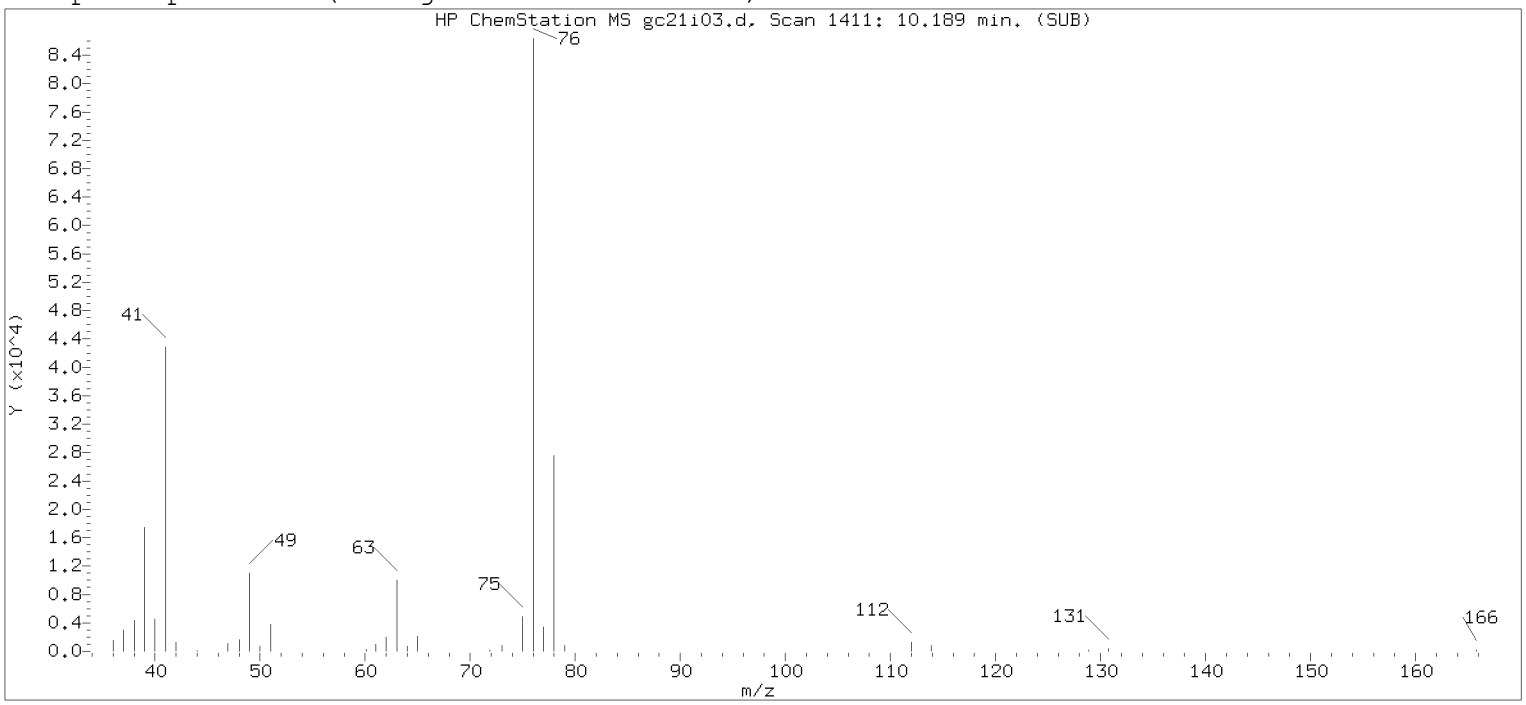
Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1417
Retention Time (minutes): 10.225
Quant Ion : 43.00
Area (flag) : 1478649M
On-Column Amount (ng) : 49.4113
Integration start scan : 1406 Integration stop scan: 1488
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

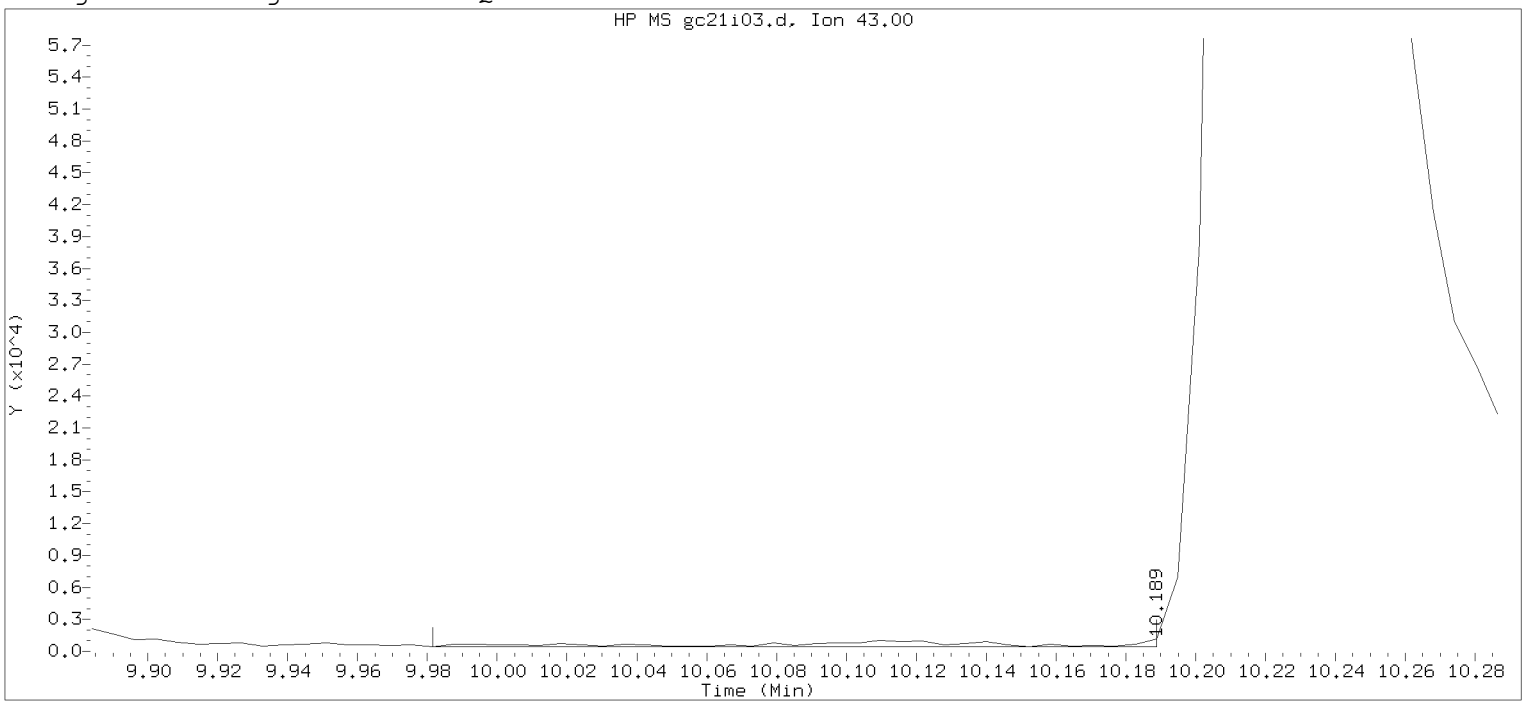
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

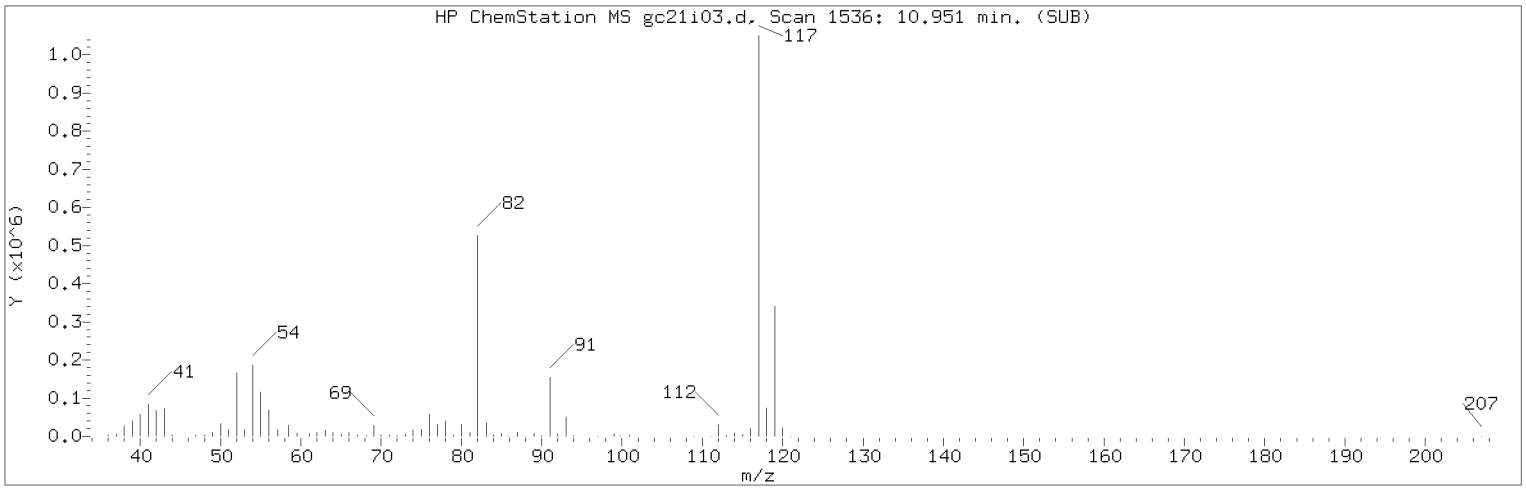
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

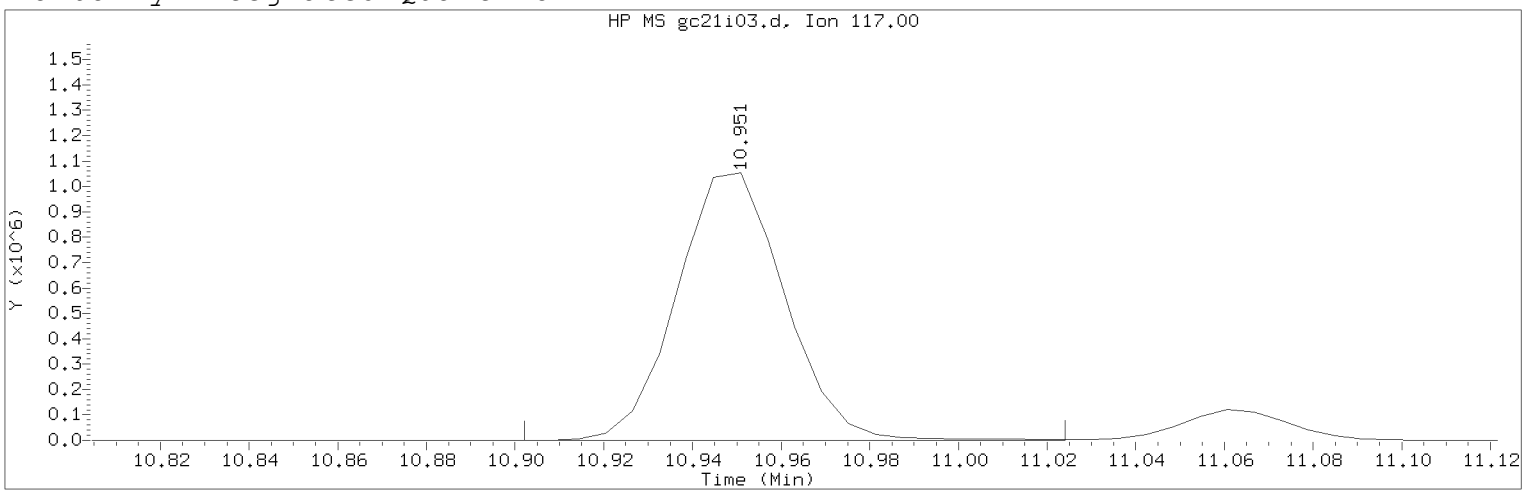
Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1411
Retention Time (minutes): 10.189
Quant Ion : 43.00
Area : 2890
On-column Amount (ng) : 0.1484
Integration start scan : 1376 Integration stop scan: 1410
Y at integration start : 413 Y at integration end: 413

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

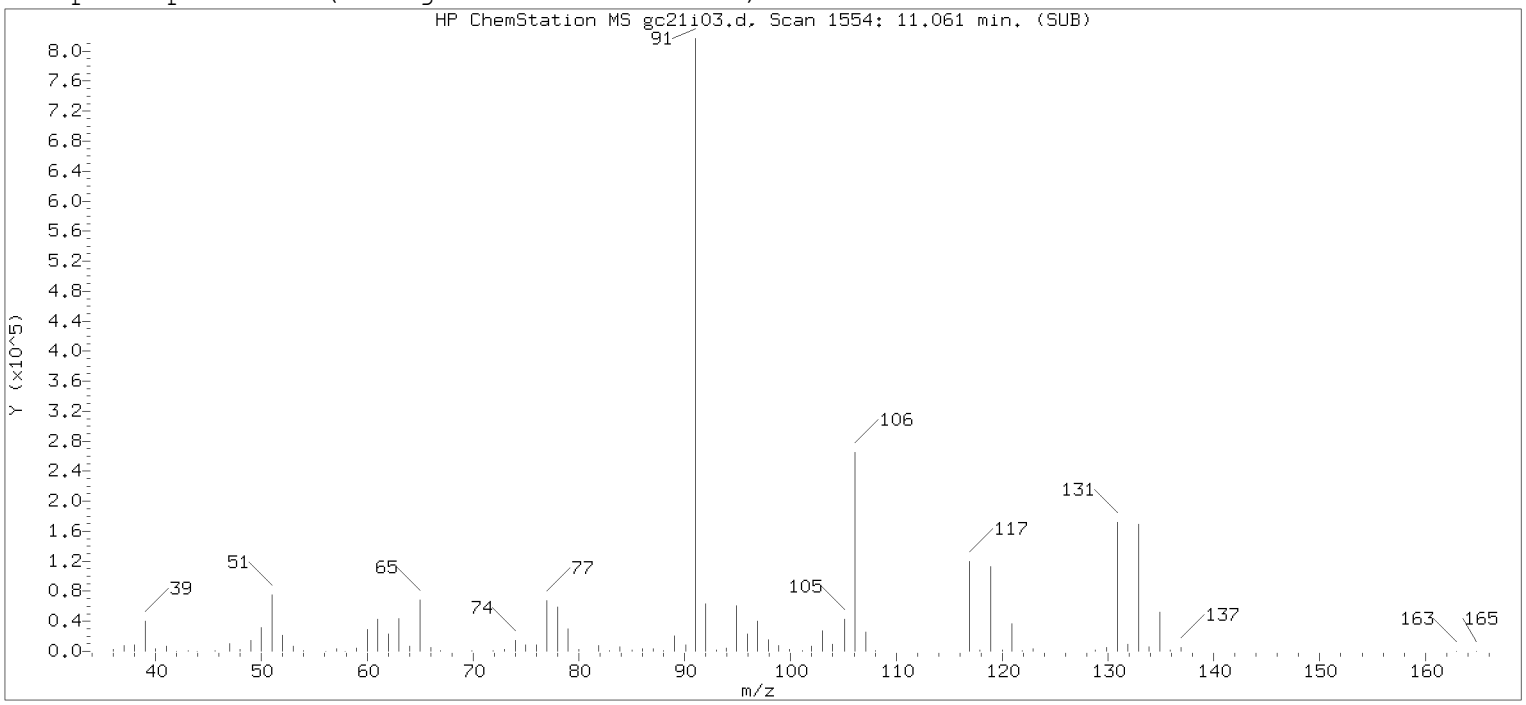
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1774449A
On-Column Amount (ng) : 10.0000
Integration start scan : 1527 Integration stop scan: 1547
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

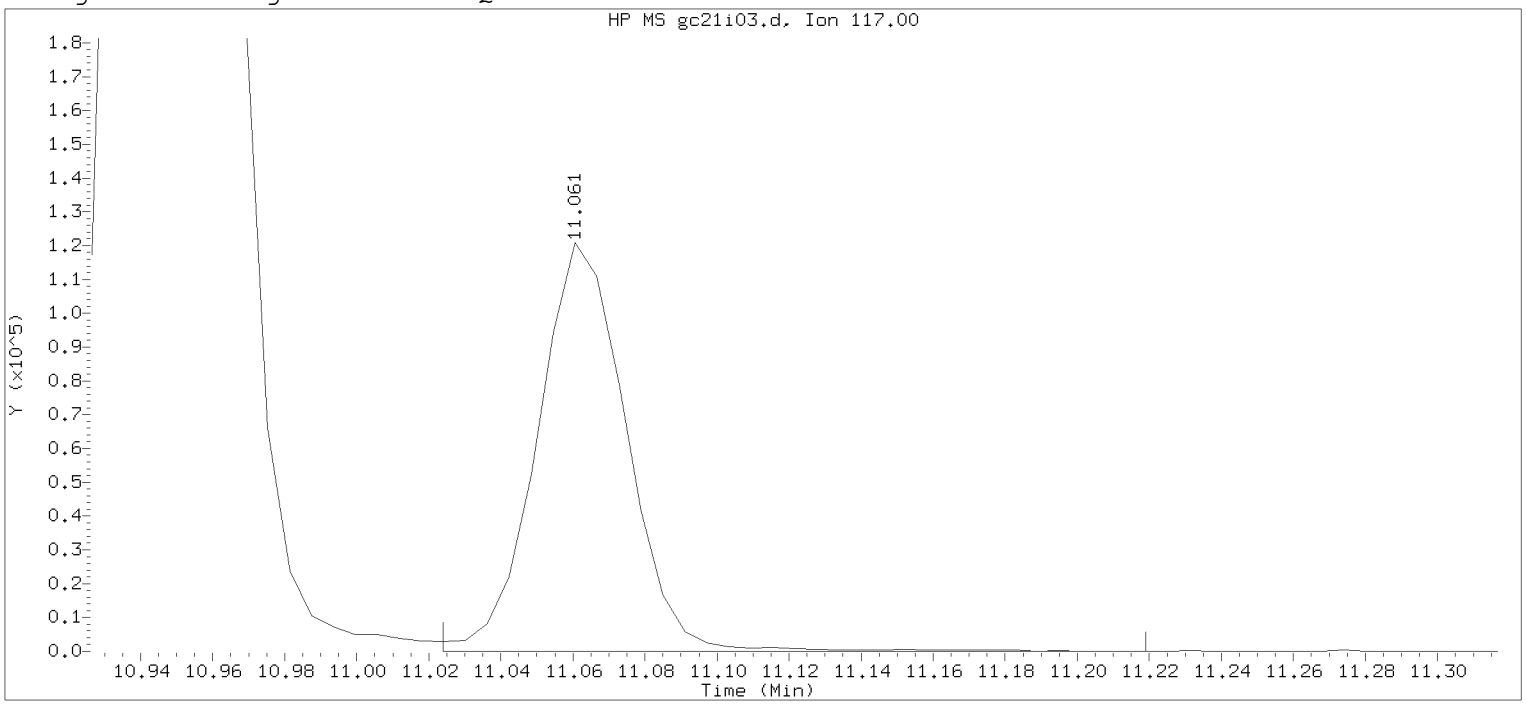
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

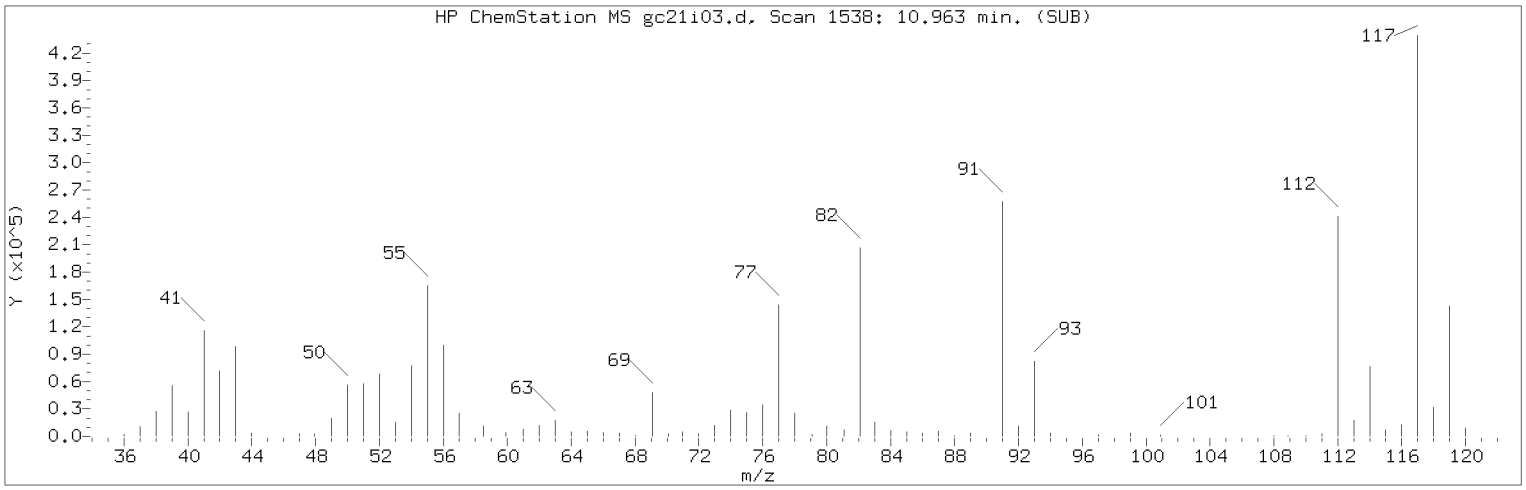
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

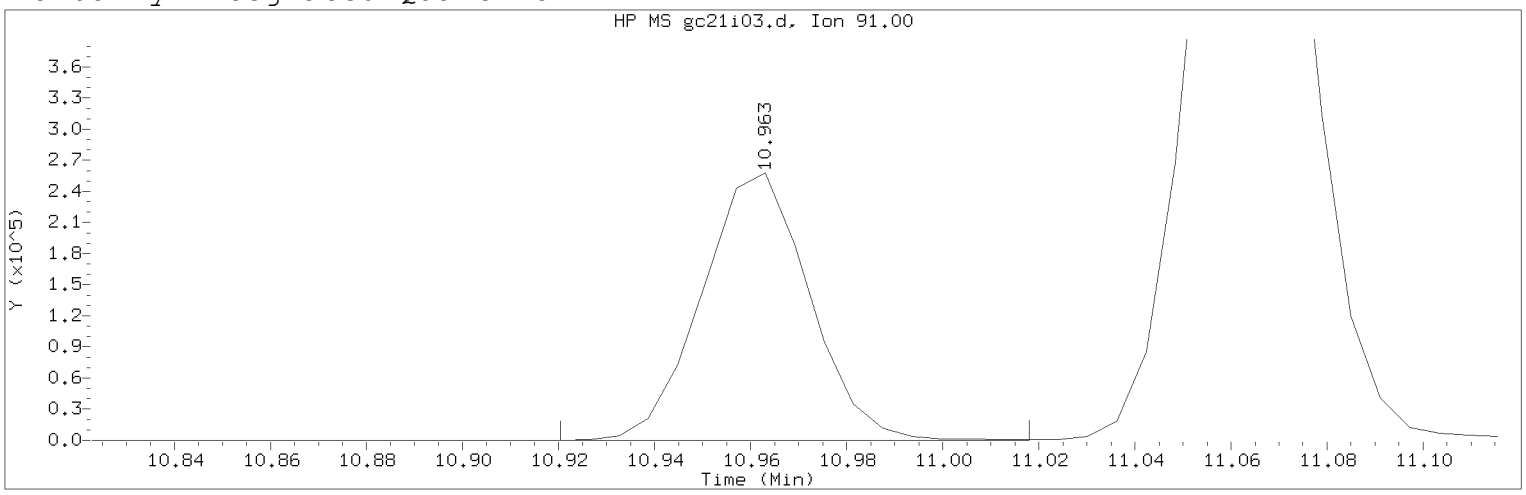
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1554
Retention Time (minutes): 11.061
Quant Ion : 117.00
Area : 207316
On-column Amount (ng) : 10.0000
Integration start scan : 1547 Integration stop scan: 1579
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

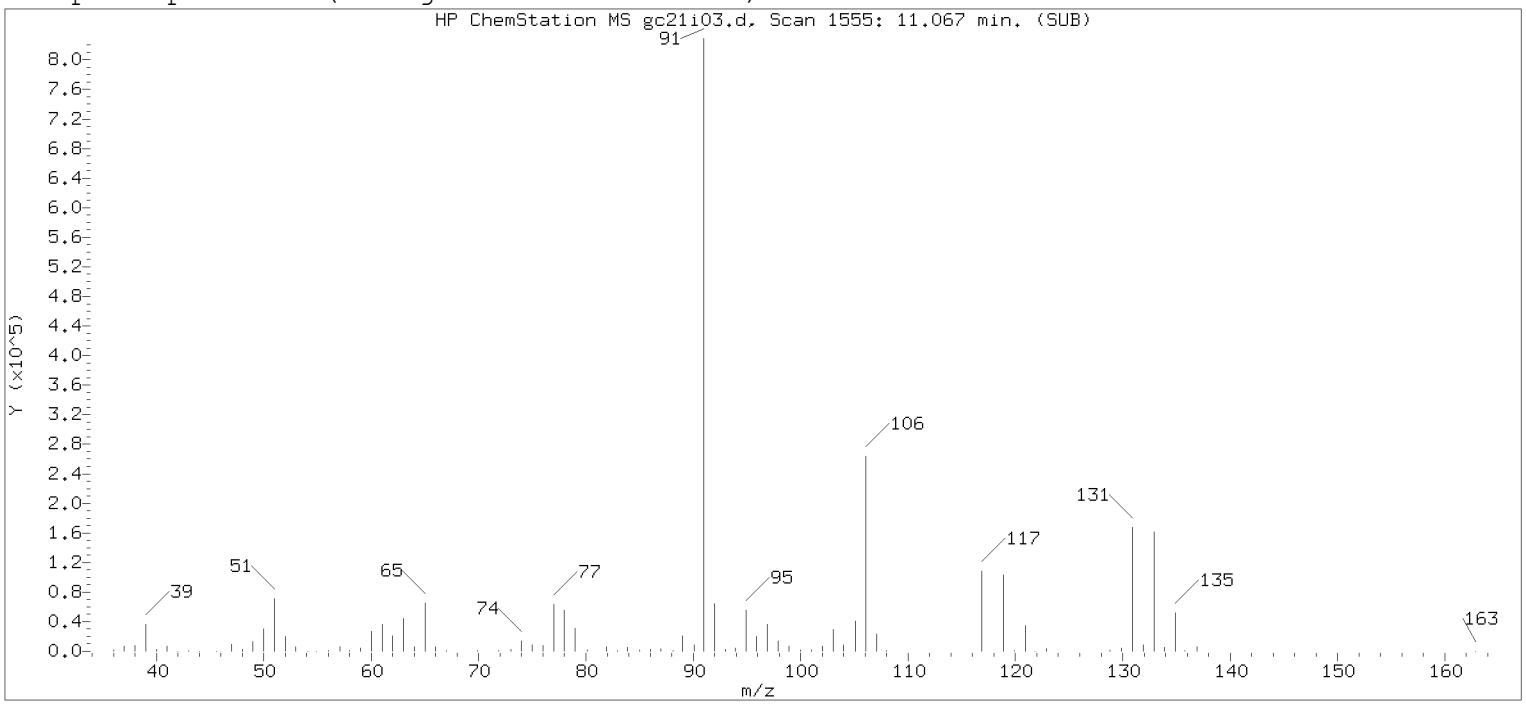
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 400143MA
On-Column Amount (ng) : 4.7320
Integration start scan : 1530 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

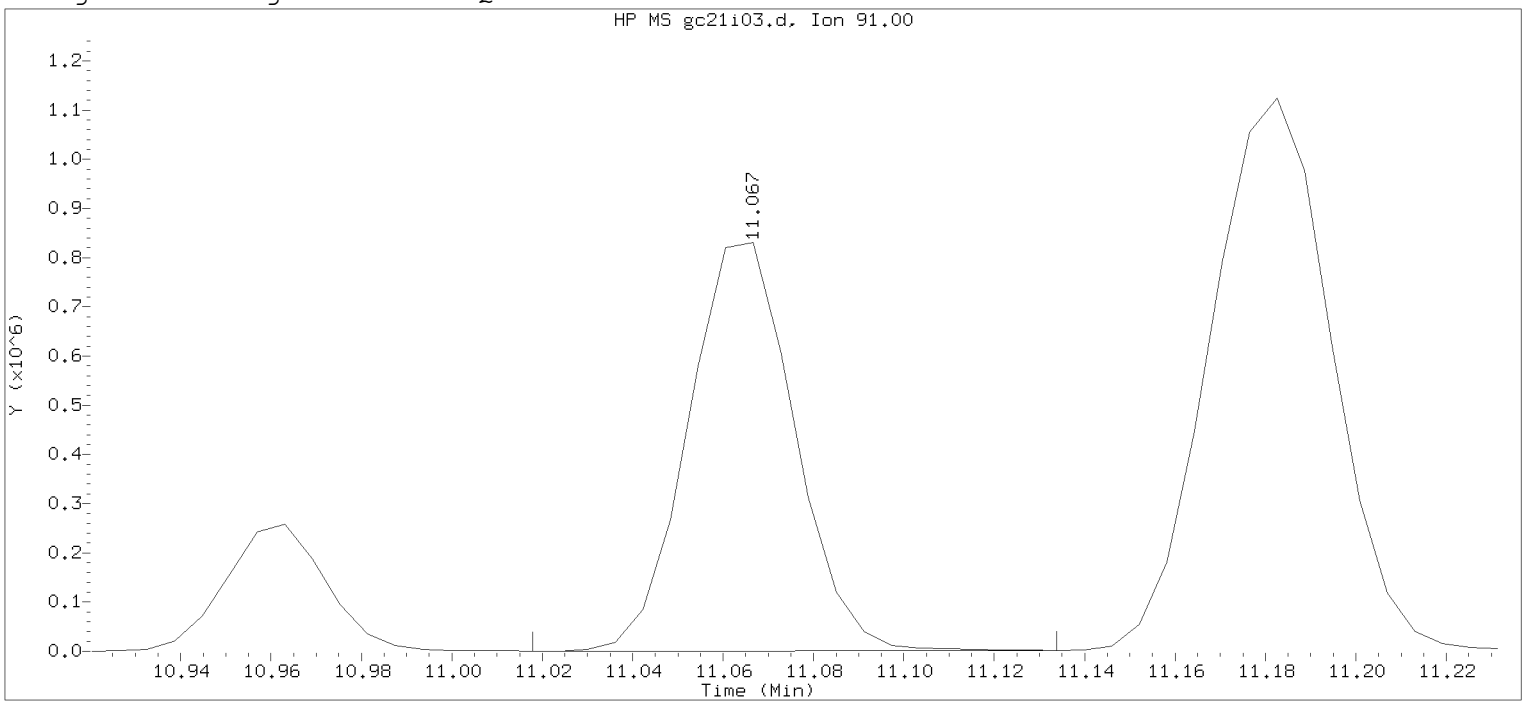
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

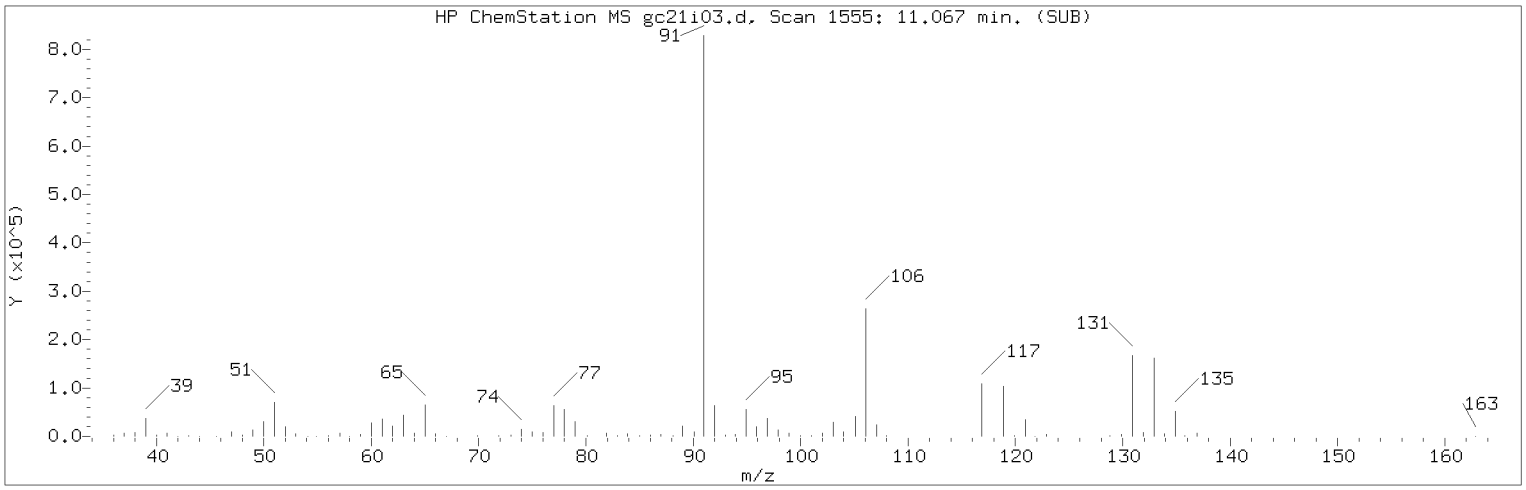
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

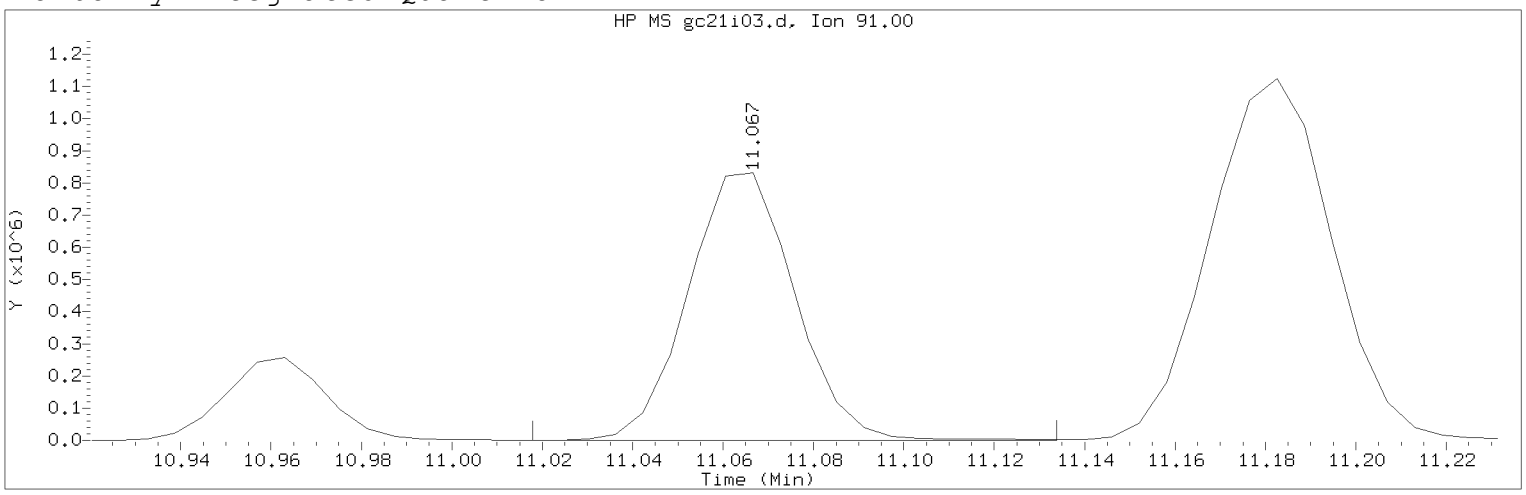
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 1357512
On-column Amount (ng) : 8.8448
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 454 Y at integration end: 859

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

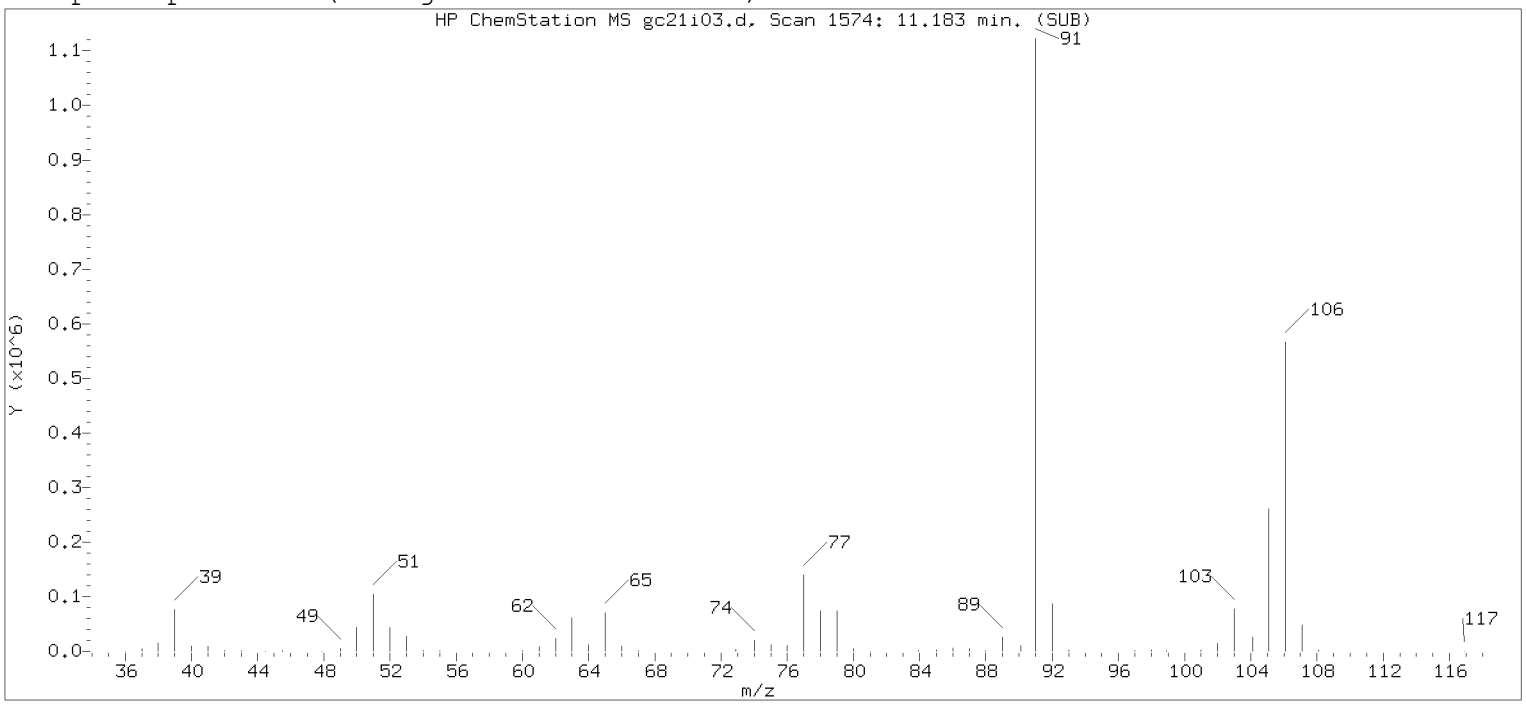
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 1359921MA
On-Column Amount (ng) : 4.9052
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 353 Y at integration end: 353

Reason for manual integration: improper integration

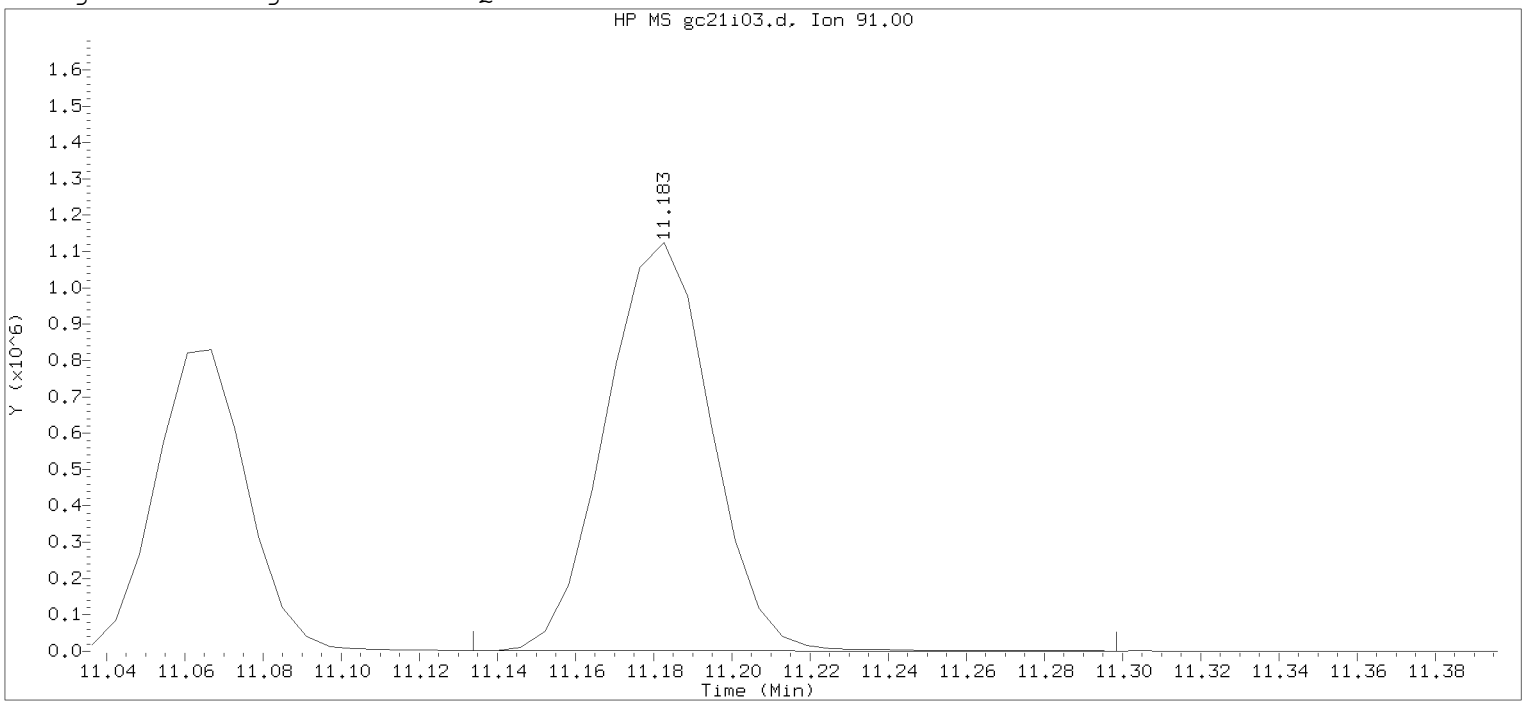
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

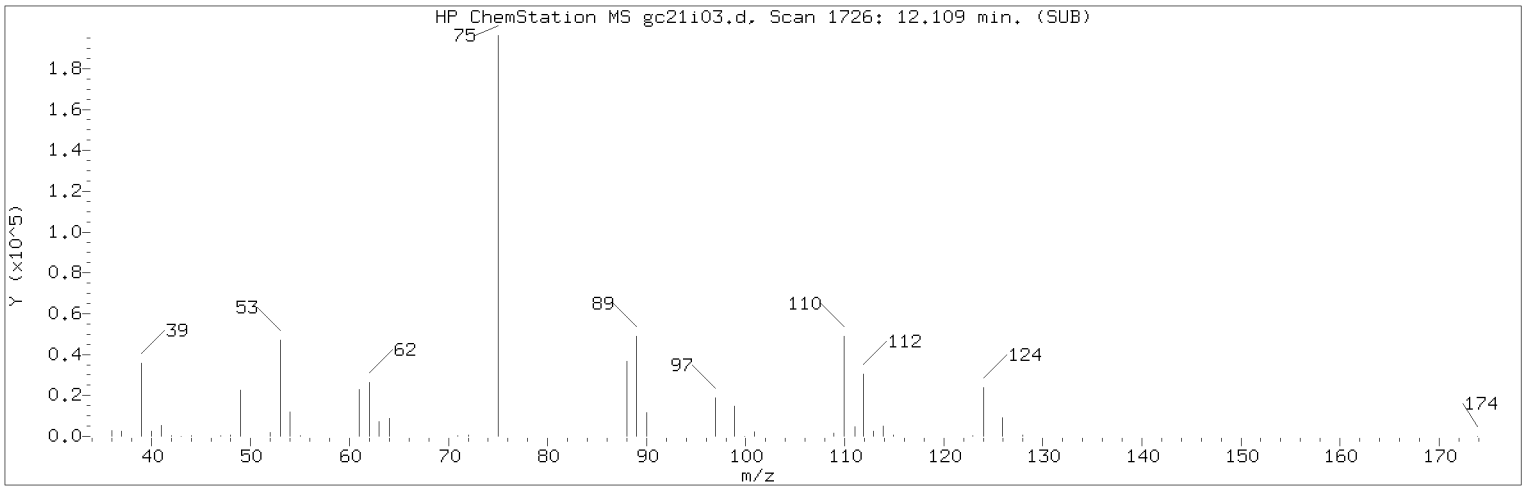
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
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Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

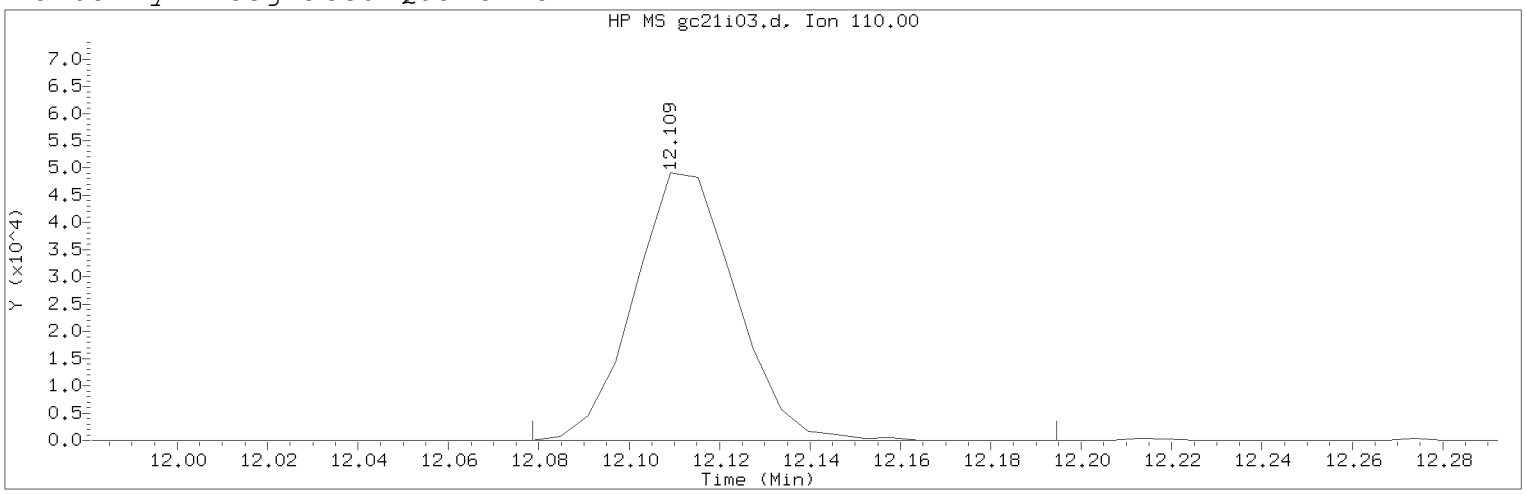
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1574
Retention Time (minutes): 11.183
Quant Ion : 91.00
Area : 2106480
On-column Amount (ng) : 8.8735
Integration start scan : 1565 Integration stop scan: 1592
Y at integration start : 926 Y at integration end: 608

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

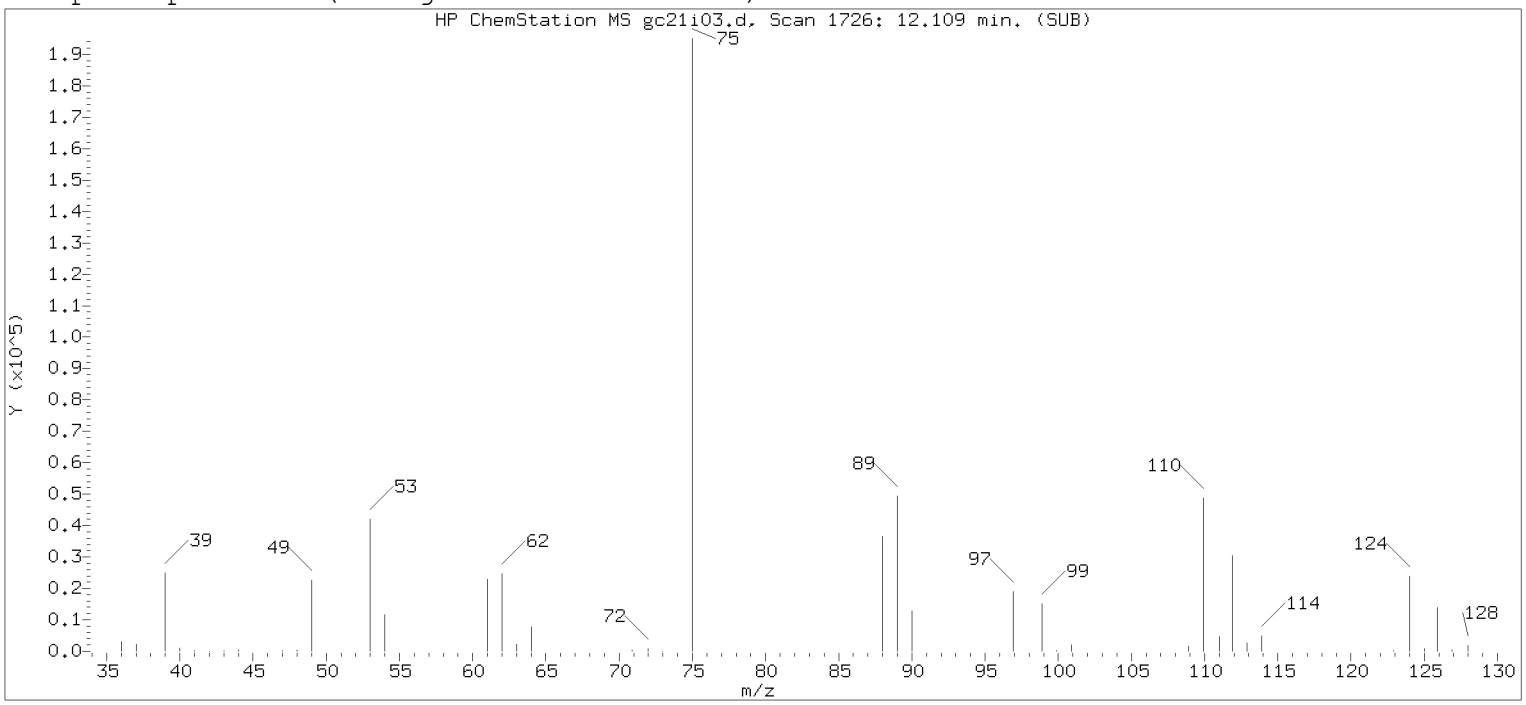
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1726
Retention Time (minutes): 12.109
Quant Ion : 110.00
Area (flag) : 76355M
On-Column Amount (ng) : 5.0235
Integration start scan : 1720 Integration stop scan: 1739
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

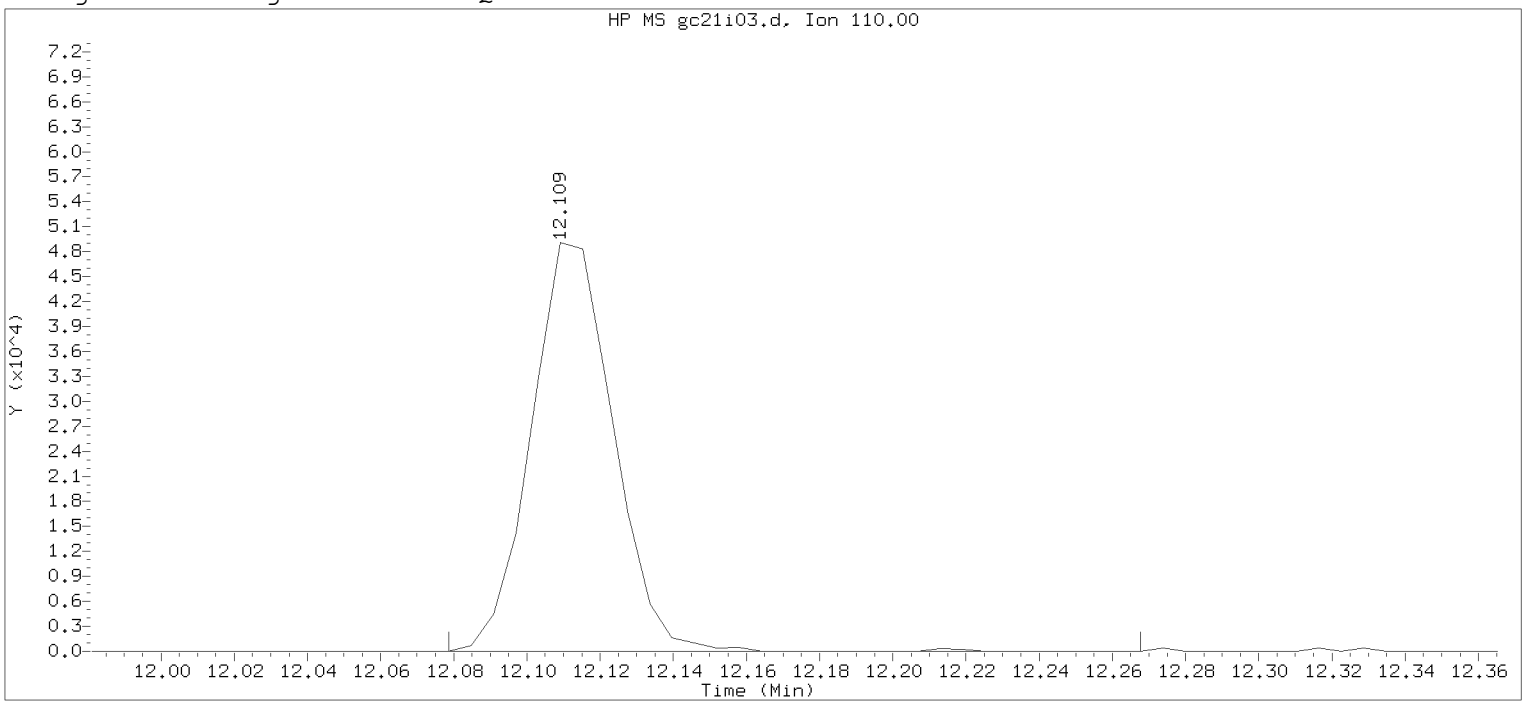
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:11.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



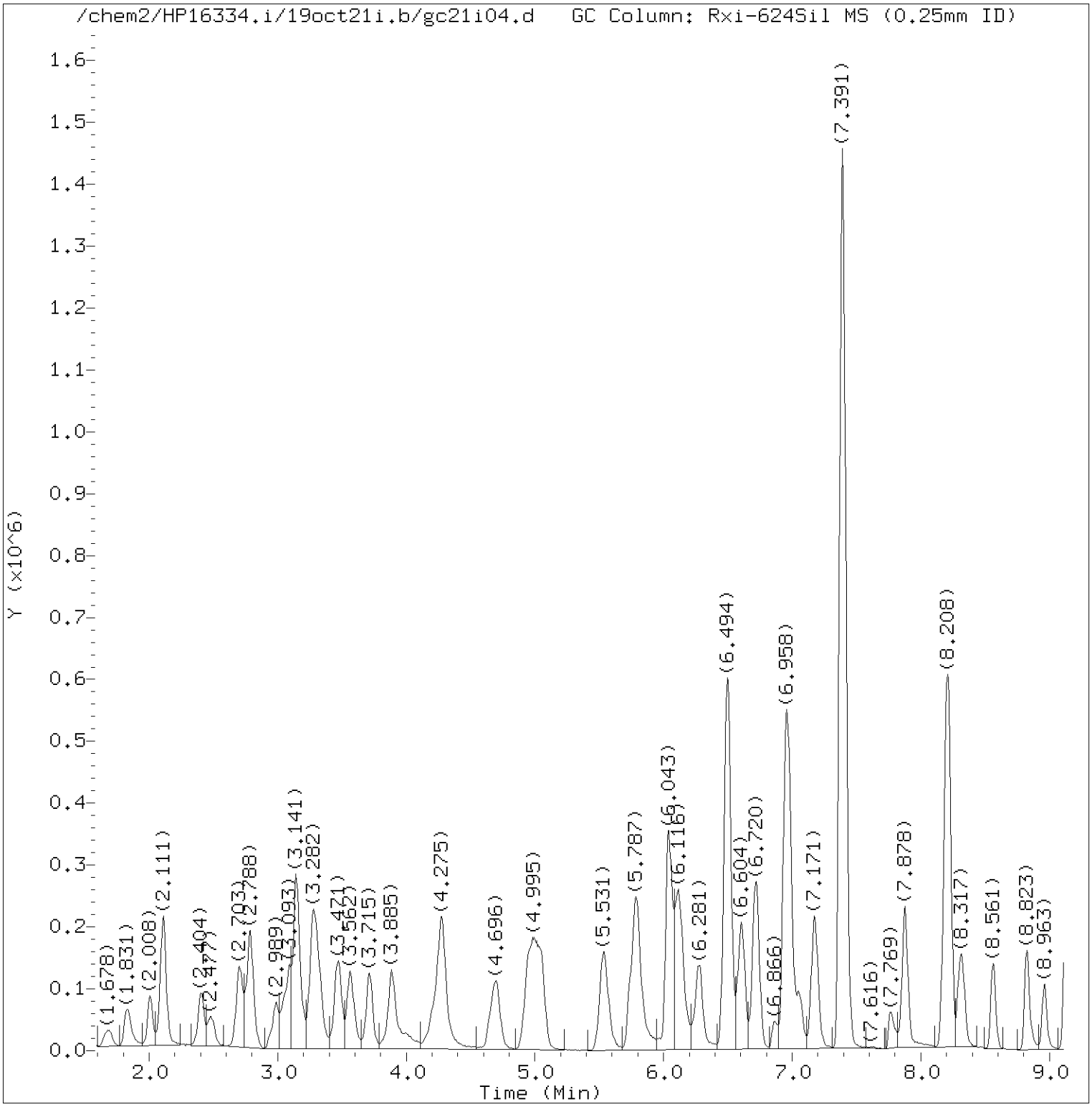
Data File: /chem2/HP16334.i/19oct21i.b/gc21i03.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:24 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1726
Retention Time (minutes): 12.109
Quant Ion : 110.00
Area : 76561
On-column Amount (ng) : 5.0138
Integration start scan : 1720 Integration stop scan: 1751
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

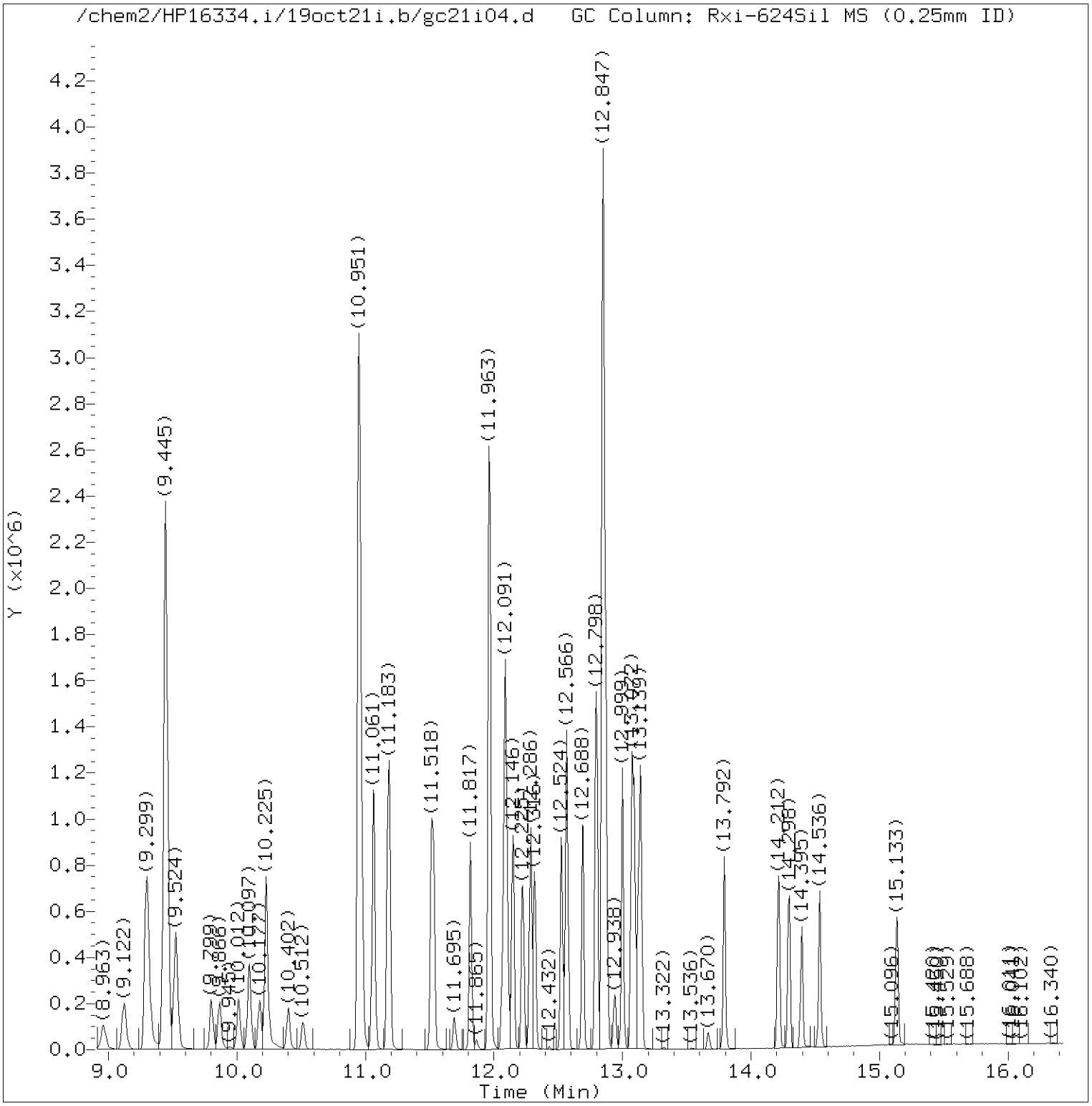
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.831	85	150714	2.135
2) Chloromethane	(2)	2.008	50	137428	2.078
6) 1,3-Butadiene	(2)	2.105	39	115817M	2.005
5) Vinyl Chloride	(2)	2.117	62	139953	2.125
7) Bromomethane	(2)	2.404	94	102724	2.064
8) Chloroethane	(2)	2.483	64	80752	2.074
9) Dichlorofluoromethane	(2)	2.703	67	186724	2.075
10) Trichlorofluoromethane	(2)	2.770	101	183629M	2.080
11) Ethyl ether	(2)	2.983	59	83991	2.085
12) Freon 123a	(2)	3.056	67	121988	2.104
13) Acrolein	(1)	3.141	56	622562	101.249
15) 1,1-Dichloroethene	(2)	3.269	96	95771	2.143
14) Acetone	(1)	3.300	43	132715	20.004
16) Freon 113	(2)	3.306	101	111867	2.149
17) Methyl Iodide	(2)	3.452	142	201088	2.075
18) Carbon Disulfide	(2)	3.562	76	346721	2.104
21) Methyl Acetate	(1)	3.696	43	31535M	1.951
22) Allyl Chloride	(2)	3.708	41	137099	2.093
23) Methylene Chloride	(2)	3.885	84	106220	2.036
26)*t-Butyl Alcohol-d10	(1)	3.885	65	130788	50.000
28) t-Butyl Alcohol	(1)	3.995	59	93151M	40.805
29) Acrylonitrile	(1)	4.196	53	94268	10.156
30) Methyl Tertiary Butyl Ether	(2)	4.257	73	282034	2.081
31) trans-1,2-Dichloroethene	(2)	4.281	96	106827	2.072
32) n-Hexane	(2)	4.696	57	148765	2.143
33) 1,1-Dichloroethane	(2)	4.940	63	182160	2.071
34) di-Isopropyl Ether	(2)	4.989	45	335274	2.102
35) 2-Chloro-1,3-Butadiene	(2)	5.050	53	169495	2.155
37) Ethyl t-butyl ether	(2)	5.531	59	343393	2.126
38) 2-Butanone	(1)	5.732	43	285811	22.581
39) cis-1,2-Dichloroethene	(2)	5.781	96	118872	2.116
41) 2,2-Dichloropropane	(2)	5.799	77	125016	2.049
42) Propionitrile	(1)	5.836	54	88093	41.436
45) Methacrylonitrile	(1)	6.043	67	304850	21.584
40) 1,2-Dichloroethene (Total)	(2)		96	225699	4.188
48) Tetrahydrofuran	(1)	6.123	71	84194	21.063
47) Bromochloromethane	(2)	6.129	128	59288	2.126
49) Chloroform	(2)	6.281	83	188920	2.114

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.494	113	551710	10.038
50)$Dibromofluoromethane	(2)	6.494	111	563801	9.982
51) 1,1,1-Trichloroethane	(2)	6.507	97	163544	2.080
52) Cyclohexane	(2)	6.604	56	185841	2.165
52) Cyclohexane	(2)	6.604	84	171569	2.148
52) Cyclohexane	(2)	6.610	69	58808	2.159
54) Carbon Tetrachloride	(2)	6.720	117	149704	2.114
55) 1,1-Dichloropropene	(2)	6.720	75	148476	2.092
56) Isobutyl Alcohol	(1)	6.860	41	65474	93.440
57)$1,2-Dichloroethane-d4	(2)	6.952	102	111858	10.049
57)$1,2-Dichloroethane-d4	(2)	6.946	65	516382	10.126
57)$1,2-Dichloroethane-d4	(2)	6.952	104	70034	10.042
58) Benzene	(2)	6.976	78	431797	2.106
59) 1,2-Dichloroethane	(2)	7.055	62	117707	2.032
59) 1,2-Dichloroethane	(2)	7.049	98	11919	2.326
60) t-Amyl methyl ether	(2)	7.171	73	316325	2.125
63)*Fluorobenzene	(2)	7.391	96	2174054	10.000
62) n-Heptane	(2)	7.403	43	152311	2.105
65) n-Butanol	(1)	7.769	56	130367M	188.251
67) Trichloroethene	(2)	7.878	95	114661	2.086
69) Methylcyclohexane	(2)	8.189	83	200432	2.175
70) 1,2-Dichloropropane	(2)	8.208	63	106362	2.086
71) Methyl Methacrylate	(1)	8.299	69	64147	2.241
72) 1,4-Dioxane	(1)	8.311	88	18169M	97.944
72) 1,4-Dioxane	(1)	8.305	58	11841M	115.486
73) Dibromomethane	(2)	8.317	93	58142	2.134
74) Bromodichloromethane	(2)	8.561	83	136323	2.074
76) 2-Nitropropane	(1)	8.823	41	167641	21.193
80) cis-1,3-Dichloropropene	(2)	9.122	75	165169	2.116
81) 4-Methyl-2-Pentanone	(1)	9.299	43	775288M	21.184
82)$Toluene-d8	(3)	9.445	98	2151005	10.034
82)$Toluene-d8	(3)	9.445	100	1377039	9.928
83) Toluene	(3)	9.524	92	276085	2.073
84) trans-1,3-Dichloropropene	(3)	9.799	75	139258	2.114
86) Ethyl Methacrylate	(3)	9.866	69	134714	2.109
88) 1,1,2-Trichloroethane	(3)	10.012	97	81966	2.059
89) Tetrachloroethene	(3)	10.097	166	131622	2.068
85) 1,3-Dichloropropene (total)	(3)		75	304427	4.229

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	143517	2.097
91) 2-Hexanone	(1)	10.225	43	575162	21.306
93) Dibromochloromethane	(3)	10.402	129	107695	2.111
95) 1,2-Dibromoethane	(3)	10.512	107	84886	2.104
97)*Chlorobenzene-d5	(3)	10.951	117	1671566A	10.000
96) 1-Chlorohexane	(3)	10.963	91	163991MA	2.059
98) Chlorobenzene	(3)	10.975	112	323581	2.078
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	116279	2.084
100) Ethylbenzene	(3)	11.067	91	544095MA	2.083
101) m+p-Xylene	(3)	11.183	106	421304	4.158
104) o-Xylene	(3)	11.512	106	206658	2.058
106) Styrene	(3)	11.530	104	351655	2.088
107) Bromoform	(3)	11.695	173	65640	2.086
105) Xylene (Total)	(3)		106	627962	6.217
108) Isopropylbenzene	(3)	11.817	105	543870	2.084
111)$4-Bromofluorobenzene	(3)	11.963	95	796208	9.937
111)$4-Bromofluorobenzene	(3)	11.963	174	722937	9.966
113) 1,1,2,2-Tetrachloroethane	(4)	12.067	83	110017	2.097
114) Bromobenzene	(4)	12.079	156	143339	2.083
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	259783	21.052
116) 1,2,3-Trichloropropane	(4)	12.109	110	29092	2.041
117) n-Propylbenzene	(4)	12.146	91	647903	2.102
119) 2-Chlorotoluene	(4)	12.225	126	136057	2.088
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	463203	2.079
122) 4-Chlorotoluene	(4)	12.316	126	143913	2.104
125) tert-Butylbenzene	(4)	12.530	134	102011M	2.052
126) Pentachloroethane	(4)	12.560	167	96713	2.102
127) 1,2,4-Trimethylbenzene	(4)	12.566	105	488566	2.085
128) sec-Butylbenzene	(4)	12.694	105	610830	2.092
131) 1,3-Dichlorobenzene	(4)	12.792	146	281449M	2.061
132) p-Isopropyltoluene	(4)	12.798	119	529928	2.094
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	936920	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	290076M	2.074
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	225372	2.057
136) Benzyl Chloride	(4)	12.944	126	32309	1.891
138) n-Butylbenzene	(4)	13.091	92	269552	2.094
139) 1,2-Dichlorobenzene	(4)	13.121	146	264933	2.075
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	15994	2.050

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

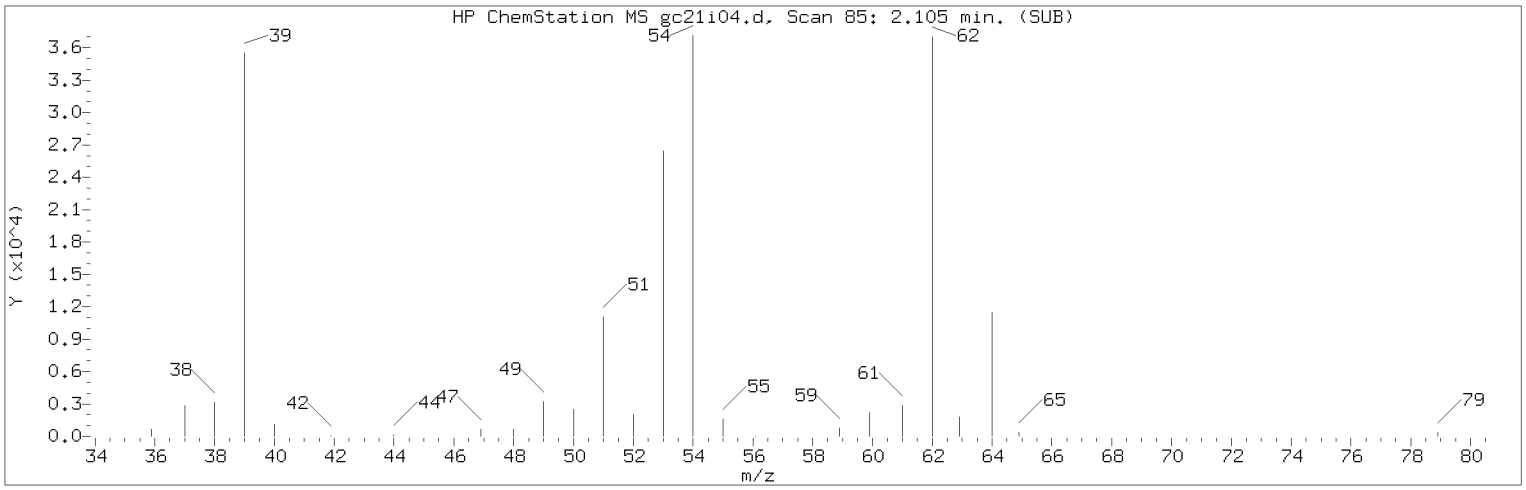
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

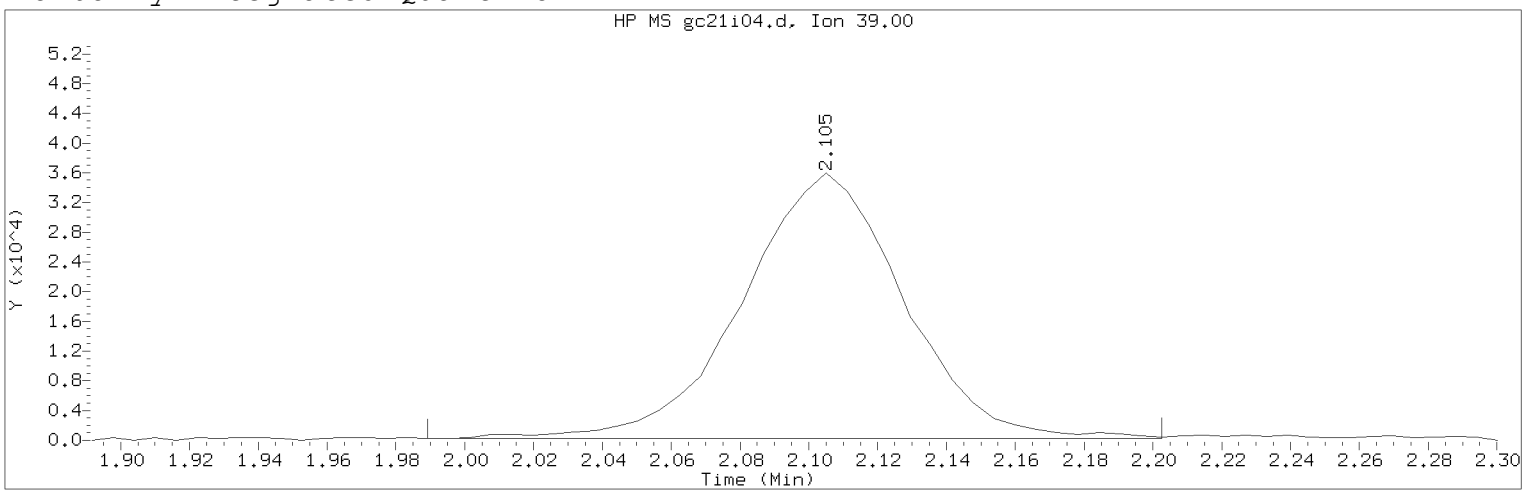
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	238296	2.052
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	220550	2.045
146) Hexachlorobutadiene	(4)	14.298	225	114404	2.095
147) Naphthalene	(4)	14.395	128	370541	2.051
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	193523	2.050

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

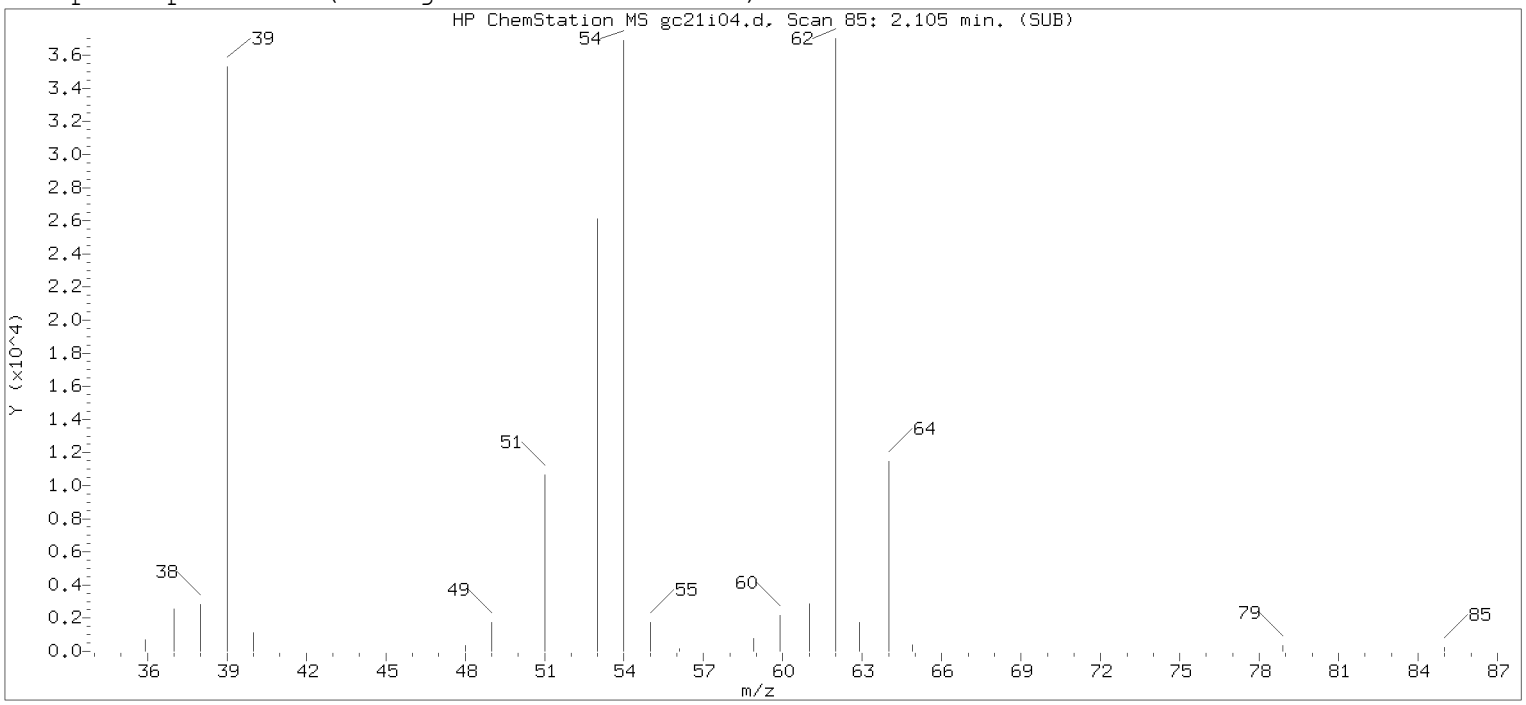
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area (flag) : 115817M
On-Column Amount (ng) : 2.0050
Integration start scan : 65 Integration stop scan: 100
Y at integration start : 269 Y at integration end: 269

Reason for manual integration: improper integration

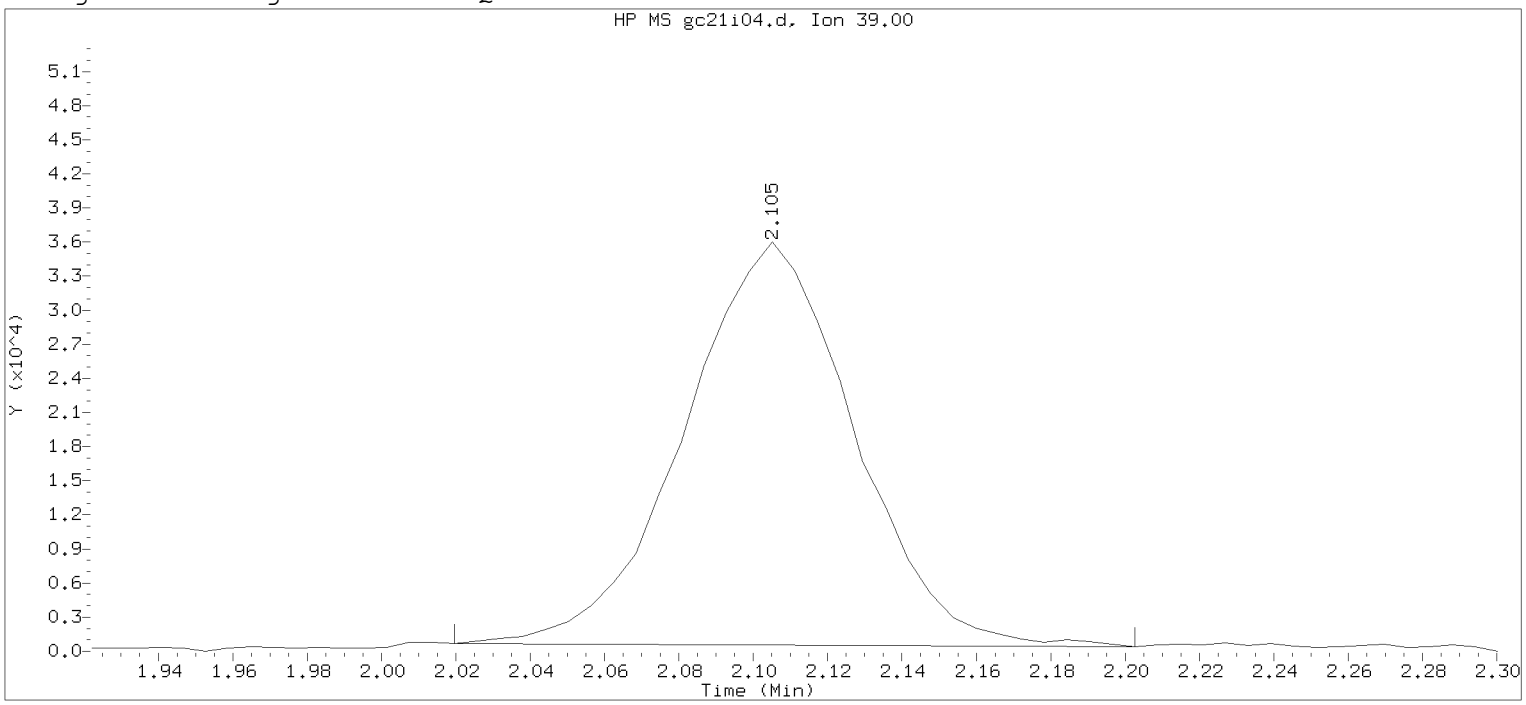
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

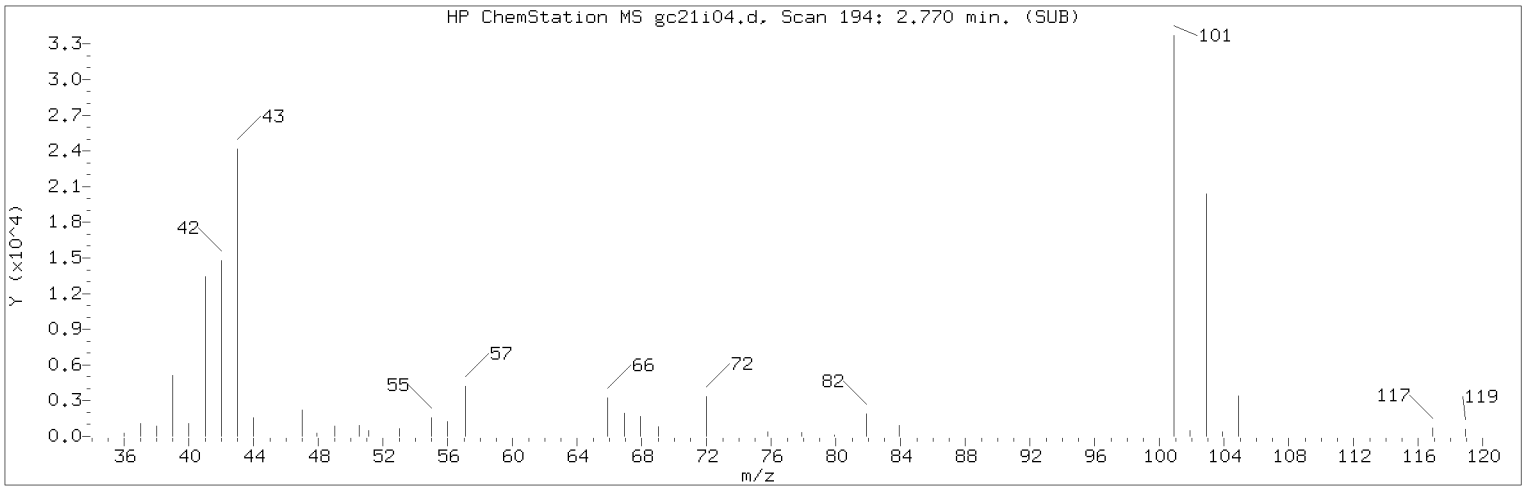
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

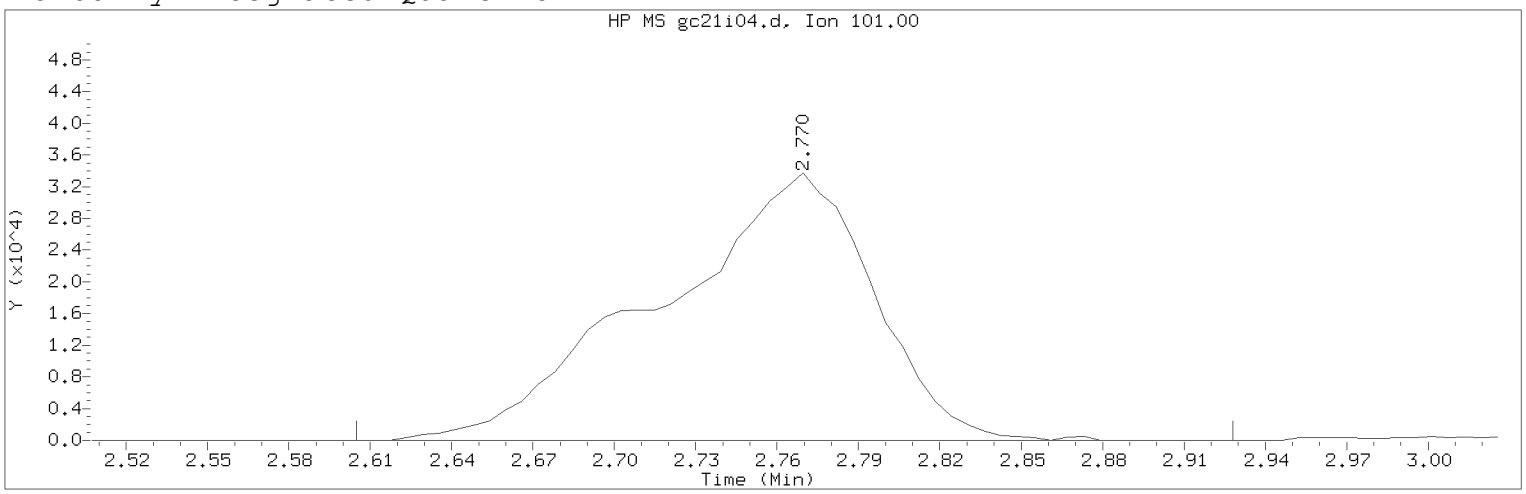
Compound Number	: 6		
Compound Name	: 1,3-Butadiene		
Scan Number	: 85		
Retention Time (minutes)	: 2.105		
Quant Ion	: 39.00		
Area	: 112315		
On-column Amount (ng)	: 2.1333		
Integration start scan	: 70	Integration stop scan:	100
Y at integration start	: 669	Y at integration end:	412

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

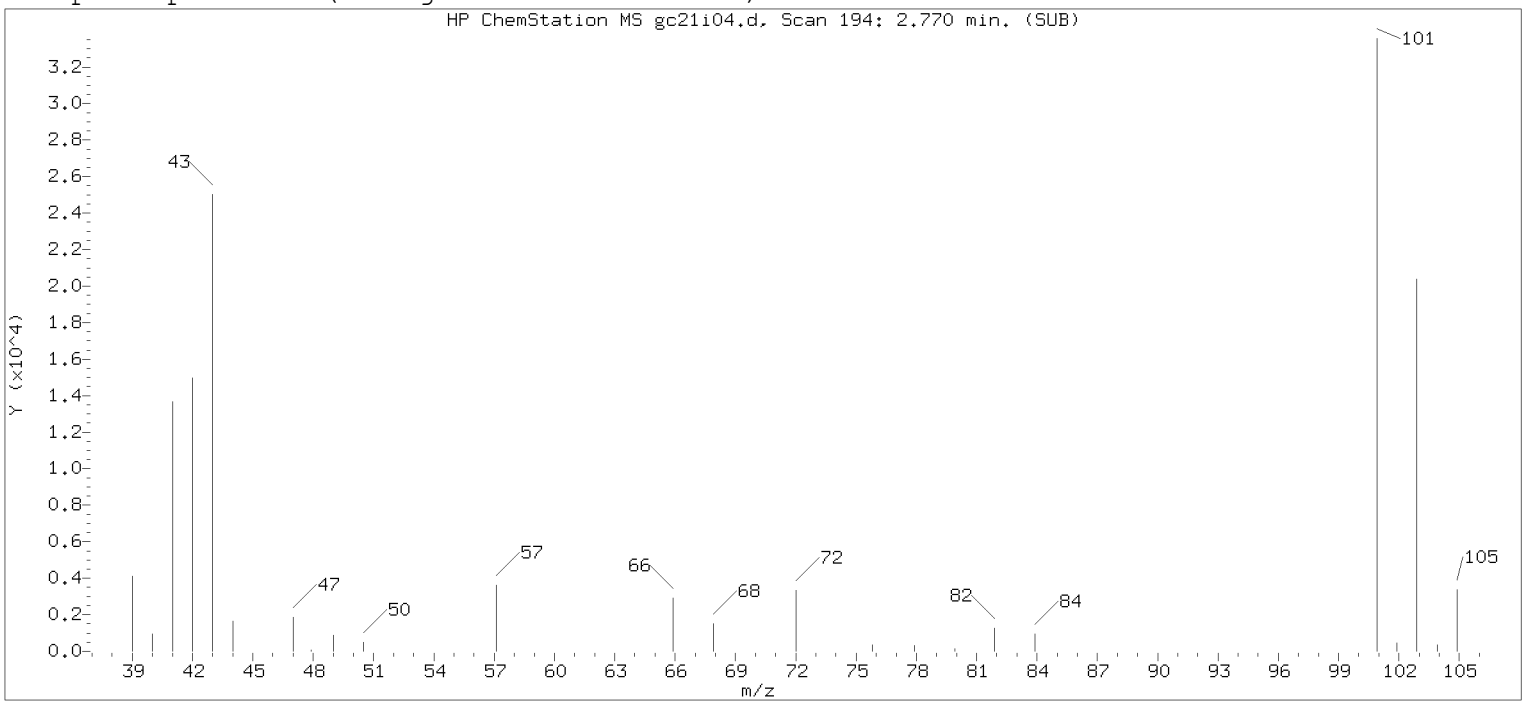
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 194
Retention Time (minutes): 2.770
Quant Ion : 101.00
Area (flag) : 183629M
On-Column Amount (ng) : 2.0796
Integration start scan : 166 Integration stop scan: 219
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

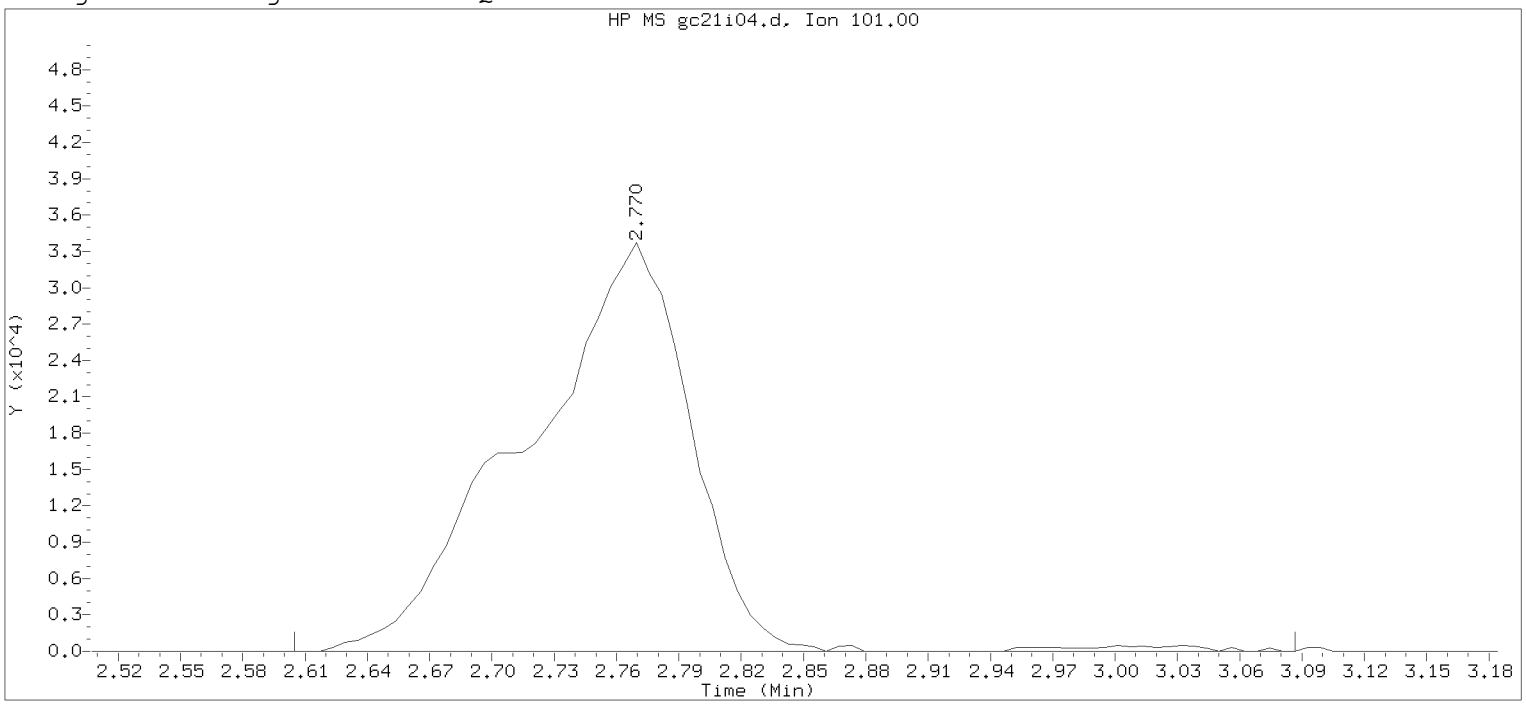
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

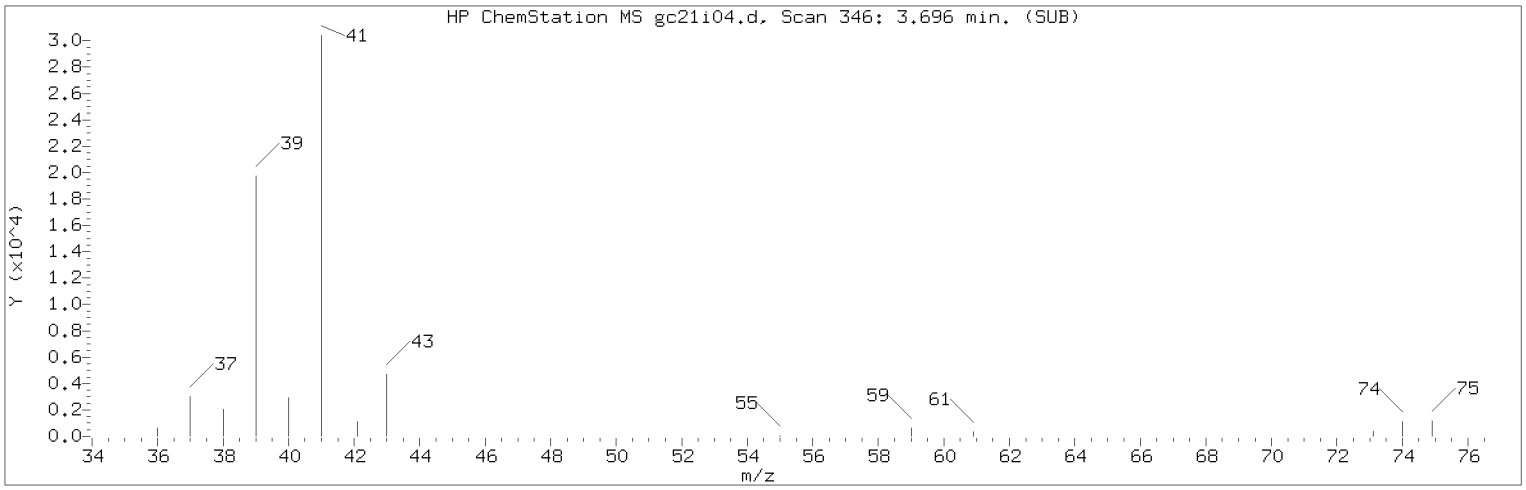
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

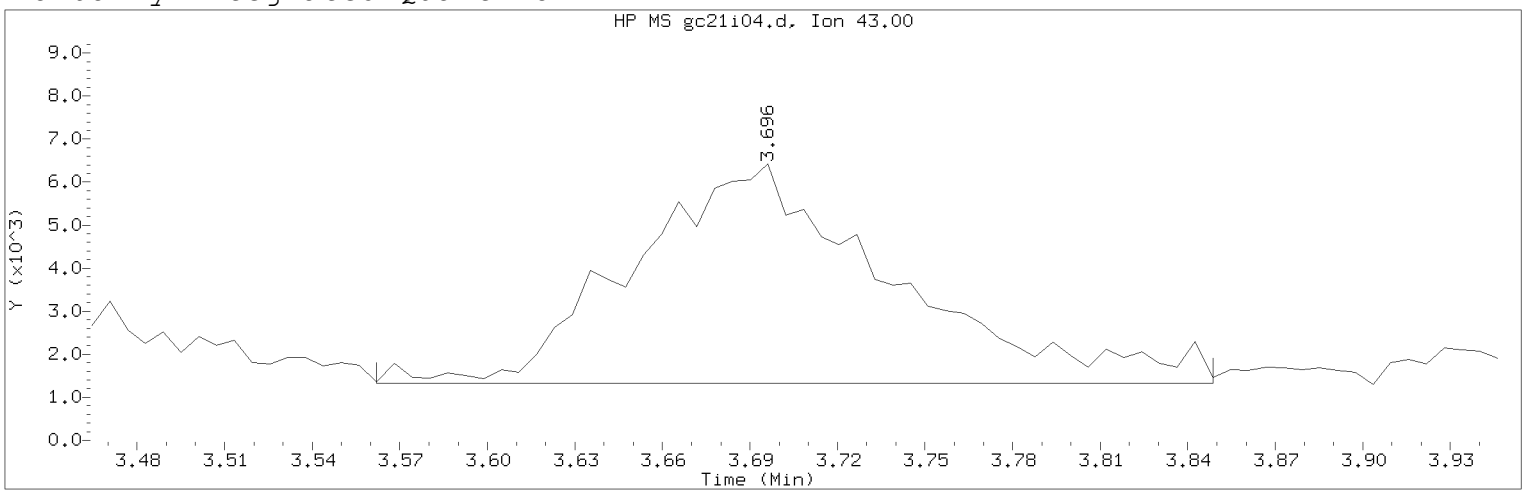
Compound Number	: 10		
Compound Name	: Trichlorofluoromethane		
Scan Number	: 194		
Retention Time (minutes)	: 2.770		
Quant Ion	: 101.00		
Area	: 185840		
On-column Amount (ng)	: 2.0681		
Integration start scan	: 166	Integration stop scan:	245
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

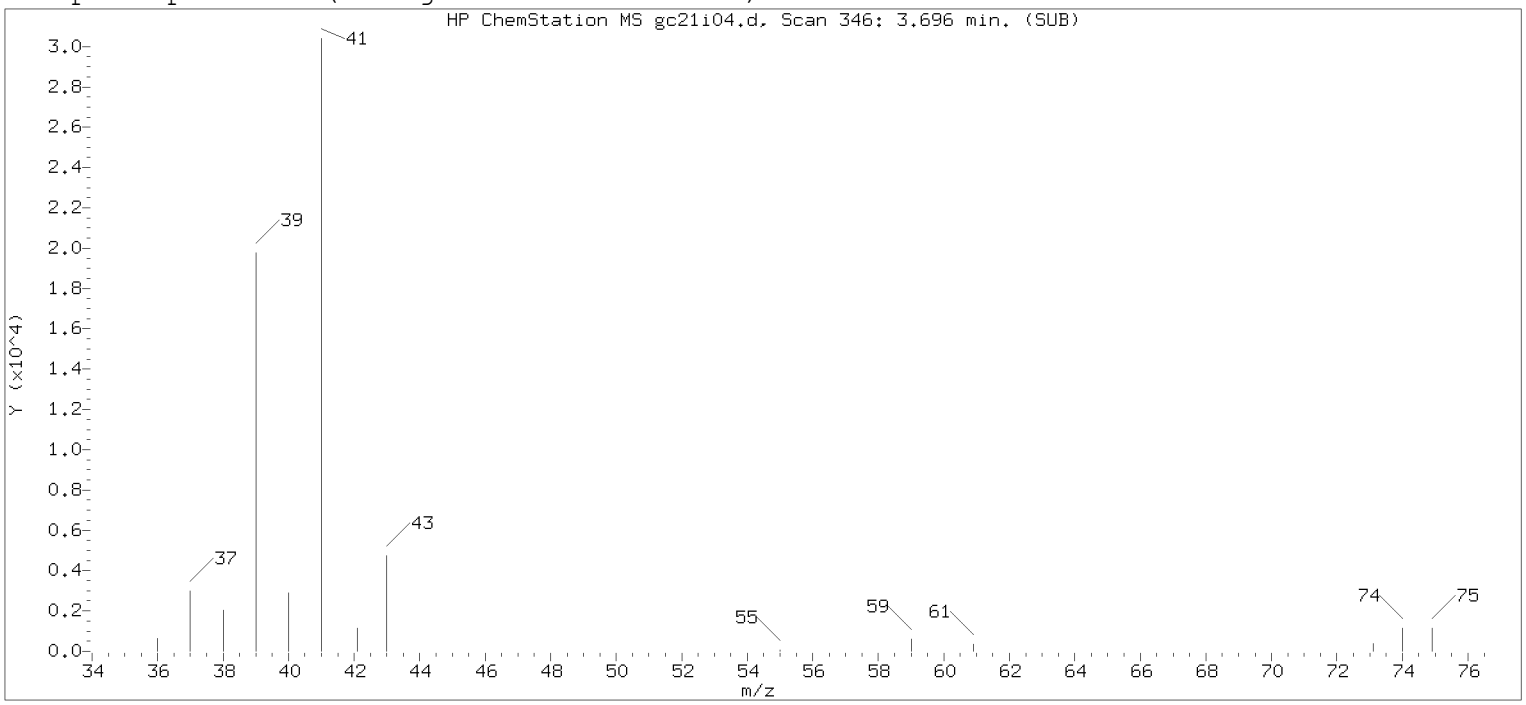
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 346
Retention Time (minutes): 3.696
Quant Ion : 43.00
Area (flag) : 31535M
On-Column Amount (ng) : 1.9512
Integration start scan : 323 Integration stop scan: 370
Y at integration start : 1325 Y at integration end: 1325

Reason for manual integration: improper integration

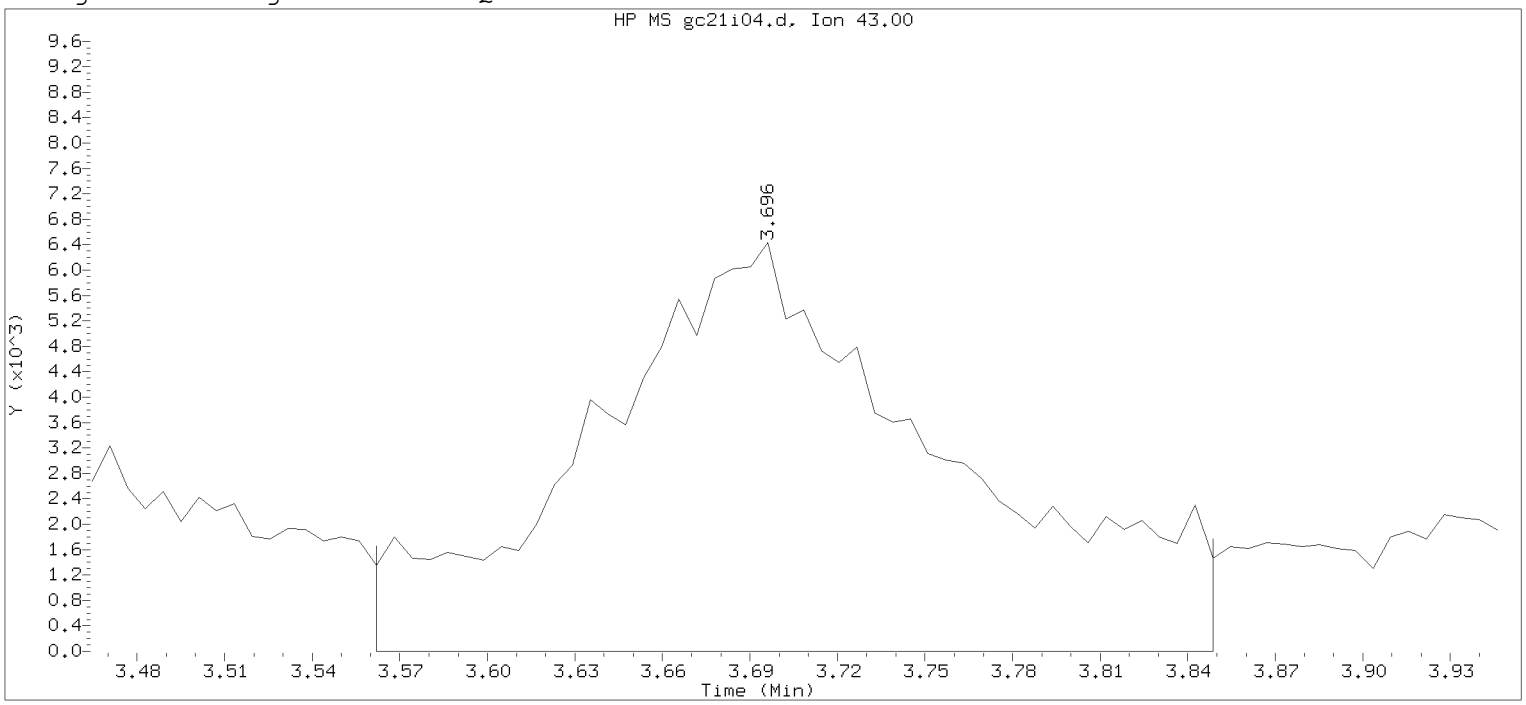
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

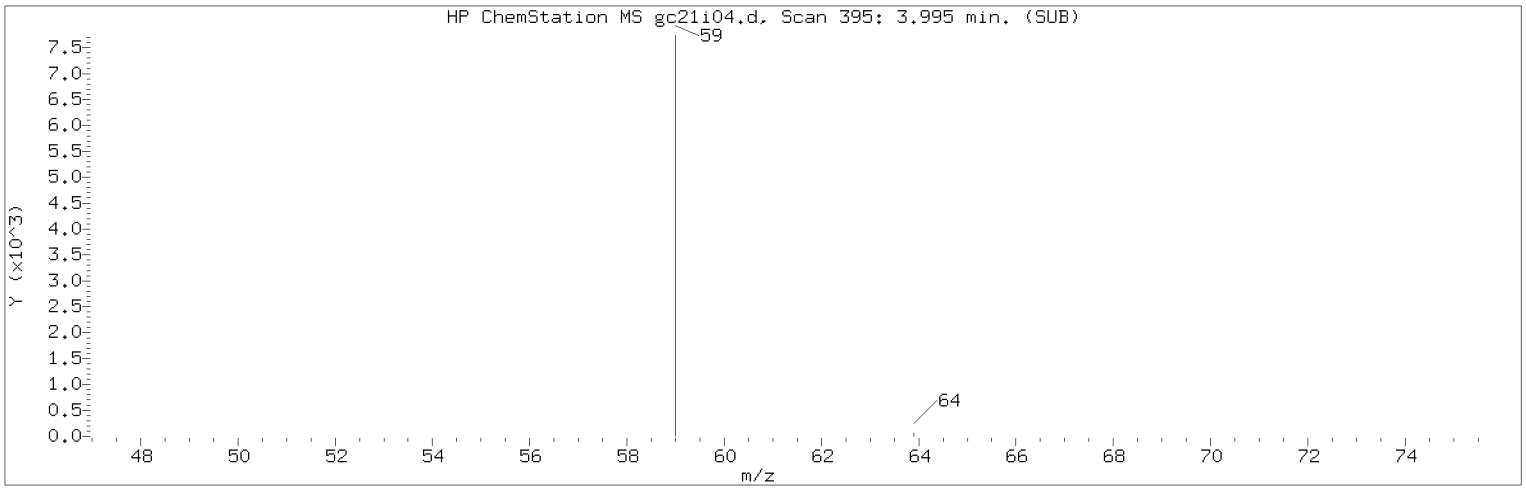
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

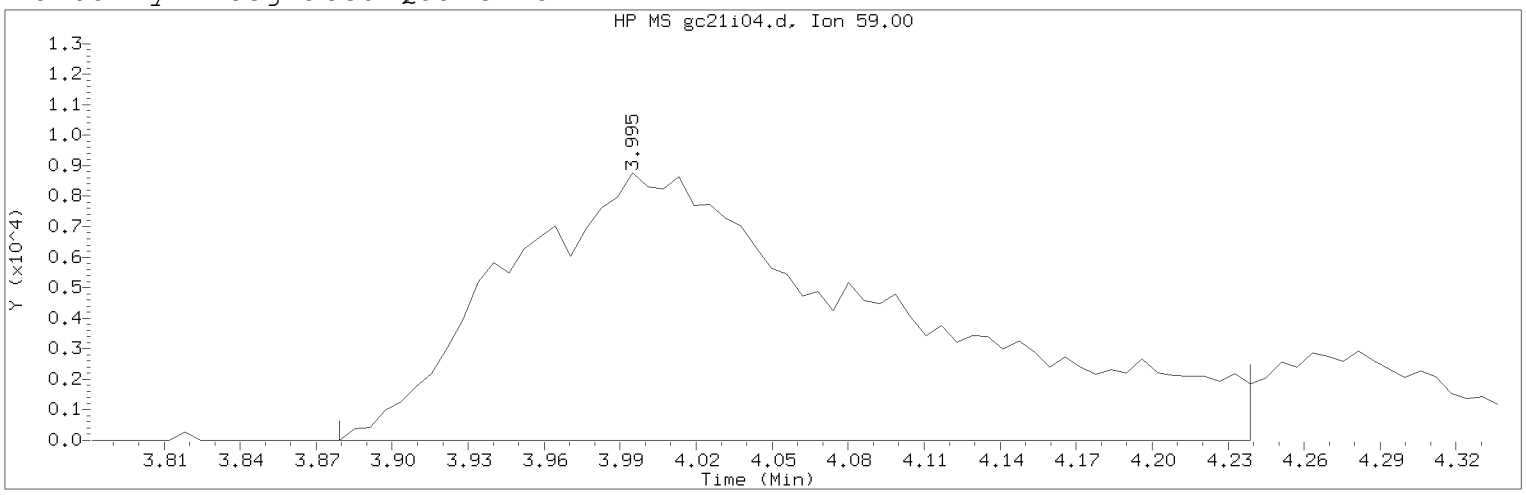
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 346
Retention Time (minutes): 3.696
Quant Ion : 43.00
Area : 54284
On-column Amount (ng) : 2.4865
Integration start scan : 323 Integration stop scan: 370
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

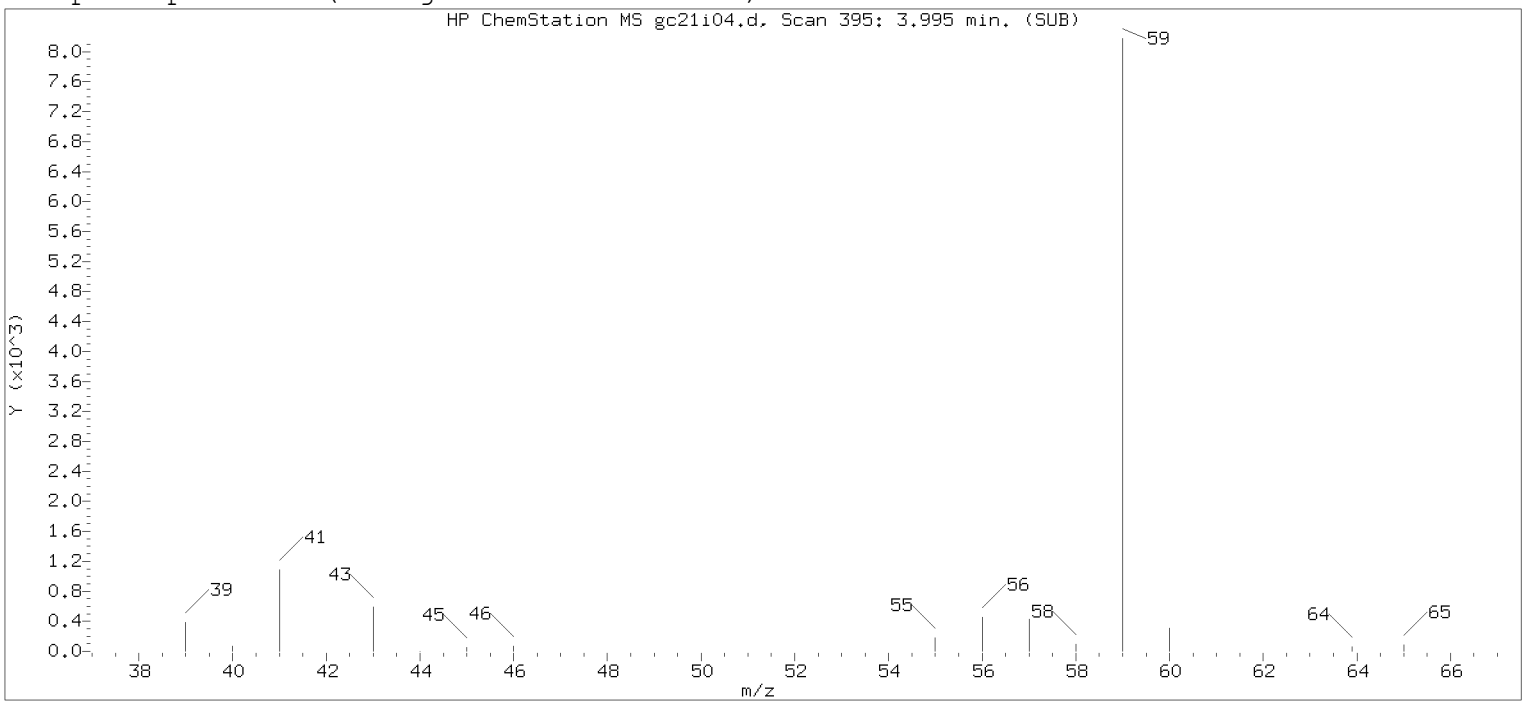
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 395
Retention Time (minutes): 3.995
Quant Ion : 59.00
Area (flag) : 93151M
On-Column Amount (ng) : 40.8050
Integration start scan : 375 Integration stop scan: 434
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

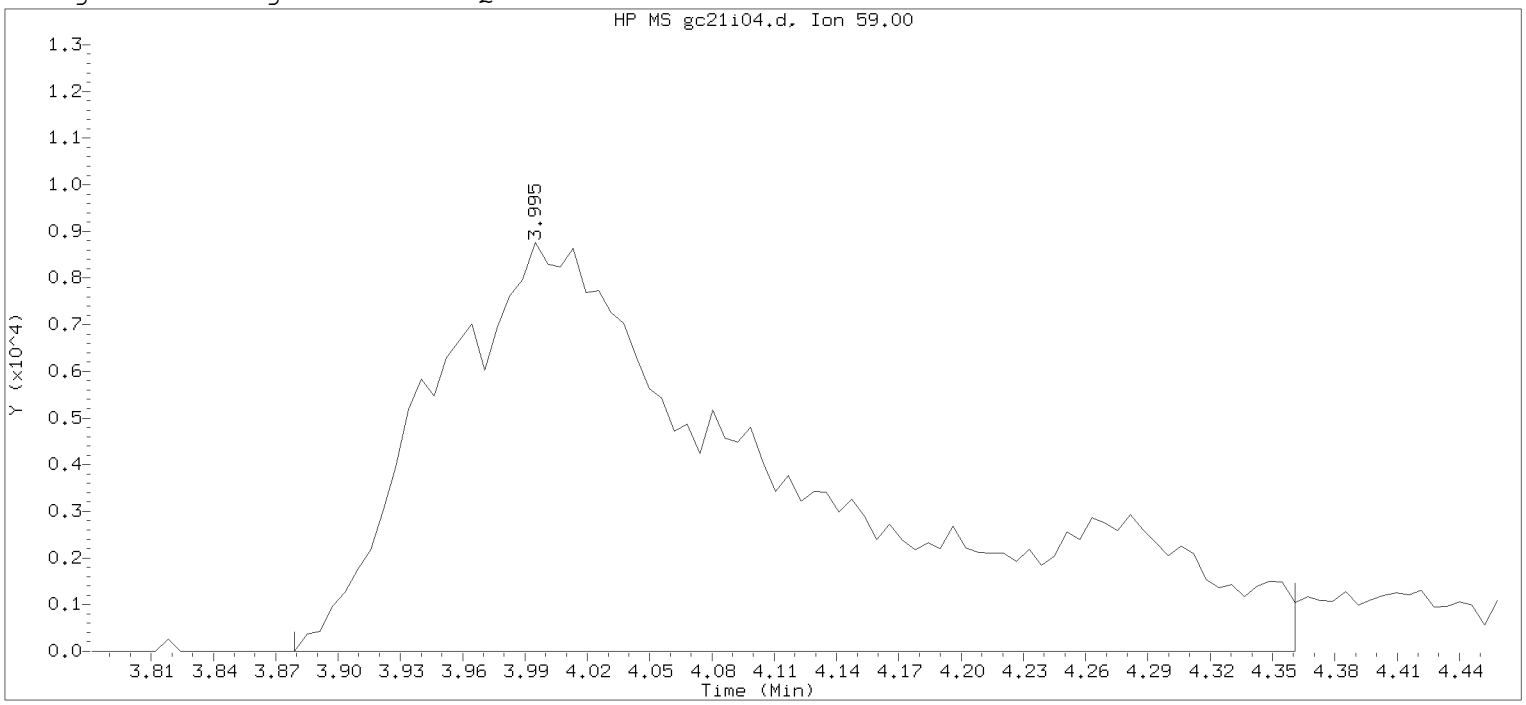
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

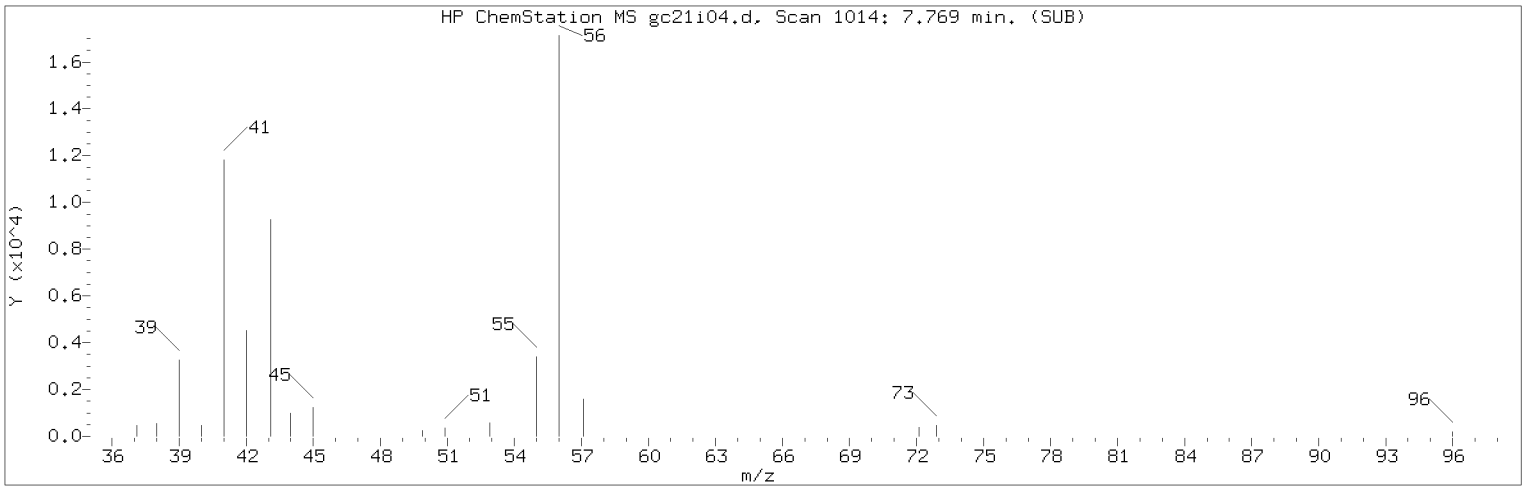
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

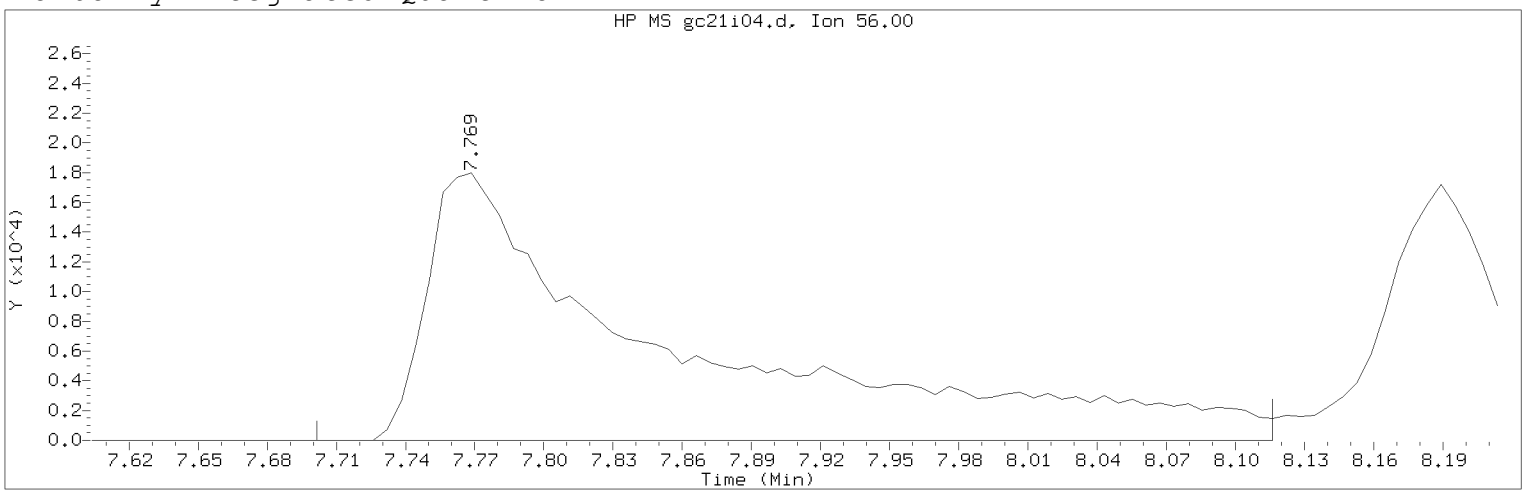
Compound Number	: 28		
Compound Name	: t-Butyl Alcohol		
Scan Number	: 395		
Retention Time (minutes)	: 3.995		
Quant Ion	: 59.00		
Area	: 107727		
On-column Amount (ng)	: 44.0538		
Integration start scan	: 375	Integration stop scan:	454
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

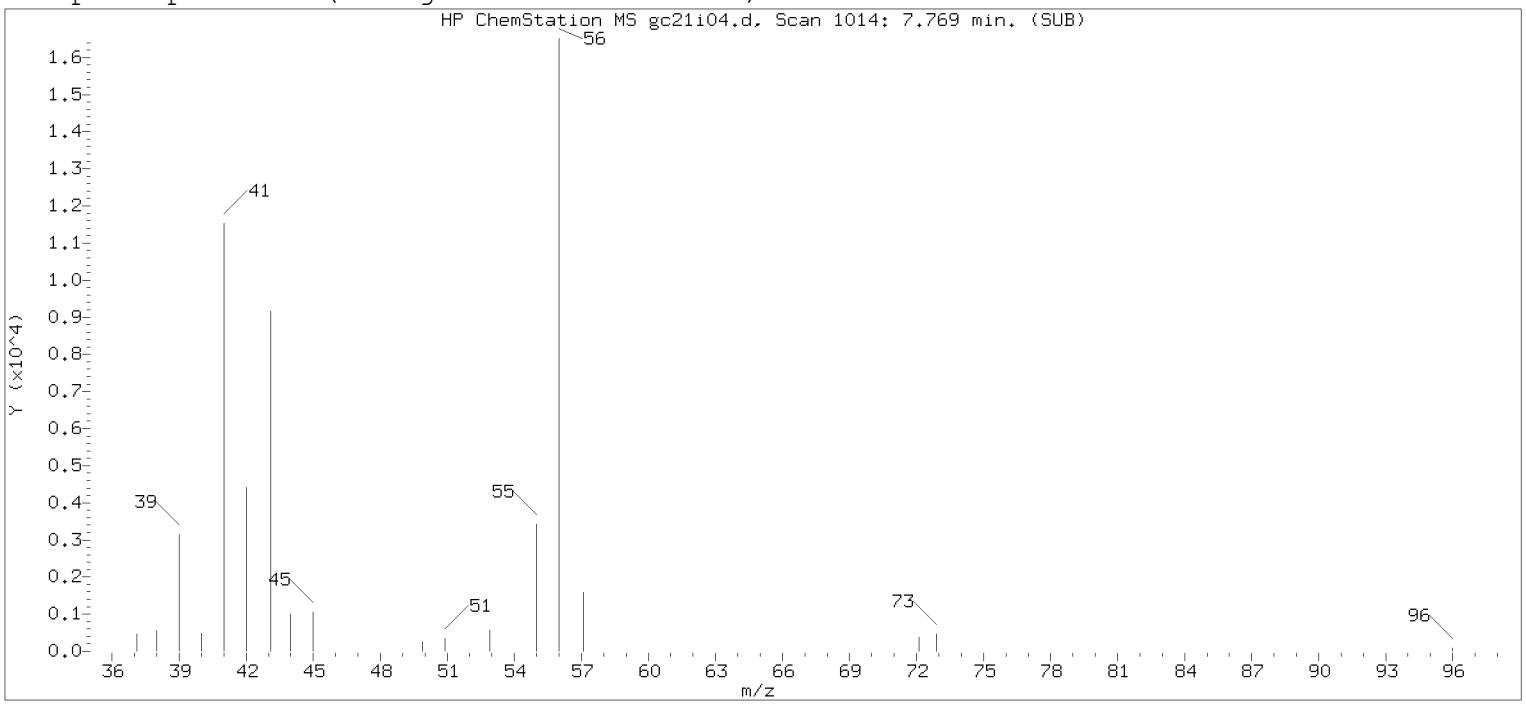
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1014
Retention Time (minutes): 7.769
Quant Ion : 56.00
Area (flag) : 130367M
On-Column Amount (ng) : 188.2509
Integration start scan : 1002 Integration stop scan: 1070
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

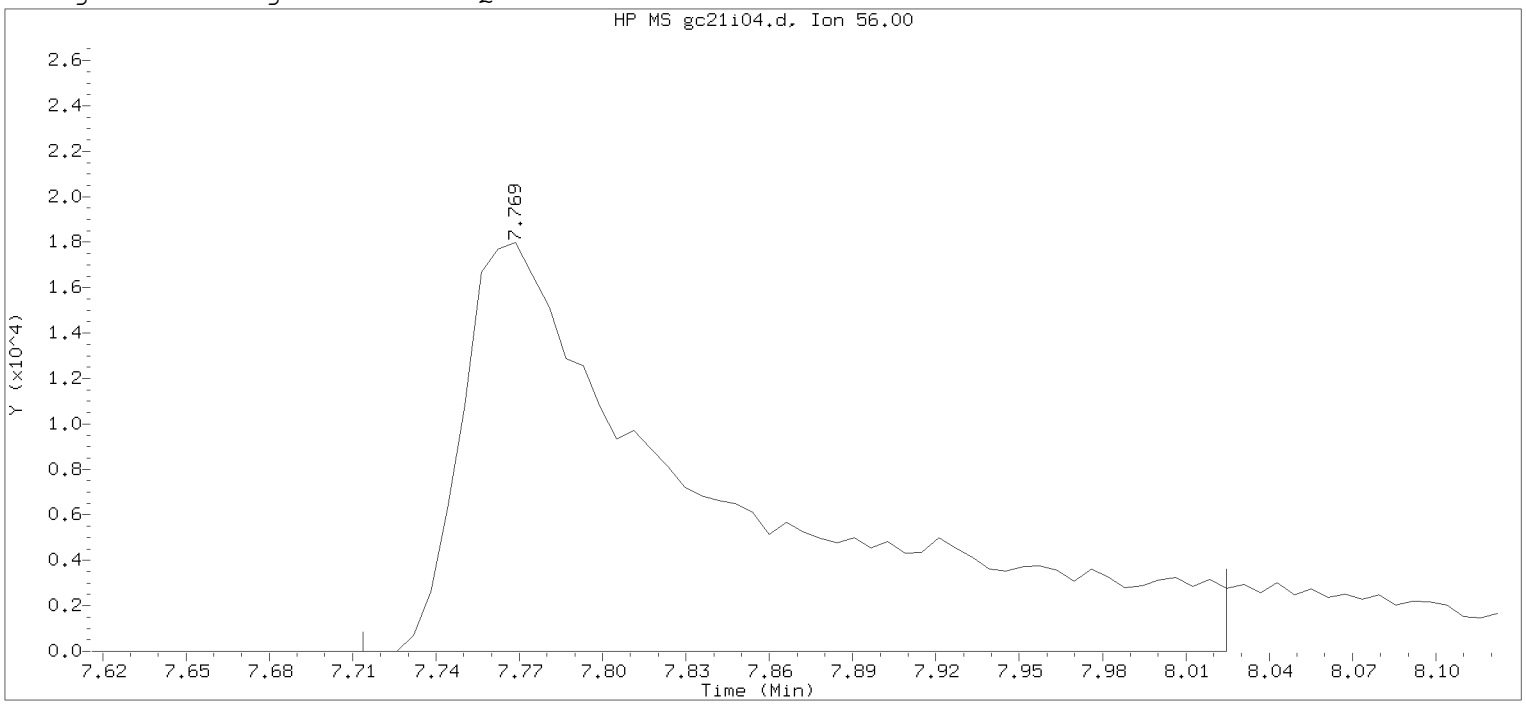
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

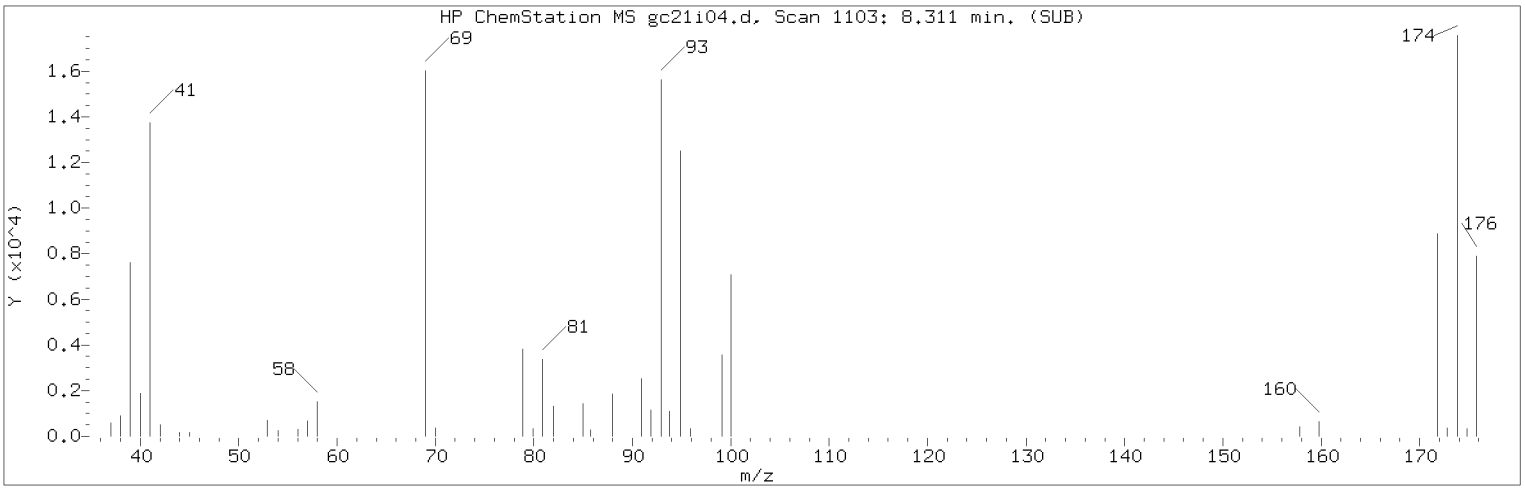
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

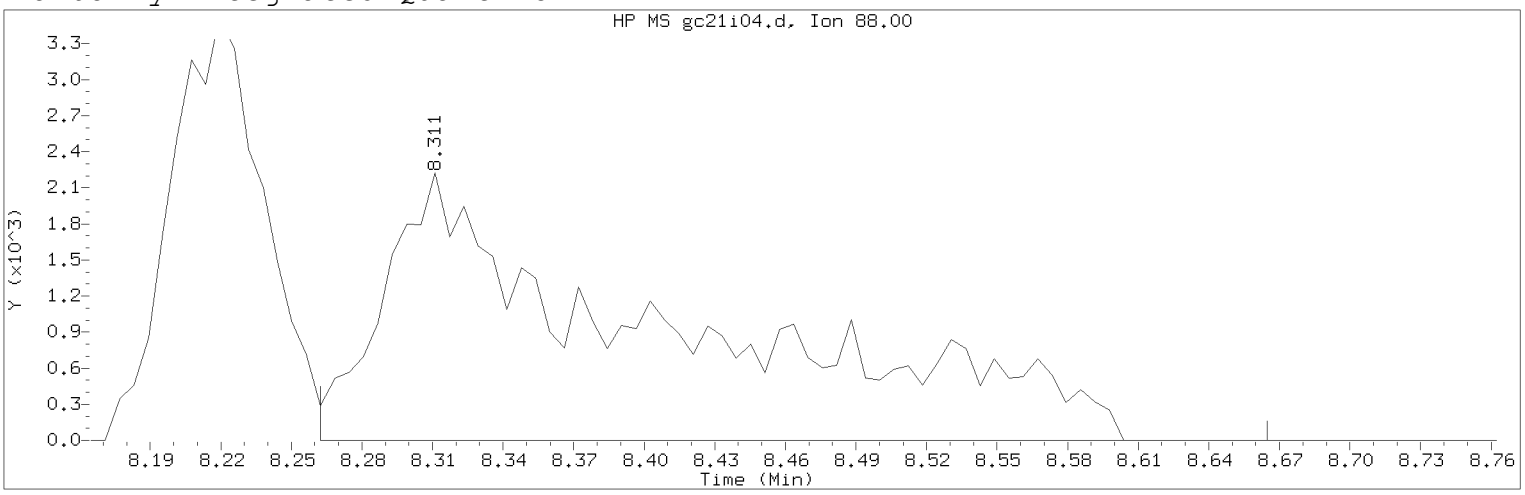
Compound Number	: 65		
Compound Name	: n-Butanol		
Scan Number	: 1014		
Retention Time (minutes)	: 7.769		
Quant Ion	: 56.00		
Area	: 117120		
On-column Amount (ng)	: 164.7105		
Integration start scan	: 1004	Integration stop scan	: 1055
Y at integration start	: 0	Y at integration end	: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

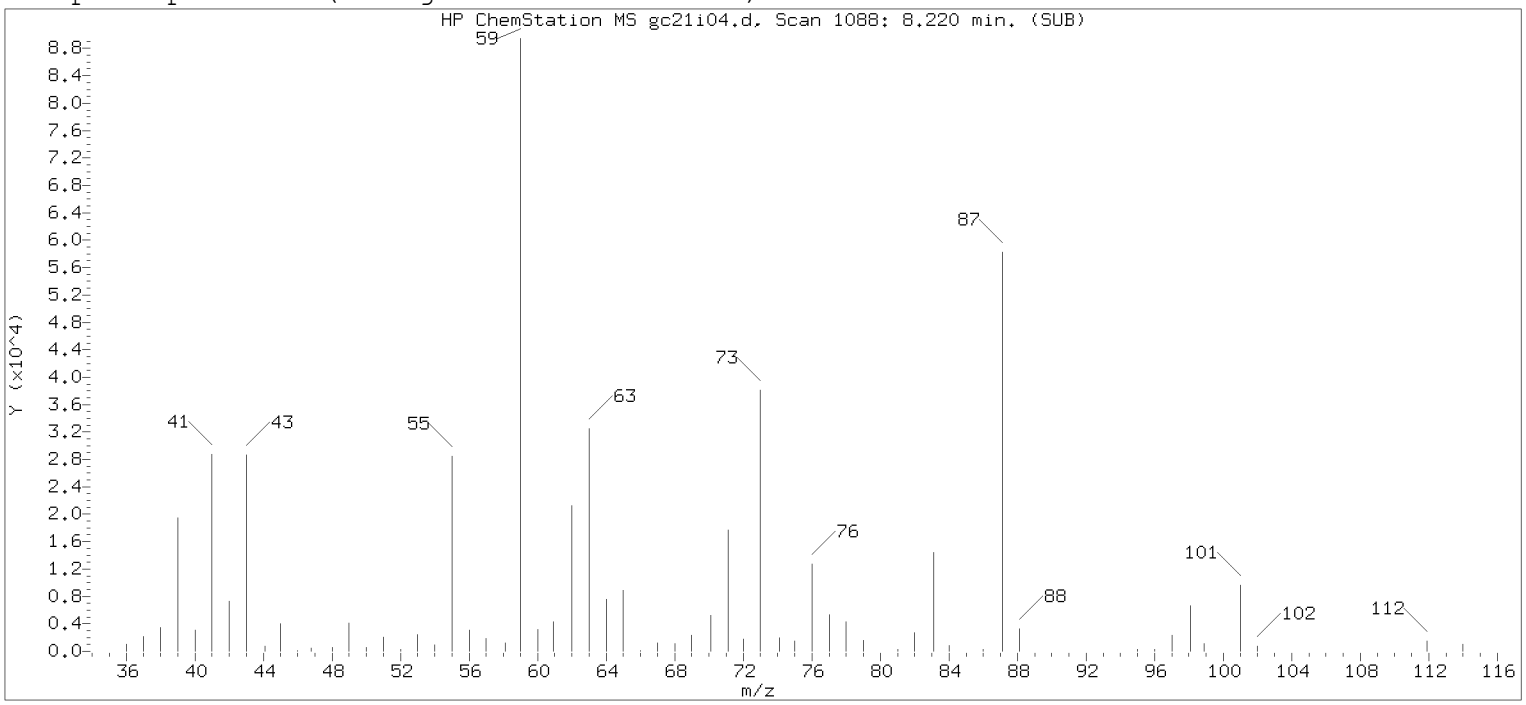
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1103
Retention Time (minutes): 8.311
Quant Ion : 88.00
Area (flag) : 18169M
On-Column Amount (ng) : 97.9444
Integration start scan : 1094 Integration stop scan: 1160
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

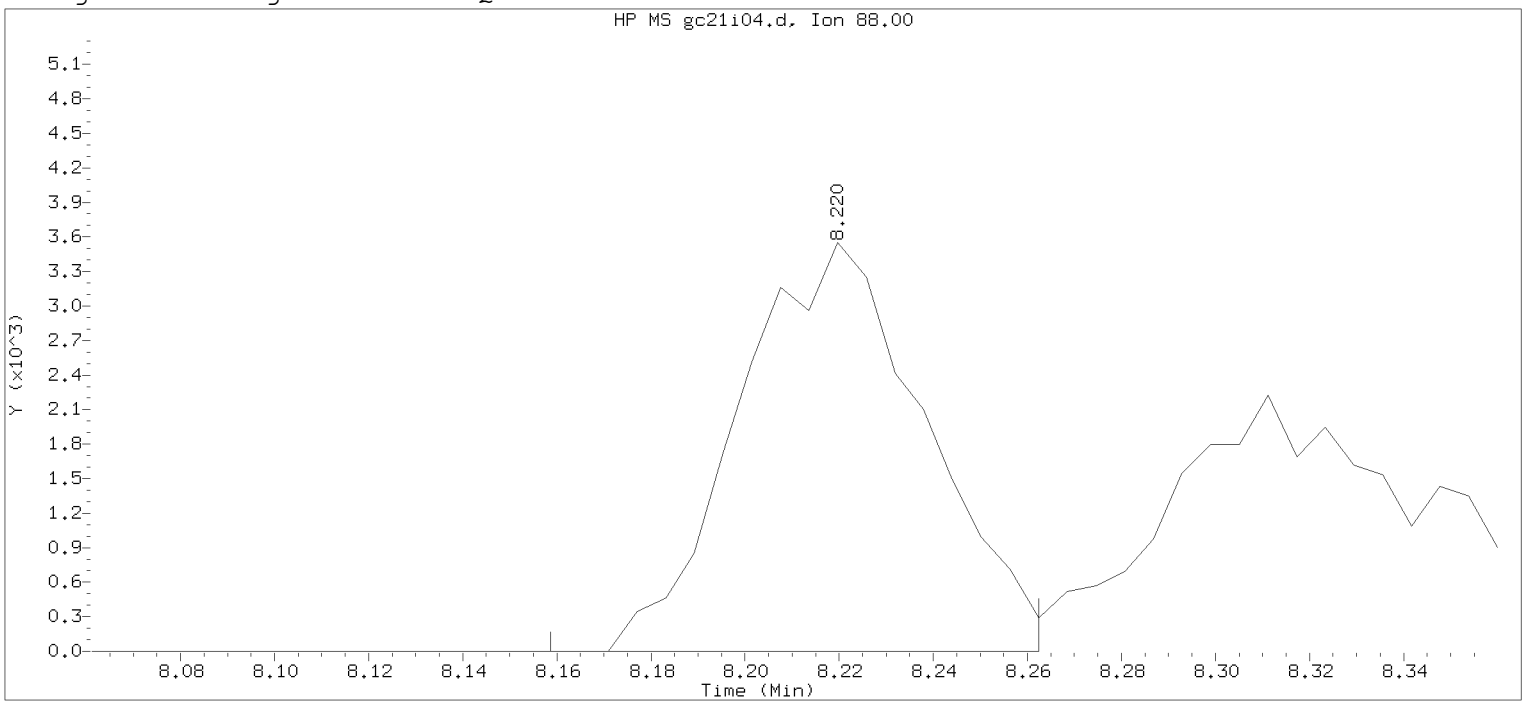
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

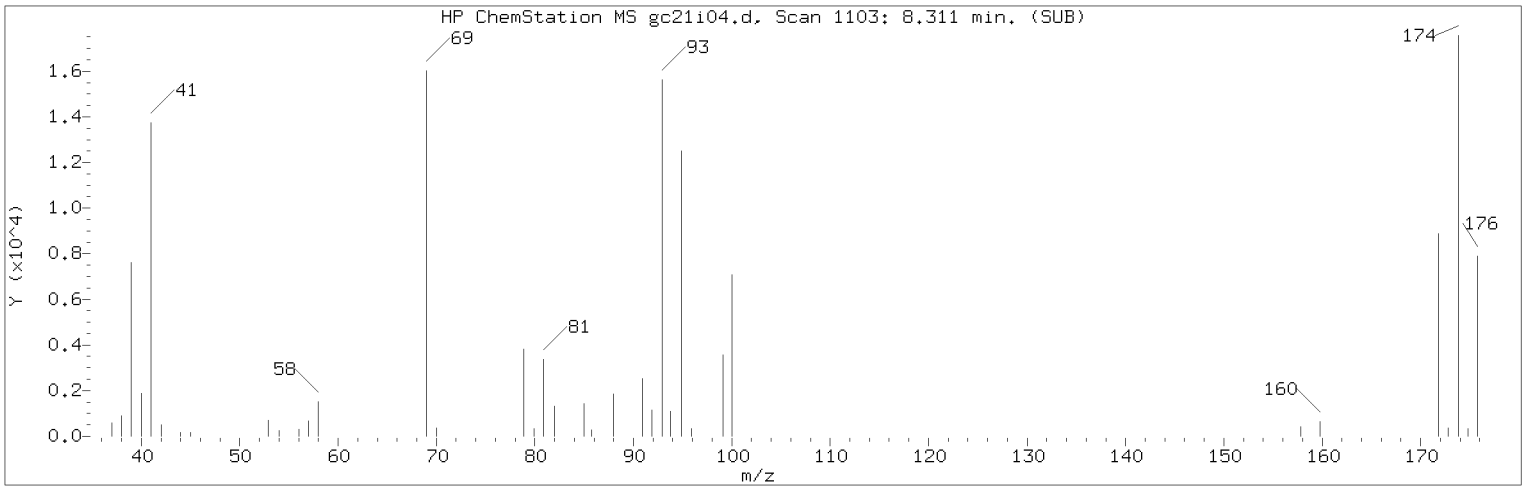
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

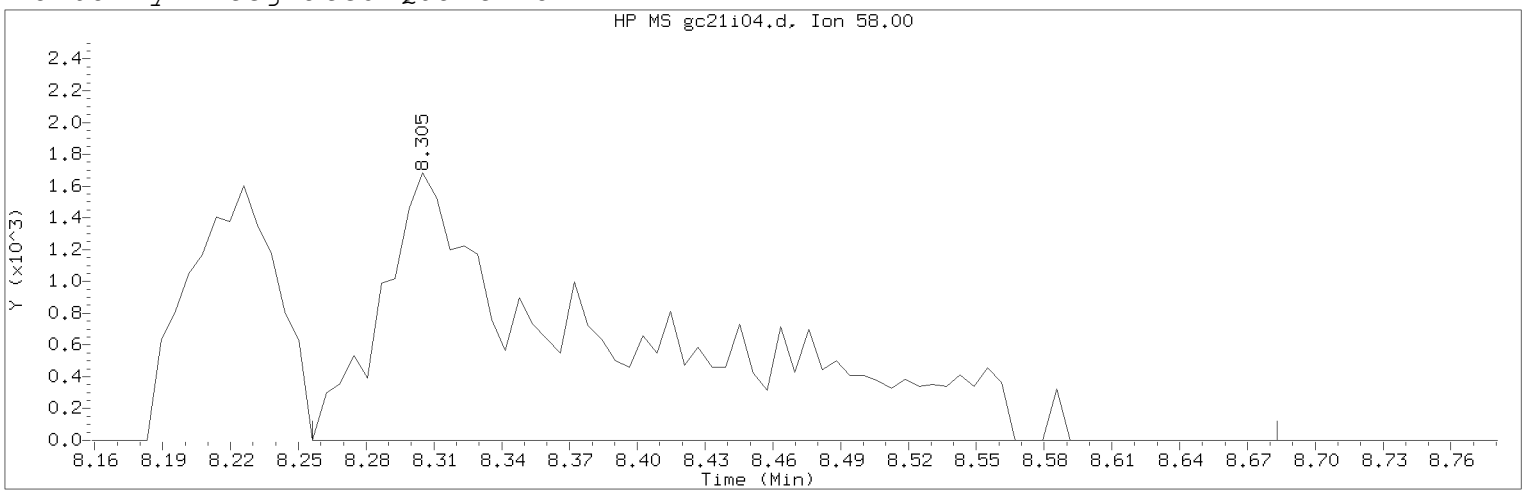
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 88.00		
Area	: 9760		
On-column Amount (ng)	: 84.9033		
Integration start scan	: 1077	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

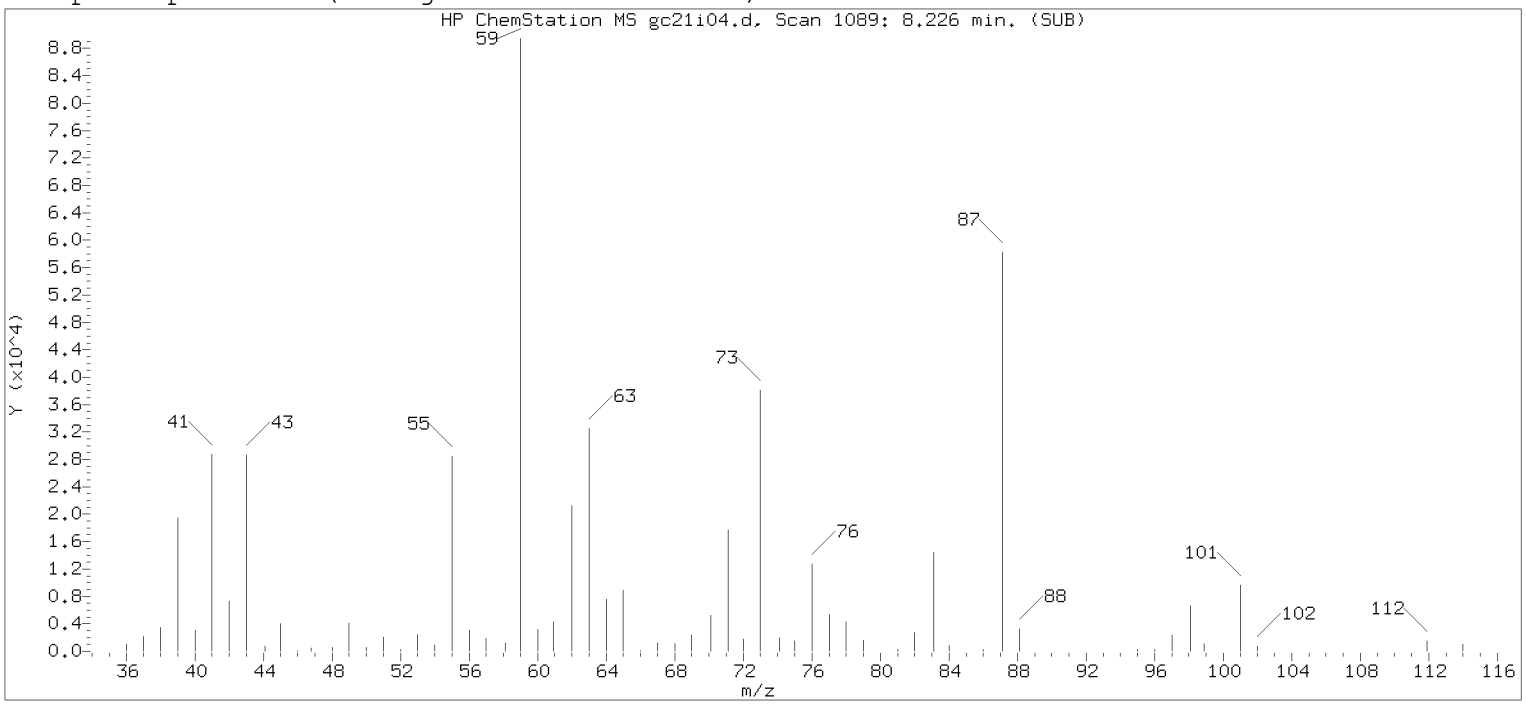
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1102
Retention Time (minutes): 8.305
Quant Ion : 58.00
Area (flag) : 11841M
On-Column Amount (ng) : 115.4863
Integration start scan : 1093 Integration stop scan: 1163
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

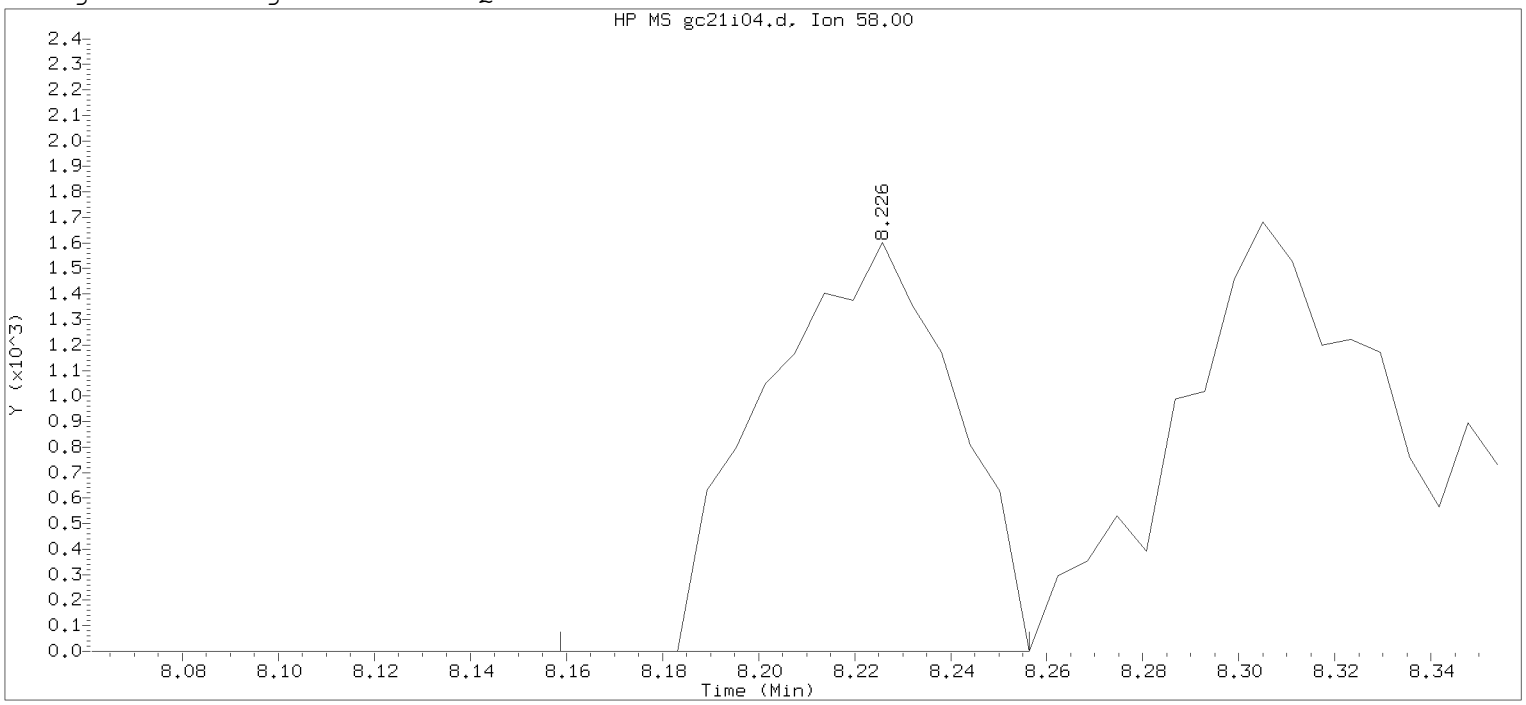
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

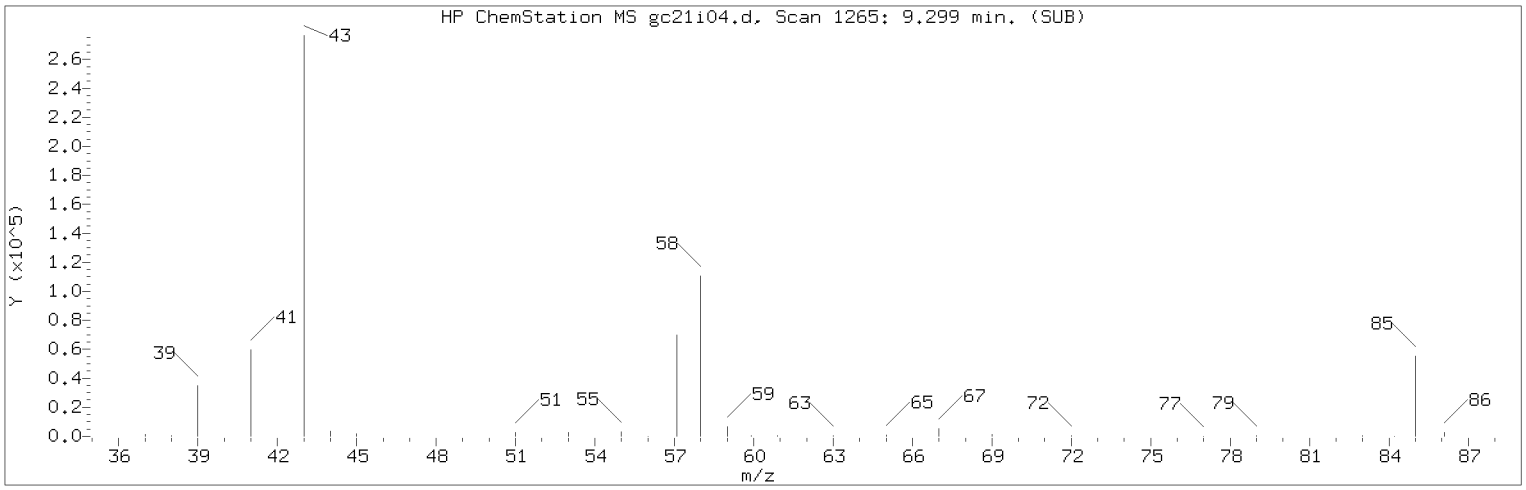
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

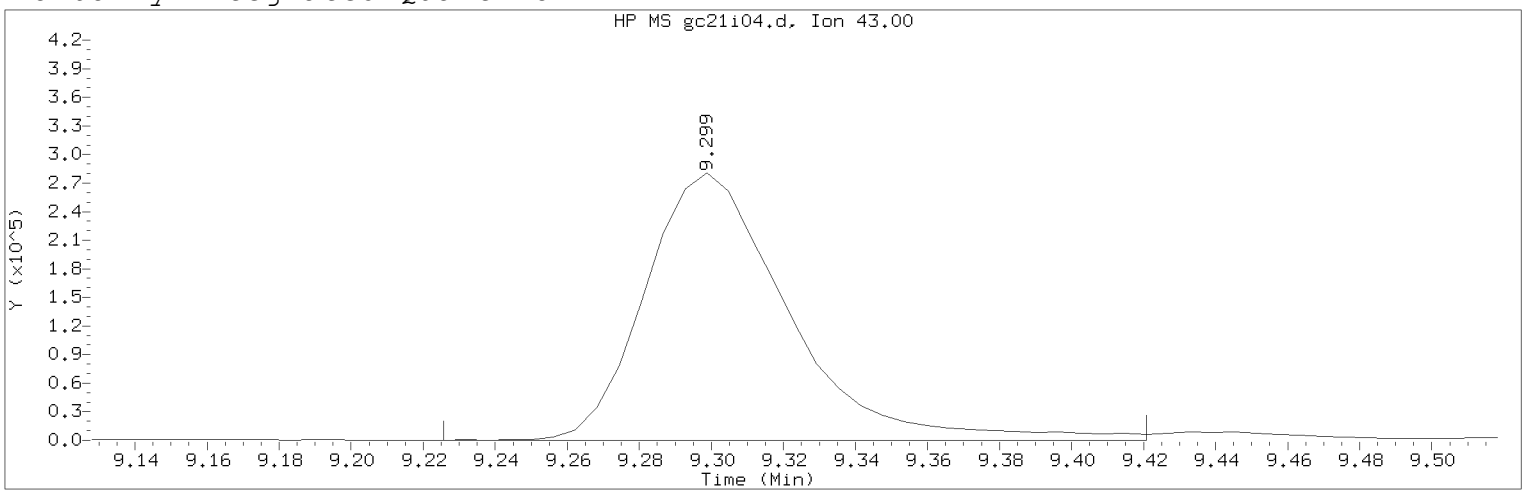
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1089		
Retention Time (minutes)	: 8.226		
Quant Ion	: 58.00		
Area	: 4387		
On-column Amount (ng)	: 71.8291		
Integration start scan	: 1077	Integration stop scan:	1093
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

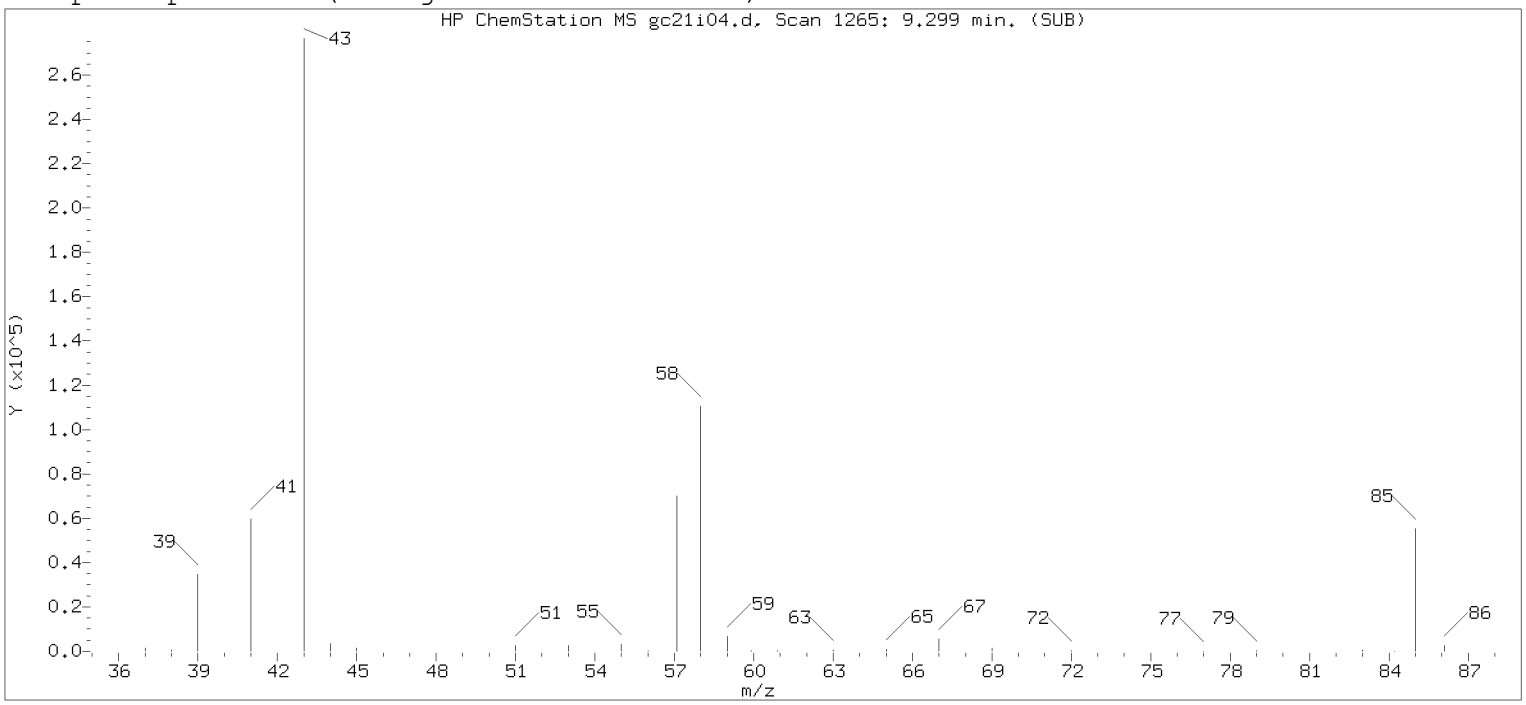
Compound Number : 81
Compound Name : 4-Methyl-2-Pentanone
Scan Number : 1265
Retention Time (minutes): 9.299
Quant Ion : 43.00
Area (flag) : 775288M
On-Column Amount (ng) : 21.1836
Integration start scan : 1252 Integration stop scan: 1284
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

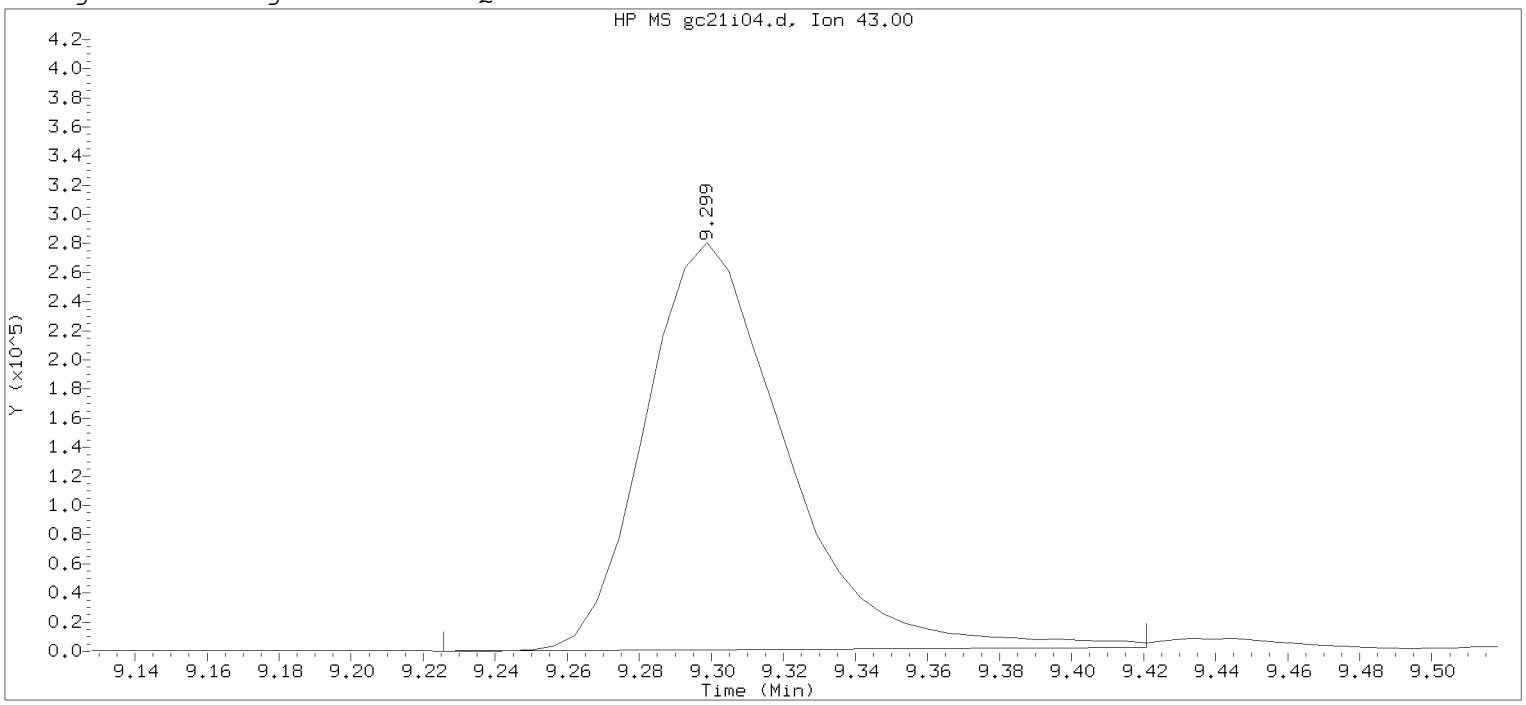
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

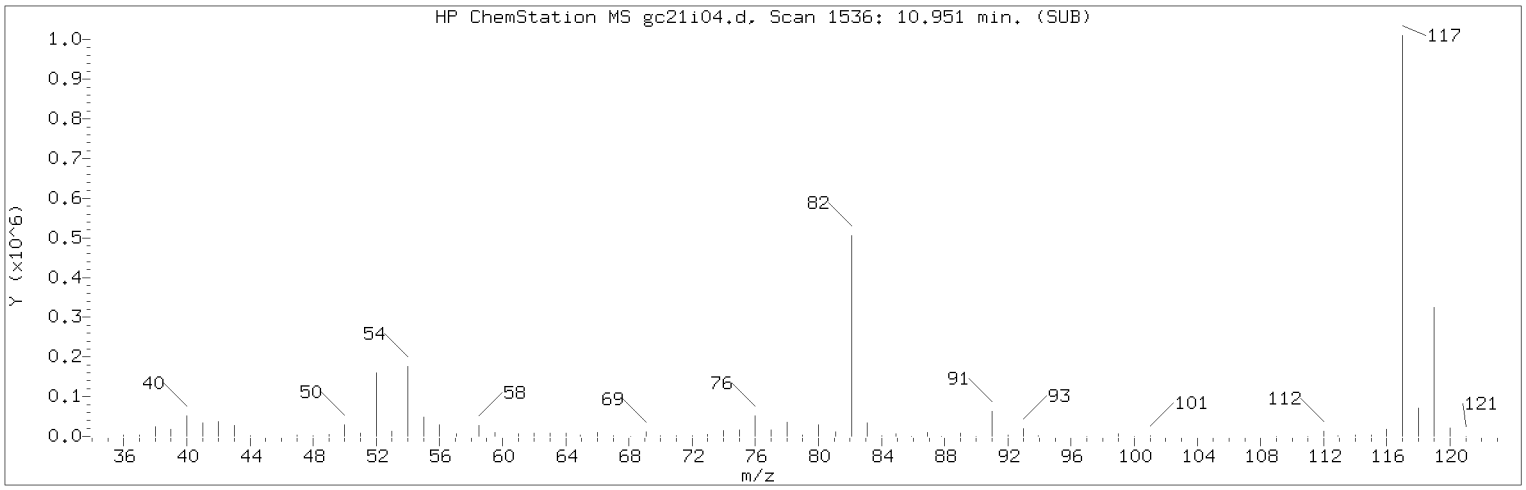
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

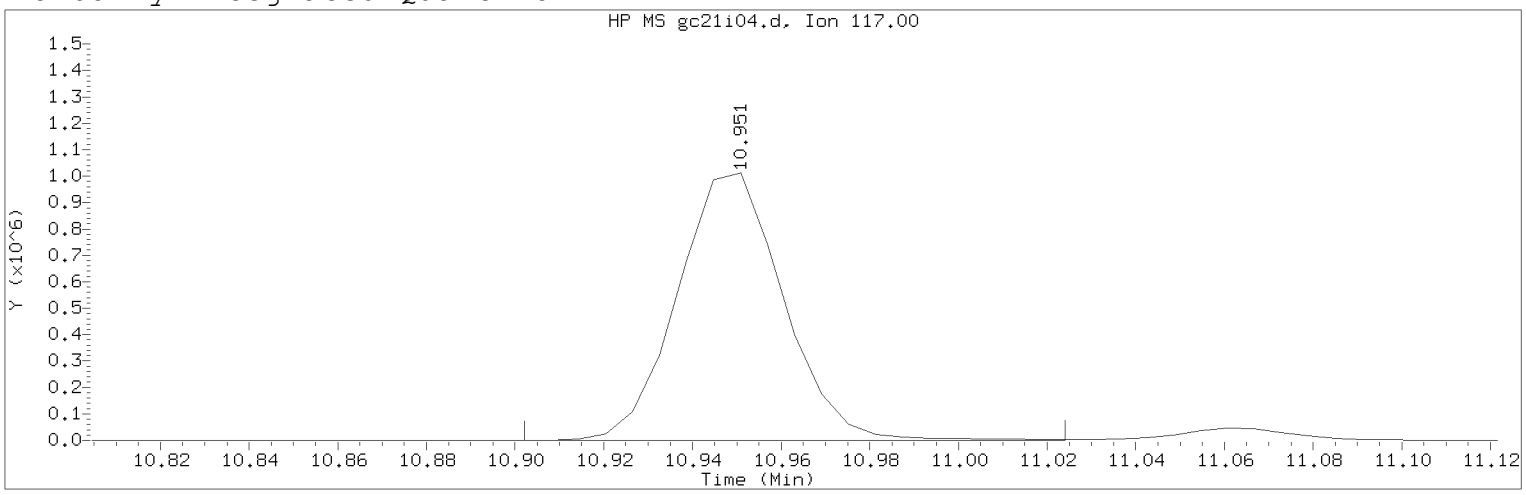
Compound Number : 81
Compound Name : 4-Methyl-2-Pentanone
Scan Number : 1265
Retention Time (minutes): 9.299
Quant Ion : 43.00
Area : 759624
On-column Amount (ng) : 21.5336
Integration start scan : 1252 Integration stop scan: 1284
Y at integration start : 0 Y at integration end: 2493

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

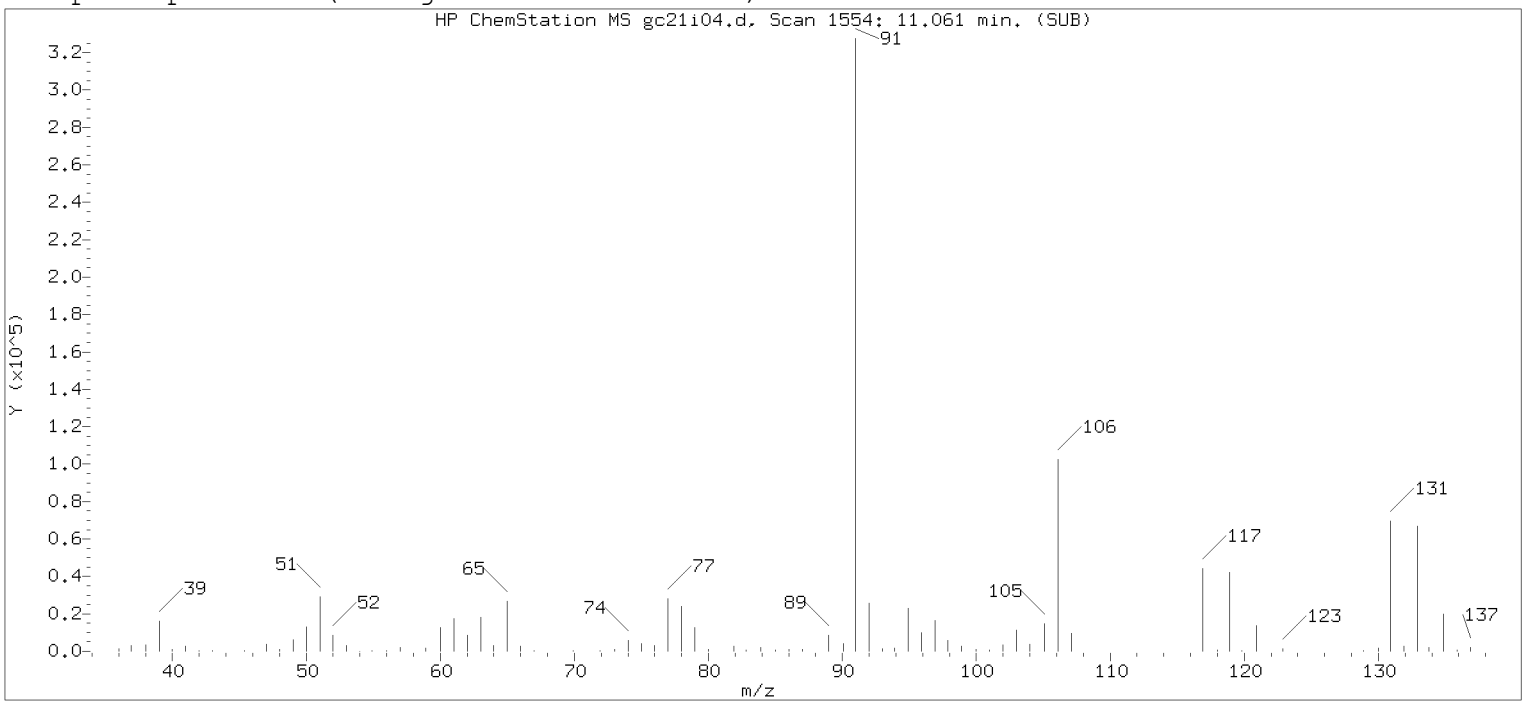
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1671566A
On-Column Amount (ng) : 10.0000
Integration start scan : 1527 Integration stop scan: 1547
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

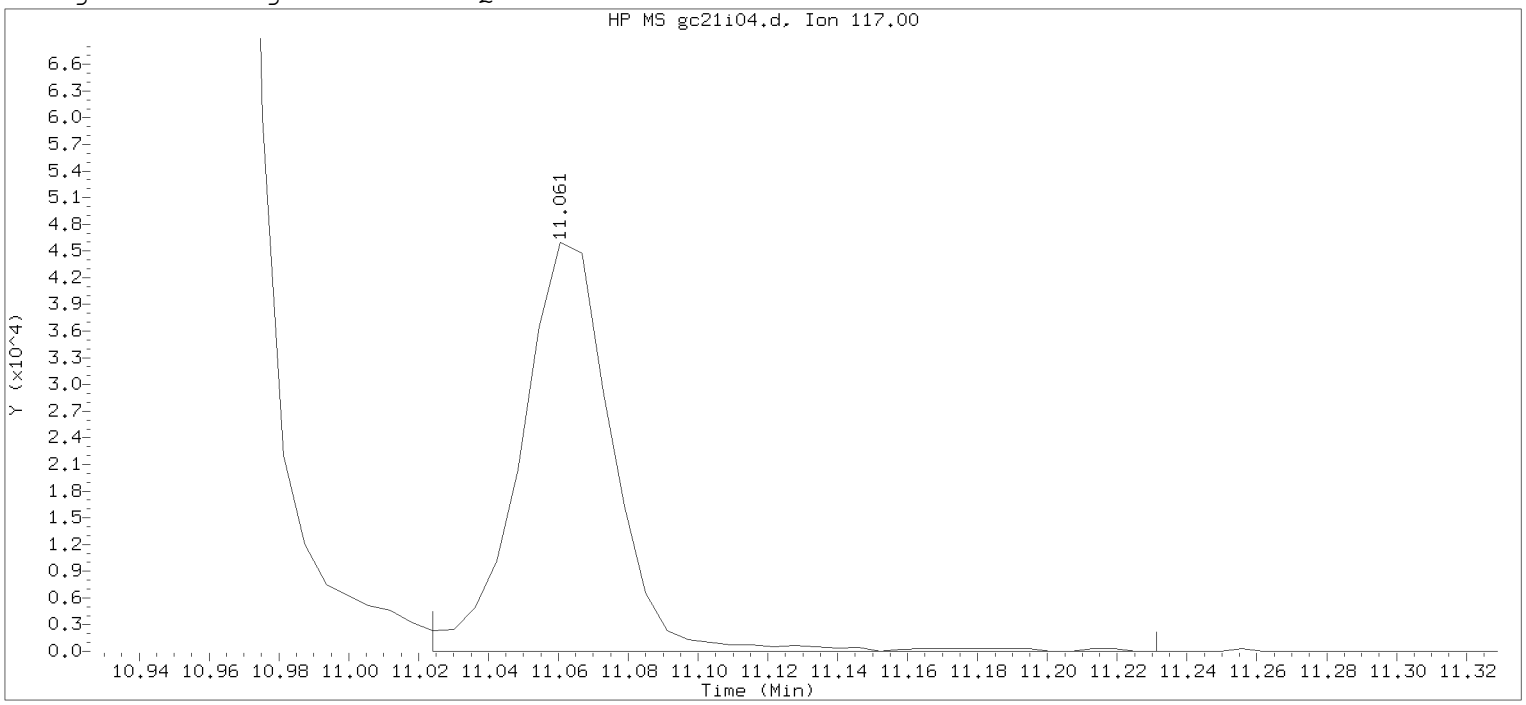
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

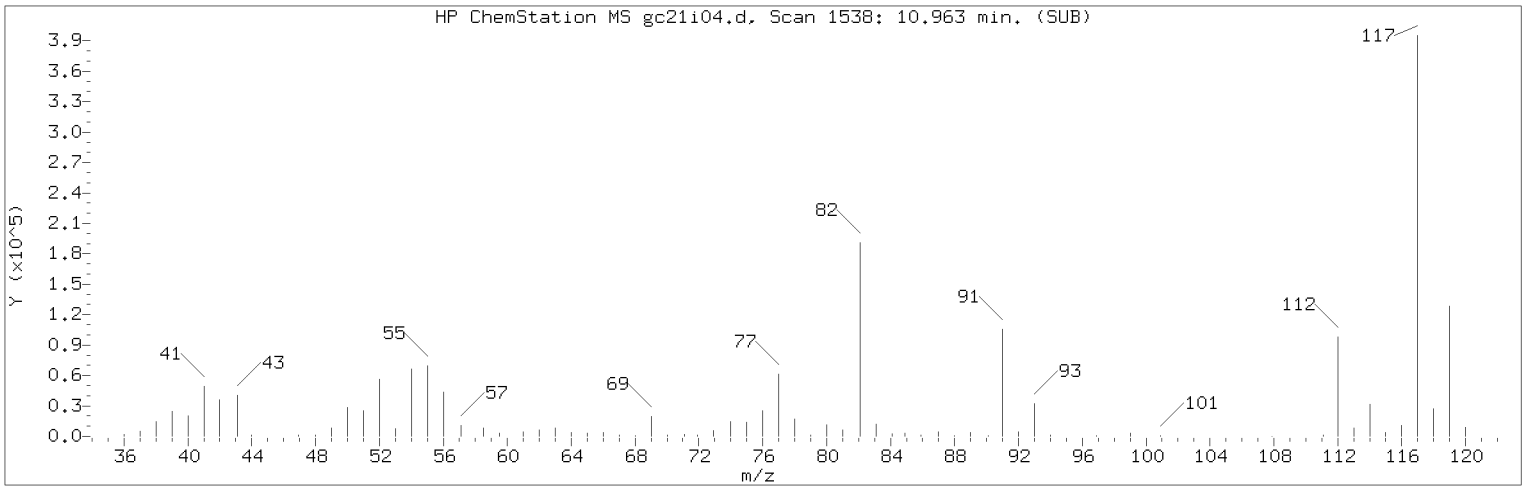
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

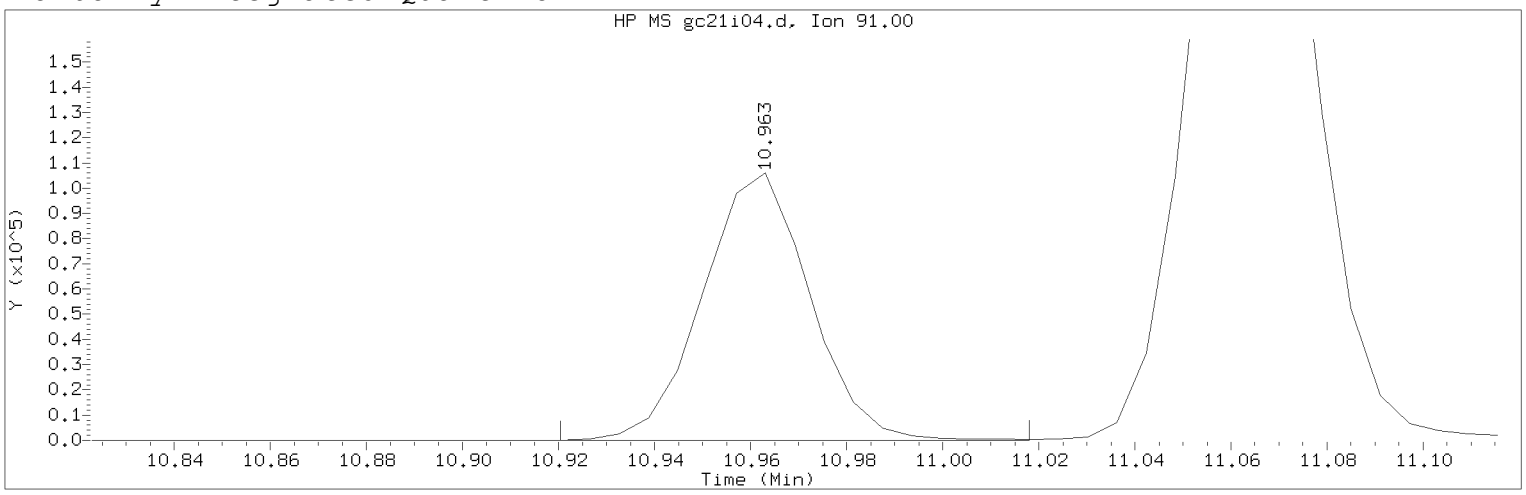
Compound Number	: 97		
Compound Name	: Chlorobenzene-d5		
Scan Number	: 1554		
Retention Time (minutes)	: 11.061		
Quant Ion	: 117.00		
Area	: 83969		
On-column Amount (ng)	: 10.0000		
Integration start scan	: 1547	Integration stop scan:	1581
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

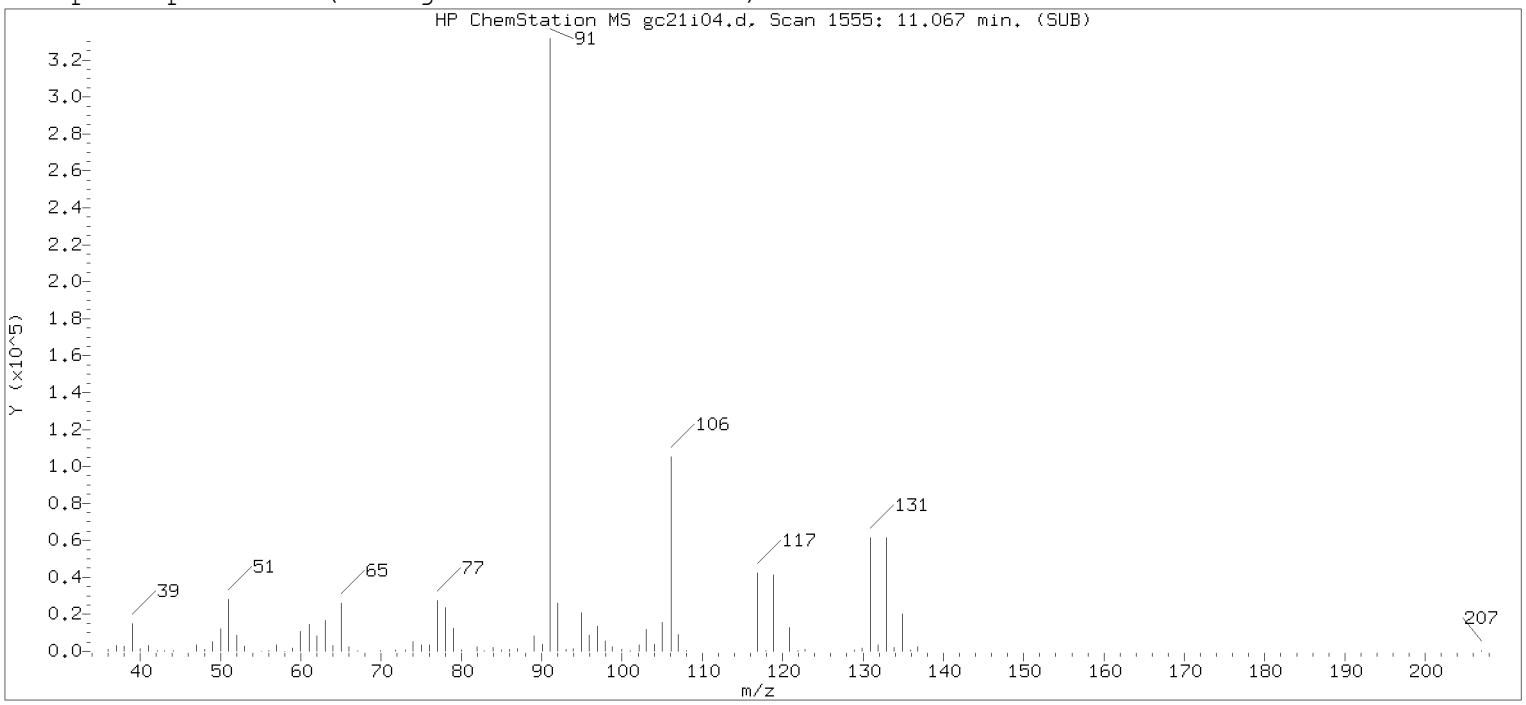
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 163991MA
On-Column Amount (ng) : 2.0587
Integration start scan : 1530 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

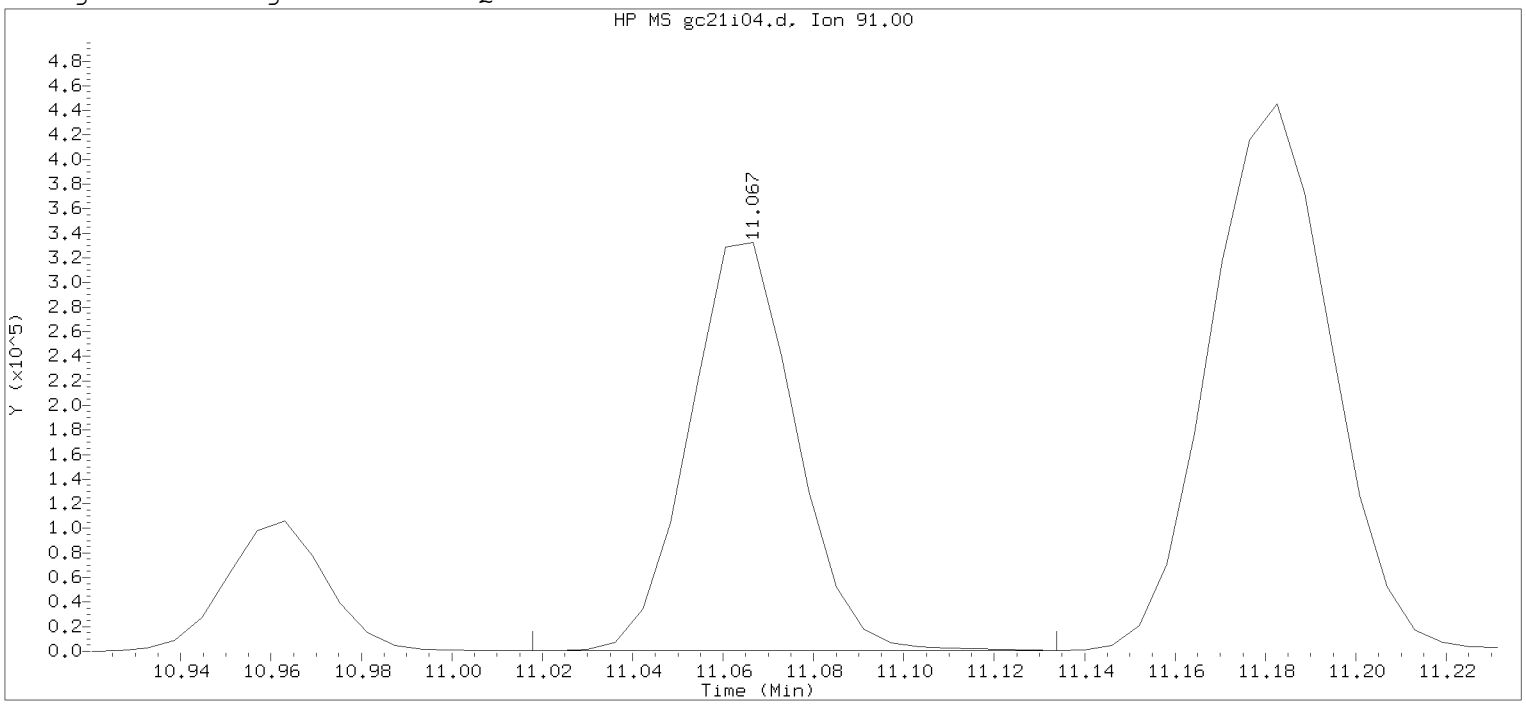
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

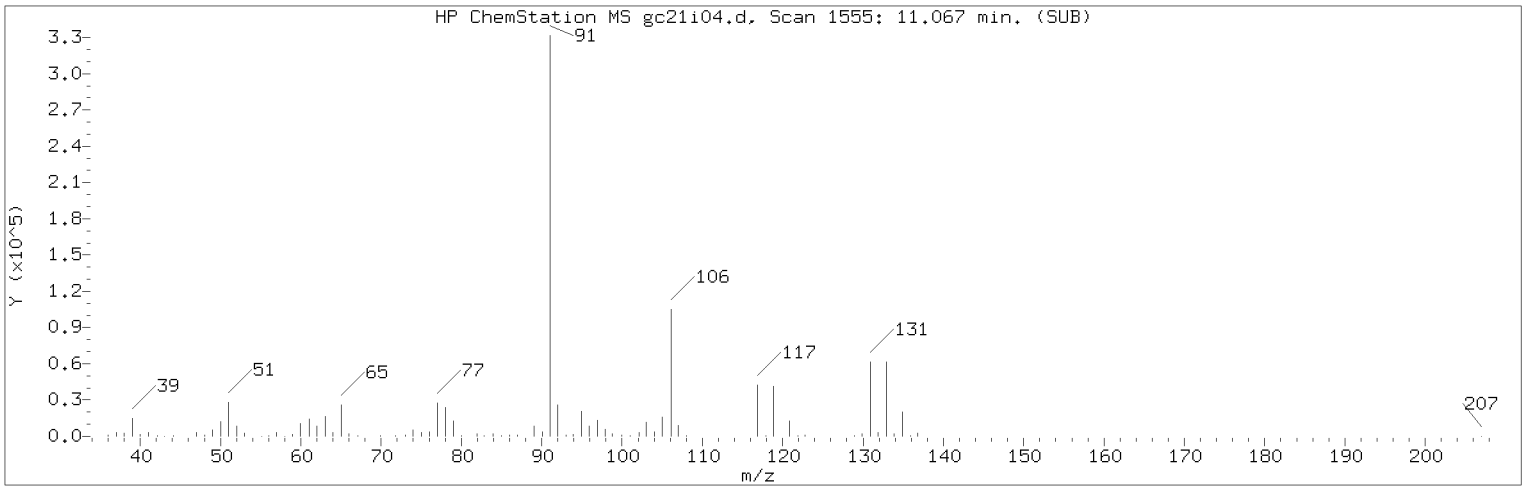
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

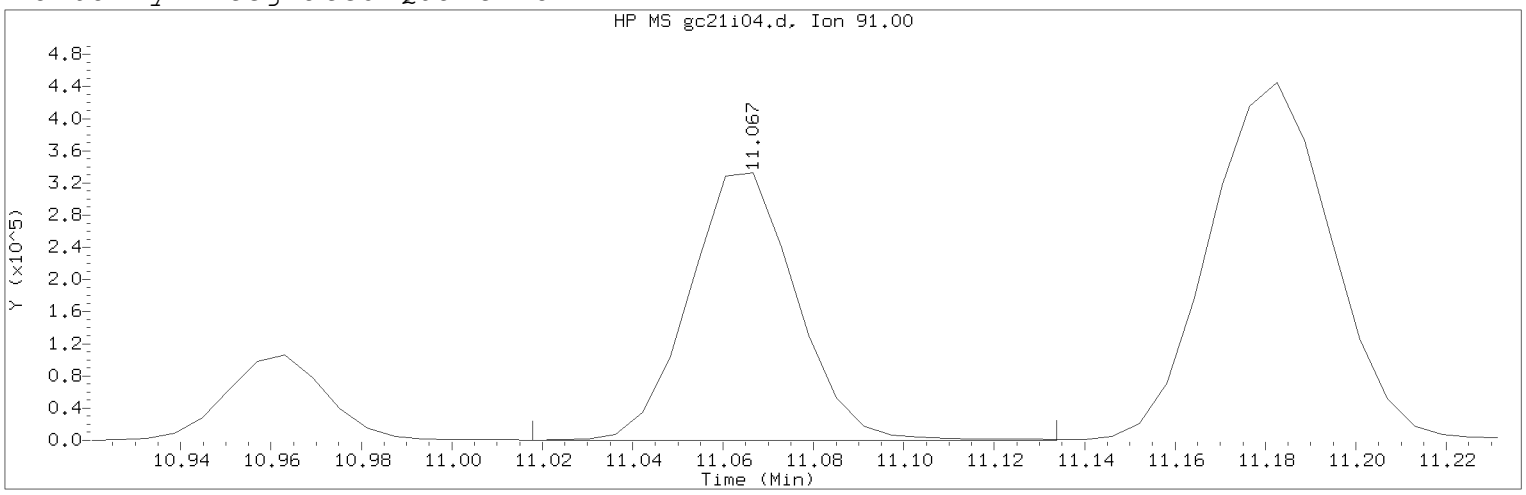
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 543454
On-column Amount (ng) : 4.7440
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 279 Y at integration end: 392

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

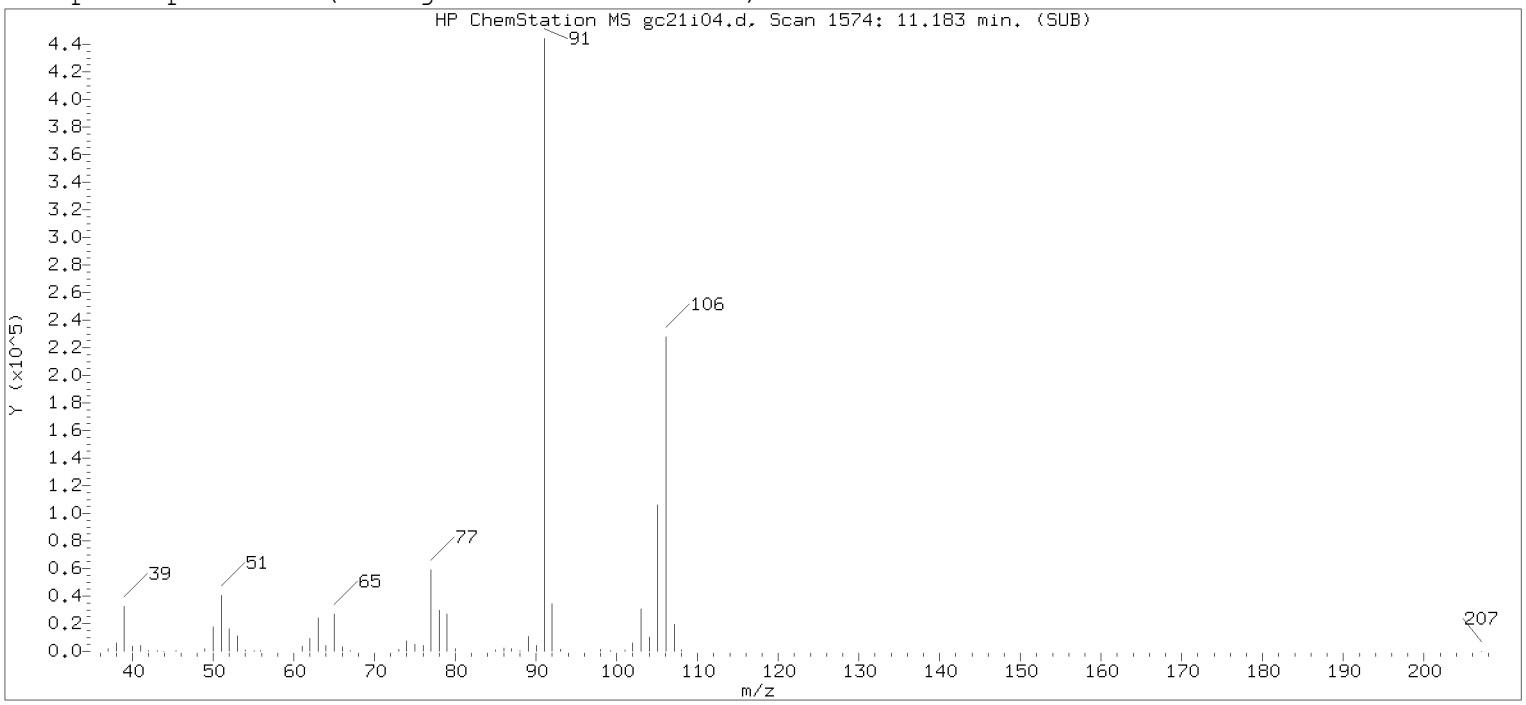
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 544095MA
On-Column Amount (ng) : 2.0833
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 258 Y at integration end: 258

Reason for manual integration: improper integration

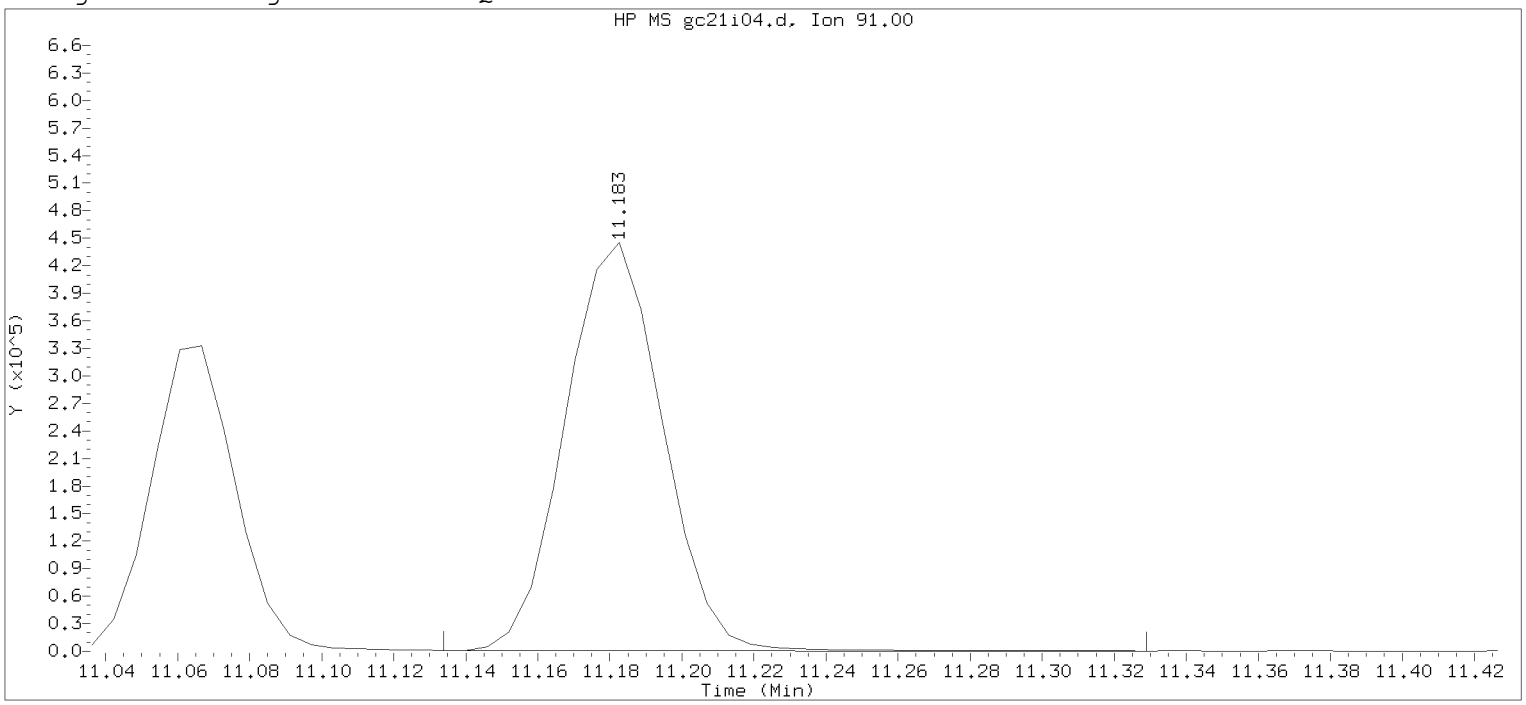
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

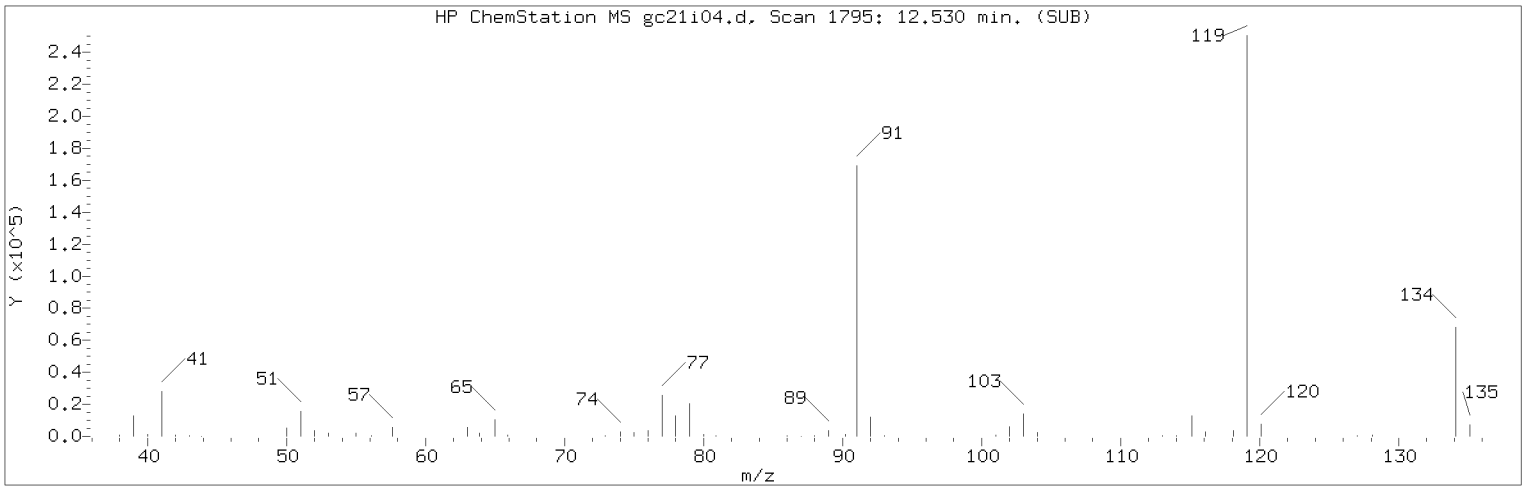
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

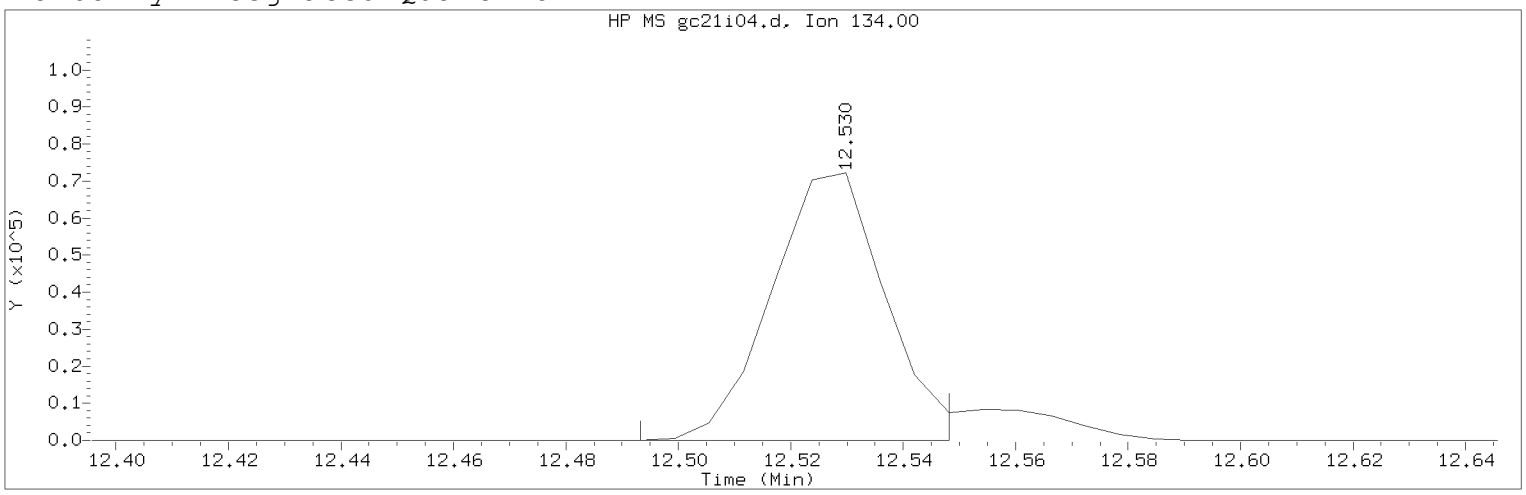
Compound Number	: 100		
Compound Name	: Ethylbenzene		
Scan Number	: 1574		
Retention Time (minutes)	: 11.183		
Quant Ion	: 91.00		
Area	: 836158		
On-column Amount (ng)	: 4.7339		
Integration start scan	: 1565	Integration stop scan:	1597
Y at integration start	: 423	Y at integration end:	276

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

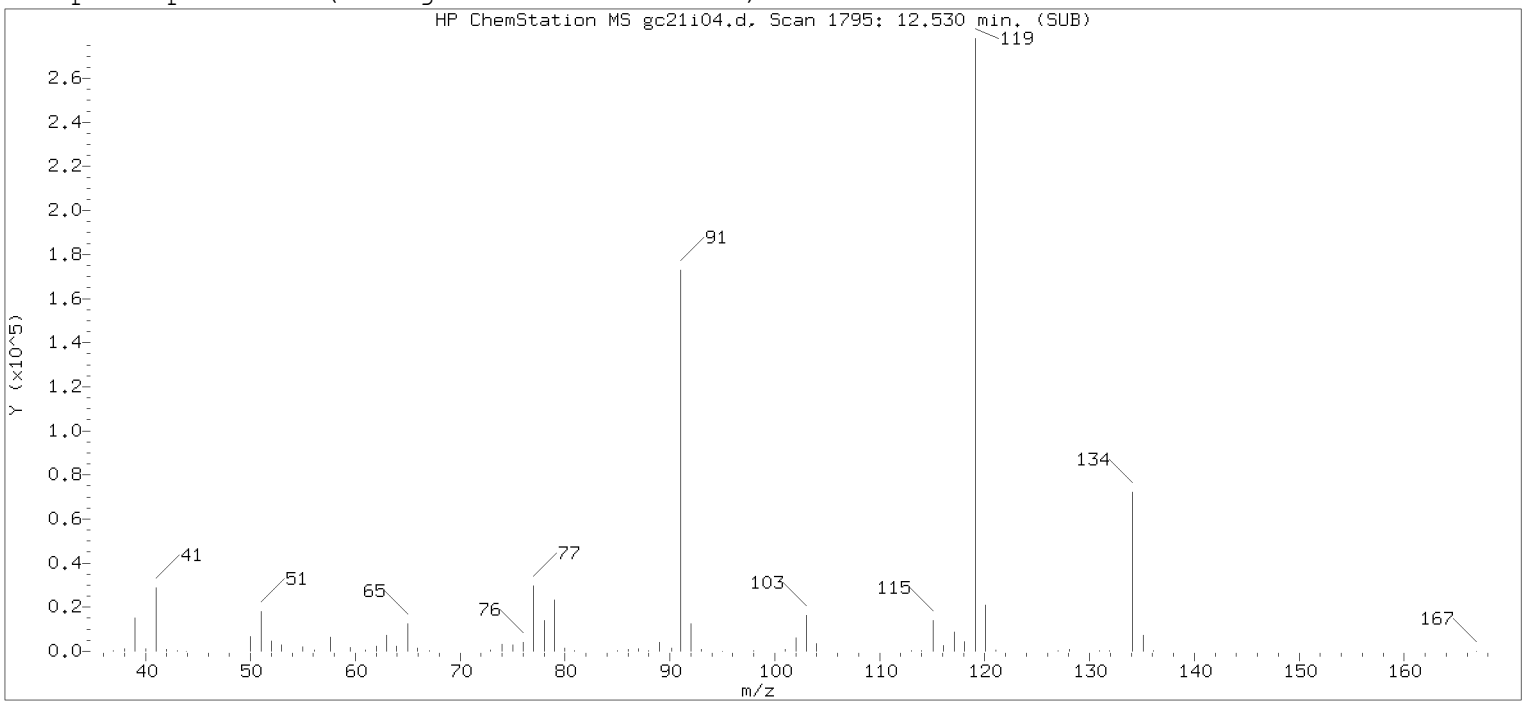
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area (flag) : 102011M
On-Column Amount (ng) : 2.0519
Integration start scan : 1788 Integration stop scan: 1797
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

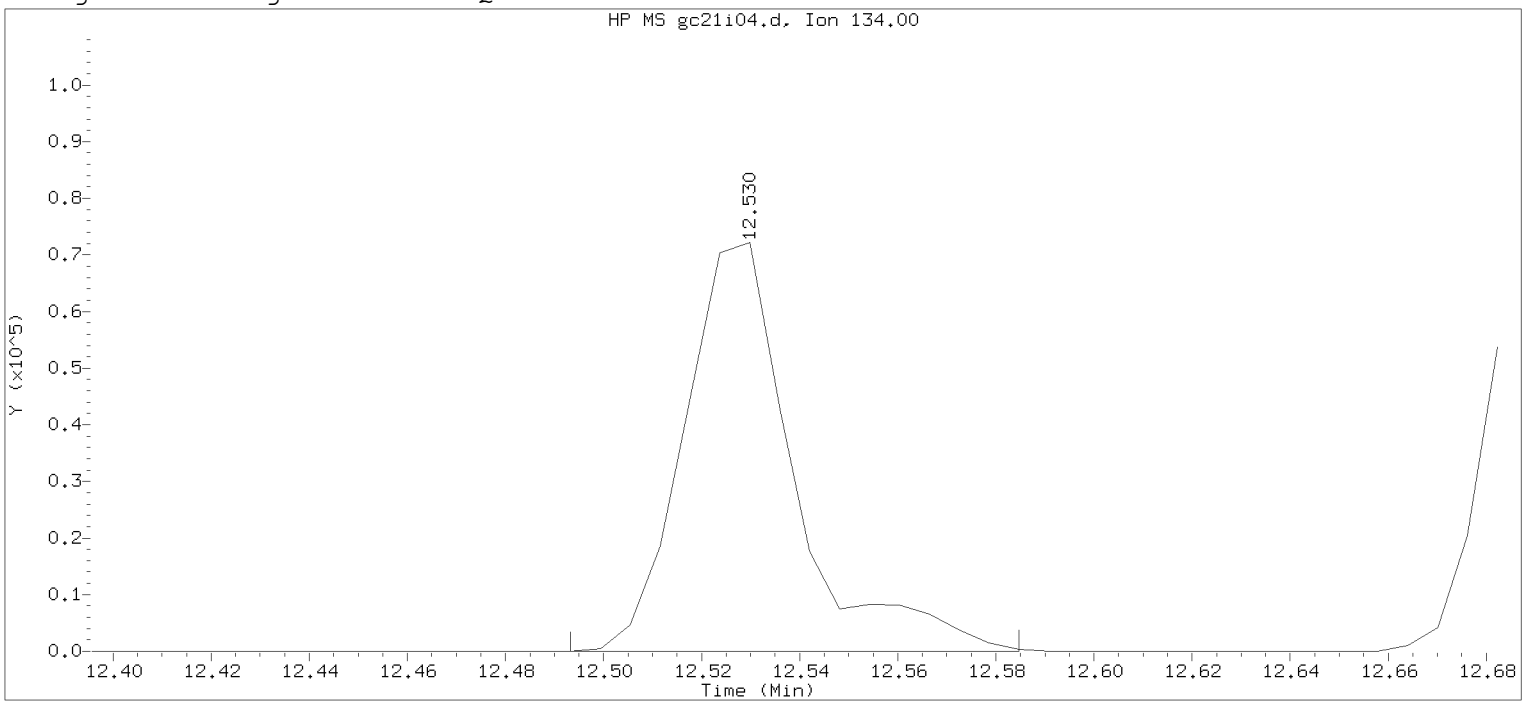
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

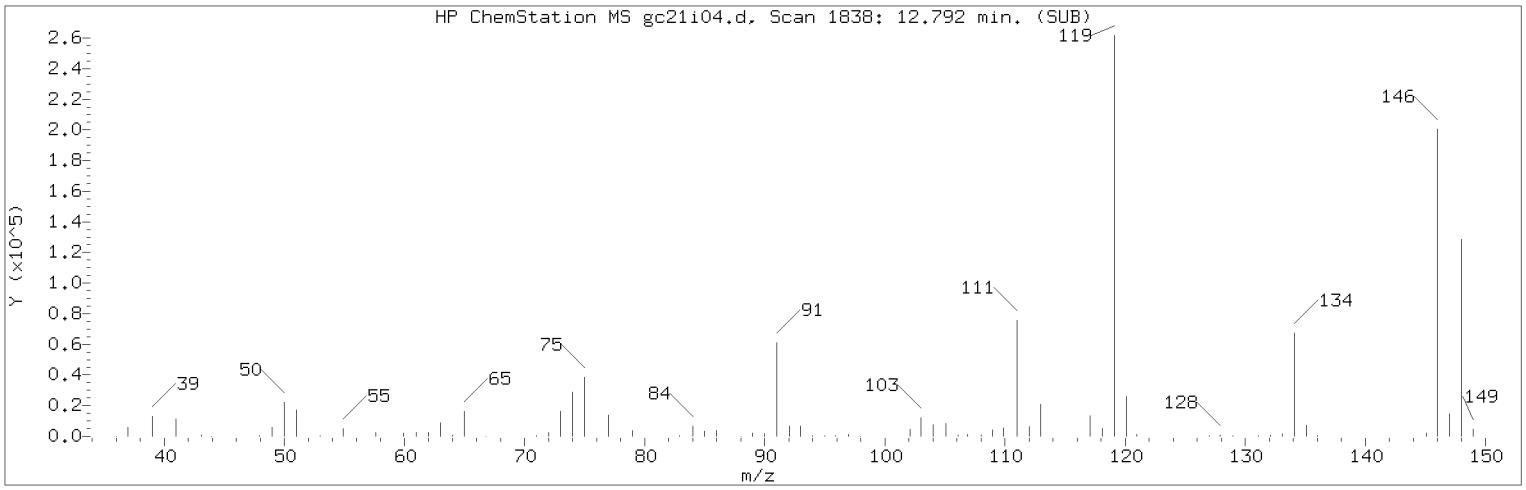
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

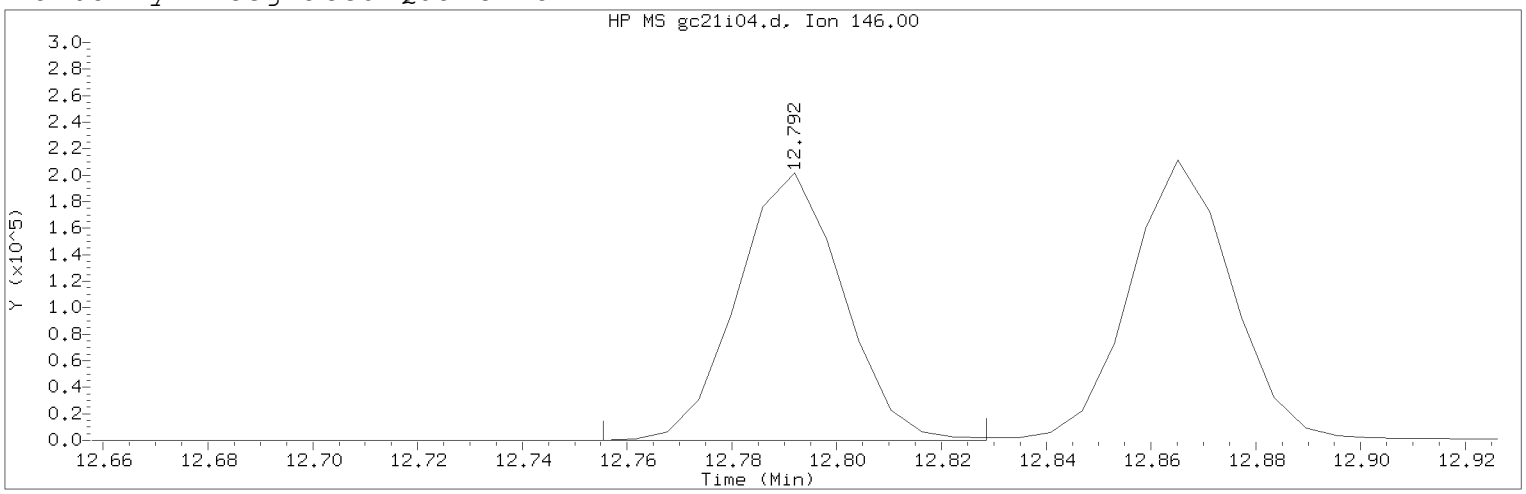
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area : 112426
On-column Amount (ng) : 2.1357
Integration start scan : 1788 Integration stop scan: 1803
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

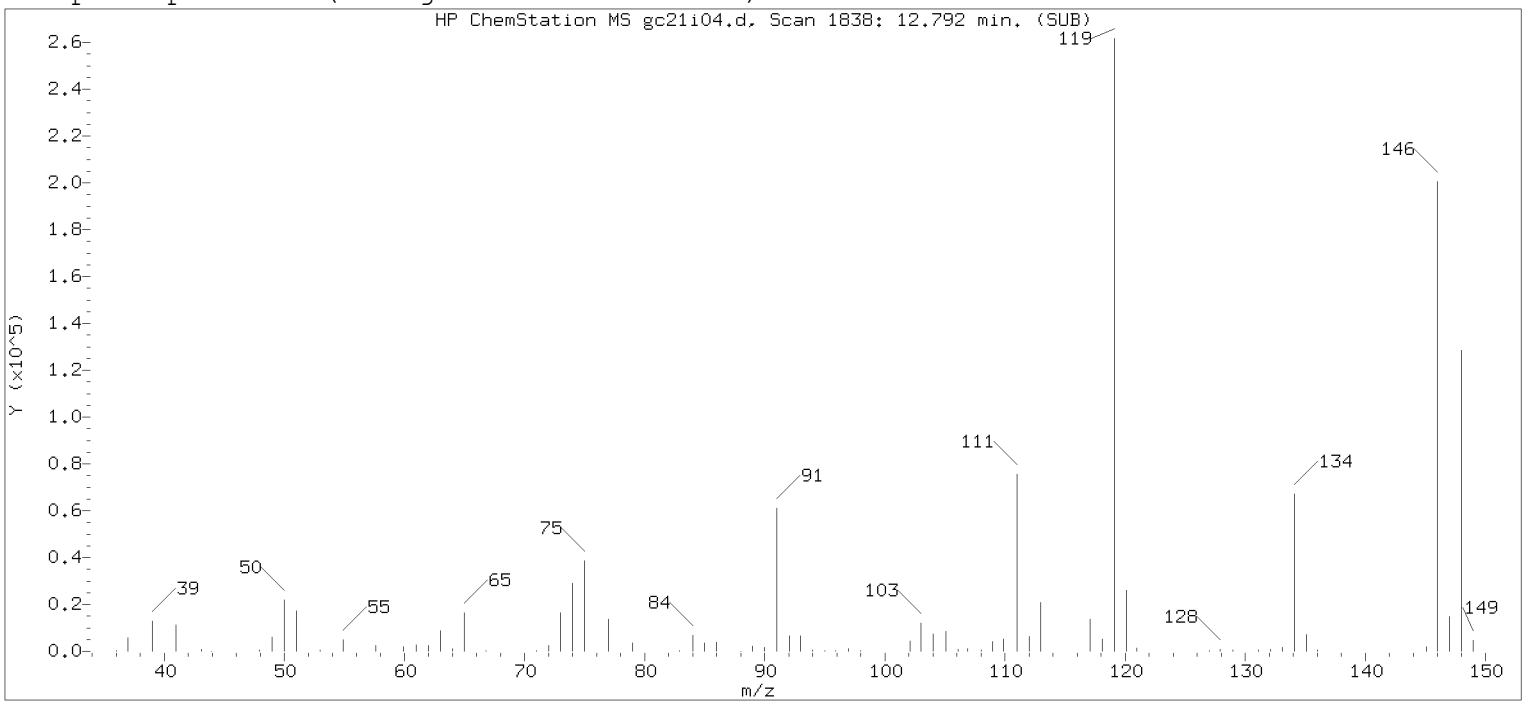
Compound Number : 131
Compound Name : 1,3-Dichlorobenzene
Scan Number : 1838
Retention Time (minutes): 12.792
Quant Ion : 146.00
Area (flag) : 281449M
On-Column Amount (ng) : 2.0611
Integration start scan : 1831 Integration stop scan: 1843
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

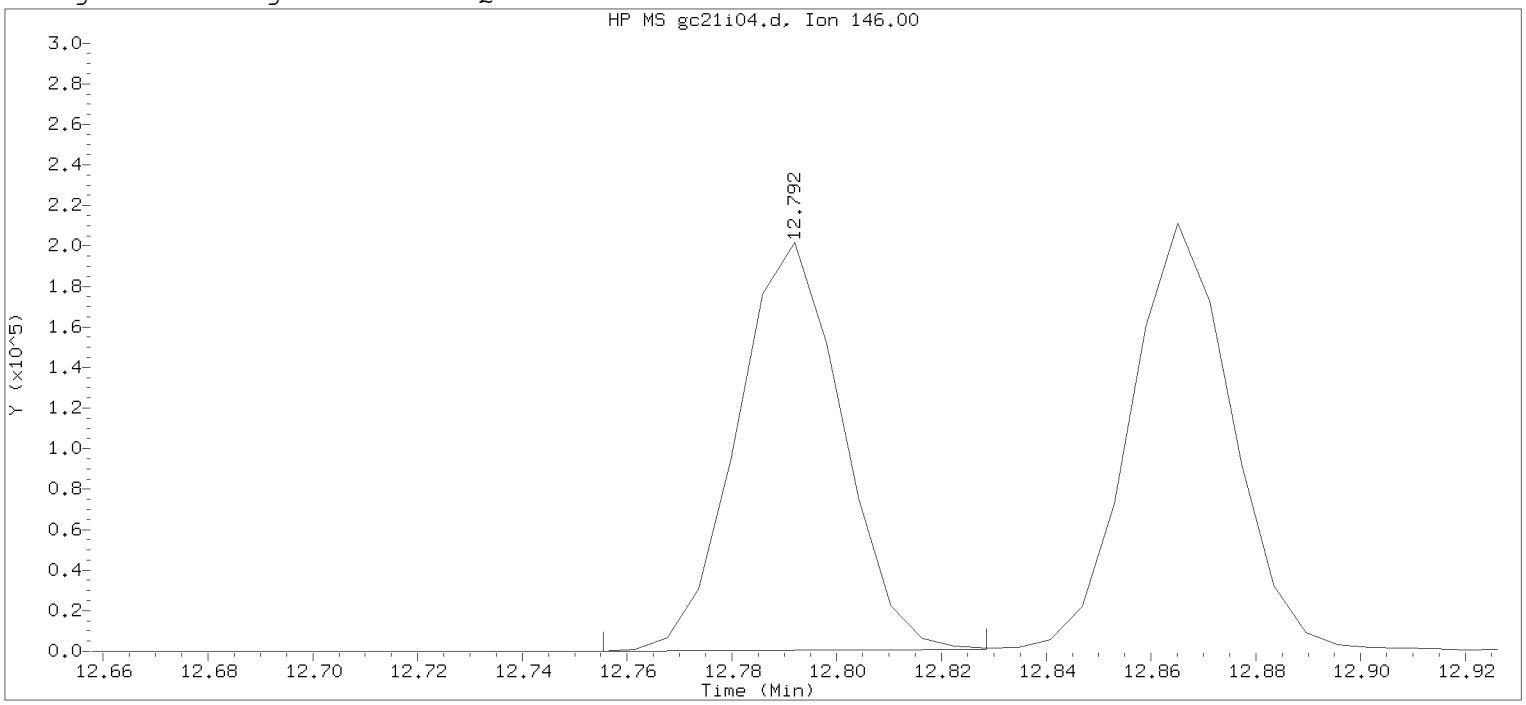
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

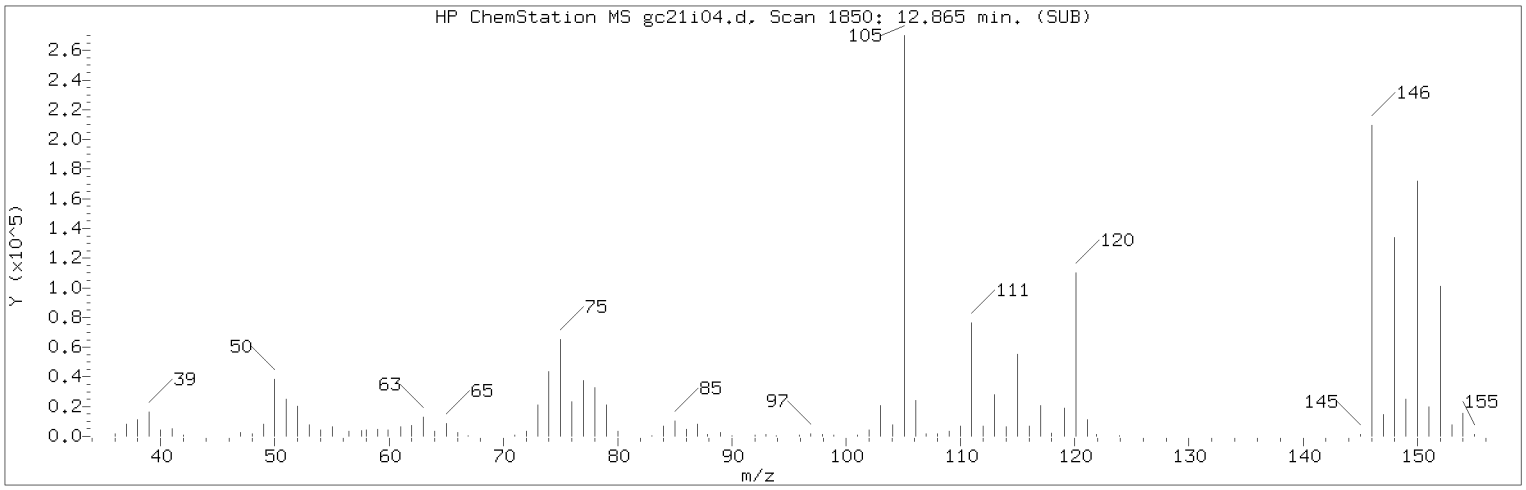
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

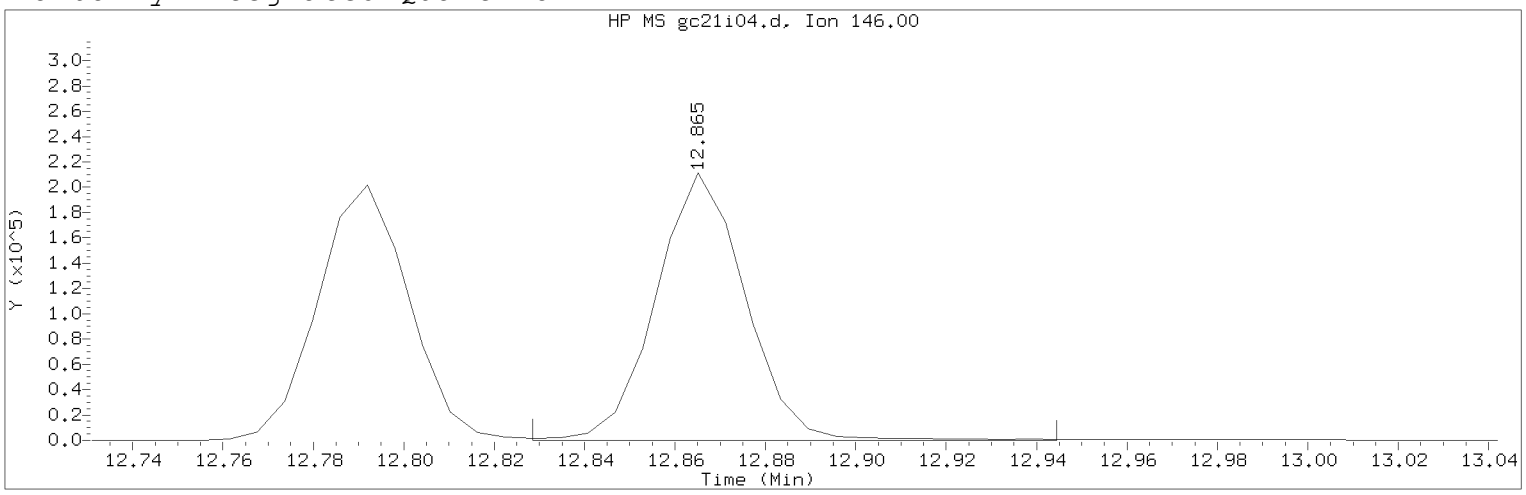
Compound Number : 131
Compound Name : 1,3-Dichlorobenzene
Scan Number : 1838
Retention Time (minutes): 12.792
Quant Ion : 146.00
Area : 279156
On-column Amount (ng) : 2.0375
Integration start scan : 1831 Integration stop scan: 1843
Y at integration start : 0 Y at integration end: 902

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

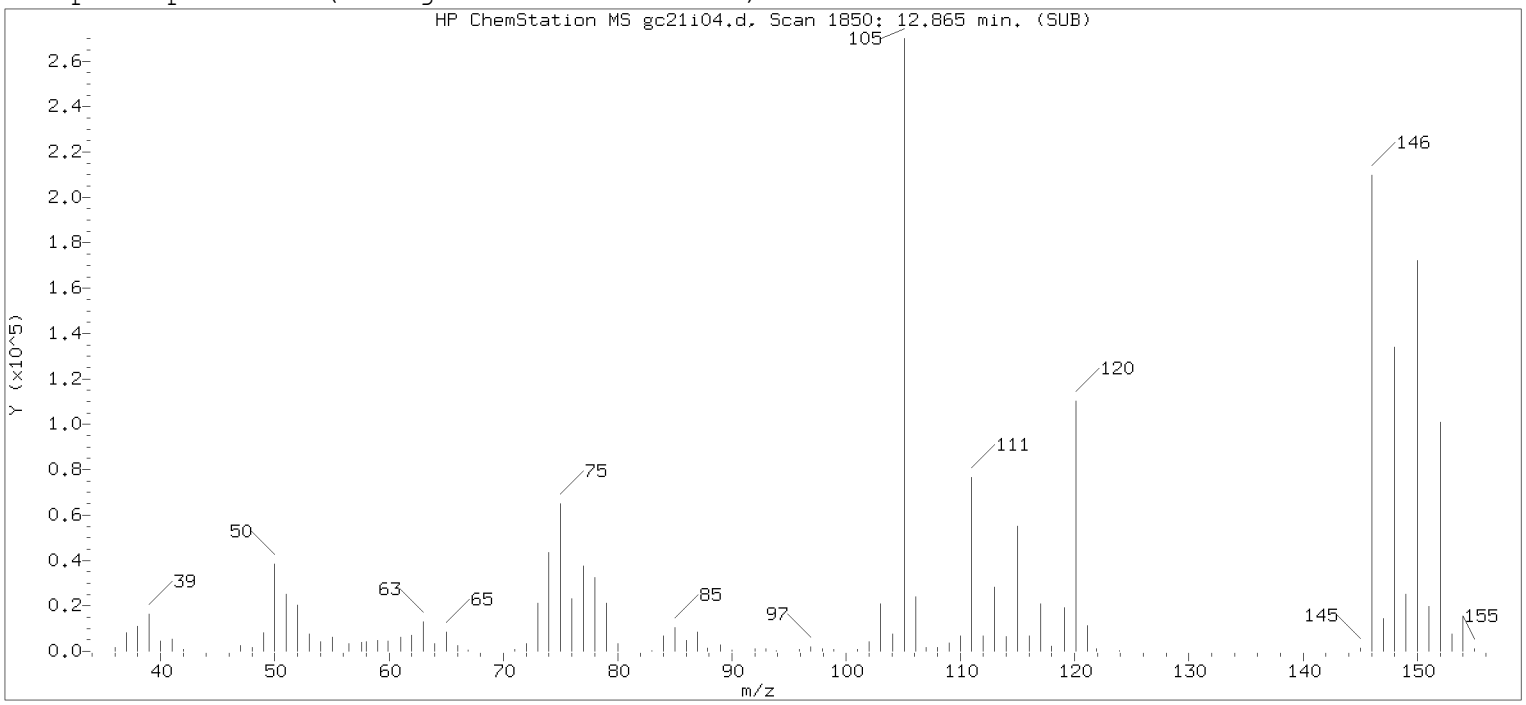
Compound Number : 134
Compound Name : 1,4-Dichlorobenzene
Scan Number : 1850
Retention Time (minutes): 12.865
Quant Ion : 146.00
Area (flag) : 290076M
On-Column Amount (ng) : 2.0745
Integration start scan : 1843 Integration stop scan: 1862
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

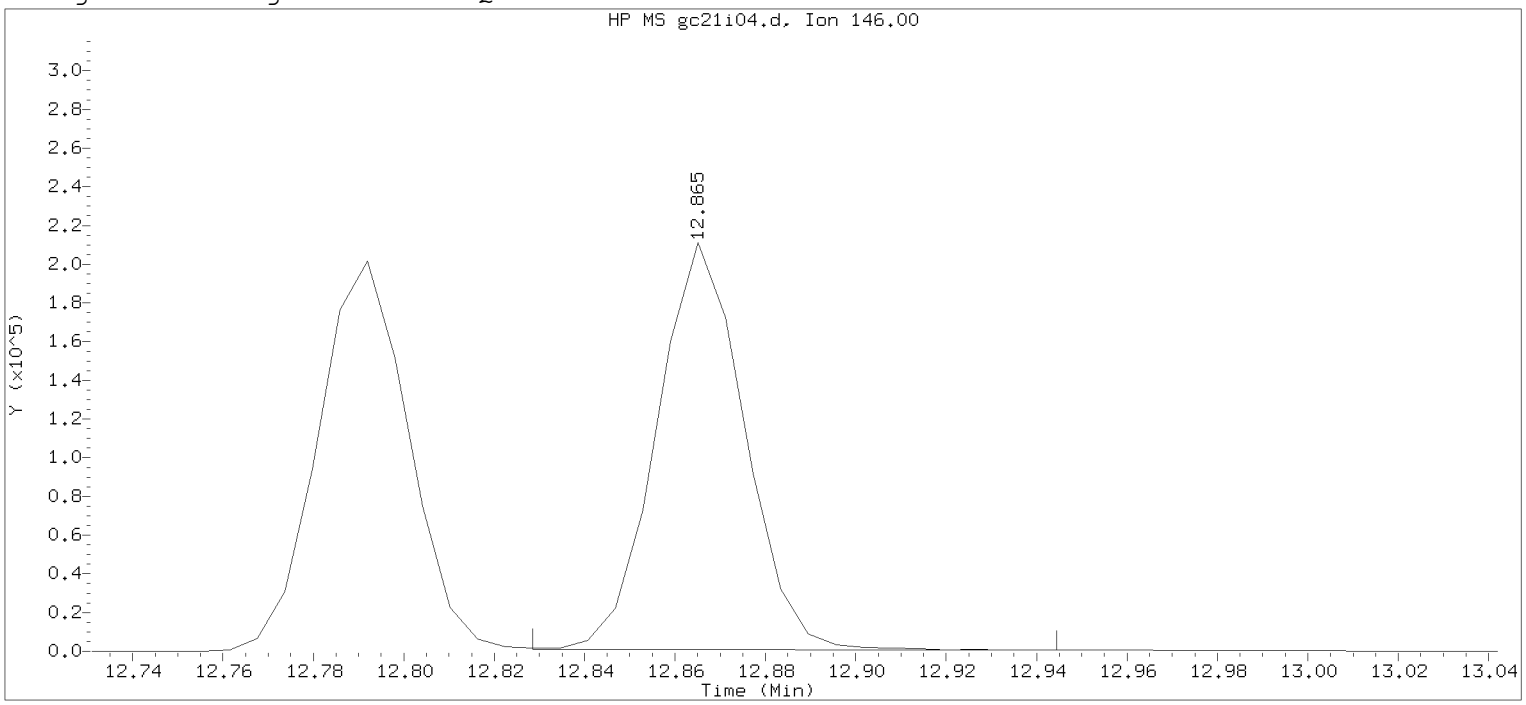
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



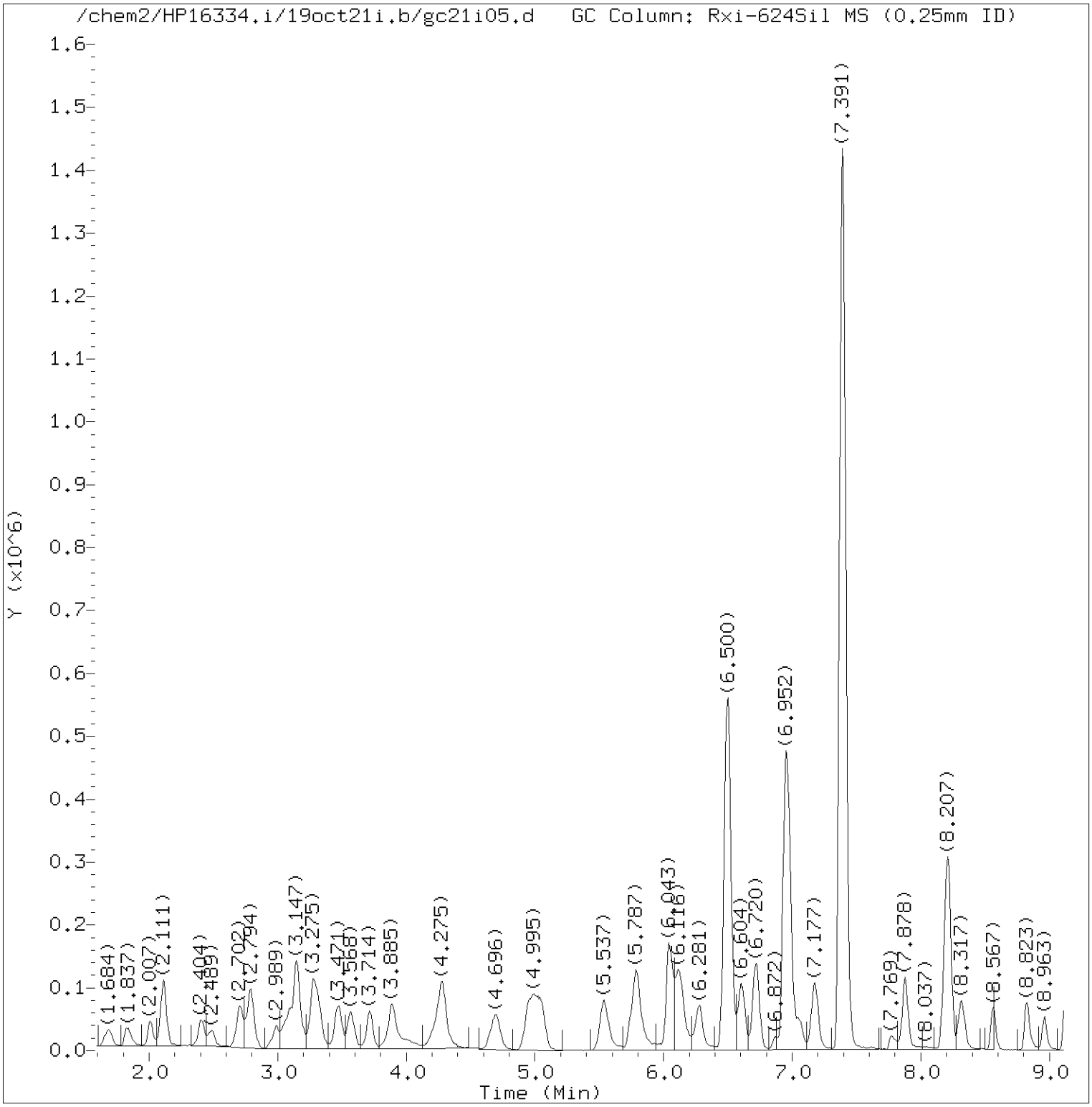
Data File: /chem2/HP16334.i/19oct21i.b/gc21i04.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 17:46 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compound Number : 134
Compound Name : 1,4-Dichlorobenzene
Scan Number : 1850
Retention Time (minutes): 12.865
Quant Ion : 146.00
Area : 284727
On-column Amount (ng) : 2.0534
Integration start scan : 1843 Integration stop scan: 1862
Y at integration start : 902 Y at integration end: 520

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

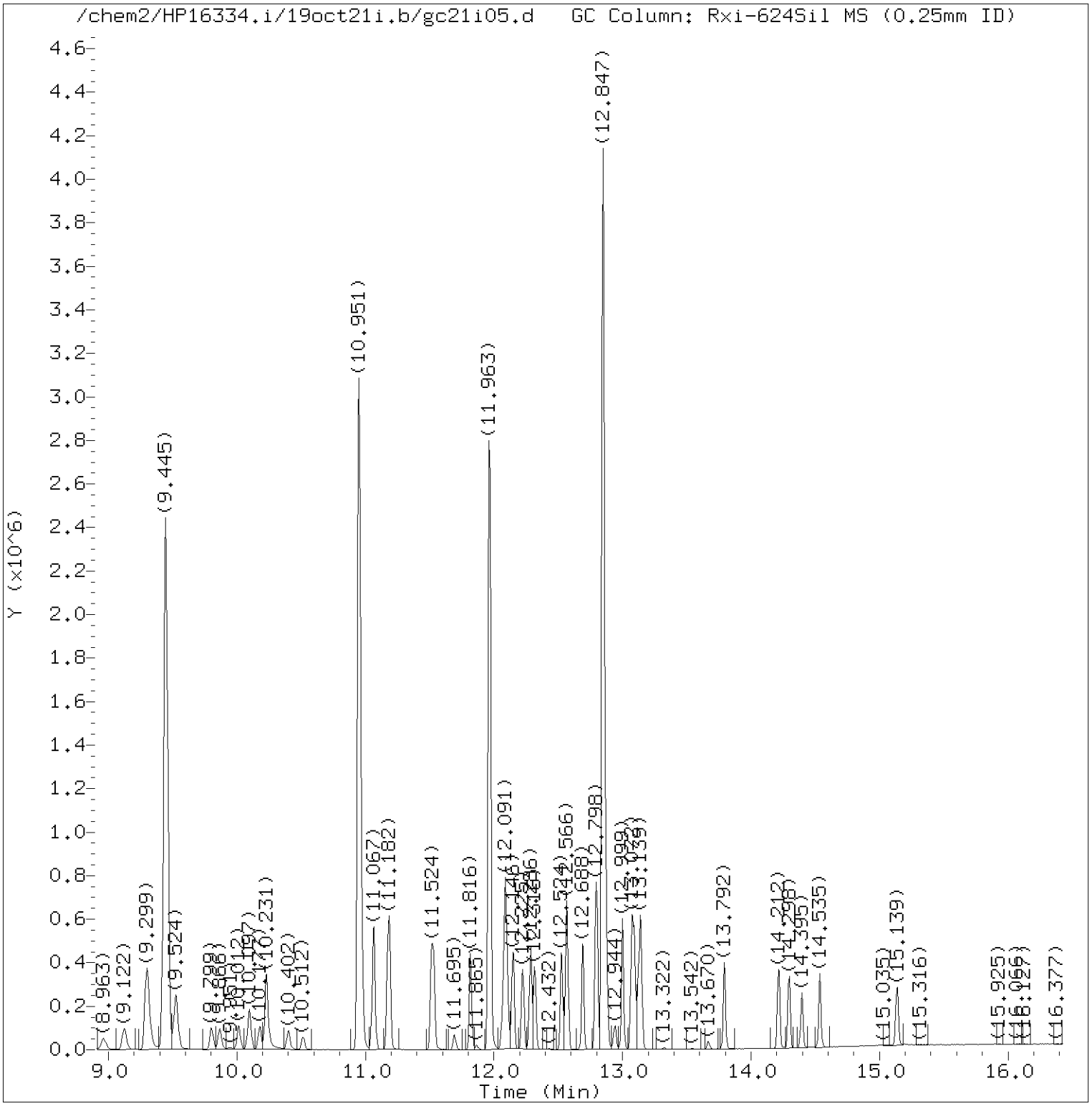
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.837	85	74110	0.996
2) Chloromethane	(2)	2.007	50	67902	0.974
6) 1,3-Butadiene	(2)	2.105	39	61658M	1.013
5) Vinyl Chloride	(2)	2.117	62	68087	0.981
7) Bromomethane	(2)	2.410	94	50742	0.968
8) Chloroethane	(2)	2.489	64	40071	0.976
9) Dichlorofluoromethane	(2)	2.702	67	92221	0.972
10) Trichlorofluoromethane	(2)	2.763	101	91777	0.986
11) Ethyl ether	(2)	2.989	59	42934	1.011
12) Freon 123a	(2)	3.062	67	61386	1.005
13) Acrolein	(1)	3.147	56	319501	51.780
15) 1,1-Dichloroethene	(2)	3.275	96	46476	0.987
14) Acetone	(1)	3.300	43	68013	10.216
16) Freon 113	(2)	3.318	101	55301	1.008
17) Methyl Iodide	(2)	3.464	142	101135	0.990
18) Carbon Disulfide	(2)	3.568	76	171388	0.987
21) Methyl Acetate	(1)	3.690	43	15951M	0.984
22) Allyl Chloride	(2)	3.721	41	67993	0.985
23) Methylene Chloride	(2)	3.891	84	53371	0.971
26)*t-Butyl Alcohol-d10	(1)	3.903	65	131247	50.000
28) t-Butyl Alcohol	(1)	3.995	59	47367M	20.677
29) Acrylonitrile	(1)	4.214	53	45271M	5.100
30) Methyl Tertiary Butyl Ether	(2)	4.251	73	142801	1.000
31) trans-1,2-Dichloroethene	(2)	4.281	96	53663	0.988
32) n-Hexane	(2)	4.696	57	74513	1.019
33) 1,1-Dichloroethane	(2)	4.946	63	91802	0.991
34) di-Isopropyl Ether	(2)	4.995	45	167226	0.995
35) 2-Chloro-1,3-Butadiene	(2)	5.050	53	82824	0.999
37) Ethyl t-butyl ether	(2)	5.537	59	167978	0.987
38) 2-Butanone	(1)	5.745	43	130190	10.250
39) cis-1,2-Dichloroethene	(2)	5.787	96	58343	0.986
41) 2,2-Dichloropropane	(2)	5.787	77	61608	0.958
42) Propionitrile	(1)	5.848	54	34857	18.736
45) Methacrylonitrile	(1)	6.049	67	153016	10.796
40) 1,2-Dichloroethene (Total)	(2)		96	112006	1.973
47) Bromochloromethane	(2)	6.116	128	29363	0.999
48) Tetrahydrofuran	(1)	6.129	71	43072	10.738
49) Chloroform	(2)	6.275	83	93918	0.997

M = Compound was manually integrated.
* = Compound is an internal standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.494	113	578985	9.996
50)$Dibromofluoromethane	(2)	6.500	111	594396	9.987
51) 1,1,1-Trichloroethane	(2)	6.500	97	83069	1.003
52) Cyclohexane	(2)	6.604	56	93371	1.032
52) Cyclohexane	(2)	6.604	84	84288M	1.002
52) Cyclohexane	(2)	6.604	69	28949	1.009
54) Carbon Tetrachloride	(2)	6.714	117	74582	1.000
55) 1,1-Dichloropropene	(2)	6.720	75	74508	0.996
56) Isobutyl Alcohol	(1)	6.872	41	36911	52.493
57)$1,2-Dichloroethane-d4	(2)	6.946	102	118826	10.131
57)$1,2-Dichloroethane-d4	(2)	6.952	65	544679	10.135
57)$1,2-Dichloroethane-d4	(2)	6.952	104	75016	10.208
58) Benzene	(2)	6.976	78	210950	0.977
59) 1,2-Dichloroethane	(2)	7.049	62	60613	0.993
59) 1,2-Dichloroethane	(2)	7.067	98	5859	1.085
60) t-Amyl methyl ether	(2)	7.177	73	154549	0.985
63)*Fluorobenzene	(2)	7.391	96	2290961	10.000
62) n-Heptane	(2)	7.409	43	76003	0.997
65) n-Butanol	(1)	7.769	56	57086M	97.374
67) Trichloroethene	(2)	7.878	95	56374	0.973
69) Methylcyclohexane	(2)	8.189	83	97791	1.007
70) 1,2-Dichloropropane	(2)	8.214	63	52112	0.970
71) Methyl Methacrylate	(1)	8.305	69	29860	1.039
72) 1,4-Dioxane	(1)	8.311	88	8669M	46.569
72) 1,4-Dioxane	(1)	8.323	58	4302M	41.811
73) Dibromomethane	(2)	8.323	93	28476	0.992
74) Bromodichloromethane	(2)	8.561	83	67013	0.968
76) 2-Nitropropane	(1)	8.823	41	82067	10.339
80) cis-1,3-Dichloropropene	(2)	9.122	75	78999	0.960
81) 4-Methyl-2-Pentanone	(1)	9.299	43	385305	10.491
82)$Toluene-d8	(3)	9.445	98	2253273	10.063
82)$Toluene-d8	(3)	9.445	100	1444245	9.969
83) Toluene	(3)	9.524	92	137754	0.990
84) trans-1,3-Dichloropropene	(3)	9.799	75	66093	0.960
86) Ethyl Methacrylate	(3)	9.866	69	63770	0.956
88) 1,1,2-Trichloroethane	(3)	10.018	97	41912	1.008
89) Tetrachloroethene	(3)	10.097	166	65826	0.990
85) 1,3-Dichloropropene (total)	(3)		75	145092	1.921

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	71980	1.007
91) 2-Hexanone	(1)	10.225	43	288328	10.643
93) Dibromochloromethane	(3)	10.402	129	51297	0.963
95) 1,2-Dibromoethane	(3)	10.512	107	41079	0.975
97)*Chlorobenzene-d5	(3)	10.951	117	1745972A	10.000
96) 1-Chlorohexane	(3)	10.963	91	82182A	0.988
98) Chlorobenzene	(3)	10.975	112	161094	0.990
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	57406	0.985
100) Ethylbenzene	(3)	11.067	91	272179MA	0.998
101) m+p-Xylene	(3)	11.182	106	210267	1.987
104) o-Xylene	(3)	11.512	106	103887	0.991
106) Styrene	(3)	11.530	104	172519	0.981
107) Bromoform	(3)	11.695	173	30359	0.924
105) Xylene (Total)	(3)		106	314154	2.977
108) Isopropylbenzene	(3)	11.816	105	269786	0.989
111)$4-Bromofluorobenzene	(3)	11.963	95	842377	10.065
111)$4-Bromofluorobenzene	(3)	11.969	174	761080	10.044
113) 1,1,2,2-Tetrachloroethane	(4)	12.066	83	53850	0.975
114) Bromobenzene	(4)	12.079	156	70829	0.978
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	127970	10.334
116) 1,2,3-Trichloropropane	(4)	12.109	110	14608	0.973
117) n-Propylbenzene	(4)	12.152	91	322279	0.993
119) 2-Chlorotoluene	(4)	12.225	126	67853	0.989
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	228728	0.975
122) 4-Chlorotoluene	(4)	12.316	126	70811	0.983
125) tert-Butylbenzene	(4)	12.530	134	50088	0.957
126) Pentachloroethane	(4)	12.560	167	47012	0.970
127) 1,2,4-Trimethylbenzene	(4)	12.572	105	242642	0.983
128) sec-Butylbenzene	(4)	12.688	105	302491	0.984
131) 1,3-Dichlorobenzene	(4)	12.792	146	140915M	0.980
132) p-Isopropyltoluene	(4)	12.798	119	260156	0.976
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	986509	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	142794	0.970
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	113176M	0.981
136) Benzyl Chloride	(4)	12.944	126	14873M	0.978
138) n-Butylbenzene	(4)	13.091	92	132796	0.980
139) 1,2-Dichlorobenzene	(4)	13.121	146	131513	0.978
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	7469	0.954

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

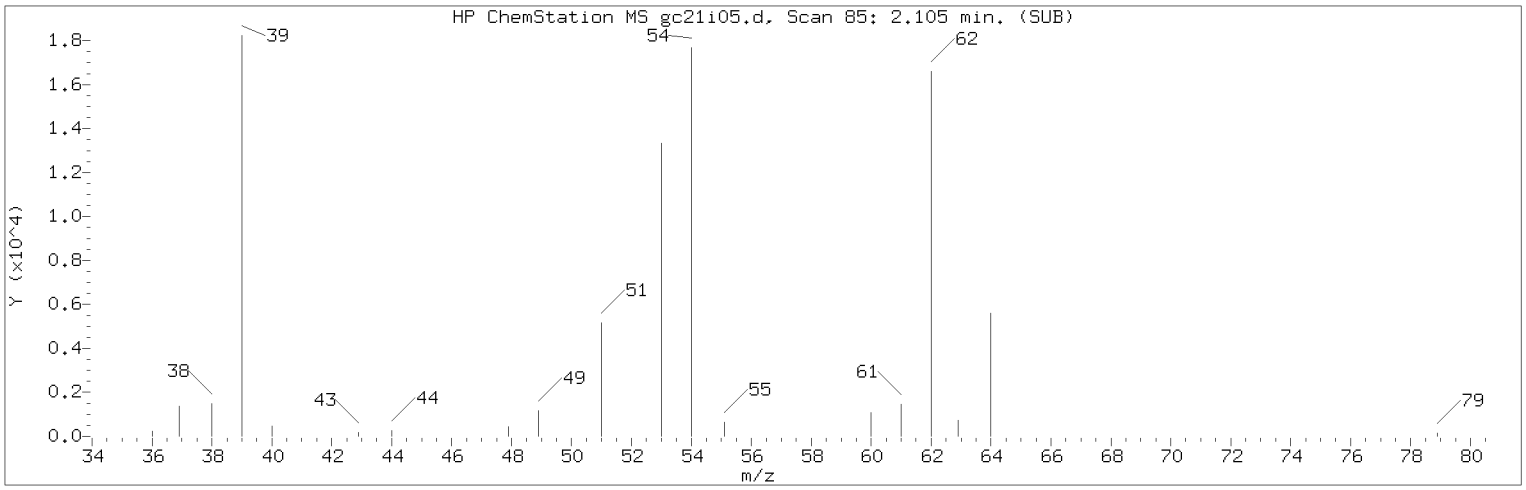
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

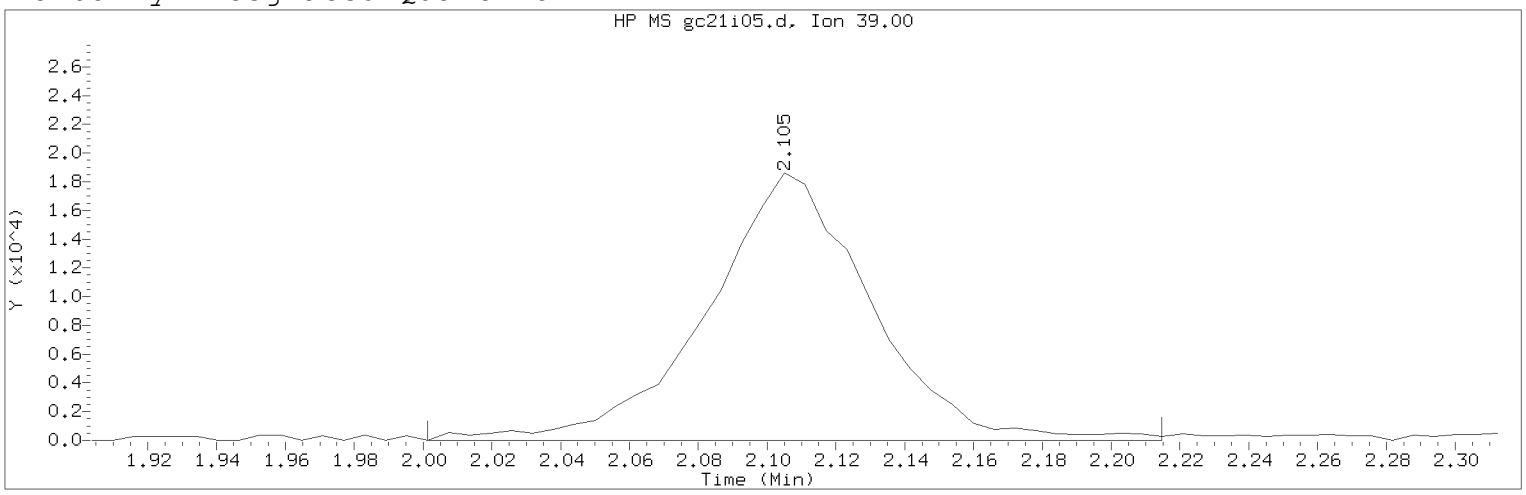
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	118574	0.970
145) 1,2,4-Trichlorobenzene	(4)	14.218	180	111016	0.978
146) Hexachlorobutadiene	(4)	14.298	225	55307	0.962
147) Naphthalene	(4)	14.395	128	181919	0.956
148) 1,2,3-Trichlorobenzene	(4)	14.535	180	97284	0.979

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

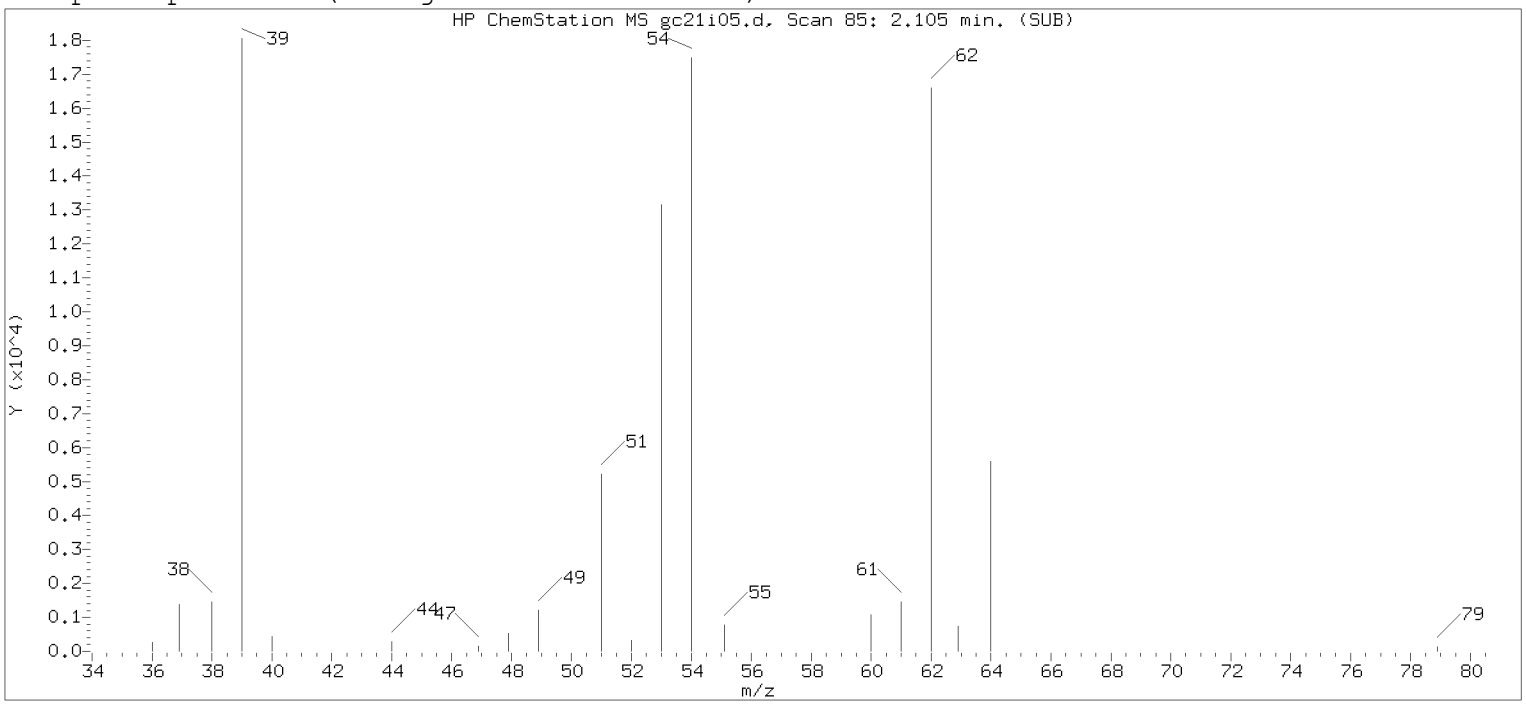
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area (flag) : 61658M
On-Column Amount (ng) : 1.0129
Integration start scan : 67 Integration stop scan: 102
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

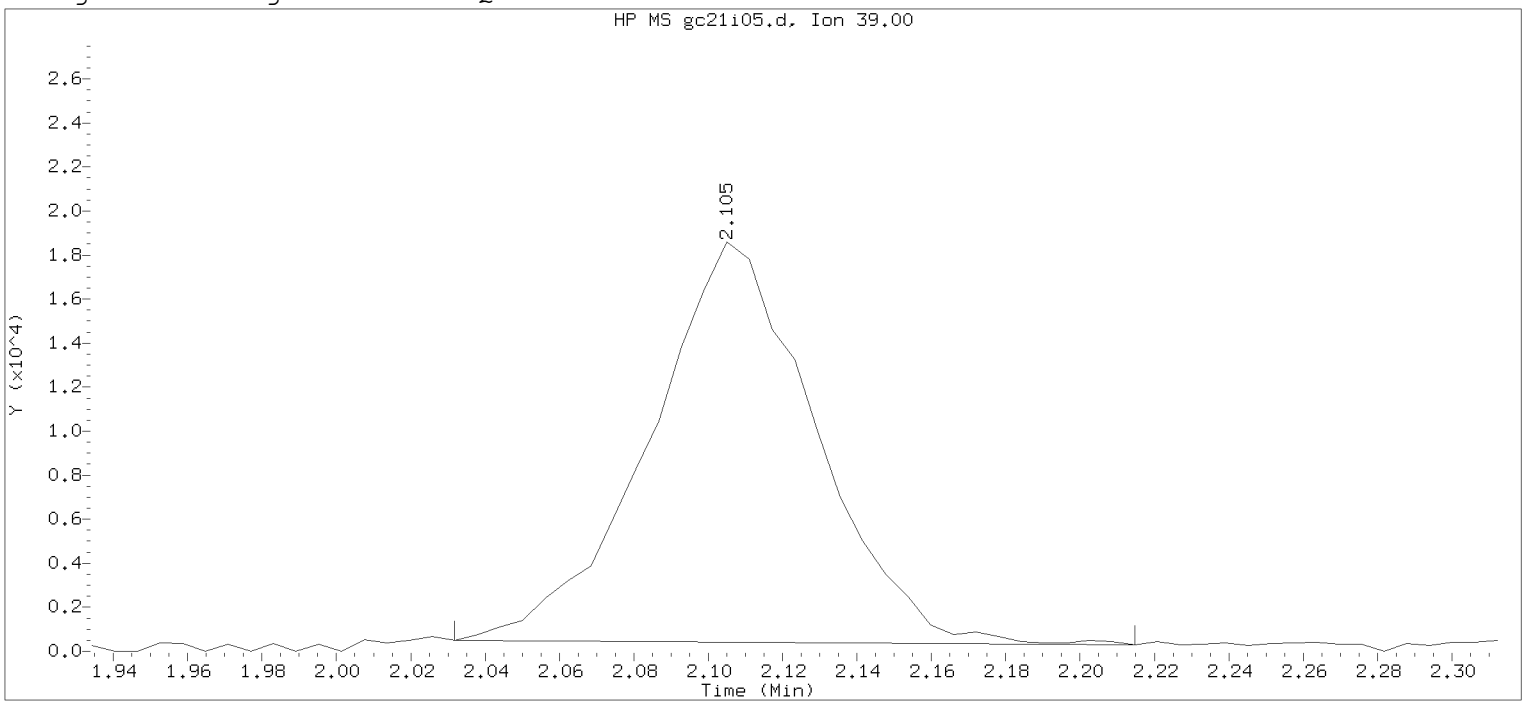
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

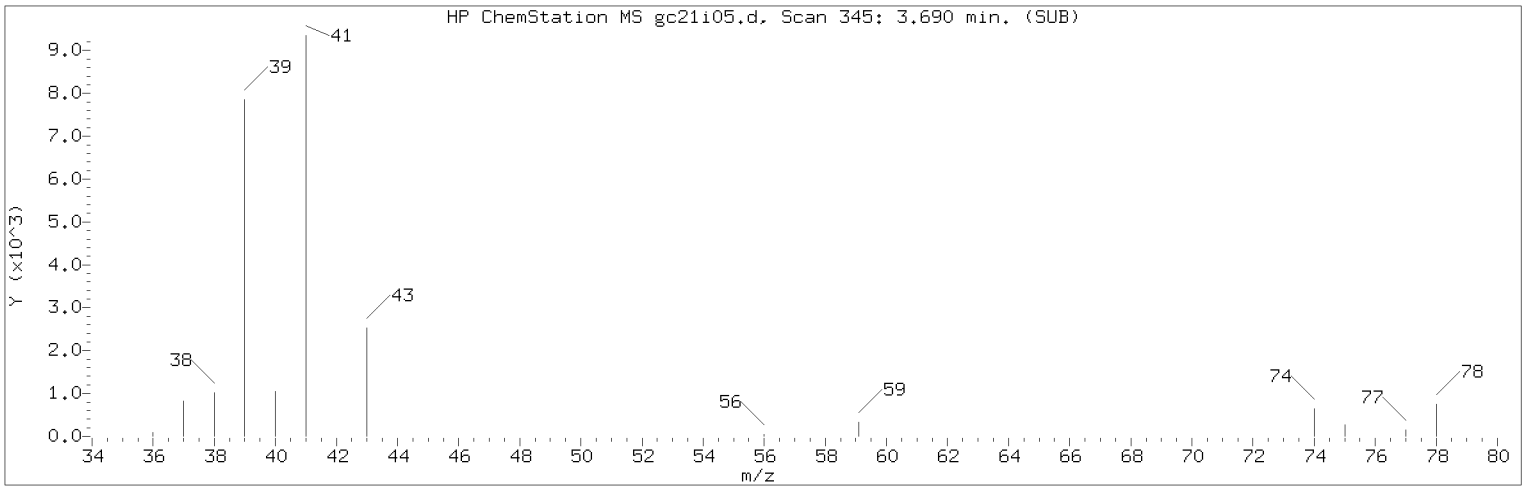
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

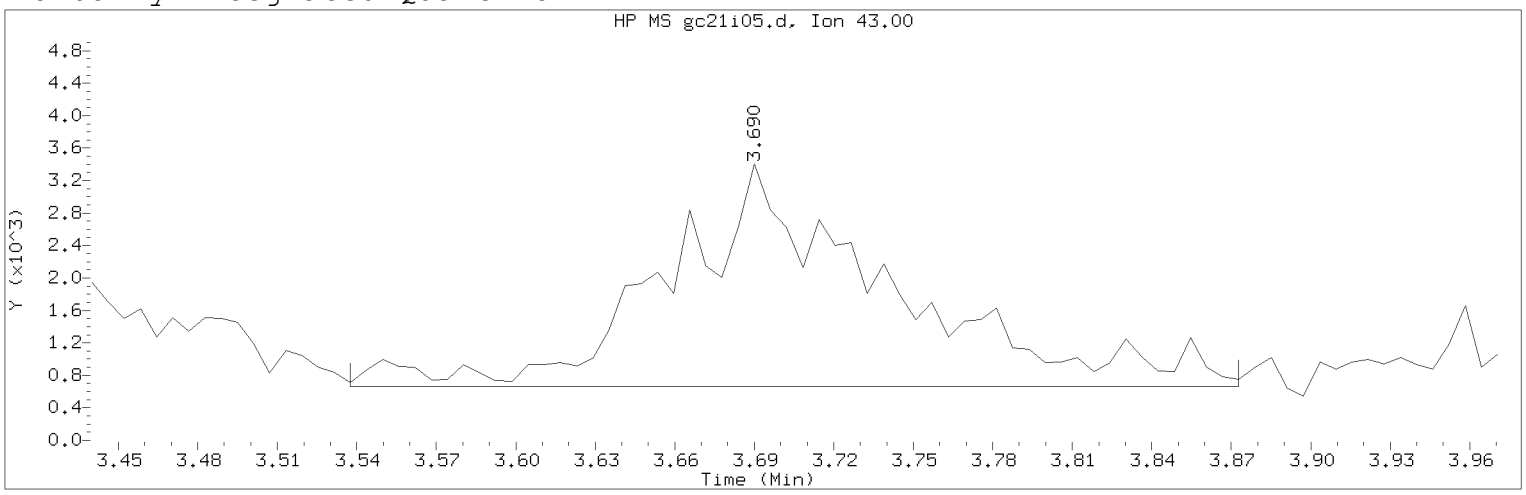
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area : 56511
On-column Amount (ng) : 1.0148
Integration start scan : 72 Integration stop scan: 102
Y at integration start : 488 Y at integration end: 286

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

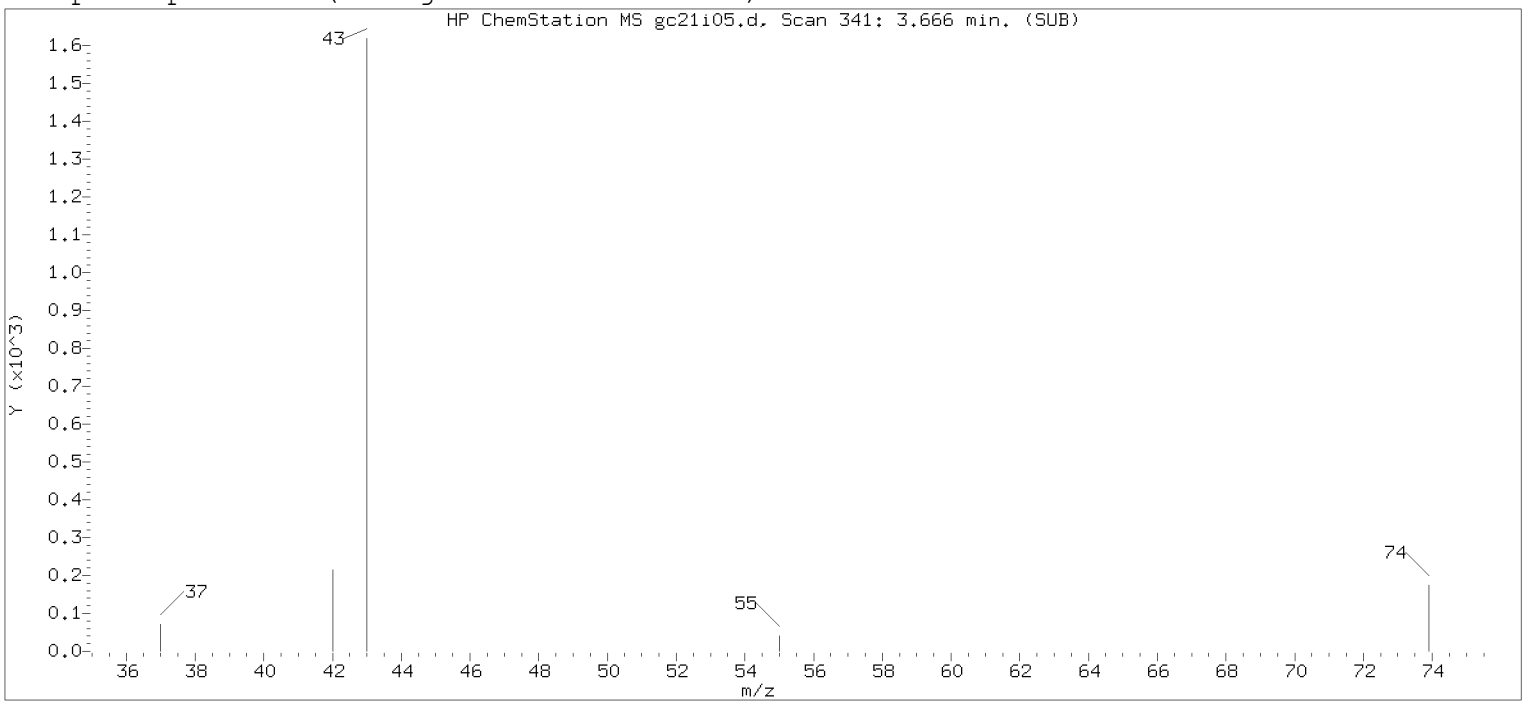
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 345
Retention Time (minutes): 3.690
Quant Ion : 43.00
Area (flag) : 15951M
On-Column Amount (ng) : 0.9835
Integration start scan : 319 Integration stop scan: 374
Y at integration start : 660 Y at integration end: 660

Reason for manual integration: improper integration

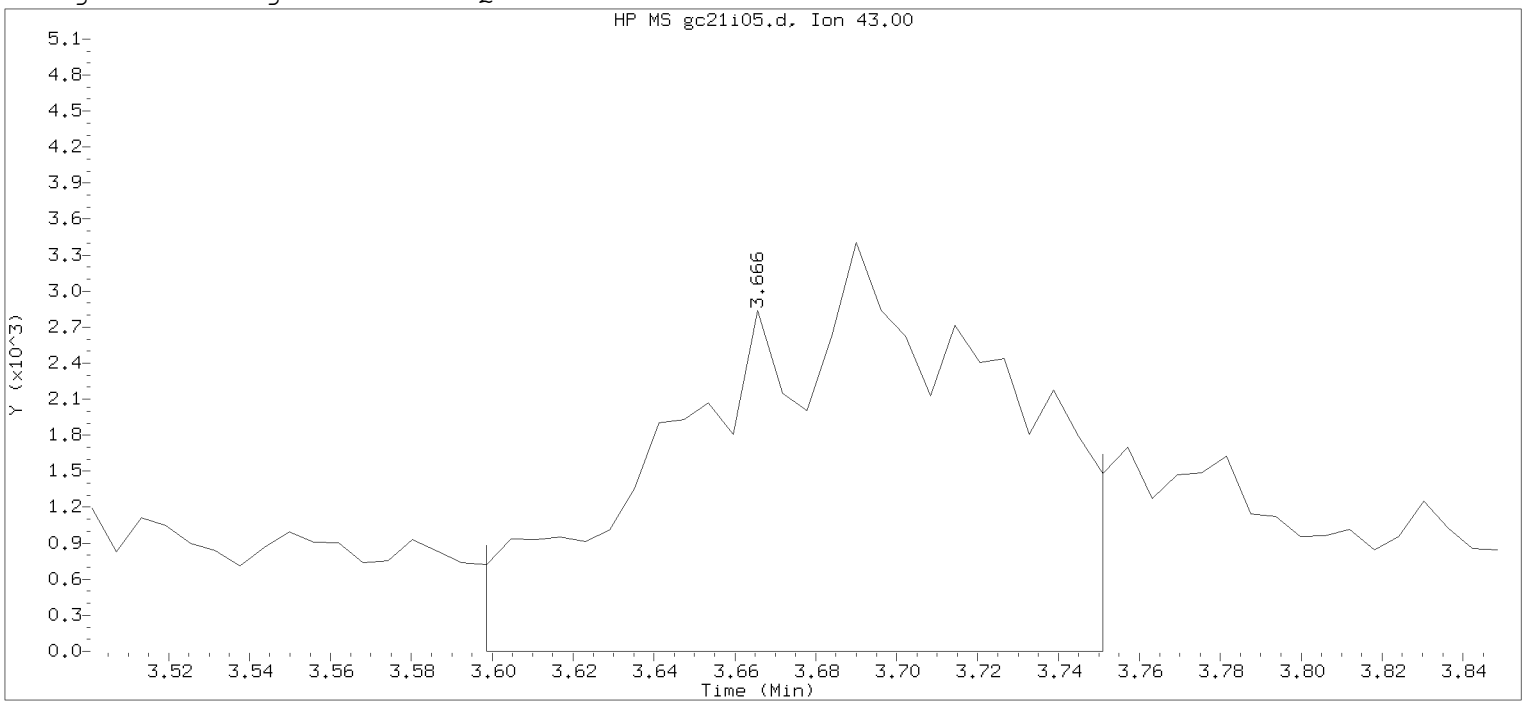
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

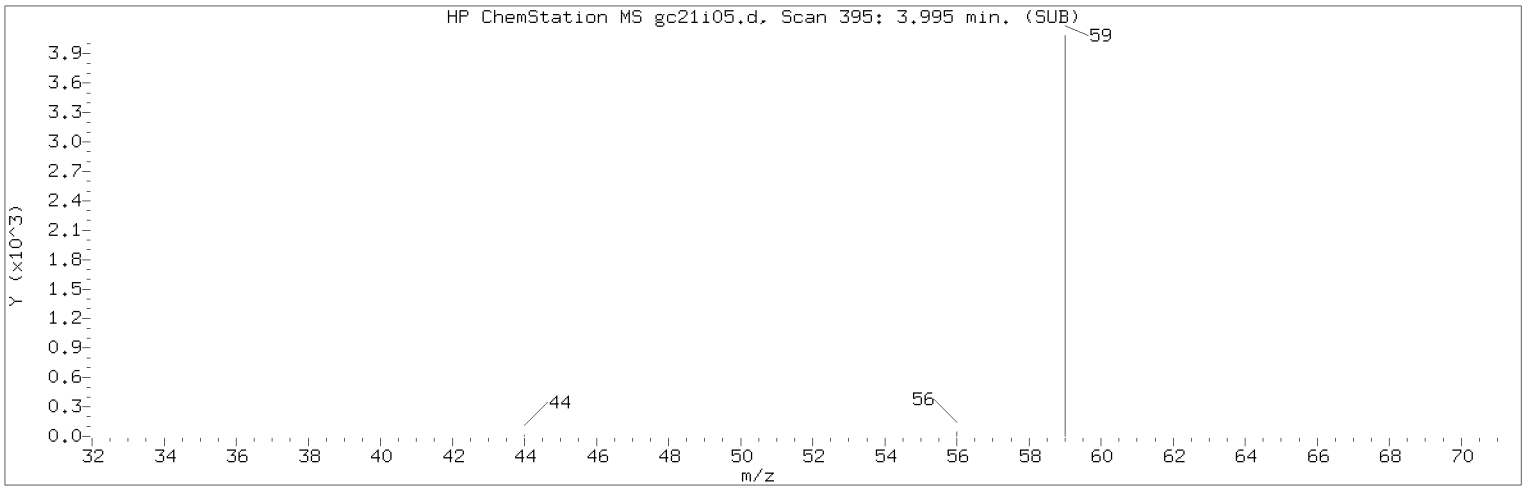
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

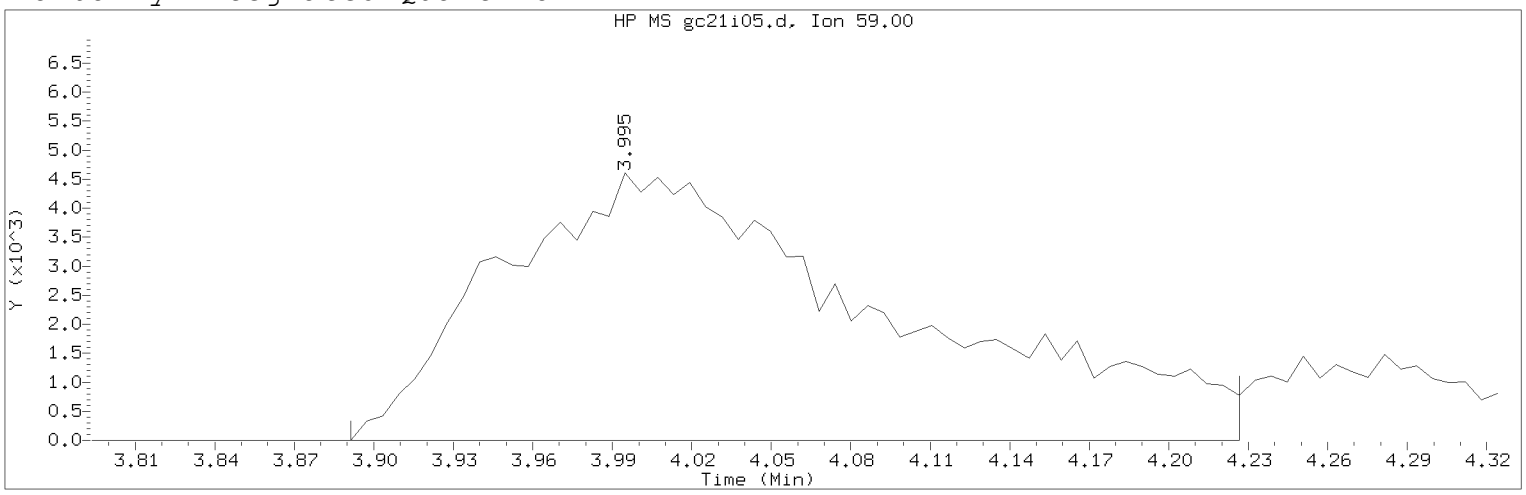
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 341
Retention Time (minutes): 3.666
Quant Ion : 43.00
Area : 17870
On-column Amount (ng) : 0.8469
Integration start scan : 329 Integration stop scan: 354
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

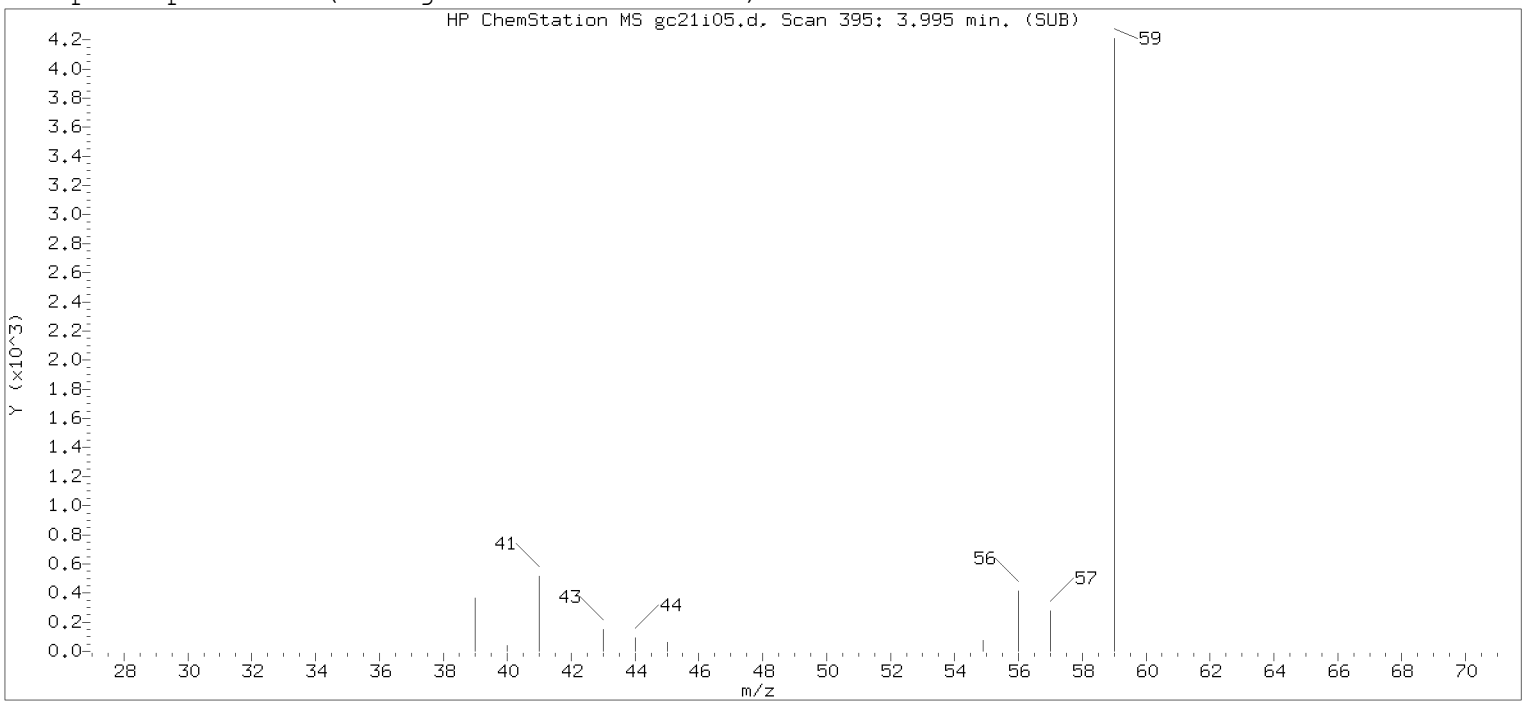
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 395
Retention Time (minutes): 3.995
Quant Ion : 59.00
Area (flag) : 47367M
On-Column Amount (ng) : 20.6766
Integration start scan : 377 Integration stop scan: 432
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

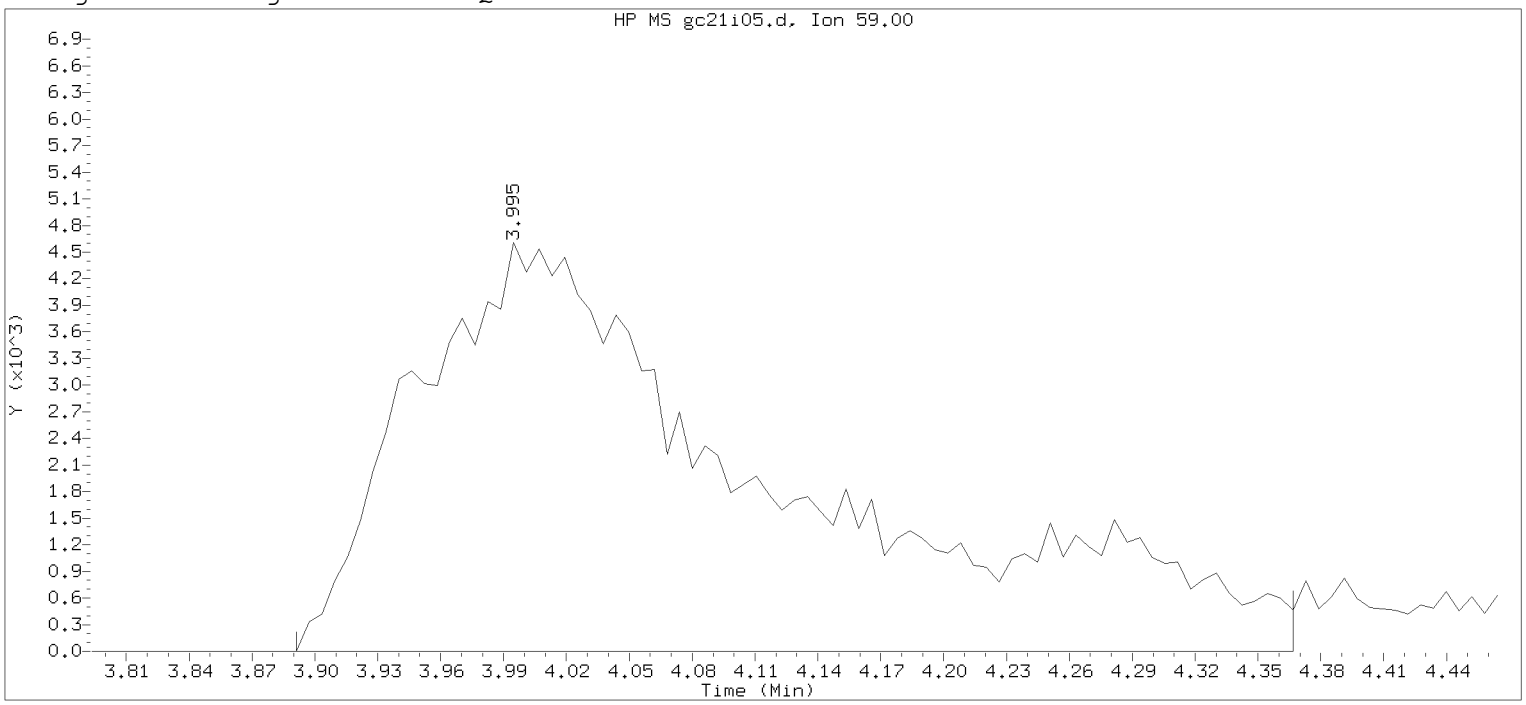
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

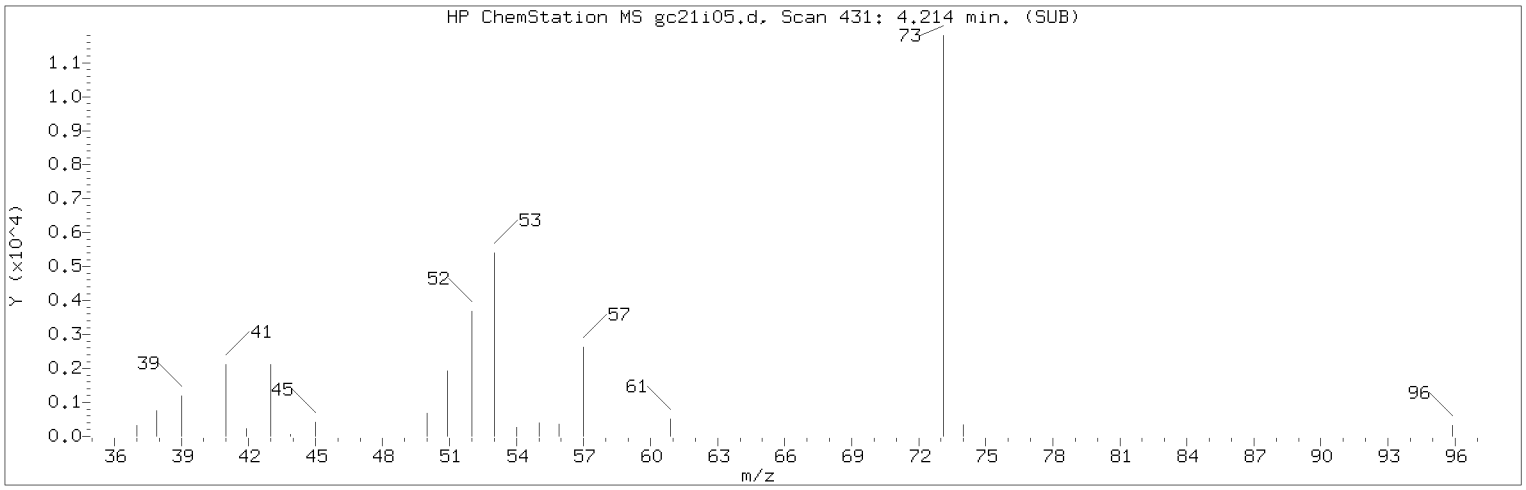
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

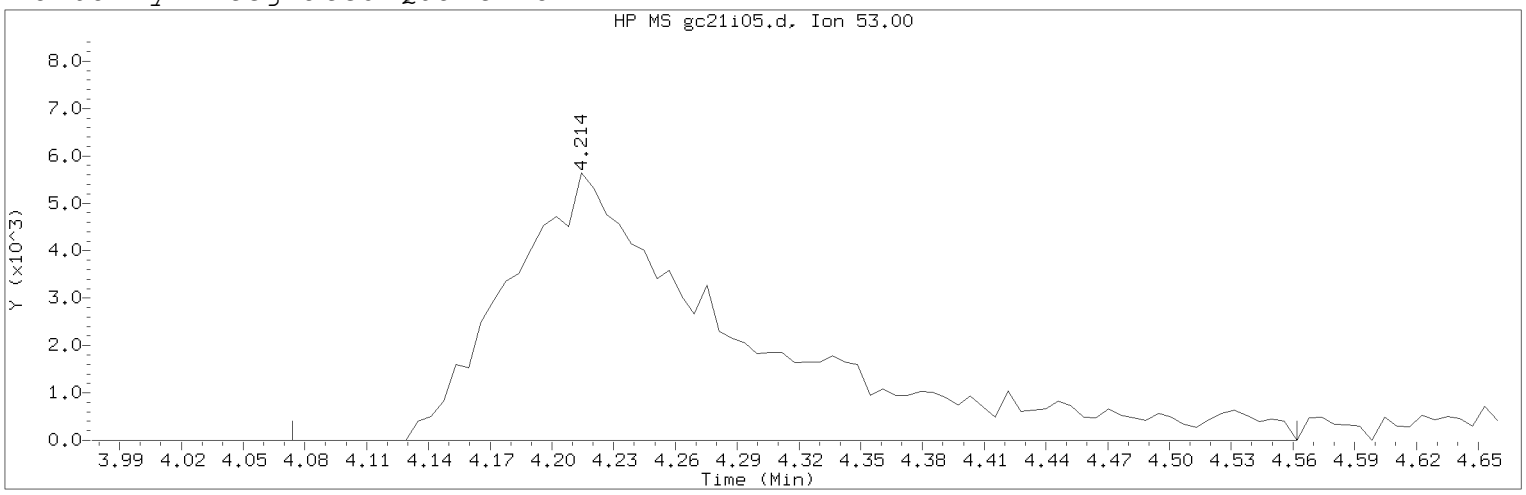
Compound Number	: 28		
Compound Name	: t-Butyl Alcohol		
Scan Number	: 395		
Retention Time (minutes)	: 3.995		
Quant Ion	: 59.00		
Area	: 55377		
On-column Amount (ng)	: 22.0020		
Integration start scan	: 377	Integration stop scan:	455
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

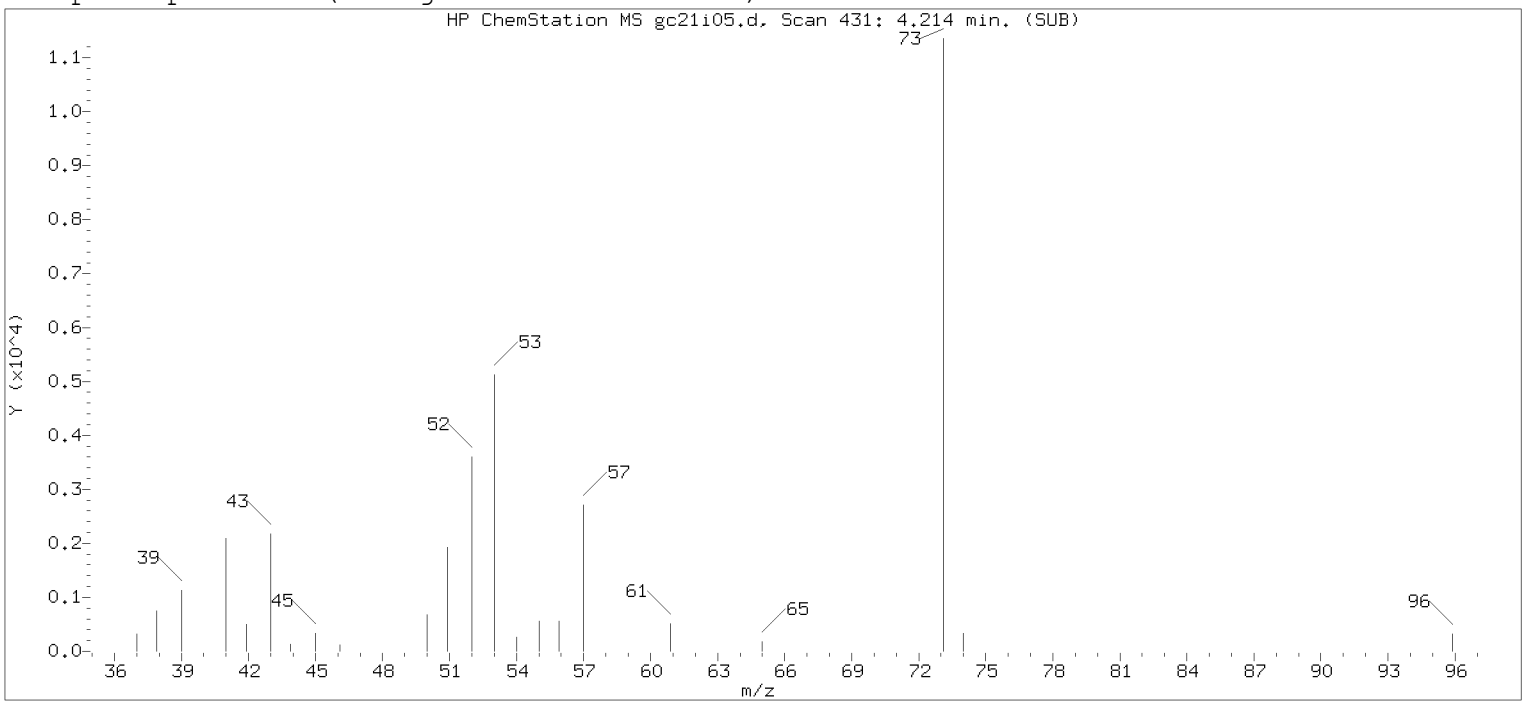
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 53.00
Area (flag) : 45271M
On-Column Amount (ng) : 5.1002
Integration start scan : 407 Integration stop scan: 487
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

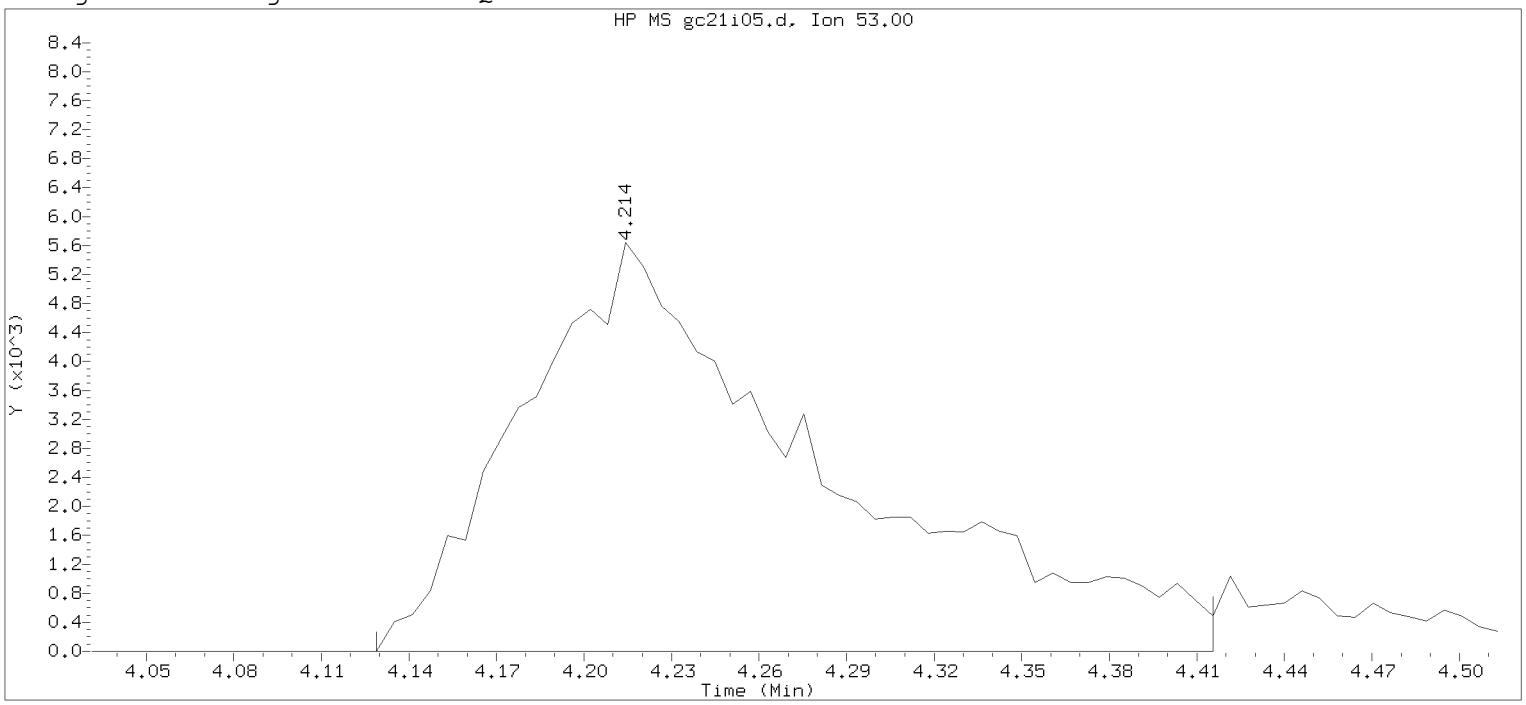
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

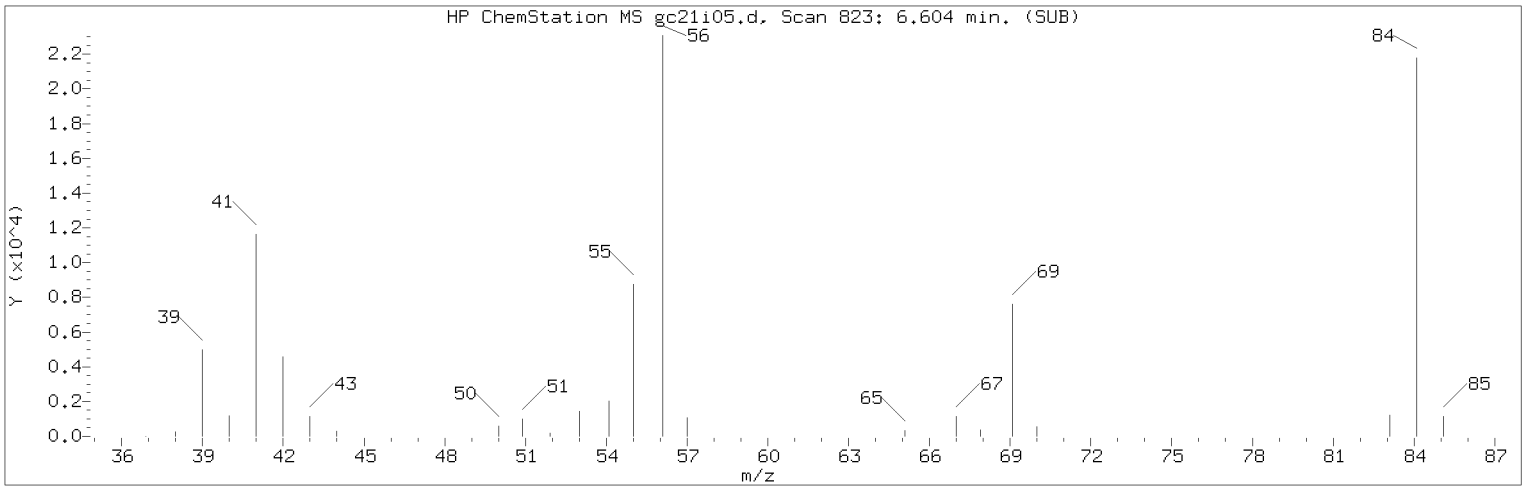
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

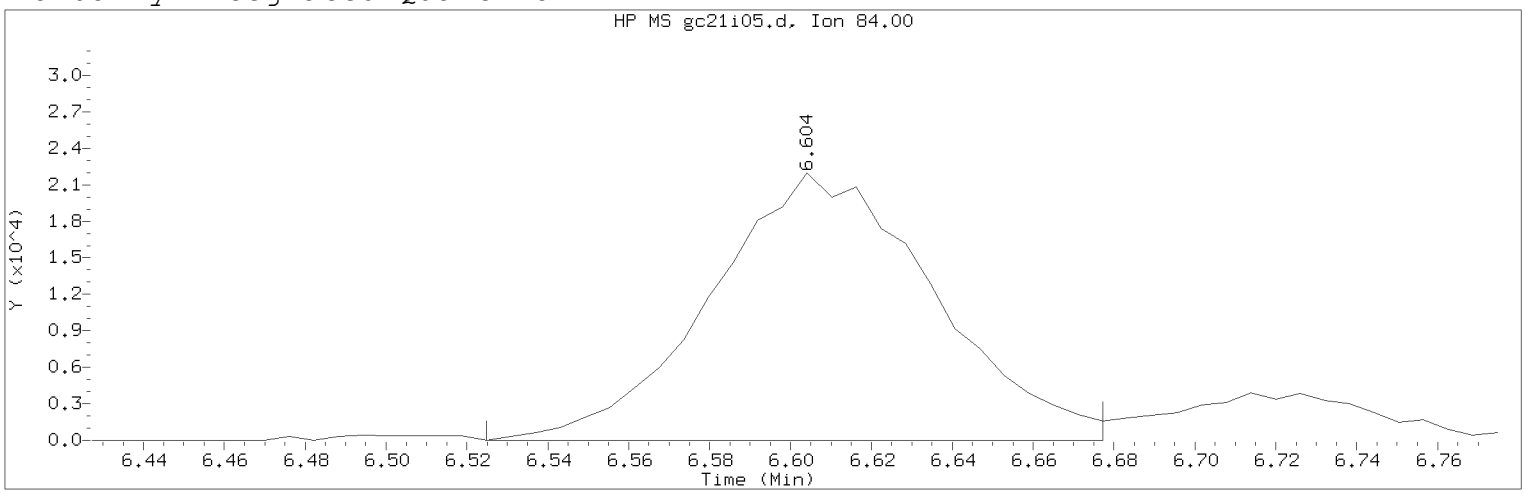
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 53.00
Area : 40556
On-column Amount (ng) : 4.5525
Integration start scan : 416 Integration stop scan: 463
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

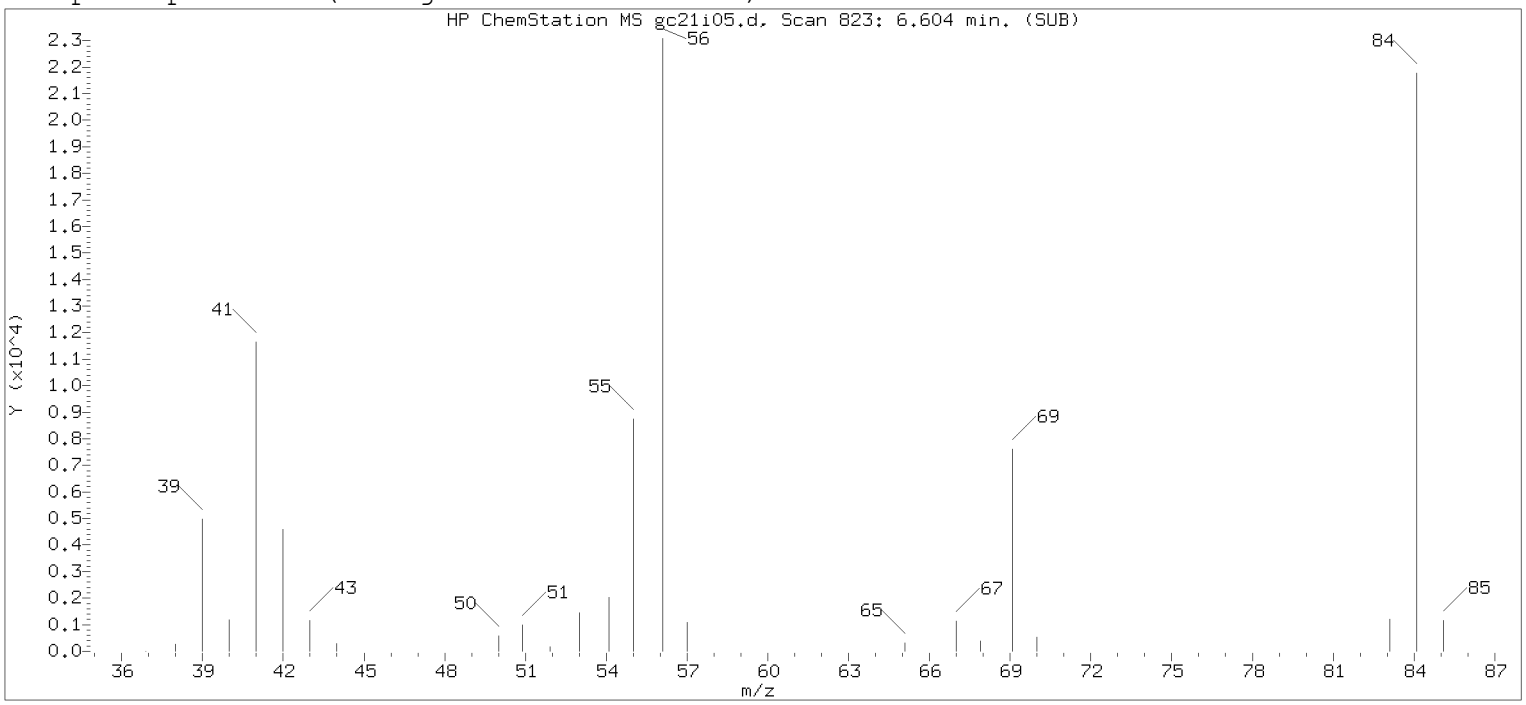
Compound Number : 52
Compound Name : Cyclohexane
Scan Number : 823
Retention Time (minutes): 6.604
Quant Ion : 84.00
Area (flag) : 84288M
On-Column Amount (ng) : 1.0016
Integration start scan : 809 Integration stop scan: 834
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

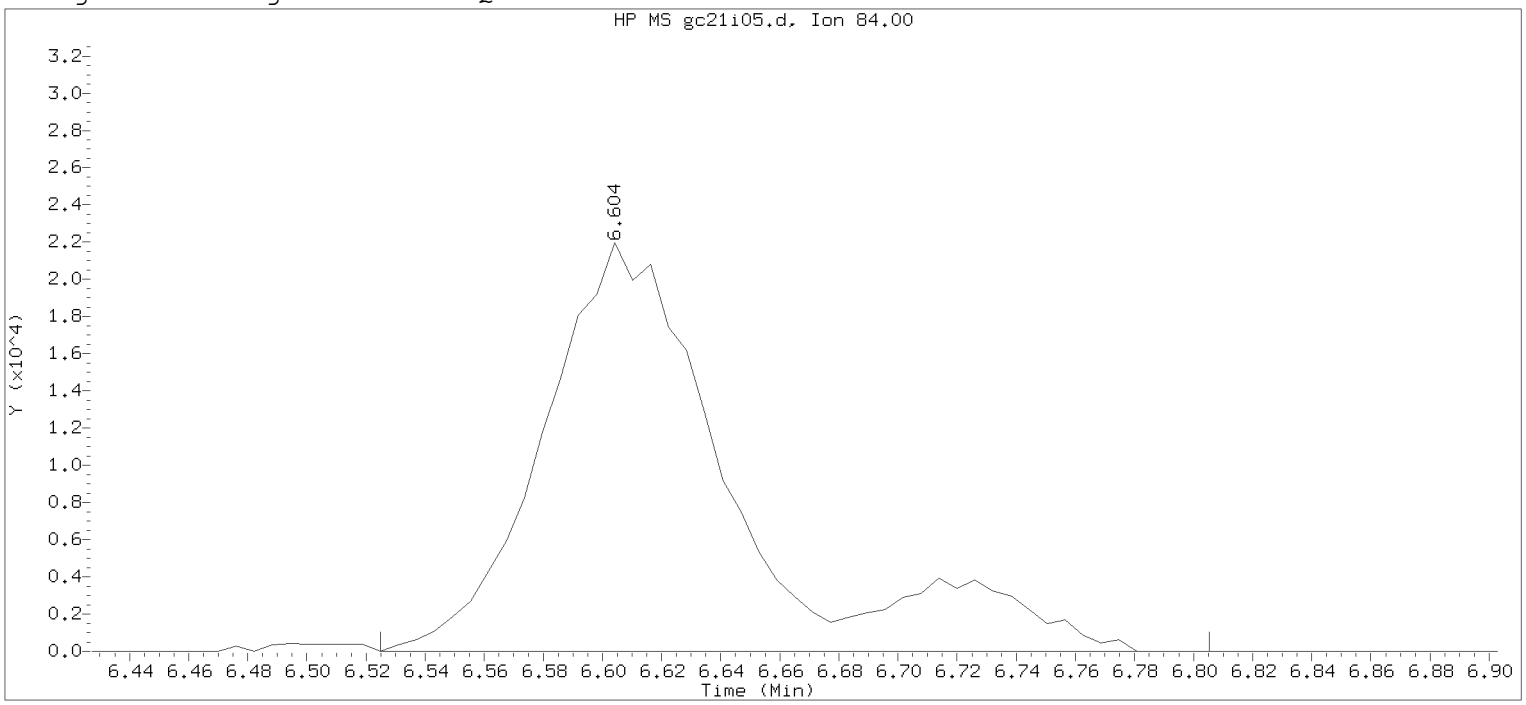
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

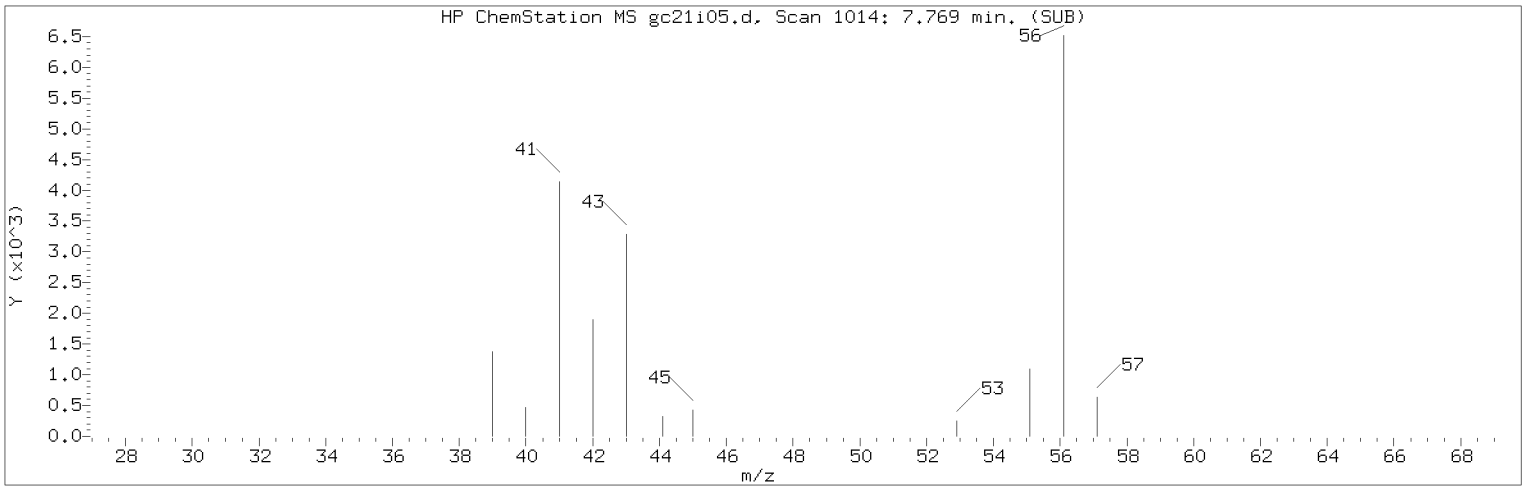
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

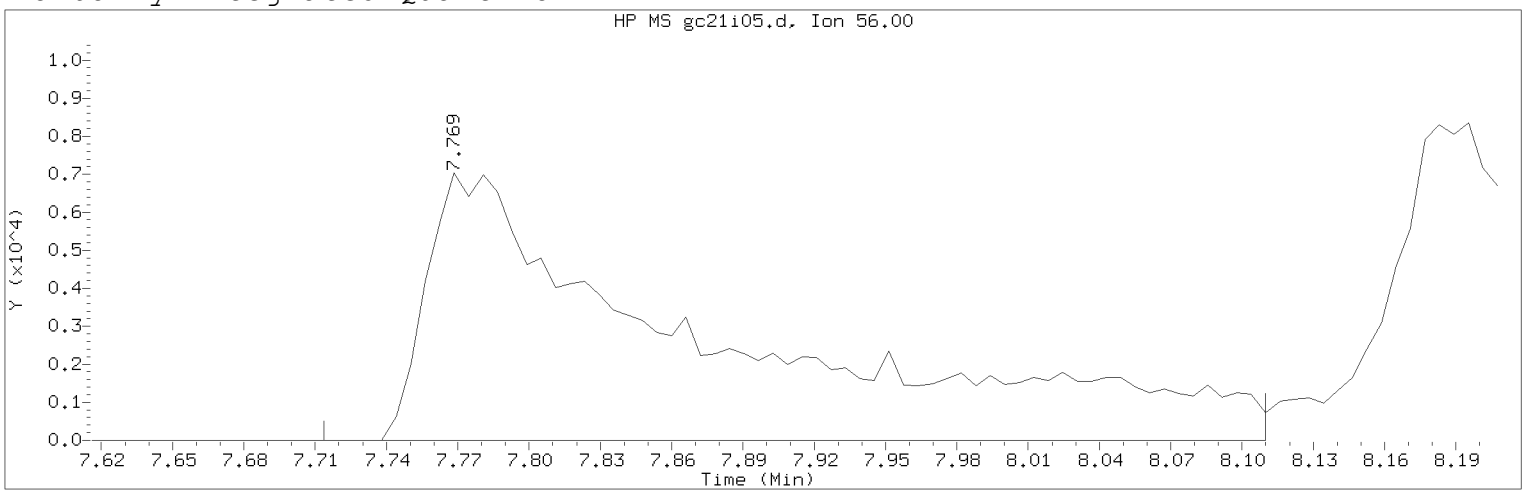
Compound Number	: 52		
Compound Name	: Cyclohexane		
Scan Number	: 823		
Retention Time (minutes)	: 6.604		
Quant Ion	: 84.00		
Area	: 97778		
On-column Amount (ng)	: 1.0957		
Integration start scan	: 809	Integration stop scan:	855
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

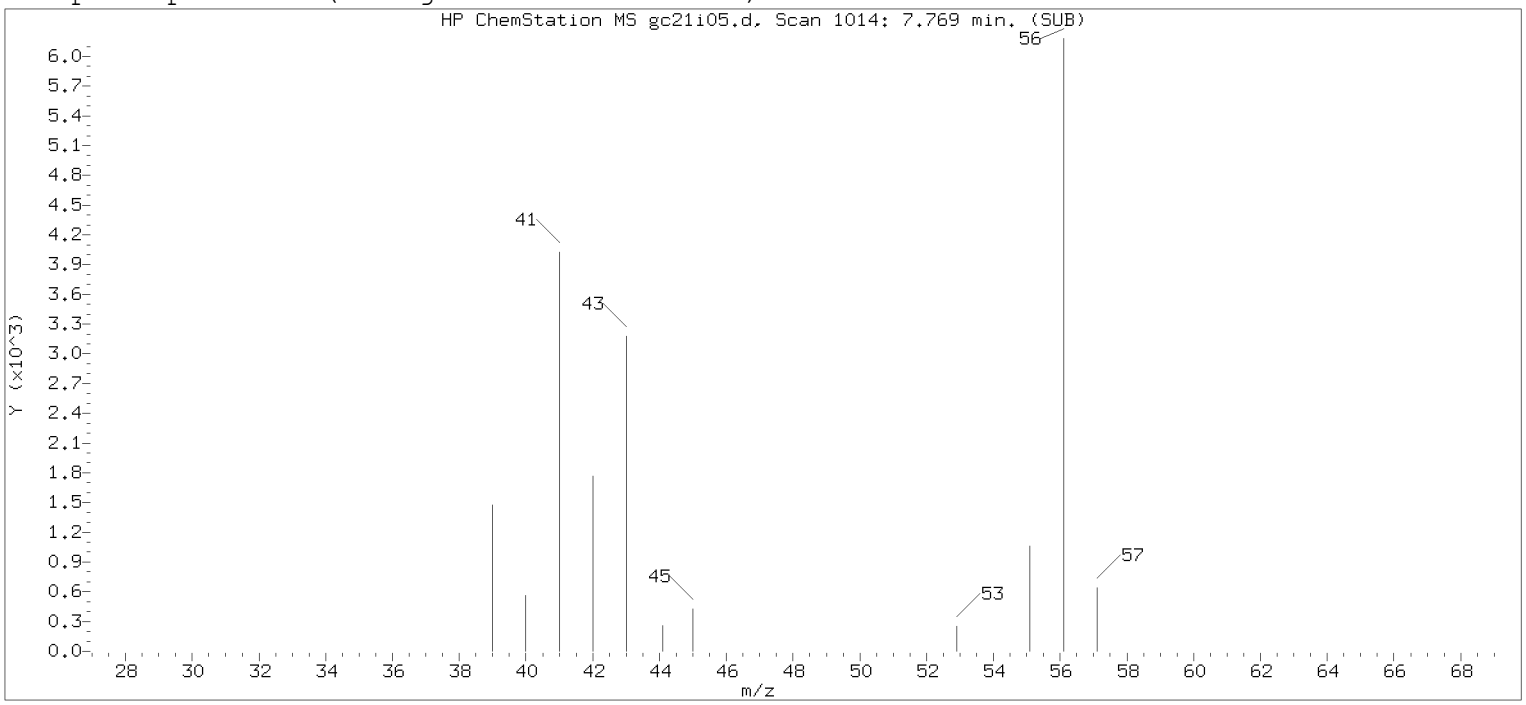
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1014
Retention Time (minutes): 7.769
Quant Ion : 56.00
Area (flag) : 57086M
On-Column Amount (ng) : 97.3738
Integration start scan : 1004 Integration stop scan: 1069
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

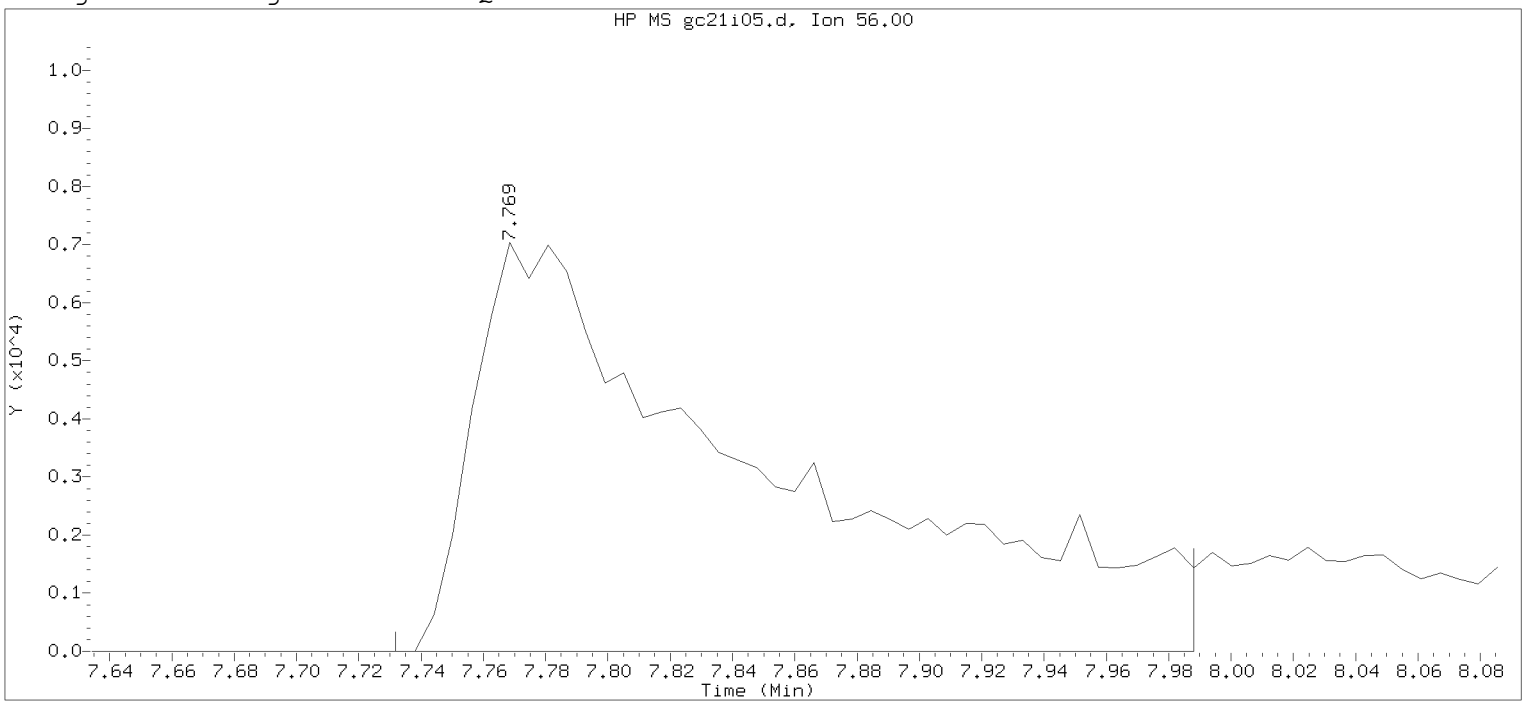
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

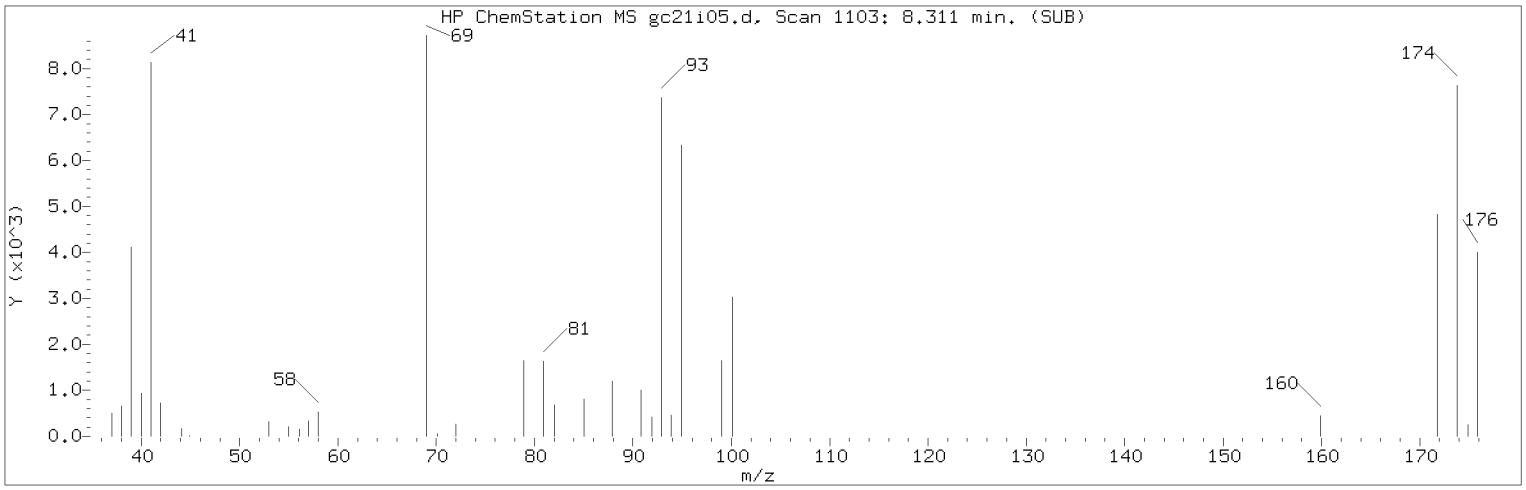
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

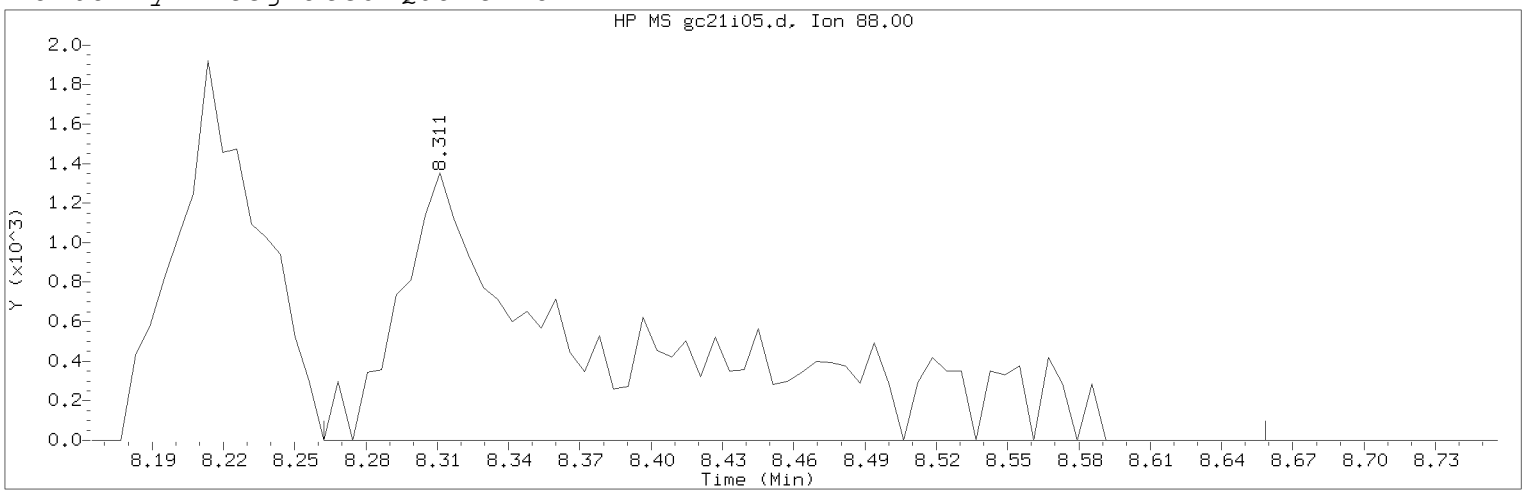
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1014
Retention Time (minutes): 7.769
Quant Ion : 56.00
Area : 46468
On-column Amount (ng) : 70.0058
Integration start scan : 1007 Integration stop scan: 1049
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

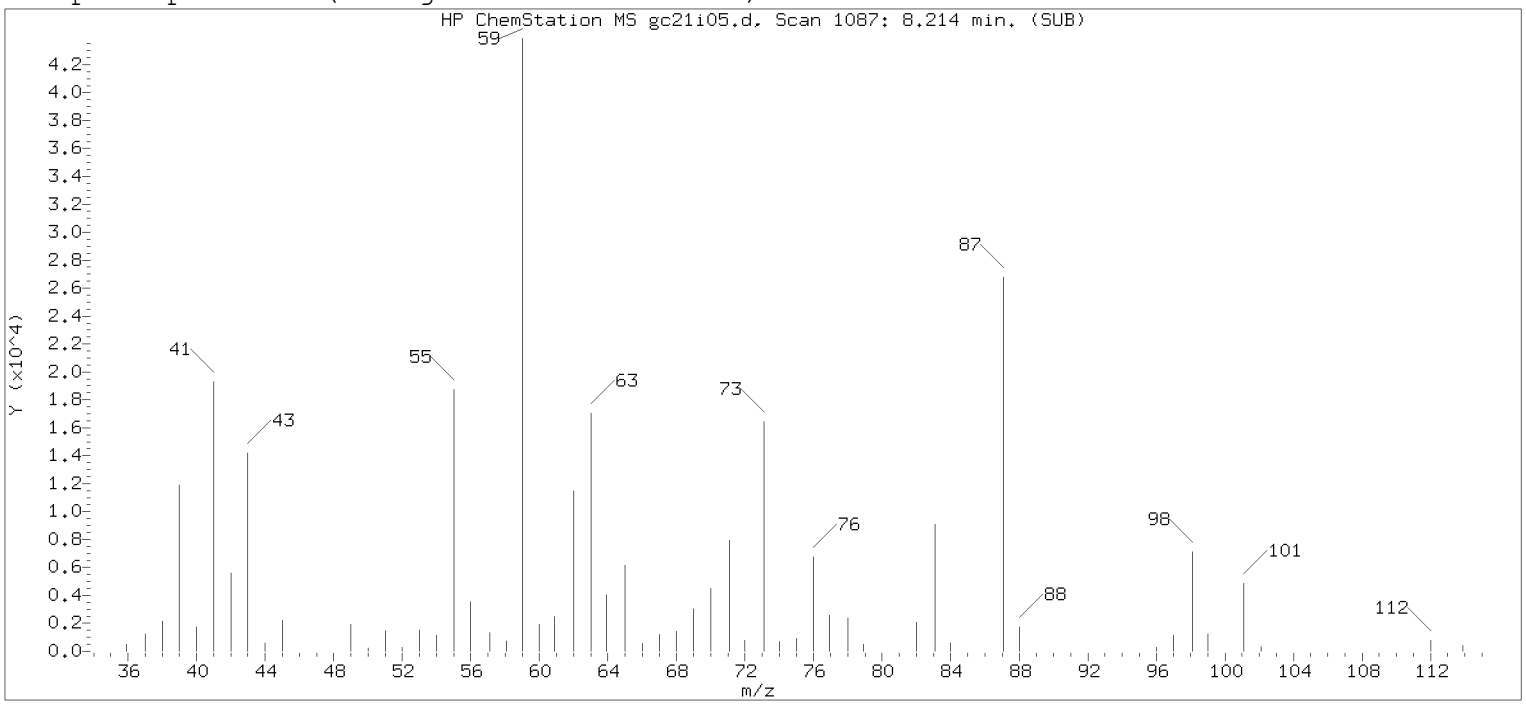
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1103
Retention Time (minutes): 8.311
Quant Ion : 88.00
Area (flag) : 8669M
On-Column Amount (ng) : 46.5689
Integration start scan : 1094 Integration stop scan: 1159
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

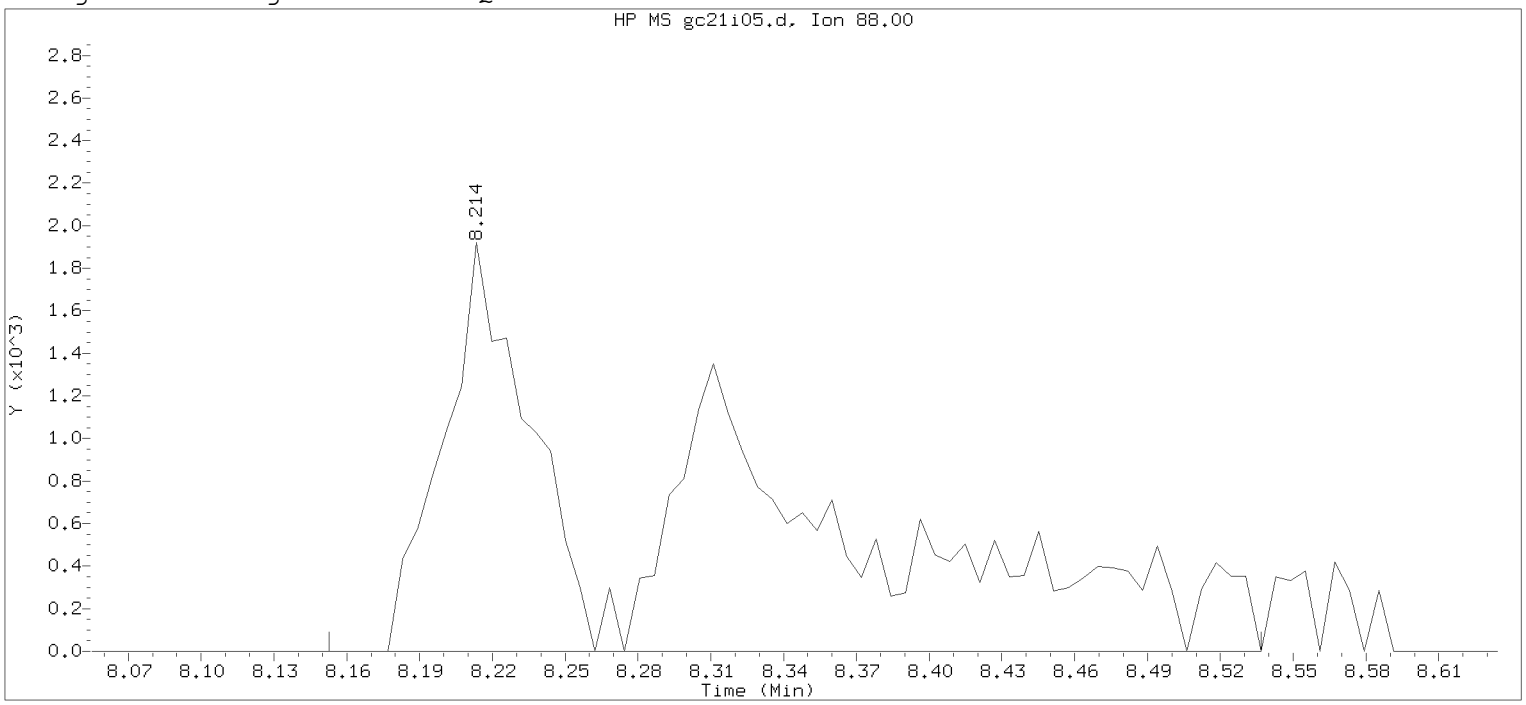
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

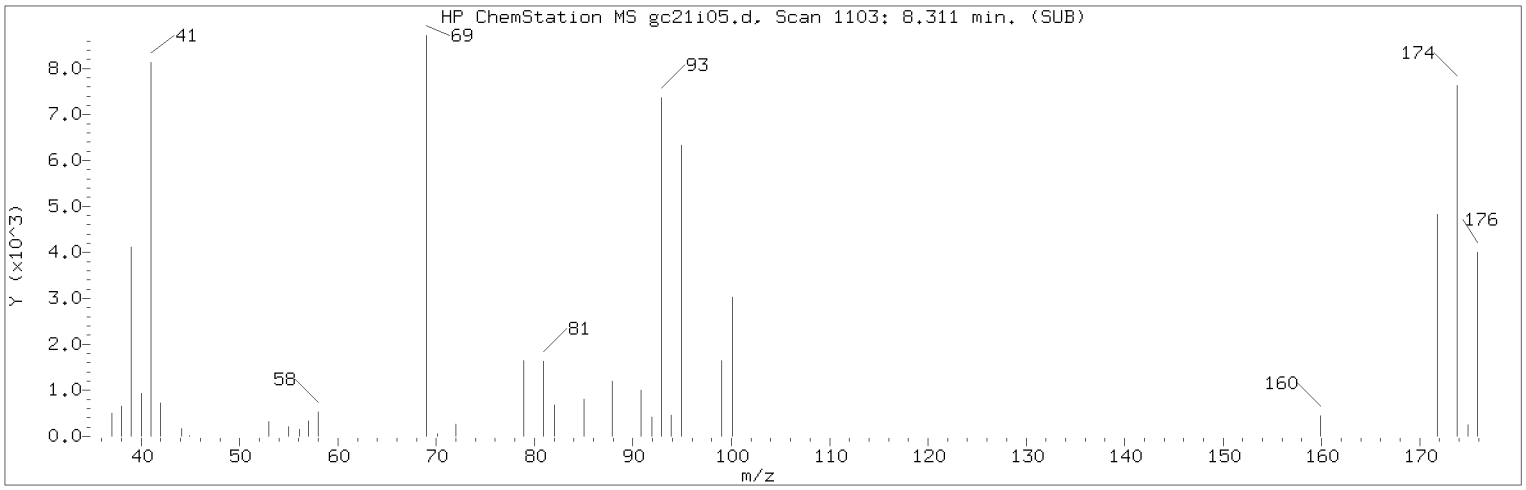
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

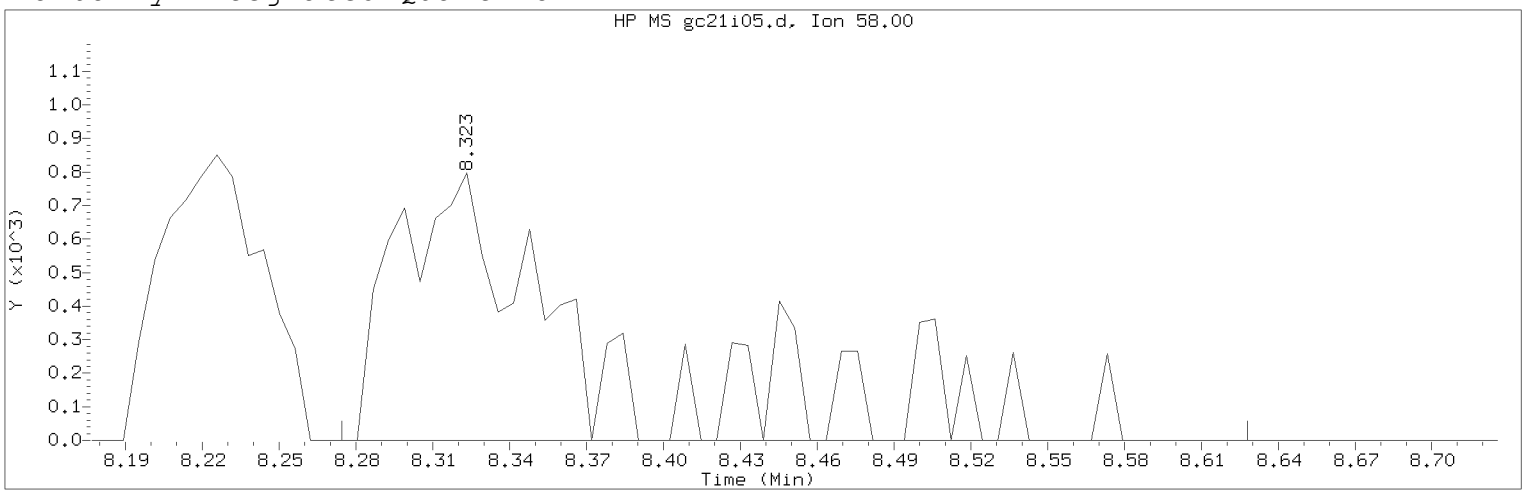
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1087		
Retention Time (minutes)	: 8.214		
Quant Ion	: 88.00		
Area	: 12620		
On-column Amount (ng)	: 88.3952		
Integration start scan	: 1076	Integration stop scan:	1139
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

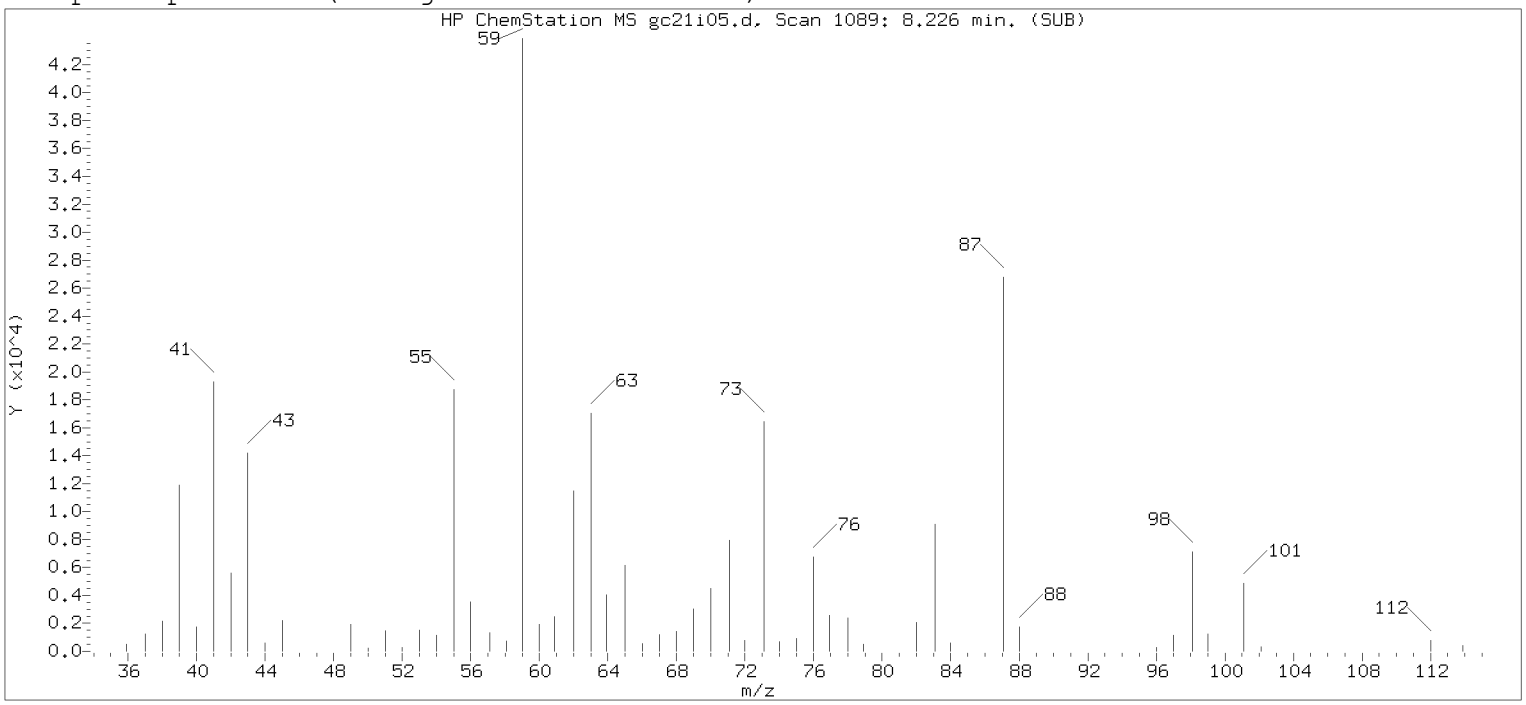
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1105
Retention Time (minutes): 8.323
Quant Ion : 58.00
Area (flag) : 4302M
On-Column Amount (ng) : 41.8110
Integration start scan : 1096 Integration stop scan: 1154
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

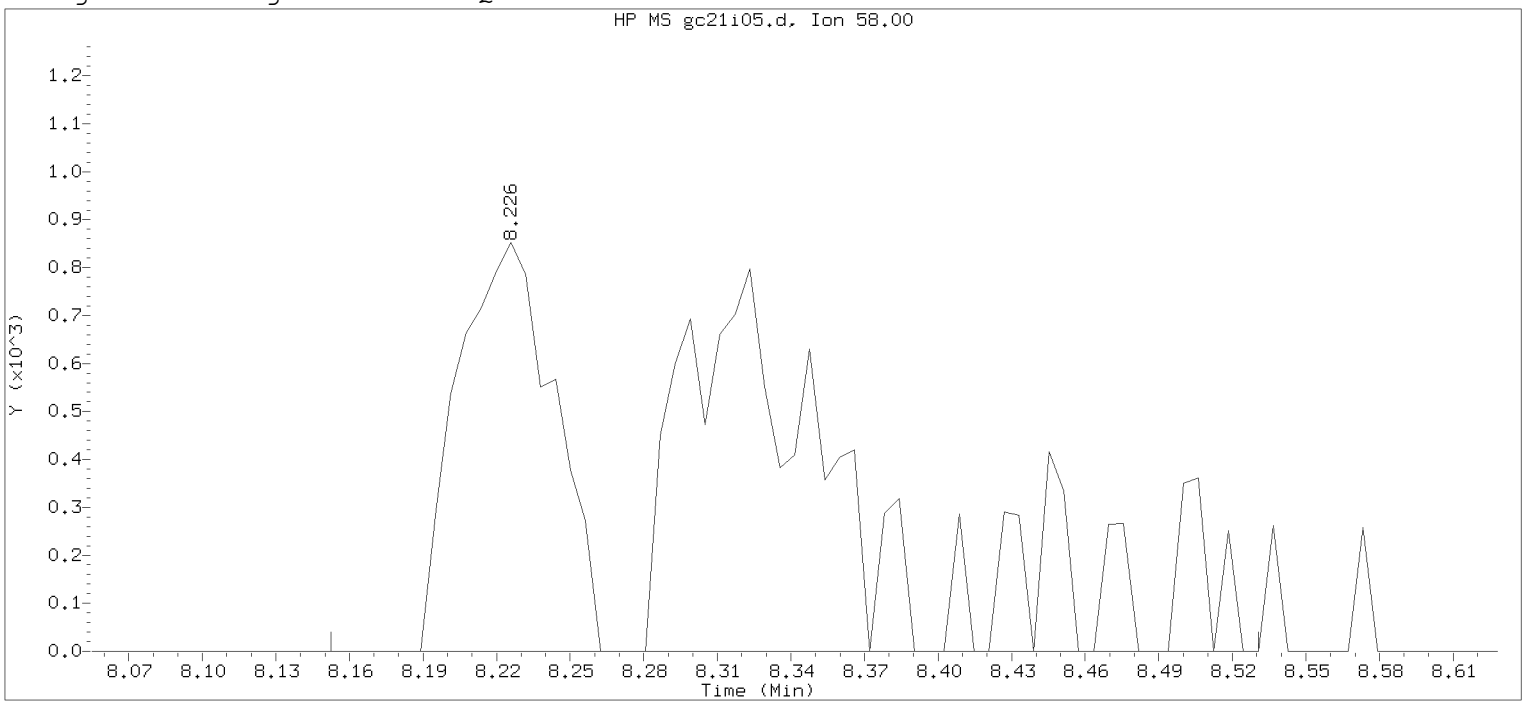
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

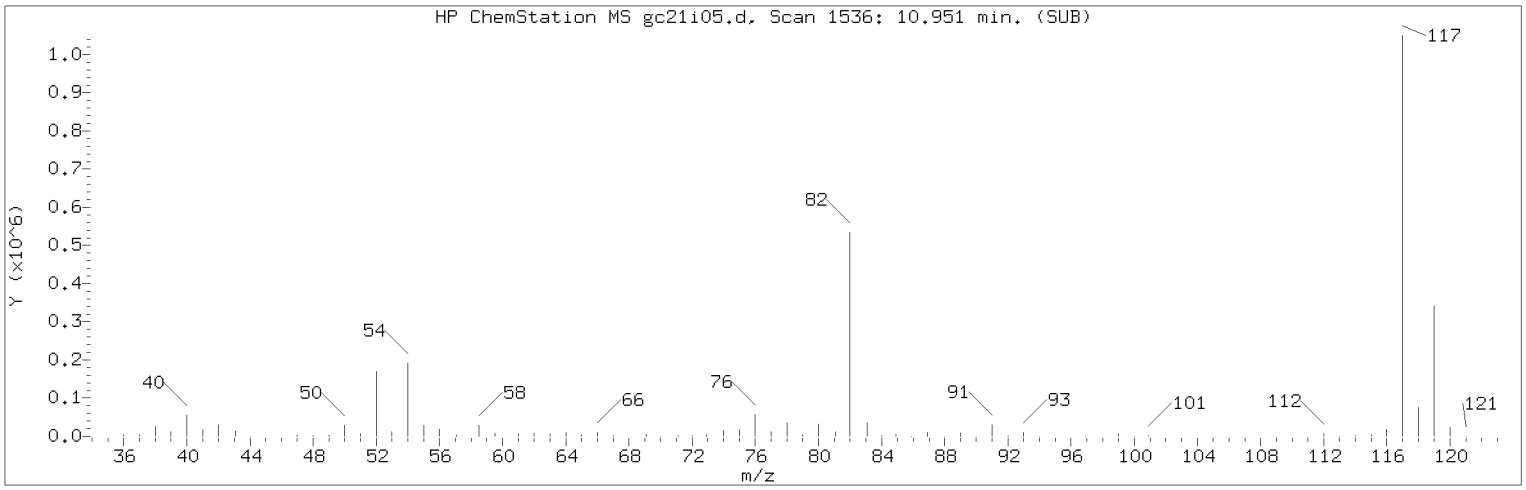
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

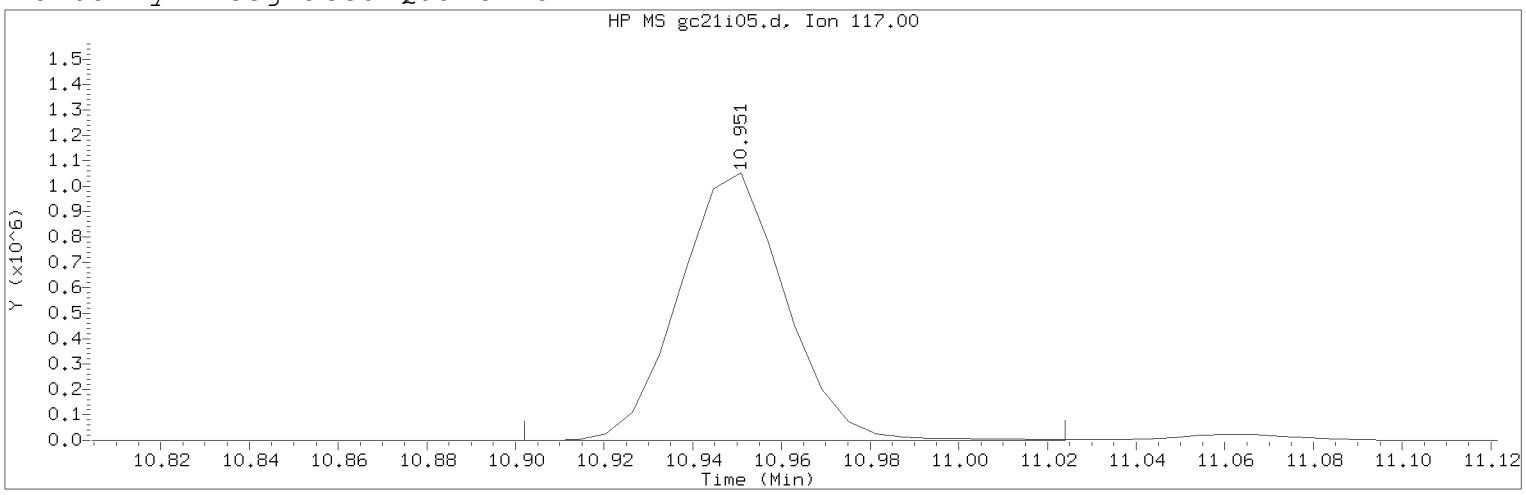
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1089		
Retention Time (minutes)	: 8.226		
Quant Ion	: 58.00		
Area	: 6455		
On-column Amount (ng)	: 86.2413		
Integration start scan	: 1076	Integration stop scan:	1138
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

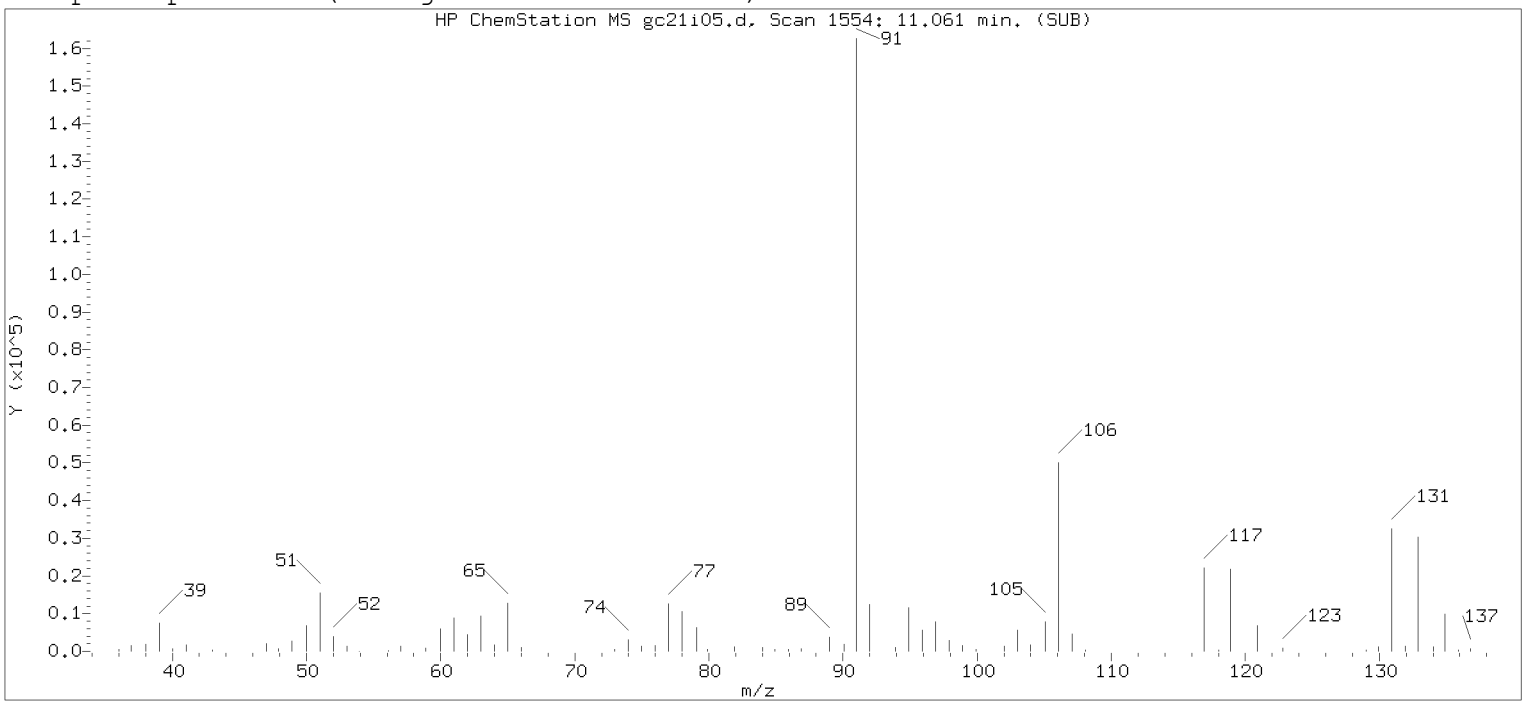
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1745972A
On-Column Amount (ng) : 10.0000
Integration start scan : 1527 Integration stop scan: 1547
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

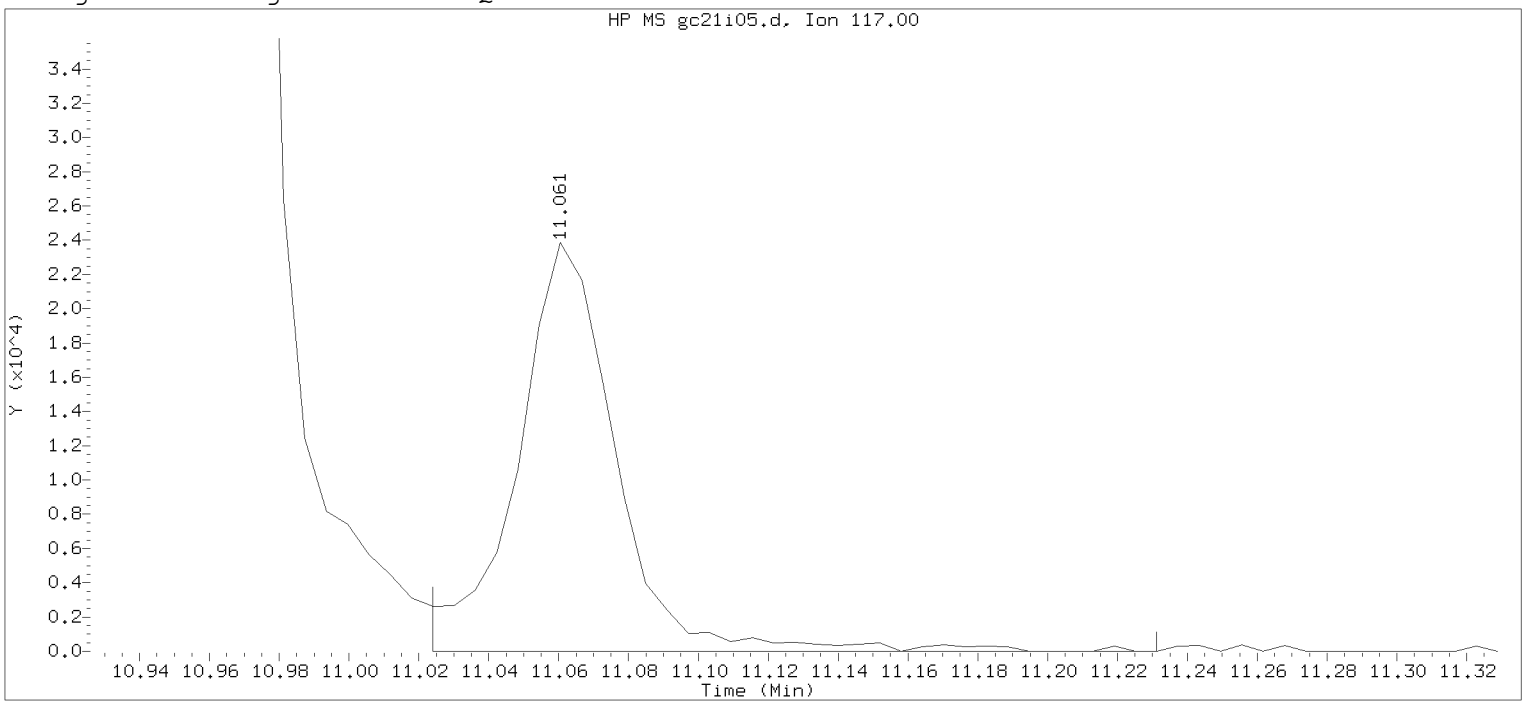
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

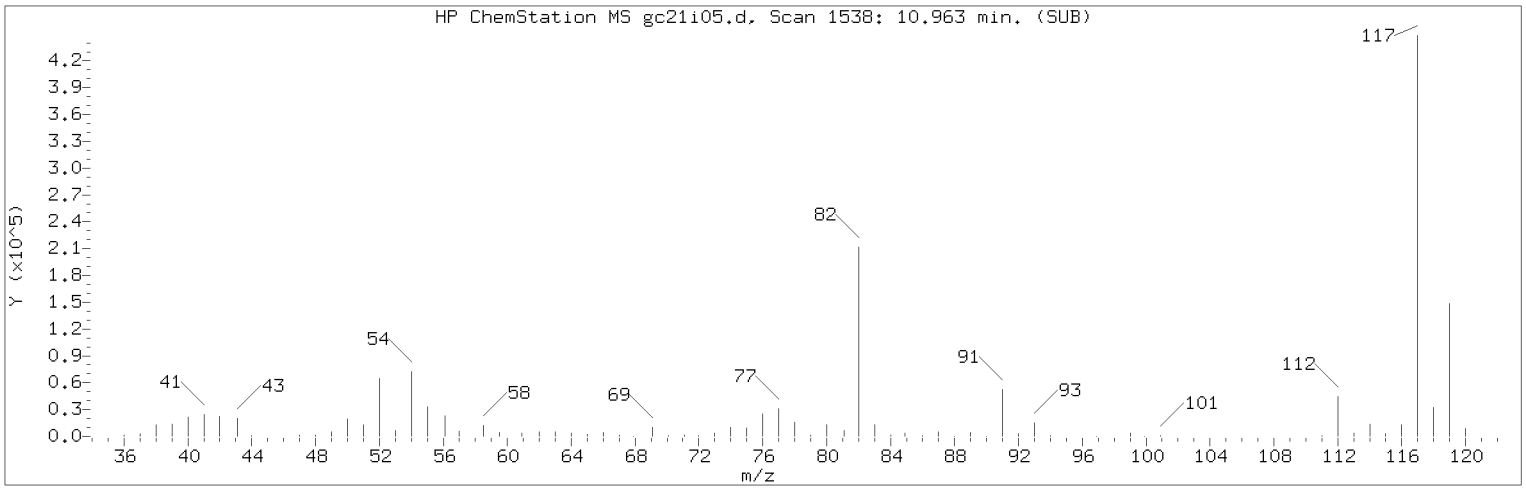
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

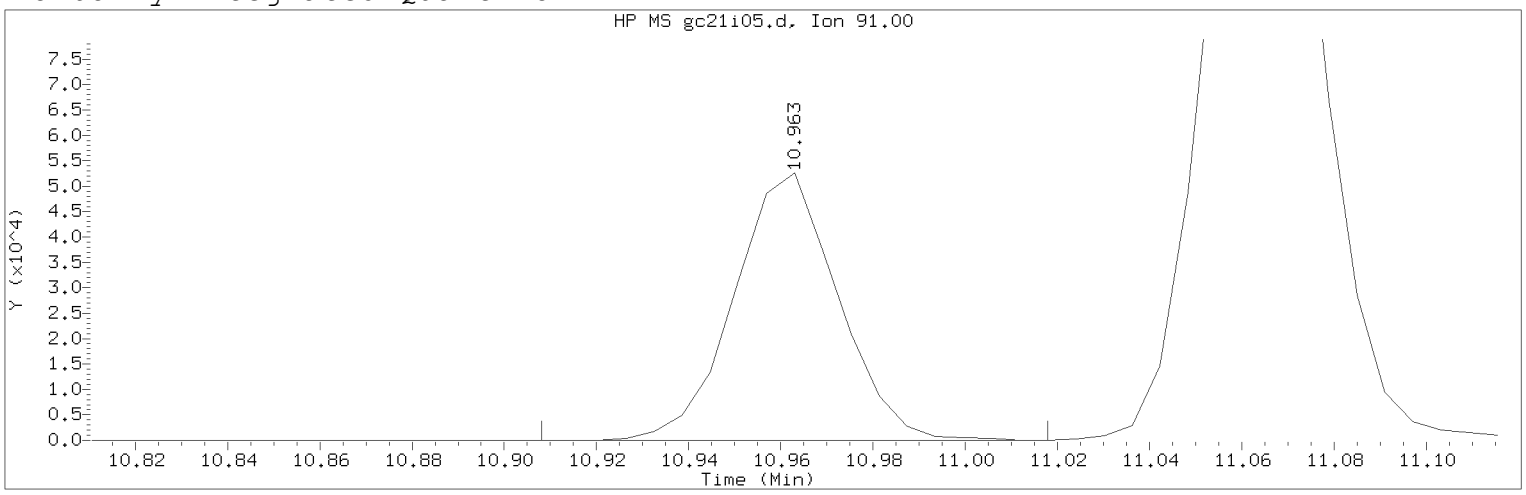
Compound Number	: 97		
Compound Name	: Chlorobenzene-d5		
Scan Number	: 1554		
Retention Time (minutes)	: 11.061		
Quant Ion	: 117.00		
Area	: 46546		
On-column Amount (ng)	: 10.0000		
Integration start scan	: 1547	Integration stop scan:	1581
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

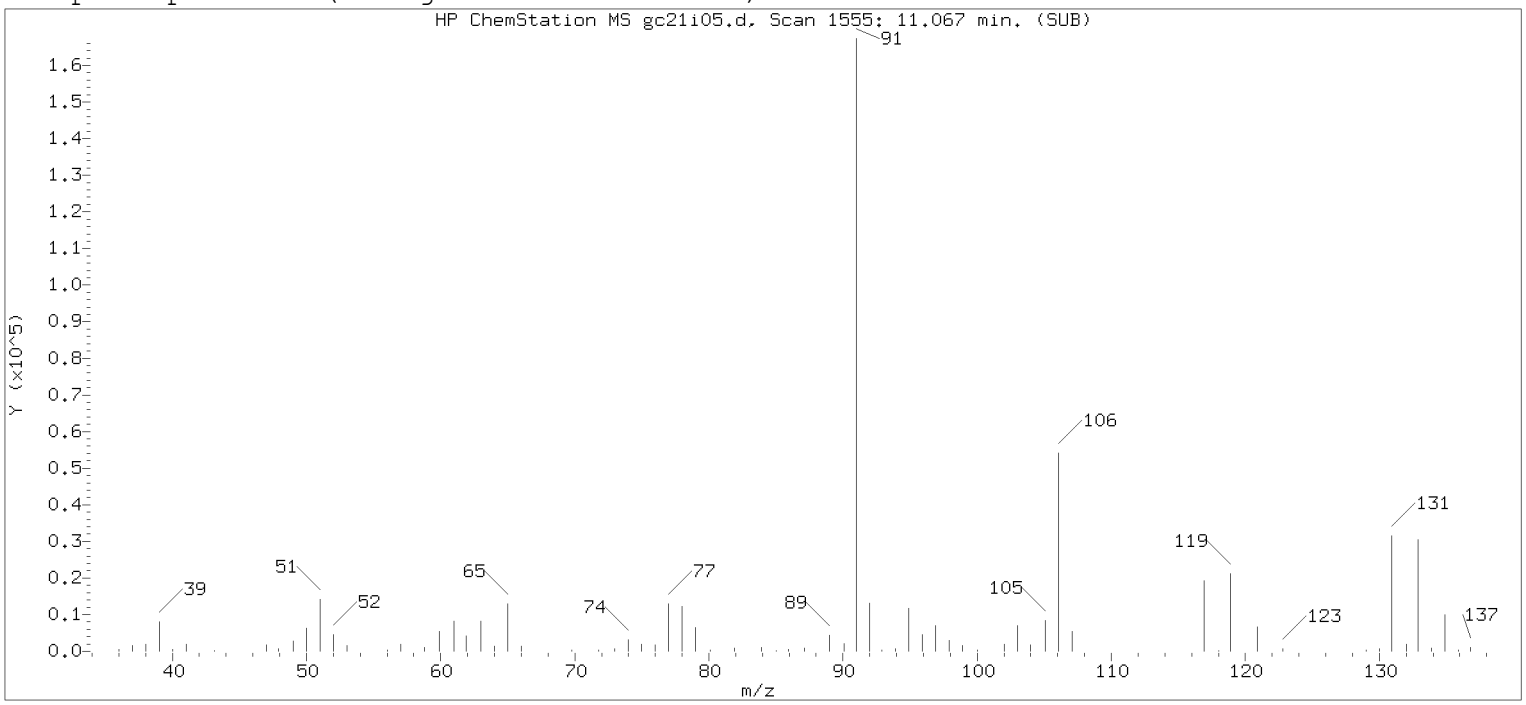
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 82182A
On-Column Amount (ng) : 0.9877
Integration start scan : 1528 Integration stop scan: 1546
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

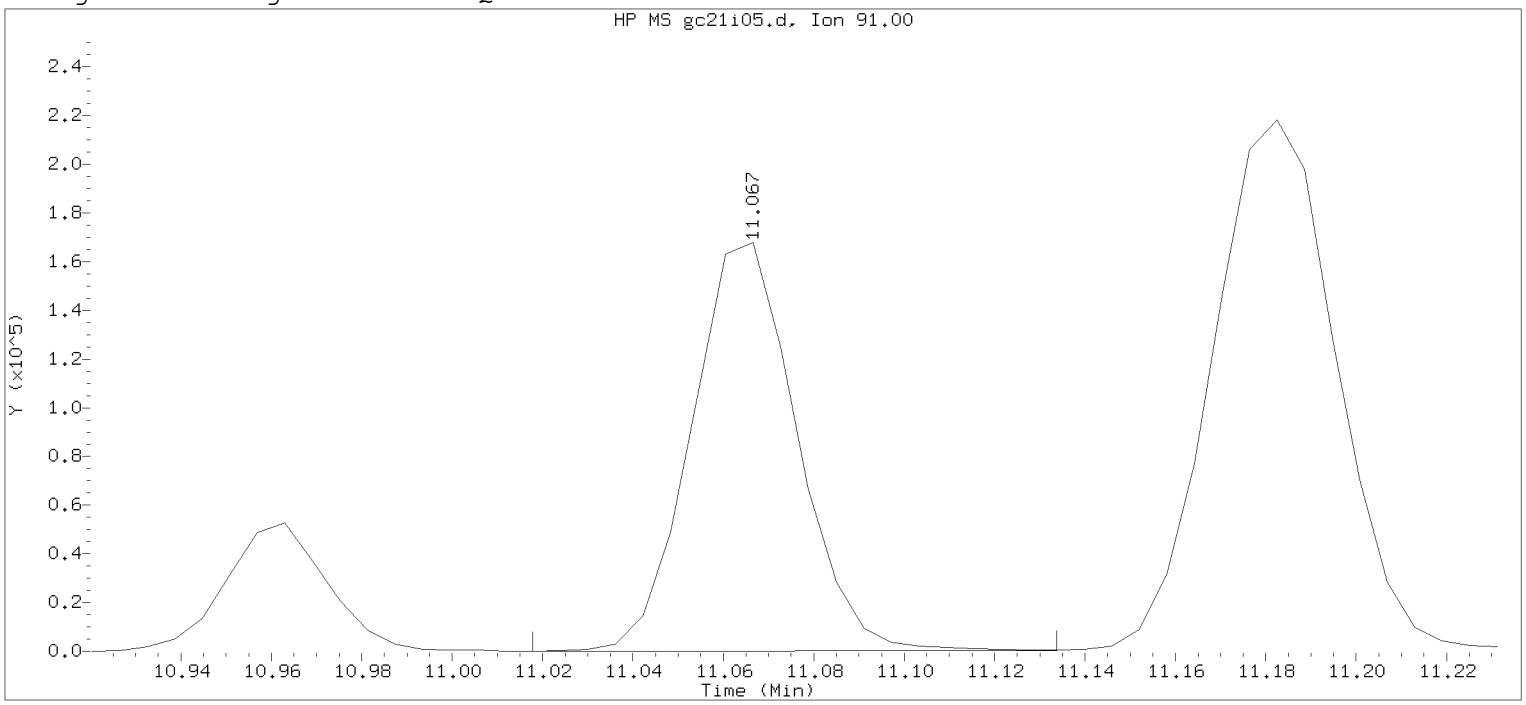
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

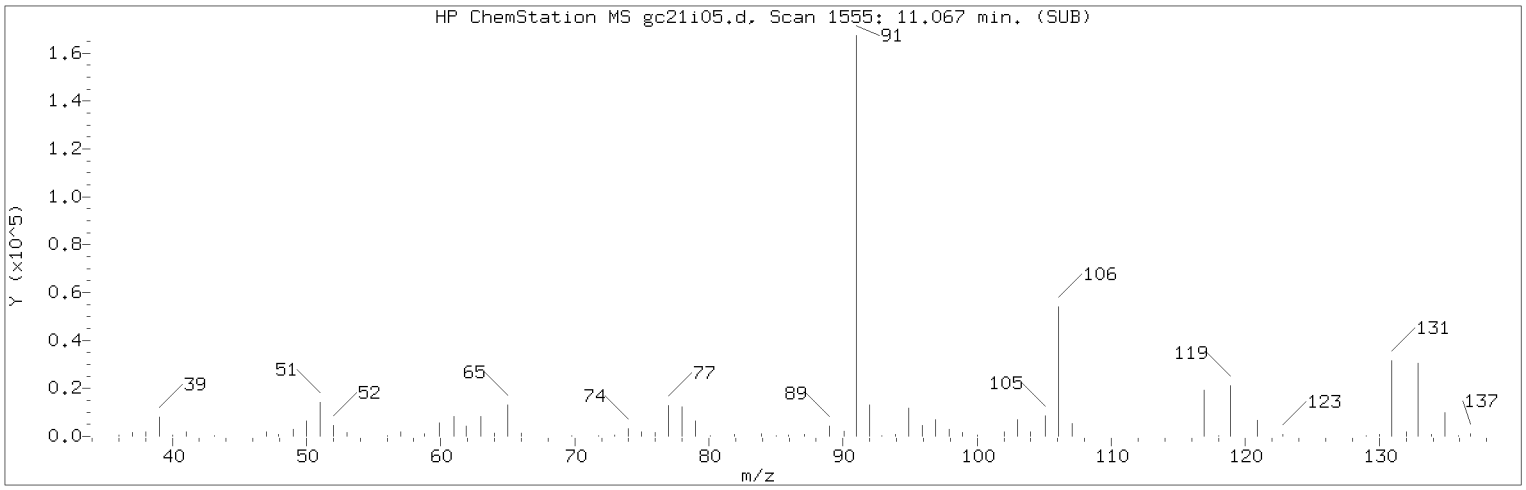
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

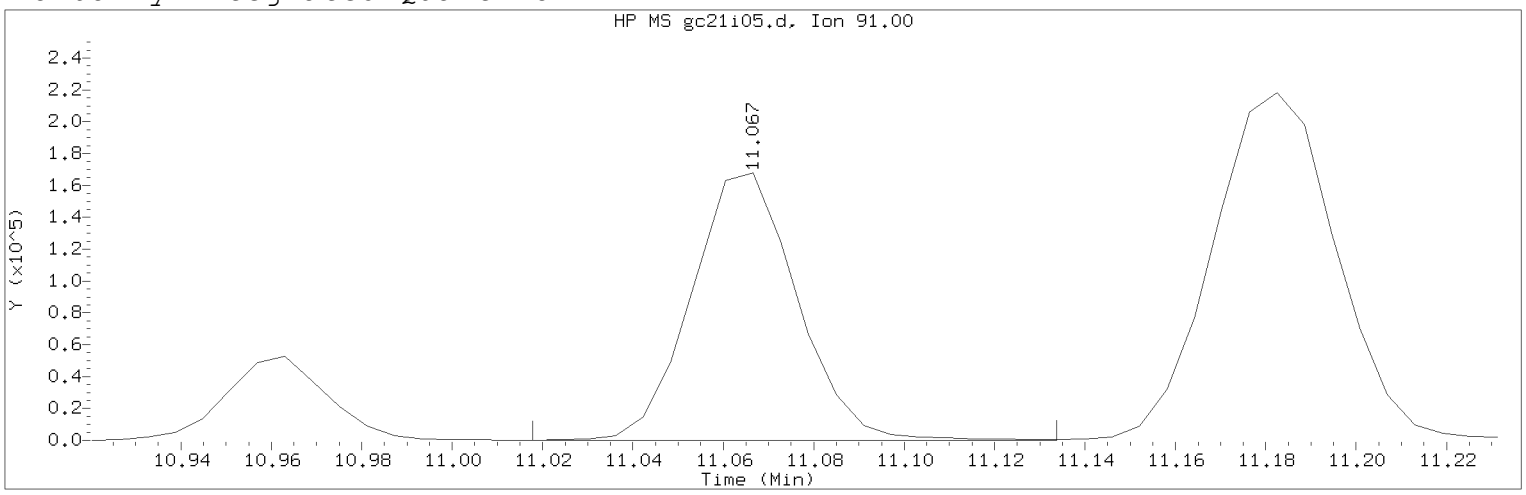
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 271329
On-column Amount (ng) : 2.5825
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 0 Y at integration end: 215

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

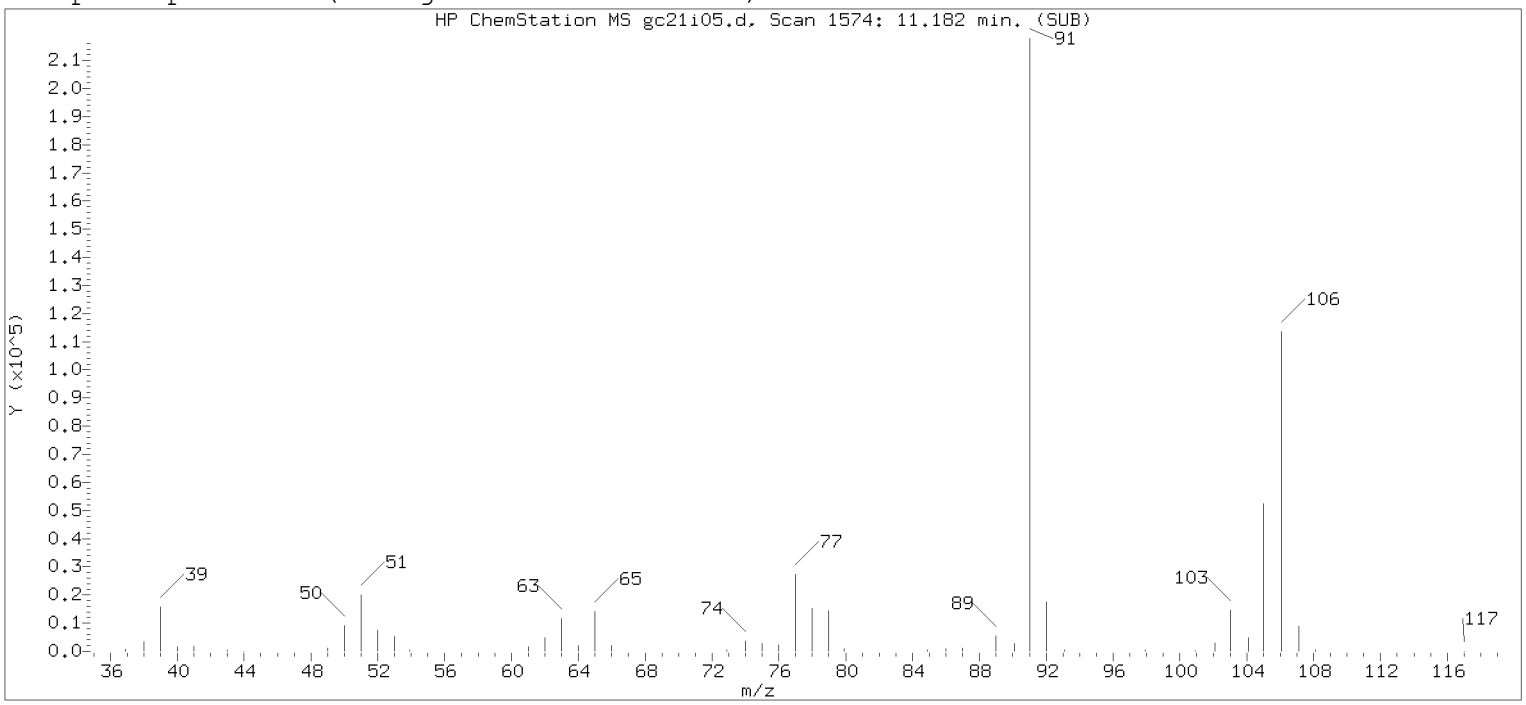
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 272179MA
On-Column Amount (ng) : 0.9978
Integration start scan : 1546 Integration stop scan: 1565
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

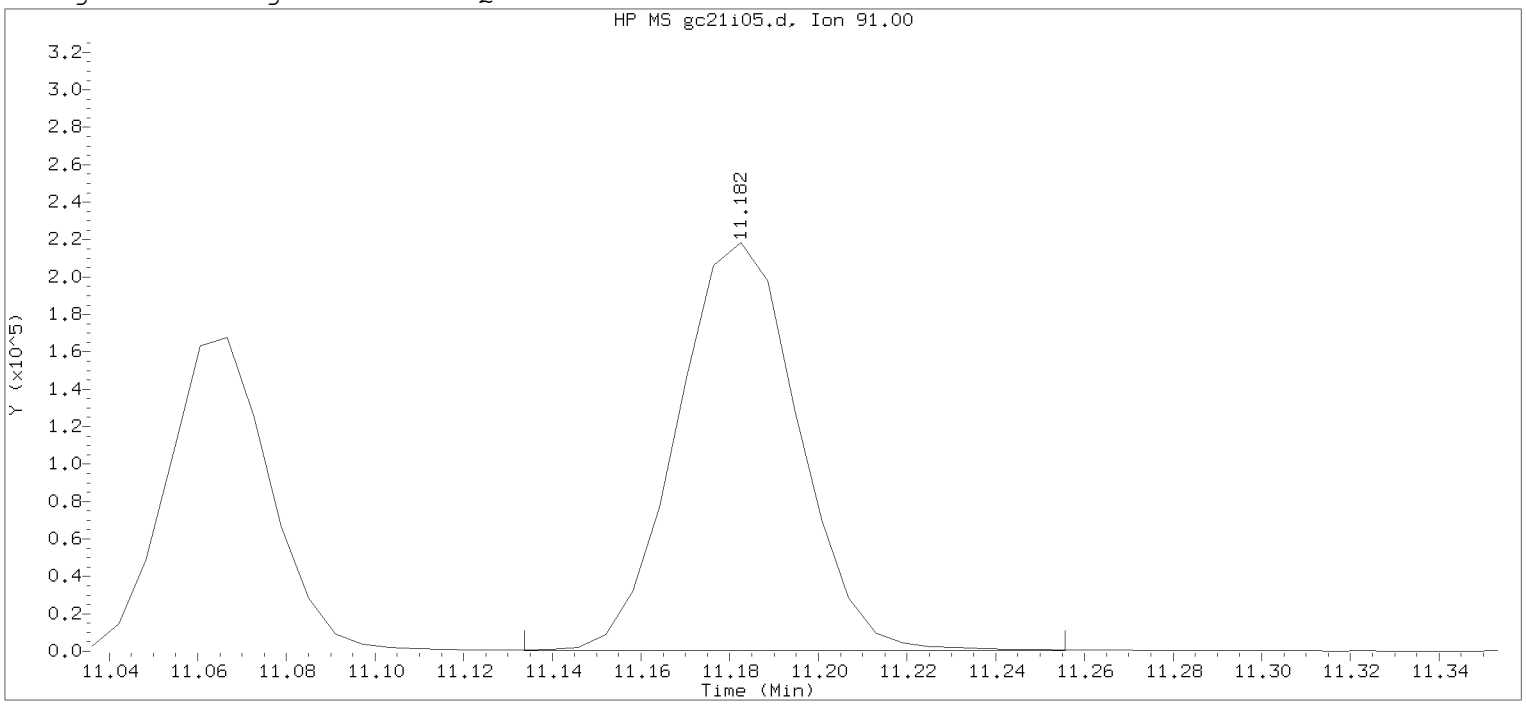
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

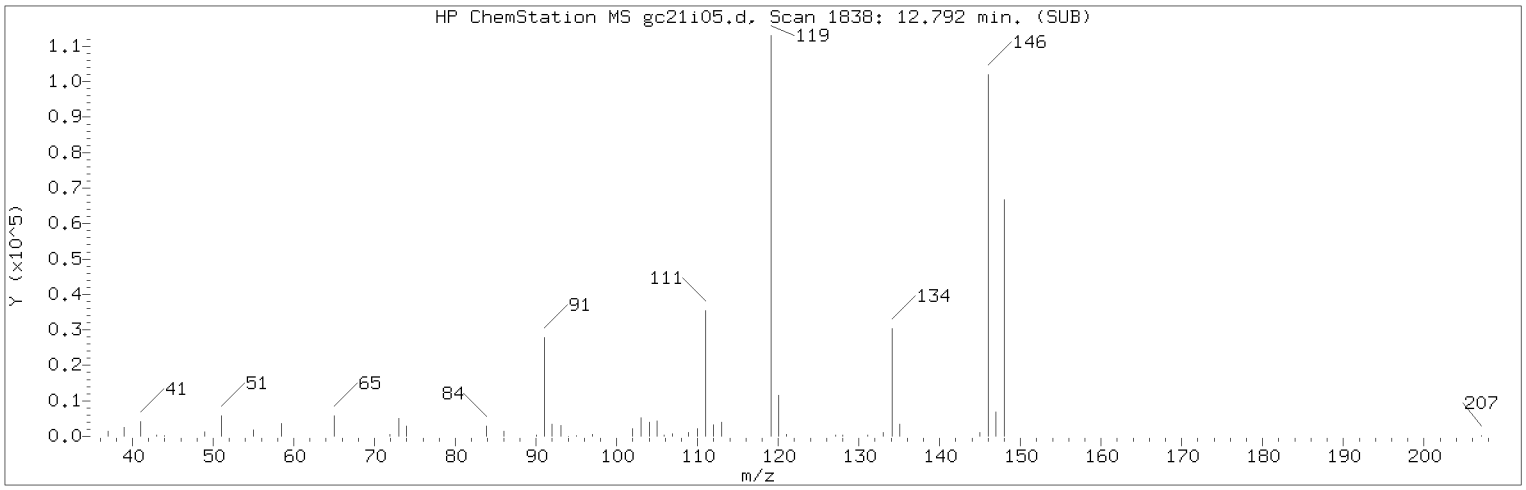
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

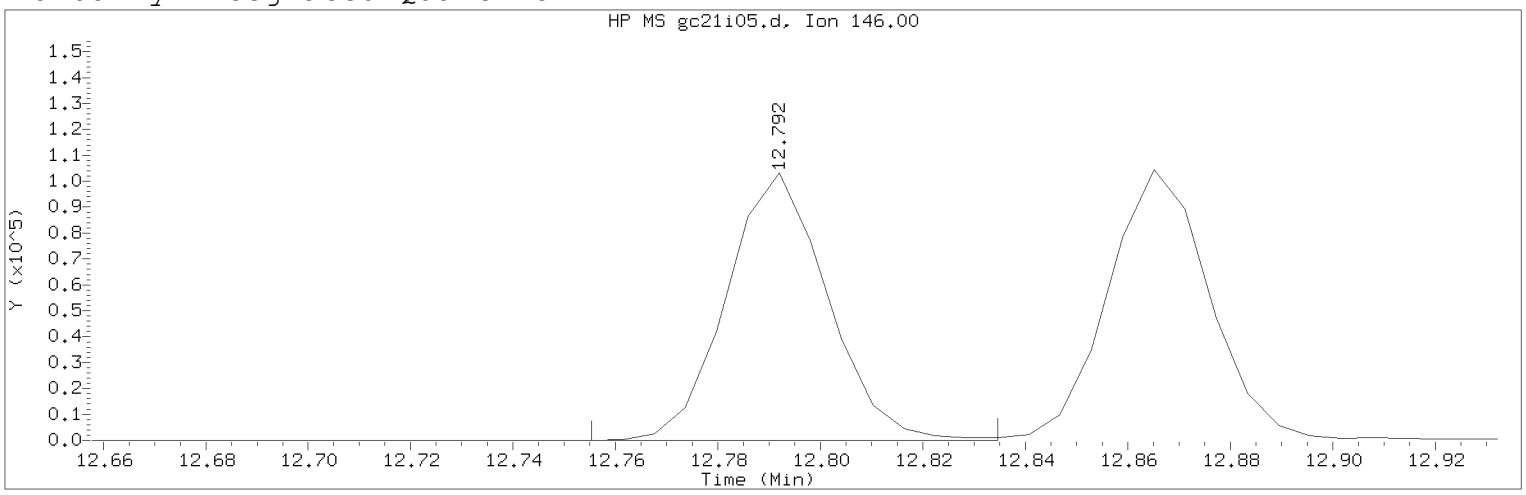
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1574
Retention Time (minutes): 11.182
Quant Ion : 91.00
Area : 414403
On-column Amount (ng) : 2.5706
Integration start scan : 1565 Integration stop scan: 1585
Y at integration start : 277 Y at integration end: 366

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

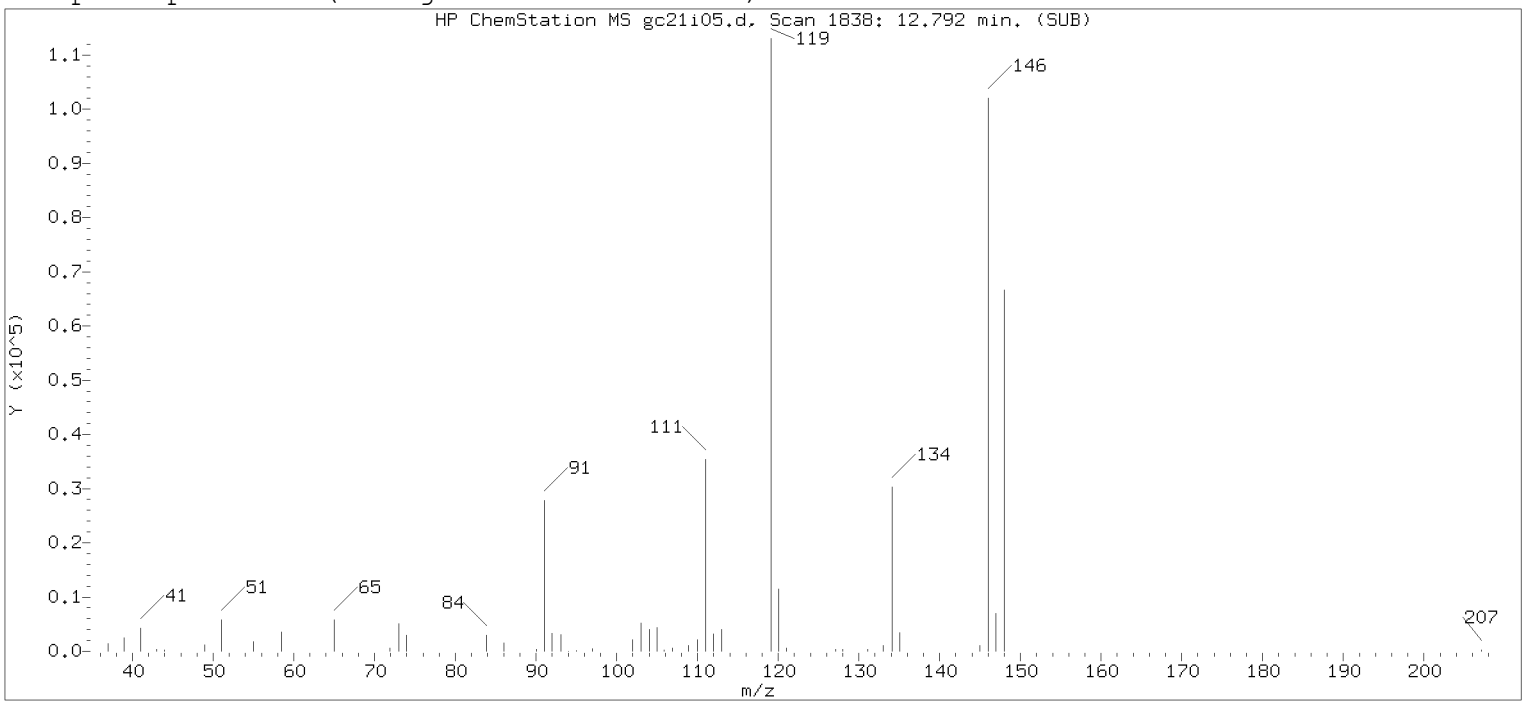
Compound Number : 131
Compound Name : 1,3-Dichlorobenzene
Scan Number : 1838
Retention Time (minutes): 12.792
Quant Ion : 146.00
Area (flag) : 140915M
On-Column Amount (ng) : 0.9801
Integration start scan : 1831 Integration stop scan: 1844
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

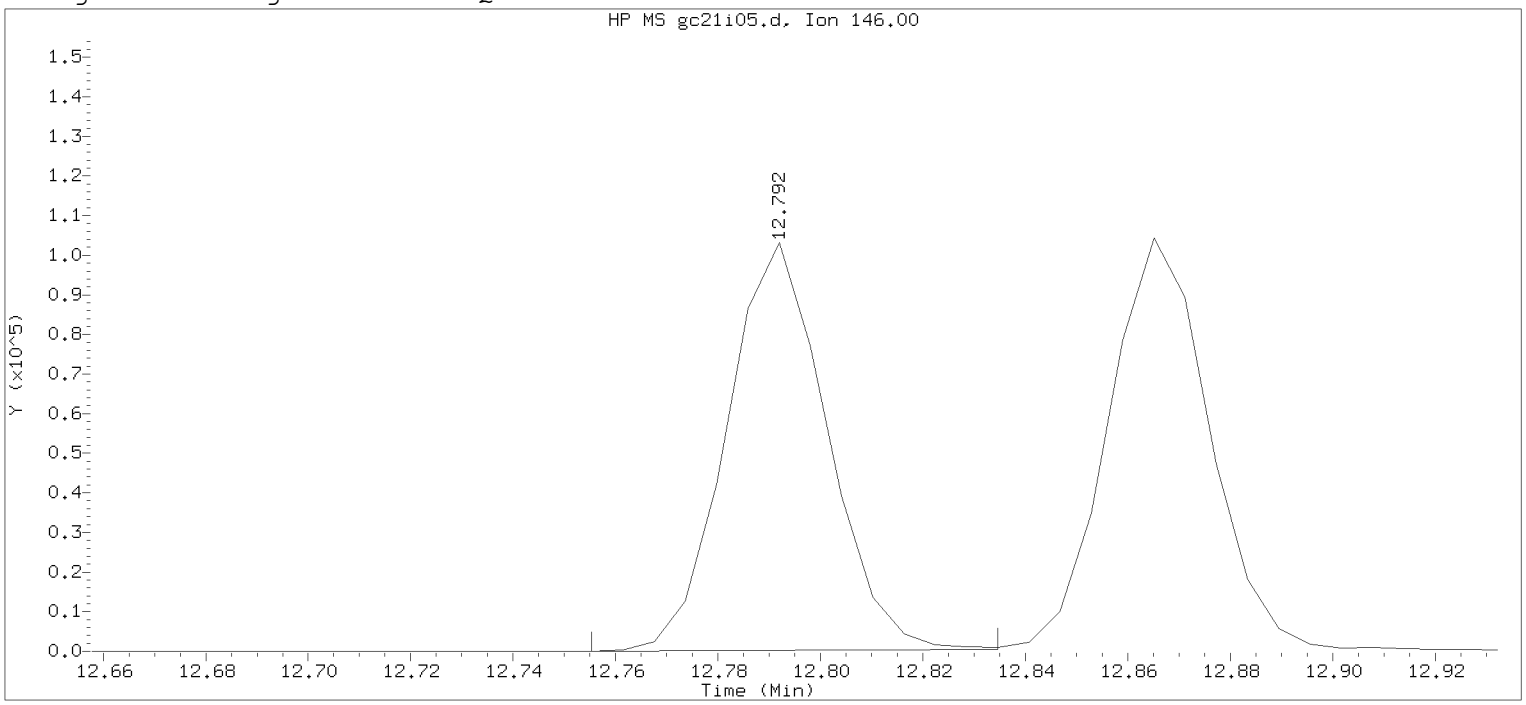
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

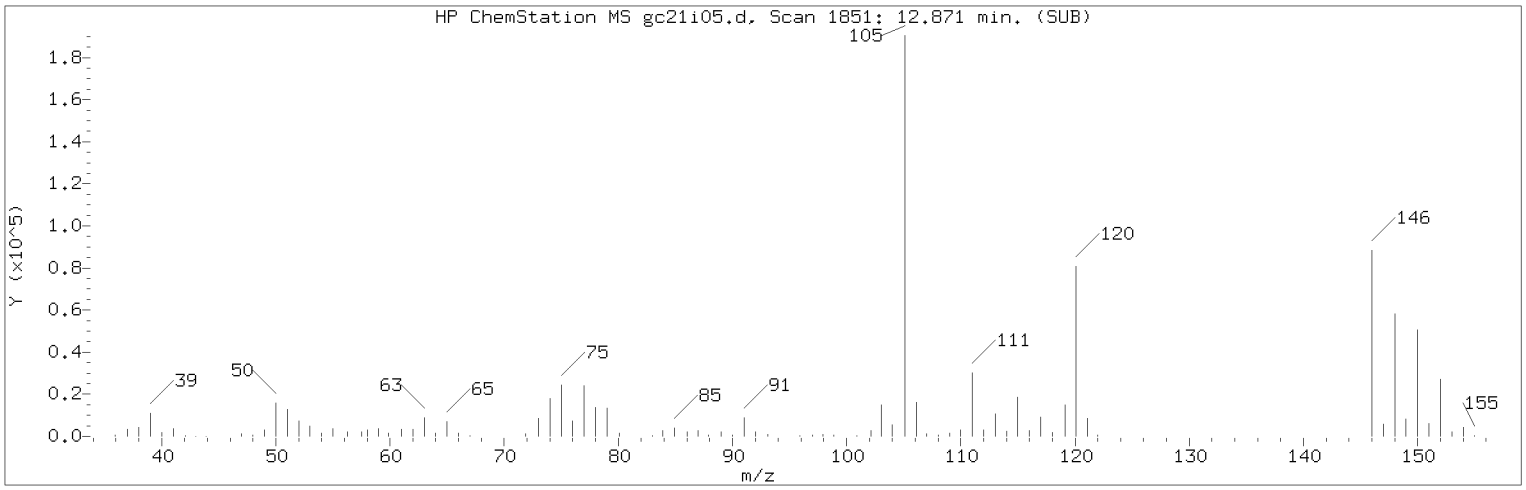
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

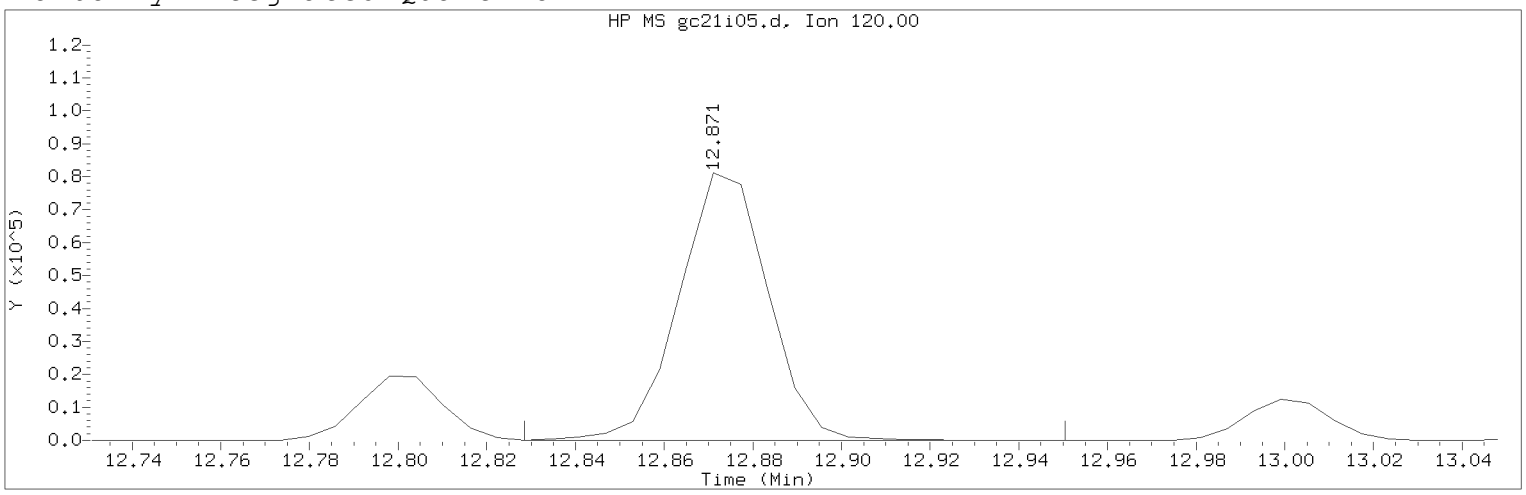
Compound Number : 131
Compound Name : 1,3-Dichlorobenzene
Scan Number : 1838
Retention Time (minutes): 12.792
Quant Ion : 146.00
Area : 139638
On-column Amount (ng) : 0.9742
Integration start scan : 1831 Integration stop scan: 1844
Y at integration start : 0 Y at integration end: 468

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

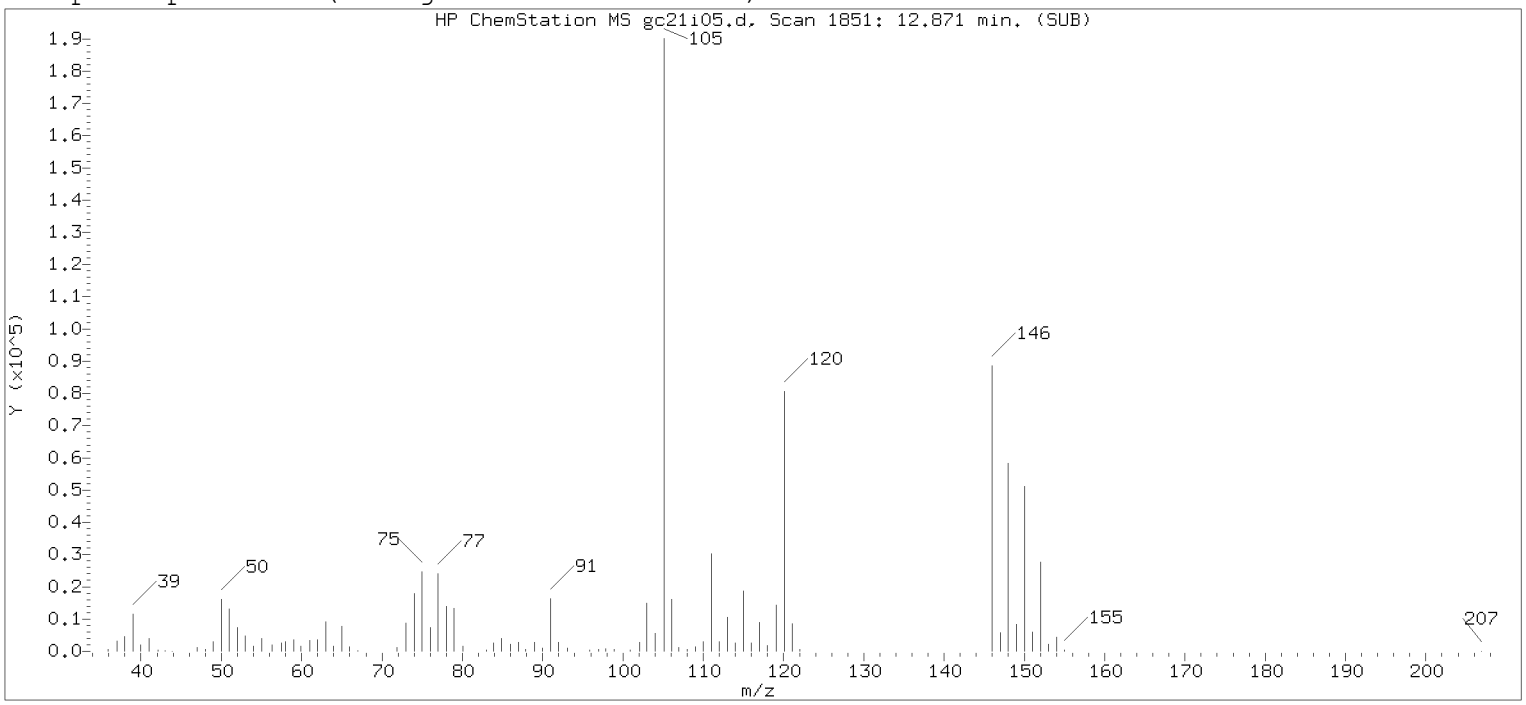
Compound Number : 135
Compound Name : 1,2,3-Trimethylbenzene
Scan Number : 1851
Retention Time (minutes): 12.871
Quant Ion : 120.00
Area (flag) : 113176M
On-Column Amount (ng) : 0.9809
Integration start scan : 1843 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

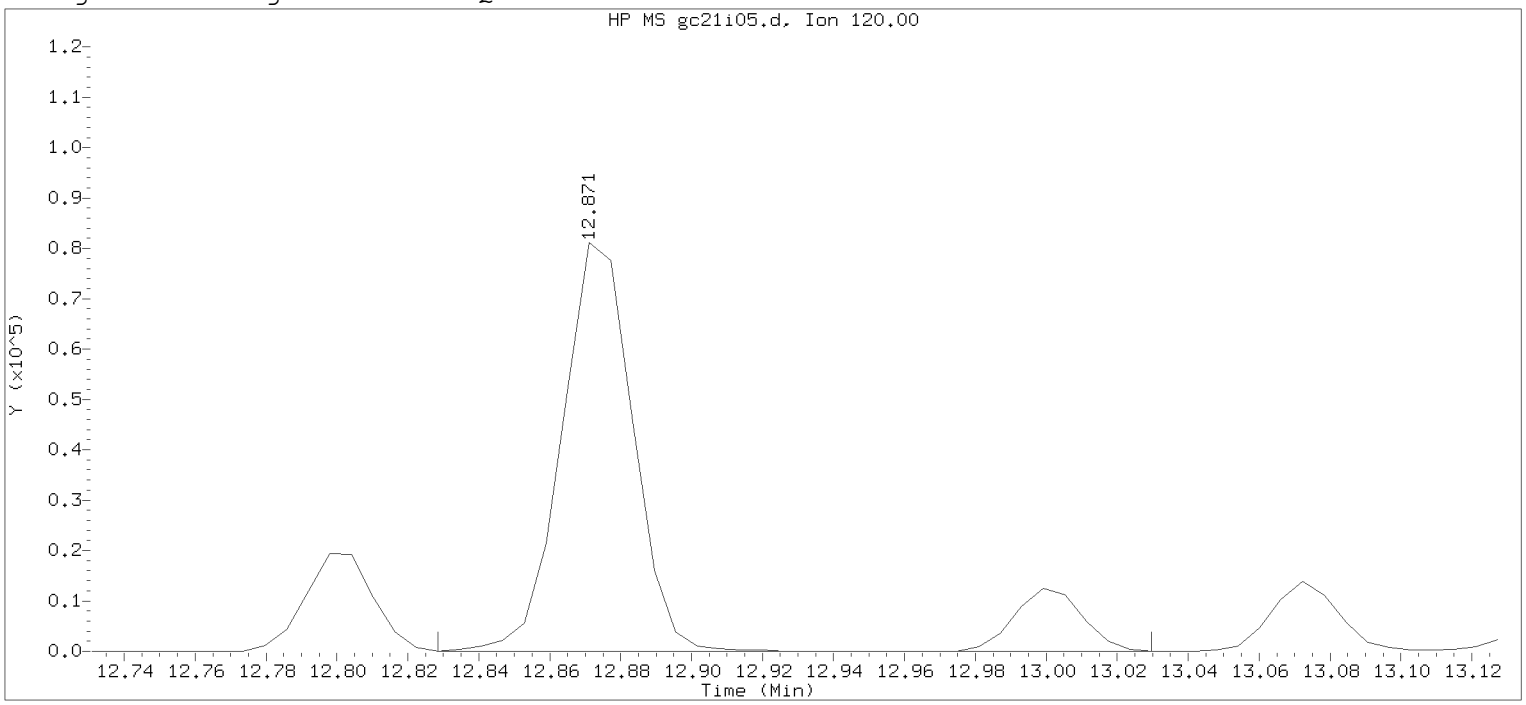
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

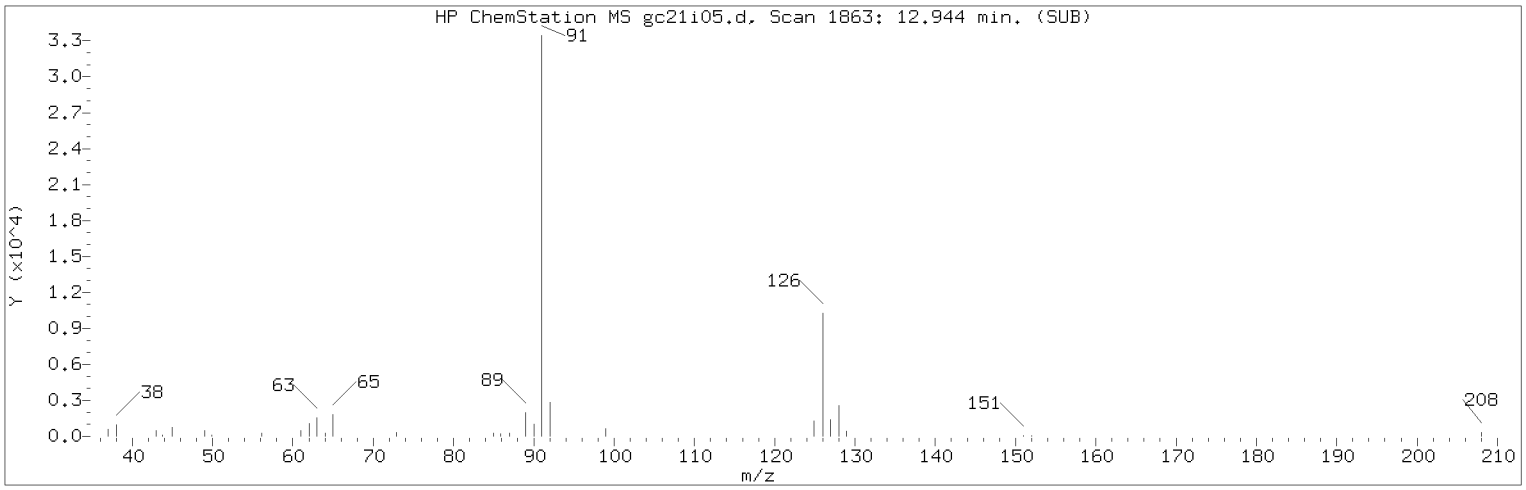
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

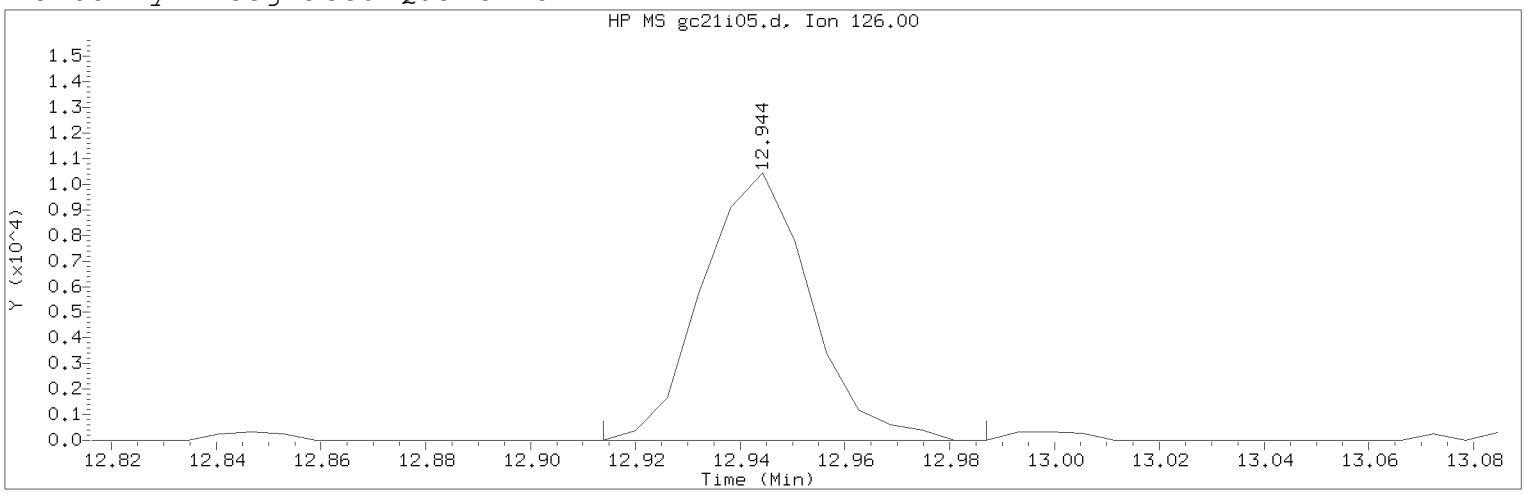
Compound Number : 135
Compound Name : 1,2,3-Trimethylbenzene
Scan Number : 1851
Retention Time (minutes): 12.871
Quant Ion : 120.00
Area : 129749
On-column Amount (ng) : 1.0932
Integration start scan : 1843 Integration stop scan: 1876
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

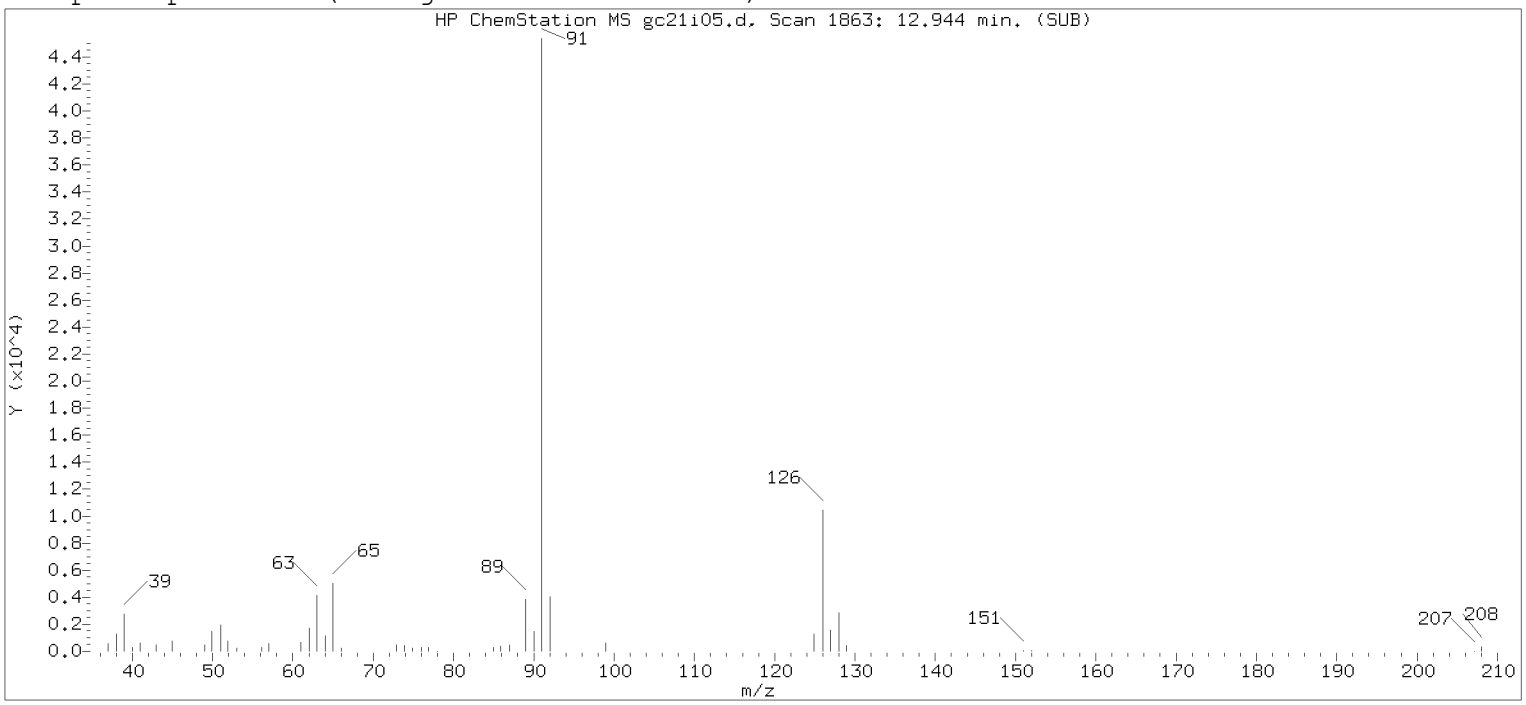
Compound Number : 136
Compound Name : Benzyl Chloride
Scan Number : 1863
Retention Time (minutes): 12.944
Quant Ion : 126.00
Area (flag) : 14873M
On-Column Amount (ng) : 0.9784
Integration start scan : 1857 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

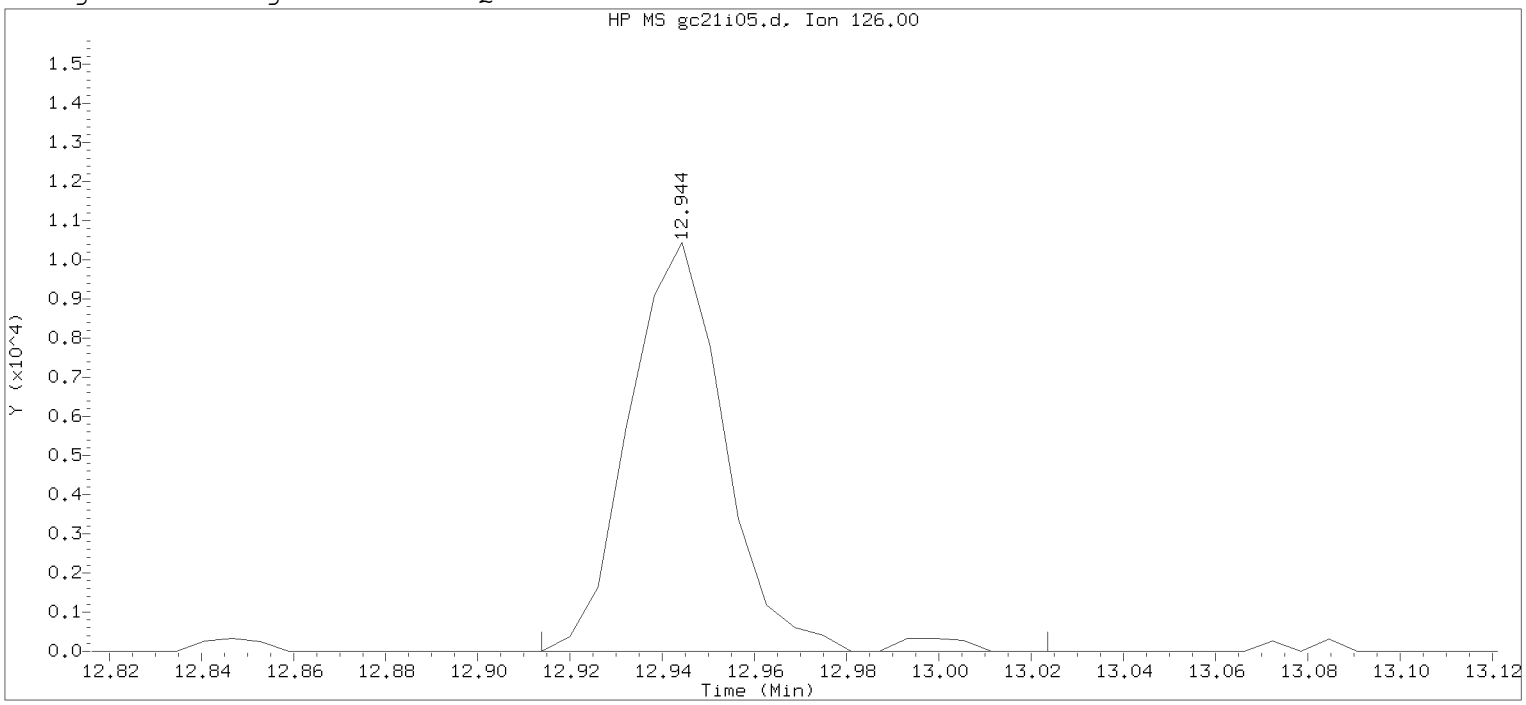
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



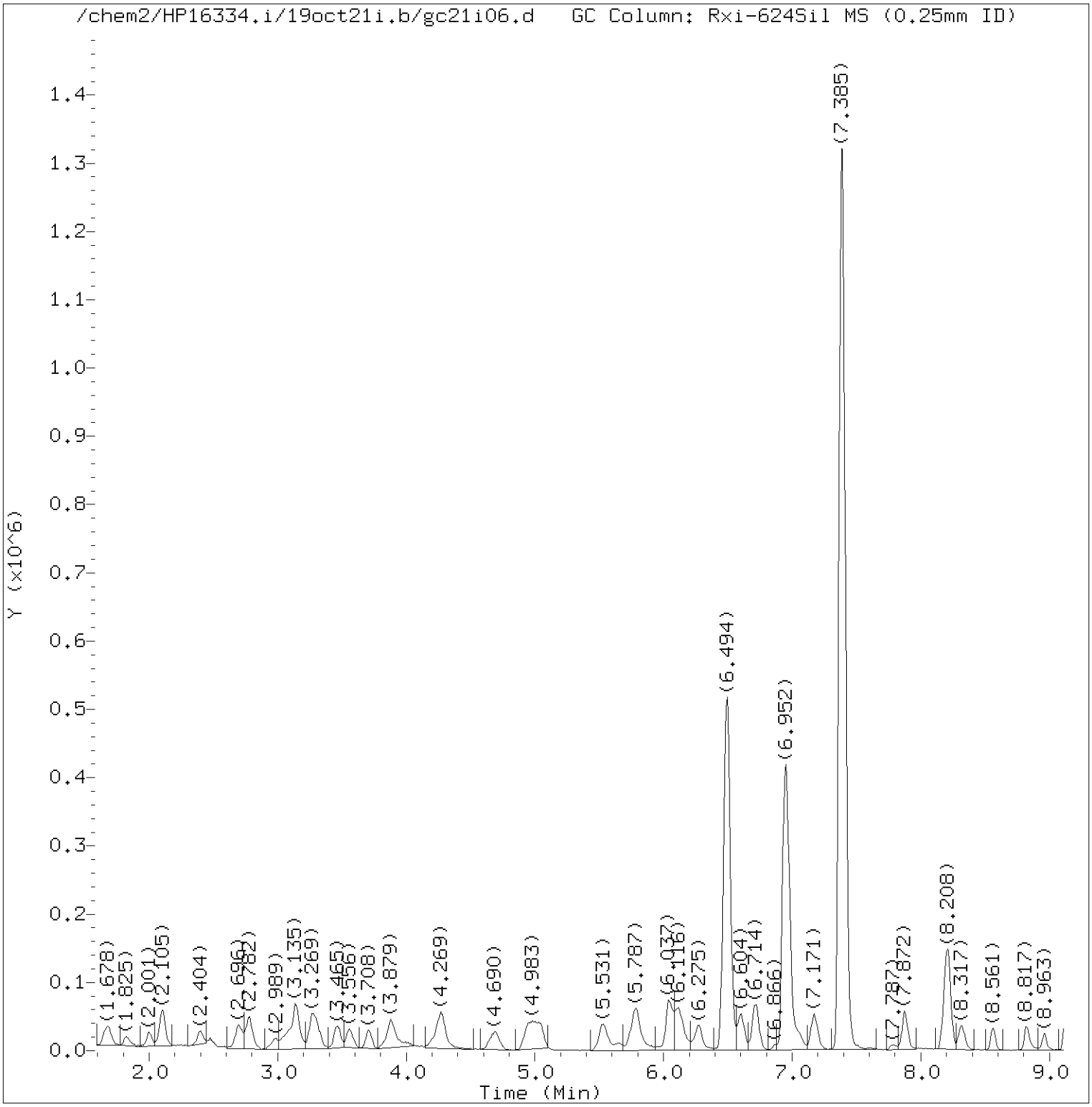
Data File: /chem2/HP16334.i/19oct21i.b/gc21i05.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:08 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number	: 136		
Compound Name	: Benzyl Chloride		
Scan Number	: 1863		
Retention Time (minutes)	: 12.944		
Quant Ion	: 126.00		
Area	: 15213		
On-column Amount (ng)	: 0.8045		
Integration start scan	: 1857	Integration stop scan:	1875
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

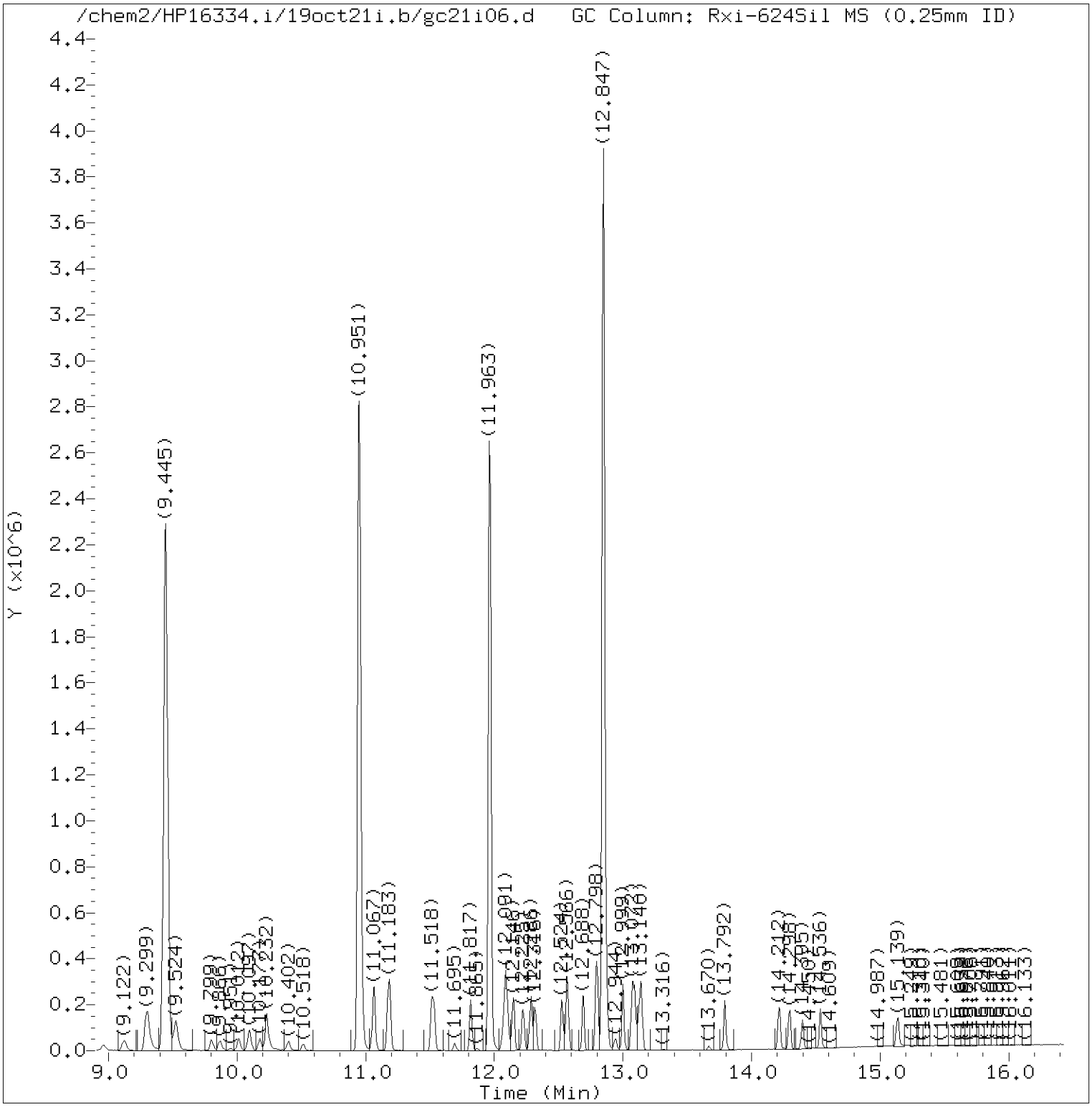
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.825	85	33384	0.472
2) Chloromethane	(2)	2.001	50	34594	0.522
6) 1,3-Butadiene	(2)	2.099	39	32609M	0.564
5) Vinyl Chloride	(2)	2.105	62	32564	0.494
7) Bromomethane	(2)	2.404	94	25291	0.508
8) Chloroethane	(2)	2.471	64	19979	0.512
9) Dichlorofluoromethane	(2)	2.696	67	46791	0.519
10) Trichlorofluoromethane	(2)	2.763	101	44900	0.508
11) Ethyl ether	(2)	2.983	59	20483	0.508
12) Freon 123a	(2)	3.050	67	30222	0.521
13) Acrolein	(1)	3.141	56	156938	24.372
15) 1,1-Dichloroethene	(2)	3.263	96	22692	0.507
16) Freon 113	(2)	3.294	101	26631	0.511
14) Acetone	(1)	3.294	43	35225	5.070
17) Methyl Iodide	(2)	3.458	142	49103	0.506
18) Carbon Disulfide	(2)	3.556	76	85724	0.520
21) Methyl Acetate	(1)	3.684	43	7451M	0.440
22) Allyl Chloride	(2)	3.702	41	33390	0.509
23) Methylene Chloride	(2)	3.879	84	27448	0.525
26)*t-Butyl Alcohol-d10	(1)	3.891	65	136968	50.000
28) t-Butyl Alcohol	(1)	3.995	59	23941M	10.014
29) Acrylonitrile	(1)	4.202	53	19202M	2.353
30) Methyl Tertiary Butyl Ether	(2)	4.251	73	68480	0.505
31) trans-1,2-Dichloroethene	(2)	4.269	96	26110	0.506
32) n-Hexane	(2)	4.684	57	35030	0.504
33) 1,1-Dichloroethane	(2)	4.934	63	45878	0.521
34) di-Isopropyl Ether	(2)	4.989	45	80982	0.507
35) 2-Chloro-1,3-Butadiene	(2)	5.056	53	41186	0.523
37) Ethyl t-butyl ether	(2)	5.531	59	84578	0.523
38) 2-Butanone	(1)	5.745	43	53732	4.054
39) cis-1,2-Dichloroethene	(2)	5.781	96	28923	0.514
41) 2,2-Dichloropropane	(2)	5.799	77	30295	0.496
42) Propionitrile	(1)	5.854	54	12838	9.116
45) Methacrylonitrile	(1)	6.043	67	71277M	4.819
40) 1,2-Dichloroethene (Total)	(2)		96	55033	1.020
47) Bromochloromethane	(2)	6.116	128	13314	0.477
48) Tetrahydrofuran	(1)	6.116	71	19522	4.663
49) Chloroform	(2)	6.275	83	45289	0.506

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
51) 1,1,1-Trichloroethane	(2)	6.494	97	40925	0.520
50)$Dibromofluoromethane	(2)	6.494	113	553146	10.052
50)$Dibromofluoromethane	(2)	6.494	111	572164	10.118
52) Cyclohexane	(2)	6.610	56	43584	0.507
52) Cyclohexane	(2)	6.604	84	40834	0.511
52) Cyclohexane	(2)	6.604	69	13377	0.491
54) Carbon Tetrachloride	(2)	6.714	117	36050	0.509
55) 1,1-Dichloropropene	(2)	6.720	75	37836	0.533
56) Isobutyl Alcohol	(1)	6.872	41	17500	23.848
57)$1,2-Dichloroethane-d4	(2)	6.952	102	111413	9.998
57)$1,2-Dichloroethane-d4	(2)	6.946	65	520438	10.193
57)$1,2-Dichloroethane-d4	(2)	6.946	104	63983	9.164
58) Benzene	(2)	6.982	78	106836	0.521
59) 1,2-Dichloroethane	(2)	7.049	62	29950	0.517
59) 1,2-Dichloroethane	(2)	7.049	98	2722	0.531
60) t-Amyl methyl ether	(2)	7.171	73	75954	0.510
63)*Fluorobenzene	(2)	7.391	96	2176593	10.000
62) n-Heptane	(2)	7.397	43	39297	0.542
65) n-Butanol	(1)	7.769	56	24002M	55.275
67) Trichloroethene	(2)	7.872	95	28176	0.512
69) Methylcyclohexane	(2)	8.183	83	45762	0.496
70) 1,2-Dichloropropane	(2)	8.214	63	25915	0.508
71) Methyl Methacrylate	(1)	8.299	69	13855	0.462
73) Dibromomethane	(2)	8.323	93	13495	0.495
72) 1,4-Dioxane	(1)	8.323	88	2988M	15.381
72) 1,4-Dioxane	(1)	8.317	58	1019M	9.490
74) Bromodichloromethane	(2)	8.561	83	32439	0.493
76) 2-Nitropropane	(1)	8.817	41	39229	4.736
80) cis-1,3-Dichloropropene	(2)	9.122	75	37059	0.474
81) 4-Methyl-2-Pentanone	(1)	9.299	43	184728	4.820
82)$Toluene-d8	(3)	9.445	98	2141274	10.032
82)$Toluene-d8	(3)	9.445	100	1367006	9.899
83) Toluene	(3)	9.524	92	68255	0.515
84) trans-1,3-Dichloropropene	(3)	9.799	75	31096	0.474
86) Ethyl Methacrylate	(3)	9.866	69	30658	0.482
88) 1,1,2-Trichloroethane	(3)	10.018	97	19924	0.503
89) Tetrachloroethene	(3)	10.097	166	32200	0.508
85) 1,3-Dichloropropene (total)	(3)		75	68155	0.948

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	33905	0.498
91) 2-Hexanone	(1)	10.232	43	140859	4.982
93) Dibromochloromethane	(3)	10.402	129	23980	0.472
95) 1,2-Dibromoethane	(3)	10.518	107	19736	0.491
97)*Chlorobenzene-d5	(3)	10.951	117	1664260A	10.000
96) 1-Chlorohexane	(3)	10.963	91	42160A	0.532
98) Chlorobenzene	(3)	10.975	112	79750	0.514
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	26833	0.483
100) Ethylbenzene	(3)	11.067	91	134065MA	0.516
101) m+p-Xylene	(3)	11.183	106	101822	1.009
104) o-Xylene	(3)	11.512	106	51848	0.519
106) Styrene	(3)	11.530	104	84076	0.501
107) Bromoform	(3)	11.695	173	14452	0.461
105) Xylene (Total)	(3)		106	153670	1.528
108) Isopropylbenzene	(3)	11.817	105	133761M	0.515
111)$4-Bromofluorobenzene	(3)	11.963	95	797161	9.993
111)$4-Bromofluorobenzene	(3)	11.963	174	719989	9.969
113) 1,1,2,2-Tetrachloroethane	(4)	12.067	83	25819	0.495
114) Bromobenzene	(4)	12.079	156	33874	0.496
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	59372	4.594
116) 1,2,3-Trichloropropane	(4)	12.109	110	7305	0.516
117) n-Propylbenzene	(4)	12.146	91	159539	0.521
119) 2-Chlorotoluene	(4)	12.225	126	33424	0.516
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	114335	0.516
122) 4-Chlorotoluene	(4)	12.316	126	35479	0.522
125) tert-Butylbenzene	(4)	12.530	134	26474M	0.536
126) Pentachloroethane	(4)	12.560	167	20594	0.451
127) 1,2,4-Trimethylbenzene	(4)	12.573	105	119715	0.514
128) sec-Butylbenzene	(4)	12.688	105	150328	0.518
131) 1,3-Dichlorobenzene	(4)	12.792	146	70057	0.516
132) p-Isopropyltoluene	(4)	12.804	119	130160	0.518
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	930830	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	73234	0.527
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	54784	0.503
136) Benzyl Chloride	(4)	12.944	126	6353	0.589
138) n-Butylbenzene	(4)	13.091	92	65992	0.516
139) 1,2-Dichlorobenzene	(4)	13.121	146	64669	0.510
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	3885	0.476

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

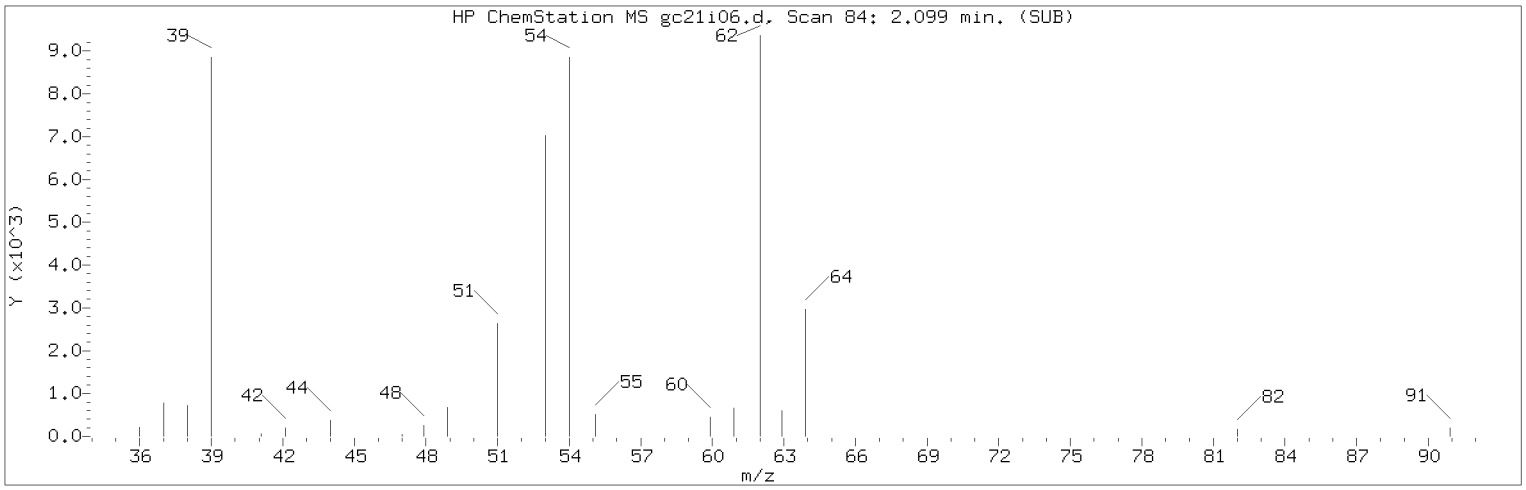
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

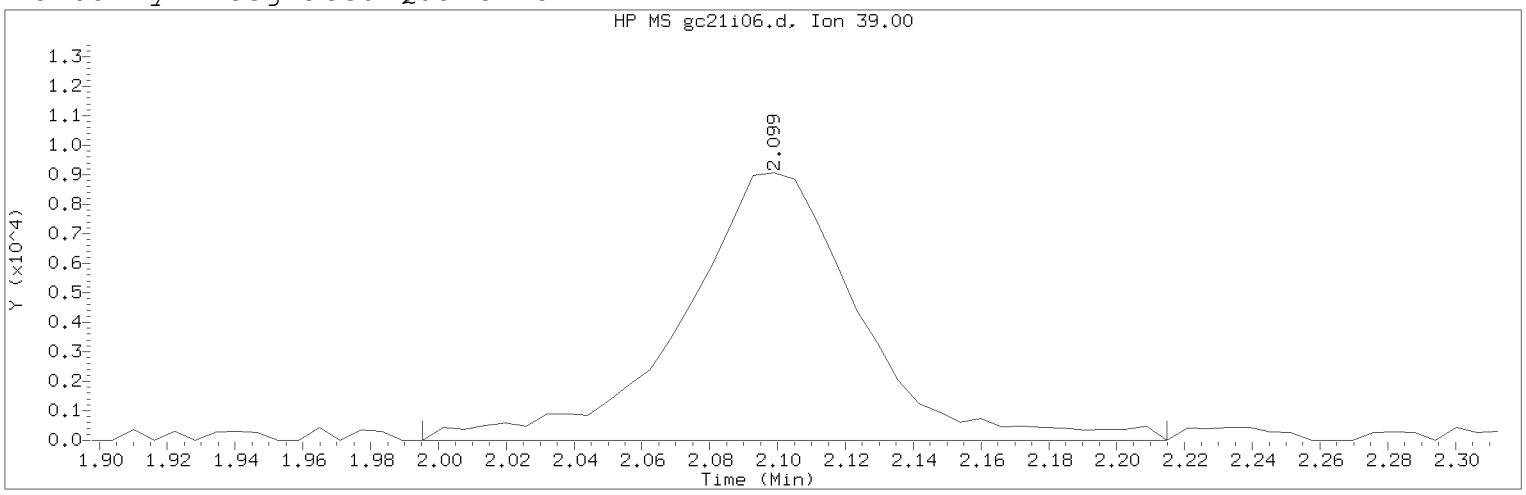
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	60106	0.521
145) 1,2,4-Trichlorobenzene	(4)	14.219	180	56567	0.528
146) Hexachlorobutadiene	(4)	14.298	225	29318	0.540
147) Naphthalene	(4)	14.395	128	92189	0.514
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	49346	0.526

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

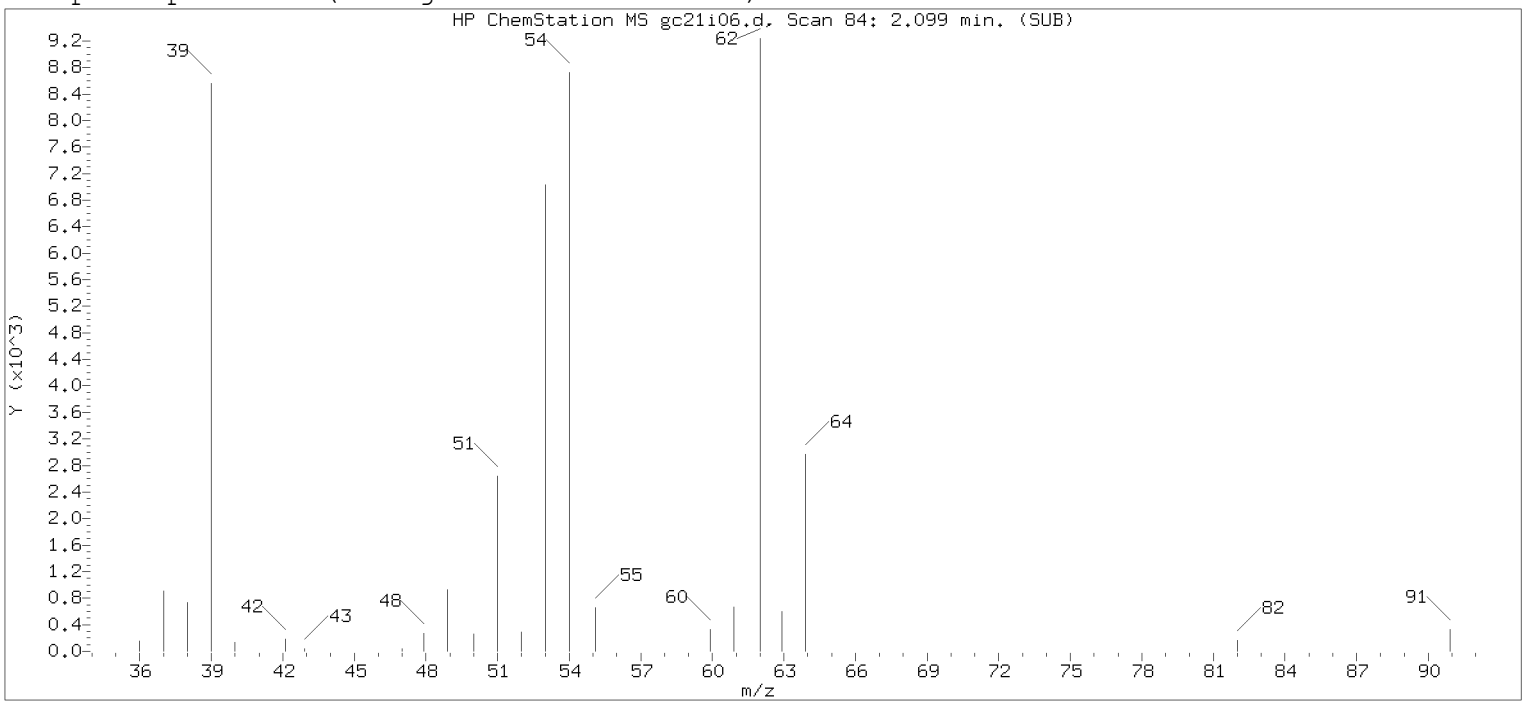
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 84
Retention Time (minutes): 2.099
Quant Ion : 39.00
Area (flag) : 32609M
On-Column Amount (ng) : 0.5639
Integration start scan : 66 Integration stop scan: 102
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

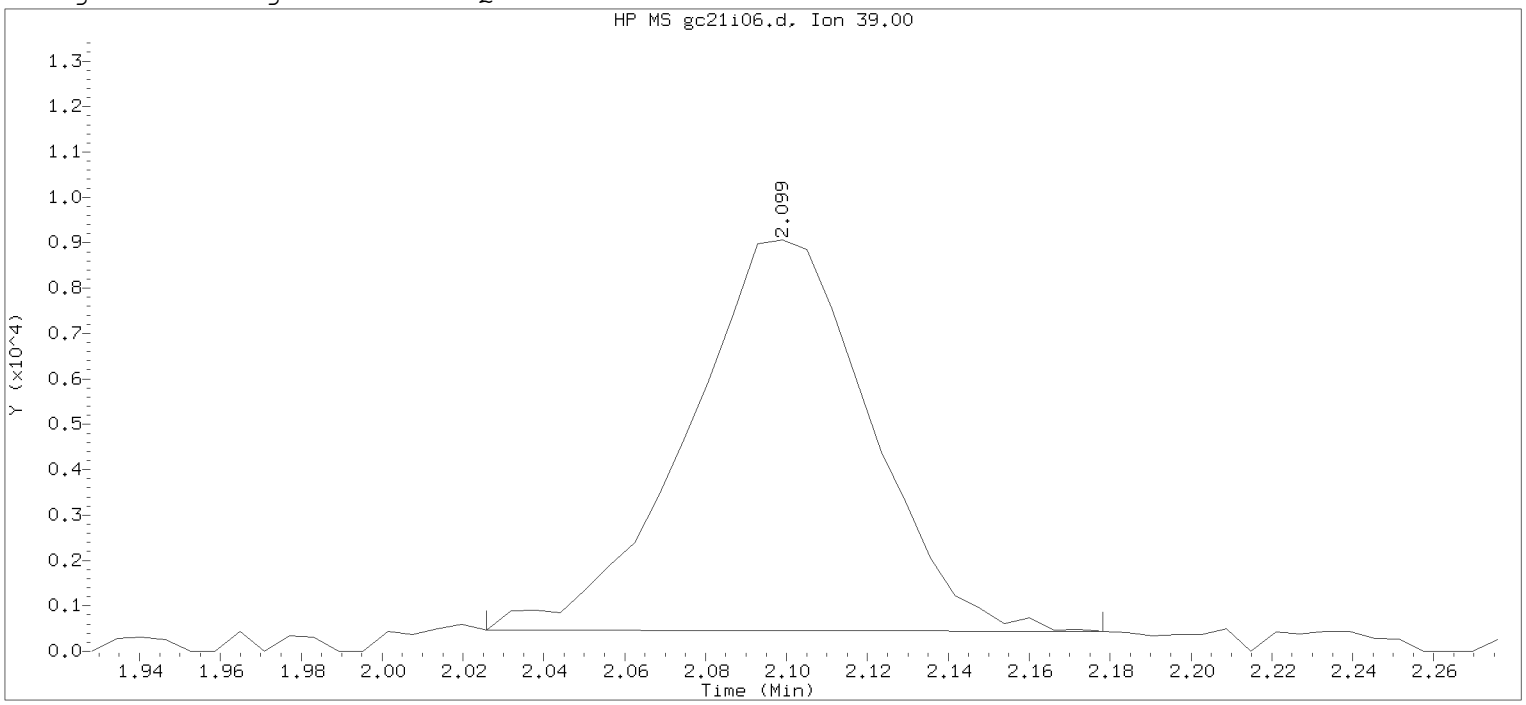
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

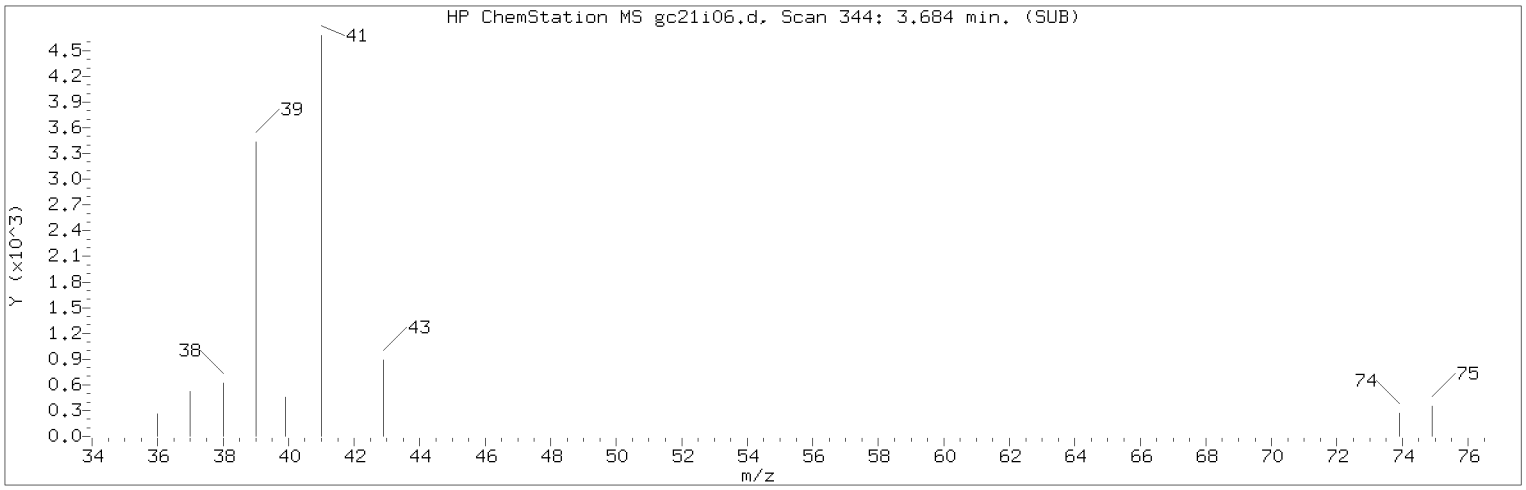
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

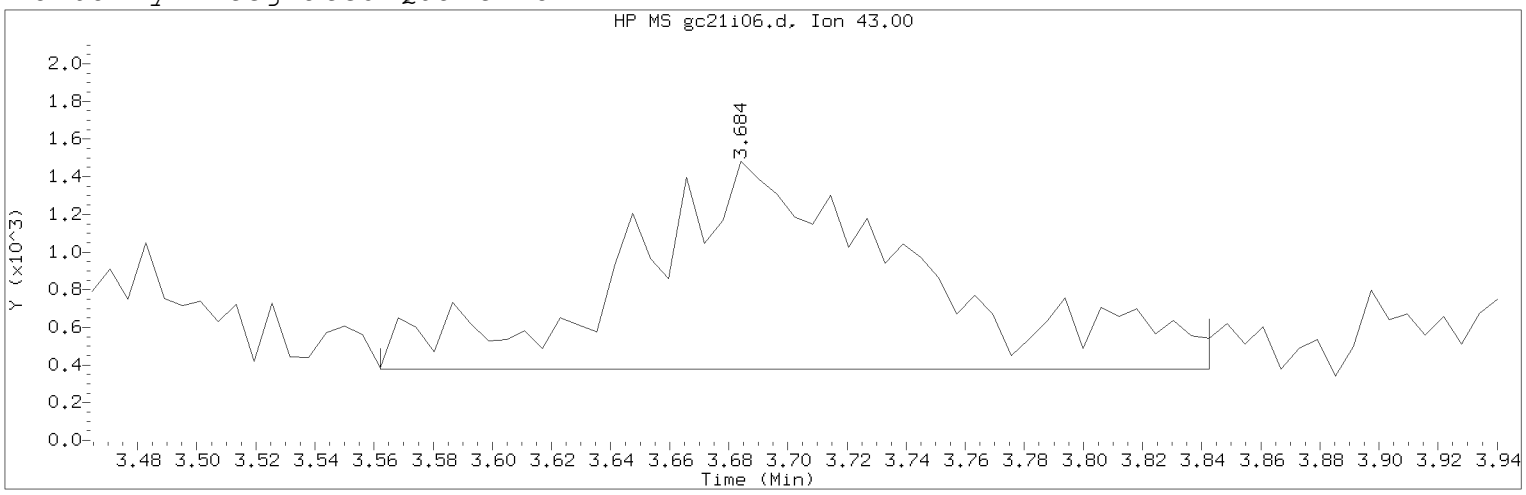
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 84
Retention Time (minutes): 2.099
Quant Ion : 39.00
Area : 26874
On-column Amount (ng) : 0.5066
Integration start scan : 71 Integration stop scan: 96
Y at integration start : 471 Y at integration end: 438

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

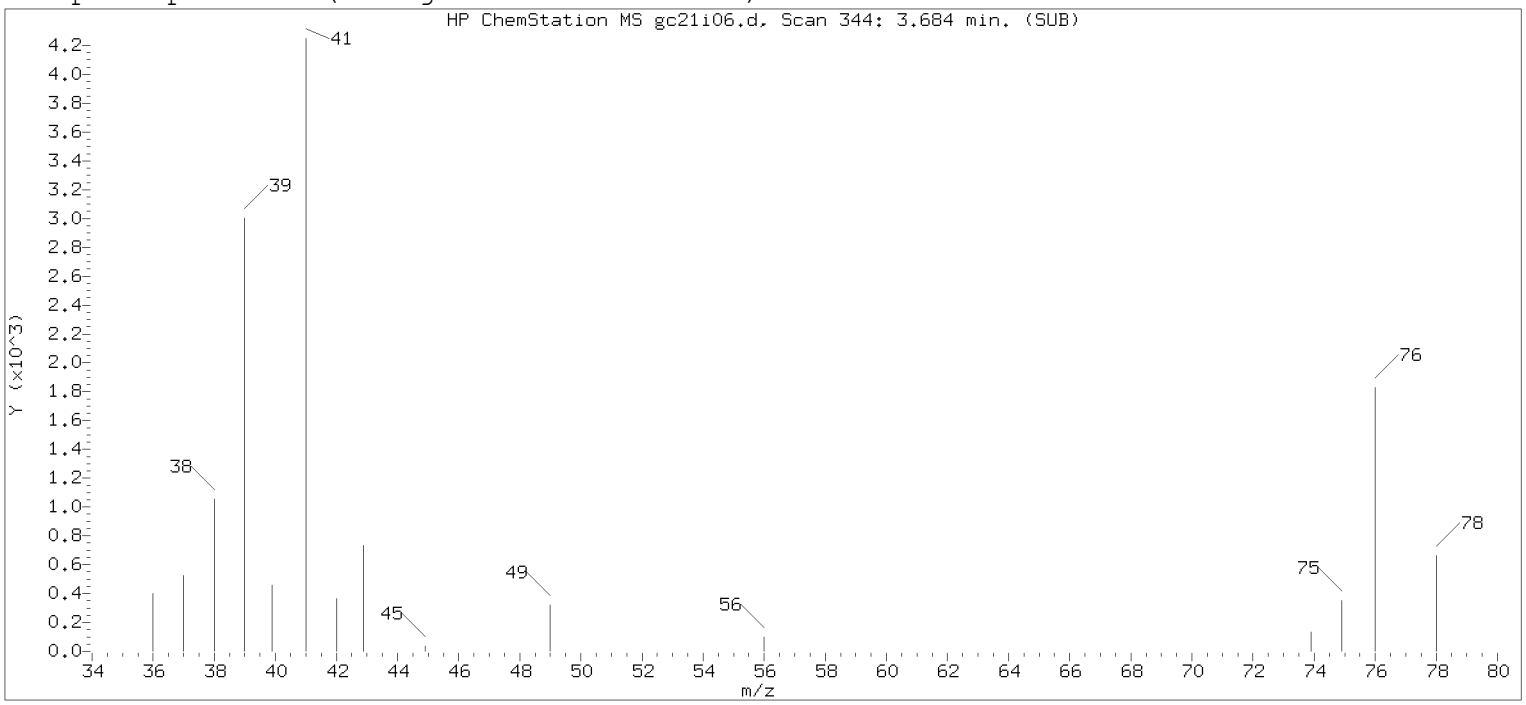
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 344
Retention Time (minutes): 3.684
Quant Ion : 43.00
Area (flag) : 7451M
On-Column Amount (ng) : 0.4402
Integration start scan : 323 Integration stop scan: 369
Y at integration start : 379 Y at integration end: 379

Reason for manual integration: improper integration

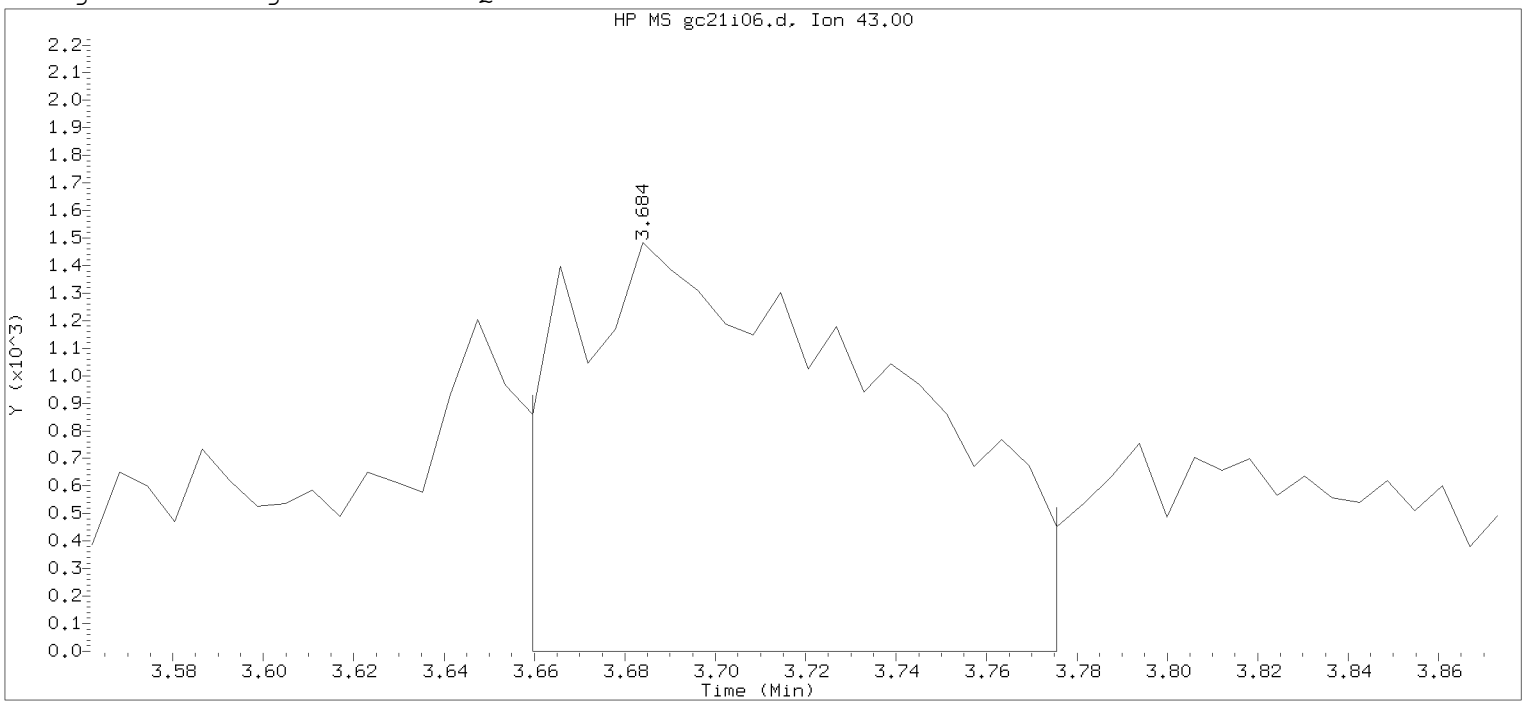
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

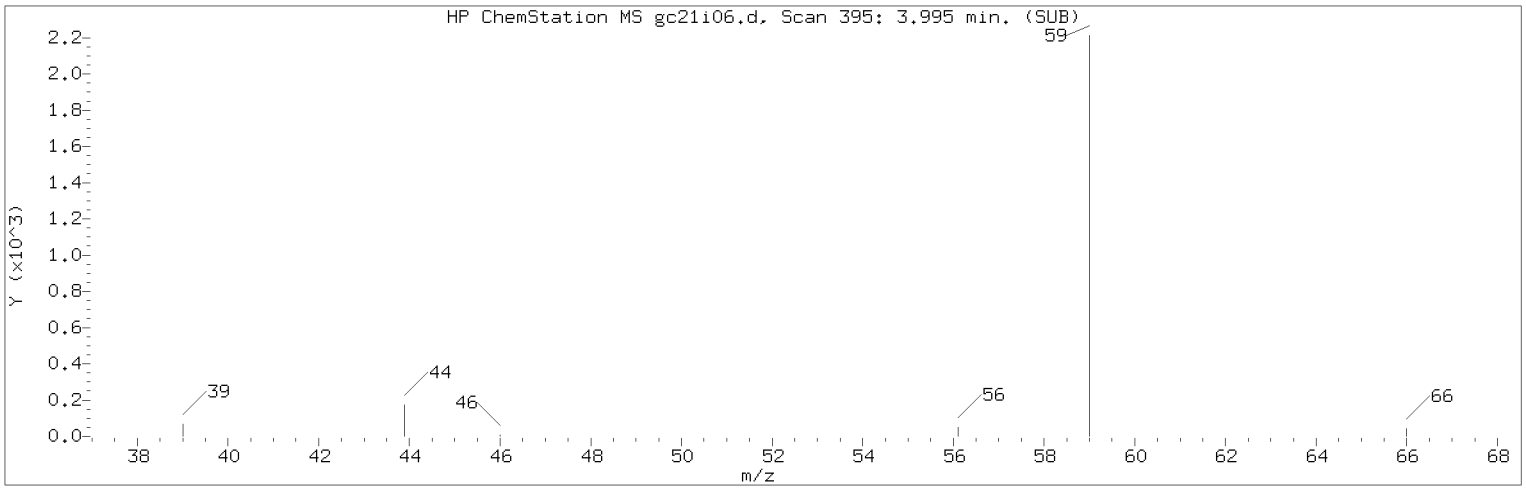
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

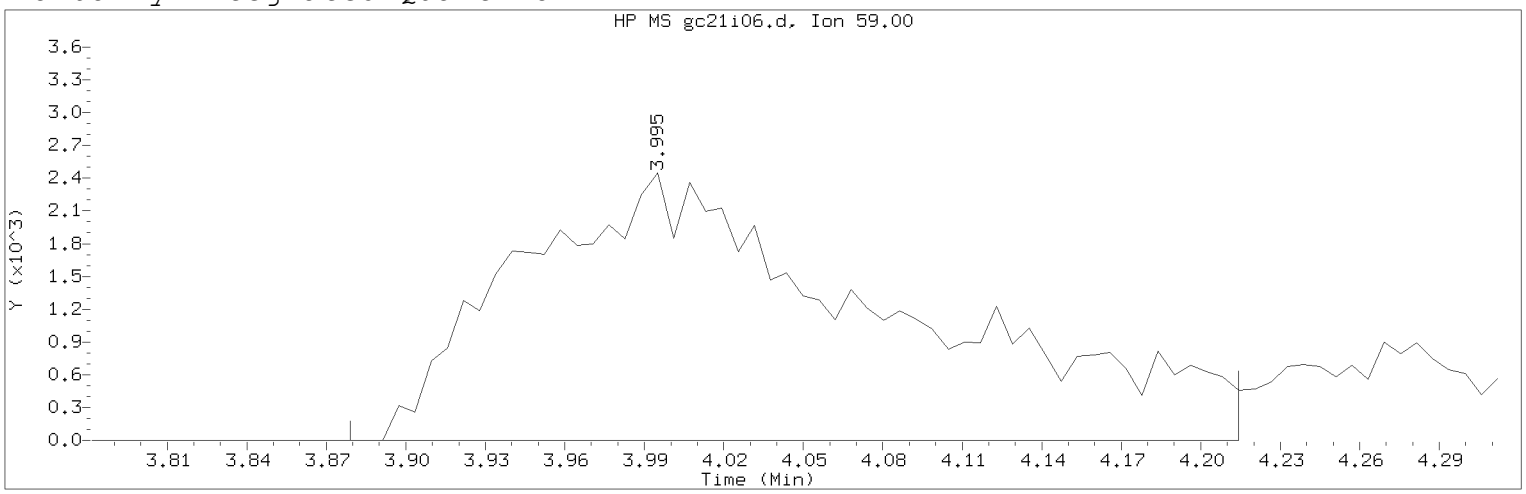
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 344
Retention Time (minutes): 3.684
Quant Ion : 43.00
Area : 7395
On-column Amount (ng) : 0.3553
Integration start scan : 339 Integration stop scan: 358
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

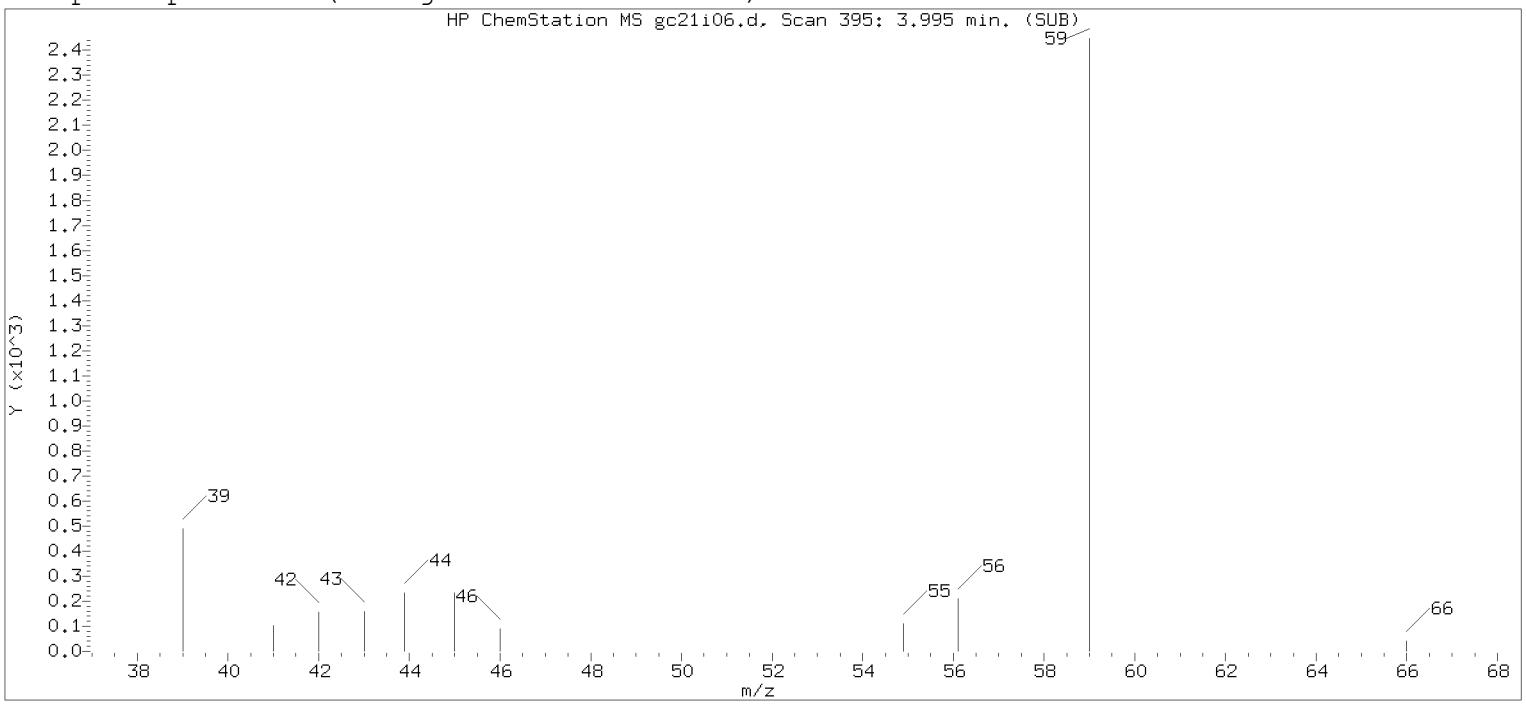
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 395
Retention Time (minutes): 3.995
Quant Ion : 59.00
Area (flag) : 23941M
On-Column Amount (ng) : 10.0142
Integration start scan : 375 Integration stop scan: 430
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

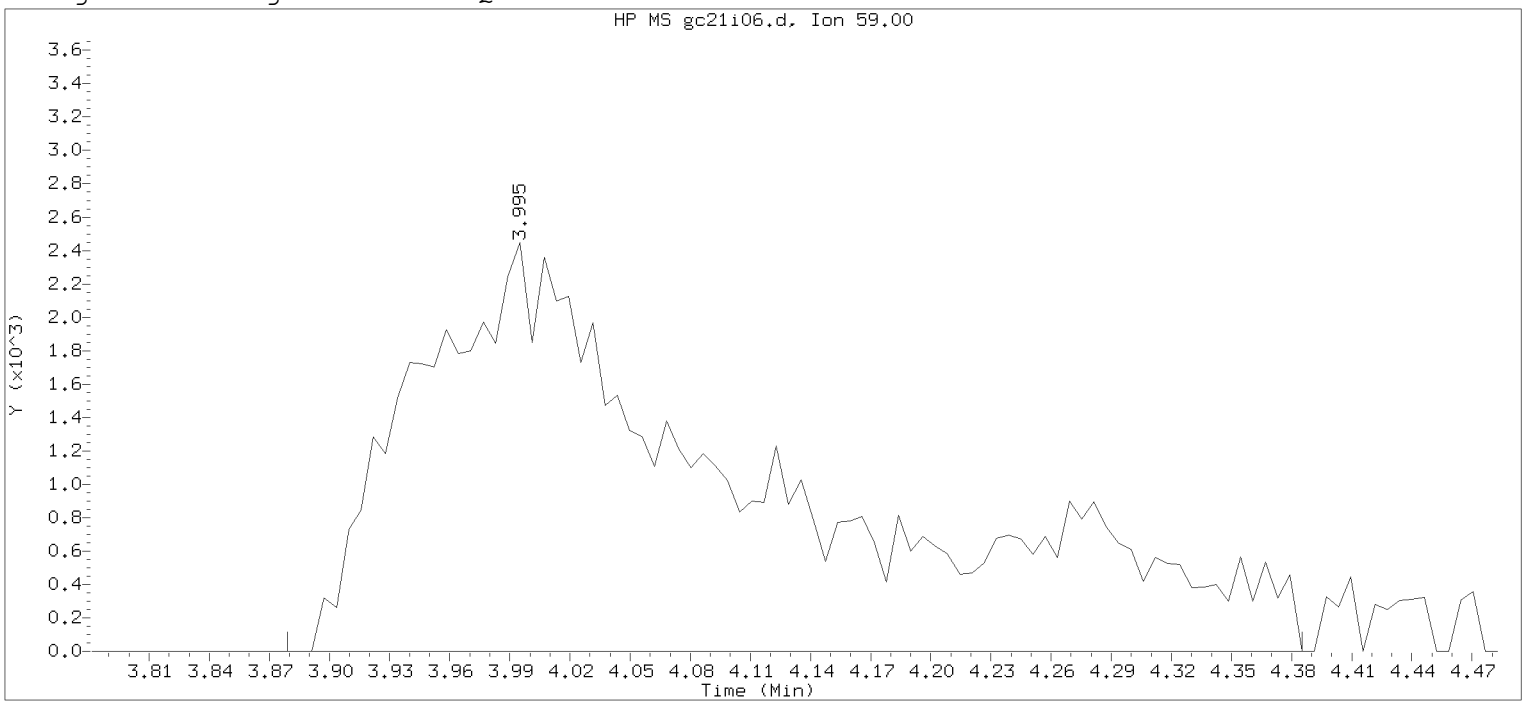
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

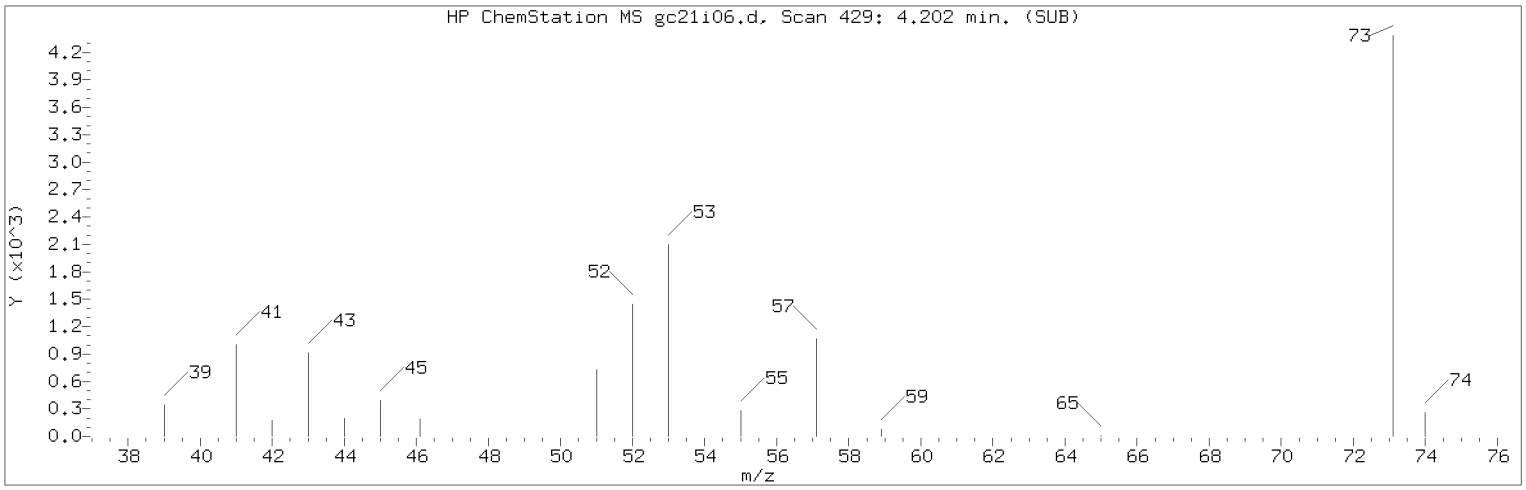
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

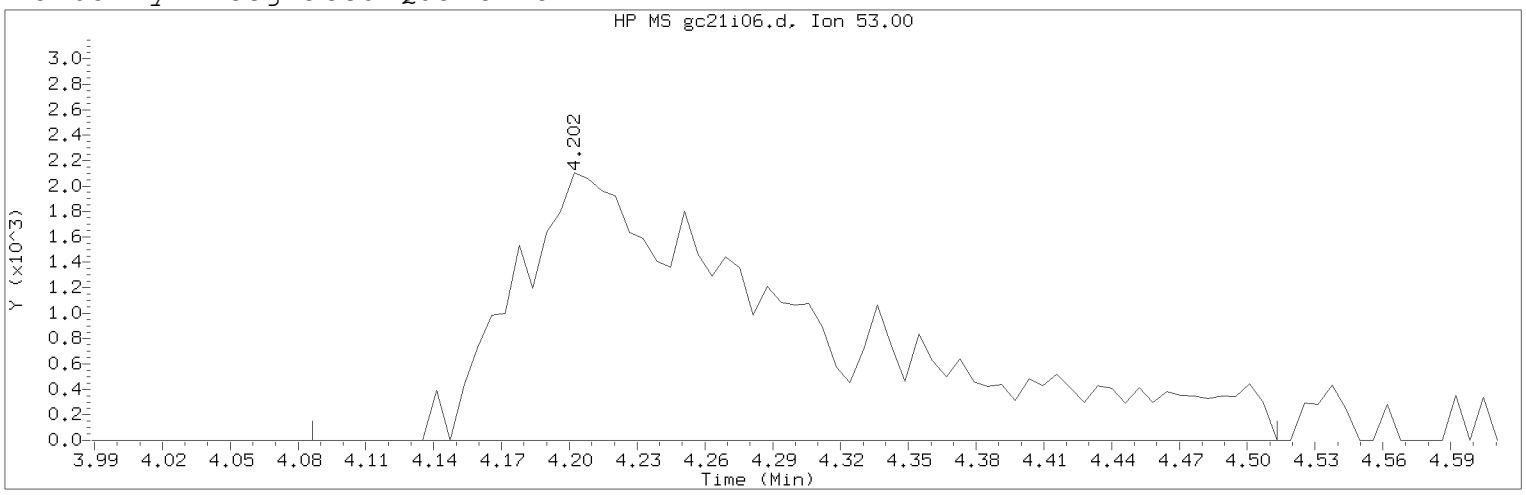
Compound Number	: 28		
Compound Name	: t-Butyl Alcohol		
Scan Number	: 395		
Retention Time (minutes)	: 3.995		
Quant Ion	: 59.00		
Area	: 29476		
On-column Amount (ng)	: 10.9981		
Integration start scan	: 375	Integration stop scan:	458
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

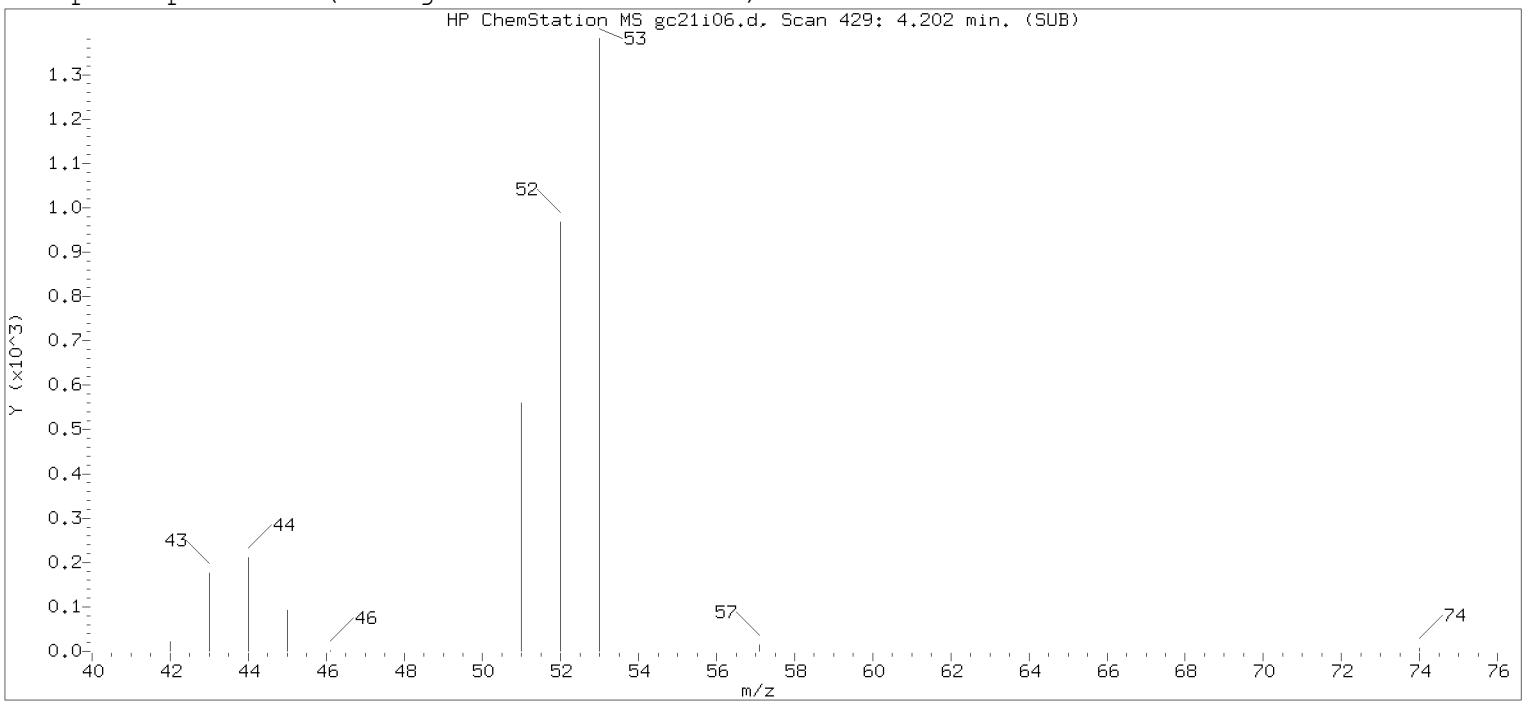
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 53.00
Area (flag) : 19202M
On-Column Amount (ng) : 2.3534
Integration start scan : 409 Integration stop scan: 479
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

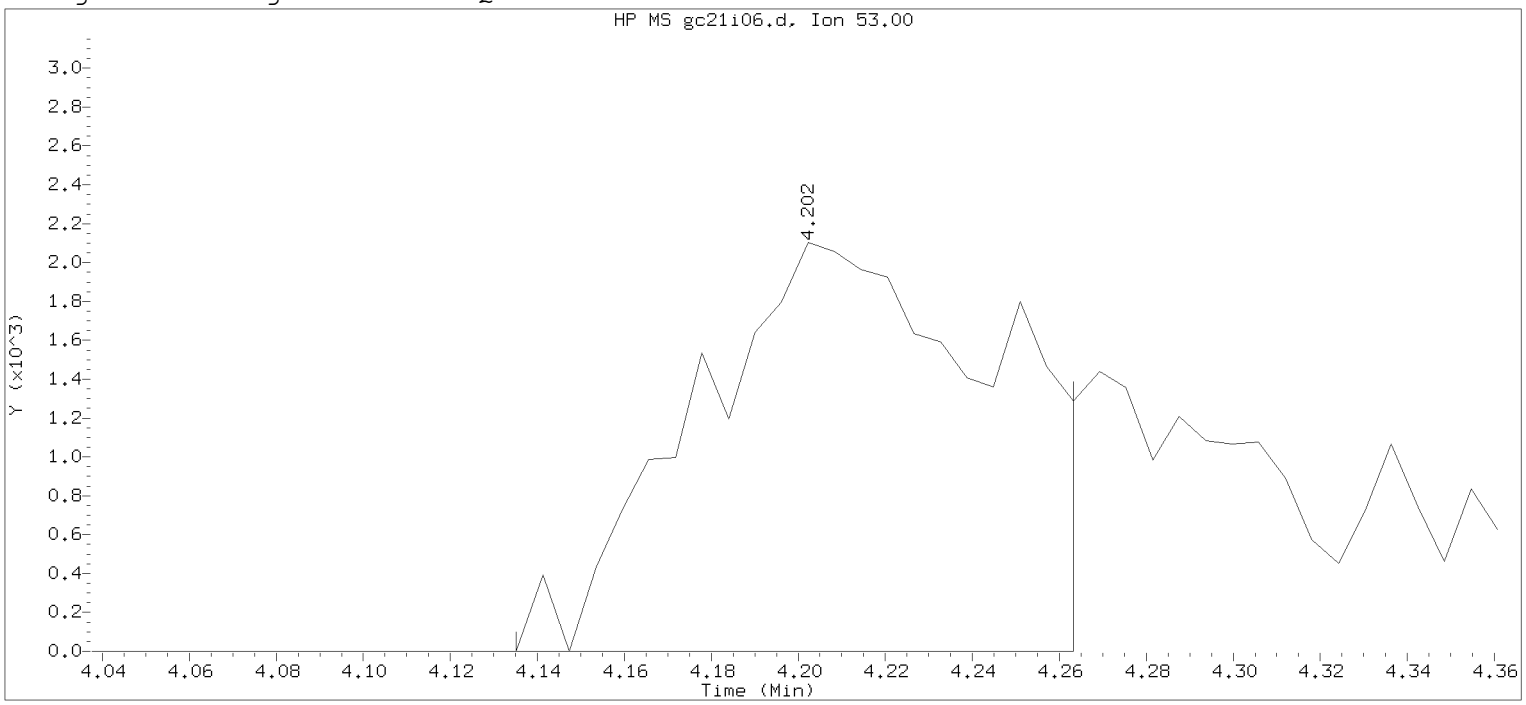
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

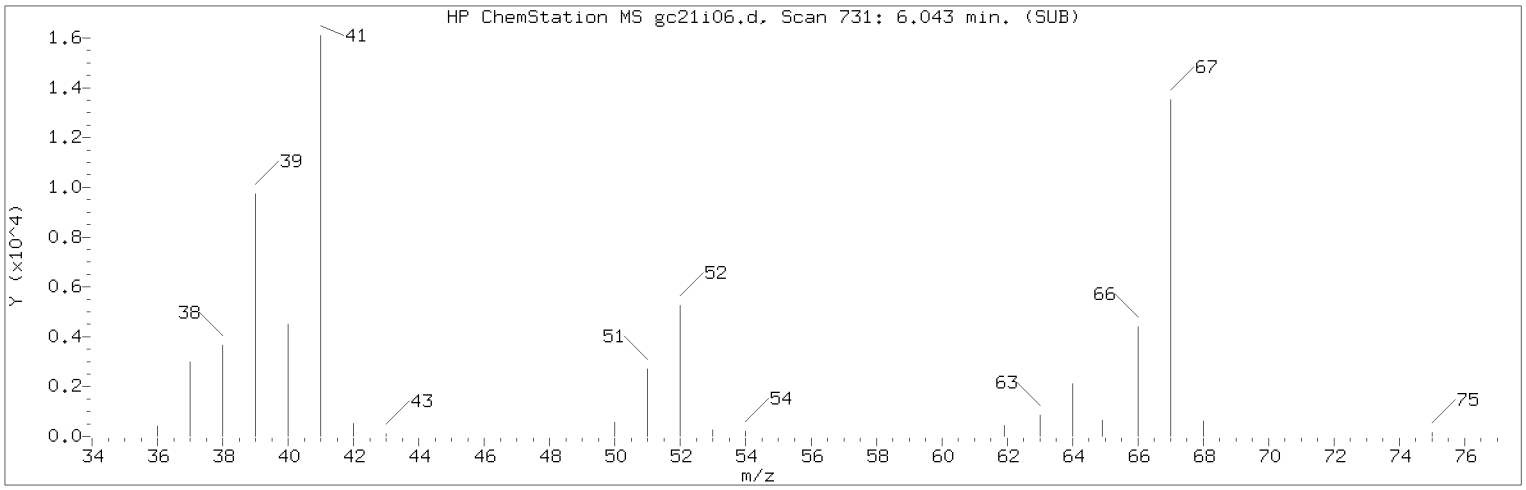
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

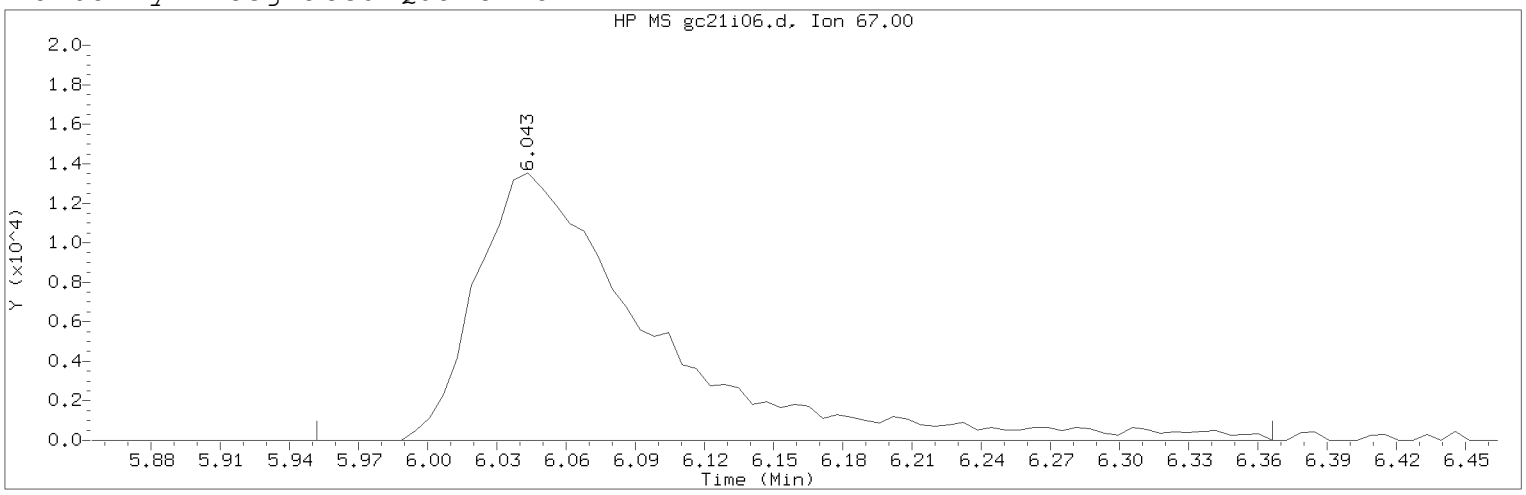
Compound Number : 29
Compound Name : Acrylonitrile
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 53.00
Area : 10114
On-column Amount (ng) : 1.2010
Integration start scan : 417 Integration stop scan: 438
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

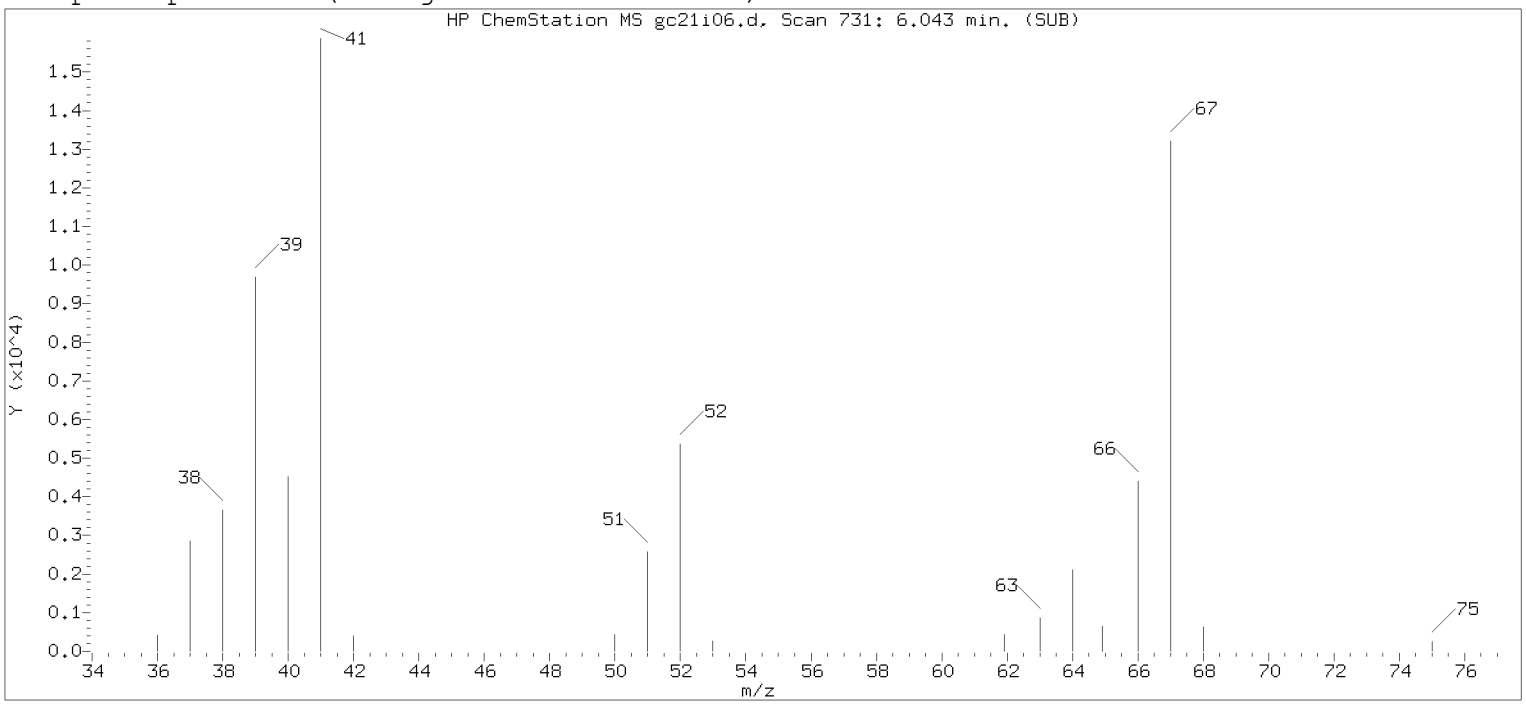
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 731
Retention Time (minutes): 6.043
Quant Ion : 67.00
Area (flag) : 71277M
On-Column Amount (ng) : 4.8189
Integration start scan : 715 Integration stop scan: 783
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

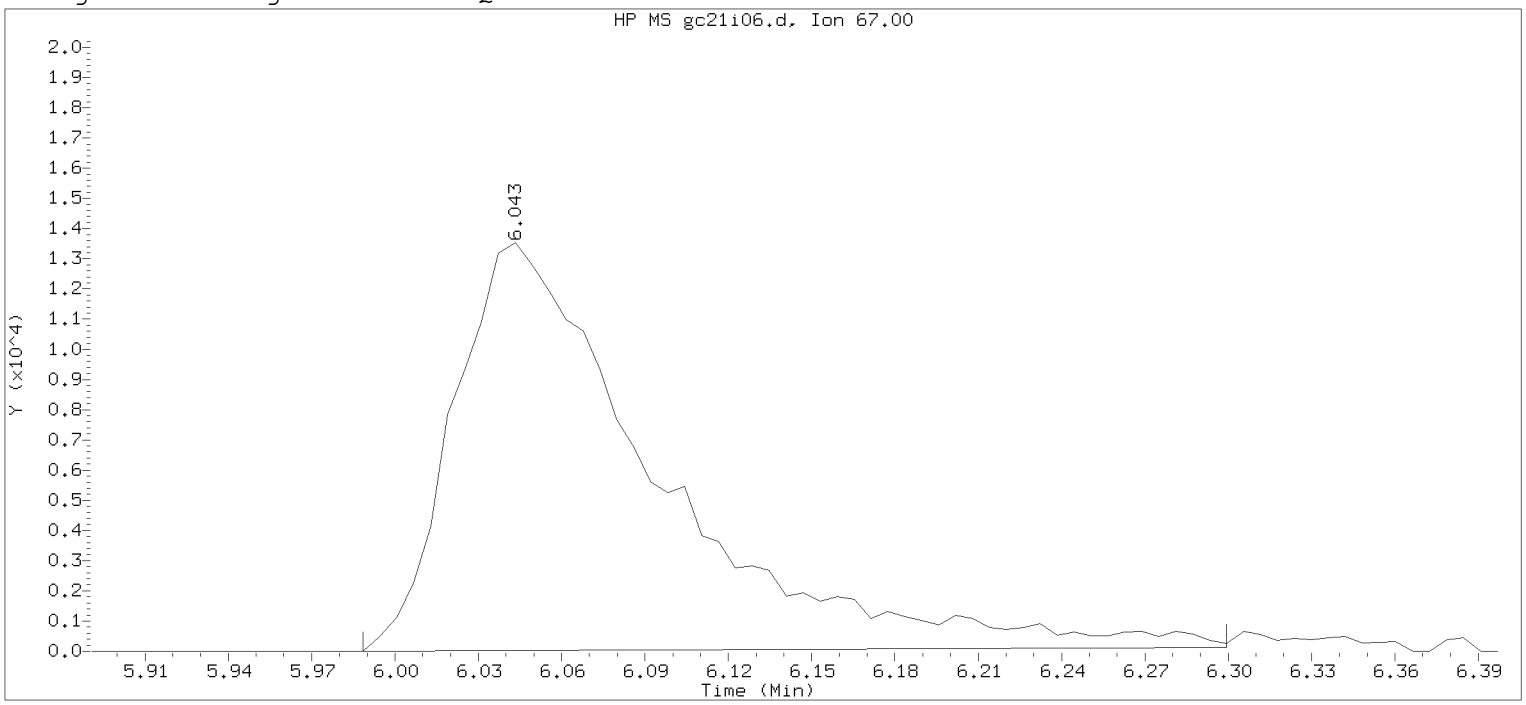
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

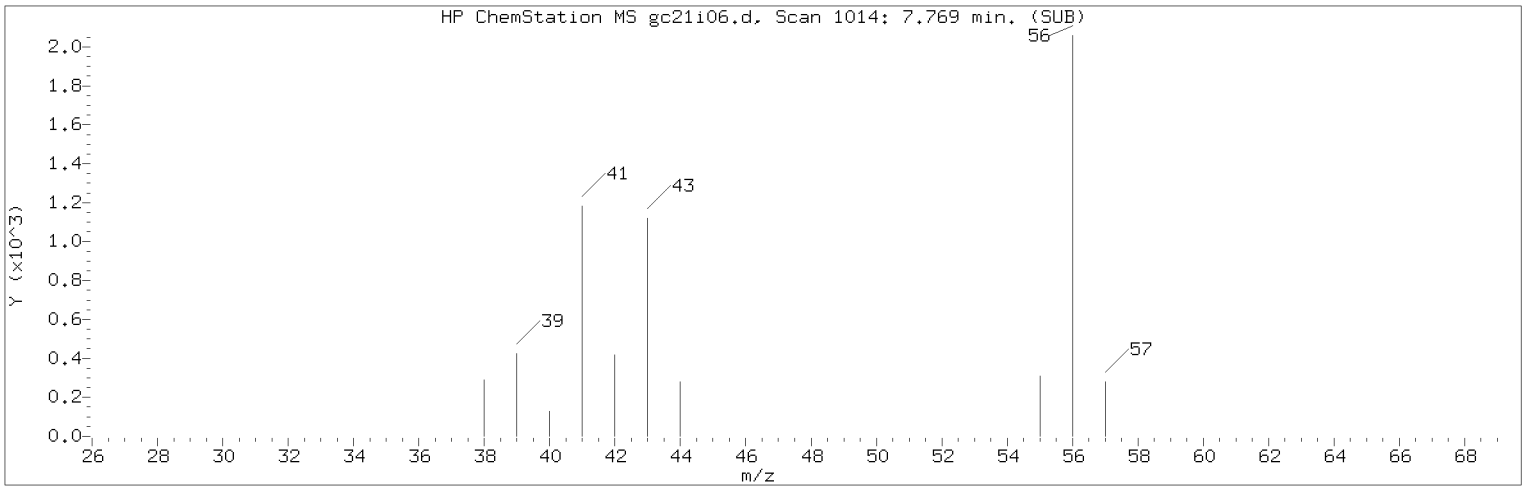
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

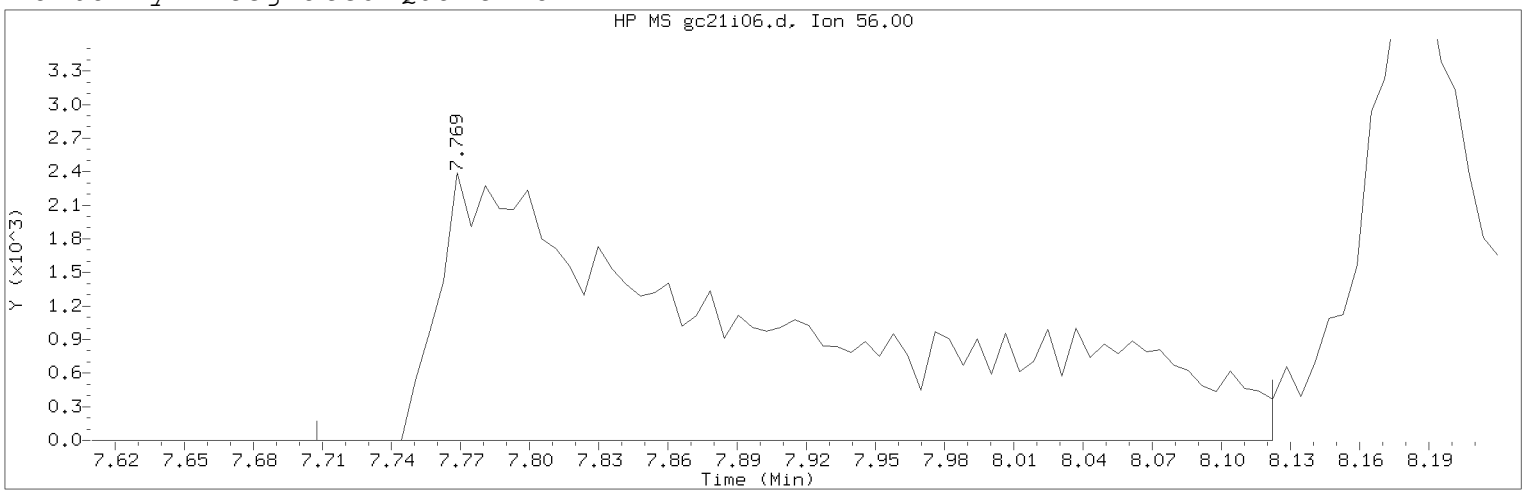
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 731
Retention Time (minutes): 6.043
Quant Ion : 67.00
Area : 68511
On-column Amount (ng) : 4.7048
Integration start scan : 721 Integration stop scan: 772
Y at integration start : 0 Y at integration end: 126

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

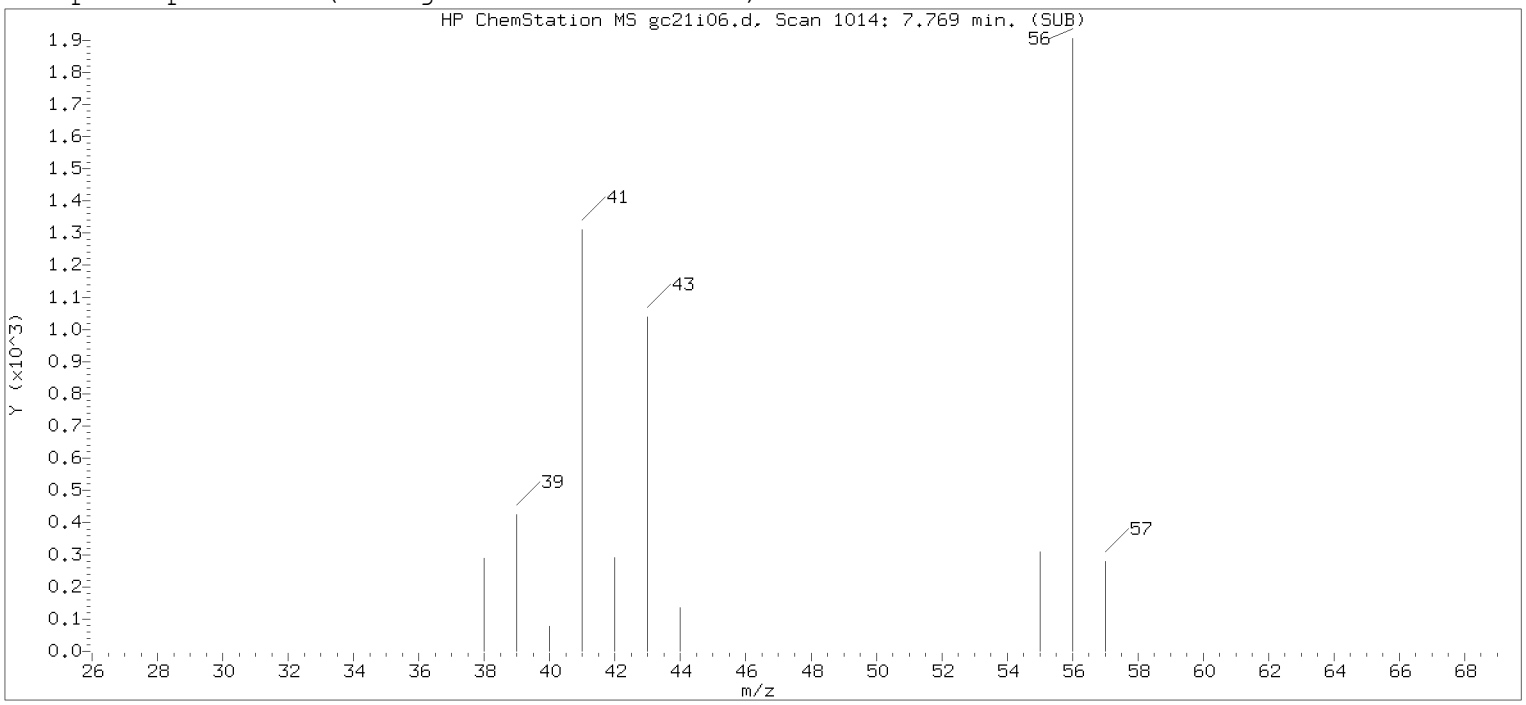
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1014
Retention Time (minutes): 7.769
Quant Ion : 56.00
Area (flag) : 24002M
On-Column Amount (ng) : 55.2748
Integration start scan : 1003 Integration stop scan: 1071
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

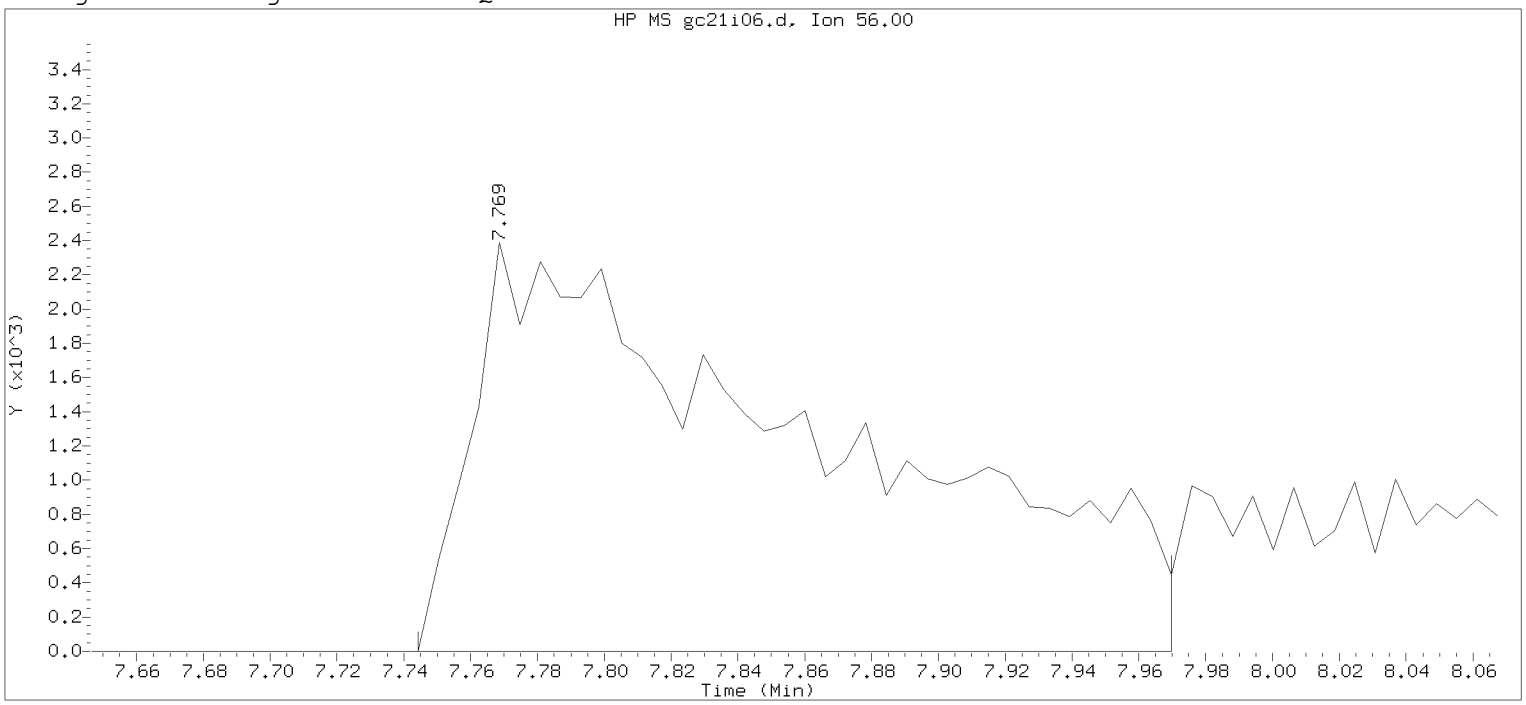
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

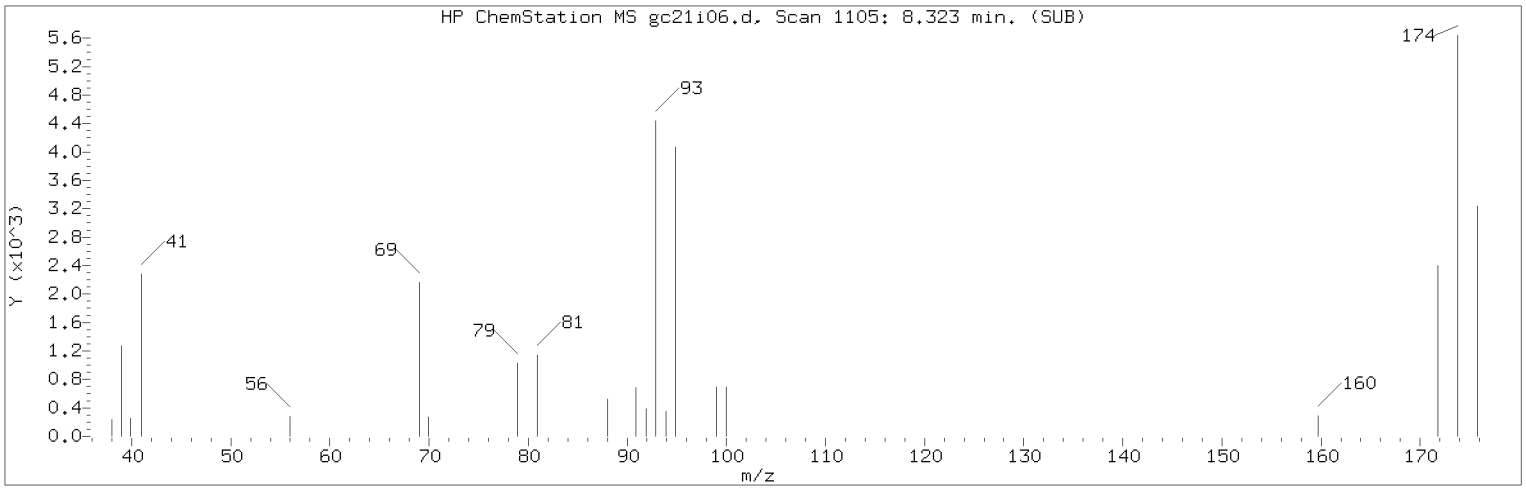
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

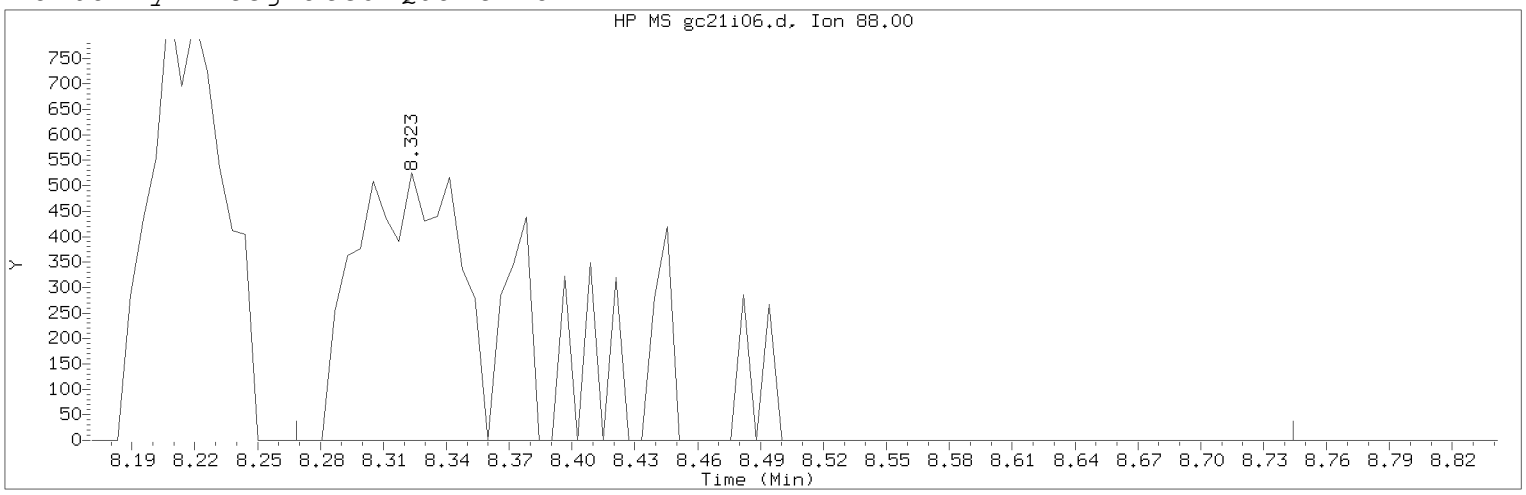
Compound Number	: 65		
Compound Name	: n-Butanol		
Scan Number	: 1014		
Retention Time (minutes)	: 7.769		
Quant Ion	: 56.00		
Area	: 17390		
On-column Amount (ng)	: 27.3759		
Integration start scan	: 1009	Integration stop scan:	1046
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

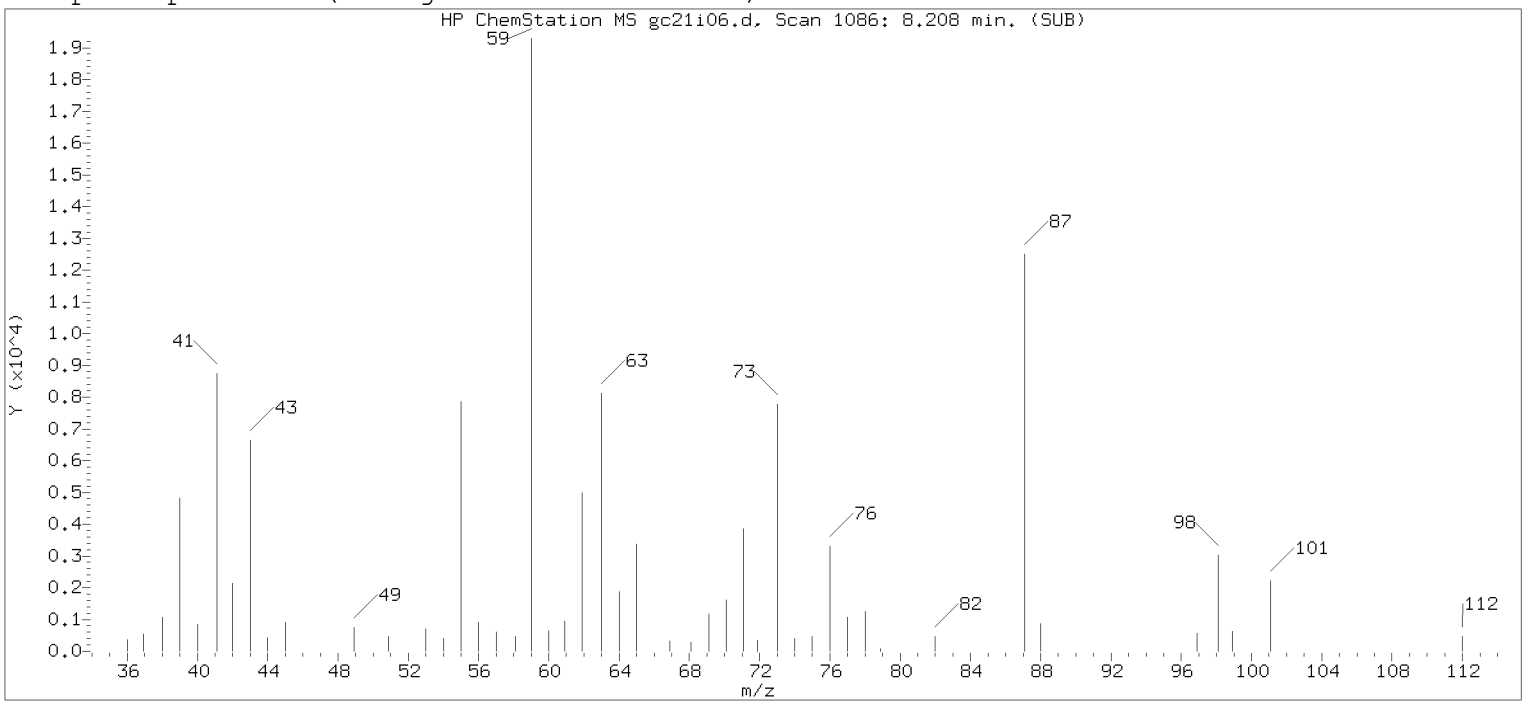
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1105
Retention Time (minutes): 8.323
Quant Ion : 88.00
Area (flag) : 2988M
On-Column Amount (ng) : 15.3808
Integration start scan : 1095 Integration stop scan: 1173
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

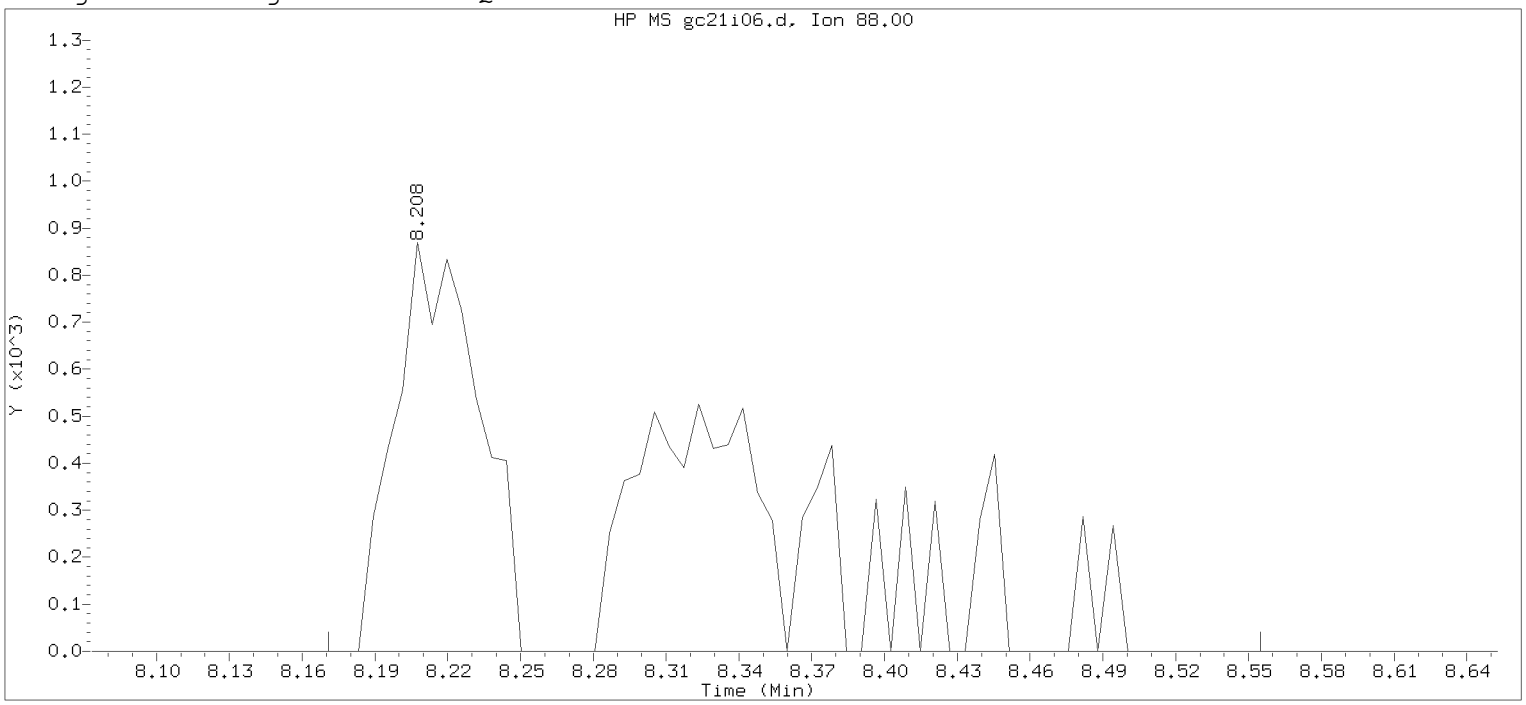
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

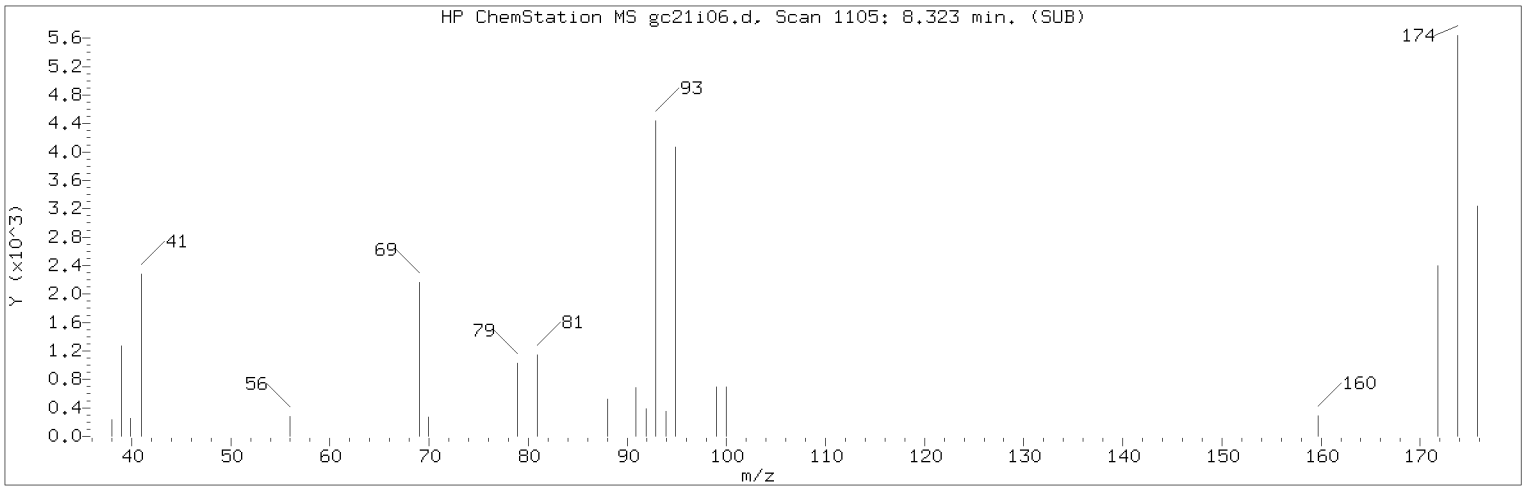
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

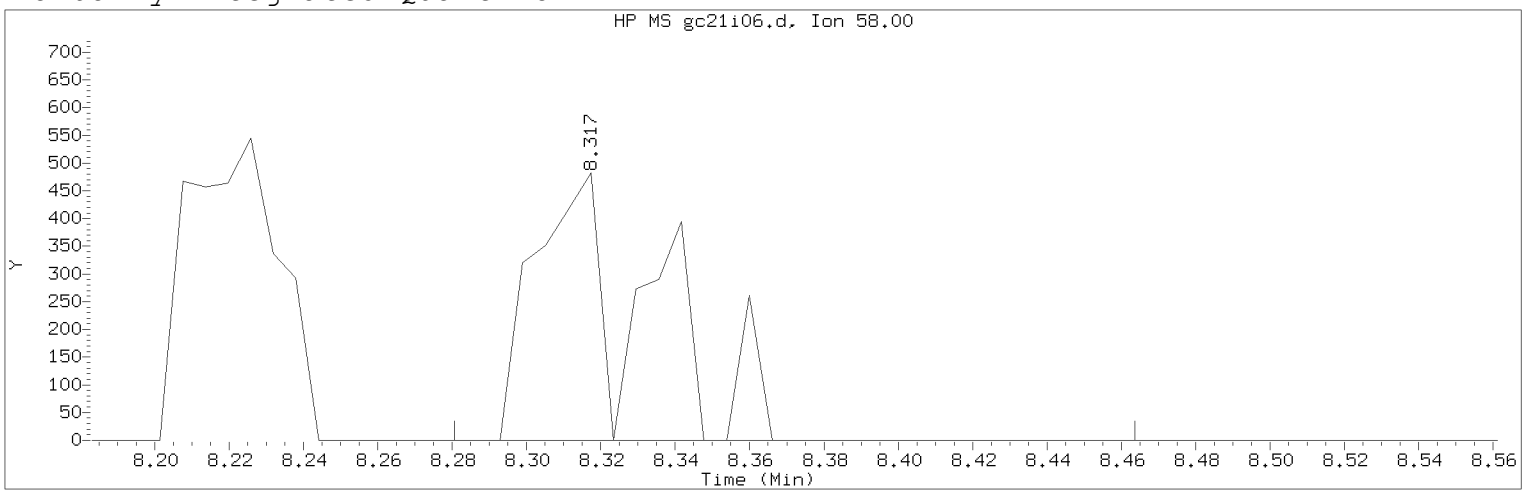
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1086		
Retention Time (minutes)	: 8.208		
Quant Ion	: 88.00		
Area	: 5092		
On-column Amount (ng)	: 32.2059		
Integration start scan	: 1079	Integration stop scan:	1142
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

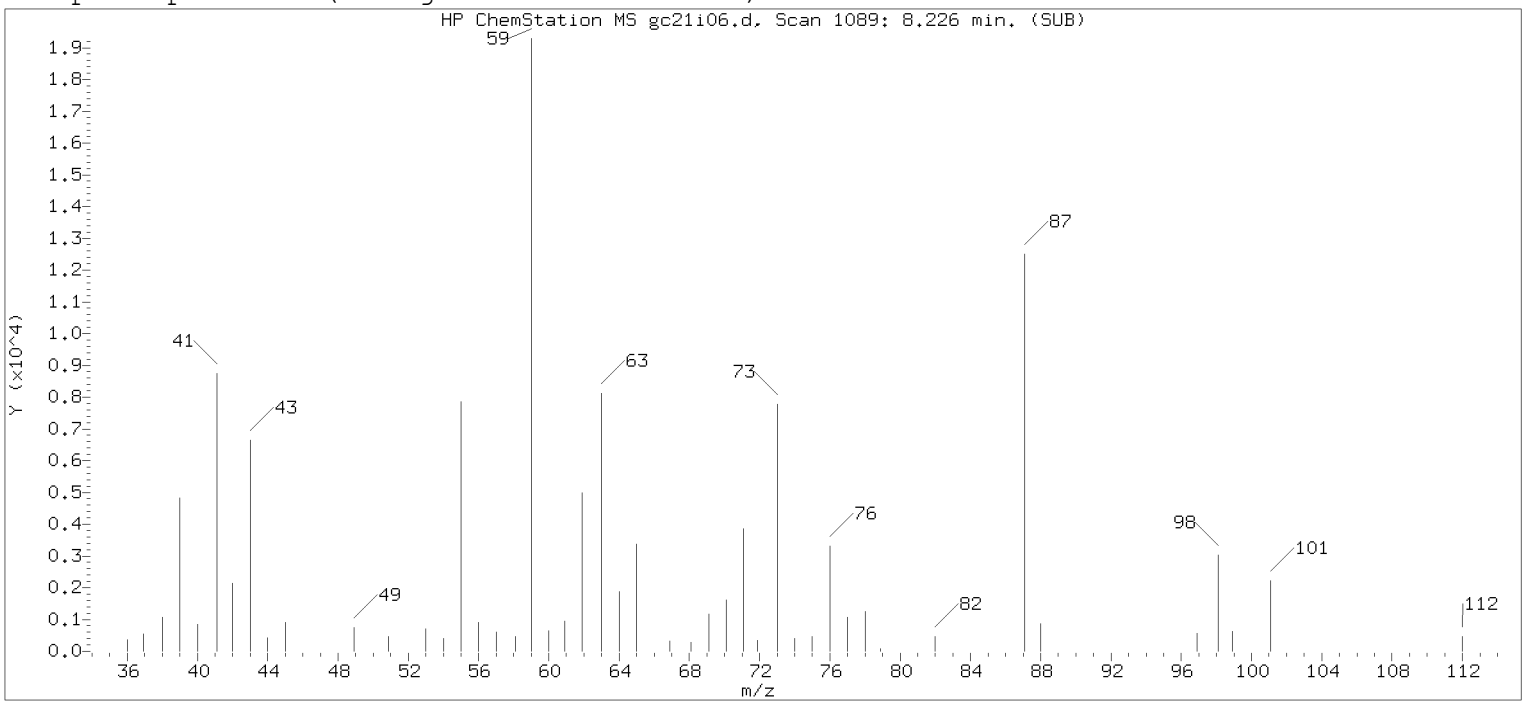
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1104
Retention Time (minutes): 8.317
Quant Ion : 58.00
Area (flag) : 1019M
On-Column Amount (ng) : 9.4900
Integration start scan : 1097 Integration stop scan: 1127
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

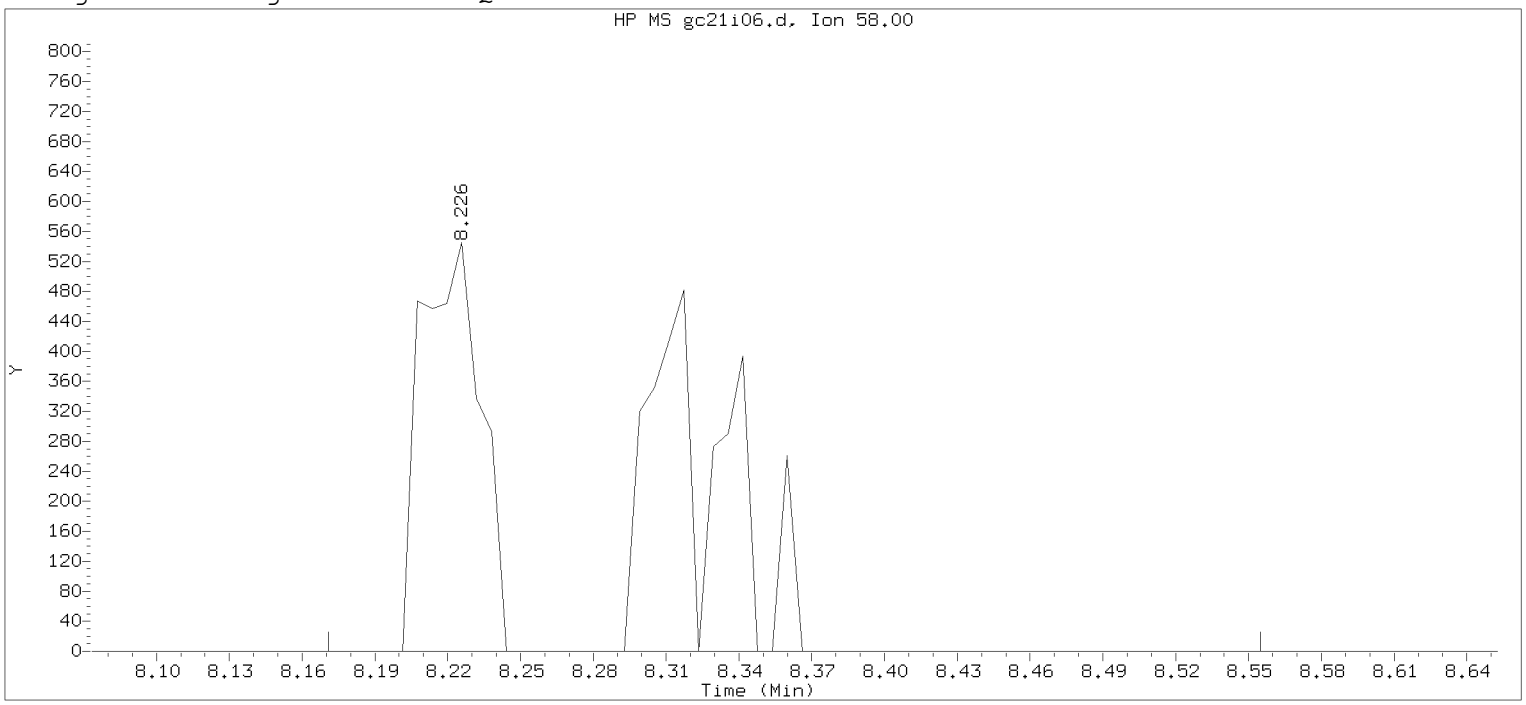
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

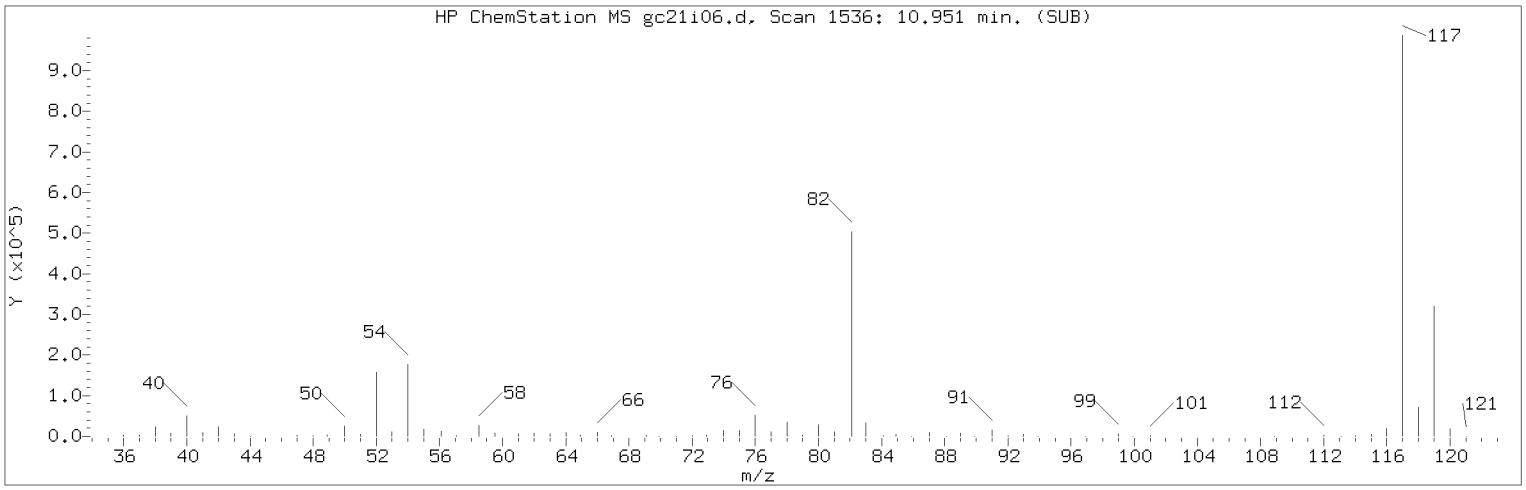
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

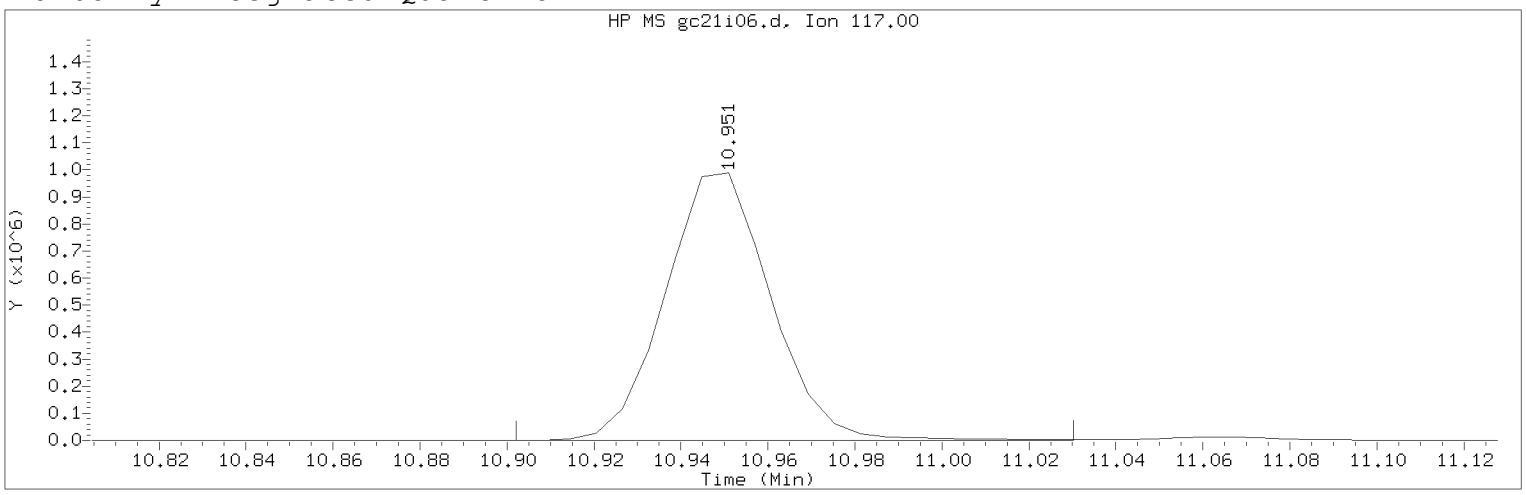
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1089		
Retention Time (minutes)	: 8.226		
Quant Ion	: 58.00		
Area	: 1956		
On-column Amount (ng)	: 25.0427		
Integration start scan	: 1079	Integration stop scan:	1142
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

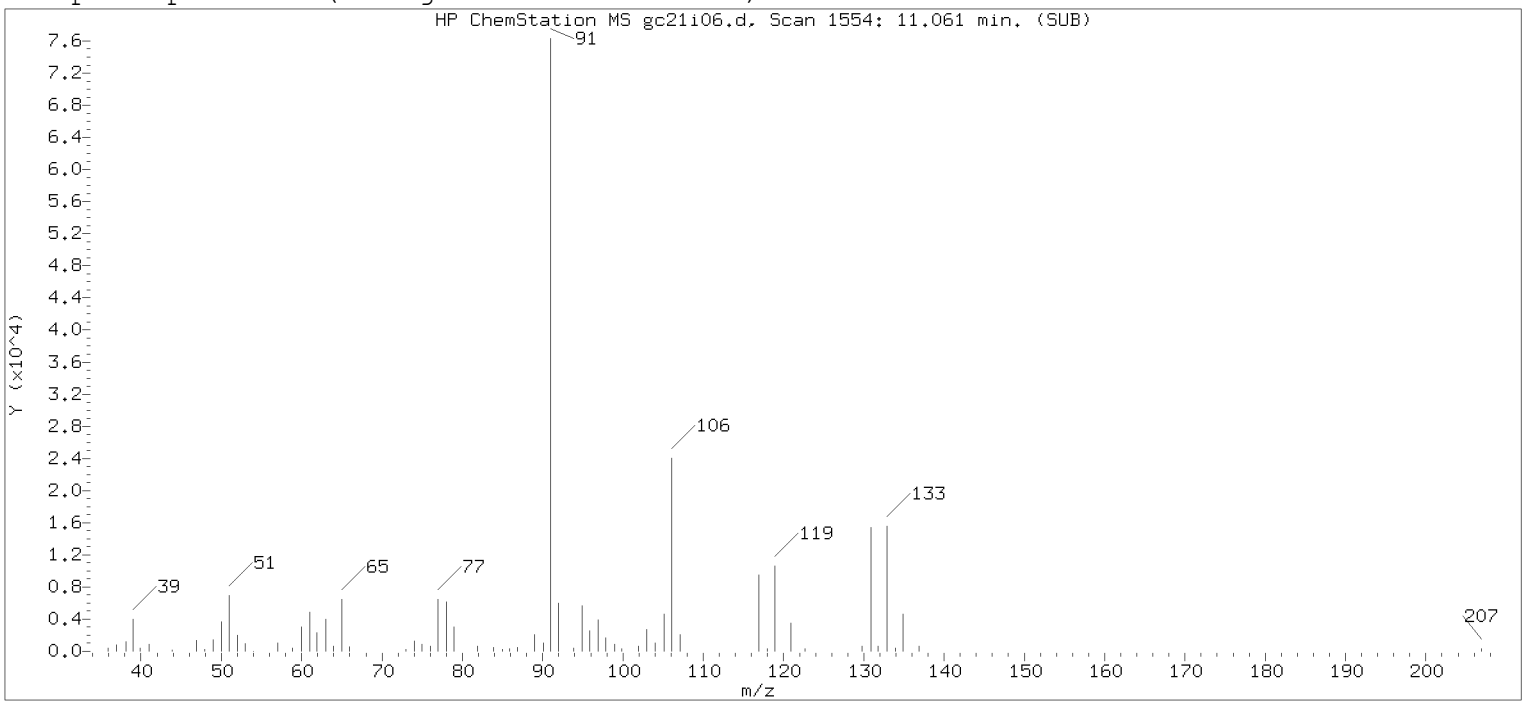
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1664260A
On-Column Amount (ng) : 10.0000
Integration start scan : 1527 Integration stop scan: 1548
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

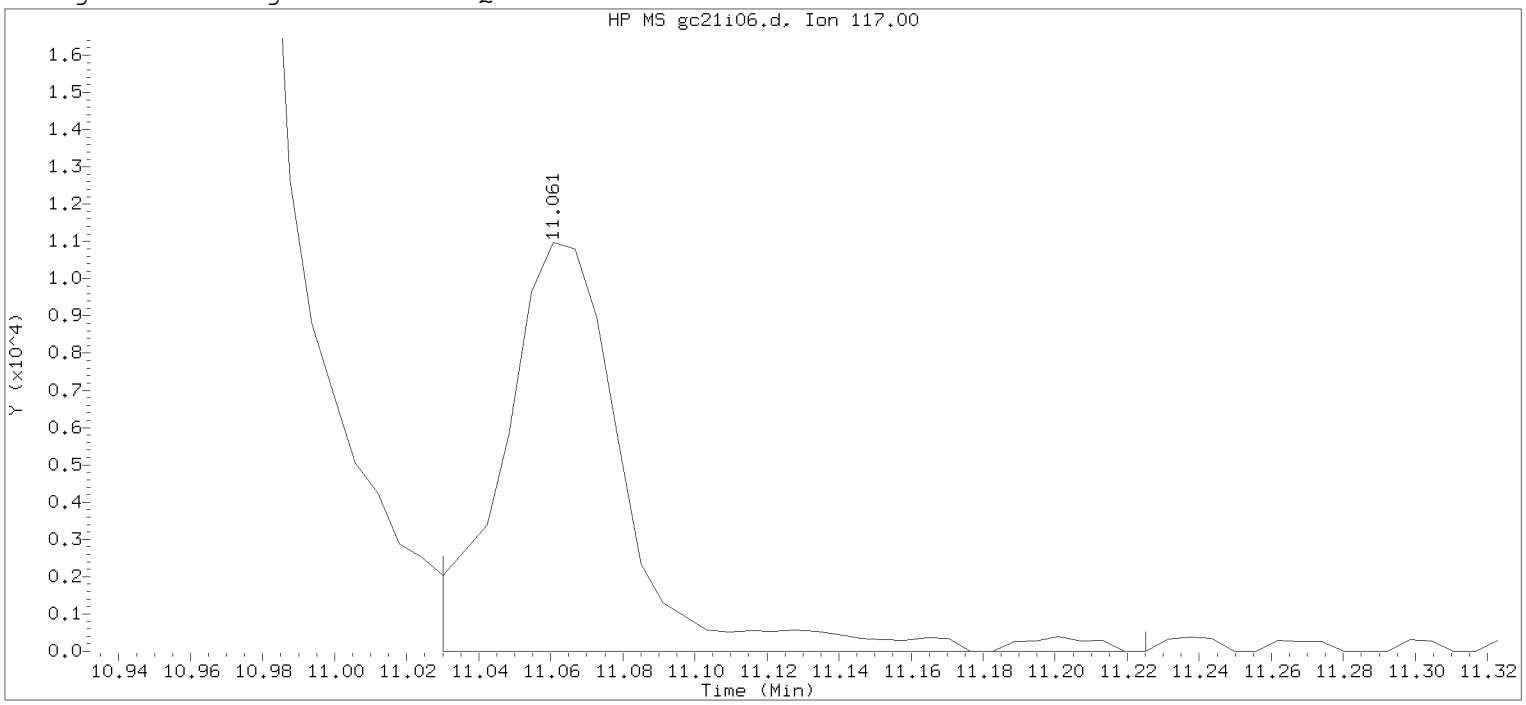
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

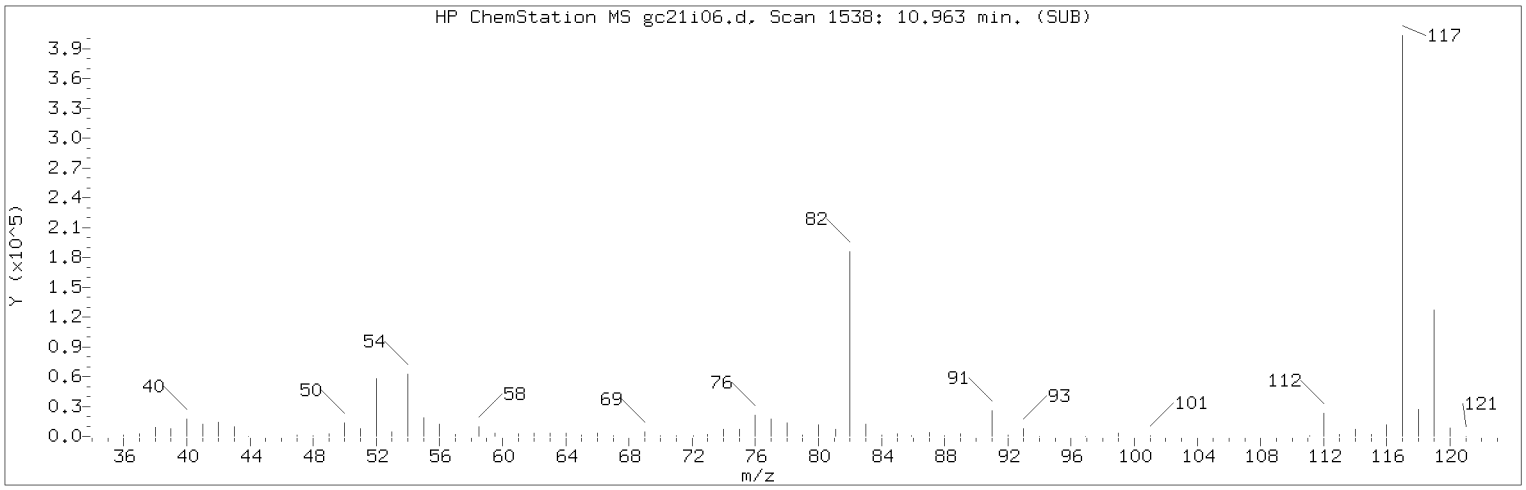
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

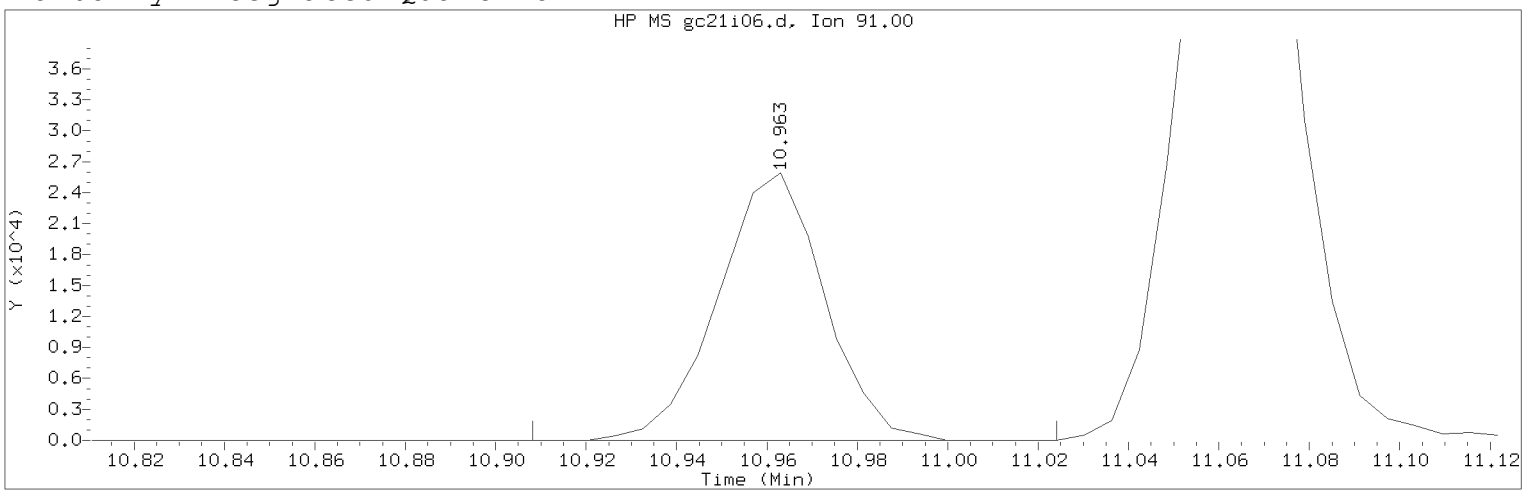
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1554
Retention Time (minutes): 11.061
Quant Ion : 117.00
Area : 25700
On-column Amount (ng) : 10.0000
Integration start scan : 1548 Integration stop scan: 1580
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

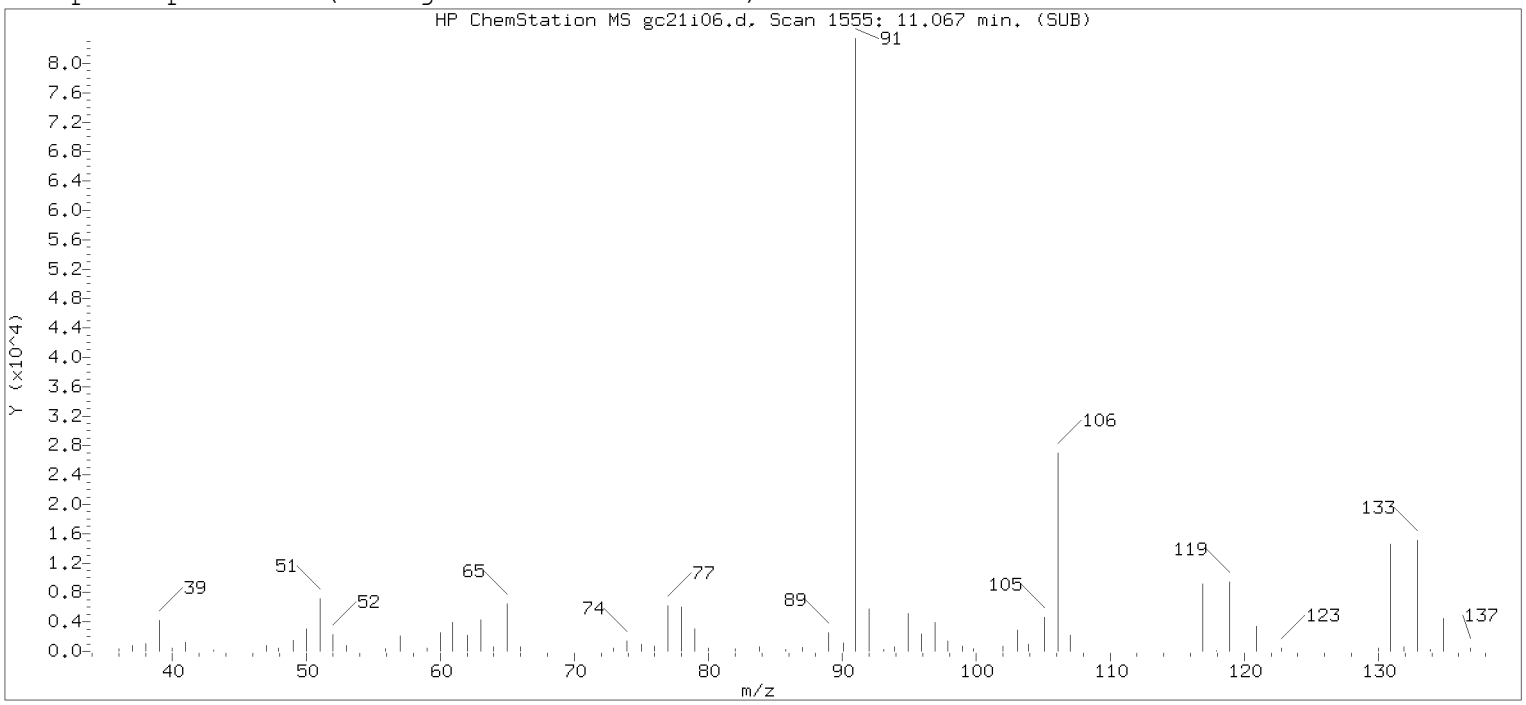
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 42160A
On-Column Amount (ng) : 0.5316
Integration start scan : 1528 Integration stop scan: 1547
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

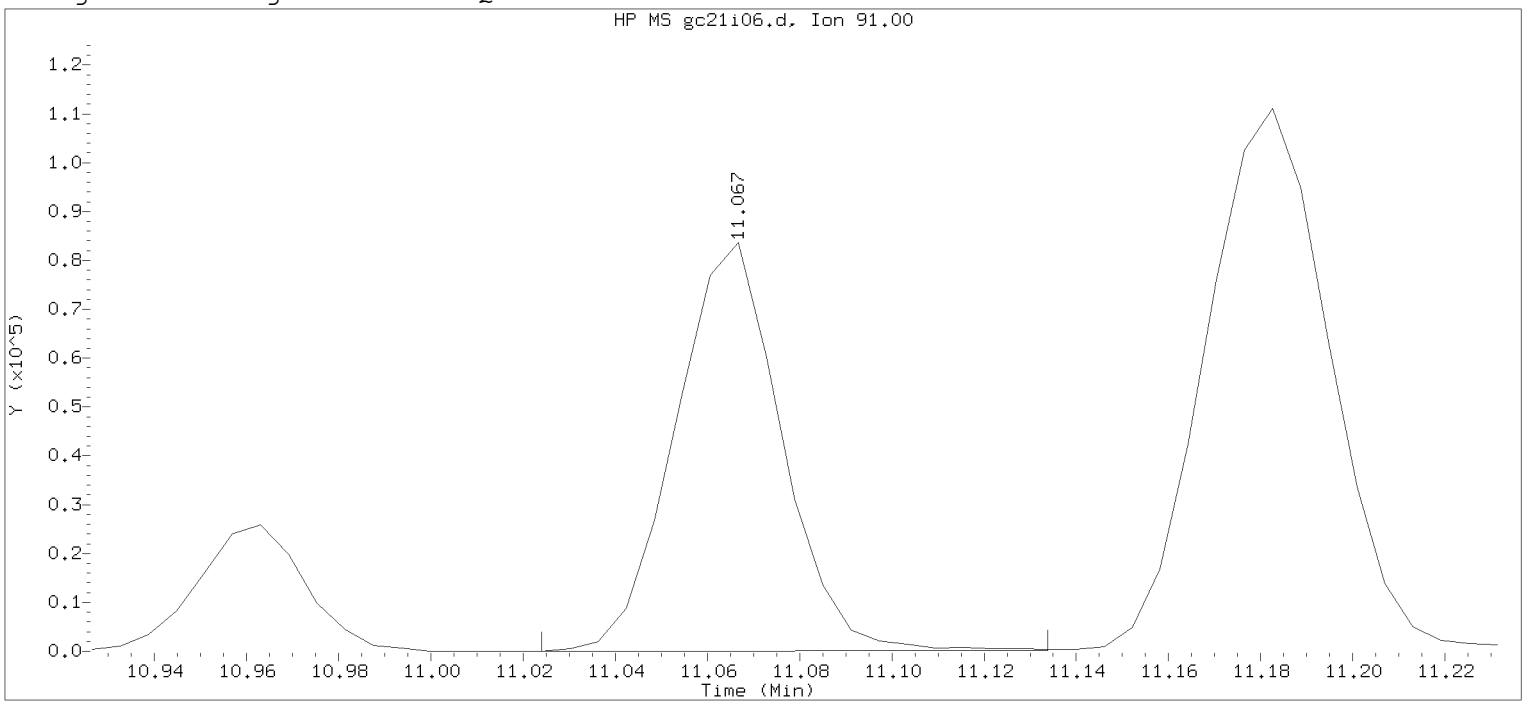
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

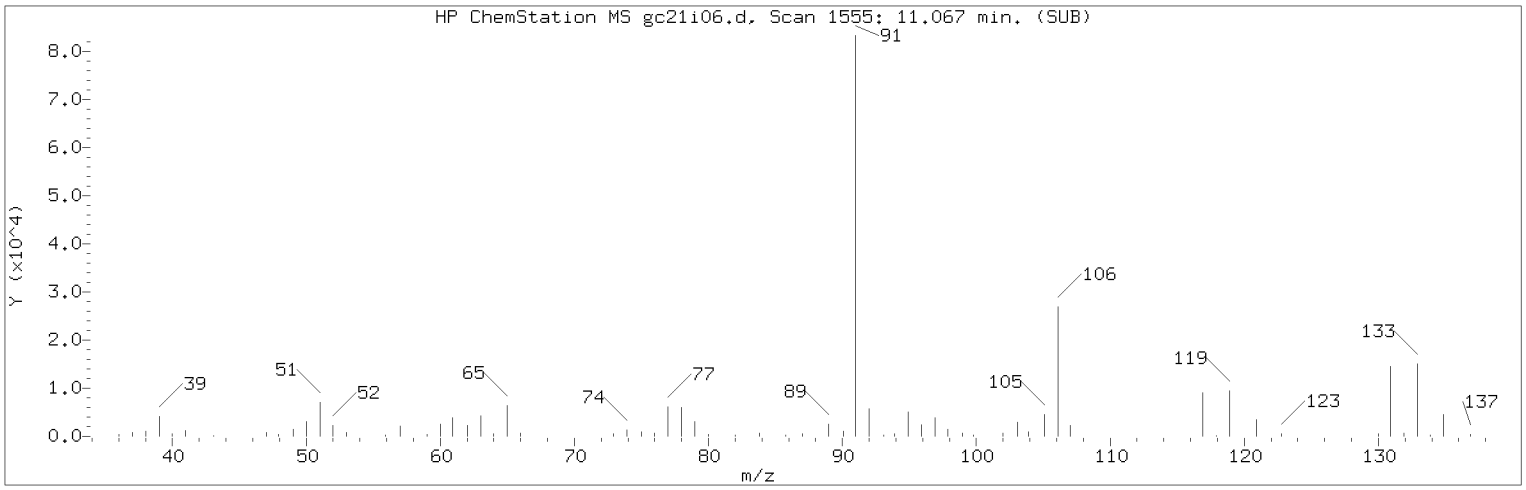
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

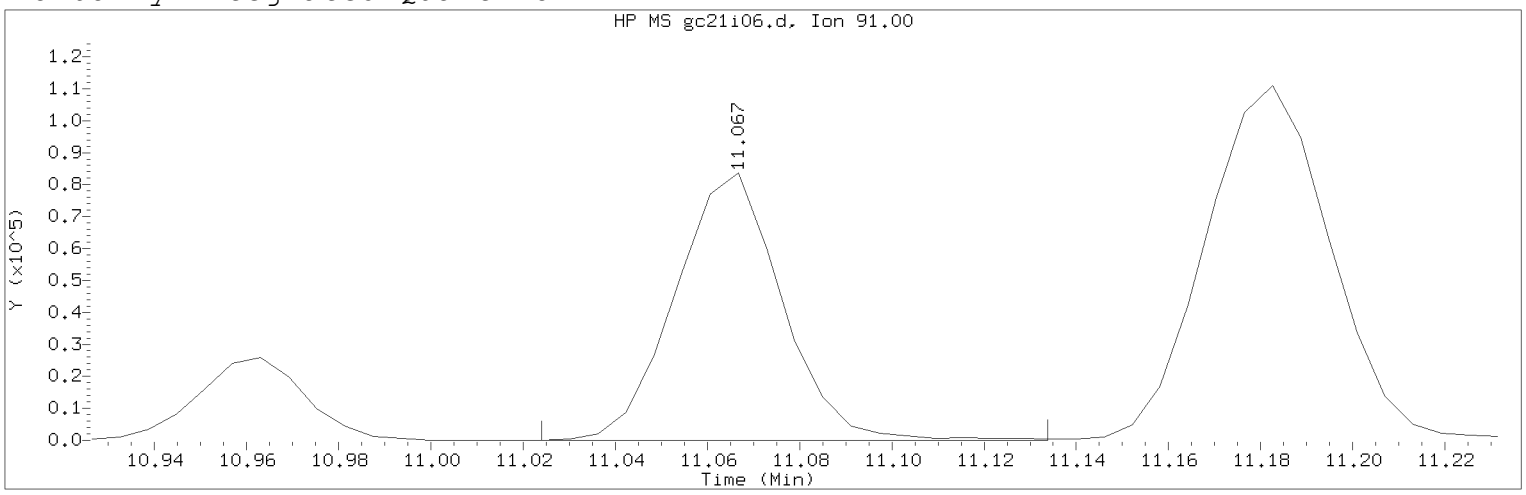
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 133565
On-column Amount (ng) : 1.4383
Integration start scan : 1547 Integration stop scan: 1565
Y at integration start : 0 Y at integration end: 132

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 134065MA
On-Column Amount (ng) : 0.5156
Integration start scan : 1547 Integration stop scan: 1565
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

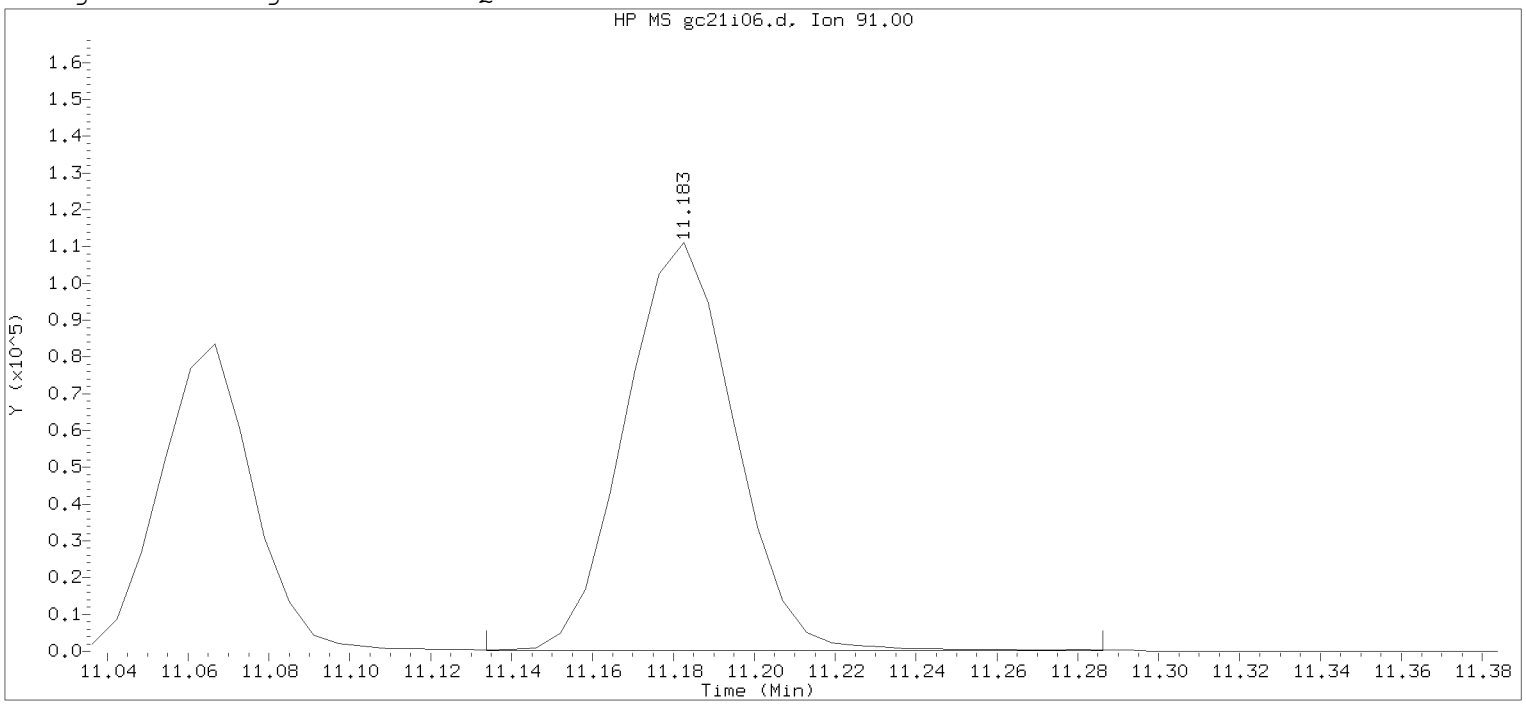
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

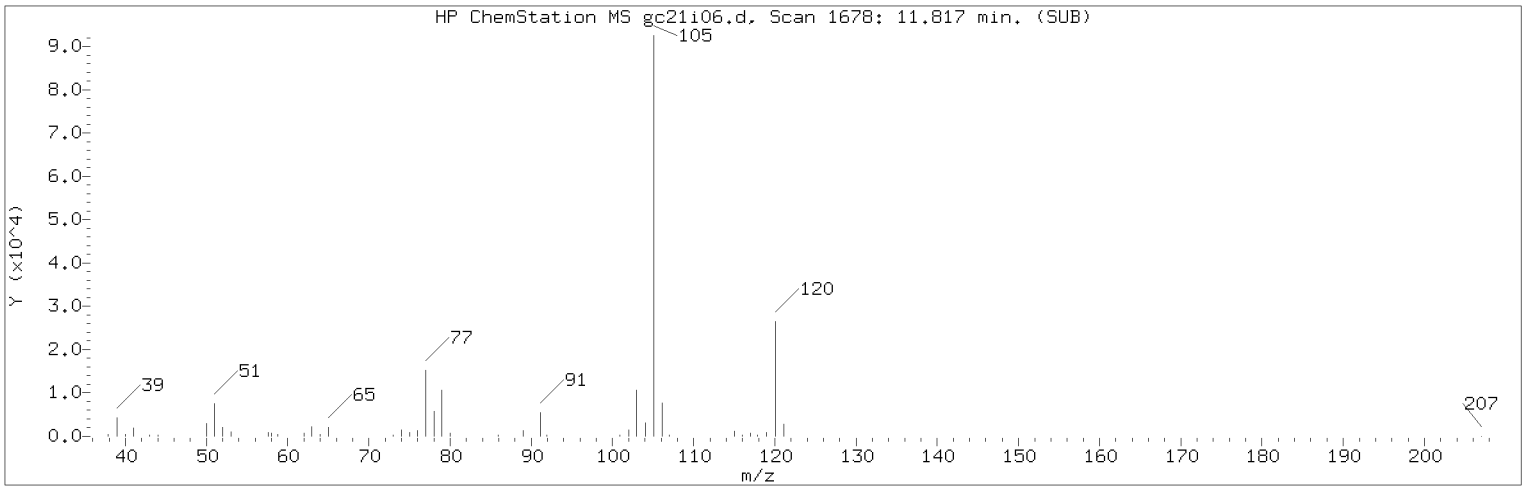
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

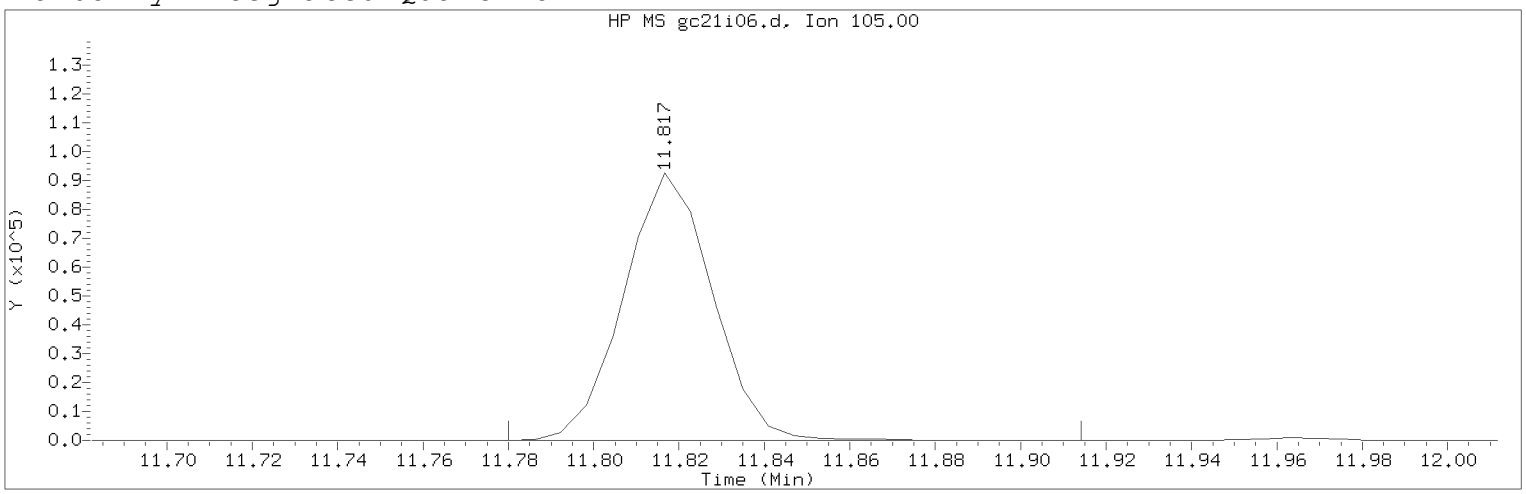
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1574
Retention Time (minutes): 11.183
Quant Ion : 91.00
Area : 208248
On-column Amount (ng) : 1.4503
Integration start scan : 1565 Integration stop scan: 1590
Y at integration start : 170 Y at integration end: 245

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

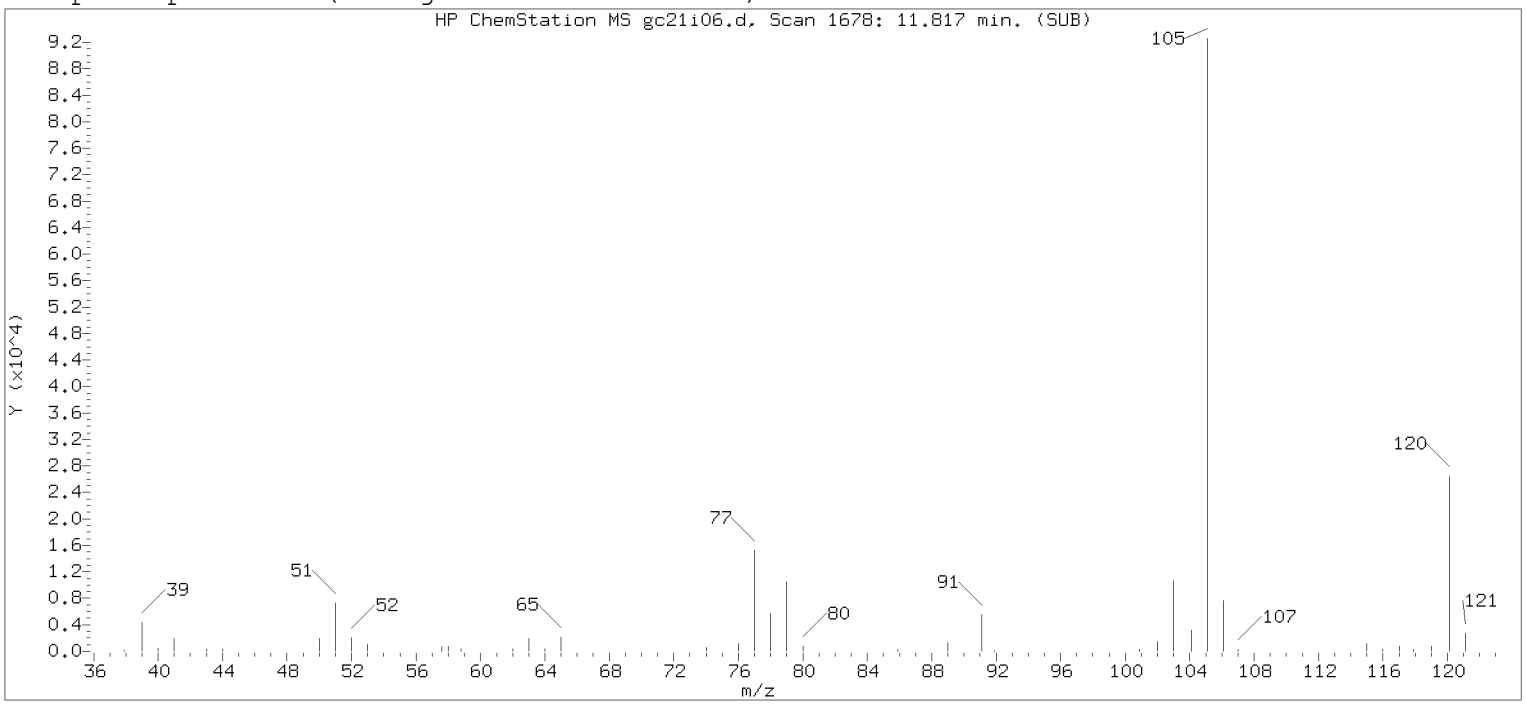
Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1678
Retention Time (minutes): 11.817
Quant Ion : 105.00
Area (flag) : 133761M
On-Column Amount (ng) : 0.5147
Integration start scan : 1671 Integration stop scan: 1693
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

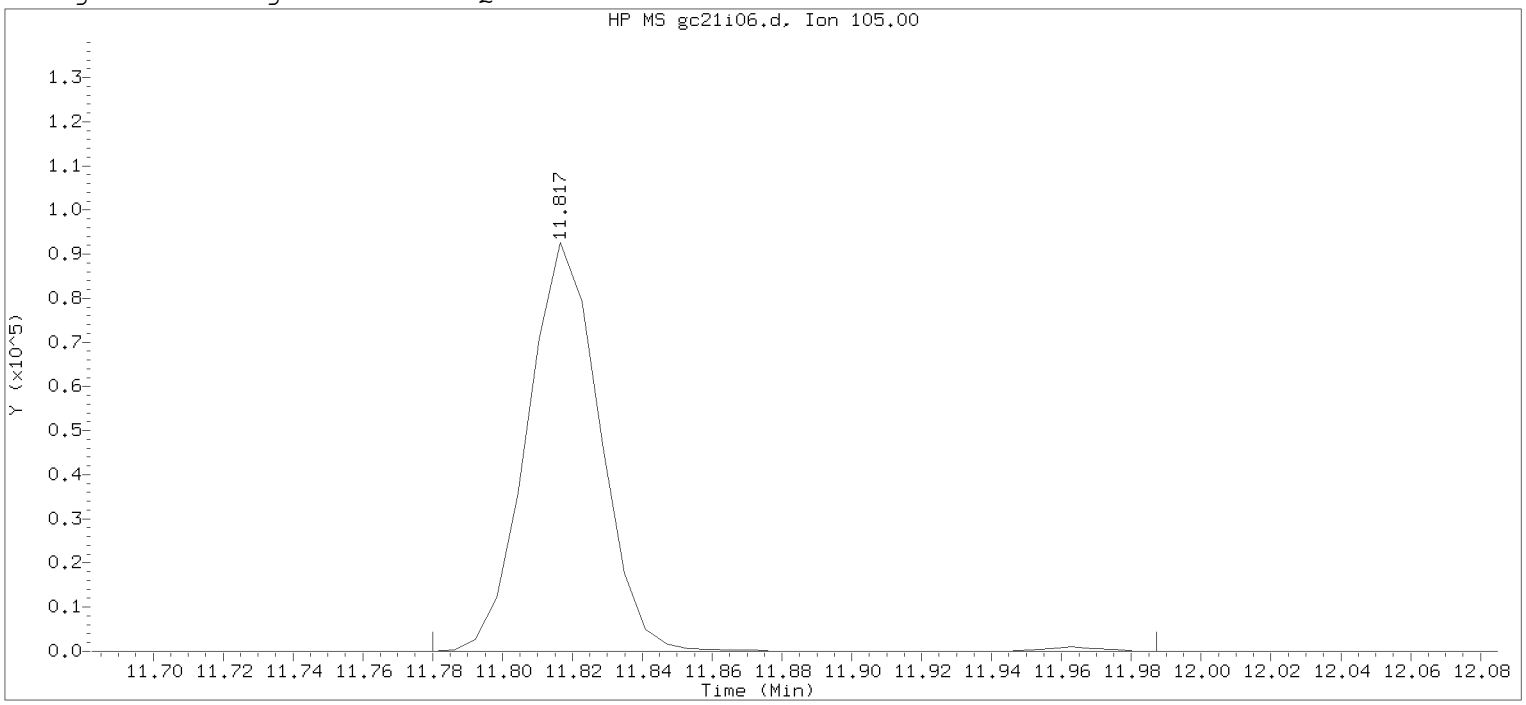
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

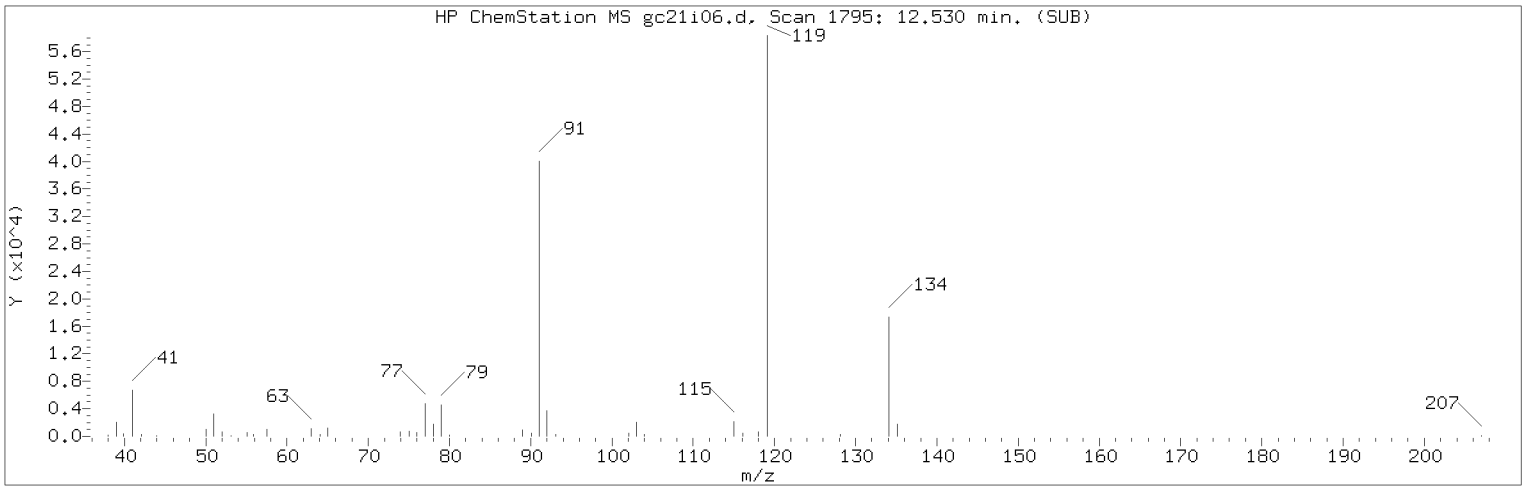
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

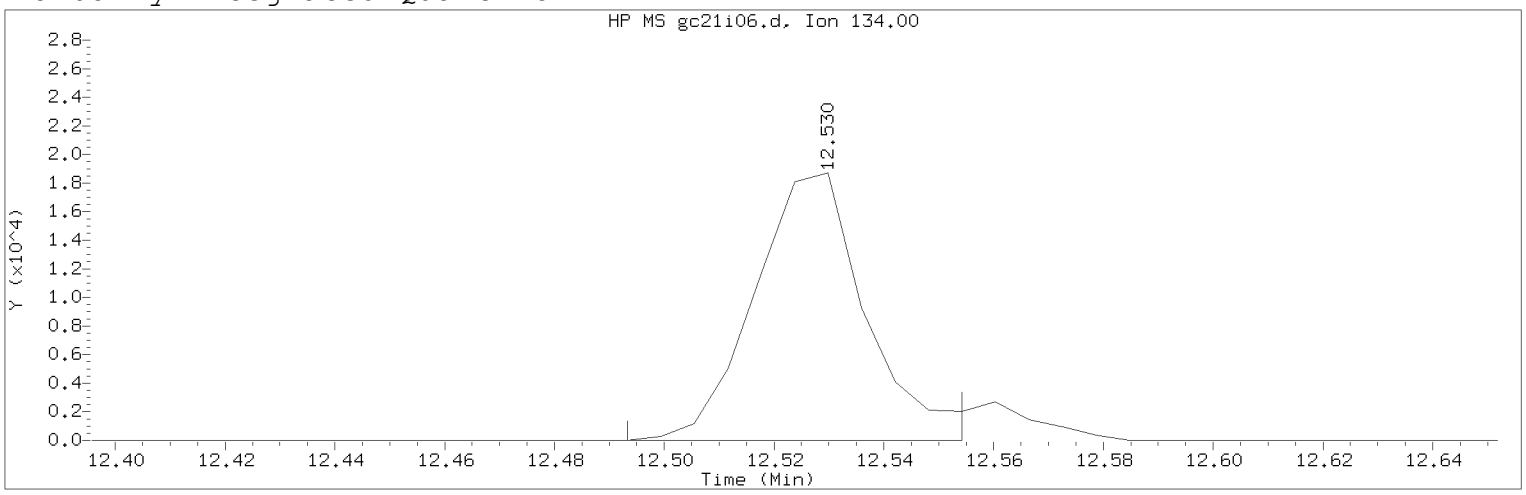
Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1678
Retention Time (minutes): 11.817
Quant Ion : 105.00
Area : 134795
On-column Amount (ng) : 1.4460
Integration start scan : 1671 Integration stop scan: 1705
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

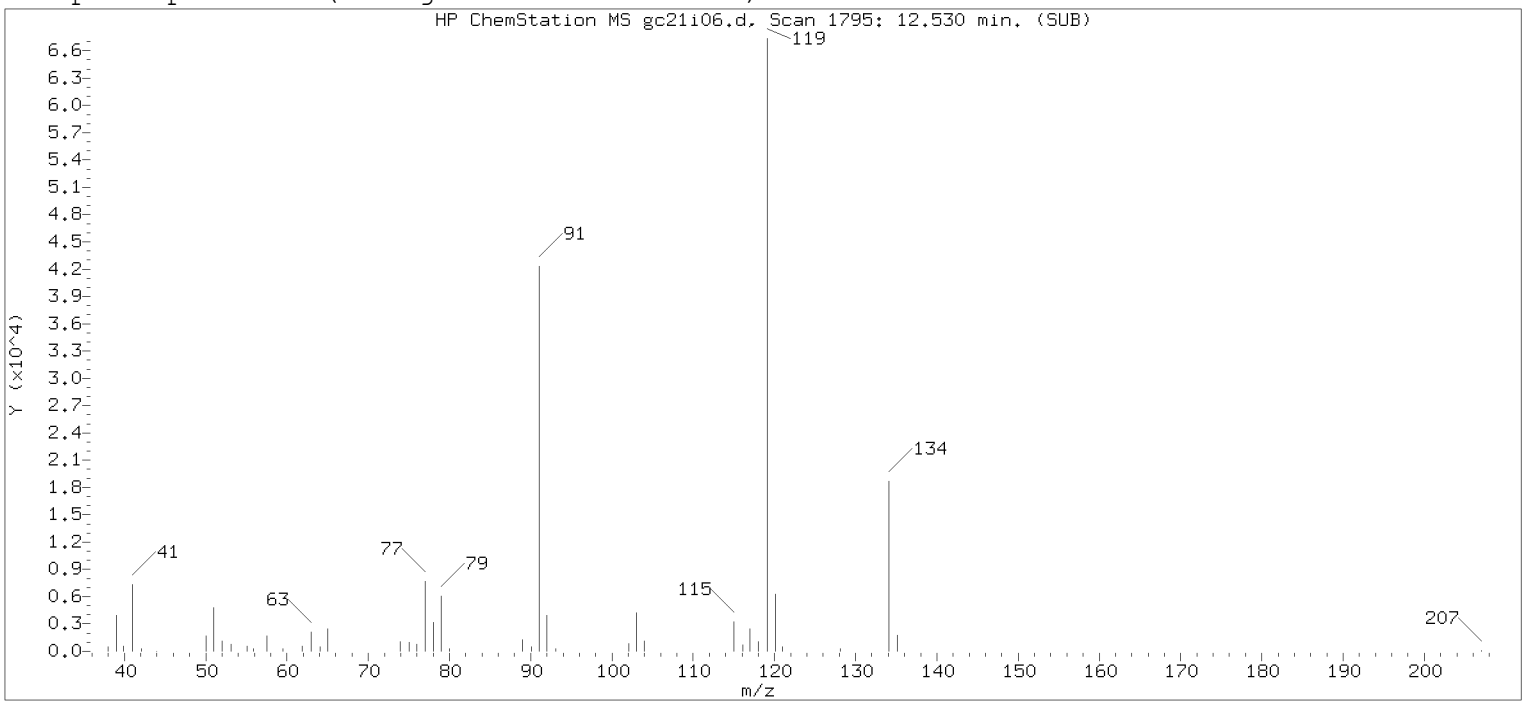
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area (flag) : 26474M
On-Column Amount (ng) : 0.5360
Integration start scan : 1788 Integration stop scan: 1798
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

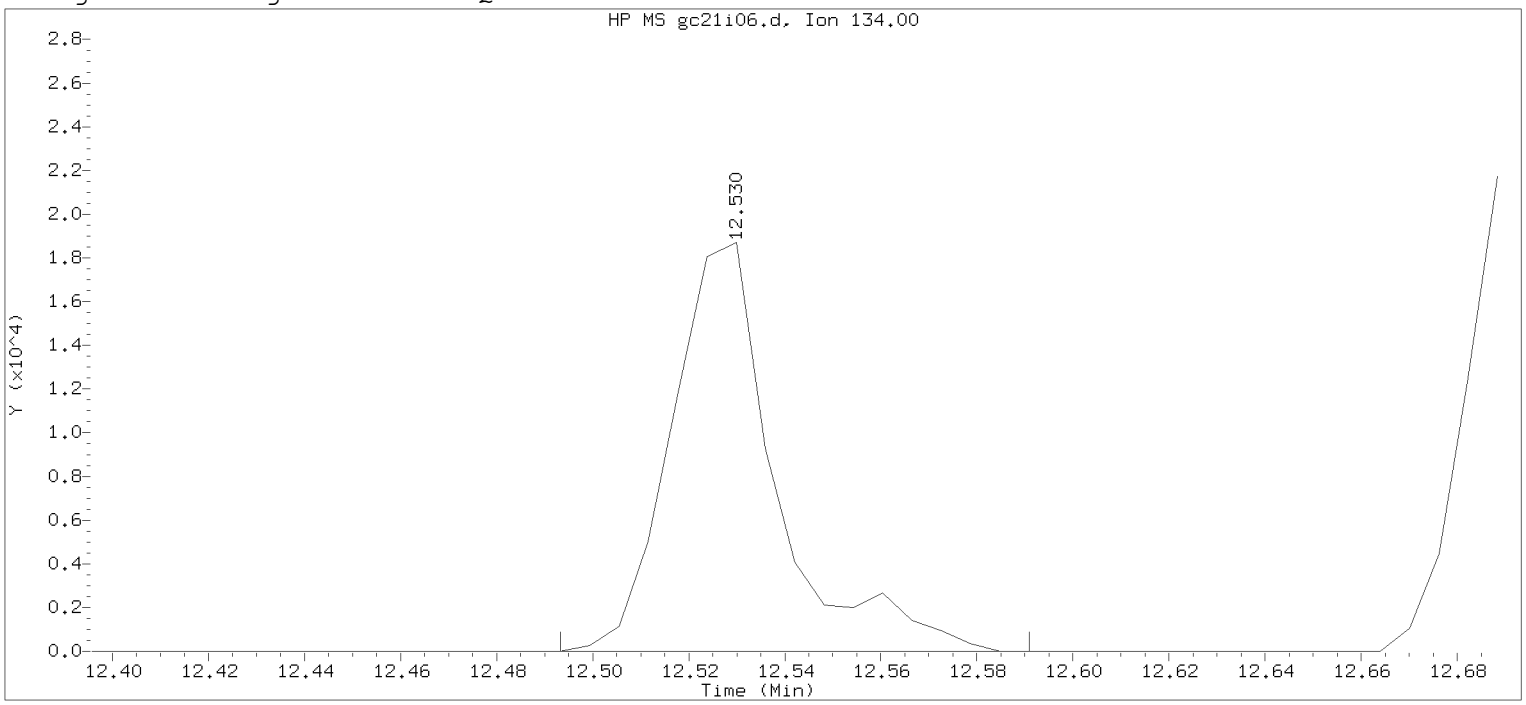
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



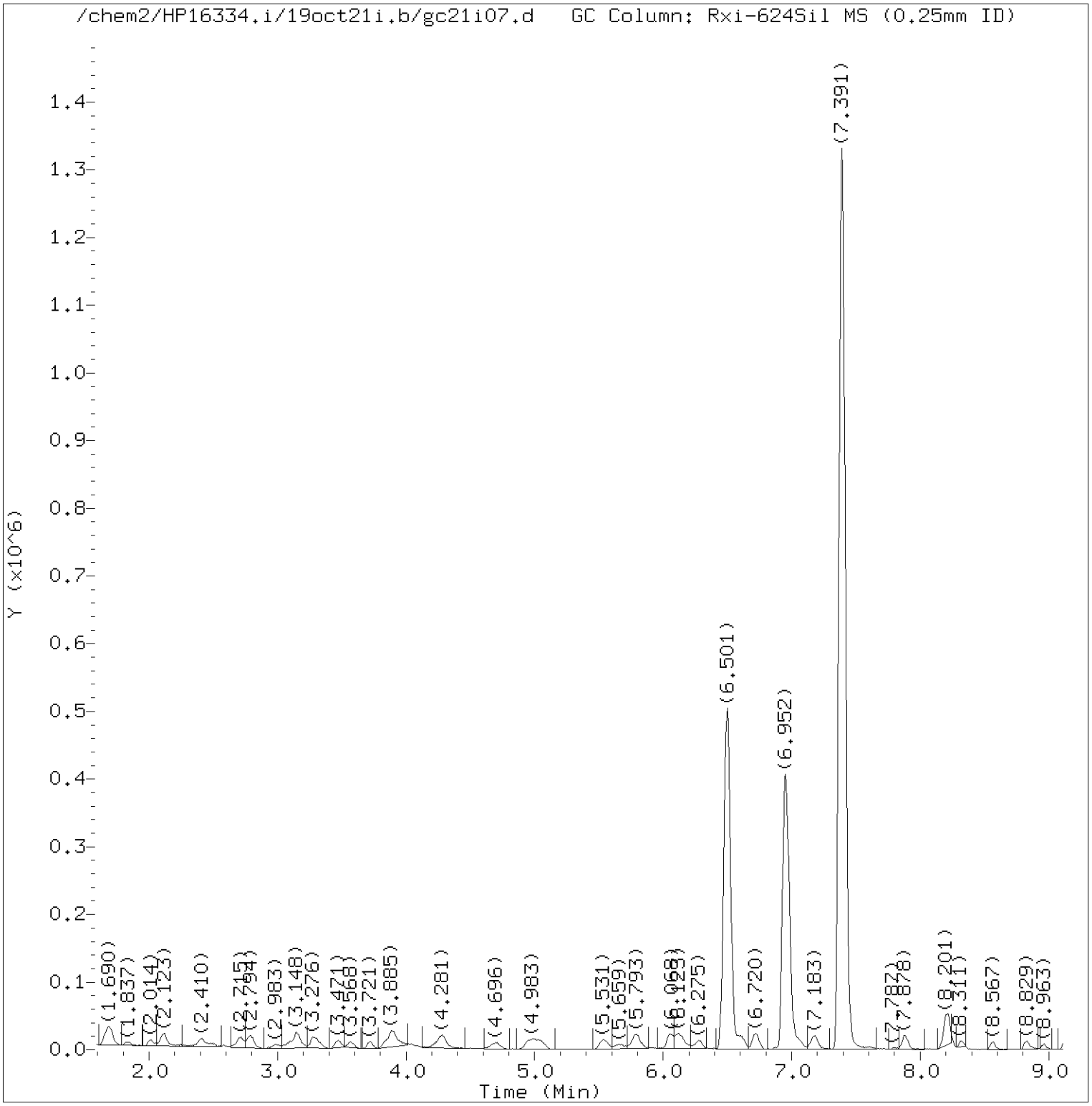
Data File: /chem2/HP16334.i/19oct21i.b/gc21i06.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:30 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1795
Retention Time (minutes): 12.530
Quant Ion : 134.00
Area : 28443
On-column Amount (ng) : 0.5446
Integration start scan : 1788 Integration stop scan: 1804
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

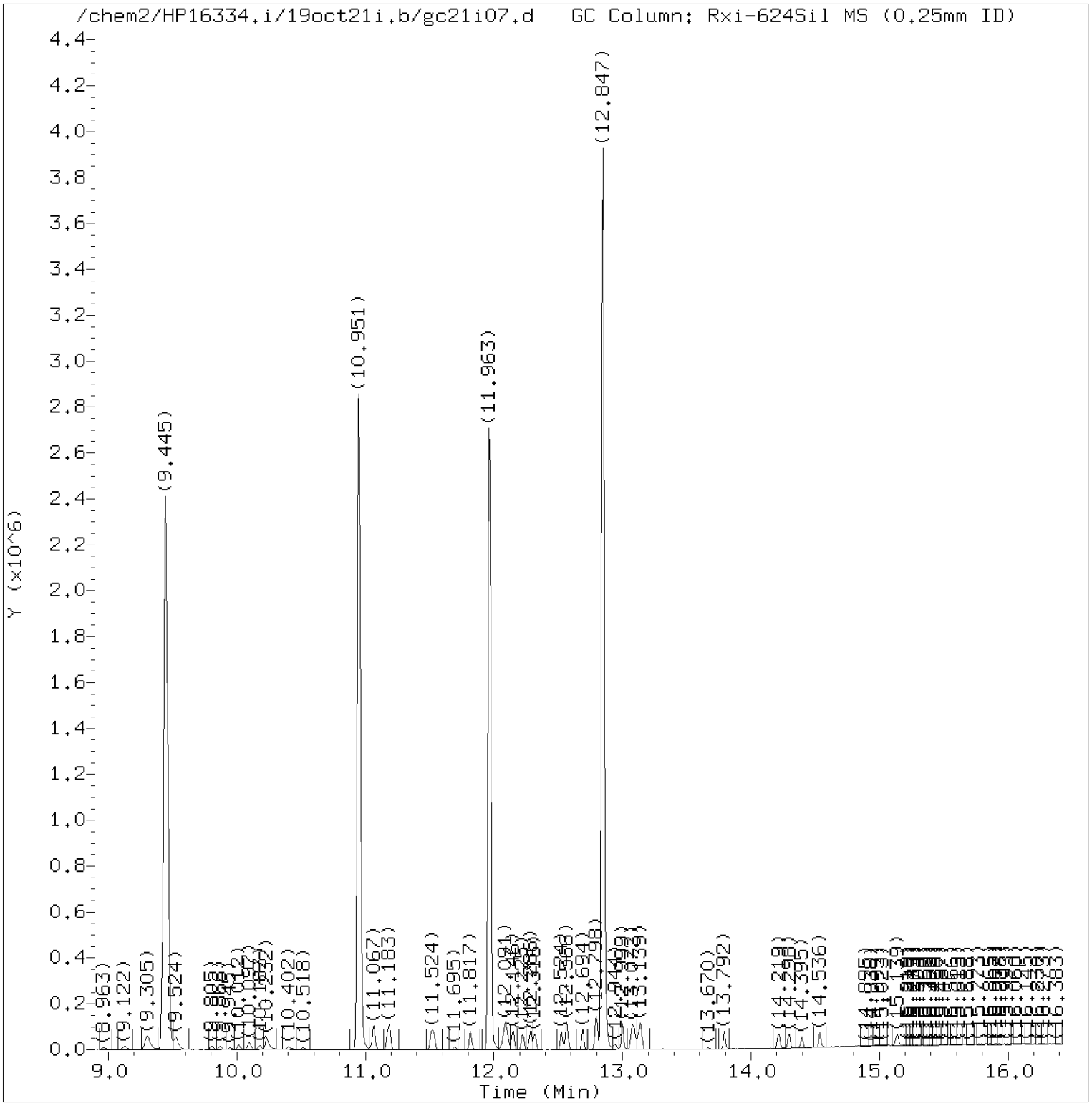
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.831	85	13389	0.184
2) Chloromethane	(2)	2.014	50	14059	0.206
6) 1,3-Butadiene	(2)	2.105	39	13379M	0.224
5) Vinyl Chloride	(2)	2.123	62	12728	0.187
7) Bromomethane	(2)	2.410	94	10054	0.196
8) Chloroethane	(2)	2.495	64	7821	0.195
9) Dichlorofluoromethane	(2)	2.715	67	18767	0.202
10) Trichlorofluoromethane	(2)	2.770	101	17128	0.188
11) Ethyl ether	(2)	2.983	59	7517	0.181
12) Freon 123a	(2)	3.056	67	10833	0.181
13) Acrolein	(1)	3.148	56	59882	9.973
15) 1,1-Dichloroethene	(2)	3.269	96	8455	0.183
14) Acetone	(1)	3.312	43	14758	2.278
16) Freon 113	(2)	3.330	101	8840	0.165
17) Methyl Iodide	(2)	3.458	142	18906	0.189
18) Carbon Disulfide	(2)	3.568	76	31425	0.185
21) Methyl Acetate	(1)	3.702	43	3728M	0.236
22) Allyl Chloride	(2)	3.721	41	13833M	0.205
23) Methylene Chloride	(2)	3.897	84	11586	0.215
26)*t-Butyl Alcohol-d10	(1)	3.897	65	127722	50.000
28) t-Butyl Alcohol	(1)	4.019	59	8999M	4.037
29) Acrylonitrile	(1)	4.227	53	4636	0.961
30) Methyl Tertiary Butyl Ether	(2)	4.257	73	26835	0.192
31) trans-1,2-Dichloroethene	(2)	4.281	96	10429	0.196
32) n-Hexane	(2)	4.708	57	11217	0.157
33) 1,1-Dichloroethane	(2)	4.940	63	17140	0.189
34) di-Isopropyl Ether	(2)	4.983	45	30621	0.186
35) 2-Chloro-1,3-Butadiene	(2)	5.050	53	13690	0.169
37) Ethyl t-butyl ether	(2)	5.531	59	32439	0.195
38) 2-Butanone	(1)	5.775	43	22042	1.783
39) cis-1,2-Dichloroethene	(2)	5.793	96	10110	0.174
41) 2,2-Dichloropropane	(2)	5.806	77	11758	0.187
42) Propionitrile	(1)	5.860	54	3517	5.401
45) Methacrylonitrile	(1)	6.055	67	25031	1.815
40) 1,2-Dichloroethene (Total)	(2)		96	20539	0.370
48) Tetrahydrofuran	(1)	6.123	71	6095	1.561
47) Bromochloromethane	(2)	6.129	128	5417	0.188
49) Chloroform	(2)	6.293	83	17263	0.187

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.494	113	561912	9.906
50)$Dibromofluoromethane	(2)	6.501	111	580624	9.960
51) 1,1,1-Trichloroethane	(2)	6.501	97	14458	0.178
52) Cyclohexane	(2)	6.610	56	14610	0.165
52) Cyclohexane	(2)	6.604	84	13788	0.167
52) Cyclohexane	(2)	6.610	69	4931	0.175
54) Carbon Tetrachloride	(2)	6.720	117	11868	0.162
55) 1,1-Dichloropropene	(2)	6.726	75	13542	0.185
56) Isobutyl Alcohol	(1)	6.891	41	5512	8.055
57)$1,2-Dichloroethane-d4	(2)	6.952	102	114720	9.986
57)$1,2-Dichloroethane-d4	(2)	6.952	65	529501	10.060
57)$1,2-Dichloroethane-d4	(2)	6.952	104	73302	10.184
58) Benzene	(2)	6.982	78	40608	0.192
59) 1,2-Dichloroethane	(2)	7.061	62	12739	0.213
59) 1,2-Dichloroethane	(2)	7.080	98	555	0.105
60) t-Amyl methyl ether	(2)	7.171	73	28756	0.187
63)*Fluorobenzene	(2)	7.391	96	2243741	10.000
62) n-Heptane	(2)	7.403	43	13832	0.185
65) n-Butanol	(1)	7.860	56	6032M	34.504
67) Trichloroethene	(2)	7.872	95	10611	0.187
69) Methylcyclohexane	(2)	8.195	83	16077	0.169
70) 1,2-Dichloropropane	(2)	8.207	63	9782	0.186
71) Methyl Methacrylate	(1)	8.311	69	4725	0.169
73) Dibromomethane	(2)	8.323	93	4943	0.176
72) 1,4-Dioxane	(1)	8.336	88	93M	0.513
72) 1,4-Dioxane	(1)	8.299	58	0	0.000
74) Bromodichloromethane	(2)	8.567	83	12086	0.178
76) 2-Nitropropane	(1)	8.829	41	14652	1.897
80) cis-1,3-Dichloropropene	(2)	9.128	75	14281	0.177
81) 4-Methyl-2-Pentanone	(1)	9.305	43	68781	1.924
82)$Toluene-d8	(3)	9.445	98	2196107	10.039
82)$Toluene-d8	(3)	9.445	100	1401055	9.900
83) Toluene	(3)	9.524	92	26842	0.197
84) trans-1,3-Dichloropropene	(3)	9.811	75	10899	0.162
86) Ethyl Methacrylate	(3)	9.872	69	11301	0.173
88) 1,1,2-Trichloroethane	(3)	10.018	97	7662	0.189
89) Tetrachloroethene	(3)	10.097	166	12162	0.187
91) 2-Hexanone	(1)	10.134	43	51217	1.943

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
85) 1,3-Dichloropropene (total)	(3)		75	25180	0.339
90) 1,3-Dichloropropane	(3)	10.183	76	12998	0.186
93) Dibromochloromethane	(3)	10.402	129	8754	0.168
95) 1,2-Dibromoethane	(3)	10.518	107	7570	0.184
97)*Chlorobenzene-d5	(3)	10.951	117	1705633A	10.000
96) 1-Chlorohexane	(3)	10.963	91	16471A	0.203
98) Chlorobenzene	(3)	10.975	112	30103	0.189
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	10291	0.181
100) Ethylbenzene	(3)	11.067	91	49866A	0.187
101) m+p-Xylene	(3)	11.183	106	38804	0.375
104) o-Xylene	(3)	11.512	106	18786	0.183
106) Styrene	(3)	11.530	104	31325	0.182
107) Bromoform	(3)	11.695	173	4884	0.152
105) Xylene (Total)	(3)		106	57590	0.559
108) Isopropylbenzene	(3)	11.817	105	48659	0.183
111)$4-Bromofluorobenzene	(3)	11.963	95	821331	10.046
111)$4-Bromofluorobenzene	(3)	11.969	174	736438	9.949
113) 1,1,2,2-Tetrachloroethane	(4)	12.066	83	9805	0.184
114) Bromobenzene	(4)	12.079	156	13369	0.191
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	21534	1.787
116) 1,2,3-Trichloropropane	(4)	12.115	110	2793	0.193
117) n-Propylbenzene	(4)	12.152	91	58088	0.185
119) 2-Chlorotoluene	(4)	12.225	126	12049	0.182
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	42908	0.189
122) 4-Chlorotoluene	(4)	12.323	126	12874	0.185
125) tert-Butylbenzene	(4)	12.530	134	9207	0.182
126) Pentachloroethane	(4)	12.560	167	8078	0.173
127) 1,2,4-Trimethylbenzene	(4)	12.572	105	44586	0.187
128) sec-Butylbenzene	(4)	12.694	105	55285M	0.186
131) 1,3-Dichlorobenzene	(4)	12.792	146	26820	0.193
132) p-Isopropyltoluene	(4)	12.798	119	46380	0.180
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	953234	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	28175	0.198
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	22156	0.199
136) Benzyl Chloride	(4)	12.944	126	2134	0.372
138) n-Butylbenzene	(4)	13.091	92	24292	0.186
139) 1,2-Dichlorobenzene	(4)	13.121	146	25264	0.194
143) 1,2-Dibromo-3-chloropropane	(1)	13.664	155	1418	0.186

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

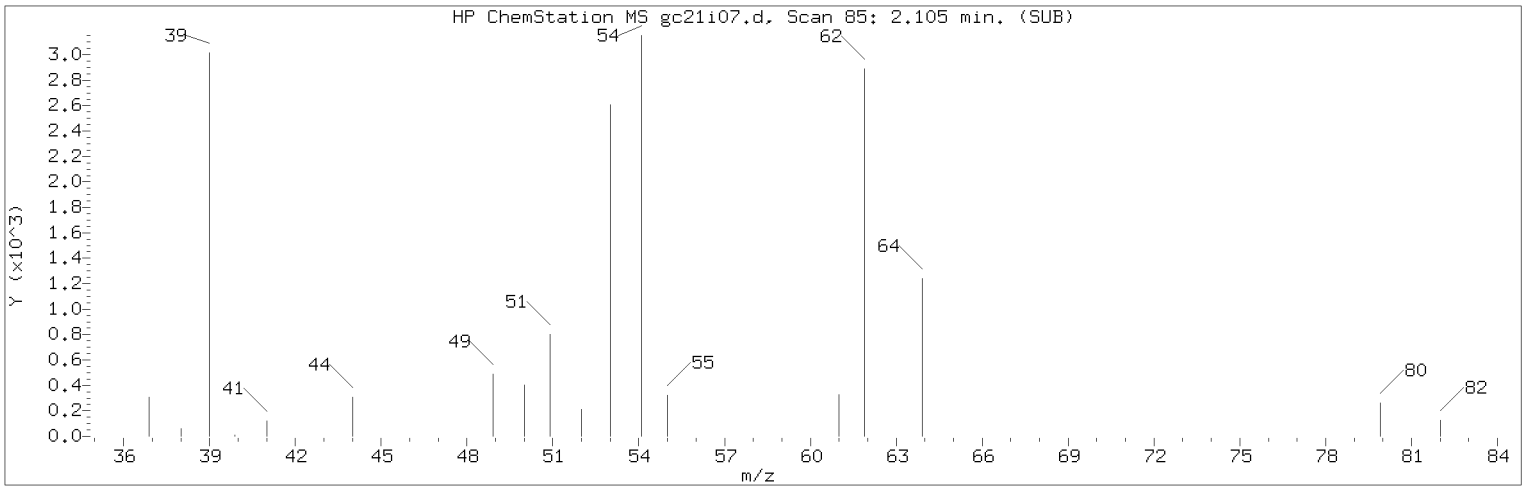
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

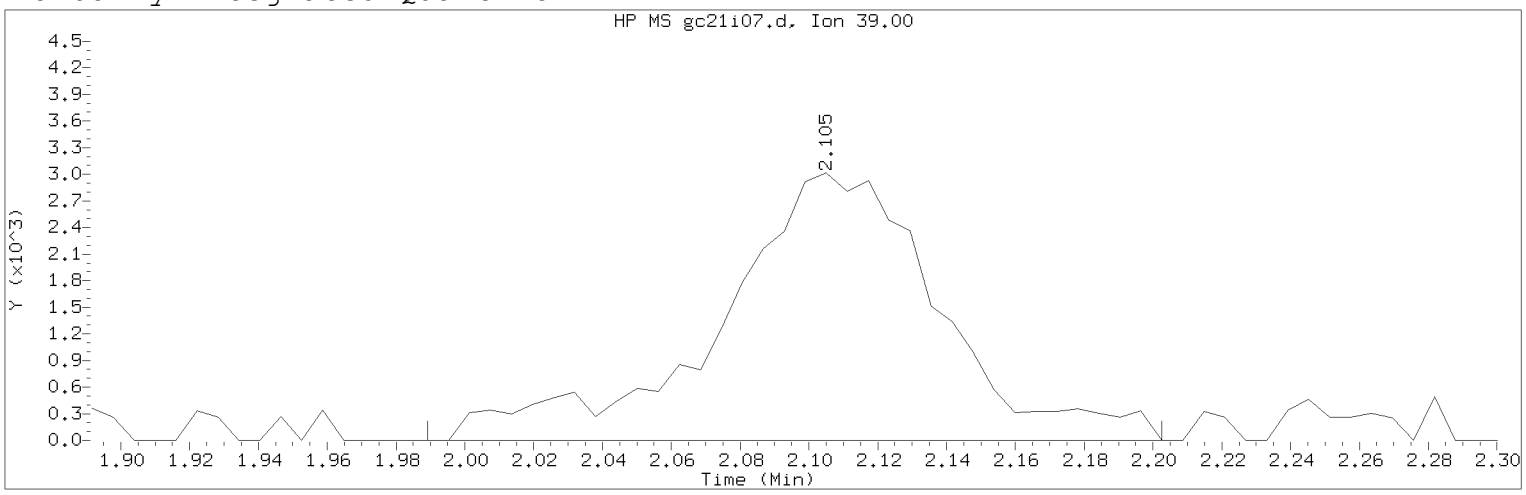
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	22604	0.191
145) 1,2,4-Trichlorobenzene	(4)	14.219	180	21179	0.193
146) Hexachlorobutadiene	(4)	14.298	225	10061	0.181
147) Naphthalene	(4)	14.395	128	34909	0.190
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	18392	0.192

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

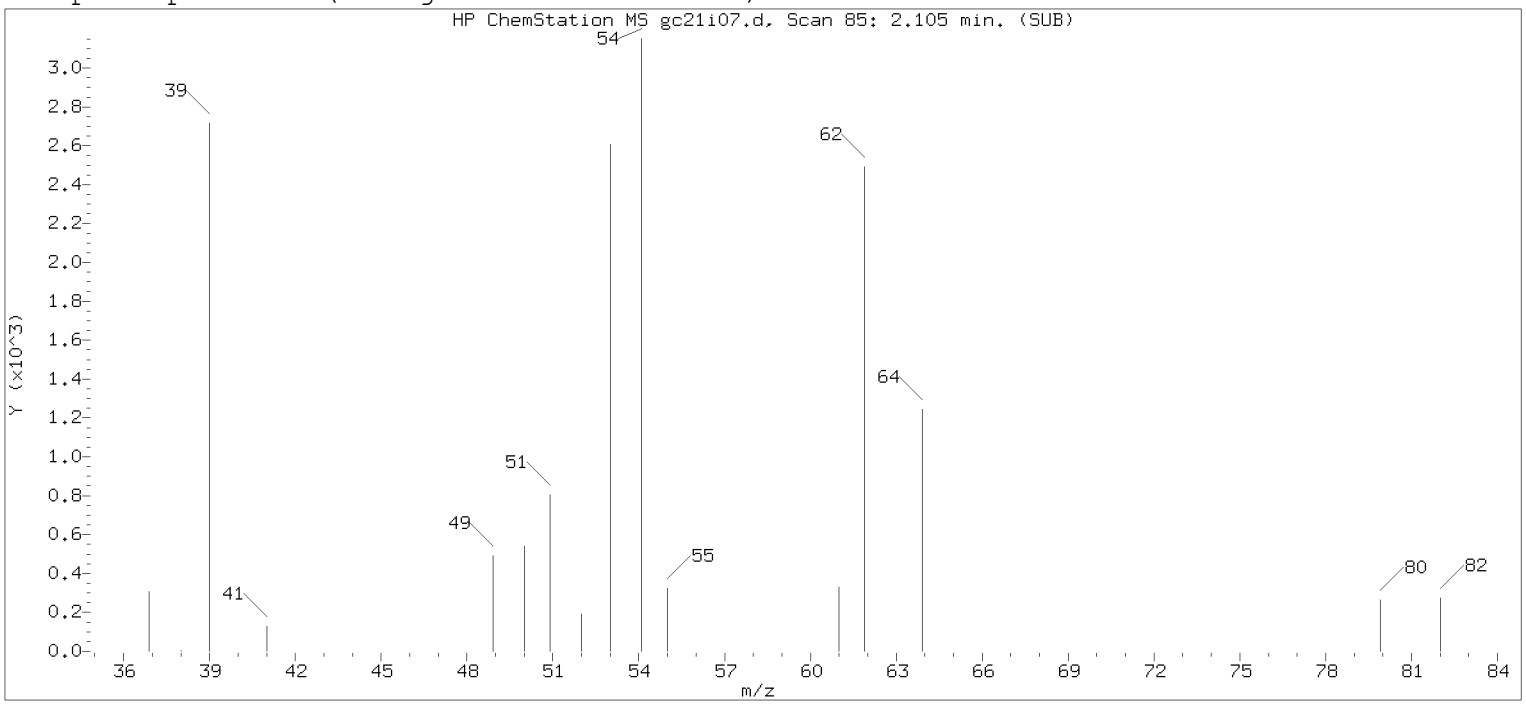
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 85
Retention Time (minutes): 2.105
Quant Ion : 39.00
Area (flag) : 13379M
On-Column Amount (ng) : 0.2244
Integration start scan : 65 Integration stop scan: 100
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

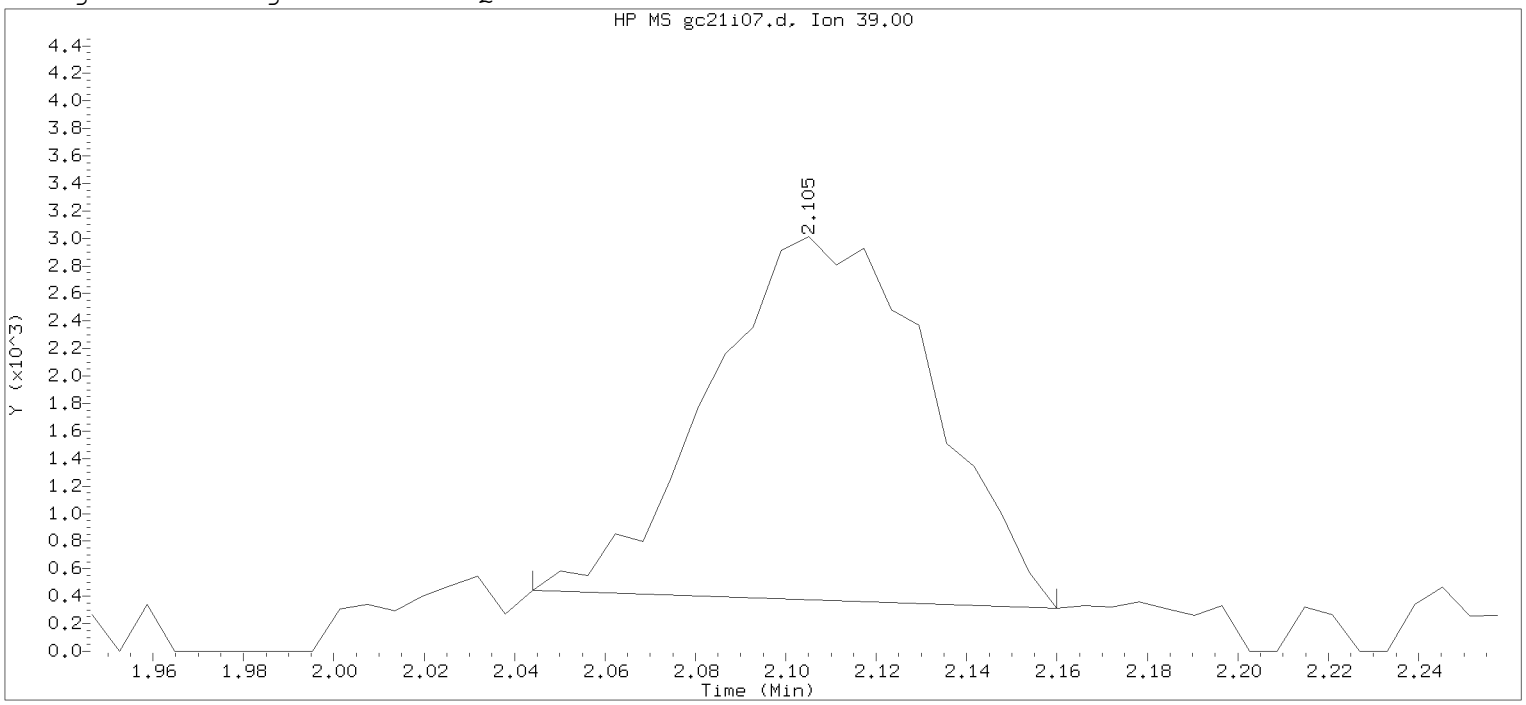
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

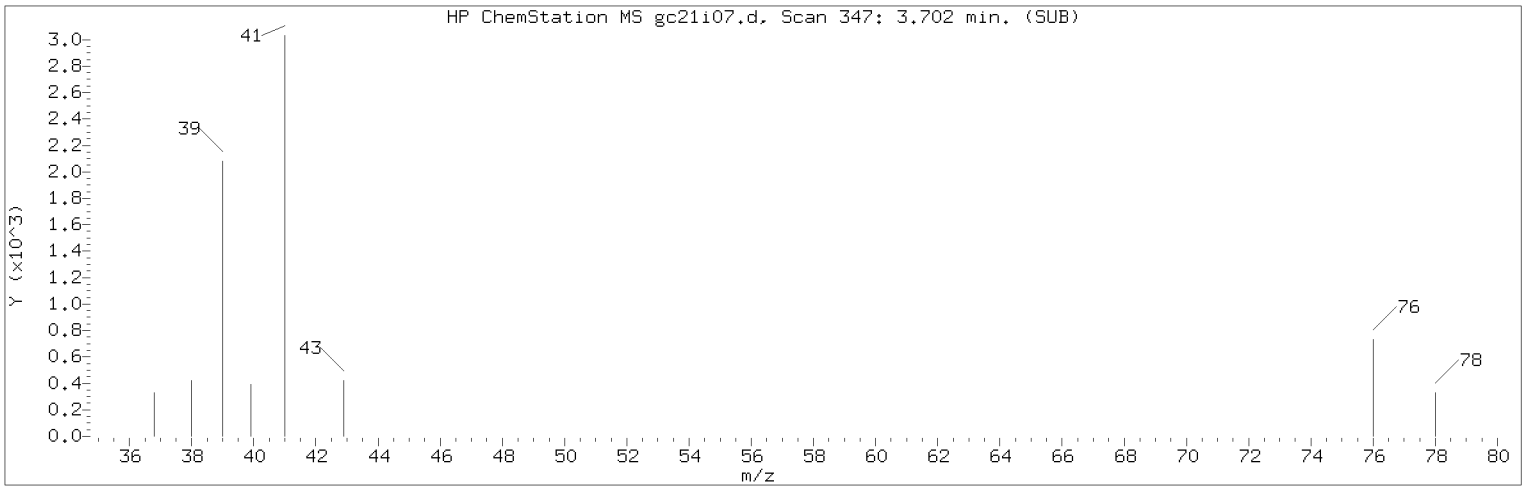
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

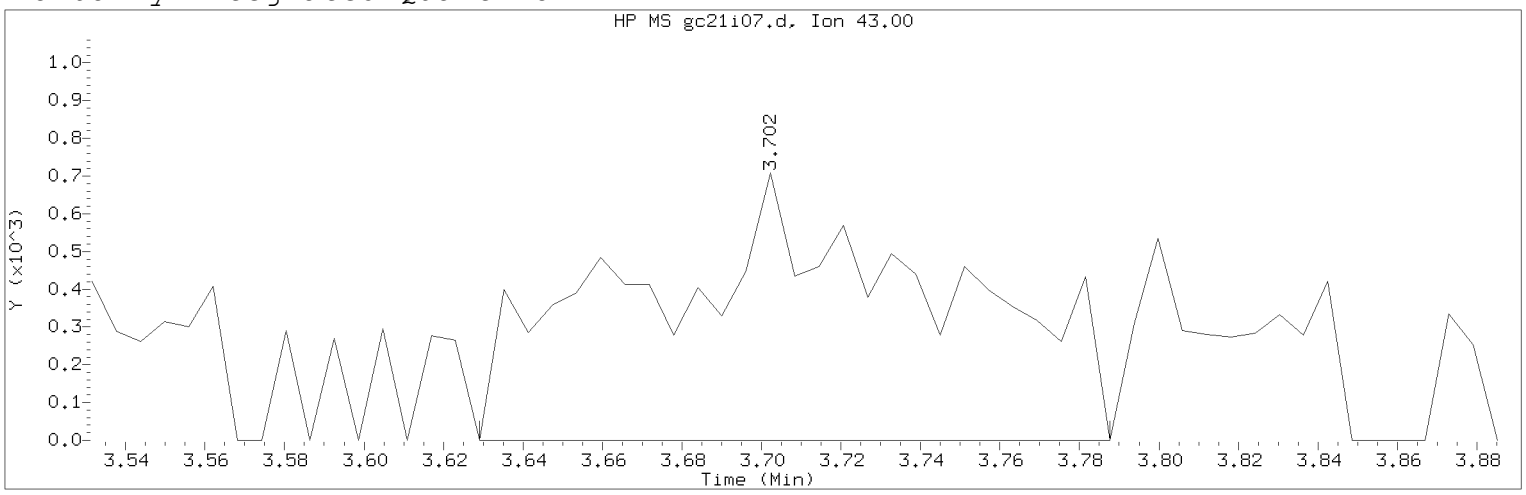
Compound Number	: 6		
Compound Name	: 1,3-Butadiene		
Scan Number	: 85		
Retention Time (minutes)	: 2.105		
Quant Ion	: 39.00		
Area	: 8946		
On-column Amount (ng)	: 0.1680		
Integration start scan	: 74	Integration stop scan:	93
Y at integration start	: 444	Y at integration end:	313

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

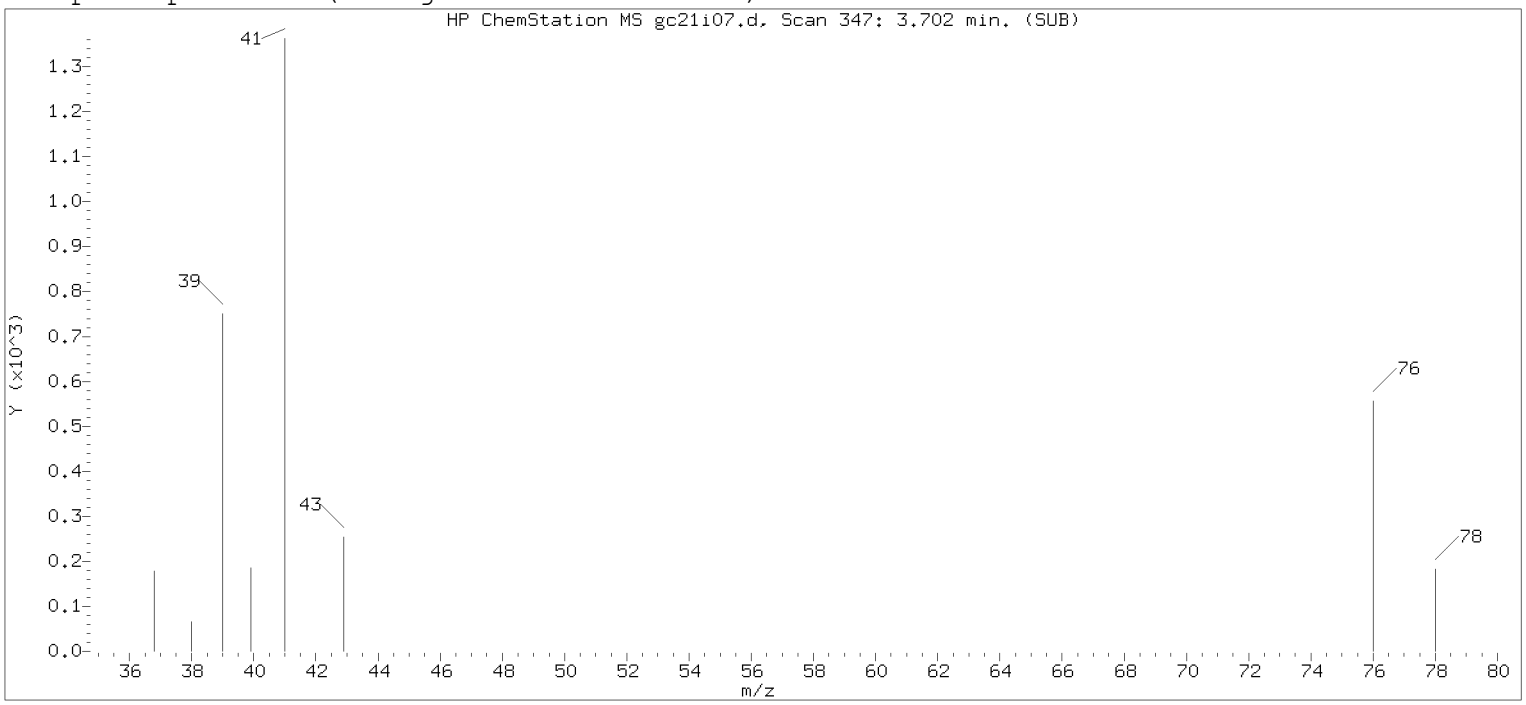
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 347
Retention Time (minutes): 3.702
Quant Ion : 43.00
Area (flag) : 3728M
On-Column Amount (ng) : 0.2362
Integration start scan : 334 Integration stop scan: 360
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

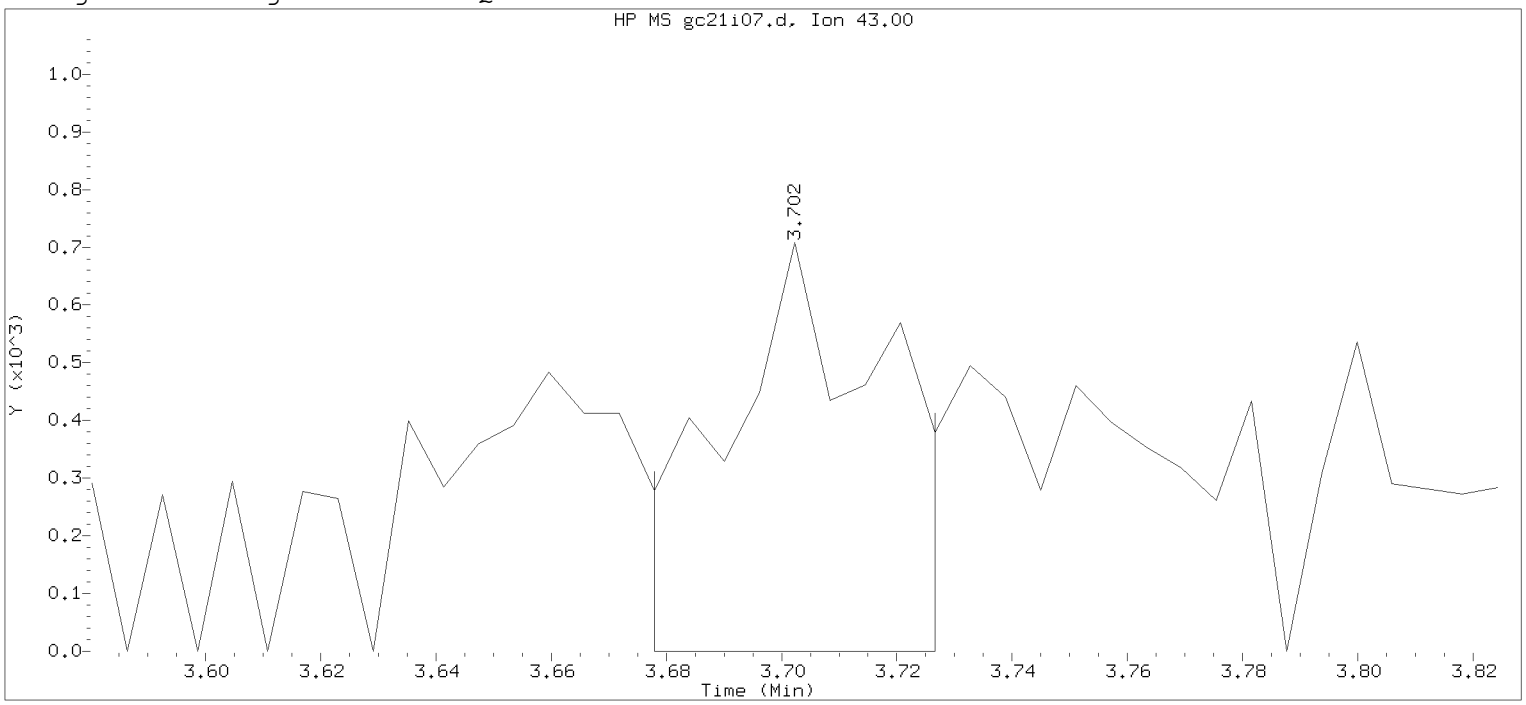
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

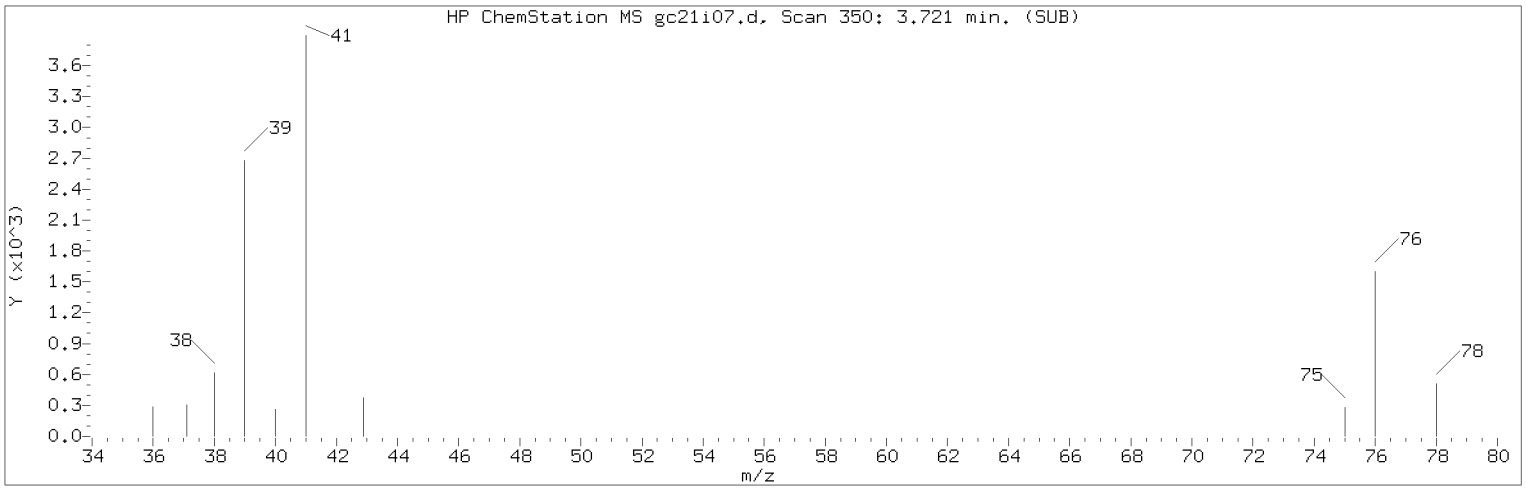
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Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

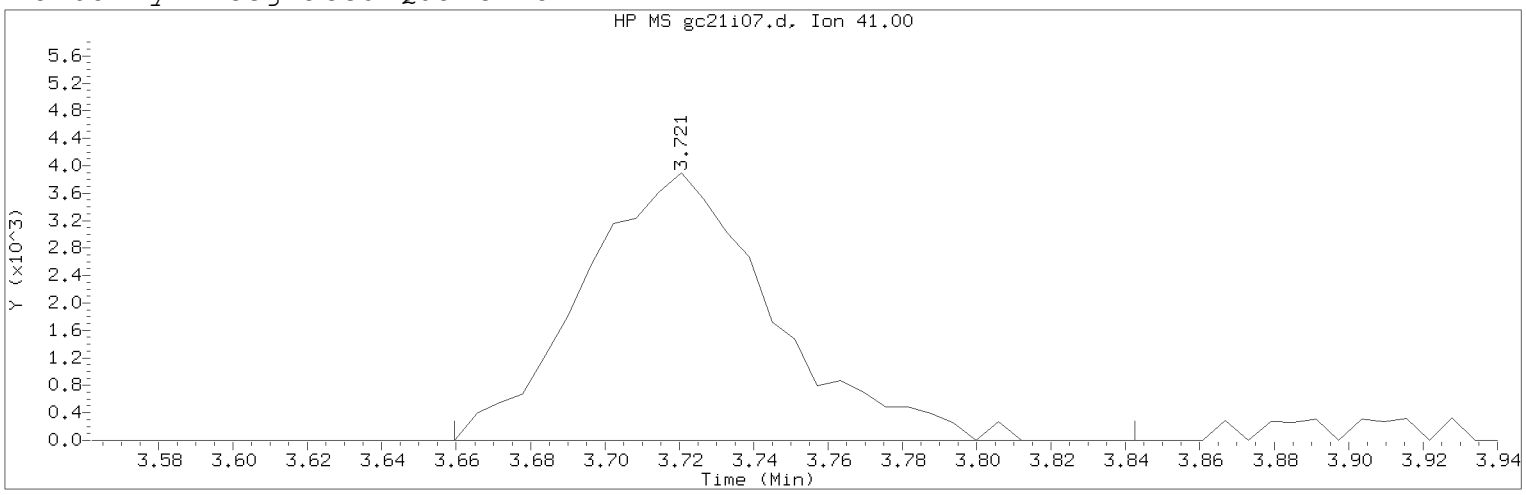
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 347
Retention Time (minutes): 3.702
Quant Ion : 43.00
Area : 1347
On-column Amount (ng) : 0.0766
Integration start scan : 342 Integration stop scan: 350
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

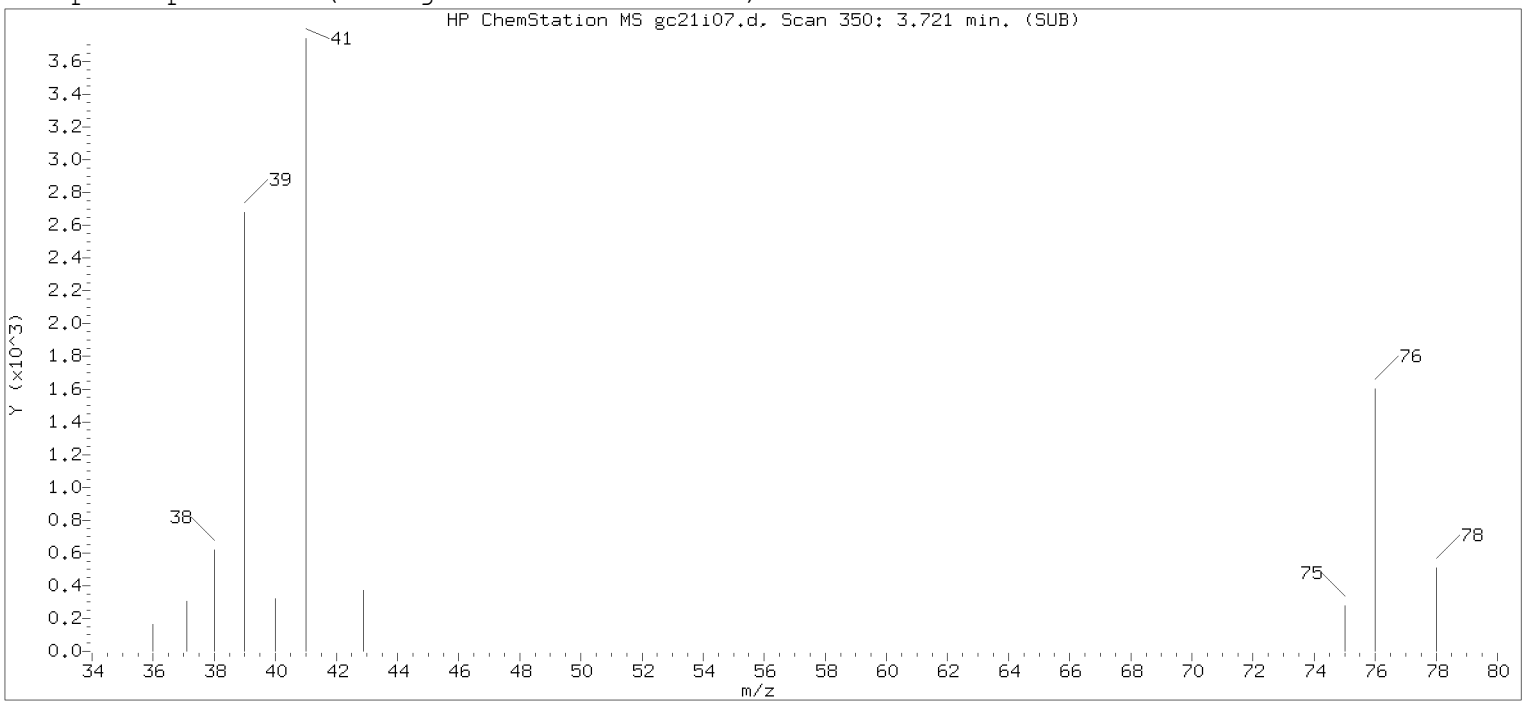
Compound Number : 22
Compound Name : Allyl Chloride
Scan Number : 350
Retention Time (minutes): 3.721
Quant Ion : 41.00
Area (flag) : 13833M
On-Column Amount (ng) : 0.2047
Integration start scan : 339 Integration stop scan: 369
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

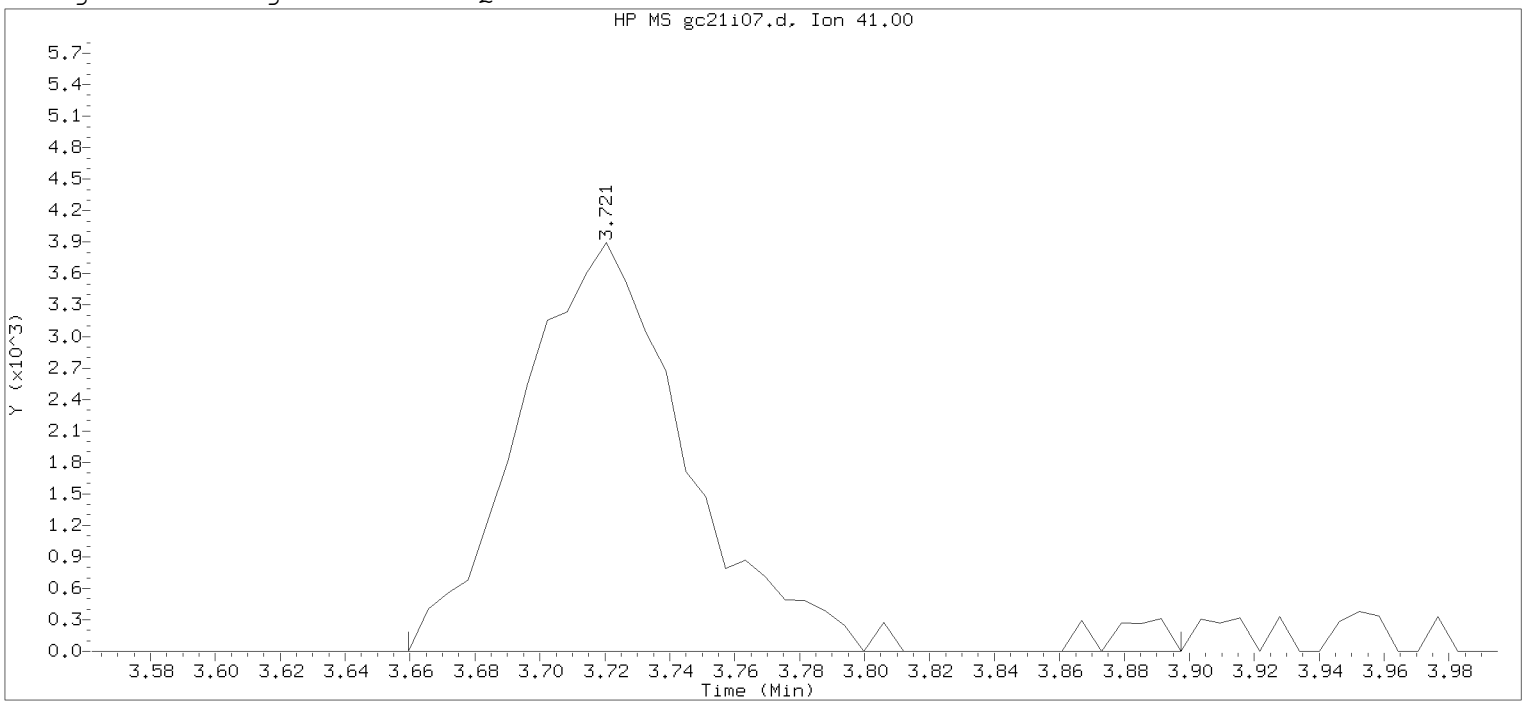
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

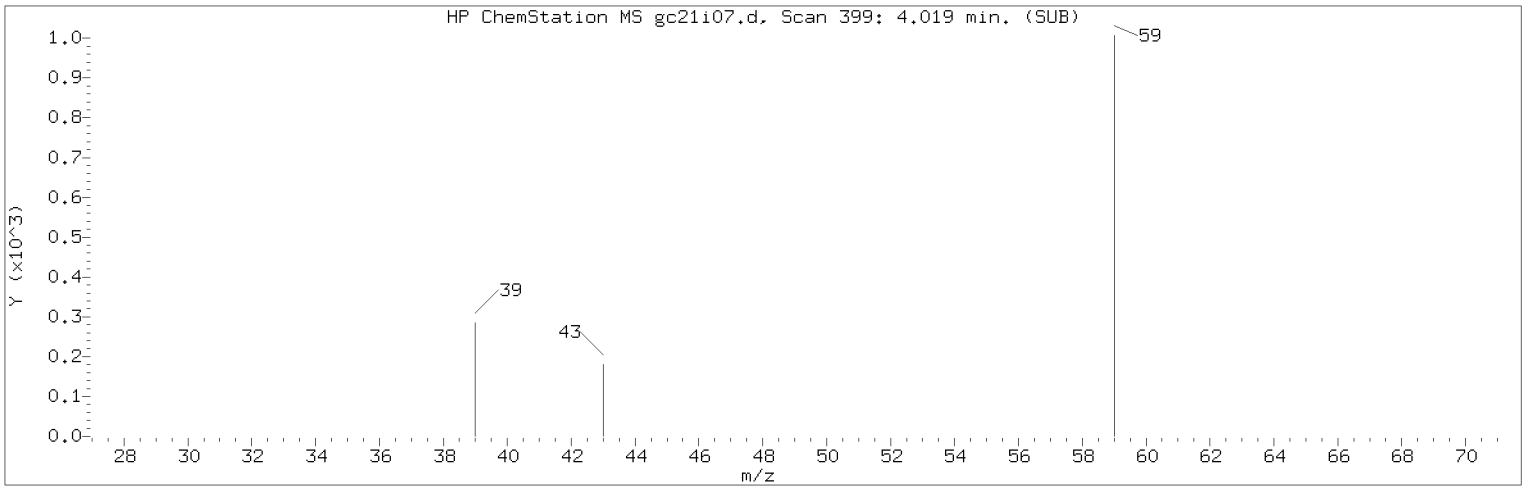
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

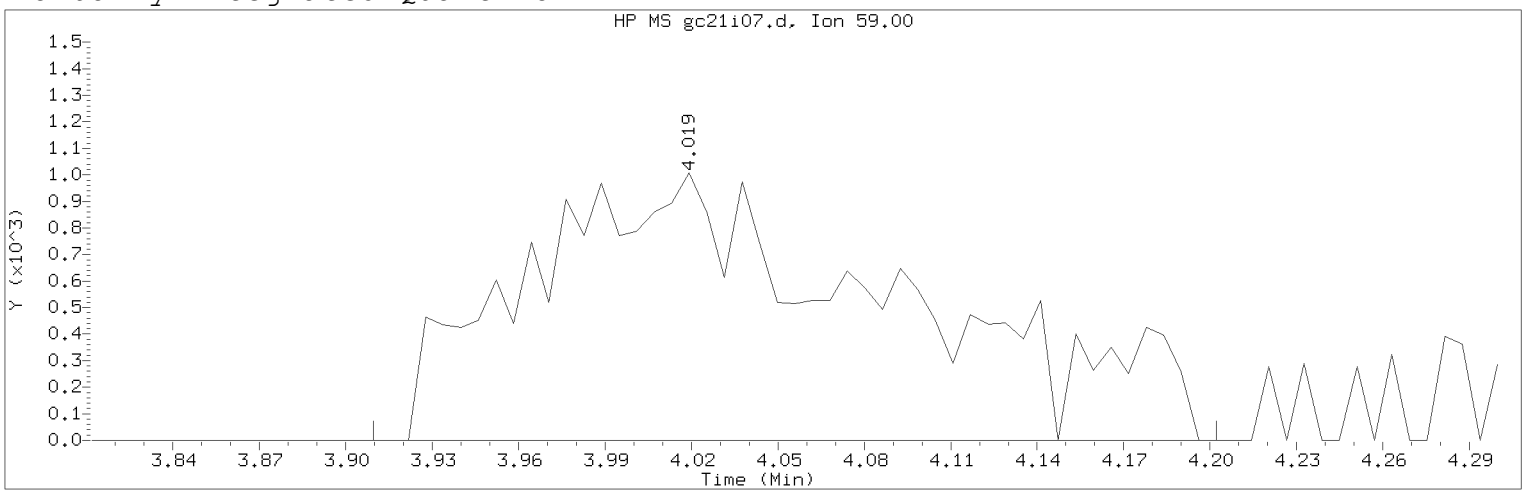
Compound Number : 22
Compound Name : Allyl Chloride
Scan Number : 350
Retention Time (minutes): 3.721
Quant Ion : 41.00
Area : 14249
On-column Amount (ng) : 0.2099
Integration start scan : 339 Integration stop scan: 378
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

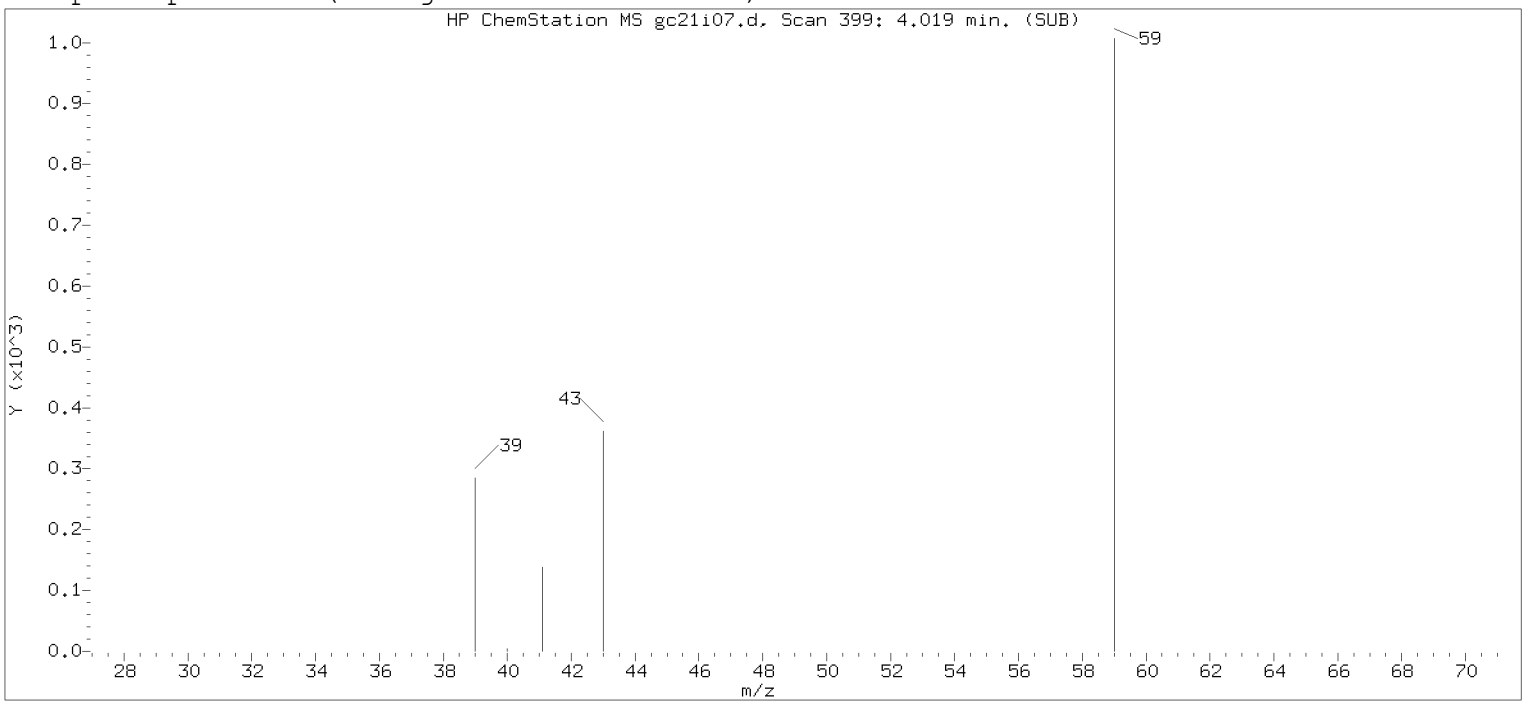
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 399
Retention Time (minutes): 4.019
Quant Ion : 59.00
Area (flag) : 8999M
On-Column Amount (ng) : 4.0367
Integration start scan : 380 Integration stop scan: 428
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

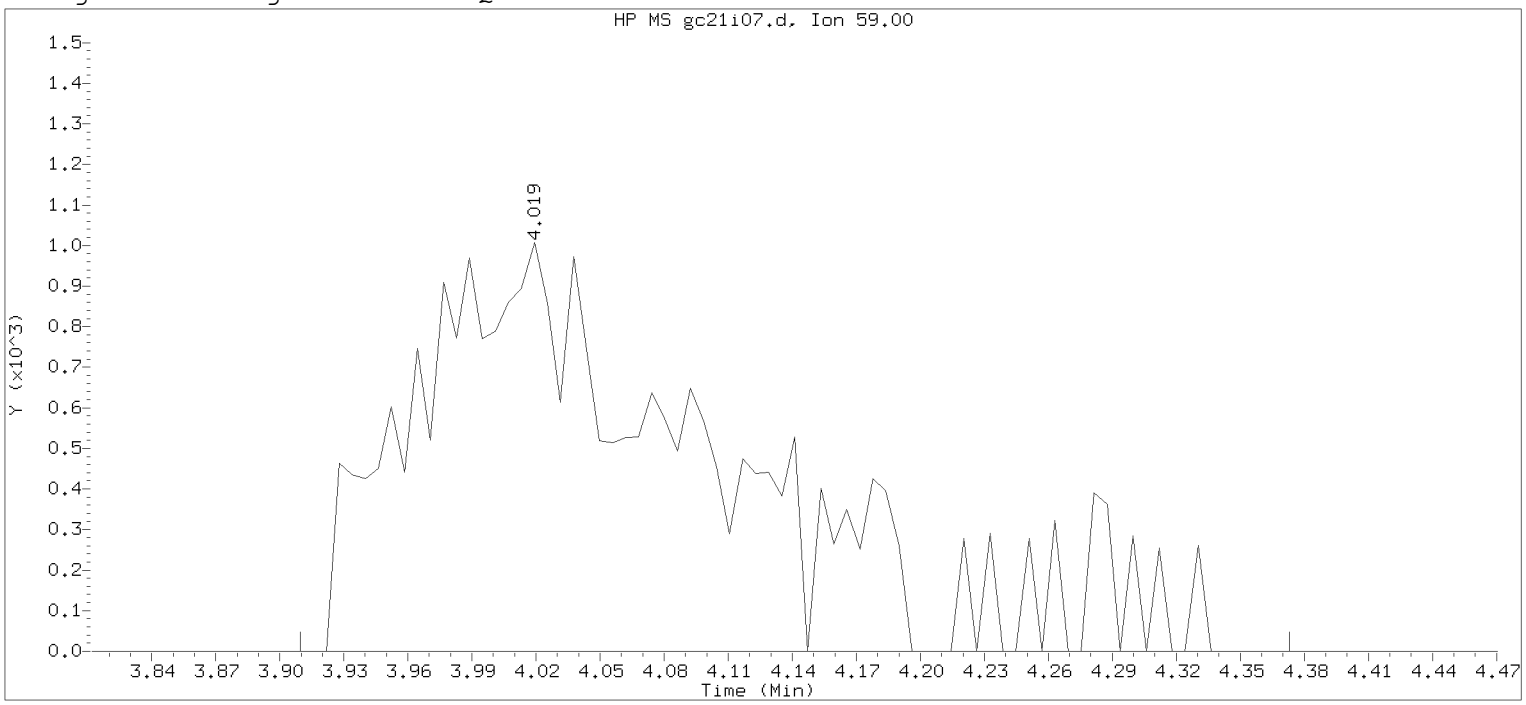
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

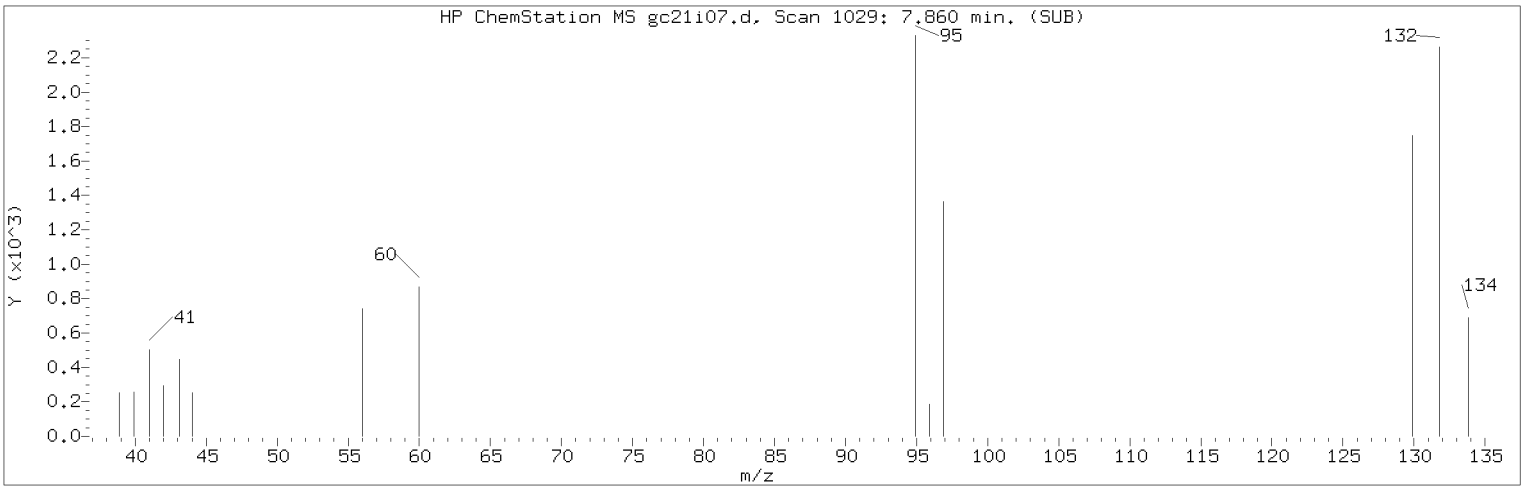
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

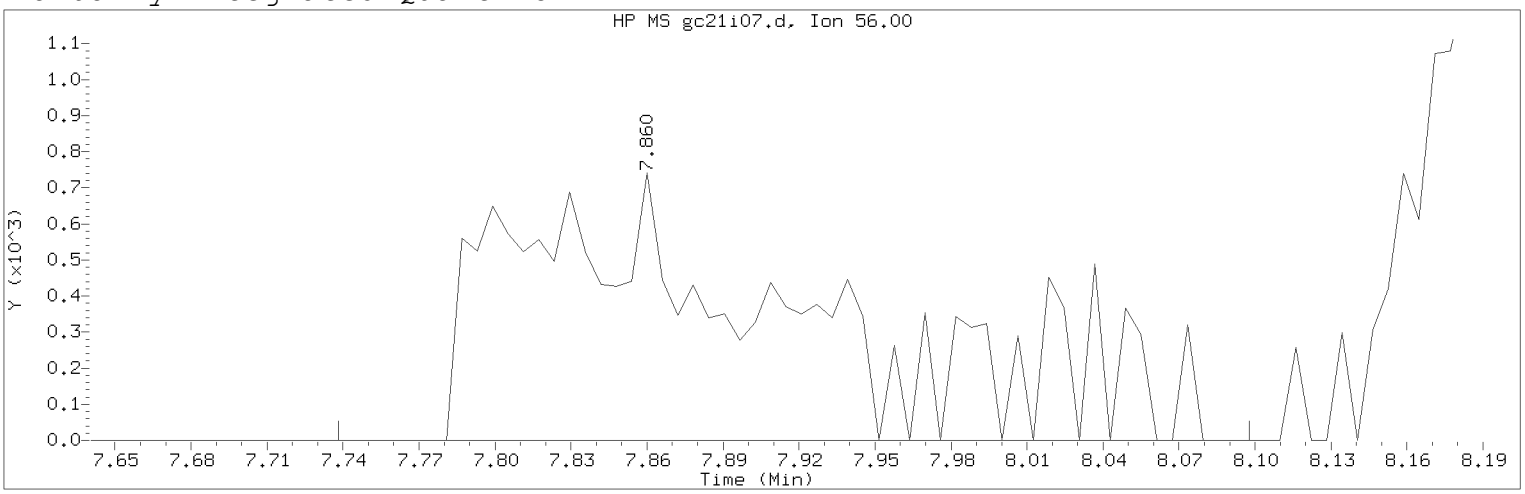
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 399
Retention Time (minutes): 4.019
Quant Ion : 59.00
Area : 9995
On-column Amount (ng) : 3.9996
Integration start scan : 380 Integration stop scan: 456
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

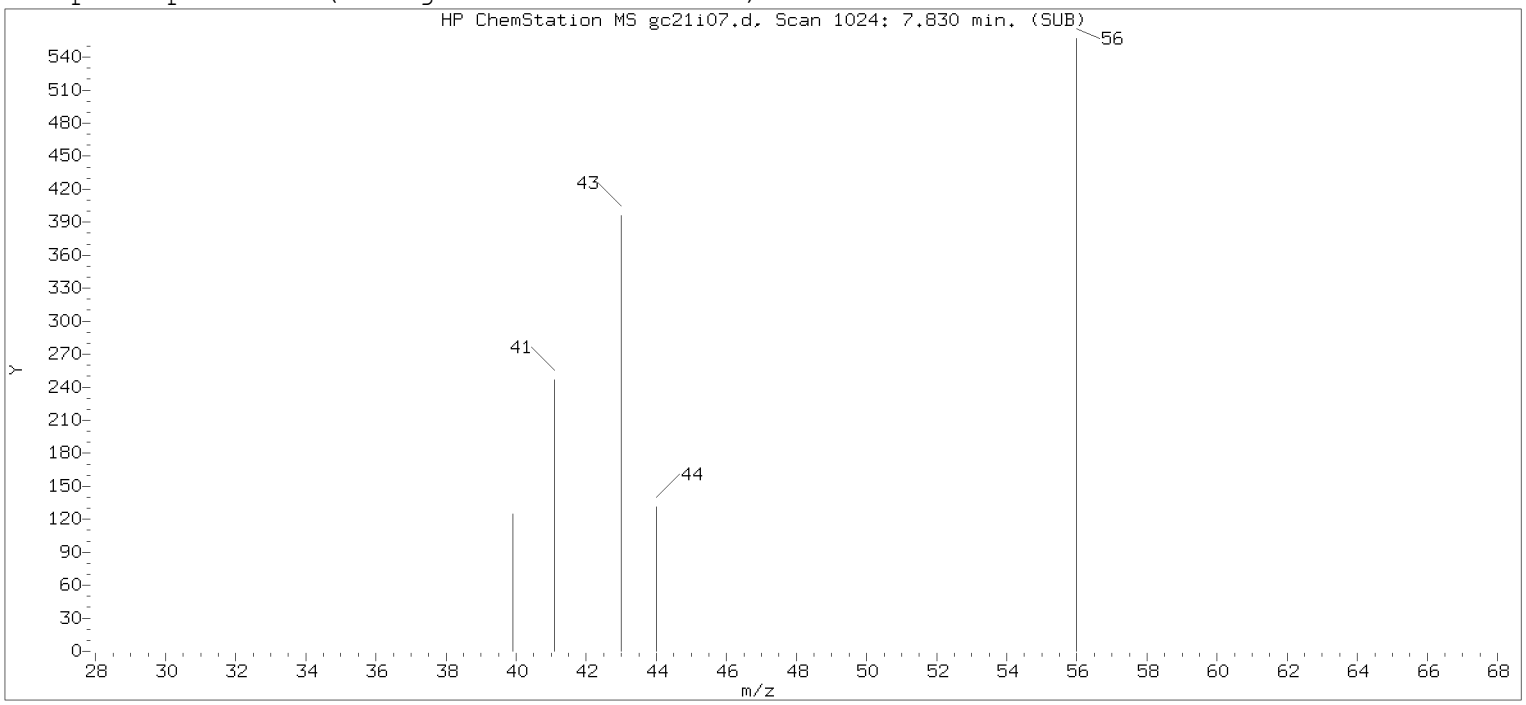
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1029
Retention Time (minutes): 7.860
Quant Ion : 56.00
Area (flag) : 6032M
On-Column Amount (ng) : 34.5036
Integration start scan : 1008 Integration stop scan: 1067
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

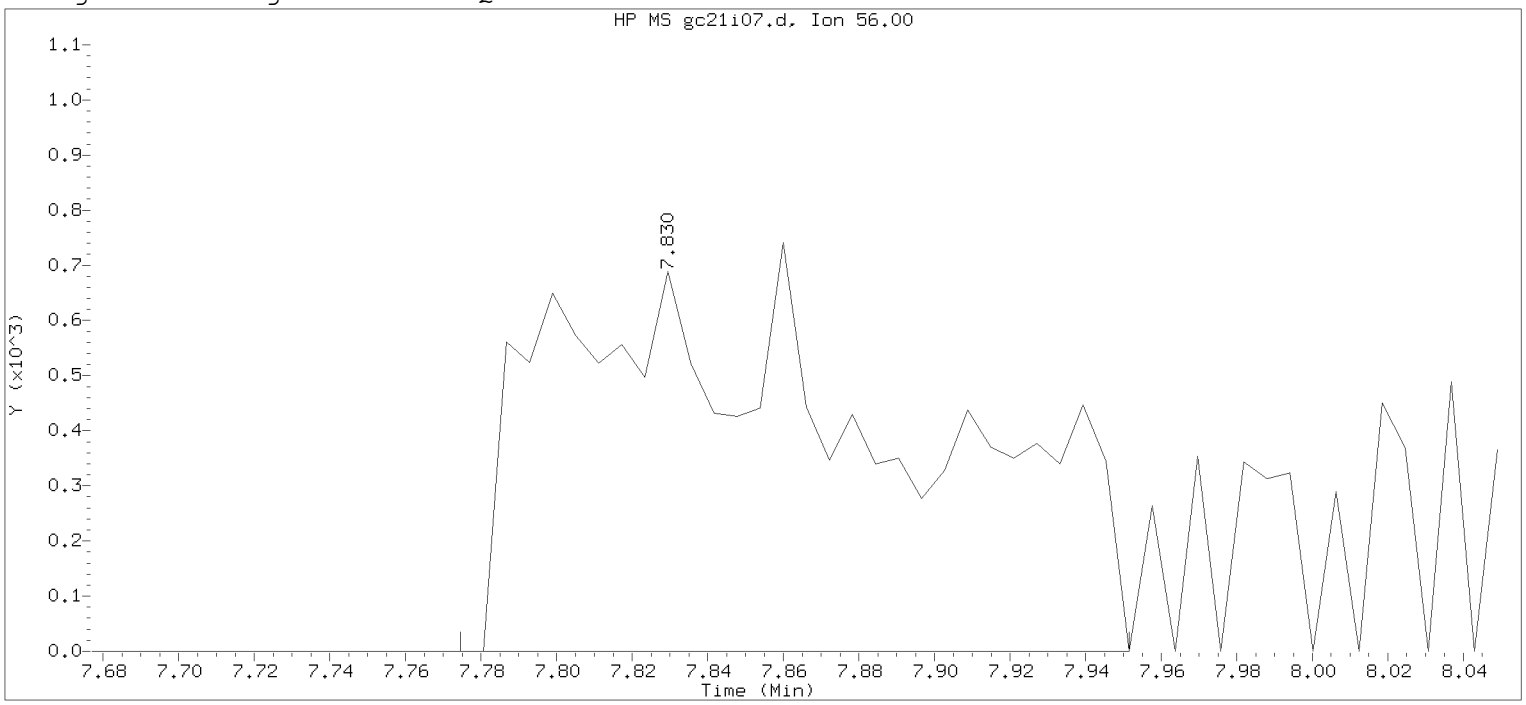
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

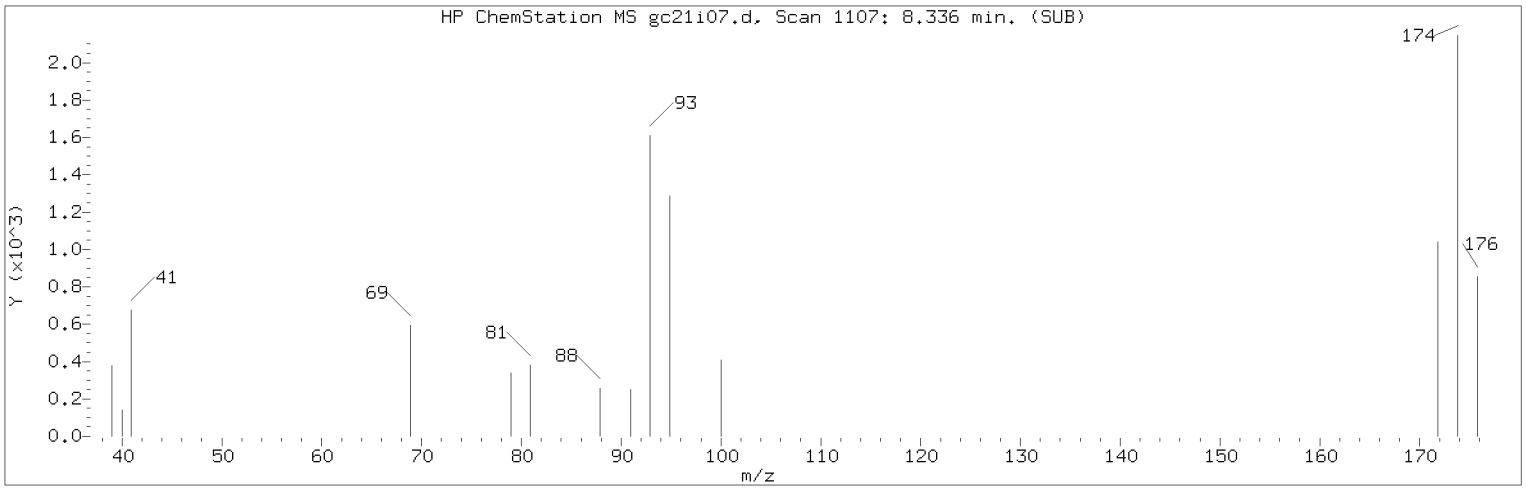
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

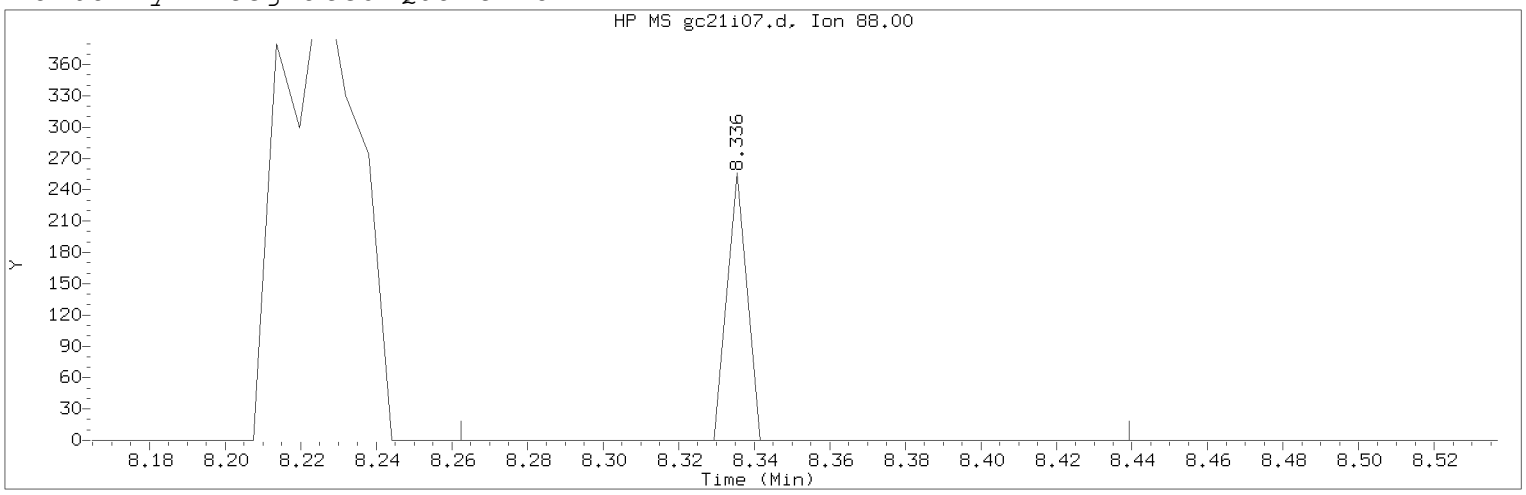
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1024
Retention Time (minutes): 7.830
Quant Ion : 56.00
Area : 4504
On-column Amount (ng) : 8.3439
Integration start scan : 1014 Integration stop scan: 1043
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

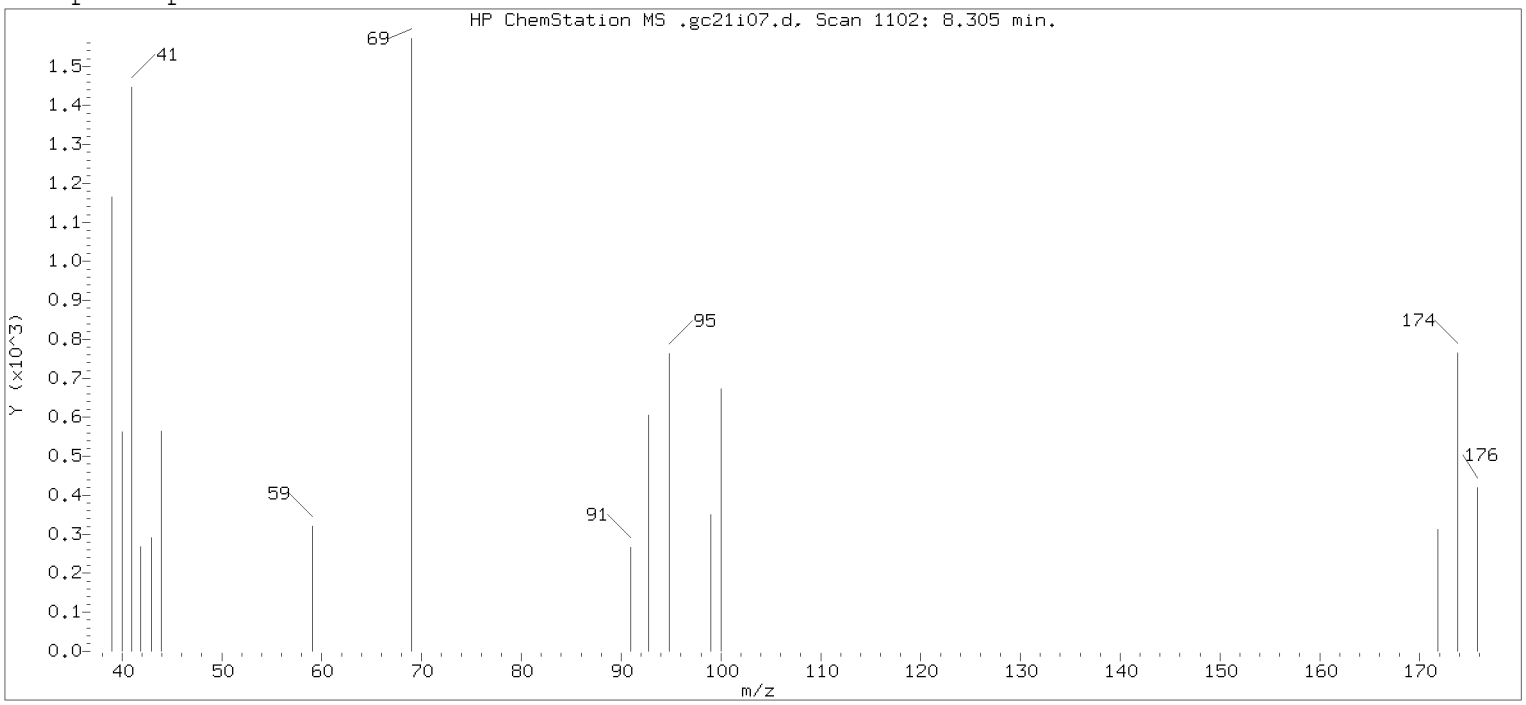
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1107
Retention Time (minutes): 8.336
Quant Ion : 88.00
Area (flag) : 93M
On-Column Amount (ng) : 0.5134
Integration start scan : 1094 Integration stop scan: 1123
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

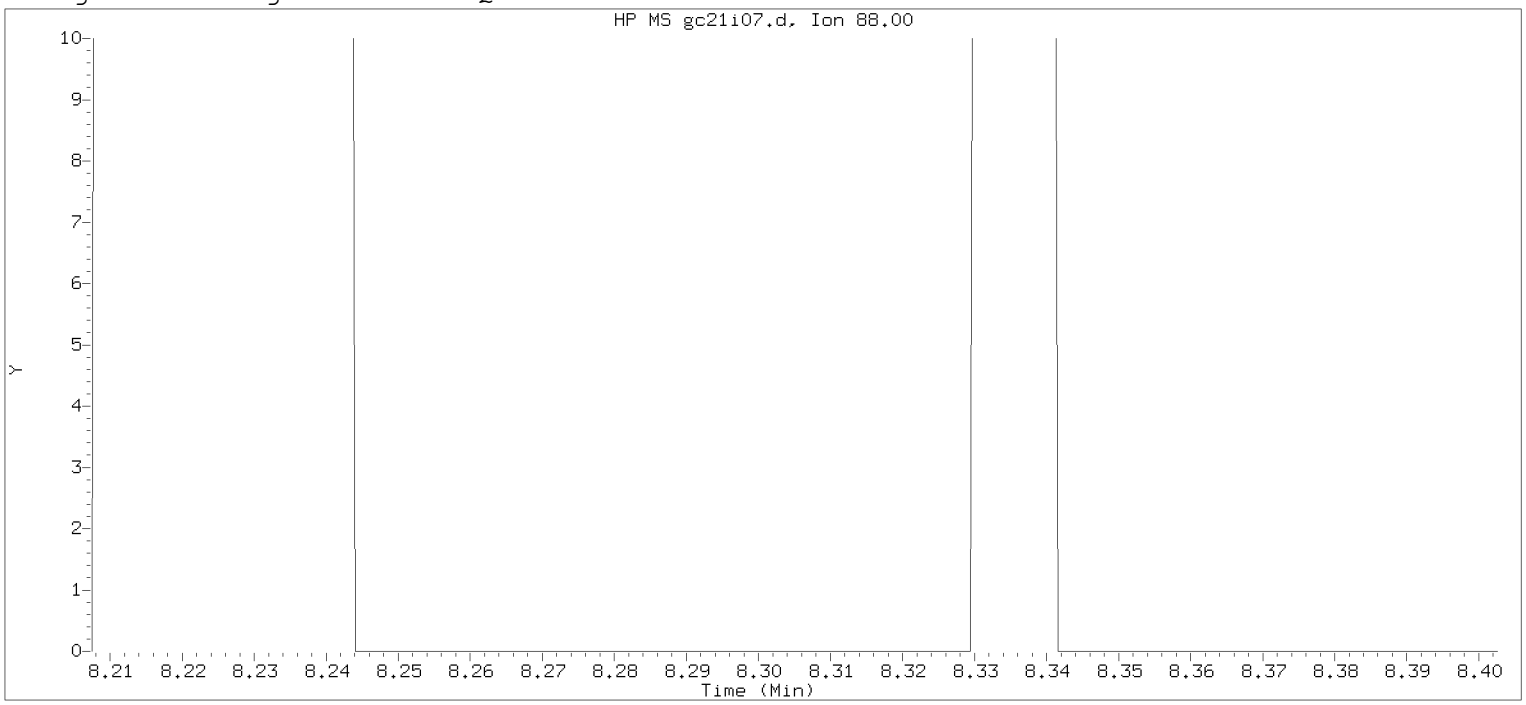
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

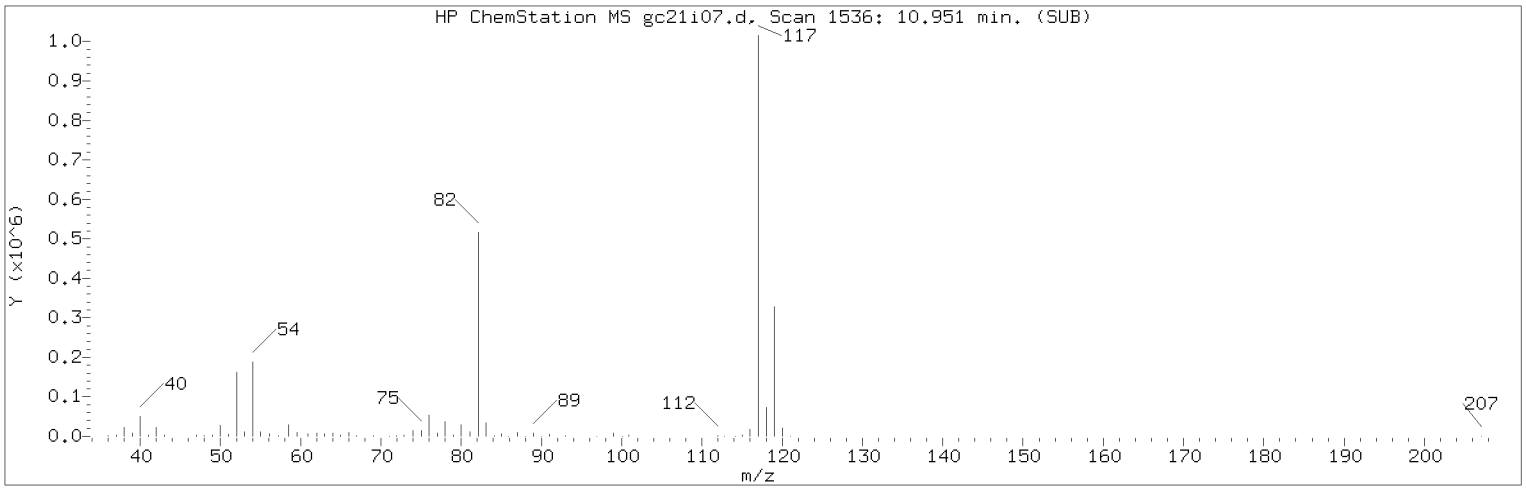
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

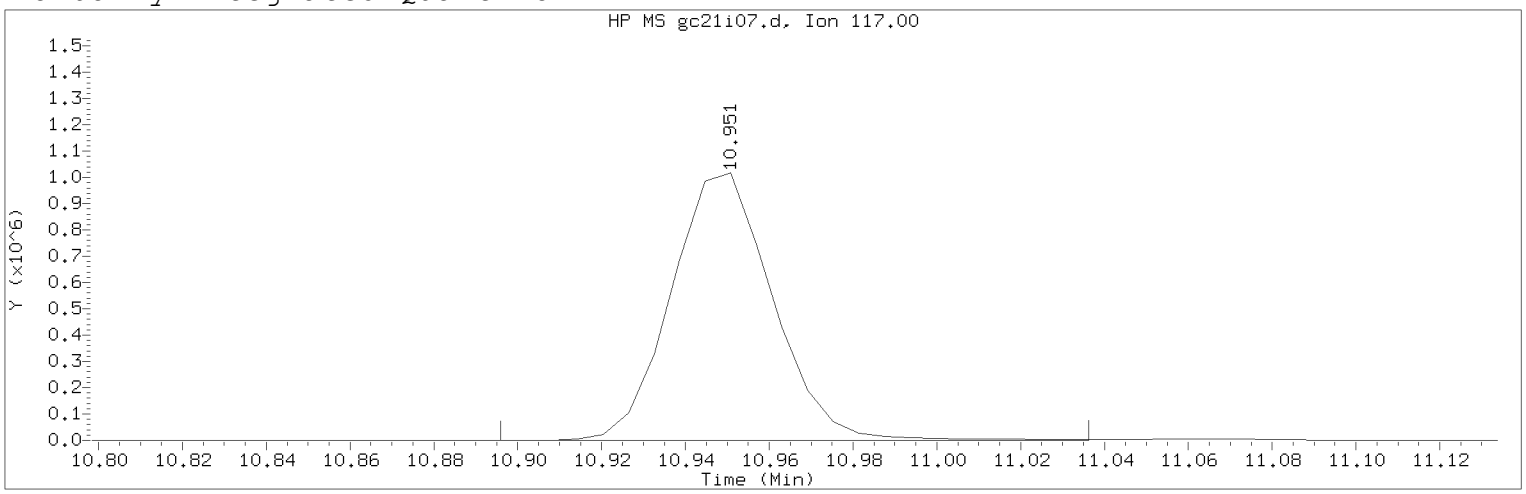
Compound Number : 72
Compound Name : 1,4-Dioxane
Expected RT (minutes) : 8.305
Quant Ion : 88.00

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

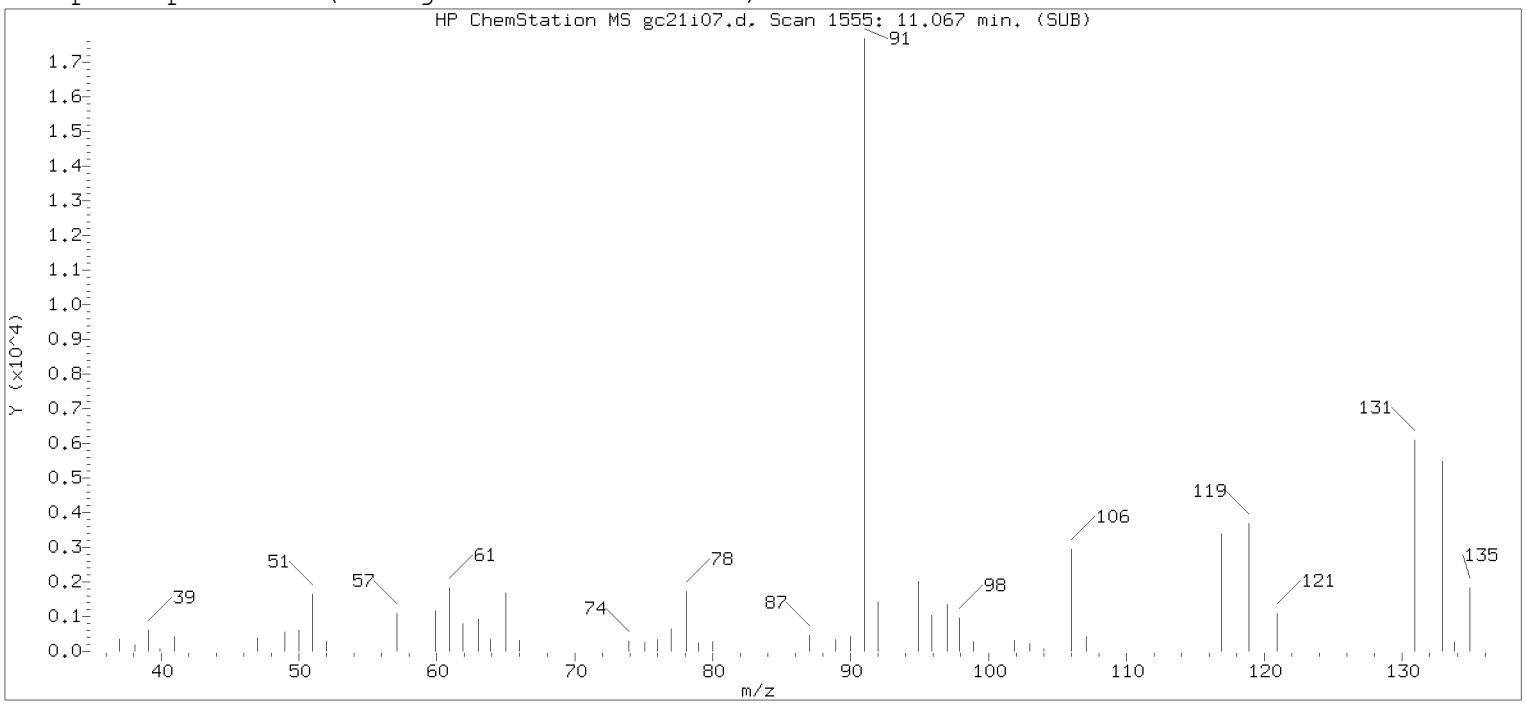
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1536
Retention Time (minutes): 10.951
Quant Ion : 117.00
Area (flag) : 1705633A
On-Column Amount (ng) : 10.0000
Integration start scan : 1526 Integration stop scan: 1549
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

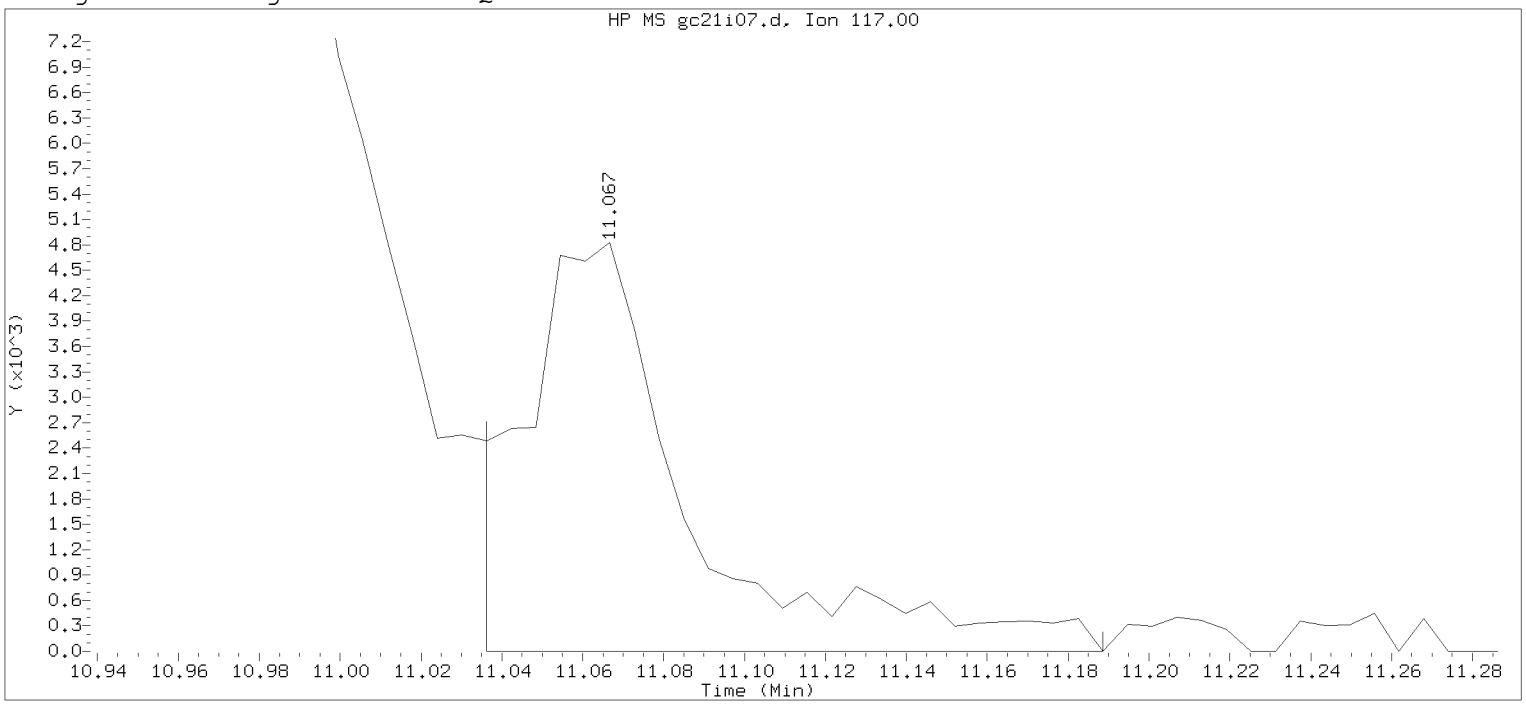
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

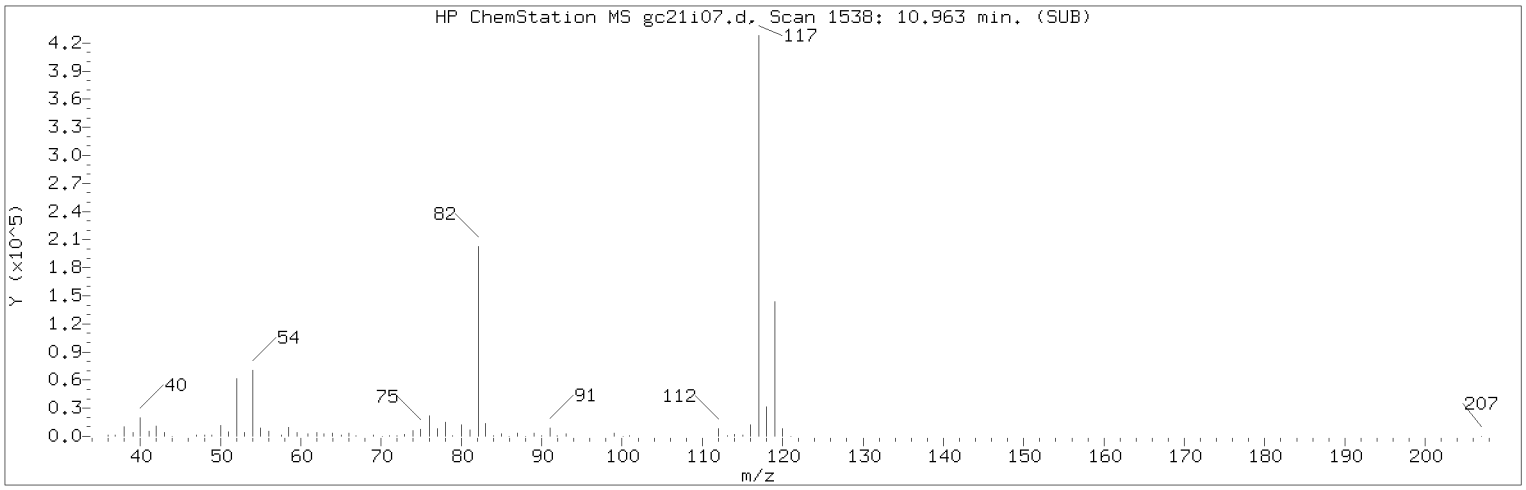
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

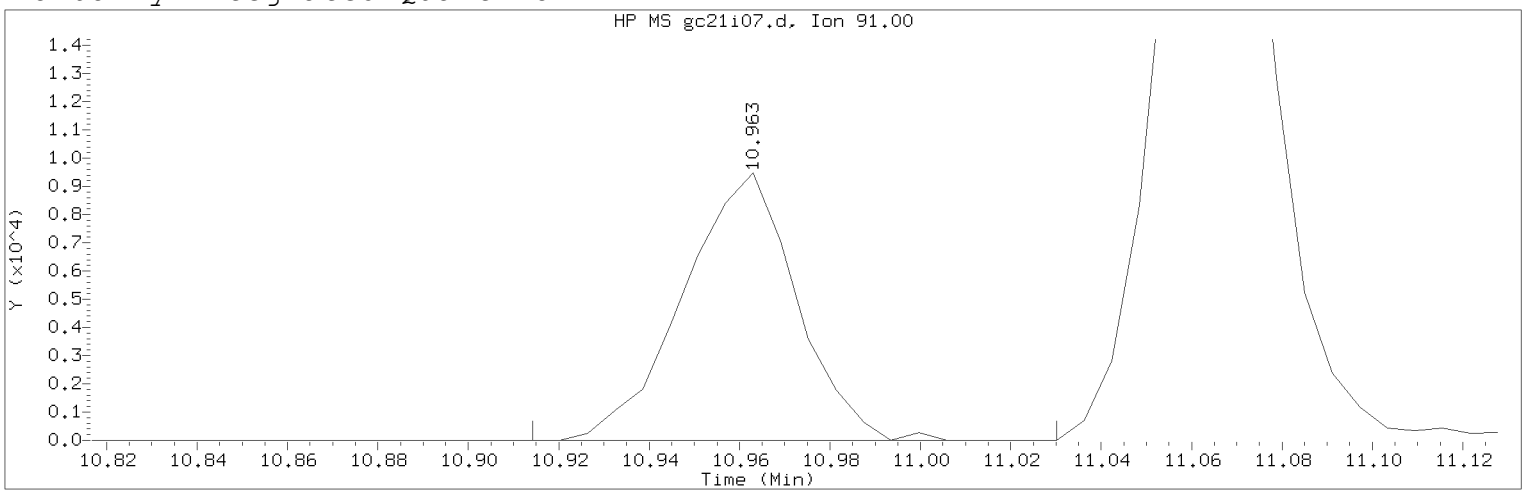
Compound Number	: 97		
Compound Name	: Chlorobenzene-d5		
Scan Number	: 1555		
Retention Time (minutes)	: 11.067		
Quant Ion	: 117.00		
Area	: 13621		
On-column Amount (ng)	: 10.0000		
Integration start scan	: 1549	Integration stop scan:	1574
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

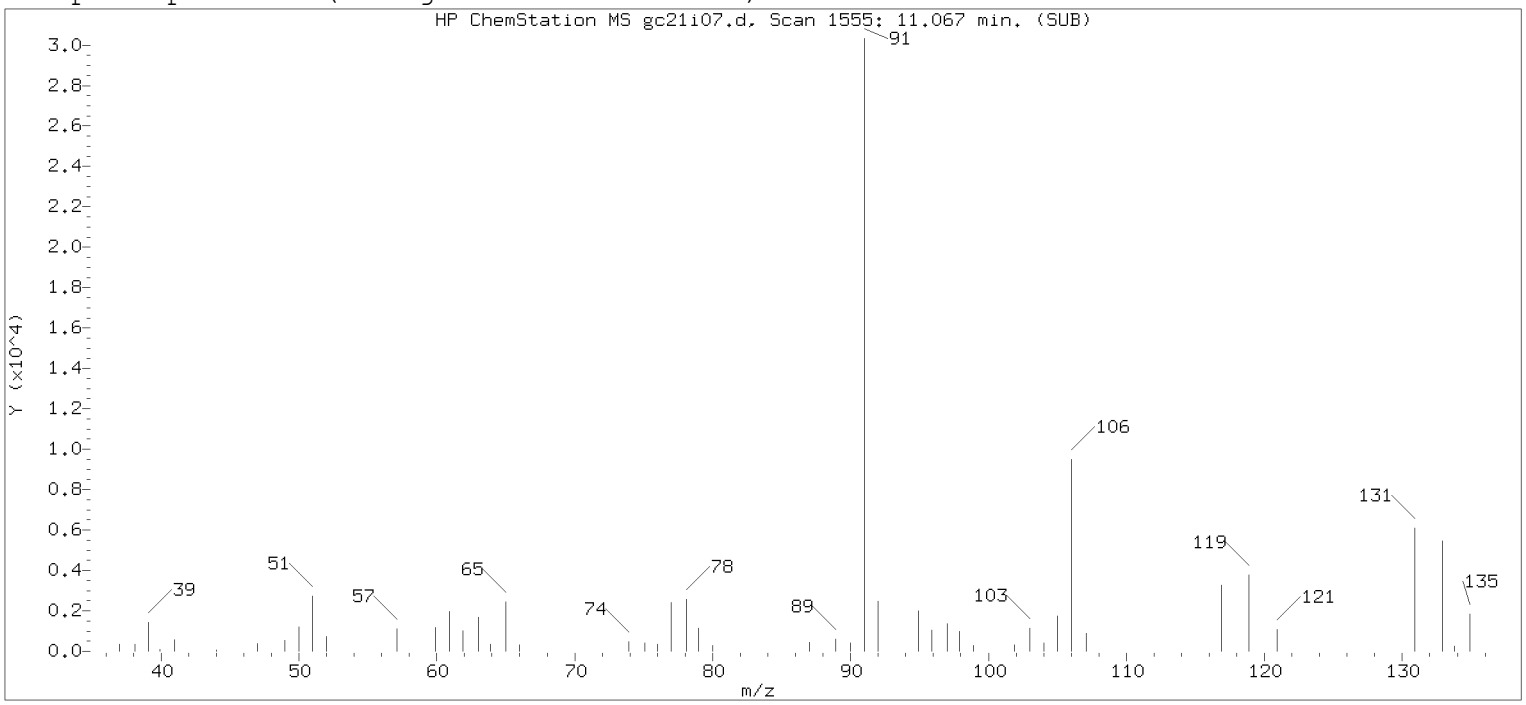
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1538
Retention Time (minutes): 10.963
Quant Ion : 91.00
Area (flag) : 16471A
On-Column Amount (ng) : 0.2026
Integration start scan : 1529 Integration stop scan: 1548
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

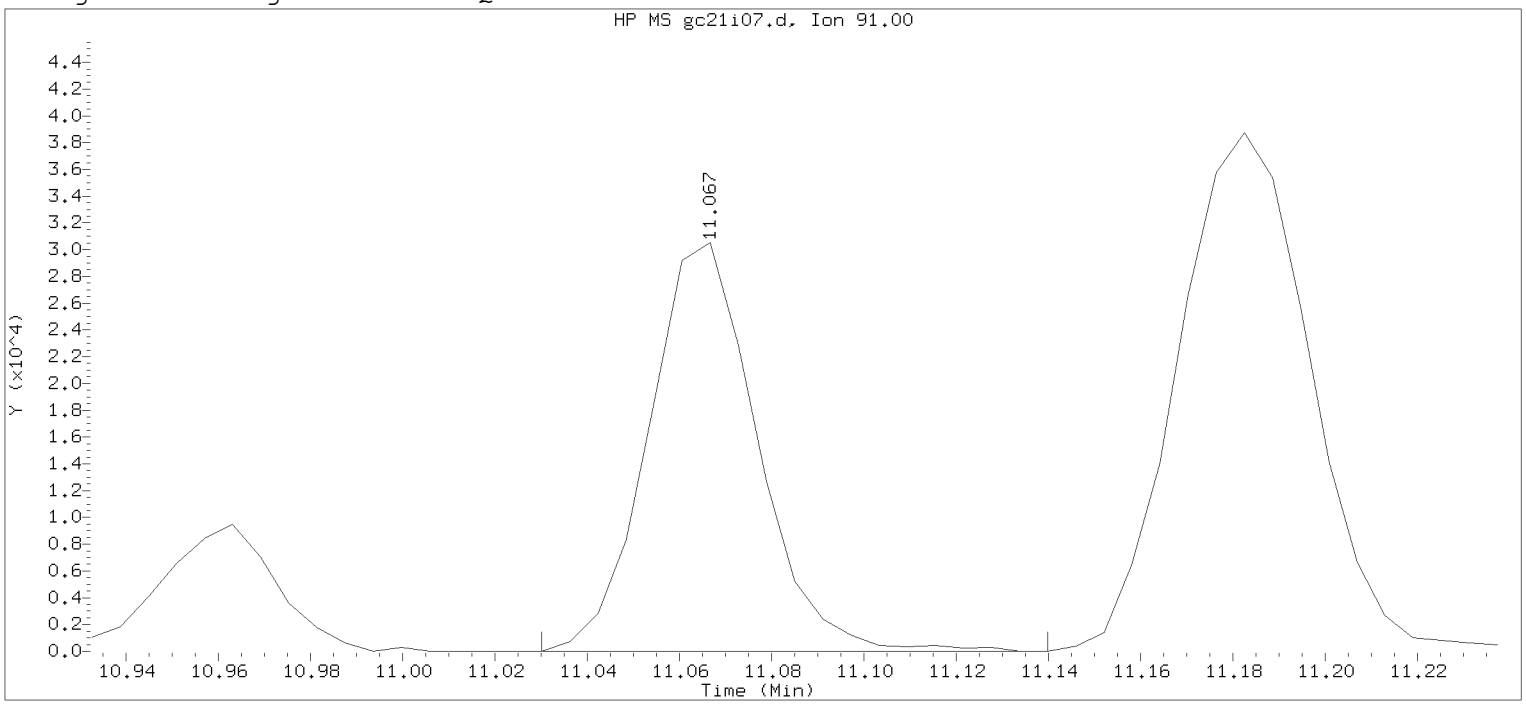
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

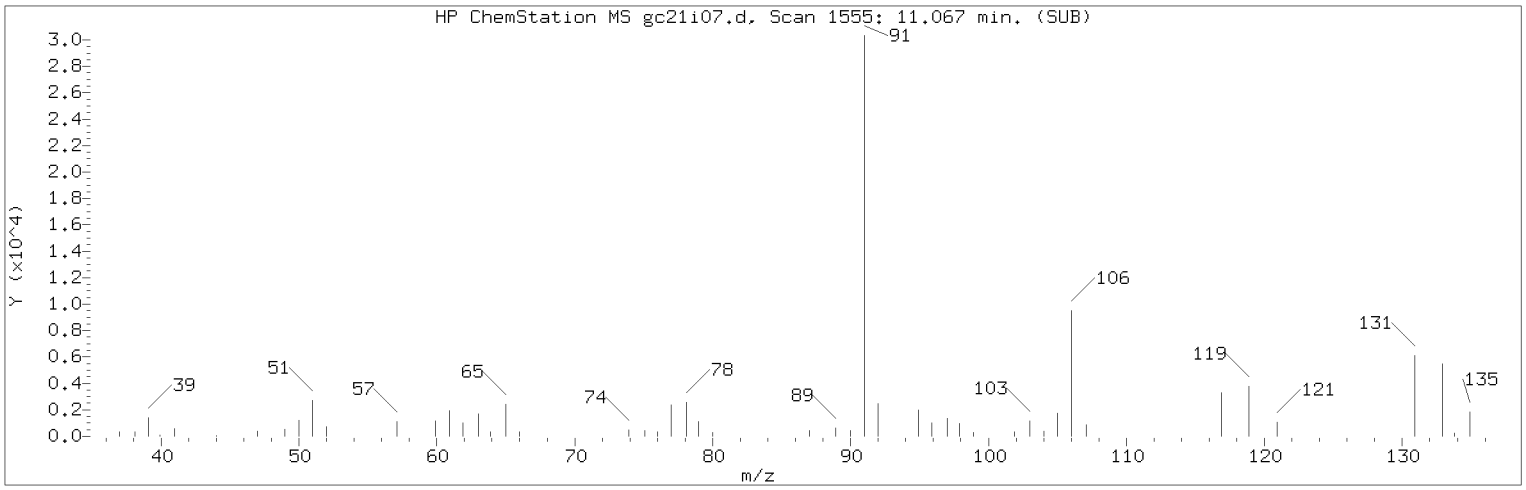
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

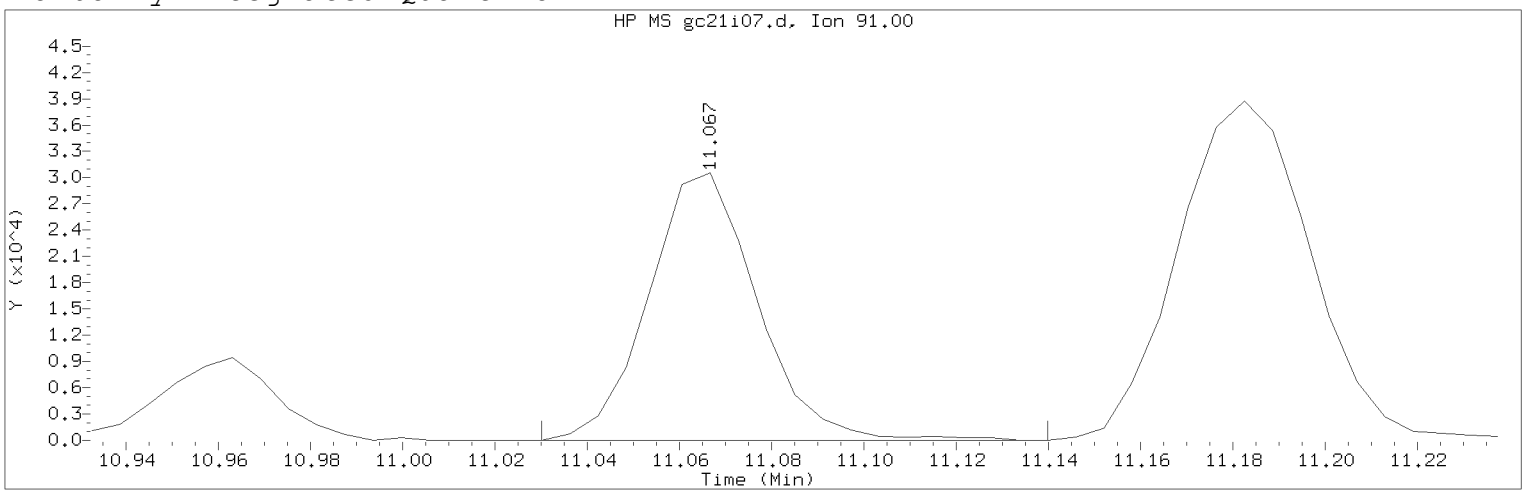
Compound Number : 96
Compound Name : 1-Chlorohexane
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area : 49866
On-column Amount (ng) : 0.6409
Integration start scan : 1548 Integration stop scan: 1566
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

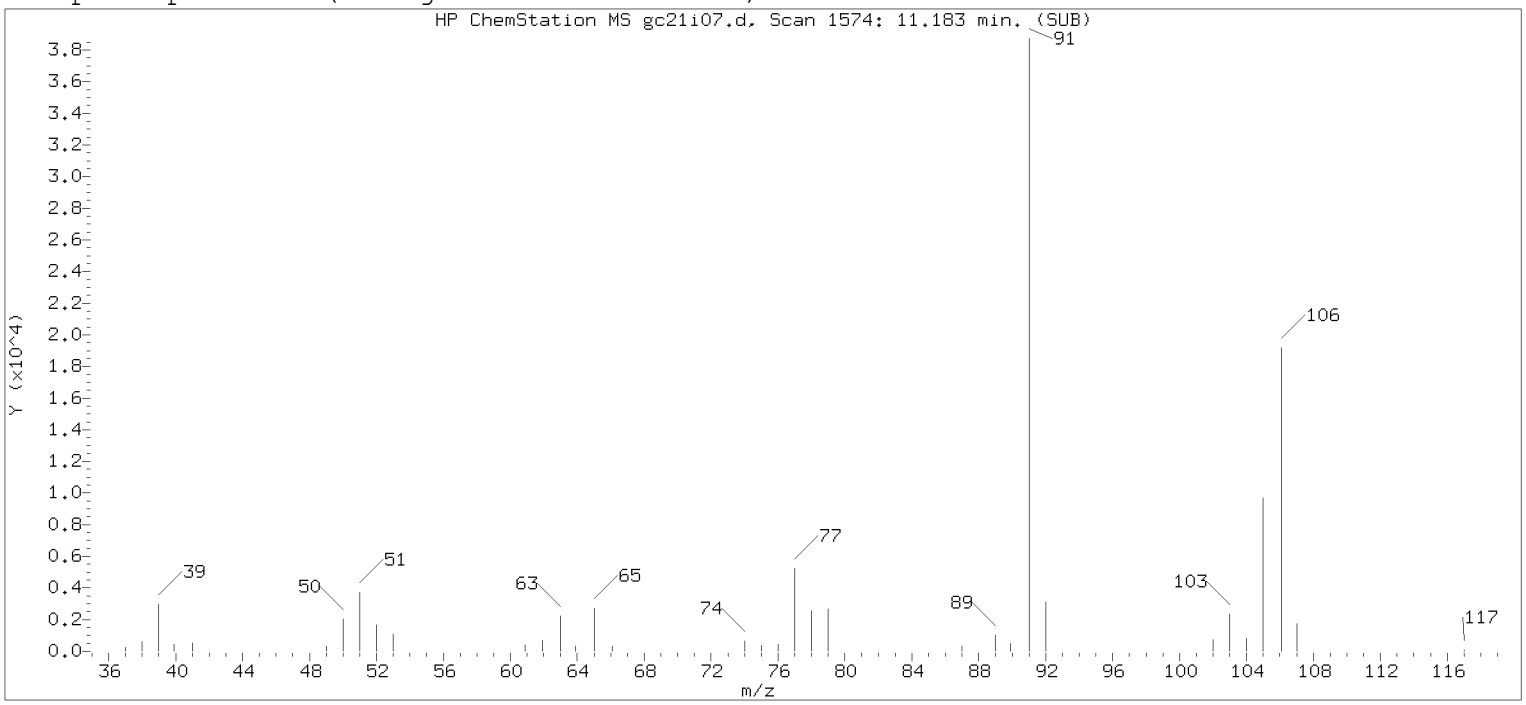
Compound Number : 100
Compound Name : Ethylbenzene
Scan Number : 1555
Retention Time (minutes): 11.067
Quant Ion : 91.00
Area (flag) : 49866A
On-Column Amount (ng) : 0.1871
Integration start scan : 1548 Integration stop scan: 1566
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

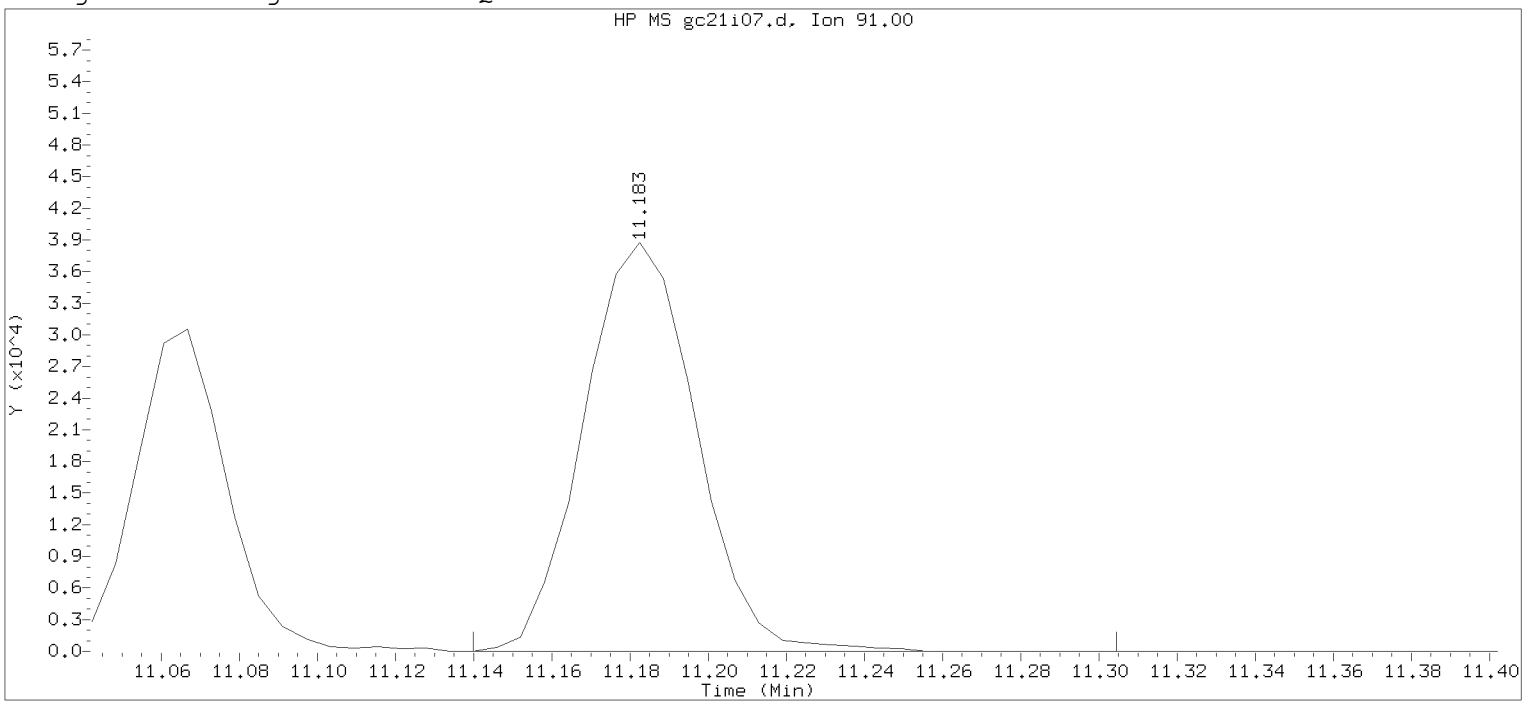
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

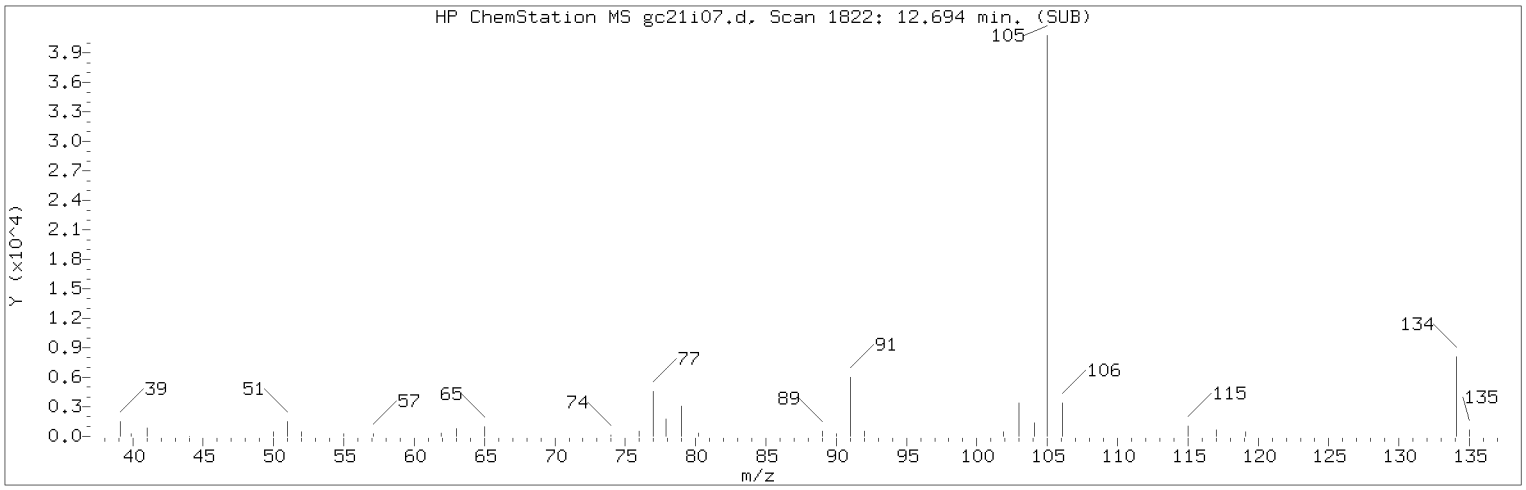
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

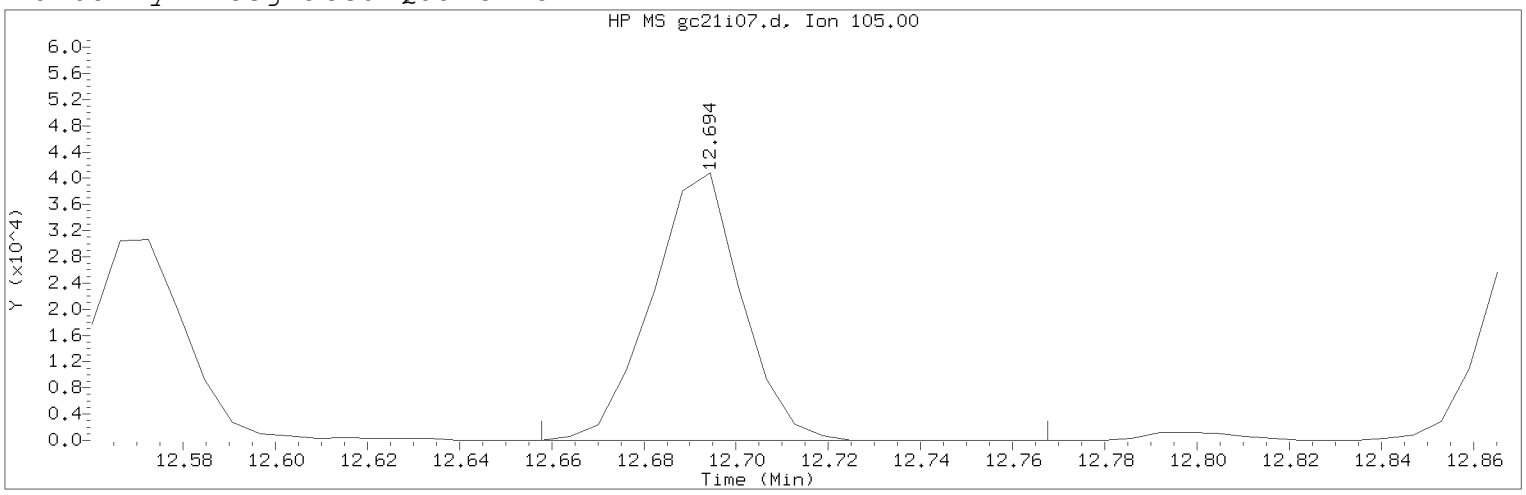
Compound Number	: 100		
Compound Name	: Ethylbenzene		
Scan Number	: 1574		
Retention Time (minutes)	: 11.183		
Quant Ion	: 91.00		
Area	: 77345		
On-column Amount (ng)	: 0.6420		
Integration start scan	: 1566	Integration stop scan	: 1593
Y at integration start	: 0	Y at integration end	: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

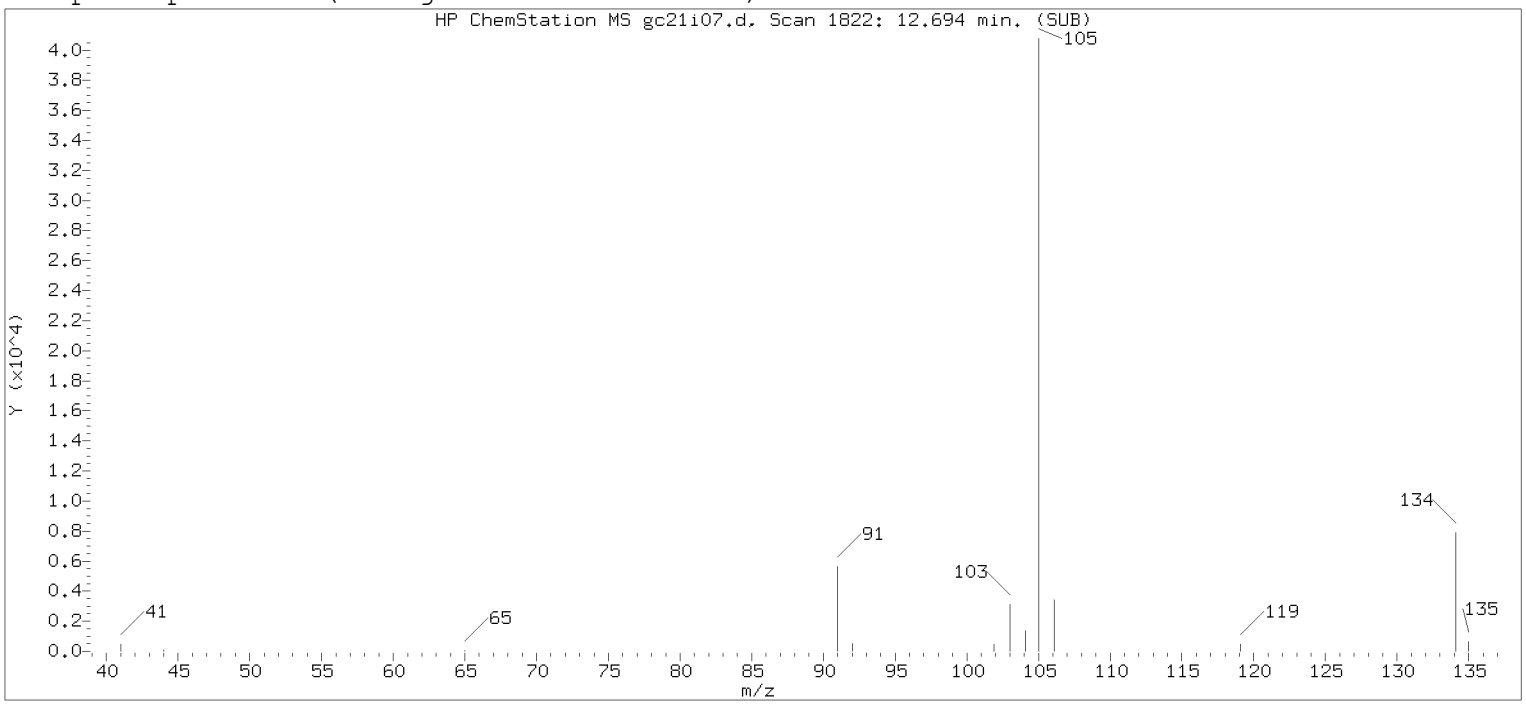
Compound Number : 128
Compound Name : sec-Butylbenzene
Scan Number : 1822
Retention Time (minutes): 12.694
Quant Ion : 105.00
Area (flag) : 55285M
On-Column Amount (ng) : 0.1861
Integration start scan : 1815 Integration stop scan: 1833
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

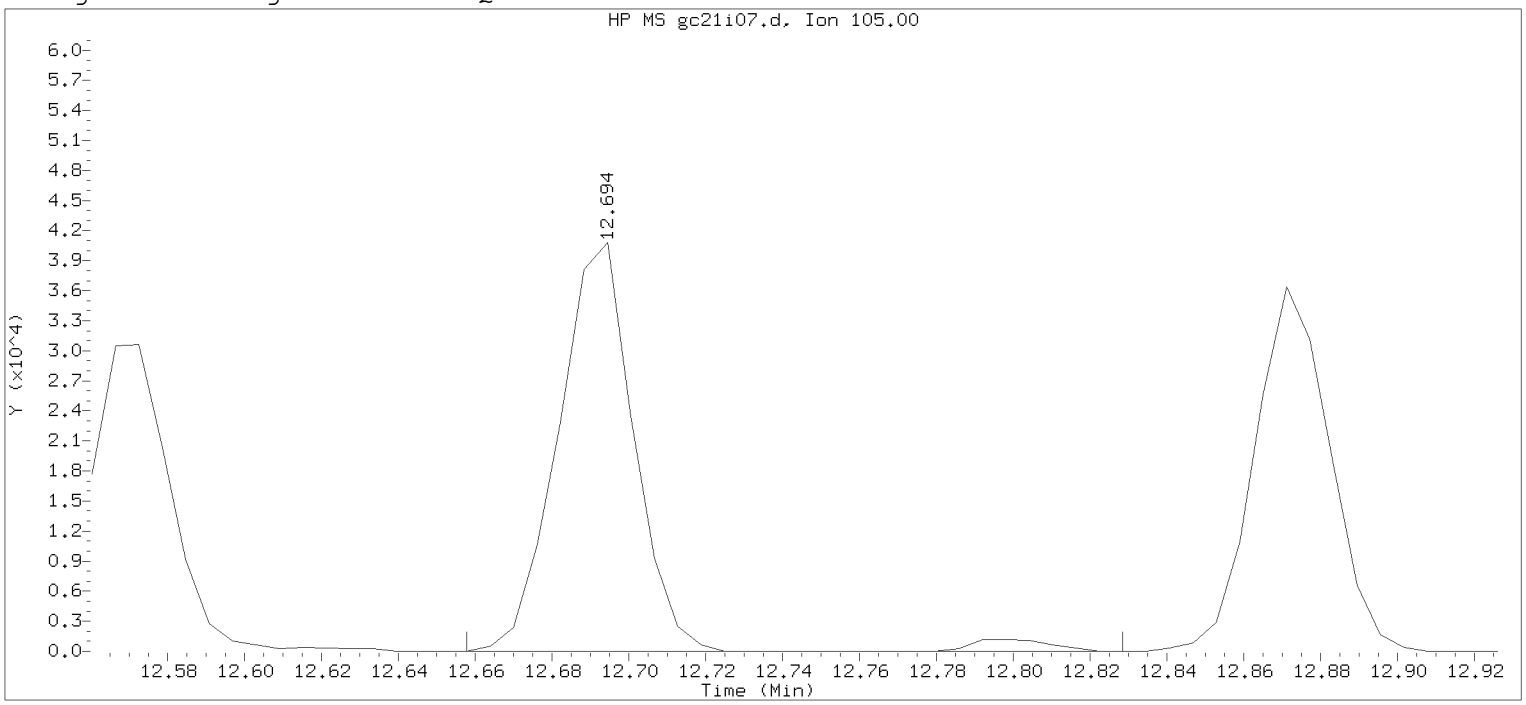
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:47.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



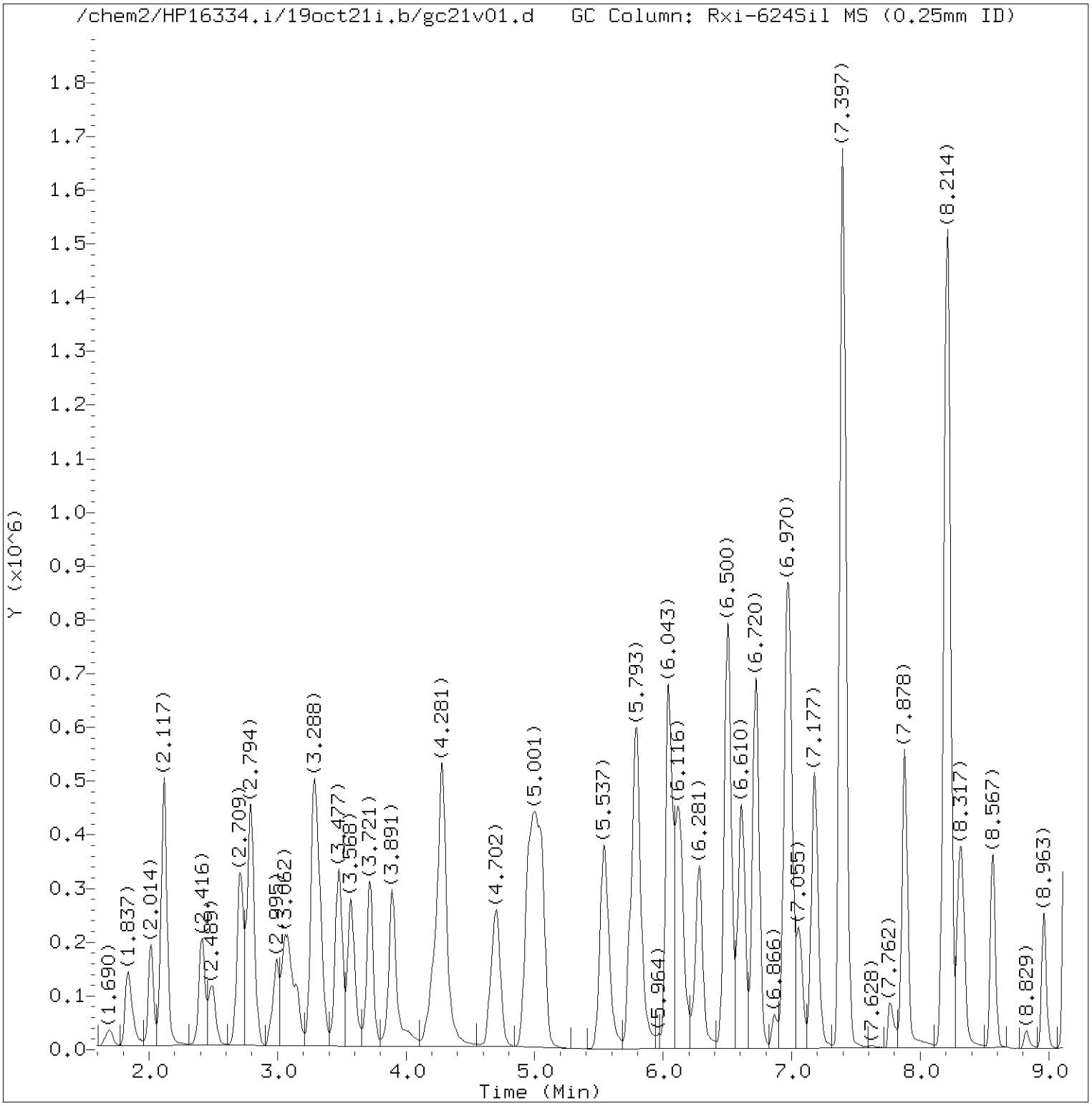
Data File: /chem2/HP16334.i/19oct21i.b/gc21i07.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 18:52 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 06:16
Date, time and analyst ID of latest file update: 22-Oct-2019 06:16 jkh09052

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compound Number : 128
Compound Name : sec-Butylbenzene
Scan Number : 1822
Retention Time (minutes): 12.694
Quant Ion : 105.00
Area : 56948
On-column Amount (ng) : 0.1910
Integration start scan : 1815 Integration stop scan: 1843
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

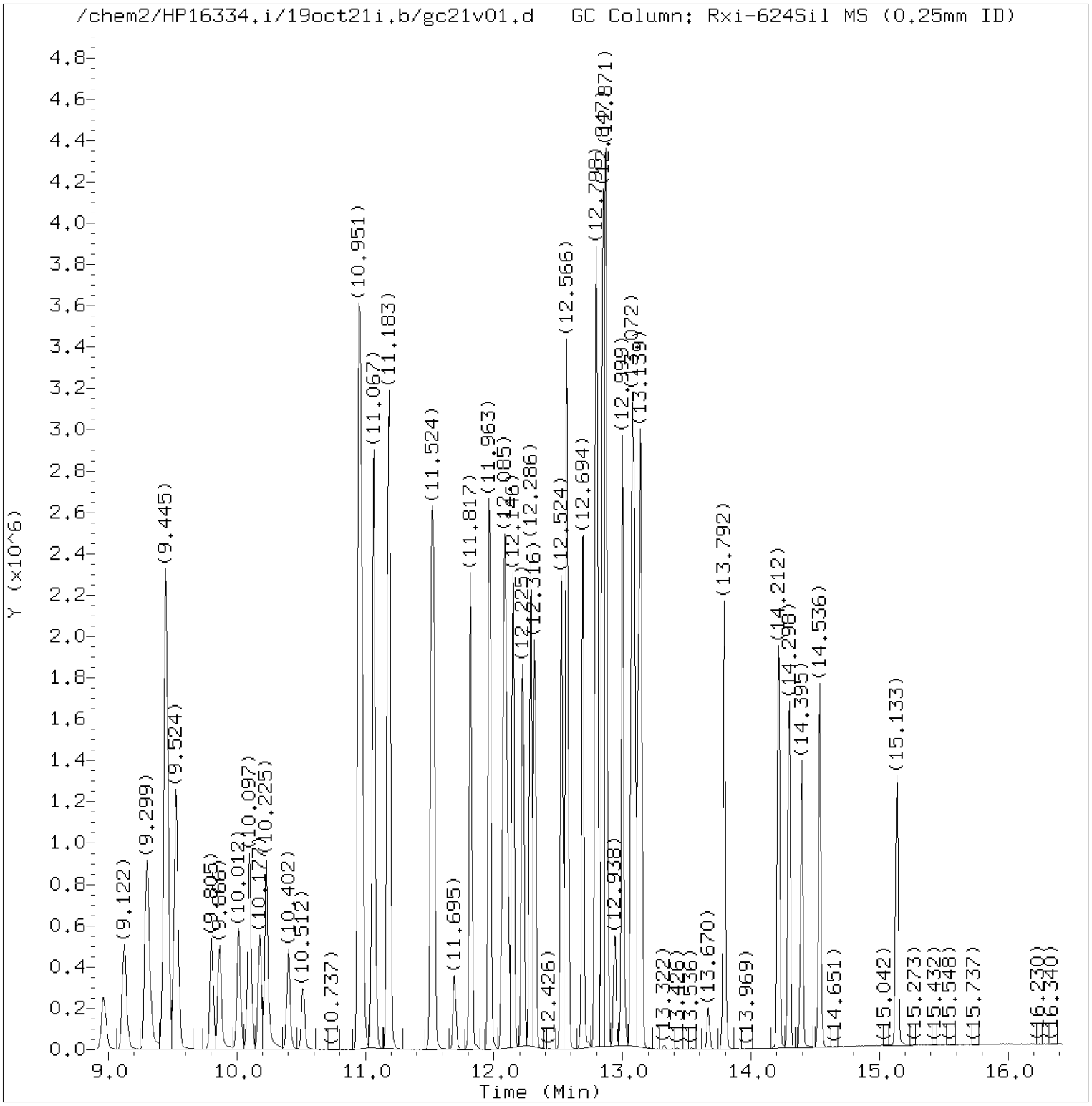
Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.837	85	349463M	4.904
2) Chloromethane	(2)	2.014	50	325809	4.879
6) 1,3-Butadiene	(2)	2.117	39	272303M	4.669
5) Vinyl Chloride	(2)	2.123	62	336173	5.056
7) Bromomethane	(2)	2.410	94	249656	4.969
8) Chloroethane	(2)	2.489	64	196252	4.991
9) Dichlorofluoromethane	(2)	2.702	67	453896	4.995
10) Trichlorofluoromethane	(2)	2.776	101	487626	5.469
11) Ethyl ether	(2)	2.989	59	181683	4.466
12) Freon 123a	(2)	3.056	67	293746	5.017
13) Acrolein	(1)	3.154	56	229493	38.856
15) 1,1-Dichloroethene	(2)	3.276	96	233944	5.186
14) Acetone	(1)	3.306	43	249854	39.207
16) Freon 113	(2)	3.324	101	258193	4.912
17) Methyl Iodide	(2)	3.471	142	466754	4.770
18) Carbon Disulfide	(2)	3.568	76	781051	4.694
21) Methyl Acetate	(1)	3.696	43	83233M	5.362
22) Allyl Chloride	(2)	3.721	41	338287	5.116
23) Methylene Chloride	(2)	3.891	84	271445	5.152
26)*t-Butyl Alcohol-d10	(1)	3.891	65	125630	50.000
28) t-Butyl Alcohol	(1)	4.019	59	114970M	52.431
29) Acrylonitrile	(1)	4.214	53	245770	26.892
30) Methyl Tertiary Butyl Ether	(2)	4.257	73	684828	5.005
31) trans-1,2-Dichloroethene	(2)	4.281	96	265066	5.091
32) n-Hexane	(2)	4.702	57	338407	4.828
33) 1,1-Dichloroethane	(2)	4.946	63	458525	5.163
34) di-Isopropyl Ether	(2)	4.995	45	817308	5.075
35) 2-Chloro-1,3-Butadiene	(2)	5.056	53	406723	5.121
37) Ethyl t-butyl ether	(2)	5.537	59	812879	4.984
38) 2-Butanone	(1)	5.732	43	489563	40.267
39) cis-1,2-Dichloroethene	(2)	5.787	96	319286	5.629
41) 2,2-Dichloropropane	(2)	5.799	77	312218	5.069
42) Propionitrile	(1)	5.848	54	71351	35.578
45) Methacrylonitrile	(1)	6.043	67	574351	42.335
40) 1,2-Dichloroethene (Total)	(2)		96	584352	10.720
48) Tetrahydrofuran	(1)	6.123	71	108905	28.364
47) Bromochloromethane	(2)	6.129	128	146436	5.201
49) Chloroform	(2)	6.281	83	483072	5.354

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	6.500	113	549780	9.906
51) 1,1,1-Trichloroethane	(2)	6.507	97	420419	5.296
52) Cyclohexane	(2)	6.610	56	418328	4.827
55) 1,1-Dichloropropene	(2)	6.720	75	367569	5.130
54) Carbon Tetrachloride	(2)	6.726	117	380184	5.317
56) Isobutyl Alcohol	(1)	6.866	41	79815	118.583
57)$1,2-Dichloroethane-d4	(2)	6.958	102	112587	10.018
58) Benzene	(2)	6.982	78	1071387	5.176
59) 1,2-Dichloroethane	(2)	7.055	62	311329M	5.324
60) t-Amyl methyl ether	(2)	7.177	73	754573	5.021
63)*Fluorobenzene	(2)	7.397	96	2195136	10.000
62) n-Heptane	(2)	7.409	43	326616	4.471
65) n-Butanol	(1)	7.762	56	172258M	248.659
67) Trichloroethene	(2)	7.878	95	290804	5.238
69) Methylcyclohexane	(2)	8.189	83	483228	5.194
70) 1,2-Dichloropropane	(2)	8.214	63	279620	5.431
71) Methyl Methacrylate	(1)	8.299	69	156752	5.700
72) 1,4-Dioxane	(1)	8.311	88	24346M	136.631
73) Dibromomethane	(2)	8.323	93	149426	5.433
74) Bromodichloromethane	(2)	8.561	83	366284	5.520
76) 2-Nitropropane	(1)	8.823	41	35414	4.661
80) cis-1,3-Dichloropropene	(2)	9.122	75	422055	5.355
81) 4-Methyl-2-Pentanone	(1)	9.299	43	973298	27.686
82)$Toluene-d8	(3)	9.445	98	2146798	10.006
83) Toluene	(3)	9.524	92	695419	5.217
84) trans-1,3-Dichloropropene	(3)	9.805	75	354571	5.377
86) Ethyl Methacrylate	(3)	9.866	69	327538	5.124
88) 1,1,2-Trichloroethane	(3)	10.012	97	223652	5.613
89) Tetrachloroethene	(3)	10.097	166	334019	5.245
85) 1,3-Dichloropropene (total)	(3)		75	776626	10.732
90) 1,3-Dichloropropane	(3)	10.177	76	369411	5.393
91) 2-Hexanone	(1)	10.225	43	716332M	27.624
93) Dibromochloromethane	(3)	10.402	129	282323	5.530
95) 1,2-Dibromoethane	(3)	10.512	107	218357	5.408
97)*Chlorobenzene-d5	(3)	10.951	117	1672867	10.000
96) 1-Chlorohexane	(3)	10.963	91	395824	4.965
98) Chlorobenzene	(3)	10.975	112	826448	5.303
100) Ethylbenzene	(3)	11.067	91	1372586	5.252

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

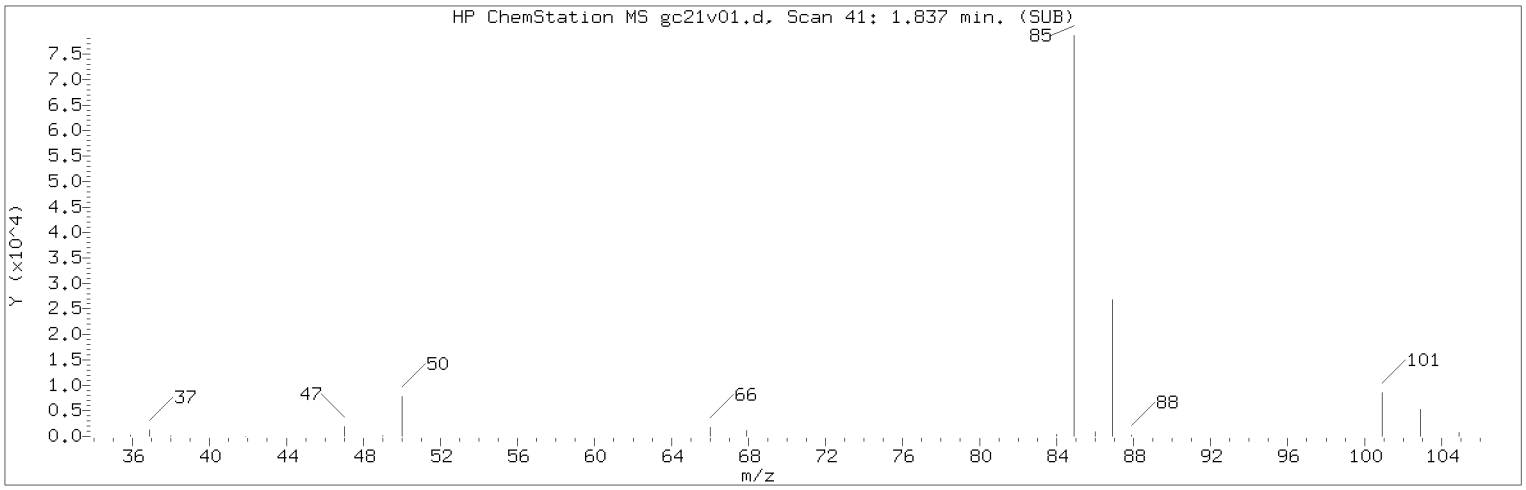
Sample Name: LCSG01 Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
99) 1,1,1,2-Tetrachloroethane	(3)	11.067	131	303778	5.441
101) m+p-Xylene	(3)	11.183	106	1074815	10.600
104) o-Xylene	(3)	11.512	106	532852	5.303
106) Styrene	(3)	11.530	104	909446	5.396
107) Bromoform	(3)	11.695	173	173938	5.522
105) Xylene (Total)	(3)		106	1607667	15.903
108) Isopropylbenzene	(3)	11.817	105	1393242	5.333
111)$4-Bromofluorobenzene	(3)	11.963	95	796157	9.929
113) 1,1,2,2-Tetrachloroethane	(4)	12.066	83	282119	5.351
114) Bromobenzene	(4)	12.079	156	368579	5.330
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	327548	27.633
116) 1,2,3-Trichloropropane	(4)	12.109	110	77862M	5.435
117) n-Propylbenzene	(4)	12.146	91	1654837	5.341
119) 2-Chlorotoluene	(4)	12.225	126	348762	5.324
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	1189040	5.309
122) 4-Chlorotoluene	(4)	12.316	126	366439	5.329
125) tert-Butylbenzene	(4)	12.530	134	257235	5.148
126) Pentachloroethane	(4)	12.560	167	246174	5.323
127) 1,2,4-Trimethylbenzene	(4)	12.572	105	1230995	5.227
128) sec-Butylbenzene	(4)	12.694	105	1546917	5.272
131) 1,3-Dichlorobenzene	(4)	12.792	146	715998	5.217
132) p-Isopropyltoluene	(4)	12.798	119	1354793	5.327
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	941694	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	741393	5.275
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	584652	5.308
136) Benzyl Chloride	(4)	12.944	126	78133	4.149
138) n-Butylbenzene	(4)	13.091	92	675807	5.224
139) 1,2-Dichlorobenzene	(4)	13.121	146	684811	5.335
143) 1,2-Dibromo-3-chloropropane	(1)	13.670	155	43704	5.832
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	611663	5.241
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	566747	5.229
146) Hexachlorobutadiene	(4)	14.298	225	291990	5.321
147) Naphthalene	(4)	14.395	128	957189	5.271
148) 1,2,3-Trichlorobenzene	(4)	14.536	180	496046	5.228

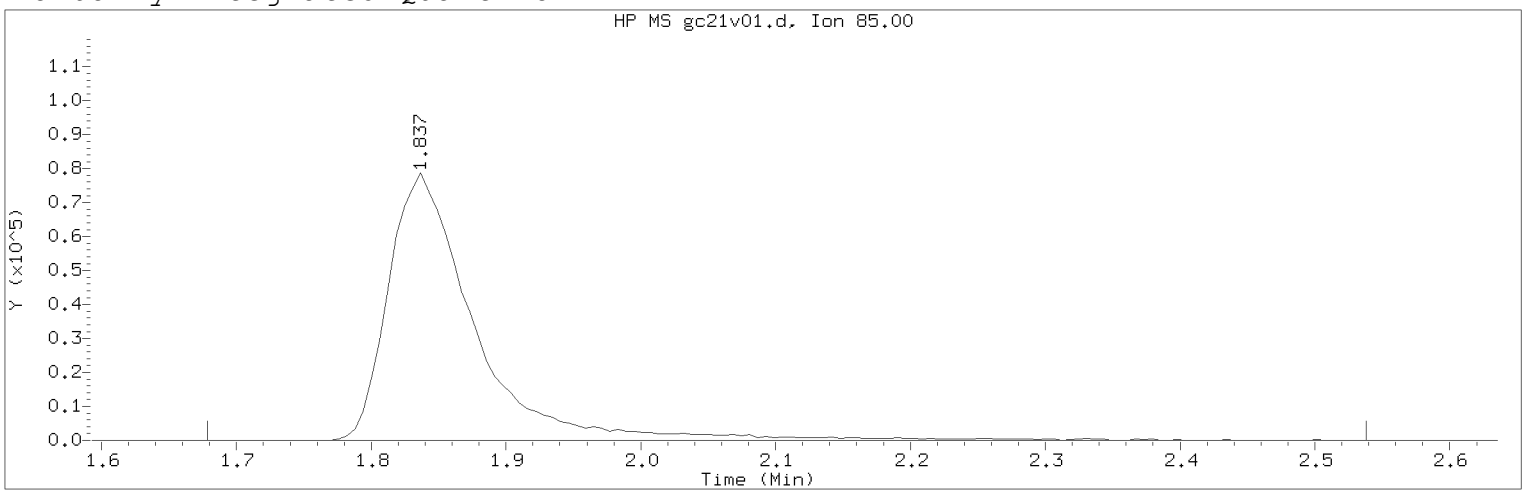
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

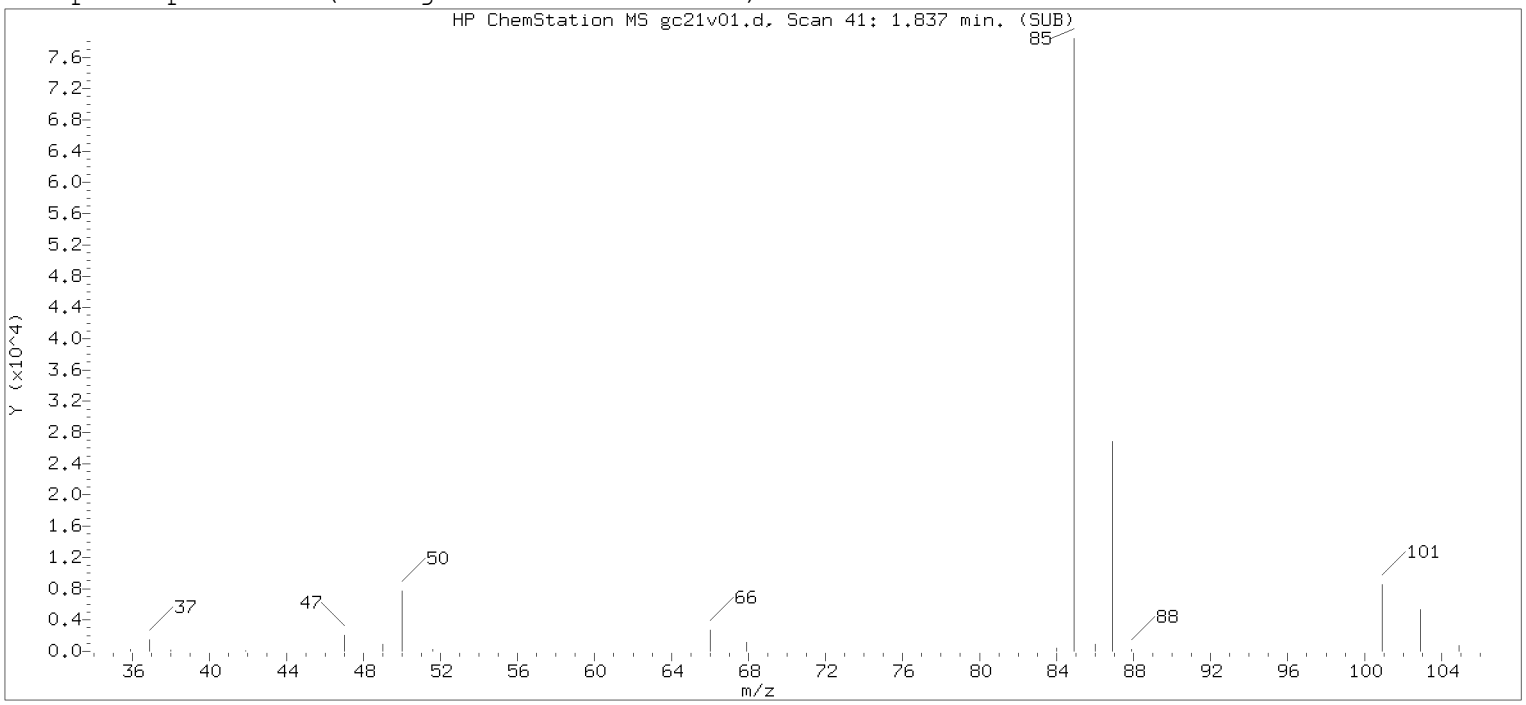
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 41
Retention Time (minutes): 1.837
Quant Ion : 85.00
Area (flag) : 349463M
On-Column Amount (ng) : 4.9040
Integration start scan : 14 Integration stop scan: 155
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

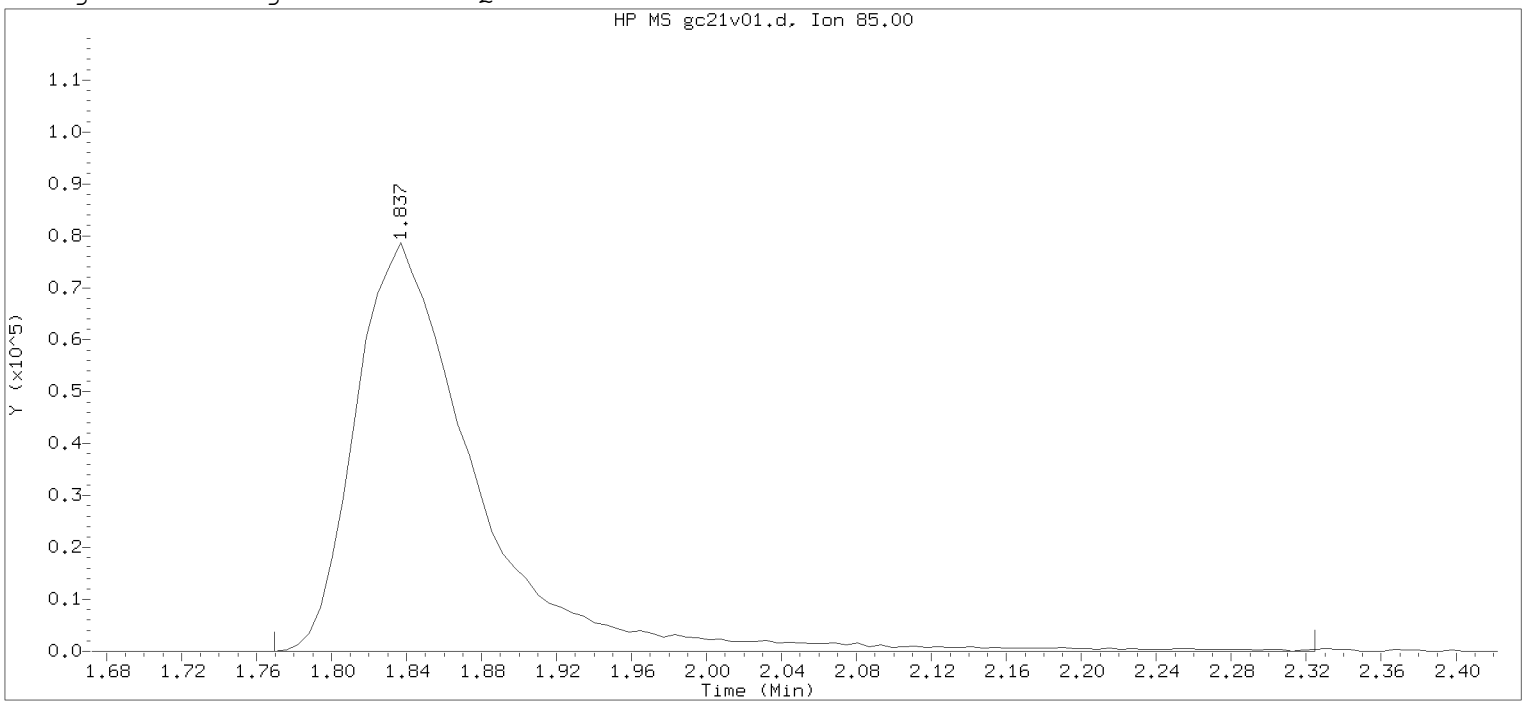
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

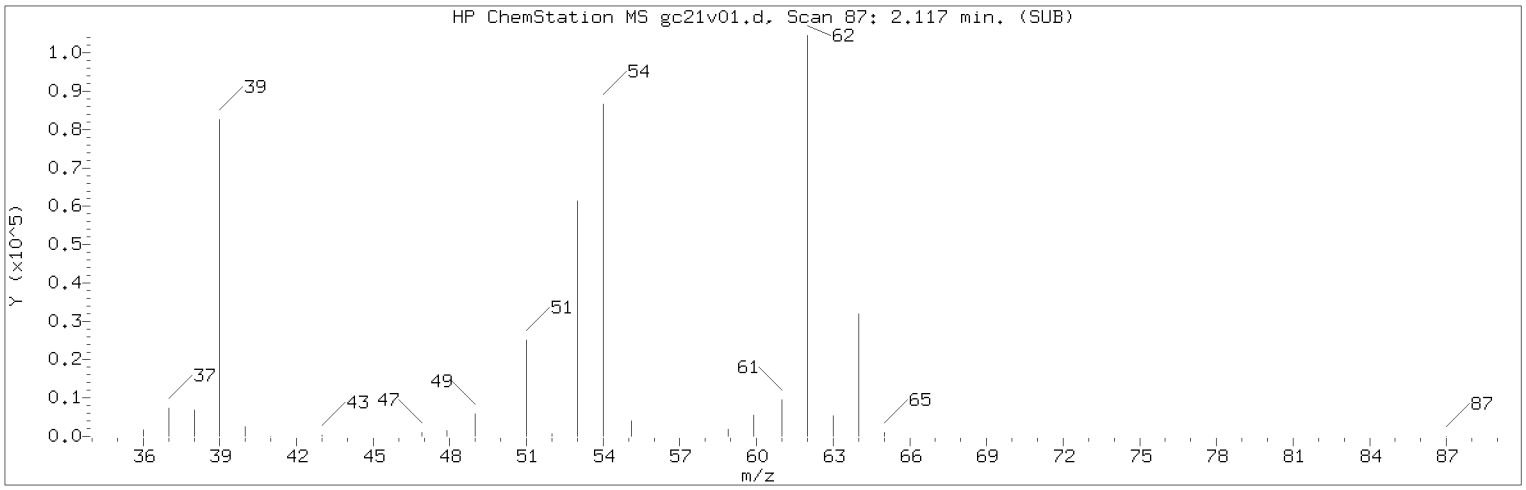
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

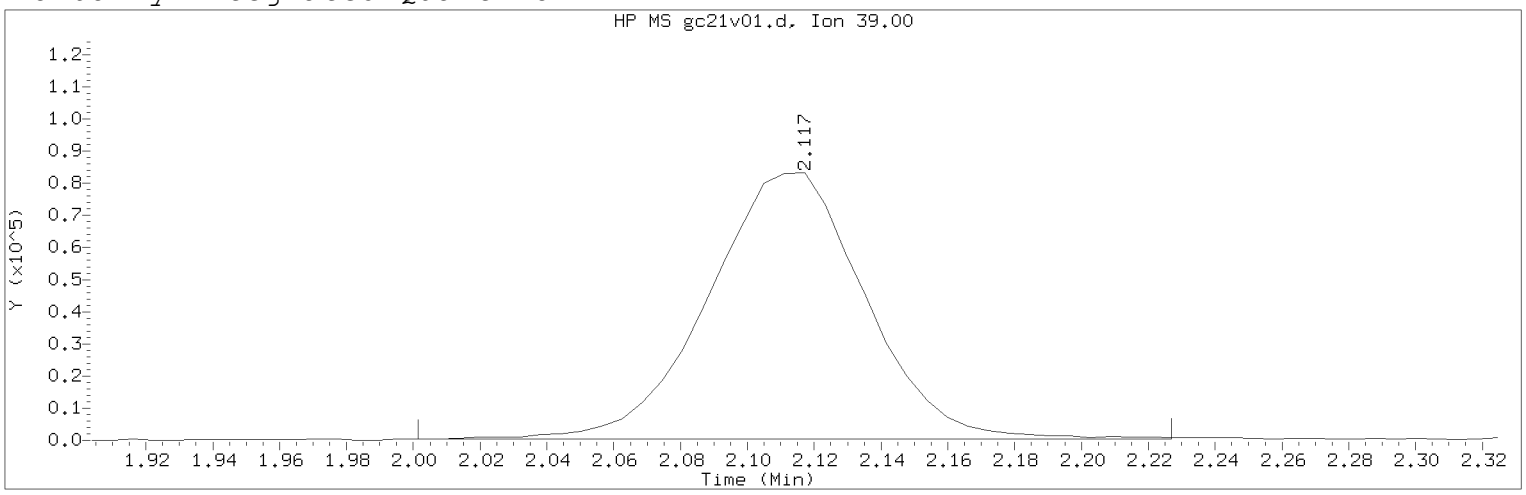
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 41
Retention Time (minutes): 1.837
Quant Ion : 85.00
Area : 348302
On-column Amount (ng) : 4.8877
Integration start scan : 29 Integration stop scan: 120
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

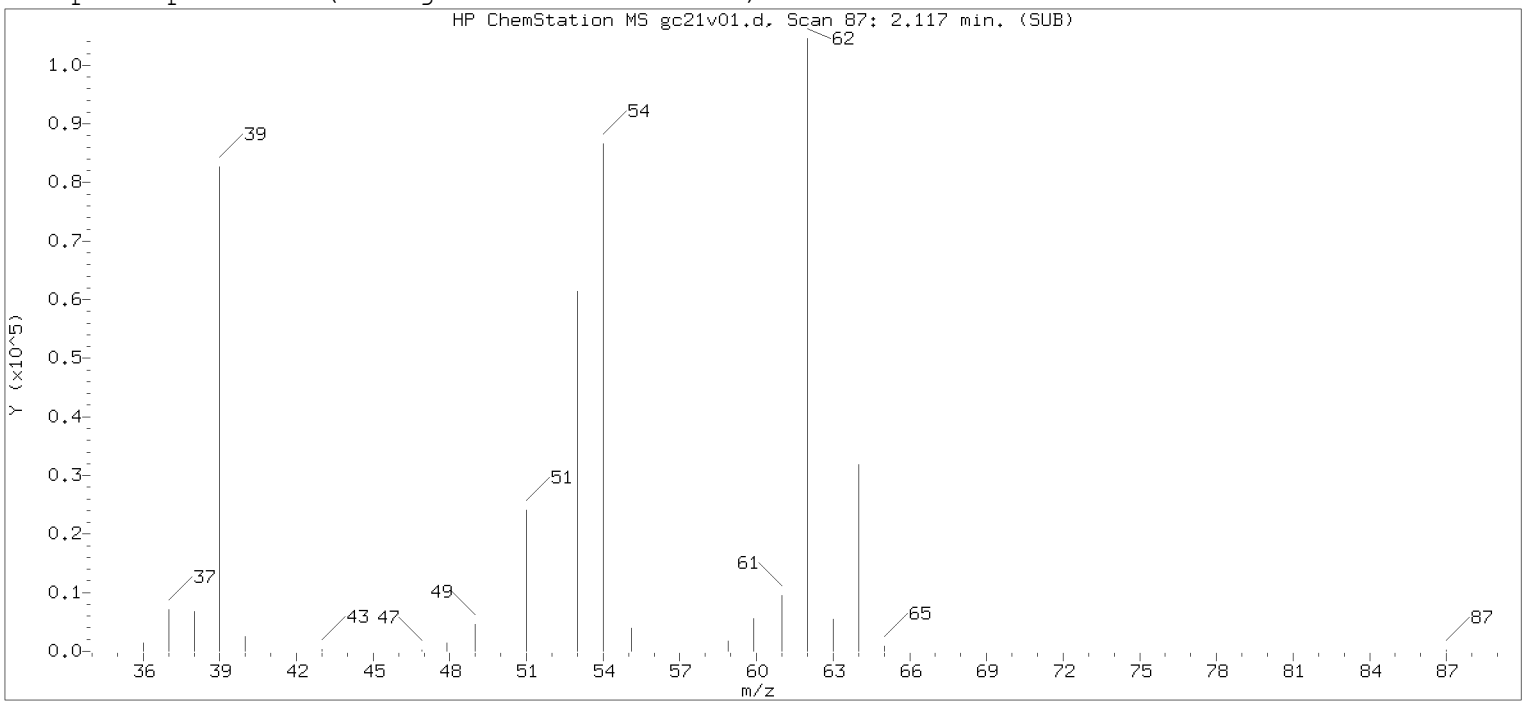
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 87
Retention Time (minutes): 2.117
Quant Ion : 39.00
Area (flag) : 272303M
On-Column Amount (ng) : 4.6687
Integration start scan : 67 Integration stop scan: 104
Y at integration start : 318 Y at integration end: 318

Reason for manual integration: improper integration

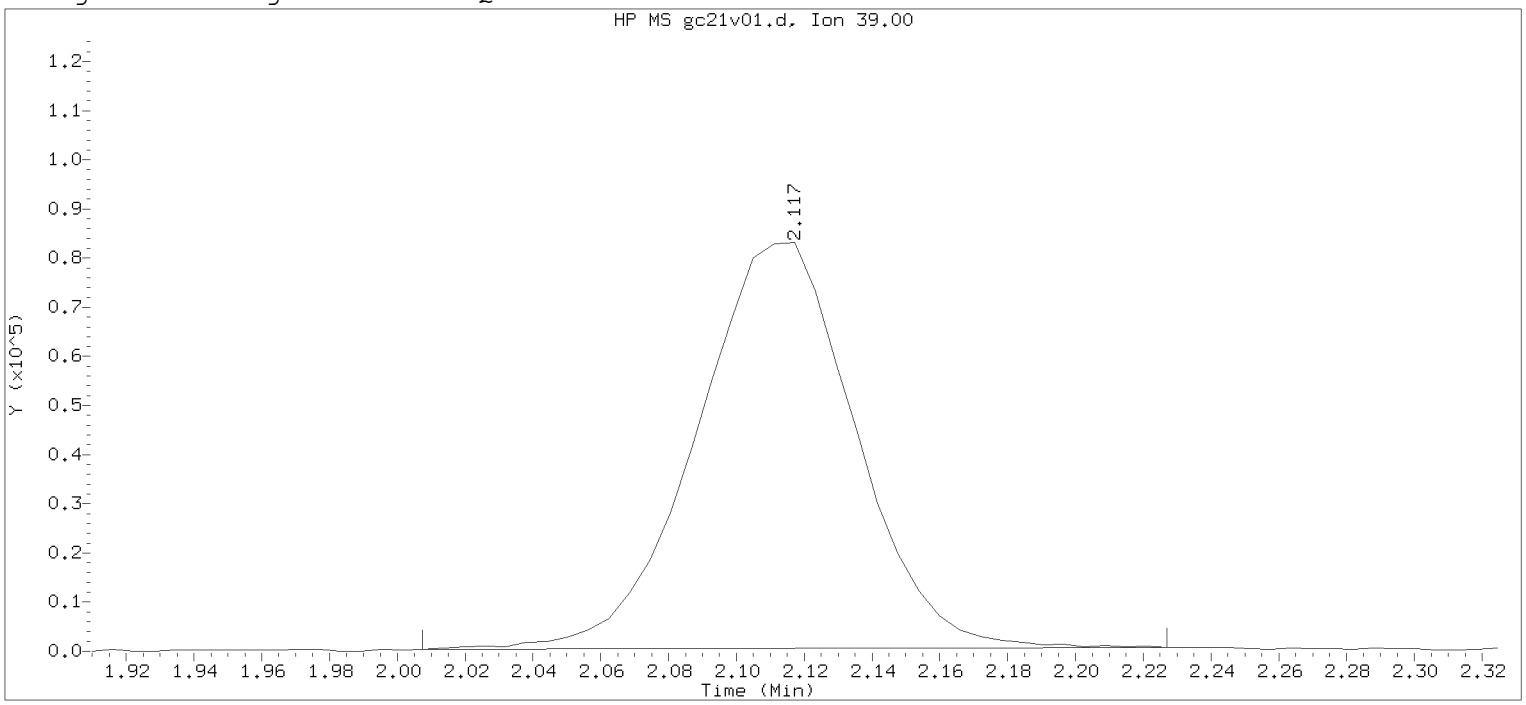
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

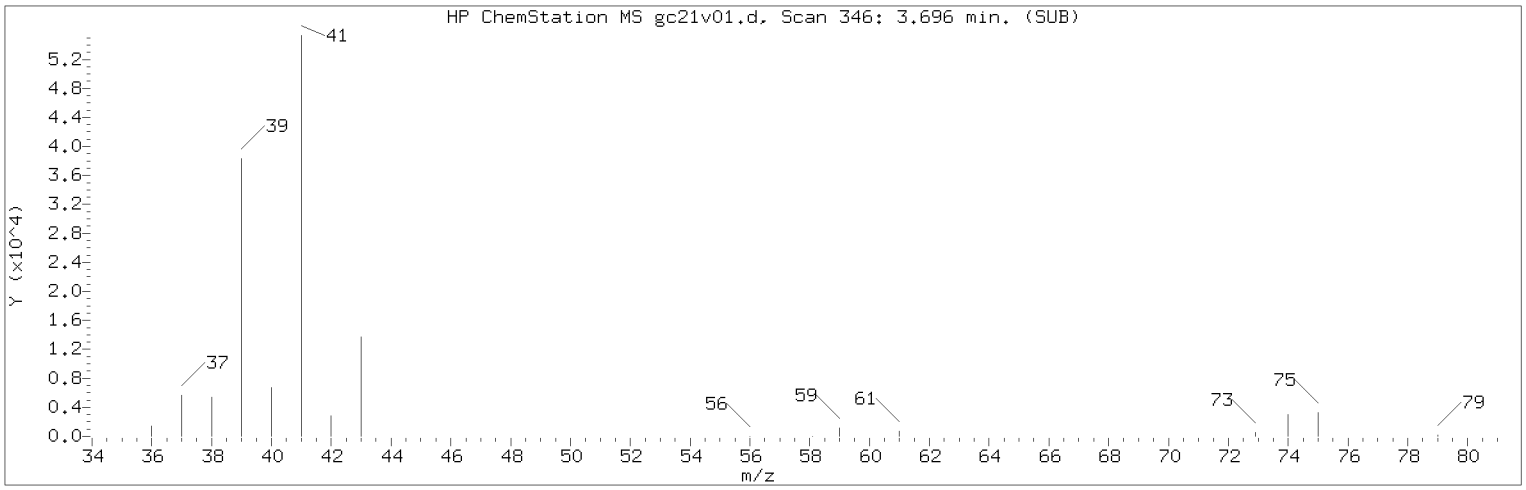
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Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

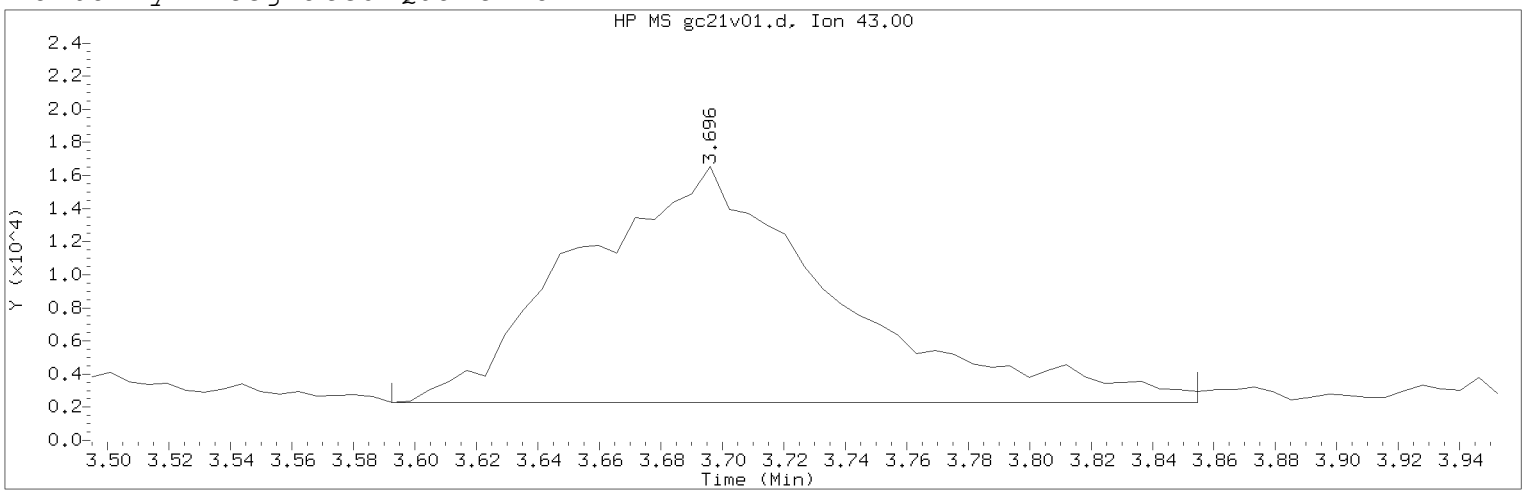
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 87
Retention Time (minutes): 2.117
Quant Ion : 39.00
Area : 269097
On-column Amount (ng) : 4.9369
Integration start scan : 68 Integration stop scan: 104
Y at integration start : 374 Y at integration end: 736

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

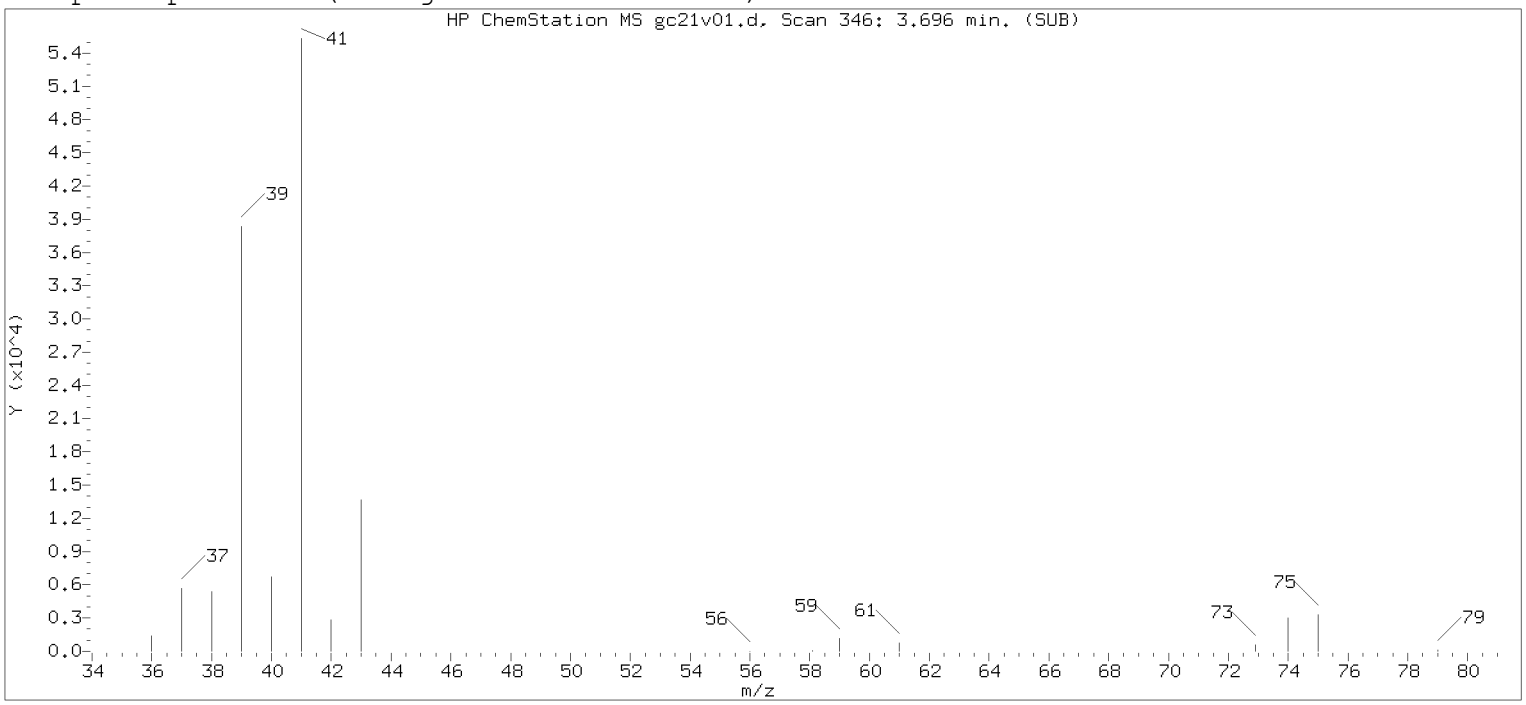
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 346
Retention Time (minutes): 3.696
Quant Ion : 43.00
Area (flag) : 83233M
On-Column Amount (ng) : 5.3615
Integration start scan : 328 Integration stop scan: 371
Y at integration start : 2294 Y at integration end: 2294

Reason for manual integration: improper integration

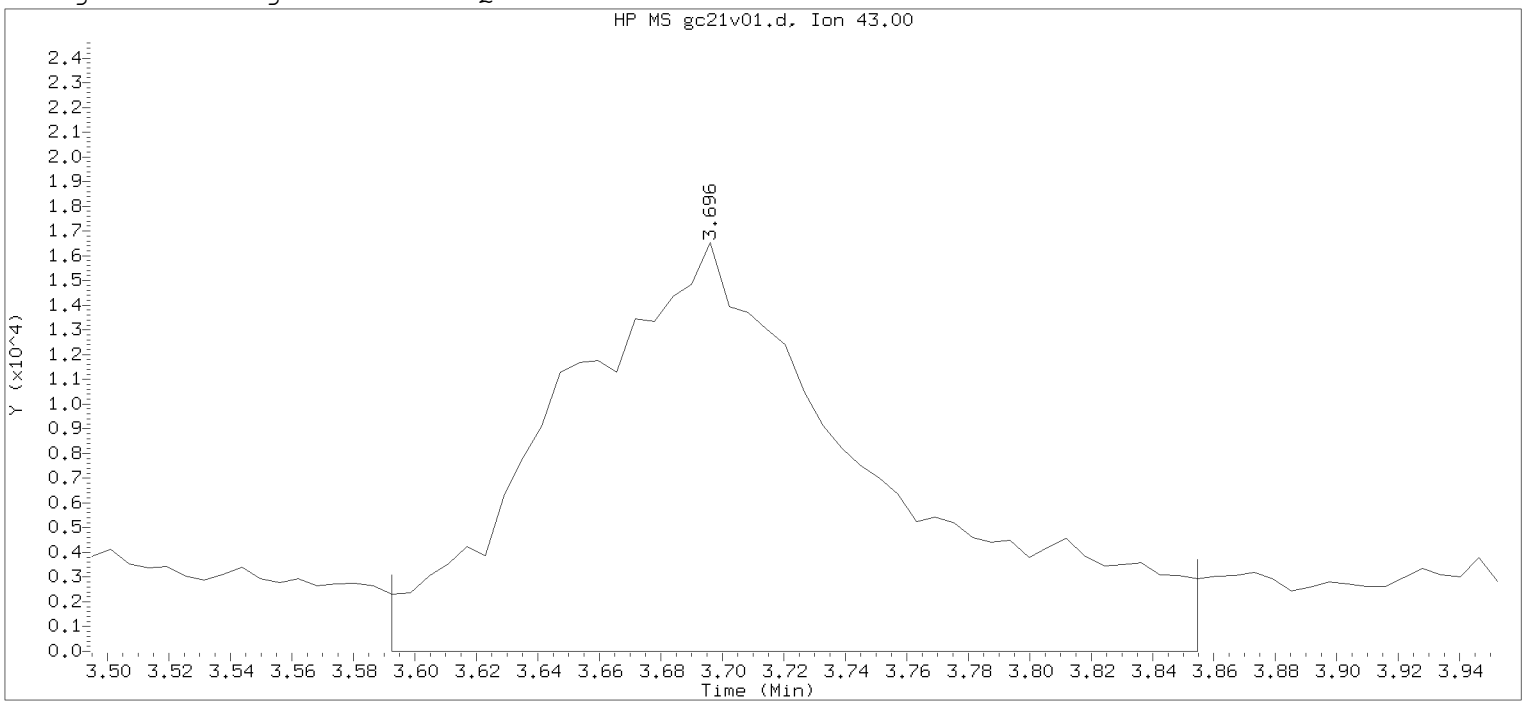
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

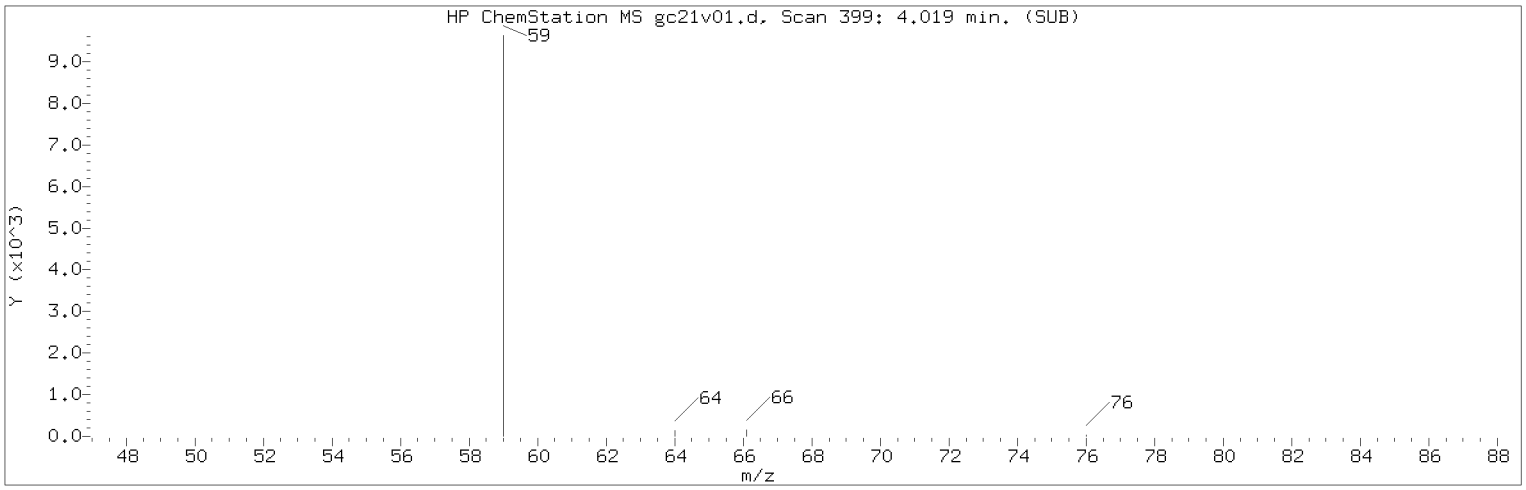
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Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

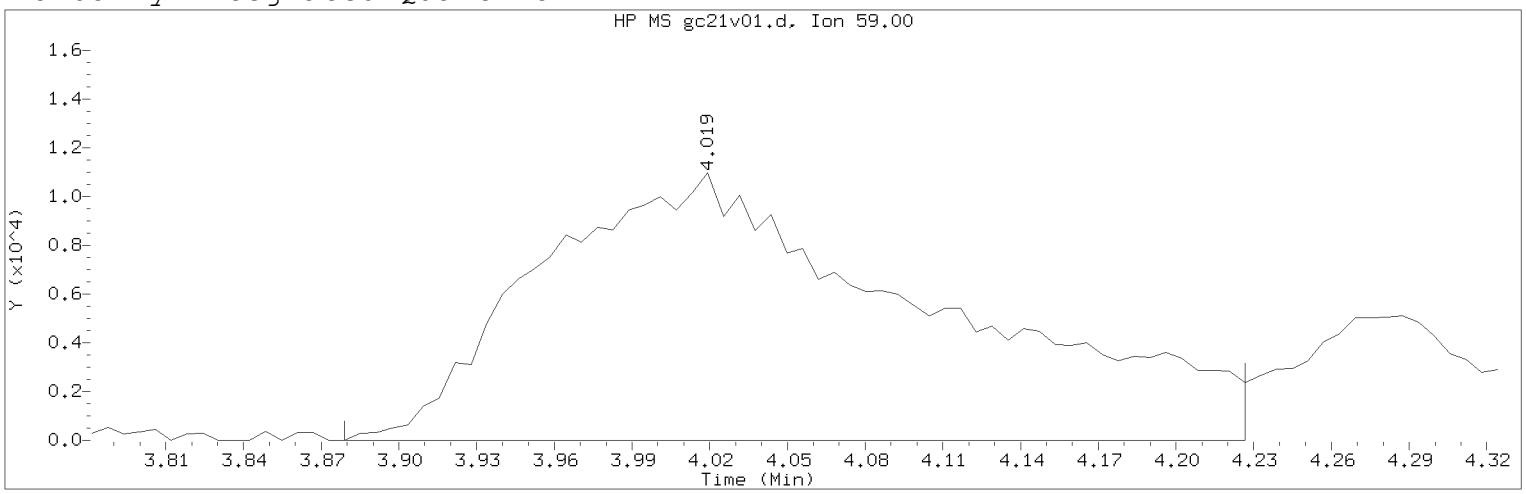
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 346
Retention Time (minutes): 3.696
Quant Ion : 43.00
Area : 119198
On-column Amount (ng) : 7.6782
Integration start scan : 328 Integration stop scan: 371
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

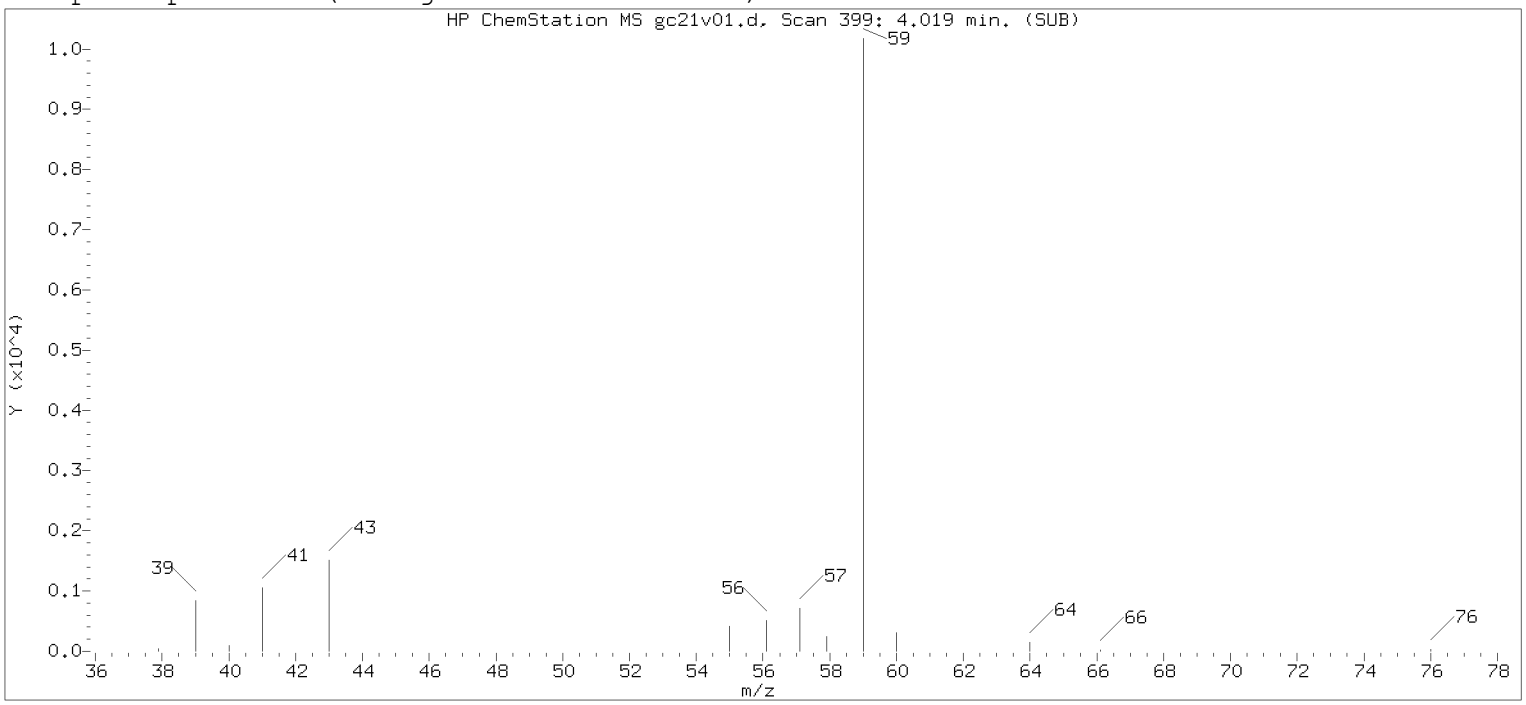
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 399
Retention Time (minutes): 4.019
Quant Ion : 59.00
Area (flag) : 114970M
On-Column Amount (ng) : 52.4306
Integration start scan : 375 Integration stop scan: 432
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

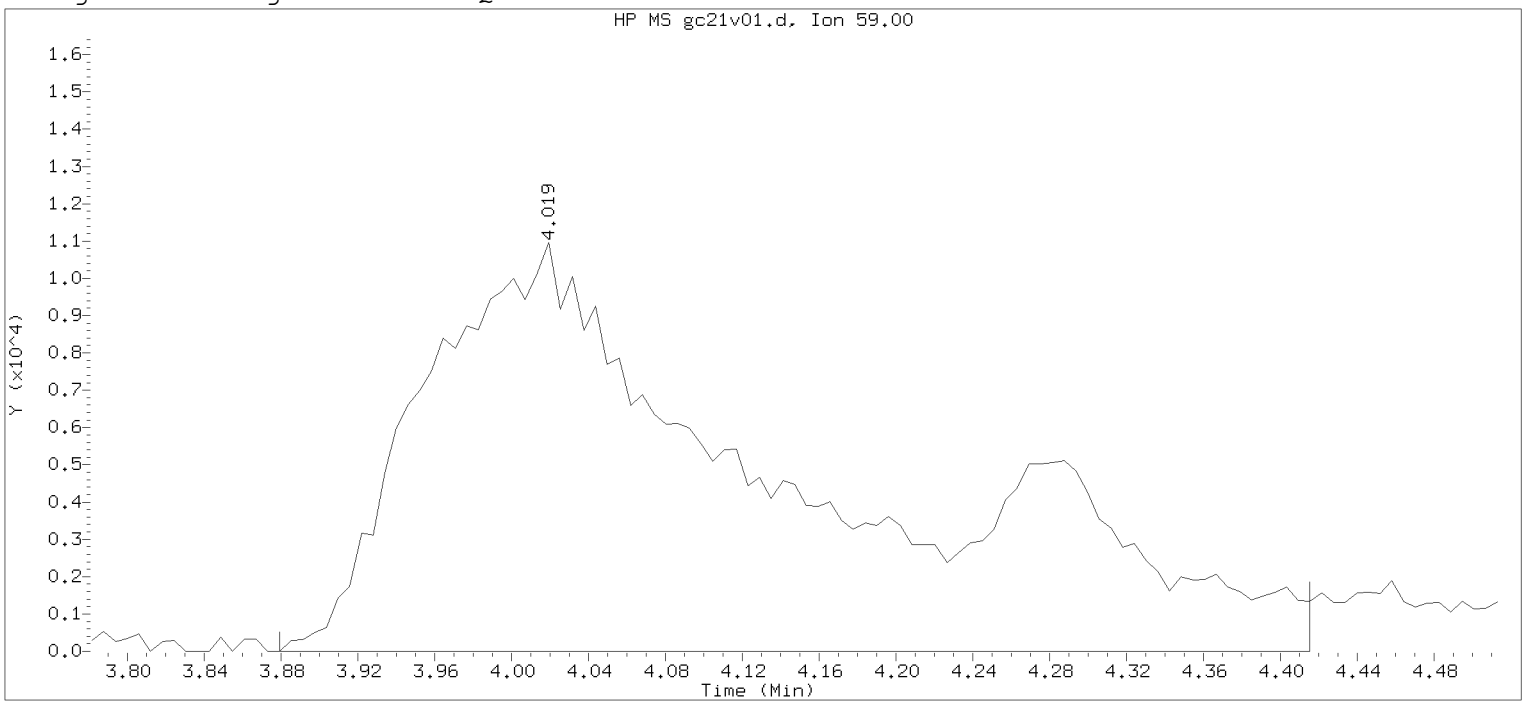
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

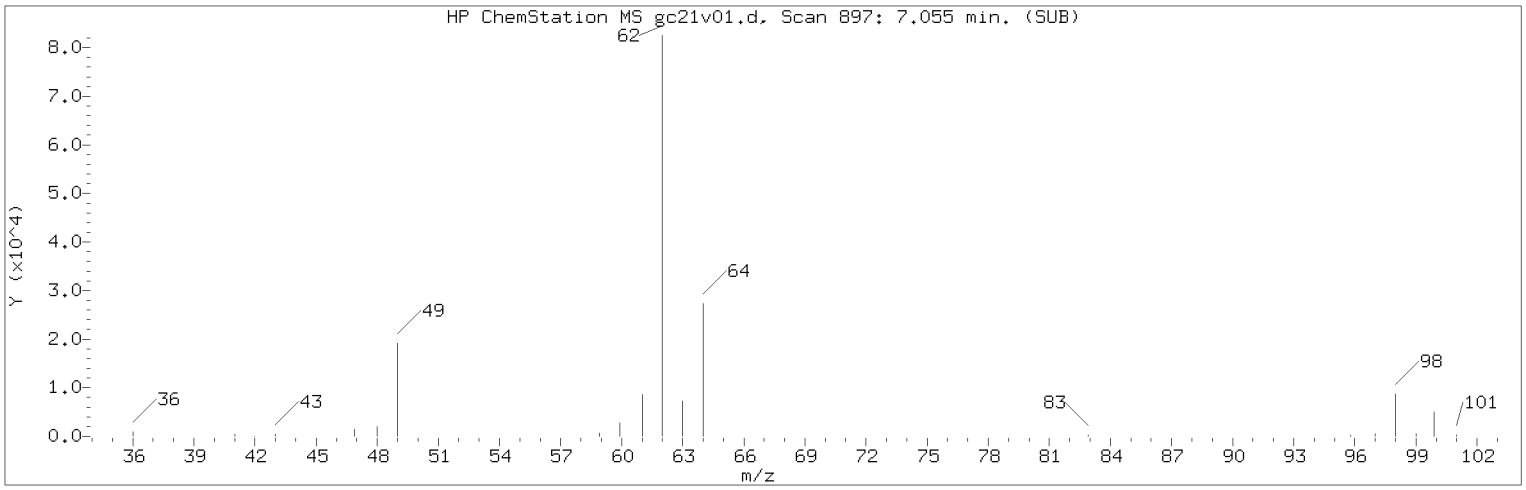
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Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

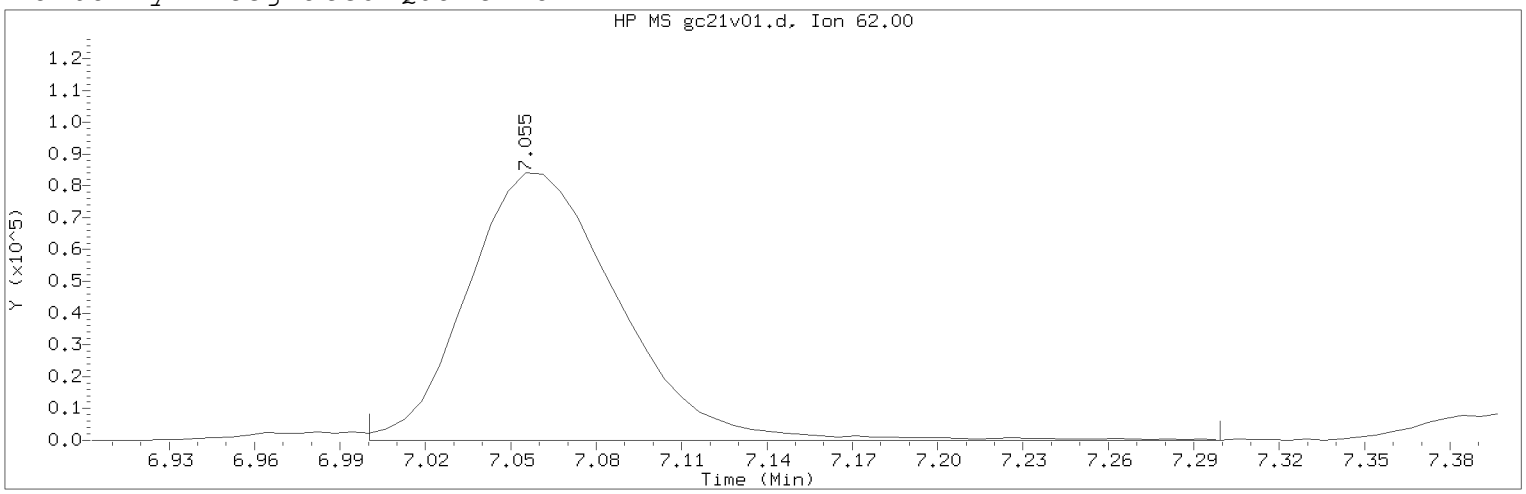
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 399
Retention Time (minutes): 4.019
Quant Ion : 59.00
Area : 147031
On-column Amount (ng) : 67.0514
Integration start scan : 375 Integration stop scan: 463
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

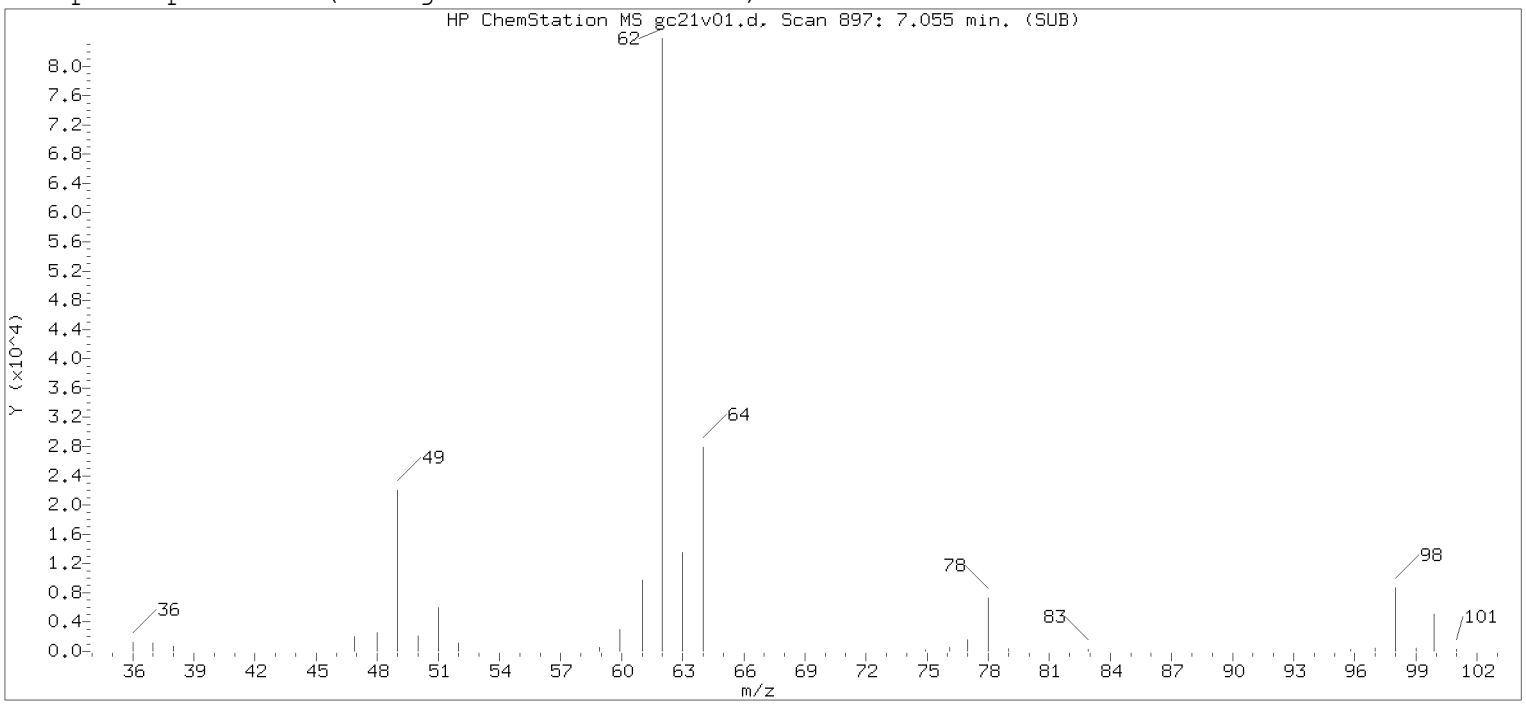
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 897
Retention Time (minutes): 7.055
Quant Ion : 62.00
Area (flag) : 311329M
On-Column Amount (ng) : 5.3238
Integration start scan : 887 Integration stop scan: 936
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

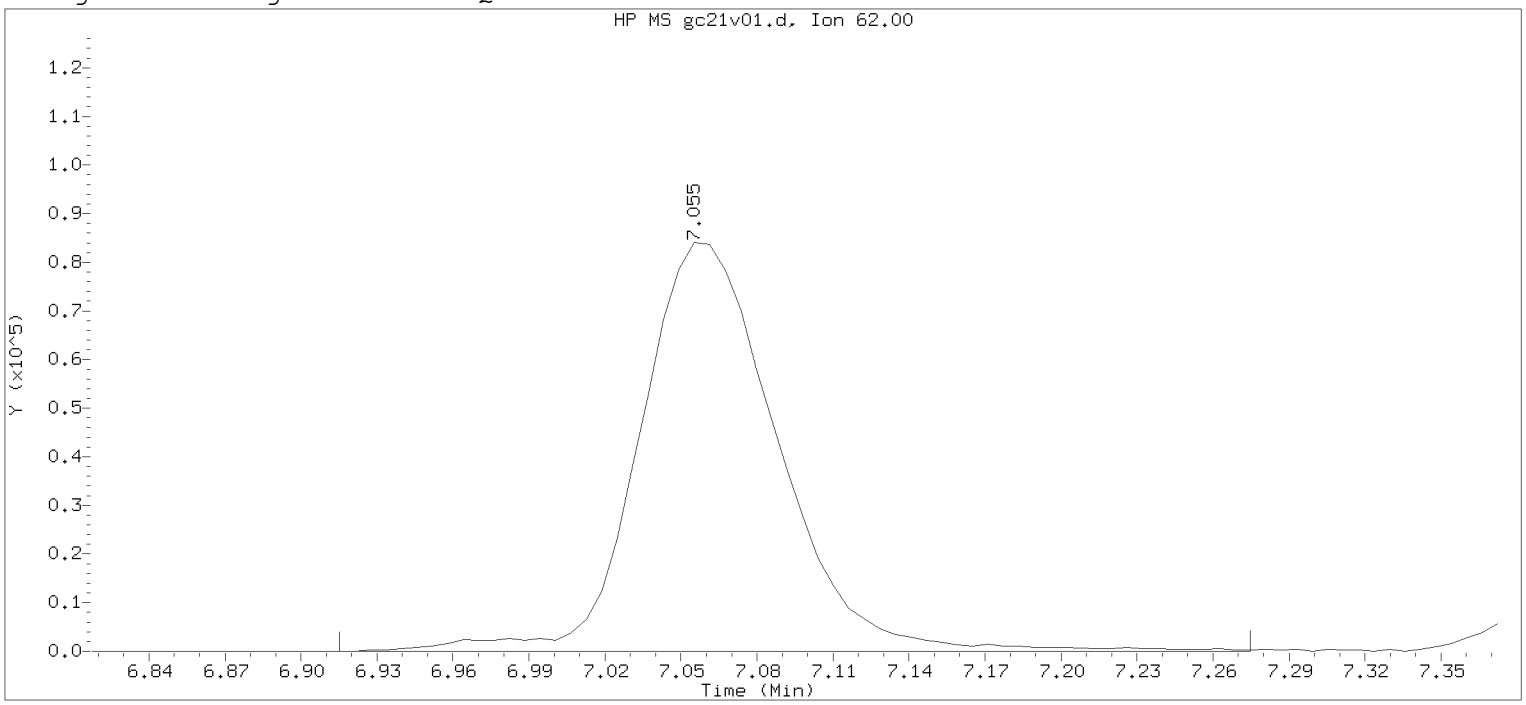
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

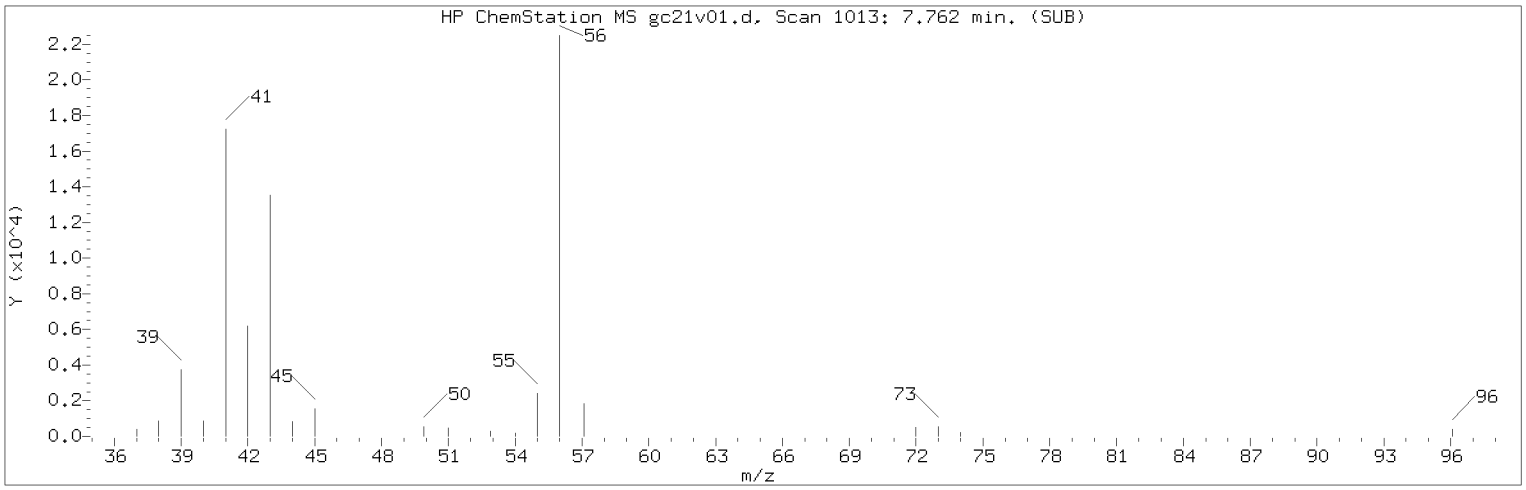
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

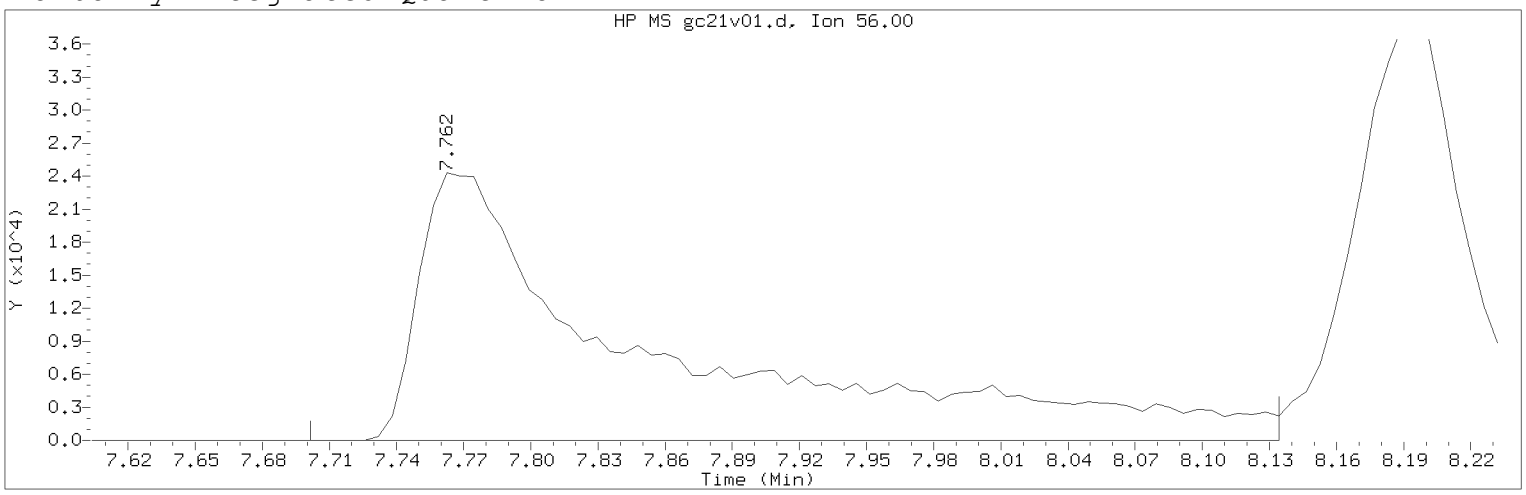
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 897
Retention Time (minutes): 7.055
Quant Ion : 62.00
Area : 317793
On-column Amount (ng) : 5.4344
Integration start scan : 873 Integration stop scan: 932
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

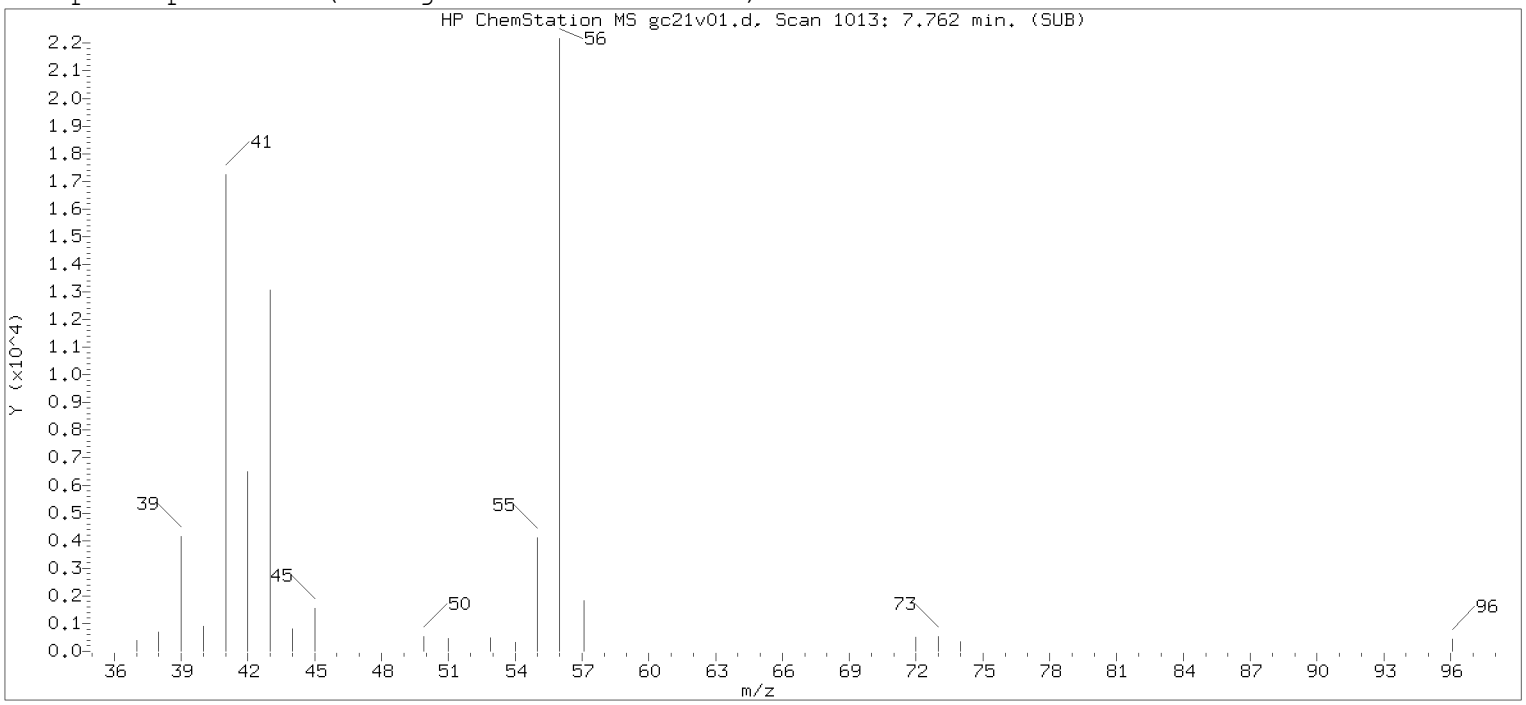
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1013
Retention Time (minutes): 7.762
Quant Ion : 56.00
Area (flag) : 172258M
On-Column Amount (ng) : 248.6585
Integration start scan : 1002 Integration stop scan: 1073
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

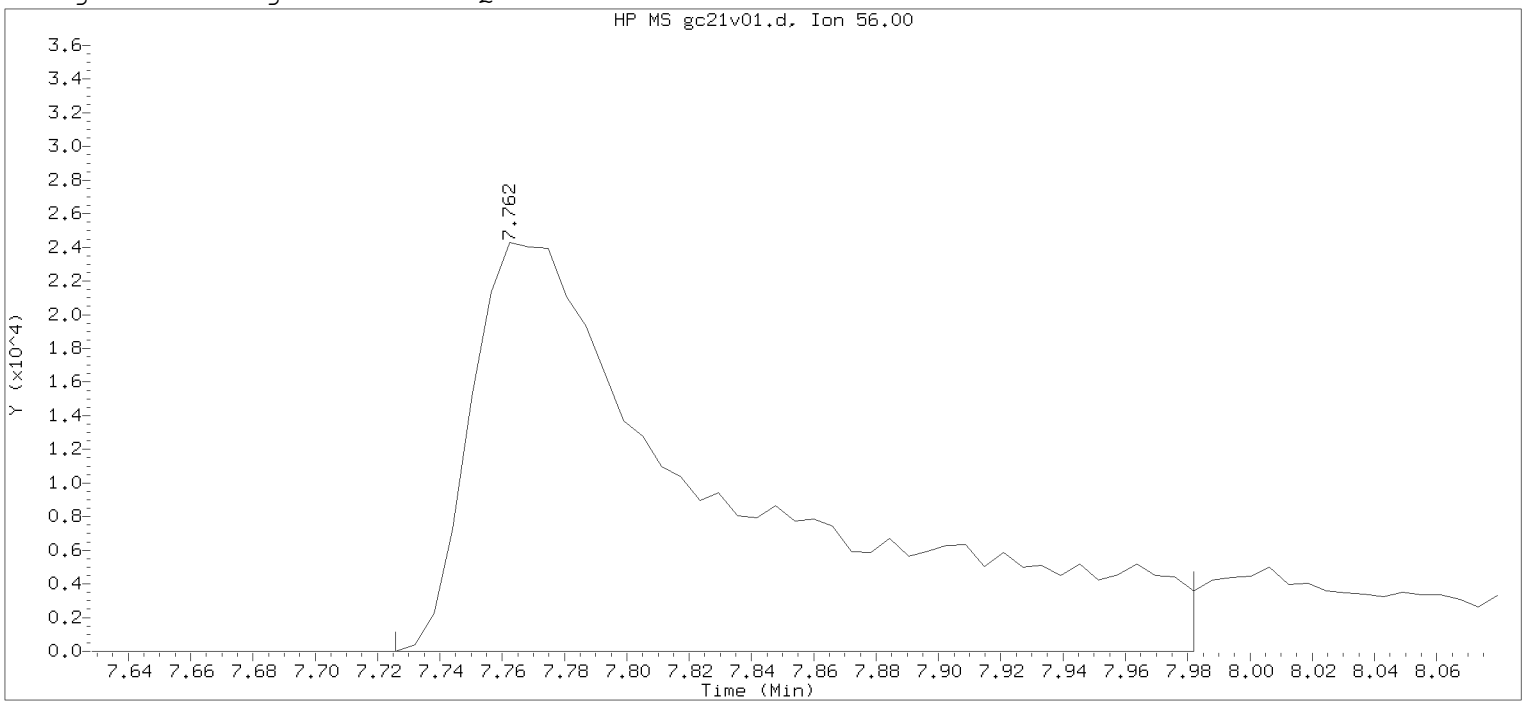
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

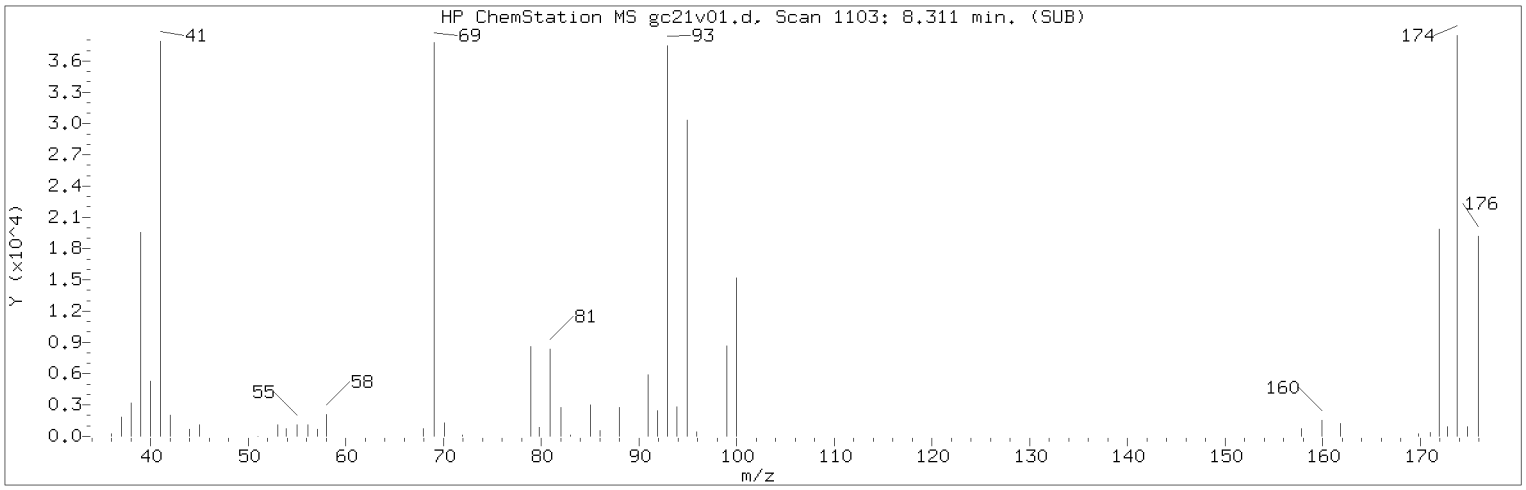
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

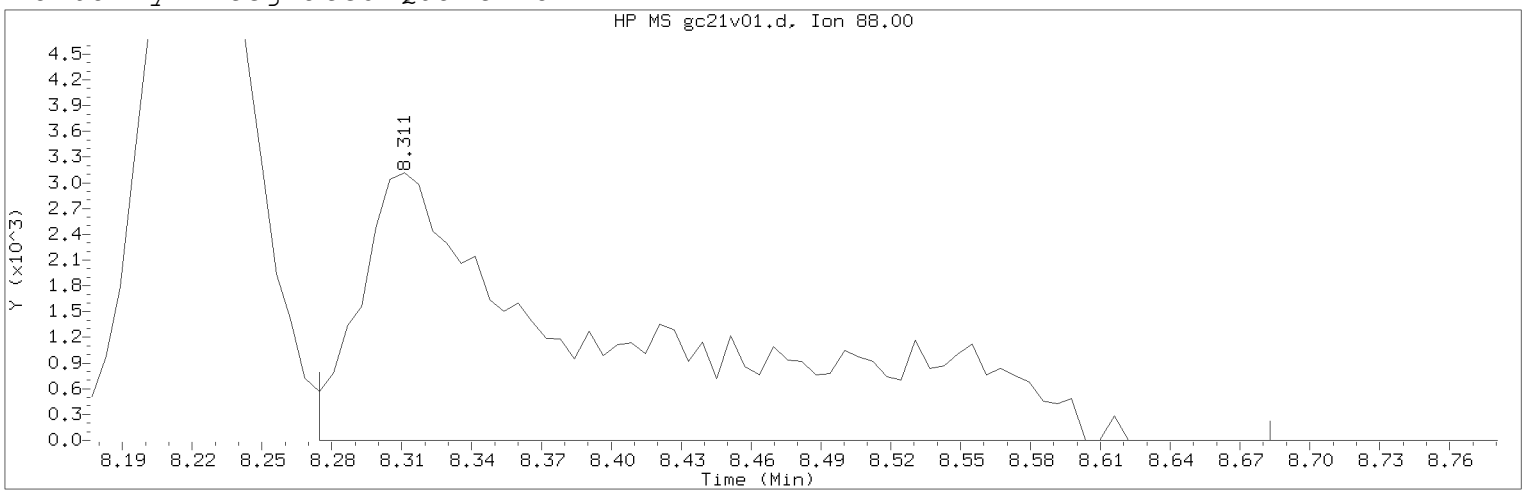
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1013
Retention Time (minutes): 7.762
Quant Ion : 56.00
Area : 141705
On-column Amount (ng) : 209.4303
Integration start scan : 1006 Integration stop scan: 1048
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

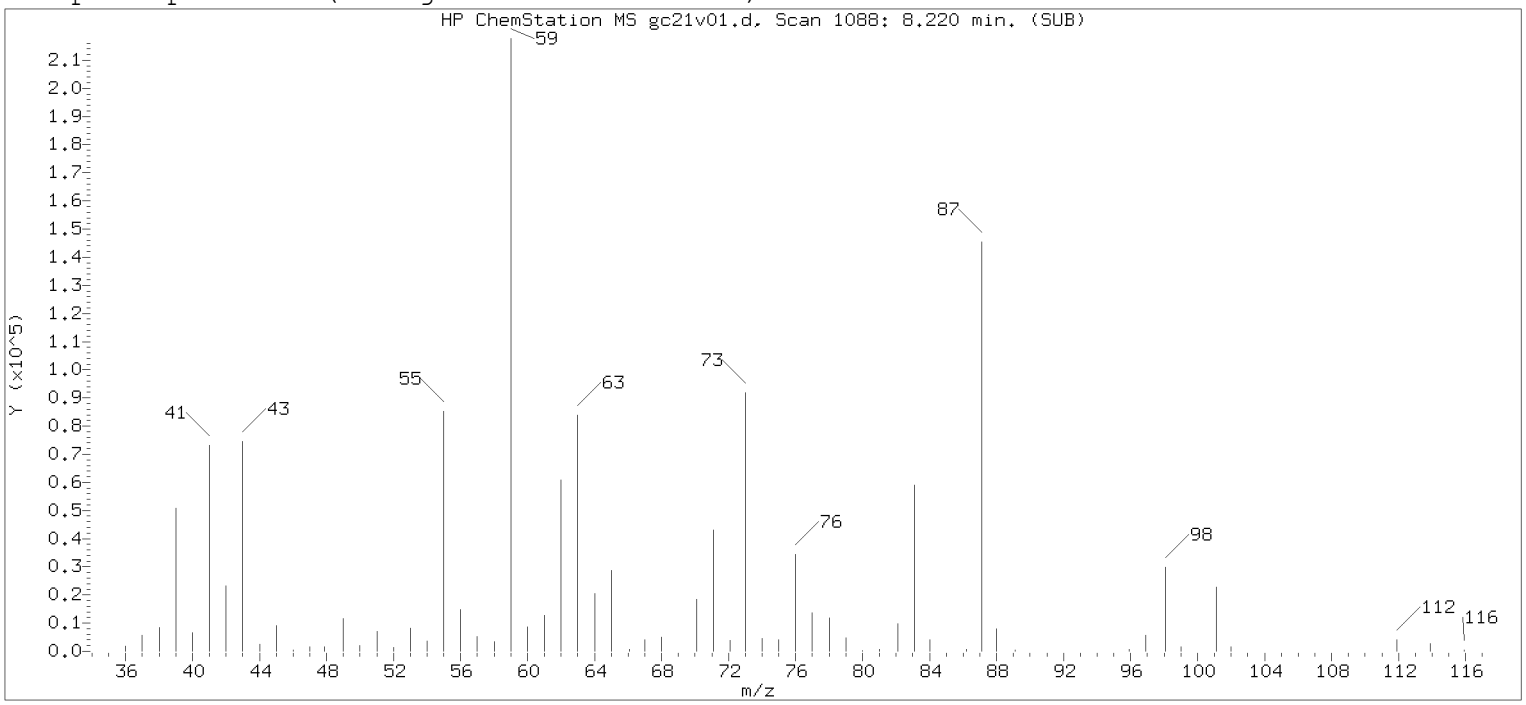
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1103
Retention Time (minutes): 8.311
Quant Ion : 88.00
Area (flag) : 24346M
On-Column Amount (ng) : 136.6315
Integration start scan : 1096 Integration stop scan: 1163
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

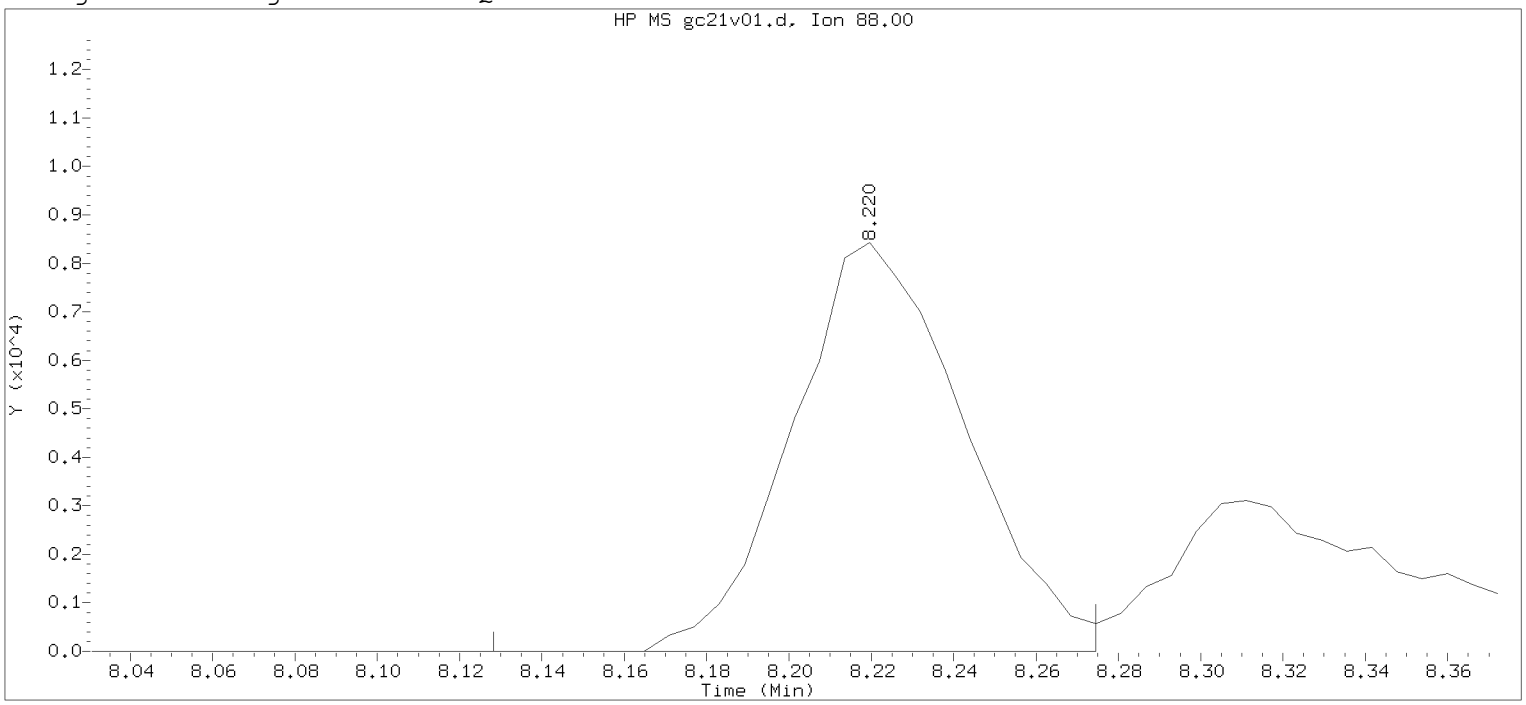
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

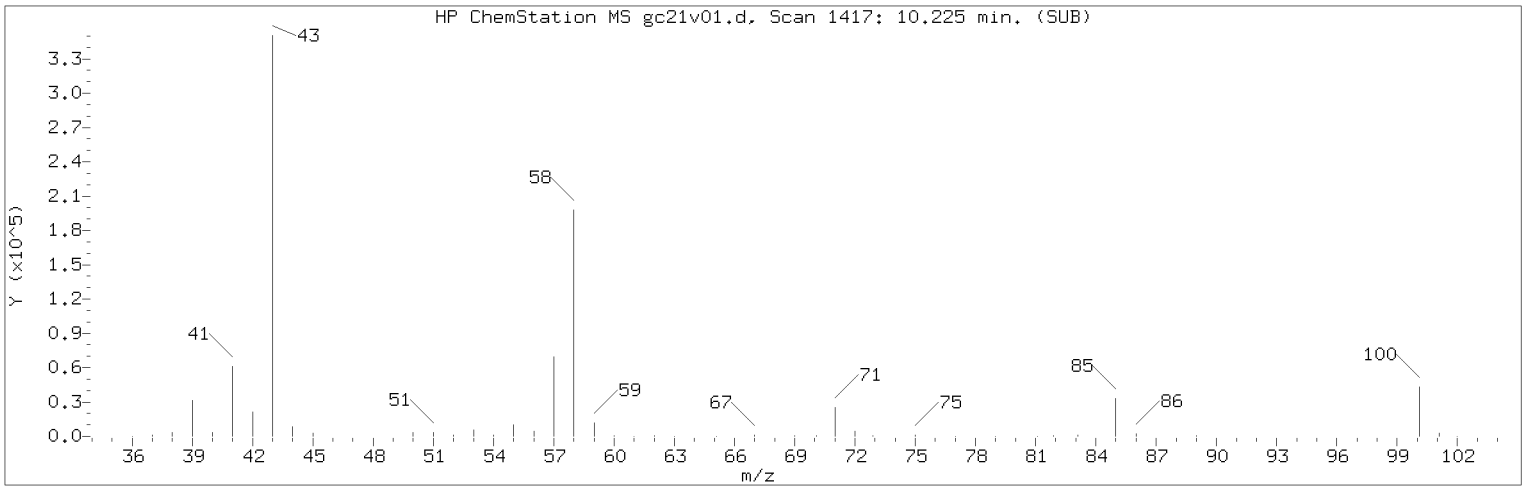
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

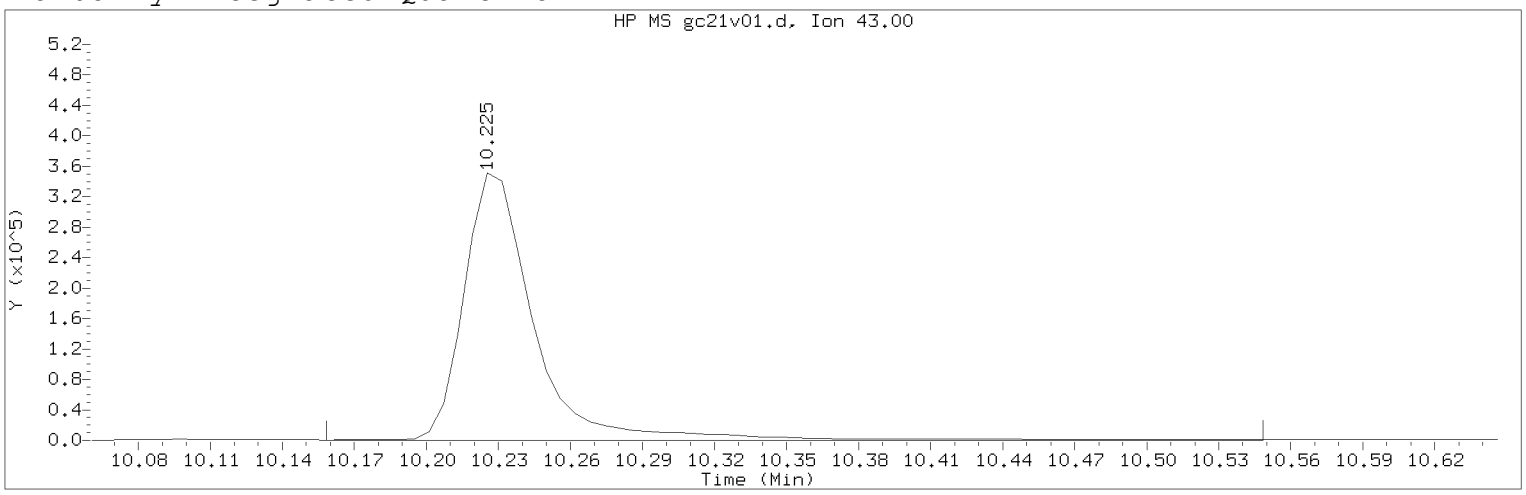
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 88.00		
Area	: 24385		
On-column Amount (ng)	: 136.8505		
Integration start scan	: 1072	Integration stop scan:	1096
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

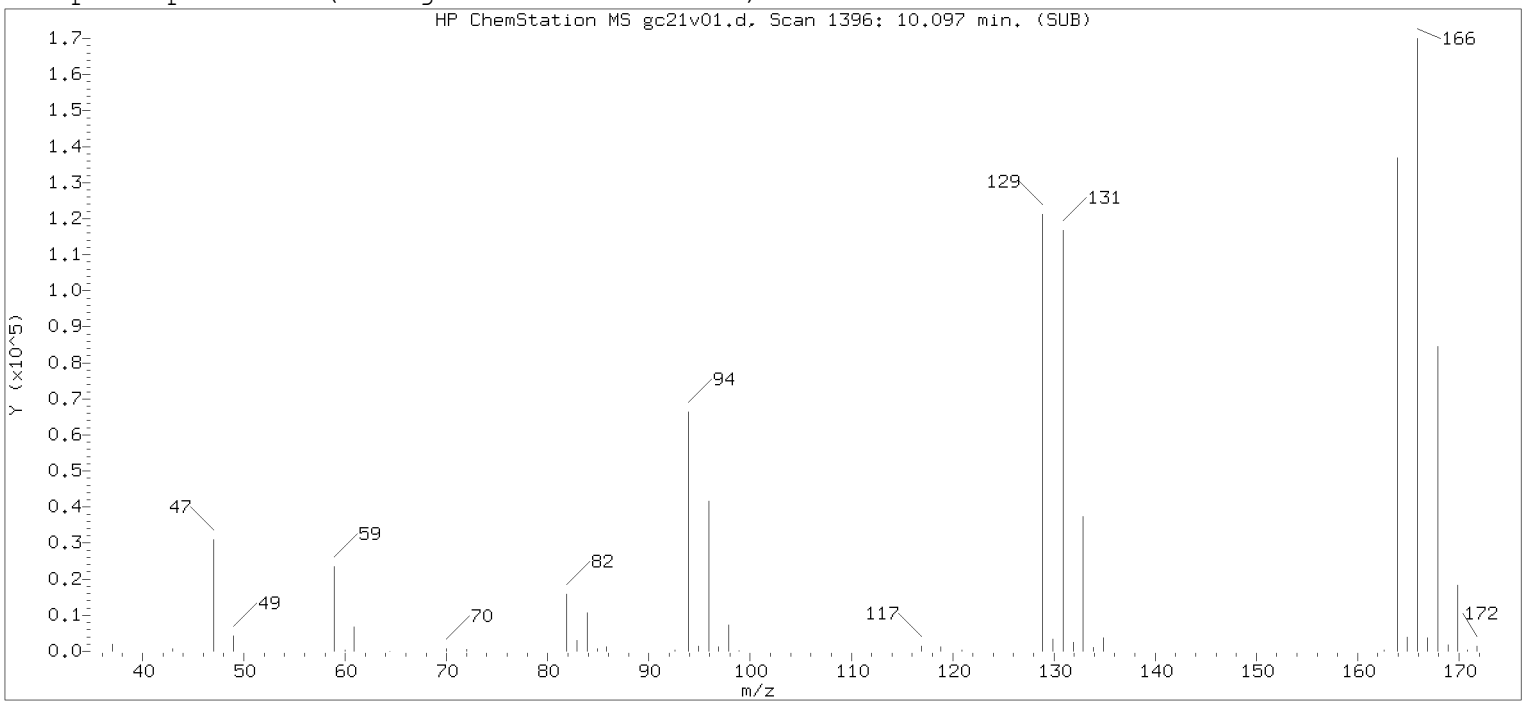
Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1417
Retention Time (minutes): 10.225
Quant Ion : 43.00
Area (flag) : 716332M
On-Column Amount (ng) : 27.6244
Integration start scan : 1405 Integration stop scan: 1469
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

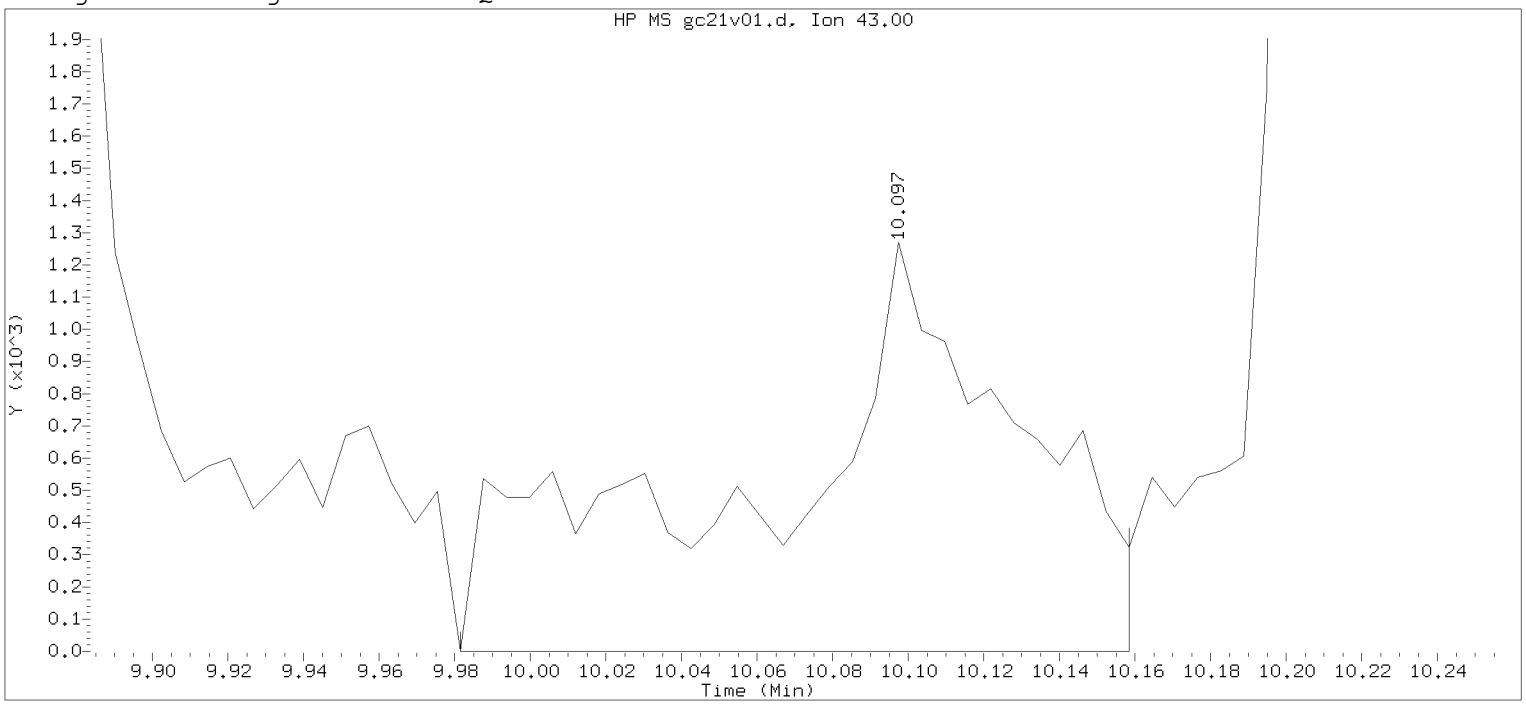
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

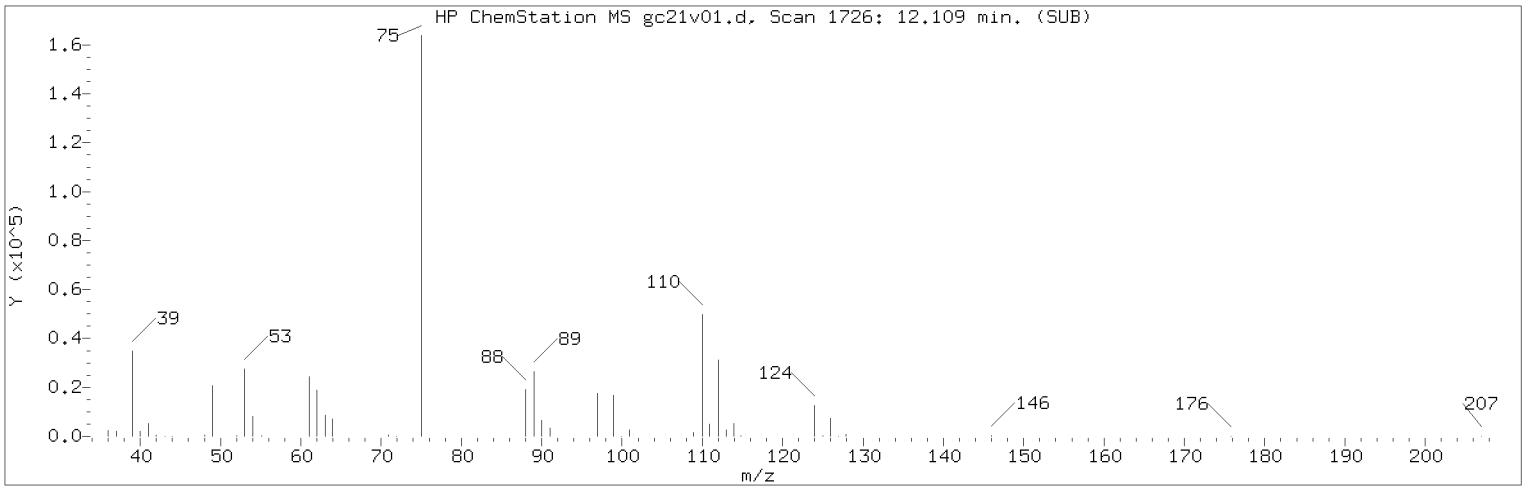
Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

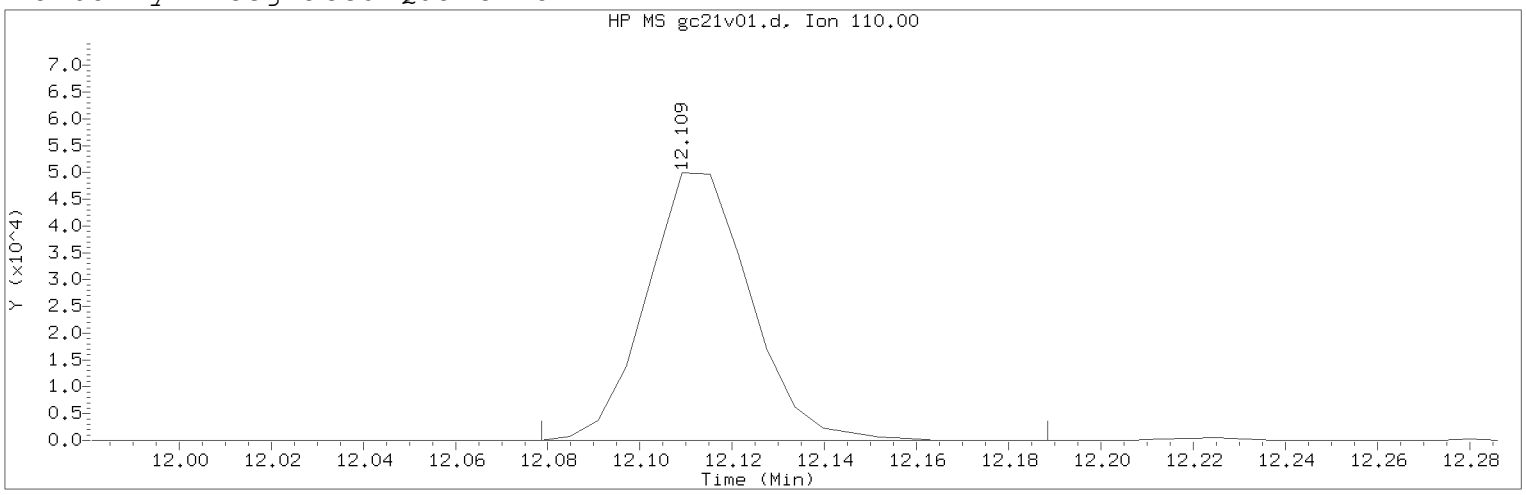
Compound Number	: 91		
Compound Name	: 2-Hexanone		
Scan Number	: 1396		
Retention Time (minutes)	: 10.097		
Quant Ion	: 43.00		
Area	: 6095		
On-column Amount (ng)	: 0.2351		
Integration start scan	: 1376	Integration stop scan:	1405
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 08:10
Date, time and analyst ID of latest file update: 22-Oct-2019 08:10 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

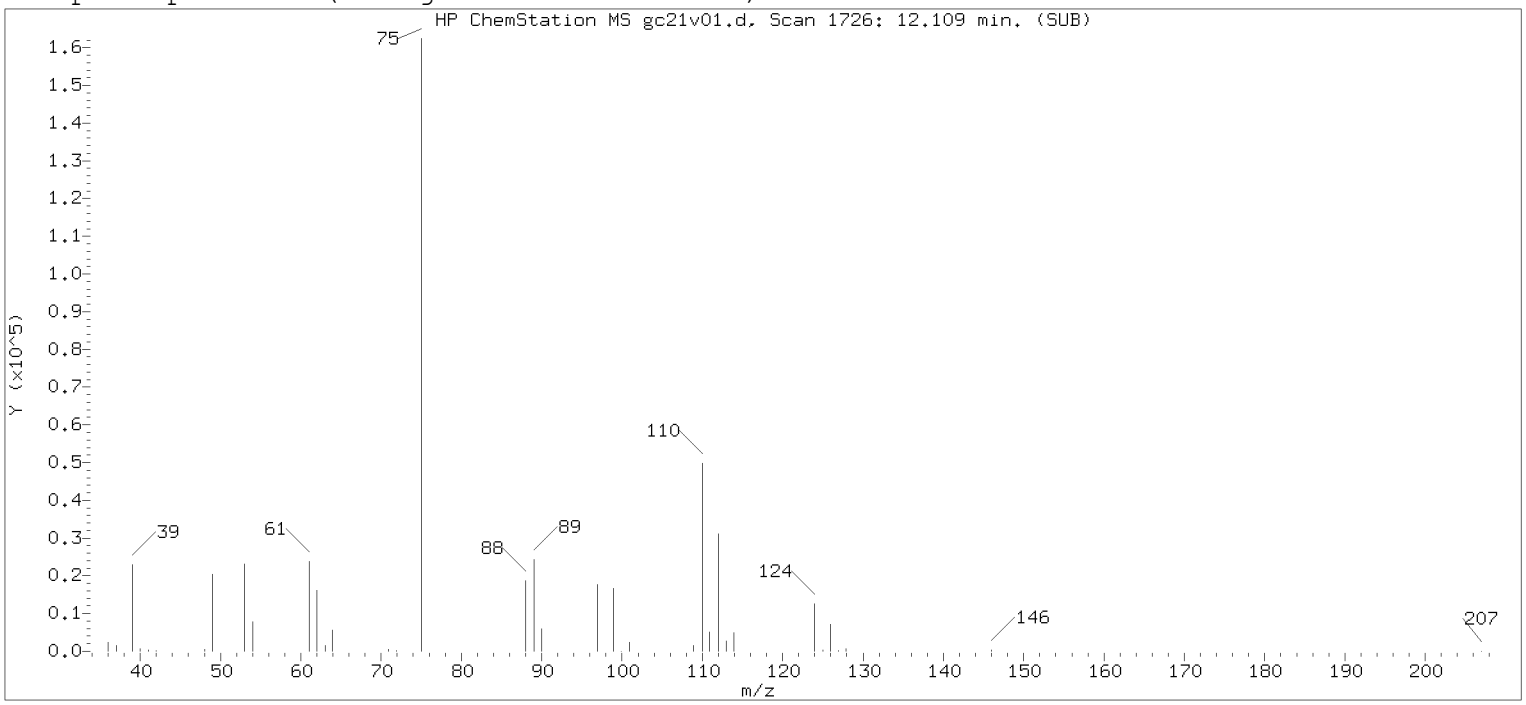
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1726
Retention Time (minutes): 12.109
Quant Ion : 110.00
Area (flag) : 77862M
On-Column Amount (ng) : 5.4352
Integration start scan : 1720 Integration stop scan: 1738
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

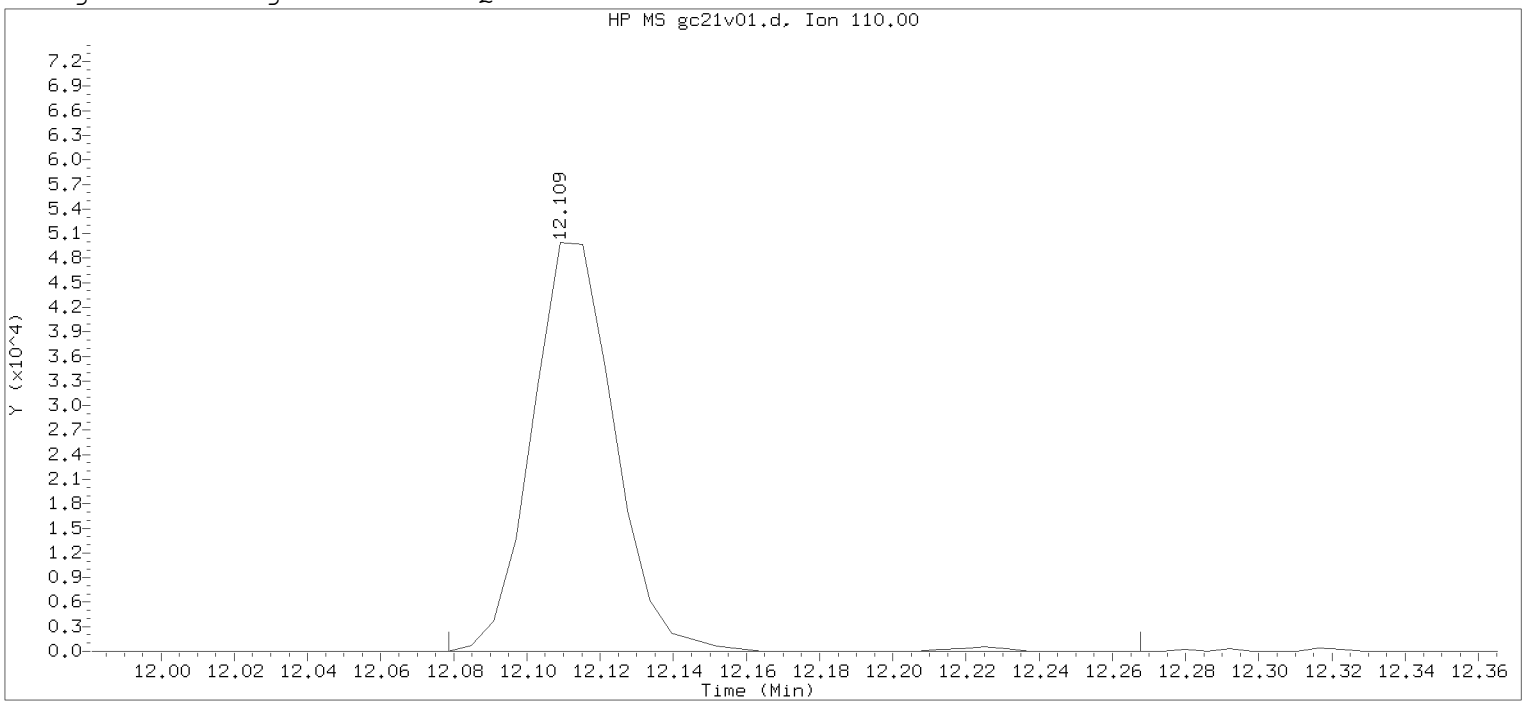
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kelly E. Keller on 10/22/2019 at 08:56.
PARALLAX ID: kek01027

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19oct21i.b/gc21v01.d Instrument ID: HP16334.i
Injection date and time: 21-OCT-2019 19:14 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/19oct21i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 22-OCT-2019 07:07
Date, time and analyst ID of latest file update: 22-Oct-2019 07:07 jkh09052

Sample Name: LCSG01 Lab Sample ID: LCSG01

Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1726
Retention Time (minutes): 12.109
Quant Ion : 110.00
Area : 78377
On-column Amount (ng) : 5.4712
Integration start scan : 1720 Integration stop scan: 1751
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/22/2019 at 08:12.
Target 3.5 esignature user ID: jkh09052

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i01.d

Injection date and time: 21-OCT-2019 16:39

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 7

Client ID: VSTD025 Lab ID: VSTD025

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	125.000	125.00330	0.0	30
Propionitrile(3)(0)	500.000	499.96566	0.0	30
n-Butanol(3)(0)	2500.000	2498.54997	0.1	30
Benzyl Chloride(3)(0)	25.000	24.97875	0.1	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i02.d

Injection date and time: 21-OCT-2019 17:01

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 6

Client ID: VSTD010 Lab ID: VSTD010

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation

3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	50.000	49.98876	0.0	30
Propionitrile(3)(0)	200.000	200.45879	-0.2	30
n-Butanol(3)(0)	1000.000	1013.56796	-1.4	30
Benzyl Chloride(3)(0)	10.000	10.20868	-2.1	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i03.d

Injection date and time: 21-OCT-2019 17:24

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 5

Client ID: VSTD005 Lab ID: VSTD005

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	25.000	24.93746	0.3	30
Propionitrile(3)(0)	100.000	98.88647	1.1	30
n-Butanol(3)(0)	500.000	482.47889	3.5	30
Benzyl Chloride(3)(0)	5.000	4.68204	6.4	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i04.d

Injection date and time: 21-OCT-2019 17:46

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 4

Client ID: VSTD002 Lab ID: VSTD002

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	10.000	10.15551	-1.6	30
Propionitrile(3)(0)	40.000	41.43566	-3.6	30
n-Butanol(3)(0)	200.000	188.25091	5.9	30
Benzyl Chloride(3)(0)	2.000	1.89097	5.5	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i05.d

Injection date and time: 21-OCT-2019 18:08

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 3

Client ID: VSTD001 Lab ID: VSTD001

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	5.000	5.10019	-2.0	30
Propionitrile(3)(0)	20.000	18.73594	6.3	30
n-Butanol(3)(0)	100.000	97.37384	2.6	30
Benzyl Chloride(3)(0)	1.000	0.97844	2.2	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i06.d

Injection date and time: 21-OCT-2019 18:30

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 2

Client ID: VSTD0.5 Lab ID: VSTD0.5

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	2.500	2.35338	5.9	30
Propionitrile(3)(0)	10.000	9.11601	8.8	30
n-Butanol(3)(0)	50.000	55.27482	-10.5	30
Benzyl Chloride(3)(0)	0.500	0.58899	-17.8	30

**B/C/D

Report generated on 10/22/2019 at 08:32

SW-846 Method 8260X** Calibration Verification Report

Instrument ID: HP16334.i

File ID: /chem2/HP16334.i/19oct21i.b/gc21i07.d

Injection date and time: 21-OCT-2019 18:52

Last file update (date, time, and analyst ID): 22-Oct-2019 08:10 jkh09052

Calibration Level: 1

Client ID: VSTD0.2 Lab ID: VSTD0.2

Target processing method: /chem2/HP16334.i/19oct21i.b/m8260c25.m

Last method update (date, time, and analyst ID): 22-Oct-2019 08:11 jkh09052

Curve Type Legend: 1 = Linear Equation 2 = Weighted Linear Equation
3 = Quadratic Equation 4 = Power Equation

Compound Name(Curve Type)	Theoretical Concentration	Calculated Concentration	Percent Drift	Drift Limit
Acrylonitrile(3)(0)	1.000	0.96139	3.9	50
Propionitrile(3)(0)	4.000	5.40148	-35.0	50
n-Butanol(3)(0)	20.000	34.50362	-72.5*	50
Benzyl Chloride(3)(0)	0.200	0.37214	-86.1*	50

An "*" indicates the recalculated concentration fails the ± % drift criteria specified in section 11.5.4.1 of SW-846 Method 8000D.

**B/C/D

Report generated on 10/22/2019 at 08:32

Data File: /chem2/HP16334.i/19nov05a.b/gn05t01.d

Date : 05-NOV-2019 07:20

Client ID: AUG02-19

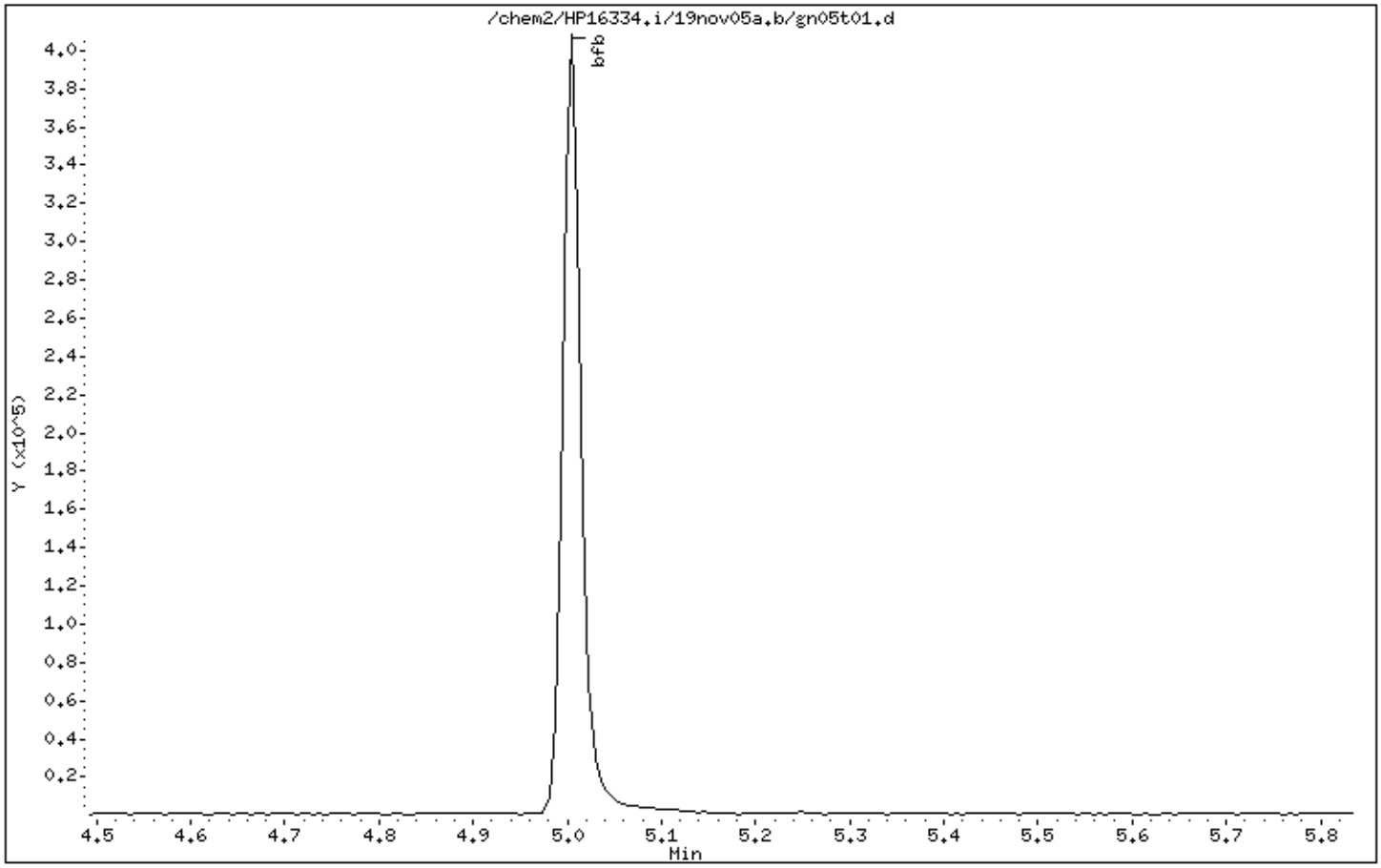
Instrument: HP16334.i

Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP16334.i/19nov05a.b/gn05t01.d

Date : 05-NOV-2019 07:20

Client ID: AUG02-19

Instrument: HP16334.i

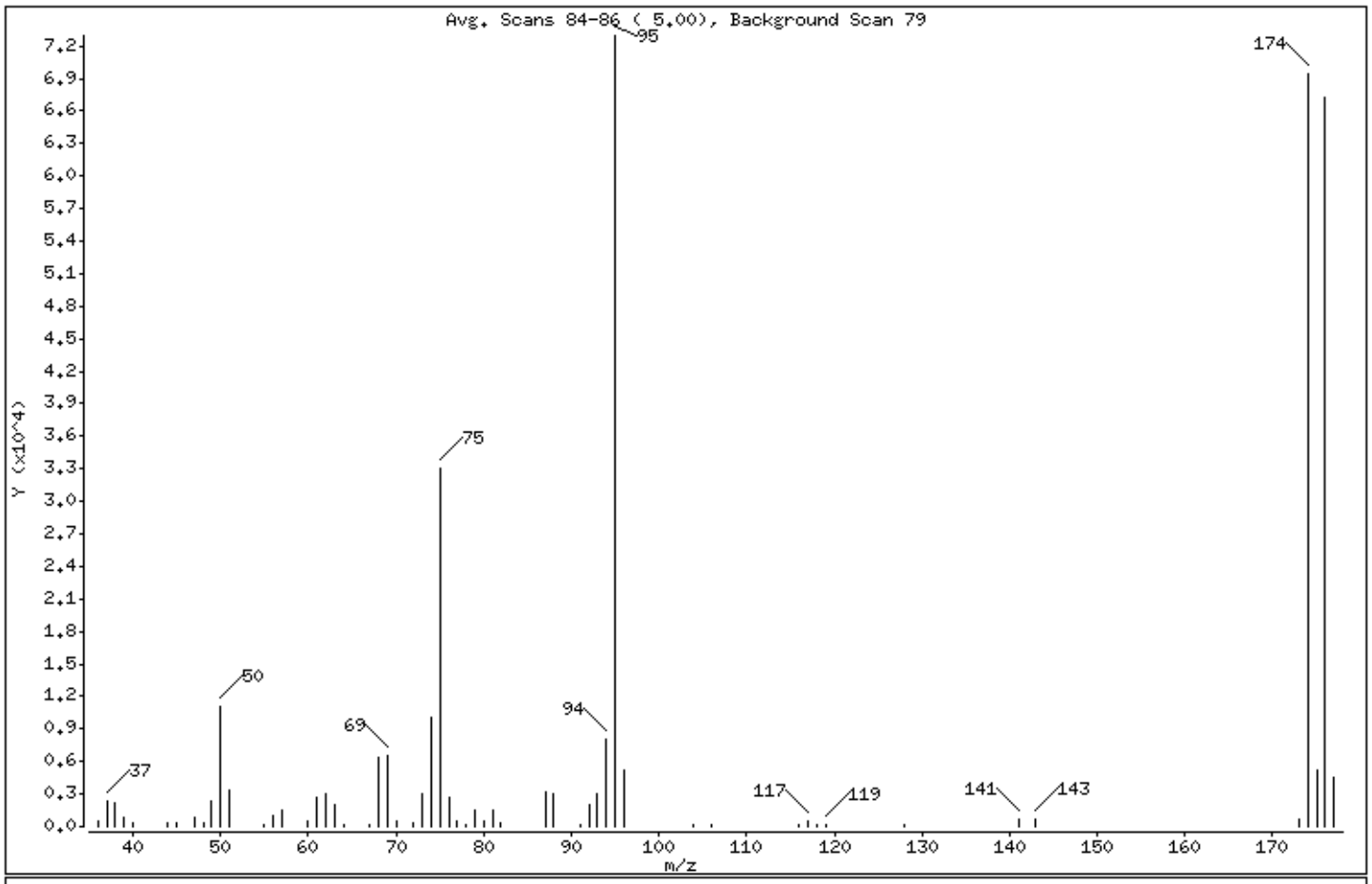
Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.13
75	30.00 - 60.00% of mass 95	45.19
96	5.00 - 9.00% of mass 95	7.03
173	Less than 2.00% of mass 174	0.93 (0.97)
174	50.00 - 100.00% of mass 95	95.27
175	5.00 - 9.00% of mass 174	7.02 (7.36)
176	95.00 - 101.00% of mass 174	92.19 (96.77)
177	5.00 - 9.00% of mass 176	6.15 (6.67)

Date : 05-NOV-2019 07:20

Client ID: AUG02-19 Instrument: HP16334.i

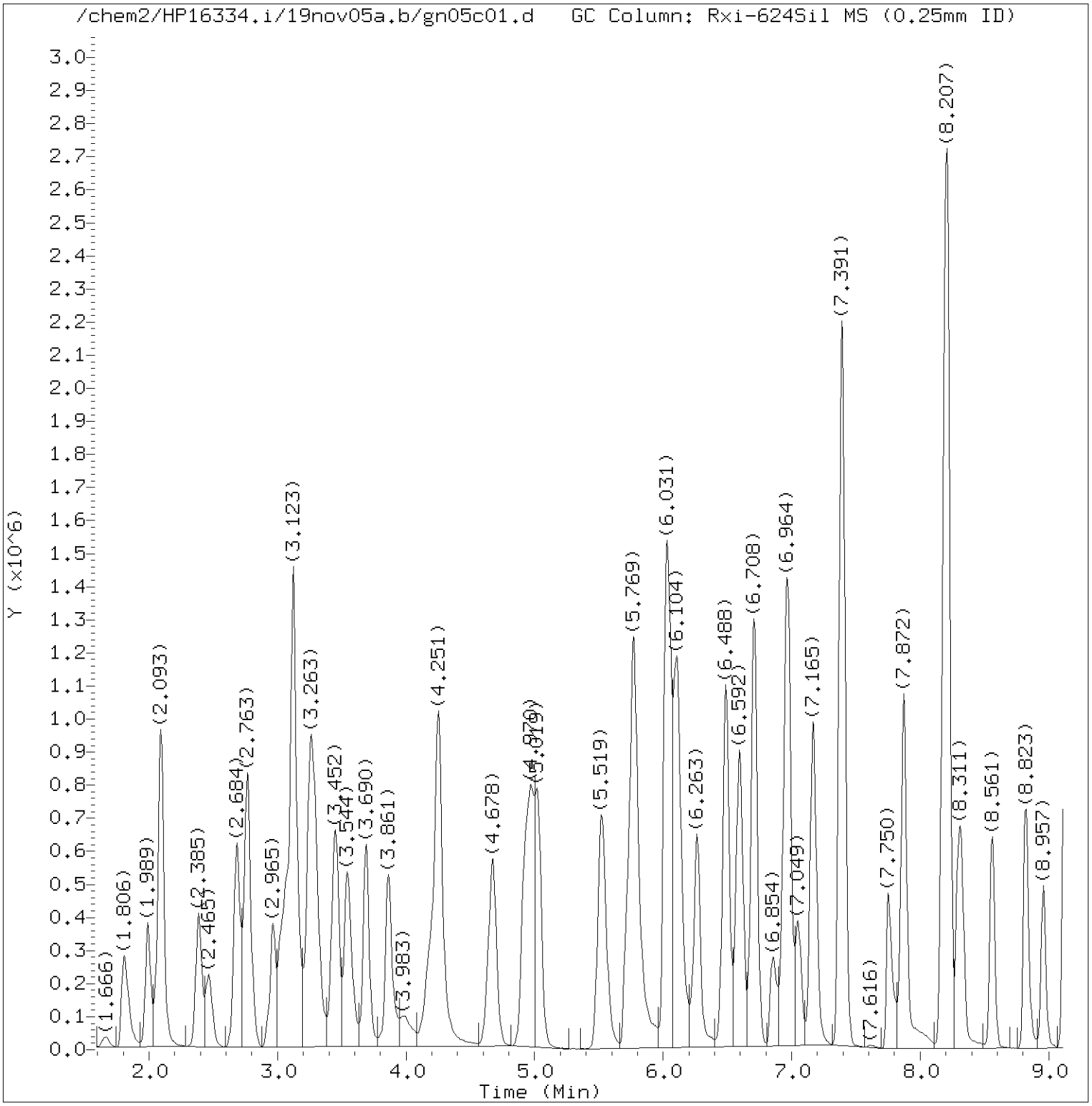
Sample Info: AUG02-19;50NGBFB;1;3;;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: gn05t01.d
Spectrum: Avg. Scans 84-86 (5.00), Background Scan 79
Location of Maximum: 95.00
Number of points: 57

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	451	60.00	575	78.00	215	116.00	185
37.00	2412	61.00	2617	79.00	1509	117.00	468
38.00	2207	62.00	3001	80.00	481	118.00	91
39.00	805	63.00	1978	81.00	1526	119.00	206
40.00	273	64.00	96	82.00	410	128.00	178
44.00	416	67.00	85	87.00	3165	141.00	652
45.00	362	68.00	6409	88.00	3045	143.00	715
47.00	916	69.00	6483	91.00	202	173.00	676
48.00	336	70.00	572	92.00	1959	174.00	69496
49.00	2399	72.00	335	93.00	2938	175.00	5118
50.00	11041	73.00	2948	94.00	7989	176.00	67248
51.00	3277	74.00	10067	95.00	72952	177.00	4483
55.00	92	75.00	32968	96.00	5132		
56.00	984	76.00	2734	104.00	148		
57.00	1438	77.00	431	106.00	212		



Total Ion Chromatogram (TIC)

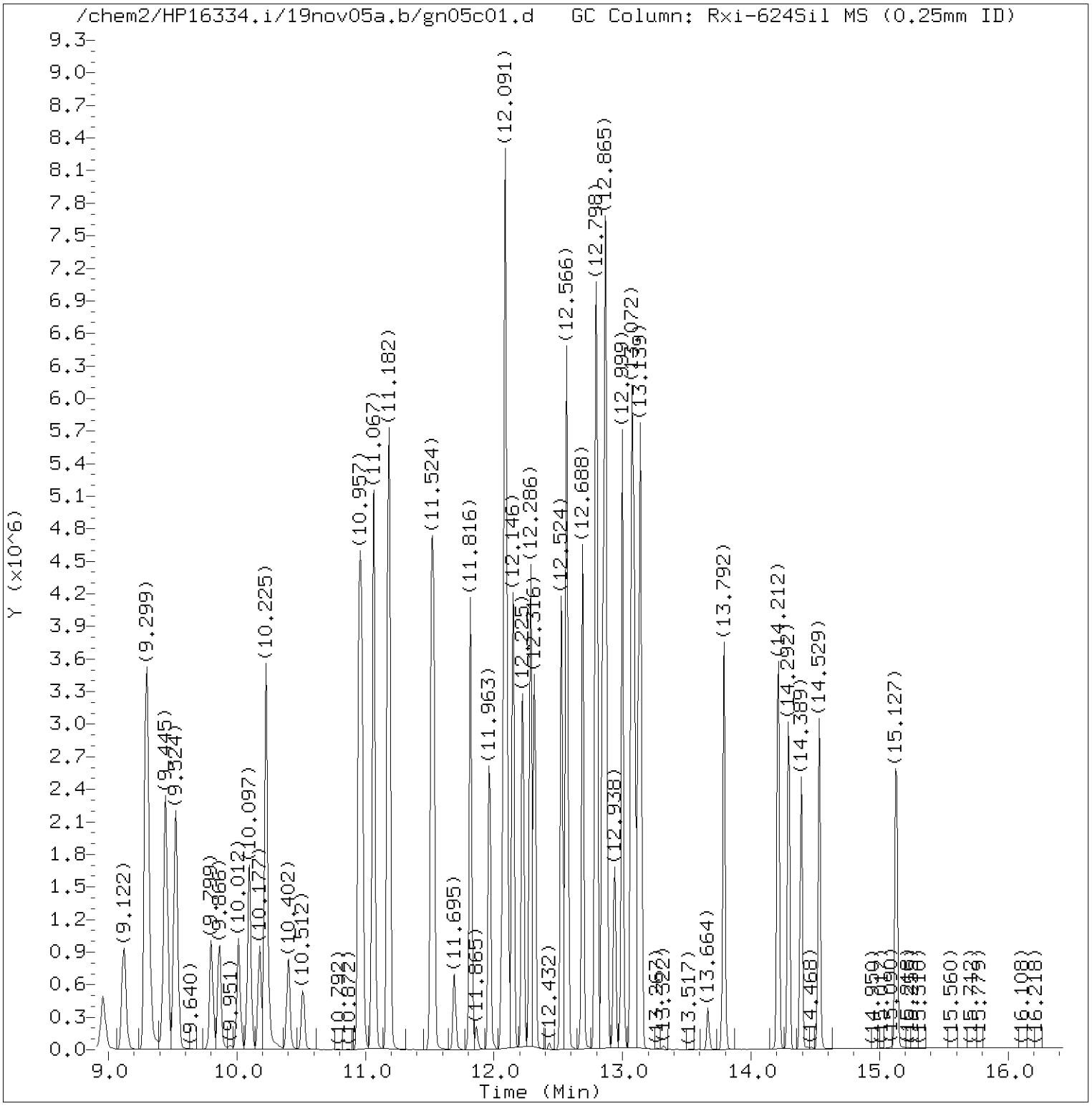
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	1.806	85	713652	10.164
2) Chloromethane	(2)	1.989	50	643368	9.779
6) 1,3-Butadiene	(2)	2.087	39	529292	9.210
5) Vinyl Chloride	(2)	2.099	62	679596	10.375
7) Bromomethane	(2)	2.385	94	498917	10.079
8) Chloroethane	(2)	2.465	64	378803	9.777
9) Dichlorofluoromethane	(2)	2.684	67	896557	10.014
10) Trichlorofluoromethane	(2)	2.751	101	824932	9.391
11) Ethyl ether	(2)	2.958	59	377514	9.418
12) Freon 123a	(2)	3.038	67	547574	9.491
13) Acrolein	(1)	3.123	56	2950121	418.683
15) 1,1-Dichloroethene	(2)	3.251	96	409212	9.206
14) Acetone	(1)	3.275	43	611861	80.481
16) Freon 113	(2)	3.288	101	484349	9.352
17) Methyl Iodide	(2)	3.434	142	894887	9.282
18) Carbon Disulfide	(2)	3.544	76	1498704	9.142
21) Methyl Acetate	(1)	3.666	43	160505M	8.666
22) Allyl Chloride	(2)	3.690	41	615685	9.450
23) Methylene Chloride	(2)	3.861	84	469609	9.047
26)*t-Butyl Alcohol-d10	(1)	3.867	65	149876	50.000
28) t-Butyl Alcohol	(1)	3.989	59	452439	172.950
29) Acrylonitrile	(1)	4.172	53	479683	43.930
30) Methyl Tertiary Butyl Ether	(2)	4.233	73	1264819	9.381
31) trans-1,2-Dichloroethene	(2)	4.257	96	479142	9.341
32) n-Hexane	(2)	4.678	57	698798M	10.119
33) 1,1-Dichloroethane	(2)	4.915	63	813282	9.295
34) di-Isopropyl Ether	(2)	4.970	45	1450990	9.145
35) 2-Chloro-1,3-Butadiene	(2)	5.025	53	699860	8.944
37) Ethyl t-butyl ether	(2)	5.519	59	1458748	9.077
38) 2-Butanone	(1)	5.720	43	1296712	89.401
39) cis-1,2-Dichloroethene	(2)	5.769	96	547845	9.802
41) 2,2-Dichloropropane	(2)	5.775	77	663719	10.937
42) Propionitrile	(1)	5.812	54	517342M	190.869
45) Methacrylonitrile	(1)	6.031	67	1409534M	87.089
48) Tetrahydrofuran	(1)	6.104	71	431150	94.125
40) 1,2-Dichloroethene (Total)	(2)		96	1026987	19.143
47) Bromochloromethane	(2)	6.110	128	275442	9.929
49) Chloroform	(2)	6.263	83	825983	9.291

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
51) 1,1,1-Trichloroethane	(2)	6.488	97	729297	9.323
50)$Dibromofluoromethane	(2)	6.488	113	543441	9.938
50)$Dibromofluoromethane	(2)	6.488	111	548596	9.763
52) Cyclohexane	(2)	6.592	56	827565	9.692
52) Cyclohexane	(2)	6.592	84	779225	9.809
52) Cyclohexane	(2)	6.592	69	268700	9.916
54) Carbon Tetrachloride	(2)	6.708	117	674835	9.580
55) 1,1-Dichloropropene	(2)	6.708	75	658312	9.325
56) Isobutyl Alcohol	(1)	6.854	41	380829	474.275
57)$1,2-Dichloroethane-d4	(2)	6.952	102	112143	10.127
57)$1,2-Dichloroethane-d4	(2)	6.945	65	480816	9.477
57)$1,2-Dichloroethane-d4	(2)	6.952	104	72161	10.401
58) Benzene	(2)	6.970	78	1938672	9.507
59) 1,2-Dichloroethane	(2)	7.049	62	500192	8.681
59) 1,2-Dichloroethane	(2)	7.049	98	51310	10.066
60) t-Amyl methyl ether	(2)	7.165	73	1423333	9.612
63)*Fluorobenzene	(2)	7.384	96	2162828	10.000
62) n-Heptane	(2)	7.397	43	703047	9.767
65) n-Butanol	(1)	7.756	56	834978A	918.252
67) Trichloroethene	(2)	7.872	95	519075	9.490
69) Methylcyclohexane	(2)	8.183	83	951202	10.376
70) 1,2-Dichloropropane	(2)	8.207	63	490566	9.670
71) Methyl Methacrylate	(1)	8.293	69	288660A	8.799
72) 1,4-Dioxane	(1)	8.305	88	96671M	454.758
72) 1,4-Dioxane	(1)	8.305	58	61565M	523.976
73) Dibromomethane	(2)	8.323	93	254629	9.396
74) Bromodichloromethane	(2)	8.561	83	632629	9.677
76) 2-Nitropropane	(1)	8.823	41	753952A	83.176
80) cis-1,3-Dichloropropene	(2)	9.122	75	789674	10.169
81) 4-Methyl-2-Pentanone	(1)	9.299	43	3480352	82.984
82)$Toluene-d8	(3)	9.445	98	2167329	9.929
82)$Toluene-d8	(3)	9.445	100	1406665	9.960
83) Toluene	(3)	9.524	92	1258332	9.278
84) trans-1,3-Dichloropropene	(3)	9.799	75	677258	10.095
86) Ethyl Methacrylate	(3)	9.866	69	626916	9.639
88) 1,1,2-Trichloroethane	(3)	10.012	97	387088	9.548
89) Tetrachloroethene	(3)	10.097	166	622881	9.613
85) 1,3-Dichloropropene (total)	(3)		75	1466932	20.264

M = Compound was manually integrated.
A = User selected an alternate hit.
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$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
90) 1,3-Dichloropropane	(3)	10.177	76	652875	9.368
91) 2-Hexanone	(1)	10.225	43	2485155A	80.333
93) Dibromochloromethane	(3)	10.402	129	510513	9.829
95) 1,2-Dibromoethane	(3)	10.512	107	393214	9.571
97)*Chlorobenzene-d5	(3)	10.951	117	1702027	10.000
96) 1-Chlorohexane	(3)	10.963	91	731237	9.015
98) Chlorobenzene	(3)	10.975	112	1492632	9.414
99) 1,1,1,2-Tetrachloroethane	(3)	11.061	131	547604	9.639
100) Ethylbenzene	(3)	11.067	91	2497548	9.392
101) m+p-Xylene	(3)	11.182	106	1997108	19.358
104) o-Xylene	(3)	11.512	106	994312	9.727
106) Styrene	(3)	11.530	104	1670420	9.741
107) Bromoform	(3)	11.695	173	331406	10.342
105) Xylene (Total)	(3)		106	2991420	29.085
108) Isopropylbenzene	(3)	11.816	105	2578071	9.700
111)$4-Bromofluorobenzene	(3)	11.963	95	794555	9.739
111)$4-Bromofluorobenzene	(3)	11.963	174	748267	10.130
113) 1,1,2,2-Tetrachloroethane	(4)	12.066	83	507091	9.528
114) Bromobenzene	(4)	12.079	156	681174	9.758
115) trans-1,4-Dichloro-2-butene	(1)	12.091	53	1179185	83.386
116) 1,2,3-Trichloropropane	(4)	12.109	110	137865	9.533
117) n-Propylbenzene	(4)	12.146	91	2958865	9.459
119) 2-Chlorotoluene	(4)	12.225	126	627362	9.487
121) 1,3,5-Trimethylbenzene	(4)	12.286	105	2211846	9.783
122) 4-Chlorotoluene	(4)	12.316	126	653662	9.417
125) tert-Butylbenzene	(4)	12.524	134	472632	9.369
126) Pentachloroethane	(4)	12.560	167	488688	10.468
127) 1,2,4-Trimethylbenzene	(4)	12.566	105	2322857	9.770
128) sec-Butylbenzene	(4)	12.688	105	2878085	9.716
131) 1,3-Dichlorobenzene	(4)	12.792	146	1332263	9.616
132) p-Isopropyltoluene	(4)	12.798	119	2486738	9.686
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	950648	10.000
134) 1,4-Dichlorobenzene	(4)	12.865	146	1335551	9.413
135) 1,2,3-Trimethylbenzene	(4)	12.871	120	1090586	9.809
136) Benzyl Chloride	(4)	12.938	126	242680	11.928
138) n-Butylbenzene	(4)	13.091	92	1254484	9.606
139) 1,2-Dichlorobenzene	(4)	13.121	146	1246346	9.619
143) 1,2-Dibromo-3-chloropropane	(1)	13.664	155	83215	9.308

A = User selected an alternate hit.
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Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

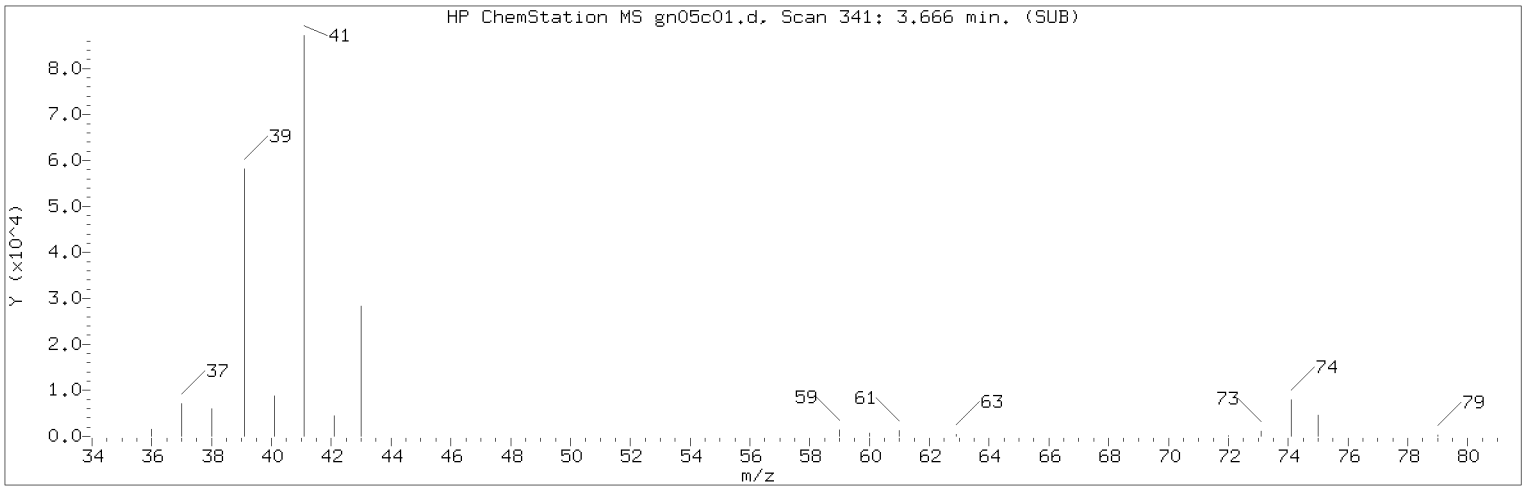
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

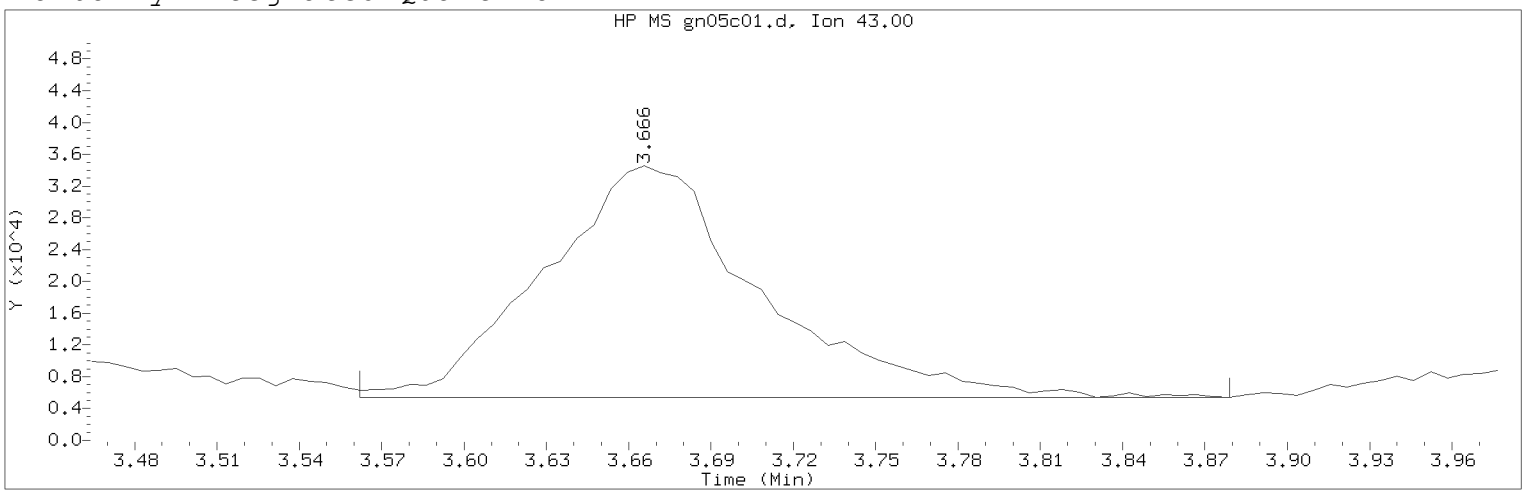
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
144) 1,3,5-Trichlorobenzene	(4)	13.792	180	1116394	9.476
145) 1,2,4-Trichlorobenzene	(4)	14.212	180	1021514	9.337
146) Hexachlorobutadiene	(4)	14.292	225	517633	9.343
147) Naphthalene	(4)	14.389	128	1774125	9.677
148) 1,2,3-Trichlorobenzene	(4)	14.529	180	882676	9.216

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

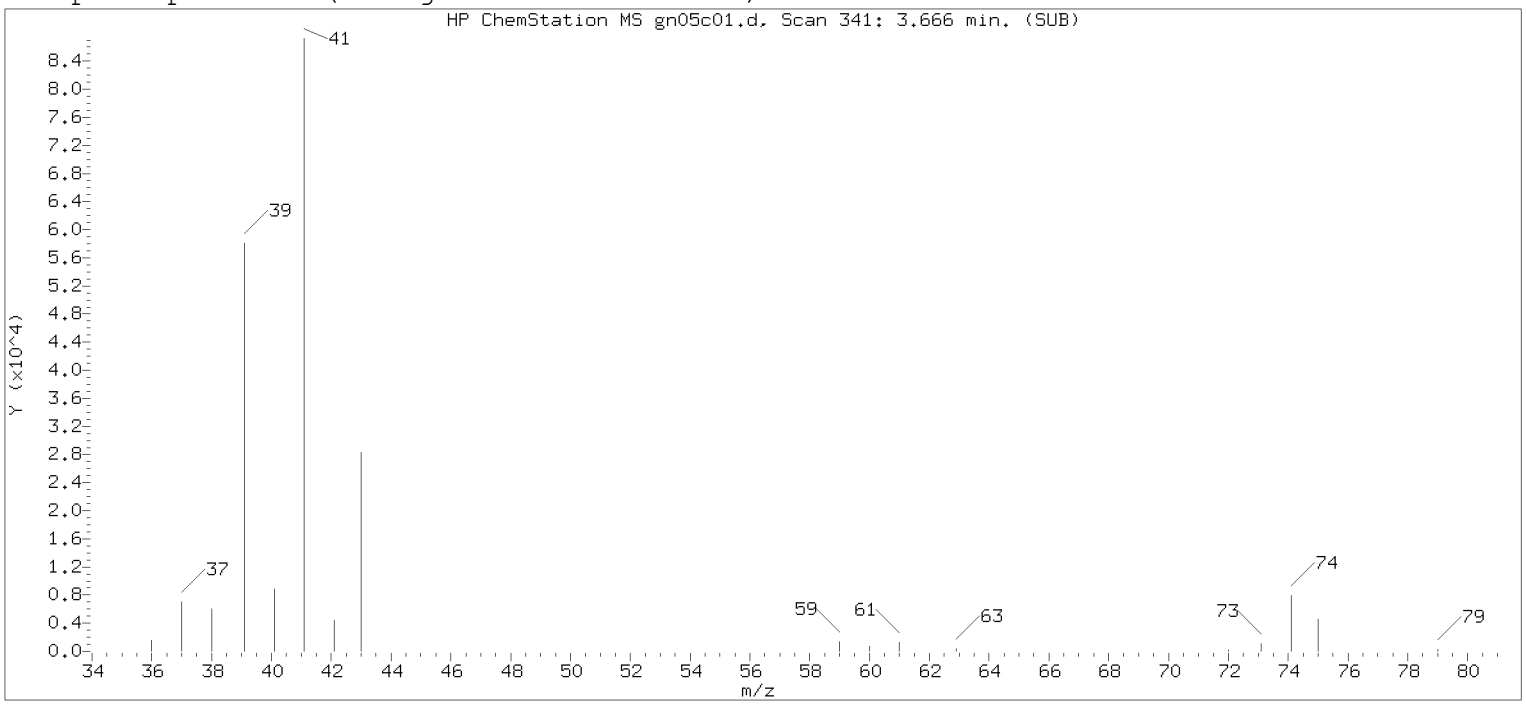
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 341
Retention Time (minutes): 3.666
Quant Ion : 43.00
Area (flag) : 160505M
On-Column Amount (ng) : 8.6665
Integration start scan : 323 Integration stop scan: 375
Y at integration start : 5370 Y at integration end: 5370

Reason for manual integration: improper integration

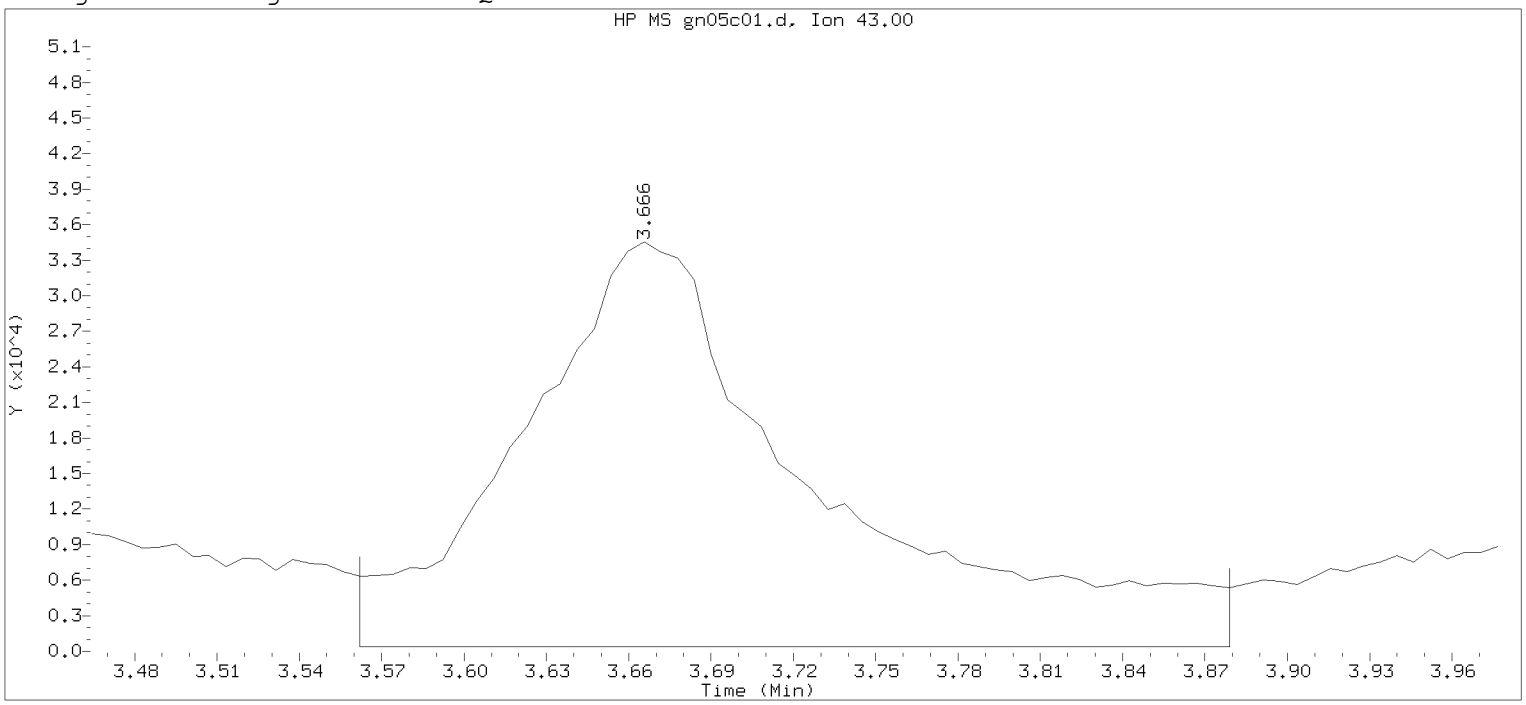
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

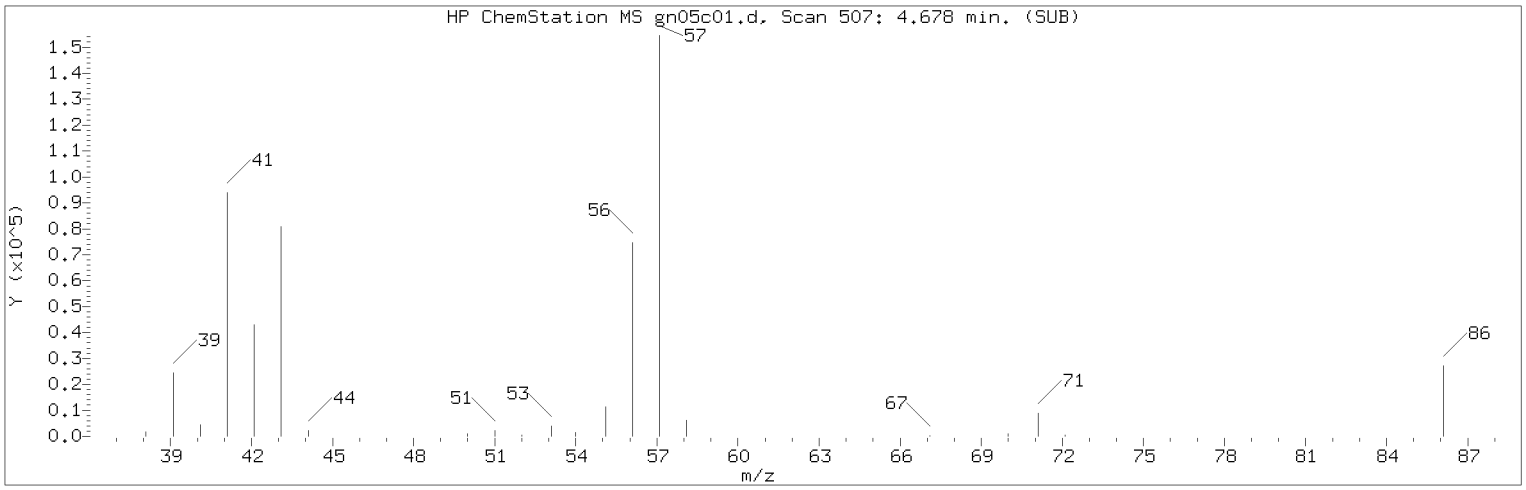
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

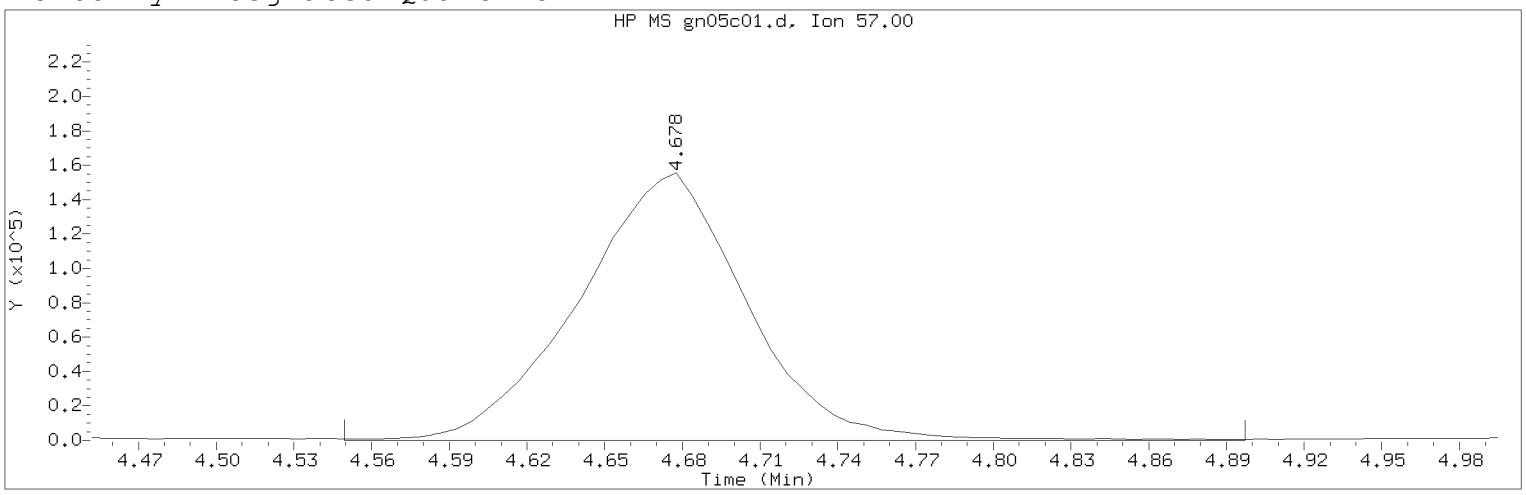
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 341
Retention Time (minutes): 3.666
Quant Ion : 43.00
Area : 255772
On-column Amount (ng) : 13.8104
Integration start scan : 323 Integration stop scan: 375
Y at integration start : 352 Y at integration end: 352

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

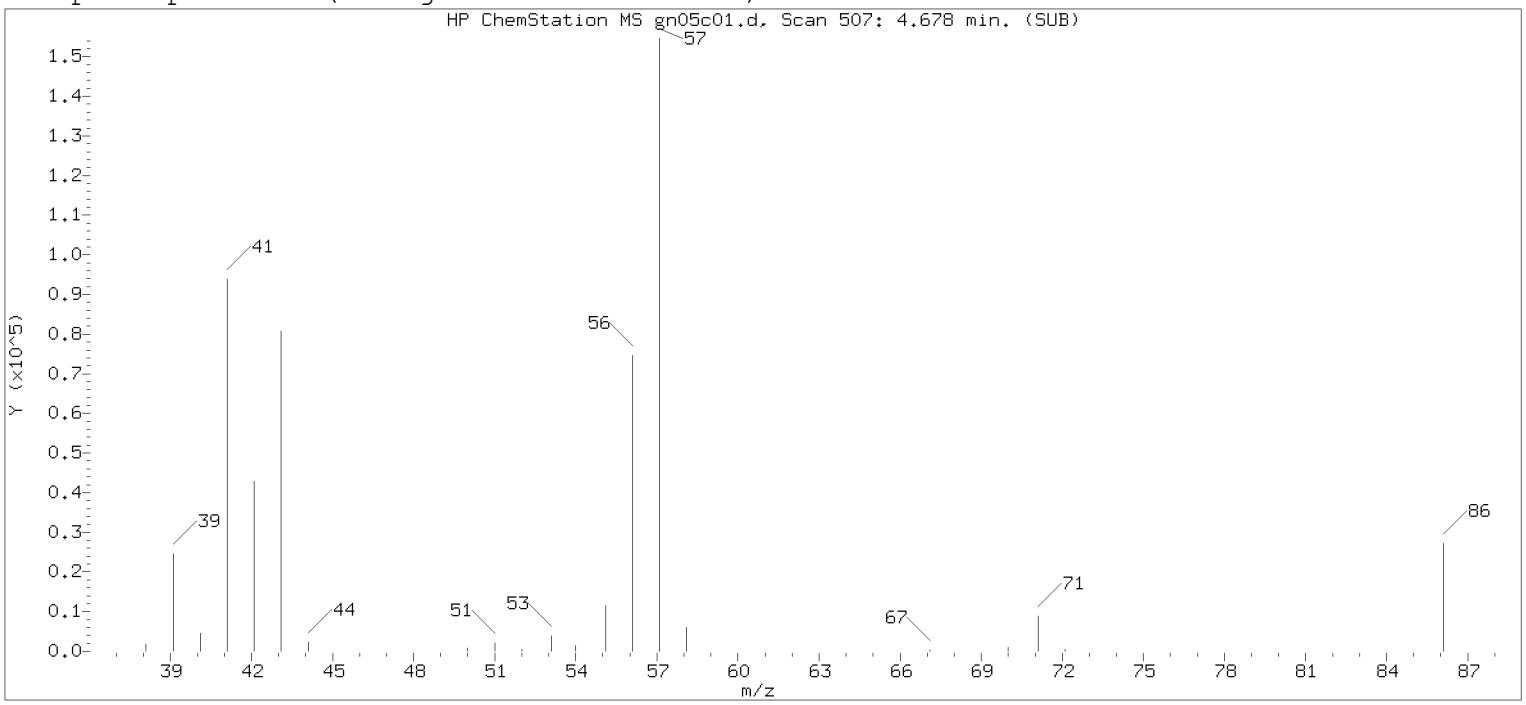
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 507
Retention Time (minutes): 4.678
Quant Ion : 57.00
Area (flag) : 698798M
On-Column Amount (ng) : 10.1187
Integration start scan : 485 Integration stop scan: 542
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

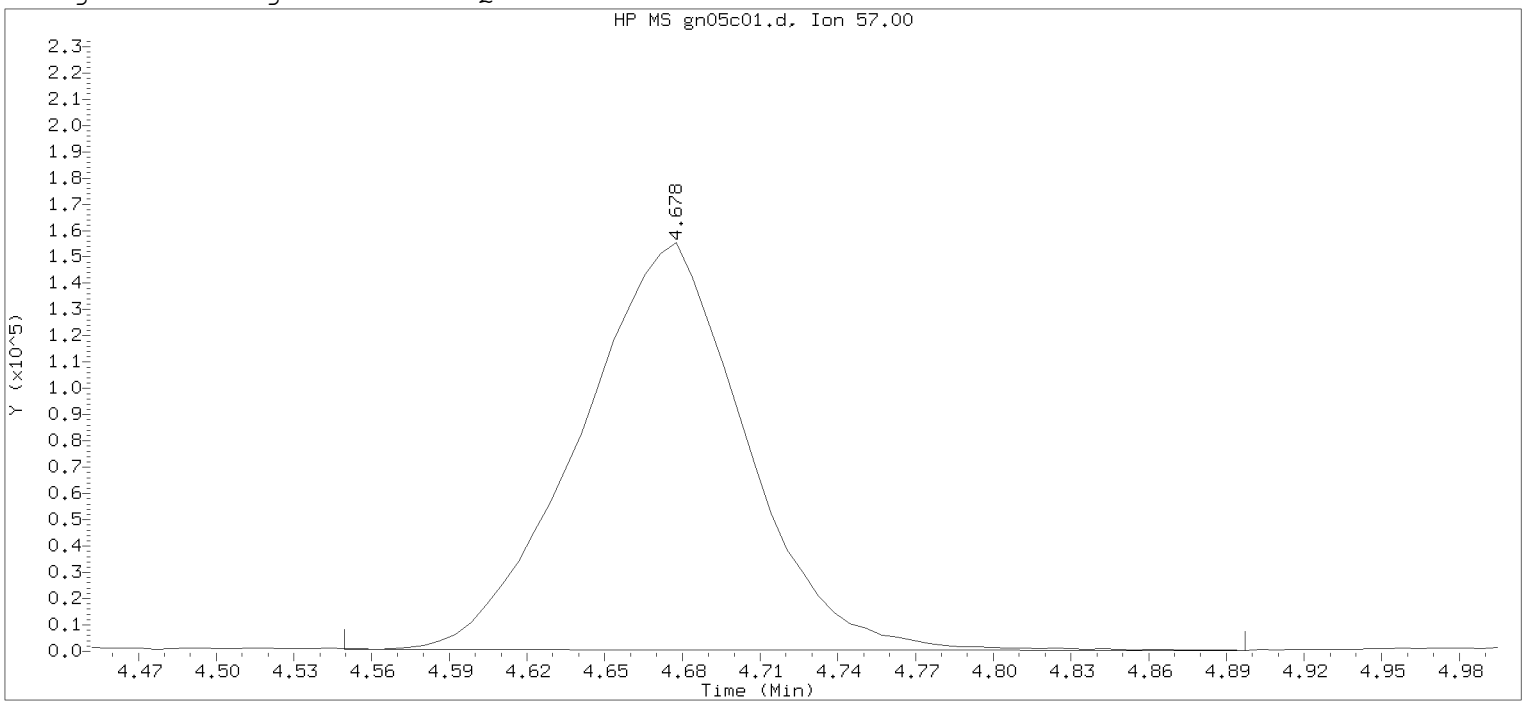
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

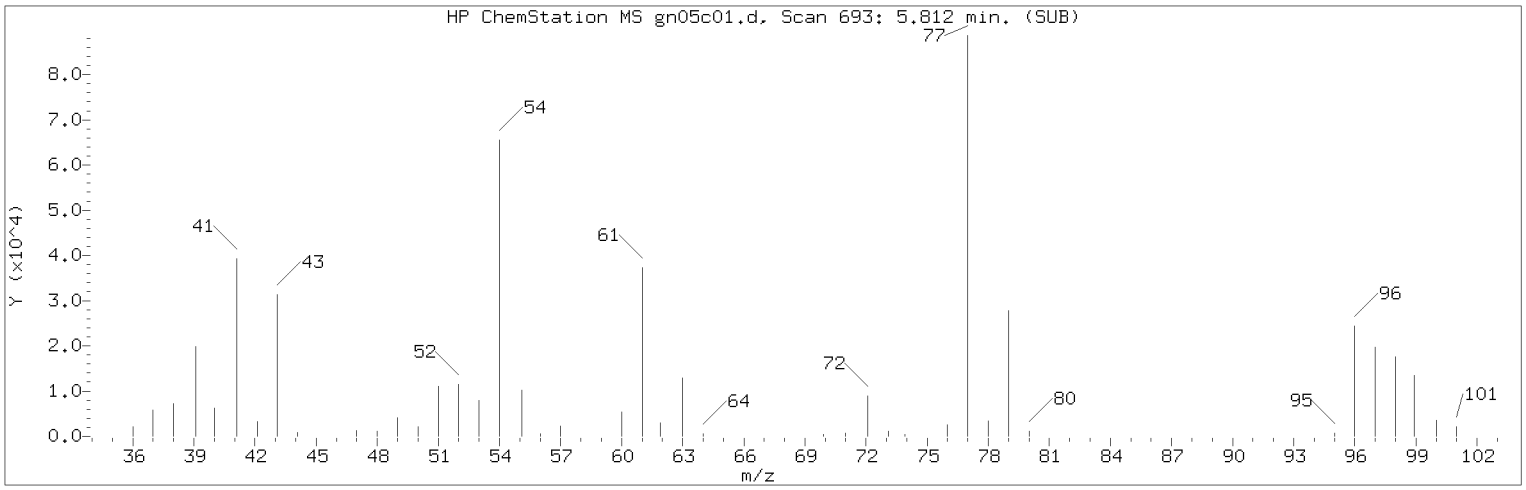
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

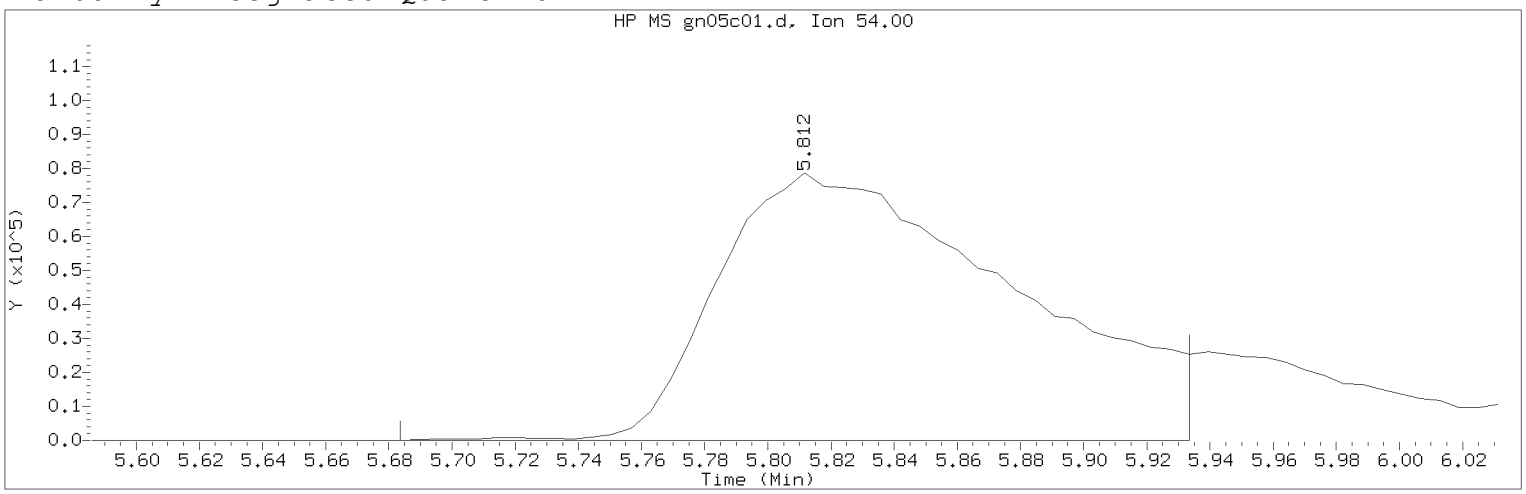
Compound Number	: 32		
Compound Name	: n-Hexane		
Scan Number	: 507		
Retention Time (minutes)	: 4.678		
Quant Ion	: 57.00		
Area	: 687430		
On-column Amount (ng)	: 9.9541		
Integration start scan	: 485	Integration stop scan:	542
Y at integration start	: 754	Y at integration end:	315

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

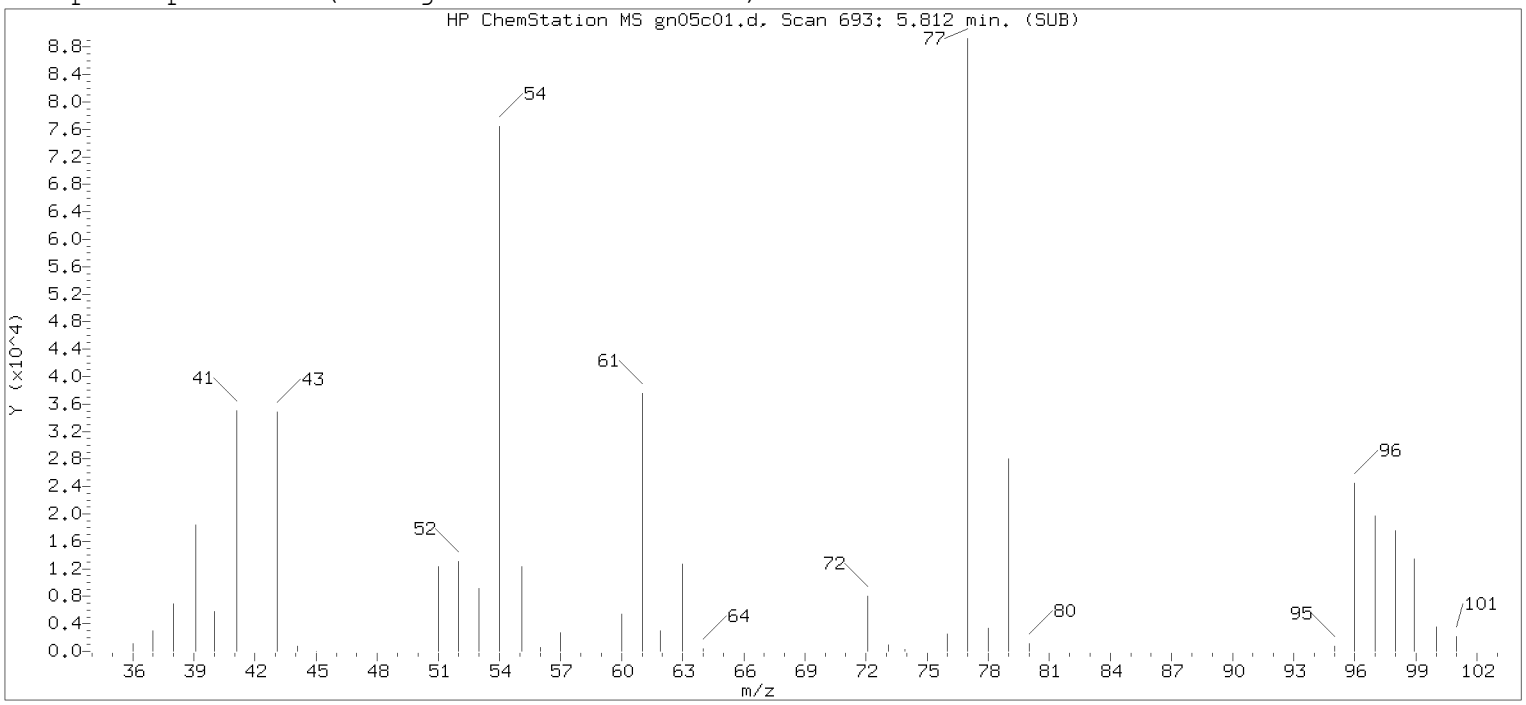
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 693
Retention Time (minutes): 5.812
Quant Ion : 54.00
Area (flag) : 517342M
On-Column Amount (ng) : 190.8689
Integration start scan : 671 Integration stop scan: 712
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

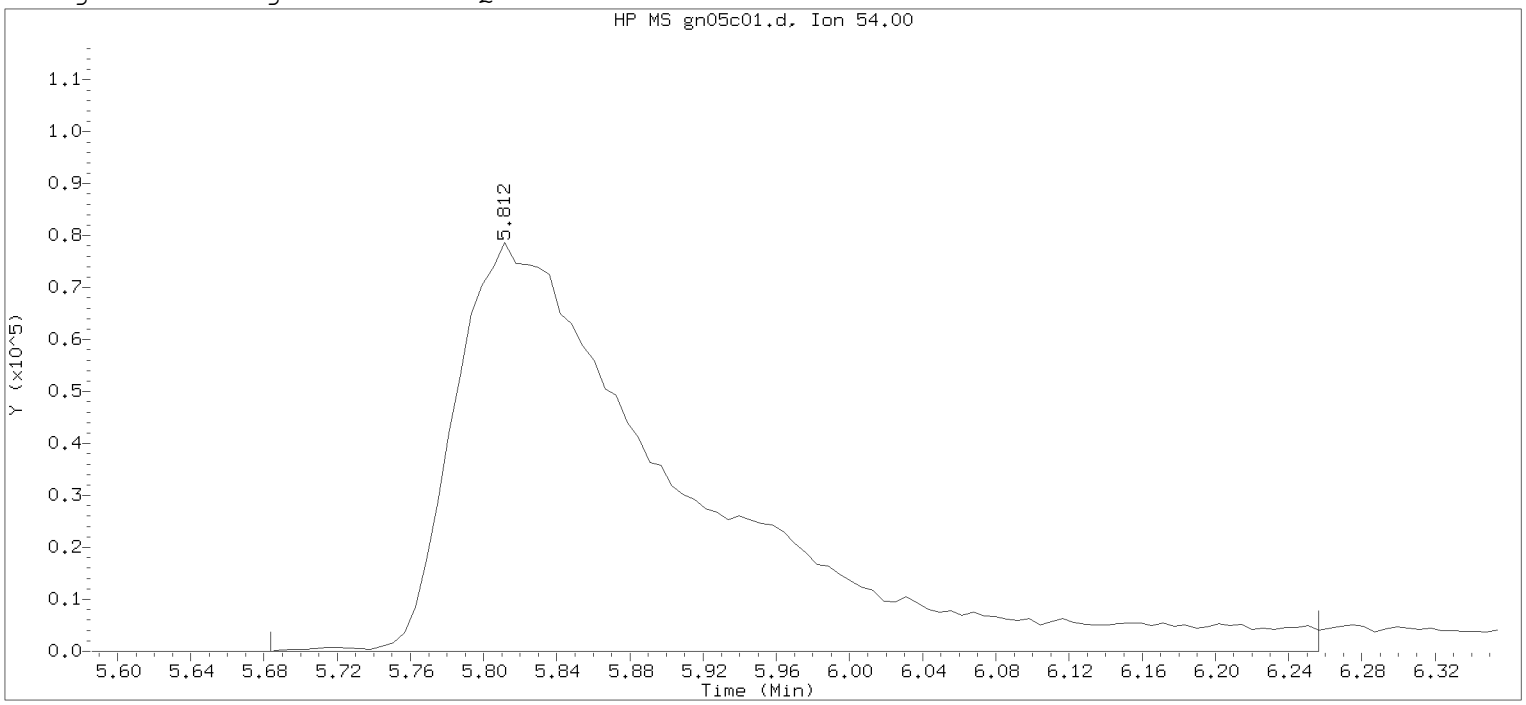
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

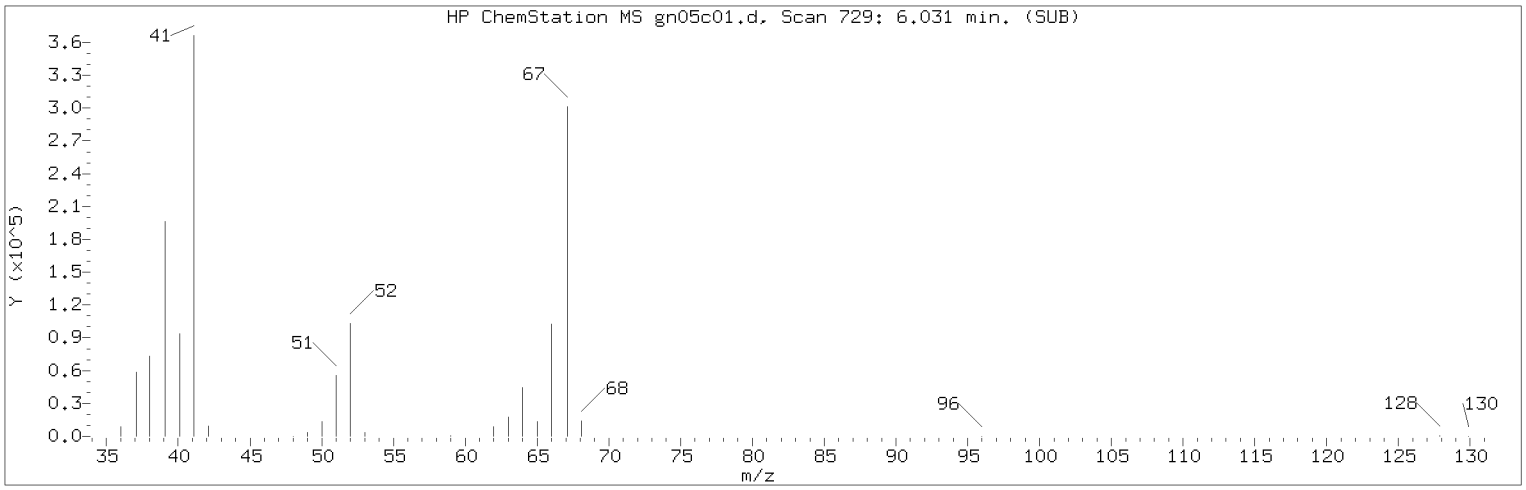
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

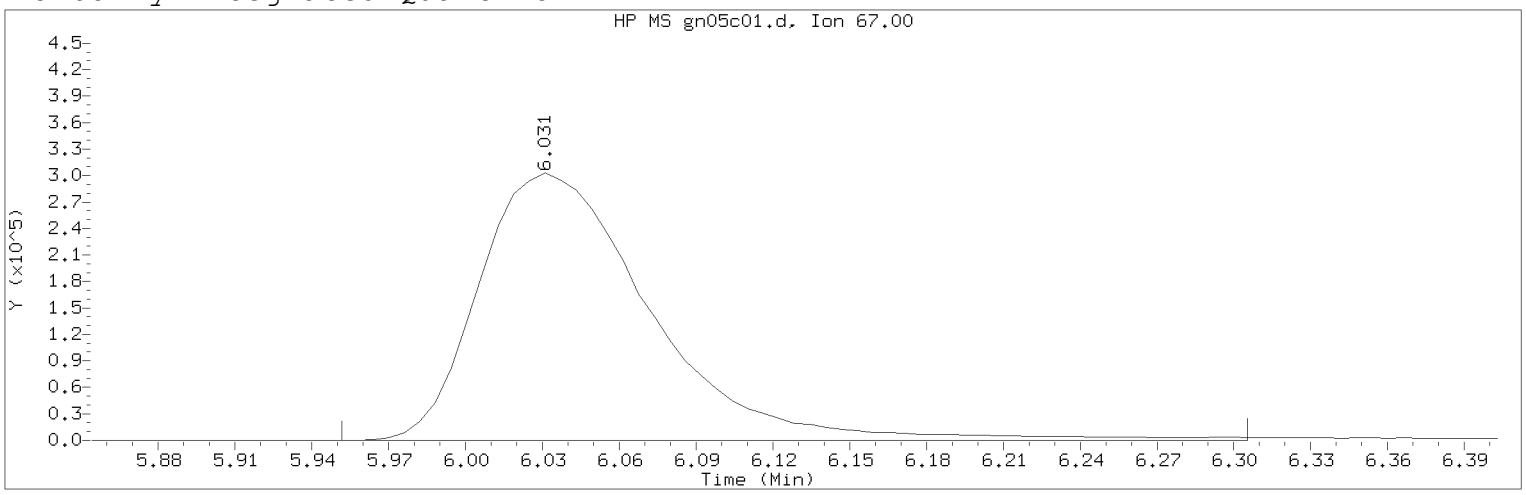
Compound Number	: 42		
Compound Name	: Propionitrile		
Scan Number	: 693		
Retention Time (minutes)	: 5.812		
Quant Ion	: 54.00		
Area	: 694797		
On-column Amount (ng)	: 251.8242		
Integration start scan	: 671	Integration stop scan:	765
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

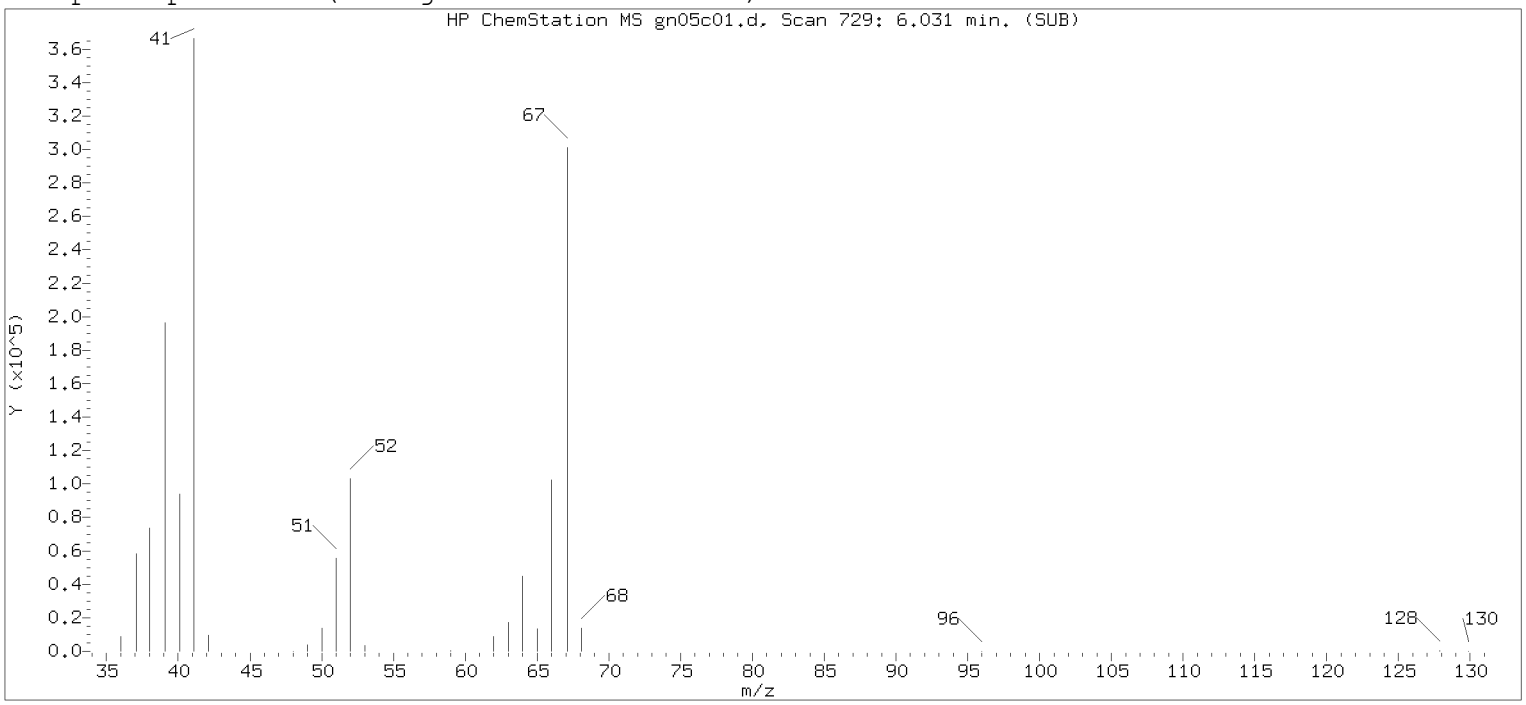
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 729
Retention Time (minutes): 6.031
Quant Ion : 67.00
Area (flag) : 1409534M
On-Column Amount (ng) : 87.0888
Integration start scan : 715 Integration stop scan: 773
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

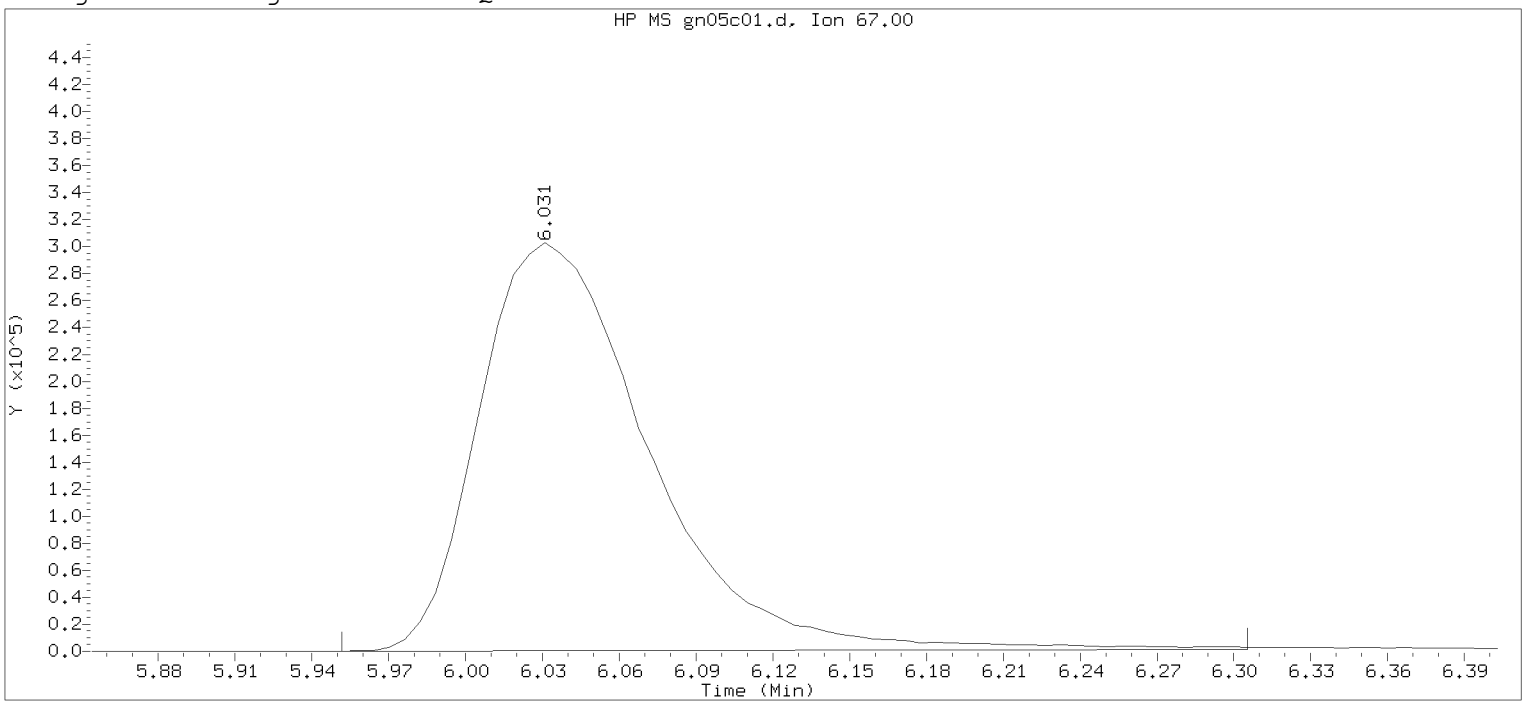
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

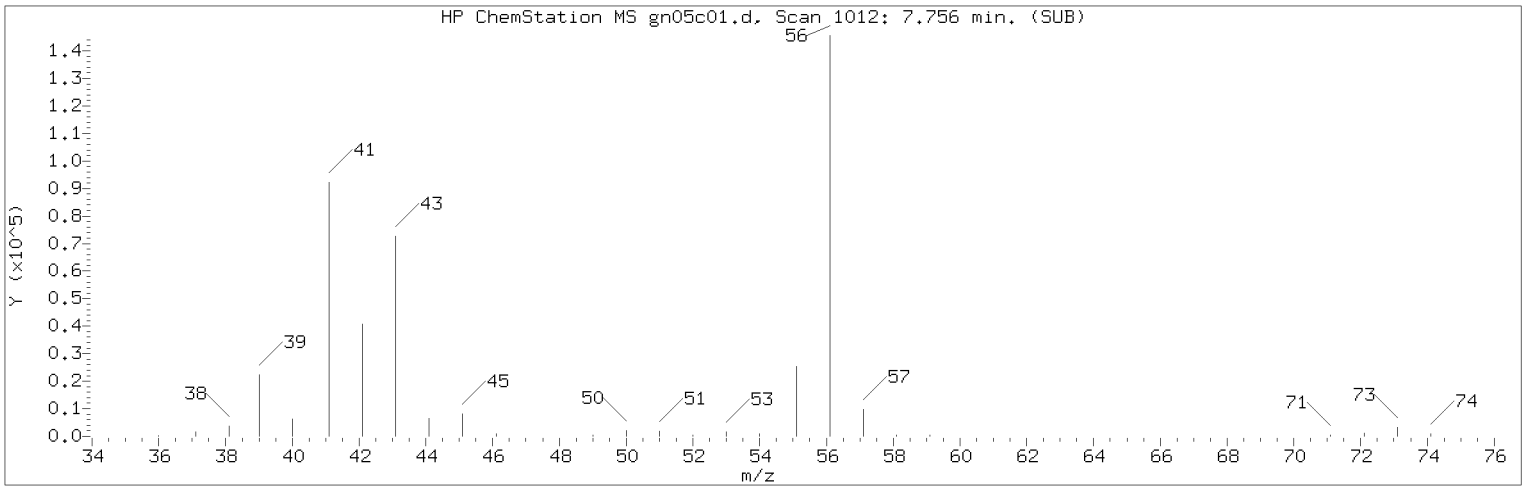
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

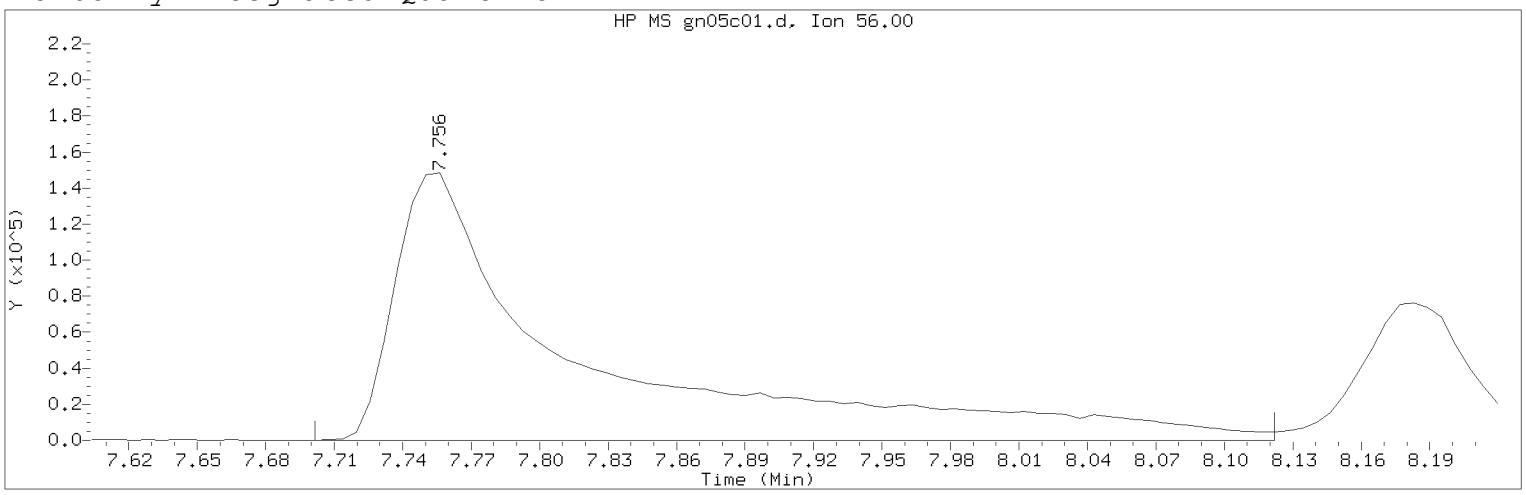
Compound Number : 45
Compound Name : Methacrylonitrile
Scan Number : 729
Retention Time (minutes): 6.031
Quant Ion : 67.00
Area : 1393640
On-column Amount (ng) : 86.1067
Integration start scan : 715 Integration stop scan: 773
Y at integration start : 0 Y at integration end: 1451

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Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

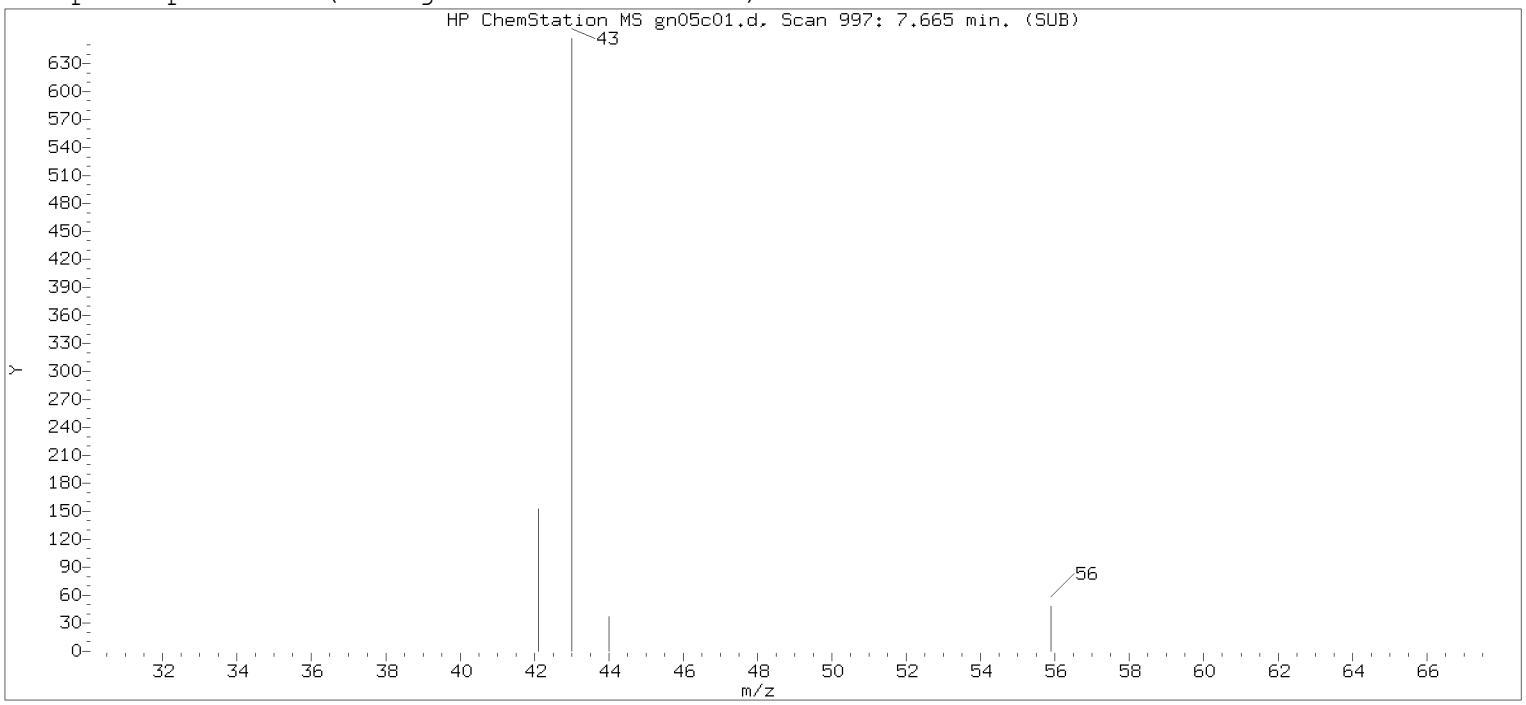
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1012
Retention Time (minutes): 7.756
Quant Ion : 56.00
Area (flag) : 834978A
On-Column Amount (ng) : 918.2523
Integration start scan : 1002 Integration stop scan: 1071
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

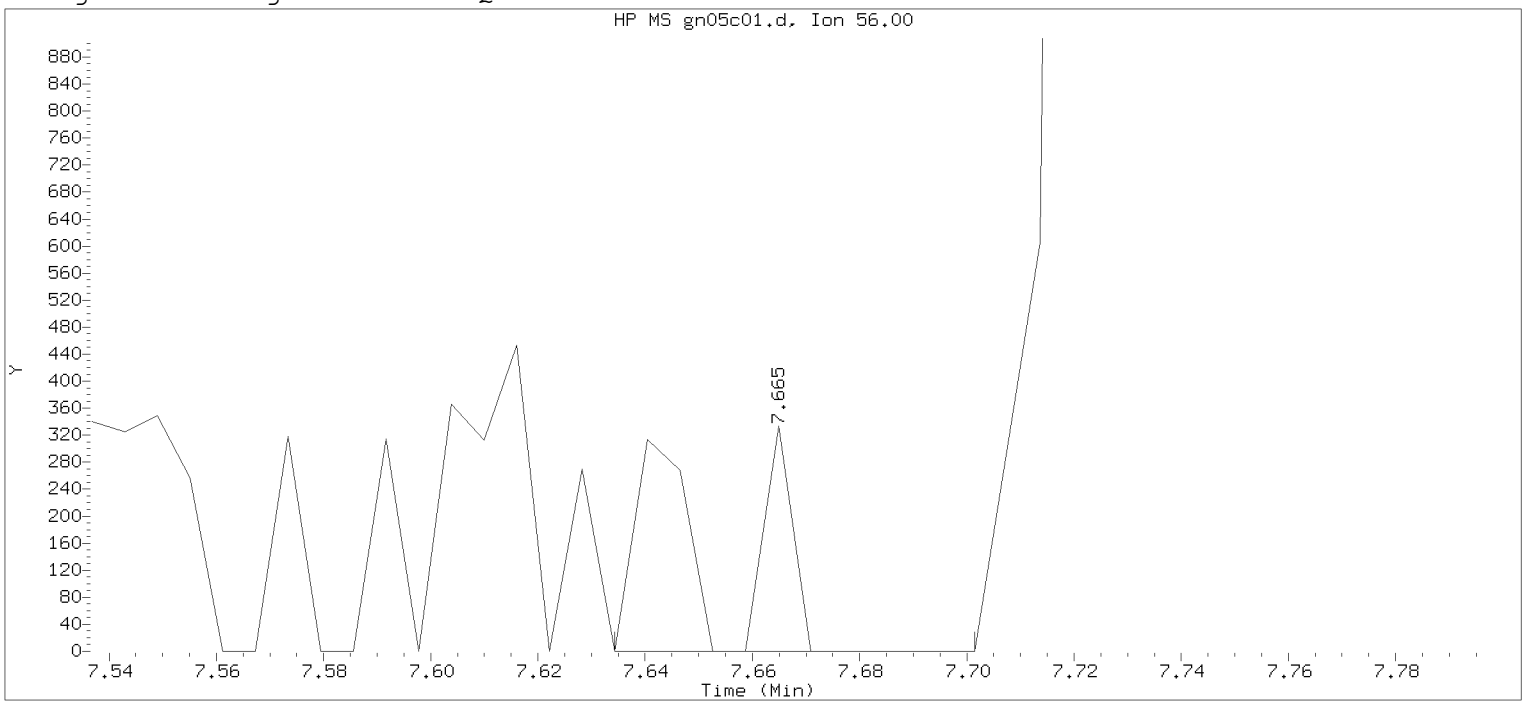
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

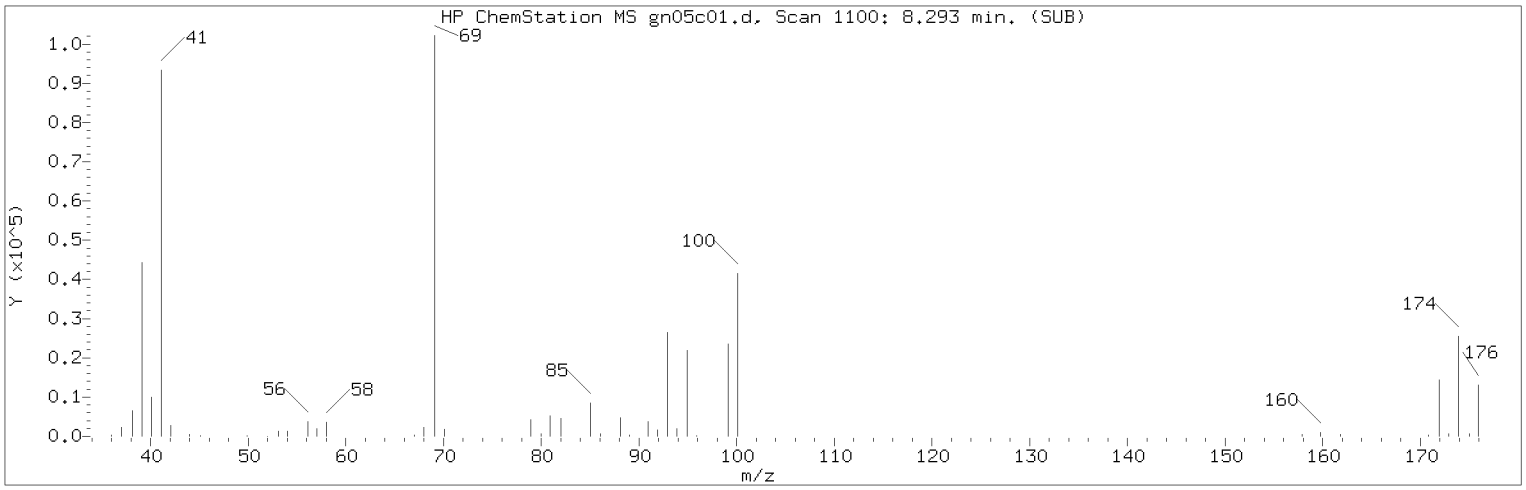
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

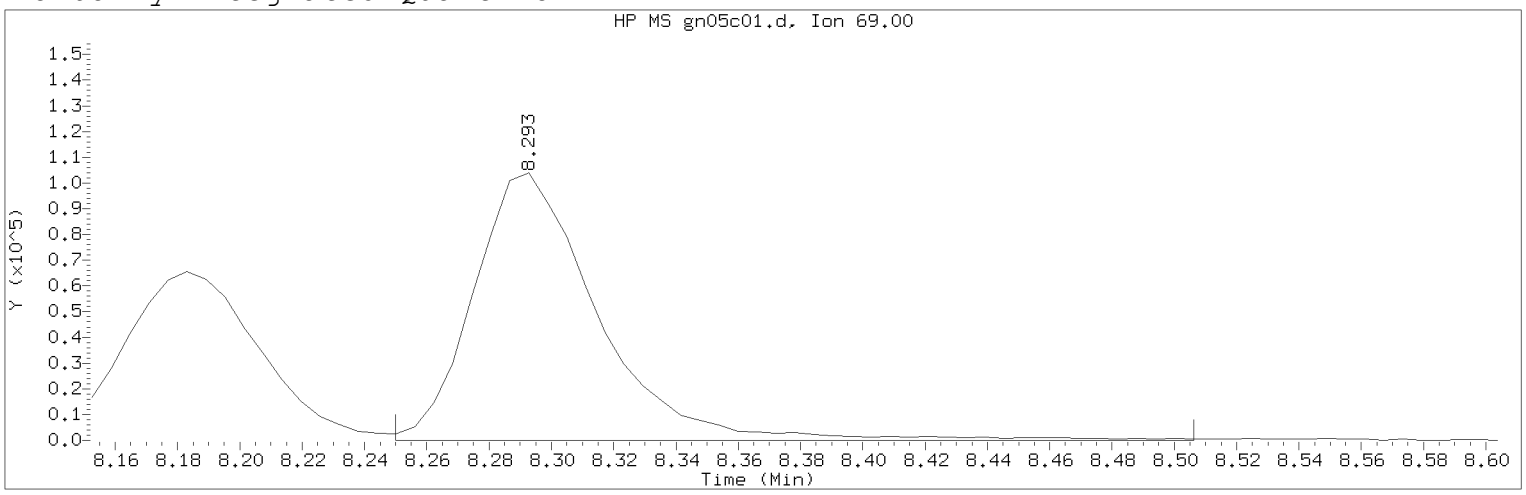
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 997
Retention Time (minutes): 7.665
Quant Ion : 56.00
Area : 335
On-column Amount (ng) : 27.1999
Integration start scan : 991 Integration stop scan: 1002
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

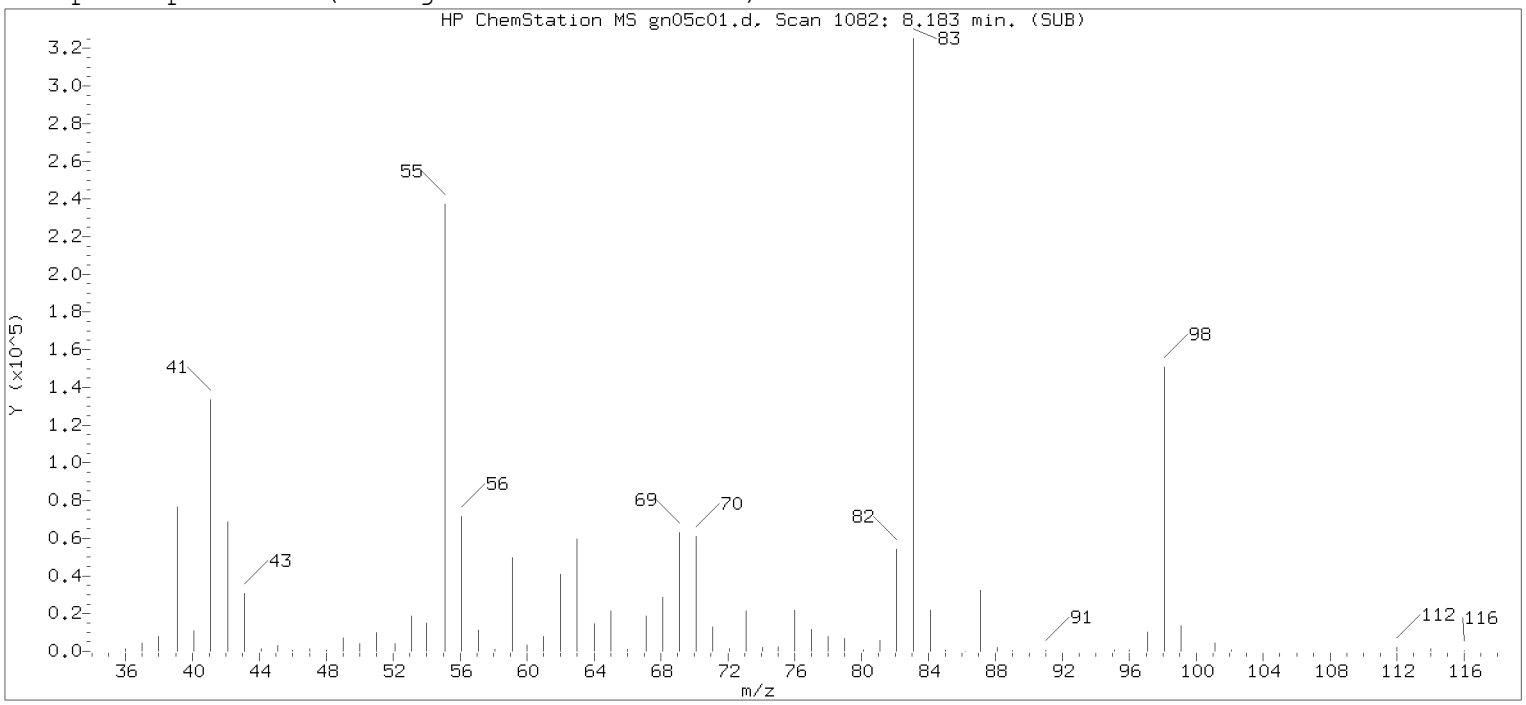
Compound Number : 71
Compound Name : Methyl Methacrylate
Scan Number : 1100
Retention Time (minutes): 8.293
Quant Ion : 69.00
Area (flag) : 288660A
On-Column Amount (ng) : 8.7988
Integration start scan : 1092 Integration stop scan: 1134
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

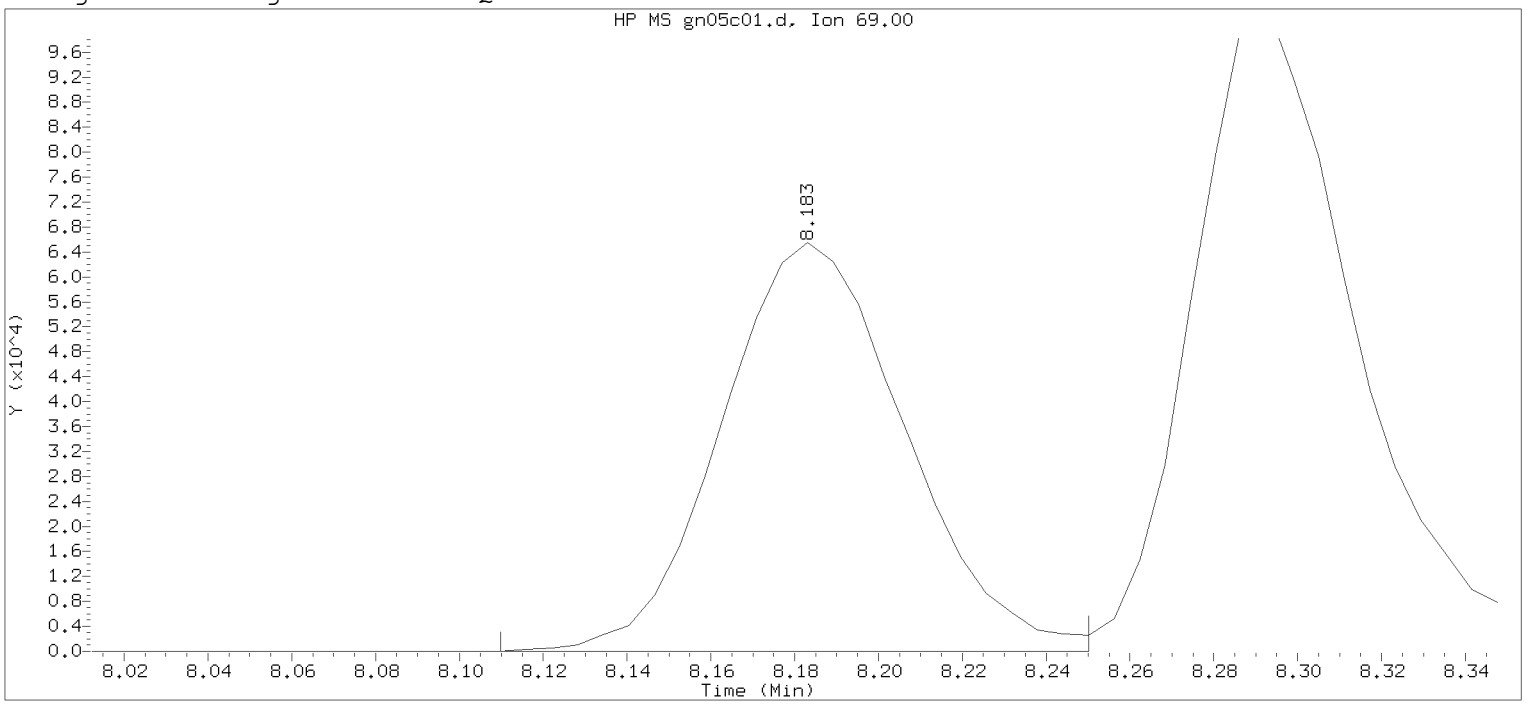
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

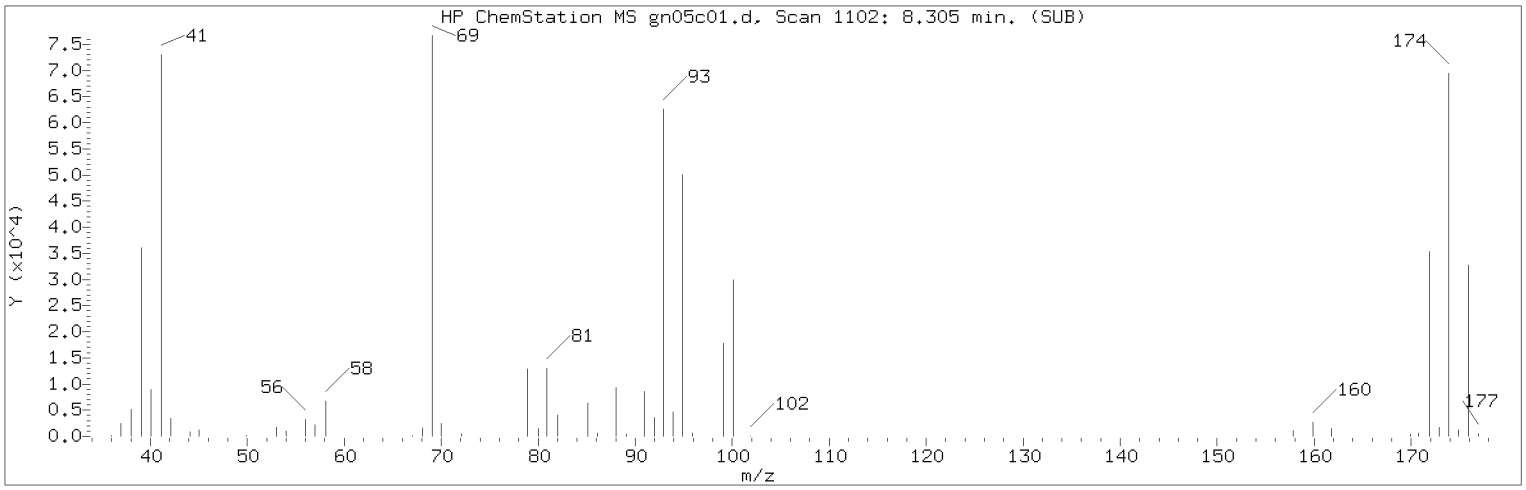
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

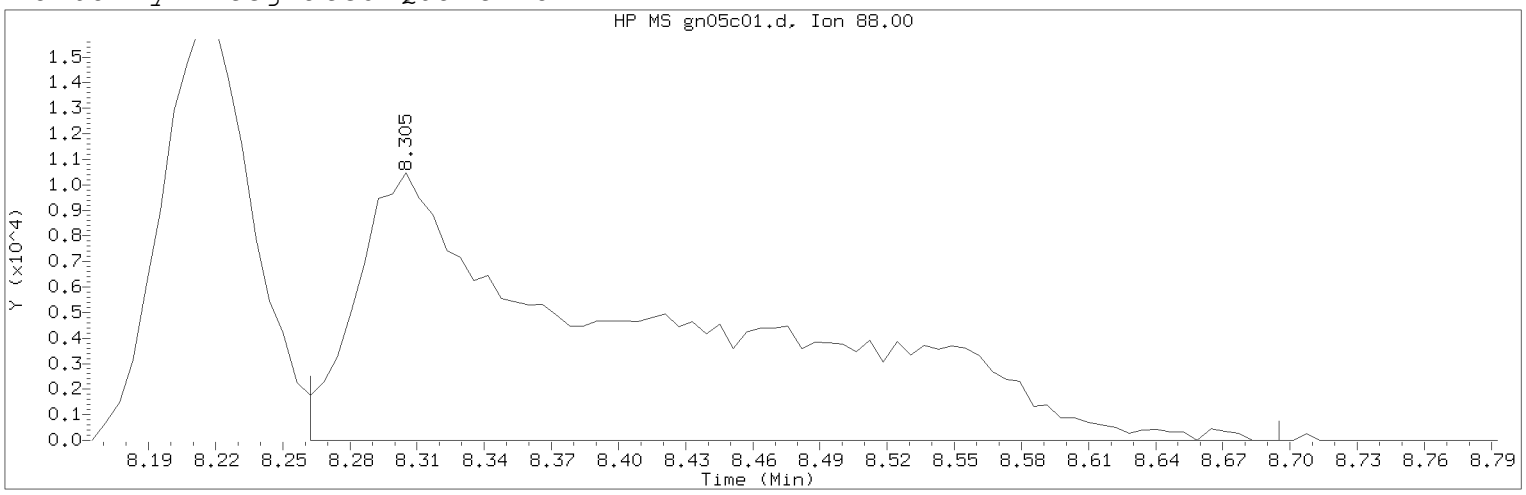
Compound Number	: 71		
Compound Name	: Methyl Methacrylate		
Scan Number	: 1082		
Retention Time (minutes)	: 8.183		
Quant Ion	: 69.00		
Area	: 198403		
On-column Amount (ng)	: 6.0476		
Integration start scan	: 1069	Integration stop scan:	1092
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

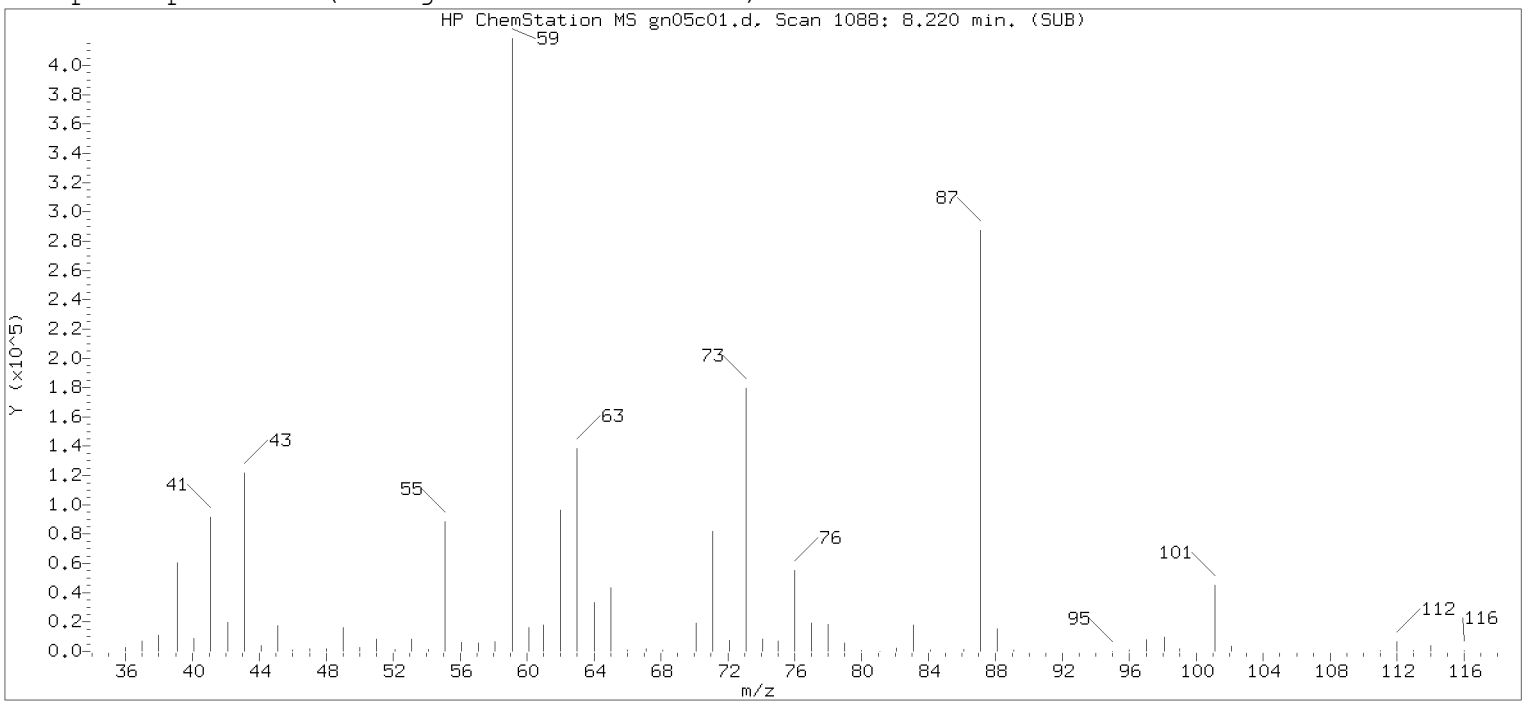
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1102
Retention Time (minutes): 8.305
Quant Ion : 88.00
Area (flag) : 96671M
On-Column Amount (ng) : 454.7583
Integration start scan : 1094 Integration stop scan: 1165
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

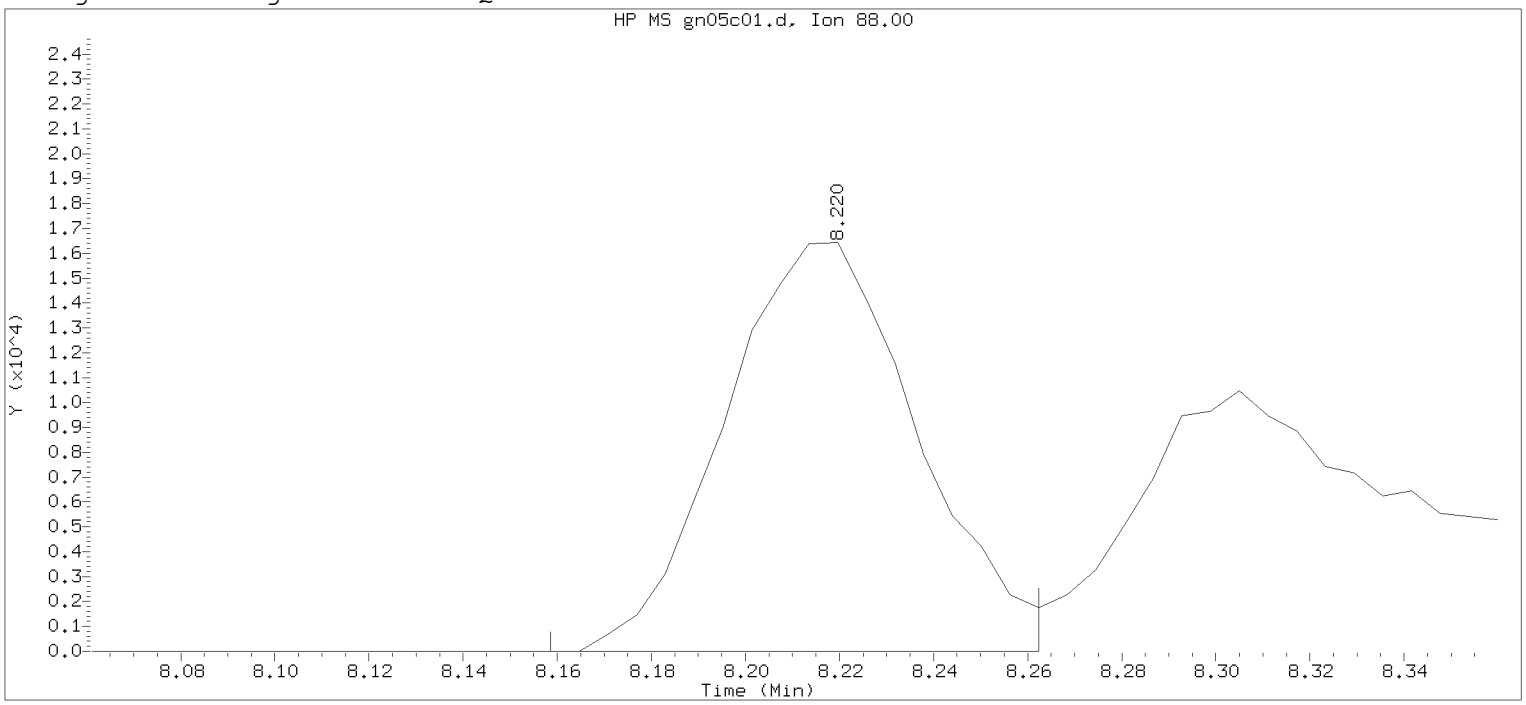
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

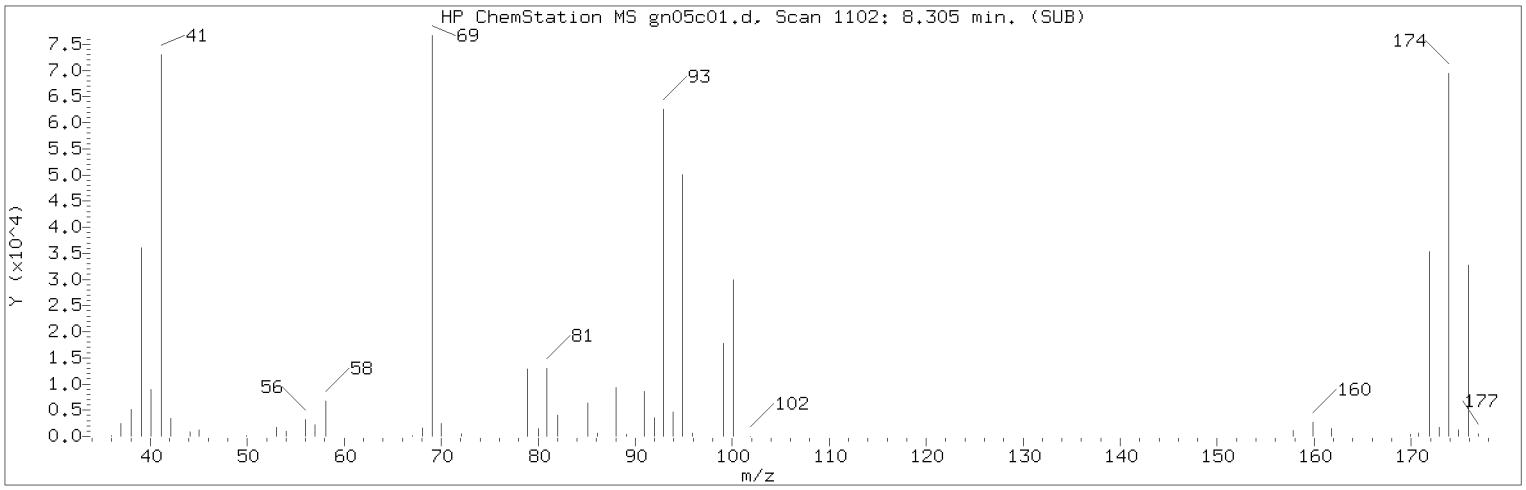
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

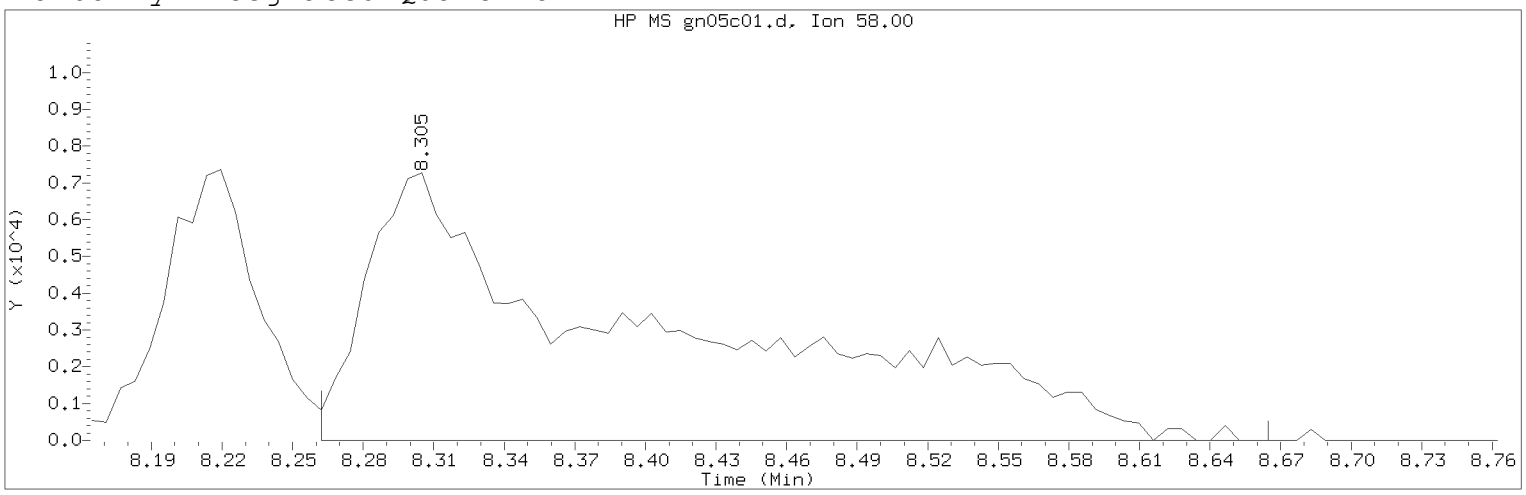
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 88.00		
Area	: 46572		
On-column Amount (ng)	: 219.0852		
Integration start scan	: 1077	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

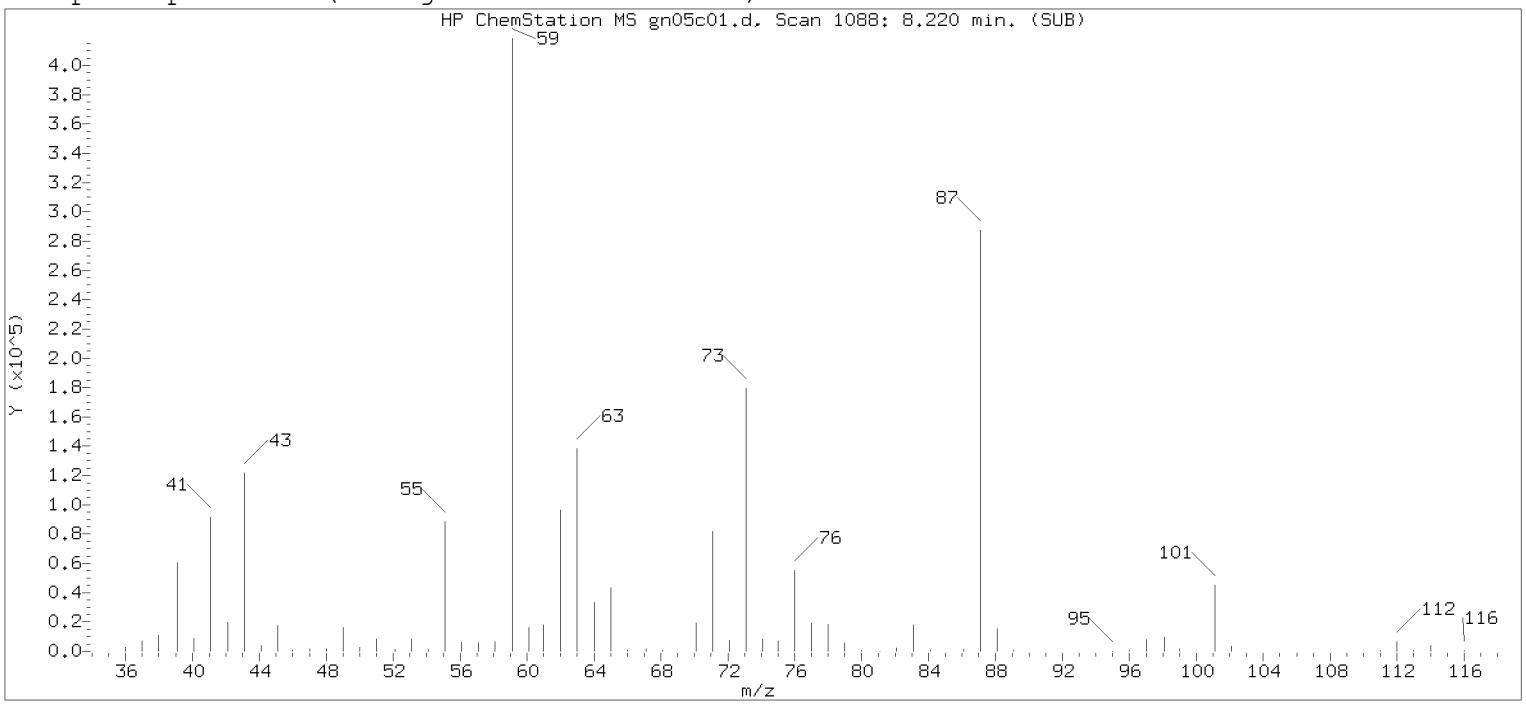
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1102
Retention Time (minutes): 8.305
Quant Ion : 58.00
Area (flag) : 61565M
On-Column Amount (ng) : 523.9765
Integration start scan : 1094 Integration stop scan: 1160
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

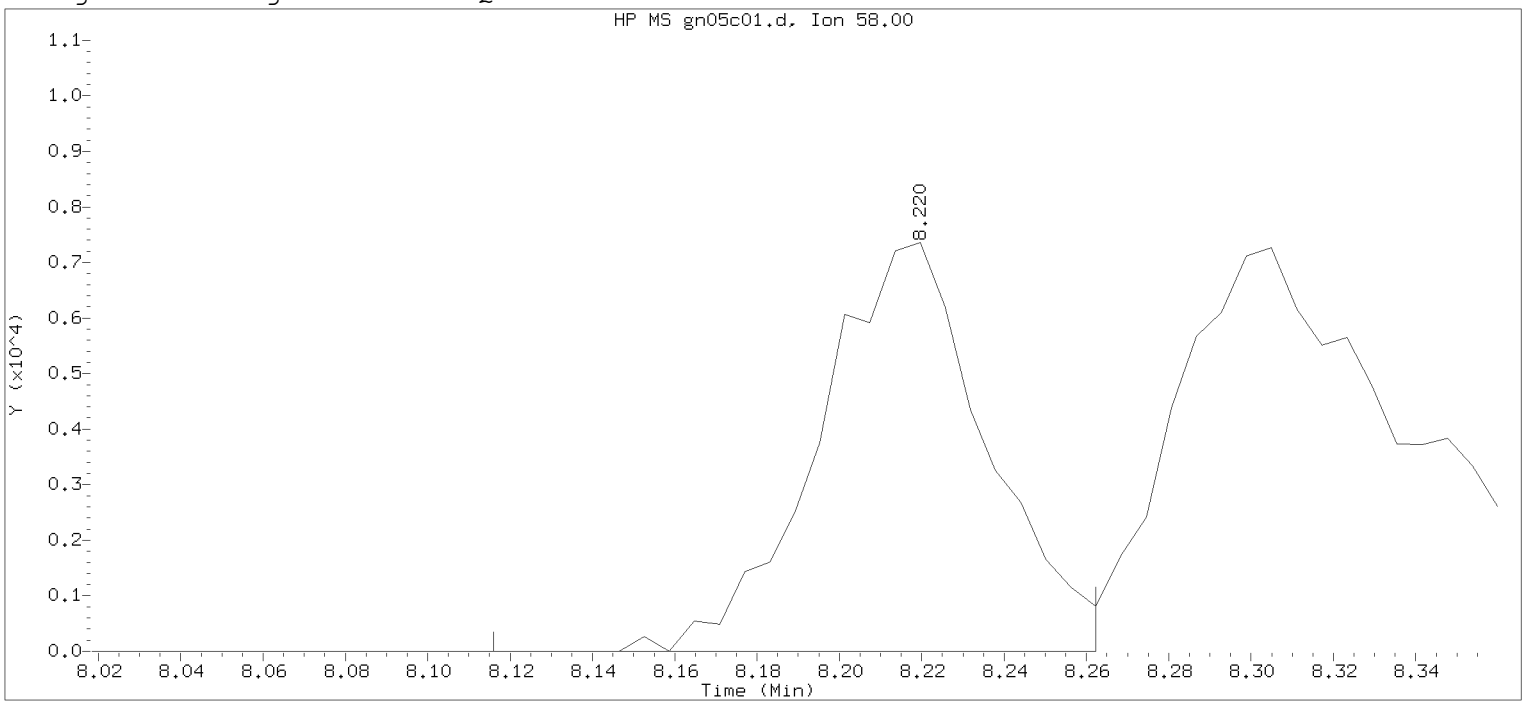
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

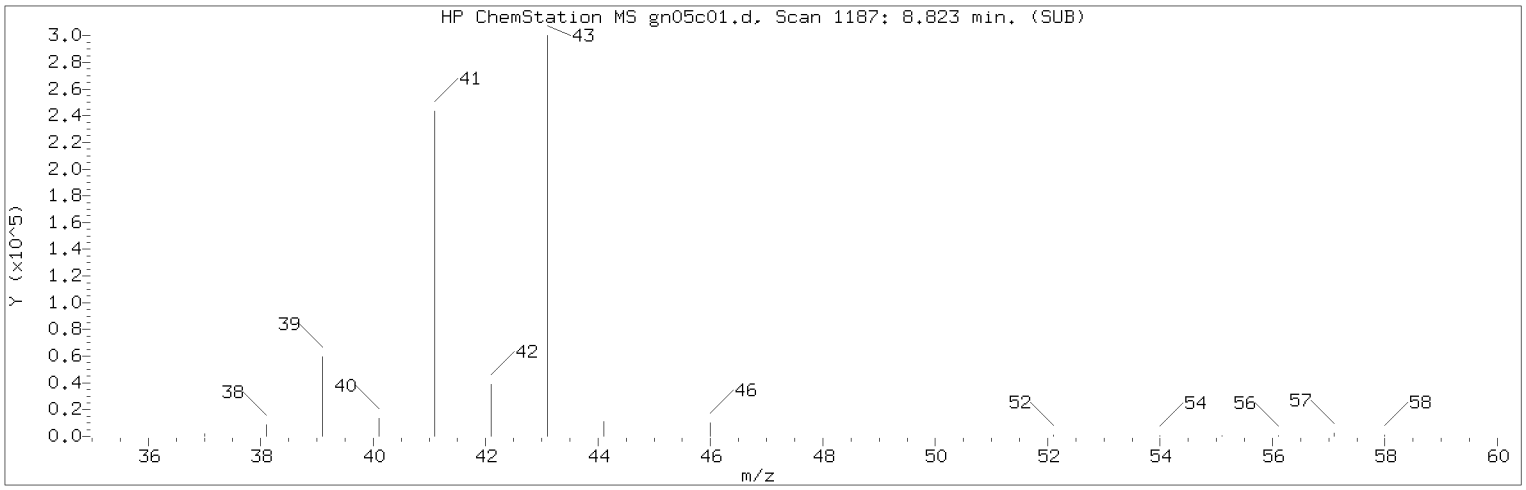
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

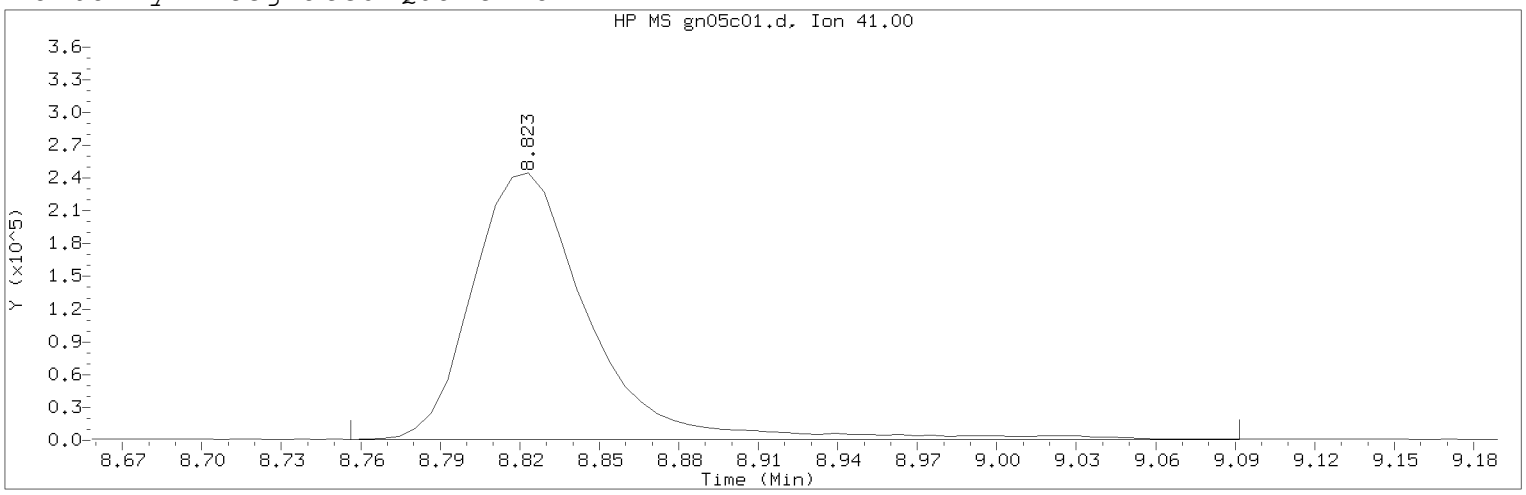
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1088		
Retention Time (minutes)	: 8.220		
Quant Ion	: 58.00		
Area	: 20784		
On-column Amount (ng)	: 176.8977		
Integration start scan	: 1070	Integration stop scan:	1094
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

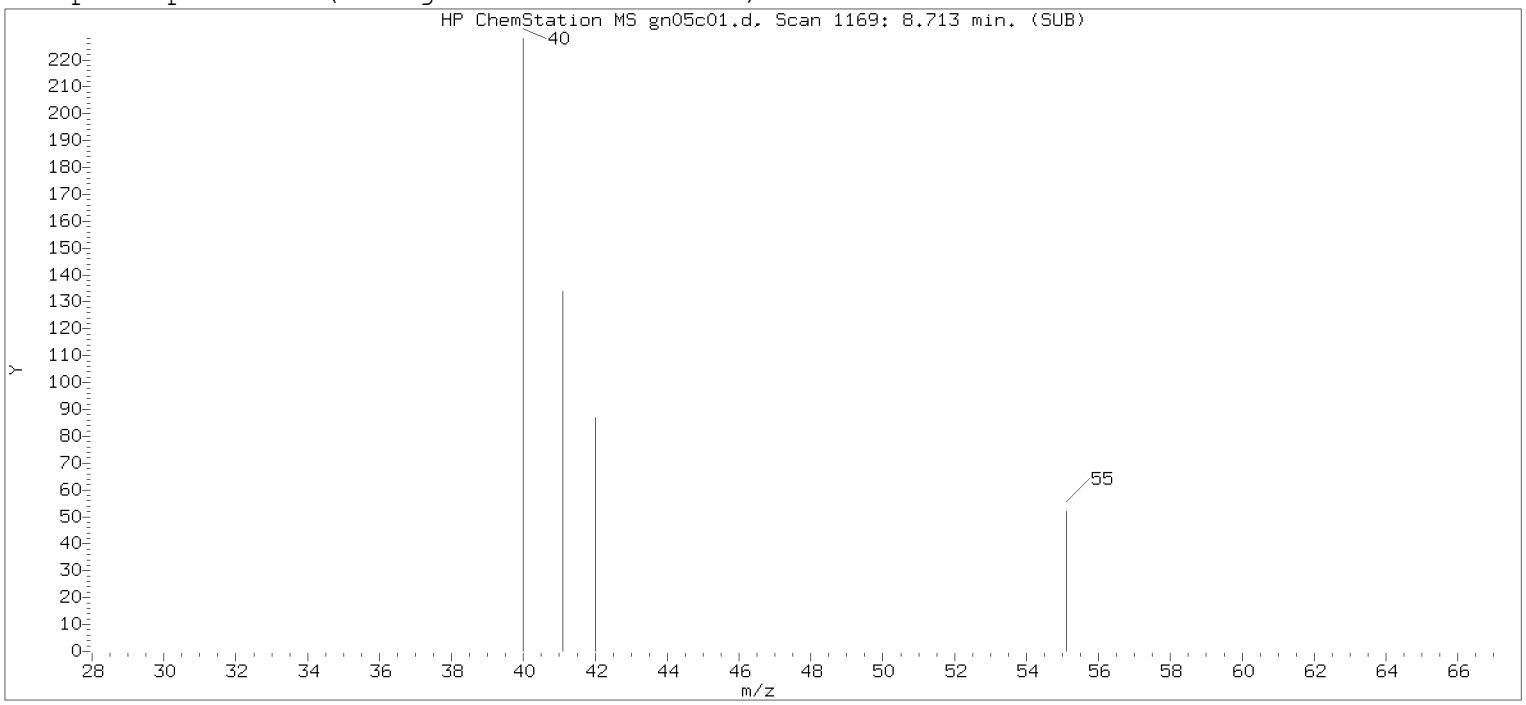
Compound Number : 76
Compound Name : 2-Nitropropane
Scan Number : 1187
Retention Time (minutes): 8.823
Quant Ion : 41.00
Area (flag) : 753952A
On-Column Amount (ng) : 83.1764
Integration start scan : 1175 Integration stop scan: 1230
Y at integration start : 555 Y at integration end: 555

Reason for manual integration: improper integration

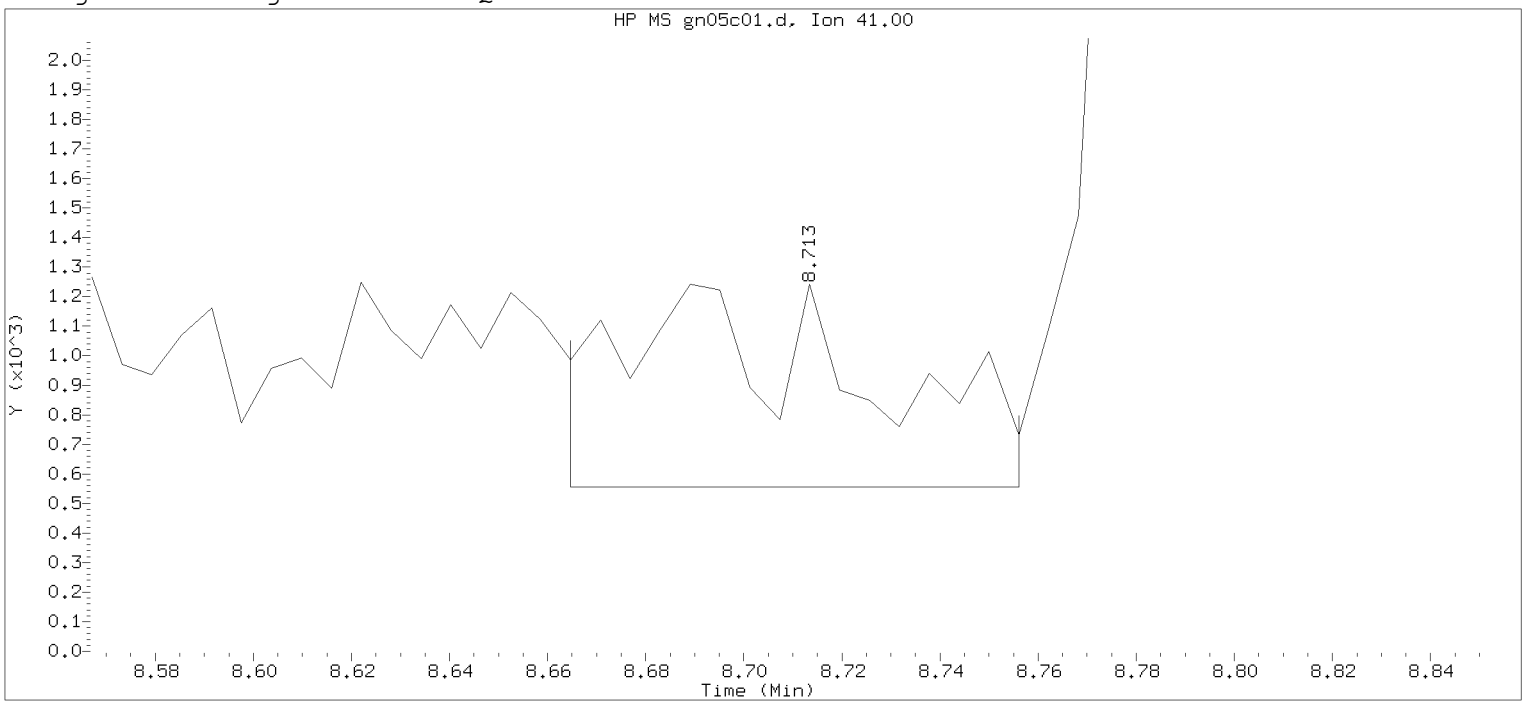
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

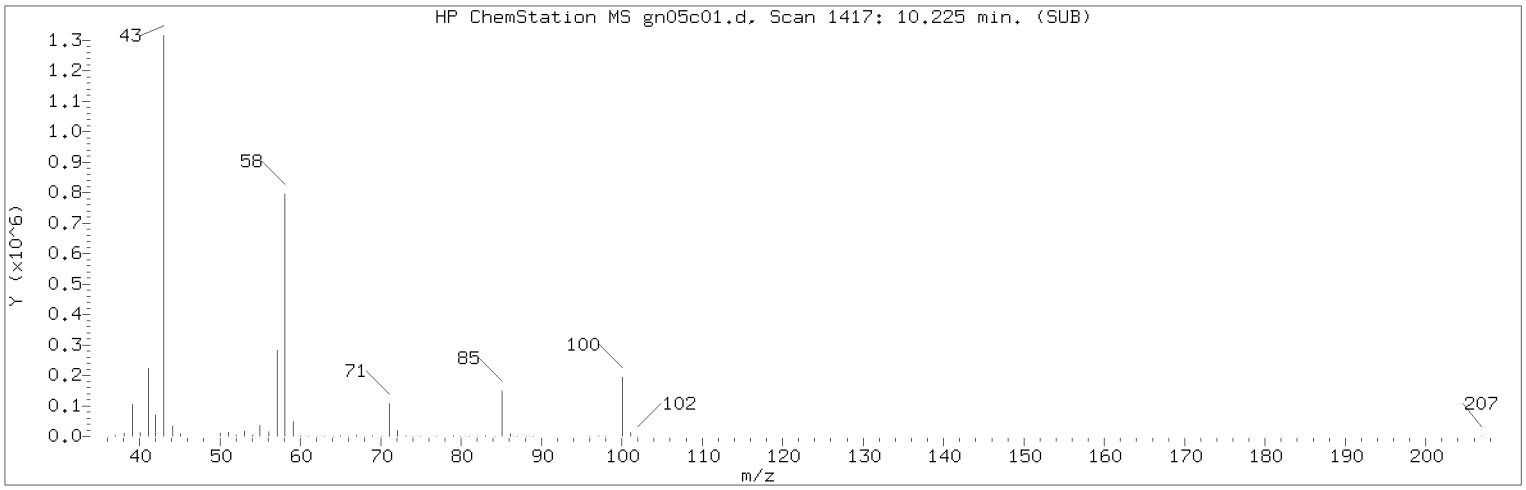
Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

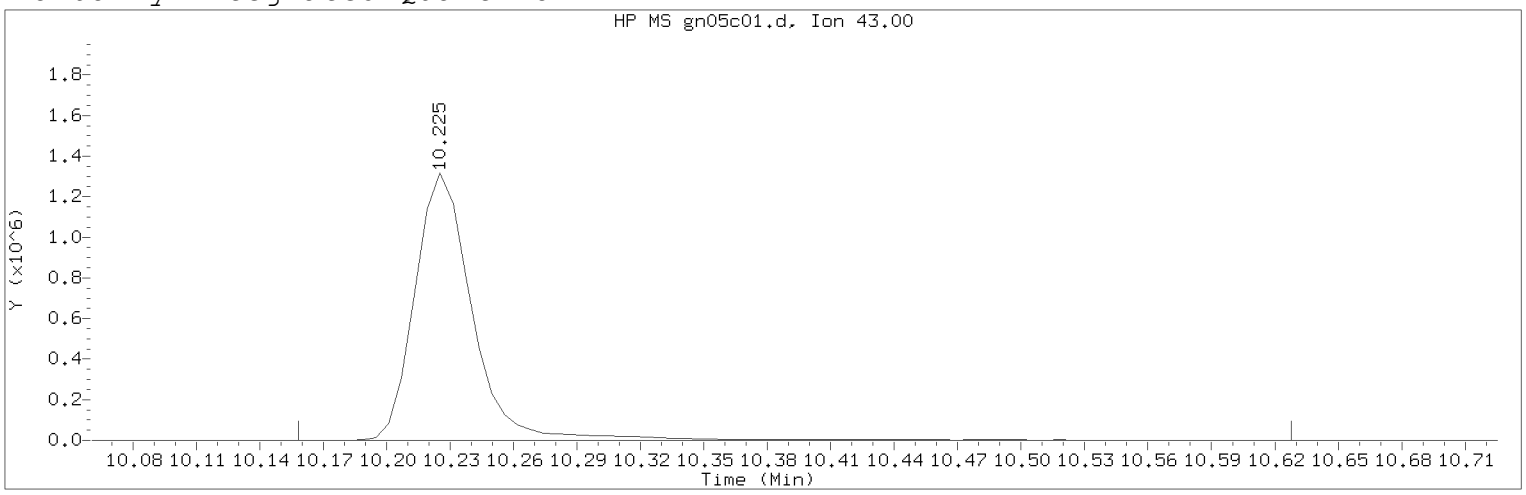
Compound Number	: 76		
Compound Name	: 2-Nitropropane		
Scan Number	: 1169		
Retention Time (minutes)	: 8.713		
Quant Ion	: 41.00		
Area	: 2315		
On-column Amount (ng)	: 0.2555		
Integration start scan	: 1160	Integration stop scan	: 1175
Y at integration start	: 555	Y at integration end	: 555

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:29 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

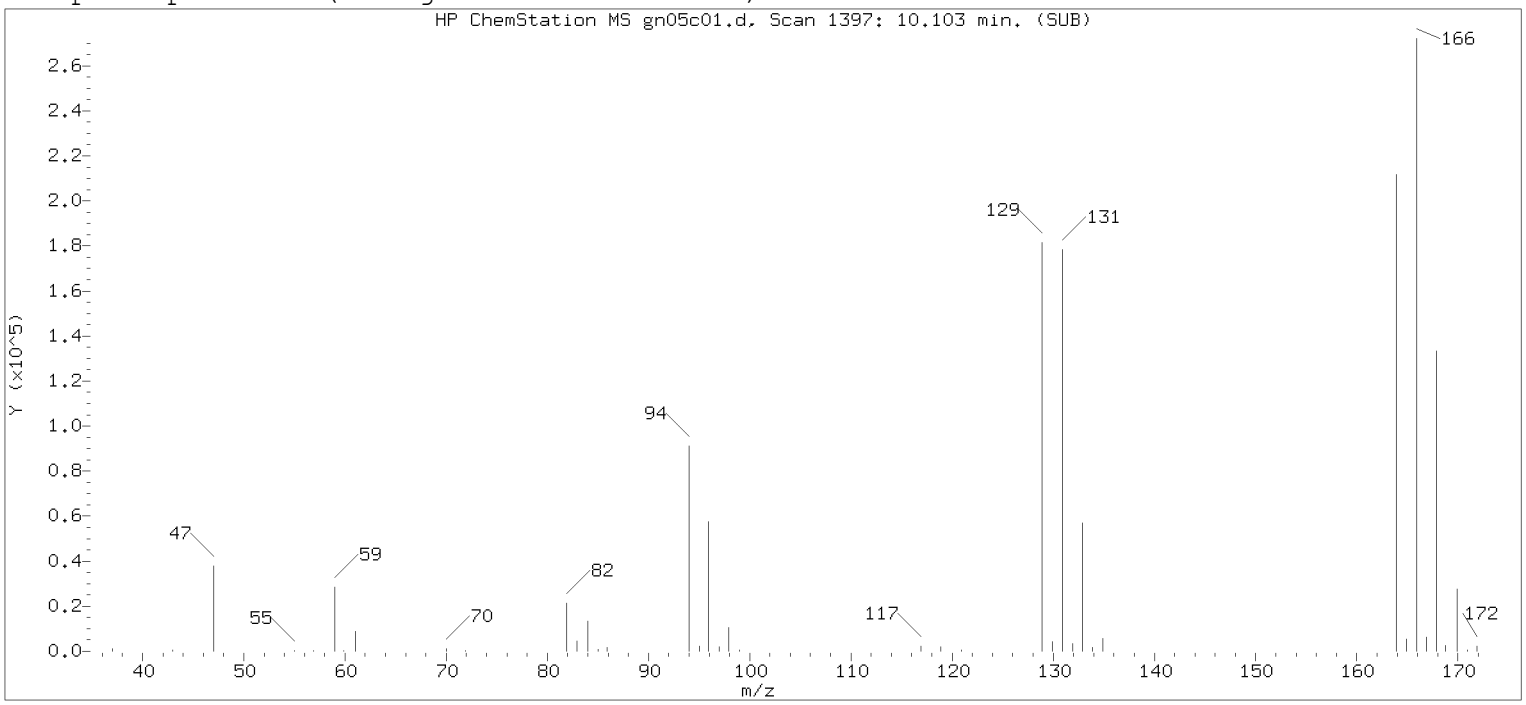
Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1417
Retention Time (minutes): 10.225
Quant Ion : 43.00
Area (flag) : 2485155A
On-Column Amount (ng) : 80.3329
Integration start scan : 1405 Integration stop scan: 1482
Y at integration start : 433 Y at integration end: 433

Reason for manual integration: improper integration

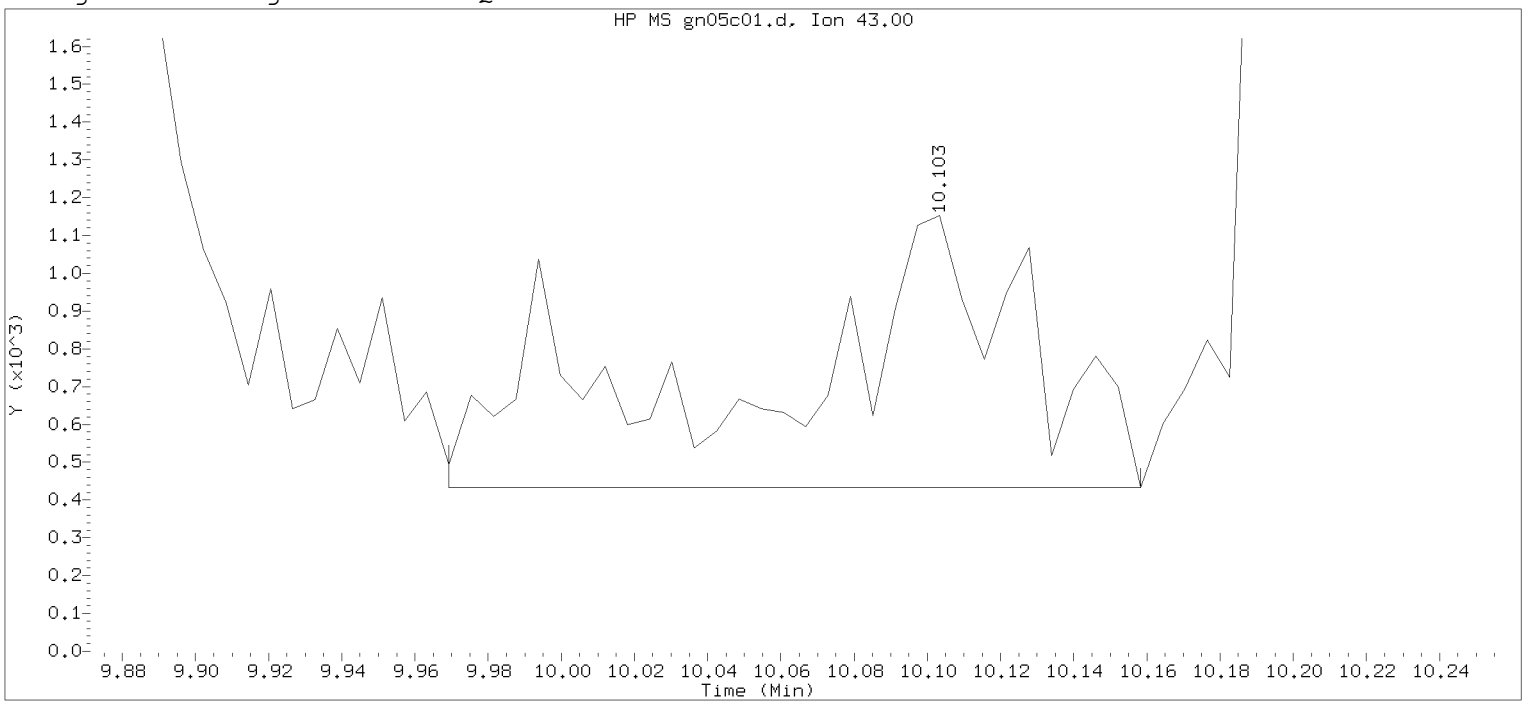
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/19nov05a.b/gn05c01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 07:57 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-NOV-2019 08:15
Date, time and analyst ID of latest file update: 05-Nov-2019 08:15 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number	: 91		
Compound Name	: 2-Hexanone		
Scan Number	: 1397		
Retention Time (minutes)	: 10.103		
Quant Ion	: 43.00		
Area	: 3535		
On-column Amount (ng)	: 0.1143		
Integration start scan	: 1374	Integration stop scan:	1405
Y at integration start	: 433	Y at integration end:	433

Digitally signed by Jennifer K. Howe on 11/05/2019 at 08:29.
Target 3.5 esignature user ID: jkh09052

Raw QC Data

Volatiles by GC/MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG47

Data file: /chem2/HP16334.i/19nov05a.b/gn05b01.d
Data file Sample Info. Line: VBLKG47;VBLKG47;1;3;;;DAA3178;;;
Date, time and analyst ID of latest file update: 05-Nov-2019 08:59 Automation

Injection date and time: **05-NOV-2019 08:41**
Instrument ID: **HP16334.i** Batch: **G193091AA**

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.873	(-0.006)	375	65	139130	(-7)	50.00	
63) Fluorobenzene	7.384	(0.000)	951	96	2075333	(-4)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1614161	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	908229	(-4)	10.00	

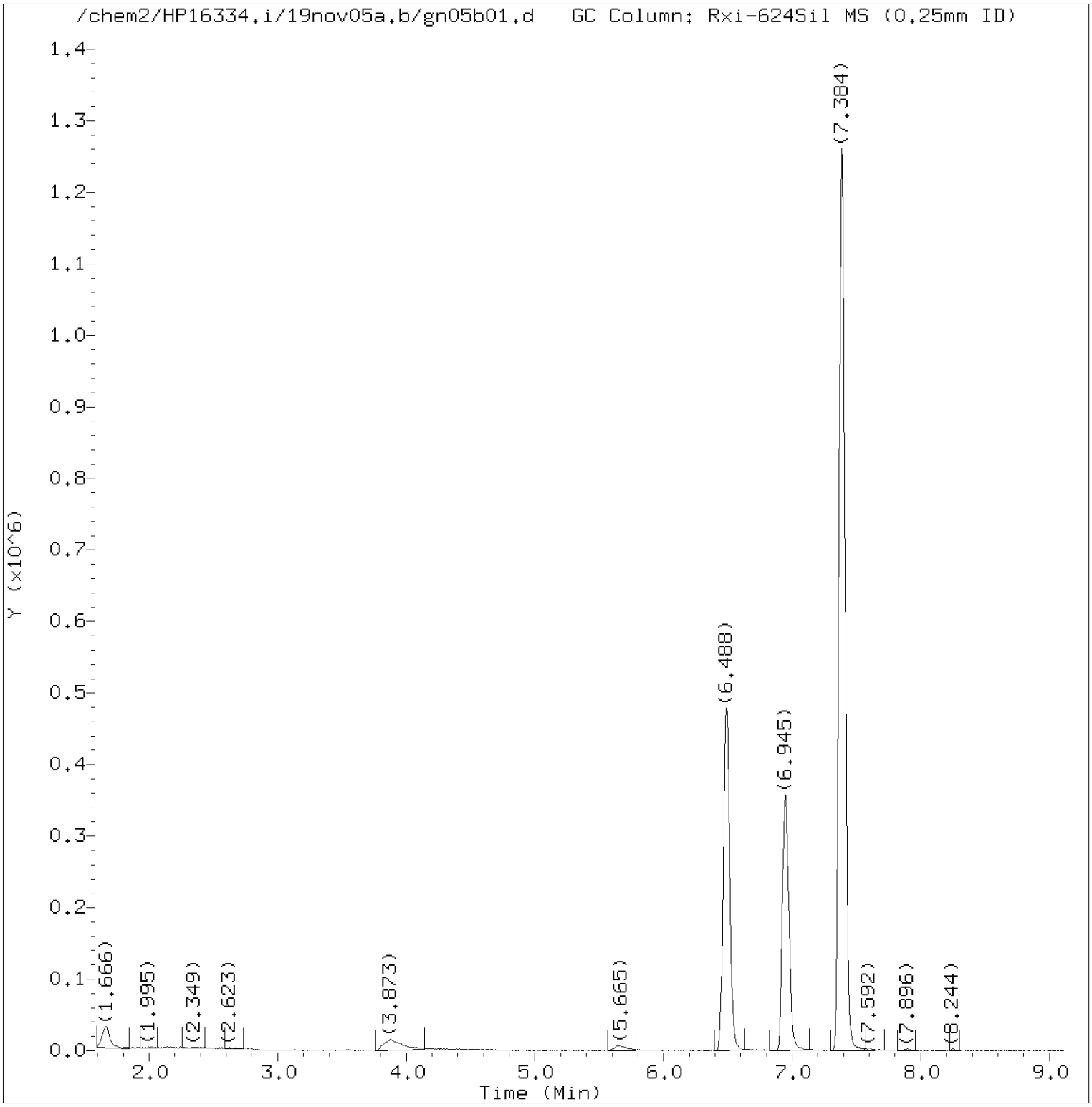
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(-0.001)	113	512929	9.776	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952	(0.000)	102	108349	10.197	102%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2088113	10.087	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	752840	9.730	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)				Not Detected					0.1	1
15) 1,1-Dichloroethene	(2)				Not Detected					0.4	1
31) trans-1,2-Dichloroethene	(2)				Not Detected					0.8	1
39) cis-1,2-Dichloroethene	(2)				Not Detected					0.1	1
67) Trichloroethene	(2)				Not Detected					0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 09:01. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

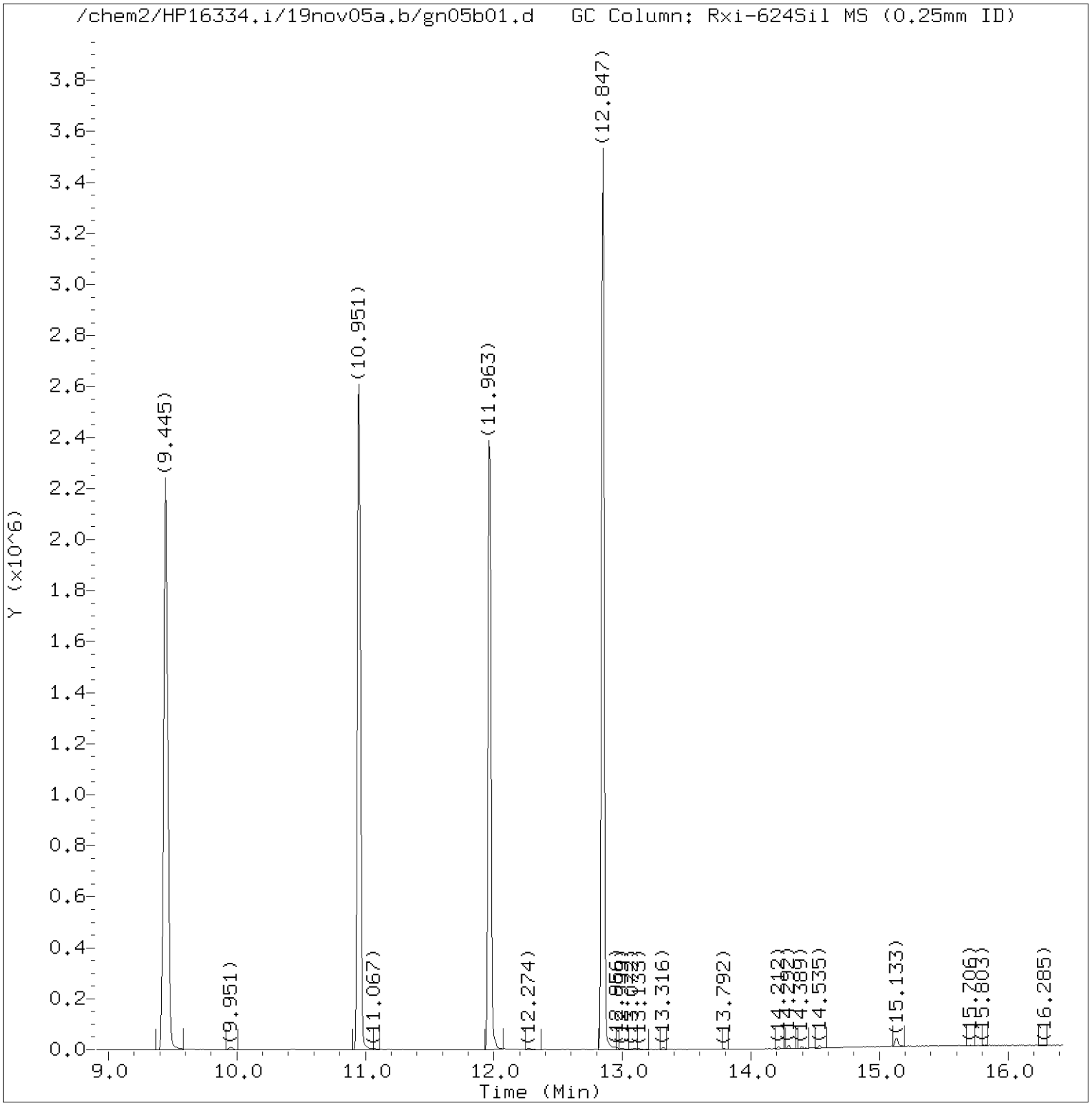
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05b01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:41 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 08:59 Automation

Sample Name: VBLKG47 Lab Sample ID: VBLKG47

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:01.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05b01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:41 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 08:59 Automation

Sample Name: VBLKG47 Lab Sample ID: VBLKG47

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:01.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05b01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:41 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 08:59 Automation

Sample Name: VBLKG47 Lab Sample ID: VBLKG47

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	3.873	65	139130	50.000
50)$Dibromofluoromethane	(2)	6.494	113	512929	9.776
57)$1,2-Dichloroethane-d4	(2)	6.952	102	108349	10.197
63)*Fluorobenzene	(2)	7.384	96	2075333	10.000
82)$Toluene-d8	(3)	9.445	98	2088113	10.087
97)*Chlorobenzene-d5	(3)	10.951	117	1614161	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	752840	9.730
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	908229	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:01.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s12.d Injection date and time: **05-NOV-2019 12:58**
Data file Sample Info. Line: 53R03MS;1187107MS;1;3;MS;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 13:16 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.897 (-0.030)	379	65	141180 (-6)	50.00	
63) Fluorobenzene	7.397 (-0.012)	953	96	2029405 (-6)	10.00	
97) Chlorobenzene-d5	10.951 (0.000)	1536	117	1589809 (-7)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847 (0.000)	1847	152	890990 (-6)	10.00	

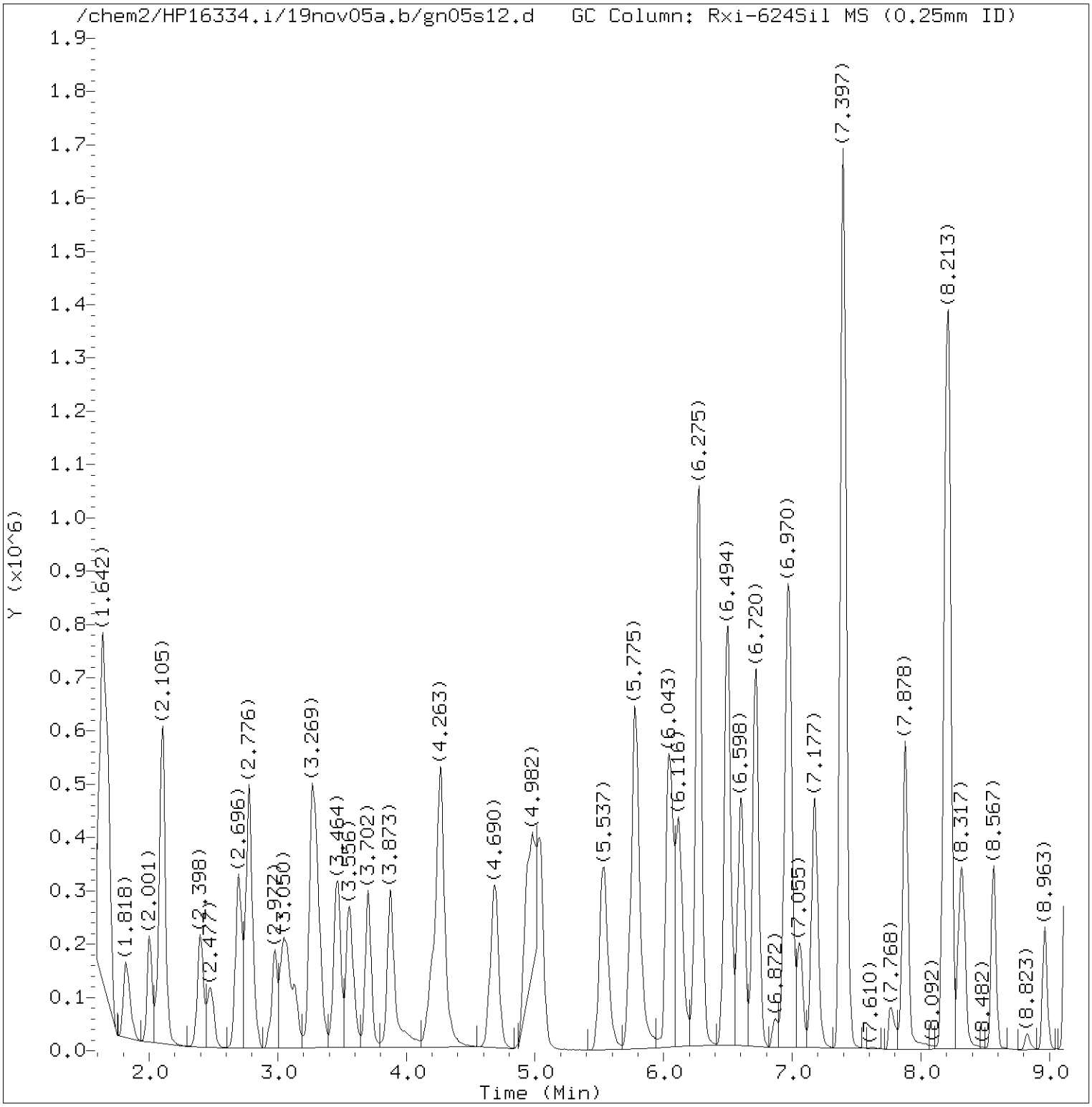
Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494 (0.001)	113	508217	9.905	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952 (0.002)	102	107666	10.362	104%		80 - 120
82) Toluene-d8	(3)	9.451 (-0.001)	98	2051695	10.063	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963 (0.000)	95	751714	9.864	99%		80 - 120

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
5) Vinyl Chloride	(2)	2.111 (-0.001)	62	365502	5.947	5.95			0.1	1
15) 1,1-Dichloroethene	(2)	3.263 (-0.000)	96	238113	5.709	5.71			0.4	1
31) trans-1,2-Dichloroethene	(2)	4.269 (-0.000)	96	263684	5.478	5.48			0.8	1
39) cis-1,2-Dichloroethene	(2)	5.775 (0.000)	96	312956	5.968	5.97			0.1	1
67) Trichloroethene	(2)	7.878 (0.000)	95	292952	5.708	5.71			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 13:36. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

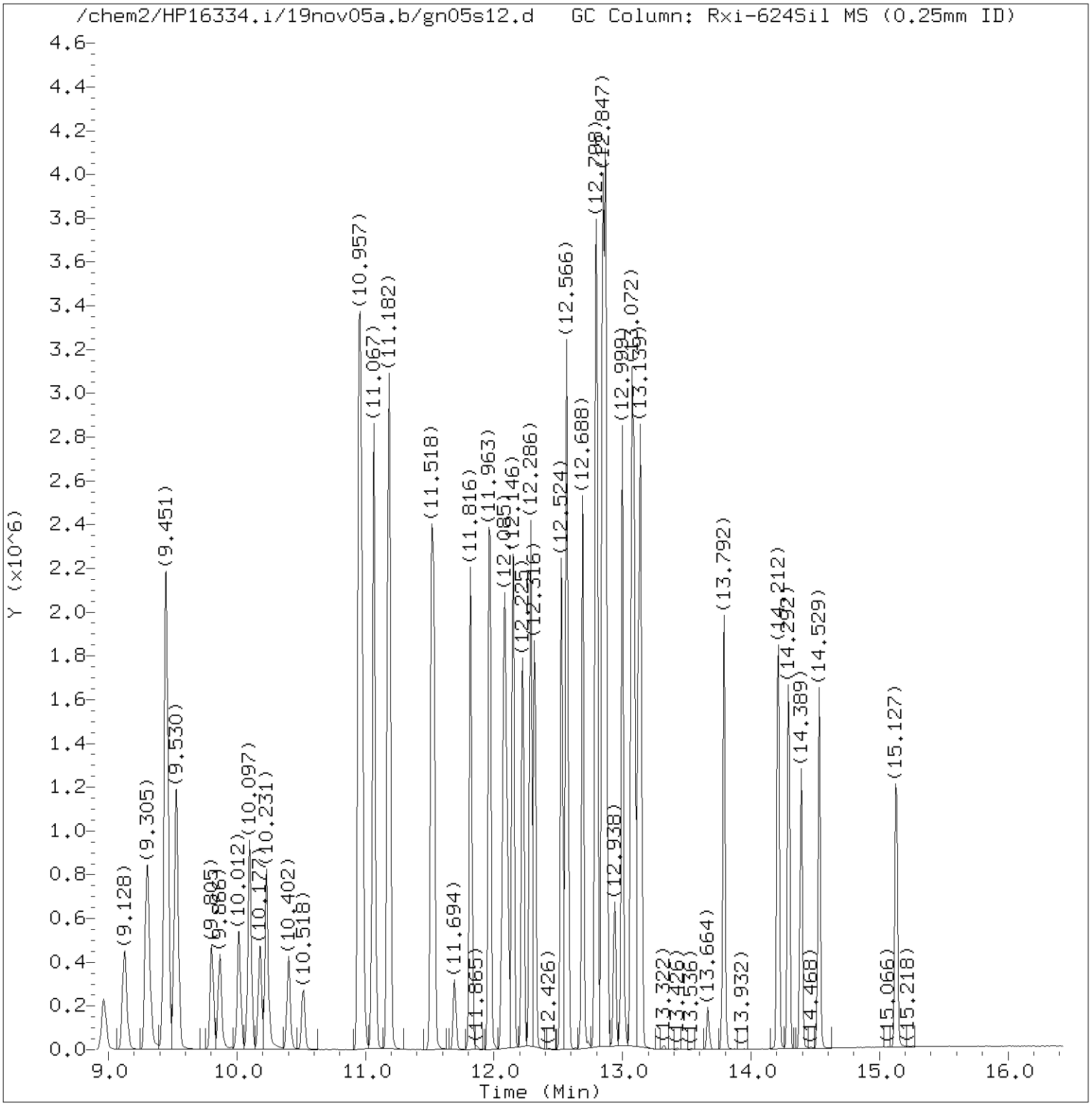
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s12.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:58 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:16 Automation

Sample Name: 53R03MS Lab Sample ID: 1187107MS

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s12.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:58 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:16 Automation

Sample Name: 53R03MS Lab Sample ID: 1187107MS

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s12.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 12:58 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:16 Automation

Sample Name: 53R03MS Lab Sample ID: 1187107MS

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
5) Vinyl Chloride	(2)	2.111	62	365502	5.947
15) 1,1-Dichloroethene	(2)	3.263	96	238113	5.709
26)*t-Butyl Alcohol-d10	(1)	3.897	65	141180	50.000
31) trans-1,2-Dichloroethene	(2)	4.269	96	263684	5.478
39) cis-1,2-Dichloroethene	(2)	5.775	96	312956	5.968
50)$Dibromofluoromethane	(2)	6.494	113	508217	9.905
57)$1,2-Dichloroethane-d4	(2)	6.952	102	107666	10.362
63)*Fluorobenzene	(2)	7.397	96	2029405	10.000
67) Trichloroethene	(2)	7.878	95	292952	5.708
82)$Toluene-d8	(3)	9.451	98	2051695	10.063
97)*Chlorobenzene-d5	(3)	10.951	117	1589809	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	751714	9.864
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	890990	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 13:36.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05s13.d Injection date and time: **05-NOV-2019 13:20**
Data file Sample Info. Line: 53R03MSD;1187108MSD;1;3;MSD;RAF53;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G19309**
Date, time and analyst ID of latest file update: 05-Nov-2019 13:38 Automation

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.891	(-0.024)	378	65	122694	(-18)	50.00	
63) Fluorobenzene	7.390	(-0.006)	952	96	1974867	(-9)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1543980	(-9)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	874950	(-8)	10.00	

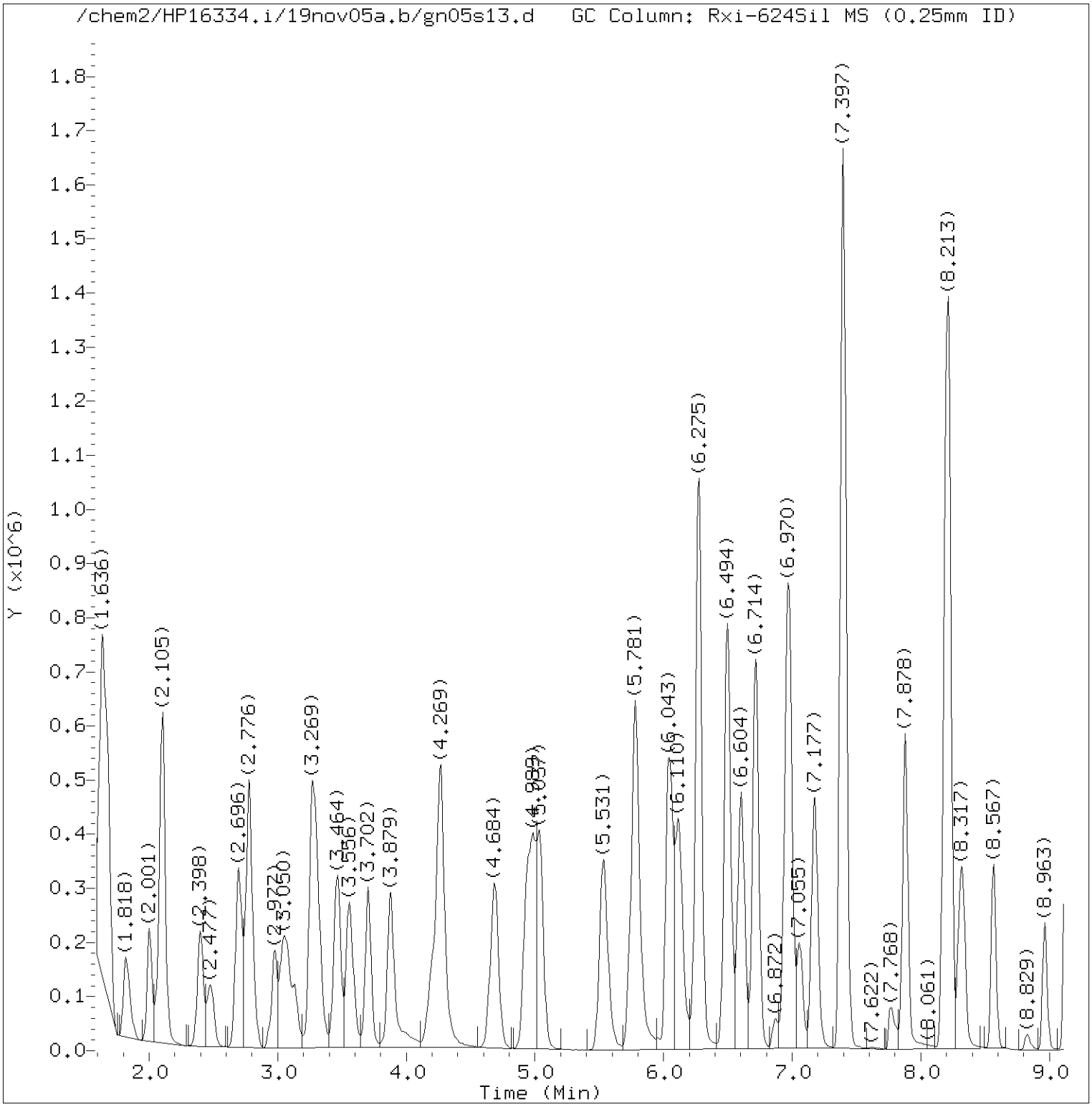
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.494	(0.000)	113	493918	9.892	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952	(0.001)	102	104103	10.296	103%		80 - 120
82) Toluene-d8	(3)	9.451	(-0.001)	98	1990218	10.051	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	724175	9.785	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
5) Vinyl Chloride	(2)	2.111	(-0.001)	62	374016	6.253	6.25			0.1	1
15) 1,1-Dichloroethene	(2)	3.263	(-0.001)	96	239966	5.912	5.91			0.4	1
31) trans-1,2-Dichloroethene	(2)	4.269	(-0.001)	96	263501	5.626	5.63			0.8	1
39) cis-1,2-Dichloroethene	(2)	5.781	(-0.001)	96	310097	6.076	6.08			0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	297206	5.951	5.95			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 14:45. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 13:00. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

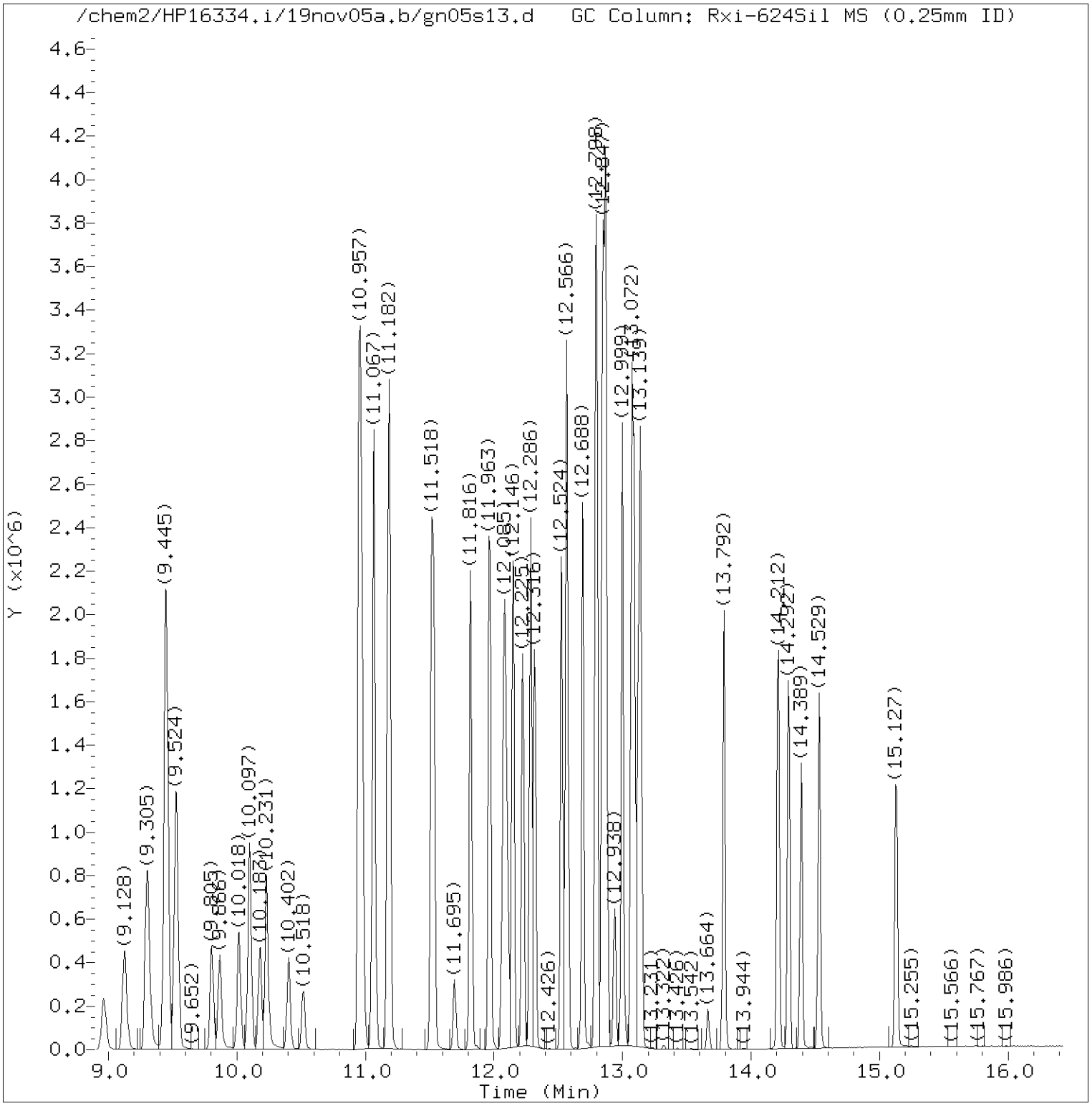
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s13.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 13:20 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:38 Automation

Sample Name: 53R03MSD Lab Sample ID: 1187108MSD

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 14:45.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s13.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 13:20 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:38 Automation

Sample Name: 53R03MSD Lab Sample ID: 1187108MSD

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 14:45.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05s13.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 13:20 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 13:38 Automation

Sample Name: 53R03MSD Lab Sample ID: 1187108MSD

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
5) Vinyl Chloride	(2)	2.111	62	374016	6.253
15) 1,1-Dichloroethene	(2)	3.263	96	239966	5.912
26)*t-Butyl Alcohol-d10	(1)	3.891	65	122694	50.000
31) trans-1,2-Dichloroethene	(2)	4.269	96	263501	5.626
39) cis-1,2-Dichloroethene	(2)	5.781	96	310097	6.076
50)$Dibromofluoromethane	(2)	6.494	113	493918	9.892
57)$1,2-Dichloroethane-d4	(2)	6.952	102	104103	10.296
63)*Fluorobenzene	(2)	7.390	96	1974867	10.000
67) Trichloroethene	(2)	7.878	95	297206	5.951
82)$Toluene-d8	(3)	9.451	98	1990218	10.051
97)*Chlorobenzene-d5	(3)	10.951	117	1543980	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	724175	9.785
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	874950	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 14:45.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP16334.i/19nov05a.b/gn05l01.d Injection date and time: **05-NOV-2019 08:19**
Data file Sample Info. Line: LCSG47;LCSG47;1;3;LCS;;DAA3178;;gn05b01; Instrument ID: **HP16334.i** Batch: **G193091AA**
Date, time and analyst ID of latest file update: 05-Nov-2019 09:01 jkh09052

Blank Data file reference: **/chem2/HP16334.i/19nov05a.b/gn05b01.d**

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: **12025**
Calibration date and time (Last Method Edit): 05-NOV-2019 08:21
Mid Level Daily Calibration Standard Reference: **/chem2/HP16334.i/19nov05a.b/gn05c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.879	(-0.012)	376	65	131239	(-12)	50.00	
63) Fluorobenzene	7.391	(-0.006)	952	96	2079278	(-4)	10.00	
97) Chlorobenzene-d5	10.951	(0.000)	1536	117	1616261	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	12.847	(0.000)	1847	152	908242	(-4)	10.00	

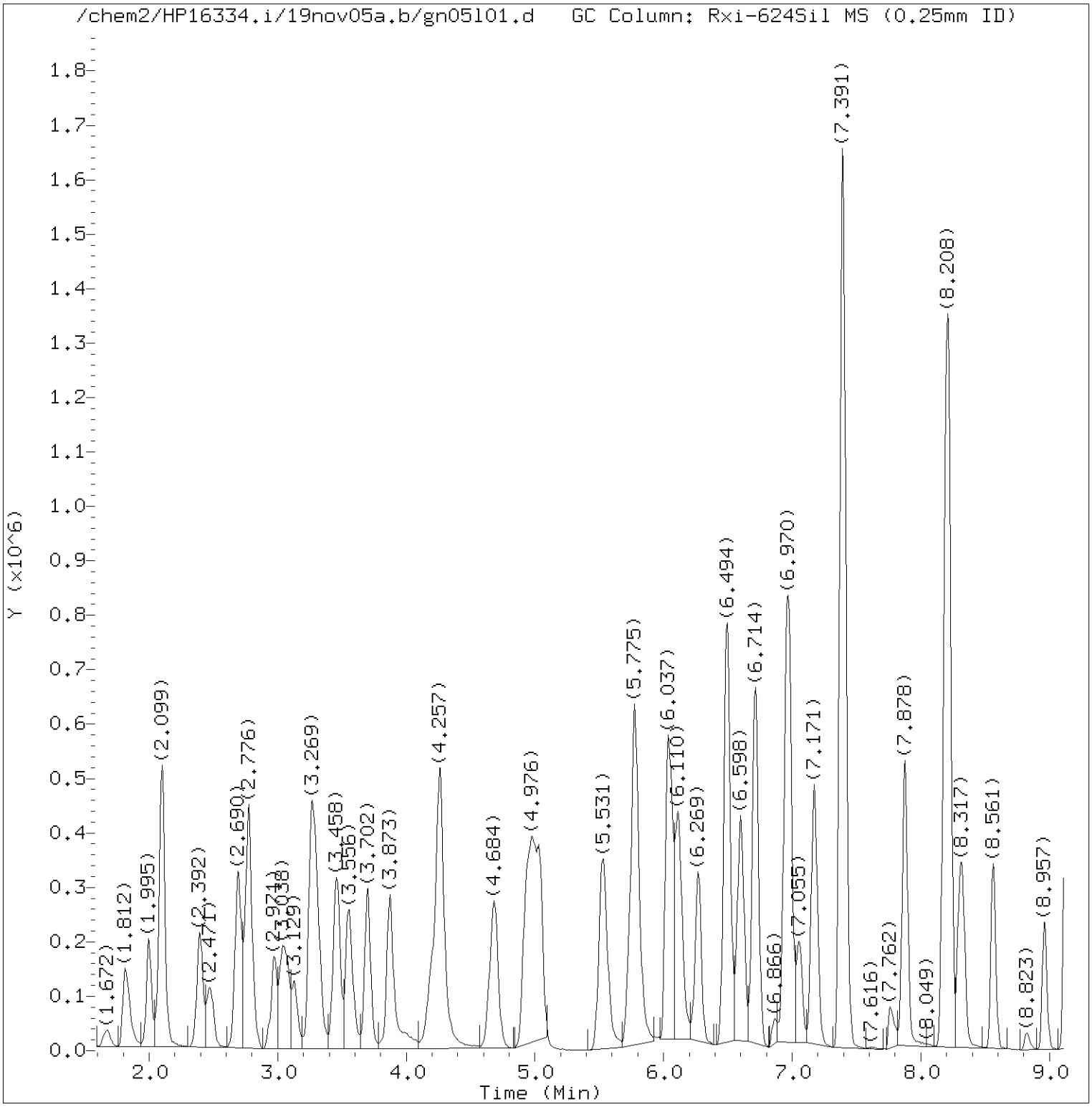
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.488	(0.001)	113	522038	9.931	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	6.952	(0.001)	102	107892	10.135	101%		80 - 120
82) Toluene-d8	(3)	9.445	(0.000)	98	2083950	10.053	101%		80 - 120
111) 4-Bromofluorobenzene	(3)	11.963	(0.000)	95	760118	9.811	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
5) Vinyl Chloride	(2)	2.105	(-0.000)	62	351013	5.574	5.57			0.1	1
15) 1,1-Dichloroethene	(2)	3.263	(-0.001)	96	222130	5.198	5.20			0.4	1
31) trans-1,2-Dichloroethene	(2)	4.263	(-0.000)	96	251862	5.107	5.11			0.8	1
39) cis-1,2-Dichloroethene	(2)	5.775	(-0.000)	96	301460	5.611	5.61			0.1	1
67) Trichloroethene	(2)	7.878	(0.000)	95	270534	5.145	5.14			0.2	1

Total number of targets = 5

Digitally signed by Jennifer K. Howe on 11/05/2019 at 09:09. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Chelsea B. Riehl on 11/07/2019 at 12:57. PARALLAX ID: cbs01947



Total Ion Chromatogram (TIC)

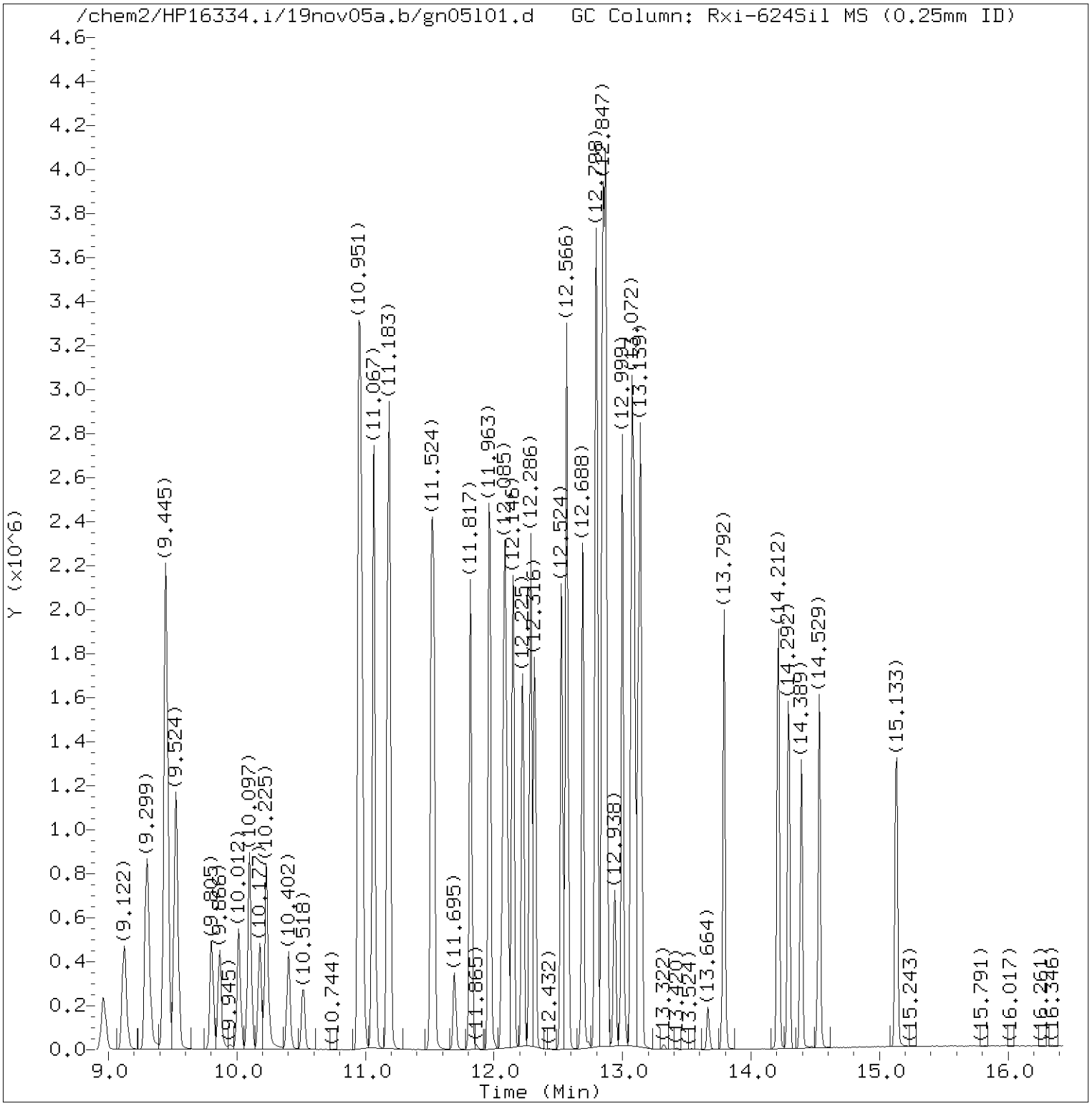
Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05l01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:19 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:01 jkh09052

Sample Name: LCSG47 Lab Sample ID: LCSG47

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:09.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05l01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:19 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:01 jkh09052

Sample Name: LCSG47 Lab Sample ID: LCSG47

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:09.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/19nov05a.b/gn05l01.d Instrument ID: HP16334.i
Injection date and time: 05-NOV-2019 08:19 Analyst ID: jkh09052

Method used: /chem2/HP16334.i/19nov05a.b/m8260c25.m Sublist used: 12025
Calibration date and time: 05-NOV-2019 08:21
Date, time and analyst ID of latest file update: 05-Nov-2019 09:01 jkh09052

Sample Name: LCSG47 Lab Sample ID: LCSG47

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
5) Vinyl Chloride	(2)	2.105	62	351013	5.574
15) 1,1-Dichloroethene	(2)	3.263	96	222130	5.198
26)*t-Butyl Alcohol-d10	(1)	3.879	65	131239	50.000
31) trans-1,2-Dichloroethene	(2)	4.263	96	251862	5.107
39) cis-1,2-Dichloroethene	(2)	5.775	96	301460	5.611
50)$Dibromofluoromethane	(2)	6.488	113	522038	9.931
57)$1,2-Dichloroethane-d4	(2)	6.952	102	107892	10.135
63)*Fluorobenzene	(2)	7.391	96	2079278	10.000
67) Trichloroethene	(2)	7.878	95	270534	5.145
82)$Toluene-d8	(3)	9.445	98	2083950	10.053
97)*Chlorobenzene-d5	(3)	10.951	117	1616261	10.000
111)$4-Bromofluorobenzene	(3)	11.963	95	760118	9.811
133)*1,4-Dichlorobenzene-d4	(4)	12.847	152	908242	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 11/05/2019 at 09:09.
Target 3.5 esignature user ID: jkh09052

Comprehensive Data Validation Report
Radford Army Ammunition Plant (RFAAP), Radford, Virginia
Facility: HWMU-16 Monitoring Event: Fourth Quarter 2019

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020B							
Laboratory: Shealy, West Columbia, SC							
Arsenic	16C1	10	U	U		10	Analyte not detected at or above the QL.
	16MW8	10	U	U		10	Analyte not detected at or above the QL.
	16MW9	10	U	U		10	Analyte not detected at or above the QL.
	16WC1A	10	U	U		10	Analyte not detected at or above the QL.
	16WC1B	10	U	U		10	Analyte not detected at or above the QL.
	16WC2B	10	U	U		10	Analyte not detected at or above the QL.
	16-2	10	U	U		10	Analyte not detected at or above the QL.
	16-3	10	U	U		10	Analyte not detected at or above the QL.
	16-5	10	U	U		10	Analyte not detected at or above the QL.
	16SPRING	10	U	U		10	Analyte not detected at or above the QL.
	16WDUP	10	U	U		10	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Barium	16C1	190		190		10	No action taken.
	16MW8	130		130		10	No action taken.
	16MW9	650		650		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L.
	16WC1A	420		420		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L.
	16WC1B	100		100		10	No action taken.
	16WC2B	120		120		10	No action taken.
	16-2	200		200		10	No action taken.
	16-3	1000		1000		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L.
	16-5	170		170		10	No action taken.
	16SPRING	230		230		10	No action taken.
	16WDUP	470		470		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L. Blind field duplicate of 16WC1A (RPD).
Beryllium	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020B							
Laboratory: Shealy, West Columbia, SC							
Beryllium	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Cadmium	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Chromium	16C1	5	U	U		5	Analyte not detected at or above the QL.
	16MW8	5	U	U		5	Analyte not detected at or above the QL.
	16MW9	5	U	U		5	Analyte not detected at or above the QL.
	16WC1A	5	U	U		5	Analyte not detected at or above the QL.
	16WC1B	6.6		6.6		5	No action taken.
	16WC2B	5	U	U		5	Analyte not detected at or above the QL.
	16-2	5	U	U		5	Analyte not detected at or above the QL.
	16-3	5	U	U		5	Analyte not detected at or above the QL.
	16-5	5	U	U		5	Analyte not detected at or above the QL.
	16SPRING	5	U	U		5	Analyte not detected at or above the QL.
	16WDUP	5	U	U		5	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Cobalt	16C1	5	U	U		5	Analyte not detected at or above the QL.
	16MW8	5	U	U		5	Analyte not detected at or above the QL.
	16MW9	5	U	U		5	Analyte not detected at or above the QL.
	16WC1A	11		11		5	No action taken.
	16WC1B	16		16		5	No action taken.
	16WC2B	5	U	U		5	Analyte not detected at or above the QL.
	16-2	5	U	U		5	Analyte not detected at or above the QL.
	16-3	5	U	U		5	Analyte not detected at or above the QL.
	16-5	5	U	U		5	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020B							
Laboratory: Shealy, West Columbia, SC							
Cobalt	16SPRING	5	U	U		5	Analyte not detected at or above the QL.
	16WDUP	11		11		5	No action taken. Blind field duplicate of 16WC1A.
Copper	16C1	5	U	U		5	Analyte not detected at or above the QL.
	16MW8	14		14		5	No action taken.
	16MW9	5	U	U		5	Analyte not detected at or above the QL.
	16WC1A	5	U	U		5	Analyte not detected at or above the QL.
	16WC1B	5	U	U		5	Analyte not detected at or above the QL.
	16WC2B	5	U	U		5	Analyte not detected at or above the QL.
	16-2	5	U	U		5	Analyte not detected at or above the QL.
	16-3	5	U	U		5	Analyte not detected at or above the QL.
	16-5	5	U	U		5	Analyte not detected at or above the QL.
	16SPRING	5	U	U		5	Analyte not detected at or above the QL.
	16WDUP	5	U	U		5	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Lead	16C1	3	U	U		3	Analyte not detected at or above the QL.
	16MW8	3	U	U		3	Analyte not detected at or above the QL.
	16MW9	3	U	U		3	Analyte not detected at or above the QL.
	16WC1A	3	U	U		3	Analyte not detected at or above the QL.
	16WC1B	3	U	U		3	Analyte not detected at or above the QL.
	16WC2B	3	U	U		3	Analyte not detected at or above the QL.
	16-2	3	U	U		3	Analyte not detected at or above the QL.
	16-3	3	U	U		3	Analyte not detected at or above the QL.
	16-5	3	U	U		3	Analyte not detected at or above the QL.
	16SPRING	3	U	U		3	Analyte not detected at or above the QL.
	16WDUP	3	U	U		3	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Nickel	16C1	10	U	U		10	Analyte not detected at or above the QL.
	16MW8	10	U	U		10	Analyte not detected at or above the QL.
	16MW9	12		12		10	No action taken.
	16WC1A	11		11		10	No action taken.
	16WC1B	10	U	U		10	Analyte not detected at or above the QL.
	16WC2B	10	U	U		10	Analyte not detected at or above the QL.
	16-2	10	U	U		10	Analyte not detected at or above the QL.
	16-3	10	U	U		10	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020B							
Laboratory: Shealy, West Columbia, SC							
Nickel	16-5	10	U	U		10	Analyte not detected at or above the QL.
	16SPRING	10	U	U		10	Analyte not detected at or above the QL.
	16WDUP	11		11		10	No action taken. Blind field duplicate of 16WC1A.
Vanadium	16C1	10	U	U		10	Analyte not detected at or above the QL.
	16MW8	10	U	U		10	Analyte not detected at or above the QL.
	16MW9	10	U	U		10	Analyte not detected at or above the QL.
	16WC1A	10	U	U		10	Analyte not detected at or above the QL.
	16WC1B	10	U	U		10	Analyte not detected at or above the QL.
	16WC2B	10	U	U		10	Analyte not detected at or above the QL.
	16-2	10	U	U		10	Analyte not detected at or above the QL.
	16-3	10	U	U		10	Analyte not detected at or above the QL.
	16-5	10	U	U		10	Analyte not detected at or above the QL.
	16SPRING	10	U	U		10	Analyte not detected at or above the QL.
	16WDUP	10	U	U		10	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
Zinc	16C1	30	U	U		30	Analyte not detected at or above the QL.
	16MW8	30	U	U		30	Analyte not detected at or above the QL.
	16MW9	30	U	U		30	Analyte not detected at or above the QL.
	16WC1A	30	U	U		30	Analyte not detected at or above the QL.
	16WC1B	30	U	U		30	Analyte not detected at or above the QL.
	16WC2B	30	U	U		30	Analyte not detected at or above the QL.
	16-2	30	U	U		30	Analyte not detected at or above the QL.
	16-3	30	U	U		30	Analyte not detected at or above the QL.
	16-5	30	U	U		30	Analyte not detected at or above the QL.
	16SPRING	30	U	U		30	Analyte not detected at or above the QL.
	16WDUP	30	U	U		30	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 7470A							
Laboratory: Shealy, West Columbia, SC							
Mercury	16C1	2	U	U		2	Analyte not detected at or above the QL.
	16MW8	2	U	U		2	Analyte not detected at or above the QL.
	16MW9	2	U	U		2	Analyte not detected at or above the QL.
	16WC1A	2	U	U		2	Analyte not detected at or above the QL.
	16WC1B	2	U	U		2	Analyte not detected at or above the QL.
	16WC2B	2	U	U		2	Analyte not detected at or above the QL.
	16-2	2	U	U		2	Analyte not detected at or above the QL.
	16-3	2	U	U		2	Analyte not detected at or above the QL.
	16-5	2	U	U		2	Analyte not detected at or above the QL.
	16SPRING	2	U	U		2	Analyte not detected at or above the QL.
	16WDUP	2	U	U		2	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Benzene	**16C1**	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW8	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW9	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1A	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC2B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-3	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-5	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16SPRING	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WDUP	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.**
	Trip_Blank_1	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	Trip_Blank_2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
2-Butanone	**16C1**	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16MW8	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16MW9	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16WC1A	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16WC1B	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16WC2B	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16-2	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16-3	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16-5	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16SPRING	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	16WDUP	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.**
	Trip_Blank_1	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
	Trip_Blank_2	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**
Carbon tetrachloride	**16C1**	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW8	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW9	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1A	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC2B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Carbon tetrachloride	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Chloroethane	16C1	3.6		3.6		1	No action taken.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1.8		1.8		1	No action taken.
	16WC1A	1.7		1.7		1	No action taken.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1.8		1.8		1	No action taken. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Dichlorodifluoromethane	16C1	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16MW8	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16MW9	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16WC1A	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16WC1B	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16WC2B	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16-2	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16-3	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16-5	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16SPRING	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
	16WDUP	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%). Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Dichlorodifluoromethane	Trip_Blank_2	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-28%). MSD/LCS recovered low (69%67%)
1,1-Dichloroethane	16C1	6.3		6.3		1	No action taken.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	6.5		6.5		1	No action taken.
	16WC1A	4.6		4.6		1	No action taken.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	4.7		4.7		1	No action taken. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
1,1-Dichloroethene	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Diethyl ether	16C1	47		47		12.5	Analyzed in dilution (1:2.5). Actual QL 31 ug/L.
	16MW8	13	U	U		12.5	Analyte not detected at or above the QL.
	16MW9	70		70		12.5	Analyzed in dilution (1:4). Actual QL 50 ug/L.
	16WC1A	23		23		12.5	No action taken.
	16WC1B	13	U	U		12.5	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Diethyl ether	16WC2B	13	U	U		12.5	Analyte not detected at or above the QL.
	16-2	13	U	U		12.5	Analyte not detected at or above the QL.
	16-3	13	U	U		12.5	Analyte not detected at or above the QL.
	16-5	13	U	U		12.5	Analyte not detected at or above the QL.
	16SPRING	13	U	U		12.5	Analyte not detected at or above the QL.
	16WDUP	23		23		12.5	No action taken. Blind field duplicate of 16WC1A.
	Trip_Blank_1	13	U	U		12.5	Analyte not detected at or above the QL.
	Trip_Blank_2	13	U	U		12.5	Analyte not detected at or above the QL.
Dimethyl ether	16C1	13	U	U		12.5	Analyte not detected at or above the QL.
	16MW8	13	U	U		12.5	Analyte not detected at or above the QL.
	16MW9	13	U	U		12.5	Analyte not detected at or above the QL.
	16WC1A	13	U	U		12.5	Analyte not detected at or above the QL.
	16WC1B	13	U	U		12.5	Analyte not detected at or above the QL.
	16WC2B	13	U	U		12.5	Analyte not detected at or above the QL.
	16-2	13	U	U		12.5	Analyte not detected at or above the QL.
	16-3	13	U	U		12.5	Analyte not detected at or above the QL.
	16-5	13	U	U		12.5	Analyte not detected at or above the QL.
	16SPRING	13	U	U		12.5	Analyte not detected at or above the QL.
	16WDUP	13	U	U		12.5	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	13	U	U		12.5	Analyte not detected at or above the QL.
	Trip_Blank_2	13	U	U		12.5	Analyte not detected at or above the QL.
Ethylbenzene	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Ethylbenzene	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Chloromethane	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Methylene chloride	16C1	1		1		1	No action taken.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Tetrachloroethene	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Tetrachloroethene	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Tetrahydrofuran	16C1	25	U	U		25	Analyte not detected at or above the QL.
	16MW8	25	U	U		25	Analyte not detected at or above the QL.
	16MW9	25	U	U		25	Analyte not detected at or above the QL.
	16WC1A	25	U	U		25	Analyte not detected at or above the QL.
	16WC1B	25	U	U		25	Analyte not detected at or above the QL.
	16WC2B	25	U	U		25	Analyte not detected at or above the QL.
	16-2	25	U	U		25	Analyte not detected at or above the QL.
	16-3	25	U	U		25	Analyte not detected at or above the QL.
	16-5	25	U	U		25	Analyte not detected at or above the QL.
	16SPRING	25	U	U		25	Analyte not detected at or above the QL.
	16WDUP	25	U	U		25	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	25	U	U		25	Analyte not detected at or above the QL.
	Trip_Blank_2	25	U	U		25	Analyte not detected at or above the QL.
Toluene	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Toluene	**16WDUP**	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.**
	Trip_Blank_1	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	Trip_Blank_2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
1,1,1-Trichloroethane	**16C1**	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW8	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW9	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1A	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC2B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-3	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-5	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16SPRING	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WDUP	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.**
	Trip_Blank_1	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	Trip_Blank_2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
Trichloroethene	**16C1**	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW8	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16MW9	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1A	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC1B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WC2B	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-3	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16-5	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16SPRING	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	16WDUP	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.**
	Trip_Blank_1	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
	Trip_Blank_2	**1**	**U**	**U**		**1**	**Analyte not detected at or above the QL.**
Trichlorofluoromethane	**16C1**	**1**	**U**	**U**	**J**	**1**	**Analyte not detected at or above the QL. CV %D > +/-20% (-26%).**
	16MW8	**1**	**U**	**U**	**J**	**1**	**Analyte not detected at or above the QL. CV %D > +/-20% (-26%).**
	16MW9	**1**	**U**	**U**	**J**	**1**	**Analyte not detected at or above the QL. CV %D > +/-20% (-26%).**

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Trichlorofluoromethane	16WC1A	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16WC1B	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16WC2B	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16-2	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16-3	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16-5	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16SPRING	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	16WDUP	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%). Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
	Trip_Blank_2	1	U	U	J	1	Analyte not detected at or above the QL. CV %D > +/-20% (-26%).
1,1,2-Trichloro-1,2,2-Trifluoroethane	16C1	1	U	U		1	Analyte not detected at or above the QL.
	16MW8	1	U	U		1	Analyte not detected at or above the QL.
	16MW9	1	U	U		1	Analyte not detected at or above the QL.
	16WC1A	1	U	U		1	Analyte not detected at or above the QL.
	16WC1B	1	U	U		1	Analyte not detected at or above the QL.
	16WC2B	1	U	U		1	Analyte not detected at or above the QL.
	16-2	1	U	U		1	Analyte not detected at or above the QL.
	16-3	1	U	U		1	Analyte not detected at or above the QL.
	16-5	1	U	U		1	Analyte not detected at or above the QL.
	16SPRING	1	U	U		1	Analyte not detected at or above the QL.
	16WDUP	1	U	U		1	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	1	U	U		1	Analyte not detected at or above the QL.
	Trip_Blank_2	1	U	U		1	Analyte not detected at or above the QL.
Xylenes (Total)	16C1	3	U	U		3	Analyte not detected at or above the QL.
	16MW8	3	U	U		3	Analyte not detected at or above the QL.
	16MW9	3	U	U		3	Analyte not detected at or above the QL.
	16WC1A	3	U	U		3	Analyte not detected at or above the QL.
	16WC1B	3	U	U		3	Analyte not detected at or above the QL.
	16WC2B	3	U	U		3	Analyte not detected at or above the QL.
	16-2	3	U	U		3	Analyte not detected at or above the QL.
	16-3	3	U	U		3	Analyte not detected at or above the QL.
	16-5	3	U	U		3	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Xylenes (Total)	16SPRING	3	U	U		3	Analyte not detected at or above the QL.
	16WDUP	3	U	U		3	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
	Trip_Blank_1	3	U	U		3	Analyte not detected at or above the QL.
	Trip_Blank_2	3	U	U		3	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8270D							
Laboratory: ELLE, Lancaster, PA							
Diethyl phthalate	16C1	5	U	U		5	Analyte not detected at or above the QL.
	16MW8	5	U	U		5	Analyte not detected at or above the QL.
	16MW9	5	U	U		5	Analyte not detected at or above the QL.
	16WC1A	5	U	U		5	Analyte not detected at or above the QL.
	16WC1B	5	U	U		5	Analyte not detected at or above the QL.
	16WC2B	5	U	U		5	Analyte not detected at or above the QL.
	16-2	5	U	U		5	Analyte not detected at or above the QL.
	16-3	5	U	U		5	Analyte not detected at or above the QL.
	16-5	5	U	U		5	Analyte not detected at or above the QL.
	16SPRING	5	U	U		5	Analyte not detected at or above the QL.
	16WDUP	5	U	U		5	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
2,4-Dinitrotoluene	16C1	10	U	U		10	Analyte not detected at or above the QL.
	16MW8	10	U	U		10	Analyte not detected at or above the QL.
	16MW9	10	U	U		10	Analyte not detected at or above the QL.
	16WC1A	10	U	U		10	Analyte not detected at or above the QL.
	16WC1B	10	U	U		10	Analyte not detected at or above the QL.
	16WC2B	10	U	U		10	Analyte not detected at or above the QL.
	16-2	10	U	U		10	Analyte not detected at or above the QL.
	16-3	10	U	U		10	Analyte not detected at or above the QL.
	16-5	10	U	U		10	Analyte not detected at or above the QL.
	16SPRING	11	U	U		10	Analyte not detected at or above the QL.
	16WDUP	10	U	U		10	Analyte not detected at or above the QL. Blind field duplicate of 16WC1A.
2,6-Dinitrotoluene	16C1	10	U	U		10	Analyte not detected at or above the QL.
	16MW8	10	U	U		10	Analyte not detected at or above the QL.
	16MW9	10	U	U		10	Analyte not detected at or above the QL.
	16WC1A	10	U	U		10	Analyte not detected at or above the QL.
	16WC1B	10	U	U		10	Analyte not detected at or above the QL.
	16WC2B	10	U	U		10	Analyte not detected at or above the QL.
	16-2	10	U	U		10	Analyte not detected at or above the QL.
	16-3	10	U	U		10	Analyte not detected at or above the QL.
	16-5	10	U	U		10	Analyte not detected at or above the QL.
	16SPRING	11	U	U		10	Analyte not detected at or above the QL.

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 8270D							
Laboratory: ELLE, Lancaster, PA							
2,6-Dinitrotoluene	**16WDUP**	**10**	**U**	**U**		**10**	**Analyte not detected at or above the QL.**

Definitions:

Appendix IX monitoring events and compliance monitoring wells:
For Appendix IX monitoring events, all compliance well results evaluated to the project detection limit.
See separate table for Appendix IX monitoring event detection limits.
QLDenotes permit quantitation limit.
Q Denotes data qualifier.
U Denotes analyte not detected at or above laboratory detection limit (DL) or QL.
J Denotes analyte reported at or above laboratory detection limit and associated result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above laboratory detection **limit and project required quantitation limit/detection limit is estimated.**
UA Denotes analyte not detected at or above adjusted sample detection limit /QL.
UN Denotes analyte concentration is less than the quantitation limit and five times the blank concentration. Analyte was not reliably detected due to blank contamination.
R Denotes result rejected.
Laboratory Data Qualifiers,
"U" and "<", denote not detected at or above the detection limit or QL.
B or J denote result detected between DL and QL, associated value should be considered an estimated concentration.

Appendix IX monitoring events:
Third Quarter 2003, Second Quarter 2004, Second Quarter 2005, Third Quarter 2006, Second Quarter 2007, Second Quarter 2008, Second Quarter 2009, Second Quarter 2010, 2Q 2011, 2Q 2012, 2Q 2013. 2Q 2014, 2Q 2015, 2Q 2016, 2Q 2017

Definitions for Non-Appendix IX Monitoring Events and plume monitoring wells:
QL Denotes permit quantitation limit.
Q Denotes data qualifier.
U Denotes analyte not detected at or above QL.
UA Denotes analyte not detected at or above adjusted sample QL. See data validation report for further explanation.
UN Denotes analyte concentration is less than five times the blank concentration. Analyte was not reliably detected due to blank contamination.

J Denotes analyte reported at or above QL and associated result is estimated. When used with "U" (i.e., "UJ"), denotes analyte not detected at or above **QL and QL is estimated. When used with "UA"**(i.e., "**UAJ**"), denotes analyte not detected at or above adjusted QL and **adjusted QL is estimated.**
R Denotes result rejected. See data validation report for further explanation.
Laboratory Data Qualifiers, "U" and "<", denote not detected at or above the QL.

Comprehensive Data Validation Report

Draper Aden Associates
Engineering ◆ Surveying ◆ Environmental Services

Radford Army Ammunition Plant (RFAAP), Radford, Virginia

Sample/Blind Field Duplicate Results Greater Than the Quantitation Limit

Facility: HWMU-16 Monitoring Event: Fourth Quarter 2019

Analyte	Sample ID	Laboratory Result (ug/L)	Q	Validated Result (ug/L)	Q	QL (ug/L)	Validation Notes
Method: 6020B							
Laboratory: Shealy, West Columbia, SC							
Barium	16WC1A	420		420		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L.
	16WDUP	470		470		10	Analyzed in dilution (1:10). Acutal QL 100 ug/L. Blind field duplicate of 16WC1A.
Cobalt	16WC1A	11		11		5	No action taken.
	16WDUP	11		11		5	No action taken. Blind field duplicate of 16WC1A.
Nickel	16WC1A	11		11		10	No action taken.
	16WDUP	11		11		10	No action taken. Blind field duplicate of 16WC1A.
Method: 8260C							
Laboratory: ELLE, Lancaster, PA							
Chloroethane	16WC1A	1.7		1.7		1	No action taken.
	16WDUP	1.8		1.8		1	No action taken. Blind field duplicate of 16WC1A.
1,1-Dichloroethane	16WC1A	4.6		4.6		1	No action taken.
	16WDUP	4.7		4.7		1	No action taken. Blind field duplicate of 16WC1A.
Diethyl ether	16WC1A	23		23		12.5	No action taken.
	16WDUP	23		23		12.5	No action taken. Blind field duplicate of 16WC1A.

Definitions:
Data Validation Qualifiers:
QL Denotes permit quantitation limit. Q Denotes data qualifier.
J Denotes analyte reported at or above quantitation limit and associated result is estimated.

See last page of this report for definitions.

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Draper Aden Associates
2206 South Main Street
Blacksburg, VA 24060
Attention: Janet Frazier

Project Name: RAAP HWMU16 Project

Number: B03204-19A

Lot Number:**UJ24097**

Date Completed:12/10/2019

12/10/2019
Approved and released by:
Project Manager: Cathy S. Dover

The electronic signature above is the equivalent of a handwritten signature.
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Case Narrative
Draper Aden Associates
Lot Number: UJ24097

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Draper Aden Associates

Lot Number: UJ24097

Project Name: RAAP HWMU16-new-no J flags

Project Number: B03204-19A

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	16C1	Aqueous	10/23/2019 1230	10/24/2019
002	16MW8	Aqueous	10/23/2019 0820	10/24/2019
003	16MW9	Aqueous	10/23/2019 1105	10/24/2019
004	16WC1A	Aqueous	10/23/2019 1005	10/24/2019
005	16WDUP	Aqueous	10/23/2019 1015	10/24/2019
006	16WC1B	Aqueous	10/23/2019 0920	10/24/2019
007	16-2	Aqueous	10/22/2019 1220	10/24/2019
008	16-3	Aqueous	10/23/2019 1150	10/24/2019
009	16-5	Aqueous	10/22/2019 1035	10/24/2019
010	16WC2B	Aqueous	10/22/2019 1135	10/24/2019
011	16SPRING	Aqueous	10/22/2019 1045	10/24/2019

(11 samples)

Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-001**

Description: **16C1** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1230** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0134	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-001**

Description: **16C1** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1230** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1501	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**190**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-002**

Description: **16MW8** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0820** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0137	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-002**

Description: **16MW8** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0820** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1507	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**130**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	**7440-50-8**	**6020B**	**14**		**5.0**	**ug/L**	**1**
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-003**

Description: **16MW9** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1105** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0139	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-003**

Description: **16MW9** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1105** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1513	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1644	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**650**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**12**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-004**

Description: **16WC1A** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1005** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0142	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-004**

Description: **16WC1A** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1005** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1519	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1650	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**420**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	**7440-48-4**	**6020B**	**11**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**11**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-005**

Description: **16WDUP** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1015** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0155	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-005**

Description: **16WDUP** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1015** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1601	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1656	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**470**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	**7440-48-4**	**6020B**	**11**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**11**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-006**

Description: **16WC1B** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0920** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0157	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-006**

Description: **16WC1B** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0920** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1607	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**100**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	**7440-47-3**	**6020B**	**6.6**		**5.0**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**16**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-007**

Description: **16-2** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1220** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0200	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-007**

Description: **16-2** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1220** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1613	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**200**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-008**

Description: **16-3** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1150** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0202	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-008**

Description: **16-3** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1150** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1619	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1714	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**1000**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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N = Recovery is out of criteria
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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-009**

Description: **16-5** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1035** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0205	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-009**

Description: **16-5** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1035** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1625	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**170**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-010**

Description: **16WC2B** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1135** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0207	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-010**

Description: **16WC2B** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1135** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1632	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**120**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-011**

Description: **16SPRING** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1045** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0210	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-011**

Description: **16SPRING** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1045** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1638	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**230**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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QC Summary

ICP-MS - MB

Sample ID: UQ33592-001
Batch: 33592
Analytical Method: 6020B
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
Arsenic	10	U	1	10	ug/L	10/30/2019 1424
Barium	10	U	1	10	ug/L	10/30/2019 1424
Beryllium	1.0	U	1	1.0	ug/L	10/30/2019 1424
Cadmium	1.0	U	1	1.0	ug/L	10/30/2019 1424
Chromium	5.0	U	1	5.0	ug/L	10/30/2019 1424
Cobalt	5.0	U	1	5.0	ug/L	10/30/2019 1424
Copper	5.0	U	1	5.0	ug/L	10/30/2019 1424
Lead	3.0	U	1	3.0	ug/L	10/30/2019 1424
Nickel	10	U	1	10	ug/L	10/30/2019 1424
Vanadium	10	U	1	10	ug/L	10/30/2019 1424
Zinc	30	U	1	30	ug/L	10/30/2019 1424

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: UQ33592-002
Batch: 33592
Analytical Method: 6020B
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	100	110		1	112	80-120	10/30/2019 1430
Barium	100	100		1	102	80-120	10/30/2019 1430
Beryllium	100	100		1	103	80-120	10/30/2019 1430
Cadmium	100	100		1	104	80-120	10/30/2019 1430
Chromium	100	100		1	104	80-120	10/30/2019 1430
Cobalt	100	110		1	110	80-120	10/30/2019 1430
Copper	100	120		1	117	80-120	10/30/2019 1430
Lead	100	100		1	102	80-120	10/30/2019 1430
Nickel	100	120		1	116	80-120	10/30/2019 1430
Vanadium	100	100		1	102	80-120	10/30/2019 1430
Zinc	100	120		1	117	80-120	10/30/2019 1430

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: UJ24097-004MS
Batch: 33592
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	0.0	100	110		1	108	70-130	10/30/2019 1525
Barium	320	100	420		1	103	70-130	10/30/2019 1525
Beryllium	0.0	100	99		1	99	70-130	10/30/2019 1525
Cadmium	0.0	100	98		1	98	70-130	10/30/2019 1525
Chromium	0.0	100	98		1	98	70-130	10/30/2019 1525
Cobalt	11	100	110		1	99	70-130	10/30/2019 1525
Copper	0.0	100	99		1	99	70-130	10/30/2019 1525
Lead	0.0	100	100		1	104	70-130	10/30/2019 1525
Nickel	11	100	110		1	102	70-130	10/30/2019 1525
Vanadium	0.0	100	98		1	98	70-130	10/30/2019 1525
Zinc	0.0	100	100		1	105	70-130	10/30/2019 1525

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: UJ24097-004MD
Batch: 33592
Analytical Method: 6020B
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.0	100	110		1	107	1.3	70-130	20	10/30/2019 1531
Barium	320	100	430		1	108	1.2	70-130	20	10/30/2019 1531
Beryllium	0.0	100	98		1	98	0.63	70-130	20	10/30/2019 1531
Cadmium	0.0	100	98		1	98	0.42	70-130	20	10/30/2019 1531
Chromium	0.0	100	96		1	96	2.2	70-130	20	10/30/2019 1531
Cobalt	11	100	110		1	96	2.9	70-130	20	10/30/2019 1531
Copper	0.0	100	98		1	98	0.93	70-130	20	10/30/2019 1531
Lead	0.0	100	100		1	104	0.044	70-130	20	10/30/2019 1531
Nickel	11	100	110		1	101	1.5	70-130	20	10/30/2019 1531
Vanadium	0.0	100	96		1	96	2.0	70-130	20	10/30/2019 1531
Zinc	0.0	100	100		1	104	0.98	70-130	20	10/30/2019 1531

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MB

Sample ID: UQ33809-001
Batch: 33809
Analytical Method: 7470A
Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
Mercury	2.0	U	1	2.0	ug/L	10/31/2019 0129

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - LCS

Sample ID: UQ33809-002
Batch: 33809
Analytical Method: 7470A
Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	2.0	1.9		1	96	80-120	10/31/2019 0131

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MS

Sample ID: UJ24097-004MS
Batch: 33809
Analytical Method: 7470A
Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0	2.0	1.8		1	92	85-115	10/31/2019 0149

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MSD

Sample ID: UJ24097-004MD
Batch: 33809
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0	2.0	1.8		1	88	4.2	85-115	20	10/31/2019 0152

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

CHAIN OF CUSTODY RECORD

Laboratory: Shealy Environmental Services- 100 Vantage Point Drive, Columbia, SC 29172 - Cathy Dover, Project Manager, 803-648-4480

9-12-19

Client: 0 Attn: 0 Address: 0 0 Phone: 0 Fax: 0 Fax: 0	Consultant: Draper Aden Associates Attn: Janet C. Frazier Address: 2206 South Main Street Blacksburg, Virginia 24060 Phone: (540) 552-0444 Fax: (540) 552-0291	Sample Site: RFAAP, Radford, Virginia Location: RFAAMU16 Event: 2019 - 2nd Semiannual Monitoring Event DAA J/N: 803204-16A Lab J/N:	(Project Specific (PS) or Batch (B) QC: Sample Collection for Project Complete? YES WBS Cardno: 12-237-301-01-9355-6394 Tracking Number:		

Box 1: Matrix		Box 2: Preservative		Box 3: Filtered/Unfiltered	Box 4: Sample Type	Invoice
SW Surface Water	T Trip Blank	A HCL	E NaOH	F Filtered	G Grab	Copy to Consultant: YES
GW Groundwater	E Equipment Blank	B HNO_3	F ZnAc	U Unfiltered	C Composite	Bill: CLIENT OTHER
L Leachate	P Product	C H_2SO_4	G Other (Specify)	Box 6: Sample Container Type		Preserved and shipped on Ice: YES
S Soil	O Other	D $Na_2S_2O_3$	H None	P Plastic V VOA AG Amber Glass CG Clear Glass		

Box 4 - Sample Type				G	G								
Box 3 - Filtered/Unfiltered				U	U								
Required pH of Sample				<2	<2								
Box 2 - Preservative				B	B								
Box 5 - Sample Container Type				1-500 ml P									
Sample ID	Date: 2019	Time	Box 1: Matrix	Number of Bottles	ICP/MS 6020B/3005A (Metals-Total)	7470A (Mercury-Total)	pH						
16C1	10/23	1230	GW	1	X	X	<2						
16MW8	10/23	0820	GW	1	X	X	<2						
16MW9	10/23	1105	GW	1	X	X	<2						
16WC1A	10/23	1005	GW	3	X	X	<2						
16WDUP	10/23	1015	GW	1	X	X	<2						
16WC1B	10/23	0920	GW	1	X	X	<2						
16-2	10/22	1220	GW	1	X	X	<2						
16-3	10/23	1150	GW	1	X	X	<2						
16-5	10/22	1035	GW	1	X	X	<2						
16WC2B	10/22	1135	GW	1	X	X	<2						
16SPRING	10/22	1045	GW	1	X	X	<2						

GENERAL NOTES:

1. ERIS EDD & DAA EDD required.
2. Level 4 deliverables required. (Full Deliverable)
3. See attached target analyte list
4. Report results at or above QL permit, (attached).

#ERIS DELIVERABLE REQUIRED

9/19/19

UJ24097

CSD

USE FOR QC

Clients Special Instructions:

Received by lab in Good Condition X Yes ____ No Custody Seal Intact: X Yes ____ No Temperature upon arrival: 2.4°C Received on Ice X Yes ____ No
Describe problems, if any:

Sampler Name (Print): Ken Coddington	Date: 10/22/19	#1 Relinquished by (Signature):	Date: 10/23/19	#2 Relinquished by (Signature):	Date: 10/24/19	Sample Storage Time Requested:	
Sampler Signature:	Time: 0700	Company Name: DAA	Time: 1700	Company Name: FedEx	Time: 1010		
Sample Name (Print): Graham Snyder	Date: 10/22/19	#1 Received by (Signature):	Date:	#2 Received by (Signature):	Date: 10/24/19	30 DYS ORGS MTHS INORG	
Sample Signature:	Time: 0700	Company Name:	Time:	Company Name: SEALY ENVS	Time: 1010		

1/2

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HWMU16
Radford Army Ammunition Plant (RFAAP)
Semiannual Monitoring Event
DAA JN: B03204-19A

ANALYTICAL METHOD: SEE BELOW
TYPE METHOD: SEE BELOW
CLASS: TOTAL

Method SW 846-6020B/3005A (ICP/MS)

No.	ANALYTE	CAS RN	Required LOQ (µg/l) (1)
1.	Arsenic	7440-38-2	10
2.	Barium	7440-39-3	10
3.	Beryllium	7440-41-7	1
4.	Cadmium	7440-43-9	1
5.	Chromium	7440-47-3	5
6.	Cobalt	7440-48-4	5
7.	Copper	7440-50-8	5
8.	Lead	7440-92-1	2 (3) proposed per class 1 permit mod. JV 9/13/19
9.	Nickel	7440-02-0	10
10.	Vanadium	7440-62-2	10
11.	Zinc	7440-66-6	30

Method SW 7470A/CVAA

12	Mercury	7439-97-6 2/7470A	2

Notes.

- Antimony, selenium and silver deleted 4-6,2012.
- 11 Zinc QL increased 11 2016, lead increased to 2 ppb.
- 10/2016 JCF- rev 102017
- **10/2018 – Changed to 6020 "B" for Shealy. 6020 "A" can still be used. No other changes. Still current.**

* Report ad or above QL. JV 9/13/19

9/13/19 JV

Shealy Environmental Services, Inc.
Document Number: ME0018C-14

Page 1 of 1
Effective Date: 8/2/2018

Sample Receipt Checklist (SRC)

Client: DRAPER Cooler Inspected by/date: JSH / 10/24/19 Lot #: UJ24097

Means of receipt: ☐ SESI ☐ Client ☑ UPS ☐ FedEx ☐ Other: _____

☑ Yes	☐ No		1. Were custody seals present on the cooler?
☑ Yes	☐ No	☐ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 19-2194 Chlorine Strip ID: NA Tested by: JSH

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.4 / 2.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☑ Yes	☐ No		21. Was the quote number listed on the container label? If yes, Quote # 22444

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSH Date: 10/24/19

Comments:

Metals

Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-001**

Description: **16C1** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1230** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0134	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-001**

Description: **16C1** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1230** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1501	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**190**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-002**

Description: **16MW8** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0820** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0137	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-002**

Description: **16MW8** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0820** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1507	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**130**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	**7440-50-8**	**6020B**	**14**		**5.0**	**ug/L**	**1**
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-003**

Description: **16MW9** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1105** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0139	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-003**

Description: **16MW9** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1105** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1513	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1644	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**650**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**12**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-004**

Description: **16WC1A** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1005** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0142	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-004**

Description: **16WC1A** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1005** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1519	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1650	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**420**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	**7440-48-4**	**6020B**	**11**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**11**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-005**

Description: **16WDUP** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1015** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0155	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-005**

Description: **16WDUP** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1015** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1601	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1656	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**470**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	**7440-48-4**	**6020B**	**11**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	**7440-02-0**	**6020B**	**11**		**10**	**ug/L**	**1**
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-006**

Description: **16WC1B** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0920** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0157	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-006**

Description: **16WC1B** Matrix: **Aqueous**

Date Sampled: **10/23/2019 0920** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1607	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**100**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	**7440-47-3**	**6020B**	**6.6**		**5.0**	**ug/L**	**1**
Cobalt	**7440-48-4**	**6020B**	**16**		**5.0**	**ug/L**	**1**
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-007**

Description: **16-2** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1220** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0200	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-007**

Description: **16-2** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1220** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1613	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**200**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-008**

Description: **16-3** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1150** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0202	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-008**

Description: **16-3** Matrix: **Aqueous**

Date Sampled: **10/23/2019 1150** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1619	BPK	10/28/2019 1912	33592
2	3005A	6020B	10	10/30/2019 1714	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**1000**		**100**	**ug/L**	**2**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-009**

Description: **16-5** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1035** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0205	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-009**

Description: **16-5** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1035** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1625	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**170**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-010**

Description: **16WC2B** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1135** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0207	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-010**

Description: **16WC2B** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1135** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1632	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**120**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
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B = Detected in the method blank
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W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Mercury

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-011**

Description: **16SPRING** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1045** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		7470A	1	10/31/2019 0210	JMH	10/30/2019 1329	33809

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Mercury	7439-97-6	7470A	2.0	U	2.0	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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ICP-MS

Client: **Draper Aden Associates** Laboratory ID: **UJ24097-011**

Description: **16SPRING** Matrix: **Aqueous**

Date Sampled: **10/22/2019 1045** Project Name: **RAAP HWMU16-new-no J flags**

Date Received: **10/24/2019** Project Number: **B03204-19A**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6020B	1	10/30/2019 1638	BPK	10/28/2019 1912	33592

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
Arsenic	7440-38-2	6020B	10	U	10	ug/L	1
Barium	**7440-39-3**	**6020B**	**230**		**10**	**ug/L**	**1**
Beryllium	7440-41-7	6020B	1.0	U	1.0	ug/L	1
Cadmium	7440-43-9	6020B	1.0	U	1.0	ug/L	1
Chromium	7440-47-3	6020B	5.0	U	5.0	ug/L	1
Cobalt	7440-48-4	6020B	5.0	U	5.0	ug/L	1
Copper	7440-50-8	6020B	5.0	U	5.0	ug/L	1
Lead	7439-92-1	6020B	3.0	U	3.0	ug/L	1
Nickel	7440-02-0	6020B	10	U	10	ug/L	1
Vanadium	7440-62-2	6020B	10	U	10	ug/L	1
Zinc	7440-66-6	6020B	30	U	30	ug/L	1

LOQ = Limit of Quantitation
U = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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QC Summary

ICP-MS - MB

Sample ID: UQ33592-001
Batch: 33592
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
Arsenic	10	U	1	10	ug/L	10/30/2019 1424
Barium	10	U	1	10	ug/L	10/30/2019 1424
Beryllium	1.0	U	1	1.0	ug/L	10/30/2019 1424
Cadmium	1.0	U	1	1.0	ug/L	10/30/2019 1424
Chromium	5.0	U	1	5.0	ug/L	10/30/2019 1424
Cobalt	5.0	U	1	5.0	ug/L	10/30/2019 1424
Copper	5.0	U	1	5.0	ug/L	10/30/2019 1424
Lead	3.0	U	1	3.0	ug/L	10/30/2019 1424
Nickel	10	U	1	10	ug/L	10/30/2019 1424
Vanadium	10	U	1	10	ug/L	10/30/2019 1424
Zinc	30	U	1	30	ug/L	10/30/2019 1424

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - LCS

Sample ID: UQ33592-002
Batch: 33592
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	100	110		1	112	80-120	10/30/2019 1430
Barium	100	100		1	102	80-120	10/30/2019 1430
Beryllium	100	100		1	103	80-120	10/30/2019 1430
Cadmium	100	100		1	104	80-120	10/30/2019 1430
Chromium	100	100		1	104	80-120	10/30/2019 1430
Cobalt	100	110		1	110	80-120	10/30/2019 1430
Copper	100	120		1	117	80-120	10/30/2019 1430
Lead	100	100		1	102	80-120	10/30/2019 1430
Nickel	100	120		1	116	80-120	10/30/2019 1430
Vanadium	100	100		1	102	80-120	10/30/2019 1430
Zinc	100	120		1	117	80-120	10/30/2019 1430

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MS

Sample ID: UJ24097-004MS
Batch: 33592
Analytical Method: 6020B

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Arsenic	0.0	100	110		1	108	70-130	10/30/2019 1525
Barium	320	100	420		1	103	70-130	10/30/2019 1525
Beryllium	0.0	100	99		1	99	70-130	10/30/2019 1525
Cadmium	0.0	100	98		1	98	70-130	10/30/2019 1525
Chromium	0.0	100	98		1	98	70-130	10/30/2019 1525
Cobalt	11	100	110		1	99	70-130	10/30/2019 1525
Copper	0.0	100	99		1	99	70-130	10/30/2019 1525
Lead	0.0	100	100		1	104	70-130	10/30/2019 1525
Nickel	11	100	110		1	102	70-130	10/30/2019 1525
Vanadium	0.0	100	98		1	98	70-130	10/30/2019 1525
Zinc	0.0	100	100		1	105	70-130	10/30/2019 1525

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS - MSD

Sample ID: UJ24097-004MD
Batch: 33592
Analytical Method: 6020B
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 10/28/2019 1912

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Arsenic	0.0	100	110		1	107	1.3	70-130	20	10/30/2019 1531
Barium	320	100	430		1	108	1.2	70-130	20	10/30/2019 1531
Beryllium	0.0	100	98		1	98	0.63	70-130	20	10/30/2019 1531
Cadmium	0.0	100	98		1	98	0.42	70-130	20	10/30/2019 1531
Chromium	0.0	100	96		1	96	2.2	70-130	20	10/30/2019 1531
Cobalt	11	100	110		1	96	2.9	70-130	20	10/30/2019 1531
Copper	0.0	100	98		1	98	0.93	70-130	20	10/30/2019 1531
Lead	0.0	100	100		1	104	0.044	70-130	20	10/30/2019 1531
Nickel	11	100	110		1	101	1.5	70-130	20	10/30/2019 1531
Vanadium	0.0	100	96		1	96	2.0	70-130	20	10/30/2019 1531
Zinc	0.0	100	100		1	104	0.98	70-130	20	10/30/2019 1531

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MB

Sample ID: UQ33809-001
Batch: 33809
Analytical Method: 7470A
Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
Mercury	2.0	U	1	2.0	ug/L	10/31/2019 0129

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit
N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - LCS

Sample ID: UQ33809-002
Batch: 33809
Analytical Method: 7470A
Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	2.0	1.9		1	96	80-120	10/31/2019 0131

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MS

Sample ID: UJ24097-004MS
Batch: 33809
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Mercury	0.0	2.0	1.8		1	92	85-115	10/31/2019 0149

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Mercury - MSD

Sample ID: UJ24097-004MD
Batch: 33809
Analytical Method: 7470A

Matrix: Aqueous
Prep Method:
Prep Date: 10/30/2019 1329

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Mercury	0.0	2.0	1.8		1	88	4.2	85-115	20	10/31/2019 0152

LOQ = Limit of Quantitation
DL = Detection Limit
LOD = Limit of Detection

P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
U = Not detected at or above the detection limit

N = Recovery is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-MS Metals

- COVER PAGE -
INORGANIC ANALYSIS DATA PACKAGE

Client: Draper Aden Associates

SDG No.: UJ24097 **Method Type:** ICP-MS **SOW No.:**

Contract: RAAP HWMU16-new-no J **Lab Code:** Shealy **Case No.:** **SAS No.:**

Lab Sample ID	Client Sample ID	QC Description
UJ24097-001	16C1	
UJ24097-002	16MW8	
UJ24097-003	16MW9	
UJ24097-004	16WC1A	
UJ24097-004S	16WC1AS	Matrix Spike
UJ24097-004SD	16WC1ASD	Matrix Spike Duplicate
UJ24097-005	16WDUP	
UJ24097-006	16WC1B	
UJ24097-007	16-2	
UJ24097-008	16-3	
UJ24097-009	16-5	
UJ24097-010	16WC2B	
UJ24097-011	16SPRING	

Were ICP interelement corrections applied?	Yes/No	Yes	
Were ICP background corrections applied?	Yes/No	Yes	
If yes - were raw data generated before applications of background corrections?	Yes/No	No	

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:

Date: Title:

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Initial Calibration Source: VHG

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV1									
	Arsenic	102.00	100.0	102	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Barium	96.00	100.0	96	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Beryllium	101.00	100.0	101	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Cadmium	98.20	100.0	98	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Chromium	100.00	100.0	100	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Cobalt	98.20	100.0	98	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Copper	102.00	100.0	102	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Lead	97.50	100.0	97	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Nickel	101.00	100.0	101	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Vanadium	102.00	100.0	102	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
	Zinc	101.00	100.0	101	90.0 - 110.0	MS	10/30/2019	11:41	MS4103019 STD_KED
CCV1									
	Arsenic	156.00	150.0	104	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Barium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Beryllium	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Cadmium	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Chromium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Cobalt	153.00	150.0	102	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Copper	157.00	150.0	104	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Lead	149.00	150.0	99	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Nickel	159.00	150.0	106	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Vanadium	145.00	150.0	96	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
	Zinc	161.00	150.0	107	90.0 - 110.0	MS	10/30/2019	12:11	MS4103019 STD_KED
CCV2									
	Arsenic	148.00	150.0	98	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Barium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Beryllium	145.00	150.0	97	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Cadmium	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Chromium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Cobalt	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Copper	153.00	150.0	102	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Lead	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Nickel	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Vanadium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED
	Zinc	152.00	150.0	102	90.0 - 110.0	MS	10/30/2019	13:24	MS4103019 STD_KED

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Initial Calibration Source: VHG

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV3									
	Arsenic	155.00	150.0	103	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Barium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Beryllium	148.00	150.0	98	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Cadmium	151.00	150.0	101	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Chromium	144.00	150.0	96	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Cobalt	151.00	150.0	101	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Copper	154.00	150.0	103	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Lead	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Nickel	157.00	150.0	105	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Vanadium	143.00	150.0	95	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
	Zinc	159.00	150.0	106	90.0 - 110.0	MS	10/30/2019	14:36	MS4103019 STD_KED
CCV4									
	Arsenic	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Barium	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Beryllium	146.00	150.0	98	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Cadmium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Chromium	146.00	150.0	98	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Cobalt	151.00	150.0	101	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Copper	157.00	150.0	104	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Lead	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Nickel	152.00	150.0	101	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Vanadium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
	Zinc	154.00	150.0	102	90.0 - 110.0	MS	10/30/2019	15:49	MS4103019 STD_KED
CCV5									
	Arsenic	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Barium	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Beryllium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Cadmium	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Chromium	145.00	150.0	97	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Cobalt	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Copper	152.00	150.0	101	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Lead	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Nickel	148.00	150.0	99	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Vanadium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED
	Zinc	153.00	150.0	102	90.0 - 110.0	MS	10/30/2019	17:02	MS4103019 STD_KED

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INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Initial Calibration Source: VHG

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV6									
	Arsenic	149.00	150.0	100	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Barium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Beryllium	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Cadmium	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Chromium	145.00	150.0	97	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Cobalt	150.00	150.0	100	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Copper	153.00	150.0	102	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Lead	147.00	150.0	98	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Nickel	151.00	150.0	101	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Vanadium	146.00	150.0	97	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED
	Zinc	153.00	150.0	102	90.0 - 110.0	MS	10/30/2019	18:15	MS4103019 STD_KED

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	½ LOQ	½ LOQ	M	Analysis Date	Analysis Time	Run
ICB1										
	Arsenic	-0.167	+/-1.000	U	1.000	1.000	MS	10/30/2019	11:53	MS4103019 S
	Barium	0.001	+/-2.500	U	2.500	2.500	MS	10/30/2019	11:53	MS4103019 S
	Beryllium	0.007	+/-0.200	U	0.200	0.200	MS	10/30/2019	11:53	MS4103019 S
	Cadmium	0.004	+/-0.250	U	0.250	0.250	MS	10/30/2019	11:53	MS4103019 S
	Chromium	-0.077	+/-2.500	U	2.500	2.500	MS	10/30/2019	11:53	MS4103019 S
	Cobalt	0.004	+/-0.500	U	0.500	0.500	MS	10/30/2019	11:53	MS4103019 S
	Copper	0.007	+/-1.000	U	1.000	1.000	MS	10/30/2019	11:53	MS4103019 S
	Lead	0.013	+/-0.500	U	0.500	0.500	MS	10/30/2019	11:53	MS4103019 S
	Nickel	-0.041	+/-2.500	U	2.500	2.500	MS	10/30/2019	11:53	MS4103019 S
	Vanadium	-0.069	+/-2.500	U	2.500	2.500	MS	10/30/2019	11:53	MS4103019 S
	Zinc	-0.22	+/-5.00	U	5.00	5.00	MS	10/30/2019	11:53	MS4103019 S
CCB1										
	Arsenic	-0.226	+/-1.000	U	1.000	1.000	MS	10/30/2019	12:17	MS4103019 S
	Barium	0.006	+/-2.500	U	2.500	2.500	MS	10/30/2019	12:17	MS4103019 S
	Beryllium	0.017	+/-0.200	U	0.200	0.200	MS	10/30/2019	12:17	MS4103019 S
	Cadmium	0.006	+/-0.250	U	0.250	0.250	MS	10/30/2019	12:17	MS4103019 S
	Chromium	-0.072	+/-2.500	U	2.500	2.500	MS	10/30/2019	12:17	MS4103019 S
	Cobalt	0.007	+/-0.500	U	0.500	0.500	MS	10/30/2019	12:17	MS4103019 S
	Copper	0.024	+/-1.000	U	1.000	1.000	MS	10/30/2019	12:17	MS4103019 S
	Lead	0.017	+/-0.500	U	0.500	0.500	MS	10/30/2019	12:17	MS4103019 S
	Nickel	0.066	+/-2.500	U	2.500	2.500	MS	10/30/2019	12:17	MS4103019 S
	Vanadium	-0.040	+/-2.500	U	2.500	2.500	MS	10/30/2019	12:17	MS4103019 S
	Zinc	-0.02	+/-5.00	U	5.00	5.00	MS	10/30/2019	12:17	MS4103019 S

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	½ LOQ	½ LOQ	M	Analysis Date	Analysis Time	Run
CCB2										
	Arsenic	-0.236	+/-1.000	U	1.000	1.000	MS	10/30/2019	13:30	MS4103019 S
	Barium	-0.010	+/-2.500	U	2.500	2.500	MS	10/30/2019	13:30	MS4103019 S
	Beryllium	0.016	+/-0.200	U	0.200	0.200	MS	10/30/2019	13:30	MS4103019 S
	Cadmium	0.003	+/-0.250	U	0.250	0.250	MS	10/30/2019	13:30	MS4103019 S
	Chromium	-0.104	+/-2.500	U	2.500	2.500	MS	10/30/2019	13:30	MS4103019 S
	Cobalt	0.000	+/-0.500	U	0.500	0.500	MS	10/30/2019	13:30	MS4103019 S
	Copper	-0.080	+/-1.000	U	1.000	1.000	MS	10/30/2019	13:30	MS4103019 S
	Lead	0.005	+/-0.500	U	0.500	0.500	MS	10/30/2019	13:30	MS4103019 S
	Nickel	-0.694	+/-2.500	U	2.500	2.500	MS	10/30/2019	13:30	MS4103019 S
	Vanadium	-0.114	+/-2.500	U	2.500	2.500	MS	10/30/2019	13:30	MS4103019 S
	Zinc	-1.69	+/-5.00	U	5.00	5.00	MS	10/30/2019	13:30	MS4103019 S
CCB3										
	Arsenic	-0.061	+/-1.000	U	1.000	1.000	MS	10/30/2019	14:42	MS4103019 S
	Barium	-0.010	+/-2.500	U	2.500	2.500	MS	10/30/2019	14:42	MS4103019 S
	Beryllium	0.013	+/-0.200	U	0.200	0.200	MS	10/30/2019	14:42	MS4103019 S
	Cadmium	0.005	+/-0.250	U	0.250	0.250	MS	10/30/2019	14:42	MS4103019 S
	Chromium	-0.102	+/-2.500	U	2.500	2.500	MS	10/30/2019	14:42	MS4103019 S
	Cobalt	0.001	+/-0.500	U	0.500	0.500	MS	10/30/2019	14:42	MS4103019 S
	Copper	-0.088	+/-1.000	U	1.000	1.000	MS	10/30/2019	14:42	MS4103019 S
	Lead	0.008	+/-0.500	U	0.500	0.500	MS	10/30/2019	14:42	MS4103019 S
	Nickel	-0.776	+/-2.500	U	2.500	2.500	MS	10/30/2019	14:42	MS4103019 S
	Vanadium	-0.112	+/-2.500	U	2.500	2.500	MS	10/30/2019	14:42	MS4103019 S
	Zinc	-1.82	+/-5.00	U	5.00	5.00	MS	10/30/2019	14:42	MS4103019 S

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	½ LOQ	½ LOQ	M	Analysis Date	Analysis Time	Run
CCB4										
	Arsenic	-0.064	+/-1.000	U	1.000	1.000	MS	10/30/2019	15:55	MS4103019 S
	Barium	-0.005	+/-2.500	U	2.500	2.500	MS	10/30/2019	15:55	MS4103019 S
	Beryllium	0.013	+/-0.200	U	0.200	0.200	MS	10/30/2019	15:55	MS4103019 S
	Cadmium	0.009	+/-0.250	U	0.250	0.250	MS	10/30/2019	15:55	MS4103019 S
	Chromium	-0.100	+/-2.500	U	2.500	2.500	MS	10/30/2019	15:55	MS4103019 S
	Cobalt	0.004	+/-0.500	U	0.500	0.500	MS	10/30/2019	15:55	MS4103019 S
	Copper	-0.079	+/-1.000	U	1.000	1.000	MS	10/30/2019	15:55	MS4103019 S
	Lead	0.013	+/-0.500	U	0.500	0.500	MS	10/30/2019	15:55	MS4103019 S
	Nickel	-0.761	+/-2.500	U	2.500	2.500	MS	10/30/2019	15:55	MS4103019 S
	Vanadium	-0.112	+/-2.500	U	2.500	2.500	MS	10/30/2019	15:55	MS4103019 S
	Zinc	-1.85	+/-5.00	U	5.00	5.00	MS	10/30/2019	15:55	MS4103019 S
CCB5										
	Arsenic	-0.002	+/-1.000	U	1.000	1.000	MS	10/30/2019	17:08	MS4103019 S
	Barium	-0.004	+/-2.500	U	2.500	2.500	MS	10/30/2019	17:08	MS4103019 S
	Beryllium	0.000	+/-0.200	U	0.200	0.200	MS	10/30/2019	17:08	MS4103019 S
	Cadmium	0.010	+/-0.250	U	0.250	0.250	MS	10/30/2019	17:08	MS4103019 S
	Chromium	-0.097	+/-2.500	U	2.500	2.500	MS	10/30/2019	17:08	MS4103019 S
	Cobalt	0.006	+/-0.500	U	0.500	0.500	MS	10/30/2019	17:08	MS4103019 S
	Copper	-0.067	+/-1.000	U	1.000	1.000	MS	10/30/2019	17:08	MS4103019 S
	Lead	0.011	+/-0.500	U	0.500	0.500	MS	10/30/2019	17:08	MS4103019 S
	Nickel	-0.779	+/-2.500	U	2.500	2.500	MS	10/30/2019	17:08	MS4103019 S
	Vanadium	-0.108	+/-2.500	U	2.500	2.500	MS	10/30/2019	17:08	MS4103019 S
	Zinc	-1.85	+/-5.00	U	5.00	5.00	MS	10/30/2019	17:08	MS4103019 S

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	½ LOQ	½ LOQ	M	Analysis Date	Analysis Time	Run
CCB6										
	Arsenic	-0.145	+/-1.000	U	1.000	1.000	MS	10/30/2019	18:21	MS4103019 S
	Barium	0.008	+/-2.500	U	2.500	2.500	MS	10/30/2019	18:21	MS4103019 S
	Beryllium	0.017	+/-0.200	U	0.200	0.200	MS	10/30/2019	18:21	MS4103019 S
	Cadmium	0.005	+/-0.250	U	0.250	0.250	MS	10/30/2019	18:21	MS4103019 S
	Chromium	-0.077	+/-2.500	U	2.500	2.500	MS	10/30/2019	18:21	MS4103019 S
	Cobalt	0.005	+/-0.500	U	0.500	0.500	MS	10/30/2019	18:21	MS4103019 S
	Copper	-0.010	+/-1.000	U	1.000	1.000	MS	10/30/2019	18:21	MS4103019 S
	Lead	0.008	+/-0.500	U	0.500	0.500	MS	10/30/2019	18:21	MS4103019 S
	Nickel	-0.306	+/-2.500	U	2.500	2.500	MS	10/30/2019	18:21	MS4103019 S
	Vanadium	-0.113	+/-2.500	U	2.500	2.500	MS	10/30/2019	18:21	MS4103019 S
	Zinc	-0.54	+/-5.00	U	5.00	5.00	MS	10/30/2019	18:21	MS4103019 S

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INTERFERENCE CHECK SAMPLE

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

ICS Source: Inorganic Ventures **Instrument ID:** ICPMS4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window	Analysis Date	Analysis Time	Run Number
ICSA								
	Arsenic	-0.013			-4.000 to 4.000	10/30/2019	11:59	MS4103019 S
	Barium	0.19			-10.00 to 10.00	10/30/2019	11:59	MS4103019 S
	Beryllium	0.031			-0.800 to 0.800	10/30/2019	11:59	MS4103019 S
	Cadmium	0.68			-1.00 to 1.00	10/30/2019	11:59	MS4103019 S
	Chromium	0.19			-10.00 to 10.00	10/30/2019	11:59	MS4103019 S
	Cobalt	0.31			-10.00 to 10.00	10/30/2019	11:59	MS4103019 S
	Copper	0.28			-10.00 to 10.00	10/30/2019	11:59	MS4103019 S
	Lead	0.097			-2.000 to 2.000	10/30/2019	11:59	MS4103019 S
	Nickel	-0.43			-10.00 to 10.00	10/30/2019	11:59	MS4103019 S
	Vanadium	-0.063			-10.000 to 10.000	10/30/2019	11:59	MS4103019 S
	Zinc	-1.7			-20.0 to 20.0	10/30/2019	11:59	MS4103019 S

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SERIAL DILUTION SAMPLE SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Matrix: WATER **Level:** **Client ID:** 16WC1AL

Sample ID: **UJ24097-004** **Serial Dilution ID:** **UJ24097-004L**

Batch Number: 33592

Analyte	Initial Result ug/L	C	Serial Result ug/L	C	% Difference	Qual	Acceptance Limits	M
Arsenic	10.000	U	50.000	U			10.00 %	MS
Barium	320.000		320.000		0.288		10.00 %	MS
Beryllium	1.000	U	5.000	U			10.00 %	MS
Cadmium	1.000	U	5.000	U			10.00 %	MS
Chromium	5.000	U	25.000	U			10.00 %	MS
Cobalt	11.000		25.000	U	100.0		10.00 %	MS
Copper	5.000	U	25.000	U			10.00 %	MS
Lead	3.000	U	15.000	U			10.00 %	MS
Nickel	11.000		50.000	U	100.0		10.00 %	MS
Vanadium	10.000	U	50.000	U			10.00 %	MS
Zinc	30.00	U	150.00	U			10.00 %	MS

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: ICPMS4 Run Number: MS4103019 STD_KED

Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1034																										
S0	1.00	1040				X	X	X	X		X	X	X		X				X						X	X	
S001	1.00	1046				X	X	X	X		X	X	X		X				X						X	X	
S01	1.00	1052				X	X	X	X		X	X	X		X				X						X	X	
S02	1.00	1058				X		X	X			X	X		X												
S03	1.00	1104				X	X	X	X		X	X	X		X				X						X	X	
S04	1.00	1110				X	X	X	X		X	X	X		X				X						X	X	
S05	1.00	1116				X	X	X	X		X	X	X		X				X						X	X	
S06	1.00	1122				X	X	X	X		X	X	X		X				X						X	X	
S07	1.00	1128				X	X	X	X		X	X	X		X				X						X	X	
S08	1.00	1135																									
ICV1	1.00	1141				X	X	X	X		X	X	X		X				X						X	X	
ZZZZZZ	2.00	1147																									
ICB1	1.00	1153				X	X	X	X		X	X	X		X				X						X	X	
ICSA	1.00	1159				X	X	X	X		X	X	X		X				X						X	X	
ZZZZZZ	10.00	1205																									
CCV1	1.00	1211				X	X	X	X		X	X	X		X				X						X	X	
CCB1	1.00	1217				X	X	X	X		X	X	X		X				X						X	X	
ZZZZZZ	1.00	1223																									
ZZZZZZ	1.00	1229																									
ZZZZZZ	1.00	1235																									
ZZZZZZ	1.00	1241																									
ZZZZZZ	1.00	1247																									
ZZZZZZ	1.00	1253																									
ZZZZZZ	1.00	1259																									
ZZZZZZ	1.00	1305																									
ZZZZZZ	1.00	1311																									
ZZZZZZ	1.00	1317																									
CCV2	1.00	1324				X	X	X	X		X	X	X		X				X						X	X	
CCB2	1.00	1330				X	X	X	X		X	X	X		X				X						X	X	
ZZZZZZ	1.00	1336																									
ZZZZZZ	1.00	1342																									
ZZZZZZ	1.00	1348																									
ZZZZZZ	5.00	1354																									
ZZZZZZ	5.00	1400																									
ZZZZZZ	5.00	1406																									

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: ICPMS4 Run Number: MS4103019 STD_KED

Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	5.00	1412																										
ZZZZZZ	25.00	1418																										
UO33592-001	1.00	1424				X	X	X	X		X	X	X		X				X						X	X		
UO33592-002	1.00	1430				X	X	X	X		X	X	X		X				X						X	X		
CCV3	1.00	1436				X	X	X	X		X	X	X		X				X						X	X		
CCB3	1.00	1442				X	X	X	X		X	X	X		X				X						X	X		
ZZZZZZ	1.00	1448																										
ZZZZZZ	1.00	1454																										
UJ24097-001	1.00	1501				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-002	1.00	1507				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-003	1.00	1513				X		X	X		X	X	X		X				X						X	X		
UJ24097-004	1.00	1519				X		X	X		X	X	X		X				X						X	X		
UJ24097-004S	1.00	1525				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-004SD	1.00	1531				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-004L	5.00	1537				X	X	X	X		X	X	X		X				X						X	X		
ZZZZZZ	1.00	1543																										
CCV4	1.00	1549				X	X	X	X		X	X	X		X				X						X	X		
CCB4	1.00	1555				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-005	1.00	1601				X		X	X		X	X	X		X				X						X	X		
UJ24097-006	1.00	1607				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-007	1.00	1613				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-008	1.00	1619				X		X	X		X	X	X		X				X						X	X		
UJ24097-009	1.00	1625				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-010	1.00	1632				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-011	1.00	1638				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-003	10.00	1644					X																					
UJ24097-004	10.00	1650					X																					
UJ24097-005	10.00	1656					X																					
CCV5	1.00	1702				X	X	X	X		X	X	X		X				X						X	X		
CCB5	1.00	1708				X	X	X	X		X	X	X		X				X						X	X		
UJ24097-008	10.00	1714					X																					
ZZZZZZ	1.00	1720																										
ZZZZZZ	1.00	1726																										
ZZZZZZ	1.00	1732																										
ZZZZZZ	1.00	1738																										
ZZZZZZ	1.00	1744																										

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: ICPMS4 Run Number: MS4103019 STD_KED

Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	25.00	1751																										
ZZZZZZ	1.00	1757																										
ZZZZZZ	1.00	1803																										
ZZZZZZ	1.00	1809																										
CCV6	1.00	1815				X	X	X	X		X	X	X		X				X						X	X		
CCB6	1.00	1821				X	X	X	X		X	X	X		X				X						X	X		
ZZZZZZ	1.00	1827																										
ZZZZZZ	1.00	1833																										
ZZZZZZ	1.00	1839																										
ZZZZZZ	1.00	1845																										
ZZZZZZ	1.00	1851																										
ZZZZZZ	1.00	1857																										
ZZZZZZ	5.00	1903																										
ZZZZZZ	1.00	1910																										
ZZZZZZ	5.00	1916																										
ZZZZZZ	1.00	1922																										
ZZZZZZ	1.00	1928																										
ZZZZZZ	1.00	1934																										
ZZZZZZ	1.00	1940																										
ZZZZZZ	1.00	1946																										
ZZZZZZ	5.00	1952																										
ZZZZZZ	10.00	1958																										
ZZZZZZ	10.00	2004																										
ZZZZZZ	10.00	2010																										
ZZZZZZ	50.00	2016																										
ZZZZZZ	1.00	2023																										
ZZZZZZ	1.00	2029																										
ZZZZZZ	1.00	2035																										
ZZZZZZ	1.00	2041																										
ZZZZZZ	1.00	2047																										
ZZZZZZ	1.00	2053																										
ZZZZZZ	1.00	2059																										
ZZZZZZ	1.00	2105																										
ZZZZZZ	1.00	2111																										
ZZZZZZ	1.00	2117																										
ZZZZZZ	1.00	2123																										

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: ICPMS4 Run Number: MS4103019 STD_KED

Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	2130																								
ZZZZZZ	1.00	2136																								
ZZZZZZ	1.00	2142																								
ZZZZZZ	1.00	2148																								
ZZZZZZ	1.00	2154																								
ZZZZZZ	1.00	2200																								
ZZZZZZ	1.00	2206																								
ZZZZZZ	1.00	2212																								
ZZZZZZ	1.00	2218																								
ZZZZZZ	1.00	2224																								
ZZZZZZ	1.00	2230																								
ZZZZZZ	1.00	2237																								
ZZZZZZ	1.00	2243																								
ZZZZZZ	1.00	2249																								
ZZZZZZ	1.00	2255																								
ZZZZZZ	5.00	2301																								
ZZZZZZ	1.00	2307																								
ZZZZZZ	1.00	2313																								
ZZZZZZ	1.00	2319																								
ZZZZZZ	1.00	2325																								
ZZZZZZ	1.00	2331																								
ZZZZZZ	1.00	2337																								
ZZZZZZ	1.00	2344																								

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Shealy Environmental Services, In Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: NRAS No.: SDG NO.: UJ24097

ICP-MS Instrument ID: ICPMS4 Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
Tune	ZZZZZZ	1034	0											
S0	S0	1040	100		100		100		100		100		100	
S001	S001	1046	100		101		100		100		99		100	
S01	S01	1052	100		101		100		102		100		100	
S02	S02	1058	98		100		98		100		98		98	
S03	S03	1104	102		98		94		96		101		97	
S04	S04	1110	99		95		90		92		98		93	
S05	S05	1116	94		92		85		88		95		91	
S06	S06	1122	89		89		83		87		94		90	
S07	S07	1128	86		88		83		87		92		90	
S08	S08	1135	102		95		89		91		98		92	
ICV1	ICV1	1141	93		93		85		89		96		92	
ICV1	ZZZZZZ	1147	0											
ICB1	ICB1	1153	103		95		87		88		98		91	
ICSA	ICSA	1159	70		88		87		82		85		88	
ICSA	ZZZZZZ	1205	0											
CCV1	CCV1	1211	90		92		95		94		94		94	
CCB1	CCB1	1217	99		97		101		98		99		95	
UQ33550-001	ZZZZZZ	1223	0											
UQ33550-002	ZZZZZZ	1229	0											
UJ24020-001	ZZZZZZ	1235	0											
UJ24020-001	ZZZZZZ	1241	0											
UJ24020-002	ZZZZZZ	1247	0											
UJ24020-002	ZZZZZZ	1253	0											
UJ24023-001	ZZZZZZ	1259	0											
UJ24023-001	ZZZZZZ	1305	0											
UJ24023-002	ZZZZZZ	1311	0											
UJ24023-002	ZZZZZZ	1317	0											

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Shealy Environmental Services, In Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: NRAS No.: SDG NO.: UJ24097

ICP-MS Instrument ID: ICPMS4 Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
CCV2	CCV2	1324	90		86		88		83		94		87	
CCB2	CCB2	1330	98		91		91		86		92		88	
UJ24065-001	ZZZZZZ	1336	0											
UJ24065-001	ZZZZZZ	1342	0											
UJ24065-001	ZZZZZZ	1348	0											
UJ24065-001	ZZZZZZ	1354	0											
UJ24065-001	ZZZZZZ	1400	0											
UJ24065-001	ZZZZZZ	1406	0											
UJ24065-001	ZZZZZZ	1412	0											
UJ24065-001	ZZZZZZ	1418	0											
UQ33592-001	UQ33592-001MB	1424	97		96		109		98		96		98	
UQ33592-002	LCS	1430	97		96		104		94		97		95	
CCV3	CCV3	1436	88		90		97		91		93		93	
CCB3	CCB3	1442	93		94		99		94		93		93	
UJ19003-008	ZZZZZZ	1448	0											
UJ19003-008	ZZZZZZ	1454	0											
UJ24097-001	16C1	1501	87		90		101		96		93		99	
UJ24097-002	16MW8	1507	96		96		99		92		96		110	
UJ24097-003	16MW9	1513	83		90		100		96		91		92	
UJ24097-004	16WC1A	1519	86		90		98		95		92		93	
UJ24097-004	16WC1AS	1525	86		90		96		93		93		94	
UJ24097-004	16WC1ASD	1531	85		90		95		94		94		94	
UJ24097-004	16WC1AL	1537	96		97		100		95		97		97	
UJ24097-004	ZZZZZZ	1543	0											
CCV4	CCV4	1549	91		91		91		87		93		92	
CCB4	CCB4	1555	95		95		95		91		94		93	
UJ24097-005	16WDUP	1601	88		91		93		95		94		94	
UJ24097-006	16WC1B	1607	92		93		92		89		96		149	
UJ24097-007	16-2	1613	91		93		95		95		95		95	

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Shealy Environmental Services, In Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: NRAS No.: SDG NO.: UJ24097

ICP-MS Instrument ID: ICPMS4 Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
UJ24097-008	16-3	1619	96		96		99		93		99		96	
UJ24097-009	16-5	1625	92		93		95		92		96		93	
UJ24097-010	16WC2B	1632	93		93		94		90		96		92	
UJ24097-011	16SPRING	1638	89		92		94		91		94		93	
UJ24097-003	16MW9	1644	94		98		101		96		94		97	
UJ24097-004	16WC1A	1650	95		97		100		95		95		96	
UJ24097-005	16WDUP	1656	94		96		99		95		94		95	
CCV5	CCV5	1702	90		91		89		88		94		92	
CCB5	CCB5	1708	96		95		92		89		93		92	
UJ24097-008	16-3	1714	98		97		95		93		95		95	
UQ33151-001	ZZZZZZ	1720	0											
UQ33151-002	ZZZZZZ	1726	0											
UQ33197-001	ZZZZZZ	1732	0											
UQ33197-002	ZZZZZZ	1738	0											
UJ22077-001	ZZZZZZ	1744	0											
UJ23031-001	ZZZZZZ	1751	0											
UJ23100-001	ZZZZZZ	1757	0											
UJ23103-001	ZZZZZZ	1803	0											
UJ23067-001	ZZZZZZ	1809	0											
CCV6	CCV6	1815	90		88		89		85		91		89	
CCB6	CCB6	1821	95		93		91		87		93		89	
UJ23077-001	ZZZZZZ	1827	0											
UQ33748-001	ZZZZZZ	1833	0											
UQ33748-002	ZZZZZZ	1839	0											
UJ21007-001	ZZZZZZ	1845	0											
UJ21007-002	ZZZZZZ	1851	0											
UJ28027-003	ZZZZZZ	1857	0											
UJ28027-003	ZZZZZZ	1903	0											

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Shealy Environmental Services, In Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: NRAS No.: SDG NO.: UJ24097

ICP-MS Instrument ID: ICPMS4 Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
UJ28038-003	ZZZZZZ	1910	0											
UJ28038-003	ZZZZZZ	1916	0											
UJ28022-001	ZZZZZZ	1922	0											
CCV	ZZZZZZ	1928	0											
CCB	ZZZZZZ	1934	0											
UJ28022-001	ZZZZZZ	1940	0											
UJ28022-001	ZZZZZZ	1946	0											
UJ28022-001	ZZZZZZ	1952	0											
UJ28022-001	ZZZZZZ	1958	0											
UJ28022-001	ZZZZZZ	2004	0											
UJ28022-001	ZZZZZZ	2010	0											
UJ28022-001	ZZZZZZ	2016	0											
UQ33743-001	ZZZZZZ	2023	0											
UQ33743-002	ZZZZZZ	2029	0											
UH09021-004	ZZZZZZ	2035	0											
CCV	ZZZZZZ	2041	0											
CCB	ZZZZZZ	2047	0											
UJ18065-001	ZZZZZZ	2053	0											
UI26045-001	ZZZZZZ	2059	0											
UI26045-002	ZZZZZZ	2105	0											
UI26045-003	ZZZZZZ	2111	0											
UI26045-004	ZZZZZZ	2117	0											
UI26045-005	ZZZZZZ	2123	0											
UI26045-006	ZZZZZZ	2130	0											
UJ26017-001	ZZZZZZ	2136	0											
UJ26017-002	ZZZZZZ	2142	0											
UJ26017-003	ZZZZZZ	2148	0											
CCV	ZZZZZZ	2154	0											
CCB	ZZZZZZ	2200	0											

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Lab Name: Shealy Environmental Services, In Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: NRAS No.: SDG NO.: UJ24097

ICP-MS Instrument ID: ICPMS4 Start Date: 10/30/2019 End Date: 10/30/2019

EPA Sample No.	Client ID	Time	Internal Standards %RI For:											
			Element	Q	Element	Q	Element	Q	Element	Q	Element	Q	Element	Q
UJ26017-004	ZZZZZZ	2206	0											
UJ26017-005	ZZZZZZ	2212	0											
UJ26017-006	ZZZZZZ	2218	0											
UJ26017-007	ZZZZZZ	2224	0											
UJ28009-001	ZZZZZZ	2230	0											
UJ28009-002	ZZZZZZ	2237	0											
UJ28009-003	ZZZZZZ	2243	0											
UJ28009-003	ZZZZZZ	2249	0											
UJ28009-003	ZZZZZZ	2255	0											
UJ28009-003	ZZZZZZ	2301	0											
CCV	ZZZZZZ	2307	0											
CCB	ZZZZZZ	2313	0											
UJ28009-003	ZZZZZZ	2319	0											
CCV	ZZZZZZ	2325	0											
CCB	ZZZZZZ	2331	0											
IS	ZZZZZZ	2337	0											
RINSE	ZZZZZZ	2344	0											

FORM 15-IN

INITIAL CALIBRATION

Lab Name: Shealy Environmental Services, Inc. **Contract:** RAAP HWMU16-new-no J flags

Lab Code: Shealy **Case No.:** **MA No.:** **SDG No.:** UJ24097

Instrument ID: ICPMS4 **Start Date:** 10/30/2019

Analytical Method: ICP-MS **Run Batch:** MS4103019 STD_KED

Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Arsenic	0.00	0	0	2.00	2.0	-2	5.00	5.0	0
Barium	0.00	0	0	5.00	4.8	-4			0
Beryllium	0.00	0	0	0.400	0.38	-4	5.00	5.1	2
Cadmium	0.00	0	0	0.500	0.44	-12	5.00	5.0	0
Chromium	0.00	0	0	5.00	5.1	1			0
Cobalt	0.00	0	0	1.00	1.0	1	5.00	5.1	3
Copper	0.00	0	0	2.00	2.1	7	5.00	5.5	10
Lead	0.00	0	0	1.00	0.94	-6	5.00	4.9	-3
Nickel	0.00	0	0	5.00	4.9	-2			0
Vanadium	0.00	0	0	5.00	4.9	-3			0
Zinc	0.00	0	0	10.0	9.8	-2			0

FORM 15-IN

INITIAL CALIBRATION

Lab Name: Shealy Environmental Services, **Contract:** RAAP HWMU16-new-no J flags

Lab Code: Shealy **Case No.:** **MA No.:** **SDG No.:** UJ24097

Instrument ID: ICPMS4 **Start Date:** 10/30/2019

Analytical Method: ICP-MS **Run Batch:** MS4103019 STD_KED

Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Arsenic	25.0	25	-1	50.0	49	-2	150	143	-4
Barium	25.0	24	-2	50.0	49	-2	150	145	-3
Beryllium	25.0	25	0	50.0	50	-1	150	146	-3
Cadmium	25.0	25	1	50.0	51	3	150	146	-3
Chromium	25.0	25	1	50.0	50	1	150	148	-2
Cobalt	25.0	25	1	50.0	50	0	150	146	-3
Copper	25.0	27	6	50.0	53	5	150	151	0
Lead	25.0	24	-6	50.0	48	-3	150	144	-4
Nickel	25.0	26	5	50.0	52	4	150	149	-1
Vanadium	25.0	25	-2	50.0	50	1	150	149	-1
Zinc	25.0	25	1	50.0	51	2	150	149	-1

FORM 15-IN

INITIAL CALIBRATION

Lab Name: Shealy Environmental Services, **Contract:** RAAP HWMU16-new-no J flags

Lab Code: Shealy **Case No.:** **MA No.:** **SDG No.:** UJ24097

Instrument ID: ICPMS4 **Start Date:** 10/30/2019

Analytical Method: ICP-MS **Run Batch:** MS4103019 STD_KED

Concentration Units: ug/L

Analyte	True	Found	%D	True	Found	%D	True	Found	%D
Arsenic	225	225	0	300	304	1			
Barium	225	228	1	300	301	0			
Beryllium	225	224	0	300	298	-1			
Cadmium	225	226	0	300	301	0			
Chromium	225	222	-1	300	290	-3			
Cobalt	225	221	-2	300	295	-2			
Copper	225	220	-2	300	288	-4			
Lead	225	227	1	300	302	1			
Nickel	225	224	0	300	296	-1			
Vanadium	225	228	1	300	298	-1			
Zinc	225	227	1	300	306	2			

Raw Sample Data

ICPMS4 Tune Performance Report

System

Time	10/30/2019 10:12:29
Operator	EQI\eqi.im
Template	KED CLP
Serial number	RQ00715
Last Autotune	Autotune-!CaliTune KEDS Line1-20191030-100318685.imatdat
Solution	RQ Tune Soln
	ISM-4467

Sensitivity & Stability Test

Result	Runs	Sweeps
Passed	5	10

Sensitivity, Background, Interferences

Analyte	Result	Value	Condition	Limit
Bkg4.5	Passed	0.0 CPS	Less than	0.5 CPS
Bkg220.7	Passed	0.0 CPS	Less than	2.0 CPS
9Be	Passed	3,449.0 CPS	Greater than	750.0 CPS
59Co/35Cl.16O	Passed	24.4	Greater than	18.0
59Co	Passed	111,495.0 CPS	Greater than	30,000.0 CPS
26Mg	Passed	5,528.0 CPS	Greater than	750.0 CPS
25Mg	Passed	4,155.0 CPS	Greater than	750.0 CPS
24Mg	Passed	28,100.0 CPS	Greater than	1,000.0 CPS
238U	Passed	693,875.0 CPS	Greater than	85,000.0 CPS
209Bi	Passed	487,205.0 CPS	Greater than	42,500.0 CPS
208Pb	Passed	337,115.0 CPS	Greater than	10,000.0 CPS
207Pb	Passed	140,838.0 CPS	Greater than	10,000.0 CPS
206Pb	Passed	153,579.0 CPS	Greater than	10,000.0 CPS
140Ce.16O/140Ce	Passed	0.0063	Less than	0.03
137Ba++/137Ba	Passed	0.0447	Less than	0.05
115In	Passed	184,113.0 CPS	Greater than	10,000.0 CPS
113In	Passed	7,567.0 CPS	Greater than	1,000.0 CPS

Stability

Run number	9Be	24Mg	25Mg	26Mg	59Co	113In	115In	206Pb	207Pb	208Pb
1	3409	27957	4122	5571	111744	7499	182184	152819	141746	337377
2	3403	27865	4191	5616	110288	7508	184063	153315	141555	339355
3	3487	28124	4151	5479	111170	7477	183884	156023	138997	342859
4	3510	28268	4207	5436	112920	7787	184456	153598	140849	335290
5	3432	28285	4108	5537	111351	7565	185979	152142	141045	330693
Average	3448	28100	4156	5528	111495	7567	184113	153579	140838	337115
RSD	1.39 %	0.66 %	1.03 %	1.30 %	0.86 %	1.68 %	0.74 %	0.96 %	0.78 %	1.35 %

Mass Calibration Test

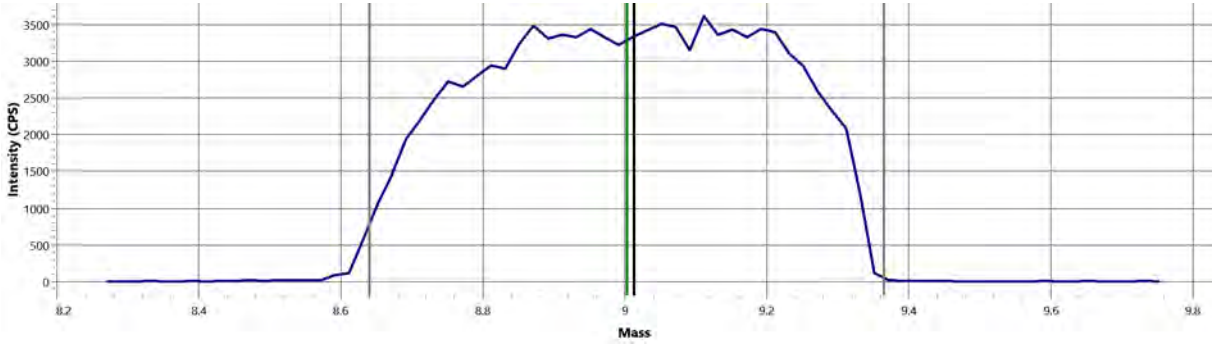
Peak width measured at 10 % of peak maximum

Result	Channels	Dwell	MeasureWidth	PointSpacing	Sweeps
Passed	75	0.04	1.5	0.02	5

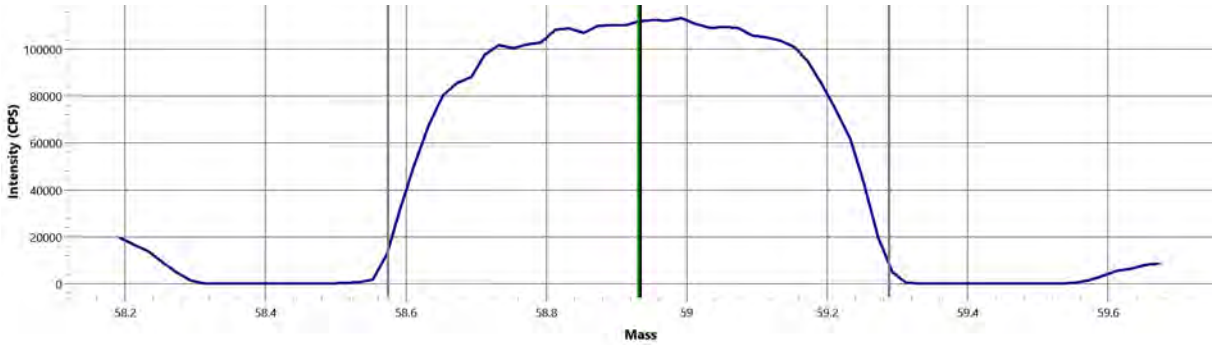
Analyte	Result	Centroid	Offset	Peak Width	Peak Width Min	Peak Width Max
9Be	Passed	9.0016	0.0105	0.725	0.650	0.850
24Mg	Passed	23.9893	0.0042	0.696	0.650	0.850
25Mg	Passed	24.9946	0.0088	0.695	0.650	0.850
26Mg	Passed	25.9909	0.0083	0.703	0.650	0.850
59Co	Passed	58.9305	0.0027	0.713	0.650	0.850
113In	Passed	112.8971	0.0069	0.725	0.650	0.850
115In	Passed	114.9013	0.0026	0.721	0.650	0.850
206Pb	Passed	205.9843	0.0098	0.692	0.650	0.850
207Pb	Passed	206.9868	0.0109	0.693	0.650	0.850
208Pb	Passed	207.9899	0.0132	0.692	0.650	0.850
209Bi	Passed	208.9917	0.0114	0.692	0.650	0.850
238U	Passed	238.0506	0.0002	0.717	0.650	0.850

Mass Calibration Peaks

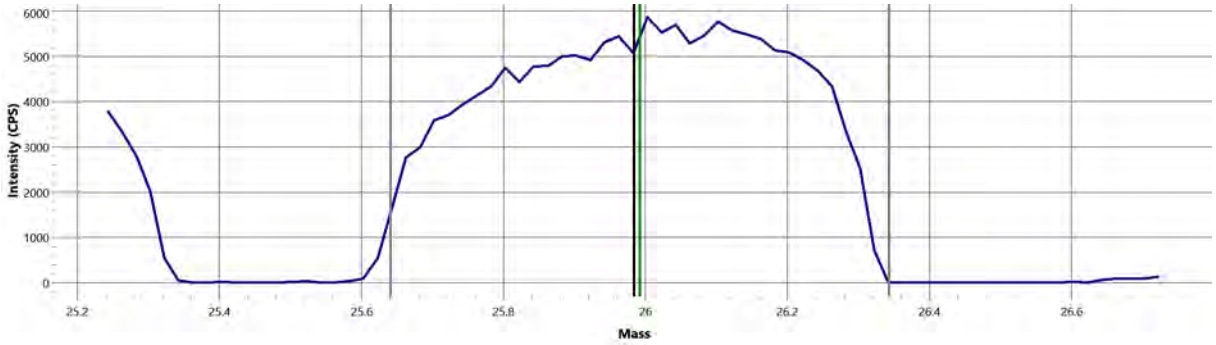
9Be



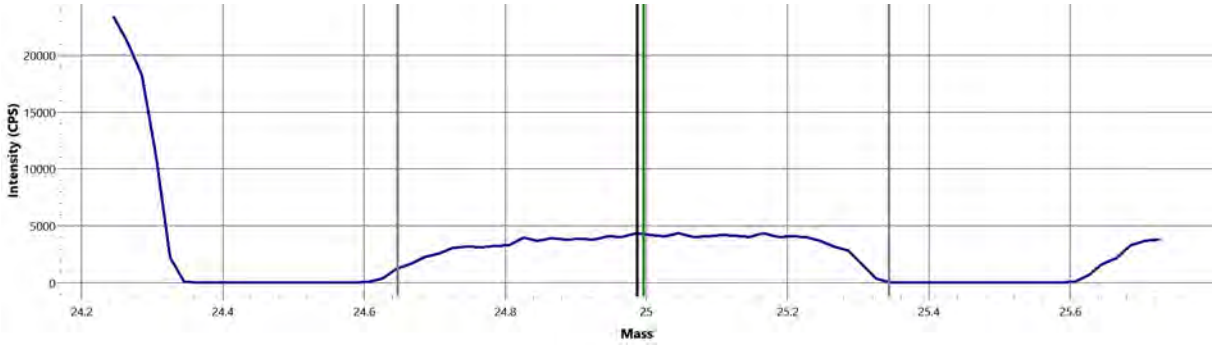
59Co



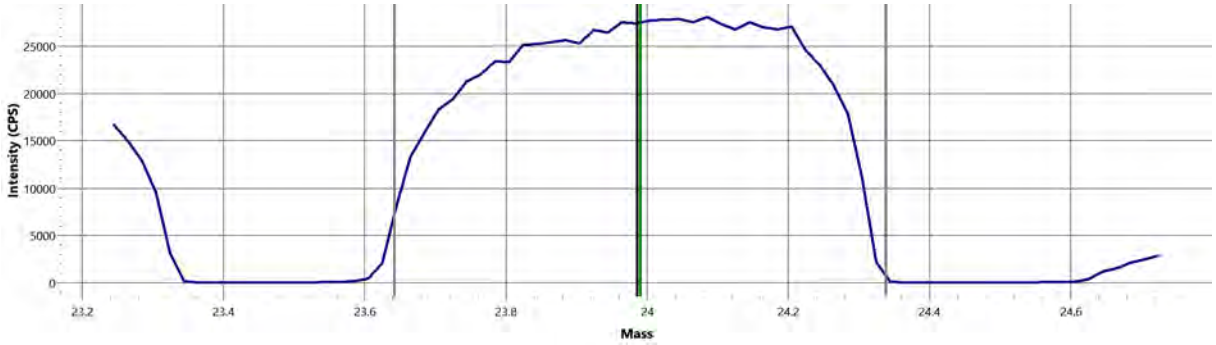
26Mg



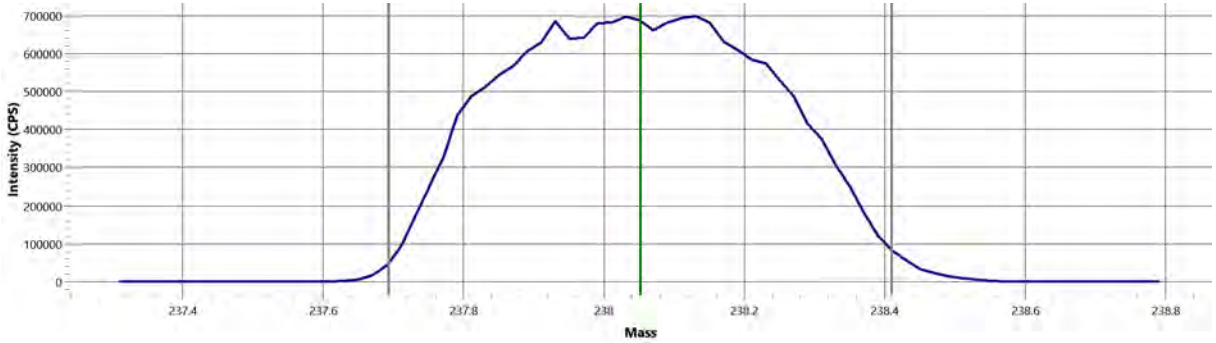
25Mg



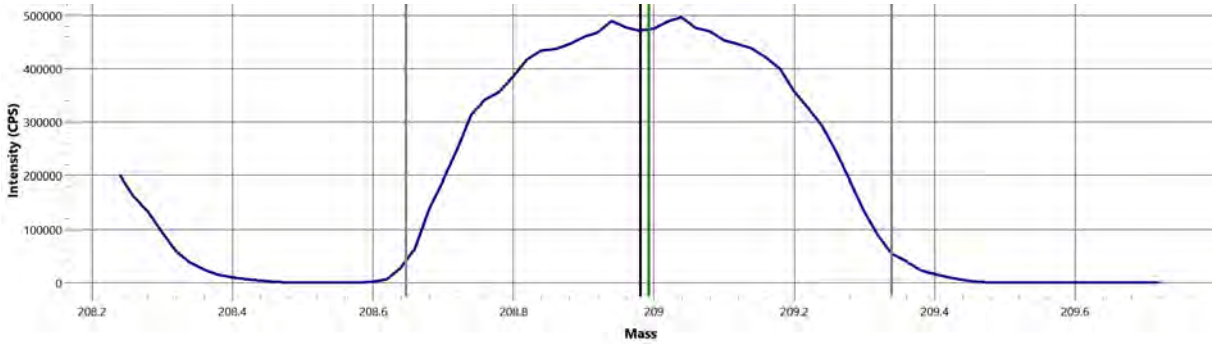
24Mg



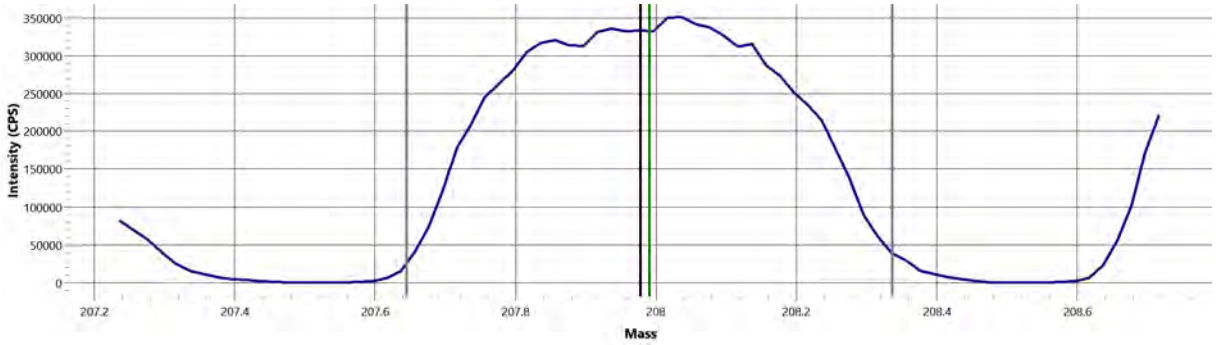
238U



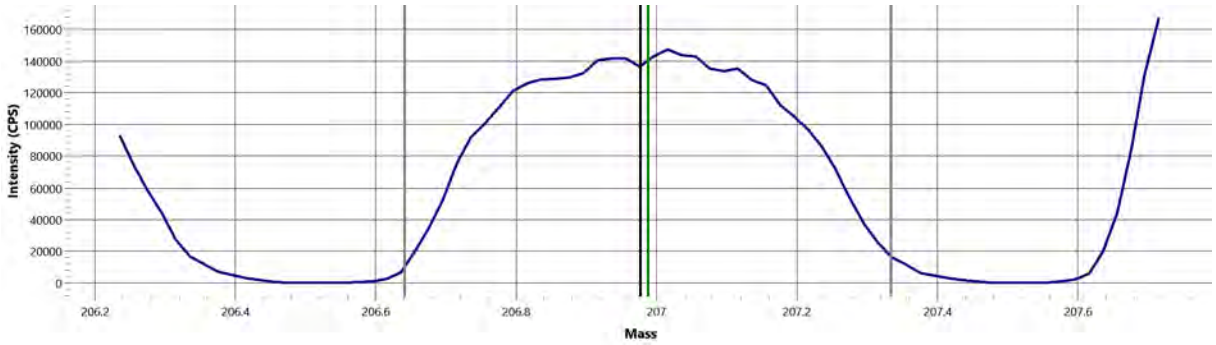
209Bi



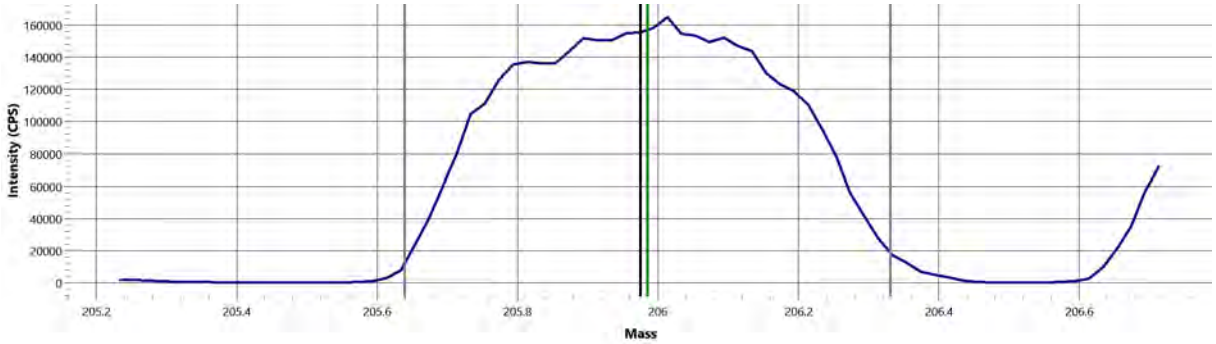
208Pb



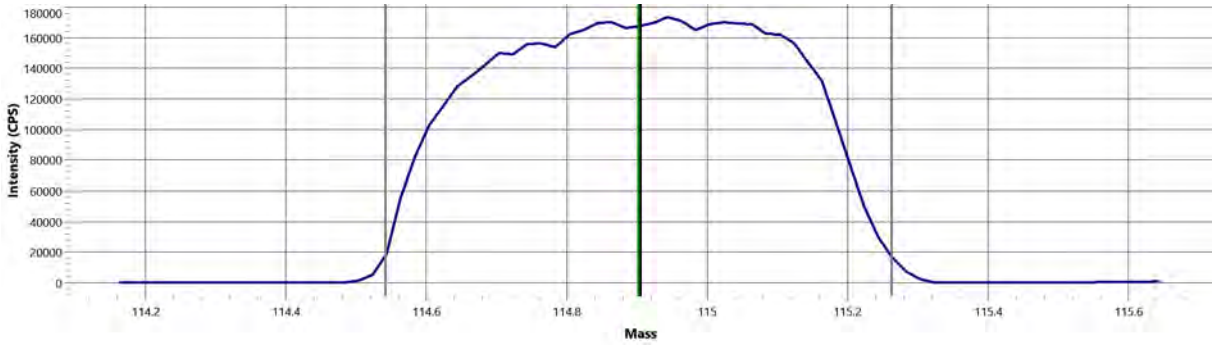
207Pb



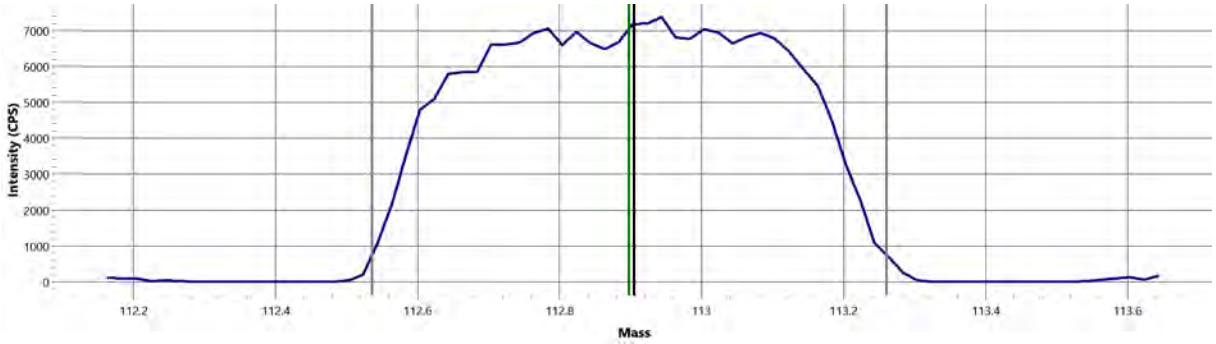
206Pb



115In



113In



Tune Settings

Parameter	Value
Additional Gas Flow 1	0.00
Additional Gas Flow 2	0.00
Additional Gas Flow 3	0.00
Angular Deflection	-374.00
Auxilliary Flow	0.90
CCT Bias	-21.00
CCT Entry Lens	-78.00
CCT Exit Lens	-40.00
CCT Focus Lens	-5.58
CCT1 Flow	4.59
CCT1 Shut-Off Valve	1.00
CCT2 Flow	0.00
CCT2 Shut-Off Valve	0.00
Cool Flow	14.00
D1 Lens	-340.00
D2 Lens	-158.00
Deflection Entry Lens	-35.00
Extraction Lens 1 Negative	0.00
Extraction Lens 1 Polarity	0.00
Extraction Lens 1 Positive	0.00
Extraction Lens 2	-100.00
Focus Lens	-7.00
Nebulizer Flow	1.07
Peristaltic Pump Speed	23.00
Plasma Power	1550.00
Pole Bias	-18.00
Quad Entry Lens	-54.00
Sampling Depth	5.00
Spray Chamber Temperature	2.00
Torch Horizontal Position	-0.56
Torch Vertical Position	0.53
Virtual CCT Mass Maximum Dac Limit Set	4095.00
Virtual CCT Mass parameter b	1.00
Virtual CCT Mass to Dac Factor	60.00
Virtual CCT Mass to Dac Offset	80.00

Detector Voltages

Analog	Counting
-1887.50	1412.50

Vacuum Check

Parameter	Result	Value
Analyzer Pressure	Vacuum ok	6.767e-7
Interface Pressure		1.581e+0

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Path and filename: _Application Data\Workspace\LabBooks\MS4103019 STD_KED.imexp
Configuration iCAP RQ W/ASX-560
Software Version 2.8.3170.309

Method Summary:

No. of sweeps	Time per sweep[s]	Time per main run[s]
10	3.24	32.4

Isotope	Mode	Dwell time (s)	# of Channels	Spacing	Resolution	Forcing	Fit Type	Weighting
6Li (STD)	STD	0.2	1	0.1	Normal	Blank	Linear	None
6Li (KED)	KED	0.2	1	0.1	Normal	Blank	Linear	None
9Be (KED)	KED	0.2	1	0.1	Normal	Blank	Linear	None
10B (KED)	KED	0.2	1	0.1	Normal	Blank	Linear	None
11B (KED)	KED	0.2	1	0.1	Normal	Blank	Linear	None
13C (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
23Na (KED)	KED	0.01	1	0.1	High	Blank	Linear	None
24Mg (KED)	KED	0.01	1	0.1	High	Blank	Linear	None
25Mg (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
26Mg (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
27Al (KED)	KED	0.01	1	0.1	High	Blank	Linear	None
29Si (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
35Cl (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
39K (KED)	KED	0.01	1	0.1	High	Blank	Linear	None
43Ca (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
44Ca (STD)	STD	0.01	1	0.1	High	Blank	Linear	None
44Ca (KED)	KED	0.01	1	0.1	High	Blank	Linear	None
45Sc (STD)	STD	0.01	1	0.1	Normal	Blank	Linear	None
45Sc (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
47Ti (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
51V (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
52Cr (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
53Cr (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
37Cl.16O (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
55Mn (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
56Fe (KED)	KED	0.005	1	0.1	High	Blank	Linear	None
57Fe (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
59Co (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
60Ni (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
62Ni (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
63Cu (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
65Cu (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
66Zn (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
67Zn (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
68Zn (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
73Ge (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
75As (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
40Ar.37Cl (KED)	KED	0.01	1	0.1	Normal	Blank	Linear	None
78Se (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
81Br (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
82Kr (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
82Se (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
83Kr (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
89Y (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
94Mo (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
95Mo (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
96Mo (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
97Mo (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
98Mo (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
103Rh (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
105Pd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
106Cd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
107Ag (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
108Cd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Isotope	Mode	Dwell time (s)	# of Channels	Spacing	Resolution	Forcing	Fit Type	Weighting
109Ag (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
111Cd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
114Cd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
115In (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
118Sn (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
121Sb (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
123Sb (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
135Ba (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
137Ba (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
150Sm (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
156Gd (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
159Tb (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
160Dy (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
164Dy (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
165Ho (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
203Tl (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
205Tl (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
206Pb (KED)	KED	0.1	1	0.1	Normal	Blank	Linear	None
207Pb (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
208Pb (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None
209Bi (KED)	KED	0.025	1	0.1	Normal	Blank	Linear	None

Internal Standard Summary

If Internal Standard Column is blank, element used interpolation.

Isotope	Is Internal Standard	Internal Standard
6Li (STD)	True	
6Li (KED)	True	
9Be (KED)	False	6Li (KED)
10B (KED)	False	
11B (KED)	False	
13C (KED)	False	
23Na (KED)	False	
24Mg (KED)	False	
25Mg (KED)	False	
26Mg (KED)	False	
27Al (KED)	False	
29Si (KED)	False	
35Cl (KED)	False	
39K (KED)	False	
43Ca (KED)	False	
44Ca (STD)	False	
44Ca (KED)	False	
45Sc (STD)	True	
45Sc (KED)	True	
47Ti (KED)	False	
51V (KED)	False	45Sc (KED)
52Cr (KED)	False	45Sc (KED)
53Cr (KED)	False	
37Cl.16O (KED)	False	
55Mn (KED)	False	
56Fe (KED)	False	
57Fe (KED)	False	45Sc (KED)
59Co (KED)	False	45Sc (KED)
60Ni (KED)	False	89Y (KED)
62Ni (KED)	False	
63Cu (KED)	False	
65Cu (KED)	False	45Sc (KED)
66Zn (KED)	False	115In (KED)
67Zn (KED)	False	
68Zn (KED)	False	
73Ge (KED)	False	
75As (KED)	False	115In (KED)
40Ar.37Cl (KED)	False	
78Se (KED)	False	
81Br (KED)	False	

Isotope	Is Internal Standard	Internal Standard
82Kr (KED)	False	
82Se (KED)	False	115In (KED)
83Kr (KED)	False	
89Y (KED)	True	
94Mo (KED)	False	
95Mo (KED)	False	
96Mo (KED)	False	
97Mo (KED)	False	
98Mo (KED)	False	
103Rh (KED)	False	
105Pd (KED)	False	
106Cd (KED)	False	
107Ag (KED)	False	115In (KED)
108Cd (KED)	False	
109Ag (KED)	False	
111Cd (KED)	False	
114Cd (KED)	False	115In (KED)
115In (KED)	True	
118Sn (KED)	False	
121Sb (KED)	False	
123Sb (KED)	False	
135Ba (KED)	False	
137Ba (KED)	False	
150Sm (KED)	False	
156Gd (KED)	False	
159Tb (KED)	True	
160Dy (KED)	False	
164Dy (KED)	False	
165Ho (KED)	False	
203Tl (KED)	False	
205Tl (KED)	False	209Bi (KED)
206Pb (KED)	False	
207Pb (KED)	False	
208Pb (KED)	False	209Bi (KED)
209Bi (KED)	True	

Interference Correction Equation Summary

Analyte	Correction	Enabled
23Na (KED)		False
24Mg (KED)		False
25Mg (KED)		False
27Al (KED)		False
39K (KED)		False
43Ca (KED)		False
47Ti (KED)		False
51V (KED)	- 0.27 * (37Cl.16O (KED) - 0.113 * 52Cr (KED))	True
52Cr (KED)		False
55Mn (KED)		False
56Fe (KED)		False
57Fe (KED)		False
59Co (KED)		False
60Ni (KED)		False
62Ni (KED)		False
63Cu (KED)		False
65Cu (KED)		False
66Zn (KED)		False
67Zn (KED)		False
68Zn (KED)		False
75As (KED)	- 0.77 * (40Ar.37Cl (KED) - 0.815 * 82Se (KED))	True
78Se (KED)	- 0.0304348 * 83Kr (KED)	True
82Se (KED)	- 1.0087 * 83Kr (KED)	True
95Mo (KED)		False
97Mo (KED)		False
98Mo (KED)		False
123Sb (KED)		False

Analyte	Correction	Enabled
150Sm (KED)		False
156Gd (KED)		False
160Dy (KED)		False
164Dy (KED)		False
206Pb (KED)		False
207Pb (KED)		False
208Pb (KED)	+ 1 * 206Pb (KED) + 1 * 207Pb (KED)	True
209Bi (KED)		False
83Kr (KED)		False
13C (KED)		False
35Cl (KED)		False
53Cr (KED)		False
81Br (KED)		False
82Kr (KED)		False
94Mo (KED)		False
96Mo (KED)		False
205Tl (KED)		False
107Ag (KED)		False
137Ba (KED)		False
26Mg (KED)		False
135Ba (KED)		False
121Sb (KED)		False
109Ag (KED)		False
9Be (KED)		False
89Y (KED)		False
115In (KED)	- 0.0148637 * 118Sn (KED)	True
111Cd (KED)		False
106Cd (KED)	- 1.22391 * 105Pd (KED)	False
108Cd (KED)	- 1.18495 * 105Pd (KED)	False
114Cd (KED)	- 0.0268373 * 118Sn (KED)	True
203Tl (KED)		False
6Li (KED)		False
159Tb (KED)		False
118Sn (KED)		False
103Rh (KED)		False
73Ge (KED)		False
165Ho (KED)		False
37Cl.16O (KED)		False
40Ar.37Cl (KED)		False
11B (KED)		False
10B (KED)		False
29Si (KED)		False
44Ca (STD)		False
45Sc (STD)		False
44Ca (KED)		False
45Sc (KED)		False
6Li (STD)		False
105Pd (KED)		False

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Standards:

Analysis Name: S001

Category	Concentration average	Standard Concentration
6Li (STD)	99.345 %	
6Li (KED)	100.209 %	
9Be (KED)	N/A	N/A
10B (KED)	N/A	N/A
11B (KED)	N/A	N/A
13C (KED)	N/A	N/A
23Na (KED)	N/A	N/A
24Mg (KED)	53.571 ppb	50.000 ppb
25Mg (KED)	54.022 ppb	50.000 ppb
26Mg (KED)	52.142 ppb	50.000 ppb
27Al (KED)	N/A	N/A
35Cl (KED)	N/A	N/A
39K (KED)	N/A	N/A
43Ca (KED)	N/A	N/A
44Ca (STD)	N/A	N/A
44Ca (KED)	N/A	N/A
45Sc (STD)	99.168 %	
45Sc (KED)	100.035 %	
47Ti (KED)	N/A	N/A
51V (KED)	N/A	N/A
52Cr (KED)	N/A	N/A
53Cr (KED)	N/A	N/A
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	N/A	N/A
56Fe (KED)	21.194 ppb	20.000 ppb
57Fe (KED)	20.334 ppb	20.000 ppb
59Co (KED)	N/A	N/A
60Ni (KED)	1.529 ppb	2.000 ppb
62Ni (KED)	1.544 ppb	2.000 ppb
63Cu (KED)	1.112 ppb	1.000 ppb
65Cu (KED)	1.058 ppb	1.000 ppb
66Zn (KED)	N/A	N/A
67Zn (KED)	N/A	N/A
68Zn (KED)	N/A	N/A
75As (KED)	N/A	N/A
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	N/A	N/A
82Se (KED)	N/A	N/A
89Y (KED)	99.917 %	
94Mo (KED)	N/A	N/A
95Mo (KED)	N/A	N/A
96Mo (KED)	N/A	N/A
97Mo (KED)	N/A	N/A
98Mo (KED)	N/A	N/A
103Rh (KED)	N/A	N/A
106Cd (KED)	0.101 ppb	0.100 ppb
107Ag (KED)	N/A	N/A
108Cd (KED)	0.103 ppb	0.100 ppb
109Ag (KED)	N/A	N/A
111Cd (KED)	0.106 ppb	0.100 ppb
114Cd (KED)	0.103 ppb	0.100 ppb
115In (KED)	100.987 %	
118Sn (KED)	4.287 ppb	5.000 ppb
121Sb (KED)	N/A	N/A
123Sb (KED)	N/A	N/A
135Ba (KED)	N/A	N/A
137Ba (KED)	N/A	N/A
159Tb (KED)	98.959 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	N/A	N/A
205Tl (KED)	N/A	N/A
206Pb (KED)	N/A	N/A
207Pb (KED)	N/A	N/A
208Pb (KED)	N/A	N/A

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
209Bi (KED)	100.282 %	

Standards:

Analysis Name: S01

Category	Concentration average	Standard Concentration
6Li (STD)	99.096 %	
6Li (KED)	100.059 %	
9Be (KED)	0.385 ppb	0.400 ppb
10B (KED)	49.726 ppb	50.000 ppb
11B (KED)	50.229 ppb	50.000 ppb
13C (KED)	N/A	N/A
23Na (KED)	378.310 ppb	400.000 ppb
24Mg (KED)	407.158 ppb	400.000 ppb
25Mg (KED)	418.255 ppb	400.000 ppb
26Mg (KED)	402.015 ppb	400.000 ppb
27Al (KED)	40.940 ppb	40.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	411.524 ppb	400.000 ppb
43Ca (KED)	487.207 ppb	400.000 ppb
44Ca (STD)	406.563 ppb	400.000 ppb
44Ca (KED)	435.942 ppb	400.000 ppb
45Sc (STD)	99.780 %	
45Sc (KED)	102.106 %	
47Ti (KED)	4.776 ppb	5.000 ppb
51V (KED)	4.853 ppb	5.000 ppb
52Cr (KED)	5.064 ppb	5.000 ppb
53Cr (KED)	5.334 ppb	5.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	5.070 ppb	5.000 ppb
56Fe (KED)	58.962 ppb	50.000 ppb
57Fe (KED)	56.095 ppb	50.000 ppb
59Co (KED)	1.014 ppb	1.000 ppb
60Ni (KED)	4.901 ppb	5.000 ppb
62Ni (KED)	4.862 ppb	5.000 ppb
63Cu (KED)	2.238 ppb	2.000 ppb
65Cu (KED)	2.144 ppb	2.000 ppb
66Zn (KED)	9.846 ppb	10.000 ppb
67Zn (KED)	9.378 ppb	10.000 ppb
68Zn (KED)	9.331 ppb	10.000 ppb
75As (KED)	1.966 ppb	2.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	1.077 ppb	1.000 ppb
82Se (KED)	1.063 ppb	1.000 ppb
89Y (KED)	99.996 %	
94Mo (KED)	9.640 ppb	10.000 ppb
95Mo (KED)	9.327 ppb	10.000 ppb
96Mo (KED)	9.306 ppb	10.000 ppb
97Mo (KED)	9.198 ppb	10.000 ppb
98Mo (KED)	9.148 ppb	10.000 ppb
103Rh (KED)	N/A	N/A
106Cd (KED)	0.512 ppb	0.500 ppb
107Ag (KED)	N/A	N/A
108Cd (KED)	0.561 ppb	0.500 ppb
109Ag (KED)	N/A	N/A
111Cd (KED)	0.511 ppb	0.500 ppb
114Cd (KED)	0.440 ppb	0.500 ppb
115In (KED)	100.642 %	
118Sn (KED)	19.916 ppb	20.000 ppb
121Sb (KED)	1.509 ppb	2.000 ppb
123Sb (KED)	1.513 ppb	2.000 ppb
135Ba (KED)	4.813 ppb	5.000 ppb
137Ba (KED)	5.003 ppb	5.000 ppb
159Tb (KED)	100.254 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	0.473 ppb	0.500 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
205Tl (KED)	0.471 ppb	0.500 ppb
206Pb (KED)	0.934 ppb	1.000 ppb
207Pb (KED)	0.941 ppb	1.000 ppb
208Pb (KED)	0.939 ppb	1.000 ppb
209Bi (KED)	100.441 %	

Standards:

Analysis Name: S02

Category	Concentration average	Standard Concentration
6Li (STD)	98.593 %	
6Li (KED)	98.209 %	
9Be (KED)	5.109 ppb	5.000 ppb
10B (KED)	N/A	N/A
11B (KED)	N/A	N/A
13C (KED)	N/A	N/A
23Na (KED)	476.394 ppb	500.000 ppb
24Mg (KED)	520.719 ppb	500.000 ppb
25Mg (KED)	519.375 ppb	500.000 ppb
26Mg (KED)	517.290 ppb	500.000 ppb
27Al (KED)	520.751 ppb	500.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	510.120 ppb	500.000 ppb
43Ca (KED)	480.549 ppb	500.000 ppb
44Ca (STD)	512.911 ppb	500.000 ppb
44Ca (KED)	499.680 ppb	500.000 ppb
45Sc (STD)	99.269 %	
45Sc (KED)	100.384 %	
47Ti (KED)	N/A	N/A
51V (KED)	N/A	N/A
52Cr (KED)	N/A	N/A
53Cr (KED)	N/A	N/A
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	N/A	N/A
56Fe (KED)	522.605 ppb	500.000 ppb
57Fe (KED)	493.366 ppb	500.000 ppb
59Co (KED)	5.133 ppb	5.000 ppb
60Ni (KED)	N/A	N/A
62Ni (KED)	N/A	N/A
63Cu (KED)	5.870 ppb	5.000 ppb
65Cu (KED)	5.500 ppb	5.000 ppb
66Zn (KED)	N/A	N/A
67Zn (KED)	N/A	N/A
68Zn (KED)	N/A	N/A
75As (KED)	5.011 ppb	5.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	5.313 ppb	5.000 ppb
82Se (KED)	5.707 ppb	5.000 ppb
89Y (KED)	98.257 %	
94Mo (KED)	N/A	N/A
95Mo (KED)	N/A	N/A
96Mo (KED)	N/A	N/A
97Mo (KED)	N/A	N/A
98Mo (KED)	N/A	N/A
103Rh (KED)	N/A	N/A
106Cd (KED)	5.148 ppb	5.000 ppb
107Ag (KED)	1.007 ppb	1.000 ppb
108Cd (KED)	5.177 ppb	5.000 ppb
109Ag (KED)	0.994 ppb	1.000 ppb
111Cd (KED)	5.092 ppb	5.000 ppb
114Cd (KED)	5.019 ppb	5.000 ppb
115In (KED)	100.061 %	
118Sn (KED)	N/A	N/A
121Sb (KED)	4.240 ppb	5.000 ppb
123Sb (KED)	4.247 ppb	5.000 ppb
135Ba (KED)	N/A	N/A

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
137Ba (KED)	N/A	N/A
159Tb (KED)	97.958 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	4.726 ppb	5.000 ppb
205Tl (KED)	4.705 ppb	5.000 ppb
206Pb (KED)	4.865 ppb	5.000 ppb
207Pb (KED)	4.849 ppb	5.000 ppb
208Pb (KED)	4.864 ppb	5.000 ppb
209Bi (KED)	98.011 %	

Standards:

Analysis Name: S03

Category	Concentration average	Standard Concentration
6Li (STD)	92.530 %	
6Li (KED)	94.023 %	
9Be (KED)	24.916 ppb	25.000 ppb
10B (KED)	N/A	N/A
11B (KED)	N/A	N/A
13C (KED)	N/A	N/A
23Na (KED)	2,474.078 ppb	2,500.000 ppb
24Mg (KED)	2,493.194 ppb	2,500.000 ppb
25Mg (KED)	2,513.745 ppb	2,500.000 ppb
26Mg (KED)	2,486.259 ppb	2,500.000 ppb
27Al (KED)	2,548.697 ppb	2,500.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	2,493.819 ppb	2,500.000 ppb
43Ca (KED)	2,529.296 ppb	2,500.000 ppb
44Ca (STD)	2,523.247 ppb	2,500.000 ppb
44Ca (KED)	2,547.794 ppb	2,500.000 ppb
45Sc (STD)	90.676 %	
45Sc (KED)	95.644 %	
47Ti (KED)	25.241 ppb	25.000 ppb
51V (KED)	24.617 ppb	25.000 ppb
52Cr (KED)	25.188 ppb	25.000 ppb
53Cr (KED)	25.650 ppb	25.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	25.337 ppb	25.000 ppb
56Fe (KED)	2,542.617 ppb	2,500.000 ppb
57Fe (KED)	2,440.436 ppb	2,500.000 ppb
59Co (KED)	25.150 ppb	25.000 ppb
60Ni (KED)	26.251 ppb	25.000 ppb
62Ni (KED)	26.474 ppb	25.000 ppb
63Cu (KED)	27.792 ppb	25.000 ppb
65Cu (KED)	26.597 ppb	25.000 ppb
66Zn (KED)	25.193 ppb	25.000 ppb
67Zn (KED)	25.718 ppb	25.000 ppb
68Zn (KED)	25.462 ppb	25.000 ppb
75As (KED)	24.864 ppb	25.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	25.927 ppb	25.000 ppb
82Se (KED)	25.552 ppb	25.000 ppb
89Y (KED)	97.397 %	
94Mo (KED)	23.929 ppb	25.000 ppb
95Mo (KED)	23.427 ppb	25.000 ppb
96Mo (KED)	23.096 ppb	25.000 ppb
97Mo (KED)	23.147 ppb	25.000 ppb
98Mo (KED)	22.704 ppb	25.000 ppb
103Rh (KED)	N/A	N/A
106Cd (KED)	25.300 ppb	25.000 ppb
107Ag (KED)	4.894 ppb	5.000 ppb
108Cd (KED)	25.862 ppb	25.000 ppb
109Ag (KED)	4.884 ppb	5.000 ppb
111Cd (KED)	24.795 ppb	25.000 ppb
114Cd (KED)	25.267 ppb	25.000 ppb
115In (KED)	97.995 %	

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
118Sn (KED)	N/A	N/A
121Sb (KED)	22.228 ppb	25.000 ppb
123Sb (KED)	22.570 ppb	25.000 ppb
135Ba (KED)	24.427 ppb	25.000 ppb
137Ba (KED)	24.712 ppb	25.000 ppb
159Tb (KED)	101.124 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	23.131 ppb	25.000 ppb
205Tl (KED)	23.184 ppb	25.000 ppb
206Pb (KED)	23.558 ppb	25.000 ppb
207Pb (KED)	23.726 ppb	25.000 ppb
208Pb (KED)	23.547 ppb	25.000 ppb
209Bi (KED)	102.204 %	

Standards:

Analysis Name: S04

Category	Concentration average	Standard Concentration
6Li (STD)	88.604 %	
6Li (KED)	89.706 %	
9Be (KED)	49.684 ppb	50.000 ppb
10B (KED)	N/A	N/A
11B (KED)	N/A	N/A
13C (KED)	N/A	N/A
23Na (KED)	4,843.490 ppb	5,000.000 ppb
24Mg (KED)	4,987.333 ppb	5,000.000 ppb
25Mg (KED)	4,964.929 ppb	5,000.000 ppb
26Mg (KED)	4,950.743 ppb	5,000.000 ppb
27Al (KED)	5,089.820 ppb	5,000.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	4,889.316 ppb	5,000.000 ppb
43Ca (KED)	5,046.522 ppb	5,000.000 ppb
44Ca (STD)	5,066.646 ppb	5,000.000 ppb
44Ca (KED)	5,019.900 ppb	5,000.000 ppb
45Sc (STD)	87.279 %	
45Sc (KED)	91.646 %	
47Ti (KED)	50.350 ppb	50.000 ppb
51V (KED)	50.454 ppb	50.000 ppb
52Cr (KED)	50.456 ppb	50.000 ppb
53Cr (KED)	50.975 ppb	50.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	50.844 ppb	50.000 ppb
56Fe (KED)	5,064.675 ppb	5,000.000 ppb
57Fe (KED)	5,025.979 ppb	5,000.000 ppb
59Co (KED)	50.018 ppb	50.000 ppb
60Ni (KED)	51.875 ppb	50.000 ppb
62Ni (KED)	51.701 ppb	50.000 ppb
63Cu (KED)	54.901 ppb	50.000 ppb
65Cu (KED)	52.691 ppb	50.000 ppb
66Zn (KED)	51.201 ppb	50.000 ppb
67Zn (KED)	52.412 ppb	50.000 ppb
68Zn (KED)	51.606 ppb	50.000 ppb
75As (KED)	49.216 ppb	50.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	51.871 ppb	50.000 ppb
82Se (KED)	50.094 ppb	50.000 ppb
89Y (KED)	92.941 %	
94Mo (KED)	47.907 ppb	50.000 ppb
95Mo (KED)	47.866 ppb	50.000 ppb
96Mo (KED)	47.269 ppb	50.000 ppb
97Mo (KED)	47.208 ppb	50.000 ppb
98Mo (KED)	46.704 ppb	50.000 ppb
103Rh (KED)	N/A	N/A
106Cd (KED)	50.976 ppb	50.000 ppb
107Ag (KED)	9.832 ppb	10.000 ppb
108Cd (KED)	52.063 ppb	50.000 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
109Ag (KED)	9.628 ppb	10.000 ppb
111Cd (KED)	50.713 ppb	50.000 ppb
114Cd (KED)	51.368 ppb	50.000 ppb
115In (KED)	94.689 %	
118Sn (KED)	49.883 ppb	50.000 ppb
121Sb (KED)	47.763 ppb	50.000 ppb
123Sb (KED)	48.026 ppb	50.000 ppb
135Ba (KED)	48.853 ppb	50.000 ppb
137Ba (KED)	48.322 ppb	50.000 ppb
159Tb (KED)	97.664 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	47.888 ppb	50.000 ppb
205Tl (KED)	47.381 ppb	50.000 ppb
206Pb (KED)	48.517 ppb	50.000 ppb
207Pb (KED)	49.397 ppb	50.000 ppb
208Pb (KED)	48.264 ppb	50.000 ppb
209Bi (KED)	98.907 %	

Standards:

Analysis Name: S05

Category	Concentration average	Standard Concentration
6Li (STD)	85.024 %	
6Li (KED)	85.487 %	
9Be (KED)	146.144 ppb	150.000 ppb
10B (KED)	149.044 ppb	150.000 ppb
11B (KED)	146.994 ppb	150.000 ppb
13C (KED)	N/A	N/A
23Na (KED)	14,445.171 ppb	15,000.000 ppb
24Mg (KED)	14,457.164 ppb	15,000.000 ppb
25Mg (KED)	14,580.068 ppb	15,000.000 ppb
26Mg (KED)	14,265.272 ppb	15,000.000 ppb
27Al (KED)	14,500.563 ppb	15,000.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	14,360.754 ppb	15,000.000 ppb
43Ca (KED)	14,763.582 ppb	15,000.000 ppb
44Ca (STD)	15,096.312 ppb	15,000.000 ppb
44Ca (KED)	14,705.437 ppb	15,000.000 ppb
45Sc (STD)	83.390 %	
45Sc (KED)	87.784 %	
47Ti (KED)	148.784 ppb	150.000 ppb
51V (KED)	149.033 ppb	150.000 ppb
52Cr (KED)	147.703 ppb	150.000 ppb
53Cr (KED)	149.999 ppb	150.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	149.703 ppb	150.000 ppb
56Fe (KED)	14,521.033 ppb	15,000.000 ppb
57Fe (KED)	14,837.480 ppb	15,000.000 ppb
59Co (KED)	145.724 ppb	150.000 ppb
60Ni (KED)	148.849 ppb	150.000 ppb
62Ni (KED)	151.681 ppb	150.000 ppb
63Cu (KED)	150.535 ppb	150.000 ppb
65Cu (KED)	150.555 ppb	150.000 ppb
66Zn (KED)	149.089 ppb	150.000 ppb
67Zn (KED)	151.199 ppb	150.000 ppb
68Zn (KED)	151.306 ppb	150.000 ppb
75As (KED)	143.268 ppb	150.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	147.954 ppb	150.000 ppb
82Se (KED)	142.445 ppb	150.000 ppb
89Y (KED)	90.609 %	
94Mo (KED)	143.315 ppb	150.000 ppb
95Mo (KED)	146.418 ppb	150.000 ppb
96Mo (KED)	145.881 ppb	150.000 ppb
97Mo (KED)	141.255 ppb	150.000 ppb
98Mo (KED)	145.646 ppb	150.000 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
103Rh (KED)	N/A	N/A
106Cd (KED)	147.899 ppb	150.000 ppb
107Ag (KED)	28.175 ppb	30.000 ppb
108Cd (KED)	150.132 ppb	150.000 ppb
109Ag (KED)	28.070 ppb	30.000 ppb
111Cd (KED)	148.893 ppb	150.000 ppb
114Cd (KED)	145.978 ppb	150.000 ppb
115In (KED)	91.653 %	
118Sn (KED)	148.480 ppb	150.000 ppb
121Sb (KED)	145.066 ppb	150.000 ppb
123Sb (KED)	144.358 ppb	150.000 ppb
135Ba (KED)	144.823 ppb	150.000 ppb
137Ba (KED)	145.496 ppb	150.000 ppb
159Tb (KED)	95.329 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	145.207 ppb	150.000 ppb
205Tl (KED)	146.032 ppb	150.000 ppb
206Pb (KED)	144.915 ppb	150.000 ppb
207Pb (KED)	145.740 ppb	150.000 ppb
208Pb (KED)	144.353 ppb	150.000 ppb
209Bi (KED)	94.080 %	

Standards:

Analysis Name: S06

Category	Concentration average	Standard Concentration
6Li (STD)	83.213 %	
6Li (KED)	83.426 %	
9Be (KED)	223.909 ppb	225.000 ppb
10B (KED)	225.371 ppb	225.000 ppb
11B (KED)	225.438 ppb	225.000 ppb
13C (KED)	N/A	N/A
23Na (KED)	22,346.782 ppb	22,500.000 ppb
24Mg (KED)	22,574.482 ppb	22,500.000 ppb
25Mg (KED)	22,467.083 ppb	22,500.000 ppb
26Mg (KED)	22,176.126 ppb	22,500.000 ppb
27Al (KED)	22,562.254 ppb	22,500.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	22,510.466 ppb	22,500.000 ppb
43Ca (KED)	22,536.691 ppb	22,500.000 ppb
44Ca (STD)	22,421.144 ppb	22,500.000 ppb
44Ca (KED)	22,708.904 ppb	22,500.000 ppb
45Sc (STD)	83.933 %	
45Sc (KED)	87.480 %	
47Ti (KED)	227.010 ppb	225.000 ppb
51V (KED)	228.361 ppb	225.000 ppb
52Cr (KED)	222.278 ppb	225.000 ppb
53Cr (KED)	226.459 ppb	225.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	227.360 ppb	225.000 ppb
56Fe (KED)	22,447.586 ppb	22,500.000 ppb
57Fe (KED)	22,605.022 ppb	22,500.000 ppb
59Co (KED)	220.722 ppb	225.000 ppb
60Ni (KED)	223.901 ppb	225.000 ppb
62Ni (KED)	224.822 ppb	225.000 ppb
63Cu (KED)	224.318 ppb	225.000 ppb
65Cu (KED)	219.662 ppb	225.000 ppb
66Zn (KED)	227.106 ppb	225.000 ppb
67Zn (KED)	227.768 ppb	225.000 ppb
68Zn (KED)	224.449 ppb	225.000 ppb
75As (KED)	224.576 ppb	225.000 ppb
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	222.446 ppb	225.000 ppb
82Se (KED)	219.291 ppb	225.000 ppb
89Y (KED)	90.488 %	
94Mo (KED)	226.513 ppb	225.000 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
95Mo (KED)	226.395 ppb	225.000 ppb
96Mo (KED)	228.508 ppb	225.000 ppb
97Mo (KED)	227.723 ppb	225.000 ppb
98Mo (KED)	225.274 ppb	225.000 ppb
103Rh (KED)	N/A	N/A
106Cd (KED)	225.150 ppb	225.000 ppb
107Ag (KED)	42.071 ppb	45.000 ppb
108Cd (KED)	228.550 ppb	225.000 ppb
109Ag (KED)	42.270 ppb	45.000 ppb
111Cd (KED)	225.514 ppb	225.000 ppb
114Cd (KED)	225.753 ppb	225.000 ppb
115In (KED)	88.792 %	
118Sn (KED)	233.003 ppb	225.000 ppb
121Sb (KED)	227.308 ppb	225.000 ppb
123Sb (KED)	228.373 ppb	225.000 ppb
135Ba (KED)	227.521 ppb	225.000 ppb
137Ba (KED)	227.911 ppb	225.000 ppb
159Tb (KED)	94.212 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	223.487 ppb	225.000 ppb
205Tl (KED)	224.293 ppb	225.000 ppb
206Pb (KED)	227.167 ppb	225.000 ppb
207Pb (KED)	226.645 ppb	225.000 ppb
208Pb (KED)	227.268 ppb	225.000 ppb
209Bi (KED)	89.048 %	

Standards:

Analysis Name: S07

Category	Concentration average	Standard Concentration
6Li (STD)	83.737 %	
6Li (KED)	82.771 %	
9Be (KED)	297.595 ppb	300.000 ppb
10B (KED)	300.245 ppb	300.000 ppb
11B (KED)	301.136 ppb	300.000 ppb
13C (KED)	N/A	N/A
23Na (KED)	30,421.256 ppb	30,000.000 ppb
24Mg (KED)	30,217.789 ppb	30,000.000 ppb
25Mg (KED)	30,238.781 ppb	30,000.000 ppb
26Mg (KED)	29,319.881 ppb	30,000.000 ppb
27Al (KED)	30,183.653 ppb	30,000.000 ppb
35Cl (KED)	N/A	N/A
39K (KED)	30,330.413 ppb	30,000.000 ppb
43Ca (KED)	30,079.657 ppb	30,000.000 ppb
44Ca (STD)	29,997.639 ppb	30,000.000 ppb
44Ca (KED)	29,982.831 ppb	30,000.000 ppb
45Sc (STD)	83.838 %	
45Sc (KED)	87.010 %	
47Ti (KED)	299.026 ppb	300.000 ppb
51V (KED)	297.921 ppb	300.000 ppb
52Cr (KED)	290.041 ppb	300.000 ppb
53Cr (KED)	298.684 ppb	300.000 ppb
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	298.208 ppb	300.000 ppb
56Fe (KED)	30,264.071 ppb	30,000.000 ppb
57Fe (KED)	30,003.228 ppb	30,000.000 ppb
59Co (KED)	295.020 ppb	300.000 ppb
60Ni (KED)	296.457 ppb	300.000 ppb
62Ni (KED)	298.892 ppb	300.000 ppb
63Cu (KED)	299.178 ppb	300.000 ppb
65Cu (KED)	287.715 ppb	300.000 ppb
66Zn (KED)	305.511 ppb	300.000 ppb
67Zn (KED)	296.884 ppb	300.000 ppb
68Zn (KED)	299.476 ppb	300.000 ppb
75As (KED)	303.826 ppb	300.000 ppb
40Ar.37Cl (KED)	N/A	N/A

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	Concentration average	Standard Concentration
78Se (KED)	302.544 ppb	300.000 ppb
82Se (KED)	300.944 ppb	300.000 ppb
89Y (KED)	90.464 %	
94Mo (KED)	302.658 ppb	300.000 ppb
95Mo (KED)	301.254 ppb	300.000 ppb
96Mo (KED)	300.066 ppb	300.000 ppb
97Mo (KED)	302.977 ppb	300.000 ppb
98Mo (KED)	302.741 ppb	300.000 ppb
103Rh (KED)	N/A	N/A
106Cd (KED)	300.748 ppb	300.000 ppb
107Ag (KED)	56.240 ppb	60.000 ppb
108Cd (KED)	296.853 ppb	300.000 ppb
109Ag (KED)	56.111 ppb	60.000 ppb
111Cd (KED)	300.065 ppb	300.000 ppb
114Cd (KED)	301.196 ppb	300.000 ppb
115In (KED)	87.689 %	
118Sn (KED)	313.811 ppb	300.000 ppb
121Sb (KED)	300.430 ppb	300.000 ppb
123Sb (KED)	300.835 ppb	300.000 ppb
135Ba (KED)	300.939 ppb	300.000 ppb
137Ba (KED)	300.372 ppb	300.000 ppb
159Tb (KED)	92.495 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	304.044 ppb	300.000 ppb
205Tl (KED)	303.184 ppb	300.000 ppb
206Pb (KED)	301.287 ppb	300.000 ppb
207Pb (KED)	301.106 ppb	300.000 ppb
208Pb (KED)	301.535 ppb	300.000 ppb
209Bi (KED)	86.441 %	

Standards:

Analysis Name: S08

Category	Concentration average	Standard Concentration
6Li (STD)	88.814 %	
6Li (KED)	88.598 %	
9Be (KED)	N/A	N/A
10B (KED)	N/A	N/A
11B (KED)	N/A	N/A
13C (KED)	N/A	N/A
23Na (KED)	N/A	N/A
24Mg (KED)	N/A	N/A
25Mg (KED)	N/A	N/A
26Mg (KED)	N/A	N/A
27Al (KED)	N/A	N/A
35Cl (KED)	N/A	N/A
39K (KED)	N/A	N/A
43Ca (KED)	N/A	N/A
44Ca (STD)	N/A	N/A
44Ca (KED)	N/A	N/A
45Sc (STD)	87.953 %	
45Sc (KED)	91.273 %	
47Ti (KED)	N/A	N/A
51V (KED)	N/A	N/A
52Cr (KED)	N/A	N/A
53Cr (KED)	N/A	N/A
37Cl.16O (KED)	N/A	N/A
55Mn (KED)	N/A	N/A
56Fe (KED)	N/A	N/A
57Fe (KED)	N/A	N/A
59Co (KED)	N/A	N/A
60Ni (KED)	N/A	N/A
62Ni (KED)	N/A	N/A
63Cu (KED)	N/A	N/A
65Cu (KED)	N/A	N/A
66Zn (KED)	N/A	N/A

6020B Sample Report

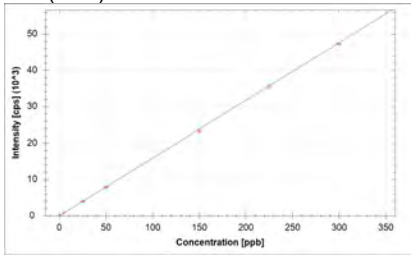
Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	Concentration average	Standard Concentration
67Zn (KED)	N/A	N/A
68Zn (KED)	N/A	N/A
75As (KED)	N/A	N/A
40Ar.37Cl (KED)	N/A	N/A
78Se (KED)	N/A	N/A
82Se (KED)	N/A	N/A
89Y (KED)	92.250 %	
94Mo (KED)	N/A	N/A
95Mo (KED)	N/A	N/A
96Mo (KED)	N/A	N/A
97Mo (KED)	N/A	N/A
98Mo (KED)	N/A	N/A
103Rh (KED)	N/A	N/A
106Cd (KED)	N/A	N/A
107Ag (KED)	123.453 ppb	120.000 ppb
108Cd (KED)	N/A	N/A
109Ag (KED)	123.486 ppb	120.000 ppb
111Cd (KED)	N/A	N/A
114Cd (KED)	N/A	N/A
115In (KED)	94.724 %	
118Sn (KED)	N/A	N/A
121Sb (KED)	N/A	N/A
123Sb (KED)	N/A	N/A
135Ba (KED)	N/A	N/A
137Ba (KED)	N/A	N/A
159Tb (KED)	97.557 %	
165Ho (KED)	N/A	N/A
203Tl (KED)	N/A	N/A
205Tl (KED)	N/A	N/A
206Pb (KED)	N/A	N/A
207Pb (KED)	N/A	N/A
208Pb (KED)	N/A	N/A
209Bi (KED)	101.955 %	

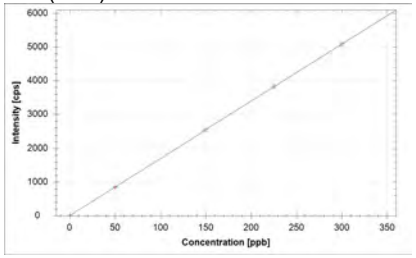
Calibration Curves:

9Be (KED)



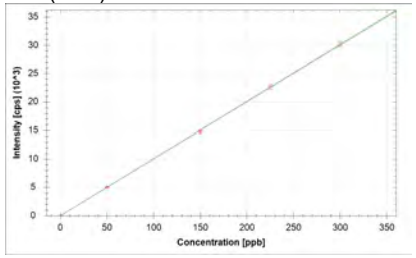
f(x) = 158.8188*x + 3.4996
R² = 0.9998
BEC = 0.022 ppb
LoD = 0.0327 ppb

10B (KED)



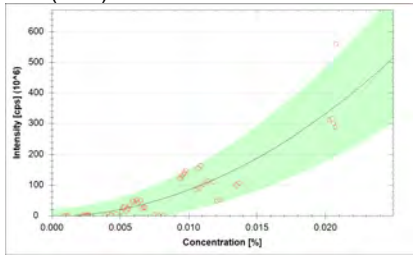
f(x) = 16.9321*x + 3.6716
R² = 1.0000
BEC = 0.217 ppb
LoD = 0.2729 ppb

11B (KED)



f(x) = 100.3301*x + 15.8409
R² = 0.9998
BEC = 0.158 ppb
LoD = 0.0645 ppb

13C (KED)



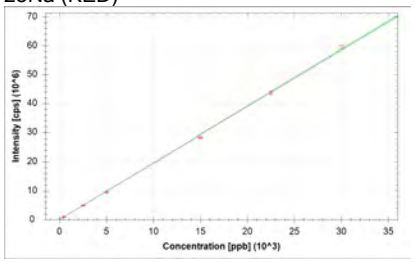
f(x) = 797716073627.9770*x² + 798737244.0788*x + -3567297.2478
R² = 0.8306
BEC = 0.003 %
LoD = N/A

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

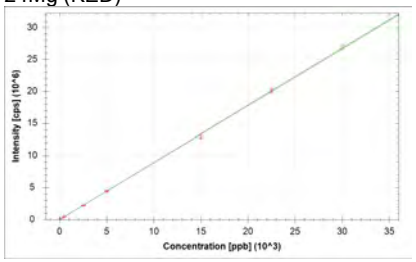
QTEGRA

23Na (KED)



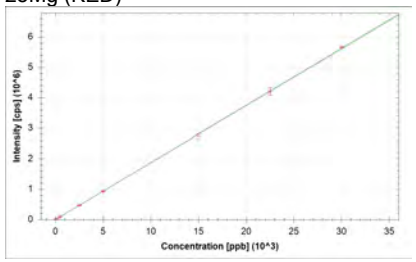
f(x) = 1953.7298*x + 16469.2745
R^2 = 0.9994
BEC = 8.430 ppb
LoD = 0.5217 ppb

24Mg (KED)



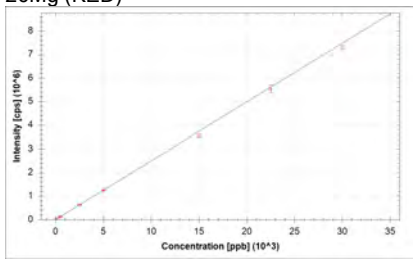
f(x) = 890.7026*x + 2042.9567
R^2 = 0.9997
BEC = 2.294 ppb
LoD = 0.5321 ppb

25Mg (KED)



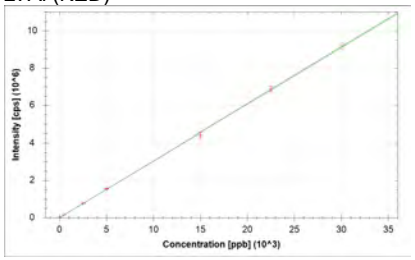
f(x) = 187.2913*x + 486.4285
R^2 = 0.9998
BEC = 2.597 ppb
LoD = 1.1581 ppb

26Mg (KED)



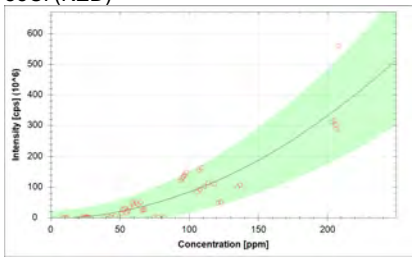
f(x) = 249.2653*x + 603.7076
R^2 = 0.9989
BEC = 2.422 ppb
LoD = 0.8273 ppb

27Al (KED)



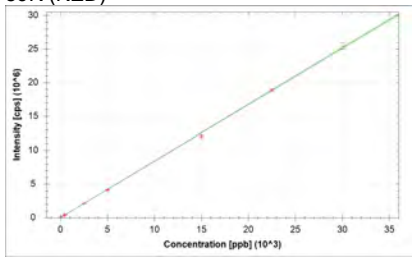
f(x) = 304.1833*x + 506.6543
R^2 = 0.9997
BEC = 1.666 ppb
LoD = 0.7451 ppb

35Cl (KED)



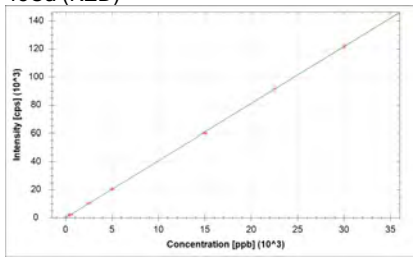
f(x) = 7977.1607*x^2 + 79873.7244*x + -3567297.2478
R^2 = 0.8306
BEC = 26.738 ppm
LoD = N/A

39K (KED)



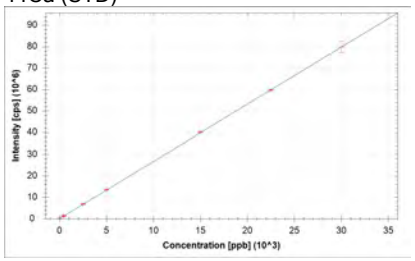
f(x) = 838.1547*x + 21731.5743
R^2 = 0.9994
BEC = 25.928 ppb
LoD = 2.7735 ppb

43Ca (KED)



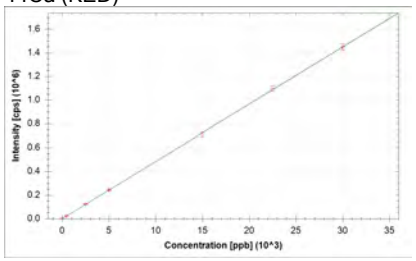
f(x) = 4.0550*x + 76.7107
R^2 = 0.9999
BEC = 18.917 ppb
LoD = 4.8075 ppb

44Ca (STD)



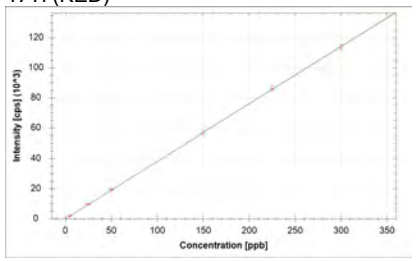
f(x) = 2658.4446*x + 68374.3171
R^2 = 1.0000
BEC = 25.720 ppb
LoD = 1.1462 ppb

44Ca (KED)



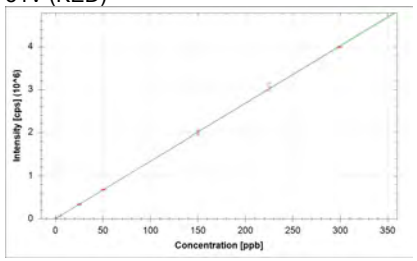
f(x) = 48.2927*x + 743.0744
R^2 = 0.9999
BEC = 15.387 ppb
LoD = 3.0188 ppb

47Ti (KED)



f(x) = 380.4459*x + 1.3186
R^2 = 0.9999
BEC = 0.003 ppb
LoD = 0.0180 ppb

51V (KED)



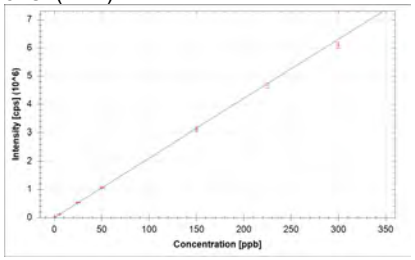
f(x) = 13385.6841*x + 1708.1411
R^2 = 0.9998
BEC = 0.128 ppb
LoD = 0.0124 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

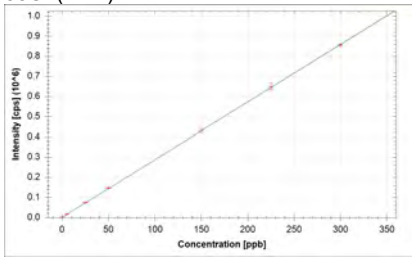
QTEGRA

52Cr (KED)



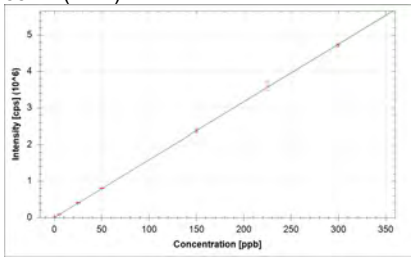
f(x) = 21008.8317*x + 2579.2249
R² = 0.9986
BEC = 0.123 ppb
LoD = 0.0133 ppb

53Cr (KED)



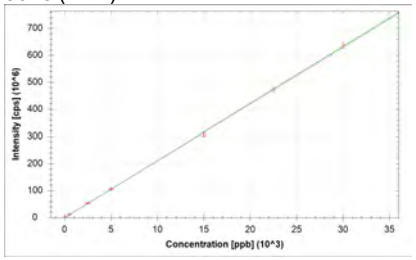
f(x) = 2858.6530*x + 1324.1129
R² = 0.9999
BEC = 0.463 ppb
LoD = 0.0331 ppb

55Mn (KED)



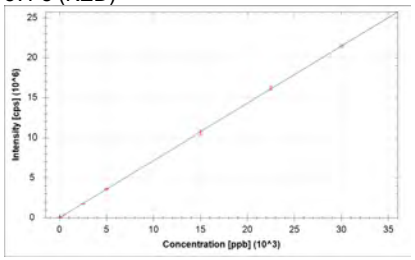
f(x) = 15815.7270*x + 2197.8943
R² = 0.9999
BEC = 0.139 ppb
LoD = 0.0125 ppb

56Fe (KED)



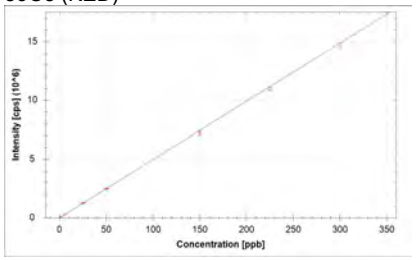
f(x) = 21058.5877*x + 40483.0418
R² = 0.9997
BEC = 1.922 ppb
LoD = 0.1555 ppb

57Fe (KED)



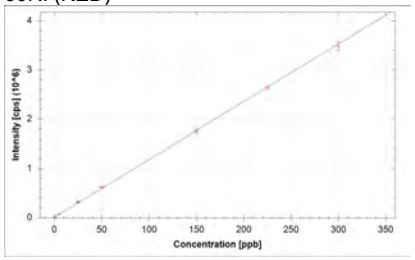
f(x) = 715.3516*x + 1191.7996
R² = 1.0000
BEC = 1.666 ppb
LoD = 0.1674 ppb

59Co (KED)



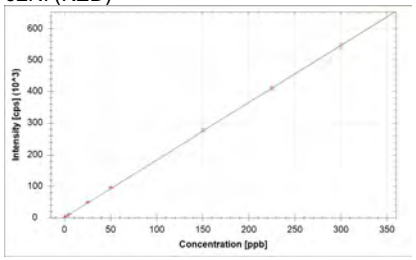
f(x) = 49579.3462*x + 265.3678
R² = 0.9993
BEC = 0.005 ppb
LoD = 0.0016 ppb

60Ni (KED)



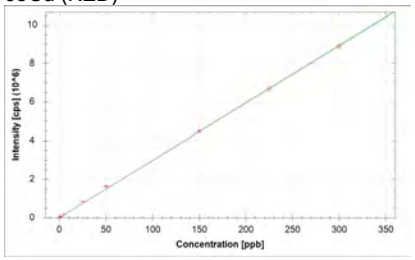
f(x) = 11721.5555*x + 11049.0802
R² = 0.9998
BEC = 0.943 ppb
LoD = 0.0748 ppb

62Ni (KED)



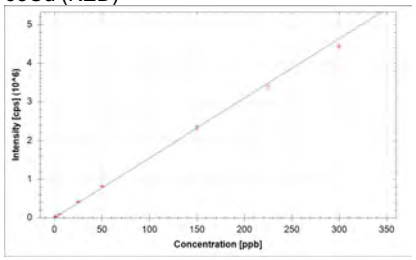
f(x) = 1816.8294*x + 1741.6763
R² = 0.9999
BEC = 0.959 ppb
LoD = 0.1293 ppb

63Cu (KED)



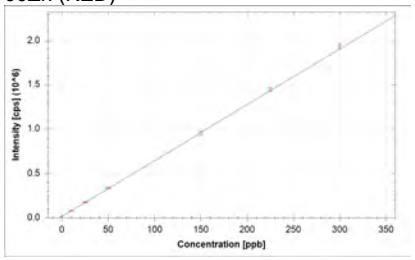
f(x) = 29743.4874*x + 4169.2493
R² = 0.9997
BEC = 0.140 ppb
LoD = 0.0168 ppb

65Cu (KED)



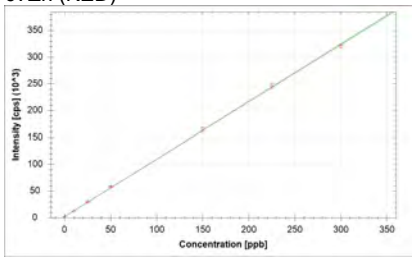
f(x) = 15448.3902*x + 1963.0237
R² = 0.9980
BEC = 0.127 ppb
LoD = 0.0063 ppb

66Zn (KED)



f(x) = 6294.5904*x + 15036.6984
R² = 0.9996
BEC = 2.389 ppb
LoD = 0.2762 ppb

67Zn (KED)



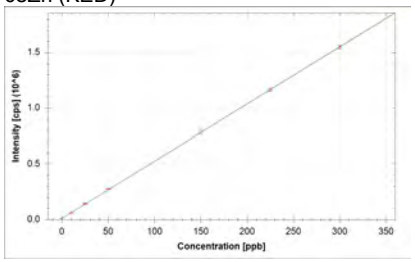
f(x) = 1072.7727*x + 2222.5942
R² = 0.9997
BEC = 2.072 ppb
LoD = 0.1600 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

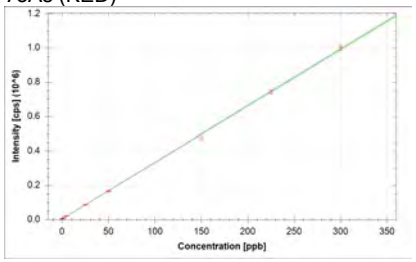
QTEGRA

68Zn (KED)



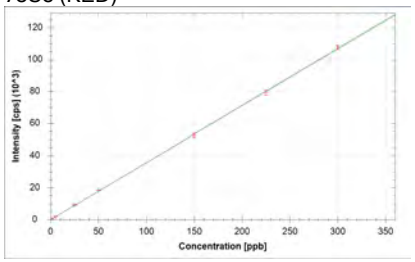
f(x) = 5132.2996*x + 11096.8637
R² = 0.9999
BEC = 2.162 ppb
LoD = 0.0635 ppb

75As (KED)



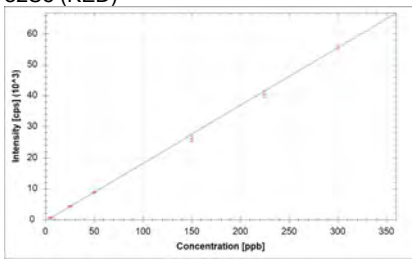
f(x) = 3291.4347*x + 4021.4228
R² = 0.9994
BEC = 1.222 ppb
LoD = 1.1774 ppb

78Se (KED)



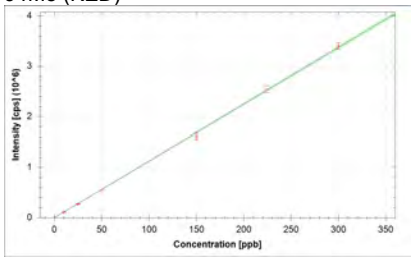
f(x) = 356.1880*x + -21.6620
R² = 0.9998
BEC = -0.061 ppb
LoD = 0.1725 ppb

82Se (KED)



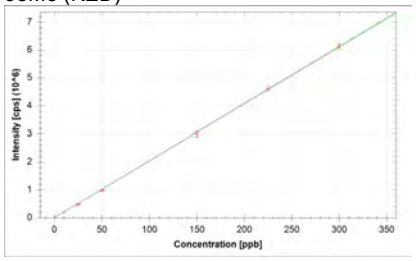
f(x) = 186.6612*x + -503.1070
R² = 0.9989
BEC = -2.695 ppb
LoD = 3.7376 ppb

94Mo (KED)



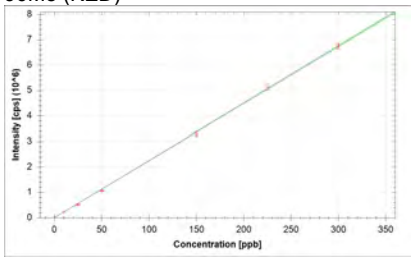
f(x) = 11234.1366*x + 322.5411
R² = 0.9993
BEC = 0.029 ppb
LoD = 0.0141 ppb

95Mo (KED)



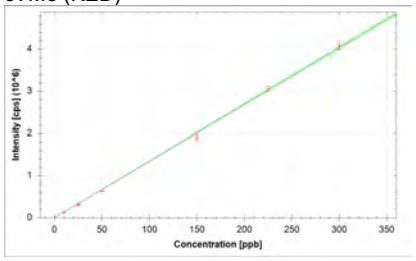
f(x) = 20387.3050*x + 389.0140
R² = 0.9997
BEC = 0.019 ppb
LoD = 0.0086 ppb

96Mo (KED)



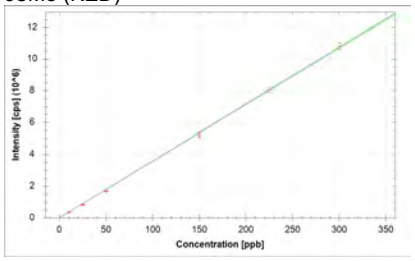
f(x) = 22491.1800*x + 459.4226
R² = 0.9995
BEC = 0.020 ppb
LoD = 0.0120 ppb

97Mo (KED)



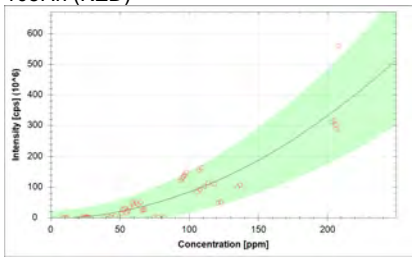
f(x) = 13451.3642*x + 259.5789
R² = 0.9988
BEC = 0.019 ppb
LoD = 0.0110 ppb

98Mo (KED)



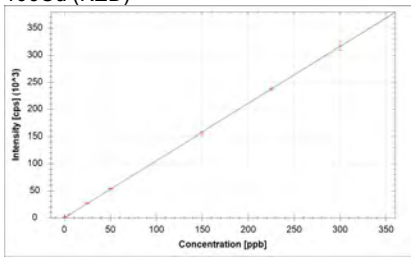
f(x) = 35724.2869*x + 592.4290
R² = 0.9995
BEC = 0.017 ppb
LoD = 0.0079 ppb

103Rh (KED)



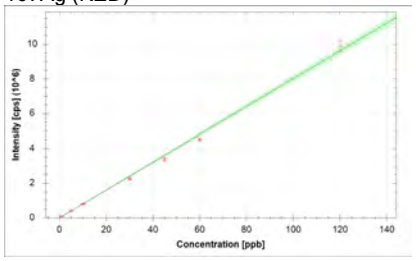
f(x) = 7977.1607*x^2 + 79873.7244*x + -3567297.2478
R² = 0.8306
BEC = 26.738 ppm
LoD = N/A

106Cd (KED)



f(x) = 1052.5996*x + 98.8291
R² = 0.9999
BEC = 0.094 ppb
LoD = 0.0496 ppb

107Ag (KED)



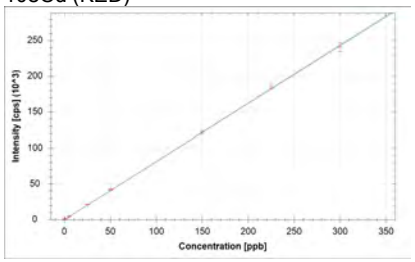
f(x) = 80138.2631*x + 94.8965
R² = 0.9969
BEC = 0.001 ppb
LoD = 0.0008 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

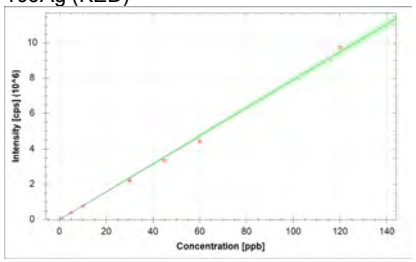
QTEGRA

108Cd (KED)



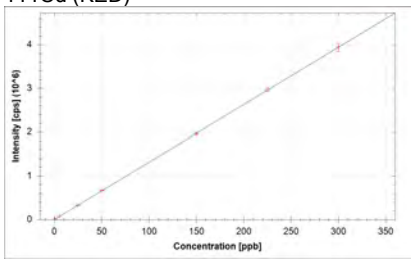
f(x) = 810.7312*x + 1.3313
R² = 0.9997
BEC = 0.002 ppb
LoD = 0.0085 ppb

109Ag (KED)



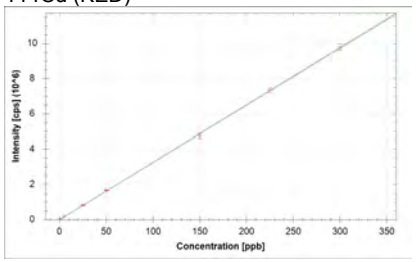
f(x) = 79008.4002*x + 77.2961
R² = 0.9969
BEC = 0.001 ppb
LoD = 0.0004 ppb

111Cd (KED)



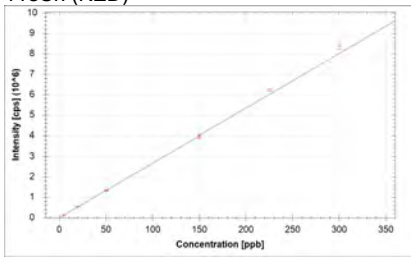
f(x) = 13144.2787*x + 9.3353
R² = 1.0000
BEC = 0.001 ppb
LoD = 0.0005 ppb

114Cd (KED)



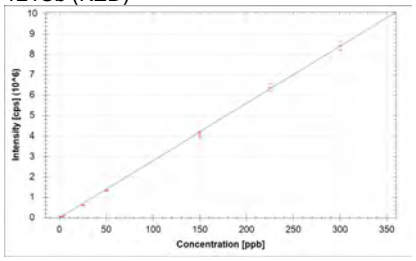
f(x) = 32490.3252*x + 43.0614
R² = 0.9998
BEC = 0.001 ppb
LoD = 0.0003 ppb

118Sn (KED)



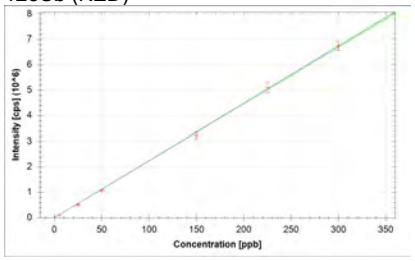
f(x) = 26696.7246*x + 778.8275
R² = 0.9972
BEC = 0.029 ppb
LoD = 0.0024 ppb

121Sb (KED)



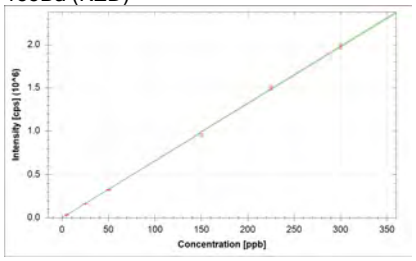
f(x) = 28018.6039*x + 359.5982
R² = 0.9995
BEC = 0.013 ppb
LoD = 0.0039 ppb

123Sb (KED)



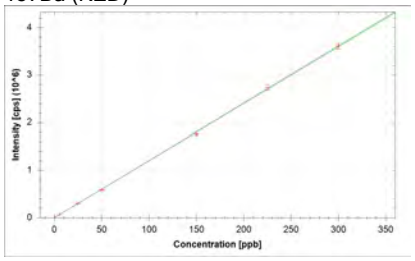
f(x) = 22403.7645*x + 294.6856
R² = 0.9994
BEC = 0.013 ppb
LoD = 0.0041 ppb

135Ba (KED)



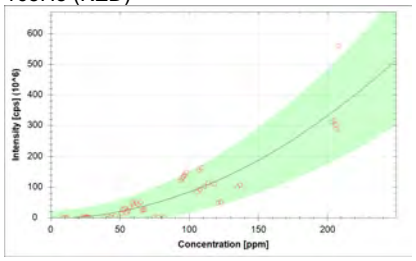
f(x) = 6595.2770*x + 162.6884
R² = 0.9996
BEC = 0.025 ppb
LoD = 0.0064 ppb

137Ba (KED)



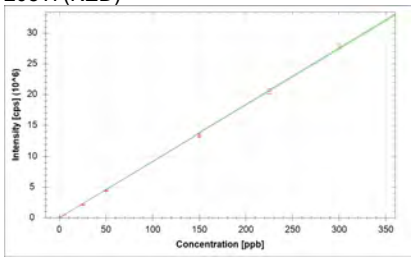
f(x) = 12017.0867*x + 283.8169
R² = 0.9996
BEC = 0.024 ppb
LoD = 0.0051 ppb

165Ho (KED)



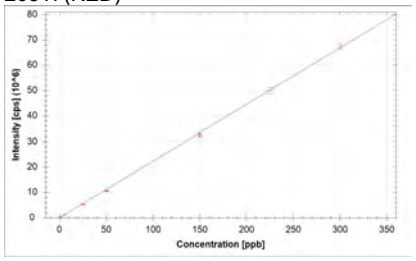
f(x) = 7977.1607*x^2 + 79873.7244*x + -3567297.2478
R² = 0.8306
BEC = 26.738 ppm
LoD = N/A

203Tl (KED)



f(x) = 91769.3325*x + 1147.0570
R² = 0.9995
BEC = 0.012 ppb
LoD = 0.0004 ppb

205Tl (KED)

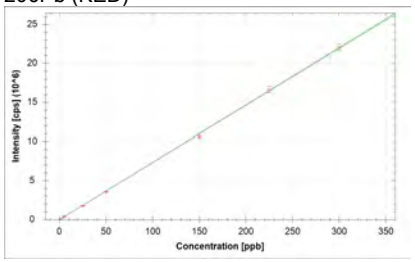


f(x) = 222825.9290*x + 2758.1590
R² = 0.9996
BEC = 0.012 ppb
LoD = 0.0007 ppb

6020B Sample Report

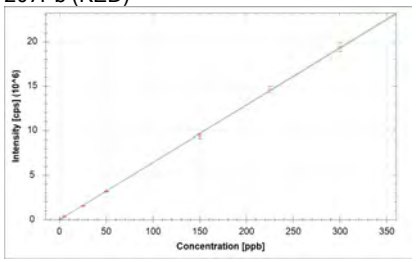
Instrument ID: ICPMS4
Analyst: BPK

206Pb (KED)



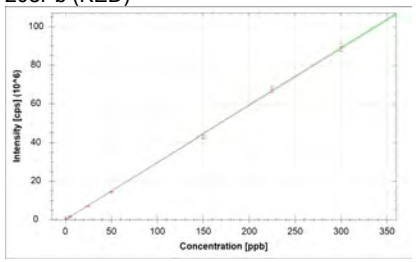
f(x) = 73248.5759*x + 758.8874
R² = 0.9996
BEC = 0.010 ppb
LoD = 0.0014 ppb

207Pb (KED)



f(x) = 64350.3891*x + 658.6152
R² = 0.9997
BEC = 0.010 ppb
LoD = 0.0020 ppb

208Pb (KED)



f(x) = 296146.2173*x + 3043.4380
R² = 0.9995
BEC = 0.010 ppb
LoD = 0.0023 ppb

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample List Summary:

Index:	Label:	Comment	Survey Runs:	Main Runs:	Start Time:	Standard	QC Reference	QC Action	QC Restart
1	Tune	ISM4467	1	3	10/30/2019 10:34:30			None	
2	S0	IM-9701	1	3	10/30/2019 10:40:31			None	
3	S001	MW-11876	1	3	10/30/2019 10:46:33	S001		None	
4	S01	MW-11877	1	3	10/30/2019 10:52:36	S01		None	
5	S02	MW-11878	1	3	10/30/2019 10:58:39	S02		None	
6	S03	MW-11879	1	3	10/30/2019 11:04:42	S03		None	
7	S04	MW-11880	1	3	10/30/2019 11:10:45	S04		None	
8	S05	MW-11881	1	3	10/30/2019 11:16:49	S05		None	
9	S06	MW-11882	1	3	10/30/2019 11:22:53	S06		None	
10	S07	MW-11883	1	3	10/30/2019 11:28:57	S07		None	
11	S08	MW-11884	1	3	10/30/2019 11:35:02	S08		None	
12	ICV	MW-11937	1	3	10/30/2019 11:41:07	ICV		ICV	QC.Next
13	ICV(2)	MW-11937	1	3	10/30/2019 11:47:12	ICV-2		ICV	QC.Next
14	ICB	IM-9701	1	3	10/30/2019 11:53:18			ICB	QC.Next
15	ICSA	MW-11885	1	3	10/30/2019 11:59:19	ICSA		ICSA	QC.Next
16	ICSA(10)	MW-11885	1	3	10/30/2019 12:05:21	ICSA_10X		ICSA	QC.Next
17	CCV	MW-11881	1	3	10/30/2019 12:11:23	CCV		CCV	QC.Next
18	CCB	IM-9701	1	3	10/30/2019 12:17:25			CCB	QC.Next
19	UQ33550-001	PBW	1	3	10/30/2019 12:23:28			None	
20	UQ33550-002	LCS	1	3	10/30/2019 12:29:31	LCS-AQ		LCS_200.8	QC.Next
21	UJ24020-001	SW-1 Swampwater	1	3	10/30/2019 12:35:34			None	
22	UJ24020-001DIS	SW-1 Swampwater	1	3	10/30/2019 12:41:37			None	
23	UJ24020-002	SW-1 Swampwater	1	3	10/30/2019 12:47:40			None	
24	UJ24020-002DIS	SW-1 Swampwater	1	3	10/30/2019 12:53:43			None	
25	UJ24023-001	SW-5 Swampwater	1	3	10/30/2019 12:59:46			None	
26	UJ24023-001DIS	SW-5 Swampwater	1	3	10/30/2019 13:05:49			None	
27	UJ24023-002	SW-5 Swampwater	1	3	10/30/2019 13:11:53			None	
28	UJ24023-002DIS	SW-5 Swampwater	1	3	10/30/2019 13:17:56			None	
29	CCV	MW-11881	1	3	10/30/2019 13:24:00	CCV		CCV	QC.Next
30	CCB	IM-9701	1	3	10/30/2019 13:30:05			CCB	QC.Next
31	UJ24065-001	Effluent	1	3	10/30/2019 13:36:10			None	
32	UJ24065-001S	EffluentS	1	3	10/30/2019 13:42:13			None	
33	UJ24065-001SD	EffluentSD	1	3	10/30/2019 13:48:16			None	
34	UJ24065-001L(5)	EffluentL	1	3	10/30/2019 13:54:20			None	
35	UJ24065-001(5)	Effluent	1	3	10/30/2019 14:00:23			None	
36	UJ24065-001S(5)	EffluentS	1	3	10/30/2019 14:06:26			None	
37	UJ24065-001SD(5)	EffluentSD	1	3	10/30/2019 14:12:30			None	
38	UJ24065-001L(25)	EffluentL	1	3	10/30/2019 14:18:33			None	
39	UQ33592-001	PBW	1	3	10/30/2019 14:24:36			None	
40	UQ33592-002	LCS	1	3	10/30/2019 14:30:40	LCS-AQ		LCS	QC.Next
41	CCV	MW-11881	1	3	10/30/2019 14:36:45	CCV		CCV	QC.Next
42	CCB	IM-9701	1	3	10/30/2019 14:42:50			CCB	QC.Next
43	UJ19003-008	13MW3	1	3	10/30/2019 14:48:54			None	
44	UJ19003-008DIS	13MW3	1	3	10/30/2019 14:54:58			None	
45	UJ24097-001	16C1	1	3	10/30/2019 15:01:01			None	
46	UJ24097-002	16MW8	1	3	10/30/2019 15:07:05			None	
47	UJ24097-003	16MW9	1	3	10/30/2019 15:13:09			None	
48	UJ24097-004	16WC1A	1	3	10/30/2019 15:19:12			None	
49	UJ24097-004S	16WC1AS	1	3	10/30/2019 15:25:16			None	
50	UJ24097-004SD	16WC1ASD	1	3	10/30/2019 15:31:20			None	
51	UJ24097-004L(5)	16WC1AL	1	3	10/30/2019 15:37:24			None	
52	UJ24097-004A	16WC1AA	1	3	10/30/2019 15:43:27			None	
53	CCV	MW-11881	1	3	10/30/2019 15:49:32	CCV		CCV	QC.Next
54	CCB	IM-9701	1	3	10/30/2019 15:55:37			CCB	QC.Next
55	UJ24097-005	16WDUP	1	3	10/30/2019 16:01:42			None	
56	UJ24097-006	16WC1B	1	3	10/30/2019 16:07:46			None	
57	UJ24097-007	16-2	1	3	10/30/2019 16:13:51			None	
58	UJ24097-008	16-3	1	3	10/30/2019 16:19:55			None	
59	UJ24097-009	16-5	1	3	10/30/2019 16:25:59			None	
60	UJ24097-010	16WC2B	1	3	10/30/2019 16:32:03			None	
61	UJ24097-011	16SPRING	1	3	10/30/2019 16:38:07			None	
62	UJ24097-003(10)	16MW9	1	3	10/30/2019 16:44:11			None	
63	UJ24097-004(10)	16WC1A	1	3	10/30/2019 16:50:15			None	
64	UJ24097-005(10)	16WDUP	1	3	10/30/2019 16:56:20			None	

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Index:	Label:	Comment	Survey Runs:	Main Runs:	Start Time:	Standard	QC Reference	QC Action	QC Restart
65	CCV	MW-11881	1	3	10/30/2019 17:02:24	CCV		CCV	QC.Next
66	CCB	IM-9701	1	3	10/30/2019 17:08:29			CCB	QC.Next
67	UJ24097-008(10)	16-3	1	3	10/30/2019 17:14:34			None	
68	UQ33151-001	PBS	1	3	10/30/2019 17:20:38			None	
69	UQ33151-002	LCS	1	3	10/30/2019 17:26:43			None	
70	UQ33197-001	PBW	1	3	10/30/2019 17:32:47			None	
71	UQ33197-002	LCS	1	3	10/30/2019 17:38:52			None	
72	UJ22077-001	Pipe 001 Effluent	1	3	10/30/2019 17:44:56			None	
73	UJ23031-001(25)	SR-102319	1	3	10/30/2019 17:51:01			None	
74	UJ23100-001	WW Pipe 001	1	3	10/30/2019 17:57:05			None	
75	UJ23103-001	POSS-102319	1	3	10/30/2019 18:03:09			None	
76	UJ23067-001	Coatex Pipe 001	1	3	10/30/2019 18:09:14			None	
77	CCV	MW-11881	1	3	10/30/2019 18:15:18	CCV		CCV	QC.Next
78	CCB	IM-9701	1	3	10/30/2019 18:21:23			CCB	QC.Next
79	UJ23077-001	Carolina Polymers Pipe 001	1	3	10/30/2019 18:27:28			None	
80	UQ33748-001	<Comment>	1	3	10/30/2019 18:33:33			None	
81	UQ33748-002	<Comment>	1	3	10/30/2019 18:39:37	LCS-AQ		LCS_200.8	QC.Next
82	UJ21007-001	<Comment>	1	3	10/30/2019 18:45:42			None	
83	UJ21007-002	<Comment>	1	3	10/30/2019 18:51:47			None	
84	UJ28027-003	<Comment>	1	3	10/30/2019 18:57:52			None	
85	UJ28027-003(5)	<Comment>	1	3	10/30/2019 19:03:57			None	
86	UJ28038-003	<Comment>	1	3	10/30/2019 19:10:02			None	
87	UJ28038-003(5)	<Comment>	1	3	10/30/2019 19:16:06			None	
88	UJ28022-001	<Comment>	1	3	10/30/2019 19:22:11			None	
89	CCV	MW-11881	1	3	10/30/2019 19:28:16	CCV		CCV	QC.Next
90	CCB	IM-9701	1	3	10/30/2019 19:34:21			CCB	QC.Next
91	UJ28022-001S	<Comment>	1	3	10/30/2019 19:40:26			None	
92	UJ28022-001SD	<Comment>	1	3	10/30/2019 19:46:31			None	
93	UJ28022-001L(5)	<Comment>	1	3	10/30/2019 19:52:36			None	
94	UJ28022-001(10)	<Comment>	1	3	10/30/2019 19:58:41			None	
95	UJ28022-001S(10)	<Comment>	1	3	10/30/2019 20:04:47			None	
96	UJ28022-001SD(10)	<Comment>	1	3	10/30/2019 20:10:51			None	
97	UJ28022-001L(50)	<Comment>	1	3	10/30/2019 20:16:57			None	
98	UQ33743-001	PBW	1	3	10/30/2019 20:23:02			None	
99	UQ33743-002	LCS	1	3	10/30/2019 20:29:07	LCS-AQ		LCS	QC.Next
100	UH09021-004	MDLv ICPMS2 6020B AQ	1	3	10/30/2019 20:35:12			None	
101	CCV	MW-11881	1	3	10/30/2019 20:41:17	CCV		CCV	QC.Next
102	CCB	IM-9701	1	3	10/30/2019 20:47:22			CCB	QC.Next
103	UJ18065-001	LEACHATE	1	3	10/30/2019 20:53:28			None	
104	UI26045-001DIS	MW-21	1	3	10/30/2019 20:59:33			None	
105	UI26045-002DIS	MW-24	1	3	10/30/2019 21:05:38			None	
106	UI26045-003DIS	MW-25	1	3	10/30/2019 21:11:44			None	
107	UI26045-004DIS	MW-9	1	3	10/30/2019 21:17:49			None	
108	UI26045-005DIS	MW-10	1	3	10/30/2019 21:23:54			None	
109	UI26045-006DIS	MW-29	1	3	10/30/2019 21:30:00			None	
110	UJ26017-001	CMR-MW39R2-191025	1	3	10/30/2019 21:36:05			None	
111	UJ26017-002	CMR-MW79D-191025	1	3	10/30/2019 21:42:11			None	
112	UJ26017-003	CMR-MW81D-191025	1	3	10/30/2019 21:48:16			None	
113	CCV	MW-11881	1	3	10/30/2019 21:54:21	CCV		CCV	QC.Next
114	CCB	IM-9701	1	3	10/30/2019 22:00:27			CCB	QC.Next
115	UJ26017-004	CMR-MW81S-191025	1	3	10/30/2019 22:06:32			None	
116	UJ26017-005	CMR-MW85-191025	1	3	10/30/2019 22:12:38			None	
117	UJ26017-006	CMR-MW87-191025	1	3	10/30/2019 22:18:43			None	
118	UJ26017-007	CMR-DS06-191025	1	3	10/30/2019 22:24:49			None	
119	UJ28009-001	L106-1	1	3	10/30/2019 22:30:55			None	
120	UJ28009-002	WT-1	1	3	10/30/2019 22:37:00			None	
121	UJ28009-003	WT-2	1	3	10/30/2019 22:43:06			None	
122	UJ28009-003S	WT-2S	1	3	10/30/2019 22:49:11			None	
123	UJ28009-003SD	WT-2SD	1	3	10/30/2019 22:55:17			None	
124	UJ28009-003L(5)	WT-2SDL	1	3	10/30/2019 23:01:23			None	
125	CCV	MW-11881	1	3	10/30/2019 23:07:28	CCV		CCV	QC.Next
126	CCB	IM-9701	1	3	10/30/2019 23:13:34			CCB	QC.Next
127	UJ28009-003A	WT-2SDA	1	3	10/30/2019 23:19:40			None	
128	CCV	<Comment>	1	3	10/30/2019 23:25:46	CCV		CCV	QC.Next
129	CCB	<Comment>	1	3	10/30/2019 23:31:52			CCB	QC.Next
130	IS	IM-9701	1	3	10/30/2019 23:37:58			None	
131	RINSE	IM-9701	1	3	10/30/2019 23:44:00			None	

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: Tune Analysis: 10/30/2019 10:34:30 Sample Type UNKNOWN
Comment ISM4467 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	98.500 %	101.265 %	0.156 ppb	1.218 ppb	1.167 ppb	N/A	1.811 ppb	6.802 ppb	6.948 ppb	7.019 ppb
Concentration per Run 1	97.549 %	103.458 %	0.167 ppb	1.464 ppb	1.001 ppb	N/A	1.406 ppb	6.356 ppb	5.952 ppb	6.114 ppb
Concentration per Run 2	98.710 %	100.360 %	0.157 ppb	1.167 ppb	1.343 ppb	N/A	2.082 ppb	6.673 ppb	6.635 ppb	7.724 ppb
Concentration per Run 3	99.241 %	99.977 %	0.145 ppb	1.024 ppb	1.158 ppb	N/A	1.945 ppb	7.377 ppb	8.256 ppb	7.220 ppb
Concentration RSD	0.9 %	1.9 %	7.0 %	18.4 %	14.7 %	N/A	19.7 %	7.7 %	17.0 %	11.7 %
Intensity average	13,775,566 cps	32,605 cps	29 cps	25 cps	135 cps	2,374 cps	20,277 cps	8,209 cps	1,810 cps	2,384 cps
Intensity per Run 1	13,642,568.6 cps	33,311.3 cps	31.0 cps	29.5 cps	120.5 cps	2,370.2 cps	20,026.2 cps	8,032.6 cps	1,670.1 cps	2,220.2 cps
Intensity per Run 2	13,804,945.8 cps	32,313.7 cps	28.5 cps	23.5 cps	151.0 cps	2,310.2 cps	20,557.0 cps	7,992.6 cps	1,730.1 cps	2,530.3 cps
Intensity per Run 3	13,879,184.6 cps	32,190.4 cps	26.5 cps	21.0 cps	132.0 cps	2,440.2 cps	20,246.5 cps	8,603.0 cps	2,030.2 cps	2,400.2 cps
Intensity RSD	0.9 %	1.9 %	7.9 %	17.7 %	11.5 %	2.7 %	1.3 %	4.2 %	10.7 %	6.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	161.420 ppb		1.031 ppm	19.763 ppb	-6.810 ppb	-2.764 ppb	-1.496 ppb	97.645 %	101.568 %	1.904 ppb
Concentration per Run 1	148.560 ppb		0.983 ppm	17.999 ppb	-4.839 ppb	-2.396 ppb	-2.979 ppb	95.855 %	105.188 %	1.756 ppb
Concentration per Run 2	166.716 ppb		1.046 ppm	20.868 ppb	-4.089 ppb	-2.698 ppb	0.388 ppb	97.873 %	99.752 %	2.127 ppb
Concentration per Run 3	168.985 ppb		1.065 ppm	20.423 ppb	-11.502 ppb	-3.197 ppb	-1.896 ppb	99.207 %	99.764 %	1.830 ppb
Concentration RSD	6.9 %		4.2 %	7.8 %	59.9 %	14.6 %	114.9 %	1.7 %	3.1 %	10.3 %
Intensity average	50,258 cps	2,784 cps	7,117,648 cps	38,854 cps	50 cps	59,592 cps	680 cps	6,720,917 cps	298,186 cps	736 cps
Intensity per Run 1	47,701.8 cps	2,700.3 cps	7,004,097.5 cps	38,629.7 cps	60.0 cps	59,461.4 cps	630.0 cps	6,597,701.7 cps	308,814.0 cps	704.0 cps
Intensity per Run 2	51,235.3 cps	2,900.3 cps	7,112,908.8 cps	39,161.7 cps	60.0 cps	59,913.5 cps	760.0 cps	6,736,625.5 cps	292,853.9 cps	808.0 cps
Intensity per Run 3	51,837.5 cps	2,750.3 cps	7,235,936.4 cps	38,770.2 cps	30.0 cps	59,401.1 cps	650.0 cps	6,828,423.0 cps	292,889.5 cps	696.0 cps
Intensity RSD	4.4 %	3.7 %	1.6 %	0.7 %	34.6 %	0.5 %	10.3 %	1.7 %	3.1 %	8.5 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.342 ppb	0.187 ppb	0.274 ppb	N/A	0.516 ppb	84.949 ppb	80.914 ppb	0.175 ppb	-0.473 ppb	-0.469 ppb
Concentration per Run 1	0.310 ppb	0.151 ppb	0.218 ppb	N/A	0.458 ppb	76.750 ppb	73.303 ppb	0.158 ppb	-0.506 ppb	-0.509 ppb
Concentration per Run 2	0.367 ppb	0.198 ppb	0.275 ppb	N/A	0.529 ppb	88.302 ppb	84.023 ppb	0.184 ppb	-0.454 ppb	-0.492 ppb
Concentration per Run 3	0.348 ppb	0.211 ppb	0.329 ppb	N/A	0.560 ppb	89.795 ppb	85.415 ppb	0.183 ppb	-0.460 ppb	-0.405 ppb
Concentration RSD	8.6 %	16.8 %	20.3 %	N/A	10.1 %	8.4 %	8.2 %	8.4 %	6.0 %	11.9 %
Intensity average	6,371 cps	6,592 cps	2,136 cps	2,277 cps	10,488 cps	1,852,619 cps	59,901 cps	9,066 cps	5,553 cps	901 cps
Intensity per Run 1	6,155.3 cps	6,057.5 cps	2,048.2 cps	2,160.2 cps	9,936.0 cps	1,742,621.4 cps	56,411.5 cps	8,518.9 cps	5,385.2 cps	860.0 cps
Intensity per Run 2	6,603.5 cps	6,721.8 cps	2,100.2 cps	2,250.2 cps	10,500.4 cps	1,887,606.1 cps	61,145.7 cps	9,367.5 cps	5,621.3 cps	840.0 cps
Intensity per Run 3	6,353.9 cps	6,998.0 cps	2,260.2 cps	2,420.2 cps	11,028.9 cps	1,927,628.4 cps	62,146.4 cps	9,311.5 cps	5,653.3 cps	1,004.0 cps
Intensity RSD	3.5 %	7.3 %	5.2 %	5.8 %	5.2 %	5.3 %	5.1 %	5.2 %	2.6 %	9.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.208 ppb	0.204 ppb	-0.579 ppb	-0.342 ppb	-0.416 ppb		0.091 ppb	N/A	0.159 ppb	
Concentration per Run 1	0.174 ppb	0.174 ppb	-0.697 ppb	-0.491 ppb	-0.502 ppb		0.146 ppb	N/A	0.205 ppb	
Concentration per Run 2	0.225 ppb	0.215 ppb	-0.515 ppb	-0.210 ppb	-0.384 ppb		-0.077 ppb	N/A	0.146 ppb	
Concentration per Run 3	0.223 ppb	0.223 ppb	-0.525 ppb	-0.324 ppb	-0.363 ppb		0.204 ppb	N/A	0.126 ppb	
Concentration RSD	13.9 %	12.8 %	17.7 %	41.3 %	18.1 %		163.3 %	N/A	25.7 %	
Intensity average	10,470 cps	5,188 cps	11,571 cps	1,877 cps	9,069 cps	16 cps	4,395 cps	73 cps	36 cps	9,264 cps
Intensity per Run 1	9,843.9 cps	4,897.0 cps	11,064.9 cps	1,784.1 cps	8,959.3 cps	10.0 cps	4,678.5 cps	60.0 cps	54.0 cps	8,853.1 cps
Intensity per Run 2	10,768.7 cps	5,277.1 cps	11,805.6 cps	1,976.2 cps	9,027.3 cps	20.0 cps	3,770.4 cps	90.0 cps	30.1 cps	9,331.5 cps
Intensity per Run 3	10,796.7 cps	5,389.2 cps	11,841.6 cps	1,872.1 cps	9,219.4 cps	17.0 cps	4,737.1 cps	70.0 cps	23.2 cps	9,608.7 cps
Intensity RSD	5.2 %	5.0 %	3.8 %	5.1 %	1.5 %	32.8 %	12.3 %	20.8 %	45.2 %	4.1 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		1.164 ppb		101.077 %	0.165 ppb	0.127 ppb	0.125 ppb	0.121 ppb	0.127 ppb	0.021 ppm
Concentration per Run 1		0.518 ppb		105.176 %	0.134 ppb	0.109 ppb	0.111 ppb	0.107 ppb	0.105 ppb	0.022 ppm
Concentration per Run 2		1.628 ppb		98.134 %	0.188 ppb	0.131 ppb	0.129 ppb	0.119 ppb	0.136 ppb	0.021 ppm
Concentration per Run 3		1.345 ppb		99.920 %	0.174 ppb	0.140 ppb	0.134 ppb	0.137 ppb	0.140 ppb	0.021 ppm
Concentration RSD		49.6 %		3.6 %	17.0 %	12.5 %	9.8 %	12.4 %	14.9 %	2.6 %
Intensity average	5,940 cps	-292 cps	6,196 cps	591,078 cps	2,199 cps	2,999 cps	3,302 cps	1,905 cps	5,176 cps	1,886,254 cps
Intensity per Run 1	6,583.8 cps	-422.4 cps	6,802.0 cps	615,048.9 cps	1,916.1 cps	2,740.3 cps	3,100.4 cps	1,780.1 cps	4,556.8 cps	1,942,953.2 cps
Intensity per Run 2	4,786.0 cps	-199.4 cps	5,091.2 cps	573,870.9 cps	2,396.2 cps	3,012.4 cps	3,320.4 cps	1,832.1 cps	5,377.2 cps	1,863,488.4 cps
Intensity per Run 3	6,450.8 cps	-254.4 cps	6,695.9 cps	584,313.5 cps	2,284.2 cps	3,244.4 cps	3,484.5 cps	2,104.2 cps	5,593.3 cps	1,852,320.9 cps
Intensity RSD	16.9 %	39.8 %	15.5 %	3.6 %	11.4 %	8.4 %	5.8 %	9.1 %	10.6 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.155 ppb	0.160 ppb	0.163 ppb	0.159 ppb	0.163 ppb	0.162 ppb	101.647 %	0.169 ppb	0.081 ppb
Concentration per Run 1		0.146 ppb	0.149 ppb	0.188 ppb	0.149 ppb	0.147 ppb	0.155 ppb	103.931 %	0.152 ppb	0.072 ppb
Concentration per Run 2		0.170 ppb	0.165 ppb	0.147 ppb	0.161 ppb	0.169 ppb	0.162 ppb	100.084 %	0.177 ppb	0.081 ppb
Concentration per Run 3		0.148 ppb	0.165 ppb	0.155 ppb	0.166 ppb	0.173 ppb	0.168 ppb	100.927 %	0.177 ppb	0.090 ppb
Concentration RSD		8.5 %	5.9 %	13.2 %	5.5 %	8.5 %	3.9 %	2.0 %	8.7 %	11.3 %
Intensity average	625 cps	265 cps	13,124 cps	136 cps	12,809 cps	2,180 cps	5,384 cps	910,031 cps	5,364 cps	2,676 cps
Intensity per Run 1	624.0 cps	264.0 cps	12,526.3 cps	160.0 cps	12,370.1 cps	2,020.2 cps	5,294.3 cps	930,479.3 cps	5,025.0 cps	2,472.2 cps
Intensity per Run 2	564.0 cps	276.0 cps	13,367.2 cps	120.0 cps	12,750.6 cps	2,224.2 cps	5,301.1 cps	896,030.9 cps	5,517.2 cps	2,644.3 cps
Intensity per Run 3	688.0 cps	256.0 cps	13,479.3 cps	128.0 cps	13,307.1 cps	2,296.2 cps	5,556.4 cps	903,582.2 cps	5,549.2 cps	2,912.3 cps
Intensity RSD	9.9 %	3.8 %	4.0 %	15.6 %	3.7 %	6.6 %	2.8 %	2.0 %	5.5 %	8.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.084 ppb	0.890 ppb	0.848 ppb			102.319 %			0.015 ppm	0.161 ppb
Concentration per Run 1	0.073 ppb	0.804 ppb	0.757 ppb			106.312 %			0.015 ppm	0.142 ppb
Concentration per Run 2	0.088 ppb	0.951 ppb	0.901 ppb			99.944 %			0.015 ppm	0.169 ppb
Concentration per Run 3	0.090 ppb	0.915 ppb	0.885 ppb			100.700 %			0.014 ppm	0.172 ppb
Concentration RSD	10.7 %	8.6 %	9.3 %			3.4 %			2.6 %	10.0 %
Intensity average	2,206 cps	6,140 cps	10,665 cps	399 cps	280 cps	3,216,170 cps	308 cps	183 cps	3,331,625 cps	16,665 cps
Intensity per Run 1	2,024.2 cps	5,737.3 cps	9,863.9 cps	412.0 cps	220.0 cps	3,341,690.7 cps	252.0 cps	160.0 cps	3,409,536.3 cps	15,578.7 cps
Intensity per Run 2	2,268.2 cps	6,437.7 cps	11,117.0 cps	372.0 cps	276.0 cps	3,141,524.3 cps	368.0 cps	184.0 cps	3,348,443.8 cps	17,052.6 cps
Intensity per Run 3	2,324.2 cps	6,245.6 cps	11,012.9 cps	412.0 cps	344.0 cps	3,165,295.2 cps	304.0 cps	204.0 cps	3,236,895.5 cps	17,364.1 cps
Intensity RSD	7.2 %	5.9 %	6.5 %	5.8 %	22.2 %	3.4 %	18.9 %	12.1 %	2.6 %	5.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.163 ppb	0.190 ppb	0.186 ppb	0.189 ppb	105.389 %
Concentration per Run 1	0.145 ppb	0.174 ppb	0.168 ppb	0.171 ppb	110.164 %
Concentration per Run 2	0.170 ppb	0.198 ppb	0.195 ppb	0.197 ppb	102.880 %
Concentration per Run 3	0.175 ppb	0.198 ppb	0.197 ppb	0.198 ppb	103.122 %
Concentration RSD	9.9 %	7.3 %	8.7 %	7.9 %	3.9 %
Intensity average	41,115 cps	15,421 cps	13,294 cps	61,945 cps	2,701,048 cps
Intensity per Run 1	38,548.6 cps	14,849.9 cps	12,602.4 cps	59,261.0 cps	2,823,433.9 cps
Intensity per Run 2	41,727.7 cps	15,679.9 cps	13,539.4 cps	63,113.2 cps	2,636,761.8 cps
Intensity per Run 3	43,068.2 cps	15,733.9 cps	13,739.6 cps	63,459.9 cps	2,642,948.2 cps
Intensity RSD	5.6 %	3.2 %	4.6 %	3.8 %	3.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: S0 Analysis: 10/30/2019 10:40:31 Sample Type BLK
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	N/A	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration per Run	100.000 %	100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	N/A	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration RSD	N/A	N/A	0.5 %	0.4 %	0.1 %	N/A	0.0 %	0.1 %	0.1 %	0.1 %
Intensity average	13,985,333 cps	32,198 cps	4 cps	4 cps	16 cps	2,050 cps	16,471 cps	2,044 cps	487 cps	603 cps
Intensity per Run 1	13,819,252.1 cps	32,022.5 cps	4.5 cps	4.0 cps	16.5 cps	2,170.2 cps	16,240.6 cps	2,120.2 cps	410.0 cps	630.0 cps
Intensity per Run 2	14,072,421.2 cps	32,387.9 cps	4.5 cps	2.0 cps	13.5 cps	1,890.1 cps	17,001.6 cps	2,160.2 cps	560.0 cps	530.0 cps
Intensity per Run 3	14,064,324.9 cps	32,183.4 cps	1.5 cps	5.0 cps	17.5 cps	2,090.2 cps	16,170.5 cps	1,850.1 cps	490.0 cps	650.0 cps
Intensity RSD	1.0 %	0.6 %	49.5 %	41.7 %	13.1 %	7.0 %	2.8 %	8.3 %	15.4 %	10.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.000 ppb		0.829 ppm	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	100.000 %	0.000 ppb
Concentration per Run	0.000 ppb		0.829 ppm	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	100.000 %	0.000 ppb
Concentration RSD	0.1 %		3.0 %	0.0 %	0.1 %	0.0 %	0.1 %	N/A	N/A	1.7 %
Intensity average	507 cps	2,720 cps	5,639,340 cps	21,729 cps	77 cps	68,367 cps	743 cps	6,883,006 cps	293,583 cps	1 cps
Intensity per Run 1	420.0 cps	2,930.4 cps	5,515,638.7 cps	20,957.7 cps	80.0 cps	67,793.7 cps	780.0 cps	6,937,611.5 cps	293,698.2 cps	0.0 cps
Intensity per Run 2	540.0 cps	2,710.3 cps	5,622,294.0 cps	21,939.3 cps	70.0 cps	68,145.8 cps	770.0 cps	6,763,223.6 cps	296,951.0 cps	4.0 cps
Intensity per Run 3	560.0 cps	2,520.3 cps	5,780,087.4 cps	22,290.0 cps	80.0 cps	69,161.2 cps	680.0 cps	6,948,182.5 cps	290,100.3 cps	0.0 cps
Intensity RSD	14.9 %	7.5 %	2.4 %	3.2 %	7.5 %	1.0 %	7.4 %	1.5 %	1.2 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	N/A	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	N/A	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb
Concentration RSD	0.0 %	0.0 %	0.0 %	N/A	0.0 %	0.0 %	0.0 %	0.1 %	0.0 %	0.0 %
Intensity average	1,708 cps	2,579 cps	1,324 cps	1,443 cps	2,198 cps	40,479 cps	1,192 cps	265 cps	11,050 cps	1,741 cps
Intensity per Run 1	1,670.3 cps	2,480.2 cps	1,288.1 cps	1,250.1 cps	2,192.2 cps	41,549.3 cps	1,168.1 cps	236.0 cps	10,812.7 cps	1,820.1 cps
Intensity per Run 2	1,702.8 cps	2,624.3 cps	1,340.1 cps	1,620.1 cps	2,152.2 cps	39,984.8 cps	1,252.1 cps	280.0 cps	10,840.7 cps	1,724.1 cps
Intensity per Run 3	1,750.3 cps	2,632.3 cps	1,344.1 cps	1,460.1 cps	2,248.2 cps	39,903.9 cps	1,156.1 cps	280.0 cps	11,497.3 cps	1,680.1 cps
Intensity RSD	2.4 %	3.3 %	2.4 %	12.9 %	2.2 %	2.3 %	4.4 %	9.6 %	3.5 %	4.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb		0.000 ppb	N/A	0.000 ppb	
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb		0.000 ppb	N/A	0.000 ppb	
Concentration RSD	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %		0.3 %	N/A	-0.9 %	
Intensity average	4,170 cps	1,963 cps	15,030 cps	2,223 cps	11,097 cps	7 cps	4,005 cps	47 cps	-22 cps	6,528 cps
Intensity per Run 1	3,964.6 cps	1,940.2 cps	14,961.0 cps	2,140.2 cps	11,048.9 cps	11.0 cps	4,715.3 cps	30.0 cps	-28.9 cps	6,258.6 cps
Intensity per Run 2	4,356.8 cps	1,972.2 cps	14,684.7 cps	2,280.2 cps	11,265.1 cps	3.0 cps	2,584.0 cps	50.0 cps	1.5 cps	6,608.8 cps
Intensity per Run 3	4,188.7 cps	1,976.2 cps	15,445.6 cps	2,248.2 cps	10,976.8 cps	8.0 cps	4,717.0 cps	60.0 cps	-37.5 cps	6,715.8 cps
Intensity RSD	4.7 %	1.0 %	2.6 %	3.3 %	1.4 %	55.1 %	30.7 %	32.7 %	94.8 %	3.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.000 ppb		100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.021 ppm
Concentration per Run		0.000 ppb		100.000 %	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.021 ppm
Concentration RSD		-0.5 %		N/A	0.2 %	0.2 %	0.2 %	0.2 %	0.2 %	0.5 %
Intensity average	6,240 cps	-500 cps	6,603 cps	584,781 cps	323 cps	389 cps	460 cps	260 cps	593 cps	1,834,651 cps
Intensity per Run 1	7,430.3 cps	-679.9 cps	7,881.5 cps	575,437.5 cps	304.0 cps	344.0 cps	380.0 cps	204.0 cps	476.0 cps	1,824,507.6 cps
Intensity per Run 2	3,965.6 cps	-248.9 cps	4,122.7 cps	587,423.6 cps	280.0 cps	364.0 cps	436.0 cps	268.0 cps	652.0 cps	1,838,164.0 cps
Intensity per Run 3	7,325.2 cps	-571.2 cps	7,803.5 cps	591,482.2 cps	384.0 cps	460.0 cps	564.0 cps	308.0 cps	652.0 cps	1,841,281.5 cps
Intensity RSD	31.6 %	44.8 %	32.5 %	1.4 %	16.9 %	15.9 %	20.5 %	20.2 %	17.1 %	0.5 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration per Run		0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %	0.000 ppb	0.000 ppb
Concentration RSD		0.2 %	0.2 %	1.7 %	0.1 %	0.2 %	0.1 %	N/A	0.0 %	0.1 %
Intensity average	584 cps	99 cps	95 cps	1 cps	77 cps	9 cps	43 cps	895,282 cps	779 cps	360 cps
Intensity per Run 1	564.0 cps	108.0 cps	116.0 cps	0.0 cps	68.0 cps	8.0 cps	39.5 cps	878,268.2 cps	764.0 cps	312.0 cps
Intensity per Run 2	596.0 cps	80.0 cps	84.0 cps	0.0 cps	76.0 cps	8.0 cps	47.3 cps	914,214.9 cps	772.0 cps	392.0 cps
Intensity per Run 3	592.0 cps	108.0 cps	84.0 cps	4.0 cps	88.0 cps	12.0 cps	42.5 cps	893,363.7 cps	800.0 cps	376.0 cps
Intensity RSD	3.0 %	16.4 %	19.5 %	173.2 %	13.0 %	24.7 %	9.1 %	2.0 %	2.4 %	11.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb			100.000 %			0.014 ppm	0.000 ppb
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb			100.000 %			0.014 ppm	0.000 ppb
Concentration RSD	0.1 %	0.1 %	0.1 %			N/A			1.4 %	0.0 %
Intensity average	295 cps	163 cps	284 cps	21 cps	15 cps	3,143,288 cps	57 cps	31 cps	3,257,695 cps	1,147 cps
Intensity per Run 1	304.0 cps	164.0 cps	256.0 cps	20.0 cps	4.0 cps	3,100,596.1 cps	68.0 cps	28.0 cps	3,245,238.9 cps	1,129.1 cps
Intensity per Run 2	320.0 cps	148.0 cps	300.0 cps	20.0 cps	20.0 cps	3,110,633.7 cps	64.0 cps	36.0 cps	3,307,913.1 cps	1,161.1 cps
Intensity per Run 3	260.0 cps	176.0 cps	296.0 cps	24.0 cps	20.0 cps	3,218,634.1 cps	40.0 cps	28.0 cps	3,219,932.0 cps	1,151.1 cps
Intensity RSD	10.5 %	8.6 %	8.6 %	10.8 %	63.0 %	2.1 %	26.4 %	15.1 %	1.4 %	1.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration per Run	0.000 ppb	0.000 ppb	0.000 ppb	0.000 ppb	100.000 %
Concentration RSD	0.0 %	0.0 %	0.1 %	0.1 %	N/A
Intensity average	2,758 cps	759 cps	659 cps	3,044 cps	2,562,938 cps
Intensity per Run 1	2,686.3 cps	715.0 cps	616.0 cps	2,763.1 cps	2,543,795.2 cps
Intensity per Run 2	2,802.3 cps	782.0 cps	704.0 cps	3,142.2 cps	2,562,955.0 cps
Intensity per Run 3	2,786.3 cps	780.0 cps	656.0 cps	3,228.2 cps	2,582,062.6 cps
Intensity RSD	2.3 %	5.0 %	6.7 %	8.1 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: S001 Analysis: 10/30/2019 10:46:33 Sample Type STD
Comment MW-11876 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.345 %	100.209 %	N/A	N/A	N/A	N/A	N/A	53.571 ppb	54.022 ppb	52.142 ppb
Concentration per Run 1	98.691 %	99.785 %	N/A	N/A	N/A	N/A	N/A	53.536 ppb	52.891 ppb	51.678 ppb
Concentration per Run 2	99.763 %	100.750 %	N/A	N/A	N/A	N/A	N/A	53.278 ppb	52.592 ppb	51.231 ppb
Concentration per Run 3	99.582 %	100.090 %	N/A	N/A	N/A	N/A	N/A	53.900 ppb	56.582 ppb	53.518 ppb
Concentration RSD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.6 %	4.1 %	2.3 %
Intensity average	13,893,783 cps	32,265 cps	5 cps	3 cps	18 cps	2,234 cps	17,666 cps	49,823 cps	10,618 cps	13,617 cps
Intensity per Run 1	13,802,282.2 cps	32,128.8 cps	5.0 cps	1.5 cps	20.5 cps	2,260.2 cps	17,372.1 cps	49,458.0 cps	10,334.3 cps	13,407.2 cps
Intensity per Run 2	13,952,131.5 cps	32,439.6 cps	4.0 cps	3.0 cps	15.5 cps	2,160.2 cps	17,652.5 cps	49,779.5 cps	10,394.3 cps	13,447.3 cps
Intensity per Run 3	13,926,934.0 cps	32,227.0 cps	4.5 cps	5.0 cps	19.0 cps	2,280.2 cps	17,973.0 cps	50,231.2 cps	11,125.0 cps	13,997.9 cps
Intensity RSD	0.6 %	0.5 %	11.1 %	55.5 %	14.0 %	2.9 %	1.7 %	0.8 %	4.1 %	2.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	N/A		N/A	N/A	N/A	N/A	N/A	99.168 %	100.035 %	N/A
Concentration per Run 1	N/A		N/A	N/A	N/A	N/A	N/A	100.461 %	99.076 %	N/A
Concentration per Run 2	N/A		N/A	N/A	N/A	N/A	N/A	97.417 %	100.358 %	N/A
Concentration per Run 3	N/A		N/A	N/A	N/A	N/A	N/A	99.627 %	100.670 %	N/A
Concentration RSD	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	730 cps	2,824 cps	5,452,575 cps	23,987 cps	107 cps	80,090 cps	930 cps	6,825,763 cps	293,685 cps	1 cps
Intensity per Run 1	740.0 cps	3,040.4 cps	5,253,346.0 cps	24,193.5 cps	60.0 cps	78,757.9 cps	640.0 cps	6,914,764.4 cps	290,870.8 cps	4.0 cps
Intensity per Run 2	780.0 cps	2,950.4 cps	5,482,557.3 cps	23,221.8 cps	110.0 cps	80,267.1 cps	1,120.1 cps	6,705,185.2 cps	294,634.5 cps	0.0 cps
Intensity per Run 3	670.0 cps	2,480.3 cps	5,621,822.4 cps	24,544.3 cps	150.0 cps	81,243.6 cps	1,030.0 cps	6,857,339.9 cps	295,550.3 cps	0.0 cps
Intensity RSD	7.6 %	10.7 %	3.4 %	2.9 %	42.3 %	1.6 %	27.4 %	1.6 %	0.8 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	N/A	N/A	N/A	N/A	N/A	21.194 ppb	20.334 ppb	N/A	1.529 ppb	1.544 ppb
Concentration per Run 1	N/A	N/A	N/A	N/A	N/A	20.648 ppb	20.116 ppb	N/A	1.555 ppb	1.628 ppb
Concentration per Run 2	N/A	N/A	N/A	N/A	N/A	21.091 ppb	21.260 ppb	N/A	1.478 ppb	1.431 ppb
Concentration per Run 3	N/A	N/A	N/A	N/A	N/A	21.843 ppb	19.626 ppb	N/A	1.553 ppb	1.572 ppb
Concentration RSD	N/A	N/A	N/A	N/A	N/A	2.9 %	4.1 %	N/A	2.9 %	6.6 %
Intensity average	1,715 cps	1,037 cps	1,195 cps	1,293 cps	1,239 cps	486,909 cps	15,743 cps	228 cps	28,940 cps	4,545 cps
Intensity per Run 1	1,633.7 cps	1,016.0 cps	1,164.1 cps	1,220.1 cps	1,168.1 cps	468,853.7 cps	15,437.6 cps	276.0 cps	28,500.5 cps	4,624.9 cps
Intensity per Run 2	1,767.7 cps	1,000.0 cps	1,172.1 cps	1,300.1 cps	1,328.1 cps	487,190.8 cps	16,458.9 cps	200.0 cps	28,668.9 cps	4,368.8 cps
Intensity per Run 3	1,742.4 cps	1,096.1 cps	1,248.1 cps	1,360.1 cps	1,220.1 cps	504,682.7 cps	15,333.4 cps	208.0 cps	29,651.2 cps	4,640.9 cps
Intensity RSD	4.2 %	5.0 %	3.9 %	5.4 %	6.6 %	3.7 %	4.0 %	18.3 %	2.1 %	3.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.112 ppb	1.058 ppb	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 1	1.113 ppb	1.026 ppb	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 2	1.100 ppb	1.058 ppb	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 3	1.122 ppb	1.089 ppb	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration RSD	1.0 %	2.9 %	N/A	N/A	N/A		N/A	N/A	N/A	
Intensity average	37,230 cps	18,312 cps	9,377 cps	1,513 cps	7,317 cps	11 cps	3,960 cps	40 cps	-13 cps	7,843 cps
Intensity per Run 1	36,661.8 cps	17,652.5 cps	9,015.3 cps	1,536.1 cps	7,062.0 cps	10.0 cps	4,474.9 cps	60.0 cps	-18.9 cps	7,579.3 cps
Intensity per Run 2	37,131.1 cps	18,377.5 cps	9,551.7 cps	1,460.1 cps	7,382.2 cps	11.0 cps	2,922.6 cps	30.0 cps	-19.4 cps	7,822.4 cps
Intensity per Run 3	37,897.5 cps	18,906.3 cps	9,563.7 cps	1,544.1 cps	7,506.3 cps	11.0 cps	4,481.7 cps	30.0 cps	0.7 cps	8,126.6 cps
Intensity RSD	1.7 %	3.4 %	3.3 %	3.1 %	3.1 %	5.4 %	22.7 %	43.3 %	91.8 %	3.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		N/A		99.917 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 1		N/A		97.352 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 2		N/A		101.037 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 3		N/A		101.363 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration RSD		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	6,018 cps	-382 cps	6,347 cps	584,296 cps	485 cps	709 cps	796 cps	400 cps	1,197 cps	1,840,963 cps
Intensity per Run 1	6,768.0 cps	-330.2 cps	7,125.2 cps	569,295.1 cps	436.0 cps	604.0 cps	620.0 cps	348.0 cps	1,120.1 cps	1,827,198.3 cps
Intensity per Run 2	4,417.8 cps	-404.1 cps	4,713.0 cps	590,843.8 cps	460.0 cps	796.0 cps	832.0 cps	472.0 cps	1,212.1 cps	1,858,075.5 cps
Intensity per Run 3	6,868.0 cps	-411.9 cps	7,204.2 cps	592,749.6 cps	560.0 cps	728.0 cps	936.0 cps	380.0 cps	1,260.1 cps	1,837,613.8 cps
Intensity RSD	23.0 %	11.8 %	22.3 %	2.2 %	13.6 %	13.7 %	20.2 %	16.1 %	5.9 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.101 ppb	N/A	0.103 ppb	N/A	0.106 ppb	0.099 ppb	100.987 %	4.287 ppb	N/A
Concentration per Run 1		0.059 ppb	N/A	0.092 ppb	N/A	0.107 ppb	0.093 ppb	100.633 %	4.211 ppb	N/A
Concentration per Run 2		0.100 ppb	N/A	0.095 ppb	N/A	0.098 ppb	0.102 ppb	102.202 %	4.250 ppb	N/A
Concentration per Run 3		0.144 ppb	N/A	0.121 ppb	N/A	0.112 ppb	0.102 ppb	100.124 %	4.398 ppb	N/A
Concentration RSD		42.2 %	N/A	15.4 %	N/A	6.8 %	5.4 %	N/A	2.3 %	N/A
Intensity average	595 cps	207 cps	233 cps	85 cps	257 cps	1,408 cps	3,284 cps	904,115 cps	116,181 cps	2,031 cps
Intensity per Run 1	628.0 cps	160.0 cps	264.0 cps	76.0 cps	252.0 cps	1,420.1 cps	3,070.9 cps	900,953.0 cps	113,820.4 cps	2,004.2 cps
Intensity per Run 2	620.0 cps	208.0 cps	208.0 cps	80.0 cps	252.0 cps	1,320.1 cps	3,431.4 cps	914,996.4 cps	116,642.3 cps	1,956.2 cps
Intensity per Run 3	536.0 cps	252.0 cps	228.0 cps	100.0 cps	268.0 cps	1,484.1 cps	3,348.8 cps	896,395.8 cps	118,079.5 cps	2,132.2 cps
Intensity RSD	8.6 %	22.3 %	12.2 %	15.1 %	3.6 %	5.9 %	5.8 %	1.1 %	1.9 %	4.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	N/A	N/A	N/A			98.959 %			N/A	N/A
Concentration per Run 1	N/A	N/A	N/A			99.228 %			N/A	N/A
Concentration per Run 2	N/A	N/A	N/A			100.743 %			N/A	N/A
Concentration per Run 3	N/A	N/A	N/A			96.905 %			N/A	N/A
Concentration RSD	N/A	N/A	N/A			N/A			N/A	N/A
Intensity average	1,637 cps	1,063 cps	1,920 cps	7 cps	12 cps	3,110,569 cps	59 cps	25 cps	3,205,117 cps	1,248 cps
Intensity per Run 1	1,524.1 cps	1,088.0 cps	1,772.1 cps	8.0 cps	16.0 cps	3,119,037.1 cps	64.0 cps	24.0 cps	3,229,026.7 cps	1,222.1 cps
Intensity per Run 2	1,796.1 cps	1,072.0 cps	2,004.2 cps	0.0 cps	8.0 cps	3,166,656.9 cps	44.0 cps	20.0 cps	3,170,662.5 cps	1,226.1 cps
Intensity per Run 3	1,592.1 cps	1,028.0 cps	1,984.2 cps	12.0 cps	12.0 cps	3,046,012.4 cps	68.0 cps	32.0 cps	3,215,661.4 cps	1,295.1 cps
Intensity RSD	8.6 %	2.9 %	6.7 %	91.7 %	33.3 %	2.0 %	21.9 %	24.1 %	1.0 %	3.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	N/A	N/A	N/A	N/A	100.282 %
Concentration per Run 1	N/A	N/A	N/A	N/A	98.662 %
Concentration per Run 2	N/A	N/A	N/A	N/A	101.147 %
Concentration per Run 3	N/A	N/A	N/A	N/A	101.037 %
Concentration RSD	N/A	N/A	N/A	N/A	N/A
Intensity average	3,050 cps	1,010 cps	836 cps	4,064 cps	2,570,170 cps
Intensity per Run 1	2,975.4 cps	963.0 cps	816.0 cps	4,043.3 cps	2,528,636.2 cps
Intensity per Run 2	3,036.4 cps	1,038.0 cps	816.0 cps	3,962.3 cps	2,592,346.0 cps
Intensity per Run 3	3,138.4 cps	1,029.0 cps	876.0 cps	4,185.3 cps	2,589,527.9 cps
Intensity RSD	2.7 %	4.1 %	4.1 %	2.8 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: S01 Analysis: 10/30/2019 10:52:36 Sample Type STD
Comment MW-11877 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.096 %	100.059 %	0.385 ppb	49.726 ppb	50.229 ppb	N/A	378.310 ppb	407.158 ppb	418.255 ppb	402.015 ppb
Concentration per Run 1	98.624 %	99.919 %	0.397 ppb	50.027 ppb	48.981 ppb	N/A	374.593 ppb	404.843 ppb	411.935 ppb	398.086 ppb
Concentration per Run 2	99.096 %	99.472 %	0.348 ppb	50.329 ppb	50.750 ppb	N/A	382.798 ppb	403.240 ppb	423.892 ppb	400.173 ppb
Concentration per Run 3	99.569 %	100.785 %	0.409 ppb	48.823 ppb	50.957 ppb	N/A	377.540 ppb	413.391 ppb	418.939 ppb	407.785 ppb
Concentration RSD	N/A	N/A	8.4 %	1.6 %	2.2 %	N/A	1.1 %	1.3 %	1.4 %	1.3 %
Intensity average	13,858,953 cps	32,217 cps	65 cps	848 cps	5,072 cps	2,154 cps	762,760 cps	368,372 cps	79,653 cps	101,932 cps
Intensity per Run 1	13,792,855.4 cps	32,171.9 cps	66.5 cps	852.0 cps	4,940.5 cps	2,330.2 cps	755,137.8 cps	366,151.0 cps	78,435.9 cps	100,916.4 cps
Intensity per Run 2	13,858,918.0 cps	32,028.0 cps	58.5 cps	853.5 cps	5,097.0 cps	2,050.2 cps	768,643.5 cps	363,468.3 cps	80,428.4 cps	101,109.1 cps
Intensity per Run 3	13,925,086.2 cps	32,450.6 cps	69.0 cps	838.0 cps	5,177.6 cps	2,080.2 cps	764,498.2 cps	375,495.6 cps	80,096.2 cps	103,770.5 cps
Intensity RSD	0.5 %	0.7 %	8.5 %	1.0 %	2.4 %	7.1 %	0.9 %	1.7 %	1.3 %	1.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	40.940 ppb		N/A	411.524 ppb	487.207 ppb	406.563 ppb	435.942 ppb	99.780 %	102.106 %	4.776 ppb
Concentration per Run 1	40.676 ppb		N/A	408.660 ppb	493.294 ppb	390.892 ppb	430.022 ppb	102.077 %	102.194 %	4.462 ppb
Concentration per Run 2	41.237 ppb		N/A	410.910 ppb	460.568 ppb	417.557 ppb	444.051 ppb	97.180 %	101.971 %	4.976 ppb
Concentration per Run 3	40.907 ppb		N/A	415.000 ppb	507.759 ppb	411.239 ppb	433.752 ppb	100.082 %	102.154 %	4.890 ppb
Concentration RSD	0.7 %		N/A	0.8 %	5.0 %	3.4 %	1.7 %	N/A	N/A	5.8 %
Intensity average	13,110 cps	4,227 cps	5,123,446 cps	373,221 cps	2,094 cps	1,145,922 cps	22,243 cps	6,867,843 cps	299,766 cps	1,855 cps
Intensity per Run 1	13,026.8 cps	4,360.8 cps	5,058,900.4 cps	370,968.1 cps	2,120.2 cps	1,129,564.0 cps	21,969.3 cps	7,025,999.0 cps	300,024.0 cps	1,732.1 cps
Intensity per Run 2	13,156.9 cps	4,550.8 cps	5,153,967.2 cps	371,945.9 cps	1,980.2 cps	1,145,772.6 cps	22,610.5 cps	6,688,885.4 cps	299,368.9 cps	1,932.2 cps
Intensity per Run 3	13,147.0 cps	3,770.6 cps	5,157,470.7 cps	376,747.6 cps	2,180.2 cps	1,162,428.3 cps	22,149.7 cps	6,888,643.8 cps	299,906.6 cps	1,900.1 cps
Intensity RSD	0.6 %	9.6 %	1.1 %	0.8 %	4.9 %	1.4 %	1.5 %	2.5 %	0.1 %	5.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	4.853 ppb	5.064 ppb	5.334 ppb	N/A	5.070 ppb	58.962 ppb	56.095 ppb	1.014 ppb	4.901 ppb	4.862 ppb
Concentration per Run 1	4.841 ppb	5.035 ppb	5.257 ppb	N/A	5.054 ppb	59.069 ppb	54.642 ppb	1.009 ppb	4.967 ppb	4.793 ppb
Concentration per Run 2	4.837 ppb	5.014 ppb	5.325 ppb	N/A	4.951 ppb	58.189 ppb	57.467 ppb	1.009 ppb	4.834 ppb	4.775 ppb
Concentration per Run 3	4.881 ppb	5.143 ppb	5.422 ppb	N/A	5.205 ppb	59.630 ppb	56.174 ppb	1.024 ppb	4.903 ppb	5.017 ppb
Concentration RSD	0.5 %	1.4 %	1.6 %	N/A	2.5 %	1.2 %	2.5 %	0.9 %	1.4 %	2.8 %
Intensity average	68,073 cps	111,259 cps	16,859 cps	17,512 cps	83,727 cps	1,302,367 cps	42,189 cps	51,613 cps	68,483 cps	10,711 cps
Intensity per Run 1	67,971.3 cps	110,728.9 cps	16,559.0 cps	17,552.4 cps	82,983.1 cps	1,296,124.6 cps	41,163.9 cps	51,401.8 cps	67,244.5 cps	10,472.4 cps
Intensity per Run 2	67,765.1 cps	110,034.8 cps	16,887.4 cps	17,432.2 cps	82,189.6 cps	1,292,502.6 cps	43,134.5 cps	51,289.3 cps	69,404.4 cps	10,644.6 cps
Intensity per Run 3	68,483.3 cps	113,013.1 cps	17,131.8 cps	17,552.4 cps	86,007.4 cps	1,318,474.6 cps	42,267.5 cps	52,148.7 cps	68,801.2 cps	11,016.9 cps
Intensity RSD	0.5 %	1.4 %	1.7 %	0.4 %	2.4 %	1.1 %	2.3 %	0.9 %	1.6 %	2.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	2.238 ppb	2.144 ppb	9.846 ppb	9.378 ppb	9.331 ppb		1.966 ppb	N/A	1.077 ppb	
Concentration per Run 1	2.256 ppb	2.110 ppb	9.896 ppb	9.352 ppb	9.262 ppb		2.015 ppb	N/A	0.981 ppb	
Concentration per Run 2	2.216 ppb	2.140 ppb	9.900 ppb	9.232 ppb	9.119 ppb		1.900 ppb	N/A	1.122 ppb	
Concentration per Run 3	2.243 ppb	2.182 ppb	9.742 ppb	9.549 ppb	9.611 ppb		1.984 ppb	N/A	1.128 ppb	
Concentration RSD	0.9 %	1.7 %	0.9 %	1.7 %	2.7 %		3.0 %	N/A	7.7 %	
Intensity average	71,624 cps	35,819 cps	77,500 cps	12,412 cps	59,575 cps	9 cps	10,562 cps	197 cps	364 cps	7,352 cps
Intensity per Run 1	71,335.5 cps	35,309.9 cps	77,133.6 cps	12,210.0 cps	58,348.2 cps	6.0 cps	10,628.5 cps	200.0 cps	322.4 cps	7,061.0 cps
Intensity per Run 2	71,624.8 cps	35,707.0 cps	77,053.2 cps	12,398.2 cps	59,204.3 cps	13.0 cps	10,234.0 cps	180.0 cps	386.9 cps	7,359.2 cps
Intensity per Run 3	71,910.5 cps	36,441.1 cps	78,312.9 cps	12,626.4 cps	61,173.5 cps	9.0 cps	10,823.2 cps	210.0 cps	383.5 cps	7,636.3 cps
Intensity RSD	0.4 %	1.6 %	0.9 %	1.7 %	2.4 %	37.6 %	2.8 %	7.8 %	10.0 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		1.063 ppb		99.996 %	9.640 ppb	9.327 ppb	9.306 ppb	9.198 ppb	9.148 ppb	N/A
Concentration per Run 1		1.068 ppb		97.071 %	9.695 ppb	9.442 ppb	9.383 ppb	9.316 ppb	9.308 ppb	N/A
Concentration per Run 2		0.704 ppb		102.510 %	9.428 ppb	9.348 ppb	9.288 ppb	9.103 ppb	8.993 ppb	N/A
Concentration per Run 3		1.417 ppb		100.409 %	9.798 ppb	9.191 ppb	9.247 ppb	9.173 ppb	9.144 ppb	N/A
Concentration RSD		33.3 %		N/A	2.0 %	1.4 %	0.8 %	1.2 %	1.7 %	N/A
Intensity average	5,921 cps	-306 cps	6,146 cps	584,760 cps	108,738 cps	190,794 cps	210,099 cps	124,203 cps	328,060 cps	1,823,994 cps
Intensity per Run 1	5,990.6 cps	-302.9 cps	6,294.8 cps	567,651.7 cps	106,597.1 cps	188,426.8 cps	206,834.4 cps	122,934.0 cps	326,447.0 cps	1,793,065.0 cps
Intensity per Run 2	5,544.3 cps	-370.2 cps	5,753.4 cps	599,456.6 cps	108,316.0 cps	194,491.2 cps	212,971.5 cps	124,695.9 cps	326,697.5 cps	1,840,438.5 cps
Intensity per Run 3	6,228.7 cps	-244.7 cps	6,390.9 cps	587,172.3 cps	111,302.2 cps	189,463.3 cps	210,491.1 cps	124,978.8 cps	331,034.8 cps	1,838,478.8 cps
Intensity RSD	5.9 %	20.5 %	5.6 %	2.7 %	2.2 %	1.7 %	1.5 %	0.9 %	0.8 %	1.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.512 ppb	N/A	0.561 ppb	N/A	0.511 ppb	0.440 ppb	100.642 %	19.916 ppb	1.509 ppb
Concentration per Run 1		0.533 ppb	N/A	0.561 ppb	N/A	0.500 ppb	0.439 ppb	99.753 %	19.718 ppb	1.487 ppb
Concentration per Run 2		0.514 ppb	N/A	0.524 ppb	N/A	0.521 ppb	0.442 ppb	99.610 %	19.935 ppb	1.518 ppb
Concentration per Run 3		0.488 ppb	N/A	0.598 ppb	N/A	0.511 ppb	0.438 ppb	102.562 %	20.096 ppb	1.523 ppb
Concentration RSD		4.4 %	N/A	6.6 %	N/A	2.0 %	0.4 %	N/A	1.0 %	1.3 %
Intensity average	636 cps	640 cps	80,896 cps	459 cps	79,904 cps	6,761 cps	14,423 cps	901,027 cps	535,796 cps	42,907 cps
Intensity per Run 1	584.0 cps	652.0 cps	80,518.7 cps	452.0 cps	79,258.9 cps	6,541.7 cps	14,277.1 cps	893,067.8 cps	525,657.3 cps	41,882.2 cps
Intensity per Run 2	680.0 cps	644.0 cps	80,595.2 cps	428.0 cps	78,345.3 cps	6,861.9 cps	14,345.9 cps	891,794.2 cps	531,160.2 cps	42,769.2 cps
Intensity per Run 3	644.0 cps	624.0 cps	81,573.6 cps	496.0 cps	82,109.2 cps	6,877.9 cps	14,646.8 cps	918,217.5 cps	550,571.1 cps	44,069.7 cps
Intensity RSD	7.6 %	2.3 %	0.7 %	7.5 %	2.5 %	2.8 %	1.4 %	1.7 %	2.4 %	2.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.513 ppb	4.813 ppb	5.003 ppb			100.254 %			N/A	0.473 ppb
Concentration per Run 1	1.479 ppb	4.770 ppb	4.956 ppb			99.151 %			N/A	0.483 ppb
Concentration per Run 2	1.553 ppb	4.873 ppb	5.070 ppb			100.357 %			N/A	0.463 ppb
Concentration per Run 3	1.508 ppb	4.796 ppb	4.982 ppb			101.255 %			N/A	0.473 ppb
Concentration RSD	2.1 %	1.1 %	1.2 %			N/A			N/A	2.1 %
Intensity average	34,394 cps	32,054 cps	60,671 cps	11 cps	16 cps	3,151,276 cps	75 cps	11 cps	3,300,532 cps	44,722 cps
Intensity per Run 1	33,308.4 cps	31,459.6 cps	59,509.7 cps	12.0 cps	4.0 cps	3,116,586.1 cps	52.0 cps	12.0 cps	3,318,668.6 cps	44,547.4 cps
Intensity per Run 2	35,005.0 cps	32,285.8 cps	61,197.8 cps	4.0 cps	20.0 cps	3,154,518.5 cps	80.0 cps	4.0 cps	3,289,447.0 cps	44,279.4 cps
Intensity per Run 3	34,868.6 cps	32,418.1 cps	61,306.5 cps	16.0 cps	24.0 cps	3,182,724.7 cps	92.0 cps	16.0 cps	3,293,480.3 cps	45,339.2 cps
Intensity RSD	2.7 %	1.6 %	1.7 %	57.3 %	66.1 %	1.1 %	27.5 %	57.3 %	0.5 %	1.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.471 ppb	0.934 ppb	0.941 ppb	0.939 ppb	100.441 %
Concentration per Run 1	0.478 ppb	0.954 ppb	0.929 ppb	0.953 ppb	97.829 %
Concentration per Run 2	0.455 ppb	0.913 ppb	0.937 ppb	0.917 ppb	101.583 %
Concentration per Run 3	0.479 ppb	0.936 ppb	0.957 ppb	0.946 ppb	101.912 %
Concentration RSD	2.8 %	2.2 %	1.5 %	2.0 %	N/A
Intensity average	108,107 cps	69,490 cps	61,501 cps	282,216 cps	2,574,251 cps
Intensity per Run 1	106,933.6 cps	69,135.8 cps	59,172.3 cps	279,021.4 cps	2,507,299.5 cps
Intensity per Run 2	105,886.9 cps	68,687.3 cps	61,901.8 cps	278,990.8 cps	2,603,508.7 cps
Intensity per Run 3	111,500.5 cps	70,647.5 cps	63,429.3 cps	288,636.6 cps	2,611,943.7 cps
Intensity RSD	2.8 %	1.5 %	3.5 %	2.0 %	2.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: S02 Analysis: 10/30/2019 10:58:39 Sample Type STD
Comment MW-11878 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	98.593 %	98.209 %	5.109 ppb	N/A	N/A	N/A	476.394 ppb	520.719 ppb	519.375 ppb	517.290 ppb
Concentration per Run 1	98.083 %	96.902 %	5.089 ppb	N/A	N/A	N/A	480.360 ppb	526.613 ppb	522.282 ppb	520.542 ppb
Concentration per Run 2	98.201 %	98.834 %	5.142 ppb	N/A	N/A	N/A	478.045 ppb	515.621 ppb	523.130 ppb	511.189 ppb
Concentration per Run 3	99.494 %	98.892 %	5.097 ppb	N/A	N/A	N/A	470.777 ppb	519.921 ppb	512.713 ppb	520.140 ppb
Concentration RSD	N/A	N/A	0.6 %	N/A	N/A	N/A	1.0 %	1.1 %	1.1 %	1.0 %
Intensity average	13,788,516 cps	31,621 cps	800 cps	97 cps	524 cps	2,037 cps	939,173 cps	462,125 cps	97,043 cps	128,660 cps
Intensity per Run 1	13,717,201.1 cps	31,200.4 cps	786.5 cps	83.5 cps	543.0 cps	1,850.1 cps	928,637.8 cps	458,206.3 cps	95,635.0 cps	126,841.7 cps
Intensity per Run 2	13,733,774.7 cps	31,822.5 cps	810.5 cps	110.0 cps	515.0 cps	2,360.2 cps	954,693.4 cps	463,809.0 cps	99,091.6 cps	128,962.5 cps
Intensity per Run 3	13,914,573.3 cps	31,841.0 cps	804.0 cps	97.0 cps	513.5 cps	1,900.2 cps	934,186.6 cps	464,360.0 cps	96,402.3 cps	130,175.0 cps
Intensity RSD	0.8 %	1.2 %	1.6 %	13.7 %	3.2 %	13.8 %	1.5 %	0.7 %	1.9 %	1.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	520.751 ppb		N/A	510.120 ppb	480.549 ppb	512.911 ppb	499.680 ppb	99.269 %	100.384 %	N/A
Concentration per Run 1	514.786 ppb		N/A	521.947 ppb	428.137 ppb	503.575 ppb	496.505 ppb	101.937 %	97.685 %	N/A
Concentration per Run 2	520.981 ppb		N/A	502.488 ppb	499.182 ppb	518.003 ppb	491.075 ppb	97.096 %	102.535 %	N/A
Concentration per Run 3	526.487 ppb		N/A	505.924 ppb	514.327 ppb	517.153 ppb	511.461 ppb	98.775 %	100.931 %	N/A
Concentration RSD	1.1 %		N/A	2.0 %	9.6 %	1.6 %	2.1 %	N/A	N/A	N/A
Intensity average	157,942 cps	2,874 cps	5,196,638 cps	449,383 cps	2,034 cps	1,420,881 cps	24,955 cps	6,832,720 cps	294,710 cps	1,892 cps
Intensity per Run 1	152,891.4 cps	3,260.4 cps	5,124,995.7 cps	448,021.0 cps	1,770.1 cps	1,432,960.1 cps	24,143.4 cps	7,016,314.6 cps	286,787.4 cps	1,928.2 cps
Intensity per Run 2	160,294.9 cps	2,840.3 cps	5,218,445.5 cps	451,601.3 cps	2,150.2 cps	1,403,898.5 cps	25,055.3 cps	6,683,156.5 cps	301,026.9 cps	1,860.1 cps
Intensity per Run 3	160,638.4 cps	2,520.3 cps	5,246,473.7 cps	448,525.4 cps	2,180.2 cps	1,425,784.9 cps	25,666.4 cps	6,798,687.7 cps	296,316.4 cps	1,888.1 cps
Intensity RSD	2.8 %	12.9 %	1.2 %	0.4 %	11.2 %	1.1 %	3.1 %	2.5 %	2.5 %	1.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	N/A	N/A	N/A	N/A	N/A	522.605 ppb	493.366 ppb	5.133 ppb	N/A	N/A
Concentration per Run 1	N/A	N/A	N/A	N/A	N/A	538.599 ppb	500.217 ppb	5.245 ppb	N/A	N/A
Concentration per Run 2	N/A	N/A	N/A	N/A	N/A	515.678 ppb	485.505 ppb	5.048 ppb	N/A	N/A
Concentration per Run 3	N/A	N/A	N/A	N/A	N/A	513.538 ppb	494.378 ppb	5.105 ppb	N/A	N/A
Concentration RSD	N/A	N/A	N/A	N/A	N/A	2.7 %	1.5 %	2.0 %	N/A	N/A
Intensity average	67,329 cps	106,950 cps	16,272 cps	16,461 cps	83,412 cps	11,025,418 cps	355,399 cps	255,637 cps	68,187 cps	10,734 cps
Intensity per Run 1	66,903.0 cps	105,552.4 cps	16,334.7 cps	16,931.5 cps	82,596.5 cps	11,082,309.3 cps	350,712.0 cps	254,267.4 cps	68,390.8 cps	10,556.5 cps
Intensity per Run 2	67,471.5 cps	108,352.1 cps	16,210.5 cps	15,619.8 cps	83,957.3 cps	11,082,148.0 cps	357,334.7 cps	256,897.7 cps	67,864.0 cps	10,692.6 cps
Intensity per Run 3	67,612.1 cps	106,944.2 cps	16,270.6 cps	16,831.4 cps	83,683.3 cps	10,911,795.2 cps	358,149.2 cps	255,745.1 cps	68,306.3 cps	10,952.8 cps
Intensity RSD	0.6 %	1.3 %	0.4 %	4.4 %	0.9 %	0.9 %	1.1 %	0.5 %	0.4 %	1.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	5.870 ppb	5.500 ppb	N/A	N/A	N/A		5.011 ppb	N/A	5.313 ppb	
Concentration per Run 1	5.990 ppb	5.590 ppb	N/A	N/A	N/A		4.914 ppb	N/A	5.102 ppb	
Concentration per Run 2	5.735 ppb	5.459 ppb	N/A	N/A	N/A		5.262 ppb	N/A	5.392 ppb	
Concentration per Run 3	5.884 ppb	5.451 ppb	N/A	N/A	N/A		4.857 ppb	N/A	5.445 ppb	
Concentration RSD	2.2 %	1.4 %	N/A	N/A	N/A		4.4 %	N/A	3.5 %	
Intensity average	177,834 cps	87,245 cps	42,915 cps	7,261 cps	34,326 cps	26 cps	20,526 cps	693 cps	1,849 cps	6,006 cps
Intensity per Run 1	177,143.1 cps	86,277.1 cps	42,038.7 cps	6,990.0 cps	34,018.3 cps	20.0 cps	20,005.9 cps	730.0 cps	1,736.5 cps	5,812.4 cps
Intensity per Run 2	176,705.0 cps	88,488.5 cps	43,142.4 cps	7,402.2 cps	34,535.7 cps	34.0 cps	21,348.9 cps	690.0 cps	1,897.7 cps	6,088.5 cps
Intensity per Run 3	179,655.2 cps	86,970.0 cps	43,563.9 cps	7,390.2 cps	34,423.4 cps	23.0 cps	20,224.5 cps	660.0 cps	1,912.3 cps	6,116.5 cps
Intensity RSD	0.9 %	1.3 %	1.8 %	3.2 %	0.8 %	28.7 %	3.5 %	5.1 %	5.3 %	2.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		5.707 ppb		98.257 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 1		5.726 ppb		96.390 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 2		5.078 ppb		99.078 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 3		6.318 ppb		99.304 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration RSD		10.9 %		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	6,302 cps	563 cps	5,629 cps	574,590 cps	53,819 cps	97,174 cps	105,372 cps	62,581 cps	165,942 cps	1,832,626 cps
Intensity per Run 1	5,522.3 cps	560.5 cps	4,917.1 cps	563,670.4 cps	52,976.2 cps	95,205.5 cps	103,701.5 cps	62,311.4 cps	164,648.3 cps	1,783,686.0 cps
Intensity per Run 2	7,791.6 cps	444.9 cps	7,046.1 cps	579,388.5 cps	53,538.5 cps	96,793.5 cps	106,057.0 cps	62,266.9 cps	164,350.4 cps	1,854,882.4 cps
Intensity per Run 3	5,592.4 cps	683.5 cps	4,924.1 cps	580,710.2 cps	54,941.0 cps	99,522.9 cps	106,358.7 cps	63,163.9 cps	168,826.5 cps	1,859,309.9 cps
Intensity RSD	20.5 %	21.2 %	21.8 %	1.6 %	1.9 %	2.2 %	1.4 %	0.8 %	1.5 %	2.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		5.148 ppb	1.007 ppb	5.177 ppb	0.994 ppb	5.092 ppb	5.019 ppb	100.061 %	N/A	4.240 ppb
Concentration per Run 1		5.088 ppb	1.013 ppb	5.403 ppb	0.983 ppb	5.112 ppb	4.995 ppb	99.063 %	N/A	4.198 ppb
Concentration per Run 2		5.159 ppb	1.024 ppb	5.186 ppb	1.006 ppb	4.976 ppb	5.063 ppb	100.034 %	N/A	4.245 ppb
Concentration per Run 3		5.195 ppb	0.985 ppb	4.942 ppb	0.993 ppb	5.187 ppb	4.998 ppb	101.086 %	N/A	4.277 ppb
Concentration RSD		1.1 %	2.0 %	4.4 %	1.2 %	2.1 %	0.8 %	N/A	N/A	0.9 %
Intensity average	624 cps	5,487 cps	80,865 cps	4,179 cps	78,339 cps	66,793 cps	163,196 cps	895,829 cps	143,523 cps	118,904 cps
Intensity per Run 1	636.0 cps	5,353.2 cps	80,502.9 cps	4,308.8 cps	76,558.6 cps	66,295.8 cps	160,796.5 cps	886,892.1 cps	142,868.8 cps	116,803.8 cps
Intensity per Run 2	644.0 cps	5,513.2 cps	82,169.7 cps	4,196.7 cps	79,424.1 cps	65,346.6 cps	164,582.4 cps	895,589.1 cps	143,628.7 cps	118,798.3 cps
Intensity per Run 3	592.0 cps	5,593.3 cps	79,923.4 cps	4,032.7 cps	79,033.5 cps	68,736.8 cps	164,209.7 cps	905,006.2 cps	144,071.8 cps	121,108.5 cps
Intensity RSD	4.5 %	2.2 %	1.4 %	3.3 %	2.0 %	2.6 %	1.3 %	1.0 %	0.4 %	1.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	4.247 ppb	N/A	N/A			97.958 %			N/A	4.726 ppb
Concentration per Run 1	4.241 ppb	N/A	N/A			98.537 %			N/A	4.654 ppb
Concentration per Run 2	4.208 ppb	N/A	N/A			96.710 %			N/A	4.732 ppb
Concentration per Run 3	4.293 ppb	N/A	N/A			98.627 %			N/A	4.791 ppb
Concentration RSD	1.0 %	N/A	N/A			N/A			N/A	1.4 %
Intensity average	95,149 cps	35,248 cps	65,017 cps	11 cps	13 cps	3,079,095 cps	68 cps	31 cps	3,194,071 cps	426,178 cps
Intensity per Run 1	94,331.4 cps	34,836.6 cps	64,405.8 cps	8.0 cps	20.0 cps	3,097,289.2 cps	48.0 cps	24.0 cps	3,153,224.5 cps	416,295.2 cps
Intensity per Run 2	94,020.5 cps	34,527.7 cps	65,704.6 cps	16.0 cps	12.0 cps	3,039,865.4 cps	56.0 cps	40.0 cps	3,186,677.1 cps	427,951.5 cps
Intensity per Run 3	97,096.1 cps	36,381.1 cps	64,940.9 cps	8.0 cps	8.0 cps	3,100,129.3 cps	100.0 cps	28.0 cps	3,242,312.8 cps	434,287.3 cps
Intensity RSD	1.8 %	2.8 %	1.0 %	43.3 %	45.8 %	1.1 %	41.2 %	27.2 %	1.4 %	2.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	4.705 ppb	4.865 ppb	4.849 ppb	4.864 ppb	98.011 %
Concentration per Run 1	4.636 ppb	4.856 ppb	4.791 ppb	4.829 ppb	97.025 %
Concentration per Run 2	4.741 ppb	4.860 ppb	4.845 ppb	4.860 ppb	98.498 %
Concentration per Run 3	4.738 ppb	4.880 ppb	4.910 ppb	4.904 ppb	98.511 %
Concentration RSD	1.3 %	0.3 %	1.2 %	0.8 %	N/A
Intensity average	1,030,333 cps	350,006 cps	306,458 cps	1,414,940 cps	2,511,961 cps
Intensity per Run 1	1,004,898.8 cps	346,143.8 cps	299,936.9 cps	1,390,490.6 cps	2,486,681.2 cps
Intensity per Run 2	1,043,370.8 cps	350,968.6 cps	307,532.4 cps	1,420,646.0 cps	2,524,432.1 cps
Intensity per Run 3	1,042,728.5 cps	352,904.4 cps	311,903.2 cps	1,433,684.0 cps	2,524,768.9 cps
Intensity RSD	2.1 %	1.0 %	2.0 %	1.6 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: S03 Analysis: 10/30/2019 11:04:42 Sample Type STD
Comment MW-11879 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.530 %	94.023 %	24.916 ppb	N/A	N/A	N/A	2,474.078 ppb	2,493.194 ppb	2,513.745 ppb	2,486.259 ppb
Concentration per Run 1	91.621 %	94.067 %	24.621 ppb	N/A	N/A	N/A	2,471.318 ppb	2,430.612 ppb	2,456.090 ppb	2,473.956 ppb
Concentration per Run 2	93.002 %	94.550 %	24.818 ppb	N/A	N/A	N/A	2,425.720 ppb	2,513.797 ppb	2,499.930 ppb	2,460.515 ppb
Concentration per Run 3	92.967 %	93.452 %	25.309 ppb	N/A	N/A	N/A	2,525.196 ppb	2,535.174 ppb	2,585.217 ppb	2,524.306 ppb
Concentration RSD	N/A	N/A	1.4 %	N/A	N/A	N/A	2.0 %	2.2 %	2.6 %	1.4 %
Intensity average	12,940,674 cps	30,273 cps	3,724 cps	414 cps	2,367 cps	1,867 cps	4,594,245 cps	2,106,448 cps	446,813 cps	588,396 cps
Intensity per Run 1	12,813,563.0 cps	30,287.7 cps	3,681.5 cps	401.0 cps	2,296.7 cps	1,840.1 cps	4,594,893.1 cps	2,056,219.8 cps	437,161.2 cps	586,283.5 cps
Intensity per Run 2	13,006,686.3 cps	30,443.0 cps	3,730.1 cps	429.5 cps	2,393.2 cps	1,980.2 cps	4,522,098.3 cps	2,131,726.3 cps	445,978.5 cps	584,355.2 cps
Intensity per Run 3	13,001,773.4 cps	30,089.7 cps	3,759.6 cps	410.0 cps	2,411.2 cps	1,780.1 cps	4,665,745.0 cps	2,131,398.0 cps	457,299.4 cps	594,548.9 cps
Intensity RSD	0.9 %	0.6 %	1.1 %	3.5 %	2.6 %	5.5 %	1.6 %	2.1 %	2.3 %	0.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	2,548.697 ppb		N/A	2,493.819 ppb	2,529.296 ppb	2,523.247 ppb	2,547.794 ppb	90.676 %	95.644 %	25.241 ppb
Concentration per Run 1	2,513.779 ppb		N/A	2,475.487 ppb	2,361.636 ppb	2,461.829 ppb	2,499.057 ppb	89.404 %	95.846 %	24.438 ppb
Concentration per Run 2	2,546.562 ppb		N/A	2,490.722 ppb	2,648.637 ppb	2,523.007 ppb	2,561.419 ppb	91.567 %	95.786 %	25.484 ppb
Concentration per Run 3	2,585.750 ppb		N/A	2,515.248 ppb	2,577.615 ppb	2,584.905 ppb	2,582.907 ppb	91.057 %	95.299 %	25.800 ppb
Concentration RSD	1.4 %		N/A	0.8 %	5.9 %	2.4 %	1.7 %	N/A	N/A	2.8 %
Intensity average	736,156 cps	2,890 cps	4,659,633 cps	2,014,632 cps	9,874 cps	6,148,574 cps	118,336 cps	6,241,219 cps	280,793 cps	9,193 cps
Intensity per Run 1	727,089.5 cps	3,050.4 cps	4,563,623.3 cps	2,003,743.8 cps	9,243.5 cps	5,916,033.7 cps	116,329.7 cps	6,153,650.1 cps	281,388.0 cps	8,927.2 cps
Intensity per Run 2	738,040.3 cps	2,870.3 cps	4,688,470.1 cps	2,016,438.8 cps	10,354.3 cps	6,206,726.2 cps	119,157.2 cps	6,302,531.2 cps	281,211.1 cps	9,291.5 cps
Intensity per Run 3	743,338.8 cps	2,750.3 cps	4,726,806.7 cps	2,023,712.0 cps	10,024.1 cps	6,322,962.8 cps	119,519.8 cps	6,267,476.3 cps	279,780.7 cps	9,359.5 cps
Intensity RSD	1.1 %	5.2 %	1.8 %	0.5 %	5.8 %	3.4 %	1.5 %	1.2 %	0.3 %	2.5 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	24.617 ppb	25.188 ppb	25.650 ppb	N/A	25.337 ppb	2,542.617 ppb	2,440.436 ppb	25.150 ppb	26.251 ppb	26.474 ppb
Concentration per Run 1	24.213 ppb	24.794 ppb	25.000 ppb	N/A	24.616 ppb	2,488.224 ppb	2,411.300 ppb	24.681 ppb	25.208 ppb	26.231 ppb
Concentration per Run 2	24.620 ppb	25.087 ppb	25.477 ppb	N/A	25.513 ppb	2,589.664 ppb	2,435.435 ppb	25.111 ppb	26.642 ppb	26.332 ppb
Concentration per Run 3	25.016 ppb	25.682 ppb	26.473 ppb	N/A	25.882 ppb	2,549.964 ppb	2,474.575 ppb	25.658 ppb	26.903 ppb	26.860 ppb
Concentration RSD	1.6 %	1.8 %	2.9 %	N/A	2.6 %	2.0 %	1.3 %	1.9 %	3.5 %	1.3 %
Intensity average	316,779 cps	508,561 cps	71,628 cps	73,774 cps	386,934 cps	51,481,644 cps	1,670,812 cps	1,192,810 cps	310,331 cps	48,004 cps
Intensity per Run 1	312,281.5 cps	501,731.1 cps	70,232.9 cps	71,313.4 cps	378,388.0 cps	50,723,229.2 cps	1,654,417.6 cps	1,173,112.9 cps	304,611.0 cps	48,020.2 cps
Intensity per Run 2	317,307.8 cps	507,303.3 cps	71,138.0 cps	74,854.2 cps	389,352.1 cps	52,384,815.0 cps	1,669,915.0 cps	1,192,755.1 cps	312,310.1 cps	47,646.7 cps
Intensity per Run 3	320,747.4 cps	516,649.3 cps	73,511.8 cps	75,155.5 cps	393,061.6 cps	51,336,886.7 cps	1,688,103.7 cps	1,212,560.7 cps	314,071.5 cps	48,345.6 cps
Intensity RSD	1.3 %	1.5 %	2.4 %	2.9 %	2.0 %	1.6 %	1.0 %	1.7 %	1.6 %	0.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	27.792 ppb	26.597 ppb	25.193 ppb	25.718 ppb	25.462 ppb		24.864 ppb	N/A	25.927 ppb	
Concentration per Run 1	27.515 ppb	25.823 ppb	24.869 ppb	24.357 ppb	24.632 ppb		24.058 ppb	N/A	24.544 ppb	
Concentration per Run 2	27.917 ppb	26.851 ppb	25.080 ppb	25.902 ppb	25.915 ppb		25.367 ppb	N/A	26.552 ppb	
Concentration per Run 3	27.944 ppb	27.117 ppb	25.631 ppb	26.897 ppb	25.840 ppb		25.166 ppb	N/A	26.685 ppb	
Concentration RSD	0.9 %	2.6 %	1.6 %	5.0 %	2.8 %		2.8 %	N/A	4.6 %	
Intensity average	800,530 cps	394,841 cps	170,130 cps	28,766 cps	136,876 cps	86 cps	84,136 cps	2,870 cps	8,929 cps	7,298 cps
Intensity per Run 1	800,278.6 cps	384,235.8 cps	168,428.3 cps	27,674.6 cps	134,338.7 cps	91.0 cps	81,678.1 cps	2,700.3 cps	8,589.1 cps	6,982.0 cps
Intensity per Run 2	802,099.2 cps	399,198.4 cps	170,410.7 cps	28,865.3 cps	138,633.1 cps	95.0 cps	86,252.1 cps	2,890.3 cps	9,095.1 cps	7,512.3 cps
Intensity per Run 3	799,211.0 cps	401,089.0 cps	171,550.6 cps	29,759.4 cps	137,655.2 cps	73.0 cps	84,478.9 cps	3,020.4 cps	9,103.2 cps	7,399.2 cps
Intensity RSD	0.2 %	2.3 %	0.9 %	3.6 %	1.6 %	13.6 %	2.7 %	5.6 %	3.3 %	3.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		25.552 ppb		97.397 %	23.929 ppb	23.427 ppb	23.096 ppb	23.147 ppb	22.704 ppb	N/A
Concentration per Run 1		25.872 ppb		99.377 %	22.770 ppb	22.347 ppb	22.358 ppb	22.208 ppb	22.017 ppb	N/A
Concentration per Run 2		25.036 ppb		96.589 %	24.383 ppb	23.584 ppb	23.305 ppb	23.533 ppb	22.837 ppb	N/A
Concentration per Run 3		25.747 ppb		96.224 %	24.635 ppb	24.349 ppb	23.627 ppb	23.701 ppb	23.258 ppb	N/A
Concentration RSD		1.8 %		N/A	4.2 %	4.3 %	2.9 %	3.5 %	2.8 %	N/A
Intensity average	9,369 cps	4,181 cps	5,109 cps	569,558 cps	262,344 cps	466,026 cps	507,099 cps	303,990 cps	792,046 cps	1,765,058 cps
Intensity per Run 1	8,155.7 cps	4,246.8 cps	3,939.7 cps	581,137.3 cps	253,935.5 cps	451,876.5 cps	498,530.9 cps	296,012.0 cps	778,926.1 cps	1,760,675.9 cps
Intensity per Run 2	11,465.3 cps	4,109.9 cps	7,141.1 cps	564,836.3 cps	265,927.5 cps	466,969.4 cps	509,494.0 cps	307,919.7 cps	794,148.5 cps	1,761,085.9 cps
Intensity per Run 3	8,484.9 cps	4,185.2 cps	4,246.8 cps	562,700.7 cps	267,168.7 cps	479,232.4 cps	513,270.8 cps	308,039.3 cps	803,064.2 cps	1,773,413.1 cps
Intensity RSD	19.5 %	1.6 %	34.6 %	1.8 %	2.8 %	2.9 %	1.5 %	2.3 %	1.5 %	0.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		25.300 ppb	4.894 ppb	25.862 ppb	4.884 ppb	24.795 ppb	25.267 ppb	97.995 %	N/A	22.228 ppb
Concentration per Run 1		23.941 ppb	4.772 ppb	25.562 ppb	4.745 ppb	24.316 ppb	24.706 ppb	98.164 %	N/A	21.218 ppb
Concentration per Run 2		25.889 ppb	4.906 ppb	26.233 ppb	4.896 ppb	25.053 ppb	25.181 ppb	98.557 %	N/A	22.172 ppb
Concentration per Run 3		26.071 ppb	5.005 ppb	25.791 ppb	5.011 ppb	25.014 ppb	25.912 ppb	97.265 %	N/A	23.294 ppb
Concentration RSD		4.7 %	2.4 %	1.3 %	2.7 %	1.7 %	2.4 %	N/A	N/A	4.7 %
Intensity average	668 cps	26,133 cps	384,433 cps	20,514 cps	377,643 cps	319,069 cps	804,440 cps	877,336 cps	654,408 cps	613,235 cps
Intensity per Run 1	668.0 cps	24,941.0 cps	375,509.0 cps	20,412.7 cps	369,115.4 cps	314,359.9 cps	788,017.1 cps	878,845.0 cps	639,691.0 cps	585,782.0 cps
Intensity per Run 2	648.0 cps	26,768.8 cps	387,566.9 cps	20,849.4 cps	379,591.0 cps	323,561.9 cps	806,390.4 cps	882,363.0 cps	666,355.8 cps	616,219.6 cps
Intensity per Run 3	688.0 cps	26,688.5 cps	390,223.6 cps	20,280.5 cps	384,224.1 cps	319,285.8 cps	818,912.0 cps	870,800.3 cps	657,177.5 cps	637,703.5 cps
Intensity RSD	3.0 %	4.0 %	2.0 %	1.5 %	2.0 %	1.4 %	1.9 %	0.7 %	2.1 %	4.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	22.570 ppb	24.427 ppb	24.712 ppb			101.124 %			N/A	23.131 ppb
Concentration per Run 1	21.477 ppb	24.532 ppb	24.619 ppb			100.446 %			N/A	22.379 ppb
Concentration per Run 2	22.476 ppb	23.978 ppb	24.466 ppb			102.797 %			N/A	23.111 ppb
Concentration per Run 3	23.756 ppb	24.772 ppb	25.052 ppb			100.130 %			N/A	23.904 ppb
Concentration RSD	5.1 %	1.7 %	1.2 %			N/A			N/A	3.3 %
Intensity average	498,599 cps	160,309 cps	295,921 cps	29 cps	21 cps	3,178,627 cps	68 cps	39 cps	3,317,443 cps	2,168,161 cps
Intensity per Run 1	474,613.3 cps	160,663.6 cps	294,078.8 cps	36.0 cps	8.0 cps	3,157,319.7 cps	56.0 cps	20.0 cps	3,318,510.4 cps	2,081,989.1 cps
Intensity per Run 2	500,462.2 cps	159,068.6 cps	296,277.6 cps	32.0 cps	32.0 cps	3,231,200.4 cps	84.0 cps	36.0 cps	3,311,155.6 cps	2,178,285.2 cps
Intensity per Run 3	520,722.8 cps	161,194.1 cps	297,407.4 cps	20.0 cps	24.0 cps	3,147,360.0 cps	64.0 cps	60.0 cps	3,322,662.3 cps	2,244,208.3 cps
Intensity RSD	4.6 %	0.7 %	0.6 %	28.4 %	57.3 %	1.4 %	21.2 %	52.1 %	0.2 %	3.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	23.184 ppb	23.558 ppb	23.726 ppb	23.547 ppb	102.204 %
Concentration per Run 1	22.719 ppb	22.955 ppb	23.416 ppb	23.181 ppb	101.439 %
Concentration per Run 2	23.130 ppb	23.725 ppb	23.414 ppb	23.424 ppb	102.633 %
Concentration per Run 3	23.701 ppb	23.996 ppb	24.348 ppb	24.035 ppb	102.541 %
Concentration RSD	2.1 %	2.3 %	2.3 %	1.9 %	N/A
Intensity average	5,282,950 cps	1,763,473 cps	1,560,506 cps	7,130,424 cps	2,619,429 cps
Intensity per Run 1	5,137,952.4 cps	1,705,377.0 cps	1,528,583.4 cps	6,966,748.1 cps	2,599,810.5 cps
Intensity per Run 2	5,292,562.7 cps	1,784,497.8 cps	1,547,171.3 cps	7,122,786.9 cps	2,630,409.4 cps
Intensity per Run 3	5,418,334.5 cps	1,800,544.0 cps	1,605,761.8 cps	7,301,736.8 cps	2,628,067.7 cps
Intensity RSD	2.7 %	2.9 %	2.6 %	2.4 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: S04 Analysis: 10/30/2019 11:10:45 Sample Type STD
Comment MW-11880 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	88.604 %	89.706 %	49.684 ppb	N/A	N/A	N/A	4,843.490 ppb	4,987.333 ppb	4,964.929 ppb	4,950.743 ppb
Concentration per Run 1	88.238 %	89.349 %	50.753 ppb	N/A	N/A	N/A	4,895.032 ppb	5,105.287 ppb	5,054.210 ppb	5,036.682 ppb
Concentration per Run 2	88.747 %	90.127 %	48.385 ppb	N/A	N/A	N/A	4,759.334 ppb	4,837.676 ppb	4,947.012 ppb	4,860.885 ppb
Concentration per Run 3	88.828 %	89.642 %	49.916 ppb	N/A	N/A	N/A	4,876.104 ppb	5,019.035 ppb	4,893.564 ppb	4,954.660 ppb
Concentration RSD	N/A	N/A	2.4 %	N/A	N/A	N/A	1.5 %	2.7 %	1.6 %	1.8 %
Intensity average	12,391,600 cps	28,884 cps	7,081 cps	767 cps	4,479 cps	1,790 cps	8,583,279 cps	4,026,064 cps	843,290 cps	1,119,726 cps
Intensity per Run 1	12,340,341.1 cps	28,768.6 cps	7,205.1 cps	769.0 cps	4,496.8 cps	1,850.1 cps	8,567,844.0 cps	4,068,895.3 cps	847,124.1 cps	1,123,549.7 cps
Intensity per Run 2	12,411,594.6 cps	29,019.2 cps	6,928.9 cps	735.0 cps	4,449.3 cps	1,840.1 cps	8,472,381.8 cps	3,923,134.8 cps	844,071.6 cps	1,104,373.2 cps
Intensity per Run 3	12,422,864.2 cps	28,862.8 cps	7,109.5 cps	795.5 cps	4,492.3 cps	1,680.1 cps	8,709,612.5 cps	4,086,163.3 cps	838,673.3 cps	1,131,253.9 cps
Intensity RSD	0.4 %	0.4 %	2.0 %	4.0 %	0.6 %	5.3 %	1.4 %	2.2 %	0.5 %	1.2 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	5,089.820 ppb		N/A	4,889.316 ppb	5,046.522 ppb	5,066.646 ppb	5,019.900 ppb	87.279 %	91.646 %	50.350 ppb
Concentration per Run 1	5,188.505 ppb		N/A	5,001.469 ppb	5,069.344 ppb	4,972.897 ppb	5,207.996 ppb	88.155 %	89.545 %	51.599 ppb
Concentration per Run 2	5,028.716 ppb		N/A	4,846.827 ppb	5,178.637 ppb	5,058.630 ppb	4,949.525 ppb	87.468 %	92.026 %	50.396 ppb
Concentration per Run 3	5,052.238 ppb		N/A	4,819.650 ppb	4,891.584 ppb	5,168.410 ppb	4,902.180 ppb	86.213 %	93.369 %	49.055 ppb
Concentration RSD	1.7 %		N/A	2.0 %	2.9 %	1.9 %	3.3 %	N/A	N/A	2.5 %
Intensity average	1,405,310 cps	2,924 cps	4,360,329 cps	3,762,387 cps	18,801 cps	11,818,570 cps	222,635 cps	6,007,406 cps	269,058 cps	17,562 cps
Intensity per Run 1	1,412,272.8 cps	3,330.5 cps	4,333,536.1 cps	3,771,904.7 cps	18,473.8 cps	11,714,807.7 cps	225,864.5 cps	6,067,717.9 cps	262,887.7 cps	17,600.4 cps
Intensity per Run 2	1,394,732.2 cps	2,680.3 cps	4,334,546.7 cps	3,746,515.9 cps	19,375.1 cps	11,827,073.3 cps	220,532.2 cps	6,020,455.1 cps	270,172.2 cps	17,652.5 cps
Intensity per Run 3	1,408,925.0 cps	2,760.3 cps	4,412,904.4 cps	3,768,739.5 cps	18,553.8 cps	11,913,830.1 cps	221,507.3 cps	5,934,045.5 cps	274,115.4 cps	17,432.2 cps
Intensity RSD	0.7 %	12.1 %	1.0 %	0.4 %	2.7 %	0.8 %	1.3 %	1.1 %	2.1 %	0.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	50.454 ppb	50.456 ppb	50.975 ppb	N/A	50.844 ppb	5,064.675 ppb	5,025.979 ppb	50.018 ppb	51.875 ppb	51.701 ppb
Concentration per Run 1	50.987 ppb	51.030 ppb	51.363 ppb	N/A	51.251 ppb	5,178.784 ppb	5,122.335 ppb	50.763 ppb	52.690 ppb	52.608 ppb
Concentration per Run 2	49.890 ppb	50.219 ppb	50.983 ppb	N/A	50.423 ppb	5,024.194 ppb	4,978.036 ppb	49.395 ppb	51.735 ppb	51.435 ppb
Concentration per Run 3	50.486 ppb	50.120 ppb	50.578 ppb	N/A	50.857 ppb	4,991.046 ppb	4,977.565 ppb	49.896 ppb	51.202 ppb	51.058 ppb
Concentration RSD	1.1 %	1.0 %	0.8 %	N/A	0.8 %	2.0 %	1.7 %	1.4 %	1.5 %	1.6 %
Intensity average	620,457 cps	973,709 cps	135,092 cps	140,065 cps	741,294 cps	98,103,912 cps	3,295,369 cps	2,272,600 cps	575,343 cps	88,143 cps
Intensity per Run 1	612,661.6 cps	962,295.6 cps	133,303.5 cps	140,000.9 cps	732,185.1 cps	98,340,567.4 cps	3,282,221.7 cps	2,253,871.1 cps	577,893.2 cps	88,041.4 cps
Intensity per Run 2	616,135.4 cps	973,284.0 cps	135,560.4 cps	138,373.8 cps	737,407.4 cps	97,621,729.9 cps	3,278,177.9 cps	2,253,918.9 cps	573,337.2 cps	87,904.4 cps
Intensity per Run 3	632,572.5 cps	985,545.9 cps	136,413.1 cps	141,821.6 cps	754,290.8 cps	98,349,439.9 cps	3,325,708.2 cps	2,310,010.7 cps	574,799.3 cps	88,484.4 cps
Intensity RSD	1.7 %	1.2 %	1.2 %	1.2 %	1.6 %	0.4 %	0.8 %	1.4 %	0.4 %	0.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	54.901 ppb	52.691 ppb	51.201 ppb	52.412 ppb	51.606 ppb		49.216 ppb	N/A	51.871 ppb	
Concentration per Run 1	55.461 ppb	53.784 ppb	50.786 ppb	52.526 ppb	52.065 ppb		49.521 ppb	N/A	51.779 ppb	
Concentration per Run 2	54.496 ppb	51.782 ppb	50.591 ppb	51.823 ppb	51.054 ppb		48.496 ppb	N/A	51.887 ppb	
Concentration per Run 3	54.746 ppb	52.509 ppb	52.225 ppb	52.886 ppb	51.699 ppb		49.631 ppb	N/A	51.947 ppb	
Concentration RSD	0.9 %	1.9 %	1.7 %	1.0 %	1.0 %		1.3 %	N/A	0.2 %	
Intensity average	1,508,903 cps	747,647 cps	319,402 cps	53,946 cps	254,758 cps	159 cps	157,176 cps	4,954 cps	17,092 cps	6,558 cps
Intensity per Run 1	1,496,958.9 cps	745,763.1 cps	311,057.4 cps	53,144.8 cps	252,676.7 cps	174.0 cps	155,213.2 cps	4,680.9 cps	16,824.4 cps	6,375.6 cps
Intensity per Run 2	1,500,994.1 cps	737,958.8 cps	321,446.8 cps	53,446.1 cps	252,522.3 cps	145.0 cps	157,734.9 cps	5,011.0 cps	17,102.6 cps	6,474.7 cps
Intensity per Run 3	1,528,754.6 cps	759,219.3 cps	325,703.2 cps	55,245.9 cps	259,075.5 cps	159.0 cps	158,580.8 cps	5,171.1 cps	17,349.1 cps	6,823.9 cps
Intensity RSD	1.1 %	1.4 %	2.4 %	2.1 %	1.5 %	9.1 %	1.1 %	5.0 %	1.5 %	3.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		50.094 ppb		92.941 %	47.907 ppb	47.866 ppb	47.269 ppb	47.208 ppb	46.704 ppb	N/A
Concentration per Run 1		50.507 ppb		91.926 %	47.966 ppb	48.759 ppb	47.594 ppb	47.642 ppb	46.446 ppb	N/A
Concentration per Run 2		49.142 ppb		92.854 %	47.875 ppb	46.945 ppb	46.515 ppb	46.901 ppb	46.098 ppb	N/A
Concentration per Run 3		50.635 ppb		94.042 %	47.879 ppb	47.893 ppb	47.700 ppb	47.081 ppb	47.568 ppb	N/A
Concentration RSD		1.7 %		N/A	0.1 %	1.9 %	1.4 %	0.8 %	1.6 %	N/A
Intensity average	13,274 cps	8,376 cps	4,935 cps	543,499 cps	502,302 cps	911,175 cps	993,500 cps	593,805 cps	1,561,407 cps	1,661,136 cps
Intensity per Run 1	12,123.9 cps	8,293.8 cps	3,847.6 cps	537,563.8 cps	496,688.9 cps	916,471.8 cps	987,343.4 cps	591,329.9 cps	1,531,609.1 cps	1,645,458.3 cps
Intensity per Run 2	15,335.5 cps	8,356.8 cps	7,109.1 cps	542,991.8 cps	503,355.5 cps	896,864.3 cps	981,795.5 cps	592,901.5 cps	1,549,832.5 cps	1,663,622.4 cps
Intensity per Run 3	12,362.1 cps	8,478.0 cps	3,848.6 cps	549,940.8 cps	506,860.5 cps	920,187.5 cps	1,011,360.0 cps	597,183.4 cps	1,602,780.7 cps	1,674,326.1 cps
Intensity RSD	13.5 %	1.1 %	38.1 %	1.1 %	1.0 %	1.4 %	1.6 %	0.5 %	2.4 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		50.976 ppb	9.832 ppb	52.063 ppb	9.628 ppb	50.713 ppb	51.368 ppb	94.689 %	49.883 ppb	47.763 ppb
Concentration per Run 1		51.987 ppb	9.955 ppb	52.731 ppb	9.585 ppb	50.574 ppb	51.388 ppb	92.933 %	50.020 ppb	46.870 ppb
Concentration per Run 2		50.362 ppb	9.524 ppb	50.730 ppb	9.619 ppb	49.659 ppb	50.734 ppb	96.390 %	48.939 ppb	46.953 ppb
Concentration per Run 3		50.579 ppb	10.019 ppb	52.728 ppb	9.679 ppb	51.907 ppb	51.981 ppb	94.743 %	50.689 ppb	49.467 ppb
Concentration RSD		1.7 %	2.7 %	2.2 %	0.5 %	2.2 %	1.2 %	N/A	1.8 %	3.1 %
Intensity average	655 cps	50,568 cps	745,991 cps	39,763 cps	717,314 cps	629,358 cps	1,580,240 cps	847,731 cps	1,264,270 cps	1,272,967 cps
Intensity per Run 1	660.0 cps	50,755.0 cps	741,452.1 cps	39,614.8 cps	702,106.6 cps	616,759.6 cps	1,551,659.2 cps	832,012.3 cps	1,246,763.8 cps	1,230,671.2 cps
Intensity per Run 2	700.0 cps	50,542.1 cps	735,740.5 cps	39,253.7 cps	726,441.0 cps	625,626.3 cps	1,588,907.5 cps	862,960.3 cps	1,260,654.0 cps	1,269,524.8 cps
Intensity per Run 3	604.0 cps	50,405.5 cps	760,779.5 cps	40,421.4 cps	723,393.3 cps	645,689.1 cps	1,600,154.0 cps	848,219.7 cps	1,285,391.3 cps	1,318,706.1 cps
Intensity RSD	7.4 %	0.3 %	1.8 %	1.5 %	1.8 %	2.4 %	1.6 %	1.8 %	1.5 %	3.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	48.026 ppb	48.853 ppb	48.322 ppb			97.664 %			N/A	47.888 ppb
Concentration per Run 1	47.511 ppb	48.969 ppb	48.569 ppb			98.462 %			N/A	47.338 ppb
Concentration per Run 2	46.986 ppb	48.012 ppb	47.153 ppb			97.018 %			N/A	47.832 ppb
Concentration per Run 3	49.580 ppb	49.580 ppb	49.243 ppb			97.511 %			N/A	48.496 ppb
Concentration RSD	2.9 %	1.6 %	2.2 %			N/A			N/A	1.2 %
Intensity average	1,024,862 cps	309,587 cps	558,719 cps	21 cps	19 cps	3,069,848 cps	55 cps	28 cps	3,216,729 cps	4,341,619 cps
Intensity per Run 1	1,000,180.2 cps	308,406.3 cps	558,815.2 cps	24.0 cps	12.0 cps	3,094,954.9 cps	60.0 cps	36.0 cps	3,145,474.2 cps	4,248,621.1 cps
Intensity per Run 2	1,016,152.5 cps	306,281.5 cps	548,233.3 cps	16.0 cps	32.0 cps	3,049,552.7 cps	48.0 cps	32.0 cps	3,199,884.2 cps	4,323,422.6 cps
Intensity per Run 3	1,058,251.8 cps	314,072.0 cps	569,108.2 cps	24.0 cps	12.0 cps	3,065,036.9 cps	56.0 cps	16.0 cps	3,304,828.9 cps	4,452,812.4 cps
Intensity RSD	2.9 %	1.3 %	1.9 %	21.7 %	61.9 %	0.8 %	11.2 %	37.8 %	2.5 %	2.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	47.381 ppb	48.517 ppb	49.397 ppb	48.264 ppb	98.907 %
Concentration per Run 1	46.814 ppb	48.285 ppb	50.590 ppb	48.370 ppb	97.682 %
Concentration per Run 2	47.679 ppb	48.592 ppb	48.526 ppb	48.272 ppb	98.667 %
Concentration per Run 3	47.650 ppb	48.675 ppb	49.074 ppb	48.150 ppb	100.372 %
Concentration RSD	1.0 %	0.4 %	2.2 %	0.2 %	N/A
Intensity average	10,445,780 cps	3,513,189 cps	3,142,659 cps	14,139,624 cps	2,534,917 cps
Intensity per Run 1	10,192,166.2 cps	3,457,235.2 cps	3,181,677.8 cps	13,995,485.3 cps	2,503,516.9 cps
Intensity per Run 2	10,485,163.8 cps	3,509,034.8 cps	3,079,598.6 cps	14,107,936.2 cps	2,528,767.4 cps
Intensity per Run 3	10,660,009.1 cps	3,573,298.1 cps	3,166,702.1 cps	14,315,451.6 cps	2,572,467.0 cps
Intensity RSD	2.3 %	1.7 %	1.8 %	1.1 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: S05 Analysis: 10/30/2019 11:16:49 Sample Type STD
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	85.024 %	85.487 %	146.144 ppb	149.044 ppb	146.994 ppb	N/A	14,445.171 ppb	14,457.164 ppb	14,580.068 ppb
Concentration per Run 1	84.823 %	85.251 %	143.755 ppb	146.248 ppb	144.684 ppb	N/A	14,347.194 ppb	14,142.353 ppb	14,087.342 ppb
Concentration per Run 2	85.114 %	85.850 %	146.729 ppb	150.767 ppb	147.673 ppb	N/A	14,460.751 ppb	14,551.683 ppb	14,699.221 ppb
Concentration per Run 3	85.136 %	85.359 %	147.948 ppb	150.117 ppb	148.626 ppb	N/A	14,527.568 ppb	14,677.455 ppb	14,953.639 ppb
Concentration RSD	N/A	N/A	1.5 %	1.6 %	1.4 %	N/A	0.6 %	1.9 %	3.1 %
Intensity average	11,890,907 cps	27,525 cps	19,845 cps	2,167 cps	12,665 cps	1,930 cps	24,422,991 cps	11,146,592 cps	2,365,436 cps
Intensity per Run 1	11,862,723.7 cps	27,449.1 cps	19,466.7 cps	2,120.7 cps	12,436.2 cps	1,860.1 cps	24,221,898.8 cps	10,888,644.0 cps	2,282,468.0 cps
Intensity per Run 2	11,903,457.6 cps	27,642.0 cps	20,009.0 cps	2,199.2 cps	12,765.5 cps	1,860.1 cps	24,478,170.2 cps	11,230,590.0 cps	2,386,687.8 cps
Intensity per Run 3	11,906,540.7 cps	27,483.7 cps	20,059.6 cps	2,179.7 cps	12,792.5 cps	2,070.2 cps	24,568,904.6 cps	11,320,541.3 cps	2,427,151.2 cps
Intensity RSD	0.2 %	0.4 %	1.7 %	1.9 %	1.6 %	6.3 %	0.7 %	2.0 %	3.2 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	14,265.272 ppb	14,500.563 ppb		N/A	14,360.754 ppb	14,763.582 ppb	15,096.312 ppb	14,705.437 ppb	83.390 %
Concentration per Run 1	13,923.858 ppb	14,320.649 ppb		N/A	14,164.294 ppb	14,729.401 ppb	15,140.936 ppb	14,401.172 ppb	83.197 %
Concentration per Run 2	14,532.545 ppb	14,160.561 ppb		N/A	14,333.902 ppb	14,744.464 ppb	15,148.894 ppb	14,610.240 ppb	81.080 %
Concentration per Run 3	14,339.414 ppb	15,020.478 ppb		N/A	14,584.066 ppb	14,816.883 ppb	14,999.105 ppb	15,104.898 ppb	85.892 %
Concentration RSD	2.2 %	3.2 %		N/A	1.5 %	0.3 %	0.6 %	2.5 %	N/A
Intensity average	3,082,224 cps	3,825,706 cps	3,937 cps	3,540,415 cps	10,542,731 cps	52,551 cps	33,537,230 cps	623,661 cps	5,739,720 cps
Intensity per Run 1	3,004,706.8 cps	3,773,824.1 cps	3,970.6 cps	3,483,257.7 cps	10,395,830.3 cps	52,430.1 cps	33,561,572.4 cps	610,813.1 cps	5,726,444.0 cps
Intensity per Run 2	3,141,958.2 cps	3,737,744.9 cps	3,990.7 cps	3,484,942.1 cps	10,505,669.0 cps	52,359.7 cps	32,750,339.0 cps	618,055.7 cps	5,580,768.4 cps
Intensity per Run 3	3,100,007.2 cps	3,965,549.3 cps	3,850.6 cps	3,653,043.9 cps	10,726,693.2 cps	52,861.8 cps	34,299,779.3 cps	642,112.7 cps	5,911,948.6 cps
Intensity RSD	2.3 %	3.2 %	1.9 %	2.8 %	1.6 %	0.5 %	2.3 %	2.6 %	2.9 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.784 %	148.784 ppb	149.033 ppb	147.703 ppb	149.999 ppb	N/A	149.703 ppb	14,521.033 ppb	14,837.480 ppb
Concentration per Run 1	87.799 %	144.918 ppb	144.464 ppb	144.261 ppb	146.551 ppb	N/A	147.372 ppb	14,169.777 ppb	14,475.581 ppb
Concentration per Run 2	87.548 %	148.913 ppb	149.977 ppb	148.225 ppb	149.984 ppb	N/A	148.335 ppb	14,616.047 ppb	14,730.294 ppb
Concentration per Run 3	88.005 %	152.522 ppb	152.659 ppb	150.623 ppb	153.463 ppb	N/A	153.403 ppb	14,777.275 ppb	15,306.566 ppb
Concentration RSD	N/A	2.6 %	2.8 %	2.2 %	2.3 %	N/A	2.2 %	2.2 %	2.9 %
Intensity average	257,719 cps	49,764 cps	1,752,739 cps	2,726,296 cps	379,792 cps	388,855 cps	2,095,590 cps	270,638,194 cps	9,318,750 cps
Intensity per Run 1	257,763.0 cps	48,453.8 cps	1,699,314.8 cps	2,663,230.4 cps	370,392.6 cps	380,498.5 cps	2,058,102.4 cps	263,396,691.5 cps	9,092,743.9 cps
Intensity per Run 2	257,027.4 cps	49,718.7 cps	1,759,067.9 cps	2,728,549.4 cps	380,127.1 cps	393,118.8 cps	2,080,411.4 cps	273,047,923.8 cps	9,226,319.1 cps
Intensity per Run 3	258,366.9 cps	51,120.4 cps	1,799,833.9 cps	2,787,107.1 cps	388,856.7 cps	392,947.7 cps	2,148,256.8 cps	275,469,967.4 cps	9,637,187.2 cps
Intensity RSD	0.3 %	2.7 %	2.9 %	2.3 %	2.4 %	1.9 %	2.2 %	2.4 %	3.0 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	145.724 ppb	148.849 ppb	151.681 ppb	150.535 ppb	150.555 ppb	149.089 ppb	151.199 ppb	151.306 ppb	
Concentration per Run 1	142.356 ppb	147.723 ppb	148.749 ppb	148.810 ppb	147.362 ppb	147.557 ppb	148.786 ppb	147.469 ppb	
Concentration per Run 2	145.481 ppb	146.066 ppb	152.909 ppb	150.089 ppb	151.971 ppb	147.126 ppb	148.941 ppb	150.642 ppb	
Concentration per Run 3	149.336 ppb	152.757 ppb	153.386 ppb	152.707 ppb	152.332 ppb	152.586 ppb	155.869 ppb	155.807 ppb	
Concentration RSD	2.4 %	2.3 %	1.7 %	1.3 %	1.8 %	2.0 %	2.7 %	2.8 %	
Intensity average	6,342,684 cps	1,590,687 cps	246,478 cps	3,985,936 cps	2,043,435 cps	873,827 cps	146,657 cps	703,064 cps	391 cps
Intensity per Run 1	6,197,031.0 cps	1,562,069.7 cps	240,742.4 cps	3,923,109.9 cps	2,000,471.6 cps	851,397.5 cps	143,580.5 cps	681,643.9 cps	382.0 cps
Intensity per Run 2	6,314,956.2 cps	1,588,025.2 cps	249,718.5 cps	3,996,195.6 cps	2,057,102.7 cps	881,636.6 cps	145,563.5 cps	705,477.9 cps	414.0 cps
Intensity per Run 3	6,516,065.3 cps	1,621,964.7 cps	248,973.0 cps	4,038,503.0 cps	2,072,729.3 cps	888,446.1 cps	150,825.5 cps	722,071.4 cps	378.0 cps
Intensity RSD	2.5 %	1.9 %	2.0 %	1.5 %	1.9 %	2.3 %	2.6 %	2.9 %	5.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	143.268 ppb	N/A	147.954 ppb			142.445 ppb		90.609 %	143.315 ppb
Concentration per Run 1	141.698 ppb	N/A	145.161 ppb			139.166 ppb		89.641 %	138.214 ppb
Concentration per Run 2	141.448 ppb	N/A	147.139 ppb			141.085 ppb		92.157 %	141.924 ppb
Concentration per Run 3	146.660 ppb	N/A	151.561 ppb			147.085 ppb		90.029 %	149.806 ppb
Concentration RSD	2.1 %	N/A	2.2 %			2.9 %		N/A	4.1 %
Intensity average	435,847 cps	14,165 cps	47,358 cps	5,423 cps	28,971 cps	23,908 cps	4,748 cps	529,864 cps	1,462,323 cps
Intensity per Run 1	424,334.3 cps	13,327.1 cps	46,091.0 cps	5,224.1 cps	27,299.8 cps	22,978.6 cps	3,721.6 cps	524,201.4 cps	1,393,839.3 cps
Intensity per Run 2	439,901.5 cps	14,288.3 cps	47,675.2 cps	5,407.2 cps	30,973.4 cps	24,198.9 cps	6,746.9 cps	538,919.1 cps	1,474,311.6 cps
Intensity per Run 3	443,304.1 cps	14,878.9 cps	48,308.8 cps	5,638.3 cps	28,639.8 cps	24,546.7 cps	3,774.6 cps	526,472.8 cps	1,518,817.6 cps
Intensity RSD	2.3 %	5.5 %	2.4 %	3.8 %	6.4 %	3.4 %	36.5 %	1.5 %	4.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	146.418 ppb	145.881 ppb	141.255 ppb	145.646 ppb	N/A		147.899 ppb	28.175 ppb	150.132 ppb
Concentration per Run 1	142.069 ppb	142.932 ppb	138.551 ppb	142.268 ppb	N/A		146.951 ppb	27.887 ppb	148.922 ppb
Concentration per Run 2	145.200 ppb	144.877 ppb	138.687 ppb	144.158 ppb	N/A		145.799 ppb	27.557 ppb	148.383 ppb
Concentration per Run 3	151.987 ppb	149.834 ppb	146.526 ppb	150.512 ppb	N/A		150.946 ppb	29.081 ppb	153.090 ppb
Concentration RSD	3.5 %	2.4 %	3.2 %	3.0 %	N/A		1.8 %	2.8 %	1.7 %
Intensity average	2,712,258 cps	2,982,498 cps	1,727,776 cps	4,733,647 cps	1,595,390 cps	795 cps	142,196 cps	2,069,160 cps	111,207 cps
Intensity per Run 1	2,600,470.3 cps	2,886,982.4 cps	1,674,098.7 cps	4,566,383.5 cps	1,576,419.8 cps	756.0 cps	139,316.9 cps	2,016,034.0 cps	108,727.3 cps
Intensity per Run 2	2,738,818.9 cps	3,016,672.4 cps	1,728,192.5 cps	4,773,729.5 cps	1,613,842.5 cps	804.0 cps	143,050.3 cps	2,068,835.2 cps	112,202.4 cps
Intensity per Run 3	2,797,485.3 cps	3,043,837.7 cps	1,781,037.6 cps	4,860,828.7 cps	1,595,907.4 cps	824.0 cps	144,220.7 cps	2,122,610.1 cps	112,690.1 cps
Intensity RSD	3.7 %	2.8 %	3.1 %	3.2 %	1.2 %	4.4 %	1.8 %	2.6 %	1.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.070 ppb	148.893 ppb	145.978 ppb	91.653 %	148.480 ppb	145.066 ppb	144.358 ppb	144.823 ppb	145.496 ppb
Concentration per Run 1	27.580 ppb	148.494 ppb	144.123 ppb	90.205 %	147.020 ppb	140.658 ppb	139.905 ppb	143.181 ppb	143.722 ppb
Concentration per Run 2	27.877 ppb	147.373 ppb	142.914 ppb	93.678 %	146.026 ppb	143.836 ppb	141.638 ppb	143.672 ppb	146.038 ppb
Concentration per Run 3	28.754 ppb	150.813 ppb	150.896 ppb	91.076 %	152.395 ppb	150.705 ppb	151.531 ppb	147.616 ppb	146.727 ppb
Concentration RSD	2.2 %	1.2 %	2.9 %	N/A	2.3 %	3.5 %	4.3 %	1.7 %	1.1 %
Intensity average	2,027,381 cps	1,790,443 cps	4,346,332 cps	820,553 cps	3,643,297 cps	3,746,176 cps	2,986,039 cps	891,547 cps	1,635,038 cps
Intensity per Run 1	1,962,877.9 cps	1,758,974.2 cps	4,223,982.1 cps	807,590.4 cps	3,550,055.2 cps	3,573,123.1 cps	2,846,516.4 cps	866,182.0 cps	1,586,799.8 cps
Intensity per Run 2	2,055,589.5 cps	1,810,122.9 cps	4,349,827.2 cps	838,684.7 cps	3,659,749.5 cps	3,790,256.3 cps	2,988,247.1 cps	899,261.0 cps	1,667,612.6 cps
Intensity per Run 3	2,063,675.0 cps	1,802,232.0 cps	4,465,185.5 cps	815,385.4 cps	3,720,085.1 cps	3,875,149.1 cps	3,123,354.8 cps	909,199.3 cps	1,650,700.6 cps
Intensity RSD	2.8 %	1.5 %	2.8 %	2.0 %	2.4 %	4.2 %	4.6 %	2.5 %	2.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			95.329 %			N/A	145.207 ppb	146.032 ppb	144.915 ppb
Concentration per Run 1			93.516 %			N/A	142.835 ppb	144.946 ppb	143.654 ppb
Concentration per Run 2			96.338 %			N/A	144.663 ppb	144.370 ppb	143.044 ppb
Concentration per Run 3			96.132 %			N/A	148.122 ppb	148.778 ppb	148.049 ppb
Concentration RSD			N/A			N/A	1.8 %	1.6 %	1.9 %
Intensity average	55 cps	25 cps	2,996,460 cps	65 cps	19 cps	3,140,057 cps	12,558,312 cps	30,615,052 cps	9,994,889 cps
Intensity per Run 1	72.0 cps	36.0 cps	2,939,490.3 cps	68.0 cps	12.0 cps	3,042,071.7 cps	12,207,433.3 cps	30,061,561.0 cps	9,796,590.2 cps
Intensity per Run 2	48.0 cps	16.0 cps	3,028,193.9 cps	56.0 cps	24.0 cps	3,216,768.6 cps	12,656,570.8 cps	30,624,959.8 cps	9,981,810.3 cps
Intensity per Run 3	44.0 cps	24.0 cps	3,021,696.7 cps	72.0 cps	20.0 cps	3,161,330.6 cps	12,810,931.0 cps	31,158,634.8 cps	10,206,267.9 cps
Intensity RSD	27.7 %	39.7 %	1.7 %	12.7 %	32.7 %	2.8 %	2.5 %	1.8 %	2.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	145.740 ppb	144.353 ppb	94.080 %
Concentration per Run 1	144.948 ppb	144.091 ppb	93.068 %
Concentration per Run 2	142.046 ppb	141.716 ppb	95.191 %
Concentration per Run 3	150.224 ppb	147.251 ppb	93.980 %
Concentration RSD	2.8 %	1.9 %	N/A
Intensity average	8,827,729 cps	40,218,567 cps	2,411,206 cps
Intensity per Run 1	8,683,211.1 cps	39,717,019.1 cps	2,385,282.2 cps
Intensity per Run 2	8,705,958.4 cps	39,953,213.6 cps	2,439,680.3 cps
Intensity per Run 3	9,094,016.4 cps	40,985,469.0 cps	2,408,654.4 cps
Intensity RSD	2.6 %	1.7 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: S06 Analysis: 10/30/2019 11:22:53 Sample Type STD
Comment MW-11882 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.213 %	83.426 %	223.909 ppb	225.371 ppb	225.438 ppb	N/A	22,346.782 ppb	22,574.482 ppb	22,467.083 ppb
Concentration per Run 1	83.099 %	83.090 %	221.433 ppb	223.813 ppb	221.911 ppb	N/A	22,054.404 ppb	22,151.048 ppb	21,799.230 ppb
Concentration per Run 2	83.146 %	83.065 %	226.328 ppb	228.428 ppb	225.278 ppb	N/A	22,349.235 ppb	22,559.720 ppb	22,430.278 ppb
Concentration per Run 3	83.394 %	84.124 %	223.964 ppb	223.873 ppb	229.127 ppb	N/A	22,636.708 ppb	23,012.678 ppb	23,171.741 ppb
Concentration RSD	N/A	N/A	1.1 %	1.2 %	1.6 %	N/A	1.3 %	1.9 %	3.1 %
Intensity average	11,637,606 cps	26,862 cps	29,670 cps	3,202 cps	19,002 cps	1,927 cps	37,211,215 cps	17,154,022 cps	3,594,511 cps
Intensity per Run 1	11,621,632.2 cps	26,753.1 cps	29,223.6 cps	3,167.9 cps	18,630.4 cps	1,910.2 cps	36,590,926.5 cps	16,770,995.7 cps	3,474,873.5 cps
Intensity per Run 2	11,628,274.5 cps	26,745.1 cps	29,860.6 cps	3,230.4 cps	18,894.3 cps	1,850.1 cps	36,983,850.0 cps	17,033,889.7 cps	3,565,250.7 cps
Intensity per Run 3	11,662,911.7 cps	27,086.3 cps	29,925.8 cps	3,208.9 cps	19,480.7 cps	2,020.2 cps	38,058,868.5 cps	17,657,179.6 cps	3,743,409.4 cps
Intensity RSD	0.2 %	0.7 %	1.3 %	1.0 %	2.3 %	4.5 %	2.0 %	2.7 %	3.8 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	22,176.126 ppb	22,562.254 ppb		N/A	22,510.466 ppb	22,536.691 ppb	22,421.144 ppb	22,708.904 ppb	83.933 %
Concentration per Run 1	21,436.642 ppb	21,988.034 ppb		N/A	22,339.983 ppb	21,922.111 ppb	22,354.180 ppb	22,192.187 ppb	82.240 %
Concentration per Run 2	22,328.936 ppb	22,696.989 ppb		N/A	22,392.931 ppb	22,741.502 ppb	22,454.042 ppb	22,897.488 ppb	85.578 %
Concentration per Run 3	22,762.800 ppb	23,001.741 ppb		N/A	22,798.485 ppb	22,946.460 ppb	22,455.209 ppb	23,037.036 ppb	83.982 %
Concentration RSD	3.0 %	2.3 %		N/A	1.1 %	2.4 %	0.3 %	2.0 %	N/A
Intensity average	4,727,533 cps	5,876,305 cps	4,804 cps	4,276,784 cps	16,407,393 cps	79,828 cps	50,076,417 cps	958,931 cps	5,777,117 cps
Intensity per Run 1	4,553,388.5 cps	5,706,384.7 cps	5,141.1 cps	4,155,125.9 cps	16,230,547.2 cps	77,409.3 cps	48,942,228.9 cps	934,221.6 cps	5,660,562.6 cps
Intensity per Run 2	4,728,746.6 cps	5,872,011.5 cps	4,801.0 cps	4,298,905.1 cps	16,193,171.0 cps	79,885.5 cps	51,105,024.4 cps	958,793.9 cps	5,890,329.1 cps
Intensity per Run 3	4,900,462.6 cps	6,050,519.0 cps	4,470.8 cps	4,376,319.5 cps	16,798,462.3 cps	82,190.1 cps	50,181,996.5 cps	983,776.9 cps	5,780,458.6 cps
Intensity RSD	3.7 %	2.9 %	7.0 %	2.6 %	2.1 %	3.0 %	2.2 %	2.6 %	2.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.480 %	227.010 ppb	228.361 ppb	222.278 ppb	226.459 ppb	N/A	227.360 ppb	22,447.586 ppb	22,605.022 ppb
Concentration per Run 1	87.216 %	223.557 ppb	220.729 ppb	217.440 ppb	219.444 ppb	N/A	218.654 ppb	22,262.181 ppb	22,197.242 ppb
Concentration per Run 2	86.744 %	225.964 ppb	232.919 ppb	223.307 ppb	231.050 ppb	N/A	232.454 ppb	22,261.251 ppb	22,944.704 ppb
Concentration per Run 3	88.481 %	231.510 ppb	231.435 ppb	226.086 ppb	228.882 ppb	N/A	230.973 ppb	22,819.328 ppb	22,673.119 ppb
Concentration RSD	N/A	1.8 %	2.9 %	2.0 %	2.7 %	N/A	3.3 %	1.4 %	1.7 %
Intensity average	256,827 cps	75,679 cps	2,675,637 cps	4,087,699 cps	571,055 cps	583,287 cps	3,172,493 cps	417,157,904 cps	14,146,870 cps
Intensity per Run 1	256,051.3 cps	74,248.1 cps	2,578,381.2 cps	3,986,409.0 cps	550,303.1 cps	569,148.4 cps	3,031,962.2 cps	410,994,066.1 cps	13,849,911.1 cps
Intensity per Run 2	254,664.9 cps	74,739.0 cps	2,705,957.5 cps	4,071,743.6 cps	579,228.0 cps	578,758.8 cps	3,226,721.3 cps	411,691,609.5 cps	14,238,737.6 cps
Intensity per Run 3	259,764.4 cps	78,051.1 cps	2,742,573.6 cps	4,204,943.1 cps	583,632.9 cps	601,953.2 cps	3,258,794.1 cps	428,788,036.6 cps	14,351,961.7 cps
Intensity RSD	1.0 %	2.7 %	3.2 %	2.7 %	3.2 %	2.9 %	3.9 %	2.4 %	1.9 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	220.722 ppb	223.901 ppb	224.822 ppb	224.318 ppb	219.662 ppb	227.106 ppb	227.768 ppb	224.449 ppb	
Concentration per Run 1	217.810 ppb	221.901 ppb	221.767 ppb	220.709 ppb	216.090 ppb	222.703 ppb	223.038 ppb	221.707 ppb	
Concentration per Run 2	222.993 ppb	223.756 ppb	226.138 ppb	226.813 ppb	223.301 ppb	229.822 ppb	228.831 ppb	226.851 ppb	
Concentration per Run 3	221.364 ppb	226.047 ppb	226.560 ppb	225.433 ppb	219.596 ppb	228.794 ppb	231.435 ppb	224.789 ppb	
Concentration RSD	1.2 %	0.9 %	1.2 %	1.4 %	1.6 %	1.7 %	1.9 %	1.2 %	
Intensity average	9,573,368 cps	2,385,033 cps	363,635 cps	5,922,789 cps	2,970,198 cps	1,282,764 cps	219,431 cps	1,035,755 cps	567 cps
Intensity per Run 1	9,418,580.2 cps	2,324,572.1 cps	355,701.2 cps	5,776,811.9 cps	2,913,186.3 cps	1,248,586.8 cps	212,764.8 cps	1,012,752.4 cps	579.0 cps
Intensity per Run 2	9,590,468.9 cps	2,397,349.0 cps	364,716.7 cps	5,973,628.7 cps	2,994,048.3 cps	1,302,667.9 cps	220,166.8 cps	1,045,830.9 cps	567.0 cps
Intensity per Run 3	9,711,053.5 cps	2,433,176.9 cps	370,485.9 cps	6,017,926.2 cps	3,003,358.6 cps	1,297,037.1 cps	225,362.3 cps	1,048,682.8 cps	555.0 cps
Intensity RSD	1.5 %	2.3 %	2.0 %	2.2 %	1.7 %	2.3 %	2.9 %	1.9 %	2.1 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	224.576 ppb	N/A	222.446 ppb			219.291 ppb		90.488 %	226.513 ppb
Concentration per Run 1	220.242 ppb	N/A	216.865 ppb			212.159 ppb		88.993 %	220.597 ppb
Concentration per Run 2	225.897 ppb	N/A	224.803 ppb			221.861 ppb		91.022 %	225.420 ppb
Concentration per Run 3	227.590 ppb	N/A	225.671 ppb			223.853 ppb		91.450 %	233.523 ppb
Concentration RSD	1.7 %	N/A	2.2 %			2.9 %		N/A	2.9 %
Intensity average	659,950 cps	21,242 cps	71,093 cps	7,444 cps	40,946 cps	35,903 cps	5,025 cps	529,158 cps	2,295,125 cps
Intensity per Run 1	642,361.1 cps	20,466.9 cps	68,380.1 cps	7,171.1 cps	39,168.4 cps	34,455.1 cps	4,441.8 cps	520,415.9 cps	2,201,584.9 cps
Intensity per Run 2	666,226.5 cps	20,997.8 cps	72,007.1 cps	7,537.3 cps	42,997.1 cps	36,459.4 cps	6,208.7 cps	532,277.6 cps	2,296,076.1 cps
Intensity per Run 3	671,261.9 cps	22,260.0 cps	72,892.2 cps	7,622.3 cps	40,671.1 cps	36,794.7 cps	4,425.8 cps	534,781.6 cps	2,387,714.3 cps
Intensity RSD	2.3 %	4.3 %	3.4 %	3.2 %	4.7 %	3.5 %	20.4 %	1.5 %	4.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	226.395 ppb	228.508 ppb	227.723 ppb	225.274 ppb	N/A		225.150 ppb	42.071 ppb	228.550 ppb
Concentration per Run 1	223.440 ppb	223.173 ppb	222.514 ppb	219.808 ppb	N/A		223.786 ppb	40.824 ppb	224.761 ppb
Concentration per Run 2	225.491 ppb	229.302 ppb	230.282 ppb	228.797 ppb	N/A		226.850 ppb	42.864 ppb	231.780 ppb
Concentration per Run 3	230.253 ppb	233.049 ppb	230.373 ppb	227.216 ppb	N/A		224.814 ppb	42.525 ppb	229.108 ppb
Concentration RSD	1.5 %	2.2 %	2.0 %	2.1 %	N/A		0.7 %	2.6 %	1.6 %
Intensity average	4,159,293 cps	4,628,318 cps	2,756,502 cps	7,236,694 cps	1,548,790 cps	839 cps	211,917 cps	2,994,022 cps	165,386 cps
Intensity per Run 1	4,045,155.2 cps	4,455,604.5 cps	2,655,896.4 cps	6,965,057.9 cps	1,550,007.1 cps	860.0 cps	208,377.2 cps	2,883,072.5 cps	161,007.5 cps
Intensity per Run 2	4,164,610.0 cps	4,668,272.7 cps	2,801,614.7 cps	7,386,533.1 cps	1,566,132.7 cps	808.0 cps	214,466.0 cps	3,061,460.7 cps	168,432.4 cps
Intensity per Run 3	4,268,114.7 cps	4,761,075.9 cps	2,811,995.9 cps	7,358,490.7 cps	1,530,231.1 cps	848.0 cps	212,907.2 cps	3,037,533.4 cps	166,717.3 cps
Intensity RSD	2.7 %	3.4 %	3.2 %	3.3 %	1.2 %	3.2 %	1.5 %	3.2 %	2.4 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	42.270 ppb	225.514 ppb	225.753 ppb	88.792 %	233.003 ppb	227.308 ppb	228.373 ppb	227.521 ppb	227.911 ppb
Concentration per Run 1	41.172 ppb	223.156 ppb	221.199 ppb	88.124 %	230.397 ppb	219.531 ppb	217.042 ppb	222.752 ppb	222.731 ppb
Concentration per Run 2	42.718 ppb	224.631 ppb	227.524 ppb	89.122 %	233.430 ppb	231.142 ppb	233.570 ppb	230.105 ppb	231.759 ppb
Concentration per Run 3	42.919 ppb	228.754 ppb	228.537 ppb	89.131 %	235.183 ppb	231.252 ppb	234.507 ppb	229.707 ppb	229.245 ppb
Concentration RSD	2.3 %	1.3 %	1.8 %	N/A	1.0 %	3.0 %	4.3 %	1.8 %	2.0 %
Intensity average	2,978,863 cps	2,639,865 cps	6,513,257 cps	794,940 cps	5,547,137 cps	5,703,088 cps	4,594,402 cps	1,369,557 cps	2,506,404 cps
Intensity per Run 1	2,873,173.0 cps	2,588,798.7 cps	6,333,337.3 cps	788,954.3 cps	5,445,517.5 cps	5,469,755.7 cps	4,336,978.4 cps	1,333,803.3 cps	2,437,153.3 cps
Intensity per Run 2	3,022,804.9 cps	2,640,063.8 cps	6,588,202.7 cps	797,891.7 cps	5,571,980.1 cps	5,808,267.1 cps	4,702,829.0 cps	1,380,912.2 cps	2,539,381.0 cps
Intensity per Run 3	3,040,611.0 cps	2,690,733.6 cps	6,618,230.1 cps	797,974.6 cps	5,623,912.7 cps	5,831,240.7 cps	4,743,399.2 cps	1,393,956.4 cps	2,542,676.2 cps
Intensity RSD	3.1 %	1.9 %	2.4 %	0.7 %	1.7 %	3.5 %	4.9 %	2.3 %	2.4 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			94.212 %			N/A	223.487 ppb	224.293 ppb	227.167 ppb
Concentration per Run 1			93.969 %			N/A	218.126 ppb	217.931 ppb	220.893 ppb
Concentration per Run 2			93.218 %			N/A	226.109 ppb	226.742 ppb	231.110 ppb
Concentration per Run 3			95.448 %			N/A	226.226 ppb	228.207 ppb	229.498 ppb
Concentration RSD			N/A			N/A	2.1 %	2.5 %	2.4 %
Intensity average	97 cps	33 cps	2,961,355 cps	67 cps	77 cps	3,094,043 cps	18,392,671 cps	44,512,523 cps	14,870,507 cps
Intensity per Run 1	116.0 cps	32.0 cps	2,953,729.6 cps	76.0 cps	88.0 cps	3,066,627.3 cps	17,841,328.0 cps	42,961,096.1 cps	14,367,713.2 cps
Intensity per Run 2	96.0 cps	28.0 cps	2,930,114.2 cps	60.0 cps	68.0 cps	3,083,432.7 cps	18,457,267.0 cps	44,647,127.7 cps	15,008,588.5 cps
Intensity per Run 3	80.0 cps	40.0 cps	3,000,221.1 cps	64.0 cps	76.0 cps	3,132,069.5 cps	18,879,417.2 cps	45,929,344.7 cps	15,235,219.9 cps
Intensity RSD	18.5 %	18.3 %	1.2 %	12.5 %	13.0 %	1.1 %	2.8 %	3.3 %	3.0 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	226.645 ppb	227.268 ppb	89.048 %
Concentration per Run 1	220.185 ppb	222.067 ppb	88.464 %
Concentration per Run 2	228.739 ppb	232.165 ppb	88.363 %
Concentration per Run 3	231.010 ppb	227.573 ppb	90.318 %
Concentration RSD	2.5 %	2.2 %	N/A
Intensity average	13,019,828 cps	59,936,433 cps	2,282,253 cps
Intensity per Run 1	12,566,279.1 cps	58,180,223.5 cps	2,267,272.2 cps
Intensity per Run 2	13,035,808.3 cps	60,756,816.1 cps	2,264,700.8 cps
Intensity per Run 3	13,457,397.8 cps	60,872,258.4 cps	2,314,785.5 cps
Intensity RSD	3.4 %	2.5 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: S07 Analysis: 10/30/2019 11:28:57 Sample Type STD
Comment MW-11883 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.737 %	82.771 %	297.595 ppb	300.245 ppb	301.136 ppb	N/A	30,421.256 ppb	30,217.789 ppb	30,238.781 ppb
Concentration per Run 1	83.075 %	82.072 %	297.026 ppb	299.393 ppb	301.563 ppb	N/A	30,268.081 ppb	30,330.036 ppb	30,240.204 ppb
Concentration per Run 2	84.514 %	82.775 %	299.008 ppb	297.955 ppb	305.264 ppb	N/A	30,792.541 ppb	30,567.310 ppb	30,128.468 ppb
Concentration per Run 3	83.623 %	83.465 %	296.750 ppb	303.388 ppb	296.581 ppb	N/A	30,203.145 ppb	29,756.019 ppb	30,347.670 ppb
Concentration RSD	N/A	N/A	0.4 %	0.9 %	1.4 %	N/A	1.1 %	1.4 %	0.4 %
Intensity average	11,710,930 cps	26,650 cps	39,123 cps	4,233 cps	25,184 cps	1,933 cps	50,306,528 cps	22,804,536 cps	4,805,130 cps
Intensity per Run 1	11,618,250.6 cps	26,425.4 cps	38,718.9 cps	4,183.7 cps	24,995.0 cps	1,960.2 cps	49,546,457.5 cps	22,656,564.6 cps	4,755,659.7 cps
Intensity per Run 2	11,819,529.4 cps	26,651.9 cps	39,311.2 cps	4,200.7 cps	25,529.1 cps	1,960.2 cps	50,907,733.1 cps	23,063,511.9 cps	4,786,140.3 cps
Intensity per Run 3	11,695,011.5 cps	26,873.9 cps	39,339.3 cps	4,315.2 cps	25,027.0 cps	1,880.1 cps	50,465,394.6 cps	22,693,530.0 cps	4,873,589.1 cps
Intensity RSD	0.9 %	0.8 %	0.9 %	1.7 %	1.2 %	2.4 %	1.4 %	1.0 %	1.3 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	29,319.881 ppb	30,183.653 ppb		N/A	30,330.413 ppb	30,079.657 ppb	29,997.639 ppb	29,982.831 ppb	83.838 %
Concentration per Run 1	29,656.219 ppb	30,657.744 ppb		N/A	30,483.967 ppb	29,827.723 ppb	29,435.845 ppb	30,551.289 ppb	85.049 %
Concentration per Run 2	29,065.204 ppb	30,222.022 ppb		N/A	30,803.138 ppb	30,097.027 ppb	31,131.286 ppb	29,955.158 ppb	81.726 %
Concentration per Run 3	29,238.220 ppb	29,671.193 ppb		N/A	29,704.135 ppb	30,314.221 ppb	29,425.785 ppb	29,442.045 ppb	84.738 %
Concentration RSD	1.0 %	1.6 %		N/A	1.9 %	0.8 %	3.3 %	1.9 %	N/A
Intensity average	6,208,319 cps	7,808,573 cps	5,748 cps	4,162,088 cps	21,969,972 cps	105,939 cps	66,882,604 cps	1,258,743 cps	5,770,547 cps
Intensity per Run 1	6,214,366.8 cps	7,848,676.3 cps	5,821.4 cps	4,095,094.3 cps	21,825,922.1 cps	103,780.8 cps	66,572,101.1 cps	1,267,236.3 cps	5,853,910.2 cps
Intensity per Run 2	6,152,789.1 cps	7,816,845.8 cps	5,581.3 cps	4,201,682.3 cps	22,302,450.9 cps	105,928.3 cps	67,752,639.9 cps	1,256,988.3 cps	5,625,234.9 cps
Intensity per Run 3	6,257,801.6 cps	7,760,198.1 cps	5,841.4 cps	4,189,487.4 cps	21,781,542.1 cps	108,106.7 cps	66,323,070.7 cps	1,252,003.5 cps	5,832,495.4 cps
Intensity RSD	0.8 %	0.6 %	2.5 %	1.4 %	1.3 %	2.0 %	1.1 %	0.6 %	2.2 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.010 %	299.026 ppb	297.921 ppb	290.041 ppb	298.684 ppb	N/A	298.208 ppb	30,264.071 ppb	30,003.228 ppb
Concentration per Run 1	85.947 %	302.193 ppb	298.397 ppb	287.289 ppb	297.569 ppb	N/A	297.512 ppb	29,688.327 ppb	29,994.236 ppb
Concentration per Run 2	86.954 %	300.523 ppb	297.116 ppb	295.907 ppb	300.265 ppb	N/A	300.802 ppb	30,636.968 ppb	30,247.172 ppb
Concentration per Run 3	88.129 %	294.361 ppb	298.251 ppb	286.929 ppb	298.219 ppb	N/A	296.311 ppb	30,466.918 ppb	29,768.275 ppb
Concentration RSD	N/A	1.4 %	0.2 %	1.8 %	0.5 %	N/A	0.8 %	1.7 %	0.8 %
Intensity average	255,448 cps	99,154 cps	3,471,347 cps	5,304,097 cps	749,447 cps	774,891 cps	4,142,543 cps	560,136,715 cps	18,675,302 cps
Intensity per Run 1	252,326.4 cps	98,942.8 cps	3,434,411.4 cps	5,189,642.4 cps	736,093.0 cps	765,971.7 cps	4,072,602.1 cps	541,255,293.4 cps	18,442,214.0 cps
Intensity per Run 2	255,283.7 cps	99,567.3 cps	3,459,747.7 cps	5,407,908.5 cps	752,003.7 cps	776,469.5 cps	4,169,667.9 cps	565,660,278.2 cps	18,815,694.3 cps
Intensity per Run 3	258,732.8 cps	98,950.6 cps	3,519,883.3 cps	5,314,740.4 cps	760,243.5 cps	782,232.5 cps	4,185,359.1 cps	573,494,574.5 cps	18,767,998.3 cps
Intensity RSD	1.3 %	0.4 %	1.3 %	2.1 %	1.6 %	1.1 %	1.5 %	3.0 %	1.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	295.020 ppb	296.457 ppb	298.892 ppb	299.178 ppb	287.715 ppb	305.511 ppb	296.884 ppb	299.476 ppb	
Concentration per Run 1	293.774 ppb	298.984 ppb	297.839 ppb	298.593 ppb	286.653 ppb	306.813 ppb	298.657 ppb	298.245 ppb	
Concentration per Run 2	299.871 ppb	301.993 ppb	304.014 ppb	302.422 ppb	290.156 ppb	309.746 ppb	298.282 ppb	303.036 ppb	
Concentration per Run 3	291.415 ppb	288.394 ppb	294.823 ppb	296.518 ppb	286.337 ppb	299.976 ppb	293.711 ppb	297.147 ppb	
Concentration RSD	1.5 %	2.4 %	1.6 %	1.0 %	0.7 %	1.6 %	0.9 %	1.0 %	
Intensity average	12,726,646 cps	3,152,398 cps	481,238 cps	7,871,605 cps	3,869,059 cps	1,699,162 cps	284,557 cps	1,374,886 cps	770 cps
Intensity per Run 1	12,518,534.8 cps	3,108,986.5 cps	471,789.9 cps	7,727,069.4 cps	3,807,702.5 cps	1,671,458.0 cps	281,288.0 cps	1,345,153.4 cps	756.0 cps
Intensity per Run 2	12,928,091.7 cps	3,189,423.8 cps	487,933.0 cps	7,930,748.8 cps	3,899,392.1 cps	1,714,409.7 cps	284,793.9 cps	1,385,491.0 cps	801.0 cps
Intensity per Run 3	12,733,311.5 cps	3,158,782.6 cps	483,989.9 cps	7,956,997.9 cps	3,900,081.8 cps	1,711,618.3 cps	287,588.4 cps	1,394,014.0 cps	753.0 cps
Intensity RSD	1.6 %	1.3 %	1.7 %	1.6 %	1.4 %	1.4 %	1.1 %	1.9 %	3.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	303.826 ppb	N/A	302.544 ppb			300.944 ppb		90.464 %	302.658 ppb
Concentration per Run 1	305.186 ppb	N/A	305.516 ppb			304.902 ppb		88.434 %	307.731 ppb
Concentration per Run 2	308.428 ppb	N/A	303.785 ppb			301.558 ppb		89.821 %	304.093 ppb
Concentration per Run 3	297.863 ppb	N/A	298.331 ppb			296.374 ppb		93.139 %	296.150 ppb
Concentration RSD	1.8 %	N/A	1.2 %			1.4 %		N/A	2.0 %
Intensity average	880,243 cps	28,476 cps	96,518 cps	7,807 cps	54,152 cps	48,807 cps	5,492 cps	529,019 cps	3,056,986 cps
Intensity per Run 1	866,108.3 cps	27,981.5 cps	95,539.0 cps	7,749.4 cps	53,569.6 cps	48,444.5 cps	5,463.3 cps	517,143.9 cps	3,040,538.7 cps
Intensity per Run 2	889,324.7 cps	28,803.3 cps	96,395.3 cps	7,813.4 cps	53,922.3 cps	48,677.8 cps	5,398.3 cps	525,254.4 cps	3,051,922.6 cps
Intensity per Run 3	885,296.9 cps	28,642.9 cps	97,620.4 cps	7,859.5 cps	54,963.7 cps	49,298.6 cps	5,613.4 cps	544,659.4 cps	3,078,496.4 cps
Intensity RSD	1.4 %	1.5 %	1.1 %	0.7 %	1.3 %	0.9 %	2.0 %	2.7 %	0.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	301.254 ppb	300.066 ppb	302.977 ppb	302.741 ppb	N/A		300.748 ppb	56.240 ppb	296.853 ppb
Concentration per Run 1	301.766 ppb	299.146 ppb	301.077 ppb	301.979 ppb	N/A		300.791 ppb	57.100 ppb	301.856 ppb
Concentration per Run 2	304.950 ppb	305.126 ppb	310.588 ppb	309.437 ppb	N/A		308.365 ppb	55.847 ppb	300.450 ppb
Concentration per Run 3	297.046 ppb	295.925 ppb	297.266 ppb	296.806 ppb	N/A		293.087 ppb	55.772 ppb	288.253 ppb
Concentration RSD	1.3 %	1.6 %	2.3 %	2.1 %	N/A		2.5 %	1.3 %	2.5 %
Intensity average	5,516,161 cps	6,054,403 cps	3,651,586 cps	9,678,481 cps	1,523,729 cps	933 cps	280,645 cps	3,951,535 cps	212,755 cps
Intensity per Run 1	5,404,681.3 cps	5,904,085.7 cps	3,549,857.7 cps	9,445,341.9 cps	1,519,756.6 cps	856.0 cps	274,789.0 cps	3,929,779.2 cps	211,850.9 cps
Intensity per Run 2	5,547,821.8 cps	6,117,133.2 cps	3,719,845.1 cps	9,831,606.8 cps	1,502,360.8 cps	1,056.0 cps	286,192.2 cps	3,905,318.4 cps	214,228.8 cps
Intensity per Run 3	5,595,980.2 cps	6,141,988.7 cps	3,685,056.0 cps	9,758,493.7 cps	1,549,071.0 cps	888.0 cps	280,954.8 cps	4,019,506.7 cps	212,184.3 cps
Intensity RSD	1.8 %	2.2 %	2.5 %	2.1 %	1.5 %	11.5 %	2.0 %	1.5 %	0.6 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	56.111 ppb	300.065 ppb	301.196 ppb	87.689 %	313.811 ppb	300.430 ppb	300.835 ppb	300.939 ppb	300.372 ppb
Concentration per Run 1	55.624 ppb	305.239 ppb	302.158 ppb	85.879 %	314.837 ppb	291.990 ppb	292.016 ppb	304.519 ppb	303.851 ppb
Concentration per Run 2	57.320 ppb	302.917 ppb	306.187 ppb	87.258 %	318.784 ppb	306.998 ppb	306.543 ppb	303.151 ppb	303.038 ppb
Concentration per Run 3	55.391 ppb	292.038 ppb	295.242 ppb	89.931 %	307.811 ppb	302.301 ppb	303.947 ppb	295.148 ppb	294.226 ppb
Concentration RSD	1.9 %	2.3 %	1.8 %	N/A	1.8 %	2.6 %	2.6 %	1.7 %	1.8 %
Intensity average	3,915,603 cps	3,474,142 cps	8,579,393 cps	785,066 cps	7,372,990 cps	7,438,312 cps	5,970,685 cps	1,783,604 cps	3,251,611 cps
Intensity per Run 1	3,800,157.1 cps	3,461,363.7 cps	8,430,960.9 cps	768,858.6 cps	7,250,552.1 cps	7,087,865.8 cps	5,684,422.9 cps	1,775,384.7 cps	3,236,955.4 cps
Intensity per Run 2	3,978,523.2 cps	3,489,991.5 cps	8,680,560.6 cps	781,204.8 cps	7,458,963.6 cps	7,571,069.6 cps	6,062,232.7 cps	1,795,220.1 cps	3,278,989.6 cps
Intensity per Run 3	3,968,130.0 cps	3,471,071.3 cps	8,626,656.2 cps	805,134.9 cps	7,409,453.6 cps	7,656,000.2 cps	6,165,399.0 cps	1,780,207.0 cps	3,238,886.7 cps
Intensity RSD	2.6 %	0.4 %	1.5 %	2.3 %	1.5 %	4.1 %	4.2 %	0.6 %	0.7 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.495 %			N/A	304.044 ppb	303.184 ppb	301.287 ppb
Concentration per Run 1			91.409 %			N/A	306.051 ppb	306.179 ppb	305.507 ppb
Concentration per Run 2			92.813 %			N/A	306.726 ppb	305.734 ppb	303.703 ppb
Concentration per Run 3			93.264 %			N/A	299.353 ppb	297.637 ppb	294.652 ppb
Concentration RSD			N/A			N/A	1.3 %	1.6 %	1.9 %
Intensity average	128 cps	44 cps	2,907,394 cps	81 cps	37 cps	3,096,719 cps	24,318,390 cps	58,386,516 cps	19,152,378 cps
Intensity per Run 1	136.0 cps	60.0 cps	2,873,235.0 cps	76.0 cps	36.0 cps	3,041,755.3 cps	24,079,882.3 cps	57,964,688.9 cps	19,099,194.4 cps
Intensity per Run 2	120.0 cps	44.0 cps	2,917,392.3 cps	108.0 cps	36.0 cps	3,109,846.8 cps	24,410,306.5 cps	58,512,772.1 cps	19,199,232.5 cps
Intensity per Run 3	128.0 cps	28.0 cps	2,931,553.7 cps	60.0 cps	40.0 cps	3,138,554.4 cps	24,464,982.6 cps	58,682,085.9 cps	19,158,706.0 cps
Intensity RSD	6.2 %	36.4 %	1.0 %	30.0 %	6.2 %	1.6 %	0.9 %	0.6 %	0.3 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	301.106 ppb	301.535 ppb	86.441 %
Concentration per Run 1	302.206 ppb	302.506 ppb	84.958 %
Concentration per Run 2	308.003 ppb	308.018 ppb	85.886 %
Concentration per Run 3	293.108 ppb	294.083 ppb	88.478 %
Concentration RSD	2.5 %	2.3 %	N/A
Intensity average	16,792,027 cps	77,172,978 cps	2,215,421 cps
Intensity per Run 1	16,572,689.2 cps	76,113,083.1 cps	2,177,423.3 cps
Intensity per Run 2	17,078,282.2 cps	78,346,542.2 cps	2,201,207.8 cps
Intensity per Run 3	16,725,109.3 cps	77,059,308.7 cps	2,267,632.0 cps
Intensity RSD	1.5 %	1.5 %	2.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: S08 Analysis: 10/30/2019 11:35:02 Sample Type STD
Comment MW-11884 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	88.814 %	88.598 %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 1	88.304 %	87.727 %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 2	88.667 %	88.266 %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 3	89.471 %	89.801 %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration RSD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	12,420,901 cps	28,527 cps	8 cps	15 cps	70 cps	1,807 cps	14,976 cps	4,187 cps	870 cps	1,083 cps
Intensity per Run 1	12,349,582.7 cps	28,246.4 cps	8.5 cps	19.5 cps	76.0 cps	1,850.2 cps	15,910.2 cps	4,520.8 cps	1,070.0 cps	1,150.1 cps
Intensity per Run 2	12,400,338.0 cps	28,419.8 cps	8.5 cps	12.5 cps	71.5 cps	1,870.1 cps	14,728.7 cps	4,490.8 cps	780.0 cps	1,010.0 cps
Intensity per Run 3	12,512,780.9 cps	28,913.9 cps	6.0 cps	12.5 cps	63.5 cps	1,700.1 cps	14,288.2 cps	3,550.5 cps	760.0 cps	1,090.1 cps
Intensity RSD	0.7 %	1.2 %	18.8 %	27.2 %	9.0 %	5.1 %	5.6 %	13.2 %	19.9 %	6.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	N/A		N/A	N/A	N/A	N/A	N/A	87.953 %	91.273 %	N/A
Concentration per Run 1	N/A		N/A	N/A	N/A	N/A	N/A	88.553 %	88.537 %	N/A
Concentration per Run 2	N/A		N/A	N/A	N/A	N/A	N/A	85.724 %	92.447 %	N/A
Concentration per Run 3	N/A		N/A	N/A	N/A	N/A	N/A	89.583 %	92.836 %	N/A
Concentration RSD	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	1,190 cps	2,297 cps	4,855,247 cps	18,981 cps	30 cps	36,547 cps	463 cps	6,053,828 cps	267,963 cps	24 cps
Intensity per Run 1	1,370.1 cps	2,420.2 cps	4,741,629.3 cps	20,106.2 cps	50.0 cps	35,811.4 cps	460.0 cps	6,095,134.4 cps	259,928.3 cps	32.0 cps
Intensity per Run 2	1,040.1 cps	2,250.2 cps	4,840,806.0 cps	18,634.0 cps	30.0 cps	36,473.5 cps	470.0 cps	5,900,354.6 cps	271,409.8 cps	20.0 cps
Intensity per Run 3	1,160.1 cps	2,220.2 cps	4,983,305.1 cps	18,203.5 cps	10.0 cps	37,356.0 cps	460.0 cps	6,165,994.4 cps	272,552.0 cps	20.0 cps
Intensity RSD	14.0 %	4.7 %	2.5 %	5.3 %	66.7 %	2.1 %	1.2 %	2.3 %	2.6 %	28.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concentration RSD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	1,352 cps	983 cps	697 cps	753 cps	921 cps	69,238 cps	2,158 cps	1,143 cps	2,314 cps	344 cps
Intensity per Run 1	1,379.7 cps	1,204.1 cps	688.0 cps	730.0 cps	1,044.0 cps	85,191.9 cps	2,644.3 cps	1,536.1 cps	2,392.2 cps	388.0 cps
Intensity per Run 2	1,381.1 cps	944.0 cps	716.0 cps	740.0 cps	896.0 cps	65,211.0 cps	2,156.2 cps	1,072.1 cps	2,364.2 cps	324.0 cps
Intensity per Run 3	1,295.2 cps	800.0 cps	688.0 cps	790.0 cps	824.0 cps	57,312.4 cps	1,672.1 cps	820.0 cps	2,184.2 cps	320.0 cps
Intensity RSD	3.6 %	20.8 %	2.3 %	4.3 %	12.2 %	20.8 %	22.5 %	31.8 %	4.9 %	11.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 1	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 2	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration per Run 3	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	
Concentration RSD	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	
Intensity average	2,652 cps	1,323 cps	4,335 cps	705 cps	3,218 cps	8 cps	3,816 cps	17 cps	11 cps	8,212 cps
Intensity per Run 1	2,968.4 cps	1,504.1 cps	4,204.7 cps	736.0 cps	3,200.4 cps	8.0 cps	4,250.9 cps	10.0 cps	-13.9 cps	7,968.5 cps
Intensity per Run 2	2,704.3 cps	1,360.1 cps	4,304.7 cps	704.0 cps	3,168.4 cps	11.0 cps	2,956.3 cps	30.0 cps	24.4 cps	8,140.7 cps
Intensity per Run 3	2,284.2 cps	1,104.0 cps	4,496.8 cps	676.0 cps	3,284.4 cps	5.0 cps	4,239.8 cps	10.0 cps	21.1 cps	8,525.9 cps
Intensity RSD	13.0 %	15.3 %	3.4 %	4.3 %	1.9 %	37.5 %	19.5 %	69.3 %	201.2 %	3.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		N/A		92.250 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 1		N/A		90.030 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 2		N/A		92.989 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration per Run 3		N/A		93.733 %	N/A	N/A	N/A	N/A	N/A	N/A
Concentration RSD		N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intensity average	5,531 cps	-368 cps	5,776 cps	539,463 cps	5,975 cps	10,663 cps	11,759 cps	6,926 cps	18,292 cps	1,709,922 cps
Intensity per Run 1	6,260.7 cps	-351.2 cps	6,435.8 cps	526,476.1 cps	5,697.3 cps	10,180.2 cps	11,080.9 cps	6,565.7 cps	17,548.4 cps	1,688,266.2 cps
Intensity per Run 2	4,107.8 cps	-404.6 cps	4,423.9 cps	543,780.8 cps	5,613.3 cps	10,600.5 cps	11,825.6 cps	6,885.9 cps	17,952.9 cps	1,712,582.6 cps
Intensity per Run 3	6,223.7 cps	-349.4 cps	6,468.8 cps	548,132.8 cps	6,613.8 cps	11,209.0 cps	12,370.2 cps	7,326.2 cps	19,375.0 cps	1,728,915.9 cps
Intensity RSD	22.3 %	8.5 %	20.3 %	2.1 %	9.3 %	4.9 %	5.5 %	5.5 %	5.2 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		N/A	123.453 ppb	N/A	123.486 ppb	N/A	N/A	94.724 %	N/A	N/A
Concentration per Run 1		N/A	124.710 ppb	N/A	124.415 ppb	N/A	N/A	92.666 %	N/A	N/A
Concentration per Run 2		N/A	119.046 ppb	N/A	123.177 ppb	N/A	N/A	96.920 %	N/A	N/A
Concentration per Run 3		N/A	126.603 ppb	N/A	122.867 ppb	N/A	N/A	94.587 %	N/A	N/A
Concentration RSD		N/A	3.2 %	N/A	0.7 %	N/A	N/A	N/A	N/A	N/A
Intensity average	589 cps	119 cps	9,368,041 cps	19 cps	9,185,390 cps	345 cps	737 cps	848,046 cps	17,291 cps	28,037 cps
Intensity per Run 1	524.0 cps	136.0 cps	9,261,155.4 cps	24.0 cps	9,049,156.8 cps	496.0 cps	899.8 cps	829,618.6 cps	16,106.4 cps	26,183.5 cps
Intensity per Run 2	628.0 cps	100.0 cps	9,246,334.2 cps	24.0 cps	9,344,026.4 cps	276.0 cps	779.7 cps	867,703.1 cps	17,452.2 cps	28,119.7 cps
Intensity per Run 3	616.0 cps	120.0 cps	9,596,633.4 cps	8.0 cps	9,162,985.5 cps	264.0 cps	532.6 cps	846,816.3 cps	18,313.5 cps	29,807.6 cps
Intensity RSD	9.7 %	15.2 %	2.1 %	49.5 %	1.6 %	37.8 %	25.4 %	2.2 %	6.4 %	6.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	N/A	N/A	N/A			97.557 %			N/A	N/A
Concentration per Run 1	N/A	N/A	N/A			96.941 %			N/A	N/A
Concentration per Run 2	N/A	N/A	N/A			98.959 %			N/A	N/A
Concentration per Run 3	N/A	N/A	N/A			96.770 %			N/A	N/A
Concentration RSD	N/A	N/A	N/A			N/A			N/A	N/A
Intensity average	22,420 cps	284 cps	431 cps	1 cps	12 cps	3,066,489 cps	84 cps	23 cps	3,217,032 cps	21,199 cps
Intensity per Run 1	20,657.1 cps	388.0 cps	496.0 cps	4.0 cps	12.0 cps	3,047,140.6 cps	92.0 cps	20.0 cps	3,197,234.8 cps	22,825.9 cps
Intensity per Run 2	22,095.6 cps	256.0 cps	444.0 cps	0.0 cps	12.0 cps	3,110,555.8 cps	84.0 cps	24.0 cps	3,219,655.2 cps	21,372.3 cps
Intensity per Run 3	24,508.1 cps	208.0 cps	352.0 cps	0.0 cps	12.0 cps	3,041,771.7 cps	76.0 cps	24.0 cps	3,234,206.7 cps	19,399.1 cps
Intensity RSD	8.7 %	32.8 %	16.9 %	173.2 %	0.0 %	1.2 %	9.5 %	10.2 %	0.6 %	8.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	N/A	N/A	N/A	N/A	101.955 %
Concentration per Run 1	N/A	N/A	N/A	N/A	100.013 %
Concentration per Run 2	N/A	N/A	N/A	N/A	101.003 %
Concentration per Run 3	N/A	N/A	N/A	N/A	104.847 %
Concentration RSD	N/A	N/A	N/A	N/A	N/A
Intensity average	50,666 cps	3,440 cps	2,960 cps	13,805 cps	2,613,033 cps
Intensity per Run 1	53,704.3 cps	4,280.7 cps	3,660.5 cps	17,132.7 cps	2,563,282.9 cps
Intensity per Run 2	51,150.5 cps	3,221.4 cps	2,880.3 cps	13,119.8 cps	2,588,655.4 cps
Intensity per Run 3	47,143.9 cps	2,817.3 cps	2,340.2 cps	11,163.0 cps	2,687,159.3 cps
Intensity RSD	6.5 %	22.0 %	22.4 %	22.0 %	2.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: ICV | Analysis: 10/30/2019 11:41:07 | Sample Type QC
Comment MW-11937 | Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.438 %	84.777 %	101.278 ppb	99.819 ppb	99.074 ppb	N/A	19,931.140 ppb	19,713.638 ppb	19,525.780 ppb
Concentration per Run 1	82.936 %	84.140 %	102.125 ppb	102.935 ppb	99.640 ppb	N/A	20,164.818 ppb	19,853.509 ppb	19,787.187 ppb
Concentration per Run 2	83.165 %	85.681 %	100.369 ppb	98.026 ppb	98.222 ppb	N/A	19,606.823 ppb	19,546.192 ppb	19,238.898 ppb
Concentration per Run 3	84.215 %	84.509 %	101.340 ppb	98.497 ppb	99.360 ppb	N/A	20,021.779 ppb	19,741.214 ppb	19,551.256 ppb
Recovery Percentage 1			101.278 %		99.074 %		99.656 %		
Concentration RSD	0.8 %	0.9 %	0.9 %	2.7 %	0.8 %	N/A	1.5 %	0.8 %	1.4 %
Intensity average	11,669,147 cps	27,296 cps	13,638 cps	1,443 cps	8,492 cps	1,953 cps	33,721,145 cps	15,219,982 cps	3,173,661 cps
Intensity per Run 1	11,598,812.7 cps	27,091.3 cps	13,650.0 cps	1,476.1 cps	8,471.4 cps	2,060.2 cps	33,785,995.3 cps	15,177,020.3 cps	3,184,176.0 cps
Intensity per Run 2	11,630,891.8 cps	27,587.4 cps	13,661.0 cps	1,431.6 cps	8,503.9 cps	1,920.2 cps	33,453,496.6 cps	15,215,955.4 cps	3,152,697.1 cps
Intensity per Run 3	11,777,737.8 cps	27,210.1 cps	13,604.4 cps	1,421.1 cps	8,501.9 cps	1,880.2 cps	33,923,942.7 cps	15,266,971.5 cps	3,184,109.5 cps
Intensity RSD	0.8 %	0.9 %	0.2 %	2.0 %	0.2 %	4.8 %	0.7 %	0.3 %	0.6 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	19,402.881 ppb	100.458 ppb		0.783 ppm	19,454.117 ppb	18,645.729 ppb	20,457.556 ppb	19,561.434 ppb	83.136 %
Concentration per Run 1	19,444.143 ppb	103.037 ppb		0.790 ppm	19,443.207 ppb	18,559.965 ppb	20,531.904 ppb	19,920.466 ppb	83.739 %
Concentration per Run 2	18,998.671 ppb	99.612 ppb		0.774 ppm	19,216.630 ppb	18,261.268 ppb	20,229.599 ppb	19,588.578 ppb	81.515 %
Concentration per Run 3	19,765.829 ppb	98.725 ppb		0.784 ppm	19,702.513 ppb	19,115.955 ppb	20,611.165 ppb	19,175.257 ppb	84.154 %
Recovery Percentage 1	97.014 %	100.458 %			97.271 %		102.288 %	97.807 %	
Concentration RSD	2.0 %	2.3 %		1.1 %	1.2 %	2.3 %	1.0 %	1.9 %	1.7 %
Intensity average	4,202,425 cps	27,019 cps	13,344 cps	4,677,173 cps	14,409,465 cps	67,117 cps	45,279,822 cps	839,249 cps	5,722,261 cps
Intensity per Run 1	4,168,814.7 cps	27,420.2 cps	13,297.1 cps	4,669,402.8 cps	14,231,429.3 cps	65,984.8 cps	45,753,091.6 cps	844,122.3 cps	5,763,749.5 cps
Intensity per Run 2	4,147,974.1 cps	27,009.3 cps	13,207.0 cps	4,655,321.3 cps	14,323,758.5 cps	66,114.8 cps	43,916,929.9 cps	845,295.4 cps	5,610,708.3 cps
Intensity per Run 3	4,290,486.3 cps	26,628.5 cps	13,527.4 cps	4,706,796.2 cps	14,673,208.4 cps	69,251.8 cps	46,169,443.6 cps	828,329.7 cps	5,792,325.4 cps
Intensity RSD	1.8 %	1.5 %	1.2 %	0.6 %	1.6 %	2.8 %	2.6 %	1.1 %	1.7 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	88.886 %	102.420 ppb	101.725 ppb	100.081 ppb	101.902 ppb	N/A	100.175 ppb	20,035.557 ppb	19,825.552 ppb
Concentration per Run 1	87.771 %	103.556 ppb	101.318 ppb	100.451 ppb	102.840 ppb	N/A	101.275 ppb	20,171.258 ppb	19,954.917 ppb
Concentration per Run 2	89.381 %	102.402 ppb	101.548 ppb	99.471 ppb	100.975 ppb	N/A	99.636 ppb	19,643.928 ppb	19,757.897 ppb
Concentration per Run 3	89.507 %	101.302 ppb	102.311 ppb	100.322 ppb	101.893 ppb	N/A	99.613 ppb	20,291.484 ppb	19,763.844 ppb
Recovery Percentage 1		0.000 %	101.725 %	100.081 %			100.175 %		99.128 %
Concentration RSD	1.1 %	1.1 %	0.5 %	0.5 %	0.9 %	N/A	1.0 %	1.7 %	0.6 %
Intensity average	260,955 cps	34,691 cps	1,211,883 cps	1,871,171 cps	261,812 cps	271,596 cps	1,421,781 cps	378,455,377 cps	12,606,612 cps
Intensity per Run 1	257,680.9 cps	34,636.0 cps	1,191,855.3 cps	1,854,552.1 cps	260,847.7 cps	268,142.4 cps	1,419,018.2 cps	376,139,481.2 cps	12,530,168.0 cps
Intensity per Run 2	262,407.7 cps	34,896.7 cps	1,216,472.7 cps	1,870,157.4 cps	261,394.5 cps	272,903.9 cps	1,425,495.7 cps	374,120,412.5 cps	12,634,045.1 cps
Intensity per Run 3	262,776.8 cps	34,539.7 cps	1,227,321.6 cps	1,888,802.8 cps	263,192.3 cps	273,741.1 cps	1,420,829.0 cps	385,106,236.9 cps	12,655,622.6 cps
Intensity RSD	1.1 %	0.5 %	1.5 %	0.9 %	0.5 %	1.1 %	0.2 %	1.5 %	0.5 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	98.242 ppb	100.829 ppb	102.540 ppb	102.656 ppb	101.863 ppb	100.888 ppb	102.295 ppb	101.634 ppb	
Concentration per Run 1	99.320 ppb	102.006 ppb	104.528 ppb	103.907 ppb	102.766 ppb	102.721 ppb	104.605 ppb	102.201 ppb	
Concentration per Run 2	97.734 ppb	98.610 ppb	101.226 ppb	102.152 ppb	101.563 ppb	100.981 ppb	99.349 ppb	100.194 ppb	
Concentration per Run 3	97.673 ppb	101.871 ppb	101.866 ppb	101.910 ppb	101.258 ppb	98.962 ppb	102.932 ppb	102.506 ppb	
Recovery Percentage 1	98.242 %	100.829 %			101.863 %	100.888 %			
Concentration RSD	1.0 %	1.9 %	1.7 %	1.1 %	0.8 %	1.9 %	2.6 %	1.2 %	
Intensity average	4,329,405 cps	1,098,783 cps	169,470 cps	2,758,004 cps	1,400,392 cps	601,303 cps	101,312 cps	482,489 cps	382 cps
Intensity per Run 1	4,322,279.7 cps	1,096,354.0 cps	170,495.9 cps	2,755,281.8 cps	1,395,154.7 cps	602,602.1 cps	102,208.5 cps	478,750.2 cps	412.0 cps
Intensity per Run 2	4,331,268.0 cps	1,091,980.5 cps	168,947.3 cps	2,771,683.2 cps	1,404,132.7 cps	604,063.6 cps	99,530.9 cps	481,066.3 cps	379.0 cps
Intensity per Run 3	4,334,668.1 cps	1,108,014.4 cps	168,967.3 cps	2,747,046.7 cps	1,401,889.4 cps	597,244.8 cps	102,196.3 cps	487,651.4 cps	356.0 cps
Intensity RSD	0.1 %	0.8 %	0.5 %	0.5 %	0.3 %	0.6 %	1.5 %	1.0 %	7.4 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	101.716 ppb	N/A	101.401 ppb			95.656 ppb		92.125 %	97.395 ppb
Concentration per Run 1	102.665 ppb	N/A	102.410 ppb			96.971 ppb		90.854 %	98.091 ppb
Concentration per Run 2	100.968 ppb	N/A	99.548 ppb			95.811 ppb		93.579 %	95.660 ppb
Concentration per Run 3	101.516 ppb	N/A	102.246 ppb			94.184 ppb		91.941 %	98.434 ppb
Recovery Percentage 1	101.716 %					95.656 %			
Concentration RSD	0.9 %	N/A	1.6 %			1.5 %		1.5 %	1.6 %
Intensity average	313,421 cps	9,707 cps	32,957 cps	6,826 cps	22,223 cps	16,050 cps	5,917 cps	538,728 cps	1,008,978 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	311,433.7 cps	9,984.0 cps	32,840.3 cps	6,808.9 cps	22,903.0 cps	16,027.8 cps	6,945.0 cps	531,297.2 cps	1,001,948.3 cps
Intensity per Run 2	312,256.1 cps	9,323.5 cps	32,788.8 cps	6,767.8 cps	20,375.6 cps	16,136.1 cps	3,695.6 cps	547,232.5 cps	1,004,422.5 cps
Intensity per Run 3	316,572.1 cps	9,813.9 cps	33,242.4 cps	6,900.9 cps	23,390.9 cps	15,987.5 cps	7,110.1 cps	537,653.2 cps	1,020,563.6 cps
Intensity RSD	0.9 %	3.5 %	0.8 %	1.0 %	7.3 %	0.5 %	32.5 %	1.5 %	1.0 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	96.932 ppb	95.156 ppb	96.154 ppb	98.253 ppb	0.018 ppm		101.348 ppb	90.146 ppb	100.839 ppb
Concentration per Run 1	97.856 ppb	94.269 ppb	96.342 ppb	99.017 ppb	0.018 ppm		101.949 ppb	90.207 ppb	101.179 ppb
Concentration per Run 2	95.785 ppb	94.965 ppb	95.578 ppb	96.523 ppb	0.018 ppm		99.450 ppb	89.924 ppb	100.424 ppb
Concentration per Run 3	97.156 ppb	96.233 ppb	96.541 ppb	99.219 ppb	0.018 ppm		102.643 ppb	90.308 ppb	100.913 ppb
Recovery Percentage 1			0.000 %		0.000 %			0.000 %	
Concentration RSD	1.1 %	1.0 %	0.5 %	1.5 %	0.9 %		1.7 %	0.2 %	0.4 %
Intensity average	1,822,506 cps	1,974,358 cps	1,193,282 cps	3,238,530 cps	1,595,257 cps	704 cps	98,634 cps	6,683,277 cps	75,545 cps
Intensity per Run 1	1,813,947.2 cps	1,928,019.9 cps	1,178,546.0 cps	3,217,096.4 cps	1,578,326.5 cps	712.0 cps	97,745.3 cps	6,584,265.6 cps	74,662.9 cps
Intensity per Run 2	1,824,423.7 cps	1,994,885.3 cps	1,200,402.2 cps	3,218,495.0 cps	1,605,492.6 cps	720.0 cps	97,543.5 cps	6,690,224.1 cps	75,749.0 cps
Intensity per Run 3	1,829,146.0 cps	2,000,168.3 cps	1,200,898.7 cps	3,279,999.5 cps	1,601,951.8 cps	680.0 cps	100,611.9 cps	6,775,341.4 cps	76,224.1 cps
Intensity RSD	0.4 %	2.0 %	1.1 %	1.1 %	0.9 %	3.0 %	1.7 %	1.4 %	1.1 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	90.004 ppb	99.355 ppb	98.210 ppb	92.511 %	102.447 ppb	98.206 ppb	99.227 ppb	96.005 ppb	98.425 ppb
Concentration per Run 1	90.465 ppb	99.727 ppb	97.874 ppb	91.079 %	102.702 ppb	96.276 ppb	97.075 ppb	96.617 ppb	99.540 ppb
Concentration per Run 2	89.425 ppb	98.659 ppb	98.546 ppb	92.837 %	102.018 ppb	98.505 ppb	99.743 ppb	95.306 ppb	98.548 ppb
Concentration per Run 3	90.122 ppb	99.678 ppb	98.210 ppb	93.618 %	102.622 ppb	99.839 ppb	100.863 ppb	96.092 ppb	97.186 ppb
Recovery Percentage 1			98.210 %		102.447 %	98.206 %		96.005 %	
Concentration RSD	0.6 %	0.6 %	0.3 %	1.4 %	0.4 %	1.8 %	2.0 %	0.7 %	1.2 %
Intensity average	6,572,054 cps	1,207,357 cps	2,952,025 cps	828,238 cps	2,536,491 cps	2,557,611 cps	2,069,402 cps	594,549 cps	1,112,177 cps
Intensity per Run 1	6,506,255.3 cps	1,193,460.4 cps	2,896,314.9 cps	815,417.4 cps	2,503,027.2 cps	2,467,263.4 cps	1,991,916.6 cps	588,437.0 cps	1,106,079.9 cps
Intensity per Run 2	6,571,404.0 cps	1,205,399.6 cps	2,972,484.4 cps	831,150.6 cps	2,536,824.0 cps	2,578,123.0 cps	2,091,582.4 cps	595,485.4 cps	1,124,134.1 cps
Intensity per Run 3	6,638,501.4 cps	1,223,210.2 cps	2,987,277.0 cps	838,145.1 cps	2,569,620.4 cps	2,627,445.5 cps	2,124,706.6 cps	599,724.7 cps	1,106,316.6 cps
Intensity RSD	1.0 %	1.2 %	1.7 %	1.4 %	1.3 %	3.2 %	3.3 %	1.0 %	0.9 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			95.524 %			0.014 ppm	98.767 ppb	99.596 ppb	97.900 ppb
Concentration per Run 1			93.813 %			0.014 ppm	100.777 ppb	102.011 ppb	99.451 ppb
Concentration per Run 2			96.965 %			0.014 ppm	96.767 ppb	97.925 ppb	95.641 ppb
Concentration per Run 3			95.793 %			0.014 ppm	98.756 ppb	98.851 ppb	98.609 ppb
Recovery Percentage 1						0.000 %		99.596 %	
Concentration RSD			1.7 %			1.1 %	2.0 %	2.2 %	2.0 %
Intensity average	60 cps	152 cps	3,002,581 cps	233 cps	137 cps	3,189,419 cps	8,476,689 cps	20,694,482 cps	6,696,858 cps
Intensity per Run 1	52.0 cps	132.0 cps	2,948,827.6 cps	216.0 cps	180.0 cps	3,148,004.9 cps	8,423,394.4 cps	20,618,242.9 cps	6,621,150.5 cps
Intensity per Run 2	68.0 cps	120.0 cps	3,047,879.8 cps	268.0 cps	132.0 cps	3,203,363.9 cps	8,502,777.8 cps	20,856,143.6 cps	6,701,755.5 cps
Intensity per Run 3	60.0 cps	204.0 cps	3,011,036.7 cps	216.0 cps	100.0 cps	3,216,887.2 cps	8,503,895.9 cps	20,609,060.1 cps	6,767,668.4 cps
Intensity RSD	13.3 %	29.9 %	1.7 %	12.9 %	29.3 %	1.1 %	0.5 %	0.7 %	1.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	97.917 ppb	97.478 ppb	93.272 %
Concentration per Run 1	100.348 ppb	99.673 ppb	90.696 %
Concentration per Run 2	95.048 ppb	94.546 ppb	95.569 %
Concentration per Run 3	98.355 ppb	98.214 ppb	93.552 %
Recovery Percentage 1		97.478 %	
Concentration RSD	2.7 %	2.7 %	2.6 %
Intensity average	5,880,706 cps	26,916,364 cps	2,390,515 cps
Intensity per Run 1	5,865,250.3 cps	26,774,068.7 cps	2,324,470.6 cps
Intensity per Run 2	5,849,445.1 cps	26,761,866.1 cps	2,449,384.0 cps
Intensity per Run 3	5,927,423.4 cps	27,213,156.4 cps	2,397,689.1 cps
Intensity RSD	0.7 %	1.0 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: ICV(2) Analysis: 10/30/2019 11:47:12 Sample Type QC
Comment MW-11937 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.785 %	85.752 %	49.118 ppb	49.012 ppb	48.052 ppb	N/A	9,687.347 ppb	9,628.947 ppb	9,773.276 ppb
Concentration per Run 1	83.344 %	84.839 %	49.323 ppb	46.412 ppb	49.059 ppb	N/A	9,841.459 ppb	9,778.663 ppb	9,863.137 ppb
Concentration per Run 2	83.588 %	86.886 %	48.295 ppb	50.306 ppb	46.643 ppb	N/A	9,458.928 ppb	9,416.285 ppb	9,589.972 ppb
Concentration per Run 3	84.421 %	85.533 %	49.737 ppb	50.318 ppb	48.454 ppb	N/A	9,761.653 ppb	9,691.892 ppb	9,866.718 ppb
Recovery Percentage 1			0.000 %		0.000 %		0.000 %		
Concentration RSD	0.7 %	1.2 %	1.5 %	4.6 %	2.6 %	N/A	2.1 %	2.0 %	1.6 %
Intensity average	11,717,553 cps	27,611 cps	6,692 cps	716 cps	4,155 cps	1,917 cps	16,354,426 cps	7,409,435 cps	1,582,121 cps
Intensity per Run 1	11,655,973.5 cps	27,316.3 cps	6,648.8 cps	670.5 cps	4,194.7 cps	1,860.1 cps	16,397,688.6 cps	7,425,258.5 cps	1,575,273.3 cps
Intensity per Run 2	11,690,090.8 cps	27,975.4 cps	6,667.3 cps	745.5 cps	4,095.2 cps	1,950.2 cps	16,277,939.9 cps	7,388,358.8 cps	1,583,462.4 cps
Intensity per Run 3	11,806,594.8 cps	27,539.8 cps	6,759.3 cps	732.5 cps	4,176.2 cps	1,940.2 cps	16,387,650.2 cps	7,414,687.6 cps	1,587,628.4 cps
Intensity RSD	0.7 %	1.2 %	0.9 %	5.6 %	1.3 %	2.6 %	0.4 %	0.3 %	0.4 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	9,599.663 ppb	50.478 ppb		0.755 ppm	9,686.446 ppb	9,514.126 ppb	9,952.207 ppb	9,724.859 ppb	83.402 %
Concentration per Run 1	9,730.206 ppb	49.623 ppb		0.750 ppm	9,797.378 ppb	9,481.308 ppb	9,892.946 ppb	9,803.207 ppb	82.056 %
Concentration per Run 2	9,390.301 ppb	49.388 ppb		0.740 ppm	9,462.747 ppb	9,644.129 ppb	9,962.809 ppb	9,487.703 ppb	83.398 %
Concentration per Run 3	9,678.481 ppb	52.425 ppb		0.774 ppm	9,799.213 ppb	9,416.941 ppb	10,000.865 ppb	9,883.668 ppb	84.751 %
Recovery Percentage 1	0.000 %	0.000 %			0.000 %		0.000 %	0.000 %	
Concentration RSD	1.9 %	3.3 %		2.3 %	2.0 %	1.2 %	0.5 %	2.2 %	1.6 %
Intensity average	2,068,969 cps	13,718 cps	7,199 cps	4,456,047 cps	7,073,957 cps	33,662 cps	22,126,881 cps	409,579 cps	5,740,561 cps
Intensity per Run 1	2,068,766.8 cps	13,307.1 cps	6,921.9 cps	4,363,113.9 cps	7,044,370.0 cps	32,993.8 cps	21,645,534.7 cps	406,203.4 cps	5,647,945.6 cps
Intensity per Run 2	2,065,057.3 cps	13,707.7 cps	7,402.2 cps	4,472,599.1 cps	7,082,756.3 cps	34,999.7 cps	22,146,758.8 cps	410,223.5 cps	5,740,288.7 cps
Intensity per Run 3	2,073,083.3 cps	14,138.1 cps	7,272.2 cps	4,532,428.5 cps	7,094,743.6 cps	32,993.6 cps	22,588,350.3 cps	412,308.7 cps	5,833,450.2 cps
Intensity RSD	0.2 %	3.0 %	3.5 %	1.9 %	0.4 %	3.4 %	2.1 %	0.8 %	1.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.136 %	50.547 ppb	51.246 ppb	50.528 ppb	50.964 ppb	N/A	50.075 ppb	9,854.555 ppb	9,927.780 ppb
Concentration per Run 1	85.689 %	51.507 ppb	51.298 ppb	50.311 ppb	50.993 ppb	N/A	49.844 ppb	9,910.941 ppb	10,035.054 ppb
Concentration per Run 2	89.453 %	48.375 ppb	50.255 ppb	49.669 ppb	50.060 ppb	N/A	49.340 ppb	9,422.778 ppb	9,734.269 ppb
Concentration per Run 3	86.267 %	51.759 ppb	52.186 ppb	51.603 ppb	51.841 ppb	N/A	51.042 ppb	10,229.946 ppb	10,014.018 ppb
Recovery Percentage 1		0.000 %	0.000 %	0.000 %			0.000 %		0.000 %
Concentration RSD	2.3 %	3.7 %	1.9 %	1.9 %	1.7 %	N/A	1.7 %	4.1 %	1.7 %
Intensity average	255,817 cps	16,785 cps	599,070 cps	927,038 cps	129,181 cps	133,450 cps	699,367 cps	182,925,285 cps	6,187,698 cps
Intensity per Run 1	251,567.7 cps	16,835.4 cps	589,855.3 cps	907,920.2 cps	127,333.7 cps	131,611.0 cps	686,051.8 cps	181,393,400.2 cps	6,152,266.0 cps
Intensity per Run 2	262,618.9 cps	16,483.1 cps	603,274.2 cps	935,735.4 cps	129,783.1 cps	134,166.4 cps	703,995.3 cps	178,649,686.5 cps	6,230,057.8 cps
Intensity per Run 3	253,264.1 cps	17,035.7 cps	604,080.1 cps	937,457.8 cps	130,425.4 cps	134,571.7 cps	708,054.9 cps	188,732,769.8 cps	6,180,770.8 cps
Intensity RSD	2.3 %	1.7 %	1.3 %	1.8 %	1.3 %	1.2 %	1.7 %	2.8 %	0.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	49.044 ppb	50.851 ppb	52.384 ppb	53.830 ppb	52.431 ppb	50.465 ppb	52.584 ppb	51.924 ppb	
Concentration per Run 1	49.255 ppb	49.931 ppb	51.710 ppb	53.521 ppb	52.753 ppb	50.081 ppb	52.377 ppb	51.424 ppb	
Concentration per Run 2	47.622 ppb	51.284 ppb	52.218 ppb	53.696 ppb	51.705 ppb	49.695 ppb	51.662 ppb	51.177 ppb	
Concentration per Run 3	50.255 ppb	51.337 ppb	53.224 ppb	54.274 ppb	52.837 ppb	51.618 ppb	53.713 ppb	53.170 ppb	
Recovery Percentage 1	0.000 %	0.000 %			0.000 %	0.000 %			
Concentration RSD	2.7 %	1.6 %	1.5 %	0.7 %	1.2 %	2.0 %	2.0 %	2.1 %	
Intensity average	2,118,253 cps	554,081 cps	85,993 cps	1,425,844 cps	707,368 cps	310,552 cps	52,295 cps	247,847 cps	193 cps
Intensity per Run 1	2,092,789.2 cps	539,759.6 cps	83,780.2 cps	1,399,170.0 cps	700,001.8 cps	303,718.7 cps	51,461.8 cps	242,598.9 cps	212.0 cps
Intensity per Run 2	2,112,292.8 cps	561,340.1 cps	87,259.7 cps	1,447,060.3 cps	716,262.9 cps	312,542.0 cps	52,210.5 cps	248,086.9 cps	184.0 cps
Intensity per Run 3	2,149,675.6 cps	561,143.4 cps	86,937.7 cps	1,431,301.5 cps	705,840.2 cps	315,394.1 cps	53,213.3 cps	252,854.2 cps	183.0 cps
Intensity RSD	1.4 %	2.2 %	2.2 %	1.7 %	1.2 %	2.0 %	1.7 %	2.1 %	8.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	49.772 ppb	N/A	51.263 ppb			48.189 ppb		91.261 %	48.148 ppb
Concentration per Run 1	49.810 ppb	N/A	50.669 ppb			46.942 ppb		90.516 %	46.935 ppb
Concentration per Run 2	48.602 ppb	N/A	50.910 ppb			48.448 ppb		91.695 %	47.991 ppb
Concentration per Run 3	50.902 ppb	N/A	52.209 ppb			49.178 ppb		91.571 %	49.518 ppb
Recovery Percentage 1	0.000 %					0.000 %			
Concentration RSD	2.3 %	N/A	1.6 %			2.4 %		0.7 %	2.7 %
Intensity average	156,657 cps	5,311 cps	16,456 cps	6,600 cps	13,946 cps	7,929 cps	5,801 cps	533,676 cps	496,150 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	154,461.9 cps	5,011.0 cps	16,098.9 cps	6,421.7 cps	14,417.4 cps	7,594.9 cps	6,727.9 cps	529,321.6 cps	479,026.5 cps
Intensity per Run 2	156,336.4 cps	5,341.2 cps	16,506.2 cps	6,588.7 cps	12,062.8 cps	8,141.5 cps	3,743.6 cps	536,214.7 cps	498,433.7 cps
Intensity per Run 3	159,171.5 cps	5,581.3 cps	16,762.6 cps	6,788.8 cps	15,358.5 cps	8,049.8 cps	6,932.0 cps	535,492.1 cps	510,991.0 cps
Intensity RSD	1.5 %	5.4 %	2.0 %	2.8 %	12.2 %	3.7 %	30.8 %	0.7 %	3.2 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	47.642 ppb	47.169 ppb	46.926 ppb	46.227 ppb	0.018 ppm		50.076 ppb	45.025 ppb	49.842 ppb
Concentration per Run 1	46.702 ppb	47.090 ppb	46.460 ppb	46.176 ppb	0.018 ppm		48.844 ppb	45.277 ppb	50.138 ppb
Concentration per Run 2	47.624 ppb	46.311 ppb	46.447 ppb	45.338 ppb	0.019 ppm		50.145 ppb	43.867 ppb	48.807 ppb
Concentration per Run 3	48.599 ppb	48.107 ppb	47.871 ppb	47.167 ppb	0.018 ppm		51.238 ppb	45.930 ppb	50.581 ppb
Recovery Percentage 1			0.000 %		0.000 %			90.049 %	
Concentration RSD	2.0 %	1.9 %	1.7 %	2.0 %	2.4 %		2.4 %	2.3 %	1.9 %
Intensity average	891,521 cps	974,544 cps	580,365 cps	1,519,534 cps	1,624,282 cps	668 cps	48,921 cps	3,367,703 cps	37,491 cps
Intensity per Run 1	865,360.5 cps	963,204.7 cps	568,692.3 cps	1,501,921.0 cps	1,583,236.6 cps	696.0 cps	47,112.9 cps	3,336,739.4 cps	37,223.4 cps
Intensity per Run 2	898,804.2 cps	965,704.9 cps	580,122.0 cps	1,506,109.4 cps	1,658,941.8 cps	640.0 cps	49,747.2 cps	3,351,408.2 cps	37,335.9 cps
Intensity per Run 3	910,399.4 cps	994,722.7 cps	592,280.9 cps	1,550,570.1 cps	1,630,668.0 cps	668.0 cps	49,903.6 cps	3,414,960.4 cps	37,913.6 cps
Intensity RSD	2.6 %	1.8 %	2.0 %	1.8 %	2.4 %	4.2 %	3.2 %	1.2 %	1.0 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	45.080 ppb	49.574 ppb	50.006 ppb	93.356 %	49.972 ppb	46.511 ppb	46.941 ppb	47.748 ppb	48.594 ppb
Concentration per Run 1	45.141 ppb	49.739 ppb	51.126 ppb	91.958 %	50.366 ppb	44.688 ppb	44.822 ppb	47.709 ppb	49.287 ppb
Concentration per Run 2	43.499 ppb	47.915 ppb	47.796 ppb	95.332 %	48.806 ppb	45.527 ppb	46.230 ppb	46.967 ppb	47.137 ppb
Concentration per Run 3	46.601 ppb	51.069 ppb	51.095 ppb	92.777 %	50.745 ppb	49.317 ppb	49.770 ppb	48.569 ppb	49.358 ppb
Recovery Percentage 1			0.000 %		0.000 %	0.000 %		0.000 %	
Concentration RSD	3.4 %	3.2 %	3.8 %	1.9 %	2.1 %	5.3 %	5.4 %	1.7 %	2.6 %
Intensity average	3,307,090 cps	606,069 cps	1,516,078 cps	835,798 cps	1,248,333 cps	1,221,572 cps	987,143 cps	297,940 cps	553,105 cps
Intensity per Run 1	3,267,924.6 cps	599,767.4 cps	1,527,564.7 cps	823,287.0 cps	1,240,349.1 cps	1,157,612.0 cps	929,961.8 cps	294,413.0 cps	555,089.3 cps
Intensity per Run 2	3,247,558.5 cps	596,895.0 cps	1,480,446.8 cps	853,489.9 cps	1,244,734.0 cps	1,220,053.8 cps	991,603.3 cps	298,411.8 cps	546,225.9 cps
Intensity per Run 3	3,405,787.7 cps	621,544.3 cps	1,540,223.6 cps	830,616.5 cps	1,259,917.2 cps	1,287,051.0 cps	1,039,864.2 cps	300,996.0 cps	558,000.6 cps
Intensity RSD	2.6 %	2.2 %	2.1 %	1.9 %	0.8 %	5.3 %	5.6 %	1.1 %	1.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			96.037 %			0.014 ppm	49.006 ppb	48.246 ppb	47.956 ppb
Concentration per Run 1			95.394 %			0.014 ppm	49.736 ppb	48.675 ppb	48.173 ppb
Concentration per Run 2			97.430 %			0.015 ppm	48.557 ppb	48.112 ppb	47.687 ppb
Concentration per Run 3			95.286 %			0.014 ppm	48.725 ppb	47.951 ppb	48.008 ppb
Recovery Percentage 1						0.000 %		0.000 %	
Concentration RSD			1.3 %			2.6 %	1.3 %	0.8 %	0.5 %
Intensity average	37 cps	89 cps	3,018,714 cps	163 cps	83 cps	3,216,096 cps	4,402,272 cps	10,550,599 cps	3,443,027 cps
Intensity per Run 1	24.0 cps	88.0 cps	2,998,509.3 cps	168.0 cps	116.0 cps	3,137,091.3 cps	4,406,401.3 cps	10,487,568.8 cps	3,409,116.8 cps
Intensity per Run 2	48.0 cps	76.0 cps	3,062,508.1 cps	144.0 cps	84.0 cps	3,305,738.3 cps	4,378,208.3 cps	10,544,852.1 cps	3,433,738.5 cps
Intensity per Run 3	40.0 cps	104.0 cps	2,995,124.6 cps	176.0 cps	48.0 cps	3,205,459.6 cps	4,422,207.8 cps	10,619,375.1 cps	3,486,226.3 cps
Intensity RSD	32.7 %	15.7 %	1.3 %	10.2 %	41.2 %	2.6 %	0.5 %	0.6 %	1.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	47.630 ppb	47.431 ppb	98.123 %
Concentration per Run 1	47.530 ppb	47.686 ppb	96.671 %
Concentration per Run 2	47.517 ppb	47.074 ppb	98.336 %
Concentration per Run 3	47.844 ppb	47.532 ppb	99.363 %
Recovery Percentage 1		0.000 %	
Concentration RSD	0.4 %	0.7 %	1.4 %
Intensity average	3,005,666 cps	13,785,517 cps	2,514,838 cps
Intensity per Run 1	2,955,820.0 cps	13,654,671.9 cps	2,477,608.4 cps
Intensity per Run 2	3,006,379.3 cps	13,711,965.7 cps	2,520,295.7 cps
Intensity per Run 3	3,054,799.2 cps	13,989,913.7 cps	2,546,611.2 cps
Intensity RSD	1.6 %	1.3 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: ICB Analysis: 10/30/2019 11:53:18 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	86.400 %	86.938 %	0.007 ppb	0.156 ppb	0.157 ppb	N/A	2.607 ppb	0.575 ppb	0.735 ppb	0.861 ppb
Concentration per Run 1	85.769 %	87.142 %	0.021 ppb	0.156 ppb	0.162 ppb	N/A	2.562 ppb	0.739 ppb	0.152 ppb	1.296 ppb
Concentration per Run 2	86.849 %	86.963 %	0.003 ppb	0.122 ppb	0.220 ppb	N/A	2.900 ppb	0.728 ppb	1.315 ppb	1.206 ppb
Concentration per Run 3	86.582 %	86.708 %	-0.004 ppb	0.190 ppb	0.088 ppb	N/A	2.357 ppb	0.258 ppb	0.737 ppb	0.081 ppb
Recovery Percentage 1			0.691 %	0.016 %	0.016 %		0.521 %			0.172 %
Concentration RSD	0.7 %	0.3 %	187.7 %	21.8 %	42.1 %	N/A	10.5 %	47.8 %	79.2 %	78.6 %
Intensity average	12,083,359 cps	27,992 cps	4 cps	6 cps	28 cps	1,603 cps	18,874 cps	2,237 cps	547 cps	717 cps
Intensity per Run 1	11,995,093.5 cps	28,058.0 cps	6.0 cps	5.5 cps	28.0 cps	1,490.1 cps	18,764.1 cps	2,360.2 cps	450.0 cps	810.0 cps
Intensity per Run 2	12,146,147.2 cps	28,000.3 cps	3.5 cps	5.0 cps	33.0 cps	1,590.1 cps	19,325.0 cps	2,350.2 cps	640.0 cps	790.0 cps
Intensity per Run 3	12,108,836.1 cps	27,918.1 cps	2.5 cps	6.0 cps	21.5 cps	1,730.1 cps	18,533.9 cps	2,000.2 cps	550.0 cps	550.0 cps
Intensity RSD	0.7 %	0.3 %	45.1 %	9.1 %	21.0 %	7.5 %	2.2 %	9.2 %	17.4 %	20.2 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.021 ppb		0.766 ppm	0.626 ppb	-4.944 ppb	-4.387 ppb	-2.954 ppb	84.809 %	88.320 %	0.048 ppb
Concentration per Run 1	-0.350 ppb		0.738 ppm	1.404 ppb	-4.849 ppb	-4.845 ppb	-3.340 ppb	84.829 %	87.677 %	0.044 ppb
Concentration per Run 2	0.253 ppb		0.778 ppm	0.835 ppb	-4.858 ppb	-3.951 ppb	-2.404 ppb	84.340 %	87.744 %	0.068 ppb
Concentration per Run 3	0.160 ppb		0.783 ppm	-0.360 ppb	-5.124 ppb	-4.364 ppb	-3.120 ppb	85.259 %	89.539 %	0.032 ppb
Recovery Percentage 1	0.106 %			0.125 %		-0.439 %	-0.295 %			0.482 %
Concentration RSD	1,528.2 %		3.2 %	143.7 %	3.2 %	10.2 %	16.6 %	0.5 %	1.2 %	38.6 %
Intensity average	450 cps	2,144 cps	4,585,992 cps	19,605 cps	50 cps	48,119 cps	530 cps	5,837,429 cps	259,293 cps	17 cps
Intensity per Run 1	350.0 cps	2,440.3 cps	4,393,500.3 cps	20,066.2 cps	50.0 cps	47,088.7 cps	510.0 cps	5,838,769.8 cps	257,404.5 cps	16.0 cps
Intensity per Run 2	510.0 cps	1,990.2 cps	4,631,605.2 cps	19,655.5 cps	50.0 cps	48,845.6 cps	550.0 cps	5,805,147.1 cps	257,602.8 cps	24.0 cps
Intensity per Run 3	490.0 cps	2,000.2 cps	4,732,870.5 cps	19,094.7 cps	50.0 cps	48,423.9 cps	530.0 cps	5,868,368.7 cps	262,870.6 cps	12.0 cps
Intensity RSD	19.4 %	12.0 %	3.8 %	2.5 %	0.0 %	1.9 %	3.8 %	0.5 %	1.2 %	35.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.069 ppb	-0.077 ppb	-0.278 ppb	N/A	-0.003 ppb	0.074 ppb	0.101 ppb	0.004 ppb	-0.041 ppb	-0.034 ppb
Concentration per Run 1	-0.065 ppb	-0.076 ppb	-0.267 ppb	N/A	0.000 ppb	0.135 ppb	0.228 ppb	0.004 ppb	-0.068 ppb	-0.031 ppb
Concentration per Run 2	-0.073 ppb	-0.079 ppb	-0.263 ppb	N/A	-0.010 ppb	0.093 ppb	0.112 ppb	0.005 ppb	-0.045 ppb	-0.047 ppb
Concentration per Run 3	-0.068 ppb	-0.076 ppb	-0.303 ppb	N/A	-0.001 ppb	-0.006 ppb	-0.036 ppb	0.002 ppb	-0.010 ppb	-0.026 ppb
Recovery Percentage 1	-1.373 %	-3.861 %		0.000 %	-0.346 %		0.051 %	0.367 %	-4.116 %	
Concentration RSD	5.7 %	1.9 %	7.8 %	N/A	156.2 %	98.5 %	130.6 %	36.0 %	70.9 %	31.5 %
Intensity average	697 cps	845 cps	471 cps	457 cps	1,907 cps	37,416 cps	1,116 cps	395 cps	9,629 cps	1,501 cps
Intensity per Run 1	729.8 cps	856.0 cps	496.0 cps	490.0 cps	1,952.2 cps	38,419.6 cps	1,188.1 cps	396.0 cps	9,391.5 cps	1,504.1 cps
Intensity per Run 2	641.7 cps	808.0 cps	504.0 cps	500.0 cps	1,808.1 cps	37,536.5 cps	1,116.1 cps	448.0 cps	9,527.6 cps	1,472.1 cps
Intensity per Run 3	720.0 cps	872.0 cps	412.0 cps	380.0 cps	1,960.2 cps	36,293.3 cps	1,044.0 cps	340.0 cps	9,968.0 cps	1,528.1 cps
Intensity RSD	6.9 %	3.9 %	10.8 %	14.6 %	4.5 %	2.9 %	6.5 %	13.7 %	3.1 %	1.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.003 ppb	0.007 ppb	-0.223 ppb	-0.052 ppb	-0.053 ppb		-0.167 ppb	N/A	0.049 ppb	
Concentration per Run 1	0.003 ppb	0.006 ppb	-0.308 ppb	0.008 ppb	-0.116 ppb		-0.141 ppb	N/A	-0.007 ppb	
Concentration per Run 2	-0.005 ppb	0.005 ppb	-0.135 ppb	-0.115 ppb	0.012 ppb		-0.215 ppb	N/A	0.126 ppb	
Concentration per Run 3	-0.008 ppb	0.009 ppb	-0.227 ppb	-0.050 ppb	-0.056 ppb		-0.145 ppb	N/A	0.029 ppb	
Recovery Percentage 1		0.335 %	-11.153 %				-16.730 %	0.000 %		
Concentration RSD	181.6 %	32.9 %	38.8 %	117.6 %	119.9 %		25.0 %	N/A	139.8 %	
Intensity average	3,645 cps	1,825 cps	13,020 cps	1,944 cps	9,717 cps	5 cps	3,314 cps	47 cps	-4 cps	5,960 cps
Intensity per Run 1	3,808.6 cps	1,804.1 cps	12,454.2 cps	2,000.2 cps	9,423.6 cps	3.0 cps	3,381.4 cps	40.0 cps	-22.0 cps	5,780.3 cps
Intensity per Run 2	3,580.5 cps	1,788.1 cps	13,583.4 cps	1,872.1 cps	9,956.0 cps	2.0 cps	3,171.0 cps	50.0 cps	20.7 cps	6,037.5 cps
Intensity per Run 3	3,544.5 cps	1,884.1 cps	13,022.8 cps	1,960.2 cps	9,771.8 cps	9.0 cps	3,390.5 cps	50.0 cps	-10.2 cps	6,062.5 cps
Intensity RSD	3.9 %	2.8 %	4.3 %	3.4 %	2.8 %	81.1 %	3.7 %	12.4 %	576.4 %	2.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.729 ppb		91.130 %	0.162 ppb	0.162 ppb	0.160 ppb	0.168 ppb	0.164 ppb	0.019 ppm
Concentration per Run 1		0.732 ppb		91.614 %	0.140 ppb	0.138 ppb	0.142 ppb	0.152 ppb	0.144 ppb	0.019 ppm
Concentration per Run 2		0.818 ppb		90.578 %	0.156 ppb	0.166 ppb	0.154 ppb	0.166 ppb	0.162 ppb	0.019 ppm
Concentration per Run 3		0.637 ppb		91.199 %	0.189 ppb	0.181 ppb	0.185 ppb	0.188 ppb	0.185 ppb	0.019 ppm
Recovery Percentage 1		14.580 %						1.684 %		1.887 %
Concentration RSD		12.4 %		0.6 %	15.5 %	13.7 %	13.9 %	10.8 %	12.4 %	0.9 %
Intensity average	5,112 cps	-351 cps	5,328 cps	532,913 cps	1,968 cps	3,398 cps	3,754 cps	2,335 cps	5,964 cps	1,681,930 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	5,235.3 cps	-348.3 cps	5,421.4 cps	535,741.6 cps	1,752.1 cps	2,956.4 cps	3,380.5 cps	2,132.2 cps	5,337.1 cps	1,668,545.1 cps
Intensity per Run 2	5,012.1 cps	-335.5 cps	5,101.1 cps	529,684.9 cps	1,896.1 cps	3,468.5 cps	3,608.5 cps	2,292.2 cps	5,881.4 cps	1,699,296.5 cps
Intensity per Run 3	5,088.2 cps	-367.7 cps	5,462.4 cps	533,312.7 cps	2,256.2 cps	3,768.6 cps	4,272.7 cps	2,580.3 cps	6,673.8 cps	1,677,948.9 cps
Intensity RSD	2.2 %	4.6 %	3.7 %	0.6 %	13.2 %	12.1 %	12.3 %	9.7 %	11.3 %	0.9 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.007 ppb	0.006 ppb	0.011 ppb	0.005 ppb	0.005 ppb	0.003 ppb	95.498 %	0.074 ppb	0.434 ppb
Concentration per Run 1		0.003 ppb	0.007 ppb	0.019 ppb	0.007 ppb	0.005 ppb	0.005 ppb	95.076 %	0.067 ppb	0.397 ppb
Concentration per Run 2		-0.005 ppb	0.006 ppb	-0.002 ppb	0.005 ppb	0.007 ppb	0.002 ppb	95.739 %	0.073 ppb	0.433 ppb
Concentration per Run 3		0.023 ppb	0.004 ppb	0.014 ppb	0.005 ppb	0.004 ppb	0.003 ppb	95.679 %	0.082 ppb	0.472 ppb
Recovery Percentage 1			0.589 %				0.349 %			21.699 %
Concentration RSD		201.3 %	26.6 %	103.1 %	19.2 %	26.3 %	32.4 %	0.4 %	10.4 %	8.7 %
Intensity average	565 cps	100 cps	541 cps	9 cps	481 cps	77 cps	149 cps	854,978 cps	2,631 cps	11,992 cps
Intensity per Run 1	616.0 cps	96.0 cps	660.0 cps	16.0 cps	568.0 cps	76.0 cps	186.4 cps	851,195.8 cps	2,444.2 cps	10,988.9 cps
Intensity per Run 2	576.0 cps	88.0 cps	540.0 cps	0.0 cps	456.0 cps	96.0 cps	118.1 cps	857,137.9 cps	2,604.3 cps	11,969.8 cps
Intensity per Run 3	504.0 cps	116.0 cps	424.0 cps	12.0 cps	420.0 cps	60.0 cps	143.7 cps	856,601.1 cps	2,844.3 cps	13,018.8 cps
Intensity RSD	10.0 %	14.4 %	21.8 %	89.2 %	16.0 %	23.3 %	23.1 %	0.4 %	7.7 %	8.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.431 ppb	0.001 ppb	-0.001 ppb			97.652 %			0.014 ppm	0.047 ppb
Concentration per Run 1	0.391 ppb	0.005 ppb	-0.002 ppb			100.132 %			0.014 ppm	0.045 ppb
Concentration per Run 2	0.434 ppb	-0.002 ppb	-0.003 ppb			95.877 %			0.014 ppm	0.049 ppb
Concentration per Run 3	0.467 ppb	0.001 ppb	0.002 ppb			96.946 %			0.014 ppm	0.046 ppb
Recovery Percentage 1		0.011 %							1.415 %	
Concentration RSD	8.8 %	300.9 %	287.3 %			2.3 %			0.4 %	4.1 %
Intensity average	9,537 cps	164 cps	264 cps	15 cps	17 cps	3,069,472 cps	48 cps	15 cps	3,206,171 cps	5,567 cps
Intensity per Run 1	8,699.0 cps	188.0 cps	256.0 cps	12.0 cps	12.0 cps	3,147,437.8 cps	52.0 cps	8.0 cps	3,212,774.9 cps	5,456.2 cps
Intensity per Run 2	9,591.7 cps	144.0 cps	240.0 cps	24.0 cps	4.0 cps	3,013,682.3 cps	36.0 cps	20.0 cps	3,215,424.2 cps	5,745.3 cps
Intensity per Run 3	10,320.3 cps	160.0 cps	296.0 cps	8.0 cps	36.0 cps	3,047,296.2 cps	56.0 cps	16.0 cps	3,190,315.0 cps	5,499.2 cps
Intensity RSD	8.5 %	13.6 %	10.9 %	56.8 %	96.1 %	2.3 %	22.0 %	41.7 %	0.4 %	2.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.046 ppb	0.012 ppb	0.012 ppb	0.013 ppb	103.211 %
Concentration per Run 1	0.047 ppb	0.013 ppb	0.013 ppb	0.013 ppb	103.120 %
Concentration per Run 2	0.047 ppb	0.013 ppb	0.013 ppb	0.013 ppb	102.834 %
Concentration per Run 3	0.044 ppb	0.010 ppb	0.011 ppb	0.012 ppb	103.680 %
Recovery Percentage 1	9.220 %			1.271 %	
Concentration RSD	3.1 %	14.7 %	10.1 %	4.6 %	0.4 %
Intensity average	13,448 cps	1,705 cps	1,488 cps	7,025 cps	2,645,235 cps
Intensity per Run 1	13,651.5 cps	1,786.1 cps	1,524.1 cps	7,158.8 cps	2,642,890.6 cps
Intensity per Run 2	13,564.4 cps	1,775.1 cps	1,540.1 cps	7,059.8 cps	2,635,569.3 cps
Intensity per Run 3	13,127.9 cps	1,555.1 cps	1,400.1 cps	6,855.8 cps	2,657,245.7 cps
Intensity RSD	2.1 %	7.6 %	5.2 %	2.2 %	0.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: ICSA Analysis: 10/30/2019 11:59:19 Sample Type QC
Comment MW-11885 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)
Concentration average	88.740 %	87.047 %	0.031 ppb	0.567 ppb	0.492 ppb	N/A	115,174.831 ppb	110,612.730 ppb
Concentration per Run 1	88.068 %	84.615 %	0.041 ppb	0.449 ppb	0.441 ppb	N/A	111,991.485 ppb	110,211.228 ppb
Concentration per Run 2	88.880 %	87.650 %	0.035 ppb	0.733 ppb	0.587 ppb	N/A	115,583.770 ppb	108,598.628 ppb
Concentration per Run 3	89.271 %	88.876 %	0.017 ppb	0.519 ppb	0.447 ppb	N/A	117,949.239 ppb	113,028.333 ppb
Recovery Percentage 1			0.000 %	0.000 %	0.000 %		115.175 %	110.613 %
Concentration RSD	0.7 %	2.5 %	40.7 %	26.0 %	16.9 %	N/A	2.6 %	2.0 %
Intensity average	12,410,543 cps	28,027 cps	7 cps	12 cps	56 cps	12,993 cps	190,995,664 cps	83,474,767 cps
Intensity per Run 1	12,316,656.9 cps	27,244.2 cps	8.5 cps	9.5 cps	50.5 cps	12,936.7 cps	181,432,625.4 cps	81,297,750.0 cps
Intensity per Run 2	12,430,170.4 cps	28,221.3 cps	8.0 cps	14.0 cps	65.0 cps	12,906.7 cps	192,456,503.6 cps	82,296,077.5 cps
Intensity per Run 3	12,484,801.5 cps	28,616.2 cps	5.5 cps	11.0 cps	53.5 cps	13,137.0 cps	199,097,863.1 cps	86,830,473.7 cps
Intensity RSD	0.7 %	2.5 %	21.9 %	19.9 %	13.6 %	1.0 %	4.7 %	3.5 %

Category	25Mg (KED)	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)
Concentration average	110,056.153 ppb	109,950.368 ppb	113,421.862 ppb		0.500 ppm	112,278.733 ppb	95,656.226 ppb	102,710.500 ppb
Concentration per Run 1	106,659.102 ppb	107,802.165 ppb	111,562.150 ppb		0.473 ppm	109,960.737 ppb	93,107.203 ppb	97,813.053 ppb
Concentration per Run 2	110,842.404 ppb	107,458.137 ppb	111,933.024 ppb		0.513 ppm	111,151.085 ppb	99,851.736 ppb	106,308.732 ppb
Concentration per Run 3	112,666.953 ppb	114,590.802 ppb	116,770.412 ppb		0.514 ppm	115,724.377 ppb	94,009.738 ppb	104,009.715 ppb
Recovery Percentage 1	110.056 %	109.950 %	113.422 %			112.279 %	95.656 %	102.710 %
Concentration RSD	2.8 %	3.7 %	2.6 %		4.7 %	2.7 %	3.8 %	4.3 %
Intensity average	17,441,776 cps	23,154,947 cps	29,101,043 cps	3,554 cps	2,833,129 cps	77,929,670 cps	319,124 cps	239,824,620 cps
Intensity per Run 1	16,523,851.2 cps	22,200,347.0 cps	28,002,281.6 cps	3,550.5 cps	2,628,936.8 cps	74,961,443.9 cps	305,561.7 cps	230,911,710.0 cps
Intensity per Run 2	17,632,534.8 cps	22,712,325.1 cps	28,821,581.6 cps	3,450.5 cps	2,912,722.3 cps	77,279,841.5 cps	333,545.5 cps	250,437,511.3 cps
Intensity per Run 3	18,168,940.9 cps	24,552,168.7 cps	30,479,266.3 cps	3,660.6 cps	2,957,729.1 cps	81,547,724.0 cps	318,266.3 cps	238,124,640.2 cps
Intensity RSD	4.8 %	5.3 %	4.3 %	3.0 %	6.3 %	4.3 %	4.4 %	4.1 %

Category	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)
Concentration average	96,653.654 ppb	87.799 %	81.990 %	1,879.504 ppb	-0.063 ppb	0.189 ppb	-0.022 ppb	N/A
Concentration per Run 1	94,974.380 ppb	88.797 %	80.716 %	1,870.433 ppb	-0.064 ppb	0.194 ppb	-0.004 ppb	N/A
Concentration per Run 2	97,640.861 ppb	88.585 %	82.075 %	1,907.040 ppb	-0.058 ppb	0.177 ppb	-0.053 ppb	N/A
Concentration per Run 3	97,345.721 ppb	86.015 %	83.179 %	1,861.039 ppb	-0.068 ppb	0.194 ppb	-0.009 ppb	N/A
Recovery Percentage 1	96.654 %			93.975 %	0.000 %	0.000 %		
Concentration RSD	1.5 %	1.8 %	1.5 %	1.3 %	8.2 %	5.2 %	122.5 %	N/A
Intensity average	3,834,184 cps	6,043,211 cps	240,708 cps	588,367 cps	706 cps	5,362 cps	1,049 cps	1,000 cps
Intensity per Run 1	3,707,268.6 cps	6,111,911.6 cps	236,967.3 cps	576,618.7 cps	691.5 cps	5,373.2 cps	1,076.0 cps	920.0 cps
Intensity per Run 2	3,877,484.2 cps	6,097,316.8 cps	240,958.8 cps	597,412.3 cps	765.1 cps	5,173.1 cps	976.0 cps	1,040.0 cps
Intensity per Run 3	3,917,800.2 cps	5,920,405.4 cps	244,198.6 cps	591,070.6 cps	660.3 cps	5,541.2 cps	1,096.0 cps	1,040.0 cps
Intensity RSD	2.9 %	1.8 %	1.5 %	1.8 %	7.6 %	3.4 %	6.1 %	6.9 %

Category	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)
Concentration average	0.263 ppb	108,356.003 ppb	110,819.626 ppb	0.314 ppb	-0.428 ppb	-0.177 ppb	0.232 ppb	0.279 ppb
Concentration per Run 1	0.251 ppb	105,189.839 ppb	107,198.243 ppb	0.303 ppb	-0.413 ppb	-0.196 ppb	0.224 ppb	0.267 ppb
Concentration per Run 2	0.258 ppb	109,515.291 ppb	112,620.122 ppb	0.318 ppb	-0.437 ppb	-0.095 ppb	0.239 ppb	0.306 ppb
Concentration per Run 3	0.280 ppb	110,362.879 ppb	112,640.513 ppb	0.321 ppb	-0.434 ppb	-0.240 ppb	0.231 ppb	0.265 ppb
Recovery Percentage 1	0.000 %		110.820 %	0.000 %	0.000 %		0.000 %	0.000 %
Concentration RSD	5.8 %	2.6 %	2.8 %	3.0 %	3.1 %	42.1 %	3.2 %	8.3 %
Intensity average	5,312 cps	1,908,362,798 cps	65,014,922 cps	12,984 cps	5,336 cps	1,200 cps	9,360 cps	5,146 cps
Intensity per Run 1	5,077.0 cps	1,826,478,829.4 cps	61,897,250.3 cps	12,346.1 cps	5,441.2 cps	1,156.1 cps	9,059.3 cps	4,917.0 cps
Intensity per Run 2	5,241.1 cps	1,926,717,460.1 cps	66,123,165.9 cps	13,158.9 cps	5,213.1 cps	1,324.1 cps	9,535.7 cps	5,489.2 cps
Intensity per Run 3	5,617.3 cps	1,971,892,105.9 cps	67,024,351.2 cps	13,447.2 cps	5,353.2 cps	1,120.1 cps	9,483.6 cps	5,033.0 cps
Intensity RSD	5.2 %	3.9 %	4.2 %	4.4 %	2.2 %	9.1 %	2.8 %	5.9 %

Category	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-1.722 ppb	-1.494 ppb	-1.585 ppb		-0.013 ppb	N/A	0.139 ppb	
Concentration per Run 1	-1.742 ppb	-1.465 ppb	-1.624 ppb		-0.293 ppb	N/A	0.128 ppb	
Concentration per Run 2	-1.706 ppb	-1.493 ppb	-1.567 ppb		0.489 ppb	N/A	0.094 ppb	
Concentration per Run 3	-1.717 ppb	-1.524 ppb	-1.563 ppb		-0.233 ppb	N/A	0.195 ppb	
Recovery Percentage 1	0.000 %				0.000 %	0.000 %	0.000 %	
Concentration RSD	1.1 %	2.0 %	2.2 %		3,452.2 %	N/A	36.8 %	
Intensity average	3,687 cps	528 cps	2,531 cps	1,812 cps	3,499 cps	97 cps	24 cps	1,345 cps

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Category	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Intensity per Run 1	3,568.5 cps	548.0 cps	2,328.2 cps	1,841.1 cps	2,680.0 cps	90.0 cps	20.5 cps	1,495.1 cps
Intensity per Run 2	3,796.6 cps	528.0 cps	2,600.3 cps	1,789.1 cps	4,971.7 cps	160.0 cps	10.2 cps	1,321.1 cps
Intensity per Run 3	3,696.6 cps	508.0 cps	2,664.3 cps	1,806.1 cps	2,846.1 cps	40.0 cps	42.0 cps	1,218.1 cps
Intensity RSD	3.1 %	3.8 %	7.1 %	1.5 %	36.5 %	62.4 %	66.8 %	10.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)
Concentration average		1.029 ppb		88.488 %	2,089.758 ppb	2,075.762 ppb	2,069.707 ppb	2,063.599 ppb
Concentration per Run 1		1.362 ppb		87.668 %	2,006.361 ppb	1,984.225 ppb	1,975.250 ppb	1,981.733 ppb
Concentration per Run 2		0.250 ppb		87.948 %	2,119.470 ppb	2,094.736 ppb	2,092.585 ppb	2,095.548 ppb
Concentration per Run 3		1.476 ppb		89.847 %	2,143.444 ppb	2,148.325 ppb	2,141.286 ppb	2,113.516 ppb
Recovery Percentage 1		0.000 %						103.180 %
Concentration RSD		65.8 %		1.3 %	3.5 %	4.0 %	4.1 %	3.5 %
Intensity average	4,797 cps	-273 cps	5,139 cps	517,460 cps	20,748,139 cps	37,391,368 cps	41,117,357 cps	24,509,990 cps
Intensity per Run 1	3,524.5 cps	-218.3 cps	3,826.6 cps	512,668.8 cps	19,762,066.1 cps	35,468,179.6 cps	38,951,983.7 cps	23,372,933.3 cps
Intensity per Run 2	7,130.1 cps	-403.0 cps	7,680.5 cps	514,304.9 cps	20,957,511.9 cps	37,594,818.0 cps	41,438,330.0 cps	24,822,096.4 cps
Intensity per Run 3	3,735.6 cps	-199.1 cps	3,909.6 cps	525,407.2 cps	21,524,838.1 cps	39,111,107.3 cps	42,961,757.1 cps	25,334,940.3 cps
Intensity RSD	42.2 %	41.2 %	42.8 %	1.3 %	4.3 %	4.9 %	4.9 %	4.2 %

Category	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)
Concentration average	2,061.113 ppb	0.016 ppm		0.054 ppb	0.014 ppb	11.177 ppb	0.016 ppb	0.909 ppb
Concentration per Run 1	1,977.883 ppb	0.016 ppm		0.101 ppb	0.015 ppb	11.074 ppb	0.015 ppb	0.902 ppb
Concentration per Run 2	2,074.747 ppb	0.016 ppm		0.014 ppb	0.014 ppb	11.256 ppb	0.016 ppb	0.904 ppb
Concentration per Run 3	2,130.709 ppb	0.016 ppm		0.048 ppb	0.014 ppb	11.202 ppb	0.018 ppb	0.921 ppb
Recovery Percentage 1		0.000 %			0.000 %		0.000 %	0.000 %
Concentration RSD	3.8 %	0.6 %		80.9 %	3.5 %	0.8 %	10.0 %	1.2 %
Intensity average	64,998,436 cps	1,414,834 cps	636 cps	137 cps	1,087 cps	7,976 cps	1,193 cps	10,512 cps
Intensity per Run 1	61,954,390.5 cps	1,412,079.5 cps	680.0 cps	180.0 cps	1,116.1 cps	7,874.5 cps	1,084.0 cps	10,400.3 cps
Intensity per Run 2	65,278,569.0 cps	1,407,536.6 cps	596.0 cps	100.0 cps	1,100.0 cps	8,050.6 cps	1,184.1 cps	10,492.4 cps
Intensity per Run 3	67,762,349.6 cps	1,424,884.7 cps	632.0 cps	132.0 cps	1,044.0 cps	8,002.6 cps	1,312.1 cps	10,644.5 cps
Intensity RSD	4.5 %	0.6 %	6.6 %	29.3 %	3.5 %	1.1 %	9.6 %	1.2 %

Category	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)
Concentration average	0.680 ppb	87.825 %	0.361 ppb	0.495 ppb	0.503 ppb	0.187 ppb	0.164 ppb	
Concentration per Run 1	0.679 ppb	87.704 %	0.339 ppb	0.452 ppb	0.469 ppb	0.183 ppb	0.153 ppb	
Concentration per Run 2	0.682 ppb	88.306 %	0.365 ppb	0.499 ppb	0.496 ppb	0.182 ppb	0.164 ppb	
Concentration per Run 3	0.679 ppb	87.464 %	0.379 ppb	0.534 ppb	0.545 ppb	0.195 ppb	0.175 ppb	
Recovery Percentage 1	0.000 %		0.000 %	0.000 %	0.000 %	0.000 %	0.000 %	
Concentration RSD	0.3 %	0.5 %	5.6 %	8.4 %	7.6 %	4.0 %	6.9 %	
Intensity average	19,444 cps	786,279 cps	9,134 cps	12,438 cps	10,096 cps	1,204 cps	1,945 cps	75 cps
Intensity per Run 1	19,392.6 cps	785,197.8 cps	8,603.0 cps	11,357.2 cps	9,415.6 cps	1,180.1 cps	1,824.1 cps	92.0 cps
Intensity per Run 2	19,606.5 cps	790,588.1 cps	9,287.5 cps	12,626.4 cps	10,024.0 cps	1,188.1 cps	1,964.2 cps	56.0 cps
Intensity per Run 3	19,332.1 cps	783,051.1 cps	9,511.6 cps	13,331.1 cps	10,848.7 cps	1,244.1 cps	2,048.2 cps	76.0 cps
Intensity RSD	0.7 %	0.5 %	5.2 %	8.0 %	7.1 %	2.9 %	5.8 %	24.2 %

Category	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average		84.804 %			0.012 ppm	0.049 ppb	0.051 ppb	0.096 ppb
Concentration per Run 1		84.439 %			0.012 ppm	0.047 ppb	0.049 ppb	0.096 ppb
Concentration per Run 2		86.039 %			0.012 ppm	0.051 ppb	0.052 ppb	0.100 ppb
Concentration per Run 3		83.933 %			0.012 ppm	0.048 ppb	0.051 ppb	0.093 ppb
Recovery Percentage 1						0.000 %	0.000 %	0.000 %
Concentration RSD		1.3 %			0.2 %	4.8 %	2.8 %	3.6 %
Intensity average	321 cps	2,665,625 cps	427 cps	40 cps	2,765,211 cps	4,054 cps	9,892 cps	5,556 cps
Intensity per Run 1	276.0 cps	2,654,160.7 cps	416.0 cps	44.0 cps	2,759,187.6 cps	3,971.6 cps	9,767.8 cps	5,624.3 cps
Intensity per Run 2	380.0 cps	2,704,465.0 cps	508.0 cps	32.0 cps	2,766,463.3 cps	4,186.7 cps	9,899.9 cps	5,670.3 cps
Intensity per Run 3	308.0 cps	2,638,248.6 cps	356.0 cps	44.0 cps	2,769,982.6 cps	4,003.6 cps	10,007.0 cps	5,374.2 cps
Intensity RSD	16.6 %	1.3 %	17.9 %	17.3 %	0.2 %	2.9 %	1.2 %	2.9 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.095 ppb	0.097 ppb	70.357 %
Concentration per Run 1	0.096 ppb	0.095 ppb	71.317 %
Concentration per Run 2	0.095 ppb	0.098 ppb	69.370 %
Concentration per Run 3	0.094 ppb	0.096 ppb	70.385 %
Recovery Percentage 1	0.000 %	0.000 %	
Concentration RSD	1.4 %	1.6 %	1.4 %
Intensity average	4,809 cps	22,255 cps	1,803,216 cps
Intensity per Run 1	4,933.0 cps	22,318.8 cps	1,827,812.8 cps

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Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Intensity per Run 2	4,748.9 cps	22,304.9 cps	1,777,913.5 cps
Intensity per Run 3	4,744.9 cps	22,140.9 cps	1,803,922.5 cps
Intensity RSD	2.2 %	0.4 %	1.4 %

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Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: ICSA(10) Analysis: 10/30/2019 12:05:21 Sample Type QC
Comment MW-11885 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	96.584 %	96.364 %	0.014 ppb	0.112 ppb	0.148 ppb	N/A	9,950.982 ppb	9,879.604 ppb	10,098.322 ppb
Concentration per Run 1	96.109 %	96.071 %	0.004 ppb	0.124 ppb	0.166 ppb	N/A	9,980.426 ppb	9,772.523 ppb	9,938.127 ppb
Concentration per Run 2	96.370 %	97.210 %	0.017 ppb	0.150 ppb	0.074 ppb	N/A	9,951.492 ppb	9,852.260 ppb	10,097.971 ppb
Concentration per Run 3	97.275 %	95.812 %	0.021 ppb	0.062 ppb	0.203 ppb	N/A	9,921.027 ppb	10,014.029 ppb	10,258.868 ppb
Recovery Percentage 1			0.000 %	0.000 %	0.000 %		99.510 %	98.796 %	100.983 %
Concentration RSD	0.6 %	0.8 %	62.1 %	40.5 %	44.7 %	N/A	0.3 %	1.2 %	1.6 %
Intensity average	13,507,647 cps	31,027 cps	6 cps	5 cps	29 cps	3,144 cps	18,330,723 cps	8,281,130 cps	1,777,543 cps
Intensity per Run 1	13,441,150.7 cps	30,932.7 cps	4.0 cps	5.5 cps	31.0 cps	3,000.4 cps	18,216,133.8 cps	8,112,827.4 cps	1,731,873.3 cps
Intensity per Run 2	13,477,599.7 cps	31,299.6 cps	6.0 cps	6.0 cps	22.5 cps	3,100.4 cps	18,484,062.6 cps	8,326,281.0 cps	1,792,029.4 cps
Intensity per Run 3	13,604,192.0 cps	30,849.5 cps	6.5 cps	4.5 cps	34.5 cps	3,330.5 cps	18,291,972.5 cps	8,404,282.6 cps	1,808,726.8 cps
Intensity RSD	0.6 %	0.8 %	24.1 %	14.3 %	21.0 %	5.4 %	0.8 %	1.8 %	2.3 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	9,835.807 ppb	9,722.034 ppb		0.755 ppm	9,982.563 ppb	9,057.450 ppb	10,252.773 ppb	9,487.227 ppb	92.490 %
Concentration per Run 1	9,646.378 ppb	9,683.850 ppb		0.758 ppm	10,039.567 ppb	9,159.262 ppb	9,973.834 ppb	9,386.135 ppb	92.126 %
Concentration per Run 2	9,793.491 ppb	9,626.063 ppb		0.742 ppm	9,919.431 ppb	9,252.021 ppb	10,375.754 ppb	9,545.379 ppb	93.209 %
Concentration per Run 3	10,067.552 ppb	9,856.190 ppb		0.765 ppm	9,988.691 ppb	8,761.066 ppb	10,408.732 ppb	9,530.167 ppb	92.135 %
Recovery Percentage 1	98.358 %	97.220 %			99.826 %	90.574 %	102.528 %	94.872 %	
Concentration RSD	2.2 %	1.2 %		1.6 %	0.6 %	2.9 %	2.4 %	0.9 %	0.7 %
Intensity average	2,301,116 cps	2,771,453 cps	2,547 cps	4,760,854 cps	7,732,158 cps	33,736 cps	25,302,759 cps	420,138 cps	6,366,117 cps
Intensity per Run 1	2,233,401.0 cps	2,731,103.2 cps	2,690.3 cps	4,712,523.1 cps	7,658,079.3 cps	33,545.1 cps	24,517,393.7 cps	408,492.0 cps	6,341,064.3 cps
Intensity per Run 2	2,309,884.1 cps	2,766,575.4 cps	2,580.3 cps	4,717,374.1 cps	7,743,943.4 cps	34,728.6 cps	25,796,467.7 cps	425,920.2 cps	6,415,607.1 cps
Intensity per Run 3	2,360,063.5 cps	2,816,681.6 cps	2,370.2 cps	4,852,664.1 cps	7,794,451.7 cps	32,933.5 cps	25,594,416.6 cps	426,002.5 cps	6,341,678.1 cps
Intensity RSD	2.8 %	1.6 %	6.4 %	1.7 %	0.9 %	2.7 %	2.7 %	2.4 %	0.7 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.417 %	201.216 ppb	-0.063 ppb	-0.053 ppb	-0.240 ppb	N/A	0.023 ppb	10,373.007 ppb	10,264.804 ppb
Concentration per Run 1	89.811 %	200.535 ppb	-0.055 ppb	-0.057 ppb	-0.240 ppb	N/A	0.024 ppb	10,379.132 ppb	10,468.087 ppb
Concentration per Run 2	92.117 %	198.150 ppb	-0.077 ppb	-0.054 ppb	-0.272 ppb	N/A	0.023 ppb	10,205.180 ppb	10,038.334 ppb
Concentration per Run 3	92.323 %	204.963 ppb	-0.058 ppb	-0.047 ppb	-0.209 ppb	N/A	0.022 ppb	10,534.709 ppb	10,287.990 ppb
Recovery Percentage 1		100.608 %	0.000 %	0.000 %			0.000 %		102.648 %
Concentration RSD	1.5 %	1.7 %	18.5 %	10.0 %	13.2 %	N/A	3.9 %	1.6 %	2.1 %
Intensity average	268,384 cps	70,035 cps	784 cps	1,345 cps	584 cps	730 cps	2,352 cps	200,504,379 cps	6,712,652 cps
Intensity per Run 1	263,668.5 cps	68,607.9 cps	868.7 cps	1,232.1 cps	576.0 cps	670.0 cps	2,332.2 cps	197,717,915.9 cps	6,726,407.4 cps
Intensity per Run 2	270,438.8 cps	69,480.7 cps	624.9 cps	1,336.1 cps	504.0 cps	770.0 cps	2,364.2 cps	198,582,424.5 cps	6,615,934.4 cps
Intensity per Run 3	271,043.8 cps	72,014.9 cps	858.3 cps	1,468.1 cps	672.0 cps	750.0 cps	2,360.2 cps	205,212,797.0 cps	6,795,614.6 cps
Intensity RSD	1.5 %	2.5 %	17.6 %	8.8 %	14.4 %	7.2 %	0.7 %	2.0 %	1.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.030 ppb	-0.070 ppb	-0.040 ppb	0.020 ppb	0.028 ppb	-0.238 ppb	-0.189 ppb	-0.182 ppb	
Concentration per Run 1	0.030 ppb	-0.093 ppb	-0.066 ppb	0.021 ppb	0.026 ppb	-0.303 ppb	-0.373 ppb	-0.203 ppb	
Concentration per Run 2	0.031 ppb	-0.073 ppb	-0.031 ppb	0.017 ppb	0.026 ppb	-0.263 ppb	-0.064 ppb	-0.226 ppb	
Concentration per Run 3	0.030 ppb	-0.043 ppb	-0.024 ppb	0.022 ppb	0.032 ppb	-0.148 ppb	-0.132 ppb	-0.118 ppb	
Recovery Percentage 1	0.000 %	0.000 %		0.000 %	0.000 %	0.000 %			
Concentration RSD	2.2 %	35.8 %	56.4 %	13.9 %	11.8 %	33.8 %	85.7 %	31.3 %	
Intensity average	1,609 cps	9,497 cps	1,535 cps	4,379 cps	2,192 cps	12,420 cps	1,861 cps	9,366 cps	194 cps
Intensity per Run 1	1,564.1 cps	9,195.4 cps	1,472.1 cps	4,348.8 cps	2,128.2 cps	12,081.8 cps	1,660.1 cps	9,163.4 cps	196.0 cps
Intensity per Run 2	1,656.1 cps	9,495.6 cps	1,560.1 cps	4,320.8 cps	2,180.2 cps	12,149.9 cps	1,996.2 cps	9,211.4 cps	189.0 cps
Intensity per Run 3	1,608.1 cps	9,799.9 cps	1,572.1 cps	4,468.8 cps	2,268.2 cps	13,026.8 cps	1,928.2 cps	9,723.8 cps	197.0 cps
Intensity RSD	2.9 %	3.2 %	3.6 %	1.8 %	3.2 %	4.2 %	9.5 %	3.3 %	2.2 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.103 ppb	N/A	0.011 ppb			-0.334 ppb		92.838 %	197.354 ppb
Concentration per Run 1	-0.103 ppb	N/A	-0.010 ppb			-0.449 ppb		92.343 %	193.928 ppb
Concentration per Run 2	-0.148 ppb	N/A	-0.012 ppb			-0.337 ppb		93.198 %	194.348 ppb
Concentration per Run 3	-0.057 ppb	N/A	0.056 ppb			-0.215 ppb		92.974 %	203.786 ppb
Recovery Percentage 1	0.000 %	0.000 %	0.000 %			0.000 %			
Concentration RSD	44.1 %	N/A	337.7 %			35.1 %		0.5 %	2.8 %
Intensity average	3,379 cps	63 cps	-16 cps	5,506 cps	5,186 cps	-519 cps	5,594 cps	542,900 cps	2,053,948 cps

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QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	3,388.9 cps	50.0 cps	-23.1 cps	5,372.2 cps	5,153.2 cps	-540.2 cps	5,621.4 cps	540,002.8 cps	2,010,794.6 cps
Intensity per Run 2	3,208.5 cps	90.0 cps	-24.0 cps	5,451.2 cps	4,957.1 cps	-513.8 cps	5,357.4 cps	545,001.6 cps	2,024,957.7 cps
Intensity per Run 3	3,539.7 cps	50.0 cps	-1.6 cps	5,695.3 cps	5,446.3 cps	-501.7 cps	5,802.5 cps	543,696.2 cps	2,126,092.8 cps
Intensity RSD	4.9 %	36.5 %	78.1 %	3.1 %	4.7 %	3.8 %	4.0 %	0.5 %	3.1 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	202.086 ppb	198.525 ppb	199.176 ppb	199.651 ppb	0.019 ppm		-0.009 ppb	0.003 ppb	0.972 ppb
Concentration per Run 1	194.916 ppb	196.546 ppb	197.045 ppb	196.652 ppb	0.018 ppm		-0.028 ppb	0.003 ppb	1.011 ppb
Concentration per Run 2	201.506 ppb	198.968 ppb	201.211 ppb	198.023 ppb	0.019 ppm		-0.011 ppb	0.002 ppb	0.943 ppb
Concentration per Run 3	209.835 ppb	200.060 ppb	199.272 ppb	204.277 ppb	0.019 ppm		0.013 ppb	0.003 ppb	0.964 ppb
Recovery Percentage 1			99.588 %		0.000 %			0.000 %	
Concentration RSD	3.7 %	0.9 %	1.0 %	2.0 %	1.1 %		236.2 %	18.1 %	3.6 %
Intensity average	3,814,951 cps	4,132,368 cps	2,478,375 cps	6,594,842 cps	1,649,473 cps	557 cps	83 cps	299 cps	727 cps
Intensity per Run 1	3,667,041.2 cps	4,078,807.0 cps	2,445,287.0 cps	6,480,329.9 cps	1,628,813.4 cps	504.0 cps	64.0 cps	340.0 cps	756.0 cps
Intensity per Run 2	3,806,142.8 cps	4,141,893.9 cps	2,502,539.7 cps	6,534,316.8 cps	1,664,034.3 cps	600.0 cps	80.0 cps	260.0 cps	700.0 cps
Intensity per Run 3	3,971,668.2 cps	4,176,402.0 cps	2,487,297.8 cps	6,769,880.0 cps	1,655,570.6 cps	568.0 cps	104.0 cps	296.0 cps	724.0 cps
Intensity RSD	4.0 %	1.2 %	1.2 %	2.3 %	1.1 %	8.8 %	24.4 %	13.4 %	3.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.003 ppb	0.082 ppb	0.062 ppb	91.723 %	0.061 ppb	0.137 ppb	0.136 ppb	0.024 ppb	0.012 ppb
Concentration per Run 1	0.003 ppb	0.081 ppb	0.063 ppb	92.034 %	0.053 ppb	0.120 ppb	0.120 ppb	0.022 ppb	0.013 ppb
Concentration per Run 2	0.003 ppb	0.084 ppb	0.063 ppb	90.779 %	0.064 ppb	0.135 ppb	0.132 ppb	0.023 ppb	0.018 ppb
Concentration per Run 3	0.003 ppb	0.082 ppb	0.060 ppb	92.356 %	0.064 ppb	0.157 ppb	0.157 ppb	0.027 ppb	0.005 ppb
Recovery Percentage 1	0.000 %	0.000 %	0.000 %		0.000 %	0.000 %	0.000 %	0.000 %	0.000 %
Concentration RSD	13.1 %	1.8 %	2.9 %	0.9 %	10.4 %	13.4 %	14.0 %	12.0 %	53.2 %
Intensity average	273 cps	1,004 cps	1,880 cps	821,177 cps	2,202 cps	3,873 cps	3,095 cps	300 cps	403 cps
Intensity per Run 1	304.0 cps	992.0 cps	1,913.7 cps	823,959.9 cps	2,028.2 cps	3,436.5 cps	2,752.3 cps	288.0 cps	412.0 cps
Intensity per Run 2	260.0 cps	1,016.0 cps	1,895.1 cps	812,726.6 cps	2,276.2 cps	3,788.6 cps	2,996.4 cps	292.0 cps	472.0 cps
Intensity per Run 3	256.0 cps	1,004.0 cps	1,830.4 cps	826,845.5 cps	2,300.2 cps	4,392.8 cps	3,536.5 cps	320.0 cps	324.0 cps
Intensity RSD	9.7 %	1.2 %	2.3 %	0.9 %	6.8 %	12.5 %	13.0 %	5.8 %	18.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			94.945 %			0.014 ppm	0.024 ppb	0.024 ppb	0.013 ppb
Concentration per Run 1			94.325 %			0.014 ppm	0.023 ppb	0.022 ppb	0.013 ppb
Concentration per Run 2			96.629 %			0.014 ppm	0.024 ppb	0.025 ppb	0.012 ppb
Concentration per Run 3			93.880 %			0.014 ppm	0.025 ppb	0.027 ppb	0.012 ppb
Recovery Percentage 1							0.000 %	0.000 %	0.000 %
Concentration RSD			1.6 %			2.3 %	4.6 %	8.9 %	2.9 %
Intensity average	32 cps	41 cps	2,984,387 cps	115 cps	23 cps	3,137,737 cps	3,130 cps	7,600 cps	1,563 cps
Intensity per Run 1	32.0 cps	28.0 cps	2,964,895.3 cps	92.0 cps	24.0 cps	3,110,558.6 cps	3,037.4 cps	7,167.1 cps	1,595.1 cps
Intensity per Run 2	20.0 cps	48.0 cps	3,037,336.5 cps	108.0 cps	32.0 cps	3,220,090.2 cps	3,142.4 cps	7,608.3 cps	1,553.1 cps
Intensity per Run 3	44.0 cps	48.0 cps	2,950,928.4 cps	144.0 cps	12.0 cps	3,082,562.8 cps	3,211.4 cps	8,024.6 cps	1,540.1 cps
Intensity RSD	37.5 %	27.9 %	1.6 %	23.2 %	44.4 %	2.3 %	2.8 %	5.6 %	1.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.013 ppb	0.013 ppb	92.680 %
Concentration per Run 1	0.014 ppb	0.013 ppb	92.987 %
Concentration per Run 2	0.015 ppb	0.013 ppb	92.520 %
Concentration per Run 3	0.010 ppb	0.012 ppb	92.532 %
Recovery Percentage 1	0.000 %	0.000 %	
Concentration RSD	19.0 %	6.3 %	0.3 %
Intensity average	1,397 cps	6,258 cps	2,375,324 cps
Intensity per Run 1	1,468.1 cps	6,339.6 cps	2,383,200.6 cps
Intensity per Run 2	1,500.1 cps	6,425.7 cps	2,371,221.0 cps
Intensity per Run 3	1,224.1 cps	6,008.6 cps	2,371,550.2 cps
Intensity RSD	10.8 %	3.5 %	0.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 12:11:23 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	95.217 %	94.803 %	148.247 ppb	150.736 ppb	148.923 ppb	N/A	15,305.815 ppb	15,117.878 ppb	15,193.110 ppb
Concentration per Run 1	94.516 %	94.592 %	146.856 ppb	149.106 ppb	146.981 ppb	N/A	14,929.437 ppb	14,835.572 ppb	14,884.552 ppb
Concentration per Run 2	95.678 %	95.174 %	147.691 ppb	151.859 ppb	149.455 ppb	N/A	15,388.301 ppb	15,109.272 ppb	15,238.544 ppb
Concentration per Run 3	95.456 %	94.643 %	150.192 ppb	151.243 ppb	150.333 ppb	N/A	15,599.708 ppb	15,408.788 ppb	15,456.235 ppb
Recovery Percentage 1			98.831 %		99.282 %		101.028 %		
Concentration RSD	0.6 %	0.3 %	1.2 %	1.0 %	1.2 %	N/A	2.2 %	1.9 %	1.9 %
Intensity average	13,316,385 cps	30,525 cps	22,324 cps	2,420 cps	14,158 cps	2,260 cps	28,210,954 cps	12,694,257 cps	2,681,756 cps
Intensity per Run 1	13,218,331.4 cps	30,456.6 cps	22,065.5 cps	2,391.2 cps	13,961.3 cps	2,150.2 cps	27,587,621.9 cps	12,492,468.1 cps	2,635,457.8 cps
Intensity per Run 2	13,380,940.3 cps	30,644.0 cps	22,327.4 cps	2,447.2 cps	14,261.1 cps	2,170.2 cps	28,458,115.6 cps	12,729,230.3 cps	2,698,615.3 cps
Intensity per Run 3	13,349,882.8 cps	30,473.1 cps	22,578.9 cps	2,421.7 cps	14,250.1 cps	2,460.3 cps	28,587,125.6 cps	12,861,071.2 cps	2,711,193.6 cps
Intensity RSD	0.6 %	0.3 %	1.2 %	1.2 %	1.2 %	7.7 %	1.9 %	1.5 %	1.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	15,228.466 ppb	14,943.117 ppb		0.626 ppm	15,165.216 ppb	14,848.561 ppb	15,420.652 ppb	15,293.613 ppb	92.320 %
Concentration per Run 1	14,847.781 ppb	14,933.287 ppb		0.614 ppm	15,367.875 ppb	14,322.931 ppb	15,585.930 ppb	14,927.852 ppb	92.309 %
Concentration per Run 2	15,417.786 ppb	14,592.176 ppb		0.623 ppm	14,989.033 ppb	15,103.447 ppb	15,433.927 ppb	15,061.597 ppb	92.827 %
Concentration per Run 3	15,419.831 ppb	15,303.887 ppb		0.642 ppm	15,138.741 ppb	15,119.304 ppb	15,242.099 ppb	15,891.390 ppb	91.824 %
Recovery Percentage 1	100.518 %	98.634 %			100.100 %		101.786 %	100.948 %	
Concentration RSD	2.2 %	2.4 %		2.3 %	1.3 %	3.1 %	1.1 %	3.4 %	0.5 %
Intensity average	3,576,307 cps	4,280,730 cps	4,651 cps	4,002,970 cps	11,945,133 cps	56,478 cps	37,940,963 cps	692,312 cps	6,354,386 cps
Intensity per Run 1	3,498,677.1 cps	4,293,700.9 cps	4,991.0 cps	3,946,531.4 cps	12,188,672.3 cps	54,931.1 cps	38,334,139.2 cps	681,594.9 cps	6,353,613.1 cps
Intensity per Run 2	3,632,488.8 cps	4,193,758.3 cps	4,460.8 cps	3,995,311.3 cps	11,838,481.6 cps	57,602.8 cps	38,180,682.7 cps	683,706.9 cps	6,389,281.8 cps
Intensity per Run 3	3,597,754.4 cps	4,354,732.0 cps	4,500.8 cps	4,067,066.1 cps	11,808,243.9 cps	56,899.8 cps	37,308,066.7 cps	711,634.8 cps	6,320,263.2 cps
Intensity RSD	1.9 %	1.9 %	6.3 %	1.5 %	1.8 %	2.5 %	1.5 %	2.4 %	0.5 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	93.633 %	146.867 ppb	144.604 ppb	145.762 ppb	154.204 ppb	N/A	153.888 ppb	15,595.367 ppb	15,270.823 ppb
Concentration per Run 1	94.446 %	140.122 ppb	138.988 ppb	139.990 ppb	147.390 ppb	N/A	148.567 ppb	14,722.740 ppb	15,000.926 ppb
Concentration per Run 2	93.868 %	149.717 ppb	145.868 ppb	146.443 ppb	154.831 ppb	N/A	154.949 ppb	15,874.673 ppb	15,088.991 ppb
Concentration per Run 3	92.586 %	150.761 ppb	148.955 ppb	150.852 ppb	160.391 ppb	N/A	158.149 ppb	16,188.686 ppb	15,722.553 ppb
Recovery Percentage 1		97.911 %	96.403 %	97.174 %		0.000 %	102.592 %		100.798 %
Concentration RSD	1.0 %	4.0 %	3.5 %	3.7 %	4.2 %	N/A	3.2 %	4.9 %	2.6 %
Intensity average	274,892 cps	52,328 cps	1,813,594 cps	2,869,046 cps	414,532 cps	425,246 cps	2,284,978 cps	308,128,893 cps	10,227,890 cps
Intensity per Run 1	277,277.3 cps	50,341.2 cps	1,758,733.8 cps	2,780,107.6 cps	398,928.8 cps	410,741.7 cps	2,219,472.2 cps	292,598,819.7 cps	10,136,055.8 cps
Intensity per Run 2	275,581.6 cps	53,498.4 cps	1,834,427.6 cps	2,890,372.5 cps	417,659.6 cps	432,690.3 cps	2,308,974.8 cps	314,818,738.5 cps	10,133,205.3 cps
Intensity per Run 3	271,817.3 cps	53,144.9 cps	1,847,621.0 cps	2,936,658.7 cps	427,006.6 cps	432,305.1 cps	2,326,486.2 cps	316,969,120.9 cps	10,414,409.4 cps
Intensity RSD	1.0 %	3.3 %	2.6 %	2.8 %	3.4 %	3.0 %	2.5 %	4.4 %	1.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	153.445 ppb	159.265 ppb	157.664 ppb	157.966 ppb	156.675 ppb	160.736 ppb	158.292 ppb	155.898 ppb	
Concentration per Run 1	147.491 ppb	157.992 ppb	153.512 ppb	156.197 ppb	151.812 ppb	157.712 ppb	154.527 ppb	154.318 ppb	
Concentration per Run 2	154.703 ppb	157.903 ppb	157.716 ppb	156.178 ppb	157.717 ppb	156.560 ppb	156.525 ppb	154.765 ppb	
Concentration per Run 3	158.140 ppb	161.901 ppb	161.765 ppb	161.523 ppb	160.496 ppb	167.934 ppb	163.826 ppb	158.611 ppb	
Recovery Percentage 1	102.297 %	106.177 %			104.450 %	107.157 %			
Concentration RSD	3.5 %	1.4 %	2.6 %	2.0 %	2.8 %	3.9 %	3.1 %	1.5 %	
Intensity average	7,122,029 cps	1,773,051 cps	270,690 cps	4,417,966 cps	2,267,725 cps	944,397 cps	161,739 cps	762,855 cps	428 cps
Intensity per Run 1	6,906,635.6 cps	1,753,246.6 cps	264,696.2 cps	4,385,368.7 cps	2,216,845.4 cps	931,233.2 cps	158,382.6 cps	757,093.2 cps	442.0 cps
Intensity per Run 2	7,200,017.9 cps	1,769,611.4 cps	271,915.2 cps	4,386,672.6 cps	2,288,925.9 cps	934,748.8 cps	160,704.3 cps	760,952.8 cps	402.0 cps
Intensity per Run 3	7,259,435.0 cps	1,796,296.1 cps	275,458.9 cps	4,481,855.7 cps	2,297,402.6 cps	967,208.0 cps	166,129.4 cps	770,519.2 cps	440.0 cps
Intensity RSD	2.7 %	1.2 %	2.0 %	1.3 %	2.0 %	2.1 %	2.5 %	0.9 %	5.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	156.233 ppb	N/A	151.077 ppb			149.940 ppb		94.420 %	149.082 ppb
Concentration per Run 1	152.075 ppb	N/A	147.563 ppb			144.963 ppb		94.111 %	145.441 ppb
Concentration per Run 2	154.352 ppb	N/A	151.043 ppb			150.918 ppb		95.042 %	149.300 ppb
Concentration per Run 3	162.271 ppb	N/A	154.624 ppb			153.937 ppb		94.107 %	152.506 ppb
Recovery Percentage 1	104.155 %	0.000 %				99.960 %			
Concentration RSD	3.4 %	N/A	2.3 %			3.0 %		0.6 %	2.4 %
Intensity average	476,706 cps	15,066 cps	50,681 cps	5,608 cps	31,463 cps	25,285 cps	6,264 cps	552,151 cps	1,573,872 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	466,248.4 cps	15,029.1 cps	49,488.5 cps	5,398.2 cps	31,525.9 cps	24,539.1 cps	7,137.2 cps	550,341.8 cps	1,532,619.0 cps
Intensity per Run 2	478,399.2 cps	14,838.9 cps	50,953.9 cps	5,627.3 cps	29,710.3 cps	25,848.7 cps	4,082.7 cps	555,790.0 cps	1,589,202.1 cps
Intensity per Run 3	485,470.2 cps	15,329.5 cps	51,599.9 cps	5,797.3 cps	33,152.1 cps	25,468.6 cps	7,572.5 cps	550,320.4 cps	1,599,794.0 cps
Intensity RSD	2.0 %	1.6 %	2.1 %	3.6 %	5.5 %	2.7 %	30.4 %	0.6 %	2.3 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	150.323 ppb	150.218 ppb	146.636 ppb	150.684 ppb	0.018 ppm		152.429 ppb	29.143 ppb	152.253 ppb
Concentration per Run 1	146.793 ppb	147.837 ppb	142.961 ppb	144.797 ppb	0.018 ppm		147.322 ppb	27.984 ppb	147.168 ppb
Concentration per Run 2	148.882 ppb	149.135 ppb	146.556 ppb	151.852 ppb	0.019 ppm		154.173 ppb	29.231 ppb	150.320 ppb
Concentration per Run 3	155.294 ppb	153.681 ppb	150.392 ppb	155.403 ppb	0.018 ppm		155.791 ppb	30.214 ppb	159.272 ppb
Recovery Percentage 1			97.757 %		0.000 %			97.144 %	
Concentration RSD	2.9 %	2.0 %	2.5 %	3.6 %	0.6 %		2.9 %	3.8 %	4.1 %
Intensity average	2,876,768 cps	3,168,380 cps	1,847,927 cps	5,038,163 cps	1,643,589 cps	753 cps	149,052 cps	2,148,504 cps	114,346 cps
Intensity per Run 1	2,805,049.6 cps	3,114,370.9 cps	1,799,918.3 cps	4,838,136.1 cps	1,637,107.7 cps	724.0 cps	144,301.3 cps	2,072,396.9 cps	110,801.5 cps
Intensity per Run 2	2,873,881.6 cps	3,173,769.1 cps	1,864,090.5 cps	5,126,077.7 cps	1,655,796.3 cps	820.0 cps	152,615.3 cps	2,188,642.5 cps	114,389.6 cps
Intensity per Run 3	2,951,373.2 cps	3,216,999.1 cps	1,879,772.0 cps	5,150,273.9 cps	1,637,862.5 cps	716.0 cps	150,238.6 cps	2,184,473.1 cps	117,846.1 cps
Intensity RSD	2.5 %	1.6 %	2.3 %	3.4 %	0.6 %	7.7 %	2.9 %	3.1 %	3.1 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	29.295 ppb	151.334 ppb	149.902 ppb	92.016 %	152.922 ppb	147.004 ppb	148.038 ppb	146.651 ppb	149.347 ppb
Concentration per Run 1	28.562 ppb	149.170 ppb	146.282 ppb	92.405 %	151.030 ppb	138.541 ppb	139.420 ppb	143.057 ppb	145.482 ppb
Concentration per Run 2	28.929 ppb	149.693 ppb	147.271 ppb	93.426 %	150.708 ppb	146.010 ppb	148.048 ppb	146.468 ppb	148.929 ppb
Concentration per Run 3	30.393 ppb	155.137 ppb	156.153 ppb	90.215 %	157.029 ppb	156.460 ppb	156.646 ppb	150.429 ppb	153.630 ppb
Recovery Percentage 1			99.935 %		101.948 %	98.002 %		97.768 %	
Concentration RSD	3.3 %	2.2 %	3.6 %	1.8 %	2.3 %	6.1 %	5.8 %	2.5 %	2.7 %
Intensity average	2,142,052 cps	1,837,333 cps	4,479,772 cps	823,799 cps	3,762,441 cps	3,800,778 cps	3,064,051 cps	899,659 cps	1,671,133 cps
Intensity per Run 1	2,094,236.9 cps	1,816,982.1 cps	4,391,851.2 cps	827,290.0 cps	3,732,992.6 cps	3,599,730.1 cps	2,899,953.9 cps	882,101.4 cps	1,636,351.9 cps
Intensity per Run 2	2,143,964.6 cps	1,843,163.4 cps	4,470,391.2 cps	836,429.5 cps	3,761,684.2 cps	3,826,552.4 cps	3,103,561.7 cps	905,919.0 cps	1,678,974.9 cps
Intensity per Run 3	2,187,953.6 cps	1,851,852.1 cps	4,577,073.7 cps	807,678.5 cps	3,792,646.9 cps	3,976,051.5 cps	3,188,638.0 cps	910,957.7 cps	1,698,072.4 cps
Intensity RSD	2.2 %	1.0 %	2.1 %	1.8 %	0.8 %	5.0 %	4.8 %	1.7 %	1.9 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			94.215 %			0.014 ppm	148.927 ppb	148.565 ppb	147.917 ppb
Concentration per Run 1			94.762 %			0.014 ppm	145.836 ppb	146.771 ppb	144.778 ppb
Concentration per Run 2			94.171 %			0.014 ppm	148.865 ppb	146.098 ppb	147.191 ppb
Concentration per Run 3			93.713 %			0.014 ppm	152.080 ppb	152.826 ppb	151.781 ppb
Recovery Percentage 1						0.000 %		99.043 %	
Concentration RSD			0.6 %			0.5 %	2.1 %	2.5 %	2.4 %
Intensity average	57 cps	19 cps	2,961,459 cps	64 cps	29 cps	3,130,883 cps	12,352,926 cps	29,745,318 cps	9,764,318 cps
Intensity per Run 1	52.0 cps	16.0 cps	2,978,628.8 cps	72.0 cps	20.0 cps	3,145,118.4 cps	12,020,714.7 cps	29,153,729.8 cps	9,489,168.0 cps
Intensity per Run 2	60.0 cps	20.0 cps	2,960,071.1 cps	64.0 cps	36.0 cps	3,114,987.3 cps	12,479,947.7 cps	29,613,953.1 cps	9,828,345.0 cps
Intensity per Run 3	60.0 cps	20.0 cps	2,945,676.2 cps	56.0 cps	32.0 cps	3,132,544.0 cps	12,558,114.4 cps	30,468,272.5 cps	9,975,441.9 cps
Intensity RSD	8.1 %	12.4 %	0.6 %	12.5 %	28.4 %	0.5 %	2.4 %	2.2 %	2.6 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	149.416 ppb	148.609 ppb	89.853 %
Concentration per Run 1	149.549 ppb	145.716 ppb	89.136 %
Concentration per Run 2	145.825 ppb	147.010 ppb	90.960 %
Concentration per Run 3	152.874 ppb	153.100 ppb	89.464 %
Recovery Percentage 1		99.073 %	
Concentration RSD	2.4 %	2.7 %	1.1 %
Intensity average	8,655,632 cps	39,545,714 cps	2,302,884 cps
Intensity per Run 1	8,600,299.1 cps	38,467,703.7 cps	2,284,495.5 cps
Intensity per Run 2	8,548,255.3 cps	39,603,565.7 cps	2,331,244.6 cps
Intensity per Run 3	8,818,341.5 cps	40,565,874.0 cps	2,292,910.9 cps
Intensity RSD	1.7 %	2.7 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 12:17:25 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	100.772 %	100.754 %	0.017 ppb	0.214 ppb	0.332 ppb	N/A	4.858 ppb	1.481 ppb	1.476 ppb	1.600 ppb
Concentration per Run 1	100.159 %	100.976 %	0.009 ppb	0.341 ppb	0.397 ppb	N/A	4.475 ppb	1.724 ppb	1.915 ppb	1.860 ppb
Concentration per Run 2	101.538 %	100.336 %	0.022 ppb	0.196 ppb	0.256 ppb	N/A	5.136 ppb	1.469 ppb	1.178 ppb	1.309 ppb
Concentration per Run 3	100.617 %	100.948 %	0.019 ppb	0.106 ppb	0.343 ppb	N/A	4.962 ppb	1.250 ppb	1.336 ppb	1.631 ppb
Recovery Percentage 1			1.651 %	0.021 %			0.972 %			0.320 %
Concentration RSD	0.7 %	0.4 %	40.0 %	55.2 %	21.5 %	N/A	7.1 %	16.0 %	26.3 %	17.3 %
Intensity average	14,093,247 cps	32,441 cps	6 cps	7 cps	49 cps	2,024 cps	25,787 cps	3,337 cps	757 cps	993 cps
Intensity per Run 1	14,007,629.8 cps	32,512.2 cps	5.0 cps	9.5 cps	56.0 cps	1,930.2 cps	25,105.4 cps	3,560.5 cps	840.0 cps	1,060.0 cps
Intensity per Run 2	14,200,431.5 cps	32,306.2 cps	7.0 cps	7.0 cps	41.5 cps	2,060.2 cps	26,277.7 cps	3,320.5 cps	700.0 cps	920.0 cps
Intensity per Run 3	14,071,680.0 cps	32,503.2 cps	6.5 cps	5.5 cps	50.5 cps	2,080.2 cps	25,977.2 cps	3,130.4 cps	730.0 cps	1,000.0 cps
Intensity RSD	0.7 %	0.4 %	16.9 %	27.6 %	14.8 %	4.0 %	2.4 %	6.5 %	9.7 %	7.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.968 ppb		0.797 ppm	4.442 ppb	-3.766 ppb	2.916 ppb	0.385 ppb	95.800 %	97.503 %	0.015 ppb
Concentration per Run 1	1.481 ppb		0.778 ppm	3.584 ppb	-6.326 ppb	2.969 ppb	1.544 ppb	95.306 %	97.761 %	-0.003 ppb
Concentration per Run 2	0.296 ppb		0.791 ppm	4.591 ppb	-1.257 ppb	3.100 ppb	0.089 ppb	95.120 %	97.609 %	0.029 ppb
Concentration per Run 3	1.127 ppb		0.821 ppm	5.151 ppb	-3.716 ppb	2.680 ppb	-0.480 ppb	96.975 %	97.139 %	0.018 ppb
Recovery Percentage 1	4.841 %			0.888 %			0.038 %			0.145 %
Concentration RSD	62.8 %		2.7 %	17.9 %	67.3 %	7.4 %	271.4 %	1.1 %	0.3 %	113.4 %
Intensity average	793 cps	2,904 cps	5,330,221 cps	24,945 cps	60 cps	73,023 cps	743 cps	6,593,928 cps	286,253 cps	7 cps
Intensity per Run 1	950.0 cps	3,010.4 cps	5,222,353.3 cps	24,303.8 cps	50.0 cps	72,782.0 cps	800.0 cps	6,559,918.8 cps	287,011.1 cps	0.0 cps
Intensity per Run 2	590.0 cps	2,980.4 cps	5,289,257.1 cps	25,075.3 cps	70.0 cps	73,003.0 cps	730.0 cps	6,547,097.1 cps	286,564.8 cps	12.0 cps
Intensity per Run 3	840.0 cps	2,720.3 cps	5,479,053.8 cps	25,456.0 cps	60.0 cps	73,284.5 cps	700.0 cps	6,674,767.9 cps	285,183.9 cps	8.0 cps
Intensity RSD	23.3 %	5.5 %	2.5 %	2.4 %	16.7 %	0.3 %	6.9 %	1.1 %	0.3 %	91.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.040 ppb	-0.072 ppb	-0.197 ppb	N/A	0.038 ppb	0.350 ppb	0.450 ppb	0.007 ppb	0.066 ppb	0.021 ppb
Concentration per Run 1	-0.038 ppb	-0.066 ppb	-0.203 ppb	N/A	0.034 ppb	0.363 ppb	0.559 ppb	0.007 ppb	0.054 ppb	0.059 ppb
Concentration per Run 2	-0.048 ppb	-0.071 ppb	-0.183 ppb	N/A	0.038 ppb	0.200 ppb	0.270 ppb	0.005 ppb	0.072 ppb	0.007 ppb
Concentration per Run 3	-0.034 ppb	-0.078 ppb	-0.207 ppb	N/A	0.044 ppb	0.486 ppb	0.522 ppb	0.009 ppb	0.071 ppb	-0.003 ppb
Recovery Percentage 1	-0.804 %	-3.587 %			3.845 %		0.225 %	0.695 %	6.583 %	
Concentration RSD	17.4 %	8.1 %	6.6 %	N/A	12.9 %	41.2 %	34.9 %	24.9 %	15.0 %	158.5 %
Intensity average	1,140 cps	1,045 cps	737 cps	803 cps	2,720 cps	46,354 cps	1,476 cps	595 cps	11,238 cps	1,719 cps
Intensity per Run 1	1,166.3 cps	1,164.1 cps	724.0 cps	790.0 cps	2,652.3 cps	46,648.2 cps	1,556.1 cps	596.0 cps	11,036.9 cps	1,784.1 cps
Intensity per Run 2	1,041.3 cps	1,052.0 cps	780.0 cps	870.0 cps	2,716.3 cps	43,416.1 cps	1,352.1 cps	512.0 cps	11,393.2 cps	1,700.1 cps
Intensity per Run 3	1,213.6 cps	920.0 cps	708.0 cps	750.0 cps	2,792.3 cps	48,996.7 cps	1,520.1 cps	676.0 cps	11,285.1 cps	1,672.1 cps
Intensity RSD	7.8 %	11.7 %	5.1 %	7.6 %	2.6 %	6.0 %	7.4 %	13.8 %	1.6 %	3.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.014 ppb	0.024 ppb	-0.020 ppb	0.079 ppb	0.058 ppb		-0.226 ppb	N/A	0.097 ppb	
Concentration per Run 1	0.013 ppb	0.022 ppb	-0.047 ppb	-0.015 ppb	0.063 ppb		-0.413 ppb	N/A	0.110 ppb	
Concentration per Run 2	0.008 ppb	0.015 ppb	-0.041 ppb	0.080 ppb	0.009 ppb		0.150 ppb	N/A	0.068 ppb	
Concentration per Run 3	0.022 ppb	0.035 ppb	0.028 ppb	0.172 ppb	0.102 ppb		-0.415 ppb	N/A	0.114 ppb	
Recovery Percentage 1		1.203 %	-1.000 %				-22.600 %			
Concentration RSD	47.8 %	41.2 %	209.3 %	118.8 %	80.6 %		144.1 %	N/A	26.2 %	
Intensity average	4,434 cps	2,276 cps	14,459 cps	2,222 cps	10,965 cps	8 cps	3,187 cps	83 cps	12 cps	6,295 cps
Intensity per Run 1	4,384.8 cps	2,256.2 cps	14,035.9 cps	2,120.2 cps	10,964.8 cps	10.0 cps	2,536.3 cps	110.0 cps	16.6 cps	6,056.5 cps
Intensity per Run 2	4,280.7 cps	2,144.2 cps	14,544.5 cps	2,232.2 cps	10,772.7 cps	7.0 cps	4,443.5 cps	60.0 cps	2.4 cps	6,392.6 cps
Intensity per Run 3	4,636.9 cps	2,428.2 cps	14,796.8 cps	2,312.2 cps	11,157.0 cps	7.0 cps	2,581.4 cps	80.0 cps	18.0 cps	6,434.7 cps
Intensity RSD	4.1 %	6.3 %	2.7 %	4.3 %	1.8 %	21.7 %	34.1 %	30.2 %	69.9 %	3.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		1.824 ppb		95.070 %	0.395 ppb	0.394 ppb	0.398 ppb	0.377 ppb	0.396 ppb	0.020 ppm
Concentration per Run 1		2.761 ppb		94.433 %	0.362 ppb	0.359 ppb	0.362 ppb	0.319 ppb	0.359 ppb	0.020 ppm
Concentration per Run 2		1.255 ppb		95.816 %	0.386 ppb	0.374 ppb	0.384 ppb	0.387 ppb	0.396 ppb	0.020 ppm
Concentration per Run 3		1.458 ppb		94.961 %	0.436 ppb	0.450 ppb	0.447 ppb	0.425 ppb	0.433 ppb	0.020 ppm
Recovery Percentage 1		36.489 %						3.770 %		
Concentration RSD		44.8 %		0.7 %	9.6 %	12.3 %	11.0 %	14.3 %	9.3 %	1.2 %
Intensity average	4,731 cps	-159 cps	4,884 cps	555,951 cps	4,541 cps	8,051 cps	8,990 cps	5,102 cps	14,120 cps	1,791,381 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,724.6 cps	11.6 cps	3,724.6 cps	552,227.0 cps	4,148.7 cps	7,290.1 cps	8,146.7 cps	4,308.8 cps	12,710.5 cps	1,772,455.4 cps
Intensity per Run 2	6,769.9 cps	-264.6 cps	6,952.0 cps	560,315.6 cps	4,488.8 cps	7,734.4 cps	8,783.1 cps	5,277.1 cps	14,268.2 cps	1,813,375.2 cps
Intensity per Run 3	3,699.6 cps	-224.6 cps	3,974.6 cps	555,311.3 cps	4,985.0 cps	9,127.4 cps	10,040.1 cps	5,721.3 cps	15,381.5 cps	1,788,312.3 cps
Intensity RSD	37.3 %	93.8 %	36.8 %	0.7 %	9.3 %	11.9 %	10.7 %	14.2 %	9.5 %	1.2 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.017 ppb	0.002 ppb	0.009 ppb	0.003 ppb	0.008 ppb	0.006 ppb	96.966 %	0.173 ppb	0.469 ppb
Concentration per Run 1		0.034 ppb	0.003 ppb	-0.002 ppb	0.003 ppb	0.012 ppb	0.010 ppb	95.226 %	0.156 ppb	0.424 ppb
Concentration per Run 2		0.007 ppb	0.002 ppb	0.008 ppb	0.002 ppb	0.006 ppb	0.006 ppb	98.417 %	0.171 ppb	0.470 ppb
Concentration per Run 3		0.009 ppb	0.002 ppb	0.019 ppb	0.002 ppb	0.006 ppb	0.003 ppb	97.256 %	0.192 ppb	0.513 ppb
Recovery Percentage 1			0.246 %				0.617 %			23.470 %
Concentration RSD		90.5 %	16.1 %	119.7 %	19.1 %	45.5 %	56.2 %	1.7 %	10.5 %	9.5 %
Intensity average	651 cps	112 cps	283 cps	8 cps	280 cps	109 cps	235 cps	868,120 cps	5,240 cps	13,150 cps
Intensity per Run 1	604.0 cps	128.0 cps	308.0 cps	0.0 cps	320.0 cps	160.0 cps	341.5 cps	852,537.9 cps	4,712.9 cps	11,697.5 cps
Intensity per Run 2	676.0 cps	104.0 cps	256.0 cps	8.0 cps	268.0 cps	84.0 cps	235.0 cps	881,106.1 cps	5,253.1 cps	13,355.2 cps
Intensity per Run 3	672.0 cps	104.0 cps	284.0 cps	16.0 cps	252.0 cps	84.0 cps	129.6 cps	870,715.9 cps	5,753.3 cps	14,396.3 cps
Intensity RSD	6.2 %	12.4 %	9.2 %	100.0 %	12.7 %	40.1 %	45.0 %	1.7 %	9.9 %	10.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.471 ppb	0.006 ppb	0.004 ppb			99.078 %			0.014 ppm	0.104 ppb
Concentration per Run 1	0.441 ppb	0.004 ppb	0.002 ppb			97.233 %			0.014 ppm	0.110 ppb
Concentration per Run 2	0.471 ppb	0.010 ppb	0.003 ppb			100.016 %			0.014 ppm	0.106 ppb
Concentration per Run 3	0.500 ppb	0.003 ppb	0.006 ppb			99.986 %			0.014 ppm	0.095 ppb
Recovery Percentage 1		0.057 %							1.422 %	
Concentration RSD	6.3 %	69.9 %	61.9 %			1.6 %			2.7 %	7.6 %
Intensity average	10,559 cps	196 cps	321 cps	21 cps	17 cps	3,114,317 cps	52 cps	35 cps	3,223,003 cps	10,599 cps
Intensity per Run 1	9,723.8 cps	180.0 cps	292.0 cps	28.0 cps	20.0 cps	3,056,322.2 cps	40.0 cps	32.0 cps	3,122,895.7 cps	11,148.0 cps
Intensity per Run 2	10,712.6 cps	228.0 cps	320.0 cps	20.0 cps	16.0 cps	3,143,780.8 cps	64.0 cps	24.0 cps	3,282,764.4 cps	10,788.7 cps
Intensity per Run 3	11,241.1 cps	180.0 cps	352.0 cps	16.0 cps	16.0 cps	3,142,847.0 cps	52.0 cps	48.0 cps	3,263,349.2 cps	9,858.9 cps
Intensity RSD	7.3 %	14.1 %	9.3 %	28.6 %	13.3 %	1.6 %	23.1 %	35.3 %	2.7 %	6.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.105 ppb	0.017 ppb	0.017 ppb	0.017 ppb	99.432 %
Concentration per Run 1	0.116 ppb	0.020 ppb	0.020 ppb	0.020 ppb	98.996 %
Concentration per Run 2	0.105 ppb	0.017 ppb	0.018 ppb	0.016 ppb	99.413 %
Concentration per Run 3	0.094 ppb	0.015 ppb	0.014 ppb	0.014 ppb	99.887 %
Recovery Percentage 1	20.959 %			1.688 %	
Concentration RSD	10.2 %	14.3 %	18.6 %	17.6 %	0.4 %
Intensity average	25,954 cps	2,022 cps	1,765 cps	7,995 cps	2,548,379 cps
Intensity per Run 1	28,208.8 cps	2,210.2 cps	1,956.2 cps	8,923.3 cps	2,537,205.1 cps
Intensity per Run 2	25,926.9 cps	1,981.2 cps	1,780.1 cps	7,781.9 cps	2,547,902.7 cps
Intensity per Run 3	23,726.5 cps	1,876.1 cps	1,560.1 cps	7,280.8 cps	2,560,030.6 cps
Intensity RSD	8.6 %	8.4 %	11.2 %	10.5 %	0.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33550-001 Analysis: 10/30/2019 12:23:28 Sample Type UNKNOWN
Comment PBW Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	101.847 %	101.921 %	0.016 ppb	0.336 ppb	0.335 ppb	N/A	-0.041 ppb	0.064 ppb	0.274 ppb	-0.211 ppb
Concentration per Run 1	101.209 %	102.569 %	0.018 ppb	0.333 ppb	0.370 ppb	N/A	0.768 ppb	0.174 ppb	-0.471 ppb	0.097 ppb
Concentration per Run 2	102.063 %	102.061 %	0.015 ppb	0.451 ppb	0.264 ppb	N/A	-0.429 ppb	0.005 ppb	0.392 ppb	-0.575 ppb
Concentration per Run 3	102.270 %	101.132 %	0.015 ppb	0.223 ppb	0.372 ppb	N/A	-0.463 ppb	0.013 ppb	0.902 ppb	-0.155 ppb
Concentration RSD	0.6 %	0.7 %	9.8 %	34.0 %	18.4 %	N/A	1,694.7 %	148.9 %	253.2 %	160.8 %
Intensity average	14,243,692 cps	32,816 cps	6 cps	10 cps	50 cps	2,467 cps	16,411 cps	2,100 cps	537 cps	550 cps
Intensity per Run 1	14,154,437.2 cps	33,025.1 cps	6.5 cps	9.5 cps	54.0 cps	2,520.3 cps	18,093.2 cps	2,210.2 cps	400.0 cps	630.0 cps
Intensity per Run 2	14,273,810.7 cps	32,861.6 cps	6.0 cps	11.5 cps	43.0 cps	2,500.3 cps	15,669.9 cps	2,050.2 cps	560.0 cps	460.0 cps
Intensity per Run 3	14,302,827.3 cps	32,562.4 cps	6.0 cps	7.5 cps	53.5 cps	2,380.2 cps	15,469.7 cps	2,040.2 cps	650.0 cps	560.0 cps
Intensity RSD	0.6 %	0.7 %	4.7 %	21.1 %	12.4 %	3.1 %	8.9 %	4.5 %	23.6 %	15.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.710 ppb		0.969 ppm	-3.175 ppb	-14.737 ppb	-9.990 ppb	-9.606 ppb	98.820 %	97.765 %	0.032 ppb
Concentration per Run 1	0.532 ppb		0.941 ppm	-3.886 ppb	-11.404 ppb	-10.465 ppb	-9.281 ppb	98.224 %	98.246 %	0.029 ppb
Concentration per Run 2	0.541 ppb		0.976 ppm	-2.905 ppb	-13.890 ppb	-9.881 ppb	-9.048 ppb	98.048 %	97.898 %	0.039 ppb
Concentration per Run 3	1.058 ppb		0.990 ppm	-2.735 ppb	-18.917 ppb	-9.624 ppb	-10.490 ppb	100.189 %	97.149 %	0.029 ppb
Concentration RSD	42.4 %		2.6 %	19.6 %	26.0 %	4.3 %	8.1 %	1.2 %	0.6 %	19.0 %
Intensity average	720 cps	2,810 cps	6,514,749 cps	18,764 cps	17 cps	41,362 cps	273 cps	6,801,802 cps	287,020 cps	13 cps
Intensity per Run 1	670.0 cps	2,820.3 cps	6,362,683.0 cps	18,273.5 cps	30.0 cps	39,863.9 cps	290.0 cps	6,760,768.4 cps	288,435.2 cps	12.0 cps
Intensity per Run 2	670.0 cps	2,720.3 cps	6,569,660.5 cps	19,014.6 cps	20.0 cps	41,328.4 cps	300.0 cps	6,748,628.7 cps	287,411.3 cps	16.0 cps
Intensity per Run 3	820.0 cps	2,890.4 cps	6,611,904.9 cps	19,004.5 cps	0.0 cps	42,894.0 cps	230.0 cps	6,896,009.4 cps	285,214.3 cps	12.0 cps
Intensity RSD	12.0 %	3.0 %	2.0 %	2.3 %	91.7 %	3.7 %	13.9 %	1.2 %	0.6 %	17.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.036 ppb	-0.087 ppb	-0.131 ppb	N/A	-0.118 ppb	-0.727 ppb	-0.617 ppb	0.000 ppb	-0.817 ppb	-0.834 ppb
Concentration per Run 1	-0.034 ppb	-0.085 ppb	-0.127 ppb	N/A	-0.121 ppb	-0.690 ppb	-0.579 ppb	0.001 ppb	-0.821 ppb	-0.826 ppb
Concentration per Run 2	-0.036 ppb	-0.086 ppb	-0.157 ppb	N/A	-0.120 ppb	-0.720 ppb	-0.689 ppb	0.000 ppb	-0.812 ppb	-0.839 ppb
Concentration per Run 3	-0.038 ppb	-0.091 ppb	-0.108 ppb	N/A	-0.114 ppb	-0.770 ppb	-0.584 ppb	-0.001 ppb	-0.817 ppb	-0.837 ppb
Concentration RSD	5.4 %	3.3 %	18.9 %	N/A	3.0 %	5.6 %	10.1 %	671.8 %	0.5 %	0.9 %
Intensity average	1,199 cps	728 cps	928 cps	930 cps	323 cps	24,598 cps	733 cps	265 cps	1,440 cps	221 cps
Intensity per Run 1	1,231.6 cps	776.0 cps	940.0 cps	860.0 cps	284.0 cps	25,386.3 cps	764.0 cps	296.0 cps	1,380.1 cps	236.0 cps
Intensity per Run 2	1,198.5 cps	752.0 cps	856.0 cps	950.0 cps	300.0 cps	24,785.1 cps	684.0 cps	280.0 cps	1,496.1 cps	212.0 cps
Intensity per Run 3	1,167.5 cps	656.0 cps	988.0 cps	980.0 cps	384.0 cps	23,622.5 cps	752.0 cps	220.0 cps	1,444.1 cps	216.0 cps
Intensity RSD	2.7 %	8.7 %	7.2 %	6.7 %	16.6 %	3.6 %	5.9 %	15.1 %	4.0 %	5.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.098 ppb	-0.084 ppb	1.271 ppb	1.400 ppb	1.250 ppb		-0.150 ppb	N/A	0.010 ppb	
Concentration per Run 1	-0.098 ppb	-0.082 ppb	1.110 ppb	1.292 ppb	1.135 ppb		-0.186 ppb	N/A	0.023 ppb	
Concentration per Run 2	-0.096 ppb	-0.086 ppb	1.288 ppb	1.258 ppb	1.300 ppb		-0.099 ppb	N/A	0.052 ppb	
Concentration per Run 3	-0.100 ppb	-0.084 ppb	1.415 ppb	1.649 ppb	1.314 ppb		-0.165 ppb	N/A	-0.044 ppb	
Concentration RSD	1.7 %	2.6 %	12.0 %	15.5 %	8.0 %		30.4 %	N/A	473.4 %	
Intensity average	1,220 cps	653 cps	23,008 cps	3,637 cps	17,098 cps	7 cps	3,524 cps	40 cps	-18 cps	2,159 cps
Intensity per Run 1	1,216.1 cps	688.0 cps	22,087.5 cps	3,516.5 cps	16,482.9 cps	7.0 cps	3,419.1 cps	60.0 cps	-13.1 cps	2,180.2 cps
Intensity per Run 2	1,272.1 cps	620.0 cps	23,161.5 cps	3,496.5 cps	17,392.1 cps	7.0 cps	3,699.1 cps	20.0 cps	-3.2 cps	2,178.2 cps
Intensity per Run 3	1,172.1 cps	652.0 cps	23,774.7 cps	3,896.6 cps	17,420.2 cps	7.0 cps	3,454.2 cps	40.0 cps	-36.4 cps	2,118.2 cps
Intensity RSD	4.1 %	5.2 %	3.7 %	6.2 %	3.1 %	0.0 %	4.3 %	50.0 %	97.3 %	1.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.896 ppb		97.518 %	0.162 ppb	0.154 ppb	0.155 ppb	0.159 ppb	0.157 ppb	0.020 ppm
Concentration per Run 1		1.642 ppb		96.639 %	0.140 ppb	0.143 ppb	0.133 ppb	0.135 ppb	0.133 ppb	0.020 ppm
Concentration per Run 2		0.974 ppb		97.846 %	0.152 ppb	0.145 ppb	0.157 ppb	0.165 ppb	0.157 ppb	0.020 ppm
Concentration per Run 3		0.071 ppb		98.070 %	0.193 ppb	0.174 ppb	0.176 ppb	0.179 ppb	0.181 ppb	0.020 ppm
Concentration RSD		88.1 %		0.8 %	17.1 %	11.5 %	14.1 %	14.1 %	15.5 %	0.3 %
Intensity average	5,354 cps	-335 cps	5,582 cps	570,269 cps	2,098 cps	3,462 cps	3,881 cps	2,360 cps	6,100 cps	1,812,872 cps
Intensity per Run 1	5,216.2 cps	-197.1 cps	5,292.2 cps	565,126.9 cps	1,848.1 cps	3,220.4 cps	3,364.5 cps	2,024.2 cps	5,217.1 cps	1,815,738.0 cps
Intensity per Run 2	5,466.4 cps	-321.5 cps	5,788.6 cps	572,182.7 cps	1,996.2 cps	3,284.4 cps	3,920.6 cps	2,436.2 cps	6,121.5 cps	1,807,032.1 cps
Intensity per Run 3	5,380.2 cps	-486.5 cps	5,665.4 cps	573,497.4 cps	2,448.2 cps	3,880.6 cps	4,356.8 cps	2,620.3 cps	6,961.9 cps	1,815,844.7 cps
Intensity RSD	2.4 %	43.3 %	4.6 %	0.8 %	14.9 %	10.5 %	12.8 %	12.9 %	14.3 %	0.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.011 ppb	0.002 ppb	0.000 ppb	0.002 ppb	0.004 ppb	0.004 ppb	99.885 %	0.055 ppb	0.169 ppb
Concentration per Run 1		0.029 ppb	0.002 ppb	-0.002 ppb	0.002 ppb	0.006 ppb	0.006 ppb	100.288 %	0.046 ppb	0.149 ppb
Concentration per Run 2		0.002 ppb	0.001 ppb	-0.002 ppb	0.002 ppb	0.002 ppb	0.005 ppb	100.068 %	0.053 ppb	0.166 ppb
Concentration per Run 3		0.002 ppb	0.002 ppb	0.003 ppb	0.002 ppb	0.005 ppb	0.003 ppb	99.300 %	0.067 ppb	0.192 ppb
Concentration RSD		141.8 %	21.6 %	14,663.9 %	2.2 %	47.5 %	29.2 %	0.5 %	19.9 %	12.6 %
Intensity average	601 cps	109 cps	249 cps	1 cps	203 cps	65 cps	189 cps	894,255 cps	2,250 cps	5,076 cps
Intensity per Run 1	608.0 cps	128.0 cps	276.0 cps	0.0 cps	204.0 cps	88.0 cps	230.1 cps	897,858.4 cps	2,008.2 cps	4,548.8 cps
Intensity per Run 2	596.0 cps	100.0 cps	212.0 cps	0.0 cps	200.0 cps	36.0 cps	193.4 cps	895,891.8 cps	2,184.2 cps	5,005.0 cps
Intensity per Run 3	600.0 cps	100.0 cps	260.0 cps	4.0 cps	204.0 cps	72.0 cps	143.4 cps	889,015.4 cps	2,556.3 cps	5,673.3 cps
Intensity RSD	1.0 %	14.8 %	13.4 %	173.2 %	1.1 %	40.8 %	23.0 %	0.5 %	12.4 %	11.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.169 ppb	-0.007 ppb	-0.007 ppb			99.023 %			0.014 ppm	0.039 ppb
Concentration per Run 1	0.148 ppb	-0.009 ppb	-0.008 ppb			98.971 %			0.014 ppm	0.038 ppb
Concentration per Run 2	0.165 ppb	-0.008 ppb	-0.006 ppb			100.518 %			0.014 ppm	0.041 ppb
Concentration per Run 3	0.194 ppb	-0.003 ppb	-0.006 ppb			97.580 %			0.014 ppm	0.038 ppb
Concentration RSD	13.7 %	46.2 %	14.6 %			1.5 %			1.2 %	3.8 %
Intensity average	4,070 cps	119 cps	204 cps	1 cps	12 cps	3,112,579 cps	39 cps	13 cps	3,245,582 cps	4,698 cps
Intensity per Run 1	3,612.5 cps	104.0 cps	192.0 cps	0.0 cps	16.0 cps	3,110,944.9 cps	36.0 cps	12.0 cps	3,206,052.7 cps	4,621.9 cps
Intensity per Run 2	4,004.7 cps	112.0 cps	216.0 cps	0.0 cps	8.0 cps	3,159,576.2 cps	36.0 cps	16.0 cps	3,282,408.5 cps	4,807.9 cps
Intensity per Run 3	4,592.9 cps	140.0 cps	204.0 cps	4.0 cps	12.0 cps	3,067,215.6 cps	44.0 cps	12.0 cps	3,248,283.7 cps	4,662.9 cps
Intensity RSD	12.1 %	15.9 %	5.9 %	173.2 %	33.3 %	1.5 %	11.9 %	17.3 %	1.2 %	2.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.039 ppb	0.009 ppb	0.010 ppb	0.010 ppb	99.673 %
Concentration per Run 1	0.038 ppb	0.010 ppb	0.009 ppb	0.011 ppb	100.132 %
Concentration per Run 2	0.041 ppb	0.009 ppb	0.009 ppb	0.009 ppb	98.389 %
Concentration per Run 3	0.037 ppb	0.008 ppb	0.010 ppb	0.009 ppb	100.498 %
Concentration RSD	5.1 %	9.2 %	5.4 %	11.2 %	1.1 %
Intensity average	11,406 cps	1,428 cps	1,276 cps	5,878 cps	2,554,559 cps
Intensity per Run 1	11,316.1 cps	1,501.1 cps	1,260.1 cps	6,269.7 cps	2,566,324.6 cps
Intensity per Run 2	11,753.5 cps	1,400.1 cps	1,244.1 cps	5,664.5 cps	2,521,651.5 cps
Intensity per Run 3	11,147.0 cps	1,382.1 cps	1,324.1 cps	5,698.5 cps	2,575,699.7 cps
Intensity RSD	2.7 %	4.5 %	3.3 %	5.8 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33550-002 Analysis: 10/30/2019 12:29:31 Sample Type QC
Comment LCS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.848 %	100.751 %	100.385 ppb	100.079 ppb	99.309 ppb	N/A	1,002.078 ppb	1,018.088 ppb	1,026.445 ppb	1,008.733 ppb
Concentration per Run 1	99.246 %	101.814 %	97.247 ppb	100.677 ppb	96.731 ppb	N/A	994.484 ppb	986.711 ppb	1,010.093 ppb	988.806 ppb
Concentration per Run 2	99.868 %	100.448 %	100.647 ppb	101.028 ppb	99.884 ppb	N/A	976.253 ppb	1,010.704 ppb	1,026.016 ppb	1,007.018 ppb
Concentration per Run 3	100.430 %	99.992 %	103.259 ppb	98.531 ppb	101.312 ppb	N/A	1,035.497 ppb	1,056.848 ppb	1,043.227 ppb	1,030.373 ppb
Recovery Percentage 1			100.385 %		0.000 %		100.208 %	101.809 %	102.644 %	100.873 %
Concentration RSD	0.6 %	0.9 %	3.0 %	1.4 %	2.4 %	N/A	3.0 %	3.5 %	1.6 %	2.1 %
Intensity average	13,964,072 cps	32,440 cps	16,063 cps	1,705 cps	10,012 cps	2,254 cps	1,961,176 cps	902,048 cps	191,143 cps	249,757 cps
Intensity per Run 1	13,879,946.4 cps	32,781.9 cps	15,728.4 cps	1,731.6 cps	9,842.4 cps	2,130.2 cps	1,957,377.0 cps	878,999.0 cps	189,042.2 cps	245,985.2 cps
Intensity per Run 2	13,966,862.5 cps	32,342.3 cps	16,059.8 cps	1,718.1 cps	10,054.0 cps	2,130.2 cps	1,914,049.8 cps	897,199.6 cps	191,457.1 cps	249,918.8 cps
Intensity per Run 3	14,045,406.8 cps	32,195.4 cps	16,401.8 cps	1,666.6 cps	10,139.6 cps	2,500.3 cps	2,012,102.6 cps	929,944.3 cps	192,929.5 cps	253,368.0 cps
Intensity RSD	0.6 %	0.9 %	2.1 %	2.0 %	1.5 %	9.5 %	2.5 %	2.9 %	1.0 %	1.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	101.149 ppb		0.973 ppm	1,022.140 ppb	1,962.015 ppb	1,082.489 ppb	1,531.213 ppb	95.112 %	97.531 %	101.122 ppb
Concentration per Run 1	95.244 ppb		0.937 ppm	1,001.613 ppb	1,936.600 ppb	1,067.931 ppb	1,486.599 ppb	96.256 %	97.413 %	98.919 ppb
Concentration per Run 2	102.321 ppb		0.980 ppm	1,016.870 ppb	1,866.882 ppb	1,098.941 ppb	1,546.180 ppb	93.673 %	98.257 %	100.322 ppb
Concentration per Run 3	105.883 ppb		1.003 ppm	1,047.939 ppb	2,082.562 ppb	1,080.594 ppb	1,560.861 ppb	95.408 %	96.923 %	104.127 ppb
Recovery Percentage 1	101.149 %			102.214 %		108.249 %	153.121 %			101.122 %
Concentration RSD	5.4 %		3.4 %	2.3 %	5.6 %	1.4 %	2.6 %	1.4 %	0.7 %	2.7 %
Intensity average	30,962 cps	14,775 cps	6,513,020 cps	861,050 cps	7,846 cps	2,805,352 cps	72,906 cps	6,546,597 cps	286,334 cps	37,526 cps
Intensity per Run 1	29,314.5 cps	14,538.5 cps	6,281,360.8 cps	844,792.4 cps	7,742.5 cps	2,800,797.9 cps	70,740.6 cps	6,625,322.8 cps	285,989.0 cps	36,673.9 cps
Intensity per Run 2	31,399.6 cps	14,678.7 cps	6,589,873.1 cps	861,736.4 cps	7,522.3 cps	2,805,442.0 cps	74,140.0 cps	6,447,524.8 cps	288,465.1 cps	37,504.2 cps
Intensity per Run 3	32,171.4 cps	15,109.2 cps	6,667,826.5 cps	876,620.1 cps	8,272.8 cps	2,809,816.8 cps	73,838.8 cps	6,566,943.4 cps	284,548.7 cps	38,398.9 cps
Intensity RSD	4.8 %	2.0 %	3.1 %	1.8 %	4.9 %	0.2 %	2.6 %	1.4 %	0.7 %	2.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	98.499 ppb	100.596 ppb	104.783 ppb	N/A	103.194 ppb	1,029.201 ppb	981.689 ppb	104.140 ppb	110.625 ppb	110.591 ppb
Concentration per Run 1	95.716 ppb	98.513 ppb	100.174 ppb	N/A	100.494 ppb	1,006.557 ppb	942.702 ppb	100.895 ppb	106.939 ppb	106.940 ppb
Concentration per Run 2	97.945 ppb	98.913 ppb	105.986 ppb	N/A	103.723 ppb	1,047.836 ppb	997.299 ppb	104.464 ppb	111.871 ppb	111.307 ppb
Concentration per Run 3	101.837 ppb	104.363 ppb	108.189 ppb	N/A	105.365 ppb	1,033.210 ppb	1,005.065 ppb	107.060 ppb	113.066 ppb	113.525 ppb
Recovery Percentage 1	98.499 %	100.596 %			103.194 %		98.169 %	104.140 %	110.625 %	
Concentration RSD	3.1 %	3.2 %	4.0 %	N/A	2.4 %	2.0 %	3.5 %	3.0 %	2.9 %	3.0 %
Intensity average	1,287,496 cps	2,063,519 cps	293,595 cps	299,341 cps	1,595,050 cps	21,195,667 cps	686,080 cps	5,035,756 cps	1,279,487 cps	197,898 cps
Intensity per Run 1	1,249,749.1 cps	2,018,630.2 cps	280,637.7 cps	295,301.3 cps	1,553,120.8 cps	20,727,572.8 cps	658,080.9 cps	4,873,192.0 cps	1,241,310.2 cps	191,530.1 cps
Intensity per Run 2	1,289,880.2 cps	2,044,353.1 cps	299,040.6 cps	296,368.4 cps	1,614,302.6 cps	21,725,330.9 cps	702,153.3 cps	5,089,214.2 cps	1,300,323.2 cps	200,472.8 cps
Intensity per Run 3	1,322,860.1 cps	2,127,573.1 cps	301,108.0 cps	306,354.7 cps	1,617,725.3 cps	21,134,096.7 cps	698,005.3 cps	5,144,860.9 cps	1,296,826.2 cps	201,691.6 cps
Intensity RSD	2.8 %	2.8 %	3.8 %	2.0 %	2.3 %	2.4 %	3.5 %	2.8 %	2.6 %	2.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	112.241 ppb	112.474 ppb	112.285 ppb	112.191 ppb	110.378 ppb		106.721 ppb	N/A	103.362 ppb	
Concentration per Run 1	109.710 ppb	108.609 ppb	113.442 ppb	109.279 ppb	107.109 ppb		107.151 ppb	N/A	99.036 ppb	
Concentration per Run 2	111.303 ppb	113.005 ppb	109.098 ppb	112.365 ppb	109.615 ppb		104.506 ppb	N/A	103.356 ppb	
Concentration per Run 3	115.709 ppb	115.807 ppb	114.314 ppb	114.928 ppb	114.409 ppb		108.506 ppb	N/A	107.694 ppb	
Recovery Percentage 1	112.241 %	112.474 %	112.285 %				106.721 %	0.000 %	103.362 %	
Concentration RSD	2.8 %	3.2 %	2.5 %	2.5 %	3.4 %		1.9 %	N/A	4.2 %	
Intensity average	3,264,068 cps	1,696,491 cps	703,428 cps	119,737 cps	564,215 cps	30 cps	346,269 cps	10,568 cps	35,968 cps	1,947 cps
Intensity per Run 1	3,192,835.6 cps	1,636,353.0 cps	689,380.3 cps	116,811.9 cps	548,500.9 cps	30.0 cps	337,263.3 cps	10,234.2 cps	34,539.9 cps	1,892.1 cps
Intensity per Run 2	3,257,960.8 cps	1,717,235.2 cps	698,894.1 cps	120,672.2 cps	563,908.2 cps	34.0 cps	346,569.9 cps	10,464.5 cps	36,172.4 cps	1,967.2 cps
Intensity per Run 3	3,341,409.0 cps	1,735,884.3 cps	722,011.1 cps	121,726.3 cps	580,237.0 cps	27.0 cps	354,975.1 cps	11,004.9 cps	37,192.0 cps	1,982.2 cps
Intensity RSD	2.3 %	3.1 %	2.4 %	2.2 %	2.8 %	11.6 %	2.6 %	3.7 %	3.7 %	2.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		98.922 ppb		97.846 %	98.178 ppb	95.736 ppb	94.936 ppb	95.354 ppb	96.926 ppb	0.020 ppm
Concentration per Run 1		98.289 ppb		98.163 %	95.586 ppb	93.183 ppb	92.844 ppb	92.103 ppb	94.542 ppb	0.020 ppm
Concentration per Run 2		98.466 ppb		98.334 %	98.096 ppb	94.750 ppb	94.511 ppb	95.959 ppb	96.570 ppb	0.020 ppm
Concentration per Run 3		100.010 ppb		97.042 %	100.852 ppb	99.275 ppb	97.454 ppb	98.001 ppb	99.667 ppb	0.020 ppm
Recovery Percentage 1		98.922 %						95.354 %		0.000 %
Concentration RSD		1.0 %		0.7 %	2.7 %	3.3 %	2.5 %	3.1 %	2.7 %	1.5 %
Intensity average	24,013 cps	17,509 cps	6,239 cps	572,186 cps	1,078,699 cps	1,908,387 cps	2,087,550 cps	1,253,904 cps	3,384,290 cps	1,793,850 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	24,651.4 cps	16,871.3 cps	7,506.4 cps	574,037.6 cps	1,046,955.2 cps	1,849,396.7 cps	2,029,954.1 cps	1,202,633.1 cps	3,273,740.7 cps	1,763,457.6 cps
Intensity per Run 2	21,793.0 cps	17,803.5 cps	4,018.7 cps	575,040.5 cps	1,086,644.0 cps	1,905,502.9 cps	2,097,896.2 cps	1,274,528.3 cps	3,408,008.5 cps	1,812,784.4 cps
Intensity per Run 3	25,593.3 cps	17,853.6 cps	7,192.2 cps	567,481.0 cps	1,102,497.3 cps	1,970,260.1 cps	2,134,800.4 cps	1,284,549.8 cps	3,471,121.4 cps	1,805,308.8 cps
Intensity RSD	8.2 %	3.2 %	30.9 %	0.7 %	2.7 %	3.2 %	2.5 %	3.6 %	3.0 %	1.5 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		103.850 ppb	101.768 ppb	104.535 ppb	101.130 ppb	101.960 ppb	101.919 ppb	97.476 %	99.841 ppb	102.352 ppb
Concentration per Run 1		102.037 ppb	101.110 ppb	102.391 ppb	99.187 ppb	99.695 ppb	99.874 ppb	94.551 %	99.281 ppb	101.360 ppb
Concentration per Run 2		104.408 ppb	99.484 ppb	102.800 ppb	100.545 ppb	99.949 ppb	102.184 ppb	99.591 %	97.812 ppb	101.638 ppb
Concentration per Run 3		105.103 ppb	104.709 ppb	108.415 ppb	103.659 ppb	106.237 ppb	103.699 ppb	98.287 %	102.431 ppb	104.058 ppb
Recovery Percentage 1			101.768 %		101.130 %		101.919 %		99.841 %	102.352 %
Concentration RSD		1.5 %	2.6 %	3.2 %	2.3 %	3.6 %	1.9 %	2.7 %	2.4 %	1.5 %
Intensity average	1,025 cps	106,805 cps	7,949,610 cps	82,705 cps	7,796,518 cps	1,307,323 cps	3,228,716 cps	872,685 cps	2,601,580 cps	2,801,796 cps
Intensity per Run 1	1,008.0 cps	102,989.1 cps	7,661,338.7 cps	79,296.8 cps	7,475,003.3 cps	1,246,306.3 cps	3,068,167.9 cps	846,496.9 cps	2,512,123.5 cps	2,696,982.7 cps
Intensity per Run 2	1,028.0 cps	109,070.3 cps	7,939,970.2 cps	82,721.1 cps	7,888,401.5 cps	1,305,846.0 cps	3,306,441.9 cps	891,617.2 cps	2,602,286.2 cps	2,838,495.9 cps
Intensity per Run 3	1,040.0 cps	108,356.0 cps	8,247,520.3 cps	86,095.9 cps	8,026,150.0 cps	1,369,815.5 cps	3,311,536.9 cps	879,942.0 cps	2,690,329.3 cps	2,869,909.6 cps
Intensity RSD	1.6 %	3.1 %	3.7 %	4.1 %	3.7 %	4.7 %	4.3 %	2.7 %	3.4 %	3.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	103.961 ppb	99.628 ppb	99.908 ppb			98.967 %			0.014 ppm	97.924 ppb
Concentration per Run 1	101.867 ppb	100.450 ppb	98.781 ppb			97.507 %			0.014 ppm	95.689 ppb
Concentration per Run 2	102.672 ppb	98.058 ppb	99.566 ppb			100.117 %			0.014 ppm	98.807 ppb
Concentration per Run 3	107.344 ppb	100.378 ppb	101.377 ppb			99.278 %			0.014 ppm	99.275 ppb
Recovery Percentage 1	103.961 %	99.628 %	99.908 %							97.924 %
Concentration RSD	2.8 %	1.4 %	1.3 %			1.3 %			1.7 %	2.0 %
Intensity average	2,277,343 cps	645,015 cps	1,179,636 cps	25 cps	28 cps	3,110,828 cps	83 cps	32 cps	3,168,461 cps	8,944,670 cps
Intensity per Run 1	2,170,379.1 cps	635,447.2 cps	1,140,180.8 cps	24.0 cps	12.0 cps	3,064,920.2 cps	116.0 cps	32.0 cps	3,105,536.7 cps	8,624,560.3 cps
Intensity per Run 2	2,293,315.9 cps	645,780.9 cps	1,195,028.2 cps	28.0 cps	48.0 cps	3,146,971.0 cps	44.0 cps	32.0 cps	3,194,031.9 cps	9,025,138.3 cps
Intensity per Run 3	2,368,333.5 cps	653,818.3 cps	1,203,697.7 cps	24.0 cps	24.0 cps	3,120,593.3 cps	88.0 cps	32.0 cps	3,205,815.5 cps	9,184,310.6 cps
Intensity RSD	4.4 %	1.4 %	2.9 %	9.1 %	65.5 %	1.3 %	43.9 %	0.0 %	1.7 %	3.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	97.149 ppb	99.350 ppb	98.674 ppb	99.303 ppb	99.581 %
Concentration per Run 1	94.991 ppb	99.032 ppb	99.029 ppb	100.102 ppb	98.297 %
Concentration per Run 2	97.001 ppb	99.835 ppb	97.061 ppb	97.803 ppb	99.439 %
Concentration per Run 3	99.457 ppb	99.182 ppb	99.933 ppb	100.003 ppb	101.006 %
Recovery Percentage 1	97.149 %	99.350 %	98.674 %	99.303 %	
Concentration RSD	2.3 %	0.4 %	1.5 %	1.3 %	1.4 %
Intensity average	21,563,891 cps	7,244,817 cps	6,322,511 cps	29,288,013 cps	2,552,192 cps
Intensity per Run 1	20,808,655.3 cps	7,127,709.4 cps	6,262,695.4 cps	29,143,039.4 cps	2,519,296.4 cps
Intensity per Run 2	21,495,770.8 cps	7,275,472.6 cps	6,213,227.6 cps	28,804,667.5 cps	2,548,565.1 cps
Intensity per Run 3	22,387,247.8 cps	7,331,270.3 cps	6,491,609.4 cps	29,916,332.0 cps	2,588,714.4 cps
Intensity RSD	3.7 %	1.5 %	2.3 %	1.9 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24020-001 Analysis: 10/30/2019 12:35:34 Sample Type UNKNOWN
Comment SW-1 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	97.135 %	97.736 %	0.069 ppb	77.599 ppb	80.222 ppb	N/A	11,706.605 ppb	3,575.337 ppb	3,608.869 ppb
Concentration per Run 1	96.092 %	97.433 %	0.078 ppb	76.804 ppb	78.738 ppb	N/A	11,648.906 ppb	3,579.108 ppb	3,609.218 ppb
Concentration per Run 2	97.530 %	98.463 %	0.061 ppb	75.748 ppb	79.773 ppb	N/A	11,684.188 ppb	3,492.436 ppb	3,598.433 ppb
Concentration per Run 3	97.784 %	97.311 %	0.069 ppb	80.246 ppb	82.155 ppb	N/A	11,786.720 ppb	3,654.467 ppb	3,618.956 ppb
Concentration RSD	0.9 %	0.6 %	12.3 %	3.0 %	2.2 %	N/A	0.6 %	2.3 %	0.3 %
Intensity average	13,584,686 cps	31,469 cps	14 cps	1,289 cps	7,894 cps	3,437 cps	22,487,388 cps	3,131,520 cps	664,954 cps
Intensity per Run 1	13,438,844.9 cps	31,371.3 cps	15.5 cps	1,270.6 cps	7,711.9 cps	3,360.5 cps	22,185,198.8 cps	3,107,270.5 cps	658,916.5 cps
Intensity per Run 2	13,639,861.2 cps	31,703.2 cps	13.0 cps	1,268.6 cps	7,912.5 cps	3,390.5 cps	22,651,046.7 cps	3,087,704.5 cps	669,286.8 cps
Intensity per Run 3	13,675,352.8 cps	31,332.2 cps	14.0 cps	1,328.6 cps	8,057.6 cps	3,560.5 cps	22,625,918.2 cps	3,199,585.4 cps	666,659.7 cps
Intensity RSD	0.9 %	0.6 %	8.9 %	2.6 %	2.2 %	3.1 %	1.2 %	1.9 %	0.8 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,546.138 ppb	679.124 ppb		1.037 ppm	3,202.924 ppb	69,489.971 ppb	74,218.289 ppb	69,298.626 ppb	95.443 %
Concentration per Run 1	3,535.705 ppb	688.595 ppb		1.037 ppm	3,235.404 ppb	70,692.141 ppb	77,420.137 ppb	69,489.694 ppb	94.961 %
Concentration per Run 2	3,550.144 ppb	668.968 ppb		1.034 ppm	3,162.673 ppb	68,279.627 ppb	72,036.825 ppb	69,607.232 ppb	94.863 %
Concentration per Run 3	3,552.566 ppb	679.808 ppb		1.041 ppm	3,210.694 ppb	69,498.146 ppb	73,197.904 ppb	68,798.952 ppb	96.504 %
Concentration RSD	0.3 %	1.4 %		0.3 %	1.2 %	1.7 %	3.8 %	0.6 %	1.0 %
Intensity average	869,856 cps	203,690 cps	46,704 cps	6,961,112 cps	2,671,722 cps	278,586 cps	188,451,756 cps	3,309,942 cps	6,569,330 cps
Intensity per Run 1	859,045.2 cps	204,514.0 cps	46,496.6 cps	6,872,647.9 cps	2,662,069.4 cps	279,227.4 cps	195,571,198.9 cps	3,268,638.5 cps	6,536,185.1 cps
Intensity per Run 2	879,122.3 cps	202,602.1 cps	46,737.5 cps	7,013,530.0 cps	2,667,322.2 cps	276,863.2 cps	181,864,565.2 cps	3,362,529.7 cps	6,529,433.3 cps
Intensity per Run 3	871,400.6 cps	203,952.5 cps	46,878.1 cps	6,997,157.8 cps	2,685,774.6 cps	279,666.0 cps	187,919,504.1 cps	3,298,656.8 cps	6,642,372.8 cps
Intensity RSD	1.2 %	0.5 %	0.4 %	1.1 %	0.5 %	0.5 %	3.6 %	1.4 %	1.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	98.913 %	6.806 ppb	3.252 ppb	2.923 ppb	2.874 ppb	N/A	53.626 ppb	1,440.841 ppb	1,370.746 ppb
Concentration per Run 1	97.378 %	7.252 ppb	3.258 ppb	2.871 ppb	2.909 ppb	N/A	54.065 ppb	1,455.384 ppb	1,388.294 ppb
Concentration per Run 2	100.049 %	6.818 ppb	3.223 ppb	2.913 ppb	2.732 ppb	N/A	52.552 ppb	1,426.163 ppb	1,356.980 ppb
Concentration per Run 3	99.312 %	6.347 ppb	3.275 ppb	2.986 ppb	2.979 ppb	N/A	54.261 ppb	1,440.976 ppb	1,366.965 ppb
Concentration RSD	1.4 %	6.7 %	0.8 %	2.0 %	4.4 %	N/A	1.7 %	1.0 %	1.2 %
Intensity average	290,392 cps	2,562 cps	44,744 cps	63,307 cps	9,438 cps	9,477 cps	841,516 cps	30,069,557 cps	970,981 cps
Intensity per Run 1	285,886.7 cps	2,688.3 cps	44,130.6 cps	61,237.7 cps	9,391.5 cps	9,013.3 cps	835,123.1 cps	29,897,267.9 cps	968,243.9 cps
Intensity per Run 2	293,726.1 cps	2,596.3 cps	44,872.8 cps	63,810.6 cps	9,135.4 cps	9,603.8 cps	833,252.5 cps	30,068,588.7 cps	972,382.8 cps
Intensity per Run 3	291,563.3 cps	2,400.2 cps	45,229.7 cps	64,872.0 cps	9,787.8 cps	9,813.9 cps	856,171.1 cps	30,242,813.2 cps	972,316.6 cps
Intensity RSD	1.4 %	5.7 %	1.3 %	3.0 %	3.5 %	4.4 %	1.5 %	0.6 %	0.2 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.233 ppb	0.438 ppb	0.410 ppb	1.232 ppb	1.162 ppb	3.801 ppb	5.311 ppb	4.584 ppb	
Concentration per Run 1	0.230 ppb	0.438 ppb	0.408 ppb	1.222 ppb	1.165 ppb	3.723 ppb	5.368 ppb	4.690 ppb	
Concentration per Run 2	0.232 ppb	0.416 ppb	0.436 ppb	1.236 ppb	1.172 ppb	3.856 ppb	5.330 ppb	4.463 ppb	
Concentration per Run 3	0.237 ppb	0.461 ppb	0.385 ppb	1.237 ppb	1.149 ppb	3.823 ppb	5.235 ppb	4.599 ppb	
Concentration RSD	1.5 %	5.1 %	6.2 %	0.7 %	1.0 %	1.8 %	1.3 %	2.5 %	
Intensity average	11,673 cps	16,053 cps	2,462 cps	40,407 cps	19,697 cps	35,821 cps	7,844 cps	34,288 cps	305 cps
Intensity per Run 1	11,349.2 cps	15,786.0 cps	2,420.2 cps	39,474.3 cps	19,435.2 cps	35,101.2 cps	7,778.4 cps	34,275.1 cps	321.0 cps
Intensity per Run 2	11,757.5 cps	15,890.1 cps	2,532.3 cps	40,918.9 cps	20,076.2 cps	36,228.5 cps	7,934.5 cps	33,970.2 cps	283.0 cps
Intensity per Run 3	11,913.7 cps	16,482.9 cps	2,432.2 cps	40,826.7 cps	19,579.4 cps	36,132.2 cps	7,818.5 cps	34,619.9 cps	310.0 cps
Intensity RSD	2.5 %	2.3 %	2.5 %	2.0 %	1.7 %	1.7 %	1.0 %	0.9 %	6.4 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.448 ppb	N/A	0.304 ppb			0.750 ppb		99.175 %	1.262 ppb
Concentration per Run 1	1.291 ppb	N/A	0.275 ppb			0.986 ppb		97.548 %	1.191 ppb
Concentration per Run 2	1.730 ppb	N/A	0.289 ppb			-0.150 ppb		99.789 %	1.266 ppb
Concentration per Run 3	1.322 ppb	N/A	0.349 ppb			1.414 ppb		100.188 %	1.328 ppb
Concentration RSD	16.9 %	N/A	13.0 %			107.8 %		1.4 %	5.4 %
Intensity average	8,079 cps	180 cps	86 cps	14,222 cps	5,294 cps	-334 cps	5,454 cps	579,955 cps	14,183 cps
Intensity per Run 1	7,546.9 cps	200.0 cps	74.3 cps	13,946.8 cps	4,781.0 cps	-291.2 cps	4,952.1 cps	570,439.7 cps	13,203.0 cps
Intensity per Run 2	8,954.3 cps	210.0 cps	81.1 cps	14,247.1 cps	6,619.9 cps	-489.5 cps	6,700.0 cps	583,546.9 cps	14,300.2 cps
Intensity per Run 3	7,736.3 cps	130.0 cps	102.6 cps	14,473.4 cps	4,479.9 cps	-221.1 cps	4,711.0 cps	585,878.5 cps	15,045.1 cps
Intensity RSD	9.5 %	24.2 %	17.2 %	1.9 %	21.9 %	41.7 %	19.9 %	1.4 %	6.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.805 ppb	0.858 ppb	0.825 ppb	0.829 ppb	0.018 ppm		0.075 ppb	0.007 ppb	0.035 ppb
Concentration per Run 1	0.799 ppb	0.826 ppb	0.788 ppb	0.802 ppb	0.019 ppm		0.105 ppb	0.009 ppb	0.036 ppb
Concentration per Run 2	0.787 ppb	0.840 ppb	0.838 ppb	0.830 ppb	0.018 ppm		0.054 ppb	0.007 ppb	0.030 ppb
Concentration per Run 3	0.828 ppb	0.908 ppb	0.849 ppb	0.856 ppb	0.018 ppm		0.066 ppb	0.006 ppb	0.040 ppb
Concentration RSD	2.6 %	5.1 %	3.9 %	3.3 %	0.8 %		35.5 %	23.2 %	14.8 %
Intensity average	16,381 cps	19,215 cps	11,010 cps	29,220 cps	1,647,661 cps	917 cps	168 cps	611 cps	28 cps
Intensity per Run 1	16,030.3 cps	18,245.4 cps	10,380.3 cps	27,883.1 cps	1,662,236.7 cps	944.0 cps	196.0 cps	740.0 cps	28.0 cps
Intensity per Run 2	16,118.4 cps	18,914.4 cps	11,233.1 cps	29,374.6 cps	1,644,310.1 cps	908.0 cps	148.0 cps	580.0 cps	24.0 cps
Intensity per Run 3	16,995.6 cps	20,484.8 cps	11,417.2 cps	30,401.0 cps	1,636,436.4 cps	900.0 cps	160.0 cps	512.0 cps	32.0 cps
Intensity RSD	3.3 %	6.0 %	5.0 %	4.3 %	0.8 %	2.6 %	14.9 %	19.2 %	14.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.007 ppb	0.033 ppb	0.032 ppb	91.937 %	0.118 ppb	0.268 ppb	0.281 ppb	24.283 ppb	24.669 ppb
Concentration per Run 1	0.008 ppb	0.032 ppb	0.037 ppb	91.240 %	0.109 ppb	0.258 ppb	0.268 ppb	23.909 ppb	24.293 ppb
Concentration per Run 2	0.006 ppb	0.038 ppb	0.031 ppb	92.163 %	0.123 ppb	0.269 ppb	0.290 ppb	24.344 ppb	24.702 ppb
Concentration per Run 3	0.006 ppb	0.030 ppb	0.029 ppb	92.408 %	0.121 ppb	0.276 ppb	0.284 ppb	24.597 ppb	25.013 ppb
Concentration RSD	19.0 %	12.7 %	13.9 %	0.7 %	6.5 %	3.3 %	4.0 %	1.4 %	1.5 %
Intensity average	563 cps	417 cps	1,006 cps	823,095 cps	3,613 cps	7,245 cps	6,069 cps	148,529 cps	275,123 cps
Intensity per Run 1	664.0 cps	400.0 cps	1,149.6 cps	816,851.5 cps	3,372.5 cps	6,962.0 cps	5,777.3 cps	145,860.2 cps	270,356.5 cps
Intensity per Run 2	520.0 cps	476.0 cps	959.3 cps	825,123.4 cps	3,752.6 cps	7,290.1 cps	6,273.6 cps	149,008.9 cps	275,653.9 cps
Intensity per Run 3	504.0 cps	376.0 cps	908.4 cps	827,311.5 cps	3,712.6 cps	7,482.2 cps	6,157.5 cps	150,716.7 cps	279,359.8 cps
Intensity RSD	15.7 %	12.5 %	12.6 %	0.7 %	5.8 %	3.6 %	4.3 %	1.7 %	1.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.493 %			0.014 ppm	0.256 ppb	0.258 ppb	0.606 ppb
Concentration per Run 1			93.801 %			0.014 ppm	0.278 ppb	0.281 ppb	0.606 ppb
Concentration per Run 2			93.380 %			0.013 ppm	0.253 ppb	0.252 ppb	0.590 ppb
Concentration per Run 3			93.299 %			0.014 ppm	0.238 ppb	0.240 ppb	0.623 ppb
Concentration RSD			0.3 %			2.2 %	7.8 %	8.3 %	2.8 %
Intensity average	13,035 cps	10,882 cps	2,938,764 cps	10,846 cps	9,995 cps	3,118,599 cps	22,324 cps	54,229 cps	40,762 cps
Intensity per Run 1	13,026.8 cps	10,476.4 cps	2,948,438.5 cps	10,792.7 cps	9,932.0 cps	3,117,122.6 cps	24,047.2 cps	58,756.9 cps	40,590.8 cps
Intensity per Run 2	12,814.6 cps	10,992.9 cps	2,935,210.8 cps	11,016.9 cps	10,108.1 cps	3,052,115.4 cps	22,523.3 cps	54,415.5 cps	40,699.2 cps
Intensity per Run 3	13,263.1 cps	11,177.0 cps	2,932,643.1 cps	10,728.6 cps	9,944.0 cps	3,186,558.5 cps	20,402.7 cps	49,514.0 cps	40,996.2 cps
Intensity RSD	1.7 %	3.3 %	0.3 %	1.4 %	1.0 %	2.2 %	8.2 %	8.5 %	0.5 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.578 ppb	0.588 ppb	90.067 %
Concentration per Run 1	0.571 ppb	0.588 ppb	89.735 %
Concentration per Run 2	0.553 ppb	0.568 ppb	92.489 %
Concentration per Run 3	0.612 ppb	0.608 ppb	87.979 %
Concentration RSD	5.2 %	3.4 %	2.5 %
Intensity average	34,139 cps	159,499 cps	2,308,373 cps
Intensity per Run 1	33,597.2 cps	158,951.2 cps	2,299,849.4 cps
Intensity per Run 2	33,525.1 cps	158,403.7 cps	2,370,430.7 cps
Intensity per Run 3	35,294.0 cps	161,141.8 cps	2,254,838.8 cps
Intensity RSD	2.9 %	0.9 %	2.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24020-001DIS Analysis: 10/30/2019 12:41:37 Sample Type UNKNOWN
Comment SW-1 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	96.535 %	97.493 %	0.036 ppb	72.171 ppb	74.231 ppb	N/A	10,713.104 ppb	3,158.076 ppb	3,147.618 ppb
Concentration per Run 1	96.122 %	98.245 %	0.016 ppb	71.231 ppb	72.313 ppb	N/A	10,736.597 ppb	3,158.143 ppb	3,076.138 ppb
Concentration per Run 2	96.253 %	96.846 %	0.040 ppb	72.390 ppb	74.286 ppb	N/A	10,591.122 ppb	3,120.014 ppb	3,100.978 ppb
Concentration per Run 3	97.229 %	97.389 %	0.052 ppb	72.891 ppb	76.095 ppb	N/A	10,811.593 ppb	3,196.071 ppb	3,265.739 ppb
Concentration RSD	0.6 %	0.7 %	50.4 %	1.2 %	2.5 %	N/A	1.0 %	1.2 %	3.3 %
Intensity average	13,500,708 cps	31,391 cps	9 cps	1,189 cps	7,228 cps	3,124 cps	19,960,597 cps	2,678,744 cps	560,671 cps
Intensity per Run 1	13,442,967.7 cps	31,633.0 cps	6.0 cps	1,180.6 cps	7,083.5 cps	2,990.4 cps	20,036,457.0 cps	2,682,136.0 cps	548,450.6 cps
Intensity per Run 2	13,461,342.7 cps	31,182.4 cps	9.5 cps	1,186.6 cps	7,202.6 cps	3,220.4 cps	19,765,225.2 cps	2,652,064.7 cps	553,833.4 cps
Intensity per Run 3	13,597,814.8 cps	31,357.3 cps	11.5 cps	1,198.6 cps	7,396.7 cps	3,160.4 cps	20,080,108.0 cps	2,702,030.3 cps	579,729.6 cps
Intensity RSD	0.6 %	0.7 %	30.9 %	0.8 %	2.2 %	3.8 %	0.9 %	0.9 %	3.0 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,122.139 ppb	106.552 ppb		0.964 ppm	2,982.615 ppb	60,023.721 ppb	66,464.242 ppb	59,908.980 ppb	90.158 %
Concentration per Run 1	3,060.253 ppb	106.371 ppb		0.951 ppm	2,979.799 ppb	58,367.971 ppb	63,265.217 ppb	60,053.198 ppb	91.235 %
Concentration per Run 2	3,120.860 ppb	103.640 ppb		0.962 ppm	2,983.655 ppb	59,502.251 ppb	68,274.877 ppb	59,392.548 ppb	87.969 %
Concentration per Run 3	3,185.306 ppb	109.646 ppb		0.979 ppm	2,984.390 ppb	62,200.940 ppb	67,852.634 ppb	60,281.192 ppb	91.271 %
Concentration RSD	2.0 %	2.8 %		1.5 %	0.1 %	3.3 %	4.2 %	0.8 %	2.1 %
Intensity average	739,137 cps	31,196 cps	33,909 cps	6,146,790 cps	2,350,691 cps	225,698 cps	159,602,929 cps	2,678,863 cps	6,205,596 cps
Intensity per Run 1	724,867.0 cps	31,149.3 cps	33,003.6 cps	6,045,681.5 cps	2,338,075.6 cps	218,172.2 cps	153,718,475.4 cps	2,668,340.6 cps	6,279,684.1 cps
Intensity per Run 2	741,134.1 cps	30,467.3 cps	34,798.4 cps	6,180,230.3 cps	2,374,306.8 cps	226,385.5 cps	160,114,316.7 cps	2,688,599.6 cps	6,054,896.2 cps
Intensity per Run 3	751,410.6 cps	31,971.3 cps	33,926.1 cps	6,214,457.0 cps	2,339,691.8 cps	232,537.4 cps	164,975,996.0 cps	2,679,648.0 cps	6,282,207.5 cps
Intensity RSD	1.8 %	2.4 %	2.6 %	1.5 %	0.9 %	3.2 %	3.5 %	0.4 %	2.1 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	92.444 %	1.067 ppb	1.573 ppb	0.980 ppb	0.894 ppb	N/A	38.830 ppb	479.942 ppb	457.078 ppb
Concentration per Run 1	91.819 %	1.257 ppb	1.555 ppb	0.998 ppb	0.879 ppb	N/A	38.280 ppb	470.550 ppb	457.425 ppb
Concentration per Run 2	93.631 %	1.030 ppb	1.548 ppb	0.961 ppb	0.888 ppb	N/A	38.488 ppb	481.956 ppb	451.217 ppb
Concentration per Run 3	91.883 %	0.913 ppb	1.617 ppb	0.981 ppb	0.915 ppb	N/A	39.723 ppb	487.321 ppb	462.592 ppb
Concentration RSD	1.1 %	16.4 %	2.4 %	1.9 %	2.1 %	N/A	2.0 %	1.8 %	1.2 %
Intensity average	271,401 cps	376 cps	21,043 cps	21,412 cps	3,577 cps	3,697 cps	567,561 cps	9,341,677 cps	303,344 cps
Intensity per Run 1	269,565.0 cps	440.0 cps	20,678.5 cps	21,618.7 cps	3,508.5 cps	3,580.5 cps	554,939.4 cps	9,081,953.6 cps	301,543.9 cps
Intensity per Run 2	274,883.5 cps	368.0 cps	20,994.4 cps	21,318.2 cps	3,608.5 cps	3,860.6 cps	570,205.0 cps	9,507,835.8 cps	303,335.6 cps
Intensity per Run 3	269,753.4 cps	320.0 cps	21,455.2 cps	21,298.1 cps	3,612.5 cps	3,650.6 cps	577,537.5 cps	9,435,242.3 cps	305,151.0 cps
Intensity RSD	1.1 %	16.1 %	1.9 %	0.8 %	1.6 %	3.9 %	2.0 %	2.4 %	0.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.105 ppb	-0.308 ppb	-0.337 ppb	0.740 ppb	0.715 ppb	1.579 ppb	3.298 ppb	2.773 ppb	
Concentration per Run 1	0.102 ppb	-0.313 ppb	-0.293 ppb	0.730 ppb	0.700 ppb	1.459 ppb	2.914 ppb	2.586 ppb	
Concentration per Run 2	0.107 ppb	-0.321 ppb	-0.391 ppb	0.743 ppb	0.681 ppb	1.682 ppb	3.447 ppb	2.790 ppb	
Concentration per Run 3	0.105 ppb	-0.290 ppb	-0.328 ppb	0.747 ppb	0.765 ppb	1.597 ppb	3.534 ppb	2.942 ppb	
Concentration RSD	2.3 %	5.3 %	14.8 %	1.2 %	6.1 %	7.1 %	10.2 %	6.4 %	
Intensity average	5,040 cps	6,759 cps	1,036 cps	24,036 cps	12,028 cps	22,592 cps	5,282 cps	23,210 cps	111 cps
Intensity per Run 1	4,889.0 cps	6,613.8 cps	1,100.1 cps	23,534.2 cps	11,737.5 cps	21,807.1 cps	4,852.9 cps	22,099.6 cps	103.0 cps
Intensity per Run 2	5,201.1 cps	6,725.8 cps	960.0 cps	24,452.0 cps	11,689.5 cps	23,193.5 cps	5,505.2 cps	23,626.5 cps	109.0 cps
Intensity per Run 3	5,029.0 cps	6,937.9 cps	1,048.0 cps	24,123.3 cps	12,658.4 cps	22,776.8 cps	5,489.2 cps	23,902.9 cps	120.0 cps
Intensity RSD	3.1 %	2.4 %	6.8 %	1.9 %	4.5 %	3.1 %	7.0 %	4.2 %	7.8 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.846 ppb	N/A	0.245 ppb			1.559 ppb		90.889 %	0.943 ppb
Concentration per Run 1	0.670 ppb	N/A	0.288 ppb			2.117 ppb		89.660 %	0.926 ppb
Concentration per Run 2	1.185 ppb	N/A	0.196 ppb			1.086 ppb		92.337 %	0.939 ppb
Concentration per Run 3	0.684 ppb	N/A	0.251 ppb			1.475 ppb		90.668 %	0.965 ppb
Concentration RSD	34.7 %	N/A	18.9 %			33.4 %		1.5 %	2.1 %
Intensity average	6,157 cps	113 cps	60 cps	12,827 cps	4,786 cps	-192 cps	4,971 cps	531,499 cps	9,916 cps
Intensity per Run 1	5,606.3 cps	110.0 cps	72.8 cps	12,365.1 cps	4,000.7 cps	-97.2 cps	4,046.7 cps	524,313.0 cps	9,619.7 cps
Intensity per Run 2	7,169.6 cps	70.0 cps	44.6 cps	12,888.6 cps	6,319.7 cps	-272.0 cps	6,651.9 cps	539,971.6 cps	10,000.0 cps
Intensity per Run 3	5,693.8 cps	160.0 cps	61.8 cps	13,226.0 cps	4,037.7 cps	-206.7 cps	4,213.7 cps	530,211.9 cps	10,128.1 cps
Intensity RSD	14.3 %	39.8 %	23.9 %	3.4 %	27.8 %	46.0 %	29.3 %	1.5 %	2.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.700 ppb	0.715 ppb	0.677 ppb	0.697 ppb	0.018 ppm		0.015 ppb	0.002 ppb	0.027 ppb
Concentration per Run 1	0.683 ppb	0.691 ppb	0.627 ppb	0.669 ppb	0.018 ppm		-0.005 ppb	0.001 ppb	0.037 ppb
Concentration per Run 2	0.690 ppb	0.717 ppb	0.686 ppb	0.710 ppb	0.018 ppm		0.044 ppb	0.002 ppb	0.025 ppb
Concentration per Run 3	0.726 ppb	0.738 ppb	0.719 ppb	0.712 ppb	0.018 ppm		0.007 ppb	0.002 ppb	0.020 ppb
Concentration RSD	3.3 %	3.3 %	6.8 %	3.5 %	1.3 %		169.2 %	37.2 %	31.0 %
Intensity average	13,300 cps	15,022 cps	8,507 cps	23,138 cps	1,613,080 cps	819 cps	104 cps	207 cps	21 cps
Intensity per Run 1	12,846.6 cps	14,364.3 cps	7,810.4 cps	21,999.4 cps	1,636,625.5 cps	856.0 cps	84.0 cps	156.0 cps	28.0 cps
Intensity per Run 2	13,283.1 cps	15,241.3 cps	8,703.0 cps	23,803.0 cps	1,602,415.5 cps	736.0 cps	132.0 cps	244.0 cps	20.0 cps
Intensity per Run 3	13,771.6 cps	15,461.6 cps	9,007.3 cps	23,610.4 cps	1,600,200.4 cps	864.0 cps	96.0 cps	220.0 cps	16.0 cps
Intensity RSD	3.5 %	3.9 %	7.3 %	4.3 %	1.3 %	8.8 %	24.0 %	22.0 %	28.6 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.003 ppb	0.008 ppb	0.008 ppb	90.443 %	0.042 ppb	0.356 ppb	0.371 ppb	20.446 ppb	20.293 ppb
Concentration per Run 1	0.002 ppb	0.009 ppb	0.009 ppb	90.038 %	0.037 ppb	0.344 ppb	0.353 ppb	20.015 ppb	19.950 ppb
Concentration per Run 2	0.003 ppb	0.011 ppb	0.005 ppb	90.517 %	0.042 ppb	0.361 ppb	0.376 ppb	20.288 ppb	20.405 ppb
Concentration per Run 3	0.003 ppb	0.006 ppb	0.009 ppb	90.775 %	0.047 ppb	0.364 ppb	0.384 ppb	21.034 ppb	20.522 ppb
Concentration RSD	33.9 %	27.8 %	31.2 %	0.4 %	12.0 %	3.1 %	4.4 %	2.6 %	1.5 %
Intensity average	263 cps	109 cps	267 cps	809,721 cps	1,717 cps	9,397 cps	7,840 cps	124,021 cps	224,625 cps
Intensity per Run 1	188.0 cps	112.0 cps	313.5 cps	806,091.6 cps	1,584.1 cps	9,019.3 cps	7,422.2 cps	120,293.3 cps	218,699.0 cps
Intensity per Run 2	316.0 cps	136.0 cps	185.6 cps	810,381.0 cps	1,728.1 cps	9,559.7 cps	7,974.6 cps	124,290.0 cps	228,310.5 cps
Intensity per Run 3	284.0 cps	80.0 cps	302.6 cps	812,691.1 cps	1,840.1 cps	9,611.7 cps	8,122.7 cps	127,480.5 cps	226,866.7 cps
Intensity RSD	25.4 %	25.7 %	26.5 %	0.4 %	7.5 %	3.5 %	4.7 %	2.9 %	2.3 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.558 %			0.014 ppm	0.085 ppb	0.085 ppb	0.155 ppb
Concentration per Run 1			92.190 %			0.014 ppm	0.085 ppb	0.084 ppb	0.156 ppb
Concentration per Run 2			95.487 %			0.014 ppm	0.085 ppb	0.084 ppb	0.150 ppb
Concentration per Run 3			92.998 %			0.014 ppm	0.086 ppb	0.085 ppb	0.158 ppb
Concentration RSD			1.8 %			0.5 %	0.8 %	0.4 %	2.8 %
Intensity average	2,882 cps	2,482 cps	2,940,800 cps	2,747 cps	2,632 cps	3,127,773 cps	8,143 cps	19,575 cps	10,976 cps
Intensity per Run 1	2,820.3 cps	2,384.2 cps	2,897,784.1 cps	2,592.3 cps	2,664.3 cps	3,134,560.6 cps	7,901.5 cps	19,012.5 cps	10,771.6 cps
Intensity per Run 2	2,908.3 cps	2,456.2 cps	3,001,427.2 cps	2,772.3 cps	2,652.3 cps	3,140,452.4 cps	8,313.8 cps	20,027.1 cps	10,925.8 cps
Intensity per Run 3	2,916.3 cps	2,604.3 cps	2,923,189.1 cps	2,876.3 cps	2,580.3 cps	3,108,304.7 cps	8,212.7 cps	19,684.5 cps	11,230.1 cps
Intensity RSD	1.8 %	4.5 %	1.8 %	5.2 %	1.7 %	0.5 %	2.6 %	2.6 %	2.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.147 ppb	0.150 ppb	90.604 %
Concentration per Run 1	0.149 ppb	0.151 ppb	88.173 %
Concentration per Run 2	0.141 ppb	0.147 ppb	92.923 %
Concentration per Run 3	0.150 ppb	0.152 ppb	90.715 %
Concentration RSD	3.5 %	1.8 %	2.6 %
Intensity average	9,146 cps	42,955 cps	2,322,121 cps
Intensity per Run 1	9,067.3 cps	42,026.7 cps	2,259,828.3 cps
Intensity per Run 2	9,027.3 cps	43,254.8 cps	2,381,567.9 cps
Intensity per Run 3	9,343.5 cps	43,582.8 cps	2,324,966.3 cps
Intensity RSD	1.9 %	1.9 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24020-002 Analysis: 10/30/2019 12:47:40 Sample Type UNKNOWN
Comment SW-1 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	95.914 %	95.655 %	0.047 ppb	74.059 ppb	75.576 ppb	N/A	10,725.269 ppb	3,356.300 ppb	3,327.412 ppb
Concentration per Run 1	94.524 %	96.209 %	0.043 ppb	71.128 ppb	73.926 ppb	N/A	10,425.403 ppb	3,257.102 ppb	3,218.228 ppb
Concentration per Run 2	96.009 %	95.642 %	0.041 ppb	74.663 ppb	74.013 ppb	N/A	10,838.468 ppb	3,394.432 ppb	3,326.280 ppb
Concentration per Run 3	97.208 %	95.113 %	0.057 ppb	76.386 ppb	78.788 ppb	N/A	10,911.935 ppb	3,417.367 ppb	3,437.727 ppb
Concentration RSD	1.4 %	0.6 %	19.2 %	3.6 %	3.7 %	N/A	2.4 %	2.6 %	3.3 %
Intensity average	13,413,852 cps	30,799 cps	11 cps	1,196 cps	7,219 cps	3,270 cps	19,601,674 cps	2,792,375 cps	581,350 cps
Intensity per Run 1	13,219,453.4 cps	30,977.3 cps	10.0 cps	1,156.6 cps	7,107.5 cps	3,050.4 cps	19,206,246.6 cps	2,731,904.6 cps	566,941.7 cps
Intensity per Run 2	13,427,212.5 cps	30,794.9 cps	9.5 cps	1,205.6 cps	7,065.5 cps	3,450.5 cps	19,766,585.2 cps	2,817,785.1 cps	579,800.3 cps
Intensity per Run 3	13,594,888.7 cps	30,624.5 cps	12.0 cps	1,227.1 cps	7,483.2 cps	3,310.4 cps	19,832,191.2 cps	2,827,436.8 cps	597,308.1 cps
Intensity RSD	1.4 %	0.6 %	12.6 %	3.0 %	3.2 %	6.2 %	1.8 %	1.9 %	2.6 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,297.772 ppb	369.167 ppb		0.982 ppm	2,967.356 ppb	65,641.367 ppb	72,046.386 ppb	66,663.989 ppb	88.695 %
Concentration per Run 1	3,180.953 ppb	368.276 ppb		0.957 ppm	2,884.036 ppb	63,713.796 ppb	72,668.459 ppb	65,463.533 ppb	86.124 %
Concentration per Run 2	3,290.875 ppb	363.017 ppb		0.993 ppm	2,999.501 ppb	66,409.612 ppb	72,116.065 ppb	66,548.437 ppb	89.482 %
Concentration per Run 3	3,421.489 ppb	376.206 ppb		0.997 ppm	3,018.532 ppb	66,800.693 ppb	71,354.634 ppb	67,979.996 ppb	90.480 %
Concentration RSD	3.7 %	1.8 %		2.2 %	2.5 %	2.6 %	0.9 %	1.9 %	2.6 %
Intensity average	765,728 cps	104,870 cps	36,236 cps	6,146,273 cps	2,293,696 cps	242,058 cps	170,270,427 cps	2,923,541 cps	6,104,887 cps
Intensity per Run 1	744,839.2 cps	105,496.9 cps	35,560.6 cps	6,046,826.8 cps	2,252,278.8 cps	237,442.7 cps	166,854,291.0 cps	2,901,554.3 cps	5,927,907.4 cps
Intensity per Run 2	762,264.7 cps	102,851.7 cps	36,894.5 cps	6,189,797.6 cps	2,308,713.4 cps	243,748.5 cps	171,934,242.1 cps	2,904,313.8 cps	6,159,037.9 cps
Intensity per Run 3	790,080.1 cps	106,260.2 cps	36,252.6 cps	6,202,194.7 cps	2,320,094.6 cps	244,983.5 cps	172,022,748.9 cps	2,964,754.1 cps	6,227,715.6 cps
Intensity RSD	3.0 %	1.7 %	1.8 %	1.4 %	1.6 %	1.7 %	1.7 %	1.2 %	2.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	90.670 %	4.621 ppb	2.250 ppb	48.281 ppb	49.042 ppb	N/A	52.942 ppb	1,290.306 ppb	1,233.417 ppb
Concentration per Run 1	91.642 %	3.537 ppb	2.106 ppb	46.339 ppb	46.839 ppb	N/A	50.681 ppb	1,271.450 ppb	1,181.433 ppb
Concentration per Run 2	90.210 %	3.662 ppb	2.269 ppb	49.289 ppb	50.136 ppb	N/A	53.917 ppb	1,282.628 ppb	1,240.644 ppb
Concentration per Run 3	90.160 %	6.665 ppb	2.374 ppb	49.215 ppb	50.151 ppb	N/A	54.227 ppb	1,316.839 ppb	1,278.175 ppb
Concentration RSD	0.9 %	38.3 %	6.0 %	3.5 %	3.9 %	N/A	3.7 %	1.8 %	4.0 %
Intensity average	266,193 cps	1,596 cps	28,847 cps	921,841 cps	129,189 cps	132,059 cps	767,721 cps	24,910,360 cps	800,908 cps
Intensity per Run 1	269,044.0 cps	1,236.1 cps	27,404.3 cps	894,525.7 cps	124,562.3 cps	128,548.8 cps	741,358.2 cps	24,749,578.3 cps	775,591.0 cps
Intensity per Run 2	264,840.1 cps	1,260.1 cps	28,944.5 cps	936,456.5 cps	131,343.1 cps	135,279.1 cps	777,569.4 cps	24,623,104.2 cps	801,682.1 cps
Intensity per Run 3	264,695.6 cps	2,292.6 cps	30,190.8 cps	934,539.8 cps	131,662.0 cps	132,347.8 cps	784,236.2 cps	25,358,396.3 cps	825,451.0 cps
Intensity RSD	0.9 %	37.8 %	4.8 %	2.6 %	3.1 %	2.6 %	3.0 %	1.6 %	3.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.945 ppb	34.017 ppb	34.533 ppb	3.724 ppb	3.635 ppb	2.770 ppb	4.612 ppb	3.895 ppb	
Concentration per Run 1	0.909 ppb	33.486 ppb	33.364 ppb	3.618 ppb	3.521 ppb	2.757 ppb	4.139 ppb	3.787 ppb	
Concentration per Run 2	0.965 ppb	34.752 ppb	35.278 ppb	3.792 ppb	3.686 ppb	2.809 ppb	5.084 ppb	3.822 ppb	
Concentration per Run 3	0.960 ppb	33.812 ppb	34.956 ppb	3.761 ppb	3.698 ppb	2.744 ppb	4.612 ppb	4.074 ppb	
Concentration RSD	3.3 %	1.9 %	3.0 %	2.5 %	2.7 %	1.3 %	10.2 %	4.0 %	
Intensity average	42,694 cps	385,854 cps	59,330 cps	105,833 cps	52,688 cps	29,288 cps	6,624 cps	28,753 cps	283 cps
Intensity per Run 1	41,533.0 cps	380,395.5 cps	57,777.5 cps	103,624.1 cps	51,646.6 cps	28,949.6 cps	6,193.5 cps	28,400.3 cps	282.0 cps
Intensity per Run 2	43,395.4 cps	391,100.0 cps	60,221.0 cps	107,061.3 cps	53,140.8 cps	29,803.6 cps	7,050.0 cps	28,232.0 cps	283.0 cps
Intensity per Run 3	43,154.4 cps	386,066.5 cps	59,991.9 cps	106,814.7 cps	53,277.5 cps	29,110.0 cps	6,629.8 cps	29,627.1 cps	285.0 cps
Intensity RSD	2.4 %	1.4 %	2.3 %	1.8 %	1.7 %	1.5 %	6.5 %	2.6 %	0.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.286 ppb	N/A	0.258 ppb			0.169 ppb		94.169 %	10.384 ppb
Concentration per Run 1	1.377 ppb	N/A	0.197 ppb			0.211 ppb		94.262 %	9.925 ppb
Concentration per Run 2	0.955 ppb	N/A	0.315 ppb			0.883 ppb		93.475 %	10.452 ppb
Concentration per Run 3	1.528 ppb	N/A	0.263 ppb			-0.588 ppb		94.769 %	10.773 ppb
Concentration RSD	23.1 %	N/A	22.8 %			436.4 %		0.7 %	4.1 %
Intensity average	7,442 cps	120 cps	66 cps	13,522 cps	5,285 cps	-425 cps	5,719 cps	550,681 cps	109,265 cps
Intensity per Run 1	7,645.3 cps	120.0 cps	45.5 cps	12,756.5 cps	5,976.6 cps	-414.5 cps	6,358.8 cps	551,224.9 cps	104,355.2 cps
Intensity per Run 2	6,525.1 cps	150.0 cps	83.8 cps	13,736.6 cps	3,820.6 cps	-308.2 cps	4,145.7 cps	546,625.0 cps	109,522.7 cps
Intensity per Run 3	8,154.3 cps	90.0 cps	67.5 cps	14,071.9 cps	6,058.6 cps	-552.2 cps	6,652.9 cps	554,193.0 cps	113,917.3 cps
Intensity RSD	11.2 %	25.0 %	29.3 %	5.1 %	24.0 %	28.8 %	24.0 %	0.7 %	4.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	9.852 ppb	9.810 ppb	9.839 ppb	9.732 ppb	0.018 ppm		0.049 ppb	0.002 ppb	0.096 ppb
Concentration per Run 1	9.702 ppb	9.599 ppb	9.518 ppb	9.436 ppb	0.018 ppm		0.035 ppb	0.001 ppb	0.096 ppb
Concentration per Run 2	9.841 ppb	9.922 ppb	9.864 ppb	9.740 ppb	0.018 ppm		0.096 ppb	0.002 ppb	0.095 ppb
Concentration per Run 3	10.013 ppb	9.907 ppb	10.135 ppb	10.019 ppb	0.018 ppm		0.014 ppb	0.002 ppb	0.096 ppb
Concentration RSD	1.6 %	1.9 %	3.1 %	3.0 %	0.5 %		88.1 %	11.6 %	0.6 %
Intensity average	187,676 cps	205,834 cps	123,261 cps	323,176 cps	1,604,283 cps	932 cps	137 cps	205 cps	72 cps
Intensity per Run 1	184,587.3 cps	201,096.8 cps	118,996.9 cps	312,608.7 cps	1,609,261.0 cps	908.0 cps	124.0 cps	188.0 cps	72.0 cps
Intensity per Run 2	186,803.5 cps	207,600.4 cps	123,297.6 cps	322,929.2 cps	1,594,632.4 cps	928.0 cps	184.0 cps	212.0 cps	72.0 cps
Intensity per Run 3	191,636.3 cps	208,803.7 cps	127,487.4 cps	333,988.8 cps	1,608,956.8 cps	960.0 cps	104.0 cps	216.0 cps	72.0 cps
Intensity RSD	1.9 %	2.0 %	3.4 %	3.3 %	0.5 %	2.8 %	30.3 %	7.4 %	0.0 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.002 ppb	0.032 ppb	0.026 ppb	90.192 %	0.082 ppb	0.214 ppb	0.214 ppb	22.385 ppb	22.733 ppb
Concentration per Run 1	0.001 ppb	0.025 ppb	0.026 ppb	89.379 %	0.076 ppb	0.208 ppb	0.200 ppb	21.831 ppb	22.214 ppb
Concentration per Run 2	0.002 ppb	0.032 ppb	0.022 ppb	91.090 %	0.086 ppb	0.210 ppb	0.216 ppb	22.547 ppb	22.950 ppb
Concentration per Run 3	0.002 ppb	0.037 ppb	0.030 ppb	90.106 %	0.084 ppb	0.226 ppb	0.227 ppb	22.777 ppb	23.034 ppb
Concentration RSD	15.9 %	19.4 %	14.6 %	1.0 %	6.4 %	4.6 %	6.4 %	2.2 %	2.0 %
Intensity average	192 cps	385 cps	804 cps	807,471 cps	2,684 cps	5,772 cps	4,629 cps	135,522 cps	251,155 cps
Intensity per Run 1	172.0 cps	308.0 cps	788.4 cps	800,196.0 cps	2,520.3 cps	5,553.2 cps	4,296.7 cps	131,307.1 cps	243,884.0 cps
Intensity per Run 2	192.0 cps	392.0 cps	704.6 cps	815,509.6 cps	2,812.3 cps	5,705.3 cps	4,700.9 cps	136,952.1 cps	254,229.5 cps
Intensity per Run 3	212.0 cps	456.0 cps	919.0 cps	806,706.9 cps	2,720.3 cps	6,057.5 cps	4,889.0 cps	138,306.4 cps	255,352.6 cps
Intensity RSD	10.4 %	19.3 %	13.4 %	1.0 %	5.6 %	4.5 %	6.5 %	2.7 %	2.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.482 %			0.014 ppm	0.056 ppb	0.055 ppb	0.471 ppb
Concentration per Run 1			93.153 %			0.014 ppm	0.053 ppb	0.052 ppb	0.462 ppb
Concentration per Run 2			93.084 %			0.014 ppm	0.056 ppb	0.054 ppb	0.464 ppb
Concentration per Run 3			94.208 %			0.014 ppm	0.058 ppb	0.058 ppb	0.488 ppb
Concentration RSD			0.7 %			0.4 %	4.7 %	5.5 %	3.1 %
Intensity average	11,467 cps	9,273 cps	2,938,401 cps	10,136 cps	9,189 cps	3,143,194 cps	5,670 cps	13,463 cps	31,914 cps
Intensity per Run 1	11,509.3 cps	9,119.3 cps	2,928,052.3 cps	9,439.6 cps	8,835.1 cps	3,143,378.5 cps	5,469.2 cps	12,986.8 cps	31,496.7 cps
Intensity per Run 2	11,617.4 cps	9,223.4 cps	2,925,912.5 cps	10,684.6 cps	9,547.7 cps	3,157,020.5 cps	5,772.3 cps	13,587.4 cps	31,837.5 cps
Intensity per Run 3	11,273.1 cps	9,475.6 cps	2,961,238.3 cps	10,284.3 cps	9,183.4 cps	3,129,182.9 cps	5,769.3 cps	13,813.6 cps	32,409.0 cps
Intensity RSD	1.5 %	2.0 %	0.7 %	6.3 %	3.9 %	0.4 %	3.1 %	3.2 %	1.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.452 ppb	0.465 ppb	90.257 %
Concentration per Run 1	0.442 ppb	0.451 ppb	90.885 %
Concentration per Run 2	0.446 ppb	0.455 ppb	91.463 %
Concentration per Run 3	0.469 ppb	0.488 ppb	88.423 %
Concentration RSD	3.2 %	4.3 %	1.8 %
Intensity average	26,898 cps	126,925 cps	2,313,237 cps
Intensity per Run 1	26,500.1 cps	124,200.1 cps	2,329,338.2 cps
Intensity per Run 2	26,860.9 cps	126,092.2 cps	2,344,147.6 cps
Intensity per Run 3	27,333.9 cps	130,483.4 cps	2,266,226.6 cps
Intensity RSD	1.6 %	2.5 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24020-002DIS Analysis: 10/30/2019 12:53:43 Sample Type UNKNOWN
Comment SW-1 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	96.681 %	96.333 %	0.024 ppb	74.227 ppb	74.949 ppb	N/A	10,834.822 ppb	3,129.606 ppb	3,194.475 ppb
Concentration per Run 1	95.854 %	97.142 %	0.023 ppb	70.740 ppb	72.470 ppb	N/A	10,546.587 ppb	3,025.383 ppb	3,136.700 ppb
Concentration per Run 2	96.446 %	96.203 %	0.050 ppb	74.580 ppb	75.305 ppb	N/A	10,841.869 ppb	3,184.435 ppb	3,194.757 ppb
Concentration per Run 3	97.742 %	95.655 %	-0.002 ppb	77.361 ppb	77.073 ppb	N/A	11,116.010 ppb	3,179.000 ppb	3,251.969 ppb
Concentration RSD	1.0 %	0.8 %	110.4 %	4.5 %	3.1 %	N/A	2.6 %	2.9 %	1.8 %
Intensity average	13,521,135 cps	31,017 cps	7 cps	1,208 cps	7,211 cps	2,927 cps	19,956,322 cps	2,624,248 cps	562,563 cps
Intensity per Run 1	13,405,504.7 cps	31,277.6 cps	7.0 cps	1,159.1 cps	7,017.5 cps	2,820.3 cps	19,445,679.3 cps	2,538,476.6 cps	552,467.5 cps
Intensity per Run 2	13,488,287.6 cps	30,975.3 cps	11.0 cps	1,211.1 cps	7,229.1 cps	2,990.4 cps	19,873,964.0 cps	2,656,989.0 cps	559,692.3 cps
Intensity per Run 3	13,669,611.3 cps	30,798.9 cps	3.0 cps	1,253.1 cps	7,386.7 cps	2,970.4 cps	20,549,323.6 cps	2,677,277.3 cps	575,529.6 cps
Intensity RSD	1.0 %	0.8 %	57.1 %	3.9 %	2.6 %	3.2 %	2.8 %	2.9 %	2.1 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,183.082 ppb	113.335 ppb		0.932 ppm	2,966.260 ppb	60,292.792 ppb	65,529.575 ppb	60,356.494 ppb	92.047 %
Concentration per Run 1	3,101.823 ppb	112.352 ppb		0.896 ppm	2,911.576 ppb	58,763.568 ppb	62,230.537 ppb	59,026.240 ppb	94.143 %
Concentration per Run 2	3,210.461 ppb	110.890 ppb		0.950 ppm	3,042.092 ppb	60,845.642 ppb	67,237.779 ppb	61,419.178 ppb	90.537 %
Concentration per Run 3	3,236.963 ppb	116.763 ppb		0.952 ppm	2,945.112 ppb	61,269.165 ppb	67,120.410 ppb	60,624.064 ppb	91.463 %
Concentration RSD	2.2 %	2.7 %		3.4 %	2.3 %	2.2 %	4.4 %	2.0 %	2.0 %
Intensity average	745,001 cps	32,780 cps	32,526 cps	5,881,959 cps	2,311,923 cps	224,270 cps	160,534,168 cps	2,669,642 cps	6,335,631 cps
Intensity per Run 1	725,774.5 cps	32,472.5 cps	31,981.0 cps	5,625,056.4 cps	2,255,780.7 cps	216,796.8 cps	155,883,559.2 cps	2,588,516.3 cps	6,479,851.7 cps
Intensity per Run 2	747,357.3 cps	31,900.8 cps	32,823.2 cps	5,946,909.0 cps	2,351,477.1 cps	224,269.1 cps	162,166,461.8 cps	2,691,628.3 cps	6,231,671.2 cps
Intensity per Run 3	761,872.4 cps	33,966.4 cps	32,773.0 cps	6,073,911.8 cps	2,328,512.7 cps	231,742.8 cps	163,552,484.3 cps	2,728,781.0 cps	6,295,370.2 cps
Intensity RSD	2.4 %	3.3 %	1.5 %	3.9 %	2.2 %	3.3 %	2.5 %	2.7 %	2.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.438 %	1.101 ppb	1.622 ppb	0.753 ppb	0.672 ppb	N/A	39.025 ppb	463.699 ppb	449.461 ppb
Concentration per Run 1	90.617 %	1.122 ppb	1.611 ppb	0.721 ppb	0.675 ppb	N/A	37.827 ppb	466.521 ppb	437.070 ppb
Concentration per Run 2	90.579 %	1.064 ppb	1.655 ppb	0.754 ppb	0.701 ppb	N/A	39.373 ppb	466.511 ppb	457.859 ppb
Concentration per Run 3	93.117 %	1.116 ppb	1.601 ppb	0.784 ppb	0.642 ppb	N/A	39.875 ppb	458.066 ppb	453.455 ppb
Concentration RSD	1.6 %	2.9 %	1.8 %	4.2 %	4.4 %	N/A	2.7 %	1.1 %	2.4 %
Intensity average	268,446 cps	384 cps	21,414 cps	16,835 cps	2,962 cps	3,150 cps	564,999 cps	8,939,509 cps	295,106 cps
Intensity per Run 1	266,035.7 cps	388.0 cps	21,085.4 cps	16,070.3 cps	2,944.4 cps	2,930.3 cps	543,165.6 cps	8,921,925.2 cps	284,401.4 cps
Intensity per Run 2	265,925.5 cps	368.0 cps	21,613.8 cps	16,687.2 cps	3,016.4 cps	3,150.4 cps	566,703.5 cps	8,946,768.3 cps	297,754.0 cps
Intensity per Run 3	273,375.3 cps	396.0 cps	21,542.7 cps	17,748.6 cps	2,924.3 cps	3,370.5 cps	585,129.1 cps	8,949,833.4 cps	303,162.1 cps
Intensity RSD	1.6 %	3.8 %	1.3 %	5.0 %	1.6 %	7.0 %	3.7 %	0.2 %	3.3 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.105 ppb	-0.320 ppb	-0.346 ppb	0.735 ppb	0.729 ppb	1.188 ppb	2.937 ppb	2.478 ppb	
Concentration per Run 1	0.103 ppb	-0.320 ppb	-0.386 ppb	0.719 ppb	0.704 ppb	1.150 ppb	2.857 ppb	2.355 ppb	
Concentration per Run 2	0.105 ppb	-0.321 ppb	-0.289 ppb	0.760 ppb	0.741 ppb	1.221 ppb	3.008 ppb	2.508 ppb	
Concentration per Run 3	0.106 ppb	-0.319 ppb	-0.363 ppb	0.728 ppb	0.742 ppb	1.194 ppb	2.944 ppb	2.572 ppb	
Concentration RSD	1.6 %	0.4 %	14.6 %	2.9 %	3.0 %	3.0 %	2.6 %	4.5 %	
Intensity average	4,985 cps	6,596 cps	1,013 cps	23,703 cps	12,095 cps	20,361 cps	4,885 cps	21,649 cps	110 cps
Intensity per Run 1	4,853.0 cps	6,557.7 cps	940.0 cps	23,073.3 cps	11,633.4 cps	20,060.2 cps	4,772.9 cps	20,921.5 cps	96.0 cps
Intensity per Run 2	4,977.0 cps	6,633.8 cps	1,104.1 cps	24,291.6 cps	12,145.9 cps	20,384.6 cps	4,949.0 cps	21,771.0 cps	121.0 cps
Intensity per Run 3	5,125.1 cps	6,597.8 cps	996.0 cps	23,742.6 cps	12,506.3 cps	20,637.1 cps	4,933.0 cps	22,255.8 cps	113.0 cps
Intensity RSD	2.7 %	0.6 %	8.2 %	2.6 %	3.6 %	1.4 %	2.0 %	3.1 %	11.6 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.975 ppb	N/A	0.224 ppb			0.064 ppb		90.395 %	0.884 ppb
Concentration per Run 1	1.082 ppb	N/A	0.152 ppb			-0.423 ppb		89.918 %	0.842 ppb
Concentration per Run 2	0.691 ppb	N/A	0.286 ppb			-0.337 ppb		91.047 %	0.903 ppb
Concentration per Run 3	1.152 ppb	N/A	0.235 ppb			0.953 ppb		90.219 %	0.905 ppb
Concentration RSD	25.5 %	N/A	30.3 %			1,197.7 %		0.6 %	4.0 %
Intensity average	6,542 cps	103 cps	53 cps	14,666 cps	5,351 cps	-443 cps	5,709 cps	528,612 cps	9,266 cps
Intensity per Run 1	6,828.8 cps	170.0 cps	29.2 cps	13,991.8 cps	6,142.7 cps	-524.2 cps	6,434.8 cps	525,826.3 cps	8,803.1 cps
Intensity per Run 2	5,646.6 cps	60.0 cps	73.1 cps	14,787.7 cps	3,972.7 cps	-507.7 cps	4,432.8 cps	532,428.5 cps	9,503.6 cps
Intensity per Run 3	7,150.2 cps	80.0 cps	56.5 cps	15,217.3 cps	5,936.6 cps	-297.6 cps	6,260.7 cps	527,582.2 cps	9,491.6 cps
Intensity RSD	12.1 %	56.7 %	41.9 %	4.2 %	22.4 %	28.5 %	19.4 %	0.6 %	4.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.618 ppb	0.629 ppb	0.595 ppb	0.588 ppb	0.018 ppm		0.015 ppb	0.000 ppb	0.017 ppb
Concentration per Run 1	0.588 ppb	0.587 ppb	0.561 ppb	0.547 ppb	0.018 ppm		-0.005 ppb	0.000 ppb	0.009 ppb
Concentration per Run 2	0.632 ppb	0.641 ppb	0.609 ppb	0.600 ppb	0.018 ppm		0.033 ppb	0.000 ppb	0.026 ppb
Concentration per Run 3	0.633 ppb	0.660 ppb	0.616 ppb	0.617 ppb	0.018 ppm		0.019 ppb	0.001 ppb	0.015 ppb
Concentration RSD	4.1 %	6.0 %	5.0 %	6.2 %	1.3 %		124.4 %	48.4 %	50.7 %
Intensity average	11,738 cps	13,215 cps	7,472 cps	19,530 cps	1,586,381 cps	804 cps	104 cps	112 cps	13 cps
Intensity per Run 1	11,137.0 cps	12,286.1 cps	7,018.0 cps	18,105.2 cps	1,590,055.8 cps	780.0 cps	84.0 cps	104.0 cps	8.0 cps
Intensity per Run 2	12,037.8 cps	13,499.3 cps	7,654.4 cps	19,964.0 cps	1,563,942.6 cps	876.0 cps	120.0 cps	104.0 cps	20.0 cps
Intensity per Run 3	12,037.8 cps	13,859.7 cps	7,742.4 cps	20,520.9 cps	1,605,145.8 cps	756.0 cps	108.0 cps	128.0 cps	12.0 cps
Intensity RSD	4.4 %	6.2 %	5.3 %	6.5 %	1.3 %	7.9 %	17.6 %	12.4 %	45.8 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.007 ppb	0.008 ppb	90.425 %	0.034 ppb	0.368 ppb	0.376 ppb	20.710 ppb	21.200 ppb
Concentration per Run 1	0.001 ppb	0.007 ppb	0.010 ppb	90.065 %	0.028 ppb	0.351 ppb	0.356 ppb	20.359 ppb	20.680 ppb
Concentration per Run 2	0.001 ppb	0.007 ppb	0.006 ppb	89.711 %	0.035 ppb	0.377 ppb	0.382 ppb	21.056 ppb	21.380 ppb
Concentration per Run 3	0.001 ppb	0.007 ppb	0.009 ppb	91.499 %	0.039 ppb	0.377 ppb	0.391 ppb	20.714 ppb	21.540 ppb
Concentration RSD	23.4 %	5.6 %	22.0 %	1.0 %	16.4 %	4.1 %	4.8 %	1.7 %	2.2 %
Intensity average	148 cps	92 cps	286 cps	809,556 cps	1,521 cps	9,697 cps	7,939 cps	125,555 cps	234,531 cps
Intensity per Run 1	128.0 cps	92.0 cps	327.2 cps	806,331.9 cps	1,372.1 cps	9,227.4 cps	7,502.3 cps	123,245.2 cps	228,485.8 cps
Intensity per Run 2	164.0 cps	96.0 cps	222.9 cps	803,163.8 cps	1,532.1 cps	9,843.9 cps	8,002.6 cps	127,157.4 cps	235,690.6 cps
Intensity per Run 3	152.0 cps	88.0 cps	307.5 cps	819,172.3 cps	1,660.1 cps	10,020.0 cps	8,310.8 cps	126,263.0 cps	239,417.3 cps
Intensity RSD	12.4 %	4.3 %	19.4 %	1.0 %	9.5 %	4.3 %	5.1 %	1.6 %	2.4 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.484 %			0.014 ppm	0.039 ppb	0.038 ppb	0.165 ppb
Concentration per Run 1			93.610 %			0.013 ppm	0.037 ppb	0.037 ppb	0.164 ppb
Concentration per Run 2			93.555 %			0.014 ppm	0.038 ppb	0.039 ppb	0.167 ppb
Concentration per Run 3			93.286 %			0.014 ppm	0.040 ppb	0.039 ppb	0.162 ppb
Concentration RSD			0.2 %			2.4 %	3.7 %	2.0 %	1.5 %
Intensity average	3,084 cps	2,675 cps	2,938,466 cps	2,883 cps	2,770 cps	3,087,558 cps	4,320 cps	10,357 cps	11,770 cps
Intensity per Run 1	3,028.4 cps	2,660.3 cps	2,942,447.1 cps	2,960.4 cps	2,544.3 cps	3,010,714.8 cps	4,143.7 cps	9,991.0 cps	11,533.3 cps
Intensity per Run 2	3,132.4 cps	2,732.3 cps	2,940,696.4 cps	2,896.3 cps	2,856.3 cps	3,161,607.4 cps	4,304.7 cps	10,439.4 cps	11,972.7 cps
Intensity per Run 3	3,092.4 cps	2,632.3 cps	2,932,254.0 cps	2,792.3 cps	2,908.3 cps	3,090,352.6 cps	4,512.8 cps	10,641.5 cps	11,803.6 cps
Intensity RSD	1.7 %	1.9 %	0.2 %	2.9 %	7.1 %	2.4 %	4.3 %	3.2 %	1.9 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.153 ppb	0.158 ppb	91.719 %
Concentration per Run 1	0.146 ppb	0.159 ppb	90.037 %
Concentration per Run 2	0.154 ppb	0.159 ppb	91.857 %
Concentration per Run 3	0.158 ppb	0.158 ppb	93.265 %
Concentration RSD	3.9 %	0.3 %	1.8 %
Intensity average	9,646 cps	45,796 cps	2,350,711 cps
Intensity per Run 1	9,095.3 cps	45,012.5 cps	2,307,590.3 cps
Intensity per Run 2	9,723.8 cps	45,964.2 cps	2,354,230.7 cps
Intensity per Run 3	10,120.1 cps	46,411.7 cps	2,390,313.0 cps
Intensity RSD	5.4 %	1.6 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24023-001 Analysis: 10/30/2019 12:59:46 Sample Type UNKNOWN
Comment SW-5 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	95.831 %	97.188 %	0.015 ppb	35.348 ppb	36.124 ppb	N/A	7,946.781 ppb	1,634.854 ppb	1,626.367 ppb	1,615.214 ppb
Concentration per Run 1	95.013 %	97.504 %	0.007 ppb	35.934 ppb	35.771 ppb	N/A	7,677.350 ppb	1,593.771 ppb	1,583.567 ppb	1,573.160 ppb
Concentration per Run 2	96.026 %	97.722 %	0.020 ppb	35.837 ppb	35.678 ppb	N/A	8,014.467 ppb	1,639.820 ppb	1,632.581 ppb	1,633.045 ppb
Concentration per Run 3	96.454 %	96.338 %	0.017 ppb	34.273 ppb	36.922 ppb	N/A	8,148.524 ppb	1,670.970 ppb	1,662.952 ppb	1,639.438 ppb
Concentration RSD	0.8 %	0.8 %	46.1 %	2.6 %	1.9 %	N/A	3.1 %	2.4 %	2.5 %	2.3 %
Intensity average	13,402,314 cps	31,293 cps	6 cps	580 cps	3,495 cps	3,014 cps	14,485,120 cps	1,355,630 cps	282,912 cps	372,973 cps
Intensity per Run 1	13,287,917.2 cps	31,394.4 cps	4.5 cps	591.0 cps	3,472.0 cps	2,940.4 cps	14,034,836.9 cps	1,325,368.4 cps	276,254.2 cps	364,281.3 cps
Intensity per Run 2	13,429,611.0 cps	31,464.6 cps	6.5 cps	590.5 cps	3,469.0 cps	3,150.4 cps	14,657,349.0 cps	1,364,103.2 cps	284,863.1 cps	378,181.7 cps
Intensity per Run 3	13,489,414.8 cps	31,018.9 cps	6.0 cps	557.5 cps	3,543.5 cps	2,950.4 cps	14,763,173.4 cps	1,377,418.5 cps	287,619.0 cps	376,457.1 cps
Intensity RSD	0.8 %	0.8 %	18.4 %	3.3 %	1.2 %	3.9 %	2.7 %	2.0 %	2.1 %	2.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	254.846 ppb		0.979 ppm	2,945.177 ppb	17,401.201 ppb	19,217.180 ppb	17,896.444 ppb	87.103 %	88.050 %	1.872 ppb
Concentration per Run 1	251.883 ppb		0.961 ppm	2,917.902 ppb	16,752.782 ppb	18,882.309 ppb	17,656.835 ppb	88.829 %	88.241 %	1.959 ppb
Concentration per Run 2	249.516 ppb		0.973 ppm	2,941.482 ppb	17,810.358 ppb	19,605.087 ppb	17,898.326 ppb	84.662 %	88.060 %	1.939 ppb
Concentration per Run 3	263.141 ppb		1.002 ppm	2,976.148 ppb	17,640.464 ppb	19,164.145 ppb	18,134.170 ppb	87.818 %	87.849 %	1.717 ppb
Concentration RSD	2.9 %		2.2 %	1.0 %	3.3 %	1.9 %	1.3 %	2.5 %	0.2 %	7.2 %
Intensity average	71,987 cps	21,375 cps	6,018,507 cps	2,227,631 cps	62,527 cps	44,659,915 cps	763,654 cps	5,995,312 cps	258,499 cps	629 cps
Intensity per Run 1	71,353.6 cps	20,877.5 cps	5,922,451.7 cps	2,212,411.0 cps	60,335.6 cps	44,730,518.9 cps	755,112.0 cps	6,114,094.0 cps	259,060.0 cps	660.0 cps
Intensity per Run 2	70,689.9 cps	20,757.3 cps	5,996,295.2 cps	2,227,159.4 cps	64,024.2 cps	44,335,435.6 cps	763,954.1 cps	5,827,312.1 cps	258,528.9 cps	652.0 cps
Intensity per Run 3	73,918.4 cps	22,490.2 cps	6,136,773.1 cps	2,243,322.0 cps	63,219.8 cps	44,913,791.9 cps	771,896.5 cps	6,044,529.8 cps	257,908.7 cps	576.0 cps
Intensity RSD	2.4 %	4.5 %	1.8 %	0.7 %	3.1 %	0.7 %	1.1 %	2.5 %	0.2 %	7.4 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.291 ppb	0.482 ppb	0.522 ppb	N/A	15.325 ppb	515.779 ppb	499.188 ppb	0.097 ppb	-0.486 ppb	-0.486 ppb
Concentration per Run 1	1.289 ppb	0.464 ppb	0.503 ppb	N/A	15.106 ppb	503.787 ppb	487.682 ppb	0.094 ppb	-0.494 ppb	-0.519 ppb
Concentration per Run 2	1.312 ppb	0.484 ppb	0.552 ppb	N/A	15.262 ppb	522.091 ppb	501.526 ppb	0.094 ppb	-0.493 ppb	-0.489 ppb
Concentration per Run 3	1.271 ppb	0.498 ppb	0.510 ppb	N/A	15.606 ppb	521.459 ppb	508.356 ppb	0.104 ppb	-0.471 ppb	-0.449 ppb
Concentration RSD	1.6 %	3.5 %	5.1 %	N/A	1.7 %	2.0 %	2.1 %	6.3 %	2.7 %	7.2 %
Intensity average	16,717 cps	11,186 cps	2,498 cps	2,640 cps	217,311 cps	9,695,772 cps	315,461 cps	4,483 cps	4,902 cps	768 cps
Intensity per Run 1	16,736.4 cps	10,884.7 cps	2,456.2 cps	2,620.3 cps	214,811.8 cps	9,497,350.1 cps	308,891.9 cps	4,352.8 cps	4,832.9 cps	716.0 cps
Intensity per Run 2	16,965.6 cps	11,217.0 cps	2,576.3 cps	2,580.3 cps	216,553.8 cps	9,819,826.8 cps	316,979.3 cps	4,316.7 cps	4,840.9 cps	764.0 cps
Intensity per Run 3	16,450.4 cps	11,457.3 cps	2,460.2 cps	2,720.3 cps	220,566.5 cps	9,770,140.5 cps	320,511.6 cps	4,780.9 cps	5,033.0 cps	824.0 cps
Intensity RSD	1.5 %	2.6 %	2.7 %	2.7 %	1.4 %	1.8 %	1.9 %	5.8 %	2.3 %	7.0 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.734 ppb	1.683 ppb	2.232 ppb	3.216 ppb	2.930 ppb		2.666 ppb	N/A	0.144 ppb	
Concentration per Run 1	1.701 ppb	1.669 ppb	2.098 ppb	3.233 ppb	2.816 ppb		2.461 ppb	N/A	0.110 ppb	
Concentration per Run 2	1.746 ppb	1.681 ppb	2.177 ppb	3.133 ppb	2.965 ppb		2.866 ppb	N/A	0.188 ppb	
Concentration per Run 3	1.755 ppb	1.699 ppb	2.421 ppb	3.282 ppb	3.008 ppb		2.671 ppb	N/A	0.134 ppb	
Concentration RSD	1.7 %	0.9 %	7.6 %	2.4 %	3.4 %		7.6 %	N/A	28.0 %	
Intensity average	49,886 cps	24,620 cps	26,423 cps	5,096 cps	23,494 cps	81 cps	11,631 cps	120 cps	27 cps	10,493 cps
Intensity per Run 1	49,160.7 cps	24,480.0 cps	25,754.5 cps	5,129.1 cps	23,049.3 cps	81.0 cps	11,054.3 cps	160.0 cps	15.8 cps	10,227.2 cps
Intensity per Run 2	50,253.0 cps	24,592.2 cps	26,496.1 cps	5,021.0 cps	23,682.5 cps	86.0 cps	12,407.1 cps	110.0 cps	41.2 cps	10,475.4 cps
Intensity per Run 3	50,244.8 cps	24,788.6 cps	27,017.3 cps	5,137.1 cps	23,750.6 cps	76.0 cps	11,432.8 cps	90.0 cps	23.4 cps	10,775.7 cps
Intensity RSD	1.3 %	0.6 %	2.4 %	1.3 %	1.6 %	6.2 %	6.0 %	30.0 %	48.6 %	2.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.755 ppb		91.606 %	0.377 ppb	0.141 ppb	0.164 ppb	0.137 ppb	0.141 ppb	0.018 ppm
Concentration per Run 1		1.149 ppb		92.005 %	0.352 ppb	0.124 ppb	0.151 ppb	0.126 ppb	0.121 ppb	0.018 ppm
Concentration per Run 2		0.530 ppb		91.776 %	0.387 ppb	0.137 ppb	0.155 ppb	0.133 ppb	0.142 ppb	0.018 ppm
Concentration per Run 3		0.587 ppb		91.036 %	0.391 ppb	0.163 ppb	0.185 ppb	0.151 ppb	0.159 ppb	0.018 ppm
Concentration RSD		45.3 %		0.6 %	5.7 %	14.1 %	11.3 %	9.5 %	13.6 %	0.7 %
Intensity average	4,537 cps	-329 cps	4,781 cps	535,692 cps	4,169 cps	2,990 cps	3,782 cps	1,919 cps	5,134 cps	1,633,814 cps
Intensity per Run 1	3,867.6 cps	-263.3 cps	4,046.7 cps	538,025.0 cps	3,932.6 cps	2,684.3 cps	3,544.5 cps	1,792.1 cps	4,508.8 cps	1,627,175.6 cps
Intensity per Run 2	5,826.5 cps	-372.7 cps	6,038.6 cps	536,689.3 cps	4,292.8 cps	2,916.3 cps	3,620.5 cps	1,888.1 cps	5,213.1 cps	1,627,365.7 cps
Intensity per Run 3	3,916.7 cps	-351.2 cps	4,257.8 cps	532,360.7 cps	4,280.7 cps	3,368.5 cps	4,180.7 cps	2,076.2 cps	5,681.3 cps	1,646,901.0 cps
Intensity RSD	24.6 %	17.6 %	22.9 %	0.6 %	4.9 %	11.6 %	9.2 %	7.5 %	11.5 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.005 ppb	0.001 ppb	0.024 ppb	0.001 ppb	0.004 ppb	0.003 ppb	90.880 %	0.026 ppb	0.110 ppb
Concentration per Run 1		0.031 ppb	0.000 ppb	0.009 ppb	0.001 ppb	0.005 ppb	0.003 ppb	91.199 %	0.023 ppb	0.103 ppb
Concentration per Run 2		-0.011 ppb	0.001 ppb	0.031 ppb	0.001 ppb	0.006 ppb	0.003 ppb	92.202 %	0.028 ppb	0.105 ppb
Concentration per Run 3		-0.005 ppb	0.000 ppb	0.031 ppb	0.001 ppb	0.002 ppb	0.004 ppb	89.240 %	0.028 ppb	0.122 ppb
Concentration RSD		475.4 %	24.7 %	53.1 %	14.3 %	45.5 %	30.0 %	1.7 %	10.2 %	9.6 %
Intensity average	663 cps	95 cps	127 cps	19 cps	128 cps	59 cps	131 cps	813,636 cps	1,347 cps	3,144 cps
Intensity per Run 1	660.0 cps	120.0 cps	120.0 cps	8.0 cps	132.0 cps	68.0 cps	113.8 cps	816,487.0 cps	1,276.1 cps	2,984.4 cps
Intensity per Run 2	656.0 cps	80.0 cps	140.0 cps	24.0 cps	120.0 cps	76.0 cps	118.2 cps	825,472.1 cps	1,408.1 cps	3,048.4 cps
Intensity per Run 3	672.0 cps	84.0 cps	120.0 cps	24.0 cps	132.0 cps	32.0 cps	159.6 cps	798,947.7 cps	1,356.1 cps	3,400.5 cps
Intensity RSD	1.3 %	23.3 %	9.1 %	49.5 %	5.4 %	40.0 %	19.4 %	1.7 %	4.9 %	7.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.112 ppb	11.431 ppb	11.476 ppb			94.892 %			0.014 ppm	0.026 ppb
Concentration per Run 1	0.102 ppb	11.178 ppb	11.224 ppb			95.046 %			0.014 ppm	0.024 ppb
Concentration per Run 2	0.112 ppb	11.288 ppb	11.531 ppb			95.388 %			0.014 ppm	0.025 ppb
Concentration per Run 3	0.124 ppb	11.826 ppb	11.674 ppb			94.242 %			0.014 ppm	0.028 ppb
Concentration RSD	9.9 %	3.0 %	2.0 %			0.6 %			2.2 %	7.7 %
Intensity average	2,576 cps	70,025 cps	128,352 cps	3,694 cps	2,800 cps	2,982,727 cps	2,992 cps	2,695 cps	3,147,043 cps	3,369 cps
Intensity per Run 1	2,364.2 cps	68,676.5 cps	125,863.6 cps	3,616.5 cps	2,664.3 cps	2,987,577.0 cps	2,892.3 cps	2,680.3 cps	3,194,862.3 cps	3,144.4 cps
Intensity per Run 2	2,596.3 cps	69,875.2 cps	130,233.1 cps	3,888.6 cps	2,812.3 cps	2,998,314.8 cps	2,968.4 cps	2,764.3 cps	3,069,513.9 cps	3,362.5 cps
Intensity per Run 3	2,768.3 cps	71,524.6 cps	128,959.3 cps	3,576.5 cps	2,924.3 cps	2,962,288.7 cps	3,116.4 cps	2,640.3 cps	3,176,752.0 cps	3,600.5 cps
Intensity RSD	7.9 %	2.0 %	1.8 %	4.6 %	4.7 %	0.6 %	3.8 %	2.3 %	2.2 %	6.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.026 ppb	0.192 ppb	0.184 ppb	0.188 ppb	95.682 %
Concentration per Run 1	0.026 ppb	0.193 ppb	0.185 ppb	0.189 ppb	93.210 %
Concentration per Run 2	0.026 ppb	0.190 ppb	0.187 ppb	0.185 ppb	96.833 %
Concentration per Run 3	0.027 ppb	0.193 ppb	0.180 ppb	0.192 ppb	97.003 %
Concentration RSD	1.5 %	1.1 %	1.9 %	1.8 %	2.2 %
Intensity average	8,228 cps	14,177 cps	11,954 cps	56,314 cps	2,452,272 cps
Intensity per Run 1	7,944.5 cps	13,917.8 cps	11,741.5 cps	54,957.7 cps	2,388,909.4 cps
Intensity per Run 2	8,304.8 cps	14,167.0 cps	12,254.0 cps	55,952.0 cps	2,481,779.2 cps
Intensity per Run 3	8,435.9 cps	14,445.4 cps	11,865.7 cps	58,031.3 cps	2,486,126.7 cps
Intensity RSD	3.1 %	1.9 %	2.2 %	2.8 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24023-001DIS Analysis: 10/30/2019 13:05:49 Sample Type UNKNOWN
Comment SW-5 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	93.305 %	94.925 %	0.018 ppb	36.098 ppb	37.034 ppb	N/A	8,223.021 ppb	1,683.860 ppb	1,677.057 ppb	1,653.409 ppb
Concentration per Run 1	91.495 %	95.927 %	0.024 ppb	34.913 ppb	35.760 ppb	N/A	7,913.328 ppb	1,640.279 ppb	1,632.138 ppb	1,628.801 ppb
Concentration per Run 2	93.319 %	95.060 %	0.014 ppb	35.876 ppb	36.907 ppb	N/A	8,275.149 ppb	1,685.673 ppb	1,669.744 ppb	1,651.522 ppb
Concentration per Run 3	95.102 %	93.789 %	0.015 ppb	37.504 ppb	38.435 ppb	N/A	8,480.586 ppb	1,725.629 ppb	1,729.291 ppb	1,679.903 ppb
Concentration RSD	1.9 %	1.1 %	30.2 %	3.6 %	3.6 %	N/A	3.5 %	2.5 %	2.9 %	1.5 %
Intensity average	13,049,033 cps	30,564 cps	6 cps	578 cps	3,501 cps	3,140 cps	14,668,683 cps	1,366,720 cps	285,589 cps	373,836 cps
Intensity per Run 1	12,795,854.5 cps	30,886.6 cps	7.0 cps	565.5 cps	3,418.5 cps	3,150.4 cps	14,285,862.4 cps	1,347,339.0 cps	281,304.1 cps	372,717.0 cps
Intensity per Run 2	13,050,928.0 cps	30,607.4 cps	5.5 cps	575.0 cps	3,490.0 cps	3,010.4 cps	14,717,968.1 cps	1,363,663.6 cps	283,327.8 cps	371,934.7 cps
Intensity per Run 3	13,300,316.5 cps	30,198.0 cps	5.5 cps	594.0 cps	3,593.5 cps	3,260.4 cps	15,002,217.6 cps	1,389,156.8 cps	292,136.0 cps	376,855.0 cps
Intensity RSD	1.9 %	1.1 %	14.4 %	2.5 %	2.5 %	4.0 %	2.5 %	1.5 %	2.0 %	0.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	191.120 ppb		0.958 ppm	3,048.144 ppb	17,920.041 ppb	19,489.259 ppb	18,546.541 ppb	83.828 %	86.457 %	1.237 ppb
Concentration per Run 1	183.415 ppb		0.929 ppm	3,012.615 ppb	16,923.489 ppb	19,693.986 ppb	18,018.389 ppb	81.453 %	87.615 %	1.471 ppb
Concentration per Run 2	192.326 ppb		0.955 ppm	3,024.246 ppb	18,578.360 ppb	19,455.973 ppb	18,595.922 ppb	84.921 %	85.613 %	1.124 ppb
Concentration per Run 3	197.620 ppb		0.989 ppm	3,107.569 ppb	18,258.274 ppb	19,317.817 ppb	19,025.312 ppb	85.110 %	86.142 %	1.117 ppb
Concentration RSD	3.8 %		3.2 %	1.7 %	4.9 %	1.0 %	2.7 %	2.5 %	1.2 %	16.3 %
Intensity average	52,979 cps	21,111 cps	5,773,395 cps	2,261,034 cps	63,183 cps	43,609,299 cps	776,821 cps	5,769,888 cps	253,822 cps	409 cps
Intensity per Run 1	51,485.9 cps	20,617.1 cps	5,671,410.7 cps	2,263,929.4 cps	60,486.4 cps	42,835,936.0 cps	764,898.9 cps	5,606,411.7 cps	257,223.1 cps	492.0 cps
Intensity per Run 2	53,092.7 cps	21,598.7 cps	5,719,382.1 cps	2,225,879.8 cps	64,928.6 cps	44,093,135.7 cps	771,663.5 cps	5,845,112.4 cps	251,345.7 cps	368.0 cps
Intensity per Run 3	54,358.3 cps	21,118.0 cps	5,929,391.4 cps	2,293,291.5 cps	64,134.4 cps	43,898,824.7 cps	793,902.0 cps	5,858,138.6 cps	252,897.5 cps	368.0 cps
Intensity RSD	2.7 %	2.3 %	2.4 %	1.5 %	3.7 %	1.6 %	2.0 %	2.5 %	1.2 %	17.5 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.123 ppb	0.390 ppb	0.497 ppb	N/A	9.030 ppb	372.844 ppb	356.889 ppb	0.083 ppb	-0.564 ppb	-0.579 ppb
Concentration per Run 1	1.096 ppb	0.371 ppb	0.482 ppb	N/A	8.650 ppb	352.626 ppb	345.250 ppb	0.081 ppb	-0.572 ppb	-0.593 ppb
Concentration per Run 2	1.151 ppb	0.385 ppb	0.506 ppb	N/A	9.071 ppb	378.824 ppb	358.349 ppb	0.084 ppb	-0.560 ppb	-0.536 ppb
Concentration per Run 3	1.122 ppb	0.415 ppb	0.503 ppb	N/A	9.368 ppb	387.082 ppb	367.068 ppb	0.084 ppb	-0.560 ppb	-0.607 ppb
Concentration RSD	2.5 %	5.8 %	2.6 %	N/A	4.0 %	4.8 %	3.1 %	2.0 %	1.3 %	6.6 %
Intensity average	14,474 cps	9,318 cps	2,390 cps	2,417 cps	126,443 cps	6,886,993 cps	221,713 cps	3,786 cps	3,985 cps	605 cps
Intensity per Run 1	14,352.7 cps	9,091.3 cps	2,380.2 cps	2,390.2 cps	122,546.1 cps	6,586,026.0 cps	217,431.6 cps	3,752.6 cps	3,904.6 cps	588.0 cps
Intensity per Run 2	14,658.2 cps	9,127.3 cps	2,388.2 cps	2,390.2 cps	125,831.1 cps	6,932,377.9 cps	220,486.0 cps	3,784.6 cps	3,992.6 cps	668.0 cps
Intensity per Run 3	14,410.8 cps	9,735.8 cps	2,400.2 cps	2,470.3 cps	130,950.7 cps	7,142,576.5 cps	227,220.0 cps	3,820.6 cps	4,056.7 cps	560.0 cps
Intensity RSD	1.1 %	3.9 %	0.4 %	1.9 %	3.3 %	4.1 %	2.3 %	0.9 %	1.9 %	9.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.622 ppb	1.594 ppb	1.930 ppb	3.016 ppb	2.753 ppb		2.396 ppb	N/A	0.145 ppb	
Concentration per Run 1	1.556 ppb	1.559 ppb	1.884 ppb	2.850 ppb	2.623 ppb		2.153 ppb	N/A	0.175 ppb	
Concentration per Run 2	1.662 ppb	1.592 ppb	1.884 ppb	2.986 ppb	2.799 ppb		2.694 ppb	N/A	0.082 ppb	
Concentration per Run 3	1.648 ppb	1.631 ppb	2.023 ppb	3.211 ppb	2.836 ppb		2.342 ppb	N/A	0.178 ppb	
Concentration RSD	3.5 %	2.3 %	4.2 %	6.1 %	4.1 %		11.5 %	N/A	37.6 %	
Intensity average	46,022 cps	22,982 cps	24,407 cps	4,809 cps	22,245 cps	68 cps	10,693 cps	87 cps	27 cps	10,570 cps
Intensity per Run 1	44,703.8 cps	22,816.8 cps	24,059.2 cps	4,688.9 cps	21,823.1 cps	62.0 cps	9,934.3 cps	100.0 cps	36.3 cps	10,099.1 cps
Intensity per Run 2	46,622.8 cps	22,732.7 cps	24,295.6 cps	4,736.9 cps	22,251.8 cps	71.0 cps	11,643.1 cps	80.0 cps	6.6 cps	10,692.6 cps
Intensity per Run 3	46,739.4 cps	23,397.9 cps	24,864.8 cps	5,001.0 cps	22,660.6 cps	71.0 cps	10,501.5 cps	80.0 cps	37.1 cps	10,917.8 cps
Intensity RSD	2.5 %	1.6 %	1.7 %	3.5 %	1.9 %	7.6 %	8.1 %	13.3 %	65.1 %	4.0 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.714 ppb		89.781 %	0.361 ppb	0.134 ppb	0.154 ppb	0.128 ppb	0.135 ppb	0.018 ppm
Concentration per Run 1		1.154 ppb		89.997 %	0.337 ppb	0.118 ppb	0.141 ppb	0.119 ppb	0.122 ppb	0.018 ppm
Concentration per Run 2		-0.080 ppb		89.005 %	0.347 ppb	0.140 ppb	0.147 ppb	0.133 ppb	0.139 ppb	0.018 ppm
Concentration per Run 3		1.067 ppb		90.342 %	0.400 ppb	0.144 ppb	0.175 ppb	0.132 ppb	0.146 ppb	0.018 ppm
Concentration RSD		96.5 %		0.8 %	9.3 %	10.8 %	11.7 %	5.9 %	9.0 %	0.7 %
Intensity average	4,559 cps	-332 cps	4,829 cps	525,024 cps	3,934 cps	2,804 cps	3,526 cps	1,780 cps	4,874 cps	1,605,735 cps
Intensity per Run 1	3,677.6 cps	-257.3 cps	3,932.6 cps	526,286.8 cps	3,696.6 cps	2,504.3 cps	3,252.4 cps	1,676.1 cps	4,444.8 cps	1,601,409.6 cps
Intensity per Run 2	6,165.6 cps	-468.0 cps	6,517.9 cps	520,484.9 cps	3,764.6 cps	2,904.3 cps	3,372.5 cps	1,828.1 cps	4,957.0 cps	1,617,700.6 cps
Intensity per Run 3	3,832.6 cps	-272.2 cps	4,036.7 cps	528,301.8 cps	4,340.8 cps	3,004.4 cps	3,952.6 cps	1,836.1 cps	5,221.1 cps	1,598,095.7 cps
Intensity RSD	30.6 %	35.4 %	30.3 %	0.8 %	9.0 %	9.4 %	10.6 %	5.1 %	8.1 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.039 ppb	0.001 ppb	0.011 ppb	0.001 ppb	0.002 ppb	0.002 ppb	89.775 %	0.028 ppb	0.237 ppb
Concentration per Run 1		0.063 ppb	0.001 ppb	0.004 ppb	0.001 ppb	0.001 ppb	0.001 ppb	89.448 %	0.020 ppb	0.222 ppb
Concentration per Run 2		0.016 ppb	0.001 ppb	0.015 ppb	0.001 ppb	0.004 ppb	0.002 ppb	90.342 %	0.033 ppb	0.242 ppb
Concentration per Run 3		0.037 ppb	0.001 ppb	0.015 ppb	0.001 ppb	0.002 ppb	0.003 ppb	89.536 %	0.032 ppb	0.248 ppb
Concentration RSD		60.6 %	20.5 %	56.6 %	10.7 %	62.6 %	55.1 %	0.5 %	26.0 %	5.5 %
Intensity average	673 cps	125 cps	149 cps	9 cps	129 cps	36 cps	95 cps	803,739 cps	1,384 cps	6,330 cps
Intensity per Run 1	716.0 cps	148.0 cps	140.0 cps	4.0 cps	136.0 cps	24.0 cps	60.4 cps	800,808.7 cps	1,176.1 cps	5,945.4 cps
Intensity per Run 2	628.0 cps	104.0 cps	144.0 cps	12.0 cps	124.0 cps	56.0 cps	103.5 cps	808,812.0 cps	1,508.1 cps	6,473.7 cps
Intensity per Run 3	676.0 cps	124.0 cps	164.0 cps	12.0 cps	128.0 cps	28.0 cps	120.6 cps	801,597.0 cps	1,468.1 cps	6,569.7 cps
Intensity RSD	6.5 %	17.6 %	8.6 %	49.5 %	4.7 %	48.4 %	32.7 %	0.5 %	13.1 %	5.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.237 ppb	11.543 ppb	11.585 ppb			93.745 %			0.014 ppm	0.022 ppb
Concentration per Run 1	0.216 ppb	11.334 ppb	11.202 ppb			94.734 %			0.014 ppm	0.019 ppb
Concentration per Run 2	0.243 ppb	11.590 ppb	11.612 ppb			93.606 %			0.014 ppm	0.023 ppb
Concentration per Run 3	0.251 ppb	11.704 ppb	11.940 ppb			92.895 %			0.014 ppm	0.023 ppb
Concentration RSD	7.7 %	1.6 %	3.2 %			1.0 %			0.4 %	10.3 %
Intensity average	5,065 cps	69,863 cps	127,990 cps	2,747 cps	2,287 cps	2,946,675 cps	2,558 cps	2,315 cps	3,138,831 cps	2,958 cps
Intensity per Run 1	4,644.9 cps	68,805.3 cps	124,227.3 cps	2,812.3 cps	2,180.2 cps	2,977,772.9 cps	2,592.3 cps	2,212.2 cps	3,127,798.9 cps	2,793.3 cps
Intensity per Run 2	5,217.1 cps	70,341.7 cps	128,603.3 cps	2,684.3 cps	2,388.2 cps	2,942,291.5 cps	2,380.2 cps	2,288.2 cps	3,136,933.1 cps	3,020.4 cps
Intensity per Run 3	5,333.1 cps	70,442.4 cps	131,138.2 cps	2,744.3 cps	2,292.2 cps	2,919,960.0 cps	2,700.3 cps	2,444.2 cps	3,151,761.4 cps	3,060.4 cps
Intensity RSD	7.3 %	1.3 %	2.7 %	2.3 %	4.6 %	1.0 %	6.4 %	5.1 %	0.4 %	4.9 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.022 ppb	0.120 ppb	0.115 ppb	0.117 ppb	94.009 %
Concentration per Run 1	0.019 ppb	0.114 ppb	0.116 ppb	0.113 ppb	96.013 %
Concentration per Run 2	0.024 ppb	0.126 ppb	0.115 ppb	0.121 ppb	91.610 %
Concentration per Run 3	0.023 ppb	0.120 ppb	0.113 ppb	0.117 ppb	94.405 %
Concentration RSD	10.3 %	5.0 %	1.4 %	3.6 %	2.4 %
Intensity average	7,222 cps	8,977 cps	7,546 cps	35,380 cps	2,409,400 cps
Intensity per Run 1	6,817.9 cps	8,758.1 cps	7,790.5 cps	34,978.2 cps	2,460,766.1 cps
Intensity per Run 2	7,325.1 cps	9,174.4 cps	7,382.2 cps	35,667.2 cps	2,347,903.3 cps
Intensity per Run 3	7,523.3 cps	8,999.2 cps	7,466.2 cps	35,496.0 cps	2,419,531.1 cps
Intensity RSD	5.0 %	2.3 %	2.9 %	1.0 %	2.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24023-002 Analysis: 10/30/2019 13:11:53 Sample Type UNKNOWN
Comment SW-5 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	94.002 %	93.219 %	0.011 ppb	36.589 ppb	37.041 ppb	N/A	7,926.555 ppb	1,634.314 ppb	1,643.509 ppb	1,611.823 ppb
Concentration per Run 1	93.390 %	94.916 %	0.014 ppb	35.036 ppb	36.086 ppb	N/A	7,866.479 ppb	1,594.467 ppb	1,625.850 ppb	1,585.915 ppb
Concentration per Run 2	93.934 %	93.264 %	0.012 ppb	37.878 ppb	36.793 ppb	N/A	7,937.829 ppb	1,625.251 ppb	1,631.084 ppb	1,635.224 ppb
Concentration per Run 3	94.682 %	91.478 %	0.005 ppb	36.854 ppb	38.244 ppb	N/A	7,975.356 ppb	1,683.225 ppb	1,673.594 ppb	1,614.331 ppb
Concentration RSD	0.7 %	1.8 %	43.5 %	3.9 %	3.0 %	N/A	0.7 %	2.8 %	1.6 %	1.5 %
Intensity average	13,146,454 cps	30,015 cps	5 cps	577 cps	3,446 cps	2,987 cps	13,997,468 cps	1,313,590 cps	277,296 cps	361,239 cps
Intensity per Run 1	13,060,849.0 cps	30,560.8 cps	5.5 cps	560.5 cps	3,405.5 cps	2,960.4 cps	13,942,094.8 cps	1,285,231.9 cps	274,840.8 cps	355,775.8 cps
Intensity per Run 2	13,136,917.6 cps	30,029.0 cps	5.0 cps	597.5 cps	3,428.5 cps	3,020.4 cps	14,064,563.6 cps	1,311,032.6 cps	276,233.6 cps	367,890.3 cps
Intensity per Run 3	13,241,596.2 cps	29,454.2 cps	4.0 cps	571.5 cps	3,504.0 cps	2,980.4 cps	13,985,745.7 cps	1,344,505.2 cps	280,813.6 cps	360,051.3 cps
Intensity RSD	0.7 %	1.8 %	15.8 %	3.3 %	1.5 %	1.0 %	0.4 %	2.3 %	1.1 %	1.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	251.750 ppb		0.947 ppm	2,941.010 ppb	17,142.876 ppb	18,722.995 ppb	17,964.394 ppb	86.370 %	86.504 %	1.580 ppb
Concentration per Run 1	249.264 ppb		0.935 ppm	2,927.598 ppb	16,863.933 ppb	18,447.228 ppb	18,045.305 ppb	86.210 %	85.058 %	1.638 ppb
Concentration per Run 2	248.562 ppb		0.953 ppm	2,931.372 ppb	17,298.145 ppb	19,467.065 ppb	17,766.770 ppb	86.398 %	87.139 %	1.420 ppb
Concentration per Run 3	257.424 ppb		0.954 ppm	2,964.060 ppb	17,266.551 ppb	18,254.693 ppb	18,081.106 ppb	86.500 %	87.313 %	1.682 ppb
Concentration RSD	2.0 %		1.1 %	0.7 %	1.4 %	3.5 %	1.0 %	0.2 %	1.5 %	8.9 %
Intensity average	69,067 cps	20,811 cps	5,686,727 cps	2,176,876 cps	60,446 cps	43,146,394 cps	752,577 cps	5,944,821 cps	253,960 cps	521 cps
Intensity per Run 1	68,396.9 cps	21,168.0 cps	5,574,659.6 cps	2,143,180.9 cps	58,577.7 cps	42,427,728.0 cps	744,087.9 cps	5,933,840.9 cps	249,717.3 cps	532.0 cps
Intensity per Run 2	68,477.7 cps	20,426.7 cps	5,749,970.5 cps	2,183,250.8 cps	61,410.7 cps	44,872,331.7 cps	749,654.2 cps	5,946,798.9 cps	255,824.9 cps	472.0 cps
Intensity per Run 3	70,327.5 cps	20,837.4 cps	5,735,552.2 cps	2,204,194.9 cps	61,350.5 cps	42,139,122.0 cps	763,989.8 cps	5,953,823.5 cps	256,336.9 cps	560.0 cps
Intensity RSD	1.6 %	1.8 %	1.7 %	1.4 %	2.7 %	3.5 %	1.4 %	0.2 %	1.5 %	8.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.317 ppb	0.503 ppb	0.605 ppb	N/A	15.529 ppb	520.836 ppb	500.626 ppb	0.099 ppb	3.546 ppb	3.640 ppb
Concentration per Run 1	1.350 ppb	0.514 ppb	0.566 ppb	N/A	15.201 ppb	526.809 ppb	492.015 ppb	0.100 ppb	3.427 ppb	3.761 ppb
Concentration per Run 2	1.313 ppb	0.489 ppb	0.598 ppb	N/A	15.596 ppb	519.096 ppb	500.213 ppb	0.100 ppb	3.569 ppb	3.591 ppb
Concentration per Run 3	1.287 ppb	0.504 ppb	0.650 ppb	N/A	15.792 ppb	516.604 ppb	509.652 ppb	0.097 ppb	3.641 ppb	3.569 ppb
Concentration RSD	2.4 %	2.5 %	7.0 %	N/A	1.9 %	1.0 %	1.8 %	2.1 %	3.1 %	2.9 %
Intensity average	16,721 cps	11,364 cps	2,648 cps	3,027 cps	215,068 cps	9,555,317 cps	310,867 cps	4,483 cps	46,139 cps	7,266 cps
Intensity per Run 1	16,822.5 cps	11,385.2 cps	2,520.3 cps	3,010.4 cps	208,096.0 cps	9,558,490.0 cps	300,388.9 cps	4,456.8 cps	45,185.7 cps	7,398.2 cps
Intensity per Run 2	16,806.0 cps	11,201.0 cps	2,644.3 cps	3,080.4 cps	217,057.7 cps	9,570,427.6 cps	312,845.5 cps	4,572.8 cps	46,265.8 cps	7,214.1 cps
Intensity per Run 3	16,535.2 cps	11,505.3 cps	2,780.3 cps	2,990.4 cps	220,049.3 cps	9,537,034.6 cps	319,367.2 cps	4,420.8 cps	46,964.1 cps	7,186.1 cps
Intensity RSD	1.0 %	1.3 %	4.9 %	1.6 %	2.9 %	0.2 %	3.1 %	1.8 %	1.9 %	1.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	2.131 ppb	2.071 ppb	2.250 ppb	3.199 ppb	2.964 ppb		2.868 ppb	N/A	0.097 ppb	
Concentration per Run 1	2.124 ppb	2.040 ppb	2.259 ppb	3.292 ppb	2.940 ppb		2.917 ppb	N/A	0.065 ppb	
Concentration per Run 2	2.140 ppb	2.072 ppb	2.305 ppb	3.139 ppb	2.814 ppb		2.715 ppb	N/A	0.127 ppb	
Concentration per Run 3	2.129 ppb	2.101 ppb	2.187 ppb	3.166 ppb	3.140 ppb		2.971 ppb	N/A	0.099 ppb	
Concentration RSD	0.4 %	1.5 %	2.7 %	2.5 %	5.5 %		4.7 %	N/A	32.0 %	
Intensity average	58,773 cps	29,381 cps	25,674 cps	4,925 cps	22,926 cps	80 cps	11,835 cps	100 cps	11 cps	10,527 cps
Intensity per Run 1	58,147.2 cps	28,480.4 cps	25,514.1 cps	4,985.0 cps	22,704.6 cps	85.0 cps	11,881.2 cps	130.0 cps	1.3 cps	10,187.2 cps
Intensity per Run 2	59,204.0 cps	29,607.1 cps	26,047.2 cps	4,881.0 cps	22,299.9 cps	73.0 cps	11,423.7 cps	110.0 cps	20.6 cps	10,543.4 cps
Intensity per Run 3	58,967.0 cps	30,056.2 cps	25,462.0 cps	4,909.0 cps	23,774.6 cps	83.0 cps	12,199.9 cps	60.0 cps	12.0 cps	10,849.7 cps
Intensity RSD	0.9 %	2.8 %	1.3 %	1.1 %	3.3 %	8.0 %	3.3 %	36.1 %	85.6 %	3.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.230 ppb		87.709 %	0.361 ppb	0.131 ppb	0.145 ppb	0.125 ppb	0.127 ppb	0.018 ppm
Concentration per Run 1		0.173 ppb		88.215 %	0.340 ppb	0.120 ppb	0.138 ppb	0.111 ppb	0.119 ppb	0.018 ppm
Concentration per Run 2		0.396 ppb		87.490 %	0.372 ppb	0.131 ppb	0.137 ppb	0.121 ppb	0.128 ppb	0.018 ppm
Concentration per Run 3		0.119 ppb		87.420 %	0.371 ppb	0.142 ppb	0.161 ppb	0.141 ppb	0.133 ppb	0.018 ppm
Concentration RSD		64.0 %		0.5 %	5.1 %	8.3 %	9.3 %	12.1 %	5.6 %	1.7 %
Intensity average	5,034 cps	-405 cps	5,379 cps	512,903 cps	3,842 cps	2,683 cps	3,272 cps	1,699 cps	4,491 cps	1,594,302 cps
Intensity per Run 1	5,174.2 cps	-410.6 cps	5,674.4 cps	515,865.8 cps	3,644.5 cps	2,492.3 cps	3,132.4 cps	1,544.1 cps	4,252.7 cps	1,624,531.2 cps
Intensity per Run 2	4,370.9 cps	-378.3 cps	4,614.0 cps	511,625.5 cps	3,948.6 cps	2,684.3 cps	3,108.4 cps	1,660.1 cps	4,536.8 cps	1,584,428.8 cps
Intensity per Run 3	5,556.4 cps	-425.1 cps	5,849.5 cps	511,217.0 cps	3,932.6 cps	2,872.3 cps	3,576.5 cps	1,892.1 cps	4,684.9 cps	1,573,946.8 cps
Intensity RSD	12.0 %	5.9 %	12.4 %	0.5 %	4.5 %	7.1 %	8.1 %	10.4 %	4.9 %	1.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.019 ppb	0.001 ppb	0.004 ppb	0.001 ppb	0.005 ppb	0.003 ppb	87.924 %	0.024 ppb	0.105 ppb
Concentration per Run 1		0.019 ppb	0.001 ppb	-0.002 ppb	0.000 ppb	0.002 ppb	0.003 ppb	87.211 %	0.018 ppb	0.099 ppb
Concentration per Run 2		0.001 ppb	0.001 ppb	-0.002 ppb	0.001 ppb	0.006 ppb	0.003 ppb	88.153 %	0.023 ppb	0.103 ppb
Concentration per Run 3		0.036 ppb	0.000 ppb	0.015 ppb	0.000 ppb	0.006 ppb	0.003 ppb	88.407 %	0.031 ppb	0.112 ppb
Concentration RSD		92.6 %	68.0 %	245.1 %	74.6 %	48.0 %	14.2 %	0.7 %	26.5 %	6.1 %
Intensity average	651 cps	104 cps	120 cps	4 cps	109 cps	61 cps	125 cps	787,164 cps	1,249 cps	2,927 cps
Intensity per Run 1	648.0 cps	104.0 cps	136.0 cps	0.0 cps	84.0 cps	32.0 cps	110.3 cps	780,787.0 cps	1,108.1 cps	2,772.3 cps
Intensity per Run 2	672.0 cps	88.0 cps	132.0 cps	0.0 cps	144.0 cps	72.0 cps	135.2 cps	789,215.0 cps	1,224.1 cps	2,896.3 cps
Intensity per Run 3	632.0 cps	120.0 cps	92.0 cps	12.0 cps	100.0 cps	80.0 cps	130.0 cps	791,489.6 cps	1,416.1 cps	3,112.4 cps
Intensity RSD	3.1 %	15.4 %	20.3 %	173.2 %	28.4 %	41.9 %	10.5 %	0.7 %	12.5 %	5.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.104 ppb	11.801 ppb	11.833 ppb			95.203 %			0.014 ppm	0.019 ppb
Concentration per Run 1	0.103 ppb	11.539 ppb	11.469 ppb			95.927 %			0.014 ppm	0.016 ppb
Concentration per Run 2	0.101 ppb	11.867 ppb	11.823 ppb			94.738 %			0.014 ppm	0.021 ppb
Concentration per Run 3	0.108 ppb	11.996 ppb	12.207 ppb			94.942 %			0.014 ppm	0.020 ppb
Concentration RSD	3.3 %	2.0 %	3.1 %			0.7 %			1.3 %	12.8 %
Intensity average	2,342 cps	71,153 cps	130,460 cps	3,601 cps	2,839 cps	2,992,492 cps	2,923 cps	2,792 cps	3,139,319 cps	2,732 cps
Intensity per Run 1	2,316.2 cps	69,533.1 cps	126,461.6 cps	3,536.5 cps	2,732.3 cps	3,015,277.4 cps	2,916.3 cps	2,844.3 cps	3,105,734.4 cps	2,519.3 cps
Intensity per Run 2	2,284.2 cps	71,484.4 cps	130,183.9 cps	3,552.5 cps	2,908.3 cps	2,977,889.6 cps	2,932.3 cps	2,756.3 cps	3,184,858.2 cps	2,853.3 cps
Intensity per Run 3	2,424.2 cps	72,441.9 cps	134,733.8 cps	3,712.6 cps	2,876.3 cps	2,984,309.0 cps	2,920.3 cps	2,776.3 cps	3,127,364.0 cps	2,823.3 cps
Intensity RSD	3.1 %	2.1 %	3.2 %	2.7 %	3.3 %	0.7 %	0.3 %	1.7 %	1.3 %	6.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.020 ppb	0.197 ppb	0.189 ppb	0.191 ppb	94.512 %
Concentration per Run 1	0.018 ppb	0.190 ppb	0.179 ppb	0.184 ppb	95.648 %
Concentration per Run 2	0.021 ppb	0.201 ppb	0.196 ppb	0.196 ppb	93.693 %
Concentration per Run 3	0.021 ppb	0.199 ppb	0.194 ppb	0.194 ppb	94.196 %
Concentration RSD	8.0 %	2.9 %	4.8 %	3.2 %	1.1 %
Intensity average	6,810 cps	14,346 cps	12,147 cps	56,452 cps	2,422,288 cps
Intensity per Run 1	6,505.7 cps	14,071.9 cps	11,649.5 cps	55,164.1 cps	2,451,390.2 cps
Intensity per Run 2	6,902.9 cps	14,520.4 cps	12,438.2 cps	57,127.3 cps	2,401,287.0 cps
Intensity per Run 3	7,021.0 cps	14,446.4 cps	12,354.1 cps	57,065.2 cps	2,414,187.3 cps
Intensity RSD	4.0 %	1.7 %	3.6 %	2.0 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24023-002DIS Analysis: 10/30/2019 13:17:56 Sample Type UNKNOWN
Comment SW-5 Swampwater Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	93.222 %	93.118 %	0.028 ppb	35.716 ppb	35.965 ppb	N/A	7,981.244 ppb	1,643.080 ppb	1,625.592 ppb	1,608.951 ppb
Concentration per Run 1	91.812 %	93.208 %	0.035 ppb	35.452 ppb	35.856 ppb	N/A	7,971.819 ppb	1,647.725 ppb	1,586.392 ppb	1,572.178 ppb
Concentration per Run 2	93.812 %	93.460 %	0.022 ppb	35.920 ppb	35.500 ppb	N/A	7,874.907 ppb	1,624.281 ppb	1,638.486 ppb	1,610.764 ppb
Concentration per Run 3	94.041 %	92.685 %	0.026 ppb	35.777 ppb	36.537 ppb	N/A	8,097.005 ppb	1,657.233 ppb	1,651.899 ppb	1,643.912 ppb
Concentration RSD	1.3 %	0.4 %	25.5 %	0.7 %	1.5 %	N/A	1.4 %	1.0 %	2.1 %	2.2 %
Intensity average	13,037,373 cps	29,982 cps	7 cps	561 cps	3,336 cps	3,104 cps	13,968,605 cps	1,308,340 cps	271,586 cps	356,867 cps
Intensity per Run 1	12,840,224.8 cps	30,011.0 cps	8.5 cps	557.5 cps	3,327.4 cps	3,070.4 cps	13,938,856.6 cps	1,310,637.0 cps	264,731.3 cps	348,261.9 cps
Intensity per Run 2	13,119,963.1 cps	30,092.2 cps	6.5 cps	566.0 cps	3,300.9 cps	3,090.4 cps	13,769,757.6 cps	1,291,818.0 cps	273,323.0 cps	356,622.7 cps
Intensity per Run 3	13,151,931.6 cps	29,842.6 cps	7.0 cps	560.5 cps	3,379.5 cps	3,150.4 cps	14,197,200.4 cps	1,322,564.4 cps	276,703.5 cps	365,716.1 cps
Intensity RSD	1.3 %	0.4 %	14.2 %	0.8 %	1.2 %	1.3 %	1.5 %	1.2 %	2.3 %	2.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	185.944 ppb		0.952 ppm	2,979.874 ppb	17,308.732 ppb	19,037.618 ppb	18,074.891 ppb	84.736 %	84.786 %	1.292 ppb
Concentration per Run 1	186.553 ppb		0.935 ppm	3,009.481 ppb	17,113.628 ppb	18,984.018 ppb	18,013.481 ppb	82.511 %	84.477 %	1.190 ppb
Concentration per Run 2	186.568 ppb		0.955 ppm	2,985.154 ppb	17,155.718 ppb	19,547.098 ppb	18,304.405 ppb	83.239 %	84.153 %	1.268 ppb
Concentration per Run 3	184.710 ppb		0.967 ppm	2,944.987 ppb	17,656.851 ppb	18,581.739 ppb	17,906.787 ppb	88.456 %	85.728 %	1.418 ppb
Concentration RSD	0.6 %		1.7 %	1.1 %	1.7 %	2.5 %	1.1 %	3.8 %	1.0 %	9.0 %
Intensity average	50,579 cps	19,843 cps	5,633,321 cps	2,168,233 cps	59,881 cps	43,033,321 cps	742,538 cps	5,832,359 cps	248,917 cps	419 cps
Intensity per Run 1	50,672.7 cps	19,575.4 cps	5,516,177.7 cps	2,183,385.5 cps	58,999.7 cps	41,818,882.3 cps	737,458.3 cps	5,679,249.5 cps	248,008.9 cps	384.0 cps
Intensity per Run 2	50,643.7 cps	19,695.7 cps	5,622,563.5 cps	2,159,949.7 cps	58,939.6 cps	43,453,531.4 cps	746,623.2 cps	5,729,376.6 cps	247,057.8 cps	408.0 cps
Intensity per Run 3	50,421.9 cps	20,256.5 cps	5,761,222.2 cps	2,161,363.9 cps	61,702.3 cps	43,827,548.1 cps	743,533.5 cps	6,088,450.7 cps	251,683.8 cps	464.0 cps
Intensity RSD	0.3 %	1.8 %	2.2 %	0.6 %	2.6 %	2.5 %	0.6 %	3.8 %	1.0 %	9.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.103 ppb	0.388 ppb	0.552 ppb	N/A	8.817 ppb	354.404 ppb	343.263 ppb	0.082 ppb	-0.141 ppb	-0.171 ppb
Concentration per Run 1	1.100 ppb	0.369 ppb	0.502 ppb	N/A	8.727 ppb	348.712 ppb	338.080 ppb	0.079 ppb	-0.111 ppb	-0.088 ppb
Concentration per Run 2	1.078 ppb	0.381 ppb	0.569 ppb	N/A	8.718 ppb	352.115 ppb	344.282 ppb	0.083 ppb	-0.172 ppb	-0.229 ppb
Concentration per Run 3	1.130 ppb	0.413 ppb	0.587 ppb	N/A	9.005 ppb	362.384 ppb	347.427 ppb	0.084 ppb	-0.140 ppb	-0.195 ppb
Concentration RSD	2.3 %	5.8 %	8.1 %	N/A	1.9 %	2.0 %	1.4 %	3.0 %	21.6 %	42.9 %
Intensity average	13,964 cps	9,094 cps	2,475 cps	2,407 cps	120,896 cps	6,408,898 cps	209,217 cps	3,677 cps	8,197 cps	1,227 cps
Intensity per Run 1	13,883.5 cps	8,735.1 cps	2,340.2 cps	2,560.3 cps	119,114.0 cps	6,275,648.2 cps	205,309.7 cps	3,544.5 cps	8,434.8 cps	1,348.1 cps
Intensity per Run 2	13,581.9 cps	8,903.2 cps	2,504.3 cps	2,480.3 cps	119,153.1 cps	6,348,564.4 cps	208,256.3 cps	3,704.6 cps	7,962.6 cps	1,136.1 cps
Intensity per Run 3	14,426.3 cps	9,643.7 cps	2,580.3 cps	2,180.2 cps	124,420.9 cps	6,602,480.5 cps	214,084.5 cps	3,780.6 cps	8,194.7 cps	1,196.1 cps
Intensity RSD	3.1 %	5.3 %	5.0 %	8.3 %	2.5 %	2.7 %	2.1 %	3.3 %	2.9 %	8.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.648 ppb	1.619 ppb	1.917 ppb	2.949 ppb	2.772 ppb		2.499 ppb	N/A	0.159 ppb	
Concentration per Run 1	1.626 ppb	1.657 ppb	1.919 ppb	3.092 ppb	2.780 ppb		2.615 ppb	N/A	0.050 ppb	
Concentration per Run 2	1.652 ppb	1.576 ppb	1.754 ppb	2.915 ppb	2.625 ppb		2.096 ppb	N/A	0.241 ppb	
Concentration per Run 3	1.666 ppb	1.623 ppb	2.078 ppb	2.840 ppb	2.912 ppb		2.786 ppb	N/A	0.185 ppb	
Concentration RSD	1.2 %	2.5 %	8.4 %	4.4 %	5.2 %		14.4 %	N/A	62.0 %	
Intensity average	45,634 cps	22,866 cps	23,883 cps	4,633 cps	21,799 cps	71 cps	10,784 cps	67 cps	30 cps	10,156 cps
Intensity per Run 1	44,824.4 cps	23,281.7 cps	23,826.7 cps	4,736.9 cps	21,698.9 cps	70.0 cps	11,097.4 cps	40.0 cps	-3.4 cps	9,882.9 cps
Intensity per Run 2	45,735.8 cps	22,143.7 cps	23,462.1 cps	4,608.9 cps	21,190.0 cps	82.0 cps	9,825.3 cps	110.0 cps	56.1 cps	10,172.2 cps
Intensity per Run 3	46,341.9 cps	23,173.6 cps	24,359.8 cps	4,552.8 cps	22,508.3 cps	60.0 cps	11,428.8 cps	50.0 cps	38.3 cps	10,414.3 cps
Intensity RSD	1.7 %	2.7 %	1.9 %	2.0 %	3.0 %	15.6 %	7.8 %	56.8 %	100.6 %	2.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.679 ppb		87.252 %	0.370 ppb	0.119 ppb	0.139 ppb	0.118 ppb	0.121 ppb	0.018 ppm
Concentration per Run 1		0.135 ppb		86.537 %	0.350 ppb	0.121 ppb	0.127 ppb	0.110 ppb	0.116 ppb	0.018 ppm
Concentration per Run 2		1.690 ppb		88.155 %	0.343 ppb	0.113 ppb	0.133 ppb	0.114 ppb	0.115 ppb	0.018 ppm
Concentration per Run 3		0.212 ppb		87.064 %	0.417 ppb	0.122 ppb	0.158 ppb	0.131 ppb	0.131 ppb	0.017 ppm
Concentration RSD		129.1 %		0.9 %	11.1 %	4.2 %	11.8 %	9.4 %	7.6 %	1.1 %
Intensity average	5,180 cps	-330 cps	5,443 cps	510,234 cps	3,911 cps	2,460 cps	3,142 cps	1,620 cps	4,294 cps	1,576,374 cps
Intensity per Run 1	5,643.3 cps	-420.0 cps	5,959.5 cps	506,052.4 cps	3,688.6 cps	2,484.3 cps	2,872.3 cps	1,512.1 cps	4,108.7 cps	1,585,476.4 cps
Intensity per Run 2	3,639.5 cps	-168.9 cps	3,776.6 cps	515,515.9 cps	3,692.6 cps	2,388.2 cps	3,068.4 cps	1,592.1 cps	4,180.7 cps	1,587,016.4 cps
Intensity per Run 3	6,255.7 cps	-401.5 cps	6,593.8 cps	509,132.3 cps	4,352.8 cps	2,508.3 cps	3,484.5 cps	1,756.1 cps	4,592.9 cps	1,556,630.5 cps
Intensity RSD	26.4 %	42.4 %	27.2 %	0.9 %	9.8 %	2.6 %	9.9 %	7.7 %	6.1 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.008 ppb	0.000 ppb	0.006 ppb	0.000 ppb	0.002 ppb	0.003 ppb	88.160 %	0.017 ppb	0.276 ppb
Concentration per Run 1		-0.016 ppb	0.000 ppb	0.004 ppb	0.000 ppb	0.001 ppb	0.003 ppb	87.878 %	0.015 ppb	0.265 ppb
Concentration per Run 2		0.017 ppb	0.000 ppb	0.009 ppb	0.000 ppb	0.005 ppb	0.003 ppb	89.966 %	0.016 ppb	0.277 ppb
Concentration per Run 3		-0.024 ppb	0.000 ppb	0.004 ppb	0.001 ppb	0.001 ppb	0.002 ppb	86.638 %	0.018 ppb	0.285 ppb
Concentration RSD		282.4 %	358.5 %	53.3 %	63.2 %	95.2 %	16.3 %	1.9 %	9.7 %	3.8 %
Intensity average	640 cps	80 cps	77 cps	5 cps	95 cps	35 cps	118 cps	789,285 cps	1,079 cps	7,181 cps
Intensity per Run 1	692.0 cps	72.0 cps	52.0 cps	4.0 cps	76.0 cps	16.0 cps	132.1 cps	786,754.3 cps	1,040.0 cps	6,833.9 cps
Intensity per Run 2	632.0 cps	104.0 cps	100.0 cps	8.0 cps	100.0 cps	64.0 cps	114.7 cps	805,447.5 cps	1,092.0 cps	7,378.2 cps
Intensity per Run 3	596.0 cps	64.0 cps	80.0 cps	4.0 cps	108.0 cps	24.0 cps	106.4 cps	775,653.4 cps	1,104.1 cps	7,330.2 cps
Intensity RSD	7.6 %	26.5 %	31.2 %	43.3 %	17.6 %	74.2 %	11.1 %	1.9 %	3.2 %	4.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.277 ppb	11.157 ppb	11.359 ppb			92.883 %			0.014 ppm	0.016 ppb
Concentration per Run 1	0.258 ppb	11.414 ppb	11.545 ppb			88.358 %			0.013 ppm	0.016 ppb
Concentration per Run 2	0.263 ppb	10.721 ppb	11.067 ppb			95.878 %			0.014 ppm	0.016 ppb
Concentration per Run 3	0.309 ppb	11.336 ppb	11.464 ppb			94.414 %			0.013 ppm	0.016 ppb
Concentration RSD	10.2 %	3.4 %	2.3 %			4.3 %			1.9 %	1.5 %
Intensity average	5,781 cps	66,562 cps	123,769 cps	2,803 cps	2,328 cps	2,919,584 cps	2,363 cps	2,286 cps	3,075,735 cps	2,475 cps
Intensity per Run 1	5,349.2 cps	66,460.6 cps	122,507.1 cps	2,908.3 cps	2,216.2 cps	2,777,334.1 cps	2,332.2 cps	2,264.2 cps	3,035,705.4 cps	2,443.2 cps
Intensity per Run 2	5,633.3 cps	65,661.5 cps	123,836.5 cps	2,740.3 cps	2,432.2 cps	3,013,721.2 cps	2,268.2 cps	2,396.2 cps	3,141,480.5 cps	2,505.3 cps
Intensity per Run 3	6,361.6 cps	67,562.5 cps	124,962.6 cps	2,760.3 cps	2,336.2 cps	2,967,696.5 cps	2,488.3 cps	2,196.2 cps	3,050,019.6 cps	2,476.2 cps
Intensity RSD	9.0 %	1.4 %	1.0 %	3.3 %	4.6 %	4.3 %	4.8 %	4.5 %	1.9 %	1.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.017 ppb	0.113 ppb	0.108 ppb	0.110 ppb	94.485 %
Concentration per Run 1	0.016 ppb	0.113 ppb	0.109 ppb	0.108 ppb	93.182 %
Concentration per Run 2	0.017 ppb	0.112 ppb	0.106 ppb	0.110 ppb	94.921 %
Concentration per Run 3	0.017 ppb	0.115 ppb	0.108 ppb	0.111 ppb	95.352 %
Concentration RSD	3.1 %	1.1 %	1.4 %	1.1 %	1.2 %
Intensity average	6,105 cps	8,544 cps	7,163 cps	33,624 cps	2,421,589 cps
Intensity per Run 1	5,899.4 cps	8,380.8 cps	7,138.1 cps	32,774.9 cps	2,388,190.7 cps
Intensity per Run 2	6,169.5 cps	8,528.9 cps	7,102.0 cps	33,876.4 cps	2,432,767.7 cps
Intensity per Run 3	6,247.6 cps	8,721.0 cps	7,250.1 cps	34,220.5 cps	2,443,807.1 cps
Intensity RSD	3.0 %	2.0 %	1.1 %	2.2 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 13:24:00 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	87.115 %	88.182 %	144.825 ppb	146.126 ppb	144.960 ppb	N/A	14,195.465 ppb	14,215.279 ppb	14,349.802 ppb
Concentration per Run 1	86.655 %	87.467 %	145.224 ppb	143.914 ppb	143.396 ppb	N/A	13,903.382 ppb	14,332.418 ppb	14,115.026 ppb
Concentration per Run 2	87.004 %	87.994 %	144.832 ppb	147.781 ppb	145.208 ppb	N/A	14,280.957 ppb	14,206.700 ppb	14,347.028 ppb
Concentration per Run 3	87.686 %	89.085 %	144.421 ppb	146.683 ppb	146.275 ppb	N/A	14,402.057 ppb	14,106.721 ppb	14,587.352 ppb
Recovery Percentage 1			96.550 %		96.640 %		93.699 %		
Concentration RSD	0.6 %	0.9 %	0.3 %	1.4 %	1.0 %	N/A	1.8 %	0.8 %	1.6 %
Intensity average	12,183,302 cps	28,393 cps	20,285 cps	2,171 cps	12,738 cps	1,713 cps	23,818,181 cps	10,848,899 cps	2,299,683 cps
Intensity per Run 1	12,118,996.4 cps	28,162.7 cps	20,176.8 cps	2,118.2 cps	12,476.7 cps	1,770.1 cps	22,997,534.4 cps	10,781,884.3 cps	2,228,361.5 cps
Intensity per Run 2	12,167,770.1 cps	28,332.1 cps	20,243.4 cps	2,191.7 cps	12,736.5 cps	1,620.1 cps	23,934,540.7 cps	10,833,557.0 cps	2,296,976.3 cps
Intensity per Run 3	12,263,140.2 cps	28,683.4 cps	20,436.2 cps	2,204.2 cps	13,002.3 cps	1,750.1 cps	24,522,468.8 cps	10,931,255.9 cps	2,373,710.3 cps
Intensity RSD	0.6 %	0.9 %	0.7 %	2.1 %	2.1 %	4.8 %	3.2 %	0.7 %	3.2 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	14,144.753 ppb	14,244.298 ppb		0.579 ppm	14,180.485 ppb	14,657.354 ppb	15,470.664 ppb	14,989.769 ppb	80.453 %
Concentration per Run 1	14,192.593 ppb	14,351.745 ppb		0.579 ppm	14,375.249 ppb	14,918.594 ppb	15,204.249 ppb	15,053.099 ppb	79.117 %
Concentration per Run 2	14,016.022 ppb	14,228.666 ppb		0.577 ppm	14,022.431 ppb	14,689.663 ppb	15,784.807 ppb	15,005.950 ppb	80.511 %
Concentration per Run 3	14,225.645 ppb	14,152.481 ppb		0.580 ppm	14,143.776 ppb	14,363.807 ppb	15,422.936 ppb	14,910.256 ppb	81.730 %
Recovery Percentage 1	93.365 %	94.022 %			93.601 %		102.117 %	98.942 %	
Concentration RSD	0.8 %	0.7 %		0.3 %	1.3 %	1.9 %	1.9 %	0.5 %	1.6 %
Intensity average	3,011,519 cps	3,694,315 cps	4,014 cps	3,312,618 cps	9,951,896 cps	49,401 cps	33,216,677 cps	600,628 cps	5,537,552 cps
Intensity per Run 1	2,976,042.5 cps	3,664,912.3 cps	4,430.8 cps	3,251,553.5 cps	9,888,727.1 cps	49,217.0 cps	32,111,138.6 cps	590,058.5 cps	5,445,595.6 cps
Intensity per Run 2	2,981,842.8 cps	3,688,043.4 cps	3,860.6 cps	3,303,702.1 cps	9,844,279.9 cps	49,548.2 cps	33,909,878.5 cps	601,667.8 cps	5,541,553.3 cps
Intensity per Run 3	3,076,671.1 cps	3,729,989.6 cps	3,750.6 cps	3,382,598.8 cps	10,122,681.5 cps	49,438.1 cps	33,629,012.5 cps	610,157.4 cps	5,625,507.7 cps
Intensity RSD	1.9 %	0.9 %	9.1 %	2.0 %	1.5 %	0.3 %	2.9 %	1.7 %	1.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	82.753 %	147.645 ppb	147.187 ppb	145.986 ppb	149.512 ppb	N/A	149.374 ppb	14,864.172 ppb	15,008.714 ppb
Concentration per Run 1	80.917 %	150.602 ppb	147.058 ppb	145.551 ppb	150.589 ppb	N/A	150.833 ppb	15,085.474 ppb	15,136.294 ppb
Concentration per Run 2	82.807 %	145.893 ppb	146.831 ppb	146.008 ppb	149.200 ppb	N/A	147.577 ppb	14,884.797 ppb	14,942.885 ppb
Concentration per Run 3	84.533 %	146.442 ppb	147.673 ppb	146.401 ppb	148.746 ppb	N/A	149.713 ppb	14,622.245 ppb	14,946.963 ppb
Recovery Percentage 1		98.430 %	98.125 %	97.324 %		0.000 %	99.583 %		99.067 %
Concentration RSD	2.2 %	1.7 %	0.3 %	0.3 %	0.6 %	N/A	1.1 %	1.6 %	0.7 %
Intensity average	242,948 cps	46,592 cps	1,631,859 cps	2,540,267 cps	358,352 cps	368,558 cps	1,981,519 cps	262,620,586 cps	8,884,901 cps
Intensity per Run 1	237,559.9 cps	46,454.3 cps	1,594,223.0 cps	2,476,417.5 cps	352,147.2 cps	360,726.4 cps	1,951,040.9 cps	259,863,805.3 cps	8,762,518.1 cps
Intensity per Run 2	243,108.3 cps	46,105.0 cps	1,628,932.4 cps	2,542,213.1 cps	358,667.2 cps	370,816.1 cps	1,964,531.7 cps	264,017,608.4 cps	8,852,606.8 cps
Intensity per Run 3	248,175.2 cps	47,217.1 cps	1,672,420.3 cps	2,602,170.7 cps	364,241.6 cps	374,131.8 cps	2,028,983.0 cps	263,980,343.7 cps	9,039,578.9 cps
Intensity RSD	2.2 %	1.2 %	2.4 %	2.5 %	1.7 %	1.9 %	2.1 %	0.9 %	1.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	148.121 ppb	150.047 ppb	153.811 ppb	151.743 ppb	152.843 ppb	152.465 ppb	153.562 ppb	152.731 ppb	
Concentration per Run 1	148.547 ppb	153.208 ppb	157.432 ppb	154.239 ppb	155.717 ppb	153.042 ppb	157.086 ppb	153.752 ppb	
Concentration per Run 2	146.757 ppb	147.167 ppb	150.479 ppb	151.006 ppb	151.980 ppb	149.160 ppb	151.265 ppb	151.194 ppb	
Concentration per Run 3	149.058 ppb	149.767 ppb	153.522 ppb	149.984 ppb	150.832 ppb	155.193 ppb	152.334 ppb	153.246 ppb	
Recovery Percentage 1	98.747 %	100.032 %			101.895 %	101.644 %			
Concentration RSD	0.8 %	2.0 %	2.3 %	1.5 %	1.7 %	2.0 %	2.0 %	0.9 %	
Intensity average	6,077,479 cps	1,545,986 cps	237,656 cps	3,822,952 cps	1,955,106 cps	835,767 cps	141,983 cps	677,033 cps	370 cps
Intensity per Run 1	5,959,665.7 cps	1,525,224.3 cps	236,738.9 cps	3,781,158.8 cps	1,948,124.0 cps	826,406.1 cps	141,141.4 cps	662,115.2 cps	376.0 cps
Intensity per Run 2	6,025,378.0 cps	1,535,632.4 cps	233,833.4 cps	3,826,520.0 cps	1,945,814.8 cps	831,639.1 cps	140,857.9 cps	674,979.8 cps	362.0 cps
Intensity per Run 3	6,247,392.4 cps	1,577,101.2 cps	242,395.0 cps	3,861,175.7 cps	1,971,380.6 cps	849,255.6 cps	143,949.3 cps	694,005.5 cps	373.0 cps
Intensity RSD	2.5 %	1.8 %	1.8 %	1.0 %	0.7 %	1.4 %	1.2 %	2.4 %	2.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	147.610 ppb	N/A	149.389 ppb			144.422 ppb		87.381 %	144.772 ppb
Concentration per Run 1	146.825 ppb	N/A	151.922 ppb			141.508 ppb		84.412 %	146.203 ppb
Concentration per Run 2	144.881 ppb	N/A	146.441 ppb			144.589 ppb		88.454 %	143.466 ppb
Concentration per Run 3	151.125 ppb	N/A	149.805 ppb			147.168 ppb		89.275 %	144.647 ppb
Recovery Percentage 1	98.407 %	0.000 %				96.281 %			
Concentration RSD	2.2 %	N/A	1.9 %			2.0 %		3.0 %	0.9 %
Intensity average	420,052 cps	13,654 cps	45,851 cps	4,988 cps	28,174 cps	22,689 cps	5,253 cps	510,985 cps	1,416,140 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	411,597.9 cps	13,897.9 cps	45,186.8 cps	4,887.0 cps	27,722.9 cps	21,886.3 cps	5,465.4 cps	493,625.3 cps	1,386,882.3 cps
Intensity per Run 2	419,235.3 cps	13,397.3 cps	45,383.0 cps	4,963.0 cps	28,154.8 cps	23,090.4 cps	4,955.1 cps	517,263.3 cps	1,421,967.4 cps
Intensity per Run 3	429,321.9 cps	13,667.6 cps	46,984.4 cps	5,115.1 cps	28,644.0 cps	23,088.9 cps	5,338.3 cps	522,065.8 cps	1,439,569.7 cps
Intensity RSD	2.1 %	1.8 %	2.2 %	2.3 %	1.6 %	3.1 %	5.1 %	3.0 %	1.9 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	147.054 ppb	144.757 ppb	141.271 ppb	146.104 ppb	0.017 ppm		150.326 ppb	28.765 ppb	153.226 ppb
Concentration per Run 1	149.796 ppb	146.765 ppb	142.724 ppb	148.024 ppb	0.017 ppm		151.476 ppb	28.536 ppb	152.671 ppb
Concentration per Run 2	143.589 ppb	142.311 ppb	140.513 ppb	142.636 ppb	0.017 ppm		146.493 ppb	28.444 ppb	150.840 ppb
Concentration per Run 3	147.779 ppb	145.193 ppb	140.577 ppb	147.651 ppb	0.018 ppm		153.008 ppb	29.314 ppb	156.166 ppb
Recovery Percentage 1			94.181 %		0.000 %			95.883 %	
Concentration RSD	2.2 %	1.6 %	0.9 %	2.1 %	1.5 %		2.3 %	1.7 %	1.8 %
Intensity average	2,608,115 cps	2,830,491 cps	1,650,964 cps	4,531,115 cps	1,539,524 cps	703 cps	136,648 cps	1,976,803 cps	107,071 cps
Intensity per Run 1	2,578,598.8 cps	2,787,250.0 cps	1,621,109.2 cps	4,465,263.0 cps	1,517,914.6 cps	684.0 cps	134,730.8 cps	1,931,702.3 cps	104,532.1 cps
Intensity per Run 2	2,581,131.7 cps	2,820,620.5 cps	1,664,684.2 cps	4,485,298.3 cps	1,536,560.0 cps	652.0 cps	135,196.2 cps	1,987,331.0 cps	107,033.5 cps
Intensity per Run 3	2,664,613.1 cps	2,883,604.0 cps	1,667,099.0 cps	4,642,783.3 cps	1,564,096.7 cps	772.0 cps	140,017.1 cps	2,011,376.8 cps	109,647.1 cps
Intensity RSD	1.9 %	1.7 %	1.6 %	2.1 %	1.5 %	8.8 %	2.1 %	2.1 %	2.4 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.745 ppb	152.038 ppb	149.574 ppb	85.755 %	151.387 ppb	145.506 ppb	146.419 ppb	145.745 ppb	145.256 ppb
Concentration per Run 1	28.820 ppb	152.337 ppb	149.291 ppb	84.467 %	150.825 ppb	142.471 ppb	143.076 ppb	147.912 ppb	147.635 ppb
Concentration per Run 2	28.130 ppb	150.578 ppb	147.456 ppb	87.180 %	148.569 ppb	142.513 ppb	143.711 ppb	141.006 ppb	142.849 ppb
Concentration per Run 3	29.286 ppb	153.201 ppb	151.975 ppb	85.618 %	154.767 ppb	151.535 ppb	152.468 ppb	148.319 ppb	145.284 ppb
Recovery Percentage 1			99.716 %		100.925 %	97.004 %		97.164 %	
Concentration RSD	2.0 %	0.9 %	1.5 %	1.6 %	2.1 %	3.6 %	3.6 %	2.8 %	1.6 %
Intensity average	1,955,974 cps	1,718,662 cps	4,167,150 cps	767,748 cps	3,487,852 cps	3,540,208 cps	2,860,355 cps	858,594 cps	1,565,516 cps
Intensity per Run 1	1,923,085.6 cps	1,691,172.2 cps	4,097,122.1 cps	756,218.9 cps	3,418,936.9 cps	3,406,176.1 cps	2,744,296.2 cps	851,900.6 cps	1,554,358.9 cps
Intensity per Run 2	1,944,154.8 cps	1,729,377.3 cps	4,176,715.4 cps	780,503.5 cps	3,481,732.9 cps	3,528,235.5 cps	2,857,491.5 cps	847,241.3 cps	1,570,610.5 cps
Intensity per Run 3	2,000,681.9 cps	1,735,436.9 cps	4,227,612.7 cps	766,520.5 cps	3,562,887.0 cps	3,686,212.5 cps	2,979,277.7 cps	876,641.4 cps	1,571,577.6 cps
Intensity RSD	2.1 %	1.4 %	1.6 %	1.6 %	2.1 %	4.0 %	4.1 %	1.8 %	0.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.634 %			0.014 ppm	147.561 ppb	148.414 ppb	147.914 ppb
Concentration per Run 1			90.732 %			0.013 ppm	147.266 ppb	148.040 ppb	146.997 ppb
Concentration per Run 2			95.781 %			0.014 ppm	147.496 ppb	149.208 ppb	147.205 ppb
Concentration per Run 3			94.388 %			0.014 ppm	147.922 ppb	147.995 ppb	149.541 ppb
Recovery Percentage 1						0.000 %		98.943 %	
Concentration RSD			2.8 %			2.3 %	0.2 %	0.5 %	1.0 %
Intensity average	73 cps	37 cps	2,943,173 cps	75 cps	31 cps	3,063,240 cps	12,218,318 cps	29,684,067 cps	9,750,926 cps
Intensity per Run 1	84.0 cps	56.0 cps	2,851,954.0 cps	64.0 cps	36.0 cps	2,988,531.7 cps	12,028,913.9 cps	29,283,076.4 cps	9,570,865.4 cps
Intensity per Run 2	44.0 cps	12.0 cps	3,010,686.6 cps	80.0 cps	24.0 cps	3,074,417.1 cps	12,226,846.1 cps	29,785,070.6 cps	9,699,730.8 cps
Intensity per Run 3	92.0 cps	44.0 cps	2,966,879.5 cps	80.0 cps	32.0 cps	3,126,770.8 cps	12,399,194.2 cps	29,984,053.6 cps	9,982,181.7 cps
Intensity RSD	35.1 %	60.9 %	2.8 %	12.4 %	19.9 %	2.3 %	1.5 %	1.2 %	2.2 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	148.159 ppb	148.392 ppb	89.753 %
Concentration per Run 1	152.033 ppb	148.782 ppb	88.764 %
Concentration per Run 2	143.151 ppb	147.267 ppb	89.579 %
Concentration per Run 3	149.293 ppb	149.127 ppb	90.916 %
Recovery Percentage 1		98.928 %	
Concentration RSD	3.1 %	0.7 %	1.2 %
Intensity average	8,572,007 cps	39,445,992 cps	2,300,310 cps
Intensity per Run 1	8,692,379.9 cps	39,113,094.9 cps	2,274,956.7 cps
Intensity per Run 2	8,275,331.1 cps	39,070,490.5 cps	2,295,851.7 cps
Intensity per Run 3	8,748,309.5 cps	40,154,391.0 cps	2,330,120.3 cps
Intensity RSD	3.0 %	1.6 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 13:30:05 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.408 %	90.568 %	0.016 ppb	0.153 ppb	0.285 ppb	N/A	-1.118 ppb	-0.053 ppb	-0.357 ppb	-0.587 ppb
Concentration per Run 1	91.916 %	88.856 %	0.038 ppb	0.017 ppb	0.237 ppb	N/A	-0.587 ppb	0.205 ppb	-0.131 ppb	-0.428 ppb
Concentration per Run 2	92.810 %	91.371 %	-0.001 ppb	0.206 ppb	0.376 ppb	N/A	-1.520 ppb	-0.075 ppb	-0.060 ppb	-0.649 ppb
Concentration per Run 3	92.498 %	91.477 %	0.012 ppb	0.237 ppb	0.241 ppb	N/A	-1.248 ppb	-0.290 ppb	-0.879 ppb	-0.685 ppb
Recovery Percentage 1			1.641 %	0.015 %			-0.224 %			-0.117 %
Concentration RSD	0.5 %	1.6 %	122.4 %	77.6 %	27.7 %	N/A	42.9 %	465.5 %	127.0 %	23.7 %
Intensity average	12,923,562 cps	29,161 cps	6 cps	6 cps	40 cps	1,930 cps	12,650 cps	1,763 cps	370 cps	403 cps
Intensity per Run 1	12,854,724.2 cps	28,609.7 cps	8.5 cps	3.5 cps	35.0 cps	1,900.2 cps	13,307.2 cps	1,930.2 cps	400.0 cps	430.0 cps
Intensity per Run 2	12,979,800.6 cps	29,419.6 cps	3.0 cps	6.5 cps	48.5 cps	2,120.2 cps	11,975.8 cps	1,750.1 cps	420.0 cps	390.0 cps
Intensity per Run 3	12,936,161.1 cps	29,453.7 cps	5.0 cps	7.0 cps	36.5 cps	1,770.1 cps	12,666.5 cps	1,610.1 cps	290.0 cps	390.0 cps
Intensity RSD	0.5 %	1.6 %	50.6 %	33.4 %	18.5 %	9.2 %	5.3 %	9.1 %	18.9 %	5.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.325 ppb		0.004 ppm	-0.697 ppb	-10.259 ppb	-7.850 ppb	-3.442 ppb	86.313 %	86.084 %	0.005 ppb
Concentration per Run 1	-0.296 ppb		0.004 ppm	0.856 ppb	-7.243 ppb	-7.744 ppb	-2.626 ppb	84.079 %	84.261 %	0.009 ppb
Concentration per Run 2	-0.621 ppb		0.004 ppm	-0.890 ppb	-7.393 ppb	-8.005 ppb	-3.511 ppb	87.055 %	85.280 %	0.009 ppb
Concentration per Run 3	-0.058 ppb		0.004 ppm	-2.058 ppb	-16.142 ppb	-7.803 ppb	-4.191 ppb	87.805 %	88.711 %	-0.003 ppb
Recovery Percentage 1	-1.624 %			-0.139 %			-0.344 %			0.048 %
Concentration RSD	87.0 %		4.1 %	210.3 %	49.7 %	1.7 %	22.8 %	2.3 %	2.7 %	149.3 %
Intensity average	360 cps	2,420 cps	22,908 cps	18,334 cps	30 cps	41,074 cps	497 cps	5,940,934 cps	252,728 cps	3 cps
Intensity per Run 1	360.0 cps	2,660.3 cps	22,650.8 cps	19,074.7 cps	40.0 cps	40,275.1 cps	520.0 cps	5,787,142.2 cps	247,377.3 cps	4.0 cps
Intensity per Run 2	280.0 cps	2,430.3 cps	23,622.4 cps	18,093.2 cps	40.0 cps	41,067.4 cps	490.0 cps	5,992,015.6 cps	250,366.4 cps	4.0 cps
Intensity per Run 3	440.0 cps	2,170.2 cps	22,450.4 cps	17,832.9 cps	10.0 cps	41,880.3 cps	480.0 cps	6,043,643.2 cps	260,439.2 cps	0.0 cps
Intensity RSD	22.2 %	10.1 %	2.7 %	3.6 %	57.7 %	2.0 %	4.2 %	2.3 %	2.7 %	86.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.114 ppb	-0.104 ppb	-0.417 ppb	N/A	-0.036 ppb	-1.095 ppb	-0.962 ppb	0.000 ppb	-0.694 ppb	-0.700 ppb
Concentration per Run 1	-0.114 ppb	-0.103 ppb	-0.429 ppb	N/A	-0.032 ppb	-0.943 ppb	-0.797 ppb	0.001 ppb	-0.680 ppb	-0.706 ppb
Concentration per Run 2	-0.114 ppb	-0.103 ppb	-0.408 ppb	N/A	-0.039 ppb	-1.117 ppb	-1.010 ppb	-0.001 ppb	-0.708 ppb	-0.697 ppb
Concentration per Run 3	-0.113 ppb	-0.107 ppb	-0.416 ppb	N/A	-0.038 ppb	-1.223 ppb	-1.080 ppb	-0.001 ppb	-0.694 ppb	-0.698 ppb
Recovery Percentage 1	-2.275 %	-5.215 %			-3.637 %		-0.481 %	-0.043 %	-69.401 %	
Concentration RSD	0.4 %	2.2 %	2.5 %	N/A	10.5 %	12.9 %	15.3 %	241.4 %	2.1 %	0.7 %
Intensity average	160 cps	333 cps	113 cps	97 cps	1,404 cps	15,063 cps	432 cps	209 cps	2,570 cps	408 cps
Intensity per Run 1	151.8 cps	356.0 cps	84.0 cps	130.0 cps	1,436.1 cps	17,512.5 cps	524.0 cps	256.0 cps	2,680.3 cps	392.0 cps
Intensity per Run 2	158.4 cps	348.0 cps	136.0 cps	60.0 cps	1,364.1 cps	14,608.8 cps	400.0 cps	184.0 cps	2,436.2 cps	412.0 cps
Intensity per Run 3	170.0 cps	296.0 cps	120.0 cps	100.0 cps	1,412.1 cps	13,066.9 cps	372.0 cps	188.0 cps	2,592.3 cps	420.0 cps
Intensity RSD	5.8 %	9.8 %	23.5 %	36.3 %	2.6 %	15.0 %	18.7 %	19.3 %	4.8 %	3.5 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.094 ppb	-0.080 ppb	-1.688 ppb	-1.411 ppb	-1.491 ppb		-0.236 ppb	N/A	0.048 ppb	
Concentration per Run 1	-0.085 ppb	-0.077 ppb	-1.644 ppb	-1.318 ppb	-1.515 ppb		-0.361 ppb	N/A	0.057 ppb	
Concentration per Run 2	-0.097 ppb	-0.085 ppb	-1.705 ppb	-1.450 ppb	-1.454 ppb		0.079 ppb	N/A	0.037 ppb	
Concentration per Run 3	-0.098 ppb	-0.079 ppb	-1.715 ppb	-1.463 ppb	-1.504 ppb		-0.425 ppb	N/A	0.050 ppb	
Recovery Percentage 1		-4.003 %	-84.404 %				-23.566 %			
Concentration RSD	7.8 %	5.0 %	2.3 %	5.7 %	2.2 %		116.3 %	N/A	20.7 %	
Intensity average	1,203 cps	625 cps	4,021 cps	617 cps	3,003 cps	8 cps	2,964 cps	63 cps	-4 cps	665 cps
Intensity per Run 1	1,396.1 cps	652.0 cps	4,108.7 cps	692.0 cps	2,844.3 cps	7.0 cps	2,484.7 cps	30.0 cps	-1.2 cps	697.0 cps
Intensity per Run 2	1,108.1 cps	560.0 cps	3,960.6 cps	580.0 cps	3,164.4 cps	9.0 cps	3,938.7 cps	100.0 cps	-7.4 cps	669.0 cps
Intensity per Run 3	1,104.1 cps	664.0 cps	3,992.6 cps	580.0 cps	3,000.4 cps	8.0 cps	2,468.5 cps	60.0 cps	-3.5 cps	628.0 cps
Intensity RSD	13.9 %	9.1 %	1.9 %	10.5 %	5.3 %	12.5 %	28.5 %	55.5 %	76.8 %	5.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.884 ppb		88.209 %	0.225 ppb	0.239 ppb	0.237 ppb	0.245 ppb	0.224 ppb	0.018 ppm
Concentration per Run 1		2.505 ppb		86.935 %	0.203 ppb	0.240 ppb	0.228 ppb	0.228 ppb	0.215 ppb	0.018 ppm
Concentration per Run 2		-0.394 ppb		88.752 %	0.225 ppb	0.221 ppb	0.233 ppb	0.244 ppb	0.217 ppb	0.019 ppm
Concentration per Run 3		0.542 ppb		88.939 %	0.246 ppb	0.255 ppb	0.249 ppb	0.264 ppb	0.240 ppb	0.019 ppm
Recovery Percentage 1		17.690 %						2.454 %		
Concentration RSD		167.3 %		1.3 %	9.6 %	7.1 %	4.7 %	7.2 %	6.3 %	1.9 %
Intensity average	4,502 cps	-313 cps	4,777 cps	515,828 cps	2,531 cps	4,674 cps	5,154 cps	3,176 cps	7,672 cps	1,645,348 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

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Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,569.5 cps	-31.1 cps	3,687.6 cps	508,380.4 cps	2,264.2 cps	4,608.9 cps	4,869.0 cps	2,900.3 cps	7,206.1 cps	1,608,555.2 cps
Intensity per Run 2	6,124.6 cps	-530.5 cps	6,583.8 cps	519,004.2 cps	2,552.3 cps	4,380.8 cps	5,113.1 cps	3,184.4 cps	7,490.3 cps	1,661,350.8 cps
Intensity per Run 3	3,811.6 cps	-378.4 cps	4,058.7 cps	520,100.1 cps	2,776.3 cps	5,033.0 cps	5,481.2 cps	3,444.5 cps	8,318.8 cps	1,666,136.7 cps
Intensity RSD	31.3 %	81.7 %	33.0 %	1.3 %	10.1 %	7.1 %	6.0 %	8.6 %	7.5 %	1.9 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.013 ppb	0.000 ppb	0.004 ppb	0.000 ppb	0.003 ppb	0.003 ppb	91.269 %	0.021 ppb	0.602 ppb
Concentration per Run 1		-0.024 ppb	0.001 ppb	-0.002 ppb	0.000 ppb	0.003 ppb	0.004 ppb	87.654 %	0.047 ppb	0.600 ppb
Concentration per Run 2		0.011 ppb	0.001 ppb	0.004 ppb	0.000 ppb	0.005 ppb	0.002 ppb	92.017 %	0.011 ppb	0.629 ppb
Concentration per Run 3		-0.024 ppb	0.000 ppb	0.009 ppb	0.000 ppb	0.002 ppb	0.002 ppb	94.137 %	0.005 ppb	0.578 ppb
Recovery Percentage 1			0.048 %				0.305 %			30.110 %
Concentration RSD		160.1 %	64.6 %	143.4 %	52.8 %	47.7 %	39.6 %	3.6 %	106.8 %	4.3 %
Intensity average	603 cps	77 cps	121 cps	4 cps	91 cps	47 cps	129 cps	817,117 cps	1,211 cps	15,735 cps
Intensity per Run 1	628.0 cps	64.0 cps	136.0 cps	0.0 cps	100.0 cps	48.0 cps	164.2 cps	784,749.3 cps	1,780.1 cps	15,125.2 cps
Intensity per Run 2	560.0 cps	100.0 cps	128.0 cps	4.0 cps	84.0 cps	64.0 cps	109.6 cps	823,812.9 cps	984.0 cps	16,531.0 cps
Intensity per Run 3	620.0 cps	68.0 cps	100.0 cps	8.0 cps	88.0 cps	28.0 cps	112.7 cps	842,788.0 cps	868.0 cps	15,549.7 cps
Intensity RSD	6.2 %	25.5 %	15.6 %	100.0 %	9.2 %	38.7 %	23.8 %	3.6 %	41.0 %	4.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.592 ppb	-0.010 ppb	-0.010 ppb			91.763 %			0.013 ppm	0.002 ppb
Concentration per Run 1	0.590 ppb	-0.006 ppb	-0.007 ppb			90.951 %			0.013 ppm	0.003 ppb
Concentration per Run 2	0.608 ppb	-0.008 ppb	-0.009 ppb			91.300 %			0.013 ppm	0.002 ppb
Concentration per Run 3	0.577 ppb	-0.014 ppb	-0.013 ppb			93.037 %			0.014 ppm	0.001 ppb
Recovery Percentage 1		-0.096 %							1.348 %	
Concentration RSD	2.6 %	43.8 %	29.3 %			1.2 %			1.1 %	54.0 %
Intensity average	12,375 cps	91 cps	151 cps	5 cps	12 cps	2,884,362 cps	59 cps	12 cps	3,054,224 cps	1,267 cps
Intensity per Run 1	11,917.7 cps	108.0 cps	176.0 cps	12.0 cps	12.0 cps	2,858,840.2 cps	36.0 cps	12.0 cps	3,028,034.2 cps	1,305.1 cps
Intensity per Run 2	12,782.6 cps	100.0 cps	156.0 cps	4.0 cps	8.0 cps	2,869,811.4 cps	80.0 cps	12.0 cps	3,041,162.2 cps	1,283.1 cps
Intensity per Run 3	12,426.2 cps	64.0 cps	120.0 cps	0.0 cps	16.0 cps	2,924,434.1 cps	60.0 cps	12.0 cps	3,093,476.4 cps	1,214.1 cps
Intensity RSD	3.5 %	25.9 %	18.8 %	114.6 %	33.3 %	1.2 %	37.6 %	0.0 %	1.1 %	3.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.002 ppb	0.005 ppb	0.005 ppb	0.005 ppb	97.869 %
Concentration per Run 1	0.003 ppb	0.007 ppb	0.009 ppb	0.008 ppb	93.801 %
Concentration per Run 2	0.001 ppb	0.005 ppb	0.003 ppb	0.004 ppb	99.852 %
Concentration per Run 3	0.001 ppb	0.003 ppb	0.004 ppb	0.003 ppb	99.953 %
Recovery Percentage 1	0.369 %			0.478 %	
Concentration RSD	72.4 %	45.7 %	60.2 %	53.1 %	3.6 %
Intensity average	3,095 cps	1,083 cps	956 cps	4,347 cps	2,508,315 cps
Intensity per Run 1	3,284.4 cps	1,204.1 cps	1,132.1 cps	4,964.4 cps	2,404,065.6 cps
Intensity per Run 2	3,073.4 cps	1,086.0 cps	844.0 cps	4,246.3 cps	2,559,139.6 cps
Intensity per Run 3	2,926.3 cps	959.0 cps	892.0 cps	3,831.2 cps	2,561,740.0 cps
Intensity RSD	5.8 %	11.3 %	16.1 %	13.2 %	3.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001 Analysis: 10/30/2019 13:36:10 Sample Type UNKNOWN
Comment Effluent Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	81.287 %	85.747 %	0.018 ppb	607.707 ppb	624.175 ppb	N/A	579,037.613 ppb	4,524.959 ppb	4,610.373 ppb
Concentration per Run 1	81.053 %	85.424 %	0.022 ppb	584.103 ppb	599.482 ppb	N/A	565,944.460 ppb	4,212.986 ppb	4,410.226 ppb
Concentration per Run 2	81.593 %	85.950 %	0.015 ppb	617.148 ppb	629.464 ppb	N/A	576,575.858 ppb	4,657.274 ppb	4,652.843 ppb
Concentration per Run 3	81.215 %	85.867 %	0.018 ppb	621.869 ppb	643.579 ppb	N/A	594,592.522 ppb	4,704.618 ppb	4,768.051 ppb
Concentration RSD	0.3 %	0.3 %	20.7 %	3.4 %	3.6 %	N/A	2.5 %	6.0 %	4.0 %
Intensity average	11,368,261 cps	27,609 cps	6 cps	8,491 cps	51,160 cps	6,195 cps	813,305,777 cps	2,866,065 cps	607,022 cps
Intensity per Run 1	11,335,529.6 cps	27,504.7 cps	6.0 cps	8,140.2 cps	49,026.5 cps	5,991.5 cps	796,738,613.8 cps	2,675,964.1 cps	582,540.5 cps
Intensity per Run 2	11,411,065.5 cps	27,674.1 cps	5.0 cps	8,640.0 cps	51,693.2 cps	6,311.6 cps	810,540,675.7 cps	2,952,186.7 cps	613,021.9 cps
Intensity per Run 3	11,358,187.0 cps	27,647.6 cps	5.5 cps	8,692.5 cps	52,761.6 cps	6,281.6 cps	832,638,041.5 cps	2,970,045.6 cps	625,502.6 cps
Intensity RSD	0.3 %	0.3 %	9.1 %	3.6 %	3.8 %	2.9 %	2.2 %	5.8 %	3.6 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	4,538.567 ppb	982.955 ppb		1.339 ppm	31,245.089 ppb	2,261.881 ppb	1,889.807 ppb	1,970.973 ppb	84.001 %
Concentration per Run 1	4,313.343 ppb	933.978 ppb		1.277 ppm	30,393.875 ppb	2,209.880 ppb	1,916.521 ppb	1,903.240 ppb	81.084 %
Concentration per Run 2	4,625.617 ppb	992.941 ppb		1.365 ppm	31,563.814 ppb	2,243.770 ppb	1,897.161 ppb	1,998.830 ppb	84.481 %
Concentration per Run 3	4,676.742 ppb	1,021.947 ppb		1.375 ppm	31,777.579 ppb	2,331.993 ppb	1,855.739 ppb	2,010.847 ppb	86.437 %
Concentration RSD	4.3 %	4.6 %		4.0 %	2.4 %	2.8 %	1.6 %	3.0 %	3.2 %
Intensity average	786,061 cps	205,546 cps	98,787 cps	5,658,362 cps	15,424,480 cps	5,141 cps	4,272,680 cps	52,540 cps	5,781,777 cps
Intensity per Run 1	749,804.0 cps	196,130.1 cps	95,777.0 cps	5,440,380.3 cps	15,164,418.3 cps	5,091.1 cps	4,186,618.5 cps	51,465.9 cps	5,581,041.2 cps
Intensity per Run 2	801,584.3 cps	207,729.4 cps	99,374.5 cps	5,765,197.4 cps	15,563,433.8 cps	5,091.0 cps	4,314,768.2 cps	53,173.3 cps	5,814,831.5 cps
Intensity per Run 3	806,794.5 cps	212,778.6 cps	101,209.0 cps	5,769,509.4 cps	15,545,587.5 cps	5,241.1 cps	4,316,652.7 cps	52,982.1 cps	5,949,458.7 cps
Intensity RSD	4.0 %	4.2 %	2.8 %	3.3 %	1.5 %	1.7 %	1.7 %	1.8 %	3.2 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	53.969 %	0.463 ppb	0.905 ppb	0.839 ppb	1.039 ppb	N/A	1.202 ppb	181.860 ppb	211.440 ppb
Concentration per Run 1	54.758 %	0.374 ppb	0.899 ppb	0.813 ppb	1.030 ppb	N/A	1.143 ppb	173.213 ppb	201.939 ppb
Concentration per Run 2	53.840 %	0.514 ppb	0.915 ppb	0.834 ppb	1.060 ppb	N/A	1.224 ppb	189.418 ppb	212.100 ppb
Concentration per Run 3	53.309 %	0.500 ppb	0.900 ppb	0.869 ppb	1.028 ppb	N/A	1.239 ppb	182.949 ppb	220.280 ppb
Concentration RSD	1.4 %	16.6 %	1.0 %	3.4 %	1.7 %	N/A	4.3 %	4.5 %	4.3 %
Intensity average	158,443 cps	97 cps	7,457 cps	10,897 cps	2,479 cps	2,344 cps	12,440 cps	2,288,088 cps	82,241 cps
Intensity per Run 1	160,758.9 cps	80.0 cps	7,527.8 cps	10,764.6 cps	2,488.3 cps	2,530.3 cps	12,001.8 cps	2,198,934.2 cps	79,753.9 cps
Intensity per Run 2	158,064.0 cps	108.0 cps	7,512.8 cps	10,816.7 cps	2,512.3 cps	2,280.2 cps	12,650.4 cps	2,384,105.0 cps	82,330.6 cps
Intensity per Run 3	156,504.9 cps	104.0 cps	7,329.8 cps	11,109.0 cps	2,436.2 cps	2,220.2 cps	12,666.5 cps	2,281,224.5 cps	84,637.8 cps
Intensity RSD	1.4 %	15.6 %	1.5 %	1.7 %	1.6 %	7.0 %	3.0 %	4.1 %	3.0 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.149 ppb	1.886 ppb	2.405 ppb	3.246 ppb	3.699 ppb	15.775 ppb	17.066 ppb	17.137 ppb	
Concentration per Run 1	0.144 ppb	1.787 ppb	2.160 ppb	3.176 ppb	3.535 ppb	15.334 ppb	16.056 ppb	16.396 ppb	
Concentration per Run 2	0.155 ppb	1.883 ppb	2.496 ppb	3.257 ppb	3.789 ppb	15.639 ppb	17.460 ppb	17.311 ppb	
Concentration per Run 3	0.148 ppb	1.987 ppb	2.558 ppb	3.306 ppb	3.772 ppb	16.351 ppb	17.682 ppb	17.703 ppb	
Concentration RSD	3.8 %	5.3 %	8.9 %	2.0 %	3.8 %	3.3 %	5.2 %	3.9 %	
Intensity average	4,129 cps	24,745 cps	3,785 cps	62,862 cps	31,887 cps	83,842 cps	13,199 cps	64,142 cps	31 cps
Intensity per Run 1	4,052.7 cps	23,754.6 cps	3,528.5 cps	61,864.9 cps	30,978.4 cps	82,064.9 cps	12,542.3 cps	61,849.0 cps	22.0 cps
Intensity per Run 2	4,280.7 cps	24,900.8 cps	3,896.6 cps	63,211.5 cps	32,570.5 cps	84,271.5 cps	13,515.3 cps	64,948.5 cps	36.0 cps
Intensity per Run 3	4,052.7 cps	25,578.2 cps	3,928.6 cps	63,509.0 cps	32,113.3 cps	85,189.5 cps	13,539.4 cps	65,627.9 cps	35.0 cps
Intensity RSD	3.2 %	3.7 %	5.9 %	1.4 %	2.6 %	1.9 %	4.3 %	3.1 %	25.2 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.003 ppb	N/A	0.036 ppb			1.354 ppb		74.626 %	0.484 ppb
Concentration per Run 1	-0.197 ppb	N/A	0.072 ppb			2.093 ppb		74.232 %	0.441 ppb
Concentration per Run 2	0.354 ppb	N/A	0.036 ppb			0.960 ppb		75.171 %	0.456 ppb
Concentration per Run 3	-0.165 ppb	N/A	-0.001 ppb			1.008 ppb		74.475 %	0.554 ppb
Concentration RSD	11,028.2 %	N/A	102.5 %			47.4 %		0.7 %	12.6 %
Intensity average	2,948 cps	53 cps	-6 cps	110,242 cps	4,240 cps	-184 cps	4,388 cps	436,398 cps	4,281 cps
Intensity per Run 1	2,480.5 cps	20.0 cps	2.8 cps	105,750.9 cps	3,476.5 cps	-82.7 cps	3,522.5 cps	434,092.6 cps	3,912.6 cps
Intensity per Run 2	3,851.4 cps	90.0 cps	-6.2 cps	111,563.8 cps	5,788.4 cps	-240.6 cps	5,920.5 cps	439,583.5 cps	4,084.7 cps
Intensity per Run 3	2,511.9 cps	50.0 cps	-15.2 cps	113,412.2 cps	3,456.5 cps	-227.4 cps	3,720.6 cps	435,516.7 cps	4,845.0 cps
Intensity RSD	26.5 %	65.8 %	145.2 %	3.6 %	31.6 %	47.7 %	30.3 %	0.7 %	11.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.415 ppb	0.414 ppb	0.394 ppb	0.400 ppb	0.015 ppm		-0.006 ppb	0.002 ppb	0.012 ppb
Concentration per Run 1	0.376 ppb	0.366 ppb	0.337 ppb	0.351 ppb	0.014 ppm		-0.027 ppb	0.003 ppb	-0.002 ppb
Concentration per Run 2	0.403 ppb	0.403 ppb	0.403 ppb	0.392 ppb	0.015 ppm		0.008 ppb	0.001 ppb	0.018 ppb
Concentration per Run 3	0.466 ppb	0.473 ppb	0.441 ppb	0.455 ppb	0.015 ppm		0.000 ppb	0.001 ppb	0.019 ppb
Concentration RSD	11.1 %	13.2 %	13.5 %	13.1 %	0.6 %		287.0 %	49.2 %	98.7 %
Intensity average	6,579 cps	7,254 cps	4,125 cps	11,025 cps	1,292,803 cps	479 cps	68 cps	171 cps	8 cps
Intensity per Run 1	5,969.4 cps	6,429.7 cps	3,544.5 cps	9,715.8 cps	1,284,918.1 cps	460.0 cps	52.0 cps	228.0 cps	0.0 cps
Intensity per Run 2	6,457.7 cps	7,130.1 cps	4,256.7 cps	10,936.8 cps	1,298,818.1 cps	456.0 cps	80.0 cps	136.0 cps	12.0 cps
Intensity per Run 3	7,310.2 cps	8,202.7 cps	4,572.9 cps	12,422.2 cps	1,294,672.2 cps	520.0 cps	72.0 cps	148.0 cps	12.0 cps
Intensity RSD	10.3 %	12.3 %	12.8 %	12.3 %	0.6 %	7.5 %	21.2 %	29.3 %	86.6 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.008 ppb	0.005 ppb	73.347 %	0.333 ppb	0.362 ppb	0.361 ppb	1.592 ppb	1.611 ppb
Concentration per Run 1	0.001 ppb	0.005 ppb	0.005 ppb	73.561 %	0.305 ppb	0.331 ppb	0.341 ppb	1.548 ppb	1.540 ppb
Concentration per Run 2	0.001 ppb	0.010 ppb	0.004 ppb	74.262 %	0.341 ppb	0.375 ppb	0.345 ppb	1.568 ppb	1.625 ppb
Concentration per Run 3	0.001 ppb	0.009 ppb	0.006 ppb	72.218 %	0.353 ppb	0.381 ppb	0.398 ppb	1.660 ppb	1.669 ppb
Concentration RSD	34.3 %	32.1 %	27.3 %	1.4 %	7.6 %	7.6 %	8.7 %	3.7 %	4.1 %
Intensity average	119 cps	84 cps	148 cps	656,664 cps	7,161 cps	7,858 cps	6,307 cps	8,320 cps	15,428 cps
Intensity per Run 1	100.0 cps	56.0 cps	150.4 cps	658,581.2 cps	6,617.8 cps	7,218.1 cps	5,989.5 cps	8,106.6 cps	14,772.8 cps
Intensity per Run 2	116.0 cps	104.0 cps	116.9 cps	664,858.7 cps	7,418.2 cps	8,226.7 cps	6,109.5 cps	8,306.8 cps	15,766.0 cps
Intensity per Run 3	140.0 cps	92.0 cps	176.2 cps	646,553.5 cps	7,446.2 cps	8,130.7 cps	6,821.9 cps	8,546.9 cps	15,745.9 cps
Intensity RSD	17.0 %	29.7 %	20.1 %	1.4 %	6.6 %	7.1 %	7.1 %	2.6 %	3.7 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			83.724 %			0.012 ppm	0.037 ppb	0.038 ppb	0.131 ppb
Concentration per Run 1			83.642 %			0.012 ppm	0.039 ppb	0.039 ppb	0.129 ppb
Concentration per Run 2			84.923 %			0.012 ppm	0.036 ppb	0.038 ppb	0.130 ppb
Concentration per Run 3			82.607 %			0.012 ppm	0.035 ppb	0.038 ppb	0.134 ppb
Concentration RSD			1.4 %			1.0 %	5.6 %	1.5 %	1.7 %
Intensity average	127 cps	112 cps	2,631,687 cps	127 cps	113 cps	2,769,218 cps	3,173 cps	7,743 cps	7,173 cps
Intensity per Run 1	108.0 cps	120.0 cps	2,629,105.9 cps	92.0 cps	100.0 cps	2,738,625.7 cps	3,346.5 cps	7,908.5 cps	7,156.1 cps
Intensity per Run 2	136.0 cps	116.0 cps	2,669,372.6 cps	172.0 cps	128.0 cps	2,791,295.8 cps	3,098.4 cps	7,617.3 cps	7,050.0 cps
Intensity per Run 3	136.0 cps	100.0 cps	2,596,581.3 cps	116.0 cps	112.0 cps	2,777,732.8 cps	3,073.4 cps	7,704.4 cps	7,313.1 cps
Intensity RSD	12.8 %	9.4 %	1.4 %	32.4 %	12.4 %	1.0 %	4.8 %	1.9 %	1.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.120 ppb	0.127 ppb	68.422 %
Concentration per Run 1	0.120 ppb	0.125 ppb	68.997 %
Concentration per Run 2	0.122 ppb	0.129 ppb	67.712 %
Concentration per Run 3	0.120 ppb	0.128 ppb	68.557 %
Concentration RSD	1.0 %	1.7 %	1.0 %
Intensity average	5,805 cps	27,883 cps	1,753,615 cps
Intensity per Run 1	5,809.4 cps	27,606.0 cps	1,768,352.4 cps
Intensity per Run 2	5,813.4 cps	27,908.5 cps	1,735,426.2 cps
Intensity per Run 3	5,793.3 cps	28,135.5 cps	1,757,067.4 cps
Intensity RSD	0.2 %	1.0 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001S Analysis: 10/30/2019 13:42:13 Sample Type UNKNOWN
Comment EffluentS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.083 %	87.947 %	96.273 ppb	719.684 ppb	737.263 ppb	N/A	613,126.433 ppb	5,869.774 ppb	5,917.955 ppb
Concentration per Run 1	82.322 %	87.492 %	93.150 ppb	696.865 ppb	715.435 ppb	N/A	583,562.842 ppb	5,666.989 ppb	5,764.218 ppb
Concentration per Run 2	83.114 %	87.304 %	97.228 ppb	737.451 ppb	748.279 ppb	N/A	617,450.722 ppb	5,981.926 ppb	6,008.980 ppb
Concentration per Run 3	83.814 %	89.044 %	98.439 ppb	724.736 ppb	748.075 ppb	N/A	638,365.735 ppb	5,960.406 ppb	5,980.667 ppb
Concentration RSD	0.9 %	1.1 %	2.9 %	2.9 %	2.6 %	N/A	4.5 %	3.0 %	2.3 %
Intensity average	11,619,463 cps	28,317 cps	13,452 cps	10,297 cps	61,862 cps	6,588 cps	877,018,775 cps	3,783,524 cps	792,477 cps
Intensity per Run 1	11,512,987.8 cps	28,170.7 cps	12,946.7 cps	9,915.9 cps	59,693.7 cps	6,441.7 cps	829,033,015.2 cps	3,628,002.8 cps	766,586.5 cps
Intensity per Run 2	11,623,796.6 cps	28,110.1 cps	13,484.3 cps	10,482.9 cps	62,390.9 cps	6,641.8 cps	880,297,779.6 cps	3,844,739.4 cps	802,629.7 cps
Intensity per Run 3	11,721,603.8 cps	28,670.3 cps	13,924.3 cps	10,492.4 cps	63,501.5 cps	6,681.8 cps	921,725,531.7 cps	3,877,830.9 cps	808,214.5 cps
Intensity RSD	0.9 %	1.1 %	3.6 %	3.2 %	3.2 %	2.0 %	5.3 %	3.6 %	2.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	5,861.858 ppb	1,169.716 ppb		1.384 ppm	33,748.288 ppb	4,513.610 ppb	2,992.167 ppb	3,513.666 ppb	86.615 %
Concentration per Run 1	5,645.668 ppb	1,140.687 ppb		1.337 ppm	33,345.126 ppb	4,462.431 ppb	3,057.643 ppb	3,474.263 ppb	85.618 %
Concentration per Run 2	5,927.428 ppb	1,190.090 ppb		1.380 ppm	33,590.823 ppb	4,351.364 ppb	2,885.974 ppb	3,533.645 ppb	88.649 %
Concentration per Run 3	6,012.478 ppb	1,178.372 ppb		1.435 ppm	34,308.916 ppb	4,727.034 ppb	3,032.884 ppb	3,533.090 ppb	85.578 %
Concentration RSD	3.3 %	2.2 %		3.5 %	1.5 %	4.3 %	3.1 %	1.0 %	2.0 %
Intensity average	1,032,095 cps	248,466 cps	112,936 cps	5,912,503 cps	16,791,930 cps	10,264 cps	6,938,965 cps	93,701 cps	5,961,735 cps
Intensity per Run 1	987,024.4 cps	240,590.7 cps	109,498.1 cps	5,664,673.2 cps	16,447,934.8 cps	10,054.1 cps	7,011,161.7 cps	91,777.2 cps	5,893,125.3 cps
Intensity per Run 2	1,041,254.9 cps	252,315.1 cps	112,858.6 cps	5,901,767.5 cps	16,760,547.4 cps	9,944.0 cps	6,850,974.6 cps	94,729.3 cps	6,101,749.8 cps
Intensity per Run 3	1,068,006.5 cps	252,492.3 cps	116,451.3 cps	6,171,067.2 cps	17,167,307.4 cps	10,794.7 cps	6,954,759.7 cps	94,596.9 cps	5,890,329.1 cps
Intensity RSD	4.0 %	2.7 %	3.1 %	4.3 %	2.1 %	4.5 %	1.2 %	1.8 %	2.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	54.108 %	87.430 ppb	99.865 ppb	116.926 ppb	120.735 ppb	N/A	115.579 ppb	1,407.976 ppb	1,622.833 ppb
Concentration per Run 1	53.588 %	87.266 ppb	97.337 ppb	112.808 ppb	118.043 ppb	N/A	111.133 ppb	1,328.567 ppb	1,564.124 ppb
Concentration per Run 2	54.426 %	87.578 ppb	99.245 ppb	116.371 ppb	120.553 ppb	N/A	115.421 ppb	1,464.198 ppb	1,632.030 ppb
Concentration per Run 3	54.310 %	87.446 ppb	103.012 ppb	121.599 ppb	123.610 ppb	N/A	120.184 ppb	1,431.163 ppb	1,672.346 ppb
Concentration RSD	0.8 %	0.2 %	2.9 %	3.8 %	2.3 %	N/A	3.9 %	5.0 %	3.4 %
Intensity average	158,852 cps	18,344 cps	724,293 cps	1,330,750 cps	201,886 cps	209,176 cps	1,085,536 cps	17,766,401 cps	628,885 cps
Intensity per Run 1	157,326.1 cps	18,141.2 cps	699,128.0 cps	1,271,406.3 cps	195,794.8 cps	202,163.7 cps	1,035,642.2 cps	16,635,554.9 cps	600,236.9 cps
Intensity per Run 2	159,785.0 cps	18,481.7 cps	723,959.3 cps	1,332,020.0 cps	202,699.6 cps	209,614.7 cps	1,089,943.6 cps	18,572,834.8 cps	636,056.5 cps
Intensity per Run 3	159,443.6 cps	18,409.6 cps	749,790.6 cps	1,388,824.3 cps	207,164.3 cps	215,749.8 cps	1,131,021.3 cps	18,090,813.6 cps	650,360.4 cps
Intensity RSD	0.8 %	1.0 %	3.5 %	4.4 %	2.8 %	3.3 %	4.4 %	5.7 %	4.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	147.781 ppb	107.788 ppb	129.343 ppb	131.054 ppb	149.600 ppb	117.640 ppb	130.631 ppb	127.886 ppb	
Concentration per Run 1	143.759 ppb	104.135 ppb	126.215 ppb	129.358 ppb	146.888 ppb	114.926 ppb	128.770 ppb	125.075 ppb	
Concentration per Run 2	147.432 ppb	108.542 ppb	129.859 ppb	130.117 ppb	149.174 ppb	118.697 ppb	129.955 ppb	129.036 ppb	
Concentration per Run 3	152.151 ppb	110.686 ppb	131.954 ppb	133.687 ppb	152.738 ppb	119.296 ppb	133.169 ppb	129.545 ppb	
Concentration RSD	2.8 %	3.1 %	2.2 %	1.8 %	2.0 %	2.0 %	1.7 %	1.9 %	
Intensity average	3,965,026 cps	981,321 cps	149,026 cps	2,476,678 cps	1,251,636 cps	554,345 cps	93,318 cps	440,999 cps	44 cps
Intensity per Run 1	3,819,641.7 cps	945,297.3 cps	144,482.8 cps	2,428,907.9 cps	1,217,068.8 cps	529,872.7 cps	91,470.0 cps	428,985.2 cps	49.0 cps
Intensity per Run 2	3,978,435.0 cps	992,839.8 cps	150,409.0 cps	2,472,065.8 cps	1,255,308.6 cps	562,935.0 cps	93,327.3 cps	447,196.5 cps	47.0 cps
Intensity per Run 3	4,096,999.8 cps	1,005,826.6 cps	152,186.0 cps	2,529,059.0 cps	1,282,529.3 cps	570,228.2 cps	95,157.2 cps	446,814.8 cps	35.0 cps
Intensity RSD	3.5 %	3.2 %	2.7 %	2.0 %	2.6 %	3.9 %	2.0 %	2.4 %	17.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	110.068 ppb	N/A	95.023 ppb			87.919 ppb		76.995 %	103.501 ppb
Concentration per Run 1	108.737 ppb	N/A	91.084 ppb			86.212 ppb		76.749 %	101.033 ppb
Concentration per Run 2	110.279 ppb	N/A	96.579 ppb			87.280 ppb		77.364 %	104.354 ppb
Concentration per Run 3	111.188 ppb	N/A	97.406 ppb			90.267 ppb		76.871 %	105.117 ppb
Concentration RSD	1.1 %	N/A	3.6 %			2.4 %		0.4 %	2.1 %
Intensity average	268,733 cps	7,356 cps	24,109 cps	116,000 cps	16,883 cps	11,672 cps	4,854 cps	450,251 cps	887,426 cps
Intensity per Run 1	259,698.0 cps	7,052.0 cps	23,005.6 cps	110,574.5 cps	16,548.0 cps	11,186.1 cps	4,989.1 cps	448,814.8 cps	860,464.5 cps
Intensity per Run 2	271,057.0 cps	7,782.5 cps	24,625.0 cps	117,432.4 cps	16,601.1 cps	11,661.1 cps	4,551.0 cps	452,412.0 cps	899,303.3 cps
Intensity per Run 3	275,444.2 cps	7,232.1 cps	24,697.8 cps	119,992.3 cps	17,500.3 cps	12,169.1 cps	5,023.1 cps	449,527.0 cps	902,511.2 cps
Intensity RSD	3.0 %	5.2 %	4.0 %	4.2 %	3.2 %	4.2 %	5.4 %	0.4 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	103.130 ppb	103.244 ppb	102.314 ppb	106.337 ppb	0.015 ppm		94.237 ppb	92.782 ppb	96.561 ppb
Concentration per Run 1	99.068 ppb	98.876 ppb	98.128 ppb	103.756 ppb	0.015 ppm		93.427 ppb	91.742 ppb	95.591 ppb
Concentration per Run 2	103.323 ppb	104.031 ppb	102.867 ppb	105.672 ppb	0.015 ppm		93.959 ppb	93.113 ppb	94.986 ppb
Concentration per Run 3	107.000 ppb	106.825 ppb	105.947 ppb	109.584 ppb	0.015 ppm		95.327 ppb	93.489 ppb	99.106 ppb
Concentration RSD	3.8 %	3.9 %	3.8 %	2.8 %	0.8 %		1.0 %	1.0 %	2.3 %
Intensity average	1,601,681 cps	1,765,744 cps	1,044,600 cps	2,877,755 cps	1,314,030 cps	795 cps	74,091 cps	5,454,829 cps	58,199 cps
Intensity per Run 1	1,527,136.9 cps	1,677,217.1 cps	992,964.4 cps	2,781,145.5 cps	1,314,716.3 cps	760.0 cps	72,337.1 cps	5,275,539.4 cps	56,652.2 cps
Intensity per Run 2	1,612,914.9 cps	1,788,419.0 cps	1,055,756.5 cps	2,875,167.9 cps	1,303,656.8 cps	772.0 cps	74,320.7 cps	5,511,307.5 cps	57,604.6 cps
Intensity per Run 3	1,664,991.6 cps	1,831,594.4 cps	1,085,078.1 cps	2,976,952.8 cps	1,323,716.0 cps	852.0 cps	75,616.4 cps	5,577,641.1 cps	60,341.7 cps
Intensity RSD	4.3 %	4.5 %	4.5 %	3.4 %	0.8 %	6.3 %	2.2 %	2.9 %	3.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	92.046 ppb	95.530 ppb	97.887 ppb	73.353 %	104.170 ppb	106.241 ppb	106.191 ppb	103.094 ppb	103.658 ppb
Concentration per Run 1	91.507 ppb	94.385 ppb	98.136 ppb	71.755 %	103.719 ppb	104.668 ppb	104.743 ppb	102.457 ppb	100.137 ppb
Concentration per Run 2	91.745 ppb	95.770 ppb	97.198 ppb	73.858 %	102.067 ppb	105.896 ppb	106.327 ppb	103.477 ppb	105.618 ppb
Concentration per Run 3	92.886 ppb	96.436 ppb	98.328 ppb	74.446 %	106.726 ppb	108.159 ppb	107.504 ppb	103.349 ppb	105.220 ppb
Concentration RSD	0.8 %	1.1 %	0.6 %	1.9 %	2.3 %	1.7 %	1.3 %	0.5 %	2.9 %
Intensity average	5,396,014 cps	928,232 cps	2,332,917 cps	656,717 cps	2,058,303 cps	2,221,761 cps	1,785,650 cps	527,507 cps	971,827 cps
Intensity per Run 1	5,271,104.4 cps	899,751.3 cps	2,287,916.7 cps	642,409.6 cps	2,006,799.1 cps	2,145,673.1 cps	1,727,869.1 cps	516,550.1 cps	925,490.6 cps
Intensity per Run 2	5,412,368.2 cps	936,539.5 cps	2,332,464.2 cps	661,237.2 cps	2,027,997.8 cps	2,224,164.5 cps	1,794,379.1 cps	529,080.2 cps	988,591.5 cps
Intensity per Run 3	5,504,569.8 cps	948,404.4 cps	2,378,369.4 cps	666,505.5 cps	2,140,111.7 cps	2,295,445.0 cps	1,834,703.2 cps	536,890.3 cps	1,001,398.1 cps
Intensity RSD	2.2 %	2.7 %	1.9 %	1.9 %	3.5 %	3.4 %	3.0 %	1.9 %	4.2 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			82.612 %			0.012 ppm	105.928 ppb	110.285 ppb	107.000 ppb
Concentration per Run 1			82.032 %			0.012 ppm	103.014 ppb	107.131 ppb	104.152 ppb
Concentration per Run 2			81.889 %			0.012 ppm	107.582 ppb	111.904 ppb	108.238 ppb
Concentration per Run 3			83.915 %			0.012 ppm	107.188 ppb	111.822 ppb	108.610 ppb
Concentration RSD			1.4 %			2.0 %	2.4 %	2.5 %	2.3 %
Intensity average	141 cps	119 cps	2,596,737 cps	143 cps	115 cps	2,742,461 cps	6,829,468 cps	16,850,163 cps	5,440,177 cps
Intensity per Run 1	140.0 cps	140.0 cps	2,578,490.4 cps	144.0 cps	104.0 cps	2,695,327.1 cps	6,613,449.4 cps	16,306,449.2 cps	5,274,098.8 cps
Intensity per Run 2	144.0 cps	92.0 cps	2,574,016.3 cps	148.0 cps	136.0 cps	2,801,893.0 cps	6,900,016.6 cps	17,018,555.2 cps	5,476,043.0 cps
Intensity per Run 3	140.0 cps	124.0 cps	2,637,703.9 cps	136.0 cps	104.0 cps	2,730,163.7 cps	6,974,938.6 cps	17,225,485.7 cps	5,570,389.9 cps
Intensity RSD	1.6 %	20.6 %	1.4 %	4.3 %	16.1 %	2.0 %	2.8 %	2.9 %	2.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	107.698 ppb	107.711 ppb	68.557 %
Concentration per Run 1	105.074 ppb	104.877 ppb	68.301 %
Concentration per Run 2	108.216 ppb	108.571 ppb	68.244 %
Concentration per Run 3	109.804 ppb	109.683 ppb	69.124 %
Concentration RSD	2.2 %	2.3 %	0.7 %
Intensity average	4,791,091 cps	21,871,912 cps	1,757,062 cps
Intensity per Run 1	4,655,843.8 cps	21,215,822.8 cps	1,750,519.2 cps
Intensity per Run 2	4,790,843.3 cps	21,944,584.7 cps	1,749,050.8 cps
Intensity per Run 3	4,926,585.0 cps	22,455,328.8 cps	1,771,617.0 cps
Intensity RSD	2.8 %	2.8 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001SD Analysis: 10/30/2019 13:48:16 Sample Type UNKNOWN
Comment EffluentSD Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	83.266 %	90.205 %	98.236 ppb	720.733 ppb	738.429 ppb	N/A	614,588.648 ppb	5,945.739 ppb	5,957.933 ppb
Concentration per Run 1	83.009 %	91.116 %	95.370 ppb	711.922 ppb	719.278 ppb	N/A	601,839.786 ppb	5,694.796 ppb	5,729.617 ppb
Concentration per Run 2	83.236 %	90.243 %	99.119 ppb	720.270 ppb	747.136 ppb	N/A	623,818.484 ppb	6,086.606 ppb	6,044.601 ppb
Concentration per Run 3	83.553 %	89.256 %	100.218 ppb	730.008 ppb	748.874 ppb	N/A	618,107.674 ppb	6,055.814 ppb	6,099.581 ppb
Concentration RSD	0.3 %	1.0 %	2.6 %	1.3 %	2.2 %	N/A	1.9 %	3.7 %	3.4 %
Intensity average	11,645,033 cps	29,044 cps	14,074 cps	10,578 cps	63,559 cps	6,719 cps	902,595,892 cps	3,935,347 cps	819,350 cps
Intensity per Run 1	11,609,145.4 cps	29,337.4 cps	13,804.1 cps	10,552.0 cps	62,517.0 cps	6,921.9 cps	891,360,516.3 cps	3,801,142.6 cps	794,517.4 cps
Intensity per Run 2	11,640,797.3 cps	29,056.3 cps	14,209.1 cps	10,574.5 cps	64,324.2 cps	6,231.6 cps	915,537,520.6 cps	4,025,889.4 cps	830,641.8 cps
Intensity per Run 3	11,685,154.8 cps	28,738.5 cps	14,209.6 cps	10,609.0 cps	63,835.6 cps	7,002.0 cps	900,889,640.2 cps	3,979,009.7 cps	832,892.0 cps
Intensity RSD	0.3 %	1.0 %	1.7 %	0.3 %	1.5 %	6.3 %	1.3 %	3.0 %	2.6 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	5,931.504 ppb	1,186.059 ppb		1.523 ppm	32,945.497 ppb	4,687.640 ppb	2,940.802 ppb	3,458.038 ppb	87.542 %
Concentration per Run 1	5,717.554 ppb	1,116.054 ppb		1.467 ppm	32,285.434 ppb	4,480.342 ppb	2,967.151 ppb	3,421.231 ppb	86.112 %
Concentration per Run 2	5,964.471 ppb	1,211.346 ppb		1.540 ppm	33,066.386 ppb	4,689.307 ppb	2,951.783 ppb	3,463.140 ppb	88.948 %
Concentration per Run 3	6,112.489 ppb	1,230.779 ppb		1.562 ppm	33,484.672 ppb	4,893.270 ppb	2,903.471 ppb	3,489.743 ppb	87.567 %
Concentration RSD	3.4 %	5.2 %		3.3 %	1.8 %	4.4 %	1.1 %	1.0 %	1.6 %
Intensity average	1,072,547 cps	258,762 cps	118,025 cps	6,691,183 cps	16,864,864 cps	10,972 cps	6,895,015 cps	94,957 cps	6,025,547 cps
Intensity per Run 1	1,042,344.2 cps	245,492.3 cps	115,764.5 cps	6,490,157.4 cps	16,627,811.6 cps	10,544.5 cps	6,845,051.7 cps	94,426.4 cps	5,927,089.0 cps
Intensity per Run 2	1,077,608.0 cps	264,048.1 cps	118,257.2 cps	6,752,517.5 cps	16,887,693.6 cps	10,944.8 cps	7,029,065.0 cps	94,809.8 cps	6,122,278.0 cps
Intensity per Run 3	1,097,687.9 cps	266,745.4 cps	120,054.5 cps	6,830,875.1 cps	17,079,086.3 cps	11,425.3 cps	6,810,927.8 cps	95,634.8 cps	6,027,275.1 cps
Intensity RSD	2.6 %	4.5 %	1.8 %	2.7 %	1.3 %	4.0 %	1.7 %	0.7 %	1.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	55.725 %	87.387 ppb	100.358 ppb	118.059 ppb	123.472 ppb	N/A	118.037 ppb	1,394.305 ppb	1,642.160 ppb
Concentration per Run 1	55.994 %	86.232 ppb	96.754 ppb	114.304 ppb	119.680 ppb	N/A	114.639 ppb	1,385.263 ppb	1,590.406 ppb
Concentration per Run 2	55.547 %	85.625 ppb	102.064 ppb	119.127 ppb	123.681 ppb	N/A	117.743 ppb	1,397.839 ppb	1,660.582 ppb
Concentration per Run 3	55.634 %	90.305 ppb	102.256 ppb	120.747 ppb	127.056 ppb	N/A	121.728 ppb	1,399.814 ppb	1,675.492 ppb
Concentration RSD	0.4 %	2.9 %	3.1 %	2.8 %	3.0 %	N/A	3.0 %	0.6 %	2.8 %
Intensity average	163,599 cps	18,864 cps	749,474 cps	1,383,472 cps	211,786 cps	214,499 cps	1,136,229 cps	18,024,028 cps	655,229 cps
Intensity per Run 1	164,387.8 cps	18,686.0 cps	726,137.7 cps	1,346,066.2 cps	205,531.1 cps	211,712.9 cps	1,103,824.7 cps	17,903,361.0 cps	637,706.4 cps
Intensity per Run 2	163,077.5 cps	18,449.6 cps	759,835.9 cps	1,391,624.1 cps	212,557.6 cps	211,721.1 cps	1,136,954.8 cps	18,135,821.7 cps	660,508.5 cps
Intensity per Run 3	163,331.8 cps	19,455.2 cps	762,448.3 cps	1,412,724.7 cps	217,269.1 cps	220,061.6 cps	1,167,908.8 cps	18,032,900.1 cps	667,472.5 cps
Intensity RSD	0.4 %	2.8 %	2.7 %	2.5 %	2.8 %	2.2 %	2.8 %	0.6 %	2.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	151.080 ppb	111.121 ppb	133.319 ppb	133.330 ppb	152.964 ppb	121.588 ppb	133.454 ppb	129.708 ppb	
Concentration per Run 1	146.438 ppb	108.843 ppb	129.763 ppb	131.312 ppb	147.362 ppb	118.979 ppb	132.014 ppb	126.732 ppb	
Concentration per Run 2	152.813 ppb	111.323 ppb	132.978 ppb	133.155 ppb	154.812 ppb	121.818 ppb	132.079 ppb	129.425 ppb	
Concentration per Run 3	153.989 ppb	113.198 ppb	137.216 ppb	135.523 ppb	156.718 ppb	123.967 ppb	136.268 ppb	132.968 ppb	
Concentration RSD	2.7 %	2.0 %	2.8 %	1.6 %	3.2 %	2.1 %	1.8 %	2.4 %	
Intensity average	4,173,900 cps	1,025,224 cps	156,971 cps	2,574,557 cps	1,317,788 cps	578,672 cps	97,236 cps	456,090 cps	52 cps
Intensity per Run 1	4,065,456.6 cps	993,265.4 cps	152,420.1 cps	2,528,098.3 cps	1,275,798.5 cps	568,290.1 cps	95,781.7 cps	443,673.1 cps	48.0 cps
Intensity per Run 2	4,208,629.8 cps	1,045,868.1 cps	157,657.2 cps	2,590,272.6 cps	1,329,555.9 cps	582,868.3 cps	97,156.5 cps	459,598.9 cps	55.0 cps
Intensity per Run 3	4,247,612.8 cps	1,036,537.7 cps	160,836.9 cps	2,605,301.5 cps	1,348,011.0 cps	584,857.7 cps	98,768.8 cps	464,998.0 cps	54.0 cps
Intensity RSD	2.3 %	2.7 %	2.7 %	1.6 %	2.8 %	1.6 %	1.5 %	2.4 %	7.2 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	113.868 ppb	N/A	97.045 ppb			89.153 ppb		78.046 %	106.515 ppb
Concentration per Run 1	111.440 ppb	N/A	95.792 ppb			86.465 ppb		77.185 %	104.208 ppb
Concentration per Run 2	113.493 ppb	N/A	95.190 ppb			91.085 ppb		79.478 %	104.944 ppb
Concentration per Run 3	116.671 ppb	N/A	100.152 ppb			89.910 ppb		77.475 %	110.392 ppb
Concentration RSD	2.3 %	N/A	2.8 %			2.7 %		1.6 %	3.2 %
Intensity average	280,890 cps	7,609 cps	25,030 cps	110,991 cps	17,630 cps	11,968 cps	5,533 cps	456,398 cps	925,101 cps
Intensity per Run 1	275,842.9 cps	6,962.0 cps	24,512.2 cps	106,692.8 cps	18,217.3 cps	11,631.6 cps	6,678.9 cps	451,363.1 cps	897,545.8 cps
Intensity per Run 2	281,489.1 cps	8,242.8 cps	24,902.9 cps	112,065.3 cps	15,863.1 cps	12,300.2 cps	3,485.5 cps	464,771.2 cps	926,094.2 cps
Intensity per Run 3	285,337.8 cps	7,622.3 cps	25,673.9 cps	114,215.6 cps	18,808.2 cps	11,971.0 cps	6,434.7 cps	453,058.9 cps	951,662.7 cps
Intensity RSD	1.7 %	8.4 %	2.4 %	3.5 %	8.8 %	2.8 %	32.1 %	1.6 %	2.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	105.023 ppb	104.917 ppb	103.821 ppb	106.866 ppb	0.015 ppm		97.347 ppb	94.495 ppb	98.469 ppb
Concentration per Run 1	101.581 ppb	102.189 ppb	102.561 ppb	103.143 ppb	0.015 ppm		96.233 ppb	92.170 ppb	96.914 ppb
Concentration per Run 2	105.127 ppb	105.134 ppb	103.306 ppb	107.855 ppb	0.015 ppm		96.042 ppb	93.626 ppb	97.847 ppb
Concentration per Run 3	108.362 ppb	107.428 ppb	105.597 ppb	109.602 ppb	0.015 ppm		99.766 ppb	97.690 ppb	100.646 ppb
Concentration RSD	3.2 %	2.5 %	1.5 %	3.1 %	1.0 %		2.2 %	3.0 %	2.0 %
Intensity average	1,652,177 cps	1,817,334 cps	1,073,388 cps	2,928,793 cps	1,332,907 cps	840 cps	77,433 cps	5,615,005 cps	60,033 cps
Intensity per Run 1	1,585,402.8 cps	1,757,025.9 cps	1,053,154.2 cps	2,808,803.2 cps	1,318,376.8 cps	812.0 cps	76,405.4 cps	5,494,543.1 cps	59,039.5 cps
Intensity per Run 2	1,679,347.8 cps	1,848,324.2 cps	1,083,570.2 cps	2,997,058.0 cps	1,345,245.3 cps	908.0 cps	77,165.9 cps	5,593,681.5 cps	60,192.9 cps
Intensity per Run 3	1,691,780.0 cps	1,846,652.7 cps	1,083,439.1 cps	2,980,519.2 cps	1,335,099.7 cps	800.0 cps	78,727.2 cps	5,756,791.3 cps	60,868.0 cps
Intensity RSD	3.5 %	2.9 %	1.6 %	3.6 %	1.0 %	7.0 %	1.5 %	2.4 %	1.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	92.822 ppb	97.692 ppb	98.910 ppb	74.157 %	105.803 ppb	107.140 ppb	107.829 ppb	103.899 ppb	104.571 ppb
Concentration per Run 1	91.151 ppb	95.517 ppb	96.385 ppb	74.387 %	100.866 ppb	102.050 ppb	104.509 ppb	100.632 ppb	101.119 ppb
Concentration per Run 2	92.610 ppb	97.796 ppb	98.799 ppb	74.552 %	107.503 ppb	108.532 ppb	108.459 ppb	105.675 ppb	106.457 ppb
Concentration per Run 3	94.705 ppb	99.762 ppb	101.545 ppb	73.534 %	109.040 ppb	110.837 ppb	110.520 ppb	105.389 ppb	106.136 ppb
Concentration RSD	1.9 %	2.2 %	2.6 %	0.7 %	4.1 %	4.3 %	2.8 %	2.7 %	2.9 %
Intensity average	5,504,022 cps	959,875 cps	2,382,915 cps	663,919 cps	2,110,932 cps	2,260,021 cps	1,827,946 cps	534,070 cps	984,122 cps
Intensity per Run 1	5,403,694.4 cps	939,342.3 cps	2,329,525.7 cps	665,975.4 cps	2,020,793.8 cps	2,163,618.0 cps	1,781,659.5 cps	521,997.0 cps	960,861.9 cps
Intensity per Run 2	5,538,118.6 cps	968,075.1 cps	2,393,149.9 cps	667,446.9 cps	2,154,698.6 cps	2,298,089.3 cps	1,844,534.0 cps	543,231.4 cps	1,001,434.7 cps
Intensity per Run 3	5,570,253.5 cps	972,207.7 cps	2,426,068.7 cps	658,334.2 cps	2,157,304.5 cps	2,318,355.4 cps	1,857,645.4 cps	536,981.3 cps	990,068.4 cps
Intensity RSD	1.6 %	1.9 %	2.1 %	0.7 %	3.7 %	3.7 %	2.2 %	2.0 %	2.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			82.462 %			0.012 ppm	103.597 ppb	106.293 ppb	107.682 ppb
Concentration per Run 1			83.726 %			0.012 ppm	98.960 ppb	101.360 ppb	106.188 ppb
Concentration per Run 2			81.976 %			0.012 ppm	104.504 ppb	106.789 ppb	107.507 ppb
Concentration per Run 3			81.685 %			0.012 ppm	107.327 ppb	110.731 ppb	109.351 ppb
Concentration RSD			1.3 %			2.6 %	4.1 %	4.4 %	1.5 %
Intensity average	141 cps	161 cps	2,592,032 cps	127 cps	121 cps	2,693,535 cps	6,588,910 cps	15,990,480 cps	5,395,107 cps
Intensity per Run 1	140.0 cps	144.0 cps	2,631,751.4 cps	156.0 cps	148.0 cps	2,653,570.7 cps	6,250,042.0 cps	15,084,259.5 cps	5,273,825.8 cps
Intensity per Run 2	176.0 cps	168.0 cps	2,576,747.4 cps	112.0 cps	116.0 cps	2,773,501.8 cps	6,689,708.8 cps	16,201,524.6 cps	5,427,247.4 cps
Intensity per Run 3	108.0 cps	172.0 cps	2,567,597.0 cps	112.0 cps	100.0 cps	2,653,531.1 cps	6,826,979.9 cps	16,685,656.0 cps	5,484,246.6 cps
Intensity RSD	24.1 %	9.4 %	1.3 %	20.1 %	20.1 %	2.6 %	4.6 %	5.1 %	2.0 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	107.374 ppb	109.029 ppb	67.492 %
Concentration per Run 1	105.820 ppb	107.801 ppb	66.779 %
Concentration per Run 2	107.886 ppb	109.196 ppb	68.079 %
Concentration per Run 3	108.415 ppb	110.089 ppb	67.618 %
Concentration RSD	1.3 %	1.1 %	1.0 %
Intensity average	4,705,544 cps	21,795,277 cps	1,729,775 cps
Intensity per Run 1	4,594,020.0 cps	21,321,211.8 cps	1,711,504.5 cps
Intensity per Run 2	4,765,476.3 cps	22,017,446.7 cps	1,744,815.1 cps
Intensity per Run 3	4,757,137.1 cps	22,047,172.3 cps	1,733,004.4 cps
Intensity RSD	2.1 %	1.9 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001L(5) Analysis: 10/30/2019 13:54:20 Sample Type UNKNOWN
Comment EffluentL Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	98.326 %	100.908 %	0.037 ppb	123.717 ppb	128.662 ppb	N/A	102,853.036 ppb	826.939 ppb	820.417 ppb
Concentration per Run 1	97.557 %	100.948 %	0.040 ppb	118.864 ppb	127.083 ppb	N/A	101,409.066 ppb	802.841 ppb	791.904 ppb
Concentration per Run 2	98.109 %	101.306 %	0.053 ppb	126.825 ppb	130.548 ppb	N/A	104,873.053 ppb	835.077 ppb	825.842 ppb
Concentration per Run 3	99.314 %	100.469 %	0.019 ppb	125.461 ppb	128.356 ppb	N/A	102,276.988 ppb	842.899 ppb	843.506 ppb
Concentration RSD	0.9 %	0.4 %	46.1 %	3.4 %	1.4 %	N/A	1.8 %	2.6 %	3.2 %
Intensity average	13,751,261 cps	32,490 cps	10 cps	2,087 cps	12,810 cps	3,424 cps	190,542,575 cps	697,614 cps	145,032 cps
Intensity per Run 1	13,643,608.3 cps	32,503.2 cps	10.0 cps	2,010.7 cps	12,691.4 cps	3,590.5 cps	189,696,777.8 cps	684,377.4 cps	141,548.9 cps
Intensity per Run 2	13,720,822.1 cps	32,618.5 cps	12.0 cps	2,143.7 cps	13,014.8 cps	3,160.4 cps	193,231,146.5 cps	700,274.4 cps	145,037.8 cps
Intensity per Run 3	13,889,352.7 cps	32,348.8 cps	6.5 cps	2,107.7 cps	12,725.0 cps	3,520.5 cps	188,699,799.9 cps	708,189.1 cps	148,509.4 cps
Intensity RSD	0.9 %	0.4 %	29.3 %	3.3 %	1.4 %	6.7 %	1.2 %	1.7 %	2.4 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	804.371 ppb	172.443 ppb		0.964 ppm	5,768.927 ppb	441.539 ppb	396.181 ppb	394.322 ppb	96.958 %
Concentration per Run 1	771.687 ppb	168.727 ppb		0.927 ppm	5,656.329 ppb	371.899 ppb	391.476 ppb	375.127 ppb	96.131 %
Concentration per Run 2	816.771 ppb	172.822 ppb		0.981 ppm	5,817.757 ppb	511.254 ppb	389.212 ppb	385.011 ppb	98.031 %
Concentration per Run 3	824.655 ppb	175.780 ppb		0.984 ppm	5,832.697 ppb	441.464 ppb	407.854 ppb	422.827 ppb	96.712 %
Concentration RSD	3.6 %	2.1 %		3.3 %	1.7 %	15.8 %	2.6 %	6.4 %	1.0 %
Intensity average	188,491 cps	49,455 cps	25,192 cps	5,937,117 cps	4,326,486 cps	1,633 cps	1,087,823 cps	17,269 cps	6,673,631 cps
Intensity per Run 1	182,961.2 cps	48,986.2 cps	24,804.7 cps	5,809,530.4 cps	4,326,081.6 cps	1,420.1 cps	1,066,591.4 cps	16,841.4 cps	6,616,729.5 cps
Intensity per Run 2	190,035.9 cps	49,176.8 cps	25,195.6 cps	5,966,380.5 cps	4,295,844.0 cps	1,850.1 cps	1,081,372.7 cps	16,561.0 cps	6,747,469.3 cps
Intensity per Run 3	192,474.6 cps	50,200.6 cps	25,576.3 cps	6,035,440.4 cps	4,357,531.4 cps	1,630.1 cps	1,115,503.9 cps	18,403.7 cps	6,656,694.9 cps
Intensity RSD	2.6 %	1.3 %	1.5 %	1.9 %	0.7 %	13.2 %	2.3 %	5.7 %	1.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	86.946 %	0.145 ppb	0.118 ppb	0.080 ppb	-0.037 ppb	N/A	0.191 ppb	31.552 ppb	32.259 ppb
Concentration per Run 1	88.995 %	0.162 ppb	0.098 ppb	0.073 ppb	-0.037 ppb	N/A	0.176 ppb	30.116 ppb	30.662 ppb
Concentration per Run 2	85.235 %	0.132 ppb	0.133 ppb	0.087 ppb	-0.052 ppb	N/A	0.192 ppb	31.670 ppb	32.680 ppb
Concentration per Run 3	86.607 %	0.142 ppb	0.123 ppb	0.079 ppb	-0.023 ppb	N/A	0.204 ppb	32.870 ppb	33.435 ppb
Concentration RSD	2.2 %	10.5 %	15.2 %	8.7 %	39.8 %	N/A	7.5 %	4.4 %	4.4 %
Intensity average	255,258 cps	49 cps	2,855 cps	3,695 cps	1,071 cps	1,100 cps	4,592 cps	621,992 cps	21,090 cps
Intensity per Run 1	261,274.0 cps	56.0 cps	2,688.9 cps	3,660.5 cps	1,092.0 cps	930.0 cps	4,464.8 cps	605,667.7 cps	20,581.0 cps
Intensity per Run 2	250,234.3 cps	44.0 cps	2,972.5 cps	3,752.6 cps	1,016.0 cps	1,120.1 cps	4,536.8 cps	615,116.8 cps	20,941.6 cps
Intensity per Run 3	254,264.3 cps	48.0 cps	2,902.9 cps	3,672.5 cps	1,104.0 cps	1,250.1 cps	4,772.9 cps	645,191.8 cps	21,747.0 cps
Intensity RSD	2.2 %	12.4 %	5.2 %	1.4 %	4.5 %	14.6 %	3.5 %	3.3 %	2.8 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.033 ppb	-0.098 ppb	-0.094 ppb	0.568 ppb	0.550 ppb	3.371 ppb	3.253 ppb	3.042 ppb	
Concentration per Run 1	0.036 ppb	-0.093 ppb	-0.072 ppb	0.559 ppb	0.524 ppb	3.283 ppb	3.299 ppb	3.063 ppb	
Concentration per Run 2	0.037 ppb	-0.112 ppb	-0.107 ppb	0.588 ppb	0.575 ppb	3.387 ppb	3.299 ppb	3.045 ppb	
Concentration per Run 3	0.027 ppb	-0.089 ppb	-0.101 ppb	0.558 ppb	0.549 ppb	3.443 ppb	3.161 ppb	3.018 ppb	
Concentration RSD	15.8 %	12.9 %	19.7 %	3.0 %	4.6 %	2.4 %	2.4 %	0.7 %	
Intensity average	1,672 cps	9,129 cps	1,399 cps	18,777 cps	9,083 cps	32,002 cps	5,117 cps	23,958 cps	12 cps
Intensity per Run 1	1,832.1 cps	9,171.4 cps	1,452.1 cps	18,778.1 cps	8,955.2 cps	31,471.6 cps	5,217.1 cps	24,299.7 cps	18.0 cps
Intensity per Run 2	1,780.1 cps	8,963.2 cps	1,360.1 cps	19,066.6 cps	9,243.4 cps	31,984.9 cps	5,109.1 cps	23,738.6 cps	14.0 cps
Intensity per Run 3	1,404.1 cps	9,251.4 cps	1,384.1 cps	18,485.7 cps	9,051.3 cps	32,550.7 cps	5,025.0 cps	23,834.9 cps	5.0 cps
Intensity RSD	14.0 %	1.6 %	3.4 %	1.5 %	1.6 %	1.7 %	1.9 %	1.3 %	54.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.064 ppb	N/A	0.078 ppb			0.604 ppb		92.210 %	0.412 ppb
Concentration per Run 1	0.121 ppb	N/A	0.055 ppb			0.031 ppb		92.099 %	0.365 ppb
Concentration per Run 2	-0.064 ppb	N/A	0.079 ppb			1.062 ppb		92.113 %	0.412 ppb
Concentration per Run 3	0.135 ppb	N/A	0.100 ppb			0.719 ppb		92.418 %	0.460 ppb
Concentration RSD	173.5 %	N/A	28.7 %			86.9 %		0.2 %	11.6 %
Intensity average	3,736 cps	60 cps	6 cps	31,868 cps	5,596 cps	-345 cps	5,750 cps	539,226 cps	4,530 cps
Intensity per Run 1	3,895.0 cps	100.0 cps	-1.7 cps	30,840.0 cps	5,843.6 cps	-438.3 cps	6,102.7 cps	538,575.0 cps	4,036.7 cps
Intensity per Run 2	3,352.9 cps	40.0 cps	5.9 cps	32,059.1 cps	5,061.1 cps	-268.2 cps	5,063.1 cps	538,657.9 cps	4,516.8 cps
Intensity per Run 3	3,958.6 cps	40.0 cps	12.8 cps	32,705.8 cps	5,882.6 cps	-327.1 cps	6,084.7 cps	540,444.6 cps	5,037.0 cps
Intensity RSD	8.9 %	57.7 %	128.5 %	3.0 %	8.3 %	25.1 %	10.3 %	0.2 %	11.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.386 ppb	0.383 ppb	0.383 ppb	0.376 ppb	0.018 ppm		0.008 ppb	0.011 ppb	0.030 ppb
Concentration per Run 1	0.341 ppb	0.315 ppb	0.326 ppb	0.329 ppb	0.018 ppm		0.012 ppb	0.016 ppb	0.048 ppb
Concentration per Run 2	0.383 ppb	0.390 ppb	0.370 ppb	0.379 ppb	0.018 ppm		0.008 ppb	0.011 ppb	0.015 ppb
Concentration per Run 3	0.433 ppb	0.443 ppb	0.453 ppb	0.420 ppb	0.018 ppm		0.003 ppb	0.007 ppb	0.026 ppb
Concentration RSD	11.9 %	16.8 %	16.8 %	12.0 %	0.4 %		57.1 %	39.1 %	57.0 %
Intensity average	7,540 cps	8,268 cps	4,929 cps	12,741 cps	1,593,528 cps	557 cps	96 cps	871 cps	23 cps
Intensity per Run 1	6,697.8 cps	6,869.9 cps	4,224.7 cps	11,213.1 cps	1,588,893.5 cps	496.0 cps	100.0 cps	1,180.1 cps	36.0 cps
Intensity per Run 2	7,478.2 cps	8,398.8 cps	4,760.9 cps	12,810.6 cps	1,589,942.9 cps	596.0 cps	96.0 cps	864.0 cps	12.0 cps
Intensity per Run 3	8,442.9 cps	9,535.7 cps	5,801.4 cps	14,200.1 cps	1,601,747.8 cps	580.0 cps	92.0 cps	568.0 cps	20.0 cps
Intensity RSD	11.6 %	16.2 %	16.3 %	11.7 %	0.4 %	9.6 %	4.2 %	35.2 %	53.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.011 ppb	0.011 ppb	0.011 ppb	88.261 %	0.142 ppb	0.085 ppb	0.074 ppb	0.330 ppb	0.324 ppb
Concentration per Run 1	0.015 ppb	0.012 ppb	0.016 ppb	88.149 %	0.126 ppb	0.083 ppb	0.076 ppb	0.335 ppb	0.337 ppb
Concentration per Run 2	0.011 ppb	0.013 ppb	0.009 ppb	87.970 %	0.151 ppb	0.083 ppb	0.074 ppb	0.350 ppb	0.310 ppb
Concentration per Run 3	0.007 ppb	0.008 ppb	0.008 ppb	88.665 %	0.150 ppb	0.090 ppb	0.074 ppb	0.306 ppb	0.326 ppb
Concentration RSD	36.7 %	23.6 %	38.3 %	0.4 %	9.7 %	4.8 %	1.7 %	6.8 %	4.1 %
Intensity average	832 cps	139 cps	366 cps	790,188 cps	4,047 cps	2,440 cps	1,739 cps	2,092 cps	3,742 cps
Intensity per Run 1	1,104.1 cps	152.0 cps	509.8 cps	789,183.4 cps	3,660.5 cps	2,372.2 cps	1,760.1 cps	2,104.2 cps	3,840.6 cps
Intensity per Run 2	844.0 cps	160.0 cps	306.3 cps	787,575.5 cps	4,236.7 cps	2,380.2 cps	1,724.1 cps	2,216.2 cps	3,608.5 cps
Intensity per Run 3	548.0 cps	104.0 cps	282.1 cps	793,806.4 cps	4,244.7 cps	2,568.3 cps	1,732.1 cps	1,956.2 cps	3,776.6 cps
Intensity RSD	33.4 %	21.8 %	34.2 %	0.4 %	8.3 %	4.5 %	1.1 %	6.2 %	3.2 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			90.738 %			0.013 ppm	0.370 ppb	0.377 ppb	0.036 ppb
Concentration per Run 1			89.257 %			0.013 ppm	0.410 ppb	0.415 ppb	0.040 ppb
Concentration per Run 2			91.834 %			0.014 ppm	0.365 ppb	0.371 ppb	0.035 ppb
Concentration per Run 3			91.123 %			0.013 ppm	0.336 ppb	0.345 ppb	0.033 ppb
Concentration RSD			1.5 %			3.0 %	10.0 %	9.4 %	9.4 %
Intensity average	39 cps	31 cps	2,852,161 cps	71 cps	39 cps	3,008,316 cps	28,987 cps	70,577 cps	2,787 cps
Intensity per Run 1	52.0 cps	20.0 cps	2,805,618.1 cps	60.0 cps	20.0 cps	2,961,405.8 cps	31,698.2 cps	76,866.0 cps	2,987.4 cps
Intensity per Run 2	32.0 cps	36.0 cps	2,886,618.4 cps	64.0 cps	48.0 cps	3,113,603.3 cps	29,211.1 cps	71,214.7 cps	2,798.3 cps
Intensity per Run 3	32.0 cps	36.0 cps	2,864,248.0 cps	88.0 cps	48.0 cps	2,949,938.6 cps	26,052.2 cps	63,650.0 cps	2,576.3 cps
Intensity RSD	29.9 %	30.1 %	1.5 %	21.4 %	41.8 %	3.0 %	9.8 %	9.4 %	7.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.033 ppb	0.035 ppb	81.372 %
Concentration per Run 1	0.037 ppb	0.039 ppb	80.713 %
Concentration per Run 2	0.034 ppb	0.035 ppb	83.380 %
Concentration per Run 3	0.028 ppb	0.033 ppb	80.023 %
Concentration RSD	13.1 %	9.1 %	2.2 %
Intensity average	2,283 cps	10,993 cps	2,085,514 cps
Intensity per Run 1	2,448.2 cps	11,749.2 cps	2,068,633.4 cps
Intensity per Run 2	2,404.2 cps	11,084.0 cps	2,136,976.6 cps
Intensity per Run 3	1,996.2 cps	10,145.7 cps	2,050,931.8 cps
Intensity RSD	10.9 %	7.3 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001(5) Analysis: 10/30/2019 14:00:23 Sample Type UNKNOWN
Comment Effluent Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	100.250 %	103.093 %	0.012 ppb	125.697 ppb	127.778 ppb	N/A	105,118.081 ppb	825.176 ppb	821.482 ppb
Concentration per Run 1	99.747 %	101.566 %	0.028 ppb	123.275 ppb	126.687 ppb	N/A	104,564.791 ppb	811.697 ppb	831.235 ppb
Concentration per Run 2	100.313 %	104.699 %	0.011 ppb	122.282 ppb	125.800 ppb	N/A	103,614.582 ppb	828.632 ppb	824.515 ppb
Concentration per Run 3	100.689 %	103.013 %	-0.004 ppb	131.534 ppb	130.846 ppb	N/A	107,174.869 ppb	835.200 ppb	808.696 ppb
Concentration RSD	0.5 %	1.5 %	134.4 %	4.0 %	2.1 %	N/A	1.8 %	1.5 %	1.4 %
Intensity average	14,020,238 cps	33,194 cps	6 cps	2,165 cps	12,987 cps	3,354 cps	198,401,131 cps	709,212 cps	147,927 cps
Intensity per Run 1	13,949,956.9 cps	32,702.3 cps	8.0 cps	2,096.7 cps	12,720.0 cps	3,320.4 cps	196,282,181.1 cps	694,207.3 cps	149,025.8 cps
Intensity per Run 2	14,029,100.9 cps	33,710.9 cps	5.5 cps	2,136.7 cps	12,965.2 cps	3,520.5 cps	197,479,474.2 cps	718,827.2 cps	149,803.3 cps
Intensity per Run 3	14,081,657.6 cps	33,168.0 cps	3.0 cps	2,262.2 cps	13,276.1 cps	3,220.4 cps	201,441,739.0 cps	714,601.7 cps	144,950.4 cps
Intensity RSD	0.5 %	1.5 %	45.5 %	4.0 %	2.1 %	4.6 %	1.4 %	1.9 %	1.8 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	819.209 ppb	172.966 ppb		0.954 ppm	5,670.841 ppb	411.044 ppb	396.319 ppb	383.747 ppb	97.317 %
Concentration per Run 1	815.967 ppb	170.579 ppb		0.940 ppm	5,653.297 ppb	380.157 ppb	392.127 ppb	383.328 ppb	96.618 %
Concentration per Run 2	805.438 ppb	173.457 ppb		0.951 ppm	5,676.095 ppb	371.241 ppb	403.204 ppb	378.914 ppb	96.110 %
Concentration per Run 3	836.220 ppb	174.862 ppb		0.971 ppm	5,683.132 ppb	481.733 ppb	393.625 ppb	388.998 ppb	99.223 %
Concentration RSD	1.9 %	1.3 %		1.6 %	0.3 %	14.9 %	1.5 %	1.3 %	1.7 %
Intensity average	195,491 cps	50,506 cps	26,184 cps	5,972,916 cps	4,321,031 cps	1,550 cps	1,092,616 cps	17,075 cps	6,698,320 cps
Intensity per Run 1	194,006.3 cps	49,658.9 cps	26,207.6 cps	5,897,455.4 cps	4,326,957.1 cps	1,450.1 cps	1,074,147.3 cps	17,191.9 cps	6,650,215.8 cps
Intensity per Run 2	193,885.9 cps	51,065.0 cps	25,496.2 cps	5,983,965.5 cps	4,340,021.9 cps	1,410.1 cps	1,097,139.5 cps	16,891.5 cps	6,615,229.1 cps
Intensity per Run 3	198,580.3 cps	50,793.6 cps	26,848.9 cps	6,037,326.9 cps	4,296,113.3 cps	1,790.1 cps	1,106,560.7 cps	17,141.8 cps	6,829,514.2 cps
Intensity RSD	1.4 %	1.5 %	2.6 %	1.2 %	0.5 %	13.5 %	1.5 %	0.9 %	1.7 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	88.207 %	0.095 ppb	0.117 ppb	0.069 ppb	-0.050 ppb	N/A	0.172 ppb	31.722 ppb	31.735 ppb
Concentration per Run 1	88.962 %	0.186 ppb	0.108 ppb	0.073 ppb	-0.055 ppb	N/A	0.152 ppb	31.114 ppb	31.354 ppb
Concentration per Run 2	88.285 %	0.044 ppb	0.112 ppb	0.068 ppb	-0.053 ppb	N/A	0.183 ppb	31.703 ppb	31.512 ppb
Concentration per Run 3	87.375 %	0.057 ppb	0.131 ppb	0.066 ppb	-0.043 ppb	N/A	0.181 ppb	32.348 ppb	32.338 ppb
Concentration RSD	0.9 %	82.1 %	10.4 %	4.9 %	12.9 %	N/A	10.1 %	1.9 %	1.7 %
Intensity average	258,962 cps	33 cps	2,886 cps	3,557 cps	1,048 cps	1,177 cps	4,371 cps	630,766 cps	21,074 cps
Intensity per Run 1	261,176.0 cps	64.0 cps	2,801.9 cps	3,656.5 cps	1,040.0 cps	1,000.0 cps	4,104.7 cps	621,243.4 cps	21,013.7 cps
Intensity per Run 2	259,190.8 cps	16.0 cps	2,835.2 cps	3,544.5 cps	1,044.0 cps	1,190.1 cps	4,532.8 cps	631,829.3 cps	20,953.6 cps
Intensity per Run 3	256,518.9 cps	20.0 cps	3,020.4 cps	3,468.5 cps	1,060.0 cps	1,340.1 cps	4,476.8 cps	639,224.7 cps	21,254.1 cps
Intensity RSD	0.9 %	79.9 %	4.1 %	2.7 %	1.0 %	14.5 %	5.3 %	1.4 %	0.8 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.022 ppb	-0.109 ppb	-0.123 ppb	0.570 ppb	0.550 ppb	3.417 ppb	2.987 ppb	3.009 ppb	
Concentration per Run 1	0.018 ppb	-0.099 ppb	-0.154 ppb	0.571 ppb	0.536 ppb	3.345 ppb	2.742 ppb	2.786 ppb	
Concentration per Run 2	0.021 ppb	-0.116 ppb	-0.105 ppb	0.565 ppb	0.545 ppb	3.369 ppb	2.891 ppb	3.165 ppb	
Concentration per Run 3	0.026 ppb	-0.111 ppb	-0.110 ppb	0.575 ppb	0.569 ppb	3.536 ppb	3.329 ppb	3.074 ppb	
Concentration RSD	18.4 %	8.0 %	22.0 %	1.0 %	3.1 %	3.1 %	10.2 %	6.6 %	
Intensity average	1,177 cps	8,946 cps	1,359 cps	18,929 cps	9,229 cps	32,431 cps	4,877 cps	23,868 cps	23 cps
Intensity per Run 1	1,024.0 cps	8,931.2 cps	1,308.1 cps	18,942.4 cps	9,119.3 cps	31,888.7 cps	4,628.9 cps	22,772.8 cps	23.0 cps
Intensity per Run 2	1,160.1 cps	8,923.2 cps	1,392.1 cps	18,830.2 cps	9,167.4 cps	32,229.7 cps	4,800.9 cps	24,676.4 cps	27.0 cps
Intensity per Run 3	1,348.1 cps	8,983.2 cps	1,376.1 cps	19,014.5 cps	9,399.5 cps	33,176.0 cps	5,201.1 cps	24,155.3 cps	18.0 cps
Intensity RSD	13.8 %	0.4 %	3.3 %	0.5 %	1.6 %	2.1 %	6.0 %	4.1 %	19.9 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.058 ppb	N/A	0.068 ppb			1.337 ppb		91.510 %	0.224 ppb
Concentration per Run 1	-0.236 ppb	N/A	0.130 ppb			1.525 ppb		90.306 %	0.179 ppb
Concentration per Run 2	0.307 ppb	N/A	-0.012 ppb			0.912 ppb		92.057 %	0.225 ppb
Concentration per Run 3	-0.244 ppb	N/A	0.086 ppb			1.575 ppb		92.168 %	0.267 ppb
Concentration RSD	547.7 %	N/A	107.1 %			27.6 %		1.1 %	19.5 %
Intensity average	3,402 cps	83 cps	2 cps	31,744 cps	5,017 cps	-225 cps	5,239 cps	535,134 cps	2,582 cps
Intensity per Run 1	2,867.3 cps	70.0 cps	22.2 cps	30,807.0 cps	4,197.7 cps	-193.0 cps	4,363.8 cps	528,091.2 cps	2,100.2 cps
Intensity per Run 2	4,474.5 cps	90.0 cps	-23.7 cps	32,135.3 cps	6,645.9 cps	-295.9 cps	6,988.1 cps	538,329.2 cps	2,608.3 cps
Intensity per Run 3	2,862.9 cps	90.0 cps	8.2 cps	32,288.7 cps	4,206.7 cps	-186.0 cps	4,364.8 cps	538,981.4 cps	3,036.4 cps
Intensity RSD	27.3 %	13.9 %	1,057.2 %	2.6 %	28.1 %	27.3 %	28.9 %	1.1 %	18.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.202 ppb	0.196 ppb	0.201 ppb	0.193 ppb	0.018 ppm		0.005 ppb	0.002 ppb	0.004 ppb
Concentration per Run 1	0.161 ppb	0.159 ppb	0.157 ppb	0.157 ppb	0.018 ppm		-0.034 ppb	0.002 ppb	0.004 ppb
Concentration per Run 2	0.207 ppb	0.195 ppb	0.213 ppb	0.188 ppb	0.018 ppm		0.029 ppb	0.002 ppb	0.004 ppb
Concentration per Run 3	0.240 ppb	0.234 ppb	0.233 ppb	0.234 ppb	0.018 ppm		0.020 ppb	0.003 ppb	0.004 ppb
Concentration RSD	19.5 %	19.1 %	19.7 %	20.2 %	1.8 %		706.5 %	32.5 %	0.8 %
Intensity average	4,107 cps	4,425 cps	2,690 cps	6,783 cps	1,605,178 cps	581 cps	93 cps	236 cps	4 cps
Intensity per Run 1	3,300.4 cps	3,624.5 cps	2,124.2 cps	5,553.2 cps	1,572,491.5 cps	552.0 cps	56.0 cps	196.0 cps	4.0 cps
Intensity per Run 2	4,200.7 cps	4,424.8 cps	2,848.3 cps	6,637.8 cps	1,622,337.1 cps	624.0 cps	116.0 cps	220.0 cps	4.0 cps
Intensity per Run 3	4,820.9 cps	5,225.1 cps	3,096.4 cps	8,158.7 cps	1,620,704.2 cps	568.0 cps	108.0 cps	292.0 cps	4.0 cps
Intensity RSD	18.6 %	18.1 %	18.8 %	19.3 %	1.8 %	6.5 %	34.9 %	21.2 %	0.0 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.002 ppb	0.004 ppb	0.002 ppb	88.748 %	0.071 ppb	0.056 ppb	0.059 ppb	0.322 ppb	0.320 ppb
Concentration per Run 1	0.002 ppb	0.003 ppb	0.002 ppb	88.360 %	0.062 ppb	0.050 ppb	0.054 ppb	0.316 ppb	0.302 ppb
Concentration per Run 2	0.002 ppb	0.006 ppb	0.003 ppb	88.928 %	0.070 ppb	0.056 ppb	0.060 ppb	0.316 ppb	0.329 ppb
Concentration per Run 3	0.002 ppb	0.004 ppb	0.002 ppb	88.954 %	0.080 ppb	0.062 ppb	0.062 ppb	0.333 ppb	0.329 ppb
Concentration RSD	16.3 %	35.1 %	23.0 %	0.4 %	13.1 %	10.6 %	7.1 %	3.1 %	4.9 %
Intensity average	216 cps	60 cps	104 cps	794,541 cps	2,371 cps	1,715 cps	1,433 cps	2,051 cps	3,714 cps
Intensity per Run 1	188.0 cps	44.0 cps	102.3 cps	791,072.9 cps	2,148.2 cps	1,560.1 cps	1,332.1 cps	2,004.2 cps	3,496.5 cps
Intensity per Run 2	224.0 cps	80.0 cps	120.6 cps	796,157.8 cps	2,364.2 cps	1,720.1 cps	1,476.1 cps	2,040.2 cps	3,852.6 cps
Intensity per Run 3	236.0 cps	56.0 cps	90.2 cps	796,392.8 cps	2,600.3 cps	1,864.1 cps	1,492.1 cps	2,108.2 cps	3,792.6 cps
Intensity RSD	11.6 %	30.6 %	14.6 %	0.4 %	9.5 %	8.9 %	6.1 %	2.6 %	5.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			91.112 %			0.013 ppm	0.089 ppb	0.090 ppb	0.025 ppb
Concentration per Run 1			90.441 %			0.013 ppm	0.087 ppb	0.086 ppb	0.024 ppb
Concentration per Run 2			92.995 %			0.013 ppm	0.090 ppb	0.093 ppb	0.026 ppb
Concentration per Run 3			89.901 %			0.013 ppm	0.091 ppb	0.090 ppb	0.025 ppb
Concentration RSD			1.8 %			0.5 %	2.2 %	3.7 %	2.6 %
Intensity average	31 cps	33 cps	2,863,924 cps	60 cps	41 cps	3,002,516 cps	7,722 cps	18,495 cps	2,134 cps
Intensity per Run 1	44.0 cps	48.0 cps	2,842,811.3 cps	72.0 cps	56.0 cps	3,001,936.5 cps	7,439.2 cps	17,618.4 cps	2,058.2 cps
Intensity per Run 2	28.0 cps	28.0 cps	2,923,111.3 cps	44.0 cps	36.0 cps	3,017,357.9 cps	7,854.5 cps	19,222.8 cps	2,182.2 cps
Intensity per Run 3	20.0 cps	24.0 cps	2,825,848.7 cps	64.0 cps	32.0 cps	2,988,254.9 cps	7,871.5 cps	18,644.9 cps	2,162.2 cps
Intensity RSD	39.8 %	38.6 %	1.8 %	24.0 %	31.1 %	0.5 %	3.2 %	4.4 %	3.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.022 ppb	0.024 ppb	81.370 %
Concentration per Run 1	0.019 ppb	0.022 ppb	80.088 %
Concentration per Run 2	0.024 ppb	0.024 ppb	81.899 %
Concentration per Run 3	0.023 ppb	0.024 ppb	82.122 %
Concentration RSD	11.5 %	4.8 %	1.4 %
Intensity average	1,699 cps	8,194 cps	2,085,460 cps
Intensity per Run 1	1,520.1 cps	7,751.0 cps	2,052,612.1 cps
Intensity per Run 2	1,788.1 cps	8,415.1 cps	2,099,029.7 cps
Intensity per Run 3	1,788.1 cps	8,415.1 cps	2,104,738.9 cps
Intensity RSD	9.1 %	4.7 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001S(5) Analysis: 10/30/2019 14:06:26 Sample Type UNKNOWN
Comment EffluentS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	99.064 %	102.469 %	20.038 ppb	149.077 ppb	149.682 ppb	N/A	105,854.441 ppb	1,063.822 ppb	1,061.304 ppb
Concentration per Run 1	98.277 %	104.475 %	19.311 ppb	145.936 ppb	144.807 ppb	N/A	104,243.256 ppb	1,044.334 ppb	1,024.058 ppb
Concentration per Run 2	98.853 %	101.686 %	20.427 ppb	148.472 ppb	150.875 ppb	N/A	104,516.407 ppb	1,054.536 ppb	1,067.993 ppb
Concentration per Run 3	100.061 %	101.247 %	20.376 ppb	152.823 ppb	153.363 ppb	N/A	108,803.660 ppb	1,092.595 ppb	1,091.859 ppb
Concentration RSD	0.9 %	1.7 %	3.1 %	2.3 %	2.9 %	N/A	2.4 %	2.4 %	3.2 %
Intensity average	13,854,383 cps	32,993 cps	3,263 cps	2,552 cps	15,118 cps	3,410 cps	198,707,379 cps	908,762 cps	189,940 cps
Intensity per Run 1	13,744,339.1 cps	33,638.7 cps	3,207.9 cps	2,540.8 cps	14,867.3 cps	3,270.4 cps	197,188,877.9 cps	898,338.3 cps	184,423.8 cps
Intensity per Run 2	13,824,931.9 cps	32,740.8 cps	3,302.4 cps	2,528.8 cps	15,173.2 cps	3,630.5 cps	196,873,412.2 cps	904,573.7 cps	192,060.4 cps
Intensity per Run 3	13,993,876.9 cps	32,599.5 cps	3,279.9 cps	2,585.8 cps	15,313.9 cps	3,330.5 cps	202,059,847.2 cps	923,372.6 cps	193,334.9 cps
Intensity RSD	0.9 %	1.7 %	1.5 %	1.2 %	1.5 %	5.7 %	1.5 %	1.4 %	2.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	1,043.561 ppb	202.546 ppb		0.962 ppm	5,983.980 ppb	826.808 ppb	637.926 ppb	719.239 ppb	95.566 %
Concentration per Run 1	1,048.538 ppb	196.293 ppb		0.949 ppm	6,092.889 ppb	809.755 ppb	633.791 ppb	707.573 ppb	94.726 %
Concentration per Run 2	1,005.009 ppb	203.470 ppb		0.961 ppm	5,873.723 ppb	801.436 ppb	649.530 ppb	716.759 ppb	94.760 %
Concentration per Run 3	1,077.137 ppb	207.876 ppb		0.975 ppm	5,985.329 ppb	869.232 ppb	630.457 ppb	733.387 ppb	97.210 %
Concentration RSD	3.5 %	2.9 %		1.3 %	1.8 %	4.5 %	1.6 %	1.8 %	1.5 %
Intensity average	247,554 cps	58,749 cps	29,157 cps	5,991,804 cps	4,537,184 cps	3,037 cps	1,687,457 cps	31,293 cps	6,577,787 cps
Intensity per Run 1	250,080.8 cps	57,211.9 cps	29,023.8 cps	5,900,891.6 cps	4,595,324.4 cps	2,950.4 cps	1,662,409.5 cps	30,497.2 cps	6,520,021.6 cps
Intensity per Run 2	239,754.0 cps	59,381.1 cps	28,943.7 cps	6,061,716.8 cps	4,521,380.3 cps	3,000.4 cps	1,702,937.6 cps	31,780.5 cps	6,522,340.5 cps
Intensity per Run 3	252,826.6 cps	59,652.8 cps	29,504.9 cps	6,012,802.2 cps	4,494,846.6 cps	3,160.4 cps	1,697,024.7 cps	31,600.2 cps	6,690,999.6 cps
Intensity RSD	2.8 %	2.3 %	1.0 %	1.4 %	1.1 %	3.6 %	1.3 %	2.2 %	1.5 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.832 %	18.505 ppb	18.803 ppb	20.015 ppb	21.212 ppb	N/A	20.854 ppb	251.856 ppb	246.457 ppb
Concentration per Run 1	86.899 %	18.606 ppb	18.846 ppb	19.730 ppb	20.717 ppb	N/A	20.534 ppb	245.084 ppb	241.899 ppb
Concentration per Run 2	89.573 %	18.009 ppb	18.048 ppb	19.454 ppb	21.045 ppb	N/A	20.463 ppb	247.776 ppb	244.569 ppb
Concentration per Run 3	87.024 %	18.899 ppb	19.515 ppb	20.862 ppb	21.876 ppb	N/A	21.565 ppb	262.707 ppb	252.903 ppb
Concentration RSD	1.7 %	2.5 %	3.9 %	3.7 %	2.8 %	N/A	3.0 %	3.8 %	2.3 %
Intensity average	257,859 cps	6,192 cps	222,478 cps	371,498 cps	54,744 cps	55,748 cps	293,742 cps	4,731,825 cps	155,887 cps
Intensity per Run 1	255,120.3 cps	6,161.5 cps	220,695.4 cps	362,433.5 cps	52,927.9 cps	53,986.7 cps	286,241.7 cps	4,557,278.1 cps	151,408.1 cps
Intensity per Run 2	262,970.3 cps	6,141.5 cps	217,926.4 cps	368,405.4 cps	55,185.8 cps	56,517.8 cps	292,606.6 cps	4,723,275.4 cps	157,777.7 cps
Intensity per Run 3	255,487.0 cps	6,273.6 cps	228,813.7 cps	383,656.6 cps	56,117.8 cps	56,738.8 cps	302,379.1 cps	4,914,922.3 cps	158,475.7 cps
Intensity RSD	1.7 %	1.1 %	2.5 %	2.9 %	3.0 %	2.7 %	2.8 %	3.8 %	2.5 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	21.885 ppb	22.534 ppb	22.381 ppb	24.232 ppb	23.470 ppb	26.275 ppb	25.648 ppb	25.501 ppb	
Concentration per Run 1	21.669 ppb	22.362 ppb	22.124 ppb	24.103 ppb	23.177 ppb	25.816 ppb	25.214 ppb	25.177 ppb	
Concentration per Run 2	21.433 ppb	22.739 ppb	22.022 ppb	23.771 ppb	23.284 ppb	26.331 ppb	25.169 ppb	25.495 ppb	
Concentration per Run 3	22.553 ppb	22.502 ppb	22.997 ppb	24.822 ppb	23.951 ppb	26.678 ppb	26.560 ppb	25.832 ppb	
Concentration RSD	2.7 %	0.8 %	2.4 %	2.2 %	1.8 %	1.7 %	3.1 %	1.3 %	
Intensity average	953,057 cps	249,558 cps	37,710 cps	645,134 cps	320,162 cps	159,101 cps	26,543 cps	126,824 cps	19 cps
Intensity per Run 1	933,804.1 cps	245,183.1 cps	36,906.6 cps	635,043.3 cps	312,839.5 cps	155,684.2 cps	25,854.8 cps	124,025.3 cps	15.0 cps
Intensity per Run 2	952,066.8 cps	251,448.2 cps	37,560.4 cps	639,985.8 cps	323,946.7 cps	159,524.2 cps	26,323.7 cps	127,891.9 cps	25.0 cps
Intensity per Run 3	973,299.1 cps	252,041.7 cps	38,663.8 cps	660,372.4 cps	323,700.5 cps	162,093.8 cps	27,450.2 cps	128,554.4 cps	18.0 cps
Intensity RSD	2.1 %	1.5 %	2.4 %	2.1 %	2.0 %	2.0 %	3.1 %	1.9 %	26.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	22.816 ppb	N/A	20.310 ppb			21.060 ppb		90.686 %	20.013 ppb
Concentration per Run 1	22.048 ppb	N/A	19.830 ppb			21.903 ppb		89.757 %	19.627 ppb
Concentration per Run 2	23.382 ppb	N/A	20.443 ppb			20.274 ppb		90.583 %	20.059 ppb
Concentration per Run 3	23.019 ppb	N/A	20.658 ppb			21.003 ppb		91.717 %	20.354 ppb
Concentration RSD	3.0 %	N/A	2.1 %			3.9 %		1.1 %	1.8 %
Intensity average	69,769 cps	1,990 cps	6,490 cps	32,889 cps	8,291 cps	3,022 cps	5,246 cps	530,313 cps	203,118 cps
Intensity per Run 1	67,164.4 cps	2,100.2 cps	6,269.8 cps	31,709.2 cps	7,217.1 cps	3,144.1 cps	4,297.8 cps	524,881.8 cps	197,319.4 cps
Intensity per Run 2	71,458.2 cps	2,120.2 cps	6,557.8 cps	33,381.5 cps	9,993.1 cps	2,895.4 cps	6,967.1 cps	529,712.2 cps	203,399.0 cps
Intensity per Run 3	70,683.8 cps	1,750.1 cps	6,642.7 cps	33,577.0 cps	7,661.4 cps	3,027.6 cps	4,471.8 cps	536,345.1 cps	208,636.8 cps
Intensity RSD	3.3 %	10.5 %	3.0 %	3.1 %	18.0 %	4.1 %	28.5 %	1.1 %	2.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	19.606 ppb	19.625 ppb	19.564 ppb	19.346 ppb	0.018 ppm		19.994 ppb	19.384 ppb	20.447 ppb
Concentration per Run 1	19.300 ppb	19.166 ppb	19.012 ppb	18.634 ppb	0.018 ppm		19.892 ppb	18.896 ppb	20.020 ppb
Concentration per Run 2	19.707 ppb	19.905 ppb	19.925 ppb	19.783 ppb	0.018 ppm		19.790 ppb	19.389 ppb	20.652 ppb
Concentration per Run 3	19.810 ppb	19.805 ppb	19.754 ppb	19.622 ppb	0.018 ppm		20.301 ppb	19.866 ppb	20.671 ppb
Concentration RSD	1.4 %	2.0 %	2.5 %	3.2 %	1.3 %		1.4 %	2.5 %	1.8 %
Intensity average	360,541 cps	397,753 cps	236,874 cps	621,376 cps	1,585,390 cps	675 cps	18,829 cps	1,369,886 cps	14,731 cps
Intensity per Run 1	351,641.1 cps	384,920.2 cps	228,144.7 cps	593,265.5 cps	1,572,981.1 cps	720.0 cps	18,597.8 cps	1,327,962.1 cps	14,324.2 cps
Intensity per Run 2	362,115.3 cps	403,119.0 cps	241,082.3 cps	634,994.2 cps	1,573,529.3 cps	672.0 cps	18,637.9 cps	1,371,199.1 cps	14,880.9 cps
Intensity per Run 3	367,867.6 cps	405,218.6 cps	241,393.8 cps	635,867.6 cps	1,609,659.6 cps	632.0 cps	19,250.9 cps	1,410,497.4 cps	14,989.0 cps
Intensity RSD	2.3 %	2.8 %	3.2 %	3.9 %	1.3 %	6.5 %	1.9 %	3.0 %	2.4 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	19.233 ppb	20.181 ppb	20.388 ppb	88.175 %	20.002 ppb	21.006 ppb	21.058 ppb	20.334 ppb	20.431 ppb
Concentration per Run 1	18.995 ppb	19.859 ppb	20.237 ppb	87.691 %	19.663 ppb	20.670 ppb	20.676 ppb	19.816 ppb	20.275 ppb
Concentration per Run 2	19.169 ppb	20.468 ppb	20.175 ppb	88.241 %	20.043 ppb	21.001 ppb	21.121 ppb	20.554 ppb	20.118 ppb
Concentration per Run 3	19.536 ppb	20.215 ppb	20.754 ppb	88.592 %	20.300 ppb	21.347 ppb	21.377 ppb	20.631 ppb	20.900 ppb
Concentration RSD	1.4 %	1.5 %	1.6 %	0.5 %	1.6 %	1.6 %	1.7 %	2.2 %	2.0 %
Intensity average	1,348,851 cps	234,939 cps	584,156 cps	789,414 cps	472,295 cps	520,944 cps	418,015 cps	119,639 cps	219,239 cps
Intensity per Run 1	1,323,262.6 cps	229,745.6 cps	576,600.4 cps	785,084.8 cps	462,190.1 cps	510,815.6 cps	409,274.7 cps	116,726.9 cps	217,961.4 cps
Intensity per Run 2	1,344,647.6 cps	238,381.3 cps	578,454.5 cps	790,006.9 cps	473,803.4 cps	521,628.5 cps	420,025.7 cps	121,359.2 cps	216,713.0 cps
Intensity per Run 3	1,378,644.1 cps	236,690.3 cps	597,414.4 cps	793,151.7 cps	480,890.3 cps	530,389.3 cps	424,744.1 cps	120,829.8 cps	223,042.4 cps
Intensity RSD	2.1 %	1.9 %	2.0 %	0.5 %	2.0 %	1.9 %	1.9 %	2.1 %	1.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			90.222 %			0.013 ppm	20.436 ppb	20.465 ppb	20.397 ppb
Concentration per Run 1			91.021 %			0.013 ppm	20.371 ppb	20.446 ppb	20.364 ppb
Concentration per Run 2			90.828 %			0.013 ppm	20.453 ppb	20.637 ppb	20.582 ppb
Concentration per Run 3			88.817 %			0.013 ppm	20.483 ppb	20.311 ppb	20.243 ppb
Concentration RSD			1.4 %			1.1 %	0.3 %	0.8 %	0.8 %
Intensity average	35 cps	39 cps	2,835,938 cps	85 cps	37 cps	2,985,685 cps	1,556,414 cps	3,738,848 cps	1,232,300 cps
Intensity per Run 1	36.0 cps	36.0 cps	2,861,057.8 cps	92.0 cps	32.0 cps	2,961,049.9 cps	1,518,681.4 cps	3,639,829.8 cps	1,201,641.7 cps
Intensity per Run 2	32.0 cps	44.0 cps	2,854,988.6 cps	72.0 cps	40.0 cps	3,023,921.9 cps	1,564,474.3 cps	3,785,727.3 cps	1,248,775.1 cps
Intensity per Run 3	36.0 cps	36.0 cps	2,791,767.9 cps	92.0 cps	40.0 cps	2,972,082.2 cps	1,586,087.4 cps	3,790,985.6 cps	1,246,482.7 cps
Intensity RSD	6.7 %	11.9 %	1.4 %	13.5 %	12.4 %	1.1 %	2.2 %	2.3 %	2.2 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	20.669 ppb	20.591 ppb	81.945 %
Concentration per Run 1	20.774 ppb	20.544 ppb	79.845 %
Concentration per Run 2	20.552 ppb	20.786 ppb	82.275 %
Concentration per Run 3	20.680 ppb	20.442 ppb	83.714 %
Concentration RSD	0.5 %	0.9 %	2.4 %
Intensity average	1,094,796 cps	4,999,281 cps	2,100,190 cps
Intensity per Run 1	1,073,897.9 cps	4,860,269.8 cps	2,046,375.8 cps
Intensity per Run 2	1,093,162.8 cps	5,067,189.9 cps	2,108,656.2 cps
Intensity per Run 3	1,117,328.1 cps	5,070,382.2 cps	2,145,539.3 cps
Intensity RSD	2.0 %	2.4 %	2.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001SD(5) Analysis: 10/30/2019 14:12:30 Sample Type UNKNOWN
Comment EffluentSD Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	99.057 %	102.221 %	20.007 ppb	146.338 ppb	146.590 ppb	N/A	103,189.712 ppb	1,034.431 ppb	1,047.142 ppb
Concentration per Run 1	98.442 %	102.827 %	19.134 ppb	141.694 ppb	143.329 ppb	N/A	98,544.083 ppb	987.712 ppb	1,017.655 ppb
Concentration per Run 2	98.754 %	102.183 %	20.278 ppb	147.981 ppb	146.970 ppb	N/A	105,920.693 ppb	1,049.702 ppb	1,054.088 ppb
Concentration per Run 3	99.976 %	101.652 %	20.607 ppb	149.339 ppb	149.471 ppb	N/A	105,104.359 ppb	1,065.878 ppb	1,069.683 ppb
Concentration RSD	0.8 %	0.6 %	3.9 %	2.8 %	2.1 %	N/A	3.9 %	4.0 %	2.5 %
Intensity average	13,853,474 cps	32,913 cps	3,251 cps	2,499 cps	14,771 cps	3,190 cps	193,098,315 cps	880,912 cps	186,829 cps
Intensity per Run 1	13,767,395.4 cps	33,108.3 cps	3,128.4 cps	2,436.2 cps	14,544.5 cps	3,020.4 cps	186,233,908.5 cps	849,741.5 cps	183,449.5 cps
Intensity per Run 2	13,811,073.4 cps	32,900.8 cps	3,294.4 cps	2,522.3 cps	14,776.2 cps	3,120.4 cps	196,828,012.6 cps	887,267.6 cps	186,574.9 cps
Intensity per Run 3	13,981,953.7 cps	32,729.8 cps	3,330.4 cps	2,537.8 cps	14,991.0 cps	3,430.5 cps	196,233,025.2 cps	905,728.2 cps	190,461.4 cps
Intensity RSD	0.8 %	0.6 %	3.3 %	2.2 %	1.5 %	6.7 %	3.1 %	3.2 %	1.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	1,001.639 ppb	191.262 ppb		0.968 ppm	5,802.765 ppb	824.990 ppb	606.657 ppb	706.302 ppb	96.371 %
Concentration per Run 1	967.943 ppb	184.456 ppb		0.926 ppm	5,607.135 ppb	892.829 ppb	600.936 ppb	675.970 ppb	98.240 %
Concentration per Run 2	1,016.824 ppb	190.886 ppb		0.991 ppm	5,921.416 ppb	830.864 ppb	614.133 ppb	731.933 ppb	93.943 %
Concentration per Run 3	1,020.150 ppb	198.444 ppb		0.986 ppm	5,879.745 ppb	751.276 ppb	604.903 ppb	711.003 ppb	96.930 %
Concentration RSD	2.9 %	3.7 %		3.7 %	2.9 %	8.6 %	1.1 %	4.0 %	2.3 %
Intensity average	236,875 cps	55,323 cps	27,707 cps	6,006,783 cps	4,383,347 cps	3,020 cps	1,621,031 cps	30,608 cps	6,633,211 cps
Intensity per Run 1	231,346.6 cps	53,946.7 cps	27,069.4 cps	5,821,860.2 cps	4,295,372.5 cps	3,310.5 cps	1,636,693.4 cps	29,775.5 cps	6,761,859.6 cps
Intensity per Run 2	238,458.1 cps	54,729.7 cps	27,821.0 cps	6,073,507.5 cps	4,408,847.8 cps	2,990.4 cps	1,600,078.8 cps	31,169.1 cps	6,466,075.3 cps
Intensity per Run 3	240,820.9 cps	57,291.4 cps	28,232.0 cps	6,124,982.4 cps	4,445,819.9 cps	2,760.3 cps	1,626,320.6 cps	30,878.2 cps	6,671,698.9 cps
Intensity RSD	2.1 %	3.2 %	2.1 %	2.7 %	1.8 %	9.1 %	1.2 %	2.4 %	2.3 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.478 %	19.141 ppb	18.712 ppb	20.095 ppb	21.258 ppb	N/A	20.711 ppb	248.991 ppb	243.663 ppb
Concentration per Run 1	88.822 %	18.895 ppb	18.064 ppb	19.237 ppb	20.276 ppb	N/A	19.928 ppb	240.908 ppb	235.791 ppb
Concentration per Run 2	85.948 %	19.298 ppb	18.991 ppb	20.563 ppb	21.685 ppb	N/A	21.202 ppb	254.266 ppb	246.069 ppb
Concentration per Run 3	87.665 %	19.229 ppb	19.081 ppb	20.487 ppb	21.812 ppb	N/A	21.005 ppb	251.798 ppb	249.129 ppb
Concentration RSD	1.7 %	1.1 %	3.0 %	3.7 %	4.0 %	N/A	3.3 %	2.9 %	2.9 %
Intensity average	256,821 cps	6,383 cps	220,546 cps	371,445 cps	54,722 cps	54,820 cps	291,181 cps	4,670,255 cps	153,489 cps
Intensity per Run 1	260,766.2 cps	6,393.6 cps	216,283.6 cps	361,260.8 cps	52,907.8 cps	55,181.9 cps	283,557.6 cps	4,571,474.2 cps	150,877.7 cps
Intensity per Run 2	252,327.8 cps	6,325.6 cps	219,955.3 cps	373,506.3 cps	54,908.4 cps	54,589.3 cps	293,361.0 cps	4,694,399.3 cps	152,314.6 cps
Intensity per Run 3	257,368.5 cps	6,429.7 cps	225,399.0 cps	379,567.9 cps	56,351.0 cps	54,689.7 cps	296,625.5 cps	4,744,892.1 cps	157,275.9 cps
Intensity RSD	1.7 %	0.8 %	2.1 %	2.5 %	3.2 %	0.6 %	2.3 %	1.9 %	2.2 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	21.695 ppb	22.005 ppb	22.612 ppb	24.223 ppb	23.256 ppb	26.003 ppb	25.550 ppb	25.102 ppb	
Concentration per Run 1	20.905 ppb	21.262 ppb	21.938 ppb	23.651 ppb	22.353 ppb	25.232 ppb	24.482 ppb	24.650 ppb	
Concentration per Run 2	22.302 ppb	22.698 ppb	22.703 ppb	24.537 ppb	23.823 ppb	26.377 ppb	26.130 ppb	25.409 ppb	
Concentration per Run 3	21.877 ppb	22.056 ppb	23.196 ppb	24.481 ppb	23.591 ppb	26.401 ppb	26.039 ppb	25.247 ppb	
Concentration RSD	3.3 %	3.3 %	2.8 %	2.0 %	3.4 %	2.6 %	3.6 %	1.6 %	
Intensity average	940,845 cps	245,273 cps	38,074 cps	644,842 cps	315,888 cps	159,481 cps	26,468 cps	125,113 cps	18 cps
Intensity per Run 1	920,855.9 cps	237,170.9 cps	37,319.7 cps	635,193.6 cps	308,455.2 cps	154,007.8 cps	25,630.4 cps	123,883.2 cps	15.0 cps
Intensity per Run 2	950,579.1 cps	250,001.4 cps	37,656.8 cps	643,655.0 cps	317,998.5 cps	161,148.9 cps	26,648.4 cps	124,775.9 cps	23.0 cps
Intensity per Run 3	951,099.1 cps	248,646.0 cps	39,245.7 cps	655,676.1 cps	321,209.3 cps	163,284.8 cps	27,125.5 cps	126,679.4 cps	17.0 cps
Intensity RSD	1.8 %	2.9 %	2.7 %	1.6 %	2.1 %	3.0 %	2.9 %	1.1 %	22.7 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	22.498 ppb	N/A	20.312 ppb			18.759 ppb		91.192 %	19.837 ppb
Concentration per Run 1	22.180 ppb	N/A	19.592 ppb			18.010 ppb		91.126 %	19.049 ppb
Concentration per Run 2	22.534 ppb	N/A	20.824 ppb			19.273 ppb		90.218 %	20.185 ppb
Concentration per Run 3	22.780 ppb	N/A	20.520 ppb			18.993 ppb		92.233 %	20.277 ppb
Concentration RSD	1.3 %	N/A	3.2 %			3.5 %		1.1 %	3.4 %
Intensity average	69,667 cps	1,933 cps	6,510 cps	30,369 cps	8,817 cps	2,676 cps	5,913 cps	533,275 cps	202,686 cps
Intensity per Run 1	68,230.2 cps	1,790.1 cps	6,299.2 cps	29,675.2 cps	8,626.0 cps	2,532.2 cps	5,896.5 cps	532,885.1 cps	194,249.5 cps
Intensity per Run 2	69,587.9 cps	2,180.2 cps	6,593.1 cps	30,599.4 cps	8,902.3 cps	2,754.0 cps	5,807.6 cps	527,576.3 cps	204,340.2 cps
Intensity per Run 3	71,183.4 cps	1,830.1 cps	6,638.2 cps	30,832.0 cps	8,923.3 cps	2,741.2 cps	6,034.6 cps	539,362.2 cps	209,469.0 cps
Intensity RSD	2.1 %	11.1 %	2.8 %	2.0 %	1.9 %	4.7 %	1.9 %	1.1 %	3.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	19.467 ppb	19.610 ppb	19.298 ppb	19.072 ppb	0.018 ppm		20.057 ppb	19.312 ppb	20.416 ppb
Concentration per Run 1	19.047 ppb	19.019 ppb	18.895 ppb	18.463 ppb	0.018 ppm		19.720 ppb	19.030 ppb	20.035 ppb
Concentration per Run 2	19.659 ppb	19.886 ppb	19.443 ppb	19.293 ppb	0.018 ppm		20.057 ppb	19.469 ppb	20.712 ppb
Concentration per Run 3	19.696 ppb	19.925 ppb	19.555 ppb	19.460 ppb	0.018 ppm		20.395 ppb	19.435 ppb	20.502 ppb
Concentration RSD	1.9 %	2.6 %	1.8 %	2.8 %	1.0 %		1.7 %	1.3 %	1.7 %
Intensity average	360,491 cps	400,311 cps	235,396 cps	617,266 cps	1,606,571 cps	607 cps	19,072 cps	1,381,047 cps	14,858 cps
Intensity per Run 1	351,920.3 cps	387,289.7 cps	229,848.2 cps	595,768.0 cps	1,612,593.3 cps	612.0 cps	18,658.0 cps	1,351,010.1 cps	14,500.4 cps
Intensity per Run 2	360,803.1 cps	402,459.3 cps	235,208.2 cps	619,420.7 cps	1,588,359.6 cps	540.0 cps	18,966.4 cps	1,388,672.4 cps	15,001.0 cps
Intensity per Run 3	368,750.5 cps	411,184.0 cps	241,131.5 cps	636,610.5 cps	1,618,759.3 cps	668.0 cps	19,591.4 cps	1,403,459.8 cps	15,073.1 cps
Intensity RSD	2.3 %	3.0 %	2.4 %	3.3 %	1.0 %	10.6 %	2.5 %	2.0 %	2.1 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	18.912 ppb	20.094 ppb	20.113 ppb	89.228 %	20.177 ppb	20.810 ppb	20.877 ppb	20.325 ppb	20.434 ppb
Concentration per Run 1	18.859 ppb	19.949 ppb	19.739 ppb	88.582 %	19.993 ppb	20.424 ppb	20.428 ppb	20.324 ppb	20.183 ppb
Concentration per Run 2	19.132 ppb	20.231 ppb	20.247 ppb	88.999 %	20.138 ppb	20.944 ppb	21.085 ppb	20.278 ppb	20.490 ppb
Concentration per Run 3	18.744 ppb	20.101 ppb	20.353 ppb	90.104 %	20.399 ppb	21.061 ppb	21.118 ppb	20.373 ppb	20.629 ppb
Concentration RSD	1.1 %	0.7 %	1.6 %	0.9 %	1.0 %	1.6 %	1.9 %	0.2 %	1.1 %
Intensity average	1,340,025 cps	236,476 cps	583,179 cps	798,843 cps	482,182 cps	522,416 cps	419,571 cps	121,143 cps	222,159 cps
Intensity per Run 1	1,328,715.0 cps	233,310.5 cps	568,147.4 cps	793,056.8 cps	474,328.8 cps	509,007.6 cps	407,569.4 cps	120,273.2 cps	217,863.9 cps
Intensity per Run 2	1,349,646.5 cps	237,177.9 cps	585,509.0 cps	796,789.1 cps	480,252.6 cps	524,978.6 cps	423,244.0 cps	120,991.9 cps	223,075.9 cps
Intensity per Run 3	1,341,712.3 cps	238,940.1 cps	595,881.3 cps	806,682.3 cps	491,965.4 cps	533,261.6 cps	427,898.2 cps	122,162.7 cps	225,538.7 cps
Intensity RSD	0.8 %	1.2 %	2.4 %	0.9 %	1.9 %	2.4 %	2.5 %	0.8 %	1.8 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			91.499 %			0.013 ppm	18.383 ppb	18.632 ppb	20.179 ppb
Concentration per Run 1			90.860 %			0.013 ppm	17.405 ppb	17.772 ppb	20.104 ppb
Concentration per Run 2			91.988 %			0.013 ppm	18.428 ppb	18.879 ppb	20.070 ppb
Concentration per Run 3			91.650 %			0.013 ppm	19.318 ppb	19.245 ppb	20.364 ppb
Concentration RSD			0.6 %			0.2 %	5.2 %	4.1 %	0.8 %
Intensity average	41 cps	48 cps	2,876,088 cps	85 cps	57 cps	2,958,981 cps	1,415,746 cps	3,440,286 cps	1,231,874 cps
Intensity per Run 1	36.0 cps	36.0 cps	2,856,000.1 cps	80.0 cps	64.0 cps	2,962,829.3 cps	1,316,778.2 cps	3,218,742.8 cps	1,205,245.5 cps
Intensity per Run 2	52.0 cps	44.0 cps	2,891,442.6 cps	64.0 cps	48.0 cps	2,954,090.5 cps	1,425,835.5 cps	3,502,382.6 cps	1,231,505.0 cps
Intensity per Run 3	36.0 cps	64.0 cps	2,880,821.5 cps	112.0 cps	60.0 cps	2,960,021.8 cps	1,504,623.3 cps	3,599,731.5 cps	1,258,870.3 cps
Intensity RSD	22.3 %	30.0 %	0.6 %	28.6 %	14.5 %	0.2 %	6.7 %	5.8 %	2.2 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	20.122 ppb	20.267 ppb	82.772 %
Concentration per Run 1	20.243 ppb	20.229 ppb	81.225 %
Concentration per Run 2	19.939 ppb	20.171 ppb	83.201 %
Concentration per Run 3	20.183 ppb	20.401 ppb	83.888 %
Concentration RSD	0.8 %	0.6 %	1.7 %
Intensity average	1,076,799 cps	4,970,705 cps	2,121,384 cps
Intensity per Run 1	1,063,644.3 cps	4,868,582.9 cps	2,081,751.9 cps
Intensity per Run 2	1,072,609.0 cps	4,972,641.1 cps	2,132,397.2 cps
Intensity per Run 3	1,094,142.3 cps	5,070,890.8 cps	2,150,002.0 cps
Intensity RSD	1.5 %	2.0 %	1.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24065-001L(25) Analysis: 10/30/2019 14:18:33 Sample Type UNKNOWN
Comment EffluentL Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	105.569 %	107.842 %	0.007 ppb	25.043 ppb	25.418 ppb	N/A	20,153.902 ppb	164.791 ppb	161.748 ppb	160.093 ppb
Concentration per Run 1	104.422 %	108.217 %	-0.002 ppb	24.459 ppb	25.122 ppb	N/A	19,710.555 ppb	161.337 ppb	158.586 ppb	155.980 ppb
Concentration per Run 2	105.991 %	108.120 %	0.010 ppb	25.651 ppb	25.048 ppb	N/A	19,908.811 ppb	163.517 ppb	160.589 ppb	157.056 ppb
Concentration per Run 3	106.295 %	107.189 %	0.013 ppb	25.019 ppb	26.084 ppb	N/A	20,842.342 ppb	169.518 ppb	166.069 ppb	167.243 ppb
Concentration RSD	1.0 %	0.5 %	109.1 %	2.4 %	2.3 %	N/A	3.0 %	2.6 %	2.4 %	3.9 %
Intensity average	14,764,241 cps	34,723 cps	5 cps	456 cps	2,728 cps	2,427 cps	40,427,765 cps	152,287 cps	31,403 cps	41,201 cps
Intensity per Run 1	14,603,776.7 cps	34,843.5 cps	3.5 cps	447.0 cps	2,705.8 cps	2,530.3 cps	39,681,013.8 cps	149,672.0 cps	30,908.3 cps	40,305.2 cps
Intensity per Run 2	14,823,229.8 cps	34,812.4 cps	5.5 cps	468.5 cps	2,697.8 cps	2,130.2 cps	40,163,635.6 cps	152,010.5 cps	31,369.4 cps	40,686.3 cps
Intensity per Run 3	14,865,716.4 cps	34,512.6 cps	6.0 cps	452.5 cps	2,779.8 cps	2,620.3 cps	41,438,645.5 cps	155,179.3 cps	31,930.9 cps	42,612.7 cps
Intensity RSD	1.0 %	0.5 %	26.5 %	2.4 %	1.7 %	10.7 %	2.2 %	1.8 %	1.6 %	3.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	33.875 ppb		0.869 ppm	1,162.132 ppb	77.295 ppb	75.769 ppb	78.479 ppb	98.704 %	95.921 %	0.037 ppb
Concentration per Run 1	33.851 ppb		0.827 ppm	1,143.206 ppb	52.371 ppb	73.126 ppb	73.629 ppb	97.332 %	96.247 %	0.007 ppb
Concentration per Run 2	33.911 ppb		0.878 ppm	1,151.605 ppb	97.501 ppb	75.347 ppb	78.409 ppb	101.207 %	96.866 %	0.029 ppb
Concentration per Run 3	33.864 ppb		0.901 ppm	1,191.585 ppb	82.012 ppb	78.835 ppb	83.400 ppb	97.574 %	94.650 %	0.074 ppb
Concentration RSD	0.1 %		4.4 %	2.2 %	29.7 %	3.8 %	6.2 %	2.2 %	1.2 %	92.2 %
Intensity average	10,965 cps	7,779 cps	5,848,990 cps	973,288 cps	377 cps	266,776 cps	4,361 cps	6,793,823 cps	281,608 cps	15 cps
Intensity per Run 1	10,994.9 cps	7,652.4 cps	5,587,528.3 cps	961,192.0 cps	280.0 cps	256,244.2 cps	4,150.7 cps	6,699,388.2 cps	282,566.3 cps	4.0 cps
Intensity per Run 2	11,044.9 cps	7,852.5 cps	5,956,611.1 cps	973,113.4 cps	460.0 cps	272,250.9 cps	4,400.8 cps	6,966,051.0 cps	284,381.4 cps	12.0 cps
Intensity per Run 3	10,854.8 cps	7,832.5 cps	6,002,830.7 cps	985,557.2 cps	390.0 cps	271,833.7 cps	4,530.8 cps	6,716,029.0 cps	277,875.8 cps	28.0 cps
Intensity RSD	0.9 %	1.4 %	3.9 %	1.3 %	24.1 %	3.4 %	4.4 %	2.2 %	1.2 %	83.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.002 ppb	-0.061 ppb	-0.132 ppb	N/A	-0.004 ppb	5.267 ppb	5.424 ppb	0.004 ppb	-0.504 ppb	-0.527 ppb
Concentration per Run 1	-0.018 ppb	-0.064 ppb	-0.134 ppb	N/A	-0.009 ppb	5.228 ppb	5.173 ppb	0.003 ppb	-0.494 ppb	-0.496 ppb
Concentration per Run 2	0.006 ppb	-0.060 ppb	-0.146 ppb	N/A	-0.009 ppb	4.881 ppb	5.320 ppb	0.003 ppb	-0.510 ppb	-0.514 ppb
Concentration per Run 3	0.006 ppb	-0.057 ppb	-0.116 ppb	N/A	0.005 ppb	5.691 ppb	5.779 ppb	0.005 ppb	-0.507 ppb	-0.572 ppb
Concentration RSD	673.2 %	5.8 %	11.2 %	N/A	189.8 %	7.7 %	5.8 %	28.0 %	1.7 %	7.5 %
Intensity average	1,612 cps	1,252 cps	907 cps	907 cps	2,042 cps	144,997 cps	4,864 cps	439 cps	4,913 cps	751 cps
Intensity per Run 1	1,415.9 cps	1,180.1 cps	904.0 cps	860.0 cps	1,980.2 cps	144,841.3 cps	4,708.9 cps	408.0 cps	5,053.0 cps	808.0 cps
Intensity per Run 2	1,728.4 cps	1,276.1 cps	876.0 cps	810.0 cps	1,984.2 cps	138,024.4 cps	4,840.9 cps	416.0 cps	4,804.9 cps	776.0 cps
Intensity per Run 3	1,692.3 cps	1,300.1 cps	940.0 cps	1,050.0 cps	2,160.2 cps	152,125.0 cps	5,041.0 cps	492.0 cps	4,881.0 cps	668.0 cps
Intensity RSD	10.6 %	5.1 %	3.5 %	14.0 %	5.0 %	4.9 %	3.4 %	10.6 %	2.6 %	9.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.076 ppb	0.068 ppb	0.374 ppb	0.508 ppb	0.381 ppb		0.031 ppb	N/A	0.040 ppb	
Concentration per Run 1	0.071 ppb	0.073 ppb	0.260 ppb	0.531 ppb	0.393 ppb		0.199 ppb	N/A	-0.010 ppb	
Concentration per Run 2	0.074 ppb	0.061 ppb	0.340 ppb	0.454 ppb	0.365 ppb		-0.342 ppb	N/A	0.060 ppb	
Concentration per Run 3	0.084 ppb	0.071 ppb	0.523 ppb	0.539 ppb	0.386 ppb		0.235 ppb	N/A	0.071 ppb	
Concentration RSD	8.7 %	9.5 %	36.0 %	9.3 %	3.8 %		1,051.9 %	N/A	108.8 %	
Intensity average	6,159 cps	2,895 cps	16,634 cps	2,648 cps	12,489 cps	10 cps	3,938 cps	57 cps	-7 cps	11,544 cps
Intensity per Run 1	6,033.5 cps	2,972.4 cps	16,006.3 cps	2,684.3 cps	12,602.4 cps	10.0 cps	4,488.6 cps	90.0 cps	-24.2 cps	11,087.9 cps
Intensity per Run 2	6,117.5 cps	2,812.3 cps	16,595.0 cps	2,596.3 cps	12,422.2 cps	10.0 cps	2,797.7 cps	70.0 cps	-0.4 cps	11,484.3 cps
Intensity per Run 3	6,325.6 cps	2,900.3 cps	17,300.0 cps	2,664.3 cps	12,442.2 cps	11.0 cps	4,527.3 cps	10.0 cps	3.4 cps	12,059.8 cps
Intensity RSD	2.4 %	2.8 %	3.9 %	1.7 %	0.8 %	5.6 %	25.1 %	73.5 %	211.6 %	4.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.993 ppb		95.455 %	0.130 ppb	0.126 ppb	0.126 ppb	0.122 ppb	0.127 ppb	0.019 ppm
Concentration per Run 1		0.763 ppb		95.996 %	0.105 ppb	0.111 ppb	0.096 ppb	0.096 ppb	0.106 ppb	0.020 ppm
Concentration per Run 2		1.948 ppb		94.780 %	0.134 ppb	0.121 ppb	0.131 ppb	0.128 ppb	0.131 ppb	0.019 ppm
Concentration per Run 3		0.268 ppb		95.588 %	0.150 ppb	0.145 ppb	0.150 ppb	0.142 ppb	0.144 ppb	0.019 ppm
Concentration RSD		86.9 %		0.6 %	17.6 %	13.6 %	21.8 %	19.4 %	15.1 %	1.0 %
Intensity average	5,973 cps	-303 cps	6,179 cps	558,202 cps	1,699 cps	2,820 cps	3,138 cps	1,812 cps	4,900 cps	1,730,169 cps
Intensity per Run 1	6,931.0 cps	-346.2 cps	7,136.1 cps	561,367.3 cps	1,440.1 cps	2,552.3 cps	2,516.3 cps	1,484.1 cps	4,212.7 cps	1,747,723.0 cps
Intensity per Run 2	4,089.7 cps	-134.7 cps	4,219.7 cps	554,257.2 cps	1,744.1 cps	2,728.3 cps	3,244.4 cps	1,892.1 cps	5,029.0 cps	1,730,113.6 cps
Intensity per Run 3	6,897.0 cps	-427.7 cps	7,182.2 cps	558,982.0 cps	1,912.1 cps	3,180.4 cps	3,652.5 cps	2,060.2 cps	5,457.2 cps	1,712,671.8 cps
Intensity RSD	27.3 %	49.9 %	27.5 %	0.6 %	14.1 %	11.5 %	18.3 %	16.3 %	12.9 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

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Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.000 ppb	0.002 ppb	0.002 ppb	0.002 ppb	0.003 ppb	0.001 ppb	95.667 %	0.044 ppb	0.025 ppb
Concentration per Run 1		0.005 ppb	0.001 ppb	0.003 ppb	0.002 ppb	0.003 ppb	0.002 ppb	96.005 %	0.034 ppb	0.022 ppb
Concentration per Run 2		-0.003 ppb	0.002 ppb	0.003 ppb	0.002 ppb	0.003 ppb	0.001 ppb	96.602 %	0.048 ppb	0.023 ppb
Concentration per Run 3		-0.002 ppb	0.002 ppb	-0.002 ppb	0.002 ppb	0.002 ppb	0.000 ppb	94.393 %	0.049 ppb	0.031 ppb
Concentration RSD		2,324.6 %	10.2 %	166.4 %	13.9 %	34.7 %	122.4 %	1.2 %	19.9 %	19.5 %
Intensity average	557 cps	95 cps	213 cps	3 cps	208 cps	41 cps	73 cps	856,488 cps	1,857 cps	1,012 cps
Intensity per Run 1	504.0 cps	100.0 cps	200.0 cps	4.0 cps	228.0 cps	48.0 cps	116.8 cps	859,518.2 cps	1,608.1 cps	928.0 cps
Intensity per Run 2	576.0 cps	92.0 cps	220.0 cps	4.0 cps	208.0 cps	48.0 cps	58.4 cps	864,861.6 cps	1,996.2 cps	960.0 cps
Intensity per Run 3	592.0 cps	92.0 cps	220.0 cps	0.0 cps	188.0 cps	28.0 cps	43.2 cps	845,083.6 cps	1,968.2 cps	1,148.1 cps
Intensity RSD	8.4 %	4.9 %	5.4 %	86.6 %	9.6 %	27.9 %	53.4 %	1.2 %	11.7 %	11.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.026 ppb	0.060 ppb	0.057 ppb			94.206 %			0.014 ppm	0.144 ppb
Concentration per Run 1	0.024 ppb	0.060 ppb	0.049 ppb			94.942 %			0.014 ppm	0.156 ppb
Concentration per Run 2	0.028 ppb	0.057 ppb	0.056 ppb			94.237 %			0.014 ppm	0.143 ppb
Concentration per Run 3	0.026 ppb	0.064 ppb	0.068 ppb			93.440 %			0.013 ppm	0.133 ppb
Concentration RSD	7.0 %	6.5 %	17.3 %			0.8 %			2.5 %	8.1 %
Intensity average	839 cps	532 cps	924 cps	25 cps	11 cps	2,961,173 cps	69 cps	23 cps	3,101,372 cps	13,127 cps
Intensity per Run 1	800.0 cps	532.0 cps	828.0 cps	32.0 cps	8.0 cps	2,984,309.0 cps	68.0 cps	24.0 cps	3,175,842.6 cps	14,055.9 cps
Intensity per Run 2	880.0 cps	512.0 cps	908.0 cps	20.0 cps	12.0 cps	2,962,133.1 cps	68.0 cps	24.0 cps	3,107,909.3 cps	13,204.0 cps
Intensity per Run 3	836.0 cps	552.0 cps	1,036.0 cps	24.0 cps	12.0 cps	2,937,078.2 cps	72.0 cps	20.0 cps	3,020,363.1 cps	12,120.9 cps
Intensity RSD	4.8 %	3.8 %	11.4 %	24.1 %	21.7 %	0.8 %	3.3 %	10.2 %	2.5 %	7.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.145 ppb	0.005 ppb	0.004 ppb	0.004 ppb	91.044 %
Concentration per Run 1	0.160 ppb	0.004 ppb	0.004 ppb	0.005 ppb	90.292 %
Concentration per Run 2	0.143 ppb	0.004 ppb	0.004 ppb	0.004 ppb	92.365 %
Concentration per Run 3	0.133 ppb	0.005 ppb	0.005 ppb	0.004 ppb	90.474 %
Concentration RSD	9.3 %	12.2 %	9.3 %	6.9 %	1.3 %
Intensity average	31,989 cps	1,007 cps	840 cps	3,947 cps	2,333,389 cps
Intensity per Run 1	34,659.0 cps	971.0 cps	824.0 cps	3,979.3 cps	2,314,116.3 cps
Intensity per Run 2	31,952.9 cps	1,006.0 cps	836.0 cps	4,030.3 cps	2,367,262.1 cps
Intensity per Run 3	29,355.5 cps	1,044.0 cps	860.0 cps	3,832.2 cps	2,318,787.8 cps
Intensity RSD	8.3 %	3.6 %	2.2 %	2.6 %	1.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33592-001 Analysis: 10/30/2019 14:24:36 Sample Type UNKNOWN
Comment PBW Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	106.936 %	108.829 %	0.004 ppb	0.516 ppb	0.730 ppb	N/A	9.659 ppb	-0.183 ppb	-0.342 ppb	-0.154 ppb
Concentration per Run 1	106.028 %	108.643 %	-0.002 ppb	0.609 ppb	0.806 ppb	N/A	9.475 ppb	-0.184 ppb	0.011 ppb	-0.181 ppb
Concentration per Run 2	106.960 %	109.775 %	0.007 ppb	0.272 ppb	0.696 ppb	N/A	9.561 ppb	-0.202 ppb	-0.563 ppb	-0.200 ppb
Concentration per Run 3	107.819 %	108.067 %	0.007 ppb	0.666 ppb	0.687 ppb	N/A	9.942 ppb	-0.164 ppb	-0.473 ppb	-0.081 ppb
Concentration RSD	0.8 %	0.8 %	124.7 %	41.3 %	9.1 %	N/A	2.6 %	10.5 %	90.2 %	41.7 %
Intensity average	14,955,337 cps	35,041 cps	5 cps	13 cps	96 cps	2,604 cps	36,767 cps	1,950 cps	437 cps	583 cps
Intensity per Run 1	14,828,394.9 cps	34,980.9 cps	3.5 cps	15.0 cps	103.5 cps	2,820.3 cps	36,042.0 cps	1,930.2 cps	500.0 cps	570.0 cps
Intensity per Run 2	14,958,775.4 cps	35,345.4 cps	5.0 cps	9.0 cps	93.0 cps	2,410.2 cps	37,075.0 cps	1,960.2 cps	400.0 cps	580.0 cps
Intensity per Run 3	15,078,841.2 cps	34,795.4 cps	5.0 cps	16.0 cps	90.5 cps	2,580.3 cps	37,185.4 cps	1,960.2 cps	410.0 cps	600.0 cps
Intensity RSD	0.8 %	0.8 %	19.2 %	28.4 %	7.2 %	7.9 %	1.7 %	0.9 %	12.6 %	2.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.040 ppb		1.033 ppm	-2.128 ppb	-13.035 ppb	-13.064 ppb	-8.567 ppb	99.034 %	97.839 %	0.072 ppb
Concentration per Run 1	0.177 ppb		1.026 ppm	-1.731 ppb	-8.689 ppb	-13.319 ppb	-8.492 ppb	98.081 %	95.779 %	0.084 ppb
Concentration per Run 2	-0.250 ppb		1.010 ppm	-2.739 ppb	-14.006 ppb	-12.697 ppb	-7.945 ppb	97.998 %	99.923 %	0.049 ppb
Concentration per Run 3	0.194 ppb		1.064 ppm	-1.913 ppb	-16.410 ppb	-13.176 ppb	-9.264 ppb	101.021 %	97.814 %	0.082 ppb
Concentration RSD	622.9 %		2.7 %	25.2 %	30.3 %	2.5 %	7.7 %	1.7 %	2.1 %	27.5 %
Intensity average	533 cps	3,087 cps	7,077,582 cps	19,849 cps	23 cps	33,385 cps	323 cps	6,816,488 cps	287,238 cps	28 cps
Intensity per Run 1	570.0 cps	2,940.4 cps	6,919,541.3 cps	19,825.8 cps	40.0 cps	32,402.2 cps	320.0 cps	6,750,947.5 cps	281,190.1 cps	32.0 cps
Intensity per Run 2	450.0 cps	3,100.4 cps	7,040,884.5 cps	19,715.8 cps	20.0 cps	34,006.4 cps	360.0 cps	6,745,218.7 cps	293,357.0 cps	20.0 cps
Intensity per Run 3	580.0 cps	3,220.4 cps	7,272,319.2 cps	20,006.1 cps	10.0 cps	33,745.6 cps	290.0 cps	6,953,297.6 cps	287,166.1 cps	32.0 cps
Intensity RSD	13.6 %	4.6 %	2.5 %	0.7 %	65.5 %	2.6 %	10.9 %	1.7 %	2.1 %	24.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.013 ppb	-0.086 ppb	-0.087 ppb	N/A	0.059 ppb	-0.951 ppb	-0.829 ppb	-0.003 ppb	-0.833 ppb	-0.849 ppb
Concentration per Run 1	-0.022 ppb	-0.087 ppb	-0.138 ppb	N/A	0.056 ppb	-0.962 ppb	-0.825 ppb	-0.002 ppb	-0.838 ppb	-0.858 ppb
Concentration per Run 2	-0.014 ppb	-0.085 ppb	-0.047 ppb	N/A	0.055 ppb	-0.976 ppb	-0.855 ppb	-0.004 ppb	-0.828 ppb	-0.850 ppb
Concentration per Run 3	-0.003 ppb	-0.085 ppb	-0.077 ppb	N/A	0.068 ppb	-0.916 ppb	-0.809 ppb	-0.003 ppb	-0.833 ppb	-0.840 ppb
Concentration RSD	75.9 %	1.2 %	53.1 %	N/A	11.8 %	3.3 %	2.8 %	21.2 %	0.6 %	1.0 %
Intensity average	1,503 cps	764 cps	1,053 cps	1,267 cps	3,072 cps	20,016 cps	585 cps	115 cps	1,264 cps	195 cps
Intensity per Run 1	1,352.9 cps	724.0 cps	892.0 cps	1,190.1 cps	2,960.4 cps	19,415.3 cps	576.0 cps	144.0 cps	1,188.1 cps	176.0 cps
Intensity per Run 2	1,518.5 cps	788.0 cps	1,184.1 cps	1,310.1 cps	3,048.4 cps	19,815.8 cps	580.0 cps	88.0 cps	1,320.1 cps	196.0 cps
Intensity per Run 3	1,636.9 cps	780.0 cps	1,084.0 cps	1,300.1 cps	3,208.4 cps	20,817.5 cps	600.0 cps	112.0 cps	1,284.1 cps	212.0 cps
Intensity RSD	9.5 %	4.6 %	14.1 %	5.3 %	4.1 %	3.6 %	2.2 %	24.5 %	5.4 %	9.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.073 ppb	-0.065 ppb	1.099 ppb	1.009 ppb	0.993 ppb		-0.004 ppb	N/A	0.016 ppb	
Concentration per Run 1	-0.069 ppb	-0.063 ppb	1.045 ppb	0.938 ppb	0.957 ppb		0.139 ppb	N/A	-0.009 ppb	
Concentration per Run 2	-0.077 ppb	-0.067 ppb	1.046 ppb	0.998 ppb	0.998 ppb		-0.314 ppb	N/A	0.028 ppb	
Concentration per Run 3	-0.074 ppb	-0.066 ppb	1.207 ppb	1.090 ppb	1.025 ppb		0.165 ppb	N/A	0.030 ppb	
Concentration RSD	5.5 %	3.4 %	8.5 %	7.6 %	3.5 %		7,451.1 %	N/A	137.7 %	
Intensity average	1,949 cps	931 cps	21,075 cps	3,238 cps	15,867 cps	13 cps	3,832 cps	63 cps	-16 cps	2,358 cps
Intensity per Run 1	2,040.2 cps	948.0 cps	20,316.6 cps	3,108.4 cps	15,413.5 cps	18.0 cps	4,208.6 cps	30.0 cps	-24.2 cps	2,283.2 cps
Intensity per Run 2	1,868.1 cps	924.0 cps	21,494.5 cps	3,256.4 cps	16,034.3 cps	12.0 cps	2,970.1 cps	70.0 cps	-11.6 cps	2,396.2 cps
Intensity per Run 3	1,940.2 cps	920.0 cps	21,414.4 cps	3,348.5 cps	16,154.4 cps	8.0 cps	4,317.1 cps	90.0 cps	-10.8 cps	2,395.2 cps
Intensity RSD	4.4 %	1.6 %	3.1 %	3.7 %	2.5 %	39.7 %	19.5 %	48.2 %	48.3 %	2.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.457 ppb		98.081 %	0.049 ppb	0.052 ppb	0.053 ppb	0.053 ppb	0.054 ppb	0.020 ppm
Concentration per Run 1		-0.330 ppb		96.765 %	0.044 ppb	0.041 ppb	0.041 ppb	0.040 ppb	0.041 ppb	0.021 ppm
Concentration per Run 2		1.726 ppb		97.873 %	0.042 ppb	0.049 ppb	0.048 ppb	0.056 ppb	0.054 ppb	0.020 ppm
Concentration per Run 3		-0.023 ppb		99.605 %	0.060 ppb	0.067 ppb	0.068 ppb	0.061 ppb	0.067 ppb	0.020 ppm
Concentration RSD		242.4 %		1.5 %	21.1 %	26.0 %	26.6 %	20.8 %	24.4 %	2.6 %
Intensity average	5,878 cps	-397 cps	6,140 cps	573,559 cps	849 cps	1,423 cps	1,604 cps	943 cps	2,459 cps	1,790,064 cps
Intensity per Run 1	6,571.8 cps	-530.8 cps	6,840.0 cps	565,861.9 cps	784.0 cps	1,168.1 cps	1,332.1 cps	768.0 cps	1,968.2 cps	1,829,946.5 cps
Intensity per Run 2	4,455.8 cps	-179.9 cps	4,585.9 cps	572,343.1 cps	776.0 cps	1,368.1 cps	1,520.1 cps	1,000.0 cps	2,476.2 cps	1,801,943.4 cps
Intensity per Run 3	6,605.9 cps	-480.1 cps	6,993.1 cps	582,472.8 cps	988.0 cps	1,732.1 cps	1,960.2 cps	1,060.0 cps	2,932.4 cps	1,738,302.1 cps
Intensity RSD	21.0 %	47.8 %	22.0 %	1.5 %	14.1 %	20.1 %	20.1 %	16.4 %	19.6 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.002 ppb	0.000 ppb	0.005 ppb	0.001 ppb	0.001 ppb	0.000 ppb	96.003 %	0.026 ppb	0.017 ppb
Concentration per Run 1		0.002 ppb	0.001 ppb	0.004 ppb	0.000 ppb	0.001 ppb	0.000 ppb	93.989 %	0.021 ppb	0.015 ppb
Concentration per Run 2		0.018 ppb	0.000 ppb	0.013 ppb	0.001 ppb	0.002 ppb	0.000 ppb	99.411 %	0.025 ppb	0.016 ppb
Concentration per Run 3		-0.015 ppb	0.001 ppb	-0.002 ppb	0.001 ppb	0.002 ppb	-0.001 ppb	94.608 %	0.031 ppb	0.021 ppb
Concentration RSD		1,033.5 %	120.4 %	149.5 %	50.7 %	17.5 %	4,350.1 %	3.1 %	20.4 %	17.2 %
Intensity average	667 cps	97 cps	120 cps	5 cps	119 cps	28 cps	41 cps	859,496 cps	1,404 cps	812 cps
Intensity per Run 1	756.0 cps	96.0 cps	128.0 cps	4.0 cps	92.0 cps	24.0 cps	54.4 cps	841,464.5 cps	1,252.1 cps	736.0 cps
Intensity per Run 2	608.0 cps	116.0 cps	84.0 cps	12.0 cps	128.0 cps	32.0 cps	49.5 cps	890,012.6 cps	1,436.1 cps	808.0 cps
Intensity per Run 3	636.0 cps	80.0 cps	148.0 cps	0.0 cps	136.0 cps	28.0 cps	19.1 cps	847,011.0 cps	1,524.1 cps	892.0 cps
Intensity RSD	11.8 %	18.5 %	27.3 %	114.6 %	19.8 %	14.3 %	46.6 %	3.1 %	9.9 %	9.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.018 ppb	0.030 ppb	0.039 ppb			96.096 %			0.014 ppm	0.050 ppb
Concentration per Run 1	0.017 ppb	0.036 ppb	0.039 ppb			95.078 %			0.014 ppm	0.049 ppb
Concentration per Run 2	0.014 ppb	0.027 ppb	0.038 ppb			96.952 %			0.014 ppm	0.052 ppb
Concentration per Run 3	0.024 ppb	0.028 ppb	0.039 ppb			96.257 %			0.014 ppm	0.049 ppb
Concentration RSD	26.4 %	15.4 %	2.2 %			1.0 %			1.1 %	3.1 %
Intensity average	675 cps	348 cps	719 cps	8 cps	9 cps	3,020,568 cps	53 cps	25 cps	3,119,587 cps	5,517 cps
Intensity per Run 1	640.0 cps	376.0 cps	716.0 cps	4.0 cps	12.0 cps	2,988,588.5 cps	48.0 cps	20.0 cps	3,153,066.3 cps	5,373.2 cps
Intensity per Run 2	604.0 cps	336.0 cps	724.0 cps	4.0 cps	8.0 cps	3,047,490.8 cps	52.0 cps	32.0 cps	3,122,618.9 cps	5,676.3 cps
Intensity per Run 3	780.0 cps	332.0 cps	716.0 cps	16.0 cps	8.0 cps	3,025,626.1 cps	60.0 cps	24.0 cps	3,083,076.8 cps	5,500.2 cps
Intensity RSD	13.8 %	7.0 %	0.6 %	86.6 %	24.7 %	1.0 %	11.5 %	24.1 %	1.1 %	2.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.050 ppb	0.005 ppb	0.006 ppb	0.005 ppb	96.511 %
Concentration per Run 1	0.049 ppb	0.005 ppb	0.006 ppb	0.005 ppb	95.637 %
Concentration per Run 2	0.051 ppb	0.005 ppb	0.006 ppb	0.005 ppb	96.498 %
Concentration per Run 3	0.050 ppb	0.005 ppb	0.005 ppb	0.005 ppb	97.398 %
Concentration RSD	1.6 %	7.9 %	4.6 %	2.0 %	0.9 %
Intensity average	13,378 cps	1,089 cps	987 cps	4,422 cps	2,473,521 cps
Intensity per Run 1	13,068.8 cps	1,051.0 cps	996.0 cps	4,375.3 cps	2,451,126.4 cps
Intensity per Run 2	13,528.3 cps	1,090.0 cps	980.0 cps	4,394.3 cps	2,473,193.5 cps
Intensity per Run 3	13,538.3 cps	1,127.1 cps	984.0 cps	4,495.3 cps	2,496,242.8 cps
Intensity RSD	2.0 %	3.5 %	0.8 %	1.5 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33592-002 Analysis: 10/30/2019 14:30:40 Sample Type QC
Comment LCS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	101.585 %	104.140 %	102.846 ppb	103.311 ppb	103.678 ppb	N/A	1,100.685 ppb	1,082.334 ppb	1,092.222 ppb	1,065.277 ppb
Concentration per Run 1	101.244 %	105.392 %	99.709 ppb	102.039 ppb	100.315 ppb	N/A	1,091.491 ppb	1,040.901 ppb	1,061.554 ppb	1,044.049 ppb
Concentration per Run 2	100.866 %	103.832 %	103.226 ppb	102.311 ppb	104.059 ppb	N/A	1,104.953 ppb	1,098.996 ppb	1,086.794 ppb	1,071.041 ppb
Concentration per Run 3	102.644 %	103.196 %	105.603 ppb	105.584 ppb	106.659 ppb	N/A	1,105.610 ppb	1,107.105 ppb	1,128.319 ppb	1,080.739 ppb
Recovery Percentage 1			102.846 %		0.000 %		110.068 %	108.233 %	109.222 %	106.528 %
Concentration RSD	0.9 %	1.1 %	2.9 %	1.9 %	3.1 %	N/A	0.7 %	3.3 %	3.1 %	1.8 %
Intensity average	14,206,947 cps	33,531 cps	17,010 cps	1,807 cps	10,713 cps	2,427 cps	2,161,815 cps	961,254 cps	203,500 cps	263,456 cps
Intensity per Run 1	14,159,242.0 cps	33,934.0 cps	16,693.1 cps	1,804.1 cps	10,473.9 cps	2,460.3 cps	2,156,073.1 cps	929,500.6 cps	198,781.2 cps	259,386.7 cps
Intensity per Run 2	14,106,512.8 cps	33,431.7 cps	17,026.1 cps	1,785.6 cps	10,729.6 cps	2,320.2 cps	2,168,702.1 cps	975,592.7 cps	202,428.0 cps	264,822.0 cps
Intensity per Run 3	14,355,085.6 cps	33,227.1 cps	17,311.5 cps	1,832.1 cps	10,935.8 cps	2,500.3 cps	2,160,671.3 cps	978,669.1 cps	209,289.6 cps	266,158.4 cps
Intensity RSD	0.9 %	1.1 %	1.8 %	1.3 %	2.2 %	3.9 %	0.3 %	2.9 %	2.6 %	1.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	109.203 ppb		1.025 ppm	1,098.760 ppb	2,109.281 ppb	1,112.236 ppb	1,693.867 ppb	93.539 %	94.109 %	104.753 ppb
Concentration per Run 1	107.041 ppb		1.006 ppm	1,085.652 ppb	2,142.717 ppb	1,081.095 ppb	1,665.122 ppb	93.788 %	93.783 %	102.830 ppb
Concentration per Run 2	110.436 ppb		1.032 ppm	1,092.945 ppb	2,210.322 ppb	1,128.256 ppb	1,707.556 ppb	94.486 %	94.351 %	105.815 ppb
Concentration per Run 3	110.131 ppb		1.037 ppm	1,117.683 ppb	1,974.802 ppb	1,127.357 ppb	1,708.922 ppb	92.344 %	94.192 %	105.615 ppb
Recovery Percentage 1	109.203 %			109.876 %		111.224 %	169.387 %			104.753 %
Concentration RSD	1.7 %		1.7 %	1.5 %	5.7 %	2.4 %	1.5 %	1.2 %	0.3 %	1.6 %
Intensity average	33,298 cps	15,129 cps	6,742,568 cps	901,675 cps	8,166 cps	2,835,909 cps	77,896 cps	6,438,318 cps	276,287 cps	37,518 cps
Intensity per Run 1	32,783.0 cps	15,059.1 cps	6,620,394.2 cps	890,399.3 cps	8,272.8 cps	2,765,260.6 cps	76,353.1 cps	6,455,436.0 cps	275,332.1 cps	36,677.8 cps
Intensity per Run 2	33,665.4 cps	14,989.0 cps	6,795,637.8 cps	898,495.3 cps	8,573.0 cps	2,903,640.7 cps	78,708.0 cps	6,503,449.0 cps	276,999.0 cps	38,005.8 cps
Intensity per Run 3	33,444.8 cps	15,339.5 cps	6,811,673.1 cps	916,131.6 cps	7,652.4 cps	2,838,825.5 cps	78,627.6 cps	6,356,068.3 cps	276,531.3 cps	37,869.3 cps
Intensity RSD	1.4 %	1.2 %	1.6 %	1.5 %	5.7 %	2.4 %	1.7 %	1.2 %	0.3 %	1.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	102.087 ppb	104.367 ppb	109.969 ppb	N/A	110.335 ppb	1,114.742 ppb	1,055.208 ppb	110.120 ppb	116.405 ppb	116.150 ppb
Concentration per Run 1	100.506 ppb	103.990 ppb	108.341 ppb	N/A	106.650 ppb	1,110.631 ppb	1,019.758 ppb	110.054 ppb	117.033 ppb	116.129 ppb
Concentration per Run 2	100.964 ppb	102.547 ppb	109.229 ppb	N/A	112.089 ppb	1,105.153 ppb	1,064.813 ppb	110.407 ppb	115.661 ppb	116.407 ppb
Concentration per Run 3	104.792 ppb	106.566 ppb	112.337 ppb	N/A	112.267 ppb	1,128.442 ppb	1,081.054 ppb	109.900 ppb	116.522 ppb	115.915 ppb
Recovery Percentage 1	102.087 %	104.367 %			110.335 %		105.521 %	110.120 %	116.405 %	
Concentration RSD	2.3 %	2.0 %	1.9 %	N/A	2.9 %	1.1 %	3.0 %	0.2 %	0.6 %	0.2 %
Intensity average	1,287,634 cps	2,065,881 cps	297,412 cps	307,453 cps	1,646,637 cps	22,162,183 cps	711,535 cps	5,138,308 cps	1,301,901 cps	200,680 cps
Intensity per Run 1	1,263,308.1 cps	2,051,302.8 cps	291,297.9 cps	304,528.9 cps	1,581,244.5 cps	21,931,012.6 cps	685,253.5 cps	5,117,424.7 cps	1,287,130.3 cps	198,923.2 cps
Intensity per Run 2	1,276,741.2 cps	2,035,119.7 cps	296,531.8 cps	309,258.0 cps	1,679,473.3 cps	22,065,391.4 cps	719,812.0 cps	5,164,958.4 cps	1,305,737.0 cps	202,162.6 cps
Intensity per Run 3	1,322,851.8 cps	2,111,221.0 cps	304,407.0 cps	308,571.0 cps	1,679,193.6 cps	22,490,144.3 cps	729,539.9 cps	5,132,539.9 cps	1,312,834.6 cps	200,955.3 cps
Intensity RSD	2.4 %	1.9 %	2.2 %	0.8 %	3.4 %	1.3 %	3.3 %	0.5 %	1.0 %	0.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	117.883 ppb	117.497 ppb	116.648 ppb	117.672 ppb	116.352 ppb		111.577 ppb	N/A	108.803 ppb	
Concentration per Run 1	118.846 ppb	116.064 ppb	111.914 ppb	117.027 ppb	115.048 ppb		107.801 ppb	N/A	106.944 ppb	
Concentration per Run 2	117.167 ppb	117.047 ppb	119.603 ppb	118.021 ppb	116.225 ppb		113.583 ppb	N/A	108.820 ppb	
Concentration per Run 3	117.635 ppb	119.380 ppb	118.427 ppb	117.969 ppb	117.783 ppb		113.347 ppb	N/A	110.646 ppb	
Recovery Percentage 1	117.883 %	117.497 %	116.648 %				111.577 %	0.000 %	108.803 %	
Concentration RSD	0.7 %	1.4 %	3.6 %	0.5 %	1.2 %		2.9 %	N/A	1.7 %	
Intensity average	3,311,305 cps	1,710,079 cps	717,218 cps	121,243 cps	574,181 cps	34 cps	355,408 cps	10,855 cps	36,613 cps	2,004 cps
Intensity per Run 1	3,308,846.4 cps	1,683,376.8 cps	698,553.6 cps	119,372.1 cps	561,944.6 cps	30.0 cps	348,399.7 cps	11,135.0 cps	35,502.2 cps	1,968.2 cps
Intensity per Run 2	3,308,915.0 cps	1,707,891.6 cps	720,025.3 cps	122,316.2 cps	577,034.0 cps	35.0 cps	354,320.1 cps	11,095.0 cps	36,893.9 cps	1,995.2 cps
Intensity per Run 3	3,316,154.9 cps	1,738,968.2 cps	733,074.0 cps	122,041.8 cps	583,565.7 cps	38.0 cps	363,503.2 cps	10,334.3 cps	37,443.4 cps	2,050.2 cps
Intensity RSD	0.1 %	1.6 %	2.4 %	1.3 %	1.9 %	11.8 %	2.1 %	4.2 %	2.7 %	2.1 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		103.649 ppb		94.654 %	102.809 ppb	100.060 ppb	99.545 ppb	97.617 ppb	100.132 ppb	0.019 ppm
Concentration per Run 1		100.512 ppb		93.078 %	99.875 ppb	97.030 ppb	95.956 ppb	94.975 ppb	97.948 ppb	0.019 ppm
Concentration per Run 2		105.971 ppb		95.534 %	103.968 ppb	99.750 ppb	100.920 ppb	98.079 ppb	100.911 ppb	0.020 ppm
Concentration per Run 3		104.464 ppb		95.349 %	104.584 ppb	103.401 ppb	101.761 ppb	99.798 ppb	101.538 ppb	0.019 ppm
Recovery Percentage 1		103.649 %						97.617 %		0.000 %
Concentration RSD		2.7 %		1.4 %	2.5 %	3.2 %	3.2 %	2.5 %	1.9 %	0.9 %
Intensity average	23,856 cps	18,038 cps	5,858 cps	553,517 cps	1,096,138 cps	1,936,770 cps	2,126,584 cps	1,247,711 cps	3,400,304 cps	1,730,533 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	23,367.0 cps	17,727.2 cps	5,970.6 cps	544,300.9 cps	1,053,302.8 cps	1,859,931.4 cps	2,032,505.4 cps	1,205,127.3 cps	3,306,048.9 cps	1,727,505.6 cps
Intensity per Run 2	23,429.0 cps	18,076.0 cps	5,255.1 cps	558,665.1 cps	1,112,167.7 cps	1,934,883.3 cps	2,158,080.6 cps	1,253,452.5 cps	3,422,484.3 cps	1,746,770.3 cps
Intensity per Run 3	24,772.8 cps	18,311.5 cps	6,347.8 cps	557,584.9 cps	1,122,942.1 cps	2,015,494.4 cps	2,189,165.0 cps	1,284,552.7 cps	3,472,380.2 cps	1,717,324.4 cps
Intensity RSD	3.3 %	1.6 %	9.5 %	1.4 %	3.4 %	4.0 %	3.9 %	3.2 %	2.5 %	0.9 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		107.881 ppb	104.488 ppb	106.932 ppb	105.162 ppb	106.273 ppb	104.349 ppb	95.751 %	105.088 ppb	104.596 ppb
Concentration per Run 1		106.530 ppb	99.345 ppb	103.629 ppb	101.652 ppb	103.110 ppb	99.631 ppb	97.090 %	100.729 ppb	99.636 ppb
Concentration per Run 2		106.713 ppb	107.291 ppb	108.454 ppb	106.593 ppb	106.972 ppb	107.356 ppb	93.767 %	107.933 ppb	108.137 ppb
Concentration per Run 3		110.401 ppb	106.828 ppb	108.715 ppb	107.242 ppb	108.737 ppb	106.058 ppb	96.395 %	106.604 ppb	106.014 ppb
Recovery Percentage 1			104.488 %		105.162 %		104.349 %		105.088 %	104.596 %
Concentration RSD		2.0 %	4.3 %	2.7 %	2.9 %	2.7 %	4.0 %	1.8 %	3.6 %	4.2 %
Intensity average	1,037 cps	108,402 cps	8,014,864 cps	82,748 cps	7,933,948 cps	1,335,075 cps	3,245,089 cps	857,240 cps	2,688,803 cps	2,810,905 cps
Intensity per Run 1	992.0 cps	107,407.8 cps	7,729,767.8 cps	80,663.9 cps	7,723,370.8 cps	1,307,513.2 cps	3,142,887.8 cps	869,228.2 cps	2,611,219.2 cps	2,709,926.6 cps
Intensity per Run 2	1,028.0 cps	106,104.9 cps	8,062,312.0 cps	82,866.2 cps	7,931,273.6 cps	1,322,257.8 cps	3,270,672.8 cps	839,481.7 cps	2,710,693.5 cps	2,858,403.8 cps
Intensity per Run 3	1,092.0 cps	111,693.5 cps	8,252,511.5 cps	84,714.4 cps	8,147,200.5 cps	1,375,454.1 cps	3,321,705.3 cps	863,011.3 cps	2,744,495.1 cps	2,864,383.8 cps
Intensity RSD	4.9 %	2.7 %	3.3 %	2.5 %	2.7 %	2.7 %	2.8 %	1.8 %	2.6 %	3.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	106.370 ppb	102.142 ppb	104.073 ppb			97.115 %			0.014 ppm	98.988 ppb
Concentration per Run 1	103.127 ppb	99.538 ppb	101.765 ppb			96.871 %			0.014 ppm	94.431 ppb
Concentration per Run 2	107.367 ppb	102.686 ppb	105.140 ppb			97.897 %			0.014 ppm	101.419 ppb
Concentration per Run 3	108.617 ppb	104.202 ppb	105.314 ppb			96.577 %			0.014 ppm	101.115 ppb
Recovery Percentage 1	106.370 %	102.142 %	104.073 %							98.988 %
Concentration RSD	2.7 %	2.3 %	1.9 %			0.7 %			1.2 %	4.0 %
Intensity average	2,287,727 cps	649,324 cps	1,206,241 cps	31 cps	25 cps	3,052,600 cps	60 cps	27 cps	3,141,507 cps	8,786,480 cps
Intensity per Run 1	2,242,553.8 cps	636,880.2 cps	1,186,267.3 cps	20.0 cps	28.0 cps	3,044,923.0 cps	56.0 cps	32.0 cps	3,159,748.9 cps	8,380,260.8 cps
Intensity per Run 2	2,273,829.4 cps	647,895.2 cps	1,211,080.0 cps	44.0 cps	36.0 cps	3,077,175.3 cps	68.0 cps	16.0 cps	3,168,290.0 cps	8,922,100.0 cps
Intensity per Run 3	2,346,798.7 cps	663,196.9 cps	1,221,375.0 cps	28.0 cps	12.0 cps	3,035,702.5 cps	56.0 cps	32.0 cps	3,096,481.6 cps	9,057,080.2 cps
Intensity RSD	2.3 %	2.0 %	1.5 %	39.8 %	48.2 %	0.7 %	11.5 %	34.6 %	1.2 %	4.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	98.856 ppb	102.350 ppb	102.588 ppb	102.209 ppb	96.657 %
Concentration per Run 1	95.249 ppb	100.467 ppb	100.623 ppb	101.001 ppb	96.667 %
Concentration per Run 2	100.886 ppb	103.437 ppb	103.464 ppb	102.679 ppb	95.572 %
Concentration per Run 3	100.433 ppb	103.144 ppb	103.678 ppb	102.947 ppb	97.733 %
Recovery Percentage 1	98.856 %	102.350 %	102.588 %	102.209 %	
Concentration RSD	3.2 %	1.6 %	1.7 %	1.0 %	1.1 %
Intensity average	21,293,596 cps	7,249,092 cps	6,382,821 cps	29,260,268 cps	2,477,268 cps
Intensity per Run 1	20,519,276.1 cps	7,115,431.3 cps	6,260,512.3 cps	28,917,159.6 cps	2,477,518.8 cps
Intensity per Run 2	21,487,265.7 cps	7,252,478.5 cps	6,369,970.1 cps	29,064,499.3 cps	2,449,462.4 cps
Intensity per Run 3	21,874,245.1 cps	7,379,366.8 cps	6,517,980.5 cps	29,799,144.2 cps	2,504,824.3 cps
Intensity RSD	3.3 %	1.8 %	2.0 %	1.6 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV | Analysis: 10/30/2019 14:36:45 | Sample Type QC
Comment MW-11881 | Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	94.598 %	96.561 %	147.609 ppb	150.622 ppb	149.031 ppb	N/A	15,474.720 ppb	15,049.092 ppb	14,998.003 ppb
Concentration per Run 1	93.680 %	97.162 %	145.078 ppb	148.115 ppb	145.003 ppb	N/A	15,313.925 ppb	14,817.630 ppb	14,650.507 ppb
Concentration per Run 2	94.752 %	97.037 %	147.656 ppb	150.266 ppb	150.117 ppb	N/A	15,214.996 ppb	14,982.730 ppb	14,869.014 ppb
Concentration per Run 3	95.361 %	95.485 %	150.093 ppb	153.486 ppb	151.972 ppb	N/A	15,895.240 ppb	15,346.917 ppb	15,474.488 ppb
Recovery Percentage 1			98.406 %		99.354 %		102.143 %		
Concentration RSD	0.9 %	1.0 %	1.7 %	1.8 %	2.4 %	N/A	2.4 %	1.8 %	2.8 %
Intensity average	13,229,788 cps	31,091 cps	22,638 cps	2,453 cps	14,354 cps	2,250 cps	28,532,637 cps	12,628,599 cps	2,642,668 cps
Intensity per Run 1	13,101,407.9 cps	31,284.1 cps	22,390.5 cps	2,424.2 cps	14,034.4 cps	2,450.3 cps	28,273,797.1 cps	12,446,310.6 cps	2,583,281.4 cps
Intensity per Run 2	13,251,403.9 cps	31,244.0 cps	22,759.2 cps	2,461.7 cps	14,551.0 cps	2,160.2 cps	28,328,458.0 cps	12,698,633.7 cps	2,647,037.8 cps
Intensity per Run 3	13,336,551.9 cps	30,744.3 cps	22,764.7 cps	2,471.7 cps	14,476.9 cps	2,140.2 cps	28,995,657.3 cps	12,740,851.7 cps	2,697,683.6 cps
Intensity RSD	0.9 %	1.0 %	0.9 %	1.0 %	1.9 %	7.7 %	1.4 %	1.3 %	2.2 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	15,045.373 ppb	15,318.961 ppb		0.631 ppm	15,129.940 ppb	15,121.849 ppb	15,575.670 ppb	15,312.888 ppb	89.287 %
Concentration per Run 1	14,949.499 ppb	15,125.565 ppb		0.619 ppm	15,107.214 ppb	15,343.978 ppb	15,312.931 ppb	15,330.099 ppb	88.941 %
Concentration per Run 2	14,910.006 ppb	15,241.964 ppb		0.621 ppm	14,948.727 ppb	14,658.411 ppb	15,986.002 ppb	15,096.843 ppb	88.249 %
Concentration per Run 3	15,276.615 ppb	15,589.353 ppb		0.652 ppm	15,333.879 ppb	15,363.159 ppb	15,428.077 ppb	15,511.721 ppb	90.671 %
Recovery Percentage 1	99.309 %	101.115 %			99.868 %		102.810 %	101.075 %	
Concentration RSD	1.3 %	1.6 %		3.0 %	1.3 %	2.7 %	2.3 %	1.4 %	1.4 %
Intensity average	3,523,497 cps	4,371,681 cps	4,341 cps	3,980,129 cps	11,716,678 cps	56,301 cps	37,084,119 cps	677,916 cps	6,145,625 cps
Intensity per Run 1	3,502,251.7 cps	4,316,629.7 cps	4,730.9 cps	3,894,450.2 cps	11,655,843.6 cps	56,849.9 cps	36,316,992.9 cps	675,094.4 cps	6,121,800.6 cps
Intensity per Run 2	3,528,690.3 cps	4,396,880.5 cps	4,410.8 cps	3,971,460.3 cps	11,742,785.2 cps	55,433.3 cps	37,635,508.0 cps	678,965.1 cps	6,074,196.9 cps
Intensity per Run 3	3,539,549.0 cps	4,401,533.7 cps	3,880.6 cps	4,074,477.4 cps	11,751,405.3 cps	56,618.4 cps	37,299,855.4 cps	679,689.3 cps	6,240,878.2 cps
Intensity RSD	0.5 %	1.1 %	9.9 %	2.3 %	0.5 %	1.3 %	1.8 %	0.4 %	1.4 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.460 %	145.317 ppb	142.939 ppb	144.228 ppb	150.852 ppb	N/A	151.414 ppb	15,293.195 ppb	15,288.737 ppb
Concentration per Run 1	90.937 %	142.062 ppb	139.835 ppb	141.569 ppb	147.980 ppb	N/A	147.252 ppb	15,309.986 ppb	15,092.144 ppb
Concentration per Run 2	92.928 %	146.067 ppb	141.757 ppb	142.091 ppb	149.562 ppb	N/A	151.401 ppb	14,620.267 ppb	15,074.832 ppb
Concentration per Run 3	90.516 %	147.822 ppb	147.224 ppb	149.023 ppb	155.015 ppb	N/A	155.590 ppb	15,949.333 ppb	15,699.235 ppb
Recovery Percentage 1		96.878 %	95.292 %	96.152 %		0.000 %	100.943 %		100.916 %
Concentration RSD	1.4 %	2.0 %	2.7 %	2.9 %	2.4 %	N/A	2.8 %	4.3 %	2.3 %
Intensity average	268,512 cps	50,598 cps	1,751,314 cps	2,773,217 cps	396,598 cps	413,145 cps	2,199,224 cps	295,513,048 cps	10,002,503 cps
Intensity per Run 1	266,975.0 cps	49,160.6 cps	1,703,694.3 cps	2,706,984.9 cps	386,229.2 cps	402,227.6 cps	2,122,166.4 cps	293,579,316.6 cps	9,818,789.8 cps
Intensity per Run 2	272,819.7 cps	51,682.8 cps	1,764,896.8 cps	2,776,444.0 cps	399,811.7 cps	422,516.1 cps	2,236,104.9 cps	287,403,057.1 cps	10,022,235.2 cps
Intensity per Run 3	265,740.5 cps	50,951.8 cps	1,785,349.9 cps	2,836,223.0 cps	403,753.6 cps	414,692.8 cps	2,239,400.0 cps	305,556,769.0 cps	10,166,483.1 cps
Intensity RSD	1.4 %	2.6 %	2.4 %	2.3 %	2.3 %	2.5 %	3.0 %	3.1 %	1.7 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	151.057 ppb	156.807 ppb	156.747 ppb	155.029 ppb	153.874 ppb	158.895 ppb	155.200 ppb	153.606 ppb	
Concentration per Run 1	149.762 ppb	156.883 ppb	154.958 ppb	153.953 ppb	153.371 ppb	153.294 ppb	154.225 ppb	152.350 ppb	
Concentration per Run 2	151.047 ppb	154.935 ppb	154.913 ppb	151.800 ppb	150.338 ppb	160.482 ppb	152.167 ppb	151.766 ppb	
Concentration per Run 3	152.362 ppb	158.601 ppb	160.371 ppb	159.335 ppb	157.911 ppb	162.907 ppb	159.209 ppb	156.701 ppb	
Recovery Percentage 1	100.705 %	104.538 %			102.582 %	105.930 %			
Concentration RSD	0.9 %	1.2 %	2.0 %	2.5 %	2.5 %	3.1 %	2.3 %	1.8 %	
Intensity average	6,849,878 cps	1,714,836 cps	263,458 cps	4,244,744 cps	2,175,445 cps	918,234 cps	155,372 cps	736,496 cps	419 cps
Intensity per Run 1	6,752,386.9 cps	1,690,480.8 cps	258,084.1 cps	4,176,165.0 cps	2,156,385.0 cps	883,960.6 cps	152,845.4 cps	722,964.3 cps	445.0 cps
Intensity per Run 2	6,959,420.9 cps	1,727,787.2 cps	264,952.9 cps	4,229,829.9 cps	2,160,049.1 cps	935,423.4 cps	155,113.5 cps	740,884.6 cps	390.0 cps
Intensity per Run 3	6,837,826.3 cps	1,726,239.4 cps	267,337.8 cps	4,328,238.3 cps	2,209,899.5 cps	935,317.0 cps	158,158.4 cps	745,638.5 cps	421.0 cps
Intensity RSD	1.5 %	1.2 %	1.8 %	1.8 %	1.4 %	3.2 %	1.7 %	1.6 %	6.6 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	155.249 ppb	N/A	151.348 ppb			150.435 ppb		92.750 %	148.014 ppb
Concentration per Run 1	151.632 ppb	N/A	149.587 ppb			145.722 ppb		91.379 %	144.001 ppb
Concentration per Run 2	154.802 ppb	N/A	148.142 ppb			151.016 ppb		94.563 %	146.716 ppb
Concentration per Run 3	159.313 ppb	N/A	156.316 ppb			154.568 ppb		92.307 %	153.324 ppb
Recovery Percentage 1	103.499 %	0.000 %				100.290 %			
Concentration RSD	2.5 %	N/A	2.9 %			3.0 %		1.8 %	3.2 %
Intensity average	465,793 cps	15,266 cps	49,799 cps	5,375 cps	30,550 cps	24,942 cps	5,723 cps	542,383 cps	1,535,188 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	453,822.6 cps	15,229.4 cps	48,609.0 cps	5,275.1 cps	29,845.8 cps	24,082.2 cps	5,621.4 cps	534,367.6 cps	1,474,906.1 cps
Intensity per Run 2	468,567.5 cps	15,289.5 cps	49,661.3 cps	5,396.2 cps	30,644.6 cps	25,261.0 cps	5,481.3 cps	552,986.8 cps	1,548,395.9 cps
Intensity per Run 3	474,989.1 cps	15,279.4 cps	51,125.6 cps	5,455.2 cps	31,160.0 cps	25,483.6 cps	6,065.7 cps	539,794.7 cps	1,582,262.3 cps
Intensity RSD	2.3 %	0.2 %	2.5 %	1.7 %	2.2 %	3.0 %	5.3 %	1.8 %	3.6 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	148.484 ppb	148.933 ppb	145.275 ppb	148.132 ppb	0.018 ppm		151.186 ppb	29.142 ppb	152.198 ppb
Concentration per Run 1	144.423 ppb	145.321 ppb	140.976 ppb	145.505 ppb	0.018 ppm		148.928 ppb	28.364 ppb	149.556 ppb
Concentration per Run 2	149.318 ppb	148.652 ppb	143.242 ppb	144.785 ppb	0.018 ppm		148.323 ppb	28.938 ppb	149.795 ppb
Concentration per Run 3	151.712 ppb	152.825 ppb	151.608 ppb	154.107 ppb	0.018 ppm		156.306 ppb	30.125 ppb	157.243 ppb
Recovery Percentage 1			96.850 %		0.000 %			97.141 %	
Concentration RSD	2.5 %	2.5 %	3.9 %	3.5 %	0.9 %		2.9 %	3.1 %	2.9 %
Intensity average	2,792,271 cps	3,086,585 cps	1,798,784 cps	4,865,980 cps	1,601,833 cps	776 cps	145,278 cps	2,112,242 cps	112,360 cps
Intensity per Run 1	2,682,925.0 cps	2,976,751.9 cps	1,726,216.9 cps	4,729,323.2 cps	1,601,107.9 cps	764.0 cps	142,132.1 cps	2,050,472.1 cps	109,756.5 cps
Intensity per Run 2	2,855,706.7 cps	3,132,124.8 cps	1,802,589.5 cps	4,832,226.9 cps	1,588,143.9 cps	836.0 cps	144,337.5 cps	2,116,027.0 cps	111,895.1 cps
Intensity per Run 3	2,838,182.0 cps	3,150,878.5 cps	1,867,545.1 cps	5,036,391.0 cps	1,616,245.9 cps	728.0 cps	149,363.6 cps	2,170,227.1 cps	115,427.2 cps
Intensity RSD	3.4 %	3.1 %	3.9 %	3.2 %	0.9 %	7.1 %	2.6 %	2.8 %	2.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.595 ppb	150.289 ppb	150.760 ppb	90.447 %	152.221 ppb	145.821 ppb	146.045 ppb	147.258 ppb	150.192 ppb
Concentration per Run 1	28.018 ppb	147.824 ppb	146.170 ppb	90.204 %	148.099 ppb	140.535 ppb	140.921 ppb	143.898 ppb	146.588 ppb
Concentration per Run 2	28.431 ppb	150.171 ppb	151.020 ppb	91.242 %	153.976 ppb	145.871 ppb	145.401 ppb	148.183 ppb	151.341 ppb
Concentration per Run 3	29.335 ppb	152.872 ppb	155.090 ppb	89.894 %	154.588 ppb	151.056 ppb	151.812 ppb	149.693 ppb	152.647 ppb
Recovery Percentage 1			100.507 %		101.481 %	97.214 %		98.172 %	
Concentration RSD	2.4 %	1.7 %	3.0 %	0.8 %	2.4 %	3.6 %	3.7 %	2.0 %	2.1 %
Intensity average	2,055,391 cps	1,793,710 cps	4,430,217 cps	809,752 cps	3,682,057 cps	3,707,004 cps	2,971,696 cps	887,659 cps	1,651,275 cps
Intensity per Run 1	2,002,885.6 cps	1,756,222.9 cps	4,283,924.8 cps	807,579.5 cps	3,576,286.5 cps	3,570,398.0 cps	2,867,596.2 cps	870,846.7 cps	1,619,111.5 cps
Intensity per Run 2	2,066,866.8 cps	1,811,120.7 cps	4,477,023.7 cps	816,876.5 cps	3,752,940.4 cps	3,732,614.0 cps	2,975,833.8 cps	894,361.4 cps	1,664,759.4 cps
Intensity per Run 3	2,096,420.4 cps	1,813,786.7 cps	4,529,702.2 cps	804,800.6 cps	3,716,943.4 cps	3,817,998.8 cps	3,071,658.1 cps	897,767.5 cps	1,669,955.2 cps
Intensity RSD	2.3 %	1.8 %	2.9 %	0.8 %	2.5 %	3.4 %	3.4 %	1.7 %	1.7 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.517 %			0.013 ppm	148.212 ppb	149.008 ppb	148.272 ppb
Concentration per Run 1			93.594 %			0.013 ppm	144.089 ppb	146.921 ppb	145.764 ppb
Concentration per Run 2			91.803 %			0.013 ppm	149.281 ppb	151.035 ppb	148.911 ppb
Concentration per Run 3			92.152 %			0.013 ppm	151.265 ppb	149.068 ppb	150.142 ppb
Recovery Percentage 1						0.000 %		99.339 %	
Concentration RSD			1.0 %			0.7 %	2.5 %	1.4 %	1.5 %
Intensity average	53 cps	32 cps	2,908,068 cps	61 cps	25 cps	3,015,578 cps	12,099,985 cps	29,376,377 cps	9,635,609 cps
Intensity per Run 1	44.0 cps	20.0 cps	2,941,941.4 cps	48.0 cps	20.0 cps	3,039,738.7 cps	11,808,949.0 cps	29,045,000.8 cps	9,503,827.4 cps
Intensity per Run 2	72.0 cps	32.0 cps	2,885,645.8 cps	56.0 cps	28.0 cps	2,999,682.6 cps	12,107,771.1 cps	29,586,874.7 cps	9,614,614.3 cps
Intensity per Run 3	44.0 cps	44.0 cps	2,896,617.0 cps	80.0 cps	28.0 cps	3,007,314.2 cps	12,383,234.2 cps	29,497,254.7 cps	9,788,386.6 cps
Intensity RSD	30.3 %	37.5 %	1.0 %	27.2 %	18.2 %	0.7 %	2.4 %	1.0 %	1.5 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	147.291 ppb	147.916 ppb	88.472 %
Concentration per Run 1	145.584 ppb	144.920 ppb	88.712 %
Concentration per Run 2	147.710 ppb	149.278 ppb	87.907 %
Concentration per Run 3	148.581 ppb	149.550 ppb	88.796 %
Recovery Percentage 1		98.611 %	
Concentration RSD	1.0 %	1.8 %	0.6 %
Intensity average	8,401,453 cps	38,756,553 cps	2,267,477 cps
Intensity per Run 1	8,329,819.9 cps	38,075,853.6 cps	2,273,645.6 cps
Intensity per Run 2	8,371,079.4 cps	38,864,468.4 cps	2,252,991.3 cps
Intensity per Run 3	8,503,459.2 cps	39,329,337.1 cps	2,275,795.0 cps
Intensity RSD	1.1 %	1.6 %	0.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 14:42:50 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	100.761 %	99.215 %	0.013 ppb	0.411 ppb	0.506 ppb	N/A	3.306 ppb	-0.576 ppb	-0.776 ppb	-0.954 ppb
Concentration per Run 1	99.426 %	98.440 %	0.029 ppb	0.358 ppb	0.579 ppb	N/A	4.202 ppb	-0.243 ppb	-0.620 ppb	-0.763 ppb
Concentration per Run 2	101.832 %	99.304 %	0.000 ppb	0.260 ppb	0.476 ppb	N/A	2.967 ppb	-0.681 ppb	-0.910 ppb	-0.990 ppb
Concentration per Run 3	101.026 %	99.902 %	0.009 ppb	0.614 ppb	0.464 ppb	N/A	2.750 ppb	-0.804 ppb	-0.796 ppb	-1.108 ppb
Recovery Percentage 1			1.292 %	0.041 %			0.661 %			-0.191 %
Concentration RSD	1.2 %	0.7 %	114.5 %	44.5 %	12.4 %	N/A	23.7 %	51.1 %	18.8 %	18.4 %
Intensity average	14,091,791 cps	31,945 cps	6 cps	11 cps	66 cps	2,127 cps	22,240 cps	1,480 cps	330 cps	353 cps
Intensity per Run 1	13,905,033.2 cps	31,695.7 cps	8.0 cps	9.5 cps	72.0 cps	2,090.2 cps	23,432.0 cps	1,730.1 cps	350.0 cps	390.0 cps
Intensity per Run 2	14,241,538.6 cps	31,973.8 cps	3.5 cps	8.0 cps	63.0 cps	2,010.2 cps	21,869.2 cps	1,410.1 cps	310.0 cps	350.0 cps
Intensity per Run 3	14,128,802.2 cps	32,166.3 cps	5.0 cps	14.0 cps	62.0 cps	2,280.2 cps	21,418.5 cps	1,300.1 cps	330.0 cps	320.0 cps
Intensity RSD	1.2 %	0.7 %	41.7 %	29.7 %	8.4 %	6.5 %	4.8 %	15.1 %	6.1 %	9.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.191 ppb		0.004 ppm	-0.894 ppb	-11.992 ppb	-13.302 ppb	-4.234 ppb	97.058 %	94.309 %	0.019 ppb
Concentration per Run 1	-0.199 ppb		0.004 ppm	0.568 ppb	-13.488 ppb	-13.499 ppb	-2.136 ppb	96.167 %	90.431 %	0.043 ppb
Concentration per Run 2	0.214 ppb		0.004 ppm	-1.346 ppb	-11.286 ppb	-13.397 ppb	-5.554 ppb	97.480 %	96.813 %	0.007 ppb
Concentration per Run 3	-0.588 ppb		0.004 ppm	-1.906 ppb	-11.203 ppb	-13.010 ppb	-5.010 ppb	97.528 %	95.681 %	0.008 ppb
Recovery Percentage 1	-0.955 %			-0.179 %			-0.423 %			0.193 %
Concentration RSD	209.9 %		4.0 %	145.1 %	10.8 %	1.9 %	43.4 %	0.8 %	3.6 %	106.3 %
Intensity average	433 cps	2,747 cps	28,222 cps	19,926 cps	27 cps	32,075 cps	507 cps	6,680,519 cps	276,874 cps	8 cps
Intensity per Run 1	420.0 cps	2,690.3 cps	28,051.9 cps	20,356.6 cps	20.0 cps	31,269.2 cps	580.0 cps	6,619,184.7 cps	265,490.1 cps	16.0 cps
Intensity per Run 2	560.0 cps	2,850.3 cps	27,460.5 cps	20,026.2 cps	30.0 cps	31,970.9 cps	460.0 cps	6,709,550.0 cps	284,228.0 cps	4.0 cps
Intensity per Run 3	320.0 cps	2,700.3 cps	29,154.2 cps	19,395.1 cps	30.0 cps	32,983.6 cps	480.0 cps	6,712,823.6 cps	280,904.6 cps	4.0 cps
Intensity RSD	27.8 %	3.3 %	3.0 %	2.5 %	21.7 %	2.7 %	12.7 %	0.8 %	3.6 %	86.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.102 ppb	-0.418 ppb	N/A	-0.078 ppb	-0.853 ppb	-0.818 ppb	0.001 ppb	-0.776 ppb	-0.788 ppb
Concentration per Run 1	-0.111 ppb	-0.099 ppb	-0.418 ppb	N/A	-0.076 ppb	-0.644 ppb	-0.701 ppb	0.003 ppb	-0.760 ppb	-0.803 ppb
Concentration per Run 2	-0.113 ppb	-0.102 ppb	-0.420 ppb	N/A	-0.073 ppb	-0.856 ppb	-0.782 ppb	0.000 ppb	-0.774 ppb	-0.768 ppb
Concentration per Run 3	-0.112 ppb	-0.105 ppb	-0.416 ppb	N/A	-0.084 ppb	-1.061 ppb	-0.971 ppb	0.000 ppb	-0.795 ppb	-0.792 ppb
Recovery Percentage 1	-2.237 %	-5.106 %			-7.770 %		-0.409 %	0.117 %	-77.623 %	
Concentration RSD	1.1 %	2.8 %	0.4 %	N/A	7.3 %	24.4 %	16.9 %	174.9 %	2.3 %	2.2 %
Intensity average	199 cps	408 cps	121 cps	100 cps	911 cps	21,085 cps	571 cps	303 cps	1,812 cps	292 cps
Intensity per Run 1	206.4 cps	444.0 cps	116.0 cps	130.0 cps	904.0 cps	24,324.1 cps	624.0 cps	396.0 cps	1,932.2 cps	256.0 cps
Intensity per Run 2	189.9 cps	424.0 cps	120.0 cps	100.0 cps	1,000.0 cps	21,619.7 cps	612.0 cps	276.0 cps	1,868.1 cps	332.0 cps
Intensity per Run 3	200.0 cps	356.0 cps	128.0 cps	70.0 cps	828.0 cps	17,312.6 cps	476.0 cps	236.0 cps	1,636.1 cps	288.0 cps
Intensity RSD	4.2 %	11.3 %	5.0 %	30.0 %	9.5 %	16.8 %	14.4 %	27.5 %	8.6 %	13.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.097 ppb	-0.088 ppb	-1.820 ppb	-1.573 ppb	-1.637 ppb		-0.061 ppb	N/A	0.102 ppb	
Concentration per Run 1	-0.089 ppb	-0.088 ppb	-1.780 ppb	-1.522 ppb	-1.662 ppb		-0.126 ppb	N/A	0.114 ppb	
Concentration per Run 2	-0.098 ppb	-0.088 ppb	-1.828 ppb	-1.538 ppb	-1.682 ppb		0.044 ppb	N/A	0.098 ppb	
Concentration per Run 3	-0.103 ppb	-0.087 ppb	-1.851 ppb	-1.660 ppb	-1.567 ppb		-0.101 ppb	N/A	0.095 ppb	
Recovery Percentage 1		-4.386 %	-90.985 %				-6.101 %			
Concentration RSD	7.8 %	0.4 %	2.0 %	4.8 %	3.7 %		150.1 %	N/A	9.9 %	
Intensity average	1,209 cps	573 cps	3,363 cps	500 cps	2,526 cps	6 cps	3,589 cps	70 cps	14 cps	746 cps
Intensity per Run 1	1,384.1 cps	548.0 cps	3,544.5 cps	532.0 cps	2,316.2 cps	10.0 cps	3,338.8 cps	60.0 cps	17.1 cps	771.0 cps
Intensity per Run 2	1,204.1 cps	584.0 cps	3,320.4 cps	548.0 cps	2,356.2 cps	5.0 cps	3,918.2 cps	50.0 cps	12.6 cps	728.0 cps
Intensity per Run 3	1,040.0 cps	588.0 cps	3,224.4 cps	420.0 cps	2,904.4 cps	2.0 cps	3,511.2 cps	100.0 cps	11.6 cps	738.0 cps
Intensity RSD	14.2 %	3.8 %	4.9 %	13.9 %	13.0 %	71.3 %	8.3 %	37.8 %	21.1 %	3.0 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.497 ppb		93.061 %	0.296 ppb	0.290 ppb	0.289 ppb	0.274 ppb	0.284 ppb	0.019 ppm
Concentration per Run 1		0.786 ppb		90.025 %	0.286 ppb	0.268 ppb	0.268 ppb	0.257 ppb	0.270 ppb	0.019 ppm
Concentration per Run 2		0.104 ppb		94.545 %	0.287 ppb	0.283 ppb	0.279 ppb	0.261 ppb	0.278 ppb	0.019 ppm
Concentration per Run 3		0.601 ppb		94.614 %	0.315 ppb	0.320 ppb	0.320 ppb	0.304 ppb	0.303 ppb	0.020 ppm
Recovery Percentage 1		9.940 %						2.741 %		
Concentration RSD		70.9 %		2.8 %	5.4 %	9.3 %	9.5 %	9.5 %	6.2 %	2.7 %
Intensity average	5,396 cps	-386 cps	5,724 cps	544,204 cps	3,402 cps	5,892 cps	6,500 cps	3,687 cps	10,016 cps	1,716,044 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	5,038.1 cps	-329.9 cps	5,254.2 cps	526,448.6 cps	3,200.4 cps	5,297.1 cps	5,881.4 cps	3,372.5 cps	9,291.5 cps	1,664,184.4 cps
Intensity per Run 2	5,934.5 cps	-454.9 cps	6,287.7 cps	552,878.8 cps	3,352.5 cps	5,825.4 cps	6,365.7 cps	3,564.5 cps	9,928.0 cps	1,730,910.3 cps
Intensity per Run 3	5,216.2 cps	-372.2 cps	5,631.4 cps	553,283.7 cps	3,652.5 cps	6,553.7 cps	7,254.1 cps	4,124.7 cps	10,828.7 cps	1,753,036.4 cps
Intensity RSD	8.8 %	16.5 %	9.1 %	2.8 %	6.8 %	10.7 %	10.7 %	10.6 %	7.7 %	2.7 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.006 ppb	0.001 ppb	0.007 ppb	0.002 ppb	0.006 ppb	0.005 ppb	93.933 %	0.018 ppb	0.675 ppb
Concentration per Run 1		0.018 ppb	0.002 ppb	0.014 ppb	0.002 ppb	0.009 ppb	0.006 ppb	92.539 %	0.036 ppb	0.687 ppb
Concentration per Run 2		-0.001 ppb	0.002 ppb	0.009 ppb	0.002 ppb	0.004 ppb	0.006 ppb	94.063 %	0.006 ppb	0.705 ppb
Concentration per Run 3		0.002 ppb	0.001 ppb	-0.002 ppb	0.002 ppb	0.005 ppb	0.002 ppb	95.198 %	0.012 ppb	0.633 ppb
Recovery Percentage 1			0.148 %				0.464 %			33.736 %
Concentration RSD		161.8 %	22.5 %	113.2 %	15.3 %	41.7 %	41.4 %	1.4 %	88.8 %	5.6 %
Intensity average	661 cps	99 cps	200 cps	7 cps	216 cps	83 cps	182 cps	840,967 cps	1,179 cps	18,073 cps
Intensity per Run 1	680.0 cps	108.0 cps	220.0 cps	12.0 cps	220.0 cps	116.0 cps	216.7 cps	828,481.8 cps	1,612.1 cps	18,113.3 cps
Intensity per Run 2	592.0 cps	92.0 cps	204.0 cps	8.0 cps	192.0 cps	60.0 cps	212.2 cps	842,130.6 cps	888.0 cps	18,902.3 cps
Intensity per Run 3	712.0 cps	96.0 cps	176.0 cps	0.0 cps	236.0 cps	72.0 cps	116.2 cps	852,287.3 cps	1,036.0 cps	17,203.9 cps
Intensity RSD	9.4 %	8.4 %	11.1 %	91.7 %	10.3 %	35.7 %	31.2 %	1.4 %	32.5 %	4.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.677 ppb	-0.010 ppb	-0.009 ppb			93.309 %			0.013 ppm	0.008 ppb
Concentration per Run 1	0.680 ppb	-0.006 ppb	-0.006 ppb			91.276 %			0.013 ppm	0.010 ppb
Concentration per Run 2	0.714 ppb	-0.009 ppb	-0.007 ppb			93.885 %			0.013 ppm	0.007 ppb
Concentration per Run 3	0.637 ppb	-0.015 ppb	-0.013 ppb			94.767 %			0.014 ppm	0.006 ppb
Recovery Percentage 1		-0.099 %							1.334 %	
Concentration RSD	5.7 %	48.5 %	47.3 %			1.9 %			2.4 %	31.3 %
Intensity average	14,502 cps	91 cps	169 cps	1 cps	5 cps	2,932,980 cps	51 cps	25 cps	3,022,037 cps	1,706 cps
Intensity per Run 1	14,344.3 cps	116.0 cps	200.0 cps	4.0 cps	4.0 cps	2,869,072.2 cps	52.0 cps	24.0 cps	2,988,610.8 cps	1,858.1 cps
Intensity per Run 2	15,309.4 cps	96.0 cps	188.0 cps	0.0 cps	4.0 cps	2,951,084.0 cps	52.0 cps	20.0 cps	2,973,742.9 cps	1,660.1 cps
Intensity per Run 3	13,851.7 cps	60.0 cps	120.0 cps	0.0 cps	8.0 cps	2,978,784.4 cps	48.0 cps	32.0 cps	3,103,757.3 cps	1,601.1 cps
Intensity RSD	5.1 %	31.3 %	25.5 %	173.2 %	43.3 %	1.9 %	4.6 %	24.1 %	2.4 %	7.9 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.008 ppb	0.008 ppb	0.008 ppb	0.008 ppb	93.126 %
Concentration per Run 1	0.010 ppb	0.012 ppb	0.011 ppb	0.011 ppb	89.132 %
Concentration per Run 2	0.007 ppb	0.008 ppb	0.007 ppb	0.007 ppb	93.665 %
Concentration per Run 3	0.006 ppb	0.005 ppb	0.006 ppb	0.005 ppb	96.581 %
Recovery Percentage 1	1.520 %			0.772 %	
Concentration RSD	30.2 %	41.3 %	35.3 %	39.2 %	4.0 %
Intensity average	4,133 cps	1,261 cps	1,083 cps	4,941 cps	2,386,766 cps
Intensity per Run 1	4,461.8 cps	1,451.1 cps	1,224.1 cps	5,647.5 cps	2,284,409.1 cps
Intensity per Run 2	4,074.7 cps	1,239.1 cps	1,024.0 cps	4,715.3 cps	2,400,571.1 cps
Intensity per Run 3	3,861.6 cps	1,093.0 cps	1,000.0 cps	4,461.3 cps	2,475,318.9 cps
Intensity RSD	7.4 %	14.3 %	11.4 %	12.6 %	4.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ19003-008 Analysis: 10/30/2019 14:48:54 Sample Type UNKNOWN
Comment 13MW3 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	95.390 %	97.407 %	0.006 ppb	9.979 ppb	10.212 ppb	N/A	13,735.025 ppb	30,748.347 ppb	30,995.782 ppb
Concentration per Run 1	94.710 %	98.600 %	-0.003 ppb	9.156 ppb	9.858 ppb	N/A	13,462.161 ppb	30,016.424 ppb	29,799.338 ppb
Concentration per Run 2	95.403 %	96.584 %	0.014 ppb	9.833 ppb	10.505 ppb	N/A	13,843.395 ppb	30,354.582 ppb	30,592.176 ppb
Concentration per Run 3	96.058 %	97.037 %	0.007 ppb	10.947 ppb	10.272 ppb	N/A	13,899.521 ppb	31,874.034 ppb	32,595.833 ppb
Concentration RSD	0.7 %	1.1 %	139.3 %	9.1 %	3.2 %	N/A	1.7 %	3.2 %	4.6 %
Intensity average	13,340,670 cps	31,363 cps	4 cps	168 cps	1,009 cps	2,620 cps	25,771,012 cps	26,262,843 cps	5,561,289 cps
Intensity per Run 1	13,245,495.1 cps	31,747.3 cps	3.0 cps	156.0 cps	987.0 cps	2,480.3 cps	25,608,302.9 cps	25,996,513.4 cps	5,422,640.1 cps
Intensity per Run 2	13,342,432.5 cps	31,098.2 cps	5.5 cps	164.0 cps	1,030.5 cps	2,570.3 cps	25,901,684.1 cps	25,865,066.4 cps	5,478,410.3 cps
Intensity per Run 3	13,434,081.2 cps	31,244.0 cps	4.5 cps	182.5 cps	1,009.0 cps	2,810.3 cps	25,803,048.4 cps	26,926,950.7 cps	5,782,817.5 cps
Intensity RSD	0.7 %	1.1 %	29.0 %	8.1 %	2.2 %	6.5 %	0.6 %	2.2 %	3.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	30,678.809 ppb	0.992 ppb		1.028 ppm	1,849.803 ppb	80,703.686 ppb	79,149.814 ppb	78,721.421 ppb	93.064 %
Concentration per Run 1	29,610.665 ppb	0.876 ppb		0.995 ppm	1,813.353 ppb	78,869.822 ppb	77,143.323 ppb	76,796.774 ppb	92.180 %
Concentration per Run 2	30,969.286 ppb	1.364 ppb		1.024 ppm	1,820.338 ppb	80,853.806 ppb	79,106.761 ppb	77,034.167 ppb	93.792 %
Concentration per Run 3	31,456.478 ppb	0.736 ppb		1.066 ppm	1,915.718 ppb	82,387.429 ppb	81,199.358 ppb	82,333.323 ppb	93.221 %
Concentration RSD	3.1 %	33.2 %		3.4 %	3.1 %	2.2 %	2.6 %	4.0 %	0.9 %
Intensity average	7,320,134 cps	773 cps	101,511 cps	6,644,245 cps	1,487,714 cps	308,683 cps	196,029,662 cps	3,581,856 cps	6,405,627 cps
Intensity per Run 1	7,165,616.9 cps	750.0 cps	99,767.3 cps	6,528,561.4 cps	1,481,226.8 cps	306,392.5 cps	189,240,038.3 cps	3,550,042.9 cps	6,344,747.1 cps
Intensity per Run 2	7,377,058.3 cps	880.0 cps	101,965.6 cps	6,624,908.3 cps	1,468,332.5 cps	310,499.1 cps	197,396,659.1 cps	3,521,101.5 cps	6,455,708.8 cps
Intensity per Run 3	7,417,727.9 cps	690.0 cps	102,801.2 cps	6,779,265.5 cps	1,513,584.2 cps	309,157.7 cps	201,452,287.6 cps	3,674,423.5 cps	6,416,425.5 cps
Intensity RSD	1.8 %	12.6 %	1.5 %	1.9 %	1.6 %	0.7 %	3.2 %	2.3 %	0.9 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	94.159 %	0.049 ppb	0.272 ppb	1.617 ppb	1.504 ppb	N/A	0.062 ppb	2.141 ppb	8.361 ppb
Concentration per Run 1	95.626 %	0.030 ppb	0.276 ppb	1.550 ppb	1.447 ppb	N/A	0.057 ppb	2.042 ppb	7.634 ppb
Concentration per Run 2	94.578 %	0.063 ppb	0.257 ppb	1.582 ppb	1.509 ppb	N/A	0.054 ppb	2.152 ppb	8.719 ppb
Concentration per Run 3	92.273 %	0.053 ppb	0.284 ppb	1.719 ppb	1.555 ppb	N/A	0.074 ppb	2.228 ppb	8.730 ppb
Concentration RSD	1.8 %	35.6 %	5.0 %	5.5 %	3.6 %	N/A	17.6 %	4.4 %	7.5 %
Intensity average	276,435 cps	19 cps	5,041 cps	34,395 cps	5,276 cps	5,828 cps	2,974 cps	80,191 cps	6,750 cps
Intensity per Run 1	280,741.5 cps	12.0 cps	5,168.1 cps	33,605.2 cps	5,205.1 cps	5,831.4 cps	2,948.4 cps	79,493.9 cps	6,361.6 cps
Intensity per Run 2	277,665.4 cps	24.0 cps	4,873.5 cps	33,882.0 cps	5,293.1 cps	5,901.4 cps	2,860.3 cps	80,339.2 cps	7,026.0 cps
Intensity per Run 3	270,898.5 cps	20.0 cps	5,081.6 cps	35,699.1 cps	5,329.1 cps	5,751.4 cps	3,112.4 cps	80,740.2 cps	6,861.9 cps
Intensity RSD	1.8 %	32.7 %	3.0 %	3.3 %	1.2 %	1.3 %	4.3 %	0.8 %	5.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.022 ppb	-0.429 ppb	-0.437 ppb	0.682 ppb	0.676 ppb	1.295 ppb	9.734 ppb	7.443 ppb	
Concentration per Run 1	0.018 ppb	-0.458 ppb	-0.453 ppb	0.661 ppb	0.679 ppb	1.244 ppb	9.361 ppb	7.219 ppb	
Concentration per Run 2	0.023 ppb	-0.405 ppb	-0.436 ppb	0.687 ppb	0.664 ppb	1.378 ppb	9.803 ppb	7.443 ppb	
Concentration per Run 3	0.023 ppb	-0.424 ppb	-0.423 ppb	0.698 ppb	0.685 ppb	1.263 ppb	10.040 ppb	7.666 ppb	
Concentration RSD	13.8 %	6.2 %	3.5 %	2.7 %	1.6 %	5.6 %	3.5 %	3.0 %	
Intensity average	1,259 cps	5,564 cps	885 cps	22,848 cps	11,677 cps	20,881 cps	11,816 cps	45,974 cps	53 cps
Intensity per Run 1	1,116.1 cps	5,341.1 cps	872.0 cps	22,628.5 cps	11,909.7 cps	20,657.1 cps	11,625.4 cps	45,619.2 cps	60.0 cps
Intensity per Run 2	1,352.1 cps	5,717.3 cps	884.0 cps	22,877.1 cps	11,553.4 cps	21,278.1 cps	11,805.6 cps	45,643.3 cps	53.0 cps
Intensity per Run 3	1,308.1 cps	5,633.3 cps	900.0 cps	23,037.3 cps	11,569.4 cps	20,709.2 cps	12,017.8 cps	46,659.0 cps	45.0 cps
Intensity RSD	10.0 %	3.5 %	1.6 %	0.9 %	1.7 %	1.6 %	1.7 %	1.3 %	14.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.010 ppb	N/A	0.373 ppb			1.361 ppb		92.480 %	0.847 ppb
Concentration per Run 1	-0.147 ppb	N/A	0.334 ppb			2.404 ppb		93.954 %	0.787 ppb
Concentration per Run 2	0.199 ppb	N/A	0.394 ppb			0.565 ppb		90.771 %	0.877 ppb
Concentration per Run 3	-0.080 ppb	N/A	0.390 ppb			1.113 ppb		92.714 %	0.877 ppb
Concentration RSD	1,917.6 %	N/A	9.0 %			69.4 %		1.7 %	6.1 %
Intensity average	3,592 cps	100 cps	103 cps	4,042 cps	5,045 cps	-224 cps	5,241 cps	540,804 cps	9,051 cps
Intensity per Run 1	3,194.8 cps	110.0 cps	92.0 cps	4,038.7 cps	4,441.8 cps	-49.2 cps	4,502.9 cps	549,425.2 cps	8,550.9 cps
Intensity per Run 2	4,195.4 cps	60.0 cps	108.9 cps	4,043.7 cps	5,969.5 cps	-356.8 cps	6,278.7 cps	530,811.7 cps	9,219.4 cps
Intensity per Run 3	3,386.1 cps	130.0 cps	108.7 cps	4,044.7 cps	4,723.0 cps	-266.1 cps	4,940.1 cps	542,174.9 cps	9,383.5 cps
Intensity RSD	14.8 %	36.1 %	9.4 %	0.1 %	16.1 %	70.6 %	17.7 %	1.7 %	4.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.815 ppb	0.814 ppb	0.813 ppb	0.819 ppb	0.017 ppm		0.008 ppb	0.001 ppb	0.016 ppb
Concentration per Run 1	0.762 ppb	0.756 ppb	0.789 ppb	0.789 ppb	0.018 ppm		0.002 ppb	0.001 ppb	0.015 ppb
Concentration per Run 2	0.833 ppb	0.829 ppb	0.796 ppb	0.810 ppb	0.017 ppm		0.024 ppb	0.000 ppb	0.015 ppb
Concentration per Run 3	0.850 ppb	0.858 ppb	0.854 ppb	0.860 ppb	0.017 ppm		-0.002 ppb	0.001 ppb	0.020 ppb
Concentration RSD	5.7 %	6.4 %	4.4 %	4.5 %	1.8 %		179.9 %	59.4 %	18.9 %
Intensity average	15,623 cps	17,233 cps	10,274 cps	27,370 cps	1,549,674 cps	1,493 cps	97 cps	132 cps	13 cps
Intensity per Run 1	14,824.8 cps	16,238.6 cps	10,096.1 cps	26,668.5 cps	1,578,058.1 cps	1,548.1 cps	92.0 cps	152.0 cps	12.0 cps
Intensity per Run 2	15,721.9 cps	17,284.0 cps	9,924.0 cps	26,692.5 cps	1,521,531.1 cps	1,420.1 cps	112.0 cps	100.0 cps	12.0 cps
Intensity per Run 3	16,322.7 cps	18,177.3 cps	10,800.7 cps	28,749.1 cps	1,549,431.9 cps	1,512.1 cps	88.0 cps	144.0 cps	16.0 cps
Intensity RSD	4.8 %	5.6 %	4.5 %	4.4 %	1.8 %	4.4 %	13.2 %	21.2 %	17.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.007 ppb	0.004 ppb	90.058 %	0.111 ppb	0.150 ppb	0.154 ppb	98.475 ppb	100.890 ppb
Concentration per Run 1	0.001 ppb	0.006 ppb	0.004 ppb	90.336 %	0.089 ppb	0.136 ppb	0.146 ppb	96.682 ppb	99.755 ppb
Concentration per Run 2	0.001 ppb	0.007 ppb	0.003 ppb	89.738 %	0.117 ppb	0.159 ppb	0.153 ppb	99.315 ppb	100.951 ppb
Concentration per Run 3	0.001 ppb	0.008 ppb	0.004 ppb	90.099 %	0.127 ppb	0.155 ppb	0.163 ppb	99.429 ppb	101.966 ppb
Concentration RSD	29.0 %	12.7 %	13.2 %	0.3 %	17.5 %	8.2 %	5.5 %	1.6 %	1.1 %
Intensity average	124 cps	92 cps	151 cps	806,272 cps	3,379 cps	4,119 cps	3,387 cps	593,556 cps	1,109,629 cps
Intensity per Run 1	140.0 cps	84.0 cps	155.0 cps	808,764.7 cps	2,868.3 cps	3,780.6 cps	3,240.4 cps	586,386.1 cps	1,104,290.7 cps
Intensity per Run 2	124.0 cps	88.0 cps	133.8 cps	803,408.3 cps	3,508.5 cps	4,336.8 cps	3,356.5 cps	596,002.1 cps	1,105,323.7 cps
Intensity per Run 3	108.0 cps	104.0 cps	163.1 cps	806,643.7 cps	3,760.6 cps	4,240.7 cps	3,564.5 cps	598,280.7 cps	1,119,273.0 cps
Intensity RSD	12.9 %	11.5 %	10.0 %	0.3 %	13.6 %	7.2 %	4.8 %	1.1 %	0.8 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.952 %			0.013 ppm	0.080 ppb	0.080 ppb	0.081 ppb
Concentration per Run 1			93.861 %			0.013 ppm	0.081 ppb	0.082 ppb	0.083 ppb
Concentration per Run 2			92.447 %			0.013 ppm	0.081 ppb	0.080 ppb	0.081 ppb
Concentration per Run 3			92.547 %			0.013 ppm	0.077 ppb	0.078 ppb	0.080 ppb
Concentration RSD			0.8 %			1.5 %	3.1 %	2.1 %	1.5 %
Intensity average	313 cps	224 cps	2,921,737 cps	321 cps	367 cps	3,012,679 cps	7,374 cps	17,785 cps	5,825 cps
Intensity per Run 1	312.0 cps	244.0 cps	2,950,305.9 cps	324.0 cps	428.0 cps	3,015,499.4 cps	7,554.3 cps	18,197.3 cps	5,938.4 cps
Intensity per Run 2	340.0 cps	192.0 cps	2,905,876.4 cps	316.0 cps	276.0 cps	2,966,467.2 cps	7,396.2 cps	17,616.4 cps	5,738.3 cps
Intensity per Run 3	288.0 cps	236.0 cps	2,909,027.7 cps	324.0 cps	396.0 cps	3,056,069.6 cps	7,171.1 cps	17,540.3 cps	5,797.3 cps
Intensity RSD	8.3 %	12.5 %	0.8 %	1.4 %	21.9 %	1.5 %	2.6 %	2.0 %	1.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.077 ppb	0.079 ppb	86.494 %
Concentration per Run 1	0.080 ppb	0.081 ppb	86.846 %
Concentration per Run 2	0.074 ppb	0.077 ppb	85.772 %
Concentration per Run 3	0.077 ppb	0.080 ppb	86.863 %
Concentration RSD	3.8 %	2.7 %	0.7 %
Intensity average	4,869 cps	22,948 cps	2,216,776 cps
Intensity per Run 1	5,045.0 cps	23,465.7 cps	2,225,802.3 cps
Intensity per Run 2	4,656.9 cps	22,128.7 cps	2,198,288.2 cps
Intensity per Run 3	4,905.0 cps	23,248.6 cps	2,226,237.2 cps
Intensity RSD	4.0 %	3.1 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ19003-008DIS Analysis: 10/30/2019 14:54:58 Sample Type UNKNOWN
Comment 13MW3 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	94.108 %	96.297 %	0.011 ppb	10.086 ppb	10.797 ppb	N/A	14,211.701 ppb	32,865.787 ppb	33,021.645 ppb
Concentration per Run 1	93.319 %	96.668 %	0.011 ppb	10.267 ppb	10.446 ppb	N/A	13,747.092 ppb	32,361.366 ppb	32,387.649 ppb
Concentration per Run 2	94.338 %	95.946 %	0.007 ppb	9.724 ppb	10.814 ppb	N/A	14,417.174 ppb	33,071.868 ppb	33,085.208 ppb
Concentration per Run 3	94.668 %	96.278 %	0.014 ppb	10.268 ppb	11.130 ppb	N/A	14,470.838 ppb	33,164.129 ppb	33,592.077 ppb
Concentration RSD	0.7 %	0.4 %	30.2 %	3.1 %	3.2 %	N/A	2.8 %	1.3 %	1.8 %
Intensity average	13,161,355 cps	31,006 cps	5 cps	167 cps	1,048 cps	2,500 cps	25,854,212 cps	27,187,941 cps	5,732,216 cps
Intensity per Run 1	13,050,979.5 cps	31,125.2 cps	5.0 cps	170.0 cps	1,016.5 cps	2,270.2 cps	24,955,805.1 cps	26,703,911.0 cps	5,606,122.9 cps
Intensity per Run 2	13,193,501.9 cps	30,892.6 cps	4.5 cps	160.5 cps	1,048.0 cps	2,870.4 cps	26,332,300.3 cps	27,480,577.6 cps	5,771,636.8 cps
Intensity per Run 3	13,239,583.6 cps	30,999.4 cps	5.5 cps	169.5 cps	1,079.0 cps	2,360.3 cps	26,274,530.7 cps	27,379,333.2 cps	5,818,888.5 cps
Intensity RSD	0.7 %	0.4 %	10.0 %	3.2 %	3.0 %	12.9 %	3.0 %	1.6 %	1.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	32,119.830 ppb	15.385 ppb		1.054 ppm	1,945.402 ppb	85,735.410 ppb	83,181.381 ppb	83,115.089 ppb	88.754 %
Concentration per Run 1	31,764.024 ppb	12.636 ppb		1.042 ppm	1,924.121 ppb	85,625.148 ppb	81,529.130 ppb	82,617.109 ppb	87.817 %
Concentration per Run 2	32,509.089 ppb	16.043 ppb		1.058 ppm	1,949.991 ppb	84,832.092 ppb	82,788.911 ppb	82,154.084 ppb	89.701 %
Concentration per Run 3	32,086.377 ppb	17.475 ppb		1.062 ppm	1,962.092 ppb	86,748.989 ppb	85,226.102 ppb	84,574.073 ppb	88.745 %
Concentration RSD	1.2 %	16.2 %		1.0 %	1.0 %	1.1 %	2.3 %	1.5 %	1.1 %
Intensity average	7,405,565 cps	4,788 cps	99,455 cps	6,510,235 cps	1,487,225 cps	310,321 cps	196,640,369 cps	3,574,991 cps	6,108,956 cps
Intensity per Run 1	7,299,765.9 cps	4,000.6 cps	98,033.5 cps	6,395,697.0 cps	1,459,176.6 cps	306,936.8 cps	190,702,048.7 cps	3,517,938.2 cps	6,044,461.6 cps
Intensity per Run 2	7,535,689.9 cps	5,001.0 cps	100,805.4 cps	6,598,025.5 cps	1,508,134.0 cps	311,291.0 cps	197,745,840.2 cps	3,584,234.1 cps	6,174,110.2 cps
Intensity per Run 3	7,381,239.9 cps	5,361.2 cps	99,525.9 cps	6,536,983.4 cps	1,494,365.7 cps	312,735.5 cps	201,473,219.6 cps	3,622,800.2 cps	6,108,297.0 cps
Intensity RSD	1.6 %	14.7 %	1.4 %	1.6 %	1.7 %	1.0 %	2.8 %	1.5 %	1.1 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	88.864 %	0.324 ppb	0.314 ppb	2.016 ppb	2.000 ppb	N/A	1.191 ppb	12.785 ppb	19.190 ppb
Concentration per Run 1	87.932 %	0.415 ppb	0.319 ppb	1.981 ppb	1.969 ppb	N/A	1.140 ppb	12.385 ppb	18.700 ppb
Concentration per Run 2	90.176 %	0.335 ppb	0.305 ppb	2.021 ppb	2.055 ppb	N/A	1.183 ppb	12.702 ppb	19.323 ppb
Concentration per Run 3	88.484 %	0.222 ppb	0.319 ppb	2.046 ppb	1.976 ppb	N/A	1.251 ppb	13.269 ppb	19.547 ppb
Concentration RSD	1.3 %	29.9 %	2.7 %	1.6 %	2.4 %	N/A	4.7 %	3.5 %	2.3 %
Intensity average	260,890 cps	111 cps	5,257 cps	39,934 cps	6,270 cps	6,782 cps	18,738 cps	275,922 cps	13,259 cps
Intensity per Run 1	258,154.8 cps	140.0 cps	5,258.5 cps	38,860.4 cps	6,133.5 cps	6,401.7 cps	17,860.8 cps	266,150.0 cps	12,810.6 cps
Intensity per Run 2	264,741.8 cps	116.0 cps	5,217.2 cps	40,617.9 cps	6,485.7 cps	6,871.9 cps	18,826.2 cps	277,333.4 cps	13,539.3 cps
Intensity per Run 3	259,774.4 cps	76.0 cps	5,294.3 cps	40,325.1 cps	6,189.5 cps	7,072.0 cps	19,527.3 cps	284,281.4 cps	13,427.2 cps
Intensity RSD	1.3 %	29.2 %	0.7 %	2.4 %	3.0 %	5.1 %	4.5 %	3.3 %	3.0 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.030 ppb	-0.158 ppb	-0.213 ppb	0.149 ppb	0.171 ppb	1.069 ppb	9.686 ppb	7.647 ppb	
Concentration per Run 1	0.028 ppb	-0.198 ppb	-0.205 ppb	0.152 ppb	0.162 ppb	0.907 ppb	9.656 ppb	7.353 ppb	
Concentration per Run 2	0.027 ppb	-0.143 ppb	-0.185 ppb	0.134 ppb	0.178 ppb	1.116 ppb	9.418 ppb	7.637 ppb	
Concentration per Run 3	0.035 ppb	-0.134 ppb	-0.249 ppb	0.160 ppb	0.173 ppb	1.183 ppb	9.984 ppb	7.951 ppb	
Concentration RSD	14.8 %	21.9 %	15.3 %	8.9 %	4.8 %	13.5 %	2.9 %	3.9 %	
Intensity average	1,561 cps	8,249 cps	1,208 cps	7,662 cps	4,090 cps	19,489 cps	11,264 cps	44,973 cps	60 cps
Intensity per Run 1	1,456.1 cps	7,814.5 cps	1,212.1 cps	7,694.4 cps	3,924.6 cps	18,890.3 cps	11,165.0 cps	43,355.1 cps	60.0 cps
Intensity per Run 2	1,448.1 cps	8,406.8 cps	1,264.1 cps	7,338.2 cps	4,248.7 cps	19,739.6 cps	11,084.9 cps	45,225.8 cps	62.0 cps
Intensity per Run 3	1,780.1 cps	8,526.9 cps	1,148.1 cps	7,954.5 cps	4,096.7 cps	19,835.8 cps	11,541.3 cps	46,337.8 cps	59.0 cps
Intensity RSD	12.1 %	4.6 %	4.8 %	4.0 %	4.0 %	2.7 %	2.2 %	3.4 %	2.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.087 ppb	N/A	0.417 ppb			1.195 ppb		89.746 %	0.802 ppb
Concentration per Run 1	-0.289 ppb	N/A	0.376 ppb			1.361 ppb		89.554 %	0.746 ppb
Concentration per Run 2	0.187 ppb	N/A	0.429 ppb			1.012 ppb		89.689 %	0.837 ppb
Concentration per Run 3	-0.159 ppb	N/A	0.445 ppb			1.212 ppb		89.995 %	0.822 ppb
Concentration RSD	282.5 %	N/A	8.7 %			14.7 %		0.3 %	6.1 %
Intensity average	3,343 cps	117 cps	114 cps	3,409 cps	4,702 cps	-251 cps	4,942 cps	524,817 cps	8,369 cps
Intensity per Run 1	2,794.2 cps	150.0 cps	100.1 cps	3,266.4 cps	3,918.6 cps	-226.8 cps	4,102.7 cps	523,694.9 cps	7,814.5 cps
Intensity per Run 2	4,149.1 cps	120.0 cps	117.9 cps	3,501.5 cps	5,881.4 cps	-281.2 cps	6,214.6 cps	524,483.2 cps	8,723.1 cps
Intensity per Run 3	3,085.3 cps	80.0 cps	122.8 cps	3,458.5 cps	4,304.8 cps	-244.3 cps	4,508.9 cps	526,273.5 cps	8,570.9 cps
Intensity RSD	21.3 %	30.1 %	10.5 %	3.7 %	22.1 %	11.1 %	22.7 %	0.3 %	5.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.814 ppb	0.801 ppb	0.795 ppb	0.775 ppb	0.017 ppm		0.005 ppb	0.001 ppb	0.013 ppb
Concentration per Run 1	0.775 ppb	0.768 ppb	0.779 ppb	0.728 ppb	0.017 ppm		-0.027 ppb	0.001 ppb	0.009 ppb
Concentration per Run 2	0.807 ppb	0.790 ppb	0.771 ppb	0.768 ppb	0.017 ppm		0.016 ppb	0.001 ppb	0.009 ppb
Concentration per Run 3	0.860 ppb	0.844 ppb	0.835 ppb	0.830 ppb	0.017 ppm		0.026 ppb	0.000 ppb	0.021 ppb
Concentration RSD	5.3 %	4.9 %	4.4 %	6.7 %	0.3 %		539.4 %	33.6 %	49.9 %
Intensity average	15,237 cps	16,566 cps	9,825 cps	25,374 cps	1,534,263 cps	1,500 cps	93 cps	125 cps	11 cps
Intensity per Run 1	14,556.5 cps	15,950.2 cps	9,663.8 cps	23,955.0 cps	1,532,914.9 cps	1,528.1 cps	64.0 cps	136.0 cps	8.0 cps
Intensity per Run 2	15,101.1 cps	16,338.7 cps	9,527.6 cps	25,125.3 cps	1,531,170.2 cps	1,436.1 cps	104.0 cps	132.0 cps	8.0 cps
Intensity per Run 3	16,054.3 cps	17,408.2 cps	10,284.3 cps	27,041.3 cps	1,538,703.2 cps	1,536.1 cps	112.0 cps	108.0 cps	16.0 cps
Intensity RSD	5.0 %	4.6 %	4.1 %	6.1 %	0.3 %	3.7 %	27.6 %	12.1 %	43.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.003 ppb	0.003 ppb	89.581 %	0.052 ppb	0.090 ppb	0.089 ppb	102.905 ppb	102.995 ppb
Concentration per Run 1	0.001 ppb	0.002 ppb	0.003 ppb	91.048 %	0.042 ppb	0.077 ppb	0.073 ppb	99.349 ppb	99.885 ppb
Concentration per Run 2	0.000 ppb	0.003 ppb	0.003 ppb	89.468 %	0.053 ppb	0.090 ppb	0.095 ppb	105.191 ppb	104.412 ppb
Concentration per Run 3	0.001 ppb	0.005 ppb	0.003 ppb	88.228 %	0.061 ppb	0.102 ppb	0.099 ppb	104.174 ppb	104.689 ppb
Concentration RSD	3.6 %	45.5 %	4.7 %	1.6 %	18.9 %	13.9 %	15.9 %	3.0 %	2.6 %
Intensity average	105 cps	48 cps	116 cps	802,006 cps	1,943 cps	2,587 cps	2,055 cps	617,729 cps	1,128,323 cps
Intensity per Run 1	108.0 cps	36.0 cps	113.8 cps	815,134.0 cps	1,720.1 cps	2,308.2 cps	1,752.1 cps	600,566.9 cps	1,100,867.3 cps
Intensity per Run 2	104.0 cps	40.0 cps	119.0 cps	800,993.2 cps	1,976.2 cps	2,580.3 cps	2,180.2 cps	629,529.5 cps	1,140,116.5 cps
Intensity per Run 3	104.0 cps	68.0 cps	114.8 cps	789,892.2 cps	2,132.2 cps	2,872.3 cps	2,232.2 cps	623,091.6 cps	1,143,985.1 cps
Intensity RSD	2.2 %	36.3 %	2.4 %	1.6 %	10.7 %	10.9 %	12.8 %	2.5 %	2.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.720 %			0.014 ppm	0.046 ppb	0.047 ppb	0.060 ppb
Concentration per Run 1			92.338 %			0.013 ppm	0.042 ppb	0.044 ppb	0.058 ppb
Concentration per Run 2			92.223 %			0.014 ppm	0.049 ppb	0.048 ppb	0.062 ppb
Concentration per Run 3			93.598 %			0.014 ppm	0.049 ppb	0.048 ppb	0.061 ppb
Concentration RSD			0.8 %			0.3 %	9.0 %	5.4 %	3.1 %
Intensity average	527 cps	404 cps	2,914,448 cps	532 cps	468 cps	3,064,940 cps	4,779 cps	11,578 cps	4,549 cps
Intensity per Run 1	540.0 cps	352.0 cps	2,902,452.7 cps	552.0 cps	484.0 cps	3,054,092.5 cps	4,399.8 cps	11,047.9 cps	4,421.8 cps
Intensity per Run 2	516.0 cps	408.0 cps	2,898,834.6 cps	492.0 cps	448.0 cps	3,073,507.6 cps	4,959.0 cps	11,826.6 cps	4,611.9 cps
Intensity per Run 3	524.0 cps	452.0 cps	2,942,058.1 cps	552.0 cps	472.0 cps	3,067,220.4 cps	4,979.0 cps	11,860.6 cps	4,613.9 cps
Intensity RSD	2.3 %	12.4 %	0.8 %	6.5 %	3.9 %	0.3 %	6.9 %	4.0 %	2.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.058 ppb	0.058 ppb	87.758 %
Concentration per Run 1	0.058 ppb	0.056 ppb	88.019 %
Concentration per Run 2	0.056 ppb	0.059 ppb	87.215 %
Concentration per Run 3	0.060 ppb	0.059 ppb	88.040 %
Concentration RSD	3.1 %	2.6 %	0.5 %
Intensity average	3,862 cps	17,776 cps	2,249,182 cps
Intensity per Run 1	3,884.6 cps	17,381.7 cps	2,255,860.3 cps
Intensity per Run 2	3,732.6 cps	17,800.0 cps	2,235,273.3 cps
Intensity per Run 3	3,968.6 cps	18,146.2 cps	2,256,411.0 cps
Intensity RSD	3.1 %	2.2 %	0.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-001 Analysis: 10/30/2019 15:01:01 Sample Type UNKNOWN
Comment 16C1 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	98.191 %	100.793 %	0.002 ppb	4.053 ppb	4.591 ppb	N/A	5,236.761 ppb	32,083.732 ppb	31,804.739 ppb
Concentration per Run 1	97.565 %	101.829 %	0.003 ppb	3.631 ppb	4.453 ppb	N/A	5,114.504 ppb	31,737.174 ppb	30,633.861 ppb
Concentration per Run 2	98.442 %	100.428 %	0.012 ppb	4.243 ppb	4.778 ppb	N/A	5,308.572 ppb	32,286.393 ppb	32,219.107 ppb
Concentration per Run 3	98.565 %	100.121 %	-0.009 ppb	4.286 ppb	4.542 ppb	N/A	5,287.208 ppb	32,227.630 ppb	32,561.249 ppb
Concentration RSD	0.6 %	0.9 %	578.9 %	9.0 %	3.7 %	N/A	2.0 %	0.9 %	3.2 %
Intensity average	13,732,282 cps	32,453 cps	4 cps	73 cps	477 cps	2,684 cps	10,122,030 cps	28,196,423 cps	5,869,778 cps
Intensity per Run 1	13,644,833.3 cps	32,786.9 cps	4.0 cps	66.0 cps	468.0 cps	2,530.3 cps	9,967,460.0 cps	28,116,408.1 cps	5,699,095.6 cps
Intensity per Run 2	13,767,428.8 cps	32,335.8 cps	5.5 cps	75.5 cps	494.5 cps	2,720.3 cps	10,234,093.6 cps	28,301,366.3 cps	5,931,893.2 cps
Intensity per Run 3	13,784,584.0 cps	32,237.0 cps	2.0 cps	76.0 cps	469.5 cps	2,800.3 cps	10,164,537.0 cps	28,171,495.1 cps	5,978,346.2 cps
Intensity RSD	0.6 %	0.9 %	45.8 %	7.8 %	3.1 %	5.2 %	1.4 %	0.3 %	2.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	31,472.088 ppb	0.475 ppb		1.018 ppm	3,734.551 ppb	91,719.024 ppb	101,564.475 ppb	92,181.533 ppb	95.027 %
Concentration per Run 1	30,446.209 ppb	0.392 ppb		0.989 ppm	3,697.558 ppb	90,697.767 ppb	100,410.999 ppb	88,236.406 ppb	91.155 %
Concentration per Run 2	31,732.619 ppb	0.715 ppb		1.023 ppm	3,775.208 ppb	92,209.265 ppb	100,996.724 ppb	93,455.326 ppb	99.098 %
Concentration per Run 3	32,237.435 ppb	0.318 ppb		1.041 ppm	3,730.886 ppb	92,250.041 ppb	103,285.703 ppb	94,852.869 ppb	94.826 %
Concentration RSD	2.9 %	44.4 %		2.6 %	1.0 %	1.0 %	1.5 %	3.8 %	4.2 %
Intensity average	7,721,187 cps	640 cps	103,712 cps	6,743,085 cps	3,053,812 cps	358,667 cps	256,875,576 cps	4,287,195 cps	6,540,686 cps
Intensity per Run 1	7,528,405.8 cps	620.0 cps	102,075.4 cps	6,597,284.4 cps	3,042,093.7 cps	356,634.4 cps	243,829,455.7 cps	4,126,245.4 cps	6,274,228.1 cps
Intensity per Run 2	7,766,623.0 cps	710.0 cps	103,094.2 cps	6,765,184.1 cps	3,081,490.1 cps	360,047.3 cps	266,094,860.7 cps	4,340,613.5 cps	6,820,921.0 cps
Intensity per Run 3	7,868,533.1 cps	590.0 cps	105,967.6 cps	6,866,786.3 cps	3,037,851.0 cps	359,318.6 cps	260,702,410.1 cps	4,394,727.1 cps	6,526,909.9 cps
Intensity RSD	2.3 %	9.8 %	1.9 %	2.0 %	0.8 %	0.5 %	4.5 %	3.3 %	4.2 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	96.182 %	0.059 ppb	0.010 ppb	0.172 ppb	0.031 ppb	N/A	79.585 ppb	6.326 ppb	14.435 ppb
Concentration per Run 1	96.685 %	-0.003 ppb	0.014 ppb	0.162 ppb	0.019 ppb	N/A	77.064 ppb	6.142 ppb	13.719 ppb
Concentration per Run 2	96.047 %	0.095 ppb	0.001 ppb	0.168 ppb	-0.004 ppb	N/A	80.523 ppb	6.544 ppb	14.776 ppb
Concentration per Run 3	95.814 %	0.084 ppb	0.014 ppb	0.185 ppb	0.078 ppb	N/A	81.168 ppb	6.291 ppb	14.811 ppb
Concentration RSD	0.5 %	92.2 %	75.2 %	6.8 %	137.6 %	N/A	2.8 %	3.2 %	4.3 %
Intensity average	282,374 cps	23 cps	1,769 cps	5,952 cps	1,365 cps	1,390 cps	1,220,714 cps	168,277 cps	11,077 cps
Intensity per Run 1	283,849.5 cps	0.0 cps	1,834.9 cps	5,793.3 cps	1,336.1 cps	1,400.1 cps	1,184,977.2 cps	164,883.2 cps	10,640.5 cps
Intensity per Run 2	281,979.1 cps	36.0 cps	1,657.2 cps	5,869.4 cps	1,268.1 cps	1,400.1 cps	1,234,995.6 cps	172,731.7 cps	11,297.1 cps
Intensity per Run 3	281,293.4 cps	32.0 cps	1,815.2 cps	6,193.5 cps	1,492.1 cps	1,370.1 cps	1,242,168.3 cps	167,214.9 cps	11,293.1 cps
Intensity RSD	0.5 %	87.1 %	5.5 %	3.6 %	8.4 %	1.2 %	2.6 %	2.4 %	3.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.323 ppb	2.927 ppb	2.954 ppb	-0.068 ppb	-0.014 ppb	1.138 ppb	16.995 ppb	12.404 ppb	
Concentration per Run 1	0.312 ppb	2.898 ppb	2.832 ppb	-0.066 ppb	-0.014 ppb	1.027 ppb	16.321 ppb	12.190 ppb	
Concentration per Run 2	0.330 ppb	2.878 ppb	2.987 ppb	-0.069 ppb	-0.013 ppb	1.118 ppb	17.431 ppb	12.096 ppb	
Concentration per Run 3	0.328 ppb	3.005 ppb	3.043 ppb	-0.068 ppb	-0.014 ppb	1.270 ppb	17.234 ppb	12.926 ppb	
Concentration RSD	3.1 %	2.3 %	3.7 %	2.3 %	5.5 %	10.8 %	3.5 %	3.7 %	
Intensity average	15,662 cps	44,897 cps	6,914 cps	2,095 cps	1,681 cps	19,888 cps	19,960 cps	72,997 cps	59 cps
Intensity per Run 1	15,197.3 cps	44,250.4 cps	6,701.8 cps	2,136.2 cps	1,684.1 cps	19,142.7 cps	19,234.9 cps	71,834.1 cps	61.0 cps
Intensity per Run 2	15,946.2 cps	44,511.2 cps	6,978.0 cps	2,048.2 cps	1,692.1 cps	20,080.2 cps	20,444.8 cps	71,564.4 cps	61.0 cps
Intensity per Run 3	15,842.1 cps	45,928.4 cps	7,062.0 cps	2,100.2 cps	1,668.1 cps	20,440.7 cps	20,200.4 cps	75,592.1 cps	54.0 cps
Intensity RSD	2.6 %	2.0 %	2.7 %	2.1 %	0.7 %	3.4 %	3.2 %	3.1 %	6.9 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	-0.019 ppb	N/A	0.094 ppb			0.773 ppb		98.980 %	0.055 ppb
Concentration per Run 1	-0.190 ppb	N/A	0.092 ppb			1.249 ppb		98.287 %	0.046 ppb
Concentration per Run 2	0.282 ppb	N/A	0.081 ppb			-0.181 ppb		99.391 %	0.058 ppb
Concentration per Run 3	-0.148 ppb	N/A	0.110 ppb			1.251 ppb		99.260 %	0.060 ppb
Concentration RSD	1,380.8 %	N/A	15.8 %			106.9 %		0.6 %	13.6 %
Intensity average	3,553 cps	87 cps	12 cps	5,816 cps	4,931 cps	-323 cps	5,159 cps	578,814 cps	911 cps
Intensity per Run 1	3,023.3 cps	100.0 cps	10.7 cps	5,572.2 cps	4,118.7 cps	-240.3 cps	4,279.7 cps	574,765.9 cps	812.0 cps
Intensity per Run 2	4,500.8 cps	80.0 cps	6.9 cps	5,838.4 cps	6,470.7 cps	-488.4 cps	6,803.9 cps	581,221.9 cps	952.0 cps
Intensity per Run 3	3,136.2 cps	80.0 cps	17.2 cps	6,037.5 cps	4,202.7 cps	-239.3 cps	4,394.8 cps	580,453.2 cps	968.0 cps
Intensity RSD	23.1 %	13.3 %	44.8 %	4.0 %	27.1 %	44.5 %	27.6 %	0.6 %	9.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.056 ppb	0.050 ppb	0.053 ppb	0.053 ppb	0.018 ppm		0.054 ppb	0.002 ppb	0.037 ppb
Concentration per Run 1	0.046 ppb	0.038 ppb	0.035 ppb	0.040 ppb	0.017 ppm		0.054 ppb	0.002 ppb	0.020 ppb
Concentration per Run 2	0.056 ppb	0.054 ppb	0.053 ppb	0.054 ppb	0.018 ppm		0.048 ppb	0.002 ppb	0.067 ppb
Concentration per Run 3	0.067 ppb	0.059 ppb	0.071 ppb	0.066 ppb	0.018 ppm		0.058 ppb	0.002 ppb	0.025 ppb
Concentration RSD	18.4 %	22.6 %	34.2 %	24.2 %	0.4 %		9.9 %	9.8 %	69.0 %
Intensity average	1,491 cps	1,533 cps	935 cps	2,394 cps	1,560,284 cps	624 cps	144 cps	208 cps	29 cps
Intensity per Run 1	1,276.1 cps	1,248.1 cps	696.0 cps	1,920.2 cps	1,553,490.4 cps	616.0 cps	144.0 cps	200.0 cps	16.0 cps
Intensity per Run 2	1,500.1 cps	1,624.1 cps	940.0 cps	2,448.2 cps	1,566,285.3 cps	664.0 cps	140.0 cps	204.0 cps	52.0 cps
Intensity per Run 3	1,696.1 cps	1,728.1 cps	1,168.1 cps	2,812.3 cps	1,561,076.5 cps	592.0 cps	148.0 cps	220.0 cps	20.0 cps
Intensity RSD	14.1 %	16.5 %	25.3 %	18.7 %	0.4 %	5.9 %	2.8 %	5.1 %	67.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.002 ppb	0.036 ppb	0.034 ppb	89.580 %	0.034 ppb	0.060 ppb	0.063 ppb	192.017 ppb	193.003 ppb
Concentration per Run 1	0.002 ppb	0.040 ppb	0.034 ppb	89.018 %	0.031 ppb	0.058 ppb	0.056 ppb	189.333 ppb	188.964 ppb
Concentration per Run 2	0.001 ppb	0.036 ppb	0.032 ppb	90.964 %	0.032 ppb	0.059 ppb	0.064 ppb	192.118 ppb	194.361 ppb
Concentration per Run 3	0.002 ppb	0.034 ppb	0.037 ppb	88.760 %	0.040 ppb	0.063 ppb	0.068 ppb	194.599 ppb	195.684 ppb
Concentration RSD	21.2 %	8.5 %	6.5 %	1.3 %	14.2 %	4.6 %	9.5 %	1.4 %	1.8 %
Intensity average	193 cps	443 cps	1,034 cps	801,997 cps	1,519 cps	1,844 cps	1,536 cps	1,154,605 cps	2,118,431 cps
Intensity per Run 1	216.0 cps	480.0 cps	1,009.6 cps	796,960.6 cps	1,432.1 cps	1,780.1 cps	1,388.1 cps	1,116,416.6 cps	2,031,076.7 cps
Intensity per Run 2	168.0 cps	440.0 cps	996.2 cps	814,380.2 cps	1,484.1 cps	1,840.1 cps	1,588.1 cps	1,177,287.9 cps	2,174,667.5 cps
Intensity per Run 3	196.0 cps	408.0 cps	1,096.0 cps	794,649.9 cps	1,640.1 cps	1,912.1 cps	1,632.1 cps	1,170,111.5 cps	2,149,547.9 cps
Intensity RSD	12.5 %	8.1 %	5.2 %	1.3 %	7.1 %	3.6 %	8.5 %	2.9 %	3.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.039 %			0.014 ppm	0.040 ppb	0.040 ppb	0.007 ppb
Concentration per Run 1			89.847 %			0.014 ppm	0.038 ppb	0.038 ppb	0.007 ppb
Concentration per Run 2			95.231 %			0.013 ppm	0.040 ppb	0.040 ppb	0.008 ppb
Concentration per Run 3			94.040 %			0.014 ppm	0.041 ppb	0.041 ppb	0.006 ppb
Concentration RSD			3.0 %			1.0 %	4.3 %	4.4 %	14.2 %
Intensity average	2,492 cps	4,370 cps	2,924,486 cps	5,176 cps	5,516 cps	3,071,280 cps	4,189 cps	10,065 cps	1,095 cps
Intensity per Run 1	2,424.2 cps	4,044.7 cps	2,824,136.9 cps	5,157.1 cps	5,353.2 cps	3,105,774.0 cps	3,952.6 cps	9,513.6 cps	1,096.0 cps
Intensity per Run 2	2,572.3 cps	4,452.8 cps	2,993,373.8 cps	5,189.1 cps	5,373.2 cps	3,043,495.2 cps	4,267.7 cps	10,217.2 cps	1,157.1 cps
Intensity per Run 3	2,480.3 cps	4,612.9 cps	2,955,947.2 cps	5,181.1 cps	5,821.4 cps	3,064,571.1 cps	4,346.8 cps	10,464.4 cps	1,033.0 cps
Intensity RSD	3.0 %	6.7 %	3.0 %	0.3 %	4.8 %	1.0 %	5.0 %	4.9 %	5.7 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.005 ppb	0.006 ppb	86.746 %
Concentration per Run 1	0.005 ppb	0.007 ppb	84.932 %
Concentration per Run 2	0.005 ppb	0.007 ppb	87.919 %
Concentration per Run 3	0.005 ppb	0.005 ppb	87.386 %
Concentration RSD	5.9 %	14.3 %	1.8 %
Intensity average	861 cps	4,252 cps	2,223,239 cps
Intensity per Run 1	828.0 cps	4,332.3 cps	2,176,749.6 cps
Intensity per Run 2	892.0 cps	4,401.3 cps	2,253,319.6 cps
Intensity per Run 3	864.0 cps	4,021.3 cps	2,239,647.6 cps
Intensity RSD	3.7 %	4.8 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-002 Analysis: 10/30/2019 15:07:05 Sample Type UNKNOWN
Comment 16MW8 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	97.670 %	99.035 %	0.295 ppb	1.906 ppb	2.123 ppb	N/A	4,650.890 ppb	5,364.782 ppb	5,404.631 ppb	5,368.037 ppb
Concentration per Run 1	96.866 %	99.682 %	0.322 ppb	2.051 ppb	1.931 ppb	N/A	4,488.782 ppb	5,185.595 ppb	5,273.165 ppb	5,239.781 ppb
Concentration per Run 2	97.700 %	98.527 %	0.278 ppb	1.893 ppb	1.976 ppb	N/A	4,671.193 ppb	5,390.447 ppb	5,396.662 ppb	5,360.515 ppb
Concentration per Run 3	98.443 %	98.895 %	0.284 ppb	1.775 ppb	2.462 ppb	N/A	4,792.695 ppb	5,518.302 ppb	5,544.068 ppb	5,503.815 ppb
Concentration RSD	0.8 %	0.6 %	8.1 %	7.3 %	13.9 %	N/A	3.3 %	3.1 %	2.5 %	2.5 %
Intensity average	13,659,429 cps	31,887 cps	50 cps	35 cps	224 cps	2,197 cps	8,715,031 cps	4,567,545 cps	965,683 cps	1,273,905 cps
Intensity per Run 1	13,546,974.6 cps	32,095.7 cps	54.5 cps	38.0 cps	207.0 cps	1,910.2 cps	8,482,679.3 cps	4,452,665.3 cps	950,309.0 cps	1,254,309.0 cps
Intensity per Run 2	13,663,712.7 cps	31,723.7 cps	47.0 cps	35.0 cps	209.5 cps	2,310.2 cps	8,799,310.7 cps	4,616,481.7 cps	970,536.6 cps	1,281,201.5 cps
Intensity per Run 3	13,767,598.7 cps	31,842.0 cps	48.0 cps	33.0 cps	256.5 cps	2,370.2 cps	8,863,103.3 cps	4,633,487.0 cps	976,202.5 cps	1,286,203.1 cps
Intensity RSD	0.8 %	0.6 %	8.2 %	7.1 %	12.4 %	11.4 %	2.3 %	2.2 %	1.4 %	1.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	48.694 ppb		0.981 ppm	3,678.644 ppb	8,532.194 ppb	8,920.113 ppb	8,686.700 ppb	91.943 %	91.519 %	0.918 ppb
Concentration per Run 1	46.882 ppb		0.963 ppm	3,640.009 ppb	8,128.840 ppb	8,716.434 ppb	8,498.297 ppb	91.643 %	92.483 %	0.661 ppb
Concentration per Run 2	49.546 ppb		0.969 ppm	3,648.099 ppb	8,334.251 ppb	9,263.045 ppb	8,599.715 ppb	89.730 %	93.289 %	0.936 ppb
Concentration per Run 3	49.654 ppb		1.010 ppm	3,747.824 ppb	9,133.492 ppb	8,780.861 ppb	8,962.086 ppb	94.456 %	88.786 %	1.157 ppb
Concentration RSD	3.2 %		2.6 %	1.6 %	6.2 %	3.3 %	2.8 %	2.6 %	2.6 %	27.0 %
Intensity average	14,549 cps	78,251 cps	6,233,569 cps	2,876,920 cps	31,837 cps	21,891,783 cps	385,248 cps	6,328,425 cps	268,686 cps	323 cps
Intensity per Run 1	14,148.1 cps	77,892.1 cps	6,183,329.5 cps	2,875,685.7 cps	30,677.8 cps	21,329,468.0 cps	381,001.8 cps	6,307,782.6 cps	271,513.7 cps	236.0 cps
Intensity per Run 2	14,908.9 cps	77,731.6 cps	6,238,442.7 cps	2,897,572.6 cps	31,690.4 cps	22,208,074.2 cps	388,686.4 cps	6,176,088.0 cps	273,881.5 cps	336.0 cps
Intensity per Run 3	14,588.6 cps	79,129.8 cps	6,278,935.3 cps	2,857,502.7 cps	33,144.1 cps	22,137,807.2 cps	386,056.0 cps	6,501,403.0 cps	260,662.0 cps	396.0 cps
Intensity RSD	2.6 %	1.0 %	0.8 %	0.7 %	3.9 %	2.2 %	1.0 %	2.6 %	2.6 %	25.1 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.188 ppb	0.343 ppb	0.537 ppb	N/A	787.557 ppb	211.546 ppb	212.213 ppb	1.783 ppb	4.020 ppb	4.605 ppb
Concentration per Run 1	0.172 ppb	0.328 ppb	0.502 ppb	N/A	759.478 ppb	207.199 ppb	206.502 ppb	1.741 ppb	3.869 ppb	4.538 ppb
Concentration per Run 2	0.208 ppb	0.337 ppb	0.592 ppb	N/A	781.388 ppb	205.437 ppb	211.594 ppb	1.772 ppb	4.050 ppb	4.489 ppb
Concentration per Run 3	0.185 ppb	0.363 ppb	0.518 ppb	N/A	821.804 ppb	222.002 ppb	218.543 ppb	1.836 ppb	4.140 ppb	4.787 ppb
Concentration RSD	9.6 %	5.4 %	9.0 %	N/A	4.0 %	4.3 %	2.8 %	2.7 %	3.4 %	3.5 %
Intensity average	3,874 cps	8,946 cps	2,712 cps	2,800 cps	11,911,514 cps	4,316,375 cps	139,966 cps	81,100 cps	63,833 cps	9,959 cps
Intensity per Run 1	3,713.7 cps	8,755.1 cps	2,640.3 cps	2,600.3 cps	11,598,349.5 cps	4,269,323.7 cps	137,718.8 cps	80,055.9 cps	62,234.7 cps	9,924.0 cps
Intensity per Run 2	4,191.3 cps	9,015.3 cps	2,904.3 cps	2,550.3 cps	11,996,717.5 cps	4,254,643.6 cps	142,318.3 cps	82,189.4 cps	64,309.2 cps	9,867.9 cps
Intensity per Run 3	3,715.8 cps	9,067.3 cps	2,592.3 cps	3,250.4 cps	12,139,476.0 cps	4,425,157.8 cps	139,862.3 cps	81,054.3 cps	64,956.5 cps	10,084.1 cps
Intensity RSD	7.1 %	1.9 %	6.2 %	13.9 %	2.4 %	2.2 %	1.6 %	1.3 %	2.2 %	1.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	13.816 ppb	14.284 ppb	27.721 ppb	35.609 ppb	32.884 ppb		-0.057 ppb	N/A	0.134 ppb	
Concentration per Run 1	13.331 ppb	14.026 ppb	27.041 ppb	34.506 ppb	32.075 ppb		-0.220 ppb	N/A	0.172 ppb	
Concentration per Run 2	13.835 ppb	14.074 ppb	28.056 ppb	35.562 ppb	32.722 ppb		0.252 ppb	N/A	0.081 ppb	
Concentration per Run 3	14.283 ppb	14.753 ppb	28.066 ppb	36.759 ppb	33.855 ppb		-0.203 ppb	N/A	0.150 ppb	
Concentration RSD	3.4 %	2.8 %	2.1 %	3.2 %	2.7 %		469.0 %	N/A	35.4 %	
Intensity average	410,734 cps	203,654 cps	181,251 cps	40,669 cps	181,710 cps	245 cps	3,667 cps	143 cps	28 cps	3,906 cps
Intensity per Run 1	399,825.6 cps	202,208.1 cps	177,346.6 cps	39,795.3 cps	178,913.2 cps	252.0 cps	3,157.7 cps	170.0 cps	42.0 cps	3,749.6 cps
Intensity per Run 2	415,990.9 cps	204,665.0 cps	183,668.6 cps	41,011.3 cps	182,544.1 cps	235.0 cps	4,648.2 cps	120.0 cps	7.6 cps	3,872.6 cps
Intensity per Run 3	416,384.1 cps	204,089.9 cps	182,738.9 cps	41,199.9 cps	183,672.4 cps	247.0 cps	3,196.0 cps	140.0 cps	33.1 cps	4,095.7 cps
Intensity RSD	2.3 %	0.6 %	1.9 %	1.9 %	1.4 %	3.6 %	23.2 %	17.6 %	64.9 %	4.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		1.577 ppb		109.752 %	0.070 ppb	0.054 ppb	0.058 ppb	0.061 ppb	0.056 ppb	0.019 ppm
Concentration per Run 1		2.339 ppb		110.351 %	0.056 ppb	0.038 ppb	0.050 ppb	0.050 ppb	0.049 ppb	0.019 ppm
Concentration per Run 2		1.178 ppb		109.880 %	0.065 ppb	0.059 ppb	0.057 ppb	0.068 ppb	0.057 ppb	0.019 ppm
Concentration per Run 3		1.213 ppb		109.025 %	0.088 ppb	0.063 ppb	0.066 ppb	0.066 ppb	0.062 ppb	0.019 ppm
Concentration RSD		41.9 %		0.6 %	23.6 %	25.2 %	13.6 %	16.7 %	11.1 %	0.4 %
Intensity average	4,763 cps	-200 cps	5,009 cps	641,811 cps	1,181 cps	1,576 cps	1,860 cps	1,143 cps	2,715 cps	1,672,852 cps
Intensity per Run 1	4,004.6 cps	-63.7 cps	4,106.7 cps	645,312.5 cps	1,020.0 cps	1,248.1 cps	1,692.1 cps	980.0 cps	2,480.3 cps	1,670,071.8 cps
Intensity per Run 2	6,266.6 cps	-271.4 cps	6,585.8 cps	642,559.7 cps	1,132.1 cps	1,700.1 cps	1,844.1 cps	1,240.1 cps	2,748.3 cps	1,668,390.6 cps
Intensity per Run 3	4,018.7 cps	-263.8 cps	4,333.8 cps	637,560.2 cps	1,392.1 cps	1,780.1 cps	2,044.2 cps	1,208.1 cps	2,916.3 cps	1,680,093.0 cps
Intensity RSD	27.3 %	59.0 %	27.4 %	0.6 %	16.2 %	18.2 %	9.5 %	12.4 %	8.1 %	0.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.448 ppb	1.007 ppb	0.389 ppb	0.975 ppb	0.466 ppb	0.458 ppb	95.633 %	0.123 ppb	0.131 ppb
Concentration per Run 1		0.343 ppb	0.973 ppb	0.449 ppb	0.936 ppb	0.452 ppb	0.448 ppb	95.735 %	0.120 ppb	0.126 ppb
Concentration per Run 2		0.548 ppb	1.023 ppb	0.360 ppb	1.010 ppb	0.469 ppb	0.469 ppb	95.840 %	0.120 ppb	0.138 ppb
Concentration per Run 3		0.453 ppb	1.025 ppb	0.357 ppb	0.978 ppb	0.479 ppb	0.457 ppb	95.324 %	0.131 ppb	0.128 ppb
Concentration RSD		22.8 %	2.9 %	13.4 %	3.8 %	2.8 %	2.3 %	0.3 %	5.0 %	5.2 %
Intensity average	771 cps	573 cps	77,246 cps	315 cps	76,238 cps	6,005 cps	14,270 cps	856,186 cps	3,898 cps	3,845 cps
Intensity per Run 1	784.0 cps	464.0 cps	74,706.8 cps	364.0 cps	73,403.0 cps	5,833.4 cps	13,973.5 cps	857,094.3 cps	3,816.6 cps	3,716.6 cps
Intensity per Run 2	748.0 cps	680.0 cps	78,626.9 cps	292.0 cps	79,170.3 cps	6,045.5 cps	14,634.5 cps	858,040.8 cps	3,808.6 cps	4,060.7 cps
Intensity per Run 3	780.0 cps	576.0 cps	78,405.4 cps	288.0 cps	76,139.3 cps	6,137.5 cps	14,203.0 cps	853,422.1 cps	4,068.7 cps	3,756.6 cps
Intensity RSD	2.6 %	18.8 %	2.9 %	13.6 %	3.8 %	2.6 %	2.4 %	0.3 %	3.8 %	4.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.135 ppb	130.543 ppb	131.083 ppb			96.135 %			0.014 ppm	0.092 ppb
Concentration per Run 1	0.123 ppb	127.858 ppb	125.875 ppb			95.517 %			0.014 ppm	0.091 ppb
Concentration per Run 2	0.144 ppb	130.661 ppb	132.553 ppb			96.389 %			0.014 ppm	0.094 ppb
Concentration per Run 3	0.137 ppb	133.110 ppb	134.820 ppb			96.498 %			0.014 ppm	0.092 ppb
Concentration RSD	8.0 %	2.0 %	3.5 %			0.6 %			1.5 %	2.1 %
Intensity average	3,171 cps	825,502 cps	1,510,733 cps	13,146 cps	16,438 cps	3,021,787 cps	16,701 cps	17,713 cps	3,184,015 cps	9,186 cps
Intensity per Run 1	2,920.4 cps	806,609.4 cps	1,446,752.3 cps	12,782.6 cps	15,902.2 cps	3,002,360.9 cps	16,631.1 cps	17,468.3 cps	3,161,330.6 cps	8,945.2 cps
Intensity per Run 2	3,388.5 cps	828,205.4 cps	1,531,282.3 cps	13,118.9 cps	16,615.1 cps	3,029,789.0 cps	16,539.0 cps	17,840.8 cps	3,153,026.8 cps	9,319.5 cps
Intensity per Run 3	3,204.4 cps	841,690.6 cps	1,554,164.8 cps	13,535.4 cps	16,795.4 cps	3,033,212.6 cps	16,931.5 cps	17,828.7 cps	3,237,686.4 cps	9,294.5 cps
Intensity RSD	7.4 %	2.1 %	3.7 %	2.9 %	2.9 %	0.6 %	1.2 %	1.2 %	1.5 %	2.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.090 ppb	0.689 ppb	0.680 ppb	0.677 ppb	95.534 %
Concentration per Run 1	0.087 ppb	0.674 ppb	0.684 ppb	0.667 ppb	94.279 %
Concentration per Run 2	0.092 ppb	0.699 ppb	0.682 ppb	0.687 ppb	94.873 %
Concentration per Run 3	0.092 ppb	0.694 ppb	0.676 ppb	0.675 ppb	97.448 %
Concentration RSD	3.3 %	1.9 %	0.6 %	1.5 %	1.8 %
Intensity average	21,858 cps	48,949 cps	42,471 cps	194,339 cps	2,448,466 cps
Intensity per Run 1	20,844.4 cps	47,281.3 cps	42,127.1 cps	189,093.7 cps	2,416,314.4 cps
Intensity per Run 2	22,166.7 cps	49,340.2 cps	42,295.6 cps	196,018.4 cps	2,431,546.2 cps
Intensity per Run 3	22,564.4 cps	50,224.8 cps	42,989.9 cps	197,904.5 cps	2,497,538.3 cps
Intensity RSD	4.1 %	3.1 %	1.1 %	2.4 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-003 Analysis: 10/30/2019 15:13:09 Sample Type UNKNOWN
Comment 16MW9 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	97.970 %	100.035 %	-0.002 ppb	7.047 ppb	7.473 ppb	N/A	5,350.293 ppb	44,950.996 ppb	44,808.832 ppb
Concentration per Run 1	96.257 %	100.796 %	0.009 ppb	6.764 ppb	7.368 ppb	N/A	5,318.445 ppb	44,047.459 ppb	43,462.454 ppb
Concentration per Run 2	98.563 %	99.998 %	-0.009 ppb	7.059 ppb	7.463 ppb	N/A	5,289.737 ppb	44,610.931 ppb	43,961.277 ppb
Concentration per Run 3	99.091 %	99.310 %	-0.006 ppb	7.317 ppb	7.588 ppb	N/A	5,442.697 ppb	46,194.598 ppb	47,002.765 ppb
Concentration RSD	1.5 %	0.7 %	464.6 %	3.9 %	1.5 %	N/A	1.5 %	2.5 %	4.3 %
Intensity average	13,701,461 cps	32,209 cps	3 cps	123 cps	762 cps	2,814 cps	10,288,344 cps	39,304,286 cps	8,228,679 cps
Intensity per Run 1	13,461,847.1 cps	32,454.1 cps	5.0 cps	118.5 cps	756.0 cps	2,890.3 cps	10,251,903.7 cps	38,596,844.2 cps	7,997,189.9 cps
Intensity per Run 2	13,784,365.3 cps	32,197.4 cps	2.0 cps	123.0 cps	763.0 cps	2,940.3 cps	10,280,270.4 cps	39,448,951.7 cps	8,171,022.7 cps
Intensity per Run 3	13,858,169.1 cps	31,975.9 cps	2.5 cps	126.0 cps	766.5 cps	2,610.3 cps	10,332,858.8 cps	39,867,060.8 cps	8,517,823.3 cps
Intensity RSD	1.5 %	0.7 %	50.8 %	3.1 %	0.7 %	6.3 %	0.4 %	1.6 %	3.2 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	44,527.808 ppb	1.057 ppb		1.032 ppm	3,688.908 ppb	114,646.600 ppb	122,836.304 ppb	116,979.781 ppb	97.253 %
Concentration per Run 1	43,941.170 ppb	0.952 ppb		1.024 ppm	3,653.967 ppb	112,576.324 ppb	122,284.626 ppb	114,695.017 ppb	96.314 %
Concentration per Run 2	44,479.499 ppb	0.954 ppb		1.010 ppm	3,617.840 ppb	112,536.859 ppb	123,820.733 ppb	114,708.649 ppb	95.982 %
Concentration per Run 3	45,162.754 ppb	1.265 ppb		1.061 ppm	3,794.915 ppb	118,826.617 ppb	122,403.552 ppb	121,535.677 ppb	99.463 %
Concentration RSD	1.4 %	17.0 %		2.6 %	2.5 %	3.2 %	0.7 %	3.4 %	2.0 %
Intensity average	10,873,923 cps	810 cps	124,622 cps	6,810,079 cps	3,007,815 cps	447,230 cps	317,694,477 cps	5,428,428 cps	6,693,909 cps
Intensity per Run 1	10,745,889.5 cps	780.0 cps	122,810.9 cps	6,753,326.0 cps	2,971,853.5 cps	437,470.5 cps	313,164,367.5 cps	5,300,390.1 cps	6,629,278.4 cps
Intensity per Run 2	10,998,472.5 cps	790.0 cps	125,305.3 cps	6,789,304.5 cps	3,013,472.3 cps	449,621.2 cps	316,227,710.8 cps	5,455,596.7 cps	6,606,431.3 cps
Intensity per Run 3	10,877,408.0 cps	860.0 cps	125,750.7 cps	6,887,605.3 cps	3,038,120.4 cps	454,597.7 cps	323,691,354.0 cps	5,529,296.2 cps	6,846,018.6 cps
Intensity RSD	1.2 %	5.4 %	1.3 %	1.0 %	1.1 %	2.0 %	1.7 %	2.2 %	2.0 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	96.012 %	0.077 ppb	-0.058 ppb	0.009 ppb	-0.122 ppb	N/A	290.038 ppb	1,507.440 ppb	1,419.620 ppb
Concentration per Run 1	95.546 %	0.041 ppb	-0.055 ppb	0.008 ppb	-0.140 ppb	N/A	280.047 ppb	1,466.921 ppb	1,394.673 ppb
Concentration per Run 2	98.430 %	0.114 ppb	-0.060 ppb	-0.003 ppb	-0.138 ppb	N/A	288.281 ppb	1,497.150 ppb	1,393.840 ppb
Concentration per Run 3	94.061 %	0.075 ppb	-0.059 ppb	0.022 ppb	-0.087 ppb	N/A	301.787 ppb	1,558.247 ppb	1,470.346 ppb
Concentration RSD	2.3 %	48.2 %	4.5 %	143.9 %	24.4 %	N/A	3.8 %	3.1 %	3.1 %
Intensity average	281,876 cps	29 cps	896 cps	2,648 cps	929 cps	1,000 cps	4,363,057 cps	30,188,933 cps	975,818 cps
Intensity per Run 1	280,506.1 cps	16.0 cps	929.7 cps	2,616.3 cps	876.0 cps	1,060.0 cps	4,192,545.6 cps	29,236,021.3 cps	954,380.9 cps
Intensity per Run 2	288,974.8 cps	44.0 cps	893.9 cps	2,472.2 cps	904.0 cps	880.0 cps	4,417,965.3 cps	30,524,798.8 cps	982,607.8 cps
Intensity per Run 3	276,146.0 cps	28.0 cps	865.0 cps	2,856.3 cps	1,008.0 cps	1,060.1 cps	4,478,658.8 cps	30,805,977.9 cps	990,463.9 cps
Intensity RSD	2.3 %	47.9 %	3.6 %	7.3 %	7.5 %	10.4 %	3.5 %	2.8 %	1.9 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	4.355 ppb	11.523 ppb	10.836 ppb	0.358 ppb	0.452 ppb	1.495 ppb	46.204 ppb	34.430 ppb	
Concentration per Run 1	4.257 ppb	11.226 ppb	10.225 ppb	0.347 ppb	0.446 ppb	1.394 ppb	45.160 ppb	33.925 ppb	
Concentration per Run 2	4.340 ppb	11.699 ppb	10.799 ppb	0.369 ppb	0.460 ppb	1.556 ppb	46.503 ppb	34.395 ppb	
Concentration per Run 3	4.469 ppb	11.644 ppb	11.485 ppb	0.356 ppb	0.451 ppb	1.533 ppb	46.949 ppb	34.971 ppb	
Concentration RSD	2.4 %	2.2 %	5.8 %	3.1 %	1.6 %	5.8 %	2.0 %	1.5 %	
Intensity average	207,550 cps	134,325 cps	20,235 cps	13,969 cps	8,594 cps	22,007 cps	48,668 cps	176,305 cps	125 cps
Intensity per Run 1	201,919.4 cps	130,409.0 cps	19,090.6 cps	13,603.4 cps	8,458.9 cps	21,690.8 cps	47,369.8 cps	172,978.5 cps	130.0 cps
Intensity per Run 2	212,074.5 cps	135,551.3 cps	20,452.7 cps	14,488.4 cps	8,927.2 cps	22,344.0 cps	49,481.9 cps	177,865.0 cps	134.0 cps
Intensity per Run 3	208,656.0 cps	137,015.3 cps	21,161.9 cps	13,815.7 cps	8,394.8 cps	21,987.4 cps	49,152.6 cps	178,072.6 cps	111.0 cps
Intensity RSD	2.5 %	2.6 %	5.2 %	3.3 %	3.4 %	1.5 %	2.3 %	1.6 %	9.8 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.755 ppb	N/A	0.032 ppb			0.637 ppb		91.928 %	0.097 ppb
Concentration per Run 1	1.578 ppb	N/A	0.052 ppb			1.414 ppb		91.431 %	0.087 ppb
Concentration per Run 2	2.070 ppb	N/A	0.034 ppb			0.722 ppb		91.481 %	0.091 ppb
Concentration per Run 3	1.618 ppb	N/A	0.011 ppb			-0.227 ppb		92.871 %	0.113 ppb
Concentration RSD	15.6 %	N/A	63.3 %			129.4 %		0.9 %	14.5 %
Intensity average	8,822 cps	117 cps	-9 cps	8,547 cps	4,926 cps	-345 cps	5,196 cps	537,576 cps	1,293 cps
Intensity per Run 1	8,393.0 cps	30.0 cps	-3.0 cps	8,180.7 cps	4,008.7 cps	-217.8 cps	4,338.8 cps	534,670.0 cps	1,188.1 cps
Intensity per Run 2	9,748.9 cps	90.0 cps	-8.8 cps	8,765.1 cps	6,525.8 cps	-331.4 cps	6,697.8 cps	534,963.2 cps	1,224.1 cps
Intensity per Run 3	8,324.5 cps	230.0 cps	-16.6 cps	8,694.0 cps	4,242.7 cps	-485.8 cps	4,552.9 cps	543,094.5 cps	1,468.1 cps
Intensity RSD	9.1 %	88.0 %	71.5 %	3.7 %	28.2 %	39.0 %	25.1 %	0.9 %	11.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.074 ppb	0.075 ppb	0.074 ppb	0.076 ppb	0.018 ppm		-0.009 ppb	0.014 ppb	0.018 ppb
Concentration per Run 1	0.069 ppb	0.060 ppb	0.063 ppb	0.069 ppb	0.018 ppm		-0.011 ppb	0.013 ppb	0.015 ppb
Concentration per Run 2	0.073 ppb	0.079 ppb	0.074 ppb	0.079 ppb	0.017 ppm		-0.023 ppb	0.015 ppb	0.026 ppb
Concentration per Run 3	0.081 ppb	0.086 ppb	0.086 ppb	0.080 ppb	0.017 ppm		0.007 ppb	0.014 ppb	0.015 ppb
Concentration RSD	8.5 %	18.1 %	15.7 %	8.2 %	0.9 %		171.1 %	5.7 %	34.5 %
Intensity average	1,744 cps	1,955 cps	1,151 cps	3,027 cps	1,565,717 cps	797 cps	81 cps	1,089 cps	15 cps
Intensity per Run 1	1,632.1 cps	1,644.1 cps	1,008.0 cps	2,792.3 cps	1,582,196.1 cps	796.0 cps	80.0 cps	1,036.0 cps	12.0 cps
Intensity per Run 2	1,720.1 cps	2,028.2 cps	1,144.1 cps	3,120.4 cps	1,556,509.7 cps	804.0 cps	68.0 cps	1,132.1 cps	20.0 cps
Intensity per Run 3	1,880.1 cps	2,192.2 cps	1,300.1 cps	3,168.4 cps	1,558,445.0 cps	792.0 cps	96.0 cps	1,100.1 cps	12.0 cps
Intensity RSD	7.2 %	14.4 %	12.7 %	6.8 %	0.9 %	0.8 %	17.3 %	4.5 %	31.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.014 ppb	0.012 ppb	0.012 ppb	90.044 %	0.024 ppb	0.057 ppb	0.059 ppb	545.409 ppb	550.267 ppb
Concentration per Run 1	0.014 ppb	0.008 ppb	0.012 ppb	91.083 %	0.018 ppb	0.052 ppb	0.056 ppb	526.368 ppb	527.525 ppb
Concentration per Run 2	0.014 ppb	0.011 ppb	0.011 ppb	89.984 %	0.024 ppb	0.059 ppb	0.059 ppb	559.500 ppb	559.963 ppb
Concentration per Run 3	0.013 ppb	0.016 ppb	0.013 ppb	89.064 %	0.029 ppb	0.061 ppb	0.061 ppb	550.360 ppb	563.313 ppb
Concentration RSD	2.1 %	32.1 %	5.3 %	1.1 %	23.2 %	7.6 %	4.4 %	3.1 %	3.6 %
Intensity average	1,056 cps	145 cps	388 cps	806,146 cps	1,273 cps	1,768 cps	1,456 cps	3,257,417 cps	5,991,155 cps
Intensity per Run 1	1,084.0 cps	108.0 cps	393.1 cps	815,453.6 cps	1,152.1 cps	1,668.1 cps	1,420.1 cps	3,205,366.4 cps	5,861,139.2 cps
Intensity per Run 2	1,056.0 cps	136.0 cps	369.7 cps	805,608.6 cps	1,280.1 cps	1,800.1 cps	1,460.1 cps	3,313,858.0 cps	6,041,848.4 cps
Intensity per Run 3	1,028.0 cps	192.0 cps	402.8 cps	797,377.1 cps	1,388.1 cps	1,836.1 cps	1,488.1 cps	3,253,025.5 cps	6,070,477.1 cps
Intensity RSD	2.7 %	29.4 %	4.4 %	1.1 %	9.3 %	5.0 %	2.3 %	1.7 %	1.9 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			91.228 %			0.013 ppm	0.056 ppb	0.056 ppb	0.016 ppb
Concentration per Run 1			93.823 %			0.013 ppm	0.053 ppb	0.054 ppb	0.016 ppb
Concentration per Run 2			89.582 %			0.013 ppm	0.058 ppb	0.058 ppb	0.015 ppb
Concentration per Run 3			90.280 %			0.013 ppm	0.056 ppb	0.057 ppb	0.015 ppb
Concentration RSD			2.5 %			1.4 %	4.4 %	4.0 %	0.4 %
Intensity average	1,160 cps	851 cps	2,867,568 cps	563 cps	356 cps	3,018,623 cps	5,307 cps	12,743 cps	1,590 cps
Intensity per Run 1	1,196.1 cps	836.0 cps	2,949,138.8 cps	572.0 cps	336.0 cps	3,039,303.7 cps	5,120.0 cps	12,245.0 cps	1,595.1 cps
Intensity per Run 2	1,136.1 cps	844.0 cps	2,815,811.2 cps	564.0 cps	392.0 cps	2,968,839.7 cps	5,467.2 cps	13,006.8 cps	1,584.1 cps
Intensity per Run 3	1,148.1 cps	872.0 cps	2,837,753.6 cps	552.0 cps	340.0 cps	3,047,726.2 cps	5,335.1 cps	12,975.7 cps	1,591.1 cps
Intensity RSD	2.7 %	2.2 %	2.5 %	1.8 %	8.8 %	1.4 %	3.3 %	3.4 %	0.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.013 ppb	0.015 ppb	83.434 %
Concentration per Run 1	0.011 ppb	0.014 ppb	83.297 %
Concentration per Run 2	0.013 ppb	0.015 ppb	83.299 %
Concentration per Run 3	0.015 ppb	0.015 ppb	83.705 %
Concentration RSD	17.0 %	3.5 %	0.3 %
Intensity average	1,253 cps	6,141 cps	2,138,354 cps
Intensity per Run 1	1,144.1 cps	5,987.6 cps	2,134,843.2 cps
Intensity per Run 2	1,232.1 cps	6,228.6 cps	2,134,910.7 cps
Intensity per Run 3	1,384.1 cps	6,207.6 cps	2,145,306.6 cps
Intensity RSD	9.7 %	2.2 %	0.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-004 Analysis: 10/30/2019 15:19:12 Sample Type UNKNOWN
Comment 16WC1A Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	96.003 %	98.117 %	0.010 ppb	6.638 ppb	6.960 ppb	N/A	6,929.893 ppb	38,786.029 ppb	38,900.515 ppb
Concentration per Run 1	94.542 %	98.062 %	0.000 ppb	6.584 ppb	6.802 ppb	N/A	6,836.756 ppb	38,254.687 ppb	38,051.689 ppb
Concentration per Run 2	96.785 %	98.628 %	0.019 ppb	6.878 ppb	6.922 ppb	N/A	6,877.077 ppb	38,534.928 ppb	38,934.660 ppb
Concentration per Run 3	96.683 %	97.662 %	0.010 ppb	6.451 ppb	7.156 ppb	N/A	7,075.846 ppb	39,568.471 ppb	39,715.194 ppb
Concentration RSD	1.3 %	0.5 %	94.8 %	3.3 %	2.6 %	N/A	1.8 %	1.8 %	2.1 %
Intensity average	13,426,397 cps	31,592 cps	5 cps	114 cps	698 cps	2,594 cps	13,107,783 cps	33,378,840 cps	7,033,456 cps
Intensity per Run 1	13,221,957.5 cps	31,573.8 cps	3.5 cps	112.5 cps	681.5 cps	2,350.2 cps	12,905,092.7 cps	32,850,469.9 cps	6,864,414.6 cps
Intensity per Run 2	13,535,761.7 cps	31,756.3 cps	6.5 cps	118.0 cps	697.0 cps	2,730.3 cps	13,039,413.4 cps	33,237,194.6 cps	7,054,153.3 cps
Intensity per Run 3	13,521,470.8 cps	31,445.0 cps	5.0 cps	110.0 cps	714.5 cps	2,700.3 cps	13,378,841.8 cps	34,048,856.8 cps	7,181,799.3 cps
Intensity RSD	1.3 %	0.5 %	30.0 %	3.6 %	2.4 %	8.1 %	1.9 %	1.8 %	2.3 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	38,179.385 ppb	0.984 ppb		1.001 ppm	2,840.893 ppb	94,448.268 ppb	103,297.542 ppb	95,350.065 ppb	95.061 %
Concentration per Run 1	37,258.426 ppb	0.865 ppb		0.969 ppm	2,723.438 ppb	91,672.891 ppb	106,587.143 ppb	93,866.380 ppb	91.443 %
Concentration per Run 2	38,370.217 ppb	0.855 ppb		1.003 ppm	2,897.281 ppb	95,097.348 ppb	100,939.331 ppb	94,523.207 ppb	95.478 %
Concentration per Run 3	38,909.512 ppb	1.232 ppb		1.031 ppm	2,901.960 ppb	96,574.566 ppb	102,366.153 ppb	97,660.607 ppb	98.261 %
Concentration RSD	2.2 %	21.9 %		3.1 %	3.6 %	2.7 %	2.8 %	2.1 %	3.6 %
Intensity average	9,179,357 cps	777 cps	101,414 cps	6,518,051 cps	2,291,496 cps	364,036 cps	261,039,588 cps	4,372,763 cps	6,543,028 cps
Intensity per Run 1	8,936,801.0 cps	740.0 cps	96,561.8 cps	6,288,637.4 cps	2,189,715.9 cps	351,941.1 cps	259,396,548.5 cps	4,287,307.5 cps	6,294,006.2 cps
Intensity per Run 2	9,242,666.0 cps	740.0 cps	101,752.8 cps	6,533,412.5 cps	2,335,718.5 cps	366,152.2 cps	256,363,761.9 cps	4,329,575.4 cps	6,571,785.6 cps
Intensity per Run 3	9,358,604.7 cps	850.0 cps	105,927.7 cps	6,732,102.7 cps	2,349,052.7 cps	374,015.2 cps	267,358,454.5 cps	4,501,406.4 cps	6,763,291.8 cps
Intensity RSD	2.4 %	8.2 %	4.6 %	3.4 %	3.9 %	3.1 %	2.2 %	2.6 %	3.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	94.858 %	0.052 ppb	-0.041 ppb	-0.002 ppb	-0.133 ppb	N/A	2,806.798 ppb	3,569.525 ppb	3,481.195 ppb
Concentration per Run 1	94.471 %	0.041 ppb	-0.049 ppb	-0.012 ppb	-0.130 ppb	N/A	2,714.480 ppb	3,462.930 ppb	3,321.481 ppb
Concentration per Run 2	94.732 %	0.041 ppb	-0.040 ppb	-0.001 ppb	-0.139 ppb	N/A	2,820.591 ppb	3,649.791 ppb	3,515.292 ppb
Concentration per Run 3	95.370 %	0.074 ppb	-0.035 ppb	0.007 ppb	-0.130 ppb	N/A	2,885.324 ppb	3,595.854 ppb	3,606.812 ppb
Concentration RSD	0.5 %	36.4 %	17.8 %	435.7 %	3.6 %	N/A	3.1 %	2.7 %	4.2 %
Intensity average	278,486 cps	20 cps	1,095 cps	2,404 cps	892 cps	883 cps	41,926,047 cps	70,993,769 cps	2,363,638 cps
Intensity per Run 1	277,350.8 cps	16.0 cps	990.7 cps	2,200.2 cps	896.0 cps	950.0 cps	40,392,944.5 cps	68,618,669.4 cps	2,245,780.7 cps
Intensity per Run 2	278,116.9 cps	16.0 cps	1,107.1 cps	2,416.2 cps	876.0 cps	810.0 cps	42,071,619.7 cps	72,488,389.7 cps	2,383,323.4 cps
Intensity per Run 3	279,989.8 cps	28.0 cps	1,187.0 cps	2,596.3 cps	904.0 cps	890.0 cps	43,313,577.7 cps	71,874,248.3 cps	2,461,811.2 cps
Intensity RSD	0.5 %	34.6 %	9.0 %	8.2 %	1.6 %	8.0 %	3.5 %	2.9 %	4.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	10.658 ppb	11.256 ppb	11.091 ppb	-0.022 ppb	0.047 ppb	3.772 ppb	30.056 ppb	22.761 ppb	
Concentration per Run 1	10.354 ppb	10.835 ppb	10.940 ppb	-0.018 ppb	0.036 ppb	3.651 ppb	29.525 ppb	22.118 ppb	
Concentration per Run 2	10.719 ppb	11.316 ppb	11.113 ppb	-0.026 ppb	0.050 ppb	3.726 ppb	30.454 ppb	22.790 ppb	
Concentration per Run 3	10.901 ppb	11.617 ppb	11.220 ppb	-0.021 ppb	0.055 ppb	3.940 ppb	30.191 ppb	23.376 ppb	
Concentration RSD	2.6 %	3.5 %	1.3 %	18.1 %	20.7 %	4.0 %	1.6 %	2.8 %	
Intensity average	501,535 cps	132,972 cps	20,609 cps	3,319 cps	2,554 cps	35,004 cps	32,373 cps	120,095 cps	156 cps
Intensity per Run 1	485,215.1 cps	128,061.1 cps	20,280.5 cps	3,404.5 cps	2,384.2 cps	33,801.7 cps	31,732.3 cps	116,610.2 cps	176.0 cps
Intensity per Run 2	503,694.4 cps	133,426.0 cps	20,617.0 cps	3,196.4 cps	2,592.3 cps	35,273.8 cps	32,726.9 cps	120,058.0 cps	125.0 cps
Intensity per Run 3	515,695.8 cps	137,428.9 cps	20,929.5 cps	3,356.5 cps	2,684.3 cps	35,935.7 cps	32,658.7 cps	123,616.9 cps	166.0 cps
Intensity RSD	3.1 %	3.5 %	1.6 %	3.3 %	6.0 %	3.1 %	1.7 %	2.9 %	17.4 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.772 ppb	N/A	0.059 ppb			0.485 ppb		92.989 %	0.394 ppb
Concentration per Run 1	1.532 ppb	N/A	0.042 ppb			1.076 ppb		92.759 %	0.394 ppb
Concentration per Run 2	2.103 ppb	N/A	0.054 ppb			-0.331 ppb		92.856 %	0.374 ppb
Concentration per Run 3	1.683 ppb	N/A	0.081 ppb			0.710 ppb		93.352 %	0.413 ppb
Concentration RSD	16.7 %	N/A	33.4 %			150.4 %		0.3 %	5.0 %
Intensity average	8,904 cps	93 cps	-1 cps	5,365 cps	4,840 cps	-374 cps	5,179 cps	543,783 cps	4,389 cps
Intensity per Run 1	8,057.7 cps	100.0 cps	-6.2 cps	5,142.1 cps	3,862.6 cps	-268.7 cps	4,211.7 cps	542,439.2 cps	4,368.8 cps
Intensity per Run 2	10,030.7 cps	70.0 cps	-2.3 cps	5,290.1 cps	6,528.8 cps	-517.6 cps	6,943.0 cps	543,003.8 cps	4,192.7 cps
Intensity per Run 3	8,623.4 cps	110.0 cps	6.6 cps	5,664.3 cps	4,128.7 cps	-334.2 cps	4,382.8 cps	545,906.7 cps	4,604.9 cps
Intensity RSD	11.4 %	22.3 %	1,048.7 %	5.0 %	30.3 %	34.5 %	29.5 %	0.3 %	4.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.379 ppb	0.382 ppb	0.371 ppb	0.390 ppb	0.017 ppm		0.026 ppb	0.001 ppb	0.022 ppb
Concentration per Run 1	0.355 ppb	0.375 ppb	0.349 ppb	0.384 ppb	0.017 ppm		0.041 ppb	0.001 ppb	0.015 ppb
Concentration per Run 2	0.390 ppb	0.378 ppb	0.367 ppb	0.390 ppb	0.017 ppm		0.034 ppb	0.000 ppb	0.036 ppb
Concentration per Run 3	0.392 ppb	0.394 ppb	0.397 ppb	0.394 ppb	0.018 ppm		0.002 ppb	0.001 ppb	0.015 ppb
Concentration RSD	5.6 %	2.7 %	6.5 %	1.3 %	1.3 %		81.4 %	23.4 %	56.2 %
Intensity average	7,494 cps	8,359 cps	4,837 cps	13,356 cps	1,554,317 cps	723 cps	115 cps	128 cps	17 cps
Intensity per Run 1	6,998.0 cps	8,150.7 cps	4,540.8 cps	13,086.9 cps	1,546,469.9 cps	704.0 cps	128.0 cps	136.0 cps	12.0 cps
Intensity per Run 2	7,718.4 cps	8,298.8 cps	4,800.9 cps	13,435.2 cps	1,539,223.0 cps	724.0 cps	124.0 cps	120.0 cps	28.0 cps
Intensity per Run 3	7,766.4 cps	8,627.0 cps	5,169.1 cps	13,547.4 cps	1,577,258.7 cps	740.0 cps	92.0 cps	128.0 cps	12.0 cps
Intensity RSD	5.7 %	2.9 %	6.5 %	1.8 %	1.3 %	2.5 %	17.2 %	6.2 %	53.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.010 ppb	0.010 ppb	90.257 %	0.049 ppb	0.038 ppb	0.038 ppb	320.479 ppb	326.777 ppb
Concentration per Run 1	0.001 ppb	0.011 ppb	0.010 ppb	88.915 %	0.043 ppb	0.031 ppb	0.039 ppb	313.913 ppb	325.670 ppb
Concentration per Run 2	0.001 ppb	0.007 ppb	0.011 ppb	91.649 %	0.050 ppb	0.039 ppb	0.043 ppb	316.865 ppb	320.268 ppb
Concentration per Run 3	0.001 ppb	0.011 ppb	0.010 ppb	90.208 %	0.053 ppb	0.045 ppb	0.031 ppb	330.658 ppb	334.393 ppb
Concentration RSD	18.0 %	25.7 %	8.6 %	1.5 %	10.8 %	18.7 %	15.3 %	2.8 %	2.2 %
Intensity average	147 cps	125 cps	342 cps	808,057 cps	1,876 cps	1,301 cps	1,029 cps	1,929,242 cps	3,587,985 cps
Intensity per Run 1	140.0 cps	140.0 cps	330.2 cps	796,036.0 cps	1,708.1 cps	1,096.0 cps	1,040.0 cps	1,872,607.2 cps	3,545,774.2 cps
Intensity per Run 2	164.0 cps	92.0 cps	375.7 cps	820,518.9 cps	1,948.2 cps	1,336.1 cps	1,148.1 cps	1,932,869.8 cps	3,562,853.0 cps
Intensity per Run 3	136.0 cps	144.0 cps	319.1 cps	807,615.1 cps	1,972.2 cps	1,472.1 cps	900.0 cps	1,982,250.4 cps	3,655,328.2 cps
Intensity RSD	10.3 %	23.1 %	8.8 %	1.5 %	7.8 %	14.6 %	12.1 %	2.8 %	1.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.490 %			0.014 ppm	0.071 ppb	0.072 ppb	0.007 ppb
Concentration per Run 1			92.276 %			0.014 ppm	0.068 ppb	0.068 ppb	0.008 ppb
Concentration per Run 2			93.484 %			0.014 ppm	0.071 ppb	0.074 ppb	0.007 ppb
Concentration per Run 3			91.708 %			0.014 ppm	0.076 ppb	0.075 ppb	0.006 ppb
Concentration RSD			1.0 %			0.3 %	5.8 %	5.5 %	7.7 %
Intensity average	1,765 cps	1,535 cps	2,907,212 cps	1,291 cps	1,360 cps	3,101,675 cps	6,677 cps	16,240 cps	1,105 cps
Intensity per Run 1	1,572.1 cps	1,484.1 cps	2,900,507.5 cps	1,148.1 cps	1,312.1 cps	3,096,046.6 cps	6,401.6 cps	15,442.5 cps	1,137.1 cps
Intensity per Run 2	1,840.1 cps	1,496.1 cps	2,938,478.8 cps	1,312.1 cps	1,368.1 cps	3,096,837.5 cps	6,572.7 cps	16,402.8 cps	1,107.0 cps
Intensity per Run 3	1,884.1 cps	1,624.1 cps	2,882,650.1 cps	1,412.1 cps	1,400.1 cps	3,112,140.3 cps	7,057.0 cps	16,873.4 cps	1,072.0 cps
Intensity RSD	9.6 %	5.1 %	1.0 %	10.3 %	3.3 %	0.3 %	5.1 %	4.5 %	2.9 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.006 ppb	0.007 ppb	86.087 %
Concentration per Run 1	0.006 ppb	0.006 ppb	86.496 %
Concentration per Run 2	0.006 ppb	0.008 ppb	85.131 %
Concentration per Run 3	0.006 ppb	0.007 ppb	86.636 %
Concentration RSD	7.0 %	9.7 %	1.0 %
Intensity average	911 cps	4,422 cps	2,206,366 cps
Intensity per Run 1	928.0 cps	4,249.3 cps	2,216,836.9 cps
Intensity per Run 2	916.0 cps	4,519.3 cps	2,181,845.5 cps
Intensity per Run 3	888.0 cps	4,496.3 cps	2,220,414.5 cps
Intensity RSD	2.3 %	3.4 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-004S Analysis: 10/30/2019 15:25:16 Sample Type UNKNOWN
Comment 16WC1AS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	93.613 %	96.088 %	99.063 ppb	109.039 ppb	107.250 ppb	N/A	7,892.307 ppb	39,830.484 ppb	39,959.798 ppb
Concentration per Run 1	93.138 %	96.066 %	95.521 ppb	106.364 ppb	101.984 ppb	N/A	7,675.563 ppb	39,452.785 ppb	38,505.403 ppb
Concentration per Run 2	93.206 %	96.928 %	98.992 ppb	110.818 ppb	108.781 ppb	N/A	7,947.665 ppb	39,463.268 ppb	40,062.188 ppb
Concentration per Run 3	94.494 %	95.270 %	102.677 ppb	109.935 ppb	110.987 ppb	N/A	8,053.692 ppb	40,575.398 ppb	41,311.803 ppb
Concentration RSD	0.8 %	0.9 %	3.6 %	2.2 %	4.4 %	N/A	2.5 %	1.6 %	3.5 %
Intensity average	13,092,033 cps	30,938 cps	15,119 cps	1,772 cps	10,313 cps	2,737 cps	14,631,335 cps	33,599,101 cps	7,082,837 cps
Intensity per Run 1	13,025,671.3 cps	30,931.2 cps	14,577.0 cps	1,725.6 cps	9,787.8 cps	2,580.3 cps	14,138,653.7 cps	33,058,408.3 cps	6,776,433.3 cps
Intensity per Run 2	13,035,129.1 cps	31,208.9 cps	15,242.3 cps	1,818.6 cps	10,567.5 cps	3,080.4 cps	14,937,712.6 cps	33,763,770.4 cps	7,203,761.3 cps
Intensity per Run 3	13,215,299.8 cps	30,675.1 cps	15,539.2 cps	1,771.6 cps	10,584.5 cps	2,550.3 cps	14,817,640.0 cps	33,975,123.0 cps	7,268,316.4 cps
Intensity RSD	0.8 %	0.9 %	3.3 %	2.6 %	4.4 %	10.9 %	2.9 %	1.4 %	3.8 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	39,167.733 ppb	108.086 ppb		1.041 ppm	3,876.540 ppb	97,728.283 ppb	105,486.695 ppb	98,069.937 ppb	92.290 %
Concentration per Run 1	37,344.796 ppb	103.431 ppb		1.011 ppm	3,787.761 ppb	97,183.118 ppb	104,828.553 ppb	93,099.932 ppb	91.234 %
Concentration per Run 2	39,277.576 ppb	110.642 ppb		1.056 ppm	3,904.564 ppb	95,751.243 ppb	105,757.222 ppb	99,494.276 ppb	93.933 %
Concentration per Run 3	40,880.828 ppb	110.186 ppb		1.056 ppm	3,937.296 ppb	100,250.488 ppb	105,874.309 ppb	101,615.604 ppb	91.702 %
Concentration RSD	4.5 %	3.7 %		2.5 %	2.0 %	2.4 %	0.5 %	4.5 %	1.6 %
Intensity average	9,232,234 cps	31,547 cps	110,090 cps	6,649,882 cps	3,060,434 cps	369,552 cps	258,974,498 cps	4,414,582 cps	6,352,295 cps
Intensity per Run 1	8,736,555.6 cps	29,966.1 cps	104,828.2 cps	6,387,679.3 cps	2,953,670.5 cps	362,469.7 cps	254,449,458.5 cps	4,130,283.7 cps	6,279,615.9 cps
Intensity per Run 2	9,394,890.3 cps	32,763.0 cps	113,211.1 cps	6,860,453.0 cps	3,140,147.1 cps	369,414.9 cps	264,103,223.2 cps	4,568,913.8 cps	6,465,393.3 cps
Intensity per Run 3	9,565,257.4 cps	31,911.0 cps	112,231.9 cps	6,701,514.2 cps	3,087,483.8 cps	376,770.5 cps	258,370,812.4 cps	4,544,549.2 cps	6,311,874.6 cps
Intensity RSD	4.7 %	4.5 %	4.2 %	3.6 %	3.1 %	1.9 %	1.9 %	5.6 %	1.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	93.096 %	101.502 ppb	97.544 ppb	98.225 ppb	101.686 ppb	N/A	2,899.858 ppb	4,631.555 ppb	4,513.113 ppb
Concentration per Run 1	91.738 %	99.186 ppb	94.845 ppb	94.739 ppb	98.818 ppb	N/A	2,817.498 ppb	4,654.089 ppb	4,467.604 ppb
Concentration per Run 2	95.026 %	101.381 ppb	97.230 ppb	98.562 ppb	101.801 ppb	N/A	2,891.118 ppb	4,519.117 ppb	4,434.681 ppb
Concentration per Run 3	92.524 %	103.938 ppb	100.556 ppb	101.374 ppb	104.441 ppb	N/A	2,990.957 ppb	4,721.459 ppb	4,637.056 ppb
Concentration RSD	1.8 %	2.3 %	2.9 %	3.4 %	2.8 %	N/A	3.0 %	2.2 %	2.4 %
Intensity average	273,314 cps	35,962 cps	1,217,193 cps	1,923,776 cps	272,156 cps	281,989 cps	42,757,157 cps	90,955,921 cps	3,006,299 cps
Intensity per Run 1	269,328.7 cps	34,656.0 cps	1,166,240.9 cps	1,828,284.9 cps	261,492.3 cps	271,004.3 cps	41,103,002.4 cps	90,484,977.0 cps	2,932,970.5 cps
Intensity per Run 2	278,980.8 cps	36,613.6 cps	1,238,376.2 cps	1,970,131.1 cps	276,605.0 cps	284,001.7 cps	43,219,964.0 cps	89,937,782.9 cps	3,015,701.0 cps
Intensity per Run 3	271,633.6 cps	36,617.6 cps	1,246,963.1 cps	1,972,911.6 cps	278,370.8 cps	290,960.2 cps	43,948,506.1 cps	92,445,002.9 cps	3,070,224.8 cps
Intensity RSD	1.8 %	3.1 %	3.6 %	4.3 %	3.4 %	3.6 %	3.5 %	1.4 %	2.3 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	109.937 ppb	113.511 ppb	112.699 ppb	99.604 ppb	98.935 ppb	104.887 ppb	127.251 ppb	119.824 ppb	
Concentration per Run 1	110.375 ppb	109.974 ppb	110.593 ppb	98.338 ppb	96.707 ppb	101.241 ppb	123.832 ppb	116.939 ppb	
Concentration per Run 2	107.614 ppb	114.575 ppb	111.942 ppb	98.780 ppb	97.792 ppb	105.691 ppb	127.819 ppb	119.163 ppb	
Concentration per Run 3	111.823 ppb	115.983 ppb	115.562 ppb	101.693 ppb	102.307 ppb	107.729 ppb	130.103 ppb	123.370 ppb	
Concentration RSD	1.9 %	2.8 %	2.3 %	1.8 %	3.0 %	3.2 %	2.5 %	2.7 %	
Intensity average	5,073,538 cps	1,256,137 cps	192,672 cps	2,768,423 cps	1,424,645 cps	607,771 cps	129,536 cps	584,624 cps	199 cps
Intensity per Run 1	5,020,472.2 cps	1,221,173.8 cps	187,640.4 cps	2,713,317.5 cps	1,372,350.3 cps	585,957.9 cps	125,386.1 cps	567,755.7 cps	193.0 cps
Intensity per Run 2	5,070,295.0 cps	1,256,319.5 cps	193,142.6 cps	2,768,903.8 cps	1,437,450.3 cps	615,449.4 cps	130,849.7 cps	584,408.1 cps	196.0 cps
Intensity per Run 3	5,129,846.7 cps	1,290,916.5 cps	197,232.9 cps	2,823,049.1 cps	1,464,134.5 cps	621,905.0 cps	132,373.5 cps	601,709.1 cps	208.0 cps
Intensity RSD	1.1 %	2.8 %	2.5 %	2.0 %	3.3 %	3.2 %	2.8 %	2.9 %	4.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	108.120 ppb	N/A	96.950 ppb			97.909 ppb		93.633 %	97.415 ppb
Concentration per Run 1	104.529 ppb	N/A	92.997 ppb			95.980 ppb		93.928 %	94.799 ppb
Concentration per Run 2	108.643 ppb	N/A	98.359 ppb			98.032 ppb		92.783 %	99.167 ppb
Concentration per Run 3	111.187 ppb	N/A	99.493 ppb			99.715 ppb		94.189 %	98.277 ppb
Concentration RSD	3.1 %	N/A	3.6 %			1.9 %		0.8 %	2.4 %
Intensity average	323,919 cps	9,537 cps	32,268 cps	5,232 cps	21,091 cps	15,996 cps	5,131 cps	547,551 cps	1,017,312 cps
Intensity per Run 1	312,668.8 cps	9,964.0 cps	30,911.6 cps	4,997.0 cps	19,843.8 cps	15,641.5 cps	4,203.7 cps	549,273.3 cps	992,226.3 cps
Intensity per Run 2	327,131.7 cps	9,643.8 cps	32,682.1 cps	5,312.1 cps	23,088.4 cps	16,098.8 cps	6,837.9 cps	542,577.4 cps	1,028,986.0 cps
Intensity per Run 3	331,956.4 cps	9,003.3 cps	33,211.0 cps	5,388.2 cps	20,340.6 cps	16,248.4 cps	4,350.8 cps	550,801.4 cps	1,030,723.9 cps
Intensity RSD	3.1 %	5.1 %	3.7 %	4.0 %	8.3 %	2.0 %	28.8 %	0.8 %	2.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	97.100 ppb	95.938 ppb	96.080 ppb	99.717 ppb	0.017 ppm		100.875 ppb	96.667 ppb	100.797 ppb
Concentration per Run 1	92.751 ppb	92.119 ppb	92.389 ppb	96.025 ppb	0.017 ppm		97.323 ppb	93.131 ppb	96.898 ppb
Concentration per Run 2	98.567 ppb	96.270 ppb	97.218 ppb	100.026 ppb	0.017 ppm		101.224 ppb	96.435 ppb	101.721 ppb
Concentration per Run 3	99.982 ppb	99.426 ppb	98.632 ppb	103.100 ppb	0.018 ppm		104.078 ppb	100.434 ppb	103.773 ppb
Concentration RSD	3.9 %	3.8 %	3.4 %	3.6 %	1.8 %		3.4 %	3.8 %	3.5 %
Intensity average	1,837,318 cps	1,999,766 cps	1,195,919 cps	3,291,352 cps	1,539,386 cps	1,136 cps	96,992 cps	6,972,361 cps	74,352 cps
Intensity per Run 1	1,758,595.7 cps	1,923,623.9 cps	1,151,864.2 cps	3,173,983.8 cps	1,515,134.9 cps	1,116.1 cps	93,565.7 cps	6,704,321.4 cps	71,435.9 cps
Intensity per Run 2	1,854,089.2 cps	1,995,876.9 cps	1,204,245.5 cps	3,287,342.3 cps	1,534,123.1 cps	1,124.1 cps	97,333.9 cps	6,991,297.1 cps	75,121.2 cps
Intensity per Run 3	1,899,269.3 cps	2,079,797.9 cps	1,231,647.4 cps	3,412,728.9 cps	1,568,899.6 cps	1,168.1 cps	100,076.2 cps	7,221,464.3 cps	76,498.0 cps
Intensity RSD	3.9 %	3.9 %	3.4 %	3.6 %	1.8 %	2.5 %	3.4 %	3.7 %	3.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	94.976 ppb	100.164 ppb	97.785 ppb	90.005 %	104.166 ppb	105.028 ppb	105.572 ppb	423.687 ppb	427.165 ppb
Concentration per Run 1	92.349 ppb	97.511 ppb	95.105 ppb	89.829 %	100.230 ppb	100.166 ppb	101.559 ppb	411.598 ppb	409.015 ppb
Concentration per Run 2	96.262 ppb	99.353 ppb	97.172 ppb	90.465 %	104.742 ppb	106.373 ppb	105.582 ppb	430.581 ppb	437.721 ppb
Concentration per Run 3	96.318 ppb	103.627 ppb	101.079 ppb	89.722 %	107.527 ppb	108.546 ppb	109.574 ppb	428.882 ppb	434.760 ppb
Concentration RSD	2.4 %	3.1 %	3.1 %	0.4 %	3.5 %	4.1 %	3.8 %	2.5 %	3.7 %
Intensity average	6,816,868 cps	1,192,327 cps	2,859,489 cps	805,799 cps	2,508,328 cps	2,658,852 cps	2,139,684 cps	2,546,566 cps	4,683,500 cps
Intensity per Run 1	6,623,293.7 cps	1,159,437.3 cps	2,775,733.2 cps	804,219.6 cps	2,413,034.3 cps	2,539,636.0 cps	2,063,876.3 cps	2,497,514.0 cps	4,532,744.8 cps
Intensity per Run 2	6,921,029.0 cps	1,186,071.6 cps	2,856,146.5 cps	809,915.7 cps	2,529,915.4 cps	2,695,632.6 cps	2,139,164.0 cps	2,566,189.7 cps	4,752,761.7 cps
Intensity per Run 3	6,906,279.8 cps	1,231,471.6 cps	2,946,588.4 cps	803,262.1 cps	2,582,035.6 cps	2,741,287.2 cps	2,216,011.3 cps	2,575,994.0 cps	4,764,993.3 cps
Intensity RSD	2.5 %	3.1 %	3.0 %	0.4 %	3.5 %	4.0 %	3.6 %	1.7 %	2.8 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.504 %			0.013 ppm	99.643 ppb	101.000 ppb	103.647 ppb
Concentration per Run 1			94.602 %			0.014 ppm	93.287 ppb	94.787 ppb	100.783 ppb
Concentration per Run 2			90.234 %			0.013 ppm	101.644 ppb	102.857 ppb	105.113 ppb
Concentration per Run 3			92.677 %			0.014 ppm	103.997 ppb	105.355 ppb	105.045 ppb
Concentration RSD			2.4 %			1.6 %	5.6 %	5.5 %	2.4 %
Intensity average	1,872 cps	1,488 cps	2,907,679 cps	1,332 cps	1,363 cps	3,051,759 cps	7,916,490 cps	19,302,899 cps	6,539,868 cps
Intensity per Run 1	1,816.1 cps	1,460.1 cps	2,973,610.1 cps	1,344.1 cps	1,236.1 cps	3,076,236.0 cps	7,325,762.2 cps	17,813,273.7 cps	6,271,497.7 cps
Intensity per Run 2	1,988.2 cps	1,576.1 cps	2,836,314.2 cps	1,300.1 cps	1,316.1 cps	2,995,530.6 cps	8,017,160.3 cps	19,564,328.3 cps	6,594,813.7 cps
Intensity per Run 3	1,812.1 cps	1,428.1 cps	2,913,112.7 cps	1,352.1 cps	1,536.1 cps	3,083,511.8 cps	8,406,546.6 cps	20,531,093.6 cps	6,753,293.0 cps
Intensity RSD	5.4 %	5.2 %	2.4 %	2.1 %	11.4 %	1.6 %	6.9 %	7.1 %	3.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	103.062 ppb	103.625 ppb	85.709 %
Concentration per Run 1	100.563 ppb	101.419 ppb	84.328 %
Concentration per Run 2	103.592 ppb	105.365 ppb	85.352 %
Concentration per Run 3	105.032 ppb	104.090 ppb	87.446 %
Concentration RSD	2.2 %	1.9 %	1.9 %
Intensity average	5,704,229 cps	26,308,131 cps	2,196,663 cps
Intensity per Run 1	5,484,265.5 cps	25,330,427.5 cps	2,161,279.8 cps
Intensity per Run 2	5,703,355.8 cps	26,635,398.2 cps	2,187,523.7 cps
Intensity per Run 3	5,925,065.7 cps	26,958,566.3 cps	2,241,185.3 cps
Intensity RSD	3.9 %	3.3 %	1.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-004SD Analysis: 10/30/2019 15:31:20 Sample Type UNKNOWN
Comment 16WC1ASD Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	93.692 %	95.226 %	98.442 ppb	108.092 ppb	107.695 ppb	N/A	7,926.119 ppb	39,523.823 ppb	40,113.279 ppb
Concentration per Run 1	92.600 %	96.047 %	96.025 ppb	108.298 ppb	103.560 ppb	N/A	7,740.567 ppb	38,837.095 ppb	38,448.064 ppb
Concentration per Run 2	94.121 %	94.791 %	98.611 ppb	106.821 ppb	108.611 ppb	N/A	8,006.268 ppb	39,324.979 ppb	40,220.969 ppb
Concentration per Run 3	94.356 %	94.839 %	100.691 ppb	109.158 ppb	110.913 ppb	N/A	8,031.520 ppb	40,409.395 ppb	41,670.805 ppb
Concentration RSD	1.0 %	0.7 %	2.4 %	1.1 %	3.5 %	N/A	2.0 %	2.0 %	4.0 %
Intensity average	13,103,207 cps	30,661 cps	14,890 cps	1,743 cps	10,281 cps	2,520 cps	14,656,831 cps	33,272,103 cps	7,096,968 cps
Intensity per Run 1	12,950,467.4 cps	30,925.2 cps	14,651.1 cps	1,761.1 cps	9,969.0 cps	2,370.2 cps	14,413,900.9 cps	32,919,410.6 cps	6,849,240.8 cps
Intensity per Run 2	13,163,170.2 cps	30,520.7 cps	14,848.8 cps	1,717.6 cps	10,341.8 cps	2,370.2 cps	14,830,333.8 cps	33,174,491.3 cps	7,134,348.0 cps
Intensity per Run 3	13,195,982.8 cps	30,536.3 cps	15,169.7 cps	1,751.6 cps	10,532.9 cps	2,820.3 cps	14,726,257.9 cps	33,722,406.0 cps	7,307,315.7 cps
Intensity RSD	1.0 %	0.7 %	1.8 %	1.3 %	2.8 %	10.3 %	1.5 %	1.2 %	3.3 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	39,250.036 ppb	108.325 ppb		1.004 ppm	3,879.063 ppb	97,526.364 ppb	102,588.300 ppb	97,387.955 ppb	93.227 %
Concentration per Run 1	38,295.004 ppb	107.017 ppb		0.974 ppm	3,850.692 ppb	96,877.295 ppb	103,522.740 ppb	96,708.668 ppb	90.632 %
Concentration per Run 2	39,081.535 ppb	107.277 ppb		1.006 ppm	3,865.712 ppb	97,058.807 ppb	100,113.576 ppb	95,702.311 ppb	95.464 %
Concentration per Run 3	40,373.569 ppb	110.681 ppb		1.030 ppm	3,920.784 ppb	98,642.991 ppb	104,128.584 ppb	99,752.886 ppb	93.586 %
Concentration RSD	2.7 %	1.9 %		2.8 %	1.0 %	1.0 %	2.1 %	2.2 %	2.6 %
Intensity average	9,238,754 cps	31,580 cps	108,140 cps	6,423,995 cps	3,073,992 cps	370,874 cps	254,286,377 cps	4,408,121 cps	6,416,835 cps
Intensity per Run 1	9,074,592.0 cps	31,409.7 cps	105,988.1 cps	6,273,612.7 cps	3,067,819.2 cps	370,207.0 cps	249,629,508.6 cps	4,398,765.5 cps	6,238,218.4 cps
Intensity per Run 2	9,225,602.3 cps	31,379.6 cps	109,539.0 cps	6,479,040.5 cps	3,086,810.3 cps	372,461.6 cps	254,046,298.4 cps	4,373,391.3 cps	6,570,762.6 cps
Intensity per Run 3	9,416,068.2 cps	31,951.0 cps	108,893.6 cps	6,519,331.0 cps	3,067,347.8 cps	369,953.2 cps	259,183,324.6 cps	4,452,206.0 cps	6,441,523.2 cps
Intensity RSD	1.9 %	1.0 %	1.7 %	2.1 %	0.4 %	0.4 %	1.9 %	0.9 %	2.6 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	93.690 %	99.417 ppb	95.620 ppb	96.073 ppb	98.831 ppb	N/A	2,881.172 ppb	4,488.802 ppb	4,481.204 ppb
Concentration per Run 1	94.121 %	97.851 ppb	92.652 ppb	93.768 ppb	96.693 ppb	N/A	2,785.661 ppb	4,309.771 ppb	4,325.178 ppb
Concentration per Run 2	94.607 %	98.036 ppb	95.771 ppb	95.516 ppb	98.945 ppb	N/A	2,893.250 ppb	4,509.737 ppb	4,533.531 ppb
Concentration per Run 3	92.342 %	102.365 ppb	98.437 ppb	98.936 ppb	100.857 ppb	N/A	2,964.604 ppb	4,646.900 ppb	4,584.903 ppb
Concentration RSD	1.3 %	2.6 %	3.0 %	2.7 %	2.1 %	N/A	3.1 %	3.8 %	3.1 %
Intensity average	275,058 cps	35,440 cps	1,200,553 cps	1,893,066 cps	266,188 cps	276,823 cps	42,745,169 cps	88,716,544 cps	3,004,100 cps
Intensity per Run 1	276,323.6 cps	35,021.1 cps	1,168,904.1 cps	1,856,570.4 cps	260,847.2 cps	271,683.5 cps	41,357,921.5 cps	85,207,909.6 cps	2,913,249.1 cps
Intensity per Run 2	277,750.1 cps	35,289.8 cps	1,214,435.2 cps	1,900,896.1 cps	268,927.4 cps	275,852.5 cps	43,309,278.3 cps	89,922,134.9 cps	3,069,296.8 cps
Intensity per Run 3	271,101.0 cps	36,008.0 cps	1,218,318.7 cps	1,921,733.0 cps	268,789.4 cps	282,931.8 cps	43,568,308.5 cps	91,019,588.2 cps	3,029,754.5 cps
Intensity RSD	1.3 %	1.4 %	2.3 %	1.8 %	1.7 %	2.1 %	2.8 %	3.5 %	2.7 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	106.780 ppb	111.774 ppb	110.070 ppb	98.682 ppb	98.015 ppb	103.868 ppb	124.210 ppb	117.521 ppb	
Concentration per Run 1	103.981 ppb	111.532 ppb	108.110 ppb	96.810 ppb	95.085 ppb	102.857 ppb	121.600 ppb	115.628 ppb	
Concentration per Run 2	106.865 ppb	112.196 ppb	109.942 ppb	99.227 ppb	98.435 ppb	104.038 ppb	124.123 ppb	117.275 ppb	
Concentration per Run 3	109.494 ppb	111.593 ppb	112.159 ppb	100.008 ppb	100.525 ppb	104.708 ppb	126.908 ppb	119.660 ppb	
Concentration RSD	2.6 %	0.3 %	1.8 %	1.7 %	2.8 %	0.9 %	2.1 %	1.7 %	
Intensity average	4,959,495 cps	1,244,786 cps	189,395 cps	2,760,154 cps	1,420,254 cps	603,132 cps	127,279 cps	577,173 cps	193 cps
Intensity per Run 1	4,852,488.6 cps	1,226,209.8 cps	185,658.6 cps	2,700,999.3 cps	1,384,405.5 cps	592,709.8 cps	124,134.0 cps	565,480.6 cps	163.0 cps
Intensity per Run 2	5,012,830.5 cps	1,256,693.2 cps	190,741.5 cps	2,798,000.9 cps	1,440,515.3 cps	606,927.0 cps	128,182.4 cps	580,424.4 cps	192.0 cps
Intensity per Run 3	5,013,167.1 cps	1,251,455.3 cps	191,785.5 cps	2,781,462.2 cps	1,435,840.9 cps	609,759.5 cps	129,520.3 cps	585,614.6 cps	223.0 cps
Intensity RSD	1.9 %	1.3 %	1.7 %	1.9 %	2.2 %	1.5 %	2.2 %	1.8 %	15.6 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	106.726 ppb	N/A	96.114 ppb			96.255 ppb		94.214 %	97.796 ppb
Concentration per Run 1	104.460 ppb	N/A	94.015 ppb			95.052 ppb		93.009 %	96.703 ppb
Concentration per Run 2	106.716 ppb	N/A	96.010 ppb			97.600 ppb		94.762 %	98.122 ppb
Concentration per Run 3	109.003 ppb	N/A	98.317 ppb			96.114 ppb		94.872 %	98.563 ppb
Concentration RSD	2.1 %	N/A	2.2 %			1.3 %		1.1 %	1.0 %
Intensity average	320,411 cps	9,817 cps	32,191 cps	5,753 cps	20,529 cps	15,749 cps	4,528 cps	550,948 cps	1,026,921 cps
Intensity per Run 1	311,212.5 cps	9,683.8 cps	31,218.9 cps	5,527.2 cps	19,974.0 cps	15,423.8 cps	4,253.7 cps	543,897.8 cps	1,003,328.8 cps
Intensity per Run 2	321,865.7 cps	9,884.0 cps	32,372.5 cps	5,746.3 cps	20,105.2 cps	16,049.5 cps	3,898.6 cps	554,151.0 cps	1,036,054.0 cps
Intensity per Run 3	328,155.8 cps	9,884.0 cps	32,981.6 cps	5,984.4 cps	21,507.5 cps	15,772.6 cps	5,430.2 cps	554,796.5 cps	1,041,380.2 cps
Intensity RSD	2.7 %	1.2 %	2.8 %	4.0 %	4.1 %	2.0 %	17.7 %	1.1 %	2.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	97.780 ppb	97.027 ppb	95.886 ppb	99.535 ppb	0.017 ppm		98.391 ppb	94.802 ppb	99.131 ppb
Concentration per Run 1	95.145 ppb	95.691 ppb	93.118 ppb	97.537 ppb	0.017 ppm		96.803 ppb	93.218 ppb	96.605 ppb
Concentration per Run 2	99.948 ppb	97.374 ppb	97.184 ppb	100.663 ppb	0.017 ppm		99.139 ppb	94.773 ppb	101.527 ppb
Concentration per Run 3	98.246 ppb	98.016 ppb	97.357 ppb	100.406 ppb	0.017 ppm		99.230 ppb	96.415 ppb	99.261 ppb
Concentration RSD	2.5 %	1.2 %	2.5 %	1.7 %	0.9 %		1.4 %	1.7 %	2.5 %
Intensity average	1,860,192 cps	2,032,839 cps	1,199,574 cps	3,301,270 cps	1,548,747 cps	1,128 cps	94,935 cps	6,851,124 cps	73,355 cps
Intensity per Run 1	1,788,650.0 cps	1,981,651.1 cps	1,151,582.9 cps	3,198,669.6 cps	1,533,031.0 cps	1,088.0 cps	92,502.1 cps	6,683,670.8 cps	70,820.4 cps
Intensity per Run 2	1,911,729.2 cps	2,051,222.8 cps	1,222,277.8 cps	3,356,469.3 cps	1,557,105.1 cps	1,224.1 cps	96,136.7 cps	6,880,880.8 cps	75,495.7 cps
Intensity per Run 3	1,880,197.9 cps	2,065,643.7 cps	1,224,861.8 cps	3,348,671.9 cps	1,556,104.7 cps	1,072.0 cps	96,165.0 cps	6,988,820.5 cps	73,749.1 cps
Intensity RSD	3.4 %	2.2 %	3.5 %	2.7 %	0.9 %	7.4 %	2.2 %	2.3 %	3.2 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	94.724 ppb	98.784 ppb	98.193 ppb	90.173 %	103.496 ppb	104.004 ppb	104.752 ppb	428.791 ppb	431.141 ppb
Concentration per Run 1	92.383 ppb	97.418 ppb	96.659 ppb	89.469 %	101.836 ppb	101.263 ppb	102.243 ppb	419.962 ppb	418.008 ppb
Concentration per Run 2	95.858 ppb	98.430 ppb	97.190 ppb	90.598 %	104.692 ppb	104.737 ppb	105.878 ppb	430.959 ppb	432.572 ppb
Concentration per Run 3	95.932 ppb	100.505 ppb	100.732 ppb	90.452 %	103.961 ppb	106.012 ppb	106.137 ppb	435.453 ppb	442.845 ppb
Concentration RSD	2.1 %	1.6 %	2.3 %	0.7 %	1.4 %	2.4 %	2.1 %	1.9 %	2.9 %
Intensity average	6,819,160 cps	1,178,993 cps	2,876,996 cps	807,299 cps	2,498,781 cps	2,641,825 cps	2,131,248 cps	2,594,321 cps	4,761,017 cps
Intensity per Run 1	6,590,012.4 cps	1,152,620.3 cps	2,809,778.4 cps	800,996.1 cps	2,440,805.5 cps	2,554,934.7 cps	2,067,049.0 cps	2,530,811.0 cps	4,599,393.6 cps
Intensity per Run 2	6,934,364.5 cps	1,180,445.1 cps	2,860,855.2 cps	811,103.4 cps	2,539,251.7 cps	2,672,431.7 cps	2,163,779.7 cps	2,618,580.6 cps	4,797,030.1 cps
Intensity per Run 3	6,933,103.5 cps	1,203,913.6 cps	2,960,353.5 cps	809,797.1 cps	2,516,287.2 cps	2,698,108.0 cps	2,162,914.2 cps	2,633,571.0 cps	4,886,627.4 cps
Intensity RSD	2.9 %	2.2 %	2.7 %	0.7 %	2.1 %	2.9 %	2.6 %	2.1 %	3.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.598 %			0.014 ppm	102.264 ppb	103.205 ppb	103.936 ppb
Concentration per Run 1			93.648 %			0.014 ppm	98.131 ppb	99.048 ppb	102.381 ppb
Concentration per Run 2			93.957 %			0.013 ppm	103.523 ppb	105.616 ppb	104.738 ppb
Concentration per Run 3			93.188 %			0.014 ppm	105.140 ppb	104.949 ppb	104.691 ppb
Concentration RSD			0.4 %			0.7 %	3.6 %	3.5 %	1.3 %
Intensity average	1,733 cps	1,523 cps	2,942,045 cps	1,355 cps	1,383 cps	3,077,251 cps	8,066,546 cps	19,525,928 cps	6,502,797 cps
Intensity per Run 1	1,672.1 cps	1,540.1 cps	2,943,614.3 cps	1,356.1 cps	1,392.1 cps	3,073,863.5 cps	7,643,953.3 cps	18,469,561.1 cps	6,320,490.0 cps
Intensity per Run 2	1,752.1 cps	1,456.1 cps	2,953,340.5 cps	1,424.1 cps	1,360.1 cps	3,056,583.6 cps	8,194,057.4 cps	20,050,624.3 cps	6,576,615.1 cps
Intensity per Run 3	1,776.1 cps	1,572.1 cps	2,929,180.5 cps	1,284.1 cps	1,396.1 cps	3,101,305.7 cps	8,361,626.3 cps	20,057,598.9 cps	6,611,286.5 cps
Intensity RSD	3.1 %	3.9 %	0.4 %	5.2 %	1.4 %	0.7 %	4.7 %	4.7 %	2.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	103.958 ppb	103.670 ppb	84.874 %
Concentration per Run 1	103.045 ppb	102.490 ppb	83.674 %
Concentration per Run 2	105.292 ppb	104.637 ppb	85.188 %
Concentration per Run 3	103.538 ppb	103.884 ppb	85.760 %
Concentration RSD	1.1 %	1.1 %	1.3 %
Intensity average	5,702,031 cps	26,062,126 cps	2,175,268 cps
Intensity per Run 1	5,575,429.4 cps	25,399,340.0 cps	2,144,513.6 cps
Intensity per Run 2	5,796,353.5 cps	26,400,573.1 cps	2,183,322.5 cps
Intensity per Run 3	5,734,311.3 cps	26,386,465.2 cps	2,197,966.5 cps
Intensity RSD	2.0 %	2.2 %	1.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-004L(5) Analysis: 10/30/2019 15:37:24 Sample Type UNKNOWN
Comment 16WC1AL Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.118 %	100.446 %	0.030 ppb	1.744 ppb	1.746 ppb	N/A	1,374.811 ppb	8,008.892 ppb	8,057.897 ppb	7,881.697 ppb
Concentration per Run 1	98.314 %	101.004 %	0.028 ppb	1.726 ppb	1.648 ppb	N/A	1,371.262 ppb	7,905.597 ppb	8,011.806 ppb	7,762.737 ppb
Concentration per Run 2	100.128 %	100.283 %	0.038 ppb	1.765 ppb	1.641 ppb	N/A	1,368.434 ppb	8,004.231 ppb	7,959.862 ppb	7,969.002 ppb
Concentration per Run 3	98.913 %	100.050 %	0.025 ppb	1.742 ppb	1.949 ppb	N/A	1,384.737 ppb	8,116.849 ppb	8,202.021 ppb	7,913.351 ppb
Concentration RSD	0.9 %	0.5 %	21.7 %	1.1 %	10.0 %	N/A	0.6 %	1.3 %	1.6 %	1.4 %
Intensity average	13,862,026 cps	32,341 cps	8 cps	33 cps	191 cps	2,197 cps	2,650,201 cps	6,987,583 cps	1,476,202 cps	1,919,033 cps
Intensity per Run 1	13,749,596.8 cps	32,521.3 cps	8.0 cps	33.0 cps	181.5 cps	2,140.2 cps	2,644,070.2 cps	6,897,041.1 cps	1,467,221.7 cps	1,888,678.6 cps
Intensity per Run 2	14,003,208.5 cps	32,289.2 cps	9.5 cps	33.5 cps	180.0 cps	2,200.2 cps	2,646,790.3 cps	7,008,922.1 cps	1,464,018.5 cps	1,948,444.1 cps
Intensity per Run 3	13,833,272.8 cps	32,214.0 cps	7.5 cps	33.0 cps	210.0 cps	2,250.2 cps	2,659,743.1 cps	7,056,786.7 cps	1,497,365.1 cps	1,919,976.6 cps
Intensity RSD	0.9 %	0.5 %	12.5 %	0.9 %	8.9 %	2.5 %	0.3 %	1.2 %	1.2 %	1.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.830 ppb		0.846 ppm	583.611 ppb	19,279.902 ppb	21,278.171 ppb	20,105.488 ppb	94.072 %	94.989 %	0.052 ppb
Concentration per Run 1	0.900 ppb		0.837 ppm	576.964 ppb	18,873.710 ppb	21,485.999 ppb	20,077.939 ppb	90.273 %	94.320 %	0.041 ppb
Concentration per Run 2	0.717 ppb		0.839 ppm	582.025 ppb	19,065.089 ppb	20,816.135 ppb	19,974.018 ppb	96.773 %	95.947 %	0.040 ppb
Concentration per Run 3	0.872 ppb		0.863 ppm	591.845 ppb	19,900.907 ppb	21,532.377 ppb	20,264.506 ppb	95.168 %	94.699 %	0.074 ppb
Concentration RSD	11.8 %		1.8 %	1.3 %	2.8 %	1.9 %	0.7 %	3.6 %	0.9 %	37.3 %
Intensity average	740 cps	22,610 cps	5,550,786 cps	489,574 cps	74,553 cps	53,335,821 cps	924,333 cps	6,474,964 cps	278,870 cps	20 cps
Intensity per Run 1	760.0 cps	22,249.8 cps	5,467,061.0 cps	481,811.6 cps	72,521.4 cps	51,743,484.5 cps	916,908.1 cps	6,213,529.9 cps	276,906.9 cps	16.0 cps
Intensity per Run 2	710.0 cps	22,520.3 cps	5,541,039.2 cps	492,304.7 cps	74,421.8 cps	53,666,941.5 cps	927,288.0 cps	6,660,923.3 cps	281,683.0 cps	16.0 cps
Intensity per Run 3	750.0 cps	23,061.4 cps	5,644,258.4 cps	494,605.9 cps	76,715.7 cps	54,597,036.4 cps	928,803.3 cps	6,550,438.9 cps	278,021.3 cps	28.0 cps
Intensity RSD	3.6 %	1.8 %	1.6 %	1.4 %	2.8 %	2.7 %	0.7 %	3.6 %	0.9 %	34.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.027 ppb	-0.062 ppb	-0.137 ppb	N/A	568.828 ppb	721.418 ppb	695.882 ppb	2.251 ppb	1.905 ppb	1.950 ppb
Concentration per Run 1	-0.034 ppb	-0.058 ppb	-0.142 ppb	N/A	552.271 ppb	709.430 ppb	693.104 ppb	2.250 ppb	1.890 ppb	1.955 ppb
Concentration per Run 2	-0.028 ppb	-0.065 ppb	-0.151 ppb	N/A	572.156 ppb	729.597 ppb	689.195 ppb	2.234 ppb	1.963 ppb	1.886 ppb
Concentration per Run 3	-0.018 ppb	-0.062 ppb	-0.119 ppb	N/A	582.057 ppb	725.226 ppb	705.348 ppb	2.269 ppb	1.863 ppb	2.010 ppb
Concentration RSD	31.7 %	5.9 %	12.3 %	N/A	2.7 %	1.5 %	1.2 %	0.8 %	2.7 %	3.2 %
Intensity average	1,284 cps	1,215 cps	888 cps	810 cps	8,591,530 cps	14,550,883 cps	473,968 cps	106,260 cps	32,418 cps	5,062 cps
Intensity per Run 1	1,176.7 cps	1,284.1 cps	868.0 cps	750.0 cps	8,275,551.0 cps	14,195,282.2 cps	468,774.1 cps	105,467.7 cps	31,900.7 cps	5,029.0 cps
Intensity per Run 2	1,280.7 cps	1,160.1 cps	860.0 cps	840.0 cps	8,741,108.7 cps	14,886,534.2 cps	474,176.1 cps	106,524.4 cps	33,613.3 cps	5,013.0 cps
Intensity per Run 3	1,393.9 cps	1,200.1 cps	936.0 cps	840.0 cps	8,757,929.7 cps	14,570,832.9 cps	478,954.7 cps	106,787.3 cps	31,740.3 cps	5,145.1 cps
Intensity RSD	8.5 %	5.2 %	4.7 %	6.4 %	3.2 %	2.4 %	1.1 %	0.7 %	3.2 %	1.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.016 ppb	0.009 ppb	0.471 ppb	6.625 ppb	5.041 ppb		0.335 ppb	N/A	0.059 ppb	
Concentration per Run 1	-0.013 ppb	0.019 ppb	0.472 ppb	6.344 ppb	4.992 ppb		0.213 ppb	N/A	0.040 ppb	
Concentration per Run 2	-0.018 ppb	0.011 ppb	0.440 ppb	6.762 ppb	5.046 ppb		0.448 ppb	N/A	0.047 ppb	
Concentration per Run 3	-0.017 ppb	-0.002 ppb	0.501 ppb	6.768 ppb	5.085 ppb		0.345 ppb	N/A	0.090 ppb	
Concentration RSD	16.8 %	119.0 %	6.5 %	3.7 %	0.9 %		35.2 %	N/A	45.3 %	
Intensity average	3,543 cps	1,999 cps	17,530 cps	8,962 cps	35,525 cps	44 cps	4,993 cps	70 cps	-1 cps	5,963 cps
Intensity per Run 1	3,600.5 cps	2,132.2 cps	17,308.0 cps	8,595.0 cps	34,969.0 cps	44.0 cps	4,537.6 cps	70.0 cps	-7.0 cps	5,703.3 cps
Intensity per Run 2	3,540.5 cps	2,040.2 cps	17,472.2 cps	9,223.4 cps	36,028.0 cps	45.0 cps	5,393.6 cps	100.0 cps	-4.7 cps	6,024.5 cps
Intensity per Run 3	3,488.5 cps	1,824.1 cps	17,808.7 cps	9,067.3 cps	35,578.7 cps	42.0 cps	5,049.1 cps	40.0 cps	9.9 cps	6,160.5 cps
Intensity RSD	1.6 %	7.9 %	1.5 %	3.7 %	1.5 %	3.5 %	8.6 %	42.9 %	1,534.4 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.030 ppb		97.105 %	0.305 ppb	0.296 ppb	0.295 ppb	0.291 ppb	0.294 ppb	0.019 ppm
Concentration per Run 1		0.234 ppb		96.086 %	0.270 ppb	0.273 ppb	0.271 ppb	0.266 ppb	0.272 ppb	0.019 ppm
Concentration per Run 2		0.193 ppb		98.706 %	0.307 ppb	0.280 ppb	0.295 ppb	0.281 ppb	0.291 ppb	0.020 ppm
Concentration per Run 3		-0.337 ppb		96.524 %	0.338 ppb	0.335 ppb	0.319 ppb	0.327 ppb	0.318 ppb	0.019 ppm
Concentration RSD		1,074.0 %		1.4 %	11.2 %	11.5 %	8.2 %	10.8 %	7.9 %	3.1 %
Intensity average	5,851 cps	-485 cps	6,120 cps	567,854 cps	3,645 cps	6,238 cps	6,901 cps	4,062 cps	10,773 cps	1,706,618 cps
Intensity per Run 1	5,326.1 cps	-441.6 cps	5,454.2 cps	561,894.5 cps	3,224.4 cps	5,717.3 cps	6,301.6 cps	3,688.6 cps	9,903.9 cps	1,652,858.1 cps
Intensity per Run 2	6,426.7 cps	-458.4 cps	6,693.8 cps	577,214.4 cps	3,716.6 cps	6,009.5 cps	6,994.0 cps	3,984.6 cps	10,824.7 cps	1,757,221.2 cps
Intensity per Run 3	5,799.4 cps	-554.3 cps	6,212.6 cps	564,453.2 cps	3,992.6 cps	6,986.0 cps	7,406.2 cps	4,512.8 cps	11,589.4 cps	1,709,773.8 cps
Intensity RSD	9.4 %	12.5 %	10.2 %	1.4 %	10.7 %	10.7 %	8.1 %	10.3 %	7.8 %	3.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.025 ppb	0.011 ppb	0.010 ppb	0.010 ppb	0.011 ppb	0.012 ppb	97.388 %	0.055 ppb	0.034 ppb
Concentration per Run 1		0.048 ppb	0.012 ppb	0.019 ppb	0.011 ppb	0.014 ppb	0.014 ppb	96.115 %	0.056 ppb	0.033 ppb
Concentration per Run 2		0.038 ppb	0.010 ppb	0.013 ppb	0.010 ppb	0.011 ppb	0.012 ppb	98.134 %	0.054 ppb	0.035 ppb
Concentration per Run 3		-0.012 ppb	0.010 ppb	-0.002 ppb	0.009 ppb	0.008 ppb	0.011 ppb	97.916 %	0.054 ppb	0.034 ppb
Concentration RSD		130.6 %	12.3 %	104.0 %	12.1 %	28.7 %	12.2 %	1.1 %	1.7 %	3.6 %
Intensity average	639 cps	121 cps	929 cps	9 cps	836 cps	153 cps	431 cps	871,901 cps	2,178 cps	1,277 cps
Intensity per Run 1	596.0 cps	144.0 cps	1,028.0 cps	16.0 cps	924.0 cps	192.0 cps	477.6 cps	860,500.1 cps	2,176.2 cps	1,236.1 cps
Intensity per Run 2	656.0 cps	136.0 cps	844.0 cps	12.0 cps	828.0 cps	156.0 cps	421.3 cps	878,577.6 cps	2,188.2 cps	1,324.1 cps
Intensity per Run 3	664.0 cps	84.0 cps	916.0 cps	0.0 cps	756.0 cps	112.0 cps	393.8 cps	876,624.4 cps	2,168.2 cps	1,272.1 cps
Intensity RSD	5.8 %	26.9 %	10.0 %	89.2 %	10.1 %	26.1 %	9.9 %	1.1 %	0.5 %	3.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.034 ppb	63.911 ppb	64.369 ppb			97.392 %			0.014 ppm	0.404 ppb
Concentration per Run 1	0.032 ppb	63.027 ppb	62.985 ppb			96.622 %			0.014 ppm	0.442 ppb
Concentration per Run 2	0.035 ppb	63.035 ppb	64.542 ppb			97.627 %			0.014 ppm	0.400 ppb
Concentration per Run 3	0.035 ppb	65.671 ppb	65.578 ppb			97.928 %			0.015 ppm	0.371 ppb
Concentration RSD	5.6 %	2.4 %	2.0 %			0.7 %			2.8 %	8.7 %
Intensity average	1,024 cps	410,700 cps	753,698 cps	379 cps	307 cps	3,061,315 cps	333 cps	265 cps	3,244,198 cps	36,741 cps
Intensity per Run 1	964.0 cps	400,644.5 cps	729,686.9 cps	400.0 cps	312.0 cps	3,037,103.1 cps	320.0 cps	276.0 cps	3,140,412.9 cps	39,346.9 cps
Intensity per Run 2	1,056.0 cps	407,178.1 cps	759,450.4 cps	360.0 cps	304.0 cps	3,068,694.0 cps	360.0 cps	280.0 cps	3,281,934.0 cps	36,779.1 cps
Intensity per Run 3	1,052.0 cps	424,276.0 cps	771,957.6 cps	376.0 cps	304.0 cps	3,078,147.9 cps	320.0 cps	240.0 cps	3,310,246.1 cps	34,097.5 cps
Intensity RSD	5.1 %	3.0 %	2.9 %	5.3 %	1.5 %	0.7 %	6.9 %	8.3 %	2.8 %	7.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.406 ppb	0.015 ppb	0.014 ppb	0.015 ppb	95.921 %
Concentration per Run 1	0.449 ppb	0.018 ppb	0.019 ppb	0.018 ppb	94.120 %
Concentration per Run 2	0.399 ppb	0.014 ppb	0.014 ppb	0.013 ppb	96.966 %
Concentration per Run 3	0.371 ppb	0.013 ppb	0.010 ppb	0.013 ppb	96.678 %
Concentration RSD	9.7 %	18.8 %	32.4 %	18.9 %	1.6 %
Intensity average	89,398 cps	1,783 cps	1,517 cps	7,146 cps	2,458,401 cps
Intensity per Run 1	96,693.8 cps	1,976.2 cps	1,780.1 cps	7,929.0 cps	2,412,229.6 cps
Intensity per Run 2	88,853.4 cps	1,708.1 cps	1,524.1 cps	6,772.7 cps	2,485,176.6 cps
Intensity per Run 3	82,646.5 cps	1,664.1 cps	1,248.1 cps	6,736.8 cps	2,477,797.2 cps
Intensity RSD	7.9 %	9.5 %	17.5 %	9.5 %	1.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-004A Analysis: 10/30/2019 15:43:27 Sample Type UNKNOWN
Comment 16WC1AA Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	91.697 %	93.631 %	101.566 ppb	107.869 ppb	110.434 ppb	N/A	7,934.105 ppb	39,820.930 ppb	39,656.333 ppb
Concentration per Run 1	90.387 %	95.165 %	99.191 ppb	102.222 ppb	107.239 ppb	N/A	7,625.223 ppb	38,634.139 ppb	38,703.197 ppb
Concentration per Run 2	92.118 %	93.915 %	101.814 ppb	109.974 ppb	111.265 ppb	N/A	8,027.055 ppb	40,304.443 ppb	39,614.385 ppb
Concentration per Run 3	92.585 %	91.815 %	103.693 ppb	111.411 ppb	112.798 ppb	N/A	8,150.038 ppb	40,524.208 ppb	40,651.418 ppb
Concentration RSD	1.3 %	1.8 %	2.2 %	4.6 %	2.6 %	N/A	3.5 %	2.6 %	2.5 %
Intensity average	12,824,084 cps	30,147 cps	15,103 cps	1,708 cps	10,352 cps	2,557 cps	14,363,255 cps	32,814,358 cps	6,866,921 cps
Intensity per Run 1	12,640,945.6 cps	30,641.0 cps	14,995.0 cps	1,647.1 cps	10,226.7 cps	2,650.3 cps	14,063,980.7 cps	32,434,527.4 cps	6,828,676.4 cps
Intensity per Run 2	12,882,976.4 cps	30,238.5 cps	15,189.2 cps	1,746.6 cps	10,456.9 cps	2,500.3 cps	14,543,947.1 cps	33,232,729.8 cps	6,862,817.3 cps
Intensity per Run 3	12,948,331.4 cps	29,562.4 cps	15,123.7 cps	1,731.1 cps	10,373.3 cps	2,520.3 cps	14,481,838.4 cps	32,775,816.9 cps	6,909,270.4 cps
Intensity RSD	1.3 %	1.8 %	0.7 %	3.1 %	1.1 %	3.2 %	1.8 %	1.2 %	0.6 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	39,191.255 ppb	110.906 ppb		1.007 ppm	3,983.951 ppb	98,343.987 ppb	104,044.191 ppb	99,773.662 ppb	91.135 %
Concentration per Run 1	37,990.346 ppb	108.387 ppb		0.962 ppm	3,901.082 ppb	93,909.550 ppb	102,345.278 ppb	96,573.187 ppb	89.972 %
Concentration per Run 2	39,662.323 ppb	109.300 ppb		1.038 ppm	4,020.701 ppb	99,208.327 ppb	104,891.898 ppb	103,110.801 ppb	92.371 %
Concentration per Run 3	39,921.095 ppb	115.033 ppb		1.023 ppm	4,030.070 ppb	101,914.084 ppb	104,895.398 ppb	99,636.999 ppb	91.062 %
Concentration RSD	2.7 %	3.2 %		4.0 %	1.8 %	4.1 %	1.4 %	3.3 %	1.3 %
Intensity average	9,026,009 cps	31,613 cps	108,352 cps	6,295,375 cps	3,078,841 cps	364,305 cps	252,204,618 cps	4,399,887 cps	6,272,841 cps
Intensity per Run 1	8,916,027.8 cps	31,499.8 cps	108,025.4 cps	6,131,383.1 cps	3,077,045.4 cps	355,299.0 cps	244,886,421.6 cps	4,348,824.8 cps	6,192,797.1 cps
Intensity per Run 2	9,137,316.3 cps	31,169.1 cps	110,043.0 cps	6,478,164.6 cps	3,101,491.4 cps	366,736.5 cps	257,621,230.9 cps	4,535,463.0 cps	6,357,909.8 cps
Intensity per Run 3	9,024,682.4 cps	32,171.5 cps	106,986.7 cps	6,276,577.2 cps	3,057,987.0 cps	370,879.2 cps	254,106,200.3 cps	4,315,373.9 cps	6,267,817.3 cps
Intensity RSD	1.2 %	1.6 %	1.4 %	2.8 %	0.7 %	2.2 %	2.6 %	2.7 %	1.3 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.263 %	105.987 ppb	100.554 ppb	101.114 ppb	104.542 ppb	N/A	2,927.109 ppb	4,705.098 ppb	4,552.761 ppb
Concentration per Run 1	93.181 %	102.166 ppb	96.708 ppb	96.700 ppb	100.680 ppb	N/A	2,800.535 ppb	4,548.816 ppb	4,349.933 ppb
Concentration per Run 2	90.994 %	107.549 ppb	101.442 ppb	102.181 ppb	106.182 ppb	N/A	2,954.058 ppb	4,879.048 ppb	4,603.100 ppb
Concentration per Run 3	89.614 %	108.245 ppb	103.513 ppb	104.461 ppb	106.762 ppb	N/A	3,026.735 ppb	4,687.430 ppb	4,705.250 ppb
Concentration RSD	2.0 %	3.1 %	3.5 %	3.9 %	3.2 %	N/A	3.9 %	3.5 %	4.0 %
Intensity average	267,933 cps	36,816 cps	1,229,392 cps	1,940,046 cps	274,721 cps	281,161 cps	42,401,470 cps	90,839,502 cps	2,971,806 cps
Intensity per Run 1	273,563.8 cps	36,200.4 cps	1,207,823.7 cps	1,895,423.3 cps	268,858.5 cps	278,306.5 cps	41,166,991.0 cps	89,042,139.8 cps	2,900,653.9 cps
Intensity per Run 2	267,143.5 cps	37,279.6 cps	1,237,135.2 cps	1,955,724.4 cps	278,799.5 cps	284,985.5 cps	42,781,803.1 cps	94,175,149.3 cps	2,997,371.7 cps
Intensity per Run 3	263,091.4 cps	36,966.7 cps	1,243,216.4 cps	1,968,991.1 cps	276,504.5 cps	280,192.3 cps	43,255,614.4 cps	89,301,218.1 cps	3,017,391.4 cps
Intensity RSD	2.0 %	1.5 %	1.5 %	2.0 %	1.9 %	1.2 %	2.6 %	3.2 %	2.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	111.423 ppb	115.081 ppb	113.684 ppb	102.194 ppb	102.104 ppb	105.230 ppb	129.770 ppb	120.720 ppb	
Concentration per Run 1	107.369 ppb	114.464 ppb	110.892 ppb	99.221 ppb	98.218 ppb	103.300 ppb	127.898 ppb	117.757 ppb	
Concentration per Run 2	113.288 ppb	115.697 ppb	115.701 ppb	103.735 ppb	104.595 ppb	105.925 ppb	128.873 ppb	121.982 ppb	
Concentration per Run 3	113.610 ppb	115.084 ppb	114.459 ppb	103.628 ppb	103.500 ppb	106.465 ppb	132.538 ppb	122.421 ppb	
Concentration RSD	3.2 %	0.5 %	2.2 %	2.5 %	3.3 %	1.6 %	1.9 %	2.1 %	
Intensity average	5,039,885 cps	1,262,580 cps	191,335 cps	2,797,063 cps	1,440,789 cps	610,509 cps	130,178 cps	580,705 cps	194 cps
Intensity per Run 1	4,960,550.2 cps	1,246,077.2 cps	188,520.1 cps	2,740,939.1 cps	1,415,668.2 cps	602,309.1 cps	129,177.8 cps	570,062.4 cps	202.0 cps
Intensity per Run 2	5,111,163.2 cps	1,278,441.7 cps	194,921.1 cps	2,843,121.9 cps	1,472,091.3 cps	614,559.2 cps	129,588.7 cps	588,138.4 cps	199.0 cps
Intensity per Run 3	5,047,942.1 cps	1,263,219.9 cps	190,562.9 cps	2,807,128.0 cps	1,434,608.4 cps	614,658.9 cps	131,767.2 cps	583,913.1 cps	182.0 cps
Intensity RSD	1.5 %	1.3 %	1.7 %	1.9 %	2.0 %	1.2 %	1.1 %	1.6 %	5.6 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	110.239 ppb	N/A	101.225 ppb			99.101 ppb		92.835 %	102.085 ppb
Concentration per Run 1	107.267 ppb	N/A	98.565 ppb			98.391 ppb		92.115 %	99.804 ppb
Concentration per Run 2	111.673 ppb	N/A	103.067 ppb			100.156 ppb		93.508 %	103.329 ppb
Concentration per Run 3	111.778 ppb	N/A	102.044 ppb			98.756 ppb		92.883 %	103.121 ppb
Concentration RSD	2.3 %	N/A	2.3 %			0.9 %		0.8 %	1.9 %
Intensity average	330,626 cps	9,477 cps	33,311 cps	5,346 cps	21,847 cps	16,218 cps	5,381 cps	542,884 cps	1,059,064 cps
Intensity per Run 1	323,288.6 cps	9,713.8 cps	32,413.0 cps	5,098.0 cps	21,600.7 cps	16,172.1 cps	5,601.3 cps	538,670.6 cps	1,029,697.4 cps
Intensity per Run 2	334,944.1 cps	9,473.6 cps	34,077.2 cps	5,544.2 cps	22,666.5 cps	16,398.2 cps	6,036.5 cps	546,819.7 cps	1,078,240.8 cps
Intensity per Run 3	333,644.8 cps	9,243.4 cps	33,443.0 cps	5,395.2 cps	21,273.1 cps	16,085.0 cps	4,505.8 cps	543,162.2 cps	1,069,252.5 cps
Intensity RSD	1.9 %	2.5 %	2.5 %	4.2 %	3.3 %	1.0 %	14.7 %	0.8 %	2.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	101.421 ppb	100.781 ppb	99.447 ppb	102.453 ppb	0.017 ppm		102.656 ppb	68.597 ppb	102.734 ppb
Concentration per Run 1	99.788 ppb	98.101 ppb	96.887 ppb	101.746 ppb	0.017 ppm		100.908 ppb	67.244 ppb	100.746 ppb
Concentration per Run 2	102.336 ppb	101.658 ppb	99.898 ppb	102.037 ppb	0.017 ppm		102.772 ppb	68.673 ppb	103.585 ppb
Concentration per Run 3	102.140 ppb	102.584 ppb	101.555 ppb	103.576 ppb	0.017 ppm		104.287 ppb	69.875 ppb	103.871 ppb
Concentration RSD	1.4 %	2.3 %	2.4 %	1.0 %	0.1 %		1.6 %	1.9 %	1.7 %
Intensity average	1,907,080 cps	2,088,291 cps	1,230,991 cps	3,364,057 cps	1,546,939 cps	764 cps	98,489 cps	4,954,324 cps	75,674 cps
Intensity per Run 1	1,866,935.5 cps	2,023,476.8 cps	1,194,408.8 cps	3,328,881.4 cps	1,548,065.4 cps	728.0 cps	96,834.3 cps	4,878,871.4 cps	74,296.4 cps
Intensity per Run 2	1,935,054.8 cps	2,117,677.3 cps	1,242,842.1 cps	3,366,609.3 cps	1,545,743.4 cps	732.0 cps	98,862.2 cps	4,960,750.2 cps	76,461.7 cps
Intensity per Run 3	1,919,251.3 cps	2,123,720.1 cps	1,255,722.1 cps	3,396,679.7 cps	1,547,007.3 cps	832.0 cps	99,769.3 cps	5,023,349.9 cps	76,264.2 cps
Intensity RSD	1.9 %	2.7 %	2.6 %	1.0 %	0.1 %	7.7 %	1.5 %	1.5 %	1.6 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	68.028 ppb	101.631 ppb	100.750 ppb	90.127 %	106.347 ppb	98.724 ppb	99.969 ppb	428.268 ppb	438.397 ppb
Concentration per Run 1	66.329 ppb	99.508 ppb	99.646 ppb	90.536 %	103.486 ppb	93.206 ppb	93.665 ppb	420.551 ppb	427.592 ppb
Concentration per Run 2	68.619 ppb	102.288 ppb	101.123 ppb	90.139 %	107.261 ppb	100.143 ppb	102.145 ppb	434.368 ppb	448.361 ppb
Concentration per Run 3	69.136 ppb	103.097 ppb	101.480 ppb	89.706 %	108.294 ppb	102.823 ppb	104.098 ppb	429.884 ppb	439.238 ppb
Concentration RSD	2.2 %	1.9 %	1.0 %	0.5 %	2.4 %	5.0 %	5.5 %	1.6 %	2.4 %
Intensity average	4,877,665 cps	1,209,510 cps	2,950,175 cps	806,893 cps	2,563,590 cps	2,501,230 cps	2,027,449 cps	2,573,978 cps	4,806,169 cps
Intensity per Run 1	4,763,708.6 cps	1,187,360.6 cps	2,931,175.1 cps	810,552.3 cps	2,506,068.9 cps	2,372,397.8 cps	1,908,393.1 cps	2,538,677.6 cps	4,708,152.4 cps
Intensity per Run 2	4,929,121.4 cps	1,218,900.2 cps	2,961,590.3 cps	807,001.3 cps	2,587,281.0 cps	2,540,132.8 cps	2,074,612.9 cps	2,618,618.4 cps	4,931,804.7 cps
Intensity per Run 3	4,940,164.2 cps	1,222,267.8 cps	2,957,759.7 cps	803,124.7 cps	2,597,421.1 cps	2,591,159.5 cps	2,099,341.7 cps	2,564,637.6 cps	4,778,550.2 cps
Intensity RSD	2.0 %	1.6 %	0.6 %	0.5 %	2.0 %	4.6 %	5.1 %	1.6 %	2.4 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.324 %			0.014 ppm	109.119 ppb	110.017 ppb	106.953 ppb
Concentration per Run 1			92.708 %			0.014 ppm	106.915 ppb	106.610 ppb	103.912 ppb
Concentration per Run 2			92.919 %			0.014 ppm	111.106 ppb	111.460 ppb	108.807 ppb
Concentration per Run 3			91.347 %			0.013 ppm	109.335 ppb	111.982 ppb	108.140 ppb
Concentration RSD			0.9 %			2.3 %	1.9 %	2.7 %	2.5 %
Intensity average	1,833 cps	1,663 cps	2,902,025 cps	1,461 cps	1,367 cps	3,066,720 cps	8,663,105 cps	21,012,561 cps	6,746,036 cps
Intensity per Run 1	1,856.1 cps	1,608.1 cps	2,914,085.3 cps	1,432.1 cps	1,416.1 cps	3,127,008.1 cps	8,570,180.2 cps	20,575,848.9 cps	6,620,418.6 cps
Intensity per Run 2	1,884.1 cps	1,796.1 cps	2,920,699.2 cps	1,420.1 cps	1,360.1 cps	3,082,088.3 cps	8,773,801.5 cps	21,138,690.2 cps	6,820,724.2 cps
Intensity per Run 3	1,760.1 cps	1,584.1 cps	2,871,289.8 cps	1,532.1 cps	1,324.1 cps	2,991,062.4 cps	8,645,332.4 cps	21,323,144.7 cps	6,796,965.4 cps
Intensity RSD	3.5 %	7.0 %	0.9 %	4.2 %	3.4 %	2.3 %	1.2 %	1.9 %	1.6 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	108.246 ppb	107.591 ppb	85.718 %
Concentration per Run 1	103.800 ppb	104.518 ppb	86.605 %
Concentration per Run 2	110.093 ppb	109.356 ppb	85.103 %
Concentration per Run 3	110.845 ppb	108.901 ppb	85.445 %
Concentration RSD	3.6 %	2.5 %	0.9 %
Intensity average	5,988,592 cps	27,310,587 cps	2,196,894 cps
Intensity per Run 1	5,801,767.4 cps	26,809,150.0 cps	2,219,637.9 cps
Intensity per Run 2	6,051,856.9 cps	27,563,366.9 cps	2,181,129.4 cps
Intensity per Run 3	6,112,152.6 cps	27,559,243.0 cps	2,189,913.2 cps
Intensity RSD	2.7 %	1.6 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 15:49:32 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	89.157 %	91.435 %	146.482 ppb	146.216 ppb	147.971 ppb	N/A	14,572.421 ppb	14,891.641 ppb	14,809.002 ppb
Concentration per Run 1	88.626 %	90.917 %	144.538 ppb	143.794 ppb	145.638 ppb	N/A	14,487.933 ppb	14,861.022 ppb	14,689.638 ppb
Concentration per Run 2	89.230 %	92.588 %	144.918 ppb	143.483 ppb	147.581 ppb	N/A	14,492.110 ppb	14,734.815 ppb	14,945.113 ppb
Concentration per Run 3	89.615 %	90.801 %	149.990 ppb	151.371 ppb	150.693 ppb	N/A	14,737.218 ppb	15,079.085 ppb	14,792.255 ppb
Recovery Percentage 1			97.655 %		98.647 %		96.188 %		
Concentration RSD	0.6 %	1.1 %	2.1 %	3.1 %	1.7 %	N/A	1.0 %	1.2 %	0.9 %
Intensity average	12,468,914 cps	29,440 cps	21,273 cps	2,255 cps	13,500 cps	2,140 cps	25,470,701 cps	11,845,235 cps	2,473,893 cps
Intensity per Run 1	12,394,627.3 cps	29,273.3 cps	20,873.4 cps	2,200.7 cps	13,177.4 cps	2,350.2 cps	24,949,328.7 cps	11,640,360.6 cps	2,414,905.7 cps
Intensity per Run 2	12,479,168.0 cps	29,811.5 cps	21,313.2 cps	2,240.7 cps	13,631.9 cps	2,140.2 cps	25,631,877.0 cps	11,859,920.4 cps	2,525,980.4 cps
Intensity per Run 3	12,532,947.2 cps	29,236.2 cps	21,633.2 cps	2,323.7 cps	13,692.0 cps	1,930.2 cps	25,830,897.0 cps	12,035,423.8 cps	2,480,791.9 cps
Intensity RSD	0.6 %	1.1 %	1.8 %	2.8 %	2.1 %	9.8 %	1.8 %	1.7 %	2.3 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	14,577.733 ppb	14,989.329 ppb		0.615 ppm	14,826.604 ppb	15,053.900 ppb	15,227.629 ppb	15,110.254 ppb	85.978 %
Concentration per Run 1	14,517.168 ppb	14,676.998 ppb		0.609 ppm	15,002.658 ppb	14,930.175 ppb	15,359.179 ppb	15,139.046 ppb	84.570 %
Concentration per Run 2	14,526.293 ppb	15,059.339 ppb		0.615 ppm	14,741.021 ppb	15,283.367 ppb	15,153.998 ppb	15,105.057 ppb	86.511 %
Concentration per Run 3	14,689.738 ppb	15,231.650 ppb		0.621 ppm	14,736.133 ppb	14,948.157 ppb	15,169.709 ppb	15,086.660 ppb	86.851 %
Recovery Percentage 1	96.223 %	98.939 %			97.865 %		100.512 %	99.738 %	
Concentration RSD	0.7 %	1.9 %		0.9 %	1.0 %	1.3 %	0.7 %	0.2 %	1.4 %
Intensity average	3,236,539 cps	4,056,051 cps	4,294 cps	3,681,544 cps	10,891,597 cps	53,197 cps	34,894,760 cps	634,812 cps	5,917,837 cps
Intensity per Run 1	3,170,217.9 cps	3,903,641.6 cps	4,350.8 cps	3,570,239.4 cps	10,761,442.9 cps	51,386.1 cps	34,631,730.1 cps	619,163.9 cps	5,820,969.5 cps
Intensity per Run 2	3,263,090.2 cps	4,122,207.0 cps	4,280.8 cps	3,721,093.1 cps	10,952,094.9 cps	54,599.3 cps	34,939,316.3 cps	641,605.5 cps	5,954,573.7 cps
Intensity per Run 3	3,276,309.5 cps	4,142,303.4 cps	4,250.7 cps	3,753,298.6 cps	10,961,253.7 cps	53,605.0 cps	35,113,233.8 cps	643,667.0 cps	5,977,966.4 cps
Intensity RSD	1.8 %	3.3 %	1.2 %	2.7 %	1.0 %	3.1 %	0.7 %	2.1 %	1.4 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	86.789 %	148.778 ppb	146.181 ppb	146.325 ppb	151.090 ppb	N/A	150.696 ppb	15,301.383 ppb	15,344.301 ppb
Concentration per Run 1	84.436 %	147.093 ppb	145.546 ppb	145.993 ppb	150.185 ppb	N/A	149.908 ppb	15,201.708 ppb	15,464.132 ppb
Concentration per Run 2	87.742 %	148.218 ppb	145.383 ppb	145.376 ppb	150.058 ppb	N/A	148.785 ppb	15,103.600 ppb	15,137.927 ppb
Concentration per Run 3	88.189 %	151.023 ppb	147.614 ppb	147.608 ppb	153.029 ppb	N/A	153.395 ppb	15,598.842 ppb	15,430.843 ppb
Recovery Percentage 1		99.185 %	97.454 %	97.550 %		0.000 %	100.464 %		101.283 %
Concentration RSD	2.4 %	1.4 %	0.9 %	0.8 %	1.1 %	N/A	1.6 %	1.7 %	1.2 %
Intensity average	254,798 cps	49,264 cps	1,699,832 cps	2,670,359 cps	380,021 cps	393,373 cps	2,097,989 cps	283,791,447 cps	9,526,637 cps
Intensity per Run 1	247,890.8 cps	47,393.8 cps	1,646,454.3 cps	2,591,954.4 cps	367,972.3 cps	386,044.0 cps	2,033,706.6 cps	274,780,328.7 cps	9,341,598.1 cps
Intensity per Run 2	257,595.1 cps	49,622.4 cps	1,709,003.0 cps	2,682,054.7 cps	381,953.6 cps	391,992.4 cps	2,096,805.0 cps	283,592,218.2 cps	9,502,551.3 cps
Intensity per Run 3	258,907.7 cps	50,775.0 cps	1,744,037.7 cps	2,737,068.0 cps	390,135.8 cps	402,082.2 cps	2,163,454.7 cps	293,001,794.6 cps	9,735,761.1 cps
Intensity RSD	2.4 %	3.5 %	2.9 %	2.7 %	2.9 %	2.1 %	3.1 %	3.2 %	2.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	151.001 ppb	151.648 ppb	154.140 ppb	152.687 ppb	156.558 ppb	153.528 ppb	155.896 ppb	155.379 ppb	
Concentration per Run 1	150.803 ppb	150.577 ppb	155.494 ppb	151.473 ppb	156.373 ppb	148.696 ppb	153.347 ppb	154.082 ppb	
Concentration per Run 2	150.812 ppb	151.119 ppb	152.901 ppb	152.629 ppb	158.224 ppb	157.142 ppb	156.231 ppb	154.747 ppb	
Concentration per Run 3	151.386 ppb	153.248 ppb	154.024 ppb	153.960 ppb	155.076 ppb	154.744 ppb	158.111 ppb	157.306 ppb	
Recovery Percentage 1	100.667 %	101.099 %			104.372 %	102.352 %			
Concentration RSD	0.2 %	0.9 %	0.8 %	0.8 %	1.0 %	2.8 %	1.5 %	1.1 %	
Intensity average	6,497,831 cps	1,642,931 cps	250,042 cps	4,039,590 cps	2,100,746 cps	893,443 cps	151,393 cps	723,184 cps	408 cps
Intensity per Run 1	6,313,306.6 cps	1,598,292.0 cps	246,105.9 cps	3,910,105.4 cps	2,041,397.6 cps	865,489.7 cps	145,410.0 cps	700,370.1 cps	380.0 cps
Intensity per Run 2	6,560,838.5 cps	1,664,498.1 cps	251,363.0 cps	4,091,756.1 cps	2,146,397.1 cps	911,021.6 cps	153,797.0 cps	730,341.2 cps	439.0 cps
Intensity per Run 3	6,619,346.6 cps	1,666,001.7 cps	252,658.4 cps	4,116,907.2 cps	2,114,443.6 cps	903,816.6 cps	154,971.4 cps	738,841.4 cps	406.0 cps
Intensity RSD	2.5 %	2.4 %	1.4 %	2.8 %	2.6 %	2.7 %	3.4 %	2.8 %	7.2 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	150.232 ppb	N/A	152.412 ppb			147.091 ppb		91.852 %	144.966 ppb
Concentration per Run 1	146.193 ppb	N/A	152.888 ppb			143.743 ppb		89.992 %	141.039 ppb
Concentration per Run 2	151.858 ppb	N/A	150.702 ppb			147.983 ppb		93.386 %	144.259 ppb
Concentration per Run 3	152.646 ppb	N/A	153.645 ppb			149.548 ppb		92.179 %	149.598 ppb
Recovery Percentage 1	100.155 %	0.000 %				98.061 %			
Concentration RSD	2.3 %	N/A	1.0 %			2.0 %		1.9 %	3.0 %
Intensity average	453,820 cps	14,585 cps	49,154 cps	5,298 cps	30,092 cps	24,537 cps	5,548 cps	537,134 cps	1,493,857 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	441,567.6 cps	14,128.0 cps	48,230.9 cps	5,037.0 cps	30,569.4 cps	23,960.3 cps	6,895.9 cps	526,253.9 cps	1,429,256.9 cps
Intensity per Run 2	457,107.3 cps	15,259.4 cps	49,350.4 cps	5,266.1 cps	29,286.3 cps	24,603.6 cps	4,413.8 cps	546,101.0 cps	1,505,435.4 cps
Intensity per Run 3	462,784.9 cps	14,368.3 cps	49,880.7 cps	5,592.3 cps	30,421.1 cps	25,048.5 cps	5,334.2 cps	539,046.5 cps	1,546,878.4 cps
Intensity RSD	2.4 %	4.1 %	1.7 %	5.3 %	2.3 %	2.2 %	22.6 %	1.9 %	4.0 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	146.457 ppb	145.162 ppb	140.605 ppb	146.155 ppb	0.018 ppm		149.788 ppb	28.546 ppb	151.283 ppb
Concentration per Run 1	144.130 ppb	140.795 ppb	136.358 ppb	142.399 ppb	0.017 ppm		145.892 ppb	27.545 ppb	147.240 ppb
Concentration per Run 2	146.526 ppb	144.478 ppb	139.809 ppb	145.719 ppb	0.018 ppm		150.603 ppb	29.095 ppb	152.924 ppb
Concentration per Run 3	148.715 ppb	150.214 ppb	145.646 ppb	150.347 ppb	0.018 ppm		152.868 ppb	28.997 ppb	153.684 ppb
Recovery Percentage 1			93.736 %		0.000 %			95.152 %	
Concentration RSD	1.6 %	3.3 %	3.3 %	2.7 %	2.2 %		2.4 %	3.0 %	2.3 %
Intensity average	2,737,598 cps	2,992,621 cps	1,732,995 cps	4,782,319 cps	1,596,535 cps	755 cps	144,082 cps	2,082,618 cps	111,935 cps
Intensity per Run 1	2,651,572.4 cps	2,858,782.9 cps	1,656,591.9 cps	4,596,384.0 cps	1,558,666.3 cps	740.0 cps	139,305.0 cps	2,008,973.9 cps	108,311.7 cps
Intensity per Run 2	2,771,677.5 cps	3,011,673.7 cps	1,741,063.2 cps	4,813,939.9 cps	1,626,074.9 cps	776.0 cps	145,369.7 cps	2,115,363.1 cps	113,368.4 cps
Intensity per Run 3	2,789,544.4 cps	3,107,407.2 cps	1,801,328.9 cps	4,936,634.1 cps	1,604,863.8 cps	748.0 cps	147,572.3 cps	2,123,517.6 cps	114,124.4 cps
Intensity RSD	2.7 %	4.2 %	4.2 %	3.6 %	2.2 %	2.5 %	3.0 %	3.1 %	2.8 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.184 ppb	150.970 ppb	147.193 ppb	91.036 %	150.958 ppb	146.659 ppb	146.051 ppb	148.103 ppb	149.727 ppb
Concentration per Run 1	27.282 ppb	146.777 ppb	142.177 ppb	91.006 %	147.247 ppb	138.206 ppb	138.777 ppb	144.403 ppb	146.636 ppb
Concentration per Run 2	28.259 ppb	153.821 ppb	150.977 ppb	90.723 %	152.366 ppb	150.691 ppb	146.803 ppb	150.837 ppb	149.195 ppb
Concentration per Run 3	29.010 ppb	152.312 ppb	148.425 ppb	91.379 %	153.262 ppb	151.081 ppb	152.573 ppb	149.069 ppb	153.350 ppb
Recovery Percentage 1			98.129 %		100.639 %	97.773 %		98.735 %	
Concentration RSD	3.1 %	2.5 %	3.1 %	0.4 %	2.1 %	5.0 %	4.7 %	2.2 %	2.3 %
Intensity average	2,031,579 cps	1,809,082 cps	4,353,623 cps	815,029 cps	3,675,357 cps	3,753,102 cps	2,991,767 cps	898,719 cps	1,657,181 cps
Intensity per Run 1	1,956,645.4 cps	1,752,762.9 cps	4,203,958.8 cps	814,764.7 cps	3,580,980.1 cps	3,529,900.8 cps	2,835,654.8 cps	871,381.1 cps	1,613,096.2 cps
Intensity per Run 2	2,039,338.0 cps	1,842,580.6 cps	4,450,239.5 cps	812,223.4 cps	3,700,061.6 cps	3,849,601.8 cps	3,003,650.1 cps	917,461.1 cps	1,656,144.0 cps
Intensity per Run 3	2,098,752.6 cps	1,831,901.8 cps	4,406,670.9 cps	818,097.6 cps	3,745,029.4 cps	3,879,804.4 cps	3,135,995.2 cps	907,314.0 cps	1,702,302.9 cps
Intensity RSD	3.5 %	2.7 %	3.0 %	0.4 %	2.3 %	5.2 %	5.0 %	2.7 %	2.7 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.129 %			0.014 ppm	146.885 ppb	147.562 ppb	146.146 ppb
Concentration per Run 1			92.048 %			0.013 ppm	144.062 ppb	144.864 ppb	144.951 ppb
Concentration per Run 2			93.995 %			0.014 ppm	145.954 ppb	146.976 ppb	145.120 ppb
Concentration per Run 3			93.343 %			0.014 ppm	150.639 ppb	150.844 ppb	148.368 ppb
Recovery Percentage 1						0.000 %		98.374 %	
Concentration RSD			1.1 %			0.5 %	2.3 %	2.1 %	1.3 %
Intensity average	69 cps	21 cps	2,927,313 cps	88 cps	28 cps	3,071,491 cps	12,330,246 cps	30,002,375 cps	9,779,305 cps
Intensity per Run 1	48.0 cps	32.0 cps	2,893,349.0 cps	96.0 cps	36.0 cps	3,055,792.8 cps	11,900,554.4 cps	28,966,957.8 cps	9,542,518.7 cps
Intensity per Run 2	92.0 cps	24.0 cps	2,954,546.6 cps	60.0 cps	12.0 cps	3,074,812.5 cps	12,427,584.5 cps	30,332,388.6 cps	9,853,818.8 cps
Intensity per Run 3	68.0 cps	8.0 cps	2,934,043.6 cps	108.0 cps	36.0 cps	3,083,867.7 cps	12,662,599.6 cps	30,707,780.1 cps	9,941,578.8 cps
Intensity RSD	31.8 %	57.3 %	1.1 %	28.4 %	49.5 %	0.5 %	3.2 %	3.1 %	2.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	147.472 ppb	145.699 ppb	91.231 %
Concentration per Run 1	144.741 ppb	144.172 ppb	89.730 %
Concentration per Run 2	146.894 ppb	143.891 ppb	92.610 %
Concentration per Run 3	150.780 ppb	149.033 ppb	91.352 %
Recovery Percentage 1		97.132 %	
Concentration RSD	2.1 %	2.0 %	1.6 %
Intensity average	8,666,271 cps	39,367,280 cps	2,338,185 cps
Intensity per Run 1	8,366,844.3 cps	38,314,081.6 cps	2,299,730.3 cps
Intensity per Run 2	8,759,966.9 cps	39,466,296.6 cps	2,373,529.3 cps
Intensity per Run 3	8,872,000.8 cps	40,321,462.2 cps	2,341,294.0 cps
Intensity RSD	3.1 %	2.6 %	1.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 15:55:37 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	96.609 %	94.530 %	0.013 ppb	0.431 ppb	0.327 ppb	N/A	-0.725 ppb	0.320 ppb	0.369 ppb	-0.063 ppb
Concentration per Run 1	95.630 %	91.164 %	0.009 ppb	0.401 ppb	0.347 ppb	N/A	-0.402 ppb	0.939 ppb	0.862 ppb	-0.045 ppb
Concentration per Run 2	96.926 %	95.333 %	0.021 ppb	0.468 ppb	0.341 ppb	N/A	-0.457 ppb	0.084 ppb	0.090 ppb	0.416 ppb
Concentration per Run 3	97.272 %	97.093 %	0.010 ppb	0.425 ppb	0.291 ppb	N/A	-1.315 ppb	-0.063 ppb	0.157 ppb	-0.562 ppb
Recovery Percentage 1			1.344 %	0.043 %			-0.145 %			-0.013 %
Concentration RSD	0.9 %	3.2 %	48.3 %	7.8 %	9.5 %	N/A	70.6 %	169.0 %	115.8 %	771.9 %
Intensity average	13,511,127 cps	30,437 cps	5 cps	10 cps	46 cps	1,897 cps	13,961 cps	2,150 cps	513 cps	543 cps
Intensity per Run 1	13,374,215.6 cps	29,352.9 cps	4.5 cps	9.5 cps	46.0 cps	2,010.2 cps	14,067.9 cps	2,580.3 cps	580.0 cps	530.0 cps
Intensity per Run 2	13,555,397.7 cps	30,695.1 cps	6.5 cps	11.0 cps	47.5 cps	1,890.1 cps	14,578.6 cps	1,980.2 cps	470.0 cps	660.0 cps
Intensity per Run 3	13,603,767.4 cps	31,262.1 cps	5.0 cps	10.5 cps	43.5 cps	1,790.1 cps	13,237.0 cps	1,890.2 cps	490.0 cps	440.0 cps
Intensity RSD	0.9 %	3.2 %	19.5 %	7.4 %	4.4 %	5.8 %	4.8 %	17.4 %	11.4 %	20.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.011 ppb		0.004 ppm	-0.686 ppb	-12.602 ppb	-11.731 ppb	-6.405 ppb	93.182 %	90.657 %	0.032 ppb
Concentration per Run 1	0.468 ppb		0.005 ppm	1.057 ppb	-13.311 ppb	-11.736 ppb	-6.198 ppb	92.640 %	87.806 %	0.044 ppb
Concentration per Run 2	-0.466 ppb		0.004 ppm	-1.584 ppb	-13.530 ppb	-11.815 ppb	-5.650 ppb	94.289 %	91.351 %	0.043 ppb
Concentration per Run 3	-0.036 ppb		0.004 ppm	-1.530 ppb	-10.965 ppb	-11.641 ppb	-7.365 ppb	92.617 %	92.815 %	0.008 ppb
Recovery Percentage 1	-0.056 %			-0.137 %			-0.640 %			0.316 %
Concentration RSD	4,203.3 %		9.8 %	220.1 %	11.3 %	0.7 %	13.7 %	1.0 %	2.8 %	65.2 %
Intensity average	463 cps	2,744 cps	26,622 cps	19,285 cps	23 cps	34,685 cps	393 cps	6,413,720 cps	266,155 cps	12 cps
Intensity per Run 1	580.0 cps	3,100.4 cps	28,412.9 cps	19,976.1 cps	20.0 cps	34,467.5 cps	390.0 cps	6,376,392.0 cps	257,783.1 cps	16.0 cps
Intensity per Run 2	340.0 cps	2,330.2 cps	26,708.7 cps	18,764.2 cps	20.0 cps	34,878.7 cps	430.0 cps	6,489,945.4 cps	268,191.0 cps	16.0 cps
Intensity per Run 3	470.0 cps	2,800.3 cps	24,745.0 cps	19,114.7 cps	30.0 cps	34,708.4 cps	360.0 cps	6,374,823.4 cps	272,489.8 cps	4.0 cps
Intensity RSD	25.9 %	14.1 %	6.9 %	3.2 %	24.7 %	0.6 %	8.9 %	1.0 %	2.8 %	57.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.100 ppb	-0.425 ppb	N/A	-0.046 ppb	-0.609 ppb	-0.505 ppb	0.004 ppb	-0.761 ppb	-0.777 ppb
Concentration per Run 1	-0.107 ppb	-0.096 ppb	-0.423 ppb	N/A	-0.034 ppb	-0.137 ppb	0.111 ppb	0.008 ppb	-0.736 ppb	-0.774 ppb
Concentration per Run 2	-0.114 ppb	-0.101 ppb	-0.417 ppb	N/A	-0.050 ppb	-0.739 ppb	-0.754 ppb	0.004 ppb	-0.770 ppb	-0.770 ppb
Concentration per Run 3	-0.114 ppb	-0.103 ppb	-0.433 ppb	N/A	-0.055 ppb	-0.951 ppb	-0.871 ppb	0.000 ppb	-0.777 ppb	-0.785 ppb
Recovery Percentage 1	-2.237 %	-5.001 %			-4.618 %		-0.252 %	0.407 %	-76.121 %	
Concentration RSD	3.7 %	3.4 %	1.9 %	N/A	24.5 %	69.3 %	106.2 %	99.4 %	2.9 %	1.0 %
Intensity average	190 cps	432 cps	100 cps	120 cps	1,335 cps	25,067 cps	747 cps	420 cps	1,971 cps	303 cps
Intensity per Run 1	240.8 cps	488.0 cps	100.0 cps	230.0 cps	1,468.1 cps	33,104.7 cps	1,116.1 cps	596.0 cps	2,148.2 cps	296.0 cps
Intensity per Run 2	162.0 cps	424.0 cps	120.0 cps	70.0 cps	1,300.1 cps	22,941.3 cps	596.0 cps	404.0 cps	1,904.1 cps	316.0 cps
Intensity per Run 3	167.5 cps	384.0 cps	80.0 cps	60.0 cps	1,236.1 cps	19,154.9 cps	528.0 cps	260.0 cps	1,860.1 cps	296.0 cps
Intensity RSD	23.1 %	12.1 %	20.0 %	79.5 %	9.0 %	28.8 %	43.1 %	40.1 %	7.9 %	3.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.091 ppb	-0.079 ppb	-1.846 ppb	-1.519 ppb	-1.646 ppb		-0.064 ppb	N/A	0.077 ppb	
Concentration per Run 1	-0.085 ppb	-0.069 ppb	-1.836 ppb	-1.561 ppb	-1.612 ppb		-0.236 ppb	N/A	0.102 ppb	
Concentration per Run 2	-0.091 ppb	-0.077 ppb	-1.828 ppb	-1.485 ppb	-1.676 ppb		-0.167 ppb	N/A	0.075 ppb	
Concentration per Run 3	-0.098 ppb	-0.091 ppb	-1.874 ppb	-1.511 ppb	-1.650 ppb		0.210 ppb	N/A	0.055 ppb	
Recovery Percentage 1		-3.945 %	-92.307 %				-6.437 %			
Concentration RSD	6.8 %	13.9 %	1.3 %	2.5 %	1.9 %		372.8 %	N/A	30.8 %	
Intensity average	1,332 cps	672 cps	3,256 cps	545 cps	2,430 cps	6 cps	3,654 cps	63 cps	5 cps	727 cps
Intensity per Run 1	1,440.1 cps	792.0 cps	3,140.4 cps	484.0 cps	2,492.3 cps	9.0 cps	2,929.5 cps	110.0 cps	13.1 cps	778.0 cps
Intensity per Run 2	1,364.1 cps	700.0 cps	3,412.5 cps	584.0 cps	2,316.2 cps	2.0 cps	3,357.2 cps	40.0 cps	4.7 cps	719.0 cps
Intensity per Run 3	1,192.1 cps	524.0 cps	3,216.4 cps	568.0 cps	2,480.2 cps	6.0 cps	4,676.8 cps	40.0 cps	-2.1 cps	683.0 cps
Intensity RSD	9.5 %	20.3 %	4.3 %	9.9 %	4.0 %	62.0 %	24.9 %	63.8 %	145.1 %	6.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.735 ppb		92.973 %	0.246 ppb	0.248 ppb	0.234 ppb	0.243 ppb	0.245 ppb	0.019 ppm
Concentration per Run 1		1.860 ppb		88.829 %	0.289 ppb	0.256 ppb	0.257 ppb	0.280 ppb	0.268 ppb	0.018 ppm
Concentration per Run 2		0.655 ppb		94.163 %	0.228 ppb	0.235 ppb	0.209 ppb	0.208 ppb	0.225 ppb	0.019 ppm
Concentration per Run 3		-0.309 ppb		95.926 %	0.222 ppb	0.253 ppb	0.235 ppb	0.242 ppb	0.243 ppb	0.020 ppm
Recovery Percentage 1		14.700 %						2.435 %		
Concentration RSD		147.8 %		4.0 %	15.0 %	4.8 %	10.3 %	15.0 %	8.7 %	3.5 %
Intensity average	5,467 cps	-355 cps	5,797 cps	543,687 cps	2,875 cps	5,094 cps	5,346 cps	3,303 cps	8,764 cps	1,699,567 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,352.8 cps	-140.9 cps	4,466.9 cps	519,456.0 cps	3,176.4 cps	5,009.0 cps	5,577.3 cps	3,600.5 cps	9,075.3 cps	1,633,057.0 cps
Intensity per Run 2	4,965.1 cps	-368.3 cps	5,300.3 cps	550,648.7 cps	2,728.3 cps	4,901.0 cps	4,901.0 cps	2,896.3 cps	8,206.7 cps	1,717,538.2 cps
Intensity per Run 3	7,083.0 cps	-556.6 cps	7,625.3 cps	560,957.4 cps	2,720.3 cps	5,373.2 cps	5,561.2 cps	3,412.5 cps	9,011.3 cps	1,748,106.6 cps
Intensity RSD	26.2 %	58.6 %	28.2 %	4.0 %	9.1 %	4.9 %	7.2 %	11.0 %	5.5 %	3.5 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.009 ppb	0.003 ppb	0.012 ppb	0.003 ppb	0.009 ppb	0.009 ppb	95.411 %	0.022 ppb	0.907 ppb
Concentration per Run 1		0.003 ppb	0.003 ppb	0.015 ppb	0.004 ppb	0.013 ppb	0.013 ppb	90.307 %	0.041 ppb	0.905 ppb
Concentration per Run 2		-0.019 ppb	0.003 ppb	0.003 ppb	0.002 ppb	0.007 ppb	0.007 ppb	96.676 %	0.016 ppb	0.918 ppb
Concentration per Run 3		-0.013 ppb	0.002 ppb	0.018 ppb	0.002 ppb	0.007 ppb	0.005 ppb	99.251 %	0.009 ppb	0.899 ppb
Recovery Percentage 1			0.279 %				0.875 %			45.360 %
Concentration RSD		123.4 %	22.8 %	63.6 %	46.5 %	42.9 %	47.2 %	4.8 %	76.2 %	1.1 %
Intensity average	644 cps	84 cps	303 cps	11 cps	271 cps	120 cps	308 cps	854,202 cps	1,287 cps	24,535 cps
Intensity per Run 1	704.0 cps	92.0 cps	332.0 cps	12.0 cps	356.0 cps	168.0 cps	430.8 cps	808,500.5 cps	1,684.1 cps	23,177.6 cps
Intensity per Run 2	552.0 cps	76.0 cps	312.0 cps	4.0 cps	256.0 cps	96.0 cps	276.5 cps	865,525.6 cps	1,172.1 cps	25,213.4 cps
Intensity per Run 3	676.0 cps	84.0 cps	264.0 cps	16.0 cps	200.0 cps	96.0 cps	217.1 cps	888,580.5 cps	1,004.0 cps	25,213.5 cps
Intensity RSD	12.6 %	9.5 %	11.5 %	57.3 %	29.2 %	34.6 %	35.8 %	4.8 %	27.5 %	4.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.926 ppb	-0.005 ppb	-0.003 ppb			93.691 %			0.013 ppm	0.008 ppb
Concentration per Run 1	0.936 ppb	0.005 ppb	-0.005 ppb			89.062 %			0.013 ppm	0.012 ppb
Concentration per Run 2	0.951 ppb	-0.007 ppb	-0.002 ppb			96.830 %			0.014 ppm	0.006 ppb
Concentration per Run 3	0.891 ppb	-0.013 ppb	-0.002 ppb			95.181 %			0.014 ppm	0.005 ppb
Recovery Percentage 1		-0.050 %							1.343 %	
Concentration RSD	3.4 %	184.4 %	64.5 %			4.4 %			3.4 %	42.9 %
Intensity average	20,001 cps	121 cps	236 cps	1 cps	8 cps	2,944,976 cps	45 cps	16 cps	3,042,876 cps	1,756 cps
Intensity per Run 1	19,162.8 cps	176.0 cps	200.0 cps	0.0 cps	12.0 cps	2,799,471.1 cps	48.0 cps	16.0 cps	2,924,592.1 cps	1,986.2 cps
Intensity per Run 2	20,885.5 cps	112.0 cps	252.0 cps	4.0 cps	12.0 cps	3,043,639.2 cps	52.0 cps	8.0 cps	3,090,985.2 cps	1,663.1 cps
Intensity per Run 3	19,955.9 cps	76.0 cps	256.0 cps	0.0 cps	0.0 cps	2,991,817.6 cps	36.0 cps	24.0 cps	3,113,049.7 cps	1,620.1 cps
Intensity RSD	4.3 %	41.7 %	13.2 %	173.2 %	86.6 %	4.4 %	18.4 %	50.0 %	3.4 %	11.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.008 ppb	0.013 ppb	0.013 ppb	0.013 ppb	95.029 %
Concentration per Run 1	0.013 ppb	0.020 ppb	0.018 ppb	0.020 ppb	89.998 %
Concentration per Run 2	0.007 ppb	0.012 ppb	0.011 ppb	0.011 ppb	95.514 %
Concentration per Run 3	0.005 ppb	0.007 ppb	0.009 ppb	0.008 ppb	99.574 %
Recovery Percentage 1	1.671 %			1.284 %	
Concentration RSD	44.8 %	50.1 %	38.7 %	47.8 %	5.1 %
Intensity average	4,364 cps	1,600 cps	1,403 cps	6,448 cps	2,435,528 cps
Intensity per Run 1	4,995.0 cps	1,982.2 cps	1,660.1 cps	8,003.0 cps	2,306,596.9 cps
Intensity per Run 2	4,176.7 cps	1,557.1 cps	1,328.1 cps	5,945.6 cps	2,447,970.8 cps
Intensity per Run 3	3,919.6 cps	1,260.1 cps	1,220.1 cps	5,396.5 cps	2,552,015.8 cps
Intensity RSD	12.9 %	22.7 %	16.3 %	21.3 %	5.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-005 Analysis: 10/30/2019 16:01:42 Sample Type UNKNOWN
Comment 16WDUP Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	90.914 %	92.791 %	0.024 ppb	7.669 ppb	6.918 ppb	N/A	7,159.169 ppb	39,610.944 ppb	39,437.648 ppb
Concentration per Run 1	90.190 %	93.015 %	0.012 ppb	8.411 ppb	6.939 ppb	N/A	7,000.917 ppb	38,350.111 ppb	38,231.669 ppb
Concentration per Run 2	90.680 %	92.646 %	0.036 ppb	7.343 ppb	6.966 ppb	N/A	7,171.587 ppb	39,712.139 ppb	39,686.376 ppb
Concentration per Run 3	91.874 %	92.713 %	0.026 ppb	7.253 ppb	6.850 ppb	N/A	7,305.003 ppb	40,770.582 ppb	40,394.900 ppb
Concentration RSD	1.0 %	0.2 %	49.3 %	8.4 %	0.9 %	N/A	2.1 %	3.1 %	2.8 %
Intensity average	12,714,684 cps	29,877 cps	7 cps	124 cps	661 cps	2,530 cps	13,110,805 cps	33,051,821 cps	6,923,268 cps
Intensity per Run 1	12,613,370.2 cps	29,948.8 cps	5.0 cps	136.0 cps	663.0 cps	2,480.3 cps	12,782,818.2 cps	31,893,309.8 cps	6,687,054.5 cps
Intensity per Run 2	12,681,852.0 cps	29,830.1 cps	8.5 cps	119.0 cps	665.0 cps	2,670.3 cps	13,186,168.7 cps	33,279,478.2 cps	6,999,248.2 cps
Intensity per Run 3	12,848,830.8 cps	29,851.6 cps	7.0 cps	117.5 cps	653.5 cps	2,440.2 cps	13,363,427.9 cps	33,982,673.7 cps	7,083,502.5 cps
Intensity RSD	1.0 %	0.2 %	25.7 %	8.3 %	0.9 %	4.9 %	2.3 %	3.2 %	3.0 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	38,945.954 ppb	0.519 ppb		1.013 ppm	2,871.864 ppb	97,745.582 ppb	107,263.016 ppb	97,986.954 ppb	89.401 %
Concentration per Run 1	38,365.891 ppb	0.481 ppb		0.979 ppm	2,790.525 ppb	95,500.556 ppb	103,576.419 ppb	98,373.806 ppb	88.849 %
Concentration per Run 2	38,777.208 ppb	0.217 ppb		1.025 ppm	2,915.302 ppb	98,404.651 ppb	107,686.554 ppb	95,010.627 ppb	90.945 %
Concentration per Run 3	39,694.764 ppb	0.860 ppb		1.034 ppm	2,909.766 ppb	99,331.540 ppb	110,526.076 ppb	100,576.430 ppb	88.409 %
Concentration RSD	1.7 %	62.3 %		3.0 %	2.5 %	2.0 %	3.3 %	2.9 %	1.5 %
Intensity average	9,103,683 cps	623 cps	99,086 cps	6,492,269 cps	2,293,202 cps	375,072 cps	255,097,723 cps	4,479,038 cps	6,153,468 cps
Intensity per Run 1	8,932,821.8 cps	610.0 cps	95,655.7 cps	6,230,559.7 cps	2,210,794.7 cps	363,051.0 cps	244,802,357.0 cps	4,454,494.4 cps	6,115,458.0 cps
Intensity per Run 2	9,109,528.7 cps	540.0 cps	100,180.4 cps	6,624,908.3 cps	2,348,716.0 cps	381,524.4 cps	260,399,669.9 cps	4,390,486.9 cps	6,259,769.7 cps
Intensity per Run 3	9,268,699.9 cps	720.0 cps	101,420.6 cps	6,621,337.4 cps	2,320,094.6 cps	380,641.9 cps	260,091,141.4 cps	4,592,134.2 cps	6,085,177.1 cps
Intensity RSD	1.8 %	14.6 %	3.1 %	3.5 %	3.2 %	2.8 %	3.5 %	2.3 %	1.5 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	94.700 %	0.022 ppb	-0.050 ppb	0.012 ppb	-0.165 ppb	N/A	2,891.363 ppb	3,609.180 ppb	3,471.284 ppb
Concentration per Run 1	93.769 %	0.019 ppb	-0.051 ppb	0.011 ppb	-0.199 ppb	N/A	2,812.126 ppb	3,476.548 ppb	3,415.173 ppb
Concentration per Run 2	95.753 %	0.029 ppb	-0.047 ppb	0.009 ppb	-0.169 ppb	N/A	2,880.312 ppb	3,593.324 ppb	3,468.361 ppb
Concentration per Run 3	94.578 %	0.019 ppb	-0.051 ppb	0.017 ppb	-0.128 ppb	N/A	2,981.650 ppb	3,757.668 ppb	3,530.317 ppb
Concentration RSD	1.1 %	27.3 %	4.0 %	30.4 %	21.3 %	N/A	3.0 %	3.9 %	1.7 %
Intensity average	278,023 cps	9 cps	989 cps	2,688 cps	805 cps	873 cps	43,228,584 cps	71,871,613 cps	2,352,808 cps
Intensity per Run 1	275,290.2 cps	8.0 cps	967.2 cps	2,640.3 cps	708.0 cps	820.0 cps	41,602,327.5 cps	68,498,486.7 cps	2,291,942.0 cps
Intensity per Run 2	281,113.9 cps	12.0 cps	1,028.8 cps	2,656.3 cps	804.0 cps	890.0 cps	43,554,186.4 cps	72,372,078.7 cps	2,376,860.1 cps
Intensity per Run 3	277,665.5 cps	8.0 cps	970.8 cps	2,768.3 cps	904.0 cps	910.0 cps	44,529,237.2 cps	74,744,274.8 cps	2,389,621.0 cps
Intensity RSD	1.1 %	24.7 %	3.5 %	2.6 %	12.2 %	5.4 %	3.4 %	4.4 %	2.3 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	10.714 ppb	11.309 ppb	11.206 ppb	-0.039 ppb	0.044 ppb	3.947 ppb	30.360 ppb	23.110 ppb	
Concentration per Run 1	10.472 ppb	11.065 ppb	11.056 ppb	-0.037 ppb	0.047 ppb	3.916 ppb	29.844 ppb	22.466 ppb	
Concentration per Run 2	10.482 ppb	11.092 ppb	11.259 ppb	-0.046 ppb	0.036 ppb	3.933 ppb	29.987 ppb	23.159 ppb	
Concentration per Run 3	11.189 ppb	11.770 ppb	11.305 ppb	-0.034 ppb	0.050 ppb	3.991 ppb	31.249 ppb	23.704 ppb	
Concentration RSD	3.8 %	3.5 %	1.2 %	16.3 %	16.6 %	1.0 %	2.5 %	2.7 %	
Intensity average	503,293 cps	134,865 cps	20,864 cps	2,839 cps	2,503 cps	36,293 cps	32,811 cps	122,307 cps	169 cps
Intensity per Run 1	487,071.6 cps	130,523.0 cps	20,380.7 cps	2,860.3 cps	2,520.3 cps	35,490.4 cps	31,928.8 cps	117,841.3 cps	149.0 cps
Intensity per Run 2	497,867.1 cps	134,152.9 cps	21,198.0 cps	2,672.3 cps	2,408.2 cps	36,798.2 cps	32,819.1 cps	123,996.1 cps	169.0 cps
Intensity per Run 3	524,939.4 cps	139,919.6 cps	21,013.7 cps	2,984.4 cps	2,580.3 cps	36,589.6 cps	33,685.4 cps	125,083.3 cps	188.0 cps
Intensity RSD	3.9 %	3.5 %	2.1 %	5.5 %	3.5 %	1.9 %	2.7 %	3.2 %	11.6 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.816 ppb	N/A	0.098 ppb			0.816 ppb		93.912 %	0.539 ppb
Concentration per Run 1	1.704 ppb	N/A	0.113 ppb			1.710 ppb		92.737 %	0.518 ppb
Concentration per Run 2	2.278 ppb	N/A	0.085 ppb			-0.611 ppb		95.102 %	0.548 ppb
Concentration per Run 3	1.468 ppb	N/A	0.097 ppb			1.348 ppb		93.896 %	0.552 ppb
Concentration RSD	22.9 %	N/A	14.6 %			153.1 %		1.3 %	3.4 %
Intensity average	9,109 cps	70 cps	12 cps	5,999 cps	4,805 cps	-321 cps	5,208 cps	549,178 cps	5,959 cps
Intensity per Run 1	8,610.6 cps	90.0 cps	17.3 cps	5,831.4 cps	4,251.8 cps	-164.4 cps	4,524.0 cps	542,306.6 cps	5,657.3 cps
Intensity per Run 2	10,650.9 cps	40.0 cps	8.1 cps	6,078.5 cps	7,113.0 cps	-570.8 cps	7,752.4 cps	556,138.3 cps	6,129.5 cps
Intensity per Run 3	8,066.1 cps	80.0 cps	12.1 cps	6,088.5 cps	3,049.4 cps	-229.2 cps	3,347.5 cps	549,088.6 cps	6,089.5 cps
Intensity RSD	15.0 %	37.8 %	37.1 %	2.4 %	43.4 %	67.9 %	43.8 %	1.3 %	4.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.501 ppb	0.502 ppb	0.490 ppb	0.486 ppb	0.017 ppm		0.015 ppb	0.001 ppb	0.011 ppb
Concentration per Run 1	0.474 ppb	0.481 ppb	0.465 ppb	0.463 ppb	0.017 ppm		0.015 ppb	0.001 ppb	0.015 ppb
Concentration per Run 2	0.498 ppb	0.499 ppb	0.486 ppb	0.471 ppb	0.017 ppm		0.000 ppb	0.002 ppb	0.009 ppb
Concentration per Run 3	0.531 ppb	0.525 ppb	0.519 ppb	0.522 ppb	0.017 ppm		0.030 ppb	0.002 ppb	0.009 ppb
Concentration RSD	5.7 %	4.4 %	5.5 %	6.6 %	0.7 %		101.1 %	39.0 %	30.2 %
Intensity average	9,881 cps	10,937 cps	6,374 cps	16,673 cps	1,543,903 cps	763 cps	105 cps	196 cps	9 cps
Intensity per Run 1	9,239.4 cps	10,352.3 cps	5,977.4 cps	15,705.9 cps	1,534,084.0 cps	668.0 cps	104.0 cps	144.0 cps	12.0 cps
Intensity per Run 2	9,952.0 cps	11,028.9 cps	6,409.6 cps	16,418.8 cps	1,555,774.3 cps	812.0 cps	92.0 cps	220.0 cps	8.0 cps
Intensity per Run 3	10,452.4 cps	11,429.2 cps	6,733.8 cps	17,892.8 cps	1,541,849.2 cps	808.0 cps	120.0 cps	224.0 cps	8.0 cps
Intensity RSD	6.2 %	5.0 %	6.0 %	6.7 %	0.7 %	10.8 %	13.3 %	23.0 %	24.7 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.002 ppb	0.004 ppb	0.004 ppb	91.003 %	0.094 ppb	0.177 ppb	0.178 ppb	332.491 ppb	332.033 ppb
Concentration per Run 1	0.001 ppb	0.005 ppb	0.004 ppb	89.424 %	0.079 ppb	0.166 ppb	0.172 ppb	326.257 ppb	323.469 ppb
Concentration per Run 2	0.002 ppb	0.006 ppb	0.004 ppb	92.470 %	0.093 ppb	0.173 ppb	0.180 ppb	328.797 ppb	333.146 ppb
Concentration per Run 3	0.002 ppb	0.003 ppb	0.003 ppb	91.114 %	0.109 ppb	0.192 ppb	0.181 ppb	342.418 ppb	339.484 ppb
Concentration RSD	22.3 %	25.2 %	15.8 %	1.7 %	15.9 %	7.6 %	2.9 %	2.6 %	2.4 %
Intensity average	208 cps	63 cps	145 cps	814,731 cps	2,992 cps	4,868 cps	3,921 cps	2,027,862 cps	3,695,936 cps
Intensity per Run 1	176.0 cps	64.0 cps	150.5 cps	800,597.4 cps	2,588.3 cps	4,516.8 cps	3,752.6 cps	1,978,878.8 cps	3,584,703.2 cps
Intensity per Run 2	208.0 cps	76.0 cps	158.6 cps	827,870.4 cps	3,032.4 cps	4,840.9 cps	4,024.7 cps	2,028,271.5 cps	3,748,750.2 cps
Intensity per Run 3	240.0 cps	48.0 cps	125.9 cps	815,726.3 cps	3,356.5 cps	5,245.1 cps	3,984.6 cps	2,076,434.5 cps	3,754,354.7 cps
Intensity RSD	15.4 %	22.4 %	11.7 %	1.7 %	12.9 %	7.5 %	3.7 %	2.4 %	2.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			94.242 %			0.014 ppm	0.132 ppb	0.134 ppb	0.014 ppb
Concentration per Run 1			95.003 %			0.014 ppm	0.129 ppb	0.133 ppb	0.015 ppb
Concentration per Run 2			94.794 %			0.014 ppm	0.137 ppb	0.135 ppb	0.015 ppb
Concentration per Run 3			92.929 %			0.014 ppm	0.132 ppb	0.135 ppb	0.013 ppb
Concentration RSD			1.2 %			0.7 %	3.2 %	1.0 %	7.0 %
Intensity average	1,867 cps	1,548 cps	2,962,289 cps	1,403 cps	1,331 cps	3,093,266 cps	11,757 cps	28,573 cps	1,586 cps
Intensity per Run 1	1,828.1 cps	1,416.1 cps	2,986,215.3 cps	1,332.1 cps	1,180.1 cps	3,104,192.3 cps	11,563.4 cps	28,588.7 cps	1,639.1 cps
Intensity per Run 2	2,000.2 cps	1,532.1 cps	2,979,640.4 cps	1,504.1 cps	1,448.1 cps	3,106,960.2 cps	12,132.9 cps	28,684.9 cps	1,625.1 cps
Intensity per Run 3	1,772.1 cps	1,696.1 cps	2,921,010.4 cps	1,372.1 cps	1,364.1 cps	3,068,644.0 cps	11,574.4 cps	28,444.3 cps	1,495.1 cps
Intensity RSD	6.4 %	9.1 %	1.2 %	6.4 %	10.3 %	0.7 %	2.8 %	0.4 %	5.0 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.014 ppb	0.014 ppb	87.561 %
Concentration per Run 1	0.014 ppb	0.016 ppb	88.531 %
Concentration per Run 2	0.013 ppb	0.014 ppb	87.555 %
Concentration per Run 3	0.014 ppb	0.013 ppb	86.597 %
Concentration RSD	2.3 %	8.6 %	1.1 %
Intensity average	1,352 cps	6,411 cps	2,244,125 cps
Intensity per Run 1	1,364.1 cps	6,839.8 cps	2,268,984.7 cps
Intensity per Run 2	1,336.1 cps	6,317.6 cps	2,243,975.5 cps
Intensity per Run 3	1,356.1 cps	6,075.6 cps	2,219,414.8 cps
Intensity RSD	1.1 %	6.1 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-006 Analysis: 10/30/2019 16:07:46 Sample Type UNKNOWN
Comment 16WC1B Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	88.798 %	92.265 %	0.070 ppb	6.478 ppb	6.380 ppb	N/A	2,189.779 ppb	18,535.639 ppb	18,686.772 ppb
Concentration per Run 1	88.105 %	92.778 %	0.080 ppb	6.526 ppb	6.348 ppb	N/A	2,147.807 ppb	17,930.852 ppb	17,808.944 ppb
Concentration per Run 2	88.571 %	93.133 %	0.062 ppb	5.834 ppb	6.185 ppb	N/A	2,197.621 ppb	19,053.289 ppb	18,872.280 ppb
Concentration per Run 3	89.719 %	90.884 %	0.068 ppb	7.074 ppb	6.607 ppb	N/A	2,223.910 ppb	18,622.777 ppb	19,379.092 ppb
Concentration RSD	0.9 %	1.3 %	12.6 %	9.6 %	3.3 %	N/A	1.8 %	3.1 %	4.3 %
Intensity average	12,418,744 cps	29,707 cps	14 cps	104 cps	603 cps	2,257 cps	3,905,415 cps	15,003,180 cps	3,177,432 cps
Intensity per Run 1	12,321,708.7 cps	29,872.7 cps	15.0 cps	105.5 cps	602.5 cps	2,370.2 cps	3,841,428.1 cps	14,550,447.5 cps	3,035,699.3 cps
Intensity per Run 2	12,386,968.5 cps	29,986.9 cps	12.5 cps	95.0 cps	589.5 cps	2,160.2 cps	3,940,776.1 cps	15,501,829.6 cps	3,225,171.8 cps
Intensity per Run 3	12,547,554.6 cps	29,262.7 cps	13.0 cps	112.0 cps	615.5 cps	2,240.2 cps	3,934,040.7 cps	14,957,263.5 cps	3,271,425.2 cps
Intensity RSD	0.9 %	1.3 %	9.8 %	8.2 %	2.2 %	4.7 %	1.4 %	3.2 %	3.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	18,353.328 ppb	101.417 ppb		0.961 ppm	2,694.009 ppb	45,564.609 ppb	49,912.305 ppb	46,451.657 ppb	86.318 %
Concentration per Run 1	17,647.041 ppb	98.686 ppb		0.932 ppm	2,585.953 ppb	44,245.711 ppb	50,034.890 ppb	44,874.260 ppb	85.138 %
Concentration per Run 2	18,495.018 ppb	105.176 ppb		0.972 ppm	2,738.842 ppb	46,114.876 ppb	50,019.855 ppb	46,788.701 ppb	85.915 %
Concentration per Run 3	18,917.925 ppb	100.388 ppb		0.979 ppm	2,757.231 ppb	46,333.240 ppb	49,682.168 ppb	47,692.010 ppb	87.901 %
Concentration RSD	3.5 %	3.3 %		2.7 %	3.5 %	2.5 %	0.4 %	3.1 %	1.7 %
Intensity average	4,149,885 cps	28,419 cps	41,466 cps	5,886,136 cps	2,044,768 cps	165,218 cps	114,673,379 cps	2,004,035 cps	5,941,275 cps
Intensity per Run 1	3,999,324.4 cps	27,720.8 cps	39,873.6 cps	5,711,431.8 cps	1,963,438.8 cps	160,315.1 cps	113,405,836.7 cps	1,934,172.1 cps	5,860,048.2 cps
Intensity per Run 2	4,201,930.4 cps	29,585.3 cps	42,873.6 cps	5,967,256.4 cps	2,081,695.5 cps	167,305.2 cps	114,394,689.3 cps	2,019,178.9 cps	5,913,517.2 cps
Intensity per Run 3	4,248,400.3 cps	27,951.4 cps	41,649.5 cps	5,979,720.9 cps	2,089,170.7 cps	168,034.2 cps	116,219,611.1 cps	2,058,754.6 cps	6,050,258.6 cps
Intensity RSD	3.2 %	3.6 %	3.6 %	2.6 %	3.4 %	2.6 %	1.2 %	3.2 %	1.7 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	89.226 %	2.718 ppb	1.292 ppb	6.617 ppb	5.992 ppb	N/A	7,220.870 ppb	5,191.303 ppb	5,950.105 ppb
Concentration per Run 1	89.127 %	2.679 ppb	1.243 ppb	6.399 ppb	5.865 ppb	N/A	7,045.926 ppb	5,044.163 ppb	5,803.222 ppb
Concentration per Run 2	89.232 %	2.760 ppb	1.344 ppb	6.686 ppb	6.000 ppb	N/A	7,316.535 ppb	5,204.422 ppb	6,054.926 ppb
Concentration per Run 3	89.319 %	2.716 ppb	1.288 ppb	6.766 ppb	6.110 ppb	N/A	7,300.150 ppb	5,325.324 ppb	5,992.167 ppb
Concentration RSD	0.1 %	1.5 %	3.9 %	2.9 %	2.0 %	N/A	2.1 %	2.7 %	2.2 %
Intensity average	261,953 cps	952 cps	16,950 cps	126,343 cps	18,471 cps	18,257 cps	117,435,291 cps	113,938,448 cps	3,798,945 cps
Intensity per Run 1	261,662.8 cps	936.0 cps	16,348.1 cps	122,122.2 cps	18,001.0 cps	17,592.4 cps	113,787,747.9 cps	109,881,006.6 cps	3,701,044.6 cps
Intensity per Run 2	261,971.1 cps	968.0 cps	17,575.5 cps	127,636.6 cps	18,597.9 cps	18,313.5 cps	119,786,396.9 cps	115,056,281.7 cps	3,866,074.6 cps
Intensity per Run 3	262,224.5 cps	952.0 cps	16,927.7 cps	129,269.7 cps	18,814.2 cps	18,864.3 cps	118,731,729.1 cps	116,878,057.2 cps	3,829,714.3 cps
Intensity RSD	0.1 %	1.7 %	3.6 %	3.0 %	2.3 %	3.5 %	2.7 %	3.2 %	2.3 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	16.434 ppb	1.589 ppb	2.449 ppb	0.987 ppb	1.263 ppb	7.130 ppb	11.395 ppb	9.563 ppb	
Concentration per Run 1	15.978 ppb	1.574 ppb	2.412 ppb	0.951 ppb	1.214 ppb	7.093 ppb	11.100 ppb	9.393 ppb	
Concentration per Run 2	16.696 ppb	1.534 ppb	2.421 ppb	1.009 ppb	1.281 ppb	7.112 ppb	11.565 ppb	9.574 ppb	
Concentration per Run 3	16.630 ppb	1.658 ppb	2.514 ppb	1.003 ppb	1.295 ppb	7.184 ppb	11.519 ppb	9.722 ppb	
Concentration RSD	2.4 %	4.0 %	2.3 %	3.2 %	3.4 %	0.7 %	2.2 %	1.7 %	
Intensity average	727,266 cps	44,228 cps	6,955 cps	38,140 cps	19,163 cps	55,815 cps	17,215 cps	72,521 cps	1,490 cps
Intensity per Run 1	706,264.0 cps	43,154.7 cps	6,809.9 cps	36,509.3 cps	18,465.7 cps	55,262.0 cps	16,631.1 cps	70,570.9 cps	1,459.1 cps
Intensity per Run 2	738,862.4 cps	44,154.0 cps	6,970.0 cps	39,273.7 cps	19,407.1 cps	56,001.3 cps	17,652.5 cps	73,543.9 cps	1,480.1 cps
Intensity per Run 3	736,671.2 cps	45,374.3 cps	7,086.0 cps	38,635.7 cps	19,615.4 cps	56,182.3 cps	17,360.1 cps	73,447.3 cps	1,530.1 cps
Intensity RSD	2.5 %	2.5 %	2.0 %	3.8 %	3.2 %	0.9 %	3.1 %	2.3 %	2.4 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.482 ppb	N/A	0.301 ppb			0.040 ppb		149.074 %	0.261 ppb
Concentration per Run 1	0.891 ppb	N/A	0.294 ppb			-1.261 ppb		146.279 %	0.244 ppb
Concentration per Run 2	0.022 ppb	N/A	0.313 ppb			1.466 ppb		152.118 %	0.274 ppb
Concentration per Run 3	0.534 ppb	N/A	0.295 ppb			-0.085 ppb		148.826 %	0.264 ppb
Concentration RSD	90.6 %	N/A	3.6 %			3,394.8 %		2.0 %	5.9 %
Intensity average	5,219 cps	237 cps	115 cps	3,722 cps	5,395 cps	-461 cps	5,775 cps	871,759 cps	4,505 cps
Intensity per Run 1	6,437.5 cps	290.0 cps	109.7 cps	3,681.5 cps	7,402.2 cps	-683.8 cps	8,092.6 cps	855,414.1 cps	4,168.7 cps
Intensity per Run 2	3,832.5 cps	240.0 cps	122.5 cps	3,722.6 cps	3,180.5 cps	-214.8 cps	3,301.5 cps	889,558.9 cps	4,796.9 cps
Intensity per Run 3	5,388.1 cps	180.0 cps	111.5 cps	3,761.6 cps	5,602.4 cps	-483.8 cps	5,930.6 cps	870,304.9 cps	4,548.8 cps
Intensity RSD	25.1 %	23.3 %	6.1 %	1.1 %	39.3 %	51.1 %	41.5 %	2.0 %	7.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.226 ppb	0.233 ppb	0.222 ppb	0.234 ppb	0.018 ppm		0.207 ppb	0.139 ppb	0.153 ppb
Concentration per Run 1	0.228 ppb	0.227 ppb	0.215 ppb	0.232 ppb	0.018 ppm		0.286 ppb	0.139 ppb	0.146 ppb
Concentration per Run 2	0.216 ppb	0.232 ppb	0.216 ppb	0.228 ppb	0.018 ppm		0.123 ppb	0.140 ppb	0.156 ppb
Concentration per Run 3	0.233 ppb	0.240 ppb	0.236 ppb	0.241 ppb	0.018 ppm		0.214 ppb	0.136 ppb	0.158 ppb
Concentration RSD	3.9 %	2.8 %	5.4 %	2.8 %	0.5 %		39.3 %	1.4 %	4.3 %
Intensity average	6,797 cps	7,640 cps	4,282 cps	11,596 cps	1,597,714 cps	1,085 cps	356 cps	10,430 cps	136 cps
Intensity per Run 1	6,741.8 cps	7,334.2 cps	4,088.7 cps	11,341.2 cps	1,594,542.6 cps	1,108.1 cps	444.0 cps	10,400.3 cps	128.0 cps
Intensity per Run 2	6,649.8 cps	7,742.4 cps	4,236.7 cps	11,525.3 cps	1,606,925.1 cps	1,184.1 cps	260.0 cps	10,604.5 cps	140.0 cps
Intensity per Run 3	6,998.0 cps	7,842.5 cps	4,520.8 cps	11,921.7 cps	1,591,673.0 cps	964.0 cps	364.0 cps	10,284.2 cps	140.0 cps
Intensity RSD	2.7 %	3.5 %	5.1 %	2.6 %	0.5 %	10.3 %	25.9 %	1.6 %	5.1 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.121 ppb	0.161 ppb	0.180 ppb	93.157 %	0.114 ppb	0.167 ppb	0.167 ppb	104.061 ppb	106.022 ppb
Concentration per Run 1	0.121 ppb	0.181 ppb	0.175 ppb	92.592 %	0.105 ppb	0.157 ppb	0.157 ppb	101.743 ppb	102.883 ppb
Concentration per Run 2	0.122 ppb	0.154 ppb	0.177 ppb	93.638 %	0.116 ppb	0.169 ppb	0.178 ppb	104.875 ppb	108.534 ppb
Concentration per Run 3	0.121 ppb	0.148 ppb	0.189 ppb	93.241 %	0.121 ppb	0.174 ppb	0.166 ppb	105.566 ppb	106.649 ppb
Concentration RSD	0.4 %	10.8 %	4.2 %	0.6 %	7.5 %	5.1 %	6.3 %	2.0 %	2.7 %
Intensity average	10,246 cps	2,164 cps	5,496 cps	834,019 cps	3,567 cps	4,702 cps	3,777 cps	647,627 cps	1,203,739 cps
Intensity per Run 1	10,112.1 cps	2,408.2 cps	5,296.3 cps	828,958.7 cps	3,312.4 cps	4,428.8 cps	3,540.5 cps	629,527.2 cps	1,161,369.6 cps
Intensity per Run 2	10,396.3 cps	2,092.2 cps	5,427.6 cps	838,323.5 cps	3,636.5 cps	4,772.9 cps	4,012.6 cps	652,843.2 cps	1,231,957.4 cps
Intensity per Run 3	10,228.2 cps	1,992.2 cps	5,764.7 cps	834,773.8 cps	3,752.6 cps	4,905.0 cps	3,776.6 cps	660,511.7 cps	1,217,891.1 cps
Intensity RSD	1.4 %	10.0 %	4.4 %	0.6 %	6.4 %	5.2 %	6.3 %	2.5 %	3.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			95.748 %			0.014 ppm	0.083 ppb	0.084 ppb	0.285 ppb
Concentration per Run 1			95.237 %			0.014 ppm	0.079 ppb	0.078 ppb	0.283 ppb
Concentration per Run 2			95.234 %			0.014 ppm	0.083 ppb	0.086 ppb	0.286 ppb
Concentration per Run 3			96.774 %			0.014 ppm	0.085 ppb	0.087 ppb	0.286 ppb
Concentration RSD			0.9 %			1.7 %	3.7 %	5.4 %	0.6 %
Intensity average	86,504 cps	59,050 cps	3,009,649 cps	65,619 cps	57,161 cps	3,137,869 cps	8,107 cps	19,757 cps	20,033 cps
Intensity per Run 1	83,949.7 cps	57,472.1 cps	2,993,568.4 cps	62,564.4 cps	55,310.4 cps	3,077,224.6 cps	7,742.4 cps	18,482.7 cps	19,690.5 cps
Intensity per Run 2	89,000.5 cps	59,075.6 cps	2,993,490.6 cps	67,164.3 cps	58,163.2 cps	3,180,864.4 cps	8,194.7 cps	20,353.6 cps	20,196.3 cps
Intensity per Run 3	86,561.2 cps	60,602.8 cps	3,041,888.4 cps	67,128.2 cps	58,010.7 cps	3,155,517.9 cps	8,382.8 cps	20,435.7 cps	20,213.3 cps
Intensity RSD	2.9 %	2.7 %	0.9 %	4.0 %	2.8 %	1.7 %	4.1 %	5.6 %	1.5 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.263 ppb	0.274 ppb	92.250 %
Concentration per Run 1	0.257 ppb	0.272 ppb	91.285 %
Concentration per Run 2	0.261 ppb	0.275 ppb	92.740 %
Concentration per Run 3	0.270 ppb	0.275 ppb	92.725 %
Concentration RSD	2.7 %	0.7 %	0.9 %
Intensity average	16,227 cps	77,773 cps	2,364,312 cps
Intensity per Run 1	15,709.9 cps	76,379.5 cps	2,339,565.0 cps
Intensity per Run 2	16,194.6 cps	78,477.9 cps	2,376,876.2 cps
Intensity per Run 3	16,775.3 cps	78,461.5 cps	2,376,496.2 cps
Intensity RSD	3.3 %	1.6 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-007 Analysis: 10/30/2019 16:13:51 Sample Type UNKNOWN
Comment 16-2 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	94.702 %	95.279 %	0.001 ppb	10.312 ppb	10.744 ppb	N/A	4,204.503 ppb	21,832.415 ppb	21,800.877 ppb
Concentration per Run 1	92.794 %	95.115 %	-0.015 ppb	9.617 ppb	10.054 ppb	N/A	4,133.155 ppb	21,530.661 ppb	21,074.487 ppb
Concentration per Run 2	95.426 %	95.502 %	0.011 ppb	10.285 ppb	10.912 ppb	N/A	4,201.498 ppb	21,507.489 ppb	22,001.813 ppb
Concentration per Run 3	95.886 %	95.219 %	0.008 ppb	11.033 ppb	11.267 ppb	N/A	4,278.856 ppb	22,459.096 ppb	22,326.332 ppb
Concentration RSD	1.8 %	0.2 %	1,332.8 %	6.9 %	5.8 %	N/A	1.7 %	2.5 %	3.0 %
Intensity average	13,244,405 cps	30,678 cps	4 cps	170 cps	1,042 cps	2,484 cps	7,839,443 cps	18,521,543 cps	3,889,157 cps
Intensity per Run 1	12,977,561.6 cps	30,625.0 cps	1.0 cps	158.5 cps	975.5 cps	2,420.2 cps	7,724,227.4 cps	18,312,707.5 cps	3,769,963.5 cps
Intensity per Run 2	13,345,680.3 cps	30,749.8 cps	5.0 cps	170.0 cps	1,062.0 cps	2,570.3 cps	7,889,829.1 cps	18,382,698.7 cps	3,955,309.8 cps
Intensity per Run 3	13,409,972.3 cps	30,658.6 cps	4.5 cps	181.0 cps	1,088.5 cps	2,460.3 cps	7,904,271.5 cps	18,869,223.3 cps	3,942,199.1 cps
Intensity RSD	1.8 %	0.2 %	62.3 %	6.6 %	5.7 %	3.1 %	1.3 %	1.6 %	2.7 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	21,642.668 ppb	7.580 ppb		1.033 ppm	3,573.593 ppb	70,225.184 ppb	77,680.768 ppb	70,709.852 ppb	94.297 %
Concentration per Run 1	21,476.597 ppb	7.626 ppb		1.001 ppm	3,506.833 ppb	68,577.304 ppb	78,453.452 ppb	68,495.785 ppb	92.325 %
Concentration per Run 2	21,510.769 ppb	6.655 ppb		1.035 ppm	3,541.251 ppb	69,593.433 ppb	76,558.979 ppb	70,309.085 ppb	94.100 %
Concentration per Run 3	21,940.637 ppb	8.460 ppb		1.063 ppm	3,672.694 ppb	72,504.815 ppb	78,029.871 ppb	73,324.686 ppb	96.467 %
Concentration RSD	1.2 %	11.9 %		3.0 %	2.4 %	2.9 %	1.3 %	3.4 %	2.2 %
Intensity average	5,138,455 cps	2,677 cps	85,187 cps	6,692,172 cps	2,872,184 cps	271,136 cps	194,814,259 cps	3,250,960 cps	6,490,491 cps
Intensity per Run 1	5,114,197.1 cps	2,700.3 cps	82,804.0 cps	6,515,962.2 cps	2,836,221.9 cps	266,665.1 cps	192,644,216.7 cps	3,172,526.3 cps	6,354,704.3 cps
Intensity per Run 2	5,147,919.8 cps	2,430.2 cps	84,293.7 cps	6,778,120.2 cps	2,879,861.1 cps	272,177.1 cps	191,653,681.4 cps	3,275,436.4 cps	6,476,919.1 cps
Intensity per Run 3	5,153,248.0 cps	2,900.3 cps	88,462.4 cps	6,782,432.2 cps	2,900,468.5 cps	274,565.9 cps	200,144,878.0 cps	3,304,916.2 cps	6,639,849.4 cps
Intensity RSD	0.4 %	8.8 %	3.4 %	2.3 %	1.1 %	1.5 %	2.4 %	2.1 %	2.2 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	95.213 %	0.103 ppb	0.074 ppb	0.697 ppb	0.593 ppb	N/A	0.940 ppb	7.549 ppb	13.840 ppb
Concentration per Run 1	95.908 %	0.084 ppb	0.071 ppb	0.682 ppb	0.604 ppb	N/A	1.307 ppb	7.515 ppb	13.901 ppb
Concentration per Run 2	96.470 %	0.106 ppb	0.070 ppb	0.690 ppb	0.558 ppb	N/A	0.810 ppb	7.516 ppb	13.492 ppb
Concentration per Run 3	93.262 %	0.120 ppb	0.081 ppb	0.720 ppb	0.618 ppb	N/A	0.703 ppb	7.615 ppb	14.127 ppb
Concentration RSD	1.8 %	17.5 %	8.0 %	2.8 %	5.2 %	N/A	34.3 %	0.8 %	2.3 %
Intensity average	279,530 cps	39 cps	2,570 cps	16,399 cps	2,872 cps	3,120 cps	16,243 cps	189,646 cps	10,559 cps
Intensity per Run 1	281,569.8 cps	32.0 cps	2,548.8 cps	16,214.6 cps	2,912.3 cps	3,030.4 cps	21,811.2 cps	189,410.6 cps	10,680.6 cps
Intensity per Run 2	283,220.4 cps	40.0 cps	2,558.0 cps	16,474.9 cps	2,812.3 cps	3,070.4 cps	14,448.5 cps	191,294.7 cps	10,460.4 cps
Intensity per Run 3	273,800.9 cps	44.0 cps	2,603.7 cps	16,506.9 cps	2,892.3 cps	3,260.4 cps	12,470.2 cps	188,231.6 cps	10,536.5 cps
Intensity RSD	1.8 %	15.8 %	1.1 %	1.0 %	1.8 %	3.9 %	30.3 %	0.8 %	1.1 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.011 ppb	0.299 ppb	0.297 ppb	0.497 ppb	0.515 ppb	1.546 ppb	18.852 ppb	14.182 ppb	
Concentration per Run 1	0.012 ppb	0.275 ppb	0.268 ppb	0.484 ppb	0.498 ppb	1.528 ppb	18.448 ppb	13.760 ppb	
Concentration per Run 2	0.010 ppb	0.307 ppb	0.331 ppb	0.501 ppb	0.511 ppb	1.489 ppb	18.382 ppb	14.089 ppb	
Concentration per Run 3	0.010 ppb	0.314 ppb	0.293 ppb	0.507 ppb	0.537 ppb	1.622 ppb	19.726 ppb	14.696 ppb	
Concentration RSD	10.4 %	6.9 %	10.7 %	2.4 %	3.8 %	4.4 %	4.0 %	3.3 %	
Intensity average	759 cps	13,786 cps	2,168 cps	18,006 cps	9,446 cps	22,975 cps	21,313 cps	79,645 cps	59 cps
Intensity per Run 1	824.0 cps	13,347.2 cps	2,116.2 cps	17,612.4 cps	9,259.4 cps	22,472.2 cps	20,845.4 cps	77,338.7 cps	58.0 cps
Intensity per Run 2	748.0 cps	13,999.8 cps	2,252.2 cps	18,317.4 cps	9,515.6 cps	22,820.9 cps	21,069.8 cps	80,072.5 cps	64.0 cps
Intensity per Run 3	704.0 cps	14,011.9 cps	2,136.2 cps	18,089.1 cps	9,563.7 cps	23,630.4 cps	22,023.4 cps	81,525.1 cps	56.0 cps
Intensity RSD	8.0 %	2.8 %	3.4 %	2.0 %	1.7 %	2.6 %	2.9 %	2.7 %	7.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.001 ppb	N/A	0.103 ppb			0.453 ppb		94.721 %	0.257 ppb
Concentration per Run 1	-0.349 ppb	N/A	0.144 ppb			0.834 ppb		93.483 %	0.232 ppb
Concentration per Run 2	-0.102 ppb	N/A	0.096 ppb			0.123 ppb		95.578 %	0.268 ppb
Concentration per Run 3	0.453 ppb	N/A	0.071 ppb			0.403 ppb		95.102 %	0.271 ppb
Concentration RSD	77,320.8 %	N/A	35.8 %			79.1 %		1.2 %	8.4 %
Intensity average	3,741 cps	73 cps	14 cps	2,365 cps	5,393 cps	-389 cps	5,652 cps	553,910 cps	3,032 cps
Intensity per Run 1	2,617.7 cps	100.0 cps	27.7 cps	2,301.2 cps	3,714.7 cps	-316.6 cps	3,853.7 cps	546,670.1 cps	2,728.3 cps
Intensity per Run 2	3,445.4 cps	70.0 cps	11.8 cps	2,319.2 cps	4,941.1 cps	-449.0 cps	5,262.3 cps	558,919.8 cps	3,176.4 cps
Intensity per Run 3	5,159.4 cps	50.0 cps	3.4 cps	2,473.2 cps	7,523.3 cps	-400.4 cps	7,840.5 cps	556,139.6 cps	3,192.4 cps
Intensity RSD	34.7 %	34.3 %	86.3 %	4.0 %	36.0 %	17.2 %	35.8 %	1.2 %	8.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

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Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.259 ppb	0.250 ppb	0.251 ppb	0.252 ppb	0.018 ppm		0.126 ppb	0.001 ppb	0.127 ppb
Concentration per Run 1	0.254 ppb	0.228 ppb	0.249 ppb	0.231 ppb	0.018 ppm		0.142 ppb	0.001 ppb	0.095 ppb
Concentration per Run 2	0.237 ppb	0.256 ppb	0.239 ppb	0.256 ppb	0.018 ppm		0.071 ppb	0.001 ppb	0.150 ppb
Concentration per Run 3	0.287 ppb	0.267 ppb	0.265 ppb	0.271 ppb	0.018 ppm		0.165 ppb	0.001 ppb	0.135 ppb
Concentration RSD	9.8 %	8.1 %	5.3 %	8.0 %	0.7 %		38.5 %	27.9 %	22.5 %
Intensity average	5,349 cps	5,739 cps	3,418 cps	9,045 cps	1,597,188 cps	603 cps	216 cps	163 cps	97 cps
Intensity per Run 1	5,169.1 cps	5,185.1 cps	3,344.5 cps	8,190.7 cps	1,584,155.0 cps	608.0 cps	228.0 cps	172.0 cps	72.0 cps
Intensity per Run 2	4,965.0 cps	5,901.4 cps	3,292.4 cps	9,231.4 cps	1,604,164.9 cps	616.0 cps	164.0 cps	176.0 cps	116.0 cps
Intensity per Run 3	5,913.4 cps	6,129.5 cps	3,616.5 cps	9,711.8 cps	1,603,244.2 cps	584.0 cps	256.0 cps	140.0 cps	104.0 cps
Intensity RSD	9.3 %	8.6 %	5.1 %	8.6 %	0.7 %	2.8 %	21.8 %	12.1 %	23.4 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.132 ppb	0.130 ppb	92.746 %	0.036 ppb	0.091 ppb	0.095 ppb	204.964 ppb	205.626 ppb
Concentration per Run 1	0.001 ppb	0.128 ppb	0.138 ppb	91.147 %	0.031 ppb	0.084 ppb	0.088 ppb	199.004 ppb	202.831 ppb
Concentration per Run 2	0.001 ppb	0.131 ppb	0.123 ppb	93.498 %	0.038 ppb	0.092 ppb	0.101 ppb	209.384 ppb	206.339 ppb
Concentration per Run 3	0.001 ppb	0.136 ppb	0.130 ppb	93.595 %	0.040 ppb	0.098 ppb	0.096 ppb	206.505 ppb	207.709 ppb
Concentration RSD	20.4 %	3.1 %	5.5 %	1.5 %	13.9 %	7.9 %	6.7 %	2.6 %	1.2 %
Intensity average	161 cps	1,621 cps	3,968 cps	830,342 cps	1,623 cps	2,715 cps	2,258 cps	1,270,865 cps	2,326,007 cps
Intensity per Run 1	140.0 cps	1,548.1 cps	4,113.5 cps	816,019.6 cps	1,460.1 cps	2,480.2 cps	2,088.2 cps	1,224,582.8 cps	2,279,397.0 cps
Intensity per Run 2	164.0 cps	1,628.1 cps	3,787.8 cps	837,069.9 cps	1,668.1 cps	2,752.3 cps	2,396.2 cps	1,302,778.5 cps	2,341,295.2 cps
Intensity per Run 3	180.0 cps	1,688.1 cps	4,002.0 cps	837,936.0 cps	1,740.1 cps	2,912.3 cps	2,288.2 cps	1,285,232.9 cps	2,357,329.5 cps
Intensity RSD	12.5 %	4.3 %	4.2 %	1.5 %	9.0 %	8.0 %	6.9 %	3.2 %	1.8 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			95.487 %			0.014 ppm	0.043 ppb	0.043 ppb	0.040 ppb
Concentration per Run 1			95.866 %			0.014 ppm	0.042 ppb	0.043 ppb	0.040 ppb
Concentration per Run 2			95.326 %			0.014 ppm	0.043 ppb	0.044 ppb	0.041 ppb
Concentration per Run 3			95.269 %			0.014 ppm	0.044 ppb	0.043 ppb	0.039 ppb
Concentration RSD			0.3 %			1.8 %	1.9 %	2.2 %	2.7 %
Intensity average	1,112 cps	771 cps	3,001,427 cps	927 cps	1,005 cps	3,158,457 cps	4,647 cps	11,321 cps	3,379 cps
Intensity per Run 1	1,120.1 cps	760.0 cps	3,013,332.1 cps	868.0 cps	964.0 cps	3,098,102.8 cps	4,559.8 cps	11,206.0 cps	3,366.5 cps
Intensity per Run 2	1,080.0 cps	788.0 cps	2,996,369.5 cps	940.0 cps	996.0 cps	3,207,239.0 cps	4,620.9 cps	11,503.3 cps	3,437.5 cps
Intensity per Run 3	1,136.1 cps	764.0 cps	2,994,579.9 cps	972.0 cps	1,056.0 cps	3,170,029.9 cps	4,758.9 cps	11,253.1 cps	3,332.4 cps
Intensity RSD	2.6 %	2.0 %	0.3 %	5.7 %	4.6 %	1.8 %	2.2 %	1.4 %	1.6 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.039 ppb	0.039 ppb	91.117 %
Concentration per Run 1	0.040 ppb	0.038 ppb	90.450 %
Concentration per Run 2	0.039 ppb	0.040 ppb	90.899 %
Concentration per Run 3	0.038 ppb	0.039 ppb	92.002 %
Concentration RSD	2.7 %	1.9 %	0.9 %
Intensity average	2,894 cps	13,324 cps	2,335,269 cps
Intensity per Run 1	2,944.4 cps	13,004.6 cps	2,318,187.3 cps
Intensity per Run 2	2,856.3 cps	13,467.9 cps	2,329,676.0 cps
Intensity per Run 3	2,880.3 cps	13,498.9 cps	2,357,943.7 cps
Intensity RSD	1.6 %	2.1 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-008 Analysis: 10/30/2019 16:19:55 Sample Type UNKNOWN
Comment 16-3 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	96.697 %	99.218 %	0.001 ppb	3.117 ppb	3.246 ppb	N/A	476.207 ppb	17,751.045 ppb	17,723.903 ppb	17,305.021 ppb
Concentration per Run 1	96.549 %	99.829 %	0.000 ppb	3.297 ppb	2.973 ppb	N/A	458.632 ppb	17,270.431 ppb	17,035.712 ppb	16,711.613 ppb
Concentration per Run 2	96.272 %	99.246 %	0.003 ppb	2.775 ppb	3.249 ppb	N/A	481.764 ppb	17,922.058 ppb	18,024.392 ppb	17,422.852 ppb
Concentration per Run 3	97.271 %	98.580 %	0.000 ppb	3.279 ppb	3.515 ppb	N/A	488.224 ppb	18,060.647 ppb	18,111.605 ppb	17,780.598 ppb
Concentration RSD	0.5 %	0.6 %	148.4 %	9.5 %	8.3 %	N/A	3.3 %	2.4 %	3.4 %	3.1 %
Intensity average	13,523,449 cps	31,946 cps	4 cps	56 cps	336 cps	2,334 cps	915,216 cps	15,261,412 cps	3,199,195 cps	4,150,604 cps
Intensity per Run 1	13,502,642.8 cps	32,142.8 cps	3.5 cps	59.0 cps	311.0 cps	2,210.2 cps	885,043.7 cps	14,896,136.0 cps	3,084,415.1 cps	4,019,962.7 cps
Intensity per Run 2	13,464,001.2 cps	31,955.3 cps	4.0 cps	50.0 cps	337.0 cps	2,470.3 cps	928,758.3 cps	15,461,450.0 cps	3,265,235.9 cps	4,194,848.6 cps
Intensity per Run 3	13,603,703.0 cps	31,740.8 cps	3.5 cps	58.0 cps	360.5 cps	2,320.2 cps	931,845.9 cps	15,426,651.4 cps	3,247,932.5 cps	4,237,002.0 cps
Intensity RSD	0.5 %	0.6 %	7.9 %	8.9 %	7.4 %	5.6 %	2.9 %	2.1 %	3.1 %	2.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	7.586 ppb		1.008 ppm	1,047.432 ppb	18,069.345 ppb	19,630.315 ppb	18,841.178 ppb	93.629 %	93.366 %	0.128 ppb
Concentration per Run 1	6.663 ppb		0.982 ppm	1,027.436 ppb	17,859.617 ppb	19,596.206 ppb	18,365.024 ppb	92.571 %	93.316 %	0.087 ppb
Concentration per Run 2	8.459 ppb		1.009 ppm	1,039.197 ppb	17,963.652 ppb	19,674.649 ppb	18,865.914 ppb	92.892 %	94.041 %	0.153 ppb
Concentration per Run 3	7.636 ppb		1.035 ppm	1,075.664 ppb	18,384.767 ppb	19,620.091 ppb	19,292.596 ppb	95.423 %	92.740 %	0.144 ppb
Concentration RSD	11.9 %		2.6 %	2.4 %	1.5 %	0.2 %	2.5 %	1.7 %	0.7 %	28.1 %
Intensity average	2,704 cps	53,823 cps	6,509,472 cps	847,993 cps	68,699 cps	48,966,324 cps	851,547 cps	6,444,479 cps	274,106 cps	47 cps
Intensity per Run 1	2,440.2 cps	52,681.0 cps	6,344,895.9 cps	832,718.8 cps	67,894.6 cps	48,341,998.3 cps	829,795.0 cps	6,371,686.2 cps	273,960.2 cps	32.0 cps
Intensity per Run 2	2,970.4 cps	54,830.5 cps	6,548,908.8 cps	846,691.6 cps	68,769.4 cps	48,695,352.3 cps	858,711.8 cps	6,393,783.1 cps	276,088.5 cps	56.0 cps
Intensity per Run 3	2,700.3 cps	53,956.4 cps	6,634,610.4 cps	864,567.9 cps	69,433.1 cps	49,861,622.3 cps	866,135.6 cps	6,567,966.4 cps	272,268.1 cps	52.0 cps
Intensity RSD	9.8 %	2.0 %	2.3 %	1.9 %	1.1 %	1.6 %	2.3 %	1.7 %	0.7 %	27.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.120 ppb	1.558 ppb	1.570 ppb	N/A	0.520 ppb	8.415 ppb	10.026 ppb	0.013 ppb	-0.540 ppb	-0.550 ppb
Concentration per Run 1	0.119 ppb	1.510 ppb	1.525 ppb	N/A	0.522 ppb	7.953 ppb	10.130 ppb	0.013 ppb	-0.522 ppb	-0.567 ppb
Concentration per Run 2	0.129 ppb	1.555 ppb	1.567 ppb	N/A	0.495 ppb	8.480 ppb	9.992 ppb	0.013 ppb	-0.549 ppb	-0.543 ppb
Concentration per Run 3	0.111 ppb	1.608 ppb	1.617 ppb	N/A	0.541 ppb	8.812 ppb	9.956 ppb	0.011 ppb	-0.549 ppb	-0.542 ppb
Concentration RSD	7.2 %	3.2 %	2.9 %	N/A	4.4 %	5.1 %	0.9 %	9.0 %	2.9 %	2.5 %
Intensity average	3,090 cps	32,961 cps	5,459 cps	5,708 cps	9,796 cps	204,940 cps	7,809 cps	835 cps	4,550 cps	701 cps
Intensity per Run 1	3,075.8 cps	32,001.1 cps	5,317.1 cps	5,811.4 cps	9,791.9 cps	194,710.0 cps	7,874.5 cps	864.0 cps	4,664.9 cps	668.0 cps
Intensity per Run 2	3,227.0 cps	33,151.9 cps	5,493.2 cps	5,411.2 cps	9,507.6 cps	207,796.2 cps	7,842.5 cps	872.0 cps	4,484.8 cps	720.0 cps
Intensity per Run 3	2,968.2 cps	33,729.5 cps	5,565.3 cps	5,901.4 cps	10,088.1 cps	212,312.4 cps	7,710.4 cps	768.0 cps	4,500.8 cps	716.0 cps
Intensity RSD	4.2 %	2.7 %	2.3 %	4.6 %	3.0 %	4.5 %	1.1 %	6.9 %	2.2 %	4.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.056 ppb	0.243 ppb	2.072 ppb	69.574 ppb	51.897 ppb		-0.133 ppb	N/A	0.048 ppb	
Concentration per Run 1	0.050 ppb	0.236 ppb	2.047 ppb	69.428 ppb	51.032 ppb		-0.310 ppb	N/A	0.128 ppb	
Concentration per Run 2	0.054 ppb	0.244 ppb	2.004 ppb	68.079 ppb	51.493 ppb		0.456 ppb	N/A	-0.084 ppb	
Concentration per Run 3	0.063 ppb	0.249 ppb	2.166 ppb	71.216 ppb	53.165 ppb		-0.544 ppb	N/A	0.101 ppb	
Concentration RSD	11.5 %	2.7 %	4.1 %	2.3 %	2.2 %		394.5 %	N/A	240.5 %	
Intensity average	5,509 cps	5,337 cps	26,948 cps	72,949 cps	263,546 cps	21 cps	3,455 cps	77 cps	-5 cps	2,482 cps
Intensity per Run 1	5,309.1 cps	5,233.1 cps	26,969.1 cps	72,059.4 cps	256,561.4 cps	21.0 cps	2,899.8 cps	80.0 cps	22.5 cps	2,444.2 cps
Intensity per Run 2	5,509.2 cps	5,393.2 cps	26,844.9 cps	72,007.0 cps	263,689.9 cps	21.0 cps	5,362.0 cps	60.0 cps	-49.9 cps	2,386.2 cps
Intensity per Run 3	5,709.3 cps	5,385.2 cps	27,029.3 cps	74,779.2 cps	270,385.3 cps	21.0 cps	2,102.2 cps	90.0 cps	13.6 cps	2,614.3 cps
Intensity RSD	3.6 %	1.7 %	0.3 %	2.2 %	2.6 %	0.0 %	49.2 %	19.9 %	856.6 %	4.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.536 ppb		96.463 %	0.231 ppb	0.210 ppb	0.215 ppb	0.222 ppb	0.221 ppb	0.019 ppm
Concentration per Run 1		0.997 ppb		94.577 %	0.217 ppb	0.198 ppb	0.201 ppb	0.196 ppb	0.206 ppb	0.019 ppm
Concentration per Run 2		-0.970 ppb		97.324 %	0.248 ppb	0.209 ppb	0.214 ppb	0.231 ppb	0.220 ppb	0.019 ppm
Concentration per Run 3		1.583 ppb		97.488 %	0.228 ppb	0.224 ppb	0.231 ppb	0.238 ppb	0.236 ppb	0.019 ppm
Concentration RSD		249.3 %		1.7 %	6.7 %	6.2 %	6.8 %	10.1 %	6.7 %	0.7 %
Intensity average	4,997 cps	-389 cps	5,354 cps	564,097 cps	2,812 cps	4,505 cps	5,112 cps	3,123 cps	8,164 cps	1,675,465 cps
Intensity per Run 1	4,041.8 cps	-306.3 cps	4,387.9 cps	553,069.3 cps	2,624.3 cps	4,204.7 cps	4,744.9 cps	2,760.3 cps	7,590.3 cps	1,678,100.3 cps
Intensity per Run 2	8,111.7 cps	-664.3 cps	8,605.0 cps	569,132.6 cps	3,020.4 cps	4,516.8 cps	5,137.1 cps	3,268.4 cps	8,202.7 cps	1,685,753.6 cps
Intensity per Run 3	2,838.4 cps	-195.8 cps	3,068.4 cps	570,089.8 cps	2,792.3 cps	4,792.9 cps	5,453.2 cps	3,340.5 cps	8,699.0 cps	1,662,540.1 cps
Intensity RSD	55.3 %	63.0 %	54.0 %	1.7 %	7.1 %	6.5 %	6.9 %	10.1 %	6.8 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.020 ppb	0.006 ppb	0.007 ppb	0.005 ppb	0.013 ppb	0.011 ppb	95.984 %	0.051 ppb	0.077 ppb
Concentration per Run 1		0.005 ppb	0.006 ppb	0.003 ppb	0.005 ppb	0.017 ppb	0.011 ppb	96.597 %	0.046 ppb	0.069 ppb
Concentration per Run 2		0.008 ppb	0.006 ppb	0.014 ppb	0.005 ppb	0.012 ppb	0.013 ppb	97.090 %	0.047 ppb	0.071 ppb
Concentration per Run 3		0.046 ppb	0.006 ppb	0.004 ppb	0.004 ppb	0.010 ppb	0.009 ppb	94.265 %	0.059 ppb	0.091 ppb
Concentration RSD		115.8 %	5.1 %	84.6 %	9.3 %	27.2 %	16.6 %	1.6 %	14.6 %	16.1 %
Intensity average	623 cps	115 cps	540 cps	7 cps	441 cps	173 cps	382 cps	859,330 cps	2,051 cps	2,424 cps
Intensity per Run 1	644.0 cps	100.0 cps	536.0 cps	4.0 cps	432.0 cps	224.0 cps	391.8 cps	864,817.4 cps	1,944.2 cps	2,220.2 cps
Intensity per Run 2	580.0 cps	104.0 cps	572.0 cps	12.0 cps	484.0 cps	160.0 cps	439.0 cps	869,232.1 cps	1,976.2 cps	2,288.2 cps
Intensity per Run 3	644.0 cps	140.0 cps	512.0 cps	4.0 cps	408.0 cps	136.0 cps	316.1 cps	843,939.9 cps	2,232.2 cps	2,764.3 cps
Intensity RSD	5.9 %	19.2 %	5.6 %	69.3 %	8.8 %	26.2 %	16.2 %	1.6 %	7.7 %	12.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.078 ppb	742.368 ppb	748.611 ppb			99.340 %			0.014 ppm	0.034 ppb
Concentration per Run 1	0.071 ppb	724.012 ppb	721.083 ppb			101.184 %			0.014 ppm	0.033 ppb
Concentration per Run 2	0.078 ppb	736.085 ppb	754.011 ppb			98.444 %			0.014 ppm	0.035 ppb
Concentration per Run 3	0.085 ppb	767.007 ppb	770.740 ppb			98.393 %			0.014 ppm	0.035 ppb
Concentration RSD	9.3 %	3.0 %	3.4 %			1.6 %			1.2 %	3.5 %
Intensity average	1,967 cps	4,773,081 cps	8,783,526 cps	833 cps	457 cps	3,122,552 cps	469 cps	548 cps	3,237,858 cps	4,116 cps
Intensity per Run 1	1,828.1 cps	4,712,248.8 cps	8,569,391.4 cps	844.0 cps	388.0 cps	3,180,507.1 cps	432.0 cps	528.0 cps	3,273,867.4 cps	3,948.6 cps
Intensity per Run 2	1,980.2 cps	4,743,441.1 cps	8,858,935.1 cps	840.0 cps	504.0 cps	3,094,371.3 cps	524.0 cps	504.0 cps	3,242,194.2 cps	4,171.7 cps
Intensity per Run 3	2,092.2 cps	4,863,554.1 cps	8,922,251.5 cps	816.0 cps	480.0 cps	3,092,776.2 cps	452.0 cps	612.0 cps	3,197,511.6 cps	4,228.7 cps
Intensity RSD	6.7 %	1.7 %	2.1 %	1.8 %	13.4 %	1.6 %	10.3 %	10.3 %	1.2 %	3.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.034 ppb	0.039 ppb	0.039 ppb	0.038 ppb	95.734 %
Concentration per Run 1	0.032 ppb	0.039 ppb	0.038 ppb	0.037 ppb	94.168 %
Concentration per Run 2	0.036 ppb	0.040 ppb	0.038 ppb	0.039 ppb	95.253 %
Concentration per Run 3	0.034 ppb	0.039 ppb	0.040 ppb	0.039 ppb	97.780 %
Concentration RSD	5.4 %	1.3 %	2.8 %	3.0 %	1.9 %
Intensity average	9,958 cps	3,488 cps	3,012 cps	13,707 cps	2,453,593 cps
Intensity per Run 1	9,403.6 cps	3,436.5 cps	2,940.3 cps	13,118.7 cps	2,413,470.2 cps
Intensity per Run 2	10,304.3 cps	3,507.5 cps	2,948.4 cps	13,866.1 cps	2,441,265.7 cps
Intensity per Run 3	10,167.1 cps	3,521.5 cps	3,148.4 cps	14,136.2 cps	2,506,043.4 cps
Intensity RSD	4.9 %	1.3 %	3.9 %	3.8 %	1.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-009 Analysis: 10/30/2019 16:25:59 Sample Type UNKNOWN
Comment 16-5 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	92.074 %	95.126 %	0.010 ppb	28.162 ppb	28.455 ppb	N/A	3,366.915 ppb	23,984.485 ppb	24,165.158 ppb
Concentration per Run 1	90.780 %	96.066 %	0.007 ppb	27.517 ppb	27.773 ppb	N/A	3,278.751 ppb	23,413.860 ppb	23,539.886 ppb
Concentration per Run 2	92.928 %	94.175 %	0.015 ppb	29.608 ppb	28.760 ppb	N/A	3,434.868 ppb	24,080.224 ppb	24,051.317 ppb
Concentration per Run 3	92.513 %	95.138 %	0.008 ppb	27.360 ppb	28.831 ppb	N/A	3,387.126 ppb	24,459.371 ppb	24,904.271 ppb
Concentration RSD	1.2 %	1.0 %	41.3 %	4.5 %	2.1 %	N/A	2.4 %	2.2 %	2.9 %
Intensity average	12,876,803 cps	30,629 cps	5 cps	455 cps	2,718 cps	2,530 cps	6,174,963 cps	19,985,779 cps	4,229,946 cps
Intensity per Run 1	12,695,929.2 cps	30,931.2 cps	4.5 cps	449.0 cps	2,676.3 cps	2,730.3 cps	6,047,032.7 cps	19,614,899.5 cps	4,141,787.4 cps
Intensity per Run 2	12,996,227.5 cps	30,322.2 cps	5.5 cps	475.5 cps	2,731.8 cps	2,390.2 cps	6,331,152.6 cps	20,186,516.6 cps	4,239,485.2 cps
Intensity per Run 3	12,938,253.4 cps	30,632.5 cps	4.5 cps	441.5 cps	2,745.8 cps	2,470.3 cps	6,146,704.6 cps	20,155,920.1 cps	4,308,565.8 cps
Intensity RSD	1.2 %	1.0 %	11.9 %	3.9 %	1.4 %	7.0 %	2.3 %	1.6 %	2.0 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	23,690.433 ppb	5.065 ppb		1.035 ppm	2,463.798 ppb	61,195.891 ppb	65,209.796 ppb	61,984.318 ppb	90.224 %
Concentration per Run 1	23,243.618 ppb	5.316 ppb		1.017 ppm	2,439.742 ppb	60,581.912 ppb	64,012.568 ppb	61,383.621 ppb	88.002 %
Concentration per Run 2	23,693.505 ppb	4.903 ppb		1.021 ppm	2,442.296 ppb	59,593.793 ppb	65,356.920 ppb	60,576.983 ppb	92.085 %
Concentration per Run 3	24,134.176 ppb	4.976 ppb		1.067 ppm	2,509.356 ppb	63,411.967 ppb	66,259.900 ppb	63,992.350 ppb	90.586 %
Concentration RSD	1.9 %	4.4 %		2.7 %	1.6 %	3.2 %	1.7 %	2.9 %	2.3 %
Intensity average	5,514,216 cps	1,910 cps	67,780 cps	6,519,578 cps	1,924,559 cps	227,997 cps	156,582,953 cps	2,747,604 cps	6,210,143 cps
Intensity per Run 1	5,436,383.9 cps	1,990.2 cps	66,446.3 cps	6,420,289.1 cps	1,908,750.5 cps	225,863.8 cps	149,938,866.8 cps	2,721,983.1 cps	6,057,215.0 cps
Intensity per Run 2	5,558,122.9 cps	1,880.1 cps	68,728.9 cps	6,538,263.5 cps	1,945,717.5 cps	227,319.7 cps	160,095,807.6 cps	2,751,597.6 cps	6,338,199.9 cps
Intensity per Run 3	5,548,140.9 cps	1,860.1 cps	68,165.8 cps	6,600,181.5 cps	1,919,210.1 cps	230,806.6 cps	159,714,185.4 cps	2,769,231.6 cps	6,235,013.0 cps
Intensity RSD	1.2 %	3.7 %	1.8 %	1.4 %	1.0 %	1.1 %	3.7 %	0.9 %	2.3 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.720 %	0.340 ppb	0.243 ppb	1.435 ppb	1.322 ppb	N/A	0.601 ppb	17.079 ppb	22.658 ppb
Concentration per Run 1	91.688 %	0.237 ppb	0.239 ppb	1.394 ppb	1.306 ppb	N/A	0.583 ppb	16.819 ppb	22.042 ppb
Concentration per Run 2	94.030 %	0.399 ppb	0.239 ppb	1.410 ppb	1.388 ppb	N/A	0.609 ppb	17.282 ppb	22.826 ppb
Concentration per Run 3	89.441 %	0.384 ppb	0.252 ppb	1.502 ppb	1.272 ppb	N/A	0.612 ppb	17.136 ppb	23.107 ppb
Concentration RSD	2.5 %	26.3 %	3.1 %	4.0 %	4.5 %	N/A	2.6 %	1.4 %	2.4 %
Intensity average	269,273 cps	120 cps	4,551 cps	30,005 cps	4,692 cps	5,141 cps	10,763 cps	367,967 cps	15,958 cps
Intensity per Run 1	269,179.2 cps	84.0 cps	4,497.3 cps	29,222.2 cps	4,644.9 cps	4,901.0 cps	10,496.4 cps	362,688.3 cps	15,549.7 cps
Intensity per Run 2	276,057.7 cps	144.0 cps	4,612.2 cps	30,272.6 cps	4,965.0 cps	5,261.1 cps	11,084.9 cps	379,038.0 cps	16,474.9 cps
Intensity per Run 3	262,583.0 cps	132.0 cps	4,543.7 cps	30,521.3 cps	4,464.8 cps	5,261.1 cps	10,708.6 cps	362,174.4 cps	15,850.1 cps
Intensity RSD	2.5 %	26.5 %	1.3 %	2.3 %	5.4 %	4.0 %	2.8 %	2.6 %	3.0 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.069 ppb	-0.307 ppb	-0.310 ppb	0.519 ppb	0.556 ppb	2.447 ppb	16.875 ppb	12.717 ppb	
Concentration per Run 1	0.066 ppb	-0.324 ppb	-0.222 ppb	0.507 ppb	0.538 ppb	2.459 ppb	17.018 ppb	12.559 ppb	
Concentration per Run 2	0.068 ppb	-0.292 ppb	-0.368 ppb	0.501 ppb	0.540 ppb	2.438 ppb	16.687 ppb	12.504 ppb	
Concentration per Run 3	0.074 ppb	-0.304 ppb	-0.339 ppb	0.550 ppb	0.590 ppb	2.443 ppb	16.922 ppb	13.087 ppb	
Concentration RSD	5.7 %	5.4 %	25.0 %	5.1 %	5.3 %	0.5 %	1.0 %	2.5 %	
Intensity average	3,390 cps	6,906 cps	1,085 cps	18,057 cps	9,672 cps	28,264 cps	18,737 cps	70,402 cps	31 cps
Intensity per Run 1	3,264.4 cps	6,705.8 cps	1,232.1 cps	17,720.6 cps	9,419.6 cps	28,260.0 cps	18,862.2 cps	69,605.4 cps	28.0 cps
Intensity per Run 2	3,396.5 cps	7,082.0 cps	1,004.0 cps	17,832.7 cps	9,691.8 cps	28,380.2 cps	18,798.2 cps	70,293.2 cps	27.0 cps
Intensity per Run 3	3,508.5 cps	6,929.9 cps	1,020.0 cps	18,617.9 cps	9,903.9 cps	28,151.7 cps	18,549.8 cps	71,307.0 cps	37.0 cps
Intensity RSD	3.6 %	2.7 %	11.7 %	2.7 %	2.5 %	0.4 %	0.9 %	1.2 %	18.0 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.095 ppb	N/A	0.393 ppb			1.348 ppb		92.652 %	1.252 ppb
Concentration per Run 1	0.660 ppb	N/A	0.251 ppb			0.674 ppb		92.525 %	1.237 ppb
Concentration per Run 2	-0.399 ppb	N/A	0.539 ppb			2.181 ppb		92.796 %	1.257 ppb
Concentration per Run 3	0.024 ppb	N/A	0.387 ppb			1.189 ppb		92.635 %	1.261 ppb
Concentration RSD	560.8 %	N/A	36.7 %			56.8 %		0.1 %	1.0 %
Intensity average	4,021 cps	110 cps	109 cps	3,507 cps	5,470 cps	-233 cps	5,705 cps	541,810 cps	13,336 cps
Intensity per Run 1	5,737.0 cps	50.0 cps	62.7 cps	3,473.5 cps	8,037.6 cps	-349.5 cps	8,422.9 cps	541,067.9 cps	13,162.9 cps
Intensity per Run 2	2,530.2 cps	200.0 cps	158.7 cps	3,420.5 cps	3,271.5 cps	-89.6 cps	3,395.6 cps	542,652.6 cps	13,423.2 cps
Intensity per Run 3	3,794.4 cps	80.0 cps	106.8 cps	3,628.5 cps	5,101.2 cps	-260.2 cps	5,297.3 cps	541,709.7 cps	13,423.2 cps
Intensity RSD	40.2 %	72.2 %	43.9 %	3.1 %	44.0 %	56.7 %	44.5 %	0.1 %	1.1 %

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Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	1.221 ppb	1.223 ppb	1.201 ppb	1.197 ppb	0.018 ppm		0.007 ppb	0.001 ppb	0.011 ppb
Concentration per Run 1	1.205 ppb	1.205 ppb	1.167 ppb	1.157 ppb	0.018 ppm		0.021 ppb	0.002 ppb	0.025 ppb
Concentration per Run 2	1.220 ppb	1.216 ppb	1.214 ppb	1.201 ppb	0.018 ppm		0.012 ppb	0.001 ppb	-0.002 ppb
Concentration per Run 3	1.239 ppb	1.248 ppb	1.223 ppb	1.233 ppb	0.018 ppm		-0.012 ppb	0.002 ppb	0.009 ppb
Concentration RSD	1.4 %	1.8 %	2.5 %	3.2 %	0.7 %		238.5 %	30.6 %	124.3 %
Intensity average	23,441 cps	25,920 cps	15,223 cps	40,201 cps	1,605,922 cps	679 cps	99 cps	197 cps	9 cps
Intensity per Run 1	23,093.4 cps	25,498.0 cps	14,764.8 cps	38,812.3 cps	1,595,974.6 cps	672.0 cps	112.0 cps	212.0 cps	20.0 cps
Intensity per Run 2	23,474.1 cps	25,842.7 cps	15,425.5 cps	40,453.4 cps	1,603,199.9 cps	764.0 cps	104.0 cps	160.0 cps	0.0 cps
Intensity per Run 3	23,754.7 cps	26,420.0 cps	15,477.6 cps	41,336.4 cps	1,618,592.8 cps	600.0 cps	80.0 cps	220.0 cps	8.0 cps
Intensity RSD	1.4 %	1.8 %	2.6 %	3.2 %	0.7 %	12.1 %	16.9 %	16.5 %	107.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.002 ppb	0.008 ppb	0.007 ppb	92.858 %	0.032 ppb	0.070 ppb	0.077 ppb	166.973 ppb	167.231 ppb
Concentration per Run 1	0.003 ppb	0.011 ppb	0.009 ppb	92.602 %	0.031 ppb	0.068 ppb	0.069 ppb	163.709 ppb	163.935 ppb
Concentration per Run 2	0.002 ppb	0.006 ppb	0.007 ppb	93.401 %	0.031 ppb	0.067 ppb	0.077 ppb	165.809 ppb	165.661 ppb
Concentration per Run 3	0.003 ppb	0.008 ppb	0.006 ppb	92.570 %	0.034 ppb	0.074 ppb	0.084 ppb	171.400 ppb	172.096 ppb
Concentration RSD	19.7 %	30.2 %	24.7 %	0.5 %	5.4 %	5.6 %	9.4 %	2.4 %	2.6 %
Intensity average	241 cps	109 cps	257 cps	831,338 cps	1,516 cps	2,156 cps	1,881 cps	1,038,067 cps	1,897,127 cps
Intensity per Run 1	264.0 cps	140.0 cps	312.2 cps	829,049.8 cps	1,484.1 cps	2,112.2 cps	1,724.1 cps	1,014,689.6 cps	1,854,065.5 cps
Intensity per Run 2	204.0 cps	80.0 cps	251.6 cps	836,206.0 cps	1,504.1 cps	2,092.2 cps	1,896.2 cps	1,038,988.4 cps	1,894,584.7 cps
Intensity per Run 3	256.0 cps	108.0 cps	206.1 cps	828,758.8 cps	1,560.1 cps	2,264.2 cps	2,024.2 cps	1,060,523.6 cps	1,942,732.1 cps
Intensity RSD	13.5 %	27.5 %	20.7 %	0.5 %	2.6 %	4.4 %	8.0 %	2.2 %	2.3 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			95.931 %			0.014 ppm	0.059 ppb	0.059 ppb	2.158 ppb
Concentration per Run 1			95.599 %			0.014 ppm	0.058 ppb	0.059 ppb	2.176 ppb
Concentration per Run 2			96.910 %			0.014 ppm	0.059 ppb	0.058 ppb	2.087 ppb
Concentration per Run 3			95.283 %			0.014 ppm	0.061 ppb	0.060 ppb	2.212 ppb
Concentration RSD			0.9 %			2.0 %	2.9 %	1.7 %	3.0 %
Intensity average	207 cps	235 cps	3,015,381 cps	247 cps	195 cps	3,140,729 cps	6,060 cps	14,609 cps	145,743 cps
Intensity per Run 1	220.0 cps	232.0 cps	3,004,967.5 cps	220.0 cps	224.0 cps	3,168,685.4 cps	5,757.3 cps	14,141.0 cps	142,225.9 cps
Intensity per Run 2	224.0 cps	228.0 cps	3,046,168.0 cps	240.0 cps	172.0 cps	3,069,988.4 cps	6,187.5 cps	14,833.8 cps	145,205.3 cps
Intensity per Run 3	176.0 cps	244.0 cps	2,995,007.8 cps	280.0 cps	188.0 cps	3,183,513.7 cps	6,235.6 cps	14,852.8 cps	149,796.6 cps
Intensity RSD	12.9 %	3.5 %	0.9 %	12.4 %	13.7 %	2.0 %	4.3 %	2.8 %	2.6 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	1.993 ppb	2.048 ppb	91.518 %
Concentration per Run 1	2.008 ppb	2.089 ppb	88.379 %
Concentration per Run 2	1.927 ppb	1.968 ppb	94.347 %
Concentration per Run 3	2.044 ppb	2.086 ppb	91.829 %
Concentration RSD	3.0 %	3.4 %	3.3 %
Intensity average	118,148 cps	557,498 cps	2,345,561 cps
Intensity per Run 1	115,132.5 cps	549,545.5 cps	2,265,106.9 cps
Intensity per Run 2	117,745.6 cps	552,742.4 cps	2,418,056.4 cps
Intensity per Run 3	121,566.0 cps	570,205.1 cps	2,353,521.2 cps
Intensity RSD	2.7 %	2.0 %	3.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-010 Analysis: 10/30/2019 16:32:03 Sample Type UNKNOWN
Comment 16WC2B Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.034 %	94.263 %	0.006 ppb	7.128 ppb	7.058 ppb	N/A	553.922 ppb	23,892.923 ppb	24,067.961 ppb	23,709.618 ppb
Concentration per Run 1	91.366 %	95.253 %	0.004 ppb	6.512 ppb	6.759 ppb	N/A	542.314 ppb	23,470.402 ppb	23,449.976 ppb	23,243.545 ppb
Concentration per Run 2	92.001 %	93.924 %	0.005 ppb	7.179 ppb	7.058 ppb	N/A	560.798 ppb	24,189.088 ppb	24,566.144 ppb	23,576.360 ppb
Concentration per Run 3	92.735 %	93.613 %	0.008 ppb	7.694 ppb	7.357 ppb	N/A	558.654 ppb	24,019.278 ppb	24,187.761 ppb	24,308.949 ppb
Concentration RSD	0.7 %	0.9 %	36.3 %	8.3 %	4.2 %	N/A	1.8 %	1.6 %	2.4 %	2.3 %
Intensity average	12,871,269 cps	30,351 cps	4 cps	117 cps	679 cps	2,497 cps	1,016,145 cps	19,662,764 cps	4,160,023 cps	5,448,412 cps
Intensity per Run 1	12,777,878.4 cps	30,669.6 cps	4.0 cps	108.0 cps	657.0 cps	2,390.2 cps	1,004,015.0 cps	19,484,568.6 cps	4,088,546.1 cps	5,386,879.0 cps
Intensity per Run 2	12,866,647.3 cps	30,241.6 cps	4.0 cps	117.0 cps	675.5 cps	2,360.2 cps	1,021,189.3 cps	19,759,084.1 cps	4,213,929.4 cps	5,375,076.0 cps
Intensity per Run 3	12,969,280.0 cps	30,141.3 cps	4.5 cps	125.0 cps	703.0 cps	2,740.3 cps	1,023,230.7 cps	19,744,639.4 cps	4,177,592.2 cps	5,583,280.0 cps
Intensity RSD	0.7 %	0.9 %	6.9 %	7.3 %	3.4 %	8.5 %	1.0 %	0.8 %	1.6 %	2.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	2.572 ppb		0.998 ppm	1,245.154 ppb	24,605.312 ppb	26,751.663 ppb	25,692.210 ppb	87.722 %	90.210 %	0.229 ppb
Concentration per Run 1	2.123 ppb		0.966 ppm	1,222.739 ppb	23,956.377 ppb	25,652.370 ppb	25,067.442 ppb	88.341 %	90.794 %	0.043 ppb
Concentration per Run 2	2.546 ppb		1.026 ppm	1,259.472 ppb	24,932.547 ppb	27,014.666 ppb	26,358.155 ppb	87.277 %	89.107 %	0.067 ppb
Concentration per Run 3	3.048 ppb		1.002 ppm	1,253.253 ppb	24,927.012 ppb	27,587.953 ppb	25,651.034 ppb	87.547 %	90.728 %	0.576 ppb
Concentration RSD	18.0 %		3.0 %	1.6 %	2.3 %	3.7 %	2.5 %	0.6 %	1.1 %	131.6 %
Intensity average	1,187 cps	47,122 cps	6,194,738 cps	967,634 cps	90,276 cps	62,516,764 cps	1,121,056 cps	6,037,892 cps	264,840 cps	80 cps
Intensity per Run 1	1,070.0 cps	47,319.6 cps	6,040,156.7 cps	957,410.5 cps	88,493.1 cps	60,358,186.7 cps	1,101,191.8 cps	6,080,539.5 cps	266,556.2 cps	16.0 cps
Intensity per Run 2	1,170.1 cps	47,440.1 cps	6,304,740.1 cps	967,988.1 cps	90,407.3 cps	62,826,751.1 cps	1,136,480.9 cps	6,007,292.5 cps	261,601.8 cps	24.0 cps
Intensity per Run 3	1,320.1 cps	46,607.0 cps	6,239,318.5 cps	977,503.4 cps	91,927.5 cps	64,365,355.2 cps	1,125,496.1 cps	6,025,842.9 cps	266,363.1 cps	200.0 cps
Intensity RSD	10.6 %	1.0 %	2.2 %	1.0 %	1.9 %	3.2 %	1.6 %	0.6 %	1.1 %	130.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.011 ppb	0.258 ppb	0.240 ppb	N/A	0.783 ppb	19.119 ppb	20.465 ppb	0.040 ppb	1.103 ppb	1.087 ppb
Concentration per Run 1	-0.009 ppb	0.255 ppb	0.181 ppb	N/A	0.783 ppb	18.326 ppb	19.562 ppb	0.042 ppb	1.099 ppb	0.993 ppb
Concentration per Run 2	-0.016 ppb	0.259 ppb	0.290 ppb	N/A	0.763 ppb	19.811 ppb	21.164 ppb	0.037 ppb	1.060 ppb	1.206 ppb
Concentration per Run 3	-0.008 ppb	0.262 ppb	0.249 ppb	N/A	0.804 ppb	19.221 ppb	20.670 ppb	0.040 ppb	1.150 ppb	1.062 ppb
Concentration RSD	42.3 %	1.4 %	23.0 %	N/A	2.6 %	3.9 %	4.0 %	6.2 %	4.1 %	10.0 %
Intensity average	1,411 cps	7,225 cps	1,819 cps	1,947 cps	13,215 cps	401,455 cps	14,279 cps	2,016 cps	22,021 cps	3,375 cps
Intensity per Run 1	1,444.2 cps	7,202.1 cps	1,676.1 cps	1,880.2 cps	13,283.1 cps	388,492.1 cps	13,787.6 cps	2,124.2 cps	22,027.4 cps	3,236.4 cps
Intensity per Run 2	1,330.8 cps	7,138.0 cps	1,928.2 cps	2,100.2 cps	12,786.6 cps	410,508.7 cps	14,552.5 cps	1,872.1 cps	21,474.5 cps	3,540.5 cps
Intensity per Run 3	1,457.6 cps	7,334.2 cps	1,852.1 cps	1,860.1 cps	13,575.4 cps	405,365.5 cps	14,496.4 cps	2,052.2 cps	22,560.4 cps	3,348.5 cps
Intensity RSD	4.9 %	1.4 %	7.1 %	6.8 %	3.0 %	2.9 %	3.0 %	6.4 %	2.5 %	4.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.286 ppb	0.311 ppb	2.975 ppb	13.145 ppb	10.463 ppb		0.116 ppb	N/A	0.086 ppb	
Concentration per Run 1	0.291 ppb	0.305 ppb	2.820 ppb	13.060 ppb	10.211 ppb		-0.157 ppb	N/A	0.100 ppb	
Concentration per Run 2	0.285 ppb	0.309 ppb	2.967 ppb	13.346 ppb	10.535 ppb		-0.141 ppb	N/A	0.080 ppb	
Concentration per Run 3	0.284 ppb	0.321 ppb	3.139 ppb	13.030 ppb	10.644 ppb		0.646 ppb	N/A	0.078 ppb	
Concentration RSD	1.3 %	2.7 %	5.4 %	1.3 %	2.2 %		396.2 %	N/A	14.0 %	
Intensity average	11,531 cps	6,110 cps	31,339 cps	14,858 cps	59,002 cps	28 cps	4,081 cps	57 cps	8 cps	2,268 cps
Intensity per Run 1	11,697.5 cps	6,053.5 cps	30,465.2 cps	14,840.8 cps	58,074.8 cps	35.0 cps	3,255.5 cps	70.0 cps	12.8 cps	2,225.2 cps
Intensity per Run 2	11,389.2 cps	6,001.5 cps	31,503.7 cps	14,932.9 cps	58,870.5 cps	26.0 cps	3,324.4 cps	30.0 cps	6.4 cps	2,240.2 cps
Intensity per Run 3	11,505.3 cps	6,273.6 cps	32,049.1 cps	14,800.8 cps	60,060.0 cps	23.0 cps	5,663.0 cps	70.0 cps	5.7 cps	2,339.2 cps
Intensity RSD	1.4 %	2.4 %	2.6 %	0.5 %	1.7 %	22.3 %	33.6 %	40.8 %	47.8 %	2.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.848 ppb		91.835 %	2.186 ppb	2.173 ppb	2.157 ppb	2.169 ppb	2.141 ppb	0.018 ppm
Concentration per Run 1		1.627 ppb		92.056 %	2.141 ppb	2.095 ppb	2.062 ppb	2.065 ppb	2.038 ppb	0.018 ppm
Concentration per Run 2		1.032 ppb		91.467 %	2.186 ppb	2.161 ppb	2.167 ppb	2.233 ppb	2.180 ppb	0.018 ppm
Concentration per Run 3		-0.116 ppb		91.982 %	2.230 ppb	2.263 ppb	2.242 ppb	2.208 ppb	2.207 ppb	0.018 ppm
Concentration RSD		104.5 %		0.3 %	2.0 %	3.9 %	4.2 %	4.2 %	4.2 %	0.7 %
Intensity average	5,179 cps	-320 cps	5,489 cps	537,034 cps	22,894 cps	41,144 cps	45,109 cps	27,115 cps	71,059 cps	1,601,993 cps
Intensity per Run 1	3,833.7 cps	-185.3 cps	4,046.8 cps	538,325.9 cps	22,480.2 cps	39,767.3 cps	43,230.9 cps	25,882.8 cps	67,779.4 cps	1,612,515.4 cps
Intensity per Run 2	3,988.8 cps	-290.2 cps	4,259.9 cps	534,880.9 cps	22,856.9 cps	40,858.8 cps	45,266.0 cps	27,895.1 cps	72,300.7 cps	1,590,368.7 cps
Intensity per Run 3	7,715.4 cps	-483.3 cps	8,159.7 cps	537,894.8 cps	23,345.8 cps	42,805.4 cps	46,831.7 cps	27,566.5 cps	73,097.2 cps	1,603,093.7 cps
Intensity RSD	42.4 %	47.3 %	42.2 %	0.3 %	1.9 %	3.7 %	4.0 %	4.0 %	4.0 %	0.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.158 ppb	0.001 ppb	0.167 ppb	0.001 ppb	0.170 ppb	0.177 ppb	92.828 %	0.031 ppb	0.076 ppb
Concentration per Run 1		0.128 ppb	0.000 ppb	0.169 ppb	0.002 ppb	0.169 ppb	0.173 ppb	92.924 %	0.026 ppb	0.072 ppb
Concentration per Run 2		0.148 ppb	0.001 ppb	0.168 ppb	0.002 ppb	0.166 ppb	0.180 ppb	93.453 %	0.029 ppb	0.074 ppb
Concentration per Run 3		0.199 ppb	0.001 ppb	0.164 ppb	0.001 ppb	0.175 ppb	0.177 ppb	92.106 %	0.037 ppb	0.084 ppb
Concentration RSD		23.3 %	46.7 %	1.4 %	23.3 %	3.0 %	1.8 %	0.7 %	19.0 %	8.1 %
Intensity average	616 cps	245 cps	129 cps	127 cps	177 cps	2,078 cps	5,368 cps	831,070 cps	1,489 cps	2,332 cps
Intensity per Run 1	632.0 cps	216.0 cps	108.0 cps	128.0 cps	192.0 cps	2,064.2 cps	5,276.1 cps	831,935.8 cps	1,380.1 cps	2,220.2 cps
Intensity per Run 2	656.0 cps	236.0 cps	136.0 cps	128.0 cps	192.0 cps	2,036.2 cps	5,494.5 cps	836,669.7 cps	1,444.1 cps	2,272.2 cps
Intensity per Run 3	560.0 cps	284.0 cps	144.0 cps	124.0 cps	148.0 cps	2,132.2 cps	5,333.0 cps	824,605.2 cps	1,644.1 cps	2,504.3 cps
Intensity RSD	8.1 %	14.2 %	14.6 %	1.8 %	14.3 %	2.4 %	2.1 %	0.7 %	9.2 %	6.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.082 ppb	117.054 ppb	116.715 ppb			95.558 %			0.014 ppm	0.023 ppb
Concentration per Run 1	0.077 ppb	115.424 ppb	113.824 ppb			94.664 %			0.014 ppm	0.020 ppb
Concentration per Run 2	0.084 ppb	116.167 ppb	118.374 ppb			95.404 %			0.014 ppm	0.025 ppb
Concentration per Run 3	0.085 ppb	119.571 ppb	117.948 ppb			96.607 %			0.014 ppm	0.024 ppb
Concentration RSD	5.5 %	1.9 %	2.2 %			1.0 %			0.4 %	11.4 %
Intensity average	1,988 cps	726,378 cps	1,321,460 cps	73 cps	49 cps	3,003,671 cps	75 cps	84 cps	3,203,997 cps	3,050 cps
Intensity per Run 1	1,880.1 cps	713,560.6 cps	1,283,207.2 cps	40.0 cps	52.0 cps	2,975,555.3 cps	44.0 cps	96.0 cps	3,209,690.6 cps	2,790.3 cps
Intensity per Run 2	2,032.2 cps	722,940.0 cps	1,343,520.0 cps	88.0 cps	48.0 cps	2,998,820.5 cps	88.0 cps	68.0 cps	3,211,984.0 cps	3,206.4 cps
Intensity per Run 3	2,052.2 cps	742,632.3 cps	1,337,654.1 cps	92.0 cps	48.0 cps	3,036,636.2 cps	92.0 cps	88.0 cps	3,190,315.0 cps	3,153.4 cps
Intensity RSD	4.7 %	2.0 %	2.5 %	39.5 %	4.7 %	1.0 %	35.7 %	17.2 %	0.4 %	7.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.023 ppb	0.038 ppb	0.035 ppb	0.037 ppb	93.429 %
Concentration per Run 1	0.021 ppb	0.038 ppb	0.034 ppb	0.036 ppb	93.419 %
Concentration per Run 2	0.024 ppb	0.036 ppb	0.033 ppb	0.036 ppb	92.960 %
Concentration per Run 3	0.024 ppb	0.039 ppb	0.038 ppb	0.038 ppb	93.910 %
Concentration RSD	7.9 %	3.3 %	7.1 %	3.6 %	0.5 %
Intensity average	7,338 cps	3,295 cps	2,715 cps	12,988 cps	2,394,537 cps
Intensity per Run 1	6,902.9 cps	3,335.4 cps	2,668.3 cps	12,745.6 cps	2,394,264.2 cps
Intensity per Run 2	7,509.3 cps	3,181.4 cps	2,580.3 cps	12,743.6 cps	2,382,497.0 cps
Intensity per Run 3	7,601.3 cps	3,369.5 cps	2,896.3 cps	13,475.9 cps	2,406,849.5 cps
Intensity RSD	5.2 %	3.0 %	6.0 %	3.3 %	0.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-011 Analysis: 10/30/2019 16:38:07 Sample Type UNKNOWN
Comment 16SPRING Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	92.180 %	93.576 %	0.012 ppb	25.586 ppb	25.700 ppb	N/A	6,055.604 ppb	28,054.832 ppb	27,913.657 ppb
Concentration per Run 1	91.796 %	94.123 %	0.015 ppb	23.157 ppb	24.872 ppb	N/A	5,905.101 ppb	27,280.756 ppb	27,481.385 ppb
Concentration per Run 2	92.309 %	93.669 %	0.001 ppb	26.433 ppb	26.467 ppb	N/A	6,121.462 ppb	27,942.379 ppb	27,975.386 ppb
Concentration per Run 3	92.435 %	92.937 %	0.019 ppb	27.168 ppb	25.760 ppb	N/A	6,140.248 ppb	28,941.362 ppb	28,284.200 ppb
Concentration RSD	0.4 %	0.6 %	77.3 %	8.3 %	3.1 %	N/A	2.2 %	3.0 %	1.5 %
Intensity average	12,891,661 cps	30,130 cps	5 cps	408 cps	2,420 cps	2,587 cps	10,964,805 cps	23,112,449 cps	4,832,571 cps
Intensity per Run 1	12,837,942.1 cps	30,305.7 cps	5.5 cps	371.0 cps	2,351.7 cps	2,680.3 cps	10,688,089.6 cps	22,457,949.7 cps	4,752,199.0 cps
Intensity per Run 2	12,909,736.1 cps	30,159.4 cps	3.5 cps	422.0 cps	2,497.3 cps	2,230.2 cps	11,143,575.2 cps	23,150,968.2 cps	4,871,925.3 cps
Intensity per Run 3	12,927,305.6 cps	29,923.8 cps	6.0 cps	430.0 cps	2,410.2 cps	2,850.3 cps	11,062,749.7 cps	23,728,428.9 cps	4,873,589.1 cps
Intensity RSD	0.4 %	0.6 %	26.5 %	7.9 %	3.0 %	12.4 %	2.2 %	2.8 %	1.4 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	27,922.427 ppb	108.501 ppb		1.143 ppm	2,942.300 ppb	75,375.368 ppb	80,902.160 ppb	76,615.474 ppb	92.849 %
Concentration per Run 1	27,133.192 ppb	105.369 ppb		1.118 ppm	2,835.982 ppb	73,879.904 ppb	77,867.534 ppb	75,613.543 ppb	91.908 %
Concentration per Run 2	28,194.641 ppb	111.114 ppb		1.145 ppm	2,998.883 ppb	75,951.856 ppb	83,126.550 ppb	76,336.587 ppb	93.226 %
Concentration per Run 3	28,439.446 ppb	109.018 ppb		1.165 ppm	2,992.035 ppb	76,294.343 ppb	81,712.396 ppb	77,896.291 ppb	93.413 %
Concentration RSD	2.5 %	2.7 %		2.1 %	3.1 %	1.7 %	3.4 %	1.5 %	0.9 %
Intensity average	6,429,540 cps	30,935 cps	83,093 cps	7,140,780 cps	2,278,723 cps	279,276 cps	199,756,772 cps	3,378,100 cps	6,390,805 cps
Intensity per Run 1	6,238,107.6 cps	29,996.1 cps	82,532.2 cps	6,949,051.7 cps	2,182,644.7 cps	271,531.3 cps	190,313,224.7 cps	3,305,993.1 cps	6,326,060.3 cps
Intensity per Run 2	6,532,237.0 cps	31,870.8 cps	83,095.5 cps	7,217,677.7 cps	2,344,203.9 cps	284,399.2 cps	206,029,803.0 cps	3,402,643.8 cps	6,416,766.5 cps
Intensity per Run 3	6,518,275.8 cps	30,938.4 cps	83,650.4 cps	7,255,610.1 cps	2,309,319.5 cps	281,898.7 cps	202,927,288.0 cps	3,425,662.3 cps	6,429,588.2 cps
Intensity RSD	2.6 %	3.0 %	0.7 %	2.3 %	3.7 %	2.4 %	4.2 %	1.9 %	0.9 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	91.221 %	2.732 ppb	0.536 ppb	0.756 ppb	0.689 ppb	N/A	20.661 ppb	230.586 ppb	224.157 ppb
Concentration per Run 1	90.422 %	3.552 ppb	0.512 ppb	0.734 ppb	0.649 ppb	N/A	20.218 ppb	229.303 ppb	221.770 ppb
Concentration per Run 2	92.245 %	2.640 ppb	0.540 ppb	0.772 ppb	0.742 ppb	N/A	20.548 ppb	230.686 ppb	223.108 ppb
Concentration per Run 3	90.996 %	2.004 ppb	0.557 ppb	0.763 ppb	0.675 ppb	N/A	21.216 ppb	231.769 ppb	227.592 ppb
Concentration RSD	1.0 %	28.5 %	4.3 %	2.6 %	7.0 %	N/A	2.5 %	0.5 %	1.4 %
Intensity average	267,810 cps	949 cps	8,108 cps	16,846 cps	3,016 cps	3,160 cps	301,484 cps	4,489,255 cps	147,362 cps
Intensity per Run 1	265,465.1 cps	1,224.1 cps	7,737.5 cps	16,274.6 cps	2,884.3 cps	3,280.4 cps	292,310.4 cps	4,422,738.1 cps	144,527.2 cps
Intensity per Run 2	270,815.8 cps	928.0 cps	8,247.4 cps	17,336.0 cps	3,184.4 cps	3,320.5 cps	302,420.2 cps	4,528,563.3 cps	148,323.3 cps
Intensity per Run 3	267,149.3 cps	696.0 cps	8,337.7 cps	16,927.5 cps	2,980.4 cps	2,880.3 cps	309,721.0 cps	4,516,464.4 cps	149,234.0 cps
Intensity RSD	1.0 %	27.9 %	4.0 %	3.2 %	5.1 %	7.7 %	2.9 %	1.3 %	1.7 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.093 ppb	-0.643 ppb	-0.642 ppb	0.488 ppb	0.544 ppb	1.556 ppb	20.614 ppb	15.567 ppb	
Concentration per Run 1	0.093 ppb	-0.649 ppb	-0.652 ppb	0.482 ppb	0.549 ppb	1.478 ppb	19.709 ppb	15.215 ppb	
Concentration per Run 2	0.091 ppb	-0.650 ppb	-0.652 ppb	0.494 ppb	0.518 ppb	1.594 ppb	21.069 ppb	15.294 ppb	
Concentration per Run 3	0.096 ppb	-0.630 ppb	-0.622 ppb	0.489 ppb	0.564 ppb	1.597 ppb	21.065 ppb	16.192 ppb	
Concentration RSD	2.2 %	1.7 %	2.7 %	1.2 %	4.4 %	4.4 %	3.8 %	3.5 %	
Intensity average	4,461 cps	3,270 cps	529 cps	17,191 cps	9,449 cps	22,731 cps	22,431 cps	83,894 cps	86 cps
Intensity per Run 1	4,400.8 cps	3,168.4 cps	508.0 cps	16,855.4 cps	9,439.6 cps	22,199.8 cps	21,318.2 cps	81,404.5 cps	101.0 cps
Intensity per Run 2	4,428.8 cps	3,192.4 cps	516.0 cps	17,452.2 cps	9,187.4 cps	23,037.2 cps	23,001.2 cps	83,027.0 cps	78.0 cps
Intensity per Run 3	4,552.8 cps	3,448.5 cps	564.0 cps	17,264.0 cps	9,719.8 cps	22,957.1 cps	22,973.1 cps	87,251.5 cps	78.0 cps
Intensity RSD	1.8 %	4.7 %	5.7 %	1.8 %	2.8 %	2.0 %	4.3 %	3.6 %	15.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.216 ppb	N/A	0.261 ppb			-0.260 ppb		93.077 %	0.566 ppb
Concentration per Run 1	0.529 ppb	N/A	0.141 ppb			-1.524 ppb		92.051 %	0.545 ppb
Concentration per Run 2	-0.316 ppb	N/A	0.373 ppb			1.837 ppb		93.064 %	0.591 ppb
Concentration per Run 3	0.436 ppb	N/A	0.269 ppb			-1.093 ppb		94.116 %	0.562 ppb
Concentration RSD	214.4 %	N/A	44.4 %			703.0 %		1.1 %	4.1 %
Intensity average	4,329 cps	113 cps	66 cps	4,478 cps	5,807 cps	-504 cps	6,085 cps	544,297 cps	6,200 cps
Intensity per Run 1	5,254.8 cps	90.0 cps	26.2 cps	4,380.8 cps	7,162.2 cps	-718.2 cps	7,680.5 cps	538,298.8 cps	5,925.4 cps
Intensity per Run 2	2,738.8 cps	140.0 cps	103.1 cps	4,557.8 cps	3,379.6 cps	-147.3 cps	3,249.5 cps	544,221.4 cps	6,461.7 cps
Intensity per Run 3	4,993.3 cps	110.0 cps	69.1 cps	4,495.8 cps	6,878.1 cps	-647.1 cps	7,325.3 cps	550,371.9 cps	6,213.6 cps
Intensity RSD	32.0 %	22.2 %	58.2 %	2.0 %	36.3 %	61.7 %	40.5 %	1.1 %	4.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.540 ppb	0.537 ppb	0.526 ppb	0.523 ppb	0.018 ppm		-0.002 ppb	0.000 ppb	0.011 ppb
Concentration per Run 1	0.522 ppb	0.526 ppb	0.508 ppb	0.499 ppb	0.018 ppm		0.006 ppb	0.000 ppb	-0.002 ppb
Concentration per Run 2	0.545 ppb	0.535 ppb	0.547 ppb	0.517 ppb	0.017 ppm		-0.020 ppb	0.001 ppb	0.025 ppb
Concentration per Run 3	0.553 ppb	0.549 ppb	0.523 ppb	0.551 ppb	0.018 ppm		0.009 ppb	0.000 ppb	0.009 ppb
Concentration RSD	3.0 %	2.2 %	3.7 %	5.1 %	0.9 %		931.7 %	49.0 %	124.2 %
Intensity average	10,570 cps	11,615 cps	6,797 cps	17,830 cps	1,569,433 cps	645 cps	89 cps	116 cps	9 cps
Intensity per Run 1	10,124.1 cps	11,281.1 cps	6,513.7 cps	16,903.5 cps	1,576,456.5 cps	632.0 cps	96.0 cps	120.0 cps	0.0 cps
Intensity per Run 2	10,680.6 cps	11,593.4 cps	7,066.0 cps	17,676.6 cps	1,553,619.2 cps	664.0 cps	72.0 cps	128.0 cps	20.0 cps
Intensity per Run 3	10,904.8 cps	11,969.7 cps	6,809.9 cps	18,910.3 cps	1,578,222.4 cps	640.0 cps	100.0 cps	100.0 cps	8.0 cps
Intensity RSD	3.8 %	3.0 %	4.1 %	5.7 %	0.9 %	2.6 %	17.0 %	12.4 %	107.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.005 ppb	0.004 ppb	91.532 %	0.018 ppb	0.049 ppb	0.053 ppb	230.522 ppb	228.521 ppb
Concentration per Run 1	0.000 ppb	0.006 ppb	0.003 ppb	91.203 %	0.018 ppb	0.044 ppb	0.048 ppb	224.821 ppb	225.332 ppb
Concentration per Run 2	0.001 ppb	0.006 ppb	0.003 ppb	91.896 %	0.015 ppb	0.050 ppb	0.048 ppb	231.448 ppb	230.142 ppb
Concentration per Run 3	0.001 ppb	0.003 ppb	0.006 ppb	91.498 %	0.022 ppb	0.051 ppb	0.064 ppb	235.296 ppb	230.090 ppb
Concentration RSD	73.9 %	41.9 %	34.4 %	0.4 %	18.7 %	7.6 %	17.8 %	2.3 %	1.2 %
Intensity average	132 cps	69 cps	160 cps	819,472 cps	1,159 cps	1,580 cps	1,369 cps	1,408,903 cps	2,547,988 cps
Intensity per Run 1	80.0 cps	84.0 cps	129.2 cps	816,520.2 cps	1,148.1 cps	1,468.1 cps	1,256.1 cps	1,370,851.5 cps	2,506,816.1 cps
Intensity per Run 2	152.0 cps	84.0 cps	142.9 cps	822,725.7 cps	1,084.0 cps	1,624.1 cps	1,260.1 cps	1,424,430.3 cps	2,584,667.9 cps
Intensity per Run 3	164.0 cps	40.0 cps	206.6 cps	819,169.4 cps	1,244.1 cps	1,648.1 cps	1,592.1 cps	1,431,427.7 cps	2,552,479.5 cps
Intensity RSD	34.4 %	36.6 %	25.9 %	0.4 %	7.0 %	6.2 %	14.1 %	2.4 %	1.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			94.014 %			0.014 ppm	0.029 ppb	0.030 ppb	0.119 ppb
Concentration per Run 1			93.932 %			0.014 ppm	0.027 ppb	0.029 ppb	0.118 ppb
Concentration per Run 2			94.999 %			0.014 ppm	0.028 ppb	0.030 ppb	0.119 ppb
Concentration per Run 3			93.110 %			0.014 ppm	0.030 ppb	0.031 ppb	0.121 ppb
Concentration RSD			1.0 %			0.9 %	5.4 %	3.4 %	1.3 %
Intensity average	3,048 cps	2,419 cps	2,955,130 cps	2,563 cps	2,410 cps	3,113,485 cps	3,374 cps	8,428 cps	8,469 cps
Intensity per Run 1	3,240.4 cps	2,380.2 cps	2,952,562.4 cps	2,540.3 cps	2,224.2 cps	3,146,462.8 cps	3,243.4 cps	8,151.7 cps	8,295.8 cps
Intensity per Run 2	2,936.4 cps	2,460.2 cps	2,986,098.6 cps	2,552.3 cps	2,360.2 cps	3,097,193.3 cps	3,379.5 cps	8,531.9 cps	8,574.9 cps
Intensity per Run 3	2,968.4 cps	2,416.2 cps	2,926,729.5 cps	2,596.3 cps	2,644.3 cps	3,096,797.9 cps	3,498.5 cps	8,599.0 cps	8,535.9 cps
Intensity RSD	5.5 %	1.7 %	1.0 %	1.2 %	8.9 %	0.9 %	3.8 %	2.9 %	1.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.114 ppb	0.115 ppb	89.052 %
Concentration per Run 1	0.113 ppb	0.113 ppb	88.211 %
Concentration per Run 2	0.108 ppb	0.113 ppb	90.254 %
Concentration per Run 3	0.120 ppb	0.118 ppb	88.689 %
Concentration RSD	5.2 %	2.5 %	1.2 %
Intensity average	7,114 cps	33,000 cps	2,282,336 cps
Intensity per Run 1	7,014.0 cps	32,237.2 cps	2,260,803.0 cps
Intensity per Run 2	6,885.9 cps	33,013.2 cps	2,313,154.2 cps
Intensity per Run 3	7,442.2 cps	33,750.8 cps	2,273,050.3 cps
Intensity RSD	4.1 %	2.3 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-003(10) Analysis: 10/30/2019 16:44:11 Sample Type UNKNOWN
Comment 16MW9 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	102.044 %	100.893 %	0.001 ppb	0.964 ppb	0.958 ppb	N/A	599.921 ppb	5,400.104 ppb	5,531.545 ppb	5,467.682 ppb
Concentration per Run 1	100.646 %	98.406 %	0.000 ppb	0.599 ppb	1.139 ppb	N/A	627.638 ppb	5,672.111 ppb	5,878.119 ppb	5,759.825 ppb
Concentration per Run 2	101.847 %	102.233 %	-0.007 ppb	1.232 ppb	0.806 ppb	N/A	582.041 ppb	5,229.740 ppb	5,414.524 ppb	5,351.235 ppb
Concentration per Run 3	103.638 %	102.040 %	0.009 ppb	1.062 ppb	0.928 ppb	N/A	590.084 ppb	5,298.461 ppb	5,301.993 ppb	5,291.986 ppb
Concentration RSD	1.5 %	2.1 %	914.5 %	34.0 %	17.6 %	N/A	4.1 %	4.4 %	5.5 %	4.7 %
Intensity average	14,271,141 cps	32,485 cps	4 cps	20 cps	112 cps	2,357 cps	1,173,736 cps	4,745,696 cps	1,020,793 cps	1,341,370 cps
Intensity per Run 1	14,075,663.9 cps	31,684.6 cps	3.5 cps	13.5 cps	127.0 cps	2,470.3 cps	1,188,160.4 cps	4,824,091.8 cps	1,049,445.7 cps	1,366,208.8 cps
Intensity per Run 2	14,243,589.7 cps	32,916.8 cps	2.5 cps	25.0 cps	98.5 cps	2,170.2 cps	1,162,944.5 cps	4,693,957.9 cps	1,021,080.3 cps	1,341,914.4 cps
Intensity per Run 3	14,494,169.8 cps	32,854.6 cps	5.0 cps	22.0 cps	110.5 cps	2,430.2 cps	1,170,103.9 cps	4,719,039.2 cps	991,851.6 cps	1,315,987.7 cps
Intensity RSD	1.5 %	2.1 %	34.3 %	29.6 %	12.8 %	6.9 %	1.1 %	1.5 %	2.8 %	1.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.454 ppb		0.113 ppm	441.670 ppb	13,982.581 ppb	13,782.166 ppb	14,590.121 ppb	100.760 %	96.157 %	0.015 ppb
Concentration per Run 1	0.031 ppb		0.115 ppm	472.344 ppb	15,104.581 ppb	13,824.528 ppb	15,636.058 ppb	100.277 %	91.994 %	0.031 ppb
Concentration per Run 2	-0.749 ppb		0.111 ppm	427.959 ppb	13,413.571 ppb	13,775.878 ppb	13,888.287 ppb	100.039 %	98.965 %	0.007 ppb
Concentration per Run 3	-0.642 ppb		0.113 ppm	424.708 ppb	13,429.591 ppb	13,746.091 ppb	14,246.018 ppb	101.964 %	97.512 %	0.007 ppb
Concentration RSD	93.3 %		1.8 %	6.0 %	6.9 %	0.3 %	6.3 %	1.0 %	3.8 %	90.1 %
Intensity average	360 cps	16,675 cps	747,061 cps	379,218 cps	54,640 cps	36,998,035 cps	678,009 cps	6,935,315 cps	282,300 cps	7 cps
Intensity per Run 1	490.0 cps	16,520.9 cps	731,013.3 cps	388,314.6 cps	56,618.4 cps	36,925,636.7 cps	696,583.3 cps	6,902,079.2 cps	270,079.5 cps	12.0 cps
Intensity per Run 2	280.0 cps	17,151.8 cps	751,677.4 cps	378,402.8 cps	53,996.8 cps	36,722,239.4 cps	665,058.7 cps	6,885,711.2 cps	290,544.1 cps	4.0 cps
Intensity per Run 3	310.0 cps	16,350.7 cps	758,491.3 cps	370,935.7 cps	53,303.9 cps	37,346,228.9 cps	672,384.6 cps	7,018,156.0 cps	286,277.7 cps	4.0 cps
Intensity RSD	31.6 %	2.5 %	1.9 %	2.3 %	3.2 %	0.9 %	2.4 %	1.0 %	3.8 %	69.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.096 ppb	-0.091 ppb	-0.364 ppb	N/A	34.689 ppb	182.043 ppb	174.486 ppb	0.563 ppb	0.805 ppb	0.795 ppb
Concentration per Run 1	-0.089 ppb	-0.090 ppb	-0.353 ppb	N/A	36.299 ppb	196.102 ppb	186.295 ppb	0.584 ppb	0.894 ppb	0.939 ppb
Concentration per Run 2	-0.101 ppb	-0.094 ppb	-0.378 ppb	N/A	33.620 ppb	174.083 ppb	166.831 ppb	0.550 ppb	0.761 ppb	0.705 ppb
Concentration per Run 3	-0.099 ppb	-0.091 ppb	-0.360 ppb	N/A	34.149 ppb	175.944 ppb	170.333 ppb	0.555 ppb	0.761 ppb	0.742 ppb
Concentration RSD	6.6 %	2.1 %	3.6 %	N/A	4.1 %	6.7 %	5.9 %	3.2 %	9.5 %	15.8 %
Intensity average	401 cps	633 cps	273 cps	320 cps	529,949 cps	3,725,517 cps	120,986 cps	27,068 cps	19,814 cps	3,067 cps
Intensity per Run 1	475.7 cps	636.0 cps	292.0 cps	310.0 cps	532,617.2 cps	3,855,863.1 cps	123,693.5 cps	26,868.9 cps	20,208.3 cps	3,196.4 cps
Intensity per Run 2	358.8 cps	608.0 cps	240.0 cps	340.0 cps	527,308.8 cps	3,659,699.1 cps	119,287.1 cps	27,249.7 cps	19,583.4 cps	2,980.4 cps
Intensity per Run 3	368.3 cps	656.0 cps	288.0 cps	310.0 cps	529,921.8 cps	3,660,989.7 cps	119,977.8 cps	27,085.4 cps	19,651.5 cps	3,024.4 cps
Intensity RSD	16.2 %	3.8 %	10.6 %	5.4 %	0.5 %	3.0 %	2.0 %	0.7 %	1.7 %	3.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.007 ppb	0.023 ppb	-0.905 ppb	5.654 ppb	3.969 ppb		0.063 ppb	N/A	0.036 ppb	
Concentration per Run 1	-0.002 ppb	0.026 ppb	-0.807 ppb	6.071 ppb	4.404 ppb		0.193 ppb	N/A	-0.003 ppb	
Concentration per Run 2	-0.009 ppb	0.021 ppb	-0.918 ppb	5.410 ppb	3.765 ppb		-0.059 ppb	N/A	0.103 ppb	
Concentration per Run 3	-0.010 ppb	0.021 ppb	-0.989 ppb	5.482 ppb	3.739 ppb		0.055 ppb	N/A	0.007 ppb	
Concentration RSD	64.1 %	12.0 %	10.2 %	6.4 %	9.5 %		201.4 %	N/A	163.7 %	
Intensity average	3,818 cps	2,223 cps	9,113 cps	7,988 cps	30,325 cps	21 cps	4,122 cps	77 cps	-8 cps	1,630 cps
Intensity per Run 1	3,816.6 cps	2,172.2 cps	9,379.5 cps	8,118.7 cps	31,335.3 cps	27.0 cps	4,384.0 cps	90.0 cps	-21.1 cps	1,604.1 cps
Intensity per Run 2	3,848.6 cps	2,268.2 cps	9,143.4 cps	7,906.5 cps	29,959.9 cps	17.0 cps	3,779.5 cps	60.0 cps	14.7 cps	1,639.1 cps
Intensity per Run 3	3,788.6 cps	2,228.2 cps	8,815.1 cps	7,938.5 cps	29,679.3 cps	18.0 cps	4,201.9 cps	80.0 cps	-18.9 cps	1,648.1 cps
Intensity RSD	0.8 %	2.2 %	3.1 %	1.4 %	2.9 %	26.6 %	7.5 %	19.9 %	238.1 %	1.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.430 ppb		96.789 %	0.078 ppb	0.079 ppb	0.082 ppb	0.081 ppb	0.078 ppb	0.019 ppm
Concentration per Run 1		0.757 ppb		93.876 %	0.061 ppb	0.066 ppb	0.062 ppb	0.074 ppb	0.062 ppb	0.019 ppm
Concentration per Run 2		0.438 ppb		98.063 %	0.076 ppb	0.083 ppb	0.088 ppb	0.081 ppb	0.079 ppb	0.019 ppm
Concentration per Run 3		0.096 ppb		98.428 %	0.096 ppb	0.088 ppb	0.095 ppb	0.087 ppb	0.092 ppb	0.020 ppm
Concentration RSD		76.8 %		2.6 %	22.5 %	15.1 %	20.8 %	7.8 %	19.3 %	2.3 %
Intensity average	5,140 cps	-414 cps	5,469 cps	566,004 cps	1,163 cps	1,941 cps	2,234 cps	1,305 cps	3,290 cps	1,718,687 cps
Intensity per Run 1	5,367.2 cps	-340.8 cps	5,818.4 cps	548,969.9 cps	948.0 cps	1,620.1 cps	1,752.1 cps	1,180.1 cps	2,648.3 cps	1,675,913.0 cps
Intensity per Run 2	4,630.9 cps	-416.1 cps	4,938.0 cps	573,452.3 cps	1,156.1 cps	2,040.2 cps	2,388.2 cps	1,328.1 cps	3,368.5 cps	1,726,199.4 cps
Intensity per Run 3	5,422.2 cps	-485.3 cps	5,649.3 cps	575,590.0 cps	1,384.1 cps	2,164.2 cps	2,560.3 cps	1,408.1 cps	3,852.6 cps	1,753,948.0 cps
Intensity RSD	8.6 %	17.5 %	8.5 %	2.6 %	18.8 %	14.7 %	19.1 %	8.9 %	18.4 %	2.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.004 ppb	0.001 ppb	-0.002 ppb	0.002 ppb	0.002 ppb	0.001 ppb	97.657 %	-0.014 ppb	0.046 ppb
Concentration per Run 1		0.027 ppb	0.002 ppb	-0.002 ppb	0.002 ppb	0.001 ppb	0.001 ppb	94.172 %	-0.014 ppb	0.042 ppb
Concentration per Run 2		-0.017 ppb	0.001 ppb	-0.002 ppb	0.001 ppb	0.003 ppb	0.001 ppb	98.775 %	-0.017 ppb	0.047 ppb
Concentration per Run 3		-0.021 ppb	0.001 ppb	-0.002 ppb	0.001 ppb	0.003 ppb	0.001 ppb	100.024 %	-0.013 ppb	0.050 ppb
Concentration RSD		748.7 %	19.6 %	0.0 %	15.9 %	54.2 %	4.9 %	3.2 %	13.3 %	8.6 %
Intensity average	596 cps	92 cps	203 cps	0 cps	193 cps	40 cps	80 cps	874,308 cps	383 cps	1,613 cps
Intensity per Run 1	544.0 cps	120.0 cps	220.0 cps	0.0 cps	208.0 cps	20.0 cps	77.8 cps	843,107.5 cps	380.0 cps	1,440.1 cps
Intensity per Run 2	568.0 cps	80.0 cps	192.0 cps	0.0 cps	184.0 cps	52.0 cps	83.1 cps	884,317.4 cps	332.0 cps	1,660.1 cps
Intensity per Run 3	676.0 cps	76.0 cps	196.0 cps	0.0 cps	188.0 cps	48.0 cps	80.3 cps	895,498.3 cps	436.0 cps	1,740.1 cps
Intensity RSD	11.8 %	26.4 %	7.5 %	N/A	6.7 %	43.6 %	3.3 %	3.2 %	13.6 %	9.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.046 ppb	64.978 ppb	65.684 ppb			94.340 %			0.014 ppm	0.020 ppb
Concentration per Run 1	0.039 ppb	67.986 ppb	69.543 ppb			91.733 %			0.013 ppm	0.019 ppb
Concentration per Run 2	0.044 ppb	63.721 ppb	64.289 ppb			95.851 %			0.014 ppm	0.019 ppb
Concentration per Run 3	0.055 ppb	63.225 ppb	63.221 ppb			95.436 %			0.014 ppm	0.020 ppb
Concentration RSD	17.7 %	4.0 %	5.2 %			2.4 %			3.1 %	2.7 %
Intensity average	1,287 cps	411,894 cps	757,308 cps	137 cps	136 cps	2,965,375 cps	111 cps	80 cps	3,130,106 cps	2,777 cps
Intensity per Run 1	1,088.0 cps	417,439.4 cps	777,071.0 cps	116.0 cps	108.0 cps	2,883,428.2 cps	136.0 cps	84.0 cps	3,050,494.1 cps	2,652.3 cps
Intensity per Run 2	1,264.1 cps	409,687.3 cps	752,085.5 cps	164.0 cps	164.0 cps	3,012,865.3 cps	116.0 cps	84.0 cps	3,239,623.9 cps	2,795.3 cps
Intensity per Run 3	1,508.1 cps	408,554.4 cps	742,767.7 cps	132.0 cps	136.0 cps	2,999,832.1 cps	80.0 cps	72.0 cps	3,100,198.5 cps	2,883.3 cps
Intensity RSD	16.4 %	1.2 %	2.3 %	17.8 %	20.6 %	2.4 %	25.6 %	8.7 %	3.1 %	4.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.020 ppb	-0.002 ppb	-0.002 ppb	-0.002 ppb	94.441 %
Concentration per Run 1	0.020 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	90.695 %
Concentration per Run 2	0.020 ppb	-0.002 ppb	-0.004 ppb	-0.002 ppb	96.237 %
Concentration per Run 3	0.020 ppb	-0.002 ppb	-0.002 ppb	-0.002 ppb	96.391 %
Concentration RSD	0.6 %	11.0 %	74.3 %	23.0 %	3.4 %
Intensity average	6,771 cps	598 cps	489 cps	2,378 cps	2,420,454 cps
Intensity per Run 1	6,521.7 cps	589.0 cps	544.0 cps	2,409.1 cps	2,324,444.9 cps
Intensity per Run 2	6,872.9 cps	600.0 cps	388.0 cps	2,336.1 cps	2,466,487.1 cps
Intensity per Run 3	6,916.9 cps	604.0 cps	536.0 cps	2,388.1 cps	2,470,428.5 cps
Intensity RSD	3.2 %	1.3 %	18.0 %	1.6 %	3.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ24097-004(10) Analysis: 10/30/2019 16:50:15 Sample Type UNKNOWN
Comment 16WC1A Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.736 %	100.224 %	0.002 ppb	0.870 ppb	0.940 ppb	N/A	885.347 ppb	5,126.223 ppb	5,202.683 ppb	5,184.890 ppb
Concentration per Run 1	98.891 %	98.409 %	0.000 ppb	0.959 ppb	0.988 ppb	N/A	940.293 ppb	5,325.582 ppb	5,469.119 ppb	5,402.938 ppb
Concentration per Run 2	99.911 %	101.448 %	-0.010 ppb	0.984 ppb	0.897 ppb	N/A	859.392 ppb	5,151.565 ppb	5,165.934 ppb	5,096.094 ppb
Concentration per Run 3	100.407 %	100.814 %	0.015 ppb	0.666 ppb	0.936 ppb	N/A	856.355 ppb	4,901.522 ppb	4,972.995 ppb	5,055.638 ppb
Concentration RSD	0.8 %	1.6 %	613.0 %	20.4 %	4.9 %	N/A	5.4 %	4.2 %	4.8 %	3.7 %
Intensity average	13,948,439 cps	32,270 cps	4 cps	18 cps	110 cps	2,347 cps	1,710,636 cps	4,469,780 cps	952,585 cps	1,261,849 cps
Intensity per Run 1	13,830,181.9 cps	31,685.6 cps	3.5 cps	19.5 cps	112.5 cps	2,390.2 cps	1,787,336.4 cps	4,570,521.2 cps	985,809.7 cps	1,294,532.0 cps
Intensity per Run 2	13,972,936.0 cps	32,664.1 cps	2.0 cps	20.5 cps	106.5 cps	2,490.3 cps	1,673,640.1 cps	4,524,035.4 cps	952,432.1 cps	1,248,374.5 cps
Intensity per Run 3	14,042,197.6 cps	32,460.1 cps	6.0 cps	15.0 cps	110.0 cps	2,160.2 cps	1,670,930.0 cps	4,314,783.9 cps	919,512.3 cps	1,242,639.5 cps
Intensity RSD	0.8 %	1.6 %	52.7 %	16.0 %	2.7 %	7.2 %	3.9 %	3.0 %	3.5 %	2.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.032 ppb		0.121 ppm	378.897 ppb	12,389.236 ppb	13,166.696 ppb	13,147.310 ppb	94.467 %	95.151 %	0.019 ppb
Concentration per Run 1	0.047 ppb		0.119 ppm	396.085 ppb	13,061.242 ppb	12,689.728 ppb	13,507.006 ppb	94.451 %	93.864 %	0.008 ppb
Concentration per Run 2	0.044 ppb		0.122 ppm	372.387 ppb	12,242.816 ppb	13,177.150 ppb	13,304.102 ppb	92.705 %	95.170 %	0.030 ppb
Concentration per Run 3	0.004 ppb		0.122 ppm	368.219 ppb	11,863.651 ppb	13,633.210 ppb	12,630.821 ppb	96.246 %	96.417 %	0.018 ppb
Concentration RSD	75.6 %		1.7 %	4.0 %	4.9 %	3.6 %	3.5 %	1.9 %	1.3 %	59.0 %
Intensity average	503 cps	15,503 cps	793,880 cps	325,396 cps	47,986 cps	33,185,671 cps	605,487 cps	6,502,199 cps	279,346 cps	8 cps
Intensity per Run 1	500.0 cps	15,980.3 cps	767,221.2 cps	334,482.5 cps	49,909.8 cps	31,966,095.2 cps	613,726.3 cps	6,501,062.0 cps	275,569.6 cps	4.0 cps
Intensity per Run 2	510.0 cps	15,469.6 cps	806,224.7 cps	320,950.0 cps	47,480.4 cps	32,603,613.0 cps	613,203.9 cps	6,380,893.2 cps	279,403.5 cps	12.0 cps
Intensity per Run 3	500.0 cps	15,059.1 cps	808,192.8 cps	320,756.2 cps	46,566.7 cps	34,987,305.2 cps	589,529.6 cps	6,624,640.8 cps	283,065.4 cps	8.0 cps
Intensity RSD	1.1 %	3.0 %	2.9 %	2.4 %	3.6 %	4.8 %	2.3 %	1.9 %	1.3 %	50.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.095 ppb	-0.092 ppb	-0.364 ppb	N/A	370.946 ppb	472.838 ppb	454.429 ppb	1.471 ppb	0.896 ppb	0.927 ppb
Concentration per Run 1	-0.096 ppb	-0.092 ppb	-0.357 ppb	N/A	383.727 ppb	495.545 ppb	467.761 ppb	1.531 ppb	1.001 ppb	1.056 ppb
Concentration per Run 2	-0.090 ppb	-0.089 ppb	-0.368 ppb	N/A	369.371 ppb	463.140 ppb	454.788 ppb	1.475 ppb	0.869 ppb	0.912 ppb
Concentration per Run 3	-0.098 ppb	-0.094 ppb	-0.368 ppb	N/A	359.740 ppb	459.828 ppb	440.737 ppb	1.408 ppb	0.819 ppb	0.811 ppb
Concentration RSD	4.6 %	3.0 %	1.7 %	N/A	3.3 %	4.2 %	3.0 %	4.2 %	10.5 %	13.3 %
Intensity average	419 cps	623 cps	269 cps	277 cps	5,597,441 cps	9,536,927 cps	310,364 cps	69,626 cps	20,732 cps	3,271 cps
Intensity per Run 1	397.7 cps	612.0 cps	284.0 cps	300.0 cps	5,683,491.4 cps	9,804,501.5 cps	315,201.0 cps	71,500.1 cps	21,129.9 cps	3,420.5 cps
Intensity per Run 2	481.4 cps	680.0 cps	260.0 cps	220.0 cps	5,587,367.2 cps	9,367,649.6 cps	310,754.7 cps	69,834.7 cps	20,617.0 cps	3,260.4 cps
Intensity per Run 3	377.9 cps	576.0 cps	264.0 cps	310.0 cps	5,521,464.2 cps	9,438,630.0 cps	305,135.8 cps	67,542.2 cps	20,448.7 cps	3,132.4 cps
Intensity RSD	13.1 %	8.5 %	4.8 %	17.8 %	1.5 %	2.5 %	1.6 %	2.9 %	1.7 %	4.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.088 ppb	-0.063 ppb	-0.990 ppb	3.209 ppb	2.173 ppb		0.059 ppb	N/A	0.040 ppb	
Concentration per Run 1	-0.083 ppb	-0.058 ppb	-0.948 ppb	3.499 ppb	2.390 ppb		0.073 ppb	N/A	0.041 ppb	
Concentration per Run 2	-0.090 ppb	-0.067 ppb	-1.040 ppb	3.162 ppb	2.129 ppb		0.015 ppb	N/A	0.089 ppb	
Concentration per Run 3	-0.091 ppb	-0.062 ppb	-0.981 ppb	2.966 ppb	2.001 ppb		0.090 ppb	N/A	-0.011 ppb	
Concentration RSD	5.1 %	7.1 %	4.7 %	8.4 %	9.1 %		66.5 %	N/A	125.8 %	
Intensity average	1,483 cps	947 cps	8,555 cps	5,419 cps	21,290 cps	33 cps	4,096 cps	50 cps	-7 cps	1,156 cps
Intensity per Run 1	1,592.1 cps	996.0 cps	8,687.0 cps	5,577.3 cps	21,795.0 cps	35.0 cps	4,082.6 cps	50.0 cps	-6.6 cps	1,153.1 cps
Intensity per Run 2	1,432.1 cps	880.0 cps	8,290.8 cps	5,397.2 cps	21,182.0 cps	38.0 cps	3,974.2 cps	60.0 cps	9.6 cps	1,155.1 cps
Intensity per Run 3	1,424.1 cps	964.0 cps	8,687.0 cps	5,281.1 cps	20,893.5 cps	25.0 cps	4,232.5 cps	40.0 cps	-25.1 cps	1,160.1 cps
Intensity RSD	6.4 %	6.3 %	2.7 %	2.8 %	2.2 %	20.8 %	3.2 %	20.0 %	235.2 %	0.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.578 ppb		96.294 %	0.080 ppb	0.091 ppb	0.081 ppb	0.080 ppb	0.085 ppb	0.019 ppm
Concentration per Run 1		-0.049 ppb		92.768 %	0.072 ppb	0.079 ppb	0.069 ppb	0.073 ppb	0.072 ppb	0.019 ppm
Concentration per Run 2		1.380 ppb		97.096 %	0.078 ppb	0.084 ppb	0.078 ppb	0.077 ppb	0.086 ppb	0.019 ppm
Concentration per Run 3		0.401 ppb		99.019 %	0.092 ppb	0.111 ppb	0.097 ppb	0.089 ppb	0.096 ppb	0.019 ppm
Concentration RSD		126.5 %		3.3 %	12.7 %	18.6 %	17.5 %	10.5 %	13.9 %	1.5 %
Intensity average	5,019 cps	-383 cps	5,313 cps	563,110 cps	1,185 cps	2,175 cps	2,216 cps	1,288 cps	3,510 cps	1,700,282 cps
Intensity per Run 1	4,894.0 cps	-490.7 cps	5,341.2 cps	542,490.8 cps	1,052.0 cps	1,868.1 cps	1,892.1 cps	1,164.1 cps	2,984.4 cps	1,675,305.4 cps
Intensity per Run 2	4,832.9 cps	-239.7 cps	5,009.0 cps	567,797.7 cps	1,168.1 cps	2,044.2 cps	2,144.2 cps	1,260.1 cps	3,580.5 cps	1,725,445.9 cps
Intensity per Run 3	5,331.1 cps	-419.8 cps	5,590.3 cps	579,042.6 cps	1,336.1 cps	2,612.3 cps	2,612.3 cps	1,440.1 cps	3,964.6 cps	1,700,094.2 cps
Intensity RSD	5.4 %	33.8 %	5.5 %	3.3 %	12.0 %	17.9 %	16.5 %	10.9 %	14.1 %	1.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.025 ppb	0.000 ppb	0.002 ppb	0.000 ppb	0.003 ppb	0.001 ppb	97.157 %	-0.010 ppb	0.038 ppb
Concentration per Run 1		-0.030 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.003 ppb	0.000 ppb	95.799 %	-0.011 ppb	0.039 ppb
Concentration per Run 2		-0.004 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.003 ppb	0.002 ppb	97.639 %	-0.011 ppb	0.038 ppb
Concentration per Run 3		-0.040 ppb	0.000 ppb	0.008 ppb	0.000 ppb	0.003 ppb	0.002 ppb	98.033 %	-0.008 ppb	0.038 ppb
Concentration RSD		74.7 %	21.9 %	340.1 %	49.6 %	1.9 %	66.0 %	1.2 %	16.7 %	1.6 %
Intensity average	684 cps	71 cps	64 cps	3 cps	84 cps	48 cps	85 cps	869,831 cps	497 cps	1,385 cps
Intensity per Run 1	668.0 cps	64.0 cps	56.0 cps	0.0 cps	84.0 cps	48.0 cps	51.4 cps	857,673.7 cps	468.0 cps	1,376.1 cps
Intensity per Run 2	776.0 cps	92.0 cps	68.0 cps	0.0 cps	88.0 cps	48.0 cps	103.3 cps	874,145.7 cps	472.0 cps	1,376.1 cps
Intensity per Run 3	608.0 cps	56.0 cps	68.0 cps	8.0 cps	80.0 cps	48.0 cps	101.2 cps	877,675.1 cps	552.0 cps	1,404.1 cps
Intensity RSD	12.4 %	26.8 %	10.8 %	173.2 %	4.8 %	0.0 %	34.4 %	1.2 %	9.5 %	1.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.039 ppb	41.663 ppb	41.676 ppb			95.364 %			0.014 ppm	0.021 ppb
Concentration per Run 1	0.038 ppb	43.346 ppb	43.163 ppb			92.169 %			0.014 ppm	0.021 ppb
Concentration per Run 2	0.036 ppb	40.928 ppb	40.935 ppb			96.907 %			0.014 ppm	0.021 ppb
Concentration per Run 3	0.044 ppb	40.716 ppb	40.930 ppb			97.015 %			0.014 ppm	0.020 ppb
Concentration RSD	11.3 %	3.5 %	3.1 %			2.9 %			1.8 %	3.4 %
Intensity average	1,136 cps	264,765 cps	482,164 cps	207 cps	227 cps	2,997,550 cps	239 cps	217 cps	3,132,135 cps	2,919 cps
Intensity per Run 1	1,088.1 cps	269,307.2 cps	487,759.7 cps	208.0 cps	212.0 cps	2,897,122.7 cps	208.0 cps	228.0 cps	3,073,626.3 cps	2,869.3 cps
Intensity per Run 2	1,064.0 cps	262,820.8 cps	478,775.0 cps	200.0 cps	244.0 cps	3,046,051.3 cps	236.0 cps	244.0 cps	3,138,198.5 cps	2,961.4 cps
Intensity per Run 3	1,256.1 cps	262,166.3 cps	479,957.1 cps	212.0 cps	224.0 cps	3,049,474.9 cps	272.0 cps	180.0 cps	3,184,581.4 cps	2,926.3 cps
Intensity RSD	9.2 %	1.5 %	1.0 %	3.0 %	7.1 %	2.9 %	13.4 %	15.3 %	1.8 %	1.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.021 ppb	-0.003 ppb	-0.003 ppb	-0.003 ppb	95.439 %
Concentration per Run 1	0.022 ppb	-0.003 ppb	-0.003 ppb	-0.003 ppb	92.352 %
Concentration per Run 2	0.021 ppb	-0.003 ppb	-0.003 ppb	-0.003 ppb	95.837 %
Concentration per Run 3	0.021 ppb	-0.004 ppb	-0.003 ppb	-0.004 ppb	98.127 %
Concentration RSD	3.6 %	8.5 %	3.3 %	8.7 %	3.0 %
Intensity average	7,197 cps	490 cps	429 cps	1,954 cps	2,446,041 cps
Intensity per Run 1	7,131.0 cps	484.0 cps	408.0 cps	1,944.1 cps	2,366,929.5 cps
Intensity per Run 2	7,067.0 cps	505.0 cps	436.0 cps	2,005.1 cps	2,456,248.4 cps
Intensity per Run 3	7,393.2 cps	480.0 cps	444.0 cps	1,912.1 cps	2,514,945.5 cps
Intensity RSD	2.4 %	2.7 %	4.4 %	2.4 %	3.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-005(10) Analysis: 10/30/2019 16:56:20 Sample Type UNKNOWN
Comment 16WDUP Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.320 %	99.294 %	-0.003 ppb	1.108 ppb	1.075 ppb	N/A	975.432 ppb	5,660.671 ppb	5,746.270 ppb	5,649.067 ppb
Concentration per Run 1	97.942 %	97.313 %	0.004 ppb	1.247 ppb	1.151 ppb	N/A	1,017.514 ppb	5,922.179 ppb	5,984.075 ppb	5,851.826 ppb
Concentration per Run 2	99.600 %	100.017 %	-0.006 ppb	0.851 ppb	0.974 ppb	N/A	952.800 ppb	5,616.017 ppb	5,570.636 ppb	5,598.155 ppb
Concentration per Run 3	100.417 %	100.551 %	-0.006 ppb	1.226 ppb	1.100 ppb	N/A	955.983 ppb	5,443.817 ppb	5,684.098 ppb	5,497.220 ppb
Concentration RSD	1.3 %	1.7 %	199.7 %	20.1 %	8.4 %	N/A	3.7 %	4.3 %	3.7 %	3.2 %
Intensity average	13,890,172 cps	31,971 cps	3 cps	22 cps	122 cps	2,137 cps	1,875,407 cps	4,915,684 cps	1,048,424 cps	1,370,286 cps
Intensity per Run 1	13,697,451.8 cps	31,332.7 cps	4.0 cps	24.0 cps	127.0 cps	2,340.2 cps	1,910,682.1 cps	5,024,019.9 cps	1,066,195.2 cps	1,385,902.4 cps
Intensity per Run 2	13,929,384.0 cps	32,203.4 cps	2.5 cps	18.0 cps	113.0 cps	2,150.2 cps	1,843,068.4 cps	4,905,704.4 cps	1,022,109.5 cps	1,365,457.4 cps
Intensity per Run 3	14,043,679.9 cps	32,375.4 cps	2.5 cps	24.5 cps	126.5 cps	1,920.2 cps	1,872,471.3 cps	4,817,329.0 cps	1,056,968.5 cps	1,359,498.9 cps
Intensity RSD	1.3 %	1.7 %	28.9 %	16.3 %	6.5 %	9.8 %	1.8 %	2.1 %	2.2 %	1.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.134 ppb		0.130 ppm	407.922 ppb	13,763.168 ppb	14,351.626 ppb	14,203.416 ppb	95.219 %	95.440 %	0.022 ppb
Concentration per Run 1	-0.210 ppb		0.128 ppm	432.249 ppb	14,128.700 ppb	14,182.153 ppb	14,726.703 ppb	94.329 %	92.749 %	-0.003 ppb
Concentration per Run 2	-0.118 ppb		0.132 ppm	397.458 ppb	13,528.391 ppb	14,260.418 ppb	14,095.345 ppb	96.401 %	95.713 %	0.008 ppb
Concentration per Run 3	-0.073 ppb		0.130 ppm	394.060 ppb	13,632.412 ppb	14,612.306 ppb	13,788.199 ppb	94.927 %	97.859 %	0.061 ppb
Concentration RSD	52.2 %		1.5 %	5.2 %	2.3 %	1.6 %	3.4 %	1.1 %	2.7 %	159.1 %
Intensity average	453 cps	16,234 cps	852,751 cps	348,937 cps	53,431 cps	36,434,037 cps	655,645 cps	6,553,917 cps	280,197 cps	9 cps
Intensity per Run 1	420.0 cps	15,760.1 cps	817,211.8 cps	358,875.7 cps	53,343.9 cps	35,663,927.5 cps	661,150.1 cps	6,492,673.4 cps	272,296.6 cps	0.0 cps
Intensity per Run 2	460.0 cps	16,500.9 cps	867,794.0 cps	341,999.7 cps	52,701.1 cps	36,643,222.8 cps	652,984.6 cps	6,635,280.0 cps	280,997.1 cps	4.0 cps
Intensity per Run 3	480.0 cps	16,440.8 cps	873,247.7 cps	345,935.7 cps	54,247.8 cps	36,994,961.4 cps	652,798.9 cps	6,533,798.1 cps	287,296.6 cps	24.0 cps
Intensity RSD	6.7 %	2.5 %	3.6 %	2.5 %	1.5 %	1.9 %	0.7 %	1.1 %	2.7 %	137.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.097 ppb	-0.085 ppb	-0.362 ppb	N/A	413.913 ppb	514.868 ppb	494.381 ppb	1.615 ppb	1.156 ppb	1.182 ppb
Concentration per Run 1	-0.097 ppb	-0.086 ppb	-0.368 ppb	N/A	425.150 ppb	520.684 ppb	514.030 ppb	1.694 ppb	1.204 ppb	1.273 ppb
Concentration per Run 2	-0.096 ppb	-0.080 ppb	-0.352 ppb	N/A	410.481 ppb	514.635 ppb	495.246 ppb	1.597 ppb	1.135 ppb	1.129 ppb
Concentration per Run 3	-0.097 ppb	-0.089 ppb	-0.364 ppb	N/A	406.110 ppb	509.284 ppb	473.867 ppb	1.554 ppb	1.131 ppb	1.144 ppb
Concentration RSD	0.8 %	5.2 %	2.3 %	N/A	2.4 %	1.1 %	4.1 %	4.4 %	3.6 %	6.7 %
Intensity average	395 cps	757 cps	277 cps	340 cps	6,243,939 cps	10,378,206 cps	338,424 cps	76,631 cps	23,415 cps	3,706 cps
Intensity per Run 1	376.3 cps	708.0 cps	252.0 cps	390.0 cps	6,250,696.7 cps	10,229,254.4 cps	342,156.2 cps	78,160.0 cps	23,534.2 cps	3,772.6 cps
Intensity per Run 2	406.6 cps	860.0 cps	304.0 cps	280.0 cps	6,230,768.9 cps	10,439,130.5 cps	340,227.8 cps	76,055.0 cps	23,550.2 cps	3,644.5 cps
Intensity per Run 3	403.0 cps	704.0 cps	276.0 cps	350.0 cps	6,250,351.5 cps	10,466,232.1 cps	332,889.0 cps	75,676.6 cps	23,161.5 cps	3,700.6 cps
Intensity RSD	4.2 %	11.7 %	9.4 %	16.4 %	0.2 %	1.2 %	1.4 %	1.7 %	0.9 %	1.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.079 ppb	-0.049 ppb	-0.613 ppb	3.996 ppb	2.756 ppb		0.268 ppb	N/A	0.002 ppb	
Concentration per Run 1	-0.077 ppb	-0.057 ppb	-0.591 ppb	4.158 ppb	2.792 ppb		0.297 ppb	N/A	0.045 ppb	
Concentration per Run 2	-0.079 ppb	-0.043 ppb	-0.602 ppb	3.901 ppb	2.685 ppb		0.314 ppb	N/A	-0.004 ppb	
Concentration per Run 3	-0.082 ppb	-0.048 ppb	-0.648 ppb	3.929 ppb	2.790 ppb		0.192 ppb	N/A	-0.035 ppb	
Concentration RSD	3.7 %	13.8 %	4.9 %	3.5 %	2.2 %		24.7 %	N/A	1,903.2 %	
Intensity average	1,728 cps	1,145 cps	10,717 cps	6,203 cps	24,054 cps	31 cps	4,701 cps	57 cps	-20 cps	1,324 cps
Intensity per Run 1	1,760.1 cps	1,008.0 cps	10,744.6 cps	6,225.6 cps	23,686.5 cps	27.0 cps	4,747.3 cps	40.0 cps	-5.4 cps	1,276.1 cps
Intensity per Run 2	1,760.1 cps	1,240.1 cps	10,740.6 cps	6,165.5 cps	23,942.9 cps	34.0 cps	4,827.6 cps	100.0 cps	-22.1 cps	1,373.1 cps
Intensity per Run 3	1,664.1 cps	1,188.1 cps	10,664.6 cps	6,217.6 cps	24,532.1 cps	31.0 cps	4,528.1 cps	30.0 cps	-32.7 cps	1,324.1 cps
Intensity RSD	3.2 %	10.6 %	0.4 %	0.5 %	1.8 %	11.5 %	3.3 %	66.8 %	68.6 %	3.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.527 ppb		95.193 %	0.075 ppb	0.081 ppb	0.080 ppb	0.083 ppb	0.077 ppb	0.019 ppm
Concentration per Run 1		0.652 ppb		93.544 %	0.064 ppb	0.069 ppb	0.066 ppb	0.073 ppb	0.066 ppb	0.019 ppm
Concentration per Run 2		0.628 ppb		96.725 %	0.066 ppb	0.085 ppb	0.084 ppb	0.086 ppb	0.078 ppb	0.019 ppm
Concentration per Run 3		0.300 ppb		95.310 %	0.094 ppb	0.088 ppb	0.089 ppb	0.091 ppb	0.086 ppb	0.019 ppm
Concentration RSD		37.3 %		1.7 %	23.0 %	12.3 %	15.5 %	10.9 %	13.0 %	2.7 %
Intensity average	5,682 cps	-389 cps	6,059 cps	556,672 cps	1,108 cps	1,943 cps	2,148 cps	1,320 cps	3,194 cps	1,705,609 cps
Intensity per Run 1	5,753.4 cps	-362.2 cps	6,090.5 cps	547,028.4 cps	972.0 cps	1,692.1 cps	1,816.1 cps	1,172.1 cps	2,788.3 cps	1,652,410.2 cps
Intensity per Run 2	5,778.4 cps	-368.5 cps	6,247.7 cps	565,631.4 cps	1,028.0 cps	2,052.2 cps	2,272.2 cps	1,364.1 cps	3,260.4 cps	1,729,298.4 cps
Intensity per Run 3	5,515.3 cps	-435.0 cps	5,837.4 cps	557,356.4 cps	1,324.1 cps	2,084.2 cps	2,356.2 cps	1,424.1 cps	3,532.5 cps	1,735,118.8 cps
Intensity RSD	2.6 %	10.4 %	3.4 %	1.7 %	17.1 %	11.2 %	13.5 %	10.0 %	11.8 %	2.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.004 ppb	0.000 ppb	0.005 ppb	0.000 ppb	0.001 ppb	0.000 ppb	95.912 %	-0.014 ppb	0.034 ppb
Concentration per Run 1		-0.013 ppb	0.000 ppb	0.004 ppb	0.000 ppb	0.002 ppb	0.000 ppb	94.938 %	-0.014 ppb	0.031 ppb
Concentration per Run 2		0.021 ppb	0.000 ppb	0.004 ppb	0.000 ppb	0.001 ppb	0.000 ppb	95.501 %	-0.014 ppb	0.034 ppb
Concentration per Run 3		0.004 ppb	0.000 ppb	0.009 ppb	0.000 ppb	0.001 ppb	-0.001 ppb	97.297 %	-0.015 ppb	0.036 ppb
Concentration RSD		429.8 %	136.7 %	55.6 %	136.0 %	48.6 %	1,052.8 %	1.3 %	3.2 %	7.2 %
Intensity average	605 cps	99 cps	103 cps	5 cps	88 cps	27 cps	43 cps	858,683 cps	388 cps	1,244 cps
Intensity per Run 1	600.0 cps	80.0 cps	120.0 cps	4.0 cps	108.0 cps	36.0 cps	53.5 cps	849,966.2 cps	392.0 cps	1,164.1 cps
Intensity per Run 2	612.0 cps	116.0 cps	92.0 cps	4.0 cps	72.0 cps	24.0 cps	53.5 cps	855,005.0 cps	392.0 cps	1,248.1 cps
Intensity per Run 3	604.0 cps	100.0 cps	96.0 cps	8.0 cps	84.0 cps	20.0 cps	21.8 cps	871,078.5 cps	380.0 cps	1,320.1 cps
Intensity RSD	1.0 %	18.3 %	14.8 %	43.3 %	20.8 %	31.2 %	42.6 %	1.3 %	1.8 %	6.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.033 ppb	46.958 ppb	46.373 ppb			94.102 %			0.014 ppm	0.021 ppb
Concentration per Run 1	0.028 ppb	47.272 ppb	46.829 ppb			94.078 %			0.014 ppm	0.021 ppb
Concentration per Run 2	0.034 ppb	47.768 ppb	46.796 ppb			93.760 %			0.014 ppm	0.021 ppb
Concentration per Run 3	0.037 ppb	45.834 ppb	45.494 ppb			94.468 %			0.014 ppm	0.021 ppb
Concentration RSD	12.8 %	2.1 %	1.6 %			0.4 %			2.1 %	0.7 %
Intensity average	993 cps	294,614 cps	529,670 cps	260 cps	263 cps	2,957,905 cps	224 cps	212 cps	3,129,209 cps	2,890 cps
Intensity per Run 1	884.0 cps	294,928.0 cps	532,115.0 cps	272.0 cps	284.0 cps	2,957,153.2 cps	168.0 cps	196.0 cps	3,096,283.9 cps	2,801.3 cps
Intensity per Run 2	1,016.0 cps	298,530.0 cps	532,422.6 cps	264.0 cps	236.0 cps	2,947,154.6 cps	272.0 cps	220.0 cps	3,086,714.7 cps	2,897.3 cps
Intensity per Run 3	1,080.0 cps	290,384.7 cps	524,472.5 cps	244.0 cps	268.0 cps	2,969,408.3 cps	232.0 cps	220.0 cps	3,204,629.2 cps	2,972.4 cps
Intensity RSD	10.1 %	1.4 %	0.9 %	5.5 %	9.3 %	0.4 %	23.4 %	6.5 %	2.1 %	3.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.021 ppb	-0.002 ppb	-0.002 ppb	-0.002 ppb	94.472 %
Concentration per Run 1	0.022 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	91.651 %
Concentration per Run 2	0.021 ppb	-0.002 ppb	-0.002 ppb	-0.002 ppb	94.294 %
Concentration per Run 3	0.020 ppb	-0.002 ppb	-0.001 ppb	-0.002 ppb	97.469 %
Concentration RSD	5.8 %	18.5 %	15.5 %	23.4 %	3.1 %
Intensity average	7,003 cps	599 cps	517 cps	2,343 cps	2,421,247 cps
Intensity per Run 1	7,002.0 cps	606.0 cps	496.0 cps	2,410.1 cps	2,348,970.0 cps
Intensity per Run 2	7,067.0 cps	580.0 cps	504.0 cps	2,304.1 cps	2,416,693.2 cps
Intensity per Run 3	6,938.9 cps	612.0 cps	552.0 cps	2,316.1 cps	2,498,077.7 cps
Intensity RSD	0.9 %	2.8 %	5.9 %	2.5 %	3.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV | Analysis: 10/30/2019 17:02:24 | Sample Type QC
Comment MW-11881 | Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	86.525 %	89.146 %	147.222 ppb	148.813 ppb	148.866 ppb	N/A	14,791.455 ppb	14,700.323 ppb	14,736.693 ppb
Concentration per Run 1	85.796 %	90.503 %	144.332 ppb	142.795 ppb	143.701 ppb	N/A	14,549.001 ppb	14,367.598 ppb	14,389.833 ppb
Concentration per Run 2	86.762 %	88.303 %	148.613 ppb	149.320 ppb	149.626 ppb	N/A	14,761.025 ppb	14,788.209 ppb	14,920.427 ppb
Concentration per Run 3	87.018 %	88.633 %	148.721 ppb	154.323 ppb	153.272 ppb	N/A	15,064.340 ppb	14,945.162 ppb	14,899.818 ppb
Recovery Percentage 1			98.148 %		99.244 %		97.633 %		
Concentration RSD	0.7 %	1.3 %	1.7 %	3.9 %	3.2 %	N/A	1.8 %	2.0 %	2.0 %
Intensity average	12,100,838 cps	28,703 cps	20,844 cps	2,246 cps	13,303 cps	2,010 cps	25,625,768 cps	11,601,666 cps	2,444,743 cps
Intensity per Run 1	11,998,809.7 cps	29,139.9 cps	20,748.7 cps	2,184.7 cps	13,011.8 cps	1,930.2 cps	25,399,827.4 cps	11,421,588.7 cps	2,403,525.4 cps
Intensity per Run 2	12,133,953.8 cps	28,431.8 cps	20,844.9 cps	2,234.2 cps	13,258.0 cps	2,000.2 cps	25,402,094.2 cps	11,595,188.0 cps	2,459,561.9 cps
Intensity per Run 3	12,169,751.7 cps	28,538.0 cps	20,938.0 cps	2,318.7 cps	13,639.9 cps	2,100.2 cps	26,075,381.3 cps	11,788,222.1 cps	2,471,141.9 cps
Intensity RSD	0.7 %	1.3 %	0.5 %	3.0 %	2.4 %	4.3 %	1.5 %	1.6 %	1.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	14,642.091 ppb	14,975.413 ppb		0.608 ppm	14,731.980 ppb	15,159.044 ppb	15,312.017 ppb	15,136.339 ppb	83.966 %
Concentration per Run 1	14,312.251 ppb	14,584.704 ppb		0.597 ppm	14,509.630 ppb	14,670.927 ppb	14,989.655 ppb	14,762.689 ppb	83.895 %
Concentration per Run 2	14,790.707 ppb	15,193.641 ppb		0.610 ppm	14,827.096 ppb	15,441.906 ppb	15,063.072 ppb	15,308.039 ppb	85.516 %
Concentration per Run 3	14,823.316 ppb	15,147.893 ppb		0.617 ppm	14,859.212 ppb	15,364.299 ppb	15,883.325 ppb	15,338.290 ppb	82.487 %
Recovery Percentage 1	96.647 %	98.848 %			97.241 %		101.069 %	99.910 %	
Concentration RSD	2.0 %	2.3 %		1.6 %	1.3 %	2.8 %	3.2 %	2.1 %	1.8 %
Intensity average	3,231,706 cps	4,031,841 cps	4,287 cps	3,651,157 cps	10,902,507 cps	54,174 cps	34,253,383 cps	643,844 cps	5,779,413 cps
Intensity per Run 1	3,179,053.2 cps	3,949,971.2 cps	4,620.9 cps	3,595,640.0 cps	10,743,057.9 cps	52,359.5 cps	33,508,468.4 cps	626,808.7 cps	5,774,525.2 cps
Intensity per Run 2	3,244,340.4 cps	4,066,031.4 cps	4,090.7 cps	3,645,632.6 cps	10,927,446.8 cps	54,991.0 cps	34,315,798.0 cps	648,966.0 cps	5,886,100.7 cps
Intensity per Run 3	3,271,723.2 cps	4,079,518.9 cps	4,150.7 cps	3,712,199.6 cps	11,037,016.1 cps	55,171.8 cps	34,935,883.7 cps	655,757.9 cps	5,677,612.7 cps
Intensity RSD	1.5 %	1.8 %	6.8 %	1.6 %	1.4 %	2.9 %	2.1 %	2.4 %	1.8 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	87.958 %	150.475 ppb	145.764 ppb	144.974 ppb	149.028 ppb	N/A	148.792 ppb	14,866.904 ppb	14,949.215 ppb
Concentration per Run 1	87.758 %	146.672 ppb	142.211 ppb	141.443 ppb	146.755 ppb	N/A	144.692 ppb	14,417.225 ppb	14,620.920 ppb
Concentration per Run 2	87.681 %	151.200 ppb	148.712 ppb	146.288 ppb	149.657 ppb	N/A	150.653 ppb	14,739.241 ppb	15,072.744 ppb
Concentration per Run 3	88.435 %	153.554 ppb	146.370 ppb	147.191 ppb	150.671 ppb	N/A	151.032 ppb	15,444.247 ppb	15,153.981 ppb
Recovery Percentage 1		100.317 %	97.176 %	96.649 %		0.000 %	99.195 %		98.675 %
Concentration RSD	0.5 %	2.3 %	2.3 %	2.1 %	1.4 %	N/A	2.4 %	3.5 %	1.9 %
Intensity average	258,230 cps	50,473 cps	1,717,709 cps	2,681,340 cps	379,314 cps	386,739 cps	2,095,525 cps	278,896,544 cps	9,407,546 cps
Intensity per Run 1	257,642.9 cps	49,036.2 cps	1,672,055.7 cps	2,610,034.0 cps	371,299.1 cps	380,866.1 cps	2,023,623.0 cps	268,432,425.7 cps	9,179,750.0 cps
Intensity per Run 2	257,416.7 cps	50,578.2 cps	1,746,884.3 cps	2,697,006.9 cps	380,452.8 cps	390,828.2 cps	2,120,115.6 cps	276,341,574.0 cps	9,455,087.4 cps
Intensity per Run 3	259,630.7 cps	51,803.2 cps	1,734,186.8 cps	2,736,978.6 cps	386,189.9 cps	388,521.7 cps	2,142,836.4 cps	291,915,633.7 cps	9,587,800.8 cps
Intensity RSD	0.5 %	2.7 %	2.3 %	2.4 %	2.0 %	1.3 %	3.0 %	4.3 %	2.2 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	147.894 ppb	147.794 ppb	151.533 ppb	150.373 ppb	151.502 ppb	152.691 ppb	153.246 ppb	151.694 ppb	
Concentration per Run 1	144.260 ppb	147.279 ppb	150.130 ppb	149.410 ppb	148.045 ppb	149.057 ppb	150.826 ppb	148.732 ppb	
Concentration per Run 2	149.641 ppb	147.408 ppb	152.577 ppb	150.393 ppb	152.536 ppb	152.872 ppb	154.812 ppb	152.732 ppb	
Concentration per Run 3	149.781 ppb	148.695 ppb	151.893 ppb	151.317 ppb	153.925 ppb	156.145 ppb	154.100 ppb	153.619 ppb	
Recovery Percentage 1	98.596 %	98.529 %			101.001 %	101.794 %			
Concentration RSD	2.1 %	0.5 %	0.8 %	0.6 %	2.0 %	2.3 %	1.4 %	1.7 %	
Intensity average	6,449,938 cps	1,610,153 cps	248,400 cps	4,018,304 cps	2,060,428 cps	886,459 cps	150,229 cps	712,772 cps	420 cps
Intensity per Run 1	6,276,983.1 cps	1,569,540.9 cps	243,633.3 cps	3,950,559.9 cps	2,008,793.3 cps	862,591.1 cps	146,061.1 cps	690,073.9 cps	422.0 cps
Intensity per Run 2	6,505,360.1 cps	1,617,854.9 cps	250,356.5 cps	4,023,920.2 cps	2,067,867.6 cps	890,468.9 cps	152,075.9 cps	719,291.0 cps	397.0 cps
Intensity per Run 3	6,567,470.3 cps	1,643,062.1 cps	251,209.3 cps	4,080,433.0 cps	2,104,623.5 cps	906,317.1 cps	152,551.0 cps	728,951.1 cps	441.0 cps
Intensity RSD	2.4 %	2.3 %	1.7 %	1.6 %	2.3 %	2.5 %	2.4 %	2.8 %	5.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	150.476 ppb	N/A	151.342 ppb			147.857 ppb		92.351 %	143.316 ppb
Concentration per Run 1	146.166 ppb	N/A	148.524 ppb			144.413 ppb		90.339 %	140.474 ppb
Concentration per Run 2	151.391 ppb	N/A	151.996 ppb			148.154 ppb		93.039 %	143.886 ppb
Concentration per Run 3	153.871 ppb	N/A	153.505 ppb			151.003 ppb		93.676 %	145.589 ppb
Recovery Percentage 1	100.317 %	0.000 %				98.571 %			
Concentration RSD	2.6 %	N/A	1.7 %			2.2 %		1.9 %	1.8 %
Intensity average	453,424 cps	14,395 cps	49,180 cps	5,164 cps	30,372 cps	24,606 cps	5,645 cps	540,054 cps	1,482,691 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	438,963.7 cps	13,267.1 cps	47,430.8 cps	4,946.0 cps	28,981.8 cps	23,936.5 cps	5,085.1 cps	528,285.8 cps	1,426,377.1 cps
Intensity per Run 2	457,682.6 cps	14,859.0 cps	49,625.3 cps	5,190.1 cps	30,962.4 cps	24,739.1 cps	6,168.6 cps	544,074.9 cps	1,498,230.8 cps
Intensity per Run 3	463,626.2 cps	15,059.1 cps	50,482.6 cps	5,357.1 cps	31,173.0 cps	25,142.4 cps	5,680.4 cps	547,800.4 cps	1,523,463.8 cps
Intensity RSD	2.8 %	6.8 %	3.2 %	4.0 %	4.0 %	2.5 %	9.6 %	1.9 %	3.4 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	143.822 ppb	142.828 ppb	140.211 ppb	142.290 ppb	0.018 ppm		148.091 ppb	28.374 ppb	151.068 ppb
Concentration per Run 1	142.746 ppb	141.238 ppb	137.468 ppb	138.300 ppb	0.018 ppm		144.034 ppb	27.549 ppb	148.511 ppb
Concentration per Run 2	142.487 ppb	141.673 ppb	140.476 ppb	142.306 ppb	0.018 ppm		147.882 ppb	28.118 ppb	149.439 ppb
Concentration per Run 3	146.233 ppb	145.571 ppb	142.689 ppb	146.263 ppb	0.018 ppm		152.359 ppb	29.456 ppb	155.254 ppb
Recovery Percentage 1			93.474 %		0.000 %			94.581 %	
Concentration RSD	1.5 %	1.7 %	1.9 %	2.8 %	1.0 %		2.8 %	3.5 %	2.4 %
Intensity average	2,698,019 cps	2,954,068 cps	1,733,349 cps	4,668,879 cps	1,578,258 cps	835 cps	142,495 cps	2,064,977 cps	111,735 cps
Intensity per Run 1	2,630,385.4 cps	2,871,400.3 cps	1,671,561.6 cps	4,466,416.9 cps	1,561,131.8 cps	848.0 cps	137,197.9 cps	1,997,743.9 cps	108,900.8 cps
Intensity per Run 2	2,690,181.3 cps	2,948,517.9 cps	1,747,114.5 cps	4,696,595.4 cps	1,582,758.7 cps	788.0 cps	142,957.3 cps	2,053,201.6 cps	111,019.3 cps
Intensity per Run 3	2,773,491.6 cps	3,042,286.4 cps	1,781,372.1 cps	4,843,625.7 cps	1,590,883.0 cps	868.0 cps	147,328.5 cps	2,143,984.4 cps	115,285.6 cps
Intensity RSD	2.7 %	2.9 %	3.2 %	4.1 %	1.0 %	5.0 %	3.6 %	3.6 %	2.9 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.051 ppb	150.106 ppb	148.329 ppb	90.808 %	151.835 ppb	144.170 ppb	145.791 ppb	149.931 ppb	150.858 ppb
Concentration per Run 1	27.274 ppb	147.993 ppb	147.006 ppb	90.486 %	147.053 ppb	136.594 ppb	135.907 ppb	143.545 ppb	147.290 ppb
Concentration per Run 2	28.077 ppb	149.462 ppb	146.045 ppb	91.115 %	151.643 ppb	145.216 ppb	147.505 ppb	149.721 ppb	150.769 ppb
Concentration per Run 3	28.803 ppb	152.862 ppb	151.935 ppb	90.822 %	156.809 ppb	150.699 ppb	153.960 ppb	156.526 ppb	154.515 ppb
Recovery Percentage 1			98.886 %		101.223 %	96.113 %		99.954 %	
Concentration RSD	2.7 %	1.7 %	2.1 %	0.3 %	3.2 %	4.9 %	6.3 %	4.3 %	2.4 %
Intensity average	2,020,747 cps	1,796,426 cps	4,376,261 cps	812,984 cps	3,689,488 cps	3,684,131 cps	2,983,151 cps	910,750 cps	1,672,044 cps
Intensity per Run 1	1,949,177.6 cps	1,759,756.2 cps	4,321,896.8 cps	810,105.4 cps	3,563,530.5 cps	3,483,877.8 cps	2,777,145.9 cps	873,694.3 cps	1,636,607.8 cps
Intensity per Run 2	2,031,160.7 cps	1,795,837.4 cps	4,323,499.8 cps	815,735.9 cps	3,694,232.4 cps	3,717,323.5 cps	3,021,891.6 cps	907,764.7 cps	1,667,031.3 cps
Intensity per Run 3	2,081,901.5 cps	1,833,685.0 cps	4,483,385.6 cps	813,112.1 cps	3,810,702.1 cps	3,851,191.4 cps	3,150,414.2 cps	950,790.2 cps	1,712,494.3 cps
Intensity RSD	3.3 %	2.1 %	2.1 %	0.3 %	3.4 %	5.0 %	6.4 %	4.2 %	2.3 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			93.632 %			0.014 ppm	150.650 ppb	148.706 ppb	148.896 ppb
Concentration per Run 1			94.414 %			0.014 ppm	147.042 ppb	146.241 ppb	143.724 ppb
Concentration per Run 2			92.875 %			0.014 ppm	151.958 ppb	149.278 ppb	151.172 ppb
Concentration per Run 3			93.606 %			0.014 ppm	152.950 ppb	150.600 ppb	151.791 ppb
Recovery Percentage 1						0.000 %		99.137 %	
Concentration RSD			0.8 %			0.2 %	2.1 %	1.5 %	3.0 %
Intensity average	64 cps	23 cps	2,943,109 cps	52 cps	33 cps	3,121,894 cps	12,544,591 cps	29,936,194 cps	9,874,512 cps
Intensity per Run 1	72.0 cps	16.0 cps	2,967,696.5 cps	52.0 cps	20.0 cps	3,120,088.2 cps	12,277,630.9 cps	29,496,303.7 cps	9,553,912.0 cps
Intensity per Run 2	64.0 cps	28.0 cps	2,919,337.5 cps	36.0 cps	44.0 cps	3,129,341.1 cps	12,610,751.6 cps	29,969,011.2 cps	9,994,962.3 cps
Intensity per Run 3	56.0 cps	24.0 cps	2,942,291.5 cps	68.0 cps	36.0 cps	3,116,252.6 cps	12,745,392.0 cps	30,343,265.9 cps	10,074,660.7 cps
Intensity RSD	12.5 %	27.0 %	0.8 %	30.8 %	36.7 %	0.2 %	1.9 %	1.4 %	2.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	150.035 ppb	149.668 ppb	90.338 %
Concentration per Run 1	144.441 ppb	144.963 ppb	90.510 %
Concentration per Run 2	154.508 ppb	152.112 ppb	90.090 %
Concentration per Run 3	151.157 ppb	151.930 ppb	90.414 %
Recovery Percentage 1		99.779 %	
Concentration RSD	3.4 %	2.7 %	0.2 %
Intensity average	8,734,833 cps	40,042,624 cps	2,315,307 cps
Intensity per Run 1	8,427,882.2 cps	38,858,867.4 cps	2,319,716.9 cps
Intensity per Run 2	8,969,015.2 cps	40,585,771.5 cps	2,308,947.9 cps
Intensity per Run 3	8,807,601.0 cps	40,683,233.6 cps	2,317,254.8 cps
Intensity RSD	3.2 %	2.6 %	0.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 17:08:29 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.943 %	92.308 %	0.000 ppb	0.351 ppb	0.257 ppb	N/A	-1.252 ppb	0.691 ppb	-0.069 ppb	0.363 ppb
Concentration per Run 1	92.420 %	89.368 %	-0.001 ppb	0.412 ppb	0.228 ppb	N/A	-0.899 ppb	1.165 ppb	0.115 ppb	0.478 ppb
Concentration per Run 2	92.935 %	93.835 %	-0.005 ppb	0.384 ppb	0.249 ppb	N/A	-1.428 ppb	0.442 ppb	-0.202 ppb	0.392 ppb
Concentration per Run 3	93.474 %	93.722 %	0.005 ppb	0.257 ppb	0.295 ppb	N/A	-1.430 ppb	0.465 ppb	-0.122 ppb	0.218 ppb
Recovery Percentage 1			-0.044 %	0.035 %			-0.250 %			0.073 %
Concentration RSD	0.6 %	2.8 %	1,150.1 %	23.6 %	13.5 %	N/A	24.5 %	59.5 %	237.3 %	36.5 %
Intensity average	12,998,396 cps	29,721 cps	3 cps	9 cps	38 cps	2,064 cps	12,760 cps	2,414 cps	430 cps	630 cps
Intensity per Run 1	12,925,277.7 cps	28,774.6 cps	3.0 cps	9.5 cps	34.5 cps	2,160.2 cps	13,046.8 cps	2,730.3 cps	450.0 cps	640.0 cps
Intensity per Run 2	12,997,202.8 cps	30,213.0 cps	2.5 cps	9.5 cps	38.0 cps	1,850.1 cps	12,536.3 cps	2,230.2 cps	410.0 cps	640.0 cps
Intensity per Run 3	13,072,707.8 cps	30,176.4 cps	4.0 cps	7.5 cps	42.5 cps	2,180.2 cps	12,696.5 cps	2,280.2 cps	430.0 cps	610.0 cps
Intensity RSD	0.6 %	2.8 %	24.1 %	13.1 %	10.5 %	9.0 %	2.0 %	11.4 %	4.7 %	2.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.492 ppb		0.003 ppm	-0.720 ppb	-9.760 ppb	-11.409 ppb	-5.637 ppb	90.632 %	89.429 %	0.020 ppb
Concentration per Run 1	0.117 ppb		0.003 ppm	-0.940 ppb	-10.496 ppb	-11.764 ppb	-4.303 ppb	90.728 %	87.768 %	0.032 ppb
Concentration per Run 2	0.896 ppb		0.003 ppm	-1.242 ppb	-10.610 ppb	-11.661 ppb	-4.443 ppb	91.377 %	88.802 %	0.020 ppb
Concentration per Run 3	0.464 ppb		0.003 ppm	0.023 ppb	-8.174 ppb	-10.800 ppb	-8.166 ppb	89.791 %	91.716 %	0.008 ppb
Recovery Percentage 1	2.461 %			-0.144 %			-0.564 %			0.202 %
Concentration RSD	79.2 %		8.2 %	91.8 %	14.1 %	4.6 %	38.9 %	0.9 %	2.3 %	60.6 %
Intensity average	597 cps	2,670 cps	19,235 cps	18,995 cps	33 cps	34,498 cps	420 cps	6,238,218 cps	262,548 cps	8 cps
Intensity per Run 1	480.0 cps	2,640.3 cps	19,505.3 cps	18,433.7 cps	30.0 cps	33,675.5 cps	470.0 cps	6,244,833.8 cps	257,672.5 cps	12.0 cps
Intensity per Run 2	710.0 cps	2,860.3 cps	20,346.7 cps	18,533.8 cps	30.0 cps	34,166.8 cps	470.0 cps	6,289,504.9 cps	260,708.8 cps	8.0 cps
Intensity per Run 3	600.0 cps	2,510.3 cps	17,853.0 cps	20,016.2 cps	40.0 cps	35,651.0 cps	320.0 cps	6,180,316.4 cps	269,261.5 cps	4.0 cps
Intensity RSD	19.3 %	6.6 %	6.6 %	4.7 %	17.3 %	3.0 %	20.6 %	0.9 %	2.3 %	50.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.108 ppb	-0.097 ppb	-0.414 ppb	N/A	-0.057 ppb	-0.471 ppb	-0.406 ppb	0.006 ppb	-0.779 ppb	-0.796 ppb
Concentration per Run 1	-0.104 ppb	-0.095 ppb	-0.417 ppb	N/A	-0.044 ppb	-0.215 ppb	-0.207 ppb	0.009 ppb	-0.771 ppb	-0.826 ppb
Concentration per Run 2	-0.106 ppb	-0.100 ppb	-0.412 ppb	N/A	-0.054 ppb	-0.498 ppb	-0.381 ppb	0.006 ppb	-0.779 ppb	-0.765 ppb
Concentration per Run 3	-0.114 ppb	-0.097 ppb	-0.413 ppb	N/A	-0.074 ppb	-0.701 ppb	-0.630 ppb	0.002 ppb	-0.786 ppb	-0.797 ppb
Recovery Percentage 1	-2.160 %	-4.871 %			-5.741 %		-0.203 %	0.576 %	-77.853 %	
Concentration RSD	4.9 %	2.6 %	0.7 %	N/A	27.1 %	51.8 %	52.3 %	54.3 %	1.0 %	3.8 %
Intensity average	234 cps	476 cps	127 cps	150 cps	1,159 cps	27,478 cps	804 cps	491 cps	1,776 cps	268 cps
Intensity per Run 1	275.0 cps	512.0 cps	116.0 cps	180.0 cps	1,324.1 cps	31,600.2 cps	916.0 cps	612.0 cps	1,780.1 cps	212.0 cps
Intensity per Run 2	260.5 cps	424.0 cps	132.0 cps	120.0 cps	1,208.1 cps	27,069.6 cps	816.0 cps	504.0 cps	1,812.1 cps	320.0 cps
Intensity per Run 3	166.5 cps	492.0 cps	132.0 cps	150.0 cps	944.0 cps	23,763.5 cps	680.0 cps	356.0 cps	1,736.1 cps	272.0 cps
Intensity RSD	25.2 %	9.7 %	7.3 %	20.0 %	16.8 %	14.3 %	14.7 %	26.2 %	2.1 %	20.2 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.086 ppb	-0.067 ppb	-1.846 ppb	-1.567 ppb	-1.615 ppb		-0.002 ppb	N/A	0.112 ppb	
Concentration per Run 1	-0.084 ppb	-0.064 ppb	-1.832 ppb	-1.559 ppb	-1.597 ppb		0.189 ppb	N/A	0.139 ppb	
Concentration per Run 2	-0.088 ppb	-0.064 ppb	-1.843 ppb	-1.539 ppb	-1.613 ppb		-0.239 ppb	N/A	0.115 ppb	
Concentration per Run 3	-0.085 ppb	-0.072 ppb	-1.862 ppb	-1.603 ppb	-1.635 ppb		0.045 ppb	N/A	0.081 ppb	
Recovery Percentage 1		-3.339 %	-92.277 %				-0.205 %			
Concentration RSD	2.8 %	6.4 %	0.8 %	2.1 %	1.2 %		10,633.4 %	N/A	26.0 %	
Intensity average	1,472 cps	832 cps	3,242 cps	492 cps	2,555 cps	8 cps	3,804 cps	43 cps	16 cps	620 cps
Intensity per Run 1	1,480.1 cps	852.0 cps	3,224.4 cps	484.0 cps	2,556.3 cps	4.0 cps	4,268.0 cps	30.0 cps	24.5 cps	598.0 cps
Intensity per Run 2	1,408.1 cps	860.0 cps	3,244.4 cps	524.0 cps	2,588.3 cps	8.0 cps	3,055.2 cps	40.0 cps	17.9 cps	623.0 cps
Intensity per Run 3	1,528.1 cps	784.0 cps	3,256.4 cps	468.0 cps	2,520.3 cps	11.0 cps	4,090.3 cps	60.0 cps	6.8 cps	640.0 cps
Intensity RSD	4.1 %	5.0 %	0.5 %	5.9 %	1.3 %	45.8 %	17.2 %	35.3 %	54.6 %	3.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.794 ppb		92.438 %	0.196 ppb	0.190 ppb	0.183 ppb	0.190 ppb	0.191 ppb	0.019 ppm
Concentration per Run 1		0.561 ppb		88.318 %	0.225 ppb	0.228 ppb	0.212 ppb	0.223 ppb	0.228 ppb	0.018 ppm
Concentration per Run 2		0.667 ppb		94.475 %	0.187 ppb	0.182 ppb	0.170 ppb	0.176 ppb	0.176 ppb	0.019 ppm
Concentration per Run 3		1.153 ppb		94.520 %	0.178 ppb	0.162 ppb	0.166 ppb	0.170 ppb	0.169 ppb	0.019 ppm
Recovery Percentage 1		15.876 %						1.897 %		
Concentration RSD		39.8 %		3.9 %	12.5 %	17.8 %	14.0 %	15.5 %	17.0 %	3.0 %
Intensity average	5,787 cps	-335 cps	6,054 cps	540,560 cps	2,344 cps	3,957 cps	4,243 cps	2,611 cps	6,879 cps	1,685,436 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	6,496.7 cps	-366.2 cps	6,784.9 cps	516,469.3 cps	2,532.3 cps	4,484.8 cps	4,672.9 cps	2,920.3 cps	7,818.5 cps	1,628,465.6 cps
Intensity per Run 2	4,588.9 cps	-357.7 cps	4,898.0 cps	552,474.3 cps	2,284.2 cps	3,872.6 cps	4,052.7 cps	2,476.3 cps	6,485.7 cps	1,721,372.6 cps
Intensity per Run 3	6,274.6 cps	-282.5 cps	6,479.7 cps	552,735.8 cps	2,216.2 cps	3,512.5 cps	4,004.7 cps	2,436.2 cps	6,333.6 cps	1,706,470.4 cps
Intensity RSD	18.0 %	13.7 %	16.7 %	3.9 %	7.1 %	12.4 %	8.8 %	10.3 %	11.9 %	3.0 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.002 ppb	0.004 ppb	0.014 ppb	0.004 ppb	0.008 ppb	0.010 ppb	94.851 %	0.019 ppb	1.100 ppb
Concentration per Run 1		0.002 ppb	0.004 ppb	0.004 ppb	0.006 ppb	0.011 ppb	0.012 ppb	91.927 %	0.045 ppb	1.041 ppb
Concentration per Run 2		-0.009 ppb	0.004 ppb	0.019 ppb	0.004 ppb	0.009 ppb	0.011 ppb	94.491 %	0.014 ppb	1.149 ppb
Concentration per Run 3		0.012 ppb	0.003 ppb	0.019 ppb	0.002 ppb	0.006 ppb	0.007 ppb	98.136 %	-0.001 ppb	1.109 ppb
Recovery Percentage 1			0.374 %				0.967 %			54.984 %
Concentration RSD		634.5 %	10.8 %	63.1 %	39.5 %	28.6 %	28.3 %	3.3 %	121.3 %	5.0 %
Intensity average	629 cps	95 cps	373 cps	12 cps	376 cps	113 cps	337 cps	849,188 cps	1,208 cps	29,490 cps
Intensity per Run 1	636.0 cps	92.0 cps	388.0 cps	4.0 cps	476.0 cps	136.0 cps	391.6 cps	823,007.6 cps	1,804.1 cps	26,997.4 cps
Intensity per Run 2	608.0 cps	84.0 cps	380.0 cps	16.0 cps	392.0 cps	120.0 cps	367.0 cps	845,957.9 cps	1,080.0 cps	30,830.0 cps
Intensity per Run 3	644.0 cps	108.0 cps	352.0 cps	16.0 cps	260.0 cps	84.0 cps	252.1 cps	878,597.5 cps	740.0 cps	30,641.6 cps
Intensity RSD	3.0 %	12.9 %	5.1 %	57.7 %	29.0 %	23.5 %	22.1 %	3.3 %	45.0 %	7.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.123 ppb	-0.004 ppb	0.001 ppb			92.577 %			0.014 ppm	0.008 ppb
Concentration per Run 1	1.076 ppb	-0.003 ppb	0.005 ppb			88.564 %			0.013 ppm	0.010 ppb
Concentration per Run 2	1.194 ppb	-0.002 ppb	-0.001 ppb			95.828 %			0.013 ppm	0.008 ppb
Concentration per Run 3	1.097 ppb	-0.006 ppb	-0.002 ppb			93.339 %			0.014 ppm	0.005 ppb
Recovery Percentage 1		-0.035 %							1.350 %	
Concentration RSD	5.6 %	57.1 %	607.5 %			4.0 %			2.7 %	29.1 %
Intensity average	24,037 cps	131 cps	272 cps	1 cps	5 cps	2,909,974 cps	65 cps	20 cps	3,059,286 cps	1,786 cps
Intensity per Run 1	22,288.0 cps	128.0 cps	308.0 cps	0.0 cps	8.0 cps	2,783,831.2 cps	72.0 cps	20.0 cps	2,979,081.1 cps	1,913.1 cps
Intensity per Run 2	25,630.3 cps	144.0 cps	264.0 cps	4.0 cps	4.0 cps	3,012,165.0 cps	60.0 cps	20.0 cps	3,057,018.6 cps	1,831.1 cps
Intensity per Run 3	24,191.4 cps	120.0 cps	244.0 cps	0.0 cps	4.0 cps	2,933,926.9 cps	64.0 cps	20.0 cps	3,141,757.3 cps	1,614.1 cps
Intensity RSD	7.0 %	9.4 %	12.0 %	173.2 %	43.3 %	4.0 %	9.4 %	0.0 %	2.7 %	8.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.007 ppb	0.011 ppb	0.012 ppb	0.011 ppb	96.115 %
Concentration per Run 1	0.009 ppb	0.015 ppb	0.018 ppb	0.016 ppb	93.293 %
Concentration per Run 2	0.007 ppb	0.010 ppb	0.013 ppb	0.011 ppb	96.368 %
Concentration per Run 3	0.005 ppb	0.009 ppb	0.006 ppb	0.007 ppb	98.686 %
Recovery Percentage 1	1.446 %			1.137 %	
Concentration RSD	29.6 %	30.6 %	47.8 %	40.7 %	2.8 %
Intensity average	4,191 cps	1,524 cps	1,380 cps	6,137 cps	2,463,380 cps
Intensity per Run 1	4,499.8 cps	1,747.1 cps	1,676.1 cps	7,283.8 cps	2,391,037.0 cps
Intensity per Run 2	4,250.7 cps	1,463.1 cps	1,428.1 cps	6,127.6 cps	2,469,840.8 cps
Intensity per Run 3	3,822.6 cps	1,362.1 cps	1,036.0 cps	4,998.4 cps	2,529,261.3 cps
Intensity RSD	8.2 %	13.1 %	23.4 %	18.6 %	2.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ24097-008(10) Analysis: 10/30/2019 17:14:34 Sample Type UNKNOWN
Comment 16-3 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	96.564 %	94.934 %	-0.003 ppb	0.480 ppb	0.555 ppb	N/A	63.318 ppb	2,439.253 ppb	2,458.241 ppb	2,419.953 ppb
Concentration per Run 1	95.555 %	92.582 %	0.002 ppb	0.552 ppb	0.584 ppb	N/A	68.138 ppb	2,609.909 ppb	2,577.120 ppb	2,544.367 ppb
Concentration per Run 2	97.263 %	95.569 %	-0.009 ppb	0.402 ppb	0.569 ppb	N/A	61.565 ppb	2,388.649 ppb	2,428.879 ppb	2,399.140 ppb
Concentration per Run 3	96.873 %	96.651 %	-0.002 ppb	0.486 ppb	0.513 ppb	N/A	60.251 ppb	2,319.201 ppb	2,368.726 ppb	2,316.350 ppb
Concentration RSD	0.9 %	2.2 %	167.4 %	15.6 %	6.7 %	N/A	6.7 %	6.2 %	4.4 %	4.8 %
Intensity average	13,504,754 cps	30,567 cps	3 cps	11 cps	68 cps	2,150 cps	131,543 cps	2,039,324 cps	432,093 cps	565,679 cps
Intensity per Run 1	13,363,648.7 cps	29,809.5 cps	3.5 cps	12.0 cps	68.5 cps	2,290.2 cps	135,916.4 cps	2,111,635.0 cps	438,008.2 cps	574,859.7 cps
Intensity per Run 2	13,602,619.6 cps	30,771.3 cps	2.0 cps	10.0 cps	69.5 cps	2,190.2 cps	129,477.9 cps	2,015,249.3 cps	430,699.4 cps	565,852.0 cps
Intensity per Run 3	13,547,993.7 cps	31,119.7 cps	3.0 cps	11.5 cps	65.0 cps	1,970.2 cps	129,235.4 cps	1,991,087.2 cps	427,570.8 cps	556,326.3 cps
Intensity RSD	0.9 %	2.2 %	27.0 %	9.3 %	3.5 %	7.6 %	2.9 %	3.1 %	1.2 %	1.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.474 ppb		0.124 ppm	143.570 ppb	2,555.146 ppb	2,532.452 ppb	2,654.360 ppb	94.811 %	92.677 %	0.043 ppb
Concentration per Run 1	1.242 ppb		0.124 ppm	158.769 ppb	2,666.693 ppb	2,527.506 ppb	2,858.761 ppb	94.376 %	88.627 %	0.079 ppb
Concentration per Run 2	-0.134 ppb		0.124 ppm	138.245 ppb	2,486.632 ppb	2,530.868 ppb	2,605.252 ppb	94.050 %	93.533 %	0.019 ppb
Concentration per Run 3	0.316 ppb		0.123 ppm	133.695 ppb	2,512.113 ppb	2,538.983 ppb	2,499.066 ppb	96.007 %	95.873 %	0.029 ppb
Concentration RSD	147.9 %		0.6 %	9.3 %	3.8 %	0.2 %	7.0 %	1.1 %	4.0 %	75.8 %
Intensity average	607 cps	9,344 cps	786,062 cps	131,901 cps	9,677 cps	6,451,000 cps	119,345 cps	6,525,819 cps	272,085 cps	16 cps
Intensity per Run 1	800.0 cps	9,623.7 cps	758,301.8 cps	138,140.3 cps	9,673.8 cps	6,407,902.4 cps	123,155.1 cps	6,495,878.8 cps	260,193.0 cps	28.0 cps
Intensity per Run 2	440.0 cps	9,183.4 cps	795,562.5 cps	129,134.8 cps	9,513.7 cps	6,397,739.3 cps	118,439.2 cps	6,473,440.9 cps	274,596.8 cps	8.0 cps
Intensity per Run 3	580.0 cps	9,223.4 cps	804,322.2 cps	128,427.3 cps	9,843.9 cps	6,547,359.4 cps	116,442.0 cps	6,608,136.3 cps	281,465.8 cps	12.0 cps
Intensity RSD	29.9 %	2.6 %	3.1 %	4.1 %	1.7 %	1.3 %	2.9 %	1.1 %	4.0 %	66.1 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.078 ppb	0.131 ppb	-0.134 ppb	N/A	0.018 ppb	0.128 ppb	0.545 ppb	0.001 ppb	-0.639 ppb	-0.653 ppb
Concentration per Run 1	-0.078 ppb	0.146 ppb	-0.138 ppb	N/A	0.030 ppb	0.294 ppb	0.788 ppb	0.002 ppb	-0.637 ppb	-0.610 ppb
Concentration per Run 2	-0.077 ppb	0.124 ppb	-0.103 ppb	N/A	0.018 ppb	0.033 ppb	0.349 ppb	0.000 ppb	-0.654 ppb	-0.693 ppb
Concentration per Run 3	-0.080 ppb	0.122 ppb	-0.161 ppb	N/A	0.007 ppb	0.058 ppb	0.498 ppb	0.000 ppb	-0.626 ppb	-0.655 ppb
Concentration RSD	2.0 %	10.1 %	21.8 %	N/A	63.4 %	112.1 %	41.0 %	114.4 %	2.2 %	6.4 %
Intensity average	614 cps	4,928 cps	876 cps	800 cps	2,315 cps	40,192 cps	1,463 cps	281 cps	3,378 cps	519 cps
Intensity per Run 1	587.2 cps	5,001.0 cps	832.0 cps	820.0 cps	2,400.2 cps	41,870.4 cps	1,556.1 cps	316.0 cps	3,336.4 cps	572.0 cps
Intensity per Run 2	639.7 cps	4,852.9 cps	968.0 cps	920.0 cps	2,332.2 cps	38,760.5 cps	1,348.1 cps	264.0 cps	3,248.4 cps	456.0 cps
Intensity per Run 3	616.2 cps	4,929.0 cps	828.0 cps	660.0 cps	2,212.2 cps	39,944.1 cps	1,484.1 cps	264.0 cps	3,548.5 cps	528.0 cps
Intensity RSD	4.3 %	1.5 %	9.1 %	16.4 %	4.1 %	3.9 %	7.2 %	10.7 %	4.6 %	11.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.061 ppb	-0.026 ppb	-0.945 ppb	9.299 ppb	6.469 ppb		-0.151 ppb	N/A	0.031 ppb	
Concentration per Run 1	-0.056 ppb	-0.023 ppb	-0.856 ppb	9.721 ppb	6.773 ppb		-0.262 ppb	N/A	0.054 ppb	
Concentration per Run 2	-0.065 ppb	-0.032 ppb	-0.999 ppb	9.223 ppb	6.248 ppb		0.115 ppb	N/A	-0.037 ppb	
Concentration per Run 3	-0.063 ppb	-0.022 ppb	-0.981 ppb	8.954 ppb	6.385 ppb		-0.305 ppb	N/A	0.075 ppb	
Concentration RSD	7.7 %	21.3 %	8.2 %	4.2 %	4.2 %		153.4 %	N/A	195.0 %	
Intensity average	2,191 cps	1,449 cps	8,838 cps	11,428 cps	41,524 cps	9 cps	3,436 cps	80 cps	-10 cps	826 cps
Intensity per Run 1	2,264.2 cps	1,420.1 cps	9,007.3 cps	11,489.3 cps	41,693.5 cps	10.0 cps	2,950.0 cps	120.0 cps	-2.1 cps	831.0 cps
Intensity per Run 2	2,120.2 cps	1,372.1 cps	8,611.0 cps	11,477.3 cps	40,910.9 cps	7.0 cps	4,330.0 cps	60.0 cps	-33.3 cps	831.0 cps
Intensity per Run 3	2,188.2 cps	1,556.1 cps	8,895.2 cps	11,317.1 cps	41,966.5 cps	11.0 cps	3,027.6 cps	60.0 cps	4.9 cps	816.0 cps
Intensity RSD	3.3 %	6.6 %	2.3 %	0.8 %	1.3 %	22.3 %	22.6 %	43.3 %	199.8 %	1.0 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		1.037 ppb		94.805 %	0.144 ppb	0.157 ppb	0.150 ppb	0.145 ppb	0.147 ppb	0.019 ppm
Concentration per Run 1		1.551 ppb		93.013 %	0.126 ppb	0.144 ppb	0.139 ppb	0.131 ppb	0.140 ppb	0.018 ppm
Concentration per Run 2		0.108 ppb		95.919 %	0.140 ppb	0.152 ppb	0.143 ppb	0.142 ppb	0.142 ppb	0.019 ppm
Concentration per Run 3		1.452 ppb		95.481 %	0.166 ppb	0.175 ppb	0.167 ppb	0.163 ppb	0.159 ppb	0.019 ppm
Concentration RSD		77.7 %		1.7 %	14.1 %	10.3 %	10.0 %	11.0 %	7.2 %	2.8 %
Intensity average	5,211 cps	-303 cps	5,450 cps	554,399 cps	1,852 cps	3,430 cps	3,662 cps	2,116 cps	5,599 cps	1,693,367 cps
Intensity per Run 1	4,440.8 cps	-199.4 cps	4,635.9 cps	543,922.5 cps	1,616.1 cps	3,100.4 cps	3,344.5 cps	1,884.1 cps	5,217.1 cps	1,639,444.5 cps
Intensity per Run 2	6,739.8 cps	-475.2 cps	7,010.0 cps	560,918.9 cps	1,832.1 cps	3,360.5 cps	3,560.5 cps	2,092.2 cps	5,473.2 cps	1,717,714.9 cps
Intensity per Run 3	4,452.8 cps	-233.0 cps	4,702.9 cps	558,355.1 cps	2,108.2 cps	3,828.6 cps	4,080.7 cps	2,372.2 cps	6,105.5 cps	1,722,942.8 cps
Intensity RSD	25.4 %	49.7 %	24.8 %	1.7 %	13.3 %	10.8 %	10.3 %	11.6 %	8.2 %	2.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK



Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.017 ppb	0.001 ppb	0.005 ppb	0.001 ppb	0.004 ppb	0.003 ppb	97.369 %	0.032 ppb	0.143 ppb
Concentration per Run 1		0.037 ppb	0.000 ppb	0.004 ppb	0.001 ppb	0.004 ppb	0.003 ppb	93.341 %	0.033 ppb	0.136 ppb
Concentration per Run 2		0.007 ppb	0.000 ppb	0.003 ppb	0.001 ppb	0.004 ppb	0.003 ppb	98.408 %	0.033 ppb	0.142 ppb
Concentration per Run 3		0.006 ppb	0.001 ppb	0.008 ppb	0.001 ppb	0.004 ppb	0.003 ppb	100.357 %	0.029 ppb	0.151 ppb
Concentration RSD		102.6 %	50.3 %	54.1 %	21.3 %	5.2 %	3.5 %	3.7 %	6.9 %	5.3 %
Intensity average	685 cps	112 cps	133 cps	5 cps	165 cps	61 cps	126 cps	871,724 cps	1,577 cps	4,241 cps
Intensity per Run 1	764.0 cps	128.0 cps	124.0 cps	4.0 cps	148.0 cps	56.0 cps	122.5 cps	835,665.8 cps	1,548.1 cps	3,888.6 cps
Intensity per Run 2	708.0 cps	104.0 cps	116.0 cps	4.0 cps	156.0 cps	64.0 cps	128.4 cps	881,032.1 cps	1,624.1 cps	4,236.7 cps
Intensity per Run 3	584.0 cps	104.0 cps	160.0 cps	8.0 cps	192.0 cps	64.0 cps	126.1 cps	898,474.0 cps	1,560.1 cps	4,596.8 cps
Intensity RSD	13.4 %	12.4 %	17.6 %	43.3 %	14.2 %	7.5 %	2.4 %	3.7 %	2.6 %	8.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.141 ppb	100.021 ppb	100.819 ppb			95.251 %			0.014 ppm	0.038 ppb
Concentration per Run 1	0.136 ppb	105.291 ppb	106.191 ppb			92.958 %			0.014 ppm	0.041 ppb
Concentration per Run 2	0.152 ppb	98.154 ppb	99.147 ppb			94.170 %			0.014 ppm	0.039 ppb
Concentration per Run 3	0.136 ppb	96.616 ppb	97.118 ppb			98.624 %			0.014 ppm	0.035 ppb
Concentration RSD	6.7 %	4.6 %	4.7 %			3.1 %			1.0 %	7.7 %
Intensity average	3,356 cps	635,499 cps	1,165,964 cps	112 cps	99 cps	2,994,009 cps	109 cps	80 cps	3,106,631 cps	4,556 cps
Intensity per Run 1	3,112.4 cps	647,128.4 cps	1,188,958.1 cps	96.0 cps	96.0 cps	2,921,944.2 cps	104.0 cps	96.0 cps	3,133,690.7 cps	4,715.9 cps
Intensity per Run 2	3,616.5 cps	624,737.6 cps	1,147,522.1 cps	108.0 cps	80.0 cps	2,960,032.2 cps	96.0 cps	80.0 cps	3,075,128.9 cps	4,586.8 cps
Intensity per Run 3	3,340.5 cps	634,630.8 cps	1,161,411.3 cps	132.0 cps	120.0 cps	3,100,051.5 cps	128.0 cps	64.0 cps	3,111,072.6 cps	4,365.8 cps
Intensity RSD	7.5 %	1.8 %	1.8 %	16.4 %	20.4 %	3.1 %	15.2 %	20.0 %	1.0 %	3.9 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.038 ppb	0.006 ppb	0.007 ppb	0.006 ppb	98.151 %
Concentration per Run 1	0.041 ppb	0.008 ppb	0.008 ppb	0.007 ppb	96.288 %
Concentration per Run 2	0.038 ppb	0.006 ppb	0.006 ppb	0.006 ppb	98.287 %
Concentration per Run 3	0.035 ppb	0.005 ppb	0.006 ppb	0.006 ppb	99.877 %
Concentration RSD	8.3 %	23.7 %	12.7 %	10.7 %	1.8 %
Intensity average	11,020 cps	1,198 cps	1,068 cps	4,770 cps	2,515,539 cps
Intensity per Run 1	11,484.3 cps	1,277.1 cps	1,108.1 cps	4,881.4 cps	2,467,809.2 cps
Intensity per Run 2	11,060.9 cps	1,210.1 cps	1,048.0 cps	4,750.4 cps	2,519,021.7 cps
Intensity per Run 3	10,515.4 cps	1,107.0 cps	1,048.0 cps	4,679.4 cps	2,559,787.6 cps
Intensity RSD	4.4 %	7.1 %	3.2 %	2.1 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33151-001 Analysis: 10/30/2019 17:20:38 Sample Type UNKNOWN
Comment PBS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	89.195 %	90.207 %	0.002 ppb	0.057 ppb	0.213 ppb	N/A	-3.274 ppb	0.624 ppb	0.229 ppb	0.132 ppb
Concentration per Run 1	89.087 %	91.575 %	0.002 ppb	0.108 ppb	0.215 ppb	N/A	-3.313 ppb	0.759 ppb	0.587 ppb	0.200 ppb
Concentration per Run 2	88.647 %	89.589 %	-0.004 ppb	0.081 ppb	0.205 ppb	N/A	-3.157 ppb	0.816 ppb	0.376 ppb	-0.049 ppb
Concentration per Run 3	89.850 %	89.458 %	0.010 ppb	-0.018 ppb	0.218 ppb	N/A	-3.352 ppb	0.298 ppb	-0.276 ppb	0.243 ppb
Concentration RSD	0.7 %	1.3 %	294.0 %	116.1 %	3.0 %	N/A	3.1 %	45.5 %	196.5 %	120.2 %
Intensity average	12,474,171 cps	29,045 cps	4 cps	4 cps	33 cps	2,190 cps	8,897 cps	2,294 cps	467 cps	560 cps
Intensity per Run 1	12,459,153.6 cps	29,485.3 cps	3.5 cps	5.0 cps	34.0 cps	2,200.2 cps	8,913.2 cps	2,420.2 cps	530.0 cps	580.0 cps
Intensity per Run 2	12,397,535.4 cps	28,845.8 cps	2.5 cps	4.5 cps	32.5 cps	2,200.2 cps	9,083.3 cps	2,440.2 cps	490.0 cps	520.0 cps
Intensity per Run 3	12,565,824.1 cps	28,803.7 cps	4.5 cps	3.0 cps	33.5 cps	2,170.2 cps	8,693.1 cps	2,020.2 cps	380.0 cps	580.0 cps
Intensity RSD	0.7 %	1.3 %	28.6 %	25.0 %	2.3 %	0.8 %	2.2 %	10.3 %	16.6 %	6.2 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	1.477 ppb		3.766 ppm	-1.797 ppb	-16.032 ppb	-7.007 ppb	-7.521 ppb	83.928 %	85.875 %	0.127 ppb
Concentration per Run 1	1.489 ppb		3.711 ppm	-0.889 ppb	-18.917 ppb	-7.427 ppb	-7.217 ppb	84.113 %	86.030 %	0.045 ppb
Concentration per Run 2	1.516 ppb		3.771 ppm	-1.855 ppb	-18.917 ppb	-6.787 ppb	-7.480 ppb	83.985 %	86.346 %	0.130 ppb
Concentration per Run 3	1.426 ppb		3.817 ppm	-2.646 ppb	-10.261 ppb	-6.809 ppb	-7.866 ppb	83.686 %	85.248 %	0.206 ppb
Concentration RSD	3.1 %		1.4 %	49.0 %	31.2 %	5.2 %	4.3 %	0.3 %	0.7 %	63.1 %
Intensity average	840 cps	2,237 cps	22,290,692 cps	17,506 cps	10 cps	41,817 cps	327 cps	5,776,776 cps	252,113 cps	43 cps
Intensity per Run 1	850.0 cps	2,230.2 cps	22,082,996.4 cps	18,233.4 cps	0.0 cps	40,967.3 cps	340.0 cps	5,789,529.2 cps	252,568.8 cps	16.0 cps
Intensity per Run 2	850.0 cps	2,130.2 cps	22,368,601.0 cps	17,522.4 cps	0.0 cps	42,331.8 cps	330.0 cps	5,780,663.2 cps	253,497.0 cps	44.0 cps
Intensity per Run 3	820.0 cps	2,350.2 cps	22,420,480.1 cps	16,761.3 cps	30.0 cps	42,151.0 cps	310.0 cps	5,760,134.9 cps	250,274.3 cps	68.0 cps
Intensity RSD	2.1 %	4.9 %	0.8 %	4.2 %	173.2 %	1.8 %	4.7 %	0.3 %	0.7 %	61.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.359 ppb	-0.006 ppb	1.052 ppb	N/A	-0.009 ppb	1.168 ppb	1.276 ppb	0.001 ppb	-0.798 ppb	-0.797 ppb
Concentration per Run 1	0.384 ppb	-0.010 ppb	1.041 ppb	N/A	-0.003 ppb	1.128 ppb	1.142 ppb	0.002 ppb	-0.786 ppb	-0.780 ppb
Concentration per Run 2	0.346 ppb	-0.003 ppb	1.041 ppb	N/A	-0.011 ppb	1.169 ppb	1.158 ppb	0.001 ppb	-0.809 ppb	-0.797 ppb
Concentration per Run 3	0.347 ppb	-0.006 ppb	1.073 ppb	N/A	-0.013 ppb	1.208 ppb	1.529 ppb	-0.001 ppb	-0.799 ppb	-0.815 ppb
Concentration RSD	6.0 %	50.9 %	1.8 %	N/A	57.4 %	3.4 %	17.1 %	210.5 %	1.5 %	2.2 %
Intensity average	5,594 cps	2,103 cps	3,757 cps	3,327 cps	1,787 cps	56,669 cps	1,807 cps	253 cps	1,536 cps	257 cps
Intensity per Run 1	5,889.1 cps	2,044.2 cps	3,724.6 cps	3,300.4 cps	1,864.1 cps	55,784.8 cps	1,728.1 cps	304.0 cps	1,644.1 cps	284.0 cps
Intensity per Run 2	5,478.6 cps	2,164.2 cps	3,752.6 cps	3,470.5 cps	1,768.1 cps	57,031.0 cps	1,744.1 cps	260.0 cps	1,428.1 cps	260.0 cps
Intensity per Run 3	5,414.8 cps	2,100.2 cps	3,792.6 cps	3,210.4 cps	1,728.1 cps	57,191.6 cps	1,948.2 cps	196.0 cps	1,536.1 cps	228.0 cps
Intensity RSD	4.6 %	2.9 %	0.9 %	4.0 %	3.9 %	1.4 %	6.8 %	21.4 %	7.0 %	10.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.080 ppb	-0.068 ppb	-0.840 ppb	-0.617 ppb	-0.641 ppb		-0.120 ppb	N/A	0.008 ppb	
Concentration per Run 1	-0.078 ppb	-0.064 ppb	-0.848 ppb	-0.536 ppb	-0.650 ppb		-0.059 ppb	N/A	0.012 ppb	
Concentration per Run 2	-0.080 ppb	-0.072 ppb	-0.864 ppb	-0.674 ppb	-0.632 ppb		-0.285 ppb	N/A	0.057 ppb	
Concentration per Run 3	-0.082 ppb	-0.068 ppb	-0.809 ppb	-0.640 ppb	-0.642 ppb		-0.016 ppb	N/A	-0.045 ppb	
Concentration RSD	2.6 %	5.9 %	3.4 %	11.6 %	1.4 %		120.2 %	N/A	634.8 %	
Intensity average	1,576 cps	789 cps	9,047 cps	1,377 cps	6,898 cps	9 cps	3,364 cps	60 cps	-17 cps	5,914 cps
Intensity per Run 1	1,624.1 cps	844.0 cps	8,963.2 cps	1,444.1 cps	6,809.9 cps	15.0 cps	3,537.8 cps	60.0 cps	-15.4 cps	5,757.3 cps
Intensity per Run 2	1,580.1 cps	740.0 cps	8,959.2 cps	1,332.1 cps	6,986.0 cps	6.0 cps	2,877.2 cps	70.0 cps	-1.1 cps	6,040.5 cps
Intensity per Run 3	1,524.1 cps	784.0 cps	9,219.4 cps	1,356.1 cps	6,897.9 cps	5.0 cps	3,677.8 cps	50.0 cps	-33.9 cps	5,945.4 cps
Intensity RSD	3.2 %	6.6 %	1.6 %	4.3 %	1.3 %	63.5 %	12.7 %	16.7 %	97.8 %	2.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.295 ppb		90.653 %	0.106 ppb	0.095 ppb	0.100 ppb	0.097 ppb	0.096 ppb	0.018 ppm
Concentration per Run 1		0.463 ppb		89.296 %	0.099 ppb	0.077 ppb	0.078 ppb	0.084 ppb	0.076 ppb	0.018 ppm
Concentration per Run 2		0.810 ppb		91.332 %	0.111 ppb	0.096 ppb	0.100 ppb	0.092 ppb	0.098 ppb	0.019 ppm
Concentration per Run 3		-0.390 ppb		91.331 %	0.108 ppb	0.111 ppb	0.122 ppb	0.114 ppb	0.114 ppb	0.018 ppm
Concentration RSD		209.6 %		1.3 %	5.8 %	18.0 %	21.8 %	15.8 %	19.6 %	0.5 %
Intensity average	5,194 cps	-416 cps	5,437 cps	530,123 cps	1,380 cps	2,119 cps	2,472 cps	1,424 cps	3,671 cps	1,647,179 cps
Intensity per Run 1	5,359.2 cps	-385.1 cps	5,631.3 cps	522,188.0 cps	1,292.1 cps	1,764.1 cps	1,996.2 cps	1,256.1 cps	2,992.4 cps	1,646,639.0 cps
Intensity per Run 2	4,536.9 cps	-328.4 cps	4,636.9 cps	534,094.4 cps	1,440.1 cps	2,160.2 cps	2,492.3 cps	1,376.1 cps	3,752.6 cps	1,656,377.9 cps
Intensity per Run 3	5,686.3 cps	-533.8 cps	6,041.5 cps	534,085.6 cps	1,408.1 cps	2,432.2 cps	2,928.3 cps	1,640.1 cps	4,268.7 cps	1,638,519.5 cps
Intensity RSD	11.4 %	25.5 %	13.3 %	1.3 %	5.6 %	15.9 %	18.9 %	13.8 %	17.5 %	0.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.021 ppb	0.001 ppb	0.005 ppb	0.001 ppb	0.003 ppb	-0.014 ppb	92.824 %	5.493 ppb	0.209 ppb
Concentration per Run 1		-0.002 ppb	0.001 ppb	0.004 ppb	0.001 ppb	0.004 ppb	-0.013 ppb	92.442 %	5.405 ppb	0.206 ppb
Concentration per Run 2		-0.028 ppb	0.000 ppb	0.009 ppb	0.001 ppb	0.002 ppb	-0.017 ppb	93.328 %	5.506 ppb	0.204 ppb
Concentration per Run 3		-0.032 ppb	0.001 ppb	0.004 ppb	0.001 ppb	0.004 ppb	-0.014 ppb	92.701 %	5.569 ppb	0.216 ppb
Concentration RSD		77.3 %	53.8 %	55.5 %	54.9 %	34.4 %	15.4 %	0.5 %	1.5 %	3.2 %
Intensity average	563 cps	71 cps	139 cps	5 cps	136 cps	47 cps	-396 cps	831,033 cps	137,225 cps	5,791 cps
Intensity per Run 1	584.0 cps	88.0 cps	168.0 cps	4.0 cps	176.0 cps	56.0 cps	-342.8 cps	827,618.0 cps	134,411.7 cps	5,697.3 cps
Intensity per Run 2	564.0 cps	64.0 cps	116.0 cps	8.0 cps	116.0 cps	32.0 cps	-474.1 cps	835,544.7 cps	138,258.3 cps	5,689.3 cps
Intensity per Run 3	540.0 cps	60.0 cps	132.0 cps	4.0 cps	116.0 cps	52.0 cps	-370.1 cps	829,935.7 cps	139,006.4 cps	5,985.4 cps
Intensity RSD	3.9 %	21.4 %	19.2 %	43.3 %	25.5 %	27.6 %	17.5 %	0.5 %	1.8 %	2.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.206 ppb	0.004 ppb	0.006 ppb			96.595 %			0.014 ppm	0.028 ppb
Concentration per Run 1	0.197 ppb	0.011 ppb	0.007 ppb			95.571 %			0.014 ppm	0.029 ppb
Concentration per Run 2	0.209 ppb	0.001 ppb	0.006 ppb			96.868 %			0.014 ppm	0.027 ppb
Concentration per Run 3	0.213 ppb	0.002 ppb	0.003 ppb			97.347 %			0.014 ppm	0.027 ppb
Concentration RSD	4.1 %	125.7 %	35.6 %			1.0 %			0.9 %	3.9 %
Intensity average	4,601 cps	181 cps	332 cps	16 cps	21 cps	3,036,273 cps	75 cps	28 cps	3,152,935 cps	3,655 cps
Intensity per Run 1	4,380.8 cps	220.0 cps	348.0 cps	16.0 cps	24.0 cps	3,004,072.7 cps	72.0 cps	36.0 cps	3,144,485.7 cps	3,694.5 cps
Intensity per Run 2	4,672.9 cps	160.0 cps	340.0 cps	16.0 cps	24.0 cps	3,044,845.2 cps	76.0 cps	24.0 cps	3,128,352.5 cps	3,647.5 cps
Intensity per Run 3	4,748.9 cps	164.0 cps	308.0 cps	16.0 cps	16.0 cps	3,059,901.5 cps	76.0 cps	24.0 cps	3,185,965.3 cps	3,621.5 cps
Intensity RSD	4.2 %	18.5 %	6.4 %	0.0 %	21.7 %	1.0 %	3.1 %	24.7 %	0.9 %	1.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.027 ppb	0.021 ppb	0.020 ppb	0.021 ppb	99.774 %
Concentration per Run 1	0.028 ppb	0.025 ppb	0.024 ppb	0.024 ppb	97.744 %
Concentration per Run 2	0.027 ppb	0.020 ppb	0.021 ppb	0.020 ppb	100.577 %
Concentration per Run 3	0.025 ppb	0.019 ppb	0.016 ppb	0.019 ppb	101.003 %
Concentration RSD	6.5 %	17.0 %	18.3 %	14.2 %	1.8 %
Intensity average	8,652 cps	2,310 cps	1,959 cps	9,278 cps	2,557,157 cps
Intensity per Run 1	8,820.1 cps	2,562.3 cps	2,124.2 cps	10,055.6 cps	2,505,119.8 cps
Intensity per Run 2	8,792.1 cps	2,227.2 cps	2,032.2 cps	9,148.3 cps	2,577,719.6 cps
Intensity per Run 3	8,342.8 cps	2,140.2 cps	1,720.1 cps	8,629.2 cps	2,588,632.1 cps
Intensity RSD	3.1 %	9.6 %	10.8 %	7.8 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UQ33151-002 Analysis: 10/30/2019 17:26:43 Sample Type UNKNOWN
Comment LCS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	84.957 %	86.268 %	161.956 ppb	178.766 ppb	176.944 ppb	N/A	1,643.808 ppb	1,713.385 ppb	1,707.030 ppb	1,676.081 ppb
Concentration per Run 1	84.517 %	86.773 %	158.491 ppb	175.845 ppb	175.162 ppb	N/A	1,622.244 ppb	1,688.220 ppb	1,673.138 ppb	1,648.260 ppb
Concentration per Run 2	84.918 %	86.544 %	163.054 ppb	180.406 ppb	177.649 ppb	N/A	1,638.115 ppb	1,704.700 ppb	1,696.505 ppb	1,696.088 ppb
Concentration per Run 3	85.436 %	85.486 %	164.324 ppb	180.049 ppb	178.023 ppb	N/A	1,671.065 ppb	1,747.234 ppb	1,751.448 ppb	1,683.894 ppb
Concentration RSD	0.5 %	0.8 %	1.9 %	1.4 %	0.9 %	N/A	1.5 %	1.8 %	2.4 %	1.5 %
Intensity average	11,881,524 cps	27,776 cps	22,191 cps	2,605 cps	15,258 cps	1,984 cps	2,741,497 cps	1,296,621 cps	271,424 cps	354,363 cps
Intensity per Run 1	11,820,021.0 cps	27,939.2 cps	21,845.1 cps	2,577.8 cps	15,196.7 cps	2,100.2 cps	2,723,535.7 cps	1,286,085.0 cps	267,827.8 cps	350,811.0 cps
Intensity per Run 2	11,876,075.2 cps	27,865.5 cps	22,414.6 cps	2,636.8 cps	15,365.9 cps	2,010.2 cps	2,739,273.4 cps	1,293,437.3 cps	270,457.3 cps	359,479.1 cps
Intensity per Run 3	11,948,476.5 cps	27,524.8 cps	22,312.9 cps	2,599.8 cps	15,212.8 cps	1,840.1 cps	2,761,681.8 cps	1,310,340.8 cps	275,985.7 cps	352,799.3 cps
Intensity RSD	0.5 %	0.8 %	1.4 %	1.1 %	0.6 %	6.7 %	0.7 %	1.0 %	1.5 %	1.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	175.467 ppb		4.117 ppm	1,674.912 ppb	3,076.572 ppb	1,808.655 ppb	2,595.815 ppb	80.662 %	83.210 %	175.457 ppb
Concentration per Run 1	168.984 ppb		4.061 ppm	1,663.608 ppb	2,895.448 ppb	1,770.312 ppb	2,520.127 ppb	80.363 %	83.823 %	172.901 ppb
Concentration per Run 2	176.281 ppb		4.151 ppm	1,676.264 ppb	3,076.995 ppb	1,885.222 ppb	2,659.940 ppb	80.239 %	83.351 %	174.954 ppb
Concentration per Run 3	181.135 ppb		4.139 ppm	1,684.863 ppb	3,257.274 ppb	1,770.432 ppb	2,607.377 ppb	81.384 %	82.455 %	178.514 ppb
Concentration RSD	3.5 %		1.2 %	0.6 %	5.9 %	3.7 %	2.7 %	0.8 %	0.8 %	1.6 %
Intensity average	45,587 cps	5,121 cps	23,528,941 cps	1,192,880 cps	10,461 cps	3,938,508 cps	105,021 cps	5,551,965 cps	244,290 cps	55,744 cps
Intensity per Run 1	44,218.4 cps	5,391.2 cps	23,369,800.4 cps	1,193,441.3 cps	9,924.0 cps	3,842,148.8 cps	102,731.5 cps	5,531,391.4 cps	246,090.5 cps	55,334.4 cps
Intensity per Run 2	45,914.5 cps	5,001.0 cps	23,774,390.1 cps	1,196,181.7 cps	10,484.5 cps	4,082,362.2 cps	107,794.6 cps	5,522,866.4 cps	244,704.9 cps	55,687.9 cps
Intensity per Run 3	46,627.0 cps	4,971.0 cps	23,442,633.3 cps	1,189,016.1 cps	10,974.9 cps	3,891,012.6 cps	104,536.3 cps	5,601,637.7 cps	242,073.8 cps	56,210.4 cps
Intensity RSD	2.7 %	4.6 %	0.9 %	0.3 %	5.0 %	3.2 %	2.4 %	0.8 %	0.8 %	0.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	173.163 ppb	173.250 ppb	179.056 ppb	N/A	174.374 ppb	1,734.231 ppb	1,709.649 ppb	176.180 ppb	173.252 ppb	180.927 ppb
Concentration per Run 1	168.609 ppb	168.782 ppb	172.315 ppb	N/A	168.732 ppb	1,725.005 ppb	1,666.002 ppb	171.610 ppb	170.373 ppb	177.229 ppb
Concentration per Run 2	174.572 ppb	174.807 ppb	181.965 ppb	N/A	175.253 ppb	1,713.948 ppb	1,720.443 ppb	177.453 ppb	172.374 ppb	182.458 ppb
Concentration per Run 3	176.308 ppb	176.162 ppb	182.889 ppb	N/A	179.139 ppb	1,763.738 ppb	1,742.501 ppb	179.477 ppb	177.010 ppb	183.093 ppb
Concentration RSD	2.3 %	2.3 %	3.3 %	N/A	3.0 %	1.5 %	2.3 %	2.3 %	2.0 %	1.8 %
Intensity average	1,929,923 cps	3,030,472 cps	433,239 cps	447,917 cps	2,338,516 cps	31,035,320 cps	1,018,527 cps	7,267,649 cps	1,836,387 cps	283,547 cps
Intensity per Run 1	1,893,279.9 cps	2,974,456.2 cps	419,864.2 cps	446,095.5 cps	2,278,314.2 cps	31,076,025.9 cps	999,984.1 cps	7,132,151.2 cps	1,814,172.0 cps	279,517.6 cps
Intensity per Run 2	1,949,145.6 cps	3,063,216.1 cps	441,187.3 cps	449,578.9 cps	2,355,420.7 cps	30,738,385.2 cps	1,026,813.7 cps	7,333,462.2 cps	1,832,948.1 cps	286,602.7 cps
Intensity per Run 3	1,947,342.6 cps	3,053,744.4 cps	438,667.0 cps	448,077.6 cps	2,381,813.3 cps	31,291,548.1 cps	1,028,784.4 cps	7,337,333.6 cps	1,862,040.0 cps	284,519.7 cps
Intensity RSD	1.6 %	1.6 %	2.7 %	0.4 %	2.3 %	0.9 %	1.6 %	1.6 %	1.3 %	1.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	185.379 ppb	189.466 ppb	171.643 ppb	180.807 ppb	178.298 ppb		162.809 ppb	N/A	159.108 ppb	
Concentration per Run 1	182.101 ppb	185.081 ppb	169.682 ppb	176.765 ppb	174.985 ppb		161.635 ppb	N/A	155.432 ppb	
Concentration per Run 2	186.918 ppb	189.171 ppb	172.383 ppb	182.678 ppb	178.728 ppb		162.321 ppb	N/A	161.136 ppb	
Concentration per Run 3	187.118 ppb	194.145 ppb	172.863 ppb	182.977 ppb	181.182 ppb		164.471 ppb	N/A	160.757 ppb	
Concentration RSD	1.5 %	2.4 %	1.0 %	1.9 %	1.8 %		0.9 %	N/A	2.0 %	
Intensity average	4,743,249 cps	2,436,811 cps	999,589 cps	169,842 cps	803,212 cps	41 cps	492,628 cps	14,795 cps	49,998 cps	8,422 cps
Intensity per Run 1	4,688,177.1 cps	2,398,316.5 cps	980,528.2 cps	167,069.7 cps	793,079.3 cps	41.0 cps	485,262.1 cps	14,048.0 cps	49,095.1 cps	8,178.7 cps
Intensity per Run 2	4,793,859.8 cps	2,437,480.1 cps	1,014,932.4 cps	172,008.0 cps	807,167.3 cps	32.0 cps	496,610.0 cps	15,810.0 cps	50,778.6 cps	8,416.8 cps
Intensity per Run 3	4,747,709.4 cps	2,474,635.4 cps	1,003,305.7 cps	170,447.6 cps	809,390.6 cps	51.0 cps	496,011.3 cps	14,528.5 cps	50,120.6 cps	8,670.0 cps
Intensity RSD	1.1 %	1.6 %	1.8 %	1.5 %	1.1 %	23.0 %	1.3 %	6.2 %	1.7 %	2.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		149.463 ppb		89.946 %	168.572 ppb	170.807 ppb	170.818 ppb	164.049 ppb	168.751 ppb	0.018 ppm
Concentration per Run 1		147.249 ppb		90.344 %	165.525 ppb	169.674 ppb	167.178 ppb	162.277 ppb	166.787 ppb	0.018 ppm
Concentration per Run 2		149.484 ppb		90.225 %	168.775 ppb	170.354 ppb	172.909 ppb	163.099 ppb	168.451 ppb	0.018 ppm
Concentration per Run 3		151.656 ppb		89.269 %	171.415 ppb	172.392 ppb	172.368 ppb	166.771 ppb	171.014 ppb	0.018 ppm
Concentration RSD		1.5 %		0.7 %	1.8 %	0.8 %	1.9 %	1.5 %	1.3 %	0.1 %
Intensity average	29,982 cps	24,998 cps	4,996 cps	525,985 cps	1,708,293 cps	3,142,877 cps	3,469,461 cps	1,993,777 cps	5,449,859 cps	1,606,636 cps
Intensity per Run 1	29,515.8 cps	24,426.8 cps	5,053.1 cps	528,312.2 cps	1,680,917.9 cps	3,126,995.8 cps	3,399,227.0 cps	1,973,533.7 cps	5,387,340.6 cps	1,604,629.8 cps
Intensity per Run 2	30,699.7 cps	25,278.2 cps	5,456.2 cps	527,616.9 cps	1,718,398.1 cps	3,150,202.2 cps	3,530,468.4 cps	1,993,395.2 cps	5,472,411.9 cps	1,607,881.0 cps
Intensity per Run 3	29,731.4 cps	25,288.7 cps	4,478.8 cps	522,026.3 cps	1,725,562.7 cps	3,151,434.4 cps	3,478,688.9 cps	2,014,401.0 cps	5,489,824.7 cps	1,607,397.9 cps
Intensity RSD	2.1 %	2.0 %	9.8 %	0.7 %	1.4 %	0.4 %	1.9 %	1.0 %	1.0 %	0.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		180.677 ppb	180.348 ppb	181.175 ppb	182.851 ppb	180.148 ppb	176.927 ppb	91.245 %	185.027 ppb	175.570 ppb
Concentration per Run 1		179.399 ppb	182.178 ppb	178.904 ppb	180.789 ppb	179.843 ppb	175.216 ppb	90.528 %	182.543 ppb	170.660 ppb
Concentration per Run 2		180.108 ppb	177.190 ppb	180.591 ppb	183.802 ppb	179.997 ppb	175.968 ppb	92.257 %	184.307 ppb	175.282 ppb
Concentration per Run 3		182.523 ppb	181.678 ppb	184.030 ppb	183.963 ppb	180.603 ppb	179.598 ppb	90.950 %	188.232 ppb	180.769 ppb
Concentration RSD		0.9 %	1.5 %	1.4 %	1.0 %	0.2 %	1.3 %	1.0 %	1.6 %	2.9 %
Intensity average	1,392 cps	172,762 cps	13,186,242 cps	133,510 cps	13,139,070 cps	2,155,867 cps	5,245,129 cps	816,900 cps	4,520,207 cps	4,513,592 cps
Intensity per Run 1	1,364.1 cps	170,917.9 cps	13,216,709.8 cps	131,233.9 cps	12,924,875.0 cps	2,139,334.9 cps	5,153,643.0 cps	810,483.4 cps	4,425,641.0 cps	4,355,022.3 cps
Intensity per Run 2	1,444.1 cps	173,659.0 cps	13,100,235.5 cps	134,273.8 cps	13,329,446.6 cps	2,175,337.1 cps	5,274,607.8 cps	825,958.3 cps	4,552,141.5 cps	4,555,237.5 cps
Intensity per Run 3	1,368.1 cps	173,707.6 cps	13,241,780.2 cps	135,022.4 cps	13,162,887.5 cps	2,152,930.1 cps	5,307,135.8 cps	814,258.6 cps	4,582,839.2 cps	4,630,516.9 cps
Intensity RSD	3.2 %	0.9 %	0.6 %	1.5 %	1.5 %	0.8 %	1.5 %	1.0 %	1.8 %	3.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	174.867 ppb	173.663 ppb	175.408 ppb			94.912 %			0.014 ppm	175.688 ppb
Concentration per Run 1	171.737 ppb	171.373 ppb	171.345 ppb			94.509 %			0.014 ppm	168.135 ppb
Concentration per Run 2	174.365 ppb	173.285 ppb	174.097 ppb			95.848 %			0.014 ppm	176.501 ppb
Concentration per Run 3	178.499 ppb	176.330 ppb	180.782 ppb			94.378 %			0.014 ppm	182.428 ppb
Concentration RSD	1.9 %	1.4 %	2.8 %			0.9 %			0.7 %	4.1 %
Intensity average	3,601,089 cps	1,064,309 cps	1,962,189 cps	81 cps	55 cps	2,983,349 cps	103 cps	43 cps	3,132,531 cps	15,704,660 cps
Intensity per Run 1	3,511,231.5 cps	1,043,791.0 cps	1,905,263.9 cps	80.0 cps	56.0 cps	2,970,692.2 cps	88.0 cps	60.0 cps	3,111,151.7 cps	14,918,459.4 cps
Intensity per Run 2	3,629,725.1 cps	1,073,171.5 cps	1,967,957.7 cps	76.0 cps	52.0 cps	3,012,787.5 cps	112.0 cps	28.0 cps	3,134,244.3 cps	15,920,452.4 cps
Intensity per Run 3	3,662,310.0 cps	1,075,964.2 cps	2,013,345.7 cps	88.0 cps	56.0 cps	2,966,568.3 cps	108.0 cps	40.0 cps	3,152,196.4 cps	16,275,068.6 cps
Intensity RSD	2.2 %	1.7 %	2.8 %	7.5 %	4.2 %	0.9 %	12.5 %	37.9 %	0.7 %	4.5 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	175.470 ppb	180.280 ppb	180.181 ppb	179.455 ppb	97.729 %
Concentration per Run 1	169.642 ppb	180.325 ppb	176.457 ppb	178.001 ppb	96.976 %
Concentration per Run 2	174.807 ppb	178.408 ppb	179.335 ppb	178.723 ppb	98.616 %
Concentration per Run 3	181.960 ppb	182.108 ppb	184.751 ppb	181.641 ppb	97.594 %
Concentration RSD	3.5 %	1.0 %	2.3 %	1.1 %	0.8 %
Intensity average	38,215,972 cps	12,883,236 cps	11,319,179 cps	51,940,866 cps	2,504,721 cps
Intensity per Run 1	36,660,183.2 cps	12,790,261.5 cps	11,001,080.1 cps	51,123,098.4 cps	2,485,426.9 cps
Intensity per Run 2	38,415,031.2 cps	12,866,245.9 cps	11,368,355.5 cps	52,198,258.4 cps	2,527,455.0 cps
Intensity per Run 3	39,572,700.7 cps	12,993,199.7 cps	11,588,100.7 cps	52,501,242.7 cps	2,501,282.5 cps
Intensity RSD	3.8 %	0.8 %	2.6 %	1.4 %	0.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UQ33197-001 Analysis: 10/30/2019 17:32:47 Sample Type UNKNOWN
Comment PBW Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	87.042 %	87.012 %	-0.002 ppb	0.497 ppb	0.477 ppb	N/A	-3.468 ppb	-0.052 ppb	-0.231 ppb	-0.180 ppb
Concentration per Run 1	86.093 %	86.990 %	-0.011 ppb	0.361 ppb	0.485 ppb	N/A	-3.458 ppb	-0.289 ppb	-0.739 ppb	-0.094 ppb
Concentration per Run 2	86.797 %	87.310 %	0.003 ppb	0.561 ppb	0.481 ppb	N/A	-3.768 ppb	-0.126 ppb	-0.097 ppb	-0.131 ppb
Concentration per Run 3	88.237 %	86.736 %	0.003 ppb	0.568 ppb	0.465 ppb	N/A	-3.179 ppb	0.259 ppb	0.144 ppb	-0.314 ppb
Concentration RSD	1.3 %	0.3 %	544.7 %	23.6 %	2.3 %	N/A	8.5 %	542.3 %	197.9 %	65.4 %
Intensity average	12,173,150 cps	28,016 cps	3 cps	11 cps	55 cps	1,953 cps	8,386 cps	1,727 cps	383 cps	483 cps
Intensity per Run 1	12,040,372.3 cps	28,008.9 cps	1.5 cps	8.5 cps	56.0 cps	1,860.1 cps	8,382.8 cps	1,540.1 cps	300.0 cps	500.0 cps
Intensity per Run 2	12,138,784.3 cps	28,112.1 cps	3.5 cps	11.5 cps	56.0 cps	2,010.2 cps	7,972.6 cps	1,690.1 cps	410.0 cps	500.0 cps
Intensity per Run 3	12,340,294.8 cps	27,927.2 cps	3.5 cps	11.5 cps	54.0 cps	1,990.2 cps	8,803.1 cps	1,950.2 cps	440.0 cps	450.0 cps
Intensity RSD	1.3 %	0.3 %	40.8 %	16.5 %	2.1 %	4.2 %	5.0 %	12.0 %	19.2 %	6.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.046 ppb		0.972 ppm	-5.735 ppb	-15.113 ppb	-12.727 ppb	-9.515 ppb	82.746 %	85.947 %	0.046 ppb
Concentration per Run 1	0.052 ppb		0.951 ppm	-5.814 ppb	-16.032 ppb	-12.856 ppb	-9.328 ppb	81.382 %	85.401 %	0.033 ppb
Concentration per Run 2	-0.014 ppb		0.961 ppm	-6.405 ppb	-13.300 ppb	-13.312 ppb	-10.435 ppb	83.903 %	87.827 %	0.032 ppb
Concentration per Run 3	0.101 ppb		1.005 ppm	-4.986 ppb	-16.007 ppb	-12.013 ppb	-8.783 ppb	82.954 %	84.611 %	0.071 ppb
Concentration RSD	124.9 %		2.9 %	12.4 %	10.4 %	5.2 %	8.8 %	1.5 %	1.9 %	48.2 %
Intensity average	450 cps	2,120 cps	5,702,224 cps	14,569 cps	13 cps	28,616 cps	243 cps	5,695,436 cps	252,325 cps	16 cps
Intensity per Run 1	450.0 cps	1,920.2 cps	5,553,166.8 cps	14,438.5 cps	10.0 cps	27,871.2 cps	250.0 cps	5,601,501.3 cps	250,723.6 cps	12.0 cps
Intensity per Run 2	440.0 cps	2,220.2 cps	5,732,520.3 cps	14,358.3 cps	20.0 cps	27,700.8 cps	210.0 cps	5,775,070.8 cps	257,846.0 cps	12.0 cps
Intensity per Run 3	460.0 cps	2,220.2 cps	5,820,984.3 cps	14,909.1 cps	10.0 cps	30,276.8 cps	270.0 cps	5,709,735.0 cps	248,405.1 cps	24.0 cps
Intensity RSD	2.2 %	8.2 %	2.4 %	2.0 %	43.3 %	5.0 %	12.6 %	1.5 %	1.9 %	43.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.014 ppb	-0.086 ppb	-0.107 ppb	N/A	-0.084 ppb	-1.165 ppb	-1.022 ppb	0.001 ppb	-0.815 ppb	-0.823 ppb
Concentration per Run 1	0.008 ppb	-0.088 ppb	-0.112 ppb	N/A	-0.083 ppb	-1.219 ppb	-0.965 ppb	0.004 ppb	-0.814 ppb	-0.819 ppb
Concentration per Run 2	0.006 ppb	-0.088 ppb	-0.113 ppb	N/A	-0.080 ppb	-1.134 ppb	-1.023 ppb	-0.001 ppb	-0.805 ppb	-0.832 ppb
Concentration per Run 3	0.027 ppb	-0.083 ppb	-0.096 ppb	N/A	-0.088 ppb	-1.143 ppb	-1.078 ppb	0.000 ppb	-0.827 ppb	-0.818 ppb
Concentration RSD	83.8 %	3.0 %	8.8 %	N/A	4.9 %	4.0 %	5.5 %	200.1 %	1.4 %	1.0 %
Intensity average	1,627 cps	660 cps	881 cps	1,007 cps	757 cps	13,841 cps	396 cps	280 cps	1,335 cps	215 cps
Intensity per Run 1	1,549.5 cps	628.0 cps	864.0 cps	940.0 cps	760.0 cps	12,766.6 cps	428.0 cps	396.0 cps	1,332.1 cps	220.0 cps
Intensity per Run 2	1,576.3 cps	648.0 cps	884.0 cps	1,080.1 cps	824.0 cps	14,688.8 cps	404.0 cps	200.0 cps	1,464.1 cps	204.0 cps
Intensity per Run 3	1,755.6 cps	704.0 cps	896.0 cps	1,000.0 cps	688.0 cps	14,068.0 cps	356.0 cps	244.0 cps	1,208.1 cps	220.0 cps
Intensity RSD	6.9 %	6.0 %	1.8 %	7.0 %	9.0 %	7.1 %	9.3 %	36.7 %	9.6 %	4.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.089 ppb	-0.078 ppb	1.169 ppb	1.490 ppb	1.499 ppb		-0.179 ppb	N/A	0.074 ppb	
Concentration per Run 1	-0.087 ppb	-0.076 ppb	1.089 ppb	1.239 ppb	1.484 ppb		-0.240 ppb	N/A	0.073 ppb	
Concentration per Run 2	-0.087 ppb	-0.076 ppb	1.192 ppb	1.641 ppb	1.363 ppb		-0.168 ppb	N/A	0.083 ppb	
Concentration per Run 3	-0.093 ppb	-0.080 ppb	1.227 ppb	1.591 ppb	1.652 ppb		-0.130 ppb	N/A	0.066 ppb	
Concentration RSD	4.0 %	3.0 %	6.1 %	14.7 %	9.7 %		31.3 %	N/A	11.4 %	
Intensity average	1,324 cps	657 cps	21,186 cps	3,350 cps	16,476 cps	6 cps	3,245 cps	70 cps	4 cps	2,348 cps
Intensity per Run 1	1,368.1 cps	672.0 cps	20,753.2 cps	3,088.4 cps	16,282.6 cps	5.0 cps	3,062.4 cps	80.0 cps	3.7 cps	2,354.2 cps
Intensity per Run 2	1,400.1 cps	688.0 cps	21,394.4 cps	3,552.5 cps	16,146.5 cps	8.0 cps	3,291.7 cps	60.0 cps	7.0 cps	2,363.2 cps
Intensity per Run 3	1,204.1 cps	612.0 cps	21,410.4 cps	3,408.5 cps	16,999.6 cps	4.0 cps	3,380.7 cps	70.0 cps	1.6 cps	2,326.2 cps
Intensity RSD	7.9 %	6.1 %	1.8 %	7.1 %	2.8 %	36.7 %	5.1 %	14.3 %	66.3 %	0.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.466 ppb		89.309 %	0.186 ppb	0.189 ppb	0.184 ppb	0.185 ppb	0.185 ppb	0.018 ppm
Concentration per Run 1		0.540 ppb		88.496 %	0.184 ppb	0.174 ppb	0.169 ppb	0.157 ppb	0.161 ppb	0.018 ppm
Concentration per Run 2		0.578 ppb		90.546 %	0.183 ppb	0.186 ppb	0.174 ppb	0.186 ppb	0.186 ppb	0.019 ppm
Concentration per Run 3		0.280 ppb		88.885 %	0.191 ppb	0.207 ppb	0.209 ppb	0.212 ppb	0.210 ppb	0.018 ppm
Concentration RSD		34.8 %		1.2 %	2.4 %	8.9 %	11.9 %	15.0 %	13.3 %	0.5 %
Intensity average	4,978 cps	-394 cps	5,255 cps	522,261 cps	2,179 cps	3,846 cps	4,171 cps	2,498 cps	6,579 cps	1,640,944 cps
Intensity per Run 1	4,744.0 cps	-381.4 cps	4,972.1 cps	517,506.8 cps	2,140.2 cps	3,540.5 cps	3,832.6 cps	2,140.2 cps	5,741.3 cps	1,632,882.3 cps
Intensity per Run 2	5,037.1 cps	-375.2 cps	5,291.2 cps	529,496.6 cps	2,176.2 cps	3,836.6 cps	4,020.6 cps	2,536.3 cps	6,657.8 cps	1,650,635.7 cps
Intensity per Run 3	5,153.1 cps	-424.0 cps	5,500.3 cps	519,779.9 cps	2,220.2 cps	4,160.7 cps	4,660.9 cps	2,816.3 cps	7,338.2 cps	1,639,314.6 cps
Intensity RSD	4.2 %	6.8 %	5.1 %	1.2 %	1.8 %	8.1 %	10.4 %	13.6 %	12.2 %	0.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.020 ppb	0.004 ppb	0.012 ppb	0.005 ppb	0.007 ppb	0.005 ppb	94.592 %	0.055 ppb	0.111 ppb
Concentration per Run 1		-0.020 ppb	0.007 ppb	0.025 ppb	0.006 ppb	0.009 ppb	0.007 ppb	94.800 %	0.053 ppb	0.104 ppb
Concentration per Run 2		-0.025 ppb	0.004 ppb	0.009 ppb	0.004 ppb	0.006 ppb	0.005 ppb	94.917 %	0.057 ppb	0.112 ppb
Concentration per Run 3		-0.016 ppb	0.003 ppb	0.004 ppb	0.004 ppb	0.006 ppb	0.005 ppb	94.059 %	0.055 ppb	0.117 ppb
Concentration RSD		22.6 %	48.8 %	88.5 %	21.2 %	23.3 %	22.9 %	0.5 %	4.2 %	6.0 %
Intensity average	607 cps	72 cps	409 cps	11 cps	423 cps	93 cps	208 cps	846,865 cps	2,130 cps	3,302 cps
Intensity per Run 1	584.0 cps	72.0 cps	584.0 cps	20.0 cps	508.0 cps	116.0 cps	252.3 cps	848,728.6 cps	2,076.2 cps	3,124.4 cps
Intensity per Run 2	672.0 cps	68.0 cps	364.0 cps	8.0 cps	376.0 cps	80.0 cps	193.2 cps	849,773.4 cps	2,192.2 cps	3,332.5 cps
Intensity per Run 3	564.0 cps	76.0 cps	280.0 cps	4.0 cps	384.0 cps	84.0 cps	179.1 cps	842,093.6 cps	2,120.2 cps	3,448.5 cps
Intensity RSD	9.5 %	5.6 %	38.4 %	78.1 %	17.5 %	21.1 %	18.7 %	0.5 %	2.8 %	5.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.116 ppb	-0.009 ppb	-0.006 ppb			97.088 %			0.014 ppm	0.466 ppb
Concentration per Run 1	0.107 ppb	-0.006 ppb	-0.004 ppb			98.011 %			0.014 ppm	0.520 ppb
Concentration per Run 2	0.117 ppb	-0.011 ppb	-0.008 ppb			96.220 %			0.014 ppm	0.469 ppb
Concentration per Run 3	0.123 ppb	-0.011 ppb	-0.006 ppb			97.034 %			0.014 ppm	0.407 ppb
Concentration RSD	6.8 %	26.8 %	35.1 %			0.9 %			0.9 %	12.1 %
Intensity average	2,743 cps	97 cps	205 cps	5 cps	16 cps	3,051,757 cps	63 cps	13 cps	3,177,134 cps	44,129 cps
Intensity per Run 1	2,572.3 cps	116.0 cps	232.0 cps	4.0 cps	12.0 cps	3,080,754.6 cps	60.0 cps	12.0 cps	3,168,290.0 cps	49,032.1 cps
Intensity per Run 2	2,776.3 cps	88.0 cps	184.0 cps	12.0 cps	20.0 cps	3,024,459.0 cps	76.0 cps	16.0 cps	3,210,402.3 cps	44,027.4 cps
Intensity per Run 3	2,880.3 cps	88.0 cps	200.0 cps	0.0 cps	16.0 cps	3,050,058.5 cps	52.0 cps	12.0 cps	3,152,710.4 cps	39,328.8 cps
Intensity RSD	5.7 %	16.6 %	11.9 %	114.6 %	25.0 %	0.9 %	19.5 %	17.3 %	0.9 %	11.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.462 ppb	0.018 ppb	0.018 ppb	0.017 ppb	101.159 %
Concentration per Run 1	0.513 ppb	0.020 ppb	0.020 ppb	0.020 ppb	100.634 %
Concentration per Run 2	0.467 ppb	0.017 ppb	0.019 ppb	0.017 ppb	100.053 %
Concentration per Run 3	0.407 ppb	0.016 ppb	0.016 ppb	0.015 ppb	102.790 %
Concentration RSD	11.5 %	11.7 %	13.1 %	12.9 %	1.4 %
Intensity average	106,855 cps	2,063 cps	1,848 cps	8,259 cps	2,592,633 cps
Intensity per Run 1	117,764.4 cps	2,213.2 cps	1,960.2 cps	8,938.3 cps	2,579,181.3 cps
Intensity per Run 2	106,814.2 cps	2,026.2 cps	1,884.1 cps	8,055.0 cps	2,564,286.7 cps
Intensity per Run 3	95,987.0 cps	1,948.2 cps	1,700.1 cps	7,785.0 cps	2,634,431.0 cps
Intensity RSD	10.2 %	6.6 %	7.2 %	7.3 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UQ33197-002 Analysis: 10/30/2019 17:38:52 Sample Type UNKNOWN
Comment LCS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	86.188 %	88.112 %	99.273 ppb	100.118 ppb	100.296 ppb	N/A	930.910 ppb	996.403 ppb	997.214 ppb	988.983 ppb
Concentration per Run 1	85.848 %	87.401 %	99.057 ppb	99.256 ppb	99.235 ppb	N/A	937.793 ppb	985.421 ppb	983.599 ppb	991.006 ppb
Concentration per Run 2	85.678 %	89.349 %	96.995 ppb	98.819 ppb	98.843 ppb	N/A	919.420 ppb	981.790 ppb	971.791 ppb	974.271 ppb
Concentration per Run 3	87.037 %	87.586 %	101.766 ppb	102.278 ppb	102.811 ppb	N/A	935.518 ppb	1,021.996 ppb	1,036.252 ppb	1,001.672 ppb
Concentration RSD	0.9 %	1.2 %	2.4 %	1.9 %	2.2 %	N/A	1.1 %	2.2 %	3.4 %	1.4 %
Intensity average	12,053,631 cps	28,370 cps	13,893 cps	1,495 cps	8,866 cps	1,967 cps	1,608,330 cps	779,332 cps	163,995 cps	216,366 cps
Intensity per Run 1	12,006,079.9 cps	28,141.2 cps	13,753.1 cps	1,470.1 cps	8,701.0 cps	1,910.2 cps	1,606,519.6 cps	764,269.2 cps	160,404.3 cps	214,974.3 cps
Intensity per Run 2	11,982,416.3 cps	28,768.6 cps	13,767.1 cps	1,496.1 cps	8,858.6 cps	2,040.2 cps	1,609,614.5 cps	778,009.6 cps	161,923.3 cps	215,933.3 cps
Intensity per Run 3	12,172,397.3 cps	28,200.8 cps	14,159.0 cps	1,518.6 cps	9,037.8 cps	1,950.2 cps	1,608,856.4 cps	795,718.0 cps	169,656.9 cps	218,190.4 cps
Intensity RSD	0.9 %	1.2 %	1.7 %	1.6 %	1.9 %	3.4 %	0.1 %	2.0 %	3.0 %	0.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	99.100 ppb		0.952 ppm	997.466 ppb	1,970.897 ppb	1,076.309 ppb	1,553.630 ppb	81.931 %	87.039 %	101.831 ppb
Concentration per Run 1	98.826 ppb		0.940 ppm	1,000.737 ppb	1,930.132 ppb	1,047.109 ppb	1,547.133 ppb	81.482 %	86.256 %	100.908 ppb
Concentration per Run 2	95.843 ppb		0.937 ppm	977.785 ppb	2,024.174 ppb	1,085.206 ppb	1,527.358 ppb	82.712 %	88.074 %	101.105 ppb
Concentration per Run 3	102.632 ppb		0.978 ppm	1,013.876 ppb	1,958.385 ppb	1,096.612 ppb	1,586.399 ppb	81.598 %	86.788 %	103.481 ppb
Concentration RSD	3.4 %		2.4 %	1.8 %	2.4 %	2.4 %	1.9 %	0.8 %	1.1 %	1.4 %
Intensity average	26,826 cps	12,149 cps	5,654,073 cps	747,926 cps	7,029 cps	2,403,628 cps	65,967 cps	5,639,284 cps	255,532 cps	33,806 cps
Intensity per Run 1	26,528.2 cps	12,266.1 cps	5,535,244.9 cps	743,753.1 cps	6,821.9 cps	2,327,101.7 cps	65,109.6 cps	5,608,389.5 cps	253,233.6 cps	33,184.0 cps
Intensity per Run 2	26,297.7 cps	12,416.2 cps	5,635,634.4 cps	742,586.2 cps	7,302.2 cps	2,445,020.9 cps	65,642.2 cps	5,693,094.1 cps	258,569.6 cps	33,962.1 cps
Intensity per Run 3	27,650.7 cps	11,765.6 cps	5,791,339.1 cps	757,439.7 cps	6,962.0 cps	2,438,761.5 cps	67,150.1 cps	5,616,368.9 cps	254,794.2 cps	34,271.0 cps
Intensity RSD	2.7 %	2.8 %	2.3 %	1.1 %	3.5 %	2.8 %	1.6 %	0.8 %	1.1 %	1.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	101.280 ppb	103.220 ppb	103.673 ppb	N/A	101.716 ppb	1,003.898 ppb	982.715 ppb	101.321 ppb	103.960 ppb	105.423 ppb
Concentration per Run 1	100.326 ppb	101.632 ppb	101.939 ppb	N/A	101.316 ppb	1,008.467 ppb	972.412 ppb	100.658 ppb	104.892 ppb	105.022 ppb
Concentration per Run 2	100.579 ppb	102.583 ppb	103.268 ppb	N/A	100.062 ppb	997.718 ppb	970.155 ppb	100.437 ppb	102.633 ppb	104.766 ppb
Concentration per Run 3	102.934 ppb	105.446 ppb	105.811 ppb	N/A	103.769 ppb	1,005.511 ppb	1,005.578 ppb	102.866 ppb	104.357 ppb	106.479 ppb
Concentration RSD	1.4 %	1.9 %	1.9 %	N/A	1.9 %	0.6 %	2.0 %	1.3 %	1.1 %	0.9 %
Intensity average	1,181,459 cps	1,889,727 cps	261,726 cps	267,141 cps	1,419,711 cps	18,690,598 cps	612,886 cps	4,372,439 cps	1,129,519 cps	171,829 cps
Intensity per Run 1	1,159,836.2 cps	1,843,940.7 cps	254,610.1 cps	261,958.4 cps	1,398,520.3 cps	18,563,962.3 cps	601,039.9 cps	4,304,909.0 cps	1,119,273.7 cps	169,036.4 cps
Intensity per Run 2	1,187,262.6 cps	1,900,394.6 cps	263,738.6 cps	270,620.8 cps	1,412,942.1 cps	18,791,583.4 cps	612,282.7 cps	4,385,972.1 cps	1,127,258.1 cps	172,718.7 cps
Intensity per Run 3	1,197,279.1 cps	1,924,845.1 cps	266,829.2 cps	268,844.2 cps	1,447,670.0 cps	18,716,247.4 cps	625,334.8 cps	4,426,436.3 cps	1,142,024.7 cps	173,732.6 cps
Intensity RSD	1.6 %	2.2 %	2.4 %	1.7 %	1.8 %	0.6 %	2.0 %	1.4 %	1.0 %	1.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	108.023 ppb	109.626 ppb	105.248 ppb	110.422 ppb	109.161 ppb		99.507 ppb	N/A	105.724 ppb	
Concentration per Run 1	107.947 ppb	108.109 ppb	104.471 ppb	110.967 ppb	107.828 ppb		99.684 ppb	N/A	104.277 ppb	
Concentration per Run 2	107.134 ppb	108.262 ppb	104.113 ppb	108.886 ppb	108.740 ppb		98.105 ppb	N/A	104.757 ppb	
Concentration per Run 3	108.987 ppb	112.507 ppb	107.159 ppb	111.413 ppb	110.916 ppb		100.731 ppb	N/A	108.139 ppb	
Concentration RSD	0.9 %	2.3 %	1.6 %	1.2 %	1.5 %		1.3 %	N/A	2.0 %	
Intensity average	2,863,618 cps	1,475,711 cps	644,412 cps	107,945 cps	511,738 cps	33 cps	315,309 cps	9,894 cps	34,123 cps	1,933 cps
Intensity per Run 1	2,825,210.8 cps	1,442,268.1 cps	627,715.3 cps	107,004.4 cps	498,627.0 cps	40.0 cps	309,943.9 cps	9,753.8 cps	33,123.4 cps	1,900.1 cps
Intensity per Run 2	2,872,493.5 cps	1,474,744.6 cps	643,702.6 cps	107,678.5 cps	515,507.2 cps	21.0 cps	313,915.2 cps	9,673.8 cps	34,179.7 cps	1,935.2 cps
Intensity per Run 3	2,893,149.6 cps	1,510,121.4 cps	661,819.0 cps	109,150.7 cps	521,080.0 cps	37.0 cps	322,068.9 cps	10,254.2 cps	35,066.7 cps	1,963.2 cps
Intensity RSD	1.2 %	2.3 %	2.6 %	1.0 %	2.3 %	31.3 %	2.0 %	3.2 %	2.9 %	1.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		96.929 ppb		91.867 %	93.518 ppb	92.930 ppb	92.682 ppb	91.958 ppb	93.697 ppb	0.019 ppm
Concentration per Run 1		96.181 ppb		90.224 %	91.989 ppb	91.845 ppb	92.119 ppb	90.473 ppb	93.246 ppb	0.018 ppm
Concentration per Run 2		95.844 ppb		92.850 %	93.283 ppb	91.530 ppb	91.999 ppb	91.517 ppb	92.905 ppb	0.019 ppm
Concentration per Run 3		98.762 ppb		92.526 %	95.283 ppb	95.416 ppb	93.929 ppb	93.884 ppb	94.941 ppb	0.019 ppm
Concentration RSD		1.6 %		1.6 %	1.8 %	2.3 %	1.2 %	1.9 %	1.2 %	0.9 %
Intensity average	22,448 cps	16,730 cps	5,413 cps	537,220 cps	972,124 cps	1,755,182 cps	1,933,686 cps	1,149,081 cps	3,113,225 cps	1,659,572 cps
Intensity per Run 1	22,413.1 cps	16,284.6 cps	5,683.3 cps	527,614.8 cps	938,836.0 cps	1,703,169.9 cps	1,887,013.4 cps	1,109,850.2 cps	3,041,744.0 cps	1,643,855.9 cps
Intensity per Run 2	22,282.0 cps	16,695.2 cps	5,303.2 cps	542,969.9 cps	979,715.5 cps	1,746,637.9 cps	1,939,300.5 cps	1,155,257.2 cps	3,118,633.3 cps	1,673,328.3 cps
Intensity per Run 3	22,647.6 cps	17,210.5 cps	5,252.2 cps	541,076.6 cps	997,821.1 cps	1,815,738.7 cps	1,974,744.8 cps	1,182,135.7 cps	3,179,298.6 cps	1,661,531.9 cps
Intensity RSD	0.8 %	2.8 %	4.4 %	1.6 %	3.1 %	3.2 %	2.3 %	3.2 %	2.2 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		103.369 ppb	97.823 ppb	103.544 ppb	97.719 ppb	101.453 ppb	98.586 ppb	95.106 %	99.982 ppb	100.521 ppb
Concentration per Run 1		100.261 ppb	98.437 ppb	103.141 ppb	97.254 ppb	100.520 ppb	98.116 ppb	93.321 %	99.477 ppb	100.422 ppb
Concentration per Run 2		102.193 ppb	96.762 ppb	103.122 ppb	97.178 ppb	100.302 ppb	97.373 ppb	96.020 %	98.706 ppb	99.857 ppb
Concentration per Run 3		107.652 ppb	98.271 ppb	104.369 ppb	98.726 ppb	103.539 ppb	100.268 ppb	95.977 %	101.762 ppb	101.285 ppb
Concentration RSD		3.7 %	0.9 %	0.7 %	0.9 %	1.8 %	1.5 %	1.6 %	1.6 %	0.7 %
Intensity average	1,113 cps	102,381 cps	7,455,353 cps	79,110 cps	7,285,454 cps	1,261,734 cps	3,046,490 cps	851,467 cps	2,540,748 cps	2,681,831 cps
Intensity per Run 1	1,000.0 cps	97,446.6 cps	7,361,789.8 cps	77,339.0 cps	7,115,825.6 cps	1,226,735.6 cps	2,974,943.8 cps	835,489.3 cps	2,483,269.1 cps	2,634,987.1 cps
Intensity per Run 2	1,136.1 cps	102,200.9 cps	7,445,764.0 cps	79,564.6 cps	7,316,200.9 cps	1,259,495.8 cps	3,037,803.7 cps	859,646.9 cps	2,530,575.4 cps	2,685,968.6 cps
Intensity per Run 3	1,204.1 cps	107,496.5 cps	7,558,504.5 cps	80,426.2 cps	7,424,336.3 cps	1,298,971.9 cps	3,126,723.0 cps	859,263.9 cps	2,608,398.5 cps	2,724,535.9 cps
Intensity RSD	9.3 %	4.9 %	1.3 %	2.0 %	2.1 %	2.9 %	2.5 %	1.6 %	2.5 %	1.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	102.438 ppb	99.830 ppb	99.467 ppb			95.846 %			0.014 ppm	96.701 ppb
Concentration per Run 1	101.343 ppb	98.202 ppb	98.591 ppb			95.640 %			0.014 ppm	94.241 ppb
Concentration per Run 2	102.544 ppb	99.517 ppb	97.439 ppb			95.795 %			0.014 ppm	94.950 ppb
Concentration per Run 3	103.427 ppb	101.772 ppb	102.370 ppb			96.102 %			0.014 ppm	100.912 ppb
Concentration RSD	1.0 %	1.8 %	2.6 %			0.2 %			1.5 %	3.8 %
Intensity average	2,186,232 cps	628,613 cps	1,141,556 cps	43 cps	31 cps	3,012,710 cps	75 cps	29 cps	3,197,419 cps	8,874,848 cps
Intensity per Run 1	2,128,671.5 cps	611,388.5 cps	1,119,644.8 cps	32.0 cps	28.0 cps	3,006,251.4 cps	76.0 cps	36.0 cps	3,160,342.1 cps	8,567,582.3 cps
Intensity per Run 2	2,205,277.5 cps	629,705.4 cps	1,123,283.2 cps	36.0 cps	32.0 cps	3,011,114.5 cps	48.0 cps	20.0 cps	3,181,576.2 cps	8,907,488.2 cps
Intensity per Run 3	2,224,747.7 cps	644,746.6 cps	1,181,739.4 cps	60.0 cps	32.0 cps	3,020,763.0 cps	100.0 cps	32.0 cps	3,250,339.9 cps	9,149,474.9 cps
Intensity RSD	2.3 %	2.7 %	3.1 %	35.5 %	7.5 %	0.2 %	34.9 %	28.4 %	1.5 %	3.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	95.970 ppb	99.395 ppb	98.934 ppb	98.563 ppb	100.587 %
Concentration per Run 1	93.968 ppb	98.825 ppb	98.348 ppb	97.980 ppb	99.518 %
Concentration per Run 2	94.232 ppb	97.733 ppb	96.691 ppb	95.922 ppb	103.089 %
Concentration per Run 3	99.709 ppb	101.626 ppb	101.763 ppb	101.786 ppb	99.154 %
Concentration RSD	3.4 %	2.0 %	2.6 %	3.0 %	2.2 %
Intensity average	21,507,136 cps	7,301,733 cps	6,390,520 cps	29,352,863 cps	2,577,973 cps
Intensity per Run 1	20,840,325.1 cps	7,187,778.2 cps	6,289,022.9 cps	28,879,456.1 cps	2,550,571.9 cps
Intensity per Run 2	21,648,653.8 cps	7,349,359.7 cps	6,396,777.9 cps	29,287,528.1 cps	2,642,094.3 cps
Intensity per Run 3	22,032,430.1 cps	7,368,060.9 cps	6,485,758.8 cps	29,891,603.4 cps	2,541,252.5 cps
Intensity RSD	2.8 %	1.4 %	1.5 %	1.7 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ22077-001 Analysis: 10/30/2019 17:44:56 Sample Type UNKNOWN
Comment Pipe 001 Effluent Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	80.674 %	82.639 %	0.048 ppb	21.102 ppb	21.513 ppb	N/A	235,165.010 ppb	1,735.632 ppb	1,710.354 ppb
Concentration per Run 1	79.960 %	81.837 %	0.063 ppb	22.154 ppb	21.190 ppb	N/A	227,769.166 ppb	1,668.720 ppb	1,673.402 ppb
Concentration per Run 2	80.223 %	83.013 %	0.046 ppb	19.295 ppb	21.325 ppb	N/A	241,914.026 ppb	1,766.678 ppb	1,710.241 ppb
Concentration per Run 3	81.838 %	83.066 %	0.035 ppb	21.856 ppb	22.025 ppb	N/A	235,811.837 ppb	1,771.500 ppb	1,747.419 ppb
Concentration RSD	1.3 %	0.8 %	29.2 %	7.4 %	2.1 %	N/A	3.0 %	3.3 %	2.2 %
Intensity average	11,282,482 cps	26,608 cps	9 cps	294 cps	1,765 cps	4,124 cps	356,755,915 cps	1,197,446 cps	247,226 cps
Intensity per Run 1	11,182,622.9 cps	26,349.8 cps	11.0 cps	306.0 cps	1,724.6 cps	4,030.7 cps	344,300,880.7 cps	1,147,630.9 cps	241,209.5 cps
Intensity per Run 2	11,219,494.0 cps	26,728.6 cps	9.0 cps	270.0 cps	1,754.6 cps	4,120.7 cps	366,535,675.8 cps	1,216,833.3 cps	246,715.3 cps
Intensity per Run 3	11,445,329.5 cps	26,745.6 cps	7.5 cps	306.0 cps	1,815.6 cps	4,220.7 cps	359,431,188.6 cps	1,227,873.2 cps	253,752.1 cps
Intensity RSD	1.3 %	0.8 %	19.2 %	7.1 %	2.6 %	2.3 %	3.2 %	3.6 %	2.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	1,728.916 ppb	212.485 ppb		1.259 ppm	49,607.416 ppb	5,008.822 ppb	4,809.841 ppb	4,808.292 ppb	84.252 %
Concentration per Run 1	1,662.529 ppb	205.198 ppb		1.208 ppm	48,655.186 ppb	4,706.477 ppb	4,879.702 ppb	4,616.539 ppb	83.219 %
Concentration per Run 2	1,766.206 ppb	218.674 ppb		1.268 ppm	50,438.131 ppb	5,233.977 ppb	4,904.884 ppb	5,007.951 ppb	84.219 %
Concentration per Run 3	1,758.014 ppb	213.582 ppb		1.300 ppm	49,728.933 ppb	5,086.011 ppb	4,644.937 ppb	4,800.385 ppb	85.318 %
Concentration RSD	3.3 %	3.2 %		3.7 %	1.8 %	5.4 %	3.0 %	4.1 %	1.2 %
Intensity average	331,293 cps	49,813 cps	128,256 cps	6,348,871 cps	30,342,808 cps	14,629 cps	10,816,616 cps	166,464 cps	5,799,077 cps
Intensity per Run 1	317,819.5 cps	48,022.3 cps	124,851.6 cps	6,102,613.7 cps	29,852,227.0 cps	13,817.7 cps	10,841,451.3 cps	160,717.6 cps	5,727,944.4 cps
Intensity per Run 2	337,632.7 cps	51,114.9 cps	128,185.4 cps	6,358,573.1 cps	30,625,609.8 cps	15,149.2 cps	11,025,801.2 cps	171,753.3 cps	5,796,826.6 cps
Intensity per Run 3	338,426.5 cps	50,301.3 cps	131,731.2 cps	6,585,426.3 cps	30,550,588.2 cps	14,918.9 cps	10,582,594.3 cps	166,919.9 cps	5,872,460.7 cps
Intensity RSD	3.5 %	3.2 %	2.7 %	3.8 %	1.4 %	4.9 %	2.1 %	3.3 %	1.2 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	71.179 %	3.010 ppb	0.958 ppb	1.084 ppb	1.283 ppb	N/A	19.801 ppb	1,710.792 ppb	1,768.364 ppb
Concentration per Run 1	71.586 %	2.961 ppb	0.959 ppb	1.024 ppb	1.289 ppb	N/A	19.164 ppb	1,630.773 ppb	1,687.560 ppb
Concentration per Run 2	70.478 %	3.194 ppb	0.941 ppb	1.120 ppb	1.305 ppb	N/A	20.022 ppb	1,750.471 ppb	1,808.070 ppb
Concentration per Run 3	71.475 %	2.874 ppb	0.973 ppb	1.108 ppb	1.254 ppb	N/A	20.216 ppb	1,751.131 ppb	1,809.462 ppb
Concentration RSD	0.9 %	5.5 %	1.7 %	4.8 %	2.0 %	N/A	2.8 %	4.1 %	4.0 %
Intensity average	208,971 cps	821 cps	10,340 cps	18,048 cps	3,650 cps	3,667 cps	232,171 cps	26,640,775 cps	901,155 cps
Intensity per Run 1	210,163.4 cps	812.0 cps	10,410.2 cps	17,251.9 cps	3,668.5 cps	3,410.5 cps	224,926.5 cps	25,403,243.0 cps	865,034.2 cps
Intensity per Run 2	206,910.5 cps	864.0 cps	10,079.5 cps	18,405.6 cps	3,672.5 cps	3,920.6 cps	233,355.0 cps	27,106,933.0 cps	912,402.3 cps
Intensity per Run 3	209,839.1 cps	788.0 cps	10,529.8 cps	18,485.7 cps	3,608.5 cps	3,670.6 cps	238,231.6 cps	27,412,148.6 cps	926,028.0 cps
Intensity RSD	0.9 %	4.7 %	2.3 %	3.8 %	1.0 %	7.0 %	2.9 %	4.1 %	3.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.344 ppb	3.512 ppb	3.965 ppb	28.994 ppb	29.065 ppb	55.150 ppb	53.509 ppb	54.120 ppb	
Concentration per Run 1	0.330 ppb	3.465 ppb	3.704 ppb	28.148 ppb	27.975 ppb	53.670 ppb	52.050 ppb	52.993 ppb	
Concentration per Run 2	0.354 ppb	3.544 ppb	4.201 ppb	29.207 ppb	29.661 ppb	56.129 ppb	53.328 ppb	54.302 ppb	
Concentration per Run 3	0.347 ppb	3.526 ppb	3.991 ppb	29.627 ppb	29.558 ppb	55.651 ppb	55.150 ppb	55.065 ppb	
Concentration RSD	3.5 %	1.2 %	6.3 %	2.6 %	3.3 %	2.4 %	2.9 %	1.9 %	
Intensity average	12,315 cps	42,777 cps	6,739 cps	654,937 cps	320,957 cps	289,816 cps	45,650 cps	221,848 cps	926 cps
Intensity per Run 1	11,913.7 cps	41,737.7 cps	6,365.6 cps	633,972.1 cps	310,781.1 cps	284,761.2 cps	44,234.2 cps	216,256.4 cps	897.0 cps
Intensity per Run 2	12,542.3 cps	43,331.0 cps	7,038.0 cps	657,725.5 cps	324,318.5 cps	291,603.7 cps	45,426.7 cps	222,288.1 cps	907.0 cps
Intensity per Run 3	12,490.3 cps	43,262.8 cps	6,813.9 cps	673,112.0 cps	327,771.2 cps	293,082.6 cps	47,289.4 cps	226,999.6 cps	974.0 cps
Intensity RSD	2.8 %	2.1 %	5.1 %	3.0 %	2.8 %	1.5 %	3.4 %	2.4 %	4.5 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	4.891 ppb	N/A	0.128 ppb			0.665 ppb		81.927 %	82.929 ppb
Concentration per Run 1	4.620 ppb	N/A	0.139 ppb			1.998 ppb		80.789 %	80.141 ppb
Concentration per Run 2	5.127 ppb	N/A	0.109 ppb			-0.735 ppb		82.395 %	83.646 ppb
Concentration per Run 3	4.927 ppb	N/A	0.136 ppb			0.733 ppb		82.598 %	84.999 ppb
Concentration RSD	5.2 %	N/A	13.1 %			205.6 %		1.2 %	3.0 %
Intensity average	16,098 cps	73 cps	19 cps	25,611 cps	4,794 cps	-302 cps	4,961 cps	479,096 cps	760,258 cps
Intensity per Run 1	15,515.7 cps	120.0 cps	21.9 cps	23,539.2 cps	4,257.8 cps	-105.1 cps	4,371.8 cps	472,439.0 cps	727,465.4 cps
Intensity per Run 2	16,543.9 cps	50.0 cps	13.6 cps	26,009.0 cps	5,319.2 cps	-506.9 cps	5,599.3 cps	481,830.4 cps	768,685.4 cps
Intensity per Run 3	16,235.6 cps	50.0 cps	21.5 cps	27,285.8 cps	4,804.0 cps	-293.9 cps	4,912.0 cps	483,018.6 cps	784,622.8 cps
Intensity RSD	3.3 %	55.1 %	24.7 %	7.4 %	11.1 %	66.6 %	12.4 %	1.2 %	3.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	1.410 ppb	8.547 ppb	1.394 ppb	1.407 ppb	0.015 ppm		3.927 ppb	0.041 ppb	2.171 ppb
Concentration per Run 1	1.362 ppb	8.388 ppb	1.328 ppb	1.347 ppb	0.016 ppm		4.035 ppb	0.039 ppb	2.199 ppb
Concentration per Run 2	1.385 ppb	8.516 ppb	1.372 ppb	1.419 ppb	0.015 ppm		3.892 ppb	0.039 ppb	2.168 ppb
Concentration per Run 3	1.483 ppb	8.737 ppb	1.483 ppb	1.455 ppb	0.015 ppm		3.855 ppb	0.045 ppb	2.146 ppb
Concentration RSD	4.6 %	2.1 %	5.7 %	3.9 %	0.3 %		2.4 %	8.3 %	1.2 %
Intensity average	23,745 cps	156,897 cps	15,470 cps	41,342 cps	1,378,559 cps	583 cps	3,415 cps	2,698 cps	1,419 cps
Intensity per Run 1	22,736.7 cps	152,745.5 cps	14,632.6 cps	39,353.9 cps	1,382,909.2 cps	580.0 cps	3,508.5 cps	2,596.3 cps	1,440.1 cps
Intensity per Run 2	23,373.9 cps	156,523.0 cps	15,237.3 cps	41,677.5 cps	1,373,575.3 cps	580.0 cps	3,368.5 cps	2,540.3 cps	1,408.1 cps
Intensity per Run 3	25,125.3 cps	161,423.1 cps	16,539.0 cps	42,993.9 cps	1,379,192.0 cps	588.0 cps	3,368.5 cps	2,956.4 cps	1,408.1 cps
Intensity RSD	5.2 %	2.8 %	6.3 %	4.5 %	0.3 %	0.8 %	2.4 %	8.4 %	1.3 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.029 ppb	0.201 ppb	0.190 ppb	80.029 %	1.198 ppb	1.259 ppb	1.258 ppb	12.434 ppb	12.487 ppb
Concentration per Run 1	0.028 ppb	0.202 ppb	0.183 ppb	80.700 %	1.137 ppb	1.202 ppb	1.202 ppb	11.953 ppb	12.062 ppb
Concentration per Run 2	0.029 ppb	0.208 ppb	0.185 ppb	79.165 %	1.216 ppb	1.270 ppb	1.276 ppb	12.574 ppb	12.681 ppb
Concentration per Run 3	0.030 ppb	0.193 ppb	0.201 ppb	80.222 %	1.240 ppb	1.305 ppb	1.294 ppb	12.777 ppb	12.717 ppb
Concentration RSD	5.0 %	3.9 %	5.0 %	1.0 %	4.5 %	4.2 %	3.9 %	3.5 %	2.9 %
Intensity average	1,916 cps	2,130 cps	4,968 cps	716,486 cps	26,415 cps	28,958 cps	23,260 cps	69,210 cps	127,256 cps
Intensity per Run 1	1,820.1 cps	2,152.2 cps	4,838.2 cps	722,490.6 cps	25,301.6 cps	27,871.2 cps	22,412.1 cps	66,927.1 cps	123,633.8 cps
Intensity per Run 2	1,924.2 cps	2,188.2 cps	4,805.0 cps	708,752.1 cps	26,540.2 cps	28,917.5 cps	23,369.9 cps	69,376.4 cps	128,138.2 cps
Intensity per Run 3	2,004.2 cps	2,048.2 cps	5,262.1 cps	718,214.5 cps	27,402.1 cps	30,084.3 cps	23,999.1 cps	71,327.3 cps	129,997.0 cps
Intensity RSD	4.8 %	3.4 %	5.1 %	1.0 %	4.0 %	3.8 %	3.4 %	3.2 %	2.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			89.283 %			0.013 ppm	0.487 ppb	0.494 ppb	0.315 ppb
Concentration per Run 1			89.557 %			0.013 ppm	0.500 ppb	0.509 ppb	0.310 ppb
Concentration per Run 2			88.694 %			0.013 ppm	0.486 ppb	0.496 ppb	0.317 ppb
Concentration per Run 3			89.597 %			0.013 ppm	0.474 ppb	0.478 ppb	0.318 ppb
Concentration RSD			0.6 %			0.7 %	2.6 %	3.1 %	1.3 %
Intensity average	251 cps	212 cps	2,806,409 cps	233 cps	261 cps	2,985,408 cps	36,847 cps	89,389 cps	19,012 cps
Intensity per Run 1	240.0 cps	180.0 cps	2,815,033.1 cps	228.0 cps	228.0 cps	2,969,037.4 cps	37,751.0 cps	91,700.9 cps	18,701.0 cps
Intensity per Run 2	224.0 cps	240.0 cps	2,787,916.3 cps	256.0 cps	328.0 cps	3,007,472.4 cps	36,815.2 cps	89,872.1 cps	19,138.7 cps
Intensity per Run 3	288.0 cps	216.0 cps	2,816,278.1 cps	216.0 cps	228.0 cps	2,979,713.8 cps	35,973.7 cps	86,595.3 cps	19,196.7 cps
Intensity RSD	13.3 %	14.2 %	0.6 %	8.8 %	22.1 %	0.7 %	2.4 %	2.9 %	1.4 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.270 ppb	0.283 ppb	79.193 %
Concentration per Run 1	0.267 ppb	0.278 ppb	78.975 %
Concentration per Run 2	0.269 ppb	0.285 ppb	79.335 %
Concentration per Run 3	0.275 ppb	0.287 ppb	79.269 %
Concentration RSD	1.5 %	1.6 %	0.2 %
Intensity average	14,378 cps	68,824 cps	2,029,672 cps
Intensity per Run 1	14,180.1 cps	67,457.1 cps	2,024,090.7 cps
Intensity per Run 2	14,320.2 cps	69,258.3 cps	2,033,298.9 cps
Intensity per Run 3	14,632.6 cps	69,757.1 cps	2,031,627.2 cps
Intensity RSD	1.6 %	1.8 %	0.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ23031-001(25) Analysis: 10/30/2019 17:51:01 Sample Type UNKNOWN
Comment SR-102319 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	86.839 %	86.158 %	0.022 ppb	1.355 ppb	1.332 ppb	N/A	315,001.504 ppb	1,156.230 ppb	1,153.864 ppb
Concentration per Run 1	86.023 %	83.858 %	0.027 ppb	1.470 ppb	1.296 ppb	N/A	316,384.042 ppb	1,216.832 ppb	1,198.559 ppb
Concentration per Run 2	87.464 %	86.888 %	0.029 ppb	0.960 ppb	1.321 ppb	N/A	312,032.662 ppb	1,108.791 ppb	1,143.207 ppb
Concentration per Run 3	87.031 %	87.727 %	0.010 ppb	1.635 ppb	1.377 ppb	N/A	316,587.808 ppb	1,143.067 ppb	1,119.826 ppb
Concentration RSD	0.9 %	2.4 %	46.2 %	26.0 %	3.1 %	N/A	0.8 %	4.8 %	3.5 %
Intensity average	12,144,743 cps	27,741 cps	6 cps	23 cps	126 cps	2,410 cps	488,765,351 cps	814,888 cps	170,207 cps
Intensity per Run 1	12,030,605.7 cps	27,000.6 cps	6.5 cps	23.5 cps	119.5 cps	2,670.3 cps	477,144,455.6 cps	833,940.3 cps	171,886.5 cps
Intensity per Run 2	12,232,095.6 cps	27,976.3 cps	7.0 cps	17.0 cps	126.0 cps	2,300.2 cps	489,257,341.5 cps	790,370.2 cps	170,547.7 cps
Intensity per Run 3	12,171,527.4 cps	28,246.4 cps	4.5 cps	27.0 cps	132.0 cps	2,260.2 cps	499,894,254.5 cps	820,352.2 cps	168,187.6 cps
Intensity RSD	0.9 %	2.4 %	22.0 %	22.6 %	5.0 %	9.4 %	2.3 %	2.7 %	1.1 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	1,137.701 ppb	6.110 ppb		0.119 ppm	20,994.222 ppb	25,994.733 ppb	24,975.676 ppb	25,321.476 ppb	88.334 %
Concentration per Run 1	1,191.721 ppb	6.247 ppb		0.115 ppm	22,553.030 ppb	27,656.675 ppb	25,336.590 ppb	26,729.136 ppb	87.906 %
Concentration per Run 2	1,119.572 ppb	6.565 ppb		0.120 ppm	20,095.534 ppb	25,169.926 ppb	26,088.335 ppb	24,395.986 ppb	86.388 %
Concentration per Run 3	1,101.810 ppb	5.517 ppb		0.121 ppm	20,334.102 ppb	25,157.599 ppb	23,502.104 ppb	24,839.305 ppb	90.708 %
Concentration RSD	4.2 %	8.8 %		2.9 %	6.5 %	5.5 %	5.3 %	4.9 %	2.5 %
Intensity average	222,177 cps	1,840 cps	3,034 cps	602,832 cps	12,861,218 cps	75,344 cps	58,635,569 cps	869,225 cps	6,080,062 cps
Intensity per Run 1	226,261.8 cps	1,820.1 cps	3,120.4 cps	566,167.1 cps	13,420,266.3 cps	77,822.6 cps	59,237,617.1 cps	890,573.8 cps	6,050,599.6 cps
Intensity per Run 2	221,174.8 cps	1,970.2 cps	3,070.4 cps	614,874.9 cps	12,481,485.7 cps	73,998.7 cps	59,992,381.2 cps	849,477.1 cps	5,946,116.9 cps
Intensity per Run 3	219,095.7 cps	1,730.1 cps	2,910.3 cps	627,454.6 cps	12,681,902.5 cps	74,210.3 cps	56,676,709.6 cps	867,625.0 cps	6,243,469.8 cps
Intensity RSD	1.7 %	6.6 %	3.6 %	5.4 %	3.8 %	2.9 %	3.0 %	2.4 %	2.5 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	70.701 %	0.060 ppb	-0.485 ppb	23.448 ppb	24.447 ppb	N/A	22.593 ppb	18.987 ppb	23.065 ppb
Concentration per Run 1	68.560 %	0.057 ppb	-0.525 ppb	24.081 ppb	24.910 ppb	N/A	23.676 ppb	19.422 ppb	24.348 ppb
Concentration per Run 2	71.666 %	0.084 ppb	-0.457 ppb	23.077 ppb	23.917 ppb	N/A	21.746 ppb	18.850 ppb	22.291 ppb
Concentration per Run 3	71.877 %	0.040 ppb	-0.474 ppb	23.186 ppb	24.515 ppb	N/A	22.358 ppb	18.690 ppb	22.556 ppb
Concentration RSD	2.6 %	36.5 %	7.3 %	2.3 %	2.0 %	N/A	4.4 %	2.0 %	4.9 %
Intensity average	207,566 cps	17 cps	-3,381 cps	349,966 cps	51,859 cps	53,659 cps	263,640 cps	324,200 cps	12,498 cps
Intensity per Run 1	201,280.8 cps	16.0 cps	-3,647.8 cps	348,621.0 cps	51,236.9 cps	54,519.2 cps	268,026.0 cps	321,021.0 cps	12,758.5 cps
Intensity per Run 2	210,400.1 cps	24.0 cps	-3,159.2 cps	349,299.8 cps	51,514.0 cps	52,771.7 cps	257,785.1 cps	327,021.0 cps	12,282.1 cps
Intensity per Run 3	211,018.3 cps	12.0 cps	-3,336.2 cps	351,977.9 cps	52,827.5 cps	53,685.2 cps	265,107.6 cps	324,558.1 cps	12,454.2 cps
Intensity RSD	2.6 %	35.3 %	7.3 %	0.5 %	1.6 %	1.6 %	2.0 %	0.9 %	1.9 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.043 ppb	0.132 ppb	0.200 ppb	0.877 ppb	0.881 ppb	-0.010 ppb	0.319 ppb	0.228 ppb	
Concentration per Run 1	0.043 ppb	0.172 ppb	0.281 ppb	0.922 ppb	0.934 ppb	0.081 ppb	0.288 ppb	0.332 ppb	
Concentration per Run 2	0.043 ppb	0.123 ppb	0.116 ppb	0.848 ppb	0.854 ppb	-0.012 ppb	0.481 ppb	0.182 ppb	
Concentration per Run 3	0.044 ppb	0.102 ppb	0.203 ppb	0.861 ppb	0.855 ppb	-0.098 ppb	0.189 ppb	0.171 ppb	
Concentration RSD	1.2 %	26.9 %	41.4 %	4.5 %	5.2 %	928.5 %	46.5 %	39.6 %	
Intensity average	1,704 cps	10,390 cps	1,583 cps	22,836 cps	11,001 cps	12,049 cps	1,965 cps	9,425 cps	13 cps
Intensity per Run 1	1,636.1 cps	10,448.4 cps	1,644.1 cps	23,129.4 cps	11,237.1 cps	12,222.0 cps	1,880.1 cps	9,543.7 cps	12.0 cps
Intensity per Run 2	1,724.1 cps	10,500.4 cps	1,492.1 cps	22,552.4 cps	10,856.7 cps	12,254.0 cps	2,132.2 cps	9,399.5 cps	12.0 cps
Intensity per Run 3	1,752.1 cps	10,220.2 cps	1,612.1 cps	22,824.9 cps	10,908.8 cps	11,669.5 cps	1,884.1 cps	9,331.5 cps	15.0 cps
Intensity RSD	3.6 %	1.4 %	5.1 %	1.3 %	1.9 %	2.7 %	7.3 %	1.1 %	13.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.109 ppb	N/A	0.057 ppb			0.437 ppb		82.503 %	0.559 ppb
Concentration per Run 1	0.305 ppb	N/A	-0.018 ppb			0.142 ppb		80.003 %	0.529 ppb
Concentration per Run 2	-0.152 ppb	N/A	0.086 ppb			0.831 ppb		84.038 %	0.559 ppb
Concentration per Run 3	0.173 ppb	N/A	0.103 ppb			0.338 ppb		83.469 %	0.588 ppb
Concentration RSD	216.3 %	N/A	115.3 %			81.3 %		2.6 %	5.3 %
Intensity average	3,517 cps	83 cps	-1 cps	2,865 cps	5,415 cps	-339 cps	5,611 cps	482,465 cps	5,421 cps
Intensity per Run 1	3,949.9 cps	40.0 cps	-21.7 cps	2,797.3 cps	6,034.5 cps	-374.7 cps	6,266.6 cps	467,842.9 cps	4,993.0 cps
Intensity per Run 2	2,884.8 cps	110.0 cps	7.2 cps	2,873.3 cps	4,366.8 cps	-285.0 cps	4,592.9 cps	491,441.2 cps	5,517.2 cps
Intensity per Run 3	3,715.4 cps	100.0 cps	12.2 cps	2,923.3 cps	5,843.4 cps	-356.1 cps	5,974.5 cps	488,109.8 cps	5,753.3 cps
Intensity RSD	15.9 %	45.4 %	2,353.7 %	2.2 %	16.9 %	14.0 %	15.9 %	2.6 %	7.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	0.487 ppb	0.486 ppb	0.477 ppb	0.491 ppb	0.016 ppm		0.000 ppb	0.025 ppb	0.014 ppb
Concentration per Run 1	0.452 ppb	0.455 ppb	0.437 ppb	0.443 ppb	0.016 ppm		0.017 ppb	0.025 ppb	0.005 ppb
Concentration per Run 2	0.481 ppb	0.480 ppb	0.459 ppb	0.498 ppb	0.016 ppm		-0.011 ppb	0.026 ppb	0.028 ppb
Concentration per Run 3	0.528 ppb	0.524 ppb	0.535 ppb	0.533 ppb	0.016 ppm		-0.006 ppb	0.024 ppb	0.010 ppb
Concentration RSD	7.9 %	7.2 %	10.7 %	9.3 %	1.7 %		31,466.1 %	4.4 %	85.4 %
Intensity average	8,471 cps	9,342 cps	5,471 cps	14,860 cps	1,408,509 cps	559 cps	80 cps	1,675 cps	11 cps
Intensity per Run 1	7,650.4 cps	8,506.9 cps	4,881.0 cps	13,050.8 cps	1,381,700.2 cps	584.0 cps	92.0 cps	1,624.1 cps	4.0 cps
Intensity per Run 2	8,510.9 cps	9,387.6 cps	5,369.2 cps	15,309.4 cps	1,418,775.4 cps	528.0 cps	72.0 cps	1,780.1 cps	20.0 cps
Intensity per Run 3	9,251.4 cps	10,132.1 cps	6,161.5 cps	16,218.5 cps	1,425,051.1 cps	564.0 cps	76.0 cps	1,620.1 cps	8.0 cps
Intensity RSD	9.5 %	8.7 %	11.8 %	11.0 %	1.7 %	5.1 %	13.2 %	5.4 %	78.1 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.025 ppb	0.010 ppb	0.008 ppb	80.484 %	0.067 ppb	1.047 ppb	1.035 ppb	1.397 ppb	1.388 ppb
Concentration per Run 1	0.022 ppb	0.012 ppb	0.007 ppb	78.600 %	0.068 ppb	1.036 ppb	1.029 ppb	1.454 ppb	1.447 ppb
Concentration per Run 2	0.024 ppb	0.010 ppb	0.007 ppb	81.911 %	0.068 ppb	1.057 ppb	1.017 ppb	1.346 ppb	1.355 ppb
Concentration per Run 3	0.028 ppb	0.008 ppb	0.008 ppb	80.942 %	0.065 ppb	1.046 ppb	1.059 ppb	1.390 ppb	1.364 ppb
Concentration RSD	11.9 %	20.3 %	7.7 %	2.1 %	3.0 %	1.0 %	2.1 %	3.9 %	3.7 %
Intensity average	1,636 cps	116 cps	235 cps	720,559 cps	2,082 cps	24,127 cps	19,144 cps	7,786 cps	14,141 cps
Intensity per Run 1	1,444.1 cps	136.0 cps	216.8 cps	703,687.9 cps	2,056.2 cps	23,321.8 cps	18,589.8 cps	7,914.5 cps	14,388.3 cps
Intensity per Run 2	1,608.1 cps	116.0 cps	234.5 cps	733,332.7 cps	2,144.2 cps	24,780.6 cps	19,126.7 cps	7,622.3 cps	14,007.9 cps
Intensity per Run 3	1,856.1 cps	96.0 cps	253.1 cps	724,656.1 cps	2,044.2 cps	24,279.6 cps	19,715.6 cps	7,822.5 cps	14,027.9 cps
Intensity RSD	12.7 %	17.2 %	7.7 %	2.1 %	2.6 %	3.1 %	2.9 %	1.9 %	1.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			86.274 %			0.013 ppm	0.369 ppb	0.374 ppb	10.603 ppb
Concentration per Run 1			84.253 %			0.013 ppm	0.375 ppb	0.383 ppb	11.017 ppb
Concentration per Run 2			87.254 %			0.013 ppm	0.360 ppb	0.360 ppb	10.281 ppb
Concentration per Run 3			87.315 %			0.013 ppm	0.372 ppb	0.379 ppb	10.513 ppb
Concentration RSD			2.0 %			1.9 %	2.1 %	3.3 %	3.5 %
Intensity average	77 cps	11 cps	2,711,844 cps	48 cps	32 cps	2,881,715 cps	26,682 cps	64,436 cps	587,310 cps
Intensity per Run 1	56.0 cps	12.0 cps	2,648,325.0 cps	24.0 cps	40.0 cps	2,838,864.9 cps	26,237.5 cps	63,806.5 cps	590,698.0 cps
Intensity per Run 2	96.0 cps	12.0 cps	2,742,630.8 cps	72.0 cps	24.0 cps	2,944,284.1 cps	26,692.5 cps	63,694.0 cps	583,542.0 cps
Intensity per Run 3	80.0 cps	8.0 cps	2,744,576.1 cps	48.0 cps	32.0 cps	2,861,997.0 cps	27,117.4 cps	65,806.9 cps	587,690.2 cps
Intensity RSD	26.0 %	21.7 %	2.0 %	50.0 %	25.0 %	1.9 %	1.6 %	1.8 %	0.6 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	10.155 ppb	10.377 ppb	74.914 %
Concentration per Run 1	10.481 ppb	10.751 ppb	72.421 %
Concentration per Run 2	9.717 ppb	10.144 ppb	76.783 %
Concentration per Run 3	10.266 ppb	10.236 ppb	75.537 %
Concentration RSD	3.9 %	3.2 %	3.0 %
Intensity average	492,671 cps	2,303,001 cps	1,919,994 cps
Intensity per Run 1	492,123.6 cps	2,308,058.4 cps	1,856,111.4 cps
Intensity per Run 2	483,257.9 cps	2,308,956.1 cps	1,967,906.0 cps
Intensity per Run 3	502,630.2 cps	2,291,989.2 cps	1,935,963.2 cps
Intensity RSD	2.0 %	0.4 %	3.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ23100-001 Analysis: 10/30/2019 17:57:05 Sample Type UNKNOWN
Comment WW Pipe 001 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	91.668 %	92.858 %	0.293 ppb	41.829 ppb	41.587 ppb	N/A	31,209.853 ppb	203.668 ppb	195.772 ppb	195.773 ppb
Concentration per Run 1	91.354 %	93.034 %	0.316 ppb	39.341 ppb	39.452 ppb	N/A	30,577.505 ppb	201.187 ppb	191.432 ppb	188.367 ppb
Concentration per Run 2	91.720 %	93.062 %	0.309 ppb	44.776 ppb	42.261 ppb	N/A	30,856.046 ppb	200.030 ppb	190.997 ppb	196.482 ppb
Concentration per Run 3	91.930 %	92.478 %	0.254 ppb	41.371 ppb	43.047 ppb	N/A	32,196.009 ppb	209.786 ppb	204.886 ppb	202.471 ppb
Concentration RSD	0.3 %	0.4 %	11.7 %	6.6 %	4.5 %	N/A	2.8 %	2.6 %	4.0 %	3.6 %
Intensity average	12,820,059 cps	29,898 cps	47 cps	655 cps	3,846 cps	2,297 cps	54,530,548 cps	163,643 cps	33,064 cps	43,871 cps
Intensity per Run 1	12,776,141.2 cps	29,954.9 cps	50.0 cps	617.5 cps	3,655.5 cps	2,170.2 cps	53,465,589.4 cps	161,782.0 cps	32,362.0 cps	42,251.7 cps
Intensity per Run 2	12,827,349.4 cps	29,963.9 cps	49.0 cps	703.5 cps	3,922.6 cps	2,450.2 cps	54,286,020.5 cps	161,913.7 cps	32,512.4 cps	44,368.9 cps
Intensity per Run 3	12,856,685.2 cps	29,775.9 cps	40.5 cps	645.0 cps	3,961.1 cps	2,270.2 cps	55,840,034.0 cps	167,234.2 cps	34,317.4 cps	44,991.1 cps
Intensity RSD	0.3 %	0.4 %	11.2 %	6.7 %	4.3 %	6.2 %	2.2 %	1.9 %	3.3 %	3.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	5.557 ppb		0.985 ppm	6,519.872 ppb	903.105 ppb	1,008.289 ppb	968.205 ppb	86.432 %	84.962 %	1.124 ppb
Concentration per Run 1	5.160 ppb		0.954 ppm	6,401.246 ppb	897.857 ppb	979.302 ppb	930.729 ppb	86.614 %	84.864 %	1.059 ppb
Concentration per Run 2	5.807 ppb		0.983 ppm	6,496.216 ppb	859.756 ppb	1,034.507 ppb	971.726 ppb	86.658 %	86.096 %	1.155 ppb
Concentration per Run 3	5.705 ppb		1.017 ppm	6,662.155 ppb	951.702 ppb	1,011.059 ppb	1,002.159 ppb	86.023 %	83.925 %	1.158 ppb
Concentration RSD	6.3 %		3.2 %	2.0 %	5.1 %	2.7 %	3.7 %	0.4 %	1.3 %	5.0 %
Intensity average	1,947 cps	56,344 cps	5,829,316 cps	4,727,566 cps	3,190 cps	2,379,578 cps	40,449 cps	5,949,095 cps	249,433 cps	365 cps
Intensity per Run 1	1,840.1 cps	54,217.7 cps	5,647,425.1 cps	4,639,300.3 cps	3,170.4 cps	2,317,409.7 cps	38,870.5 cps	5,961,666.5 cps	249,145.4 cps	344.0 cps
Intensity per Run 2	2,030.2 cps	56,909.6 cps	5,879,061.9 cps	4,765,099.6 cps	3,080.4 cps	2,446,165.1 cps	41,127.6 cps	5,964,667.4 cps	252,764.1 cps	380.0 cps
Intensity per Run 3	1,970.2 cps	57,904.1 cps	5,961,462.1 cps	4,778,299.1 cps	3,320.5 cps	2,375,157.8 cps	41,348.6 cps	5,920,951.0 cps	246,388.6 cps	372.0 cps
Intensity RSD	5.0 %	3.4 %	2.8 %	1.6 %	3.8 %	2.7 %	3.4 %	0.4 %	1.3 %	5.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.073 ppb	0.636 ppb	0.740 ppb	N/A	0.432 ppb	5.070 ppb	5.090 ppb	0.194 ppb	352.848 ppb	359.916 ppb
Concentration per Run 1	0.058 ppb	0.614 ppb	0.639 ppb	N/A	0.423 ppb	5.023 ppb	5.049 ppb	0.194 ppb	343.166 ppb	351.044 ppb
Concentration per Run 2	0.069 ppb	0.637 ppb	0.739 ppb	N/A	0.423 ppb	5.069 ppb	4.609 ppb	0.188 ppb	357.937 ppb	358.839 ppb
Concentration per Run 3	0.093 ppb	0.658 ppb	0.843 ppb	N/A	0.450 ppb	5.119 ppb	5.611 ppb	0.201 ppb	357.441 ppb	369.866 ppb
Concentration RSD	24.1 %	3.4 %	13.8 %	N/A	3.7 %	0.9 %	9.9 %	3.4 %	2.4 %	2.6 %
Intensity average	2,283 cps	13,546 cps	2,950 cps	2,927 cps	7,764 cps	126,715 cps	4,103 cps	8,398 cps	3,704,427 cps	568,074 cps
Intensity per Run 1	2,112.6 cps	13,138.9 cps	2,700.3 cps	2,920.4 cps	7,638.4 cps	125,815.5 cps	4,076.7 cps	8,370.8 cps	3,609,163.3 cps	554,128.8 cps
Intensity per Run 2	2,261.8 cps	13,739.6 cps	2,976.4 cps	2,880.3 cps	7,710.4 cps	127,811.6 cps	3,864.6 cps	8,238.7 cps	3,742,771.0 cps	570,065.6 cps
Intensity per Run 3	2,475.4 cps	13,759.6 cps	3,172.4 cps	2,980.4 cps	7,942.5 cps	126,518.7 cps	4,368.8 cps	8,583.0 cps	3,761,346.5 cps	580,026.5 cps
Intensity RSD	8.0 %	2.6 %	8.0 %	1.7 %	2.0 %	0.8 %	6.2 %	2.1 %	2.2 %	2.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	85.322 ppb	83.758 ppb	12.513 ppb	11.787 ppb	11.813 ppb		0.045 ppb	N/A	0.053 ppb	
Concentration per Run 1	84.518 ppb	81.599 ppb	11.822 ppb	11.169 ppb	11.451 ppb		-0.074 ppb	N/A	0.085 ppb	
Concentration per Run 2	84.194 ppb	83.027 ppb	12.526 ppb	11.643 ppb	11.719 ppb		0.275 ppb	N/A	-0.045 ppb	
Concentration per Run 3	87.256 ppb	86.648 ppb	13.191 ppb	12.549 ppb	12.268 ppb		-0.067 ppb	N/A	0.119 ppb	
Concentration RSD	2.0 %	3.1 %	5.5 %	5.9 %	3.5 %		447.6 %	N/A	162.6 %	
Intensity average	2,204,944 cps	1,100,823 cps	83,390 cps	12,955 cps	62,571 cps	62 cps	3,709 cps	60 cps	-2 cps	3,234 cps
Intensity per Run 1	2,184,417.9 cps	1,071,440.2 cps	80,470.3 cps	12,382.1 cps	60,976.6 cps	59.0 cps	3,397.3 cps	20.0 cps	7.6 cps	3,113.4 cps
Intensity per Run 2	2,189,140.7 cps	1,105,991.0 cps	84,094.3 cps	12,878.6 cps	62,407.7 cps	74.0 cps	4,412.3 cps	80.0 cps	-33.2 cps	3,267.4 cps
Intensity per Run 3	2,241,274.1 cps	1,125,036.6 cps	85,604.5 cps	13,603.4 cps	64,329.3 cps	54.0 cps	3,318.7 cps	80.0 cps	18.4 cps	3,322.4 cps
Intensity RSD	1.4 %	2.5 %	3.2 %	4.7 %	2.7 %	16.7 %	16.4 %	57.7 %	1,135.2 %	3.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.372 ppb		89.331 %	0.943 ppb	0.155 ppb	0.226 ppb	0.155 ppb	0.153 ppb	0.018 ppm
Concentration per Run 1		1.168 ppb		89.480 %	1.051 ppb	0.129 ppb	0.227 ppb	0.126 ppb	0.139 ppb	0.018 ppm
Concentration per Run 2		-0.187 ppb		88.973 %	0.928 ppb	0.164 ppb	0.220 ppb	0.166 ppb	0.144 ppb	0.018 ppm
Concentration per Run 3		0.135 ppb		89.538 %	0.849 ppb	0.173 ppb	0.232 ppb	0.173 ppb	0.176 ppb	0.018 ppm
Concentration RSD		190.2 %		0.3 %	10.8 %	15.1 %	2.6 %	16.1 %	13.2 %	0.6 %
Intensity average	4,791 cps	-385 cps	5,062 cps	522,388 cps	9,741 cps	3,167 cps	4,954 cps	2,091 cps	5,404 cps	1,587,852 cps
Intensity per Run 1	4,231.7 cps	-256.5 cps	4,414.8 cps	523,262.1 cps	10,868.7 cps	2,696.3 cps	4,981.0 cps	1,756.1 cps	4,989.0 cps	1,595,012.0 cps
Intensity per Run 2	5,990.4 cps	-481.9 cps	6,281.6 cps	520,298.7 cps	9,571.7 cps	3,320.4 cps	4,828.9 cps	2,224.2 cps	5,105.1 cps	1,591,884.9 cps
Intensity per Run 3	4,150.7 cps	-417.2 cps	4,489.8 cps	523,603.7 cps	8,783.1 cps	3,484.5 cps	5,053.0 cps	2,292.2 cps	6,117.5 cps	1,576,658.9 cps
Intensity RSD	21.7 %	30.1 %	20.9 %	0.3 %	10.8 %	13.1 %	2.3 %	14.0 %	11.5 %	0.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		12.725 ppb	0.607 ppb	17.554 ppb	0.590 ppb	0.002 ppb	-0.994 ppb	88.942 %	323.135 ppb	0.121 ppb
Concentration per Run 1		11.926 ppb	0.573 ppb	16.126 ppb	0.565 ppb	0.003 ppb	-0.916 ppb	89.958 %	312.342 ppb	0.114 ppb
Concentration per Run 2		12.686 ppb	0.614 ppb	18.157 ppb	0.595 ppb	0.002 ppb	-1.127 ppb	89.574 %	326.278 ppb	0.122 ppb
Concentration per Run 3		13.561 ppb	0.633 ppb	18.380 ppb	0.609 ppb	0.002 ppb	-0.940 ppb	87.293 %	330.786 ppb	0.128 ppb
Concentration RSD		6.4 %	5.1 %	7.1 %	3.8 %	27.4 %	11.6 %	1.6 %	3.0 %	5.9 %
Intensity average	10,247 cps	12,014 cps	43,310 cps	12,669 cps	41,551 cps	36 cps	-28,705 cps	796,279 cps	7,701,252 cps	3,371 cps
Intensity per Run 1	9,960.0 cps	11,361.2 cps	41,380.6 cps	11,745.5 cps	40,212.6 cps	44.0 cps	-26,721.1 cps	805,381.8 cps	7,524,863.5 cps	3,216.4 cps
Intensity per Run 2	10,468.4 cps	12,021.8 cps	44,166.2 cps	13,163.0 cps	42,139.2 cps	36.0 cps	-32,757.6 cps	801,936.1 cps	7,825,481.8 cps	3,404.5 cps
Intensity per Run 3	10,312.3 cps	12,658.4 cps	44,382.8 cps	13,098.9 cps	42,299.7 cps	28.0 cps	-26,636.0 cps	781,520.3 cps	7,753,412.1 cps	3,492.5 cps
Intensity RSD	2.5 %	5.4 %	3.9 %	6.3 %	2.8 %	22.2 %	12.2 %	1.6 %	2.0 %	4.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.119 ppb	1.289 ppb	1.255 ppb			93.987 %			0.014 ppm	0.095 ppb
Concentration per Run 1	0.118 ppb	1.281 ppb	1.190 ppb			94.004 %			0.014 ppm	0.094 ppb
Concentration per Run 2	0.117 ppb	1.248 ppb	1.292 ppb			93.354 %			0.014 ppm	0.097 ppb
Concentration per Run 3	0.123 ppb	1.338 ppb	1.283 ppb			94.602 %			0.014 ppm	0.094 ppb
Concentration RSD	2.6 %	3.5 %	4.5 %			0.7 %			1.1 %	1.7 %
Intensity average	2,662 cps	7,904 cps	14,051 cps	61 cps	225 cps	2,954,274 cps	308 cps	68 cps	3,134,271 cps	9,174 cps
Intensity per Run 1	2,656.3 cps	7,906.5 cps	13,411.3 cps	76.0 cps	248.0 cps	2,954,818.9 cps	244.0 cps	72.0 cps	3,096,442.0 cps	8,998.2 cps
Intensity per Run 2	2,632.3 cps	7,662.4 cps	14,464.4 cps	28.0 cps	216.0 cps	2,934,393.8 cps	340.0 cps	100.0 cps	3,147,570.0 cps	9,363.5 cps
Intensity per Run 3	2,696.3 cps	8,142.7 cps	14,276.2 cps	80.0 cps	212.0 cps	2,973,610.1 cps	340.0 cps	32.0 cps	3,158,799.9 cps	9,159.4 cps
Intensity RSD	1.2 %	3.0 %	4.0 %	47.2 %	8.8 %	0.7 %	18.0 %	50.3 %	1.1 %	2.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.095 ppb	7.557 ppb	7.231 ppb	7.402 ppb	92.821 %
Concentration per Run 1	0.091 ppb	7.352 ppb	7.056 ppb	7.271 ppb	91.809 %
Concentration per Run 2	0.096 ppb	7.544 ppb	7.331 ppb	7.395 ppb	93.268 %
Concentration per Run 3	0.098 ppb	7.776 ppb	7.307 ppb	7.539 ppb	93.387 %
Concentration RSD	3.4 %	2.8 %	2.1 %	1.8 %	0.9 %
Intensity average	22,189 cps	515,004 cps	432,807 cps	2,037,644 cps	2,378,952 cps
Intensity per Run 1	21,230.1 cps	495,807.1 cps	417,855.7 cps	1,979,736.1 cps	2,352,999.9 cps
Intensity per Run 2	22,441.2 cps	516,156.8 cps	440,618.0 cps	2,045,310.1 cps	2,390,397.2 cps
Intensity per Run 3	22,897.0 cps	533,047.1 cps	439,947.7 cps	2,087,884.4 cps	2,393,460.0 cps
Intensity RSD	3.9 %	3.6 %	3.0 %	2.7 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ23103-001 Analysis: 10/30/2019 18:03:09 Sample Type UNKNOWN
Comment POSS-102319 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	89.078 %	90.743 %	0.013 ppb	87.698 ppb	86.780 ppb	N/A	37,708.719 ppb	3,655.889 ppb	3,739.288 ppb	3,681.209 ppb
Concentration per Run 1	88.495 %	91.724 %	0.019 ppb	87.021 ppb	82.959 ppb	N/A	36,268.403 ppb	3,585.117 ppb	3,594.968 ppb	3,610.822 ppb
Concentration per Run 2	88.923 %	90.629 %	0.006 ppb	87.307 ppb	88.409 ppb	N/A	38,307.948 ppb	3,635.314 ppb	3,770.304 ppb	3,726.857 ppb
Concentration per Run 3	89.814 %	89.875 %	0.013 ppb	88.768 ppb	88.973 ppb	N/A	38,549.805 ppb	3,747.237 ppb	3,852.592 ppb	3,705.948 ppb
Concentration RSD	0.8 %	1.0 %	53.1 %	1.1 %	3.8 %	N/A	3.3 %	2.3 %	3.5 %	1.7 %
Intensity average	12,457,789 cps	29,217 cps	5 cps	1,342 cps	7,849 cps	2,380 cps	65,010,581 cps	2,869,983 cps	616,231 cps	806,032 cps
Intensity per Run 1	12,376,355.2 cps	29,533.4 cps	6.0 cps	1,344.1 cps	7,572.8 cps	2,530.3 cps	62,809,293.9 cps	2,825,861.0 cps	594,652.9 cps	793,228.2 cps
Intensity per Run 2	12,436,197.6 cps	29,180.5 cps	4.0 cps	1,333.6 cps	7,982.0 cps	2,340.2 cps	65,806,120.9 cps	2,842,997.7 cps	618,907.5 cps	812,691.5 cps
Intensity per Run 3	12,560,813.4 cps	28,938.0 cps	5.0 cps	1,348.1 cps	7,992.1 cps	2,270.2 cps	66,416,327.9 cps	2,941,090.5 cps	635,132.7 cps	812,174.9 cps
Intensity RSD	0.8 %	1.0 %	20.0 %	0.6 %	3.0 %	5.7 %	3.0 %	2.2 %	3.3 %	1.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	1,249.074 ppb		1.046 ppm	5,305.098 ppb	10,282.562 ppb	10,407.624 ppb	10,155.259 ppb	84.617 %	84.978 %	0.436 ppb
Concentration per Run 1	1,210.885 ppb		1.006 ppm	5,259.678 ppb	10,174.045 ppb	10,455.639 ppb	10,043.747 ppb	81.611 %	84.602 %	0.480 ppb
Concentration per Run 2	1,262.977 ppb		1.071 ppm	5,346.218 ppb	10,229.218 ppb	10,543.530 ppb	10,204.553 ppb	84.985 %	84.382 %	0.320 ppb
Concentration per Run 3	1,273.359 ppb		1.061 ppm	5,309.399 ppb	10,444.423 ppb	10,223.703 ppb	10,217.476 ppb	87.253 %	85.950 %	0.509 ppb
Concentration RSD	2.7 %		3.4 %	0.8 %	1.4 %	1.6 %	1.0 %	3.4 %	1.0 %	23.4 %
Intensity average	333,414 cps	6,362 cps	6,152,943 cps	3,836,623 cps	35,624 cps	23,496,436 cps	418,124 cps	5,824,175 cps	249,482 cps	143 cps
Intensity per Run 1	324,169.7 cps	6,351.6 cps	5,913,895.0 cps	3,796,552.7 cps	35,119.4 cps	22,789,593.8 cps	411,870.3 cps	5,617,323.7 cps	248,377.1 cps	156.0 cps
Intensity per Run 2	335,695.7 cps	6,001.5 cps	6,267,616.2 cps	3,842,751.0 cps	35,199.6 cps	23,907,403.8 cps	417,259.3 cps	5,849,545.4 cps	247,732.2 cps	104.0 cps
Intensity per Run 3	340,377.4 cps	6,731.8 cps	6,277,318.3 cps	3,870,564.2 cps	36,553.6 cps	23,792,311.4 cps	425,241.4 cps	6,005,655.7 cps	252,336.0 cps	168.0 cps
Intensity RSD	2.5 %	5.7 %	3.4 %	1.0 %	2.3 %	2.6 %	1.6 %	3.4 %	1.0 %	23.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.392 ppb	0.579 ppb	0.728 ppb	N/A	29.025 ppb	88.015 ppb	87.757 ppb	0.141 ppb	1.817 ppb	1.877 ppb
Concentration per Run 1	0.367 ppb	0.535 ppb	0.741 ppb	N/A	28.190 ppb	85.232 ppb	85.617 ppb	0.140 ppb	1.747 ppb	1.802 ppb
Concentration per Run 2	0.404 ppb	0.612 ppb	0.669 ppb	N/A	29.227 ppb	89.310 ppb	89.963 ppb	0.148 ppb	1.870 ppb	1.963 ppb
Concentration per Run 3	0.405 ppb	0.591 ppb	0.774 ppb	N/A	29.657 ppb	89.505 ppb	87.690 ppb	0.136 ppb	1.834 ppb	1.867 ppb
Concentration RSD	5.5 %	6.9 %	7.4 %	N/A	2.6 %	2.7 %	2.5 %	4.5 %	3.5 %	4.3 %
Intensity average	5,910 cps	12,536 cps	2,920 cps	2,787 cps	396,330 cps	1,629,127 cps	54,358 cps	6,179 cps	28,829 cps	4,461 cps
Intensity per Run 1	5,603.1 cps	11,693.5 cps	2,940.4 cps	2,900.4 cps	383,723.4 cps	1,573,776.3 cps	52,823.6 cps	6,077.5 cps	28,123.6 cps	4,332.8 cps
Intensity per Run 2	6,001.3 cps	13,026.8 cps	2,756.3 cps	2,510.3 cps	396,297.9 cps	1,641,120.6 cps	55,310.2 cps	6,433.7 cps	29,194.1 cps	4,564.8 cps
Intensity per Run 3	6,126.3 cps	12,886.7 cps	3,064.4 cps	2,950.4 cps	408,967.6 cps	1,672,483.8 cps	54,940.6 cps	6,025.5 cps	29,170.1 cps	4,484.8 cps
Intensity RSD	4.6 %	5.8 %	5.3 %	8.6 %	3.2 %	3.1 %	2.5 %	3.6 %	2.1 %	2.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	13.796 ppb	13.584 ppb	168.023 ppb	156.839 ppb	159.306 ppb		0.297 ppb	N/A	0.100 ppb	
Concentration per Run 1	13.400 ppb	13.277 ppb	162.738 ppb	152.438 ppb	156.131 ppb		0.265 ppb	N/A	0.128 ppb	
Concentration per Run 2	14.034 ppb	13.759 ppb	169.038 ppb	158.426 ppb	160.602 ppb		0.222 ppb	N/A	0.137 ppb	
Concentration per Run 3	13.955 ppb	13.717 ppb	172.294 ppb	159.655 ppb	161.184 ppb		0.403 ppb	N/A	0.037 ppb	
Concentration RSD	2.5 %	2.0 %	2.9 %	2.5 %	1.7 %		32.0 %	N/A	55.3 %	
Intensity average	359,264 cps	180,004 cps	952,693 cps	148,401 cps	722,159 cps	187 cps	4,438 cps	57 cps	12 cps	9,904 cps
Intensity per Run 1	348,266.2 cps	175,180.1 cps	924,695.1 cps	144,034.1 cps	706,799.2 cps	177.0 cps	4,353.2 cps	70.0 cps	21.1 cps	9,492.6 cps
Intensity per Run 2	362,906.0 cps	181,018.5 cps	962,690.7 cps	148,866.1 cps	723,043.2 cps	190.0 cps	4,238.4 cps	40.0 cps	23.6 cps	9,950.0 cps
Intensity per Run 3	366,621.1 cps	183,814.3 cps	970,691.9 cps	152,302.6 cps	736,635.0 cps	194.0 cps	4,721.3 cps	60.0 cps	-7.7 cps	10,270.2 cps
Intensity RSD	2.7 %	2.4 %	2.6 %	2.8 %	2.1 %	4.8 %	5.7 %	27.0 %	140.7 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.705 ppb		89.117 %	0.838 ppb	0.150 ppb	0.213 ppb	0.152 ppb	0.151 ppb	0.017 ppm
Concentration per Run 1		0.584 ppb		89.192 %	0.811 ppb	0.136 ppb	0.205 ppb	0.144 ppb	0.135 ppb	0.017 ppm
Concentration per Run 2		1.856 ppb		88.540 %	0.840 ppb	0.156 ppb	0.206 ppb	0.149 ppb	0.154 ppb	0.017 ppm
Concentration per Run 3		-0.326 ppb		89.619 %	0.863 ppb	0.157 ppb	0.228 ppb	0.164 ppb	0.165 ppb	0.017 ppm
Concentration RSD		155.5 %		0.6 %	3.1 %	7.9 %	6.2 %	6.8 %	9.9 %	0.9 %
Intensity average	5,182 cps	-329 cps	5,432 cps	521,141 cps	8,674 cps	3,068 cps	4,677 cps	2,056 cps	5,340 cps	1,538,865 cps
Intensity per Run 1	5,179.1 cps	-350.6 cps	5,450.3 cps	521,577.7 cps	8,410.9 cps	2,824.3 cps	4,520.8 cps	1,960.2 cps	4,828.9 cps	1,553,454.8 cps
Intensity per Run 2	4,782.0 cps	-139.7 cps	4,908.0 cps	517,766.5 cps	8,655.0 cps	3,168.4 cps	4,516.8 cps	2,008.2 cps	5,413.2 cps	1,525,918.7 cps
Intensity per Run 3	5,584.3 cps	-497.9 cps	5,936.5 cps	524,077.2 cps	8,955.3 cps	3,212.4 cps	4,993.0 cps	2,200.2 cps	5,777.3 cps	1,537,222.9 cps
Intensity RSD	7.7 %	54.6 %	9.5 %	0.6 %	3.1 %	6.9 %	5.9 %	6.2 %	9.0 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK



Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.123 ppb	0.004 ppb	0.100 ppb	0.004 ppb	0.010 ppb	0.008 ppb	88.820 %	0.368 ppb	0.073 ppb
Concentration per Run 1		0.068 ppb	0.005 ppb	0.109 ppb	0.004 ppb	0.012 ppb	0.007 ppb	88.964 %	0.352 ppb	0.065 ppb
Concentration per Run 2		0.154 ppb	0.004 ppb	0.126 ppb	0.005 ppb	0.007 ppb	0.009 ppb	89.216 %	0.362 ppb	0.075 ppb
Concentration per Run 3		0.146 ppb	0.005 ppb	0.065 ppb	0.004 ppb	0.011 ppb	0.008 ppb	88.280 %	0.391 ppb	0.080 ppb
Concentration RSD		38.5 %	10.9 %	31.3 %	8.1 %	22.1 %	13.6 %	0.5 %	5.4 %	10.6 %
Intensity average	652 cps	203 cps	404 cps	73 cps	368 cps	125 cps	272 cps	795,189 cps	9,454 cps	2,159 cps
Intensity per Run 1	628.0 cps	152.0 cps	436.0 cps	80.0 cps	360.0 cps	144.0 cps	236.1 cps	796,478.7 cps	9,087.3 cps	1,948.2 cps
Intensity per Run 2	708.0 cps	232.0 cps	368.0 cps	92.0 cps	396.0 cps	96.0 cps	297.3 cps	798,732.9 cps	9,343.5 cps	2,208.2 cps
Intensity per Run 3	620.0 cps	224.0 cps	408.0 cps	48.0 cps	348.0 cps	136.0 cps	281.5 cps	790,356.1 cps	9,932.0 cps	2,320.2 cps
Intensity RSD	7.5 %	21.7 %	8.5 %	31.0 %	6.8 %	20.5 %	11.7 %	0.5 %	4.6 %	8.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.078 ppb	15.105 ppb	15.436 ppb			92.664 %			0.014 ppm	0.053 ppb
Concentration per Run 1	0.068 ppb	15.074 ppb	15.271 ppb			92.350 %			0.014 ppm	0.051 ppb
Concentration per Run 2	0.078 ppb	15.074 ppb	15.298 ppb			92.237 %			0.014 ppm	0.055 ppb
Concentration per Run 3	0.088 ppb	15.166 ppb	15.740 ppb			93.405 %			0.013 ppm	0.054 ppb
Concentration RSD	12.6 %	0.4 %	1.7 %			0.7 %			1.4 %	4.4 %
Intensity average	1,832 cps	90,369 cps	168,583 cps	191 cps	193 cps	2,912,698 cps	241 cps	181 cps	3,088,692 cps	5,386 cps
Intensity per Run 1	1,636.1 cps	90,124.3 cps	166,624.3 cps	200.0 cps	184.0 cps	2,902,841.8 cps	240.0 cps	172.0 cps	3,110,084.1 cps	5,165.1 cps
Intensity per Run 2	1,836.1 cps	90,205.1 cps	167,041.3 cps	224.0 cps	188.0 cps	2,899,262.5 cps	276.0 cps	168.0 cps	3,118,427.4 cps	5,505.2 cps
Intensity per Run 3	2,024.2 cps	90,776.9 cps	172,082.4 cps	148.0 cps	208.0 cps	2,935,988.9 cps	208.0 cps	204.0 cps	3,037,563.9 cps	5,489.2 cps
Intensity RSD	10.6 %	0.4 %	1.8 %	20.4 %	6.7 %	0.7 %	14.1 %	10.9 %	1.4 %	3.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.053 ppb	0.482 ppb	0.471 ppb	0.477 ppb	88.793 %
Concentration per Run 1	0.052 ppb	0.473 ppb	0.460 ppb	0.468 ppb	88.801 %
Concentration per Run 2	0.054 ppb	0.487 ppb	0.468 ppb	0.478 ppb	88.668 %
Concentration per Run 3	0.054 ppb	0.488 ppb	0.484 ppb	0.485 ppb	88.910 %
Concentration RSD	2.8 %	1.7 %	2.6 %	1.8 %	0.1 %
Intensity average	13,031 cps	32,124 cps	27,522 cps	128,236 cps	2,275,712 cps
Intensity per Run 1	12,686.5 cps	31,493.7 cps	26,909.0 cps	125,896.9 cps	2,275,907.4 cps
Intensity per Run 2	13,178.0 cps	32,348.8 cps	27,325.9 cps	128,294.9 cps	2,272,514.7 cps
Intensity per Run 3	13,230.0 cps	32,530.3 cps	28,332.2 cps	130,516.3 cps	2,278,712.9 cps
Intensity RSD	2.3 %	1.7 %	2.7 %	1.8 %	0.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ23067-001 Analysis: 10/30/2019 18:09:14 Sample Type UNKNOWN
Comment Coatex Pipe 001 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	84.171 %	86.327 %	0.010 ppb	127.515 ppb	127.657 ppb	N/A	124,054.576 ppb	6,410.428 ppb	6,463.416 ppb
Concentration per Run 1	83.336 %	87.027 %	0.003 ppb	124.315 ppb	124.816 ppb	N/A	122,570.484 ppb	6,249.183 ppb	6,316.715 ppb
Concentration per Run 2	85.212 %	85.628 %	0.018 ppb	128.782 ppb	128.110 ppb	N/A	123,272.124 ppb	6,491.043 ppb	6,481.552 ppb
Concentration per Run 3	83.964 %	86.327 %	0.007 ppb	129.446 ppb	130.045 ppb	N/A	126,321.119 ppb	6,491.058 ppb	6,591.981 ppb
Concentration RSD	1.1 %	0.8 %	81.7 %	2.2 %	2.1 %	N/A	1.6 %	2.2 %	2.1 %
Intensity average	11,771,565 cps	27,796 cps	4 cps	1,849 cps	10,934 cps	4,558 cps	200,560,991 cps	4,713,918 cps	996,909 cps
Intensity per Run 1	11,654,820.5 cps	28,020.9 cps	3.5 cps	1,817.6 cps	10,782.7 cps	4,530.8 cps	200,022,110.9 cps	4,639,199.3 cps	983,640.7 cps
Intensity per Run 2	11,917,177.1 cps	27,570.4 cps	5.5 cps	1,853.1 cps	10,893.2 cps	4,110.7 cps	198,204,831.6 cps	4,748,125.6 cps	994,604.6 cps
Intensity per Run 3	11,742,696.5 cps	27,795.4 cps	4.0 cps	1,875.1 cps	11,127.5 cps	5,031.0 cps	203,456,030.6 cps	4,754,428.8 cps	1,012,481.2 cps
Intensity RSD	1.1 %	0.8 %	24.0 %	1.6 %	1.6 %	10.1 %	1.3 %	1.4 %	1.5 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	6,463.058 ppb	36.853 ppb		1.119 ppm	8,517.577 ppb	39,955.728 ppb	40,237.969 ppb	39,781.912 ppb	84.089 %
Concentration per Run 1	6,266.883 ppb	34.285 ppb		1.084 ppm	8,245.251 ppb	38,951.231 ppb	39,950.833 ppb	38,900.646 ppb	83.355 %
Concentration per Run 2	6,473.911 ppb	37.675 ppb		1.126 ppm	8,773.217 ppb	40,401.241 ppb	40,005.074 ppb	39,960.537 ppb	84.357 %
Concentration per Run 3	6,648.382 ppb	38.599 ppb		1.146 ppm	8,534.262 ppb	40,514.713 ppb	40,757.998 ppb	40,484.552 ppb	84.554 %
Concentration RSD	3.0 %	6.2 %		2.9 %	3.1 %	2.2 %	1.1 %	2.0 %	0.8 %
Intensity average	1,323,236 cps	9,594 cps	124,087 cps	6,105,107 cps	5,683,475 cps	127,293 cps	90,013,378 cps	1,505,209 cps	5,787,847 cps
Intensity per Run 1	1,295,546.7 cps	9,043.3 cps	119,872.9 cps	5,975,678.3 cps	5,561,446.8 cps	125,468.3 cps	88,585,783.5 cps	1,488,294.6 cps	5,737,356.1 cps
Intensity per Run 2	1,318,956.8 cps	9,753.8 cps	125,305.2 cps	6,124,578.1 cps	5,837,491.4 cps	128,447.4 cps	89,795,936.7 cps	1,509,122.6 cps	5,806,306.5 cps
Intensity per Run 3	1,355,205.6 cps	9,984.0 cps	127,083.3 cps	6,215,063.4 cps	5,651,486.3 cps	127,962.9 cps	91,658,414.9 cps	1,518,208.3 cps	5,819,878.3 cps
Intensity RSD	2.3 %	5.1 %	3.0 %	2.0 %	2.5 %	1.3 %	1.7 %	1.0 %	0.8 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	78.118 %	0.561 ppb	0.555 ppb	1.242 ppb	1.459 ppb	N/A	26.187 ppb	630.289 ppb	624.645 ppb
Concentration per Run 1	78.985 %	0.528 ppb	0.526 ppb	1.186 ppb	1.364 ppb	N/A	25.404 ppb	602.639 ppb	600.389 ppb
Concentration per Run 2	77.974 %	0.480 ppb	0.565 ppb	1.272 ppb	1.468 ppb	N/A	26.216 ppb	642.438 ppb	635.234 ppb
Concentration per Run 3	77.394 %	0.674 ppb	0.573 ppb	1.268 ppb	1.545 ppb	N/A	26.941 ppb	645.789 ppb	638.313 ppb
Concentration RSD	1.0 %	18.0 %	4.5 %	3.9 %	6.2 %	N/A	2.9 %	3.8 %	3.4 %
Intensity average	229,341 cps	168 cps	7,134 cps	22,392 cps	4,338 cps	4,518 cps	329,670 cps	10,555,818 cps	349,916 cps
Intensity per Run 1	231,886.6 cps	160.0 cps	6,915.1 cps	21,714.9 cps	4,152.7 cps	4,420.8 cps	321,775.8 cps	10,149,240.2 cps	340,173.4 cps
Intensity per Run 2	228,919.2 cps	144.0 cps	7,224.5 cps	22,852.9 cps	4,364.8 cps	4,470.8 cps	330,677.0 cps	10,783,385.2 cps	355,256.4 cps
Intensity per Run 3	227,217.2 cps	200.0 cps	7,261.8 cps	22,608.5 cps	4,496.8 cps	4,660.9 cps	336,557.8 cps	10,734,828.2 cps	354,319.5 cps
Intensity RSD	1.0 %	17.2 %	2.7 %	2.7 %	4.0 %	2.8 %	2.3 %	3.3 %	2.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.429 ppb	3.282 ppb	3.449 ppb	35.773 ppb	35.320 ppb	171.263 ppb	162.482 ppb	165.381 ppb	
Concentration per Run 1	0.421 ppb	3.194 ppb	3.266 ppb	35.136 ppb	34.168 ppb	168.744 ppb	158.055 ppb	163.084 ppb	
Concentration per Run 2	0.434 ppb	3.252 ppb	3.617 ppb	35.739 ppb	35.665 ppb	170.650 ppb	162.955 ppb	163.165 ppb	
Concentration per Run 3	0.432 ppb	3.399 ppb	3.464 ppb	36.444 ppb	36.127 ppb	174.395 ppb	166.437 ppb	169.894 ppb	
Concentration RSD	1.7 %	3.2 %	5.1 %	1.8 %	2.9 %	1.7 %	2.6 %	2.4 %	
Intensity average	16,822 cps	41,017 cps	6,402 cps	855,010 cps	427,688 cps	902,141 cps	142,060 cps	692,874 cps	874 cps
Intensity per Run 1	16,687.2 cps	39,719.1 cps	6,149.5 cps	841,350.5 cps	418,464.4 cps	875,852.0 cps	138,204.6 cps	682,894.0 cps	860.0 cps
Intensity per Run 2	16,999.6 cps	41,284.2 cps	6,673.8 cps	858,236.1 cps	431,143.5 cps	904,286.7 cps	143,337.4 cps	688,150.9 cps	833.0 cps
Intensity per Run 3	16,779.3 cps	42,046.7 cps	6,381.6 cps	865,442.8 cps	433,456.3 cps	926,282.8 cps	144,636.7 cps	707,577.1 cps	929.0 cps
Intensity RSD	1.0 %	2.9 %	4.1 %	1.4 %	1.9 %	2.8 %	2.4 %	1.9 %	5.7 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.849 ppb	N/A	0.149 ppb			0.643 ppb		82.836 %	1.861 ppb
Concentration per Run 1	0.971 ppb	N/A	0.113 ppb			-0.177 ppb		81.925 %	1.804 ppb
Concentration per Run 2	0.642 ppb	N/A	0.181 ppb			2.312 ppb		83.957 %	1.862 ppb
Concentration per Run 3	0.933 ppb	N/A	0.154 ppb			-0.206 ppb		82.627 %	1.916 ppb
Concentration RSD	21.2 %	N/A	22.8 %			224.7 %		1.2 %	3.0 %
Intensity average	5,622 cps	63 cps	26 cps	164,783 cps	5,294 cps	-315 cps	5,428 cps	484,412 cps	17,571 cps
Intensity per Run 1	5,868.2 cps	30.0 cps	15.1 cps	156,078.9 cps	5,629.3 cps	-435.9 cps	5,942.4 cps	479,080.1 cps	16,839.4 cps
Intensity per Run 2	5,092.7 cps	60.0 cps	35.2 cps	165,939.8 cps	4,338.8 cps	-59.4 cps	4,296.8 cps	490,965.8 cps	17,796.7 cps
Intensity per Run 3	5,903.9 cps	100.0 cps	27.1 cps	172,329.7 cps	5,913.4 cps	-450.8 cps	6,043.5 cps	483,189.6 cps	18,077.1 cps
Intensity RSD	8.2 %	55.5 %	39.1 %	5.0 %	15.9 %	70.3 %	18.1 %	1.2 %	3.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	1.712 ppb	1.728 ppb	1.719 ppb	1.673 ppb	0.016 ppm		0.039 ppb	0.001 ppb	0.046 ppb
Concentration per Run 1	1.700 ppb	1.656 ppb	1.708 ppb	1.630 ppb	0.016 ppm		-0.001 ppb	0.001 ppb	0.047 ppb
Concentration per Run 2	1.705 ppb	1.765 ppb	1.695 ppb	1.660 ppb	0.016 ppm		0.079 ppb	0.001 ppb	0.052 ppb
Concentration per Run 3	1.731 ppb	1.763 ppb	1.755 ppb	1.730 ppb	0.016 ppm		0.039 ppb	0.001 ppb	0.040 ppb
Concentration RSD	1.0 %	3.6 %	1.8 %	3.1 %	0.5 %		102.1 %	17.4 %	12.8 %
Intensity average	29,214 cps	32,549 cps	19,351 cps	49,942 cps	1,444,478 cps	608 cps	116 cps	161 cps	32 cps
Intensity per Run 1	28,668.9 cps	30,826.1 cps	18,990.5 cps	48,052.4 cps	1,438,893.6 cps	632.0 cps	80.0 cps	144.0 cps	32.0 cps
Intensity per Run 2	29,434.7 cps	33,617.2 cps	19,298.9 cps	50,084.3 cps	1,442,084.8 cps	656.0 cps	152.0 cps	176.0 cps	36.0 cps
Intensity per Run 3	29,538.9 cps	33,204.1 cps	19,763.6 cps	51,690.8 cps	1,452,454.9 cps	536.0 cps	116.0 cps	164.0 cps	28.0 cps
Intensity RSD	1.6 %	4.6 %	2.0 %	3.7 %	0.5 %	10.4 %	31.0 %	10.0 %	12.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.001 ppb	0.024 ppb	0.017 ppb	82.523 %	0.221 ppb	0.562 ppb	0.571 ppb	53.017 ppb	53.435 ppb
Concentration per Run 1	0.002 ppb	0.022 ppb	0.015 ppb	81.307 %	0.197 ppb	0.551 ppb	0.560 ppb	51.478 ppb	52.816 ppb
Concentration per Run 2	0.001 ppb	0.025 ppb	0.019 ppb	83.022 %	0.230 ppb	0.554 ppb	0.565 ppb	53.734 ppb	53.370 ppb
Concentration per Run 3	0.001 ppb	0.024 ppb	0.018 ppb	83.240 %	0.237 ppb	0.581 ppb	0.589 ppb	53.837 ppb	54.119 ppb
Concentration RSD	26.4 %	5.2 %	10.4 %	1.3 %	9.6 %	3.0 %	2.8 %	2.5 %	1.2 %
Intensity average	145 cps	267 cps	502 cps	738,817 cps	5,559 cps	13,469 cps	10,990 cps	300,934 cps	554,877 cps
Intensity per Run 1	164.0 cps	248.0 cps	443.0 cps	727,931.3 cps	4,957.0 cps	13,074.9 cps	10,680.6 cps	291,992.1 cps	548,796.1 cps
Intensity per Run 2	148.0 cps	280.0 cps	549.2 cps	743,285.5 cps	5,769.3 cps	13,335.1 cps	10,908.8 cps	305,503.7 cps	554,880.1 cps
Intensity per Run 3	124.0 cps	272.0 cps	512.4 cps	745,233.8 cps	5,949.4 cps	13,995.9 cps	11,381.2 cps	305,307.4 cps	560,955.8 cps
Intensity RSD	13.9 %	6.2 %	10.8 %	1.3 %	9.5 %	3.5 %	3.3 %	2.6 %	1.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			90.229 %			0.013 ppm	0.040 ppb	0.041 ppb	0.698 ppb
Concentration per Run 1			91.551 %			0.014 ppm	0.038 ppb	0.039 ppb	0.687 ppb
Concentration per Run 2			89.939 %			0.013 ppm	0.041 ppb	0.042 ppb	0.692 ppb
Concentration per Run 3			89.196 %			0.013 ppm	0.042 ppb	0.044 ppb	0.713 ppb
Concentration RSD			1.3 %			1.7 %	4.8 %	5.6 %	2.0 %
Intensity average	576 cps	3,657 cps	2,836,146 cps	4,106 cps	719 cps	3,006,853 cps	4,068 cps	9,953 cps	43,265 cps
Intensity per Run 1	548.0 cps	3,704.6 cps	2,877,709.1 cps	4,092.7 cps	668.0 cps	3,063,661.7 cps	3,883.6 cps	9,425.6 cps	42,287.6 cps
Intensity per Run 2	640.0 cps	3,692.5 cps	2,827,054.8 cps	4,064.7 cps	732.0 cps	2,967,534.8 cps	4,132.7 cps	10,079.1 cps	43,394.2 cps
Intensity per Run 3	540.0 cps	3,572.5 cps	2,803,672.8 cps	4,160.7 cps	756.0 cps	2,989,362.1 cps	4,187.7 cps	10,354.3 cps	44,113.9 cps
Intensity RSD	9.6 %	2.0 %	1.3 %	1.2 %	6.3 %	1.7 %	4.0 %	4.8 %	2.1 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.682 ppb	0.690 ppb	83.001 %
Concentration per Run 1	0.667 ppb	0.680 ppb	82.212 %
Concentration per Run 2	0.679 ppb	0.679 ppb	83.936 %
Concentration per Run 3	0.701 ppb	0.712 ppb	82.856 %
Concentration RSD	2.5 %	2.7 %	1.1 %
Intensity average	37,129 cps	172,182 cps	2,127,271 cps
Intensity per Run 1	35,995.9 cps	168,110.5 cps	2,107,034.5 cps
Intensity per Run 2	37,339.8 cps	171,309.2 cps	2,151,238.1 cps
Intensity per Run 3	38,050.0 cps	177,127.5 cps	2,123,539.5 cps
Intensity RSD	2.8 %	2.7 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 18:15:18 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	87.198 %	88.786 %	147.442 ppb	150.363 ppb	149.824 ppb	N/A	14,948.992 ppb	14,915.494 ppb	14,709.821 ppb
Concentration per Run 1	86.430 %	89.520 %	143.386 ppb	143.343 ppb	146.641 ppb	N/A	14,749.391 ppb	14,440.369 ppb	14,192.326 ppb
Concentration per Run 2	87.855 %	88.473 %	148.374 ppb	152.986 ppb	150.318 ppb	N/A	14,805.855 ppb	15,120.622 ppb	14,827.819 ppb
Concentration per Run 3	87.310 %	88.364 %	150.566 ppb	154.760 ppb	152.511 ppb	N/A	15,291.730 ppb	15,185.493 ppb	15,109.317 ppb
Recovery Percentage 1			98.295 %		99.882 %		98.673 %		
Concentration RSD	0.8 %	0.7 %	2.5 %	4.1 %	2.0 %	N/A	2.0 %	2.8 %	3.2 %
Intensity average	12,194,942 cps	28,587 cps	20,791 cps	2,253 cps	13,281 cps	2,037 cps	25,426,186 cps	11,547,739 cps	2,391,812 cps
Intensity per Run 1	12,087,478.3 cps	28,823.7 cps	20,389.1 cps	2,162.7 cps	13,083.8 cps	2,110.2 cps	25,138,828.3 cps	11,198,417.7 cps	2,310,685.9 cps
Intensity per Run 2	12,286,762.7 cps	28,486.4 cps	20,851.4 cps	2,288.7 cps	13,311.1 cps	1,890.1 cps	25,307,732.9 cps	11,769,969.2 cps	2,425,354.3 cps
Intensity per Run 3	12,210,586.0 cps	28,451.3 cps	21,133.4 cps	2,306.7 cps	13,447.2 cps	2,110.2 cps	25,831,998.0 cps	11,674,831.0 cps	2,439,396.7 cps
Intensity RSD	0.8 %	0.7 %	1.8 %	3.5 %	1.4 %	6.2 %	1.4 %	2.7 %	3.0 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	14,844.307 ppb	14,920.190 ppb		0.620 ppm	14,601.277 ppb	14,960.037 ppb	15,380.650 ppb	15,055.833 ppb	82.772 %
Concentration per Run 1	14,434.909 ppb	14,516.415 ppb		0.603 ppm	14,342.573 ppb	14,746.891 ppb	15,346.398 ppb	14,964.236 ppb	81.964 %
Concentration per Run 2	14,738.100 ppb	14,908.845 ppb		0.626 ppm	14,509.374 ppb	14,594.399 ppb	15,391.624 ppb	14,944.306 ppb	83.290 %
Concentration per Run 3	15,359.911 ppb	15,335.309 ppb		0.630 ppm	14,951.883 ppb	15,538.820 ppb	15,403.929 ppb	15,258.956 ppb	83.061 %
Recovery Percentage 1	97.982 %	98.483 %			96.378 %		101.522 %	99.378 %	
Concentration RSD	3.2 %	2.7 %		2.4 %	2.2 %	3.4 %	0.2 %	1.2 %	0.9 %
Intensity average	3,208,325 cps	3,930,392 cps	3,824 cps	3,617,178 cps	10,462,816 cps	51,576 cps	33,947,749 cps	617,358 cps	5,697,186 cps
Intensity per Run 1	3,122,871.2 cps	3,826,155.7 cps	3,500.5 cps	3,509,466.8 cps	10,235,820.1 cps	50,562.2 cps	33,542,323.0 cps	609,888.8 cps	5,641,603.0 cps
Intensity per Run 2	3,206,098.8 cps	3,954,826.7 cps	4,250.7 cps	3,695,018.8 cps	10,534,155.7 cps	51,094.3 cps	34,185,427.2 cps	622,481.6 cps	5,732,854.9 cps
Intensity per Run 3	3,296,003.6 cps	4,010,193.0 cps	3,720.6 cps	3,647,047.5 cps	10,618,470.8 cps	53,072.8 cps	34,115,496.8 cps	619,702.2 cps	5,717,100.6 cps
Intensity RSD	2.7 %	2.4 %	10.1 %	2.7 %	1.9 %	2.6 %	1.0 %	1.1 %	0.9 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	84.723 %	148.401 ppb	145.547 ppb	145.143 ppb	149.610 ppb	N/A	149.399 ppb	14,748.914 ppb	15,069.364 ppb
Concentration per Run 1	84.171 %	144.611 ppb	142.897 ppb	141.529 ppb	146.964 ppb	N/A	145.951 ppb	14,534.897 ppb	14,758.099 ppb
Concentration per Run 2	86.102 %	149.391 ppb	143.493 ppb	144.155 ppb	149.289 ppb	N/A	147.929 ppb	14,853.531 ppb	14,950.091 ppb
Concentration per Run 3	83.897 %	151.200 ppb	150.250 ppb	149.746 ppb	152.576 ppb	N/A	154.316 ppb	14,858.314 ppb	15,499.902 ppb
Recovery Percentage 1		98.934 %	97.031 %	96.762 %		0.000 %	99.599 %		99.468 %
Concentration RSD	1.4 %	2.3 %	2.8 %	2.9 %	1.9 %	N/A	2.9 %	1.3 %	2.6 %
Intensity average	248,733 cps	47,947 cps	1,651,827 cps	2,585,422 cps	366,823 cps	376,603 cps	2,026,813 cps	266,531,926 cps	9,133,258 cps
Intensity per Run 1	247,110.4 cps	46,394.1 cps	1,611,429.6 cps	2,504,862.4 cps	357,344.8 cps	373,043.5 cps	1,962,684.3 cps	260,276,459.3 cps	8,887,077.8 cps
Intensity per Run 2	252,782.3 cps	49,016.1 cps	1,655,289.5 cps	2,609,855.3 cps	370,963.6 cps	374,082.8 cps	2,032,541.2 cps	271,736,722.9 cps	9,209,315.6 cps
Intensity per Run 3	246,307.0 cps	48,429.9 cps	1,688,761.9 cps	2,641,546.8 cps	372,161.6 cps	382,681.5 cps	2,085,214.7 cps	267,582,597.2 cps	9,303,381.7 cps
Intensity RSD	1.4 %	2.9 %	2.3 %	2.8 %	2.2 %	1.4 %	3.0 %	2.2 %	2.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	149.658 ppb	150.792 ppb	154.306 ppb	152.030 ppb	153.335 ppb	153.062 ppb	155.423 ppb	152.553 ppb	
Concentration per Run 1	146.033 ppb	148.564 ppb	152.414 ppb	150.417 ppb	149.444 ppb	151.582 ppb	152.780 ppb	149.159 ppb	
Concentration per Run 2	150.600 ppb	152.474 ppb	152.787 ppb	152.869 ppb	154.091 ppb	152.986 ppb	153.436 ppb	152.406 ppb	
Concentration per Run 3	152.341 ppb	151.339 ppb	157.716 ppb	152.803 ppb	156.470 ppb	154.620 ppb	160.054 ppb	156.093 ppb	
Recovery Percentage 1	99.772 %	100.528 %			102.223 %	102.042 %			
Concentration RSD	2.2 %	1.3 %	1.9 %	0.9 %	2.3 %	1.0 %	2.6 %	2.3 %	
Intensity average	6,286,813 cps	1,583,514 cps	243,682 cps	3,914,463 cps	2,008,602 cps	865,448 cps	146,786 cps	690,661 cps	365 cps
Intensity per Run 1	6,094,355.6 cps	1,534,851.3 cps	238,214.4 cps	3,831,735.5 cps	1,944,875.1 cps	839,076.2 cps	142,658.3 cps	667,541.7 cps	394.0 cps
Intensity per Run 2	6,429,178.3 cps	1,603,084.6 cps	243,792.0 cps	3,975,196.4 cps	2,051,317.5 cps	873,876.5 cps	146,178.2 cps	695,656.8 cps	373.0 cps
Intensity per Run 3	6,336,905.1 cps	1,612,606.6 cps	249,038.9 cps	3,936,457.5 cps	2,029,612.3 cps	883,391.3 cps	151,521.5 cps	708,784.5 cps	329.0 cps
Intensity RSD	2.8 %	2.7 %	2.2 %	1.9 %	2.8 %	2.7 %	3.0 %	3.1 %	9.1 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	149.456 ppb	N/A	152.903 ppb			147.192 ppb		89.024 %	145.230 ppb
Concentration per Run 1	147.340 ppb	N/A	149.666 ppb			145.209 ppb		87.583 %	142.778 ppb
Concentration per Run 2	149.204 ppb	N/A	153.659 ppb			147.568 ppb		89.146 %	145.704 ppb
Concentration per Run 3	151.824 ppb	N/A	155.385 ppb			148.797 ppb		90.343 %	147.207 ppb
Recovery Percentage 1	99.637 %	0.000 %				98.128 %			
Concentration RSD	1.5 %	N/A	1.9 %			1.2 %		1.6 %	1.6 %
Intensity average	438,666 cps	13,551 cps	47,887 cps	9,898 cps	29,446 cps	23,857 cps	5,335 cps	520,595 cps	1,451,135 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Intensity per Run 1	423,340.3 cps	12,996.8 cps	46,216.1 cps	9,628.7 cps	28,913.4 cps	23,030.7 cps	5,480.2 cps	512,168.5 cps	1,401,990.8 cps
Intensity per Run 2	442,393.0 cps	13,507.3 cps	48,355.3 cps	10,135.1 cps	29,652.2 cps	24,162.6 cps	5,150.1 cps	521,306.9 cps	1,460,121.7 cps
Intensity per Run 3	450,266.2 cps	14,148.1 cps	49,090.3 cps	9,928.9 cps	29,772.5 cps	24,376.6 cps	5,374.2 cps	528,311.1 cps	1,491,293.0 cps
Intensity RSD	3.2 %	4.3 %	3.1 %	2.6 %	1.6 %	3.0 %	3.2 %	1.6 %	3.1 %

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	147.092 ppb	146.298 ppb	142.811 ppb	145.304 ppb	0.017 ppm		150.455 ppb	28.861 ppb	151.159 ppb
Concentration per Run 1	142.865 ppb	142.784 ppb	139.660 ppb	144.318 ppb	0.017 ppm		149.956 ppb	28.546 ppb	148.174 ppb
Concentration per Run 2	148.342 ppb	146.397 ppb	141.483 ppb	143.769 ppb	0.017 ppm		152.109 ppb	29.064 ppb	152.213 ppb
Concentration per Run 3	150.069 ppb	149.712 ppb	147.290 ppb	147.825 ppb	0.017 ppm		149.299 ppb	28.972 ppb	153.091 ppb
Recovery Percentage 1			95.207 %		0.000 %			96.202 %	
Concentration RSD	2.6 %	2.4 %	2.8 %	1.5 %	0.6 %		1.0 %	1.0 %	1.7 %
Intensity average	2,666,667 cps	2,925,191 cps	1,707,360 cps	4,611,582 cps	1,543,339 cps	813 cps	140,469 cps	2,045,735 cps	108,596 cps
Intensity per Run 1	2,544,542.2 cps	2,804,314.5 cps	1,639,753.9 cps	4,498,025.8 cps	1,536,682.5 cps	764.0 cps	137,290.3 cps	1,980,620.1 cps	104,330.0 cps
Intensity per Run 2	2,697,814.0 cps	2,937,486.4 cps	1,698,004.8 cps	4,582,747.4 cps	1,539,689.4 cps	792.0 cps	143,035.0 cps	2,081,207.0 cps	110,196.1 cps
Intensity per Run 3	2,757,644.2 cps	3,033,771.4 cps	1,784,321.6 cps	4,753,973.9 cps	1,553,645.9 cps	884.0 cps	141,080.3 cps	2,075,377.1 cps	111,261.7 cps
Intensity RSD	4.1 %	3.9 %	4.3 %	2.8 %	0.6 %	7.7 %	2.1 %	2.8 %	3.4 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	28.318 ppb	151.308 ppb	149.614 ppb	88.437 %	152.064 ppb	145.344 ppb	146.083 ppb	147.460 ppb	150.267 ppb
Concentration per Run 1	27.969 ppb	150.674 ppb	147.207 ppb	86.576 %	152.526 ppb	140.938 ppb	139.671 ppb	146.266 ppb	147.642 ppb
Concentration per Run 2	28.338 ppb	151.813 ppb	150.667 ppb	89.352 %	152.259 ppb	145.432 ppb	147.670 ppb	147.447 ppb	152.147 ppb
Concentration per Run 3	28.648 ppb	151.436 ppb	150.968 ppb	89.385 %	151.406 ppb	149.664 ppb	150.908 ppb	148.669 ppb	151.011 ppb
Recovery Percentage 1			99.743 %		101.376 %	96.896 %		98.307 %	
Concentration RSD	1.2 %	0.4 %	1.4 %	1.8 %	0.4 %	3.0 %	4.0 %	0.8 %	1.6 %
Intensity average	1,982,035 cps	1,760,744 cps	4,299,707 cps	791,763 cps	3,599,023 cps	3,619,386 cps	2,913,540 cps	873,458 cps	1,624,305 cps
Intensity per Run 1	1,918,368.7 cps	1,717,710.0 cps	4,140,787.9 cps	775,096.9 cps	3,538,207.7 cps	3,442,775.0 cps	2,734,380.7 cps	854,602.1 cps	1,575,342.8 cps
Intensity per Run 2	1,999,529.2 cps	1,782,365.5 cps	4,373,984.9 cps	799,948.6 cps	3,638,401.1 cps	3,652,717.1 cps	2,968,794.6 cps	878,197.0 cps	1,652,845.2 cps
Intensity per Run 3	2,028,207.6 cps	1,782,156.0 cps	4,384,347.1 cps	800,244.4 cps	3,620,459.4 cps	3,762,665.2 cps	3,037,446.0 cps	887,576.2 cps	1,644,727.2 cps
Intensity RSD	2.9 %	2.1 %	3.2 %	1.8 %	1.5 %	4.5 %	5.5 %	1.9 %	2.6 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			91.418 %			0.013 ppm	148.472 ppb	147.766 ppb	148.458 ppb
Concentration per Run 1			90.978 %			0.013 ppm	146.076 ppb	144.842 ppb	145.823 ppb
Concentration per Run 2			91.422 %			0.013 ppm	148.948 ppb	148.462 ppb	148.608 ppb
Concentration per Run 3			91.854 %			0.013 ppm	150.393 ppb	149.996 ppb	150.943 ppb
Recovery Percentage 1						0.000 %		98.511 %	
Concentration RSD			0.5 %			0.4 %	1.5 %	1.8 %	1.7 %
Intensity average	56 cps	19 cps	2,873,533 cps	53 cps	23 cps	3,042,296 cps	12,280,309 cps	29,618,064 cps	9,791,263 cps
Intensity per Run 1	44.0 cps	24.0 cps	2,859,696.1 cps	32.0 cps	24.0 cps	3,035,428.6 cps	12,006,223.5 cps	28,843,481.6 cps	9,556,042.1 cps
Intensity per Run 2	80.0 cps	20.0 cps	2,873,663.0 cps	68.0 cps	20.0 cps	3,055,871.9 cps	12,329,029.5 cps	29,782,895.1 cps	9,809,054.0 cps
Intensity per Run 3	44.0 cps	12.0 cps	2,887,240.9 cps	60.0 cps	24.0 cps	3,035,586.8 cps	12,505,674.4 cps	30,227,813.8 cps	10,008,693.2 cps
Intensity RSD	37.1 %	32.7 %	0.5 %	35.4 %	10.2 %	0.4 %	2.1 %	2.4 %	2.3 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	149.101 ppb	147.336 ppb	89.939 %
Concentration per Run 1	145.109 ppb	145.047 ppb	89.362 %
Concentration per Run 2	152.589 ppb	148.647 ppb	90.023 %
Concentration per Run 3	149.606 ppb	148.313 ppb	90.433 %
Recovery Percentage 1		98.224 %	
Concentration RSD	2.5 %	1.3 %	0.6 %
Intensity average	8,636,290 cps	39,247,634 cps	2,305,080 cps
Intensity per Run 1	8,351,082.8 cps	38,388,235.1 cps	2,290,284.4 cps
Intensity per Run 2	8,845,542.3 cps	39,631,663.5 cps	2,307,220.6 cps
Intensity per Run 3	8,712,245.6 cps	39,723,004.6 cps	2,317,735.9 cps
Intensity RSD	3.0 %	1.9 %	0.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 18:21:23 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.038 %	90.917 %	0.017 ppb	0.330 ppb	0.315 ppb	N/A	6.512 ppb	1.235 ppb	0.632 ppb	1.088 ppb
Concentration per Run 1	91.199 %	88.451 %	0.021 ppb	0.487 ppb	0.352 ppb	N/A	7.659 ppb	1.633 ppb	0.796 ppb	1.987 ppb
Concentration per Run 2	92.425 %	92.672 %	0.015 ppb	0.168 ppb	0.373 ppb	N/A	5.946 ppb	1.121 ppb	0.608 ppb	0.705 ppb
Concentration per Run 3	92.490 %	91.626 %	0.016 ppb	0.333 ppb	0.219 ppb	N/A	5.931 ppb	0.952 ppb	0.492 ppb	0.572 ppb
Recovery Percentage 1			1.726 %	0.033 %			1.302 %			0.218 %
Concentration RSD	0.8 %	2.4 %	17.2 %	48.5 %	26.5 %	N/A	15.3 %	28.7 %	24.2 %	71.8 %
Intensity average	12,871,816 cps	29,273 cps	6 cps	8 cps	43 cps	1,993 cps	25,960 cps	2,790 cps	537 cps	773 cps
Intensity per Run 1	12,754,520.9 cps	28,479.4 cps	6.0 cps	10.5 cps	45.0 cps	1,950.2 cps	27,269.8 cps	3,030.4 cps	550.0 cps	950.0 cps
Intensity per Run 2	12,925,928.8 cps	29,838.6 cps	5.5 cps	6.0 cps	49.0 cps	2,010.2 cps	25,345.8 cps	2,740.3 cps	540.0 cps	700.0 cps
Intensity per Run 3	12,934,997.9 cps	29,501.8 cps	5.5 cps	8.5 cps	34.5 cps	2,020.2 cps	25,265.6 cps	2,600.3 cps	520.0 cps	670.0 cps
Intensity RSD	0.8 %	2.4 %	5.1 %	27.1 %	17.5 %	1.9 %	4.4 %	7.9 %	2.8 %	19.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	1.259 ppb		0.004 ppm	6.363 ppb	15.051 ppb	10.811 ppb	16.154 ppb	88.106 %	86.557 %	0.037 ppb
Concentration per Run 1	1.647 ppb		0.005 ppm	8.151 ppb	4.359 ppb	10.581 ppb	16.902 ppb	87.397 %	84.557 %	0.059 ppb
Concentration per Run 2	1.634 ppb		0.004 ppm	5.529 ppb	17.768 ppb	11.541 ppb	13.570 ppb	87.960 %	87.103 %	0.021 ppb
Concentration per Run 3	0.497 ppb		0.004 ppm	5.408 ppb	23.025 ppb	10.312 ppb	17.989 ppb	88.961 %	88.011 %	0.032 ppb
Recovery Percentage 1	6.296 %			1.273 %			1.615 %			0.372 %
Concentration RSD	52.4 %		4.0 %	24.4 %	63.9 %	6.0 %	14.3 %	0.9 %	2.1 %	52.4 %
Intensity average	787 cps	2,354 cps	25,941 cps	23,592 cps	120 cps	85,660 cps	1,320 cps	6,064,331 cps	254,117 cps	13 cps
Intensity per Run 1	870.0 cps	2,410.3 cps	26,458.4 cps	24,323.7 cps	80.0 cps	84,434.8 cps	1,320.1 cps	6,015,544.7 cps	248,244.8 cps	20.0 cps
Intensity per Run 2	900.0 cps	2,320.2 cps	25,907.1 cps	23,191.7 cps	130.0 cps	87,243.8 cps	1,220.1 cps	6,054,282.4 cps	255,720.7 cps	8.0 cps
Intensity per Run 3	590.0 cps	2,330.2 cps	25,456.1 cps	23,261.7 cps	150.0 cps	85,300.8 cps	1,420.1 cps	6,123,164.6 cps	258,386.0 cps	12.0 cps
Intensity RSD	21.7 %	2.1 %	1.9 %	2.7 %	30.0 %	1.7 %	7.6 %	0.9 %	2.1 %	45.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.113 ppb	-0.077 ppb	-0.397 ppb	N/A	0.539 ppb	-0.440 ppb	-0.381 ppb	0.005 ppb	-0.306 ppb	-0.333 ppb
Concentration per Run 1	-0.114 ppb	-0.084 ppb	-0.389 ppb	N/A	0.574 ppb	-0.144 ppb	-0.205 ppb	0.007 ppb	-0.238 ppb	-0.285 ppb
Concentration per Run 2	-0.112 ppb	-0.081 ppb	-0.403 ppb	N/A	0.545 ppb	-0.491 ppb	-0.498 ppb	0.004 ppb	-0.324 ppb	-0.428 ppb
Concentration per Run 3	-0.113 ppb	-0.065 ppb	-0.398 ppb	N/A	0.498 ppb	-0.686 ppb	-0.440 ppb	0.002 ppb	-0.356 ppb	-0.285 ppb
Recovery Percentage 1	-2.263 %	-3.841 %			53.911 %		-0.190 %	0.453 %	-30.600 %	
Concentration RSD	0.7 %	12.9 %	1.8 %	N/A	7.1 %	62.3 %	40.8 %	55.6 %	20.0 %	24.9 %
Intensity average	168 cps	837 cps	165 cps	170 cps	9,329 cps	27,111 cps	795 cps	423 cps	6,610 cps	993 cps
Intensity per Run 1	156.4 cps	696.0 cps	180.0 cps	240.0 cps	9,559.7 cps	31,761.5 cps	884.0 cps	528.0 cps	7,074.0 cps	1,040.0 cps
Intensity per Run 2	178.8 cps	756.0 cps	152.0 cps	90.0 cps	9,507.6 cps	26,508.6 cps	728.0 cps	408.0 cps	6,557.7 cps	852.0 cps
Intensity per Run 3	167.7 cps	1,060.1 cps	164.0 cps	180.0 cps	8,919.2 cps	23,062.0 cps	772.0 cps	332.0 cps	6,197.5 cps	1,088.0 cps
Intensity RSD	6.7 %	23.3 %	8.5 %	44.4 %	3.8 %	16.2 %	10.1 %	23.4 %	6.7 %	12.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.023 ppb	-0.010 ppb	-0.542 ppb	-0.329 ppb	-0.305 ppb		-0.145 ppb	N/A	0.089 ppb	
Concentration per Run 1	-0.010 ppb	0.006 ppb	-0.473 ppb	-0.236 ppb	-0.218 ppb		-0.159 ppb	N/A	0.130 ppb	
Concentration per Run 2	-0.023 ppb	-0.006 ppb	-0.560 ppb	-0.278 ppb	-0.293 ppb		-0.022 ppb	N/A	0.052 ppb	
Concentration per Run 3	-0.036 ppb	-0.030 ppb	-0.594 ppb	-0.473 ppb	-0.405 ppb		-0.254 ppb	N/A	0.084 ppb	
Recovery Percentage 1		-0.513 %	-27.118 %				-14.511 %			
Concentration RSD	55.8 %	178.9 %	11.5 %	38.5 %	30.9 %		80.4 %	N/A	44.2 %	
Intensity average	3,039 cps	1,559 cps	10,766 cps	1,637 cps	8,351 cps	9 cps	3,285 cps	63 cps	9 cps	2,366 cps
Intensity per Run 1	3,284.4 cps	1,736.1 cps	10,808.7 cps	1,676.1 cps	8,494.9 cps	11.0 cps	3,135.6 cps	90.0 cps	21.2 cps	2,317.2 cps
Intensity per Run 2	3,080.4 cps	1,624.1 cps	10,844.7 cps	1,708.1 cps	8,518.9 cps	7.0 cps	3,719.1 cps	40.0 cps	-2.7 cps	2,356.2 cps
Intensity per Run 3	2,752.3 cps	1,316.1 cps	10,644.5 cps	1,528.1 cps	8,038.6 cps	10.0 cps	3,001.1 cps	60.0 cps	7.4 cps	2,424.2 cps
Intensity RSD	8.8 %	14.0 %	1.0 %	5.9 %	3.2 %	22.3 %	11.6 %	39.7 %	138.9 %	2.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.333 ppb		88.741 %	0.232 ppb	0.219 ppb	0.223 ppb	0.227 ppb	0.216 ppb	0.018 ppm
Concentration per Run 1		0.909 ppb		85.631 %	0.254 ppb	0.238 ppb	0.250 ppb	0.235 ppb	0.226 ppb	0.018 ppm
Concentration per Run 2		-0.275 ppb		90.397 %	0.215 ppb	0.202 ppb	0.200 ppb	0.217 ppb	0.208 ppb	0.018 ppm
Concentration per Run 3		0.365 ppb		90.194 %	0.228 ppb	0.218 ppb	0.218 ppb	0.228 ppb	0.214 ppb	0.019 ppm
Recovery Percentage 1		6.659 %						2.268 %		
Concentration RSD		178.1 %		3.0 %	8.4 %	8.2 %	11.2 %	4.0 %	4.0 %	2.2 %
Intensity average	5,064 cps	-410 cps	5,346 cps	518,939 cps	2,622 cps	4,347 cps	4,901 cps	2,976 cps	7,478 cps	1,634,444 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,818.9 cps	-298.8 cps	5,021.0 cps	500,753.6 cps	2,740.3 cps	4,532.8 cps	5,269.1 cps	2,976.4 cps	7,526.3 cps	1,598,490.5 cps
Intensity per Run 2	5,706.3 cps	-522.3 cps	6,100.5 cps	528,624.4 cps	2,496.3 cps	4,108.7 cps	4,540.8 cps	2,916.3 cps	7,374.2 cps	1,635,836.0 cps
Intensity per Run 3	4,667.9 cps	-409.9 cps	4,917.0 cps	527,439.9 cps	2,628.3 cps	4,400.8 cps	4,893.0 cps	3,036.4 cps	7,534.3 cps	1,669,006.3 cps
Intensity RSD	11.1 %	27.2 %	12.3 %	3.0 %	4.7 %	5.0 %	7.4 %	2.0 %	1.2 %	2.2 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.010 ppb	0.001 ppb	0.002 ppb	0.001 ppb	0.006 ppb	0.005 ppb	92.686 %	0.016 ppb	0.805 ppb
Concentration per Run 1		0.001 ppb	0.001 ppb	0.004 ppb	0.001 ppb	0.008 ppb	0.007 ppb	89.627 %	0.038 ppb	0.774 ppb
Concentration per Run 2		-0.016 ppb	0.002 ppb	-0.002 ppb	0.001 ppb	0.006 ppb	0.004 ppb	94.189 %	0.011 ppb	0.827 ppb
Concentration per Run 3		0.045 ppb	0.000 ppb	0.004 ppb	0.001 ppb	0.005 ppb	0.003 ppb	94.242 %	0.000 ppb	0.813 ppb
Recovery Percentage 1			0.090 %				0.467 %			40.228 %
Concentration RSD		317.4 %	85.6 %	158.6 %	19.6 %	22.5 %	51.6 %	2.9 %	116.2 %	3.4 %
Intensity average	560 cps	100 cps	155 cps	3 cps	147 cps	84 cps	179 cps	829,801 cps	1,121 cps	21,259 cps
Intensity per Run 1	544.0 cps	88.0 cps	148.0 cps	4.0 cps	152.0 cps	100.0 cps	253.1 cps	802,411.1 cps	1,600.1 cps	19,795.8 cps
Intensity per Run 2	588.0 cps	76.0 cps	216.0 cps	0.0 cps	156.0 cps	80.0 cps	160.6 cps	843,258.1 cps	1,020.0 cps	22,151.6 cps
Intensity per Run 3	548.0 cps	136.0 cps	100.0 cps	4.0 cps	132.0 cps	72.0 cps	124.0 cps	843,734.9 cps	744.0 cps	21,831.1 cps
Intensity RSD	4.3 %	31.7 %	37.7 %	86.6 %	8.8 %	17.2 %	37.1 %	2.9 %	39.0 %	6.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.808 ppb	0.008 ppb	0.005 ppb			93.321 %			0.013 ppm	0.001 ppb
Concentration per Run 1	0.781 ppb	0.014 ppb	0.006 ppb			90.932 %			0.013 ppm	0.002 ppb
Concentration per Run 2	0.822 ppb	0.006 ppb	0.005 ppb			94.211 %			0.013 ppm	0.000 ppb
Concentration per Run 3	0.822 ppb	0.004 ppb	0.004 ppb			94.821 %			0.014 ppm	-0.001 ppb
Recovery Percentage 1		0.076 %							1.330 %	
Concentration RSD	2.9 %	70.1 %	21.3 %			2.2 %			2.4 %	286.8 %
Intensity average	17,086 cps	197 cps	317 cps	19 cps	17 cps	2,933,356 cps	63 cps	29 cps	3,013,285 cps	1,133 cps
Intensity per Run 1	15,990.3 cps	228.0 cps	320.0 cps	20.0 cps	12.0 cps	2,858,256.6 cps	68.0 cps	36.0 cps	2,931,828.3 cps	1,250.1 cps
Intensity per Run 2	17,616.4 cps	188.0 cps	320.0 cps	16.0 cps	12.0 cps	2,961,316.1 cps	72.0 cps	28.0 cps	3,045,907.3 cps	1,133.1 cps
Intensity per Run 3	17,652.5 cps	176.0 cps	312.0 cps	20.0 cps	28.0 cps	2,980,496.3 cps	48.0 cps	24.0 cps	3,062,119.5 cps	1,015.0 cps
Intensity RSD	5.6 %	13.8 %	1.5 %	12.4 %	53.3 %	2.2 %	20.5 %	20.8 %	2.4 %	10.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.001 ppb	0.008 ppb	0.009 ppb	0.008 ppb	94.894 %
Concentration per Run 1	0.003 ppb	0.011 ppb	0.012 ppb	0.011 ppb	93.011 %
Concentration per Run 2	0.000 ppb	0.008 ppb	0.008 ppb	0.007 ppb	95.524 %
Concentration per Run 3	-0.001 ppb	0.005 ppb	0.006 ppb	0.006 ppb	96.149 %
Recovery Percentage 1	0.174 %			0.792 %	
Concentration RSD	206.9 %	38.1 %	37.8 %	31.9 %	1.8 %
Intensity average	2,797 cps	1,278 cps	1,148 cps	5,106 cps	2,432,081 cps
Intensity per Run 1	3,164.4 cps	1,475.1 cps	1,344.1 cps	5,763.5 cps	2,383,803.7 cps
Intensity per Run 2	2,696.3 cps	1,264.1 cps	1,100.1 cps	5,016.4 cps	2,448,208.5 cps
Intensity per Run 3	2,530.3 cps	1,095.0 cps	1,000.0 cps	4,539.3 cps	2,464,229.9 cps
Intensity RSD	11.8 %	14.9 %	15.4 %	12.1 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ23077-001 Analysis: 10/30/2019 18:27:28 Sample Type UNKNOWN
Comment Carolina Polymers Pipe 001 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	85.270 %	86.590 %	0.020 ppb	837.717 ppb	836.336 ppb	N/A	99,721.811 ppb	14,025.903 ppb	14,037.477 ppb
Concentration per Run 1	84.696 %	86.292 %	0.004 ppb	812.511 ppb	823.871 ppb	N/A	97,875.002 ppb	13,764.445 ppb	13,917.830 ppb
Concentration per Run 2	85.453 %	86.499 %	0.040 ppb	846.572 ppb	847.381 ppb	N/A	101,216.126 ppb	14,180.302 ppb	14,333.206 ppb
Concentration per Run 3	85.661 %	86.979 %	0.018 ppb	854.069 ppb	837.756 ppb	N/A	100,074.304 ppb	14,132.963 ppb	13,861.394 ppb
Concentration RSD	0.6 %	0.4 %	89.9 %	2.6 %	1.4 %	N/A	1.7 %	1.6 %	1.8 %
Intensity average	11,925,294 cps	27,880 cps	6 cps	12,239 cps	72,327 cps	5,935 cps	165,995,142 cps	10,634,592 cps	2,235,860 cps
Intensity per Run 1	11,844,989.4 cps	27,784.4 cps	3.5 cps	11,831.1 cps	71,013.8 cps	5,281.1 cps	162,441,991.2 cps	10,405,993.2 cps	2,210,459.1 cps
Intensity per Run 2	11,950,913.6 cps	27,851.0 cps	8.5 cps	12,360.6 cps	73,245.5 cps	6,321.6 cps	168,630,326.2 cps	10,762,318.3 cps	2,285,529.4 cps
Intensity per Run 3	11,979,979.1 cps	28,005.3 cps	5.5 cps	12,526.3 cps	72,721.5 cps	6,201.6 cps	166,913,107.3 cps	10,735,464.2 cps	2,211,590.5 cps
Intensity RSD	0.6 %	0.4 %	43.1 %	3.0 %	1.6 %	9.6 %	1.9 %	1.9 %	1.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	13,759.702 ppb	95.061 ppb		1.148 ppm	33,542.549 ppb	80,280.457 ppb	82,994.994 ppb	78,474.207 ppb	88.450 %
Concentration per Run 1	13,348.175 ppb	95.279 ppb		1.109 ppm	33,080.426 ppb	78,652.621 ppb	83,600.198 ppb	77,514.967 ppb	86.322 %
Concentration per Run 2	14,197.002 ppb	93.403 ppb		1.165 ppm	33,877.128 ppb	81,408.545 ppb	82,368.093 ppb	78,825.668 ppb	89.748 %
Concentration per Run 3	13,733.930 ppb	96.499 ppb		1.169 ppm	33,670.093 ppb	80,780.205 ppb	83,016.690 ppb	79,081.985 ppb	89.281 %
Concentration RSD	3.1 %	1.6 %		2.9 %	1.2 %	1.8 %	0.7 %	1.1 %	2.1 %
Intensity average	2,914,060 cps	24,968 cps	154,282 cps	6,575,814 cps	23,598,942 cps	272,044 cps	195,016,736 cps	3,163,664 cps	6,088,042 cps
Intensity per Run 1	2,818,827.3 cps	24,955.0 cps	148,833.1 cps	6,338,832.1 cps	23,217,526.3 cps	265,914.0 cps	191,813,733.9 cps	3,117,941.5 cps	5,941,547.5 cps
Intensity per Run 2	3,010,304.8 cps	24,574.3 cps	155,058.0 cps	6,690,329.9 cps	23,900,398.3 cps	276,763.8 cps	196,342,520.1 cps	3,188,612.3 cps	6,177,383.8 cps
Intensity per Run 3	2,913,048.5 cps	25,375.9 cps	158,956.1 cps	6,698,280.2 cps	23,678,902.6 cps	273,455.0 cps	196,893,954.2 cps	3,184,439.3 cps	6,145,193.3 cps
Intensity RSD	3.3 %	1.6 %	3.3 %	3.1 %	1.5 %	2.0 %	1.4 %	1.3 %	2.1 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	83.380 %	1.071 ppb	0.265 ppb	1.185 ppb	1.244 ppb	N/A	15.627 ppb	154.375 ppb	159.053 ppb
Concentration per Run 1	83.196 %	1.007 ppb	0.244 ppb	1.162 ppb	1.151 ppb	N/A	15.192 ppb	151.983 ppb	154.568 ppb
Concentration per Run 2	83.674 %	1.138 ppb	0.277 ppb	1.182 ppb	1.244 ppb	N/A	15.648 ppb	151.533 ppb	161.047 ppb
Concentration per Run 3	83.271 %	1.068 ppb	0.275 ppb	1.209 ppb	1.336 ppb	N/A	16.039 ppb	159.609 ppb	161.544 ppb
Concentration RSD	0.3 %	6.2 %	6.8 %	2.0 %	7.5 %	N/A	2.7 %	2.9 %	2.4 %
Intensity average	244,790 cps	341 cps	4,386 cps	22,901 cps	4,093 cps	3,917 cps	209,437 cps	2,766,530 cps	95,865 cps
Intensity per Run 1	244,248.0 cps	320.0 cps	4,143.4 cps	22,464.2 cps	3,852.6 cps	3,980.7 cps	202,665.6 cps	2,710,175.5 cps	92,981.1 cps
Intensity per Run 2	245,653.3 cps	364.0 cps	4,526.3 cps	22,933.1 cps	4,108.7 cps	3,860.6 cps	210,534.9 cps	2,726,952.6 cps	97,394.2 cps
Intensity per Run 3	244,469.3 cps	340.0 cps	4,488.1 cps	23,305.7 cps	4,316.8 cps	3,910.6 cps	215,111.9 cps	2,862,460.6 cps	97,220.9 cps
Intensity RSD	0.3 %	6.5 %	4.8 %	1.8 %	5.7 %	1.5 %	3.0 %	3.0 %	2.6 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.320 ppb	4.094 ppb	4.025 ppb	76.060 ppb	73.373 ppb	95.272 ppb	92.842 ppb	92.743 ppb	
Concentration per Run 1	0.317 ppb	4.061 ppb	3.942 ppb	75.557 ppb	71.393 ppb	92.990 ppb	92.484 ppb	90.560 ppb	
Concentration per Run 2	0.319 ppb	4.064 ppb	3.923 ppb	75.748 ppb	73.736 ppb	97.153 ppb	92.979 ppb	92.868 ppb	
Concentration per Run 3	0.325 ppb	4.158 ppb	4.210 ppb	76.875 ppb	74.989 ppb	95.674 ppb	93.064 ppb	94.800 ppb	
Concentration RSD	1.4 %	1.4 %	4.0 %	0.9 %	2.5 %	2.2 %	0.3 %	2.3 %	
Intensity average	13,463 cps	50,818 cps	7,644 cps	1,914,734 cps	946,761 cps	523,245 cps	86,269 cps	413,012 cps	847 cps
Intensity per Run 1	13,279.1 cps	49,791.1 cps	7,466.2 cps	1,888,807.9 cps	919,203.9 cps	513,232.9 cps	85,253.9 cps	400,144.1 cps	798.0 cps
Intensity per Run 2	13,463.3 cps	50,771.1 cps	7,518.3 cps	1,914,955.4 cps	954,782.1 cps	523,663.8 cps	86,772.5 cps	415,354.4 cps	875.0 cps
Intensity per Run 3	13,647.5 cps	51,891.6 cps	7,946.5 cps	1,940,440.0 cps	966,297.5 cps	532,838.8 cps	86,780.5 cps	423,537.7 cps	869.0 cps
Intensity RSD	1.4 %	2.1 %	3.4 %	1.3 %	2.6 %	1.9 %	1.0 %	2.9 %	5.1 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	1.162 ppb	N/A	0.628 ppb			5.705 ppb		86.069 %	853.969 ppb
Concentration per Run 1	0.983 ppb	N/A	0.670 ppb			5.150 ppb		84.898 %	837.028 ppb
Concentration per Run 2	1.435 ppb	N/A	0.551 ppb			5.174 ppb		86.521 %	862.999 ppb
Concentration per Run 3	1.068 ppb	N/A	0.663 ppb			6.792 ppb		86.789 %	861.880 ppb
Concentration RSD	20.7 %	N/A	10.6 %			16.5 %		1.2 %	1.7 %
Intensity average	6,672 cps	137 cps	172 cps	993,807 cps	5,443 cps	479 cps	4,913 cps	503,316 cps	8,240,865 cps
Intensity per Run 1	6,203.3 cps	160.0 cps	183.4 cps	957,657.2 cps	4,924.0 cps	391.7 cps	4,423.8 cps	496,464.7 cps	7,994,066.0 cps
Intensity per Run 2	7,309.5 cps	110.0 cps	149.8 cps	1,006,073.3 cps	6,381.6 cps	386.7 cps	5,919.4 cps	505,960.7 cps	8,333,646.2 cps
Intensity per Run 3	6,504.4 cps	140.0 cps	184.2 cps	1,017,691.8 cps	5,024.0 cps	660.0 cps	4,395.8 cps	507,522.8 cps	8,394,881.4 cps
Intensity RSD	8.6 %	18.4 %	11.4 %	3.2 %	15.0 %	32.6 %	17.7 %	1.2 %	2.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	851.057 ppb	848.435 ppb	846.632 ppb	845.869 ppb	0.016 ppm		0.099 ppb	0.017 ppb	4.331 ppb
Concentration per Run 1	830.098 ppb	826.607 ppb	828.414 ppb	827.373 ppb	0.016 ppm		0.107 ppb	0.017 ppb	4.272 ppb
Concentration per Run 2	860.920 ppb	864.549 ppb	860.716 ppb	852.605 ppb	0.016 ppm		0.077 ppb	0.019 ppb	4.127 ppb
Concentration per Run 3	862.153 ppb	854.148 ppb	850.768 ppb	857.630 ppb	0.016 ppm		0.113 ppb	0.017 ppb	4.593 ppb
Concentration RSD	2.1 %	2.3 %	2.0 %	1.9 %	0.5 %		19.4 %	5.3 %	5.5 %
Intensity average	14,898,078 cps	16,377,516 cps	9,769,731 cps	25,912,945 cps	1,458,584 cps	808 cps	173 cps	1,273 cps	3,000 cps
Intensity per Run 1	14,390,903.0 cps	15,813,446.1 cps	9,480,771.2 cps	25,154,122.2 cps	1,461,993.7 cps	812.0 cps	180.0 cps	1,260.1 cps	2,956.4 cps
Intensity per Run 2	15,067,106.4 cps	16,670,048.5 cps	9,912,544.6 cps	26,043,192.3 cps	1,463,194.7 cps	792.0 cps	152.0 cps	1,320.1 cps	2,824.3 cps
Intensity per Run 3	15,236,225.7 cps	16,649,054.0 cps	9,915,877.7 cps	26,541,521.8 cps	1,450,563.9 cps	820.0 cps	188.0 cps	1,240.1 cps	3,220.4 cps
Intensity RSD	3.0 %	3.0 %	2.6 %	2.7 %	0.5 %	1.8 %	10.9 %	3.3 %	6.7 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.019 ppb	0.416 ppb	0.333 ppb	85.128 %	0.600 ppb	0.715 ppb	0.733 ppb	73.107 ppb	73.382 ppb
Concentration per Run 1	0.019 ppb	0.420 ppb	0.326 ppb	85.486 %	0.572 ppb	0.658 ppb	0.685 ppb	70.935 ppb	71.057 ppb
Concentration per Run 2	0.020 ppb	0.435 ppb	0.344 ppb	83.576 %	0.618 ppb	0.733 ppb	0.749 ppb	74.511 ppb	74.538 ppb
Concentration per Run 3	0.019 ppb	0.393 ppb	0.329 ppb	86.322 %	0.609 ppb	0.754 ppb	0.765 ppb	73.874 ppb	74.552 ppb
Concentration RSD	1.3 %	5.1 %	2.8 %	1.7 %	4.1 %	7.1 %	5.8 %	2.6 %	2.7 %
Intensity average	1,371 cps	4,670 cps	9,244 cps	762,135 cps	14,352 cps	17,524 cps	14,403 cps	423,390 cps	776,706 cps
Intensity per Run 1	1,360.1 cps	4,724.9 cps	9,102.1 cps	765,338.2 cps	13,767.6 cps	16,194.5 cps	13,507.3 cps	410,412.9 cps	750,969.2 cps
Intensity per Run 2	1,372.1 cps	4,812.9 cps	9,365.6 cps	748,237.4 cps	14,540.5 cps	17,688.5 cps	14,516.4 cps	428,838.8 cps	784,920.3 cps
Intensity per Run 3	1,380.1 cps	4,472.8 cps	9,263.9 cps	772,829.3 cps	14,748.7 cps	18,690.0 cps	15,185.2 cps	430,917.9 cps	794,227.9 cps
Intensity RSD	0.7 %	3.8 %	1.4 %	1.7 %	3.6 %	7.2 %	5.9 %	2.7 %	2.9 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			90.969 %			0.013 ppm	0.059 ppb	0.061 ppb	0.273 ppb
Concentration per Run 1			90.349 %			0.013 ppm	0.058 ppb	0.060 ppb	0.274 ppb
Concentration per Run 2			91.631 %			0.013 ppm	0.060 ppb	0.063 ppb	0.272 ppb
Concentration per Run 3			90.927 %			0.013 ppm	0.060 ppb	0.061 ppb	0.273 ppb
Concentration RSD			0.7 %			1.3 %	2.1 %	2.6 %	0.4 %
Intensity average	281 cps	4,035 cps	2,859,424 cps	4,510 cps	453 cps	2,989,283 cps	5,626 cps	13,876 cps	17,659 cps
Intensity per Run 1	316.0 cps	3,792.6 cps	2,839,932.3 cps	4,304.7 cps	484.0 cps	2,947,407.9 cps	5,441.2 cps	13,391.2 cps	17,468.2 cps
Intensity per Run 2	244.0 cps	4,156.7 cps	2,880,238.0 cps	4,684.9 cps	460.0 cps	2,998,140.4 cps	5,726.3 cps	14,256.1 cps	17,691.5 cps
Intensity per Run 3	284.0 cps	4,156.7 cps	2,858,101.0 cps	4,540.8 cps	416.0 cps	3,022,300.6 cps	5,709.3 cps	13,980.8 cps	17,817.7 cps
Intensity RSD	12.8 %	5.2 %	0.7 %	4.3 %	7.6 %	1.3 %	2.8 %	3.2 %	1.0 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.260 ppb	0.263 ppb	84.661 %
Concentration per Run 1	0.258 ppb	0.263 ppb	83.469 %
Concentration per Run 2	0.260 ppb	0.264 ppb	85.128 %
Concentration per Run 3	0.261 ppb	0.262 ppb	85.385 %
Concentration RSD	0.5 %	0.4 %	1.2 %
Intensity average	14,743 cps	68,592 cps	2,169,802 cps
Intensity per Run 1	14,464.4 cps	67,551.4 cps	2,139,265.5 cps
Intensity per Run 2	14,848.8 cps	69,258.4 cps	2,181,765.7 cps
Intensity per Run 3	14,916.9 cps	68,967.2 cps	2,188,374.5 cps
Intensity RSD	1.7 %	1.3 %	1.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UQ33748-001 Analysis: 10/30/2019 18:33:33 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	99.113 %	100.365 %	-0.005 ppb	1.699 ppb	1.668 ppb	N/A	2.723 ppb	0.335 ppb	0.080 ppb	0.007 ppb
Concentration per Run 1	98.573 %	101.725 %	-0.013 ppb	1.716 ppb	1.878 ppb	N/A	1.238 ppb	0.040 ppb	-0.296 ppb	-0.277 ppb
Concentration per Run 2	99.356 %	100.445 %	0.003 ppb	1.532 ppb	1.792 ppb	N/A	4.532 ppb	0.547 ppb	0.276 ppb	0.116 ppb
Concentration per Run 3	99.411 %	98.926 %	-0.006 ppb	1.851 ppb	1.335 ppb	N/A	2.399 ppb	0.419 ppb	0.260 ppb	0.182 ppb
Concentration RSD	0.5 %	1.4 %	150.2 %	9.4 %	17.5 %	N/A	61.3 %	78.7 %	408.0 %	3,603.9 %
Intensity average	13,861,311 cps	32,316 cps	3 cps	32 cps	183 cps	2,460 cps	21,222 cps	2,277 cps	487 cps	587 cps
Intensity per Run 1	13,785,765.3 cps	32,753.4 cps	1.5 cps	33.0 cps	205.5 cps	2,550.3 cps	18,493.8 cps	2,030.2 cps	420.0 cps	520.0 cps
Intensity per Run 2	13,895,251.2 cps	32,341.3 cps	4.0 cps	29.5 cps	194.5 cps	2,490.3 cps	24,574.3 cps	2,450.2 cps	520.0 cps	610.0 cps
Intensity per Run 3	13,902,915.2 cps	31,852.0 cps	2.5 cps	34.5 cps	147.5 cps	2,340.2 cps	20,597.2 cps	2,350.2 cps	520.0 cps	630.0 cps
Intensity RSD	0.5 %	1.4 %	47.2 %	7.9 %	16.9 %	4.4 %	14.6 %	9.6 %	11.9 %	10.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.238 ppb		1.010 ppm	-3.235 ppb	-14.546 ppb	-12.184 ppb	-8.471 ppb	93.481 %	93.648 %	0.019 ppb
Concentration per Run 1	0.232 ppb		0.989 ppm	-3.853 ppb	-18.917 ppb	-12.482 ppb	-7.388 ppb	94.502 %	92.978 %	0.019 ppb
Concentration per Run 2	0.384 ppb		1.006 ppm	-2.428 ppb	-10.966 ppb	-11.886 ppb	-9.365 ppb	91.702 %	92.643 %	0.019 ppb
Concentration per Run 3	0.097 ppb		1.035 ppm	-3.425 ppb	-13.753 ppb	-12.185 ppb	-8.659 ppb	94.239 %	95.323 %	0.019 ppb
Concentration RSD	60.4 %		2.3 %	22.6 %	27.7 %	2.4 %	11.8 %	1.7 %	1.6 %	1.7 %
Intensity average	560 cps	2,840 cps	6,555,197 cps	18,006 cps	17 cps	33,682 cps	313 cps	6,434,317 cps	274,935 cps	8 cps
Intensity per Run 1	560.0 cps	2,960.4 cps	6,408,026.7 cps	17,452.3 cps	0.0 cps	33,294.5 cps	360.0 cps	6,504,608.4 cps	272,966.3 cps	8.0 cps
Intensity per Run 2	600.0 cps	3,050.4 cps	6,477,760.3 cps	18,483.8 cps	30.0 cps	33,795.9 cps	270.0 cps	6,311,874.6 cps	271,985.5 cps	8.0 cps
Intensity per Run 3	520.0 cps	2,510.3 cps	6,779,804.5 cps	18,083.1 cps	20.0 cps	33,956.3 cps	310.0 cps	6,486,467.1 cps	279,851.8 cps	8.0 cps
Intensity RSD	7.1 %	10.2 %	3.0 %	2.9 %	91.7 %	1.0 %	14.4 %	1.7 %	1.6 %	0.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.014 ppb	-0.089 ppb	-0.027 ppb	N/A	-0.104 ppb	-0.875 ppb	-0.783 ppb	-0.004 ppb	-0.842 ppb	-0.866 ppb
Concentration per Run 1	0.005 ppb	-0.090 ppb	-0.081 ppb	N/A	-0.102 ppb	-0.848 ppb	-0.728 ppb	-0.004 ppb	-0.839 ppb	-0.863 ppb
Concentration per Run 2	0.015 ppb	-0.088 ppb	0.015 ppb	N/A	-0.110 ppb	-0.882 ppb	-0.875 ppb	-0.004 ppb	-0.845 ppb	-0.878 ppb
Concentration per Run 3	0.022 ppb	-0.088 ppb	-0.017 ppb	N/A	-0.099 ppb	-0.895 ppb	-0.745 ppb	-0.004 ppb	-0.843 ppb	-0.857 ppb
Concentration RSD	61.7 %	1.4 %	178.2 %	N/A	5.6 %	2.8 %	10.3 %	1.9 %	0.4 %	1.3 %
Intensity average	1,775 cps	671 cps	1,171 cps	1,133 cps	523 cps	20,764 cps	592 cps	77 cps	1,123 cps	159 cps
Intensity per Run 1	1,647.9 cps	640.0 cps	1,024.0 cps	1,140.1 cps	552.0 cps	21,258.7 cps	624.0 cps	76.0 cps	1,176.1 cps	164.0 cps
Intensity per Run 2	1,769.1 cps	684.0 cps	1,272.1 cps	1,170.1 cps	420.0 cps	20,397.0 cps	524.0 cps	80.0 cps	1,076.0 cps	136.0 cps
Intensity per Run 3	1,906.9 cps	688.0 cps	1,216.1 cps	1,090.1 cps	596.0 cps	20,637.2 cps	628.0 cps	76.0 cps	1,116.1 cps	176.0 cps
Intensity RSD	7.3 %	4.0 %	11.1 %	3.6 %	17.5 %	2.1 %	10.0 %	3.0 %	4.5 %	12.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.105 ppb	-0.094 ppb	0.739 ppb	0.841 ppb	0.831 ppb		-0.146 ppb	N/A	0.037 ppb	
Concentration per Run 1	-0.104 ppb	-0.093 ppb	0.581 ppb	0.781 ppb	0.744 ppb		-0.222 ppb	N/A	0.104 ppb	
Concentration per Run 2	-0.105 ppb	-0.092 ppb	0.788 ppb	0.901 ppb	0.854 ppb		-0.048 ppb	N/A	-0.011 ppb	
Concentration per Run 3	-0.106 ppb	-0.096 ppb	0.847 ppb	0.841 ppb	0.895 ppb		-0.168 ppb	N/A	0.018 ppb	
Concentration RSD	1.0 %	2.5 %	18.9 %	7.1 %	9.4 %		61.1 %	N/A	161.9 %	
Intensity average	991 cps	483 cps	19,189 cps	2,956 cps	14,540 cps	5 cps	3,451 cps	57 cps	-8 cps	15,214 cps
Intensity per Run 1	1,024.0 cps	492.0 cps	18,513.7 cps	2,904.3 cps	14,168.0 cps	9.0 cps	3,259.6 cps	60.0 cps	14.7 cps	15,453.6 cps
Intensity per Run 2	968.0 cps	504.0 cps	19,290.9 cps	2,984.4 cps	14,492.4 cps	6.0 cps	3,728.0 cps	50.0 cps	-24.1 cps	15,483.6 cps
Intensity per Run 3	980.0 cps	452.0 cps	19,763.6 cps	2,980.4 cps	14,961.0 cps	1.0 cps	3,365.2 cps	60.0 cps	-14.5 cps	14,704.7 cps
Intensity RSD	3.0 %	5.6 %	3.3 %	1.5 %	2.7 %	75.8 %	7.1 %	10.2 %	253.1 %	2.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.589 ppb		95.575 %	0.975 ppb	0.961 ppb	0.957 ppb	0.945 ppb	0.942 ppb	0.020 ppm
Concentration per Run 1		1.072 ppb		96.813 %	0.866 ppb	0.858 ppb	0.858 ppb	0.849 ppb	0.849 ppb	0.020 ppm
Concentration per Run 2		-0.178 ppb		94.503 %	1.006 ppb	1.010 ppb	0.954 ppb	0.966 ppb	0.971 ppb	0.019 ppm
Concentration per Run 3		0.872 ppb		95.407 %	1.053 ppb	1.015 ppb	1.058 ppb	1.019 ppb	1.008 ppb	0.020 ppm
Concentration RSD		114.0 %		1.2 %	10.0 %	9.3 %	10.5 %	9.2 %	8.8 %	1.5 %
Intensity average	5,245 cps	-383 cps	5,563 cps	558,902 cps	10,811 cps	19,169 cps	21,111 cps	12,462 cps	32,954 cps	1,759,448 cps
Intensity per Run 1	4,821.0 cps	-300.1 cps	5,169.1 cps	566,145.9 cps	9,771.8 cps	17,396.1 cps	19,246.9 cps	11,385.2 cps	30,164.5 cps	1,782,797.0 cps
Intensity per Run 2	5,806.4 cps	-517.4 cps	6,115.5 cps	552,637.7 cps	11,032.9 cps	19,924.0 cps	20,833.4 cps	12,602.4 cps	33,569.1 cps	1,731,940.2 cps
Intensity per Run 3	5,107.1 cps	-330.1 cps	5,405.2 cps	557,923.7 cps	11,629.4 cps	20,188.3 cps	23,253.7 cps	13,399.2 cps	35,129.4 cps	1,763,607.8 cps
Intensity RSD	9.7 %	30.8 %	8.9 %	1.2 %	8.8 %	8.0 %	9.6 %	8.1 %	7.7 %	1.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK



Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.010 ppb	0.000 ppb	0.012 ppb	0.000 ppb	0.001 ppb	0.000 ppb	97.513 %	0.046 ppb	0.075 ppb
Concentration per Run 1		-0.024 ppb	0.000 ppb	0.013 ppb	0.000 ppb	0.001 ppb	0.000 ppb	99.036 %	0.043 ppb	0.067 ppb
Concentration per Run 2		0.013 ppb	0.000 ppb	0.009 ppb	0.000 ppb	0.000 ppb	0.000 ppb	96.481 %	0.044 ppb	0.077 ppb
Concentration per Run 3		0.040 ppb	0.000 ppb	0.014 ppb	0.000 ppb	0.003 ppb	0.000 ppb	97.022 %	0.051 ppb	0.082 ppb
Concentration RSD		334.4 %	151.8 %	23.8 %	675.2 %	144.8 %	23.8 %	1.4 %	9.6 %	10.3 %
Intensity average	652 cps	105 cps	84 cps	11 cps	79 cps	25 cps	34 cps	873,016 cps	1,961 cps	2,402 cps
Intensity per Run 1	584.0 cps	72.0 cps	72.0 cps	12.0 cps	100.0 cps	16.0 cps	36.6 cps	886,647.4 cps	1,916.1 cps	2,204.2 cps
Intensity per Run 2	680.0 cps	108.0 cps	84.0 cps	8.0 cps	84.0 cps	8.0 cps	33.4 cps	863,776.9 cps	1,884.1 cps	2,424.2 cps
Intensity per Run 3	692.0 cps	136.0 cps	96.0 cps	12.0 cps	52.0 cps	52.0 cps	32.1 cps	868,624.4 cps	2,084.2 cps	2,576.3 cps
Intensity RSD	9.1 %	30.5 %	14.3 %	21.7 %	31.1 %	92.5 %	6.8 %	1.4 %	5.5 %	7.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.077 ppb	-0.004 ppb	-0.006 ppb			96.612 %			0.014 ppm	0.029 ppb
Concentration per Run 1	0.074 ppb	-0.007 ppb	-0.008 ppb			96.810 %			0.014 ppm	0.026 ppb
Concentration per Run 2	0.078 ppb	0.002 ppb	-0.005 ppb			97.191 %			0.014 ppm	0.030 ppb
Concentration per Run 3	0.079 ppb	-0.005 ppb	-0.005 ppb			95.835 %			0.014 ppm	0.032 ppb
Concentration RSD	3.2 %	129.4 %	28.0 %			0.7 %			1.7 %	10.0 %
Intensity average	1,963 cps	135 cps	208 cps	3 cps	13 cps	3,036,792 cps	63 cps	28 cps	3,143,906 cps	3,810 cps
Intensity per Run 1	1,928.2 cps	112.0 cps	188.0 cps	4.0 cps	4.0 cps	3,043,016.7 cps	84.0 cps	32.0 cps	3,094,109.1 cps	3,547.5 cps
Intensity per Run 2	1,968.2 cps	168.0 cps	220.0 cps	0.0 cps	16.0 cps	3,054,999.4 cps	52.0 cps	24.0 cps	3,199,686.4 cps	3,915.6 cps
Intensity per Run 3	1,992.2 cps	124.0 cps	216.0 cps	4.0 cps	20.0 cps	3,012,359.5 cps	52.0 cps	28.0 cps	3,137,921.7 cps	3,965.6 cps
Intensity RSD	1.6 %	21.9 %	8.4 %	86.6 %	62.4 %	0.7 %	29.5 %	14.3 %	1.7 %	6.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.030 ppb	0.003 ppb	0.003 ppb	0.004 ppb	100.027 %
Concentration per Run 1	0.026 ppb	0.004 ppb	0.003 ppb	0.004 ppb	100.975 %
Concentration per Run 2	0.029 ppb	0.003 ppb	0.002 ppb	0.003 ppb	101.060 %
Concentration per Run 3	0.033 ppb	0.003 ppb	0.003 ppb	0.004 ppb	98.045 %
Concentration RSD	11.5 %	8.9 %	20.4 %	6.9 %	1.7 %
Intensity average	9,344 cps	1,002 cps	829 cps	4,138 cps	2,563,624 cps
Intensity per Run 1	8,687.0 cps	1,034.0 cps	876.0 cps	4,178.3 cps	2,587,916.9 cps
Intensity per Run 2	9,422.6 cps	1,009.0 cps	808.0 cps	4,105.3 cps	2,590,117.3 cps
Intensity per Run 3	9,920.9 cps	963.0 cps	804.0 cps	4,131.3 cps	2,512,838.4 cps
Intensity RSD	6.6 %	3.6 %	4.9 %	0.9 %	1.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33748-002 Analysis: 10/30/2019 18:39:37 Sample Type QC
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	92.349 %	95.330 %	99.724 ppb	101.977 ppb	102.221 ppb	N/A	973.448 ppb	1,025.980 ppb	1,017.662 ppb	1,005.887 ppb
Concentration per Run 1	91.610 %	95.821 %	96.629 ppb	100.437 ppb	100.014 ppb	N/A	954.711 ppb	1,012.976 ppb	1,027.837 ppb	1,009.774 ppb
Concentration per Run 2	92.433 %	94.982 %	100.958 ppb	101.199 ppb	102.235 ppb	N/A	988.414 ppb	1,020.698 ppb	1,002.247 ppb	995.600 ppb
Concentration per Run 3	93.003 %	95.185 %	101.584 ppb	104.295 ppb	104.415 ppb	N/A	977.218 ppb	1,044.264 ppb	1,022.903 ppb	1,012.286 ppb
Recovery Percentage 1			99.724 %		0.000 %		97.345 %	102.598 %	101.766 %	100.589 %
Concentration RSD	0.8 %	0.5 %	2.7 %	2.0 %	2.2 %	N/A	1.8 %	1.6 %	1.3 %	0.9 %
Intensity average	12,915,286 cps	30,694 cps	15,100 cps	1,637 cps	9,702 cps	2,457 cps	1,772,107 cps	844,432 cps	175,847 cps	230,858 cps
Intensity per Run 1	12,811,897.9 cps	30,852.5 cps	14,708.7 cps	1,619.6 cps	9,531.1 cps	2,230.2 cps	1,739,998.7 cps	834,419.9 cps	177,695.6 cps	231,811.9 cps
Intensity per Run 2	12,927,122.9 cps	30,582.4 cps	15,232.8 cps	1,622.6 cps	9,694.8 cps	2,790.3 cps	1,809,326.3 cps	845,394.6 cps	174,379.9 cps	230,202.0 cps
Intensity per Run 3	13,006,838.2 cps	30,647.5 cps	15,359.9 cps	1,670.1 cps	9,880.9 cps	2,350.2 cps	1,766,996.8 cps	853,481.2 cps	175,465.7 cps	230,560.3 cps
Intensity RSD	0.8 %	0.5 %	2.3 %	1.7 %	1.8 %	12.0 %	2.0 %	1.1 %	1.0 %	0.4 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	102.139 ppb		0.975 ppm	1,022.218 ppb	1,900.120 ppb	1,084.854 ppb	1,541.798 ppb	84.998 %	88.555 %	100.900 ppb
Concentration per Run 1	100.720 ppb		0.957 ppm	1,016.112 ppb	1,895.424 ppb	1,105.602 ppb	1,562.620 ppb	84.106 %	88.130 %	99.262 ppb
Concentration per Run 2	101.370 ppb		0.971 ppm	1,013.806 ppb	1,821.853 ppb	1,056.083 ppb	1,476.227 ppb	85.593 %	90.210 %	100.403 ppb
Concentration per Run 3	104.327 ppb		0.998 ppm	1,036.735 ppb	1,983.084 ppb	1,092.878 ppb	1,586.548 ppb	85.295 %	87.326 %	103.035 ppb
Recovery Percentage 1	102.139 %			102.222 %		108.485 %	154.180 %			100.900 %
Concentration RSD	1.9 %		2.2 %	1.2 %	4.2 %	2.4 %	3.8 %	0.9 %	1.7 %	1.9 %
Intensity average	28,947 cps	12,717 cps	5,990,726 cps	787,054 cps	6,915 cps	2,514,772 cps	66,698 cps	5,850,432 cps	259,984 cps	34,052 cps
Intensity per Run 1	28,552.8 cps	12,976.9 cps	5,864,508.8 cps	780,056.0 cps	6,871.9 cps	2,535,344.9 cps	67,311.0 cps	5,789,051.8 cps	258,734.6 cps	33,352.5 cps
Intensity per Run 2	28,963.7 cps	12,956.8 cps	6,039,011.3 cps	792,540.9 cps	6,751.9 cps	2,466,626.0 cps	65,070.1 cps	5,891,352.1 cps	264,840.8 cps	34,487.6 cps
Intensity per Run 3	29,324.5 cps	12,216.0 cps	6,068,656.5 cps	788,564.6 cps	7,122.0 cps	2,542,344.7 cps	67,713.3 cps	5,870,892.1 cps	256,375.2 cps	34,315.1 cps
Intensity RSD	1.3 %	3.4 %	1.8 %	0.8 %	2.7 %	1.7 %	2.1 %	0.9 %	1.7 %	1.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	101.092 ppb	104.269 ppb	106.686 ppb	N/A	105.914 ppb	1,064.520 ppb	1,022.850 ppb	105.272 ppb	109.236 ppb	110.189 ppb
Concentration per Run 1	98.526 ppb	101.804 ppb	104.345 ppb	N/A	102.641 ppb	1,060.183 ppb	1,006.658 ppb	103.695 ppb	106.919 ppb	108.710 ppb
Concentration per Run 2	100.684 ppb	103.234 ppb	105.023 ppb	N/A	105.444 ppb	1,046.848 ppb	994.497 ppb	104.638 ppb	110.063 ppb	108.632 ppb
Concentration per Run 3	104.065 ppb	107.768 ppb	110.689 ppb	N/A	109.658 ppb	1,086.528 ppb	1,067.397 ppb	107.482 ppb	110.726 ppb	113.225 ppb
Recovery Percentage 1	101.092 %	104.269 %			105.914 %		102.285 %	105.272 %	109.236 %	
Concentration RSD	2.8 %	3.0 %	3.3 %	N/A	3.3 %	1.9 %	3.8 %	1.9 %	1.9 %	2.4 %
Intensity average	1,199,682 cps	1,941,799 cps	273,115 cps	280,653 cps	1,498,329 cps	20,078,371 cps	648,787 cps	4,621,699 cps	1,188,213 cps	181,496 cps
Intensity per Run 1	1,163,801.2 cps	1,887,178.3 cps	266,275.8 cps	271,933.8 cps	1,447,711.6 cps	19,940,336.1 cps	635,686.3 cps	4,531,097.8 cps	1,166,002.8 cps	178,749.8 cps
Intensity per Run 2	1,217,318.9 cps	1,958,819.8 cps	272,913.6 cps	281,435.1 cps	1,512,534.2 cps	20,012,768.3 cps	642,841.3 cps	4,680,229.6 cps	1,194,848.9 cps	180,860.6 cps
Intensity per Run 3	1,217,925.2 cps	1,979,397.9 cps	280,154.5 cps	288,589.6 cps	1,534,740.7 cps	20,282,009.7 cps	667,832.9 cps	4,653,769.7 cps	1,203,786.8 cps	184,877.7 cps
Intensity RSD	2.6 %	2.5 %	2.5 %	3.0 %	3.0 %	0.9 %	2.6 %	1.7 %	1.7 %	1.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	112.853 ppb	113.235 ppb	109.506 ppb	114.403 ppb	112.347 ppb		104.134 ppb	N/A	107.586 ppb	
Concentration per Run 1	110.479 ppb	112.403 ppb	109.456 ppb	110.095 ppb	110.152 ppb		103.451 ppb	N/A	104.768 ppb	
Concentration per Run 2	112.977 ppb	111.272 ppb	108.185 ppb	115.616 ppb	111.816 ppb		102.380 ppb	N/A	106.925 ppb	
Concentration per Run 3	115.103 ppb	116.028 ppb	110.878 ppb	117.498 ppb	115.072 ppb		106.572 ppb	N/A	111.065 ppb	
Recovery Percentage 1	112.853 %	113.235 %	109.506 %				104.134 %	0.000 %	107.586 %	
Concentration RSD	2.1 %	2.2 %	1.2 %	3.4 %	2.2 %		2.1 %	N/A	3.0 %	
Intensity average	3,023,503 cps	1,550,504 cps	661,487 cps	112,805 cps	531,005 cps	30 cps	325,680 cps	10,231 cps	34,906 cps	6,401 cps
Intensity per Run 1	2,954,740.7 cps	1,532,061.3 cps	648,225.6 cps	108,509.2 cps	520,342.4 cps	29.0 cps	317,221.3 cps	10,234.3 cps	34,013.8 cps	6,115.5 cps
Intensity per Run 2	3,057,403.9 cps	1,552,459.9 cps	666,851.3 cps	114,914.1 cps	532,653.6 cps	26.0 cps	326,710.0 cps	10,234.2 cps	34,799.7 cps	6,543.7 cps
Intensity per Run 3	3,058,364.6 cps	1,566,990.6 cps	669,384.6 cps	114,990.7 cps	540,019.1 cps	35.0 cps	333,108.4 cps	10,224.3 cps	35,903.5 cps	6,544.7 cps
Intensity RSD	2.0 %	1.1 %	1.7 %	3.3 %	1.9 %	15.3 %	2.5 %	0.1 %	2.7 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		100.643 ppb		92.007 %	98.000 ppb	97.481 ppb	96.430 ppb	95.344 ppb	97.262 ppb	0.019 ppm
Concentration per Run 1		98.048 ppb		92.225 %	95.331 ppb	95.049 ppb	93.060 ppb	92.269 ppb	93.264 ppb	0.019 ppm
Concentration per Run 2		100.805 ppb		91.829 %	98.815 ppb	97.769 ppb	96.824 ppb	94.729 ppb	97.948 ppb	0.019 ppm
Concentration per Run 3		103.077 ppb		91.968 %	99.853 ppb	99.625 ppb	99.405 ppb	99.034 ppb	100.572 ppb	0.019 ppm
Recovery Percentage 1		100.643 %						95.344 %		0.000 %
Concentration RSD		2.5 %		0.2 %	2.4 %	2.4 %	3.3 %	3.6 %	3.8 %	0.6 %
Intensity average	22,809 cps	17,175 cps	5,494 cps	538,042 cps	1,017,328 cps	1,837,722 cps	2,007,178 cps	1,187,845 cps	3,220,756 cps	1,684,161 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	22,290.9 cps	16,388.1 cps	5,515.3 cps	539,314.7 cps	987,688.0 cps	1,786,818.7 cps	1,929,879.2 cps	1,144,308.7 cps	3,071,569.6 cps	1,695,005.1 cps
Intensity per Run 2	22,562.4 cps	17,545.9 cps	5,000.0 cps	537,001.4 cps	1,028,199.2 cps	1,849,052.5 cps	2,023,523.9 cps	1,185,975.0 cps	3,261,992.2 cps	1,683,354.3 cps
Intensity per Run 3	23,574.3 cps	17,592.0 cps	5,965.5 cps	537,808.7 cps	1,036,096.3 cps	1,877,295.5 cps	2,068,130.3 cps	1,233,251.2 cps	3,328,706.6 cps	1,674,124.7 cps
Intensity RSD	3.0 %	4.0 %	8.8 %	0.2 %	2.6 %	2.5 %	3.5 %	3.7 %	4.1 %	0.6 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		105.243 ppb	100.449 ppb	105.986 ppb	99.642 ppb	104.246 ppb	101.989 ppb	93.924 %	102.780 ppb	104.223 ppb
Concentration per Run 1		103.779 ppb	100.250 ppb	104.829 ppb	97.414 ppb	104.160 ppb	102.364 ppb	92.075 %	102.841 ppb	103.714 ppb
Concentration per Run 2		104.051 ppb	97.440 ppb	104.076 ppb	99.455 ppb	101.221 ppb	99.719 ppb	95.810 %	101.871 ppb	101.973 ppb
Concentration per Run 3		107.898 ppb	103.656 ppb	109.053 ppb	102.056 ppb	107.357 ppb	103.885 ppb	93.887 %	103.629 ppb	106.981 ppb
Recovery Percentage 1			100.449 %		99.642 %		101.989 %		102.780 %	104.223 %
Concentration RSD		2.2 %	3.1 %	2.5 %	2.3 %	2.9 %	2.1 %	2.0 %	0.9 %	2.4 %
Intensity average	1,105 cps	103,406 cps	7,559,330 cps	80,260 cps	7,360,156 cps	1,282,746 cps	3,111,824 cps	840,886 cps	2,580,993 cps	2,749,717 cps
Intensity per Run 1	1,036.0 cps	100,728.8 cps	7,397,261.6 cps	78,288.8 cps	7,089,345.8 cps	1,260,935.6 cps	3,062,300.0 cps	824,333.3 cps	2,534,697.3 cps	2,688,731.8 cps
Intensity per Run 2	1,164.1 cps	103,519.6 cps	7,481,578.8 cps	79,939.4 cps	7,456,394.8 cps	1,266,587.1 cps	3,104,184.9 cps	857,768.5 cps	2,606,071.4 cps	2,737,063.6 cps
Intensity per Run 3	1,116.1 cps	105,968.3 cps	7,799,149.4 cps	82,552.2 cps	7,534,726.1 cps	1,320,714.3 cps	3,168,985.8 cps	840,556.2 cps	2,602,210.5 cps	2,823,356.7 cps
Intensity RSD	5.9 %	2.5 %	2.8 %	2.7 %	3.2 %	2.6 %	1.7 %	2.0 %	1.6 %	2.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	105.009 ppb	100.900 ppb	102.878 ppb			95.656 %			0.014 ppm	97.096 ppb
Concentration per Run 1	103.288 ppb	100.699 ppb	103.181 ppb			95.301 %			0.014 ppm	95.172 ppb
Concentration per Run 2	103.446 ppb	99.254 ppb	100.911 ppb			95.632 %			0.014 ppm	96.272 ppb
Concentration per Run 3	108.294 ppb	102.746 ppb	104.541 ppb			96.035 %			0.014 ppm	99.842 ppb
Recovery Percentage 1	105.009 %	100.900 %	102.878 %							97.096 %
Concentration RSD	2.7 %	1.7 %	1.8 %			0.4 %			1.2 %	2.5 %
Intensity average	2,217,374 cps	630,394 cps	1,172,068 cps	52 cps	33 cps	3,006,744 cps	59 cps	20 cps	3,144,947 cps	8,852,392 cps
Intensity per Run 1	2,144,497.3 cps	621,396.1 cps	1,161,925.4 cps	40.0 cps	36.0 cps	2,995,591.4 cps	64.0 cps	12.0 cps	3,185,332.7 cps	8,512,917.2 cps
Intensity per Run 2	2,219,991.1 cps	626,803.6 cps	1,161,031.3 cps	36.0 cps	36.0 cps	3,005,979.1 cps	60.0 cps	16.0 cps	3,135,351.5 cps	8,869,462.7 cps
Intensity per Run 3	2,287,632.3 cps	642,983.2 cps	1,193,246.0 cps	80.0 cps	28.0 cps	3,018,662.1 cps	52.0 cps	32.0 cps	3,114,156.9 cps	9,174,796.0 cps
Intensity RSD	3.2 %	1.8 %	1.6 %	46.8 %	13.9 %	0.4 %	10.4 %	52.9 %	1.2 %	3.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	96.006 ppb	99.605 ppb	99.327 ppb	98.690 ppb	99.819 %
Concentration per Run 1	93.847 ppb	99.128 ppb	98.206 ppb	98.536 ppb	97.751 %
Concentration per Run 2	95.010 ppb	99.102 ppb	98.204 ppb	98.280 ppb	101.026 %
Concentration per Run 3	99.161 ppb	100.585 ppb	101.571 ppb	99.254 ppb	100.680 %
Recovery Percentage 1	96.006 %	99.605 %	99.327 %	98.690 %	
Concentration RSD	2.9 %	0.9 %	2.0 %	0.5 %	1.8 %
Intensity average	21,361,151 cps	7,265,539 cps	6,370,756 cps	29,177,148 cps	2,558,300 cps
Intensity per Run 1	20,444,042.6 cps	7,087,718.2 cps	6,171,880.7 cps	28,527,706.9 cps	2,505,297.3 cps
Intensity per Run 2	21,390,791.5 cps	7,310,854.1 cps	6,371,323.6 cps	29,407,065.3 cps	2,589,240.4 cps
Intensity per Run 3	22,248,620.0 cps	7,398,046.1 cps	6,569,063.8 cps	29,596,671.4 cps	2,580,362.4 cps
Intensity RSD	4.2 %	2.2 %	3.1 %	2.0 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ21007-001 Analysis: 10/30/2019 18:45:42 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	89.595 %	90.325 %	0.228 ppb	62.503 ppb	63.119 ppb	N/A	23,438.197 ppb	2,024.579 ppb	2,019.013 ppb	1,987.865 ppb
Concentration per Run 1	88.642 %	90.428 %	0.239 ppb	62.950 ppb	61.806 ppb	N/A	23,425.841 ppb	1,999.372 ppb	1,985.409 ppb	1,956.168 ppb
Concentration per Run 2	89.707 %	91.114 %	0.192 ppb	61.907 ppb	63.347 ppb	N/A	23,153.657 ppb	2,027.464 ppb	2,043.845 ppb	1,985.017 ppb
Concentration per Run 3	90.438 %	89.433 %	0.253 ppb	62.651 ppb	64.205 ppb	N/A	23,735.093 ppb	2,046.899 ppb	2,027.785 ppb	2,022.410 ppb
Concentration RSD	1.0 %	0.9 %	13.9 %	0.9 %	1.9 %	N/A	1.2 %	1.2 %	1.5 %	1.7 %
Intensity average	12,530,221 cps	29,083 cps	36 cps	955 cps	5,702 cps	4,121 cps	40,584,364 cps	1,597,685 cps	334,694 cps	438,051 cps
Intensity per Run 1	12,396,861.1 cps	29,115.9 cps	37.5 cps	961.0 cps	5,577.2 cps	3,920.6 cps	40,287,788.2 cps	1,566,308.3 cps	326,571.8 cps	427,504.4 cps
Intensity per Run 2	12,545,763.4 cps	29,336.9 cps	31.0 cps	952.5 cps	5,760.8 cps	4,070.7 cps	40,157,094.4 cps	1,601,825.7 cps	339,053.9 cps	437,544.5 cps
Intensity per Run 3	12,648,038.3 cps	28,795.6 cps	39.0 cps	951.0 cps	5,767.8 cps	4,370.8 cps	41,308,210.7 cps	1,624,921.2 cps	338,455.5 cps	449,103.6 cps
Intensity RSD	1.0 %	0.9 %	11.9 %	0.6 %	1.9 %	5.6 %	1.6 %	1.8 %	2.1 %	2.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	6,427.968 ppb		0.967 ppm	3,867.258 ppb	22,765.535 ppb	23,054.271 ppb	23,400.342 ppb	89.346 %	86.355 %	218.086 ppb
Concentration per Run 1	6,188.414 ppb		0.958 ppm	3,917.851 ppb	22,585.287 ppb	22,943.454 ppb	23,186.397 ppb	87.484 %	84.847 %	217.297 ppb
Concentration per Run 2	6,524.971 ppb		0.976 ppm	3,888.039 ppb	23,399.083 ppb	23,378.453 ppb	23,884.088 ppb	89.660 %	85.668 %	220.080 ppb
Concentration per Run 3	6,570.519 ppb		0.967 ppm	3,795.883 ppb	22,312.234 ppb	22,840.906 ppb	23,130.541 ppb	90.895 %	88.551 %	216.882 ppb
Concentration RSD	3.2 %		1.0 %	1.6 %	2.5 %	1.2 %	1.8 %	1.9 %	2.3 %	0.8 %
Intensity average	1,725,058 cps	133,649 cps	5,748,601 cps	2,837,232 cps	79,959 cps	54,823,878 cps	977,572 cps	6,149,717 cps	253,524 cps	72,892 cps
Intensity per Run 1	1,646,100.0 cps	131,339.0 cps	5,621,620.3 cps	2,832,989.4 cps	78,033.6 cps	53,438,035.4 cps	952,292.1 cps	6,021,546.3 cps	249,095.2 cps	71,407.9 cps
Intensity per Run 2	1,750,669.2 cps	133,702.1 cps	5,784,736.3 cps	2,837,838.2 cps	81,616.4 cps	55,786,123.0 cps	990,368.1 cps	6,171,314.0 cps	251,506.6 cps	73,065.1 cps
Intensity per Run 3	1,778,404.4 cps	135,906.2 cps	5,839,445.2 cps	2,840,868.7 cps	80,227.0 cps	55,247,476.9 cps	990,054.8 cps	6,256,291.4 cps	259,970.1 cps	74,203.8 cps
Intensity RSD	4.0 %	1.7 %	2.0 %	0.1 %	2.3 %	2.2 %	2.2 %	1.9 %	2.3 %	1.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	14.985 ppb	7.123 ppb	7.048 ppb	N/A	147.858 ppb	4,680.130 ppb	5,066.122 ppb	1.960 ppb	3.781 ppb	4.682 ppb
Concentration per Run 1	15.006 ppb	7.147 ppb	7.071 ppb	N/A	146.229 ppb	4,734.731 ppb	5,110.015 ppb	1.952 ppb	3.740 ppb	4.632 ppb
Concentration per Run 2	15.202 ppb	7.124 ppb	7.083 ppb	N/A	148.793 ppb	4,642.509 ppb	5,098.973 ppb	1.994 ppb	3.711 ppb	4.699 ppb
Concentration per Run 3	14.748 ppb	7.099 ppb	6.991 ppb	N/A	148.552 ppb	4,663.151 ppb	4,989.378 ppb	1.933 ppb	3.891 ppb	4.715 ppb
Concentration RSD	1.5 %	0.3 %	0.7 %	N/A	1.0 %	1.0 %	1.3 %	1.6 %	2.6 %	0.9 %
Intensity average	174,660 cps	131,453 cps	19,830 cps	20,841 cps	2,197,191 cps	93,278,807 cps	3,129,975 cps	84,129 cps	66,104 cps	10,159 cps
Intensity per Run 1	171,877.0 cps	129,585.8 cps	19,591.4 cps	20,536.9 cps	2,141,204.5 cps	93,023,976.8 cps	3,102,541.4 cps	82,358.6 cps	65,049.1 cps	9,940.0 cps
Intensity per Run 2	175,784.5 cps	130,417.4 cps	19,855.8 cps	20,597.1 cps	2,205,789.5 cps	92,369,183.0 cps	3,125,809.4 cps	84,928.1 cps	65,885.4 cps	10,200.2 cps
Intensity per Run 3	176,319.4 cps	134,354.9 cps	20,044.1 cps	21,388.4 cps	2,244,578.1 cps	94,443,261.5 cps	3,161,573.1 cps	85,101.0 cps	67,377.3 cps	10,336.3 cps
Intensity RSD	1.4 %	1.9 %	1.1 %	2.3 %	2.4 %	1.1 %	1.0 %	1.8 %	1.8 %	2.0 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	39.828 ppb	44.222 ppb	430.431 ppb	347.768 ppb	349.394 ppb		1.287 ppb	N/A	0.523 ppb	
Concentration per Run 1	39.744 ppb	44.372 ppb	421.682 ppb	344.497 ppb	345.589 ppb		1.340 ppb	N/A	0.497 ppb	
Concentration per Run 2	39.898 ppb	45.020 ppb	431.739 ppb	349.049 ppb	352.134 ppb		1.078 ppb	N/A	0.563 ppb	
Concentration per Run 3	39.842 ppb	43.276 ppb	437.871 ppb	349.758 ppb	350.459 ppb		1.443 ppb	N/A	0.509 ppb	
Concentration RSD	0.2 %	2.0 %	1.9 %	0.8 %	1.0 %		14.6 %	N/A	6.7 %	
Intensity average	1,187,296 cps	591,495 cps	2,424,089 cps	386,127 cps	1,869,896 cps	1,923 cps	7,345 cps	330 cps	183 cps	21,300 cps
Intensity per Run 1	1,169,933.2 cps	583,265.5 cps	2,378,220.7 cps	378,046.6 cps	1,828,444.1 cps	1,867.1 cps	7,510.9 cps	300.0 cps	170.9 cps	20,428.7 cps
Intensity per Run 2	1,191,246.9 cps	597,484.9 cps	2,444,171.3 cps	388,826.8 cps	1,891,525.1 cps	1,966.2 cps	6,769.8 cps	420.0 cps	200.3 cps	21,528.5 cps
Intensity per Run 3	1,200,707.4 cps	593,735.2 cps	2,449,874.1 cps	391,508.3 cps	1,889,719.6 cps	1,936.2 cps	7,753.7 cps	270.0 cps	177.9 cps	21,941.2 cps
Intensity RSD	1.3 %	1.2 %	1.6 %	1.8 %	1.9 %	2.6 %	7.0 %	24.1 %	8.4 %	3.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.941 ppb		119.410 %	7.819 ppb	5.333 ppb	5.675 ppb	5.455 ppb	5.486 ppb	0.018 ppm
Concentration per Run 1		0.871 ppb		118.525 %	7.667 ppb	5.239 ppb	5.455 ppb	5.312 ppb	5.308 ppb	0.018 ppm
Concentration per Run 2		0.873 ppb		120.791 %	7.774 ppb	5.293 ppb	5.670 ppb	5.561 ppb	5.568 ppb	0.018 ppm
Concentration per Run 3		1.078 ppb		118.913 %	8.017 ppb	5.466 ppb	5.901 ppb	5.492 ppb	5.581 ppb	0.018 ppm
Concentration RSD		12.6 %		1.0 %	2.3 %	2.2 %	3.9 %	2.4 %	2.8 %	0.1 %
Intensity average	5,484 cps	-291 cps	5,519 cps	698,285 cps	100,118 cps	122,622 cps	142,480 cps	81,040 cps	214,025 cps	1,569,432 cps
Intensity per Run 1	5,843.4 cps	-303.3 cps	5,885.4 cps	693,111.9 cps	97,583.4 cps	119,780.2 cps	136,211.6 cps	78,506.1 cps	206,083.5 cps	1,568,983.9 cps
Intensity per Run 2	4,620.9 cps	-304.2 cps	4,720.9 cps	706,365.0 cps	100,599.5 cps	122,990.7 cps	143,790.7 cps	83,421.7 cps	219,341.0 cps	1,568,942.1 cps
Intensity per Run 3	5,988.4 cps	-266.9 cps	5,951.4 cps	695,378.6 cps	102,172.2 cps	125,095.4 cps	147,437.1 cps	81,191.1 cps	216,651.6 cps	1,570,370.8 cps
Intensity RSD	13.7 %	7.3 %	12.5 %	1.0 %	2.3 %	2.2 %	4.0 %	3.0 %	3.3 %	0.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.670 ppb	0.240 ppb	0.699 ppb	0.221 ppb	0.251 ppb	0.247 ppb	88.980 %	3.715 ppb	3.410 ppb
Concentration per Run 1		0.649 ppb	0.240 ppb	0.639 ppb	0.216 ppb	0.253 ppb	0.254 ppb	89.093 %	3.627 ppb	3.327 ppb
Concentration per Run 2		0.713 ppb	0.238 ppb	0.714 ppb	0.223 ppb	0.249 ppb	0.247 ppb	89.443 %	3.746 ppb	3.422 ppb
Concentration per Run 3		0.647 ppb	0.243 ppb	0.744 ppb	0.223 ppb	0.253 ppb	0.240 ppb	88.403 %	3.771 ppb	3.481 ppb
Concentration RSD		5.6 %	1.2 %	7.7 %	2.0 %	1.0 %	2.8 %	0.6 %	2.1 %	2.3 %
Intensity average	1,067 cps	800 cps	17,217 cps	552 cps	16,826 cps	3,104 cps	7,188 cps	796,620 cps	89,366 cps	86,177 cps
Intensity per Run 1	1,012.0 cps	776.0 cps	17,191.8 cps	504.0 cps	16,422.8 cps	3,116.4 cps	7,391.6 cps	797,638.0 cps	87,199.7 cps	83,856.9 cps
Intensity per Run 2	1,056.0 cps	852.0 cps	17,135.8 cps	568.0 cps	17,131.8 cps	3,088.4 cps	7,230.9 cps	800,766.8 cps	90,652.1 cps	87,050.3 cps
Intensity per Run 3	1,132.1 cps	772.0 cps	17,324.1 cps	584.0 cps	16,923.5 cps	3,108.4 cps	6,941.6 cps	791,456.3 cps	90,244.9 cps	87,622.5 cps
Intensity RSD	5.7 %	5.6 %	0.6 %	7.7 %	2.2 %	0.5 %	3.2 %	0.6 %	2.1 %	2.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	3.455 ppb	86.739 ppb	89.180 ppb			95.349 %			0.014 ppm	0.370 ppb
Concentration per Run 1	3.357 ppb	85.841 ppb	88.874 ppb			92.836 %			0.014 ppm	0.400 ppb
Concentration per Run 2	3.469 ppb	87.001 ppb	87.777 ppb			96.774 %			0.014 ppm	0.369 ppb
Concentration per Run 3	3.539 ppb	87.374 ppb	90.887 ppb			96.436 %			0.014 ppm	0.340 ppb
Concentration RSD	2.7 %	0.9 %	1.8 %			2.3 %			1.6 %	8.1 %
Intensity average	70,036 cps	525,757 cps	987,931 cps	101,467 cps	70,747 cps	2,997,083 cps	60,193 cps	49,056 cps	3,152,078 cps	33,616 cps
Intensity per Run 1	67,775.5 cps	514,174.5 cps	971,755.5 cps	97,269.9 cps	69,147.3 cps	2,918,092.6 cps	57,990.5 cps	47,446.0 cps	3,128,747.9 cps	35,893.5 cps
Intensity per Run 2	70,820.2 cps	532,483.7 cps	982,385.0 cps	102,539.6 cps	74,871.0 cps	3,041,888.4 cps	62,134.2 cps	49,289.1 cps	3,117,438.9 cps	33,956.1 cps
Intensity per Run 3	71,512.1 cps	530,611.5 cps	1,009,653.7 cps	104,592.3 cps	68,221.8 cps	3,031,267.4 cps	60,454.1 cps	50,433.6 cps	3,210,046.5 cps	30,998.4 cps
Intensity RSD	2.8 %	1.9 %	2.0 %	3.7 %	5.1 %	2.3 %	3.5 %	3.1 %	1.6 %	7.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.372 ppb	24.700 ppb	23.800 ppb	23.981 ppb	95.909 %
Concentration per Run 1	0.397 ppb	24.449 ppb	23.859 ppb	23.712 ppb	95.002 %
Concentration per Run 2	0.372 ppb	24.578 ppb	23.549 ppb	23.823 ppb	97.030 %
Concentration per Run 3	0.349 ppb	25.075 ppb	23.993 ppb	24.409 ppb	95.694 %
Concentration RSD	6.5 %	1.3 %	1.0 %	1.6 %	1.1 %
Intensity average	82,210 cps	1,735,385 cps	1,469,104 cps	6,814,305 cps	2,458,080 cps
Intensity per Run 1	86,629.4 cps	1,699,704.5 cps	1,457,895.7 cps	6,674,083.1 cps	2,434,835.7 cps
Intensity per Run 2	83,012.1 cps	1,747,313.8 cps	1,470,855.5 cps	6,848,563.5 cps	2,486,828.4 cps
Intensity per Run 3	76,989.5 cps	1,759,135.9 cps	1,478,559.5 cps	6,920,268.0 cps	2,452,576.7 cps
Intensity RSD	5.9 %	1.8 %	0.7 %	1.9 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ21007-002 Analysis: 10/30/2019 18:51:47 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	90.377 %	90.109 %	0.035 ppb	612.934 ppb	617.308 ppb	N/A	27,344.768 ppb	3,818.662 ppb	3,890.299 ppb
Concentration per Run 1	90.093 %	90.927 %	0.026 ppb	596.324 ppb	599.345 ppb	N/A	27,005.492 ppb	3,735.312 ppb	3,848.785 ppb
Concentration per Run 2	90.586 %	90.096 %	0.041 ppb	621.908 ppb	617.078 ppb	N/A	27,365.505 ppb	3,836.373 ppb	3,894.017 ppb
Concentration per Run 3	90.452 %	89.304 %	0.038 ppb	620.571 ppb	635.502 ppb	N/A	27,663.308 ppb	3,884.300 ppb	3,928.095 ppb
Concentration RSD	0.3 %	0.9 %	21.7 %	2.3 %	2.9 %	N/A	1.2 %	2.0 %	1.0 %
Intensity average	12,639,528 cps	29,013 cps	8 cps	9,363 cps	55,880 cps	9,197 cps	48,346,185 cps	3,079,585 cps	659,915 cps
Intensity per Run 1	12,599,817.9 cps	29,276.8 cps	7.0 cps	9,177.4 cps	54,639.7 cps	8,663.1 cps	47,835,844.5 cps	3,016,794.0 cps	653,538.8 cps
Intensity per Run 2	12,668,822.2 cps	29,009.1 cps	9.0 cps	9,513.6 cps	55,963.0 cps	9,623.7 cps	48,680,238.2 cps	3,114,033.3 cps	665,082.8 cps
Intensity per Run 3	12,649,945.3 cps	28,754.0 cps	8.5 cps	9,398.0 cps	57,038.4 cps	9,303.5 cps	48,522,473.0 cps	3,107,927.1 cps	661,124.5 cps
Intensity RSD	0.3 %	0.9 %	12.7 %	1.8 %	2.2 %	5.3 %	0.9 %	1.8 %	0.9 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,849.489 ppb	1,215.825 ppb		1.021 ppm	3,568.436 ppb	96,311.923 ppb	104,610.406 ppb	95,885.759 ppb	90.763 %
Concentration per Run 1	3,782.524 ppb	1,188.509 ppb		1.002 ppm	3,488.766 ppb	94,186.675 ppb	101,827.179 ppb	95,105.650 ppb	91.493 %
Concentration per Run 2	3,900.279 ppb	1,208.980 ppb		1.020 ppm	3,558.049 ppb	96,582.999 ppb	104,197.424 ppb	96,128.162 ppb	90.690 %
Concentration per Run 3	3,865.664 ppb	1,249.988 ppb		1.039 ppm	3,658.492 ppb	98,166.097 ppb	107,806.614 ppb	96,423.465 ppb	90.106 %
Concentration RSD	1.6 %	2.6 %		1.8 %	2.4 %	2.1 %	2.9 %	0.7 %	0.8 %
Intensity average	869,274 cps	335,333 cps	67,666 cps	6,300,518 cps	2,735,677 cps	355,065 cps	252,411,986 cps	4,210,691 cps	6,247,221 cps
Intensity per Run 1	854,627.0 cps	327,883.0 cps	67,643.2 cps	6,167,226.8 cps	2,661,934.7 cps	344,927.7 cps	247,639,082.5 cps	4,146,975.5 cps	6,297,484.4 cps
Intensity per Run 2	887,067.9 cps	336,002.1 cps	69,000.1 cps	6,365,917.0 cps	2,760,459.5 cps	360,830.0 cps	251,267,792.1 cps	4,279,365.5 cps	6,242,174.0 cps
Intensity per Run 3	866,126.8 cps	342,113.6 cps	66,355.8 cps	6,368,409.9 cps	2,784,636.1 cps	359,436.9 cps	258,329,083.0 cps	4,205,733.2 cps	6,202,004.1 cps
Intensity RSD	1.9 %	2.1 %	2.0 %	1.8 %	2.4 %	2.5 %	2.2 %	1.6 %	0.8 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	90.937 %	25.865 ppb	4.642 ppb	3.131 ppb	3.135 ppb	N/A	190.726 ppb	5,386.078 ppb	5,311.601 ppb
Concentration per Run 1	90.259 %	24.212 ppb	4.567 ppb	3.080 ppb	3.217 ppb	N/A	188.314 ppb	5,323.111 ppb	5,241.830 ppb
Concentration per Run 2	92.222 %	27.240 ppb	4.685 ppb	3.100 ppb	3.102 ppb	N/A	189.798 ppb	5,380.419 ppb	5,246.326 ppb
Concentration per Run 3	90.331 %	26.142 ppb	4.675 ppb	3.213 ppb	3.084 ppb	N/A	194.065 ppb	5,454.705 ppb	5,446.647 ppb
Concentration RSD	1.2 %	5.9 %	1.4 %	2.3 %	2.3 %	N/A	1.6 %	1.2 %	2.2 %
Intensity average	266,977 cps	8,967 cps	58,064 cps	62,161 cps	9,413 cps	9,707 cps	2,767,189 cps	104,096,698 cps	3,456,113 cps
Intensity per Run 1	264,985.5 cps	8,330.8 cps	56,713.4 cps	60,739.4 cps	9,567.7 cps	9,523.7 cps	2,715,282.5 cps	102,253,037.3 cps	3,385,568.4 cps
Intensity per Run 2	270,748.7 cps	9,567.7 cps	59,409.1 cps	62,447.9 cps	9,435.6 cps	9,333.5 cps	2,783,602.0 cps	105,078,862.3 cps	3,462,167.0 cps
Intensity per Run 3	265,195.7 cps	9,003.3 cps	58,070.5 cps	63,296.2 cps	9,235.4 cps	10,264.3 cps	2,802,682.5 cps	104,958,195.7 cps	3,520,602.0 cps
Intensity RSD	1.2 %	6.9 %	2.3 %	2.1 %	1.8 %	5.1 %	1.7 %	1.5 %	2.0 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.930 ppb	2.113 ppb	2.224 ppb	7.357 ppb	7.003 ppb	112.259 ppb	108.519 ppb	107.823 ppb	
Concentration per Run 1	0.907 ppb	2.046 ppb	2.091 ppb	7.290 ppb	6.973 ppb	110.319 ppb	107.591 ppb	105.029 ppb	
Concentration per Run 2	0.936 ppb	2.146 ppb	2.206 ppb	7.298 ppb	6.979 ppb	113.438 ppb	108.155 ppb	107.435 ppb	
Concentration per Run 3	0.946 ppb	2.147 ppb	2.375 ppb	7.485 ppb	7.058 ppb	113.019 ppb	109.812 ppb	111.004 ppb	
Concentration RSD	2.2 %	2.8 %	6.4 %	1.5 %	0.7 %	1.5 %	1.1 %	2.8 %	
Intensity average	42,170 cps	33,728 cps	5,330 cps	205,735 cps	100,167 cps	651,327 cps	109,803 cps	522,856 cps	678 cps
Intensity per Run 1	40,830.7 cps	32,915.4 cps	5,081.0 cps	202,809.4 cps	98,998.8 cps	639,089.4 cps	108,364.0 cps	507,206.3 cps	676.0 cps
Intensity per Run 2	43,054.1 cps	34,090.4 cps	5,345.2 cps	205,781.9 cps	101,240.6 cps	654,554.1 cps	110,199.8 cps	524,449.5 cps	679.0 cps
Intensity per Run 3	42,624.7 cps	34,178.7 cps	5,565.2 cps	208,615.0 cps	100,260.9 cps	660,338.8 cps	110,845.6 cps	536,911.8 cps	680.0 cps
Intensity RSD	2.8 %	2.1 %	4.5 %	1.4 %	1.1 %	1.7 %	1.2 %	2.9 %	0.3 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	4.399 ppb	N/A	0.252 ppb			0.895 ppb		94.168 %	10.320 ppb
Concentration per Run 1	4.440 ppb	N/A	0.220 ppb			0.892 ppb		93.967 %	9.938 ppb
Concentration per Run 2	4.296 ppb	N/A	0.271 ppb			1.615 ppb		94.165 %	10.383 ppb
Concentration per Run 3	4.460 ppb	N/A	0.264 ppb			0.177 ppb		94.373 %	10.639 ppb
Concentration RSD	2.0 %	N/A	11.1 %			80.4 %		0.2 %	3.4 %
Intensity average	16,698 cps	117 cps	63 cps	32,341 cps	5,353 cps	-304 cps	5,604 cps	550,677 cps	108,610 cps
Intensity per Run 1	16,787.9 cps	130.0 cps	52.6 cps	30,859.1 cps	5,577.3 cps	-303.3 cps	5,992.5 cps	549,498.8 cps	104,374.8 cps
Intensity per Run 2	16,304.4 cps	170.0 cps	70.2 cps	32,804.0 cps	4,775.9 cps	-181.0 cps	4,824.0 cps	550,659.2 cps	109,155.0 cps
Intensity per Run 3	17,000.8 cps	50.0 cps	67.5 cps	33,359.5 cps	5,706.3 cps	-427.3 cps	5,995.5 cps	551,872.8 cps	112,299.2 cps
Intensity RSD	2.1 %	52.4 %	14.9 %	4.1 %	9.4 %	40.5 %	12.1 %	0.2 %	3.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

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Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	8.556 ppb	8.665 ppb	8.480 ppb	8.347 ppb	0.017 ppm		0.310 ppb	0.085 ppb	0.301 ppb
Concentration per Run 1	8.364 ppb	8.293 ppb	8.207 ppb	8.145 ppb	0.017 ppm		0.297 ppb	0.084 ppb	0.274 ppb
Concentration per Run 2	8.574 ppb	8.854 ppb	8.516 ppb	8.429 ppb	0.017 ppm		0.351 ppb	0.085 ppb	0.291 ppb
Concentration per Run 3	8.730 ppb	8.847 ppb	8.717 ppb	8.468 ppb	0.017 ppm		0.282 ppb	0.084 ppb	0.337 ppb
Concentration RSD	2.1 %	3.7 %	3.0 %	2.1 %	0.4 %		11.9 %	0.7 %	10.7 %
Intensity average	163,050 cps	181,896 cps	106,287 cps	277,323 cps	1,521,986 cps	839 cps	389 cps	6,198 cps	224 cps
Intensity per Run 1	159,062.9 cps	173,740.1 cps	102,656.4 cps	270,049.1 cps	1,528,289.0 cps	800.0 cps	376.0 cps	6,161.5 cps	204.0 cps
Intensity per Run 2	163,187.3 cps	185,600.7 cps	106,556.8 cps	279,530.3 cps	1,516,482.7 cps	872.0 cps	428.0 cps	6,217.6 cps	216.0 cps
Intensity per Run 3	166,899.5 cps	186,347.6 cps	109,647.7 cps	282,389.9 cps	1,521,186.5 cps	844.0 cps	364.0 cps	6,213.6 cps	252.0 cps
Intensity RSD	2.4 %	3.9 %	3.3 %	2.3 %	0.4 %	4.3 %	8.7 %	0.5 %	11.2 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.084 ppb	0.140 ppb	0.136 ppb	90.253 %	0.498 ppb	0.421 ppb	0.414 ppb	104.578 ppb	105.065 ppb
Concentration per Run 1	0.080 ppb	0.140 ppb	0.130 ppb	90.083 %	0.485 ppb	0.399 ppb	0.410 ppb	102.188 ppb	103.844 ppb
Concentration per Run 2	0.087 ppb	0.144 ppb	0.146 ppb	89.777 %	0.511 ppb	0.433 ppb	0.414 ppb	106.546 ppb	105.890 ppb
Concentration per Run 3	0.085 ppb	0.137 ppb	0.133 ppb	90.900 %	0.499 ppb	0.431 ppb	0.419 ppb	105.000 ppb	105.460 ppb
Concentration RSD	4.5 %	2.6 %	6.2 %	0.6 %	2.7 %	4.5 %	1.0 %	2.1 %	1.0 %
Intensity average	6,104 cps	1,684 cps	4,027 cps	808,021 cps	12,729 cps	11,002 cps	8,680 cps	629,258 cps	1,153,107 cps
Intensity per Run 1	5,793.3 cps	1,672.1 cps	3,832.5 cps	806,492.8 cps	12,378.2 cps	10,436.4 cps	8,591.0 cps	614,639.3 cps	1,139,414.4 cps
Intensity per Run 2	6,305.6 cps	1,724.1 cps	4,284.5 cps	803,761.9 cps	12,978.8 cps	11,249.1 cps	8,623.0 cps	638,183.6 cps	1,156,939.9 cps
Intensity per Run 3	6,213.6 cps	1,656.1 cps	3,964.4 cps	813,809.3 cps	12,830.6 cps	11,321.2 cps	8,827.1 cps	634,952.2 cps	1,162,966.7 cps
Intensity RSD	4.5 %	2.1 %	5.8 %	0.6 %	2.5 %	4.5 %	1.5 %	2.0 %	1.1 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.367 %			0.014 ppm	0.098 ppb	0.099 ppb	3.402 ppb
Concentration per Run 1			92.489 %			0.014 ppm	0.094 ppb	0.095 ppb	3.356 ppb
Concentration per Run 2			92.022 %			0.014 ppm	0.099 ppb	0.100 ppb	3.393 ppb
Concentration per Run 3			92.591 %			0.013 ppm	0.100 ppb	0.101 ppb	3.455 ppb
Concentration RSD			0.3 %			1.0 %	3.1 %	3.3 %	1.5 %
Intensity average	18,972 cps	14,446 cps	2,903,373 cps	12,492 cps	10,710 cps	3,062,238 cps	8,928 cps	21,686 cps	219,752 cps
Intensity per Run 1	18,641.9 cps	14,520.4 cps	2,907,199.2 cps	11,825.6 cps	10,796.7 cps	3,072,123.7 cps	8,684.0 cps	21,044.7 cps	217,696.7 cps
Intensity per Run 2	19,395.1 cps	14,460.4 cps	2,892,532.0 cps	12,974.8 cps	10,572.5 cps	3,087,307.8 cps	9,079.3 cps	22,150.6 cps	220,607.0 cps
Intensity per Run 3	18,878.3 cps	14,356.3 cps	2,910,389.4 cps	12,674.4 cps	10,760.7 cps	3,027,282.9 cps	9,019.3 cps	21,864.1 cps	220,953.7 cps
Intensity RSD	2.0 %	0.6 %	0.3 %	4.8 %	1.1 %	1.0 %	2.4 %	2.6 %	0.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	3.259 ppb	3.295 ppb	87.652 %
Concentration per Run 1	3.188 ppb	3.226 ppb	88.014 %
Concentration per Run 2	3.278 ppb	3.303 ppb	88.262 %
Concentration per Run 3	3.312 ppb	3.356 ppb	86.680 %
Concentration RSD	2.0 %	2.0 %	1.0 %
Intensity average	184,790 cps	857,978 cps	2,246,472 cps
Intensity per Run 1	181,509.1 cps	843,580.0 cps	2,255,754.3 cps
Intensity per Run 2	187,058.9 cps	866,158.1 cps	2,262,111.2 cps
Intensity per Run 3	185,802.3 cps	864,194.5 cps	2,221,549.4 cps
Intensity RSD	1.6 %	1.5 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28027-003 Analysis: 10/30/2019 18:57:52 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	98.329 %	95.247 %	0.001 ppb	14.757 ppb	14.955 ppb	N/A	32,129.660 ppb	969.751 ppb	970.405 ppb	947.817 ppb
Concentration per Run 1	97.085 %	91.352 %	0.006 ppb	15.223 ppb	15.542 ppb	N/A	34,328.335 ppb	1,022.860 ppb	1,026.736 ppb	1,029.082 ppb
Concentration per Run 2	98.669 %	96.254 %	-0.002 ppb	14.399 ppb	14.899 ppb	N/A	31,396.054 ppb	963.004 ppb	949.190 ppb	932.581 ppb
Concentration per Run 3	99.234 %	98.133 %	0.000 ppb	14.648 ppb	14.425 ppb	N/A	30,664.590 ppb	923.389 ppb	935.289 ppb	881.789 ppb
Concentration RSD	1.1 %	3.7 %	340.8 %	2.9 %	3.8 %	N/A	6.0 %	5.2 %	5.1 %	7.9 %
Intensity average	13,751,659 cps	30,667 cps	4 cps	240 cps	1,433 cps	6,652 cps	58,306,249 cps	802,990 cps	168,787 cps	218,896 cps
Intensity per Run 1	13,577,591.9 cps	29,413.6 cps	4.0 cps	237.5 cps	1,429.1 cps	6,251.6 cps	59,850,353.7 cps	813,493.9 cps	171,510.9 cps	228,422.0 cps
Intensity per Run 2	13,799,160.5 cps	30,991.9 cps	3.0 cps	236.5 cps	1,441.1 cps	6,721.9 cps	57,261,864.0 cps	800,947.5 cps	165,753.3 cps	216,309.7 cps
Intensity per Run 3	13,878,224.7 cps	31,596.9 cps	3.5 cps	246.0 cps	1,428.6 cps	6,982.0 cps	57,806,529.7 cps	794,528.4 cps	169,097.8 cps	211,955.5 cps
Intensity RSD	1.1 %	3.7 %	14.3 %	2.2 %	0.5 %	5.6 %	2.3 %	1.2 %	1.7 %	3.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	141.565 ppb		0.220 ppm	8,816.083 ppb	32,115.559 ppb	32,873.540 ppb	33,863.801 ppb	96.150 %	90.097 %	2.090 ppb
Concentration per Run 1	150.371 ppb		0.221 ppm	9,291.138 ppb	33,160.304 ppb	32,456.233 ppb	35,776.875 ppb	96.706 %	86.451 %	2.380 ppb
Concentration per Run 2	142.220 ppb		0.224 ppm	8,866.046 ppb	31,908.387 ppb	33,043.570 ppb	33,929.998 ppb	95.009 %	89.540 %	1.988 ppb
Concentration per Run 3	132.106 ppb		0.215 ppm	8,291.064 ppb	31,277.987 ppb	33,120.818 ppb	31,884.532 ppb	96.736 %	94.299 %	1.902 ppb
Concentration RSD	6.5 %		1.9 %	5.7 %	3.0 %	1.1 %	5.7 %	1.0 %	4.4 %	12.2 %
Intensity average	40,222 cps	18,287 cps	1,367,561 cps	6,724,978 cps	117,649 cps	84,140,523 cps	1,473,795 cps	6,618,025 cps	264,509 cps	716 cps
Intensity per Run 1	41,027.4 cps	18,463.7 cps	1,317,323.4 cps	6,810,011.6 cps	116,652.7 cps	83,515,524.4 cps	1,496,493.5 cps	6,656,285.7 cps	253,807.0 cps	784.0 cps
Intensity per Run 2	40,545.9 cps	18,033.0 cps	1,388,857.4 cps	6,750,277.1 cps	116,370.0 cps	83,607,598.3 cps	1,470,666.9 cps	6,539,458.7 cps	262,874.0 cps	680.0 cps
Intensity per Run 3	39,091.4 cps	18,363.6 cps	1,396,501.6 cps	6,614,645.6 cps	119,924.7 cps	85,298,447.5 cps	1,454,224.5 cps	6,658,331.7 cps	276,846.1 cps	684.0 cps
Intensity RSD	2.5 %	1.2 %	3.2 %	1.5 %	1.7 %	1.2 %	1.4 %	1.0 %	4.4 %	8.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.413 ppb	1.527 ppb	1.268 ppb	N/A	8.128 ppb	220.739 ppb	218.952 ppb	0.149 ppb	1.397 ppb	1.367 ppb
Concentration per Run 1	0.442 ppb	1.589 ppb	1.394 ppb	N/A	8.512 ppb	236.119 ppb	226.866 ppb	0.153 ppb	1.567 ppb	1.451 ppb
Concentration per Run 2	0.411 ppb	1.491 ppb	1.264 ppb	N/A	7.979 ppb	216.392 ppb	220.757 ppb	0.151 ppb	1.320 ppb	1.294 ppb
Concentration per Run 3	0.386 ppb	1.500 ppb	1.145 ppb	N/A	7.892 ppb	209.705 ppb	209.232 ppb	0.141 ppb	1.303 ppb	1.358 ppb
Concentration RSD	6.8 %	3.5 %	9.8 %	N/A	4.1 %	6.2 %	4.1 %	4.5 %	10.6 %	5.8 %
Intensity average	6,509 cps	31,202 cps	4,466 cps	4,758 cps	118,240 cps	4,239,695 cps	142,022 cps	6,865 cps	25,183 cps	3,837 cps
Intensity per Run 1	6,594.7 cps	31,086.7 cps	4,588.8 cps	4,620.9 cps	118,285.3 cps	4,333,690.0 cps	141,331.4 cps	6,805.9 cps	25,433.9 cps	3,784.6 cps
Intensity per Run 2	6,451.9 cps	30,364.9 cps	4,460.8 cps	4,831.0 cps	116,230.4 cps	4,166,402.2 cps	142,467.8 cps	6,949.9 cps	24,900.8 cps	3,732.6 cps
Intensity per Run 3	6,481.2 cps	32,154.8 cps	4,348.8 cps	4,821.0 cps	120,203.8 cps	4,218,992.1 cps	142,265.4 cps	6,837.9 cps	25,213.4 cps	3,992.6 cps
Intensity RSD	1.2 %	2.9 %	2.7 %	2.5 %	1.7 %	2.0 %	0.4 %	1.1 %	1.1 %	3.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	4.030 ppb	3.899 ppb	42.337 ppb	38.890 ppb	39.827 ppb		0.118 ppb	N/A	0.111 ppb	
Concentration per Run 1	4.304 ppb	4.095 ppb	44.683 ppb	41.555 ppb	42.361 ppb		0.161 ppb	N/A	0.217 ppb	
Concentration per Run 2	3.985 ppb	3.928 ppb	41.586 ppb	38.213 ppb	39.122 ppb		0.156 ppb	N/A	0.018 ppb	
Concentration per Run 3	3.801 ppb	3.675 ppb	40.741 ppb	36.901 ppb	37.998 ppb		0.038 ppb	N/A	0.097 ppb	
Concentration RSD	6.3 %	5.4 %	4.9 %	6.2 %	5.7 %		59.2 %	N/A	90.7 %	
Intensity average	112,524 cps	55,953 cps	255,834 cps	39,944 cps	196,013 cps	57 cps	4,009 cps	77 cps	15 cps	6,067 cps
Intensity per Run 1	114,276.6 cps	56,387.1 cps	258,786.6 cps	40,461.5 cps	197,550.4 cps	57.0 cps	3,974.6 cps	60.0 cps	48.2 cps	5,979.4 cps
Intensity per Run 2	112,048.8 cps	56,089.7 cps	255,425.9 cps	39,634.8 cps	194,530.7 cps	58.0 cps	4,185.7 cps	80.0 cps	-14.2 cps	6,120.5 cps
Intensity per Run 3	111,246.2 cps	55,382.6 cps	253,289.5 cps	39,735.2 cps	195,957.4 cps	56.0 cps	3,867.1 cps	90.0 cps	12.2 cps	6,100.5 cps
Intensity RSD	1.4 %	0.9 %	1.1 %	1.1 %	0.8 %	1.8 %	4.0 %	19.9 %	203.2 %	1.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.377 ppb		92.040 %	0.857 ppb	0.817 ppb	0.801 ppb	0.800 ppb	0.799 ppb	0.018 ppm
Concentration per Run 1		0.326 ppb		86.454 %	0.830 ppb	0.793 ppb	0.784 ppb	0.782 ppb	0.780 ppb	0.017 ppm
Concentration per Run 2		0.194 ppb		93.885 %	0.870 ppb	0.792 ppb	0.776 ppb	0.794 ppb	0.788 ppb	0.018 ppm
Concentration per Run 3		0.612 ppb		95.780 %	0.872 ppb	0.867 ppb	0.841 ppb	0.826 ppb	0.830 ppb	0.019 ppm
Concentration RSD		56.6 %		5.4 %	2.7 %	5.3 %	4.5 %	2.9 %	3.4 %	4.0 %
Intensity average	5,436 cps	-393 cps	5,726 cps	538,231 cps	9,149 cps	15,671 cps	16,954 cps	10,120 cps	26,739 cps	1,601,169 cps
Intensity per Run 1	5,258.1 cps	-386.3 cps	5,646.3 cps	505,568.8 cps	8,358.8 cps	14,344.3 cps	15,685.9 cps	9,343.5 cps	24,680.4 cps	1,532,427.4 cps
Intensity per Run 2	5,807.4 cps	-430.8 cps	6,051.5 cps	549,021.3 cps	9,443.6 cps	15,461.6 cps	16,739.2 cps	10,212.2 cps	26,832.8 cps	1,610,864.1 cps
Intensity per Run 3	5,241.1 cps	-362.8 cps	5,480.2 cps	560,102.4 cps	9,643.7 cps	17,207.9 cps	18,437.6 cps	10,804.7 cps	28,705.0 cps	1,660,214.0 cps
Intensity RSD	5.9 %	8.8 %	5.1 %	5.4 %	7.6 %	9.2 %	8.2 %	7.3 %	7.5 %	4.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.043 ppb	0.005 ppb	0.056 ppb	0.005 ppb	0.037 ppb	0.038 ppb	90.971 %	0.044 ppb	0.286 ppb
Concentration per Run 1		0.041 ppb	0.006 ppb	0.061 ppb	0.006 ppb	0.036 ppb	0.038 ppb	87.340 %	0.054 ppb	0.293 ppb
Concentration per Run 2		0.037 ppb	0.006 ppb	0.084 ppb	0.005 ppb	0.034 ppb	0.036 ppb	92.277 %	0.040 ppb	0.284 ppb
Concentration per Run 3		0.051 ppb	0.004 ppb	0.025 ppb	0.006 ppb	0.040 ppb	0.040 ppb	93.297 %	0.038 ppb	0.280 ppb
Concentration RSD		16.9 %	14.8 %	52.8 %	11.6 %	7.4 %	5.2 %	3.5 %	20.1 %	2.3 %
Intensity average	648 cps	132 cps	469 cps	43 cps	456 cps	448 cps	1,167 cps	814,450 cps	1,776 cps	7,596 cps
Intensity per Run 1	636.0 cps	124.0 cps	492.0 cps	44.0 cps	468.0 cps	424.0 cps	1,123.8 cps	781,938.5 cps	1,948.2 cps	7,470.2 cps
Intensity per Run 2	636.0 cps	128.0 cps	500.0 cps	64.0 cps	412.0 cps	424.0 cps	1,122.4 cps	826,136.6 cps	1,700.1 cps	7,670.4 cps
Intensity per Run 3	672.0 cps	144.0 cps	416.0 cps	20.0 cps	488.0 cps	496.0 cps	1,255.0 cps	835,274.6 cps	1,680.1 cps	7,646.3 cps
Intensity RSD	3.2 %	8.0 %	9.9 %	51.6 %	8.6 %	9.3 %	6.5 %	3.5 %	8.4 %	1.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.286 ppb	2.962 ppb	2.962 ppb			90.527 %			0.013 ppm	0.057 ppb
Concentration per Run 1	0.302 ppb	3.166 ppb	3.081 ppb			86.506 %			0.013 ppm	0.057 ppb
Concentration per Run 2	0.280 ppb	2.858 ppb	2.929 ppb			92.112 %			0.013 ppm	0.058 ppb
Concentration per Run 3	0.277 ppb	2.864 ppb	2.875 ppb			92.963 %			0.013 ppm	0.056 ppb
Concentration RSD	4.8 %	5.9 %	3.6 %			3.9 %			2.9 %	1.7 %
Intensity average	6,084 cps	17,857 cps	32,526 cps	1,061 cps	968 cps	2,845,522 cps	1,140 cps	997 cps	2,999,643 cps	5,613 cps
Intensity per Run 1	6,149.5 cps	18,297.4 cps	32,426.1 cps	1,104.0 cps	960.0 cps	2,719,132.2 cps	1,228.1 cps	980.0 cps	2,900,748.3 cps	5,316.1 cps
Intensity per Run 2	6,049.5 cps	17,528.3 cps	32,710.9 cps	1,088.1 cps	1,048.0 cps	2,895,333.1 cps	1,040.0 cps	1,008.0 cps	3,054,567.0 cps	5,810.4 cps
Intensity per Run 3	6,053.5 cps	17,744.6 cps	32,442.1 cps	992.0 cps	896.0 cps	2,922,099.8 cps	1,152.1 cps	1,004.0 cps	3,043,613.8 cps	5,712.3 cps
Intensity RSD	0.9 %	2.2 %	0.5 %	5.7 %	7.9 %	3.9 %	8.3 %	1.5 %	2.9 %	4.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.060 ppb	1.260 ppb	1.209 ppb	1.232 ppb	87.560 %
Concentration per Run 1	0.063 ppb	1.347 ppb	1.293 ppb	1.326 ppb	82.411 %
Concentration per Run 2	0.059 ppb	1.234 ppb	1.200 ppb	1.200 ppb	89.701 %
Concentration per Run 3	0.057 ppb	1.197 ppb	1.133 ppb	1.170 ppb	90.568 %
Concentration RSD	5.2 %	6.2 %	6.6 %	6.7 %	5.1 %
Intensity average	14,013 cps	81,445 cps	68,627 cps	321,412 cps	2,244,110 cps
Intensity per Run 1	13,795.6 cps	82,182.4 cps	69,239.4 cps	326,120.2 cps	2,112,148.4 cps
Intensity per Run 2	14,342.2 cps	81,923.7 cps	69,955.5 cps	321,501.3 cps	2,298,984.6 cps
Intensity per Run 3	13,900.7 cps	80,228.7 cps	66,685.9 cps	316,613.0 cps	2,321,195.9 cps
Intensity RSD	2.1 %	1.3 %	2.5 %	1.5 %	5.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28027-003(5) Analysis: 10/30/2019 19:03:57 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)
Concentration average	125.997 %	93.669 %	0.022 ppb	53.819 ppb	53.853 ppb	N/A	129,233.322 ppb	3,720.609 ppb	3,820.564 ppb
Concentration per Run 1	126.723 %	91.992 %	0.016 ppb	61.371 ppb	61.896 ppb	N/A	147,072.702 ppb	4,250.209 ppb	4,337.395 ppb
Concentration per Run 2	127.458 %	91.415 %	0.033 ppb	62.283 ppb	61.035 ppb	N/A	149,211.098 ppb	4,294.733 ppb	4,391.115 ppb
Concentration per Run 3	123.808 %	97.599 %	0.017 ppb	37.805 ppb	38.628 ppb	N/A	91,416.167 ppb	2,616.884 ppb	2,733.184 ppb
Concentration RSD	1.5 %	3.6 %	44.9 %	25.8 %	24.5 %	N/A	25.4 %	25.7 %	24.7 %
Intensity average	17,621,039 cps	30,159 cps	7 cps	848 cps	5,020 cps	21,125 cps	230,988,698 cps	3,030,035 cps	653,814 cps
Intensity per Run 1	17,722,640.3 cps	29,619.6 cps	5.5 cps	954.5 cps	5,691.8 cps	23,001.2 cps	258,775,219.1 cps	3,406,670.3 cps	730,141.6 cps
Intensity per Run 2	17,825,460.8 cps	29,433.6 cps	8.0 cps	963.0 cps	5,580.8 cps	22,750.8 cps	261,403,797.8 cps	3,427,877.7 cps	736,161.6 cps
Intensity per Run 3	17,315,015.3 cps	31,425.0 cps	6.0 cps	627.0 cps	3,788.1 cps	17,623.0 cps	172,787,077.5 cps	2,255,557.0 cps	495,137.8 cps
Intensity RSD	1.5 %	3.6 %	20.4 %	22.6 %	21.3 %	14.4 %	21.8 %	22.1 %	21.0 %

Category	26Mg (KED)	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)
Concentration average	3,742.982 ppb	567.141 ppb		0.999 ppm	35,262.172 ppb	127,443.327 ppb	33,937.955 ppb	126,151.533 ppb	124.136 %
Concentration per Run 1	4,275.161 ppb	654.798 ppb		1.132 ppm	39,570.370 ppb	146,073.941 ppb	33,720.738 ppb	140,581.858 ppb	124.723 %
Concentration per Run 2	4,250.439 ppb	662.793 ppb		1.143 ppm	41,186.943 ppb	146,963.057 ppb	33,320.215 ppb	148,863.017 ppb	125.992 %
Concentration per Run 3	2,703.346 ppb	383.831 ppb		0.723 ppm	25,029.204 ppb	89,292.982 ppb	34,772.912 ppb	89,009.724 ppb	121.694 %
Concentration RSD	24.1 %	28.0 %		23.9 %	25.2 %	25.9 %	2.2 %	25.7 %	1.8 %
Intensity average	851,739 cps	157,502 cps	66,719 cps	6,146,453 cps	26,609,618 cps	462,928 cps	112,097,350 cps	5,452,052 cps	8,544,317 cps
Intensity per Run 1	956,555.1 cps	178,913.7 cps	74,159.7 cps	6,831,346.8 cps	29,281,416.1 cps	519,979.4 cps	111,939,249.5 cps	5,951,907.5 cps	8,584,714.7 cps
Intensity per Run 2	947,256.7 cps	180,396.3 cps	76,112.2 cps	6,876,421.0 cps	30,403,844.8 cps	522,148.5 cps	111,722,862.2 cps	6,291,261.9 cps	8,672,011.0 cps
Intensity per Run 3	651,405.1 cps	113,194.6 cps	49,884.6 cps	4,731,590.4 cps	20,143,592.2 cps	346,655.9 cps	112,629,938.7 cps	4,112,986.2 cps	8,376,226.7 cps
Intensity RSD	20.4 %	24.4 %	21.9 %	19.9 %	21.1 %	21.8 %	0.4 %	21.5 %	1.8 %

Category	45Sc (KED)	47Ti (KED)	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)
Concentration average	90.187 %	10.122 ppb	1.721 ppb	5.720 ppb	5.914 ppb	N/A	31.156 ppb	898.284 ppb	877.031 ppb
Concentration per Run 1	87.545 %	13.367 ppb	1.974 ppb	6.457 ppb	6.634 ppb	N/A	35.253 ppb	1,022.989 ppb	1,006.256 ppb
Concentration per Run 2	87.400 %	10.547 ppb	1.954 ppb	6.552 ppb	6.927 ppb	N/A	35.868 ppb	1,037.801 ppb	1,008.414 ppb
Concentration per Run 3	95.616 %	6.452 ppb	1.235 ppb	4.151 ppb	4.183 ppb	N/A	22.348 ppb	634.062 ppb	616.422 ppb
Concentration RSD	5.2 %	34.4 %	24.5 %	23.8 %	25.5 %	N/A	24.5 %	25.5 %	25.7 %
Intensity average	264,774 cps	3,445 cps	22,141 cps	109,804 cps	16,458 cps	17,189 cps	447,706 cps	17,160,917 cps	561,835 cps
Intensity per Run 1	257,017.6 cps	4,464.9 cps	24,631.0 cps	121,011.1 cps	17,944.9 cps	18,904.4 cps	496,396.1 cps	19,165,036.9 cps	631,216.4 cps
Intensity per Run 2	256,592.4 cps	3,516.5 cps	24,354.5 cps	122,555.0 cps	18,642.0 cps	19,835.8 cps	503,748.5 cps	19,390,883.5 cps	631,521.3 cps
Intensity per Run 3	280,713.5 cps	2,352.2 cps	17,437.9 cps	85,844.8 cps	12,786.9 cps	12,827.0 cps	342,973.1 cps	12,926,830.9 cps	422,768.2 cps
Intensity RSD	5.2 %	30.7 %	18.4 %	18.9 %	19.4 %	22.1 %	20.3 %	21.4 %	21.4 %

Category	59Co (KED)	60Ni (KED)	62Ni (KED)	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)
Concentration average	0.569 ppb	7.002 ppb	7.209 ppb	14.726 ppb	14.322 ppb	149.907 ppb	129.481 ppb	130.675 ppb	
Concentration per Run 1	0.648 ppb	8.116 ppb	8.459 ppb	16.761 ppb	16.237 ppb	170.464 ppb	145.902 ppb	146.342 ppb	
Concentration per Run 2	0.660 ppb	8.141 ppb	8.236 ppb	16.708 ppb	16.407 ppb	170.552 ppb	146.686 ppb	149.789 ppb	
Concentration per Run 3	0.398 ppb	4.749 ppb	4.933 ppb	10.708 ppb	10.322 ppb	108.706 ppb	95.854 ppb	95.895 ppb	
Concentration RSD	26.0 %	27.9 %	27.4 %	23.6 %	24.2 %	23.8 %	22.5 %	23.1 %	
Intensity average	25,443 cps	87,495 cps	13,532 cps	403,732 cps	199,636 cps	826,747 cps	129,493 cps	626,153 cps	182 cps
Intensity per Run 1	28,376.2 cps	98,269.0 cps	15,309.4 cps	450,389.9 cps	221,315.2 cps	912,276.4 cps	142,945.5 cps	687,189.4 cps	201.0 cps
Intensity per Run 2	28,833.3 cps	98,011.9 cps	14,900.9 cps	447,510.1 cps	223,246.2 cps	914,246.1 cps	143,188.5 cps	700,563.5 cps	193.0 cps
Intensity per Run 3	19,119.7 cps	66,204.1 cps	10,384.6 cps	313,295.4 cps	154,346.7 cps	653,717.4 cps	102,346.0 cps	490,706.6 cps	151.0 cps
Intensity RSD	21.5 %	21.1 %	20.2 %	19.4 %	19.7 %	18.1 %	18.2 %	18.8 %	14.8 %

Category	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)
Concentration average	0.542 ppb	N/A	0.185 ppb			0.920 ppb		94.613 %	2.626 ppb
Concentration per Run 1	0.595 ppb	N/A	0.176 ppb			0.104 ppb		92.553 %	3.012 ppb
Concentration per Run 2	0.471 ppb	N/A	0.242 ppb			0.779 ppb		92.053 %	3.062 ppb
Concentration per Run 3	0.560 ppb	N/A	0.136 ppb			1.878 ppb		99.233 %	1.802 ppb
Concentration RSD	11.8 %	N/A	28.9 %			97.3 %		4.2 %	27.2 %
Intensity average	5,058 cps	137 cps	41 cps	16,557 cps	5,072 cps	-283 cps	5,341 cps	553,279 cps	27,552 cps
Intensity per Run 1	5,013.7 cps	170.0 cps	37.4 cps	18,131.2 cps	4,747.9 cps	-405.6 cps	5,112.1 cps	541,233.2 cps	31,046.6 cps
Intensity per Run 2	4,678.3 cps	170.0 cps	58.6 cps	18,824.2 cps	4,288.7 cps	-300.4 cps	4,515.8 cps	538,310.2 cps	31,427.5 cps
Intensity per Run 3	5,483.2 cps	70.0 cps	26.4 cps	12,715.7 cps	6,179.5 cps	-142.7 cps	6,395.6 cps	580,294.0 cps	20,181.2 cps
Intensity RSD	8.0 %	42.2 %	40.1 %	20.2 %	19.4 %	46.8 %	18.0 %	4.2 %	23.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)
Concentration average	2.484 ppb	2.441 ppb	2.425 ppb	2.436 ppb	0.017 ppm		0.150 ppb	0.019 ppb	0.136 ppb
Concentration per Run 1	2.821 ppb	2.794 ppb	2.738 ppb	2.783 ppb	0.017 ppm		0.239 ppb	0.022 ppb	0.182 ppb
Concentration per Run 2	2.922 ppb	2.827 ppb	2.838 ppb	2.820 ppb	0.017 ppm		0.151 ppb	0.021 ppb	0.136 ppb
Concentration per Run 3	1.709 ppb	1.702 ppb	1.699 ppb	1.705 ppb	0.019 ppm		0.061 ppb	0.014 ppb	0.092 ppb
Concentration RSD	27.1 %	26.2 %	26.0 %	26.0 %	6.7 %		58.9 %	23.9 %	32.9 %
Intensity average	46,999 cps	50,834 cps	30,091 cps	79,944 cps	1,536,796 cps	672 cps	228 cps	1,387 cps	99 cps
Intensity per Run 1	52,425.9 cps	57,106.4 cps	33,328.5 cps	89,560.0 cps	1,483,647.3 cps	712.0 cps	304.0 cps	1,536.1 cps	128.0 cps
Intensity per Run 2	54,081.0 cps	57,552.4 cps	34,423.5 cps	90,450.8 cps	1,471,586.0 cps	708.0 cps	224.0 cps	1,512.1 cps	96.0 cps
Intensity per Run 3	34,490.1 cps	37,844.1 cps	22,521.5 cps	59,822.3 cps	1,655,154.4 cps	596.0 cps	156.0 cps	1,112.1 cps	72.0 cps
Intensity RSD	23.1 %	22.1 %	21.9 %	21.8 %	6.7 %	9.8 %	32.5 %	17.2 %	28.5 %

Category	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)	123Sb (KED)	135Ba (KED)	137Ba (KED)
Concentration average	0.018 ppb	0.144 ppb	0.144 ppb	87.104 %	0.280 ppb	1.002 ppb	1.023 ppb	11.881 ppb	11.535 ppb
Concentration per Run 1	0.020 ppb	0.163 ppb	0.168 ppb	83.846 %	0.339 ppb	1.134 ppb	1.177 ppb	13.297 ppb	13.473 ppb
Concentration per Run 2	0.022 ppb	0.169 ppb	0.163 ppb	83.984 %	0.316 ppb	1.165 ppb	1.211 ppb	14.714 ppb	13.366 ppb
Concentration per Run 3	0.013 ppb	0.098 ppb	0.101 ppb	93.482 %	0.184 ppb	0.707 ppb	0.682 ppb	7.630 ppb	7.766 ppb
Concentration RSD	24.7 %	27.6 %	26.2 %	6.3 %	29.8 %	25.6 %	28.9 %	31.6 %	28.3 %
Intensity average	1,351 cps	1,655 cps	4,069 cps	779,829 cps	7,134 cps	24,697 cps	20,197 cps	69,304 cps	123,064 cps
Intensity per Run 1	1,400.1 cps	1,836.1 cps	4,618.7 cps	750,659.2 cps	8,282.8 cps	27,197.6 cps	22,628.5 cps	75,889.9 cps	140,502.4 cps
Intensity per Run 2	1,576.1 cps	1,904.1 cps	4,496.4 cps	751,895.6 cps	7,770.4 cps	27,923.2 cps	23,269.7 cps	83,745.3 cps	138,970.7 cps
Intensity per Run 3	1,076.1 cps	1,224.1 cps	3,092.9 cps	836,931.5 cps	5,349.2 cps	18,971.1 cps	14,693.1 cps	48,278.2 cps	89,717.5 cps
Intensity RSD	18.8 %	22.6 %	20.8 %	6.3 %	22.0 %	20.1 %	23.7 %	26.9 %	23.5 %

Category	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)	205Tl (KED)	206Pb (KED)
Concentration average			92.122 %			0.013 ppm	0.052 ppb	0.054 ppb	5.015 ppb
Concentration per Run 1			89.416 %			0.013 ppm	0.061 ppb	0.062 ppb	5.819 ppb
Concentration per Run 2			88.752 %			0.013 ppm	0.064 ppb	0.067 ppb	5.933 ppb
Concentration per Run 3			98.199 %			0.014 ppm	0.032 ppb	0.033 ppb	3.294 ppb
Concentration RSD			5.7 %			5.4 %	33.8 %	33.8 %	29.7 %
Intensity average	3,893 cps	3,790 cps	2,895,670 cps	4,198 cps	3,967 cps	3,010,939 cps	4,791 cps	11,792 cps	295,400 cps
Intensity per Run 1	4,512.8 cps	4,420.8 cps	2,810,597.9 cps	4,776.9 cps	4,652.9 cps	2,919,688.9 cps	5,305.1 cps	12,832.6 cps	335,095.4 cps
Intensity per Run 2	4,348.8 cps	4,332.8 cps	2,789,744.8 cps	4,732.9 cps	4,384.8 cps	2,915,655.6 cps	5,453.2 cps	13,623.4 cps	337,027.9 cps
Intensity per Run 3	2,816.3 cps	2,616.3 cps	3,086,668.1 cps	3,084.4 cps	2,864.4 cps	3,197,472.1 cps	3,615.5 cps	8,919.4 cps	214,077.8 cps
Intensity RSD	24.0 %	26.8 %	5.7 %	23.0 %	24.3 %	5.4 %	21.3 %	21.4 %	23.8 %

Category	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	4.858 ppb	4.917 ppb	80.771 %
Concentration per Run 1	5.700 ppb	5.763 ppb	77.784 %
Concentration per Run 2	5.672 ppb	5.737 ppb	76.696 %
Concentration per Run 3	3.203 ppb	3.250 ppb	87.834 %
Concentration RSD	29.5 %	29.4 %	7.6 %
Intensity average	250,734 cps	1,161,118 cps	2,070,120 cps
Intensity per Run 1	287,525.4 cps	1,329,964.4 cps	1,993,561.0 cps
Intensity per Run 2	282,197.9 cps	1,305,306.0 cps	1,965,677.6 cps
Intensity per Run 3	182,478.8 cps	848,083.1 cps	2,251,121.1 cps
Intensity RSD	23.6 %	23.4 %	7.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28038-003 Analysis: 10/30/2019 19:10:02 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	3.431 %	3.232 %	0.427 ppb	18.360 ppb	16.337 ppb	N/A	6,859.316 ppb	228.897 ppb	211.017 ppb	239.771 ppb
Concentration per Run 1	3.233 %	3.457 %	0.433 ppb	16.226 ppb	16.399 ppb	N/A	6,851.203 ppb	234.974 ppb	203.071 ppb	255.615 ppb
Concentration per Run 2	4.694 %	3.358 %	0.541 ppb	13.126 ppb	15.198 ppb	N/A	6,975.972 ppb	231.674 ppb	194.002 ppb	226.790 ppb
Concentration per Run 3	2.366 %	2.882 %	0.306 ppb	25.727 ppb	17.412 ppb	N/A	6,750.774 ppb	220.042 ppb	235.977 ppb	236.909 ppb
Concentration RSD	34.3 %	9.5 %	27.6 %	35.8 %	6.8 %	N/A	1.6 %	3.4 %	10.5 %	6.1 %
Intensity average	479,847 cps	1,041 cps	2 cps	10 cps	53 cps	1,873 cps	411,385 cps	6,302 cps	1,210 cps	1,833 cps
Intensity per Run 1	452,201.3 cps	1,113.1 cps	2.5 cps	9.5 cps	56.5 cps	1,970.2 cps	437,910.2 cps	6,882.0 cps	1,250.1 cps	2,080.2 cps
Intensity per Run 2	656,443.3 cps	1,081.1 cps	3.0 cps	7.5 cps	51.0 cps	1,680.1 cps	436,199.7 cps	6,642.0 cps	1,170.1 cps	1,810.2 cps
Intensity per Run 3	330,895.2 cps	928.0 cps	1.5 cps	12.5 cps	50.0 cps	1,970.2 cps	360,045.4 cps	5,381.2 cps	1,210.1 cps	1,610.1 cps
Intensity RSD	34.3 %	9.5 %	32.7 %	25.6 %	6.7 %	8.9 %	10.8 %	12.8 %	3.3 %	12.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	38.352 ppb		0.351 ppm	2,257.283 ppb	7,334.826 ppb	8,539.258 ppb	8,525.902 ppb	2.964 %	2.845 %	1.225 ppb
Concentration per Run 1	27.915 ppb		0.340 ppm	2,294.084 ppb	6,784.819 ppb	8,599.404 ppb	9,047.785 ppb	2.852 %	3.022 %	0.692 ppb
Concentration per Run 2	47.252 ppb		0.338 ppm	2,232.786 ppb	7,771.608 ppb	8,328.670 ppb	8,623.466 ppb	4.066 %	2.988 %	1.747 ppb
Concentration per Run 3	39.890 ppb		0.375 ppm	2,244.980 ppb	7,448.052 ppb	8,689.699 ppb	7,906.454 ppb	1.974 %	2.525 %	1.238 ppb
Concentration RSD	25.4 %		6.0 %	1.4 %	6.9 %	2.2 %	6.8 %	35.4 %	9.8 %	43.0 %
Intensity average	367 cps	1,097 cps	70,036 cps	55,609 cps	853 cps	674,193 cps	11,826 cps	204,019 cps	8,353 cps	13 cps
Intensity per Run 1	290.0 cps	1,190.1 cps	72,510.2 cps	60,072.7 cps	840.0 cps	656,177.8 cps	13,277.7 cps	196,298.5 cps	8,873.5 cps	8.0 cps
Intensity per Run 2	470.0 cps	1,150.1 cps	70,810.8 cps	57,650.5 cps	950.0 cps	906,706.1 cps	12,507.0 cps	279,887.9 cps	8,773.5 cps	20.0 cps
Intensity per Run 3	340.0 cps	950.0 cps	66,788.3 cps	49,103.1 cps	770.0 cps	459,696.0 cps	9,694.1 cps	135,869.8 cps	7,412.3 cps	12.0 cps
Intensity RSD	25.3 %	11.7 %	4.2 %	10.4 %	10.6 %	33.2 %	16.0 %	35.4 %	9.8 %	45.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.102 ppb	0.456 ppb	0.367 ppb	N/A	2.174 ppb	57.819 ppb	65.166 ppb	0.054 ppb	-0.292 ppb	-0.590 ppb
Concentration per Run 1	0.097 ppb	0.589 ppb	0.415 ppb	N/A	2.140 ppb	58.972 ppb	74.378 ppb	0.064 ppb	-0.306 ppb	-0.523 ppb
Concentration per Run 2	0.104 ppb	0.412 ppb	0.500 ppb	N/A	2.055 ppb	61.114 ppb	56.342 ppb	0.059 ppb	-0.257 ppb	-0.535 ppb
Concentration per Run 3	0.104 ppb	0.367 ppb	0.185 ppb	N/A	2.328 ppb	53.370 ppb	64.779 ppb	0.039 ppb	-0.314 ppb	-0.710 ppb
Concentration RSD	4.1 %	25.7 %	44.3 %	N/A	6.4 %	6.9 %	13.8 %	24.2 %	10.6 %	17.7 %
Intensity average	87 cps	349 cps	69 cps	67 cps	1,057 cps	36,699 cps	1,361 cps	85 cps	236 cps	20 cps
Intensity per Run 1	90.9 cps	452.0 cps	76.0 cps	70.0 cps	1,092.1 cps	38,865.4 cps	1,644.2 cps	104.0 cps	228.0 cps	24.0 cps
Intensity per Run 2	92.7 cps	336.0 cps	84.0 cps	80.0 cps	1,064.0 cps	40,811.2 cps	1,240.1 cps	96.0 cps	268.0 cps	24.0 cps
Intensity per Run 3	78.4 cps	260.0 cps	48.0 cps	50.0 cps	1,016.0 cps	30,419.0 cps	1,200.1 cps	56.0 cps	212.0 cps	12.0 cps
Intensity RSD	8.9 %	27.7 %	27.3 %	22.9 %	3.6 %	15.1 %	18.0 %	30.1 %	12.2 %	34.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.992 ppb	0.963 ppb	11.360 ppb	10.080 ppb	9.982 ppb		66.917 ppb	N/A	-3.847 ppb	
Concentration per Run 1	1.016 ppb	0.935 ppb	10.377 ppb	11.670 ppb	9.607 ppb		46.417 ppb	N/A	-3.206 ppb	
Concentration per Run 2	1.050 ppb	1.034 ppb	13.544 ppb	8.074 ppb	10.729 ppb		64.571 ppb	N/A	-3.951 ppb	
Concentration per Run 3	0.908 ppb	0.919 ppb	10.159 ppb	10.494 ppb	9.609 ppb		89.762 ppb	N/A	-4.382 ppb	
Concentration RSD	7.5 %	6.5 %	16.7 %	18.2 %	6.5 %		32.5 %	N/A	15.5 %	
Intensity average	995 cps	480 cps	2,452 cps	385 cps	1,856 cps	9 cps	6,253 cps	73 cps	-42 cps	413 cps
Intensity per Run 1	1,044.0 cps	496.0 cps	2,420.3 cps	448.0 cps	1,836.1 cps	7.0 cps	4,722.8 cps	50.0 cps	-35.5 cps	373.0 cps
Intensity per Run 2	1,108.1 cps	536.0 cps	2,868.4 cps	344.0 cps	2,096.2 cps	14.0 cps	6,193.5 cps	80.0 cps	-46.4 cps	437.0 cps
Intensity per Run 3	832.0 cps	408.0 cps	2,068.2 cps	364.0 cps	1,636.1 cps	7.0 cps	7,841.4 cps	90.0 cps	-44.1 cps	429.0 cps
Intensity RSD	14.5 %	13.6 %	16.4 %	14.3 %	12.4 %	43.3 %	25.0 %	28.4 %	13.7 %	8.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-131.926 ppb		3.088 %	0.402 ppb	0.512 ppb	0.411 ppb	0.348 ppb	0.315 ppb	0.001 ppm
Concentration per Run 1		-113.135 ppb		3.056 %	0.404 ppb	0.322 ppb	0.313 ppb	0.381 ppb	0.304 ppb	0.001 ppm
Concentration per Run 2		-146.864 ppb		3.333 %	0.389 ppb	0.529 ppb	0.579 ppb	0.363 ppb	0.333 ppb	0.001 ppm
Concentration per Run 3		-135.779 ppb		2.876 %	0.412 ppb	0.685 ppb	0.341 ppb	0.300 ppb	0.309 ppb	0.001 ppm
Concentration RSD		13.0 %		7.5 %	3.0 %	35.5 %	35.6 %	12.3 %	5.0 %	6.7 %
Intensity average	9,757 cps	-709 cps	10,306 cps	18,058 cps	147 cps	325 cps	296 cps	149 cps	356 cps	52,687 cps
Intensity per Run 1	7,381.2 cps	-651.2 cps	7,802.5 cps	17,869.5 cps	148.0 cps	212.0 cps	228.0 cps	164.0 cps	348.0 cps	54,566.4 cps
Intensity per Run 2	9,768.8 cps	-798.4 cps	10,330.3 cps	19,488.3 cps	152.0 cps	360.0 cps	432.0 cps	164.0 cps	396.0 cps	54,895.4 cps
Intensity per Run 3	12,121.9 cps	-676.8 cps	12,785.6 cps	16,816.5 cps	140.0 cps	404.0 cps	228.0 cps	120.0 cps	324.0 cps	48,599.6 cps
Intensity RSD	24.3 %	11.1 %	24.2 %	7.5 %	4.2 %	30.9 %	39.8 %	17.0 %	10.3 %	6.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.074 ppb	0.014 ppb	-0.002 ppb	0.012 ppb	0.013 ppb	0.026 ppb	2.830 %	0.275 ppb	0.172 ppb
Concentration per Run 1		0.032 ppb	0.014 ppb	-0.002 ppb	0.012 ppb	0.009 ppb	0.023 ppb	3.012 %	0.356 ppb	0.189 ppb
Concentration per Run 2		0.283 ppb	0.020 ppb	-0.002 ppb	0.016 ppb	0.020 ppb	0.014 ppb	2.860 %	0.255 ppb	0.118 ppb
Concentration per Run 3		-0.094 ppb	0.008 ppb	-0.002 ppb	0.008 ppb	0.011 ppb	0.040 ppb	2.618 %	0.212 ppb	0.207 ppb
Concentration RSD		260.7 %	40.9 %	0.0 %	30.8 %	43.4 %	52.2 %	7.0 %	26.9 %	27.4 %
Intensity average	8 cps	5 cps	35 cps	0 cps	31 cps	5 cps	24 cps	25,338 cps	231 cps	144 cps
Intensity per Run 1	8.0 cps	4.0 cps	36.0 cps	0.0 cps	32.0 cps	4.0 cps	23.7 cps	26,966.2 cps	308.0 cps	168.0 cps
Intensity per Run 2	8.0 cps	12.0 cps	48.0 cps	0.0 cps	40.0 cps	8.0 cps	14.2 cps	25,605.7 cps	216.0 cps	104.0 cps
Intensity per Run 3	8.0 cps	0.0 cps	20.0 cps	0.0 cps	20.0 cps	4.0 cps	35.5 cps	23,442.3 cps	168.0 cps	160.0 cps
Intensity RSD	0.0 %	114.6 %	40.5 %	N/A	32.8 %	43.3 %	43.6 %	7.0 %	30.8 %	24.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.189 ppb	0.747 ppb	0.789 ppb			2.590 %			0.000 ppm	0.036 ppb
Concentration per Run 1	0.168 ppb	0.692 ppb	0.814 ppb			2.712 %			0.000 ppm	0.039 ppb
Concentration per Run 2	0.177 ppb	0.856 ppb	0.826 ppb			2.625 %			0.000 ppm	0.032 ppb
Concentration per Run 3	0.222 ppb	0.694 ppb	0.728 ppb			2.431 %			0.000 ppm	0.036 ppb
Concentration RSD	15.3 %	12.6 %	6.8 %			5.6 %			4.1 %	10.7 %
Intensity average	125 cps	139 cps	265 cps	11 cps	11 cps	81,396 cps	9 cps	4 cps	85,519 cps	124 cps
Intensity per Run 1	120.0 cps	136.0 cps	288.0 cps	4.0 cps	8.0 cps	85,256.4 cps	8.0 cps	4.0 cps	88,502.7 cps	142.0 cps
Intensity per Run 2	120.0 cps	160.0 cps	280.0 cps	20.0 cps	12.0 cps	82,520.7 cps	8.0 cps	0.0 cps	86,453.7 cps	118.0 cps
Intensity per Run 3	136.0 cps	120.0 cps	228.0 cps	8.0 cps	12.0 cps	76,412.2 cps	12.0 cps	8.0 cps	81,600.3 cps	111.0 cps
Intensity RSD	7.4 %	14.5 %	12.3 %	78.1 %	21.7 %	5.6 %	24.7 %	100.0 %	4.1 %	13.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.033 ppb	0.482 ppb	0.500 ppb	0.478 ppb	2.827 %
Concentration per Run 1	0.029 ppb	0.485 ppb	0.490 ppb	0.465 ppb	3.031 %
Concentration per Run 2	0.035 ppb	0.485 ppb	0.459 ppb	0.463 ppb	2.955 %
Concentration per Run 3	0.036 ppb	0.476 ppb	0.551 ppb	0.508 ppb	2.494 %
Concentration RSD	10.6 %	1.1 %	9.4 %	5.3 %	10.3 %
Intensity average	288 cps	1,015 cps	920 cps	4,077 cps	72,445 cps
Intensity per Run 1	282.0 cps	1,093.1 cps	972.0 cps	4,265.3 cps	77,681.4 cps
Intensity per Run 2	314.0 cps	1,066.0 cps	888.0 cps	4,138.3 cps	75,742.6 cps
Intensity per Run 3	267.0 cps	887.0 cps	900.0 cps	3,827.2 cps	63,912.0 cps
Intensity RSD	8.3 %	11.0 %	4.9 %	5.5 %	10.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28038-003(5) Analysis: 10/30/2019 19:16:06 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	4.290 %	5.630 %	0.153 ppb	14.257 ppb	10.550 ppb	N/A	5,889.575 ppb	179.096 ppb	200.568 ppb	192.477 ppb
Concentration per Run 1	6.096 %	5.108 %	0.225 ppb	15.027 ppb	11.857 ppb	N/A	5,799.876 ppb	170.831 ppb	188.834 ppb	182.482 ppb
Concentration per Run 2	4.167 %	5.099 %	0.163 ppb	16.039 ppb	11.606 ppb	N/A	5,284.899 ppb	171.840 ppb	201.851 ppb	175.183 ppb
Concentration per Run 3	2.606 %	6.684 %	0.072 ppb	11.705 ppb	8.187 ppb	N/A	6,583.950 ppb	194.616 ppb	211.021 ppb	219.767 ppb
Concentration RSD	40.7 %	16.2 %	50.0 %	15.9 %	19.4 %	N/A	11.1 %	7.5 %	5.6 %	12.4 %
Intensity average	599,915 cps	1,813 cps	2 cps	14 cps	59 cps	1,410 cps	643,313 cps	8,985 cps	2,107 cps	2,710 cps
Intensity per Run 1	852,492.0 cps	1,644.6 cps	2.0 cps	13.0 cps	60.5 cps	1,200.1 cps	545,316.8 cps	7,382.8 cps	1,710.2 cps	2,190.3 cps
Intensity per Run 2	582,767.0 cps	1,641.6 cps	1.5 cps	14.0 cps	60.0 cps	1,450.1 cps	521,936.5 cps	7,823.1 cps	1,930.2 cps	2,230.3 cps
Intensity per Run 3	364,487.3 cps	2,152.2 cps	1.0 cps	13.5 cps	56.0 cps	1,580.1 cps	862,686.7 cps	11,748.9 cps	2,680.4 cps	3,711.0 cps
Intensity RSD	40.7 %	16.2 %	33.3 %	3.7 %	4.2 %	13.7 %	29.6 %	26.8 %	24.1 %	32.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	26.932 ppb		0.298 ppm	1,855.059 ppb	6,585.811 ppb	7,391.260 ppb	7,164.446 ppb	3.853 %	5.370 %	1.755 ppb
Concentration per Run 1	23.333 ppb		0.317 ppm	1,857.759 ppb	6,244.099 ppb	6,911.896 ppb	7,311.852 ppb	5.596 %	4.414 %	0.474 ppb
Concentration per Run 2	21.841 ppb		0.312 ppm	1,800.350 ppb	7,103.668 ppb	7,604.752 ppb	6,580.400 ppb	3.723 %	4.980 %	0.630 ppb
Concentration per Run 3	35.621 ppb		0.265 ppm	1,907.068 ppb	6,409.666 ppb	7,657.133 ppb	7,601.086 ppb	2.241 %	6.716 %	4.160 ppb
Concentration RSD	28.1 %		9.6 %	2.9 %	6.9 %	5.6 %	7.3 %	43.6 %	22.3 %	118.8 %
Intensity average	493 cps	977 cps	108,839 cps	85,537 cps	1,440 cps	750,514 cps	18,751 cps	265,218 cps	15,765 cps	43 cps
Intensity per Run 1	360.0 cps	1,130.1 cps	99,062.2 cps	71,375.6 cps	1,130.1 cps	1,034,504.5 cps	15,682.3 cps	385,192.9 cps	12,958.9 cps	8.0 cps
Intensity per Run 2	360.0 cps	810.0 cps	106,482.6 cps	76,508.5 cps	1,440.1 cps	757,468.1 cps	15,872.4 cps	256,232.3 cps	14,620.5 cps	12.0 cps
Intensity per Run 3	760.1 cps	990.0 cps	120,971.4 cps	108,725.8 cps	1,750.2 cps	459,569.6 cps	24,698.6 cps	154,227.9 cps	19,716.1 cps	108.0 cps
Intensity RSD	46.8 %	16.4 %	10.2 %	23.7 %	21.5 %	38.3 %	27.5 %	43.6 %	22.3 %	132.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.023 ppb	0.330 ppb	0.248 ppb	N/A	1.613 ppb	44.774 ppb	42.550 ppb	0.033 ppb	-0.483 ppb	-0.573 ppb
Concentration per Run 1	0.117 ppb	0.373 ppb	0.145 ppb	N/A	1.688 ppb	48.478 ppb	41.535 ppb	0.044 ppb	-0.428 ppb	-0.500 ppb
Concentration per Run 2	-0.039 ppb	0.290 ppb	0.435 ppb	N/A	1.641 ppb	40.937 ppb	43.812 ppb	0.021 ppb	-0.521 ppb	-0.694 ppb
Concentration per Run 3	-0.010 ppb	0.328 ppb	0.165 ppb	N/A	1.510 ppb	44.909 ppb	42.303 ppb	0.034 ppb	-0.501 ppb	-0.523 ppb
Concentration RSD	365.4 %	12.6 %	65.1 %	N/A	5.7 %	8.4 %	2.7 %	35.7 %	10.1 %	18.5 %
Intensity average	103 cps	509 cps	111 cps	140 cps	1,516 cps	54,338 cps	1,699 cps	101 cps	321 cps	40 cps
Intensity per Run 1	144.4 cps	460.0 cps	76.0 cps	80.0 cps	1,260.1 cps	46,225.0 cps	1,364.1 cps	108.0 cps	252.0 cps	36.0 cps
Intensity per Run 2	59.4 cps	432.0 cps	128.0 cps	140.0 cps	1,404.1 cps	45,022.5 cps	1,620.1 cps	64.0 cps	248.0 cps	24.0 cps
Intensity per Run 3	105.4 cps	636.0 cps	128.0 cps	200.0 cps	1,884.2 cps	71,767.6 cps	2,112.3 cps	132.0 cps	464.0 cps	60.0 cps
Intensity RSD	41.3 %	21.7 %	27.1 %	42.9 %	21.6 %	27.8 %	22.4 %	34.0 %	38.5 %	45.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.734 ppb	0.751 ppb	8.552 ppb	8.270 ppb	7.978 ppb		14.904 ppb	N/A	1.190 ppb	
Concentration per Run 1	0.676 ppb	0.712 ppb	9.498 ppb	7.995 ppb	8.410 ppb		14.321 ppb	N/A	1.927 ppb	
Concentration per Run 2	0.805 ppb	0.736 ppb	8.043 ppb	8.898 ppb	7.727 ppb		16.022 ppb	N/A	1.945 ppb	
Concentration per Run 3	0.721 ppb	0.806 ppb	8.116 ppb	7.917 ppb	7.797 ppb		14.369 ppb	N/A	-0.302 ppb	
Concentration RSD	8.9 %	6.5 %	9.6 %	6.6 %	4.7 %		6.5 %	N/A	108.6 %	
Intensity average	1,469 cps	735 cps	3,808 cps	631 cps	2,966 cps	9 cps	2,959 cps	67 cps	17 cps	493 cps
Intensity per Run 1	1,048.1 cps	572.0 cps	2,988.4 cps	464.0 cps	2,328.3 cps	13.0 cps	2,043.2 cps	40.0 cps	28.2 cps	450.0 cps
Intensity per Run 2	1,404.1 cps	664.0 cps	3,256.5 cps	588.0 cps	2,536.3 cps	10.0 cps	2,814.9 cps	60.0 cps	33.6 cps	504.0 cps
Intensity per Run 3	1,956.2 cps	968.0 cps	5,177.6 cps	840.0 cps	4,033.0 cps	5.0 cps	4,018.1 cps	100.0 cps	-10.9 cps	526.0 cps
Intensity RSD	31.1 %	28.2 %	31.4 %	30.4 %	31.4 %	43.3 %	33.6 %	45.8 %	142.9 %	7.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-22.023 ppb		6.052 %	0.292 ppb	0.311 ppb	0.363 ppb	0.277 ppb	0.298 ppb	0.001 ppm
Concentration per Run 1		-31.474 ppb		4.179 %	0.289 ppb	0.256 ppb	0.578 ppb	0.320 ppb	0.400 ppb	0.001 ppm
Concentration per Run 2		-19.193 ppb		5.013 %	0.256 ppb	0.283 ppb	0.243 ppb	0.254 ppb	0.223 ppb	0.001 ppm
Concentration per Run 3		-15.402 ppb		8.964 %	0.330 ppb	0.394 ppb	0.267 ppb	0.257 ppb	0.270 ppb	0.002 ppm
Concentration RSD		38.1 %		42.2 %	12.6 %	23.4 %	51.6 %	13.4 %	30.8 %	38.3 %
Intensity average	4,403 cps	-241 cps	4,623 cps	35,390 cps	220 cps	424 cps	471 cps	231 cps	639 cps	102,248 cps
Intensity per Run 1	3,020.4 cps	-254.7 cps	3,181.4 cps	24,436.7 cps	148.0 cps	232.0 cps	556.0 cps	188.0 cps	612.0 cps	75,087.5 cps
Intensity per Run 2	3,956.7 cps	-202.6 cps	4,317.8 cps	29,316.8 cps	160.0 cps	308.0 cps	296.0 cps	184.0 cps	428.0 cps	84,491.9 cps
Intensity per Run 3	6,232.6 cps	-264.5 cps	6,369.6 cps	52,417.9 cps	352.0 cps	732.1 cps	560.0 cps	320.0 cps	876.0 cps	147,165.3 cps
Intensity RSD	37.5 %	13.8 %	35.0 %	42.2 %	52.0 %	63.5 %	32.1 %	33.6 %	35.3 %	38.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.006 ppb	0.004 ppb	-0.002 ppb	0.004 ppb	0.013 ppb	0.007 ppb	5.595 %	0.175 ppb	0.130 ppb
Concentration per Run 1		0.000 ppb	0.008 ppb	-0.002 ppb	0.004 ppb	0.007 ppb	0.007 ppb	3.994 %	0.287 ppb	0.135 ppb
Concentration per Run 2		-0.018 ppb	0.004 ppb	-0.002 ppb	0.003 ppb	0.005 ppb	0.007 ppb	4.959 %	0.149 ppb	0.143 ppb
Concentration per Run 3		-0.001 ppb	0.001 ppb	-0.002 ppb	0.004 ppb	0.026 ppb	0.007 ppb	7.830 %	0.090 ppb	0.112 ppb
Concentration RSD		150.5 %	73.2 %	0.0 %	14.6 %	89.9 %	0.7 %	35.7 %	57.6 %	12.1 %
Intensity average	19 cps	5 cps	21 cps	0 cps	21 cps	12 cps	15 cps	50,087 cps	273 cps	217 cps
Intensity per Run 1	20.0 cps	4.0 cps	28.0 cps	0.0 cps	16.0 cps	4.0 cps	11.0 cps	35,757.8 cps	336.0 cps	164.0 cps
Intensity per Run 2	16.0 cps	4.0 cps	20.0 cps	0.0 cps	16.0 cps	4.0 cps	13.7 cps	44,401.3 cps	236.0 cps	216.0 cps
Intensity per Run 3	20.0 cps	8.0 cps	16.0 cps	0.0 cps	32.0 cps	28.0 cps	21.3 cps	70,102.6 cps	248.0 cps	272.0 cps
Intensity RSD	12.4 %	43.3 %	28.6 %	N/A	43.3 %	115.5 %	35.1 %	35.7 %	20.0 %	24.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.143 ppb	0.559 ppb	0.593 ppb			5.290 %			0.001 ppm	0.007 ppb
Concentration per Run 1	0.167 ppb	0.581 ppb	0.711 ppb			3.801 %			0.001 ppm	0.008 ppb
Concentration per Run 2	0.139 ppb	0.568 ppb	0.465 ppb			4.856 %			0.001 ppm	0.011 ppb
Concentration per Run 3	0.123 ppb	0.530 ppb	0.605 ppb			7.213 %			0.001 ppm	0.001 ppb
Concentration RSD	15.6 %	4.8 %	20.8 %			33.0 %			31.0 %	80.5 %
Intensity average	188 cps	208 cps	400 cps	15 cps	11 cps	166,278 cps	11 cps	15 cps	169,861 cps	90 cps
Intensity per Run 1	160.0 cps	156.0 cps	344.0 cps	12.0 cps	16.0 cps	119,468.6 cps	4.0 cps	8.0 cps	122,904.5 cps	89.0 cps
Intensity per Run 2	168.0 cps	192.0 cps	288.0 cps	24.0 cps	4.0 cps	152,630.7 cps	20.0 cps	20.0 cps	159,992.7 cps	100.0 cps
Intensity per Run 3	236.0 cps	276.0 cps	568.0 cps	8.0 cps	12.0 cps	226,736.0 cps	8.0 cps	16.0 cps	226,686.0 cps	82.0 cps
Intensity RSD	22.2 %	29.6 %	37.0 %	56.8 %	57.3 %	33.0 %	78.1 %	41.7 %	31.0 %	10.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.007 ppb	0.332 ppb	0.334 ppb	0.326 ppb	5.412 %
Concentration per Run 1	0.009 ppb	0.356 ppb	0.335 ppb	0.339 ppb	4.754 %
Concentration per Run 2	0.010 ppb	0.341 ppb	0.333 ppb	0.325 ppb	4.706 %
Concentration per Run 3	0.003 ppb	0.300 ppb	0.333 ppb	0.315 ppb	6.776 %
Concentration RSD	54.6 %	8.8 %	0.4 %	3.6 %	21.8 %
Intensity average	226 cps	1,340 cps	1,196 cps	5,374 cps	138,700 cps
Intensity per Run 1	222.0 cps	1,262.1 cps	1,048.0 cps	4,914.4 cps	121,839.4 cps
Intensity per Run 2	230.0 cps	1,212.1 cps	1,040.1 cps	4,676.4 cps	120,605.8 cps
Intensity per Run 3	226.0 cps	1,545.1 cps	1,500.1 cps	6,529.8 cps	173,654.3 cps
Intensity RSD	1.8 %	13.4 %	22.0 %	18.8 %	21.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28022-001 Analysis: 10/30/2019 19:22:11 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	22.850 %	59.727 %	0.011 ppb	5.733 ppb	5.027 ppb	N/A	8,113.017 ppb	303.992 ppb	308.091 ppb	292.353 ppb
Concentration per Run 1	18.556 %	58.739 %	-0.001 ppb	5.777 ppb	4.406 ppb	N/A	7,387.693 ppb	265.087 ppb	260.534 ppb	251.001 ppb
Concentration per Run 2	28.332 %	103.597 %	-0.001 ppb	5.678 ppb	5.703 ppb	N/A	12,524.217 ppb	443.351 ppb	443.851 ppb	425.725 ppb
Concentration per Run 3	21.660 %	16.844 %	0.034 ppb	5.745 ppb	4.973 ppb	N/A	4,427.143 ppb	203.538 ppb	219.887 ppb	200.332 ppb
Concentration RSD	21.9 %	72.6 %	184.0 %	0.9 %	12.9 %	N/A	50.5 %	41.0 %	38.7 %	40.4 %
Intensity average	3,195,582 cps	19,231 cps	2 cps	59 cps	314 cps	2,514 cps	10,752,216 cps	176,152 cps	36,880 cps	46,727 cps
Intensity per Run 1	2,595,174.7 cps	18,912.7 cps	2.0 cps	59.0 cps	265.5 cps	1,890.2 cps	8,118,169.6 cps	133,441.8 cps	27,539.0 cps	35,204.4 cps
Intensity per Run 2	3,962,353.0 cps	33,356.0 cps	3.5 cps	101.0 cps	591.5 cps	3,810.6 cps	22,862,436.5 cps	368,247.0 cps	77,068.2 cps	97,724.3 cps
Intensity per Run 3	3,029,219.6 cps	5,423.5 cps	1.5 cps	16.5 cps	83.5 cps	1,840.1 cps	1,276,043.1 cps	26,767.9 cps	6,031.9 cps	7,253.0 cps
Intensity RSD	21.9 %	72.6 %	44.6 %	71.8 %	82.1 %	44.7 %	102.6 %	99.2 %	98.8 %	99.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	44.789 ppb		0.091 ppm	2,275.152 ppb	10,632.973 ppb	6,530.852 ppb	11,536.896 ppb	18.866 %	48.331 %	0.912 ppb
Concentration per Run 1	39.349 ppb		0.087 ppm	2,076.098 ppb	9,245.282 ppb	6,591.764 ppb	9,350.035 ppb	14.511 %	52.871 %	0.747 ppb
Concentration per Run 2	65.717 ppb		0.096 ppm	3,594.355 ppb	15,352.445 ppb	6,326.910 ppb	17,337.018 ppb	24.347 %	80.140 %	1.287 ppb
Concentration per Run 3	29.302 ppb		0.090 ppm	1,155.002 ppb	7,301.194 ppb	6,673.882 ppb	7,923.637 ppb	17.738 %	11.982 %	0.702 ppb
Concentration RSD	42.0 %		5.0 %	54.1 %	39.5 %	2.8 %	44.0 %	26.6 %	71.0 %	35.7 %
Intensity average	8,973 cps	4,902 cps	322,791 cps	1,204,886 cps	24,769 cps	3,292,465 cps	320,947 cps	1,298,514 cps	141,891 cps	193 cps
Intensity per Run 1	6,934.0 cps	4,211.2 cps	323,710.6 cps	947,400.5 cps	19,974.9 cps	2,571,151.5 cps	239,807.0 cps	998,817.7 cps	155,220.1 cps	152.0 cps
Intensity per Run 2	18,645.2 cps	8,963.5 cps	563,960.2 cps	2,541,253.5 cps	50,702.2 cps	4,129,004.9 cps	676,616.2 cps	1,675,790.7 cps	235,276.7 cps	396.0 cps
Intensity per Run 3	1,340.1 cps	1,530.1 cps	80,703.3 cps	126,005.3 cps	3,630.7 cps	3,177,237.6 cps	46,418.1 cps	1,220,932.1 cps	35,177.6 cps	32.0 cps
Intensity RSD	98.4 %	76.8 %	74.9 %	101.9 %	96.5 %	23.9 %	100.6 %	26.6 %	71.0 %	95.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.103 ppb	0.498 ppb	0.188 ppb	N/A	2.722 ppb	72.649 ppb	74.097 ppb	0.049 ppb	-0.188 ppb	-0.194 ppb
Concentration per Run 1	0.063 ppb	0.405 ppb	0.118 ppb	N/A	2.135 ppb	57.919 ppb	62.302 ppb	0.038 ppb	-0.361 ppb	-0.354 ppb
Concentration per Run 2	0.151 ppb	0.741 ppb	0.422 ppb	N/A	4.132 ppb	107.408 ppb	109.377 ppb	0.075 ppb	0.106 ppb	0.217 ppb
Concentration per Run 3	0.095 ppb	0.349 ppb	0.024 ppb	N/A	1.897 ppb	52.621 ppb	50.613 ppb	0.034 ppb	-0.308 ppb	-0.443 ppb
Concentration RSD	43.0 %	42.6 %	110.5 %	N/A	45.1 %	41.6 %	42.0 %	46.9 %	136.1 %	184.9 %
Intensity average	1,565 cps	7,197 cps	1,049 cps	1,113 cps	26,448 cps	912,314 cps	30,778 cps	1,518 cps	5,405 cps	843 cps
Intensity per Run 1	1,351.1 cps	5,858.9 cps	904.1 cps	740.0 cps	19,701.0 cps	692,695.7 cps	24,193.6 cps	1,124.1 cps	4,177.4 cps	616.0 cps
Intensity per Run 2	2,985.5 cps	14,545.3 cps	2,080.2 cps	2,380.3 cps	55,869.0 cps	1,909,999.6 cps	63,659.1 cps	3,196.5 cps	11,233.5 cps	1,804.1 cps
Intensity per Run 3	356.9 cps	1,188.1 cps	164.0 cps	220.0 cps	3,772.7 cps	134,247.2 cps	4,481.0 cps	232.0 cps	804.0 cps	108.0 cps
Intensity RSD	84.8 %	94.2 %	92.1 %	101.3 %	100.9 %	99.5 %	97.9 %	100.2 %	98.5 %	103.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.221 ppb	1.235 ppb	13.295 ppb	11.637 ppb	11.629 ppb		3.166 ppb	N/A	0.144 ppb	
Concentration per Run 1	1.009 ppb	1.080 ppb	9.948 ppb	8.917 ppb	9.166 ppb		-0.111 ppb	N/A	0.136 ppb	
Concentration per Run 2	1.844 ppb	1.938 ppb	17.814 ppb	17.265 ppb	16.908 ppb		0.424 ppb	N/A	-0.021 ppb	
Concentration per Run 3	0.811 ppb	0.686 ppb	12.124 ppb	8.729 ppb	8.812 ppb		9.186 ppb	N/A	0.315 ppb	
Concentration RSD	44.9 %	51.9 %	30.5 %	41.9 %	39.3 %		164.9 %	N/A	117.1 %	
Intensity average	24,170 cps	12,311 cps	54,808 cps	8,614 cps	41,300 cps	17 cps	3,357 cps	93 cps	0 cps	1,392 cps
Intensity per Run 1	19,238.1 cps	9,860.1 cps	44,689.2 cps	6,727.6 cps	33,290.0 cps	20.0 cps	2,104.0 cps	120.0 cps	15.8 cps	1,315.1 cps
Intensity per Run 2	50,019.2 cps	25,568.6 cps	111,115.2 cps	17,794.0 cps	84,209.1 cps	21.0 cps	4,733.3 cps	120.0 cps	-25.7 cps	2,252.2 cps
Intensity per Run 3	3,252.6 cps	1,504.1 cps	8,619.9 cps	1,320.1 cps	6,402.0 cps	9.0 cps	3,232.4 cps	40.0 cps	10.1 cps	610.0 cps
Intensity RSD	98.3 %	99.2 %	94.9 %	97.5 %	95.7 %	39.9 %	39.3 %	49.5 %	33,934.4 %	59.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-4.910 ppb		54.498 %	0.268 ppb	0.245 ppb	0.253 ppb	0.245 ppb	0.240 ppb	0.010 ppm
Concentration per Run 1		-0.024 ppb		61.267 %	0.232 ppb	0.217 ppb	0.225 ppb	0.222 ppb	0.217 ppb	0.012 ppm
Concentration per Run 2		-0.247 ppb		91.424 %	0.324 ppb	0.288 ppb	0.301 ppb	0.286 ppb	0.286 ppb	0.017 ppm
Concentration per Run 3		-14.458 ppb		10.804 %	0.248 ppb	0.230 ppb	0.232 ppb	0.227 ppb	0.218 ppb	0.002 ppm
Concentration RSD		168.4 %		74.7 %	18.3 %	15.4 %	16.6 %	14.5 %	16.5 %	73.5 %
Intensity average	4,891 cps	-358 cps	5,200 cps	318,696 cps	1,899 cps	3,033 cps	3,486 cps	1,998 cps	5,205 cps	929,550 cps
Intensity per Run 1	2,964.4 cps	-292.1 cps	3,225.4 cps	358,276.7 cps	1,776.2 cps	2,908.6 cps	3,332.8 cps	1,948.3 cps	5,013.8 cps	1,087,821.4 cps
Intensity per Run 2	6,901.9 cps	-479.9 cps	7,317.2 cps	534,630.7 cps	3,592.6 cps	5,657.5 cps	6,534.0 cps	3,700.6 cps	9,736.4 cps	1,519,894.9 cps
Intensity per Run 3	4,808.0 cps	-302.1 cps	5,058.1 cps	63,179.5 cps	328.0 cps	532.0 cps	592.0 cps	344.0 cps	864.0 cps	180,934.1 cps
Intensity RSD	40.3 %	29.5 %	39.4 %	74.7 %	86.1 %	84.6 %	85.3 %	84.0 %	85.3 %	73.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.009 ppb	0.002 ppb	0.020 ppb	0.001 ppb	0.016 ppb	0.008 ppb	51.455 %	0.036 ppb	0.099 ppb
Concentration per Run 1		0.009 ppb	0.000 ppb	0.024 ppb	0.001 ppb	0.014 ppb	0.009 ppb	57.550 %	0.024 ppb	0.080 ppb
Concentration per Run 2		-0.004 ppb	0.002 ppb	0.037 ppb	0.002 ppb	0.018 ppb	0.014 ppb	87.378 %	0.020 ppb	0.119 ppb
Concentration per Run 3		0.021 ppb	0.003 ppb	-0.002 ppb	0.000 ppb	0.015 ppb	0.001 ppb	9.436 %	0.066 ppb	0.099 ppb
Concentration RSD		141.9 %	70.3 %	100.0 %	143.1 %	10.6 %	86.9 %	76.4 %	69.6 %	19.4 %
Intensity average	188 cps	53 cps	101 cps	13 cps	95 cps	116 cps	208 cps	460,664 cps	728 cps	1,656 cps
Intensity per Run 1	224.0 cps	64.0 cps	72.0 cps	12.0 cps	96.0 cps	116.0 cps	190.2 cps	515,233.8 cps	812.0 cps	1,492.2 cps
Intensity per Run 2	324.0 cps	84.0 cps	204.0 cps	28.0 cps	184.0 cps	212.0 cps	429.5 cps	782,280.3 cps	1,136.1 cps	3,188.5 cps
Intensity per Run 3	16.0 cps	12.0 cps	28.0 cps	0.0 cps	4.0 cps	20.0 cps	5.7 cps	84,476.8 cps	236.0 cps	288.0 cps
Intensity RSD	83.6 %	69.7 %	90.4 %	105.4 %	95.1 %	82.8 %	101.9 %	76.4 %	62.6 %	88.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.104 ppb	0.918 ppb	0.915 ppb			47.743 %			0.007 ppm	-0.004 ppb
Concentration per Run 1	0.082 ppb	0.907 ppb	0.894 ppb			54.835 %			0.008 ppm	-0.005 ppb
Concentration per Run 2	0.115 ppb	1.241 ppb	1.237 ppb			80.484 %			0.012 ppm	-0.004 ppb
Concentration per Run 3	0.114 ppb	0.607 ppb	0.613 ppb			7.910 %			0.001 ppm	-0.004 ppb
Concentration RSD	17.9 %	34.6 %	34.1 %			77.1 %			76.2 %	19.5 %
Intensity average	1,319 cps	3,620 cps	6,523 cps	217 cps	191 cps	1,500,707 cps	259 cps	217 cps	1,566,826 cps	356 cps
Intensity per Run 1	1,220.1 cps	3,460.8 cps	6,194.8 cps	208.0 cps	204.0 cps	1,723,629.8 cps	260.0 cps	208.0 cps	1,819,114.0 cps	359.0 cps
Intensity per Run 2	2,476.3 cps	7,034.3 cps	12,711.6 cps	392.0 cps	344.0 cps	2,529,859.1 cps	496.0 cps	408.0 cps	2,615,017.1 cps	614.0 cps
Intensity per Run 3	260.0 cps	364.0 cps	664.0 cps	52.0 cps	24.0 cps	248,630.9 cps	20.0 cps	36.0 cps	266,345.9 cps	96.0 cps
Intensity RSD	84.3 %	92.2 %	92.4 %	78.3 %	84.1 %	77.1 %	92.0 %	85.7 %	76.2 %	72.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.004 ppb	0.361 ppb	0.353 ppb	0.355 ppb	47.773 %
Concentration per Run 1	-0.005 ppb	0.332 ppb	0.331 ppb	0.329 ppb	54.480 %
Concentration per Run 2	-0.003 ppb	0.503 ppb	0.483 ppb	0.490 ppb	75.969 %
Concentration per Run 3	-0.003 ppb	0.249 ppb	0.244 ppb	0.247 ppb	12.871 %
Concentration RSD	32.4 %	35.8 %	34.4 %	34.7 %	67.1 %
Intensity average	908 cps	14,906 cps	12,736 cps	59,008 cps	1,224,398 cps
Intensity per Run 1	902.1 cps	13,681.7 cps	11,954.7 cps	54,751.8 cps	1,396,293.9 cps
Intensity per Run 2	1,543.1 cps	28,649.8 cps	24,179.9 cps	112,451.7 cps	1,947,027.7 cps
Intensity per Run 3	278.0 cps	2,387.3 cps	2,072.2 cps	9,821.1 cps	329,873.0 cps
Intensity RSD	69.7 %	88.4 %	87.0 %	87.2 %	67.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 19:28:16 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	27.451 %	40.018 %	-0.001 ppb	1.765 ppb	1.711 ppb	N/A	44.832 ppb	0.537 ppb	0.400 ppb	0.608 ppb
Concentration per Run 1	36.123 %	47.338 %	-0.009 ppb	1.363 ppb	1.308 ppb	N/A	59.630 ppb	1.507 ppb	0.285 ppb	1.924 ppb
Concentration per Run 2	27.668 %	26.292 %	0.002 ppb	2.236 ppb	2.544 ppb	N/A	50.688 ppb	0.843 ppb	1.295 ppb	0.954 ppb
Concentration per Run 3	18.562 %	46.424 %	0.005 ppb	1.696 ppb	1.280 ppb	N/A	24.179 ppb	-0.737 ppb	-0.380 ppb	-1.054 ppb
Recovery Percentage 1			0.000 %		1.140 %		0.296 %			0.004 %
Concentration RSD	32.0 %	29.7 %	1,254.6 %	25.0 %	42.2 %	N/A	41.1 %	214.5 %	211.0 %	249.8 %
Intensity average	3,839,159 cps	12,885 cps	1 cps	13 cps	70 cps	1,353 cps	40,609 cps	987 cps	213 cps	297 cps
Intensity per Run 1	5,051,944.6 cps	15,241.8 cps	1.0 cps	12.5 cps	68.5 cps	1,280.1 cps	59,525.5 cps	1,510.2 cps	240.0 cps	480.0 cps
Intensity per Run 2	3,869,512.7 cps	8,465.6 cps	1.0 cps	11.5 cps	76.0 cps	1,600.1 cps	37,221.6 cps	910.1 cps	240.0 cps	280.0 cps
Intensity per Run 3	2,596,018.8 cps	14,947.5 cps	2.0 cps	14.5 cps	64.0 cps	1,180.1 cps	25,081.2 cps	540.0 cps	160.0 cps	130.0 cps
Intensity RSD	32.0 %	29.7 %	43.3 %	11.9 %	8.7 %	16.2 %	43.0 %	49.6 %	21.7 %	59.2 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.508 ppb		0.022 ppm	6.138 ppb	74.988 ppb	20.956 ppb	81.281 ppb	26.012 %	37.194 %	0.518 ppb
Concentration per Run 1	-0.921 ppb		0.020 ppm	7.311 ppb	87.429 ppb	18.094 ppb	107.114 ppb	33.498 %	41.438 %	-0.003 ppb
Concentration per Run 2	0.192 ppb		0.023 ppm	7.128 ppb	69.141 ppb	19.628 ppb	77.808 ppb	27.713 %	39.905 %	0.050 ppb
Concentration per Run 3	-0.794 ppb		0.021 ppm	3.974 ppb	68.394 ppb	25.147 ppb	58.921 ppb	16.824 %	30.239 %	1.509 ppb
Recovery Percentage 1	-0.003 %			0.041 %		0.138 %	0.537 %			0.346 %
Concentration RSD	120.1 %		7.1 %	30.6 %	14.4 %	17.7 %	29.9 %	32.5 %	16.3 %	165.5 %
Intensity average	130 cps	1,400 cps	55,277 cps	10,159 cps	143 cps	31,771 cps	1,780 cps	1,790,373 cps	109,196 cps	60 cps
Intensity per Run 1	100.0 cps	1,890.2 cps	58,465.1 cps	11,797.2 cps	180.0 cps	39,095.2 cps	2,460.4 cps	2,305,658.0 cps	121,655.6 cps	0.0 cps
Intensity per Run 2	190.0 cps	1,290.1 cps	57,131.2 cps	10,475.7 cps	140.0 cps	33,407.4 cps	1,780.2 cps	1,907,454.8 cps	117,155.4 cps	8.0 cps
Intensity per Run 3	100.0 cps	1,020.0 cps	50,234.5 cps	8,202.9 cps	110.0 cps	22,811.2 cps	1,100.1 cps	1,158,006.6 cps	88,777.0 cps	172.0 cps
Intensity RSD	40.0 %	31.8 %	8.0 %	17.9 %	24.5 %	26.0 %	38.2 %	32.5 %	16.3 %	161.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.104 ppb	-0.381 ppb	N/A	-0.084 ppb	-0.874 ppb	-0.724 ppb	0.005 ppb	-0.836 ppb	-0.858 ppb
Concentration per Run 1	-0.119 ppb	-0.104 ppb	-0.375 ppb	N/A	-0.078 ppb	-0.672 ppb	-0.856 ppb	0.004 ppb	-0.836 ppb	-0.900 ppb
Concentration per Run 2	-0.103 ppb	-0.107 ppb	-0.374 ppb	N/A	-0.088 ppb	-0.862 ppb	-0.629 ppb	0.003 ppb	-0.831 ppb	-0.845 ppb
Concentration per Run 3	-0.115 ppb	-0.101 ppb	-0.395 ppb	N/A	-0.087 ppb	-1.089 ppb	-0.686 ppb	0.009 ppb	-0.841 ppb	-0.830 ppb
Recovery Percentage 1	-0.075 %	-0.069 %		0.000 %	-0.056 %		-0.005 %	0.004 %	-0.557 %	
Concentration RSD	7.7 %	2.8 %	3.2 %	N/A	6.0 %	23.9 %	16.3 %	63.2 %	0.6 %	4.3 %
Intensity average	77 cps	145 cps	84 cps	63 cps	304 cps	7,804 cps	249 cps	192 cps	339 cps	59 cps
Intensity per Run 1	46.0 cps	160.0 cps	100.0 cps	70.0 cps	376.0 cps	10,266.9 cps	240.0 cps	192.0 cps	396.0 cps	40.0 cps
Intensity per Run 2	133.4 cps	136.0 cps	96.0 cps	40.0 cps	300.0 cps	8,164.0 cps	296.0 cps	164.0 cps	348.0 cps	72.0 cps
Intensity per Run 3	50.7 cps	140.0 cps	56.0 cps	80.0 cps	236.0 cps	4,981.2 cps	212.0 cps	220.0 cps	272.0 cps	64.0 cps
Intensity RSD	64.1 %	8.8 %	29.0 %	32.9 %	23.1 %	34.1 %	17.2 %	14.6 %	18.5 %	28.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.106 ppb	-0.099 ppb	-1.907 ppb	-1.717 ppb	-1.761 ppb		2.411 ppb	N/A	0.021 ppb	
Concentration per Run 1	-0.105 ppb	-0.105 ppb	-2.039 ppb	-1.837 ppb	-1.793 ppb		0.605 ppb	N/A	0.093 ppb	
Concentration per Run 2	-0.104 ppb	-0.091 ppb	-1.808 ppb	-1.510 ppb	-1.700 ppb		3.733 ppb	N/A	-0.354 ppb	
Concentration per Run 3	-0.110 ppb	-0.102 ppb	-1.873 ppb	-1.805 ppb	-1.789 ppb		2.894 ppb	N/A	0.325 ppb	
Recovery Percentage 1		-0.066 %	-1.271 %				1.607 %	0.000 %		
Concentration RSD	2.7 %	7.5 %	6.3 %	10.5 %	3.0 %		67.1 %	N/A	1,641.1 %	
Intensity average	336 cps	161 cps	831 cps	123 cps	657 cps	10 cps	3,159 cps	60 cps	-6 cps	388 cps
Intensity per Run 1	392.0 cps	144.0 cps	844.0 cps	92.0 cps	688.0 cps	11.0 cps	2,307.6 cps	50.0 cps	3.9 cps	399.0 cps
Intensity per Run 2	368.0 cps	224.0 cps	1,012.1 cps	200.0 cps	780.0 cps	7.0 cps	4,515.1 cps	70.0 cps	-44.1 cps	361.0 cps
Intensity per Run 3	248.0 cps	116.0 cps	636.0 cps	76.0 cps	504.0 cps	13.0 cps	2,655.6 cps	60.0 cps	23.2 cps	405.0 cps
Intensity RSD	23.0 %	34.7 %	22.7 %	55.0 %	21.4 %	29.6 %	37.6 %	16.7 %	608.2 %	6.1 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-3.784 ppb		26.987 %	0.016 ppb	0.017 ppb	0.017 ppb	0.002 ppb	0.006 ppb	0.005 ppm
Concentration per Run 1		-2.008 ppb		31.677 %	-0.009 ppb	0.033 ppb	0.040 ppb	0.005 ppb	0.002 ppb	0.006 ppm
Concentration per Run 2		-8.172 ppb		26.497 %	0.017 ppb	0.013 ppb	0.005 ppb	0.003 ppb	0.002 ppb	0.005 ppm
Concentration per Run 3		-1.170 ppb		22.787 %	0.040 ppb	0.003 ppb	0.005 ppb	0.000 ppb	0.015 ppb	0.004 ppm
Recovery Percentage 1		-2.522 %						0.002 %		0.000 %
Concentration RSD		101.1 %		16.5 %	156.2 %	93.1 %	123.5 %	100.4 %	120.7 %	21.7 %
Intensity average	4,796 cps	-347 cps	5,039 cps	157,814 cps	127 cps	211 cps	244 cps	81 cps	217 cps	475,454 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,495.5 cps	-336.9 cps	3,651.6 cps	185,243.5 cps	72.0 cps	356.0 cps	456.0 cps	108.0 cps	228.0 cps	572,563.3 cps
Intensity per Run 2	6,918.9 cps	-561.6 cps	7,397.2 cps	154,948.7 cps	136.0 cps	176.0 cps	152.0 cps	80.0 cps	176.0 cps	486,958.3 cps
Intensity per Run 3	3,974.7 cps	-141.4 cps	4,068.7 cps	133,251.2 cps	172.0 cps	100.0 cps	124.0 cps	56.0 cps	248.0 cps	366,840.5 cps
Intensity RSD	38.6 %	60.7 %	40.7 %	16.5 %	40.0 %	62.4 %	75.5 %	32.0 %	17.1 %	21.7 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.006 ppb	-0.001 ppb	0.003 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	28.552 %	-0.013 ppb	-0.003 ppb
Concentration per Run 1		-0.020 ppb	-0.001 ppb	0.012 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	38.369 %	-0.016 ppb	-0.003 ppb
Concentration per Run 2		0.059 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	27.687 %	-0.011 ppb	-0.004 ppb
Concentration per Run 3		-0.020 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	19.602 %	-0.012 ppb	-0.003 ppb
Recovery Percentage 1			-0.002 %				-0.001 %		-0.009 %	-0.002 %
Concentration RSD		734.3 %	46.4 %	272.8 %	301.3 %	187.1 %	34.2 %	33.0 %	18.7 %	14.4 %
Intensity average	60 cps	29 cps	12 cps	1 cps	16 cps	1 cps	1 cps	255,624 cps	120 cps	79 cps
Intensity per Run 1	68.0 cps	28.0 cps	8.0 cps	4.0 cps	8.0 cps	0.0 cps	-3.6 cps	343,508.2 cps	136.0 cps	108.0 cps
Intensity per Run 2	48.0 cps	44.0 cps	16.0 cps	0.0 cps	20.0 cps	4.0 cps	4.5 cps	247,873.2 cps	132.0 cps	72.0 cps
Intensity per Run 3	64.0 cps	16.0 cps	12.0 cps	0.0 cps	20.0 cps	0.0 cps	1.5 cps	175,490.5 cps	92.0 cps	56.0 cps
Intensity RSD	17.6 %	47.9 %	33.3 %	173.2 %	43.3 %	173.2 %	526.7 %	33.0 %	20.3 %	33.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.001 ppb	-0.007 ppb	-0.009 ppb			30.053 %			0.004 ppm	-0.008 ppb
Concentration per Run 1	-0.003 ppb	-0.004 ppb	-0.009 ppb			35.999 %			0.005 ppm	-0.008 ppb
Concentration per Run 2	0.002 ppb	-0.014 ppb	-0.006 ppb			28.584 %			0.004 ppm	-0.006 ppb
Concentration per Run 3	0.005 ppb	-0.003 ppb	-0.012 ppb			25.578 %			0.004 ppm	-0.009 ppb
Recovery Percentage 1		-0.005 %							0.000 %	
Concentration RSD	320.2 %	90.9 %	33.2 %			17.8 %			9.2 %	18.4 %
Intensity average	88 cps	35 cps	52 cps	0 cps	4 cps	944,665 cps	12 cps	11 cps	1,013,730 cps	146 cps
Intensity per Run 1	84.0 cps	52.0 cps	64.0 cps	0.0 cps	4.0 cps	1,131,544.8 cps	4.0 cps	20.0 cps	1,119,063.2 cps	150.0 cps
Intensity per Run 2	96.0 cps	20.0 cps	60.0 cps	0.0 cps	4.0 cps	898,474.7 cps	24.0 cps	8.0 cps	943,823.5 cps	154.0 cps
Intensity per Run 3	84.0 cps	32.0 cps	32.0 cps	0.0 cps	4.0 cps	803,974.6 cps	8.0 cps	4.0 cps	978,302.2 cps	135.0 cps
Intensity RSD	7.9 %	46.6 %	33.5 %	N/A	0.0 %	17.8 %	88.2 %	78.1 %	9.2 %	6.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.008 ppb	0.062 ppb	0.059 ppb	0.057 ppb	35.460 %
Concentration per Run 1	-0.008 ppb	0.058 ppb	0.048 ppb	0.051 ppb	39.140 %
Concentration per Run 2	-0.006 ppb	0.086 ppb	0.084 ppb	0.078 ppb	25.908 %
Concentration per Run 3	-0.009 ppb	0.043 ppb	0.044 ppb	0.042 ppb	41.334 %
Recovery Percentage 1	-0.005 %			0.038 %	
Concentration RSD	17.3 %	35.5 %	37.2 %	32.9 %	23.5 %
Intensity average	349 cps	1,786 cps	1,493 cps	6,783 cps	908,826 cps
Intensity per Run 1	345.0 cps	1,944.2 cps	1,472.1 cps	7,136.8 cps	1,003,125.6 cps
Intensity per Run 2	356.0 cps	1,844.1 cps	1,580.1 cps	6,796.7 cps	663,997.3 cps
Intensity per Run 3	345.0 cps	1,571.1 cps	1,428.1 cps	6,415.7 cps	1,059,355.0 cps
Intensity RSD	1.8 %	10.8 %	5.2 %	5.3 %	23.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 19:34:21 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	139.783 %	168.082 %	5.821 ppb	10.307 ppb	10.440 ppb	N/A	2,167.466 ppb	675.914 ppb	680.368 ppb	669.165 ppb
Concentration per Run 1	139.977 %	190.925 %	0.140 ppb	0.465 ppb	0.559 ppb	N/A	32.429 ppb	16.387 ppb	14.393 ppb	14.650 ppb
Concentration per Run 2	139.463 %	169.351 %	5.732 ppb	10.493 ppb	10.626 ppb	N/A	2,439.644 ppb	675.103 ppb	690.025 ppb	695.201 ppb
Concentration per Run 3	139.910 %	143.970 %	11.591 ppb	19.962 ppb	20.135 ppb	N/A	4,030.325 ppb	1,336.251 ppb	1,336.684 ppb	1,297.643 ppb
Recovery Percentage 1			582.078 %	1.031 %			433.493 %			133.833 %
Concentration RSD	0.2 %	14.0 %	98.4 %	94.6 %	93.8 %	N/A	92.9 %	97.6 %	97.2 %	95.9 %
Intensity average	19,549,145 cps	54,119 cps	1,417 cps	273 cps	1,630 cps	2,597 cps	6,483,450 cps	915,756 cps	193,920 cps	253,999 cps
Intensity per Run 1	19,576,273.6 cps	61,473.9 cps	49.0 cps	22.0 cps	137.0 cps	2,070.2 cps	151,088.5 cps	31,475.3 cps	6,016.6 cps	8,041.6 cps
Intensity per Run 2	19,504,296.9 cps	54,527.6 cps	1,547.6 cps	306.0 cps	1,824.2 cps	2,870.4 cps	7,977,390.1 cps	1,005,441.0 cps	215,974.0 cps	289,252.4 cps
Intensity per Run 3	19,566,864.8 cps	46,355.4 cps	2,655.3 cps	491.5 cps	2,928.3 cps	2,850.3 cps	11,321,870.6 cps	1,710,353.1 cps	359,768.5 cps	464,701.7 cps
Intensity RSD	0.2 %	14.0 %	92.3 %	86.6 %	86.3 %	17.6 %	88.4 %	92.1 %	91.7 %	90.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	662.124 ppb		0.039 ppm	1,114.083 ppb	2,469.900 ppb	3,540.376 ppb	2,627.738 ppb	136.832 %	164.486 %	6.560 ppb
Concentration per Run 1	18.832 ppb		0.004 ppm	-2.470 ppb	62.715 ppb	3,266.897 ppb	69.898 ppb	140.118 %	187.124 %	0.148 ppb
Concentration per Run 2	675.390 ppb		0.038 ppm	1,211.491 ppb	2,921.428 ppb	3,585.644 ppb	2,991.724 ppb	134.231 %	163.477 %	6.533 ppb
Concentration per Run 3	1,292.151 ppb		0.074 ppm	2,133.228 ppb	4,425.558 ppb	3,768.587 ppb	4,821.591 ppb	136.146 %	142.857 %	12.997 ppb
Recovery Percentage 1	3,310.622 %			222.817 %			262.774 %			65.596 %
Concentration RSD	96.2 %		90.3 %	96.1 %	89.7 %	7.2 %	91.2 %	2.2 %	13.5 %	97.9 %
Intensity average	306,096 cps	4,461 cps	399,400 cps	1,443,392 cps	15,301 cps	12,969,046 cps	193,034 cps	9,418,121 cps	482,904 cps	3,744 cps
Intensity per Run 1	11,776.6 cps	2,980.4 cps	50,323.2 cps	36,906.8 cps	620.1 cps	12,264,559.2 cps	7,711.0 cps	9,644,341.3 cps	549,366.0 cps	108.0 cps
Intensity per Run 2	342,263.8 cps	4,750.9 cps	429,406.6 cps	1,704,875.4 cps	19,527.7 cps	12,899,855.9 cps	237,622.9 cps	9,239,095.7 cps	479,941.1 cps	4,060.8 cps
Intensity per Run 3	564,246.6 cps	5,651.3 cps	718,470.7 cps	2,588,394.6 cps	25,756.8 cps	13,742,722.9 cps	333,767.6 cps	9,370,926.7 cps	419,404.5 cps	7,062.0 cps
Intensity RSD	90.8 %	30.5 %	83.9 %	89.8 %	85.5 %	5.7 %	86.8 %	2.2 %	13.5 %	93.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	5.843 ppb	6.084 ppb	6.010 ppb	N/A	8.238 ppb	734.017 ppb	708.907 ppb	5.930 ppb	5.902 ppb	5.731 ppb
Concentration per Run 1	0.043 ppb	0.084 ppb	-0.223 ppb	N/A	0.152 ppb	22.395 ppb	22.656 ppb	0.167 ppb	-0.659 ppb	-0.647 ppb
Concentration per Run 2	5.824 ppb	6.249 ppb	6.152 ppb	N/A	8.730 ppb	775.239 ppb	751.355 ppb	6.066 ppb	6.197 ppb	5.907 ppb
Concentration per Run 3	11.661 ppb	11.918 ppb	12.101 ppb	N/A	15.833 ppb	1,404.418 ppb	1,352.709 ppb	11.557 ppb	12.168 ppb	11.932 ppb
Recovery Percentage 1	116.851 %	304.176 %			823.826 %		354.453 %	593.001 %	590.198 %	
Concentration RSD	99.4 %	97.3 %	102.6 %	N/A	95.3 %	94.3 %	94.0 %	96.1 %	108.7 %	109.8 %
Intensity average	119,976 cps	196,108 cps	27,750 cps	29,399 cps	198,811 cps	23,239,656 cps	765,749 cps	442,338 cps	118,771 cps	18,181 cps
Intensity per Run 1	4,274.7 cps	8,111.4 cps	1,276.3 cps	1,260.2 cps	8,547.8 cps	950,740.6 cps	32,557.7 cps	15,980.8 cps	6,032.0 cps	1,048.1 cps
Intensity per Run 2	130,229.8 cps	218,846.4 cps	30,772.9 cps	32,670.2 cps	227,978.7 cps	26,584,582.1 cps	880,610.3 cps	492,103.7 cps	133,328.1 cps	20,191.6 cps
Intensity per Run 3	225,424.5 cps	361,366.5 cps	51,200.9 cps	54,268.0 cps	359,906.2 cps	42,183,646.2 cps	1,384,077.6 cps	818,929.4 cps	216,954.2 cps	33,304.4 cps
Intensity RSD	92.5 %	90.6 %	90.4 %	90.7 %	89.3 %	89.6 %	89.2 %	91.3 %	89.4 %	89.2 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	7.512 ppb	7.084 ppb	10.584 ppb	10.361 ppb	10.160 ppb		5.518 ppb	N/A	5.762 ppb	
Concentration per Run 1	0.106 ppb	0.123 ppb	-1.667 ppb	-1.381 ppb	-1.513 ppb		-0.328 ppb	N/A	0.150 ppb	
Concentration per Run 2	7.776 ppb	7.272 ppb	11.896 ppb	11.712 ppb	11.263 ppb		5.742 ppb	N/A	5.824 ppb	
Concentration per Run 3	14.653 ppb	13.856 ppb	21.523 ppb	20.752 ppb	20.730 ppb		11.141 ppb	N/A	11.311 ppb	
Recovery Percentage 1		354.175 %	529.185 %				551.847 %			
Concentration RSD	96.9 %	97.0 %	110.1 %	107.4 %	109.9 %		104.0 %	N/A	96.9 %	
Intensity average	339,996 cps	167,557 cps	120,419 cps	20,001 cps	94,693 cps	50 cps	32,844 cps	903 cps	3,008 cps	1,432 cps
Intensity per Run 1	13,526.1 cps	7,220.8 cps	8,094.9 cps	1,364.2 cps	6,131.9 cps	5.0 cps	5,241.9 cps	70.0 cps	58.1 cps	654.0 cps
Intensity per Run 2	380,912.2 cps	186,861.4 cps	142,012.7 cps	23,866.1 cps	111,139.3 cps	67.0 cps	36,202.9 cps	1,010.0 cps	3,291.7 cps	1,614.1 cps
Intensity per Run 3	625,549.3 cps	308,588.8 cps	211,150.8 cps	34,772.5 cps	166,809.2 cps	78.0 cps	57,086.1 cps	1,630.1 cps	5,674.2 cps	2,028.2 cps
Intensity RSD	90.6 %	90.5 %	85.7 %	85.2 %	86.2 %	78.7 %	79.4 %	87.0 %	93.7 %	49.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		7.293 ppb		160.585 %	5.994 ppb	5.904 ppb	5.821 ppb	5.784 ppb	5.807 ppb	0.031 ppm
Concentration per Run 1		1.367 ppb		181.256 %	0.166 ppb	0.172 ppb	0.168 ppb	0.177 ppb	0.176 ppb	0.036 ppm
Concentration per Run 2		7.722 ppb		159.320 %	6.325 ppb	6.162 ppb	6.014 ppb	6.082 ppb	6.080 ppb	0.032 ppm
Concentration per Run 3		12.790 ppb		141.178 %	11.492 ppb	11.377 ppb	11.282 ppb	11.092 ppb	11.163 ppb	0.027 ppm
Recovery Percentage 1		145.857 %						57.837 %		
Concentration RSD		78.5 %		12.5 %	94.6 %	95.0 %	95.5 %	94.5 %	94.7 %	13.8 %
Intensity average	6,867 cps	1,228 cps	5,562 cps	939,069 cps	99,991 cps	178,311 cps	193,874 cps	115,256 cps	307,000 cps	2,791,234 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	6,748.9 cps	-441.9 cps	7,093.1 cps	1,059,952.0 cps	3,946.6 cps	7,024.4 cps	7,638.1 cps	4,767.6 cps	12,417.6 cps	3,167,427.0 cps
Intensity per Run 2	7,786.4 cps	1,481.9 cps	6,303.7 cps	931,674.4 cps	113,524.0 cps	200,376.4 cps	215,717.1 cps	130,399.7 cps	345,959.4 cps	2,808,835.9 cps
Intensity per Run 3	6,065.5 cps	2,643.4 cps	3,289.4 cps	825,579.6 cps	182,501.9 cps	327,533.6 cps	358,266.7 cps	210,600.8 cps	562,623.3 cps	2,397,440.1 cps
Intensity RSD	12.6 %	126.9 %	36.1 %	12.5 %	90.1 %	90.5 %	91.0 %	90.0 %	90.3 %	13.8 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		5.943 ppb	1.121 ppb	5.985 ppb	1.099 ppb	5.991 ppb	5.950 ppb	158.816 %	6.173 ppb	5.918 ppb
Concentration per Run 1		0.228 ppb	0.019 ppb	0.216 ppb	0.019 ppb	0.211 ppb	0.228 ppb	178.220 %	0.238 ppb	0.179 ppb
Concentration per Run 2		6.168 ppb	1.132 ppb	6.249 ppb	1.119 ppb	6.355 ppb	6.298 ppb	157.940 %	6.584 ppb	6.137 ppb
Concentration per Run 3		11.434 ppb	2.212 ppb	11.489 ppb	2.161 ppb	11.408 ppb	11.323 ppb	140.288 %	11.699 ppb	11.438 ppb
Recovery Percentage 1			112.098 %				594.986 %			295.888 %
Concentration RSD		94.3 %	97.8 %	94.3 %	97.4 %	93.6 %	93.4 %	12.0 %	93.0 %	95.2 %
Intensity average	963 cps	9,370 cps	131,704 cps	7,143 cps	127,590 cps	115,894 cps	284,242 cps	1,421,852 cps	242,762 cps	242,270 cps
Intensity per Run 1	996.0 cps	608.0 cps	2,877.7 cps	316.0 cps	2,801.6 cps	4,980.1 cps	13,293.5 cps	1,595,575.8 cps	12,681.1 cps	9,539.1 cps
Intensity per Run 2	1,048.0 cps	10,441.1 cps	143,373.2 cps	8,023.0 cps	140,029.6 cps	132,127.6 cps	323,276.1 cps	1,414,006.3 cps	277,773.0 cps	270,081.0 cps
Intensity per Run 3	844.0 cps	17,059.7 cps	248,861.7 cps	13,090.9 cps	239,937.9 cps	210,575.7 cps	516,156.0 cps	1,255,974.0 cps	437,832.5 cps	447,188.9 cps
Intensity RSD	11.0 %	88.3 %	93.7 %	90.1 %	93.3 %	89.5 %	89.3 %	12.0 %	88.5 %	90.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	5.965 ppb	6.870 ppb	6.965 ppb			152.069 %			0.022 ppm	5.719 ppb
Concentration per Run 1	0.173 ppb	0.222 ppb	0.218 ppb			173.322 %			0.025 ppm	0.091 ppb
Concentration per Run 2	6.218 ppb	7.367 ppb	7.430 ppb			149.215 %			0.022 ppm	5.632 ppb
Concentration per Run 3	11.505 ppb	13.019 ppb	13.247 ppb			133.669 %			0.020 ppm	11.435 ppb
Recovery Percentage 1		68.697 %							2.205 %	
Concentration RSD	95.0 %	93.4 %	93.7 %			13.1 %			11.3 %	99.2 %
Intensity average	194,863 cps	65,345 cps	120,372 cps	229 cps	267 cps	4,779,958 cps	359 cps	295 cps	4,996,070 cps	743,692 cps
Intensity per Run 1	7,409.3 cps	2,865.4 cps	5,108.3 cps	16.0 cps	60.0 cps	5,448,010.0 cps	108.0 cps	56.0 cps	5,570,590.5 cps	16,203.9 cps
Intensity per Run 2	218,272.3 cps	75,067.5 cps	137,557.7 cps	304.0 cps	344.0 cps	4,690,256.4 cps	484.0 cps	400.0 cps	4,975,323.9 cps	809,899.9 cps
Intensity per Run 3	358,906.4 cps	118,101.1 cps	218,450.6 cps	368.0 cps	396.0 cps	4,201,609.0 cps	484.0 cps	428.0 cps	4,442,296.6 cps	1,404,973.3 cps
Intensity RSD	90.8 %	89.1 %	89.5 %	81.8 %	67.8 %	13.1 %	60.5 %	70.3 %	11.3 %	93.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	5.651 ppb	5.966 ppb	5.956 ppb	5.974 ppb	153.916 %
Concentration per Run 1	0.096 ppb	0.219 ppb	0.226 ppb	0.217 ppb	170.668 %
Concentration per Run 2	5.691 ppb	6.210 ppb	6.174 ppb	6.144 ppb	157.334 %
Concentration per Run 3	11.165 ppb	11.469 ppb	11.467 ppb	11.560 ppb	133.746 %
Recovery Percentage 1	1,130.133 %			597.385 %	
Concentration RSD	97.9 %	94.3 %	94.4 %	95.0 %	12.1 %
Intensity average	1,790,596 cps	622,659 cps	546,212 cps	2,521,813 cps	3,944,775 cps
Intensity per Run 1	41,081.0 cps	28,732.4 cps	26,010.1 cps	115,103.2 cps	4,374,117.8 cps
Intensity per Run 2	1,999,605.2 cps	714,688.9 cps	624,828.7 cps	2,867,389.9 cps	4,032,384.1 cps
Intensity per Run 3	3,331,101.2 cps	1,124,554.8 cps	987,796.0 cps	4,582,945.3 cps	3,427,821.8 cps
Intensity RSD	92.4 %	88.9 %	88.9 %	89.4 %	12.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28022-001S Analysis: 10/30/2019 19:40:26 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	141.211 %	144.153 %	1.022 ppb	4.170 ppb	4.404 ppb	N/A	676.439 ppb	72.472 ppb	72.022 ppb	70.554 ppb
Concentration per Run 1	137.736 %	153.180 %	0.403 ppb	1.402 ppb	1.107 ppb	N/A	213.617 ppb	41.842 ppb	42.717 ppb	40.301 ppb
Concentration per Run 2	141.527 %	142.436 %	0.851 ppb	2.989 ppb	3.586 ppb	N/A	528.406 ppb	66.301 ppb	67.388 ppb	66.618 ppb
Concentration per Run 3	144.370 %	136.842 %	1.812 ppb	8.119 ppb	8.520 ppb	N/A	1,287.293 ppb	109.273 ppb	105.962 ppb	104.743 ppb
Concentration RSD	2.4 %	5.8 %	70.4 %	84.2 %	85.7 %	N/A	81.6 %	47.1 %	44.3 %	45.9 %
Intensity average	19,748,828 cps	46,414 cps	233 cps	104 cps	642 cps	2,037 cps	1,888,523 cps	95,133 cps	19,991 cps	26,014 cps
Intensity per Run 1	19,262,791.1 cps	49,320.8 cps	103.5 cps	42.0 cps	194.5 cps	2,090.2 cps	666,196.7 cps	60,378.0 cps	13,036.9 cps	16,361.0 cps
Intensity per Run 2	19,793,052.9 cps	45,861.5 cps	197.5 cps	77.5 cps	536.5 cps	1,900.1 cps	1,508,576.9 cps	87,929.4 cps	18,874.7 cps	24,795.2 cps
Intensity per Run 3	20,190,641.1 cps	44,060.1 cps	398.5 cps	193.5 cps	1,194.1 cps	2,120.2 cps	3,490,795.5 cps	137,090.7 cps	28,062.1 cps	36,884.6 cps
Intensity RSD	2.4 %	5.8 %	64.6 %	75.9 %	79.2 %	5.9 %	76.8 %	40.8 %	37.9 %	39.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	66.829 ppb		0.011 ppm	194.388 ppb	392.528 ppb	1,006.128 ppb	377.406 ppb	138.252 %	146.322 %	1.496 ppb
Concentration per Run 1	42.081 ppb		0.006 ppm	104.859 ppb	147.609 ppb	981.740 ppb	155.691 ppb	135.678 %	154.065 %	1.043 ppb
Concentration per Run 2	62.602 ppb		0.010 ppm	159.131 ppb	316.752 ppb	1,018.556 ppb	333.660 ppb	137.930 %	145.643 %	1.060 ppb
Concentration per Run 3	95.804 ppb		0.017 ppm	319.174 ppb	713.224 ppb	1,018.088 ppb	642.866 ppb	141.148 %	139.258 %	2.384 ppb
Concentration RSD	40.6 %		51.7 %	57.3 %	74.0 %	2.1 %	65.3 %	2.0 %	5.1 %	51.4 %
Intensity average	29,862 cps	3,537 cps	103,698 cps	265,200 cps	2,384 cps	3,795,327 cps	27,170 cps	9,515,898 cps	429,576 cps	821 cps
Intensity per Run 1	20,447.1 cps	3,110.4 cps	60,414.0 cps	168,735.7 cps	1,040.1 cps	3,635,251.7 cps	12,726.6 cps	9,338,736.2 cps	452,308.1 cps	612.1 cps
Intensity per Run 2	28,182.5 cps	3,110.4 cps	93,983.2 cps	225,137.9 cps	1,980.2 cps	3,831,716.5 cps	24,536.3 cps	9,493,755.3 cps	427,582.8 cps	588.0 cps
Intensity per Run 3	40,957.5 cps	4,390.8 cps	156,695.3 cps	401,725.6 cps	4,130.7 cps	3,919,011.7 cps	44,248.5 cps	9,715,201.4 cps	408,836.9 cps	1,264.1 cps
Intensity RSD	34.7 %	20.9 %	47.1 %	45.8 %	66.5 %	3.8 %	58.6 %	2.0 %	5.1 %	46.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.935 ppb	1.037 ppb	0.740 ppb	N/A	2.563 ppb	155.718 ppb	148.948 ppb	0.985 ppb	0.358 ppb	0.335 ppb
Concentration per Run 1	0.278 ppb	0.286 ppb	-0.017 ppb	N/A	0.513 ppb	49.067 ppb	48.286 ppb	0.382 ppb	-0.380 ppb	-0.429 ppb
Concentration per Run 2	0.859 ppb	0.976 ppb	0.665 ppb	N/A	2.274 ppb	144.632 ppb	142.231 ppb	0.902 ppb	0.260 ppb	0.260 ppb
Concentration per Run 3	1.667 ppb	1.849 ppb	1.573 ppb	N/A	4.904 ppb	273.455 ppb	256.325 ppb	1.670 ppb	1.194 ppb	1.174 ppb
Concentration RSD	74.6 %	75.6 %	107.8 %	N/A	86.2 %	72.3 %	69.9 %	65.8 %	221.2 %	240.2 %
Intensity average	20,351 cps	34,842 cps	4,897 cps	5,055 cps	60,464 cps	4,707,936 cps	153,993 cps	70,263 cps	21,207 cps	3,329 cps
Intensity per Run 1	8,373.2 cps	13,215.1 cps	1,948.2 cps	1,870.2 cps	15,710.2 cps	1,635,265.9 cps	55,052.7 cps	29,587.6 cps	9,691.8 cps	1,456.1 cps
Intensity per Run 2	19,231.7 cps	33,622.3 cps	4,656.9 cps	4,871.1 cps	54,973.6 cps	4,441,451.1 cps	149,920.5 cps	65,547.1 cps	19,552.5 cps	3,164.4 cps
Intensity per Run 3	33,448.4 cps	57,689.5 cps	8,086.6 cps	8,422.9 cps	110,707.3 cps	8,047,092.2 cps	257,006.4 cps	115,655.4 cps	34,375.5 cps	5,365.2 cps
Intensity RSD	61.8 %	63.9 %	62.8 %	64.9 %	78.9 %	68.3 %	65.6 %	61.5 %	58.6 %	58.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.705 ppb	1.590 ppb	3.831 ppb	3.674 ppb	3.549 ppb		0.658 ppb	N/A	1.027 ppb	
Concentration per Run 1	0.407 ppb	0.405 ppb	-0.952 ppb	-0.739 ppb	-0.839 ppb		0.251 ppb	N/A	0.535 ppb	
Concentration per Run 2	1.515 ppb	1.418 ppb	3.215 ppb	3.149 ppb	2.990 ppb		0.286 ppb	N/A	0.882 ppb	
Concentration per Run 3	3.194 ppb	2.947 ppb	9.231 ppb	8.611 ppb	8.496 ppb		1.438 ppb	N/A	1.663 ppb	
Concentration RSD	82.3 %	80.5 %	133.6 %	127.9 %	132.2 %		102.6 %	N/A	56.3 %	
Intensity average	77,394 cps	37,853 cps	53,776 cps	8,654 cps	41,128 cps	17 cps	8,592 cps	180 cps	483 cps	735 cps
Intensity per Run 1	24,592.7 cps	12,670.6 cps	13,067.0 cps	2,152.2 cps	10,212.2 cps	6.0 cps	7,003.0 cps	120.0 cps	251.4 cps	601.0 cps
Intensity per Run 2	70,299.4 cps	34,755.3 cps	48,916.7 cps	7,963.0 cps	37,556.4 cps	14.0 cps	6,883.3 cps	180.0 cps	410.7 cps	728.0 cps
Intensity per Run 3	137,289.8 cps	66,131.9 cps	99,344.2 cps	15,846.2 cps	75,614.0 cps	32.0 cps	11,889.2 cps	240.0 cps	786.5 cps	877.0 cps
Intensity RSD	73.2 %	71.0 %	80.6 %	79.4 %	79.9 %	76.8 %	33.2 %	33.3 %	56.9 %	18.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.660 ppb		140.989 %	1.219 ppb	1.182 ppb	1.177 ppb	1.163 ppb	1.157 ppb	0.028 ppm
Concentration per Run 1		1.911 ppb		146.967 %	0.502 ppb	0.490 ppb	0.486 ppb	0.498 ppb	0.499 ppb	0.029 ppm
Concentration per Run 2		2.501 ppb		138.713 %	1.206 ppb	1.140 ppb	1.131 ppb	1.107 ppb	1.130 ppb	0.028 ppm
Concentration per Run 3		3.568 ppb		137.288 %	1.948 ppb	1.916 ppb	1.912 ppb	1.883 ppb	1.843 ppb	0.027 ppm
Concentration RSD		31.6 %		3.7 %	59.3 %	60.4 %	60.7 %	59.7 %	58.1 %	3.7 %
Intensity average	5,704 cps	-14 cps	5,656 cps	824,479 cps	19,467 cps	34,004 cps	37,371 cps	22,065 cps	58,201 cps	2,525,962 cps
Intensity per Run 1	7,597.3 cps	-211.6 cps	7,644.4 cps	859,436.3 cps	8,739.1 cps	15,205.5 cps	16,679.4 cps	10,172.3 cps	26,918.2 cps	2,619,518.7 cps
Intensity per Run 2	3,833.6 cps	-50.3 cps	3,820.6 cps	811,168.1 cps	19,235.8 cps	32,777.3 cps	35,931.1 cps	21,010.7 cps	56,813.0 cps	2,526,955.6 cps
Intensity per Run 3	5,680.4 cps	221.2 cps	5,504.3 cps	802,831.7 cps	30,425.3 cps	54,029.2 cps	59,502.7 cps	35,013.5 cps	90,872.1 cps	2,431,413.1 cps
Intensity RSD	33.0 %	1,615.1 %	33.9 %	3.7 %	55.7 %	57.2 %	57.4 %	56.4 %	55.0 %	3.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.019 ppb	0.597 ppb	1.048 ppb	0.580 ppb	1.006 ppb	1.018 ppb	139.672 %	0.982 ppb	1.211 ppb
Concentration per Run 1		0.434 ppb	0.101 ppb	0.386 ppb	0.094 ppb	0.406 ppb	0.418 ppb	144.501 %	0.430 ppb	0.518 ppb
Concentration per Run 2		1.060 ppb	0.435 ppb	0.984 ppb	0.439 ppb	0.925 ppb	0.960 ppb	138.689 %	0.903 ppb	1.164 ppb
Concentration per Run 3		1.562 ppb	1.255 ppb	1.773 ppb	1.206 ppb	1.685 ppb	1.676 ppb	135.827 %	1.613 ppb	1.950 ppb
Concentration RSD		55.5 %	99.4 %	66.4 %	98.1 %	64.0 %	62.0 %	3.2 %	60.6 %	59.2 %
Intensity average	804 cps	1,623 cps	65,724 cps	1,175 cps	62,987 cps	18,260 cps	45,684 cps	1,250,460 cps	37,195 cps	47,176 cps
Intensity per Run 1	864.0 cps	808.0 cps	11,885.9 cps	456.0 cps	10,941.0 cps	7,754.5 cps	19,698.2 cps	1,293,693.2 cps	17,672.7 cps	21,394.8 cps
Intensity per Run 2	776.0 cps	1,684.1 cps	48,509.4 cps	1,108.1 cps	48,217.4 cps	16,876.6 cps	43,324.9 cps	1,241,654.9 cps	34,430.3 cps	45,537.7 cps
Intensity per Run 3	772.0 cps	2,376.2 cps	136,776.8 cps	1,960.2 cps	129,802.1 cps	30,148.5 cps	74,029.1 cps	1,216,030.6 cps	59,482.6 cps	74,595.8 cps
Intensity RSD	6.5 %	48.4 %	97.7 %	64.2 %	96.5 %	61.7 %	59.6 %	3.2 %	56.6 %	56.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.219 ppb	1.625 ppb	1.663 ppb			135.766 %			0.020 ppm	0.820 ppb
Concentration per Run 1	0.533 ppb	0.512 ppb	0.498 ppb			138.918 %			0.021 ppm	0.431 ppb
Concentration per Run 2	1.154 ppb	1.511 ppb	1.522 ppb			134.159 %			0.020 ppm	0.661 ppb
Concentration per Run 3	1.969 ppb	2.851 ppb	2.969 ppb			134.221 %			0.019 ppm	1.369 ppb
Concentration RSD	59.1 %	72.2 %	74.6 %			2.0 %			4.5 %	59.6 %
Intensity average	37,934 cps	14,828 cps	27,595 cps	139 cps	156 cps	4,267,527 cps	228 cps	177 cps	4,500,990 cps	104,319 cps
Intensity per Run 1	17,560.8 cps	5,029.0 cps	8,887.3 cps	24.0 cps	32.0 cps	4,366,605.3 cps	92.0 cps	68.0 cps	4,728,541.7 cps	60,034.2 cps
Intensity per Run 2	36,043.5 cps	13,836.7 cps	25,345.9 cps	124.0 cps	152.0 cps	4,217,015.4 cps	232.0 cps	168.0 cps	4,441,584.8 cps	85,114.2 cps
Intensity per Run 3	60,197.9 cps	25,618.4 cps	48,551.2 cps	268.0 cps	284.0 cps	4,218,960.7 cps	360.0 cps	296.0 cps	4,332,844.1 cps	167,808.2 cps
Intensity RSD	56.4 %	69.7 %	72.2 %	88.5 %	80.8 %	2.0 %	58.8 %	64.4 %	4.5 %	54.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.814 ppb	1.046 ppb	1.037 ppb	1.033 ppb	139.628 %
Concentration per Run 1	0.426 ppb	0.404 ppb	0.389 ppb	0.393 ppb	148.544 %
Concentration per Run 2	0.675 ppb	0.936 ppb	0.933 ppb	0.926 ppb	138.219 %
Concentration per Run 3	1.342 ppb	1.797 ppb	1.789 ppb	1.778 ppb	132.121 %
Concentration RSD	58.2 %	67.2 %	68.0 %	67.7 %	5.9 %
Intensity average	251,872 cps	105,222 cps	91,670 cps	420,185 cps	3,578,585 cps
Intensity per Run 1	145,090.8 cps	44,937.3 cps	38,099.2 cps	177,400.3 cps	3,807,090.0 cps
Intensity per Run 2	211,695.6 cps	95,676.1 cps	83,822.5 cps	383,283.0 cps	3,542,474.2 cps
Intensity per Run 3	398,828.4 cps	175,052.2 cps	153,089.0 cps	699,871.1 cps	3,386,189.5 cps
Intensity RSD	52.2 %	62.3 %	63.2 %	62.6 %	5.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28022-001SD Analysis: 10/30/2019 19:46:31 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	31.615 %	83.553 %	7.970 ppb	43.472 ppb	46.814 ppb	N/A	7,592.009 ppb	392.652 ppb	385.791 ppb	380.738 ppb
Concentration per Run 1	34.986 %	146.510 %	5.471 ppb	31.270 ppb	31.829 ppb	N/A	4,972.034 ppb	247.812 ppb	245.709 ppb	250.056 ppb
Concentration per Run 2	17.021 %	75.167 %	8.238 ppb	42.772 ppb	44.494 ppb	N/A	7,303.817 ppb	371.667 ppb	378.209 ppb	368.135 ppb
Concentration per Run 3	42.837 %	28.981 %	10.200 ppb	56.373 ppb	64.120 ppb	N/A	10,500.177 ppb	558.476 ppb	533.454 ppb	524.023 ppb
Concentration RSD	41.9 %	70.9 %	29.8 %	28.9 %	34.8 %	N/A	36.6 %	39.8 %	37.3 %	36.1 %
Intensity average	4,421,460 cps	26,902 cps	912 cps	541 cps	3,361 cps	2,260 cps	10,834,845 cps	253,552 cps	53,155 cps	70,491 cps
Intensity per Run 1	4,892,974.6 cps	47,173.3 cps	1,278.1 cps	781.5 cps	4,705.0 cps	2,750.3 cps	14,288,712.0 cps	327,170.0 cps	68,309.3 cps	92,452.4 cps
Intensity per Run 2	2,380,492.8 cps	24,202.2 cps	986.1 cps	558.0 cps	3,451.2 cps	2,290.2 cps	11,645,755.7 cps	272,766.0 cps	58,672.5 cps	76,329.8 cps
Intensity per Run 3	5,990,912.2 cps	9,331.3 cps	470.5 cps	284.5 cps	1,926.3 cps	1,740.1 cps	6,570,067.2 cps	160,721.2 cps	32,484.5 cps	42,691.4 cps
Intensity RSD	41.9 %	70.9 %	44.9 %	46.0 %	41.4 %	22.4 %	36.2 %	33.5 %	34.9 %	36.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	289.005 ppb		0.079 ppm	1,707.669 ppb	2,700.827 ppb	1,945.082 ppb	2,856.192 ppb	31.317 %	90.974 %	10.570 ppb
Concentration per Run 1	194.005 ppb		0.050 ppm	1,188.914 ppb	2,035.638 ppb	1,939.440 ppb	2,009.987 ppb	35.342 %	147.278 %	7.150 ppb
Concentration per Run 2	288.379 ppb		0.077 ppm	1,655.230 ppb	2,734.338 ppb	2,114.122 ppb	2,849.288 ppb	15.281 %	89.736 %	10.575 ppb
Concentration per Run 3	384.631 ppb		0.108 ppm	2,278.864 ppb	3,332.507 ppb	1,781.684 ppb	3,709.299 ppb	43.329 %	35.908 %	13.985 ppb
Concentration RSD	33.0 %		36.9 %	32.0 %	24.0 %	8.5 %	29.7 %	46.1 %	61.2 %	32.3 %
Intensity average	66,374 cps	7,440 cps	401,946 cps	1,134,782 cps	9,011 cps	1,599,659 cps	110,643 cps	2,155,560 cps	267,084 cps	3,181 cps
Intensity per Run 1	87,448.4 cps	9,594.0 cps	502,003.4 cps	1,498,417.2 cps	12,266.9 cps	1,845,874.1 cps	144,034.1 cps	2,432,578.6 cps	432,382.4 cps	4,004.7 cps
Intensity per Run 2	73,238.0 cps	8,423.5 cps	452,883.6 cps	1,232,854.5 cps	9,935.2 cps	871,800.7 cps	123,625.6 cps	1,051,760.6 cps	263,450.0 cps	3,608.6 cps
Intensity per Run 3	38,436.9 cps	4,301.2 cps	250,951.8 cps	673,075.2 cps	4,831.7 cps	2,081,301.9 cps	64,270.0 cps	2,982,340.5 cps	105,420.8 cps	1,928.2 cps
Intensity RSD	38.0 %	37.4 %	33.1 %	37.1 %	42.2 %	40.1 %	37.5 %	46.1 %	61.2 %	34.7 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	8.208 ppb	8.659 ppb	8.354 ppb	N/A	25.055 ppb	1,159.143 ppb	1,140.518 ppb	7.333 ppb	7.688 ppb	7.802 ppb
Concentration per Run 1	5.695 ppb	6.230 ppb	6.162 ppb	N/A	18.593 ppb	893.657 ppb	863.861 ppb	5.542 ppb	6.104 ppb	5.993 ppb
Concentration per Run 2	8.236 ppb	8.875 ppb	8.946 ppb	N/A	26.570 ppb	1,266.894 ppb	1,227.159 ppb	7.897 ppb	9.034 ppb	8.759 ppb
Concentration per Run 3	10.695 ppb	10.870 ppb	9.952 ppb	N/A	30.001 ppb	1,316.878 ppb	1,330.534 ppb	8.559 ppb	7.925 ppb	8.653 ppb
Concentration RSD	30.5 %	26.9 %	23.5 %	N/A	23.4 %	20.0 %	21.5 %	21.6 %	19.2 %	20.1 %
Intensity average	89,089 cps	149,711 cps	20,978 cps	21,542 cps	330,292 cps	20,660,948 cps	680,967 cps	303,035 cps	89,058 cps	13,650 cps
Intensity per Run 1	114,792.9 cps	196,564.0 cps	27,798.1 cps	28,505.9 cps	434,429.0 cps	27,643,318.7 cps	911,878.3 cps	405,047.8 cps	119,327.2 cps	18,463.2 cps
Intensity per Run 2	100,456.3 cps	169,636.8 cps	24,061.2 cps	24,880.8 cps	377,566.8 cps	23,873,132.2 cps	788,818.2 cps	351,586.7 cps	103,121.7 cps	15,736.5 cps
Intensity per Run 3	52,017.9 cps	82,930.9 cps	11,076.2 cps	11,237.9 cps	178,880.2 cps	10,466,393.4 cps	342,203.4 cps	152,470.6 cps	44,723.9 cps	6,750.9 cps
Intensity RSD	36.9 %	39.7 %	41.8 %	42.3 %	40.6 %	43.7 %	44.0 %	43.9 %	44.1 %	44.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	15.148 ppb	14.906 ppb	58.095 ppb	52.443 ppb	52.391 ppb		9.010 ppb	N/A	7.606 ppb	
Concentration per Run 1	11.687 ppb	10.957 ppb	42.358 ppb	38.847 ppb	39.378 ppb		5.767 ppb	N/A	5.396 ppb	
Concentration per Run 2	16.622 ppb	15.573 ppb	73.368 ppb	55.844 ppb	56.024 ppb		10.300 ppb	N/A	8.279 ppb	
Concentration per Run 3	17.135 ppb	18.188 ppb	58.557 ppb	62.637 ppb	61.771 ppb		10.962 ppb	N/A	9.144 ppb	
Concentration RSD	19.9 %	24.6 %	26.7 %	23.4 %	22.2 %		31.4 %	N/A	25.8 %	
Intensity average	385,917 cps	190,477 cps	303,538 cps	48,900 cps	235,476 cps	59 cps	25,799 cps	690 cps	2,229 cps	1,676 cps
Intensity per Run 1	514,063.4 cps	252,190.2 cps	398,278.9 cps	64,032.5 cps	310,849.1 cps	88.0 cps	32,528.1 cps	890.0 cps	2,758.6 cps	1,841.1 cps
Intensity per Run 2	444,226.8 cps	217,643.9 cps	347,393.2 cps	55,270.0 cps	265,547.8 cps	57.0 cps	27,627.1 cps	740.0 cps	2,592.6 cps	1,827.1 cps
Intensity per Run 3	199,461.0 cps	101,598.2 cps	164,942.7 cps	27,397.4 cps	130,032.0 cps	31.0 cps	17,242.2 cps	440.0 cps	1,334.5 cps	1,360.1 cps
Intensity RSD	42.8 %	41.4 %	40.4 %	39.1 %	40.0 %	48.6 %	30.3 %	33.2 %	34.9 %	16.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		9.203 ppb		91.889 %	8.895 ppb	8.265 ppb	8.418 ppb	8.350 ppb	8.248 ppb	0.018 ppm
Concentration per Run 1		6.607 ppb		144.461 %	6.548 ppb	6.205 ppb	6.228 ppb	6.234 ppb	6.192 ppb	0.028 ppm
Concentration per Run 2		10.597 ppb		88.180 %	9.132 ppb	8.437 ppb	8.502 ppb	8.422 ppb	8.168 ppb	0.016 ppm
Concentration per Run 3		10.405 ppb		43.028 %	11.006 ppb	10.155 ppb	10.525 ppb	10.395 ppb	10.384 ppb	0.008 ppm
Concentration RSD		24.5 %		55.3 %	25.2 %	24.0 %	25.5 %	24.9 %	25.4 %	56.3 %
Intensity average	6,270 cps	909 cps	5,313 cps	537,352 cps	82,447 cps	139,186 cps	155,001 cps	91,919 cps	240,062 cps	1,562,931 cps
Intensity per Run 1	7,862.5 cps	1,032.4 cps	6,694.9 cps	844,780.6 cps	106,292.5 cps	182,408.2 cps	201,853.3 cps	120,730.0 cps	318,055.7 cps	2,500,170.6 cps
Intensity per Run 2	4,294.8 cps	1,074.5 cps	3,080.4 cps	515,657.7 cps	87,716.7 cps	145,918.8 cps	161,120.1 cps	94,765.8 cps	242,309.4 cps	1,434,048.4 cps
Intensity per Run 3	6,652.8 cps	618.7 cps	6,163.6 cps	251,616.8 cps	53,331.8 cps	89,230.5 cps	102,028.5 cps	60,261.4 cps	159,821.6 cps	754,574.0 cps
Intensity RSD	28.9 %	27.7 %	36.7 %	55.3 %	32.6 %	33.7 %	32.4 %	33.0 %	33.0 %	56.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		8.057 ppb	7.705 ppb	7.995 ppb	7.439 ppb	7.684 ppb	7.735 ppb	85.749 %	6.140 ppb	8.853 ppb
Concentration per Run 1		6.036 ppb	5.605 ppb	6.404 ppb	5.508 ppb	5.884 ppb	5.907 ppb	141.402 %	4.788 ppb	6.575 ppb
Concentration per Run 2		7.976 ppb	8.003 ppb	8.436 ppb	7.473 ppb	7.814 ppb	7.864 ppb	72.850 %	6.278 ppb	8.737 ppb
Concentration per Run 3		10.159 ppb	9.505 ppb	9.144 ppb	9.335 ppb	9.352 ppb	9.433 ppb	42.995 %	7.355 ppb	11.246 ppb
Concentration RSD		25.6 %	25.5 %	17.8 %	25.7 %	22.6 %	22.8 %	58.8 %	21.0 %	26.4 %
Intensity average	495 cps	6,824 cps	476,726 cps	5,280 cps	462,266 cps	79,954 cps	196,459 cps	767,696 cps	129,133 cps	189,862 cps
Intensity per Run 1	932.0 cps	9,191.7 cps	635,313.8 cps	7,386.4 cps	618,529.6 cps	109,743.3 cps	271,422.4 cps	1,265,944.4 cps	181,865.7 cps	261,073.9 cps
Intensity per Run 2	408.0 cps	6,638.5 cps	467,308.7 cps	5,265.6 cps	451,080.3 cps	77,253.6 cps	186,166.0 cps	652,213.2 cps	121,562.5 cps	175,413.7 cps
Intensity per Run 3	144.0 cps	4,641.2 cps	327,556.7 cps	3,188.5 cps	317,186.7 cps	52,865.0 cps	131,789.9 cps	384,930.2 cps	83,970.1 cps	133,098.8 cps
Intensity RSD	81.1 %	33.4 %	32.3 %	39.8 %	32.7 %	35.7 %	35.8 %	58.8 %	38.2 %	34.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	9.070 ppb	15.481 ppb	15.761 ppb			80.720 %			0.011 ppm	7.513 ppb
Concentration per Run 1	6.629 ppb	11.773 ppb	12.233 ppb			141.748 %			0.020 ppm	5.476 ppb
Concentration per Run 2	8.763 ppb	15.842 ppb	16.002 ppb			63.301 %			0.009 ppm	7.059 ppb
Concentration per Run 3	11.819 ppb	18.829 ppb	19.049 ppb			37.112 %			0.005 ppm	10.002 ppb
Concentration RSD	28.8 %	22.9 %	21.7 %			67.5 %			69.6 %	30.6 %
Intensity average	153,826 cps	77,327 cps	143,814 cps	843 cps	788 cps	2,537,268 cps	859 cps	813 cps	2,552,704 cps	469,591 cps
Intensity per Run 1	210,515.0 cps	110,149.8 cps	208,531.4 cps	1,276.1 cps	1,252.1 cps	4,455,542.3 cps	1,364.1 cps	1,248.1 cps	4,549,692.9 cps	732,700.2 cps
Intensity per Run 2	139,826.5 cps	71,693.6 cps	131,105.2 cps	764.0 cps	692.0 cps	1,989,717.3 cps	672.0 cps	732.0 cps	1,966,191.6 cps	393,957.0 cps
Intensity per Run 3	111,136.3 cps	50,137.7 cps	91,803.9 cps	488.0 cps	420.0 cps	1,166,544.6 cps	540.0 cps	460.0 cps	1,142,227.9 cps	282,115.4 cps
Intensity RSD	33.2 %	39.3 %	41.3 %	47.5 %	53.8 %	67.5 %	51.5 %	49.2 %	69.6 %	50.0 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	7.299 ppb	8.706 ppb	8.549 ppb	8.562 ppb	78.716 %
Concentration per Run 1	5.468 ppb	6.767 ppb	6.663 ppb	6.703 ppb	145.977 %
Concentration per Run 2	6.955 ppb	8.733 ppb	8.998 ppb	8.901 ppb	60.350 %
Concentration per Run 3	9.473 ppb	10.619 ppb	9.986 ppb	10.083 ppb	29.822 %
Concentration RSD	27.7 %	22.1 %	20.0 %	20.0 %	76.5 %
Intensity average	1,116,640 cps	448,901 cps	390,119 cps	1,795,394 cps	2,017,451 cps
Intensity per Run 1	1,782,663.7 cps	723,468.2 cps	626,114.3 cps	2,902,107.7 cps	3,741,306.6 cps
Intensity per Run 2	936,937.4 cps	387,639.7 cps	350,537.8 cps	1,592,670.7 cps	1,546,733.8 cps
Intensity per Run 3	630,317.9 cps	235,593.8 cps	193,703.5 cps	891,404.0 cps	764,313.3 cps
Intensity RSD	53.4 %	55.6 %	56.1 %	56.8 %	76.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28022-001L(5) Analysis: 10/30/2019 19:52:36 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	66.096 %	35.463 %	0.990 ppb	5.405 ppb	5.537 ppb	N/A	749.219 ppb	43.270 ppb	42.979 ppb	41.643 ppb
Concentration per Run 1	102.476 %	35.531 %	0.873 ppb	5.427 ppb	5.204 ppb	N/A	720.712 ppb	40.878 ppb	43.335 ppb	36.248 ppb
Concentration per Run 2	44.748 %	33.447 %	0.882 ppb	4.239 ppb	4.048 ppb	N/A	596.485 ppb	34.068 ppb	33.524 ppb	34.496 ppb
Concentration per Run 3	51.063 %	37.411 %	1.215 ppb	6.550 ppb	7.359 ppb	N/A	930.461 ppb	54.862 ppb	52.076 ppb	54.184 ppb
Concentration RSD	47.9 %	5.6 %	19.7 %	21.4 %	30.3 %	N/A	22.5 %	24.5 %	21.6 %	26.2 %
Intensity average	9,243,714 cps	11,418 cps	57 cps	35 cps	214 cps	1,470 cps	606,827 cps	16,790 cps	3,538 cps	4,615 cps
Intensity per Run 1	14,331,602.0 cps	11,440.3 cps	50.5 cps	34.5 cps	195.0 cps	1,250.1 cps	540,834.3 cps	14,653.8 cps	3,290.7 cps	3,700.9 cps
Intensity per Run 2	6,258,166.2 cps	10,769.3 cps	48.0 cps	24.5 cps	136.0 cps	1,450.1 cps	346,433.6 cps	9,415.3 cps	1,950.2 cps	2,630.4 cps
Intensity per Run 3	7,141,373.0 cps	12,045.4 cps	73.5 cps	46.5 cps	312.0 cps	1,710.1 cps	933,211.6 cps	26,301.6 cps	5,371.6 cps	7,513.3 cps
Intensity RSD	47.9 %	5.6 %	24.5 %	31.3 %	41.8 %	15.7 %	49.3 %	51.5 %	48.7 %	55.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	31.557 ppb		0.013 ppm	174.873 ppb	344.815 ppb	237.061 ppb	329.615 ppb	63.366 %	44.459 %	1.224 ppb
Concentration per Run 1	32.125 ppb		0.013 ppm	179.347 ppb	331.416 ppb	233.921 ppb	326.415 ppb	99.847 %	41.116 %	1.017 ppb
Concentration per Run 2	23.741 ppb		0.014 ppm	172.175 ppb	374.457 ppb	232.548 ppb	341.398 ppb	41.124 %	23.963 %	1.457 ppb
Concentration per Run 3	38.804 ppb		0.012 ppm	173.097 ppb	328.573 ppb	244.714 ppb	321.032 ppb	49.127 %	68.298 %	1.197 ppb
Concentration RSD	23.9 %		8.5 %	2.2 %	7.5 %	2.8 %	3.2 %	50.3 %	50.3 %	18.1 %
Intensity average	4,268 cps	1,487 cps	36,762 cps	72,492 cps	637 cps	442,066 cps	7,300 cps	4,361,508 cps	130,524 cps	201 cps
Intensity per Run 1	3,961.1 cps	1,430.1 cps	36,046.6 cps	69,261.8 cps	580.0 cps	689,651.8 cps	6,763.1 cps	6,872,480.3 cps	120,708.3 cps	160.0 cps
Intensity per Run 2	2,190.3 cps	1,030.1 cps	25,317.5 cps	42,212.2 cps	390.0 cps	282,994.9 cps	4,170.9 cps	2,830,595.0 cps	70,352.4 cps	136.0 cps
Intensity per Run 3	6,652.5 cps	2,000.2 cps	48,920.7 cps	106,001.4 cps	940.1 cps	353,551.6 cps	10,967.1 cps	3,381,448.1 cps	200,510.9 cps	308.0 cps
Intensity RSD	52.6 %	32.8 %	32.1 %	44.2 %	43.9 %	49.2 %	47.0 %	50.3 %	50.3 %	46.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.975 ppb	1.028 ppb	0.785 ppb	N/A	3.272 ppb	154.648 ppb	152.549 ppb	1.000 ppb	0.373 ppb	0.298 ppb
Concentration per Run 1	0.922 ppb	0.985 ppb	0.647 ppb	N/A	3.019 ppb	136.588 ppb	137.203 ppb	0.893 ppb	0.261 ppb	0.073 ppb
Concentration per Run 2	1.048 ppb	1.081 ppb	0.807 ppb	N/A	3.279 ppb	155.401 ppb	167.856 ppb	1.136 ppb	0.098 ppb	0.412 ppb
Concentration per Run 3	0.955 ppb	1.019 ppb	0.899 ppb	N/A	3.516 ppb	171.954 ppb	152.588 ppb	0.972 ppb	0.760 ppb	0.411 ppb
Concentration RSD	6.7 %	4.8 %	16.2 %	N/A	7.6 %	11.4 %	10.0 %	12.4 %	92.5 %	65.5 %
Intensity average	6,480 cps	10,668 cps	1,596 cps	1,610 cps	24,039 cps	1,476,629 cps	48,423 cps	21,651 cps	6,755 cps	1,003 cps
Intensity per Run 1	5,777.2 cps	9,565.5 cps	1,316.1 cps	1,410.1 cps	20,750.2 cps	1,212,922.9 cps	40,844.3 cps	18,303.3 cps	6,066.3 cps	784.0 cps
Intensity per Run 2	3,770.5 cps	6,061.8 cps	944.0 cps	960.1 cps	14,326.8 cps	886,396.7 cps	29,059.9 cps	13,561.3 cps	4,285.0 cps	704.0 cps
Intensity per Run 3	9,893.0 cps	16,375.7 cps	2,528.4 cps	2,460.4 cps	37,039.5 cps	2,330,566.6 cps	75,363.7 cps	33,089.3 cps	9,914.4 cps	1,520.1 cps
Intensity RSD	48.2 %	49.2 %	51.9 %	47.8 %	48.7 %	51.3 %	49.7 %	47.0 %	42.6 %	44.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	2.036 ppb	2.082 ppb	7.894 ppb	6.712 ppb	7.183 ppb		2.572 ppb	N/A	1.243 ppb	
Concentration per Run 1	1.812 ppb	1.810 ppb	7.966 ppb	6.158 ppb	5.977 ppb		2.587 ppb	N/A	1.391 ppb	
Concentration per Run 2	2.174 ppb	2.574 ppb	4.213 ppb	7.116 ppb	8.398 ppb		1.613 ppb	N/A	1.138 ppb	
Concentration per Run 3	2.122 ppb	1.863 ppb	11.504 ppb	6.862 ppb	7.174 ppb		3.517 ppb	N/A	1.200 ppb	
Concentration RSD	9.6 %	20.5 %	46.2 %	7.4 %	16.9 %		37.0 %	N/A	10.6 %	
Intensity average	28,261 cps	14,433 cps	26,229 cps	4,093 cps	20,601 cps	14 cps	5,079 cps	147 cps	182 cps	408 cps
Intensity per Run 1	24,314.7 cps	12,301.0 cps	22,195.6 cps	3,712.7 cps	17,584.4 cps	19.0 cps	4,269.2 cps	160.0 cps	201.5 cps	440.0 cps
Intensity per Run 2	19,638.6 cps	9,998.4 cps	19,338.5 cps	2,912.5 cps	16,153.3 cps	12.0 cps	4,341.7 cps	140.0 cps	124.0 cps	359.0 cps
Intensity per Run 3	40,829.5 cps	21,000.6 cps	37,154.2 cps	5,654.0 cps	28,066.4 cps	12.0 cps	6,626.9 cps	140.0 cps	220.5 cps	425.0 cps
Intensity RSD	39.4 %	40.2 %	36.5 %	34.4 %	31.6 %	28.2 %	26.4 %	7.9 %	28.1 %	10.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.021 ppb		42.605 %	1.056 ppb	1.004 ppb	1.014 ppb	1.017 ppb	0.981 ppb	0.008 ppm
Concentration per Run 1		2.983 ppb		42.988 %	1.036 ppb	0.978 ppb	0.956 ppb	1.002 ppb	0.945 ppb	0.008 ppm
Concentration per Run 2		-1.122 ppb		35.139 %	1.026 ppb	0.988 ppb	1.046 ppb	1.059 ppb	1.012 ppb	0.008 ppm
Concentration per Run 3		-1.798 ppb		49.688 %	1.106 ppb	1.046 ppb	1.042 ppb	0.989 ppb	0.987 ppb	0.009 ppm
Concentration RSD		12,243.0 %		17.1 %	4.2 %	3.6 %	5.0 %	3.7 %	3.4 %	11.4 %
Intensity average	5,053 cps	-223 cps	5,147 cps	249,146 cps	5,173 cps	8,832 cps	9,827 cps	5,857 cps	14,996 cps	732,612 cps
Intensity per Run 1	3,716.6 cps	18.3 cps	3,762.6 cps	251,388.3 cps	4,937.2 cps	8,319.6 cps	8,912.1 cps	5,529.5 cps	13,705.3 cps	674,004.6 cps
Intensity per Run 2	4,289.8 cps	-331.6 cps	4,532.9 cps	205,485.3 cps	4,421.2 cps	7,751.8 cps	9,161.2 cps	5,605.9 cps	14,356.6 cps	695,712.0 cps
Intensity per Run 3	7,153.1 cps	-356.3 cps	7,145.1 cps	290,563.5 cps	6,159.1 cps	10,425.1 cps	11,407.0 cps	6,435.5 cps	16,925.7 cps	828,118.2 cps
Intensity RSD	36.4 %	93.9 %	34.4 %	17.1 %	17.3 %	15.9 %	14.0 %	8.6 %	11.4 %	11.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.058 ppb	0.849 ppb	0.977 ppb	0.811 ppb	0.980 ppb	0.993 ppb	41.025 %	0.758 ppb	1.080 ppb
Concentration per Run 1		0.898 ppb	0.872 ppb	0.864 ppb	0.781 ppb	0.949 ppb	0.971 ppb	34.052 %	0.751 ppb	1.071 ppb
Concentration per Run 2		1.111 ppb	0.776 ppb	1.190 ppb	0.860 ppb	1.011 ppb	0.987 ppb	46.537 %	0.789 ppb	1.123 ppb
Concentration per Run 3		1.165 ppb	0.899 ppb	0.876 ppb	0.792 ppb	0.981 ppb	1.022 ppb	42.487 %	0.735 ppb	1.046 ppb
Concentration RSD		13.3 %	7.6 %	18.9 %	5.3 %	3.2 %	2.6 %	15.5 %	3.7 %	3.6 %
Intensity average	151 cps	508 cps	27,821 cps	331 cps	26,605 cps	5,335 cps	13,276 cps	367,292 cps	8,586 cps	12,427 cps
Intensity per Run 1	148.0 cps	388.0 cps	23,835.5 cps	256.0 cps	22,308.6 cps	4,421.0 cps	10,757.3 cps	304,864.4 cps	7,022.4 cps	10,149.0 cps
Intensity per Run 2	124.0 cps	540.0 cps	28,976.9 cps	420.0 cps	29,853.0 cps	5,958.2 cps	14,949.6 cps	416,636.2 cps	10,146.4 cps	14,741.2 cps
Intensity per Run 3	180.0 cps	596.0 cps	30,650.3 cps	316.0 cps	27,654.9 cps	5,626.8 cps	14,119.5 cps	380,376.6 cps	8,589.9 cps	12,391.8 cps
Intensity RSD	18.6 %	21.2 %	12.8 %	25.1 %	14.6 %	15.2 %	16.7 %	15.5 %	18.2 %	18.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.106 ppb	1.900 ppb	1.914 ppb			37.219 %			0.005 ppm	0.878 ppb
Concentration per Run 1	1.064 ppb	1.826 ppb	1.784 ppb			29.429 %			0.004 ppm	0.909 ppb
Concentration per Run 2	1.173 ppb	1.980 ppb	2.044 ppb			45.047 %			0.006 ppm	0.965 ppb
Concentration per Run 3	1.080 ppb	1.895 ppb	1.915 ppb			37.180 %			0.005 ppm	0.759 ppb
Concentration RSD	5.3 %	4.0 %	6.8 %			21.0 %			19.6 %	12.2 %
Intensity average	10,159 cps	5,012 cps	9,183 cps	56 cps	53 cps	1,169,886 cps	53 cps	71 cps	1,148,958 cps	25,839 cps
Intensity per Run 1	8,015.1 cps	3,900.8 cps	6,894.3 cps	44.0 cps	52.0 cps	925,035.9 cps	20.0 cps	44.0 cps	927,301.9 cps	21,104.1 cps
Intensity per Run 2	12,293.7 cps	6,062.4 cps	11,376.4 cps	64.0 cps	56.0 cps	1,415,942.9 cps	88.0 cps	84.0 cps	1,376,643.2 cps	32,423.4 cps
Intensity per Run 3	10,167.8 cps	5,074.1 cps	9,279.0 cps	60.0 cps	52.0 cps	1,168,677.7 cps	52.0 cps	84.0 cps	1,142,928.8 cps	23,990.1 cps
Intensity RSD	21.1 %	21.6 %	24.4 %	18.9 %	4.3 %	21.0 %	63.8 %	32.7 %	19.6 %	22.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.848 ppb	1.183 ppb	1.180 ppb	1.166 ppb	30.899 %
Concentration per Run 1	0.876 ppb	1.238 ppb	1.188 ppb	1.201 ppb	24.336 %
Concentration per Run 2	0.926 ppb	1.224 ppb	1.205 ppb	1.207 ppb	34.919 %
Concentration per Run 3	0.742 ppb	1.088 ppb	1.146 ppb	1.090 ppb	33.443 %
Concentration RSD	11.3 %	7.0 %	2.6 %	5.6 %	18.5 %
Intensity average	59,127 cps	27,247 cps	23,850 cps	107,386 cps	791,927 cps
Intensity per Run 1	48,151.0 cps	22,527.1 cps	18,928.9 cps	87,309.7 cps	623,724.7 cps
Intensity per Run 2	73,046.0 cps	32,120.2 cps	27,628.3 cps	125,841.7 cps	894,944.1 cps
Intensity per Run 3	56,183.3 cps	27,094.2 cps	24,991.4 cps	109,006.7 cps	857,111.7 cps
Intensity RSD	21.5 %	17.6 %	18.7 %	18.0 %	18.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28022-001(10) Analysis: 10/30/2019 19:58:41 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	34.899 %	27.354 %	0.281 ppb	2.714 ppb	2.521 ppb	N/A	148.269 ppb	9.479 ppb	9.499 ppb	9.742 ppb
Concentration per Run 1	25.587 %	26.028 %	0.292 ppb	2.925 ppb	2.789 ppb	N/A	182.016 ppb	11.691 ppb	12.315 ppb	11.794 ppb
Concentration per Run 2	47.168 %	30.211 %	0.353 ppb	2.488 ppb	2.621 ppb	N/A	145.395 ppb	9.136 ppb	10.449 ppb	10.487 ppb
Concentration per Run 3	31.942 %	25.823 %	0.197 ppb	2.730 ppb	2.151 ppb	N/A	117.397 ppb	7.611 ppb	5.731 ppb	6.945 ppb
Concentration RSD	31.8 %	9.1 %	27.9 %	8.1 %	13.1 %	N/A	21.9 %	21.7 %	35.7 %	25.8 %
Intensity average	4,880,732 cps	8,807 cps	13 cps	14 cps	76 cps	1,210 cps	92,530 cps	3,181 cps	697 cps	933 cps
Intensity per Run 1	3,578,443.1 cps	8,380.5 cps	13.0 cps	14.5 cps	81.5 cps	890.0 cps	116,285.2 cps	3,931.0 cps	890.1 cps	1,140.1 cps
Intensity per Run 2	6,596,596.5 cps	9,727.2 cps	18.0 cps	14.0 cps	85.5 cps	1,430.1 cps	95,396.5 cps	3,240.6 cps	780.0 cps	1,030.1 cps
Intensity per Run 3	4,467,157.3 cps	8,314.5 cps	9.0 cps	13.0 cps	60.5 cps	1,310.1 cps	65,908.2 cps	2,370.3 cps	420.0 cps	630.0 cps
Intensity RSD	31.8 %	9.1 %	33.8 %	5.5 %	17.7 %	23.4 %	27.4 %	24.6 %	35.3 %	28.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	7.931 ppb		0.012 ppm	26.490 ppb	48.586 ppb	38.757 ppb	70.209 ppb	33.287 %	33.276 %	1.074 ppb
Concentration per Run 1	9.064 ppb		0.011 ppm	27.656 ppb	86.586 ppb	38.416 ppb	82.926 ppb	23.766 %	38.014 %	0.385 ppb
Concentration per Run 2	6.425 ppb		0.011 ppm	27.824 ppb	25.192 ppb	39.406 ppb	71.425 ppb	45.225 %	33.725 %	0.438 ppb
Concentration per Run 3	8.303 ppb		0.013 ppm	23.991 ppb	33.981 ppb	38.450 ppb	56.276 ppb	30.869 %	28.088 %	2.397 ppb
Concentration RSD	17.1 %		10.3 %	8.2 %	68.3 %	1.5 %	19.0 %	32.8 %	15.0 %	106.8 %
Intensity average	890 cps	1,083 cps	24,827 cps	14,267 cps	93 cps	57,231 cps	1,390 cps	2,291,114 cps	97,692 cps	123 cps
Intensity per Run 1	1,060.1 cps	1,320.1 cps	25,921.0 cps	16,244.3 cps	160.0 cps	40,600.9 cps	1,790.2 cps	1,635,812.2 cps	111,602.2 cps	56.0 cps
Intensity per Run 2	790.0 cps	980.0 cps	24,315.0 cps	14,950.4 cps	60.0 cps	78,385.6 cps	1,410.1 cps	3,112,807.5 cps	99,011.9 cps	56.0 cps
Intensity per Run 3	820.0 cps	950.0 cps	24,244.7 cps	11,606.2 cps	60.0 cps	52,706.9 cps	970.1 cps	2,124,722.9 cps	82,461.5 cps	256.0 cps
Intensity RSD	16.6 %	19.0 %	3.8 %	16.8 %	61.9 %	33.7 %	29.5 %	32.8 %	15.0 %	94.1 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.164 ppb	0.211 ppb	-0.087 ppb	N/A	0.758 ppb	39.356 ppb	37.247 ppb	0.242 ppb	-0.515 ppb	-0.565 ppb
Concentration per Run 1	0.184 ppb	0.219 ppb	-0.063 ppb	N/A	0.781 ppb	40.503 ppb	37.873 ppb	0.247 ppb	-0.543 ppb	-0.568 ppb
Concentration per Run 2	0.186 ppb	0.235 ppb	-0.070 ppb	N/A	0.793 ppb	40.347 ppb	38.826 ppb	0.252 ppb	-0.436 ppb	-0.608 ppb
Concentration per Run 3	0.122 ppb	0.180 ppb	-0.127 ppb	N/A	0.699 ppb	37.217 ppb	35.041 ppb	0.227 ppb	-0.566 ppb	-0.520 ppb
Concentration RSD	22.0 %	13.3 %	40.5 %	N/A	6.8 %	4.7 %	5.3 %	5.6 %	13.5 %	7.8 %
Intensity average	1,313 cps	2,351 cps	352 cps	390 cps	4,588 cps	280,130 cps	9,299 cps	4,102 cps	1,419 cps	224 cps
Intensity per Run 1	1,583.2 cps	2,732.5 cps	428.0 cps	490.0 cps	5,413.9 cps	331,727.4 cps	10,752.0 cps	4,765.5 cps	1,616.2 cps	260.0 cps
Intensity per Run 2	1,416.2 cps	2,532.3 cps	360.0 cps	360.0 cps	4,665.1 cps	279,731.5 cps	9,768.9 cps	4,308.9 cps	1,456.1 cps	192.0 cps
Intensity per Run 3	940.2 cps	1,788.2 cps	268.0 cps	320.0 cps	3,684.8 cps	228,929.6 cps	7,375.4 cps	3,232.6 cps	1,184.1 cps	220.0 cps
Intensity RSD	25.4 %	21.2 %	22.8 %	22.8 %	18.9 %	18.3 %	18.7 %	19.2 %	15.4 %	15.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	0.395 ppb	0.364 ppb	0.487 ppb	0.617 ppb	0.338 ppb		2.675 ppb	N/A	0.269 ppb	
Concentration per Run 1	0.366 ppb	0.330 ppb	-0.339 ppb	0.336 ppb	0.069 ppb		0.345 ppb	N/A	0.347 ppb	
Concentration per Run 2	0.468 ppb	0.390 ppb	0.804 ppb	1.116 ppb	0.644 ppb		3.268 ppb	N/A	0.200 ppb	
Concentration per Run 3	0.350 ppb	0.373 ppb	0.995 ppb	0.399 ppb	0.301 ppb		4.413 ppb	N/A	0.261 ppb	
Concentration RSD	16.2 %	8.4 %	148.2 %	70.3 %	85.6 %		78.4 %	N/A	27.4 %	
Intensity average	4,983 cps	2,515 cps	5,112 cps	887 cps	3,925 cps	8 cps	3,369 cps	70 cps	23 cps	362 cps
Intensity per Run 1	5,506.0 cps	2,684.5 cps	5,277.8 cps	936.1 cps	4,141.1 cps	4.0 cps	2,109.8 cps	90.0 cps	36.0 cps	374.0 cps
Intensity per Run 2	5,421.6 cps	2,692.4 cps	5,605.8 cps	996.1 cps	4,165.0 cps	8.0 cps	4,121.2 cps	40.0 cps	13.3 cps	342.0 cps
Intensity per Run 3	4,021.0 cps	2,168.3 cps	4,453.3 cps	728.0 cps	3,468.7 cps	13.0 cps	3,877.0 cps	80.0 cps	19.3 cps	371.0 cps
Intensity RSD	16.7 %	11.9 %	11.6 %	15.9 %	10.1 %	54.1 %	32.6 %	37.8 %	51.4 %	4.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.245 ppb		28.610 %	0.256 ppb	0.234 ppb	0.235 ppb	0.257 ppb	0.246 ppb	0.006 ppm
Concentration per Run 1		2.293 ppb		34.476 %	0.275 ppb	0.255 ppb	0.266 ppb	0.320 ppb	0.276 ppb	0.007 ppm
Concentration per Run 2		-3.744 ppb		24.519 %	0.271 ppb	0.227 ppb	0.242 ppb	0.244 ppb	0.258 ppb	0.005 ppm
Concentration per Run 3		-5.284 ppb		26.836 %	0.221 ppb	0.221 ppb	0.195 ppb	0.208 ppb	0.205 ppb	0.005 ppm
Concentration RSD		178.4 %		18.2 %	11.9 %	7.9 %	15.4 %	22.3 %	14.9 %	25.4 %
Intensity average	4,696 cps	-226 cps	4,867 cps	167,308 cps	929 cps	1,508 cps	1,687 cps	1,111 cps	2,773 cps	505,059 cps
Intensity per Run 1	2,736.3 cps	-30.7 cps	2,727.3 cps	201,609.1 cps	1,220.1 cps	2,012.3 cps	2,336.4 cps	1,664.2 cps	3,836.9 cps	652,671.1 cps
Intensity per Run 2	5,773.4 cps	-335.2 cps	6,101.6 cps	143,384.7 cps	848.0 cps	1,268.1 cps	1,500.1 cps	904.1 cps	2,516.3 cps	444,418.3 cps
Intensity per Run 3	5,577.3 cps	-311.4 cps	5,772.4 cps	156,930.3 cps	720.0 cps	1,244.1 cps	1,224.1 cps	764.0 cps	1,964.3 cps	418,089.1 cps
Intensity RSD	36.2 %	75.0 %	38.2 %	18.2 %	28.0 %	29.0 %	34.3 %	43.6 %	34.7 %	25.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.222 ppb	0.139 ppb	0.230 ppb	0.135 ppb	0.240 ppb	0.232 ppb	29.901 %	0.192 ppb	0.263 ppb
Concentration per Run 1		0.289 ppb	0.158 ppb	0.263 ppb	0.151 ppb	0.261 ppb	0.249 ppb	40.907 %	0.202 ppb	0.271 ppb
Concentration per Run 2		0.191 ppb	0.143 ppb	0.254 ppb	0.141 ppb	0.256 ppb	0.245 ppb	27.891 %	0.217 ppb	0.273 ppb
Concentration per Run 3		0.188 ppb	0.115 ppb	0.174 ppb	0.114 ppb	0.203 ppb	0.202 ppb	20.905 %	0.156 ppb	0.244 ppb
Concentration RSD		26.0 %	15.6 %	21.3 %	14.4 %	13.4 %	11.2 %	33.9 %	16.4 %	6.2 %
Intensity average	80 cps	101 cps	3,464 cps	57 cps	3,265 cps	960 cps	2,316 cps	267,698 cps	1,796 cps	2,335 cps
Intensity per Run 1	148.0 cps	156.0 cps	5,214.1 cps	84.0 cps	4,741.8 cps	1,372.1 cps	3,329.3 cps	366,232.8 cps	2,520.5 cps	3,252.8 cps
Intensity per Run 2	48.0 cps	80.0 cps	3,224.6 cps	56.0 cps	3,036.5 cps	924.1 cps	2,235.5 cps	249,702.3 cps	1,820.2 cps	2,208.3 cps
Intensity per Run 3	44.0 cps	68.0 cps	1,952.2 cps	32.0 cps	2,016.3 cps	584.0 cps	1,384.0 cps	187,158.7 cps	1,048.1 cps	1,544.1 cps
Intensity RSD	73.7 %	47.1 %	47.5 %	45.4 %	42.2 %	41.2 %	42.1 %	33.9 %	41.0 %	36.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.266 ppb	0.439 ppb	0.470 ppb			30.354 %			0.004 ppm	0.150 ppb
Concentration per Run 1	0.309 ppb	0.510 ppb	0.552 ppb			40.503 %			0.005 ppm	0.181 ppb
Concentration per Run 2	0.281 ppb	0.438 ppb	0.515 ppb			25.635 %			0.003 ppm	0.166 ppb
Concentration per Run 3	0.210 ppb	0.368 ppb	0.344 ppb			24.924 %			0.004 ppm	0.104 ppb
Concentration RSD	19.2 %	16.2 %	23.6 %			29.0 %			25.1 %	27.3 %
Intensity average	1,946 cps	948 cps	1,854 cps	16 cps	7 cps	954,117 cps	21 cps	29 cps	964,488 cps	3,991 cps
Intensity per Run 1	2,948.8 cps	1,436.2 cps	2,816.7 cps	12.0 cps	16.0 cps	1,273,138.0 cps	28.0 cps	36.0 cps	1,239,550.8 cps	5,644.9 cps
Intensity per Run 2	1,808.2 cps	820.0 cps	1,732.2 cps	20.0 cps	4.0 cps	805,774.6 cps	12.0 cps	24.0 cps	781,338.3 cps	3,335.8 cps
Intensity per Run 3	1,080.1 cps	588.0 cps	1,012.1 cps	16.0 cps	0.0 cps	783,437.0 cps	24.0 cps	28.0 cps	872,575.9 cps	2,991.5 cps
Intensity RSD	48.4 %	46.2 %	49.0 %	25.0 %	124.9 %	29.0 %	39.0 %	20.8 %	25.1 %	36.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.150 ppb	0.429 ppb	0.407 ppb	0.415 ppb	26.257 %
Concentration per Run 1	0.177 ppb	0.425 ppb	0.407 ppb	0.416 ppb	30.586 %
Concentration per Run 2	0.166 ppb	0.513 ppb	0.484 ppb	0.494 ppb	19.680 %
Concentration per Run 3	0.107 ppb	0.351 ppb	0.331 ppb	0.334 ppb	28.505 %
Concentration RSD	24.8 %	18.9 %	18.8 %	19.3 %	22.1 %
Intensity average	9,427 cps	8,367 cps	6,963 cps	32,364 cps	672,951 cps
Intensity per Run 1	12,873.2 cps	9,936.1 cps	8,320.1 cps	38,629.8 cps	783,897.0 cps
Intensity per Run 2	7,803.9 cps	7,678.8 cps	6,338.0 cps	29,387.8 cps	504,383.0 cps
Intensity per Run 3	7,605.4 cps	7,486.6 cps	6,229.7 cps	29,074.8 cps	730,572.4 cps
Intensity RSD	31.7 %	16.3 %	16.9 %	16.8 %	22.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28022-001S(10) Analysis: 10/30/2019 20:04:47 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	20.089 %	26.053 %	0.026 ppb	2.806 ppb	2.554 ppb	N/A	6.757 ppb	-1.352 ppb	-1.683 ppb	-1.122 ppb
Concentration per Run 1	14.700 %	19.972 %	0.025 ppb	3.652 ppb	3.177 ppb	N/A	9.334 ppb	-1.114 ppb	-1.205 ppb	-1.383 ppb
Concentration per Run 2	22.674 %	27.854 %	0.023 ppb	2.723 ppb	2.340 ppb	N/A	6.975 ppb	-1.516 ppb	-2.159 ppb	-1.260 ppb
Concentration per Run 3	22.892 %	30.334 %	0.030 ppb	2.043 ppb	2.144 ppb	N/A	3.963 ppb	-1.426 ppb	-1.686 ppb	-0.723 ppb
Concentration RSD	23.2 %	20.8 %	13.1 %	28.8 %	21.5 %	N/A	39.8 %	15.6 %	28.3 %	31.2 %
Intensity average	2,809,476 cps	8,389 cps	2 cps	13 cps	70 cps	1,113 cps	7,903 cps	227 cps	47 cps	93 cps
Intensity per Run 1	2,055,895.3 cps	6,430.5 cps	1.5 cps	13.5 cps	69.5 cps	980.0 cps	7,873.0 cps	240.0 cps	60.0 cps	60.0 cps
Intensity per Run 2	3,171,006.0 cps	8,968.5 cps	2.0 cps	13.5 cps	67.5 cps	1,120.1 cps	7,442.4 cps	170.0 cps	20.0 cps	70.0 cps
Intensity per Run 3	3,201,525.6 cps	9,766.9 cps	2.5 cps	12.0 cps	73.0 cps	1,240.1 cps	8,393.5 cps	270.0 cps	60.0 cps	150.0 cps
Intensity RSD	23.2 %	20.8 %	25.0 %	6.7 %	4.0 %	11.7 %	6.0 %	22.6 %	49.5 %	52.9 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	0.790 ppb		0.013 ppm	1.440 ppb	-11.108 ppb	-8.890 ppb	-4.126 ppb	19.421 %	29.051 %	0.059 ppb
Concentration per Run 1	3.550 ppb		0.014 ppm	2.160 ppb	-18.917 ppb	-6.146 ppb	-4.252 ppb	13.877 %	26.195 %	0.037 ppb
Concentration per Run 2	-0.158 ppb		0.015 ppm	6.554 ppb	4.512 ppb	-10.166 ppb	-0.502 ppb	23.117 %	20.683 %	0.143 ppb
Concentration per Run 3	-1.021 ppb		0.011 ppm	-4.396 ppb	-18.917 ppb	-10.358 ppb	-7.625 ppb	21.269 %	40.274 %	-0.003 ppb
Concentration RSD	307.3 %		17.7 %	382.8 %	121.8 %	26.8 %	86.4 %	25.2 %	34.8 %	128.7 %
Intensity average	183 cps	987 cps	24,824 cps	6,288 cps	7 cps	8,496 cps	147 cps	1,336,779 cps	85,289 cps	5 cps
Intensity per Run 1	370.0 cps	940.0 cps	23,833.9 cps	5,941.5 cps	0.0 cps	7,232.1 cps	140.0 cps	955,181.7 cps	76,904.3 cps	4.0 cps
Intensity per Run 2	110.0 cps	820.0 cps	23,222.3 cps	5,931.4 cps	20.0 cps	9,554.0 cps	150.0 cps	1,591,176.9 cps	60,722.7 cps	12.0 cps
Intensity per Run 3	70.0 cps	1,200.1 cps	27,416.6 cps	6,992.3 cps	0.0 cps	8,703.0 cps	150.0 cps	1,463,979.4 cps	118,238.7 cps	0.0 cps
Intensity RSD	88.9 %	19.7 %	9.1 %	9.7 %	173.2 %	13.8 %	3.9 %	25.2 %	34.8 %	114.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.081 ppb	-0.070 ppb	-0.365 ppb	N/A	-0.041 ppb	2.184 ppb	2.382 ppb	0.035 ppb	-0.842 ppb	-0.883 ppb
Concentration per Run 1	-0.084 ppb	-0.074 ppb	-0.348 ppb	N/A	-0.014 ppb	3.682 ppb	3.287 ppb	0.036 ppb	-0.823 ppb	-0.861 ppb
Concentration per Run 2	-0.067 ppb	-0.059 ppb	-0.370 ppb	N/A	-0.060 ppb	1.431 ppb	2.497 ppb	0.048 ppb	-0.883 ppb	-0.903 ppb
Concentration per Run 3	-0.092 ppb	-0.077 ppb	-0.378 ppb	N/A	-0.050 ppb	1.437 ppb	1.361 ppb	0.022 ppb	-0.821 ppb	-0.884 ppb
Concentration RSD	16.0 %	13.7 %	4.2 %	N/A	59.0 %	59.4 %	40.6 %	36.1 %	4.2 %	2.4 %
Intensity average	171 cps	309 cps	81 cps	93 cps	455 cps	25,083 cps	805 cps	543 cps	361 cps	41 cps
Intensity per Run 1	154.5 cps	268.0 cps	84.0 cps	110.0 cps	504.0 cps	29,912.4 cps	928.1 cps	532.0 cps	320.0 cps	44.0 cps
Intensity per Run 2	168.1 cps	276.0 cps	64.0 cps	90.0 cps	312.0 cps	17,836.9 cps	616.0 cps	544.0 cps	272.0 cps	28.0 cps
Intensity per Run 3	190.1 cps	384.0 cps	96.0 cps	80.0 cps	548.0 cps	27,499.1 cps	872.1 cps	552.0 cps	492.0 cps	52.0 cps
Intensity RSD	10.5 %	20.9 %	19.9 %	16.4 %	27.6 %	25.5 %	20.7 %	1.9 %	32.0 %	29.6 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.080 ppb	-0.062 ppb	-1.811 ppb	-1.668 ppb	-1.714 ppb		2.150 ppb	N/A	0.045 ppb	
Concentration per Run 1	-0.057 ppb	-0.046 ppb	-1.652 ppb	-1.585 ppb	-1.604 ppb		1.635 ppb	N/A	0.217 ppb	
Concentration per Run 2	-0.098 ppb	-0.052 ppb	-2.073 ppb	-1.797 ppb	-1.773 ppb		2.912 ppb	N/A	-0.268 ppb	
Concentration per Run 3	-0.085 ppb	-0.088 ppb	-1.710 ppb	-1.624 ppb	-1.765 ppb		1.903 ppb	N/A	0.186 ppb	
Concentration RSD	25.9 %	37.0 %	12.6 %	6.8 %	5.6 %		31.3 %	N/A	604.0 %	
Intensity average	529 cps	269 cps	944 cps	132 cps	688 cps	7 cps	3,151 cps	57 cps	-4 cps	358 cps
Intensity per Run 1	612.0 cps	328.0 cps	1,032.1 cps	128.0 cps	700.0 cps	4.0 cps	2,091.5 cps	40.0 cps	13.2 cps	322.0 cps
Intensity per Run 2	356.0 cps	240.0 cps	684.0 cps	88.0 cps	604.0 cps	8.0 cps	4,677.6 cps	50.0 cps	-40.3 cps	379.0 cps
Intensity per Run 3	620.0 cps	240.0 cps	1,116.1 cps	180.0 cps	760.0 cps	8.0 cps	2,685.3 cps	80.0 cps	16.0 cps	374.0 cps
Intensity RSD	28.4 %	18.9 %	24.3 %	34.9 %	11.4 %	34.6 %	43.0 %	36.7 %	858.1 %	8.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-3.190 ppb		32.140 %	0.045 ppb	0.023 ppb	0.009 ppb	0.015 ppb	0.015 ppb	0.006 ppm
Concentration per Run 1		-1.788 ppb		22.790 %	0.022 ppb	0.023 ppb	0.009 ppb	0.014 ppb	0.019 ppb	0.004 ppm
Concentration per Run 2		-3.587 ppb		38.987 %	0.011 ppb	0.038 ppb	0.015 ppb	0.016 ppb	0.015 ppb	0.007 ppm
Concentration per Run 3		-4.195 ppb		34.644 %	0.102 ppb	0.007 ppb	0.004 ppb	0.016 ppb	0.012 ppb	0.006 ppm
Concentration RSD		39.2 %		26.1 %	111.7 %	68.7 %	59.5 %	9.8 %	22.9 %	26.8 %
Intensity average	4,766 cps	-308 cps	4,974 cps	187,951 cps	260 cps	269 cps	209 cps	144 cps	345 cps	534,095 cps
Intensity per Run 1	2,887.4 cps	-186.1 cps	3,115.4 cps	133,272.5 cps	128.0 cps	196.0 cps	152.0 cps	100.0 cps	288.0 cps	379,108.1 cps
Intensity per Run 2	7,097.0 cps	-403.2 cps	7,469.3 cps	227,990.3 cps	168.0 cps	440.0 cps	300.0 cps	180.0 cps	424.0 cps	661,391.7 cps
Intensity per Run 3	4,314.8 cps	-335.8 cps	4,335.8 cps	202,591.4 cps	484.1 cps	172.0 cps	176.0 cps	152.0 cps	324.0 cps	561,784.9 cps
Intensity RSD	44.9 %	36.0 %	45.2 %	26.1 %	75.0 %	55.1 %	37.9 %	28.2 %	20.4 %	26.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.044 ppb	0.004 ppb	0.010 ppb	0.004 ppb	0.016 ppb	0.016 ppb	27.578 %	0.003 ppb	0.023 ppb
Concentration per Run 1		-0.060 ppb	0.005 ppb	0.020 ppb	0.005 ppb	0.022 ppb	0.019 ppb	22.242 %	0.015 ppb	0.035 ppb
Concentration per Run 2		-0.031 ppb	0.003 ppb	0.012 ppb	0.005 ppb	0.016 ppb	0.017 ppb	34.380 %	0.002 ppb	0.017 ppb
Concentration per Run 3		-0.042 ppb	0.005 ppb	-0.002 ppb	0.003 ppb	0.010 ppb	0.011 ppb	26.112 %	-0.007 ppb	0.016 ppb
Concentration RSD		33.8 %	21.0 %	107.9 %	25.8 %	37.3 %	26.3 %	22.5 %	333.0 %	46.4 %
Intensity average	100 cps	16 cps	123 cps	3 cps	123 cps	61 cps	151 cps	246,903 cps	235 cps	267 cps
Intensity per Run 1	72.0 cps	8.0 cps	104.0 cps	4.0 cps	112.0 cps	68.0 cps	144.9 cps	199,130.4 cps	264.0 cps	300.0 cps
Intensity per Run 2	140.0 cps	24.0 cps	128.0 cps	4.0 cps	164.0 cps	76.0 cps	204.3 cps	307,799.3 cps	288.0 cps	292.0 cps
Intensity per Run 3	88.0 cps	16.0 cps	136.0 cps	0.0 cps	92.0 cps	40.0 cps	103.9 cps	233,779.9 cps	152.0 cps	208.0 cps
Intensity RSD	35.6 %	50.0 %	13.6 %	86.6 %	30.3 %	30.8 %	33.4 %	22.5 %	30.9 %	19.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.020 ppb	0.015 ppb	0.009 ppb			27.135 %			0.004 ppm	0.002 ppb
Concentration per Run 1	0.023 ppb	0.026 ppb	0.023 ppb			23.214 %			0.003 ppm	0.006 ppb
Concentration per Run 2	0.023 ppb	0.002 ppb	0.007 ppb			34.686 %			0.005 ppm	0.003 ppb
Concentration per Run 3	0.012 ppb	0.017 ppb	-0.003 ppb			23.504 %			0.003 ppm	-0.001 ppb
Concentration RSD	33.7 %	83.1 %	149.6 %			24.1 %			24.9 %	137.6 %
Intensity average	203 cps	68 cps	105 cps	0 cps	3 cps	852,916 cps	11 cps	5 cps	890,389 cps	346 cps
Intensity per Run 1	184.0 cps	76.0 cps	128.0 cps	0.0 cps	0.0 cps	729,669.3 cps	12.0 cps	0.0 cps	767,902.7 cps	346.0 cps
Intensity per Run 2	280.0 cps	60.0 cps	128.0 cps	0.0 cps	4.0 cps	1,090,275.3 cps	16.0 cps	4.0 cps	1,145,813.9 cps	404.0 cps
Intensity per Run 3	144.0 cps	68.0 cps	60.0 cps	0.0 cps	4.0 cps	738,804.3 cps	4.0 cps	12.0 cps	757,451.5 cps	289.0 cps
Intensity RSD	34.5 %	11.8 %	37.3 %	N/A	86.6 %	24.1 %	57.3 %	114.6 %	24.9 %	16.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.003 ppb	0.175 ppb	0.163 ppb	0.168 ppb	25.531 %
Concentration per Run 1	0.007 ppb	0.202 ppb	0.194 ppb	0.196 ppb	20.361 %
Concentration per Run 2	0.003 ppb	0.150 ppb	0.139 ppb	0.147 ppb	28.238 %
Concentration per Run 3	0.000 ppb	0.175 ppb	0.155 ppb	0.162 ppb	27.994 %
Concentration RSD	102.8 %	15.0 %	17.3 %	15.1 %	17.5 %
Intensity average	869 cps	3,436 cps	2,798 cps	13,291 cps	654,346 cps
Intensity per Run 1	868.0 cps	3,198.4 cps	2,692.3 cps	12,460.5 cps	521,843.7 cps
Intensity per Run 2	962.0 cps	3,355.5 cps	2,740.3 cps	13,141.8 cps	723,719.6 cps
Intensity per Run 3	778.0 cps	3,754.6 cps	2,960.4 cps	14,269.3 cps	717,474.9 cps
Intensity RSD	10.6 %	8.3 %	5.1 %	6.9 %	17.5 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28022-001SD(10) Analysis: 10/30/2019 20:10:51 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	25.453 %	31.149 %	0.021 ppb	1.615 ppb	1.665 ppb	N/A	0.225 ppb	-2.066 ppb	-2.419 ppb	-2.094 ppb
Concentration per Run 1	6.861 %	20.701 %	0.054 ppb	2.884 ppb	2.380 ppb	N/A	2.679 ppb	-1.985 ppb	-2.353 ppb	-1.873 ppb
Concentration per Run 2	47.888 %	29.770 %	0.010 ppb	1.146 ppb	1.624 ppb	N/A	-0.196 ppb	-2.051 ppb	-2.433 ppb	-2.176 ppb
Concentration per Run 3	21.609 %	42.977 %	0.000 ppb	0.816 ppb	0.993 ppb	N/A	-1.807 ppb	-2.162 ppb	-2.472 ppb	-2.234 ppb
Concentration RSD	81.6 %	36.0 %	135.8 %	68.8 %	41.7 %	N/A	1,008.8 %	4.3 %	2.5 %	9.2 %
Intensity average	3,559,644 cps	10,029 cps	2 cps	9 cps	53 cps	1,060 cps	5,141 cps	60 cps	10 cps	23 cps
Intensity per Run 1	959,543.5 cps	6,665.3 cps	2.5 cps	11.0 cps	53.5 cps	1,020.0 cps	4,721.0 cps	60.0 cps	10.0 cps	30.0 cps
Intensity per Run 2	6,697,319.6 cps	9,585.3 cps	1.5 cps	7.0 cps	54.5 cps	1,180.1 cps	5,181.1 cps	70.0 cps	10.0 cps	20.0 cps
Intensity per Run 3	3,022,067.7 cps	13,837.6 cps	1.5 cps	7.5 cps	49.5 cps	980.0 cps	5,521.2 cps	50.0 cps	10.0 cps	20.0 cps
Intensity RSD	81.6 %	36.0 %	31.5 %	25.6 %	5.0 %	10.0 %	7.8 %	16.7 %	0.0 %	24.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.129 ppb		0.013 ppm	-1.969 ppb	-12.998 ppb	-6.331 ppb	-11.272 ppb	24.726 %	33.585 %	0.012 ppb
Concentration per Run 1	-1.068 ppb		0.017 ppm	3.355 ppb	-8.190 ppb	11.939 ppb	-9.997 ppb	6.464 %	23.111 %	0.042 ppb
Concentration per Run 2	-0.964 ppb		0.012 ppm	-2.961 ppb	-11.887 ppb	-18.955 ppb	-11.859 ppb	47.091 %	35.365 %	-0.003 ppb
Concentration per Run 3	-1.357 ppb		0.009 ppm	-6.303 ppb	-18.917 ppb	-11.978 ppb	-11.960 ppb	20.621 %	42.280 %	-0.003 ppb
Concentration RSD	18.0 %		33.5 %	249.0 %	41.9 %	255.9 %	9.8 %	83.4 %	28.9 %	224.8 %
Intensity average	50 cps	1,087 cps	26,401 cps	6,399 cps	7 cps	7,499 cps	63 cps	1,701,865 cps	98,601 cps	1 cps
Intensity per Run 1	40.0 cps	1,130.1 cps	26,120.6 cps	5,581.3 cps	10.0 cps	6,481.7 cps	60.0 cps	444,927.0 cps	67,850.5 cps	4.0 cps
Intensity per Run 2	70.0 cps	1,080.1 cps	28,104.2 cps	6,642.0 cps	10.0 cps	8,472.9 cps	60.0 cps	3,241,296.7 cps	103,825.0 cps	0.0 cps
Intensity per Run 3	40.0 cps	1,050.1 cps	24,978.6 cps	6,972.2 cps	0.0 cps	7,542.3 cps	70.0 cps	1,419,370.1 cps	124,127.4 cps	0.0 cps
Intensity RSD	34.6 %	3.7 %	6.0 %	11.4 %	86.6 %	13.3 %	9.1 %	83.4 %	28.9 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.106 ppb	-0.098 ppb	-0.397 ppb	N/A	-0.099 ppb	-1.398 ppb	-1.111 ppb	0.014 ppb	-0.877 ppb	-0.892 ppb
Concentration per Run 1	-0.103 ppb	-0.082 ppb	-0.386 ppb	N/A	-0.105 ppb	-1.318 ppb	-0.940 ppb	0.021 ppb	-0.872 ppb	-0.904 ppb
Concentration per Run 2	-0.101 ppb	-0.104 ppb	-0.380 ppb	N/A	-0.109 ppb	-1.394 ppb	-1.176 ppb	0.013 ppb	-0.875 ppb	-0.890 ppb
Concentration per Run 3	-0.113 ppb	-0.108 ppb	-0.426 ppb	N/A	-0.083 ppb	-1.481 ppb	-1.216 ppb	0.009 ppb	-0.884 ppb	-0.882 ppb
Concentration RSD	5.8 %	14.2 %	6.4 %	N/A	14.0 %	5.8 %	13.4 %	42.5 %	0.8 %	1.2 %
Intensity average	94 cps	153 cps	63 cps	73 cps	237 cps	3,841 cps	127 cps	307 cps	323 cps	47 cps
Intensity per Run 1	75.2 cps	196.0 cps	52.0 cps	40.0 cps	128.0 cps	3,020.6 cps	120.0 cps	300.0 cps	212.0 cps	24.0 cps
Intensity per Run 2	123.9 cps	136.0 cps	88.0 cps	90.0 cps	176.0 cps	4,161.0 cps	124.0 cps	320.0 cps	348.0 cps	48.0 cps
Intensity per Run 3	83.6 cps	128.0 cps	48.0 cps	90.0 cps	408.0 cps	4,341.5 cps	136.0 cps	300.0 cps	408.0 cps	68.0 cps
Intensity RSD	27.6 %	24.2 %	35.2 %	39.4 %	63.1 %	18.6 %	6.6 %	3.8 %	31.1 %	47.2 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.123 ppb	-0.108 ppb	-2.193 ppb	-1.863 ppb	-1.959 ppb		0.515 ppb	N/A	-0.047 ppb	
Concentration per Run 1	-0.120 ppb	-0.100 ppb	-2.237 ppb	-1.857 ppb	-1.980 ppb		1.487 ppb	N/A	-0.180 ppb	
Concentration per Run 2	-0.124 ppb	-0.110 ppb	-2.135 ppb	-1.892 ppb	-1.942 ppb		0.264 ppb	N/A	0.035 ppb	
Concentration per Run 3	-0.125 ppb	-0.114 ppb	-2.207 ppb	-1.838 ppb	-1.955 ppb		-0.206 ppb	N/A	0.003 ppb	
Concentration RSD	2.2 %	6.5 %	2.4 %	1.5 %	1.0 %		169.7 %	N/A	245.5 %	
Intensity average	184 cps	92 cps	544 cps	87 cps	408 cps	9 cps	2,347 cps	53 cps	-12 cps	361 cps
Intensity per Run 1	144.0 cps	96.0 cps	340.0 cps	56.0 cps	228.0 cps	12.0 cps	3,179.6 cps	50.0 cps	-21.4 cps	306.0 cps
Intensity per Run 2	192.0 cps	92.0 cps	616.0 cps	76.0 cps	448.0 cps	5.0 cps	1,888.1 cps	60.0 cps	-3.8 cps	365.0 cps
Intensity per Run 3	216.0 cps	88.0 cps	676.0 cps	128.0 cps	548.0 cps	9.0 cps	1,973.7 cps	50.0 cps	-11.5 cps	413.0 cps
Intensity RSD	19.9 %	4.3 %	32.9 %	42.9 %	40.1 %	40.5 %	30.8 %	10.8 %	72.4 %	14.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.746 ppb		43.000 %	-0.006 ppb	-0.001 ppb	0.001 ppb	-0.006 ppb	0.001 ppb	0.009 ppm
Concentration per Run 1		-2.413 ppb		25.546 %	0.010 ppb	0.006 ppb	-0.005 ppb	-0.006 ppb	0.004 ppb	0.006 ppm
Concentration per Run 2		-3.308 ppb		43.596 %	-0.011 ppb	-0.004 ppb	0.014 ppb	-0.007 ppb	-0.002 ppb	0.009 ppm
Concentration per Run 3		0.484 ppb		59.859 %	-0.016 ppb	-0.004 ppb	-0.005 ppb	-0.005 ppb	0.000 ppb	0.012 ppm
Concentration RSD		113.5 %		39.9 %	248.5 %	697.3 %	945.9 %	20.6 %	472.6 %	32.1 %
Intensity average	3,428 cps	-339 cps	3,753 cps	251,457 cps	97 cps	152 cps	209 cps	79 cps	260 cps	809,768 cps
Intensity per Run 1	4,641.9 cps	-340.0 cps	5,040.1 cps	149,388.9 cps	120.0 cps	140.0 cps	96.0 cps	52.0 cps	212.0 cps	568,705.2 cps
Intensity per Run 2	2,814.3 cps	-432.5 cps	3,146.4 cps	254,941.0 cps	84.0 cps	128.0 cps	328.0 cps	68.0 cps	224.0 cps	774,859.4 cps
Intensity per Run 3	2,827.3 cps	-243.8 cps	3,071.4 cps	350,041.3 cps	88.0 cps	188.0 cps	204.0 cps	116.0 cps	344.0 cps	1,085,739.9 cps
Intensity RSD	30.7 %	27.9 %	29.7 %	39.9 %	20.3 %	20.9 %	55.5 %	42.3 %	28.1 %	32.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.028 ppb	-0.001 ppb	0.010 ppb	0.000 ppb	0.002 ppb	0.000 ppb	44.436 %	-0.013 ppb	-0.002 ppb
Concentration per Run 1		-0.023 ppb	0.000 ppb	0.013 ppb	0.000 ppb	0.002 ppb	0.002 ppb	35.657 %	-0.011 ppb	0.000 ppb
Concentration per Run 2		-0.056 ppb	-0.001 ppb	0.011 ppb	0.000 ppb	0.001 ppb	0.000 ppb	38.596 %	-0.012 ppb	-0.001 ppb
Concentration per Run 3		-0.004 ppb	-0.001 ppb	0.007 ppb	0.000 ppb	0.002 ppb	0.000 ppb	59.056 %	-0.016 ppb	-0.005 ppb
Concentration RSD		94.7 %	22.1 %	32.7 %	167.0 %	46.2 %	310.4 %	28.7 %	20.8 %	109.1 %
Intensity average	177 cps	32 cps	19 cps	4 cps	32 cps	15 cps	23 cps	397,830 cps	188 cps	125 cps
Intensity per Run 1	140.0 cps	24.0 cps	20.0 cps	4.0 cps	24.0 cps	12.0 cps	35.3 cps	319,227.2 cps	176.0 cps	124.0 cps
Intensity per Run 2	168.0 cps	16.0 cps	16.0 cps	4.0 cps	32.0 cps	8.0 cps	11.3 cps	345,542.7 cps	176.0 cps	120.0 cps
Intensity per Run 3	224.0 cps	56.0 cps	20.0 cps	4.0 cps	40.0 cps	24.0 cps	22.3 cps	528,719.8 cps	212.0 cps	132.0 cps
Intensity RSD	24.1 %	66.1 %	12.4 %	0.0 %	25.0 %	56.8 %	52.3 %	28.7 %	11.1 %	4.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.003 ppb	-0.021 ppb	-0.020 ppb			38.207 %			0.005 ppm	-0.004 ppb
Concentration per Run 1	-0.003 ppb	-0.021 ppb	-0.021 ppb			31.160 %			0.004 ppm	-0.002 ppb
Concentration per Run 2	0.000 ppb	-0.023 ppb	-0.019 ppb			32.059 %			0.004 ppm	-0.004 ppb
Concentration per Run 3	-0.007 ppb	-0.019 ppb	-0.021 ppb			51.401 %			0.007 ppm	-0.006 ppb
Concentration RSD	99.9 %	8.9 %	5.9 %			29.9 %			28.8 %	48.1 %
Intensity average	89 cps	11 cps	16 cps	0 cps	8 cps	1,200,946 cps	12 cps	8 cps	1,177,598 cps	241 cps
Intensity per Run 1	80.0 cps	8.0 cps	12.0 cps	0.0 cps	4.0 cps	979,436.2 cps	8.0 cps	12.0 cps	952,474.6 cps	233.0 cps
Intensity per Run 2	108.0 cps	4.0 cps	20.0 cps	0.0 cps	8.0 cps	1,007,714.1 cps	8.0 cps	8.0 cps	1,012,944.8 cps	226.0 cps
Intensity per Run 3	80.0 cps	20.0 cps	16.0 cps	0.0 cps	12.0 cps	1,615,688.1 cps	20.0 cps	4.0 cps	1,567,375.0 cps	263.0 cps
Intensity RSD	18.1 %	78.1 %	25.0 %	N/A	50.0 %	29.9 %	57.7 %	50.0 %	28.8 %	8.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.004 ppb	0.123 ppb	0.122 ppb	0.121 ppb	33.253 %
Concentration per Run 1	-0.003 ppb	0.153 ppb	0.142 ppb	0.140 ppb	24.413 %
Concentration per Run 2	-0.003 ppb	0.128 ppb	0.131 ppb	0.134 ppb	28.168 %
Concentration per Run 3	-0.006 ppb	0.089 ppb	0.092 ppb	0.090 ppb	47.180 %
Concentration RSD	43.4 %	25.8 %	21.8 %	22.5 %	36.7 %
Intensity average	577 cps	3,103 cps	2,704 cps	12,298 cps	852,265 cps
Intensity per Run 1	520.0 cps	2,962.4 cps	2,424.2 cps	10,843.8 cps	625,682.6 cps
Intensity per Run 2	562.0 cps	2,876.3 cps	2,580.3 cps	12,058.4 cps	721,926.3 cps
Intensity per Run 3	650.0 cps	3,469.5 cps	3,108.4 cps	13,992.2 cps	1,209,184.8 cps
Intensity RSD	11.5 %	10.3 %	13.3 %	12.9 %	36.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28022-001L(50) Analysis: 10/30/2019 20:16:57 Sample Type UNKNOWN
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	15.607 %	43.258 %	0.005 ppb	0.748 ppb	0.794 ppb	N/A	-1.977 ppb	-2.183 ppb	-2.468 ppb	-2.161 ppb
Concentration per Run 1	24.752 %	51.070 %	0.003 ppb	0.513 ppb	0.774 ppb	N/A	-3.422 ppb	-2.138 ppb	-2.505 ppb	-2.148 ppb
Concentration per Run 2	15.243 %	37.825 %	0.003 ppb	0.730 ppb	0.763 ppb	N/A	-0.452 ppb	-2.169 ppb	-2.300 ppb	-2.198 ppb
Concentration per Run 3	6.827 %	40.879 %	0.009 ppb	1.002 ppb	0.845 ppb	N/A	-2.056 ppb	-2.240 ppb	-2.597 ppb	-2.138 ppb
Concentration RSD	57.5 %	16.0 %	72.5 %	32.7 %	5.6 %	N/A	75.2 %	2.4 %	6.2 %	1.5 %
Intensity average	2,182,745 cps	13,928 cps	2 cps	7 cps	42 cps	1,200 cps	5,501 cps	47 cps	10 cps	30 cps
Intensity per Run 1	3,461,640.6 cps	16,443.5 cps	2.0 cps	6.5 cps	49.5 cps	1,060.0 cps	5,621.3 cps	80.0 cps	10.0 cps	40.0 cps
Intensity per Run 2	2,131,837.8 cps	12,178.7 cps	1.5 cps	6.0 cps	34.5 cps	1,350.1 cps	5,631.3 cps	40.0 cps	20.0 cps	20.0 cps
Intensity per Run 3	954,756.1 cps	13,162.1 cps	2.0 cps	8.5 cps	41.5 cps	1,190.1 cps	5,251.1 cps	20.0 cps	0.0 cps	30.0 cps
Intensity RSD	57.5 %	16.0 %	15.7 %	18.9 %	17.9 %	12.1 %	3.9 %	65.5 %	100.0 %	33.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.424 ppb		0.008 ppm	-6.731 ppb	-17.652 ppb	-4.400 ppb	-10.779 ppb	15.231 %	47.836 %	0.002 ppb
Concentration per Run 1	-1.554 ppb		0.007 ppm	-9.757 ppb	-15.122 ppb	-14.854 ppb	-12.852 ppb	23.694 %	65.731 %	0.013 ppb
Concentration per Run 2	-1.206 ppb		0.008 ppm	-5.887 ppb	-18.917 ppb	-8.601 ppb	-9.304 ppb	14.396 %	33.940 %	-0.003 ppb
Concentration per Run 3	-1.511 ppb		0.008 ppm	-4.550 ppb	-18.917 ppb	10.256 ppb	-10.182 ppb	7.603 %	43.836 %	-0.003 ppb
Concentration RSD	13.3 %		9.3 %	40.2 %	12.4 %	297.1 %	17.1 %	53.0 %	34.0 %	486.3 %
Intensity average	30 cps	1,043 cps	24,388 cps	7,393 cps	3 cps	6,889 cps	97 cps	1,048,363 cps	140,437 cps	1 cps
Intensity per Run 1	20.0 cps	1,210.1 cps	29,448.6 cps	8,603.4 cps	10.0 cps	6,851.9 cps	80.0 cps	1,630,887.5 cps	192,974.8 cps	4.0 cps
Intensity per Run 2	50.0 cps	910.0 cps	19,286.8 cps	5,801.5 cps	0.0 cps	6,561.7 cps	100.0 cps	990,906.9 cps	99,642.3 cps	0.0 cps
Intensity per Run 3	20.0 cps	1,010.0 cps	24,427.7 cps	7,772.9 cps	0.0 cps	7,252.2 cps	110.0 cps	523,293.8 cps	128,694.2 cps	0.0 cps
Intensity RSD	57.7 %	14.6 %	20.8 %	19.5 %	173.2 %	5.0 %	15.8 %	53.0 %	34.0 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.106 ppb	-0.409 ppb	N/A	-0.097 ppb	-1.686 ppb	-1.470 ppb	0.006 ppb	-0.862 ppb	-0.882 ppb
Concentration per Run 1	-0.114 ppb	-0.109 ppb	-0.408 ppb	N/A	-0.095 ppb	-1.700 ppb	-1.462 ppb	0.001 ppb	-0.819 ppb	-0.864 ppb
Concentration per Run 2	-0.109 ppb	-0.106 ppb	-0.410 ppb	N/A	-0.093 ppb	-1.677 ppb	-1.485 ppb	0.013 ppb	-0.892 ppb	-0.866 ppb
Concentration per Run 3	-0.114 ppb	-0.105 ppb	-0.408 ppb	N/A	-0.104 ppb	-1.680 ppb	-1.462 ppb	0.006 ppb	-0.874 ppb	-0.916 ppb
Concentration RSD	2.8 %	1.8 %	0.3 %	N/A	5.9 %	0.7 %	0.9 %	92.3 %	4.4 %	3.4 %
Intensity average	94 cps	160 cps	76 cps	93 cps	321 cps	2,407 cps	68 cps	249 cps	488 cps	69 cps
Intensity per Run 1	117.5 cps	196.0 cps	100.0 cps	150.0 cps	432.0 cps	2,920.5 cps	96.0 cps	204.0 cps	748.0 cps	104.0 cps
Intensity per Run 2	86.2 cps	120.0 cps	56.0 cps	50.0 cps	276.0 cps	1,960.2 cps	44.0 cps	304.0 cps	296.0 cps	68.0 cps
Intensity per Run 3	79.4 cps	164.0 cps	72.0 cps	80.0 cps	256.0 cps	2,340.3 cps	64.0 cps	240.0 cps	420.0 cps	36.0 cps
Intensity RSD	21.5 %	23.8 %	29.3 %	55.0 %	30.0 %	20.1 %	38.6 %	20.3 %	47.9 %	49.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.119 ppb	-0.108 ppb	-2.092 ppb	-1.816 ppb	-1.912 ppb		0.205 ppb	N/A	0.074 ppb	
Concentration per Run 1	-0.112 ppb	-0.109 ppb	-1.957 ppb	-1.786 ppb	-1.855 ppb		0.075 ppb	N/A	0.187 ppb	
Concentration per Run 2	-0.123 ppb	-0.107 ppb	-2.180 ppb	-1.886 ppb	-1.905 ppb		0.128 ppb	N/A	0.031 ppb	
Concentration per Run 3	-0.123 ppb	-0.109 ppb	-2.137 ppb	-1.776 ppb	-1.974 ppb		0.411 ppb	N/A	0.004 ppb	
Concentration RSD	5.1 %	1.0 %	5.7 %	3.3 %	3.1 %		88.2 %	N/A	132.9 %	
Intensity average	319 cps	136 cps	869 cps	139 cps	648 cps	8 cps	2,198 cps	73 cps	3 cps	379 cps
Intensity per Run 1	500.0 cps	180.0 cps	1,236.1 cps	180.0 cps	920.1 cps	11.0 cps	1,941.9 cps	90.0 cps	24.8 cps	390.0 cps
Intensity per Run 2	212.0 cps	104.0 cps	636.0 cps	84.0 cps	560.0 cps	8.0 cps	2,153.8 cps	30.0 cps	-4.9 cps	354.0 cps
Intensity per Run 3	244.0 cps	124.0 cps	736.0 cps	152.0 cps	464.0 cps	6.0 cps	2,498.5 cps	100.0 cps	-10.0 cps	393.0 cps
Intensity RSD	49.5 %	29.0 %	37.0 %	35.6 %	37.1 %	30.2 %	12.8 %	51.6 %	570.1 %	5.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.358 ppb		51.352 %	-0.017 ppb	-0.011 ppb	-0.013 ppb	-0.013 ppb	-0.009 ppb	0.010 ppm
Concentration per Run 1		0.936 ppb		51.787 %	-0.019 ppb	-0.011 ppb	-0.013 ppb	-0.013 ppb	-0.008 ppb	0.010 ppm
Concentration per Run 2		0.669 ppb		50.207 %	-0.016 ppb	-0.012 ppb	-0.013 ppb	-0.013 ppb	-0.011 ppb	0.010 ppm
Concentration per Run 3		-0.532 ppb		52.061 %	-0.016 ppb	-0.011 ppb	-0.014 ppb	-0.015 ppb	-0.008 ppb	0.010 ppm
Concentration RSD		218.5 %		1.9 %	9.8 %	2.8 %	5.6 %	8.0 %	20.3 %	1.4 %
Intensity average	3,248 cps	-204 cps	3,429 cps	300,294 cps	67 cps	80 cps	80 cps	40 cps	137 cps	877,407 cps
Intensity per Run 1	2,857.3 cps	-149.4 cps	3,028.4 cps	302,842.7 cps	56.0 cps	80.0 cps	88.0 cps	44.0 cps	156.0 cps	877,827.7 cps
Intensity per Run 2	3,049.4 cps	-183.3 cps	3,249.4 cps	293,599.1 cps	72.0 cps	76.0 cps	80.0 cps	44.0 cps	100.0 cps	864,873.5 cps
Intensity per Run 3	3,837.6 cps	-280.0 cps	4,009.6 cps	304,440.7 cps	72.0 cps	84.0 cps	72.0 cps	32.0 cps	156.0 cps	889,520.5 cps
Intensity RSD	16.0 %	33.2 %	15.0 %	1.9 %	13.9 %	5.0 %	10.0 %	17.3 %	23.5 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.029 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	46.812 %	-0.017 ppb	-0.008 ppb
Concentration per Run 1		-0.030 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	45.495 %	-0.020 ppb	-0.007 ppb
Concentration per Run 2		-0.016 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	48.464 %	-0.016 ppb	-0.009 ppb
Concentration per Run 3		-0.039 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	46.477 %	-0.016 ppb	-0.008 ppb
Concentration RSD		39.8 %	46.0 %	0.0 %	21.1 %	74.8 %	25.8 %	3.2 %	12.5 %	11.9 %
Intensity average	191 cps	33 cps	20 cps	0 cps	20 cps	1 cps	3 cps	419,099 cps	147 cps	60 cps
Intensity per Run 1	152.0 cps	32.0 cps	8.0 cps	0.0 cps	16.0 cps	0.0 cps	1.0 cps	407,304.8 cps	112.0 cps	68.0 cps
Intensity per Run 2	140.0 cps	40.0 cps	32.0 cps	0.0 cps	24.0 cps	0.0 cps	-0.6 cps	433,891.3 cps	172.0 cps	48.0 cps
Intensity per Run 3	280.0 cps	28.0 cps	20.0 cps	0.0 cps	20.0 cps	4.0 cps	7.8 cps	416,100.6 cps	156.0 cps	64.0 cps
Intensity RSD	40.7 %	18.3 %	60.0 %	N/A	20.0 %	173.2 %	163.9 %	3.2 %	21.2 %	17.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.007 ppb	-0.022 ppb	-0.021 ppb			40.768 %			0.006 ppm	-0.005 ppb
Concentration per Run 1	-0.010 ppb	-0.023 ppb	-0.018 ppb			38.969 %			0.005 ppm	-0.006 ppb
Concentration per Run 2	-0.005 ppb	-0.022 ppb	-0.023 ppb			43.764 %			0.006 ppm	-0.005 ppb
Concentration per Run 3	-0.007 ppb	-0.022 ppb	-0.021 ppb			39.571 %			0.005 ppm	-0.005 ppb
Concentration RSD	39.4 %	3.3 %	11.8 %			6.4 %			9.1 %	16.3 %
Intensity average	60 cps	7 cps	15 cps	0 cps	1 cps	1,281,458 cps	19 cps	8 cps	1,293,555 cps	269 cps
Intensity per Run 1	28.0 cps	4.0 cps	28.0 cps	0.0 cps	4.0 cps	1,224,912.6 cps	32.0 cps	0.0 cps	1,240,464.5 cps	295.0 cps
Intensity per Run 2	92.0 cps	8.0 cps	4.0 cps	0.0 cps	0.0 cps	1,375,623.9 cps	16.0 cps	12.0 cps	1,428,369.7 cps	264.0 cps
Intensity per Run 3	60.0 cps	8.0 cps	12.0 cps	0.0 cps	0.0 cps	1,243,837.8 cps	8.0 cps	12.0 cps	1,211,830.8 cps	249.0 cps
Intensity RSD	53.3 %	34.6 %	83.3 %	N/A	173.2 %	6.4 %	65.5 %	86.6 %	9.1 %	8.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.005 ppb	0.109 ppb	0.103 ppb	0.109 ppb	40.758 %
Concentration per Run 1	-0.007 ppb	0.080 ppb	0.071 ppb	0.076 ppb	52.189 %
Concentration per Run 2	-0.003 ppb	0.133 ppb	0.121 ppb	0.136 ppb	35.220 %
Concentration per Run 3	-0.005 ppb	0.113 ppb	0.116 ppb	0.116 ppb	34.866 %
Concentration RSD	36.2 %	24.6 %	26.3 %	27.9 %	24.3 %
Intensity average	660 cps	3,444 cps	2,848 cps	13,844 cps	1,044,609 cps
Intensity per Run 1	665.0 cps	3,404.5 cps	2,716.3 cps	13,310.9 cps	1,337,561.0 cps
Intensity per Run 2	725.0 cps	3,755.6 cps	2,992.4 cps	15,214.8 cps	902,671.5 cps
Intensity per Run 3	590.0 cps	3,172.4 cps	2,836.3 cps	13,006.7 cps	893,594.6 cps
Intensity RSD	10.2 %	8.5 %	4.9 %	8.6 %	24.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UQ33743-001 Analysis: 10/30/2019 20:23:02 Sample Type UNKNOWN
Comment PBW Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	21.077 %	34.639 %	0.014 ppb	1.052 ppb	1.034 ppb	N/A	0.059 ppb	-2.182 ppb	-2.523 ppb	-2.205 ppb
Concentration per Run 1	18.868 %	50.669 %	0.009 ppb	0.549 ppb	0.660 ppb	N/A	-2.789 ppb	-2.154 ppb	-2.375 ppb	-2.254 ppb
Concentration per Run 2	27.911 %	22.645 %	-0.008 ppb	1.095 ppb	1.239 ppb	N/A	4.163 ppb	-2.243 ppb	-2.597 ppb	-2.239 ppb
Concentration per Run 3	16.453 %	30.604 %	0.040 ppb	1.511 ppb	1.203 ppb	N/A	-1.196 ppb	-2.150 ppb	-2.597 ppb	-2.121 ppb
Concentration RSD	28.7 %	41.7 %	179.1 %	45.8 %	31.4 %	N/A	6,138.8 %	2.4 %	5.1 %	3.3 %
Intensity average	2,947,734 cps	11,153 cps	2 cps	7 cps	39 cps	1,143 cps	5,401 cps	40 cps	7 cps	20 cps
Intensity per Run 1	2,638,703.5 cps	16,314.4 cps	2.5 cps	6.5 cps	41.0 cps	1,180.1 cps	5,321.2 cps	60.0 cps	20.0 cps	20.0 cps
Intensity per Run 2	3,903,511.7 cps	7,291.1 cps	0.5 cps	5.0 cps	31.5 cps	1,180.1 cps	5,431.2 cps	10.0 cps	0.0 cps	10.0 cps
Intensity per Run 3	2,300,986.0 cps	9,853.9 cps	3.0 cps	9.5 cps	45.0 cps	1,070.1 cps	5,451.2 cps	50.0 cps	0.0 cps	30.0 cps
Intensity RSD	28.7 %	41.7 %	66.1 %	32.7 %	17.7 %	5.6 %	1.3 %	66.1 %	173.2 %	50.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.316 ppb		0.011 ppm	-1.769 ppb	-15.396 ppb	-11.867 ppb	-11.270 ppb	20.509 %	38.475 %	0.004 ppb
Concentration per Run 1	-1.459 ppb		0.008 ppm	-8.898 ppb	-13.495 ppb	-11.783 ppb	-9.907 ppb	18.289 %	45.202 %	0.020 ppb
Concentration per Run 2	-1.066 ppb		0.014 ppm	8.922 ppb	-18.917 ppb	-15.527 ppb	-11.511 ppb	27.604 %	21.339 %	-0.003 ppb
Concentration per Run 3	-1.422 ppb		0.010 ppm	-5.332 ppb	-13.774 ppb	-8.293 ppb	-12.393 ppb	15.633 %	48.884 %	-0.003 ppb
Concentration RSD	16.5 %		29.7 %	532.9 %	19.8 %	30.5 %	11.2 %	30.7 %	38.9 %	308.9 %
Intensity average	33 cps	1,160 cps	25,119 cps	6,939 cps	7 cps	7,172 cps	77 cps	1,411,622 cps	112,956 cps	1 cps
Intensity per Run 1	30.0 cps	1,300.1 cps	24,416.3 cps	6,572.1 cps	10.0 cps	6,781.8 cps	120.0 cps	1,258,861.8 cps	132,704.5 cps	4.0 cps
Intensity per Run 2	40.0 cps	1,060.0 cps	20,557.7 cps	6,291.7 cps	0.0 cps	7,482.3 cps	40.0 cps	1,900,003.2 cps	62,647.7 cps	0.0 cps
Intensity per Run 3	30.0 cps	1,120.1 cps	30,382.6 cps	7,953.1 cps	10.0 cps	7,252.1 cps	70.0 cps	1,076,001.5 cps	143,514.5 cps	0.0 cps
Intensity RSD	17.3 %	10.8 %	19.7 %	12.8 %	86.6 %	5.0 %	52.7 %	30.7 %	38.9 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.111 ppb	-0.104 ppb	-0.401 ppb	N/A	-0.101 ppb	-1.676 ppb	-1.457 ppb	0.009 ppb	-0.860 ppb	-0.868 ppb
Concentration per Run 1	-0.112 ppb	-0.107 ppb	-0.410 ppb	N/A	-0.099 ppb	-1.607 ppb	-1.493 ppb	0.008 ppb	-0.834 ppb	-0.856 ppb
Concentration per Run 2	-0.104 ppb	-0.099 ppb	-0.383 ppb	N/A	-0.093 ppb	-1.721 ppb	-1.430 ppb	0.012 ppb	-0.905 ppb	-0.867 ppb
Concentration per Run 3	-0.116 ppb	-0.108 ppb	-0.411 ppb	N/A	-0.111 ppb	-1.701 ppb	-1.449 ppb	0.008 ppb	-0.842 ppb	-0.880 ppb
Concentration RSD	5.8 %	4.8 %	4.0 %	N/A	9.2 %	3.6 %	2.2 %	27.4 %	4.5 %	1.4 %
Intensity average	79 cps	137 cps	64 cps	70 cps	221 cps	1,987 cps	56 cps	269 cps	308 cps	61 cps
Intensity per Run 1	92.4 cps	148.0 cps	64.0 cps	30.0 cps	264.0 cps	2,720.5 cps	56.0 cps	300.0 cps	356.0 cps	72.0 cps
Intensity per Run 2	68.4 cps	108.0 cps	60.0 cps	70.0 cps	200.0 cps	1,180.1 cps	36.0 cps	188.0 cps	208.0 cps	52.0 cps
Intensity per Run 3	75.1 cps	156.0 cps	68.0 cps	110.0 cps	200.0 cps	2,060.2 cps	76.0 cps	320.0 cps	360.0 cps	60.0 cps
Intensity RSD	15.8 %	18.7 %	6.2 %	57.1 %	16.7 %	38.9 %	35.7 %	26.4 %	28.1 %	16.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.108 ppb	-2.049 ppb	-1.777 ppb	-1.891 ppb		1.286 ppb	N/A	0.117 ppb	
Concentration per Run 1	-0.116 ppb	-0.114 ppb	-2.005 ppb	-1.705 ppb	-1.826 ppb		1.304 ppb	N/A	-0.046 ppb	
Concentration per Run 2	-0.121 ppb	-0.100 ppb	-2.172 ppb	-1.789 ppb	-1.965 ppb		0.835 ppb	N/A	0.237 ppb	
Concentration per Run 3	-0.124 ppb	-0.111 ppb	-1.969 ppb	-1.837 ppb	-1.882 ppb		1.719 ppb	N/A	0.161 ppb	
Concentration RSD	3.3 %	6.6 %	5.3 %	3.8 %	3.7 %		34.4 %	N/A	124.9 %	
Intensity average	217 cps	100 cps	640 cps	116 cps	513 cps	6 cps	2,517 cps	63 cps	9 cps	326 cps
Intensity per Run 1	272.0 cps	92.0 cps	748.0 cps	144.0 cps	624.0 cps	7.0 cps	2,575.2 cps	80.0 cps	-12.3 cps	341.0 cps
Intensity per Run 2	184.0 cps	88.0 cps	524.0 cps	104.0 cps	352.0 cps	5.0 cps	2,602.7 cps	10.0 cps	25.6 cps	314.0 cps
Intensity per Run 3	196.0 cps	120.0 cps	648.0 cps	100.0 cps	564.0 cps	5.0 cps	2,372.2 cps	100.0 cps	12.5 cps	324.0 cps
Intensity RSD	22.0 %	17.4 %	17.5 %	21.0 %	27.8 %	20.4 %	5.0 %	74.6 %	223.9 %	4.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.275 ppb		35.227 %	-0.020 ppb	-0.012 ppb	-0.013 ppb	-0.015 ppb	-0.010 ppb	0.006 ppm
Concentration per Run 1		-4.223 ppb		27.988 %	-0.016 ppb	-0.012 ppb	-0.011 ppb	-0.018 ppb	-0.010 ppb	0.006 ppm
Concentration per Run 2		0.491 ppb		47.223 %	-0.023 ppb	-0.012 ppb	-0.014 ppb	-0.015 ppb	-0.011 ppb	0.009 ppm
Concentration per Run 3		-3.094 ppb		30.471 %	-0.021 ppb	-0.013 ppb	-0.013 ppb	-0.012 ppb	-0.009 ppb	0.005 ppm
Concentration RSD		108.2 %		29.7 %	17.9 %	6.0 %	15.7 %	20.5 %	9.5 %	29.7 %
Intensity average	3,783 cps	-274 cps	3,978 cps	206,003 cps	31 cps	48 cps	57 cps	19 cps	77 cps	572,591 cps
Intensity per Run 1	4,102.7 cps	-400.1 cps	4,247.7 cps	163,670.0 cps	40.0 cps	44.0 cps	64.0 cps	4.0 cps	68.0 cps	494,036.5 cps
Intensity per Run 2	3,640.5 cps	-158.2 cps	3,923.6 cps	276,150.4 cps	28.0 cps	64.0 cps	60.0 cps	24.0 cps	88.0 cps	767,645.1 cps
Intensity per Run 3	3,606.5 cps	-264.8 cps	3,763.6 cps	178,189.1 cps	24.0 cps	36.0 cps	48.0 cps	28.0 cps	76.0 cps	456,090.7 cps
Intensity RSD	7.3 %	44.2 %	6.2 %	29.7 %	27.2 %	30.0 %	14.5 %	68.9 %	13.0 %	29.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.033 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	31.308 %	-0.015 ppb	-0.006 ppb
Concentration per Run 1		-0.005 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	0.000 ppb	30.981 %	-0.015 ppb	-0.007 ppb
Concentration per Run 2		-0.030 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	38.439 %	-0.018 ppb	-0.005 ppb
Concentration per Run 3		-0.065 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	0.000 ppb	24.504 %	-0.011 ppb	-0.007 ppb
Concentration RSD		90.7 %	76.4 %	0.0 %	99.0 %	152.4 %	85.6 %	22.3 %	23.4 %	15.4 %
Intensity average	117 cps	21 cps	21 cps	0 cps	16 cps	1 cps	6 cps	280,292 cps	113 cps	59 cps
Intensity per Run 1	116.0 cps	28.0 cps	28.0 cps	0.0 cps	16.0 cps	4.0 cps	8.9 cps	277,363.0 cps	116.0 cps	56.0 cps
Intensity per Run 2	180.0 cps	28.0 cps	24.0 cps	0.0 cps	12.0 cps	0.0 cps	1.1 cps	344,134.2 cps	108.0 cps	80.0 cps
Intensity per Run 3	56.0 cps	8.0 cps	12.0 cps	0.0 cps	20.0 cps	0.0 cps	8.9 cps	219,378.8 cps	116.0 cps	40.0 cps
Intensity RSD	52.9 %	54.1 %	39.0 %	N/A	25.0 %	173.2 %	71.4 %	22.3 %	4.1 %	34.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.021 ppb	-0.022 ppb			30.448 %			0.005 ppm	-0.005 ppb
Concentration per Run 1	-0.008 ppb	-0.019 ppb	-0.023 ppb			37.210 %			0.006 ppm	-0.007 ppb
Concentration per Run 2	-0.005 ppb	-0.023 ppb	-0.022 ppb			29.548 %			0.004 ppm	-0.003 ppb
Concentration per Run 3	-0.004 ppb	-0.022 ppb	-0.021 ppb			24.585 %			0.004 ppm	-0.004 ppb
Concentration RSD	34.8 %	8.9 %	4.0 %			20.9 %			21.5 %	43.0 %
Intensity average	51 cps	7 cps	7 cps	0 cps	1 cps	957,063 cps	19 cps	4 cps	1,070,184 cps	221 cps
Intensity per Run 1	36.0 cps	12.0 cps	4.0 cps	0.0 cps	4.0 cps	1,169,617.0 cps	32.0 cps	4.0 cps	1,335,489.1 cps	223.0 cps
Intensity per Run 2	68.0 cps	4.0 cps	8.0 cps	0.0 cps	0.0 cps	928,784.3 cps	16.0 cps	4.0 cps	932,787.6 cps	204.0 cps
Intensity per Run 3	48.0 cps	4.0 cps	8.0 cps	0.0 cps	0.0 cps	772,787.2 cps	8.0 cps	4.0 cps	942,276.0 cps	235.0 cps
Intensity RSD	31.9 %	69.3 %	34.6 %	N/A	173.2 %	20.9 %	65.5 %	0.0 %	21.5 %	7.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.004 ppb	0.127 ppb	0.125 ppb	0.124 ppb	33.981 %
Concentration per Run 1	-0.006 ppb	0.082 ppb	0.077 ppb	0.078 ppb	47.123 %
Concentration per Run 2	-0.001 ppb	0.183 ppb	0.185 ppb	0.180 ppb	23.107 %
Concentration per Run 3	-0.005 ppb	0.116 ppb	0.113 ppb	0.112 ppb	31.712 %
Concentration RSD	75.6 %	40.2 %	44.0 %	42.0 %	35.8 %
Intensity average	583 cps	3,127 cps	2,683 cps	12,305 cps	870,902 cps
Intensity per Run 1	619.0 cps	3,162.4 cps	2,624.3 cps	12,364.5 cps	1,207,721.1 cps
Intensity per Run 2	605.0 cps	3,325.4 cps	2,936.4 cps	13,035.7 cps	592,229.9 cps
Intensity per Run 3	526.0 cps	2,893.3 cps	2,488.3 cps	11,515.1 cps	812,755.3 cps
Intensity RSD	8.6 %	7.0 %	8.6 %	6.2 %	35.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UQ33743-002 Analysis: 10/30/2019 20:29:07 Sample Type QC
Comment LCS Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	25.526 %	38.932 %	0.011 ppb	0.705 ppb	1.035 ppb	N/A	-1.378 ppb	-2.191 ppb	-2.395 ppb	-2.266 ppb
Concentration per Run 1	5.777 %	51.234 %	-0.016 ppb	0.316 ppb	0.657 ppb	N/A	-2.783 ppb	-2.194 ppb	-2.478 ppb	-2.332 ppb
Concentration per Run 2	47.872 %	34.089 %	0.052 ppb	1.187 ppb	1.030 ppb	N/A	-0.479 ppb	-2.119 ppb	-2.264 ppb	-2.045 ppb
Concentration per Run 3	22.929 %	31.474 %	-0.002 ppb	0.611 ppb	1.418 ppb	N/A	-0.872 ppb	-2.261 ppb	-2.442 ppb	-2.422 ppb
Recovery Percentage 1			0.011 %		0.000 %		-0.138 %	-0.219 %	-0.239 %	-0.227 %
Concentration RSD	82.9 %	27.6 %	316.4 %	62.9 %	36.8 %	N/A	89.4 %	3.2 %	4.8 %	8.7 %
Intensity average	3,569,897 cps	12,535 cps	2 cps	6 cps	44 cps	1,093 cps	5,024 cps	33 cps	13 cps	13 cps
Intensity per Run 1	807,944.7 cps	16,496.4 cps	0.5 cps	4.5 cps	40.5 cps	1,060.0 cps	5,021.0 cps	40.0 cps	10.0 cps	10.0 cps
Intensity per Run 2	6,695,103.8 cps	10,975.9 cps	4.0 cps	8.0 cps	40.0 cps	1,140.1 cps	5,011.0 cps	50.0 cps	20.0 cps	30.0 cps
Intensity per Run 3	3,206,641.8 cps	10,133.8 cps	1.0 cps	4.5 cps	51.0 cps	1,080.0 cps	5,041.0 cps	10.0 cps	10.0 cps	0.0 cps
Intensity RSD	82.9 %	27.6 %	103.3 %	35.7 %	14.2 %	3.8 %	0.3 %	62.5 %	43.3 %	114.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.450 ppb		0.011 ppm	-4.559 ppb	-14.508 ppb	-4.152 ppb	-9.994 ppb	25.576 %	35.201 %	-0.003 ppb
Concentration per Run 1	-1.517 ppb		0.009 ppm	-7.609 ppb	-18.917 ppb	21.088 ppb	-10.540 ppb	5.598 %	38.111 %	-0.003 ppb
Concentration per Run 2	-1.356 ppb		0.013 ppm	-1.466 ppb	-18.917 ppb	-20.261 ppb	-11.246 ppb	48.477 %	29.896 %	-0.003 ppb
Concentration per Run 3	-1.477 ppb		0.012 ppm	-4.601 ppb	-5.688 ppb	-13.283 ppb	-8.197 ppb	22.654 %	37.596 %	-0.003 ppb
Recovery Percentage 1	-1.450 %			-0.456 %		-0.415 %	-0.999 %			-0.003 %
Concentration RSD	5.8 %		15.0 %	67.4 %	52.6 %	533.1 %	16.0 %	84.4 %	13.1 %	0.0 %
Intensity average	23 cps	953 cps	27,721 cps	6,325 cps	7 cps	7,165 cps	93 cps	1,760,423 cps	103,344 cps	0 cps
Intensity per Run 1	20.0 cps	1,250.1 cps	26,742.2 cps	6,161.6 cps	0.0 cps	6,972.0 cps	90.0 cps	385,329.6 cps	111,887.1 cps	0.0 cps
Intensity per Run 2	30.0 cps	740.0 cps	26,781.9 cps	6,261.7 cps	0.0 cps	7,032.0 cps	60.0 cps	3,336,640.6 cps	87,769.6 cps	0.0 cps
Intensity per Run 3	20.0 cps	870.0 cps	29,639.7 cps	6,552.0 cps	20.0 cps	7,492.3 cps	130.0 cps	1,559,299.6 cps	110,376.7 cps	0.0 cps
Intensity RSD	24.7 %	27.8 %	6.0 %	3.2 %	173.2 %	4.0 %	37.6 %	84.4 %	13.1 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.111 ppb	-0.102 ppb	-0.400 ppb	N/A	-0.080 ppb	-1.662 ppb	-1.505 ppb	0.014 ppb	-0.846 ppb	-0.898 ppb
Concentration per Run 1	-0.113 ppb	-0.096 ppb	-0.406 ppb	N/A	-0.057 ppb	-1.650 ppb	-1.519 ppb	0.011 ppb	-0.850 ppb	-0.871 ppb
Concentration per Run 2	-0.106 ppb	-0.106 ppb	-0.395 ppb	N/A	-0.089 ppb	-1.673 ppb	-1.479 ppb	0.019 ppb	-0.839 ppb	-0.918 ppb
Concentration per Run 3	-0.113 ppb	-0.105 ppb	-0.399 ppb	N/A	-0.093 ppb	-1.662 ppb	-1.517 ppb	0.013 ppb	-0.848 ppb	-0.904 ppb
Recovery Percentage 1	-0.111 %	-0.102 %			-0.080 %		-0.151 %	0.014 %	-0.846 %	
Concentration RSD	3.6 %	5.6 %	1.4 %	N/A	24.9 %	0.7 %	1.5 %	28.5 %	0.7 %	2.7 %
Intensity average	78 cps	153 cps	61 cps	70 cps	321 cps	1,860 cps	40 cps	337 cps	332 cps	37 cps
Intensity per Run 1	75.7 cps	216.0 cps	60.0 cps	70.0 cps	472.0 cps	2,080.3 cps	40.0 cps	312.0 cps	332.0 cps	56.0 cps
Intensity per Run 2	85.7 cps	104.0 cps	56.0 cps	50.0 cps	224.0 cps	1,480.1 cps	40.0 cps	360.0 cps	280.0 cps	20.0 cps
Intensity per Run 3	72.0 cps	140.0 cps	68.0 cps	90.0 cps	268.0 cps	2,020.2 cps	40.0 cps	340.0 cps	384.0 cps	36.0 cps
Intensity RSD	9.1 %	37.3 %	10.0 %	28.6 %	41.2 %	17.8 %	0.0 %	7.1 %	15.7 %	48.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.122 ppb	-0.111 ppb	-2.092 ppb	-1.841 ppb	-1.940 ppb		1.196 ppb	N/A	0.066 ppb	
Concentration per Run 1	-0.121 ppb	-0.114 ppb	-2.168 ppb	-1.746 ppb	-1.936 ppb		0.387 ppb	N/A	0.005 ppb	
Concentration per Run 2	-0.120 ppb	-0.111 ppb	-2.101 ppb	-1.903 ppb	-1.952 ppb		1.729 ppb	N/A	0.102 ppb	
Concentration per Run 3	-0.125 ppb	-0.107 ppb	-2.006 ppb	-1.876 ppb	-1.933 ppb		1.472 ppb	N/A	0.092 ppb	
Recovery Percentage 1	-0.122 %	-0.111 %	-2.092 %				1.196 %	0.000 %	0.066 %	
Concentration RSD	1.9 %	3.2 %	3.9 %	4.6 %	0.5 %		59.6 %	N/A	80.6 %	
Intensity average	176 cps	89 cps	572 cps	81 cps	368 cps	8 cps	2,387 cps	90 cps	0 cps	330 cps
Intensity per Run 1	200.0 cps	76.0 cps	600.0 cps	120.0 cps	396.0 cps	9.0 cps	2,283.7 cps	120.0 cps	-6.5 cps	309.0 cps
Intensity per Run 2	160.0 cps	76.0 cps	456.0 cps	48.0 cps	284.0 cps	10.0 cps	2,448.8 cps	70.0 cps	3.6 cps	334.0 cps
Intensity per Run 3	168.0 cps	116.0 cps	660.0 cps	76.0 cps	424.0 cps	4.0 cps	2,427.2 cps	80.0 cps	3.9 cps	347.0 cps
Intensity RSD	12.0 %	25.9 %	18.3 %	44.6 %	20.1 %	41.9 %	3.8 %	29.4 %	1,702.4 %	5.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.629 ppb		29.392 %	-0.014 ppb	-0.004 ppb	-0.013 ppb	-0.012 ppb	-0.008 ppb	0.006 ppm
Concentration per Run 1		0.269 ppb		30.478 %	-0.016 ppb	-0.010 ppb	-0.009 ppb	-0.007 ppb	-0.008 ppb	0.007 ppm
Concentration per Run 2		-7.052 ppb		22.981 %	-0.020 ppb	0.007 ppb	-0.015 ppb	-0.013 ppb	-0.007 ppb	0.005 ppm
Concentration per Run 3		-1.106 ppb		34.718 %	-0.005 ppb	-0.010 ppb	-0.016 ppb	-0.017 ppb	-0.010 ppb	0.006 ppm
Recovery Percentage 1		-2.629 %						-0.012 %		0.000 %
Concentration RSD		148.0 %		20.2 %	55.2 %	228.6 %	28.3 %	38.6 %	19.5 %	18.1 %
Intensity average	3,611 cps	-283 cps	3,833 cps	171,882 cps	53 cps	84 cps	51 cps	29 cps	87 cps	534,567 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,310.4 cps	-195.3 cps	3,596.5 cps	178,232.2 cps	48.0 cps	64.0 cps	88.0 cps	56.0 cps	108.0 cps	635,710.2 cps
Intensity per Run 2	3,798.6 cps	-458.7 cps	4,087.7 cps	134,386.6 cps	24.0 cps	124.0 cps	28.0 cps	20.0 cps	80.0 cps	442,301.7 cps
Intensity per Run 3	3,724.6 cps	-194.2 cps	3,814.6 cps	203,025.7 cps	88.0 cps	64.0 cps	36.0 cps	12.0 cps	72.0 cps	525,688.4 cps
Intensity RSD	7.3 %	53.9 %	6.4 %	20.2 %	60.6 %	41.2 %	64.3 %	79.9 %	21.8 %	18.1 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.033 ppb	0.000 ppb	0.004 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	31.908 %	-0.018 ppb	-0.006 ppb
Concentration per Run 1		-0.045 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	43.136 %	-0.016 ppb	-0.007 ppb
Concentration per Run 2		0.015 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	25.210 %	-0.018 ppb	-0.004 ppb
Concentration per Run 3		-0.068 ppb	0.000 ppb	0.015 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	27.377 %	-0.020 ppb	-0.005 ppb
Recovery Percentage 1			0.000 %		0.000 %		-0.001 %		-0.018 %	-0.006 %
Concentration RSD		131.1 %	118.4 %	245.0 %	666.7 %	0.0 %	21.8 %	30.7 %	11.6 %	26.6 %
Intensity average	84 cps	19 cps	21 cps	1 cps	27 cps	0 cps	1 cps	285,665 cps	100 cps	61 cps
Intensity per Run 1	88.0 cps	20.0 cps	20.0 cps	0.0 cps	44.0 cps	0.0 cps	3.8 cps	386,187.4 cps	156.0 cps	68.0 cps
Intensity per Run 2	72.0 cps	28.0 cps	16.0 cps	0.0 cps	16.0 cps	0.0 cps	2.0 cps	225,704.8 cps	76.0 cps	60.0 cps
Intensity per Run 3	92.0 cps	8.0 cps	28.0 cps	4.0 cps	20.0 cps	0.0 cps	-1.8 cps	245,102.9 cps	68.0 cps	56.0 cps
Intensity RSD	12.6 %	53.9 %	28.6 %	173.2 %	56.8 %	N/A	218.3 %	30.7 %	48.7 %	10.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.022 ppb	-0.021 ppb			30.912 %			0.005 ppm	-0.005 ppb
Concentration per Run 1	-0.007 ppb	-0.021 ppb	-0.021 ppb			45.095 %			0.007 ppm	-0.007 ppb
Concentration per Run 2	-0.009 ppb	-0.022 ppb	-0.021 ppb			23.574 %			0.003 ppm	-0.004 ppb
Concentration per Run 3	-0.002 ppb	-0.022 ppb	-0.022 ppb			24.066 %			0.004 ppm	-0.004 ppb
Recovery Percentage 1	-0.006 %	-0.022 %	-0.021 %							-0.005 %
Concentration RSD	62.4 %	4.6 %	4.3 %			39.7 %			38.4 %	32.5 %
Intensity average	52 cps	7 cps	9 cps	0 cps	3 cps	971,647 cps	12 cps	11 cps	1,035,026 cps	243 cps
Intensity per Run 1	64.0 cps	12.0 cps	16.0 cps	0.0 cps	0.0 cps	1,417,474.2 cps	24.0 cps	20.0 cps	1,490,973.8 cps	258.0 cps
Intensity per Run 2	24.0 cps	4.0 cps	8.0 cps	0.0 cps	4.0 cps	740,992.2 cps	4.0 cps	4.0 cps	759,965.0 cps	228.0 cps
Intensity per Run 3	68.0 cps	4.0 cps	4.0 cps	0.0 cps	4.0 cps	756,475.4 cps	8.0 cps	8.0 cps	854,140.4 cps	244.0 cps
Intensity RSD	46.8 %	69.3 %	65.5 %	N/A	86.6 %	39.7 %	88.2 %	78.1 %	38.4 %	6.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.006 ppb	0.096 ppb	0.094 ppb	0.092 ppb	37.485 %
Concentration per Run 1	-0.007 ppb	0.075 ppb	0.075 ppb	0.074 ppb	49.687 %
Concentration per Run 2	-0.004 ppb	0.115 ppb	0.117 ppb	0.105 ppb	29.003 %
Concentration per Run 3	-0.005 ppb	0.099 ppb	0.090 ppb	0.096 ppb	33.766 %
Recovery Percentage 1	-0.006 %	0.096 %	0.094 %	0.092 %	
Concentration RSD	26.5 %	20.6 %	22.8 %	17.6 %	28.9 %
Intensity average	551 cps	2,790 cps	2,407 cps	11,006 cps	960,722 cps
Intensity per Run 1	578.0 cps	3,096.4 cps	2,712.3 cps	12,402.5 cps	1,273,445.8 cps
Intensity per Run 2	516.0 cps	2,625.3 cps	2,360.2 cps	9,942.6 cps	743,328.9 cps
Intensity per Run 3	558.0 cps	2,648.3 cps	2,148.2 cps	10,673.9 cps	865,389.9 cps
Intensity RSD	5.7 %	9.5 %	11.8 %	11.5 %	28.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UH09021-004 Analysis: 10/30/2019 20:35:12 Sample Type UNKNOWN
Comment MDLv ICPMS2 6020B AQ Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	25.508 %	32.028 %	0.022 ppb	1.587 ppb	1.359 ppb	N/A	-0.854 ppb	-1.997 ppb	-2.503 ppb	-2.120 ppb
Concentration per Run 1	30.229 %	36.237 %	0.004 ppb	1.891 ppb	1.278 ppb	N/A	-1.558 ppb	-1.929 ppb	-2.597 ppb	-2.289 ppb
Concentration per Run 2	33.322 %	31.084 %	0.018 ppb	1.237 ppb	1.344 ppb	N/A	-0.874 ppb	-2.084 ppb	-2.314 ppb	-1.790 ppb
Concentration per Run 3	12.972 %	28.763 %	0.044 ppb	1.633 ppb	1.456 ppb	N/A	-0.130 ppb	-1.980 ppb	-2.597 ppb	-2.282 ppb
Concentration RSD	43.0 %	11.9 %	90.9 %	20.8 %	6.6 %	N/A	83.7 %	4.0 %	6.5 %	13.5 %
Intensity average	3,567,314 cps	10,312 cps	2 cps	10 cps	49 cps	1,133 cps	4,761 cps	83 cps	7 cps	27 cps
Intensity per Run 1	4,227,606.5 cps	11,667.7 cps	1.5 cps	12.5 cps	50.0 cps	1,290.1 cps	4,170.7 cps	100.0 cps	0.0 cps	10.0 cps
Intensity per Run 2	4,660,167.4 cps	10,008.4 cps	2.0 cps	8.0 cps	49.5 cps	1,080.0 cps	5,471.2 cps	70.0 cps	20.0 cps	60.0 cps
Intensity per Run 3	1,814,168.1 cps	9,261.2 cps	3.0 cps	9.0 cps	46.5 cps	1,030.0 cps	4,640.9 cps	80.0 cps	0.0 cps	10.0 cps
Intensity RSD	43.0 %	11.9 %	35.3 %	24.0 %	3.9 %	12.2 %	13.8 %	18.3 %	173.2 %	108.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.609 ppb		0.014 ppm	-2.087 ppb	-17.053 ppb	-12.791 ppb	-10.612 ppb	24.818 %	32.536 %	-0.003 ppb
Concentration per Run 1	-1.666 ppb		0.014 ppm	-0.512 ppb	-18.917 ppb	-16.520 ppb	-10.353 ppb	31.568 %	24.375 %	-0.003 ppb
Concentration per Run 2	-1.495 ppb		0.011 ppm	-5.799 ppb	-13.325 ppb	-16.950 ppb	-11.194 ppb	30.873 %	44.801 %	-0.003 ppb
Concentration per Run 3	-1.666 ppb		0.016 ppm	0.050 ppb	-18.917 ppb	-4.904 ppb	-10.290 ppb	12.014 %	28.432 %	-0.003 ppb
Concentration RSD	6.1 %		14.9 %	154.6 %	18.9 %	53.4 %	4.8 %	44.7 %	33.2 %	0.0 %
Intensity average	7 cps	1,093 cps	29,612 cps	6,328 cps	3 cps	7,195 cps	73 cps	1,708,248 cps	95,520 cps	0 cps
Intensity per Run 1	0.0 cps	1,070.1 cps	26,438.9 cps	5,581.3 cps	0.0 cps	7,712.5 cps	60.0 cps	2,172,847.6 cps	71,560.1 cps	0.0 cps
Intensity per Run 2	20.0 cps	1,200.1 cps	32,287.4 cps	7,202.3 cps	10.0 cps	7,212.1 cps	90.0 cps	2,124,995.7 cps	131,526.8 cps	0.0 cps
Intensity per Run 3	0.0 cps	1,010.0 cps	30,108.7 cps	6,201.7 cps	0.0 cps	6,661.8 cps	70.0 cps	826,901.4 cps	83,471.8 cps	0.0 cps
Intensity RSD	173.2 %	8.9 %	10.0 %	12.9 %	173.2 %	7.3 %	20.8 %	44.7 %	33.2 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.101 ppb	-0.391 ppb	N/A	-0.096 ppb	-1.640 ppb	-1.426 ppb	0.013 ppb	-0.860 ppb	-0.864 ppb
Concentration per Run 1	-0.117 ppb	-0.106 ppb	-0.397 ppb	N/A	-0.097 ppb	-1.647 ppb	-1.345 ppb	0.017 ppb	-0.880 ppb	-0.866 ppb
Concentration per Run 2	-0.114 ppb	-0.102 ppb	-0.408 ppb	N/A	-0.102 ppb	-1.656 ppb	-1.504 ppb	0.007 ppb	-0.861 ppb	-0.874 ppb
Concentration per Run 3	-0.107 ppb	-0.097 ppb	-0.367 ppb	N/A	-0.089 ppb	-1.618 ppb	-1.430 ppb	0.014 ppb	-0.839 ppb	-0.852 ppb
Concentration RSD	4.7 %	4.1 %	5.4 %	N/A	6.6 %	1.2 %	5.6 %	40.3 %	2.4 %	1.3 %
Intensity average	66 cps	147 cps	64 cps	80 cps	212 cps	1,880 cps	52 cps	276 cps	288 cps	53 cps
Intensity per Run 1	35.8 cps	88.0 cps	48.0 cps	70.0 cps	168.0 cps	1,480.1 cps	56.0 cps	276.0 cps	212.0 cps	44.0 cps
Intensity per Run 2	80.5 cps	200.0 cps	68.0 cps	80.0 cps	252.0 cps	2,400.3 cps	52.0 cps	280.0 cps	352.0 cps	64.0 cps
Intensity per Run 3	80.3 cps	152.0 cps	76.0 cps	90.0 cps	216.0 cps	1,760.2 cps	48.0 cps	272.0 cps	300.0 cps	52.0 cps
Intensity RSD	39.3 %	38.3 %	22.5 %	12.5 %	19.9 %	25.1 %	7.7 %	1.4 %	24.6 %	18.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.106 ppb	-2.105 ppb	-1.744 ppb	-1.874 ppb		1.309 ppb	N/A	0.053 ppb	
Concentration per Run 1	-0.117 ppb	-0.104 ppb	-2.167 ppb	-1.736 ppb	-1.859 ppb		1.327 ppb	N/A	0.182 ppb	
Concentration per Run 2	-0.122 ppb	-0.107 ppb	-2.075 ppb	-1.761 ppb	-1.921 ppb		0.849 ppb	N/A	-0.008 ppb	
Concentration per Run 3	-0.121 ppb	-0.107 ppb	-2.072 ppb	-1.734 ppb	-1.844 ppb		1.752 ppb	N/A	-0.015 ppb	
Concentration RSD	2.5 %	1.8 %	2.6 %	0.9 %	2.2 %		34.5 %	N/A	210.5 %	
Intensity average	185 cps	105 cps	547 cps	109 cps	451 cps	6 cps	2,508 cps	50 cps	-1 cps	344 cps
Intensity per Run 1	184.0 cps	88.0 cps	432.0 cps	96.0 cps	416.0 cps	5.0 cps	2,595.5 cps	70.0 cps	12.0 cps	325.0 cps
Intensity per Run 2	220.0 cps	140.0 cps	688.0 cps	136.0 cps	504.0 cps	9.0 cps	2,372.2 cps	30.0 cps	-9.5 cps	392.0 cps
Intensity per Run 3	152.0 cps	88.0 cps	520.0 cps	96.0 cps	432.0 cps	4.0 cps	2,556.2 cps	50.0 cps	-6.9 cps	314.0 cps
Intensity RSD	18.4 %	28.5 %	23.8 %	21.1 %	10.4 %	44.1 %	4.8 %	40.0 %	792.2 %	12.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.482 ppb		30.131 %	-0.022 ppb	-0.006 ppb	-0.006 ppb	-0.008 ppb	0.014 ppb	0.006 ppm
Concentration per Run 1		-0.603 ppb		28.918 %	-0.021 ppb	-0.010 ppb	-0.007 ppb	-0.005 ppb	0.045 ppb	0.007 ppm
Concentration per Run 2		-3.331 ppb		36.875 %	-0.024 ppb	-0.013 ppb	-0.013 ppb	-0.006 ppb	0.007 ppb	0.007 ppm
Concentration per Run 3		-0.512 ppb		24.601 %	-0.020 ppb	0.004 ppb	0.000 ppb	-0.012 ppb	-0.009 ppb	0.005 ppm
Concentration RSD		108.1 %		20.7 %	8.6 %	137.9 %	102.5 %	48.1 %	195.7 %	16.9 %
Intensity average	3,686 cps	-246 cps	3,948 cps	176,201 cps	23 cps	72 cps	89 cps	48 cps	339 cps	547,032 cps
Intensity per Run 1	3,855.6 cps	-190.5 cps	4,075.7 cps	169,104.6 cps	24.0 cps	52.0 cps	92.0 cps	56.0 cps	648.1 cps	587,454.2 cps
Intensity per Run 2	3,519.5 cps	-391.4 cps	3,827.6 cps	215,638.0 cps	20.0 cps	48.0 cps	60.0 cps	64.0 cps	300.0 cps	612,611.7 cps
Intensity per Run 3	3,681.5 cps	-156.3 cps	3,939.6 cps	143,860.5 cps	24.0 cps	116.0 cps	116.0 cps	24.0 cps	68.0 cps	441,031.4 cps
Intensity RSD	4.6 %	51.6 %	3.1 %	20.7 %	10.2 %	53.0 %	31.5 %	44.1 %	86.2 %	16.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.036 ppb	0.000 ppb	0.003 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	30.618 %	-0.019 ppb	-0.005 ppb
Concentration per Run 1		-0.069 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	0.001 ppb	-0.001 ppb	30.944 %	-0.017 ppb	-0.005 ppb
Concentration per Run 2		-0.019 ppb	0.000 ppb	0.012 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	34.797 %	-0.018 ppb	-0.007 ppb
Concentration per Run 3		-0.020 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	26.112 %	-0.023 ppb	-0.004 ppb
Concentration RSD		79.8 %	83.9 %	267.7 %	20.0 %	2,393.9 %	33.5 %	14.2 %	15.3 %	28.9 %
Intensity average	97 cps	19 cps	21 cps	1 cps	16 cps	3 cps	0 cps	274,114 cps	81 cps	61 cps
Intensity per Run 1	152.0 cps	8.0 cps	16.0 cps	0.0 cps	16.0 cps	8.0 cps	5.4 cps	277,037.4 cps	96.0 cps	64.0 cps
Intensity per Run 2	96.0 cps	28.0 cps	24.0 cps	4.0 cps	20.0 cps	0.0 cps	-2.8 cps	311,529.1 cps	104.0 cps	56.0 cps
Intensity per Run 3	44.0 cps	20.0 cps	24.0 cps	0.0 cps	12.0 cps	0.0 cps	-1.2 cps	233,774.2 cps	44.0 cps	64.0 cps
Intensity RSD	55.5 %	53.9 %	21.7 %	173.2 %	25.0 %	173.2 %	899.6 %	14.2 %	40.1 %	7.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.025 ppb	-0.021 ppb			27.289 %			0.004 ppm	-0.005 ppb
Concentration per Run 1	-0.008 ppb	-0.025 ppb	-0.020 ppb			26.956 %			0.004 ppm	-0.005 ppb
Concentration per Run 2	-0.007 ppb	-0.025 ppb	-0.023 ppb			32.596 %			0.005 ppm	-0.005 ppb
Concentration per Run 3	-0.001 ppb	-0.025 ppb	-0.021 ppb			22.314 %			0.003 ppm	-0.006 ppb
Concentration RSD	68.7 %	0.0 %	6.0 %			18.9 %			16.2 %	10.5 %
Intensity average	48 cps	0 cps	8 cps	0 cps	0 cps	857,758 cps	15 cps	4 cps	903,542 cps	188 cps
Intensity per Run 1	32.0 cps	0.0 cps	12.0 cps	0.0 cps	0.0 cps	847,303.1 cps	8.0 cps	0.0 cps	911,921.8 cps	205.0 cps
Intensity per Run 2	44.0 cps	0.0 cps	4.0 cps	0.0 cps	0.0 cps	1,024,585.9 cps	20.0 cps	12.0 cps	1,045,910.6 cps	193.0 cps
Intensity per Run 3	68.0 cps	0.0 cps	8.0 cps	0.0 cps	0.0 cps	701,384.0 cps	16.0 cps	0.0 cps	752,793.1 cps	166.0 cps
Intensity RSD	38.2 %	N/A	50.0 %	N/A	N/A	18.9 %	41.7 %	173.2 %	16.2 %	10.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.005 ppb	0.115 ppb	0.113 ppb	0.113 ppb	28.390 %
Concentration per Run 1	-0.005 ppb	0.111 ppb	0.117 ppb	0.113 ppb	28.551 %
Concentration per Run 2	-0.004 ppb	0.115 ppb	0.109 ppb	0.113 ppb	29.652 %
Concentration per Run 3	-0.004 ppb	0.118 ppb	0.112 ppb	0.112 ppb	26.969 %
Concentration RSD	9.5 %	2.8 %	3.5 %	0.6 %	4.8 %
Intensity average	495 cps	2,597 cps	2,239 cps	10,332 cps	727,627 cps
Intensity per Run 1	466.0 cps	2,539.3 cps	2,328.2 cps	10,416.7 cps	731,735.0 cps
Intensity per Run 2	533.0 cps	2,747.3 cps	2,284.2 cps	10,832.9 cps	759,953.9 cps
Intensity per Run 3	486.0 cps	2,505.3 cps	2,104.2 cps	9,746.5 cps	691,192.6 cps
Intensity RSD	6.9 %	5.0 %	5.3 %	5.3 %	4.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 20:41:17 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	28.470 %	39.794 %	-0.005 ppb	1.037 ppb	0.990 ppb	N/A	-1.918 ppb	-2.104 ppb	-2.419 ppb	-2.214 ppb
Concentration per Run 1	16.970 %	41.782 %	-0.015 ppb	0.897 ppb	0.860 ppb	N/A	-2.663 ppb	-2.118 ppb	-2.478 ppb	-2.243 ppb
Concentration per Run 2	23.026 %	20.178 %	0.009 ppb	1.519 ppb	1.563 ppb	N/A	0.355 ppb	-2.021 ppb	-2.415 ppb	-2.153 ppb
Concentration per Run 3	45.414 %	57.423 %	-0.011 ppb	0.696 ppb	0.548 ppb	N/A	-3.445 ppb	-2.173 ppb	-2.365 ppb	-2.245 ppb
Recovery Percentage 1			-0.004 %		0.660 %		-0.013 %			-0.015 %
Concentration RSD	52.6 %	47.0 %	233.9 %	41.4 %	52.5 %	N/A	104.6 %	3.6 %	2.3 %	2.4 %
Intensity average	3,981,615 cps	12,813 cps	1 cps	8 cps	40 cps	1,117 cps	4,824 cps	63 cps	13 cps	20 cps
Intensity per Run 1	2,373,305.0 cps	13,453.0 cps	0.5 cps	8.0 cps	43.5 cps	1,130.1 cps	5,011.1 cps	70.0 cps	10.0 cps	20.0 cps
Intensity per Run 2	3,220,281.5 cps	6,497.0 cps	1.0 cps	6.5 cps	39.0 cps	960.0 cps	4,871.0 cps	70.0 cps	10.0 cps	20.0 cps
Intensity per Run 3	6,351,258.7 cps	18,489.0 cps	1.0 cps	8.5 cps	38.5 cps	1,260.1 cps	4,590.9 cps	50.0 cps	20.0 cps	20.0 cps
Intensity RSD	52.6 %	47.0 %	34.6 %	13.6 %	6.8 %	13.5 %	4.4 %	18.2 %	43.3 %	0.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.507 ppb		0.011 ppm	-4.320 ppb	-14.846 ppb	-15.459 ppb	-11.769 ppb	27.959 %	40.266 %	0.004 ppb
Concentration per Run 1	-1.593 ppb		0.009 ppm	-7.093 ppb	-13.742 ppb	-11.554 ppb	-12.788 ppb	16.564 %	47.971 %	0.018 ppb
Concentration per Run 2	-1.557 ppb		0.013 ppm	-1.793 ppb	-18.917 ppb	-15.397 ppb	-8.935 ppb	26.478 %	38.996 %	-0.003 ppb
Concentration per Run 3	-1.372 ppb		0.011 ppm	-4.073 ppb	-11.880 ppb	-19.426 ppb	-13.583 ppb	40.834 %	33.831 %	-0.003 ppb
Recovery Percentage 1	-0.010 %			-0.029 %		-0.102 %	-0.078 %			0.003 %
Concentration RSD	7.9 %		18.1 %	61.5 %	24.6 %	25.5 %	21.1 %	43.6 %	17.8 %	332.3 %
Intensity average	20 cps	1,050 cps	29,954 cps	7,196 cps	7 cps	6,779 cps	70 cps	1,924,396 cps	118,214 cps	1 cps
Intensity per Run 1	10.0 cps	1,190.1 cps	29,016.6 cps	7,422.7 cps	10.0 cps	6,241.6 cps	60.0 cps	1,140,082.8 cps	140,833.9 cps	4.0 cps
Intensity per Run 2	10.0 cps	930.1 cps	30,754.2 cps	7,302.6 cps	0.0 cps	7,242.2 cps	120.0 cps	1,822,491.6 cps	114,486.2 cps	0.0 cps
Intensity per Run 3	40.0 cps	1,030.0 cps	30,092.2 cps	6,862.1 cps	10.0 cps	6,851.9 cps	30.0 cps	2,810,612.4 cps	99,320.8 cps	0.0 cps
Intensity RSD	86.6 %	12.5 %	2.9 %	4.1 %	86.6 %	7.4 %	65.5 %	43.6 %	17.8 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.107 ppb	-0.410 ppb	N/A	-0.079 ppb	-1.690 ppb	-1.529 ppb	0.008 ppb	-0.866 ppb	-0.899 ppb
Concentration per Run 1	-0.110 ppb	-0.112 ppb	-0.413 ppb	N/A	-0.090 ppb	-1.700 ppb	-1.468 ppb	0.004 ppb	-0.875 ppb	-0.890 ppb
Concentration per Run 2	-0.111 ppb	-0.110 ppb	-0.406 ppb	N/A	-0.101 ppb	-1.690 ppb	-1.537 ppb	0.011 ppb	-0.845 ppb	-0.888 ppb
Concentration per Run 3	-0.114 ppb	-0.100 ppb	-0.412 ppb	N/A	-0.045 ppb	-1.680 ppb	-1.583 ppb	0.010 ppb	-0.878 ppb	-0.918 ppb
Recovery Percentage 1	-0.074 %	-0.071 %		0.000 %	-0.052 %		-0.010 %	0.006 %	-0.577 %	
Concentration RSD	2.0 %	6.1 %	0.9 %	N/A	37.2 %	0.6 %	3.8 %	48.7 %	2.1 %	1.8 %
Intensity average	88 cps	127 cps	61 cps	83 cps	383 cps	1,994 cps	41 cps	265 cps	367 cps	45 cps
Intensity per Run 1	115.3 cps	112.0 cps	72.0 cps	30.0 cps	392.0 cps	2,360.3 cps	68.0 cps	216.0 cps	456.0 cps	64.0 cps
Intensity per Run 2	86.8 cps	104.0 cps	60.0 cps	120.0 cps	220.0 cps	1,760.2 cps	36.0 cps	324.0 cps	308.0 cps	44.0 cps
Intensity per Run 3	62.0 cps	164.0 cps	52.0 cps	100.0 cps	536.0 cps	1,860.2 cps	20.0 cps	256.0 cps	336.0 cps	28.0 cps
Intensity RSD	30.3 %	25.7 %	16.4 %	56.7 %	41.3 %	16.1 %	59.1 %	20.6 %	21.4 %	39.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.121 ppb	-0.111 ppb	-2.156 ppb	-1.811 ppb	-1.933 ppb		0.124 ppb	N/A	0.277 ppb	
Concentration per Run 1	-0.122 ppb	-0.107 ppb	-2.181 ppb	-1.846 ppb	-1.921 ppb		-0.179 ppb	N/A	0.140 ppb	
Concentration per Run 2	-0.117 ppb	-0.110 ppb	-2.053 ppb	-1.688 ppb	-1.881 ppb		0.652 ppb	N/A	0.497 ppb	
Concentration per Run 3	-0.124 ppb	-0.114 ppb	-2.234 ppb	-1.900 ppb	-1.998 ppb		-0.101 ppb	N/A	0.194 ppb	
Recovery Percentage 1		-0.074 %	-1.437 %				0.083 %	0.000 %		
Concentration RSD	3.0 %	3.1 %	4.3 %	6.1 %	3.1 %		370.4 %	N/A	69.5 %	
Intensity average	233 cps	105 cps	596 cps	112 cps	487 cps	8 cps	1,800 cps	50 cps	27 cps	335 cps
Intensity per Run 1	280.0 cps	148.0 cps	752.0 cps	128.0 cps	656.0 cps	10.0 cps	1,974.1 cps	30.0 cps	15.5 cps	389.0 cps
Intensity per Run 2	236.0 cps	100.0 cps	568.0 cps	136.0 cps	472.0 cps	7.0 cps	1,659.2 cps	80.0 cps	46.6 cps	320.0 cps
Intensity per Run 3	184.0 cps	68.0 cps	468.0 cps	72.0 cps	332.0 cps	6.0 cps	1,767.0 cps	40.0 cps	19.8 cps	295.0 cps
Intensity RSD	20.6 %	38.2 %	24.2 %	31.1 %	33.4 %	27.2 %	8.9 %	52.9 %	61.7 %	14.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		0.190 ppb		42.942 %	-0.023 ppb	-0.012 ppb	-0.015 ppb	-0.014 ppb	-0.010 ppb	0.008 ppm
Concentration per Run 1		0.871 ppb		57.533 %	-0.019 ppb	-0.016 ppb	-0.015 ppb	-0.012 ppb	-0.010 ppb	0.011 ppm
Concentration per Run 2		-0.858 ppb		27.007 %	-0.023 ppb	-0.007 ppb	-0.016 ppb	-0.016 ppb	-0.007 ppb	0.005 ppm
Concentration per Run 3		0.558 ppb		44.287 %	-0.026 ppb	-0.013 ppb	-0.015 ppb	-0.015 ppb	-0.012 ppb	0.009 ppm
Recovery Percentage 1		0.127 %						-0.010 %		0.000 %
Concentration RSD		484.2 %		35.6 %	16.6 %	39.0 %	6.3 %	14.6 %	25.5 %	38.4 %
Intensity average	2,585 cps	-188 cps	2,772 cps	251,120 cps	31 cps	55 cps	49 cps	31 cps	100 cps	743,679 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	2,757.3 cps	-195.9 cps	2,973.4 cps	336,442.9 cps	64.0 cps	40.0 cps	64.0 cps	56.0 cps	132.0 cps	1,013,500.8 cps
Intensity per Run 2	2,460.2 cps	-178.4 cps	2,576.3 cps	157,933.6 cps	16.0 cps	68.0 cps	24.0 cps	12.0 cps	92.0 cps	444,239.0 cps
Intensity per Run 3	2,538.3 cps	-191.1 cps	2,767.3 cps	258,982.0 cps	12.0 cps	56.0 cps	60.0 cps	24.0 cps	76.0 cps	773,298.4 cps
Intensity RSD	6.0 %	4.8 %	7.2 %	35.6 %	94.4 %	25.7 %	44.7 %	74.2 %	28.8 %	38.4 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.034 ppb	-0.001 ppb	0.001 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	44.110 %	-0.019 ppb	-0.007 ppb
Concentration per Run 1		-0.021 ppb	-0.001 ppb	0.007 ppb	-0.001 ppb	0.000 ppb	-0.001 ppb	57.524 %	-0.021 ppb	-0.008 ppb
Concentration per Run 2		-0.052 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	26.905 %	-0.017 ppb	-0.005 ppb
Concentration per Run 3		-0.029 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	47.901 %	-0.020 ppb	-0.007 ppb
Recovery Percentage 1			-0.002 %				-0.001 %		-0.013 %	-0.004 %
Concentration RSD		46.7 %	16.1 %	407.0 %	18.1 %	57.2 %	21.8 %	35.5 %	8.8 %	16.9 %
Intensity average	175 cps	29 cps	23 cps	1 cps	11 cps	1 cps	1 cps	394,910 cps	111 cps	73 cps
Intensity per Run 1	264.0 cps	44.0 cps	28.0 cps	4.0 cps	12.0 cps	4.0 cps	0.6 cps	515,005.9 cps	128.0 cps	84.0 cps
Intensity per Run 2	76.0 cps	12.0 cps	12.0 cps	0.0 cps	4.0 cps	0.0 cps	-2.3 cps	240,871.7 cps	84.0 cps	56.0 cps
Intensity per Run 3	184.0 cps	32.0 cps	28.0 cps	0.0 cps	16.0 cps	0.0 cps	4.8 cps	428,852.4 cps	120.0 cps	80.0 cps
Intensity RSD	54.0 %	55.1 %	40.8 %	173.2 %	57.3 %	173.2 %	343.7 %	35.5 %	21.2 %	20.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.008 ppb	-0.021 ppb	-0.020 ppb			42.687 %			0.006 ppm	-0.006 ppb
Concentration per Run 1	-0.009 ppb	-0.022 ppb	-0.022 ppb			53.357 %			0.007 ppm	-0.007 ppb
Concentration per Run 2	-0.005 ppb	-0.022 ppb	-0.020 ppb			26.440 %			0.004 ppm	-0.004 ppb
Concentration per Run 3	-0.011 ppb	-0.018 ppb	-0.019 ppb			48.263 %			0.007 ppm	-0.008 ppb
Recovery Percentage 1		-0.014 %							0.000 %	
Concentration RSD	35.1 %	11.2 %	6.2 %			33.5 %			31.2 %	30.3 %
Intensity average	40 cps	11 cps	16 cps	0 cps	7 cps	1,341,769 cps	9 cps	7 cps	1,341,875 cps	208 cps
Intensity per Run 1	48.0 cps	8.0 cps	12.0 cps	0.0 cps	4.0 cps	1,677,176.7 cps	8.0 cps	4.0 cps	1,661,126.7 cps	224.0 cps
Intensity per Run 2	48.0 cps	4.0 cps	12.0 cps	0.0 cps	12.0 cps	831,077.7 cps	4.0 cps	0.0 cps	867,052.1 cps	178.0 cps
Intensity per Run 3	24.0 cps	20.0 cps	24.0 cps	0.0 cps	4.0 cps	1,517,052.4 cps	16.0 cps	16.0 cps	1,497,447.4 cps	221.0 cps
Intensity RSD	34.6 %	78.1 %	43.3 %	N/A	69.3 %	33.5 %	65.5 %	124.9 %	31.2 %	12.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.006 ppb	0.099 ppb	0.095 ppb	0.095 ppb	39.733 %
Concentration per Run 1	-0.006 ppb	0.084 ppb	0.079 ppb	0.077 ppb	40.511 %
Concentration per Run 2	-0.003 ppb	0.155 ppb	0.149 ppb	0.154 ppb	23.211 %
Concentration per Run 3	-0.008 ppb	0.057 ppb	0.057 ppb	0.055 ppb	55.477 %
Recovery Percentage 1	-0.004 %			0.063 %	
Concentration RSD	43.9 %	51.2 %	50.7 %	54.4 %	40.6 %
Intensity average	519 cps	2,803 cps	2,368 cps	10,818 cps	1,018,325 cps
Intensity per Run 1	546.0 cps	2,855.3 cps	2,344.2 cps	10,528.7 cps	1,038,262.7 cps
Intensity per Run 2	482.0 cps	2,834.3 cps	2,384.2 cps	11,264.0 cps	594,872.3 cps
Intensity per Run 3	528.0 cps	2,719.3 cps	2,376.2 cps	10,660.8 cps	1,421,839.4 cps
Intensity RSD	6.4 %	2.6 %	0.9 %	3.6 %	40.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 20:47:22 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	22.237 %	19.813 %	0.005 ppb	2.253 ppb	2.067 ppb	N/A	3.616 ppb	-2.038 ppb	-2.422 ppb	-2.293 ppb
Concentration per Run 1	29.900 %	20.641 %	-0.022 ppb	1.792 ppb	2.024 ppb	N/A	3.057 ppb	-1.963 ppb	-2.072 ppb	-2.422 ppb
Concentration per Run 2	23.416 %	19.059 %	-0.022 ppb	2.356 ppb	2.052 ppb	N/A	3.894 ppb	-2.134 ppb	-2.597 ppb	-2.234 ppb
Concentration per Run 3	13.397 %	19.738 %	0.058 ppb	2.611 ppb	2.125 ppb	N/A	3.897 ppb	-2.016 ppb	-2.597 ppb	-2.224 ppb
Recovery Percentage 1			0.455 %	0.225 %			0.723 %			-0.459 %
Concentration RSD	37.4 %	4.0 %	1,012.4 %	18.6 %	2.5 %	N/A	13.4 %	4.3 %	12.5 %	4.9 %
Intensity average	3,109,986 cps	6,379 cps	1 cps	8 cps	45 cps	1,190 cps	4,828 cps	47 cps	7 cps	7 cps
Intensity per Run 1	4,181,572.0 cps	6,646.0 cps	0.0 cps	7.0 cps	45.0 cps	1,020.0 cps	4,570.9 cps	60.0 cps	20.0 cps	0.0 cps
Intensity per Run 2	3,274,750.4 cps	6,136.6 cps	0.0 cps	8.5 cps	43.5 cps	1,260.1 cps	5,051.1 cps	30.0 cps	0.0 cps	10.0 cps
Intensity per Run 3	1,873,634.9 cps	6,355.3 cps	2.5 cps	9.5 cps	45.5 cps	1,290.1 cps	4,861.0 cps	50.0 cps	0.0 cps	10.0 cps
Intensity RSD	37.4 %	4.0 %	173.2 %	15.1 %	2.3 %	12.4 %	5.0 %	32.7 %	173.2 %	86.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.401 ppb		0.023 ppm	4.717 ppb	-11.843 ppb	-13.035 ppb	-10.533 ppb	21.874 %	21.413 %	0.026 ppb
Concentration per Run 1	-1.342 ppb		0.022 ppm	7.303 ppb	-18.917 ppb	-17.375 ppb	-11.252 ppb	30.267 %	20.014 %	-0.003 ppb
Concentration per Run 2	-1.359 ppb		0.022 ppm	2.196 ppb	2.307 ppb	-14.429 ppb	-10.953 ppb	21.787 %	23.464 %	0.085 ppb
Concentration per Run 3	-1.504 ppb		0.025 ppm	4.653 ppb	-18.917 ppb	-7.301 ppb	-9.395 ppb	13.569 %	20.762 %	-0.003 ppb
Recovery Percentage 1	-7.007 %			0.943 %			-1.053 %			0.262 %
Concentration RSD	6.3 %		7.0 %	54.1 %	103.5 %	39.7 %	9.5 %	38.2 %	8.5 %	196.2 %
Intensity average	17 cps	1,000 cps	32,604 cps	5,418 cps	7 cps	6,635 cps	50 cps	1,505,598 cps	62,866 cps	3 cps
Intensity per Run 1	20.0 cps	990.0 cps	30,077.3 cps	5,601.3 cps	0.0 cps	6,711.9 cps	40.0 cps	2,083,271.3 cps	58,758.5 cps	0.0 cps
Intensity per Run 2	20.0 cps	1,060.1 cps	33,315.9 cps	5,371.2 cps	20.0 cps	6,551.7 cps	50.0 cps	1,499,570.9 cps	68,886.9 cps	8.0 cps
Intensity per Run 3	10.0 cps	950.0 cps	34,419.9 cps	5,281.2 cps	0.0 cps	6,641.8 cps	60.0 cps	933,951.4 cps	60,953.8 cps	0.0 cps
Intensity RSD	34.6 %	5.6 %	6.9 %	3.0 %	173.2 %	1.2 %	20.0 %	38.2 %	8.5 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.107 ppb	-0.093 ppb	-0.389 ppb	N/A	-0.104 ppb	-1.669 ppb	-1.468 ppb	0.021 ppb	-0.892 ppb	-0.884 ppb
Concentration per Run 1	-0.109 ppb	-0.086 ppb	-0.402 ppb	N/A	-0.094 ppb	-1.606 ppb	-1.359 ppb	0.020 ppb	-0.893 ppb	-0.823 ppb
Concentration per Run 2	-0.112 ppb	-0.104 ppb	-0.354 ppb	N/A	-0.113 ppb	-1.663 ppb	-1.595 ppb	0.020 ppb	-0.887 ppb	-0.897 ppb
Concentration per Run 3	-0.101 ppb	-0.088 ppb	-0.413 ppb	N/A	-0.104 ppb	-1.739 ppb	-1.451 ppb	0.023 ppb	-0.896 ppb	-0.931 ppb
Recovery Percentage 1	-2.143 %	-4.628 %			-10.368 %		-0.734 %	2.116 %	-89.240 %	
Concentration RSD	5.5 %	10.9 %	8.1 %	N/A	9.4 %	4.0 %	8.1 %	7.6 %	0.5 %	6.2 %
Intensity average	58 cps	133 cps	48 cps	67 cps	124 cps	1,200 cps	29 cps	281 cps	156 cps	31 cps
Intensity per Run 1	49.9 cps	156.0 cps	36.0 cps	70.0 cps	148.0 cps	1,380.1 cps	44.0 cps	252.0 cps	132.0 cps	52.0 cps
Intensity per Run 2	49.3 cps	92.0 cps	76.0 cps	50.0 cps	100.0 cps	1,340.1 cps	12.0 cps	300.0 cps	180.0 cps	28.0 cps
Intensity per Run 3	75.0 cps	152.0 cps	32.0 cps	80.0 cps	124.0 cps	880.0 cps	32.0 cps	292.0 cps	156.0 cps	12.0 cps
Intensity RSD	25.3 %	26.9 %	50.7 %	22.9 %	19.4 %	23.2 %	55.1 %	9.1 %	15.4 %	65.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.117 ppb	-0.107 ppb	-2.099 ppb	-1.762 ppb	-1.941 ppb		1.990 ppb	N/A	0.167 ppb	
Concentration per Run 1	-0.119 ppb	-0.109 ppb	-2.053 ppb	-1.689 ppb	-1.916 ppb		2.305 ppb	N/A	-0.055 ppb	
Concentration per Run 2	-0.117 ppb	-0.106 ppb	-2.109 ppb	-1.781 ppb	-1.950 ppb		2.029 ppb	N/A	0.228 ppb	
Concentration per Run 3	-0.116 ppb	-0.107 ppb	-2.133 ppb	-1.816 ppb	-1.956 ppb		1.636 ppb	N/A	0.326 ppb	
Recovery Percentage 1		-5.370 %	-104.926 %				199.007 %			
Concentration RSD	1.1 %	1.3 %	2.0 %	3.7 %	1.1 %		16.9 %	N/A	118.7 %	
Intensity average	161 cps	65 cps	437 cps	79 cps	272 cps	7 cps	2,542 cps	47 cps	11 cps	341 cps
Intensity per Run 1	136.0 cps	56.0 cps	416.0 cps	88.0 cps	272.0 cps	8.0 cps	2,285.8 cps	20.0 cps	-9.1 cps	323.0 cps
Intensity per Run 2	176.0 cps	76.0 cps	432.0 cps	80.0 cps	280.0 cps	10.0 cps	2,623.7 cps	80.0 cps	15.9 cps	353.0 cps
Intensity per Run 3	172.0 cps	64.0 cps	464.0 cps	68.0 cps	264.0 cps	4.0 cps	2,715.4 cps	40.0 cps	25.3 cps	348.0 cps
Intensity RSD	13.7 %	15.4 %	5.6 %	12.8 %	2.9 %	41.7 %	8.9 %	65.5 %	166.2 %	4.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-0.099 ppb		26.490 %	-0.017 ppb	0.008 ppb	-0.004 ppb	-0.005 ppb	-0.004 ppb	0.005 ppm
Concentration per Run 1		-1.333 ppb		22.885 %	-0.010 ppb	-0.012 ppb	-0.010 ppb	-0.011 ppb	0.000 ppb	0.004 ppm
Concentration per Run 2		0.715 ppb		27.758 %	-0.020 ppb	0.014 ppb	-0.001 ppb	-0.008 ppb	-0.006 ppb	0.005 ppm
Concentration per Run 3		0.321 ppb		28.828 %	-0.023 ppb	0.022 ppb	-0.003 ppb	0.004 ppb	-0.006 ppb	0.006 ppm
Recovery Percentage 1		-1.984 %						-0.050 %		
Concentration RSD		1,095.3 %		12.0 %	39.6 %	220.9 %	113.3 %	166.2 %	83.8 %	18.9 %
Intensity average	3,720 cps	-122 cps	3,854 cps	154,911 cps	32 cps	152 cps	96 cps	52 cps	112 cps	459,388 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,363.5 cps	-148.1 cps	3,453.5 cps	133,827.4 cps	48.0 cps	32.0 cps	52.0 cps	24.0 cps	128.0 cps	367,073.6 cps
Intensity per Run 2	3,808.6 cps	-90.6 cps	3,979.6 cps	162,325.0 cps	28.0 cps	184.0 cps	120.0 cps	40.0 cps	100.0 cps	471,508.9 cps
Intensity per Run 3	3,988.6 cps	-127.9 cps	4,128.7 cps	168,581.8 cps	20.0 cps	240.0 cps	116.0 cps	92.0 cps	108.0 cps	539,580.1 cps
Intensity RSD	8.7 %	23.8 %	9.2 %	12.0 %	45.1 %	70.8 %	39.7 %	68.4 %	12.9 %	18.9 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.009 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	24.359 %	-0.015 ppb	-0.005 ppb
Concentration per Run 1		-0.003 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	19.692 %	-0.008 ppb	-0.004 ppb
Concentration per Run 2		-0.049 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	24.518 %	-0.019 ppb	-0.006 ppb
Concentration per Run 3		0.025 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	28.868 %	-0.020 ppb	-0.005 ppb
Recovery Percentage 1			-0.010 %				-0.101 %			-0.256 %
Concentration RSD		411.5 %	638.8 %	0.0 %	176.4 %	0.0 %	67.9 %	18.8 %	42.0 %	21.9 %
Intensity average	80 cps	23 cps	20 cps	0 cps	13 cps	0 cps	3 cps	218,085 cps	84 cps	52 cps
Intensity per Run 1	60.0 cps	20.0 cps	20.0 cps	0.0 cps	20.0 cps	0.0 cps	-3.0 cps	176,296.4 cps	112.0 cps	48.0 cps
Intensity per Run 2	76.0 cps	12.0 cps	32.0 cps	0.0 cps	8.0 cps	0.0 cps	6.2 cps	219,508.7 cps	68.0 cps	44.0 cps
Intensity per Run 3	104.0 cps	36.0 cps	8.0 cps	0.0 cps	12.0 cps	0.0 cps	6.1 cps	258,449.3 cps	72.0 cps	64.0 cps
Intensity RSD	27.8 %	53.9 %	60.0 %	N/A	45.8 %	N/A	171.2 %	18.8 %	29.0 %	20.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.023 ppb	-0.023 ppb			22.901 %			0.003 ppm	-0.002 ppb
Concentration per Run 1	-0.006 ppb	-0.025 ppb	-0.022 ppb			21.354 %			0.003 ppm	-0.003 ppb
Concentration per Run 2	-0.004 ppb	-0.025 ppb	-0.024 ppb			23.059 %			0.003 ppm	-0.002 ppb
Concentration per Run 3	-0.008 ppb	-0.020 ppb	-0.022 ppb			24.292 %			0.003 ppm	-0.002 ppb
Recovery Percentage 1		-0.232 %							0.329 %	
Concentration RSD	30.6 %	11.3 %	3.8 %			6.4 %			2.7 %	16.2 %
Intensity average	37 cps	3 cps	3 cps	0 cps	1 cps	719,858 cps	7 cps	9 cps	745,556 cps	192 cps
Intensity per Run 1	32.0 cps	0.0 cps	4.0 cps	0.0 cps	0.0 cps	671,210.7 cps	4.0 cps	12.0 cps	722,674.3 cps	175.0 cps
Intensity per Run 2	48.0 cps	0.0 cps	0.0 cps	0.0 cps	4.0 cps	724,800.4 cps	0.0 cps	12.0 cps	753,009.4 cps	203.0 cps
Intensity per Run 3	32.0 cps	8.0 cps	4.0 cps	0.0 cps	0.0 cps	763,563.2 cps	16.0 cps	4.0 cps	760,984.9 cps	198.0 cps
Intensity RSD	24.7 %	173.2 %	86.6 %	N/A	173.2 %	6.4 %	124.9 %	49.5 %	2.7 %	7.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.003 ppb	0.118 ppb	0.115 ppb	0.117 ppb	20.363 %
Concentration per Run 1	-0.002 ppb	0.126 ppb	0.137 ppb	0.128 ppb	19.474 %
Concentration per Run 2	-0.003 ppb	0.117 ppb	0.102 ppb	0.115 ppb	20.979 %
Concentration per Run 3	-0.004 ppb	0.111 ppb	0.106 ppb	0.107 ppb	20.635 %
Recovery Percentage 1	-0.556 %			11.681 %	
Concentration RSD	30.8 %	6.3 %	17.0 %	9.1 %	3.9 %
Intensity average	435 cps	1,925 cps	1,641 cps	7,650 cps	521,881 cps
Intensity per Run 1	456.0 cps	1,953.2 cps	1,856.1 cps	7,990.0 cps	499,096.9 cps
Intensity per Run 2	443.0 cps	1,967.2 cps	1,516.1 cps	7,776.0 cps	537,689.8 cps
Intensity per Run 3	405.0 cps	1,855.1 cps	1,552.1 cps	7,183.8 cps	528,855.5 cps
Intensity RSD	6.1 %	3.2 %	11.4 %	5.5 %	3.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ18065-001 Analysis: 10/30/2019 20:53:28 Sample Type UNKNOWN
Comment LEACHATE Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	16.566 %	25.770 %	-0.001 ppb	2.713 ppb	2.389 ppb	N/A	1.500 ppb	-2.077 ppb	-2.370 ppb	-2.205 ppb
Concentration per Run 1	18.438 %	23.286 %	-0.009 ppb	3.706 ppb	2.510 ppb	N/A	2.184 ppb	-2.055 ppb	-1.916 ppb	-2.251 ppb
Concentration per Run 2	22.416 %	23.184 %	0.019 ppb	1.807 ppb	2.718 ppb	N/A	1.944 ppb	-1.965 ppb	-2.597 ppb	-2.088 ppb
Concentration per Run 3	8.844 %	30.840 %	-0.012 ppb	2.626 ppb	1.939 ppb	N/A	0.371 ppb	-2.212 ppb	-2.597 ppb	-2.275 ppb
Concentration RSD	42.1 %	17.0 %	3,064.6 %	35.1 %	16.9 %	N/A	65.7 %	6.0 %	16.6 %	4.6 %
Intensity average	2,316,850 cps	8,297 cps	1 cps	13 cps	64 cps	1,020 cps	4,831 cps	47 cps	10 cps	13 cps
Intensity per Run 1	2,578,650.6 cps	7,497.7 cps	0.5 cps	15.5 cps	62.5 cps	950.0 cps	4,871.0 cps	50.0 cps	30.0 cps	10.0 cps
Intensity per Run 2	3,134,968.8 cps	7,464.7 cps	1.5 cps	8.0 cps	67.5 cps	1,050.0 cps	4,841.0 cps	70.0 cps	0.0 cps	20.0 cps
Intensity per Run 3	1,236,930.2 cps	9,930.0 cps	0.5 cps	14.5 cps	63.0 cps	1,060.0 cps	4,780.9 cps	20.0 cps	0.0 cps	10.0 cps
Intensity RSD	42.1 %	17.0 %	69.3 %	32.1 %	4.3 %	6.0 %	0.9 %	53.9 %	173.2 %	43.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.399 ppb		0.025 ppm	2.063 ppb	-5.349 ppb	-8.650 ppb	-11.961 ppb	16.373 %	24.142 %	0.011 ppb
Concentration per Run 1	-1.247 ppb		0.025 ppm	1.433 ppb	-18.917 ppb	-13.379 ppb	-11.898 ppb	19.354 %	23.756 %	-0.003 ppb
Concentration per Run 2	-1.529 ppb		0.024 ppm	2.223 ppb	-18.917 ppb	-14.719 ppb	-12.041 ppb	21.490 %	24.793 %	-0.003 ppb
Concentration per Run 3	-1.423 ppb		0.025 ppm	2.533 ppb	21.787 ppb	2.149 ppb	-11.944 ppb	8.275 %	23.877 %	0.040 ppb
Concentration RSD	10.2 %		2.7 %	27.5 %	439.3 %	108.4 %	0.6 %	43.3 %	2.3 %	226.9 %
Intensity average	20 cps	877 cps	41,247 cps	5,725 cps	13 cps	6,258 cps	40 cps	1,126,938 cps	70,877 cps	1 cps
Intensity per Run 1	30.0 cps	920.0 cps	40,879.2 cps	5,431.3 cps	0.0 cps	6,341.7 cps	40.0 cps	1,332,110.7 cps	69,743.1 cps	0.0 cps
Intensity per Run 2	10.0 cps	840.0 cps	40,037.7 cps	5,791.4 cps	0.0 cps	6,291.6 cps	40.0 cps	1,479,128.8 cps	72,788.1 cps	0.0 cps
Intensity per Run 3	20.0 cps	870.0 cps	42,824.9 cps	5,951.5 cps	40.0 cps	6,141.6 cps	40.0 cps	569,573.8 cps	70,099.4 cps	4.0 cps
Intensity RSD	50.0 %	4.6 %	3.5 %	4.7 %	173.2 %	1.7 %	0.0 %	43.3 %	2.3 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.105 ppb	-0.096 ppb	-0.385 ppb	N/A	-0.113 ppb	-1.578 ppb	-1.396 ppb	0.011 ppb	-0.858 ppb	-0.894 ppb
Concentration per Run 1	-0.106 ppb	-0.092 ppb	-0.341 ppb	N/A	-0.120 ppb	-1.568 ppb	-1.525 ppb	0.011 ppb	-0.861 ppb	-0.898 ppb
Concentration per Run 2	-0.098 ppb	-0.097 ppb	-0.410 ppb	N/A	-0.109 ppb	-1.572 ppb	-1.373 ppb	0.012 ppb	-0.845 ppb	-0.870 ppb
Concentration per Run 3	-0.112 ppb	-0.100 ppb	-0.405 ppb	N/A	-0.110 ppb	-1.595 ppb	-1.291 ppb	0.010 ppb	-0.868 ppb	-0.913 ppb
Concentration RSD	6.8 %	3.9 %	10.0 %	N/A	5.6 %	0.9 %	8.5 %	8.1 %	1.4 %	2.4 %
Intensity average	73 cps	133 cps	52 cps	90 cps	97 cps	1,687 cps	47 cps	193 cps	204 cps	27 cps
Intensity per Run 1	68.3 cps	152.0 cps	80.0 cps	90.0 cps	68.0 cps	1,680.1 cps	24.0 cps	192.0 cps	180.0 cps	24.0 cps
Intensity per Run 2	99.8 cps	132.0 cps	36.0 cps	60.0 cps	112.0 cps	1,720.1 cps	52.0 cps	208.0 cps	216.0 cps	36.0 cps
Intensity per Run 3	51.1 cps	116.0 cps	40.0 cps	120.0 cps	112.0 cps	1,660.1 cps	64.0 cps	180.0 cps	216.0 cps	20.0 cps
Intensity RSD	33.8 %	13.5 %	46.8 %	33.3 %	26.1 %	1.8 %	44.0 %	7.3 %	10.2 %	31.2 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.108 ppb	-2.092 ppb	-1.781 ppb	-1.915 ppb		2.406 ppb	N/A	0.086 ppb	
Concentration per Run 1	-0.120 ppb	-0.109 ppb	-2.050 ppb	-1.756 ppb	-1.904 ppb		2.956 ppb	N/A	0.024 ppb	
Concentration per Run 2	-0.117 ppb	-0.109 ppb	-2.103 ppb	-1.730 ppb	-1.921 ppb		2.368 ppb	N/A	0.134 ppb	
Concentration per Run 3	-0.122 ppb	-0.106 ppb	-2.123 ppb	-1.857 ppb	-1.919 ppb		1.896 ppb	N/A	0.099 ppb	
Concentration RSD	2.1 %	1.4 %	1.8 %	3.8 %	0.5 %		22.1 %	N/A	65.3 %	
Intensity average	136 cps	71 cps	373 cps	69 cps	284 cps	6 cps	2,379 cps	57 cps	2 cps	339 cps
Intensity per Run 1	128.0 cps	68.0 cps	368.0 cps	72.0 cps	280.0 cps	7.0 cps	2,370.9 cps	70.0 cps	-2.6 cps	341.0 cps
Intensity per Run 2	152.0 cps	68.0 cps	356.0 cps	80.0 cps	268.0 cps	7.0 cps	2,339.8 cps	20.0 cps	5.3 cps	365.0 cps
Intensity per Run 3	128.0 cps	76.0 cps	396.0 cps	56.0 cps	304.0 cps	5.0 cps	2,425.5 cps	80.0 cps	3.4 cps	310.0 cps
Intensity RSD	10.2 %	6.5 %	5.5 %	17.6 %	6.5 %	18.2 %	1.8 %	56.7 %	203.4 %	8.1 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.658 ppb		20.781 %	-0.013 ppb	0.019 ppb	0.002 ppb	0.000 ppb	0.005 ppb	0.004 ppm
Concentration per Run 1		-5.027 ppb		18.810 %	-0.019 ppb	-0.004 ppb	0.001 ppb	-0.003 ppb	0.009 ppb	0.003 ppm
Concentration per Run 2		-2.212 ppb		18.807 %	-0.016 ppb	-0.007 ppb	0.011 ppb	-0.010 ppb	0.011 ppb	0.004 ppm
Concentration per Run 3		-0.735 ppb		24.725 %	-0.005 ppb	0.069 ppb	-0.005 ppb	0.014 ppb	-0.005 ppb	0.005 ppm
Concentration RSD		82.0 %		16.4 %	52.8 %	222.0 %	356.7 %	6,212.0 %	163.1 %	19.9 %
Intensity average	3,478 cps	-194 cps	3,723 cps	121,521 cps	37 cps	181 cps	103 cps	57 cps	155 cps	343,103 cps
Intensity per Run 1	3,484.5 cps	-248.5 cps	3,732.6 cps	109,995.9 cps	20.0 cps	56.0 cps	88.0 cps	40.0 cps	168.0 cps	294,421.0 cps
Intensity per Run 2	3,337.4 cps	-181.4 cps	3,603.5 cps	109,980.4 cps	28.0 cps	48.0 cps	136.0 cps	24.0 cps	192.0 cps	313,630.0 cps
Intensity per Run 3	3,613.5 cps	-151.4 cps	3,832.6 cps	144,587.8 cps	64.0 cps	440.1 cps	84.0 cps	108.0 cps	104.0 cps	421,257.6 cps
Intensity RSD	4.0 %	25.7 %	3.1 %	16.4 %	62.8 %	123.6 %	28.2 %	77.8 %	29.4 %	19.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.016 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	20.228 %	0.000 ppb	-0.001 ppb
Concentration per Run 1		-0.008 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.003 ppb	17.242 %	0.030 ppb	0.000 ppb
Concentration per Run 2		0.023 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	0.000 ppb	19.803 %	-0.013 ppb	-0.003 ppb
Concentration per Run 3		0.033 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	23.639 %	-0.016 ppb	0.000 ppb
Concentration RSD		135.9 %	202.7 %	0.0 %	32.6 %	0.0 %	105.5 %	15.9 %	7,174.5 %	129.6 %
Intensity average	43 cps	24 cps	15 cps	0 cps	11 cps	0 cps	0 cps	181,099 cps	147 cps	67 cps
Intensity per Run 1	20.0 cps	16.0 cps	4.0 cps	0.0 cps	8.0 cps	0.0 cps	-7.3 cps	154,364.3 cps	272.0 cps	60.0 cps
Intensity per Run 2	44.0 cps	24.0 cps	24.0 cps	0.0 cps	12.0 cps	0.0 cps	9.7 cps	177,297.2 cps	84.0 cps	56.0 cps
Intensity per Run 3	64.0 cps	32.0 cps	16.0 cps	0.0 cps	12.0 cps	0.0 cps	-2.3 cps	211,635.2 cps	84.0 cps	84.0 cps
Intensity RSD	51.6 %	33.3 %	68.6 %	N/A	21.7 %	N/A	13,744.0 %	15.9 %	74.0 %	22.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.001 ppb	-0.020 ppb	-0.020 ppb			20.457 %			0.003 ppm	-0.006 ppb
Concentration per Run 1	0.003 ppb	-0.025 ppb	-0.022 ppb			15.512 %			0.002 ppm	-0.005 ppb
Concentration per Run 2	-0.003 ppb	-0.016 ppb	-0.020 ppb			19.966 %			0.003 ppm	-0.006 ppb
Concentration per Run 3	-0.002 ppb	-0.020 ppb	-0.020 ppb			25.892 %			0.004 ppm	-0.007 ppb
Concentration RSD	360.3 %	22.9 %	5.0 %			25.5 %			25.7 %	13.1 %
Intensity average	55 cps	7 cps	8 cps	0 cps	0 cps	643,011 cps	11 cps	4 cps	700,533 cps	140 cps
Intensity per Run 1	60.0 cps	0.0 cps	4.0 cps	0.0 cps	0.0 cps	487,576.2 cps	4.0 cps	4.0 cps	503,644.4 cps	127.0 cps
Intensity per Run 2	44.0 cps	12.0 cps	8.0 cps	0.0 cps	0.0 cps	627,600.6 cps	20.0 cps	4.0 cps	740,763.8 cps	150.0 cps
Intensity per Run 3	60.0 cps	8.0 cps	12.0 cps	0.0 cps	0.0 cps	813,854.7 cps	8.0 cps	4.0 cps	857,191.9 cps	144.0 cps
Intensity RSD	16.9 %	91.7 %	50.0 %	N/A	N/A	25.5 %	78.1 %	0.0 %	25.7 %	8.5 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.006 ppb	0.067 ppb	0.060 ppb	0.062 ppb	24.933 %
Concentration per Run 1	-0.006 ppb	0.080 ppb	0.073 ppb	0.071 ppb	19.909 %
Concentration per Run 2	-0.006 ppb	0.064 ppb	0.054 ppb	0.058 ppb	26.207 %
Concentration per Run 3	-0.007 ppb	0.058 ppb	0.054 ppb	0.058 ppb	28.684 %
Concentration RSD	4.9 %	16.4 %	17.9 %	12.3 %	18.1 %
Intensity average	332 cps	1,380 cps	1,101 cps	5,291 cps	639,021 cps
Intensity per Run 1	282.0 cps	1,297.1 cps	1,052.0 cps	4,797.4 cps	510,256.4 cps
Intensity per Run 2	345.0 cps	1,408.1 cps	1,072.0 cps	5,316.5 cps	671,660.5 cps
Intensity per Run 3	368.0 cps	1,436.1 cps	1,180.1 cps	5,760.6 cps	735,146.6 cps
Intensity RSD	13.4 %	5.3 %	6.3 %	9.1 %	18.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UI26045-001DIS Analysis: 10/30/2019 20:59:33 Sample Type UNKNOWN
Comment MW-21 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	14.214 %	17.182 %	0.015 ppb	1.800 ppb	2.363 ppb	N/A	5.036 ppb	-1.985 ppb	-2.402 ppb	-2.106 ppb
Concentration per Run 1	11.767 %	16.962 %	0.034 ppb	1.538 ppb	2.306 ppb	N/A	6.227 ppb	-2.088 ppb	-2.270 ppb	-2.422 ppb
Concentration per Run 2	10.307 %	16.902 %	0.034 ppb	2.786 ppb	2.024 ppb	N/A	5.668 ppb	-2.014 ppb	-2.597 ppb	-1.669 ppb
Concentration per Run 3	20.568 %	17.683 %	-0.022 ppb	1.075 ppb	2.760 ppb	N/A	3.214 ppb	-1.854 ppb	-2.338 ppb	-2.228 ppb
Concentration RSD	39.1 %	2.5 %	212.6 %	49.2 %	15.7 %	N/A	31.8 %	6.0 %	7.2 %	18.6 %
Intensity average	1,987,842 cps	5,532 cps	1 cps	6 cps	44 cps	983 cps	4,581 cps	50 cps	7 cps	13 cps
Intensity per Run 1	1,645,591.2 cps	5,461.4 cps	1.5 cps	5.0 cps	41.5 cps	910.0 cps	4,690.9 cps	30.0 cps	10.0 cps	0.0 cps
Intensity per Run 2	1,441,435.2 cps	5,442.0 cps	1.5 cps	8.5 cps	36.5 cps	1,020.0 cps	4,440.8 cps	40.0 cps	0.0 cps	30.0 cps
Intensity per Run 3	2,876,500.8 cps	5,693.7 cps	0.0 cps	4.0 cps	54.0 cps	1,020.0 cps	4,610.9 cps	80.0 cps	10.0 cps	10.0 cps
Intensity RSD	39.1 %	2.5 %	86.6 %	40.5 %	20.5 %	6.5 %	2.8 %	52.9 %	86.6 %	114.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.951 ppb		0.034 ppm	10.031 ppb	-13.681 ppb	-8.507 ppb	-7.776 ppb	13.631 %	18.120 %	-0.003 ppb
Concentration per Run 1	-0.249 ppb		0.036 ppm	12.882 ppb	-3.209 ppb	-7.446 ppb	-8.778 ppb	10.911 %	15.631 %	-0.003 ppb
Concentration per Run 2	-1.253 ppb		0.037 ppm	13.383 ppb	-18.917 ppb	-4.240 ppb	-4.461 ppb	11.127 %	15.116 %	-0.003 ppb
Concentration per Run 3	-1.351 ppb		0.029 ppm	3.828 ppb	-18.917 ppb	-13.835 ppb	-10.091 ppb	18.855 %	23.613 %	-0.003 ppb
Concentration RSD	64.1 %		12.0 %	53.6 %	66.3 %	57.4 %	37.9 %	33.2 %	26.3 %	0.0 %
Intensity average	37 cps	863 cps	40,687 cps	5,295 cps	3 cps	5,875 cps	63 cps	938,222 cps	53,197 cps	0 cps
Intensity per Run 1	70.0 cps	900.0 cps	38,835.6 cps	5,151.2 cps	10.0 cps	5,311.2 cps	50.0 cps	750,989.2 cps	45,890.1 cps	0.0 cps
Intensity per Run 2	20.0 cps	930.0 cps	39,133.2 cps	5,071.0 cps	0.0 cps	6,341.6 cps	80.0 cps	765,857.5 cps	44,377.4 cps	0.0 cps
Intensity per Run 3	20.0 cps	760.0 cps	44,092.2 cps	5,661.5 cps	0.0 cps	5,971.4 cps	60.0 cps	1,297,817.9 cps	69,323.1 cps	0.0 cps
Intensity RSD	78.7 %	10.5 %	7.3 %	6.0 %	173.2 %	8.9 %	24.1 %	33.2 %	26.3 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.097 ppb	-0.090 ppb	-0.374 ppb	N/A	-0.110 ppb	-1.626 ppb	-1.369 ppb	0.011 ppb	-0.874 ppb	-0.894 ppb
Concentration per Run 1	-0.097 ppb	-0.087 ppb	-0.403 ppb	N/A	-0.105 ppb	-1.615 ppb	-1.273 ppb	0.010 ppb	-0.870 ppb	-0.893 ppb
Concentration per Run 2	-0.091 ppb	-0.093 ppb	-0.373 ppb	N/A	-0.108 ppb	-1.661 ppb	-1.333 ppb	0.015 ppb	-0.899 ppb	-0.910 ppb
Concentration per Run 3	-0.102 ppb	-0.091 ppb	-0.347 ppb	N/A	-0.118 ppb	-1.601 ppb	-1.500 ppb	0.009 ppb	-0.854 ppb	-0.879 ppb
Concentration RSD	5.6 %	2.8 %	7.4 %	N/A	6.2 %	1.9 %	8.6 %	27.9 %	2.6 %	1.7 %
Intensity average	73 cps	124 cps	51 cps	50 cps	87 cps	1,233 cps	36 cps	147 cps	181 cps	24 cps
Intensity per Run 1	64.5 cps	116.0 cps	28.0 cps	100.0 cps	88.0 cps	1,060.1 cps	44.0 cps	116.0 cps	160.0 cps	20.0 cps
Intensity per Run 2	73.5 cps	96.0 cps	48.0 cps	20.0 cps	96.0 cps	1,100.1 cps	36.0 cps	152.0 cps	176.0 cps	20.0 cps
Intensity per Run 3	80.8 cps	160.0 cps	76.0 cps	30.0 cps	76.0 cps	1,540.1 cps	28.0 cps	172.0 cps	208.0 cps	32.0 cps
Intensity RSD	11.2 %	26.4 %	47.6 %	87.2 %	11.6 %	21.6 %	22.2 %	19.3 %	13.5 %	28.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.123 ppb	-0.102 ppb	-2.170 ppb	-1.793 ppb	-1.897 ppb		1.497 ppb	N/A	0.190 ppb	
Concentration per Run 1	-0.119 ppb	-0.097 ppb	-2.138 ppb	-1.681 ppb	-1.886 ppb		1.394 ppb	N/A	0.069 ppb	
Concentration per Run 2	-0.132 ppb	-0.096 ppb	-2.216 ppb	-1.952 ppb	-1.924 ppb		0.992 ppb	N/A	0.149 ppb	
Concentration per Run 3	-0.117 ppb	-0.112 ppb	-2.155 ppb	-1.748 ppb	-1.879 ppb		2.104 ppb	N/A	0.351 ppb	
Concentration RSD	6.7 %	8.5 %	1.9 %	7.9 %	1.3 %		37.6 %	N/A	76.6 %	
Intensity average	105 cps	67 cps	297 cps	60 cps	289 cps	7 cps	1,924 cps	50 cps	10 cps	326 cps
Intensity per Run 1	104.0 cps	72.0 cps	324.0 cps	72.0 cps	244.0 cps	5.0 cps	1,763.8 cps	40.0 cps	0.5 cps	319.0 cps
Intensity per Run 2	56.0 cps	72.0 cps	296.0 cps	32.0 cps	308.0 cps	7.0 cps	1,987.6 cps	20.0 cps	9.3 cps	332.0 cps
Intensity per Run 3	156.0 cps	56.0 cps	272.0 cps	76.0 cps	316.0 cps	8.0 cps	2,019.5 cps	90.0 cps	21.7 cps	326.0 cps
Intensity RSD	47.5 %	13.9 %	8.8 %	40.6 %	13.6 %	22.9 %	7.2 %	72.1 %	101.2 %	2.0 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.841 ppb		24.415 %	-0.010 ppb	0.064 ppb	-0.006 ppb	0.008 ppb	-0.003 ppb	0.005 ppm
Concentration per Run 1		-2.066 ppb		18.683 %	-0.006 ppb	-0.004 ppb	-0.004 ppb	0.041 ppb	-0.010 ppb	0.004 ppm
Concentration per Run 2		0.822 ppb		34.487 %	-0.016 ppb	-0.006 ppb	0.001 ppb	-0.009 ppb	0.010 ppb	0.006 ppm
Concentration per Run 3		-4.279 ppb		20.076 %	-0.009 ppb	0.202 ppb	-0.015 ppb	-0.009 ppb	-0.007 ppb	0.004 ppm
Concentration RSD		139.0 %		35.8 %	47.8 %	186.2 %	145.8 %	373.1 %	406.5 %	30.7 %
Intensity average	2,756 cps	-173 cps	2,930 cps	142,776 cps	47 cps	345 cps	85 cps	76 cps	136 cps	403,449 cps
Intensity per Run 1	2,459.2 cps	-182.0 cps	2,644.3 cps	109,256.6 cps	48.0 cps	60.0 cps	72.0 cps	156.0 cps	44.0 cps	336,049.9 cps
Intensity per Run 2	2,726.3 cps	-95.4 cps	2,914.3 cps	201,670.7 cps	48.0 cps	88.0 cps	160.0 cps	44.0 cps	300.0 cps	546,338.1 cps
Intensity per Run 3	3,081.4 cps	-240.2 cps	3,231.4 cps	117,400.9 cps	44.0 cps	888.3 cps	24.0 cps	28.0 cps	64.0 cps	327,958.5 cps
Intensity RSD	11.3 %	42.2 %	10.0 %	35.8 %	4.9 %	136.2 %	80.8 %	91.8 %	104.7 %	30.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.023 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.002 ppb	22.071 %	-0.018 ppb	-0.003 ppb
Concentration per Run 1		-0.036 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	0.001 ppb	-0.002 ppb	20.484 %	-0.013 ppb	-0.004 ppb
Concentration per Run 2		-0.017 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.000 ppb	-0.001 ppb	27.278 %	-0.021 ppb	-0.005 ppb
Concentration per Run 3		-0.014 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	18.449 %	-0.019 ppb	0.000 ppb
Concentration RSD		53.9 %	33.6 %	0.0 %	102.3 %	519.9 %	6.0 %	20.9 %	24.3 %	77.5 %
Intensity average	55 cps	17 cps	9 cps	0 cps	12 cps	3 cps	-2 cps	197,594 cps	65 cps	56 cps
Intensity per Run 1	48.0 cps	12.0 cps	8.0 cps	0.0 cps	4.0 cps	4.0 cps	-2.4 cps	183,391.8 cps	88.0 cps	48.0 cps
Intensity per Run 2	80.0 cps	24.0 cps	16.0 cps	0.0 cps	20.0 cps	4.0 cps	-1.5 cps	244,219.3 cps	56.0 cps	56.0 cps
Intensity per Run 3	36.0 cps	16.0 cps	4.0 cps	0.0 cps	12.0 cps	0.0 cps	-1.4 cps	165,171.6 cps	52.0 cps	64.0 cps
Intensity RSD	41.6 %	35.3 %	65.5 %	N/A	66.7 %	86.6 %	30.2 %	20.9 %	30.2 %	14.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.004 ppb	-0.021 ppb	-0.023 ppb			19.963 %			0.003 ppm	-0.005 ppb
Concentration per Run 1	-0.001 ppb	-0.022 ppb	-0.024 ppb			18.452 %			0.003 ppm	-0.004 ppb
Concentration per Run 2	-0.004 ppb	-0.022 ppb	-0.022 ppb			23.445 %			0.003 ppm	-0.006 ppb
Concentration per Run 3	-0.006 ppb	-0.018 ppb	-0.022 ppb			17.991 %			0.003 ppm	-0.005 ppb
Concentration RSD	74.5 %	11.1 %	4.2 %			15.1 %			11.7 %	16.9 %
Intensity average	45 cps	5 cps	3 cps	0 cps	1 cps	627,482 cps	8 cps	3 cps	644,710 cps	123 cps
Intensity per Run 1	56.0 cps	4.0 cps	0.0 cps	0.0 cps	4.0 cps	580,007.7 cps	12.0 cps	4.0 cps	588,891.3 cps	125.0 cps
Intensity per Run 2	52.0 cps	4.0 cps	4.0 cps	0.0 cps	0.0 cps	736,929.2 cps	12.0 cps	4.0 cps	730,281.3 cps	120.0 cps
Intensity per Run 3	28.0 cps	8.0 cps	4.0 cps	0.0 cps	0.0 cps	565,509.1 cps	0.0 cps	0.0 cps	614,957.0 cps	123.0 cps
Intensity RSD	33.4 %	43.3 %	86.6 %	N/A	173.2 %	15.1 %	86.6 %	86.6 %	11.7 %	2.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.004 ppb	0.094 ppb	0.093 ppb	0.093 ppb	18.050 %
Concentration per Run 1	-0.003 ppb	0.108 ppb	0.107 ppb	0.107 ppb	16.053 %
Concentration per Run 2	-0.004 ppb	0.088 ppb	0.090 ppb	0.090 ppb	19.075 %
Concentration per Run 3	-0.005 ppb	0.084 ppb	0.083 ppb	0.082 ppb	19.022 %
Concentration RSD	22.5 %	13.7 %	13.1 %	14.2 %	9.6 %
Intensity average	334 cps	1,373 cps	1,199 cps	5,473 cps	462,610 cps
Intensity per Run 1	328.0 cps	1,407.1 cps	1,216.1 cps	5,595.5 cps	411,440.9 cps
Intensity per Run 2	362.0 cps	1,400.1 cps	1,240.1 cps	5,644.5 cps	488,876.1 cps
Intensity per Run 3	313.0 cps	1,312.1 cps	1,140.1 cps	5,180.4 cps	487,511.9 cps
Intensity RSD	7.5 %	3.9 %	4.4 %	4.7 %	9.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UI26045-002DIS Analysis: 10/30/2019 21:05:38 Sample Type UNKNOWN
Comment MW-24 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	30.214 %	40.904 %	0.007 ppb	1.583 ppb	1.271 ppb	N/A	-1.445 ppb	-2.214 ppb	-2.327 ppb	-2.278 ppb
Concentration per Run 1	30.484 %	26.196 %	0.026 ppb	1.648 ppb	1.902 ppb	N/A	0.038 ppb	-2.141 ppb	-2.056 ppb	-2.287 ppb
Concentration per Run 2	44.980 %	51.655 %	-0.010 ppb	1.263 ppb	0.890 ppb	N/A	-2.473 ppb	-2.268 ppb	-2.474 ppb	-2.235 ppb
Concentration per Run 3	15.177 %	44.860 %	0.006 ppb	1.837 ppb	1.021 ppb	N/A	-1.901 ppb	-2.233 ppb	-2.452 ppb	-2.311 ppb
Concentration RSD	49.3 %	32.2 %	242.7 %	18.5 %	43.3 %	N/A	91.1 %	3.0 %	10.1 %	1.7 %
Intensity average	4,225,512 cps	13,170 cps	2 cps	12 cps	53 cps	1,023 cps	4,924 cps	23 cps	17 cps	13 cps
Intensity per Run 1	4,263,312.6 cps	8,434.4 cps	2.0 cps	8.5 cps	56.0 cps	990.0 cps	4,841.0 cps	40.0 cps	30.0 cps	10.0 cps
Intensity per Run 2	6,290,654.5 cps	16,632.0 cps	1.0 cps	12.5 cps	52.0 cps	990.0 cps	5,141.1 cps	10.0 cps	10.0 cps	20.0 cps
Intensity per Run 3	2,122,567.9 cps	14,444.1 cps	2.0 cps	15.0 cps	50.5 cps	1,090.1 cps	4,790.9 cps	20.0 cps	10.0 cps	10.0 cps
Intensity RSD	49.3 %	32.2 %	34.6 %	27.3 %	5.4 %	5.6 %	3.8 %	65.5 %	69.3 %	43.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.417 ppb		0.022 ppm	-4.109 ppb	-18.917 ppb	-15.454 ppb	-12.202 ppb	29.278 %	31.949 %	0.007 ppb
Concentration per Run 1	-1.337 ppb		0.024 ppm	-3.580 ppb	-18.917 ppb	-16.629 ppb	-12.881 ppb	28.680 %	33.231 %	0.028 ppb
Concentration per Run 2	-1.433 ppb		0.020 ppm	-6.617 ppb	-18.917 ppb	-20.022 ppb	-11.239 ppb	44.768 %	34.502 %	-0.003 ppb
Concentration per Run 3	-1.482 ppb		0.021 ppm	-2.131 ppb	-18.917 ppb	-9.710 ppb	-12.485 ppb	14.386 %	28.114 %	-0.003 ppb
Concentration RSD	5.2 %		10.0 %	55.7 %	0.0 %	34.0 %	7.0 %	51.9 %	10.6 %	257.6 %
Intensity average	27 cps	1,000 cps	50,319 cps	6,052 cps	0 cps	6,618 cps	50 cps	2,015,201 cps	93,797 cps	1 cps
Intensity per Run 1	30.0 cps	1,140.1 cps	51,774.9 cps	6,021.7 cps	0.0 cps	6,942.0 cps	40.0 cps	1,974,045.6 cps	97,560.8 cps	4.0 cps
Intensity per Run 2	30.0 cps	880.0 cps	53,774.7 cps	6,011.6 cps	0.0 cps	6,781.9 cps	70.0 cps	3,081,367.2 cps	101,292.6 cps	0.0 cps
Intensity per Run 3	20.0 cps	980.0 cps	45,407.6 cps	6,121.6 cps	0.0 cps	6,131.5 cps	40.0 cps	990,191.5 cps	82,537.8 cps	0.0 cps
Intensity RSD	21.7 %	13.1 %	8.7 %	1.0 %	N/A	6.5 %	34.6 %	51.9 %	10.6 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.104 ppb	-0.104 ppb	-0.406 ppb	N/A	-0.094 ppb	-1.647 ppb	-1.491 ppb	0.005 ppb	-0.864 ppb	-0.886 ppb
Concentration per Run 1	-0.106 ppb	-0.105 ppb	-0.395 ppb	N/A	-0.115 ppb	-1.702 ppb	-1.414 ppb	0.003 ppb	-0.864 ppb	-0.904 ppb
Concentration per Run 2	-0.104 ppb	-0.109 ppb	-0.416 ppb	N/A	-0.065 ppb	-1.659 ppb	-1.553 ppb	0.004 ppb	-0.850 ppb	-0.835 ppb
Concentration per Run 3	-0.103 ppb	-0.098 ppb	-0.408 ppb	N/A	-0.101 ppb	-1.581 ppb	-1.507 ppb	0.007 ppb	-0.878 ppb	-0.918 ppb
Concentration RSD	1.1 %	5.5 %	2.6 %	N/A	27.3 %	3.7 %	4.7 %	45.7 %	1.6 %	5.1 %
Intensity average	100 cps	124 cps	52 cps	80 cps	227 cps	1,840 cps	40 cps	156 cps	281 cps	41 cps
Intensity per Run 1	98.2 cps	124.0 cps	64.0 cps	80.0 cps	124.0 cps	1,520.1 cps	60.0 cps	136.0 cps	288.0 cps	32.0 cps
Intensity per Run 2	109.5 cps	100.0 cps	44.0 cps	80.0 cps	372.0 cps	1,760.1 cps	28.0 cps	160.0 cps	252.0 cps	68.0 cps
Intensity per Run 3	90.9 cps	148.0 cps	48.0 cps	80.0 cps	184.0 cps	2,240.2 cps	32.0 cps	172.0 cps	304.0 cps	24.0 cps
Intensity RSD	9.4 %	19.4 %	20.4 %	0.0 %	57.1 %	19.9 %	43.6 %	11.8 %	9.5 %	56.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.118 ppb	-0.109 ppb	-2.120 ppb	-1.857 ppb	-1.918 ppb		1.247 ppb	N/A	-0.072 ppb	
Concentration per Run 1	-0.114 ppb	-0.109 ppb	-2.105 ppb	-1.782 ppb	-1.925 ppb		1.078 ppb	N/A	0.073 ppb	
Concentration per Run 2	-0.116 ppb	-0.106 ppb	-2.065 ppb	-1.891 ppb	-1.925 ppb		1.969 ppb	N/A	-0.222 ppb	
Concentration per Run 3	-0.123 ppb	-0.112 ppb	-2.190 ppb	-1.897 ppb	-1.904 ppb		0.693 ppb	N/A	-0.067 ppb	
Concentration RSD	3.9 %	2.9 %	3.0 %	3.5 %	0.6 %		52.5 %	N/A	204.6 %	
Intensity average	211 cps	89 cps	517 cps	73 cps	399 cps	8 cps	2,476 cps	83 cps	-14 cps	356 cps
Intensity per Run 1	248.0 cps	92.0 cps	556.0 cps	100.0 cps	392.0 cps	10.0 cps	2,357.0 cps	90.0 cps	1.4 cps	371.0 cps
Intensity per Run 2	216.0 cps	112.0 cps	464.0 cps	56.0 cps	348.0 cps	8.0 cps	2,389.5 cps	80.0 cps	-26.3 cps	359.0 cps
Intensity per Run 3	168.0 cps	64.0 cps	532.0 cps	64.0 cps	456.0 cps	7.0 cps	2,680.8 cps	80.0 cps	-17.0 cps	338.0 cps
Intensity RSD	19.1 %	27.0 %	9.2 %	32.0 %	13.6 %	18.3 %	7.2 %	6.9 %	100.8 %	4.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.989 ppb		31.563 %	-0.020 ppb	-0.007 ppb	-0.013 ppb	0.011 ppb	-0.011 ppb	0.006 ppm
Concentration per Run 1		-1.667 ppb		31.190 %	-0.021 ppb	-0.001 ppb	-0.006 ppb	0.056 ppb	-0.010 ppb	0.006 ppm
Concentration per Run 2		-5.599 ppb		23.245 %	-0.015 ppb	-0.014 ppb	-0.017 ppb	-0.013 ppb	-0.013 ppb	0.004 ppm
Concentration per Run 3		-1.702 ppb		40.255 %	-0.023 ppb	-0.007 ppb	-0.016 ppb	-0.010 ppb	-0.009 ppb	0.008 ppm
Concentration RSD		75.6 %		27.0 %	22.3 %	92.5 %	48.6 %	350.4 %	21.2 %	34.6 %
Intensity average	3,781 cps	-318 cps	4,007 cps	184,576 cps	29 cps	81 cps	55 cps	129 cps	72 cps	547,923 cps
Intensity per Run 1	3,647.5 cps	-253.5 cps	3,733.6 cps	182,391.9 cps	28.0 cps	116.0 cps	104.0 cps	316.0 cps	76.0 cps	549,345.0 cps
Intensity per Run 2	3,606.5 cps	-352.2 cps	3,919.6 cps	135,932.3 cps	36.0 cps	24.0 cps	20.0 cps	20.0 cps	28.0 cps	357,406.4 cps
Intensity per Run 3	4,087.7 cps	-349.1 cps	4,368.8 cps	235,404.0 cps	24.0 cps	104.0 cps	40.0 cps	52.0 cps	112.0 cps	737,018.0 cps
Intensity RSD	7.1 %	17.6 %	8.1 %	27.0 %	20.8 %	61.5 %	80.3 %	125.6 %	58.5 %	34.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.060 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	32.141 %	-0.020 ppb	-0.006 ppb
Concentration per Run 1		-0.069 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	31.139 %	-0.020 ppb	-0.004 ppb
Concentration per Run 2		-0.044 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	22.749 %	-0.021 ppb	-0.006 ppb
Concentration per Run 3		-0.067 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	42.536 %	-0.019 ppb	-0.006 ppb
Concentration RSD		23.1 %	16.3 %	0.0 %	14.5 %	0.0 %	9.9 %	30.9 %	7.1 %	17.4 %
Intensity average	108 cps	11 cps	13 cps	0 cps	11 cps	0 cps	-1 cps	287,755 cps	81 cps	65 cps
Intensity per Run 1	104.0 cps	8.0 cps	16.0 cps	0.0 cps	8.0 cps	0.0 cps	-2.0 cps	278,777.7 cps	76.0 cps	72.0 cps
Intensity per Run 2	40.0 cps	12.0 cps	8.0 cps	0.0 cps	8.0 cps	0.0 cps	-1.3 cps	203,669.8 cps	48.0 cps	44.0 cps
Intensity per Run 3	180.0 cps	12.0 cps	16.0 cps	0.0 cps	16.0 cps	0.0 cps	0.8 cps	380,816.6 cps	120.0 cps	80.0 cps
Intensity RSD	64.9 %	21.7 %	34.6 %	N/A	43.3 %	N/A	171.9 %	30.9 %	44.6 %	28.9 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.005 ppb	-0.022 ppb	-0.021 ppb			31.125 %			0.005 ppm	-0.008 ppb
Concentration per Run 1	-0.003 ppb	-0.021 ppb	-0.022 ppb			26.740 %			0.004 ppm	-0.006 ppb
Concentration per Run 2	-0.004 ppb	-0.025 ppb	-0.020 ppb			27.645 %			0.004 ppm	-0.009 ppb
Concentration per Run 3	-0.008 ppb	-0.022 ppb	-0.021 ppb			38.990 %			0.006 ppm	-0.009 ppb
Concentration RSD	54.2 %	9.6 %	6.7 %			21.9 %			23.0 %	24.7 %
Intensity average	53 cps	5 cps	9 cps	0 cps	3 cps	978,342 cps	20 cps	7 cps	1,045,258 cps	147 cps
Intensity per Run 1	68.0 cps	8.0 cps	4.0 cps	0.0 cps	0.0 cps	840,514.6 cps	16.0 cps	4.0 cps	830,592.3 cps	153.0 cps
Intensity per Run 2	48.0 cps	0.0 cps	12.0 cps	0.0 cps	4.0 cps	868,950.2 cps	20.0 cps	4.0 cps	1,000,364.9 cps	146.0 cps
Intensity per Run 3	44.0 cps	8.0 cps	12.0 cps	0.0 cps	4.0 cps	1,225,562.1 cps	24.0 cps	12.0 cps	1,304,818.0 cps	142.0 cps
Intensity RSD	24.1 %	86.6 %	49.5 %	N/A	86.6 %	21.9 %	20.0 %	69.3 %	23.0 %	3.8 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.008 ppb	0.044 ppb	0.041 ppb	0.040 ppb	38.114 %
Concentration per Run 1	-0.007 ppb	0.063 ppb	0.058 ppb	0.058 ppb	23.771 %
Concentration per Run 2	-0.009 ppb	0.027 ppb	0.025 ppb	0.025 ppb	49.942 %
Concentration per Run 3	-0.008 ppb	0.042 ppb	0.041 ppb	0.038 ppb	40.628 %
Concentration RSD	14.9 %	40.1 %	40.1 %	40.9 %	34.8 %
Intensity average	332 cps	1,397 cps	1,163 cps	5,263 cps	976,830 cps
Intensity per Run 1	287.0 cps	1,281.1 cps	1,048.0 cps	4,777.4 cps	609,230.4 cps
Intensity per Run 2	331.0 cps	1,345.1 cps	1,108.1 cps	5,217.5 cps	1,279,981.1 cps
Intensity per Run 3	377.0 cps	1,565.1 cps	1,332.1 cps	5,793.5 cps	1,041,279.5 cps
Intensity RSD	13.6 %	10.7 %	12.9 %	9.7 %	34.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UI26045-003DIS Analysis: 10/30/2019 21:11:44 Sample Type UNKNOWN
Comment MW-25 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	32.175 %	34.609 %	0.014 ppb	1.459 ppb	1.890 ppb	N/A	0.400 ppb	-2.215 ppb	-2.494 ppb	-2.140 ppb
Concentration per Run 1	22.726 %	33.758 %	-0.013 ppb	1.139 ppb	1.935 ppb	N/A	-0.703 ppb	-2.294 ppb	-2.597 ppb	-2.280 ppb
Concentration per Run 2	37.469 %	19.688 %	0.058 ppb	1.632 ppb	2.487 ppb	N/A	4.677 ppb	-2.164 ppb	-2.287 ppb	-1.717 ppb
Concentration per Run 3	36.331 %	50.382 %	-0.003 ppb	1.604 ppb	1.248 ppb	N/A	-2.775 ppb	-2.188 ppb	-2.597 ppb	-2.422 ppb
Concentration RSD	25.5 %	44.4 %	274.4 %	19.0 %	32.8 %	N/A	962.3 %	3.1 %	7.2 %	17.4 %
Intensity average	4,499,815 cps	11,143 cps	2 cps	10 cps	62 cps	1,037 cps	4,538 cps	20 cps	3 cps	13 cps
Intensity per Run 1	3,178,291.7 cps	10,869.3 cps	0.5 cps	7.5 cps	68.0 cps	950.0 cps	4,390.8 cps	0.0 cps	0.0 cps	10.0 cps
Intensity per Run 2	5,240,183.3 cps	6,339.2 cps	2.5 cps	6.0 cps	50.5 cps	1,050.0 cps	4,470.8 cps	20.0 cps	10.0 cps	30.0 cps
Intensity per Run 3	5,080,968.9 cps	16,221.9 cps	1.5 cps	15.0 cps	68.0 cps	1,110.1 cps	4,750.9 cps	40.0 cps	0.0 cps	0.0 cps
Intensity RSD	25.5 %	44.4 %	66.7 %	50.8 %	16.3 %	7.8 %	4.2 %	100.0 %	173.2 %	114.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.496 ppb		0.030 ppm	2.022 ppb	-16.522 ppb	-17.806 ppb	-9.623 ppb	31.553 %	23.691 %	-0.003 ppb
Concentration per Run 1	-1.431 ppb		0.027 ppm	0.992 ppb	-18.917 ppb	-15.707 ppb	-7.395 ppb	21.461 %	23.043 %	-0.003 ppb
Concentration per Run 2	-1.471 ppb		0.041 ppm	12.138 ppb	-18.917 ppb	-18.933 ppb	-9.754 ppb	38.161 %	14.574 %	-0.003 ppb
Concentration per Run 3	-1.586 ppb		0.022 ppm	-7.064 ppb	-11.733 ppb	-18.778 ppb	-11.721 ppb	35.038 %	33.455 %	-0.003 ppb
Concentration RSD	5.4 %		32.1 %	476.8 %	25.1 %	10.2 %	22.5 %	28.1 %	39.9 %	0.0 %
Intensity average	13 cps	750 cps	49,852 cps	5,391 cps	3 cps	6,358 cps	63 cps	2,171,801 cps	69,552 cps	0 cps
Intensity per Run 1	20.0 cps	810.0 cps	47,996.5 cps	5,571.3 cps	0.0 cps	5,721.3 cps	90.0 cps	1,477,153.1 cps	67,650.9 cps	0.0 cps
Intensity per Run 2	10.0 cps	670.0 cps	44,320.2 cps	4,901.0 cps	0.0 cps	6,882.0 cps	40.0 cps	2,626,608.2 cps	42,787.4 cps	0.0 cps
Intensity per Run 3	10.0 cps	770.0 cps	57,240.5 cps	5,701.4 cps	10.0 cps	6,471.7 cps	60.0 cps	2,411,641.2 cps	98,218.7 cps	0.0 cps
Intensity RSD	43.3 %	9.6 %	13.4 %	8.0 %	173.2 %	9.3 %	39.7 %	28.1 %	39.9 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.109 ppb	-0.093 ppb	-0.363 ppb	N/A	-0.110 ppb	-1.674 ppb	-1.463 ppb	0.009 ppb	-0.873 ppb	-0.874 ppb
Concentration per Run 1	-0.106 ppb	-0.096 ppb	-0.376 ppb	N/A	-0.117 ppb	-1.693 ppb	-1.496 ppb	0.007 ppb	-0.888 ppb	-0.889 ppb
Concentration per Run 2	-0.106 ppb	-0.081 ppb	-0.331 ppb	N/A	-0.122 ppb	-1.640 ppb	-1.359 ppb	0.016 ppb	-0.907 ppb	-0.914 ppb
Concentration per Run 3	-0.114 ppb	-0.103 ppb	-0.383 ppb	N/A	-0.091 ppb	-1.689 ppb	-1.532 ppb	0.004 ppb	-0.823 ppb	-0.821 ppb
Concentration RSD	4.2 %	12.0 %	7.7 %	N/A	14.9 %	1.8 %	6.2 %	68.8 %	5.0 %	5.5 %
Intensity average	57 cps	132 cps	65 cps	47 cps	121 cps	1,247 cps	31 cps	152 cps	200 cps	40 cps
Intensity per Run 1	66.4 cps	128.0 cps	60.0 cps	50.0 cps	84.0 cps	1,180.1 cps	28.0 cps	144.0 cps	184.0 cps	32.0 cps
Intensity per Run 2	42.4 cps	128.0 cps	64.0 cps	50.0 cps	48.0 cps	1,060.1 cps	32.0 cps	156.0 cps	116.0 cps	16.0 cps
Intensity per Run 3	61.5 cps	140.0 cps	72.0 cps	40.0 cps	232.0 cps	1,500.1 cps	32.0 cps	156.0 cps	300.0 cps	72.0 cps
Intensity RSD	22.3 %	5.2 %	9.4 %	12.4 %	80.4 %	18.2 %	7.5 %	4.6 %	46.5 %	72.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.117 ppb	-0.107 ppb	-2.068 ppb	-1.886 ppb	-1.891 ppb		1.586 ppb	N/A	0.018 ppb	
Concentration per Run 1	-0.123 ppb	-0.117 ppb	-2.185 ppb	-1.913 ppb	-1.928 ppb		1.211 ppb	N/A	0.007 ppb	
Concentration per Run 2	-0.108 ppb	-0.097 ppb	-2.157 ppb	-1.930 ppb	-1.914 ppb		1.682 ppb	N/A	0.007 ppb	
Concentration per Run 3	-0.121 ppb	-0.106 ppb	-1.864 ppb	-1.814 ppb	-1.832 ppb		1.865 ppb	N/A	0.039 ppb	
Concentration RSD	6.8 %	9.4 %	8.6 %	3.3 %	2.7 %		21.3 %	N/A	106.8 %	
Intensity average	160 cps	71 cps	499 cps	51 cps	348 cps	6 cps	2,389 cps	60 cps	-4 cps	345 cps
Intensity per Run 1	128.0 cps	36.0 cps	396.0 cps	44.0 cps	312.0 cps	5.0 cps	2,469.7 cps	70.0 cps	-5.3 cps	335.0 cps
Intensity per Run 2	188.0 cps	68.0 cps	380.0 cps	32.0 cps	272.0 cps	7.0 cps	2,485.4 cps	60.0 cps	-4.7 cps	335.0 cps
Intensity per Run 3	164.0 cps	108.0 cps	720.0 cps	76.0 cps	460.0 cps	7.0 cps	2,212.4 cps	50.0 cps	-1.9 cps	365.0 cps
Intensity RSD	18.9 %	51.0 %	38.5 %	44.9 %	28.5 %	18.2 %	6.4 %	16.7 %	46.1 %	5.0 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.517 ppb		25.850 %	0.052 ppb	-0.004 ppb	-0.011 ppb	-0.006 ppb	-0.006 ppb	0.005 ppm
Concentration per Run 1		-0.823 ppb		28.567 %	-0.024 ppb	-0.005 ppb	-0.012 ppb	-0.010 ppb	-0.004 ppb	0.006 ppm
Concentration per Run 2		-2.068 ppb		27.529 %	0.191 ppb	0.002 ppb	-0.007 ppb	-0.009 ppb	-0.010 ppb	0.005 ppm
Concentration per Run 3		-1.659 ppb		21.454 %	-0.011 ppb	-0.009 ppb	-0.013 ppb	0.001 ppb	-0.004 ppb	0.004 ppm
Concentration RSD		41.9 %		14.9 %	230.5 %	136.3 %	32.2 %	106.8 %	60.8 %	21.7 %
Intensity average	3,616 cps	-204 cps	3,743 cps	151,165 cps	244 cps	81 cps	59 cps	44 cps	99 cps	473,711 cps
Intensity per Run 1	3,817.6 cps	-202.6 cps	3,852.6 cps	167,052.2 cps	16.0 cps	84.0 cps	56.0 cps	36.0 cps	132.0 cps	572,682.1 cps
Intensity per Run 2	3,686.5 cps	-231.3 cps	3,931.6 cps	160,982.2 cps	672.1 cps	116.0 cps	84.0 cps	36.0 cps	64.0 cps	480,582.2 cps
Intensity per Run 3	3,342.4 cps	-177.0 cps	3,445.5 cps	125,460.6 cps	44.0 cps	44.0 cps	36.0 cps	60.0 cps	100.0 cps	367,868.3 cps
Intensity RSD	6.8 %	13.3 %	7.0 %	14.9 %	152.0 %	44.4 %	41.1 %	31.5 %	34.5 %	21.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.013 ppb	0.000 ppb	0.004 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	26.211 %	-0.019 ppb	-0.003 ppb
Concentration per Run 1		-0.031 ppb	-0.001 ppb	0.015 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	30.846 %	-0.017 ppb	-0.003 ppb
Concentration per Run 2		0.049 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	26.008 %	-0.022 ppb	-0.003 ppb
Concentration per Run 3		-0.059 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	21.779 %	-0.019 ppb	-0.003 ppb
Concentration RSD		419.1 %	90.4 %	248.1 %	154.5 %	0.0 %	3.3 %	17.3 %	12.4 %	6.4 %
Intensity average	83 cps	23 cps	19 cps	1 cps	13 cps	0 cps	-2 cps	234,664 cps	71 cps	72 cps
Intensity per Run 1	140.0 cps	20.0 cps	16.0 cps	4.0 cps	4.0 cps	0.0 cps	-2.7 cps	276,162.0 cps	100.0 cps	84.0 cps
Intensity per Run 2	56.0 cps	40.0 cps	24.0 cps	0.0 cps	20.0 cps	0.0 cps	-1.4 cps	232,846.4 cps	52.0 cps	72.0 cps
Intensity per Run 3	52.0 cps	8.0 cps	16.0 cps	0.0 cps	16.0 cps	0.0 cps	-1.6 cps	194,984.2 cps	60.0 cps	60.0 cps
Intensity RSD	60.1 %	71.3 %	24.7 %	173.2 %	62.4 %	N/A	36.4 %	17.3 %	36.4 %	16.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.005 ppb	-0.024 ppb	-0.020 ppb			25.005 %			0.004 ppm	-0.008 ppb
Concentration per Run 1	-0.008 ppb	-0.025 ppb	-0.021 ppb			25.800 %			0.004 ppm	-0.008 ppb
Concentration per Run 2	-0.002 ppb	-0.025 ppb	-0.018 ppb			24.096 %			0.004 ppm	-0.007 ppb
Concentration per Run 3	-0.005 ppb	-0.022 ppb	-0.019 ppb			25.120 %			0.004 ppm	-0.009 ppb
Concentration RSD	61.2 %	6.3 %	7.6 %			3.4 %			6.4 %	14.0 %
Intensity average	45 cps	1 cps	12 cps	1 cps	5 cps	785,988 cps	9 cps	5 cps	845,074 cps	123 cps
Intensity per Run 1	32.0 cps	0.0 cps	8.0 cps	4.0 cps	12.0 cps	810,965.1 cps	4.0 cps	8.0 cps	821,439.3 cps	120.0 cps
Intensity per Run 2	64.0 cps	0.0 cps	16.0 cps	0.0 cps	0.0 cps	757,415.6 cps	16.0 cps	8.0 cps	806,681.8 cps	136.0 cps
Intensity per Run 3	40.0 cps	4.0 cps	12.0 cps	0.0 cps	4.0 cps	789,583.6 cps	8.0 cps	0.0 cps	907,099.6 cps	113.0 cps
Intensity RSD	36.7 %	173.2 %	33.3 %	173.2 %	114.6 %	3.4 %	65.5 %	86.6 %	6.4 %	9.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.008 ppb	0.044 ppb	0.047 ppb	0.043 ppb	31.368 %
Concentration per Run 1	-0.007 ppb	0.048 ppb	0.049 ppb	0.047 ppb	28.011 %
Concentration per Run 2	-0.007 ppb	0.050 ppb	0.061 ppb	0.053 ppb	27.228 %
Concentration per Run 3	-0.009 ppb	0.033 ppb	0.031 ppb	0.031 ppb	38.864 %
Concentration RSD	11.1 %	21.5 %	31.3 %	26.1 %	20.7 %
Intensity average	322 cps	1,198 cps	1,107 cps	4,836 cps	803,930 cps
Intensity per Run 1	333.0 cps	1,193.1 cps	1,056.0 cps	4,713.4 cps	717,907.7 cps
Intensity per Run 2	309.0 cps	1,197.1 cps	1,236.1 cps	5,073.4 cps	697,831.0 cps
Intensity per Run 3	325.0 cps	1,205.1 cps	1,028.0 cps	4,721.4 cps	996,050.7 cps
Intensity RSD	3.8 %	0.5 %	10.2 %	4.3 %	20.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UI26045-004DIS Analysis: 10/30/2019 21:17:49 Sample Type UNKNOWN
Comment MW-9 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	49.917 %	40.207 %	0.008 ppb	0.820 ppb	0.957 ppb	N/A	-2.214 ppb	-2.176 ppb	-2.461 ppb	-2.349 ppb
Concentration per Run 1	77.518 %	56.033 %	-0.011 ppb	0.552 ppb	0.592 ppb	N/A	-3.438 ppb	-2.245 ppb	-2.361 ppb	-2.332 ppb
Concentration per Run 2	38.458 %	31.653 %	0.048 ppb	0.813 ppb	1.012 ppb	N/A	-1.071 ppb	-2.113 ppb	-2.426 ppb	-2.293 ppb
Concentration per Run 3	33.775 %	32.935 %	-0.012 ppb	1.095 ppb	1.266 ppb	N/A	-2.133 ppb	-2.171 ppb	-2.597 ppb	-2.422 ppb
Concentration RSD	48.1 %	34.1 %	422.0 %	33.1 %	35.6 %	N/A	53.6 %	3.0 %	5.0 %	2.8 %
Intensity average	6,981,094 cps	12,946 cps	2 cps	7 cps	42 cps	1,190 cps	4,494 cps	37 cps	10 cps	7 cps
Intensity per Run 1	10,841,171.3 cps	18,041.5 cps	1.0 cps	7.0 cps	40.0 cps	1,210.1 cps	4,520.8 cps	20.0 cps	20.0 cps	10.0 cps
Intensity per Run 2	5,378,536.6 cps	10,191.5 cps	3.5 cps	5.5 cps	37.0 cps	1,250.1 cps	4,480.8 cps	50.0 cps	10.0 cps	10.0 cps
Intensity per Run 3	4,723,574.2 cps	10,604.3 cps	0.5 cps	7.5 cps	48.5 cps	1,110.1 cps	4,480.8 cps	40.0 cps	0.0 cps	0.0 cps
Intensity RSD	48.1 %	34.1 %	96.4 %	15.6 %	14.3 %	6.1 %	0.5 %	41.7 %	100.0 %	86.6 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.382 ppb		0.019 ppm	-5.089 ppb	-16.889 ppb	-19.722 ppb	-10.651 ppb	47.982 %	35.105 %	-0.003 ppb
Concentration per Run 1	-1.591 ppb		0.016 ppm	-7.027 ppb	-18.917 ppb	-22.153 ppb	-11.174 ppb	72.133 %	33.837 %	-0.003 ppb
Concentration per Run 2	-1.242 ppb		0.021 ppm	-2.961 ppb	-18.917 ppb	-19.395 ppb	-7.935 ppb	39.956 %	30.538 %	-0.003 ppb
Concentration per Run 3	-1.313 ppb		0.019 ppm	-5.279 ppb	-12.833 ppb	-17.618 ppb	-12.845 ppb	31.857 %	40.940 %	-0.003 ppb
Concentration RSD	13.4 %		13.4 %	40.1 %	20.8 %	11.6 %	23.4 %	44.4 %	15.1 %	0.0 %
Intensity average	30 cps	1,000 cps	46,616 cps	6,228 cps	3 cps	6,812 cps	77 cps	3,302,603 cps	103,061 cps	0 cps
Intensity per Run 1	10.0 cps	1,030.0 cps	43,893.5 cps	5,901.4 cps	0.0 cps	6,851.9 cps	70.0 cps	4,964,920.5 cps	99,338.5 cps	0.0 cps
Intensity per Run 2	40.0 cps	1,010.0 cps	44,897.0 cps	5,911.5 cps	0.0 cps	6,711.9 cps	110.0 cps	2,750,168.6 cps	89,653.3 cps	0.0 cps
Intensity per Run 3	40.0 cps	960.0 cps	51,057.0 cps	6,872.2 cps	10.0 cps	6,871.9 cps	50.0 cps	2,192,718.5 cps	120,191.5 cps	0.0 cps
Intensity RSD	57.7 %	3.6 %	8.3 %	9.0 %	173.2 %	1.3 %	39.8 %	44.4 %	15.1 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.111 ppb	-0.105 ppb	-0.381 ppb	N/A	-0.082 ppb	-1.724 ppb	-1.583 ppb	0.007 ppb	-0.853 ppb	-0.878 ppb
Concentration per Run 1	-0.108 ppb	-0.103 ppb	-0.373 ppb	N/A	-0.058 ppb	-1.734 ppb	-1.517 ppb	0.008 ppb	-0.849 ppb	-0.860 ppb
Concentration per Run 2	-0.108 ppb	-0.108 ppb	-0.403 ppb	N/A	-0.097 ppb	-1.710 ppb	-1.593 ppb	0.007 ppb	-0.854 ppb	-0.872 ppb
Concentration per Run 3	-0.116 ppb	-0.104 ppb	-0.366 ppb	N/A	-0.092 ppb	-1.730 ppb	-1.639 ppb	0.005 ppb	-0.857 ppb	-0.903 ppb
Concentration RSD	3.9 %	2.5 %	5.3 %	N/A	25.9 %	0.7 %	3.9 %	16.6 %	0.5 %	2.5 %
Intensity average	77 cps	133 cps	83 cps	87 cps	307 cps	1,420 cps	20 cps	209 cps	328 cps	48 cps
Intensity per Run 1	86.8 cps	140.0 cps	84.0 cps	50.0 cps	416.0 cps	1,280.1 cps	36.0 cps	216.0 cps	300.0 cps	56.0 cps
Intensity per Run 2	78.6 cps	96.0 cps	52.0 cps	90.0 cps	204.0 cps	1,360.1 cps	16.0 cps	192.0 cps	312.0 cps	48.0 cps
Intensity per Run 3	64.6 cps	164.0 cps	112.0 cps	120.0 cps	300.0 cps	1,620.2 cps	8.0 cps	220.0 cps	372.0 cps	40.0 cps
Intensity RSD	14.6 %	25.9 %	36.3 %	40.5 %	34.6 %	12.5 %	72.1 %	7.2 %	11.8 %	16.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.122 ppb	-0.107 ppb	-2.148 ppb	-1.825 ppb	-1.906 ppb		0.583 ppb	N/A	0.038 ppb	
Concentration per Run 1	-0.120 ppb	-0.111 ppb	-2.197 ppb	-1.815 ppb	-1.859 ppb		0.369 ppb	N/A	0.147 ppb	
Concentration per Run 2	-0.125 ppb	-0.103 ppb	-2.184 ppb	-1.875 ppb	-1.975 ppb		0.632 ppb	N/A	-0.066 ppb	
Concentration per Run 3	-0.121 ppb	-0.108 ppb	-2.063 ppb	-1.784 ppb	-1.883 ppb		0.748 ppb	N/A	0.033 ppb	
Concentration RSD	2.1 %	3.6 %	3.5 %	2.5 %	3.2 %		33.3 %	N/A	279.7 %	
Intensity average	181 cps	105 cps	607 cps	89 cps	440 cps	11 cps	2,397 cps	63 cps	-3 cps	316 cps
Intensity per Run 1	184.0 cps	84.0 cps	532.0 cps	84.0 cps	472.0 cps	14.0 cps	2,312.0 cps	0.0 cps	8.9 cps	283.0 cps
Intensity per Run 2	136.0 cps	112.0 cps	512.0 cps	64.0 cps	292.0 cps	10.0 cps	2,426.1 cps	140.0 cps	-13.7 cps	342.0 cps
Intensity per Run 3	224.0 cps	120.0 cps	776.0 cps	120.0 cps	556.0 cps	9.0 cps	2,452.6 cps	50.0 cps	-3.7 cps	322.0 cps
Intensity RSD	24.3 %	17.9 %	24.2 %	31.8 %	30.7 %	24.1 %	3.1 %	112.0 %	399.4 %	9.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.724 ppb		31.423 %	-0.020 ppb	-0.011 ppb	-0.017 ppb	-0.011 ppb	-0.009 ppb	0.007 ppm
Concentration per Run 1		-1.170 ppb		27.233 %	-0.017 ppb	-0.011 ppb	-0.015 ppb	-0.005 ppb	-0.012 ppb	0.007 ppm
Concentration per Run 2		-0.502 ppb		30.145 %	-0.022 ppb	-0.011 ppb	-0.018 ppb	-0.010 ppb	-0.007 ppb	0.006 ppm
Concentration per Run 3		-3.500 ppb		36.890 %	-0.022 ppb	-0.011 ppb	-0.017 ppb	-0.018 ppb	-0.010 ppb	0.007 ppm
Concentration RSD		91.3 %		15.8 %	14.1 %	1.5 %	10.3 %	62.5 %	24.9 %	7.1 %
Intensity average	3,632 cps	-331 cps	3,872 cps	183,754 cps	31 cps	55 cps	29 cps	36 cps	88 cps	601,152 cps
Intensity per Run 1	3,301.4 cps	-318.6 cps	3,617.5 cps	159,254.1 cps	40.0 cps	52.0 cps	40.0 cps	64.0 cps	60.0 cps	612,134.6 cps
Intensity per Run 2	3,764.6 cps	-237.3 cps	3,931.6 cps	176,280.8 cps	24.0 cps	52.0 cps	16.0 cps	40.0 cps	116.0 cps	554,215.2 cps
Intensity per Run 3	3,828.6 cps	-437.5 cps	4,065.7 cps	215,726.8 cps	28.0 cps	60.0 cps	32.0 cps	4.0 cps	88.0 cps	637,107.7 cps
Intensity RSD	7.9 %	30.4 %	5.9 %	15.8 %	27.2 %	8.4 %	41.7 %	83.9 %	31.8 %	7.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.029 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	40.582 %	-0.019 ppb	-0.007 ppb
Concentration per Run 1		-0.064 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	44.152 %	-0.013 ppb	-0.007 ppb
Concentration per Run 2		0.031 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	39.762 %	-0.023 ppb	-0.005 ppb
Concentration per Run 3		-0.053 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	37.831 %	-0.022 ppb	-0.010 ppb
Concentration RSD		181.8 %	30.8 %	0.0 %	22.0 %	0.0 %	13.3 %	8.0 %	30.0 %	33.0 %
Intensity average	105 cps	25 cps	11 cps	0 cps	9 cps	0 cps	0 cps	363,322 cps	112 cps	64 cps
Intensity per Run 1	144.0 cps	12.0 cps	8.0 cps	0.0 cps	12.0 cps	0.0 cps	-1.3 cps	395,287.7 cps	196.0 cps	72.0 cps
Intensity per Run 2	72.0 cps	48.0 cps	20.0 cps	0.0 cps	4.0 cps	0.0 cps	2.3 cps	355,986.0 cps	64.0 cps	88.0 cps
Intensity per Run 3	100.0 cps	16.0 cps	4.0 cps	0.0 cps	12.0 cps	0.0 cps	-2.0 cps	338,691.4 cps	76.0 cps	32.0 cps
Intensity RSD	34.5 %	77.9 %	78.1 %	N/A	49.5 %	N/A	679.2 %	8.0 %	65.2 %	45.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.009 ppb	-0.024 ppb	-0.021 ppb			42.156 %			0.006 ppm	-0.008 ppb
Concentration per Run 1	-0.008 ppb	-0.023 ppb	-0.021 ppb			45.224 %			0.007 ppm	-0.009 ppb
Concentration per Run 2	-0.009 ppb	-0.023 ppb	-0.023 ppb			43.132 %			0.006 ppm	-0.007 ppb
Concentration per Run 3	-0.010 ppb	-0.025 ppb	-0.021 ppb			38.112 %			0.005 ppm	-0.009 ppb
Concentration RSD	11.6 %	3.4 %	5.4 %			8.7 %			9.5 %	10.5 %
Intensity average	37 cps	3 cps	11 cps	0 cps	1 cps	1,325,079 cps	16 cps	8 cps	1,340,993 cps	158 cps
Intensity per Run 1	48.0 cps	4.0 cps	16.0 cps	0.0 cps	0.0 cps	1,421,524.3 cps	24.0 cps	12.0 cps	1,476,213.2 cps	170.0 cps
Intensity per Run 2	40.0 cps	4.0 cps	4.0 cps	0.0 cps	0.0 cps	1,355,749.6 cps	8.0 cps	4.0 cps	1,324,474.1 cps	166.0 cps
Intensity per Run 3	24.0 cps	0.0 cps	12.0 cps	0.0 cps	4.0 cps	1,197,962.6 cps	16.0 cps	8.0 cps	1,222,291.3 cps	137.0 cps
Intensity RSD	32.7 %	86.6 %	57.3 %	N/A	173.2 %	8.7 %	50.0 %	50.0 %	9.5 %	11.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.008 ppb	0.046 ppb	0.045 ppb	0.046 ppb	39.560 %
Concentration per Run 1	-0.009 ppb	0.037 ppb	0.035 ppb	0.038 ppb	47.038 %
Concentration per Run 2	-0.007 ppb	0.054 ppb	0.055 ppb	0.056 ppb	32.462 %
Concentration per Run 3	-0.008 ppb	0.046 ppb	0.046 ppb	0.043 ppb	39.181 %
Concentration RSD	9.7 %	19.2 %	22.7 %	21.2 %	18.4 %
Intensity average	357 cps	1,600 cps	1,387 cps	6,403 cps	1,013,903 cps
Intensity per Run 1	356.0 cps	1,625.1 cps	1,352.1 cps	6,669.8 cps	1,205,547.5 cps
Intensity per Run 2	361.0 cps	1,571.1 cps	1,380.1 cps	6,399.7 cps	831,977.7 cps
Intensity per Run 3	355.0 cps	1,604.1 cps	1,428.1 cps	6,140.6 cps	1,004,184.5 cps
Intensity RSD	0.9 %	1.7 %	2.8 %	4.1 %	18.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UI26045-005DIS Analysis: 10/30/2019 21:23:54 Sample Type UNKNOWN
Comment MW-10 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	140.717 %	70.615 %	-0.002 ppb	1.288 ppb	1.045 ppb	N/A	2.710 ppb	4.322 ppb	4.434 ppb	4.229 ppb
Concentration per Run 1	141.403 %	38.413 %	-0.014 ppb	1.761 ppb	0.930 ppb	N/A	-2.606 ppb	-2.099 ppb	-2.333 ppb	-2.422 ppb
Concentration per Run 2	141.300 %	24.888 %	0.003 ppb	1.905 ppb	1.756 ppb	N/A	-1.256 ppb	-2.082 ppb	-2.266 ppb	-2.176 ppb
Concentration per Run 3	139.447 %	148.544 %	0.003 ppb	0.197 ppb	0.449 ppb	N/A	11.991 ppb	17.146 ppb	17.900 ppb	17.284 ppb
Concentration RSD	0.8 %	96.1 %	414.3 %	73.6 %	63.2 %	N/A	297.7 %	257.0 %	263.0 %	267.4 %
Intensity average	19,679,708 cps	22,737 cps	3 cps	11 cps	62 cps	1,147 cps	23,487 cps	8,956 cps	1,994 cps	2,546 cps
Intensity per Run 1	19,775,673.8 cps	12,368.0 cps	0.5 cps	13.0 cps	42.5 cps	1,020.0 cps	4,570.9 cps	70.0 cps	20.0 cps	0.0 cps
Intensity per Run 2	19,761,336.6 cps	8,013.3 cps	1.0 cps	9.5 cps	51.5 cps	970.0 cps	4,410.8 cps	60.0 cps	20.0 cps	20.0 cps
Intensity per Run 3	19,502,114.6 cps	47,828.2 cps	6.0 cps	10.5 cps	91.5 cps	1,450.1 cps	61,478.3 cps	26,737.4 cps	5,940.6 cps	7,617.1 cps
Intensity RSD	0.8 %	96.1 %	121.7 %	16.4 %	42.2 %	23.0 %	140.1 %	171.9 %	171.5 %	172.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.130 ppb		0.014 ppm	-8.479 ppb	-2.182 ppb	3,786.861 ppb	-2.361 ppb	143.388 %	81.240 %	0.018 ppb
Concentration per Run 1	-1.423 ppb		0.017 ppm	-6.900 ppb	-7.244 ppb	3,422.075 ppb	-13.431 ppb	146.258 %	42.459 %	0.022 ppb
Concentration per Run 2	-1.466 ppb		0.019 ppm	-4.540 ppb	-12.629 ppb	3,824.048 ppb	-12.772 ppb	142.189 %	39.990 %	0.023 ppb
Concentration per Run 3	-0.502 ppb		0.006 ppm	-13.996 ppb	13.327 ppb	4,114.460 ppb	19.122 ppb	141.715 %	161.270 %	0.010 ppb
Concentration RSD	48.2 %		49.8 %	58.0 %	627.8 %	9.2 %	788.2 %	1.7 %	85.3 %	41.3 %
Intensity average	200 cps	1,373 cps	52,849 cps	9,785 cps	80 cps	14,511,845 cps	924 cps	9,869,379 cps	238,506 cps	5 cps
Intensity per Run 1	30.0 cps	1,090.1 cps	47,144.8 cps	6,672.0 cps	20.0 cps	13,394,282.3 cps	40.0 cps	10,066,978.0 cps	124,652.3 cps	4.0 cps
Intensity per Run 2	20.0 cps	1,090.1 cps	46,637.2 cps	6,752.1 cps	10.0 cps	14,549,850.7 cps	50.0 cps	9,786,879.8 cps	117,403.3 cps	4.0 cps
Intensity per Run 3	550.1 cps	1,940.2 cps	64,763.5 cps	15,932.3 cps	210.0 cps	15,591,403.5 cps	2,682.1 cps	9,754,280.1 cps	473,461.6 cps	8.0 cps
Intensity RSD	151.6 %	35.7 %	19.5 %	54.4 %	140.9 %	7.6 %	164.8 %	1.7 %	85.3 %	43.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.110 ppb	-0.099 ppb	-0.399 ppb	N/A	0.631 ppb	-1.156 ppb	-0.977 ppb	0.008 ppb	-0.832 ppb	-0.880 ppb
Concentration per Run 1	-0.111 ppb	-0.103 ppb	-0.411 ppb	N/A	-0.091 ppb	-1.737 ppb	-1.587 ppb	0.006 ppb	-0.843 ppb	-0.899 ppb
Concentration per Run 2	-0.109 ppb	-0.102 ppb	-0.365 ppb	N/A	-0.099 ppb	-1.698 ppb	-1.652 ppb	0.005 ppb	-0.820 ppb	-0.906 ppb
Concentration per Run 3	-0.109 ppb	-0.092 ppb	-0.421 ppb	N/A	2.084 ppb	-0.034 ppb	0.308 ppb	0.013 ppb	-0.833 ppb	-0.833 ppb
Concentration RSD	1.3 %	6.4 %	7.4 %	N/A	199.3 %	84.1 %	114.0 %	50.6 %	1.4 %	4.6 %
Intensity average	200 cps	465 cps	120 cps	113 cps	19,087 cps	22,469 cps	768 cps	626 cps	915 cps	147 cps
Intensity per Run 1	91.7 cps	172.0 cps	60.0 cps	50.0 cps	296.0 cps	1,520.2 cps	24.0 cps	236.0 cps	328.0 cps	40.0 cps
Intensity per Run 2	97.3 cps	176.0 cps	104.0 cps	30.0 cps	228.0 cps	1,700.1 cps	4.0 cps	212.0 cps	344.0 cps	32.0 cps
Intensity per Run 3	409.8 cps	1,048.1 cps	196.0 cps	260.0 cps	56,737.8 cps	64,185.9 cps	2,277.3 cps	1,428.5 cps	2,072.3 cps	368.0 cps
Intensity RSD	91.2 %	108.4 %	57.8 %	112.4 %	170.8 %	160.8 %	170.1 %	111.2 %	109.6 %	130.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.111 ppb	-0.105 ppb	-2.054 ppb	-1.778 ppb	-1.920 ppb		0.892 ppb	N/A	0.060 ppb	
Concentration per Run 1	-0.116 ppb	-0.112 ppb	-2.105 ppb	-1.755 ppb	-1.952 ppb		1.216 ppb	N/A	0.060 ppb	
Concentration per Run 2	-0.114 ppb	-0.110 ppb	-1.937 ppb	-1.838 ppb	-1.915 ppb		2.209 ppb	N/A	0.007 ppb	
Concentration per Run 3	-0.104 ppb	-0.092 ppb	-2.119 ppb	-1.742 ppb	-1.893 ppb		-0.749 ppb	N/A	0.112 ppb	
Concentration RSD	5.7 %	10.8 %	4.9 %	2.9 %	1.6 %		168.8 %	N/A	88.5 %	
Intensity average	755 cps	360 cps	1,319 cps	257 cps	1,001 cps	6 cps	2,452 cps	87 cps	8 cps	451 cps
Intensity per Run 1	264.0 cps	96.0 cps	544.0 cps	120.0 cps	376.0 cps	10.0 cps	2,447.5 cps	110.0 cps	-0.1 cps	324.0 cps
Intensity per Run 2	264.0 cps	104.0 cps	584.0 cps	80.0 cps	400.0 cps	5.0 cps	2,320.3 cps	40.0 cps	-5.4 cps	342.0 cps
Intensity per Run 3	1,736.3 cps	880.1 cps	2,828.4 cps	572.0 cps	2,228.3 cps	3.0 cps	2,587.2 cps	110.0 cps	29.7 cps	686.0 cps
Intensity RSD	112.6 %	125.1 %	99.1 %	106.2 %	106.1 %	60.1 %	5.4 %	46.6 %	234.2 %	45.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.224 ppb		71.264 %	-0.017 ppb	-0.005 ppb	-0.006 ppb	-0.008 ppb	-0.003 ppb	0.014 ppm
Concentration per Run 1		-2.037 ppb		28.071 %	-0.024 ppb	-0.012 ppb	-0.006 ppb	-0.009 ppb	-0.004 ppb	0.005 ppm
Concentration per Run 2		-2.814 ppb		23.870 %	-0.020 ppb	-0.005 ppb	-0.010 ppb	-0.015 ppb	-0.010 ppb	0.004 ppm
Concentration per Run 3		1.180 ppb		161.851 %	-0.007 ppb	0.002 ppb	0.000 ppb	0.001 ppb	0.004 ppb	0.033 ppm
Concentration RSD		173.0 %		110.1 %	50.8 %	127.3 %	90.9 %	111.6 %	223.2 %	115.2 %
Intensity average	3,741 cps	-317 cps	3,940 cps	416,738 cps	144 cps	263 cps	295 cps	169 cps	467 cps	1,256,453 cps
Intensity per Run 1	3,725.6 cps	-269.4 cps	3,946.6 cps	164,156.4 cps	16.0 cps	40.0 cps	92.0 cps	40.0 cps	132.0 cps	464,763.5 cps
Intensity per Run 2	3,463.5 cps	-211.3 cps	3,593.5 cps	139,586.4 cps	24.0 cps	64.0 cps	52.0 cps	12.0 cps	52.0 cps	377,540.5 cps
Intensity per Run 3	4,033.7 cps	-470.4 cps	4,279.7 cps	946,472.7 cps	392.0 cps	684.1 cps	740.1 cps	456.0 cps	1,216.3 cps	2,927,054.3 cps
Intensity RSD	7.6 %	42.9 %	8.7 %	110.1 %	149.2 %	139.0 %	131.1 %	146.8 %	139.3 %	115.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.021 ppb	0.000 ppb	0.004 ppb	0.001 ppb	0.006 ppb	0.006 ppb	72.432 %	-0.012 ppb	-0.003 ppb
Concentration per Run 1		-0.030 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	30.501 %	-0.019 ppb	-0.008 ppb
Concentration per Run 2		-0.076 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	20.549 %	-0.021 ppb	-0.005 ppb
Concentration per Run 3		0.045 ppb	0.002 ppb	0.016 ppb	0.002 ppb	0.019 ppb	0.020 ppb	166.247 %	0.004 ppb	0.004 ppb
Concentration RSD		296.6 %	787.5 %	238.8 %	305.6 %	194.7 %	209.9 %	112.4 %	112.8 %	230.0 %
Intensity average	352 cps	88 cps	165 cps	8 cps	155 cps	140 cps	382 cps	648,473 cps	527 cps	297 cps
Intensity per Run 1	52.0 cps	20.0 cps	4.0 cps	0.0 cps	16.0 cps	0.0 cps	-2.3 cps	273,066.5 cps	84.0 cps	44.0 cps
Intensity per Run 2	56.0 cps	4.0 cps	8.0 cps	0.0 cps	8.0 cps	0.0 cps	2.8 cps	183,971.6 cps	44.0 cps	44.0 cps
Intensity per Run 3	948.0 cps	240.0 cps	484.1 cps	24.0 cps	440.1 cps	420.0 cps	1,145.3 cps	1,488,379.6 cps	1,452.3 cps	804.1 cps
Intensity RSD	146.6 %	149.9 %	166.9 %	173.2 %	159.8 %	173.2 %	173.1 %	112.4 %	152.2 %	147.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.000 ppb	0.119 ppb	0.115 ppb			71.356 %			0.010 ppm	-0.006 ppb
Concentration per Run 1	-0.004 ppb	-0.017 ppb	-0.023 ppb			32.208 %			0.005 ppm	-0.008 ppb
Concentration per Run 2	-0.003 ppb	-0.019 ppb	-0.022 ppb			20.429 %			0.003 ppm	-0.006 ppb
Concentration per Run 3	0.006 ppb	0.393 ppb	0.389 ppb			161.432 %			0.023 ppm	-0.003 ppb
Concentration RSD	1,141.3 %	199.1 %	206.8 %			109.6 %			108.0 %	51.0 %
Intensity average	269 cps	1,514 cps	2,709 cps	4 cps	1 cps	2,242,932 cps	29 cps	16 cps	2,326,922 cps	579 cps
Intensity per Run 1	60.0 cps	16.0 cps	4.0 cps	0.0 cps	0.0 cps	1,012,380.2 cps	12.0 cps	8.0 cps	1,054,123.2 cps	135.0 cps
Intensity per Run 2	48.0 cps	8.0 cps	4.0 cps	4.0 cps	0.0 cps	642,126.7 cps	4.0 cps	0.0 cps	704,576.0 cps	140.0 cps
Intensity per Run 3	700.1 cps	4,516.9 cps	8,119.9 cps	8.0 cps	4.0 cps	5,074,288.1 cps	72.0 cps	40.0 cps	5,222,066.5 cps	1,461.4 cps
Intensity RSD	138.5 %	171.8 %	172.9 %	100.0 %	173.2 %	109.6 %	126.7 %	132.3 %	108.0 %	132.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.005 ppb	0.050 ppb	0.045 ppb	0.048 ppb	73.500 %
Concentration per Run 1	-0.008 ppb	0.053 ppb	0.049 ppb	0.049 ppb	35.187 %
Concentration per Run 2	-0.006 ppb	0.072 ppb	0.065 ppb	0.070 ppb	25.745 %
Concentration per Run 3	-0.002 ppb	0.024 ppb	0.022 ppb	0.024 ppb	159.566 %
Concentration RSD	59.2 %	48.9 %	47.6 %	48.5 %	101.6 %
Intensity average	1,504 cps	2,387 cps	1,958 cps	9,498 cps	1,883,747 cps
Intensity per Run 1	378.0 cps	1,637.1 cps	1,332.1 cps	6,225.6 cps	901,824.2 cps
Intensity per Run 2	341.0 cps	1,534.1 cps	1,228.1 cps	6,134.6 cps	659,838.3 cps
Intensity per Run 3	3,791.6 cps	3,990.5 cps	3,313.0 cps	16,135.1 cps	4,089,579.5 cps
Intensity RSD	131.8 %	58.2 %	60.0 %	60.5 %	101.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UI26045-006DIS Analysis: 10/30/2019 21:30:00 Sample Type UNKNOWN
Comment MW-29 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	132.238 %	136.934 %	0.964 ppb	11.615 ppb	11.558 ppb	N/A	3,869.000 ppb	2,131.817 ppb	2,181.494 ppb	2,158.780 ppb
Concentration per Run 1	131.110 %	138.761 %	0.954 ppb	11.647 ppb	11.021 ppb	N/A	3,560.748 ppb	1,892.330 ppb	1,920.406 ppb	1,904.688 ppb
Concentration per Run 2	132.557 %	135.490 %	1.012 ppb	12.020 ppb	12.053 ppb	N/A	3,998.683 ppb	2,239.625 ppb	2,278.554 ppb	2,255.750 ppb
Concentration per Run 3	133.048 %	136.550 %	0.926 ppb	11.178 ppb	11.599 ppb	N/A	4,047.569 ppb	2,263.495 ppb	2,345.523 ppb	2,315.902 ppb
Concentration RSD	0.8 %	1.2 %	4.6 %	3.6 %	4.5 %	N/A	6.9 %	9.7 %	10.5 %	10.3 %
Intensity average	18,493,976 cps	44,090 cps	214 cps	275 cps	1,615 cps	1,847 cps	10,507,009 cps	2,637,992 cps	568,135 cps	748,791 cps
Intensity per Run 1	18,336,153.3 cps	44,678.3 cps	215.0 cps	279.5 cps	1,561.6 cps	1,760.1 cps	9,788,775.9 cps	2,370,523.9 cps	506,268.4 cps	668,672.6 cps
Intensity per Run 2	18,538,538.8 cps	43,625.0 cps	222.5 cps	281.5 cps	1,665.6 cps	1,870.1 cps	10,731,028.2 cps	2,738,995.7 cps	586,415.6 cps	773,118.7 cps
Intensity per Run 3	18,607,236.8 cps	43,966.2 cps	205.5 cps	264.5 cps	1,618.6 cps	1,910.2 cps	11,001,223.8 cps	2,804,456.5 cps	611,722.0 cps	804,580.7 cps
Intensity RSD	0.8 %	1.2 %	4.0 %	3.4 %	3.2 %	4.2 %	6.1 %	8.9 %	9.7 %	9.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	69.295 ppb		0.059 ppm	561.076 ppb	3,847.596 ppb	4,545.177 ppb	3,909.876 ppb	131.194 %	141.120 %	1.240 ppb
Concentration per Run 1	65.959 ppb		0.055 ppm	526.129 ppb	3,403.595 ppb	4,532.074 ppb	3,435.850 ppb	127.660 %	142.467 %	1.207 ppb
Concentration per Run 2	72.456 ppb		0.062 ppm	589.841 ppb	4,078.114 ppb	4,535.431 ppb	4,105.198 ppb	133.004 %	139.116 %	1.379 ppb
Concentration per Run 3	69.471 ppb		0.059 ppm	567.256 ppb	4,061.077 ppb	4,568.026 ppb	4,188.580 ppb	132.917 %	141.777 %	1.133 ppb
Concentration RSD	4.7 %		5.8 %	5.8 %	10.0 %	0.4 %	10.6 %	2.3 %	1.3 %	10.2 %
Intensity average	30,033 cps	11,125 cps	560,922 cps	690,858 cps	22,080 cps	15,945,812 cps	267,168 cps	9,030,062 cps	414,306 cps	667 cps
Intensity per Run 1	28,953.9 cps	10,424.4 cps	531,959.6 cps	656,571.6 cps	19,745.9 cps	15,478,868.7 cps	237,291.1 cps	8,786,860.1 cps	418,260.5 cps	656.0 cps
Intensity per Run 2	30,988.5 cps	11,155.1 cps	582,987.4 cps	715,113.9 cps	23,081.4 cps	16,126,078.5 cps	276,648.1 cps	9,154,663.8 cps	408,422.5 cps	732.0 cps
Intensity per Run 3	30,156.6 cps	11,795.6 cps	567,819.6 cps	700,889.0 cps	23,412.1 cps	16,232,488.6 cps	287,564.9 cps	9,148,662.2 cps	416,234.4 cps	612.0 cps
Intensity RSD	3.4 %	6.2 %	4.7 %	4.4 %	9.2 %	2.6 %	9.9 %	2.3 %	1.3 %	9.1 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.994 ppb	0.994 ppb	0.695 ppb	N/A	328.341 ppb	105.007 ppb	100.521 ppb	1.413 ppb	1.312 ppb	1.301 ppb
Concentration per Run 1	0.934 ppb	0.918 ppb	0.612 ppb	N/A	308.255 ppb	99.929 ppb	94.974 ppb	1.344 ppb	1.145 ppb	1.139 ppb
Concentration per Run 2	1.075 ppb	1.047 ppb	0.768 ppb	N/A	341.148 ppb	109.374 ppb	103.689 ppb	1.453 ppb	1.368 ppb	1.354 ppb
Concentration per Run 3	0.974 ppb	1.018 ppb	0.704 ppb	N/A	335.621 ppb	105.718 ppb	102.901 ppb	1.442 ppb	1.422 ppb	1.410 ppb
Concentration RSD	7.3 %	6.8 %	11.3 %	N/A	5.4 %	4.5 %	4.8 %	4.3 %	11.2 %	11.0 %
Intensity average	21,178 cps	33,096 cps	4,661 cps	4,908 cps	7,312,509 cps	3,168,967 cps	103,130 cps	99,220 cps	36,904 cps	5,769 cps
Intensity per Run 1	20,241.0 cps	31,139.0 cps	4,376.8 cps	4,540.8 cps	6,945,157.5 cps	3,053,946.3 cps	98,489.9 cps	95,308.2 cps	34,780.6 cps	5,425.2 cps
Intensity per Run 2	22,395.4 cps	34,182.7 cps	4,901.0 cps	5,171.1 cps	7,515,657.9 cps	3,263,661.0 cps	104,846.2 cps	100,587.3 cps	37,825.3 cps	5,853.4 cps
Intensity per Run 3	20,897.4 cps	33,966.2 cps	4,704.9 cps	5,011.0 cps	7,476,712.4 cps	3,189,292.9 cps	106,052.6 cps	101,765.0 cps	38,106.2 cps	6,029.5 cps
Intensity RSD	5.2 %	5.1 %	5.7 %	6.7 %	4.4 %	3.4 %	3.9 %	3.5 %	5.0 %	5.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.357 ppb	1.292 ppb	0.811 ppb	3.619 ppb	2.827 ppb		0.502 ppb	N/A	1.020 ppb	
Concentration per Run 1	1.252 ppb	1.218 ppb	0.588 ppb	3.086 ppb	2.426 ppb		0.367 ppb	N/A	0.955 ppb	
Concentration per Run 2	1.431 ppb	1.345 ppb	0.899 ppb	3.641 ppb	3.003 ppb		0.519 ppb	N/A	1.088 ppb	
Concentration per Run 3	1.387 ppb	1.314 ppb	0.946 ppb	4.129 ppb	3.051 ppb		0.620 ppb	N/A	1.018 ppb	
Concentration RSD	6.9 %	5.1 %	24.0 %	14.4 %	12.3 %		25.4 %	N/A	6.5 %	
Intensity average	62,545 cps	30,934 cps	28,403 cps	8,568 cps	35,929 cps	27 cps	7,999 cps	217 cps	478 cps	14,288 cps
Intensity per Run 1	58,935.9 cps	29,611.3 cps	26,648.6 cps	7,874.5 cps	33,505.2 cps	22.0 cps	7,434.1 cps	300.0 cps	452.7 cps	11,928.8 cps
Intensity per Run 2	65,101.3 cps	31,640.1 cps	29,150.0 cps	8,542.9 cps	36,950.6 cps	33.0 cps	8,067.9 cps	180.0 cps	510.2 cps	14,992.0 cps
Intensity per Run 3	63,597.5 cps	31,551.8 cps	29,410.6 cps	9,287.5 cps	37,331.7 cps	25.0 cps	8,495.9 cps	170.0 cps	472.2 cps	15,944.2 cps
Intensity RSD	5.1 %	3.7 %	5.4 %	8.2 %	5.9 %	21.3 %	6.7 %	33.4 %	6.1 %	14.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.726 ppb		139.750 %	1.155 ppb	1.075 ppb	1.045 ppb	1.056 ppb	1.038 ppb	0.027 ppm
Concentration per Run 1		2.265 ppb		142.137 %	1.083 ppb	1.038 ppb	1.012 ppb	1.001 ppb	0.970 ppb	0.028 ppm
Concentration per Run 2		3.192 ppb		139.652 %	1.184 ppb	1.089 ppb	1.069 ppb	1.094 ppb	1.061 ppb	0.026 ppm
Concentration per Run 3		2.721 ppb		137.461 %	1.196 ppb	1.097 ppb	1.054 ppb	1.073 ppb	1.084 ppb	0.027 ppm
Concentration RSD		17.0 %		1.7 %	5.4 %	3.0 %	2.8 %	4.6 %	5.8 %	3.1 %
Intensity average	4,185 cps	8 cps	4,095 cps	817,231 cps	18,601 cps	31,216 cps	33,571 cps	20,266 cps	52,794 cps	2,418,155 cps
Intensity per Run 1	3,673.5 cps	-114.1 cps	3,689.5 cps	831,190.5 cps	17,760.7 cps	30,622.0 cps	33,019.9 cps	19,503.4 cps	50,080.8 cps	2,501,008.8 cps
Intensity per Run 2	4,007.6 cps	130.7 cps	3,837.6 cps	816,658.7 cps	19,058.6 cps	31,604.0 cps	34,311.1 cps	20,969.6 cps	53,912.2 cps	2,353,795.2 cps
Intensity per Run 3	4,874.0 cps	6.6 cps	4,758.9 cps	803,843.3 cps	18,982.4 cps	31,423.5 cps	33,380.5 cps	20,324.5 cps	54,390.2 cps	2,399,660.4 cps
Intensity RSD	14.8 %	1,586.0 %	14.1 %	1.7 %	3.9 %	1.7 %	2.0 %	3.6 %	4.5 %	3.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.992 ppb	0.499 ppb	1.063 ppb	0.497 ppb	0.991 ppb	1.003 ppb	141.053 %	1.072 ppb	1.042 ppb
Concentration per Run 1		0.946 ppb	0.485 ppb	1.015 ppb	0.479 ppb	0.945 ppb	0.970 ppb	142.200 %	1.037 ppb	0.995 ppb
Concentration per Run 2		0.997 ppb	0.519 ppb	1.147 ppb	0.509 ppb	1.014 ppb	1.011 ppb	140.831 %	1.090 ppb	1.068 ppb
Concentration per Run 3		1.034 ppb	0.494 ppb	1.028 ppb	0.502 ppb	1.013 ppb	1.028 ppb	140.129 %	1.089 ppb	1.062 ppb
Concentration RSD		4.4 %	3.5 %	6.8 %	3.2 %	4.0 %	3.0 %	0.7 %	2.8 %	3.9 %
Intensity average	835 cps	1,607 cps	56,547 cps	1,215 cps	55,325 cps	18,350 cps	46,004 cps	1,262,824 cps	41,386 cps	41,522 cps
Intensity per Run 1	824.0 cps	1,556.1 cps	55,403.3 cps	1,172.1 cps	53,924.7 cps	17,676.6 cps	44,860.1 cps	1,273,093.0 cps	40,421.9 cps	40,044.6 cps
Intensity per Run 2	792.0 cps	1,612.1 cps	58,657.5 cps	1,308.1 cps	56,656.4 cps	18,762.1 cps	46,307.5 cps	1,260,832.0 cps	41,970.6 cps	42,432.0 cps
Intensity per Run 3	888.0 cps	1,652.1 cps	55,579.5 cps	1,164.1 cps	55,394.9 cps	18,609.9 cps	46,843.1 cps	1,254,546.9 cps	41,765.9 cps	42,090.9 cps
Intensity RSD	5.9 %	3.0 %	3.2 %	6.7 %	2.5 %	3.2 %	2.2 %	0.7 %	2.0 %	3.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.045 ppb	28.850 ppb	28.724 ppb			137.358 %			0.020 ppm	0.925 ppb
Concentration per Run 1	0.975 ppb	26.060 ppb	25.925 ppb			138.853 %			0.020 ppm	0.861 ppb
Concentration per Run 2	1.087 ppb	29.539 ppb	30.235 ppb			135.673 %			0.020 ppm	0.936 ppb
Concentration per Run 3	1.073 ppb	30.950 ppb	30.012 ppb			137.549 %			0.020 ppm	0.978 ppb
Concentration RSD	5.9 %	8.7 %	8.4 %			1.2 %			1.3 %	6.4 %
Intensity average	33,264 cps	265,304 cps	480,680 cps	164 cps	164 cps	4,317,572 cps	235 cps	197 cps	4,507,515 cps	119,700 cps
Intensity per Run 1	31,335.6 cps	242,021.6 cps	438,198.0 cps	180.0 cps	144.0 cps	4,364,543.3 cps	220.0 cps	200.0 cps	4,577,570.0 cps	113,710.7 cps
Intensity per Run 2	34,471.5 cps	270,022.5 cps	502,709.6 cps	116.0 cps	168.0 cps	4,264,596.3 cps	200.0 cps	216.0 cps	4,469,264.3 cps	121,856.4 cps
Intensity per Run 3	33,986.2 cps	283,866.4 cps	501,132.2 cps	196.0 cps	180.0 cps	4,323,576.3 cps	284.0 cps	176.0 cps	4,475,709.6 cps	123,531.7 cps
Intensity RSD	5.1 %	8.0 %	7.7 %	25.8 %	11.2 %	1.2 %	18.7 %	10.2 %	1.3 %	4.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.917 ppb	1.023 ppb	1.018 ppb	1.010 ppb	139.473 %
Concentration per Run 1	0.849 ppb	0.963 ppb	0.962 ppb	0.945 ppb	142.199 %
Concentration per Run 2	0.938 ppb	1.041 ppb	1.022 ppb	1.031 ppb	140.538 %
Concentration per Run 3	0.964 ppb	1.064 ppb	1.070 ppb	1.053 ppb	135.683 %
Concentration RSD	6.6 %	5.2 %	5.3 %	5.7 %	2.4 %
Intensity average	288,529 cps	105,372 cps	92,152 cps	420,983 cps	3,574,617 cps
Intensity per Run 1	272,860.1 cps	101,243.2 cps	88,837.1 cps	402,095.1 cps	3,644,484.2 cps
Intensity per Run 2	297,498.1 cps	108,053.2 cps	93,242.9 cps	433,483.1 cps	3,601,892.8 cps
Intensity per Run 3	295,230.3 cps	106,820.7 cps	94,375.5 cps	427,369.6 cps	3,477,475.4 cps
Intensity RSD	4.7 %	3.4 %	3.2 %	4.0 %	2.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ26017-001 Analysis: 10/30/2019 21:36:05 Sample Type UNKNOWN
Comment CMR-MW39R2-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	132.118 %	132.224 %	1.049 ppb	11.839 ppb	11.700 ppb	N/A	4,332.354 ppb	2,615.527 ppb	2,715.424 ppb	2,673.997 ppb
Concentration per Run 1	130.135 %	131.993 %	1.070 ppb	11.802 ppb	11.775 ppb	N/A	4,349.240 ppb	2,638.702 ppb	2,718.406 ppb	2,648.479 ppb
Concentration per Run 2	132.332 %	130.395 %	1.064 ppb	11.950 ppb	11.760 ppb	N/A	4,475.534 ppb	2,648.816 ppb	2,745.815 ppb	2,781.447 ppb
Concentration per Run 3	133.886 %	134.284 %	1.012 ppb	11.764 ppb	11.564 ppb	N/A	4,172.287 ppb	2,559.063 ppb	2,682.050 ppb	2,592.064 ppb
Concentration RSD	1.4 %	1.5 %	3.1 %	0.8 %	1.0 %	N/A	3.5 %	1.9 %	1.2 %	3.6 %
Intensity average	18,477,108 cps	42,573 cps	225 cps	271 cps	1,577 cps	1,750 cps	11,319,431 cps	3,114,362 cps	680,367 cps	892,002 cps
Intensity per Run 1	18,199,797.1 cps	42,499.2 cps	229.0 cps	269.0 cps	1,583.1 cps	1,800.1 cps	11,305,226.3 cps	3,124,735.5 cps	677,193.5 cps	878,362.8 cps
Intensity per Run 2	18,507,074.8 cps	41,984.4 cps	225.0 cps	269.5 cps	1,565.6 cps	1,830.1 cps	11,582,027.8 cps	3,124,407.2 cps	681,643.9 cps	919,639.4 cps
Intensity per Run 3	18,724,451.1 cps	43,236.7 cps	220.5 cps	273.0 cps	1,583.6 cps	1,620.1 cps	11,071,039.5 cps	3,093,942.0 cps	682,262.9 cps	878,003.3 cps
Intensity RSD	1.4 %	1.5 %	1.9 %	0.8 %	0.6 %	6.5 %	2.3 %	0.6 %	0.4 %	2.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	75.022 ppb		0.081 ppm	619.528 ppb	4,927.341 ppb	4,905.555 ppb	4,987.723 ppb	131.700 %	135.180 %	1.281 ppb
Concentration per Run 1	78.491 ppb		0.087 ppm	656.804 ppb	4,901.021 ppb	4,955.830 ppb	5,024.322 ppb	128.694 %	133.817 %	1.388 ppb
Concentration per Run 2	73.801 ppb		0.081 ppm	621.729 ppb	4,968.529 ppb	4,947.604 ppb	5,032.444 ppb	133.510 %	134.555 %	1.301 ppb
Concentration per Run 3	72.774 ppb		0.074 ppm	580.050 ppb	4,912.473 ppb	4,813.230 ppb	4,906.403 ppb	132.895 %	137.169 %	1.154 ppb
Concentration RSD	4.1 %		8.1 %	6.2 %	0.7 %	1.6 %	1.4 %	2.0 %	1.3 %	9.2 %
Intensity average	31,209 cps	14,482 cps	740,064 cps	728,504 cps	27,083 cps	17,264,933 cps	326,392 cps	9,064,890 cps	396,867 cps	660 cps
Intensity per Run 1	32,422.5 cps	15,289.4 cps	792,095.1 cps	764,143.3 cps	26,678.6 cps	17,048,029.5 cps	325,571.8 cps	8,857,992.9 cps	392,865.1 cps	708.0 cps
Intensity per Run 2	30,447.2 cps	14,878.9 cps	739,277.5 cps	726,937.8 cps	27,169.6 cps	17,647,788.9 cps	327,747.7 cps	9,189,514.2 cps	395,029.9 cps	668.0 cps
Intensity per Run 3	30,758.1 cps	13,277.1 cps	688,818.6 cps	694,432.3 cps	27,400.2 cps	17,098,979.8 cps	325,856.7 cps	9,147,161.8 cps	402,706.1 cps	604.0 cps
Intensity RSD	3.4 %	7.3 %	7.0 %	4.8 %	1.4 %	1.9 %	0.4 %	2.0 %	1.3 %	7.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.115 ppb	1.010 ppb	0.716 ppb	N/A	359.217 ppb	110.789 ppb	105.428 ppb	1.596 ppb	1.572 ppb	1.502 ppb
Concentration per Run 1	1.189 ppb	1.058 ppb	0.717 ppb	N/A	356.113 ppb	118.097 ppb	110.112 ppb	1.661 ppb	1.678 ppb	1.554 ppb
Concentration per Run 2	1.111 ppb	1.016 ppb	0.729 ppb	N/A	365.123 ppb	109.671 ppb	106.997 ppb	1.613 ppb	1.561 ppb	1.535 ppb
Concentration per Run 3	1.044 ppb	0.956 ppb	0.703 ppb	N/A	356.416 ppb	104.600 ppb	99.176 ppb	1.515 ppb	1.475 ppb	1.417 ppb
Concentration RSD	6.5 %	5.1 %	1.8 %	N/A	1.4 %	6.2 %	5.3 %	4.7 %	6.5 %	5.0 %
Intensity average	22,467 cps	32,159 cps	4,560 cps	4,884 cps	7,688,282 cps	3,209,404 cps	103,515 cps	107,281 cps	39,944 cps	6,049 cps
Intensity per Run 1	23,581.6 cps	33,204.2 cps	4,508.8 cps	5,031.0 cps	7,530,784.2 cps	3,377,713.5 cps	107,001.3 cps	110,523.7 cps	40,895.0 cps	6,097.5 cps
Intensity per Run 2	22,316.1 cps	32,177.4 cps	4,592.8 cps	5,001.0 cps	7,791,446.3 cps	3,170,257.3 cps	104,592.2 cps	107,932.5 cps	39,895.6 cps	6,121.5 cps
Intensity per Run 3	21,504.1 cps	31,094.7 cps	4,576.8 cps	4,620.9 cps	7,742,615.3 cps	3,080,241.3 cps	98,950.4 cps	103,386.5 cps	39,041.0 cps	5,929.4 cps
Intensity RSD	4.7 %	3.3 %	1.0 %	4.7 %	1.8 %	4.8 %	4.0 %	3.4 %	2.3 %	1.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.419 ppb	1.370 ppb	1.128 ppb	4.136 ppb	3.414 ppb		0.604 ppb	N/A	1.039 ppb	
Concentration per Run 1	1.490 ppb	1.430 ppb	1.384 ppb	4.451 ppb	3.542 ppb		0.739 ppb	N/A	1.048 ppb	
Concentration per Run 2	1.437 ppb	1.395 ppb	1.091 ppb	3.954 ppb	3.458 ppb		0.609 ppb	N/A	1.085 ppb	
Concentration per Run 3	1.330 ppb	1.286 ppb	0.910 ppb	4.004 ppb	3.243 ppb		0.464 ppb	N/A	0.984 ppb	
Concentration RSD	5.7 %	5.5 %	21.2 %	6.6 %	4.5 %		22.8 %	N/A	4.9 %	
Intensity average	62,750 cps	31,256 cps	30,030 cps	9,014 cps	38,742 cps	39 cps	8,150 cps	220 cps	472 cps	16,620 cps
Intensity per Run 1	64,751.9 cps	32,197.5 cps	31,295.4 cps	9,339.5 cps	39,065.2 cps	40.0 cps	8,505.5 cps	260.0 cps	468.5 cps	16,103.4 cps
Intensity per Run 2	63,392.5 cps	31,632.1 cps	29,927.8 cps	8,743.1 cps	39,025.2 cps	43.0 cps	8,233.9 cps	130.0 cps	494.6 cps	16,820.3 cps
Intensity per Run 3	60,104.3 cps	29,939.9 cps	28,865.3 cps	8,959.2 cps	38,134.2 cps	33.0 cps	7,711.4 cps	270.0 cps	452.3 cps	16,936.5 cps
Intensity RSD	3.8 %	3.8 %	4.1 %	3.3 %	1.4 %	13.3 %	5.0 %	35.5 %	4.5 %	2.7 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.315 ppb		135.606 %	1.192 ppb	1.083 ppb	1.078 ppb	1.074 ppb	1.062 ppb	0.026 ppm
Concentration per Run 1		2.045 ppb		133.115 %	1.227 ppb	1.146 ppb	1.143 ppb	1.137 ppb	1.138 ppb	0.025 ppm
Concentration per Run 2		2.743 ppb		135.955 %	1.205 ppb	1.078 ppb	1.068 ppb	1.081 ppb	1.046 ppb	0.027 ppm
Concentration per Run 3		2.156 ppb		137.747 %	1.144 ppb	1.026 ppb	1.024 ppb	1.003 ppb	1.002 ppb	0.027 ppm
Concentration RSD		16.2 %		1.7 %	3.6 %	5.5 %	5.6 %	6.3 %	6.6 %	2.8 %
Intensity average	4,289 cps	-96 cps	4,235 cps	792,997 cps	18,594 cps	30,463 cps	33,505 cps	19,928 cps	52,233 cps	2,337,056 cps
Intensity per Run 1	4,625.9 cps	-159.9 cps	4,583.8 cps	778,431.8 cps	18,742.1 cps	31,535.9 cps	34,748.5 cps	20,641.1 cps	54,724.0 cps	2,262,594.3 cps
Intensity per Run 2	4,255.7 cps	12.2 cps	4,121.7 cps	795,039.2 cps	18,854.3 cps	30,437.1 cps	33,340.5 cps	20,148.3 cps	51,711.0 cps	2,363,324.2 cps
Intensity per Run 3	3,986.6 cps	-139.8 cps	3,999.6 cps	805,519.1 cps	18,185.5 cps	29,414.7 cps	32,426.0 cps	18,994.5 cps	50,265.1 cps	2,385,249.5 cps
Intensity RSD	7.5 %	98.1 %	7.3 %	1.7 %	1.9 %	3.5 %	3.5 %	4.2 %	4.4 %	2.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.002 ppb	0.521 ppb	1.028 ppb	0.520 ppb	1.008 ppb	1.003 ppb	135.803 %	1.063 ppb	1.070 ppb
Concentration per Run 1		1.021 ppb	0.562 ppb	1.029 ppb	0.569 ppb	1.078 ppb	1.081 ppb	131.779 %	1.135 ppb	1.151 ppb
Concentration per Run 2		1.026 ppb	0.518 ppb	1.061 ppb	0.512 ppb	1.020 ppb	1.000 ppb	136.630 %	1.044 ppb	1.046 ppb
Concentration per Run 3		0.959 ppb	0.484 ppb	0.995 ppb	0.478 ppb	0.928 ppb	0.927 ppb	139.000 %	1.010 ppb	1.013 ppb
Concentration RSD		3.7 %	7.5 %	3.2 %	8.9 %	7.5 %	7.7 %	2.7 %	6.1 %	6.7 %
Intensity average	884 cps	1,565 cps	56,799 cps	1,133 cps	55,749 cps	17,988 cps	44,245 cps	1,215,820 cps	39,555 cps	41,171 cps
Intensity per Run 1	888.0 cps	1,552.1 cps	59,441.7 cps	1,104.0 cps	59,485.7 cps	18,706.0 cps	46,360.8 cps	1,179,789.8 cps	41,039.3 cps	43,150.5 cps
Intensity per Run 2	824.0 cps	1,608.1 cps	56,897.4 cps	1,176.1 cps	55,270.1 cps	18,321.5 cps	44,441.4 cps	1,223,223.3 cps	39,101.1 cps	40,445.4 cps
Intensity per Run 3	940.0 cps	1,536.1 cps	54,057.0 cps	1,120.1 cps	52,490.1 cps	16,935.5 cps	41,931.9 cps	1,244,446.2 cps	38,523.4 cps	39,915.8 cps
Intensity RSD	6.6 %	2.4 %	4.7 %	3.3 %	6.3 %	5.2 %	5.0 %	2.7 %	3.3 %	4.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.081 ppb	31.730 ppb	32.696 ppb			135.942 %			0.020 ppm	0.983 ppb
Concentration per Run 1	1.159 ppb	31.891 ppb	32.841 ppb			135.793 %			0.019 ppm	1.023 ppb
Concentration per Run 2	1.057 ppb	32.217 ppb	33.102 ppb			134.331 %			0.020 ppm	1.011 ppb
Concentration per Run 3	1.027 ppb	31.083 ppb	32.145 ppb			137.702 %			0.020 ppm	0.916 ppb
Concentration RSD	6.4 %	1.8 %	1.5 %			1.2 %			1.3 %	6.0 %
Intensity average	33,267 cps	284,501 cps	534,166 cps	375 cps	325 cps	4,273,052 cps	463 cps	356 cps	4,419,336 cps	123,205 cps
Intensity per Run 1	34,808.6 cps	281,224.9 cps	528,365.0 cps	476.0 cps	388.0 cps	4,268,370.1 cps	484.0 cps	368.0 cps	4,357,478.8 cps	128,627.8 cps
Intensity per Run 2	32,654.7 cps	288,312.1 cps	539,309.7 cps	348.0 cps	292.0 cps	4,222,423.2 cps	512.0 cps	328.0 cps	4,431,857.4 cps	122,823.1 cps
Intensity per Run 3	32,337.9 cps	283,965.2 cps	534,823.2 cps	300.0 cps	296.0 cps	4,328,361.6 cps	392.0 cps	372.0 cps	4,468,671.1 cps	118,164.4 cps
Intensity RSD	4.0 %	1.3 %	1.0 %	24.3 %	16.7 %	1.2 %	13.6 %	6.8 %	1.3 %	4.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.984 ppb	1.050 ppb	1.051 ppb	1.046 ppb	134.796 %
Concentration per Run 1	1.018 ppb	1.094 ppb	1.096 ppb	1.093 ppb	135.226 %
Concentration per Run 2	1.018 ppb	1.077 ppb	1.066 ppb	1.068 ppb	130.310 %
Concentration per Run 3	0.917 ppb	0.977 ppb	0.990 ppb	0.979 ppb	138.854 %
Concentration RSD	5.9 %	6.0 %	5.2 %	5.7 %	3.2 %
Intensity average	299,104 cps	104,614 cps	91,994 cps	421,494 cps	3,454,748 cps
Intensity per Run 1	310,575.4 cps	109,458.3 cps	96,290.6 cps	441,786.7 cps	3,465,748.6 cps
Intensity per Run 2	299,062.8 cps	103,999.0 cps	90,326.2 cps	416,015.9 cps	3,339,761.8 cps
Intensity per Run 3	287,673.3 cps	100,385.9 cps	89,366.7 cps	406,678.4 cps	3,558,734.7 cps
Intensity RSD	3.8 %	4.4 %	4.1 %	4.3 %	3.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ26017-002 Analysis: 10/30/2019 21:42:11 Sample Type UNKNOWN
Comment CMR-MW79D-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	129.161 %	135.573 %	1.037 ppb	74.533 ppb	73.988 ppb	N/A	8,064.947 ppb	5,372.964 ppb	5,505.816 ppb	5,347.915 ppb
Concentration per Run 1	127.823 %	139.444 %	0.836 ppb	64.605 ppb	63.538 ppb	N/A	6,834.794 ppb	4,369.389 ppb	4,446.922 ppb	4,416.944 ppb
Concentration per Run 2	129.587 %	134.010 %	1.167 ppb	80.678 ppb	81.373 ppb	N/A	8,721.794 ppb	5,896.195 ppb	6,035.472 ppb	5,837.835 ppb
Concentration per Run 3	130.074 %	133.266 %	1.107 ppb	78.316 ppb	77.053 ppb	N/A	8,638.254 ppb	5,853.308 ppb	6,035.053 ppb	5,788.966 ppb
Concentration RSD	0.9 %	2.5 %	17.0 %	11.6 %	12.6 %	N/A	13.2 %	16.2 %	16.7 %	15.1 %
Intensity average	18,063,663 cps	43,652 cps	227 cps	1,719 cps	10,109 cps	2,010 cps	21,650,874 cps	6,574,399 cps	1,417,768 cps	1,834,760 cps
Intensity per Run 1	17,876,460.5 cps	44,898.0 cps	190.0 cps	1,535.1 cps	8,944.7 cps	2,130.2 cps	18,881,325.4 cps	5,503,125.2 cps	1,178,640.0 cps	1,559,167.9 cps
Intensity per Run 2	18,123,231.8 cps	43,148.4 cps	253.0 cps	1,841.6 cps	11,007.3 cps	1,800.1 cps	23,178,420.4 cps	7,145,293.4 cps	1,539,276.3 cps	1,983,111.1 cps
Intensity per Run 3	18,191,296.7 cps	42,909.0 cps	239.0 cps	1,779.1 cps	10,374.8 cps	2,100.2 cps	22,892,875.6 cps	7,074,776.9 cps	1,535,388.7 cps	1,962,000.7 cps
Intensity RSD	0.9 %	2.5 %	14.6 %	9.4 %	10.5 %	9.1 %	11.1 %	14.1 %	14.6 %	13.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	70.339 ppb		0.073 ppm	584.024 ppb	7,074.413 ppb	7,450.761 ppb	7,108.629 ppb	128.244 %	140.093 %	1.251 ppb
Concentration per Run 1	54.255 ppb		0.060 ppm	469.494 ppb	5,691.178 ppb	7,324.412 ppb	5,767.514 ppb	128.353 %	143.527 %	1.015 ppb
Concentration per Run 2	75.548 ppb		0.078 ppm	631.586 ppb	7,686.912 ppb	7,540.243 ppb	7,613.222 ppb	127.408 %	138.328 %	1.473 ppb
Concentration per Run 3	81.214 ppb		0.080 ppm	650.993 ppb	7,845.151 ppb	7,487.627 ppb	7,945.151 ppb	128.971 %	138.424 %	1.267 ppb
Concentration RSD	20.2 %		15.2 %	17.1 %	17.0 %	1.5 %	16.5 %	0.6 %	2.1 %	18.3 %
Intensity average	30,137 cps	14,919 cps	684,286 cps	710,966 cps	40,132 cps	25,493,705 cps	480,459 cps	8,827,030 cps	411,289 cps	667 cps
Intensity per Run 1	24,093.7 cps	12,956.9 cps	579,987.8 cps	593,371.7 cps	33,184.7 cps	25,077,375.6 cps	400,536.6 cps	8,834,532.1 cps	421,370.2 cps	556.0 cps
Intensity per Run 2	32,021.2 cps	15,409.6 cps	729,801.3 cps	758,660.2 cps	43,154.7 cps	25,637,626.7 cps	509,199.2 cps	8,769,469.1 cps	406,107.2 cps	776.0 cps
Intensity per Run 3	34,297.2 cps	16,390.8 cps	743,069.4 cps	780,864.9 cps	44,057.8 cps	25,766,113.0 cps	531,641.6 cps	8,877,089.0 cps	406,389.4 cps	668.0 cps
Intensity RSD	17.8 %	11.9 %	13.2 %	14.4 %	15.0 %	1.4 %	14.6 %	0.6 %	2.1 %	16.5 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.099 ppb	1.008 ppb	0.769 ppb	N/A	201.028 ppb	110.327 ppb	104.483 ppb	1.295 ppb	1.400 ppb	1.377 ppb
Concentration per Run 1	0.885 ppb	0.777 ppb	0.515 ppb	N/A	126.897 ppb	87.531 ppb	84.981 ppb	1.025 ppb	0.930 ppb	0.907 ppb
Concentration per Run 2	1.200 ppb	1.109 ppb	0.857 ppb	N/A	213.723 ppb	118.876 ppb	113.444 ppb	1.367 ppb	1.550 ppb	1.567 ppb
Concentration per Run 3	1.212 ppb	1.139 ppb	0.936 ppb	N/A	262.464 ppb	124.575 ppb	115.024 ppb	1.492 ppb	1.720 ppb	1.657 ppb
Concentration RSD	16.9 %	19.9 %	29.1 %	N/A	34.2 %	18.1 %	16.2 %	18.7 %	29.7 %	29.7 %
Intensity average	22,952 cps	33,208 cps	4,905 cps	4,861 cps	4,414,921 cps	3,286,138 cps	106,138 cps	90,082 cps	37,578 cps	5,883 cps
Intensity per Run 1	19,454.3 cps	27,130.1 cps	4,008.7 cps	3,930.7 cps	2,879,475.2 cps	2,699,367.1 cps	88,962.1 cps	73,340.1 cps	31,308.0 cps	4,853.0 cps
Intensity per Run 2	24,579.3 cps	35,791.3 cps	5,197.1 cps	5,161.1 cps	4,653,647.0 cps	3,498,057.5 cps	113,905.0 cps	94,129.9 cps	39,462.3 cps	6,289.6 cps
Intensity per Run 3	24,822.5 cps	36,701.9 cps	5,509.2 cps	5,491.2 cps	5,711,641.4 cps	3,660,989.7 cps	115,548.1 cps	102,777.2 cps	41,962.4 cps	6,505.7 cps
Intensity RSD	13.2 %	15.9 %	16.1 %	16.9 %	32.4 %	15.7 %	14.0 %	16.8 %	14.8 %	15.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.574 ppb	1.484 ppb	1.347 ppb	3.535 ppb	2.875 ppb		0.467 ppb	N/A	1.108 ppb	
Concentration per Run 1	1.284 ppb	1.199 ppb	0.810 ppb	2.313 ppb	1.898 ppb		0.294 ppb	N/A	0.850 ppb	
Concentration per Run 2	1.720 ppb	1.626 ppb	1.586 ppb	4.068 ppb	3.199 ppb		0.535 ppb	N/A	1.154 ppb	
Concentration per Run 3	1.718 ppb	1.627 ppb	1.644 ppb	4.224 ppb	3.529 ppb		0.573 ppb	N/A	1.321 ppb	
Concentration RSD	15.9 %	16.6 %	34.6 %	30.0 %	30.0 %		32.4 %	N/A	21.6 %	
Intensity average	70,685 cps	34,792 cps	33,003 cps	8,316 cps	35,741 cps	24 cps	7,807 cps	240 cps	513 cps	17,853 cps
Intensity per Run 1	60,649.2 cps	29,407.2 cps	29,038.3 cps	6,729.8 cps	29,804.1 cps	23.0 cps	7,193.6 cps	240.0 cps	401.4 cps	14,231.3 cps
Intensity per Run 2	75,797.3 cps	37,456.3 cps	34,760.3 cps	9,003.3 cps	37,592.6 cps	22.0 cps	8,034.0 cps	260.0 cps	529.2 cps	19,522.3 cps
Intensity per Run 3	75,608.2 cps	37,512.3 cps	35,209.6 cps	9,215.4 cps	39,827.5 cps	26.0 cps	8,194.2 cps	220.0 cps	607.9 cps	19,804.7 cps
Intensity RSD	12.3 %	13.4 %	10.4 %	16.6 %	14.7 %	8.8 %	6.9 %	8.3 %	20.3 %	17.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.689 ppb		137.371 %	1.487 ppb	1.321 ppb	1.323 ppb	1.313 ppb	1.270 ppb	0.027 ppm
Concentration per Run 1		2.596 ppb		142.604 %	1.233 ppb	1.065 ppb	1.107 ppb	1.081 ppb	1.033 ppb	0.027 ppm
Concentration per Run 2		2.836 ppb		135.057 %	1.633 ppb	1.450 ppb	1.449 ppb	1.439 ppb	1.373 ppb	0.027 ppm
Concentration per Run 3		2.634 ppb		134.453 %	1.594 ppb	1.448 ppb	1.414 ppb	1.418 ppb	1.405 ppb	0.026 ppm
Concentration RSD		4.8 %		3.3 %	14.8 %	16.8 %	14.2 %	15.3 %	16.2 %	2.1 %
Intensity average	3,773 cps	-2 cps	3,795 cps	803,321 cps	23,426 cps	37,601 cps	41,660 cps	24,721 cps	63,466 cps	2,393,546 cps
Intensity per Run 1	3,802.6 cps	-26.8 cps	3,995.6 cps	833,922.2 cps	20,264.7 cps	31,600.5 cps	36,273.5 cps	21,182.3 cps	53,664.5 cps	2,448,204.0 cps
Intensity per Run 2	3,567.5 cps	36.5 cps	3,508.5 cps	789,786.6 cps	25,353.8 cps	40,706.3 cps	44,968.8 cps	26,732.6 cps	67,691.0 cps	2,379,393.2 cps
Intensity per Run 3	3,948.6 cps	-15.8 cps	3,881.6 cps	786,255.2 cps	24,660.3 cps	40,497.6 cps	43,736.5 cps	26,247.6 cps	69,042.4 cps	2,353,040.9 cps
Intensity RSD	5.1 %	1,680.1 %	6.7 %	3.3 %	11.8 %	13.8 %	11.3 %	12.4 %	13.4 %	2.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.049 ppb	0.511 ppb	1.050 ppb	0.513 ppb	1.019 ppb	1.007 ppb	140.616 %	1.089 ppb	1.087 ppb
Concentration per Run 1		0.856 ppb	0.427 ppb	0.877 ppb	0.431 ppb	0.853 ppb	0.840 ppb	144.213 %	0.905 ppb	0.890 ppb
Concentration per Run 2		1.121 ppb	0.546 ppb	1.126 ppb	0.555 ppb	1.092 ppb	1.075 ppb	138.920 %	1.180 ppb	1.170 ppb
Concentration per Run 3		1.169 ppb	0.561 ppb	1.146 ppb	0.552 ppb	1.111 ppb	1.106 ppb	138.714 %	1.182 ppb	1.201 ppb
Concentration RSD		16.1 %	14.4 %	14.3 %	13.8 %	14.1 %	14.5 %	2.2 %	14.6 %	15.7 %
Intensity average	968 cps	1,673 cps	57,625 cps	1,188 cps	56,671 cps	18,733 cps	45,982 cps	1,258,906 cps	41,875 cps	43,206 cps
Intensity per Run 1	936.0 cps	1,436.1 cps	49,455.2 cps	1,024.0 cps	49,145.5 cps	16,154.6 cps	39,423.8 cps	1,291,109.2 cps	36,004.6 cps	36,538.2 cps
Intensity per Run 2	1,024.0 cps	1,760.1 cps	60,888.2 cps	1,260.1 cps	60,663.0 cps	19,875.8 cps	48,600.0 cps	1,243,726.1 cps	44,832.5 cps	45,992.5 cps
Intensity per Run 3	944.0 cps	1,824.1 cps	62,532.2 cps	1,280.1 cps	60,205.0 cps	20,168.3 cps	49,922.5 cps	1,241,883.3 cps	44,788.2 cps	47,088.6 cps
Intensity RSD	5.0 %	12.4 %	12.4 %	12.0 %	11.5 %	11.9 %	12.4 %	2.2 %	12.1 %	13.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.085 ppb	21.902 ppb	21.992 ppb			139.980 %			0.021 ppm	0.951 ppb
Concentration per Run 1	0.891 ppb	15.191 ppb	15.031 ppb			145.410 %			0.021 ppm	0.786 ppb
Concentration per Run 2	1.168 ppb	23.177 ppb	23.663 ppb			138.009 %			0.020 ppm	1.015 ppb
Concentration per Run 3	1.195 ppb	27.339 ppb	27.282 ppb			136.521 %			0.020 ppm	1.053 ppb
Concentration RSD	15.5 %	28.2 %	28.6 %			3.4 %			2.6 %	15.2 %
Intensity average	34,478 cps	201,915 cps	369,228 cps	280 cps	211 cps	4,399,973 cps	297 cps	235 cps	4,655,468 cps	121,136 cps
Intensity per Run 1	29,255.2 cps	145,264.1 cps	261,989.1 cps	188.0 cps	144.0 cps	4,570,662.3 cps	260.0 cps	188.0 cps	4,786,470.9 cps	104,038.0 cps
Intensity per Run 2	36,729.9 cps	211,941.5 cps	394,124.2 cps	328.0 cps	240.0 cps	4,338,010.1 cps	288.0 cps	288.0 cps	4,628,104.8 cps	128,876.3 cps
Intensity per Run 3	37,448.1 cps	248,540.8 cps	451,570.9 cps	324.0 cps	248.0 cps	4,291,246.2 cps	344.0 cps	228.0 cps	4,551,828.1 cps	130,492.9 cps
Intensity RSD	13.2 %	25.9 %	26.3 %	28.5 %	27.5 %	3.4 %	14.4 %	21.4 %	2.6 %	12.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.951 ppb	1.051 ppb	1.046 ppb	1.050 ppb	137.057 %
Concentration per Run 1	0.780 ppb	0.866 ppb	0.862 ppb	0.864 ppb	141.526 %
Concentration per Run 2	1.007 ppb	1.130 ppb	1.113 ppb	1.122 ppb	136.539 %
Concentration per Run 3	1.066 ppb	1.158 ppb	1.162 ppb	1.165 ppb	133.106 %
Concentration RSD	15.9 %	15.3 %	15.4 %	15.5 %	3.1 %
Intensity average	293,336 cps	106,370 cps	92,937 cps	429,202 cps	3,512,685 cps
Intensity per Run 1	249,902.0 cps	90,951.9 cps	79,530.4 cps	366,288.5 cps	3,627,221.0 cps
Intensity per Run 2	310,149.2 cps	114,109.7 cps	98,753.1 cps	457,911.3 cps	3,499,403.2 cps
Intensity per Run 3	319,956.5 cps	114,047.1 cps	100,526.9 cps	463,405.3 cps	3,411,430.4 cps
Intensity RSD	12.9 %	12.6 %	12.5 %	12.7 %	3.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ26017-003 Analysis: 10/30/2019 21:48:16 Sample Type UNKNOWN
Comment CMR-MW81D-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	129.983 %	131.889 %	0.862 ppb	55.201 ppb	54.575 ppb	N/A	17,444.564 ppb	7,381.022 ppb	7,567.437 ppb	7,279.811 ppb
Concentration per Run 1	129.662 %	134.270 %	0.820 ppb	51.866 ppb	52.478 ppb	N/A	17,894.604 ppb	7,051.639 ppb	7,347.960 ppb	7,164.055 ppb
Concentration per Run 2	129.716 %	130.125 %	0.880 ppb	57.066 ppb	56.183 ppb	N/A	17,937.142 ppb	7,750.904 ppb	7,702.069 ppb	7,401.001 ppb
Concentration per Run 3	130.572 %	131.270 %	0.885 ppb	56.671 ppb	55.063 ppb	N/A	16,501.946 ppb	7,340.522 ppb	7,652.281 ppb	7,274.378 ppb
Concentration RSD	0.4 %	1.6 %	4.2 %	5.2 %	3.5 %	N/A	4.7 %	4.8 %	2.5 %	1.6 %
Intensity average	18,178,565 cps	42,465 cps	185 cps	1,238 cps	7,251 cps	1,853 cps	45,221,622 cps	8,718,105 cps	1,880,373 cps	2,408,512 cps
Intensity per Run 1	18,133,634.0 cps	43,232.2 cps	179.5 cps	1,186.1 cps	7,105.5 cps	2,040.2 cps	47,296,359.9 cps	8,499,223.8 cps	1,863,085.0 cps	2,418,471.3 cps
Intensity per Run 2	18,141,148.8 cps	41,897.6 cps	186.5 cps	1,265.1 cps	7,377.2 cps	1,720.1 cps	46,078,083.3 cps	9,081,083.6 cps	1,898,664.7 cps	2,429,532.3 cps
Intensity per Run 3	18,260,913.4 cps	42,266.4 cps	189.0 cps	1,264.1 cps	7,270.1 cps	1,800.1 cps	42,290,422.3 cps	8,574,008.1 cps	1,879,369.9 cps	2,377,531.9 cps
Intensity RSD	0.4 %	1.6 %	2.7 %	3.7 %	1.9 %	9.0 %	5.8 %	3.6 %	0.9 %	1.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	61.979 ppb		0.077 ppm	958.362 ppb	7,662.486 ppb	6,445.097 ppb	7,330.534 ppb	127.653 %	133.480 %	1.215 ppb
Concentration per Run 1	54.310 ppb		0.073 ppm	950.820 ppb	7,077.496 ppb	6,491.998 ppb	6,678.013 ppb	126.211 %	136.446 %	0.952 ppb
Concentration per Run 2	64.615 ppb		0.079 ppm	955.087 ppb	7,688.002 ppb	6,366.680 ppb	7,542.208 ppb	129.792 %	133.103 %	1.253 ppb
Concentration per Run 3	67.011 ppb		0.079 ppm	969.181 ppb	8,221.960 ppb	6,476.612 ppb	7,771.381 ppb	126.958 %	130.892 %	1.441 ppb
Concentration RSD	10.9 %		4.8 %	1.0 %	7.5 %	1.1 %	7.9 %	1.5 %	2.1 %	20.3 %
Intensity average	25,667 cps	15,443 cps	698,316 cps	1,099,052 cps	41,509 cps	21,967,390 cps	472,878 cps	8,786,383 cps	391,876 cps	617 cps
Intensity per Run 1	23,061.5 cps	15,419.7 cps	673,620.0 cps	1,114,296.9 cps	39,232.0 cps	21,883,863.5 cps	440,870.9 cps	8,687,083.2 cps	400,583.0 cps	496.0 cps
Intensity per Run 2	26,558.3 cps	15,149.3 cps	712,797.8 cps	1,090,663.1 cps	41,549.6 cps	22,056,232.9 cps	485,516.5 cps	8,933,558.8 cps	390,768.9 cps	636.0 cps
Intensity per Run 3	27,380.3 cps	15,760.0 cps	708,530.6 cps	1,092,195.5 cps	43,746.7 cps	21,962,072.5 cps	492,247.2 cps	8,738,506.2 cps	384,276.3 cps	720.0 cps
Intensity RSD	8.9 %	2.0 %	3.1 %	1.2 %	5.4 %	0.4 %	5.9 %	1.5 %	2.1 %	18.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.969 ppb	0.883 ppb	0.607 ppb	N/A	252.684 ppb	180.184 ppb	174.024 ppb	1.485 ppb	1.573 ppb	1.588 ppb
Concentration per Run 1	0.874 ppb	0.779 ppb	0.476 ppb	N/A	202.730 ppb	174.065 ppb	170.129 ppb	1.358 ppb	1.395 ppb	1.298 ppb
Concentration per Run 2	0.974 ppb	0.890 ppb	0.617 ppb	N/A	261.054 ppb	184.066 ppb	176.503 ppb	1.514 ppb	1.629 ppb	1.655 ppb
Concentration per Run 3	1.059 ppb	0.981 ppb	0.727 ppb	N/A	294.268 ppb	182.421 ppb	175.440 ppb	1.583 ppb	1.696 ppb	1.812 ppb
Concentration RSD	9.6 %	11.4 %	20.7 %	N/A	18.3 %	3.0 %	2.0 %	7.7 %	10.0 %	16.6 %
Intensity average	19,571 cps	28,179 cps	4,079 cps	4,174 cps	5,329,718 cps	5,122,916 cps	167,720 cps	98,518 cps	39,511 cps	6,179 cps
Intensity per Run 1	18,288.0 cps	25,862.9 cps	3,668.5 cps	3,610.5 cps	4,384,480.3 cps	5,065,110.3 cps	167,684.1 cps	92,256.5 cps	37,633.0 cps	5,609.3 cps
Intensity per Run 2	19,627.3 cps	28,320.1 cps	4,104.7 cps	4,550.8 cps	5,487,320.1 cps	5,201,586.2 cps	169,644.8 cps	100,238.3 cps	39,759.3 cps	6,297.6 cps
Intensity per Run 3	20,798.4 cps	30,352.9 cps	4,464.8 cps	4,360.8 cps	6,117,352.9 cps	5,102,052.4 cps	165,830.6 cps	103,060.1 cps	41,139.8 cps	6,629.8 cps
Intensity RSD	6.4 %	8.0 %	9.8 %	11.9 %	16.5 %	1.4 %	1.1 %	5.7 %	4.5 %	8.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.338 ppb	1.273 ppb	1.139 ppb	3.352 ppb	2.690 ppb		0.692 ppb	N/A	0.965 ppb	
Concentration per Run 1	1.194 ppb	1.144 ppb	0.883 ppb	2.511 ppb	2.218 ppb		0.648 ppb	N/A	0.837 ppb	
Concentration per Run 2	1.370 ppb	1.291 ppb	1.138 ppb	3.569 ppb	2.761 ppb		0.749 ppb	N/A	0.933 ppb	
Concentration per Run 3	1.449 ppb	1.383 ppb	1.395 ppb	3.977 ppb	3.090 ppb		0.680 ppb	N/A	1.124 ppb	
Concentration RSD	9.8 %	9.5 %	22.5 %	22.6 %	16.4 %		7.5 %	N/A	15.1 %	
Intensity average	58,713 cps	28,828 cps	29,654 cps	7,770 cps	33,279 cps	28 cps	8,412 cps	180 cps	431 cps	131,057 cps
Intensity per Run 1	54,290.2 cps	26,792.8 cps	27,622.6 cps	6,729.8 cps	30,778.0 cps	20.0 cps	8,253.8 cps	230.0 cps	379.1 cps	137,596.4 cps
Intensity per Run 2	59,549.7 cps	29,150.1 cps	29,482.8 cps	8,018.6 cps	33,476.9 cps	29.0 cps	8,613.1 cps	140.0 cps	410.8 cps	133,879.5 cps
Intensity per Run 3	62,299.3 cps	30,541.4 cps	31,856.6 cps	8,562.9 cps	35,582.6 cps	34.0 cps	8,370.0 cps	170.0 cps	501.6 cps	121,694.0 cps
Intensity RSD	6.9 %	6.6 %	7.2 %	12.1 %	7.2 %	25.6 %	2.2 %	25.5 %	14.8 %	6.3 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.800 ppb		134.101 %	1.506 ppb	1.167 ppb	1.164 ppb	1.137 ppb	1.144 ppb	0.026 ppm
Concentration per Run 1		2.837 ppb		137.349 %	1.416 ppb	1.062 ppb	1.065 ppb	1.048 ppb	1.031 ppb	0.026 ppm
Concentration per Run 2		1.920 ppb		131.917 %	1.530 ppb	1.204 ppb	1.199 ppb	1.166 ppb	1.190 ppb	0.026 ppm
Concentration per Run 3		3.643 ppb		133.038 %	1.571 ppb	1.235 ppb	1.228 ppb	1.196 ppb	1.209 ppb	0.025 ppm
Concentration RSD		30.8 %		2.1 %	5.3 %	7.9 %	7.5 %	6.9 %	8.5 %	1.0 %
Intensity average	4,320 cps	27 cps	4,222 cps	784,199 cps	23,083 cps	32,370 cps	35,651 cps	20,815 cps	55,462 cps	2,289,570 cps
Intensity per Run 1	4,634.9 cps	35.5 cps	4,431.8 cps	803,189.2 cps	22,187.8 cps	30,100.4 cps	33,304.3 cps	19,583.4 cps	51,008.1 cps	2,306,685.0 cps
Intensity per Run 2	4,358.8 cps	-192.3 cps	4,508.8 cps	771,426.0 cps	23,125.5 cps	32,955.5 cps	36,236.5 cps	21,077.8 cps	57,009.9 cps	2,297,470.3 cps
Intensity per Run 3	3,966.6 cps	236.7 cps	3,726.6 cps	777,981.9 cps	23,935.1 cps	34,054.4 cps	37,412.1 cps	21,783.0 cps	58,368.2 cps	2,264,556.1 cps
Intensity RSD	7.8 %	806.3 %	10.2 %	2.1 %	3.8 %	6.3 %	5.9 %	5.4 %	7.1 %	1.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.933 ppb	0.461 ppb	1.007 ppb	0.456 ppb	0.872 ppb	0.886 ppb	133.561 %	0.971 ppb	0.963 ppb
Concentration per Run 1		0.904 ppb	0.430 ppb	0.952 ppb	0.419 ppb	0.816 ppb	0.816 ppb	134.142 %	0.877 ppb	0.876 ppb
Concentration per Run 2		0.853 ppb	0.465 ppb	0.996 ppb	0.469 ppb	0.874 ppb	0.900 ppb	132.800 %	0.979 ppb	0.979 ppb
Concentration per Run 3		1.042 ppb	0.489 ppb	1.073 ppb	0.481 ppb	0.925 ppb	0.941 ppb	133.743 %	1.057 ppb	1.034 ppb
Concentration RSD		10.5 %	6.5 %	6.1 %	7.2 %	6.2 %	7.2 %	0.5 %	9.3 %	8.3 %
Intensity average	1,075 cps	1,445 cps	49,500 cps	1,093 cps	48,304 cps	15,327 cps	38,489 cps	1,195,752 cps	35,663 cps	36,526 cps
Intensity per Run 1	1,104.1 cps	1,420.1 cps	46,301.8 cps	1,044.0 cps	44,804.3 cps	14,460.4 cps	35,642.6 cps	1,200,948.6 cps	32,454.2 cps	33,444.8 cps
Intensity per Run 2	1,104.1 cps	1,320.1 cps	49,642.5 cps	1,072.0 cps	49,208.8 cps	15,261.4 cps	38,880.9 cps	1,188,933.8 cps	35,719.1 cps	36,862.4 cps
Intensity per Run 3	1,016.0 cps	1,596.1 cps	52,554.5 cps	1,164.1 cps	50,899.6 cps	16,258.6 cps	40,944.9 cps	1,197,373.9 cps	38,816.2 cps	39,269.8 cps
Intensity RSD	4.7 %	9.7 %	6.3 %	5.7 %	6.5 %	5.9 %	6.9 %	0.5 %	8.9 %	8.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.975 ppb	23.255 ppb	23.397 ppb			133.825 %			0.020 ppm	0.873 ppb
Concentration per Run 1	0.888 ppb	19.542 ppb	19.820 ppb			135.249 %			0.020 ppm	0.786 ppb
Concentration per Run 2	1.010 ppb	24.212 ppb	24.455 ppb			131.627 %			0.020 ppm	0.898 ppb
Concentration per Run 3	1.026 ppb	26.012 ppb	25.915 ppb			134.600 %			0.019 ppm	0.937 ppb
Concentration RSD	7.7 %	14.4 %	13.6 %			1.4 %			1.8 %	9.0 %
Intensity average	29,562 cps	205,169 cps	376,113 cps	277 cps	243 cps	4,206,511 cps	348 cps	327 cps	4,420,733 cps	108,054 cps
Intensity per Run 1	27,129.6 cps	173,752.0 cps	321,200.4 cps	256.0 cps	236.0 cps	4,251,251.8 cps	320.0 cps	280.0 cps	4,491,566.0 cps	99,721.5 cps
Intensity per Run 2	30,393.0 cps	211,422.9 cps	388,916.5 cps	276.0 cps	276.0 cps	4,137,415.7 cps	300.0 cps	348.0 cps	4,436,918.8 cps	109,724.7 cps
Intensity per Run 3	31,162.9 cps	230,332.2 cps	418,223.5 cps	300.0 cps	216.0 cps	4,230,865.6 cps	424.0 cps	352.0 cps	4,333,714.0 cps	114,714.7 cps
Intensity RSD	7.2 %	14.0 %	13.2 %	7.9 %	12.6 %	1.4 %	19.1 %	12.4 %	1.8 %	7.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.871 ppb	0.926 ppb	0.941 ppb	0.925 ppb	132.943 %
Concentration per Run 1	0.776 ppb	0.838 ppb	0.846 ppb	0.830 ppb	136.248 %
Concentration per Run 2	0.893 ppb	0.948 ppb	0.979 ppb	0.958 ppb	131.341 %
Concentration per Run 3	0.944 ppb	0.992 ppb	0.998 ppb	0.986 ppb	131.240 %
Concentration RSD	9.9 %	8.5 %	8.8 %	9.0 %	2.2 %
Intensity average	261,345 cps	91,104 cps	81,306 cps	367,675 cps	3,407,245 cps
Intensity per Run 1	239,370.9 cps	84,650.7 cps	75,073.3 cps	339,202.0 cps	3,491,948.7 cps
Intensity per Run 2	265,015.4 cps	92,168.0 cps	83,615.2 cps	376,720.0 cps	3,366,179.8 cps
Intensity per Run 3	279,649.3 cps	96,493.5 cps	85,229.9 cps	387,102.8 cps	3,363,607.8 cps
Intensity RSD	7.8 %	6.6 %	6.7 %	6.9 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 21:54:21 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	130.656 %	133.349 %	0.752 ppb	34.160 ppb	35.171 ppb	N/A	11,457.587 ppb	5,356.185 ppb	5,590.965 ppb	5,467.065 ppb
Concentration per Run 1	129.312 %	135.308 %	0.699 ppb	28.899 ppb	29.600 ppb	N/A	10,990.905 ppb	4,828.451 ppb	5,104.472 ppb	5,092.935 ppb
Concentration per Run 2	131.790 %	131.870 %	0.735 ppb	35.348 ppb	36.847 ppb	N/A	11,812.385 ppb	5,676.288 ppb	5,851.958 ppb	5,540.233 ppb
Concentration per Run 3	130.865 %	132.868 %	0.821 ppb	38.232 ppb	39.066 ppb	N/A	11,569.472 ppb	5,563.816 ppb	5,816.466 ppb	5,768.027 ppb
Recovery Percentage 1			0.501 %		23.447 %		75.628 %			36.086 %
Concentration RSD	1.0 %	1.3 %	8.4 %	14.0 %	14.1 %	N/A	3.7 %	8.6 %	7.5 %	6.3 %
Intensity average	18,272,612 cps	42,935 cps	164 cps	776 cps	4,728 cps	1,943 cps	29,989,311 cps	6,389,812 cps	1,402,941 cps	1,826,165 cps
Intensity per Run 1	18,084,772.9 cps	43,566.3 cps	155.0 cps	666.5 cps	4,035.7 cps	2,120.2 cps	28,975,645.2 cps	5,800,423.9 cps	1,289,176.6 cps	1,711,472.3 cps
Intensity per Run 2	18,431,214.6 cps	42,459.5 cps	158.5 cps	797.0 cps	4,918.5 cps	1,950.2 cps	30,930,612.9 cps	6,780,170.2 cps	1,471,203.5 cps	1,855,376.4 cps
Intensity per Run 3	18,301,848.1 cps	42,780.6 cps	178.0 cps	865.0 cps	5,229.1 cps	1,760.1 cps	30,061,673.6 cps	6,588,843.2 cps	1,448,442.7 cps	1,911,647.5 cps
Intensity RSD	1.0 %	1.3 %	7.6 %	13.0 %	13.1 %	9.3 %	3.3 %	8.1 %	7.1 %	5.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	62.190 ppb		0.072 ppm	731.965 ppb	5,878.351 ppb	5,725.354 ppb	5,749.434 ppb	130.199 %	134.585 %	1.048 ppb
Concentration per Run 1	56.589 ppb		0.071 ppm	717.459 ppb	5,416.355 ppb	5,253.044 ppb	5,161.131 ppb	130.684 %	134.223 %	0.944 ppb
Concentration per Run 2	66.698 ppb		0.073 ppm	751.381 ppb	5,830.440 ppb	5,916.929 ppb	5,940.779 ppb	131.506 %	136.594 %	1.082 ppb
Concentration per Run 3	63.284 ppb		0.071 ppm	727.053 ppb	6,388.257 ppb	6,006.089 ppb	6,146.391 ppb	128.408 %	132.938 %	1.118 ppb
Recovery Percentage 1	0.410 %			4.831 %		37.791 %	37.950 %			0.699 %
Concentration RSD	8.3 %		2.0 %	2.4 %	8.3 %	7.2 %	9.0 %	1.2 %	1.4 %	8.7 %
Intensity average	26,027 cps	14,956 cps	655,512 cps	853,817 cps	32,158 cps	19,903,915 cps	374,579 cps	8,961,635 cps	395,119 cps	539 cps
Intensity per Run 1	23,873.1 cps	14,989.2 cps	651,176.8 cps	837,347.0 cps	29,595.3 cps	18,334,372.5 cps	335,610.4 cps	8,995,007.2 cps	394,055.5 cps	484.0 cps
Intensity per Run 2	27,951.4 cps	15,169.3 cps	675,672.7 cps	885,184.0 cps	32,341.9 cps	20,776,687.8 cps	392,550.1 cps	9,051,545.1 cps	401,018.4 cps	564.0 cps
Intensity per Run 3	26,257.7 cps	14,708.7 cps	639,687.1 cps	838,921.4 cps	34,538.1 cps	20,600,683.8 cps	395,575.6 cps	8,838,351.3 cps	390,282.6 cps	568.0 cps
Intensity RSD	7.9 %	1.6 %	2.8 %	3.2 %	7.7 %	6.8 %	9.0 %	1.2 %	1.4 %	8.8 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	0.900 ppb	0.816 ppb	0.529 ppb	N/A	188.361 ppb	150.538 ppb	148.730 ppb	1.246 ppb	1.743 ppb	1.723 ppb
Concentration per Run 1	0.818 ppb	0.750 ppb	0.485 ppb	N/A	165.164 ppb	144.041 ppb	144.273 ppb	1.170 ppb	1.753 ppb	1.790 ppb
Concentration per Run 2	0.943 ppb	0.844 ppb	0.551 ppb	N/A	194.527 ppb	155.152 ppb	150.179 ppb	1.273 ppb	1.854 ppb	1.710 ppb
Concentration per Run 3	0.940 ppb	0.855 ppb	0.550 ppb	N/A	205.390 ppb	152.420 ppb	151.738 ppb	1.294 ppb	1.623 ppb	1.668 ppb
Recovery Percentage 1	0.600 %	0.544 %		0.000 %	125.574 %		0.982 %	0.831 %	1.162 %	
Concentration RSD	7.9 %	7.1 %	7.1 %	N/A	11.0 %	3.8 %	2.6 %	5.3 %	6.7 %	3.6 %
Intensity average	18,523 cps	26,548 cps	3,825 cps	3,757 cps	4,022,505 cps	4,333,152 cps	144,793 cps	83,485 cps	42,815 cps	6,583 cps
Intensity per Run 1	16,997.0 cps	24,608.4 cps	3,640.5 cps	3,250.4 cps	3,510,135.6 cps	4,127,040.3 cps	140,125.3 cps	78,213.7 cps	42,464.4 cps	6,705.8 cps
Intensity per Run 2	19,579.3 cps	27,742.8 cps	3,956.6 cps	4,010.7 cps	4,201,646.5 cps	4,513,722.0 cps	148,372.2 cps	86,579.3 cps	44,603.6 cps	6,613.8 cps
Intensity per Run 3	18,992.7 cps	27,293.8 cps	3,876.6 cps	4,010.7 cps	4,355,734.0 cps	4,358,694.4 cps	145,882.7 cps	85,660.8 cps	41,376.5 cps	6,429.7 cps
Intensity RSD	7.3 %	6.4 %	4.3 %	11.7 %	11.2 %	4.5 %	2.9 %	5.5 %	3.8 %	2.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.320 ppb	1.281 ppb	0.948 ppb	2.727 ppb	2.260 ppb		0.464 ppb	N/A	0.934 ppb	
Concentration per Run 1	1.270 ppb	1.210 ppb	0.847 ppb	2.510 ppb	2.077 ppb		0.403 ppb	N/A	0.877 ppb	
Concentration per Run 2	1.363 ppb	1.317 ppb	1.026 ppb	2.850 ppb	2.302 ppb		0.489 ppb	N/A	0.991 ppb	
Concentration per Run 3	1.325 ppb	1.317 ppb	0.971 ppb	2.822 ppb	2.401 ppb		0.500 ppb	N/A	0.933 ppb	
Recovery Percentage 1		0.854 %	0.632 %				0.309 %	0.000 %		
Concentration RSD	3.6 %	4.8 %	9.7 %	6.9 %	7.3 %		11.4 %	N/A	6.1 %	
Intensity average	58,699 cps	29,278 cps	28,692 cps	6,967 cps	30,719 cps	32 cps	7,581 cps	170 cps	422 cps	82,276 cps
Intensity per Run 1	56,327.4 cps	27,722.9 cps	27,859.1 cps	6,601.8 cps	29,222.3 cps	30.0 cps	7,316.3 cps	180.0 cps	390.6 cps	80,189.9 cps
Intensity per Run 2	60,988.8 cps	30,465.2 cps	29,398.6 cps	7,198.1 cps	31,231.1 cps	36.0 cps	7,703.4 cps	120.0 cps	451.1 cps	85,944.6 cps
Intensity per Run 3	58,782.1 cps	29,647.2 cps	28,817.2 cps	7,102.0 cps	31,704.2 cps	31.0 cps	7,724.1 cps	210.0 cps	424.1 cps	80,694.7 cps
Intensity RSD	4.0 %	4.8 %	2.7 %	4.6 %	4.3 %	9.9 %	3.0 %	27.0 %	7.2 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		3.038 ppb		136.018 %	1.277 ppb	1.011 ppb	1.023 ppb	0.990 ppb	1.000 ppb	0.026 ppm
Concentration per Run 1		3.312 ppb		134.395 %	1.200 ppb	0.923 ppb	0.944 ppb	0.913 ppb	0.927 ppb	0.026 ppm
Concentration per Run 2		2.642 ppb		136.050 %	1.319 ppb	1.056 ppb	1.072 ppb	1.051 ppb	1.048 ppb	0.027 ppm
Concentration per Run 3		3.161 ppb		137.608 %	1.313 ppb	1.055 ppb	1.054 ppb	1.005 ppb	1.025 ppb	0.026 ppm
Recovery Percentage 1		2.025 %						0.660 %		0.000 %
Concentration RSD		11.6 %		1.2 %	5.3 %	7.6 %	6.8 %	7.1 %	6.4 %	0.6 %
Intensity average	4,088 cps	87 cps	4,022 cps	795,405 cps	19,980 cps	28,604 cps	31,976 cps	18,494 cps	49,480 cps	2,354,206 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,121.7 cps	157.4 cps	3,987.6 cps	785,916.8 cps	18,614.0 cps	25,911.0 cps	29,282.5 cps	16,951.6 cps	45,587.7 cps	2,361,690.0 cps
Intensity per Run 2	3,902.6 cps	-13.7 cps	3,875.6 cps	795,593.7 cps	20,625.0 cps	29,847.6 cps	33,484.9 cps	19,623.4 cps	51,823.3 cps	2,362,900.0 cps
Intensity per Run 3	4,238.7 cps	118.5 cps	4,202.7 cps	804,703.5 cps	20,701.2 cps	30,052.2 cps	33,160.0 cps	18,906.4 cps	51,028.1 cps	2,338,027.6 cps
Intensity RSD	4.2 %	102.6 %	4.1 %	1.2 %	5.9 %	8.2 %	7.3 %	7.5 %	6.9 %	0.6 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.838 ppb	0.427 ppb	0.881 ppb	0.422 ppb	0.791 ppb	0.798 ppb	136.617 %	0.879 ppb	0.869 ppb
Concentration per Run 1		0.803 ppb	0.402 ppb	0.904 ppb	0.409 ppb	0.744 ppb	0.774 ppb	136.789 %	0.792 ppb	0.822 ppb
Concentration per Run 2		0.872 ppb	0.436 ppb	0.901 ppb	0.431 ppb	0.820 ppb	0.800 ppb	136.785 %	0.917 ppb	0.895 ppb
Concentration per Run 3		0.840 ppb	0.444 ppb	0.836 ppb	0.426 ppb	0.810 ppb	0.821 ppb	136.277 %	0.927 ppb	0.889 ppb
Recovery Percentage 1			1.425 %				0.532 %		0.586 %	0.579 %
Concentration RSD		4.1 %	5.2 %	4.4 %	2.7 %	5.2 %	2.9 %	0.2 %	8.5 %	4.7 %
Intensity average	987 cps	1,339 cps	46,926 cps	976 cps	45,614 cps	14,215 cps	35,484 cps	1,223,109 cps	33,142 cps	33,808 cps
Intensity per Run 1	1,016.0 cps	1,284.1 cps	44,222.3 cps	1,000.0 cps	44,138.0 cps	13,355.2 cps	34,459.9 cps	1,224,652.0 cps	30,032.3 cps	32,077.3 cps
Intensity per Run 2	1,008.0 cps	1,388.1 cps	47,919.8 cps	1,000.0 cps	46,631.0 cps	14,748.7 cps	35,595.9 cps	1,224,610.2 cps	34,632.0 cps	34,920.8 cps
Intensity per Run 3	936.0 cps	1,344.1 cps	48,634.5 cps	928.0 cps	46,072.8 cps	14,540.5 cps	36,394.9 cps	1,220,066.2 cps	34,760.4 cps	34,427.4 cps
Intensity RSD	4.5 %	3.9 %	5.0 %	4.3 %	2.9 %	5.3 %	2.7 %	0.2 %	8.1 %	4.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.851 ppb	18.344 ppb	18.617 ppb			138.421 %			0.020 ppm	0.773 ppb
Concentration per Run 1	0.789 ppb	16.336 ppb	17.013 ppb			139.095 %			0.020 ppm	0.714 ppb
Concentration per Run 2	0.865 ppb	18.969 ppb	19.025 ppb			140.419 %			0.020 ppm	0.788 ppb
Concentration per Run 3	0.899 ppb	19.729 ppb	19.813 ppb			135.749 %			0.020 ppm	0.818 ppb
Recovery Percentage 1		12.230 %							0.000 %	
Concentration RSD	6.6 %	9.7 %	7.8 %			1.7 %			0.7 %	7.0 %
Intensity average	26,510 cps	166,457 cps	307,966 cps	213 cps	209 cps	4,350,965 cps	337 cps	301 cps	4,471,808 cps	98,055 cps
Intensity per Run 1	24,664.5 cps	148,728.9 cps	282,401.9 cps	204.0 cps	196.0 cps	4,372,168.7 cps	372.0 cps	252.0 cps	4,437,116.5 cps	91,868.6 cps
Intensity per Run 2	27,041.2 cps	173,412.0 cps	317,275.4 cps	196.0 cps	204.0 cps	4,413,758.2 cps	328.0 cps	348.0 cps	4,503,547.2 cps	100,480.4 cps
Intensity per Run 3	27,823.0 cps	177,229.0 cps	324,221.9 cps	240.0 cps	228.0 cps	4,266,969.5 cps	312.0 cps	304.0 cps	4,474,760.6 cps	101,816.2 cps
Intensity RSD	6.2 %	9.3 %	7.3 %	11.0 %	8.0 %	1.7 %	9.2 %	15.9 %	0.7 %	5.5 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.783 ppb	0.843 ppb	0.847 ppb	0.847 ppb	135.753 %
Concentration per Run 1	0.723 ppb	0.778 ppb	0.793 ppb	0.783 ppb	137.721 %
Concentration per Run 2	0.803 ppb	0.868 ppb	0.872 ppb	0.863 ppb	136.212 %
Concentration per Run 3	0.822 ppb	0.882 ppb	0.877 ppb	0.894 ppb	133.327 %
Recovery Percentage 1	0.522 %			0.564 %	
Concentration RSD	6.7 %	6.7 %	5.6 %	6.8 %	1.6 %
Intensity average	240,382 cps	84,881 cps	74,934 cps	344,271 cps	3,479,277 cps
Intensity per Run 1	225,718.3 cps	79,589.5 cps	71,199.6 cps	323,347.8 cps	3,529,701.1 cps
Intensity per Run 2	247,610.0 cps	87,800.4 cps	77,415.5 cps	352,243.2 cps	3,491,033.2 cps
Intensity per Run 3	247,817.8 cps	87,253.6 cps	76,187.8 cps	357,222.2 cps	3,417,097.7 cps
Intensity RSD	5.3 %	5.4 %	4.4 %	5.3 %	1.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 22:00:27 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	130.210 %	134.257 %	1.255 ppb	33.997 ppb	34.652 ppb	N/A	9,658.191 ppb	4,902.046 ppb	5,055.065 ppb	5,011.672 ppb
Concentration per Run 1	128.894 %	136.003 %	1.163 ppb	29.084 ppb	30.066 ppb	N/A	8,718.306 ppb	4,164.564 ppb	4,397.096 ppb	4,261.678 ppb
Concentration per Run 2	130.708 %	132.891 %	1.369 ppb	33.789 ppb	35.490 ppb	N/A	9,755.152 ppb	5,035.529 ppb	5,121.474 ppb	5,143.286 ppb
Concentration per Run 3	131.027 %	133.877 %	1.234 ppb	39.117 ppb	38.399 ppb	N/A	10,501.113 ppb	5,506.045 ppb	5,646.626 ppb	5,630.053 ppb
Recovery Percentage 1			125.517 %	3.400 %			1,931.638 %			1,002.334 %
Concentration RSD	0.9 %	1.2 %	8.3 %	14.8 %	12.2 %	N/A	9.3 %	13.9 %	12.4 %	13.8 %
Intensity average	18,210,280 cps	43,228 cps	272 cps	778 cps	4,688 cps	2,044 cps	25,392,185 cps	5,871,838 cps	1,273,595 cps	1,680,415 cps
Intensity per Run 1	18,026,279.0 cps	43,790.1 cps	256.0 cps	675.0 cps	4,126.2 cps	1,910.2 cps	23,227,964.9 cps	5,056,848.8 cps	1,122,852.3 cps	1,448,490.0 cps
Intensity per Run 2	18,279,967.9 cps	42,788.1 cps	293.5 cps	766.5 cps	4,763.4 cps	1,940.2 cps	25,538,940.6 cps	6,010,266.3 cps	1,285,999.5 cps	1,719,506.5 cps
Intensity per Run 3	18,324,593.0 cps	43,105.7 cps	267.0 cps	891.0 cps	5,174.6 cps	2,280.2 cps	27,409,650.3 cps	6,548,398.0 cps	1,411,933.3 cps	1,873,247.5 cps
Intensity RSD	0.9 %	1.2 %	7.1 %	13.9 %	11.3 %	10.1 %	8.2 %	12.9 %	11.4 %	12.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	111.298 ppb		0.060 ppm	662.444 ppb	5,502.414 ppb	5,657.924 ppb	5,272.449 ppb	128.538 %	134.901 %	1.654 ppb
Concentration per Run 1	111.965 ppb		0.057 ppm	625.918 ppb	4,862.082 ppb	5,498.413 ppb	4,751.886 ppb	128.314 %	136.540 %	1.645 ppb
Concentration per Run 2	113.586 ppb		0.061 ppm	672.523 ppb	5,418.115 ppb	5,616.434 ppb	5,193.079 ppb	129.046 %	135.169 %	1.623 ppb
Concentration per Run 3	108.343 ppb		0.063 ppm	688.893 ppb	6,227.046 ppb	5,858.925 ppb	5,872.382 ppb	128.254 %	132.993 %	1.694 ppb
Recovery Percentage 1	556.491 %			132.489 %			527.245 %			16.539 %
Concentration RSD	2.4 %		4.7 %	4.9 %	12.5 %	3.2 %	10.7 %	0.3 %	1.3 %	2.2 %
Intensity average	46,256 cps	12,993 cps	552,639 cps	777,464 cps	30,164 cps	19,427,863 cps	344,125 cps	8,847,286 cps	396,046 cps	851 cps
Intensity per Run 1	47,108.7 cps	12,166.0 cps	530,069.2 cps	745,530.0 cps	27,019.4 cps	18,845,894.4 cps	314,316.0 cps	8,831,872.3 cps	400,857.8 cps	856.0 cps
Intensity per Run 2	47,018.6 cps	13,157.0 cps	560,885.8 cps	789,242.9 cps	29,775.6 cps	19,362,531.6 cps	339,845.5 cps	8,882,272.2 cps	396,834.8 cps	836.0 cps
Intensity per Run 3	44,639.9 cps	13,657.5 cps	566,962.2 cps	797,619.0 cps	33,695.6 cps	20,075,162.4 cps	378,212.8 cps	8,827,712.1 cps	390,446.3 cps	860.0 cps
Intensity RSD	3.0 %	5.8 %	3.6 %	3.6 %	11.1 %	3.2 %	9.3 %	0.3 %	1.3 %	1.5 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.412 ppb	1.328 ppb	1.067 ppb	N/A	179.746 ppb	199.592 ppb	190.341 ppb	1.712 ppb	1.888 ppb	1.806 ppb
Concentration per Run 1	1.434 ppb	1.325 ppb	0.986 ppb	N/A	161.676 ppb	190.870 ppb	179.345 ppb	1.669 ppb	1.934 ppb	1.931 ppb
Concentration per Run 2	1.422 ppb	1.343 ppb	1.137 ppb	N/A	183.167 ppb	206.327 ppb	195.975 ppb	1.731 ppb	1.945 ppb	1.771 ppb
Concentration per Run 3	1.378 ppb	1.314 ppb	1.079 ppb	N/A	194.395 ppb	201.577 ppb	195.701 ppb	1.735 ppb	1.785 ppb	1.716 ppb
Recovery Percentage 1	28.231 %	66.381 %			17,974.577 %		95.170 %	171.167 %	188.805 %	
Concentration RSD	2.1 %	1.1 %	7.2 %	N/A	9.2 %	4.0 %	5.0 %	2.1 %	4.7 %	6.2 %
Intensity average	27,798 cps	41,108 cps	5,907 cps	6,282 cps	3,840,111 cps	5,730,874 cps	185,226 cps	114,822 cps	44,982 cps	6,791 cps
Intensity per Run 1	28,548.8 cps	41,541.1 cps	5,653.3 cps	5,881.4 cps	3,492,498.7 cps	5,540,194.8 cps	176,801.0 cps	113,365.5 cps	45,928.3 cps	7,162.1 cps
Intensity per Run 2	28,039.5 cps	41,633.3 cps	6,173.5 cps	6,441.7 cps	3,909,539.3 cps	5,912,519.1 cps	191,106.8 cps	116,375.6 cps	45,286.0 cps	6,677.8 cps
Intensity per Run 3	26,806.1 cps	40,148.4 cps	5,893.4 cps	6,521.7 cps	4,118,294.9 cps	5,739,907.8 cps	187,769.1 cps	114,724.5 cps	43,732.4 cps	6,533.7 cps
Intensity RSD	3.2 %	2.0 %	4.4 %	5.6 %	8.3 %	3.3 %	4.0 %	1.3 %	2.5 %	4.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.811 ppb	1.711 ppb	1.385 ppb	3.156 ppb	2.593 ppb		0.970 ppb	N/A	1.343 ppb	
Concentration per Run 1	1.860 ppb	1.691 ppb	1.290 ppb	2.870 ppb	2.458 ppb		0.970 ppb	N/A	1.322 ppb	
Concentration per Run 2	1.811 ppb	1.766 ppb	1.413 ppb	3.251 ppb	2.627 ppb		1.038 ppb	N/A	1.356 ppb	
Concentration per Run 3	1.761 ppb	1.676 ppb	1.452 ppb	3.348 ppb	2.694 ppb		0.902 ppb	N/A	1.349 ppb	
Recovery Percentage 1		85.563 %	69.251 %				96.993 %			
Concentration RSD	2.7 %	2.8 %	6.1 %	8.0 %	4.7 %		7.0 %	N/A	1.3 %	
Intensity average	78,451 cps	38,313 cps	32,290 cps	7,584 cps	33,006 cps	26 cps	9,808 cps	260 cps	618 cps	65,055 cps
Intensity per Run 1	81,138.8 cps	38,350.8 cps	31,948.9 cps	7,230.1 cps	32,337.8 cps	30.0 cps	9,951.5 cps	270.0 cps	612.5 cps	56,834.9 cps
Intensity per Run 2	78,127.6 cps	39,538.5 cps	32,365.9 cps	7,678.4 cps	33,043.7 cps	28.0 cps	10,059.4 cps	280.0 cps	618.9 cps	67,006.3 cps
Intensity per Run 3	76,087.2 cps	37,050.9 cps	32,554.4 cps	7,842.5 cps	33,637.3 cps	21.0 cps	9,413.5 cps	230.0 cps	623.3 cps	71,324.1 cps
Intensity RSD	3.2 %	3.2 %	1.0 %	4.2 %	2.0 %	17.9 %	3.5 %	10.2 %	0.9 %	11.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.828 ppb		135.594 %	1.820 ppb	1.587 ppb	1.578 ppb	1.555 ppb	1.532 ppb	0.027 ppm
Concentration per Run 1		3.039 ppb		136.222 %	1.733 ppb	1.574 ppb	1.551 ppb	1.533 ppb	1.542 ppb	0.027 ppm
Concentration per Run 2		2.571 ppb		133.776 %	1.898 ppb	1.632 ppb	1.614 ppb	1.619 ppb	1.566 ppb	0.026 ppm
Concentration per Run 3		2.875 ppb		136.784 %	1.828 ppb	1.554 ppb	1.570 ppb	1.514 ppb	1.488 ppb	0.027 ppm
Recovery Percentage 1		56.564 %						15.554 %		
Concentration RSD		8.4 %		1.2 %	4.5 %	2.5 %	2.0 %	3.6 %	2.6 %	1.8 %
Intensity average	4,320 cps	34 cps	4,133 cps	792,928 cps	28,164 cps	44,412 cps	48,779 cps	28,738 cps	75,081 cps	2,368,896 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,628.9 cps	88.4 cps	4,321.7 cps	796,597.8 cps	27,029.3 cps	44,378.9 cps	48,297.3 cps	28,548.7 cps	76,199.8 cps	2,403,120.8 cps
Intensity per Run 2	4,465.8 cps	-31.5 cps	4,308.7 cps	782,297.4 cps	29,017.7 cps	45,137.5 cps	49,309.1 cps	29,583.0 cps	75,930.2 cps	2,319,898.0 cps
Intensity per Run 3	3,865.6 cps	45.2 cps	3,769.6 cps	799,889.7 cps	28,444.4 cps	43,720.4 cps	48,731.0 cps	28,083.6 cps	73,113.3 cps	2,383,670.4 cps
Intensity RSD	9.3 %	178.3 %	7.6 %	1.2 %	3.6 %	1.6 %	1.0 %	2.7 %	2.3 %	1.8 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.355 ppb	0.520 ppb	1.385 ppb	0.515 ppb	1.312 ppb	1.313 ppb	135.956 %	1.419 ppb	1.533 ppb
Concentration per Run 1		1.411 ppb	0.511 ppb	1.380 ppb	0.517 ppb	1.332 ppb	1.310 ppb	137.974 %	1.440 ppb	1.560 ppb
Concentration per Run 2		1.401 ppb	0.522 ppb	1.440 ppb	0.524 ppb	1.333 ppb	1.342 ppb	135.244 %	1.433 ppb	1.552 ppb
Concentration per Run 3		1.253 ppb	0.527 ppb	1.334 ppb	0.503 ppb	1.271 ppb	1.288 ppb	134.649 %	1.384 ppb	1.487 ppb
Recovery Percentage 1			51.990 %				131.346 %			76.644 %
Concentration RSD		6.5 %	1.5 %	3.8 %	2.1 %	2.7 %	2.1 %	1.3 %	2.2 %	2.6 %
Intensity average	896 cps	2,072 cps	56,766 cps	1,527 cps	55,369 cps	23,451 cps	58,078 cps	1,217,187 cps	52,603 cps	58,963 cps
Intensity per Run 1	832.0 cps	2,176.2 cps	56,644.3 cps	1,540.1 cps	56,298.7 cps	24,123.3 cps	58,789.5 cps	1,235,255.7 cps	54,097.0 cps	60,719.4 cps
Intensity per Run 2	928.0 cps	2,120.2 cps	56,692.5 cps	1,576.1 cps	55,977.2 cps	23,666.4 cps	59,033.6 cps	1,210,819.2 cps	52,775.3 cps	59,236.1 cps
Intensity per Run 3	928.0 cps	1,920.2 cps	56,961.6 cps	1,464.1 cps	53,831.7 cps	22,564.4 cps	56,410.4 cps	1,205,487.6 cps	50,935.7 cps	56,933.5 cps
Intensity RSD	6.2 %	6.5 %	0.3 %	3.7 %	2.4 %	3.4 %	2.5 %	1.3 %	3.0 %	3.2 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.520 ppb	17.994 ppb	18.141 ppb			137.256 %			0.020 ppm	1.309 ppb
Concentration per Run 1	1.527 ppb	16.739 ppb	16.911 ppb			136.650 %			0.020 ppm	1.346 ppb
Concentration per Run 2	1.563 ppb	18.559 ppb	18.645 ppb			134.507 %			0.020 ppm	1.313 ppb
Concentration per Run 3	1.469 ppb	18.684 ppb	18.868 ppb			140.610 %			0.020 ppm	1.270 ppb
Recovery Percentage 1		179.938 %							2.004 %	
Concentration RSD	3.1 %	6.0 %	5.9 %			2.3 %			0.5 %	2.9 %
Intensity average	46,773 cps	162,237 cps	298,155 cps	252 cps	208 cps	4,314,343 cps	268 cps	251 cps	4,540,928 cps	165,767 cps
Intensity per Run 1	47,534.4 cps	151,880.2 cps	279,434.0 cps	240.0 cps	196.0 cps	4,295,292.4 cps	264.0 cps	264.0 cps	4,561,278.7 cps	173,519.4 cps
Intensity per Run 2	47,698.9 cps	165,346.9 cps	302,591.8 cps	248.0 cps	236.0 cps	4,227,947.7 cps	264.0 cps	276.0 cps	4,518,415.1 cps	165,674.3 cps
Intensity per Run 3	45,085.3 cps	169,482.8 cps	312,440.5 cps	268.0 cps	192.0 cps	4,419,788.5 cps	276.0 cps	212.0 cps	4,543,089.3 cps	158,106.1 cps
Intensity RSD	3.1 %	5.7 %	5.7 %	5.7 %	11.7 %	2.3 %	2.6 %	13.6 %	0.5 %	4.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	1.314 ppb	1.350 ppb	1.364 ppb	1.352 ppb	136.513 %
Concentration per Run 1	1.349 ppb	1.356 ppb	1.370 ppb	1.353 ppb	139.575 %
Concentration per Run 2	1.302 ppb	1.370 ppb	1.375 ppb	1.364 ppb	136.466 %
Concentration per Run 3	1.289 ppb	1.325 ppb	1.348 ppb	1.339 ppb	133.497 %
Recovery Percentage 1	262.702 %			135.191 %	
Concentration RSD	2.4 %	1.7 %	1.1 %	0.9 %	2.2 %
Intensity average	403,451 cps	136,132 cps	120,784 cps	550,742 cps	3,498,735 cps
Intensity per Run 1	423,290.2 cps	139,508.6 cps	123,871.5 cps	563,425.4 cps	3,577,218.6 cps
Intensity per Run 2	399,816.9 cps	137,898.8 cps	121,569.2 cps	555,400.2 cps	3,497,528.7 cps
Intensity per Run 3	387,244.7 cps	130,987.9 cps	116,912.7 cps	533,399.4 cps	3,421,457.1 cps
Intensity RSD	4.5 %	3.3 %	2.9 %	2.8 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ26017-004 Analysis: 10/30/2019 22:06:32 Sample Type UNKNOWN
Comment CMR-MW81S-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	130.867 %	133.310 %	1.559 ppb	29.857 ppb	30.171 ppb	N/A	7,511.860 ppb	3,837.903 ppb	3,939.111 ppb	3,922.387 ppb
Concentration per Run 1	129.793 %	136.766 %	1.470 ppb	25.336 ppb	26.063 ppb	N/A	6,548.769 ppb	3,288.360 ppb	3,360.266 ppb	3,321.993 ppb
Concentration per Run 2	131.281 %	130.898 %	1.609 ppb	31.376 ppb	31.944 ppb	N/A	7,999.529 ppb	4,084.342 ppb	4,122.009 ppb	4,228.260 ppb
Concentration per Run 3	131.527 %	132.266 %	1.599 ppb	32.859 ppb	32.507 ppb	N/A	7,987.282 ppb	4,141.008 ppb	4,335.059 ppb	4,216.907 ppb
Concentration RSD	0.7 %	2.3 %	5.0 %	13.3 %	11.8 %	N/A	11.1 %	12.4 %	13.0 %	13.3 %
Intensity average	18,302,198 cps	42,923 cps	335 cps	678 cps	4,053 cps	2,050 cps	19,610,741 cps	4,565,334 cps	985,523 cps	1,305,984 cps
Intensity per Run 1	18,152,027.1 cps	44,036.0 cps	324.0 cps	592.5 cps	3,604.0 cps	1,880.2 cps	17,620,110.2 cps	4,032,586.5 cps	866,840.9 cps	1,140,860.9 cps
Intensity per Run 2	18,360,110.4 cps	42,146.4 cps	339.0 cps	700.5 cps	4,218.2 cps	2,050.2 cps	20,516,876.8 cps	4,773,863.5 cps	1,013,253.5 cps	1,383,364.3 cps
Intensity per Run 3	18,394,456.8 cps	42,586.9 cps	340.5 cps	741.0 cps	4,336.8 cps	2,220.2 cps	20,695,237.0 cps	4,889,552.6 cps	1,076,474.9 cps	1,393,725.8 cps
Intensity RSD	0.7 %	2.3 %	2.7 %	11.3 %	9.7 %	8.3 %	8.8 %	10.2 %	10.9 %	11.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	140.562 ppb		0.055 ppm	614.863 ppb	4,692.857 ppb	4,745.428 ppb	4,578.253 ppb	129.449 %	134.247 %	1.804 ppb
Concentration per Run 1	136.892 ppb		0.051 ppm	561.428 ppb	4,051.407 ppb	4,694.032 ppb	3,958.070 ppb	128.680 %	138.539 %	1.811 ppb
Concentration per Run 2	147.285 ppb		0.058 ppm	652.980 ppb	4,944.104 ppb	4,861.166 ppb	4,830.889 ppb	128.495 %	131.446 %	1.865 ppb
Concentration per Run 3	137.509 ppb		0.056 ppm	630.180 ppb	5,083.060 ppb	4,681.085 ppb	4,945.801 ppb	131.174 %	132.756 %	1.735 ppb
Concentration RSD	4.1 %		6.9 %	7.8 %	11.9 %	2.1 %	11.8 %	1.2 %	2.8 %	3.6 %
Intensity average	57,864 cps	11,322 cps	499,956 cps	719,267 cps	25,587 cps	16,422,200 cps	297,131 cps	8,910,007 cps	394,126 cps	924 cps
Intensity per Run 1	58,045.1 cps	10,914.8 cps	475,860.9 cps	680,676.2 cps	22,851.3 cps	16,149,298.9 cps	265,752.8 cps	8,857,038.1 cps	406,726.1 cps	956.0 cps
Intensity per Run 2	59,441.3 cps	11,895.7 cps	517,520.7 cps	747,487.9 cps	26,448.2 cps	16,702,684.9 cps	307,602.9 cps	8,844,284.7 cps	385,903.5 cps	936.0 cps
Intensity per Run 3	56,105.9 cps	11,155.0 cps	506,486.6 cps	729,636.0 cps	27,460.3 cps	16,414,617.3 cps	318,038.0 cps	9,028,698.1 cps	389,748.5 cps	880.0 cps
Intensity RSD	2.9 %	4.5 %	4.3 %	4.8 %	9.5 %	1.7 %	9.3 %	1.2 %	2.8 %	4.3 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.708 ppb	1.645 ppb	1.351 ppb	N/A	158.561 ppb	205.551 ppb	197.224 ppb	1.937 ppb	1.934 ppb	1.900 ppb
Concentration per Run 1	1.580 ppb	1.549 ppb	1.258 ppb	N/A	139.367 ppb	190.152 ppb	181.280 ppb	1.785 ppb	1.796 ppb	1.717 ppb
Concentration per Run 2	1.790 ppb	1.736 ppb	1.438 ppb	N/A	169.338 ppb	216.573 ppb	211.439 ppb	2.095 ppb	2.070 ppb	2.076 ppb
Concentration per Run 3	1.754 ppb	1.651 ppb	1.355 ppb	N/A	166.977 ppb	209.929 ppb	198.953 ppb	1.930 ppb	1.937 ppb	1.907 ppb
Concentration RSD	6.6 %	5.7 %	6.7 %	N/A	10.5 %	6.7 %	7.7 %	8.0 %	7.1 %	9.5 %
Intensity average	32,950 cps	49,822 cps	6,990 cps	6,932 cps	3,385,171 cps	5,899,614 cps	190,737 cps	129,071 cps	46,497 cps	7,041 cps
Intensity per Run 1	31,659.8 cps	48,662.8 cps	6,813.9 cps	6,421.7 cps	3,054,369.2 cps	5,598,914.9 cps	181,306.5 cps	122,948.0 cps	44,330.9 cps	6,725.8 cps
Intensity per Run 2	33,746.6 cps	51,341.3 cps	7,198.1 cps	7,402.2 cps	3,555,891.1 cps	6,109,650.9 cps	200,383.3 cps	136,853.4 cps	48,305.4 cps	7,362.2 cps
Intensity per Run 3	33,444.4 cps	49,461.7 cps	6,958.0 cps	6,972.0 cps	3,545,252.5 cps	5,990,274.9 cps	190,521.6 cps	127,410.8 cps	46,855.8 cps	7,034.0 cps
Intensity RSD	3.4 %	2.8 %	2.8 %	7.1 %	8.5 %	4.5 %	5.0 %	5.5 %	4.3 %	4.5 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	2.120 ppb	2.098 ppb	1.668 ppb	3.263 ppb	2.856 ppb		1.096 ppb	N/A	1.621 ppb	
Concentration per Run 1	2.028 ppb	1.937 ppb	1.357 ppb	2.844 ppb	2.500 ppb		1.030 ppb	N/A	1.655 ppb	
Concentration per Run 2	2.226 ppb	2.247 ppb	1.956 ppb	3.774 ppb	3.094 ppb		1.181 ppb	N/A	1.707 ppb	
Concentration per Run 3	2.108 ppb	2.111 ppb	1.690 ppb	3.172 ppb	2.973 ppb		1.076 ppb	N/A	1.500 ppb	
Concentration RSD	4.7 %	7.4 %	18.0 %	14.4 %	11.0 %		7.1 %	N/A	6.6 %	
Intensity average	91,227 cps	46,088 cps	35,225 cps	7,781 cps	35,043 cps	31 cps	10,527 cps	297 cps	761 cps	46,431 cps
Intensity per Run 1	89,214.0 cps	44,166.2 cps	33,108.2 cps	7,294.1 cps	33,091.9 cps	32.0 cps	10,407.8 cps	280.0 cps	784.6 cps	40,386.9 cps
Intensity per Run 2	94,053.0 cps	48,200.8 cps	37,291.6 cps	8,410.8 cps	36,212.4 cps	29.0 cps	10,785.4 cps	330.0 cps	794.0 cps	48,758.0 cps
Intensity per Run 3	90,414.1 cps	45,896.2 cps	35,273.8 cps	7,638.3 cps	35,823.3 cps	32.0 cps	10,388.4 cps	280.0 cps	704.1 cps	50,147.4 cps
Intensity RSD	2.8 %	4.4 %	5.9 %	7.3 %	4.9 %	5.6 %	2.1 %	9.7 %	6.5 %	11.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.842 ppb		137.900 %	2.003 ppb	1.806 ppb	1.829 ppb	1.772 ppb	1.739 ppb	0.027 ppm
Concentration per Run 1		2.446 ppb		138.073 %	1.933 ppb	1.761 ppb	1.758 ppb	1.704 ppb	1.678 ppb	0.027 ppm
Concentration per Run 2		2.951 ppb		136.801 %	2.067 ppb	1.876 ppb	1.926 ppb	1.837 ppb	1.823 ppb	0.027 ppm
Concentration per Run 3		3.130 ppb		138.825 %	2.009 ppb	1.779 ppb	1.803 ppb	1.775 ppb	1.715 ppb	0.026 ppm
Concentration RSD		12.5 %		0.7 %	3.4 %	3.4 %	4.8 %	3.8 %	4.3 %	0.9 %
Intensity average	4,011 cps	37 cps	3,827 cps	806,411 cps	31,473 cps	51,303 cps	57,354 cps	33,230 cps	86,479 cps	2,379,691 cps
Intensity per Run 1	3,907.6 cps	-65.3 cps	3,825.6 cps	807,424.3 cps	30,521.4 cps	50,305.5 cps	55,471.6 cps	32,173.6 cps	84,099.0 cps	2,395,456.8 cps
Intensity per Run 2	4,067.7 cps	65.0 cps	3,909.6 cps	799,984.9 cps	32,185.6 cps	52,827.6 cps	59,823.0 cps	34,122.6 cps	89,790.2 cps	2,388,131.2 cps
Intensity per Run 3	4,057.7 cps	111.5 cps	3,744.6 cps	811,824.7 cps	31,712.3 cps	50,775.1 cps	56,768.7 cps	33,392.7 cps	85,548.0 cps	2,355,485.5 cps
Intensity RSD	2.2 %	247.2 %	2.2 %	0.7 %	2.7 %	2.6 %	3.9 %	3.0 %	3.4 %	0.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.655 ppb	0.571 ppb	1.667 ppb	0.559 ppb	1.599 ppb	1.600 ppb	138.053 %	1.708 ppb	1.738 ppb
Concentration per Run 1		1.626 ppb	0.545 ppb	1.664 ppb	0.537 ppb	1.557 ppb	1.552 ppb	140.435 %	1.617 ppb	1.661 ppb
Concentration per Run 2		1.691 ppb	0.590 ppb	1.625 ppb	0.591 ppb	1.647 ppb	1.678 ppb	136.354 %	1.780 ppb	1.821 ppb
Concentration per Run 3		1.648 ppb	0.577 ppb	1.710 ppb	0.549 ppb	1.594 ppb	1.571 ppb	137.372 %	1.727 ppb	1.732 ppb
Concentration RSD		2.0 %	4.1 %	2.6 %	5.1 %	2.8 %	4.3 %	1.5 %	4.9 %	4.6 %
Intensity average	1,008 cps	2,540 cps	63,229 cps	1,867 cps	61,041 cps	29,018 cps	71,814 cps	1,235,968 cps	63,970 cps	67,674 cps
Intensity per Run 1	1,060.0 cps	2,528.3 cps	61,443.4 cps	1,888.1 cps	59,449.5 cps	28,677.0 cps	70,861.4 cps	1,257,286.8 cps	61,736.7 cps	65,930.3 cps
Intensity per Run 2	904.0 cps	2,564.3 cps	64,602.6 cps	1,800.1 cps	63,850.9 cps	29,538.9 cps	74,414.5 cps	1,220,751.9 cps	65,772.9 cps	69,931.3 cps
Intensity per Run 3	1,060.0 cps	2,528.3 cps	63,641.8 cps	1,912.2 cps	59,822.9 cps	28,837.3 cps	70,166.0 cps	1,229,865.0 cps	64,401.7 cps	67,160.1 cps
Intensity RSD	8.9 %	0.8 %	2.6 %	3.2 %	4.0 %	1.6 %	3.2 %	1.5 %	3.2 %	3.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.729 ppb	16.722 ppb	16.546 ppb			137.634 %			0.020 ppm	1.478 ppb
Concentration per Run 1	1.607 ppb	15.030 ppb	15.068 ppb			141.259 %			0.020 ppm	1.442 ppb
Concentration per Run 2	1.852 ppb	17.244 ppb	17.260 ppb			134.257 %			0.020 ppm	1.554 ppb
Concentration per Run 3	1.729 ppb	17.892 ppb	17.309 ppb			137.385 %			0.020 ppm	1.437 ppb
Concentration RSD	7.1 %	9.0 %	7.7 %			2.5 %			1.5 %	4.5 %
Intensity average	53,821 cps	152,118 cps	274,200 cps	224 cps	201 cps	4,326,222 cps	251 cps	212 cps	4,557,219 cps	189,354 cps
Intensity per Run 1	51,020.1 cps	139,810.3 cps	255,428.6 cps	272.0 cps	200.0 cps	4,440,174.8 cps	236.0 cps	172.0 cps	4,620,038.2 cps	190,526.4 cps
Intensity per Run 2	56,833.1 cps	154,206.2 cps	281,025.0 cps	176.0 cps	220.0 cps	4,220,088.9 cps	280.0 cps	240.0 cps	4,484,448.4 cps	196,495.3 cps
Intensity per Run 3	53,610.7 cps	162,336.8 cps	286,146.2 cps	224.0 cps	184.0 cps	4,318,402.0 cps	236.0 cps	224.0 cps	4,567,170.5 cps	181,038.8 cps
Intensity RSD	5.4 %	7.5 %	6.0 %	21.4 %	9.0 %	2.5 %	10.1 %	16.8 %	1.5 %	4.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	1.477 ppb	1.626 ppb	1.626 ppb	1.625 ppb	138.626 %
Concentration per Run 1	1.427 ppb	1.547 ppb	1.534 ppb	1.560 ppb	142.939 %
Concentration per Run 2	1.553 ppb	1.687 ppb	1.681 ppb	1.682 ppb	137.059 %
Concentration per Run 3	1.451 ppb	1.643 ppb	1.664 ppb	1.631 ppb	135.880 %
Concentration RSD	4.5 %	4.4 %	4.9 %	3.8 %	2.7 %
Intensity average	459,825 cps	165,976 cps	145,811 cps	670,810 cps	3,552,908 cps
Intensity per Run 1	458,310.6 cps	162,974.4 cps	141,979.6 cps	664,767.5 cps	3,663,447.6 cps
Intensity per Run 2	478,016.0 cps	170,240.6 cps	149,036.0 cps	687,017.5 cps	3,512,743.0 cps
Intensity per Run 3	443,149.3 cps	164,712.4 cps	146,417.5 cps	660,643.9 cps	3,482,532.3 cps
Intensity RSD	3.8 %	2.3 %	2.4 %	2.1 %	2.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ26017-005 Analysis: 10/30/2019 22:12:38 Sample Type UNKNOWN
Comment CMR-MW85-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	129.556 %	132.325 %	1.533 ppb	38.988 ppb	39.531 ppb	N/A	11,753.339 ppb	4,789.267 ppb	4,970.931 ppb	4,959.707 ppb
Concentration per Run 1	129.128 %	133.547 %	1.602 ppb	38.489 ppb	38.909 ppb	N/A	11,670.964 ppb	4,501.723 ppb	4,649.123 ppb	4,679.016 ppb
Concentration per Run 2	129.085 %	131.750 %	1.541 ppb	37.929 ppb	39.031 ppb	N/A	11,663.324 ppb	4,889.767 ppb	5,001.979 ppb	4,983.655 ppb
Concentration per Run 3	130.457 %	131.679 %	1.456 ppb	40.546 ppb	40.652 ppb	N/A	11,925.730 ppb	4,976.312 ppb	5,261.690 ppb	5,216.449 ppb
Concentration RSD	0.6 %	0.8 %	4.8 %	3.5 %	2.5 %	N/A	1.3 %	5.3 %	6.2 %	5.4 %
Intensity average	18,118,883 cps	42,606 cps	327 cps	879 cps	5,273 cps	1,973 cps	30,480,567 cps	5,661,733 cps	1,235,971 cps	1,641,425 cps
Intensity per Run 1	18,058,919.1 cps	42,999.4 cps	344.5 cps	874.0 cps	5,225.6 cps	2,020.2 cps	30,296,896.6 cps	5,324,732.8 cps	1,155,971.9 cps	1,547,777.2 cps
Intensity per Run 2	18,052,917.6 cps	42,420.9 cps	327.0 cps	851.5 cps	5,184.6 cps	1,930.2 cps	30,129,416.8 cps	5,758,205.9 cps	1,238,855.0 cps	1,642,967.0 cps
Intensity per Run 3	18,244,813.4 cps	42,397.8 cps	309.0 cps	911.0 cps	5,407.7 cps	1,970.2 cps	31,015,389.1 cps	5,902,259.2 cps	1,313,086.2 cps	1,733,530.0 cps
Intensity RSD	0.6 %	0.8 %	5.4 %	3.4 %	2.3 %	2.3 %	1.5 %	5.3 %	6.4 %	5.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	144.786 ppb		0.065 ppm	885.047 ppb	5,161.891 ppb	5,625.908 ppb	4,998.134 ppb	127.216 %	133.049 %	1.937 ppb
Concentration per Run 1	151.917 ppb		0.065 ppm	918.991 ppb	4,775.467 ppb	5,528.161 ppb	4,703.115 ppb	125.714 %	131.774 %	1.996 ppb
Concentration per Run 2	144.835 ppb		0.065 ppm	887.919 ppb	5,271.993 ppb	5,785.403 ppb	5,076.986 ppb	126.808 %	132.613 %	1.914 ppb
Concentration per Run 3	137.608 ppb		0.064 ppm	848.232 ppb	5,438.213 ppb	5,564.159 ppb	5,214.301 ppb	129.127 %	134.759 %	1.901 ppb
Concentration RSD	4.9 %		0.6 %	4.0 %	6.7 %	2.5 %	5.3 %	1.4 %	1.2 %	2.7 %
Intensity average	59,117 cps	12,203 cps	586,515 cps	1,014,800 cps	27,955 cps	19,122,363 cps	322,197 cps	8,756,306 cps	390,608 cps	983 cps
Intensity per Run 1	61,943.4 cps	11,685.5 cps	585,055.7 cps	1,045,794.2 cps	25,636.4 cps	18,574,249.4 cps	300,375.7 cps	8,652,914.9 cps	386,865.9 cps	1,004.0 cps
Intensity per Run 2	58,918.9 cps	12,476.3 cps	586,916.8 cps	1,014,728.7 cps	28,442.5 cps	19,599,043.2 cps	326,074.1 cps	8,728,208.0 cps	389,330.7 cps	968.0 cps
Intensity per Run 3	56,487.7 cps	12,446.2 cps	587,571.4 cps	983,878.4 cps	29,785.6 cps	19,193,796.6 cps	340,140.4 cps	8,887,796.4 cps	395,628.4 cps	976.0 cps
Intensity RSD	4.6 %	3.7 %	0.2 %	3.1 %	7.6 %	2.7 %	6.3 %	1.4 %	1.2 %	1.9 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.720 ppb	1.708 ppb	1.420 ppb	N/A	151.009 ppb	220.494 ppb	213.044 ppb	1.948 ppb	2.048 ppb	2.017 ppb
Concentration per Run 1	1.774 ppb	1.768 ppb	1.412 ppb	N/A	137.476 ppb	218.418 ppb	212.164 ppb	2.009 ppb	1.998 ppb	1.993 ppb
Concentration per Run 2	1.725 ppb	1.727 ppb	1.418 ppb	N/A	152.268 ppb	222.438 ppb	214.867 ppb	1.945 ppb	2.052 ppb	1.990 ppb
Concentration per Run 3	1.661 ppb	1.628 ppb	1.431 ppb	N/A	163.283 ppb	220.628 ppb	212.100 ppb	1.891 ppb	2.093 ppb	2.068 ppb
Concentration RSD	3.3 %	4.2 %	0.7 %	N/A	8.6 %	0.9 %	0.7 %	3.0 %	2.3 %	2.2 %
Intensity average	32,901 cps	51,146 cps	7,181 cps	7,332 cps	3,191,123 cps	6,251,934 cps	204,350 cps	128,846 cps	47,239 cps	7,229 cps
Intensity per Run 1	33,550.3 cps	52,341.6 cps	7,106.0 cps	7,722.4 cps	2,889,203.7 cps	6,164,015.4 cps	201,566.2 cps	131,611.5 cps	46,904.1 cps	7,154.1 cps
Intensity per Run 2	32,882.9 cps	51,542.2 cps	7,146.1 cps	7,222.1 cps	3,205,632.3 cps	6,285,166.0 cps	205,414.7 cps	128,202.9 cps	47,128.7 cps	7,138.0 cps
Intensity per Run 3	32,270.5 cps	49,554.2 cps	7,290.1 cps	7,052.0 cps	3,478,533.6 cps	6,306,621.4 cps	206,070.2 cps	126,723.9 cps	47,682.8 cps	7,394.2 cps
Intensity RSD	1.9 %	2.8 %	1.3 %	4.8 %	9.2 %	1.2 %	1.2 %	1.9 %	0.8 %	2.0 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	2.237 ppb	2.142 ppb	2.206 ppb	3.807 ppb	3.400 ppb		1.156 ppb	N/A	1.669 ppb	
Concentration per Run 1	2.298 ppb	2.207 ppb	2.271 ppb	3.699 ppb	3.453 ppb		1.247 ppb	N/A	1.652 ppb	
Concentration per Run 2	2.263 ppb	2.193 ppb	2.225 ppb	3.988 ppb	3.397 ppb		1.121 ppb	N/A	1.701 ppb	
Concentration per Run 3	2.152 ppb	2.028 ppb	2.121 ppb	3.735 ppb	3.350 ppb		1.099 ppb	N/A	1.654 ppb	
Concentration RSD	3.4 %	4.7 %	3.5 %	4.1 %	1.5 %		6.9 %	N/A	1.7 %	
Intensity average	94,579 cps	46,632 cps	39,528 cps	8,446 cps	38,237 cps	27 cps	10,694 cps	280 cps	769 cps	51,205 cps
Intensity per Run 1	96,830.4 cps	47,506.2 cps	39,530.6 cps	8,290.8 cps	38,619.8 cps	19.0 cps	10,950.1 cps	220.0 cps	764.9 cps	43,889.6 cps
Intensity per Run 2	95,262.0 cps	47,534.4 cps	39,602.8 cps	8,675.0 cps	38,082.0 cps	35.0 cps	10,515.6 cps	360.0 cps	782.0 cps	51,325.3 cps
Intensity per Run 3	91,643.1 cps	44,856.4 cps	39,450.2 cps	8,370.8 cps	38,009.8 cps	26.0 cps	10,616.6 cps	260.0 cps	761.3 cps	58,400.4 cps
Intensity RSD	2.8 %	3.3 %	0.2 %	2.4 %	0.9 %	30.1 %	2.1 %	25.8 %	1.4 %	14.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		2.992 ppb		134.774 %	2.086 ppb	1.892 ppb	1.922 ppb	1.874 ppb	1.857 ppb	0.027 ppm
Concentration per Run 1		3.225 ppb		136.057 %	2.092 ppb	1.951 ppb	1.953 ppb	1.906 ppb	1.896 ppb	0.027 ppm
Concentration per Run 2		2.983 ppb		134.272 %	2.070 ppb	1.889 ppb	1.914 ppb	1.860 ppb	1.856 ppb	0.026 ppm
Concentration per Run 3		2.769 ppb		133.993 %	2.096 ppb	1.835 ppb	1.900 ppb	1.854 ppb	1.818 ppb	0.027 ppm
Concentration RSD		7.6 %		0.8 %	0.7 %	3.0 %	1.5 %	1.5 %	2.1 %	0.6 %
Intensity average	4,206 cps	75 cps	4,083 cps	788,131 cps	32,109 cps	52,679 cps	59,117 cps	34,466 cps	90,641 cps	2,365,284 cps
Intensity per Run 1	4,125.7 cps	133.1 cps	4,012.6 cps	795,633.4 cps	32,361.9 cps	54,514.9 cps	60,249.3 cps	35,141.5 cps	92,659.1 cps	2,371,793.9 cps
Intensity per Run 2	4,149.7 cps	73.3 cps	4,107.7 cps	785,195.0 cps	31,748.4 cps	52,430.1 cps	58,661.5 cps	34,114.6 cps	90,313.8 cps	2,347,883.7 cps
Intensity per Run 3	4,343.8 cps	19.1 cps	4,129.7 cps	783,565.8 cps	32,217.5 cps	51,092.3 cps	58,440.4 cps	34,142.7 cps	88,951.5 cps	2,376,173.5 cps
Intensity RSD	2.8 %	75.9 %	1.5 %	0.8 %	1.0 %	3.3 %	1.7 %	1.7 %	2.1 %	0.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.581 ppb	0.568 ppb	1.672 ppb	0.571 ppb	1.582 ppb	1.587 ppb	136.703 %	1.736 ppb	1.688 ppb
Concentration per Run 1		1.674 ppb	0.572 ppb	1.758 ppb	0.587 ppb	1.600 ppb	1.677 ppb	134.780 %	1.818 ppb	1.741 ppb
Concentration per Run 2		1.548 ppb	0.571 ppb	1.575 ppb	0.568 ppb	1.630 ppb	1.591 ppb	136.370 %	1.733 ppb	1.697 ppb
Concentration per Run 3		1.521 ppb	0.562 ppb	1.683 ppb	0.560 ppb	1.515 ppb	1.494 ppb	138.959 %	1.658 ppb	1.625 ppb
Concentration RSD		5.2 %	1.0 %	5.5 %	2.4 %	3.8 %	5.8 %	1.5 %	4.6 %	3.5 %
Intensity average	949 cps	2,398 cps	62,394 cps	1,848 cps	61,619 cps	28,363 cps	70,520 cps	1,223,878 cps	64,403 cps	65,116 cps
Intensity per Run 1	892.0 cps	2,516.3 cps	61,921.2 cps	1,928.2 cps	62,709.3 cps	28,396.3 cps	73,495.2 cps	1,206,658.0 cps	66,585.3 cps	66,489.2 cps
Intensity per Run 2	972.0 cps	2,344.2 cps	62,528.1 cps	1,736.1 cps	61,117.5 cps	29,166.0 cps	70,535.8 cps	1,220,898.5 cps	64,116.2 cps	65,286.2 cps
Intensity per Run 3	984.0 cps	2,332.2 cps	62,733.4 cps	1,880.1 cps	61,028.7 cps	27,526.4 cps	67,530.0 cps	1,244,078.4 cps	62,508.0 cps	63,573.4 cps
Intensity RSD	5.3 %	4.3 %	0.7 %	5.4 %	1.5 %	2.9 %	4.2 %	1.5 %	3.2 %	2.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.718 ppb	17.620 ppb	17.586 ppb			136.639 %			0.020 ppm	1.412 ppb
Concentration per Run 1	1.770 ppb	17.159 ppb	16.935 ppb			138.378 %			0.020 ppm	1.404 ppb
Concentration per Run 2	1.718 ppb	17.403 ppb	17.493 ppb			135.567 %			0.020 ppm	1.423 ppb
Concentration per Run 3	1.665 ppb	18.298 ppb	18.329 ppb			135.974 %			0.020 ppm	1.410 ppb
Concentration RSD	3.1 %	3.4 %	4.0 %			1.1 %			1.0 %	0.7 %
Intensity average	52,991 cps	159,071 cps	289,239 cps	235 cps	245 cps	4,294,968 cps	271 cps	239 cps	4,549,825 cps	177,348 cps
Intensity per Run 1	54,105.2 cps	154,597.8 cps	278,341.0 cps	196.0 cps	256.0 cps	4,349,603.8 cps	220.0 cps	196.0 cps	4,585,083.0 cps	178,546.3 cps
Intensity per Run 2	52,835.5 cps	156,328.1 cps	286,207.1 cps	264.0 cps	260.0 cps	4,261,250.4 cps	316.0 cps	228.0 cps	4,497,141.4 cps	176,165.2 cps
Intensity per Run 3	52,032.2 cps	166,287.4 cps	303,170.3 cps	244.0 cps	220.0 cps	4,274,050.2 cps	276.0 cps	292.0 cps	4,567,249.6 cps	177,333.6 cps
Intensity RSD	2.0 %	4.0 %	4.4 %	14.9 %	9.0 %	1.1 %	17.8 %	20.5 %	1.0 %	0.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	1.407 ppb	1.644 ppb	1.642 ppb	1.627 ppb	135.515 %
Concentration per Run 1	1.413 ppb	1.673 ppb	1.681 ppb	1.644 ppb	137.245 %
Concentration per Run 2	1.415 ppb	1.665 ppb	1.654 ppb	1.643 ppb	133.462 %
Concentration per Run 3	1.393 ppb	1.595 ppb	1.593 ppb	1.594 ppb	135.840 %
Concentration RSD	0.9 %	2.6 %	2.8 %	1.7 %	1.4 %
Intensity average	428,702 cps	164,326 cps	144,175 cps	657,037 cps	3,473,174 cps
Intensity per Run 1	436,002.0 cps	169,334.2 cps	149,429.5 cps	672,219.0 cps	3,517,494.8 cps
Intensity per Run 2	424,618.6 cps	163,914.0 cps	142,987.6 cps	653,462.9 cps	3,420,541.6 cps
Intensity per Run 3	425,486.5 cps	159,730.5 cps	140,106.8 cps	645,429.1 cps	3,481,486.1 cps
Intensity RSD	1.5 %	2.9 %	3.3 %	2.1 %	1.4 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ26017-006 Analysis: 10/30/2019 22:18:43 Sample Type UNKNOWN
Comment CMR-MW87-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	129.997 %	126.765 %	1.326 ppb	32.293 ppb	33.598 ppb	N/A	22,337.959 ppb	9,199.731 ppb	9,303.250 ppb	9,040.809 ppb
Concentration per Run 1	129.498 %	127.020 %	1.277 ppb	31.886 ppb	34.064 ppb	N/A	26,565.682 ppb	10,717.502 ppb	10,793.331 ppb	10,823.653 ppb
Concentration per Run 2	130.026 %	125.735 %	1.310 ppb	32.792 ppb	34.421 ppb	N/A	22,483.731 ppb	9,342.207 ppb	9,442.094 ppb	9,059.273 ppb
Concentration per Run 3	130.466 %	127.540 %	1.390 ppb	32.201 ppb	32.308 ppb	N/A	17,964.464 ppb	7,539.483 ppb	7,674.325 ppb	7,239.501 ppb
Concentration RSD	0.4 %	0.7 %	4.4 %	1.4 %	3.4 %	N/A	19.3 %	17.3 %	16.8 %	19.8 %
Intensity average	18,180,507 cps	40,816 cps	271 cps	698 cps	4,296 cps	1,890 cps	55,476,923 cps	10,416,367 cps	2,215,367 cps	2,865,747 cps
Intensity per Run 1	18,110,739.9 cps	40,897.8 cps	262.0 cps	691.0 cps	4,365.8 cps	1,800.1 cps	66,182,141.0 cps	12,173,830.6 cps	2,578,556.2 cps	3,442,090.3 cps
Intensity per Run 2	18,184,623.5 cps	40,484.0 cps	266.0 cps	703.0 cps	4,364.3 cps	1,950.2 cps	55,341,933.6 cps	10,483,075.5 cps	2,228,161.9 cps	2,845,468.2 cps
Intensity per Run 3	18,246,156.8 cps	41,065.4 cps	286.0 cps	700.5 cps	4,157.7 cps	1,920.2 cps	44,906,695.8 cps	8,592,195.3 cps	1,839,382.6 cps	2,309,681.8 cps
Intensity RSD	0.4 %	0.7 %	4.7 %	0.9 %	2.8 %	4.2 %	19.2 %	17.2 %	16.7 %	19.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	116.589 ppb		0.071 ppm	936.255 ppb	5,790.195 ppb	4,354.590 ppb	5,470.760 ppb	125.021 %	127.533 %	1.581 ppb
Concentration per Run 1	110.544 ppb		0.076 ppm	1,005.524 ppb	6,020.643 ppb	4,247.379 ppb	5,819.190 ppb	123.660 %	128.059 %	1.393 ppb
Concentration per Run 2	119.558 ppb		0.073 ppm	948.845 ppb	5,863.200 ppb	4,369.182 ppb	5,595.472 ppb	125.779 %	126.202 %	1.602 ppb
Concentration per Run 3	119.665 ppb		0.065 ppm	854.396 ppb	5,486.741 ppb	4,447.210 ppb	4,997.617 ppb	125.623 %	128.337 %	1.747 ppb
Concentration RSD	4.5 %		7.9 %	8.2 %	4.7 %	2.3 %	7.8 %	0.9 %	0.9 %	11.3 %
Intensity average	45,744 cps	10,538 cps	619,061 cps	1,027,410 cps	30,030 cps	14,575,158 cps	337,775 cps	8,605,175 cps	374,414 cps	769 cps
Intensity per Run 1	43,545.9 cps	10,694.6 cps	663,164.0 cps	1,105,706.4 cps	31,349.4 cps	14,064,577.9 cps	360,752.3 cps	8,511,535.9 cps	375,958.8 cps	680.0 cps
Intensity per Run 2	46,456.6 cps	10,404.3 cps	624,929.7 cps	1,030,497.9 cps	30,096.3 cps	14,708,220.5 cps	341,929.3 cps	8,657,347.9 cps	370,508.5 cps	772.0 cps
Intensity per Run 3	47,229.4 cps	10,514.5 cps	569,088.2 cps	946,026.7 cps	28,643.0 cps	14,952,674.2 cps	310,643.3 cps	8,646,640.5 cps	376,775.9 cps	856.0 cps
Intensity RSD	4.2 %	1.4 %	7.6 %	7.8 %	4.5 %	3.1 %	7.5 %	0.9 %	0.9 %	11.4 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	1.406 ppb	1.336 ppb	1.099 ppb	N/A	117.877 ppb	173.181 ppb	170.940 ppb	1.584 ppb	1.583 ppb	1.603 ppb
Concentration per Run 1	1.358 ppb	1.260 ppb	1.036 ppb	N/A	111.572 ppb	164.833 ppb	161.411 ppb	1.529 ppb	1.559 ppb	1.565 ppb
Concentration per Run 2	1.414 ppb	1.359 ppb	1.124 ppb	N/A	118.885 ppb	179.760 ppb	171.012 ppb	1.590 ppb	1.591 ppb	1.723 ppb
Concentration per Run 3	1.445 ppb	1.388 ppb	1.136 ppb	N/A	123.174 ppb	174.949 ppb	180.399 ppb	1.634 ppb	1.598 ppb	1.520 ppb
Concentration RSD	3.1 %	5.0 %	5.0 %	N/A	5.0 %	4.4 %	5.6 %	3.3 %	1.3 %	6.7 %
Intensity average	26,177 cps	39,076 cps	5,713 cps	5,628 cps	2,390,548 cps	4,723,706 cps	157,476 cps	100,513 cps	38,435 cps	5,975 cps
Intensity per Run 1	25,467.1 cps	37,211.6 cps	5,477.2 cps	5,151.1 cps	2,256,409.3 cps	4,483,555.3 cps	149,389.6 cps	97,410.7 cps	37,107.2 cps	5,845.4 cps
Intensity per Run 2	26,042.1 cps	39,293.7 cps	5,757.3 cps	5,661.3 cps	2,391,133.9 cps	4,862,977.6 cps	155,891.8 cps	99,841.5 cps	38,551.6 cps	6,217.6 cps
Intensity per Run 3	27,021.2 cps	40,722.3 cps	5,905.4 cps	6,071.5 cps	2,524,101.0 cps	4,824,583.7 cps	167,146.6 cps	104,285.6 cps	39,646.8 cps	5,861.4 cps
Intensity RSD	3.0 %	4.5 %	3.8 %	8.2 %	5.6 %	4.4 %	5.7 %	3.5 %	3.3 %	3.5 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	1.874 ppb	1.815 ppb	1.966 ppb	3.289 ppb	2.814 ppb		0.851 ppb	N/A	1.442 ppb	
Concentration per Run 1	1.814 ppb	1.784 ppb	2.022 ppb	3.185 ppb	2.653 ppb		0.773 ppb	N/A	1.458 ppb	
Concentration per Run 2	1.908 ppb	1.840 ppb	1.910 ppb	3.222 ppb	2.844 ppb		0.865 ppb	N/A	1.421 ppb	
Concentration per Run 3	1.901 ppb	1.822 ppb	1.965 ppb	3.460 ppb	2.945 ppb		0.915 ppb	N/A	1.446 ppb	
Concentration RSD	2.8 %	1.6 %	2.8 %	4.5 %	5.3 %		8.5 %	N/A	1.3 %	
Intensity average	76,984 cps	38,265 cps	35,621 cps	7,402 cps	32,885 cps	25 cps	8,869 cps	310 cps	636 cps	36,414 cps
Intensity per Run 1	74,067.4 cps	37,801.2 cps	35,490.4 cps	7,178.1 cps	31,451.7 cps	29.0 cps	8,391.3 cps	320.0 cps	631.7 cps	33,032.7 cps
Intensity per Run 2	77,765.3 cps	38,358.9 cps	35,057.2 cps	7,270.1 cps	32,907.3 cps	18.0 cps	8,897.9 cps	270.0 cps	624.4 cps	36,444.1 cps
Intensity per Run 3	79,118.2 cps	38,635.8 cps	36,316.7 cps	7,758.4 cps	34,295.1 cps	27.0 cps	9,316.9 cps	340.0 cps	650.9 cps	39,765.2 cps
Intensity RSD	3.4 %	1.1 %	1.8 %	4.2 %	4.3 %	23.8 %	5.2 %	11.6 %	2.2 %	9.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		3.421 ppb		129.820 %	1.750 ppb	1.573 ppb	1.566 ppb	1.557 ppb	1.529 ppb	0.025 ppm
Concentration per Run 1		3.868 ppb		126.532 %	1.780 ppb	1.549 ppb	1.542 ppb	1.518 ppb	1.509 ppb	0.025 ppm
Concentration per Run 2		2.986 ppb		129.814 %	1.739 ppb	1.578 ppb	1.554 ppb	1.556 ppb	1.540 ppb	0.025 ppm
Concentration per Run 3		3.410 ppb		133.115 %	1.732 ppb	1.592 ppb	1.602 ppb	1.599 ppb	1.538 ppb	0.026 ppm
Concentration RSD		12.9 %		2.5 %	1.5 %	1.4 %	2.0 %	2.6 %	1.1 %	2.2 %
Intensity average	3,962 cps	176 cps	3,769 cps	759,165 cps	25,940 cps	42,157 cps	46,347 cps	27,552 cps	71,720 cps	2,229,589 cps
Intensity per Run 1	3,638.5 cps	279.8 cps	3,362.5 cps	739,934.2 cps	25,754.6 cps	40,546.0 cps	44,595.7 cps	26,239.6 cps	69,216.0 cps	2,198,247.8 cps
Intensity per Run 2	3,898.6 cps	70.3 cps	3,767.6 cps	759,129.1 cps	25,766.6 cps	42,259.4 cps	45,940.3 cps	27,486.2 cps	72,131.8 cps	2,204,840.8 cps
Intensity per Run 3	4,348.8 cps	176.7 cps	4,176.7 cps	778,430.4 cps	26,299.7 cps	43,664.2 cps	48,506.1 cps	28,929.5 cps	73,813.5 cps	2,285,678.3 cps
Intensity RSD	9.1 %	59.7 %	10.8 %	2.5 %	1.2 %	3.7 %	4.3 %	4.9 %	3.2 %	2.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		1.363 ppb	0.505 ppb	1.363 ppb	0.498 ppb	1.335 ppb	1.342 ppb	129.967 %	1.444 ppb	1.427 ppb
Concentration per Run 1		1.383 ppb	0.481 ppb	1.303 ppb	0.483 ppb	1.304 ppb	1.300 ppb	127.835 %	1.424 ppb	1.415 ppb
Concentration per Run 2		1.404 ppb	0.517 ppb	1.334 ppb	0.503 ppb	1.345 ppb	1.335 ppb	129.565 %	1.474 ppb	1.427 ppb
Concentration per Run 3		1.304 ppb	0.518 ppb	1.453 ppb	0.507 ppb	1.355 ppb	1.391 ppb	132.502 %	1.434 ppb	1.439 ppb
Concentration RSD		3.9 %	4.2 %	5.8 %	2.6 %	2.0 %	3.4 %	1.8 %	1.8 %	0.8 %
Intensity average	920 cps	1,992 cps	52,774 cps	1,439 cps	51,222 cps	22,814 cps	56,748 cps	1,163,575 cps	51,205 cps	52,609 cps
Intensity per Run 1	976.0 cps	1,980.2 cps	49,377.7 cps	1,348.1 cps	48,783.4 cps	21,891.2 cps	54,061.6 cps	1,144,484.1 cps	49,678.8 cps	51,297.4 cps
Intensity per Run 2	896.0 cps	2,044.2 cps	53,779.5 cps	1,404.1 cps	51,662.8 cps	22,921.0 cps	56,244.4 cps	1,159,972.3 cps	52,028.3 cps	52,329.4 cps
Intensity per Run 3	888.0 cps	1,952.2 cps	55,165.6 cps	1,564.1 cps	53,221.3 cps	23,630.4 cps	59,937.3 cps	1,186,267.3 cps	51,907.8 cps	54,201.4 cps
Intensity RSD	5.3 %	2.4 %	5.7 %	7.8 %	4.4 %	3.8 %	5.2 %	1.8 %	2.6 %	2.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	1.451 ppb	13.361 ppb	13.313 ppb			133.364 %			0.019 ppm	1.222 ppb
Concentration per Run 1	1.411 ppb	12.839 ppb	12.941 ppb			130.946 %			0.019 ppm	1.181 ppb
Concentration per Run 2	1.464 ppb	13.803 ppb	13.413 ppb			130.960 %			0.019 ppm	1.244 ppb
Concentration per Run 3	1.480 ppb	13.442 ppb	13.587 ppb			138.184 %			0.020 ppm	1.240 ppb
Concentration RSD	2.5 %	3.6 %	2.5 %			3.1 %			1.8 %	2.9 %
Intensity average	42,858 cps	116,124 cps	211,089 cps	225 cps	215 cps	4,191,999 cps	247 cps	237 cps	4,365,506 cps	149,454 cps
Intensity per Run 1	40,955.2 cps	109,656.2 cps	201,578.2 cps	224.0 cps	208.0 cps	4,116,017.9 cps	216.0 cps	228.0 cps	4,400,184.2 cps	143,892.7 cps
Intensity per Run 2	42,957.9 cps	118,738.0 cps	210,327.9 cps	220.0 cps	208.0 cps	4,116,445.9 cps	264.0 cps	208.0 cps	4,276,140.7 cps	150,245.6 cps
Intensity per Run 3	44,659.8 cps	119,977.9 cps	221,361.8 cps	232.0 cps	228.0 cps	4,343,534.6 cps	260.0 cps	276.0 cps	4,420,192.5 cps	154,224.3 cps
Intensity RSD	4.3 %	4.9 %	4.7 %	2.7 %	5.4 %	3.1 %	10.8 %	14.7 %	1.8 %	3.5 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	1.231 ppb	1.378 ppb	1.391 ppb	1.382 ppb	131.734 %
Concentration per Run 1	1.185 ppb	1.331 ppb	1.344 ppb	1.332 ppb	131.412 %
Concentration per Run 2	1.253 ppb	1.399 ppb	1.413 ppb	1.414 ppb	130.187 %
Concentration per Run 3	1.256 ppb	1.404 ppb	1.414 ppb	1.400 ppb	133.603 %
Concentration RSD	3.2 %	3.0 %	2.9 %	3.2 %	1.3 %
Intensity average	365,069 cps	134,087 cps	118,813 cps	543,187 cps	3,376,265 cps
Intensity per Run 1	350,685.0 cps	129,092.2 cps	114,535.6 cps	522,524.8 cps	3,368,010.8 cps
Intensity per Run 2	367,020.2 cps	134,485.0 cps	119,295.9 cps	549,239.9 cps	3,336,623.1 cps
Intensity per Run 3	377,503.0 cps	138,685.3 cps	122,606.9 cps	557,797.4 cps	3,424,159.9 cps
Intensity RSD	3.7 %	3.6 %	3.4 %	3.4 %	1.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ26017-007 Analysis: 10/30/2019 22:24:49 Sample Type UNKNOWN
Comment CMR-DS06-191025 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	16.802 %	28.226 %	0.001 ppb	0.827 ppb	0.882 ppb	N/A	32.406 ppb	18.940 ppb	18.478 ppb	16.824 ppb
Concentration per Run 1	29.665 %	33.389 %	0.025 ppb	0.680 ppb	0.556 ppb	N/A	21.871 ppb	11.103 ppb	10.945 ppb	10.766 ppb
Concentration per Run 2	12.323 %	23.623 %	-0.022 ppb	1.397 ppb	0.949 ppb	N/A	38.877 ppb	22.085 ppb	24.687 ppb	19.927 ppb
Concentration per Run 3	8.417 %	27.667 %	0.001 ppb	0.403 ppb	1.140 ppb	N/A	36.471 ppb	23.632 ppb	19.800 ppb	19.778 ppb
Concentration RSD	67.3 %	17.4 %	1,863.1 %	62.0 %	33.8 %	N/A	28.4 %	36.1 %	37.7 %	31.2 %
Intensity average	2,349,814 cps	9,088 cps	1 cps	5 cps	30 cps	1,173 cps	25,287 cps	6,043 cps	1,273 cps	1,557 cps
Intensity per Run 1	4,148,813.4 cps	10,750.6 cps	2.5 cps	5.0 cps	23.5 cps	1,140.1 cps	18,579.2 cps	3,730.9 cps	790.0 cps	1,020.1 cps
Intensity per Run 2	1,723,469.0 cps	7,606.0 cps	0.0 cps	7.0 cps	29.0 cps	1,220.1 cps	29,650.6 cps	7,074.0 cps	1,690.2 cps	1,870.3 cps
Intensity per Run 3	1,177,159.7 cps	8,908.2 cps	1.0 cps	3.0 cps	37.5 cps	1,160.1 cps	27,630.1 cps	7,325.1 cps	1,340.1 cps	1,780.3 cps
Intensity RSD	67.3 %	17.4 %	107.9 %	40.0 %	23.5 %	3.5 %	23.3 %	33.2 %	35.6 %	30.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-0.883 ppb		0.005 ppm	-1.207 ppb	-8.156 ppb	6.907 ppb	0.985 ppb	15.399 %	36.089 %	0.017 ppb
Concentration per Run 1	-0.921 ppb		0.006 ppm	0.411 ppb	-18.917 ppb	-6.162 ppb	1.805 ppb	27.009 %	28.789 %	0.033 ppb
Concentration per Run 2	-1.280 ppb		0.005 ppm	-2.111 ppb	-7.183 ppb	6.775 ppb	-1.753 ppb	11.597 %	43.027 %	0.021 ppb
Concentration per Run 3	-0.448 ppb		0.005 ppm	-1.921 ppb	1.632 ppb	20.107 ppb	2.905 ppb	7.591 %	36.452 %	-0.003 ppb
Concentration RSD	47.3 %		14.3 %	116.4 %	126.4 %	190.2 %	247.1 %	66.6 %	19.7 %	110.2 %
Intensity average	77 cps	1,080 cps	12,320 cps	7,189 cps	17 cps	11,129 cps	280 cps	1,059,911 cps	105,953 cps	3 cps
Intensity per Run 1	70.0 cps	1,130.1 cps	12,747.3 cps	6,511.9 cps	0.0 cps	14,078.3 cps	240.0 cps	1,859,061.0 cps	84,520.8 cps	4.0 cps
Intensity per Run 2	40.0 cps	1,060.0 cps	12,607.5 cps	7,993.2 cps	20.0 cps	10,034.1 cps	280.0 cps	798,199.8 cps	126,320.2 cps	4.0 cps
Intensity per Run 3	120.0 cps	1,050.1 cps	11,606.3 cps	7,062.6 cps	30.0 cps	9,273.5 cps	320.0 cps	522,473.6 cps	107,017.0 cps	0.0 cps
Intensity RSD	52.7 %	4.0 %	5.1 %	10.4 %	91.7 %	23.2 %	14.3 %	66.6 %	19.7 %	86.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.116 ppb	-0.103 ppb	-0.421 ppb	N/A	0.201 ppb	-1.260 ppb	-1.159 ppb	0.009 ppb	-0.843 ppb	-0.856 ppb
Concentration per Run 1	-0.112 ppb	-0.108 ppb	-0.423 ppb	N/A	0.157 ppb	-1.353 ppb	-1.180 ppb	0.010 ppb	-0.866 ppb	-0.870 ppb
Concentration per Run 2	-0.117 ppb	-0.102 ppb	-0.409 ppb	N/A	0.256 ppb	-1.228 ppb	-1.107 ppb	0.006 ppb	-0.822 ppb	-0.838 ppb
Concentration per Run 3	-0.119 ppb	-0.099 ppb	-0.431 ppb	N/A	0.190 ppb	-1.200 ppb	-1.190 ppb	0.013 ppb	-0.842 ppb	-0.860 ppb
Concentration RSD	3.0 %	4.3 %	2.6 %	N/A	25.0 %	6.4 %	3.9 %	38.8 %	2.6 %	1.9 %
Intensity average	55 cps	155 cps	43 cps	60 cps	1,896 cps	4,868 cps	132 cps	260 cps	355 cps	64 cps
Intensity per Run 1	60.1 cps	92.0 cps	32.0 cps	10.0 cps	1,308.1 cps	3,340.6 cps	100.0 cps	212.0 cps	224.0 cps	44.0 cps
Intensity per Run 2	61.6 cps	188.0 cps	64.0 cps	30.0 cps	2,580.5 cps	6,022.5 cps	172.0 cps	236.0 cps	504.0 cps	88.0 cps
Intensity per Run 3	43.8 cps	184.0 cps	32.0 cps	140.0 cps	1,800.3 cps	5,242.2 cps	124.0 cps	332.0 cps	336.0 cps	60.0 cps
Intensity RSD	17.9 %	35.1 %	43.3 %	116.7 %	33.8 %	28.3 %	27.8 %	24.4 %	39.7 %	34.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.119 ppb	-0.110 ppb	-2.047 ppb	-1.853 ppb	-1.915 ppb		1.426 ppb	N/A	0.143 ppb	
Concentration per Run 1	-0.120 ppb	-0.115 ppb	-2.127 ppb	-1.864 ppb	-1.979 ppb		1.400 ppb	N/A	0.201 ppb	
Concentration per Run 2	-0.118 ppb	-0.106 ppb	-1.932 ppb	-1.863 ppb	-1.844 ppb		1.541 ppb	N/A	0.159 ppb	
Concentration per Run 3	-0.120 ppb	-0.108 ppb	-2.081 ppb	-1.831 ppb	-1.921 ppb		1.338 ppb	N/A	0.071 ppb	
Concentration RSD	1.2 %	4.5 %	5.0 %	1.0 %	3.5 %		7.3 %	N/A	46.4 %	
Intensity average	209 cps	100 cps	607 cps	77 cps	431 cps	8 cps	2,459 cps	50 cps	9 cps	861 cps
Intensity per Run 1	160.0 cps	52.0 cps	476.0 cps	60.0 cps	252.0 cps	11.0 cps	2,492.8 cps	30.0 cps	12.9 cps	871.0 cps
Intensity per Run 2	268.0 cps	140.0 cps	812.0 cps	88.0 cps	640.0 cps	6.0 cps	2,566.5 cps	30.0 cps	13.1 cps	879.0 cps
Intensity per Run 3	200.0 cps	108.0 cps	532.0 cps	84.0 cps	400.0 cps	6.0 cps	2,316.3 cps	90.0 cps	1.1 cps	833.0 cps
Intensity RSD	26.1 %	44.5 %	29.7 %	19.6 %	45.5 %	37.7 %	5.2 %	69.3 %	76.5 %	2.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.064 ppb		29.720 %	-0.011 ppb	-0.010 ppb	-0.009 ppb	-0.007 ppb	-0.004 ppb	0.005 ppm
Concentration per Run 1		0.941 ppb		25.010 %	-0.011 ppb	-0.014 ppb	-0.006 ppb	-0.009 ppb	-0.006 ppb	0.005 ppm
Concentration per Run 2		-3.098 ppb		35.676 %	-0.006 ppb	-0.010 ppb	-0.013 ppb	-0.009 ppb	0.000 ppb	0.006 ppm
Concentration per Run 3		-1.035 ppb		28.474 %	-0.017 ppb	-0.007 ppb	-0.008 ppb	-0.003 ppb	-0.007 ppb	0.005 ppm
Concentration RSD		189.8 %		18.3 %	51.2 %	35.1 %	40.2 %	45.9 %	94.3 %	16.0 %
Intensity average	3,669 cps	-197 cps	3,800 cps	173,796 cps	59 cps	53 cps	73 cps	47 cps	132 cps	486,641 cps
Intensity per Run 1	3,695.5 cps	-94.6 cps	3,747.6 cps	146,254.3 cps	52.0 cps	28.0 cps	84.0 cps	36.0 cps	100.0 cps	422,660.0 cps
Intensity per Run 2	3,807.6 cps	-305.2 cps	4,039.7 cps	208,626.2 cps	88.0 cps	60.0 cps	56.0 cps	44.0 cps	200.0 cps	573,256.5 cps
Intensity per Run 3	3,504.5 cps	-191.5 cps	3,612.5 cps	166,507.7 cps	36.0 cps	72.0 cps	80.0 cps	60.0 cps	96.0 cps	464,005.4 cps
Intensity RSD	4.2 %	53.5 %	5.7 %	18.3 %	45.4 %	42.6 %	20.7 %	26.2 %	44.6 %	16.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.046 ppb	0.000 ppb	-0.002 ppb	0.001 ppb	0.004 ppb	0.003 ppb	28.205 %	-0.014 ppb	0.000 ppb
Concentration per Run 1		-0.053 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.005 ppb	0.003 ppb	28.891 %	-0.017 ppb	-0.002 ppb
Concentration per Run 2		-0.032 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	0.003 ppb	0.003 ppb	28.226 %	-0.010 ppb	0.001 ppb
Concentration per Run 3		-0.053 ppb	0.001 ppb	-0.002 ppb	0.001 ppb	0.003 ppb	0.004 ppb	27.497 %	-0.014 ppb	0.003 ppb
Concentration RSD		25.8 %	162.0 %	0.0 %	121.0 %	29.3 %	18.2 %	2.5 %	24.0 %	523.0 %
Intensity average	99 cps	15 cps	33 cps	0 cps	33 cps	16 cps	44 cps	252,511 cps	116 cps	105 cps
Intensity per Run 1	92.0 cps	12.0 cps	24.0 cps	0.0 cps	28.0 cps	20.0 cps	41.4 cps	258,654.0 cps	96.0 cps	92.0 cps
Intensity per Run 2	132.0 cps	20.0 cps	32.0 cps	0.0 cps	24.0 cps	16.0 cps	40.2 cps	252,706.3 cps	140.0 cps	104.0 cps
Intensity per Run 3	72.0 cps	12.0 cps	44.0 cps	0.0 cps	48.0 cps	12.0 cps	49.0 cps	246,172.6 cps	112.0 cps	120.0 cps
Intensity RSD	31.0 %	31.5 %	30.2 %	N/A	38.6 %	25.0 %	10.9 %	2.5 %	19.2 %	13.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.001 ppb	0.004 ppb	0.008 ppb			30.097 %			0.004 ppm	0.003 ppb
Concentration per Run 1	0.001 ppb	0.006 ppb	0.012 ppb			38.911 %			0.006 ppm	-0.002 ppb
Concentration per Run 2	-0.001 ppb	-0.004 ppb	0.007 ppb			23.994 %			0.003 ppm	0.006 ppb
Concentration per Run 3	0.003 ppb	0.008 ppb	0.007 ppb			27.386 %			0.004 ppm	0.003 ppb
Concentration RSD	189.7 %	184.3 %	33.4 %			26.0 %			27.0 %	154.9 %
Intensity average	91 cps	55 cps	113 cps	0 cps	5 cps	946,039 cps	15 cps	7 cps	997,600 cps	381 cps
Intensity per Run 1	96.0 cps	68.0 cps	144.0 cps	0.0 cps	4.0 cps	1,223,100.3 cps	28.0 cps	16.0 cps	1,288,439.9 cps	354.0 cps
Intensity per Run 2	76.0 cps	36.0 cps	96.0 cps	0.0 cps	4.0 cps	754,187.9 cps	8.0 cps	0.0 cps	756,430.6 cps	399.0 cps
Intensity per Run 3	100.0 cps	60.0 cps	100.0 cps	0.0 cps	8.0 cps	860,828.6 cps	8.0 cps	4.0 cps	947,930.0 cps	390.0 cps
Intensity RSD	14.2 %	30.5 %	23.5 %	N/A	43.3 %	26.0 %	78.7 %	124.9 %	27.0 %	6.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.002 ppb	0.112 ppb	0.102 ppb	0.106 ppb	28.405 %
Concentration per Run 1	-0.001 ppb	0.077 ppb	0.071 ppb	0.073 ppb	35.465 %
Concentration per Run 2	0.006 ppb	0.137 ppb	0.126 ppb	0.132 ppb	22.964 %
Concentration per Run 3	0.003 ppb	0.121 ppb	0.109 ppb	0.114 ppb	26.785 %
Concentration RSD	157.1 %	28.0 %	27.6 %	28.3 %	22.6 %
Intensity average	894 cps	2,451 cps	1,981 cps	9,435 cps	727,995 cps
Intensity per Run 1	864.0 cps	2,277.2 cps	1,868.1 cps	8,774.3 cps	908,944.7 cps
Intensity per Run 2	926.0 cps	2,485.3 cps	2,024.2 cps	9,682.5 cps	588,565.1 cps
Intensity per Run 3	893.0 cps	2,590.3 cps	2,052.2 cps	9,847.6 cps	686,476.3 cps
Intensity RSD	3.5 %	6.5 %	5.0 %	6.1 %	22.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-001 Analysis: 10/30/2019 22:30:55 Sample Type UNKNOWN
Comment L106-1 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	31.064 %	21.057 %	0.014 ppb	1.444 ppb	1.366 ppb	N/A	4.711 ppb	0.988 ppb	1.501 ppb	0.178 ppb
Concentration per Run 1	46.578 %	15.828 %	0.038 ppb	1.224 ppb	1.378 ppb	N/A	6.543 ppb	1.916 ppb	2.297 ppb	-0.275 ppb
Concentration per Run 2	25.172 %	26.165 %	0.026 ppb	1.943 ppb	1.226 ppb	N/A	3.851 ppb	0.591 ppb	1.420 ppb	1.239 ppb
Concentration per Run 3	21.442 %	21.178 %	-0.022 ppb	1.165 ppb	1.494 ppb	N/A	3.739 ppb	0.456 ppb	0.785 ppb	-0.430 ppb
Concentration RSD	43.7 %	24.5 %	227.7 %	30.0 %	9.8 %	N/A	33.7 %	81.7 %	50.6 %	517.7 %
Intensity average	4,344,393 cps	6,780 cps	1 cps	6 cps	32 cps	1,103 cps	5,551 cps	627 cps	167 cps	147 cps
Intensity per Run 1	6,514,107.0 cps	5,096.4 cps	1.5 cps	4.0 cps	25.5 cps	1,160.1 cps	5,341.3 cps	690.0 cps	170.0 cps	100.0 cps
Intensity per Run 2	3,520,325.0 cps	8,424.5 cps	2.0 cps	9.5 cps	36.0 cps	1,050.0 cps	6,081.6 cps	650.0 cps	190.0 cps	230.0 cps
Intensity per Run 3	2,998,746.4 cps	6,818.9 cps	0.0 cps	5.0 cps	35.5 cps	1,100.1 cps	5,231.1 cps	540.0 cps	140.0 cps	110.0 cps
Intensity RSD	43.7 %	24.5 %	89.2 %	47.5 %	18.3 %	5.0 %	8.3 %	12.4 %	15.1 %	49.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.099 ppb		0.010 ppm	3.529 ppb	2.764 ppb	-15.209 ppb	-8.164 ppb	30.088 %	22.923 %	0.012 ppb
Concentration per Run 1	-0.967 ppb		0.012 ppm	6.657 ppb	4.437 ppb	-18.904 ppb	-8.569 ppb	46.541 %	21.404 %	-0.003 ppb
Concentration per Run 2	-1.404 ppb		0.009 ppm	-0.002 ppb	1.307 ppb	-14.059 ppb	-7.730 ppb	24.176 %	24.292 %	-0.003 ppb
Concentration per Run 3	-0.925 ppb		0.009 ppm	3.931 ppb	2.549 ppb	-12.663 ppb	-8.192 ppb	19.547 %	23.073 %	0.042 ppb
Concentration RSD	24.1 %		15.1 %	94.9 %	57.0 %	21.5 %	5.1 %	48.0 %	6.3 %	224.3 %
Intensity average	37 cps	1,000 cps	14,973 cps	5,551 cps	20 cps	7,579 cps	80 cps	2,070,954 cps	67,298 cps	1 cps
Intensity per Run 1	40.0 cps	1,190.1 cps	15,801.2 cps	5,611.4 cps	20.0 cps	8,432.9 cps	70.0 cps	3,203,445.6 cps	62,839.6 cps	0.0 cps
Intensity per Run 2	20.0 cps	990.0 cps	15,119.9 cps	5,341.2 cps	20.0 cps	7,502.3 cps	90.0 cps	1,664,005.1 cps	71,315.8 cps	0.0 cps
Intensity per Run 3	50.0 cps	820.0 cps	13,998.4 cps	5,701.4 cps	20.0 cps	6,801.9 cps	80.0 cps	1,345,410.9 cps	67,739.5 cps	4.0 cps
Intensity RSD	41.7 %	18.5 %	6.1 %	3.4 %	0.0 %	10.8 %	12.5 %	48.0 %	6.3 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.111 ppb	-0.096 ppb	-0.382 ppb	N/A	-0.026 ppb	-1.546 ppb	-1.502 ppb	0.016 ppb	-0.875 ppb	-0.839 ppb
Concentration per Run 1	-0.122 ppb	-0.088 ppb	-0.373 ppb	N/A	-0.028 ppb	-1.472 ppb	-1.457 ppb	0.013 ppb	-0.881 ppb	-0.819 ppb
Concentration per Run 2	-0.106 ppb	-0.101 ppb	-0.401 ppb	N/A	-0.022 ppb	-1.619 ppb	-1.505 ppb	0.018 ppb	-0.877 ppb	-0.855 ppb
Concentration per Run 3	-0.104 ppb	-0.099 ppb	-0.372 ppb	N/A	-0.028 ppb	-1.548 ppb	-1.545 ppb	0.017 ppb	-0.865 ppb	-0.842 ppb
Concentration RSD	8.9 %	7.2 %	4.4 %	N/A	12.4 %	4.7 %	2.9 %	15.7 %	1.0 %	2.2 %
Intensity average	54 cps	128 cps	55 cps	33 cps	425 cps	1,887 cps	27 cps	244 cps	211 cps	53 cps
Intensity per Run 1	16.7 cps	156.0 cps	60.0 cps	30.0 cps	416.0 cps	2,260.3 cps	32.0 cps	196.0 cps	224.0 cps	64.0 cps
Intensity per Run 2	70.0 cps	112.0 cps	44.0 cps	20.0 cps	460.0 cps	1,600.1 cps	28.0 cps	276.0 cps	208.0 cps	48.0 cps
Intensity per Run 3	74.0 cps	116.0 cps	60.0 cps	50.0 cps	400.0 cps	1,800.2 cps	20.0 cps	260.0 cps	200.0 cps	48.0 cps
Intensity RSD	59.8 %	19.0 %	16.9 %	45.8 %	7.3 %	17.9 %	22.9 %	17.3 %	5.8 %	17.3 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.108 ppb	-2.132 ppb	-1.798 ppb	-1.907 ppb		1.691 ppb	N/A	-0.018 ppb	
Concentration per Run 1	-0.125 ppb	-0.105 ppb	-2.055 ppb	-1.590 ppb	-1.898 ppb		2.090 ppb	N/A	0.035 ppb	
Concentration per Run 2	-0.119 ppb	-0.111 ppb	-2.204 ppb	-1.913 ppb	-1.896 ppb		1.209 ppb	N/A	-0.074 ppb	
Concentration per Run 3	-0.115 ppb	-0.108 ppb	-2.138 ppb	-1.890 ppb	-1.927 ppb		1.775 ppb	N/A	-0.015 ppb	
Concentration RSD	4.3 %	2.7 %	3.5 %	10.0 %	0.9 %		26.4 %	N/A	301.5 %	
Intensity average	149 cps	67 cps	437 cps	75 cps	328 cps	8 cps	2,633 cps	53 cps	-7 cps	772 cps
Intensity per Run 1	116.0 cps	72.0 cps	524.0 cps	136.0 cps	360.0 cps	5.0 cps	2,720.8 cps	20.0 cps	-2.6 cps	838.0 cps
Intensity per Run 2	160.0 cps	60.0 cps	400.0 cps	44.0 cps	352.0 cps	17.0 cps	2,753.1 cps	80.0 cps	-12.7 cps	747.0 cps
Intensity per Run 3	172.0 cps	68.0 cps	388.0 cps	44.0 cps	272.0 cps	2.0 cps	2,424.0 cps	60.0 cps	-6.1 cps	730.0 cps
Intensity RSD	19.7 %	9.2 %	17.2 %	71.1 %	14.8 %	99.2 %	6.9 %	57.3 %	72.0 %	7.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-3.246 ppb		26.828 %	-0.008 ppb	-0.009 ppb	-0.012 ppb	-0.009 ppb	0.021 ppb	0.005 ppm
Concentration per Run 1		-1.115 ppb		31.205 %	-0.011 ppb	-0.003 ppb	-0.014 ppb	-0.011 ppb	-0.009 ppb	0.006 ppm
Concentration per Run 2		-3.614 ppb		27.198 %	-0.003 ppb	-0.014 ppb	-0.012 ppb	-0.004 ppb	0.054 ppb	0.006 ppm
Concentration per Run 3		-5.009 ppb		22.082 %	-0.010 ppb	-0.010 ppb	-0.010 ppb	-0.013 ppb	0.018 ppb	0.005 ppm
Concentration RSD		60.8 %		17.0 %	58.5 %	61.3 %	17.1 %	49.1 %	149.7 %	13.2 %
Intensity average	3,971 cps	-312 cps	4,210 cps	156,887 cps	64 cps	56 cps	49 cps	37 cps	371 cps	486,124 cps
Intensity per Run 1	3,936.6 cps	-177.5 cps	4,193.7 cps	182,483.4 cps	60.0 cps	96.0 cps	40.0 cps	32.0 cps	80.0 cps	500,524.8 cps
Intensity per Run 2	4,279.7 cps	-405.2 cps	4,492.8 cps	159,049.4 cps	84.0 cps	28.0 cps	56.0 cps	60.0 cps	748.1 cps	541,959.0 cps
Intensity per Run 3	3,696.6 cps	-353.4 cps	3,944.6 cps	129,129.2 cps	48.0 cps	44.0 cps	52.0 cps	20.0 cps	284.0 cps	415,888.5 cps
Intensity RSD	7.4 %	38.2 %	6.5 %	17.0 %	28.6 %	63.5 %	16.9 %	55.0 %	92.4 %	13.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.013 ppb	-0.001 ppb	0.010 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	27.981 %	-0.013 ppb	0.000 ppb
Concentration per Run 1		0.018 ppb	-0.001 ppb	0.017 ppb	-0.001 ppb	-0.001 ppb	0.000 ppb	24.960 %	-0.010 ppb	0.002 ppb
Concentration per Run 2		0.001 ppb	-0.001 ppb	0.014 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	34.408 %	-0.013 ppb	-0.003 ppb
Concentration per Run 3		0.018 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	24.574 %	-0.016 ppb	0.001 ppb
Concentration RSD		77.2 %	15.4 %	102.9 %	103.8 %	0.0 %	71.3 %	19.9 %	22.7 %	2,133.6 %
Intensity average	77 cps	31 cps	12 cps	3 cps	12 cps	0 cps	3 cps	250,508 cps	120 cps	97 cps
Intensity per Run 1	60.0 cps	32.0 cps	12.0 cps	4.0 cps	8.0 cps	0.0 cps	8.6 cps	223,466.5 cps	128.0 cps	100.0 cps
Intensity per Run 2	120.0 cps	32.0 cps	12.0 cps	4.0 cps	8.0 cps	0.0 cps	4.1 cps	308,052.6 cps	144.0 cps	96.0 cps
Intensity per Run 3	52.0 cps	28.0 cps	12.0 cps	0.0 cps	20.0 cps	0.0 cps	-2.4 cps	220,005.3 cps	88.0 cps	96.0 cps
Intensity RSD	48.1 %	7.5 %	0.0 %	86.6 %	57.7 %	N/A	159.5 %	19.9 %	24.0 %	2.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.001 ppb	-0.011 ppb	-0.016 ppb			24.810 %			0.003 ppm	0.000 ppb
Concentration per Run 1	0.000 ppb	-0.007 ppb	-0.011 ppb			21.658 %			0.003 ppm	0.004 ppb
Concentration per Run 2	0.000 ppb	-0.017 ppb	-0.016 ppb			31.940 %			0.004 ppm	-0.002 ppb
Concentration per Run 3	-0.002 ppb	-0.009 ppb	-0.022 ppb			20.831 %			0.003 ppm	-0.001 ppb
Concentration RSD	177.2 %	52.4 %	35.3 %			24.9 %			22.6 %	790.9 %
Intensity average	77 cps	23 cps	24 cps	3 cps	3 cps	779,839 cps	9 cps	5 cps	764,902 cps	256 cps
Intensity per Run 1	72.0 cps	28.0 cps	36.0 cps	0.0 cps	4.0 cps	680,780.5 cps	8.0 cps	4.0 cps	698,612.5 cps	272.0 cps
Intensity per Run 2	100.0 cps	16.0 cps	32.0 cps	4.0 cps	4.0 cps	1,003,963.6 cps	16.0 cps	8.0 cps	960,958.1 cps	255.0 cps
Intensity per Run 3	60.0 cps	24.0 cps	4.0 cps	4.0 cps	0.0 cps	654,774.1 cps	4.0 cps	4.0 cps	635,136.7 cps	242.0 cps
Intensity RSD	26.5 %	27.0 %	72.6 %	86.6 %	86.6 %	24.9 %	65.5 %	43.3 %	22.6 %	5.9 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.002 ppb	0.121 ppb	0.118 ppb	0.120 ppb	21.988 %
Concentration per Run 1	0.005 ppb	0.143 ppb	0.133 ppb	0.140 ppb	17.286 %
Concentration per Run 2	-0.001 ppb	0.100 ppb	0.101 ppb	0.102 ppb	25.515 %
Concentration per Run 3	0.001 ppb	0.120 ppb	0.119 ppb	0.117 ppb	23.164 %
Concentration RSD	187.3 %	18.0 %	13.2 %	15.9 %	19.3 %
Intensity average	670 cps	2,090 cps	1,793 cps	8,298 cps	563,543 cps
Intensity per Run 1	681.0 cps	1,977.2 cps	1,604.1 cps	7,674.0 cps	443,034.3 cps
Intensity per Run 2	652.0 cps	2,089.2 cps	1,852.1 cps	8,470.1 cps	653,920.7 cps
Intensity per Run 3	678.0 cps	2,202.2 cps	1,924.2 cps	8,751.2 cps	593,673.9 cps
Intensity RSD	2.4 %	5.4 %	9.4 %	6.7 %	19.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-002 Analysis: 10/30/2019 22:37:00 Sample Type UNKNOWN
Comment WT-1 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	27.337 %	22.965 %	0.025 ppb	1.718 ppb	1.722 ppb	N/A	0.604 ppb	-1.811 ppb	-1.707 ppb	-1.611 ppb
Concentration per Run 1	10.419 %	24.110 %	0.017 ppb	1.657 ppb	1.367 ppb	N/A	0.699 ppb	-1.638 ppb	-1.689 ppb	-1.475 ppb
Concentration per Run 2	4.778 %	20.672 %	0.054 ppb	1.939 ppb	2.354 ppb	N/A	0.986 ppb	-1.823 ppb	-1.592 ppb	-1.078 ppb
Concentration per Run 3	66.814 %	24.113 %	0.004 ppb	1.557 ppb	1.445 ppb	N/A	0.127 ppb	-1.973 ppb	-1.840 ppb	-2.281 ppb
Concentration RSD	125.5 %	8.6 %	103.4 %	11.6 %	31.9 %	N/A	72.4 %	9.3 %	7.3 %	38.0 %
Intensity average	3,823,172 cps	7,394 cps	2 cps	8 cps	45 cps	1,080 cps	4,851 cps	120 cps	47 cps	57 cps
Intensity per Run 1	1,457,172.3 cps	7,762.8 cps	1.5 cps	8.0 cps	39.0 cps	1,170.1 cps	5,141.2 cps	170.0 cps	50.0 cps	70.0 cps
Intensity per Run 2	668,198.6 cps	6,655.8 cps	2.5 cps	8.0 cps	56.0 cps	1,050.0 cps	4,771.0 cps	110.0 cps	50.0 cps	90.0 cps
Intensity per Run 3	9,344,145.2 cps	7,763.9 cps	1.0 cps	7.5 cps	40.5 cps	1,020.0 cps	4,640.9 cps	80.0 cps	40.0 cps	10.0 cps
Intensity RSD	125.5 %	8.6 %	45.8 %	3.7 %	20.8 %	7.3 %	5.4 %	38.2 %	12.4 %	73.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.322 ppb		0.006 ppm	-2.521 ppb	-11.403 ppb	0.193 ppb	-9.113 ppb	28.739 %	33.387 %	0.018 ppb
Concentration per Run 1	-1.226 ppb		0.006 ppm	-2.537 ppb	-11.744 ppb	-2.212 ppb	-10.009 ppb	9.681 %	34.932 %	-0.003 ppb
Concentration per Run 2	-1.303 ppb		0.007 ppm	-2.091 ppb	-11.242 ppb	23.814 ppb	-9.003 ppb	4.552 %	32.749 %	0.062 ppb
Concentration per Run 3	-1.436 ppb		0.007 ppm	-2.935 ppb	-11.223 ppb	-21.022 ppb	-8.327 ppb	71.984 %	32.481 %	-0.003 ppb
Concentration RSD	8.0 %		9.6 %	16.7 %	2.6 %	11,662.9 %	9.3 %	130.6 %	4.0 %	206.1 %
Intensity average	30 cps	950 cps	13,391 cps	6,235 cps	10 cps	7,012 cps	100 cps	1,978,101 cps	98,019 cps	3 cps
Intensity per Run 1	40.0 cps	1,060.1 cps	12,507.0 cps	6,521.9 cps	10.0 cps	6,061.5 cps	90.0 cps	666,313.7 cps	102,553.3 cps	0.0 cps
Intensity per Run 2	30.0 cps	1,050.0 cps	13,588.1 cps	6,171.6 cps	10.0 cps	6,001.5 cps	100.0 cps	313,297.7 cps	96,146.1 cps	8.0 cps
Intensity per Run 3	20.0 cps	740.0 cps	14,078.6 cps	6,011.5 cps	10.0 cps	8,973.3 cps	110.0 cps	4,954,690.5 cps	95,359.1 cps	0.0 cps
Intensity RSD	33.3 %	19.2 %	6.0 %	4.2 %	0.0 %	24.2 %	10.0 %	130.6 %	4.0 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.115 ppb	-0.105 ppb	-0.417 ppb	N/A	-0.095 ppb	-1.675 ppb	-1.539 ppb	0.010 ppb	-0.839 ppb	-0.893 ppb
Concentration per Run 1	-0.117 ppb	-0.108 ppb	-0.403 ppb	N/A	-0.079 ppb	-1.623 ppb	-1.474 ppb	0.010 ppb	-0.802 ppb	-0.892 ppb
Concentration per Run 2	-0.116 ppb	-0.106 ppb	-0.432 ppb	N/A	-0.105 ppb	-1.699 ppb	-1.598 ppb	0.011 ppb	-0.858 ppb	-0.859 ppb
Concentration per Run 3	-0.112 ppb	-0.102 ppb	-0.418 ppb	N/A	-0.101 ppb	-1.704 ppb	-1.546 ppb	0.009 ppb	-0.856 ppb	-0.928 ppb
Concentration RSD	2.5 %	2.9 %	3.4 %	N/A	14.7 %	2.7 %	4.0 %	7.1 %	3.7 %	3.8 %
Intensity average	57 cps	124 cps	41 cps	30 cps	217 cps	1,600 cps	31 cps	252 cps	272 cps	35 cps
Intensity per Run 1	48.6 cps	112.0 cps	56.0 cps	40.0 cps	304.0 cps	2,000.2 cps	48.0 cps	260.0 cps	360.0 cps	36.0 cps
Intensity per Run 2	52.8 cps	116.0 cps	28.0 cps	10.0 cps	164.0 cps	1,420.1 cps	16.0 cps	260.0 cps	224.0 cps	52.0 cps
Intensity per Run 3	69.6 cps	144.0 cps	40.0 cps	40.0 cps	184.0 cps	1,380.1 cps	28.0 cps	236.0 cps	232.0 cps	16.0 cps
Intensity RSD	19.5 %	14.1 %	34.0 %	57.7 %	34.8 %	21.7 %	52.7 %	5.5 %	28.1 %	52.0 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.119 ppb	-0.106 ppb	-1.965 ppb	-1.787 ppb	-1.865 ppb		2.316 ppb	N/A	0.282 ppb	
Concentration per Run 1	-0.120 ppb	-0.108 ppb	-1.817 ppb	-1.718 ppb	-1.849 ppb		3.079 ppb	N/A	0.310 ppb	
Concentration per Run 2	-0.119 ppb	-0.106 ppb	-2.058 ppb	-1.830 ppb	-1.901 ppb		1.836 ppb	N/A	0.231 ppb	
Concentration per Run 3	-0.119 ppb	-0.104 ppb	-2.019 ppb	-1.815 ppb	-1.843 ppb		2.032 ppb	N/A	0.306 ppb	
Concentration RSD	0.3 %	1.8 %	6.6 %	3.4 %	1.7 %		28.9 %	N/A	15.7 %	
Intensity average	179 cps	109 cps	543 cps	85 cps	423 cps	2 cps	2,388 cps	50 cps	20 cps	593 cps
Intensity per Run 1	180.0 cps	104.0 cps	648.0 cps	108.0 cps	452.0 cps	2.0 cps	2,548.5 cps	60.0 cps	22.3 cps	603.0 cps
Intensity per Run 2	180.0 cps	108.0 cps	460.0 cps	72.0 cps	368.0 cps	3.0 cps	2,226.4 cps	40.0 cps	15.3 cps	590.0 cps
Intensity per Run 3	176.0 cps	116.0 cps	520.0 cps	76.0 cps	448.0 cps	1.0 cps	2,389.1 cps	50.0 cps	22.0 cps	586.0 cps
Intensity RSD	1.3 %	5.6 %	17.7 %	23.1 %	11.2 %	50.0 %	6.7 %	20.0 %	20.0 %	1.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-4.224 ppb		22.427 %	0.123 ppb	-0.003 ppb	0.000 ppb	-0.009 ppb	-0.010 ppb	0.004 ppm
Concentration per Run 1		-1.954 ppb		21.912 %	-0.020 ppb	-0.013 ppb	-0.006 ppb	-0.009 ppb	-0.007 ppb	0.004 ppm
Concentration per Run 2		-6.076 ppb		22.646 %	0.415 ppb	-0.015 ppb	-0.009 ppb	-0.006 ppb	-0.013 ppb	0.005 ppm
Concentration per Run 3		-4.642 ppb		22.722 %	-0.026 ppb	0.019 ppb	0.014 ppb	-0.013 ppb	-0.009 ppb	0.004 ppm
Concentration RSD		49.5 %		2.0 %	205.5 %	692.3 %	11,580.5 %	35.6 %	29.9 %	7.2 %
Intensity average	3,549 cps	-275 cps	3,783 cps	131,148 cps	384 cps	75 cps	101 cps	29 cps	52 cps	388,240 cps
Intensity per Run 1	3,812.6 cps	-156.2 cps	3,931.6 cps	128,137.7 cps	20.0 cps	28.0 cps	68.0 cps	28.0 cps	68.0 cps	359,664.0 cps
Intensity per Run 2	3,314.4 cps	-362.2 cps	3,572.5 cps	132,431.6 cps	1,124.5 cps	20.0 cps	60.0 cps	40.0 cps	28.0 cps	415,666.3 cps
Intensity per Run 3	3,520.5 cps	-305.5 cps	3,845.6 cps	132,873.9 cps	8.0 cps	176.0 cps	176.0 cps	20.0 cps	60.0 cps	389,390.6 cps
Intensity RSD	7.1 %	38.7 %	5.0 %	2.0 %	166.9 %	117.7 %	63.9 %	34.3 %	40.7 %	7.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.032 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	20.810 %	-0.008 ppb	-0.001 ppb
Concentration per Run 1		0.024 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	18.002 %	-0.004 ppb	-0.006 ppb
Concentration per Run 2		-0.043 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	22.120 %	-0.011 ppb	0.005 ppb
Concentration per Run 3		-0.077 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	22.309 %	-0.009 ppb	-0.001 ppb
Concentration RSD		160.6 %	145.5 %	0.0 %	189.4 %	0.0 %	49.2 %	11.7 %	44.0 %	826.8 %
Intensity average	64 cps	13 cps	13 cps	0 cps	13 cps	0 cps	0 cps	186,313 cps	116 cps	72 cps
Intensity per Run 1	60.0 cps	24.0 cps	12.0 cps	0.0 cps	16.0 cps	0.0 cps	-3.2 cps	161,171.4 cps	120.0 cps	36.0 cps
Intensity per Run 2	76.0 cps	12.0 cps	4.0 cps	0.0 cps	8.0 cps	0.0 cps	5.1 cps	198,036.7 cps	108.0 cps	108.0 cps
Intensity per Run 3	56.0 cps	4.0 cps	24.0 cps	0.0 cps	16.0 cps	0.0 cps	-3.2 cps	199,729.9 cps	120.0 cps	72.0 cps
Intensity RSD	16.5 %	75.5 %	75.5 %	N/A	34.6 %	N/A	1,076.1 %	11.7 %	6.0 %	50.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	0.000 ppb	-0.019 ppb	-0.022 ppb			18.996 %			0.003 ppm	0.002 ppb
Concentration per Run 1	0.004 ppb	-0.014 ppb	-0.020 ppb			15.927 %			0.002 ppm	0.002 ppb
Concentration per Run 2	-0.001 ppb	-0.025 ppb	-0.024 ppb			18.546 %			0.003 ppm	0.003 ppb
Concentration per Run 3	-0.003 ppb	-0.019 ppb	-0.022 ppb			22.517 %			0.003 ppm	0.001 ppb
Concentration RSD	1,692.3 %	27.6 %	9.1 %			17.5 %			20.7 %	42.1 %
Intensity average	60 cps	7 cps	4 cps	1 cps	0 cps	597,109 cps	11 cps	4 cps	629,101 cps	290 cps
Intensity per Run 1	68.0 cps	12.0 cps	8.0 cps	0.0 cps	0.0 cps	500,618.1 cps	16.0 cps	0.0 cps	514,488.7 cps	285.0 cps
Intensity per Run 2	60.0 cps	0.0 cps	0.0 cps	0.0 cps	0.0 cps	582,944.8 cps	8.0 cps	8.0 cps	602,210.5 cps	280.0 cps
Intensity per Run 3	52.0 cps	8.0 cps	4.0 cps	4.0 cps	0.0 cps	707,763.9 cps	8.0 cps	4.0 cps	770,603.2 cps	304.0 cps
Intensity RSD	13.3 %	91.7 %	100.0 %	173.2 %	N/A	17.5 %	43.3 %	100.0 %	20.7 %	4.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.002 ppb	0.127 ppb	0.118 ppb	0.121 ppb	21.921 %
Concentration per Run 1	0.002 ppb	0.137 ppb	0.123 ppb	0.129 ppb	21.604 %
Concentration per Run 2	0.003 ppb	0.134 ppb	0.131 ppb	0.133 ppb	19.773 %
Concentration per Run 3	0.000 ppb	0.110 ppb	0.099 ppb	0.100 ppb	24.386 %
Concentration RSD	102.7 %	11.6 %	13.9 %	14.9 %	10.6 %
Intensity average	686 cps	2,175 cps	1,781 cps	8,416 cps	561,823 cps
Intensity per Run 1	701.0 cps	2,298.2 cps	1,836.1 cps	8,903.3 cps	553,702.1 cps
Intensity per Run 2	695.0 cps	2,082.2 cps	1,792.1 cps	8,379.1 cps	506,774.7 cps
Intensity per Run 3	661.0 cps	2,144.2 cps	1,716.1 cps	7,965.0 cps	624,993.2 cps
Intensity RSD	3.1 %	5.1 %	3.4 %	5.6 %	10.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-003 Analysis: 10/30/2019 22:43:06 Sample Type UNKNOWN
Comment WT-2 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	21.903 %	38.883 %	-0.009 ppb	0.865 ppb	0.931 ppb	N/A	-1.915 ppb	-2.152 ppb	-2.485 ppb	-2.148 ppb
Concentration per Run 1	21.489 %	38.911 %	0.002 ppb	0.256 ppb	0.810 ppb	N/A	-1.906 ppb	-2.189 ppb	-2.430 ppb	-2.040 ppb
Concentration per Run 2	10.394 %	41.363 %	-0.007 ppb	1.302 ppb	0.920 ppb	N/A	-2.657 ppb	-2.150 ppb	-2.597 ppb	-2.111 ppb
Concentration per Run 3	33.827 %	36.377 %	-0.022 ppb	1.036 ppb	1.063 ppb	N/A	-1.182 ppb	-2.117 ppb	-2.428 ppb	-2.294 ppb
Concentration RSD	53.5 %	6.4 %	138.3 %	62.8 %	13.6 %	N/A	38.5 %	1.7 %	3.9 %	6.1 %
Intensity average	3,063,274 cps	12,520 cps	1 cps	7 cps	41 cps	1,227 cps	4,371 cps	43 cps	7 cps	23 cps
Intensity per Run 1	3,005,275.4 cps	12,528.4 cps	1.5 cps	3.0 cps	36.0 cps	1,430.1 cps	4,160.7 cps	30.0 cps	10.0 cps	30.0 cps
Intensity per Run 2	1,453,667.2 cps	13,317.9 cps	1.0 cps	10.5 cps	44.0 cps	1,130.1 cps	4,410.8 cps	50.0 cps	0.0 cps	30.0 cps
Intensity per Run 3	4,730,880.2 cps	11,712.6 cps	0.0 cps	7.5 cps	43.0 cps	1,120.1 cps	4,540.8 cps	50.0 cps	10.0 cps	10.0 cps
Intensity RSD	53.5 %	6.4 %	91.7 %	53.9 %	10.6 %	14.4 %	4.4 %	26.6 %	86.6 %	49.5 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.468 ppb		0.006 ppm	-2.655 ppb	-13.618 ppb	-11.887 ppb	-13.279 ppb	22.839 %	29.075 %	0.010 ppb
Concentration per Run 1	-1.244 ppb		0.006 ppm	-0.766 ppb	-18.917 ppb	-15.282 ppb	-12.893 ppb	21.224 %	24.537 %	-0.003 ppb
Concentration per Run 2	-1.495 ppb		0.005 ppm	-6.152 ppb	-12.154 ppb	-1.890 ppb	-13.107 ppb	9.790 %	36.197 %	-0.003 ppb
Concentration per Run 3	-1.666 ppb		0.006 ppm	-1.048 ppb	-9.783 ppb	-18.488 ppb	-13.838 ppb	37.505 %	26.491 %	0.036 ppb
Concentration RSD	14.5 %		9.1 %	114.2 %	34.8 %	74.1 %	3.7 %	61.0 %	21.5 %	234.8 %
Intensity average	20 cps	857 cps	11,953 cps	5,871 cps	7 cps	6,432 cps	30 cps	1,572,044 cps	85,360 cps	1 cps
Intensity per Run 1	40.0 cps	870.0 cps	11,205.2 cps	5,641.3 cps	0.0 cps	5,891.4 cps	30.0 cps	1,460,857.0 cps	72,037.0 cps	0.0 cps
Intensity per Run 2	20.0 cps	930.0 cps	12,846.8 cps	6,131.6 cps	10.0 cps	6,211.6 cps	40.0 cps	673,828.4 cps	106,268.2 cps	0.0 cps
Intensity per Run 3	0.0 cps	770.0 cps	11,806.5 cps	5,841.5 cps	10.0 cps	7,192.2 cps	20.0 cps	2,581,445.2 cps	77,773.7 cps	4.0 cps
Intensity RSD	100.0 %	9.4 %	6.9 %	4.2 %	86.6 %	10.5 %	33.3 %	61.0 %	21.5 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.117 ppb	-0.098 ppb	-0.392 ppb	N/A	-0.092 ppb	-1.680 ppb	-1.521 ppb	0.014 ppb	-0.867 ppb	-0.853 ppb
Concentration per Run 1	-0.115 ppb	-0.096 ppb	-0.375 ppb	N/A	-0.085 ppb	-1.720 ppb	-1.461 ppb	0.021 ppb	-0.869 ppb	-0.863 ppb
Concentration per Run 2	-0.124 ppb	-0.102 ppb	-0.401 ppb	N/A	-0.102 ppb	-1.677 ppb	-1.542 ppb	0.005 ppb	-0.870 ppb	-0.836 ppb
Concentration per Run 3	-0.113 ppb	-0.096 ppb	-0.400 ppb	N/A	-0.088 ppb	-1.642 ppb	-1.560 ppb	0.015 ppb	-0.861 ppb	-0.860 ppb
Concentration RSD	4.9 %	3.2 %	3.8 %	N/A	9.6 %	2.3 %	3.5 %	57.7 %	0.6 %	1.8 %
Intensity average	38 cps	148 cps	57 cps	33 cps	209 cps	1,480 cps	29 cps	257 cps	247 cps	56 cps
Intensity per Run 1	42.7 cps	136.0 cps	60.0 cps	20.0 cps	200.0 cps	1,000.0 cps	36.0 cps	316.0 cps	176.0 cps	40.0 cps
Intensity per Run 2	19.4 cps	160.0 cps	64.0 cps	50.0 cps	212.0 cps	1,860.2 cps	32.0 cps	188.0 cps	300.0 cps	80.0 cps
Intensity per Run 3	52.4 cps	148.0 cps	48.0 cps	30.0 cps	216.0 cps	1,580.1 cps	20.0 cps	268.0 cps	264.0 cps	48.0 cps
Intensity RSD	44.5 %	8.1 %	14.5 %	45.8 %	4.0 %	29.6 %	28.4 %	25.1 %	25.9 %	37.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.122 ppb	-0.108 ppb	-2.123 ppb	-1.846 ppb	-1.921 ppb		1.438 ppb	N/A	0.095 ppb	
Concentration per Run 1	-0.125 ppb	-0.111 ppb	-2.206 ppb	-1.923 ppb	-1.943 ppb		1.369 ppb	N/A	0.124 ppb	
Concentration per Run 2	-0.120 ppb	-0.100 ppb	-2.115 ppb	-1.779 ppb	-1.880 ppb		0.724 ppb	N/A	0.018 ppb	
Concentration per Run 3	-0.122 ppb	-0.111 ppb	-2.047 ppb	-1.837 ppb	-1.940 ppb		2.221 ppb	N/A	0.143 ppb	
Concentration RSD	2.0 %	6.1 %	3.7 %	3.9 %	1.8 %		52.2 %	N/A	71.2 %	
Intensity average	155 cps	92 cps	488 cps	72 cps	359 cps	5 cps	2,451 cps	70 cps	2 cps	508 cps
Intensity per Run 1	104.0 cps	60.0 cps	316.0 cps	36.0 cps	252.0 cps	3.0 cps	2,336.9 cps	90.0 cps	4.8 cps	482.0 cps
Intensity per Run 2	216.0 cps	152.0 cps	668.0 cps	112.0 cps	516.0 cps	6.0 cps	2,484.9 cps	70.0 cps	-5.4 cps	531.0 cps
Intensity per Run 3	144.0 cps	64.0 cps	480.0 cps	68.0 cps	308.0 cps	7.0 cps	2,529.9 cps	50.0 cps	8.0 cps	511.0 cps
Intensity RSD	36.7 %	56.5 %	36.1 %	53.0 %	38.8 %	39.0 %	4.1 %	28.6 %	286.7 %	4.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.554 ppb		27.731 %	-0.017 ppb	-0.012 ppb	-0.016 ppb	-0.010 ppb	-0.008 ppb	0.005 ppm
Concentration per Run 1		-3.885 ppb		20.450 %	-0.017 ppb	-0.008 ppb	-0.015 ppb	-0.013 ppb	-0.006 ppb	0.004 ppm
Concentration per Run 2		-0.791 ppb		35.188 %	-0.018 ppb	-0.015 ppb	-0.017 ppb	-0.014 ppb	-0.009 ppb	0.007 ppm
Concentration per Run 3		0.013 ppb		27.554 %	-0.017 ppb	-0.014 ppb	-0.017 ppb	-0.003 ppb	-0.010 ppb	0.005 ppm
Concentration RSD		132.4 %		26.6 %	3.4 %	33.8 %	7.6 %	58.2 %	22.9 %	24.9 %
Intensity average	3,745 cps	-234 cps	3,895 cps	162,164 cps	36 cps	36 cps	25 cps	35 cps	81 cps	486,130 cps
Intensity per Run 1	3,593.5 cps	-336.6 cps	3,850.6 cps	119,584.9 cps	28.0 cps	52.0 cps	28.0 cps	20.0 cps	84.0 cps	397,067.3 cps
Intensity per Run 2	3,825.6 cps	-252.5 cps	3,957.6 cps	205,775.5 cps	44.0 cps	28.0 cps	28.0 cps	28.0 cps	100.0 cps	623,794.8 cps
Intensity per Run 3	3,814.6 cps	-111.8 cps	3,877.6 cps	161,130.2 cps	36.0 cps	28.0 cps	20.0 cps	56.0 cps	60.0 cps	437,526.4 cps
Intensity RSD	3.5 %	48.6 %	1.4 %	26.6 %	22.2 %	38.5 %	18.2 %	54.5 %	24.8 %	24.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.015 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	29.509 %	-0.019 ppb	-0.005 ppb
Concentration per Run 1		-0.033 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	27.401 %	-0.020 ppb	-0.005 ppb
Concentration per Run 2		-0.043 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	38.801 %	-0.018 ppb	-0.002 ppb
Concentration per Run 3		0.032 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	22.326 %	-0.019 ppb	-0.006 ppb
Concentration RSD		276.9 %	52.9 %	0.0 %	53.7 %	0.0 %	40.9 %	28.6 %	4.4 %	39.4 %
Intensity average	83 cps	23 cps	9 cps	0 cps	9 cps	0 cps	2 cps	264,191 cps	80 cps	72 cps
Intensity per Run 1	68.0 cps	16.0 cps	4.0 cps	0.0 cps	12.0 cps	0.0 cps	6.2 cps	245,318.1 cps	68.0 cps	60.0 cps
Intensity per Run 2	132.0 cps	20.0 cps	8.0 cps	0.0 cps	4.0 cps	0.0 cps	1.0 cps	347,379.0 cps	112.0 cps	112.0 cps
Intensity per Run 3	48.0 cps	32.0 cps	16.0 cps	0.0 cps	12.0 cps	0.0 cps	-1.6 cps	199,877.2 cps	60.0 cps	44.0 cps
Intensity RSD	53.1 %	36.7 %	65.5 %	N/A	49.5 %	N/A	213.9 %	28.6 %	35.0 %	49.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.005 ppb	-0.021 ppb	-0.020 ppb			30.997 %			0.005 ppm	-0.002 ppb
Concentration per Run 1	-0.004 ppb	-0.017 ppb	-0.020 ppb			33.477 %			0.005 ppm	-0.003 ppb
Concentration per Run 2	-0.006 ppb	-0.023 ppb	-0.020 ppb			37.414 %			0.006 ppm	-0.003 ppb
Concentration per Run 3	-0.004 ppb	-0.025 ppb	-0.019 ppb			22.101 %			0.003 ppm	-0.001 ppb
Concentration RSD	16.5 %	19.9 %	3.3 %			25.7 %			27.3 %	68.6 %
Intensity average	55 cps	7 cps	13 cps	0 cps	4 cps	974,337 cps	13 cps	1 cps	1,077,497 cps	337 cps
Intensity per Run 1	56.0 cps	16.0 cps	12.0 cps	0.0 cps	8.0 cps	1,052,269.5 cps	20.0 cps	0.0 cps	1,209,995.2 cps	323.0 cps
Intensity per Run 2	64.0 cps	4.0 cps	16.0 cps	0.0 cps	4.0 cps	1,176,039.0 cps	12.0 cps	0.0 cps	1,282,191.2 cps	346.0 cps
Intensity per Run 3	44.0 cps	0.0 cps	12.0 cps	0.0 cps	0.0 cps	694,702.1 cps	8.0 cps	4.0 cps	740,303.1 cps	341.0 cps
Intensity RSD	18.4 %	124.9 %	17.3 %	N/A	100.0 %	25.7 %	45.8 %	173.2 %	27.3 %	3.6 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.003 ppb	0.075 ppb	0.071 ppb	0.069 ppb	37.766 %
Concentration per Run 1	-0.004 ppb	0.066 ppb	0.070 ppb	0.065 ppb	39.583 %
Concentration per Run 2	-0.004 ppb	0.068 ppb	0.059 ppb	0.061 ppb	41.529 %
Concentration per Run 3	-0.002 ppb	0.090 ppb	0.083 ppb	0.081 ppb	32.186 %
Concentration RSD	29.2 %	17.8 %	16.4 %	15.2 %	13.1 %
Intensity average	740 cps	2,293 cps	1,931 cps	8,774 cps	967,923 cps
Intensity per Run 1	721.0 cps	2,183.2 cps	2,036.2 cps	8,800.2 cps	1,014,487.3 cps
Intensity per Run 2	779.0 cps	2,378.2 cps	1,856.1 cps	8,819.2 cps	1,064,362.9 cps
Intensity per Run 3	721.0 cps	2,318.2 cps	1,900.2 cps	8,703.2 cps	824,917.4 cps
Intensity RSD	4.5 %	4.4 %	4.9 %	0.7 %	13.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: UJ28009-003S Analysis: 10/30/2019 22:49:11 Sample Type UNKNOWN
Comment WT-2S Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	32.110 %	32.246 %	0.014 ppb	1.352 ppb	1.422 ppb	N/A	-1.462 ppb	-2.098 ppb	-2.450 ppb	-2.063 ppb
Concentration per Run 1	20.392 %	30.864 %	-0.002 ppb	1.059 ppb	1.302 ppb	N/A	-1.796 ppb	-2.145 ppb	-2.597 ppb	-2.005 ppb
Concentration per Run 2	45.753 %	26.749 %	0.049 ppb	1.223 ppb	1.992 ppb	N/A	-0.946 ppb	-1.978 ppb	-2.449 ppb	-2.093 ppb
Concentration per Run 3	30.184 %	39.127 %	-0.006 ppb	1.774 ppb	0.970 ppb	N/A	-1.644 ppb	-2.171 ppb	-2.304 ppb	-2.091 ppb
Concentration RSD	39.8 %	19.5 %	221.8 %	27.7 %	36.7 %	N/A	31.0 %	5.0 %	6.0 %	2.4 %
Intensity average	4,490,666 cps	10,383 cps	2 cps	9 cps	52 cps	1,210 cps	4,948 cps	63 cps	10 cps	33 cps
Intensity per Run 1	2,851,882.4 cps	9,937.5 cps	1.0 cps	7.0 cps	48.0 cps	1,060.1 cps	4,841.0 cps	50.0 cps	0.0 cps	40.0 cps
Intensity per Run 2	6,398,763.7 cps	8,612.5 cps	3.0 cps	7.0 cps	63.0 cps	1,330.1 cps	5,131.1 cps	100.0 cps	10.0 cps	30.0 cps
Intensity per Run 3	4,221,351.1 cps	12,598.0 cps	1.0 cps	13.0 cps	43.5 cps	1,240.1 cps	4,871.0 cps	40.0 cps	20.0 cps	30.0 cps
Intensity RSD	39.8 %	19.5 %	69.3 %	38.5 %	19.8 %	11.4 %	3.2 %	50.8 %	100.0 %	17.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.428 ppb		0.005 ppm	-5.849 ppb	-14.665 ppb	-16.622 ppb	-11.059 ppb	31.414 %	41.767 %	0.007 ppb
Concentration per Run 1	-1.666 ppb		0.005 ppm	-5.303 ppb	-18.917 ppb	-13.062 ppb	-12.648 ppb	18.500 %	45.749 %	-0.003 ppb
Concentration per Run 2	-1.133 ppb		0.005 ppm	-6.865 ppb	-13.427 ppb	-19.560 ppb	-13.106 ppb	46.191 %	45.894 %	-0.003 ppb
Concentration per Run 3	-1.484 ppb		0.005 ppm	-5.380 ppb	-11.651 ppb	-17.244 ppb	-7.422 ppb	29.551 %	33.657 %	0.027 ppb
Concentration RSD	19.0 %		3.8 %	15.1 %	25.8 %	19.8 %	28.6 %	44.4 %	16.8 %	261.1 %
Intensity average	27 cps	1,103 cps	12,868 cps	6,772 cps	7 cps	6,822 cps	80 cps	2,162,218 cps	122,620 cps	1 cps
Intensity per Run 1	0.0 cps	1,160.1 cps	13,368.5 cps	7,512.7 cps	0.0 cps	6,241.6 cps	60.0 cps	1,273,388.2 cps	134,310.5 cps	0.0 cps
Intensity per Run 2	60.0 cps	1,090.1 cps	13,979.3 cps	6,862.1 cps	10.0 cps	7,562.3 cps	50.0 cps	3,179,302.7 cps	134,738.3 cps	0.0 cps
Intensity per Run 3	20.0 cps	1,060.0 cps	11,255.9 cps	5,941.6 cps	10.0 cps	6,661.8 cps	130.0 cps	2,033,963.3 cps	98,810.2 cps	4.0 cps
Intensity RSD	114.6 %	4.7 %	11.1 %	11.7 %	86.6 %	9.9 %	54.5 %	44.4 %	16.8 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.121 ppb	-0.103 ppb	-0.421 ppb	N/A	-0.099 ppb	-1.717 ppb	-1.562 ppb	0.007 ppb	-0.850 ppb	-0.887 ppb
Concentration per Run 1	-0.118 ppb	-0.102 ppb	-0.424 ppb	N/A	-0.092 ppb	-1.700 ppb	-1.519 ppb	0.007 ppb	-0.802 ppb	-0.903 ppb
Concentration per Run 2	-0.121 ppb	-0.107 ppb	-0.398 ppb	N/A	-0.110 ppb	-1.722 ppb	-1.617 ppb	0.002 ppb	-0.857 ppb	-0.890 ppb
Concentration per Run 3	-0.124 ppb	-0.101 ppb	-0.439 ppb	N/A	-0.096 ppb	-1.728 ppb	-1.550 ppb	0.011 ppb	-0.891 ppb	-0.869 ppb
Concentration RSD	2.4 %	3.1 %	4.9 %	N/A	9.8 %	0.9 %	3.2 %	67.6 %	5.3 %	1.9 %
Intensity average	38 cps	169 cps	52 cps	50 cps	253 cps	1,774 cps	31 cps	239 cps	392 cps	52 cps
Intensity per Run 1	58.0 cps	204.0 cps	48.0 cps	60.0 cps	312.0 cps	1,960.2 cps	48.0 cps	276.0 cps	492.0 cps	40.0 cps
Intensity per Run 2	40.4 cps	152.0 cps	84.0 cps	60.0 cps	204.0 cps	1,900.2 cps	16.0 cps	168.0 cps	428.0 cps	56.0 cps
Intensity per Run 3	16.5 cps	152.0 cps	24.0 cps	30.0 cps	244.0 cps	1,460.1 cps	28.0 cps	272.0 cps	256.0 cps	60.0 cps
Intensity RSD	54.3 %	17.7 %	58.1 %	34.6 %	21.6 %	15.4 %	52.7 %	25.7 %	31.1 %	20.4 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.108 ppb	-1.984 ppb	-1.799 ppb	-1.888 ppb		1.217 ppb	N/A	0.121 ppb	
Concentration per Run 1	-0.115 ppb	-0.106 ppb	-1.861 ppb	-1.727 ppb	-1.846 ppb		1.490 ppb	N/A	0.050 ppb	
Concentration per Run 2	-0.122 ppb	-0.111 ppb	-1.992 ppb	-1.726 ppb	-1.927 ppb		0.881 ppb	N/A	0.238 ppb	
Concentration per Run 3	-0.123 ppb	-0.106 ppb	-2.098 ppb	-1.944 ppb	-1.890 ppb		1.280 ppb	N/A	0.074 ppb	
Concentration RSD	3.4 %	2.4 %	6.0 %	7.0 %	2.2 %		25.4 %	N/A	85.1 %	
Intensity average	243 cps	124 cps	765 cps	119 cps	557 cps	8 cps	2,432 cps	67 cps	9 cps	502 cps
Intensity per Run 1	292.0 cps	148.0 cps	848.0 cps	140.0 cps	608.0 cps	7.0 cps	2,279.4 cps	80.0 cps	-1.3 cps	467.0 cps
Intensity per Run 2	244.0 cps	116.0 cps	868.0 cps	164.0 cps	532.0 cps	10.0 cps	2,406.1 cps	50.0 cps	27.4 cps	543.0 cps
Intensity per Run 3	192.0 cps	108.0 cps	580.0 cps	52.0 cps	532.0 cps	7.0 cps	2,609.4 cps	70.0 cps	1.8 cps	497.0 cps
Intensity RSD	20.6 %	17.1 %	21.0 %	49.7 %	7.9 %	21.7 %	6.8 %	22.9 %	169.4 %	7.6 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.722 ppb		38.147 %	0.006 ppb	-0.014 ppb	-0.013 ppb	-0.012 ppb	-0.010 ppb	0.007 ppm
Concentration per Run 1		-0.425 ppb		29.846 %	0.052 ppb	-0.014 ppb	-0.014 ppb	-0.014 ppb	-0.009 ppb	0.006 ppm
Concentration per Run 2		-3.074 ppb		42.532 %	-0.014 ppb	-0.014 ppb	-0.013 ppb	-0.010 ppb	-0.011 ppb	0.008 ppm
Concentration per Run 3		-1.668 ppb		42.063 %	-0.022 ppb	-0.015 ppb	-0.012 ppb	-0.013 ppb	-0.009 ppb	0.007 ppm
Concentration RSD		77.0 %		18.9 %	729.1 %	1.4 %	9.6 %	19.0 %	10.5 %	16.0 %
Intensity average	3,726 cps	-260 cps	3,867 cps	223,078 cps	121 cps	35 cps	63 cps	35 cps	85 cps	600,099 cps
Intensity per Run 1	3,368.5 cps	-148.7 cps	3,526.5 cps	174,536.4 cps	264.0 cps	28.0 cps	40.0 cps	20.0 cps	76.0 cps	491,550.4 cps
Intensity per Run 2	3,758.6 cps	-374.3 cps	3,929.6 cps	248,719.7 cps	68.0 cps	40.0 cps	72.0 cps	52.0 cps	80.0 cps	673,389.6 cps
Intensity per Run 3	4,050.7 cps	-258.1 cps	4,145.7 cps	245,977.2 cps	32.0 cps	36.0 cps	76.0 cps	32.0 cps	100.0 cps	635,357.8 cps
Intensity RSD	9.2 %	43.3 %	8.1 %	18.9 %	102.9 %	17.6 %	31.5 %	46.6 %	15.1 %	16.0 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.050 ppb	-0.001 ppb	0.005 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	30.662 %	-0.019 ppb	-0.007 ppb
Concentration per Run 1		-0.066 ppb	-0.001 ppb	0.017 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	25.536 %	-0.021 ppb	-0.007 ppb
Concentration per Run 2		-0.033 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.002 ppb	34.758 %	-0.017 ppb	-0.005 ppb
Concentration per Run 3		-0.051 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	31.691 %	-0.019 ppb	-0.008 ppb
Concentration RSD		32.9 %	33.2 %	236.2 %	57.1 %	0.0 %	35.3 %	15.3 %	11.9 %	22.1 %
Intensity average	109 cps	16 cps	7 cps	1 cps	15 cps	0 cps	0 cps	274,509 cps	85 cps	51 cps
Intensity per Run 1	84.0 cps	8.0 cps	12.0 cps	4.0 cps	8.0 cps	0.0 cps	-1.5 cps	228,617.8 cps	56.0 cps	40.0 cps
Intensity per Run 2	124.0 cps	24.0 cps	0.0 cps	0.0 cps	24.0 cps	0.0 cps	-3.1 cps	311,180.8 cps	116.0 cps	72.0 cps
Intensity per Run 3	120.0 cps	16.0 cps	8.0 cps	0.0 cps	12.0 cps	0.0 cps	5.7 cps	283,727.0 cps	84.0 cps	40.0 cps
Intensity RSD	20.1 %	50.0 %	91.7 %	173.2 %	56.8 %	N/A	1,253.2 %	15.3 %	35.2 %	36.5 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.022 ppb	-0.020 ppb			27.293 %			0.004 ppm	-0.001 ppb
Concentration per Run 1	-0.006 ppb	-0.018 ppb	-0.018 ppb			26.279 %			0.004 ppm	-0.003 ppb
Concentration per Run 2	-0.007 ppb	-0.025 ppb	-0.023 ppb			28.139 %			0.004 ppm	0.003 ppb
Concentration per Run 3	-0.005 ppb	-0.023 ppb	-0.018 ppb			27.462 %			0.004 ppm	-0.002 ppb
Concentration RSD	19.9 %	16.7 %	12.8 %			3.5 %			4.2 %	365.4 %
Intensity average	48 cps	5 cps	13 cps	0 cps	4 cps	857,908 cps	12 cps	5 cps	915,068 cps	321 cps
Intensity per Run 1	44.0 cps	12.0 cps	16.0 cps	0.0 cps	0.0 cps	826,015.9 cps	12.0 cps	12.0 cps	958,921.2 cps	306.0 cps
Intensity per Run 2	44.0 cps	0.0 cps	4.0 cps	0.0 cps	8.0 cps	884,500.4 cps	4.0 cps	4.0 cps	897,407.9 cps	343.0 cps
Intensity per Run 3	56.0 cps	4.0 cps	20.0 cps	0.0 cps	4.0 cps	863,206.8 cps	20.0 cps	0.0 cps	888,876.2 cps	313.0 cps
Intensity RSD	14.4 %	114.6 %	62.4 %	N/A	100.0 %	3.5 %	66.7 %	114.6 %	4.2 %	6.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.000 ppb	0.092 ppb	0.088 ppb	0.088 ppb	32.058 %
Concentration per Run 1	-0.003 ppb	0.071 ppb	0.063 ppb	0.065 ppb	38.410 %
Concentration per Run 2	0.004 ppb	0.123 ppb	0.126 ppb	0.124 ppb	23.681 %
Concentration per Run 3	-0.001 ppb	0.080 ppb	0.075 ppb	0.075 ppb	34.084 %
Concentration RSD	2,094.6 %	30.0 %	38.4 %	36.2 %	23.6 %
Intensity average	835 cps	2,280 cps	1,908 cps	8,854 cps	821,638 cps
Intensity per Run 1	828.0 cps	2,259.2 cps	1,784.1 cps	8,532.2 cps	984,419.4 cps
Intensity per Run 2	848.0 cps	2,338.2 cps	2,096.2 cps	9,435.4 cps	606,937.4 cps
Intensity per Run 3	828.0 cps	2,241.2 cps	1,844.1 cps	8,594.2 cps	873,555.8 cps
Intensity RSD	1.4 %	2.3 %	8.7 %	5.7 %	23.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-003SD Analysis: 10/30/2019 22:55:17 Sample Type UNKNOWN
Comment WT-2SD Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	32.978 %	26.441 %	-0.001 ppb	1.212 ppb	1.148 ppb	N/A	1.700 ppb	-2.133 ppb	-2.529 ppb	-1.938 ppb
Concentration per Run 1	44.017 %	31.950 %	-0.012 ppb	0.835 ppb	0.689 ppb	N/A	-0.261 ppb	-2.004 ppb	-2.597 ppb	-1.667 ppb
Concentration per Run 2	40.739 %	17.261 %	-0.022 ppb	2.010 ppb	1.491 ppb	N/A	4.849 ppb	-2.228 ppb	-2.597 ppb	-2.188 ppb
Concentration per Run 3	14.178 %	30.111 %	0.030 ppb	0.792 ppb	1.265 ppb	N/A	0.513 ppb	-2.166 ppb	-2.393 ppb	-1.958 ppb
Concentration RSD	49.6 %	30.3 %	2,096.2 %	57.0 %	36.0 %	N/A	162.0 %	5.4 %	4.7 %	13.5 %
Intensity average	4,612,099 cps	8,513 cps	1 cps	6 cps	32 cps	1,020 cps	4,487 cps	37 cps	3 cps	30 cps
Intensity per Run 1	6,155,909.3 cps	10,287.2 cps	0.5 cps	5.5 cps	26.0 cps	1,030.0 cps	4,370.8 cps	70.0 cps	0.0 cps	50.0 cps
Intensity per Run 2	5,697,490.4 cps	5,557.8 cps	0.0 cps	6.5 cps	28.5 cps	1,030.0 cps	4,450.8 cps	10.0 cps	0.0 cps	10.0 cps
Intensity per Run 3	1,982,896.9 cps	9,695.1 cps	2.5 cps	5.0 cps	41.5 cps	1,000.0 cps	4,640.9 cps	30.0 cps	10.0 cps	30.0 cps
Intensity RSD	49.6 %	30.3 %	132.3 %	13.5 %	26.0 %	1.7 %	3.1 %	83.3 %	173.2 %	66.7 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.159 ppb		0.008 ppm	4.375 ppb	-18.917 ppb	-16.143 ppb	-9.724 ppb	32.674 %	20.157 %	0.012 ppb
Concentration per Run 1	-1.041 ppb		0.006 ppm	0.842 ppb	-18.917 ppb	-19.965 ppb	-11.579 ppb	47.291 %	21.480 %	-0.003 ppb
Concentration per Run 2	-0.898 ppb		0.009 ppm	10.873 ppb	-18.917 ppb	-19.186 ppb	-6.873 ppb	36.637 %	17.020 %	-0.003 ppb
Concentration per Run 3	-1.538 ppb		0.008 ppm	1.409 ppb	-18.917 ppb	-9.277 ppb	-10.719 ppb	14.094 %	21.972 %	0.044 ppb
Concentration RSD	29.0 %		18.3 %	128.8 %	0.0 %	36.9 %	25.8 %	51.9 %	13.5 %	222.3 %
Intensity average	33 cps	840 cps	11,072 cps	5,254 cps	0 cps	6,588 cps	53 cps	2,248,960 cps	59,178 cps	1 cps
Intensity per Run 1	50.0 cps	860.0 cps	9,984.2 cps	5,181.1 cps	0.0 cps	7,222.2 cps	40.0 cps	3,255,074.6 cps	63,062.9 cps	0.0 cps
Intensity per Run 2	40.0 cps	800.0 cps	10,214.4 cps	5,261.2 cps	0.0 cps	6,381.7 cps	70.0 cps	2,521,716.3 cps	49,966.6 cps	0.0 cps
Intensity per Run 3	10.0 cps	860.0 cps	13,017.3 cps	5,321.2 cps	0.0 cps	6,161.5 cps	50.0 cps	970,089.2 cps	64,505.3 cps	4.0 cps
Intensity RSD	62.5 %	4.1 %	15.3 %	1.3 %	N/A	8.5 %	28.6 %	51.9 %	13.5 %	173.2 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.114 ppb	-0.093 ppb	-0.404 ppb	N/A	-0.082 ppb	-1.679 ppb	-1.486 ppb	0.025 ppb	-0.894 ppb	-0.893 ppb
Concentration per Run 1	-0.110 ppb	-0.091 ppb	-0.436 ppb	N/A	-0.099 ppb	-1.678 ppb	-1.510 ppb	0.024 ppb	-0.908 ppb	-0.894 ppb
Concentration per Run 2	-0.115 ppb	-0.093 ppb	-0.384 ppb	N/A	-0.056 ppb	-1.685 ppb	-1.436 ppb	0.031 ppb	-0.891 ppb	-0.869 ppb
Concentration per Run 3	-0.118 ppb	-0.095 ppb	-0.391 ppb	N/A	-0.092 ppb	-1.676 ppb	-1.513 ppb	0.019 ppb	-0.884 ppb	-0.915 ppb
Concentration RSD	3.2 %	2.3 %	7.0 %	N/A	28.1 %	0.3 %	2.9 %	23.3 %	1.4 %	2.5 %
Intensity average	36 cps	127 cps	37 cps	50 cps	204 cps	1,227 cps	25 cps	295 cps	191 cps	31 cps
Intensity per Run 1	49.5 cps	144.0 cps	20.0 cps	70.0 cps	172.0 cps	1,420.1 cps	24.0 cps	312.0 cps	184.0 cps	36.0 cps
Intensity per Run 2	28.5 cps	108.0 cps	44.0 cps	40.0 cps	264.0 cps	1,020.1 cps	28.0 cps	304.0 cps	184.0 cps	36.0 cps
Intensity per Run 3	29.1 cps	128.0 cps	48.0 cps	40.0 cps	176.0 cps	1,240.1 cps	24.0 cps	268.0 cps	204.0 cps	20.0 cps
Intensity RSD	33.5 %	14.2 %	40.6 %	34.6 %	25.5 %	16.3 %	9.1 %	8.0 %	6.1 %	30.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.123 ppb	-0.104 ppb	-2.158 ppb	-1.841 ppb	-1.910 ppb		1.322 ppb	N/A	0.198 ppb	
Concentration per Run 1	-0.126 ppb	-0.108 ppb	-2.193 ppb	-1.928 ppb	-1.943 ppb		0.541 ppb	N/A	-0.042 ppb	
Concentration per Run 2	-0.116 ppb	-0.098 ppb	-2.106 ppb	-1.726 ppb	-1.819 ppb		1.616 ppb	N/A	0.442 ppb	
Concentration per Run 3	-0.127 ppb	-0.107 ppb	-2.176 ppb	-1.870 ppb	-1.967 ppb		1.809 ppb	N/A	0.195 ppb	
Concentration RSD	5.0 %	5.1 %	2.1 %	5.6 %	4.2 %		51.7 %	N/A	121.9 %	
Intensity average	128 cps	69 cps	445 cps	65 cps	356 cps	7 cps	2,467 cps	60 cps	12 cps	466 cps
Intensity per Run 1	128.0 cps	64.0 cps	548.0 cps	52.0 cps	384.0 cps	9.0 cps	2,576.1 cps	40.0 cps	-14.5 cps	475.0 cps
Intensity per Run 2	160.0 cps	76.0 cps	476.0 cps	88.0 cps	424.0 cps	7.0 cps	2,497.9 cps	50.0 cps	36.8 cps	443.0 cps
Intensity per Run 3	96.0 cps	68.0 cps	312.0 cps	56.0 cps	260.0 cps	6.0 cps	2,327.9 cps	90.0 cps	13.2 cps	479.0 cps
Intensity RSD	25.0 %	8.8 %	27.2 %	30.2 %	24.0 %	20.8 %	5.1 %	44.1 %	216.9 %	4.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.695 ppb		35.317 %	-0.008 ppb	-0.011 ppb	-0.011 ppb	0.006 ppb	-0.011 ppb	0.006 ppm
Concentration per Run 1		0.224 ppb		45.805 %	-0.026 ppb	-0.010 ppb	-0.006 ppb	-0.001 ppb	-0.015 ppb	0.009 ppm
Concentration per Run 2		-3.550 ppb		30.473 %	-0.017 ppb	-0.009 ppb	-0.008 ppb	0.021 ppb	-0.012 ppb	0.005 ppm
Concentration per Run 3		-4.757 ppb		29.673 %	0.019 ppb	-0.014 ppb	-0.017 ppb	-0.003 ppb	-0.008 ppb	0.005 ppm
Concentration RSD		96.4 %		25.7 %	300.4 %	23.4 %	56.6 %	237.1 %	28.9 %	32.6 %
Intensity average	3,633 cps	-280 cps	3,904 cps	206,527 cps	69 cps	56 cps	83 cps	111 cps	56 cps	576,373 cps
Intensity per Run 1	3,701.5 cps	-204.8 cps	3,992.6 cps	267,859.9 cps	16.0 cps	80.0 cps	148.0 cps	112.0 cps	32.0 cps	792,971.9 cps
Intensity per Run 2	3,719.6 cps	-311.7 cps	3,982.6 cps	178,200.5 cps	40.0 cps	60.0 cps	80.0 cps	160.0 cps	52.0 cps	475,133.1 cps
Intensity per Run 3	3,476.5 cps	-324.6 cps	3,737.6 cps	173,521.4 cps	152.0 cps	28.0 cps	20.0 cps	60.0 cps	84.0 cps	461,014.2 cps
Intensity RSD	3.7 %	23.5 %	3.7 %	25.7 %	104.7 %	46.8 %	77.5 %	45.2 %	46.8 %	32.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.050 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	31.489 %	-0.019 ppb	-0.008 ppb
Concentration per Run 1		-0.035 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	44.395 %	-0.022 ppb	-0.010 ppb
Concentration per Run 2		-0.080 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	26.740 %	-0.016 ppb	-0.005 ppb
Concentration per Run 3		-0.034 ppb	0.000 ppb	-0.002 ppb	0.000 ppb	-0.001 ppb	-0.001 ppb	23.334 %	-0.020 ppb	-0.007 ppb
Concentration RSD		53.2 %	55.4 %	0.0 %	142.0 %	0.0 %	23.8 %	35.9 %	14.2 %	30.1 %
Intensity average	104 cps	16 cps	8 cps	0 cps	13 cps	0 cps	-1 cps	281,919 cps	79 cps	43 cps
Intensity per Run 1	152.0 cps	28.0 cps	0.0 cps	0.0 cps	12.0 cps	0.0 cps	-2.4 cps	397,456.8 cps	88.0 cps	36.0 cps
Intensity per Run 2	88.0 cps	4.0 cps	8.0 cps	0.0 cps	4.0 cps	0.0 cps	-2.5 cps	239,399.5 cps	92.0 cps	56.0 cps
Intensity per Run 3	72.0 cps	16.0 cps	16.0 cps	0.0 cps	24.0 cps	0.0 cps	2.5 cps	208,901.6 cps	56.0 cps	36.0 cps
Intensity RSD	40.7 %	75.0 %	100.0 %	N/A	75.5 %	N/A	364.7 %	35.9 %	25.1 %	27.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.008 ppb	-0.022 ppb	-0.020 ppb			29.826 %			0.004 ppm	0.000 ppb
Concentration per Run 1	-0.010 ppb	-0.022 ppb	-0.020 ppb			40.842 %			0.006 ppm	-0.003 ppb
Concentration per Run 2	-0.008 ppb	-0.022 ppb	-0.021 ppb			28.197 %			0.004 ppm	0.001 ppb
Concentration per Run 3	-0.007 ppb	-0.022 ppb	-0.019 ppb			20.441 %			0.003 ppm	0.000 ppb
Concentration RSD	21.0 %	1.5 %	5.5 %			34.5 %			39.7 %	521.5 %
Intensity average	31 cps	5 cps	13 cps	0 cps	1 cps	937,532 cps	15 cps	4 cps	974,969 cps	310 cps
Intensity per Run 1	28.0 cps	8.0 cps	20.0 cps	0.0 cps	4.0 cps	1,283,770.1 cps	16.0 cps	0.0 cps	1,385,527.5 cps	332.0 cps
Intensity per Run 2	32.0 cps	4.0 cps	8.0 cps	0.0 cps	0.0 cps	886,314.2 cps	12.0 cps	8.0 cps	922,496.3 cps	325.0 cps
Intensity per Run 3	32.0 cps	4.0 cps	12.0 cps	0.0 cps	0.0 cps	642,510.5 cps	16.0 cps	4.0 cps	616,883.5 cps	273.0 cps
Intensity RSD	7.5 %	43.3 %	45.8 %	N/A	173.2 %	34.5 %	15.7 %	100.0 %	39.7 %	10.4 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	0.000 ppb	0.103 ppb	0.097 ppb	0.102 ppb	28.442 %
Concentration per Run 1	-0.002 ppb	0.074 ppb	0.067 ppb	0.072 ppb	36.072 %
Concentration per Run 2	0.001 ppb	0.117 ppb	0.113 ppb	0.119 ppb	25.154 %
Concentration per Run 3	0.002 ppb	0.118 ppb	0.110 ppb	0.113 ppb	24.101 %
Concentration RSD	474.8 %	24.3 %	26.5 %	25.0 %	23.3 %
Intensity average	791 cps	2,283 cps	1,889 cps	9,089 cps	728,960 cps
Intensity per Run 1	854.0 cps	2,247.2 cps	1,808.1 cps	8,832.3 cps	924,490.7 cps
Intensity per Run 2	766.0 cps	2,358.2 cps	2,004.2 cps	9,619.5 cps	644,687.8 cps
Intensity per Run 3	753.0 cps	2,243.2 cps	1,856.1 cps	8,816.2 cps	617,700.2 cps
Intensity RSD	6.9 %	2.9 %	5.4 %	5.1 %	23.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-003L(5) Analysis: 10/30/2019 23:01:23 Sample Type UNKNOWN
Comment WT-2SDL Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	44.402 %	29.892 %	0.001 ppb	1.805 ppb	1.775 ppb	N/A	-1.598 ppb	-2.016 ppb	-2.438 ppb	-2.075 ppb
Concentration per Run 1	61.087 %	18.213 %	0.030 ppb	2.231 ppb	2.182 ppb	N/A	-0.561 ppb	-2.136 ppb	-2.414 ppb	-1.611 ppb
Concentration per Run 2	41.915 %	33.561 %	-0.013 ppb	2.063 ppb	1.824 ppb	N/A	-1.933 ppb	-1.898 ppb	-2.597 ppb	-2.304 ppb
Concentration per Run 3	30.204 %	37.903 %	-0.014 ppb	1.121 ppb	1.320 ppb	N/A	-2.300 ppb	-2.015 ppb	-2.302 ppb	-2.311 ppb
Concentration RSD	35.1 %	34.6 %	2,167.5 %	33.2 %	24.4 %	N/A	57.4 %	5.9 %	6.1 %	19.4 %
Intensity average	6,209,781 cps	9,625 cps	1 cps	10 cps	57 cps	993 cps	4,324 cps	83 cps	10 cps	27 cps
Intensity per Run 1	8,543,232.3 cps	5,864.1 cps	1.5 cps	8.5 cps	49.5 cps	910.0 cps	4,300.8 cps	40.0 cps	10.0 cps	60.0 cps
Intensity per Run 2	5,862,021.8 cps	10,805.9 cps	0.5 cps	13.0 cps	67.0 cps	1,040.0 cps	4,320.8 cps	120.0 cps	0.0 cps	10.0 cps
Intensity per Run 3	4,224,089.4 cps	12,204.1 cps	0.5 cps	8.5 cps	55.5 cps	1,030.0 cps	4,350.8 cps	90.0 cps	20.0 cps	10.0 cps
Intensity RSD	35.1 %	34.6 %	69.3 %	26.0 %	15.5 %	7.3 %	0.6 %	48.5 %	100.0 %	108.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.573 ppb		0.008 ppm	-5.317 ppb	-16.834 ppb	-19.294 ppb	-12.925 ppb	44.258 %	36.523 %	-0.003 ppb
Concentration per Run 1	-1.666 ppb		0.009 ppm	-5.439 ppb	-12.668 ppb	-21.363 ppb	-12.801 ppb	61.767 %	40.607 %	-0.003 ppb
Concentration per Run 2	-1.569 ppb		0.009 ppm	-4.613 ppb	-18.917 ppb	-19.516 ppb	-12.995 ppb	42.779 %	34.659 %	-0.003 ppb
Concentration per Run 3	-1.483 ppb		0.008 ppm	-5.898 ppb	-18.917 ppb	-17.004 ppb	-12.979 ppb	28.226 %	34.301 %	-0.003 ppb
Concentration RSD	5.8 %		3.2 %	12.2 %	21.4 %	11.3 %	0.8 %	38.0 %	9.7 %	0.0 %
Intensity average	10 cps	990 cps	20,128 cps	6,132 cps	3 cps	6,919 cps	43 cps	3,046,248 cps	107,224 cps	0 cps
Intensity per Run 1	0.0 cps	1,190.1 cps	20,538.0 cps	6,381.8 cps	10.0 cps	7,152.1 cps	50.0 cps	4,251,410.0 cps	119,216.3 cps	0.0 cps
Intensity per Run 2	10.0 cps	920.0 cps	20,237.9 cps	6,161.7 cps	0.0 cps	7,052.1 cps	40.0 cps	2,944,502.9 cps	101,753.4 cps	0.0 cps
Intensity per Run 3	20.0 cps	860.0 cps	19,607.4 cps	5,851.5 cps	0.0 cps	6,551.7 cps	40.0 cps	1,942,830.6 cps	100,702.1 cps	0.0 cps
Intensity RSD	100.0 %	17.8 %	2.4 %	4.3 %	173.2 %	4.6 %	13.3 %	38.0 %	9.7 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.114 ppb	-0.108 ppb	-0.403 ppb	N/A	-0.098 ppb	-1.697 ppb	-1.547 ppb	0.010 ppb	-0.833 ppb	-0.883 ppb
Concentration per Run 1	-0.114 ppb	-0.108 ppb	-0.393 ppb	N/A	-0.113 ppb	-1.722 ppb	-1.487 ppb	0.006 ppb	-0.796 ppb	-0.864 ppb
Concentration per Run 2	-0.115 ppb	-0.109 ppb	-0.415 ppb	N/A	-0.086 ppb	-1.668 ppb	-1.569 ppb	0.014 ppb	-0.827 ppb	-0.866 ppb
Concentration per Run 3	-0.113 ppb	-0.106 ppb	-0.401 ppb	N/A	-0.094 ppb	-1.700 ppb	-1.585 ppb	0.010 ppb	-0.877 ppb	-0.918 ppb
Concentration RSD	1.0 %	1.4 %	2.7 %	N/A	14.4 %	1.6 %	3.4 %	41.3 %	4.9 %	3.5 %
Intensity average	66 cps	116 cps	60 cps	60 cps	217 cps	1,587 cps	32 cps	267 cps	311 cps	44 cps
Intensity per Run 1	72.9 cps	128.0 cps	76.0 cps	100.0 cps	152.0 cps	1,560.1 cps	52.0 cps	220.0 cps	444.0 cps	60.0 cps
Intensity per Run 2	57.7 cps	100.0 cps	44.0 cps	20.0 cps	260.0 cps	1,640.1 cps	24.0 cps	324.0 cps	252.0 cps	48.0 cps
Intensity per Run 3	67.5 cps	120.0 cps	60.0 cps	60.0 cps	240.0 cps	1,560.1 cps	20.0 cps	256.0 cps	236.0 cps	24.0 cps
Intensity RSD	11.7 %	12.4 %	26.7 %	66.7 %	26.4 %	2.9 %	54.5 %	19.8 %	37.3 %	41.7 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.121 ppb	-0.113 ppb	-2.024 ppb	-1.800 ppb	-1.893 ppb		1.856 ppb	N/A	0.150 ppb	
Concentration per Run 1	-0.118 ppb	-0.110 ppb	-1.856 ppb	-1.769 ppb	-1.849 ppb		2.431 ppb	N/A	0.228 ppb	
Concentration per Run 2	-0.119 ppb	-0.116 ppb	-2.072 ppb	-1.722 ppb	-1.898 ppb		1.817 ppb	N/A	0.049 ppb	
Concentration per Run 3	-0.125 ppb	-0.113 ppb	-2.146 ppb	-1.911 ppb	-1.931 ppb		1.320 ppb	N/A	0.174 ppb	
Concentration RSD	3.0 %	2.7 %	7.4 %	5.5 %	2.2 %		30.0 %	N/A	61.0 %	
Intensity average	183 cps	81 cps	549 cps	88 cps	423 cps	7 cps	2,485 cps	60 cps	10 cps	437 cps
Intensity per Run 1	224.0 cps	108.0 cps	716.0 cps	108.0 cps	528.0 cps	7.0 cps	2,566.2 cps	30.0 cps	17.6 cps	433.0 cps
Intensity per Run 2	176.0 cps	60.0 cps	456.0 cps	100.0 cps	356.0 cps	7.0 cps	2,284.6 cps	100.0 cps	-0.9 cps	449.0 cps
Intensity per Run 3	148.0 cps	76.0 cps	476.0 cps	56.0 cps	384.0 cps	7.0 cps	2,603.3 cps	50.0 cps	12.7 cps	429.0 cps
Intensity RSD	21.0 %	30.0 %	26.3 %	31.8 %	21.8 %	0.0 %	7.0 %	60.1 %	98.2 %	2.4 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.750 ppb		24.985 %	-0.017 ppb	-0.013 ppb	-0.012 ppb	-0.006 ppb	-0.011 ppb	0.005 ppm
Concentration per Run 1		0.096 ppb		25.857 %	-0.024 ppb	-0.014 ppb	-0.015 ppb	-0.012 ppb	-0.010 ppb	0.005 ppm
Concentration per Run 2		-4.076 ppb		18.582 %	-0.021 ppb	-0.010 ppb	-0.011 ppb	-0.001 ppb	-0.008 ppb	0.004 ppm
Concentration per Run 3		-1.270 ppb		30.516 %	-0.007 ppb	-0.013 ppb	-0.011 ppb	-0.005 ppb	-0.014 ppb	0.006 ppm
Concentration RSD		121.5 %		24.1 %	54.5 %	17.8 %	15.7 %	90.0 %	26.9 %	19.7 %
Intensity average	3,603 cps	-208 cps	3,884 cps	146,108 cps	35 cps	32 cps	45 cps	44 cps	51 cps	453,148 cps
Intensity per Run 1	3,639.5 cps	-103.6 cps	3,856.6 cps	151,207.3 cps	12.0 cps	24.0 cps	32.0 cps	24.0 cps	60.0 cps	416,945.2 cps
Intensity per Run 2	3,460.5 cps	-288.6 cps	3,743.6 cps	108,665.3 cps	16.0 cps	36.0 cps	40.0 cps	48.0 cps	60.0 cps	387,560.6 cps
Intensity per Run 3	3,708.6 cps	-230.3 cps	4,052.7 cps	178,452.1 cps	76.0 cps	36.0 cps	64.0 cps	60.0 cps	32.0 cps	554,938.8 cps
Intensity RSD	3.6 %	45.6 %	4.0 %	24.1 %	103.4 %	21.7 %	36.7 %	41.7 %	31.9 %	19.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.033 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	25.101 %	-0.016 ppb	-0.005 ppb
Concentration per Run 1		-0.044 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	21.347 %	-0.019 ppb	-0.004 ppb
Concentration per Run 2		-0.058 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	22.838 %	-0.013 ppb	-0.007 ppb
Concentration per Run 3		0.004 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	31.120 %	-0.017 ppb	-0.004 ppb
Concentration RSD		100.8 %	42.5 %	0.0 %	33.3 %	0.0 %	42.3 %	21.0 %	19.6 %	36.8 %
Intensity average	79 cps	17 cps	11 cps	0 cps	5 cps	0 cps	2 cps	224,729 cps	85 cps	55 cps
Intensity per Run 1	52.0 cps	12.0 cps	8.0 cps	0.0 cps	0.0 cps	0.0 cps	-1.5 cps	191,111.7 cps	56.0 cps	52.0 cps
Intensity per Run 2	84.0 cps	8.0 cps	4.0 cps	0.0 cps	8.0 cps	0.0 cps	5.3 cps	204,465.5 cps	100.0 cps	36.0 cps
Intensity per Run 3	100.0 cps	32.0 cps	20.0 cps	0.0 cps	8.0 cps	0.0 cps	1.3 cps	278,608.4 cps	100.0 cps	76.0 cps
Intensity RSD	31.1 %	74.2 %	78.1 %	N/A	86.6 %	N/A	200.4 %	21.0 %	29.8 %	36.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.005 ppb	-0.023 ppb	-0.020 ppb			25.070 %			0.004 ppm	-0.003 ppb
Concentration per Run 1	-0.005 ppb	-0.025 ppb	-0.020 ppb			18.318 %			0.003 ppm	0.002 ppb
Concentration per Run 2	-0.008 ppb	-0.025 ppb	-0.020 ppb			25.969 %			0.004 ppm	-0.005 ppb
Concentration per Run 3	-0.003 ppb	-0.021 ppb	-0.021 ppb			30.923 %			0.004 ppm	-0.005 ppb
Concentration RSD	50.1 %	9.7 %	4.8 %			25.3 %			26.2 %	165.9 %
Intensity average	47 cps	3 cps	9 cps	0 cps	1 cps	788,023 cps	7 cps	7 cps	870,182 cps	240 cps
Intensity per Run 1	40.0 cps	0.0 cps	8.0 cps	0.0 cps	0.0 cps	575,779.5 cps	4.0 cps	4.0 cps	607,146.2 cps	241.0 cps
Intensity per Run 2	28.0 cps	0.0 cps	12.0 cps	0.0 cps	4.0 cps	816,289.2 cps	4.0 cps	8.0 cps	1,001,446.2 cps	235.0 cps
Intensity per Run 3	72.0 cps	8.0 cps	8.0 cps	0.0 cps	0.0 cps	971,999.5 cps	12.0 cps	8.0 cps	1,001,954.6 cps	243.0 cps
Intensity RSD	48.7 %	173.2 %	24.7 %	N/A	173.2 %	25.3 %	69.3 %	34.6 %	26.2 %	1.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.002 ppb	0.091 ppb	0.092 ppb	0.088 ppb	29.799 %
Concentration per Run 1	0.003 ppb	0.143 ppb	0.142 ppb	0.138 ppb	17.583 %
Concentration per Run 2	-0.005 ppb	0.062 ppb	0.071 ppb	0.061 ppb	36.708 %
Concentration per Run 3	-0.004 ppb	0.069 ppb	0.062 ppb	0.065 ppb	35.106 %
Concentration RSD	186.4 %	49.0 %	47.6 %	49.3 %	35.6 %
Intensity average	602 cps	1,969 cps	1,747 cps	7,775 cps	763,733 cps
Intensity per Run 1	588.0 cps	1,974.2 cps	1,720.1 cps	7,730.9 cps	450,650.3 cps
Intensity per Run 2	595.0 cps	1,911.1 cps	1,892.1 cps	7,751.9 cps	940,800.5 cps
Intensity per Run 3	623.0 cps	2,022.2 cps	1,628.1 cps	7,843.0 cps	899,748.0 cps
Intensity RSD	3.1 %	2.8 %	7.7 %	0.8 %	35.6 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 23:07:28 Sample Type QC
Comment MW-11881 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	17.402 %	26.153 %	0.020 ppb	1.487 ppb	1.181 ppb	N/A	0.186 ppb	-2.122 ppb	-2.456 ppb	-1.895 ppb
Concentration per Run 1	23.724 %	22.763 %	0.019 ppb	1.227 ppb	1.377 ppb	N/A	-0.621 ppb	-2.148 ppb	-2.597 ppb	-2.169 ppb
Concentration per Run 2	19.121 %	33.440 %	0.006 ppb	1.322 ppb	0.795 ppb	N/A	-0.974 ppb	-2.181 ppb	-2.417 ppb	-2.013 ppb
Concentration per Run 3	9.361 %	22.255 %	0.035 ppb	1.914 ppb	1.372 ppb	N/A	2.153 ppb	-2.037 ppb	-2.353 ppb	-1.504 ppb
Recovery Percentage 1			0.013 %		0.788 %		0.001 %			-0.013 %
Concentration RSD	42.1 %	24.2 %	70.7 %	25.0 %	28.3 %	N/A	921.9 %	3.5 %	5.2 %	18.3 %
Intensity average	2,433,720 cps	8,421 cps	2 cps	8 cps	35 cps	1,090 cps	4,511 cps	40 cps	7 cps	33 cps
Intensity per Run 1	3,317,888.0 cps	7,329.2 cps	1.5 cps	6.0 cps	38.5 cps	1,360.1 cps	4,630.9 cps	40.0 cps	0.0 cps	20.0 cps
Intensity per Run 2	2,674,123.1 cps	10,767.1 cps	1.5 cps	8.5 cps	31.0 cps	970.0 cps	4,370.8 cps	30.0 cps	10.0 cps	30.0 cps
Intensity per Run 3	1,309,150.2 cps	7,165.6 cps	2.0 cps	8.0 cps	34.0 cps	940.0 cps	4,530.8 cps	50.0 cps	10.0 cps	50.0 cps
Intensity RSD	42.1 %	24.2 %	17.3 %	17.6 %	10.9 %	21.5 %	2.9 %	25.0 %	86.6 %	45.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.225 ppb		0.009 ppm	0.370 ppb	-12.586 ppb	-9.339 ppb	-10.690 ppb	16.966 %	29.073 %	-0.003 ppb
Concentration per Run 1	-1.359 ppb		0.008 ppm	-3.522 ppb	-18.917 ppb	-15.763 ppb	-11.739 ppb	23.926 %	40.180 %	-0.003 ppb
Concentration per Run 2	-1.103 ppb		0.009 ppm	-0.167 ppb	0.076 ppb	-13.570 ppb	-9.761 ppb	18.249 %	25.564 %	-0.003 ppb
Concentration per Run 3	-1.214 ppb		0.011 ppm	4.798 ppb	-18.917 ppb	1.317 ppb	-10.570 ppb	8.723 %	21.474 %	-0.003 ppb
Recovery Percentage 1	-0.008 %			0.002 %		-0.062 %	-0.071 %			-0.002 %
Concentration RSD	10.5 %		14.4 %	1,131.9 %	87.1 %	99.5 %	9.3 %	45.3 %	33.8 %	0.0 %
Intensity average	37 cps	987 cps	17,450 cps	6,128 cps	7 cps	6,172 cps	63 cps	1,167,775 cps	85,353 cps	0 cps
Intensity per Run 1	30.0 cps	1,040.1 cps	19,737.3 cps	7,042.3 cps	0.0 cps	6,331.6 cps	70.0 cps	1,646,834.4 cps	117,961.5 cps	0.0 cps
Intensity per Run 2	50.0 cps	930.0 cps	16,781.9 cps	5,781.4 cps	20.0 cps	5,901.4 cps	70.0 cps	1,256,065.1 cps	75,050.9 cps	0.0 cps
Intensity per Run 3	30.0 cps	990.0 cps	15,831.0 cps	5,561.3 cps	0.0 cps	6,281.6 cps	50.0 cps	600,424.5 cps	63,045.5 cps	0.0 cps
Intensity RSD	31.5 %	5.6 %	11.7 %	13.0 %	173.2 %	3.8 %	18.2 %	45.3 %	33.8 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.112 ppb	-0.103 ppb	-0.402 ppb	N/A	-0.103 ppb	-1.672 ppb	-1.518 ppb	0.011 ppb	-0.866 ppb	-0.877 ppb
Concentration per Run 1	-0.119 ppb	-0.108 ppb	-0.411 ppb	N/A	-0.106 ppb	-1.679 ppb	-1.527 ppb	0.004 ppb	-0.805 ppb	-0.845 ppb
Concentration per Run 2	-0.111 ppb	-0.100 ppb	-0.389 ppb	N/A	-0.100 ppb	-1.686 ppb	-1.491 ppb	0.011 ppb	-0.898 ppb	-0.877 ppb
Concentration per Run 3	-0.106 ppb	-0.100 ppb	-0.405 ppb	N/A	-0.102 ppb	-1.652 ppb	-1.536 ppb	0.018 ppb	-0.897 ppb	-0.909 ppb
Recovery Percentage 1	-0.075 %	-0.068 %		0.000 %	-0.068 %		-0.010 %	0.007 %	-0.578 %	
Concentration RSD	5.9 %	4.3 %	2.9 %	N/A	3.1 %	1.1 %	1.6 %	63.6 %	6.2 %	3.7 %
Intensity average	56 cps	117 cps	53 cps	53 cps	176 cps	1,627 cps	31 cps	215 cps	292 cps	49 cps
Intensity per Run 1	47.5 cps	128.0 cps	56.0 cps	120.0 cps	192.0 cps	1,880.2 cps	40.0 cps	184.0 cps	424.0 cps	72.0 cps
Intensity per Run 2	57.0 cps	120.0 cps	64.0 cps	10.0 cps	192.0 cps	1,580.1 cps	32.0 cps	212.0 cps	264.0 cps	52.0 cps
Intensity per Run 3	63.1 cps	104.0 cps	40.0 cps	30.0 cps	144.0 cps	1,420.1 cps	20.0 cps	248.0 cps	188.0 cps	24.0 cps
Intensity RSD	14.0 %	10.4 %	22.9 %	109.9 %	15.7 %	14.4 %	32.8 %	14.9 %	41.3 %	48.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.121 ppb	-0.107 ppb	-2.101 ppb	-1.799 ppb	-1.908 ppb		1.440 ppb	N/A	0.048 ppb	
Concentration per Run 1	-0.120 ppb	-0.112 ppb	-1.913 ppb	-1.757 ppb	-1.868 ppb		2.994 ppb	N/A	-0.015 ppb	
Concentration per Run 2	-0.124 ppb	-0.105 ppb	-2.258 ppb	-1.845 ppb	-1.965 ppb		0.250 ppb	N/A	0.007 ppb	
Concentration per Run 3	-0.120 ppb	-0.105 ppb	-2.131 ppb	-1.796 ppb	-1.891 ppb		1.075 ppb	N/A	0.153 ppb	
Recovery Percentage 1		-0.072 %	-1.400 %				0.960 %	0.000 %		
Concentration RSD	1.6 %	3.5 %	8.3 %	2.5 %	2.7 %		97.8 %	N/A	188.6 %	
Intensity average	180 cps	85 cps	500 cps	96 cps	428 cps	9 cps	2,493 cps	47 cps	-2 cps	423 cps
Intensity per Run 1	204.0 cps	96.0 cps	616.0 cps	112.0 cps	496.0 cps	8.0 cps	2,855.9 cps	50.0 cps	-8.0 cps	432.0 cps
Intensity per Run 2	176.0 cps	88.0 cps	420.0 cps	92.0 cps	388.0 cps	9.0 cps	2,466.5 cps	50.0 cps	-8.5 cps	404.0 cps
Intensity per Run 3	160.0 cps	72.0 cps	464.0 cps	84.0 cps	400.0 cps	10.0 cps	2,157.9 cps	40.0 cps	10.5 cps	432.0 cps
Intensity RSD	12.4 %	14.3 %	20.6 %	15.0 %	13.8 %	11.1 %	14.0 %	12.4 %	542.9 %	3.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-1.949 ppb		37.218 %	-0.020 ppb	-0.013 ppb	-0.012 ppb	-0.013 ppb	-0.011 ppb	0.007 ppm
Concentration per Run 1		-4.052 ppb		26.193 %	-0.019 ppb	-0.013 ppb	-0.005 ppb	-0.013 ppb	-0.009 ppb	0.005 ppm
Concentration per Run 2		-0.941 ppb		50.176 %	-0.021 ppb	-0.012 ppb	-0.018 ppb	-0.012 ppb	-0.011 ppb	0.011 ppm
Concentration per Run 3		-0.853 ppb		35.285 %	-0.021 ppb	-0.014 ppb	-0.014 ppb	-0.013 ppb	-0.012 ppb	0.006 ppm
Recovery Percentage 1		-1.299 %						-0.008 %		0.000 %
Concentration RSD		93.5 %		32.5 %	6.8 %	5.6 %	51.6 %	6.9 %	15.5 %	43.4 %
Intensity average	3,702 cps	-265 cps	3,932 cps	217,642 cps	33 cps	45 cps	56 cps	33 cps	73 cps	632,766 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,026.7 cps	-259.2 cps	4,500.8 cps	153,171.5 cps	28.0 cps	32.0 cps	84.0 cps	20.0 cps	68.0 cps	414,684.8 cps
Intensity per Run 2	3,820.6 cps	-345.5 cps	3,958.6 cps	293,417.1 cps	44.0 cps	68.0 cps	32.0 cps	52.0 cps	96.0 cps	940,938.4 cps
Intensity per Run 3	3,258.4 cps	-189.1 cps	3,335.4 cps	206,337.9 cps	28.0 cps	36.0 cps	52.0 cps	28.0 cps	56.0 cps	542,675.5 cps
Intensity RSD	10.7 %	29.6 %	14.8 %	32.5 %	27.7 %	43.5 %	46.8 %	50.0 %	28.0 %	43.4 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		0.004 ppb	-0.001 ppb	0.008 ppb	-0.001 ppb	0.000 ppb	-0.001 ppb	33.345 %	-0.019 ppb	-0.007 ppb
Concentration per Run 1		0.007 ppb	-0.001 ppb	-0.002 ppb	0.000 ppb	0.001 ppb	0.000 ppb	20.583 %	-0.017 ppb	-0.007 ppb
Concentration per Run 2		0.026 ppb	-0.001 ppb	0.028 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	50.903 %	-0.021 ppb	-0.010 ppb
Concentration per Run 3		-0.020 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	28.548 %	-0.019 ppb	-0.005 ppb
Recovery Percentage 1			-0.002 %				-0.001 %		-0.013 %	-0.005 %
Concentration RSD		518.8 %	25.1 %	208.4 %	53.8 %	345.4 %	50.7 %	47.1 %	10.3 %	33.7 %
Intensity average	105 cps	37 cps	13 cps	4 cps	8 cps	1 cps	3 cps	298,529 cps	81 cps	45 cps
Intensity per Run 1	44.0 cps	24.0 cps	4.0 cps	0.0 cps	12.0 cps	4.0 cps	6.3 cps	184,272.3 cps	64.0 cps	36.0 cps
Intensity per Run 2	188.0 cps	64.0 cps	24.0 cps	12.0 cps	12.0 cps	0.0 cps	1.2 cps	455,727.1 cps	104.0 cps	40.0 cps
Intensity per Run 3	84.0 cps	24.0 cps	12.0 cps	0.0 cps	0.0 cps	0.0 cps	2.0 cps	255,587.8 cps	76.0 cps	60.0 cps
Intensity RSD	70.6 %	61.9 %	75.5 %	173.2 %	86.6 %	173.2 %	86.9 %	47.1 %	25.2 %	28.4 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.007 ppb	-0.022 ppb	-0.020 ppb			28.096 %			0.004 ppm	-0.001 ppb
Concentration per Run 1	-0.005 ppb	-0.022 ppb	-0.019 ppb			18.560 %			0.003 ppm	0.002 ppb
Concentration per Run 2	-0.008 ppb	-0.023 ppb	-0.020 ppb			39.958 %			0.006 ppm	-0.005 ppb
Concentration per Run 3	-0.007 ppb	-0.020 ppb	-0.021 ppb			25.770 %			0.004 ppm	0.001 ppb
Recovery Percentage 1		-0.014 %							0.000 %	
Concentration RSD	21.7 %	7.2 %	6.7 %			38.7 %			38.9 %	503.4 %
Intensity average	43 cps	5 cps	13 cps	0 cps	3 cps	883,142 cps	5 cps	8 cps	895,530 cps	277 cps
Intensity per Run 1	36.0 cps	4.0 cps	12.0 cps	0.0 cps	8.0 cps	583,400.0 cps	0.0 cps	4.0 cps	594,983.4 cps	273.0 cps
Intensity per Run 2	56.0 cps	4.0 cps	20.0 cps	0.0 cps	0.0 cps	1,256,001.8 cps	8.0 cps	12.0 cps	1,277,057.4 cps	275.0 cps
Intensity per Run 3	36.0 cps	8.0 cps	8.0 cps	0.0 cps	0.0 cps	810,023.4 cps	8.0 cps	8.0 cps	814,550.5 cps	282.0 cps
Intensity RSD	27.1 %	43.3 %	45.8 %	N/A	173.2 %	38.7 %	86.6 %	50.0 %	38.9 %	1.7 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.001 ppb	0.108 ppb	0.109 ppb	0.106 ppb	27.700 %
Concentration per Run 1	0.000 ppb	0.132 ppb	0.124 ppb	0.125 ppb	21.607 %
Concentration per Run 2	-0.005 ppb	0.064 ppb	0.062 ppb	0.062 ppb	39.630 %
Concentration per Run 3	0.000 ppb	0.129 ppb	0.141 ppb	0.131 ppb	21.864 %
Recovery Percentage 1	-0.001 %			0.071 %	
Concentration RSD	216.1 %	35.4 %	38.0 %	35.7 %	37.3 %
Intensity average	633 cps	2,212 cps	1,952 cps	8,773 cps	709,939 cps
Intensity per Run 1	616.0 cps	2,227.2 cps	1,856.1 cps	8,664.2 cps	553,765.6 cps
Intensity per Run 2	667.0 cps	2,156.2 cps	1,852.1 cps	8,537.2 cps	1,015,683.5 cps
Intensity per Run 3	616.0 cps	2,251.2 cps	2,148.2 cps	9,116.3 cps	560,368.2 cps
Intensity RSD	4.7 %	2.2 %	8.7 %	3.5 %	37.3 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 23:13:34 Sample Type QC
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	24.540 %	27.738 %	-0.010 ppb	1.555 ppb	1.392 ppb	N/A	-1.369 ppb	-2.194 ppb	-2.455 ppb	-2.136 ppb
Concentration per Run 1	11.193 %	24.948 %	-0.009 ppb	1.699 ppb	1.778 ppb	N/A	-1.381 ppb	-2.257 ppb	-2.597 ppb	-2.165 ppb
Concentration per Run 2	38.220 %	27.882 %	0.001 ppb	1.514 ppb	1.127 ppb	N/A	-1.104 ppb	-2.071 ppb	-2.171 ppb	-2.100 ppb
Concentration per Run 3	24.206 %	30.384 %	-0.022 ppb	1.453 ppb	1.272 ppb	N/A	-1.620 ppb	-2.255 ppb	-2.597 ppb	-2.143 ppb
Recovery Percentage 1			-1.030 %	0.156 %			-0.274 %			-0.427 %
Concentration RSD	55.1 %	9.8 %	109.9 %	8.2 %	24.5 %	N/A	18.9 %	4.9 %	10.0 %	1.5 %
Intensity average	3,431,958 cps	8,931 cps	1 cps	8 cps	43 cps	1,083 cps	3,887 cps	23 cps	7 cps	20 cps
Intensity per Run 1	1,565,420.4 cps	8,032.7 cps	0.5 cps	8.5 cps	51.5 cps	950.0 cps	4,170.7 cps	10.0 cps	0.0 cps	20.0 cps
Intensity per Run 2	5,345,175.9 cps	8,977.6 cps	1.0 cps	8.0 cps	35.0 cps	1,180.1 cps	3,630.5 cps	50.0 cps	20.0 cps	20.0 cps
Intensity per Run 3	3,385,278.7 cps	9,783.0 cps	0.0 cps	8.5 cps	43.0 cps	1,120.1 cps	3,860.6 cps	10.0 cps	0.0 cps	20.0 cps
Intensity RSD	55.1 %	9.8 %	100.0 %	3.5 %	19.1 %	11.0 %	7.0 %	99.0 %	173.2 %	0.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.460 ppb		0.011 ppm	-3.000 ppb	-18.917 ppb	-12.907 ppb	-11.272 ppb	23.640 %	28.853 %	-0.003 ppb
Concentration per Run 1	-1.561 ppb		0.009 ppm	-5.817 ppb	-18.917 ppb	-5.098 ppb	-10.895 ppb	10.791 %	37.192 %	-0.003 ppb
Concentration per Run 2	-1.268 ppb		0.012 ppm	-0.402 ppb	-18.917 ppb	-18.438 ppb	-9.806 ppb	37.711 %	22.113 %	-0.003 ppb
Concentration per Run 3	-1.551 ppb		0.011 ppm	-2.780 ppb	-18.917 ppb	-15.185 ppb	-13.114 ppb	22.418 %	27.254 %	-0.003 ppb
Recovery Percentage 1	-7.300 %			-0.600 %			-1.127 %			-0.035 %
Concentration RSD	11.4 %		12.8 %	90.5 %	0.0 %	53.9 %	15.0 %	57.1 %	26.6 %	0.0 %
Intensity average	17 cps	880 cps	20,281 cps	5,418 cps	0 cps	6,505 cps	57 cps	1,627,146 cps	84,709 cps	0 cps
Intensity per Run 1	10.0 cps	1,050.1 cps	21,059.4 cps	5,951.6 cps	0.0 cps	5,921.4 cps	80.0 cps	742,729.8 cps	109,190.7 cps	0.0 cps
Intensity per Run 2	30.0 cps	850.0 cps	18,795.1 cps	4,921.0 cps	0.0 cps	7,302.2 cps	60.0 cps	2,595,645.3 cps	64,920.3 cps	0.0 cps
Intensity per Run 3	10.0 cps	740.0 cps	20,988.4 cps	5,381.3 cps	0.0 cps	6,291.6 cps	30.0 cps	1,543,063.1 cps	80,014.5 cps	0.0 cps
Intensity RSD	69.3 %	17.9 %	6.3 %	9.5 %	N/A	11.0 %	44.4 %	57.1 %	26.6 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.113 ppb	-0.102 ppb	-0.385 ppb	N/A	-0.104 ppb	-1.707 ppb	-1.539 ppb	0.011 ppb	-0.857 ppb	-0.855 ppb
Concentration per Run 1	-0.118 ppb	-0.105 ppb	-0.405 ppb	N/A	-0.114 ppb	-1.721 ppb	-1.531 ppb	0.010 ppb	-0.870 ppb	-0.837 ppb
Concentration per Run 2	-0.111 ppb	-0.099 ppb	-0.356 ppb	N/A	-0.100 ppb	-1.701 ppb	-1.565 ppb	0.010 ppb	-0.845 ppb	-0.844 ppb
Concentration per Run 3	-0.111 ppb	-0.103 ppb	-0.395 ppb	N/A	-0.098 ppb	-1.697 ppb	-1.522 ppb	0.013 ppb	-0.855 ppb	-0.883 ppb
Recovery Percentage 1	-2.268 %	-5.121 %			-10.399 %		-0.770 %	1.111 %	-85.682 %	
Concentration RSD	3.5 %	3.3 %	6.7 %	N/A	8.4 %	0.8 %	1.5 %	17.1 %	1.5 %	2.9 %
Intensity average	52 cps	120 cps	61 cps	67 cps	153 cps	1,293 cps	27 cps	235 cps	283 cps	55 cps
Intensity per Run 1	47.9 cps	136.0 cps	60.0 cps	60.0 cps	140.0 cps	1,500.1 cps	36.0 cps	284.0 cps	256.0 cps	76.0 cps
Intensity per Run 2	49.8 cps	112.0 cps	72.0 cps	80.0 cps	148.0 cps	1,120.1 cps	16.0 cps	168.0 cps	340.0 cps	52.0 cps
Intensity per Run 3	59.2 cps	112.0 cps	52.0 cps	60.0 cps	172.0 cps	1,260.1 cps	28.0 cps	252.0 cps	252.0 cps	36.0 cps
Intensity RSD	11.5 %	11.5 %	16.4 %	17.3 %	10.9 %	14.9 %	37.7 %	25.5 %	17.6 %	36.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.117 ppb	-0.108 ppb	-2.105 ppb	-1.735 ppb	-1.880 ppb		1.419 ppb	N/A	0.202 ppb	
Concentration per Run 1	-0.118 ppb	-0.115 ppb	-2.062 ppb	-1.839 ppb	-1.888 ppb		1.320 ppb	N/A	0.458 ppb	
Concentration per Run 2	-0.116 ppb	-0.101 ppb	-2.124 ppb	-1.640 ppb	-1.845 ppb		1.433 ppb	N/A	0.135 ppb	
Concentration per Run 3	-0.118 ppb	-0.107 ppb	-2.130 ppb	-1.727 ppb	-1.906 ppb		1.505 ppb	N/A	0.013 ppb	
Recovery Percentage 1		-5.394 %	-105.274 %				141.943 %			
Concentration RSD	0.8 %	6.5 %	1.8 %	5.8 %	1.7 %		6.5 %	N/A	113.9 %	
Intensity average	195 cps	80 cps	551 cps	100 cps	412 cps	7 cps	2,679 cps	70 cps	16 cps	413 cps
Intensity per Run 1	228.0 cps	68.0 cps	640.0 cps	84.0 cps	472.0 cps	7.0 cps	2,604.1 cps	90.0 cps	45.1 cps	440.0 cps
Intensity per Run 2	180.0 cps	88.0 cps	552.0 cps	120.0 cps	424.0 cps	8.0 cps	2,896.6 cps	70.0 cps	7.3 cps	384.0 cps
Intensity per Run 3	176.0 cps	84.0 cps	460.0 cps	96.0 cps	340.0 cps	5.0 cps	2,534.8 cps	50.0 cps	-4.3 cps	415.0 cps
Intensity RSD	14.9 %	13.2 %	16.3 %	18.3 %	16.2 %	22.9 %	7.2 %	28.6 %	161.0 %	6.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-3.469 ppb		28.156 %	-0.015 ppb	-0.009 ppb	-0.008 ppb	-0.014 ppb	-0.005 ppb	0.006 ppm
Concentration per Run 1		-3.735 ppb		30.154 %	-0.008 ppb	-0.016 ppb	-0.003 ppb	-0.015 ppb	-0.013 ppb	0.006 ppm
Concentration per Run 2		-2.578 ppb		29.704 %	-0.022 ppb	0.000 ppb	-0.008 ppb	-0.009 ppb	0.003 ppb	0.006 ppm
Concentration per Run 3		-4.094 ppb		24.610 %	-0.016 ppb	-0.010 ppb	-0.013 ppb	-0.018 ppb	-0.005 ppb	0.005 ppm
Recovery Percentage 1		-69.377 %						-0.141 %		
Concentration RSD		22.8 %		10.9 %	47.0 %	90.5 %	66.3 %	34.7 %	149.2 %	8.7 %
Intensity average	4,058 cps	-353 cps	4,346 cps	164,653 cps	44 cps	60 cps	83 cps	21 cps	117 cps	501,422 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	4,141.7 cps	-373.5 cps	4,299.7 cps	176,335.1 cps	72.0 cps	16.0 cps	120.0 cps	16.0 cps	36.0 cps	532,706.4 cps
Intensity per Run 2	4,374.8 cps	-326.3 cps	4,622.9 cps	173,705.8 cps	24.0 cps	116.0 cps	88.0 cps	44.0 cps	212.0 cps	519,979.8 cps
Intensity per Run 3	3,658.5 cps	-357.9 cps	4,116.7 cps	143,917.4 cps	36.0 cps	48.0 cps	40.0 cps	4.0 cps	104.0 cps	451,579.1 cps
Intensity RSD	9.0 %	6.8 %	5.9 %	10.9 %	56.8 %	85.1 %	48.7 %	96.2 %	75.6 %	8.7 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.038 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	30.838 %	-0.019 ppb	-0.005 ppb
Concentration per Run 1		-0.007 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	31.121 %	-0.017 ppb	-0.004 ppb
Concentration per Run 2		-0.070 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	33.149 %	-0.020 ppb	-0.005 ppb
Concentration per Run 3		-0.038 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	28.244 %	-0.019 ppb	-0.005 ppb
Recovery Percentage 1			-0.065 %				-0.131 %			-0.246 %
Concentration RSD		81.6 %	61.0 %	0.0 %	35.4 %	0.0 %	35.0 %	8.0 %	8.0 %	14.7 %
Intensity average	83 cps	17 cps	13 cps	0 cps	7 cps	0 cps	0 cps	276,090 cps	87 cps	68 cps
Intensity per Run 1	108.0 cps	28.0 cps	24.0 cps	0.0 cps	0.0 cps	0.0 cps	-2.7 cps	278,623.6 cps	100.0 cps	76.0 cps
Intensity per Run 2	84.0 cps	8.0 cps	12.0 cps	0.0 cps	12.0 cps	0.0 cps	5.9 cps	296,781.4 cps	80.0 cps	68.0 cps
Intensity per Run 3	56.0 cps	16.0 cps	4.0 cps	0.0 cps	8.0 cps	0.0 cps	-2.1 cps	252,865.0 cps	80.0 cps	60.0 cps
Intensity RSD	31.5 %	58.1 %	75.5 %	N/A	91.7 %	N/A	1,403.2 %	8.0 %	13.3 %	11.8 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.022 ppb	-0.023 ppb			29.820 %			0.004 ppm	-0.004 ppb
Concentration per Run 1	-0.007 ppb	-0.023 ppb	-0.021 ppb			30.612 %			0.004 ppm	-0.004 ppb
Concentration per Run 2	-0.003 ppb	-0.021 ppb	-0.024 ppb			31.113 %			0.005 ppm	-0.006 ppb
Concentration per Run 3	-0.009 ppb	-0.023 ppb	-0.024 ppb			27.734 %			0.004 ppm	-0.004 ppb
Recovery Percentage 1		-0.220 %							0.438 %	
Concentration RSD	52.2 %	4.5 %	5.4 %			6.1 %			6.0 %	22.5 %
Intensity average	48 cps	5 cps	3 cps	0 cps	5 cps	937,318 cps	13 cps	8 cps	991,513 cps	224 cps
Intensity per Run 1	44.0 cps	4.0 cps	8.0 cps	0.0 cps	0.0 cps	962,220.6 cps	20.0 cps	0.0 cps	1,012,046.2 cps	233.0 cps
Intensity per Run 2	76.0 cps	8.0 cps	0.0 cps	0.0 cps	16.0 cps	977,962.8 cps	8.0 cps	12.0 cps	1,037,652.0 cps	205.0 cps
Intensity per Run 3	24.0 cps	4.0 cps	0.0 cps	0.0 cps	0.0 cps	871,770.6 cps	12.0 cps	12.0 cps	924,840.6 cps	234.0 cps
Intensity RSD	54.6 %	43.3 %	173.2 %	N/A	173.2 %	6.1 %	45.8 %	86.6 %	6.0 %	7.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.004 ppb	0.080 ppb	0.078 ppb	0.078 ppb	30.613 %
Concentration per Run 1	-0.004 ppb	0.088 ppb	0.081 ppb	0.085 ppb	28.152 %
Concentration per Run 2	-0.004 ppb	0.075 ppb	0.078 ppb	0.076 ppb	32.282 %
Concentration per Run 3	-0.005 ppb	0.078 ppb	0.076 ppb	0.071 ppb	31.405 %
Recovery Percentage 1	-0.818 %			7.767 %	
Concentration RSD	14.6 %	8.3 %	2.9 %	9.3 %	7.1 %
Intensity average	565 cps	2,025 cps	1,743 cps	7,947 cps	784,593 cps
Intensity per Run 1	529.0 cps	2,038.2 cps	1,652.1 cps	7,983.1 cps	721,519.7 cps
Intensity per Run 2	633.0 cps	2,019.2 cps	1,840.1 cps	8,272.1 cps	827,362.3 cps
Intensity per Run 3	534.0 cps	2,018.2 cps	1,736.1 cps	7,586.9 cps	804,895.9 cps
Intensity RSD	10.4 %	0.6 %	5.4 %	4.3 %	7.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: UJ28009-003A Analysis: 10/30/2019 23:19:40 Sample Type UNKNOWN
Comment WT-2SDA Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	24.066 %	25.521 %	0.007 ppb	1.921 ppb	1.659 ppb	N/A	1.231 ppb	-1.700 ppb	-1.872 ppb	-1.920 ppb
Concentration per Run 1	18.254 %	21.302 %	-0.007 ppb	2.314 ppb	1.509 ppb	N/A	1.725 ppb	-1.618 ppb	-2.060 ppb	-2.219 ppb
Concentration per Run 2	12.178 %	35.433 %	-0.013 ppb	1.427 ppb	1.154 ppb	N/A	-1.374 ppb	-1.876 ppb	-2.049 ppb	-2.144 ppb
Concentration per Run 3	41.766 %	19.828 %	0.041 ppb	2.023 ppb	2.313 ppb	N/A	3.342 ppb	-1.606 ppb	-1.507 ppb	-1.397 ppb
Concentration RSD	64.9 %	33.8 %	426.9 %	23.5 %	35.8 %	N/A	194.7 %	9.0 %	16.9 %	23.7 %
Intensity average	3,365,749 cps	8,217 cps	1 cps	9 cps	43 cps	1,113 cps	4,201 cps	117 cps	30 cps	27 cps
Intensity per Run 1	2,552,894.0 cps	6,858.9 cps	0.5 cps	9.0 cps	35.0 cps	1,090.0 cps	3,970.7 cps	120.0 cps	20.0 cps	10.0 cps
Intensity per Run 2	1,703,179.2 cps	11,408.7 cps	0.5 cps	9.5 cps	44.5 cps	1,110.1 cps	4,120.7 cps	110.0 cps	30.0 cps	20.0 cps
Intensity per Run 3	5,841,173.5 cps	6,384.0 cps	2.0 cps	7.5 cps	49.0 cps	1,140.1 cps	4,510.8 cps	120.0 cps	40.0 cps	50.0 cps
Intensity RSD	64.9 %	33.8 %	86.6 %	12.0 %	16.7 %	2.3 %	6.6 %	4.9 %	33.3 %	78.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.460 ppb		0.014 ppm	5.030 ppb	-18.917 ppb	-13.842 ppb	-5.862 ppb	23.192 %	20.136 %	-0.003 ppb
Concentration per Run 1	-1.499 ppb		0.015 ppm	8.600 ppb	-18.917 ppb	-12.739 ppb	-4.147 ppb	17.249 %	18.348 %	-0.003 ppb
Concentration per Run 2	-1.551 ppb		0.012 ppm	0.328 ppb	-18.917 ppb	-9.051 ppb	-10.895 ppb	13.232 %	22.724 %	-0.003 ppb
Concentration per Run 3	-1.330 ppb		0.016 ppm	6.162 ppb	-18.917 ppb	-19.734 ppb	-2.545 ppb	39.095 %	19.337 %	-0.003 ppb
Concentration RSD	7.9 %		16.2 %	84.5 %	0.0 %	39.2 %	75.6 %	60.0 %	11.4 %	0.0 %
Intensity average	13 cps	867 cps	20,515 cps	5,365 cps	0 cps	6,015 cps	90 cps	1,596,322 cps	59,116 cps	0 cps
Intensity per Run 1	10.0 cps	860.0 cps	19,946.6 cps	5,441.2 cps	0.0 cps	5,961.4 cps	100.0 cps	1,187,280.9 cps	53,865.4 cps	0.0 cps
Intensity per Run 2	10.0 cps	940.0 cps	20,558.4 cps	5,431.3 cps	0.0 cps	5,851.4 cps	50.0 cps	910,763.3 cps	66,715.0 cps	0.0 cps
Intensity per Run 3	20.0 cps	800.0 cps	21,039.0 cps	5,221.2 cps	0.0 cps	6,231.6 cps	120.0 cps	2,690,921.0 cps	56,769.1 cps	0.0 cps
Intensity RSD	43.3 %	8.1 %	2.7 %	2.3 %	N/A	3.3 %	40.1 %	60.0 %	11.4 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.104 ppb	-0.095 ppb	-0.388 ppb	N/A	-0.090 ppb	-1.660 ppb	-1.524 ppb	0.017 ppb	-0.885 ppb	-0.902 ppb
Concentration per Run 1	-0.111 ppb	-0.094 ppb	-0.352 ppb	N/A	-0.094 ppb	-1.649 ppb	-1.544 ppb	0.021 ppb	-0.883 ppb	-0.932 ppb
Concentration per Run 2	-0.099 ppb	-0.096 ppb	-0.405 ppb	N/A	-0.087 ppb	-1.717 ppb	-1.592 ppb	0.013 ppb	-0.898 ppb	-0.881 ppb
Concentration per Run 3	-0.103 ppb	-0.094 ppb	-0.406 ppb	N/A	-0.089 ppb	-1.615 ppb	-1.435 ppb	0.016 ppb	-0.875 ppb	-0.893 ppb
Concentration RSD	5.5 %	1.2 %	8.0 %	N/A	4.0 %	3.1 %	5.3 %	23.5 %	1.3 %	3.0 %
Intensity average	64 cps	119 cps	43 cps	33 cps	160 cps	1,113 cps	20 cps	217 cps	141 cps	23 cps
Intensity per Run 1	42.0 cps	112.0 cps	56.0 cps	20.0 cps	124.0 cps	1,000.0 cps	16.0 cps	240.0 cps	100.0 cps	8.0 cps
Intensity per Run 2	86.4 cps	128.0 cps	40.0 cps	50.0 cps	200.0 cps	1,060.1 cps	12.0 cps	212.0 cps	156.0 cps	36.0 cps
Intensity per Run 3	63.4 cps	116.0 cps	32.0 cps	30.0 cps	156.0 cps	1,280.1 cps	32.0 cps	200.0 cps	168.0 cps	24.0 cps
Intensity RSD	34.7 %	7.0 %	28.6 %	45.8 %	23.8 %	13.2 %	52.9 %	9.4 %	25.7 %	62.0 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.121 ppb	-0.109 ppb	-2.164 ppb	-1.831 ppb	-1.947 ppb		1.940 ppb	N/A	0.131 ppb	
Concentration per Run 1	-0.121 ppb	-0.104 ppb	-2.198 ppb	-1.867 ppb	-1.985 ppb		2.060 ppb	N/A	0.396 ppb	
Concentration per Run 2	-0.125 ppb	-0.115 ppb	-2.231 ppb	-1.888 ppb	-1.942 ppb		1.173 ppb	N/A	0.048 ppb	
Concentration per Run 3	-0.117 ppb	-0.107 ppb	-2.063 ppb	-1.740 ppb	-1.916 ppb		2.587 ppb	N/A	-0.050 ppb	
Concentration RSD	3.4 %	4.8 %	4.1 %	4.4 %	1.8 %		36.9 %	N/A	178.7 %	
Intensity average	117 cps	56 cps	316 cps	53 cps	235 cps	7 cps	2,371 cps	63 cps	3 cps	372 cps
Intensity per Run 1	96.0 cps	64.0 cps	268.0 cps	36.0 cps	148.0 cps	6.0 cps	2,415.5 cps	70.0 cps	18.3 cps	333.0 cps
Intensity per Run 2	116.0 cps	44.0 cps	296.0 cps	52.0 cps	300.0 cps	8.0 cps	2,347.3 cps	40.0 cps	-1.3 cps	357.0 cps
Intensity per Run 3	140.0 cps	60.0 cps	384.0 cps	72.0 cps	256.0 cps	8.0 cps	2,349.2 cps	80.0 cps	-8.2 cps	427.0 cps
Intensity RSD	18.8 %	18.9 %	19.2 %	33.8 %	33.3 %	15.7 %	1.6 %	32.9 %	464.7 %	13.1 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-2.626 ppb		21.786 %	-0.007 ppb	0.003 ppb	0.015 ppb	-0.010 ppb	-0.008 ppb	0.004 ppm
Concentration per Run 1		-3.616 ppb		14.364 %	-0.013 ppb	0.020 ppb	0.054 ppb	-0.009 ppb	-0.005 ppb	0.003 ppm
Concentration per Run 2		0.933 ppb		29.932 %	-0.013 ppb	-0.005 ppb	-0.016 ppb	-0.013 ppb	-0.010 ppb	0.006 ppm
Concentration per Run 3		-5.195 ppb		21.062 %	0.006 ppb	-0.006 ppb	0.007 ppb	-0.008 ppb	-0.009 ppb	0.004 ppm
Concentration RSD		121.2 %		35.8 %	160.8 %	503.5 %	237.7 %	30.8 %	33.9 %	29.2 %
Intensity average	3,533 cps	-212 cps	3,725 cps	127,400 cps	53 cps	89 cps	144 cps	27 cps	67 cps	396,708 cps
Intensity per Run 1	3,648.5 cps	-263.4 cps	3,833.6 cps	83,998.5 cps	28.0 cps	128.0 cps	276.0 cps	24.0 cps	72.0 cps	291,249.3 cps
Intensity per Run 2	3,369.5 cps	-98.0 cps	3,558.5 cps	175,034.2 cps	52.0 cps	84.0 cps	28.0 cps	24.0 cps	72.0 cps	520,609.9 cps
Intensity per Run 3	3,580.5 cps	-276.0 cps	3,783.6 cps	123,167.7 cps	80.0 cps	56.0 cps	128.0 cps	32.0 cps	56.0 cps	378,265.6 cps
Intensity RSD	4.1 %	46.8 %	3.9 %	35.8 %	48.8 %	40.6 %	86.6 %	17.3 %	13.9 %	29.2 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.030 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	0.000 ppb	-0.001 ppb	23.628 %	-0.017 ppb	-0.006 ppb
Concentration per Run 1		-0.036 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	0.001 ppb	-0.001 ppb	22.362 %	-0.012 ppb	-0.001 ppb
Concentration per Run 2		-0.017 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	0.000 ppb	29.784 %	-0.022 ppb	-0.008 ppb
Concentration per Run 3		-0.036 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	18.739 %	-0.016 ppb	-0.009 ppb
Concentration RSD		35.5 %	198.3 %	0.0 %	16.0 %	361.2 %	60.4 %	23.8 %	29.7 %	75.9 %
Intensity average	67 cps	16 cps	15 cps	0 cps	3 cps	1 cps	5 cps	211,540 cps	76 cps	45 cps
Intensity per Run 1	60.0 cps	12.0 cps	20.0 cps	0.0 cps	0.0 cps	4.0 cps	1.2 cps	200,203.1 cps	104.0 cps	76.0 cps
Intensity per Run 2	96.0 cps	24.0 cps	4.0 cps	0.0 cps	4.0 cps	0.0 cps	10.4 cps	266,651.8 cps	60.0 cps	40.0 cps
Intensity per Run 3	44.0 cps	12.0 cps	20.0 cps	0.0 cps	4.0 cps	0.0 cps	2.3 cps	167,764.2 cps	64.0 cps	20.0 cps
Intensity RSD	40.0 %	43.3 %	63.0 %	N/A	86.6 %	173.2 %	108.5 %	23.8 %	32.0 %	62.6 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.004 ppb	-0.022 ppb	-0.021 ppb			24.813 %			0.004 ppm	-0.003 ppb
Concentration per Run 1	-0.003 ppb	-0.022 ppb	-0.019 ppb			23.260 %			0.003 ppm	-0.001 ppb
Concentration per Run 2	-0.007 ppb	-0.023 ppb	-0.021 ppb			31.401 %			0.005 ppm	-0.007 ppb
Concentration per Run 3	-0.003 ppb	-0.022 ppb	-0.022 ppb			19.777 %			0.003 ppm	-0.003 ppb
Concentration RSD	53.9 %	2.7 %	6.8 %			24.0 %			23.7 %	90.7 %
Intensity average	47 cps	4 cps	8 cps	0 cps	3 cps	779,936 cps	12 cps	7 cps	814,125 cps	193 cps
Intensity per Run 1	52.0 cps	4.0 cps	12.0 cps	0.0 cps	4.0 cps	731,136.7 cps	16.0 cps	8.0 cps	746,692.3 cps	198.0 cps
Intensity per Run 2	44.0 cps	4.0 cps	8.0 cps	0.0 cps	4.0 cps	987,020.6 cps	16.0 cps	8.0 cps	1,031,374.7 cps	194.0 cps
Intensity per Run 3	44.0 cps	4.0 cps	4.0 cps	0.0 cps	0.0 cps	621,650.4 cps	4.0 cps	4.0 cps	664,308.5 cps	186.0 cps
Intensity RSD	9.9 %	0.0 %	50.0 %	N/A	86.6 %	24.0 %	57.7 %	34.6 %	23.7 %	3.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.003 ppb	0.101 ppb	0.096 ppb	0.099 ppb	25.629 %
Concentration per Run 1	-0.001 ppb	0.139 ppb	0.135 ppb	0.140 ppb	17.857 %
Concentration per Run 2	-0.007 ppb	0.053 ppb	0.045 ppb	0.048 ppb	38.528 %
Concentration per Run 3	-0.002 ppb	0.109 ppb	0.108 ppb	0.108 ppb	20.501 %
Concentration RSD	109.8 %	43.4 %	48.2 %	47.0 %	43.9 %
Intensity average	467 cps	1,853 cps	1,536 cps	7,277 cps	656,848 cps
Intensity per Run 1	470.0 cps	1,991.2 cps	1,692.1 cps	7,936.0 cps	457,673.1 cps
Intensity per Run 2	450.0 cps	1,773.1 cps	1,360.1 cps	6,685.7 cps	987,453.9 cps
Intensity per Run 3	482.0 cps	1,795.1 cps	1,556.1 cps	7,207.9 cps	525,417.8 cps
Intensity RSD	3.5 %	6.5 %	10.9 %	8.6 %	43.9 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: CCV Analysis: 10/30/2019 23:25:46 Sample Type QC
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	30.103 %	21.257 %	0.017 ppb	2.800 ppb	2.565 ppb	N/A	1.205 ppb	-1.854 ppb	-2.170 ppb	-1.784 ppb
Concentration per Run 1	19.828 %	23.117 %	-0.008 ppb	3.526 ppb	2.166 ppb	N/A	0.742 ppb	-1.811 ppb	-2.182 ppb	-1.802 ppb
Concentration per Run 2	12.231 %	15.827 %	0.058 ppb	2.317 ppb	3.770 ppb	N/A	3.026 ppb	-1.618 ppb	-1.920 ppb	-2.255 ppb
Concentration per Run 3	58.250 %	24.827 %	0.003 ppb	2.555 ppb	1.758 ppb	N/A	-0.154 ppb	-2.134 ppb	-2.409 ppb	-1.296 ppb
Recovery Percentage 1			0.012 %		1.710 %		0.008 %			-0.012 %
Concentration RSD	82.0 %	22.5 %	201.2 %	22.9 %	41.5 %	N/A	136.1 %	14.1 %	11.3 %	26.9 %
Intensity average	4,210,001 cps	6,844 cps	1 cps	12 cps	59 cps	1,123 cps	4,731 cps	97 cps	20 cps	43 cps
Intensity per Run 1	2,773,047.2 cps	7,443.1 cps	0.5 cps	15.0 cps	55.5 cps	1,020.0 cps	4,560.9 cps	110.0 cps	20.0 cps	40.0 cps
Intensity per Run 2	1,710,524.4 cps	5,096.0 cps	2.0 cps	7.5 cps	70.5 cps	1,260.1 cps	5,111.1 cps	140.0 cps	30.0 cps	10.0 cps
Intensity per Run 3	8,146,431.6 cps	7,993.7 cps	1.0 cps	12.0 cps	49.5 cps	1,090.1 cps	4,520.9 cps	40.0 cps	10.0 cps	80.0 cps
Intensity RSD	82.0 %	22.5 %	65.5 %	32.8 %	18.5 %	11.0 %	7.0 %	53.1 %	50.0 %	81.0 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	-1.114 ppb		0.013 ppm	-1.835 ppb	-11.030 ppb	-15.023 ppb	-11.730 ppb	30.071 %	30.799 %	-0.003 ppb
Concentration per Run 1	-1.160 ppb		0.013 ppm	-2.321 ppb	-18.917 ppb	-14.906 ppb	-10.272 ppb	19.082 %	28.476 %	-0.003 ppb
Concentration per Run 2	-0.860 ppb		0.013 ppm	-0.462 ppb	-3.049 ppb	-8.899 ppb	-15.387 ppb	15.474 %	31.906 %	-0.003 ppb
Concentration per Run 3	-1.322 ppb		0.013 ppm	-2.723 ppb	-11.125 ppb	-21.263 ppb	-9.532 ppb	55.657 %	32.015 %	-0.003 ppb
Recovery Percentage 1	-0.007 %			-0.012 %		-0.099 %	-0.077 %			-0.002 %
Concentration RSD	21.0 %		1.2 %	65.7 %	71.9 %	41.2 %	27.2 %	73.9 %	6.5 %	0.0 %
Intensity average	43 cps	1,073 cps	24,961 cps	5,922 cps	10 cps	6,325 cps	53 cps	2,069,781 cps	90,421 cps	0 cps
Intensity per Run 1	40.0 cps	1,000.0 cps	23,523.1 cps	5,471.2 cps	0.0 cps	5,491.2 cps	70.0 cps	1,313,398.6 cps	83,600.8 cps	0.0 cps
Intensity per Run 2	60.0 cps	1,120.1 cps	24,536.9 cps	6,282.0 cps	20.0 cps	6,881.9 cps	0.0 cps	1,065,055.8 cps	93,671.2 cps	0.0 cps
Intensity per Run 3	30.0 cps	1,100.1 cps	26,823.3 cps	6,011.7 cps	10.0 cps	6,601.8 cps	90.0 cps	3,830,887.5 cps	93,991.7 cps	0.0 cps
Intensity RSD	35.3 %	6.0 %	6.8 %	7.0 %	100.0 %	11.6 %	88.6 %	73.9 %	6.5 %	N/A

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	-0.111 ppb	-0.101 ppb	-0.408 ppb	N/A	-0.096 ppb	-1.681 ppb	-1.466 ppb	0.008 ppb	-0.860 ppb	-0.885 ppb
Concentration per Run 1	-0.114 ppb	-0.106 ppb	-0.397 ppb	N/A	-0.090 ppb	-1.677 ppb	-1.470 ppb	0.008 ppb	-0.839 ppb	-0.866 ppb
Concentration per Run 2	-0.111 ppb	-0.100 ppb	-0.389 ppb	N/A	-0.104 ppb	-1.673 ppb	-1.456 ppb	0.006 ppb	-0.876 ppb	-0.904 ppb
Concentration per Run 3	-0.109 ppb	-0.096 ppb	-0.439 ppb	N/A	-0.095 ppb	-1.694 ppb	-1.474 ppb	0.009 ppb	-0.866 ppb	-0.886 ppb
Recovery Percentage 1	-0.074 %	-0.067 %		0.000 %	-0.064 %		-0.010 %	0.005 %	-0.574 %	
Concentration RSD	2.1 %	5.0 %	6.6 %	N/A	7.6 %	0.7 %	0.6 %	19.8 %	2.2 %	2.1 %
Intensity average	67 cps	144 cps	48 cps	43 cps	209 cps	1,587 cps	44 cps	199 cps	305 cps	41 cps
Intensity per Run 1	52.2 cps	100.0 cps	52.0 cps	70.0 cps	212.0 cps	1,400.1 cps	40.0 cps	188.0 cps	276.0 cps	44.0 cps
Intensity per Run 2	71.2 cps	152.0 cps	68.0 cps	20.0 cps	176.0 cps	1,680.2 cps	48.0 cps	180.0 cps	252.0 cps	32.0 cps
Intensity per Run 3	78.7 cps	180.0 cps	24.0 cps	40.0 cps	240.0 cps	1,680.1 cps	44.0 cps	228.0 cps	388.0 cps	48.0 cps
Intensity RSD	20.3 %	28.2 %	46.4 %	58.1 %	15.3 %	10.2 %	9.1 %	12.9 %	23.8 %	20.1 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	-0.120 ppb	-0.108 ppb	-2.015 ppb	-1.818 ppb	-1.888 ppb		1.517 ppb	N/A	0.087 ppb	
Concentration per Run 1	-0.118 ppb	-0.107 ppb	-1.942 ppb	-1.737 ppb	-1.783 ppb		2.145 ppb	N/A	0.133 ppb	
Concentration per Run 2	-0.125 ppb	-0.111 ppb	-2.038 ppb	-1.932 ppb	-1.950 ppb		1.541 ppb	N/A	0.058 ppb	
Concentration per Run 3	-0.117 ppb	-0.105 ppb	-2.065 ppb	-1.785 ppb	-1.930 ppb		0.864 ppb	N/A	0.071 ppb	
Recovery Percentage 1		-0.072 %	-1.343 %				1.011 %	0.000 %		
Concentration RSD	3.8 %	2.7 %	3.2 %	5.6 %	4.8 %		42.2 %	N/A	45.4 %	
Intensity average	188 cps	92 cps	627 cps	85 cps	432 cps	8 cps	2,370 cps	73 cps	2 cps	378 cps
Intensity per Run 1	176.0 cps	88.0 cps	620.0 cps	92.0 cps	496.0 cps	8.0 cps	2,442.5 cps	30.0 cps	6.2 cps	373.0 cps
Intensity per Run 2	140.0 cps	80.0 cps	564.0 cps	48.0 cps	348.0 cps	5.0 cps	2,324.7 cps	60.0 cps	-0.3 cps	367.0 cps
Intensity per Run 3	248.0 cps	108.0 cps	696.0 cps	116.0 cps	452.0 cps	12.0 cps	2,342.9 cps	130.0 cps	1.5 cps	395.0 cps
Intensity RSD	29.3 %	15.7 %	10.6 %	40.4 %	17.6 %	42.1 %	2.7 %	70.0 %	135.0 %	3.9 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		-4.282 ppb		32.749 %	-0.012 ppb	-0.013 ppb	-0.010 ppb	-0.004 ppb	-0.008 ppb	0.006 ppm
Concentration per Run 1		-6.184 ppb		22.801 %	-0.015 ppb	-0.012 ppb	-0.010 ppb	-0.017 ppb	-0.001 ppb	0.004 ppm
Concentration per Run 2		-2.205 ppb		32.061 %	-0.004 ppb	-0.015 ppb	-0.013 ppb	0.001 ppb	-0.011 ppb	0.006 ppm
Concentration per Run 3		-4.458 ppb		43.387 %	-0.016 ppb	-0.011 ppb	-0.008 ppb	0.003 ppb	-0.011 ppb	0.008 ppm
Recovery Percentage 1		-2.855 %						-0.003 %		0.000 %
Concentration RSD		46.6 %		31.5 %	53.8 %	14.6 %	21.9 %	283.2 %	78.7 %	32.3 %
Intensity average	3,610 cps	-352 cps	3,851 cps	191,512 cps	60 cps	43 cps	72 cps	72 cps	89 cps	520,477 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	3,710.6 cps	-365.3 cps	3,936.6 cps	133,334.1 cps	36.0 cps	32.0 cps	52.0 cps	8.0 cps	128.0 cps	359,959.1 cps
Intensity per Run 2	3,443.5 cps	-233.9 cps	3,656.5 cps	187,485.5 cps	84.0 cps	28.0 cps	52.0 cps	84.0 cps	60.0 cps	506,005.8 cps
Intensity per Run 3	3,674.5 cps	-455.6 cps	3,958.6 cps	253,716.5 cps	60.0 cps	68.0 cps	112.0 cps	124.0 cps	80.0 cps	695,467.2 cps
Intensity RSD	4.0 %	31.7 %	4.4 %	31.5 %	40.0 %	51.6 %	48.1 %	81.8 %	39.1 %	32.3 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		-0.043 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	27.243 %	-0.017 ppb	-0.005 ppb
Concentration per Run 1		-0.077 ppb	-0.001 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.002 ppb	22.042 %	-0.019 ppb	-0.004 ppb
Concentration per Run 2		-0.039 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	25.567 %	-0.014 ppb	-0.007 ppb
Concentration per Run 3		-0.012 ppb	0.000 ppb	-0.002 ppb	-0.001 ppb	-0.001 ppb	-0.001 ppb	34.120 %	-0.018 ppb	-0.005 ppb
Recovery Percentage 1			-0.001 %				-0.001 %		-0.011 %	-0.004 %
Concentration RSD		75.5 %	24.5 %	0.0 %	27.0 %	0.0 %	44.5 %	22.8 %	14.1 %	27.1 %
Intensity average	89 cps	17 cps	17 cps	0 cps	5 cps	0 cps	3 cps	243,903 cps	88 cps	56 cps
Intensity per Run 1	76.0 cps	4.0 cps	12.0 cps	0.0 cps	0.0 cps	0.0 cps	-1.6 cps	197,341.7 cps	60.0 cps	52.0 cps
Intensity per Run 2	72.0 cps	16.0 cps	16.0 cps	0.0 cps	4.0 cps	0.0 cps	5.3 cps	228,894.6 cps	100.0 cps	40.0 cps
Intensity per Run 3	120.0 cps	32.0 cps	24.0 cps	0.0 cps	12.0 cps	0.0 cps	5.2 cps	305,474.2 cps	104.0 cps	76.0 cps
Intensity RSD	29.8 %	81.0 %	35.3 %	N/A	114.6 %	N/A	133.5 %	22.8 %	27.6 %	32.7 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	-0.006 ppb	-0.021 ppb	-0.024 ppb			24.258 %			0.003 ppm	-0.003 ppb
Concentration per Run 1	-0.005 ppb	-0.019 ppb	-0.024 ppb			22.944 %			0.003 ppm	-0.003 ppb
Concentration per Run 2	-0.008 ppb	-0.022 ppb	-0.024 ppb			21.273 %			0.003 ppm	-0.002 ppb
Concentration per Run 3	-0.005 ppb	-0.021 ppb	-0.024 ppb			28.557 %			0.004 ppm	-0.005 ppb
Recovery Percentage 1		-0.014 %							0.000 %	
Concentration RSD	28.6 %	6.8 %	0.0 %			15.7 %			13.2 %	40.8 %
Intensity average	43 cps	7 cps	0 cps	0 cps	4 cps	762,498 cps	5 cps	4 cps	775,522 cps	186 cps
Intensity per Run 1	40.0 cps	8.0 cps	0.0 cps	0.0 cps	4.0 cps	721,202.1 cps	4.0 cps	0.0 cps	770,863.5 cps	184.0 cps
Intensity per Run 2	28.0 cps	4.0 cps	0.0 cps	0.0 cps	0.0 cps	668,666.9 cps	0.0 cps	4.0 cps	675,753.9 cps	178.0 cps
Intensity per Run 3	60.0 cps	8.0 cps	0.0 cps	0.0 cps	8.0 cps	897,624.5 cps	12.0 cps	8.0 cps	879,949.0 cps	197.0 cps
Intensity RSD	37.9 %	34.6 %	N/A	N/A	100.0 %	15.7 %	114.6 %	100.0 %	13.2 %	5.2 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	-0.003 ppb	0.106 ppb	0.101 ppb	0.102 ppb	22.139 %
Concentration per Run 1	-0.003 ppb	0.103 ppb	0.093 ppb	0.097 ppb	21.219 %
Concentration per Run 2	-0.002 ppb	0.126 ppb	0.120 ppb	0.124 ppb	18.065 %
Concentration per Run 3	-0.004 ppb	0.090 ppb	0.089 ppb	0.085 ppb	27.133 %
Recovery Percentage 1	-0.002 %			0.068 %	
Concentration RSD	31.6 %	17.3 %	16.5 %	19.5 %	20.8 %
Intensity average	454 cps	1,862 cps	1,557 cps	7,207 cps	567,407 cps
Intensity per Run 1	437.0 cps	1,771.1 cps	1,408.1 cps	6,767.7 cps	543,828.5 cps
Intensity per Run 2	416.0 cps	1,822.1 cps	1,520.1 cps	7,186.8 cps	462,988.2 cps
Intensity per Run 3	509.0 cps	1,993.2 cps	1,744.1 cps	7,665.9 cps	695,404.9 cps
Intensity RSD	10.7 %	6.2 %	11.0 %	6.2 %	20.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Sample Summary

Analysis name: CCB Analysis: 10/30/2019 23:31:52 Sample Type QC
Comment <Comment> Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	122.562 %	126.609 %	6.177 ppb	28.039 ppb	29.055 ppb	N/A	10,203.421 ppb	3,974.331 ppb	4,209.237 ppb	4,056.856 ppb
Concentration per Run 1	121.831 %	129.137 %	5.800 ppb	26.930 ppb	27.141 ppb	N/A	9,718.653 ppb	3,753.600 ppb	3,935.221 ppb	3,807.400 ppb
Concentration per Run 2	123.386 %	125.747 %	6.155 ppb	28.199 ppb	29.444 ppb	N/A	10,374.084 ppb	3,970.916 ppb	4,274.297 ppb	4,136.441 ppb
Concentration per Run 3	122.470 %	124.943 %	6.575 ppb	28.989 ppb	30.581 ppb	N/A	10,517.526 ppb	4,198.477 ppb	4,418.193 ppb	4,226.727 ppb
Recovery Percentage 1			617.655 %	2.804 %			2,040.684 %			811.371 %
Concentration RSD	0.6 %	1.8 %	6.3 %	3.7 %	6.0 %	N/A	4.2 %	5.6 %	5.9 %	5.4 %
Intensity average	17,140,755 cps	40,766 cps	1,246 cps	608 cps	3,729 cps	1,887 cps	25,724,598 cps	4,571,046 cps	1,019,107 cps	1,308,705 cps
Intensity per Run 1	17,038,514.5 cps	41,579.6 cps	1,194.1 cps	596.0 cps	3,555.0 cps	1,930.2 cps	24,966,426.4 cps	4,399,351.2 cps	970,847.8 cps	1,251,345.7 cps
Intensity per Run 2	17,255,980.9 cps	40,488.0 cps	1,233.6 cps	608.5 cps	3,761.6 cps	1,820.1 cps	26,132,891.8 cps	4,565,662.5 cps	1,034,873.9 cps	1,334,726.7 cps
Intensity per Run 3	17,127,769.9 cps	40,229.1 cps	1,309.1 cps	620.0 cps	3,870.1 cps	1,910.2 cps	26,074,474.6 cps	4,748,125.6 cps	1,051,600.7 cps	1,340,043.7 cps
Intensity RSD	0.6 %	1.8 %	4.7 %	2.0 %	4.3 %	3.1 %	2.6 %	3.8 %	4.2 %	3.8 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	457.365 ppb		0.085 ppm	954.418 ppb	4,610.653 ppb	4,158.052 ppb	4,529.289 ppb	122.573 %	132.091 %	6.703 ppb
Concentration per Run 1	425.862 ppb		0.082 ppm	908.067 ppb	4,413.091 ppb	4,200.175 ppb	4,297.240 ppb	121.184 %	134.268 %	6.364 ppb
Concentration per Run 2	461.084 ppb		0.086 ppm	962.468 ppb	4,608.441 ppb	4,107.673 ppb	4,532.262 ppb	123.066 %	132.822 %	6.613 ppb
Concentration per Run 3	485.148 ppb		0.088 ppm	992.720 ppb	4,810.426 ppb	4,166.309 ppb	4,758.365 ppb	123.469 %	129.183 %	7.133 ppb
Recovery Percentage 1	2,286.824 %			190.884 %			452.929 %			67.032 %
Concentration RSD	6.5 %		3.9 %	4.5 %	4.3 %	1.1 %	5.1 %	1.0 %	2.0 %	5.8 %
Intensity average	180,764 cps	11,035 cps	757,746 cps	1,077,867 cps	24,731 cps	13,632,252 cps	289,409 cps	8,436,698 cps	387,797 cps	3,371 cps
Intensity per Run 1	171,531.6 cps	10,674.6 cps	737,666.4 cps	1,044,913.9 cps	24,083.3 cps	13,616,053.9 cps	279,363.3 cps	8,341,103.6 cps	394,188.5 cps	3,252.4 cps
Intensity per Run 2	182,364.5 cps	11,245.1 cps	769,226.1 cps	1,091,314.3 cps	24,854.8 cps	13,523,845.4 cps	291,301.5 cps	8,470,615.8 cps	389,942.3 cps	3,344.4 cps
Intensity per Run 3	188,396.9 cps	11,185.0 cps	766,344.9 cps	1,097,372.8 cps	25,255.5 cps	13,756,857.1 cps	297,563.3 cps	8,498,373.3 cps	379,258.9 cps	3,516.5 cps
Intensity RSD	4.7 %	2.8 %	2.3 %	2.7 %	2.4 %	0.9 %	3.2 %	1.0 %	2.0 %	4.0 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	6.282 ppb	6.274 ppb	6.046 ppb	N/A	88.785 ppb	516.195 ppb	513.258 ppb	6.164 ppb	6.366 ppb	6.284 ppb
Concentration per Run 1	5.891 ppb	5.847 ppb	5.760 ppb	N/A	82.614 ppb	492.604 ppb	479.908 ppb	5.872 ppb	6.061 ppb	6.073 ppb
Concentration per Run 2	6.283 ppb	6.347 ppb	6.034 ppb	N/A	91.094 ppb	520.772 ppb	515.647 ppb	6.145 ppb	6.563 ppb	6.377 ppb
Concentration per Run 3	6.671 ppb	6.627 ppb	6.344 ppb	N/A	92.647 ppb	535.210 ppb	544.218 ppb	6.476 ppb	6.472 ppb	6.401 ppb
Recovery Percentage 1	125.638 %	313.692 %			8,878.499 %		256.629 %	616.410 %	636.553 %	
Concentration RSD	6.2 %	6.3 %	4.8 %	N/A	6.1 %	4.2 %	6.3 %	4.9 %	4.2 %	2.9 %
Intensity average	113,240 cps	177,377 cps	24,662 cps	25,960 cps	1,865,717 cps	14,482,860 cps	486,175 cps	403,779 cps	115,526 cps	17,519 cps
Intensity per Run 1	108,173.0 cps	168,396.6 cps	23,878.9 cps	25,626.3 cps	1,756,703.0 cps	13,977,501.6 cps	462,546.4 cps	391,236.3 cps	110,063.2 cps	17,143.8 cps
Intensity per Run 2	113,977.1 cps	180,546.1 cps	24,700.4 cps	26,177.6 cps	1,919,507.0 cps	14,645,201.0 cps	491,520.7 cps	405,003.8 cps	117,664.1 cps	17,748.6 cps
Intensity per Run 3	117,569.0 cps	183,189.6 cps	25,405.8 cps	26,077.4 cps	1,920,942.1 cps	14,825,878.2 cps	504,457.6 cps	415,096.9 cps	118,851.0 cps	17,664.5 cps
Intensity RSD	4.2 %	4.4 %	3.1 %	1.1 %	5.1 %	3.1 %	4.4 %	3.0 %	4.1 %	1.9 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	7.177 ppb	6.943 ppb	7.556 ppb	8.743 ppb	8.298 ppb		5.402 ppb	N/A	6.042 ppb	
Concentration per Run 1	6.853 ppb	6.556 ppb	6.932 ppb	8.161 ppb	7.789 ppb		5.146 ppb	N/A	5.879 ppb	
Concentration per Run 2	7.241 ppb	6.943 ppb	7.836 ppb	8.924 ppb	8.441 ppb		5.391 ppb	N/A	6.051 ppb	
Concentration per Run 3	7.436 ppb	7.331 ppb	7.900 ppb	9.144 ppb	8.666 ppb		5.669 ppb	N/A	6.195 ppb	
Recovery Percentage 1		347.170 %	377.800 %				540.176 %			
Concentration RSD	4.1 %	5.6 %	7.2 %	5.9 %	5.5 %		4.8 %	N/A	2.6 %	
Intensity average	289,866 cps	144,178 cps	84,618 cps	15,483 cps	71,682 cps	40 cps	29,472 cps	893 cps	2,858 cps	24,843 cps
Intensity per Run 1	279,123.8 cps	138,618.0 cps	79,927.0 cps	14,728.7 cps	68,519.9 cps	44.0 cps	28,552.6 cps	940.0 cps	2,779.4 cps	23,504.1 cps
Intensity per Run 2	292,410.6 cps	145,078.1 cps	86,813.0 cps	15,721.9 cps	72,538.2 cps	33.0 cps	29,358.1 cps	940.0 cps	2,848.4 cps	25,188.4 cps
Intensity per Run 3	298,062.2 cps	148,837.9 cps	87,114.8 cps	15,998.3 cps	73,986.5 cps	43.0 cps	30,505.0 cps	800.0 cps	2,946.6 cps	25,836.7 cps
Intensity RSD	3.4 %	3.6 %	4.8 %	4.3 %	4.0 %	15.2 %	3.3 %	9.0 %	2.9 %	4.8 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		6.716 ppb		134.851 %	6.577 ppb	6.278 ppb	6.258 ppb	6.203 ppb	6.164 ppb	0.026 ppm
Concentration per Run 1		6.069 ppb		134.068 %	6.409 ppb	6.102 ppb	6.072 ppb	5.963 ppb	5.936 ppb	0.026 ppm
Concentration per Run 2		7.081 ppb		133.740 %	6.653 ppb	6.400 ppb	6.332 ppb	6.355 ppb	6.334 ppb	0.026 ppm
Concentration per Run 3		6.998 ppb		136.746 %	6.671 ppb	6.333 ppb	6.371 ppb	6.290 ppb	6.222 ppb	0.026 ppm
Recovery Percentage 1		134.317 %						62.026 %		
Concentration RSD		8.4 %		1.2 %	2.2 %	2.5 %	2.6 %	3.4 %	3.3 %	1.7 %
Intensity average	5,174 cps	1,014 cps	4,017 cps	788,583 cps	100,135 cps	173,235 cps	190,582 cps	112,953 cps	298,011 cps	2,311,525 cps

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Intensity per Run 1	5,043.0 cps	857.9 cps	4,073.7 cps	784,003.7 cps	97,261.2 cps	167,922.2 cps	184,505.1 cps	108,424.7 cps	286,689.8 cps	2,351,073.6 cps
Intensity per Run 2	5,156.1 cps	1,104.1 cps	3,941.6 cps	782,083.4 cps	100,547.5 cps	175,377.3 cps	191,519.3 cps	114,967.3 cps	304,310.0 cps	2,309,139.4 cps
Intensity per Run 3	5,323.1 cps	1,080.3 cps	4,034.7 cps	799,662.9 cps	102,595.6 cps	176,405.0 cps	195,721.0 cps	115,467.0 cps	303,032.2 cps	2,274,361.8 cps
Intensity RSD	2.7 %	13.4 %	1.7 %	1.2 %	2.7 %	2.7 %	3.0 %	3.5 %	3.3 %	1.7 %

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		6.002 ppb	2.477 ppb	6.244 ppb	2.425 ppb	6.035 ppb	6.068 ppb	135.209 %	6.416 ppb	6.512 ppb
Concentration per Run 1		5.770 ppb	2.405 ppb	5.750 ppb	2.350 ppb	5.733 ppb	5.773 ppb	136.234 %	6.069 ppb	6.150 ppb
Concentration per Run 2		6.099 ppb	2.523 ppb	6.379 ppb	2.470 ppb	6.168 ppb	6.057 ppb	134.887 %	6.563 ppb	6.602 ppb
Concentration per Run 3		6.136 ppb	2.503 ppb	6.603 ppb	2.454 ppb	6.206 ppb	6.373 ppb	134.505 %	6.617 ppb	6.784 ppb
Recovery Percentage 1			247.710 %				606.790 %			325.585 %
Concentration RSD		3.4 %	2.6 %	7.1 %	2.7 %	4.4 %	4.9 %	0.7 %	4.7 %	5.0 %
Intensity average	991 cps	8,667 cps	268,503 cps	6,841 cps	258,972 cps	107,218 cps	266,564 cps	1,210,499 cps	232,971 cps	247,894 cps
Intensity per Run 1	1,040.0 cps	8,362.8 cps	262,695.3 cps	6,325.6 cps	252,136.8 cps	102,418.3 cps	255,593.2 cps	1,219,677.4 cps	222,201.4 cps	236,109.9 cps
Intensity per Run 2	1,040.0 cps	8,767.1 cps	272,837.6 cps	6,962.0 cps	262,857.3 cps	109,219.8 cps	265,521.3 cps	1,207,616.2 cps	237,707.6 cps	250,648.1 cps
Intensity per Run 3	892.0 cps	8,871.2 cps	269,976.3 cps	7,234.1 cps	261,921.3 cps	110,014.6 cps	278,577.0 cps	1,204,202.3 cps	239,004.9 cps	256,924.6 cps
Intensity RSD	8.6 %	3.1 %	1.9 %	6.8 %	2.3 %	3.9 %	4.3 %	0.7 %	4.0 %	4.3 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	6.477 ppb	16.185 ppb	16.278 ppb			138.342 %			0.020 ppm	6.151 ppb
Concentration per Run 1	6.132 ppb	15.340 ppb	15.407 ppb			139.985 %			0.020 ppm	5.763 ppb
Concentration per Run 2	6.574 ppb	16.393 ppb	16.462 ppb			137.525 %			0.020 ppm	6.238 ppb
Concentration per Run 3	6.725 ppb	16.823 ppb	16.965 ppb			137.515 %			0.020 ppm	6.452 ppb
Recovery Percentage 1		161.852 %							1.988 %	
Concentration RSD	4.8 %	4.7 %	4.9 %			1.0 %			1.6 %	5.7 %
Intensity average	197,378 cps	146,034 cps	267,866 cps	368 cps	323 cps	4,348,476 cps	433 cps	372 cps	4,504,312 cps	779,699 cps
Intensity per Run 1	188,486.3 cps	139,778.1 cps	256,094.6 cps	384.0 cps	296.0 cps	4,400,141.5 cps	444.0 cps	328.0 cps	4,580,417.1 cps	751,449.9 cps
Intensity per Run 2	199,774.0 cps	147,352.4 cps	269,831.8 cps	388.0 cps	368.0 cps	4,322,798.2 cps	432.0 cps	404.0 cps	4,442,533.8 cps	786,150.9 cps
Intensity per Run 3	203,874.4 cps	150,971.0 cps	277,671.8 cps	332.0 cps	304.0 cps	4,322,487.0 cps	424.0 cps	384.0 cps	4,489,984.3 cps	801,495.4 cps
Intensity RSD	4.0 %	3.9 %	4.1 %	8.5 %	12.2 %	1.0 %	2.3 %	10.6 %	1.6 %	3.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	6.136 ppb	6.200 ppb	6.260 ppb	6.247 ppb	137.938 %
Concentration per Run 1	5.806 ppb	5.735 ppb	5.874 ppb	5.810 ppb	142.028 %
Concentration per Run 2	6.200 ppb	6.332 ppb	6.363 ppb	6.371 ppb	136.998 %
Concentration per Run 3	6.403 ppb	6.533 ppb	6.545 ppb	6.559 ppb	134.787 %
Recovery Percentage 1	1,227.288 %			624.655 %	
Concentration RSD	5.0 %	6.7 %	5.5 %	6.2 %	2.7 %
Intensity average	1,888,230 cps	626,863 cps	556,132 cps	2,553,042 cps	3,535,252 cps
Intensity per Run 1	1,841,282.5 cps	597,152.7 cps	537,463.6 cps	2,448,009.1 cps	3,640,081.2 cps
Intensity per Run 2	1,896,579.9 cps	636,642.3 cps	561,928.2 cps	2,588,920.4 cps	3,511,173.6 cps
Intensity per Run 3	1,926,826.9 cps	646,794.6 cps	569,005.4 cps	2,622,195.9 cps	3,454,501.4 cps
Intensity RSD	2.3 %	4.2 %	3.0 %	3.6 %	2.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: IS Analysis: 10/30/2019 23:37:58 Sample Type UNKNOWN
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	126.333 %	127.432 %	3.063 ppb	25.533 ppb	25.985 ppb	N/A	9,998.852 ppb	3,815.068 ppb	3,956.404 ppb	3,916.590 ppb
Concentration per Run 1	124.862 %	125.704 %	3.261 ppb	24.829 ppb	26.169 ppb	N/A	9,844.054 ppb	3,732.370 ppb	3,819.488 ppb	3,769.365 ppb
Concentration per Run 2	126.561 %	128.073 %	2.908 ppb	26.081 ppb	25.416 ppb	N/A	9,988.324 ppb	3,734.482 ppb	3,872.537 ppb	3,876.378 ppb
Concentration per Run 3	127.577 %	128.519 %	3.018 ppb	25.688 ppb	26.369 ppb	N/A	10,164.178 ppb	3,978.351 ppb	4,177.186 ppb	4,104.027 ppb
Concentration RSD	1.1 %	1.2 %	5.9 %	2.5 %	1.9 %	N/A	1.6 %	3.7 %	4.9 %	4.4 %
Intensity average	17,668,127 cps	41,030 cps	624 cps	557 cps	3,350 cps	1,933 cps	25,106,684 cps	4,368,404 cps	953,131 cps	1,256,258 cps
Intensity per Run 1	17,462,358.0 cps	40,473.9 cps	655.5 cps	534.5 cps	3,331.4 cps	1,900.2 cps	24,473,507.2 cps	4,232,120.6 cps	911,341.3 cps	1,197,732.5 cps
Intensity per Run 2	17,699,915.9 cps	41,236.9 cps	596.0 cps	571.0 cps	3,291.4 cps	2,040.2 cps	25,150,680.1 cps	4,287,404.6 cps	935,208.2 cps	1,246,239.7 cps
Intensity per Run 3	17,842,106.4 cps	41,380.4 cps	620.5 cps	564.5 cps	3,426.5 cps	1,860.1 cps	25,695,863.9 cps	4,585,688.1 cps	1,012,844.0 cps	1,324,803.1 cps
Intensity RSD	1.1 %	1.2 %	4.8 %	3.5 %	2.1 %	4.9 %	2.4 %	4.4 %	5.6 %	5.1 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	189.138 ppb		0.072 ppm	718.576 ppb	4,525.590 ppb	4,304.151 ppb	4,326.027 ppb	124.847 %	129.657 %	3.582 ppb
Concentration per Run 1	195.886 ppb		0.072 ppm	732.905 ppb	4,376.242 ppb	4,283.823 ppb	4,214.620 ppb	123.059 %	129.001 %	3.594 ppb
Concentration per Run 2	187.878 ppb		0.070 ppm	711.540 ppb	4,365.545 ppb	4,313.140 ppb	4,262.888 ppb	125.927 %	129.680 %	3.606 ppb
Concentration per Run 3	183.650 ppb		0.073 ppm	711.282 ppb	4,834.981 ppb	4,315.492 ppb	4,500.572 ppb	125.556 %	130.289 %	3.546 ppb
Concentration RSD	3.3 %		2.0 %	1.7 %	5.9 %	0.4 %	3.5 %	1.2 %	0.5 %	0.9 %
Intensity average	74,643 cps	10,491 cps	630,187 cps	806,884 cps	23,876 cps	14,375,686 cps	271,746 cps	8,593,240 cps	380,650 cps	1,772 cps
Intensity per Run 1	76,604.5 cps	10,284.3 cps	624,707.4 cps	817,246.3 cps	22,961.2 cps	14,103,749.7 cps	263,348.8 cps	8,470,138.4 cps	378,726.4 cps	1,768.1 cps
Intensity per Run 2	74,340.7 cps	10,134.2 cps	618,863.9 cps	800,037.6 cps	23,041.3 cps	14,527,101.4 cps	267,844.7 cps	8,667,578.0 cps	380,717.3 cps	1,784.1 cps
Intensity per Run 3	72,983.2 cps	11,054.9 cps	646,990.8 cps	803,366.8 cps	25,626.6 cps	14,496,208.2 cps	284,045.0 cps	8,642,002.9 cps	382,506.3 cps	1,764.1 cps
Intensity RSD	2.5 %	4.7 %	2.4 %	1.1 %	6.4 %	1.6 %	4.0 %	1.2 %	0.5 %	0.6 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	3.243 ppb	3.216 ppb	3.021 ppb	N/A	89.793 ppb	267.352 ppb	263.472 ppb	3.307 ppb	3.385 ppb	3.534 ppb
Concentration per Run 1	3.292 ppb	3.276 ppb	3.085 ppb	N/A	86.842 ppb	273.740 ppb	268.852 ppb	3.383 ppb	3.462 ppb	3.574 ppb
Concentration per Run 2	3.234 ppb	3.126 ppb	2.882 ppb	N/A	88.398 ppb	264.756 ppb	259.576 ppb	3.232 ppb	3.297 ppb	3.505 ppb
Concentration per Run 3	3.204 ppb	3.247 ppb	3.094 ppb	N/A	94.138 ppb	263.561 ppb	261.987 ppb	3.305 ppb	3.397 ppb	3.522 ppb
Concentration RSD	1.4 %	2.5 %	4.0 %	N/A	4.3 %	2.1 %	1.8 %	2.3 %	2.5 %	1.0 %
Intensity average	58,502 cps	90,950 cps	13,016 cps	13,270 cps	1,863,008 cps	7,432,305 cps	245,904 cps	212,899 cps	68,662 cps	10,762 cps
Intensity per Run 1	59,050.1 cps	92,110.3 cps	13,162.9 cps	13,717.6 cps	1,787,728.8 cps	7,549,423.1 cps	249,637.8 cps	216,719.7 cps	68,760.9 cps	10,756.6 cps
Intensity per Run 2	58,360.0 cps	88,500.5 cps	12,490.2 cps	13,066.9 cps	1,832,041.4 cps	7,353,904.4 cps	242,344.8 cps	208,168.4 cps	66,967.2 cps	10,676.6 cps
Intensity per Run 3	58,095.1 cps	92,239.5 cps	13,395.2 cps	13,026.9 cps	1,969,254.3 cps	7,393,588.9 cps	245,730.9 cps	213,808.0 cps	70,257.1 cps	10,852.7 cps
Intensity RSD	0.8 %	2.3 %	3.6 %	2.9 %	5.1 %	1.4 %	1.5 %	2.0 %	2.4 %	0.8 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	4.094 ppb	4.000 ppb	4.697 ppb	5.927 ppb	5.594 ppb		2.411 ppb	N/A	3.072 ppb	
Concentration per Run 1	4.210 ppb	4.074 ppb	5.081 ppb	6.086 ppb	5.811 ppb		2.596 ppb	N/A	3.213 ppb	
Concentration per Run 2	4.010 ppb	3.978 ppb	4.606 ppb	6.009 ppb	5.599 ppb		2.354 ppb	N/A	3.071 ppb	
Concentration per Run 3	4.063 ppb	3.949 ppb	4.405 ppb	5.686 ppb	5.372 ppb		2.283 ppb	N/A	2.933 ppb	
Concentration RSD	2.5 %	1.6 %	7.4 %	3.6 %	3.9 %		6.8 %	N/A	4.6 %	
Intensity average	166,220 cps	82,669 cps	61,720 cps	11,368 cps	52,787 cps	32 cps	16,547 cps	537 cps	1,436 cps	25,335 cps
Intensity per Run 1	169,133.5 cps	83,715.5 cps	63,115.0 cps	11,473.3 cps	53,687.1 cps	30.0 cps	16,867.4 cps	530.0 cps	1,483.6 cps	24,386.8 cps
Intensity per Run 2	162,640.0 cps	82,245.8 cps	61,539.3 cps	11,461.3 cps	52,711.1 cps	37.0 cps	16,448.7 cps	650.0 cps	1,431.3 cps	24,770.5 cps
Intensity per Run 3	166,887.9 cps	82,044.8 cps	60,506.4 cps	11,169.0 cps	51,963.9 cps	29.0 cps	16,323.6 cps	430.0 cps	1,392.9 cps	26,846.8 cps
Intensity RSD	2.0 %	1.1 %	2.1 %	1.5 %	1.6 %	13.6 %	1.7 %	20.5 %	3.2 %	5.2 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		4.691 ppb		135.363 %	3.540 ppb	3.357 ppb	3.314 ppb	3.278 ppb	3.265 ppb	0.026 ppm
Concentration per Run 1		4.850 ppb		133.196 %	3.611 ppb	3.427 ppb	3.421 ppb	3.402 ppb	3.403 ppb	0.026 ppm
Concentration per Run 2		4.663 ppb		134.760 %	3.557 ppb	3.374 ppb	3.298 ppb	3.259 ppb	3.221 ppb	0.026 ppm
Concentration per Run 3		4.561 ppb		138.132 %	3.451 ppb	3.269 ppb	3.222 ppb	3.174 ppb	3.171 ppb	0.027 ppm
Concentration RSD		3.1 %		1.9 %	2.3 %	2.4 %	3.0 %	3.5 %	3.7 %	1.1 %
Intensity average	4,416 cps	515 cps	3,937 cps	791,575 cps	54,493 cps	93,627 cps	102,100 cps	60,438 cps	159,893 cps	2,349,991 cps
Intensity per Run 1	4,381.8 cps	539.9 cps	3,826.6 cps	778,904.4 cps	54,546.8 cps	93,750.9 cps	103,325.5 cps	61,442.8 cps	163,151.0 cps	2,338,684.6 cps
Intensity per Run 2	4,607.9 cps	513.2 cps	4,134.7 cps	788,053.5 cps	54,675.7 cps	94,012.6 cps	101,571.4 cps	60,100.3 cps	157,883.8 cps	2,332,616.2 cps
Intensity per Run 3	4,258.7 cps	492.7 cps	3,849.6 cps	807,767.0 cps	54,257.7 cps	93,117.8 cps	101,402.3 cps	59,770.7 cps	158,645.3 cps	2,378,671.6 cps
Intensity RSD	4.0 %	4.6 %	4.4 %	1.9 %	0.4 %	0.5 %	1.0 %	1.5 %	1.8 %	1.1 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		3.178 ppb	1.644 ppb	3.116 ppb	1.649 ppb	2.999 ppb	3.061 ppb	138.498 %	3.221 ppb	3.295 ppb
Concentration per Run 1		3.310 ppb	1.754 ppb	3.306 ppb	1.748 ppb	3.124 ppb	3.177 ppb	134.234 %	3.370 ppb	3.460 ppb
Concentration per Run 2		3.246 ppb	1.595 ppb	3.000 ppb	1.609 ppb	2.915 ppb	3.029 ppb	139.762 %	3.138 ppb	3.207 ppb
Concentration per Run 3		2.977 ppb	1.581 ppb	3.041 ppb	1.591 ppb	2.959 ppb	2.977 ppb	141.496 %	3.154 ppb	3.218 ppb
Concentration RSD		5.6 %	5.9 %	5.3 %	5.2 %	3.7 %	3.4 %	2.7 %	4.0 %	4.3 %
Intensity average	1,025 cps	4,729 cps	182,367 cps	3,476 cps	179,488 cps	54,389 cps	137,703 cps	1,239,945 cps	120,014 cps	128,118 cps
Intensity per Run 1	1,092.0 cps	4,796.9 cps	188,857.9 cps	3,592.5 cps	185,122.8 cps	55,069.2 cps	138,606.2 cps	1,201,776.8 cps	121,892.4 cps	130,789.1 cps
Intensity per Run 2	1,032.0 cps	4,853.0 cps	178,831.8 cps	3,368.5 cps	176,328.3 cps	53,261.4 cps	137,582.7 cps	1,251,265.7 cps	117,978.6 cps	125,673.8 cps
Intensity per Run 3	952.0 cps	4,536.8 cps	179,411.8 cps	3,468.5 cps	177,014.2 cps	54,836.1 cps	136,920.7 cps	1,266,792.3 cps	120,171.3 cps	127,891.5 cps
Intensity RSD	6.9 %	3.6 %	3.1 %	3.2 %	2.7 %	1.8 %	0.6 %	2.7 %	1.6 %	2.0 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	3.342 ppb	13.243 ppb	13.524 ppb			137.273 %			0.020 ppm	3.214 ppb
Concentration per Run 1	3.540 ppb	13.312 ppb	13.577 ppb			135.551 %			0.020 ppm	3.497 ppb
Concentration per Run 2	3.249 ppb	13.006 ppb	13.086 ppb			136.344 %			0.020 ppm	3.142 ppb
Concentration per Run 3	3.237 ppb	13.410 ppb	13.910 ppb			139.925 %			0.020 ppm	3.002 ppb
Concentration RSD	5.1 %	1.6 %	3.1 %			1.7 %			1.1 %	7.9 %
Intensity average	103,850 cps	120,708 cps	224,524 cps	429 cps	377 cps	4,314,888 cps	476 cps	391 cps	4,575,408 cps	411,767 cps
Intensity per Run 1	107,060.8 cps	118,600.2 cps	220,467.8 cps	456.0 cps	404.0 cps	4,260,744.7 cps	476.0 cps	372.0 cps	4,531,108.1 cps	435,610.2 cps
Intensity per Run 2	101,676.6 cps	118,778.2 cps	217,492.5 cps	368.0 cps	328.0 cps	4,285,682.8 cps	484.0 cps	380.0 cps	4,566,893.7 cps	406,869.3 cps
Intensity per Run 3	102,813.6 cps	124,744.3 cps	235,611.3 cps	464.0 cps	400.0 cps	4,398,235.1 cps	468.0 cps	420.0 cps	4,628,223.5 cps	392,820.1 cps
Intensity RSD	2.7 %	2.9 %	4.3 %	12.4 %	11.3 %	1.7 %	1.7 %	6.6 %	1.1 %	5.3 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	3.218 ppb	3.245 ppb	3.318 ppb	3.255 ppb	139.532 %
Concentration per Run 1	3.485 ppb	3.441 ppb	3.515 ppb	3.431 ppb	135.215 %
Concentration per Run 2	3.147 ppb	3.181 ppb	3.221 ppb	3.186 ppb	141.118 %
Concentration per Run 3	3.022 ppb	3.114 ppb	3.217 ppb	3.149 ppb	142.264 %
Concentration RSD	7.4 %	5.3 %	5.2 %	4.7 %	2.7 %
Intensity average	1,003,036 cps	332,100 cps	298,356 cps	1,348,295 cps	3,576,129 cps
Intensity per Run 1	1,053,656.8 cps	341,902.0 cps	306,790.9 cps	1,378,128.4 cps	3,465,487.1 cps
Intensity per Run 2	993,564.7 cps	329,176.9 cps	293,068.1 cps	1,335,903.9 cps	3,616,758.4 cps
Intensity per Run 3	961,886.5 cps	325,220.6 cps	295,210.2 cps	1,330,852.1 cps	3,646,140.8 cps
Intensity RSD	4.6 %	2.6 %	2.5 %	1.9 %	2.7 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

Sample Summary

Analysis name: RINSE Analysis: 10/30/2019 23:44:00 Sample Type UNKNOWN
Comment IM-9701 Dilution Factor 1

Category	6Li (STD)	6Li (KED)	9Be (KED)	10B (KED)	11B (KED)	13C (KED)	23Na (KED)	24Mg (KED)	25Mg (KED)	26Mg (KED)
Concentration average	123.648 %	126.765 %	2.491 ppb	24.180 ppb	25.077 ppb	N/A	9,690.770 ppb	3,646.421 ppb	3,805.662 ppb	3,744.156 ppb
Concentration per Run 1	122.409 %	126.324 %	2.380 ppb	23.323 ppb	24.449 ppb	N/A	9,626.054 ppb	3,618.946 ppb	3,770.236 ppb	3,661.512 ppb
Concentration per Run 2	124.036 %	126.458 %	2.540 ppb	24.719 ppb	25.693 ppb	N/A	9,750.734 ppb	3,687.307 ppb	3,794.106 ppb	3,814.807 ppb
Concentration per Run 3	124.497 %	127.514 %	2.553 ppb	24.498 ppb	25.090 ppb	N/A	9,695.520 ppb	3,633.012 ppb	3,852.644 ppb	3,756.147 ppb
Concentration RSD	0.9 %	0.5 %	3.9 %	3.1 %	2.5 %	N/A	0.6 %	1.0 %	1.1 %	2.1 %
Intensity average	17,292,523 cps	40,816 cps	506 cps	525 cps	3,220 cps	1,943 cps	24,278,805 cps	4,166,463 cps	915,020 cps	1,198,896 cps
Intensity per Run 1	17,119,323.6 cps	40,673.6 cps	482.0 cps	503.5 cps	3,118.9 cps	1,880.2 cps	23,781,956.6 cps	4,075,198.4 cps	892,787.5 cps	1,153,921.9 cps
Intensity per Run 2	17,346,865.4 cps	40,716.7 cps	514.5 cps	536.0 cps	3,295.9 cps	1,920.2 cps	24,513,337.1 cps	4,229,166.0 cps	915,980.6 cps	1,226,843.3 cps
Intensity per Run 3	17,411,378.8 cps	41,056.8 cps	521.5 cps	535.5 cps	3,244.4 cps	2,030.2 cps	24,541,120.8 cps	4,195,024.0 cps	936,292.1 cps	1,215,922.2 cps
Intensity RSD	0.9 %	0.5 %	4.2 %	3.5 %	2.8 %	4.0 %	1.8 %	1.9 %	2.4 %	3.3 %

Category	27Al (KED)	29Si (KED)	35Cl (KED)	39K (KED)	43Ca (KED)	44Ca (STD)	44Ca (KED)	45Sc (STD)	45Sc (KED)	47Ti (KED)
Concentration average	149.407 ppb		0.086 ppm	650.929 ppb	4,216.014 ppb	4,192.252 ppb	4,168.032 ppb	121.558 %	129.868 %	2.978 ppb
Concentration per Run 1	150.852 ppb		0.088 ppm	654.626 ppb	4,182.385 ppb	4,174.688 ppb	4,213.748 ppb	120.039 %	126.370 %	3.117 ppb
Concentration per Run 2	149.233 ppb		0.086 ppm	653.292 ppb	4,281.259 ppb	4,118.422 ppb	4,155.737 ppb	122.938 %	131.294 %	2.869 ppb
Concentration per Run 3	148.135 ppb		0.085 ppm	644.870 ppb	4,184.399 ppb	4,283.645 ppb	4,134.610 ppb	121.696 %	131.941 %	2.949 ppb
Concentration RSD	0.9 %		1.7 %	0.8 %	1.3 %	2.0 %	1.0 %	1.2 %	2.3 %	4.2 %
Intensity average	59,016 cps	9,847 cps	758,160 cps	733,994 cps	22,277 cps	13,636,044 cps	262,171 cps	8,366,815 cps	381,272 cps	1,475 cps
Intensity per Run 1	58,617.5 cps	9,353.5 cps	755,922.7 cps	720,787.4 cps	21,528.6 cps	13,410,974.0 cps	258,091.6 cps	8,262,264.1 cps	371,002.1 cps	1,504.1 cps
Intensity per Run 2	59,240.3 cps	10,184.2 cps	762,808.0 cps	743,207.9 cps	22,851.0 cps	13,547,133.1 cps	264,221.0 cps	8,461,817.9 cps	385,456.5 cps	1,436.1 cps
Intensity per Run 3	59,190.2 cps	10,004.1 cps	755,748.8 cps	737,986.3 cps	22,450.2 cps	13,950,023.9 cps	264,201.3 cps	8,376,363.1 cps	387,357.2 cps	1,484.1 cps
Intensity RSD	0.6 %	4.4 %	0.5 %	1.6 %	3.0 %	2.1 %	1.3 %	1.2 %	2.3 %	2.4 %

Category	51V (KED)	52Cr (KED)	53Cr (KED)	37Cl.16O (KED)	55Mn (KED)	56Fe (KED)	57Fe (KED)	59Co (KED)	60Ni (KED)	62Ni (KED)
Concentration average	2.621 ppb	2.603 ppb	2.412 ppb	N/A	84.656 ppb	218.849 ppb	215.069 ppb	2.665 ppb	2.824 ppb	2.855 ppb
Concentration per Run 1	2.590 ppb	2.592 ppb	2.390 ppb	N/A	83.757 ppb	216.893 ppb	213.120 ppb	2.674 ppb	2.739 ppb	2.780 ppb
Concentration per Run 2	2.663 ppb	2.581 ppb	2.399 ppb	N/A	85.270 ppb	222.290 ppb	215.684 ppb	2.668 ppb	2.900 ppb	2.868 ppb
Concentration per Run 3	2.612 ppb	2.635 ppb	2.449 ppb	N/A	84.942 ppb	217.364 ppb	216.402 ppb	2.653 ppb	2.833 ppb	2.917 ppb
Concentration RSD	1.4 %	1.1 %	1.3 %	N/A	0.9 %	1.4 %	0.8 %	0.4 %	2.9 %	2.4 %
Intensity average	47,794 cps	74,368 cps	10,743 cps	10,765 cps	1,755,417 cps	6,089,862 cps	201,375 cps	171,924 cps	59,302 cps	9,119 cps
Intensity per Run 1	45,962.9 cps	72,071.4 cps	10,412.3 cps	9,934.0 cps	1,698,284.5 cps	5,905,259.7 cps	194,165.3 cps	167,868.9 cps	57,612.5 cps	8,771.1 cps
Intensity per Run 2	49,035.8 cps	74,578.0 cps	10,776.7 cps	11,165.0 cps	1,780,786.5 cps	6,227,091.2 cps	204,138.3 cps	173,988.5 cps	60,196.7 cps	9,191.4 cps
Intensity per Run 3	48,382.2 cps	76,453.5 cps	11,040.9 cps	11,195.1 cps	1,787,180.4 cps	6,137,236.5 cps	205,822.2 cps	173,914.6 cps	60,096.2 cps	9,395.6 cps
Intensity RSD	3.4 %	3.0 %	2.9 %	6.7 %	2.8 %	2.7 %	3.1 %	2.0 %	2.5 %	3.5 %

Category	63Cu (KED)	65Cu (KED)	66Zn (KED)	67Zn (KED)	68Zn (KED)	73Ge (KED)	75As (KED)	40Ar.37Cl (KED)	78Se (KED)	81Br (KED)
Concentration average	3.388 ppb	3.306 ppb	4.059 ppb	5.039 ppb	4.840 ppb		1.886 ppb	N/A	2.460 ppb	
Concentration per Run 1	3.363 ppb	3.304 ppb	3.953 ppb	5.045 ppb	4.673 ppb		1.816 ppb	N/A	2.473 ppb	
Concentration per Run 2	3.370 ppb	3.283 ppb	4.044 ppb	5.021 ppb	4.842 ppb		1.924 ppb	N/A	2.489 ppb	
Concentration per Run 3	3.430 ppb	3.330 ppb	4.180 ppb	5.051 ppb	5.004 ppb		1.917 ppb	N/A	2.418 ppb	
Concentration RSD	1.1 %	0.7 %	2.8 %	0.3 %	3.4 %		3.2 %	N/A	1.5 %	
Intensity average	138,201 cps	68,868 cps	55,175 cps	10,076 cps	47,517 cps	27 cps	13,906 cps	367 cps	1,138 cps	24,711 cps
Intensity per Run 1	134,734.8 cps	66,983.1 cps	53,667.0 cps	9,920.0 cps	45,639.3 cps	32.0 cps	13,443.8 cps	380.0 cps	1,131.7 cps	23,713.5 cps
Intensity per Run 2	138,083.1 cps	69,163.0 cps	55,217.9 cps	10,080.1 cps	47,642.7 cps	21.0 cps	14,121.8 cps	350.0 cps	1,150.8 cps	25,233.5 cps
Intensity per Run 3	141,784.7 cps	70,458.4 cps	56,640.4 cps	10,228.2 cps	49,269.0 cps	27.0 cps	14,153.2 cps	370.0 cps	1,131.9 cps	25,187.4 cps
Intensity RSD	2.6 %	2.6 %	2.7 %	1.5 %	3.8 %	20.7 %	2.9 %	4.2 %	1.0 %	3.5 %

Category	82Kr (KED)	82Se (KED)	83Kr (KED)	89Y (KED)	94Mo (KED)	95Mo (KED)	96Mo (KED)	97Mo (KED)	98Mo (KED)	103Rh (KED)
Concentration average		4.449 ppb		134.320 %	2.977 ppb	2.722 ppb	2.730 ppb	2.671 ppb	2.666 ppb	0.026 ppm
Concentration per Run 1		4.129 ppb		133.509 %	2.920 ppb	2.686 ppb	2.693 ppb	2.597 ppb	2.620 ppb	0.026 ppm
Concentration per Run 2		4.774 ppb		133.662 %	3.025 ppb	2.698 ppb	2.723 ppb	2.669 ppb	2.675 ppb	0.026 ppm
Concentration per Run 3		4.445 ppb		135.788 %	2.985 ppb	2.782 ppb	2.775 ppb	2.747 ppb	2.702 ppb	0.026 ppm
Concentration RSD		7.3 %		0.9 %	1.8 %	1.9 %	1.5 %	2.8 %	1.6 %	1.8 %
Intensity average	4,381 cps	445 cps	3,952 cps	785,476 cps	45,456 cps	75,288 cps	83,364 cps	48,798 cps	129,268 cps	2,309,797 cps
Intensity per Run 1	4,109.7 cps	359.7 cps	3,724.6 cps	780,738.0 cps	44,282.4 cps	73,749.2 cps	81,622.0 cps	47,080.6 cps	126,065.3 cps	2,287,637.3 cps
Intensity per Run 2	4,437.8 cps	529.2 cps	4,018.6 cps	781,628.4 cps	46,028.6 cps	74,400.9 cps	82,910.2 cps	48,642.5 cps	129,443.7 cps	2,283,159.9 cps
Intensity per Run 3	4,596.8 cps	447.4 cps	4,113.7 cps	794,061.5 cps	46,056.8 cps	77,713.3 cps	85,560.0 cps	50,670.7 cps	132,293.6 cps	2,358,592.8 cps
Intensity RSD	5.7 %	19.0 %	5.1 %	0.9 %	2.2 %	2.8 %	2.4 %	3.7 %	2.4 %	1.8 %

6020B Sample Report

Instrument ID: ICPMS4
Analyst: BPK

QTEGRA

Category	105Pd (KED)	106Cd (KED)	107Ag (KED)	108Cd (KED)	109Ag (KED)	111Cd (KED)	114Cd (KED)	115In (KED)	118Sn (KED)	121Sb (KED)
Concentration average		2.531 ppb	1.406 ppb	2.544 ppb	1.413 ppb	2.474 ppb	2.469 ppb	135.930 %	2.679 ppb	2.685 ppb
Concentration per Run 1		2.508 ppb	1.392 ppb	2.436 ppb	1.388 ppb	2.403 ppb	2.417 ppb	134.439 %	2.600 ppb	2.646 ppb
Concentration per Run 2		2.527 ppb	1.404 ppb	2.512 ppb	1.426 ppb	2.506 ppb	2.457 ppb	136.375 %	2.726 ppb	2.701 ppb
Concentration per Run 3		2.558 ppb	1.423 ppb	2.685 ppb	1.426 ppb	2.511 ppb	2.532 ppb	136.976 %	2.711 ppb	2.706 ppb
Concentration RSD		1.0 %	1.1 %	5.0 %	1.5 %	2.5 %	2.4 %	1.0 %	2.6 %	1.2 %
Intensity average	933 cps	3,741 cps	153,316 cps	2,798 cps	151,487 cps	44,133 cps	109,094 cps	1,216,955 cps	98,348 cps	102,877 cps
Intensity per Run 1	912.0 cps	3,672.5 cps	150,109.2 cps	2,652.3 cps	147,332.3 cps	42,428.0 cps	105,611.0 cps	1,203,605.0 cps	94,476.5 cps	100,426.2 cps
Intensity per Run 2	888.0 cps	3,736.6 cps	153,549.9 cps	2,764.3 cps	153,044.1 cps	44,804.2 cps	108,945.2 cps	1,220,939.1 cps	100,293.5 cps	103,708.7 cps
Intensity per Run 3	1,000.0 cps	3,812.6 cps	156,289.1 cps	2,976.4 cps	154,085.2 cps	45,165.7 cps	112,724.5 cps	1,226,320.6 cps	100,273.8 cps	104,495.5 cps
Intensity RSD	6.3 %	1.9 %	2.0 %	5.9 %	2.4 %	3.4 %	3.3 %	1.0 %	3.4 %	2.1 %

Category	123Sb (KED)	135Ba (KED)	137Ba (KED)	150Sm (KED)	156Gd (KED)	159Tb (KED)	160Dy (KED)	164Dy (KED)	165Ho (KED)	203Tl (KED)
Concentration average	2.702 ppb	12.316 ppb	12.417 ppb			137.229 %			0.020 ppm	2.485 ppb
Concentration per Run 1	2.657 ppb	12.135 ppb	12.190 ppb			137.077 %			0.020 ppm	2.436 ppb
Concentration per Run 2	2.696 ppb	12.495 ppb	12.700 ppb			136.333 %			0.020 ppm	2.508 ppb
Concentration per Run 3	2.753 ppb	12.319 ppb	12.361 ppb			138.278 %			0.020 ppm	2.512 ppb
Concentration RSD	1.8 %	1.5 %	2.1 %			0.7 %			1.6 %	1.7 %
Intensity average	82,841 cps	111,121 cps	204,193 cps	487 cps	376 cps	4,313,513 cps	437 cps	413 cps	4,514,290 cps	316,258 cps
Intensity per Run 1	80,720.3 cps	108,776.1 cps	199,257.7 cps	492.0 cps	344.0 cps	4,308,714.6 cps	416.0 cps	364.0 cps	4,531,701.2 cps	313,925.0 cps
Intensity per Run 2	82,769.4 cps	112,589.2 cps	208,489.8 cps	568.0 cps	420.0 cps	4,285,332.7 cps	400.0 cps	424.0 cps	4,434,071.8 cps	314,695.3 cps
Intensity per Run 3	85,033.0 cps	111,996.5 cps	204,830.9 cps	400.0 cps	364.0 cps	4,346,491.4 cps	496.0 cps	452.0 cps	4,577,095.5 cps	320,154.0 cps
Intensity RSD	2.6 %	1.8 %	2.3 %	17.3 %	10.5 %	0.7 %	11.8 %	10.9 %	1.6 %	1.1 %

Category	205Tl (KED)	206Pb (KED)	207Pb (KED)	208Pb (KED)	209Bi (KED)
Concentration average	2.483 ppb	2.636 ppb	2.639 ppb	2.618 ppb	138.099 %
Concentration per Run 1	2.437 ppb	2.539 ppb	2.502 ppb	2.507 ppb	140.099 %
Concentration per Run 2	2.507 ppb	2.674 ppb	2.705 ppb	2.691 ppb	136.032 %
Concentration per Run 3	2.505 ppb	2.694 ppb	2.710 ppb	2.656 ppb	138.167 %
Concentration RSD	1.6 %	3.2 %	4.5 %	3.7 %	1.5 %
Intensity average	767,737 cps	267,520 cps	235,286 cps	1,074,541 cps	3,539,394 cps
Intensity per Run 1	764,537.2 cps	261,284.8 cps	226,285.6 cps	1,044,556.7 cps	3,590,645.6 cps
Intensity per Run 2	763,751.2 cps	267,549.5 cps	237,709.7 cps	1,088,286.9 cps	3,486,412.2 cps
Intensity per Run 3	774,923.4 cps	273,724.7 cps	241,863.2 cps	1,090,779.6 cps	3,541,122.7 cps
Intensity RSD	0.8 %	2.3 %	3.4 %	2.4 %	1.5 %

Raw Supportive Data

Analyst: JMH **Level 2 Analyst:** KSH2

Status: Level 2 review released

Matrix: Aqueous

Printed: 12/02/19 1003

Prep Batch: 33592

3005A - Total Recoverable Acid Digestion (ICP-MS) Linked: 6020A,6020B and

Start Date: 10/28/2019 1912

End Date: 10/29/2019 0012

Digestion Cup ID: 19-2156

Ext Solvent: 1:1 HNO3/1:1 HCl

Reagents Vol. (mL): 1.0, 0.5

Chem ID: IM9679-01, IM9711-01

Hot Block ID: Hot Block # 9

Start Temperature (°C): 93

Thermometer ID: 326394

Sample ID	QC Code	Client Sample ID	Run	Analysis Method	Initial Vol. (mL)	Spike ID	Spike Vol. (mL)	Final Vol. (mL)	Holding Time Expires	Analytical Due Date	Comments
UQ83592-001	MB	PBW	1	6020B	50		0.0	50			LCS/MS/MSD Pipet ID: 315
UQ83592-002	LCS	LCS	1	6020B	50	19-1588	0.5	50			
UJ19003-008	Sample	13MW8	1	6020B	50		0.0	50	04/19/2020 2359	10/29/2019	
UJ19003-008	Sample	13MW8	1	6020B	50		0.0	50	04/19/2020 2359	10/29/2019	
UJ24097-001	Sample	16C1	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-002	Sample	16MW8	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-003	Sample	16MW9	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-004	Sample	16WC1A	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-004MS	MS	16WC1AS	1	6020B	50	19-1588	0.5	50			
UJ24097-004MD	MSD	16WC1ASD	1	6020B	50	19-1588	0.5	50			
UJ24097-005	Sample	16WDUP	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-006	Sample	16WC1B	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-007	Sample	16-2	1	6020B	50		0.0	50	04/19/2020 2359	11/04/2019	
UJ24097-008	Sample	16-3	1	6020B	50		0.0	50	04/20/2020 2359	11/04/2019	
UJ24097-009	Sample	16-5	1	6020B	50		0.0	50	04/19/2020 2359	11/04/2019	
UJ24097-010	Sample	16WC2B	1	6020B	50		0.0	50	04/19/2020 2359	11/04/2019	
UJ24097-011	Sample	16SPRING	1	6020B	50		0.0	50	04/19/2020 2359	11/04/2019	

(end of report) **Total Samples: 13**

Mercury

- COVER PAGE -
INORGANIC ANALYSIS DATA PACKAGE

Client: Draper Aden Associates

SDG No.: UJ24097 **Method Type:** CVAA **SOW No.:**

Contract: RAAP HWMU16-new-no J **Lab Code:** Shealy **Case No.:** **SAS No.:**

Lab Sample ID	Client Sample ID	QC Description
UJ24097-001	16C1	
UJ24097-002	16MW8	
UJ24097-003	16MW9	
UJ24097-004	16WC1A	
UJ24097-004S	16WC1AS	Matrix Spike
UJ24097-004SD	16WC1ASD	Matrix Spike Duplicate
UJ24097-005	16WDUP	
UJ24097-006	16WC1B	
UJ24097-007	16-2	
UJ24097-008	16-3	
UJ24097-009	16-5	
UJ24097-010	16WC2B	
UJ24097-011	16SPRING	

Were ICP interelement corrections applied? Yes/No Yes

Were ICP background corrections applied? Yes/No Yes

If yes - were raw data generated before applications of background corrections? Yes/No No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name:

Date: Title:

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Initial Calibration Source: VHG

Continuing Calibration Source: Inorganic VenturesInorganic Ventu

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV1	Mercury	2.000000	2.000000	94	90.0 - 110.0	CV	10/30/2019	18:56	HG4103119A
CCV1	Mercury	2.000000	2.000000	99	80.0 - 120.0	CV	10/30/2019	19:04	HG4103119A
CCV2	Mercury	2.000000	2.000000	98	80.0 - 120.0	CV	10/31/2019	01:13	HG4103119A
CCV3	Mercury	2.000000	2.000000	97	80.0 - 120.0	CV	10/31/2019	01:44	HG4103119A
CCV4	Mercury	2.000000	2.000000	97	80.0 - 120.0	CV	10/31/2019	02:15	HG4103119A

- 2b -
CRDL STANDARD FOR AA & ICP

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No:** **SAS No.:**

AA CRDL Standard Source:

ICP CRDL Standard Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Advisory Limits (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV 19HG1624									
	Mercury	0.221000	0.200000	111	50 - 150	CV	10/30/2019	19:02	HG4103119A

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Draper Aden Associates **SDG No.:** UJ24097

Contract: RAAP HWMU16-new-no J flags **Lab Code:** Shealy **Case No.:** **SAS No.:**

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOQ	LOQ	M	Analysis Date	Analysis Time	Run
ICB1	Mercury	-0.040500	+/-2.000000	U	2.000000	2.000000	CV	10/30/2019	18:59	HG4103119A
CCB1	Mercury	-0.055600	+/-2.000000	U	2.000000	2.000000	CV	10/30/2019	19:07	HG4103119A
CCB2	Mercury	-0.039300	+/-2.000000	U	2.000000	2.000000	CV	10/31/2019	01:16	HG4103119A
CCB3	Mercury	-0.028700	+/-2.000000	U	2.000000	2.000000	CV	10/31/2019	01:47	HG4103119A
CCB4	Mercury	-0.043300	+/-2.000000	U	2.000000	2.000000	CV	10/31/2019	02:18	HG4103119A

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0 19HG1622	1.00	1841																X									
S01 19HG1623	1.00	1843																X									
S02 19HG1624	1.00	1846																X									
S03 19HG1625	1.00	1848																X									
S04 19HG1626	1.00	1851																X									
S05 19HG1627	1.00	1853																X									
ICV1	1.00	1856																X									
ICB1	1.00	1859																X									
LLCCV 19HG1624	1.00	1902																X									
CCV1	1.00	1904																X									
CCB1	1.00	1907																X									
ZZZZZZ	1.00	1909																										
ZZZZZZ	1.00	1912																										
ZZZZZZ	1.00	1914																										
ZZZZZZ	1.00	1917																										
ZZZZZZ	1.00	1919																										
ZZZZZZ	1.00	1922																										
ZZZZZZ	1.00	1924																										
ZZZZZZ	1.00	1927																										
ZZZZZZ	1.00	1929																										
ZZZZZZ	1.00	1932																										
ZZZZZZ	1.00	1934																										
ZZZZZZ	1.00	1937																										
ZZZZZZ	1.00	1940																										
ZZZZZZ	1.00	1942																										
ZZZZZZ	1.00	1945																										
ZZZZZZ	1.00	1947																										
ZZZZZZ	1.00	1950																										
ZZZZZZ	1.00	1952																										
ZZZZZZ	1.00	1955																										
ZZZZZZ	1.00	1957																										
ZZZZZZ	1.00	2000																										
ZZZZZZ	1.00	2002																										
ZZZZZZ	1.00	2005																										
ZZZZZZ	1.00	2008																										
ZZZZZZ	1.00	2010																										

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	2013																								
ZZZZZZ	1.00	2016																								
ZZZZZZ	1.00	2018																								
ZZZZZZ	1.00	2021																								
ZZZZZZ	1.00	2023																								
ZZZZZZ	1.00	2026																								
ZZZZZZ	1.00	2029																								
ZZZZZZ	1.00	2031																								
ZZZZZZ	1.00	2034																								
ZZZZZZ	1.00	2036																								
ZZZZZZ	1.00	2039																								
ZZZZZZ	1.00	2041																								
ZZZZZZ	1.00	2044																								
ZZZZZZ	1.00	2046																								
ZZZZZZ	1.00	2049																								
ZZZZZZ	1.00	2051																								
ZZZZZZ	1.00	2054																								
ZZZZZZ	1.00	2056																								
ZZZZZZ	1.00	2059																								
ZZZZZZ	1.00	2101																								
ZZZZZZ	1.00	2104																								
ZZZZZZ	1.00	2106																								
ZZZZZZ	1.00	2109																								
ZZZZZZ	1.00	2112																								
ZZZZZZ	1.00	2114																								
ZZZZZZ	1.00	2117																								
ZZZZZZ	1.00	2120																								
ZZZZZZ	1.00	2122																								
ZZZZZZ	1.00	2125																								
ZZZZZZ	1.00	2127																								
ZZZZZZ	1.00	2130																								
ZZZZZZ	1.00	2132																								
ZZZZZZ	1.00	2135																								
ZZZZZZ	1.00	2137																								
ZZZZZZ	1.00	2140																								
ZZZZZZ	1.00	2142																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	2145																								
ZZZZZZ	1.00	2147																								
ZZZZZZ	1.00	2150																								
ZZZZZZ	1.00	2153																								
ZZZZZZ	1.00	2155																								
ZZZZZZ	1.00	2158																								
ZZZZZZ	1.00	2200																								
ZZZZZZ	1.00	2203																								
ZZZZZZ	1.00	2206																								
ZZZZZZ	1.00	2208																								
ZZZZZZ	1.00	2211																								
ZZZZZZ	1.00	2214																								
ZZZZZZ	1.00	2216																								
ZZZZZZ	1.00	2219																								
ZZZZZZ	1.00	2221																								
ZZZZZZ	1.00	2224																								
ZZZZZZ	1.00	2226																								
ZZZZZZ	1.00	2229																								
ZZZZZZ	1.00	2232																								
ZZZZZZ	1.00	2234																								
ZZZZZZ	1.00	2237																								
ZZZZZZ	1.00	2240																								
ZZZZZZ	1.00	2242																								
ZZZZZZ	1.00	2245																								
ZZZZZZ	1.00	2247																								
ZZZZZZ	1.00	2250																								
ZZZZZZ	1.00	2252																								
ZZZZZZ	1.00	2255																								
ZZZZZZ	1.00	2257																								
ZZZZZZ	1.00	2300																								
ZZZZZZ	1.00	2303																								
ZZZZZZ	1.00	2305																								
ZZZZZZ	1.00	2308																								
ZZZZZZ	1.00	2310																								
ZZZZZZ	1.00	2313																								
ZZZZZZ	1.00	2315																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	2318																								
ZZZZZZ	1.00	2320																								
ZZZZZZ	1.00	2323																								
ZZZZZZ	1.00	2326																								
ZZZZZZ	1.00	2328																								
ZZZZZZ	1.00	2331																								
ZZZZZZ	1.00	2333																								
ZZZZZZ	1.00	2336																								
ZZZZZZ	1.00	2338																								
ZZZZZZ	1.00	2341																								
ZZZZZZ	1.00	2343																								
ZZZZZZ	1.00	2346																								
ZZZZZZ	1.00	2348																								
ZZZZZZ	1.00	2351																								
ZZZZZZ	1.00	2354																								
ZZZZZZ	1.00	2356																								
ZZZZZZ	1.00	2359																								
ZZZZZZ	1.00	0001																								
ZZZZZZ	1.00	0004																								
ZZZZZZ	1.00	0007																								
ZZZZZZ	1.00	0009																								
ZZZZZZ	1.00	0012																								
ZZZZZZ	1.00	0014																								
ZZZZZZ	1.00	0017																								
ZZZZZZ	1.00	0019																								
ZZZZZZ	1.00	0022																								
ZZZZZZ	1.00	0025																								
ZZZZZZ	1.00	0027																								
ZZZZZZ	1.00	0030																								
ZZZZZZ	1.00	0032																								
ZZZZZZ	1.00	0035																								
ZZZZZZ	1.00	0038																								
ZZZZZZ	1.00	0040																								
ZZZZZZ	1.00	0043																								
ZZZZZZ	1.00	0046																								
ZZZZZZ	1.00	0048																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	0051																										
ZZZZZZ	1.00	0053																										
ZZZZZZ	1.00	0056																										
ZZZZZZ	1.00	0058																										
ZZZZZZ	1.00	0101																										
ZZZZZZ	1.00	0103																										
ZZZZZZ	1.00	0106																										
ZZZZZZ	1.00	0108																										
ZZZZZZ	1.00	0111																										
CCV2	1.00	0113																X										
CCB2	1.00	0116																X										
ZZZZZZ	1.00	0119																										
ZZZZZZ	1.00	0121																										
ZZZZZZ	1.00	0124																										
ZZZZZZ	1.00	0126																										
UO33809-001	1.00	0129																X										
UO33809-002	1.00	0131																X										
UJ24097-001	1.00	0134																X										
UJ24097-002	1.00	0137																X										
UJ24097-003	1.00	0139																X										
UJ24097-004	1.00	0142																X										
CCV3	1.00	0144																X										
CCB3	1.00	0147																X										
UJ24097-004S	1.00	0149																X										
UJ24097-004SD	1.00	0152																X										
UJ24097-005	1.00	0155																X										
UJ24097-006	1.00	0157																X										
UJ24097-007	1.00	0200																X										
UJ24097-008	1.00	0202																X										
UJ24097-009	1.00	0205																X										
UJ24097-010	1.00	0207																X										
UJ24097-011	1.00	0210																X										
ZZZZZZ	1.00	0213																										
CCV4	1.00	0215																X										
CCB4	1.00	0218																X										
ZZZZZZ	1.00	0220																										

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ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	0223																								
ZZZZZZ	1.00	0226																								
ZZZZZZ	1.00	0228																								
ZZZZZZ	1.00	0231																								
ZZZZZZ	1.00	0233																								
ZZZZZZ	1.00	0236																								
ZZZZZZ	1.00	0238																								
ZZZZZZ	1.00	0241																								
ZZZZZZ	1.00	0243																								
ZZZZZZ	1.00	0246																								
ZZZZZZ	1.00	0249																								
ZZZZZZ	1.00	0251																								
ZZZZZZ	1.00	0254																								
ZZZZZZ	1.00	0256																								
ZZZZZZ	1.00	0259																								
ZZZZZZ	1.00	0302																								
ZZZZZZ	1.00	0304																								
ZZZZZZ	1.00	0307																								
ZZZZZZ	1.00	0309																								
ZZZZZZ	1.00	0312																								
ZZZZZZ	1.00	0314																								
ZZZZZZ	1.00	0317																								
ZZZZZZ	1.00	0319																								
ZZZZZZ	1.00	0322																								
ZZZZZZ	1.00	0325																								
ZZZZZZ	1.00	0327																								
ZZZZZZ	1.00	0330																								
ZZZZZZ	1.00	0332																								
ZZZZZZ	1.00	0335																								
ZZZZZZ	1.00	0338																								
ZZZZZZ	1.00	0340																								
ZZZZZZ	1.00	0343																								
ZZZZZZ	1.00	0345																								
ZZZZZZ	1.00	0348																								
ZZZZZZ	1.00	0351																								
ZZZZZZ	1.00	0354																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	0356																								
ZZZZZZ	1.00	0359																								
ZZZZZZ	1.00	0401																								
ZZZZZZ	1.00	0404																								
ZZZZZZ	1.00	0406																								
ZZZZZZ	1.00	0409																								
ZZZZZZ	1.00	0411																								
ZZZZZZ	1.00	0414																								
ZZZZZZ	1.00	0416																								
ZZZZZZ	1.00	0937																								
ZZZZZZ	1.00	0940																								
ZZZZZZ	1.00	0942																								
ZZZZZZ	1.00	0945																								
ZZZZZZ	1.00	0946																								
ZZZZZZ	1.00	0949																								
ZZZZZZ	1.00	0951																								
ZZZZZZ	1.00	0954																								
ZZZZZZ	1.00	0956																								
ZZZZZZ	1.00	0959																								
ZZZZZZ	1.00	1002																								
ZZZZZZ	1.00	1004																								
ZZZZZZ	1.00	1007																								
ZZZZZZ	1.00	1009																								
ZZZZZZ	1.00	1012																								
ZZZZZZ	1.00	1015																								
ZZZZZZ	1.00	1017																								
ZZZZZZ	1.00	1020																								
ZZZZZZ	1.00	1022																								
ZZZZZZ	1.00	1025																								
ZZZZZZ	1.00	1028																								
ZZZZZZ	1.00	1030																								
ZZZZZZ	1.00	1033																								
ZZZZZZ	1.00	1035																								
ZZZZZZ	1.00	1038																								
ZZZZZZ	1.00	1040																								
ZZZZZZ	1.00	1043																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1045																								
ZZZZZZ	1.00	1048																								
ZZZZZZ	1.00	1050																								
ZZZZZZ	1.00	1053																								
ZZZZZZ	1.00	1056																								
ZZZZZZ	1.00	1058																								
ZZZZZZ	1.00	1101																								
ZZZZZZ	1.00	1104																								
ZZZZZZ	1.00	1106																								
ZZZZZZ	1.00	1109																								
ZZZZZZ	1.00	1111																								
ZZZZZZ	1.00	1114																								
ZZZZZZ	1.00	1116																								
ZZZZZZ	1.00	1119																								
ZZZZZZ	1.00	1121																								
ZZZZZZ	1.00	1124																								
ZZZZZZ	1.00	1126																								
ZZZZZZ	1.00	1129																								
ZZZZZZ	1.00	1131																								
ZZZZZZ	1.00	1134																								
ZZZZZZ	1.00	1136																								
ZZZZZZ	1.00	1139																								
ZZZZZZ	1.00	1141																								
ZZZZZZ	1.00	1144																								
ZZZZZZ	1.00	1147																								
ZZZZZZ	1.00	1149																								
ZZZZZZ	1.00	1152																								
ZZZZZZ	1.00	1154																								
ZZZZZZ	1.00	1157																								
ZZZZZZ	1.00	1200																								
ZZZZZZ	1.00	1202																								
ZZZZZZ	1.00	1205																								
ZZZZZZ	1.00	1207																								
ZZZZZZ	1.00	1210																								
ZZZZZZ	1.00	1212																								
ZZZZZZ	1.00	1215																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1217																								
ZZZZZZ	1.00	1220																								
ZZZZZZ	1.00	1222																								
ZZZZZZ	1.00	1225																								
ZZZZZZ	1.00	1227																								
ZZZZZZ	1.00	1230																								
ZZZZZZ	1.00	1232																								
ZZZZZZ	1.00	1235																								
ZZZZZZ	1.00	1238																								
ZZZZZZ	1.00	1240																								
ZZZZZZ	1.00	1243																								
ZZZZZZ	1.00	1245																								
ZZZZZZ	1.00	1248																								
ZZZZZZ	1.00	1250																								
ZZZZZZ	1.00	1253																								
ZZZZZZ	1.00	1255																								
ZZZZZZ	1.00	1258																								
ZZZZZZ	1.00	1300																								
ZZZZZZ	1.00	1303																								
ZZZZZZ	1.00	1530																								
ZZZZZZ	1.00	1533																								
ZZZZZZ	1.00	1536																								
ZZZZZZ	1.00	1538																								
ZZZZZZ	1.00	1541																								
ZZZZZZ	1.00	1543																								
ZZZZZZ	1.00	1546																								
ZZZZZZ	1.00	1548																								
ZZZZZZ	1.00	1551																								
ZZZZZZ	1.00	1553																								
ZZZZZZ	1.00	1556																								
ZZZZZZ	1.00	1558																								
ZZZZZZ	1.00	1601																								
ZZZZZZ	1.00	1603																								
ZZZZZZ	1.00	1606																								
ZZZZZZ	1.00	1609																								
ZZZZZZ	1.00	1611																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1614																								
ZZZZZZ	1.00	1616																								
ZZZZZZ	1.00	1619																								
ZZZZZZ	1.00	1621																								
ZZZZZZ	1.00	1624																								
ZZZZZZ	1.00	1626																								
ZZZZZZ	1.00	1629																								
ZZZZZZ	1.00	1631																								
ZZZZZZ	1.00	1634																								
ZZZZZZ	1.00	1637																								
ZZZZZZ	1.00	1639																								
ZZZZZZ	1.00	1642																								
ZZZZZZ	1.00	1644																								
ZZZZZZ	1.00	1647																								
ZZZZZZ	1.00	1650																								
ZZZZZZ	1.00	1652																								
ZZZZZZ	1.00	1655																								
ZZZZZZ	1.00	1657																								
ZZZZZZ	1.00	1700																								
ZZZZZZ	1.00	1702																								
ZZZZZZ	1.00	1705																								
ZZZZZZ	1.00	1707																								
ZZZZZZ	1.00	1710																								
ZZZZZZ	1.00	1712																								
ZZZZZZ	1.00	1715																								
ZZZZZZ	1.00	1717																								
ZZZZZZ	1.00	1720																								
ZZZZZZ	1.00	1723																								
ZZZZZZ	1.00	1725																								
ZZZZZZ	1.00	1728																								
ZZZZZZ	1.00	1730																								
ZZZZZZ	1.00	1733																								
ZZZZZZ	1.00	1735																								
ZZZZZZ	1.00	1738																								
ZZZZZZ	1.00	1740																								
ZZZZZZ	1.00	1743																								

14

ANALYSIS RUN LOG

Client: Draper Aden Associates Contract: RAAP HWMU16-new-no J flags

Lab Code: Shealy Case No.: SAS No.: SDG No.: UJ24097

Instrument ID Number: Hg4 Run Number: HG4103119A

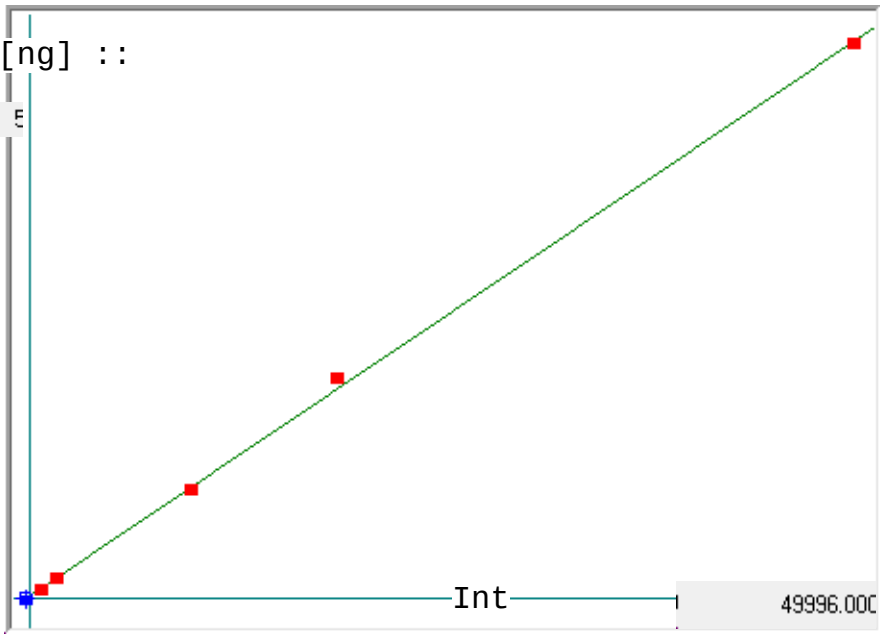
Start Date: 10/30/2019 End Date: 10/31/2019

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1746																								
ZZZZZZ	1.00	1748																								
ZZZZZZ	1.00	1751																								
ZZZZZZ	1.00	1754																								
ZZZZZZ	1.00	1756																								

Raw Sample Data

7470A/245.1

Linear



A= 0.0000e+000

B= 9.9836e-005

C= 3.9895e-002

Rho= 0.9996908

Accept= Accepted

Accepted Date=

10/30/19 18:56

Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
S0 19HG1622 10/31/19	0.000	0.016	0.016	-235	0.000	-235			
S01 19HG1623 10/31/19	0.100	0.114	0.014	740	0.0 %	740			
S02 19HG1624 10/31/19	0.200	0.214	0.014	1740	0.0 %	1740			
S03 19HG1625 10/31/19	1.000	1.022	0.022	9835	0.0 %	9835			
S04 19HG1626 10/31/19	2.000	1.903	-0.097	18663	0.0 %	18663			
S05 19HG1627 10/31/19	5.000	5.031	0.031	49996	0.0 %	49996			

HG4103119A

Method: 7470A/245.1 Operator: JMH Date of Analysis: 30 Oct 2019 18:41:01

Sample ID	Extended ID	Conc.	Units	µ Abs.	Date
S0 19HG1622 10/31/19 - 1		-	ppb	-235	30 Oct 2019 18:41:06
S01 19HG1623 10/31/19 - 1		-	ppb	740	30 Oct 2019 18:43:38
S02 19HG1624 10/31/19 - 1		-	ppb	1740	30 Oct 2019 18:46:10
S03 19HG1625 10/31/19 - 1		-	ppb	9835	30 Oct 2019 18:48:42
S04 19HG1626 10/31/19 - 1		-	ppb	18663	30 Oct 2019 18:51:14
S05 19HG1627 10/31/19 - 1		-	ppb	49996	30 Oct 2019 18:53:51
ICV 19HG1628 10/31/19 - 1		93.6% 1.8714	ppb	18345	30 Oct 2019 18:56:30
ICB 19HG1622 10/31/19 - 1		-0.0405	ppb	-805	30 Oct 2019 18:59:22
LLCCV 19HG1624 10/31/19 - 1		110.5% 0.2210	ppb	1814	30 Oct 2019 19:02:03
CCV 19HG1626 10/31/19 - 1		98.6% 1.9716	ppb	19349	30 Oct 2019 19:04:34
CCB 19HG1622 10/31/19 - 1		-0.0556	ppb	-957	30 Oct 2019 19:07:04
SnCl2 - 1	IM9723-01	0.0337	ppb	-62	30 Oct 2019 19:09:41
UQ33808001 - 1	PBW	0.0370	ppb	-29	30 Oct 2019 19:12:11
UQ33808002 - 1	LCS	1.9801	ppb	19434	30 Oct 2019 19:14:41
UI03037008 - 1	MDLv HG4 245.1 [7470A SHARE] AQ	0.1836	ppb	1439	30 Oct 2019 19:17:11
UJ28026001 - 1	B19012	0.0520	ppb	121	30 Oct 2019 19:19:52
UJ22057007 - 1	WW Pipe 002	0.0509	ppb	110	30 Oct 2019 19:22:23
UJ25086001DIS - 1	Well 120	0.0414	ppb	15	30 Oct 2019 19:24:54
UJ25086002DIS - 1	Well 360	0.0264	ppb	-135	30 Oct 2019 19:27:25
UJ25086003DIS - 1	NCWSA	0.0312	ppb	-87	30 Oct 2019 19:29:55
UJ24020001 - 1	SW-1 Swampwater	0.0282	ppb	-117	30 Oct 2019 19:32:27
CCV 19HG1626 10/31/19 - 1		97.7% 1.9545	ppb	19178	30 Oct 2019 19:34:58
CCB 19HG1622 10/31/19 - 1		-0.0347	ppb	-747	30 Oct 2019 19:37:28
UJ24020002 - 1	SW-1 Swampwater	0.0349	ppb	-50	30 Oct 2019 19:40:09
UJ24023001 - 1	SW-5 Swampwater	0.0246	ppb	-153	30 Oct 2019 19:42:41
UJ24023002 - 1	SW-5 Swampwater	0.0287	ppb	-112	30 Oct 2019 19:45:13
UJ24065001 - 1	Effluent	0.0205	ppb	-194	30 Oct 2019 19:47:43
UJ29054001 - 1	3075 Cansler Creen-Metal Shop	0.0167	ppb	-232	30 Oct 2019 19:50:13
UJ28007001 - 1	B/W	0.0273	ppb	-126	30 Oct 2019 19:52:43
UJ28007002 - 1	WTP	0.0217	ppb	-182	30 Oct 2019 19:55:14
UJ28007002MS - 1	WTPS	1.9511	ppb	19144	30 Oct 2019 19:57:44
UJ28007002MD - 1	WTPSD	1.8847	ppb	18478	30 Oct 2019 20:00:14
UJ28007003 - 1	SRW	-0.0305	ppb	-705	30 Oct 2019 20:02:48
CCV 19HG1626 10/31/19 - 1		98.3% 1.9662	ppb	19295	30 Oct 2019 20:05:32
CCB 19HG1622 10/31/19 - 1		-0.0320	ppb	-720	30 Oct 2019 20:08:01
UJ28007003MS - 1	SRWS	1.9428	ppb	19060	30 Oct 2019 20:10:45
UQ33813001 - 1	PBW	-0.0372	ppb	-772	30 Oct 2019 20:13:16
UQ33813002 - 1	LCS	1.9760	ppb	19393	30 Oct 2019 20:16:00
UJ23019001 - 1	JP-M11-GWMW995	-0.0344	ppb	-744	30 Oct 2019 20:18:31
UJ23019001MS - 1	JP-M11-GWMW995S	1.8752	ppb	18383	30 Oct 2019 20:21:14
UJ23019001MD - 1	JP-M11-GWMW995SD	1.8562	ppb	18193	30 Oct 2019 20:23:45
UJ23019002 - 1	JP-M11-GWMW335	-0.0477	ppb	-877	30 Oct 2019 20:26:26
UJ23019003 - 1	JP-M11-GWMW334	0.0116	ppb	-283	30 Oct 2019 20:29:07
UJ23019004 - 1	JP-M11-GWMW336	0.0122	ppb	-277	30 Oct 2019 20:31:38
UJ23019005 - 1	JP-M11-GWMW805	0.0175	ppb	-224	30 Oct 2019 20:34:08
CCV 19HG1626 10/31/19 - 1		97.5% 1.9498	ppb	19130	30 Oct 2019 20:36:38
CCB 19HG1622 10/31/19 - 1		-0.0586	ppb	-987	30 Oct 2019 20:39:08
UJ23019006 - 1	JP-M11-GWMW804	0.0120	ppb	-279	30 Oct 2019 20:41:42
UJ23019007 - 1	JP-M11-GWMW333	0.0125	ppb	-274	30 Oct 2019 20:44:13
UJ23019008 - 1	JP-M11-GWMW803	0.0152	ppb	-247	30 Oct 2019 20:46:43
UJ23019009 - 1	JP-M11-GWMW802	0.0182	ppb	-217	30 Oct 2019 20:49:15
UJ24007008 - 1	CCGE01-EB01(0-1)(102319)	0.0195	ppb	-204	30 Oct 2019 20:51:46
UQ33814001 - 1	PBW	0.0155	ppb	-244	30 Oct 2019 20:54:18
UQ33814002 - 1	LCS	1.9544	ppb	19177	30 Oct 2019 20:56:50
UJ23091001 - 1	0T19MW0-4R	-0.0146	ppb	-546	30 Oct 2019 20:59:21
UJ23091002 - 1	0T19MW0-5	0.0821	ppb	423	30 Oct 2019 21:01:58
UJ23091003 - 1	0T19MW0-6	0.0177	ppb	-222	30 Oct 2019 21:04:28
CCV 19HG1626 10/31/19 - 1		96.8% 1.9355	ppb	18987	30 Oct 2019 21:06:59
CCB 19HG1622 10/31/19 - 1		-0.0367	ppb	-767	30 Oct 2019 21:09:29
UJ23091003MS - 1	0T19MW0-6S	2.0061	ppb	19694	30 Oct 2019 21:12:11
UJ23091003MD - 1	0T19MW0-6SD	1.9315	ppb	18947	30 Oct 2019 21:14:41
UJ23091004 - 1	0T19MW0-6A	-0.0370	ppb	-770	30 Oct 2019 21:17:22
UJ23091005 - 1	0T19MW0-7	0.1147	ppb	749	30 Oct 2019 21:20:01
UJ23091006 - 1	0T19MW0-8	0.0476	ppb	77	30 Oct 2019 21:22:32
UJ23091007 - 1	0T19MW0-8A	0.0163	ppb	-236	30 Oct 2019 21:25:08
UJ23092001 - 1	0T19MW0-2	0.0298	ppb	-101	30 Oct 2019 21:27:39
UJ23092002 - 1	0T19MW0-2B	0.0189	ppb	-210	30 Oct 2019 21:30:11
UJ23092003 - 1	0T19MW0-3	0.0180	ppb	-219	30 Oct 2019 21:32:44
UJ23092004 - 1	0T19MW0-3A	0.0171	ppb	-228	30 Oct 2019 21:35:14
CCV 19HG1626 10/31/19 - 1		97.8% 1.9554	ppb	19187	30 Oct 2019 21:37:45
CCB 19HG1622 10/31/19 - 1		-0.0391	ppb	-791	30 Oct 2019 21:40:15
UJ23092005 - 1	0T19MW0-3B	0.0175	ppb	-224	30 Oct 2019 21:42:57
UJ23092006 - 1	EB10222019	0.0141	ppb	-258	30 Oct 2019 21:45:27
UQ33812001 - 1	PBW	0.0372	ppb	-27	30 Oct 2019 21:47:58
UQ33812002 - 1	LCS	2.0588	ppb	20222	30 Oct 2019 21:50:29
UJ22062001 - 1	OT26MW05	-0.0316	ppb	-716	30 Oct 2019 21:53:01
UJ22062001MS - 1	OT26MW05S	2.0492	ppb	20126	30 Oct 2019 21:55:39
UJ22062001MD - 1	OT26MW05SD	1.9576	ppb	19209	30 Oct 2019 21:58:11
UJ22062001DIS - 1	OT26MW05	-0.0373	ppb	-773	30 Oct 2019 22:00:55
UJ22062001MSDIS - 1	OT26MW05S	1.9712	ppb	19345	30 Oct 2019 22:03:38
UJ22062001MDDIS - 1	OT26MW05SD	1.9386	ppb	19018	30 Oct 2019 22:06:09
CCV 19HG1626 10/31/19 - 1		96.0% 1.9193	ppb	18825	30 Oct 2019 22:08:54
CCB 19HG1622 10/31/19 - 1		-0.0323	ppb	-723	30 Oct 2019 22:11:33
UJ22062002 - 1	OT26MW07	0.0393	ppb	-6	30 Oct 2019 22:14:17
UJ22062002DIS - 1	OT26MW07	0.0383	ppb	-16	30 Oct 2019 22:16:49
UJ22062003 - 1	DUP102119	0.0466	ppb	67	30 Oct 2019 22:19:20
UJ22062003DIS - 1	DUP102119	0.0522	ppb	123	30 Oct 2019 22:21:51
UJ22062004 - 1	OT19SW04	0.0465	ppb	66	30 Oct 2019 22:24:23
UJ22062004MS - 1	OT19SW04S	1.9946	ppb	19579	30 Oct 2019 22:26:54
UJ22062004MD - 1	OT19SW04SD	1.9612	ppb	19245	30 Oct 2019 22:29:26
UJ22062004DIS - 1	OT19SW04	-0.0000	ppb	-400	30 Oct 2019 22:32:05
UJ22062004MSDIS - 1	OT19SW04SD	2.0191	ppb	19825	30 Oct 2019 22:34:48

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UJ22062004MDDIS - 1	OT19SW04SD	1.9127	ppb	18759	30 Oct 2019 22:37:20
CCV 19HG1626 10/31/19 - 1		95.3% 1.9055	ppb	18687	30 Oct 2019 22:40:02
CCB 19HG1622 10/31/19 - 1		-0.0590	ppb	-991	30 Oct 2019 22:42:42
UJ22062005 - 1	DUP2102119	0.0503	ppb	104	30 Oct 2019 22:45:20
UJ22062005DIS - 1	DUP2102119	0.0460	ppb	61	30 Oct 2019 22:47:51
UJ22068003 - 1	DUP5102219	0.0588	ppb	189	30 Oct 2019 22:50:22
UJ22068003DIS - 1	DUP5102219	0.0513	ppb	114	30 Oct 2019 22:52:54
UJ22068004 - 1	OT19MW0-1R	0.0567	ppb	168	30 Oct 2019 22:55:26
UJ22068004DIS - 1	OT19MW0-1R	0.0469	ppb	70	30 Oct 2019 22:57:57
UJ22068005 - 1	OT19MW0-1B	0.0334	ppb	-65	30 Oct 2019 23:00:28
UJ22068005DIS - 1	OT19MW0-1B	0.0451	ppb	52	30 Oct 2019 23:03:00
UQ33811001 - 1	PBW	0.0343	ppb	-56	30 Oct 2019 23:05:31
UQ33811002 - 1	LCS	1.9855	ppb	19488	30 Oct 2019 23:08:02
CCV 19HG1626 10/31/19 - 1		94.7% 1.8930	ppb	18562	30 Oct 2019 23:10:34
CCB 19HG1622 10/31/19 - 1		-0.0516	ppb	-916	30 Oct 2019 23:13:13
UJ25077023 - 1	CMR-DS05-191024	0.0320	ppb	-79	30 Oct 2019 23:15:54
UJ26017001 - 1	CMR-MW39R2-191025	0.0289	ppb	-110	30 Oct 2019 23:18:26
UJ26017002 - 1	CMR-MW79D-191025	0.0363	ppb	-36	30 Oct 2019 23:20:57
UJ26017003 - 1	CMR-MW81D-191025	0.0344	ppb	-55	30 Oct 2019 23:23:29
UJ26017004 - 1	CMR-MW81S-191025	0.0368	ppb	-31	30 Oct 2019 23:26:01
UJ26017005 - 1	CMR-MW85-191025	0.0362	ppb	-37	30 Oct 2019 23:28:34
UJ26017006 - 1	CMR-MW87-191025	0.0390	ppb	-9	30 Oct 2019 23:31:05
UJ26017007 - 1	CMR-DS06-191025	0.0389	ppb	-10	30 Oct 2019 23:33:37
UJ24056001 - 1	MW042	0.0302	ppb	-97	30 Oct 2019 23:36:10
UJ24056002 - 1	PSDL021	0.0254	ppb	-145	30 Oct 2019 23:38:42
CCV 19HG1626 10/31/19 - 1		98.3% 1.9665	ppb	19298	30 Oct 2019 23:41:14
CCB 19HG1622 10/31/19 - 1		-0.0429	ppb	-829	30 Oct 2019 23:43:44
UJ24056003 - 1	SL001	0.0261	ppb	-138	30 Oct 2019 23:46:24
UJ24056004 - 1	SL002	0.0339	ppb	-60	30 Oct 2019 23:48:56
UJ24056005 - 1	SL003	0.0360	ppb	-39	30 Oct 2019 23:51:28
UJ24056006 - 1	MW016TR	0.0328	ppb	-71	30 Oct 2019 23:54:00
UJ24056007 - 1	MW045T	0.0325	ppb	-74	30 Oct 2019 23:56:32
UJ24056007MS - 1	MW045TS	1.9506	ppb	19139	30 Oct 2019 23:59:05
UJ24056007MD - 1	MW045TSD	1.8984	ppb	18616	31 Oct 2019 00:01:37
UJ24056008 - 1	MW071T	-0.0154	ppb	-554	31 Oct 2019 00:04:19
UJ24056009 - 1	MW073T	0.0333	ppb	-66	31 Oct 2019 00:07:05
UJ24056010 - 1	MW131T	0.0321	ppb	-78	31 Oct 2019 00:09:37
CCV 19HG1626 10/31/19 - 1		97.7% 1.9547	ppb	19180	31 Oct 2019 00:12:09
CCB 19HG1622 10/31/19 - 1		-0.0272	ppb	-672	31 Oct 2019 00:14:40
UJ24056011 - 1	MW054T	0.0318	ppb	-81	31 Oct 2019 00:17:24
UJ24056012 - 1	MW022TR	0.0376	ppb	-23	31 Oct 2019 00:19:56
UQ33807001 - 1	PBW	0.0215	ppb	-184	31 Oct 2019 00:22:29
UQ33807002 - 1	LCS	1.9654	ppb	19287	31 Oct 2019 00:25:00
UJ24004001 - 1	MW-5R	0.1359	ppb	962	31 Oct 2019 00:27:30
UJ24004001MS - 1	MW-5RS	1.7288	ppb	16917	31 Oct 2019 00:30:16
UJ24004001MD - 1	MW-5RSD	1.6980	ppb	16608	31 Oct 2019 00:32:48
UJ24004002 - 1	MW-2	-0.0393	ppb	-793	31 Oct 2019 00:35:39
UJ24004003 - 1	MW-1	0.0821	ppb	423	31 Oct 2019 00:38:26
UJ24054001 - 1	MW-1	0.0446	ppb	47	31 Oct 2019 00:40:58
CCV 19HG1626 10/31/19 - 1		96.9% 1.9384	ppb	19016	31 Oct 2019 00:43:31
CCB 19HG1622 10/31/19 - 1		-0.0421	ppb	-821	31 Oct 2019 00:46:01
UJ24054002 - 1	MW-2	0.4341	ppb	3949	31 Oct 2019 00:48:41
UJ24054003 - 1	MW-3	0.1471	ppb	1074	31 Oct 2019 00:51:12
UJ24054004 - 1	MW-4	0.0489	ppb	90	31 Oct 2019 00:53:44
UJ24054005 - 1	FIELD BLANK	0.0232	ppb	-167	31 Oct 2019 00:56:15
UJ21028001 - 1	MW006TR	0.0139	ppb	-260	31 Oct 2019 00:58:46
UJ21028002 - 1	MW008TR	0.0139	ppb	-260	31 Oct 2019 01:01:17
UJ21028003 - 1	MW009A	0.0211	ppb	-188	31 Oct 2019 01:03:48
UJ21028004 - 1	MW043T	0.0269	ppb	-130	31 Oct 2019 01:06:19
UJ21028005 - 1	MW049T	0.0244	ppb	-155	31 Oct 2019 01:08:50
UJ21028006 - 1	FULL FIELD BLANK	0.0267	ppb	-132	31 Oct 2019 01:11:22
CCV 19HG1626 10/31/19 - 1		97.8% 1.9561	ppb	19194	31 Oct 2019 01:13:53
CCB 19HG1622 10/31/19 - 1		-0.0393	ppb	-793	31 Oct 2019 01:16:23
UJ21028007 - 1	FULL TRIP BLANK	0.0155	ppb	-244	31 Oct 2019 01:19:06
UJ28009001 - 1	L106-1	0.0240	ppb	-159	31 Oct 2019 01:21:38
UJ28009002 - 1	WT-1	0.0216	ppb	-183	31 Oct 2019 01:24:09
UJ28009003 - 1	WT-2	0.0276	ppb	-123	31 Oct 2019 01:26:41
UQ33809001 - 1	PBW	0.0187	ppb	-212	31 Oct 2019 01:29:12
UQ33809002 - 1	LCS	1.9259	ppb	18891	31 Oct 2019 01:31:44
UJ24097001 - 1	16C1	-0.0259	ppb	-659	31 Oct 2019 01:34:15
UJ24097002 - 1	16MW8	0.0269	ppb	-130	31 Oct 2019 01:37:01
UJ24097003 - 1	16MW9	0.0120	ppb	-279	31 Oct 2019 01:39:32
UJ24097004 - 1	16WC1A	0.0186	ppb	-213	31 Oct 2019 01:42:03
CCV 19HG1626 10/31/19 - 1		97.0% 1.9395	ppb	19027	31 Oct 2019 01:44:35
CCB 19HG1622 10/31/19 - 1		-0.0287	ppb	-687	31 Oct 2019 01:47:05
UJ24097004MS - 1	16WC1AS	1.8448	ppb	18079	31 Oct 2019 01:49:51
UJ24097004MD - 1	16WC1ASD	1.7697	ppb	17327	31 Oct 2019 01:52:23
UJ24097005 - 1	16WDUP	-0.0458	ppb	-858	31 Oct 2019 01:55:05
UJ24097006 - 1	16WC1B	0.0973	ppb	575	31 Oct 2019 01:57:51
UJ24097007 - 1	16-2	0.0120	ppb	-279	31 Oct 2019 02:00:23
UJ24097008 - 1	16-3	0.0143	ppb	-256	31 Oct 2019 02:02:54
UJ24097009 - 1	16-5	0.0157	ppb	-242	31 Oct 2019 02:05:26
UJ24097010 - 1	16WC2B	0.0157	ppb	-242	31 Oct 2019 02:07:57
UJ24097011 - 1	16SPRING	0.0167	ppb	-232	31 Oct 2019 02:10:29
UQ33849001TC - 1	PBW	0.0427	ppb	28	31 Oct 2019 02:13:00
CCV 19HG1626 10/31/19 - 1		97.2% 1.9434	ppb	19066	31 Oct 2019 02:15:32
CCB 19HG1622 10/31/19 - 1		-0.0433	ppb	-833	31 Oct 2019 02:18:02
UQ33849002TC - 1	LCS	1.9665	ppb	19298	31 Oct 2019 02:20:44
UJ15017017TC - 1	AC2-H (0')	0.0254	ppb	-145	31 Oct 2019 02:23:16
UJ15017018TC - 1	AC2-H (2')	0.1027	ppb	629	31 Oct 2019 02:26:02
UJ15017019TC - 1	AC3-H (0')	0.0512	ppb	113	31 Oct 2019 02:28:34
UJ15017020TC - 1	AC3-H (2')	0.0580	ppb	181	31 Oct 2019 02:31:06

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UJ15017021TC - 1	AC4-H (0')	0.0563	ppb	164	31 Oct 2019 02:33:38
UJ15017022TC - 1	AC4-H (2')	0.0505	ppb	106	31 Oct 2019 02:36:10
UJ15017022MSTC - 1	AC4-H (2')S	1.9491	ppb	19123	31 Oct 2019 02:38:42
UJ15017022MDTC - 1	AC4-H (2')SD	1.8720	ppb	18351	31 Oct 2019 02:41:14
UJ15017023TC - 1	AC5-H (0')	-0.0052	ppb	-452	31 Oct 2019 02:43:58
CCV 19HG1626 10/31/19 - 1		96.7% 1.9345	ppb	18977	31 Oct 2019 02:46:44
CCB 19HG1622 10/31/19 - 1		-0.0418	ppb	-818	31 Oct 2019 02:49:14
UJ15017024TC - 1	AC5-H (2')	0.0518	ppb	119	31 Oct 2019 02:51:55
UJ15017025TC - 1	AC6-H (0')	0.0535	ppb	136	31 Oct 2019 02:54:27
UJ15017026TC - 1	AC6-H (2')	0.0597	ppb	198	31 Oct 2019 02:56:59
UJ15017027TC - 1	AC7-H (0')	0.0541	ppb	142	31 Oct 2019 02:59:31
UJ15017028TC - 1	AC7-H (2')	0.0572	ppb	173	31 Oct 2019 03:02:03
UJ15017029TC - 1	AC2-I (0')	0.2895	ppb	2500	31 Oct 2019 03:04:36
UJ15017030TC - 1	AC2-I (2')	0.1497	ppb	1100	31 Oct 2019 03:07:08
UJ15017031TC - 1	AC4-I (0')	0.0722	ppb	324	31 Oct 2019 03:09:42
UJ15017032TC - 1	AC4-I (2')	0.0596	ppb	197	31 Oct 2019 03:12:15
UJ15017033TC - 1	AC6-I (0')	0.0735	ppb	337	31 Oct 2019 03:14:47
CCV 19HG1626 10/31/19 - 1		97.0% 1.9410	ppb	19042	31 Oct 2019 03:17:19
CCB 19HG1622 10/31/19 - 1		-0.0265	ppb	-665	31 Oct 2019 03:19:49
UJ15017034TC - 1	AC8-I (0')	0.0667	ppb	268	31 Oct 2019 03:22:35
UJ15017035TC - 1	AC2-J (0')	0.1608	ppb	1211	31 Oct 2019 03:25:07
UJ15017036TC - 1	AC2-J (2')	0.0897	ppb	499	31 Oct 2019 03:27:40
UQ33850001TC - 1	PBW	0.0662	ppb	263	31 Oct 2019 03:30:12
UQ33850002TC - 1	LCS	1.9506	ppb	19139	31 Oct 2019 03:32:45
UJ15017037TC - 1	AC3-J (0')	0.0313	ppb	-86	31 Oct 2019 03:35:17
UJ15017038TC - 1	AC3-J (2')	0.0727	ppb	329	31 Oct 2019 03:38:07
UJ15017039TC - 1	AC4-J (0')	0.0697	ppb	299	31 Oct 2019 03:40:40
UJ15017039MSTC - 1	AC4-J (0')S	2.0216	ppb	19850	31 Oct 2019 03:43:12
UJ15017039MDTC - 1	AC4-J (0')SD	1.9646	ppb	19279	31 Oct 2019 03:45:45
CCV 19HG1626 10/31/19 - 1		94.1% 1.8827	ppb	18458	31 Oct 2019 03:48:32
CCB 19HG1622 10/31/19 - 1		-0.0253	ppb	-653	31 Oct 2019 03:51:15
UJ15017040TC - 1	AC4-J (2')	0.0853	ppb	455	31 Oct 2019 03:54:02
UJ15022028TC - 1	AC1-I (2')	0.0788	ppb	390	31 Oct 2019 03:56:34
UJ15022029TC - 1	AC1-I (7')	0.0747	ppb	349	31 Oct 2019 03:59:07
UJ15022030TC - 1	AC3-I (0')	0.0822	ppb	424	31 Oct 2019 04:01:40
UJ15022031TC - 1	AC3-I (2')	0.1044	ppb	646	31 Oct 2019 04:04:13
UJ15022032TC - 1	AC5-I (0')	0.0305	ppb	-94	31 Oct 2019 04:06:45
UJ15022033TC - 1	AC5-I (2')	0.0504	ppb	105	31 Oct 2019 04:09:18
UJ15022034TC - 1	AC7-I (0')	0.1091	ppb	693	31 Oct 2019 04:11:51
CCV 19HG1626 10/31/19 - 1		96.6% 1.9325	ppb	18957	31 Oct 2019 04:14:24
CCB 19HG1622 10/31/19 - 1		-0.0274	ppb	-674	31 Oct 2019 04:16:55
CCV 19HG1626 10/31/19 - 1		95.7% 1.9148	ppb	18780	31 Oct 2019 09:37:41
CCB 19HG1622 10/31/19 - 1		-0.0511	ppb	-911	31 Oct 2019 09:40:10
UQ33851001DIS - 1	PBW	0.0870	ppb	472	31 Oct 2019 09:42:55
UQ33851002DIS - 1	LCS	0.0399	ppb	0	31 Oct 2019 09:45:25
CCV 19HG1626 10/31/19 - 1		97.0% 1.9393	ppb	19025	31 Oct 2019 09:46:44
CCB 19HG1622 10/31/19 - 1		-0.0387	ppb	-787	31 Oct 2019 09:49:14
UQ33851001DIS - 1	PBW	0.0939	ppb	541	31 Oct 2019 09:51:55
UQ33851002DIS - 1	LCS	2.0164	ppb	19798	31 Oct 2019 09:54:26
UJ23091001DIS - 1	0T19MW0-4R	0.0304	ppb	-95	31 Oct 2019 09:56:58
UJ23091002DIS - 1	0T19MW0-5	0.0900	ppb	502	31 Oct 2019 09:59:41
UJ23091003DIS - 1	0T19MW0-6	0.0732	ppb	334	31 Oct 2019 10:02:11
UJ23091003SDIS - 1	0T19MW0-6S	1.9967	ppb	19600	31 Oct 2019 10:04:42
UJ23091003SDDIS - 1	0T19MW0-6SD	2.0518	ppb	20152	31 Oct 2019 10:07:13
UJ23091004DIS - 1	0T19MW0-6A	0.0437	ppb	38	31 Oct 2019 10:09:55
UJ23091005DIS - 1	0T19MW0-7	0.0886	ppb	488	31 Oct 2019 10:12:39
UJ23091006DIS - 1	0T19MW0-8	0.0955	ppb	557	31 Oct 2019 10:15:11
CCV 19HG1626 10/31/19 - 1		96.6% 1.9324	ppb	18956	31 Oct 2019 10:17:43
CCB 19HG1622 10/31/19 - 1		-0.0458	ppb	-858	31 Oct 2019 10:20:13
UJ23091007DIS - 1	0T19MW0-8A	0.1115	ppb	717	31 Oct 2019 10:22:55
UJ23092001DIS - 1	0T19MW0-2	0.1119	ppb	721	31 Oct 2019 10:25:27
UJ23092002DIS - 1	0T19MW0-2B	0.0458	ppb	59	31 Oct 2019 10:28:00
UJ23092003DIS - 1	0T19MW0-3	0.0706	ppb	308	31 Oct 2019 10:30:31
UJ23092004DIS - 1	0T19MW0-3A	0.1291	ppb	894	31 Oct 2019 10:33:01
UJ23092005DIS - 1	0T19MW0-3B	0.1163	ppb	765	31 Oct 2019 10:35:32
UJ23092006DIS - 1	EB10222019	0.1112	ppb	714	31 Oct 2019 10:38:03
UQ33852001 - 1	PBW	0.0560	ppb	161	31 Oct 2019 10:40:34
UQ33852002 - 1	LCS	1.9346	ppb	18978	31 Oct 2019 10:43:06
UJ25048001 - 1	MW3-5	0.0186	ppb	-213	31 Oct 2019 10:45:36
CCV 19HG1626 10/31/19 - 1		96.7% 1.9338	ppb	18970	31 Oct 2019 10:48:18
CCB 19HG1622 10/31/19 - 1		-0.0395	ppb	-795	31 Oct 2019 10:50:48
UJ25048001S - 1	MW3-5S	2.0577	ppb	20211	31 Oct 2019 10:53:30
UJ25048001SD - 1	MW3-5SD	2.0815	ppb	20450	31 Oct 2019 10:56:01
UJ25048002 - 1	MW3-6	0.1791	ppb	1394	31 Oct 2019 10:58:42
UJ25048003 - 1	MW3-7	0.0476	ppb	77	31 Oct 2019 11:01:28
UJ25048004 - 1	MW3-8	0.1113	ppb	715	31 Oct 2019 11:04:01
UJ25048005 - 1	MW3-10	0.0611	ppb	212	31 Oct 2019 11:06:32
UJ25048006 - 1	MW3-12	0.0598	ppb	199	31 Oct 2019 11:09:03
UJ25048007 - 1	MW3-13	0.0688	ppb	290	31 Oct 2019 11:11:33
UJ25048008 - 1	MW3-14	0.0618	ppb	219	31 Oct 2019 11:14:06
UJ25048009 - 1	MW3-16	0.0794	ppb	396	31 Oct 2019 11:16:37
CCV 19HG1626 10/31/19 - 1		97.0% 1.9404	ppb	19036	31 Oct 2019 11:19:07
CCB 19HG1622 10/31/19 - 1		-0.0527	ppb	-927	31 Oct 2019 11:21:37
UJ25048010 - 1	MW3-17	0.0704	ppb	306	31 Oct 2019 11:24:17
UJ25048011 - 1	MW3-18	0.0701	ppb	303	31 Oct 2019 11:26:48
UJ25048012 - 1	MW3-19	0.0623	ppb	224	31 Oct 2019 11:29:19
UJ25048013 - 1	MW3-20	0.0670	ppb	271	31 Oct 2019 11:31:50
UJ25048014 - 1	MW3-21	0.0482	ppb	83	31 Oct 2019 11:34:22
UJ25048015 - 1	DUP 1	0.0761	ppb	363	31 Oct 2019 11:36:54
UJ25048016 - 1	DUP 2	0.1257	ppb	859	31 Oct 2019 11:39:27
UJ25048017 - 1	EB-1	0.0678	ppb	280	31 Oct 2019 11:41:58
UQ33988001TC - 1	PBW	0.0546	ppb	147	31 Oct 2019 11:44:31

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UQ33988002TC - 1	LCS		2.0590	ppb	20224	31 Oct 2019 11:47:01
CCV 19HG1626 10/31/19 - 1			94.0% 1.8792	ppb	18423	31 Oct 2019 11:49:32
CCB 19HG1622 10/31/19 - 1			-0.0386	ppb	-786	31 Oct 2019 11:52:14
UJ15022035TC - 1	AC7-I (2')		0.0751	ppb	353	31 Oct 2019 11:54:58
UJ15022036TC - 1	AC9-K (0')		0.0611	ppb	212	31 Oct 2019 11:57:31
UJ15022037TC - 1	AC9-K (2')		0.0689	ppb	291	31 Oct 2019 12:00:01
UJ15022038TC - 1	AC9-K (7')		0.0718	ppb	320	31 Oct 2019 12:02:32
UJ15022039TC - 1	AC9-I (0')		0.1709	ppb	1312	31 Oct 2019 12:05:03
UJ15023001TC - 1	AC7-K (0')		0.0880	ppb	482	31 Oct 2019 12:07:35
UJ15023002TC - 1	AC7-K (2')		0.0698	ppb	300	31 Oct 2019 12:10:08
UJ15023003TC - 1	AC5-K (0')		0.0726	ppb	328	31 Oct 2019 12:12:40
UJ15023004TC - 1	AC5-K (2')		0.0678	ppb	280	31 Oct 2019 12:15:12
UJ15023005TC - 1	AC5-K (7')		0.1255	ppb	857	31 Oct 2019 12:17:43
CCV 19HG1626 10/31/19 - 1			(L)52.3% 1.0468	ppb	10086	31 Oct 2019 12:20:13
CCB 19HG1622 10/31/19 - 1			-0.0073	ppb	-473	31 Oct 2019 12:22:45
UJ15023006TC - 1	AC3-K (0')		0.0951	ppb	553	31 Oct 2019 12:25:19
UJ15023006MSTC - 1	AC3-K (0')S		2.0276	ppb	19910	31 Oct 2019 12:27:49
UJ15023006MDTC - 1	AC3-K (0')SD		1.9571	ppb	19204	31 Oct 2019 12:30:20
UJ15023007TC - 1	AC3-K (2')		0.0829	ppb	431	31 Oct 2019 12:32:58
UJ15023008TC - 1	AC3-K (7')		0.1085	ppb	687	31 Oct 2019 12:35:41
UJ15023009TC - 1	AC4-D (0')		0.0845	ppb	447	31 Oct 2019 12:38:13
UJ15023010TC - 1	AC4-D (2')	Wrong Sample Cup	0.1650	ppb	1253	31 Oct 2019 12:40:45
UJ15023011TC - 1	AC6-D (0')	KSH2 11/01/19	0.3017	ppb	2622	31 Oct 2019 12:43:17
UJ15023012TC - 1	AC6-D (2')		0.3409	ppb	3015	31 Oct 2019 12:45:48
UJ15023013TC - 1	AC2-B (0')		0.1708	ppb	1311	31 Oct 2019 12:48:22
CCV 19HG1626 10/31/19 - 1			(L)0.2% 0.0050	ppb	-350	31 Oct 2019 12:50:55
CCB 19HG1622 10/31/19 - 1			0.0106	ppb	-293	31 Oct 2019 12:53:25
UJ15023014TC - 1	AC2-B (2')		0.0497	ppb	98	31 Oct 2019 12:55:57
UJ15023015TC - 1	AC1-G (0')		0.1181	ppb	783	31 Oct 2019 12:58:28
CCV 19HG1626 10/31/19 - 1			(L)0.3% 0.0052	ppb	-348	31 Oct 2019 13:00:59
CCB 19HG1622 10/31/19 - 1			0.0044	ppb	-356	31 Oct 2019 13:03:29
CCV 19HG1626 10/31/19 - 1			97.1% 1.9424	ppb	19056	31 Oct 2019 15:30:53
CCB 19HG1622 10/31/19 - 1			-0.0501	ppb	-901	31 Oct 2019 15:33:24
UJ15022035TC - 1	AC7-I (2')		0.0692	ppb	294	31 Oct 2019 15:36:09
UJ15022036TC - 1	AC9-K (0')		0.0496	ppb	97	31 Oct 2019 15:38:40
UJ15022037TC - 1	AC9-K (2')		0.0479	ppb	80	31 Oct 2019 15:41:10
UJ15022038TC - 1	AC9-K (7')		0.0675	ppb	277	31 Oct 2019 15:43:41
UJ15022039TC - 1	AC9-I (0')		0.1287	ppb	890	31 Oct 2019 15:46:12
UJ15023001TC - 1	AC7-K (0')		0.0563	ppb	164	31 Oct 2019 15:48:44
UJ15023002TC - 1	AC7-K (2')		0.0508	ppb	109	31 Oct 2019 15:51:16
UJ15023003TC - 1	AC5-K (0')		0.0626	ppb	227	31 Oct 2019 15:53:48
UJ15023004TC - 1	AC5-K (2')		0.0756	ppb	358	31 Oct 2019 15:56:20
UJ15023005TC - 1	AC5-K (7')		0.1069	ppb	671	31 Oct 2019 15:58:51
CCV 19HG1626 10/31/19 - 1			97.8% 1.9563	ppb	19196	31 Oct 2019 16:01:22
CCB 19HG1622 10/31/19 - 1			-0.0282	ppb	-682	31 Oct 2019 16:03:52
UJ15023006TC - 1	AC3-K (0')		0.0926	ppb	528	31 Oct 2019 16:06:41
UJ15023006MSTC - 1	AC3-K (0')S		1.9945	ppb	19578	31 Oct 2019 16:09:12
UJ15023006MDTC - 1	AC3-K (0')SD		1.8316	ppb	17947	31 Oct 2019 16:11:42
UJ15023007TC - 1	AC3-K (2')		0.0950	ppb	552	31 Oct 2019 16:14:16
UJ15023008TC - 1	AC3-K (7')		0.1094	ppb	696	31 Oct 2019 16:16:49
UJ15023009TC - 1	AC4-D (0')		0.0824	ppb	426	31 Oct 2019 16:19:20
UJ15023010TC - 1	AC4-D (2')		0.1651	ppb	1254	31 Oct 2019 16:21:51
UJ15023011TC - 1	AC6-D (0')		0.2301	ppb	1905	31 Oct 2019 16:24:23
UJ15023012TC - 1	AC6-D (2')		0.3504	ppb	3110	31 Oct 2019 16:26:54
UJ15023013TC - 1	AC2-B (0')		0.1767	ppb	1370	31 Oct 2019 16:29:26
CCV 19HG1626 10/31/19 - 1			97.1% 1.9413	ppb	19045	31 Oct 2019 16:31:59
CCB 19HG1622 10/31/19 - 1			-0.0352	ppb	-752	31 Oct 2019 16:34:29
UJ15023014TC - 1	AC2-B (2')		0.0333	ppb	-66	31 Oct 2019 16:37:15
UJ15023015TC - 1	AC1-G (0')		0.1015	ppb	617	31 Oct 2019 16:39:47
UQ33810-001 - 1			0.0459	ppb	60	31 Oct 2019 16:42:18
UQ33810-002 - 1			1.9524	ppb	19157	31 Oct 2019 16:44:49
UJ25077-001 - 1			-0.0011	ppb	-411	31 Oct 2019 16:47:20
UJ25077-002 - 1			0.0586	ppb	187	31 Oct 2019 16:50:03
UJ25077-003 - 1			0.0395	ppb	-4	31 Oct 2019 16:52:34
UJ25077-004 - 1			0.0483	ppb	84	31 Oct 2019 16:55:05
UJ25077-005 - 1			0.0430	ppb	31	31 Oct 2019 16:57:36
UJ25077-006 - 1			0.0481	ppb	82	31 Oct 2019 17:00:08
CCV 19HG1626 10/31/19 - 1			96.9% 1.9382	ppb	19014	31 Oct 2019 17:02:40
CCB 19HG1622 10/31/19 - 1			-0.0483	ppb	-883	31 Oct 2019 17:05:10
UJ25077-007 - 1			0.0640	ppb	241	31 Oct 2019 17:07:53
UJ25077-008 - 1			0.0468	ppb	69	31 Oct 2019 17:10:25
UJ25077-009 - 1			0.0401	ppb	2	31 Oct 2019 17:12:56
UJ25077-010 - 1			0.0428	ppb	29	31 Oct 2019 17:15:28
UJ25077-012 - 1			0.0542	ppb	143	31 Oct 2019 17:17:59
UJ25077-013 - 1			0.0665	ppb	266	31 Oct 2019 17:20:30
UJ25077-014 - 1			0.0310	ppb	-89	31 Oct 2019 17:23:02
UJ25077-016 - 1			0.0659	ppb	260	31 Oct 2019 17:25:33
UJ25077-017 - 1			0.0645	ppb	246	31 Oct 2019 17:28:05
UJ25077-018 - 1			0.0517	ppb	118	31 Oct 2019 17:30:36
CCV 19HG1626 10/31/19 - 1			97.2% 1.9445	ppb	19077	31 Oct 2019 17:33:07
CCB 19HG1622 10/31/19 - 1			-0.0283	ppb	-683	31 Oct 2019 17:35:38
UJ25077-019 - 1			0.1118	ppb	720	31 Oct 2019 17:38:25
UJ25077-020 - 1			0.0959	ppb	561	31 Oct 2019 17:40:57
UJ25077-021 - 1			0.0587	ppb	188	31 Oct 2019 17:43:29
UJ25077-021S - 1			1.9815	ppb	19448	31 Oct 2019 17:46:01
UJ25077-021SD - 1			1.9712	ppb	19345	31 Oct 2019 17:48:32
UJ25077-022 - 1			0.0112	ppb	-287	31 Oct 2019 17:51:19
CCV 19HG1626 10/31/19 - 1			95.6% 1.9115	ppb	18747	31 Oct 2019 17:54:07
CCB 19HG1622 10/31/19 - 1			-0.0507	ppb	-907	31 Oct 2019 17:56:37

Raw Supportive Data

Analyst: RTL **Level 2 Analyst:** KSH2

Status: Level 2 review released

Matrix: Aqueous

Printed: 12/09/19 0800

Prep Batch: 33809

7470A-P - Mercury Preparation Linked: 7470A,245.1 and 7470A-P Draper

Start Date: 10/30/2019 1329

End Date: 10/30/2019 1529

Digestion Cup ID: 19-2156

Ext Solvent: H2SO4/1:1HNO3/KMnO4/K2S2O8/NaCl-NH2OH-HCl

Reagents Vol. (mL): 2.0, 2.0, 6.0, 3.2, 2.4

Hot Block ID: Hot Block #4

Chem ID: 19-1862, IM9719-01, IM9710-01, IM9706-01, IM9722-01

Start Temperature (°C): 93

Thermometer ID: 1136

Sample ID	QC Code	Client Sample ID	Run	Analysis Method	Initial Vol. (mL)	Spike ID	Spike Vol. (mL)	Final Vol. (mL)	Holding Time Expires	Analytical Due Date	Comments
UQ33809-001	MB	PBW	1	7470A	40.000		0.0	50			LCS/MS/MSD PIPET ID 315
UQ33809-002	LCS	LCS	1	7470A	40.000	19HG1620	0.8	50			
UJ24097-001	Sample	16C1	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-002	Sample	16MW8	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-003	Sample	16MW9	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-004	Sample	16WC1A	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-004MS	MS	16WC1AS	1	7470A	40.000	19HG1620	0.8	50			
UJ24097-004MD	MSD	16WC1ASD	1	7470A	40.000	19HG1620	0.8	50			
UJ24097-005	Sample	16WDUP	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-006	Sample	16WC1B	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-007	Sample	16-2	1	7470A	40.000		0.0	50	11/19/2019 2359	11/04/2019	
UJ24097-008	Sample	16-3	1	7470A	40.000		0.0	50	11/20/2019 2359	11/04/2019	
UJ24097-009	Sample	16-5	1	7470A	40.000		0.0	50	11/19/2019 2359	11/04/2019	
UJ24097-010	Sample	16WC2B	1	7470A	40.000		0.0	50	11/19/2019 2359	11/04/2019	
UJ24097-011	Sample	16SPRING	1	7470A	40.000		0.0	50	11/19/2019 2359	11/04/2019	
UQ33809-004	Standard	Conc = 0.0 mg/L	1	7470A	40.000		0.0	50			PB 33912

(end of report) **Total Samples: 11**

Analyst: RTL **Level 2 Analyst:** KSH2

Status: Level 2 review released

Matrix: ERROR

Printed: 12/09/19 0801

Prep Batch: 33912

7470A-P - Mercury Preparation Linked: 7470A,245.1 and 7470A-P Draper

Start Date: 10/30/2019 1355

End Date: 10/30/2019 1555

Digestion Cup ID: 19-2156

Ext Solvent: H2SO4/1:1HNO3/KMnO4/K2S2O8/NaCl-NH2OH-HCl

Reagents Vol. (mL): 2.0, 2.0, 6.0, 3.2, 2.4

Hot Block ID: Hot Block # 9

Chem ID: 19-1862, IM9719-01, IM9710-01, IM9706-01, IM9722-01

Start Temperature (°C): 93

Thermometer ID: 326394

Sample ID	QC Code	Client Sample ID	Run	Analysis Method	Initial Vol. (mL)	Spike ID	Spike Vol. (mL)	Final Vol. (mL)	Holding Time Expires	Analytical Due Date	Comments
UQ83912-004	Standard	Conc = 0.0 mg/L	1	245.1	40.000	19HG1622	0.0	50			CAL 0
UQ83912-104	Standard	Conc = 0.00010 mg/L	1	245.1	40.000	19HG1623	0.0	50			10/31/19
UQ83912-204	Standard	Conc = 0.00020 mg/L	1	245.1	40.000	19HG1624	0.0	50			10/31/19
UQ83912-304	Standard	Conc = 0.0010 mg/L	1	245.1	40.000	19HG1625	0.0	50			10/31/19
UQ83912-404	Standard	Conc = 0.0020 mg/L	1	245.1	40.000	19HG1626	0.0	50			10/31/19
UQ83912-504	Standard	Conc = 0.0050 mg/L	1	245.1	40.000	19HG1627	0.0	50			10/31/19
UQ83912-604	Standard	Conc = 0.0 mg/L	1	245.1	40.000	19HG1622	0.0	50			CCB
UQ83912-704	Standard	Conc = 0.0020 mg/L	1	245.1	40.000	19HG1626	0.0	50			CCV
UQ83912-804	Standard	Conc = 0.0 mg/L	1	245.1	40.000	19HG1622	0.0	50			ICB
UQ83912-904	Standard	Conc = 0.0020 mg/L	1	245.1	40.000	19HG1628	0.0	50			ICV

(end of report) **Total Samples: 0**

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Type I Data Package

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Project: RAAP - Radford, VA - HWMU16
Groundwater and Water Samples
Collected on 10/22/19-10/23/19

SDG# RAF48

GROUP	SAMPLE NUMBERS
2070949	1183606-1183620

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-18-27
AZ Cert. # AZ0780

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client.

Authorized by: Dana M Kauffman **Date:** **12/06/2019**

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Barbara Weyandt at (717) 556-7264.

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Sample Reference List for SDG Number RAF48
with a Data Package Type of I

11200 - Draper Aden Associates, Inc.
Project: RAAP - Radford, VA - HWMU16

Lab Sample Number	Client Sample ID	Collection Date	Date Received
1183606	16C1	10/23/2019 12:30	10/24/2019 10:05
1183607	16MW8	10/23/2019 08:20	10/24/2019 10:05
1183608	16MW9	10/23/2019 11:05	10/24/2019 10:05
1183609	16WC1A	10/23/2019 10:05	10/24/2019 10:05
1183610	16WC1A MS	10/23/2019 10:05	10/24/2019 10:05
1183611	16WC1A MSD	10/23/2019 10:05	10/24/2019 10:05
1183612	16WDUP	10/23/2019 10:15	10/24/2019 10:05
1183613	16WC1B	10/23/2019 09:20	10/24/2019 10:05
1183614	16-2	10/22/2019 12:20	10/24/2019 10:05
1183615	16-3	10/23/2019 11:50	10/24/2019 10:05
1183616	16-5	10/22/2019 10:35	10/24/2019 10:05
1183617	16WC2B	10/22/2019 11:35	10/24/2019 10:05
1183618	16SPRING	10/22/2019 10:45	10/24/2019 10:05
1183619	Trip Blank_1	10/22/2019 00:00	10/24/2019 10:05
1183620	Trip Blank_2	10/22/2019 00:00	10/24/2019 10:05

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Sample pH Log

SDG: RAF48

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1183606	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:02PM	2002
1183606	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:26:59PM	2002
1183606	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:01PM	2338
1183606	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:07PM	2338
1183607	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:26:59PM	2002
1183607	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:25:22PM	2338
1183607	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:25:04PM	2338
1183608	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:26:59PM	2002
1183608	038C	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/31/2019 8:04:03PM	29284
1183608	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:25:25PM	2338
1183608	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:42PM	2338
1183609	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:26:59PM	2002
1183609	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:25:28PM	2338
1183609	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:55PM	2338
1183610	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183610	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183610	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:04PM	2338
1183610	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:58PM	2338
1183611	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183611	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183611	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:25:57PM	2338
1183611	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:39PM	2338
1183612	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183612	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:15PM	2338
1183612	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:02PM	2338
1183613	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183613	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:27:05PM	2338
1183613	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:24PM	2338
1183614	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183614	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:35PM	2338
1183614	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:27:12PM	2338
1183615	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183615	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:27:00PM	2338
1183615	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:45PM	2338
1183616	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183616	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:40PM	2338
1183616	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:27PM	2338
1183617	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002

LLI Sample Number	Bottle Code	Actual pH	Exp. pH	*pH Check Code	Adj. pH	Adjusted Date	Adjusted Time	Preservative Added	Preservative Lot #	LLI Supplied Bottle?	Sulfide Present?	Corrective Substance	CS Lot #	**Chlorine Present?	Corrective Substance	CS Lot #	Record Date	Employee
1183617	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:52PM	2338
1183617	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:30PM	2338
1183618	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183618	153A		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:26:37PM	2338
1183618	153B		N/A	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	10/25/2019 1:29:13PM	2338
1183619	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002
1183620	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	10/30/2019 8:27:00PM	2002

***pH Check Code Key**
PK = Original container checked - pH is within the correct range. (No preservative was added)
PA = Original container checked - pH adjusted to correct range. (Preservative was added)
PV = Volatile container checked
PC = pH checked (unpreserved container)
SPK = Subsampled from an original container. Original container checked - pH is within correct range
SPA = Subsampled from an original container. Subsample container checked - pH adjusted to correct range.
SPC = Subsampled from an original container. pH checked (unpreserved container).
SUP = Subsampled from original container. Unable to be preserved due to the matrix of the sample.
UP = Unable to preserve due to matrix of the sample.
NA = Not applicable

****Chlorine Present Code Key**
NA = Chlorine Not Checked
Y = Chlorine Present
N = Chlorine Not Present

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01163 GC/MS VOA Water Prep

An undiluted aliquot of the water sample or a dilution of the sample is purged with an inert gas and the volatiles are collected on an adsorbent trap that is subsequently desorbed onto a gas chromatographic column.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 5030C, May 2003.

11996 VOCs- 25ml Water by 8260C/D

The water sample is purged and the volatile compounds are collected on a sorbent trap that is subsequently desorbed onto the GC/MS system for chromatographic and mass spectral analysis.

Reference: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

11010 8270D BNA Extraction

The sample aliquot is extracted with methylene chloride by either separatory funnel or liquid/liquid apparatus. Extraction is performed at both a pH of 11 and 2. The extract is concentrated prior to analysis.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3510C, Rev 3, December 1996

14241 SVOAs 8270D/E MINI

The sample extract is analyzed by capillary column Gas Chromatography/Mass Spectrometry.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 8270D, February 2007.

Analysis Reports / Field Chain of Custody

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ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Draper Aden Associates, Inc.
2206 South Main Street
Blacksburg VA 24060

Report Date: November 06, 2019 10:59

Project: RAAP - Radford, VA - HWMU16

Account #: 11200
Group Number: 2070949
SDG: RAF48
State of Sample Origin: VA

Electronic Copy To	Draper Aden Associates, Inc.	Attn: Janet Frazier
Electronic Copy To	Draper Aden Associates, Inc.	Attn: Kathy Olsen

Respectfully Submitted,

Barbara Weyandt

Barbara A. Weyandt
Specialist

(717) 556-7264

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.



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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
16C1 Grab Groundwater	10/23/2019 12:30	1183606
16MW8 Grab Groundwater	10/23/2019 08:20	1183607
16MW9 Grab Groundwater	10/23/2019 11:05	1183608
16WC1A Grab Groundwater	10/23/2019 10:05	1183609
16WC1A MS Grab Groundwater	10/23/2019 10:05	1183610
16WC1A MSD Grab Groundwater	10/23/2019 10:05	1183611
16WDUP Grab Groundwater	10/23/2019 10:15	1183612
16WC1B Grab Groundwater	10/23/2019 09:20	1183613
16-2 Grab Groundwater	10/22/2019 12:20	1183614
16-3 Grab Groundwater	10/23/2019 11:50	1183615
16-5 Grab Groundwater	10/22/2019 10:35	1183616
16WC2B Grab Groundwater	10/22/2019 11:35	1183617
16SPRING Grab Groundwater	10/22/2019 10:45	1183618
Trip Blank_1 Water	10/22/2019	1183619
Trip Blank_2 Water	10/22/2019	1183620

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

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Project Name: RAAP - Radford, VA - HWMU16
ELLE Group #: 2070949

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below.

Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set.

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

SW-846 8260C 25mL purge, GC/MS Volatiles

Sample #s: 1183610, 1183611

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

Sample #s: 1183606, 1183607, 1183608, 1183609, 1183612, 1183613, 1183614, 1183617, 1183618, 1183619, 1183620

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

Sample #s: 1183615

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated: Dichlorodifluoromethane.

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Sample #s: 1183616

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated: Trichlorofluoromethane.

Sample Description: **16C1 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 12:30
SDG#: RAF48-01

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183606
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	3.6	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	6.3	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	47	31	2.5
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 16:08	Jennifer K Howe	1
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 16:29	Jennifer K Howe	2.5
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 16:07	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H193031AA	10/30/2019 16:28	Jennifer K Howe	2.5
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 14:18	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16MW8 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 08:20
SDG#: RAF48-02

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183607
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 11:27	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 11:26	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 14:47	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16MW9 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 11:05
SDG#: RAF48-03

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183608
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	1.8	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	6.5	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	70	50	4
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 16:51	Jennifer K Howe	1
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AB	10/31/2019 15:34	Jennifer K Howe	4
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 16:50	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H193031AB	10/31/2019 15:33	Jennifer K Howe	4
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 15:16	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16WC1A Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 10:05
SDG#: RAF48-04BKG

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183609
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	1.7	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	4.6	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	23	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 14:20	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 14:19	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 15:45	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16WC1A MS Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 10:05
SDG#: RAF48-04MS

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183610
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	6.3	1.0	1
11996	2-Butanone	78-93-3	31	10	1
11996	Carbon Tetrachloride	56-23-5	5.2	1.0	1
11996	Chloroethane	75-00-3	7.0	1.0	1
11996	Chloromethane	74-87-3	5.1	1.0	1
11996	Dichlorodifluoromethane	75-71-8	3.9	1.0	1
11996	1,1-Dichloroethane	75-34-3	10	1.0	1
11996	1,1-Dichloroethene	75-35-4	6.3	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	27 E	13	1
11996	Ethylbenzene	100-41-4	5.6	1.0	1
11996	Freon 113	76-13-1	5.5	1.0	1
11996	Methylene Chloride	75-09-2	5.5	1.0	1
11996	Tetrachloroethene	127-18-4	5.5	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	5.6	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	5.5	1.0	1
11996	Trichloroethene	79-01-6	5.9	1.0	1
11996	Trichlorofluoromethane	75-69-4	4.6	1.0	1
11996	Xylene (Total)	1330-20-7	16	3.0	1
	Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.				
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	50	5	1
14241	2,4-Dinitrotoluene	121-14-2	49	10	1
14241	2,6-Dinitrotoluene	606-20-2	48	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 14:42	Jennifer K Howe	1
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 15:25	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 14:41	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H193031AA	10/30/2019 15:24	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 16:14	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16WC1A MSD Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 10:05
SDG#: RAF48-04MSD

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183611
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	6.2	1.0	1
11996	2-Butanone	78-93-3	31	10	1
11996	Carbon Tetrachloride	56-23-5	5.2	1.0	1
11996	Chloroethane	75-00-3	6.6	1.0	1
11996	Chloromethane	74-87-3	4.7	1.0	1
11996	Dichlorodifluoromethane	75-71-8	3.5	1.0	1
11996	1,1-Dichloroethane	75-34-3	10	1.0	1
11996	1,1-Dichloroethene	75-35-4	6.2	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	27 E	13	1
11996	Ethylbenzene	100-41-4	5.5	1.0	1
11996	Freon 113	76-13-1	5.4	1.0	1
11996	Methylene Chloride	75-09-2	5.4	1.0	1
11996	Tetrachloroethene	127-18-4	5.4	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	5.5	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	5.5	1.0	1
11996	Trichloroethene	79-01-6	5.9	1.0	1
11996	Trichlorofluoromethane	75-69-4	4.2	1.0	1
11996	Xylene (Total)	1330-20-7	16	3.0	1
	Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.				
GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	47	5	1
14241	2,4-Dinitrotoluene	121-14-2	50	10	1
14241	2,6-Dinitrotoluene	606-20-2	49	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 15:03	Jennifer K Howe	1
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 15:46	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 15:02	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	H193031AA	10/30/2019 15:45	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 16:43	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16WDUP Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 10:15
SDG#: RAF48-05FD

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183612
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	1.8	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	4.7	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	23	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 11:49	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 11:48	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/05/2019 17:12	Kira N Beck	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16WC1B Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 09:20
SDG#: RAF48-06

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183613
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 12:10	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 12:09	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/06/2019 00:30	Ashley R Transue	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16-2 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019 12:20
SDG#: RAF48-07

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183614
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 12:32	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 12:31	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19302WAY026	11/04/2019 16:53	William H Saadeh	1
11010	8270D BNA Extraction	SW-846 3510C	1	19302WAY026	10/29/2019 17:08	Osvaldo R Sanchez	1

Sample Description: **16-3 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 11:50
SDG#: RAF48-08

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183615
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated: Dichlorodifluoromethane.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **16-3 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/23/2019 11:50
SDG#: RAF48-08

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183615
ELLE Group #: 2070949
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 12:53	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 12:52	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19303WAG026	11/06/2019 00:58	Ashley R Transue	1
11010	8270D BNA Extraction	SW-846 3510C	1	19303WAG026	10/30/2019 17:53	Laura Duquette	1

Sample Description: **16-5 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019 10:35
SDG#: RAF48-09

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183616
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated: Trichlorofluoromethane.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: **16-5 Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019 10:35
SDG#: RAF48-09

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183616
ELLE Group #: 2070949
Matrix: Groundwater

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 13:15	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 13:14	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19302WAY026	11/04/2019 17:22	William H Saadeh	1
11010	8270D BNA Extraction	SW-846 3510C	1	19302WAY026	10/29/2019 17:08	Osvaldo R Sanchez	1

Sample Description: **16WC2B Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019 11:35
SDG#: RAF48-10

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183617
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 10	10	1
14241	2,6-Dinitrotoluene	606-20-2	< 10	10	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 13:37	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 13:36	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19302WAY026	11/04/2019 17:51	William H Saadeh	1
11010	8270D BNA Extraction	SW-846 3510C	1	19302WAY026	10/29/2019 17:08	Osvaldo R Sanchez	1

Sample Description: **16SPRING Grab Groundwater**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019 10:45
SDG#: RAF48-11

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183618
ELLE Group #: 2070949
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

GC/MS Semivolatiles	**SW-846 8270D**		**ug/l**	**ug/l**	
14241	Diethylphthalate	84-66-2	< 5	5	1
14241	2,4-Dinitrotoluene	121-14-2	< 11	11	1
14241	2,6-Dinitrotoluene	606-20-2	< 11	11	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 13:58	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 13:57	Jennifer K Howe	1
14241	3 SVOCs 8270D	SW-846 8270D	1	19302WAY026	11/04/2019 18:20	William H Saadeh	1
11010	8270D BNA Extraction	SW-846 3510C	1	19302WAY026	10/29/2019 17:08	Osvaldo R Sanchez	1

Sample Description: **Trip Blank_1 Water**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019
SDG#: RAF48-12TB

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183619
ELLE Group #: 2070949
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 10:44	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 10:43	Jennifer K Howe	1

Sample Description: **Trip Blank_2 Water**
2019-2nd Semiannual Monitoring Event
RAAP - Radford, VA - HWMU16

Project Name: **RAAP - Radford, VA - HWMU16**

Submittal Date/Time: 10/24/2019 10:05
Collection Date/Time: 10/22/2019
SDG#: RAF48-13TB

Draper Aden Associates, Inc.
ELLE Sample #: WW 1183620
ELLE Group #: 2070949
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C 25mL purge**		**ug/l**	**ug/l**	
11996	Benzene	71-43-2	< 1.0	1.0	1
11996	2-Butanone	78-93-3	< 10	10	1
11996	Carbon Tetrachloride	56-23-5	< 1.0	1.0	1
11996	Chloroethane	75-00-3	< 1.0	1.0	1
11996	Chloromethane	74-87-3	< 1.0	1.0	1
11996	Dichlorodifluoromethane	75-71-8	< 1.0	1.0	1
11996	1,1-Dichloroethane	75-34-3	< 1.0	1.0	1
11996	1,1-Dichloroethene	75-35-4	< 1.0	1.0	1
11996	Dimethyl ether	115-10-6	< 13	13	1
11996	Ethyl ether	60-29-7	< 13	13	1
11996	Ethylbenzene	100-41-4	< 1.0	1.0	1
11996	Freon 113	76-13-1	< 1.0	1.0	1
11996	Methylene Chloride	75-09-2	< 1.0	1.0	1
11996	Tetrachloroethene	127-18-4	< 1.0	1.0	1
11996	Tetrahydrofuran	109-99-9	< 25	25	1
11996	Toluene	108-88-3	< 1.0	1.0	1
11996	1,1,1-Trichloroethane	71-55-6	< 1.0	1.0	1
11996	Trichloroethene	79-01-6	< 1.0	1.0	1
11996	Trichlorofluoromethane	75-69-4	< 1.0	1.0	1
11996	Xylene (Total)	1330-20-7	< 3.0	3.0	1

Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C (25 ml)	SW-846 8260C 25mL purge	1	H193031AA	10/30/2019 11:06	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H193031AA	10/30/2019 11:05	Jennifer K Howe	1

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2070949
Reported: 11/06/2019 10:59

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: H193031AA	Sample number(s): 1183606-1183620	
Benzene	< 1.0	1.0
2-Butanone	< 10	10
Carbon Tetrachloride	< 1.0	1.0
Chloroethane	< 1.0	1.0
Chloromethane	< 1.0	1.0
Dichlorodifluoromethane	< 1.0	1.0
1,1-Dichloroethane	< 1.0	1.0
1,1-Dichloroethene	< 1.0	1.0
Dimethyl ether	< 13	13
Ethyl ether	< 13	13
Ethylbenzene	< 1.0	1.0
Freon 113	< 1.0	1.0
Methylene Chloride	< 1.0	1.0
Tetrachloroethene	< 1.0	1.0
Tetrahydrofuran	< 25	25
Toluene	< 1.0	1.0
1,1,1-Trichloroethane	< 1.0	1.0
Trichloroethene	< 1.0	1.0
Trichlorofluoromethane	< 1.0	1.0
Xylene (Total)	< 3.0	3.0
Batch number: H193031AB	Sample number(s): 1183608	
Ethyl ether	< 13	13
Batch number: 19302WAY026	Sample number(s): 1183614,1183616-1183618	
Diethylphthalate	< 5	5
2,4-Dinitrotoluene	< 10	10
2,6-Dinitrotoluene	< 10	10
Batch number: 19303WAG026	Sample number(s): 1183606-1183613,1183615	
Diethylphthalate	< 5	5
2,4-Dinitrotoluene	< 10	10
2,6-Dinitrotoluene	< 10	10

LCS/LCSD

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2070949
Reported: 11/06/2019 10:59

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H193031AA	Sample number(s): 1183606-1183620								
Benzene	5.00	5.55			111		80-120		
2-Butanone	37.5	30.32			81		59-141		
Carbon Tetrachloride	5.00	4.67			93		64-141		
Chloroethane	5.00	4.76			95		63-120		
Chloromethane	5.00	4.69			94		56-124		
Dichlorodifluoromethane	5.00	3.33			67		43-123		
1,1-Dichloroethane	5.00	5.44			109		74-120		
1,1-Dichloroethene	5.00	5.49			110		80-131		
Dimethyl ether	5.00	4.81			96		70-130		
Ethyl ether	5.00	4.83			97		72-121		
Ethylbenzene	5.00	5.25			105		80-120		
Freon 113	5.00	4.87			97		75-133		
Methylene Chloride	5.00	5.09			102		80-120		
Tetrachloroethene	5.00	4.91			98		80-120		
Tetrahydrofuran	25	20.3			81		67-137		
Toluene	5.00	5.21			104		80-120		
1,1,1-Trichloroethane	5.00	4.98			100		78-126		
Trichloroethene	5.00	5.26			105		80-120		
Trichlorofluoromethane	5.00	3.90			78		62-136		
Xylene (Total)	15	14.92			99		80-120		
Batch number: H193031AB	Sample number(s): 1183608								
Ethyl ether	5.00	5.11	5.00	4.97	102	99	72-121	3	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19302WAY026	Sample number(s): 1183614,1183616-1183618								
Diethylphthalate	50	42.38			85		48-113		
2,4-Dinitrotoluene	50	45.07			90		69-117		
2,6-Dinitrotoluene	50	47.47			95		63-122		
Batch number: 19303WAG026	Sample number(s): 1183606-1183613,1183615								
Diethylphthalate	50	43.63			87		48-113		
2,4-Dinitrotoluene	50	47.33			95		69-117		
2,6-Dinitrotoluene	50	47.1			94		63-122		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2070949
Reported: 11/06/2019 10:59

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: H193031AA	Sample number(s): 1183606-1183620 UNSPK: 1183609									
Benzene	0.279	5.00	6.27	5.00	6.24	120	119	80-120	0	30
2-Butanone	< 10	37.5	30.77	37.5	30.64	82	82	59-141	0	30
Carbon Tetrachloride	< 1.0	5.00	5.23	5.00	5.20	105	104	64-141	1	30
Chloroethane	1.73	5.00	7.01	5.00	6.58	106	97	63-120	6	30
Chloromethane	< 1.0	5.00	5.08	5.00	4.73	102	95	56-124	7	30
Dichlorodifluoromethane	0.0660	5.00	3.90	5.00	3.53	77	69	43-123	10	30
1,1-Dichloroethane	4.60	5.00	10.34	5.00	10.31	115	114	74-120	0	30
1,1-Dichloroethene	0.177	5.00	6.27	5.00	6.18	122	120	80-131	1	30
Dimethyl ether	< 13	5.00	5.48	5.00	5.74	110	115	70-130	5	30
Ethyl ether	22.63	5.00	26.64	5.00	26.98	80 (2)	87 (2)	72-121	1	30
Ethylbenzene	< 1.0	5.00	5.62	5.00	5.55	112	111	80-120	1	30
Freon 113	< 1.0	5.00	5.52	5.00	5.44	110	109	75-133	1	30
Methylene Chloride	0.0790	5.00	5.47	5.00	5.38	108	106	80-120	2	30
Tetrachloroethene	0.165	5.00	5.52	5.00	5.40	107	105	80-120	2	30
Tetrahydrofuran	1.71	25	21.99	25	22.38	81	83	67-137	2	30
Toluene	< 1.0	5.00	5.58	5.00	5.54	112	111	80-120	1	30
1,1,1-Trichloroethane	< 1.0	5.00	5.52	5.00	5.51	110	110	78-126	0	30
Trichloroethene	0.142	5.00	5.88	5.00	5.86	115	114	80-120	0	30
Trichlorofluoromethane	< 1.0	5.00	4.62	5.00	4.22	92	84	62-136	9	30
Xylene (Total)	< 3.0	15	16.04	15	15.83	107	106	80-120	1	30
Batch number: H193031AB	Sample number(s): 1183608 UNSPK: 1183609									
Ethyl ether	22.63	5.00	26.64	5.00	26.98	80 (2)	87 (2)	72-121	1	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 19303WAG026	Sample number(s): 1183606-1183613,1183615 UNSPK: 1183609									
Diethylphthalate	< 5	50.2	49.78	50.2	47.01	99	94	48-113	6	30
2,4-Dinitrotoluene	< 10	50.2	49.19	50.2	49.56	98	99	69-117	1	30
2,6-Dinitrotoluene	< 10	50.2	48.47	50.2	49.3	97	98	63-122	2	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2070949
Reported: 11/06/2019 10:59

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C (25 ml)
Batch number: H193031AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1183606	99	98	97	97
1183607	99	99	98	97
1183608	98	98	97	97
1183609	99	99	98	97
1183610	95	97	98	100
1183611	97	96	98	99
1183612	99	98	98	97
1183613	100	97	98	96
1183614	99	97	98	96
1183615	99	95	97	96
1183616	100	99	98	96
1183617	100	99	97	96
1183618	100	99	97	97
1183619	100	99	97	98
1183620	99	98	98	97
Blank	99	97	98	97
LCS	96	96	99	101
MS	95	97	98	100
MSD	97	96	98	99
Limits:	80-120	80-120	80-120	80-120

Analysis Name: 3 SVOCs 8270D
Batch number: 19302WAY026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1183614	80	74	83
1183616	79	66	80
1183617	67	66	83
1183618	71	63	84
Blank	107	66	81
LCS	66	83	88
Limits:	33-113	44-102	39-125

Analysis Name: 3 SVOCs 8270D
Batch number: 19303WAG026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1183606	80	70	94
1183607	78	64	60
1183608	72	62	91

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Draper Aden Associates, Inc. Group Number: 2070949
Reported: 11/06/2019 10:59

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 3 SVOCs 8270D
Batch number: 19303WAG026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1183609	68	55	72
1183610	83	78	91
1183611	83	77	86
1183612	81	67	78
1183613	73	64	43
1183615	72	61	93
Blank	63	51	83
LCS	75	68	86
MS	83	78	91
MSD	83	77	86
Limits:	33-113	44-102	39-125

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11200 | 2070949 | 1183606-20

CHAIN OF CUSTODY RECORD

Laboratory: Eurofins Lancaster Laboratories Environmental, LLC , 2425 New Holland Pike, Lancaster, PA, 17605-2425/ Barb Weyandt, Manager/ (717) 656-2300

Client: 0 **Attn:** 0 **Address:** 0 0 **Phone:** 0 **Fax:** 0 **Fax:** 0	**Consultant:** Draper Aden Associates **Attn:** Janet C. Frazier **Address:** 2206 South Main Street Blacksburg, Virginia 24060 **Phone:** (540) 552-0444 **Fax:** (540) 552-0291	**Sample Site:** RFAAP, Radford, Virginia **Location:** HWMU16 **Event:** 2019 - 2nd Semiannual Monitoring Event **DAA JN:** B03204-19A **Lab JN:**	**Project Specific (PS) or Batch (B) QC:** **Sample Collection for Project Complete?** YES **Carrier:** 12-754-02X-Y0-5758-7100 **Tracking Number:** 12-754-02X-Y0-5634-3893

Box 1: Matrix		Box 2: Preservative		Box 3: Filtered/Unfiltered	Box 4: Sample Type	Invoice
SW Surface Water	T Trip Blank	A HCL	E NeOH	F Filtered	G Grab	Copy to Consultant: YES
GW Groundwater	E Equipment Blank	B HNO_3	F ZnAc	U Unfiltered	C Composite	Bill: CLIENT OTHER
L Leachate	P Product	C H_2SO_4	G Other (Specify)	**Box 5: Sample Container Type**		Preserved and shipped on Ice: YES
S Soil	O Other	D $Na_2S_2O_3$	H None	P Plastic V VOA AG Amber Glass CG Clear Glass		

Box 4 - Sample Type					G	G						
Box 3 - Filtered/Unfiltered					U	U						
Required pH of Sample					<2	-						
Box 2 - Preservative					A	H						
Box 5 - Sample Container Type					3-40ml V	2-250 ML AG						
Sample ID	Date: 2019	Time	Box 1: Matrix	Number of Bottles	8260C/5030C - 25 ml purge	8270D/3510C (Semivolatiles)						
16C1	10/23	1230	GW	6	X	X						
16MW8	10/23	0820	GW	5	X	X						
16MW9	10/23	1105	GW	6	X	X						
16WC1A	10/23	1005	GW	15	X	X						
16WDUP	10/23	1015	GW	5	X	X						
16WC1B	10/23	0920	GW	5	X	X						
16-2	10/22	1220	GW	5	X	X						
16-3	10/23	1150	GW	5	X	X						
16-5	10/22	1035	GW	5	X	X						
16WC2B	10/22	1135	GW	5	X	X						
16SPRING	10/22	1045	GW	5	X	X						
Trip Blank1	10/22	—	GW	3	X							
Trip Blank2	10/22	—	GW	3	X							
~~Trip Blank3~~			GW	3	X							

GENERAL NOTES:

1. DAA EDD required.
2. Level 1 deliverables required.
3. See attached target analyte list.
4. 1 Trip Blank to be analyzed per day of sample collection.
5. Project required LOQs attached. Please report these LOQs.
6. Report to at or above project QL's.

VELAP required. JVE 9/19/19

*ERIS DELIVERABLE REQUIRED JVE 9/19/19

-additional VOA vial for dilution, if needed. JVE

-additional VOA vial for dilution, if needed.

USE FOR QC

1 per day. delete if not required. JVE 9/19/19

NOT USED JVE 10/23/19

Clients Special Instructions: Level 1 with edd. See attached target analyte list. See Genral Notes block.

Received by lab in Good Condition _____ Yes _____ No Custody Seal Intact _____ Yes _____ No Temperature upon arrival _____ Received on Ice _____ Yes _____ No

Describe problems, if any:

Sampler Name (Print): Ken Coldiron	Date: 10/22/19	#1 Relinquished by (Signature):	Date:	#2 Relinquished by (Signature):	Date:	Sample Storage Time Requested:
Sampler Signature:	Time: 0700	Company Name:	Time:	Company Name:	Time:	
Sampler Name (Print): Graham Snyder	Date: 10/22/19	#1 Received by (Signature):	Date:	#2 Received by (Signature):	Date: 10/24/19	30 DYS ORG/6 MTHS INORG
Sampler Signature:	Time: 0700	Company Name:	Time:	Company Name: ELLE	Time: 1005	

9/13/19 JVE

1/3

2070949

HWMU16
Radford Army Ammunition Plant (RFAAP)
Semiannual Monitoring Event
DAA JN: B03204-19A

ANALYTICAL METHOD: 8260C/5030C 25 ml purge volume
TYPE METHOD: GCMS
CLASS: VOLATILE

No.	ANALYTE	CAS RN	Required LOQ (µg/l)
1.	Carbon tetrachloride	56-23-5	1
2.	chloromethane ; (Methyl chloride)	74-87-3	1
3.	2-butanone (methyl ethyl ketone - MEK)	78-93-3	10
4.	1,1-dichloroethane	75-34-3	1
5.	Dichlorodifluoromethane	75-71-8	1
6.	Ethylbenzene	100-41-4	1
7.	Tetrachloroethene	127-18-4	1
8.	Toluene (methyl benzene)	108-88-3	1
9.	1,1,1-trichloroethane (methyl chloroform)	71-55-6	1
10.	Trichloroethene	79-01-6	1
11.	Trichlorofluoromethane (CFC-11)	75-69-4	1
12.	Xylenes (total)	1330-20-7	3
13	Chloroethane	75-00-3	1
14	Diethyl ether	60-29-7	12.5
15	Dimethyl ether	115-10-6	12.5
16	Methylene chloride	75-09-2	1
17	1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1
18	Benzene	71-43-2	1
19	1,1-Dichloroethene	75-35-4	1
20	Tetrahydrofuran		25

Notes
13-16 added 10/03. JCF
Revised 10/31/03 JCF

17 added 0704. Revised 7/28/2004
10/2008 JCF
18 added 04 2011. JCF
19 added 04 2014 KPO
20 added 04 2016 JCF

.t:\environmental\bbg\databases\raap\sample event set up\semi-annual events\hwmu-16\hwmu16-target analyte list-q as of 10-2018.doc
JCF 11/04/2004

2070949

25 ml purge volume

ANALYTICAL METHOD: 8270D/3510C
TYPE METHOD: GCMS
CLASS: SEMIVOLATILE

No.	ANALYTE	CAS RN	Required LOQ (µg/l)
1.	2,4-dinitrotoluene	121-14-2	10
2.	2,6-dinitrotoluene	606-20-2	10
3.	Diethylphthalate		5

10/13 – diethylphthate added

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Sample Administration Receipt Documentation Log

Doc Log ID: 264020

Group Number(s): 2070949

Client: Draper Aden

RFAAP Redford, VA

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Date:	10/24/2019
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	VA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCL
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Kristin Zeigler

Samples Chilled Details: RFAAP Redford, VA

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	192050133	1.2	IR	Wet	N	Bagged	N
2	192050133	2.5	IR	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17601
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Volatiles by GC/MS Data

Case Narrative/Conformance Summary

Volatiles by GC/MS

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

GC/MS Volatiles

Fraction: Volatiles by GC/MS

art

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1183606	16C1	X		1; 2.5	
1183607	16MW8	X		1	
1183608	16MW9	X		1; 4	
1183609	16WC1A	X		1	Unspiked
1183610	16WC1A MS	X		1	Matrix Spike
1183611	16WC1A MSD	X		1	Matrix Spike Duplicate
1183612	16WDUP	X		1	Field Duplicate Sample
1183613	16WC1B	X		1	
1183614	16-2	X		1	
1183615	16-3	X		1	
1183616	16-5	X		1	
1183617	16WC2B	X		1	
1183618	16SPRING	X		1	
1183619	Trip Blank_1	X		1	Trip Blank
1183620	Trip Blank_2	X		1	Trip Blank

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

GC/MS Volatiles

Fraction: Volatiles by GC/MS

SAMPLE ANALYSIS:

(Sample number(s): 1183616: Analysis: 11996)
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.
A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.
The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated:
Trichlorofluoromethane.

(Sample number(s): 1183615: Analysis: 11996)
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.
A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.
The referenced method allows a maximum of 20% of the analytes in the calibration to exceed the 20% Drift continuing calibration verification criteria. The reported concentration in the associated sample(s) is considered to be estimated. Therefore the result for the following analyte(s) is estimated:
Dichlorodifluoromethane.

(Sample number(s): 1183606-1183609, 1183612-1183614, 1183617-1183620: Analysis: 11996)
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.
A Report Limit Verification (RLV) standard is analyzed to confirm sensitivity of the instrument for samples with non-detect analytes associated with a continuing calibration verification standard exhibiting low response (outside the 20%D criteria). The RLV standard shows adequate sensitivity at or below the reporting limit.

(Sample number(s): 1183610-1183611: Analysis: 11996)
Project defined calibration criteria are not met. The calibration is compliant with the method defined criteria.

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Volatiles by GC/MS

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Quality Control Reference List
GC/MS Volatiles

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

Fraction: Volatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
8260C (25 ml)	H193031AA	VBLKH89	10/30/2019 09:09
		LCSH89	10/30/2019 08:26
		LCSH90	10/30/2019 08:48
		1183606	10/30/2019 16:08
		1183606	10/30/2019 16:29
		1183607	10/30/2019 11:27
		1183608	10/30/2019 16:51
		1183609 UNSPK	10/30/2019 14:20
		1183610 MS	10/30/2019 14:42
		1183610 MS	10/30/2019 15:25
		1183611 MSD	10/30/2019 15:03
		1183611 MSD	10/30/2019 15:46
		1183612	10/30/2019 11:49
		1183613	10/30/2019 12:10
		1183614	10/30/2019 12:32
		1183615	10/30/2019 12:53
		1183616	10/30/2019 13:15
		1183617	10/30/2019 13:37
		1183618	10/30/2019 13:58
		1183619	10/30/2019 10:44
		1183620	10/30/2019 11:06
8260C (25 ml)	H193031AB	VBLKH91	10/31/2019 10:09
		LCSH91	10/31/2019 08:18
		LCDH91	10/31/2019 08:39
		1183608	10/31/2019 15:34

Quality Control Summary
Method Blank
GC/MS Volatiles
SDG: RAF48
Matrix: LIQUID

Fraction: Volatiles by GC/MS

H193031AA / VBLKH89 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Dichlorodifluoromethane	10/30/19	N.D.	ug/l	0.05	1.0
Chloromethane	10/30/19	N.D.	ug/l	0.06	1.0
Chloroethane	10/30/19	N.D.	ug/l	0.07	1.0
Trichlorofluoromethane	10/30/19	N.D.	ug/l	0.05	1.0
Ethyl ether	10/30/19	N.D.	ug/l	0.05	13
1,1-Dichloroethene	10/30/19	N.D.	ug/l	0.06	1.0
Freon 113	10/30/19	N.D.	ug/l	0.06	1.0
Methylene Chloride	10/30/19	N.D.	ug/l	0.07	1.0
1,1-Dichloroethane	10/30/19	N.D.	ug/l	0.07	1.0
2-Butanone	10/30/19	N.D.	ug/l	0.6	10
Tetrahydrofuran	10/30/19	N.D.	ug/l	0.8	25
1,1,1-Trichloroethane	10/30/19	N.D.	ug/l	0.06	1.0
Carbon Tetrachloride	10/30/19	N.D.	ug/l	0.07	1.0
Benzene	10/30/19	N.D.	ug/l	0.05	1.0
Trichloroethene	10/30/19	N.D.	ug/l	0.06	1.0
Toluene	10/30/19	N.D.	ug/l	0.07	1.0
Tetrachloroethene	10/30/19	N.D.	ug/l	0.06	1.0
Ethylbenzene	10/30/19	N.D.	ug/l	0.06	1.0
Xylene (Total)	10/30/19	N.D.	ug/l	0.2	3.0
Dimethyl ether	10/30/19	N.D.	ug/l	0.04	13

H193031AB / VBLKH91 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Ethyl ether	10/31/19	N.D.	ug/l	0.05	13

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Quality Control Summary
Surrogates
GC/MS Volatiles
SDG: RAF48
Matrix: LIQUID

Fraction: Volatiles by GC/MS

H193031AA	1,2-Dichloroethane-d4		4-Bromofluorobenzene		Dibromofluoromethane		Toluene-d8	
	Spike Added	10 ug/l	Spike Added	10 ug/l	Spike Added	10 ug/l	Spike Added	10 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
VBLKH89	97	80 - 120	97	80 - 120	99	80 - 120	98	80 - 120
LCSH89	96	80 - 120	101	80 - 120	96	80 - 120	99	80 - 120
1183606	98	80 - 120	97	80 - 120	99	80 - 120	97	80 - 120
1183607	99	80 - 120	97	80 - 120	99	80 - 120	98	80 - 120
1183608	98	80 - 120	97	80 - 120	98	80 - 120	97	80 - 120
1183609 UNSPK	99	80 - 120	97	80 - 120	99	80 - 120	98	80 - 120
1183610 MS	97	80 - 120	100	80 - 120	95	80 - 120	98	80 - 120
1183611 MSD	96	80 - 120	99	80 - 120	97	80 - 120	98	80 - 120
1183612	98	80 - 120	97	80 - 120	99	80 - 120	98	80 - 120
1183613	97	80 - 120	96	80 - 120	100	80 - 120	98	80 - 120
1183614	97	80 - 120	96	80 - 120	99	80 - 120	98	80 - 120
1183615	95	80 - 120	96	80 - 120	99	80 - 120	97	80 - 120
1183616	99	80 - 120	96	80 - 120	100	80 - 120	98	80 - 120
1183617	99	80 - 120	96	80 - 120	100	80 - 120	97	80 - 120
1183618	99	80 - 120	97	80 - 120	100	80 - 120	97	80 - 120
1183619	99	80 - 120	98	80 - 120	100	80 - 120	97	80 - 120
1183620	98	80 - 120	97	80 - 120	99	80 - 120	98	80 - 120

GC/MS Volatiles

Fraction: Volatiles by GC/MS

UNSPK: 1183609 MS: 1183610 MSD: 1183611 **Analyte**	Batch: **H193031AA** (Sample number(s): 1183606-1183620) Batch: **H193031AB** (Sample number(s): 1183608) **Spike Added ug/l**	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Dichlorodifluoromethane	5.00	0.0660 J	3.90	3.53	77	69	43-123	10	30
Chloromethane	5.00	N.D.	5.08	4.73	102	95	56-124	7	30
Chloroethane	5.00	1.73	7.01	6.58	106	97	63-120	6	30
Trichlorofluoromethane	5.00	N.D.	4.62	4.22	92	84	62-136	9	30
Ethyl ether	5.00	22.63	26.64	26.98	80 (2)	87 (2)	72-121	1	30
1,1-Dichloroethene	5.00	0.177 J	6.27	6.18	122	120	80-131	1	30
Freon 113	5.00	N.D.	5.52	5.44	110	109	75-133	1	30
Methylene Chloride	5.00	0.0790 J	5.47	5.38	108	106	80-120	2	30
1,1-Dichloroethane	5.00	4.60	10.34	10.31	115	114	74-120	0	30
2-Butanone	37.5	N.D.	30.77	30.64	82	82	59-141	0	30
Tetrahydrofuran	25	1.71 J	21.99 J	22.38 J	81	83	67-137	2	30
1,1,1-Trichloroethane	5.00	N.D.	5.52	5.51	110	110	78-126	0	30
Carbon Tetrachloride	5.00	N.D.	5.23	5.20	105	104	64-141	1	30
Benzene	5.00	0.279 J	6.27	6.24	120	119	80-120	0	30
Trichloroethene	5.00	0.142 J	5.88	5.86	115	114	80-120	0	30
Toluene	5.00	N.D.	5.58	5.54	112	111	80-120	1	30
Tetrachloroethene	5.00	0.165 J	5.52	5.40	107	105	80-120	2	30
Ethylbenzene	5.00	N.D.	5.62	5.55	112	111	80-120	1	30
Xylene (Total)	15	N.D.	16.04	15.83	107	106	80-120	1	30
Dimethyl ether	5.00	N.D.	5.48 J	5.74 J	110	115	70-130	5	30

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: RAF48
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSH89	Batch: **H193031AA** (Sample number(s): 1183606-1183620)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Dichlorodifluoromethane	5.00	3.33	NA	67	NA	43-123	NA	NA
Chloromethane	5.00	4.69	NA	94	NA	56-124	NA	NA
Chloroethane	5.00	4.76	NA	95	NA	63-120	NA	NA
Trichlorofluoromethane	5.00	3.90	NA	78	NA	62-136	NA	NA
Ethyl ether	5.00	4.83 J	NA	97	NA	72-121	NA	NA
1,1-Dichloroethene	5.00	5.49	NA	110	NA	80-131	NA	NA
Freon 113	5.00	4.87	NA	97	NA	75-133	NA	NA
Methylene Chloride	5.00	5.09	NA	102	NA	80-120	NA	NA
1,1-Dichloroethane	5.00	5.44	NA	109	NA	74-120	NA	NA
2-Butanone	37.5	30.32	NA	81	NA	59-141	NA	NA
Tetrahydrofuran	25	20.3 J	NA	81	NA	67-137	NA	NA
1,1,1-Trichloroethane	5.00	4.98	NA	100	NA	78-126	NA	NA
Carbon Tetrachloride	5.00	4.67	NA	93	NA	64-141	NA	NA
Benzene	5.00	5.55	NA	111	NA	80-120	NA	NA
Trichloroethene	5.00	5.26	NA	105	NA	80-120	NA	NA
Toluene	5.00	5.21	NA	104	NA	80-120	NA	NA
Tetrachloroethene	5.00	4.91	NA	98	NA	80-120	NA	NA
Ethylbenzene	5.00	5.25	NA	105	NA	80-120	NA	NA
Xylene (Total)	15	14.92	NA	99	NA	80-120	NA	NA

LCS: LCSH90	Batch: **H193031AA** (Sample number(s): 1183606-1183620)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Dimethyl ether	5.00	4.81 J	NA	96	NA	70-130	NA	NA

LCS: LCSH91 LCSD: LCDH91	Batch: **H193031AB** (Sample number(s): 1183608)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
Ethyl ether	5.00	5.11 J	4.97 J	102	99	72-121	3	30

Fraction: Volatiles by GC/MS

11996: 8260C (25 ml) Analyte Name	Default MDL	Default LOQ	Units
Dichlorodifluoromethane	0.05	1.0	ug/l
Chloromethane	0.06	1.0	ug/l
Chloroethane	0.07	1.0	ug/l
Trichlorofluoromethane	0.05	1.0	ug/l
Ethyl ether	0.05	13	ug/l
1,1-Dichloroethene	0.06	1.0	ug/l
Freon 113	0.06	1.0	ug/l
Methylene Chloride	0.07	1.0	ug/l
1,1-Dichloroethane	0.07	1.0	ug/l
2-Butanone	0.6	10	ug/l
Tetrahydrofuran	0.8	25	ug/l
1,1,1-Trichloroethane	0.06	1.0	ug/l
Carbon Tetrachloride	0.07	1.0	ug/l
Benzene	0.05	1.0	ug/l
Trichloroethene	0.06	1.0	ug/l
Toluene	0.07	1.0	ug/l
Tetrachloroethene	0.06	1.0	ug/l
Ethylbenzene	0.06	1.0	ug/l
Xylene (Total)	0.2	3.0	ug/l
Dimethyl ether	0.04	13	ug/l

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hg05t05.d BFB Injection Date: 08/05/19

Instrument ID: HP19094 BFB Injection Time: 17:29

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.02
75	30.0 - 60.0% of mass 95	48.65
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.54
173	Less than 2.0% of mass 174	0.85 (0.86)1
174	Greater than 50.0% of mass 95	98.21
175	5.0 - 9.0% of mass 174	7.12 (7.25)1
176	Greater than 95.0%, but less than 101.0% of mass 174	97.06 (98.84)1
177	5.0 - 9.0% of mass 176	6.08 (6.26)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD25	hg05i01.d	08/05/19	18:05
02	VSTD10	hg05i02.d	08/05/19	18:26
03	VSTD5	hg05i03.d	08/05/19	18:47
04	VSTD2	hg05i04.d	08/05/19	19:09
05	VSTD1	hg05i05.d	08/05/19	19:30
06	VSTD.5	hg05i06.d	08/05/19	19:52
07	VSTD.2	hg05i07.d	08/05/19	20:13
08	VSTD25	hg05i11.d	08/05/19	21:39
09	VSTD10	hg05i12.d	08/05/19	22:00
10	ICVH00	hg05v02.d	08/05/19	22:21
11	VSTD5	hg05i13.d	08/05/19	23:04
12	VSTD2	hg05i14.d	08/05/19	23:25
13	VSTD1	hg05i15.d	08/05/19	23:47
14	VSTD.5	hg05i16.d	08/06/19	00:08
15	VSTD.2	hg05i17.d	08/06/19	00:30
16	ICVHSM	hg05v11.d	08/06/19	00:51

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hc30t02.d BFB Injection Date: 10/30/19

Instrument ID: HP19094 BFB Injection Time: 07:12

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.40
75	30.0 - 60.0% of mass 95	49.09
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.11
173	Less than 2.0% of mass 174	1.01 (1.16)1
174	Greater than 50.0% of mass 95	86.84
175	5.0 - 9.0% of mass 174	6.89 (7.93)1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.91 (100.081
177	5.0 - 9.0% of mass 176	5.35 (6.15)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD10	hc30c01.d	10/30/19	07:43
02	VSTD10	hc30c02.d	10/30/19	08:05
03	LCSH89	hc30l01.d	10/30/19	08:26
04	LCSH90	hc30l02.d	10/30/19	08:48
05	VBLKH89	hc30b01.d	10/30/19	09:09
06	RVLH89 - RVLH89	hc30r01.d	10/30/19	09:31
07	1183619	hc30s02.d	10/30/19	10:44
08	1183620	hc30s03.d	10/30/19	11:06
09	1183607	hc30s04.d	10/30/19	11:27
10	1183612	hc30s05.d	10/30/19	11:49
11	1183613	hc30s06.d	10/30/19	12:10
12	1183614	hc30s07.d	10/30/19	12:32
13	1183615	hc30s08.d	10/30/19	12:53
14	1183616	hc30s09.d	10/30/19	13:15
15	1183617	hc30s10.d	10/30/19	13:37
16	1183618	hc30s11.d	10/30/19	13:58
17	1183609	hc30s12.d	10/30/19	14:20
18	1183610MS	hc30s13.d	10/30/19	14:42
19	1183611MSD	hc30s14.d	10/30/19	15:03
20	1183610MS1	hc30s15.d	10/30/19	15:25
21	1183611MSD1	hc30s16.d	10/30/19	15:46
22	1183606	hc30s17.d	10/30/19	16:08

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hc30t02.d BFB Injection Date: 10/30/19

Instrument ID: HP19094 BFB Injection Time: 07:12

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.40
75	30.0 - 60.0% of mass 95	49.09
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.11
173	Less than 2.0% of mass 174	1.01 (1.16)1
174	Greater than 50.0% of mass 95	86.84
175	5.0 - 9.0% of mass 174	6.89 (7.93)1
176	Greater than 95.0%, but less than 101.0% of mass 174	86.91 (100.081
177	5.0 - 9.0% of mass 176	5.35 (6.15)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	1183606DL	hc30s18.d	10/30/19	16:29
24	1183608	hc30s19.d	10/30/19	16:51

FORM V VOA

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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hc31t01.d BFB Injection Date: 10/31/19

Instrument ID: HP19094 BFB Injection Time: 07:20

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.88
75	30.0 - 60.0% of mass 95	49.24
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.23
173	Less than 2.0% of mass 174	1.12 (1.21)1
174	Greater than 50.0% of mass 95	92.15
175	5.0 - 9.0% of mass 174	6.72 (7.29)1
176	Greater than 95.0%, but less than 101.0% of mass 174	90.43 (98.13)1
177	5.0 - 9.0% of mass 176	6.13 (6.77)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD10	hc31c01.d	10/31/19	07:56
02	LCSH90	hc31l01.d	10/31/19	08:18
03	LCSH91	hc31l31.d	10/31/19	08:18
04	LCDH90	hc31l02.d	10/31/19	08:39
05	LCDH91	hc31l32.d	10/31/19	08:39
06	RVLH90 - RVLH90	hc31x01.d	10/31/19	09:01
07	VBLKH90	hc31b02.d	10/31/19	10:09
08	VBLKH91	hc31b30.d	10/31/19	10:09
09	1184853RE	hc31s03.d	10/31/19	10:32
10	1184860DL	hc31s04.d	10/31/19	10:54
11	1187660	hc31s25.d	10/31/19	11:15
12	1190197	hc31s26.d	10/31/19	11:15
13	1184841	hc31s05.d	10/31/19	11:36
14	1187654	hc31s06.d	10/31/19	11:58
15	1187656	hc31s07.d	10/31/19	12:19
16	1187661	hc31s08.d	10/31/19	12:41
17	1187062	hc31s09.d	10/31/19	13:02
18	1186734	hc31s10.d	10/31/19	13:24
19	1186735	hc31s11.d	10/31/19	13:46
20	1186736	hc31s12.d	10/31/19	14:07
21	1186737	hc31s13.d	10/31/19	14:29
22	1186738	hc31s14.d	10/31/19	14:51

FORM V VOA

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hc31t01.d BFB Injection Date: 10/31/19

Instrument ID: HP19094 BFB Injection Time: 07:20

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.88
75	30.0 - 60.0% of mass 95	49.24
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.23
173	Less than 2.0% of mass 174	1.12 (1.21)1
174	Greater than 50.0% of mass 95	92.15
175	5.0 - 9.0% of mass 174	6.72 (7.29)1
176	Greater than 95.0%, but less than 101.0% of mass 174	90.43 (98.13)1
177	5.0 - 9.0% of mass 176	6.13 (6.77)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
23	1186739	hc31s15.d	10/31/19	15:12
24	1183608DL	hc31s31.d	10/31/19	15:34
25	1184843	hc31s16.d	10/31/19	15:55
26	1184843DL	hc31s17.d	10/31/19	16:17
27	1187658	hc31s18.d	10/31/19	16:38
28	1187658DL	hc31s19.d	10/31/19	17:00
29	1184678	hc31s20.d	10/31/19	17:21
30	1184683	hc31s21.d	10/31/19	17:43
31	1184683DL	hc31s22.d	10/31/19	18:05
32	1184680	hc31s23.d	10/31/19	18:26
33	1184680DL	hc31s24.d	10/31/19	18:48

FORM V VOA

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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date(s): 08/05/19 08/05/19

Heated Purge: (Y/N) Y Calibration Times: 18:05 20:13

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

LAB FILE ID: RRF0.2= hg05i07.d RRF0.5= hg05i06.d RRF 1 = hg05i05.d
RRF 2 = hg05i04.d RRF 5 = hg05i03.d RRF 10= hg05i02.d RRF 25= hg05i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Dichlorodifluoromethane	#0.5836	0.5200	0.5391	0.5068	0.5169	0.5131	0.4894	0.5241	6	AVG #
Chloromethane	#0.4335	0.3847	0.3873	0.3722	0.3789	0.3719	0.3580	0.3838	6	AVG #
Vinyl Chloride	#0.4080	0.3835	0.3904	0.3852	0.3879	0.3803	0.3674	0.3861	3	AVG #
1,3-Butadiene	0.3761	0.3101	0.2918	0.2963	0.3027	0.3013	0.2887	0.3096	10	AVG
Bromomethane	#0.3667	0.3484	0.3423	0.3309	0.3345	0.3352	0.3269	0.3407	4	AVG #
Chloroethane	#0.2328	0.2302	0.2321	0.2205	0.2277	0.2219	0.2170	0.2260	3	AVG #
Dichlorofluoromethane	0.5798	0.5215	0.4860	0.4937	0.4876	0.4537	0.4479	0.4957	9	AVG
Trichlorofluoromethane	#0.6625	0.6201	0.6004	0.6040	0.6217	0.5885	0.5806	0.6111	4	AVG #
Ethyl ether	0.1724	0.1732	0.1691	0.1661	0.1741	0.1707	0.1664	0.1703	2	AVG
Freon 123a	0.3287	0.3050	0.2989	0.3092	0.3128	0.3165	0.3051	0.3109	3	AVG
Acrolein	2.5130	2.3451	2.3397	2.2738	2.2522	2.4167	2.5399	2.3829	5	AVG
1,1-Dichloroethene	#0.2264	0.2084	0.2188	0.2167	0.2287	0.2331	0.2279	0.2228	4	AVG #
Freon 113	#0.2825	0.2567	0.2661	0.2776	0.2891	0.2929	0.2861	0.2787	5	AVG #
Acetone	#	3.4575	3.3060	2.9401	2.7510	2.9544	2.8626	3.0453	9	AVG #
Methyl Iodide	0.5632	0.5326	0.5243	0.5175	0.5304	0.5467	0.5280	0.5347	3	AVG
Carbon Disulfide	#0.8090	0.7197	0.7230	0.7086	0.7341	0.7548	0.7346	0.7405	5	AVG #
Allyl Chloride	0.4332	0.4098	0.3660	0.3604	0.3648	0.3610	0.3511	0.3780	8	AVG
Methyl Acetate	#15.095	12.196	10.138	9.8325	10.094	9.4495	10.356	11.023	18	AVG #
Methylene Chloride	#0.3436	0.2715	0.2641	0.2454	0.2414	0.2512	0.2424	0.2657	14	AVG #
t-Butyl Alcohol	1.0753	0.8547	1.0401	0.8683	0.8381	0.9630	0.8883	0.9326	10	AVG
Acrylonitrile	3.9113	3.7376	3.8193	3.7619	3.6648	3.9015	4.1528	3.8499	4	AVG
trans-1,2-Dichloroethene	#0.2798	0.2465	0.2495	0.2482	0.2537	0.2606	0.2525	0.2558	5	AVG #
Methyl Tertiary Butyl Ether	#0.5885	0.5779	0.5754	0.5688	0.5751	0.5914	0.5594	0.5766	2	AVG #
n-Hexane	0.4106	0.3601	0.3729	0.3839	0.3920	0.4057	0.3990	0.3892	5	AVG
1,1-Dichloroethane	#0.4627	0.4409	0.4505	0.4445	0.4550	0.4655	0.4526	0.4531	2	AVG #
di-Isopropyl Ether	0.8067	0.7689	0.7665	0.7633	0.7837	0.8084	0.7718	0.7813	2	AVG
2-Chloro-1,3-Butadiene	0.4366	0.4002	0.4050	0.4059	0.4261	0.4361	0.4308	0.4201	4	AVG
Ethyl t-butyl ether	0.8106	0.7160	0.7404	0.7327	0.7370	0.7568	0.7147	0.7440	4	AVG
cis-1,2-Dichloroethene	#0.3000	0.2818	0.2749	0.2831	0.2887	0.2941	0.2902	0.2875	3	AVG #
2,2-Dichloropropane	0.4302	0.4073	0.4043	0.3984	0.4083	0.4220	0.4097	0.4114	3	AVG
2-Butanone	#6.2080	5.4217	5.2847	4.9989	4.9058	5.1950	5.5738	5.3697	8	AVG #
Propionitrile	1.4409	1.3411	1.3733	1.3327	1.3278	1.3755	1.4239	1.3736	3	AVG
Methacrylonitrile	5.8706	5.2636	5.1821	5.2689	5.0890	5.5008	6.1283	5.4719	7	AVG
Bromochloromethane	0.1337	0.1352	0.1389	0.1342	0.1394	0.1378	0.1366	0.1365	2	AVG
Tetrahydrofuran	1.6121	1.4749	1.4399	1.4063	1.4046	1.4619	1.6156	1.4879	6	AVG
Chloroform	#0.5024	0.4663	0.4695	0.4592	0.4726	0.4844	0.4782	0.4761	3	AVG #
1,1,1-Trichloroethane	#0.4493	0.4288	0.4306	0.4329	0.4481	0.4589	0.4539	0.4432	3	AVG #
Cyclohexane	#0.4665	0.4420	0.4382	0.4510	0.4663	0.4740	0.4726	0.4586	3	AVG #
Cyclohexane(2)	#0.4273	0.3927	0.3857	0.4074	0.5039	0.4309	0.4341	0.4260	9	AVG #
Cyclohexane(3)	#0.1604	0.1372	0.1460	0.1445	0.1476	0.1506	0.1494	0.1480	5	AVG #
1,1-Dichloropropene	0.3591	0.3530	0.3523	0.3518	0.3619	0.3694	0.3685	0.3594	2	AVG
Carbon Tetrachloride	#0.4471	0.3957	0.3892	0.4040	0.4137	0.4288	0.4233	0.4145	5	AVG #
Isobutyl Alcohol	0.5040	0.4001	0.3922	0.3496	0.3332	0.3501	0.3429	0.3817	16	AVG
Benzene	#1.0495	0.9720	0.9886	0.9793	1.0155	1.0386	1.0357	1.0113	3	AVG #
1,2-Dichloroethane	#0.3169	0.2972	0.2749	0.2685	0.2752	0.2833	0.2781	0.2849	6	AVG #
t-Amyl methyl ether	0.7036	0.6635	0.6557	0.6561	0.6701	0.6841	0.6586	0.6702	3	AVG
n-Heptane	0.4175	0.4018	0.3997	0.4052	0.4218	0.4371	0.4444	0.4182	4	AVG
n-Butanol	0.3427	0.3123	0.3041	0.3078	0.3011	0.3112	0.2991	0.3112	5	AVG
Trichloroethene	#0.3054	0.2746	0.2736	0.2719	0.2822	0.2906	0.2904	0.2841	4	AVG #
Methylcyclohexane	#0.4538	0.5056	0.4907	0.4988	0.5169	0.5125	0.5187	0.4996	5	AVG #
1,2-Dichloropropane	#0.2686	0.2329	0.2425	0.2399	0.2480	0.2580	0.2522	0.2489	5	AVG #
Methyl Methacrylate	11.564	11.261	10.342	10.249	10.580	11.412	12.527	11.133	7	AVG

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

FORM VI VOA

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date(s): 08/05/19 08/05/19

Heated Purge: (Y/N) Y Calibration Times: 18:05 20:13

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

LAB FILE ID: RRF0.2= hg05i07.d RRF0.5= hg05i06.d RRF 1 = hg05i05.d
RRF 2 = hg05i04.d RRF 5 = hg05i03.d RRF 10= hg05i02.d RRF 25= hg05i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Dibromomethane	0.1454	0.1306	0.1318	0.1283	0.1306	0.1343	0.1332	0.1335	4	AVG
1,4-Dioxane		0.0695	0.0813	0.0970	0.0900	0.0859	0.0632	0.0812	16	AVG
Bromodichloromethane	#0.3557	0.3290	0.3373	0.3278	0.3406	0.3539	0.3557	0.3428	4	AVG #
2-Nitropropane	4.1575	3.8664	3.7542	3.7578	3.7305	4.0054	4.4093	3.9544	6	AVG
cis-1,3-Dichloropropene	#0.3808	0.3728	0.3836	0.3880	0.3925	0.4069	0.4121	0.3909	4	AVG #
4-Methyl-2-Pentanone	#14.750	12.968	12.874	12.820	12.948	13.740	15.188	13.612	7	AVG #
Toluene	#0.9123	0.8302	0.8351	0.8143	0.8515	0.8604	0.8431	0.8495	4	AVG #
trans-1,3-Dichloropropene	#0.4369	0.3994	0.4108	0.4071	0.4201	0.4347	0.4256	0.4192	3	AVG #
Ethyl Methacrylate	0.3306	0.3442	0.3281	0.3216	0.3392	0.3470	0.3347	0.3351	3	AVG
1,1,2-Trichloroethane	#0.2532	0.2121	0.2309	0.2214	0.2277	0.2269	0.2220	0.2277	6	AVG #
Tetrachloroethene	#0.4537	0.4077	0.4118	0.4213	0.4268	0.4371	0.4271	0.4265	4	AVG #
1,3-Dichloropropane	0.3955	0.3761	0.3789	0.3687	0.3738	0.3808	0.3698	0.3776	2	AVG
2-Hexanone	#10.408	9.1999	9.1872	9.0637	9.0429	9.4419	10.594	9.5625	7	AVG #
Dibromochloromethane	#0.3246	0.3045	0.3109	0.3162	0.3203	0.3338	0.3257	0.3194	3	AVG #
1,2-Dibromoethane	#0.2415	0.2270	0.2213	0.2228	0.2279	0.2359	0.2295	0.2294	3	AVG #
1-Chlorohexane	0.5987	0.5073	0.5038	0.4969	0.5012	0.5132	0.5062	0.5182	7	AVG
Chlorobenzene	#0.9949	0.9496	0.9665	0.9306	0.9677	0.9728	0.9606	0.9632	2	AVG #
1,1,1,2-Tetrachloroethane	0.3617	0.3493	0.3551	0.3581	0.3600	0.3688	0.3613	0.3592	2	AVG
Ethylbenzene	#1.7318	1.6394	1.6550	1.6497	1.6916	1.7140	1.6774	1.6799	2	AVG #
m+p-Xylene	#0.7084	0.6471	0.6540	0.6514	0.6703	0.6718	0.6632	0.6666	3	AVG #
o-Xylene	#0.6725	0.6243	0.6432	0.6386	0.6587	0.6657	0.6583	0.6516	3	AVG #
Styrene	#1.0792	1.0330	1.0275	1.0277	1.0664	1.0910	1.0891	1.0591	3	AVG #
Bromoform	#0.2029	0.1837	0.1913	0.1951	0.2023	0.2084	0.2085	0.1989	5	AVG #
Isopropylbenzene	#1.7539	1.6725	1.6816	1.6990	1.7757	1.8016	1.7850	1.7385	3	AVG #
1,1,2,2-Tetrachloroethane	#0.5166	0.4872	0.4615	0.4790	0.4831	0.5023	0.4936	0.4891	4	AVG #
Bromobenzene	0.8018	0.7361	0.7457	0.7327	0.7618	0.7790	0.7920	0.7642	4	AVG
trans-1,4-Dichloro-2-butene	5.6815	5.1960	5.2509	5.3262	5.5151	5.8810	6.7375	5.6554	9	AVG
1,2,3-Trichloropropane	0.1331	0.1482	0.1329	0.1296	0.1344	0.1387	0.1334	0.1358	5	AVG
n-Propylbenzene	3.7512	3.5373	3.4568	3.4918	3.6100	3.7135	3.6683	3.6041	3	AVG
2-Chlorotoluene	0.7741	0.7136	0.7254	0.7235	0.7449	0.7567	0.7526	0.7415	3	AVG
1,3,5-Trimethylbenzene	2.7041	2.5316	2.5563	2.5358	2.6304	2.7367	2.7179	2.6304	3	AVG
4-Chlorotoluene	0.8104	0.7549	0.7329	0.7463	0.7511	0.7758	0.7649	0.7623	3	AVG
tert-Butylbenzene	0.5867	0.5680	0.5514	0.5665	0.5805	0.6068	0.6064	0.5809	4	AVG
Pentachloroethane	0.5305	0.5392	0.5204	0.5121	0.5429	0.5495	0.5574	0.5360	3	AVG
1,2,4-Trimethylbenzene	2.7415	2.6824	2.6610	2.6117	2.7325	2.8111	2.8245	2.7235	3	AVG
sec-Butylbenzene	3.5259	3.2357	3.3447	3.3534	3.4995	3.6356	3.6355	3.4614	4	AVG
1,3-Dichlorobenzene	#1.4827	1.4460	1.4448	1.4358	1.5067	1.5484	1.5684	1.4904	4	AVG #
p-Isopropyltoluene	3.0004	2.7996	2.8869	2.8925	3.0063	3.1496	3.2071	2.9918	5	AVG
1,4-Dichlorobenzene	#1.5607	1.4724	1.4319	1.4061	1.4728	1.5053	1.5278	1.4824	4	AVG #
1,2,3-Trimethylbenzene	1.3254	1.2470	1.1810	1.1537	1.2032	1.2034	1.2235	1.2196	5	AVG
Benzyl Chloride	0.2274	0.2166	0.2297	0.2355	0.2449	0.2539	0.2560	0.2377	6	AVG
n-Butylbenzene	1.4262	1.3878	1.4262	1.4245	1.4904	1.5577	1.5959	1.4727	5	AVG
1,2-Dichlorobenzene	#1.3463	1.2821	1.2978	1.2983	1.3480	1.3881	1.3986	1.3370	3	AVG #
1,2-Dibromo-3-chloropropane	#3.0659	3.0305	2.8663	2.9802	3.0830	3.3746	3.8124	3.1732	10	AVG #
1,3,5-Trichlorobenzene	1.1316	1.1144	1.0859	1.1006	1.1622	1.2168	1.2662	1.1539	6	AVG
1,2,4-Trichlorobenzene	#0.9127	0.9330	0.9049	0.9229	0.9697	1.0368	1.0748	0.9650	7	AVG #
Hexachlorobutadiene	0.4894	0.4486	0.4585	0.4809	0.5084	0.5459	0.5717	0.5005	9	AVG
Naphthalene	1.7691	1.6435	1.6566	1.6664	1.6981	1.7824	1.7808	1.7138	4	AVG
1,2,3-Trichlorobenzene	0.8746	0.7924	0.7950	0.8008	0.8423	0.8915	0.9150	0.8445	6	AVG
Dibromofluoromethane	0.2752	0.2723	0.2713	0.2687	0.2701	0.2736	0.2723	0.2719	1	AVG
Dibromofluoromethane(2)	0.2758	0.2771	0.2758	0.2760	0.2744	0.2769	0.2782	0.2763	0	AVG

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date(s): 08/05/19 08/05/19

Heated Purge: (Y/N) Y Calibration Times: 18:05 20:13

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

LAB FILE ID: RRF0.2= hg05i07.d RRF0.5= hg05i06.d RRF 1 = hg05i05.d
RRF 2 = hg05i04.d RRF 5 = hg05i03.d RRF 10= hg05i02.d RRF 25= hg05i01.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
1,2-Dichloroethane-d4	0.0503	0.0513	0.0499	0.0492	0.0499	0.0493	0.0502	0.0500	1	AVG
1,2-Dichloroethane-d4(2)	0.2416	0.2435	0.2392	0.2412	0.2433	0.2422	0.2426	0.2419	1	AVG
1,2-Dichloroethane-d4(3)	0.0317	0.0327	0.0328	0.0316	0.0314	0.0319	0.0321	0.0320	2	AVG
Toluene-d8	1.2924	1.2854	1.2829	1.2713	1.2861	1.2685	1.2498	1.2766	1	AVG
Toluene-d8(2)	0.8169	0.8194	0.8178	0.8166	0.8230	0.8132	0.8082	0.8164	1	AVG
4-Bromofluorobenzene	0.4661	0.4669	0.4672	0.4626	0.4733	0.4710	0.4609	0.4669	1	AVG
4-Bromofluorobenzene(2)	0.4430	0.4415	0.4458	0.4461	0.4546	0.4483	0.4454	0.4464	1	AVG

Average %RSD 5

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem2/HP19094.i/19aug05i.b/hg05i01.d	VSTD025
/chem2/HP19094.i/19aug05i.b/hg05i02.d	VSTD010
/chem2/HP19094.i/19aug05i.b/hg05i03.d	VSTD005
/chem2/HP19094.i/19aug05i.b/hg05i04.d	VSTD002
/chem2/HP19094.i/19aug05i.b/hg05i05.d	VSTD001
/chem2/HP19094.i/19aug05i.b/hg05i06.d	VSTD0.5
/chem2/HP19094.i/19aug05i.b/hg05i07.d	VSTD0.2

Area Summary

File ID:

Internal Standard Name	hg05i01.d	hg05i02.d	hg05i03.d	hg05i04.d	hg05i05.d	hg05i06.d	hg05i07.d	Avg. Area	%RSD	In Spec
t-Butyl Alcohol-d10	100076	115368	119304	114851	114313	108663	106411	111284	6	Yes
Fluorobenzene	2031582	2071867	2050203	2013092	1980474	1948295	1935879	2004485	3	Yes
Chlorobenzene-d5	1676695	1661703	1622276	1596308	1568277	1541573	1526049	1598983	4	Yes
1,4-Dichlorobenzene-d4	921308	924602	919230	900092	878298	862213	848872	893516	3	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	hg05i01.d	hg05i02.d	hg05i03.d	hg05i04.d	hg05i05.d	hg05i06.d	hg05i07.d	Avg. RT
t-Butyl Alcohol-d10	4.476	4.440	4.440	4.428	4.421	4.434	4.458	4.442
Fluorobenzene	7.957	7.958	7.957	7.951	7.957	7.951	7.951	7.955
Chlorobenzene-d5	11.378	11.378	11.378	11.377	11.377	11.377	11.378	11.378
1,4-Dichlorobenzene-d4	13.243	13.243	13.243	13.243	13.243	13.243	13.243	13.243

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 08/05/2019 at 21:37.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 ICV Date: 08/05/19 Time: 22:21

Lab File ID: hg05v02.d Init. Calib. Date(s): 08/05/19 08/06/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
# Dichlorodifluoromethane	0.5241	0.4728	4.51	5	-10	#
# Chloromethane	0.3838	0.3710	4.83	5	-3	#
# Vinyl Chloride	0.3861	0.3839	4.97	5	-1	#
1,3-Butadiene	0.3096	0.3114	5.03	5	1	
# Bromomethane	0.3407	0.2996	4.40	5	-12	#
# Chloroethane	0.2260	0.2160	4.78	5	-4	#
Dichlorofluoromethane	0.4957	0.4697	4.74	5	-5	
# Trichlorofluoromethane	0.6111	0.5820	4.76	5	-5	#
Ethyl ether	0.1703	0.1530	4.49	5	-10	
Freon 123a	0.3109	0.3200	5.15	5	3	
Acrolein	2.3829	2.3767	37.40	37.5	0	
# 1,1-Dichloroethene	0.2228	0.2465	5.53	5	11	#
# Freon 113	0.2787	0.2838	5.09	5	2	#
# Acetone	3.0453	2.7848	34.29	37.5	-9	#
Methyl Iodide	0.5347	0.5108	4.78	5	-4	
# Carbon Disulfide	0.7405	0.7082	4.78	5	-4	#
Allyl Chloride	0.3780	0.3495	4.62	5	-8	
# Methyl Acetate	11.023	09.6700	4.39	5	-12	#
# Methylene Chloride	0.2657	0.2621	4.93	5	-1	#
t-Butyl Alcohol	0.9326	0.8152	43.71	50	-13	
Acrylonitrile	3.8499	4.0011	25.98	25	4	
# trans-1,2-Dichloroethene	0.2558	0.2687	5.25	5	5	#
# Methyl Tertiary Butyl Ether	0.5766	0.5555	4.82	5	-4	#
n-Hexane	0.3892	0.3940	5.06	5	1	
# 1,1-Dichloroethane	0.4531	0.4692	5.18	5	4	#
di-Isopropyl Ether	0.7813	0.7612	4.87	5	-3	
2-Chloro-1,3-Butadiene	0.4201	0.4219	5.02	5	0	
Ethyl t-butyl ether	0.7440	0.7142	4.80	5	-4	
# cis-1,2-Dichloroethene	0.2875	0.3214	5.59	5	12	#
2,2-Dichloropropane	0.4114	0.4421	5.37	5	7	
# 2-Butanone	5.3697	5.2086	36.38	37.5	-3	#
Propionitrile	1.3736	1.3401	36.58	37.5	-2	
Methacrylonitrile	5.4719	5.6982	39.05	37.5	4	
Bromochloromethane	0.1365	0.1299	4.76	5	-5	
Tetrahydrofuran	1.4879	1.5717	26.41	25	6	
# Chloroform	0.4761	0.5016	5.27	5	5	#

Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 ICV Date: 08/05/19 Time: 22:21

Lab File ID: hg05v02.d Init. Calib. Date(s): 08/05/19 08/06/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

	COMPOUND	$\overline{RRF}$	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	1,1,1-Trichloroethane	0.4432	0.4736	5.34	5	7	#
#	Cyclohexane	0.4586	0.4425	4.82	5	-4	#
	1,1-Dichloropropene	0.3594	0.3861	5.37	5	7	
#	Carbon Tetrachloride	0.4145	0.4410	5.32	5	6	#
	Isobutyl Alcohol	0.3817	0.3193	104.55	125	-16	
#	Benzene	1.0113	1.0631	5.26	5	5	#
#	1,2-Dichloroethane	0.2849	0.2931	5.14	5	3	#
	t-Amyl methyl ether	0.6702	0.6416	4.79	5	-4	
	n-Heptane	0.4182	0.4027	4.81	5	-4	
	n-Butanol	0.3112	0.2496	200.56	250	-20	
#	Trichloroethene	0.2841	0.3016	5.31	5	6	#
#	Methylcyclohexane	0.4996	0.4835	4.84	5	-3	#
#	1,2-Dichloropropane	0.2489	0.2655	5.33	5	7	#
	Methyl Methacrylate	11.1330	11.6779	5.24	5	5	
	Dibromomethane	0.1335	0.1368	5.13	5	3	
	1,4-Dioxane	0.0812	0.0537	82.71	125	-34	<-
#	Bromodichloromethane	0.3428	0.3702	5.40	5	8	#
	2-Nitropropane	3.9544	4.3108	5.45	5	9	
#	cis-1,3-Dichloropropene	0.3909	0.4130	5.28	5	6	#
#	4-Methyl-2-Pentanone	13.6120	14.6389	26.88	25	8	#
#	Toluene	0.8495	0.9014	5.31	5	6	#
#	trans-1,3-Dichloropropene	0.4192	0.4267	5.09	5	2	#
	Ethyl Methacrylate	0.3351	0.3197	4.77	5	-5	
#	1,1,2-Trichloroethane	0.2277	0.2393	5.25	5	5	#
#	Tetrachloroethene	0.4265	0.4645	5.45	5	9	#
	1,3-Dichloropropane	0.3776	0.3850	5.10	5	2	
#	2-Hexanone	9.5625	10.0120	26.18	25	5	#
#	Dibromochloromethane	0.3194	0.3412	5.34	5	7	#
#	1,2-Dibromoethane	0.2294	0.2413	5.26	5	5	#
	1-Chlorohexane	0.5182	0.5294	5.11	5	2	
#	Chlorobenzene	0.9632	1.0426	5.41	5	8	#
	1,1,1,2-Tetrachloroethane	0.3592	0.3849	5.36	5	7	
#	Ethylbenzene	1.6799	1.8053	5.37	5	7	#
#	m+p-Xylene	0.6666	0.7213	10.82	10	8	#
#	o-Xylene	0.6516	0.6928	5.32	5	6	#
#	Styrene	1.0591	1.1547	5.45	5	9	#

Compounds with required minimum RRF.
Maximum % Drift = 30 %

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 ICV Date: 08/05/19 Time: 22:21

Lab File ID: hg05v02.d Init. Calib. Date(s): 08/05/19 08/06/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

			ACTUAL	TRUE	%	
COMPOUND	$\overline{RRF}$	RRF	CONC.	CONC.	DRIFT	
# Bromoform	0.1989	0.2103	5.29	5	6	#
# Isopropylbenzene	1.7385	1.9041	5.48	5	10	#
# 1,1,2,2-Tetrachloroethane	0.4891	0.5091	5.21	5	4	#
Bromobenzene	0.7642	0.8230	5.38	5	8	
trans-1,4-Dichloro-2-butene	5.6554	6.1322	27.11	25	8	
1,2,3-Trichloropropane	0.1358	0.1460	5.38	5	8	
n-Propylbenzene	3.6041	3.9271	5.45	5	9	
2-Chlorotoluene	0.7415	0.8091	5.46	5	9	
1,3,5-Trimethylbenzene	2.6304	2.8519	5.42	5	8	
4-Chlorotoluene	0.7623	0.8157	5.35	5	7	
tert-Butylbenzene	0.5809	0.6304	5.43	5	9	
Pentachloroethane	0.5360	0.5428	5.06	5	1	
1,2,4-Trimethylbenzene	2.7235	2.8891	5.30	5	6	
sec-Butylbenzene	3.4614	3.7884	5.47	5	9	
# 1,3-Dichlorobenzene	1.4904	1.6162	5.42	5	8	#
p-Isopropyltoluene	2.9918	3.2905	5.50	5	10	
# 1,4-Dichlorobenzene	1.4824	1.6061	5.42	5	8	#
1,2,3-Trimethylbenzene	1.2196	1.2339	5.06	5	1	
Benzyl Chloride	0.2377	0.2330	4.90	5	-2	
n-Butylbenzene	1.4727	1.6208	5.50	5	10	
# 1,2-Dichlorobenzene	1.3370	1.4653	5.48	5	10	#
# 1,2-Dibromo-3-chloropropane	3.1732	3.7365	5.89	5	18	#
1,3,5-Trichlorobenzene	1.1539	1.2828	5.56	5	11	
# 1,2,4-Trichlorobenzene	0.9650	1.0766	5.58	5	12	#
Hexachlorobutadiene	0.5005	0.5797	5.79	5	16	
Naphthalene	1.7138	1.7613	5.14	5	3	
1,2,3-Trichlorobenzene	0.8445	0.9019	5.34	5	7	
			Average %Drift		7	

Compounds with required minimum RRF.
Maximum % Drift = 30 %

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date(s): 08/05/19 08/06/19

Heated Purge: (Y/N) Y Calibration Times: 21:39 00:30

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

LAB FILE ID: RRF0.2= hg05i17.d RRF0.5= hg05i16.d RRF 1 = hg05i15.d
RRF 2 = hg05i14.d RRF 5 = hg05i13.d RRF 10= hg05i12.d RRF 25= hg05i11.d

COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD
Dimethyl ether	0.4126	0.4044	0.3529	0.3773	0.3340	0.3398	0.2954	0.3595	12	AVG
Acetonitrile	1.6495	1.3159	1.1809	1.1073	1.0305	1.0926	1.0375	1.2020	18	AVG
Vinyl Acetate	0.4093	0.3661	0.3670	0.3669	0.3662	0.3777	0.3755	0.3755	4	AVG
Methyl Acrylate	0.1274	0.1166	0.1220	0.1223	0.1240	0.1258	0.1273	0.1236	3	AVG
1-Chlorobutane	0.5115	0.4787	0.4917	0.4929	0.4819	0.4929	0.5022	0.4931	2	AVG
Chloroacetonitrile	0.0063	0.0059	0.0060	0.0068	0.0066	0.0066	0.0074	0.0065	8	AVG
2-Chloroethyl vinyl ether	0.1116	0.1103	0.1162	0.1147	0.1136	0.1200	0.1197	0.1151	3	AVG
cis-1,4-Dichloro-2-butene	7.6481	8.4715	8.1424	7.5033	8.0080	9.1737	7.9215	8.1241	7	AVG
Cyclohexanone	0.3712	0.3985	0.3862	0.3830	0.3217	0.3590	0.3414	0.3659	7	AVG
Hexachloroethane	0.5958	0.5633	0.5861	0.5981	0.5976	0.6210	0.6467	0.6012	4	AVG

Average %RSD 7

Compounds with required minimum RRF.
All compounds must meet a maximum %RSD of 20.

FORM VI VOA

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Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem2/HP19094.i/19aug05i.b/hg05i11.d	VSTD025
/chem2/HP19094.i/19aug05i.b/hg05i12.d	VSTD010
/chem2/HP19094.i/19aug05i.b/hg05i13.d	VSTD005
/chem2/HP19094.i/19aug05i.b/hg05i14.d	VSTD002
/chem2/HP19094.i/19aug05i.b/hg05i15.d	VSTD001
/chem2/HP19094.i/19aug05i.b/hg05i16.d	VSTD0.5
/chem2/HP19094.i/19aug05i.b/hg05i17.d	VSTD0.2

Area Summary

File ID:

Internal Standard Name	hg05i11.d	hg05i12.d	hg05i13.d	hg05i14.d	hg05i15.d	hg05i16.d	hg05i17.d	Avg. Area	%RSD	In Spec
t-Butyl Alcohol-d10	108362	92363	102774	103041	88272	89111	87031	95851	9	Yes
Fluorobenzene	1918877	1931778	1923038	1905299	1893425	1897783	1899034	1909891	1	Yes
Chlorobenzene-d5	1569603	1565571	1537503	1501976	1487703	1478847	1499832	1520148	2	Yes
1,4-Dichlorobenzene-d4	867449	859547	857581	831755	822702	831889	827636	842651	2	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	hg05i11.d	hg05i12.d	hg05i13.d	hg05i14.d	hg05i15.d	hg05i16.d	hg05i17.d	Avg. RT
t-Butyl Alcohol-d10	4.422	4.440	4.428	4.428	4.428	4.410	4.428	4.426
Fluorobenzene	7.958	7.958	7.951	7.958	7.958	7.952	7.952	7.955
Chlorobenzene-d5	11.378	11.378	11.378	11.378	11.378	11.378	11.378	11.378
1,4-Dichlorobenzene-d4	13.243	13.243	13.243	13.243	13.243	13.243	13.243	13.243

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 08/12/2019 at 09:41.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 ICV Date: 08/06/19 Time: 00:51

Lab File ID: hg05v11.d Init. Calib. Date(s): 08/05/19 08/06/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

COMPOUND	$\overline{RRF}$	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT
Dimethyl ether	0.3595	0.3150	4.38	5	-12
Acetonitrile	1.2020	1.2225	38.14	37.5	2
Vinyl Acetate	0.3755	0.3479	11.58	12.5	-7
Methyl Acrylate	0.1236	0.1312	26.54	25	6
1-Chlorobutane	0.4931	0.4904	4.97	5	-1
Chloroacetonitrile	0.0065	0.0064	244.82	250	-2
2-Chloroethyl vinyl ether	0.1151	0.1149	4.99	5	0
cis-1,4-Dichloro-2-butene	8.1241	8.3082	12.78	12.5	2
Cyclohexanone	0.3659	0.3174	108.46	125	-13

Average %Drift 5

Compounds with required minimum RRF.
Maximum % Drift = 30 %

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Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP19094.i/19aug05i.b/hg05i07.d
/chem2/HP19094.i/19aug05i.b/hg05i06.d
/chem2/HP19094.i/19aug05i.b/hg05i05.d
/chem2/HP19094.i/19aug05i.b/hg05i04.d
/chem2/HP19094.i/19aug05i.b/hg05i03.d
/chem2/HP19094.i/19aug05i.b/hg05i02.d
/chem2/HP19094.i/19aug05i.b/hg05i01.d

File /chem2/HP19094.i/19aug05i.b/hg05i02.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP19094.i/19oct30a.b/hc30c01.d

RT Summary

Internal Standard Name	File ID: hc30c01.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	4.464	4.440	Yes
Fluorobenzene	7.951	7.958	Yes
Chlorobenzene-d5	11.378	11.378	Yes
1,4-Dichlorobenzene-d4	13.243	13.243	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: hc30c01.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	142644	115368	57684	230736	Yes
Fluorobenzene	1967991	2071867	1035934	4143734	Yes
Chlorobenzene-d5	1610732	1661703	830852	3323406	Yes
1,4-Dichlorobenzene-d4	839977	924602	462301	1849204	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

report generated on 10/30/2019 at 08:27

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/30/19 Time: 07:43

Lab File ID: hc30c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF10	CONC.	CONC.	DRIFT	
# Dichlorodifluoromethane	0.5241	0.3785	7.22	10	-28	#<-
# Chloromethane	0.3838	0.3693	9.62	10	-4	#
# Vinyl Chloride	0.3861	0.3584	9.28	10	-7	#
1,3-Butadiene	0.3096	0.3471	11.21	10	12	
# Bromomethane	0.3407	0.2740	8.04	10	-20	#
# Chloroethane	0.2260	0.2108	9.32	10	-7	#
Dichlorofluoromethane	0.4957	0.4573	9.22	10	-8	
# Trichlorofluoromethane	0.6111	0.4497	7.36	10	-26	#<-
Ethyl ether	0.1703	0.1713	10.06	10	1	
Freon 123a	0.3109	0.3282	10.56	10	6	
Acrolein	2.3829	0.6267	131.49	500	-74	<-
# 1,1-Dichloroethene	0.2228	0.2305	10.34	10	3	#
# Freon 113	0.2787	0.2804	10.06	10	1	#
# Acetone	3.0453	2.7950	91.78	100	-8	#
Methyl Iodide	0.5347	0.4932	9.23	10	-8	
# Carbon Disulfide	0.7405	0.7552	10.20	10	2	#
Allyl Chloride	0.3780	0.3346	8.85	10	-11	
# Methyl Acetate	11.023	06.4583	5.86	10	-41	#<-
# Methylene Chloride	0.2657	0.2525	9.50	10	-5	#
t-Butyl Alcohol	0.9326	1.0284	220.57	200	10	
Acrylonitrile	3.8499	3.4343	44.60	50	-11	
# trans-1,2-Dichloroethene	0.2558	0.2639	10.32	10	3	#
# Methyl Tertiary Butyl Ether	0.5766	0.5632	9.77	10	-2	#
n-Hexane	0.3892	0.4026	10.35	10	3	
# 1,1-Dichloroethane	0.4531	0.4843	10.69	10	7	#
di-Isopropyl Ether	0.7813	0.8196	10.49	10	5	
2-Chloro-1,3-Butadiene	0.4201	0.4411	10.50	10	5	
Ethyl t-butyl ether	0.7440	0.7362	9.89	10	-1	
# cis-1,2-Dichloroethene	0.2875	0.2985	10.38	10	4	#
2,2-Dichloropropane	0.4114	0.4021	9.77	10	-2	
# 2-Butanone	5.3697	4.3940	81.83	100	-18	#
Propionitrile	1.3736	1.3075	190.37	200	-5	
Methacrylonitrile	5.4719	4.4044	80.49	100	-20	
Bromochloromethane	0.1365	0.1221	8.94	10	-11	
Tetrahydrofuran	1.4879	1.2338	82.92	100	-17	
# Chloroform	0.4761	0.4914	10.32	10	3	#

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/30/19 Time: 07:43

Lab File ID: hc30c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

			ACTUAL	TRUE	%	
COMPOUND	RRF	RRF10	CONC.	CONC.	DRIFT	
# 1,1,1-Trichloroethane	0.4432	0.4300	9.70	10	-3	#
# Cyclohexane	0.4586	0.4794	10.45	10	5	#
# Cyclohexane(2)	0.4260	0.4155	9.75	10	-2	#
# Cyclohexane(3)	0.1480	0.1457	9.85	10	-2	#
1,1-Dichloropropene	0.3594	0.3753	10.44	10	4	
# Carbon Tetrachloride	0.4145	0.3783	9.13	10	-9	#
Isobutyl Alcohol	0.3817	0.3491	457.20	500	-9	
# Benzene	1.0113	1.0987	10.86	10	9	#
# 1,2-Dichloroethane	0.2849	0.2744	9.63	10	-4	#
t-Amyl methyl ether	0.6702	0.6480	9.67	10	-3	
n-Heptane	0.4182	0.4368	10.44	10	4	
n-Butanol	0.3112	0.2925	939.97	1000	-6	
# Trichloroethene	0.2841	0.2961	10.42	10	4	#
# Methylcyclohexane	0.4996	0.4766	9.54	10	-5	#
# 1,2-Dichloropropane	0.2489	0.2697	10.84	10	8	#
Methyl Methacrylate	11.133	08.3980	7.54	10	-25	<-
Dibromomethane	0.1335	0.1286	9.64	10	-4	
1,4-Dioxane	0.0812	0.0876	539.83	500	8	
# Bromodichloromethane	0.3428	0.3381	9.86	10	-1	#
2-Nitropropane	3.9544	2.8567	72.24	100	-28	<-
# cis-1,3-Dichloropropene	0.3909	0.3884	9.93	10	-1	#
# 4-Methyl-2-Pentanone	13.612	011.2832	82.89	100	-17	#
# Toluene	0.8495	0.8614	10.14	10	1	#
# trans-1,3-Dichloropropene	0.4192	0.3864	9.22	10	-8	#
Ethyl Methacrylate	0.3351	0.3225	9.62	10	-4	
# 1,1,2-Trichloroethane	0.2277	0.2182	9.58	10	-4	#
# Tetrachloroethene	0.4265	0.3993	9.36	10	-6	#
1,3-Dichloropropane	0.3776	0.3735	9.89	10	-1	
# 2-Hexanone	9.5625	7.6778	80.29	100	-20	#
# Dibromochloromethane	0.3194	0.2768	8.66	10	-13	#
# 1,2-Dibromoethane	0.2294	0.2138	9.32	10	-7	#
1-Chlorohexane	0.5182	0.4923	9.50	10	-5	
# Chlorobenzene	0.9632	0.9391	9.75	10	-3	#
1,1,1,2-Tetrachloroethane	0.3592	0.3353	9.33	10	-7	
# Ethylbenzene	1.6799	1.7155	10.21	10	2	#
# m+p-Xylene	0.6666	0.6510	19.53	20	-2	#

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/30/19 Time: 07:43

Lab File ID: hc30c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

	COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	o-Xylene	0.6516	0.6307	9.68	10	-3	#
#	Styrene	1.0591	1.0420	9.84	10	-2	#
#	Bromoform	0.1989	0.1624	8.17	10	-18	#
#	Isopropylbenzene	1.7385	1.7143	9.86	10	-1	#
#	1,1,2,2-Tetrachloroethane	0.4891	0.5100	10.43	10	4	#
	Bromobenzene	0.7642	0.7488	9.80	10	-2	
	trans-1,4-Dichloro-2-butene	5.6554	3.8452	67.99	100	-32	<-
	1,2,3-Trichloropropane	0.1358	0.1346	9.92	10	-1	
	n-Propylbenzene	3.6041	3.9679	11.01	10	10	
	2-Chlorotoluene	0.7415	0.7702	10.39	10	4	
	1,3,5-Trimethylbenzene	2.6304	2.7921	10.61	10	6	
	4-Chlorotoluene	0.7623	0.7901	10.36	10	4	
	tert-Butylbenzene	0.5809	0.5992	10.31	10	3	
	Pentachloroethane	0.5360	0.4759	8.88	10	-11	
	1,2,4-Trimethylbenzene	2.7235	2.8957	10.63	10	6	
	sec-Butylbenzene	3.4614	3.7343	10.79	10	8	
#	1,3-Dichlorobenzene	1.4904	1.5211	10.21	10	2	#
	p-Isopropyltoluene	2.9918	3.1349	10.48	10	5	
#	1,4-Dichlorobenzene	1.4824	1.4659	9.89	10	-1	#
	1,2,3-Trimethylbenzene	1.2196	1.1814	9.69	10	-3	
	Benzyl Chloride	0.2377	0.2215	9.32	10	-7	
	n-Butylbenzene	1.4727	1.6788	11.40	10	14	
#	1,2-Dichlorobenzene	1.3370	1.3485	10.09	10	1	#
#	1,2-Dibromo-3-chloropropane	3.1732	2.1658	6.83	10	-32	#<-
	1,3,5-Trichlorobenzene	1.1539	1.2189	10.56	10	6	
#	1,2,4-Trichlorobenzene	0.9650	1.0059	10.42	10	4	#
	Hexachlorobutadiene	0.5005	0.5481	10.95	10	10	
	Naphthalene	1.7138	1.6022	9.35	10	-7	
	1,2,3-Trichlorobenzene	0.8445	0.8305	9.83	10	-2	
	Dibromofluoromethane	0.2719	0.2622	9.64	10	-4	
	Dibromofluoromethane(2)	0.2763	0.2689	9.73	10	-3	
	1,2-Dichloroethane-d4	0.0500	0.0474	9.48	10	-5	
	1,2-Dichloroethane-d4(2)	0.2419	0.2365	9.77	10	-2	
	1,2-Dichloroethane-d4(3)	0.0320	0.0296	9.25	10	-7	
	Toluene-d8	1.2766	1.2459	9.76	10	-2	

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/30/19 Time: 07:43

Lab File ID: hc30c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT
Toluene-d8(2)	0.8164	0.7949	9.74	10	-3
4-Bromofluorobenzene	0.4669	0.4691	10.05	10	0
4-Bromofluorobenzene(2)	0.4464	0.4156	9.31	10	-7

Average %Drift 8

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

Lancaster Laboratories
Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP19094.i/19aug05i.b/hg05i17.d
/chem2/HP19094.i/19aug05i.b/hg05i16.d
/chem2/HP19094.i/19aug05i.b/hg05i15.d
/chem2/HP19094.i/19aug05i.b/hg05i14.d
/chem2/HP19094.i/19aug05i.b/hg05i13.d
/chem2/HP19094.i/19aug05i.b/hg05i12.d
/chem2/HP19094.i/19aug05i.b/hg05i11.d

File /chem2/HP19094.i/19aug05i.b/hg05i12.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP19094.i/19oct30a.b/hc30c02.d

RT Summary

Internal Standard Name	File ID: hc30c02.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	4.470	4.440	Yes
Fluorobenzene	7.958	7.958	Yes
Chlorobenzene-d5	11.378	11.378	Yes
1,4-Dichlorobenzene-d4	13.243	13.243	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: hc30c02.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	142874	92363	46182	184726	Yes
Fluorobenzene	1981876	1931778	965889	3863556	Yes
Chlorobenzene-d5	1612721	1565571	782786	3131142	Yes
1,4-Dichlorobenzene-d4	834085	859547	429774	1719094	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/30/19 Time: 08:05

Lab File ID: hc30c02.d Init. Calib. Date(s): 08/05/19 08/06/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT	
Dimethyl ether	0.3595	0.3411	9.73	10	-3	
Acetonitrile	1.2020	1.0461	348.10	400	-13	
Vinyl Acetate	0.3755	0.3524	9.38	10	-6	
Methyl Acrylate	0.1236	0.1356	54.84	50	10	
1-Chlorobutane	0.4931	0.5522	11.20	10	12	
Chloroacetonitrile	0.0065	0.0092	710.69	500	42	
2-Chloroethyl vinyl ether	0.1151	0.1225	10.64	10	6	
cis-1,4-Dichloro-2-butene	8.1241	4.0867	10.06	20	-50	<-
Cyclohexanone	0.3659	0.3510	479.71	500	-4	

Average %Drift 16

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

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Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

/chem2/HP19094.i/19aug05i.b/hg05i07.d
/chem2/HP19094.i/19aug05i.b/hg05i06.d
/chem2/HP19094.i/19aug05i.b/hg05i05.d
/chem2/HP19094.i/19aug05i.b/hg05i04.d
/chem2/HP19094.i/19aug05i.b/hg05i03.d
/chem2/HP19094.i/19aug05i.b/hg05i02.d
/chem2/HP19094.i/19aug05i.b/hg05i01.d

File /chem2/HP19094.i/19aug05i.b/hg05i02.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP19094.i/19oct31a.b/hc31c01.d

RT Summary

Internal Standard Name	File ID: hc31c01.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	4.470	4.440	Yes
Fluorobenzene	7.958	7.958	Yes
Chlorobenzene-d5	11.378	11.378	Yes
1,4-Dichlorobenzene-d4	13.243	13.243	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

Internal Standard Name	File ID: hc31c01.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	139429	115368	57684	230736	Yes
Fluorobenzene	1938468	2071867	1035934	4143734	Yes
Chlorobenzene-d5	1617373	1661703	830852	3323406	Yes
1,4-Dichlorobenzene-d4	855712	924602	462301	1849204	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments: _____

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/31/19 Time: 07:56

Lab File ID: hc31c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

	COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	Dichlorodifluoromethane	0.5241	0.4099	7.82	10	-22	#<-
#	Chloromethane	0.3838	0.3919	10.21	10	2	#
#	Vinyl Chloride	0.3861	0.3757	9.73	10	-3	#
	1,3-Butadiene	0.3096	0.3205	10.35	10	4	
#	Bromomethane	0.3407	0.2815	8.26	10	-17	#
#	Chloroethane	0.2260	0.2204	9.75	10	-2	#
	Dichlorofluoromethane	0.4957	0.5359	10.81	10	8	
#	Trichlorofluoromethane	0.6111	0.4671	7.64	10	-24	#<-
	Ethyl ether	0.1703	0.1847	10.84	10	8	
	Freon 123a	0.3109	0.3211	10.33	10	3	
	Acrolein	2.3829	0.7671	160.96	500	-68	<-
#	1,1-Dichloroethene	0.2228	0.2195	9.85	10	-2	#
#	Freon 113	0.2787	0.2688	9.64	10	-4	#
#	Acetone	3.0453	2.8717	94.30	100	-6	#
	Methyl Iodide	0.5347	0.4666	8.73	10	-13	
#	Carbon Disulfide	0.7405	0.7263	9.81	10	-2	#
	Allyl Chloride	0.3780	0.3759	9.94	10	-1	
#	Methyl Acetate	11.023	07.2779	6.60	10	-34	#<-
#	Methylene Chloride	0.2657	0.2484	9.35	10	-7	#
	t-Butyl Alcohol	0.9326	1.0343	221.83	200	11	
	Acrylonitrile	3.8499	3.5403	45.98	50	-8	
#	trans-1,2-Dichloroethene	0.2558	0.2528	9.88	10	-1	#
#	Methyl Tertiary Butyl Ether	0.5766	0.5563	9.65	10	-4	#
	n-Hexane	0.3892	0.3865	9.93	10	-1	
#	1,1-Dichloroethane	0.4531	0.4723	10.42	10	4	#
	di-Isopropyl Ether	0.7813	0.8080	10.34	10	3	
	2-Chloro-1,3-Butadiene	0.4201	0.4280	10.19	10	2	
	Ethyl t-butyl ether	0.7440	0.7199	9.68	10	-3	
#	cis-1,2-Dichloroethene	0.2875	0.2884	10.03	10	0	#
	2,2-Dichloropropane	0.4114	0.3882	9.44	10	-6	
#	2-Butanone	5.3697	4.5768	85.23	100	-15	#
	Propionitrile	1.3736	1.3470	196.12	200	-2	
	Methacrylonitrile	5.4719	4.4771	81.82	100	-18	
	Bromochloromethane	0.1365	0.1291	9.46	10	-5	
	Tetrahydrofuran	1.4879	1.2526	84.19	100	-16	
#	Chloroform	0.4761	0.4737	9.95	10	-1	#

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/31/19 Time: 07:56

Lab File ID: hc31c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

	COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	1,1,1-Trichloroethane	0.4432	0.4085	9.22	10	-8	#
#	Cyclohexane	0.4586	0.4654	10.15	10	1	#
#	Cyclohexane(2)	0.4260	0.3968	9.31	10	-7	#
#	Cyclohexane(3)	0.1480	0.1409	9.53	10	-5	#
	1,1-Dichloropropene	0.3594	0.3628	10.09	10	1	
#	Carbon Tetrachloride	0.4145	0.3606	8.70	10	-13	#
	Isobutyl Alcohol	0.3817	0.3626	474.97	500	-5	
#	Benzene	1.0113	1.0731	10.61	10	6	#
#	1,2-Dichloroethane	0.2849	0.2727	9.57	10	-4	#
	t-Amyl methyl ether	0.6702	0.6361	9.49	10	-5	
	n-Heptane	0.4182	0.4222	10.09	10	1	
	n-Butanol	0.3112	0.3048	979.45	1000	-2	
#	Trichloroethene	0.2841	0.2821	9.93	10	-1	#
#	Methylcyclohexane	0.4996	0.5157	10.32	10	3	#
#	1,2-Dichloropropane	0.2489	0.2660	10.69	10	7	#
	Methyl Methacrylate	11.1330	8.5203	7.65	10	-23	<-
	Dibromomethane	0.1335	0.1266	9.49	10	-5	
	1,4-Dioxane	0.0812	0.0805	495.85	500	-1	
#	Bromodichloromethane	0.3428	0.3327	9.71	10	-3	#
	2-Nitropropane	3.9544	2.8869	73.00	100	-27	<-
#	cis-1,3-Dichloropropene	0.3909	0.3761	9.62	10	-4	#
#	4-Methyl-2-Pentanone	13.6120	11.5615	84.93	100	-15	#
#	Toluene	0.8495	0.8095	9.53	10	-5	#
#	trans-1,3-Dichloropropene	0.4192	0.3733	8.90	10	-11	#
	Ethyl Methacrylate	0.3351	0.3150	9.40	10	-6	
#	1,1,2-Trichloroethane	0.2277	0.2115	9.29	10	-7	#
#	Tetrachloroethene	0.4265	0.3797	8.90	10	-11	#
	1,3-Dichloropropane	0.3776	0.3599	9.53	10	-5	
#	2-Hexanone	9.5625	7.9495	83.13	100	-17	#
#	Dibromochloromethane	0.3194	0.2668	8.35	10	-16	#
#	1,2-Dibromoethane	0.2294	0.2087	9.10	10	-9	#
	1-Chlorohexane	0.5182	0.4621	8.92	10	-11	
#	Chlorobenzene	0.9632	0.8934	9.27	10	-7	#
	1,1,1,2-Tetrachloroethane	0.3592	0.3194	8.89	10	-11	
#	Ethylbenzene	1.6799	1.6297	9.70	10	-3	#
#	m+p-Xylene	0.6666	0.6134	18.40	20	-8	#

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/31/19 Time: 07:56

Lab File ID: hc31c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

	COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT	
#	o-Xylene	0.6516	0.5961	9.15	10	-9	#
#	Styrene	1.0591	0.9915	9.36	10	-6	#
#	Bromoform	0.1989	0.1584	7.96	10	-20	#
#	Isopropylbenzene	1.7385	1.6165	9.30	10	-7	#
#	1,1,2,2-Tetrachloroethane	0.4891	0.4846	9.91	10	-1	#
	Bromobenzene	0.7642	0.7058	9.24	10	-8	
	trans-1,4-Dichloro-2-butene	5.6554	4.0695	71.96	100	-28	<-
	1,2,3-Trichloropropane	0.1358	0.1327	9.78	10	-2	
	n-Propylbenzene	3.6041	3.7003	10.27	10	3	
	2-Chlorotoluene	0.7415	0.7216	9.73	10	-3	
	1,3,5-Trimethylbenzene	2.6304	2.6007	9.89	10	-1	
	4-Chlorotoluene	0.7623	0.7303	9.58	10	-4	
	tert-Butylbenzene	0.5809	0.5472	9.42	10	-6	
	Pentachloroethane	0.5360	0.4873	9.09	10	-9	
	1,2,4-Trimethylbenzene	2.7235	2.7059	9.94	10	-1	
	sec-Butylbenzene	3.4614	3.4743	10.04	10	0	
#	1,3-Dichlorobenzene	1.4904	1.4159	9.50	10	-5	#
	p-Isopropyltoluene	2.9918	2.9295	9.79	10	-2	
#	1,4-Dichlorobenzene	1.4824	1.3865	9.35	10	-6	#
	1,2,3-Trimethylbenzene	1.2196	1.2115	9.93	10	-1	
	Benzyl Chloride	0.2377	0.2134	8.98	10	-10	
	n-Butylbenzene	1.4727	1.5688	10.65	10	7	
#	1,2-Dichlorobenzene	1.3370	1.2619	9.44	10	-6	#
#	1,2-Dibromo-3-chloropropane	3.1732	2.1177	6.67	10	-33	#<-
	1,3,5-Trichlorobenzene	1.1539	1.1234	9.74	10	-3	
#	1,2,4-Trichlorobenzene	0.9650	0.9300	9.64	10	-4	#
	Hexachlorobutadiene	0.5005	0.5047	10.08	10	1	
	Naphthalene	1.7138	1.5108	8.82	10	-12	
	1,2,3-Trichlorobenzene	0.8445	0.7837	9.28	10	-7	
	Dibromofluoromethane	0.2719	0.2607	9.59	10	-4	
	Dibromofluoromethane(2)	0.2763	0.2665	9.65	10	-4	
	1,2-Dichloroethane-d4	0.0500	0.0484	9.69	10	-3	
	1,2-Dichloroethane-d4(2)	0.2419	0.2383	9.85	10	-2	
	1,2-Dichloroethane-d4(3)	0.0320	0.0302	9.43	10	-6	
	Toluene-d8	1.2766	1.2450	9.75	10	-2	

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP19094 Calibration Date: 10/31/19 Time: 07:56

Lab File ID: hc31c01.d Init. Calib. Date(s): 08/05/19 08/05/19

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: RXI-624SILM.25

COMPOUND	RRF	RRF10	ACTUAL CONC.	TRUE CONC.	% DRIFT
Toluene-d8(2)	0.8164	0.7936	9.72	10	-3
4-Bromofluorobenzene	0.4669	0.4741	10.16	10	2
4-Bromofluorobenzene(2)	0.4464	0.4142	9.28	10	-7

Average %Drift 8

Compounds with required minimum RRF.
All compounds must meet a maximum % Drift of 20.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hc30c01.d Date Analyzed: 10/30/19

Instrument ID: HP19094 Time Analyzed: 07:43

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	142644	4.464	1967991	7.951	1610732	11.378	839977	13.243
UPPER LIMIT	285288	4.964	3935982	8.451	3221464	11.878	1679954	13.743
LOWER LIMIT	71322	3.964	983996	7.451	805366	10.878	419988	12.743
LAB SAMPLE ID								
01 LCSH89	143300	4.482	2003360	7.957	1603498	11.378	841689	13.243
02 LCSH90	141299	4.476	1988852	7.957	1584313	11.377	818496	13.243
03 VBLKH89	142768	4.452	1944651	7.957	1565331	11.371	815815	13.243
04 RVLH89 - RV	139393	4.470	1942053	7.951	1558692	11.378	820034	13.243
05 1183619	133053	4.464	1867741	7.958	1529030	11.378	801090	13.243
06 1183620	131744	4.464	1887846	7.957	1511951	11.377	790351	13.243
07 1183607	133044	4.452	1891470	7.957	1523806	11.377	794691	13.243
08 1183612	123276	4.464	1845280	7.958	1493653	11.378	779738	13.243
09 1183613	126973	4.470	1852317	7.951	1501077	11.372	784422	13.243
10 1183614	124927	4.464	1854939	7.957	1499943	11.377	779813	13.243
11 1183615	126057	4.458	1840758	7.951	1503853	11.371	775250	13.243
12 1183616	126285	4.476	1833429	7.958	1487670	11.378	784095	13.243
13 1183617	125620	4.464	1843480	7.952	1498268	11.372	781282	13.243
14 1183618	124789	4.452	1844614	7.951	1501637	11.372	778737	13.243
15 1183609	127951	4.458	1864793	7.951	1505381	11.371	786070	13.243
16 1183610MS	137970	4.476	1958047	7.958	1582039	11.378	834502	13.243
17 1183611MSD	142396	4.458	1999056	7.951	1625016	11.378	853001	13.243
18 1183610MS1	135155	4.464	1937473	7.958	1556753	11.378	811238	13.243
19 1183611MSD1	133199	4.464	1894989	7.951	1548518	11.372	801874	13.243
20 1183606	132566	4.458	1888889	7.951	1534476	11.372	803628	13.243
21 1183606DL	130027	4.483	1863226	7.958	1522961	11.378	795147	13.243
22 1183608	133368	4.458	1886389	7.951	1532887	11.372	803884	13.243

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hc31c01.d Date Analyzed: 10/31/19

Instrument ID: HP19094 Time Analyzed: 07:56

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA)		IS2(FBZ)		IS3(CBZ)		IS4(DCB)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	139429	4.470	1938468	7.958	1617373	11.378	855712	13.243
UPPER LIMIT	278858	4.970	3876936	8.458	3234746	11.878	1711424	13.743
LOWER LIMIT	69714	3.970	969234	7.458	808686	10.878	427856	12.743
LAB SAMPLE ID								
01 LCSH90	146875	4.476	1967691	7.957	1631132	11.378	854182	13.243
02 LCSH91	146875	4.476	1967691	7.957	1631132	11.378	854182	13.243
03 LCDH90	147943	4.458	1995398	7.958	1654774	11.372	867790	13.243
04 LCDH91	147943	4.458	1995398	7.958	1654774	11.372	867790	13.243
05 RVLH90 - RV	143705	4.470	1935737	7.951	1608694	11.378	839860	13.243
06 VBLKH90	140496	4.470	1863531	7.957	1563925	11.378	812588	13.243
07 VBLKH91	140496	4.470	1863531	7.957	1563925	11.378	812588	13.243
08 1184853RE	62066 *	4.519	1837745	7.951	1545538	11.378	833072	13.243
09 1184860DL	115818	4.501	1860014	7.957	1563068	11.378	812574	13.243
10 1187660	121082	4.489	1821175	7.958	1534356	11.372	810972	13.243
11 1190197	121082	4.489	1821175	7.958	1534356	11.372	810972	13.243
12 1184841	122181	4.476	1809265	7.951	1529796	11.378	800603	13.243
13 1187654	125815	4.476	1814033	7.951	1552496	11.378	828452	13.243
14 1187656	129401	4.482	1817117	7.957	1534762	11.378	818982	13.243
15 1187661	130158	4.464	1807057	7.952	1526409	11.372	796149	13.243
16 1187062	136726	4.476	1827073	7.951	1540502	11.371	811642	13.243
17 1186734	132865	4.476	1807682	7.952	1531327	11.372	805820	13.243
18 1186735	126905	4.458	1809914	7.951	1534782	11.371	808792	13.243
19 1186736	132157	4.458	1810074	7.958	1538187	11.378	804015	13.243
20 1186737	133127	4.458	1807789	7.951	1539987	11.372	804941	13.243
21 1186738	134567	4.470	1780056	7.958	1507457	11.378	796431	13.243
22 1186739	129931	4.464	1776226	7.951	1515477	11.377	797972	13.243

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hc31c01.d Date Analyzed: 10/31/19

Instrument ID: HP19094 Time Analyzed: 07:56

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) CAP

	IS1(TBA) AREA #	RT #	IS2(FBZ) AREA #	RT #	IS3(CBZ) AREA #	RT #	IS4(DCB) AREA #	RT #
12 HOUR STD	139429	4.470	1938468	7.958	1617373	11.378	855712	13.243
UPPER LIMIT	278858	4.970	3876936	8.458	3234746	11.878	1711424	13.743
LOWER LIMIT	69714	3.970	969234	7.458	808686	10.878	427856	12.743
LAB SAMPLE ID								
23 1183608DL	125149	4.482	1778074	7.957	1506220	11.378	801896	13.243
24 1184843	124623	4.495	1800387	7.958	1504315	11.372	799432	13.243
25 1184843DL	127444	4.458	1795894	7.957	1512300	11.378	785382	13.243
26 1187658	122719	4.495	1833975	7.958	1554985	11.378	854477	13.243
27 1187658DL	129244	4.470	1856896	7.952	1576593	11.372	841590	13.243
28 1184678	119006	4.476	1843674	7.951	1561716	11.371	812603	13.243
29 1184683	131815	4.476	1880259	7.957	1622053	11.378	894967	13.243
30 1184683DL	139636	4.452	1939369	7.951	1637736	11.371	880829	13.243
31 1184680	140966	4.458	1950973	7.952	1638231	11.372	899549	13.243
32 1184680DL	138582	4.464	1956935	7.951	1640537	11.372	873032	13.243

IS1 (TBA)=t-Butyl Alcohol-d10
IS2 (FBZ)=Fluorobenzene
IS3 (CBZ)=Chlorobenzene-d5
IS4 (DCB)=1,4-Dichlorobenzene-d4

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag values outside QC limits with an asterisk
* Values outside of QC limits.

FORM VIII VOA

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Sample Data

Volatiles by GC/MS

F4801 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183606

Data file: /chem2/HP19094.i/19oct30a.b/hc30s17.d Injection date and time: **30-OCT-2019 16:08**
Data file Sample Info. Line: F4801;1183606;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9145; 9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.006)	471	65	132566	(-7)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1888889	(-4)	10.00	
97) Chlorobenzene-d5	11.371	(0.006)	1605	117	1534476	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	803628	(-4)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.055	(0.001)	113	506682	9.864	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.513	(0.002)	102	92592	9.804	98%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1901149	9.705	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	694642	9.696	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.081	(0.000)	85	8952M	0.090	0.09		J	0.05	1
4) Dimethyl ether	(2)	2.136	(0.002)	45	619368	9.122	9.12		J	0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)	2.824	(0.001)	64	153106	3.586	3.59			0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.410	(0.000)	59	1560266	48.508	48.51		E	0.05	13
15) 1,1-Dichloroethene	(2)	3.745	(0.000)	96	8439	0.200	0.20		J	0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)	4.452	(0.000)	84	52281	1.042	1.04			0.07	1
33) 1,1-Dichloroethane	(2)	5.537	(0.000)	63	535759	6.260	6.26			0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)	6.702	(-0.000)	71	42001	10.647	10.65		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.086	(-0.000)	97	26584	0.318	0.32		J	0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)	7.543	(0.001)	78	68926	0.361	0.36		J	0.05	1
67) Trichloroethene	(2)	8.427	(0.000)	95	11145	0.208	0.21		J	0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)	10.548	(0.000)	166	14309	0.219	0.22		J	0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

M = Compound was manually integrated. E = Compound concentration above calibration range.

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25. Target 3.5 esignature user ID: sej02002

F4801 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183606

Data file: /chem2/HP19094.i/19oct30a.b/hc30s17.d Injection date and time: **30-OCT-2019 16:08**
Data file Sample Info. Line: F4801;1183606;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

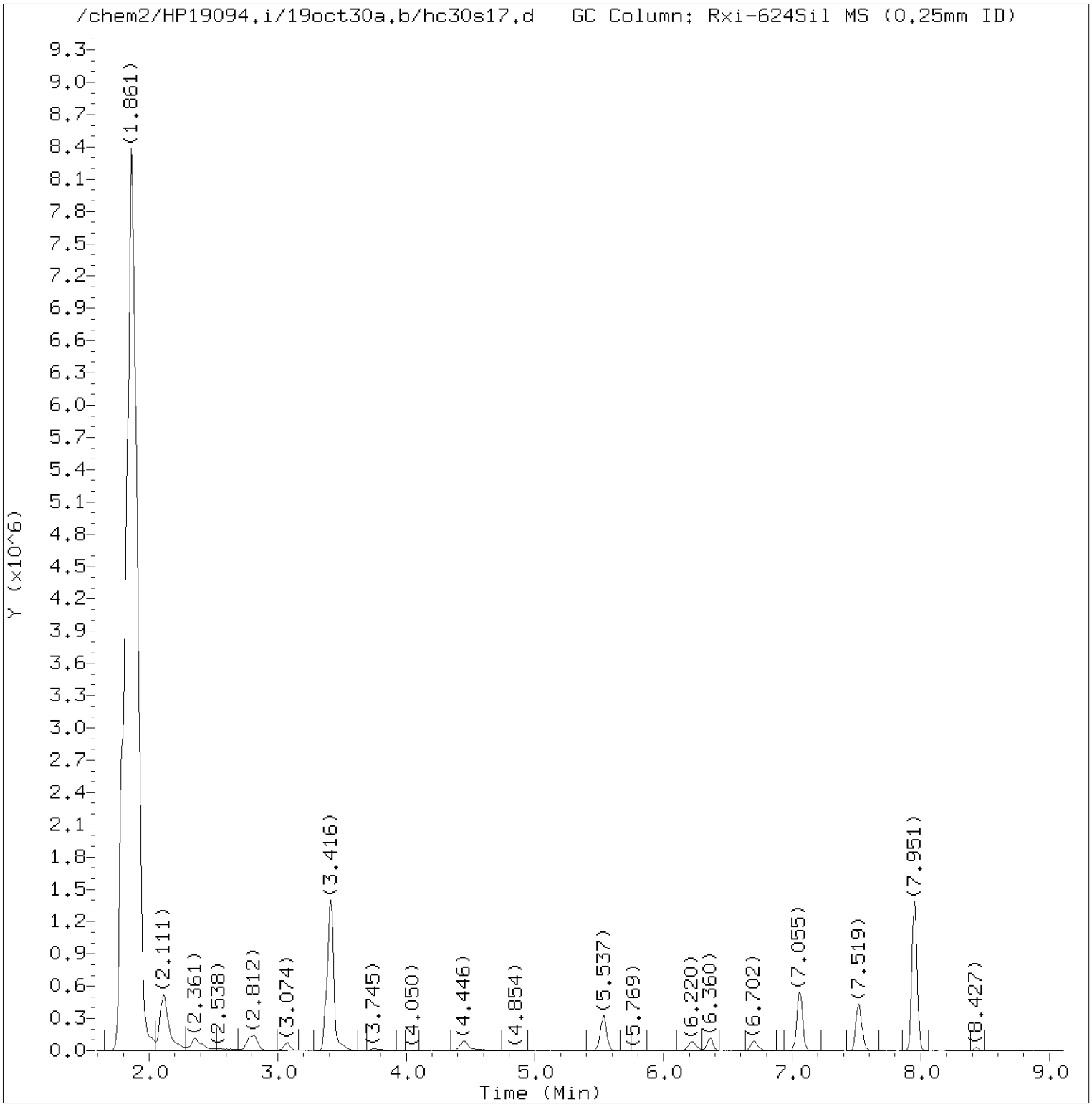
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

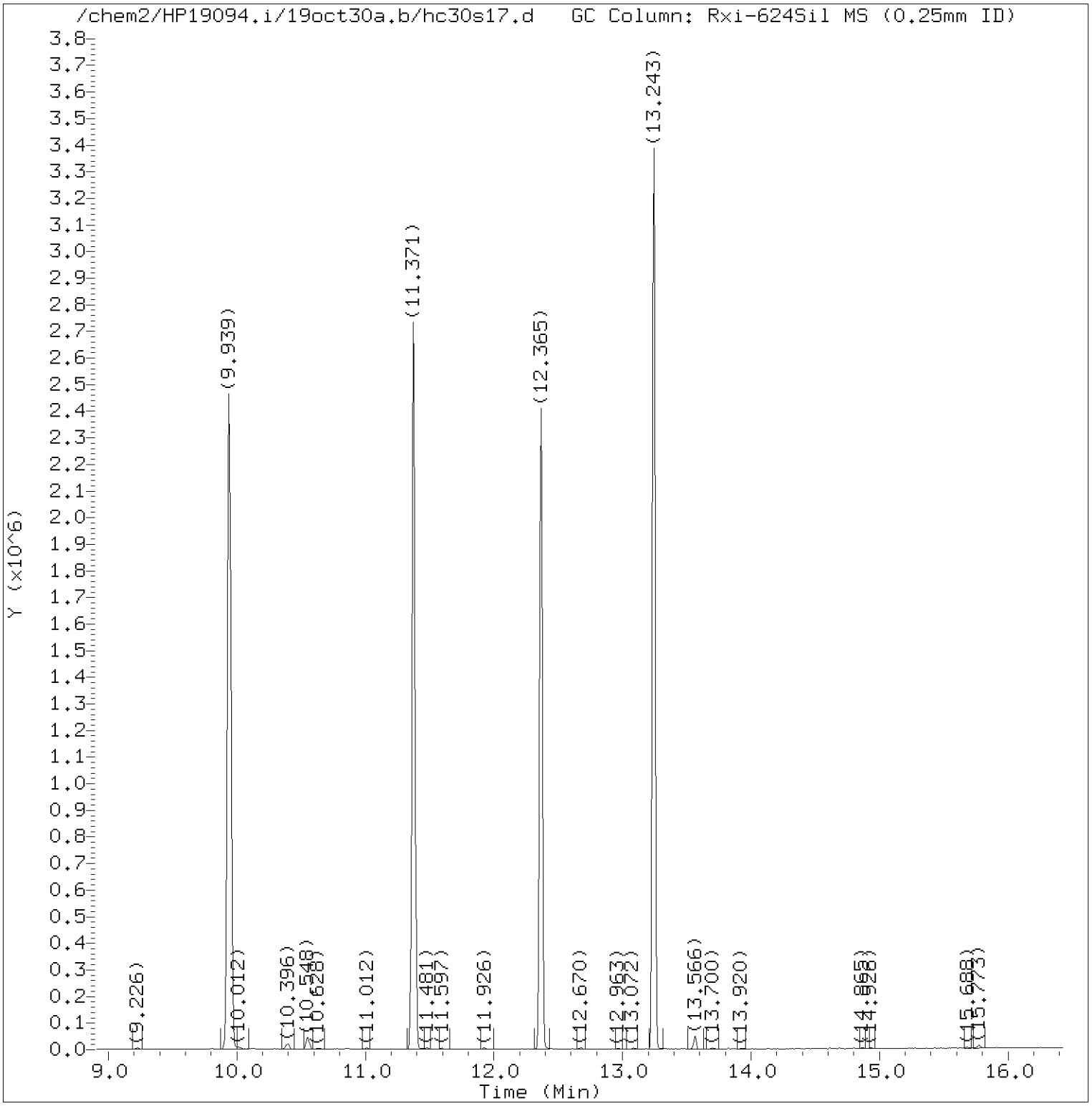
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

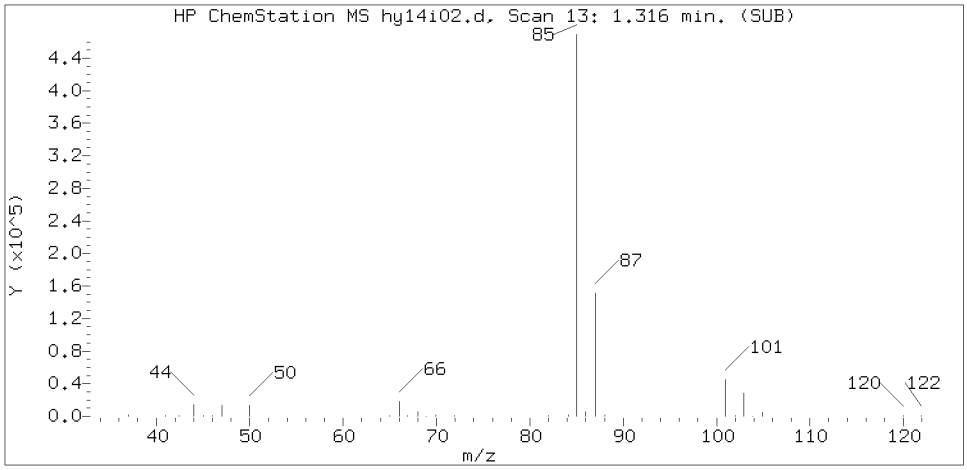
Sample Name: F4801 Lab Sample ID: 1183606

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	8952M	0.090
4) Dimethyl ether	(2)	2.135	45	619368	9.122
8) Chloroethane	(2)	2.824	64	153106	3.586
11) Ethyl ether	(2)	3.410	59	1560266	48.508
15) 1,1-Dichloroethene	(2)	3.745	96	8439	0.200
23) Methylene Chloride	(2)	4.452	84	52281	1.042
26)*t-Butyl Alcohol-d10	(1)	4.458	65	132566	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	535759	6.260
48) Tetrahydrofuran	(1)	6.702	71	42001	10.647
50)$Dibromofluoromethane	(2)	7.055	113	506682	9.864
51) 1,1,1-Trichloroethane	(2)	7.086	97	26584	0.318
57)$1,2-Dichloroethane-d4	(2)	7.513	102	92592	9.804
58) Benzene	(2)	7.543	78	68926	0.361
63)*Fluorobenzene	(2)	7.951	96	1888889	10.000
67) Trichloroethene	(2)	8.427	95	11145	0.208
82)$Toluene-d8	(3)	9.939	98	1901149	9.705
89) Tetrachloroethene	(3)	10.548	166	14309	0.219
97)*Chlorobenzene-d5	(3)	11.371	117	1534476	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	694642	9.696
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	803628	10.000

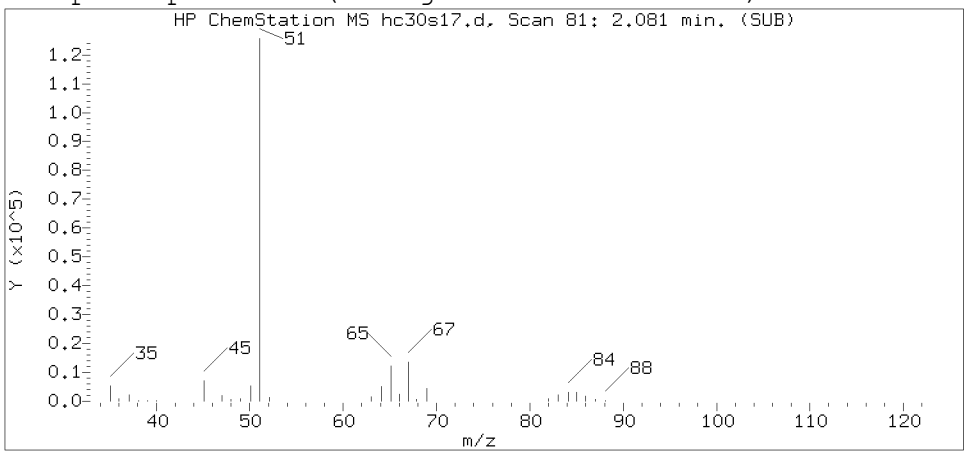
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

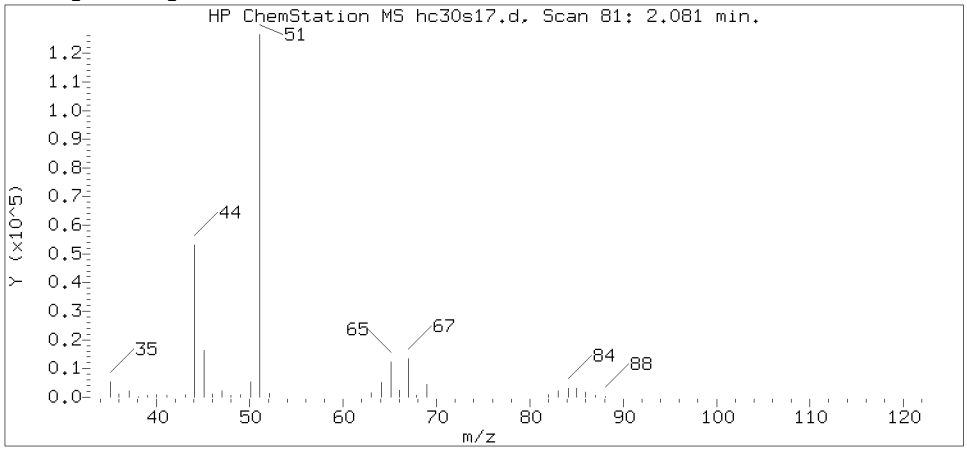
Reference Standard Spectrum for Dichlorodifluoromethane

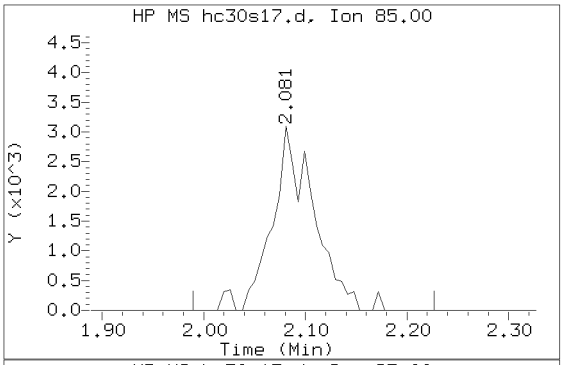


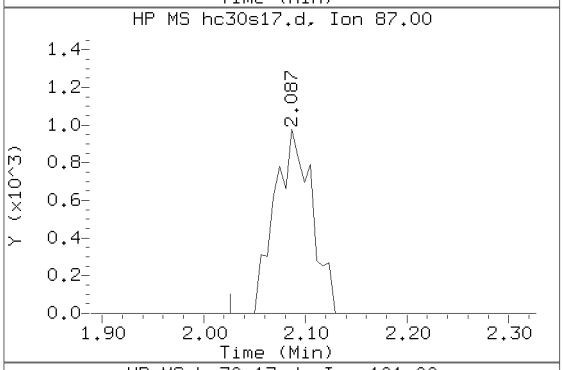
Sample Spectrum (Background Subtracted)

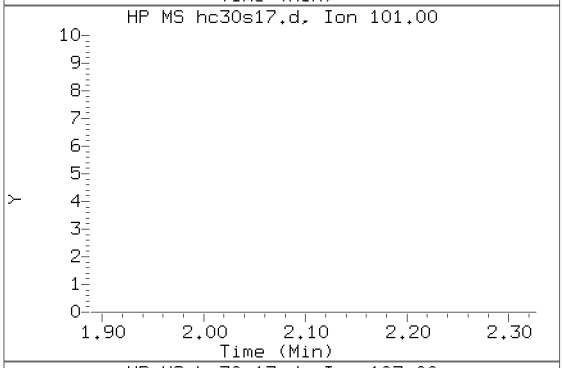


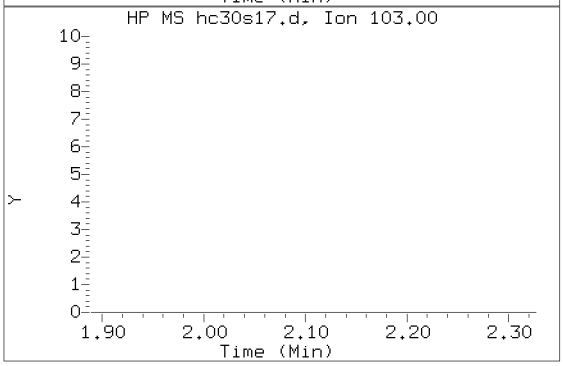
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

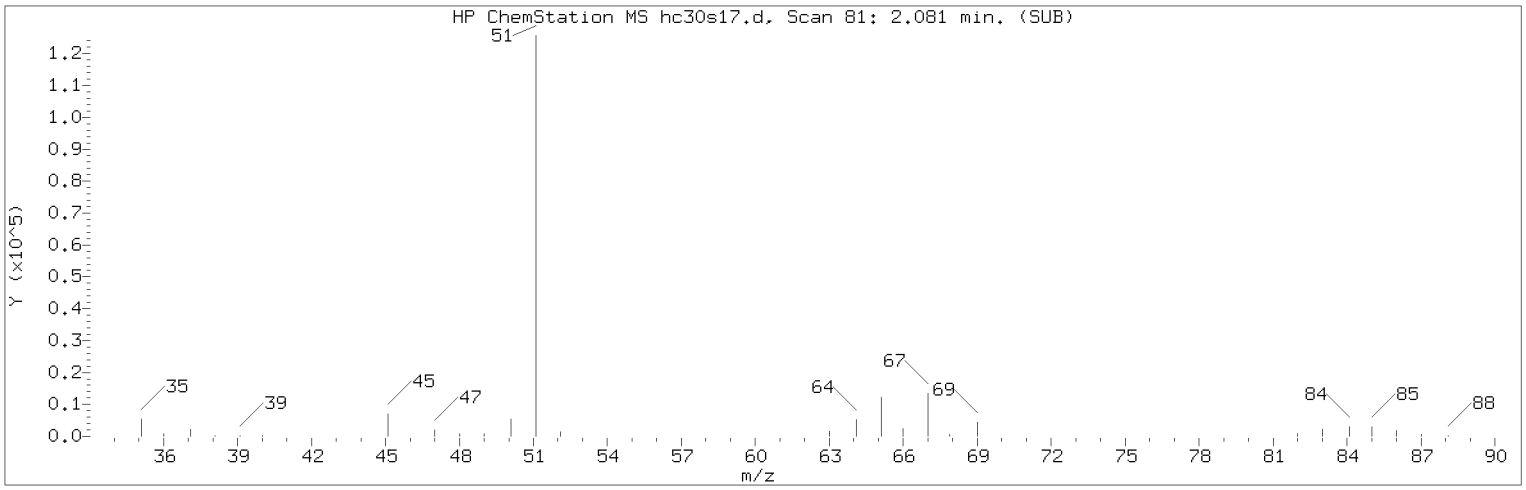
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

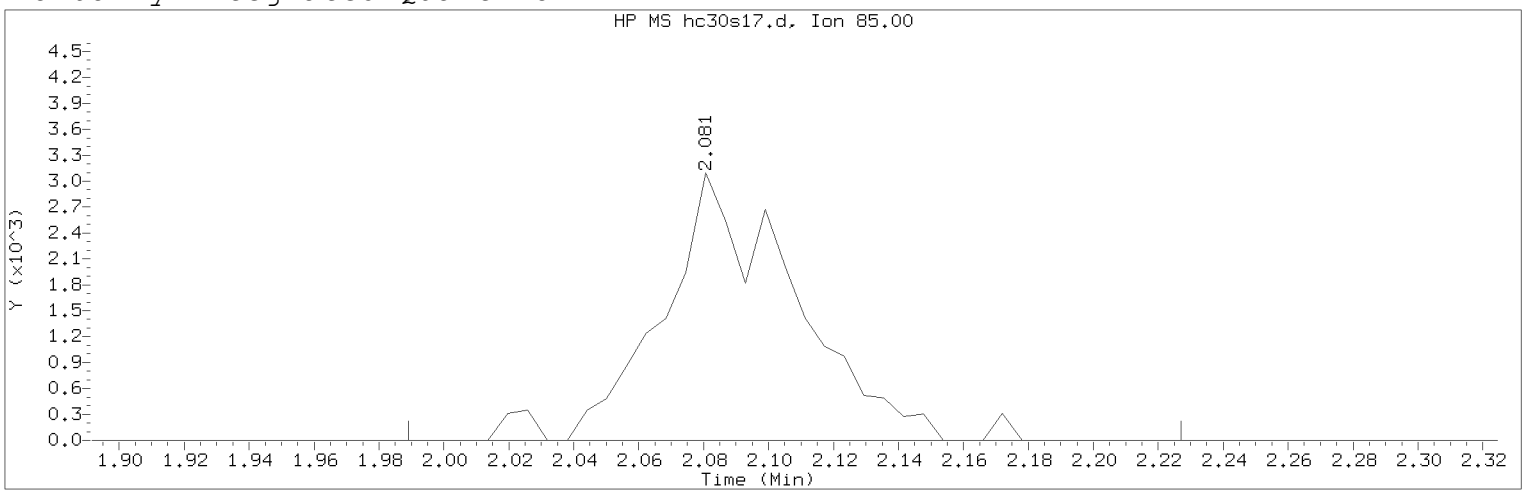
Compound Number	: 1
Compound Name	: Dichlorodifluoromethane
Scan Number	: 81
Retention Time (minutes)	: 2.081
Relative Retention Time	: 0.00000
Quant Ion	: 85.00
Area (flag)	: 8952M
On-Column Amount (ng)	: 0.0904

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

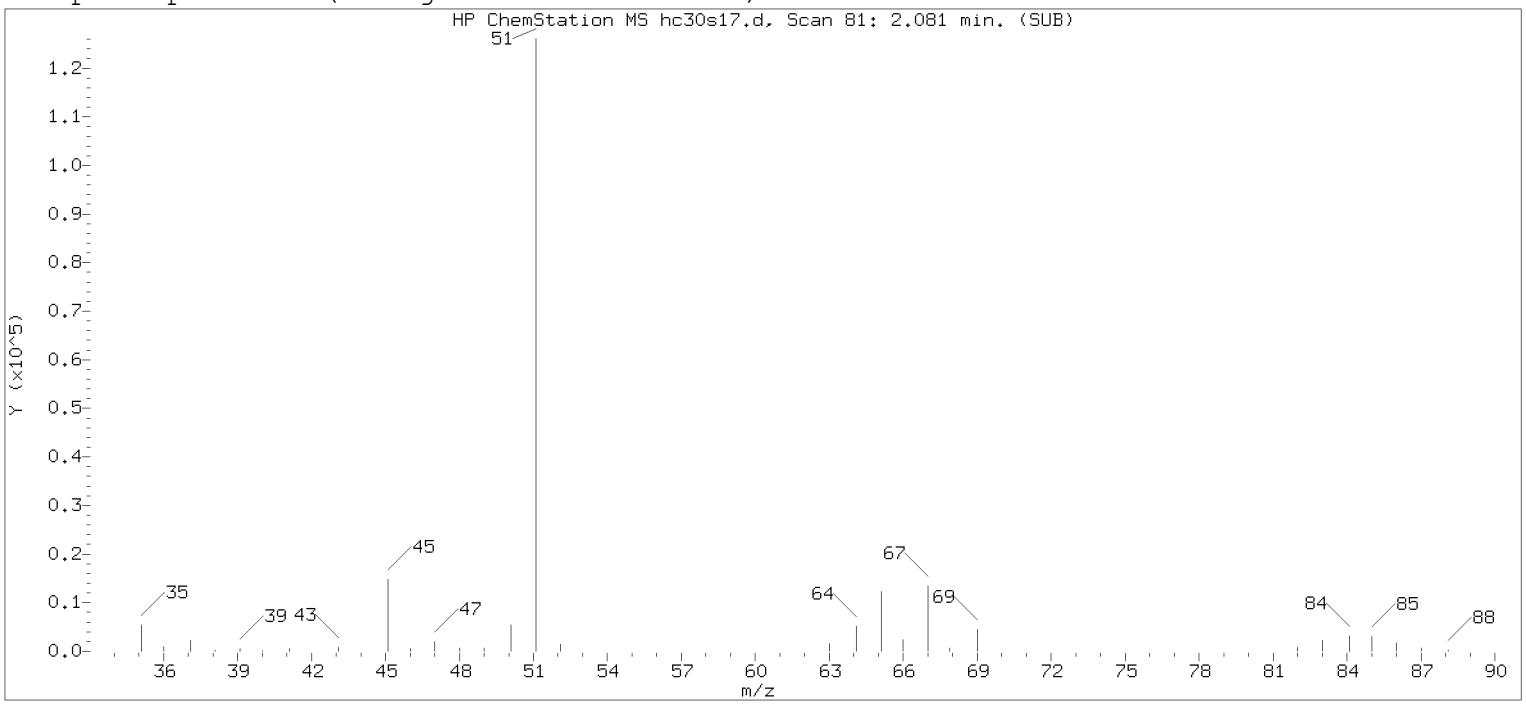
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.081
Quant Ion : 85.00
Area (flag) : 8952M
On-Column Amount (ng) : 0.0904
Integration start scan : 65 Integration stop scan: 104
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

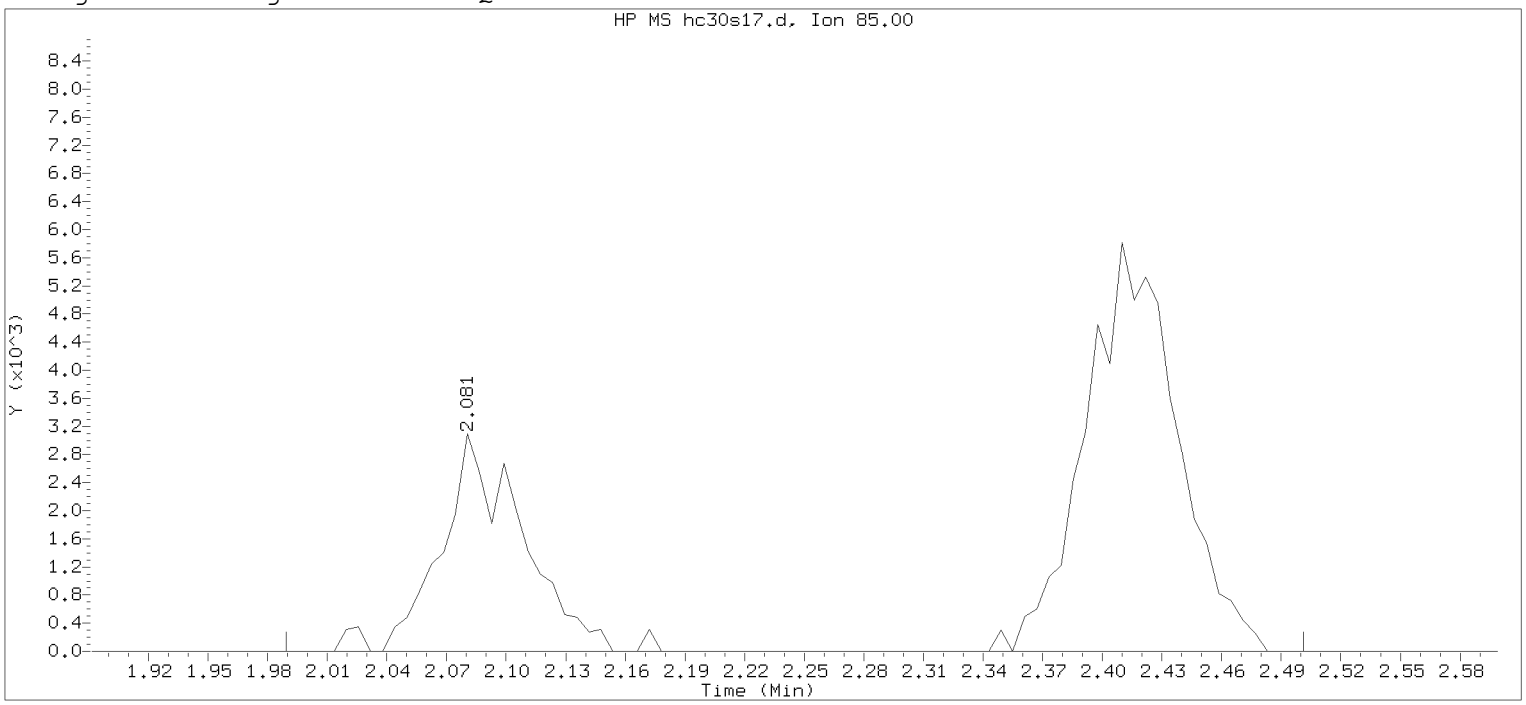
Analyst responsible for change: Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

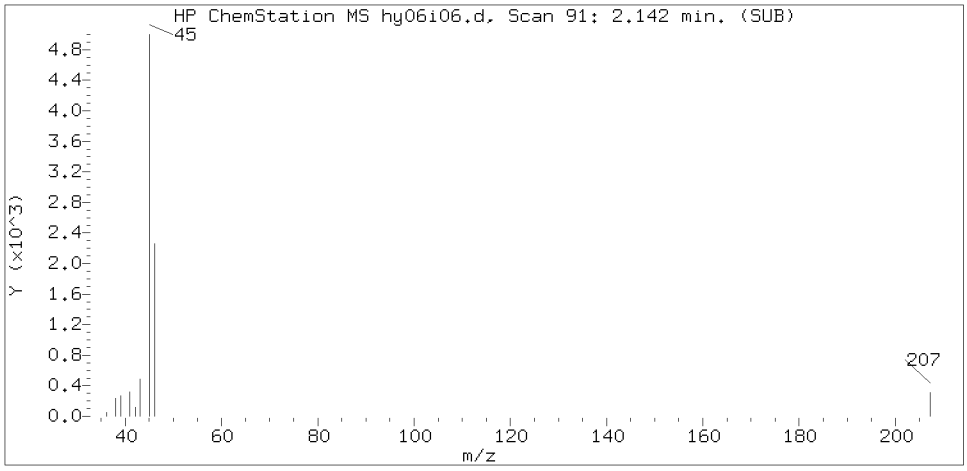
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:25 Automation

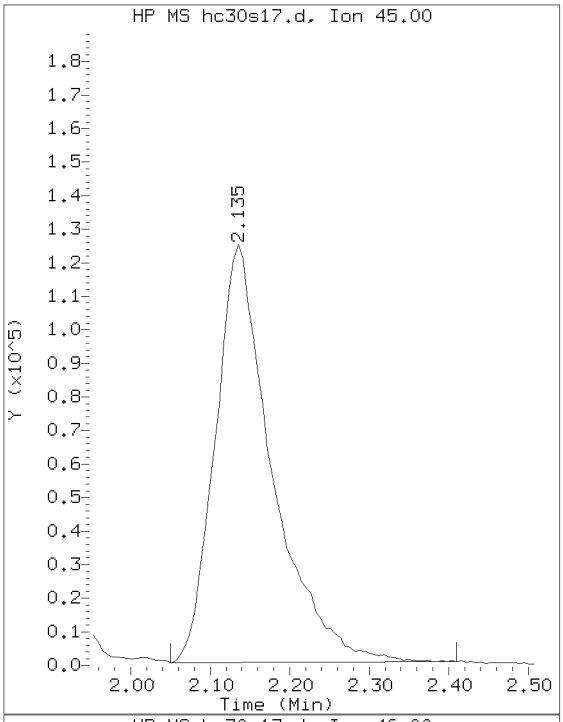
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.081
Quant Ion : 85.00
Area : 27668
On-column Amount (ng) : 0.2795
Integration start scan : 65 Integration stop scan: 149
Y at integration start : 0 Y at integration end: 0

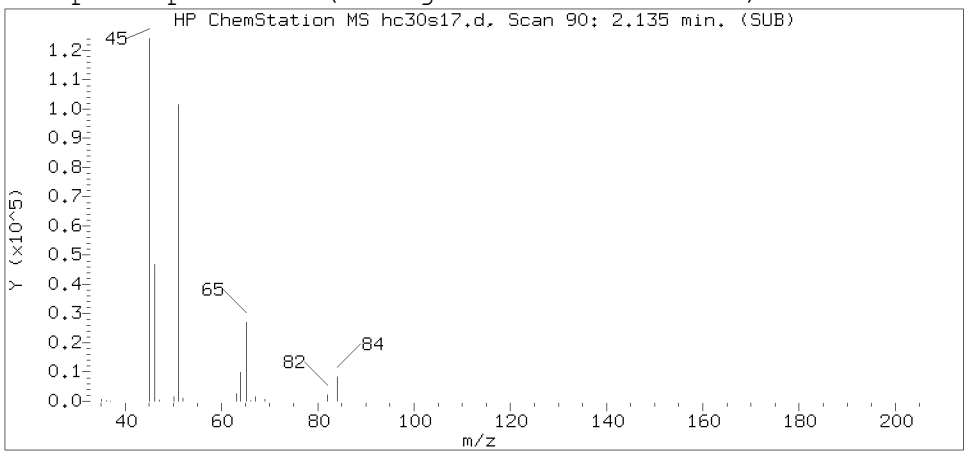
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user assigned 2012

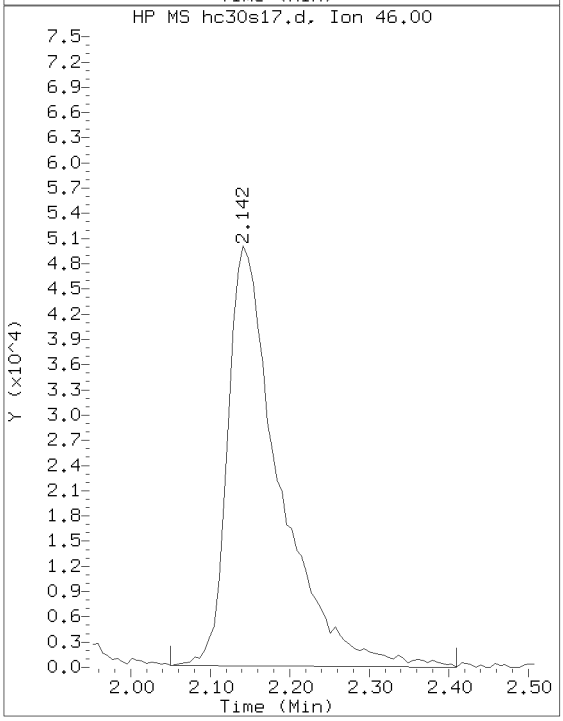
Reference Standard Spectrum for Dimethyl ether



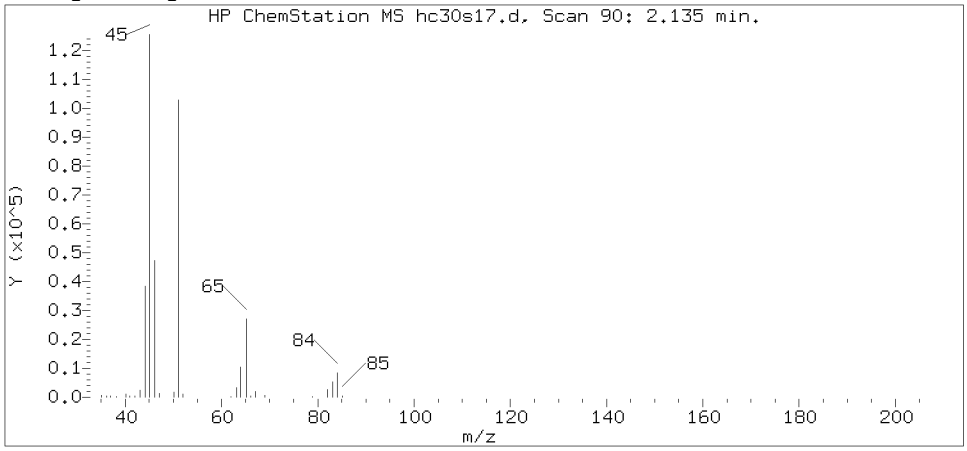


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

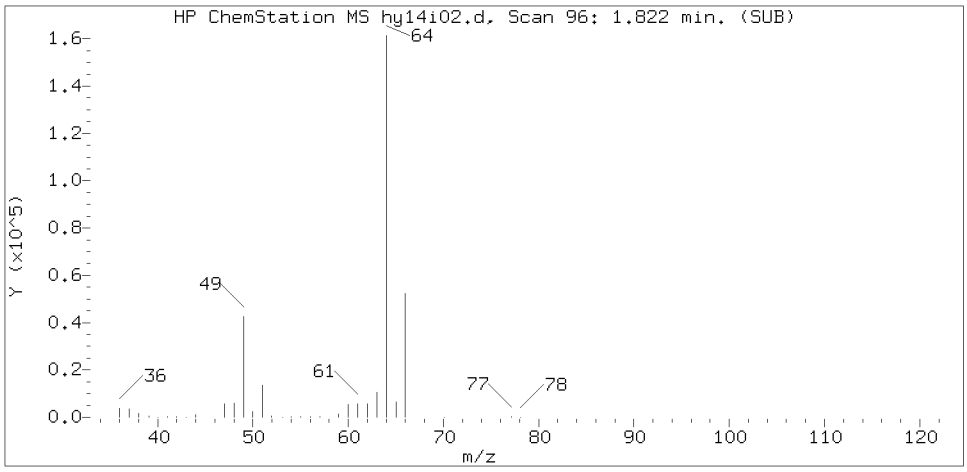
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

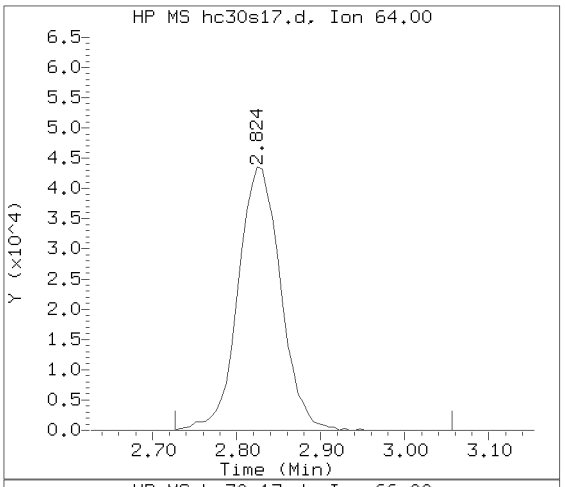
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number	: 4
Compound Name	: Dimethyl ether
Scan Number	: 90
Retention Time (minutes)	: 2.135
Relative Retention Time	: 0.00231
Quant Ion	: 45.00
Area (flag)	: 619368
On-Column Amount (ng)	: 9.1217

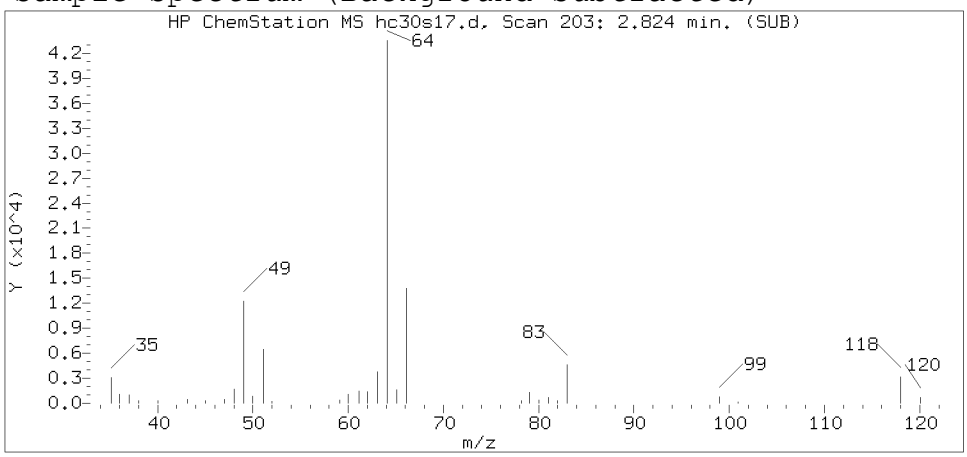
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

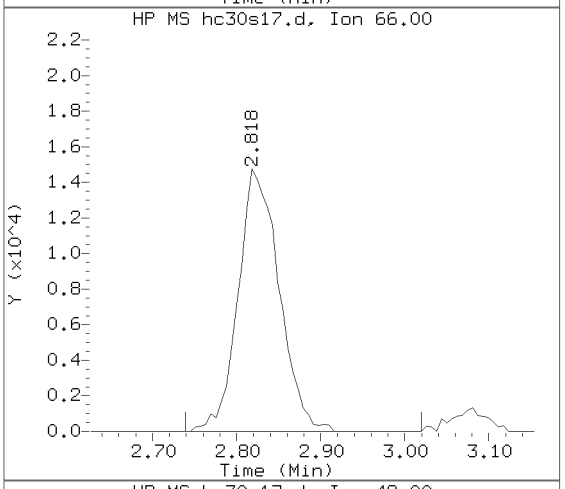
Reference Standard Spectrum for Chloroethane



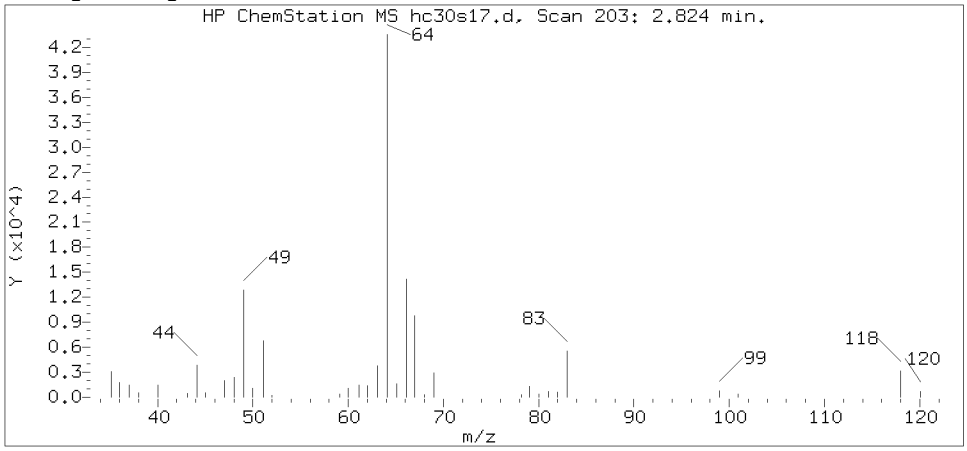


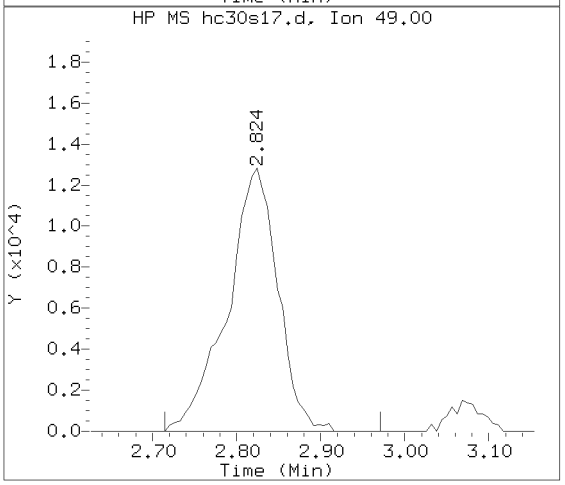
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

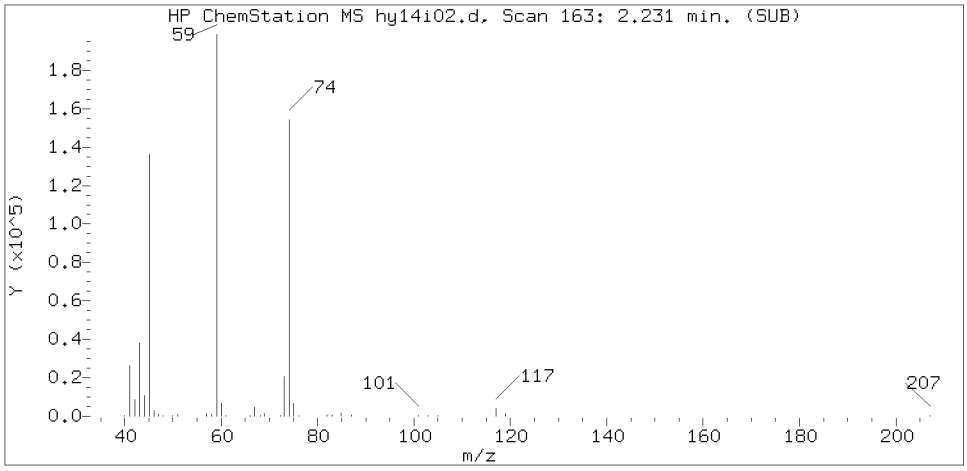
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

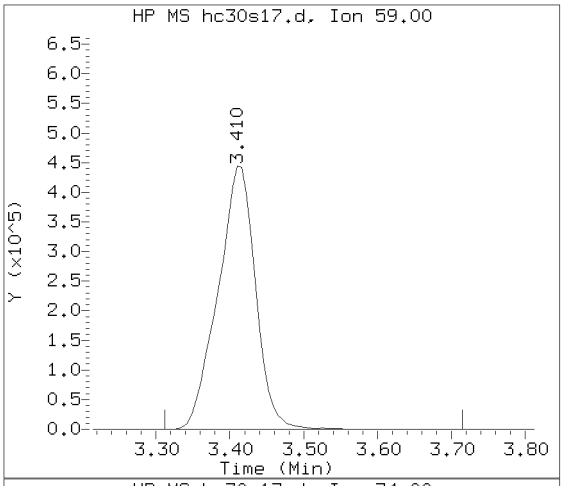
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number	: 8
Compound Name	: Chloroethane
Scan Number	: 203
Retention Time (minutes)	: 2.824
Relative Retention Time	: 0.00153
Quant Ion	: 64.00
Area (flag)	: 153106
On-Column Amount (ng)	: 3.5861

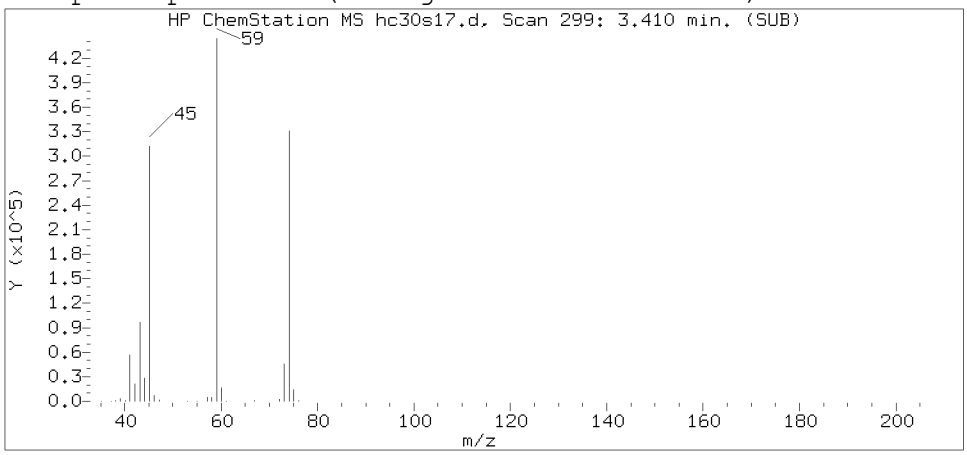
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

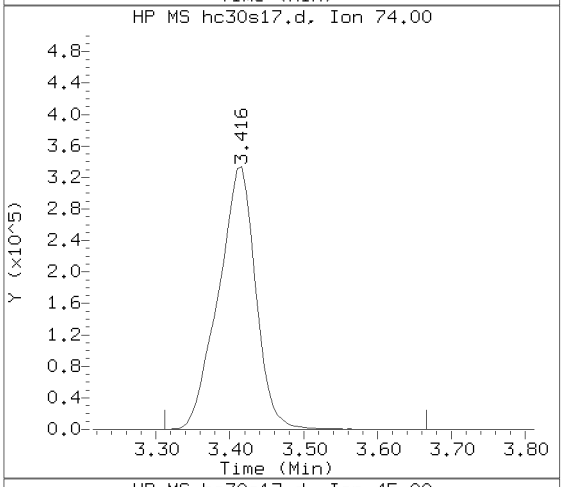
Reference Standard Spectrum for Ethyl ether



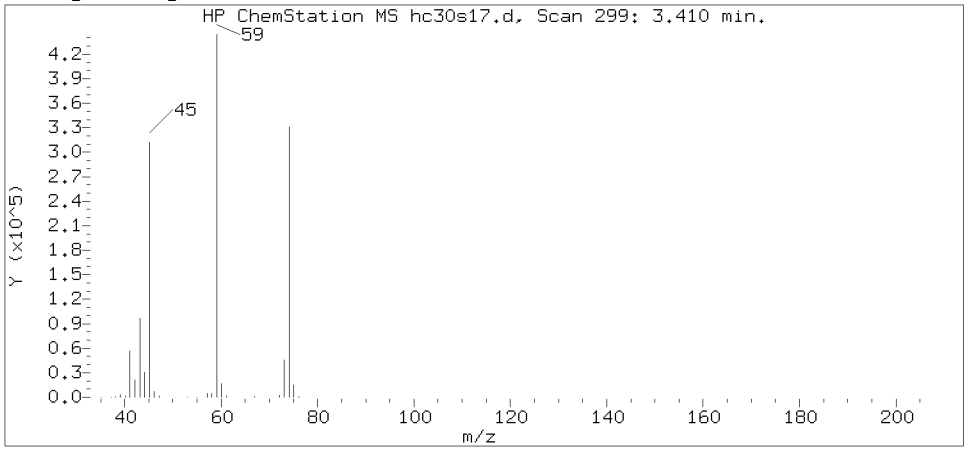


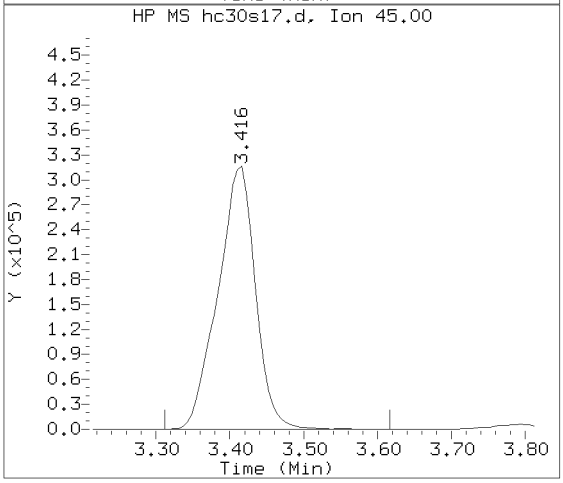
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

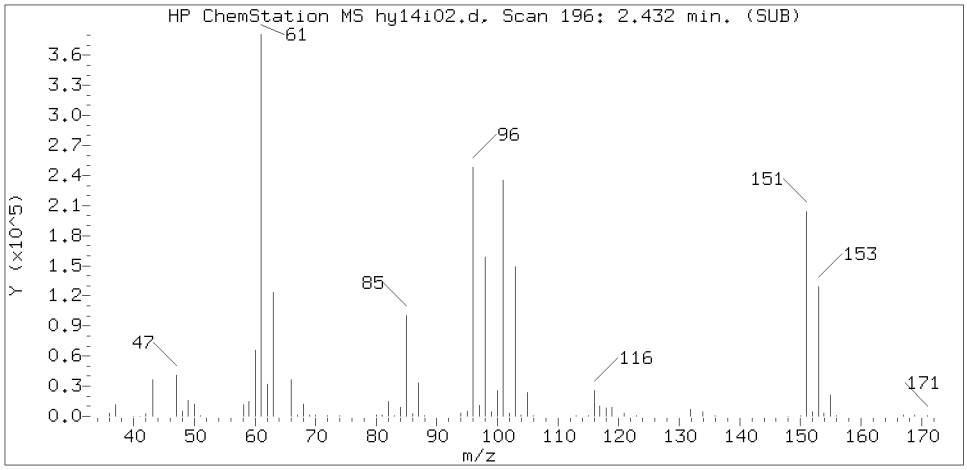
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

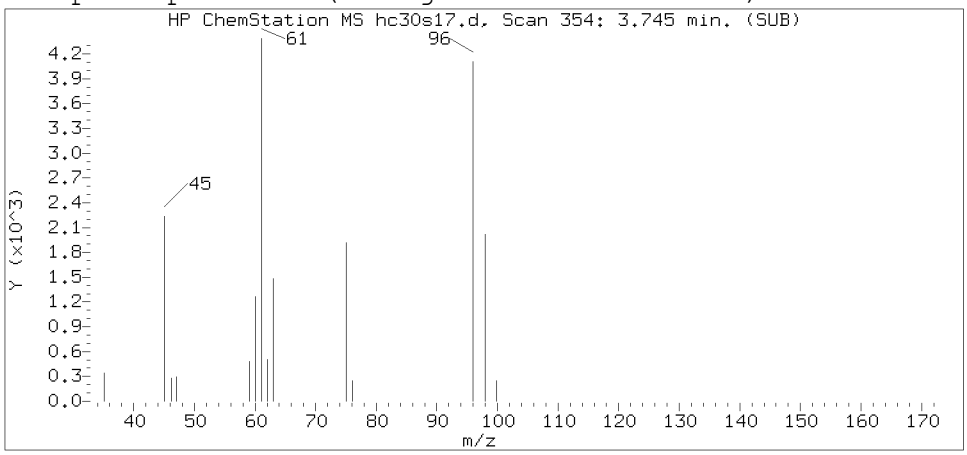
Compound Number	: 11
Compound Name	: Ethyl ether
Scan Number	: 299
Retention Time (minutes)	: 3.410
Relative Retention Time	: 0.00077
Quant Ion	: 59.00
Area (flag)	: 1560266
On-Column Amount (ng)	: 48.5083

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Target 3.5 esignature user ID: sej02002

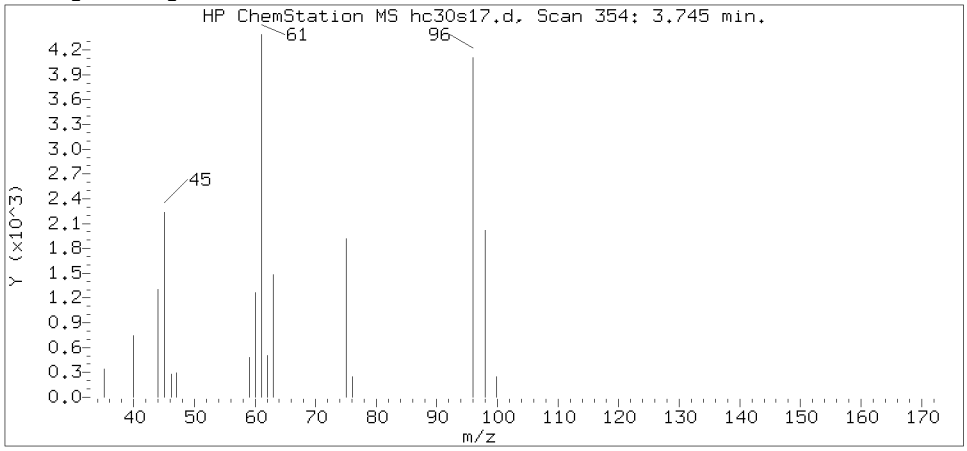
Reference Standard Spectrum for 1,1-Dichloroethene

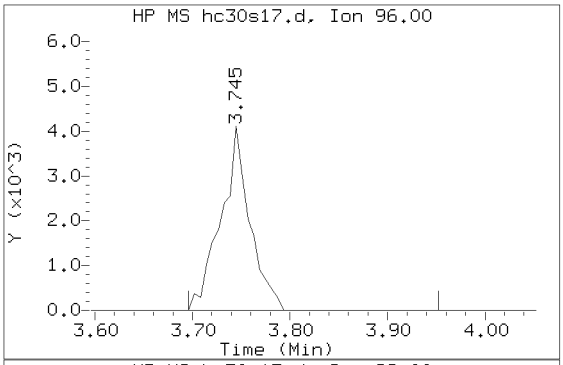


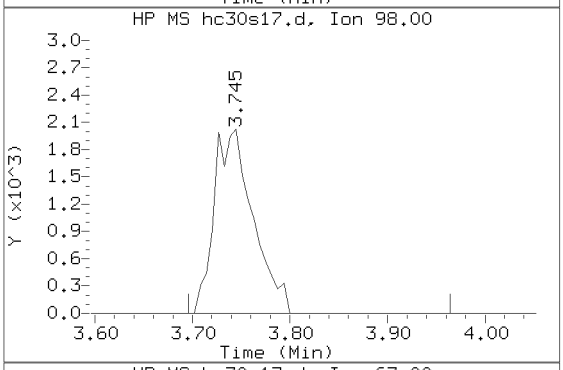
Sample Spectrum (Background Subtracted)

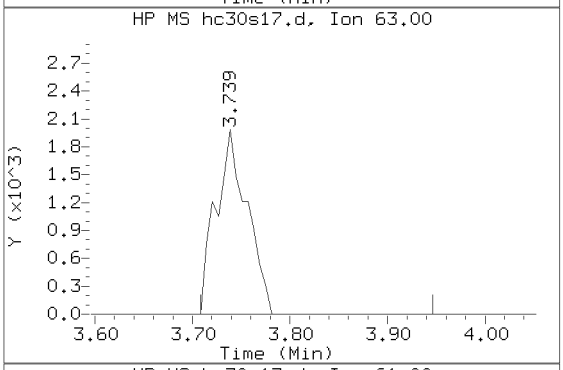


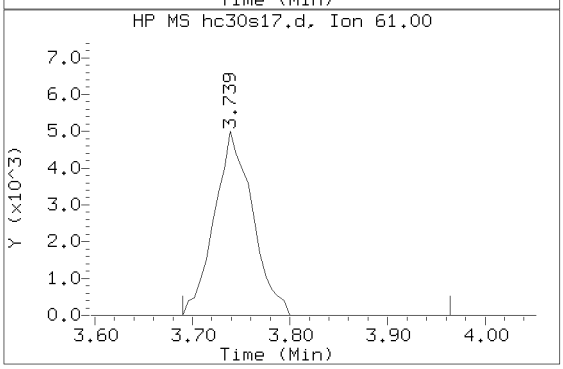
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

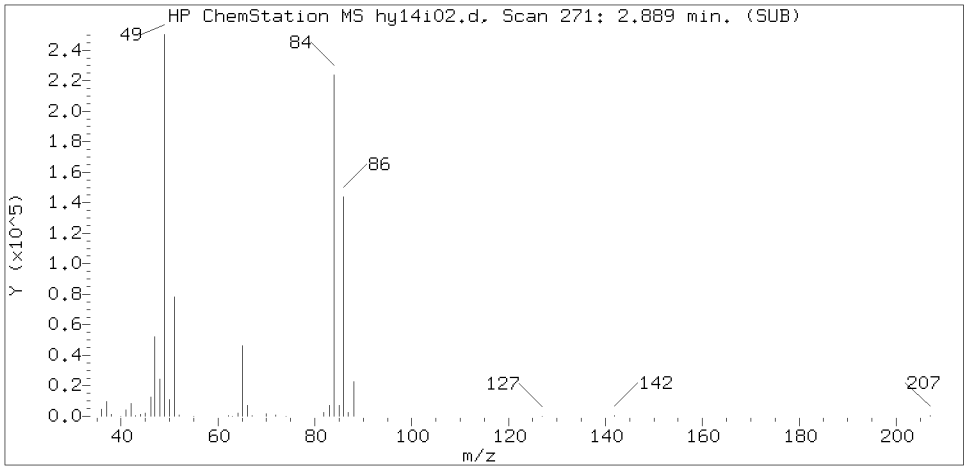
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

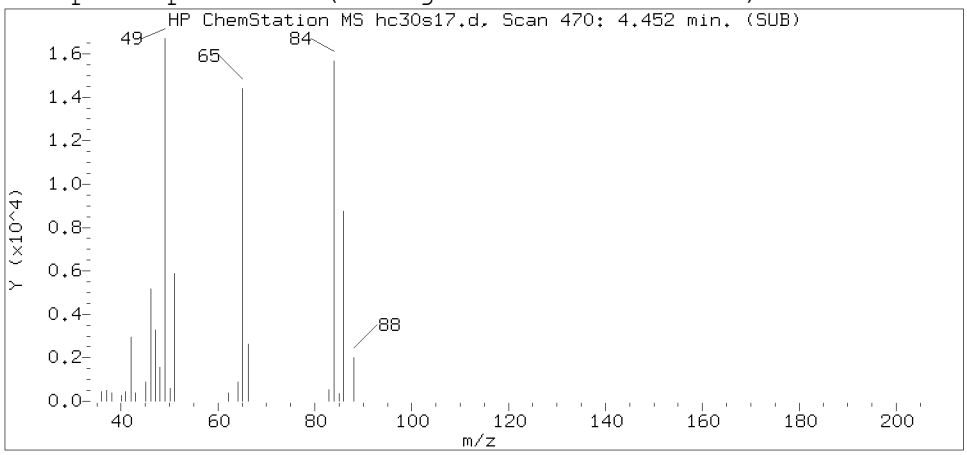
Compound Number : 15
Compound Name : 1,1-Dichloroethene
Scan Number : 354
Retention Time (minutes): 3.745
Relative Retention Time : 0.00000
Quant Ion : 96.00
Area (flag) : 8439
On-Column Amount (ng) : 0.2005

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Target 3.5 esignature user ID: sej02002

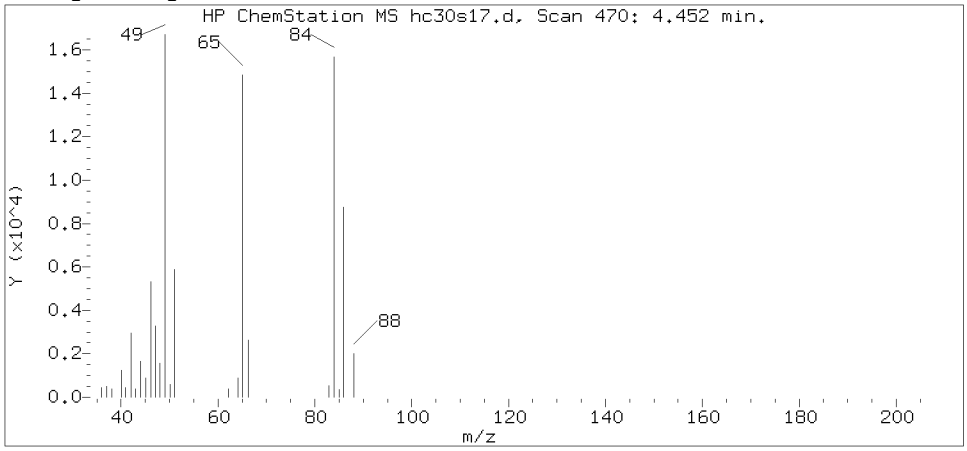
Reference Standard Spectrum for Methylene Chloride

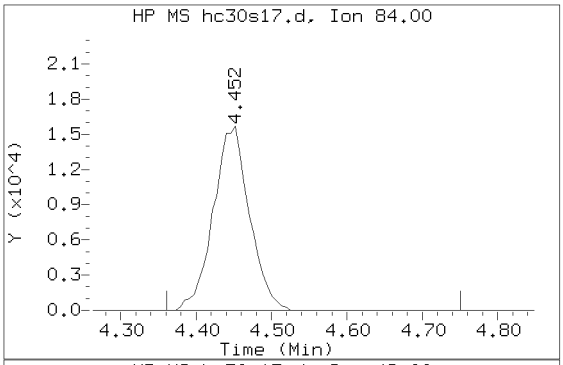


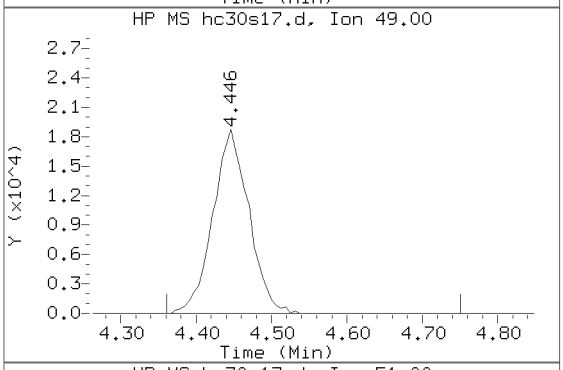
Sample Spectrum (Background Subtracted)

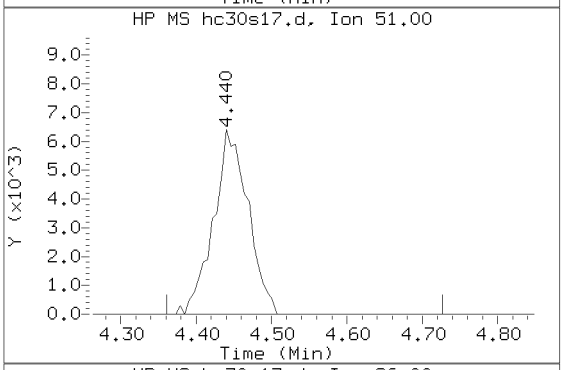


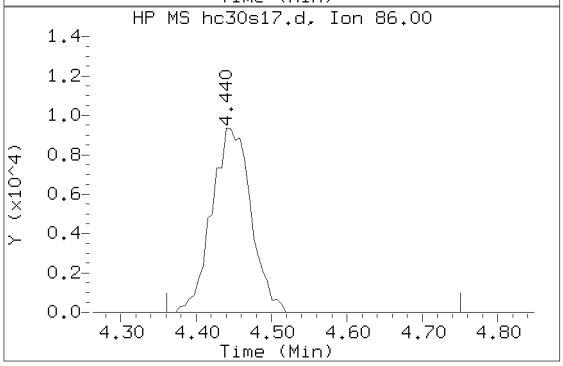
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

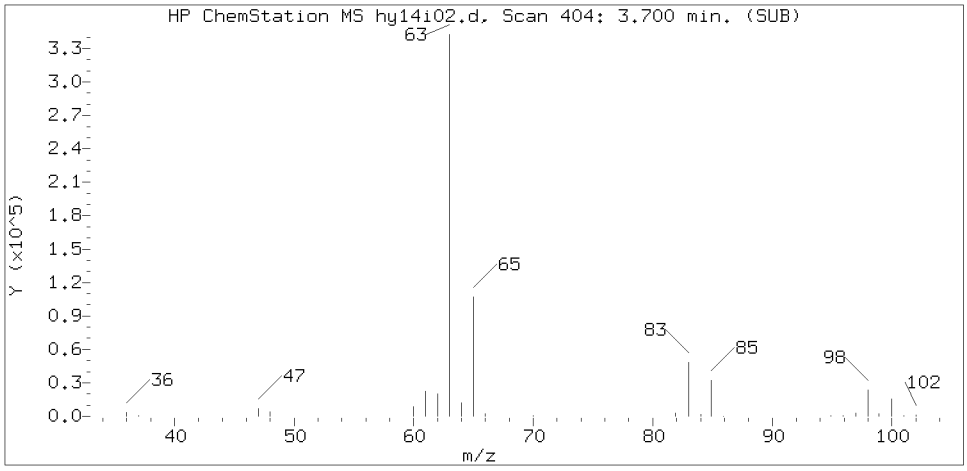
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Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

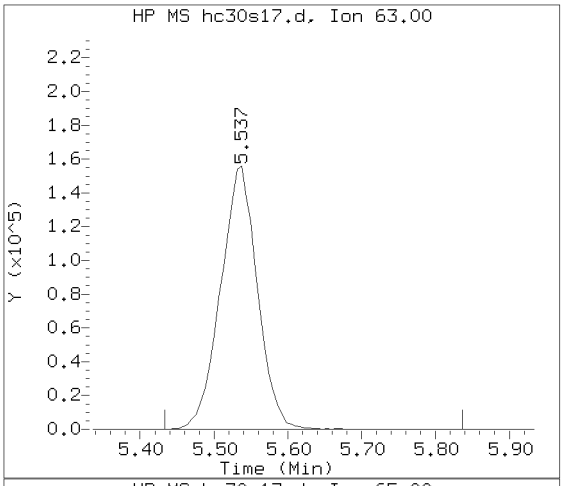
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 470
Retention Time (minutes): 4.452
Relative Retention Time : 0.00000
Quant Ion : 84.00
Area (flag) : 52281
On-Column Amount (ng) : 1.0418

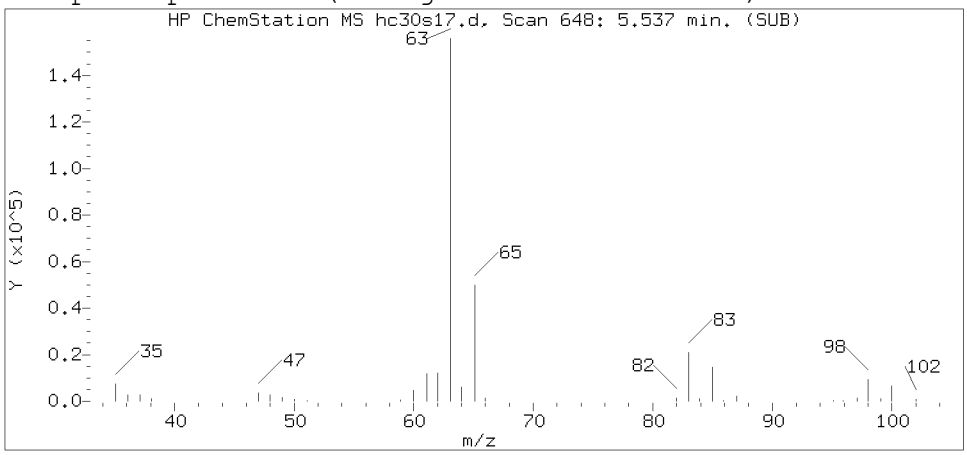
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

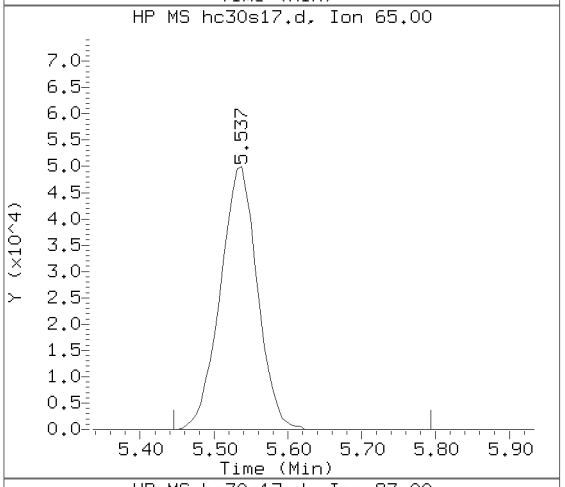
Reference Standard Spectrum for 1,1-Dichloroethane



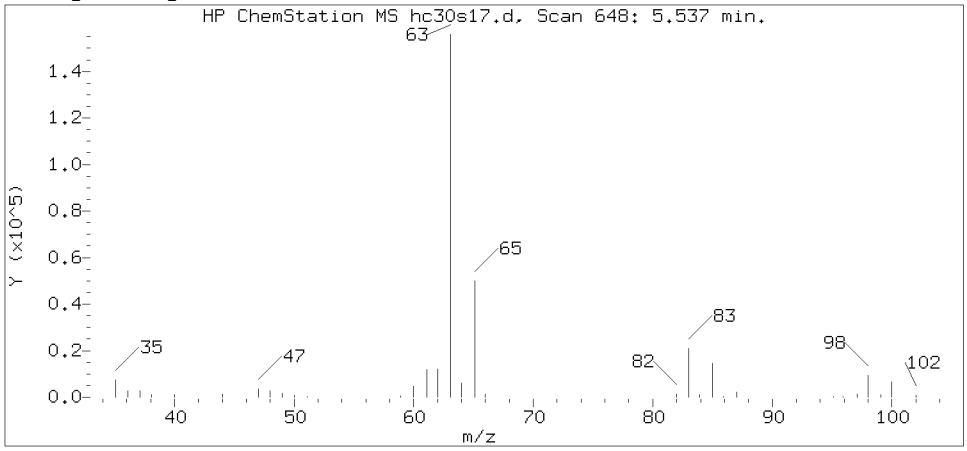


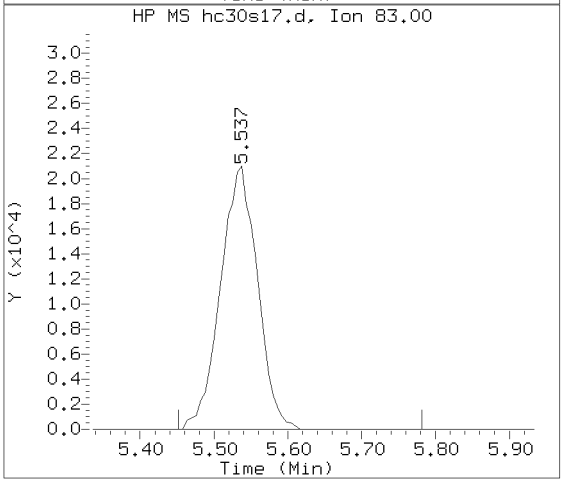
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

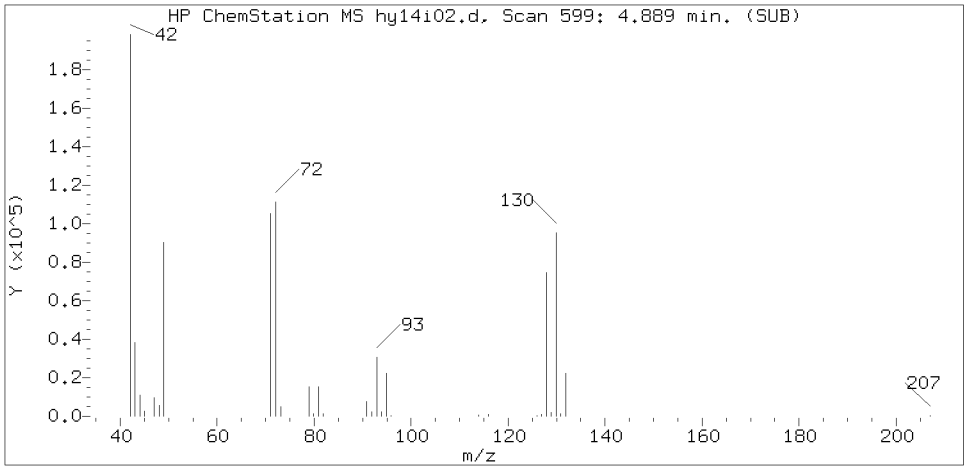
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Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

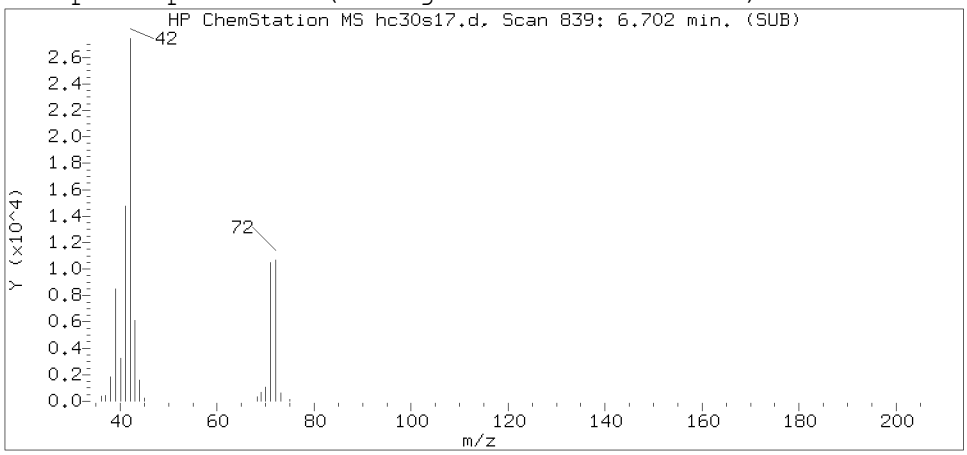
Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 648
Retention Time (minutes): 5.537
Relative Retention Time : 0.00000
Quant Ion : 63.00
Area (flag) : 535759
On-Column Amount (ng) : 6.2599

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Target 3.5 esignature user ID: sej02002

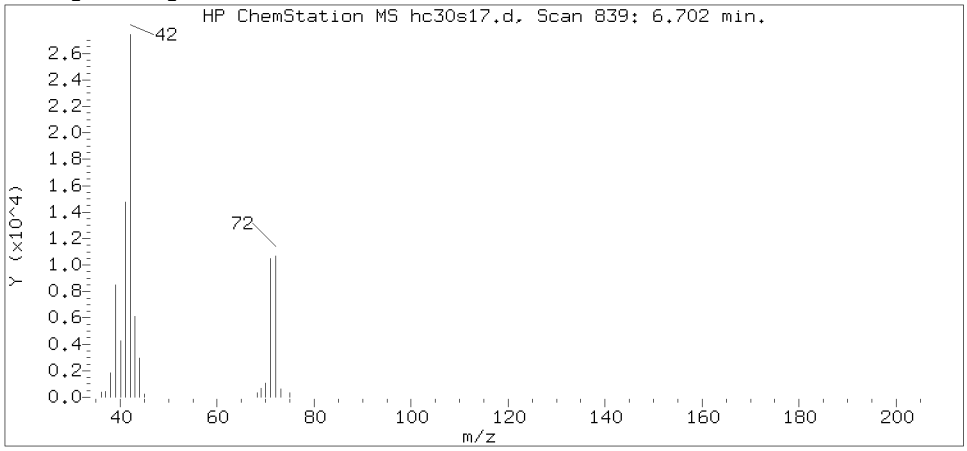
Reference Standard Spectrum for Tetrahydrofuran

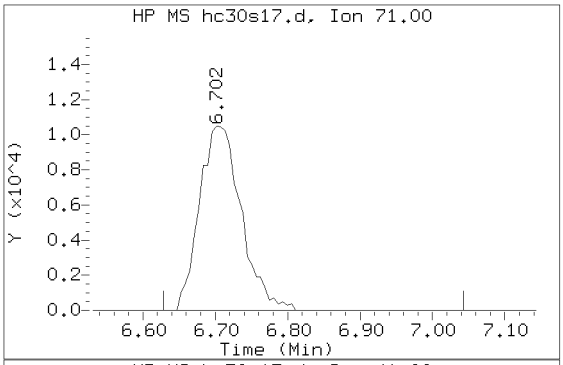


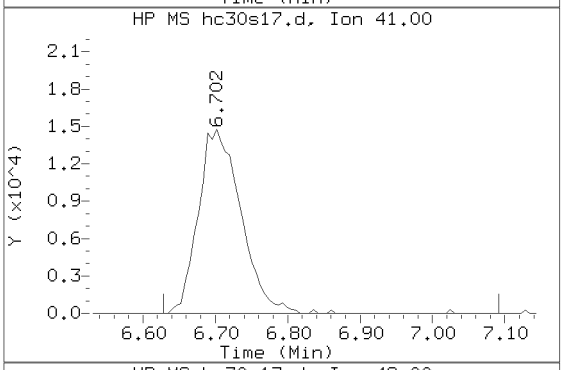
Sample Spectrum (Background Subtracted)

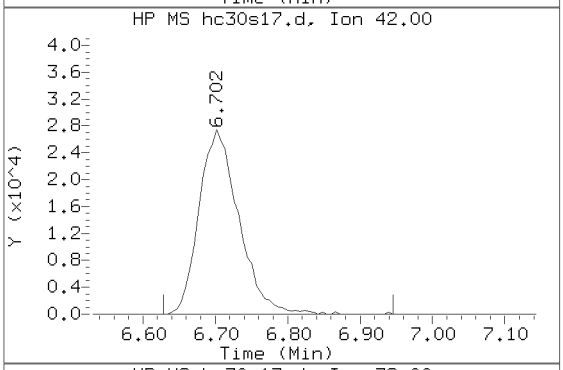


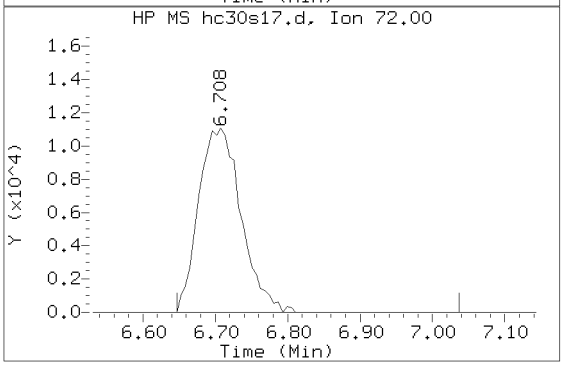
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

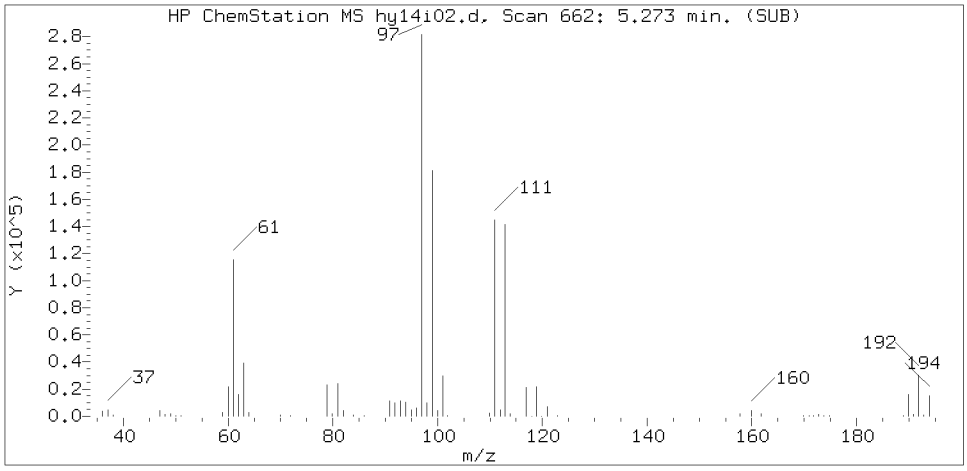
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

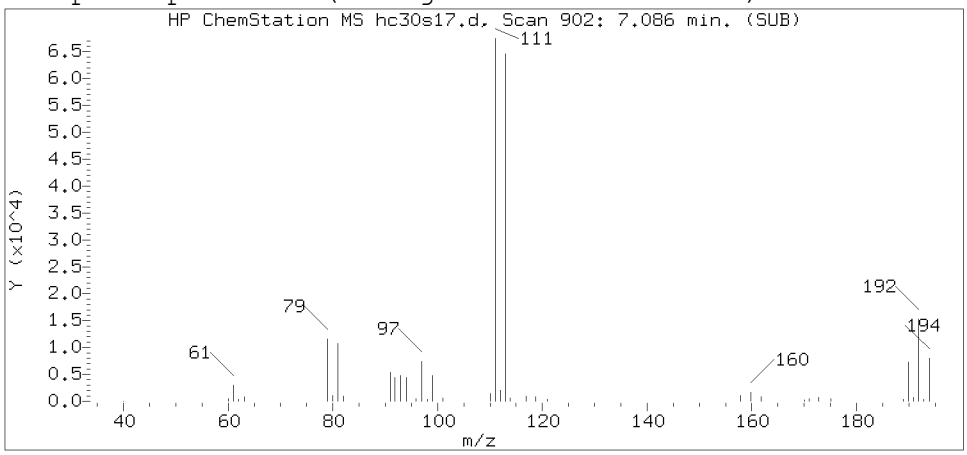
Compound Number : 48
Compound Name : Tetrahydrofuran
Scan Number : 839
Retention Time (minutes): 6.702
Relative Retention Time :-0.00069
Quant Ion : 71.00
Area (flag) : 42001
On-Column Amount (ng) : 10.6467

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Target 3.5 esignature user ID: sej02002

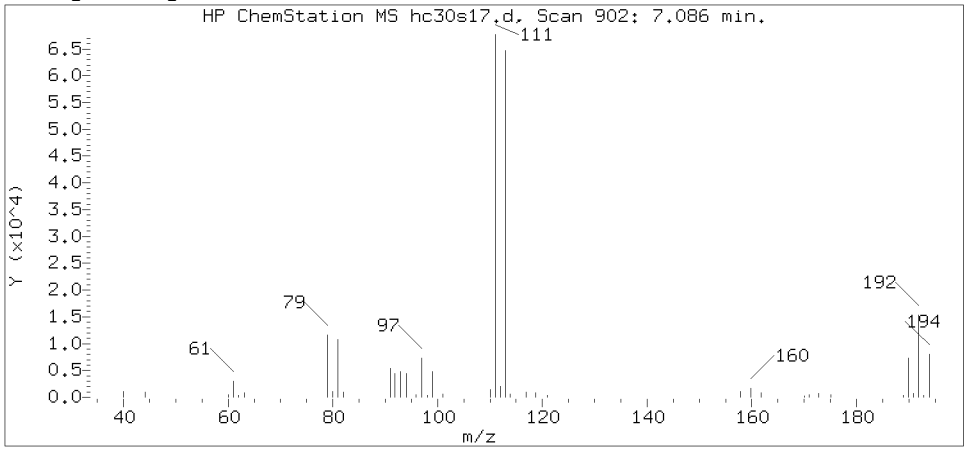
Reference Standard Spectrum for 1,1,1-Trichloroethane

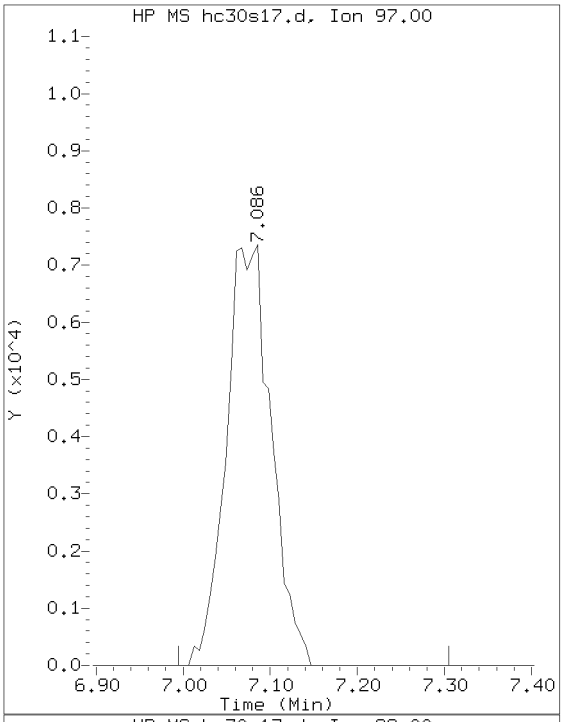


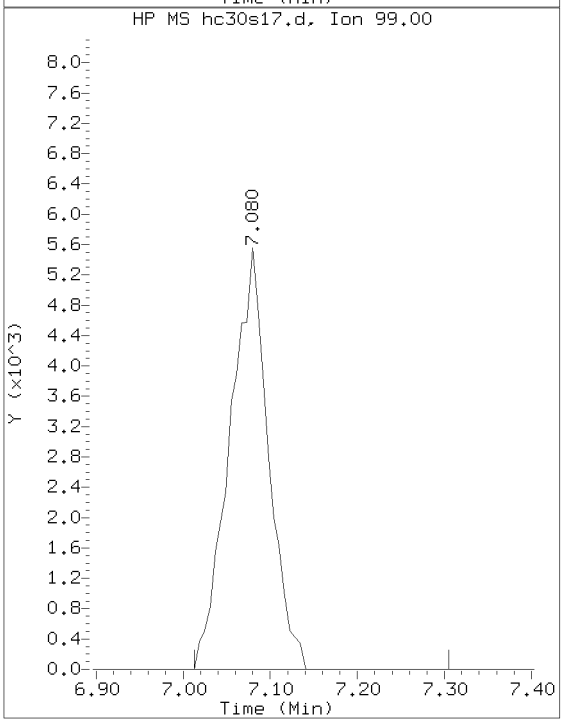
Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)







Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

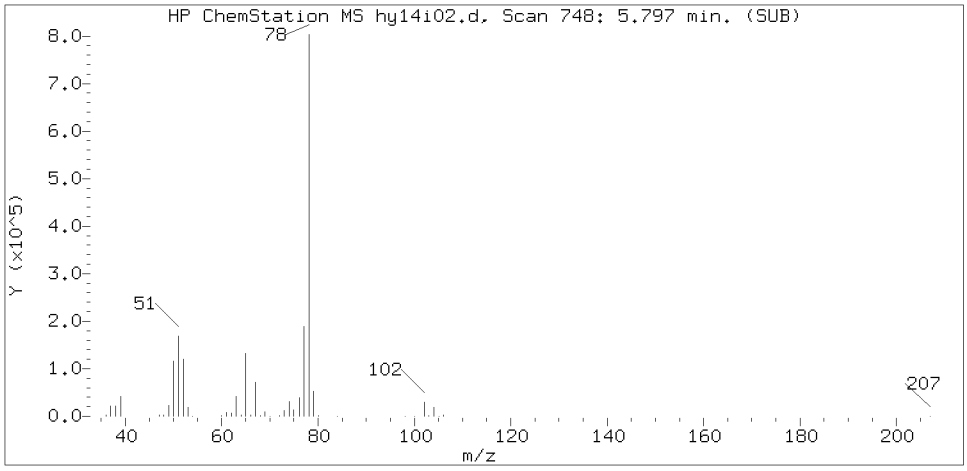
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

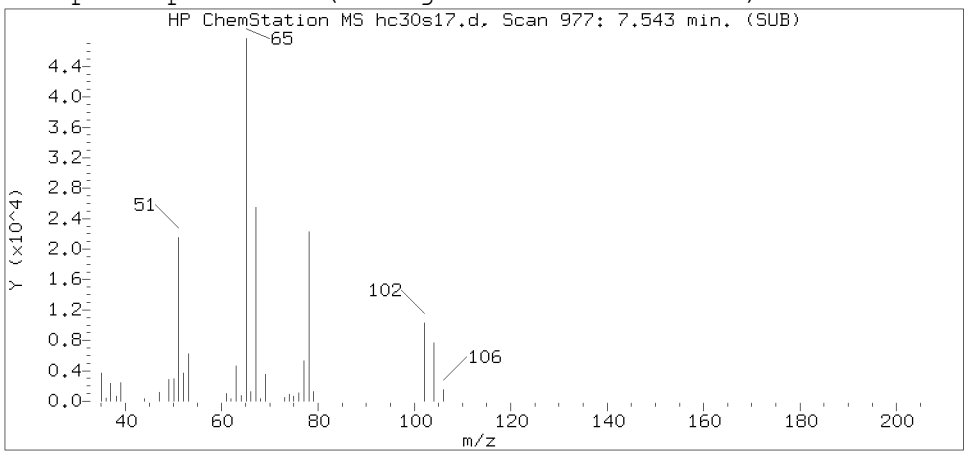
Compound Number : 51
Compound Name : 1,1,1-Trichloroethane
Scan Number : 902
Retention Time (minutes): 7.086
Relative Retention Time :-0.00077
Quant Ion : 97.00
Area (flag) : 26584
On-Column Amount (ng) : 0.3175

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Target 3.5 esignature user ID: sej02002

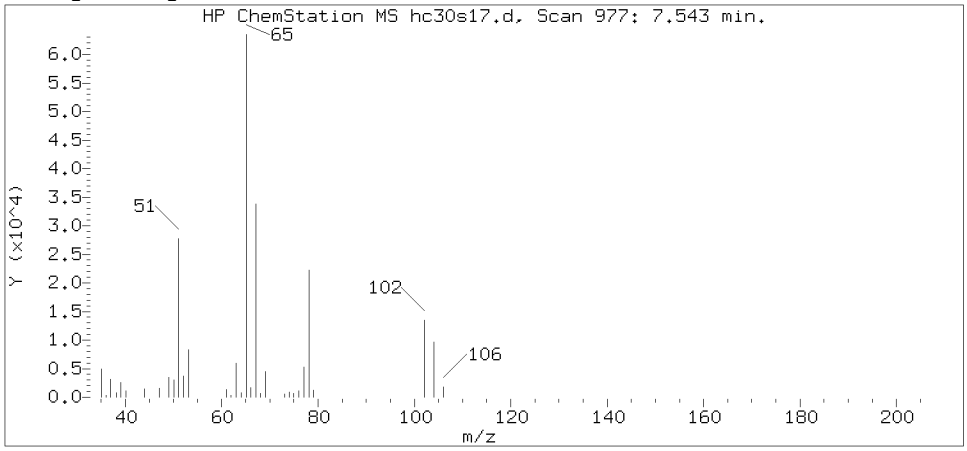
Reference Standard Spectrum for Benzene

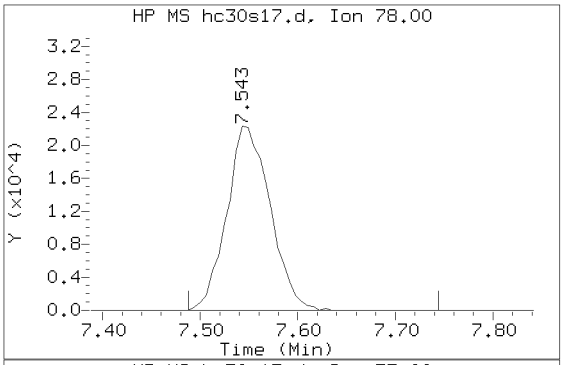


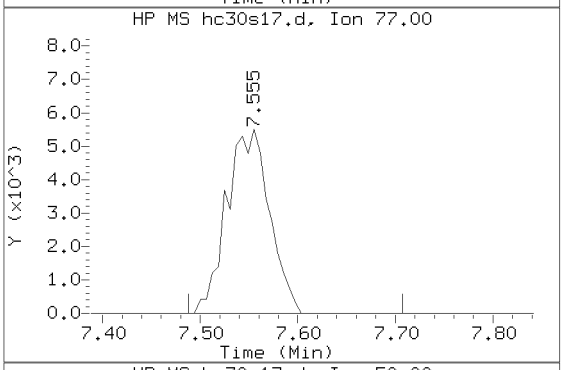
Sample Spectrum (Background Subtracted)

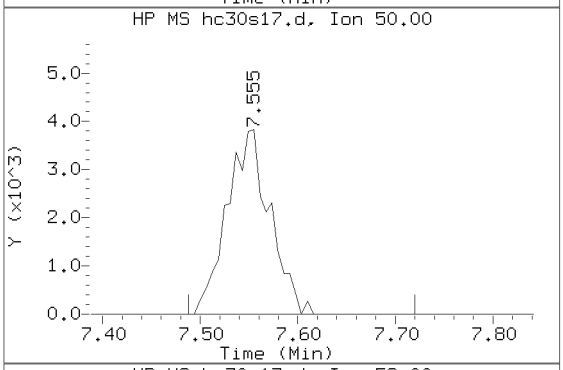


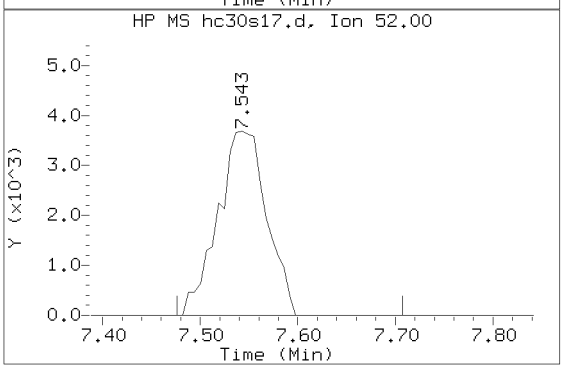
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

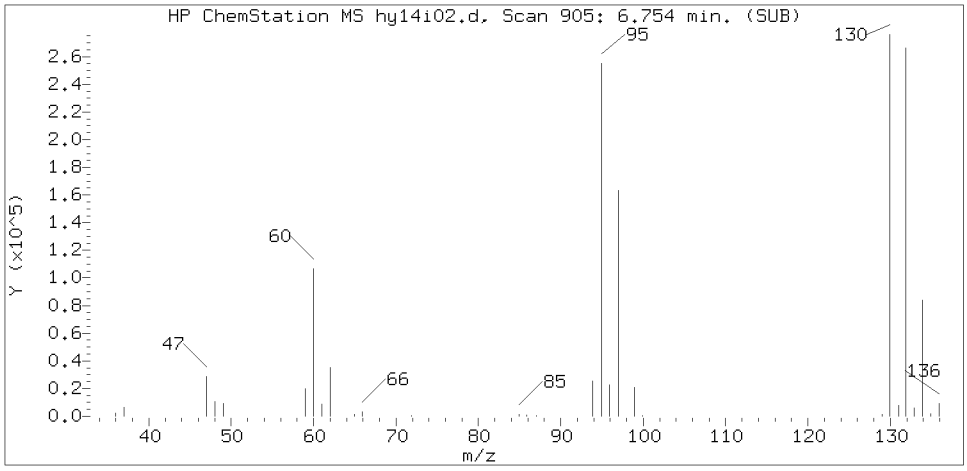
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

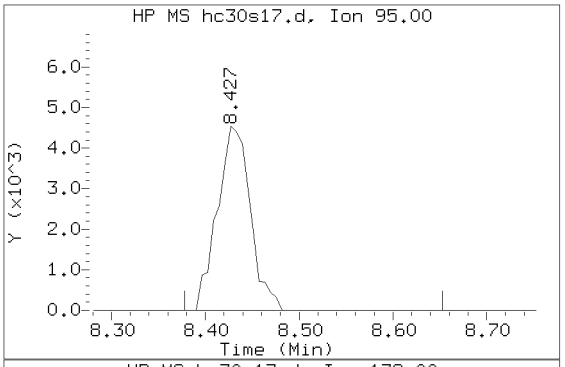
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 977
Retention Time (minutes)	: 7.543
Relative Retention Time	: 0.00153
Quant Ion	: 78.00
Area (flag)	: 68926
On-Column Amount (ng)	: 0.3608

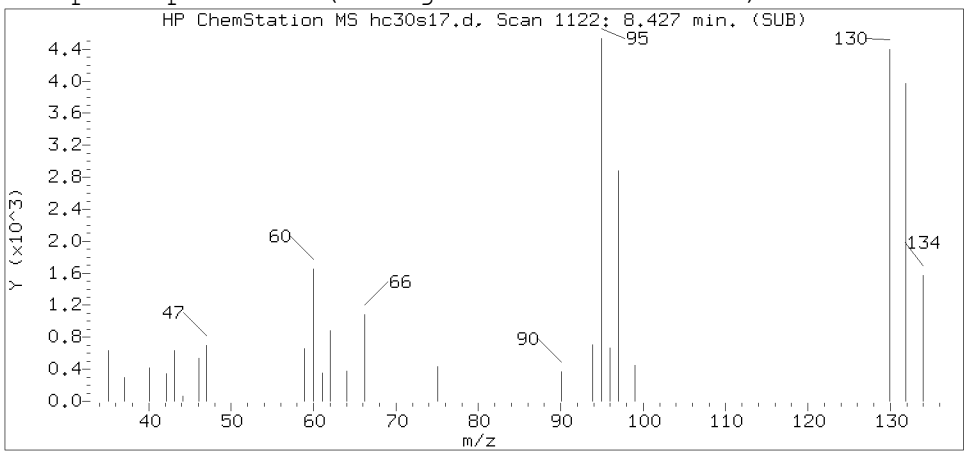
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

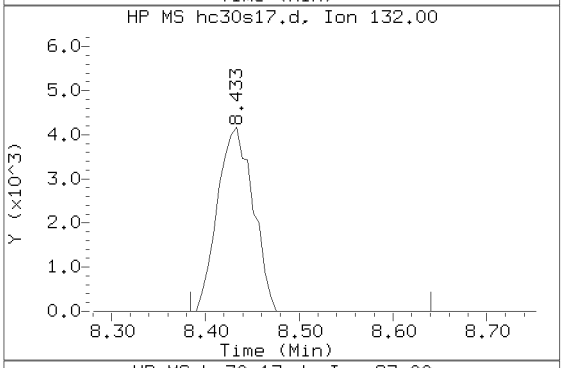
Reference Standard Spectrum for Trichloroethene

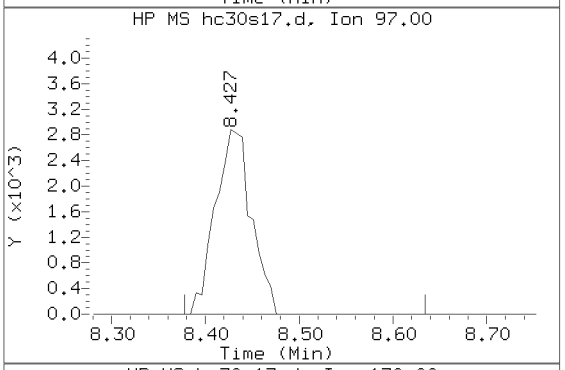




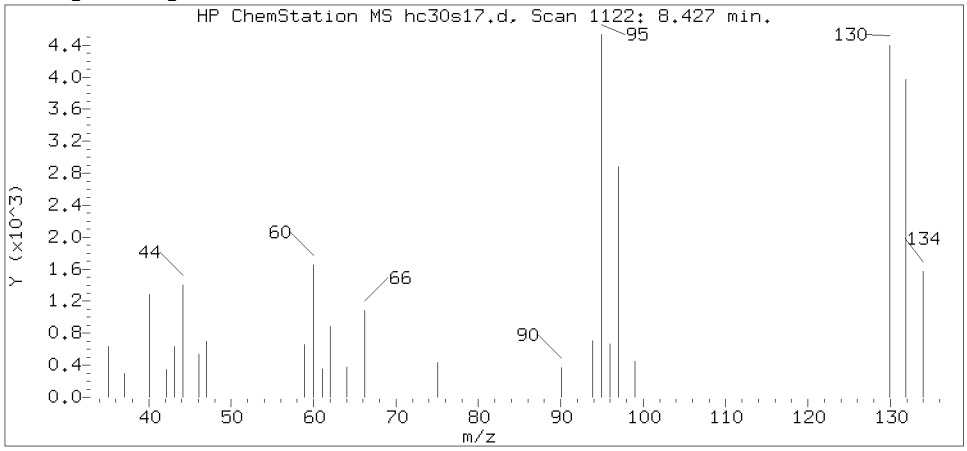
Sample Spectrum (Background Subtracted)

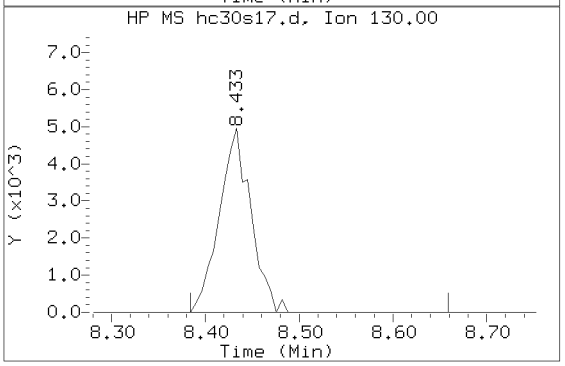






Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

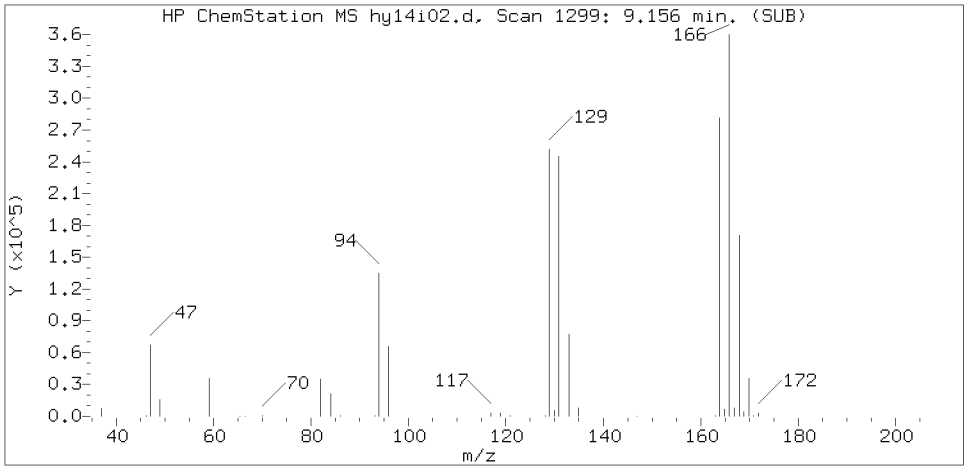
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

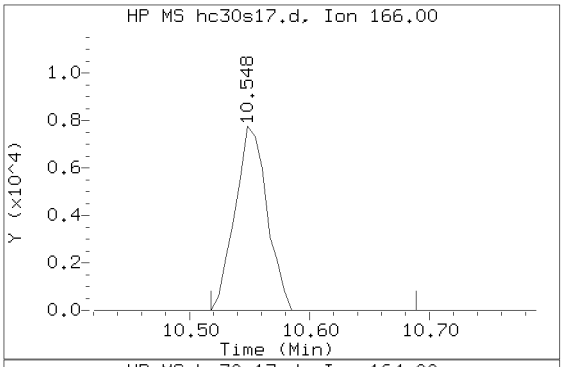
Sample Name: F4801 Lab Sample ID: 1183606

Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1122
Retention Time (minutes)	: 8.427
Relative Retention Time	: 0.00077
Quant Ion	: 95.00
Area (flag)	: 11145
On-Column Amount (ng)	: 0.2077

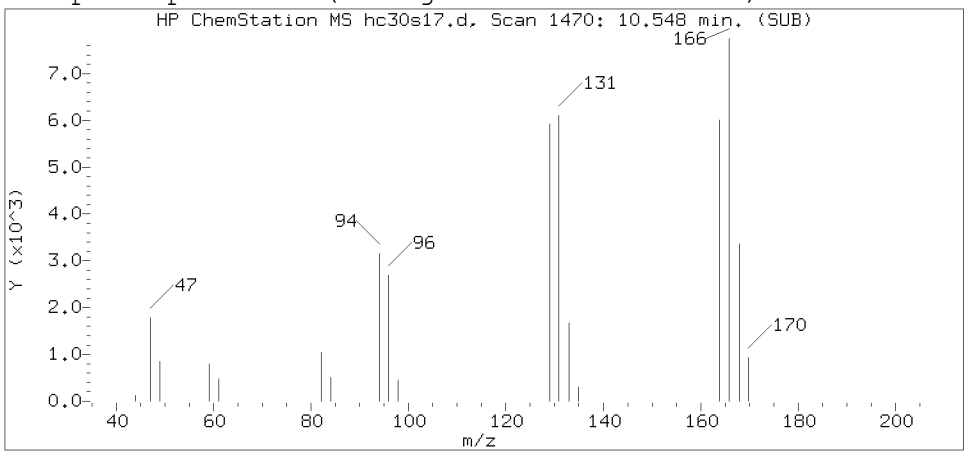
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

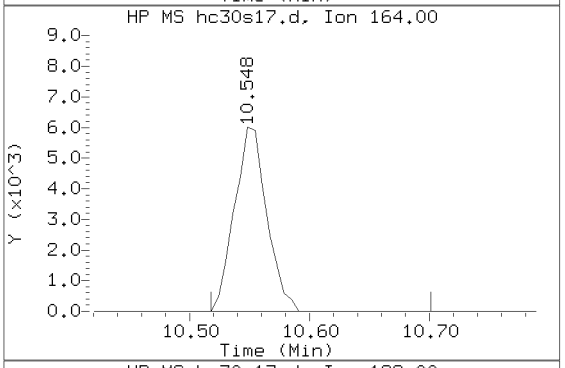
Reference Standard Spectrum for Tetrachloroethene

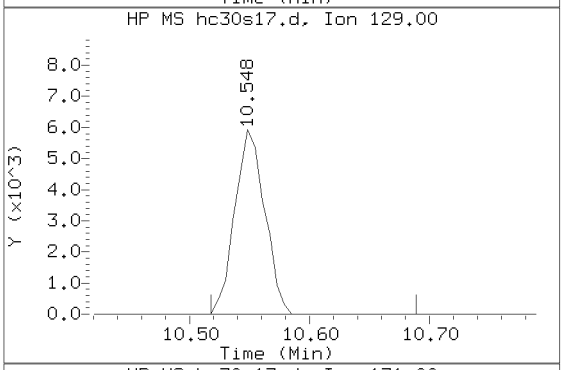




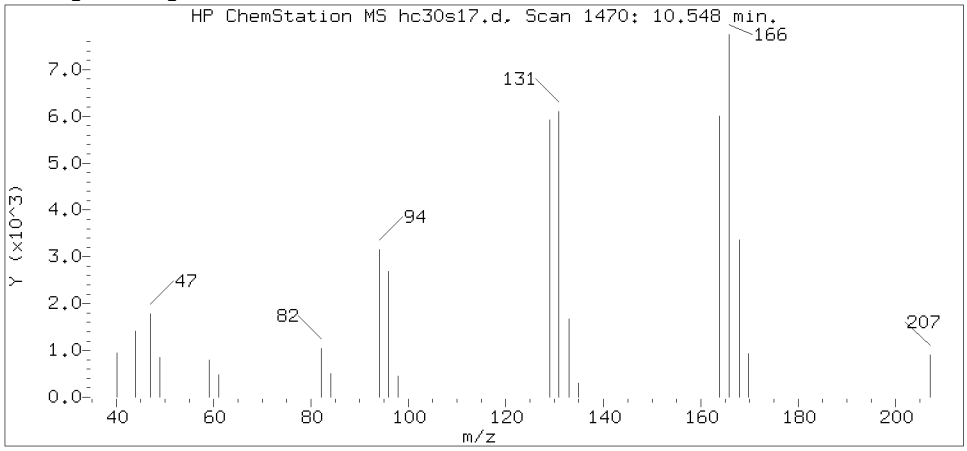
Sample Spectrum (Background Subtracted)

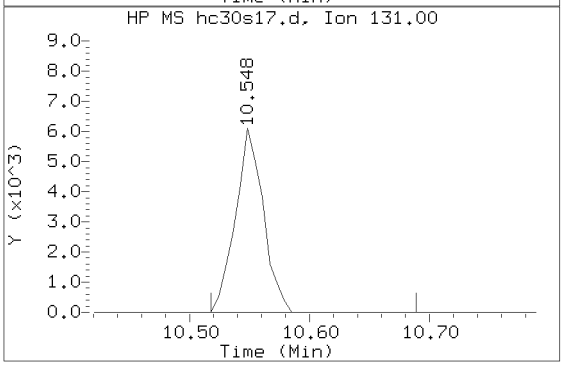






Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s17.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:08 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 19:51 sej02002

Sample Name: F4801 Lab Sample ID: 1183606

Compound Number	: 89
Compound Name	: Tetrachloroethene
Scan Number	: 1470
Retention Time (minutes)	: 10.548
Relative Retention Time	: 0.00004
Quant Ion	: 166.00
Area (flag)	: 14309
On-Column Amount (ng)	: 0.2187

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

F4801DL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

1183606DL

Data file: /chem2/HP19094.i/19oct30a.b/hc30s18.d Injection date and time: **30-OCT-2019 16:29**
Data file Sample Info. Line: F4801DL;1183606DL;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **2.50**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 10 ml

Analysis Comments:9145; 9274

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.483(-0.018)	475	65	130027 (-9)	50.00	
63) Fluorobenzene	7.958(-0.006)	1045	96	1863226 (-5)	10.00	
97) Chlorobenzene-d5	11.378(0.000)	1606	117	1522961 (-5)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243(0.000)	1912	152	795147 (-5)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.068(0.000)	113	502820	9.924	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.525(0.001)	102	90768	9.743	97%		80 - 120
82) Toluene-d8	(3)	9.939(0.000)	98	1890964	9.726	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365(0.000)	95	695534	9.782	98%		80 - 120

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)			Not Detected					0.1	3
4) Dimethyl ether	(2)	2.142(0.001)	45	243014	3.628	9.07		J	0.1	31
2) Chloromethane	(2)			Not Detected					0.2	3
8) Chloroethane	(2)	2.837(0.000)	64	57511	1.366	3.41			0.2	3
10) Trichlorofluoromethane	(2)			Not Detected					0.1	3
11) Ethyl ether	(2)	3.428(-0.001)	59	598715	18.870	47.18			0.1	31
15) 1,1-Dichloroethene	(2)	3.745(0.000)	96	3190	0.077	0.19		J	0.2	3
16) Freon 113	(2)			Not Detected					0.2	3
23) Methylene Chloride	(2)	4.464(-0.001)	84	23086	0.466	1.17		J	0.2	3
33) 1,1-Dichloroethane	(2)	5.543(-0.000)	63	198818	2.355	5.89			0.2	3
38) 2-Butanone	(1)			Not Detected					2	25
48) Tetrahydrofuran	(1)	6.708(0.006)	71	16530	4.272	10.68		J	2	63
51) 1,1,1-Trichloroethane	(2)	7.086(-0.000)	97	9752	0.118	0.30		J	0.2	3
54) Carbon Tetrachloride	(2)			Not Detected					0.2	3
58) Benzene	(2)	7.555(0.000)	78	26574	0.141	0.35		J	0.1	3
67) Trichloroethene	(2)	8.433(0.000)	95	3883	0.073	0.18		J	0.2	3
83) Toluene	(3)			Not Detected					0.2	3
89) Tetrachloroethene	(3)	10.548(0.000)	166	4848	0.075	0.19		J	0.2	3
100) Ethylbenzene	(3)			Not Detected					0.2	3
101) m+p-Xylene	(3)			Not Detected					0.3	1
104) o-Xylene	(3)			Not Detected					0.1	1
105) Xylene (Total)	(3)			Not Detected					0.4	8

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Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s18.d Injection date and time: **30-OCT-2019 16:29**
Data file Sample Info. Line: F4801DL;1183606DL;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **2.50**

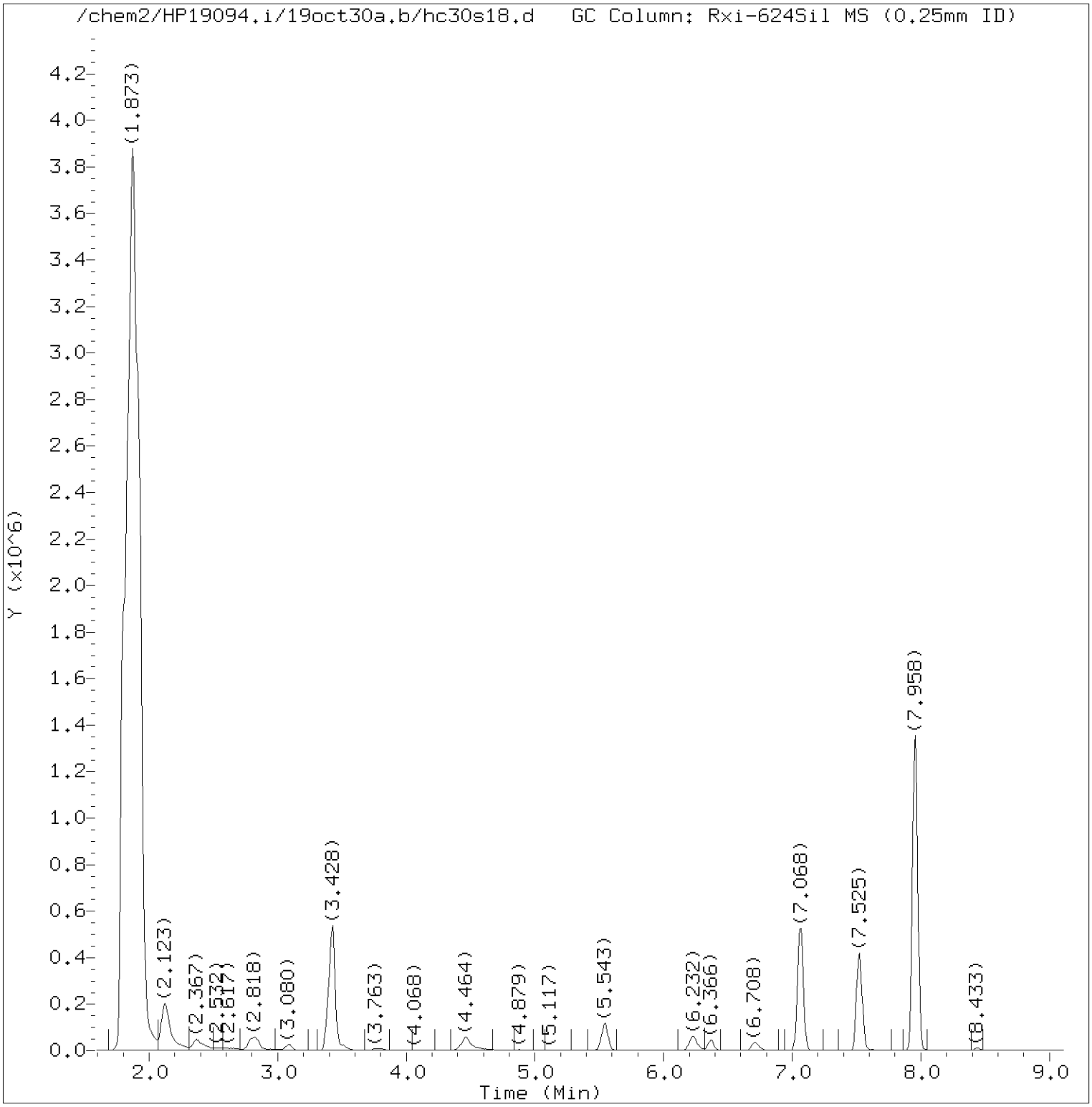
Volume Purged (Vt): 25 ml Sample Volume (Vo): 10 ml

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WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

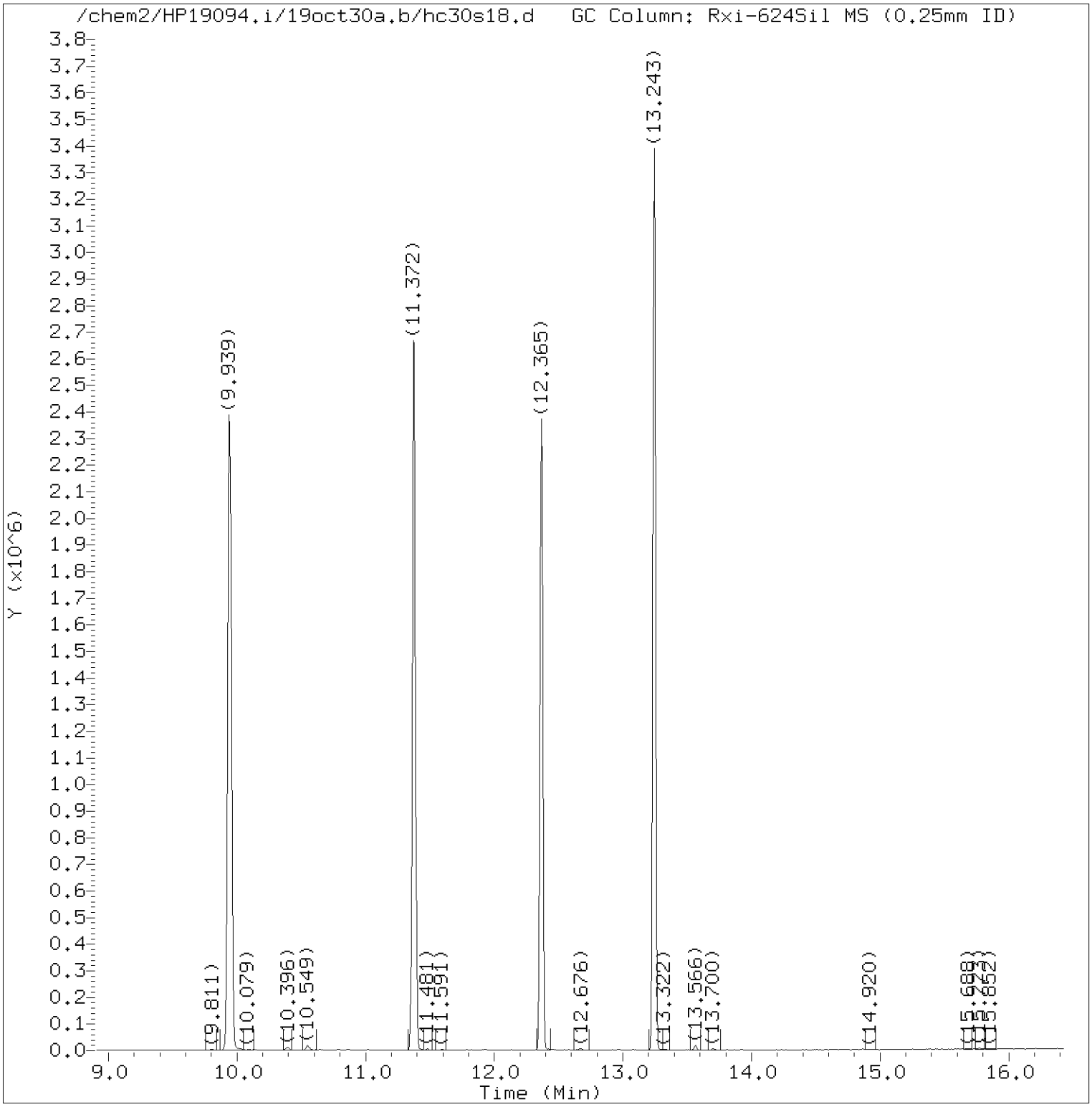
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

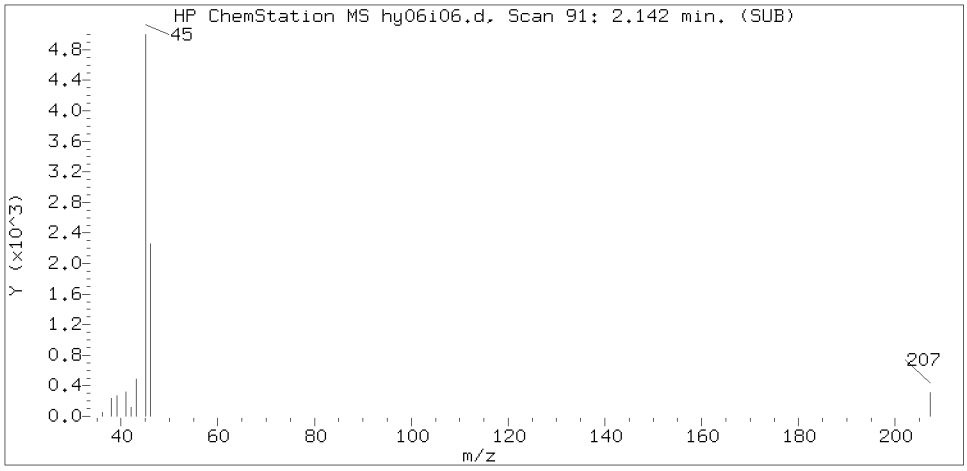
Sample Name: F4801DL Lab Sample ID: 1183606DL

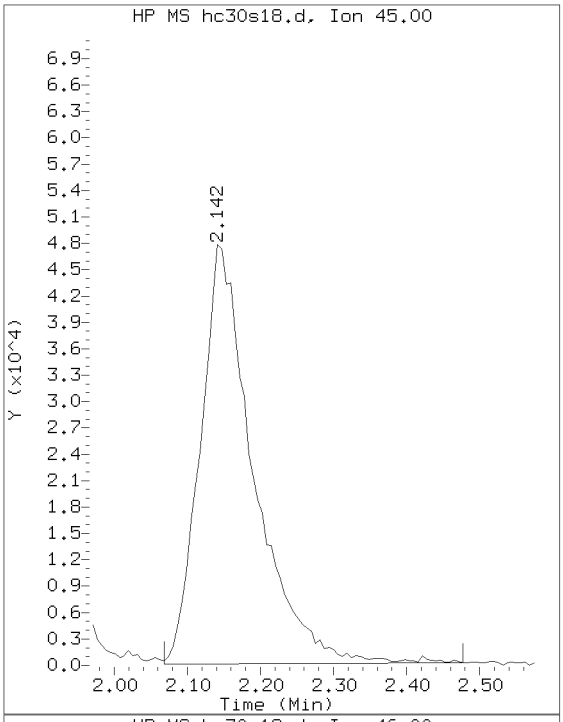
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.142	45	243014	3.628
8) Chloroethane	(2)	2.837	64	57511	1.366
11) Ethyl ether	(2)	3.428	59	598715	18.870
15) 1,1-Dichloroethene	(2)	3.745	96	3190	0.077
23) Methylene Chloride	(2)	4.464	84	23086	0.466
26)*t-Butyl Alcohol-d10	(1)	4.483	65	130027	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	198818	2.355
48) Tetrahydrofuran	(1)	6.708	71	16530	4.272
50)$Dibromofluoromethane	(2)	7.068	113	502820	9.924
51) 1,1,1-Trichloroethane	(2)	7.086	97	9752	0.118
57)$1,2-Dichloroethane-d4	(2)	7.525	102	90768	9.743
58) Benzene	(2)	7.555	78	26574	0.141
63)*Fluorobenzene	(2)	7.958	96	1863226	10.000
67) Trichloroethene	(2)	8.433	95	3883	0.073
82)$Toluene-d8	(3)	9.939	98	1890964	9.726
89) Tetrachloroethene	(3)	10.549	166	4848	0.075
97)*Chlorobenzene-d5	(3)	11.378	117	1522961	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	695534	9.782
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	795147	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

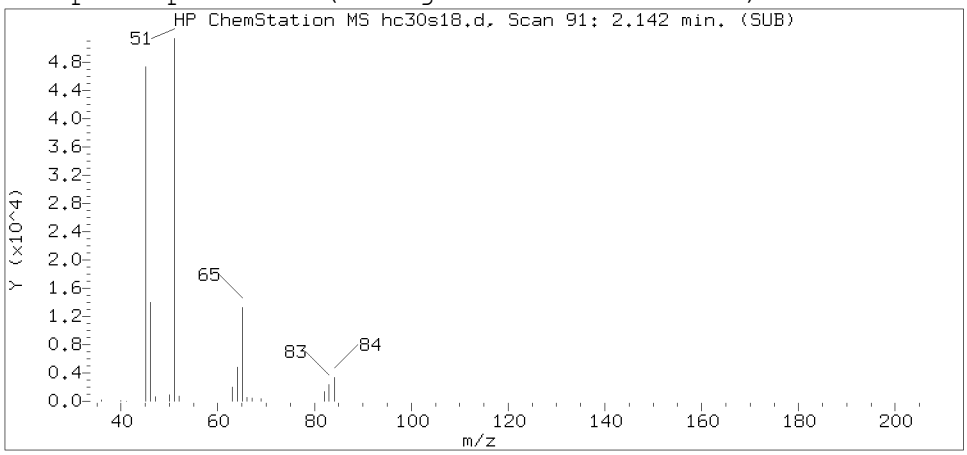
Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

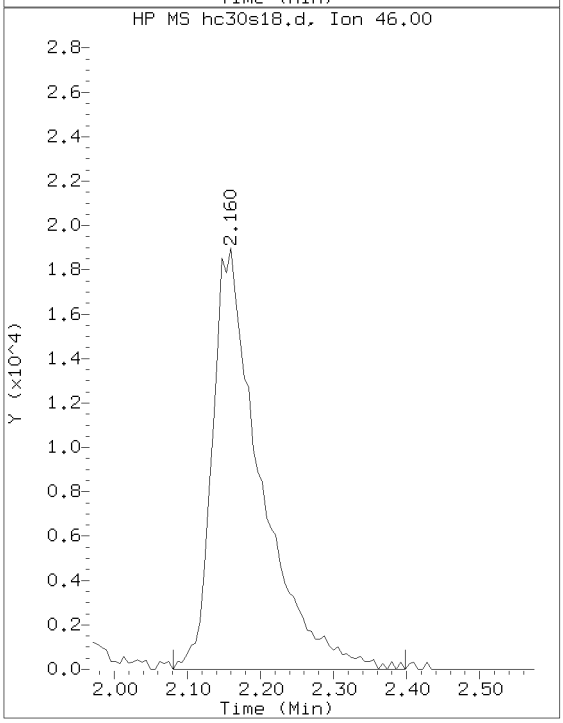
Reference Standard Spectrum for Dimethyl ether



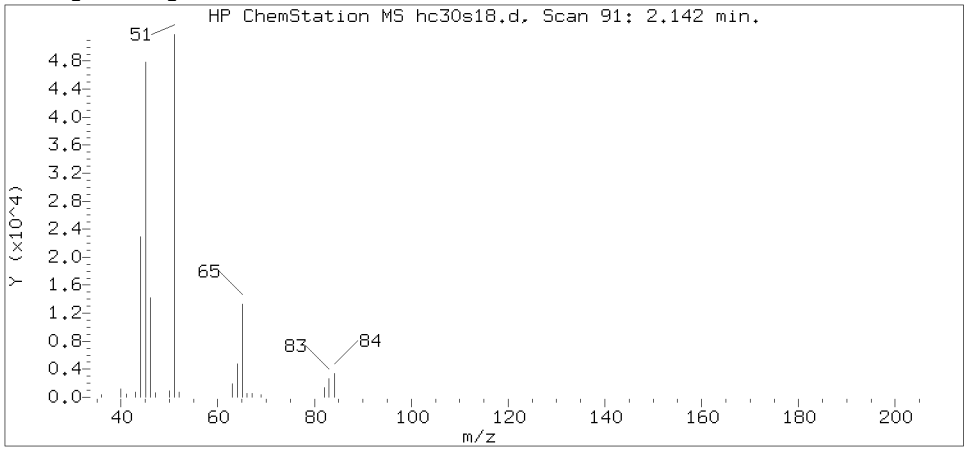


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

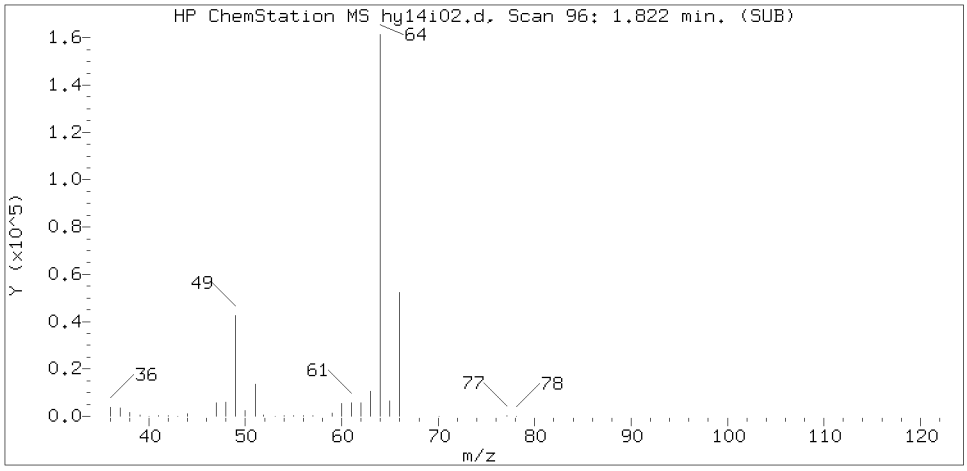
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

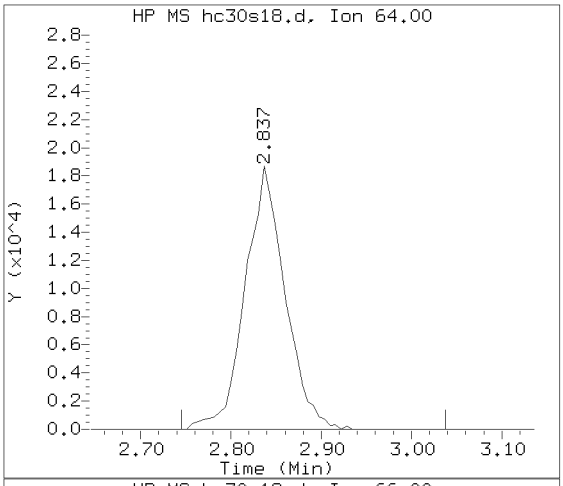
Sample Name: F4801DL Lab Sample ID: 1183606DL

Compound Number	: 4
Compound Name	: Dimethyl ether
Scan Number	: 91
Retention Time (minutes)	: 2.142
Relative Retention Time	: 0.00174
Quant Ion	: 45.00
Area (flag)	: 243014
On-Column Amount (ng)	: 3.6283

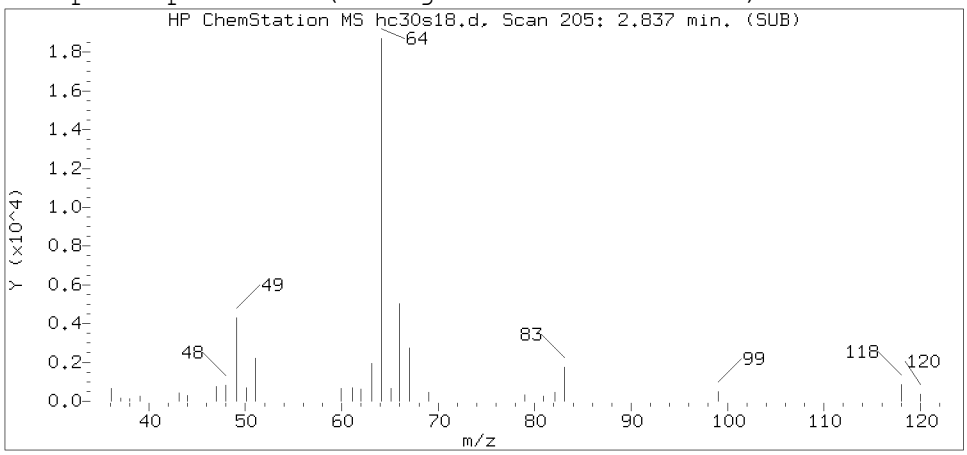
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

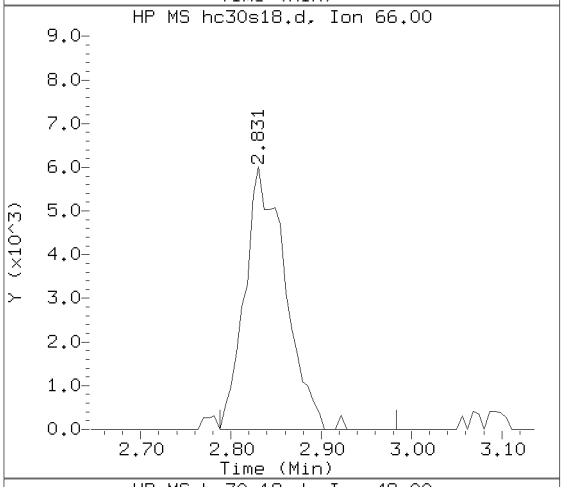
Reference Standard Spectrum for Chloroethane



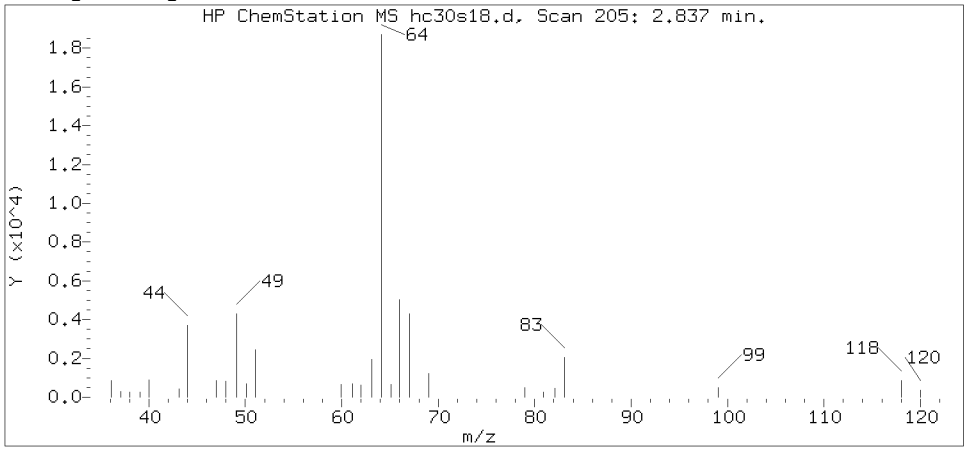


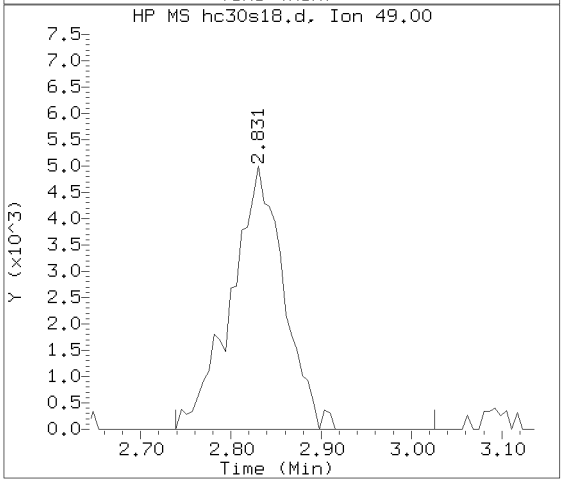
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

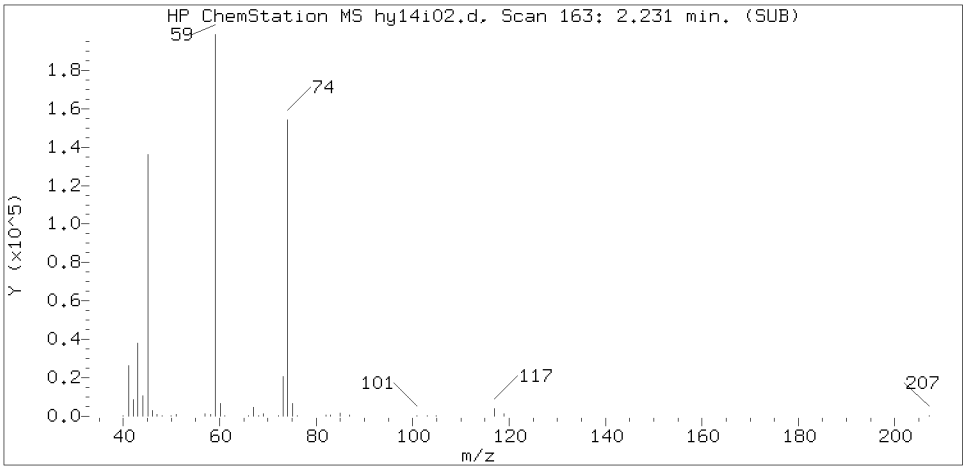
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

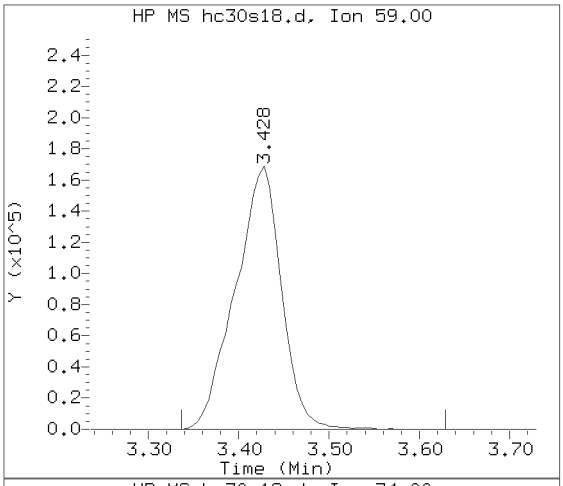
Sample Name: F4801DL Lab Sample ID: 1183606DL

Compound Number	: 8
Compound Name	: Chloroethane
Scan Number	: 205
Retention Time (minutes)	: 2.837
Relative Retention Time	: 0.00027
Quant Ion	: 64.00
Area (flag)	: 57511
On-Column Amount (ng)	: 1.3656

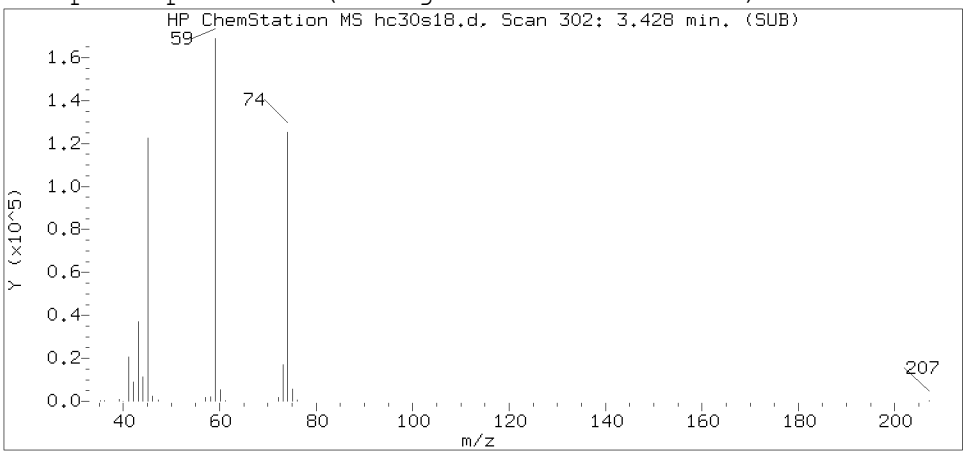
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

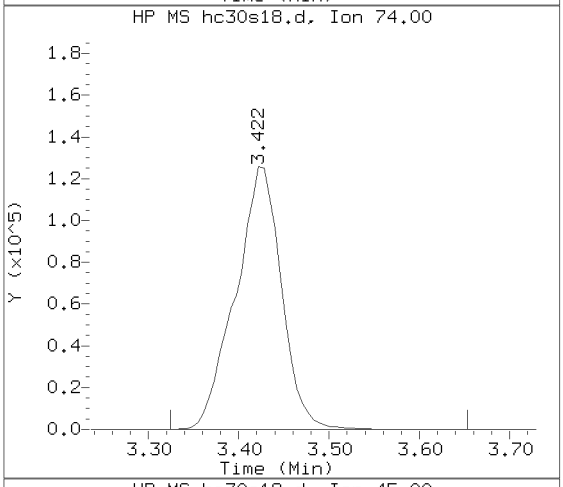
Reference Standard Spectrum for Ethyl ether



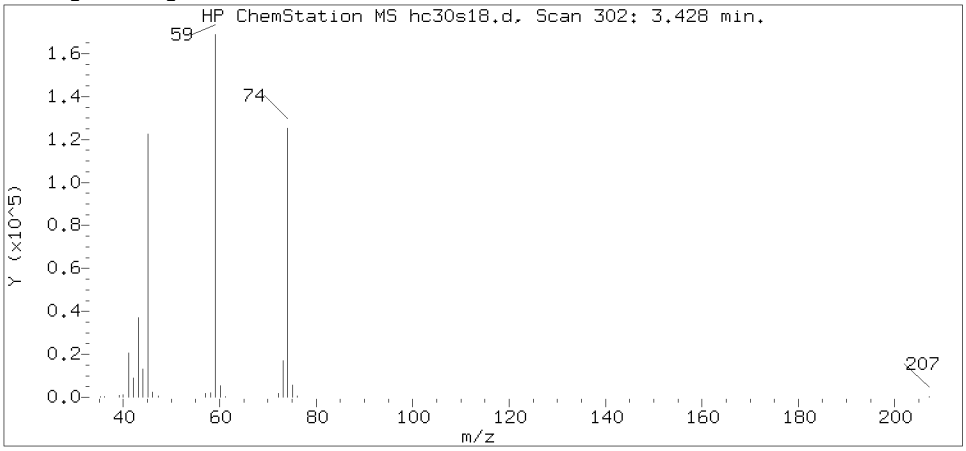


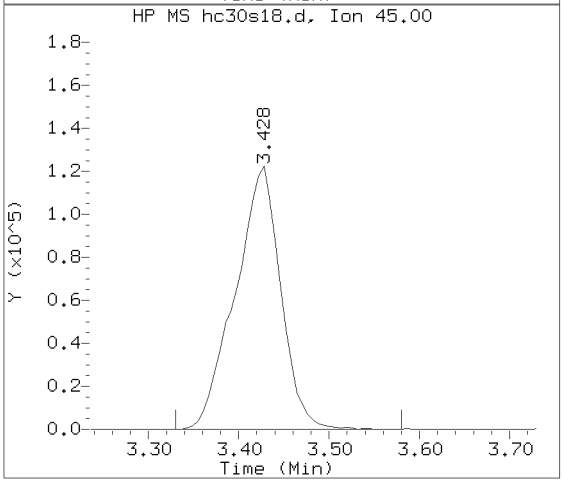
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

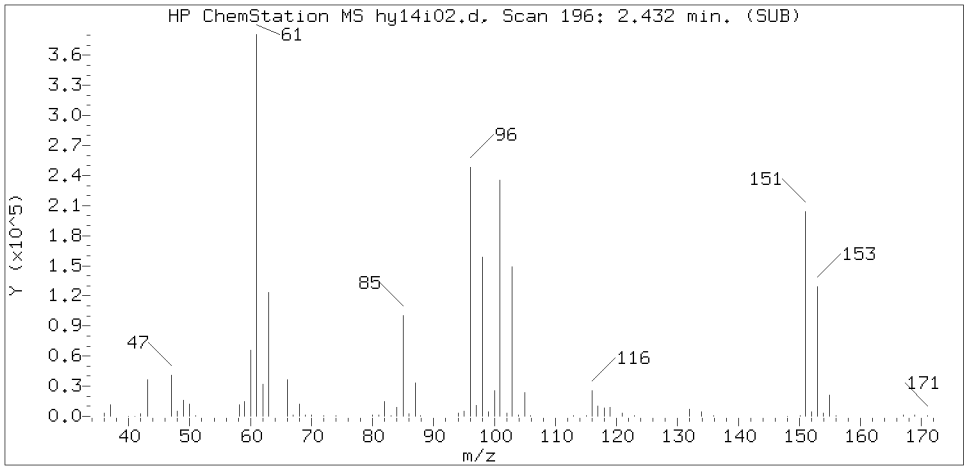
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

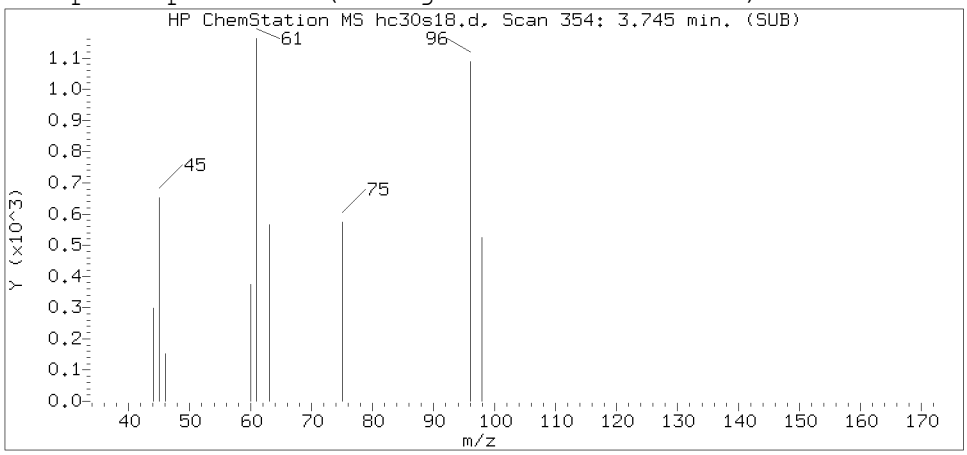
Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 302
Retention Time (minutes): 3.428
Relative Retention Time :-0.00121
Quant Ion : 59.00
Area (flag) : 598715
On-Column Amount (ng) : 18.8703

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Target 3.5 esignature user ID: sej02002

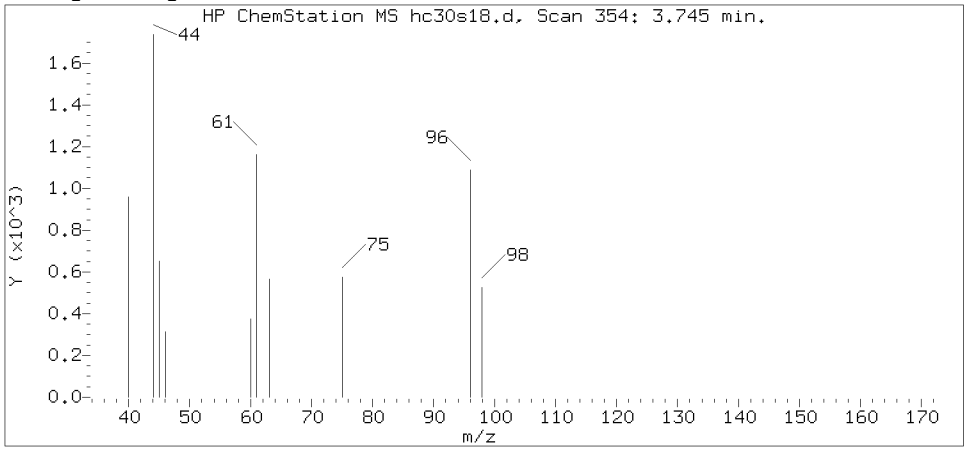
Reference Standard Spectrum for 1,1-Dichloroethene

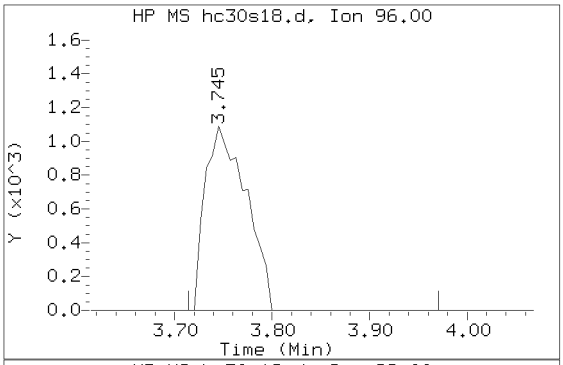


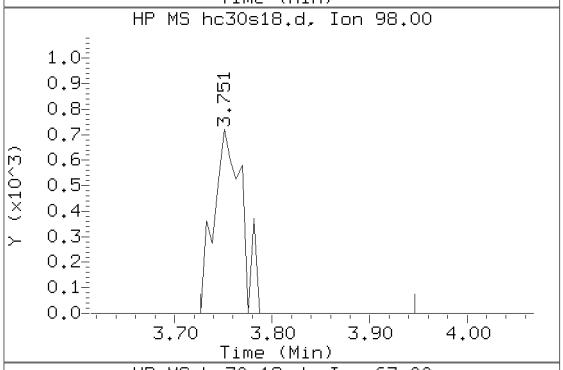
Sample Spectrum (Background Subtracted)

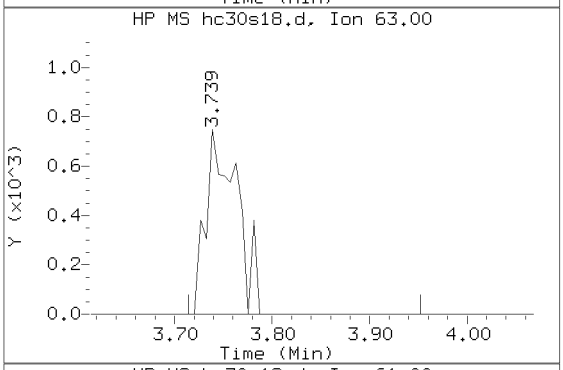


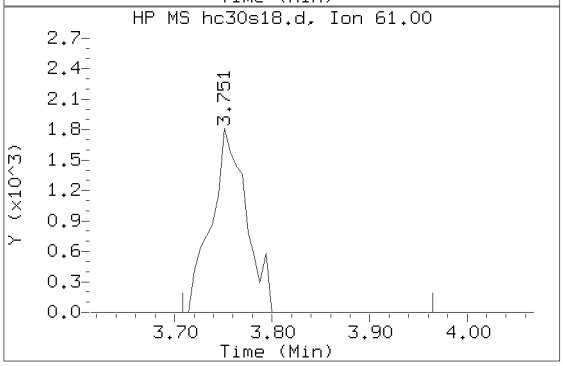
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

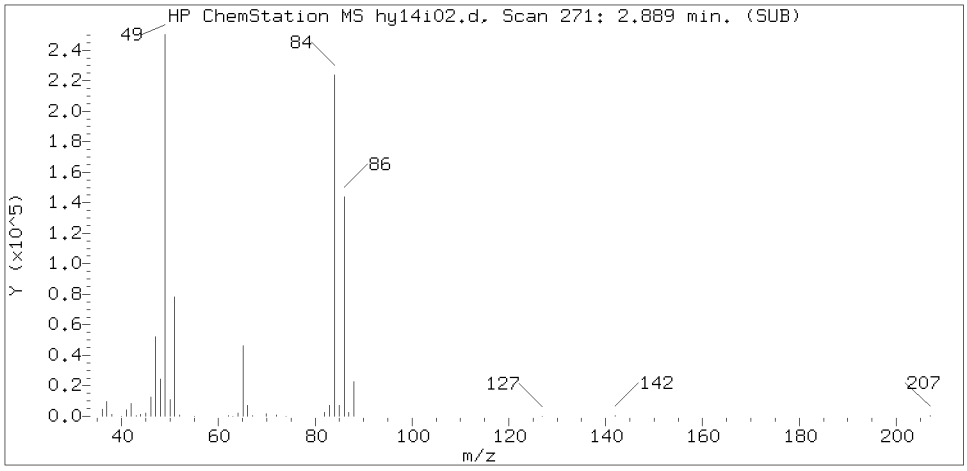
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

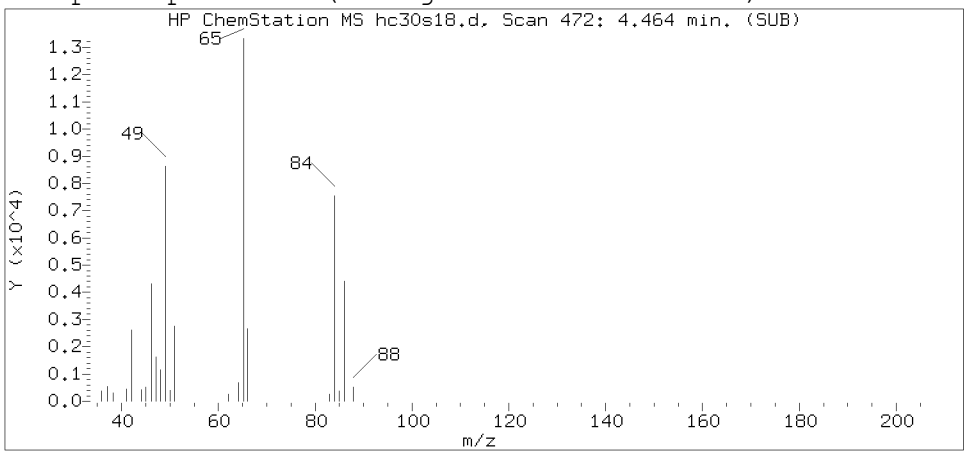
Compound Number : 15
Compound Name : 1,1-Dichloroethene
Scan Number : 354
Retention Time (minutes): 3.745
Relative Retention Time : 0.00036
Quant Ion : 96.00
Area (flag) : 3190
On-Column Amount (ng) : 0.0768

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Target 3.5 esignature user ID: sej02002

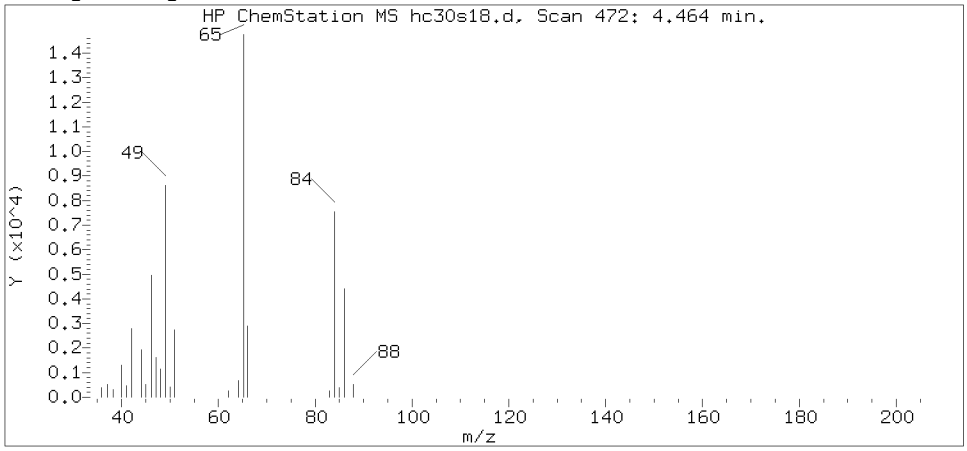
Reference Standard Spectrum for Methylene Chloride

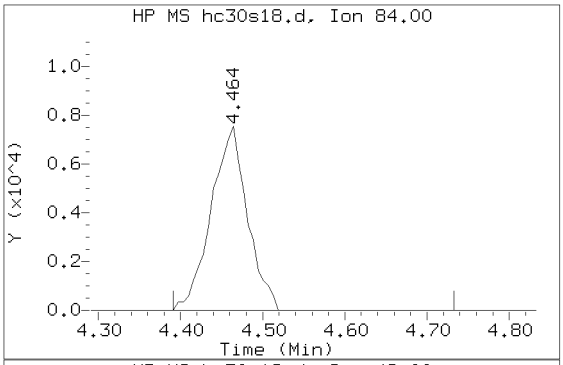


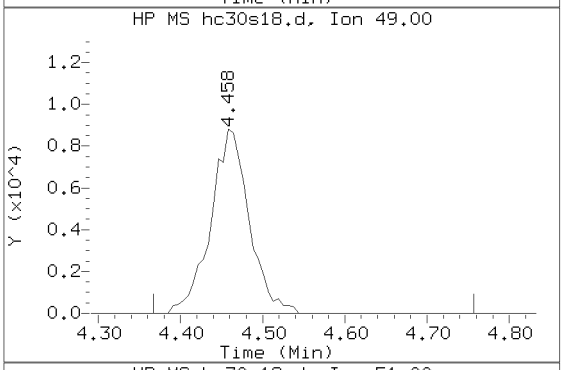
Sample Spectrum (Background Subtracted)

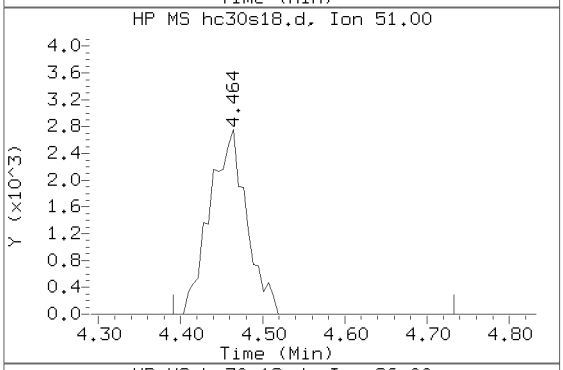


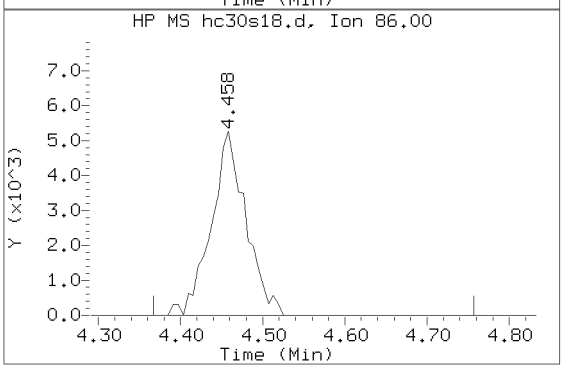
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

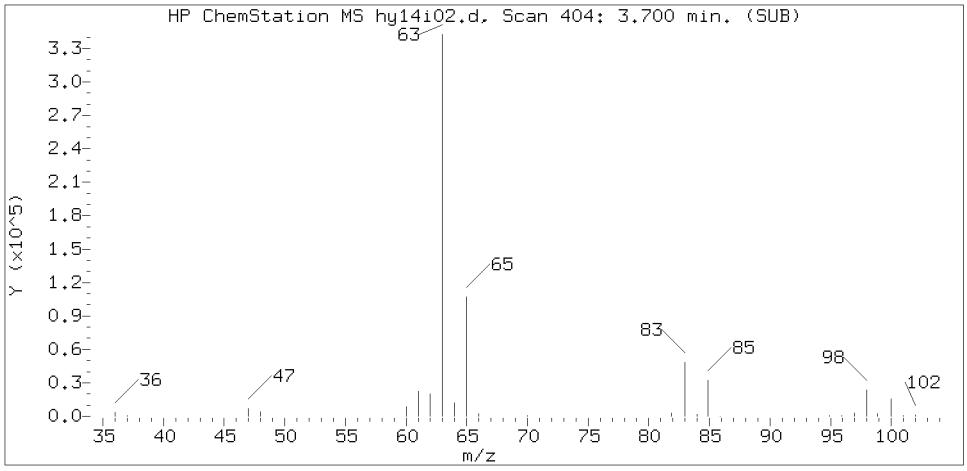
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

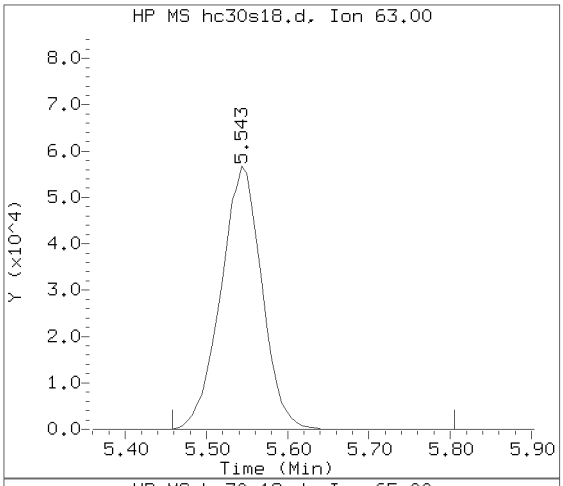
Sample Name: F4801DL Lab Sample ID: 1183606DL

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 472
Retention Time (minutes): 4.464
Relative Retention Time :-0.00111
Quant Ion : 84.00
Area (flag) : 23086
On-Column Amount (ng) : 0.4664

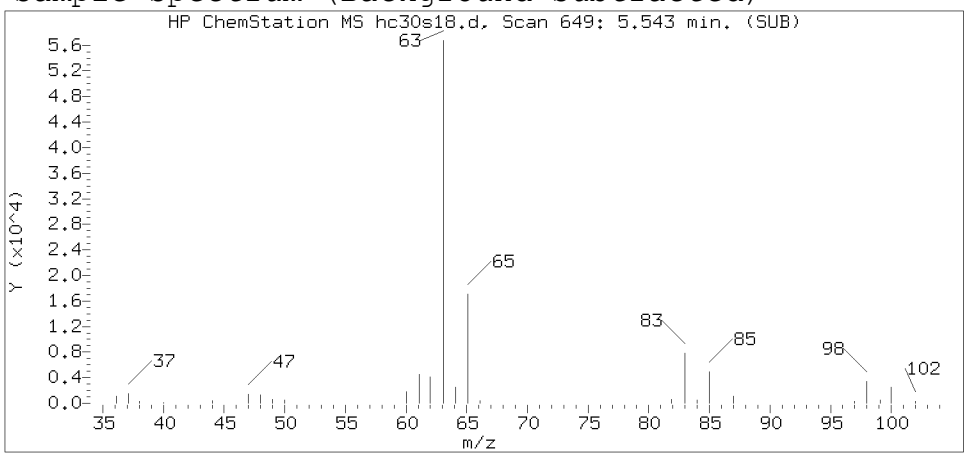
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

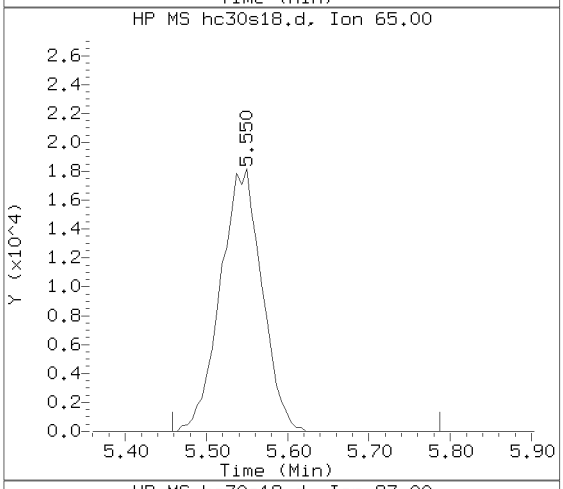
Reference Standard Spectrum for 1,1-Dichloroethane



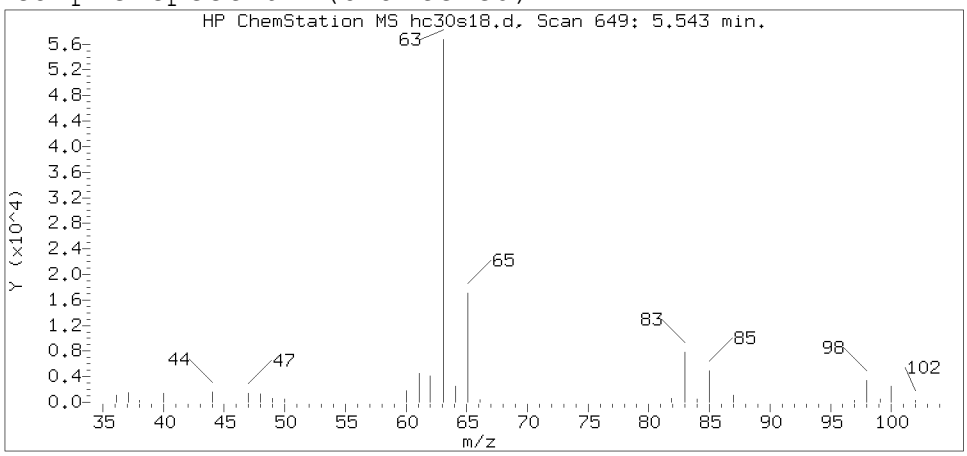


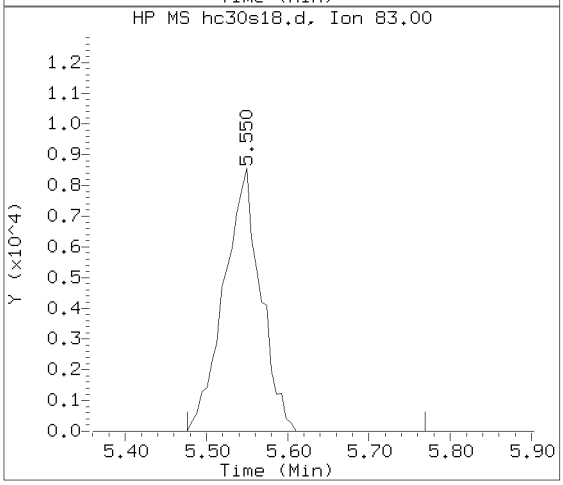
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

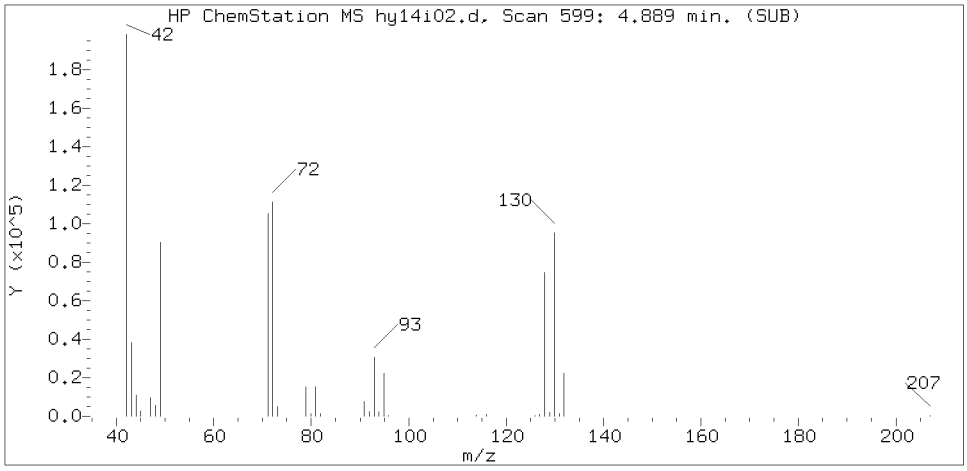
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

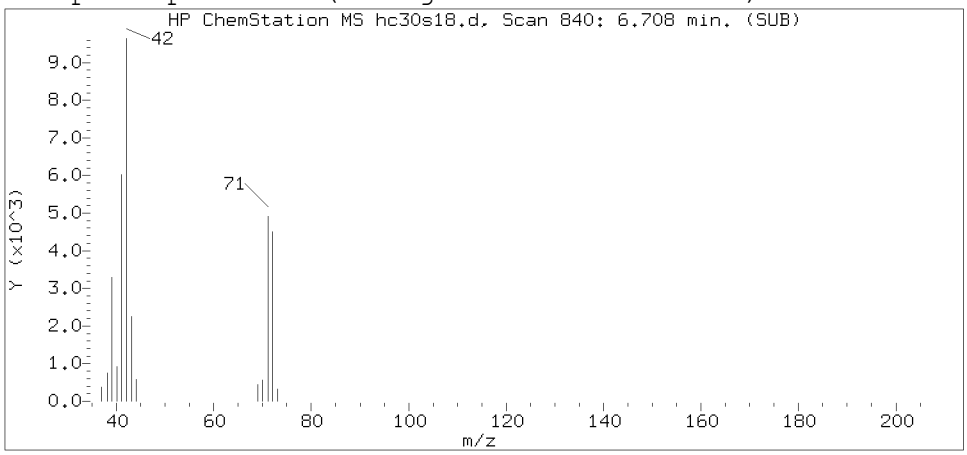
Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 649
Retention Time (minutes): 5.543
Relative Retention Time :-0.00023
Quant Ion : 63.00
Area (flag) : 198818
On-Column Amount (ng) : 2.3550

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Target 3.5 esignature user ID: sej02002

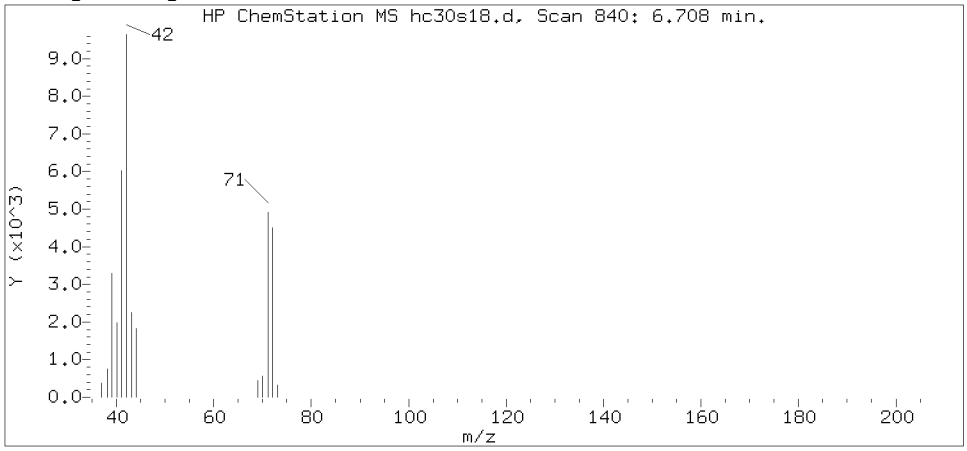
Reference Standard Spectrum for Tetrahydrofuran

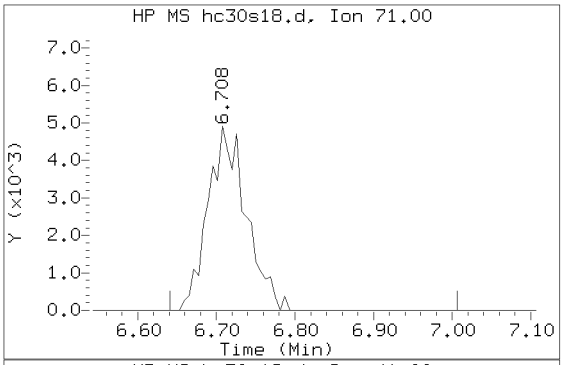


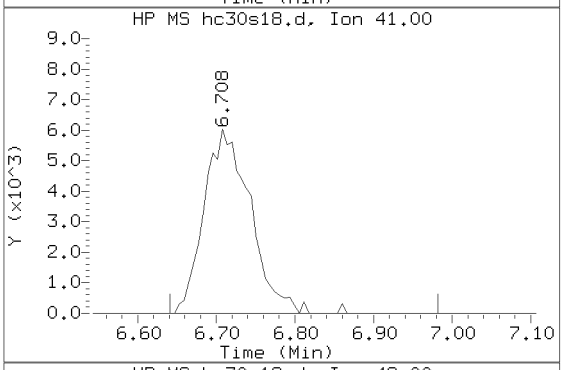
Sample Spectrum (Background Subtracted)

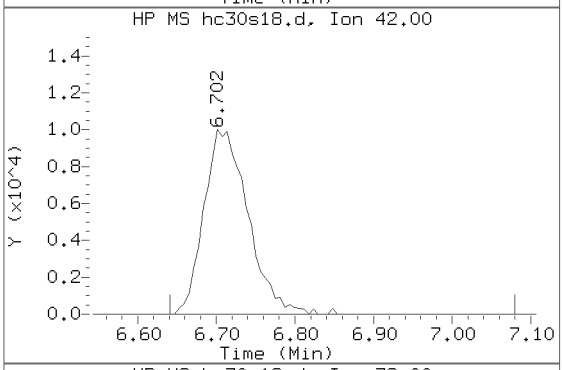


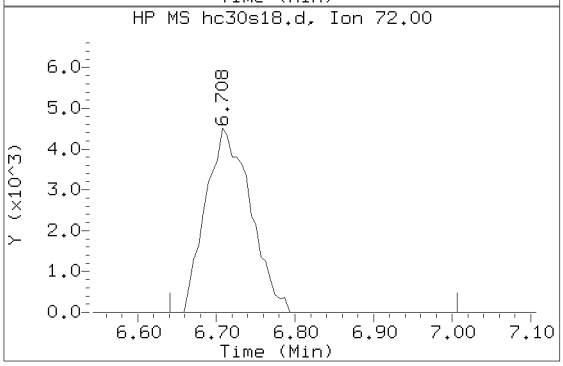
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

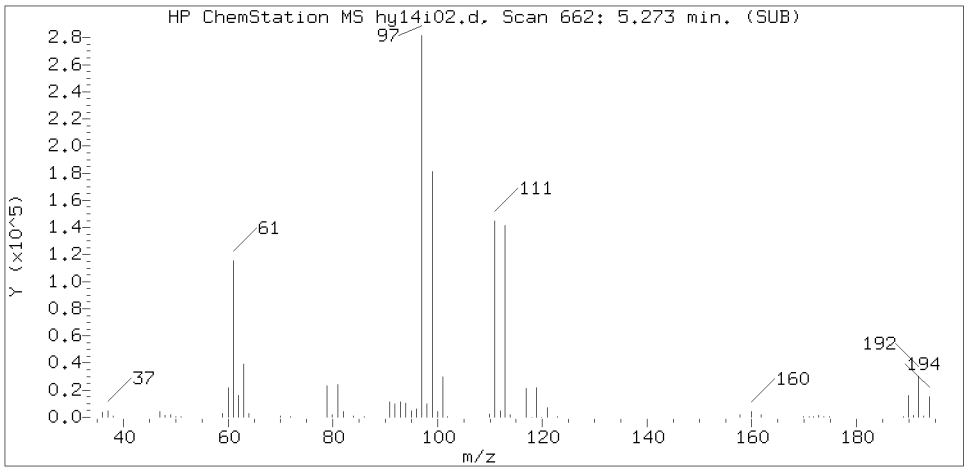
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

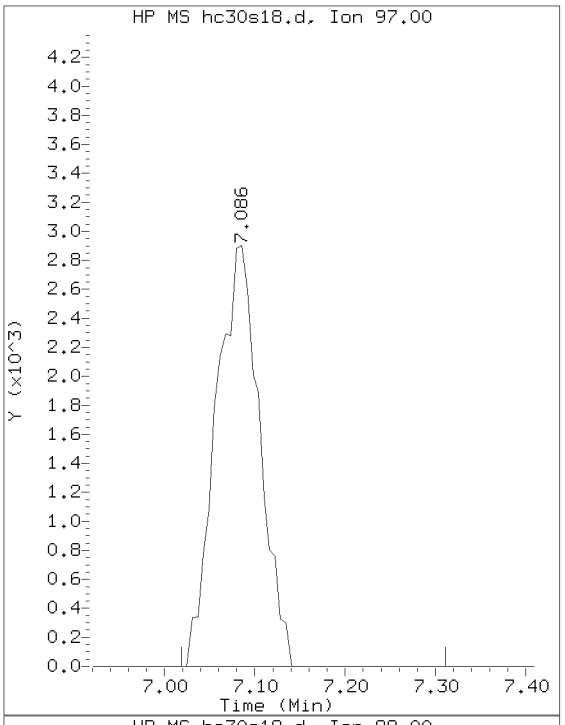
Sample Name: F4801DL Lab Sample ID: 1183606DL

Compound Number	: 48
Compound Name	: Tetrahydrofuran
Scan Number	: 840
Retention Time (minutes)	: 6.708
Relative Retention Time	: 0.00613
Quant Ion	: 71.00
Area (flag)	: 16530
On-Column Amount (ng)	: 4.2721

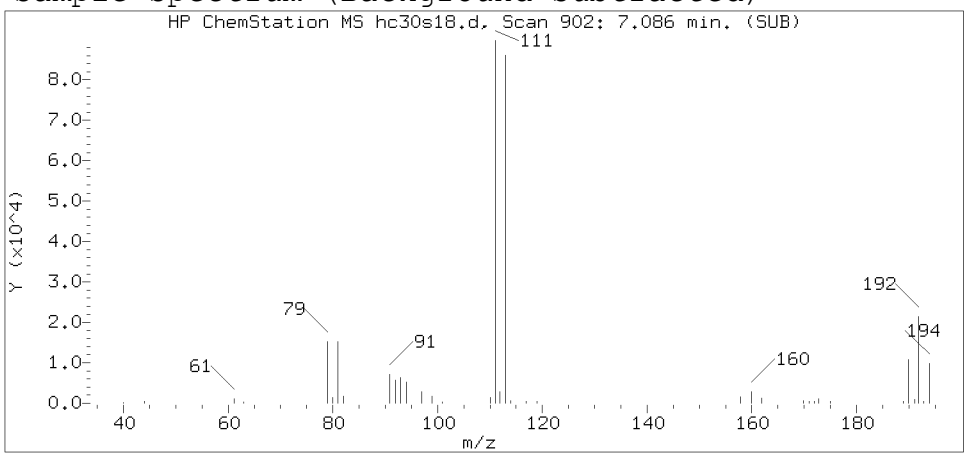
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

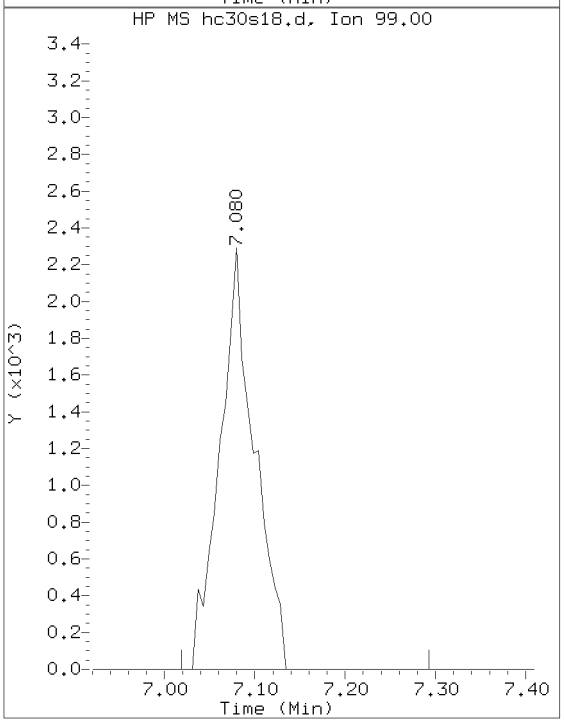
Reference Standard Spectrum for 1,1,1-Trichloroethane



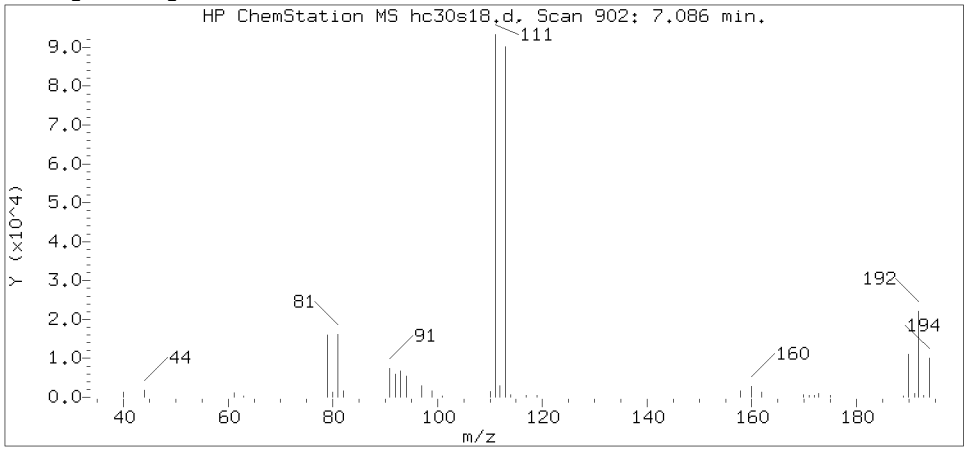


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

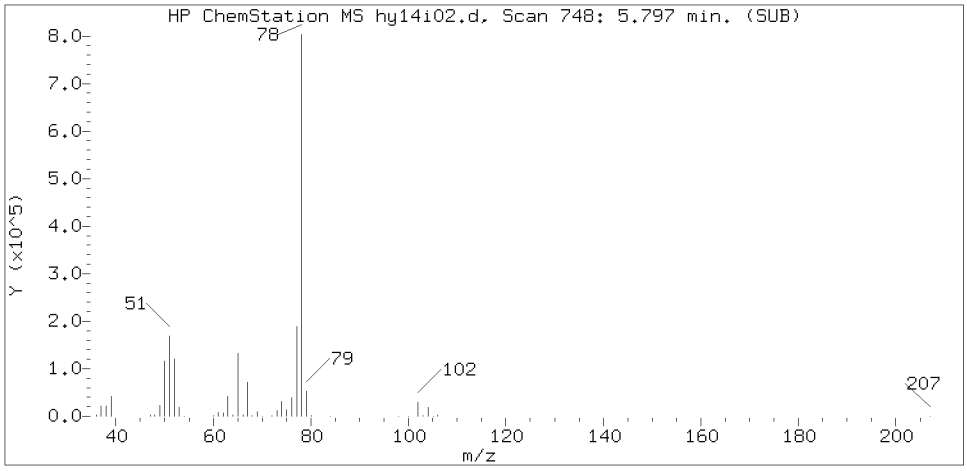
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

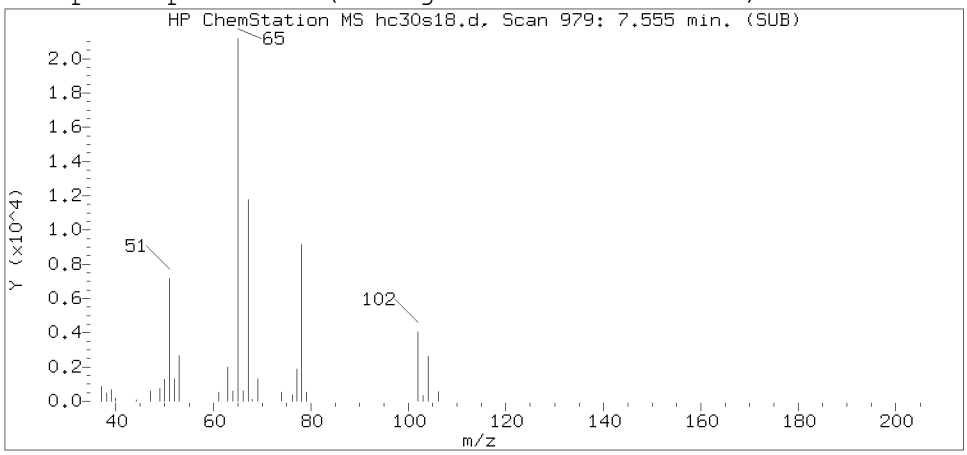
Compound Number : 51
Compound Name : 1,1,1-Trichloroethane
Scan Number : 902
Retention Time (minutes): 7.086
Relative Retention Time :-0.00008
Quant Ion : 97.00
Area (flag) : 9752
On-Column Amount (ng) : 0.1181

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

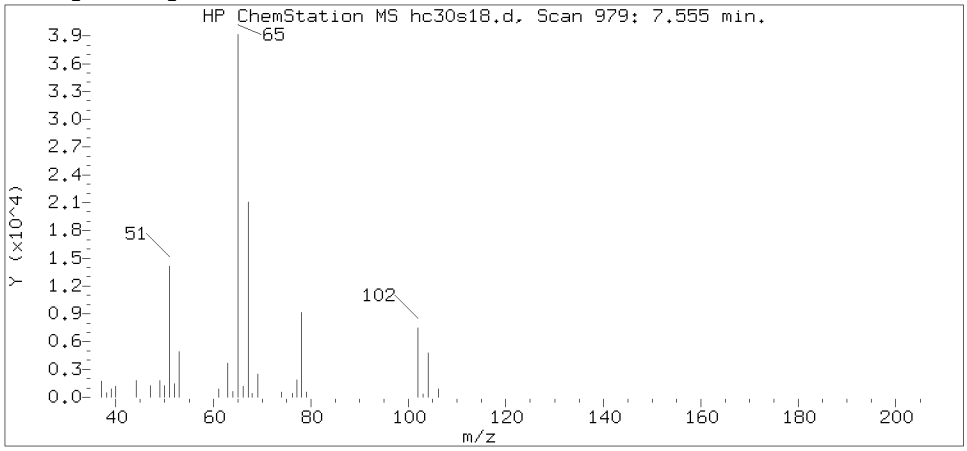
Reference Standard Spectrum for Benzene

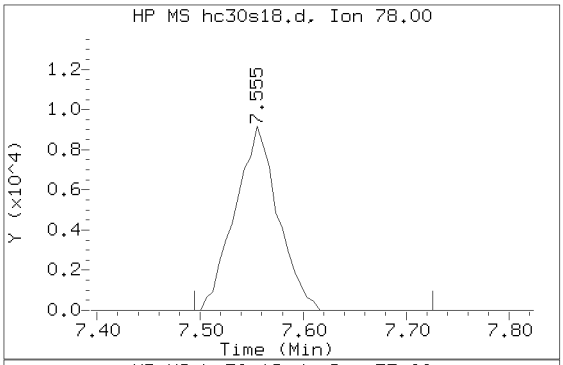


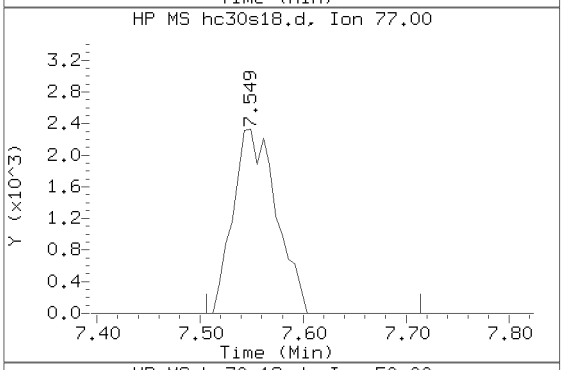
Sample Spectrum (Background Subtracted)

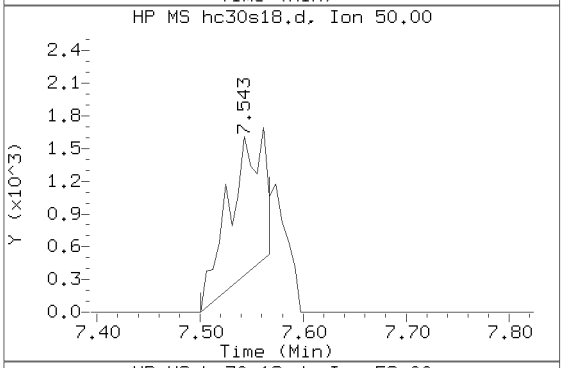


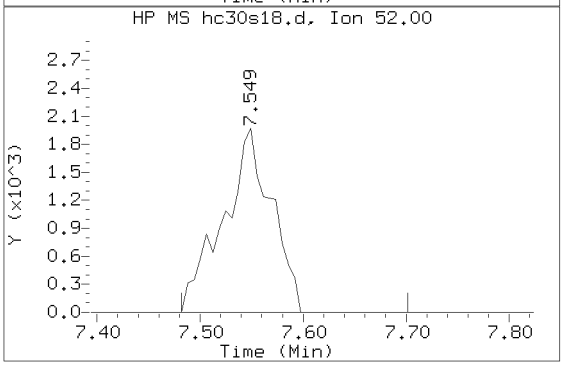
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

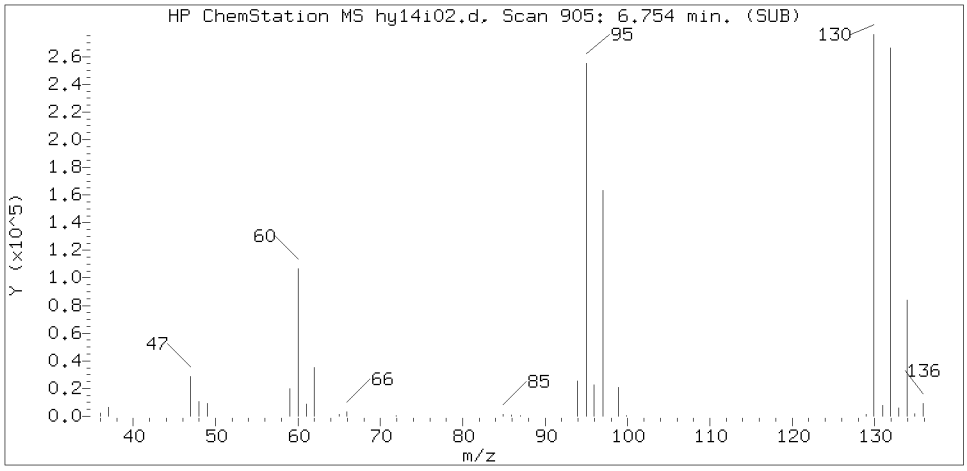
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

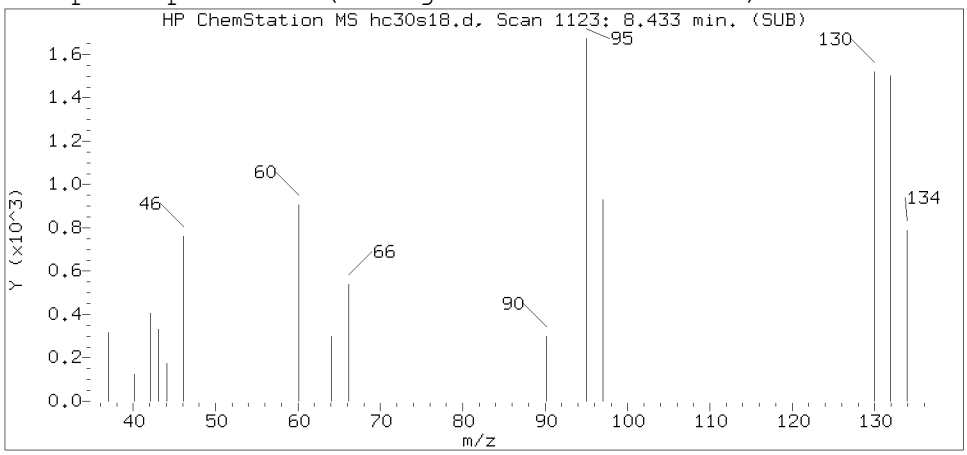
Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 979
Retention Time (minutes)	: 7.555
Relative Retention Time	: 0.00073
Quant Ion	: 78.00
Area (flag)	: 26574
On-Column Amount (ng)	: 0.1410

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

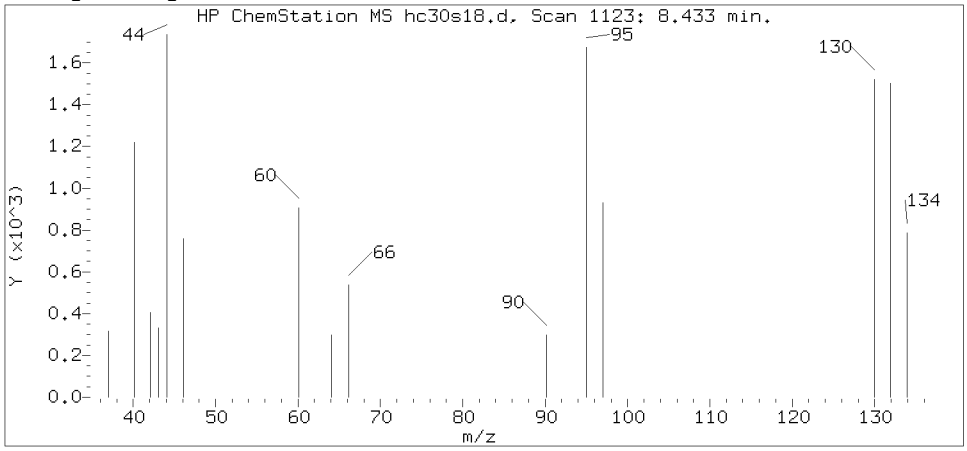
Reference Standard Spectrum for Trichloroethene

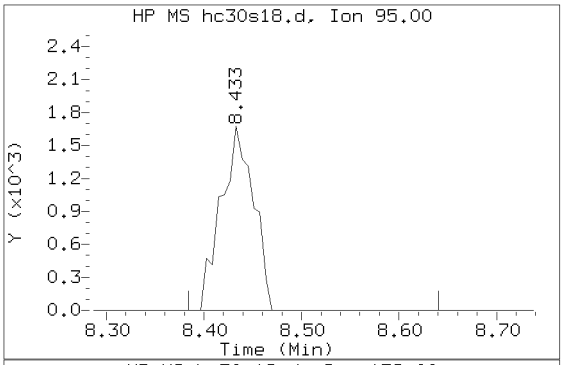


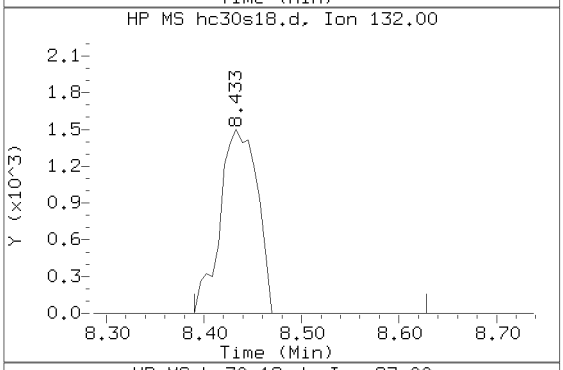
Sample Spectrum (Background Subtracted)

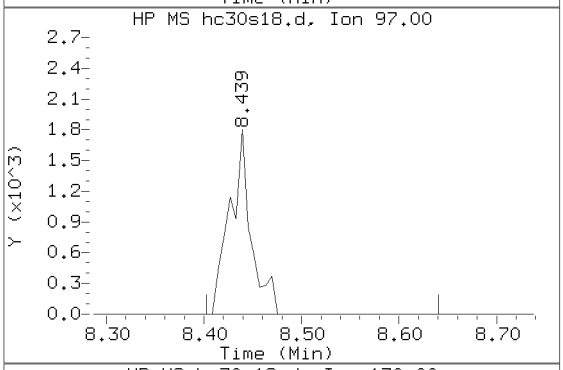


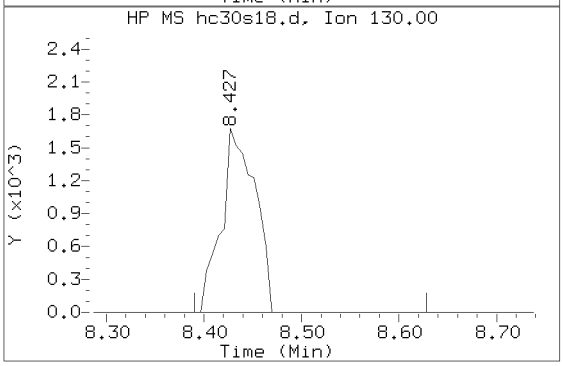
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

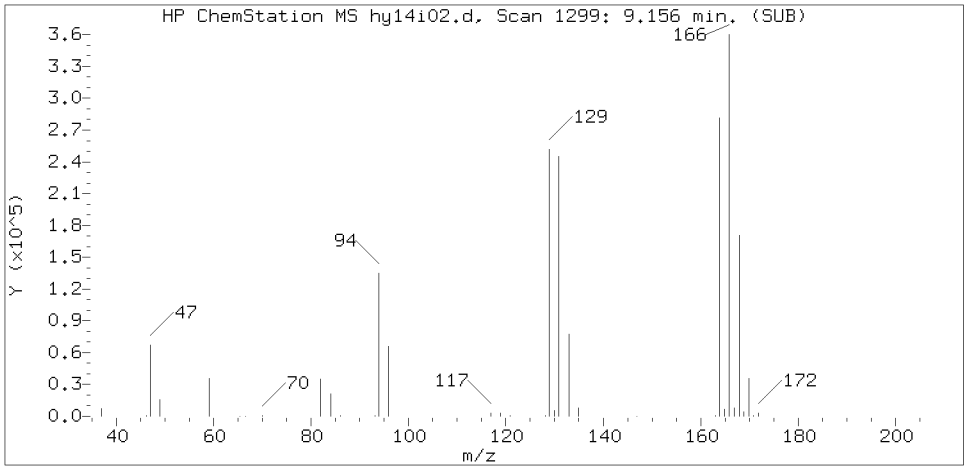
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

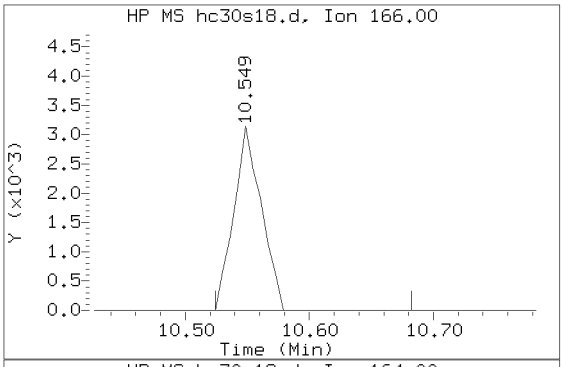
Sample Name: F4801DL Lab Sample ID: 1183606DL

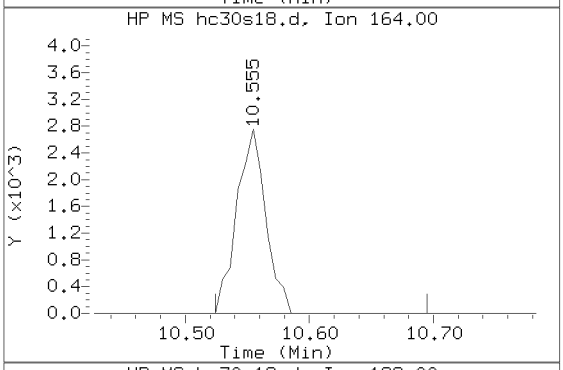
Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1123
Retention Time (minutes)	: 8.433
Relative Retention Time	: 0.00081
Quant Ion	: 95.00
Area (flag)	: 3883
On-Column Amount (ng)	: 0.0734

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Target 3.5 esignature user ID: sej02002

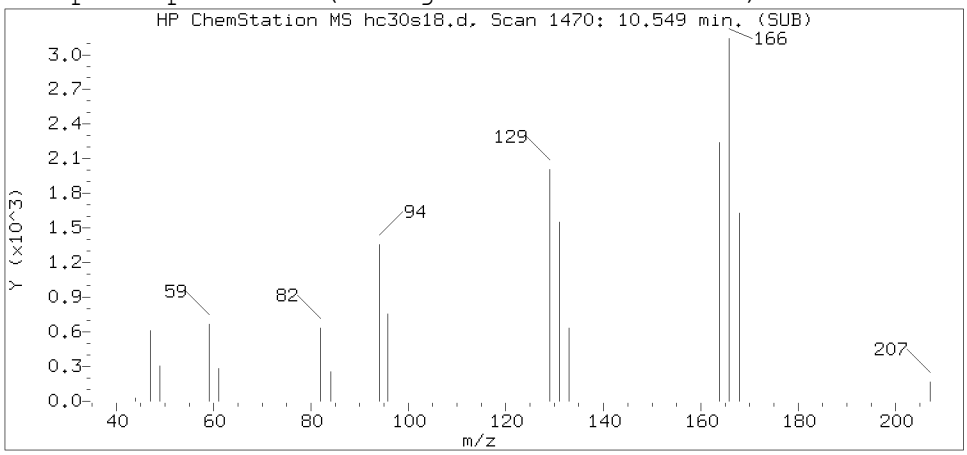
Reference Standard Spectrum for Tetrachloroethene

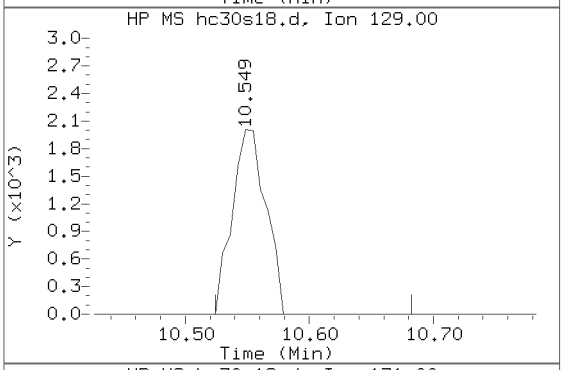




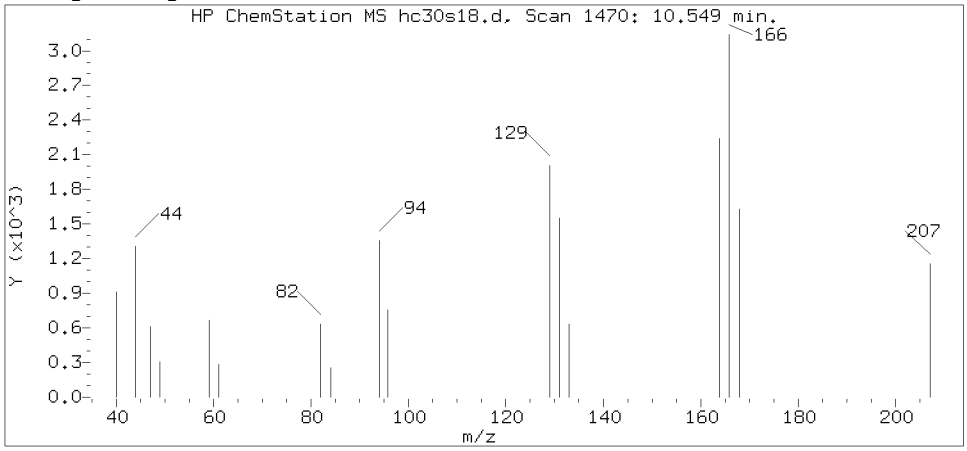


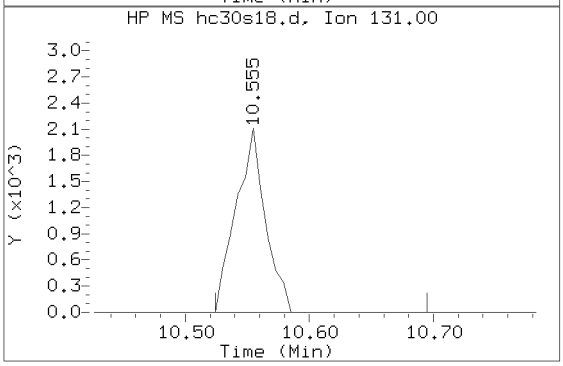
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s18.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:29 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:47 Automation

Sample Name: F4801DL Lab Sample ID: 1183606DL

Compound Number	: 89
Compound Name	: Tetrachloroethene
Scan Number	: 1470
Retention Time (minutes)	: 10.549
Relative Retention Time	: 0.00054
Quant Ion	: 166.00
Area (flag)	: 4848
On-Column Amount (ng)	: 0.0747

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Target 3.5 esignature user ID: sej02002

F4802 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183607

Data file: /chem2/HP19094.i/19oct30a.b/hc30s04.d Injection date and time: **30-OCT-2019 11:27**
Data file Sample Info. Line: F4802;1183607;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.452	(0.012)	470	65	133044	(-7)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	1891470	(-4)	10.00	
97) Chlorobenzene-d5	11.377	(0.000)	1606	117	1523806	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	794691	(-5)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	508571	9.887	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.525	(0.001)	102	94096	9.949	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1904915	9.792	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	690811	9.711	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.428	(-0.001)	59	101155	3.141	3.14		J	0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)	5.543	(-0.000)	63	20717	0.242	0.24		J	0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

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F4802 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183607

Data file: /chem2/HP19094.i/19oct30a.b/hc30s04.d Injection date and time: **30-OCT-2019 11:27**
Data file Sample Info. Line: F4802;1183607;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

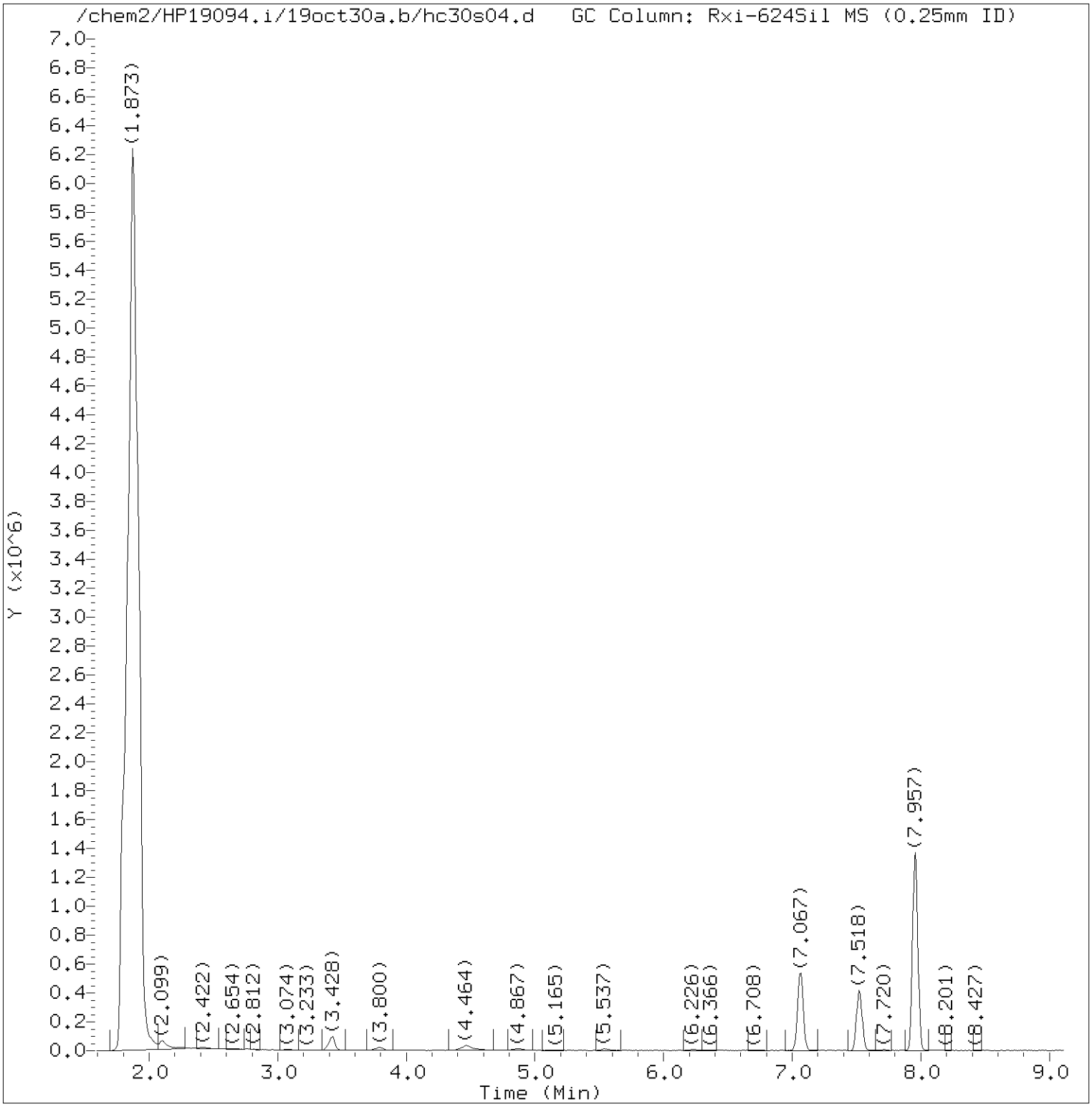
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

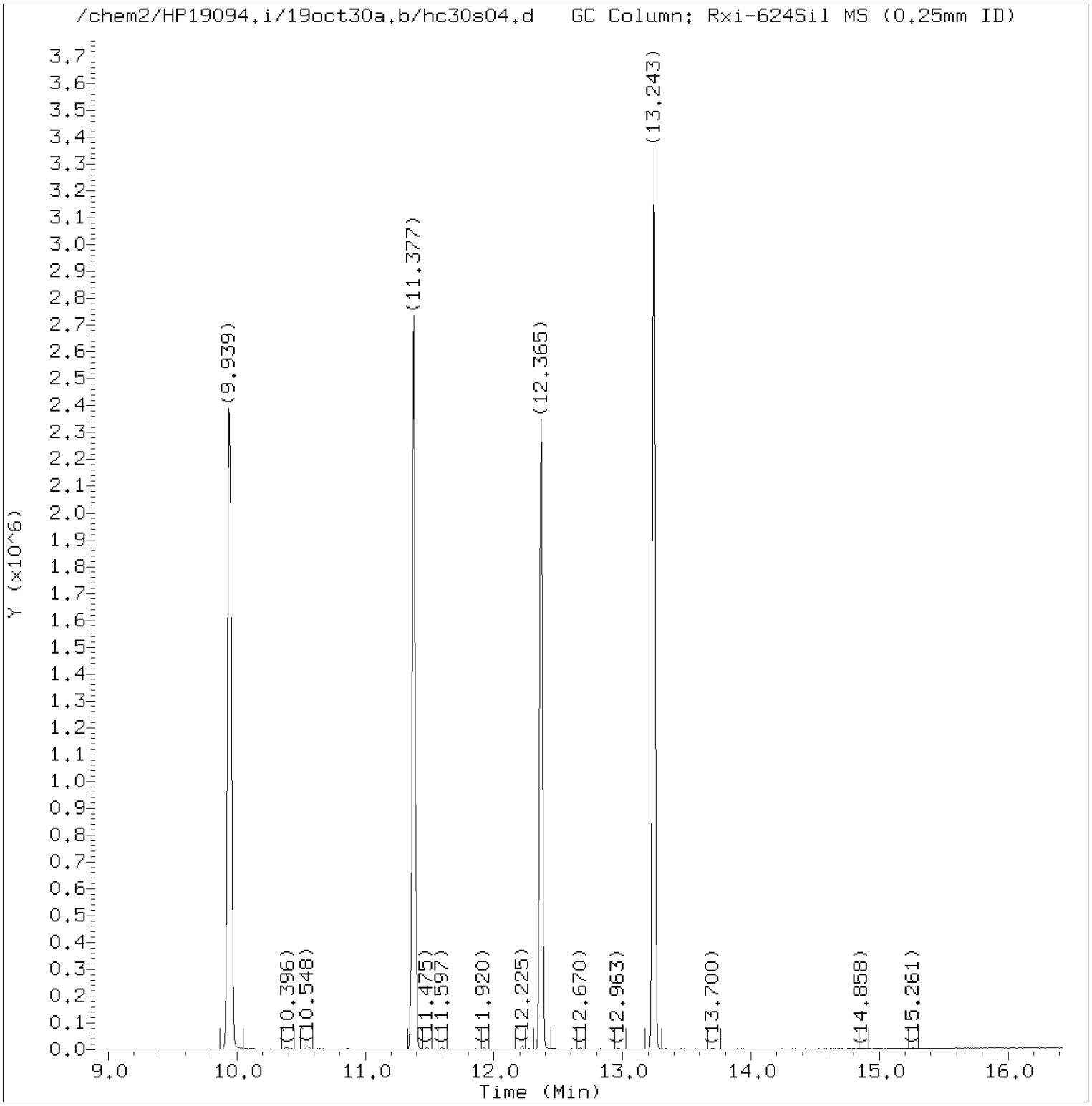
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s04.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:27 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4802 Lab Sample ID: 1183607

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s04.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:27 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4802 Lab Sample ID: 1183607

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s04.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:27 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

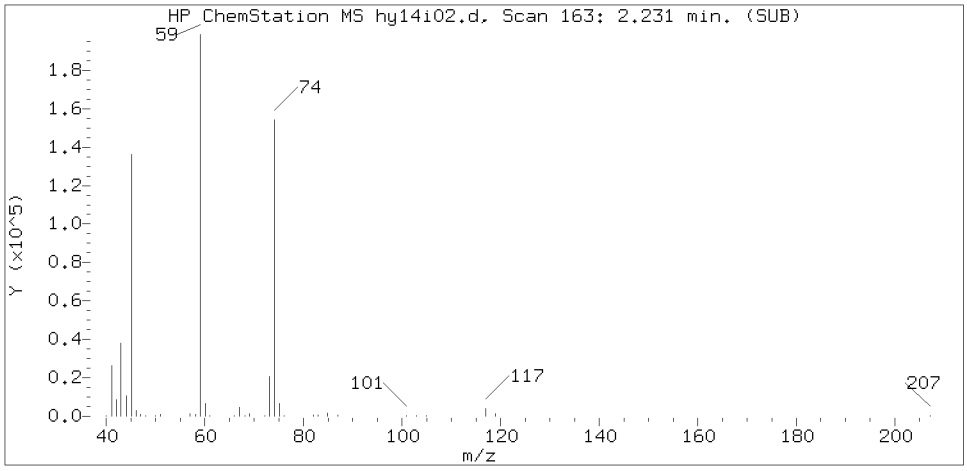
Sample Name: F4802 Lab Sample ID: 1183607

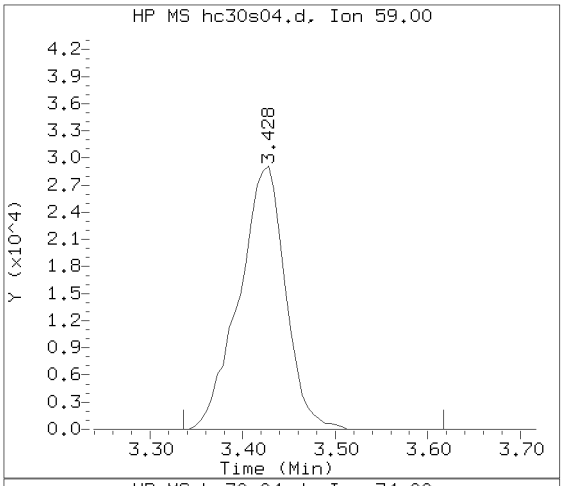
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
11) Ethyl ether	(2)	3.428	59	101155	3.141
26)*t-Butyl Alcohol-d10	(1)	4.452	65	133044	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	20717	0.242
50)$Dibromofluoromethane	(2)	7.061	113	508571	9.887
57)$1,2-Dichloroethane-d4	(2)	7.525	102	94096	9.949
63)*Fluorobenzene	(2)	7.957	96	1891470	10.000
82)$Toluene-d8	(3)	9.939	98	1904915	9.792
97)*Chlorobenzene-d5	(3)	11.377	117	1523806	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	690811	9.711
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	794691	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

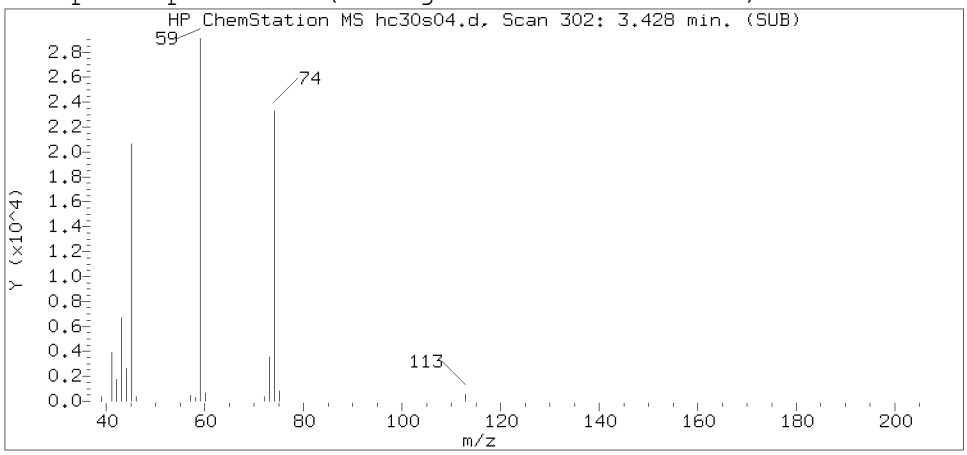
Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

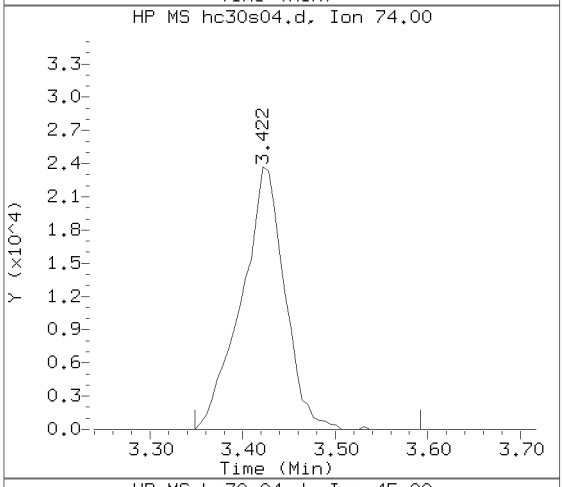
Reference Standard Spectrum for Ethyl ether



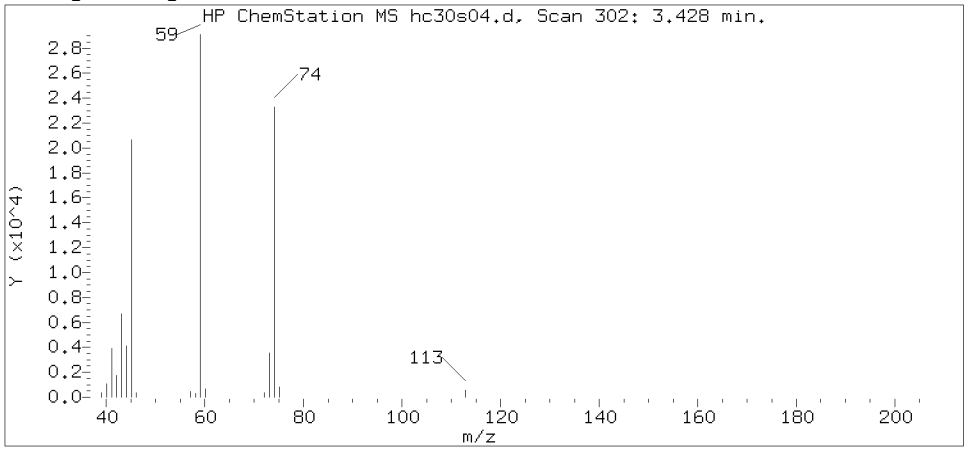


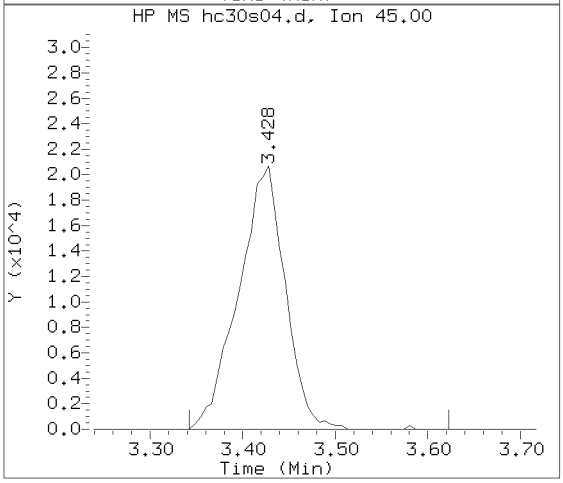
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s04.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:27 Analyst ID: jkh09052

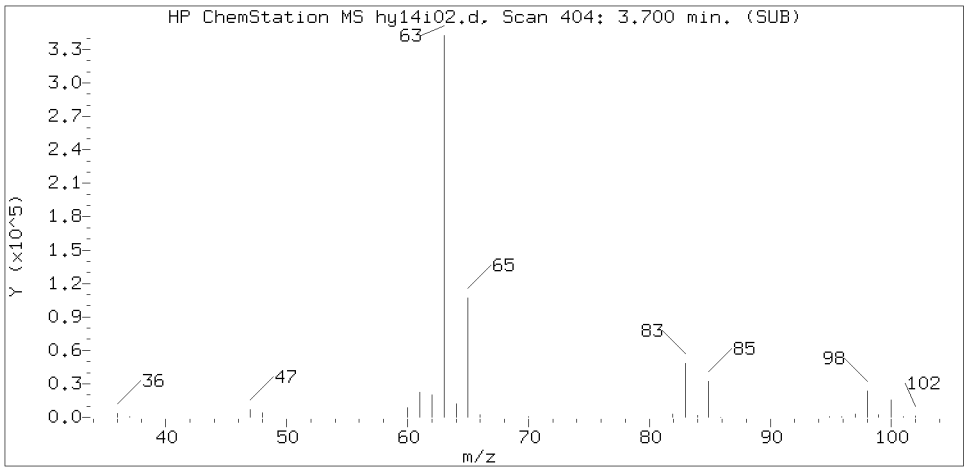
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

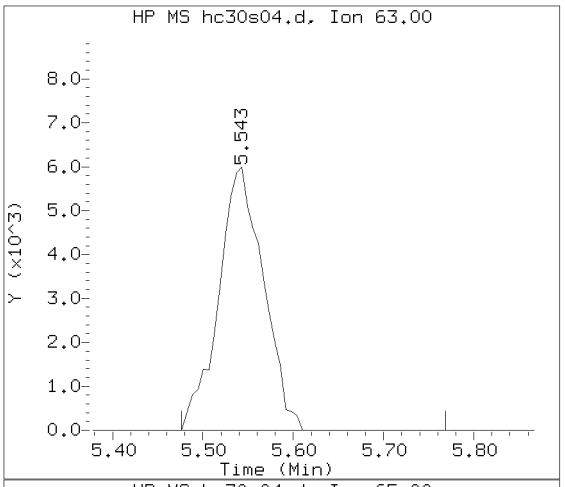
Sample Name: F4802 Lab Sample ID: 1183607

Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 302
Retention Time (minutes): 3.428
Relative Retention Time :-0.00119
Quant Ion : 59.00
Area (flag) : 101155
On-Column Amount (ng) : 3.1406

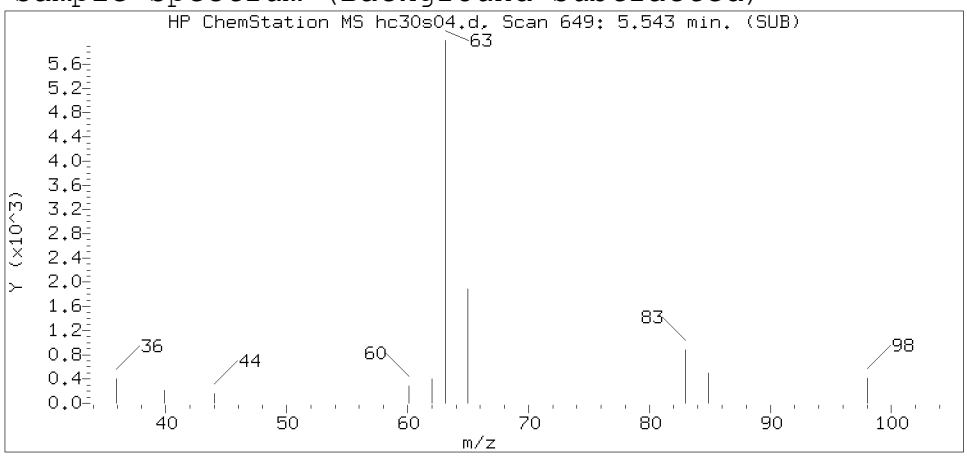
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

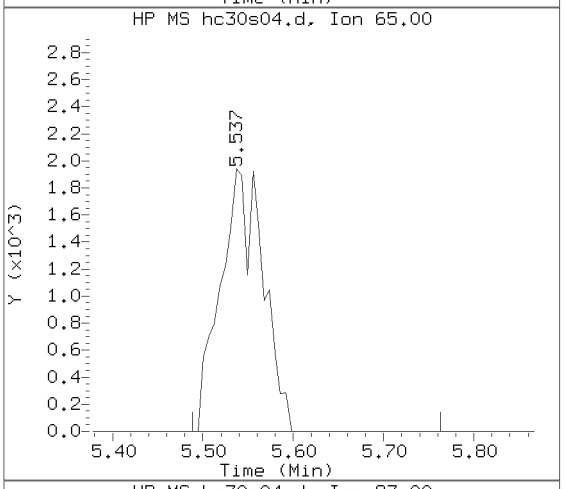
Reference Standard Spectrum for 1,1-Dichloroethane



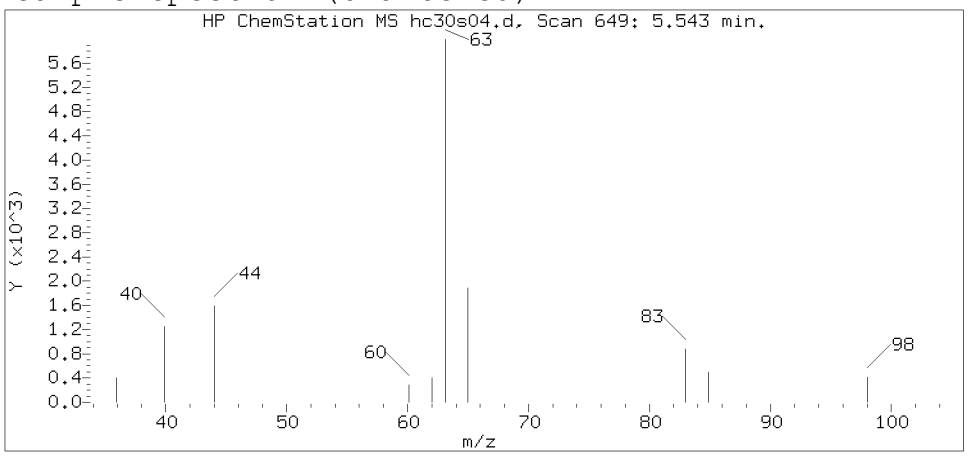


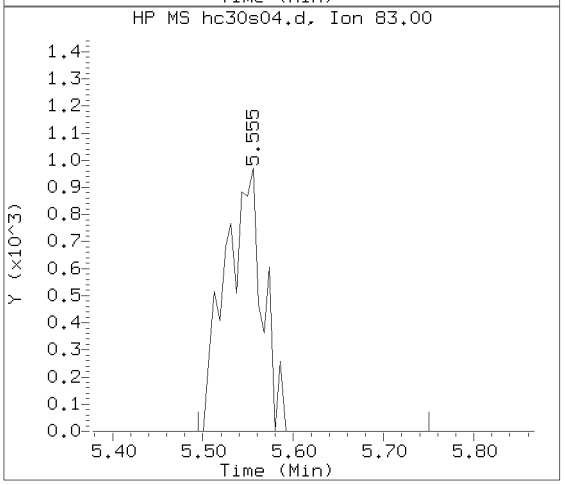
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s04.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:27 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4802 Lab Sample ID: 1183607

Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 649
Retention Time (minutes): 5.543
Relative Retention Time :-0.00023
Quant Ion : 63.00
Area (flag) : 20717
On-Column Amount (ng) : 0.2417

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

F4803 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183608

Data file: /chem2/HP19094.i/19oct30a.b/hc30s19.d Injection date and time: **30-OCT-2019 16:51**
Data file Sample Info. Line: F4803;1183608;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9145; 9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.006)	471	65	133368	(-7)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1886389	(-4)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1532887	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	803884	(-4)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.055	(0.001)	113	504386	9.832	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	92347	9.791	98%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1893403	9.675	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	696889	9.738	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)	2.111	(0.005)	45	99792	1.472	1.47		J	0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)	2.830	(0.000)	64	77175	1.810	1.81			0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.410	(0.000)	59	2256768	70.255	70.26		E	0.05	13
15) 1,1-Dichloroethene	(2)	3.745	(-0.000)	96	8775	0.209	0.21		J	0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)	4.458	(-0.000)	84	5527	0.110	0.11		J	0.07	1
33) 1,1-Dichloroethane	(2)	5.537	(0.000)	63	559665	6.548	6.55			0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)	7.549	(0.000)	78	72538	0.380	0.38		J	0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

E = Compound concentration above calibration range.

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F4803 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183608

Data file: /chem2/HP19094.i/19oct30a.b/hc30s19.d Injection date and time: **30-OCT-2019 16:51**
Data file Sample Info. Line: F4803;1183608;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

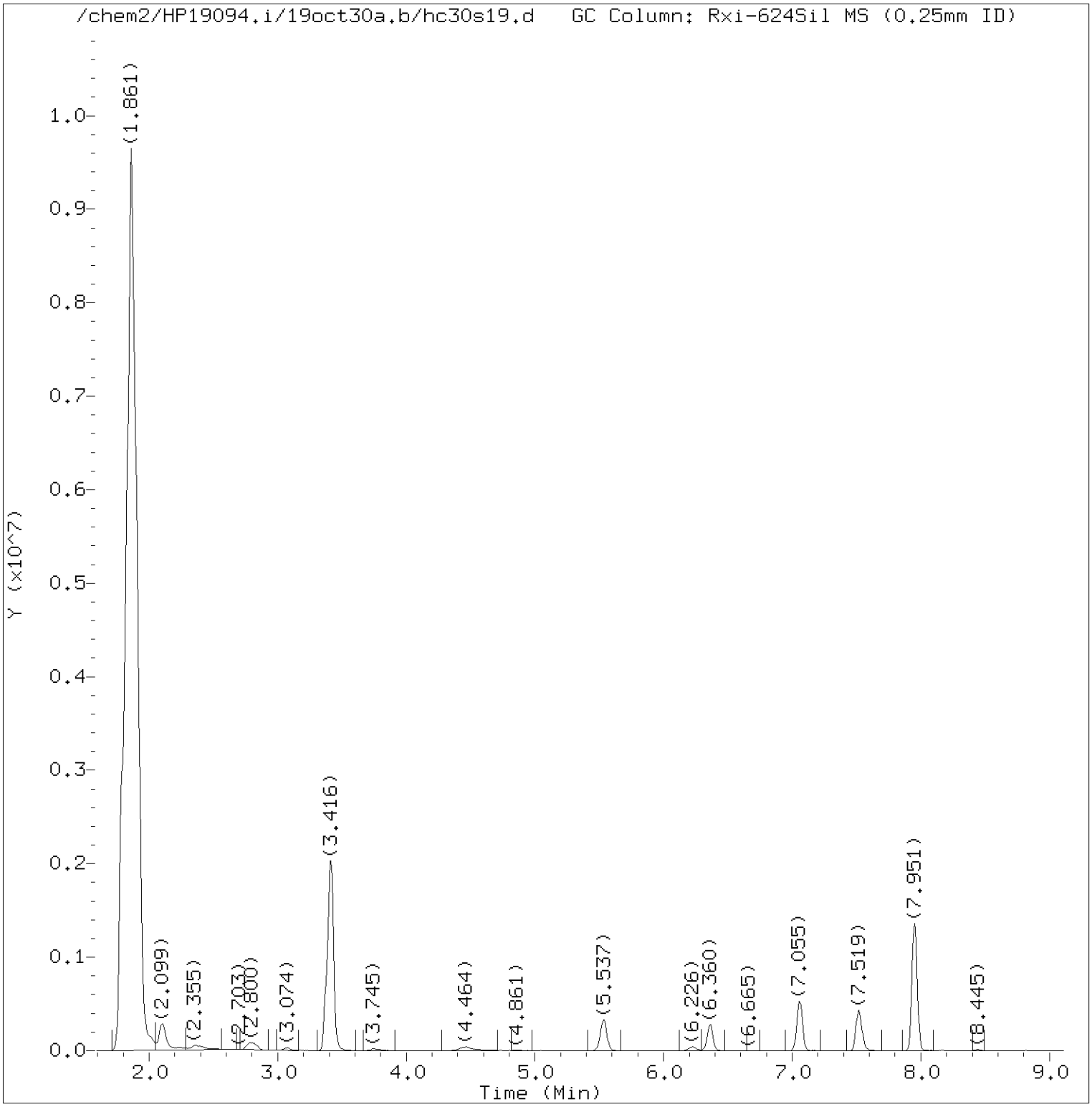
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

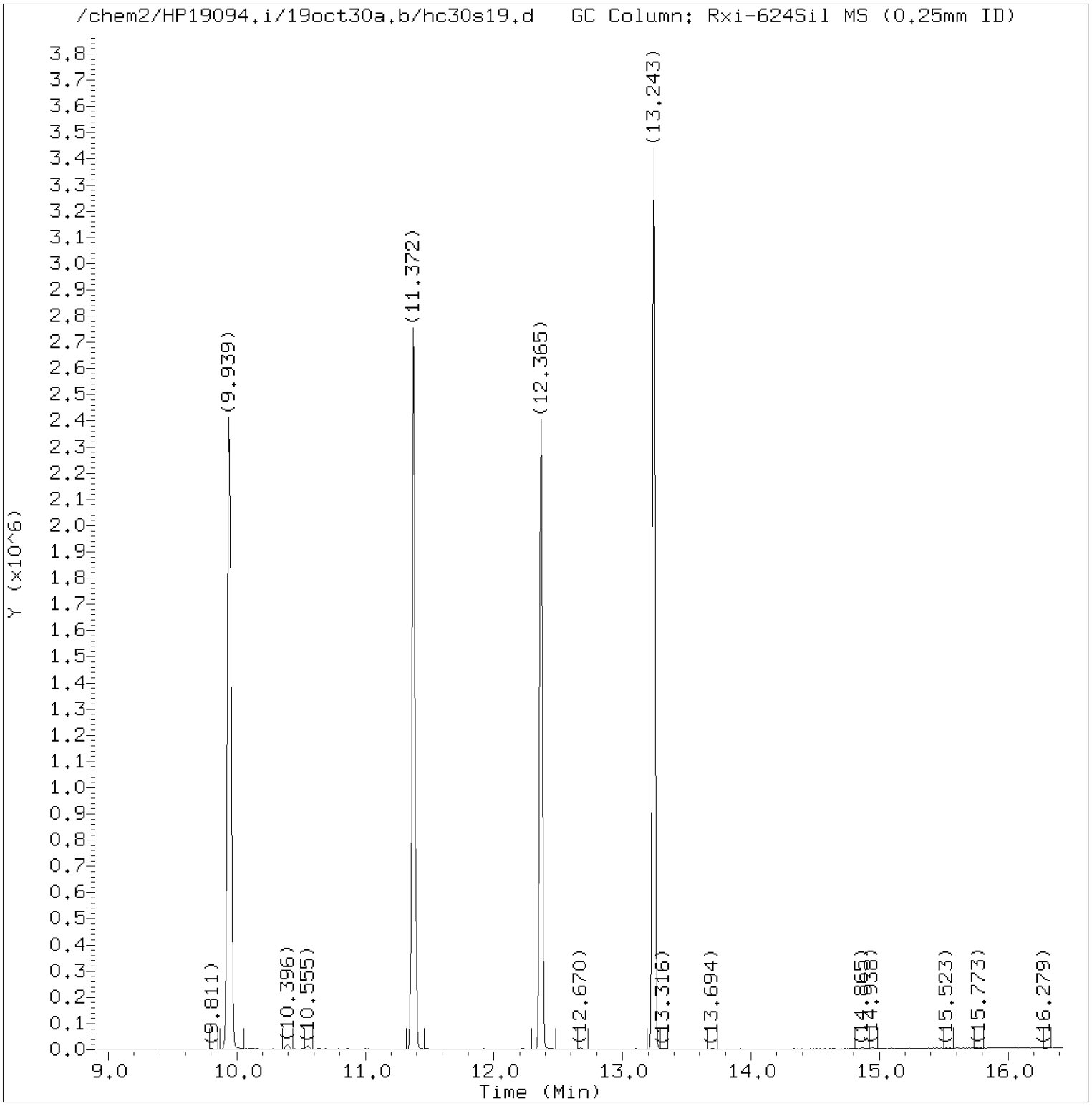
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Sample Name: F4803 Lab Sample ID: 1183608

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Sample Name: F4803 Lab Sample ID: 1183608

Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

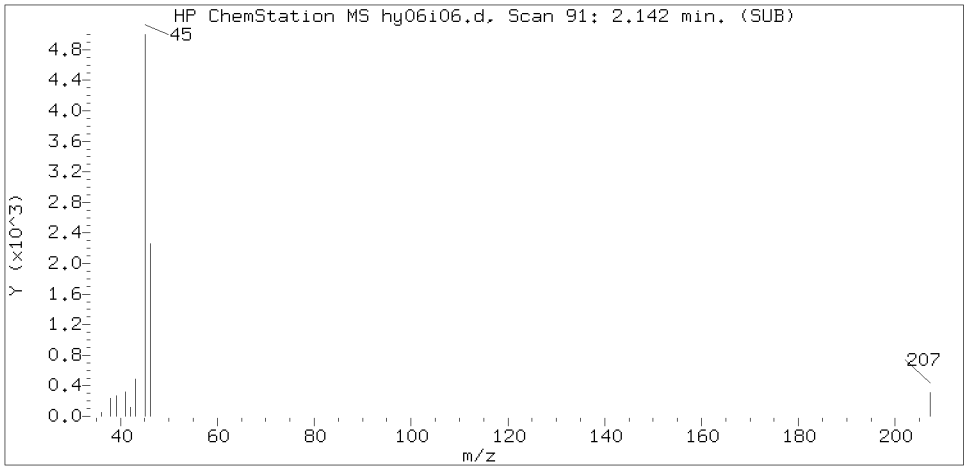
Sample Name: F4803 Lab Sample ID: 1183608

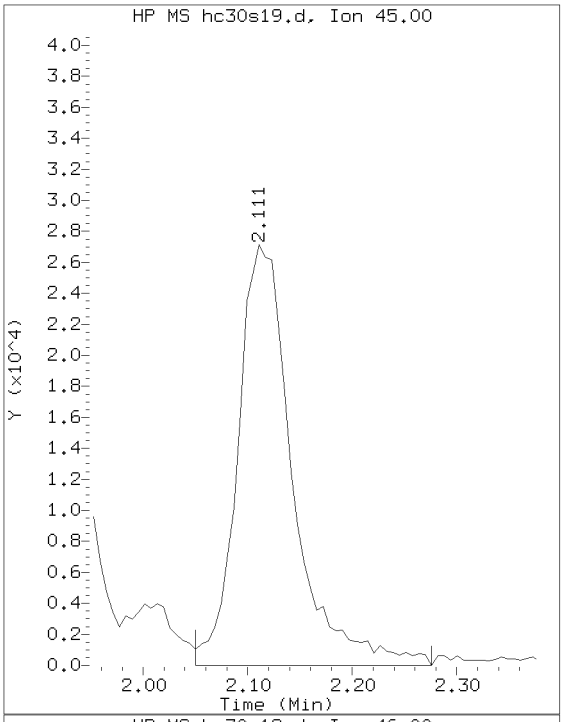
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.111	45	99792	1.472
8) Chloroethane	(2)	2.831	64	77175	1.810
11) Ethyl ether	(2)	3.410	59	2256768	70.255
15) 1,1-Dichloroethene	(2)	3.745	96	8775	0.209
23) Methylene Chloride	(2)	4.458	84	5527	0.110
26)*t-Butyl Alcohol-d10	(1)	4.458	65	133368	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	559665	6.548
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57)$1,2-Dichloroethane-d4	(2)	7.519	102	92347	9.791
58) Benzene	(2)	7.549	78	72538	0.380
63)*Fluorobenzene	(2)	7.951	96	1886389	10.000
82)$Toluene-d8	(3)	9.939	98	1893403	9.675
97)*Chlorobenzene-d5	(3)	11.372	117	1532887	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	696889	9.738
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	803884	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

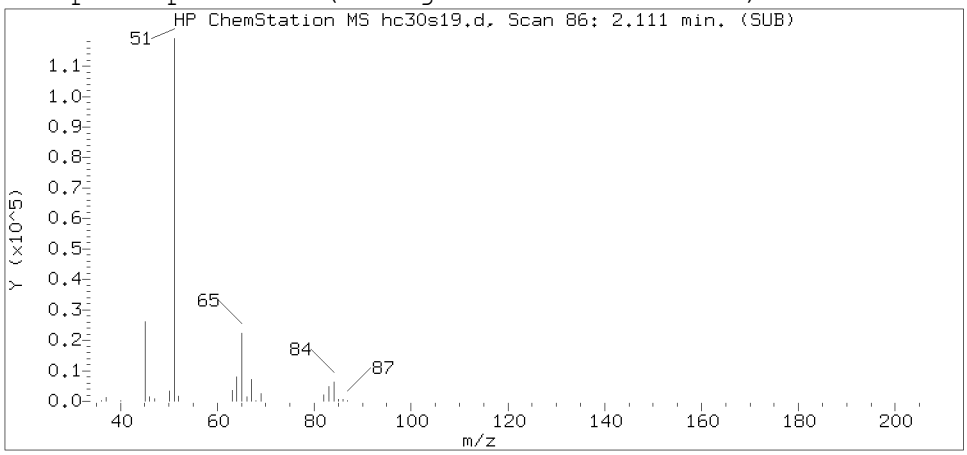
Digitally signed by Sara E. Johnson
on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

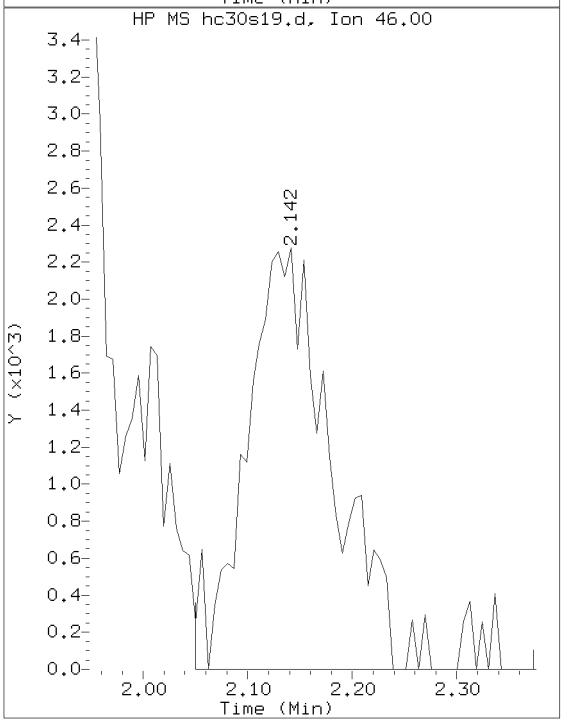
Reference Standard Spectrum for Dimethyl ether



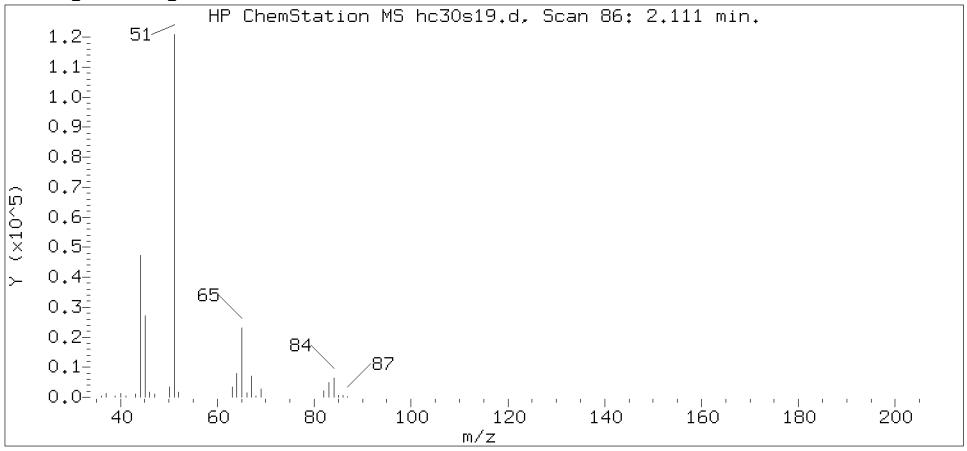


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

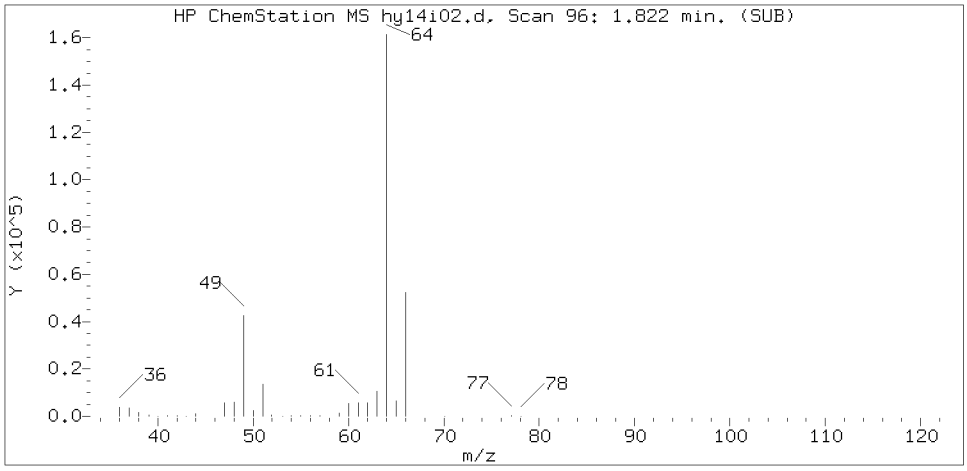
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

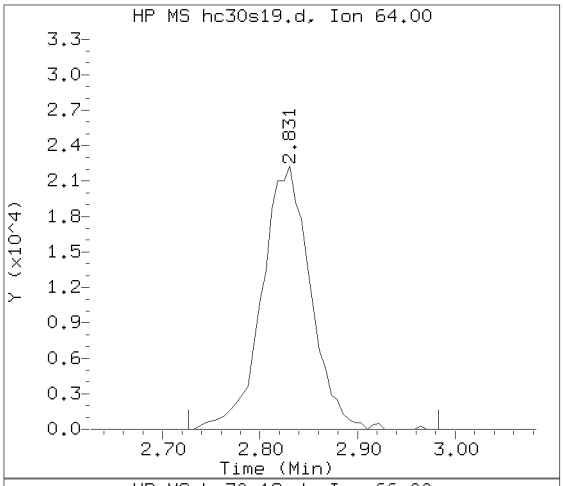
Sample Name: F4803 Lab Sample ID: 1183608

Compound Number	: 4
Compound Name	: Dimethyl ether
Scan Number	: 86
Retention Time (minutes)	: 2.111
Relative Retention Time	: 0.00537
Quant Ion	: 45.00
Area (flag)	: 99792
On-Column Amount (ng)	: 1.4716

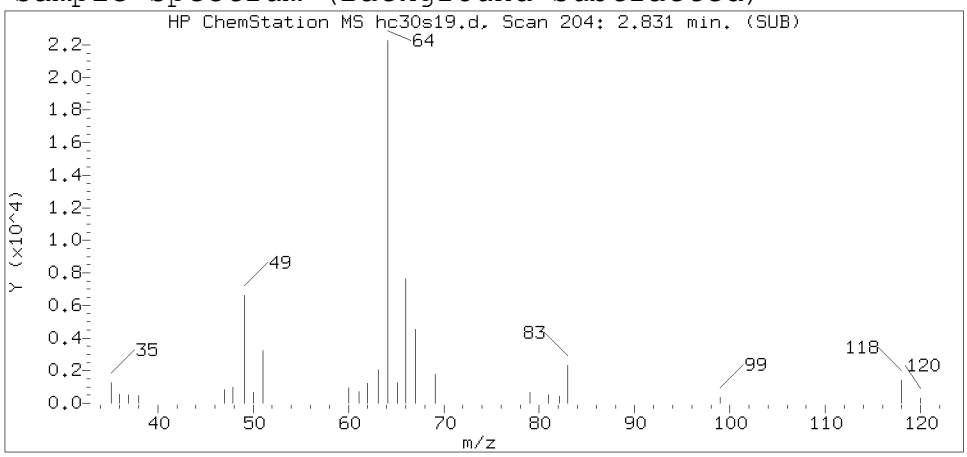
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

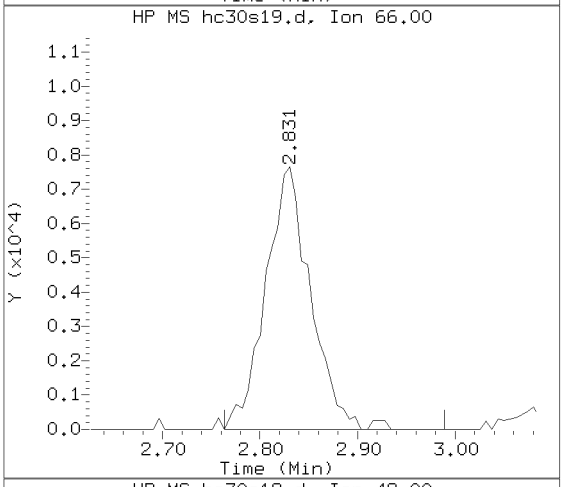
Reference Standard Spectrum for Chloroethane



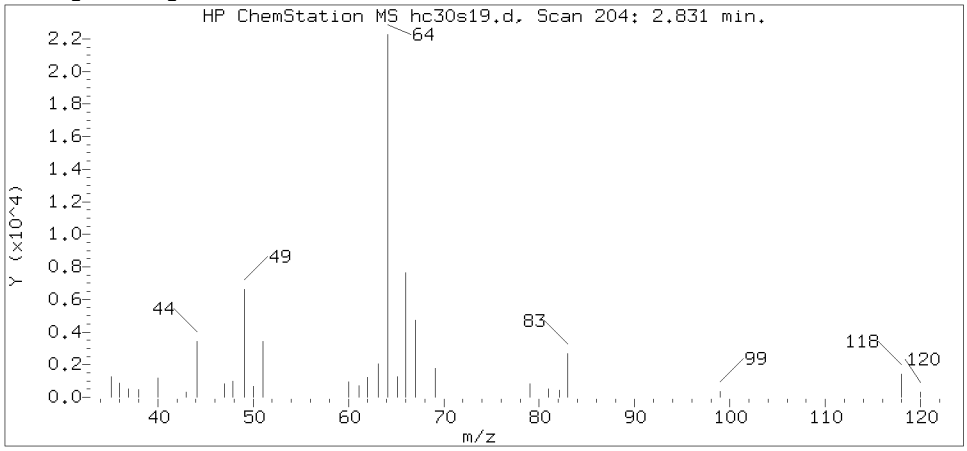


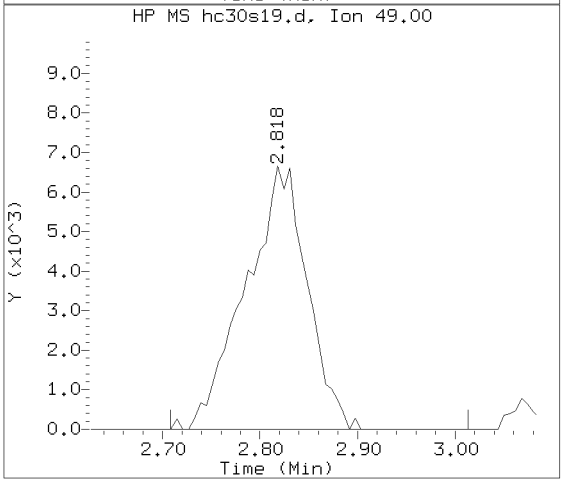
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

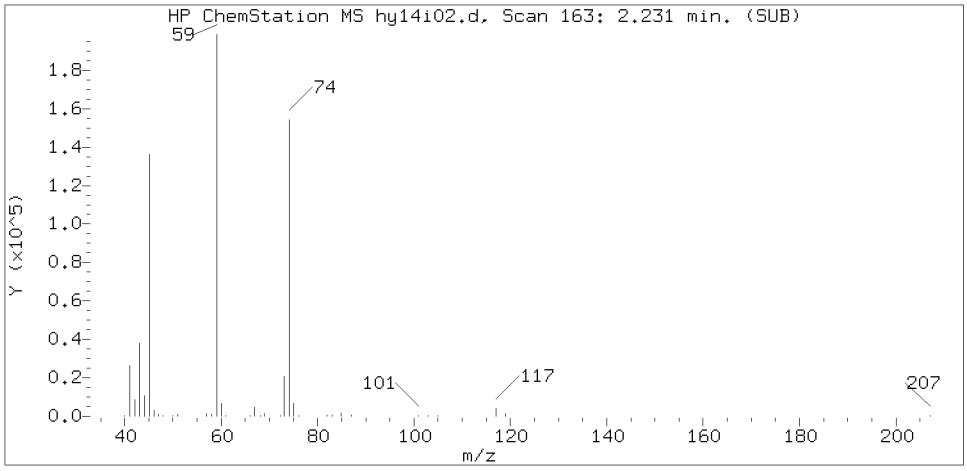
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

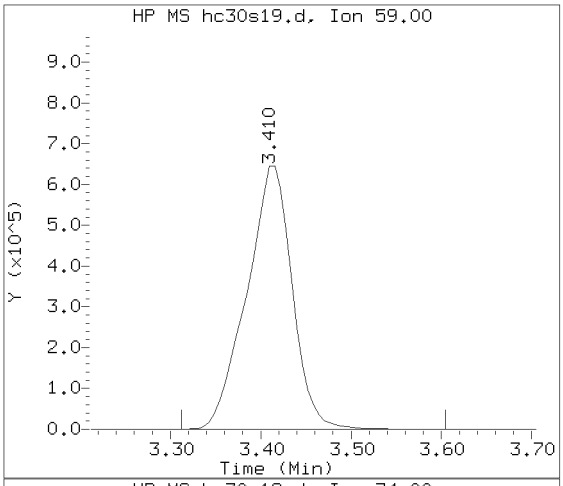
Sample Name: F4803 Lab Sample ID: 1183608

Compound Number	: 8
Compound Name	: Chloroethane
Scan Number	: 204
Retention Time (minutes)	: 2.831
Relative Retention Time	: 0.00077
Quant Ion	: 64.00
Area (flag)	: 77175
On-Column Amount (ng)	: 1.8100

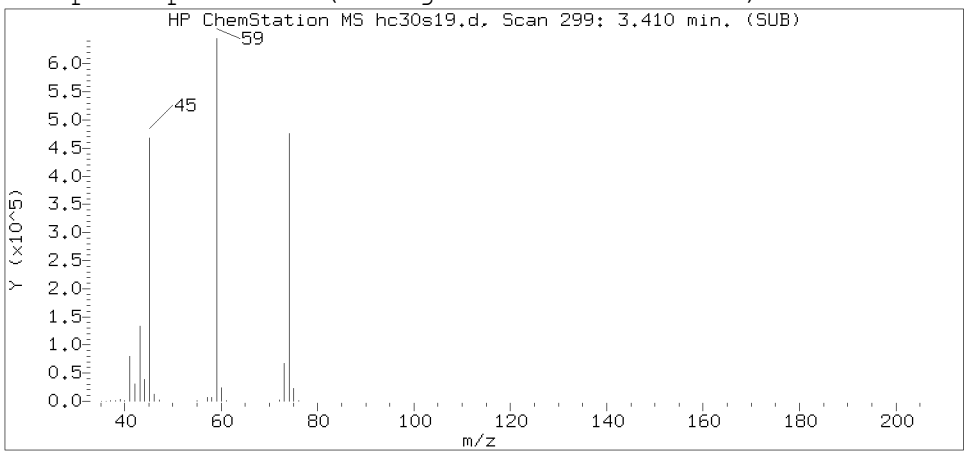
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

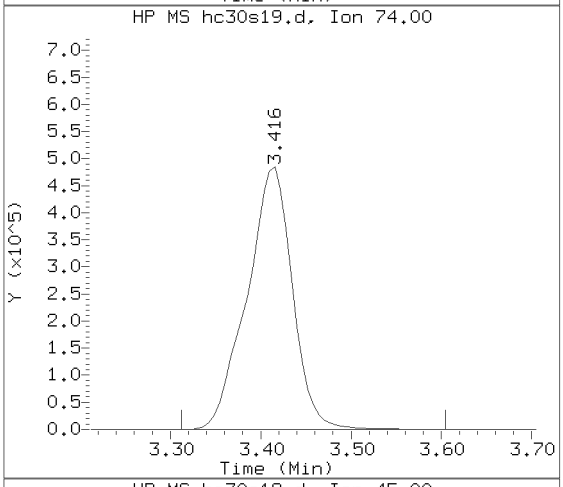
Reference Standard Spectrum for Ethyl ether



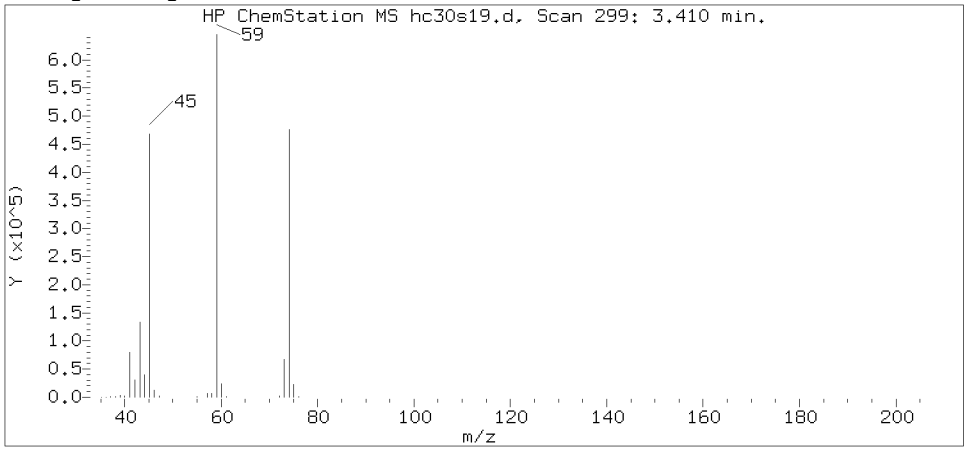


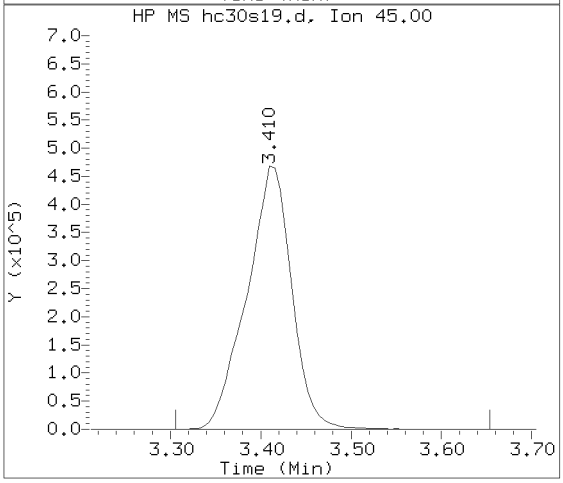
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

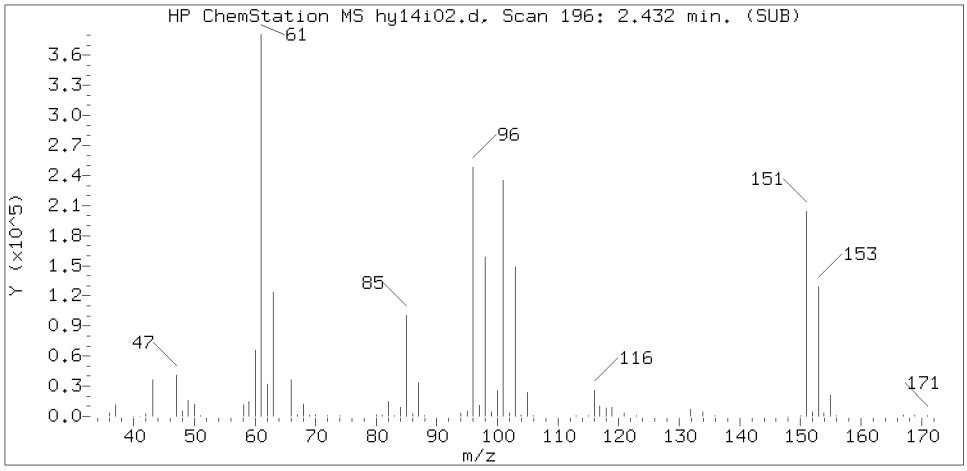
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

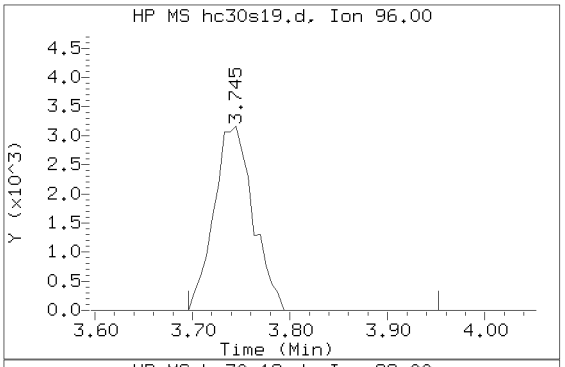
Sample Name: F4803 Lab Sample ID: 1183608

Compound Number	: 11
Compound Name	: Ethyl ether
Scan Number	: 299
Retention Time (minutes)	: 3.410
Relative Retention Time	: 0.00076
Quant Ion	: 59.00
Area (flag)	: 2256768
On-Column Amount (ng)	: 70.2553

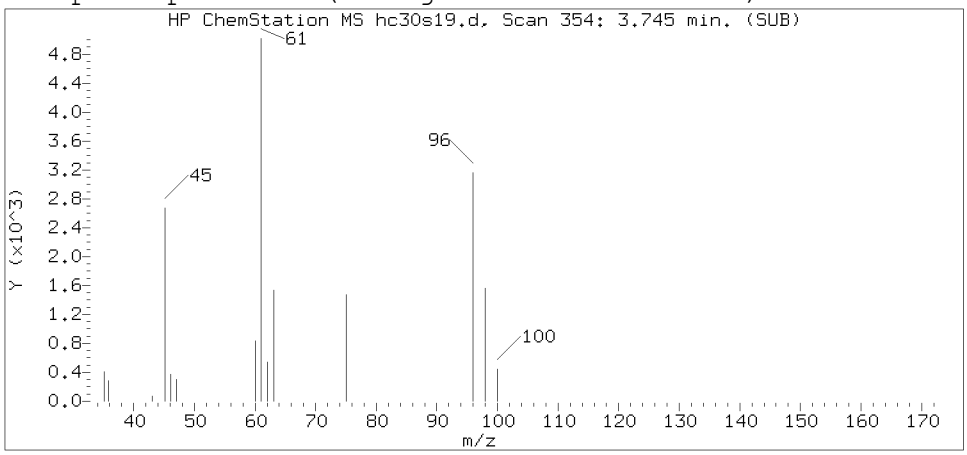
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

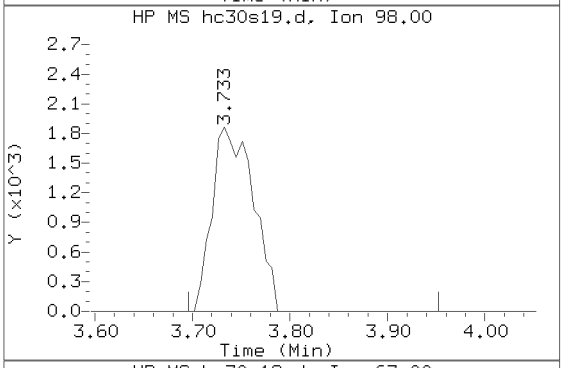
Reference Standard Spectrum for 1,1-Dichloroethene

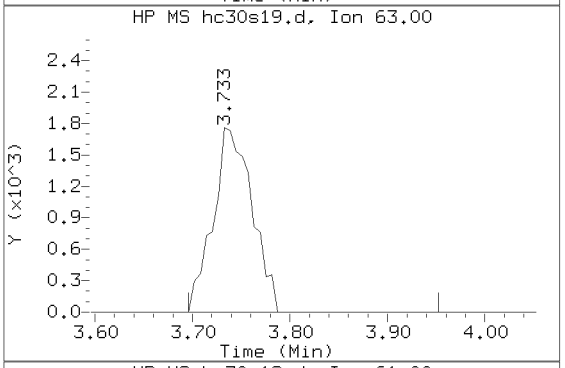




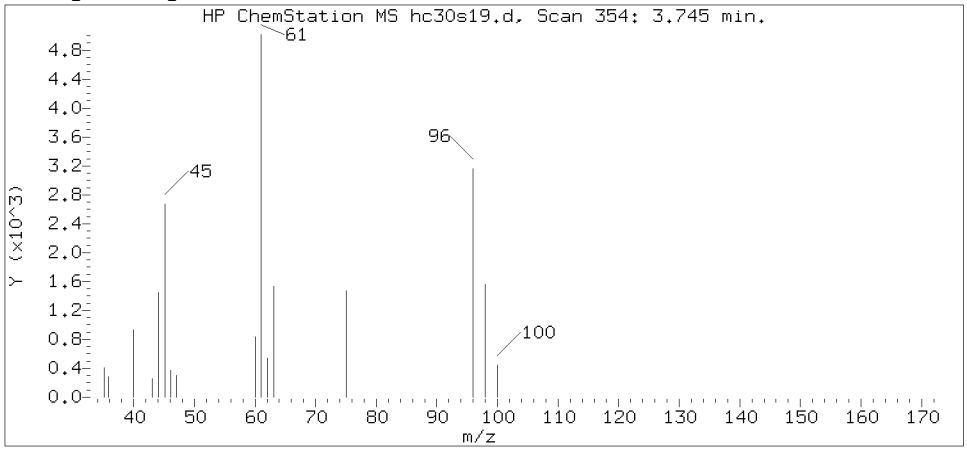
Sample Spectrum (Background Subtracted)

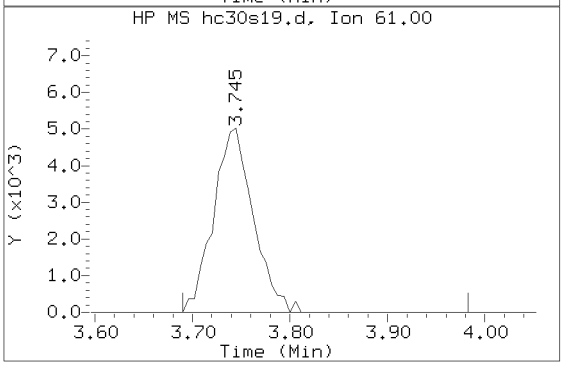






Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

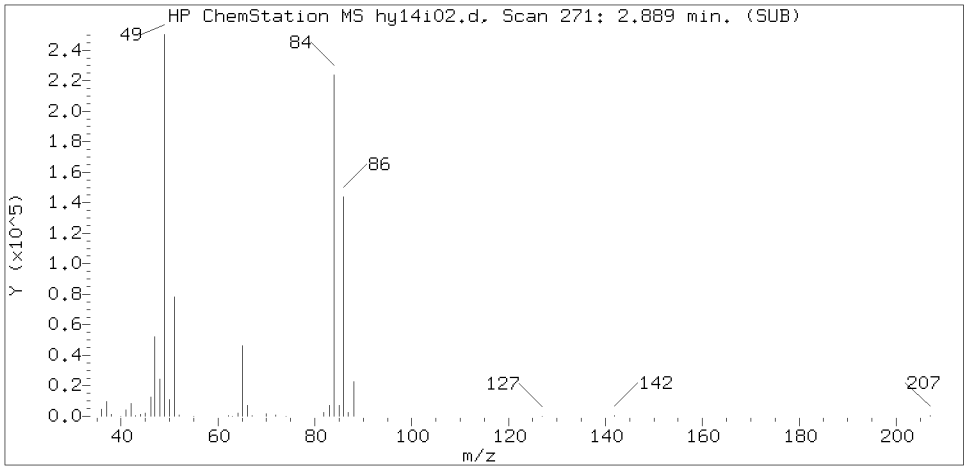
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Sample Name: F4803 Lab Sample ID: 1183608

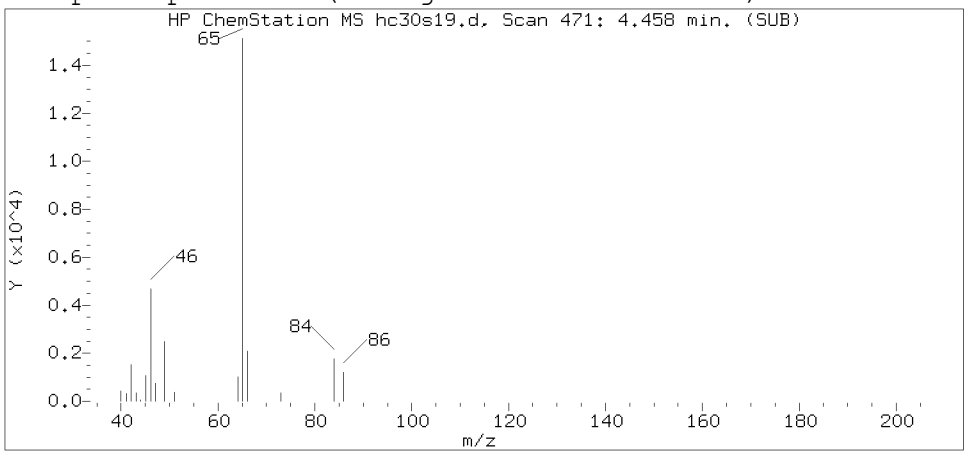
Compound Number : 15
Compound Name : 1,1-Dichloroethene
Scan Number : 354
Retention Time (minutes): 3.745
Relative Retention Time :-0.00000
Quant Ion : 96.00
Area (flag) : 8775
On-Column Amount (ng) : 0.2088

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

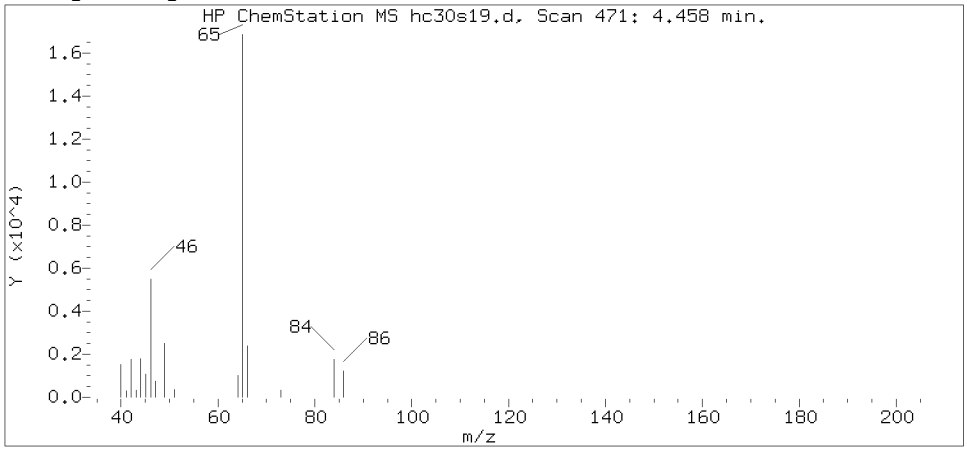
Reference Standard Spectrum for Methylene Chloride

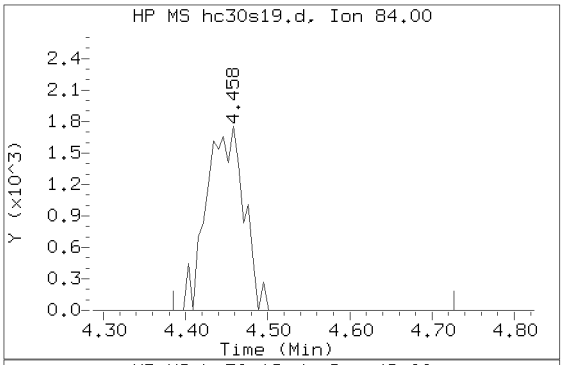


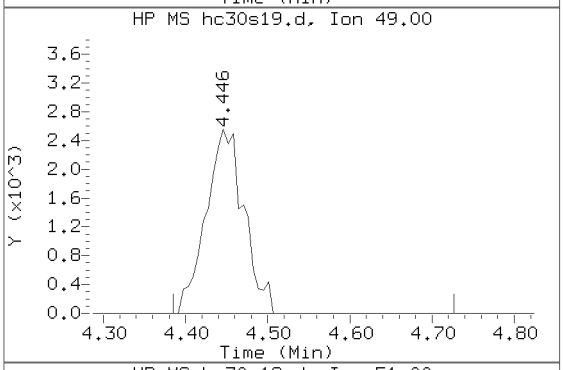
Sample Spectrum (Background Subtracted)

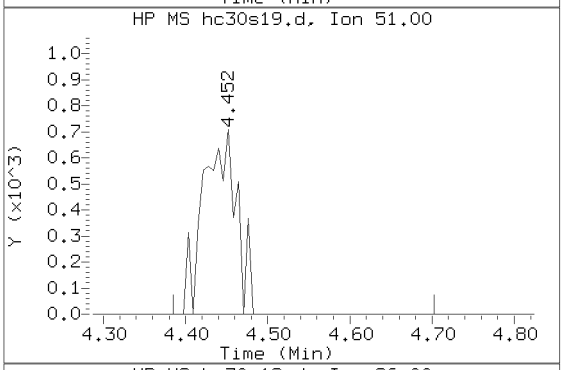


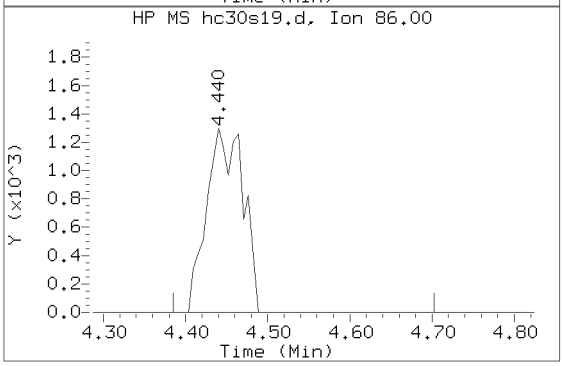
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

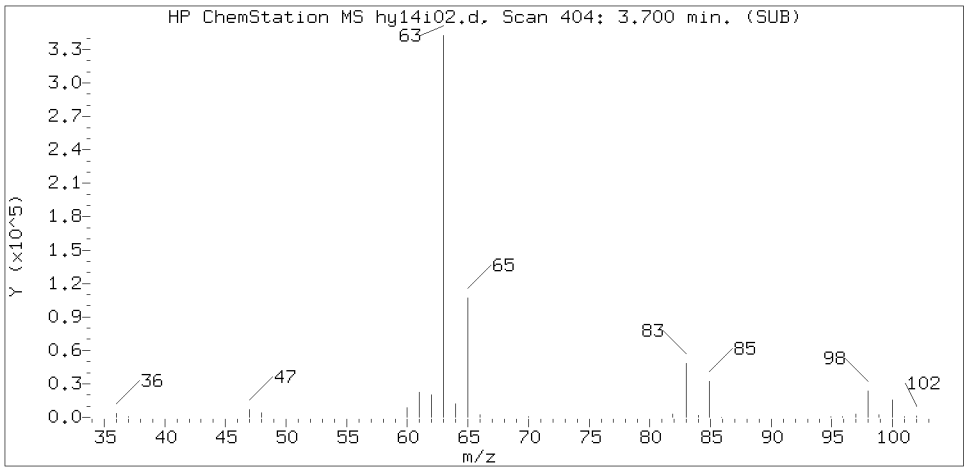
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

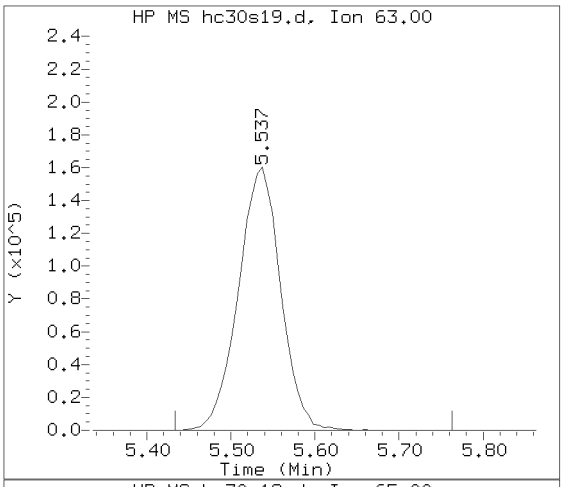
Sample Name: F4803 Lab Sample ID: 1183608

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 471
Retention Time (minutes): 4.458
Relative Retention Time :-0.00077
Quant Ion : 84.00
Area (flag) : 5527
On-Column Amount (ng) : 0.1103

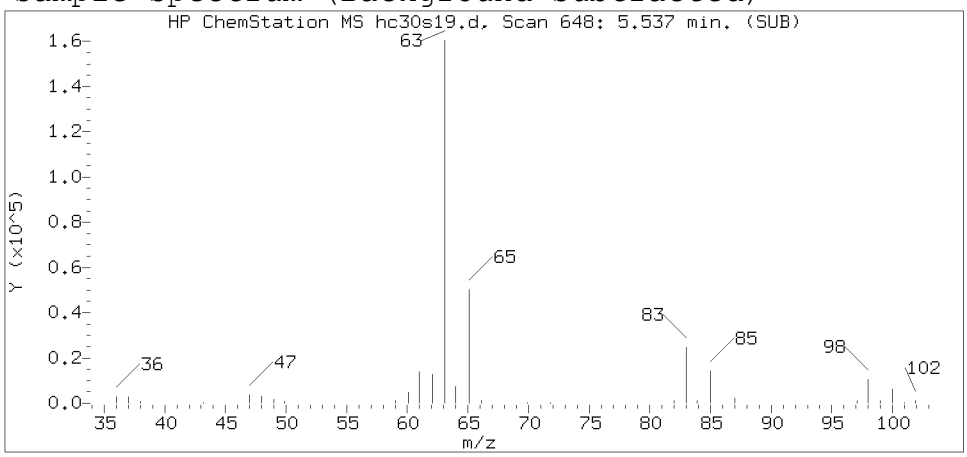
Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

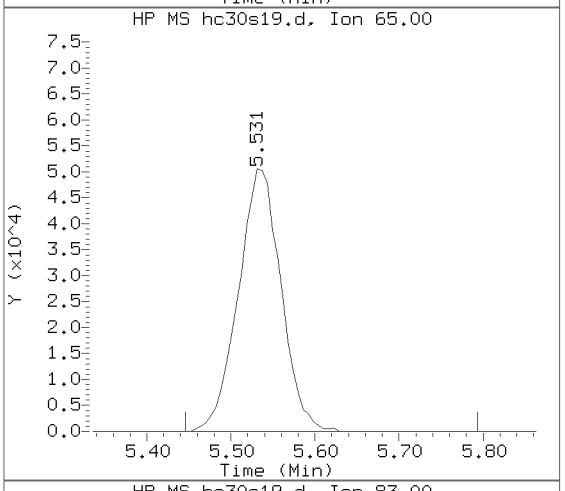
Reference Standard Spectrum for 1,1-Dichloroethane



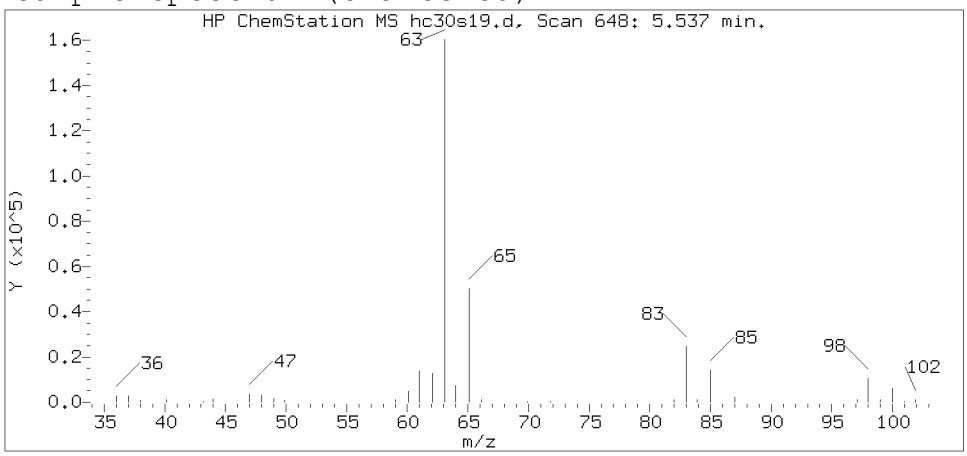


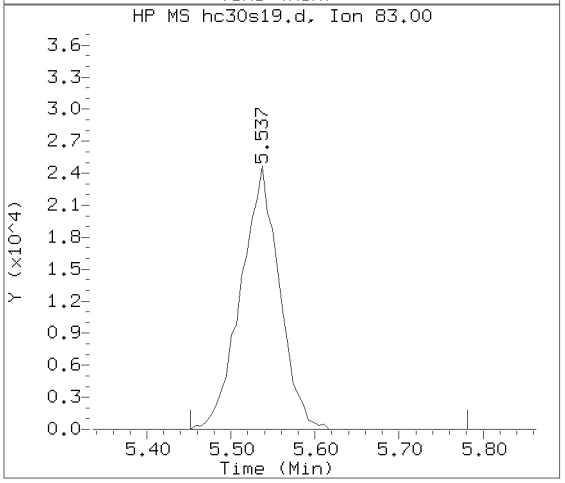
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

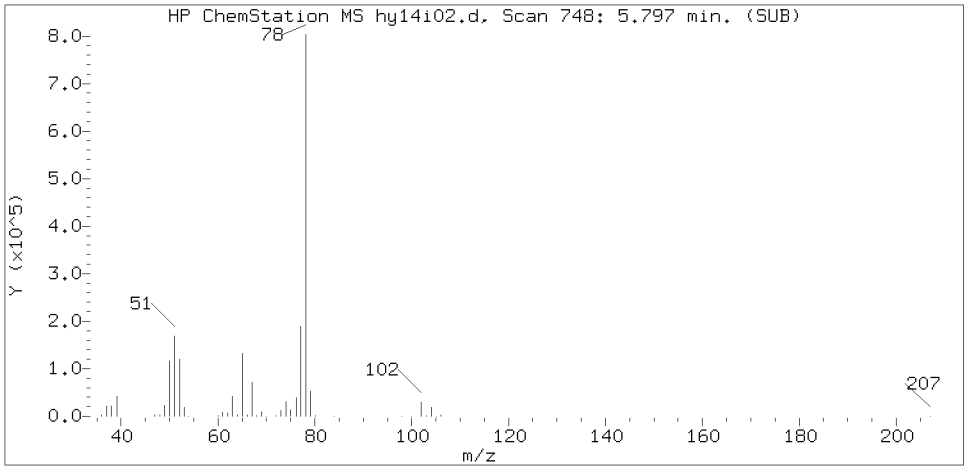
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Sample Name: F4803 Lab Sample ID: 1183608

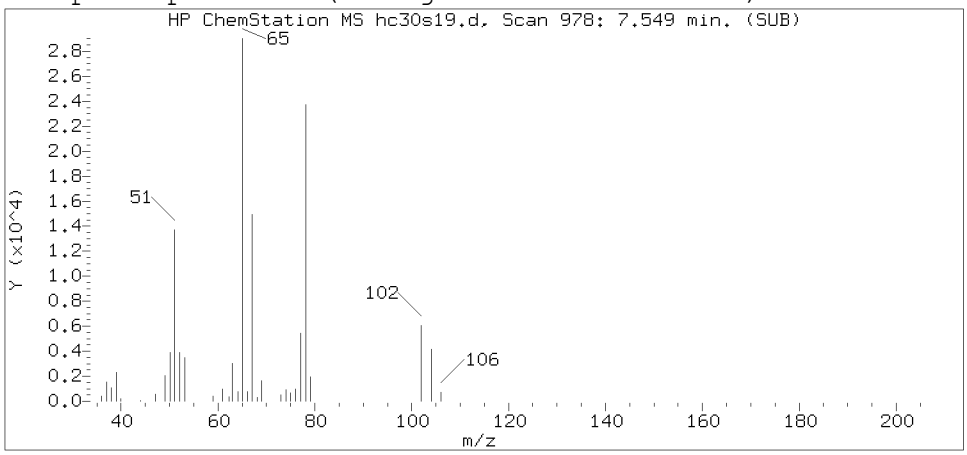
Compound Number	: 33
Compound Name	: 1,1-Dichloroethane
Scan Number	: 648
Retention Time (minutes)	: 5.537
Relative Retention Time	: 0.00000
Quant Ion	: 63.00
Area (flag)	: 559665
On-Column Amount (ng)	: 6.5479

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

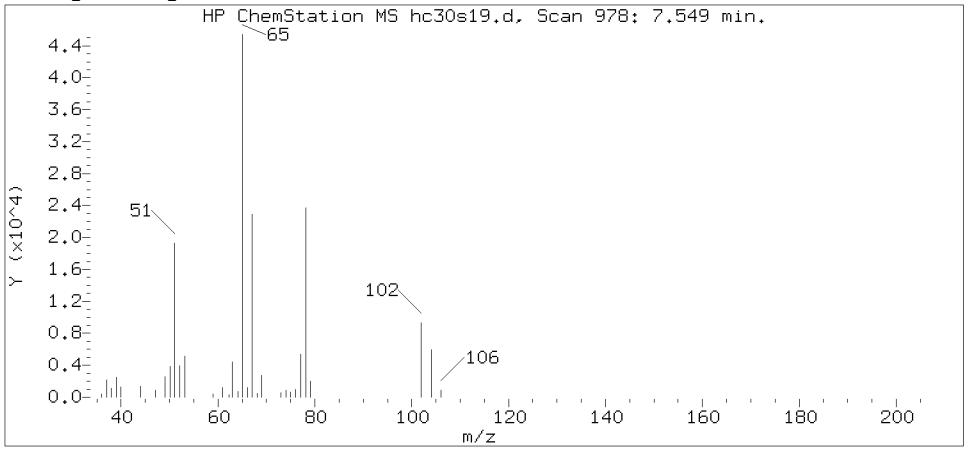
Reference Standard Spectrum for Benzene

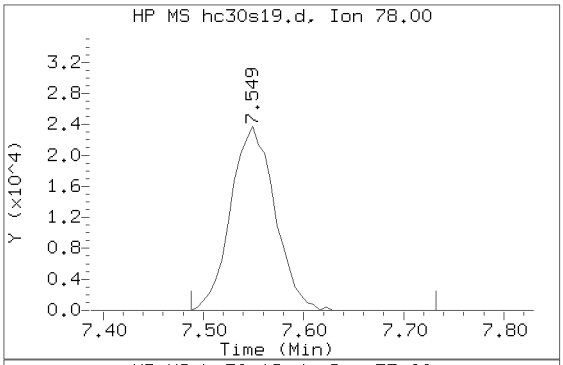


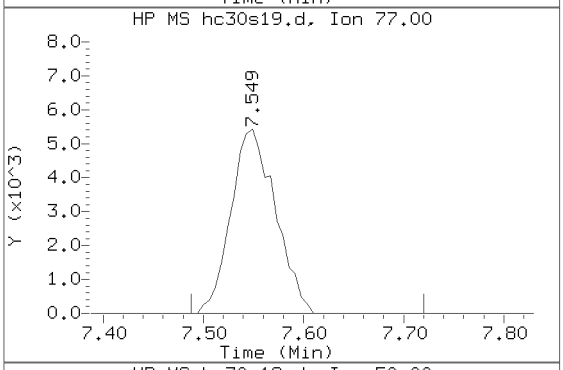
Sample Spectrum (Background Subtracted)

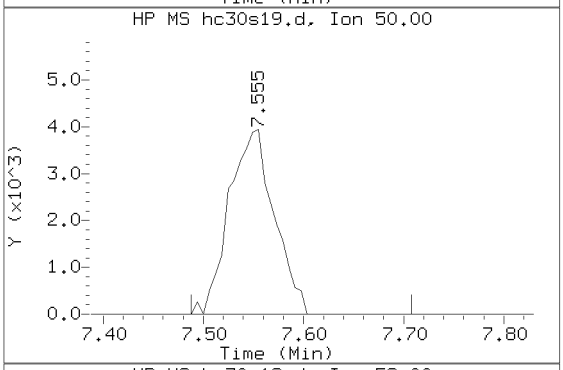


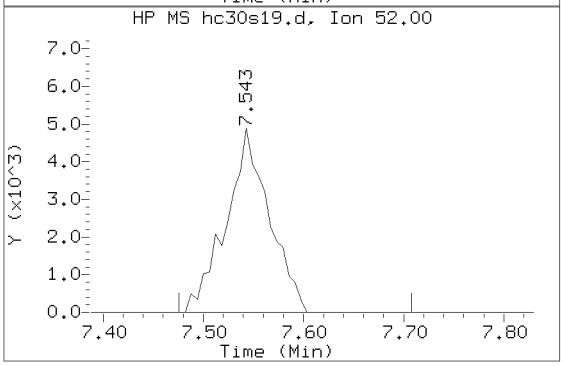
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s19.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 16:51 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 17:09 Automation

Sample Name: F4803 Lab Sample ID: 1183608

Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 978
Retention Time (minutes)	: 7.549
Relative Retention Time	: 0.00077
Quant Ion	: 78.00
Area (flag)	: 72538
On-Column Amount (ng)	: 0.3802

Digitally signed by Sara E. Johnson on 10/30/2019 at 20:25.
Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct31a.b/hc31s31.d Injection date and time: **31-OCT-2019 15:34**
Data file Sample Info. Line: F4803DL;1183608DL;1;0;;;DRAPERLOQ;;hc31b02; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b02.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 12:14
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: **038C** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **4.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 6.25 ml

Analysis Comments:9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.483	(-0.012)	475	65	125149	(-10)	50.00	
63) Fluorobenzene	7.957	(0.000)	1045	96	1778074	(-8)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1506220	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	801896	(-6)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	483796	10.005	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	87280	9.817	98%		80 - 120
82) Toluene-d8	(3)	9.945	(0.000)	98	1845819	9.599	96%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	687154	9.772	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.2	4
2) Chloromethane	(2)				Not Detected					0.2	4
8) Chloroethane	(2)	2.836	(-0.000)	64	18767	0.467	1.87		J	0.3	4
10) Trichlorofluoromethane	(2)				Not Detected					0.2	4
11) Ethyl ether	(2)	3.428	(-0.000)	59	530053	17.506	70.02			0.2	50
15) 1,1-Dichloroethene	(2)				Not Detected					0.2	4
16) Freon 113	(2)				Not Detected					0.2	4
23) Methylene Chloride	(2)				Not Detected					0.3	4
33) 1,1-Dichloroethane	(2)	5.543	(0.000)	63	128682	1.597	6.39			0.3	4
38) 2-Butanone	(1)				Not Detected					2	40
48) Tetrahydrofuran	(1)				Not Detected					3	100
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.2	4
54) Carbon Tetrachloride	(2)				Not Detected					0.3	4
58) Benzene	(2)	7.555	(0.000)	78	17816	0.099	0.40		J	0.2	4
67) Trichloroethene	(2)				Not Detected					0.2	4
83) Toluene	(3)				Not Detected					0.3	4
89) Tetrachloroethene	(3)				Not Detected					0.2	4
100) Ethylbenzene	(3)				Not Detected					0.2	4
101) m+p-Xylene	(3)				Not Detected					0.4	2
104) o-Xylene	(3)				Not Detected					0.2	2
105) Xylene (Total)	(3)				Not Detected					0.6	12

Digitally signed by Miranda E. Campbell on 10/31/2019 at 19:51. Target 3.5 esignature user ID: mec29284

Data file: /chem2/HP19094.i/19oct31a.b/hc31s31.d Injection date and time: **31-OCT-2019 15:34**
Data file Sample Info. Line: F4803DL;1183608DL;1;0;;;DRAPERLOQ;;hc31b02; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b02.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 12:14
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: **038C** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **4.00**

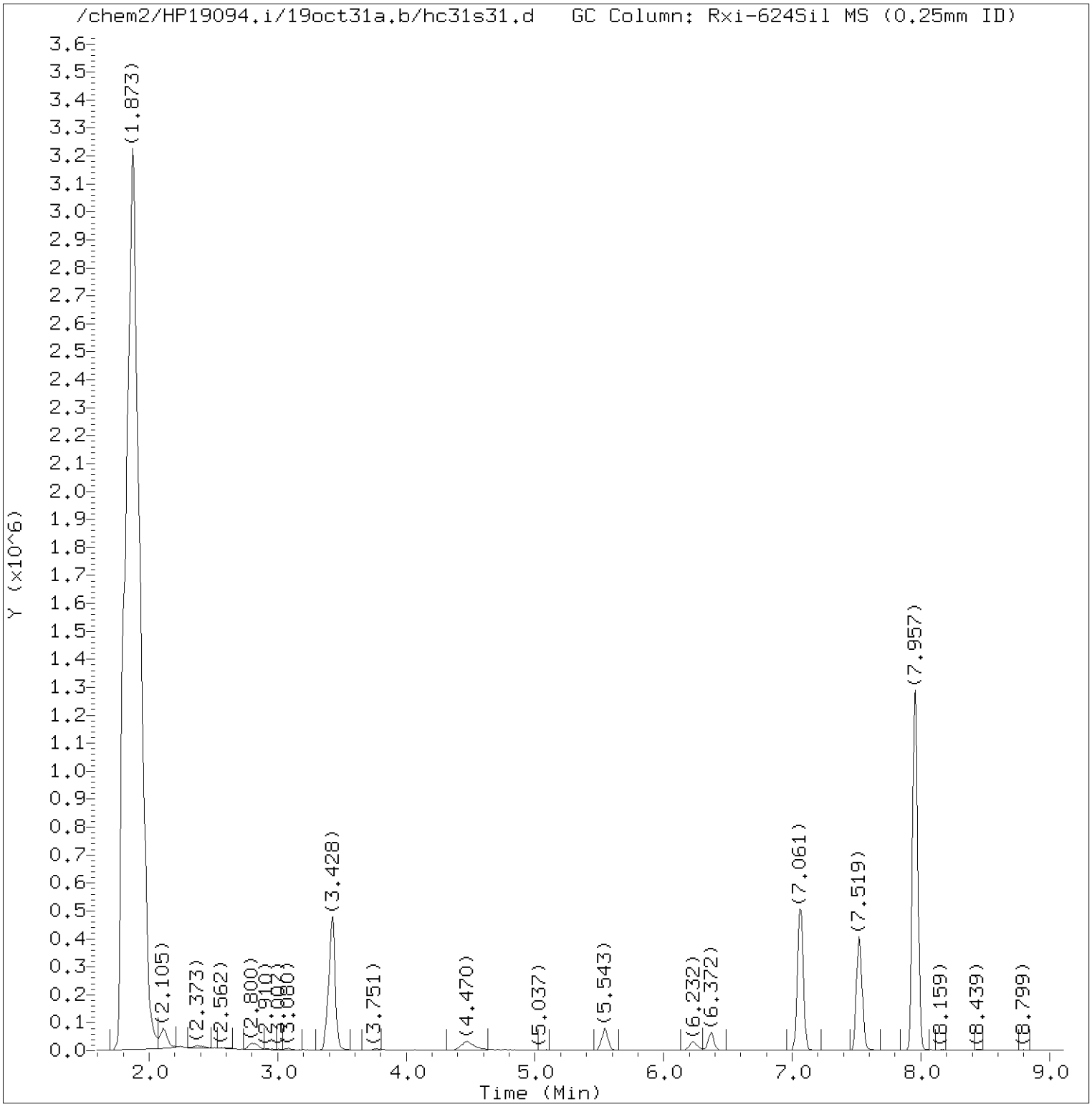
Volume Purged (Vt): 25 ml Sample Volume (Vo): 6.25 ml

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 21

Digitally signed by Miranda E. Campbell on 10/31/2019 at 19:51. Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

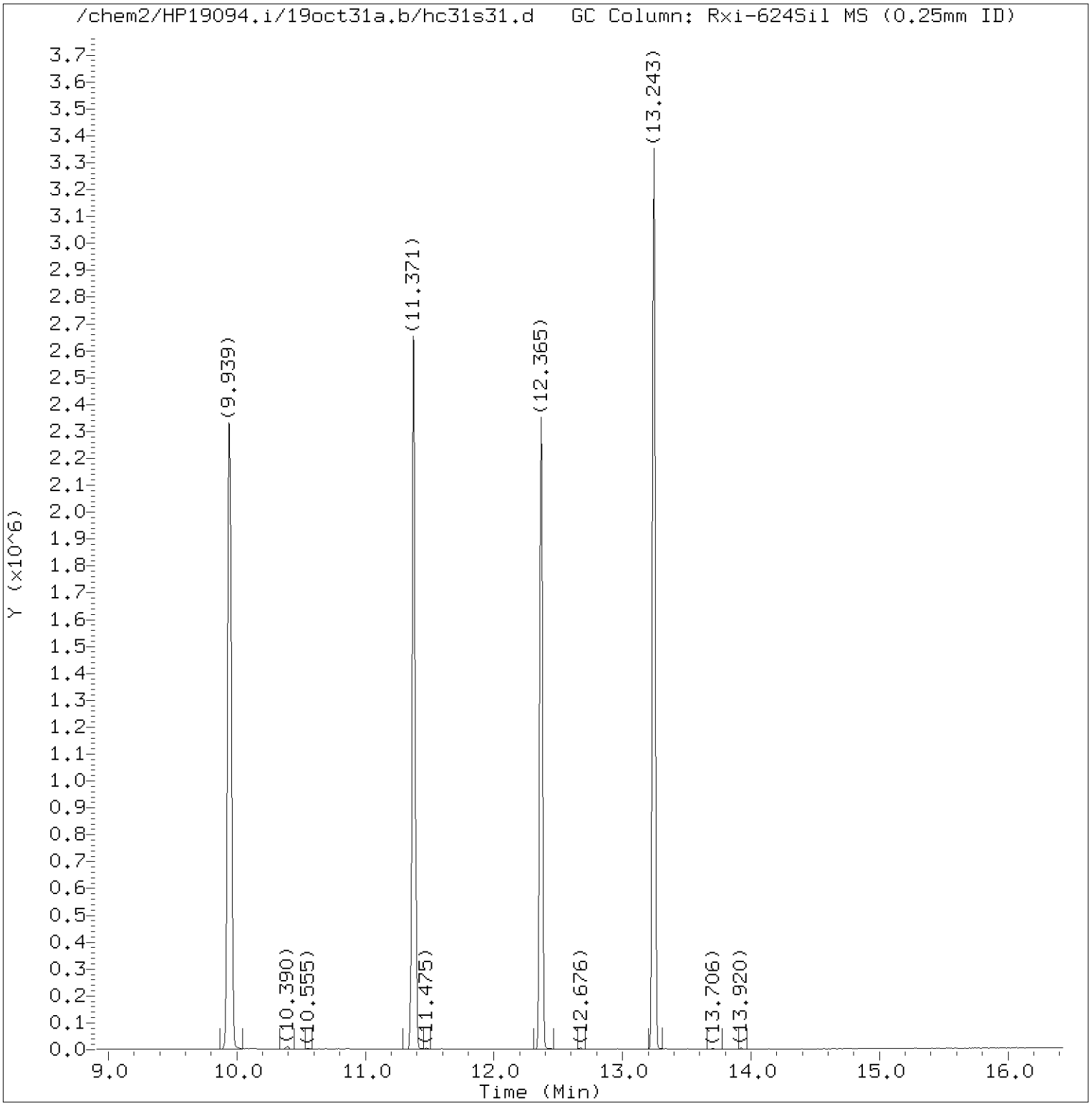
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Sample Name: F4803DL Lab Sample ID: 1183608DL

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 19:51.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Sample Name: F4803DL Lab Sample ID: 1183608DL

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 19:51.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

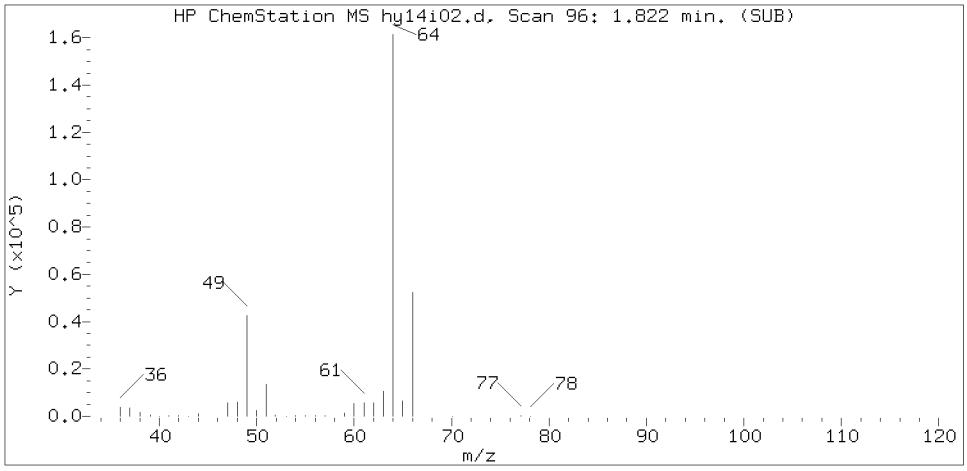
Sample Name: F4803DL Lab Sample ID: 1183608DL

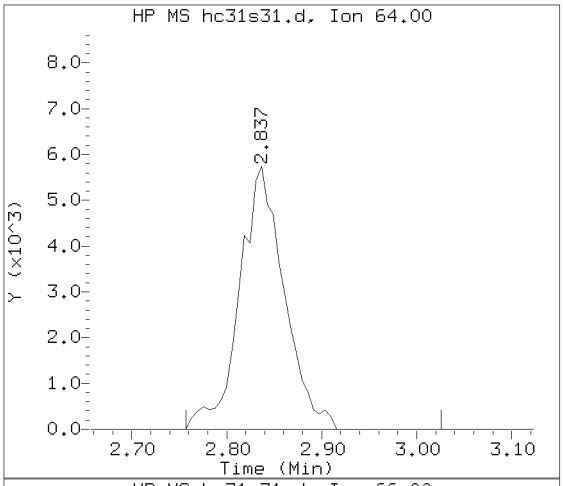
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
8) Chloroethane	(2)	2.837	64	18767	0.467
11) Ethyl ether	(2)	3.428	59	530053	17.506
26)*t-Butyl Alcohol-d10	(1)	4.483	65	125149	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	128682	1.597
50)$Dibromofluoromethane	(2)	7.067	113	483796	10.005
57)$1,2-Dichloroethane-d4	(2)	7.519	102	87280	9.817
58) Benzene	(2)	7.555	78	17816	0.099
63)*Fluorobenzene	(2)	7.957	96	1778074	10.000
82)$Toluene-d8	(3)	9.945	98	1845819	9.599
97)*Chlorobenzene-d5	(3)	11.378	117	1506220	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	687154	9.772
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	801896	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

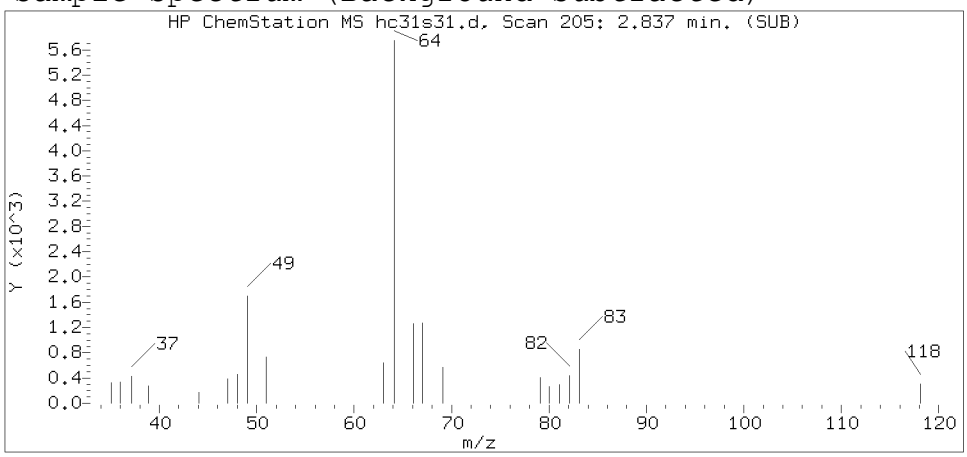
Digitally signed by Miranda E. Campbell
on 10/31/2019 at 19:51.
Target 3.5 esignature user ID: mec29284

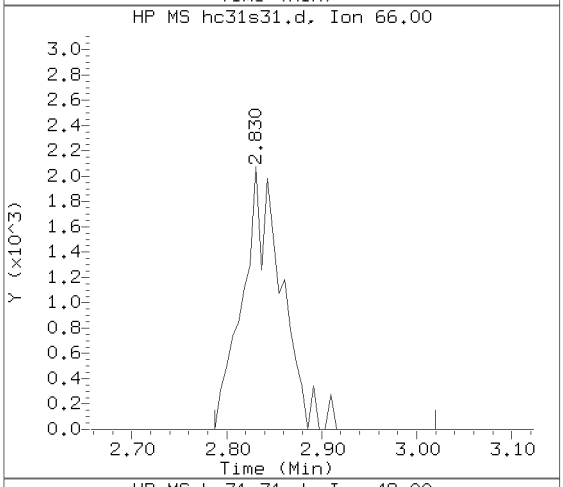
Reference Standard Spectrum for Chloroethane



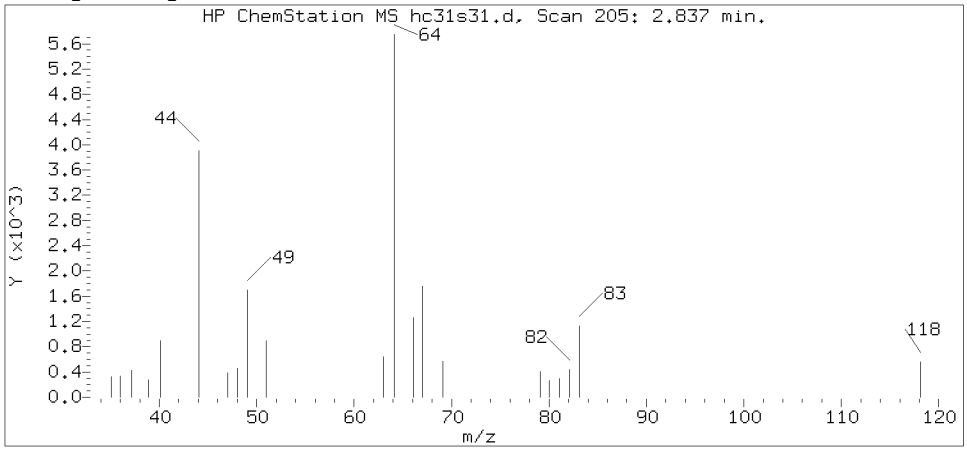


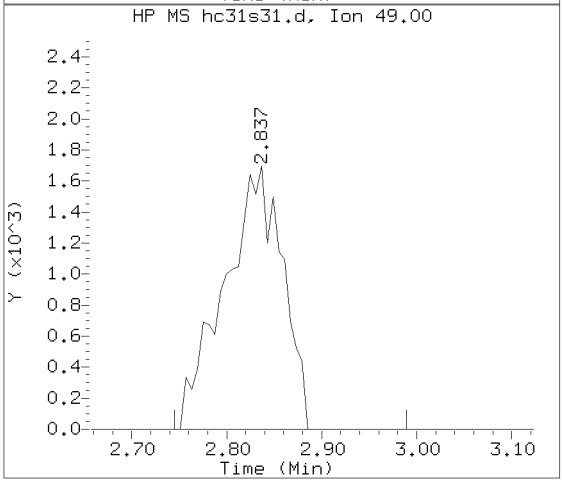
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

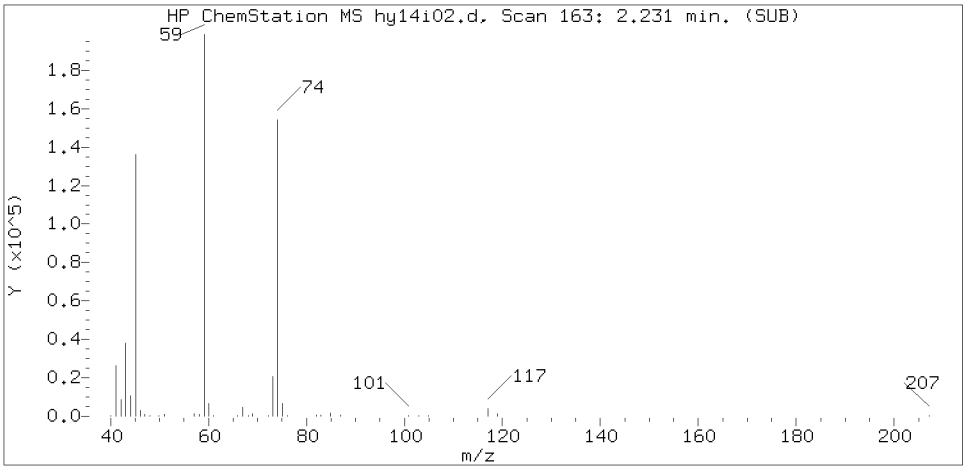
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

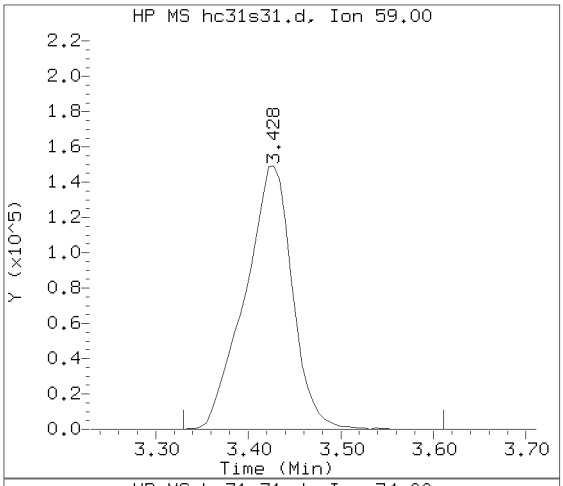
Sample Name: F4803DL Lab Sample ID: 1183608DL

Compound Number : 8
Compound Name : Chloroethane
Scan Number : 205
Retention Time (minutes): 2.837
Relative Retention Time :-0.00076
Quant Ion : 64.00
Area (flag) : 18767
On-Column Amount (ng) : 0.4670

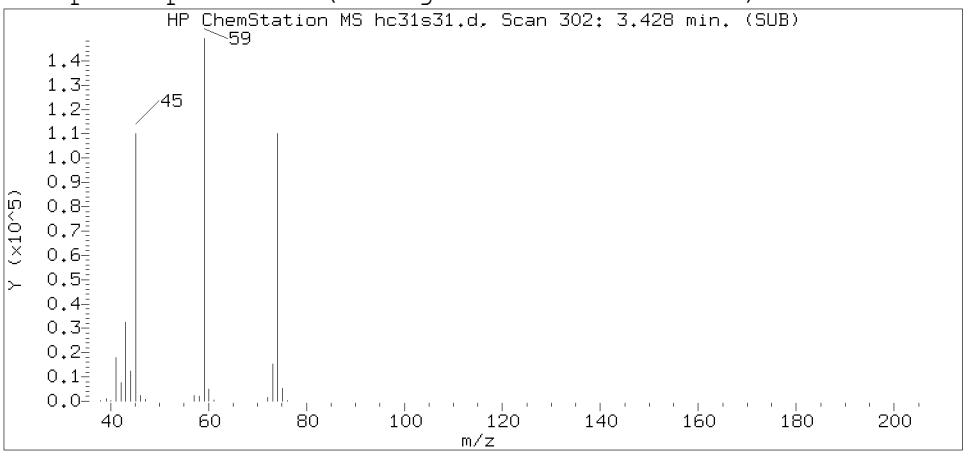
Digitally signed by Miranda E. Campbell on 10/31/2019 at 19:51.
Target 3.5 esignature user ID: mec29284

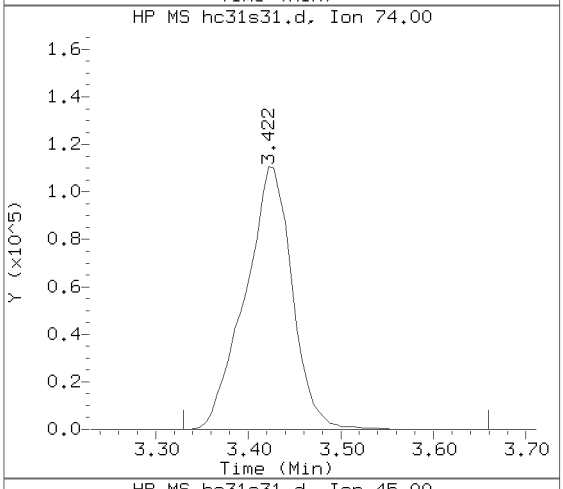
Reference Standard Spectrum for Ethyl ether



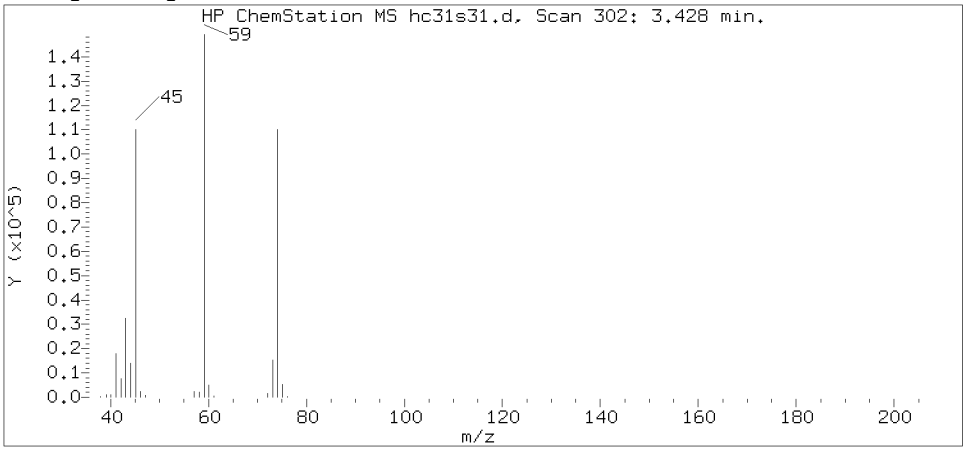


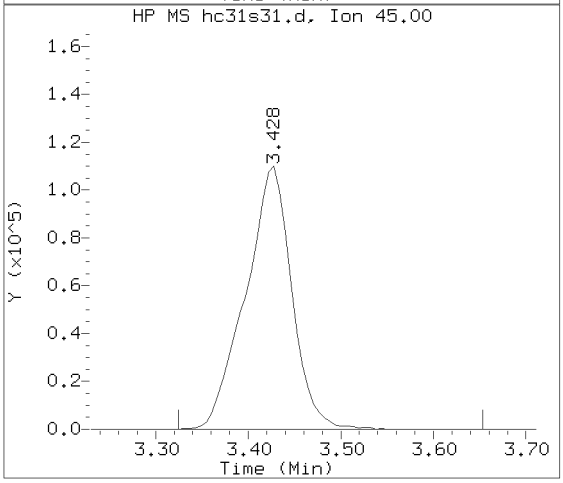
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

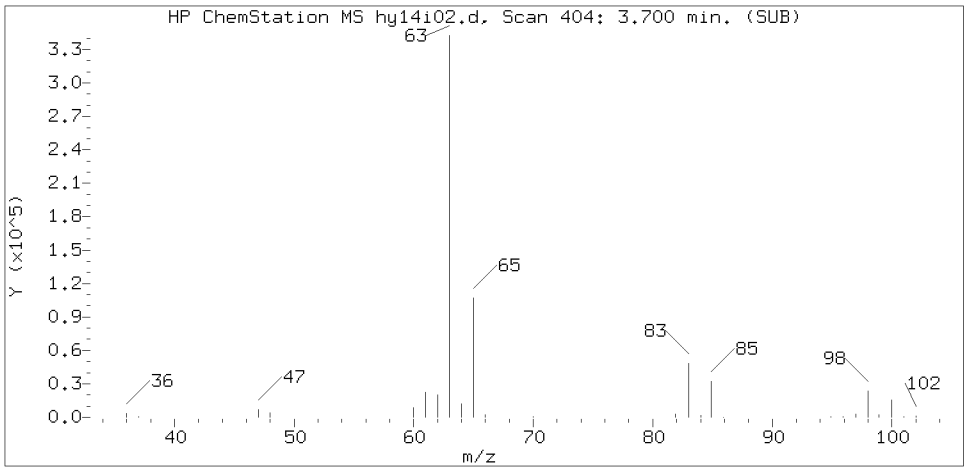
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

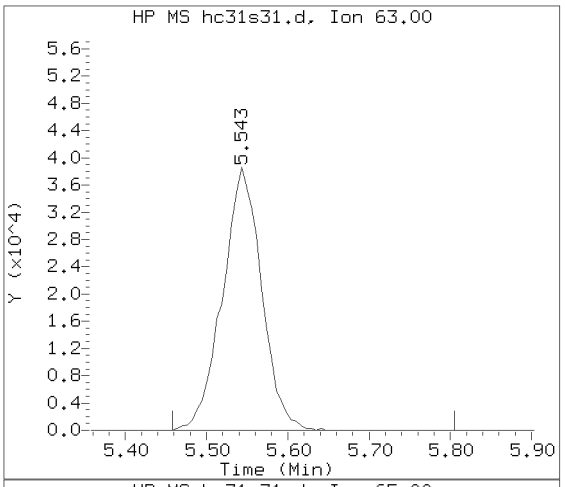
Sample Name: F4803DL Lab Sample ID: 1183608DL

Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 302
Retention Time (minutes): 3.428
Relative Retention Time :-0.00076
Quant Ion : 59.00
Area (flag) : 530053
On-Column Amount (ng) : 17.5062

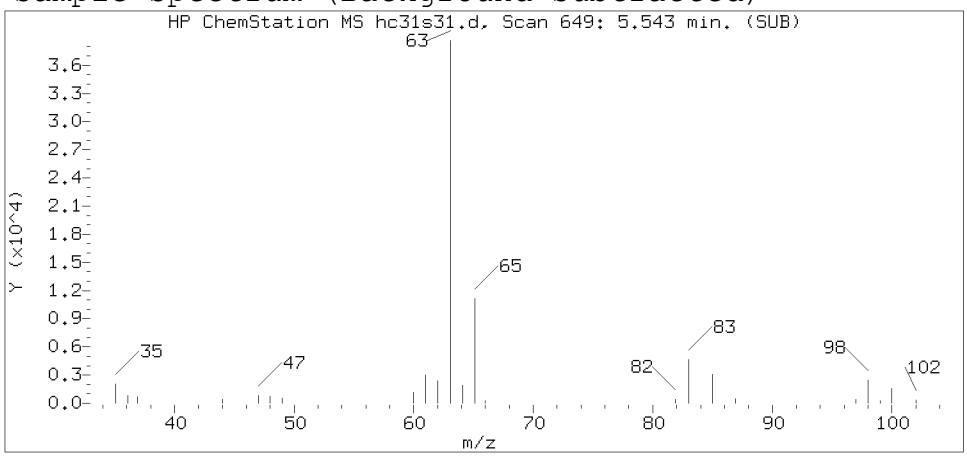
Digitally signed by Miranda E. Campbell on 10/31/2019 at 19:51.
Target 3.5 esignature user ID: mec29284

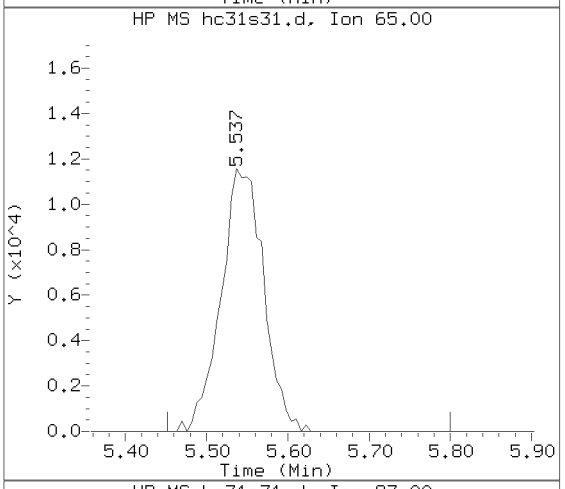
Reference Standard Spectrum for 1,1-Dichloroethane



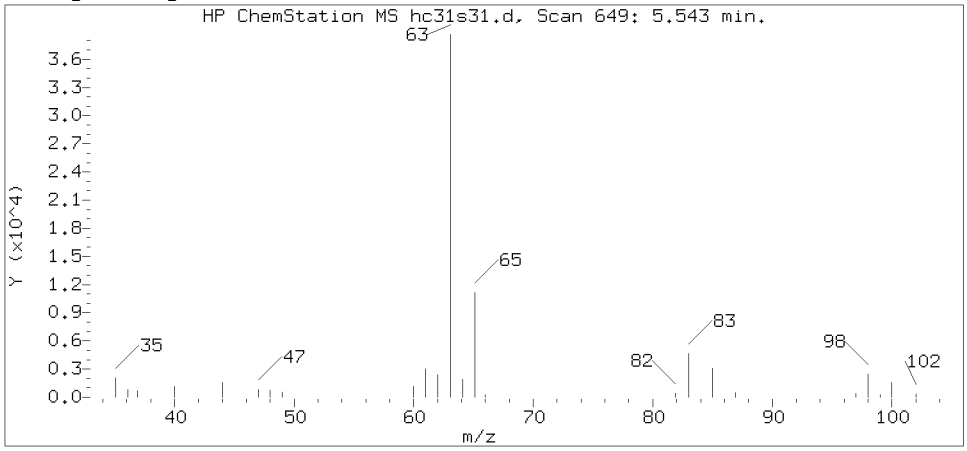


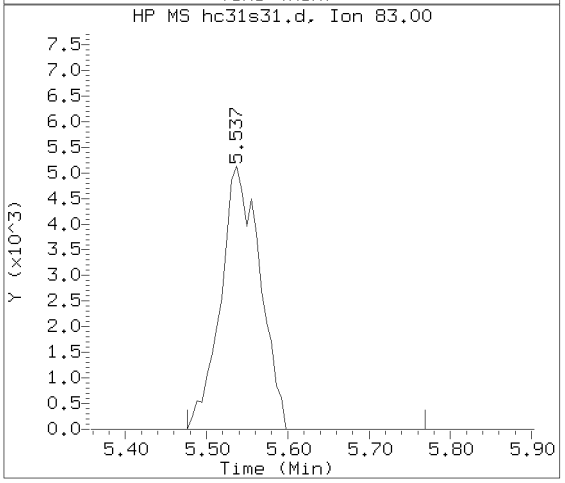
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

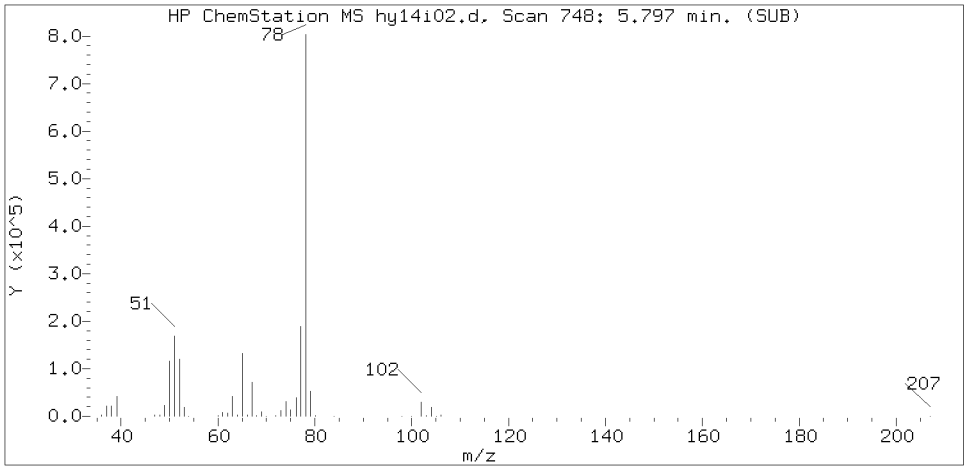
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Sample Name: F4803DL Lab Sample ID: 1183608DL

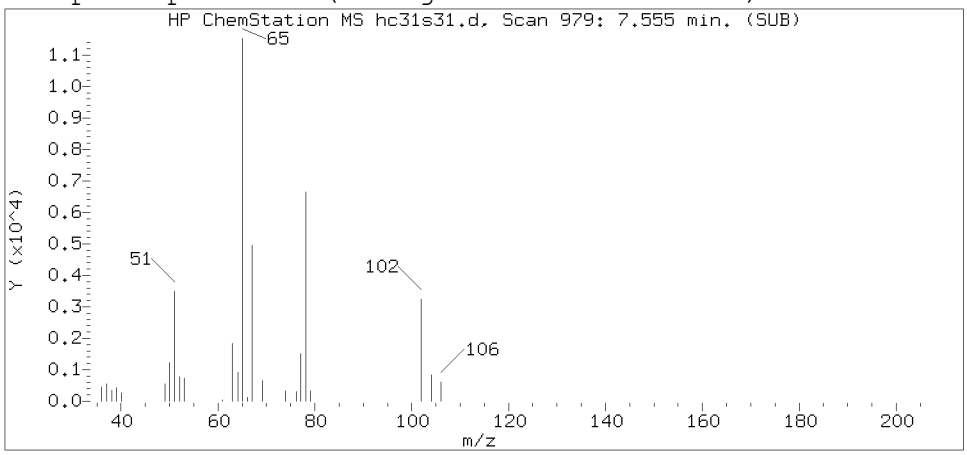
Compound Number	: 33
Compound Name	: 1,1-Dichloroethane
Scan Number	: 649
Retention Time (minutes)	: 5.543
Relative Retention Time	: 0.00001
Quant Ion	: 63.00
Area (flag)	: 128682
On-Column Amount (ng)	: 1.5972

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Target 3.5 esignature user ID: mec29284

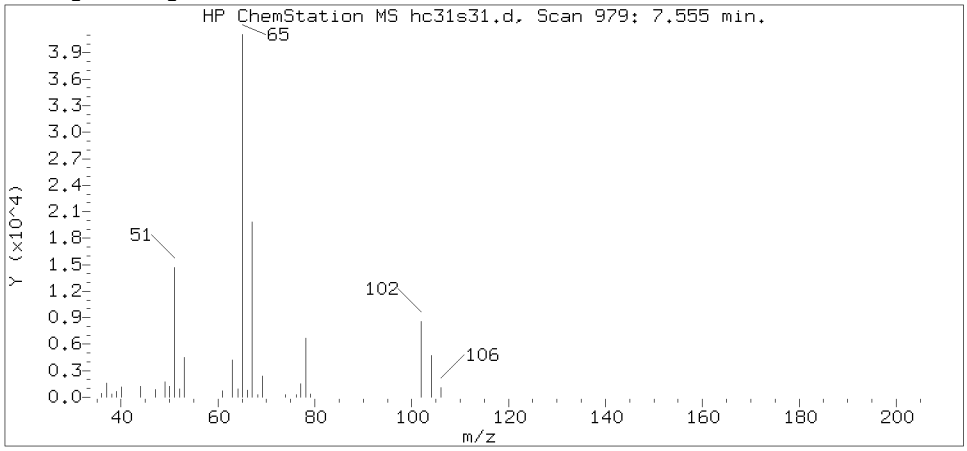
Reference Standard Spectrum for Benzene

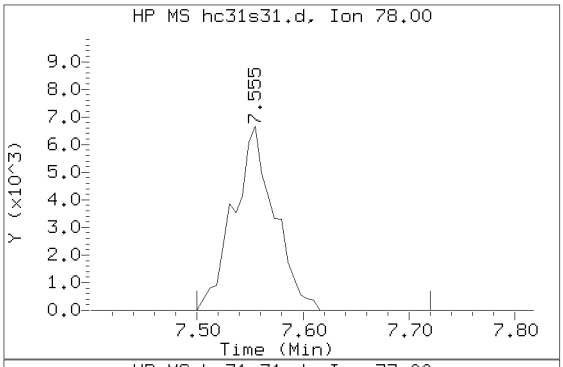


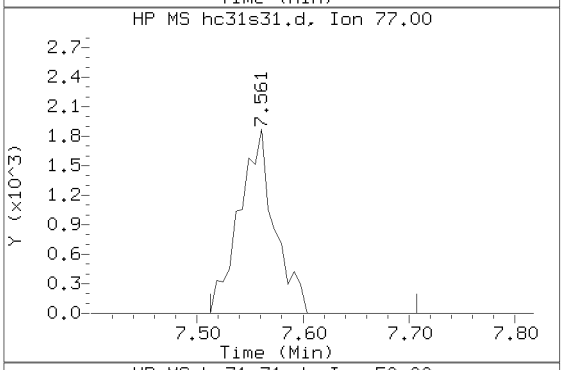
Sample Spectrum (Background Subtracted)

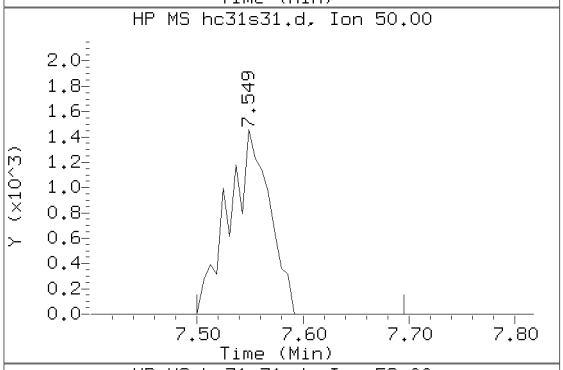


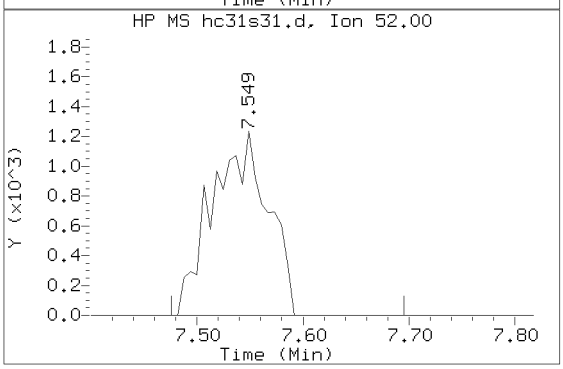
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct31a.b/hc31s31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 15:34 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 12:14
Date, time and analyst ID of latest file update: 31-Oct-2019 19:45 mec29284

Sample Name: F4803DL Lab Sample ID: 1183608DL

Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 979
Retention Time (minutes)	: 7.555
Relative Retention Time	: 0.00000
Quant Ion	: 78.00
Area (flag)	: 17816
On-Column Amount (ng)	: 0.0991

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Target 3.5 esignature user ID: mec29284

F4804 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183609

Data file: /chem2/HP19094.i/19oct30a.b/hc30s12.d Injection date and time: **30-OCT-2019 14:20**
Data file Sample Info. Line: F4804;1183609;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9145; 9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.006)	471	65	127951	(-10)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1864793	(-5)	10.00	
97) Chlorobenzene-d5	11.371	(0.006)	1605	117	1505381	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	786070	(-6)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.055	(0.001)	113	502481	9.909	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.512	(0.002)	102	92049	9.872	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1877775	9.771	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	681496	9.697	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.080	(0.000)	85	6468	0.066	0.07		J	0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)	2.830	(0.000)	64	72762	1.726	1.73			0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.410	(0.000)	59	718494	22.626	22.63			0.05	13
15) 1,1-Dichloroethene	(2)	3.745	(0.000)	96	7339	0.177	0.18		J	0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)	4.446	(0.000)	84	3891	0.079	0.08		J	0.07	1
33) 1,1-Dichloroethane	(2)	5.537	(0.000)	63	388239	4.595	4.59			0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)	6.708	(-0.002)	71	6509	1.709	1.71		J	0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)	7.549	(0.000)	78	52593	0.279	0.28		J	0.05	1
67) Trichloroethene	(2)	8.439	(-0.000)	95	7535	0.142	0.14		J	0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)	10.554	(-0.000)	166	10586	0.165	0.16		J	0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct30a.b/hc30s12.d Injection date and time: **30-OCT-2019 14:20**
Data file Sample Info. Line: F4804;1183609;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

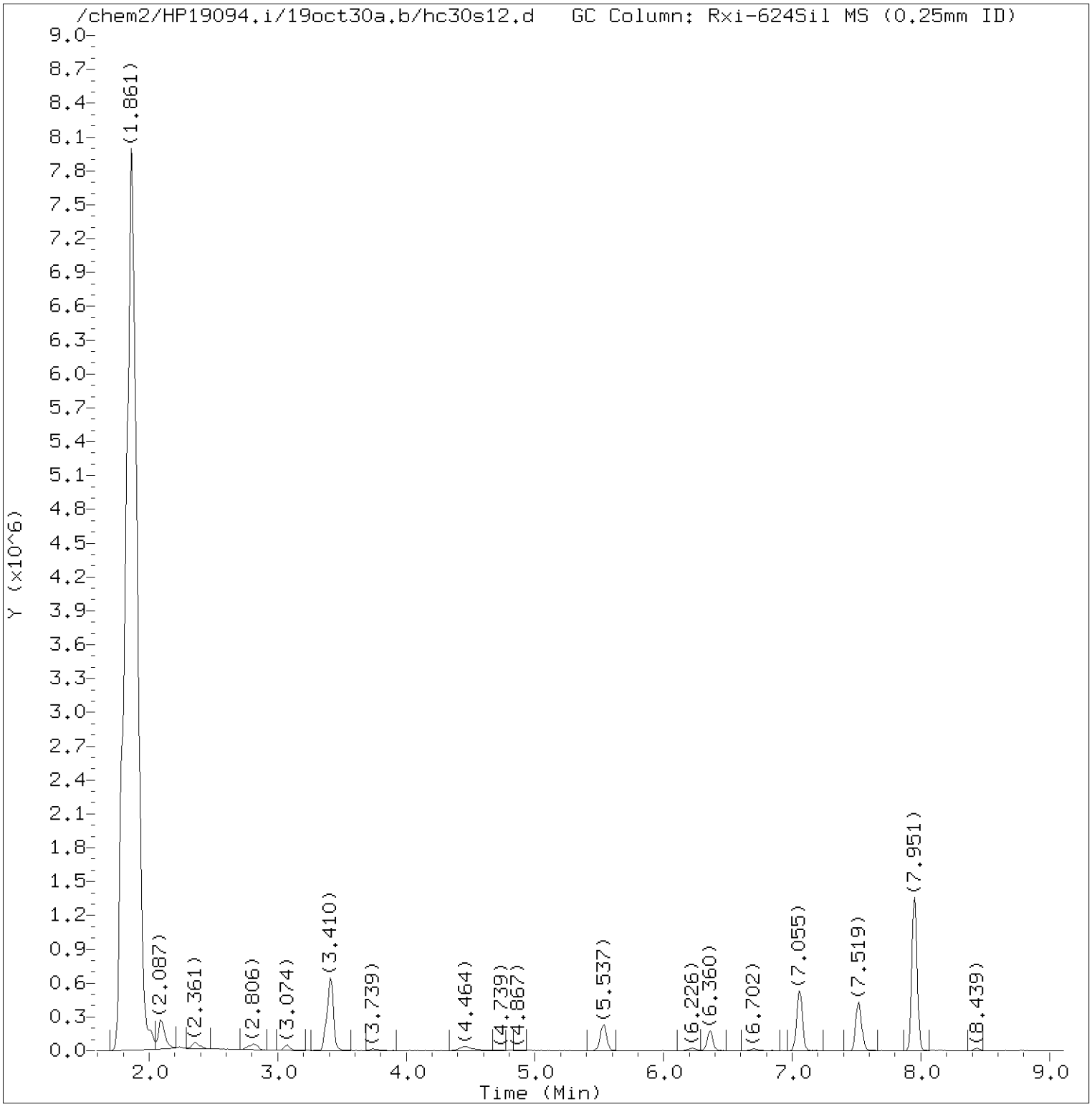
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

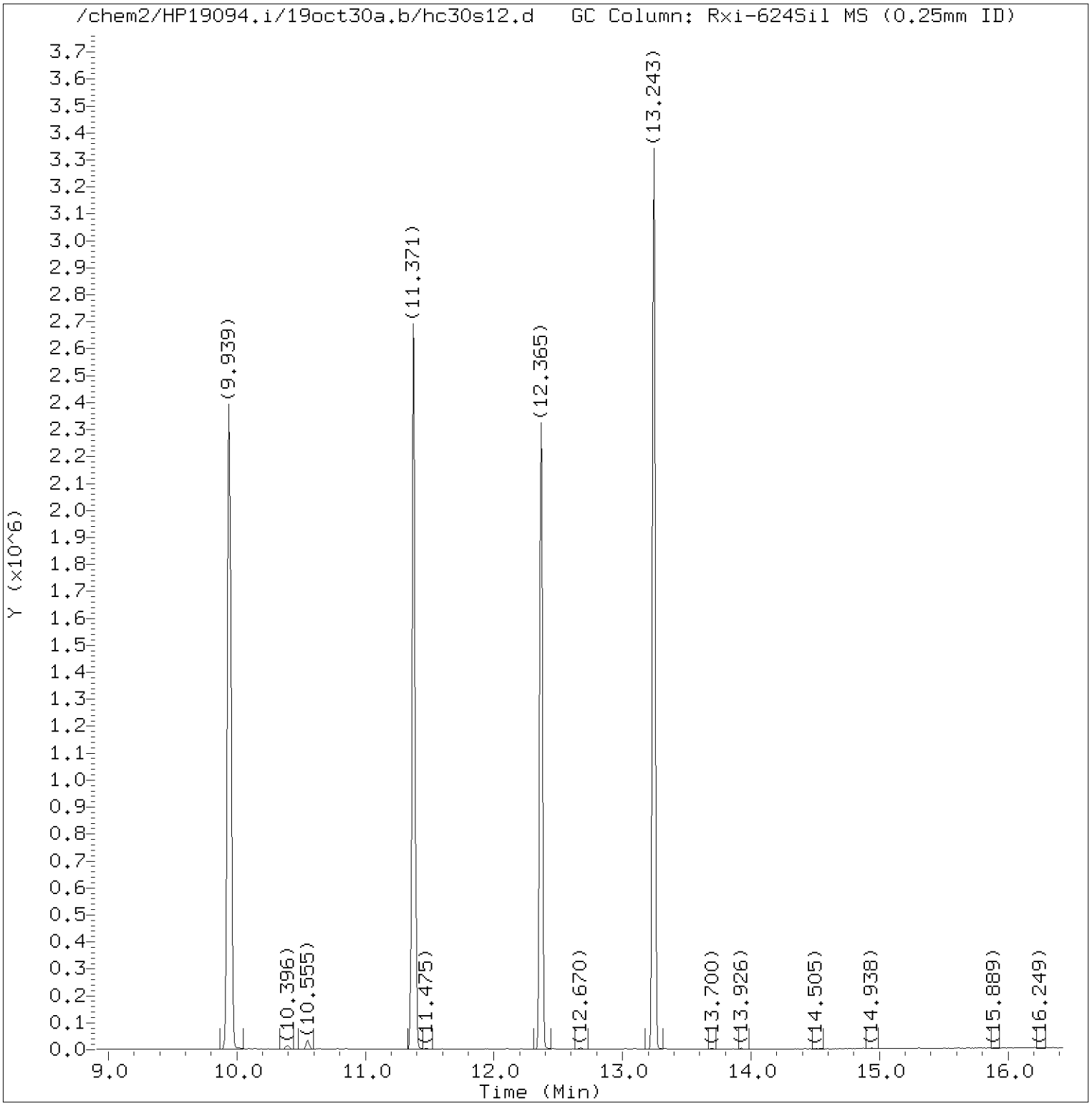
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

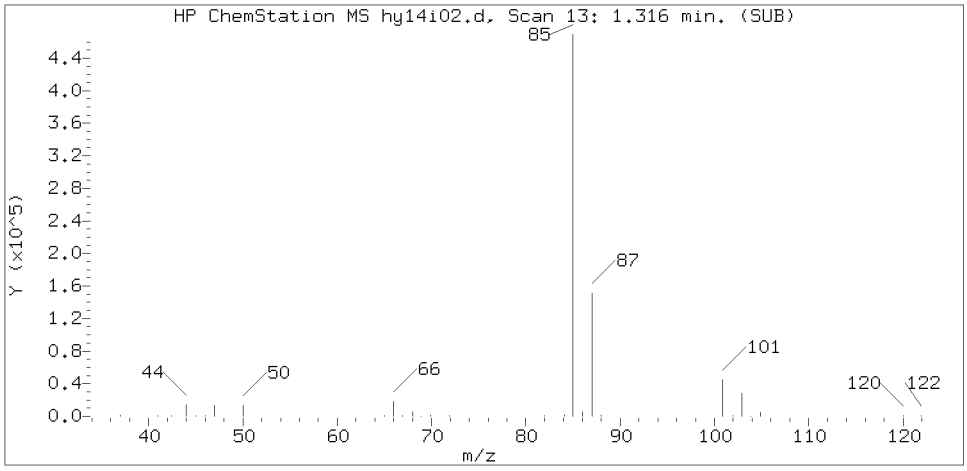
Sample Name: F4804 Lab Sample ID: 1183609

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	6468	0.066
8) Chloroethane	(2)	2.830	64	72762	1.726
11) Ethyl ether	(2)	3.410	59	718494	22.626
15) 1,1-Dichloroethene	(2)	3.745	96	7339	0.177
23) Methylene Chloride	(2)	4.446	84	3891	0.079
26)*t-Butyl Alcohol-d10	(1)	4.458	65	127951	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	388239	4.595
48) Tetrahydrofuran	(1)	6.708	71	6509	1.709
50)$Dibromofluoromethane	(2)	7.055	113	502481	9.909
57)$1,2-Dichloroethane-d4	(2)	7.512	102	92049	9.872
58) Benzene	(2)	7.549	78	52593	0.279
63)*Fluorobenzene	(2)	7.951	96	1864793	10.000
67) Trichloroethene	(2)	8.439	95	7535	0.142
82)$Toluene-d8	(3)	9.939	98	1877775	9.771
89) Tetrachloroethene	(3)	10.555	166	10586	0.165
97)*Chlorobenzene-d5	(3)	11.371	117	1505381	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	681496	9.697
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	786070	10.000

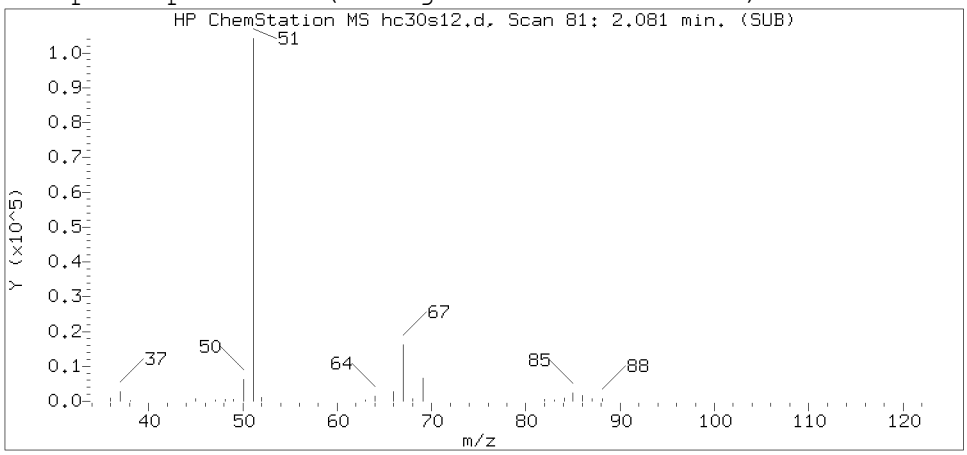
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

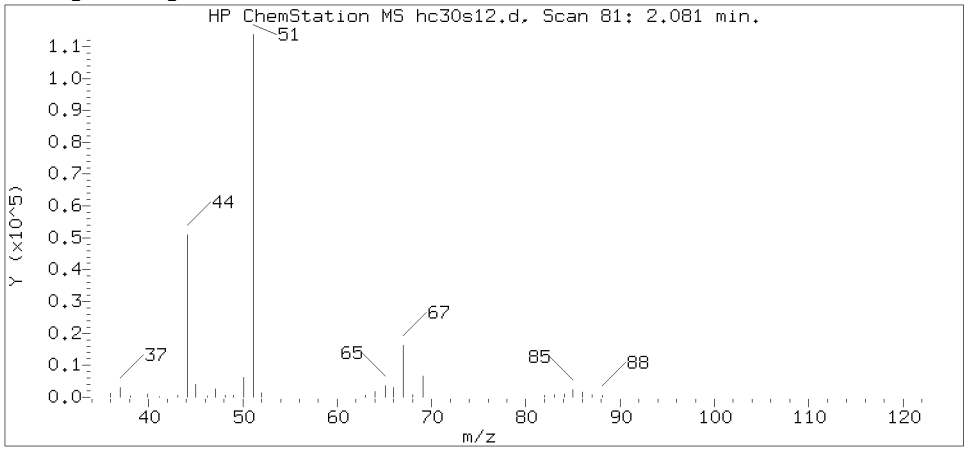
Reference Standard Spectrum for Dichlorodifluoromethane

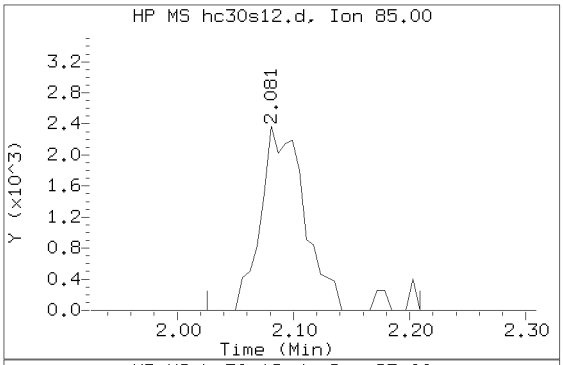


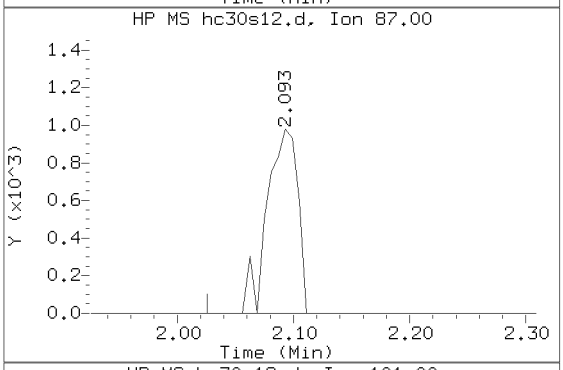
Sample Spectrum (Background Subtracted)

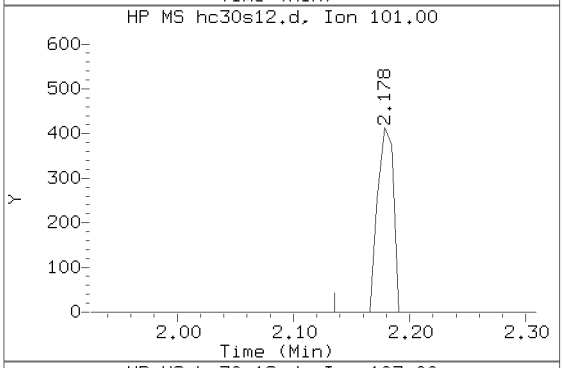


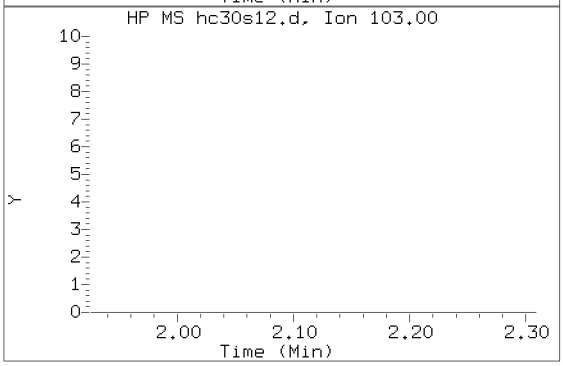
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

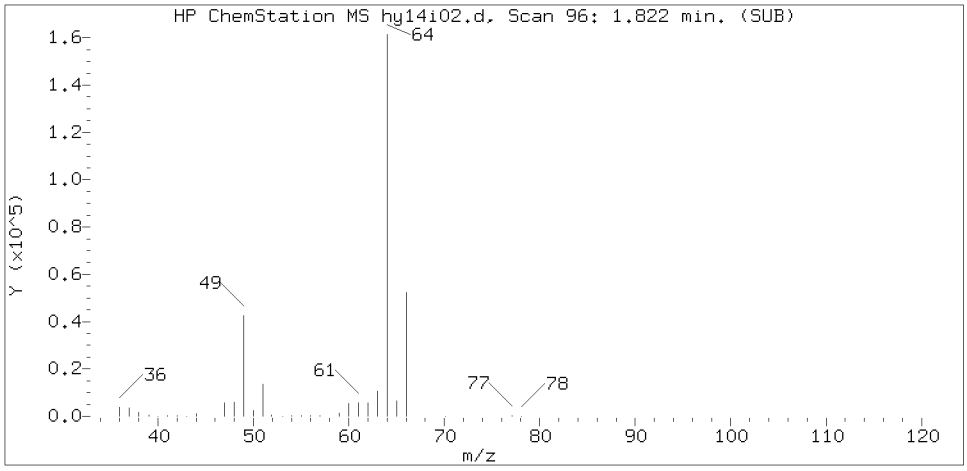
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

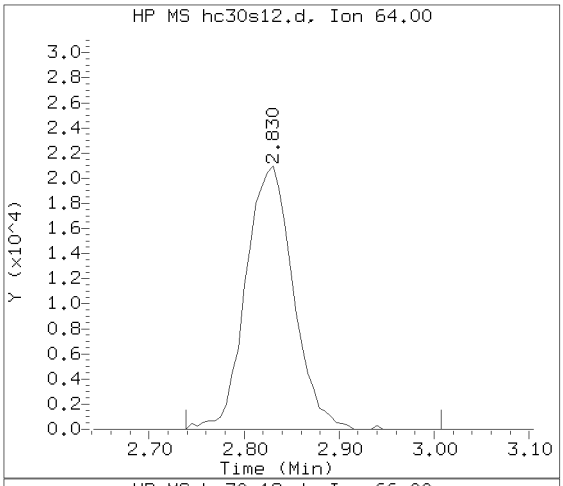
Sample Name: F4804 Lab Sample ID: 1183609

Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.081
Relative Retention Time : 0.00001
Quant Ion : 85.00
Area (flag) : 6468
On-Column Amount (ng) : 0.0662

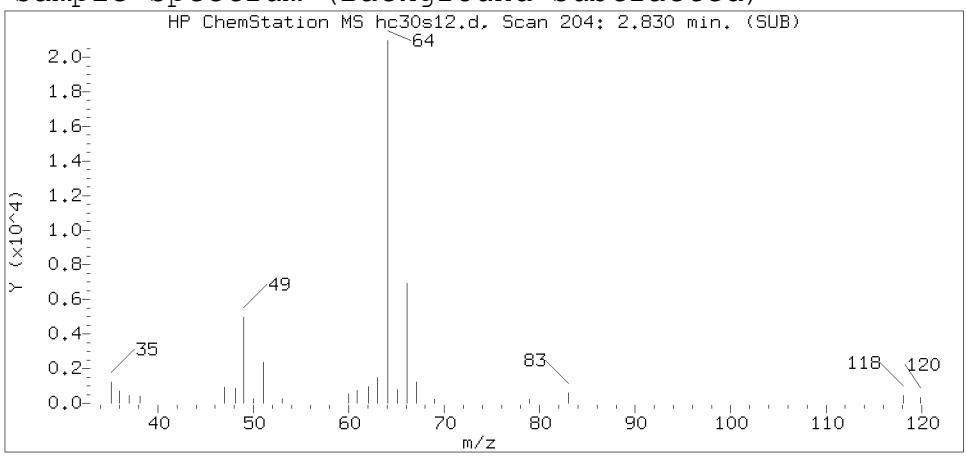
Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

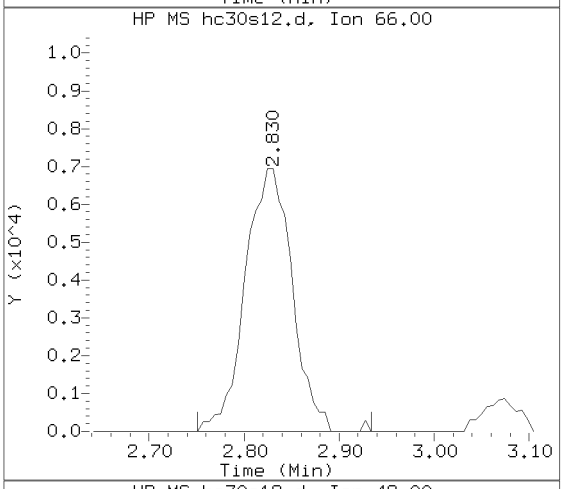
Reference Standard Spectrum for Chloroethane



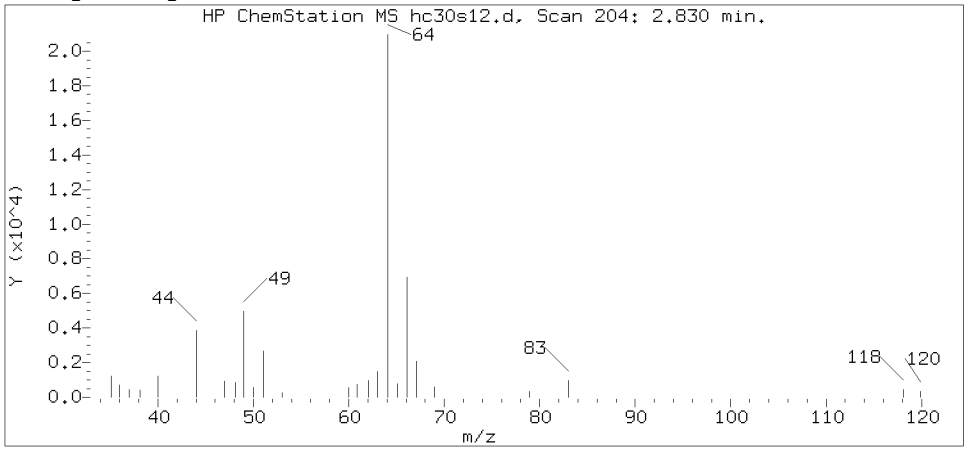


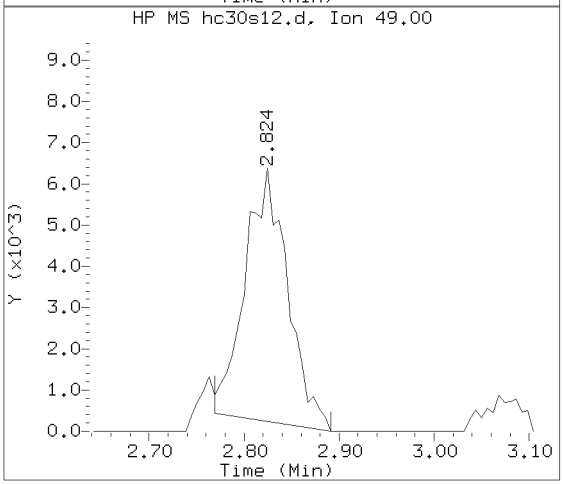
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

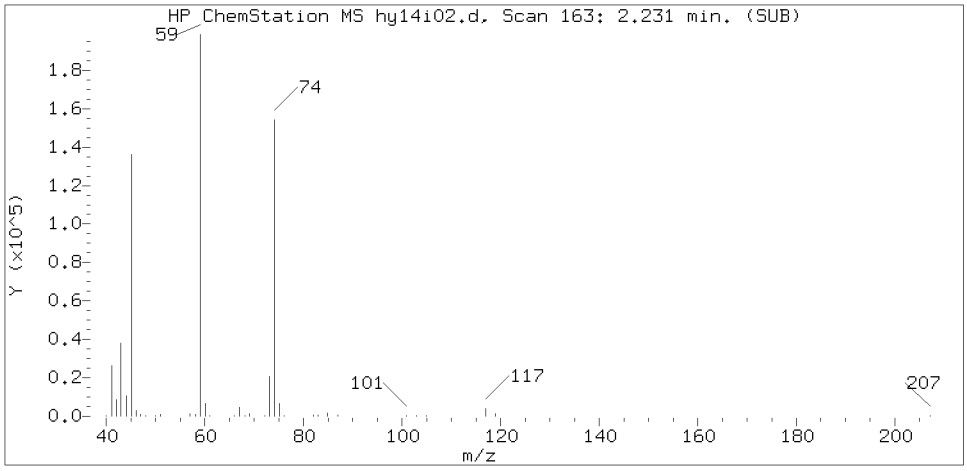
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

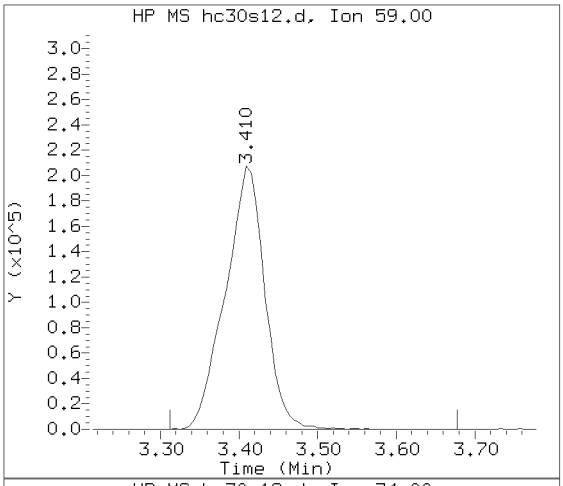
Sample Name: F4804 Lab Sample ID: 1183609

Compound Number	: 8
Compound Name	: Chloroethane
Scan Number	: 204
Retention Time (minutes)	: 2.830
Relative Retention Time	: 0.00077
Quant Ion	: 64.00
Area (flag)	: 72762
On-Column Amount (ng)	: 1.7263

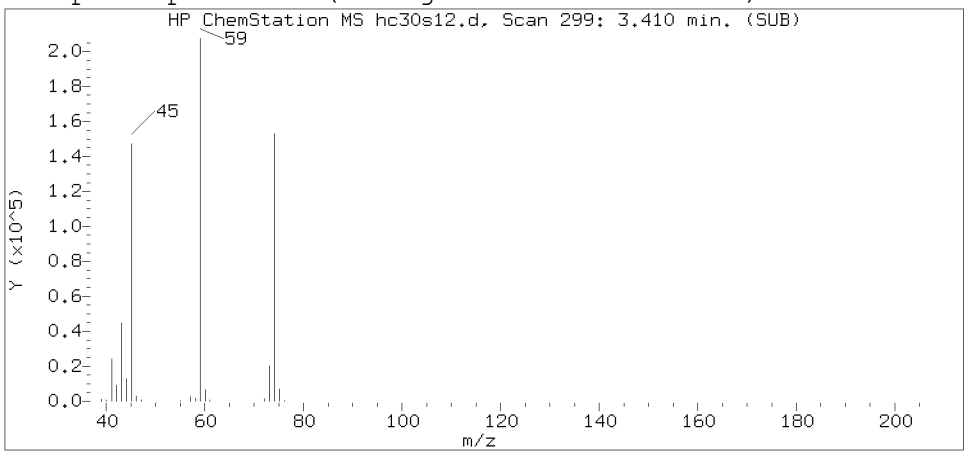
Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

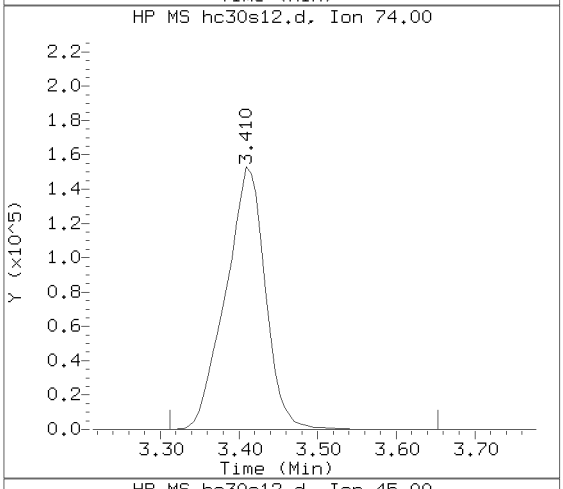
Reference Standard Spectrum for Ethyl ether



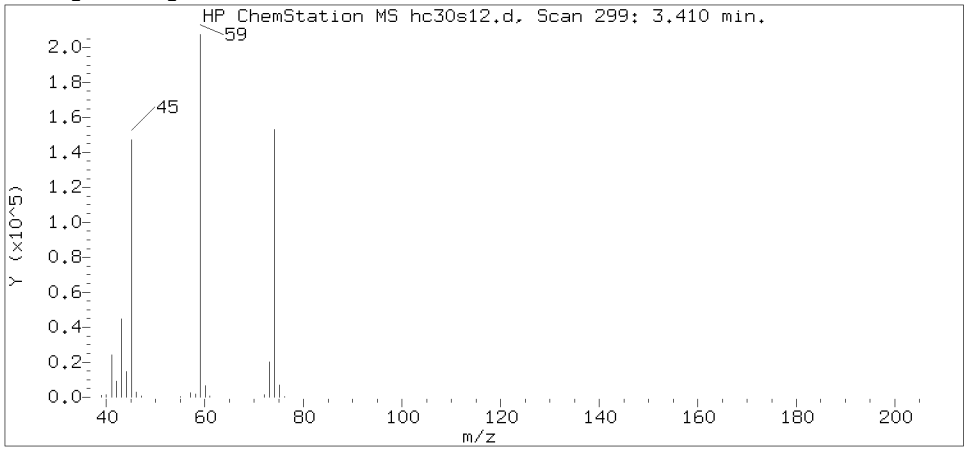


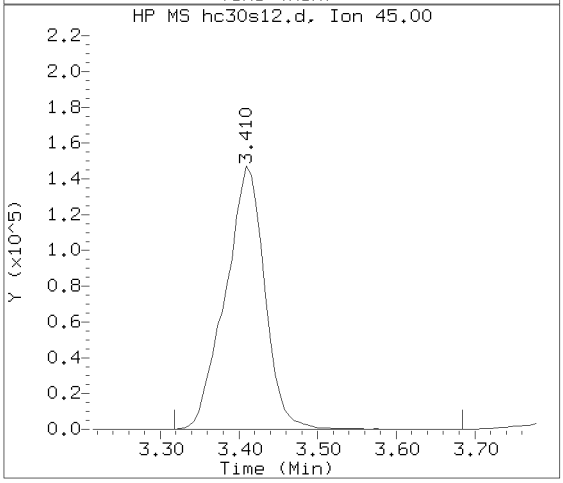
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

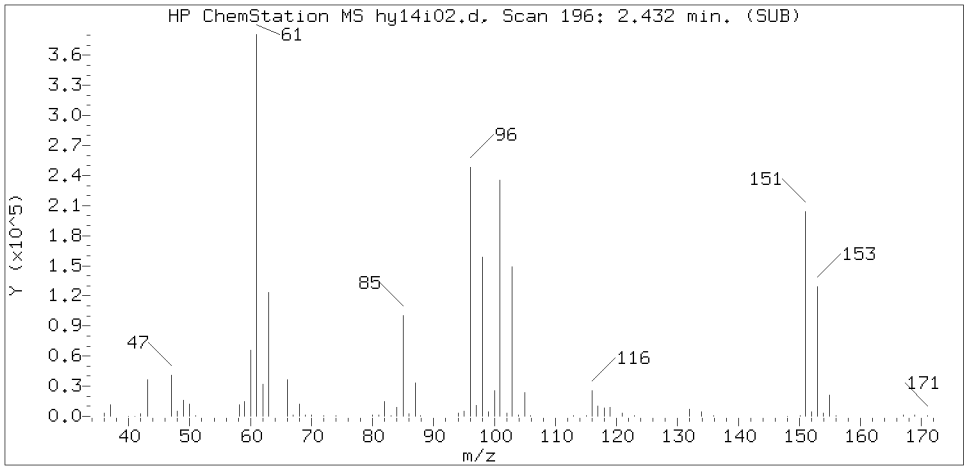
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

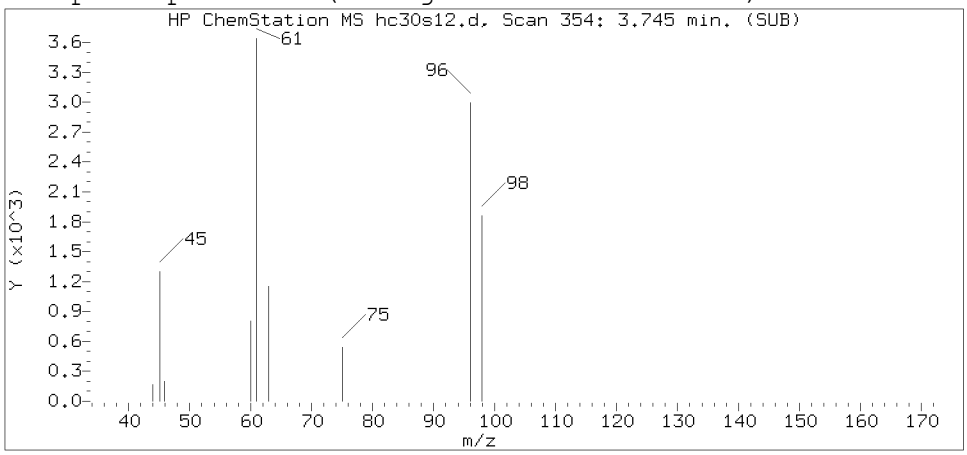
Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 299
Retention Time (minutes): 3.410
Relative Retention Time : 0.00077
Quant Ion : 59.00
Area (flag) : 718494
On-Column Amount (ng) : 22.6264

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Target 3.5 esignature user ID: sej02002

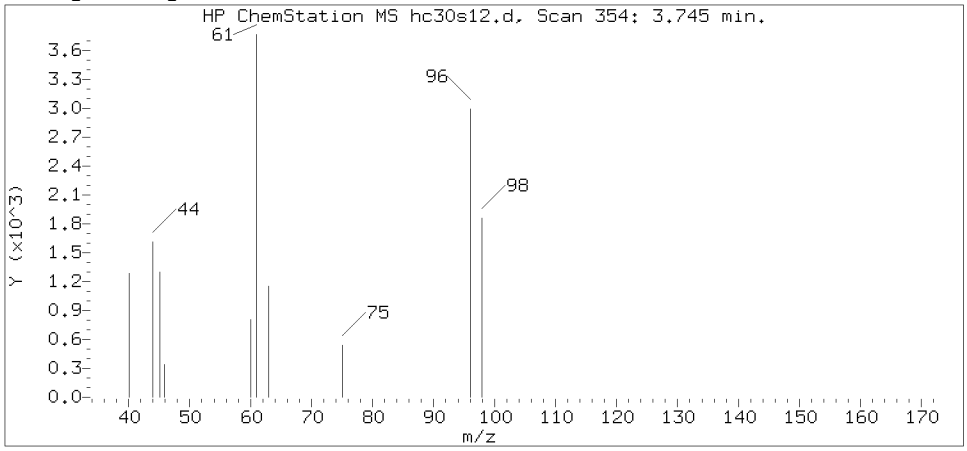
Reference Standard Spectrum for 1,1-Dichloroethene

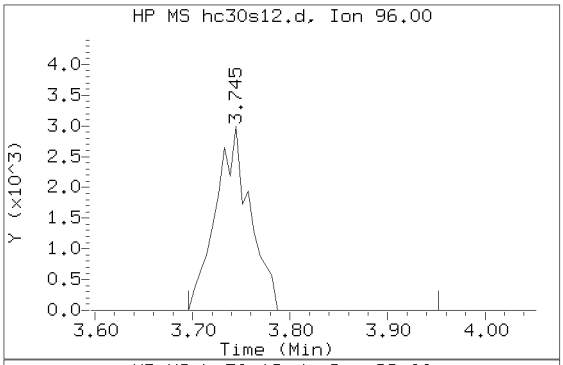


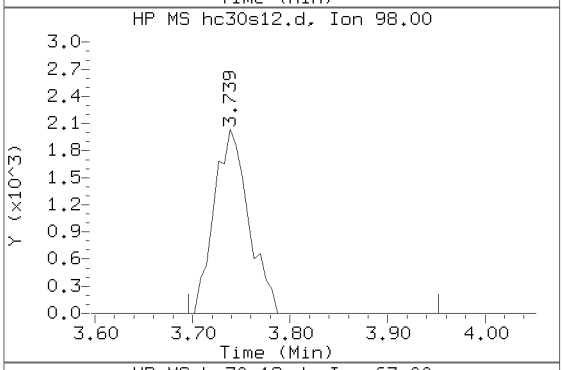
Sample Spectrum (Background Subtracted)

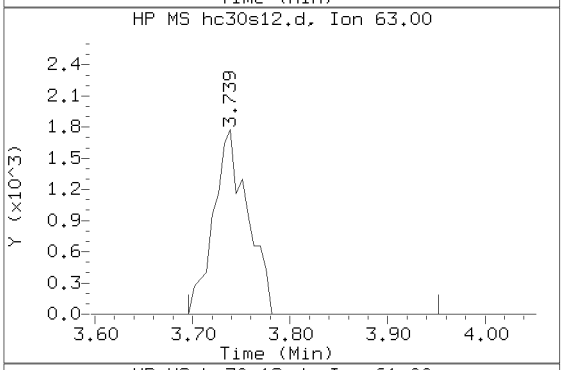


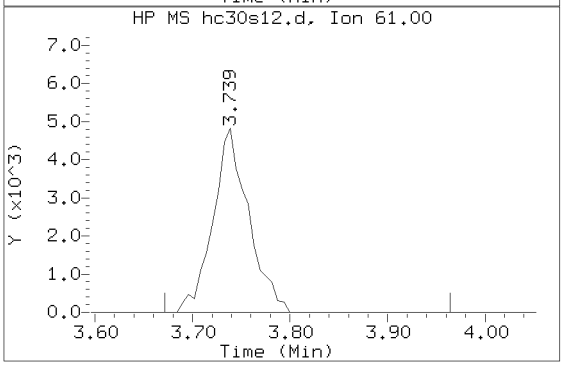
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

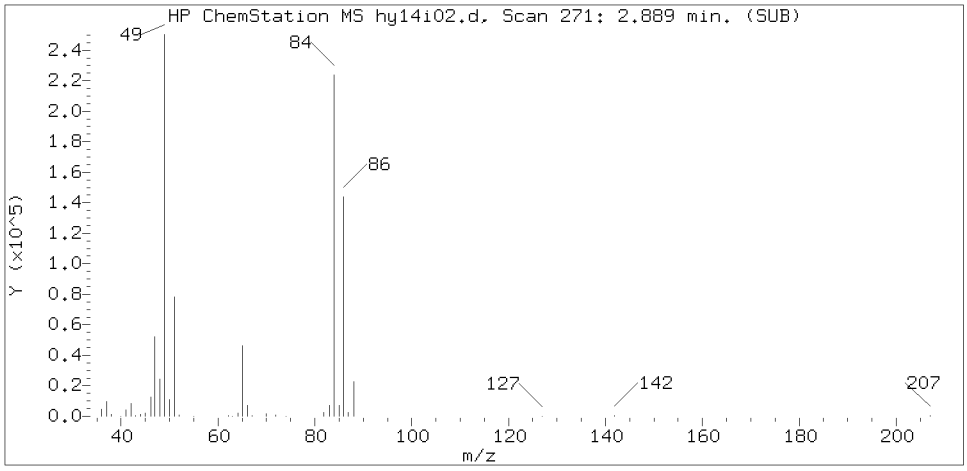
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

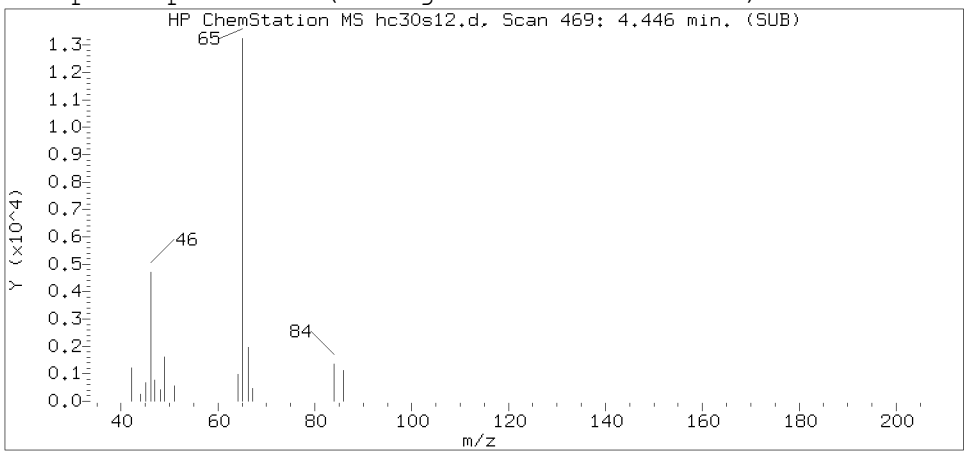
Compound Number : 15
Compound Name : 1,1-Dichloroethene
Scan Number : 354
Retention Time (minutes): 3.745
Relative Retention Time : 0.00000
Quant Ion : 96.00
Area (flag) : 7339
On-Column Amount (ng) : 0.1766

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Target 3.5 esignature user ID: sej02002

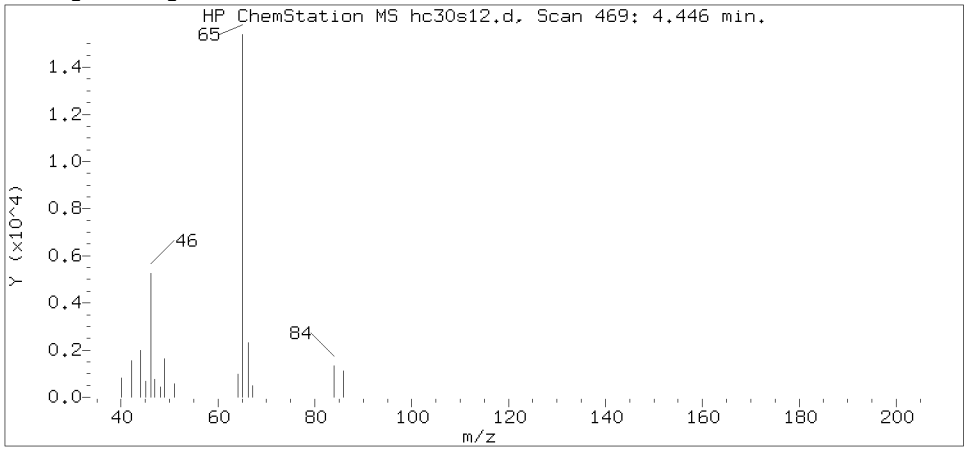
Reference Standard Spectrum for Methylene Chloride

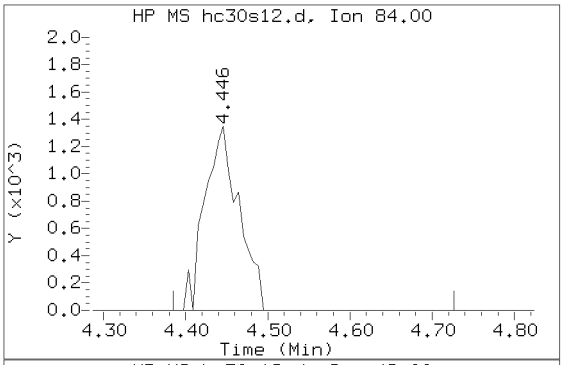


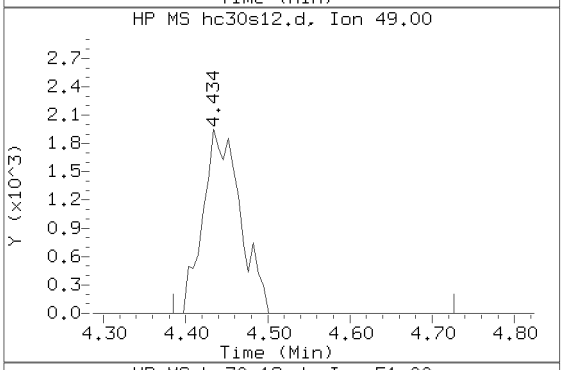
Sample Spectrum (Background Subtracted)

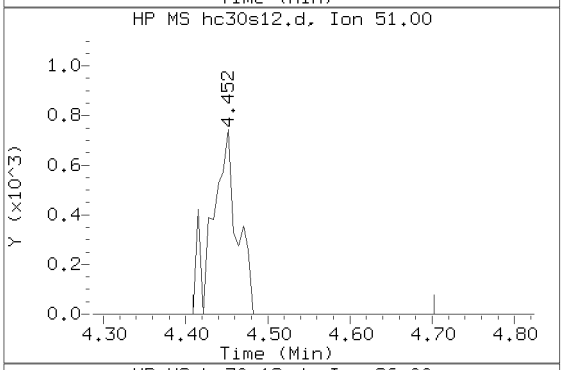


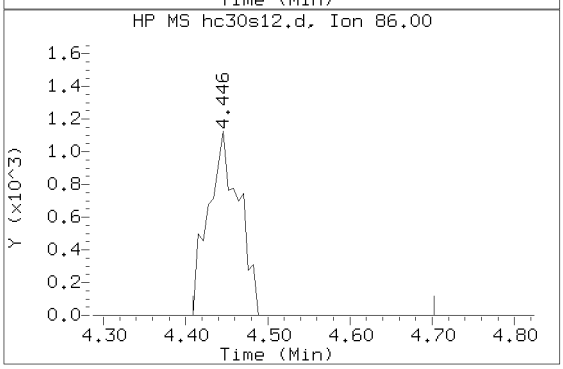
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

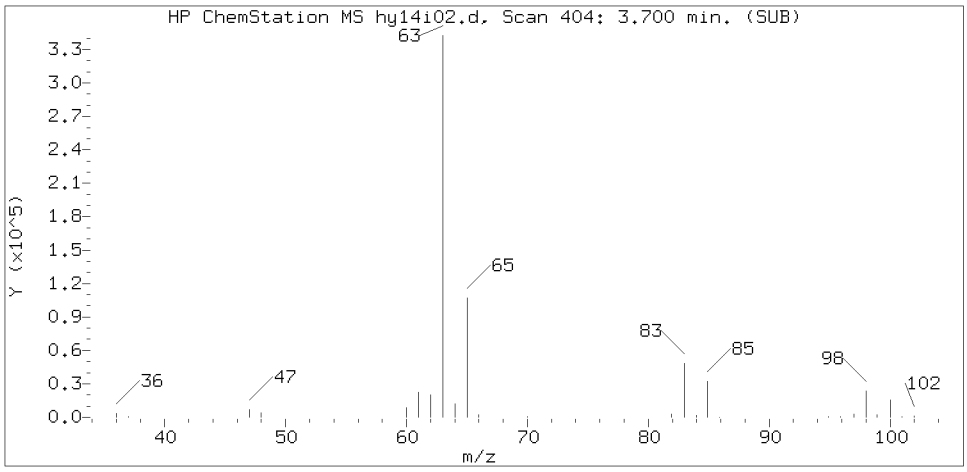
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

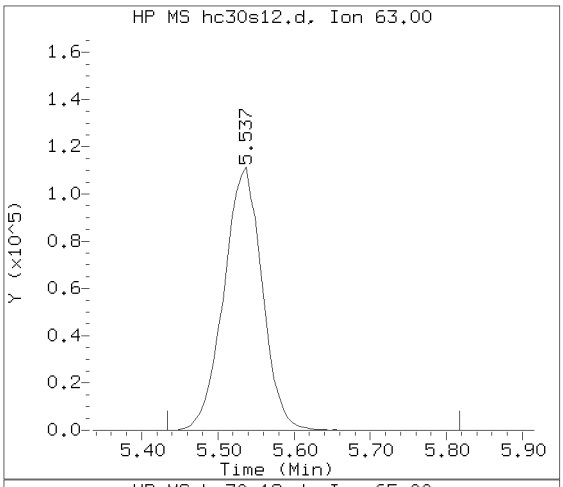
Sample Name: F4804 Lab Sample ID: 1183609

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 469
Retention Time (minutes): 4.446
Relative Retention Time : 0.00077
Quant Ion : 84.00
Area (flag) : 3891
On-Column Amount (ng) : 0.0785

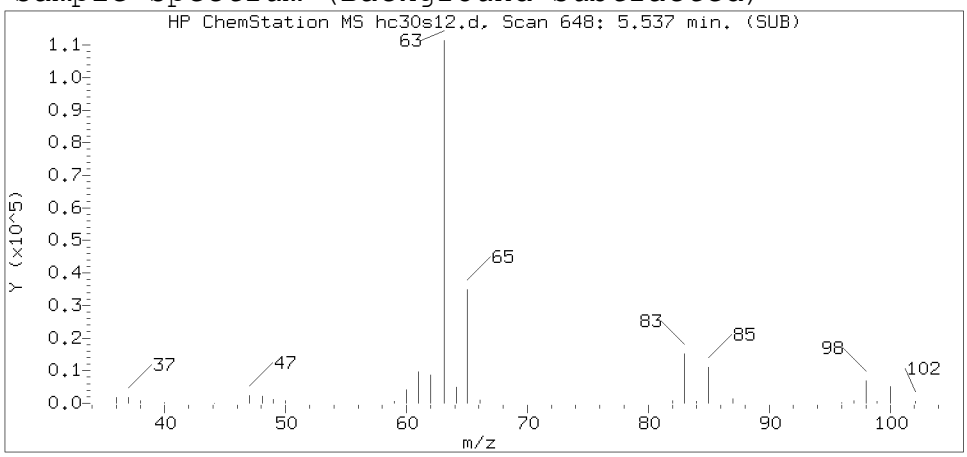
Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

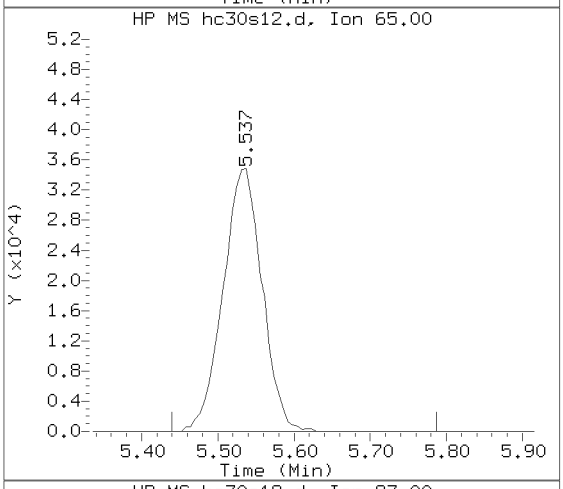
Reference Standard Spectrum for 1,1-Dichloroethane



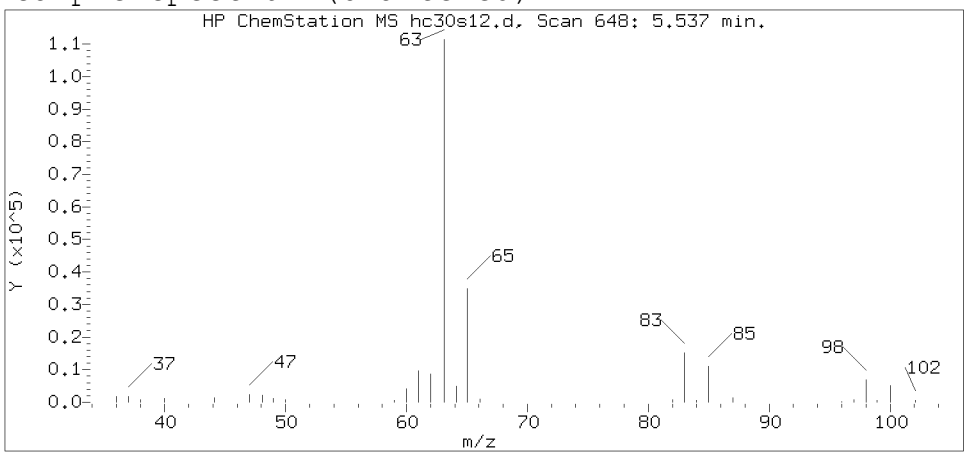


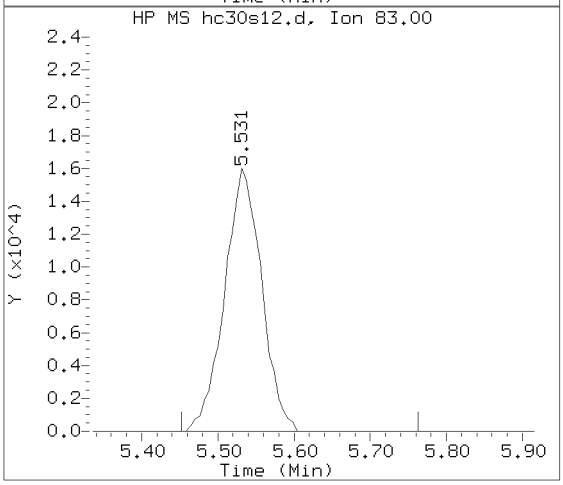
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

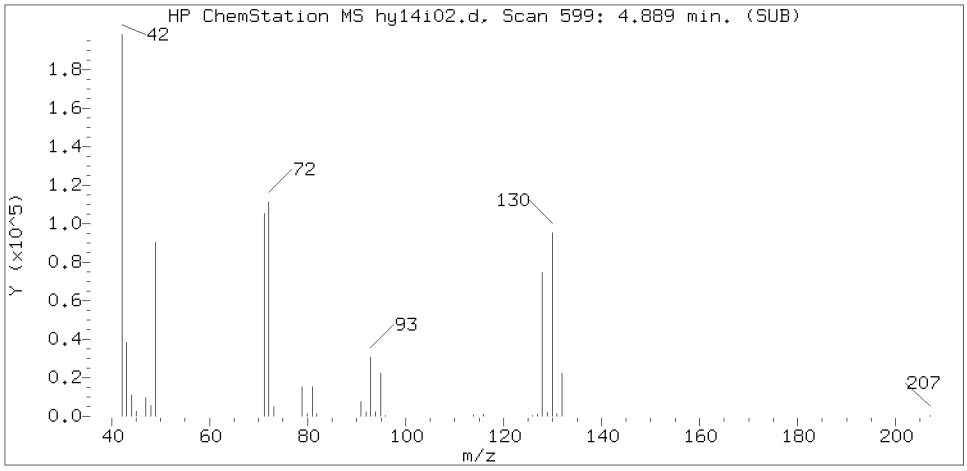
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

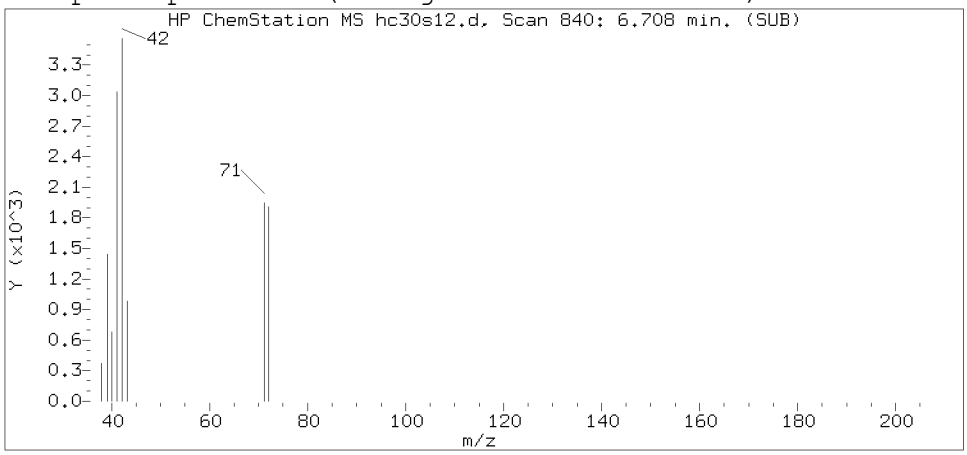
Compound Number	: 33
Compound Name	: 1,1-Dichloroethane
Scan Number	: 648
Retention Time (minutes)	: 5.537
Relative Retention Time	: 0.00000
Quant Ion	: 63.00
Area (flag)	: 388239
On-Column Amount (ng)	: 4.5949

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

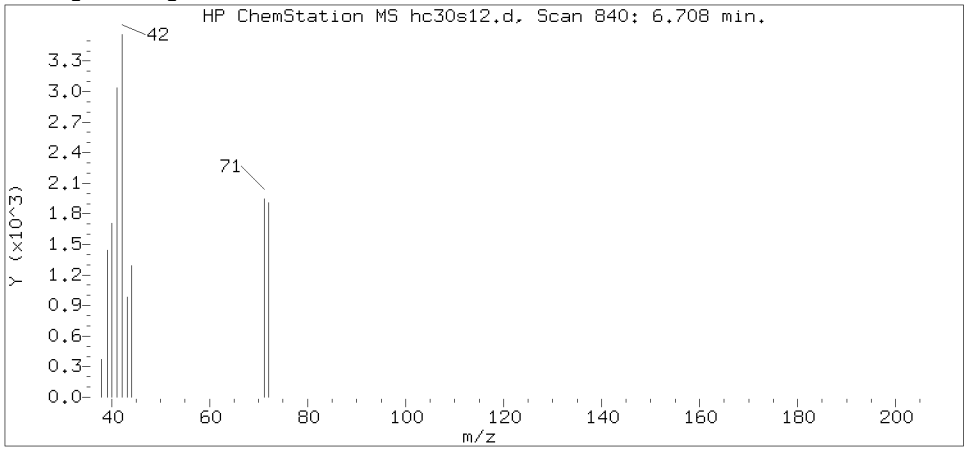
Reference Standard Spectrum for Tetrahydrofuran

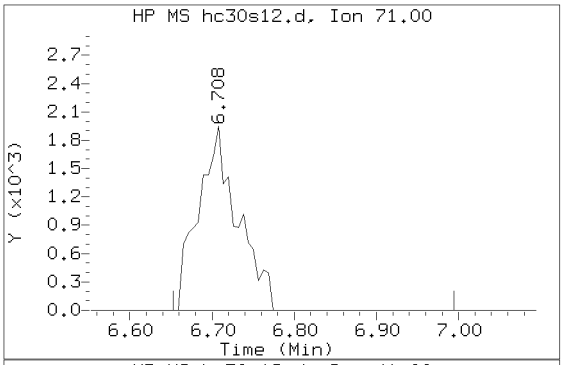


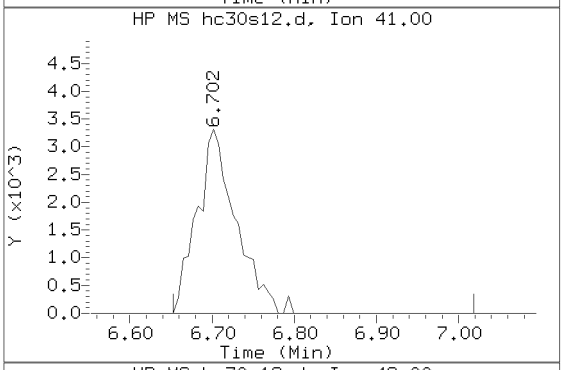
Sample Spectrum (Background Subtracted)

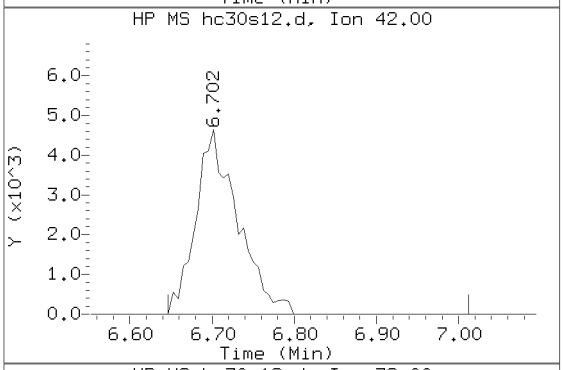


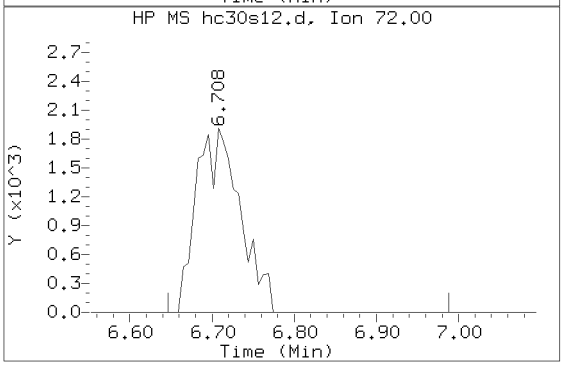
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

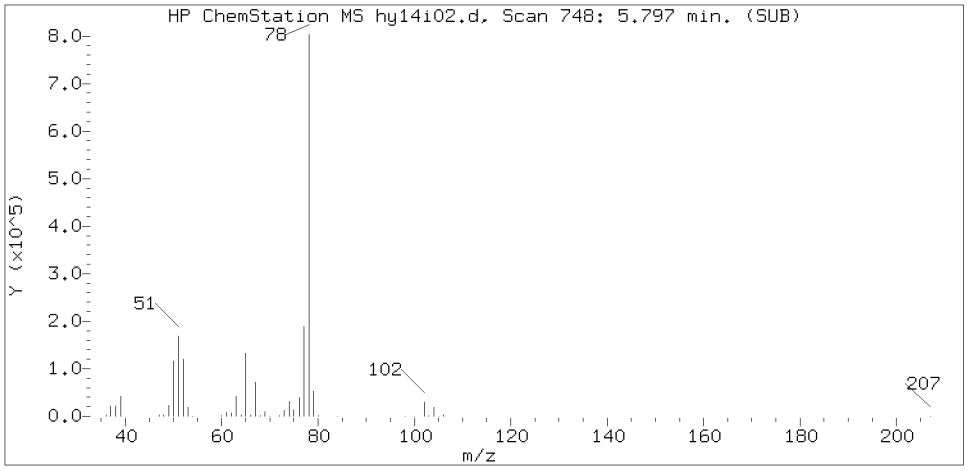
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

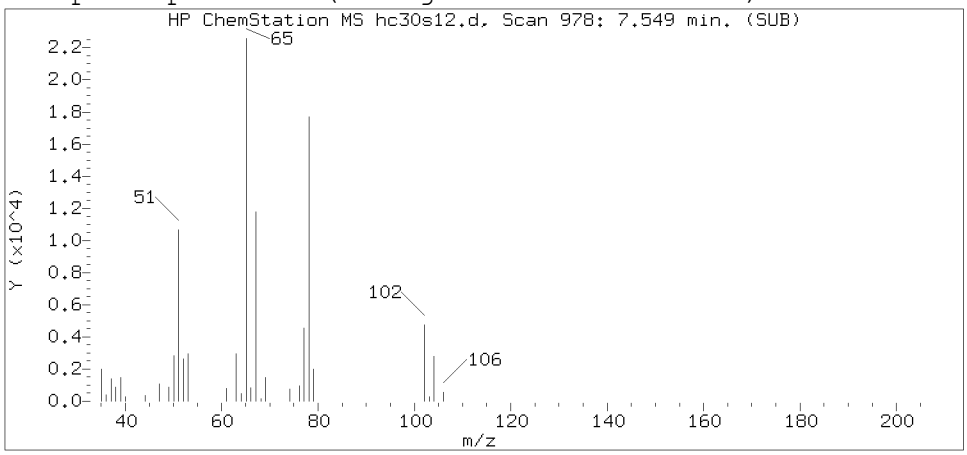
Compound Number : 48
Compound Name : Tetrahydrofuran
Scan Number : 840
Retention Time (minutes): 6.708
Relative Retention Time :-0.00206
Quant Ion : 71.00
Area (flag) : 6509
On-Column Amount (ng) : 1.7095

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

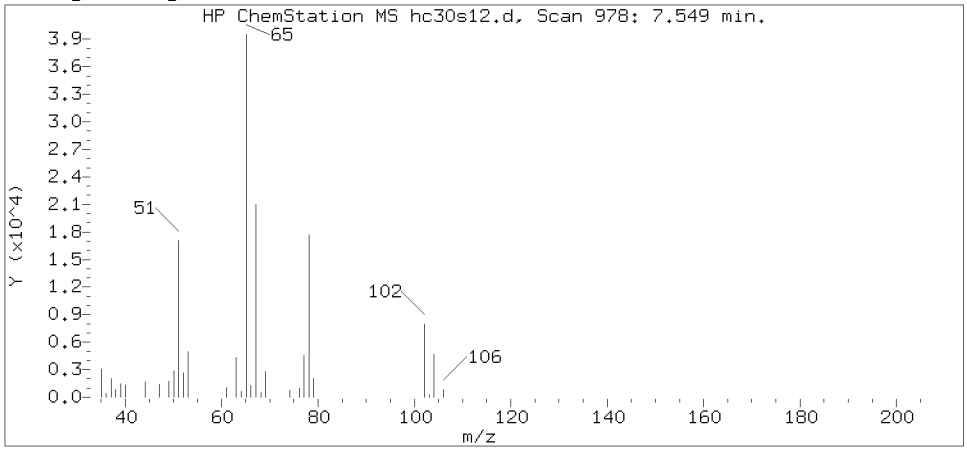
Reference Standard Spectrum for Benzene

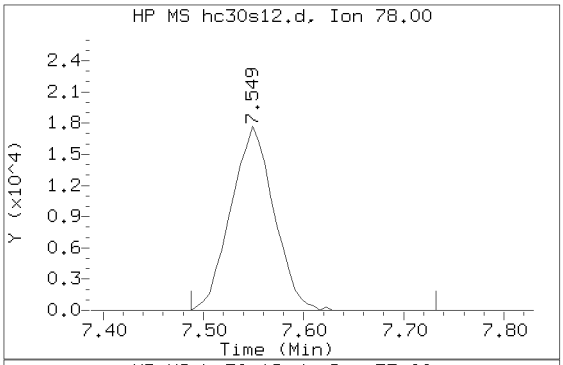


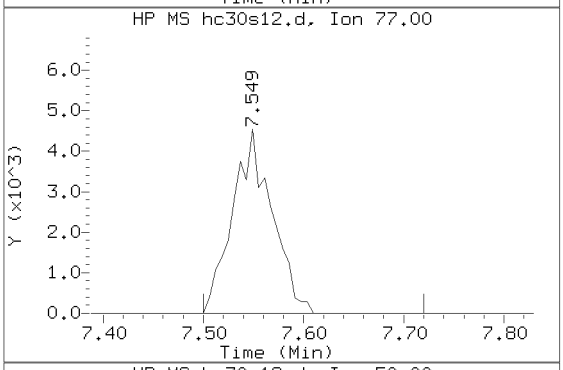
Sample Spectrum (Background Subtracted)

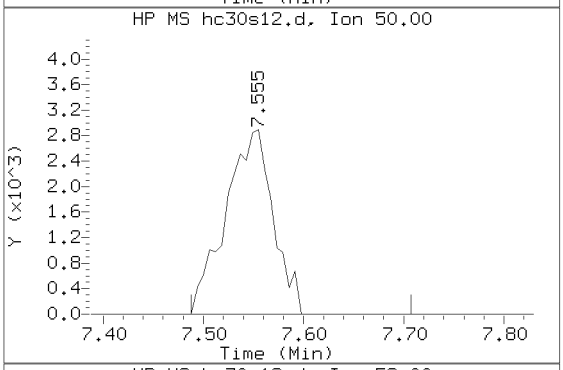


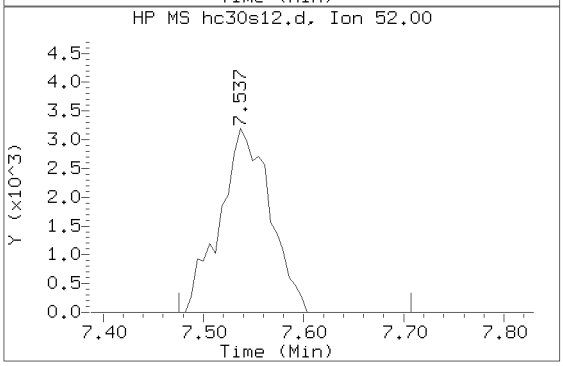
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

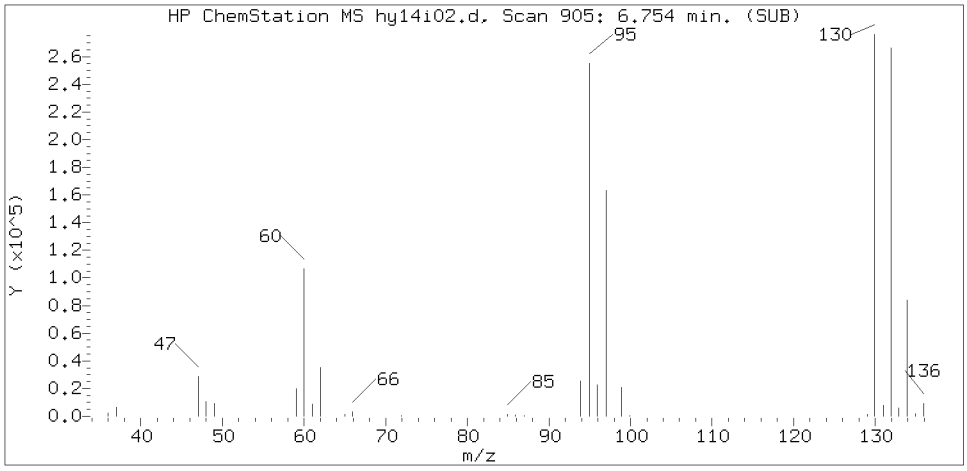
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

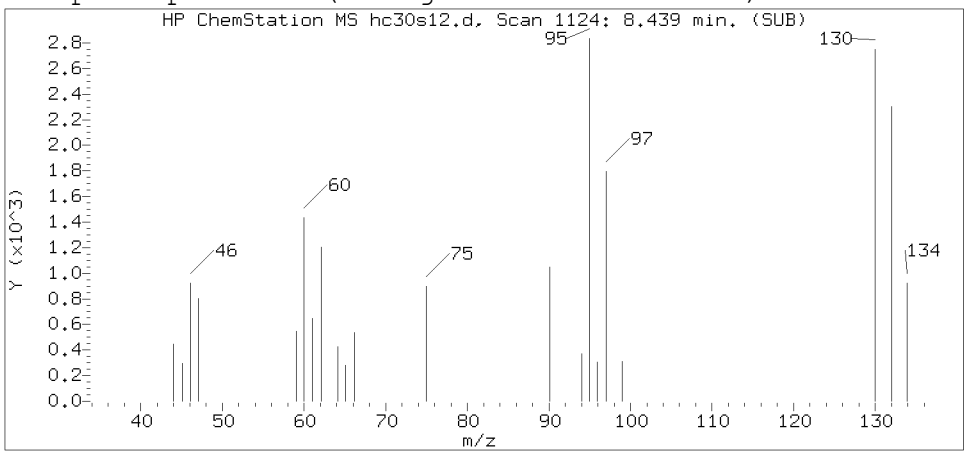
Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 978
Retention Time (minutes)	: 7.549
Relative Retention Time	: 0.00077
Quant Ion	: 78.00
Area (flag)	: 52593
On-Column Amount (ng)	: 0.2789

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

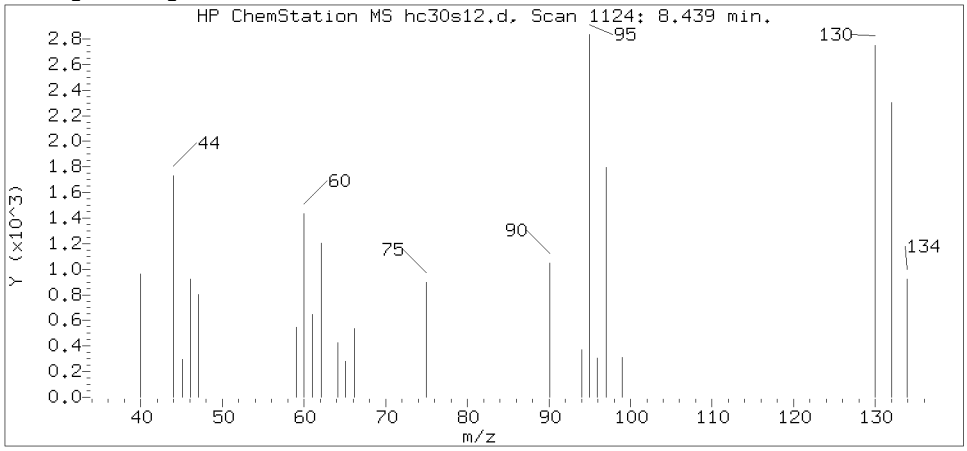
Reference Standard Spectrum for Trichloroethene

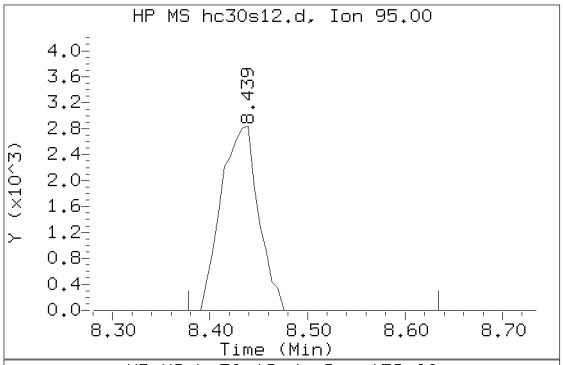


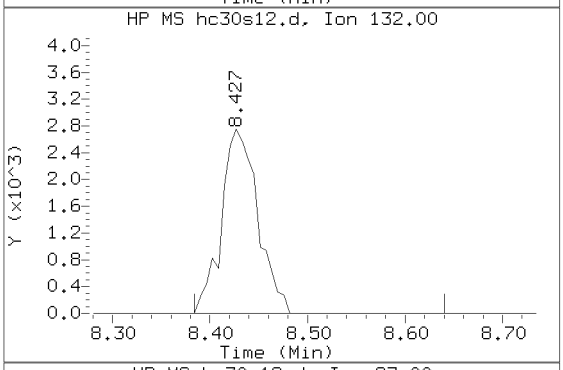
Sample Spectrum (Background Subtracted)

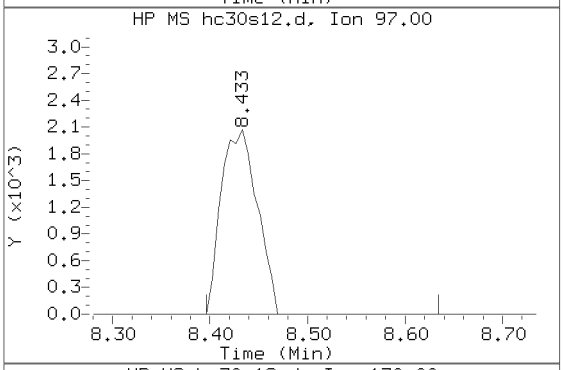


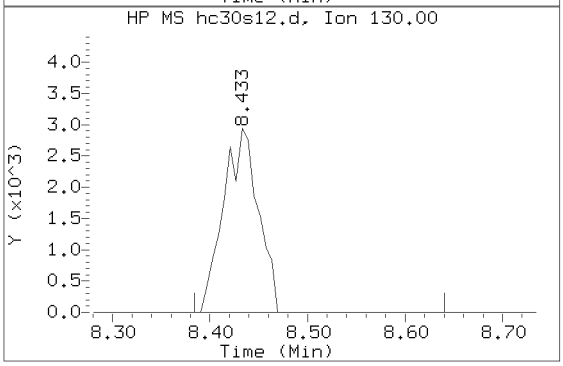
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

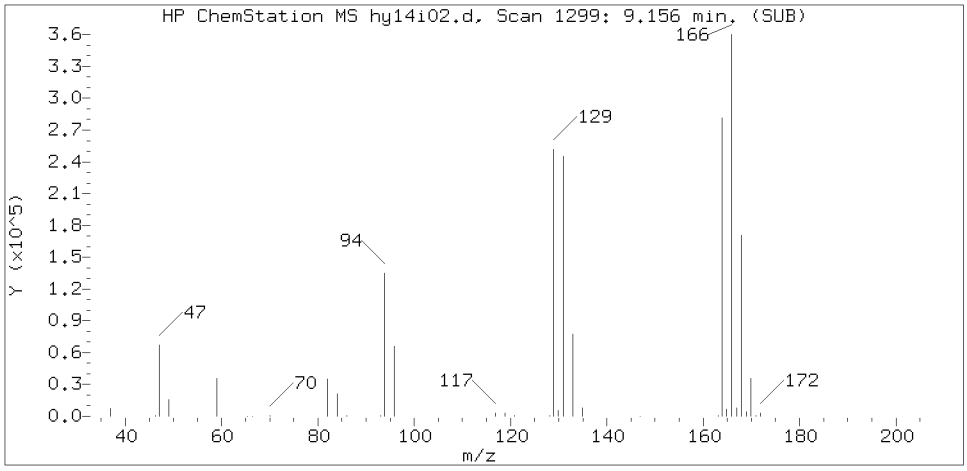
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

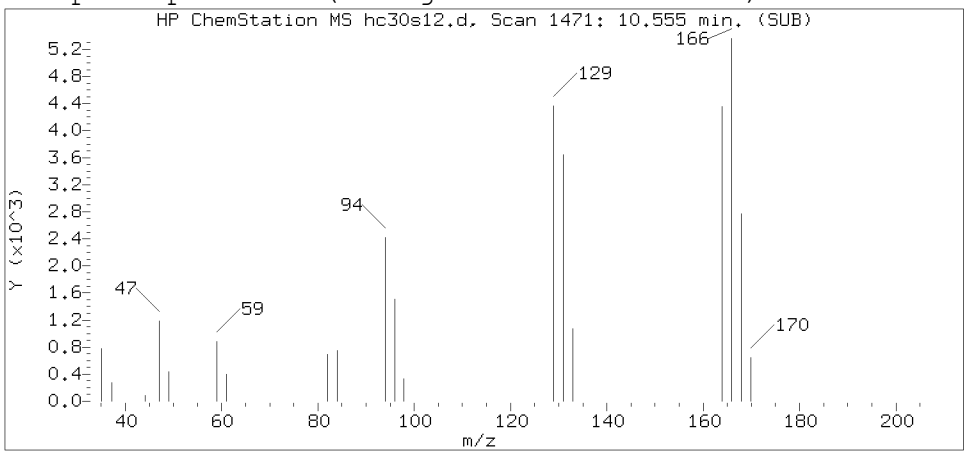
Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1124
Retention Time (minutes): 8.439
Relative Retention Time :-0.00077
Quant Ion : 95.00
Area (flag) : 7535
On-Column Amount (ng) : 0.1422

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Target 3.5 esignature user ID: sej02002

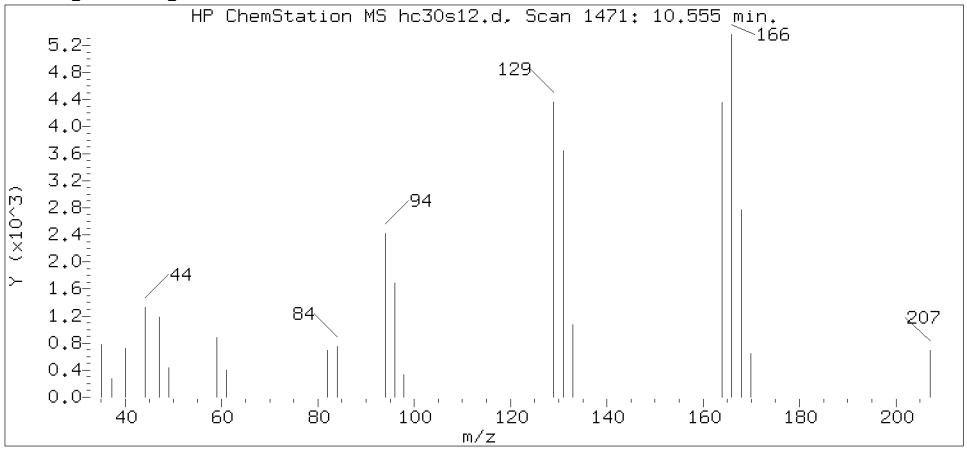
Reference Standard Spectrum for Tetrachloroethene

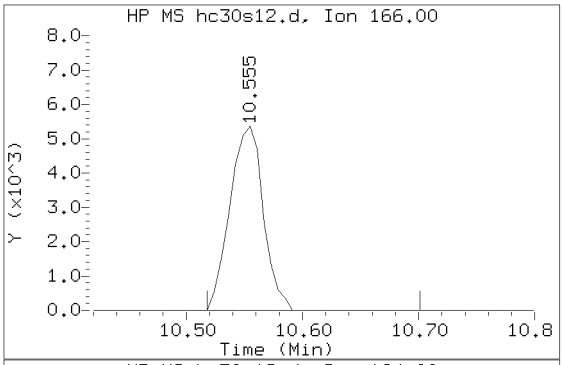


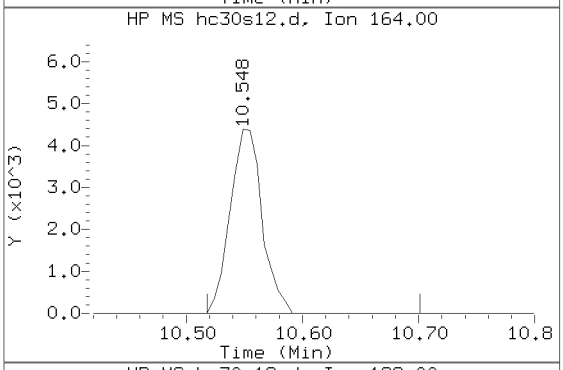
Sample Spectrum (Background Subtracted)

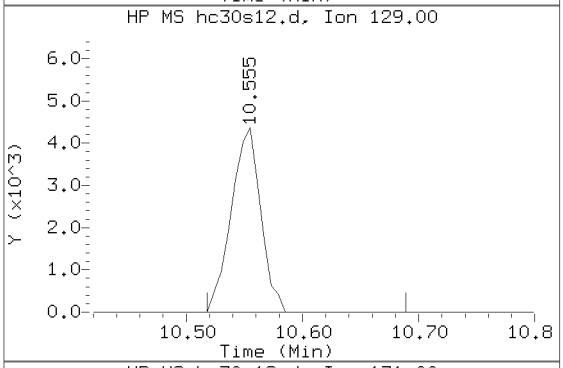


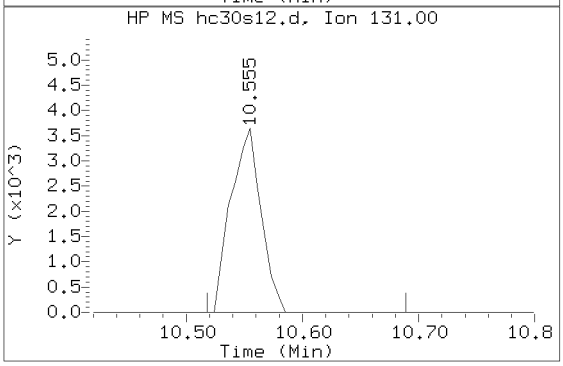
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s12.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:20 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:52 sej02002

Sample Name: F4804 Lab Sample ID: 1183609

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1471
Retention Time (minutes): 10.555
Relative Retention Time :-0.00050
Quant Ion : 166.00
Area (flag) : 10586
On-Column Amount (ng) : 0.1649

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

F4805 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183612

Data file: /chem2/HP19094.i/19oct30a.b/hc30s05.d Injection date and time: **30-OCT-2019 11:49**
Data file Sample Info. Line: F4805;1183612;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	123276	(-14)	50.00	
63) Fluorobenzene	7.958	(-0.006)	1045	96	1845280	(-6)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1493653	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	779738	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	497325	9.911	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.513	(0.002)	102	90521	9.811	98%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1861496	9.762	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	679163	9.740	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)	2.830	(0.001)	64	73341	1.758	1.76			0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.428	(-0.001)	59	717624	22.838	22.84			0.05	13
15) 1,1-Dichloroethene	(2)	3.745	(0.000)	96	7338	0.178	0.18		J	0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)	4.470	(-0.001)	84	4624	0.094	0.09		J	0.07	1
33) 1,1-Dichloroethane	(2)	5.543	(-0.000)	63	394763	4.721	4.72			0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)	6.708	(0.000)	71	6582	1.794	1.79		J	0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)	7.555	(0.000)	78	55035	0.295	0.29		J	0.05	1
67) Trichloroethene	(2)	8.433	(0.000)	95	7507	0.143	0.14		J	0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)	10.555	(0.000)	166	11342	0.178	0.18		J	0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42. Target 3.5 esignature user ID: jkh09052

F4805 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183612

Data file: /chem2/HP19094.i/19oct30a.b/hc30s05.d Injection date and time: **30-OCT-2019 11:49**
Data file Sample Info. Line: F4805;1183612;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

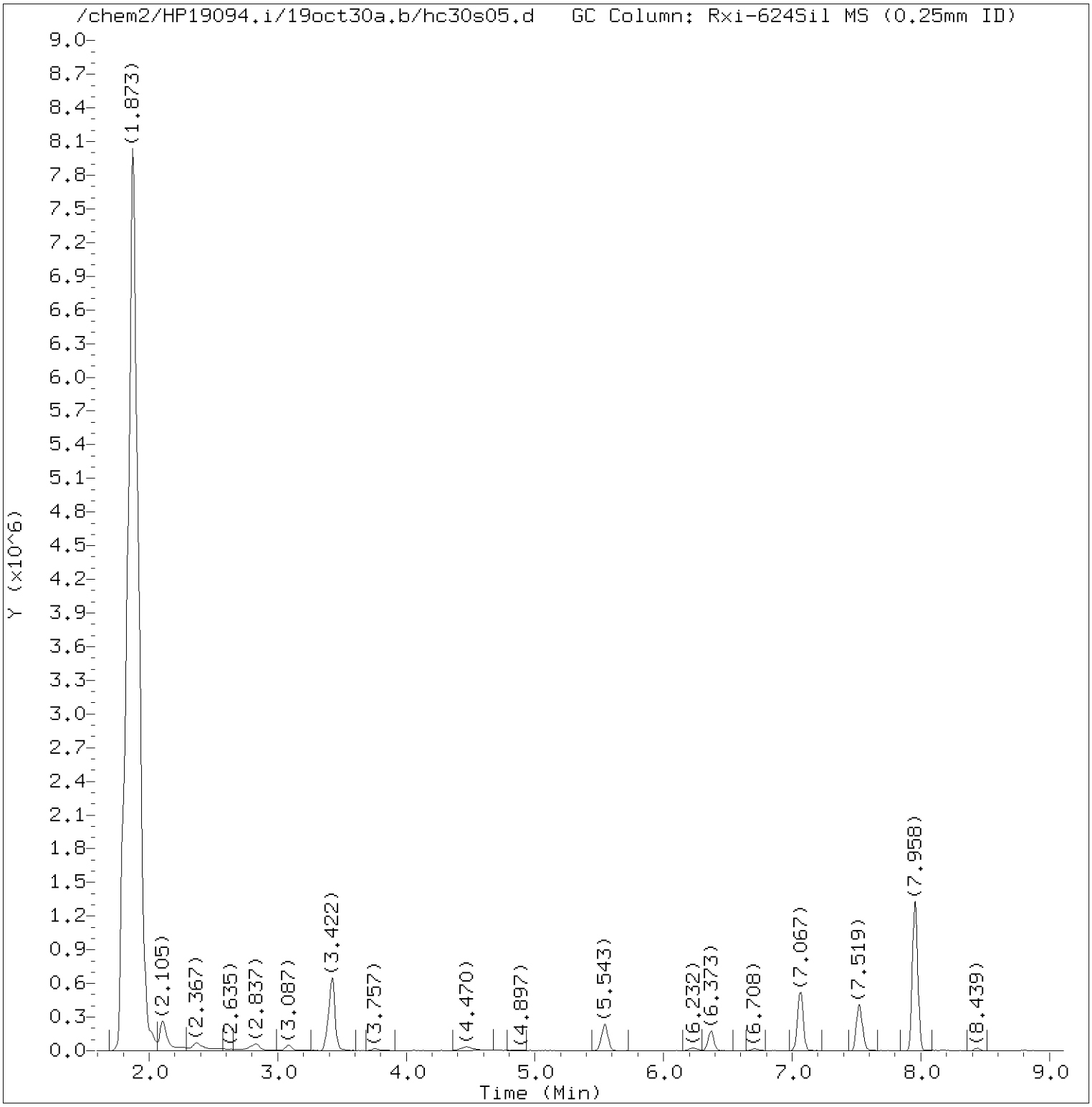
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

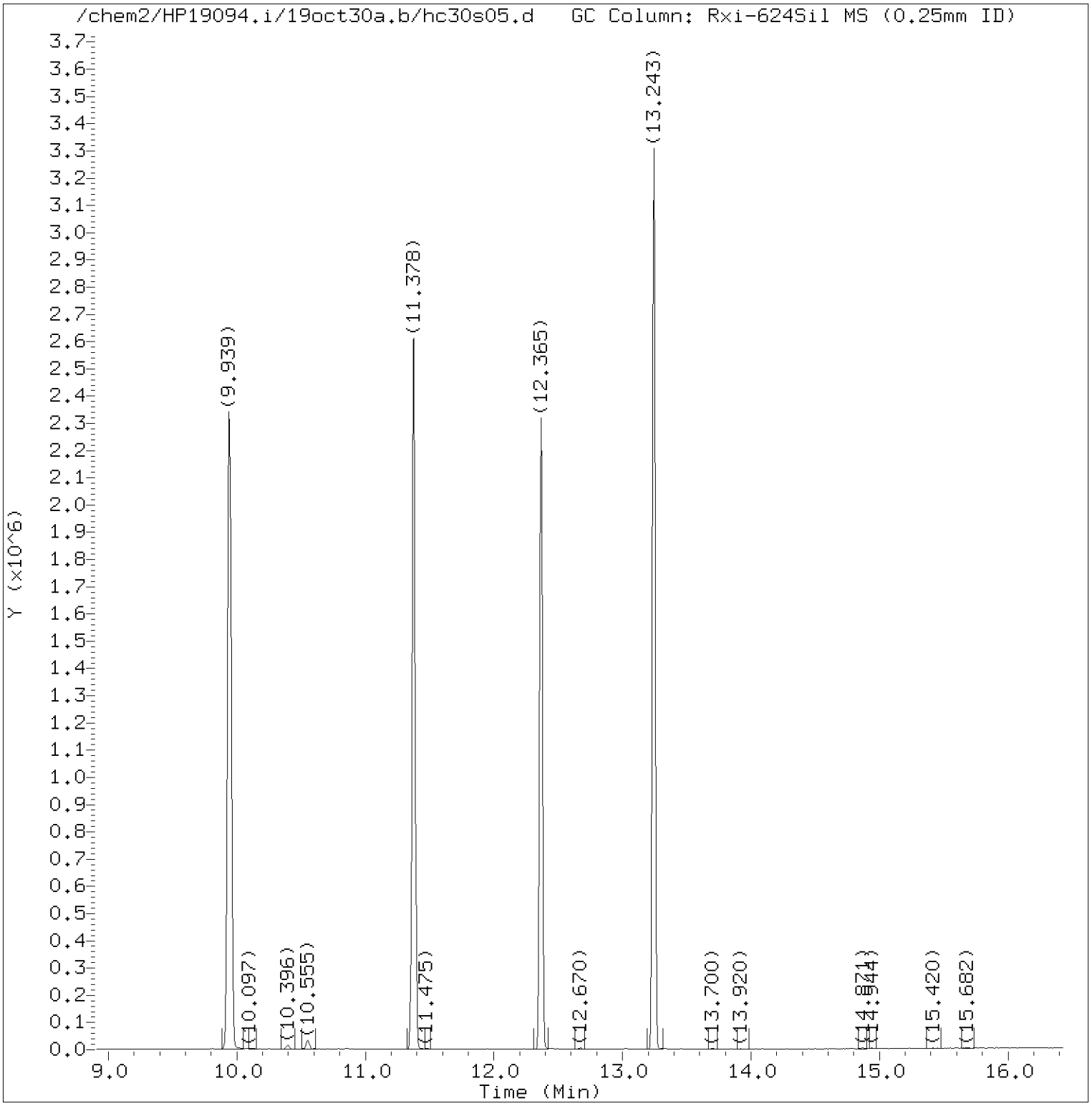
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

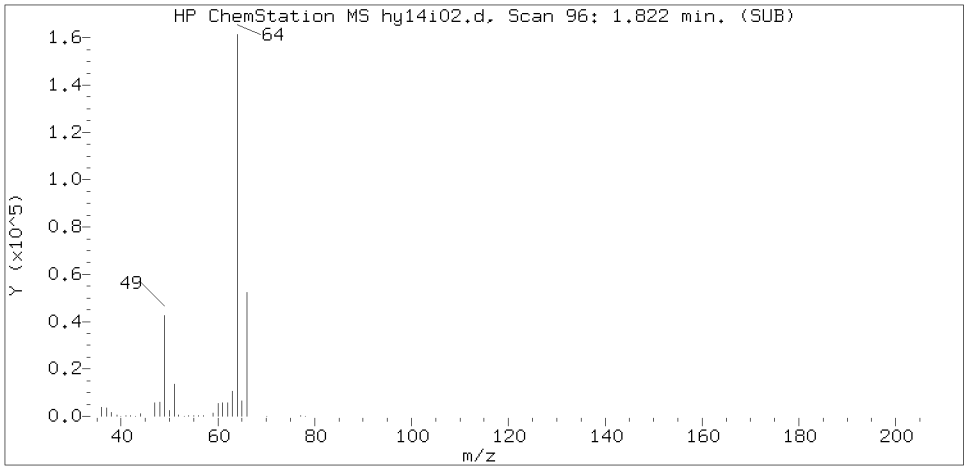
Sample Name: F4805 Lab Sample ID: 1183612

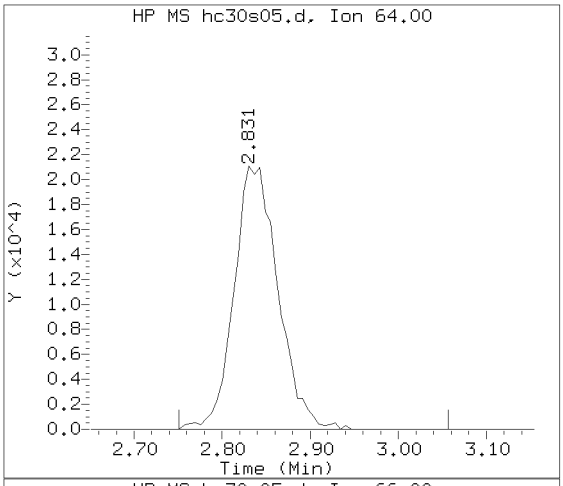
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
8) Chloroethane	(2)	2.831	64	73341	1.758
11) Ethyl ether	(2)	3.428	59	717624	22.838
15) 1,1-Dichloroethene	(2)	3.745	96	7338	0.178
26)*t-Butyl Alcohol-d10	(1)	4.464	65	123276	50.000
23) Methylene Chloride	(2)	4.470	84	4624	0.094
33) 1,1-Dichloroethane	(2)	5.543	63	394763	4.721
48) Tetrahydrofuran	(1)	6.708	71	6582	1.794
50)$Dibromofluoromethane	(2)	7.061	113	497325	9.911
57)$1,2-Dichloroethane-d4	(2)	7.513	102	90521	9.811
58) Benzene	(2)	7.555	78	55035	0.295
63)*Fluorobenzene	(2)	7.958	96	1845280	10.000
67) Trichloroethene	(2)	8.433	95	7507	0.143
82)$Toluene-d8	(3)	9.939	98	1861496	9.762
89) Tetrachloroethene	(3)	10.555	166	11342	0.178
97)*Chlorobenzene-d5	(3)	11.378	117	1493653	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	679163	9.740
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	779738	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

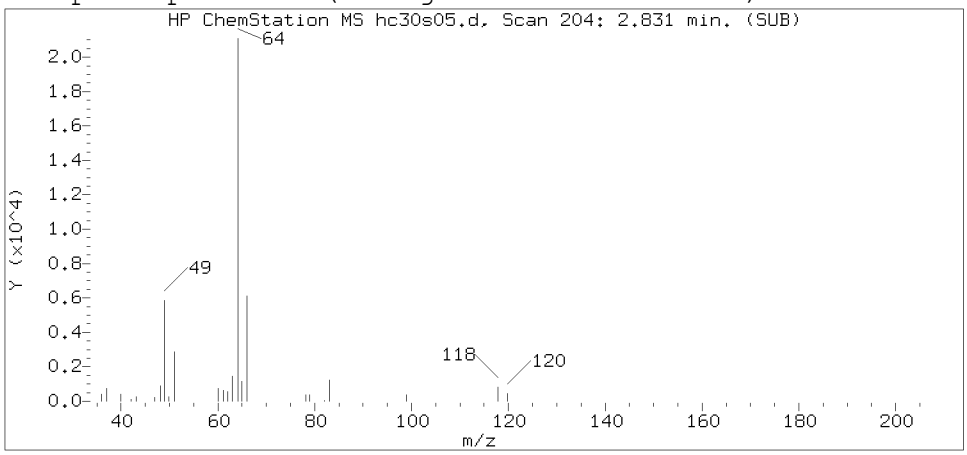
Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

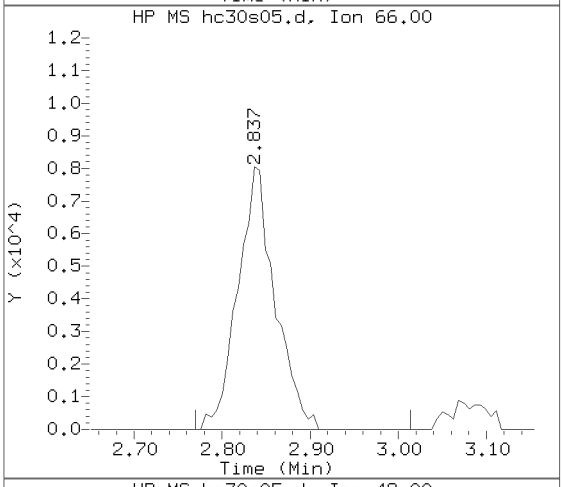
Reference Standard Spectrum for Chloroethane



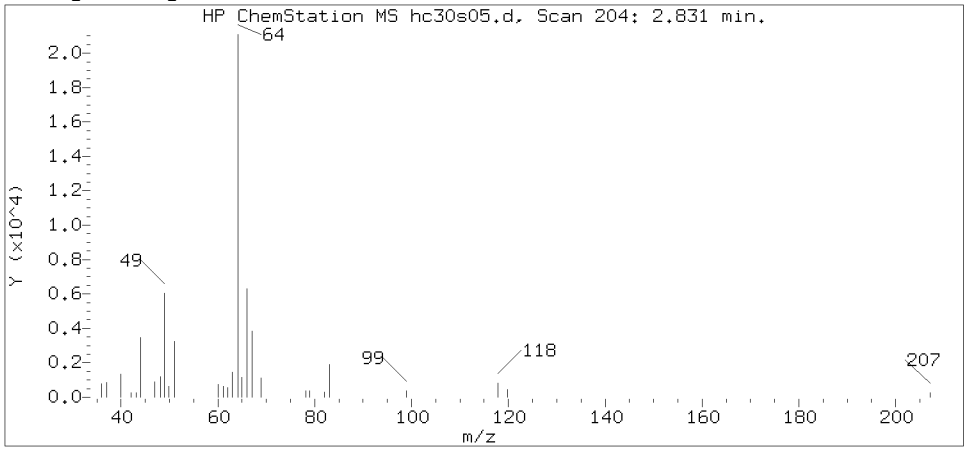


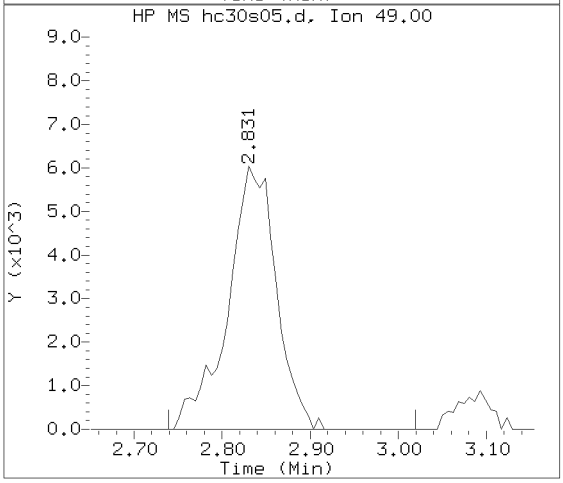
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

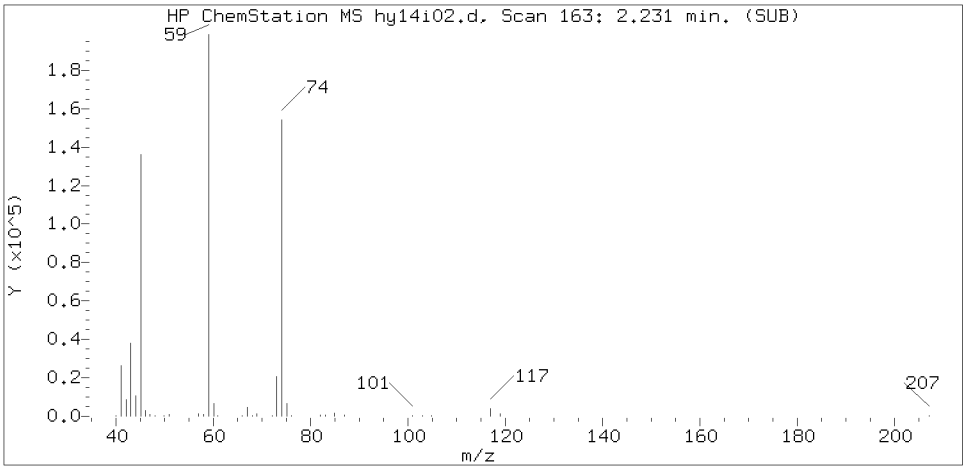
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

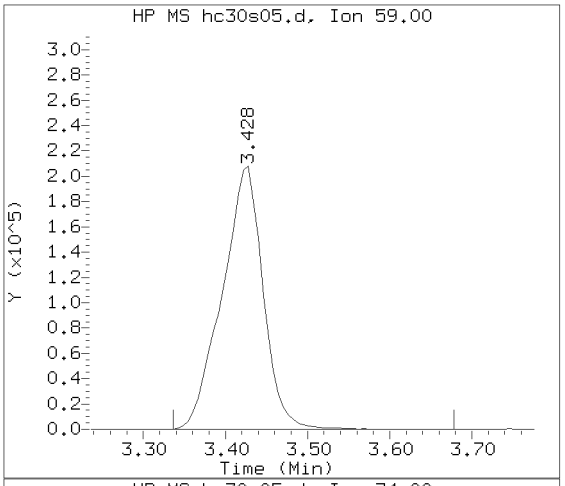
Sample Name: F4805 Lab Sample ID: 1183612

Compound Number	: 8
Compound Name	: Chloroethane
Scan Number	: 204
Retention Time (minutes)	: 2.831
Relative Retention Time	: 0.00104
Quant Ion	: 64.00
Area (flag)	: 73341
On-Column Amount (ng)	: 1.7584

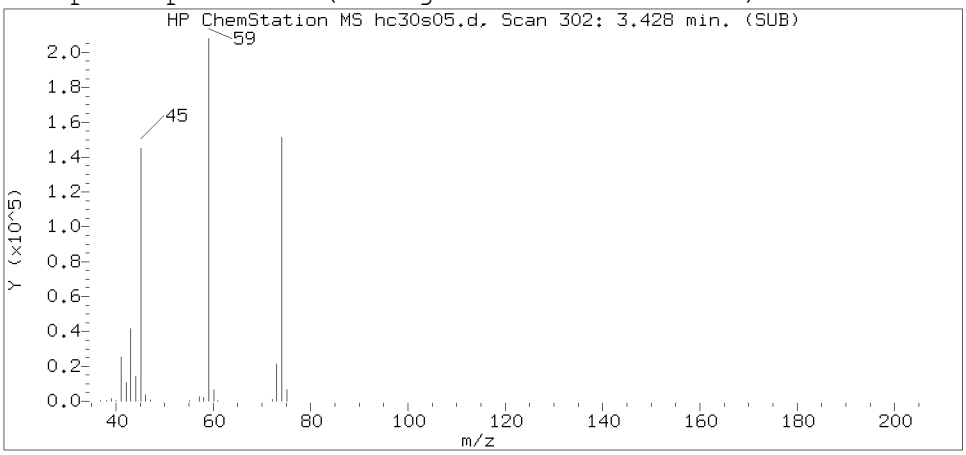
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

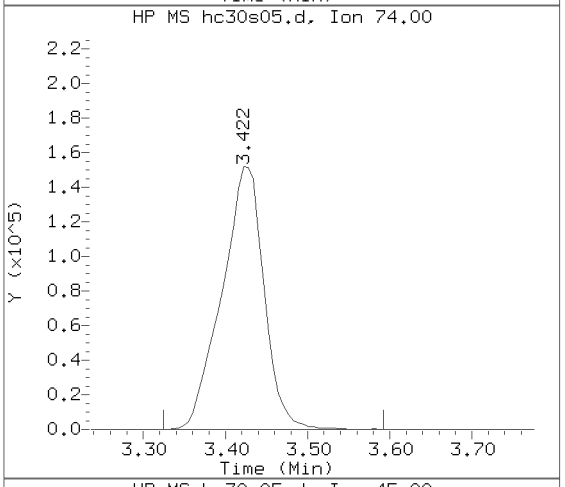
Reference Standard Spectrum for Ethyl ether



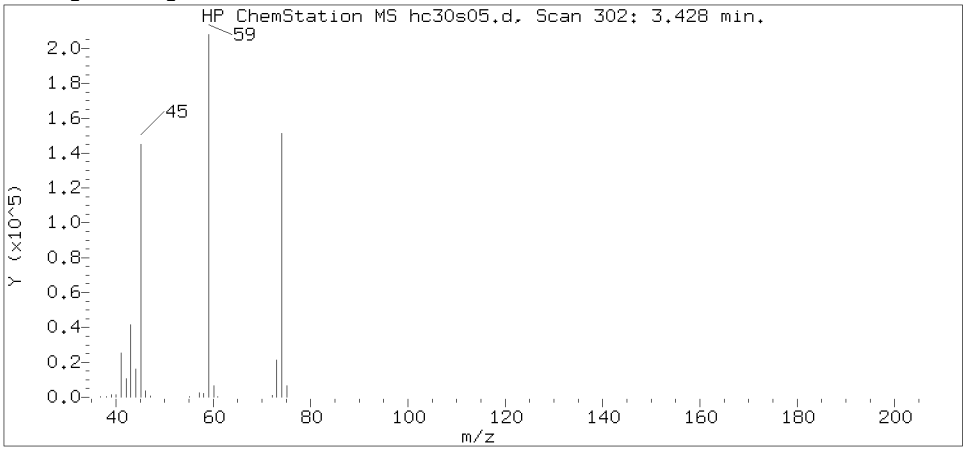


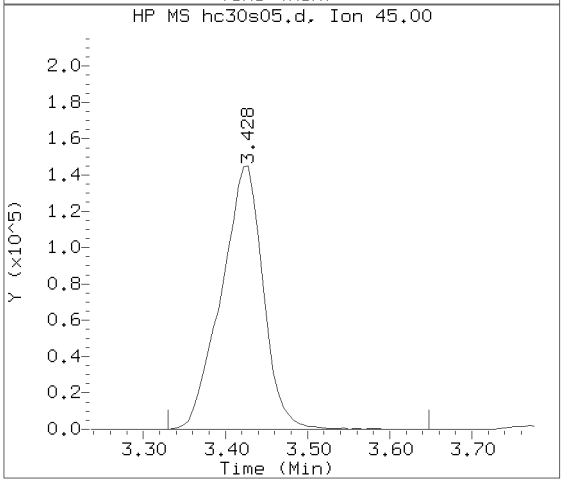
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

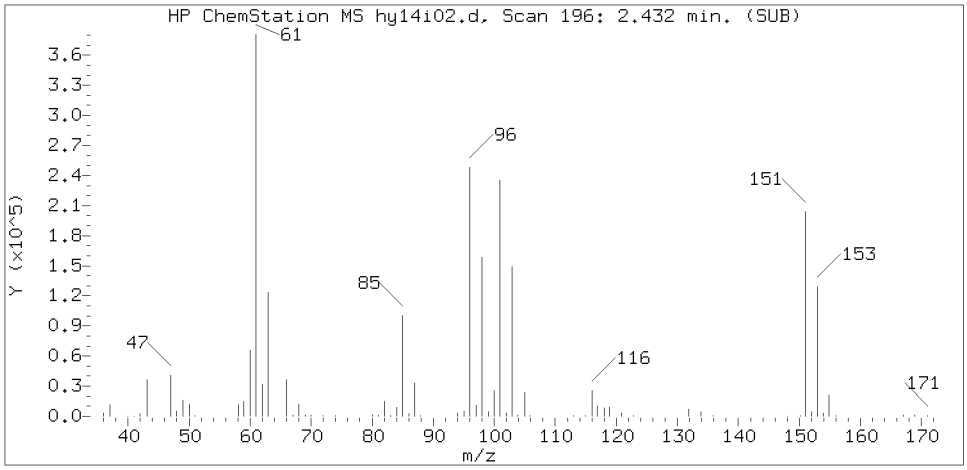
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

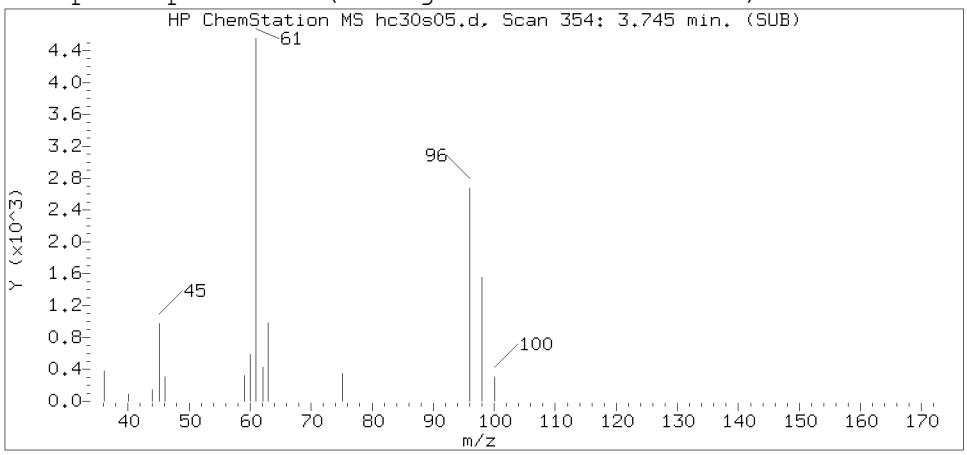
Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 302
Retention Time (minutes): 3.428
Relative Retention Time :-0.00121
Quant Ion : 59.00
Area (flag) : 717624
On-Column Amount (ng) : 22.8380

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Target 3.5 esignature user ID: jkh09052

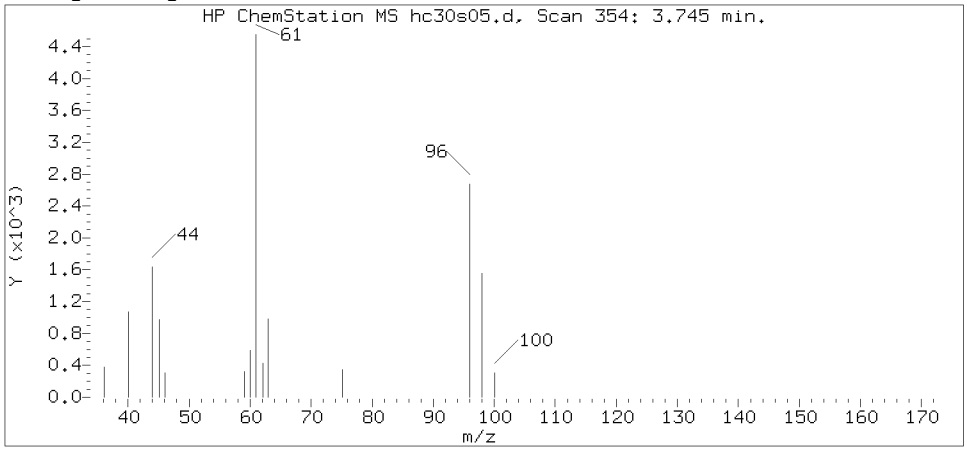
Reference Standard Spectrum for 1,1-Dichloroethene

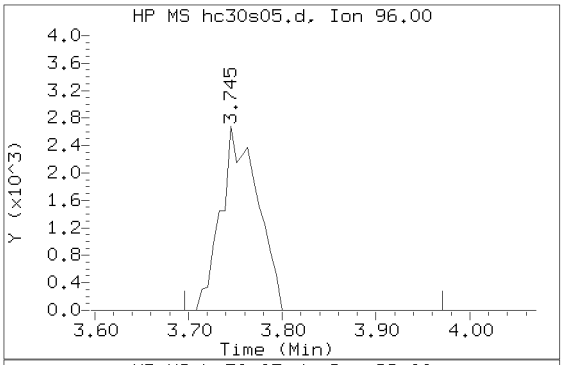


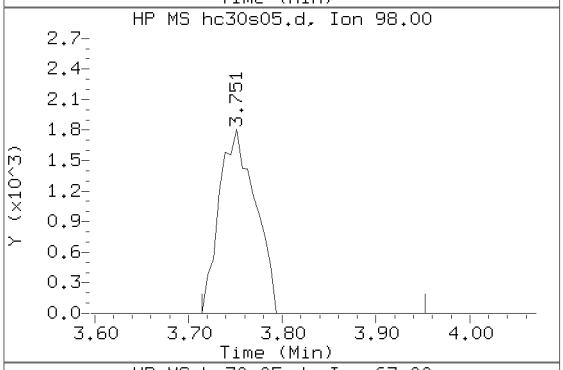
Sample Spectrum (Background Subtracted)

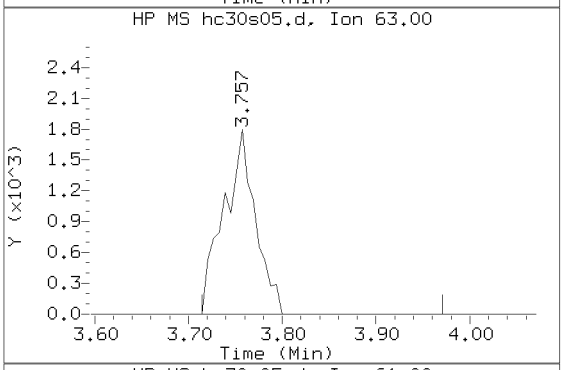


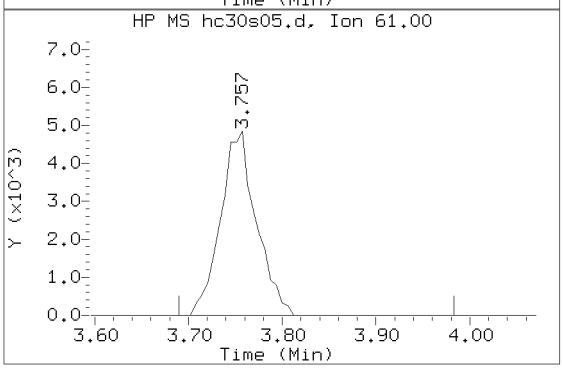
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

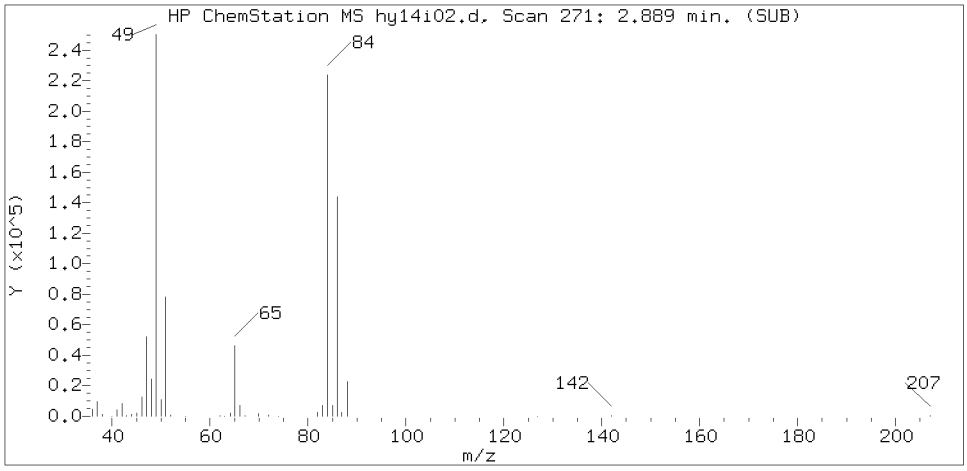
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

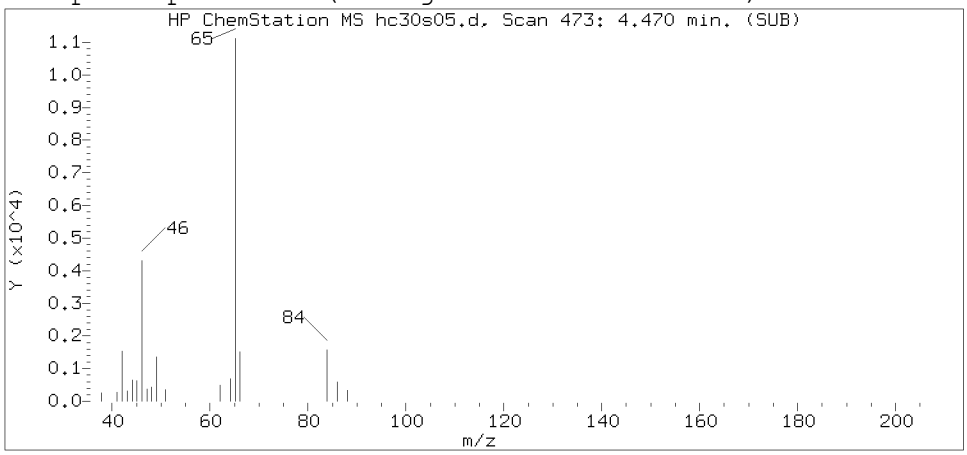
Compound Number : 15
Compound Name : 1,1-Dichloroethene
Scan Number : 354
Retention Time (minutes): 3.745
Relative Retention Time : 0.00036
Quant Ion : 96.00
Area (flag) : 7338
On-Column Amount (ng) : 0.1784

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Target 3.5 esignature user ID: jkh09052

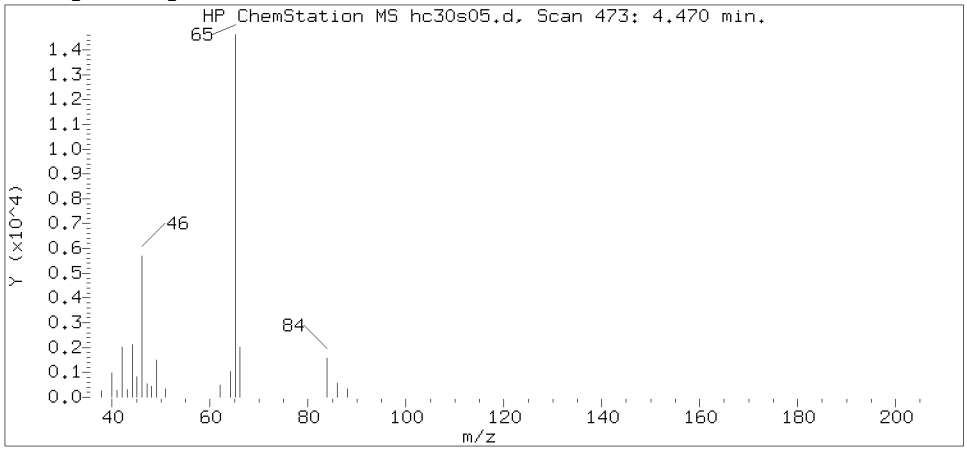
Reference Standard Spectrum for Methylene Chloride

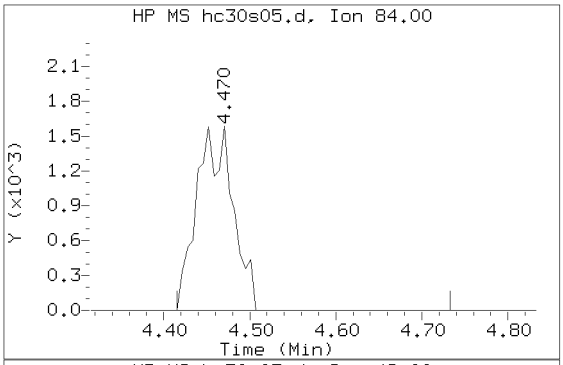


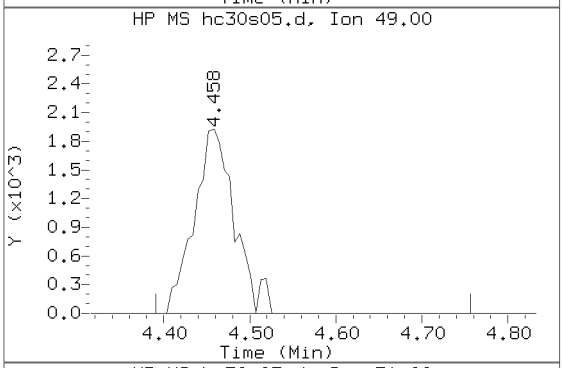
Sample Spectrum (Background Subtracted)

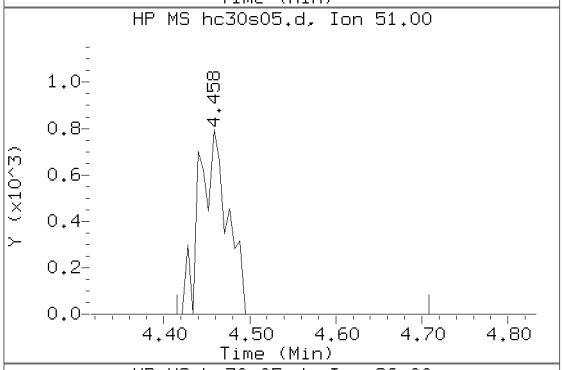


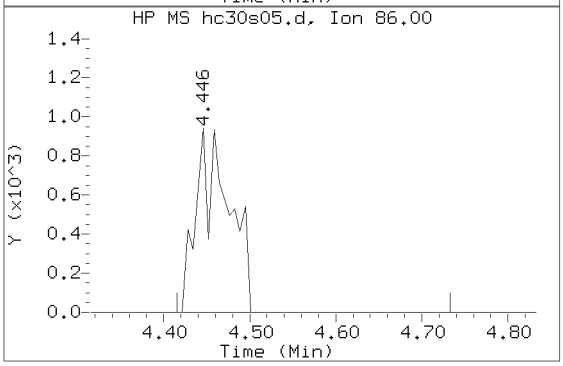
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

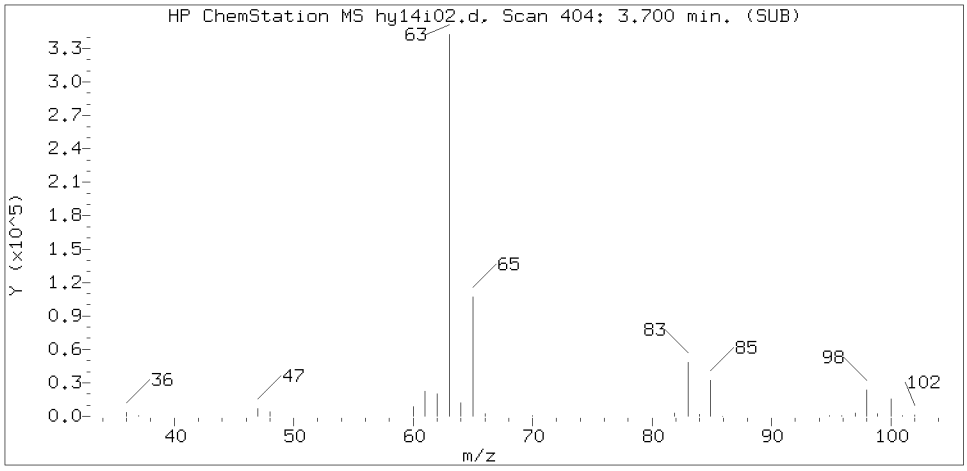
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

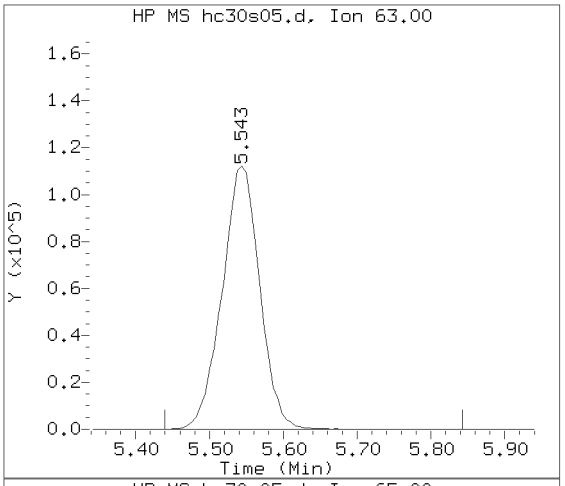
Sample Name: F4805 Lab Sample ID: 1183612

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 473
Retention Time (minutes): 4.470
Relative Retention Time :-0.00187
Quant Ion : 84.00
Area (flag) : 4624
On-Column Amount (ng) : 0.0943

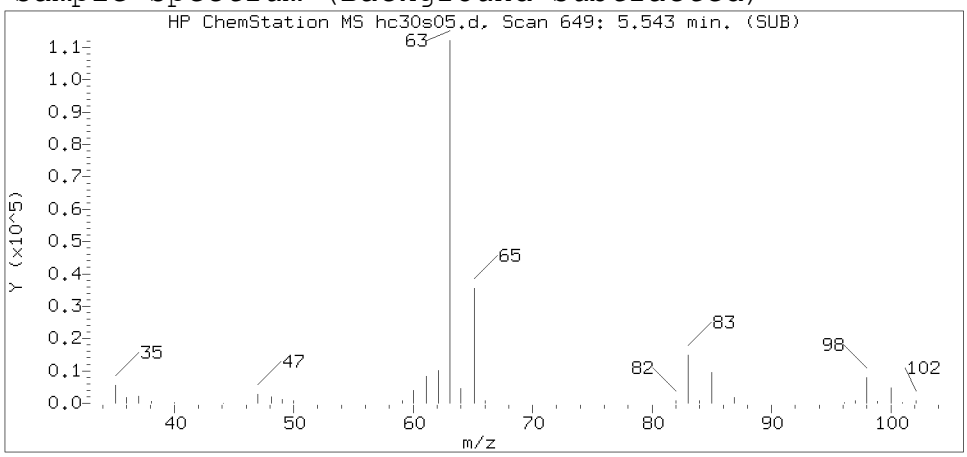
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

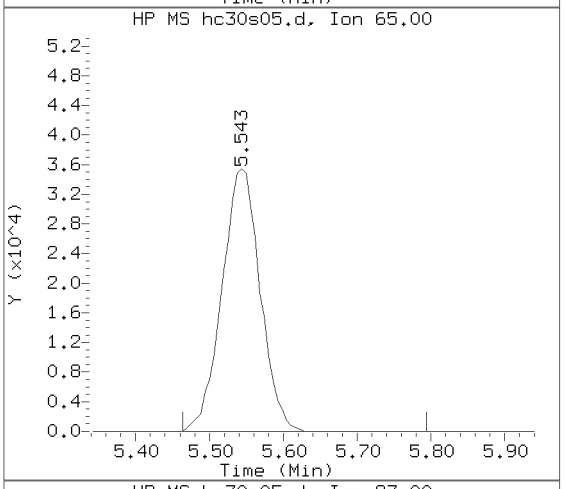
Reference Standard Spectrum for 1,1-Dichloroethane



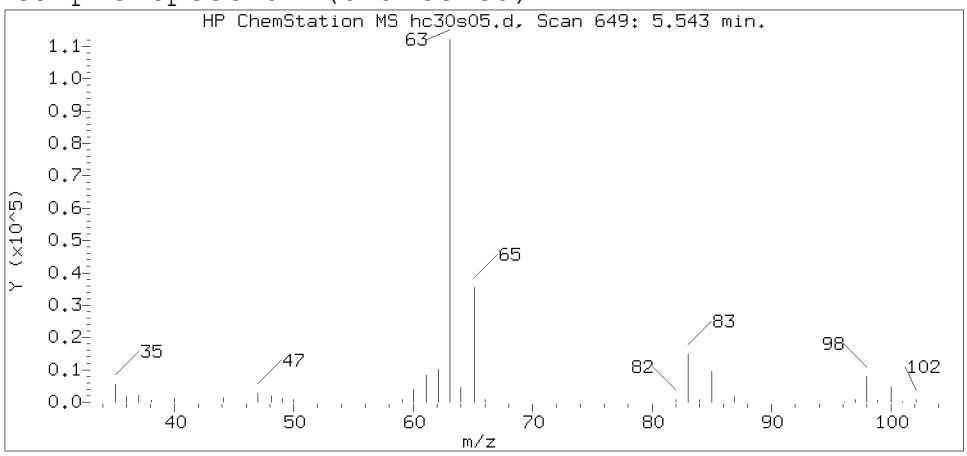


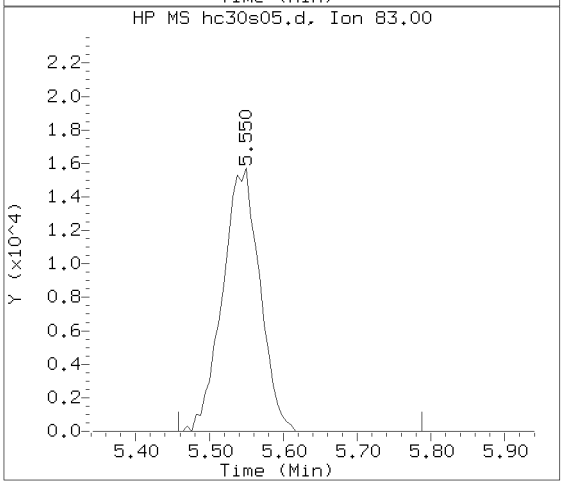
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

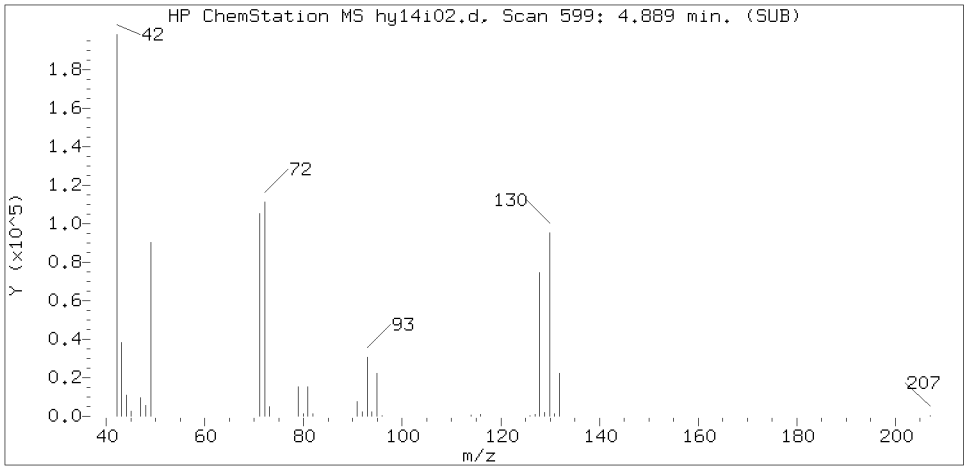
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

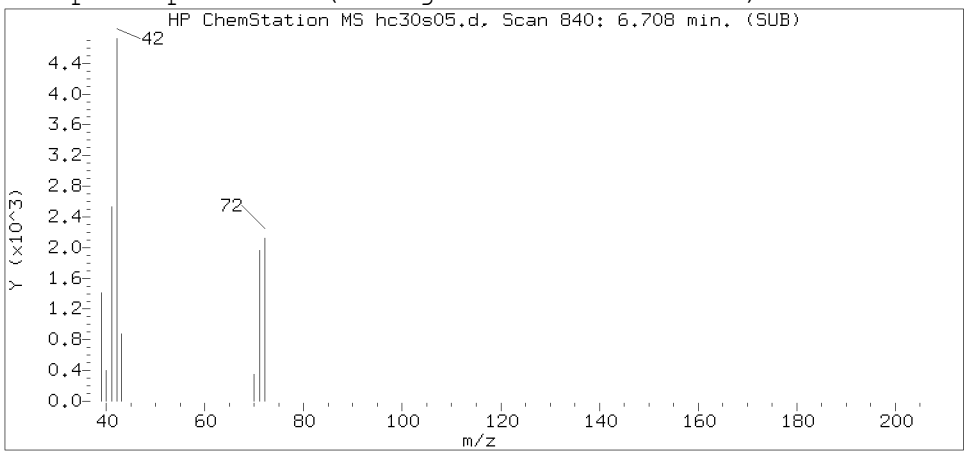
Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 649
Retention Time (minutes): 5.543
Relative Retention Time :-0.00023
Quant Ion : 63.00
Area (flag) : 394763
On-Column Amount (ng) : 4.7215

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Target 3.5 esignature user ID: jkh09052

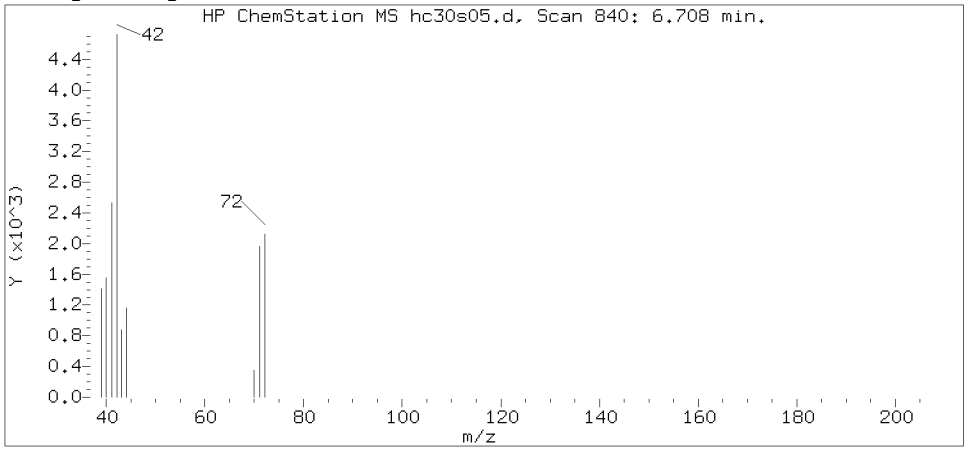
Reference Standard Spectrum for Tetrahydrofuran

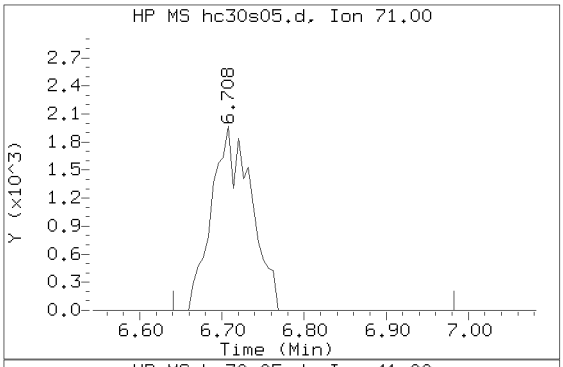


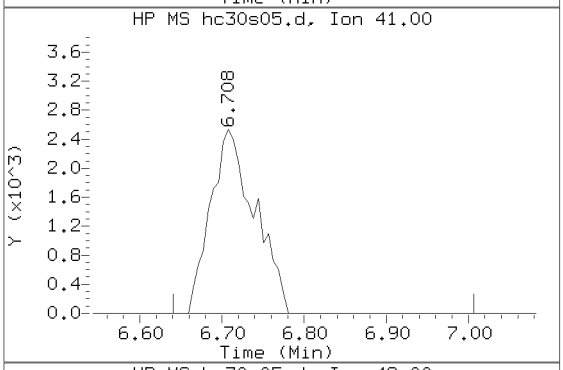
Sample Spectrum (Background Subtracted)

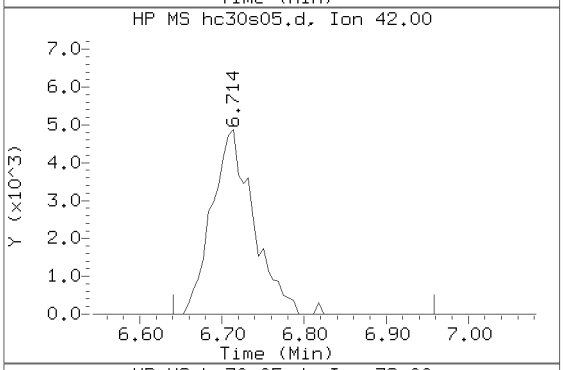


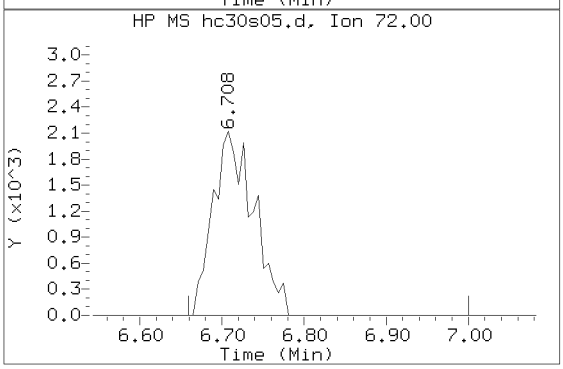
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

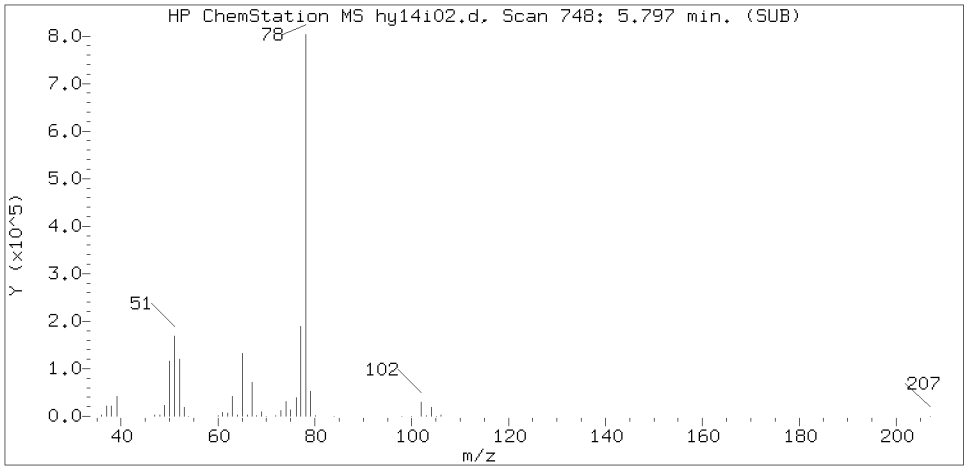
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Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

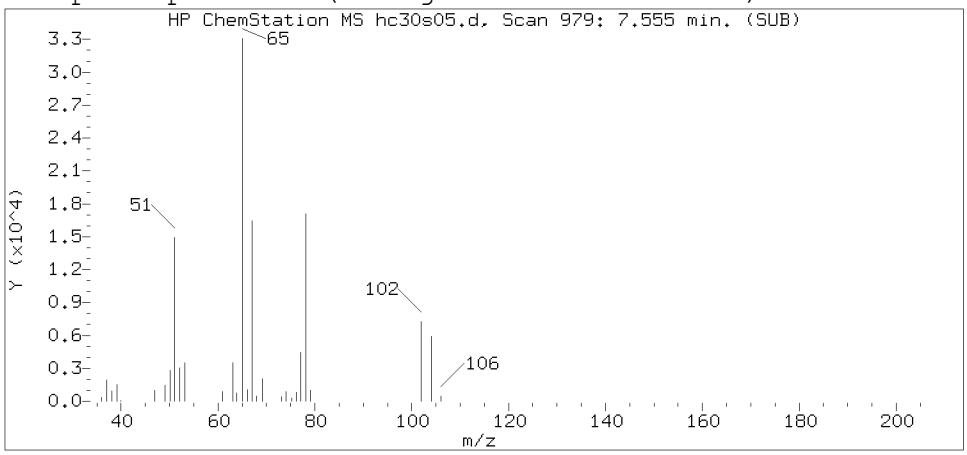
Compound Number : 48
Compound Name : Tetrahydrofuran
Scan Number : 840
Retention Time (minutes): 6.708
Relative Retention Time : 0.00000
Quant Ion : 71.00
Area (flag) : 6582
On-Column Amount (ng) : 1.7942

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

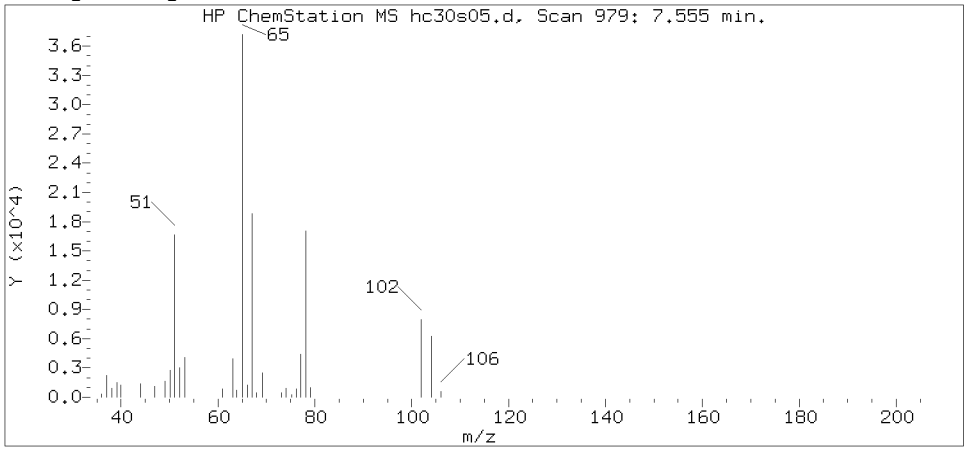
Reference Standard Spectrum for Benzene

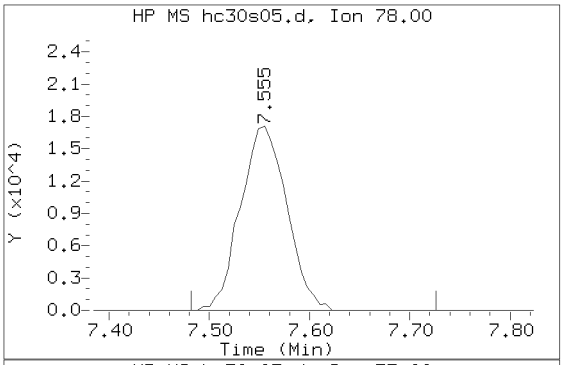


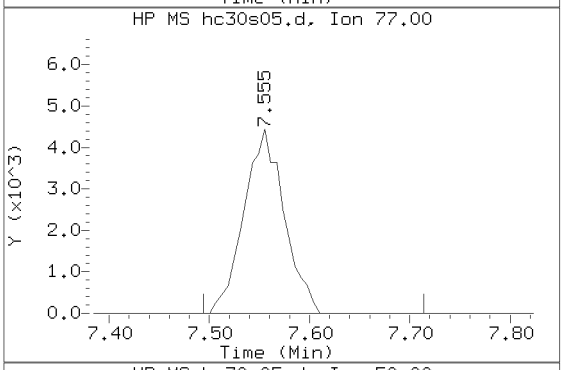
Sample Spectrum (Background Subtracted)

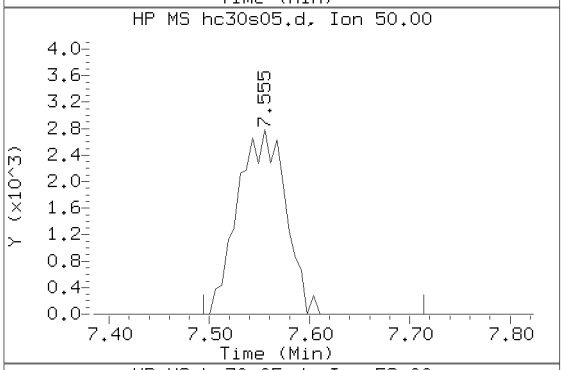


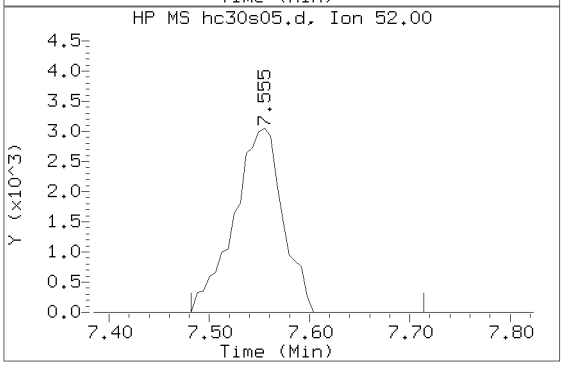
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

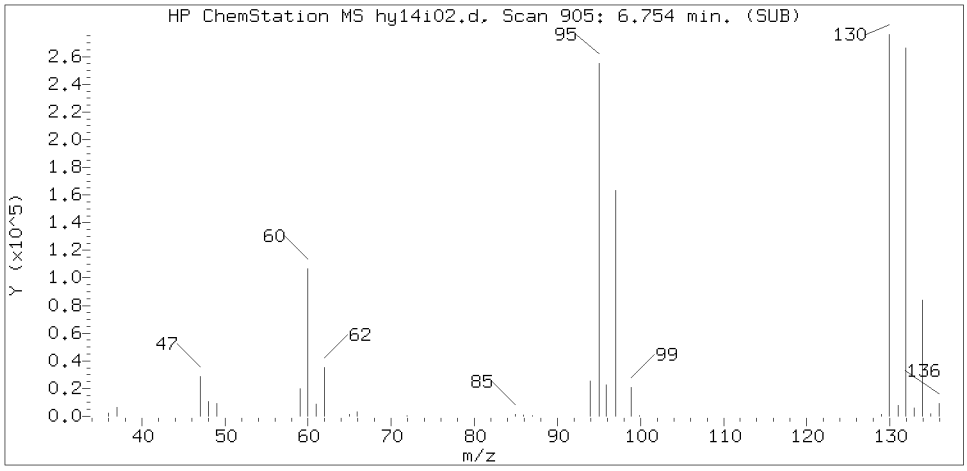
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Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

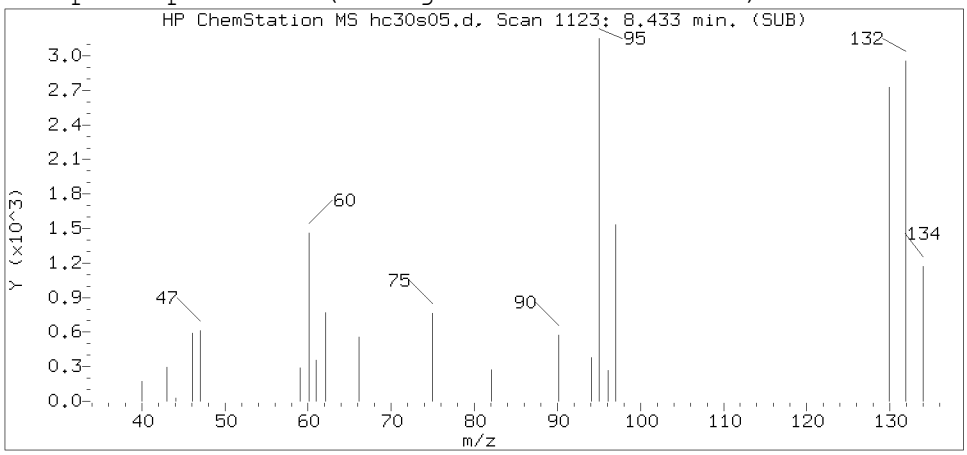
Compound Number	: 58
Compound Name	: Benzene
Scan Number	: 979
Retention Time (minutes)	: 7.555
Relative Retention Time	: 0.00073
Quant Ion	: 78.00
Area (flag)	: 55035
On-Column Amount (ng)	: 0.2949

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

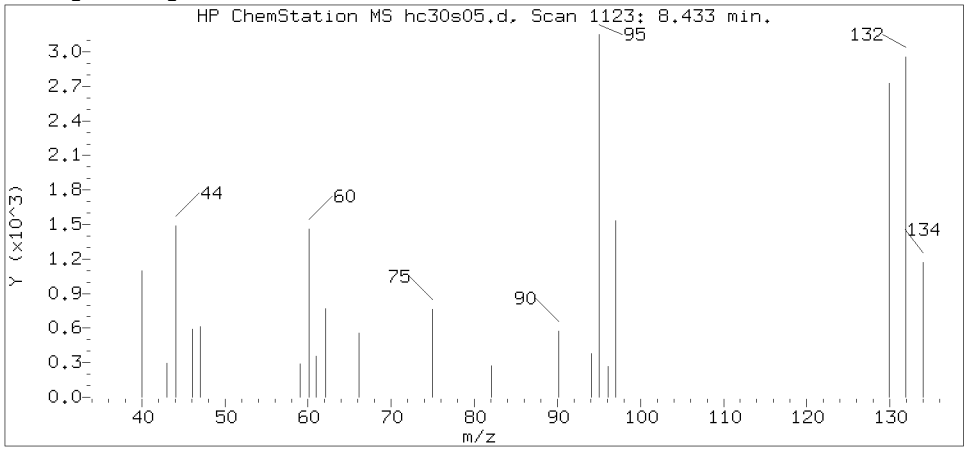
Reference Standard Spectrum for Trichloroethene

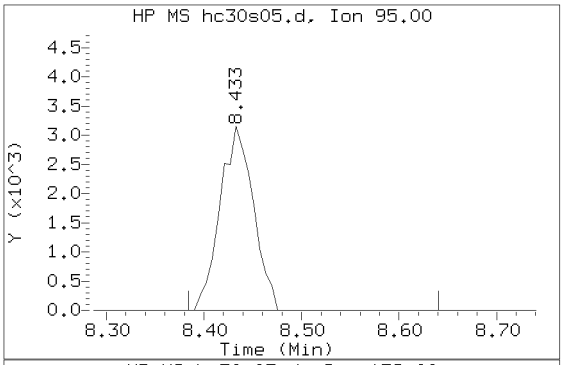


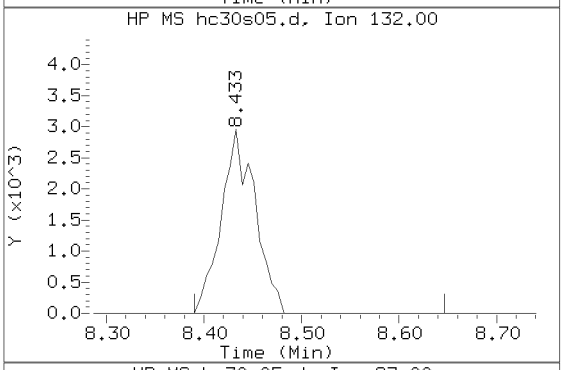
Sample Spectrum (Background Subtracted)

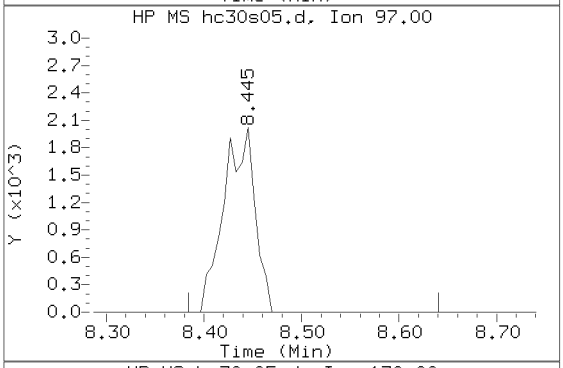


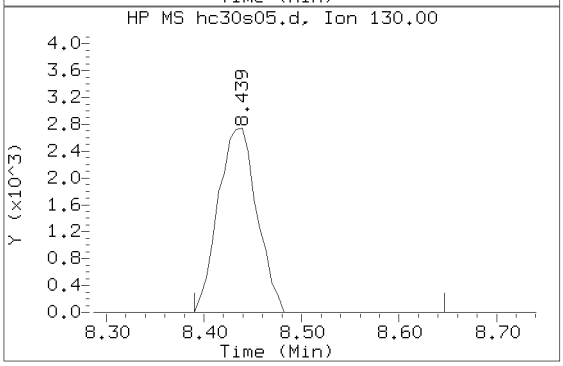
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

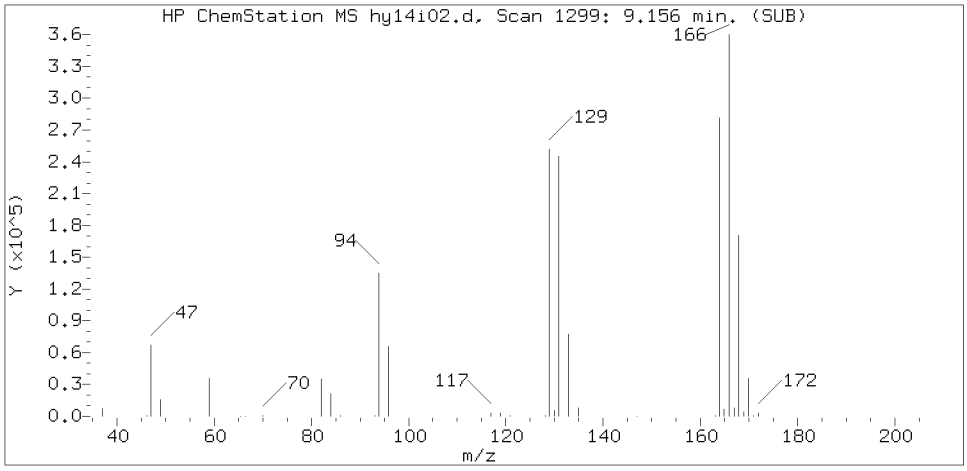
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Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

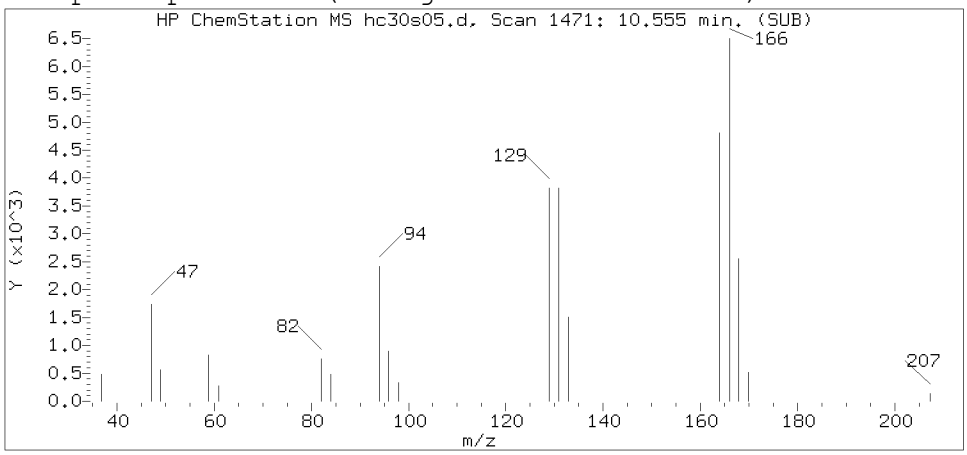
Compound Number	: 67
Compound Name	: Trichloroethene
Scan Number	: 1123
Retention Time (minutes)	: 8.433
Relative Retention Time	: 0.00081
Quant Ion	: 95.00
Area (flag)	: 7507
On-Column Amount (ng)	: 0.1432

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

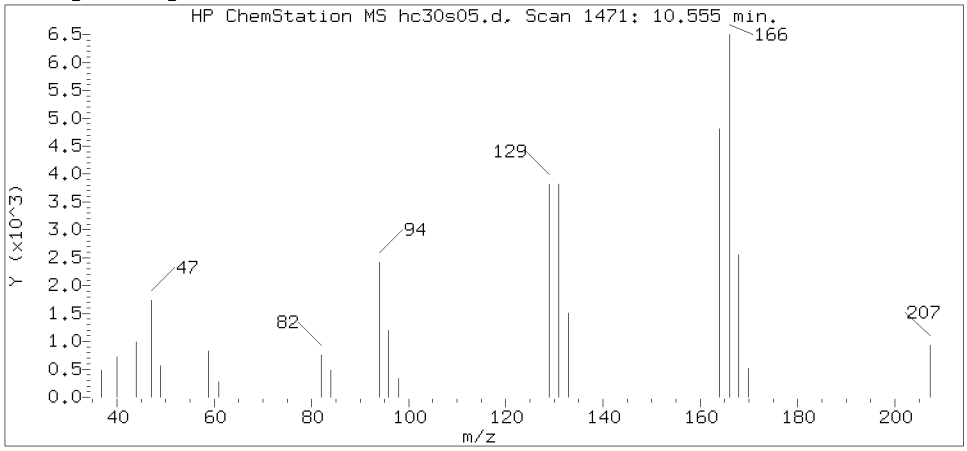
Reference Standard Spectrum for Tetrachloroethene

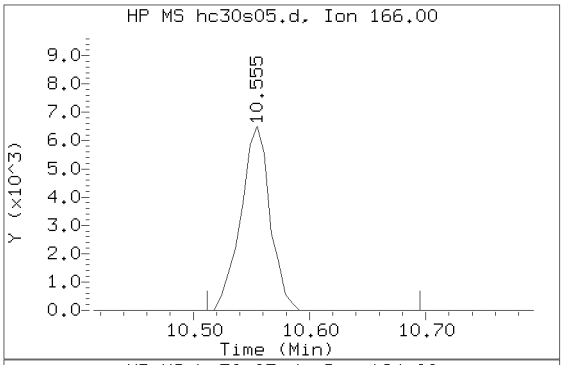


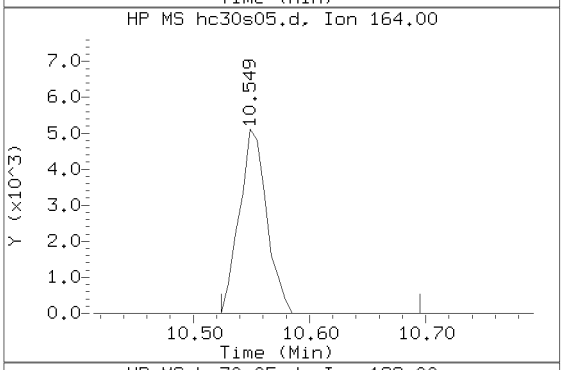
Sample Spectrum (Background Subtracted)

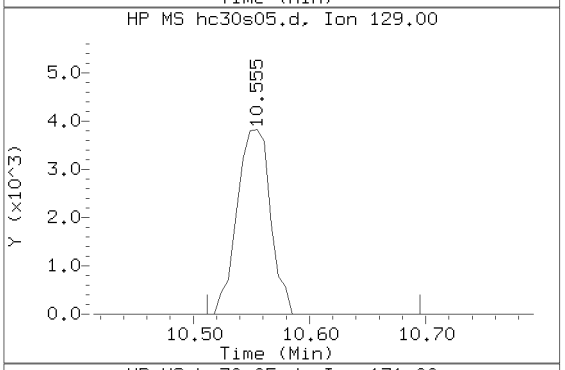


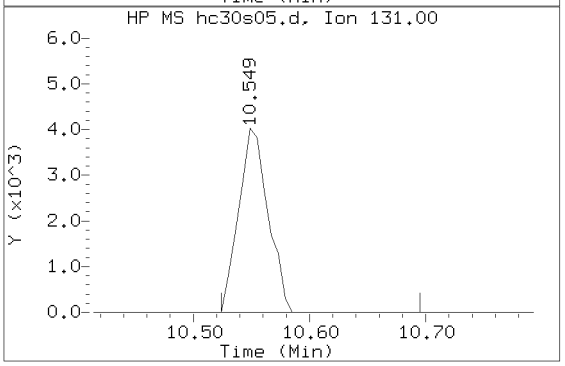
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s05.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:49 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:37 jkh09052

Sample Name: F4805 Lab Sample ID: 1183612

Compound Number	: 89
Compound Name	: Tetrachloroethene
Scan Number	: 1471
Retention Time (minutes)	: 10.555
Relative Retention Time	: 0.00000
Quant Ion	: 166.00
Area (flag)	: 11342
On-Column Amount (ng)	: 0.1780

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:42.
Target 3.5 esignature user ID: jkh09052

F4806 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183613

Data file: /chem2/HP19094.i/19oct30a.b/hc30s06.d Injection date and time: **30-OCT-2019 12:10**
Data file Sample Info. Line: F4806;1183613;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.470	(-0.006)	473	65	126973	(-11)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1852317	(-6)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1501077	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	784422	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.000)	113	502806	9.982	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	90021	9.720	97%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1875617	9.788	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	674869	9.630	96%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)	2.142	(0.001)	45	22253M	0.334	0.33		J	0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)	3.422	(-0.000)	59	33256	1.054	1.05		J	0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)	4.452	(-0.000)	84	5342	0.109	0.11		J	0.07	1
33) 1,1-Dichloroethane	(2)	5.543	(-0.000)	63	10583	0.126	0.13		J	0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

M = Compound was manually integrated.

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct30a.b/hc30s06.d Injection date and time: **30-OCT-2019 12:10**
Data file Sample Info. Line: F4806;1183613;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

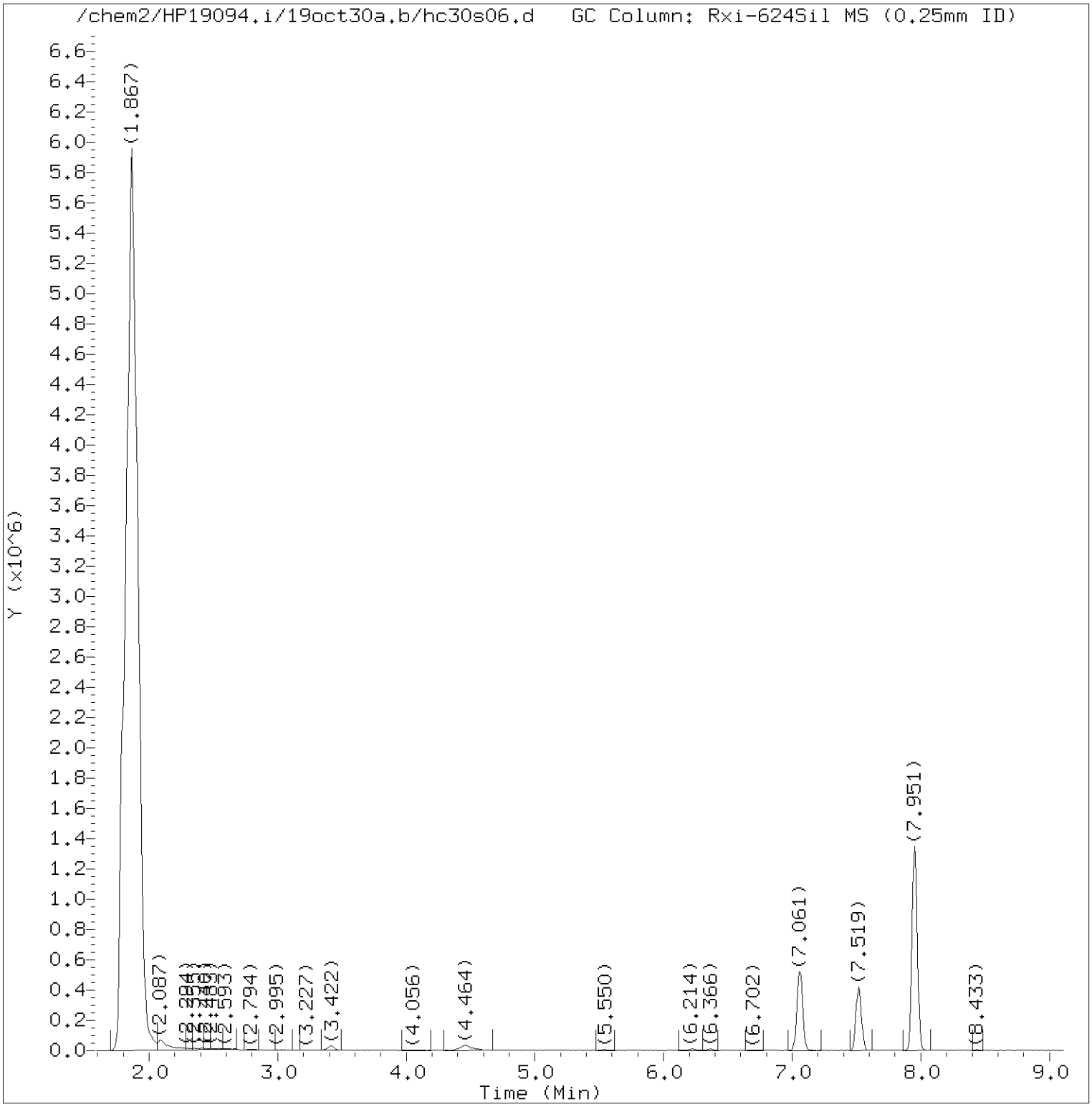
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

THIS SPACE
WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

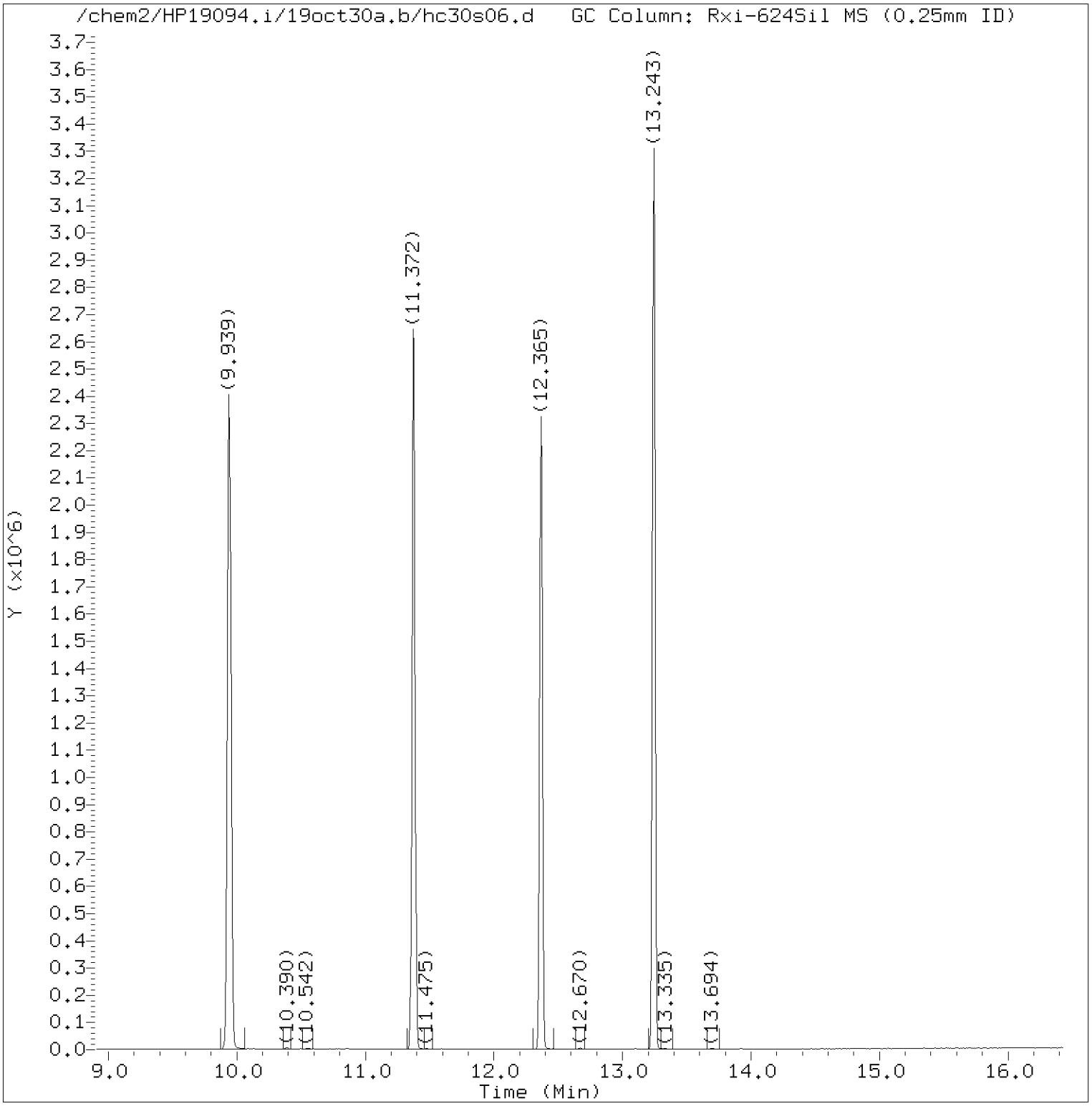
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

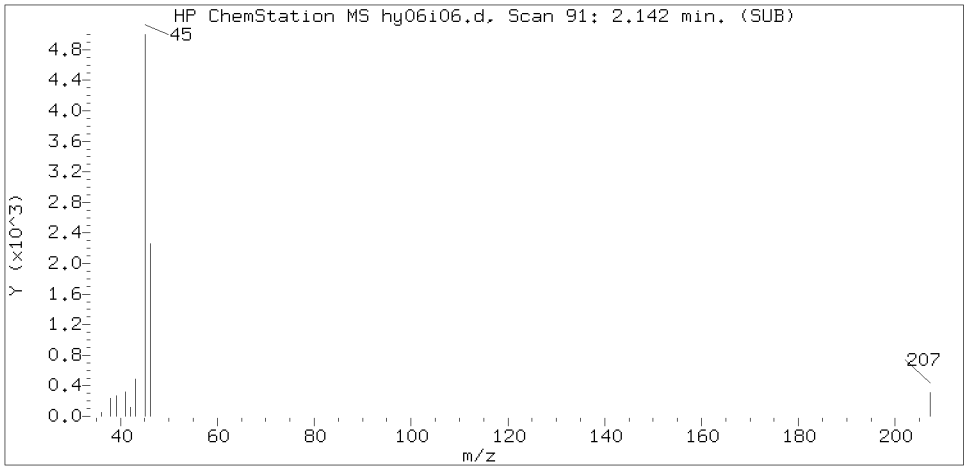
Sample Name: F4806 Lab Sample ID: 1183613

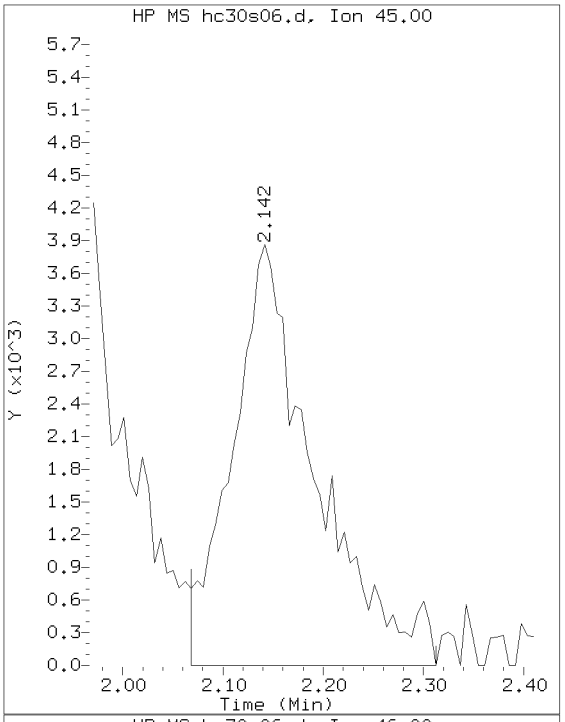
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.142	45	22253M	0.334
11) Ethyl ether	(2)	3.422	59	33256	1.054
23) Methylene Chloride	(2)	4.452	84	5342	0.109
26)*t-Butyl Alcohol-d10	(1)	4.470	65	126973	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	10583	0.126
50)$Dibromofluoromethane	(2)	7.061	113	502806	9.982
57)$1,2-Dichloroethane-d4	(2)	7.519	102	90021	9.720
63)*Fluorobenzene	(2)	7.951	96	1852317	10.000
82)$Toluene-d8	(3)	9.939	98	1875617	9.788
97)*Chlorobenzene-d5	(3)	11.372	117	1501077	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	674869	9.630
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	784422	10.000

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

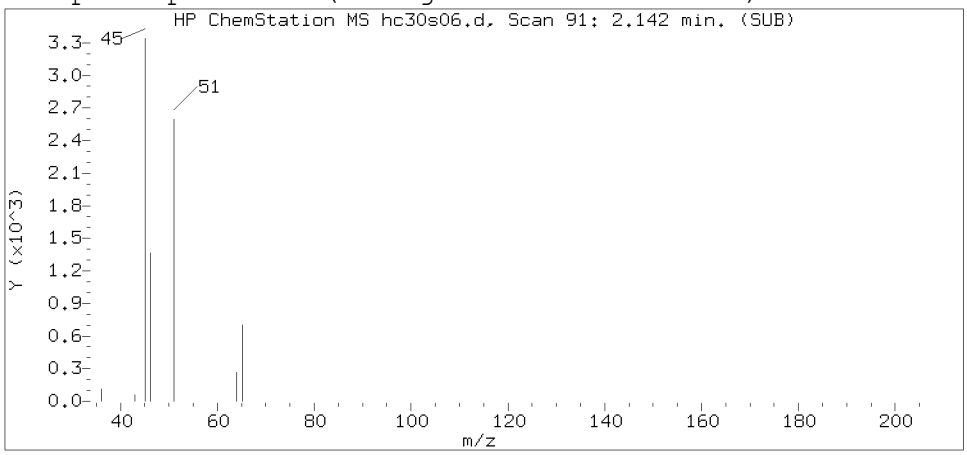
Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

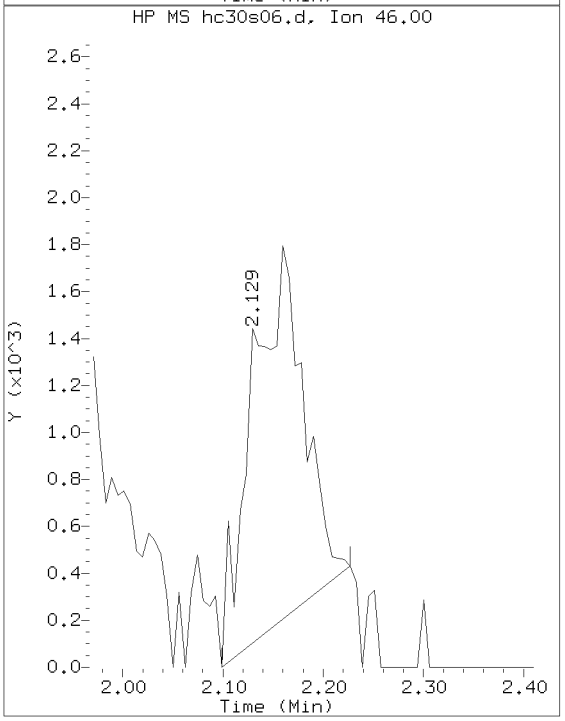
Reference Standard Spectrum for Dimethyl ether



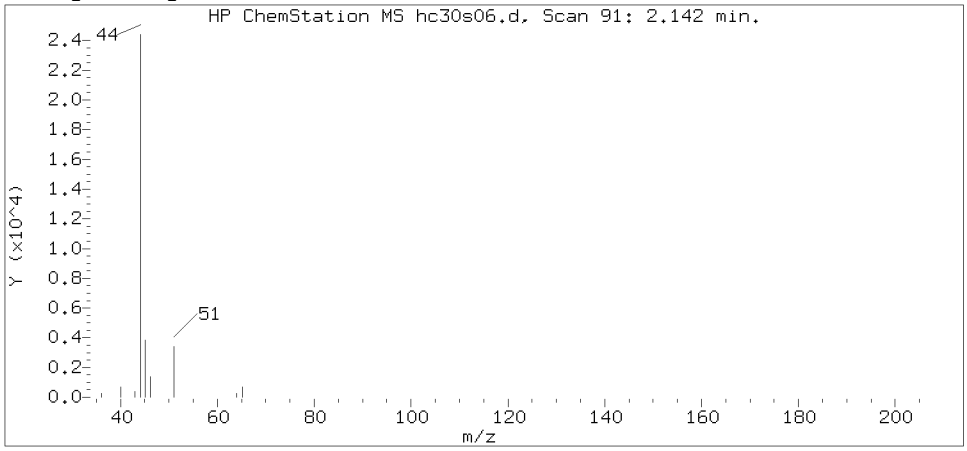


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

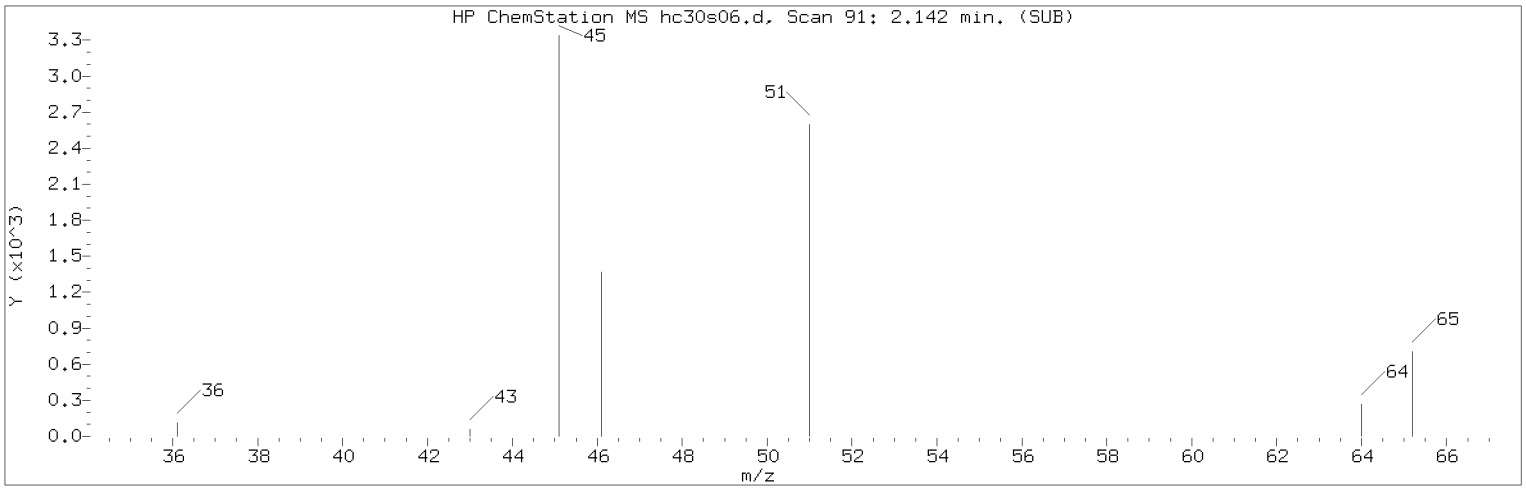
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

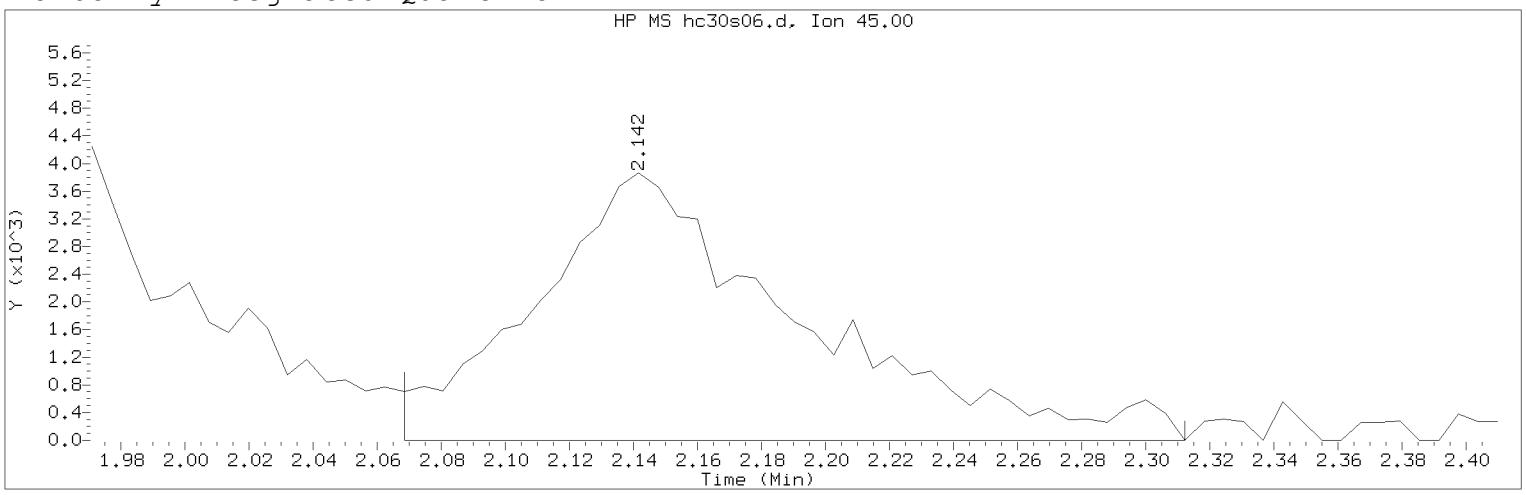
Compound Number	: 4
Compound Name	: Dimethyl ether
Scan Number	: 91
Retention Time (minutes)	: 2.142
Relative Retention Time	: 0.00154
Quant Ion	: 45.00
Area (flag)	: 22253M
On-Column Amount (ng)	: 0.3342

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

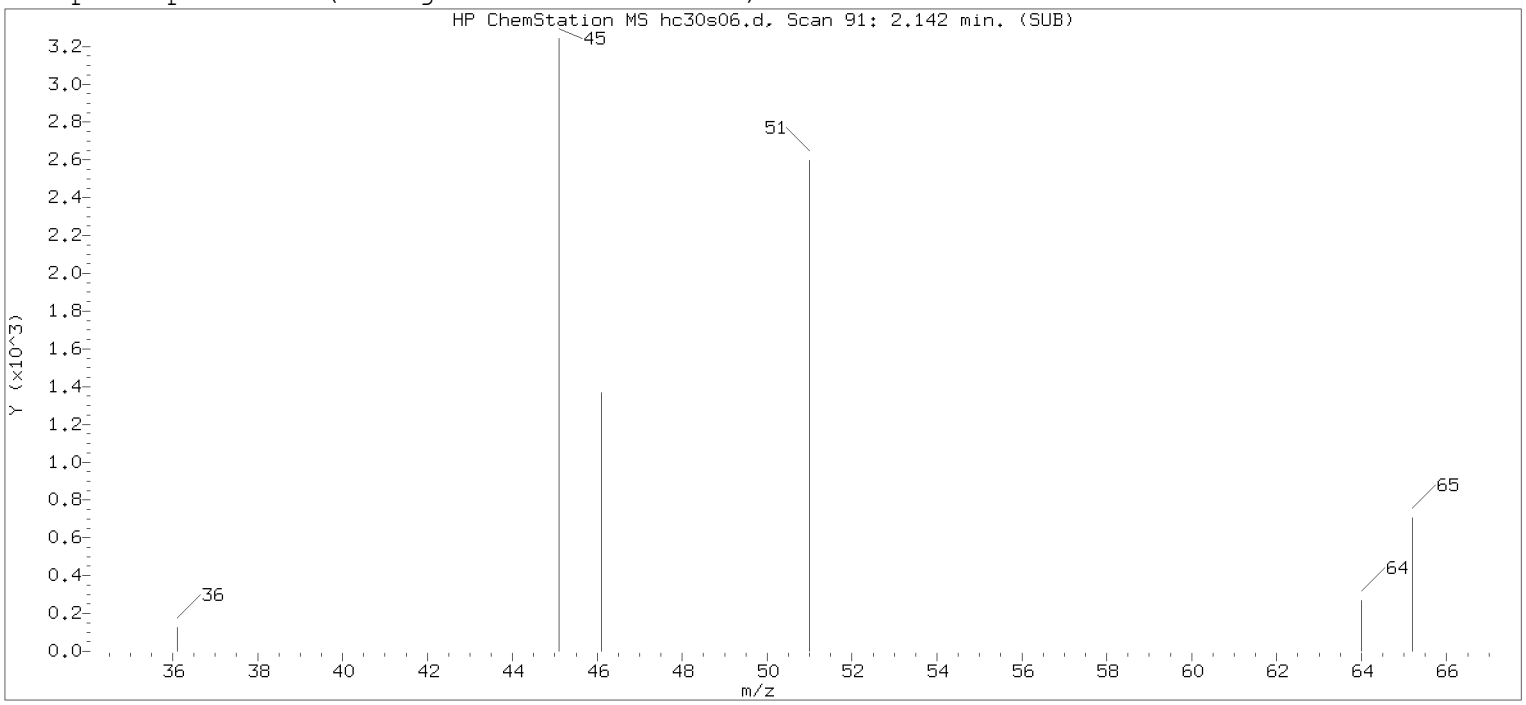
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 91
Retention Time (minutes): 2.142
Quant Ion : 45.00
Area (flag) : 22253M
On-Column Amount (ng) : 0.3342
Integration start scan : 78 Integration stop scan: 118
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

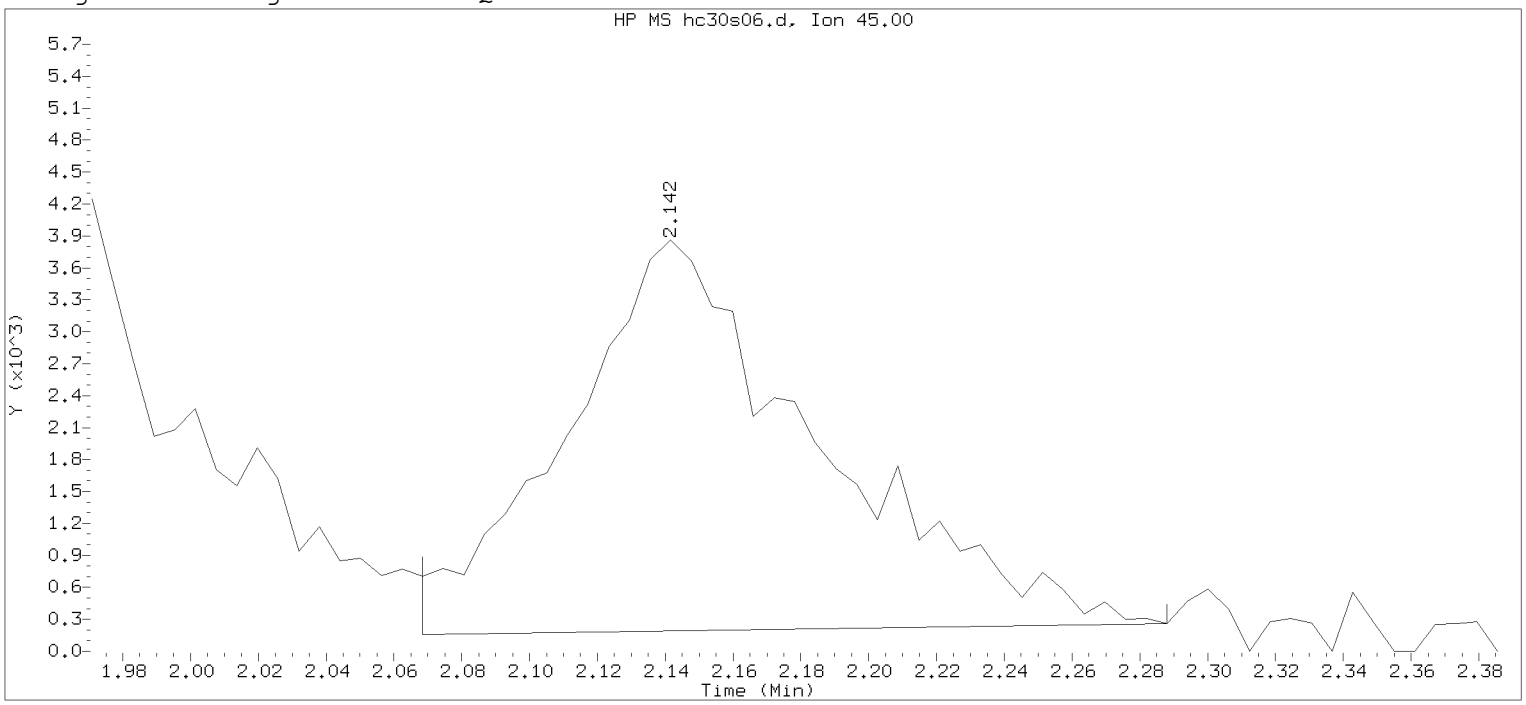
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

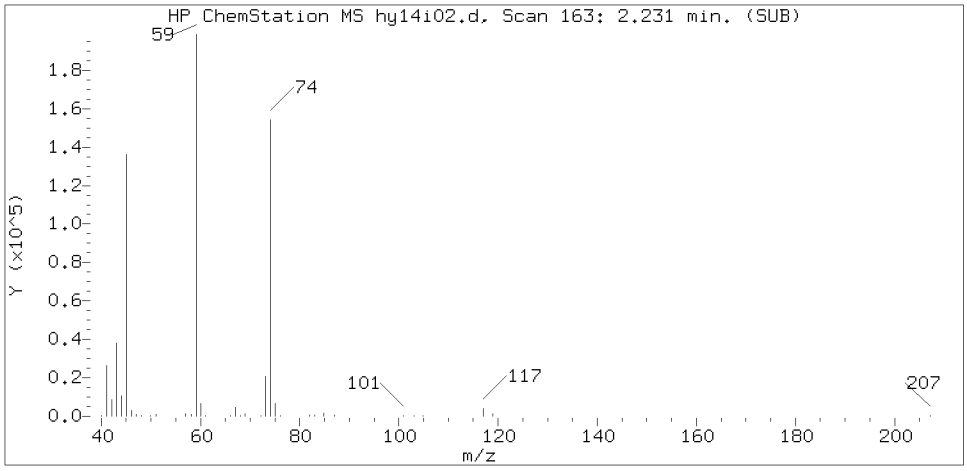
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 12:28 Automation

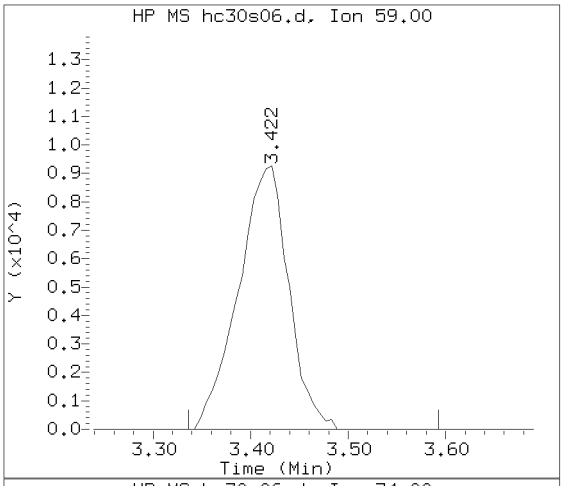
Sample Name: F4806 Lab Sample ID: 1183613

Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 91		
Retention Time (minutes)	: 2.142		
Quant Ion	: 45.00		
Area	: 18809		
On-column Amount (ng)	: 0.2825		
Integration start scan	: 78	Integration stop scan:	114
Y at integration start	: 158	Y at integration end:	258

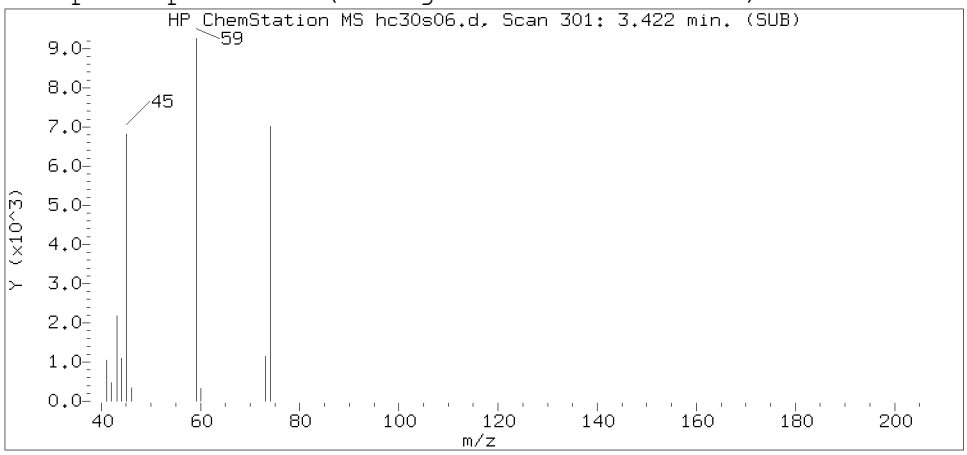
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature used. AE48 Page 185 of 1181

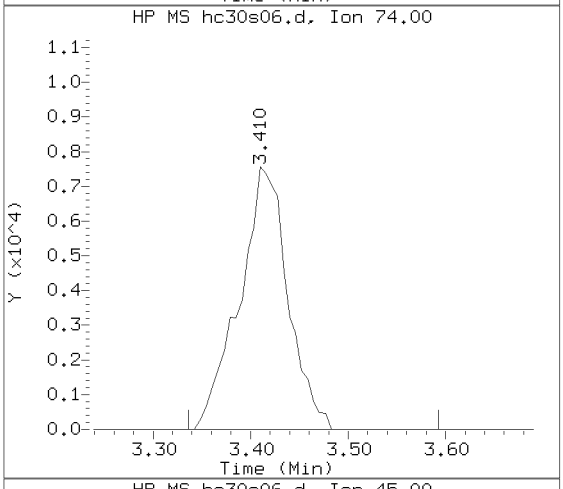
Reference Standard Spectrum for Ethyl ether



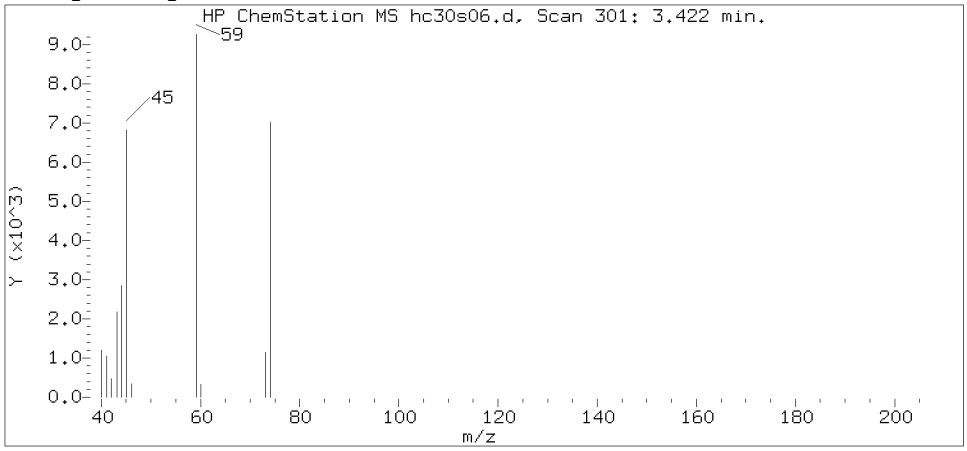


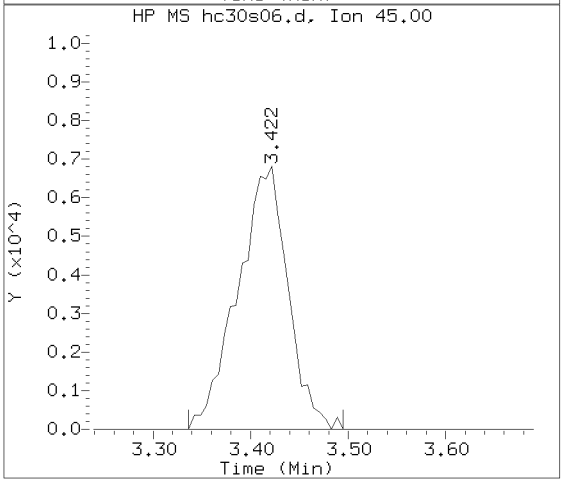
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

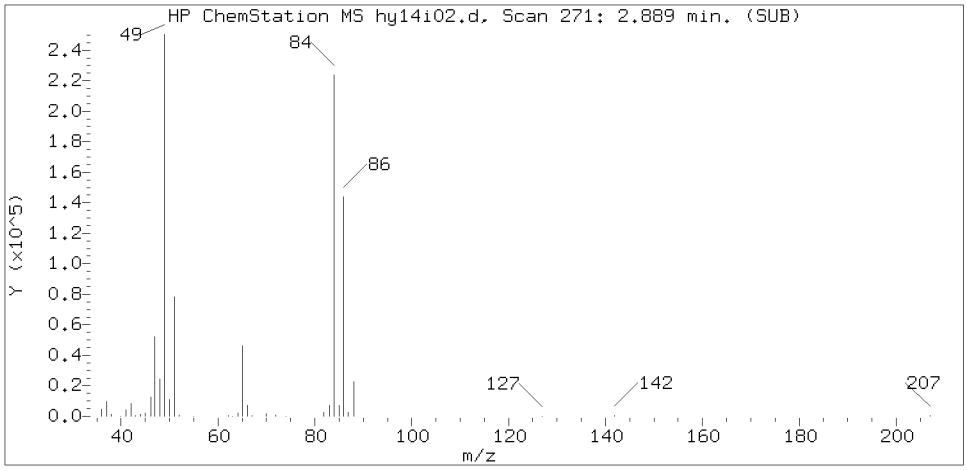
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

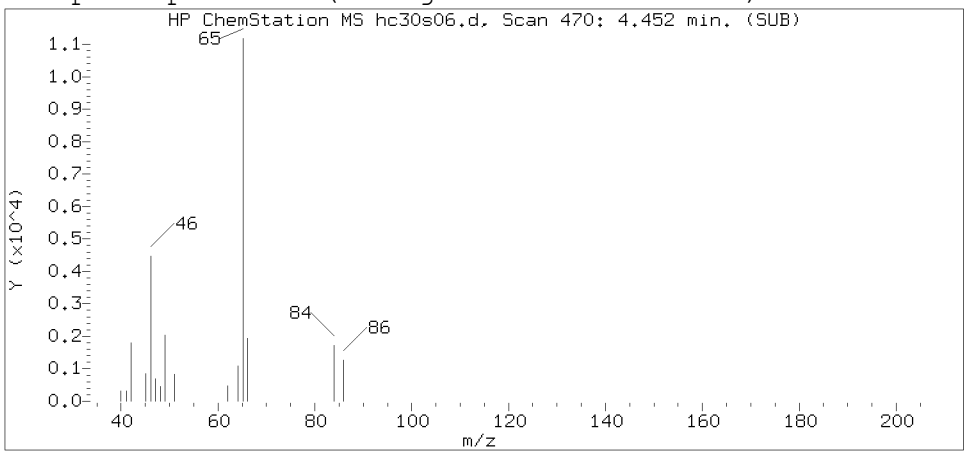
Compound Number : 11
Compound Name : Ethyl ether
Scan Number : 301
Retention Time (minutes): 3.422
Relative Retention Time :-0.00077
Quant Ion : 59.00
Area (flag) : 33256
On-Column Amount (ng) : 1.0543

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

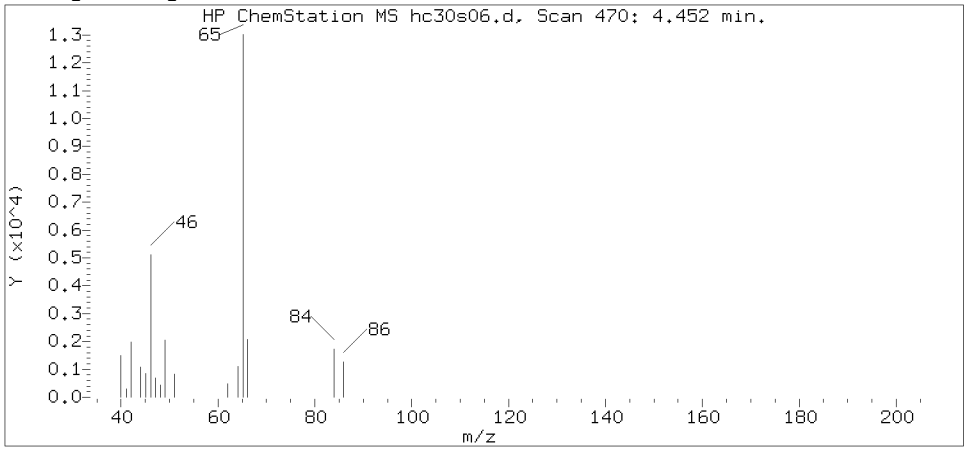
Reference Standard Spectrum for Methylene Chloride

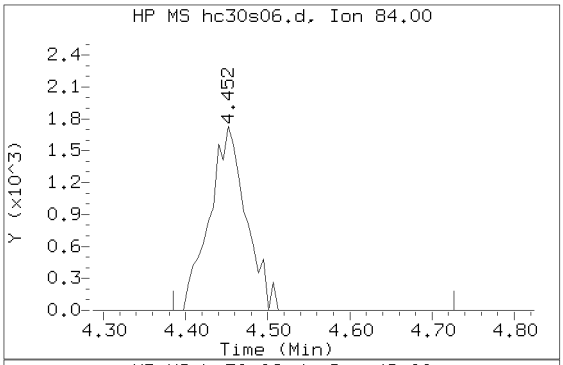


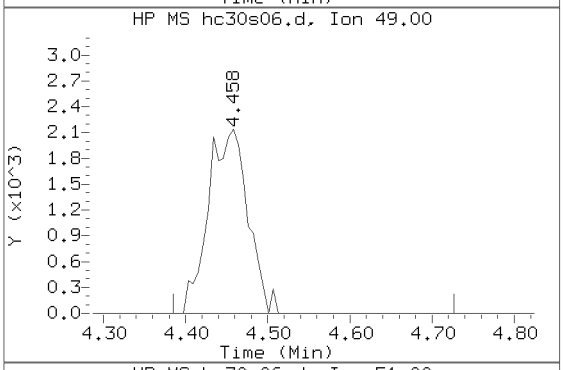
Sample Spectrum (Background Subtracted)

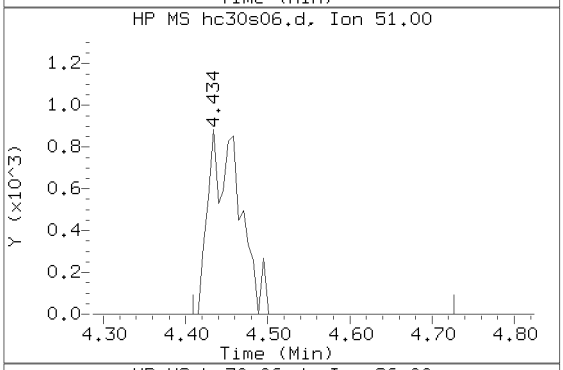


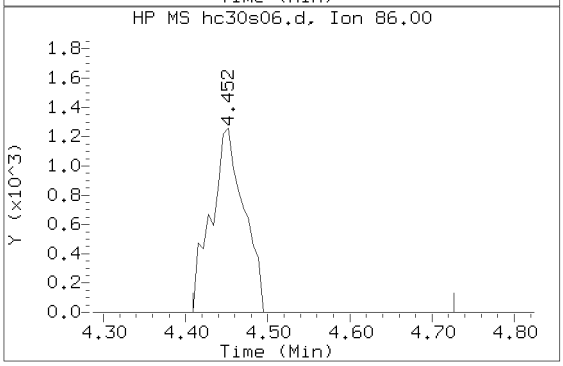
Sample Spectrum (Unaltered)











Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

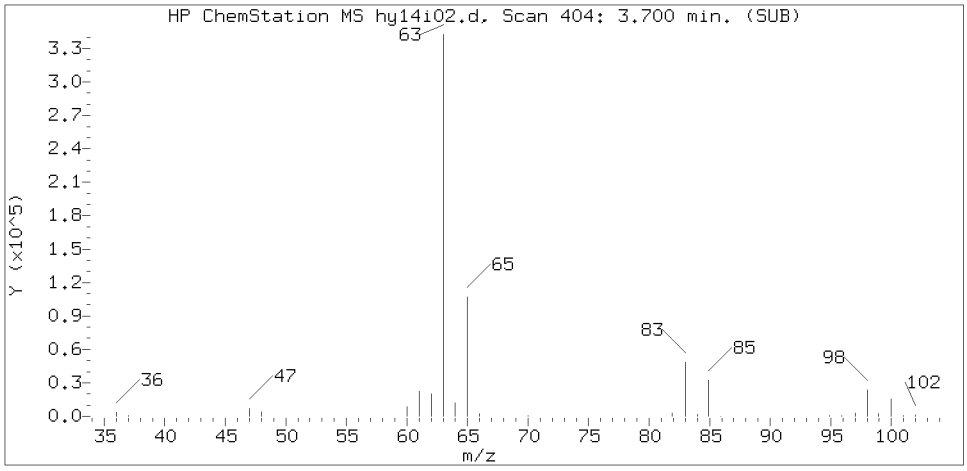
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

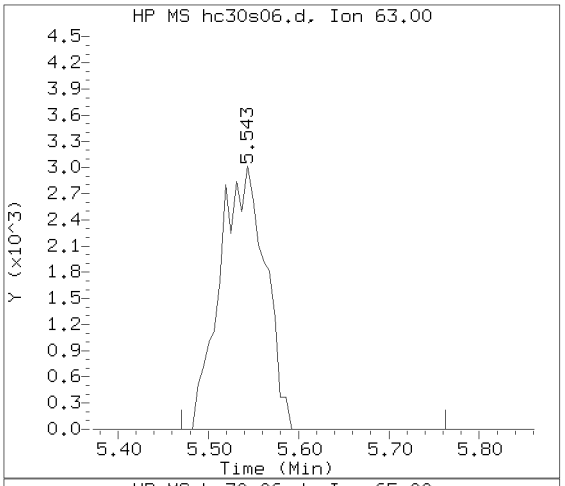
Sample Name: F4806 Lab Sample ID: 1183613

Compound Number : 23
Compound Name : Methylene Chloride
Scan Number : 470
Retention Time (minutes): 4.452
Relative Retention Time :-0.00000
Quant Ion : 84.00
Area (flag) : 5342
On-Column Amount (ng) : 0.1086

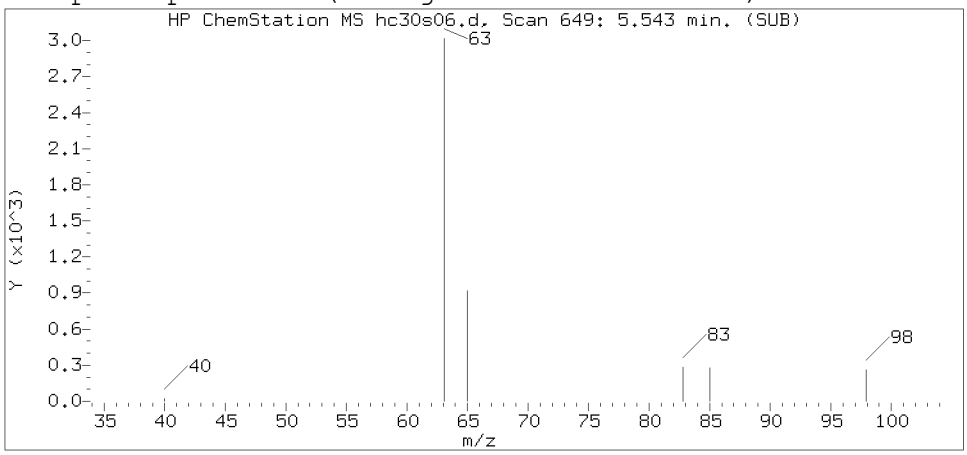
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

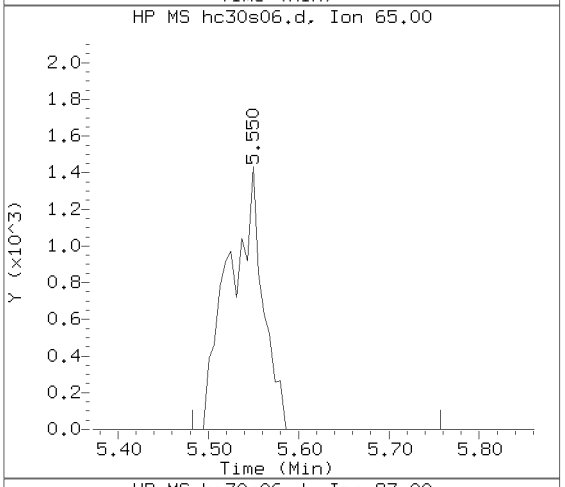
Reference Standard Spectrum for 1,1-Dichloroethane



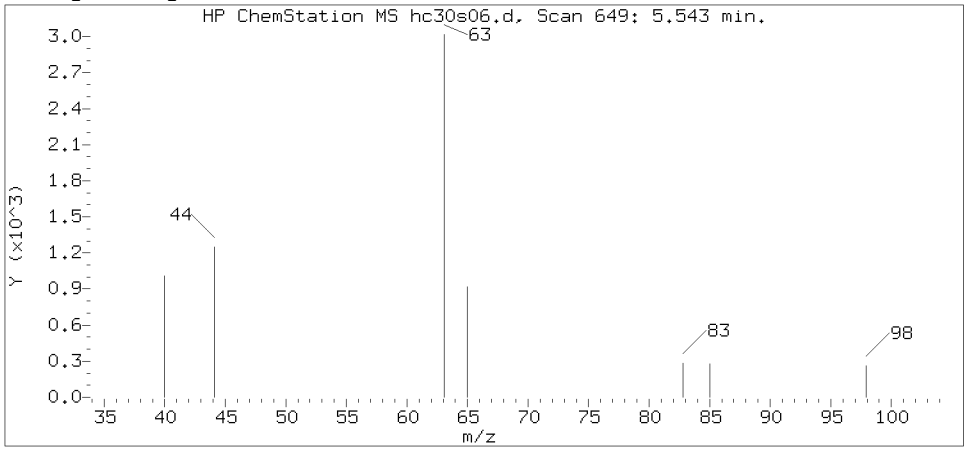


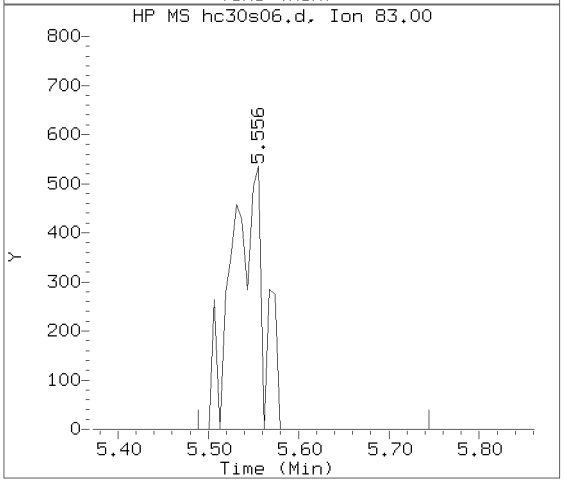
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s06.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:10 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:38 jkh09052

Sample Name: F4806 Lab Sample ID: 1183613

Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 649
Retention Time (minutes): 5.543
Relative Retention Time :-0.00077
Quant Ion : 63.00
Area (flag) : 10583
On-Column Amount (ng) : 0.1261

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

F4807 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183614

Data file: /chem2/HP19094.i/19oct30a.b/hc30s07.d Injection date and time: **30-OCT-2019 12:32**
Data file Sample Info. Line: F4807;1183614;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	124927	(-12)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	1854939	(-6)	10.00	
97) Chlorobenzene-d5	11.377	(0.000)	1606	117	1499943	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	779813	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	501542	9.943	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.525	(0.001)	102	89813	9.684	97%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1876746	9.801	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	672426	9.602	96%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

F4807 Lancaster Laboratories 1183614
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s07.d Injection date and time: **30-OCT-2019 12:32**
Data file Sample Info. Line: F4807;1183614;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

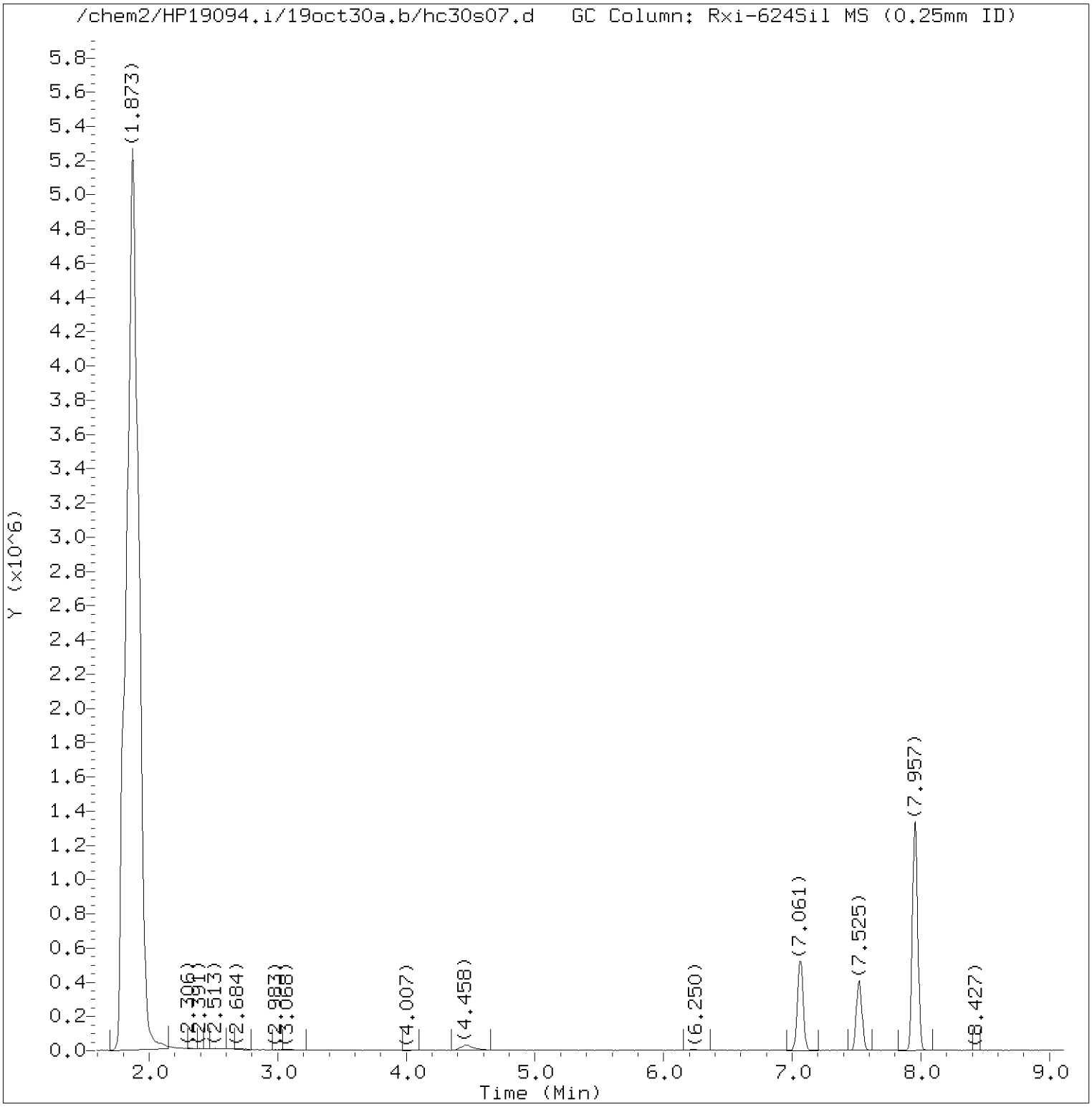
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

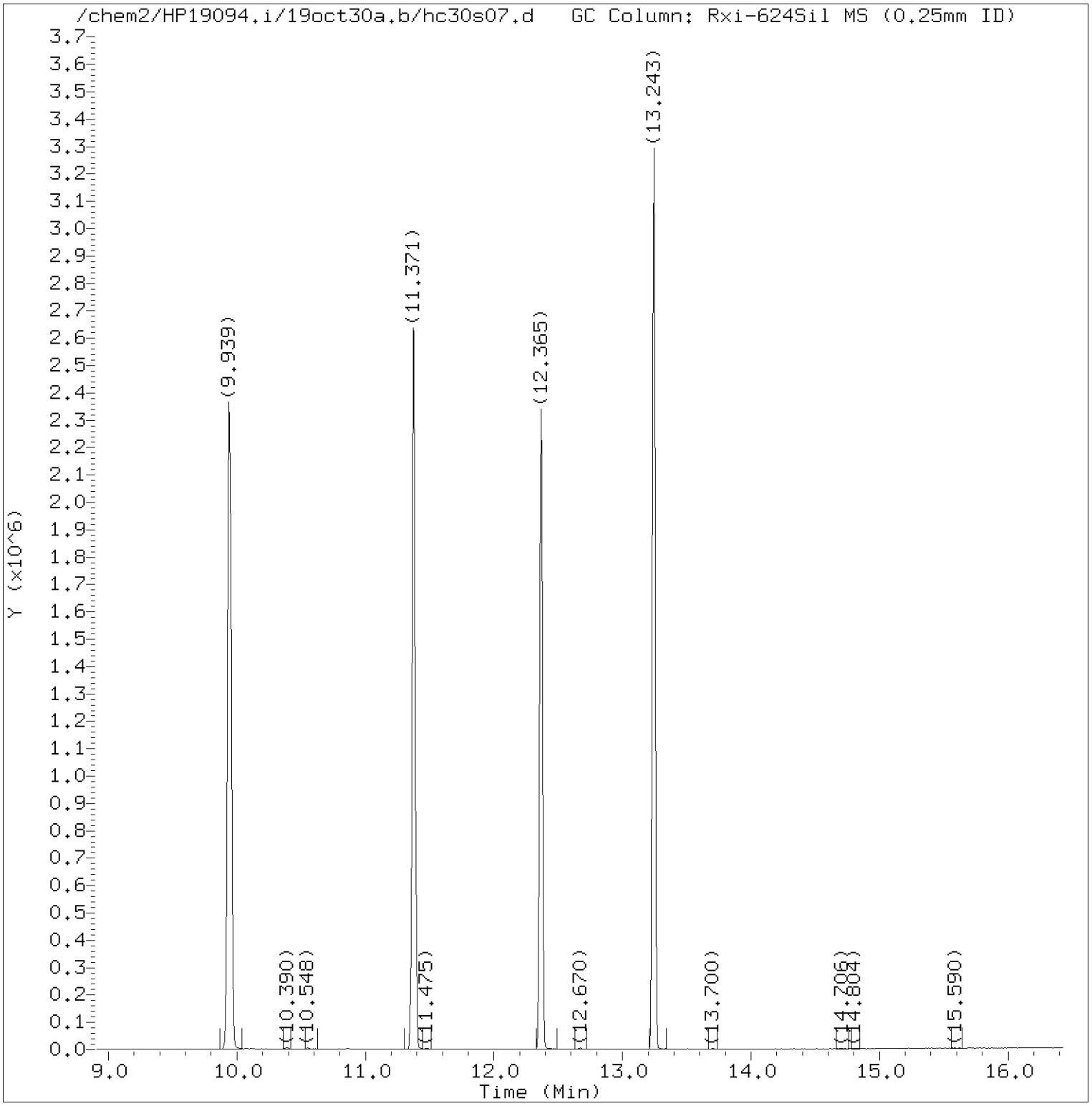
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s07.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:32 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4807 Lab Sample ID: 1183614

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s07.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:32 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4807 Lab Sample ID: 1183614

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s07.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:32 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4807 Lab Sample ID: 1183614

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.464	65	124927	50.000
50)$Dibromofluoromethane	(2)	7.067	113	501542	9.943
57)$1,2-Dichloroethane-d4	(2)	7.525	102	89813	9.684
63)*Fluorobenzene	(2)	7.957	96	1854939	10.000
82)$Toluene-d8	(3)	9.939	98	1876746	9.801
97)*Chlorobenzene-d5	(3)	11.377	117	1499943	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	672426	9.602
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	779813	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s08.d Injection date and time: **30-OCT-2019 12:53**
Data file Sample Info. Line: F4808;1183615;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145;9179

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.006)	471	65	126057	(-12)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1840758	(-6)	10.00	
97) Chlorobenzene-d5	11.371	(0.006)	1605	117	1503853	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	775250	(-8)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.055	(0.001)	113	495903	9.907	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.518	(0.001)	102	87856	9.545	95%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1869888	9.740	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	674868	9.612	96%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.080	(0.000)	85	18127	0.188	0.19		J	0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

F4808 Lancaster Laboratories 1183615
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s08.d Injection date and time: **30-OCT-2019 12:53**
Data file Sample Info. Line: F4808;1183615;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

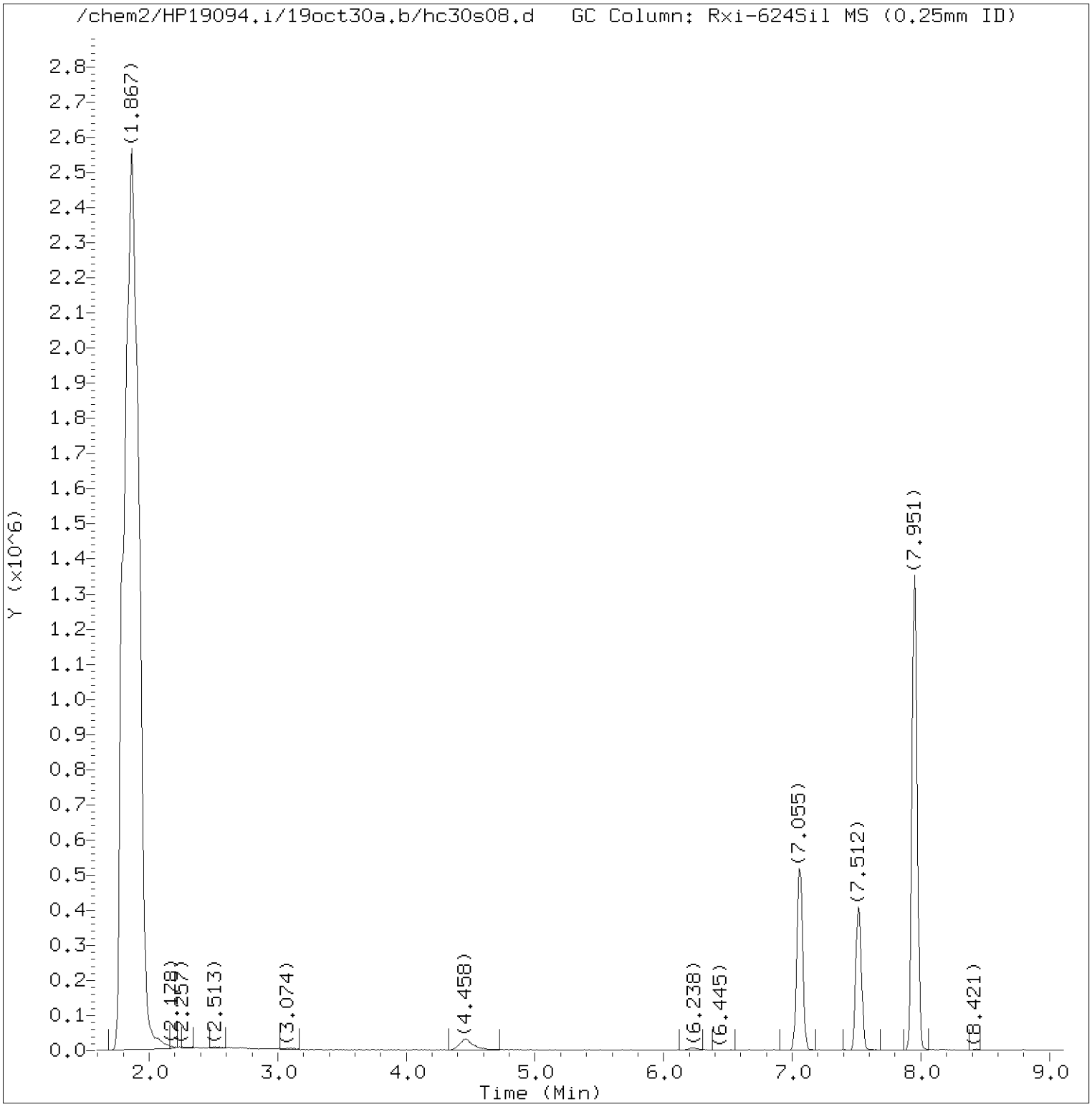
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

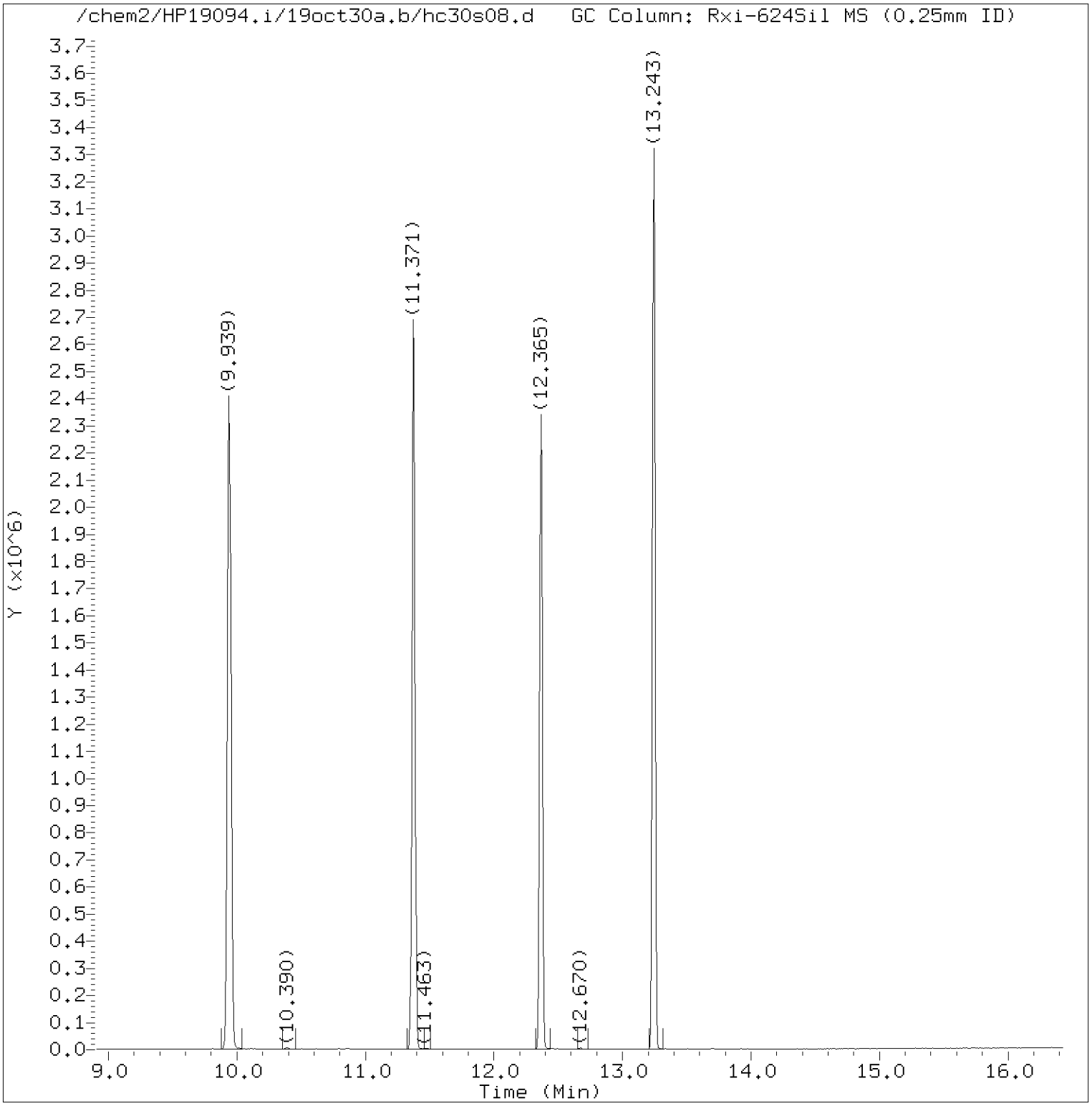
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s08.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:53 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4808 Lab Sample ID: 1183615

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s08.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:53 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4808 Lab Sample ID: 1183615

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s08.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:53 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

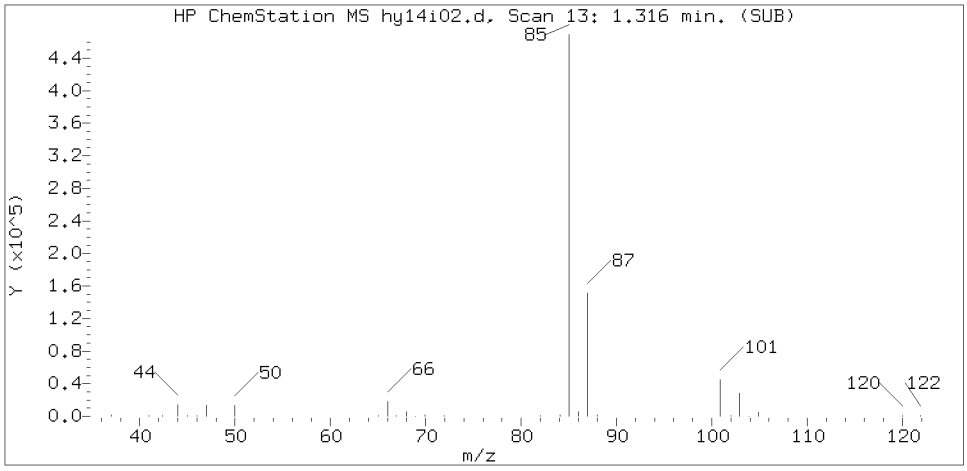
Sample Name: F4808 Lab Sample ID: 1183615

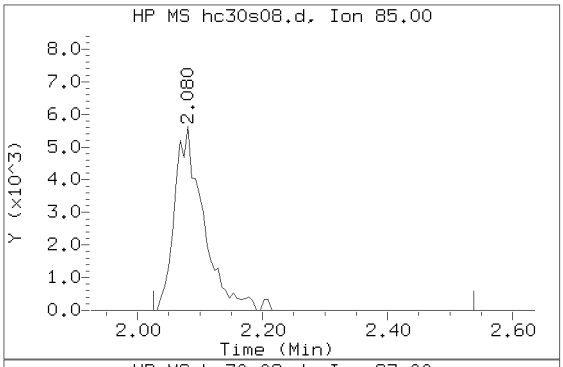
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.080	85	18127	0.188
26)*t-Butyl Alcohol-d10	(1)	4.458	65	126057	50.000
50)$Dibromofluoromethane	(2)	7.055	113	495903	9.907
57)$1,2-Dichloroethane-d4	(2)	7.518	102	87856	9.545
63)*Fluorobenzene	(2)	7.951	96	1840758	10.000
82)$Toluene-d8	(3)	9.939	98	1869888	9.740
97)*Chlorobenzene-d5	(3)	11.371	117	1503853	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	674868	9.612
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	775250	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

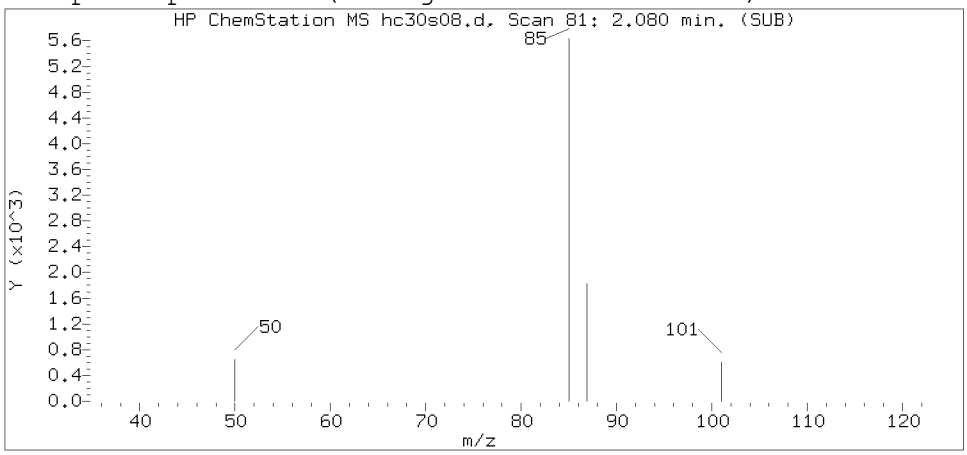
Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

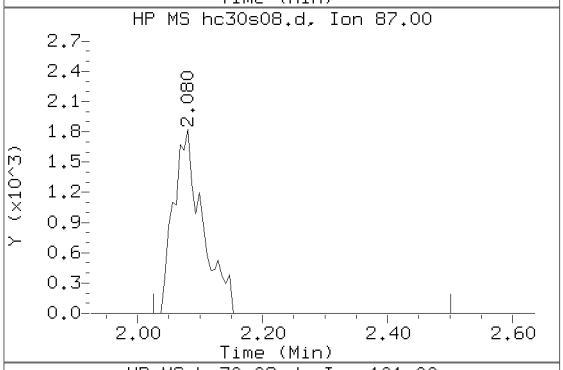
Reference Standard Spectrum for Dichlorodifluoromethane

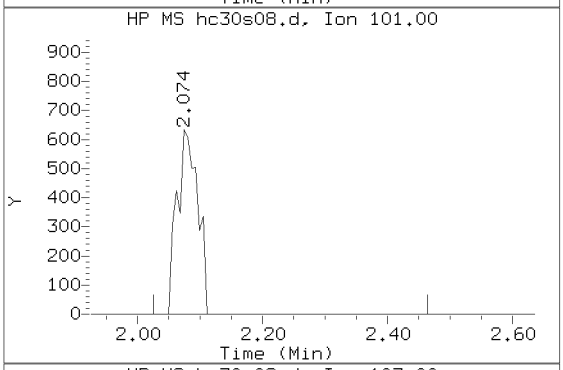




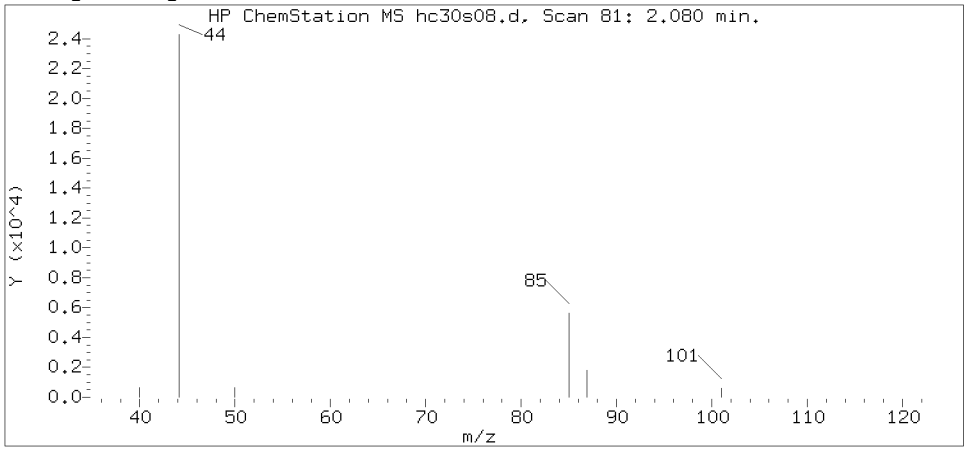
Sample Spectrum (Background Subtracted)

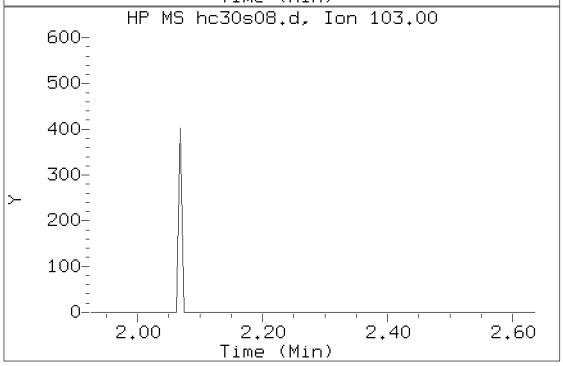






Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s08.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 12:53 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:39 jkh09052

Sample Name: F4808 Lab Sample ID: 1183615

Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.080
Relative Retention Time : 0.00001
Quant Ion : 85.00
Area (flag) : 18127
On-Column Amount (ng) : 0.1879

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

F4809 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183616

Data file: /chem2/HP19094.i/19oct30a.b/hc30s09.d Injection date and time: **30-OCT-2019 13:15**
Data file Sample Info. Line: F4809;1183616;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145;9179

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.476	(-0.012)	474	65	126285	(-11)	50.00	
63) Fluorobenzene	7.958	(-0.006)	1045	96	1833429	(-7)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1487670	(-8)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	784095	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	497782	9.984	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.525	(0.001)	102	90425	9.864	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1853451	9.759	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	667530	9.611	96%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)	3.160	(-0.001)	101	10584	0.094	0.09		J	0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)	5.549	(-0.000)	63	12778	0.154	0.15		J	0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

F4809 Lancaster Laboratories 1183616
Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s09.d Injection date and time: **30-OCT-2019 13:15**
Data file Sample Info. Line: F4809;1183616;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

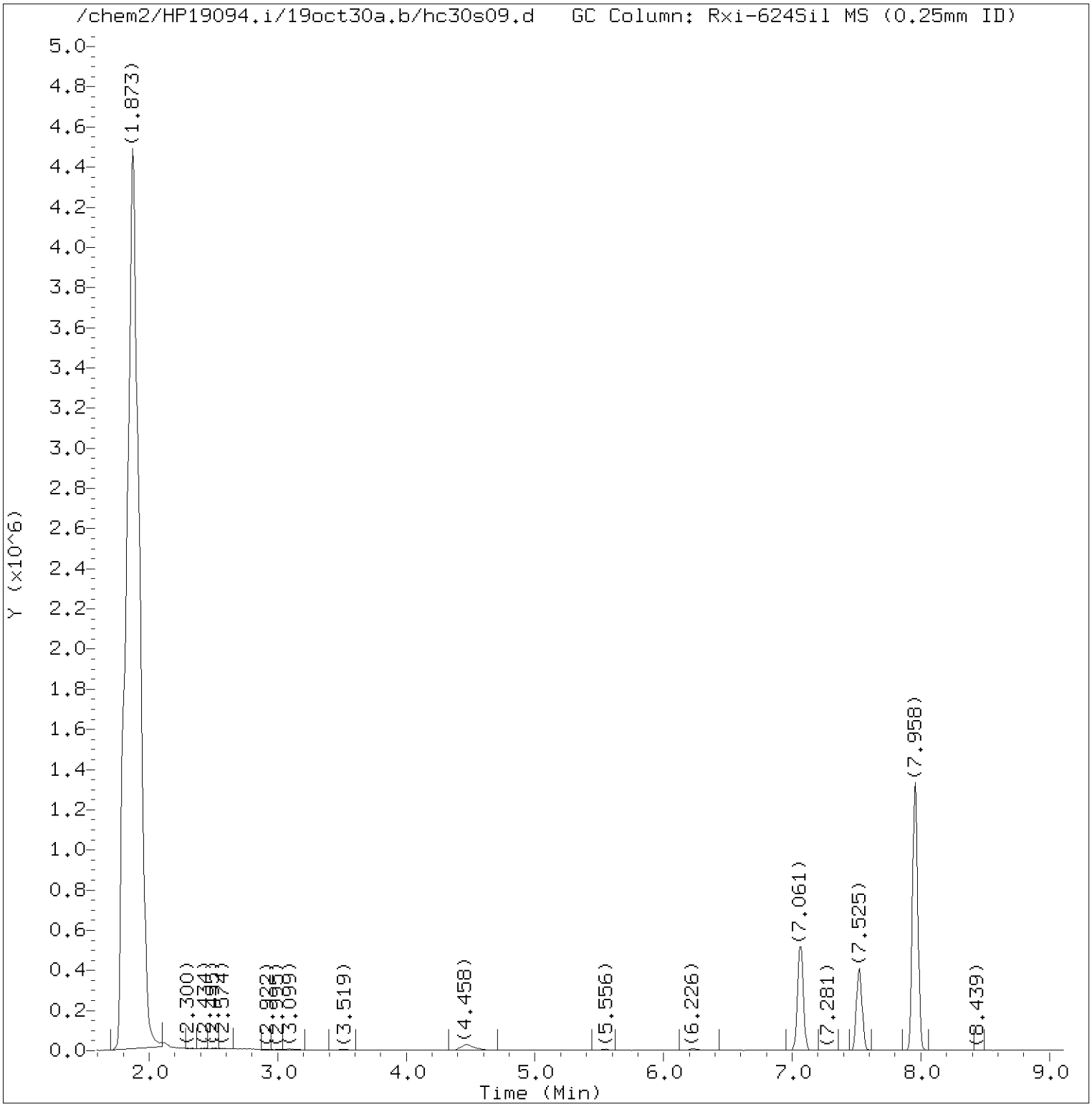
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

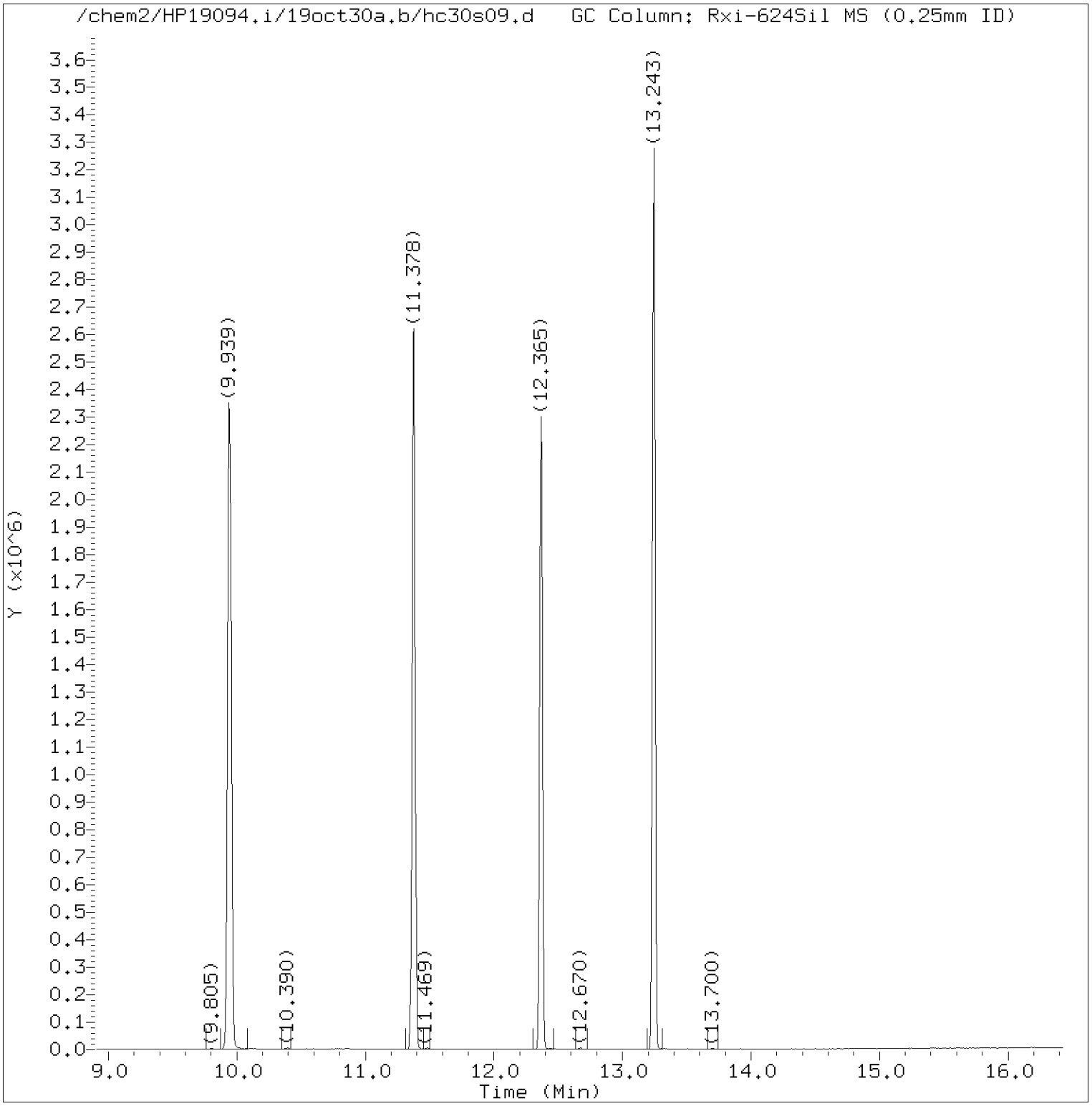
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s09.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:15 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

Sample Name: F4809 Lab Sample ID: 1183616

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s09.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:15 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

Sample Name: F4809 Lab Sample ID: 1183616

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s09.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:15 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

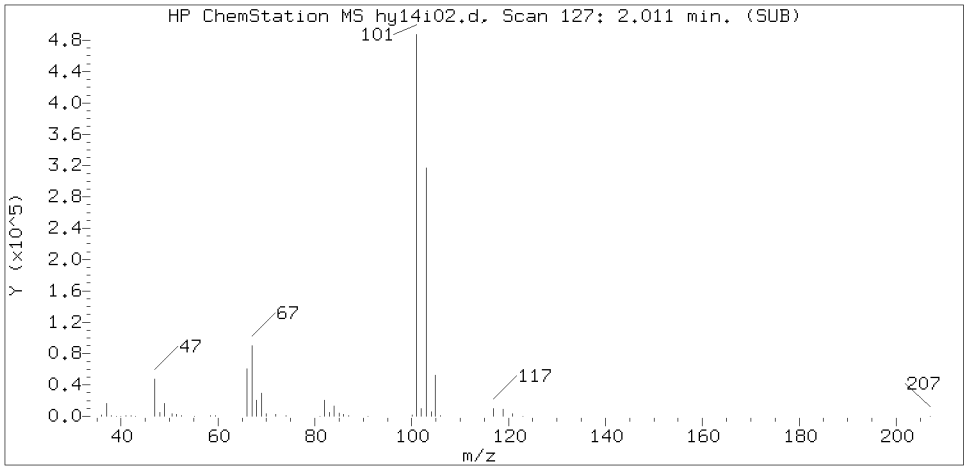
Sample Name: F4809 Lab Sample ID: 1183616

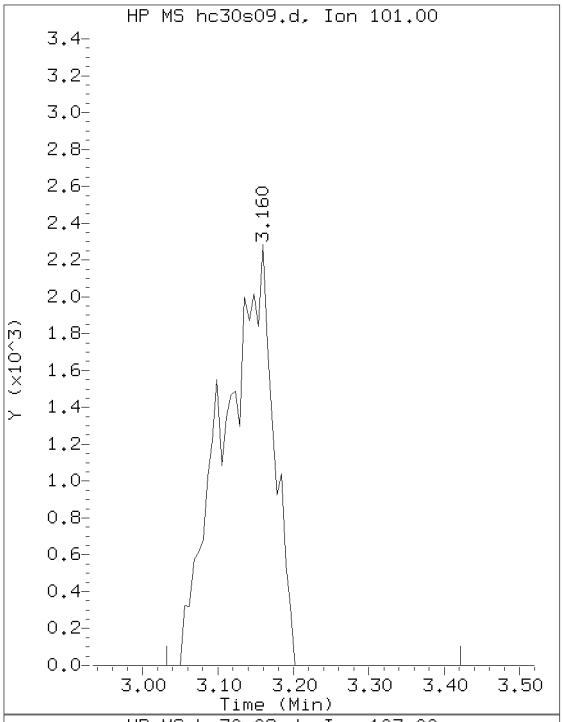
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
10) Trichlorofluoromethane	(2)	3.160	101	10584	0.094
26)*t-Butyl Alcohol-d10	(1)	4.476	65	126285	50.000
33) 1,1-Dichloroethane	(2)	5.549	63	12778	0.154
50)$Dibromofluoromethane	(2)	7.061	113	497782	9.984
57)$1,2-Dichloroethane-d4	(2)	7.525	102	90425	9.864
63)*Fluorobenzene	(2)	7.958	96	1833429	10.000
82)$Toluene-d8	(3)	9.939	98	1853451	9.759
97)*Chlorobenzene-d5	(3)	11.378	117	1487670	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	667530	9.611
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	784095	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

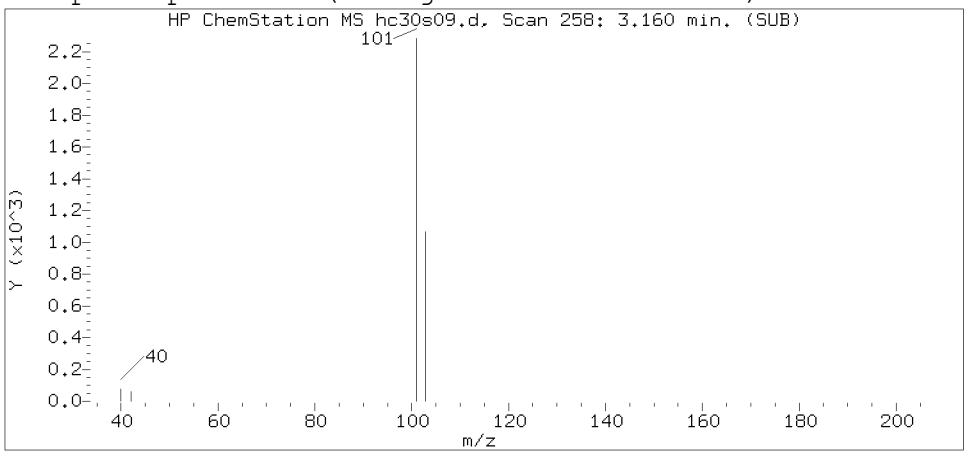
Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

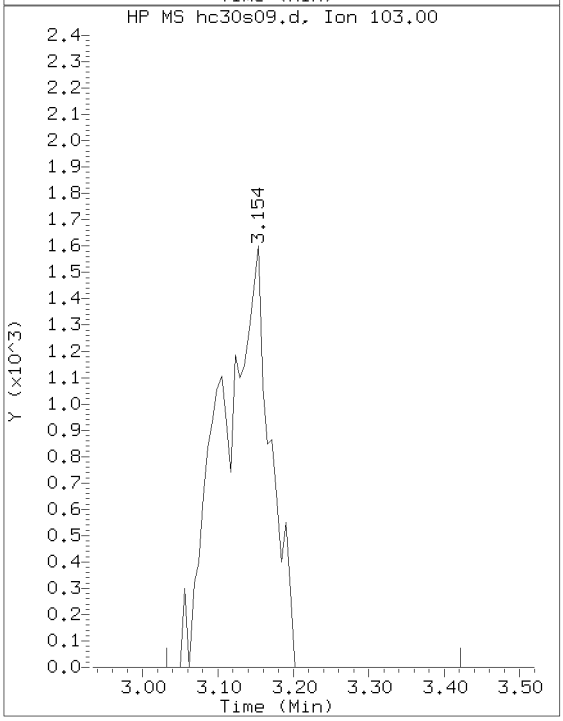
Reference Standard Spectrum for Trichlorofluoromethane



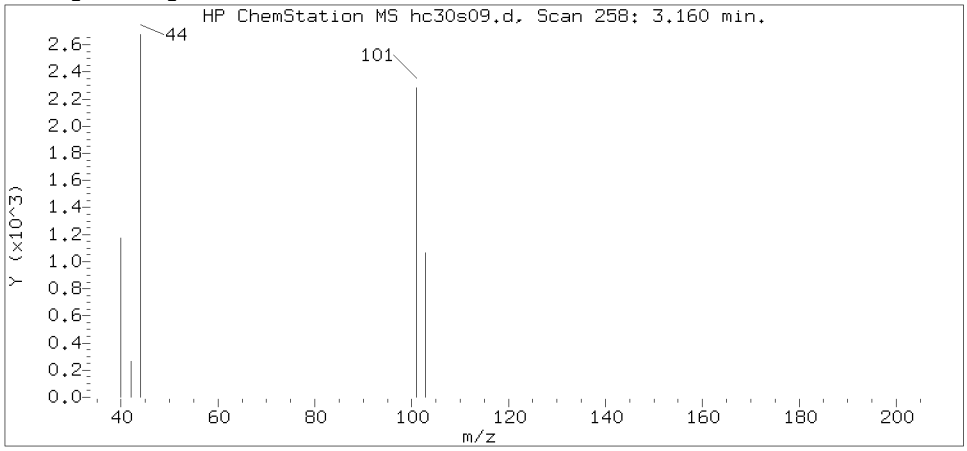


Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)



Data File: /chem2/HP19094.i/19oct30a.b/hc30s09.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:15 Analyst ID: jkh09052

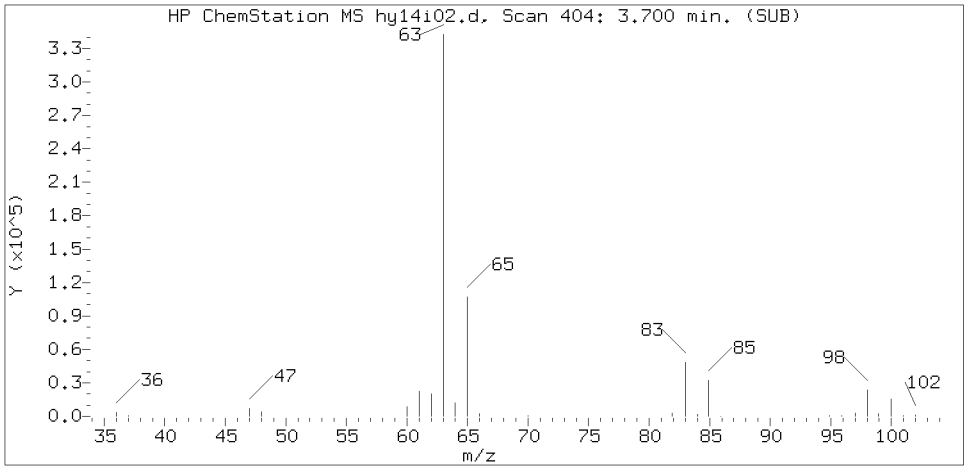
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

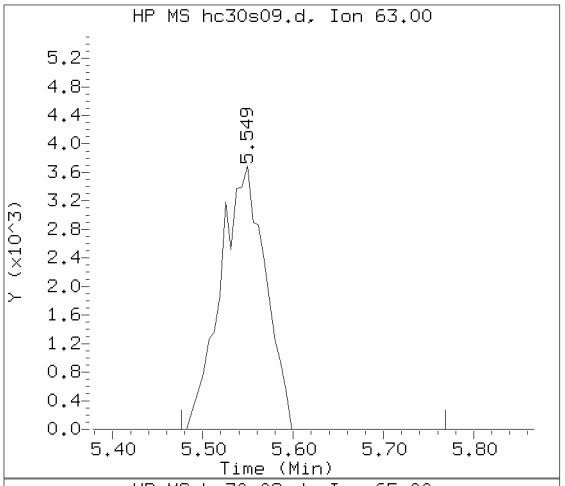
Sample Name: F4809 Lab Sample ID: 1183616

Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 258
Retention Time (minutes): 3.160
Relative Retention Time :-0.00123
Quant Ion : 101.00
Area (flag) : 10584
On-Column Amount (ng) : 0.0945

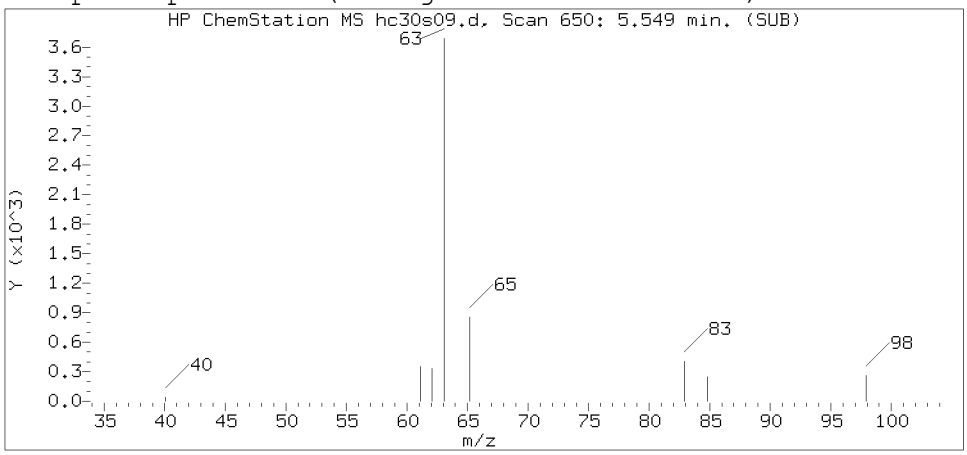
Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

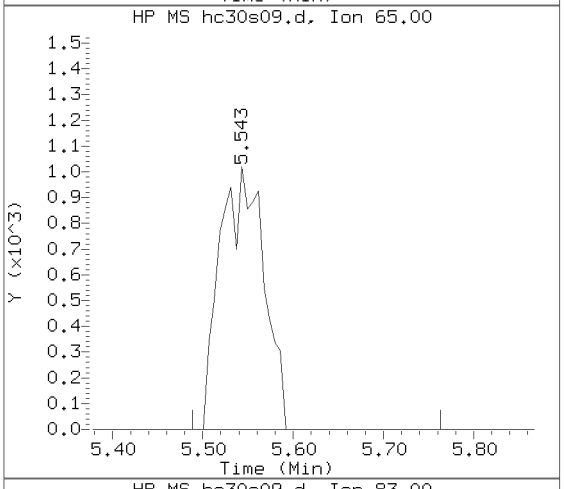
Reference Standard Spectrum for 1,1-Dichloroethane



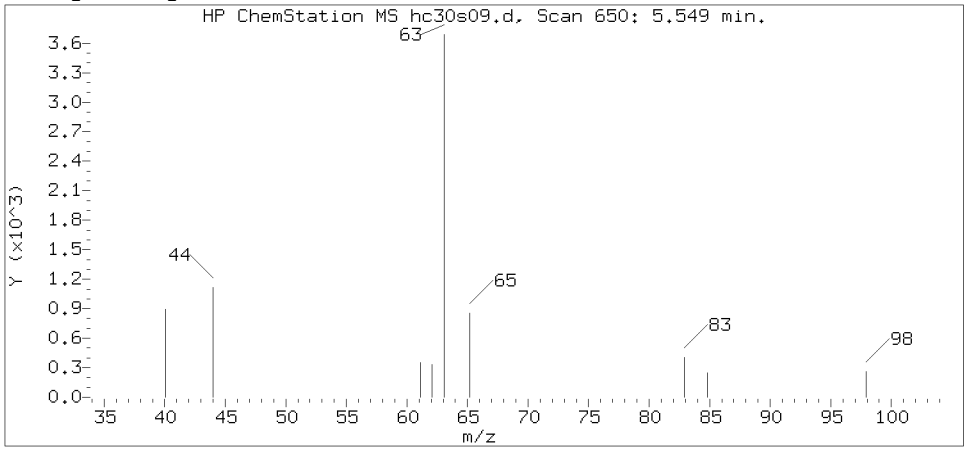


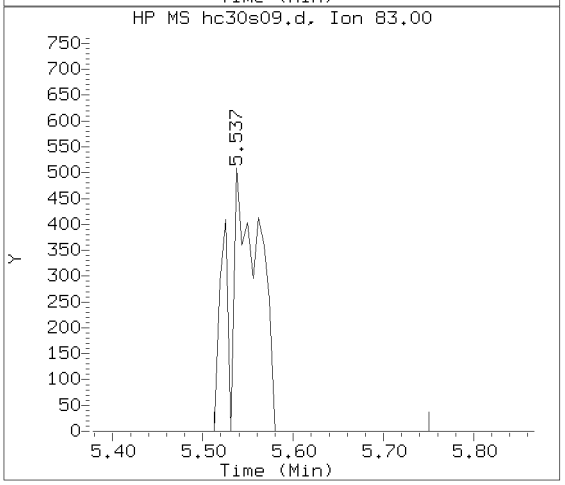
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s09.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:15 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:40 jkh09052

Sample Name: F4809 Lab Sample ID: 1183616

Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 650
Retention Time (minutes): 5.549
Relative Retention Time :-0.00100
Quant Ion : 63.00
Area (flag) : 12778
On-Column Amount (ng) : 0.1538

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:43.
Target 3.5 esignature user ID: jkh09052

F4810 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183617

Data file: /chem2/HP19094.i/19oct30a.b/hc30s10.d Injection date and time: **30-OCT-2019 13:37**
Data file Sample Info. Line: F4810;1183617;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9145; 9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	125620	(-12)	50.00	
63) Fluorobenzene	7.952	(0.000)	1044	96	1843480	(-6)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1498268	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	781282	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.000)	113	499960	9.973	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	91634	9.941	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1864134	9.746	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	671529	9.600	96%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)	7.080	(0.000)	97	15316	0.187	0.19		J	0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct30a.b/hc30s10.d Injection date and time: **30-OCT-2019 13:37**
Data file Sample Info. Line: F4810;1183617;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

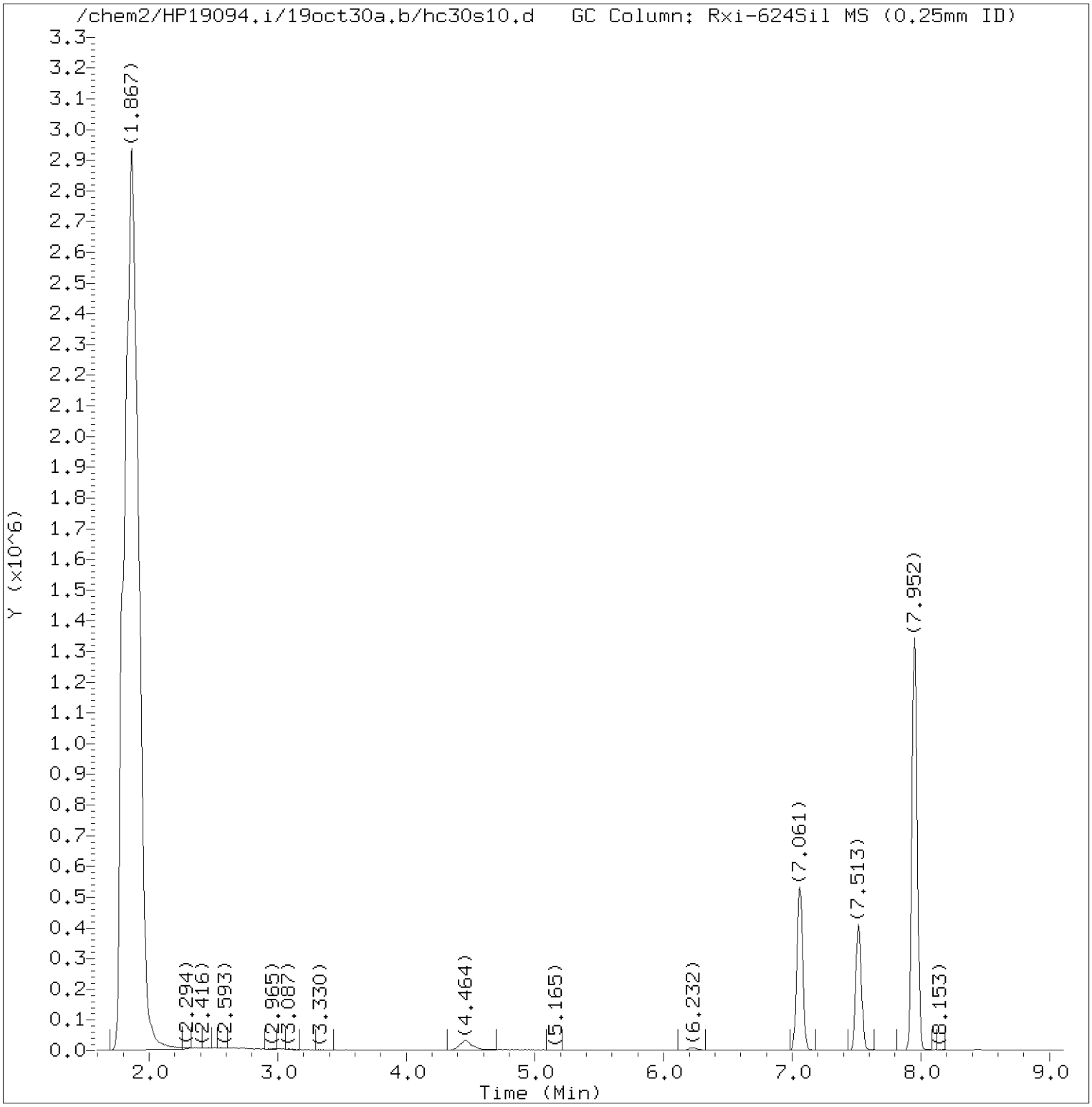
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

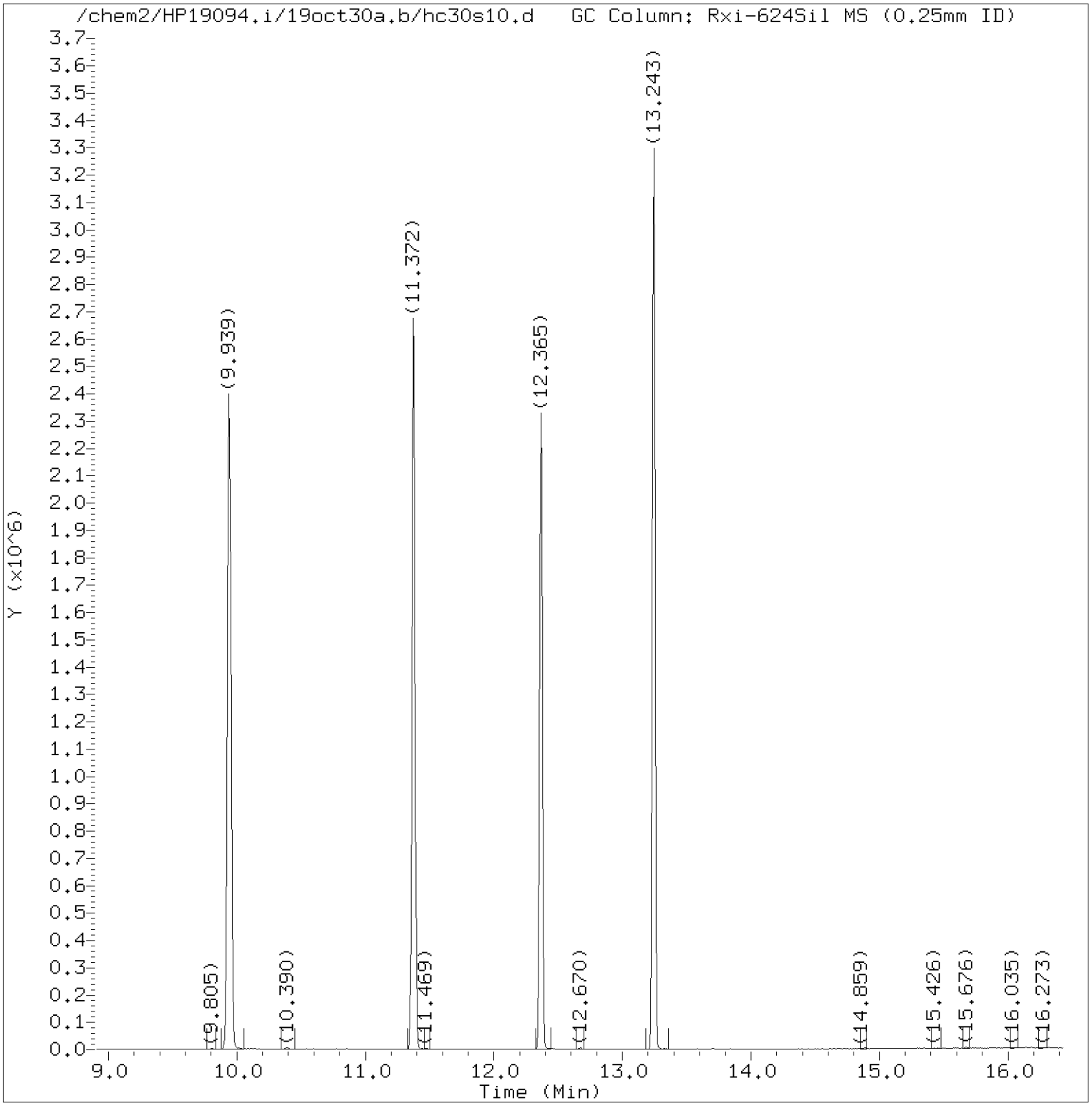
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s10.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:37 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

Sample Name: F4810 Lab Sample ID: 1183617

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s10.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:37 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

Sample Name: F4810 Lab Sample ID: 1183617

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s10.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:37 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

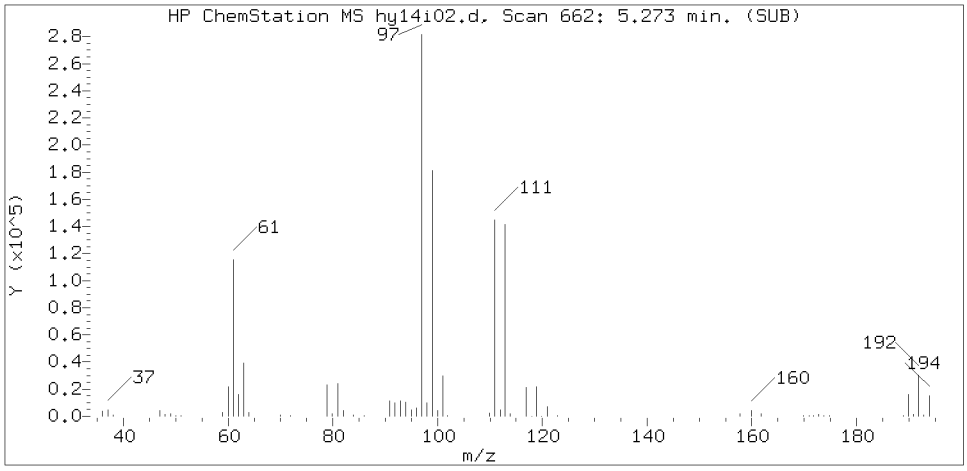
Sample Name: F4810 Lab Sample ID: 1183617

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.464	65	125620	50.000
50)$Dibromofluoromethane	(2)	7.061	113	499960	9.973
51) 1,1,1-Trichloroethane	(2)	7.080	97	15316	0.187
57)$1,2-Dichloroethane-d4	(2)	7.519	102	91634	9.941
63)*Fluorobenzene	(2)	7.952	96	1843480	10.000
82)$Toluene-d8	(3)	9.939	98	1864134	9.746
97)*Chlorobenzene-d5	(3)	11.372	117	1498268	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	671529	9.600
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	781282	10.000

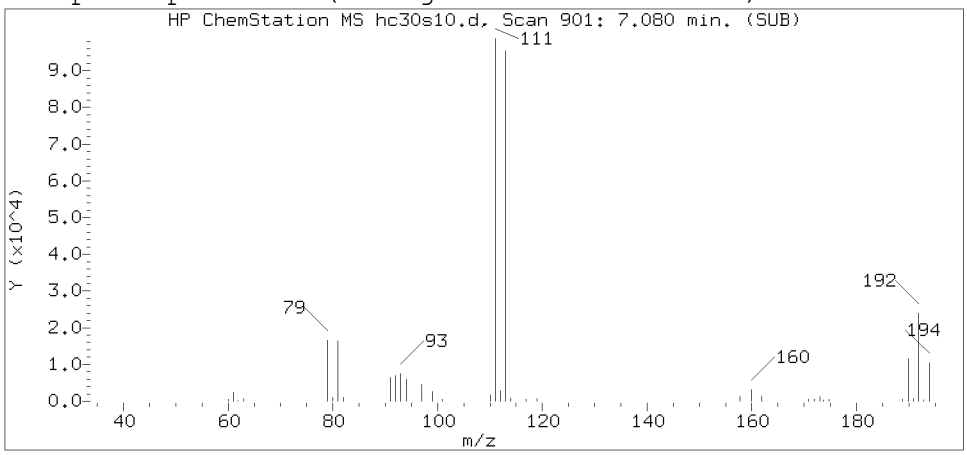
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

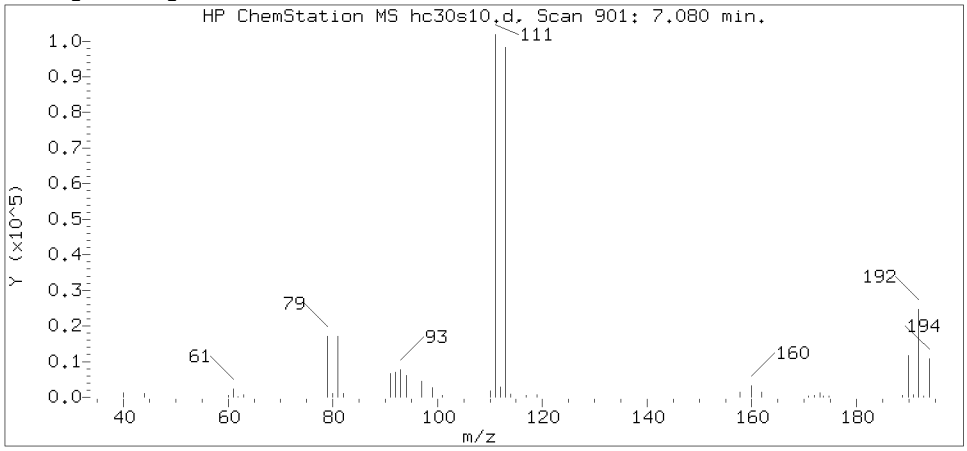
Reference Standard Spectrum for 1,1,1-Trichloroethane

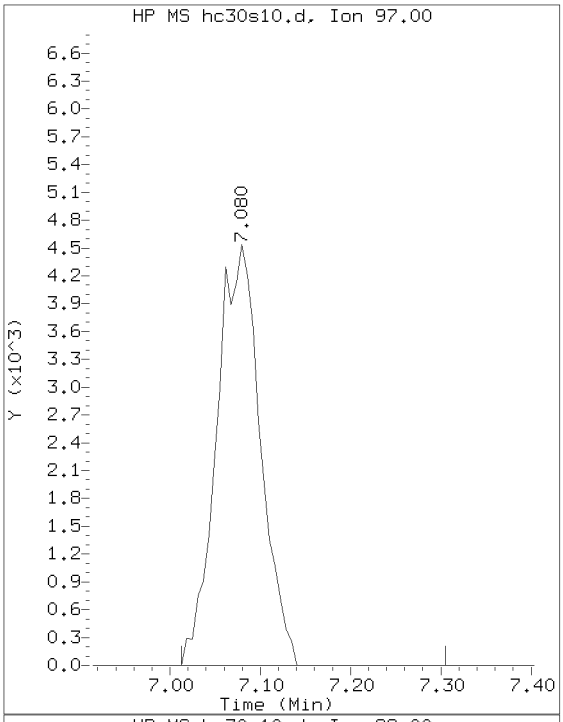


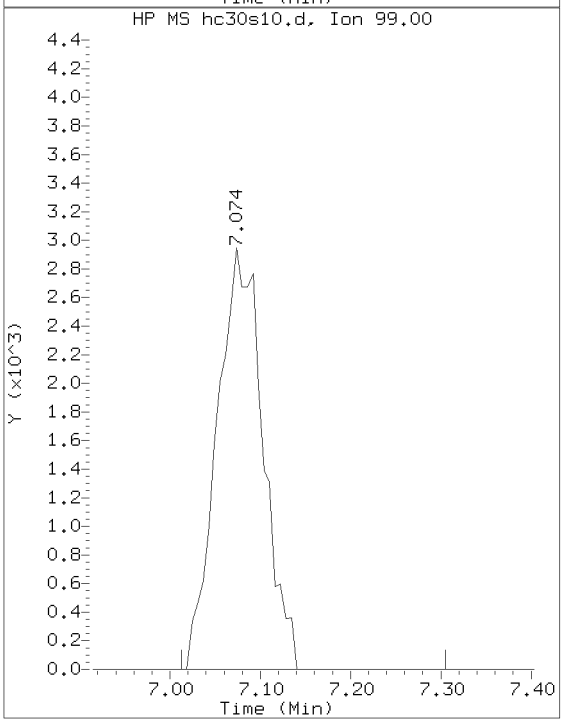
Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)







Data File: /chem2/HP19094.i/19oct30a.b/hc30s10.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:37 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:50 sej02002

Sample Name: F4810 Lab Sample ID: 1183617

Compound Number	: 51
Compound Name	: 1,1,1-Trichloroethane
Scan Number	: 901
Retention Time (minutes)	: 7.080
Relative Retention Time	: 0.00000
Quant Ion	: 97.00
Area (flag)	: 15316
On-Column Amount (ng)	: 0.1874

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Target 3.5 esignature user ID: sej02002

F4811 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183618

Data file: /chem2/HP19094.i/19oct30a.b/hc30s11.d Injection date and time: **30-OCT-2019 13:58**
Data file Sample Info. Line: F4811;1183618;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9145; 9274

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.452	(0.012)	470	65	124789	(-13)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1844614	(-6)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1501637	(-7)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	778737	(-7)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.000)	113	500631	9.980	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.513	(0.002)	102	91053	9.872	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1865399	9.731	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	681810	9.726	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)	5.543	(-0.000)	63	28606	0.342	0.34		J	0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct30a.b/hc30s11.d Injection date and time: **30-OCT-2019 13:58**
Data file Sample Info. Line: F4811;1183618;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

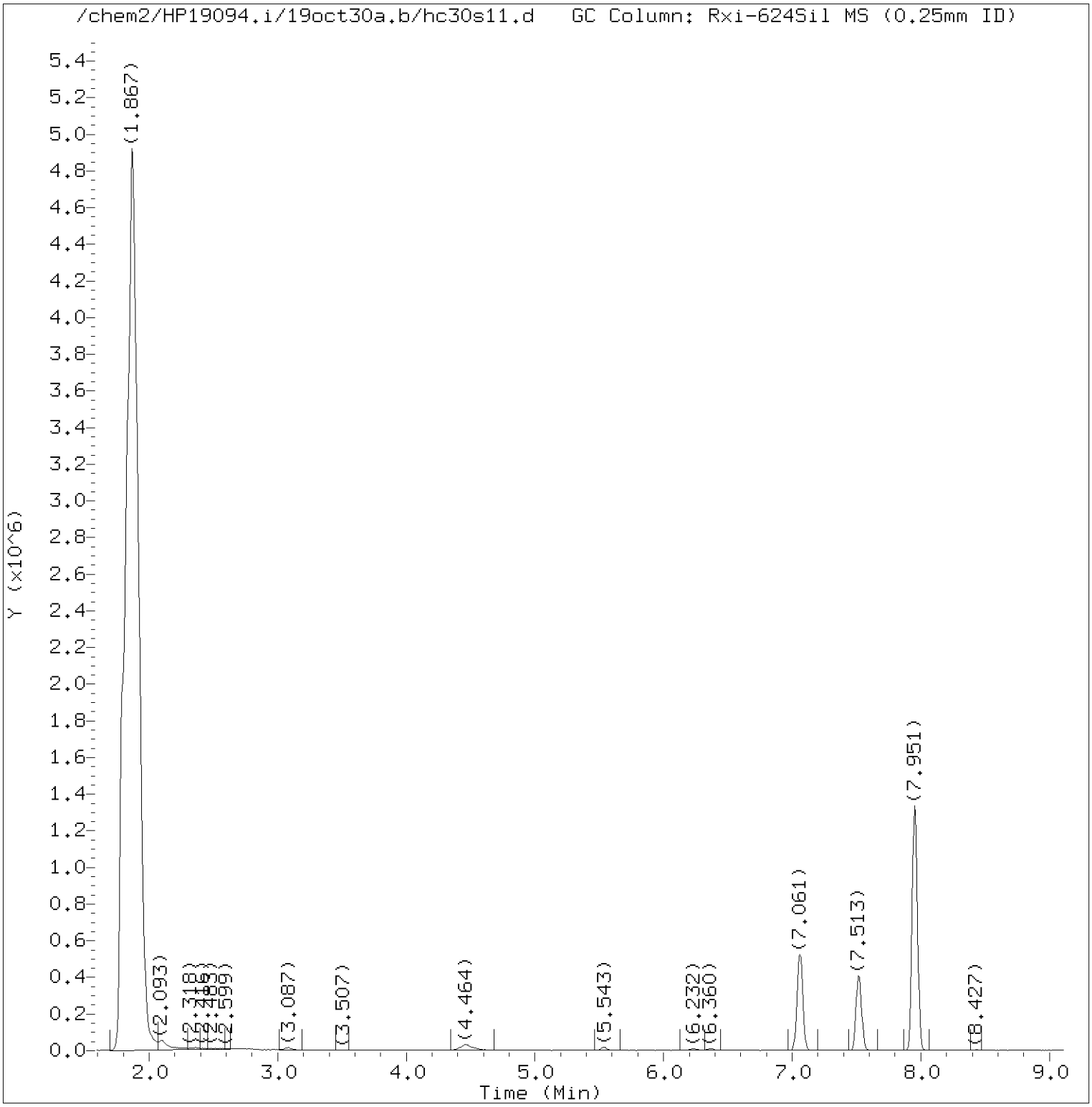
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

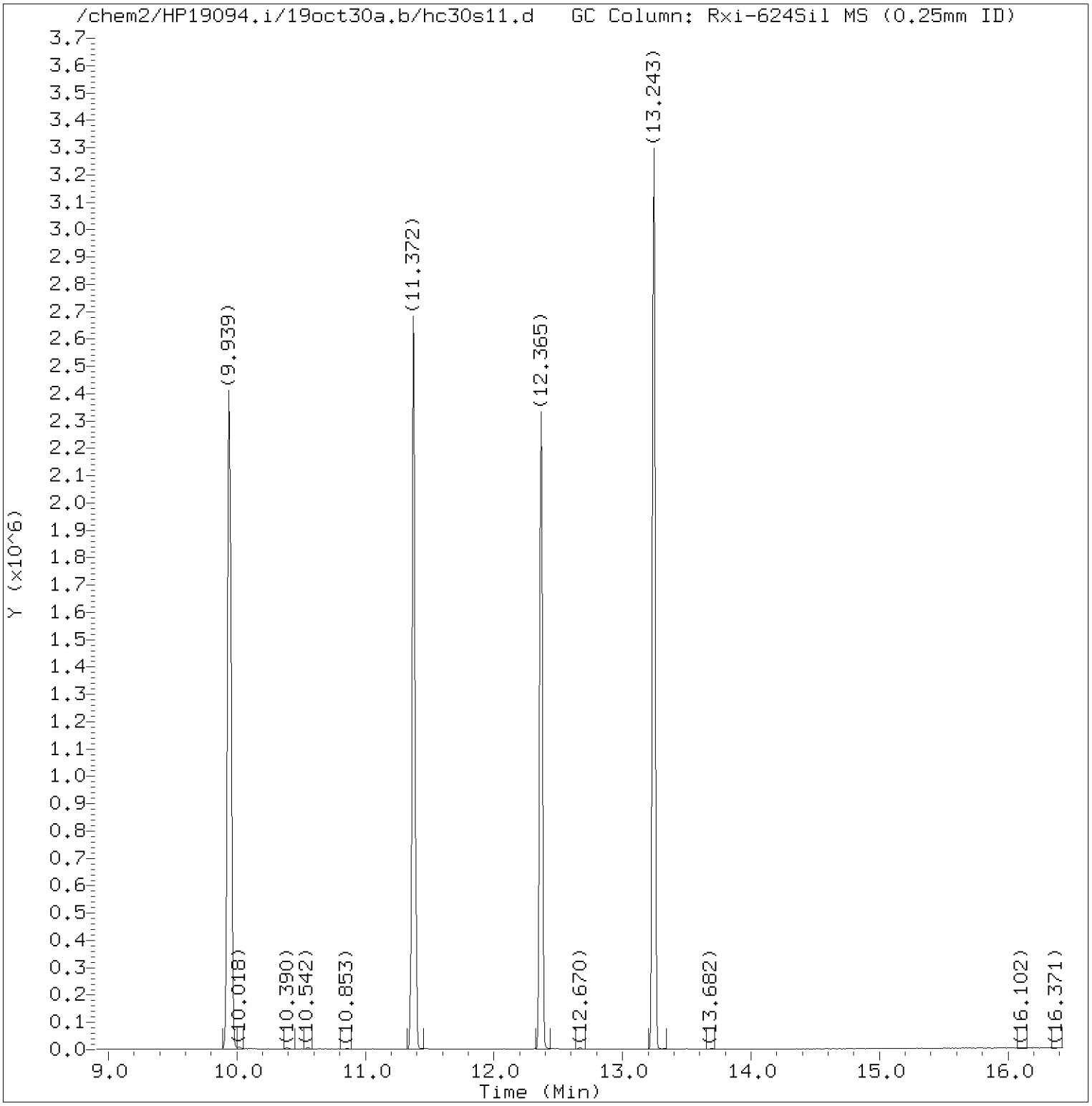
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s11.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:58 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

Sample Name: F4811 Lab Sample ID: 1183618

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s11.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:58 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

Sample Name: F4811 Lab Sample ID: 1183618

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s11.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:58 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

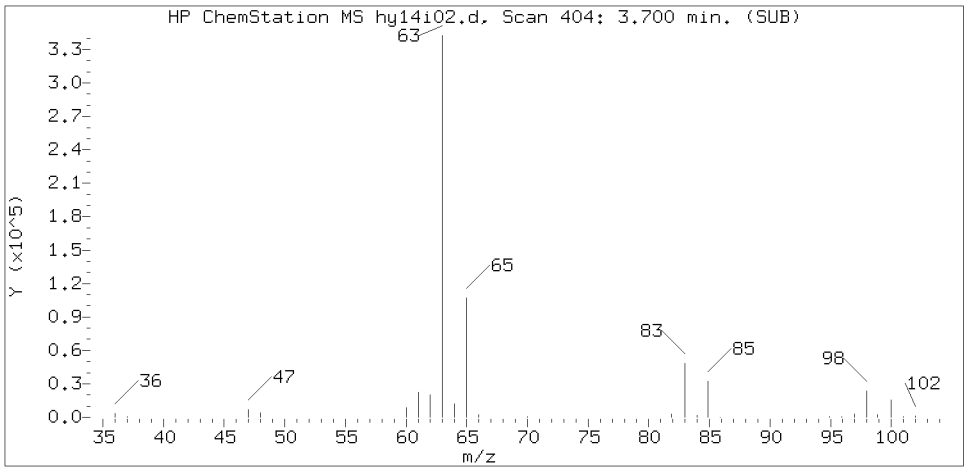
Sample Name: F4811 Lab Sample ID: 1183618

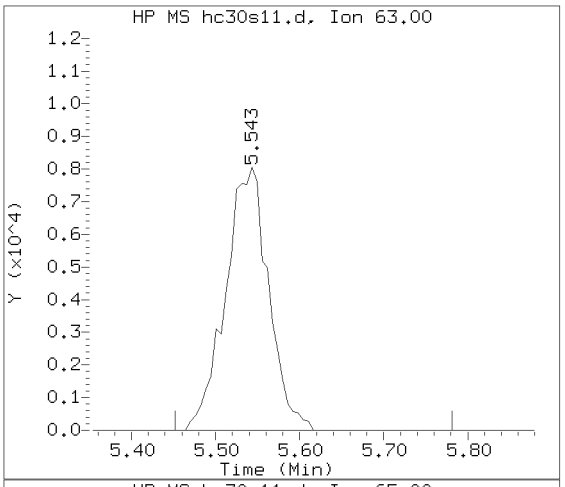
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.452	65	124789	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	28606	0.342
50)$Dibromofluoromethane	(2)	7.061	113	500631	9.980
57)$1,2-Dichloroethane-d4	(2)	7.513	102	91053	9.872
63)*Fluorobenzene	(2)	7.951	96	1844614	10.000
82)$Toluene-d8	(3)	9.939	98	1865399	9.731
97)*Chlorobenzene-d5	(3)	11.372	117	1501637	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	681810	9.726
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	778737	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

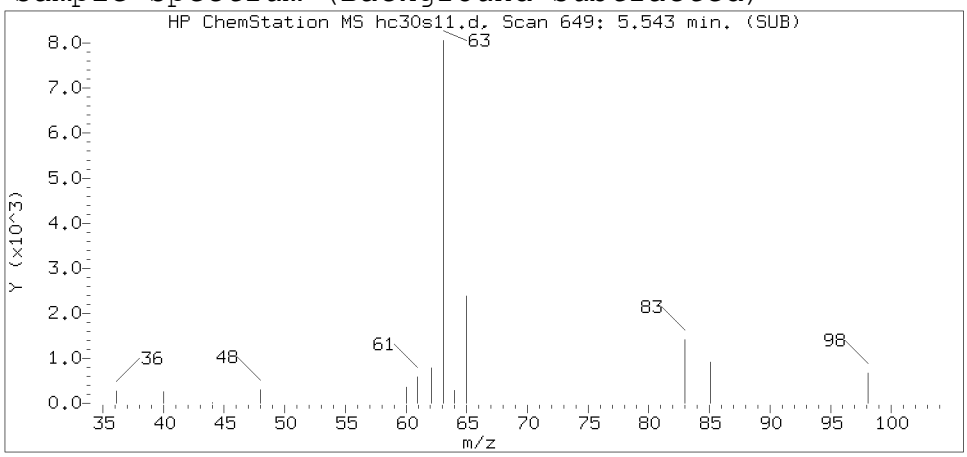
Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

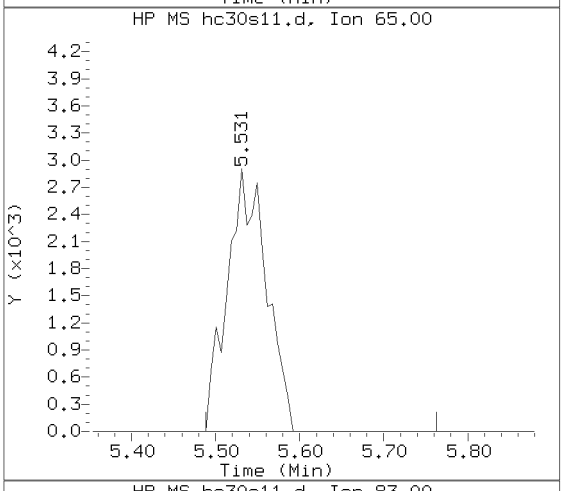
Reference Standard Spectrum for 1,1-Dichloroethane



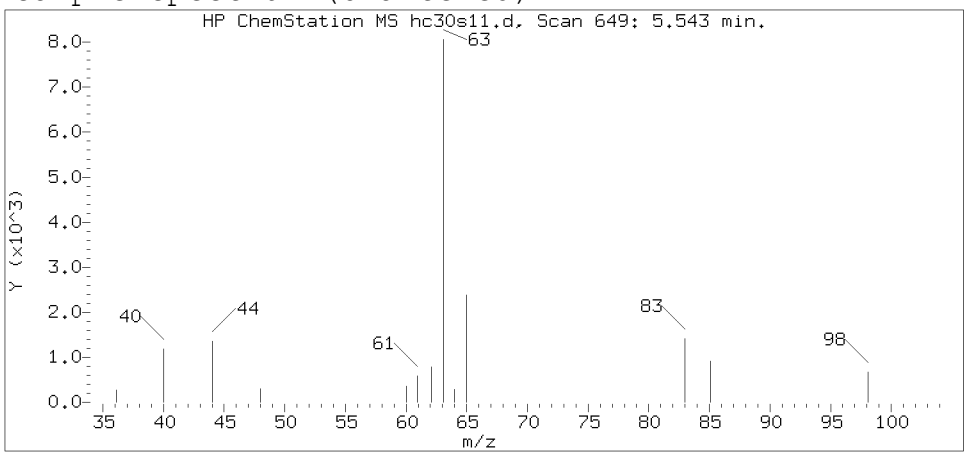


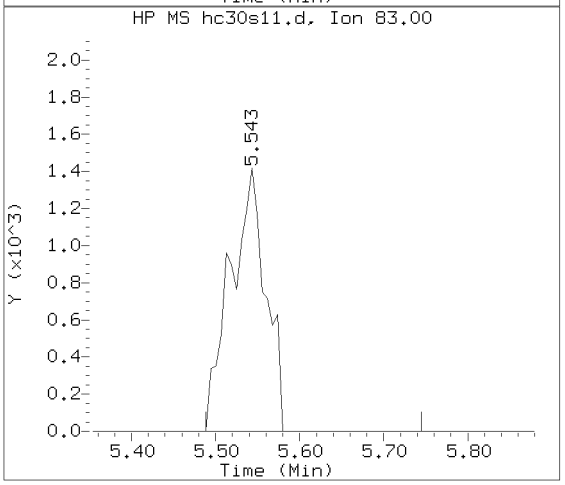
Sample Spectrum (Background Subtracted)





Sample Spectrum (Unaltered)





Data File: /chem2/HP19094.i/19oct30a.b/hc30s11.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 13:58 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:51 sej02002

Sample Name: F4811 Lab Sample ID: 1183618

Compound Number : 33
Compound Name : 1,1-Dichloroethane
Scan Number : 649
Retention Time (minutes): 5.543
Relative Retention Time :-0.00077
Quant Ion : 63.00
Area (flag) : 28606
On-Column Amount (ng) : 0.3423

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

F4812 Lancaster Laboratories
Analysis Summary for GC/MS Volatiles 1183619

Data file: /chem2/HP19094.i/19oct30a.b/hc30s02.d Injection date and time: **30-OCT-2019 10:44**
Data file Sample Info. Line: F4812;1183619;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	133053	(-7)	50.00	
63) Fluorobenzene	7.958	(-0.006)	1045	96	1867741	(-5)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1529030	(-5)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	801090	(-5)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	506266	9.968	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	92198	9.873	99%		80 - 120
82) Toluene-d8	(3)	9.945	(-0.001)	98	1897284	9.720	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	696727	9.760	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:41. Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct30a.b/hc30s02.d Injection date and time: **30-OCT-2019 10:44**
Data file Sample Info. Line: F4812;1183619;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

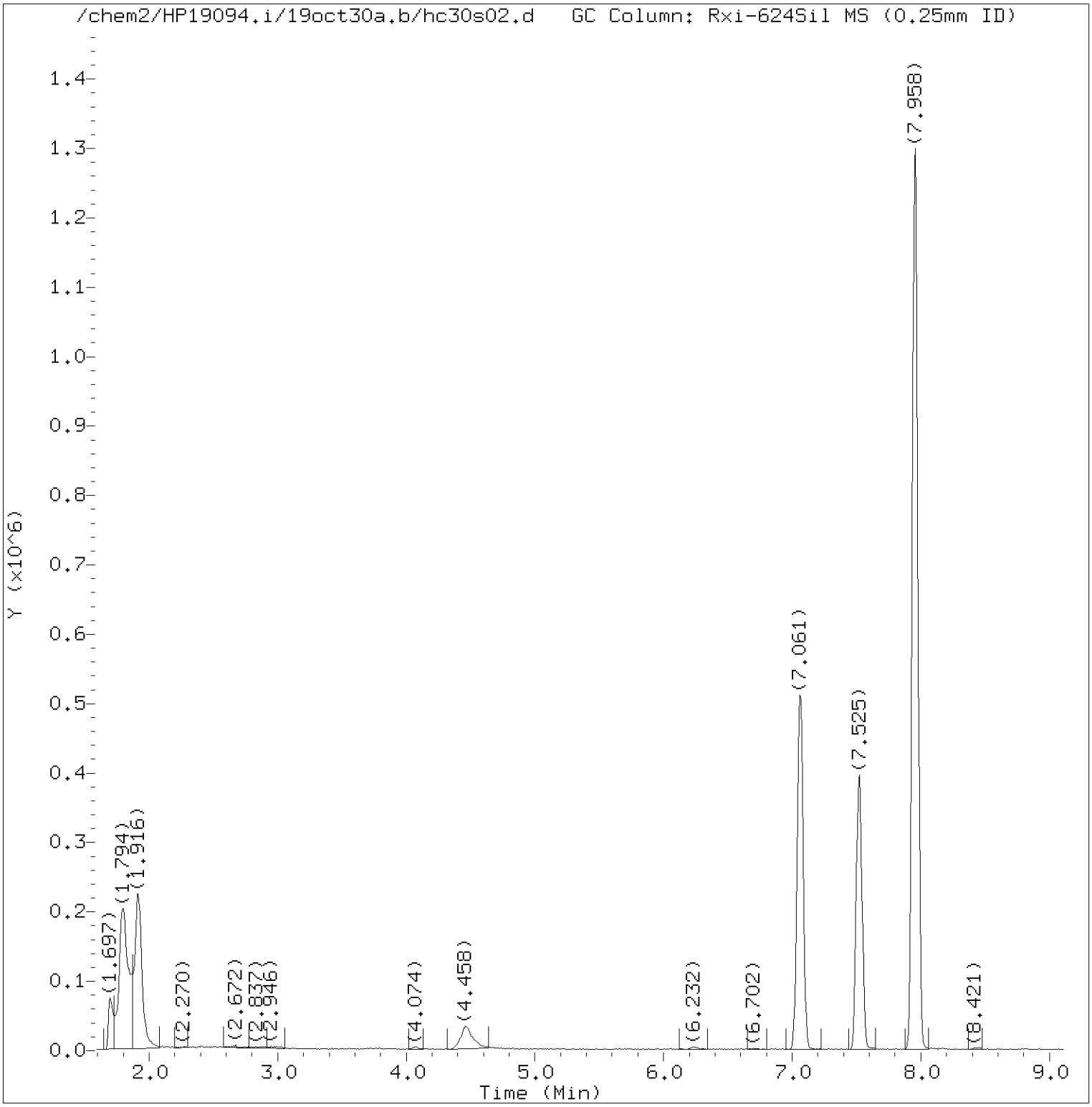
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:41. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

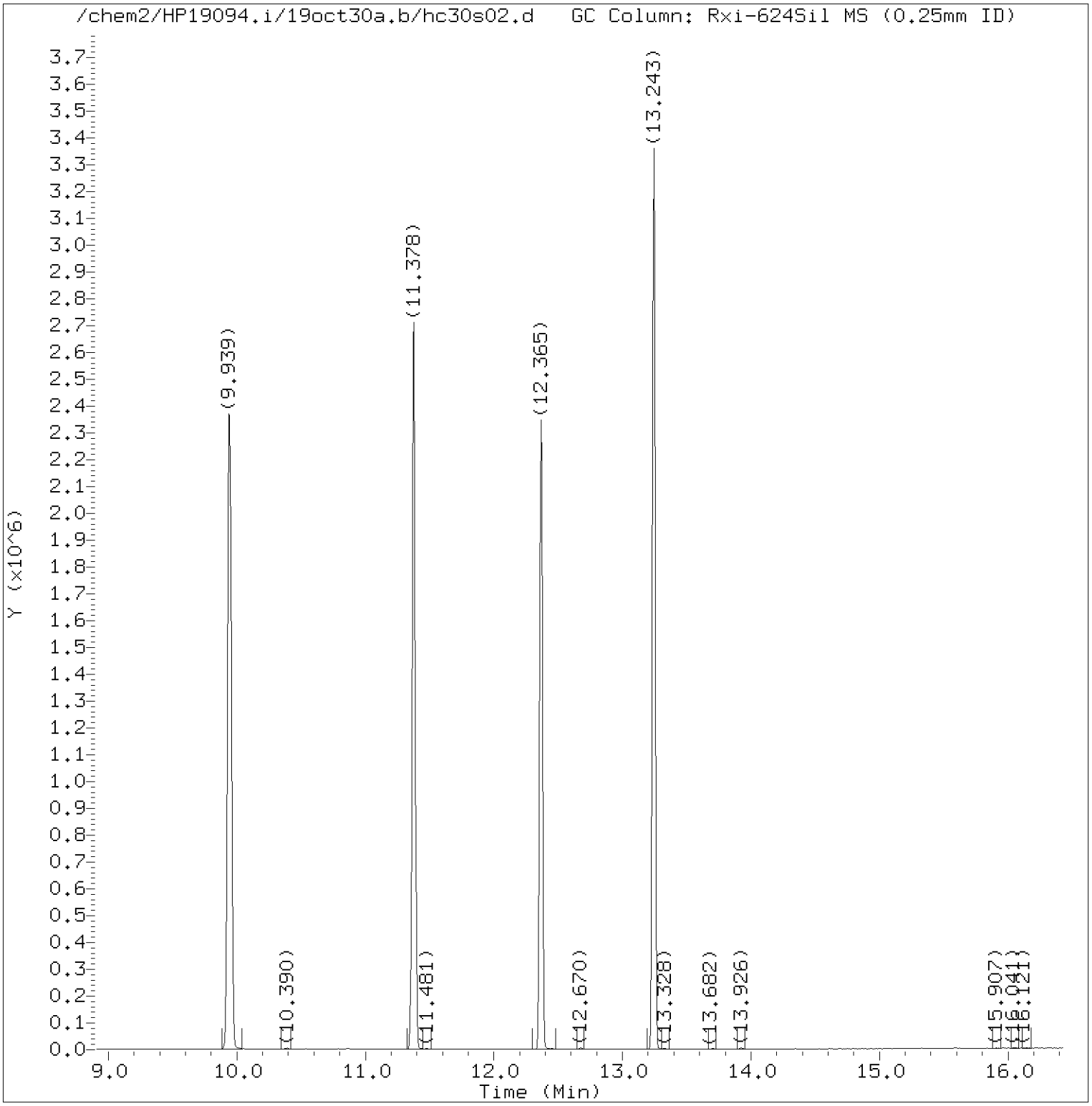
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4812 Lab Sample ID: 1183619

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4812 Lab Sample ID: 1183619

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 10:44 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4812 Lab Sample ID: 1183619

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.464	65	133053	50.000
50)$Dibromofluoromethane	(2)	7.061	113	506266	9.968
57)$1,2-Dichloroethane-d4	(2)	7.519	102	92198	9.873
63)*Fluorobenzene	(2)	7.958	96	1867741	10.000
82)$Toluene-d8	(3)	9.945	98	1897284	9.720
97)*Chlorobenzene-d5	(3)	11.378	117	1529030	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	696727	9.760
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	801090	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052

F4813 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183620

Data file: /chem2/HP19094.i/19oct30a.b/hc30s03.d Injection date and time: **30-OCT-2019 11:06**
Data file Sample Info. Line: F4813;1183620;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:9274;9145

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	131744	(-8)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	1887846	(-4)	10.00	
97) Chlorobenzene-d5	11.377	(0.000)	1606	117	1511951	(-6)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	790351	(-6)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	506125	9.859	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.518	(0.001)	102	92443	9.793	98%		80 - 120
82) Toluene-d8	(3)	9.945	(-0.001)	98	1893771	9.811	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	687340	9.738	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:41. Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct30a.b/hc30s03.d Injection date and time: **30-OCT-2019 11:06**
Data file Sample Info. Line: F4813;1183620;1;0;;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

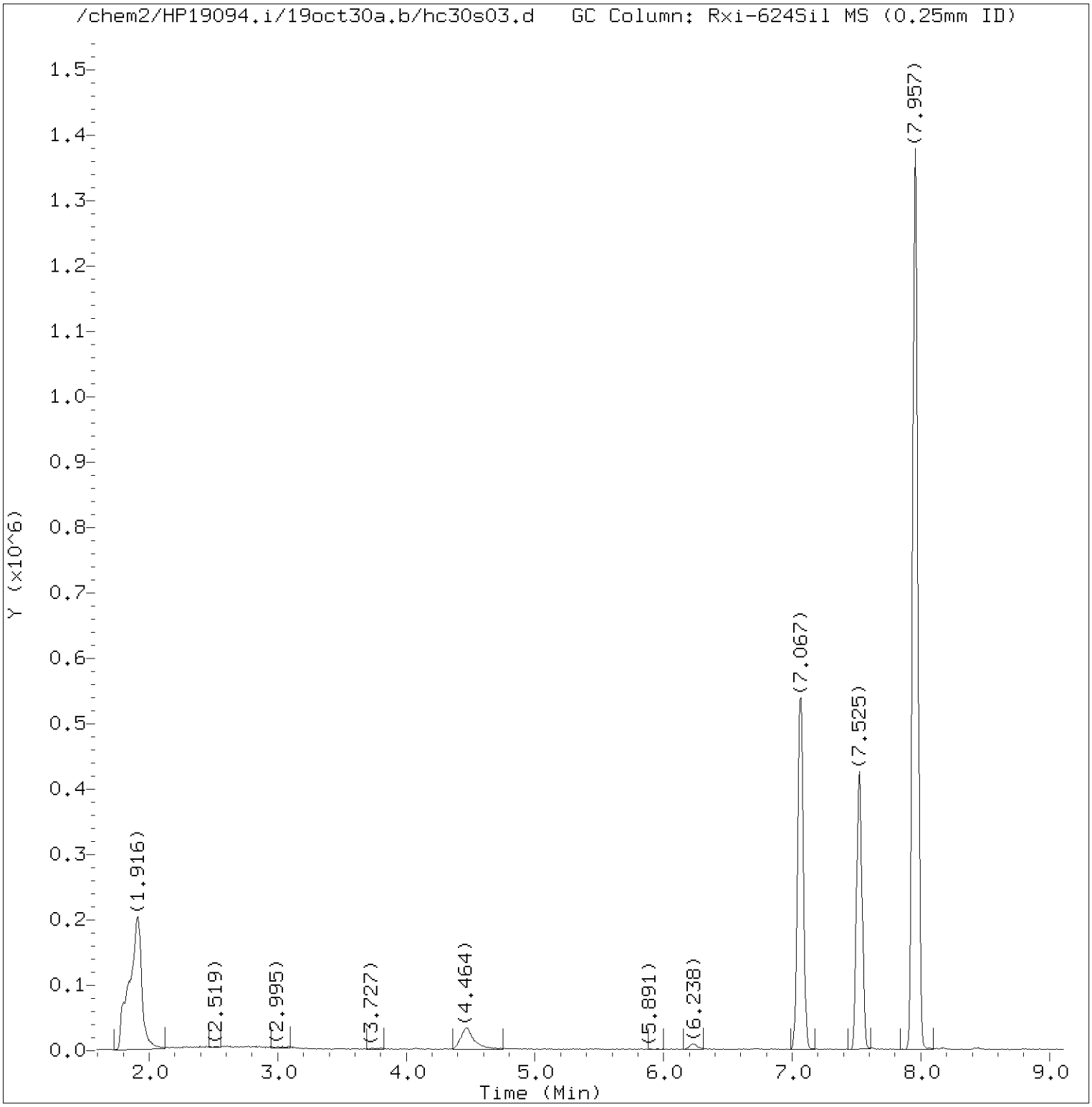
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 13:41. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

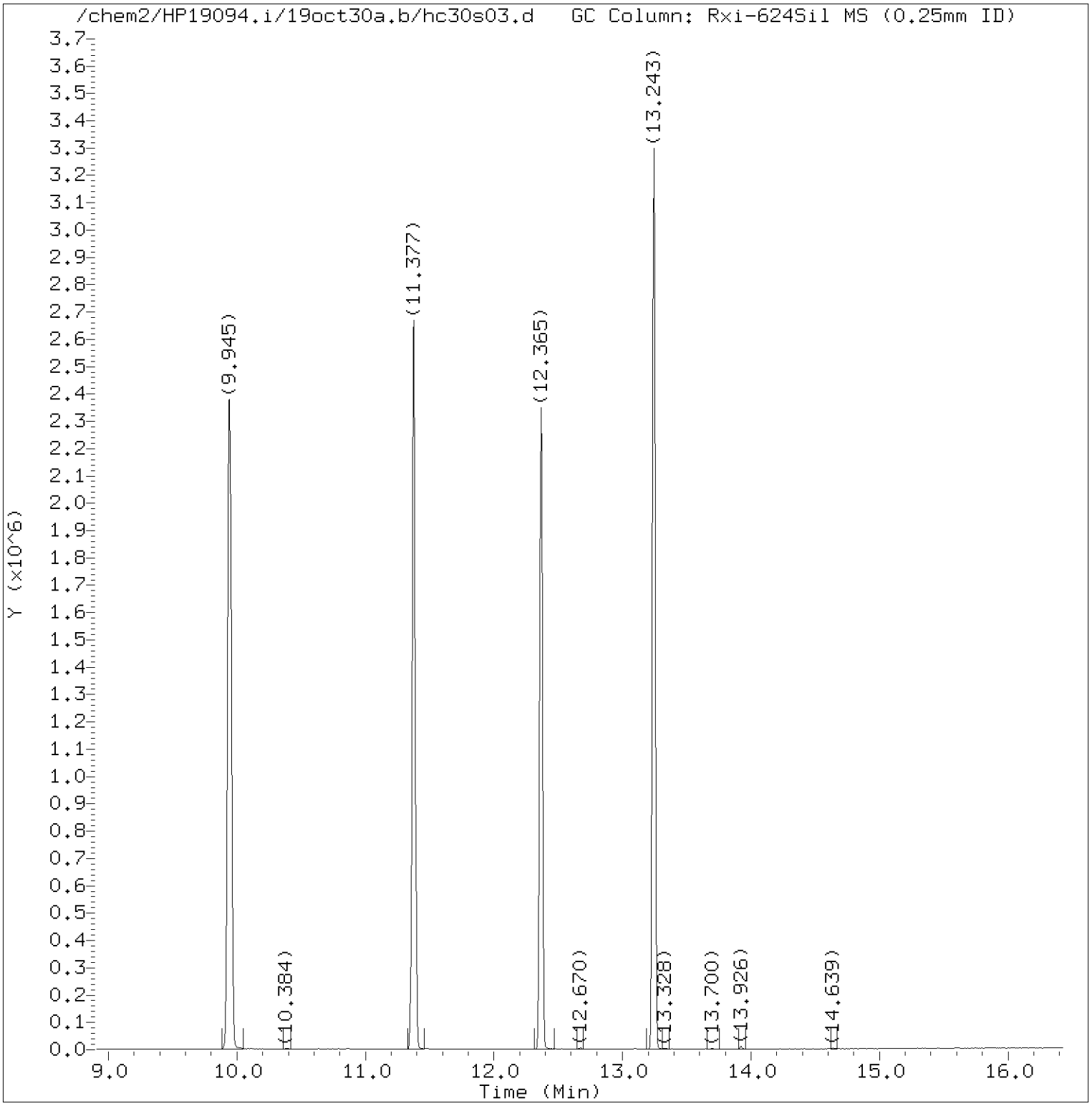
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s03.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:06 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4813 Lab Sample ID: 1183620

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s03.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:06 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4813 Lab Sample ID: 1183620

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s03.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 11:06 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 13:36 jkh09052

Sample Name: F4813 Lab Sample ID: 1183620

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.464	65	131744	50.000
50)$Dibromofluoromethane	(2)	7.067	113	506125	9.859
57)$1,2-Dichloroethane-d4	(2)	7.518	102	92443	9.793
63)*Fluorobenzene	(2)	7.957	96	1887846	10.000
82)$Toluene-d8	(3)	9.945	98	1893771	9.811
97)*Chlorobenzene-d5	(3)	11.377	117	1511951	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	687340	9.738
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	790351	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 13:41.
Target 3.5 esignature user ID: jkh09052

Standards Data

Volatiles by GC/MS

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP19094 **HP #30**

Data Directory Path is - D:\DATA\19AUG05I\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
MEC29284	HG05T05.D	BFB FEB05-19	08/05/2019	17:29		
MEC29284	HG05X01.D	blk	08/05/2019	17:44		
MEC29284	HG05I01.D	VSTD025	08/05/2019	18:05		
MEC29284	HG05I02.D	VSTD010	08/05/2019	18:26		
MEC29284	HG05I03.D	VSTD005	08/05/2019	18:47		
MEC29284	HG05I04.D	VSTD002	08/05/2019	19:09		
MEC29284	HG05I05.D	VSTD001	08/05/2019	19:30		
MEC29284	HG05I06.D	VSTD0.5	08/05/2019	19:52		
MEC29284	HG05I07.D	VSTD0.2	08/05/2019	20:13		
MEC29284	HG05V01.D	ICVH00	08/05/2019	20:35		
MEC29284	HG05X02.D	blk	08/05/2019	20:56		
MEC29284	HG05X03.D	blk	08/05/2019	21:17		
MEC29284	HG05I11.D	VSTD025	08/05/2019	21:39		
MEC29284	HG05I12.D	VSTD010	08/05/2019	22:00		
MEC29284	HG05V02.D	ICVH00	08/05/2019	22:21		
MEC29284	HG05X04.D	blk	08/05/2019	22:43		
MEC29284	HG05I13.D	VSTD005	08/05/2019	23:04		
MEC29284	HG05I14.D	VSTD002	08/05/2019	23:25		
MEC29284	HG05I15.D	VSTD001	08/05/2019	23:47		
MEC29284	HG05I16.D	VSTD0.5	08/06/2019	00:08		
MEC29284	HG05I17.D	VSTD0.2	08/06/2019	00:30		
MEC29284	HG05V11.D	ICVHSM	08/06/2019	00:51		
MEC29284	HG05X05.D	blk	08/06/2019	01:13		

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP19094 **HP #30**

Data Directory Path is - D:\DATA\19OCT30A\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	HC30T01.D	BFB AUG 02 2019	10/30/2019	07:03		
JKH09052	HC30T02.D	BFB AUG 02 2019	10/30/2019	07:12		
jkh09052	HC30x00.D	VBLKH89	10/30/2019	07:22	H193031AA	
jkh09052	HC30C01.D	VSTD010	10/30/2019	07:43	H193031AA	
jkh09052	HC30C02.D	VSTD010	10/30/2019	08:05	H193031AA	
jkh09052	HC30L01.D	LCSH89	10/30/2019	08:26	H193031AA	
jkh09052	HC30L02.D	LCDH89	10/30/2019	08:48	H193031AA	
jkh09052	HC30B01.D	VBLKH89	10/30/2019	09:09	H193031AA	
jkh09052	HC30R01.D	RVLH89	10/30/2019	09:31	H193031AA	
jkh09052	HC30S02.D	1183619	10/30/2019	10:44	H193031AA	
jkh09052	HC30S03.D	1183620	10/30/2019	11:06	H193031AA	
jkh09052	HC30S04.D	1183607	10/30/2019	11:27	H193031AA	
jkh09052	HC30S05.D	1183612	10/30/2019	11:49	H193031AA	
jkh09052	HC30S06.D	1183613	10/30/2019	12:10	H193031AA	
jkh09052	HC30S07.D	1183614	10/30/2019	12:32	H193031AA	
jkh09052	HC30S08.D	1183615	10/30/2019	12:53	H193031AA	
jkh09052	HC30S09.D	1183616	10/30/2019	13:15	H193031AA	
jkh09052	HC30S10.D	1183617	10/30/2019	13:37	H193031AA	
jkh09052	HC30S11.D	1183618	10/30/2019	13:58	H193031AA	
jkh09052	HC30S12.D	1183609	10/30/2019	14:20	H193031AA	
jkh09052	HC30S13.D	1183610MS	10/30/2019	14:42	H193031AA	
jkh09052	HC30S14.D	1183611MSD	10/30/2019	15:03	H193031AA	
jkh09052	HC30S15.D	1183610MS	10/30/2019	15:25	H193031AA	
jkh09052	HC30S16.D	1183611MSD	10/30/2019	15:46	H193031AA	
jkh09052	HC30S17.D	1183606	10/30/2019	16:08	H193031AA	
jkh09052	HC30S18.D	1183606DL	10/30/2019	16:29	H193031AA	2.5
jkh09052	HC30S19.D	1183608	10/30/2019	16:51	H193031AA	
jkh09052	HC30S20.D	1183608DL	10/30/2019	17:12	H193031AA	2.5

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP19094 **HP #30**

Data Directory Path is - D:\DATA\19OCT31A\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	HC31T01.D	BFB AUG 02 2019	10/31/2019	07:20		
jkh09052	HC31X00.D	VBLKH90	10/31/2019	07:35	H193041AA	
jkh09052	HC31C01.D	VSTD010	10/31/2019	07:56	H193041AA	
jkh09052	HC31L01.D	LCSH90	10/31/2019	08:18	H193041AA	
jkh09052	HC31L02.D	LCDH90	10/31/2019	08:39	H193041AA	
jkh09052	HC31X01.D	RVLH90	10/31/2019	09:01	H193041AA	
jkh09052	HC31B01.D	VBLKH90	10/31/2019	09:22	H193041AA	
jkh09052	HC31S02.D	1187660	10/31/2019	09:47	H193041AA	
jkh09052	HC31B02.D	VBLKH90	10/31/2019	10:09	H193041AA	
jkh09052	HC31S03.D	1184853RE	10/31/2019	10:32	H193041AA	
jkh09052	HC31S04.D	1184860DL	10/31/2019	10:54	H193041AA	10
jkh09052	HC31S25.D	1187660	10/31/2019	11:15	H193041AA	
jkh09052	HC31S05.D	1184841	10/31/2019	11:36	H193041AA	
jkh09052	HC31S06.D	1187654	10/31/2019	11:58	H193041AA	
jkh09052	HC31S07.D	1187656	10/31/2019	12:19	H193041AA	
jkh09052	HC31S08.D	1187661	10/31/2019	12:41	H193041AA	
jkh09052	HC31S09.D	1187062	10/31/2019	13:02	H193041AA	
jkh09052	HC31S10.D	1186734	10/31/2019	13:24	H193041AA	
jkh09052	HC31S11.D	1186735	10/31/2019	13:46	H193041AA	
jkh09052	HC31S12.D	1186736	10/31/2019	14:07	H193041AA	
jkh09052	HC31S13.D	1186737	10/31/2019	14:29	H193041AA	
jkh09052	HC31S14.D	1186738	10/31/2019	14:51	H193041AA	
jkh09052	HC31S15.D	1186739	10/31/2019	15:12	H193041AA	
jkh09052	HC31S31.D	1183608DL	10/31/2019	15:34	H193031AB	4
jkh09052	HC31S16.D	1184843	10/31/2019	15:55	H193041AA	20
jkh09052	HC31S17.D	1184843DL	10/31/2019	16:17	H193041AA	200
jkh09052	HC31S18.D	1187658	10/31/2019	16:38	H193041AA	10
jkh09052	HC31S19.D	1187658DL	10/31/2019	17:00	H193041AA	100
jkh09052	HC31S20.D	1184678RE	10/31/2019	17:21	H193041AA	
jkh09052	HC31S21.D	1184683	10/31/2019	17:43	H193041AA	2
jkh09052	HC31S22.D	1184683DL	10/31/2019	18:05	H193041AA	20
jkh09052	HC31S23.D	1184680	10/31/2019	18:26	H193041AA	2
jkh09052	HC31S24.D	1184680DL	10/31/2019	18:48	H193041AA	20

Data File: /chem2/HP19094.i/19aug05i.b/hg05t05.d

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng

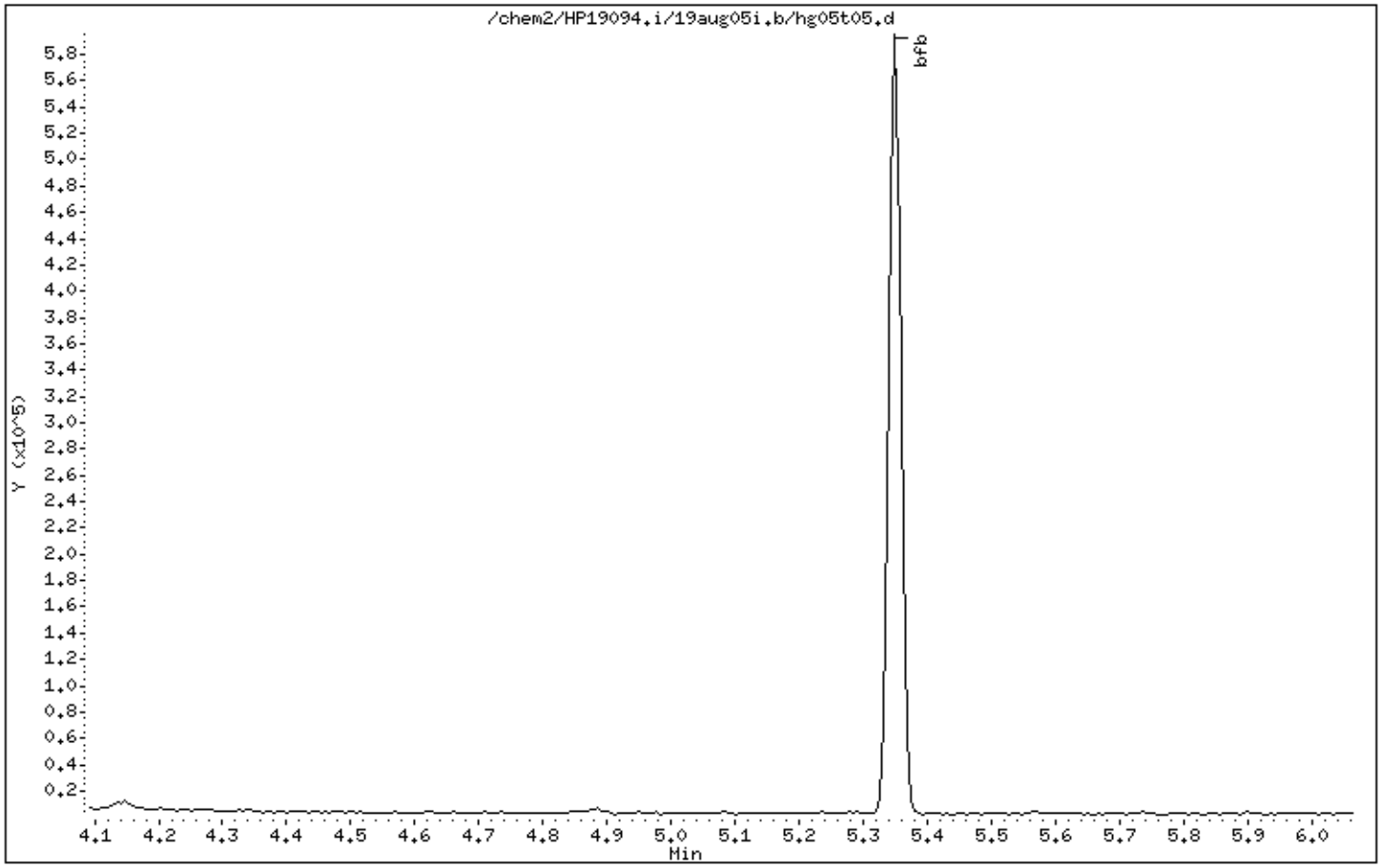
Instrument: HP19094.i

Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP19094.i/19aug05i.b/hg05t05.d

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng

Instrument: HP19094.i

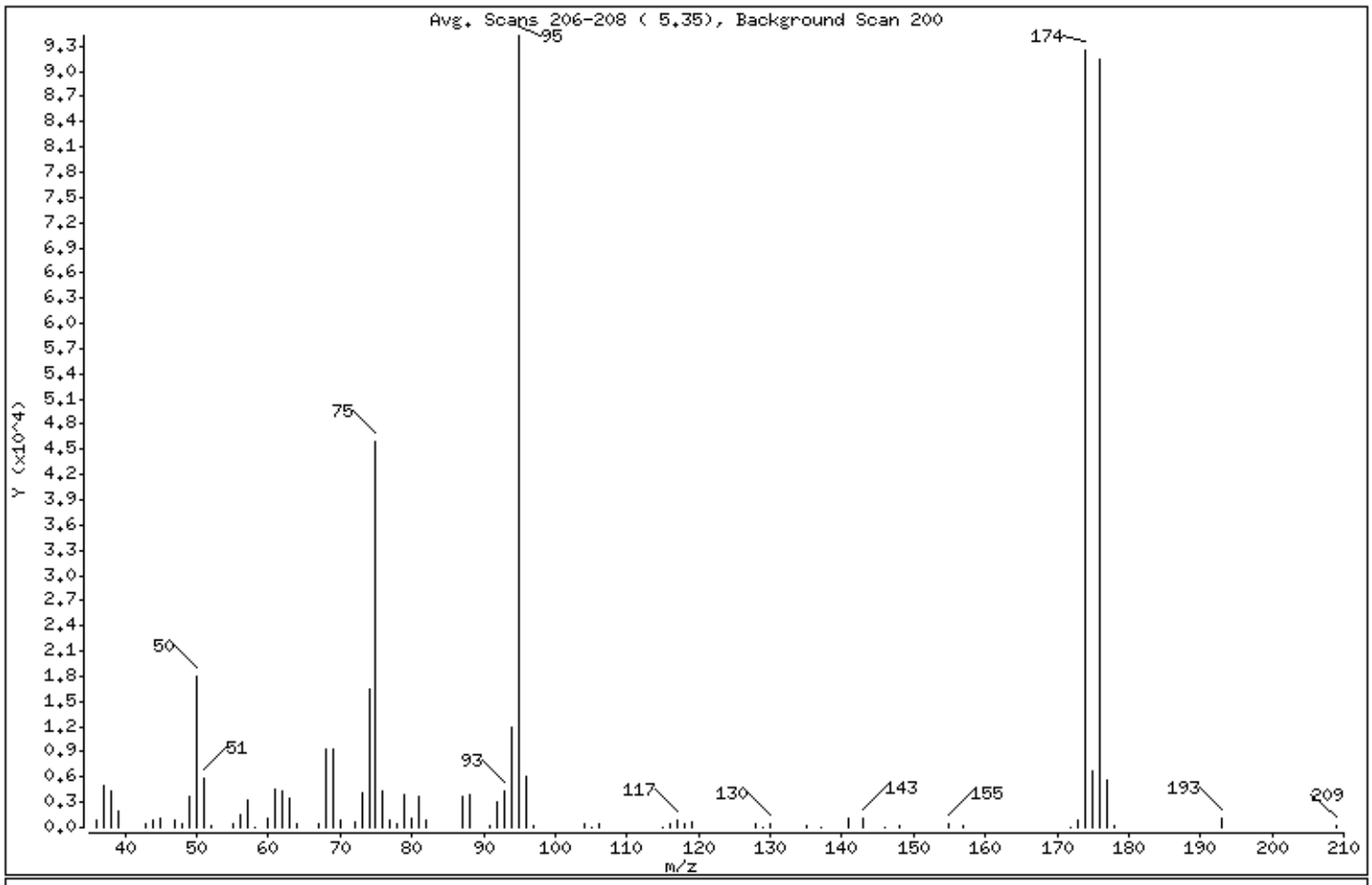
Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.02
75	30.00 - 60.00% of mass 95	48.65
96	5.00 - 9.00% of mass 95	6.54
173	Less than 2.00% of mass 174	0.85 (0.86)
174	50.00 - 100.00% of mass 95	98.21
175	5.00 - 9.00% of mass 174	7.12 (7.25)
176	95.00 - 101.00% of mass 174	97.06 (98.84)
177	5.00 - 9.00% of mass 176	6.08 (6.26)

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng Instrument: HP19094.i

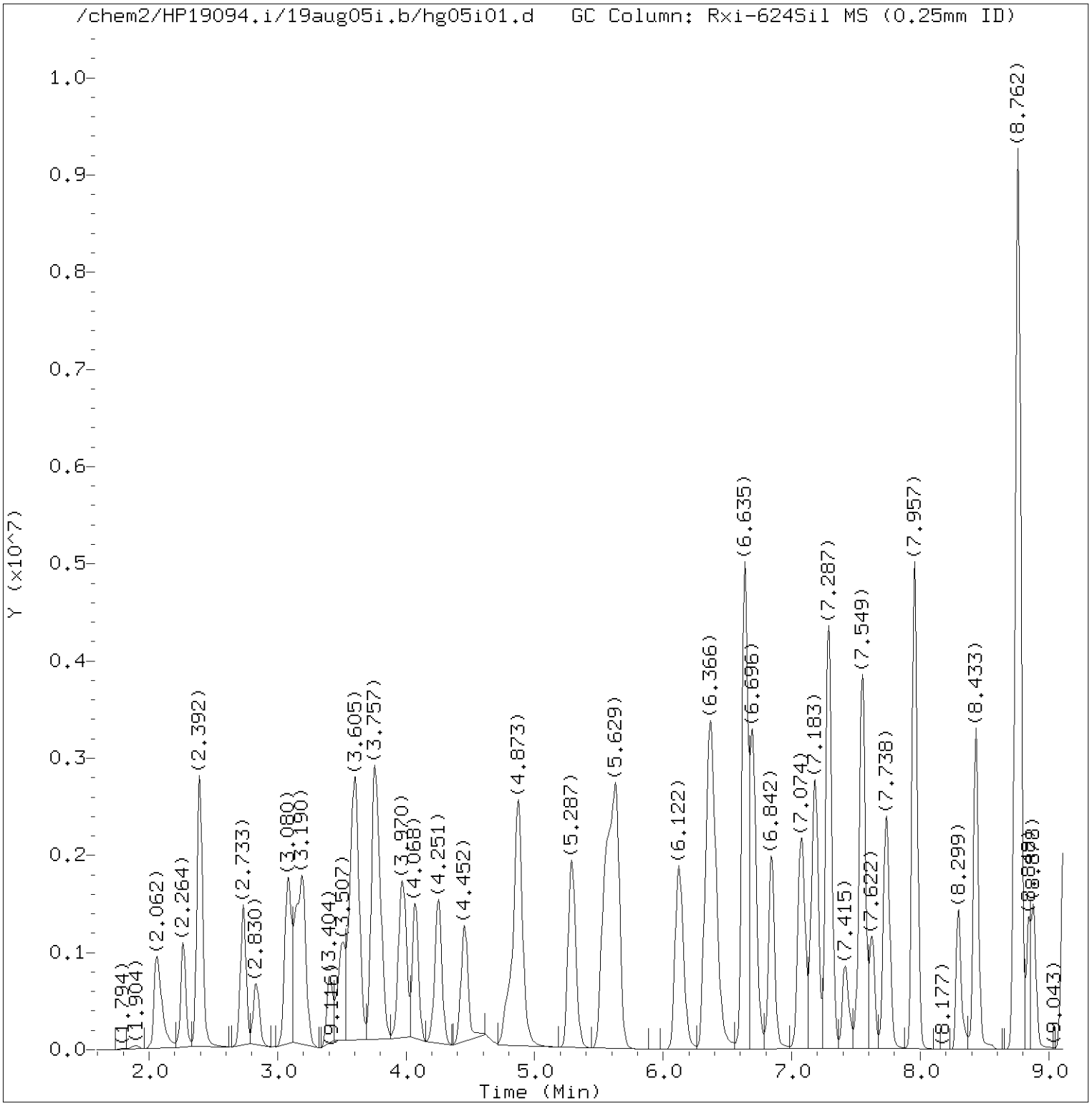
Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: hg05t05.d
Spectrum: Avg. Scans 206-208 (5.35), Background Scan 200
Location of Maximum: 95.00
Number of points: 74

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	919	62.00	4430	88.00	3963	135.00	242
37.00	4926	63.00	3535	91.00	290	137.00	107
38.00	4272	64.00	330	92.00	2938	141.00	985
39.00	1971	67.00	437	93.00	4424	143.00	1055
43.00	395	68.00	9263	94.00	11847	146.00	99
44.00	957	69.00	9322	95.00	94256	148.00	145
45.00	1037	70.00	921	96.00	6167	155.00	443
47.00	895	72.00	652	97.00	222	157.00	200
48.00	487	73.00	4146	104.00	460	172.00	94
49.00	3732	74.00	16381	105.00	88	173.00	799
50.00	17928	75.00	45856	106.00	515	174.00	92560
51.00	5824	76.00	4358	115.00	93	175.00	6715
52.00	217	77.00	774	116.00	389	176.00	91488
55.00	455	78.00	348	117.00	806	177.00	5729
56.00	1567	79.00	3918	118.00	528	178.00	137
57.00	3175	80.00	1012	119.00	729	193.00	1001
58.00	97	81.00	3776	128.00	371	209.00	228
60.00	1065	82.00	952	129.00	103		
61.00	4600	87.00	3779	130.00	528		



Total Ion Chromatogram (TIC)

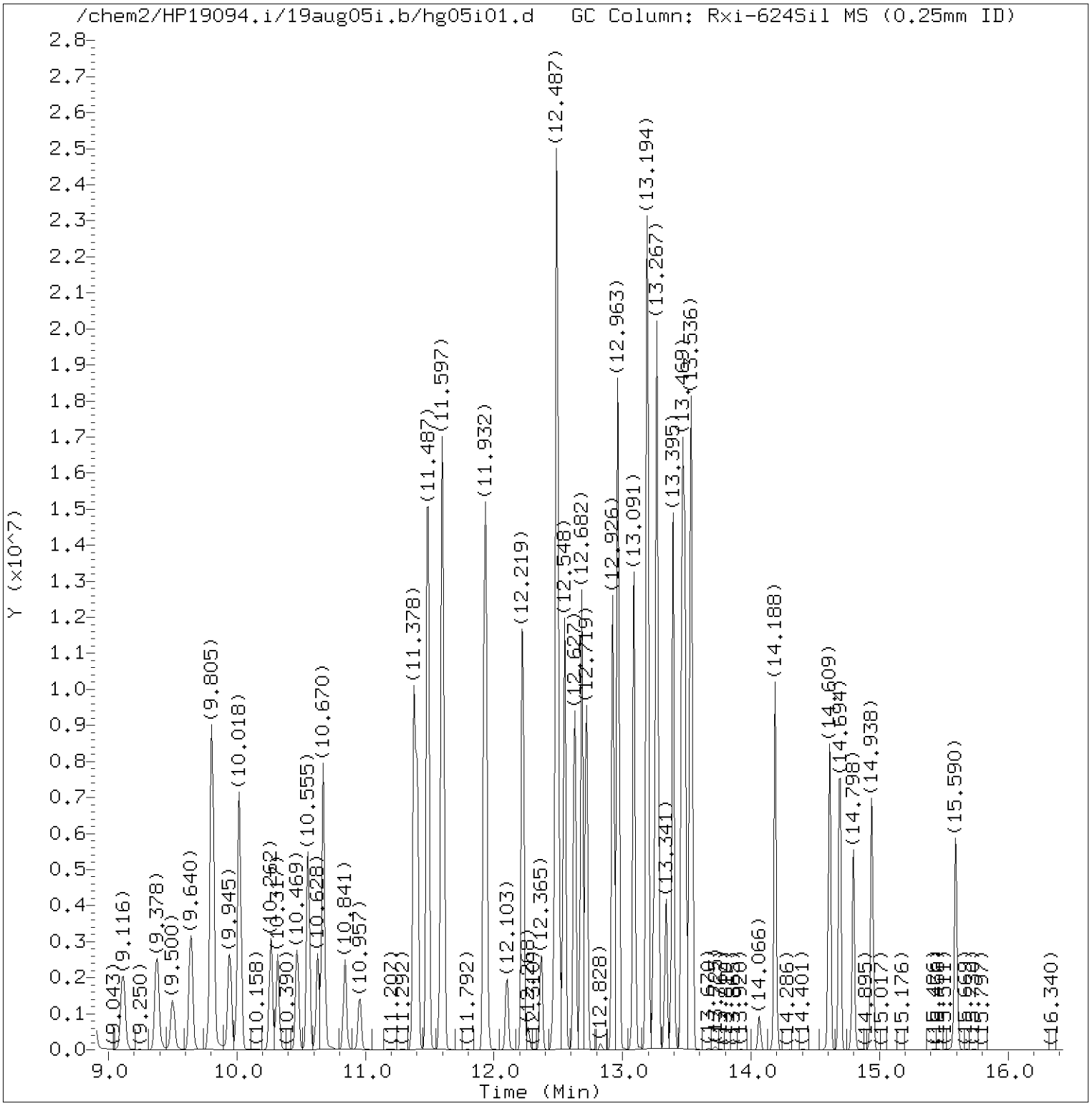
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.062	85	2485461	23.343
2) Chloromethane	(2)	2.264	50	1818093	23.318
5) Vinyl Chloride	(2)	2.385	62	1865764	23.787
6) 1,3-Butadiene	(2)	2.398	39	1466100M	23.311
7) Bromomethane	(2)	2.733	94	1660098	23.984
8) Chloroethane	(2)	2.837	64	1102182	24.002
9) Dichlorofluoromethane	(2)	3.080	67	2275074	22.589
10) Trichlorofluoromethane	(2)	3.141	101	2948773M	23.752
11) Ethyl ether	(2)	3.404	59	845352	24.436
12) Freon 123a	(2)	3.501	67	1549773	24.538
13) Acrolein	(1)	3.605	56	6354525	1332.328
15) 1,1-Dichloroethene	(2)	3.751	96	1157244	25.561
14) Acetone	(1)	3.763	43	1432398M	215.308
16) Freon 113	(2)	3.775	101	1453169	25.664
17) Methyl Iodide	(2)	3.958	142	2681542	24.687
18) Carbon Disulfide	(2)	4.074	76	3730829	24.799
21) Methyl Acetate	(1)	4.202	43	518185M	25.012
22) Allyl Chloride	(2)	4.251	41	1783271	23.219
23) Methylene Chloride	(2)	4.452	84	1231009	22.808
26)*t-Butyl Alcohol-d10	(1)	4.476	65	100076	50.000
28) t-Butyl Alcohol	(1)	4.598	59	888942	476.258
29) Acrylonitrile	(1)	4.793	53	1038987	134.835
30) Methyl Tertiary Butyl Ether	(2)	4.867	73	2840913	24.251
31) trans-1,2-Dichloroethene	(2)	4.879	96	1282560	24.676
32) n-Hexane	(2)	5.287	57	2026330	25.630
33) 1,1-Dichloroethane	(2)	5.537	63	2298612	24.971
34) di-Isopropyl Ether	(2)	5.586	45	3920034	24.696
35) 2-Chloro-1,3-Butadiene	(2)	5.641	53	2188004	25.637
40) 1,2-Dichloroethene (Total)	(2)		96	2756258	49.905
37) Ethyl t-butyl ether	(2)	6.122	59	3629850	24.014
38) 2-Butanone	(1)	6.324	43	2789026	259.503
39) cis-1,2-Dichloroethene	(2)	6.366	96	1473698	25.228
41) 2,2-Dichloropropane	(2)	6.385	77	2080774	24.893
42) Propionitrile	(1)	6.421	54	1424975	518.300
45) Methacrylonitrile	(1)	6.635	67	3066481	279.989
47) Bromochloromethane	(2)	6.696	128	693594	25.003
48) Tetrahydrofuran	(1)	6.702	71	808400	271.447
49) Chloroform	(2)	6.842	83	2428756	25.111

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	553236	10.014
50)$Dibromofluoromethane	(2)	7.061	111	565176	10.068
51) 1,1,1-Trichloroethane	(2)	7.086	97	2305476	25.603
52) Cyclohexane	(2)	7.183	56	2400163	25.759
52) Cyclohexane	(2)	7.183	84	2204706	25.474
52) Cyclohexane	(2)	7.183	69	758871	25.244
55) 1,1-Dichloropropene	(2)	7.281	75	1871457	25.630
54) Carbon Tetrachloride	(2)	7.293	117	2149995	25.529
56) Isobutyl Alcohol	(1)	7.415	41	857963	1122.940
57)$1,2-Dichloroethane-d4	(2)	7.525	102	102031	10.044
57)$1,2-Dichloroethane-d4	(2)	7.519	65	492780	10.026
57)$1,2-Dichloroethane-d4	(2)	7.519	104	65184	10.016
58) Benzene	(2)	7.549	78	5260440	25.603
59) 1,2-Dichloroethane	(2)	7.628	62	1412696	24.409
60) t-Amyl methyl ether	(2)	7.738	73	3345035	24.566
62) n-Heptane	(2)	7.957	43	2257308	26.567
63)*Fluorobenzene	(2)	7.957	96	2031582	10.000
65) n-Butanol	(1)	8.299	56	1496875	2403.308
67) Trichloroethene	(2)	8.433	95	1474964	25.555
69) Methylcyclohexane	(2)	8.750	83	2634354	25.956
70) 1,2-Dichloropropane	(2)	8.774	63	1280868	25.333
71) Methyl Methacrylate	(1)	8.841	69	626813	28.128
72) 1,4-Dioxane	(1)	8.854	88	158194M	1051.090
73) Dibromomethane	(2)	8.884	93	676621	24.956
74) Bromodichloromethane	(2)	9.116	83	1806537	25.936
76) 2-Nitropropane	(1)	9.378	41	2206304	278.755
80) cis-1,3-Dichloropropene	(2)	9.640	75	2093232	26.354
81) 4-Methyl-2-Pentanone	(1)	9.805	43	7599790	278.934
82)$Toluene-d8	(3)	9.945	98	2095479	9.790
82)$Toluene-d8	(3)	9.945	100	1355113	9.899
83) Toluene	(3)	10.018	92	3534049	24.810
85) 1,3-Dichloropropene (total)	(3)		75	3877411	51.736
84) trans-1,3-Dichloropropene	(3)	10.262	75	1784179	25.382
86) Ethyl Methacrylate	(3)	10.317	69	1403174	24.976
88) 1,1,2-Trichloroethane	(3)	10.469	97	930425	24.365
89) Tetrachloroethene	(3)	10.555	166	1790155	25.034
90) 1,3-Dichloropropane	(3)	10.628	76	1549905	24.477
91) 2-Hexanone	(1)	10.670	43	5300933	276.961

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	1365269	25.491
95) 1,2-Dibromoethane	(3)	10.957	107	961917	25.007
96) 1-Chlorohexane	(3)	11.378	91	2121874	24.422
97)*Chlorobenzene-d5	(3)	11.378	117	1676695	10.000
98) Chlorobenzene	(3)	11.402	112	4026576	24.931
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	1514675	25.149
100) Ethylbenzene	(3)	11.487	91	7031283	24.964
101) m+p-Xylene	(3)	11.597	106	5559647	49.743
105) Xylene (Total)	(3)		106	8319205	74.995
104) o-Xylene	(3)	11.926	106	2759558	25.258
106) Styrene	(3)	11.938	104	4565080	25.707
107) Bromoform	(3)	12.103	173	873901	26.206
108) Isopropylbenzene	(3)	12.225	105	7482180	25.669
111)$4-Bromofluorobenzene	(3)	12.365	95	772786	9.872
111)$4-Bromofluorobenzene	(3)	12.371	174	746864	9.979
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	1136996	25.235
114) Bromobenzene	(4)	12.487	156	1824159	25.911
115) trans-1,4-Dichloro-2-butene	(1)	12.493	53	3371309A	297.832
116) 1,2,3-Trichloropropane	(4)	12.511	110	307167	24.558
117) n-Propylbenzene	(4)	12.548	91	8448976	25.445
119) 2-Chlorotoluene	(4)	12.627	126	1733545	25.374
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	6260087	25.832
122) 4-Chlorotoluene	(4)	12.719	126	1761690	25.084
125) tert-Butylbenzene	(4)	12.926	134	1396602	26.096
126) Pentachloroethane	(4)	12.963	167	1283760	25.997
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	6505655	25.927
128) sec-Butylbenzene	(4)	13.091	105	8373466	26.257
131) 1,3-Dichlorobenzene	(4)	13.188	146	3612507	26.309
132) p-Isopropyltoluene	(4)	13.194	119	7386924	26.800
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	921308	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	3519032	25.766
135) 1,2,3-Trimethylbenzene	(4)	13.274	120	2818011	25.079
136) Benzyl Chloride	(4)	13.341	126	589613	26.922
138) n-Butylbenzene	(4)	13.487	92	3675682	27.091
139) 1,2-Dichlorobenzene	(4)	13.523	146	3221452	26.152
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	190764A	30.035
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	2916307	27.431
145) 1,2,4-Trichlorobenzene	(4)	14.615	180	2475528	27.845

A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

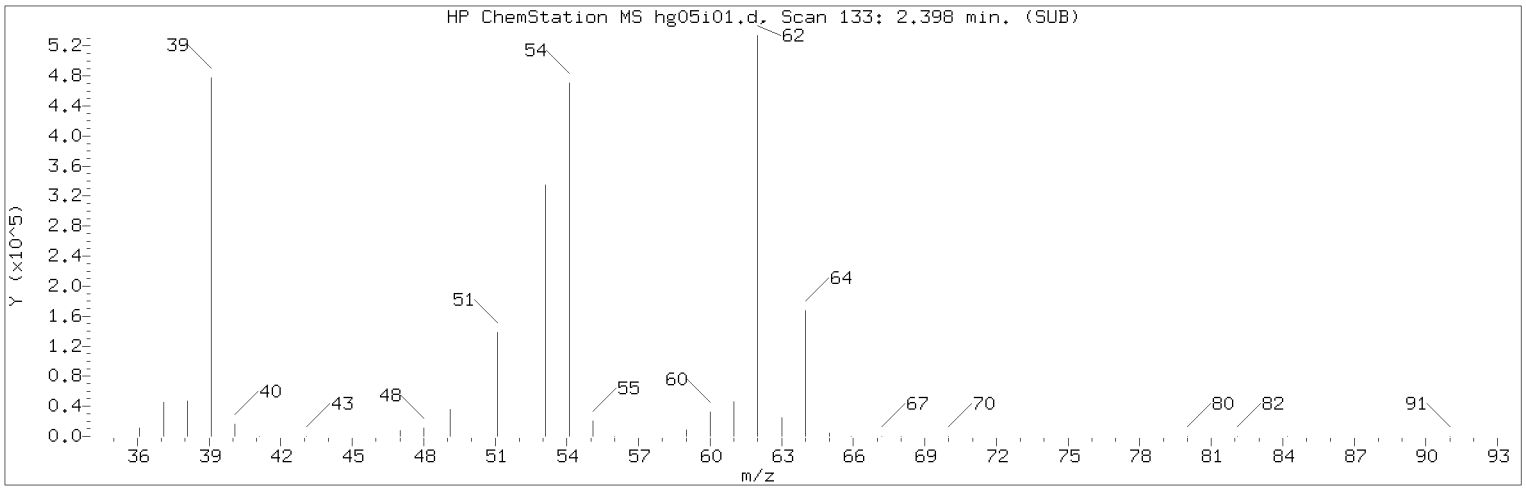
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

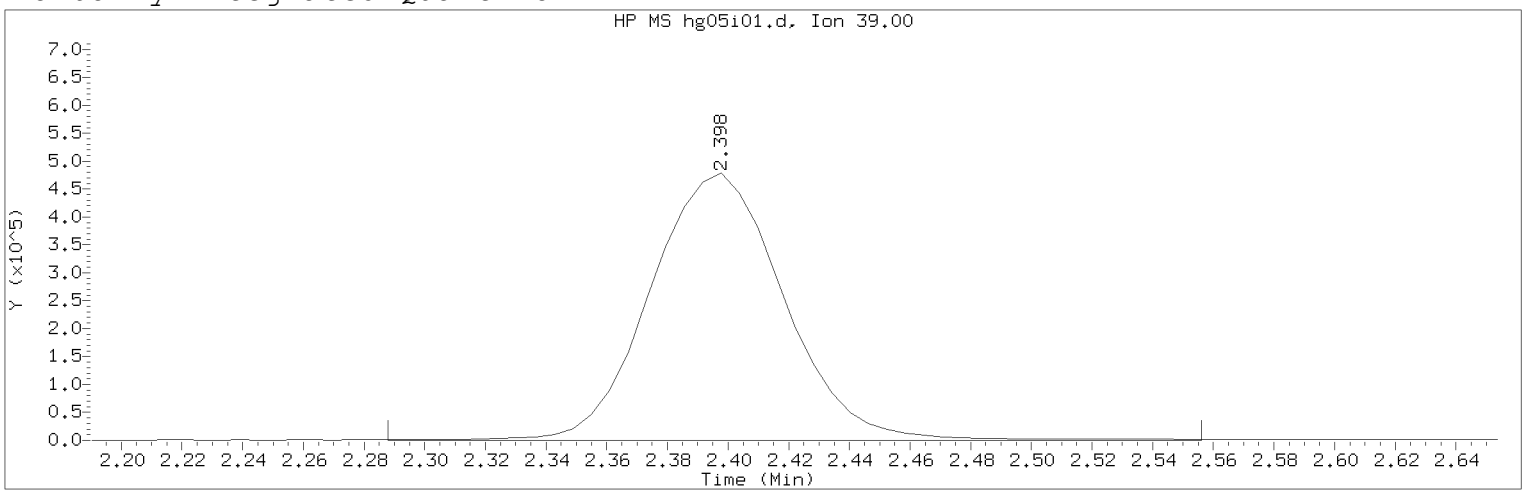
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	1316667	28.555
147) Naphthalene	(4)	14.798	128	4101585	25.976
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	2107513	27.086

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

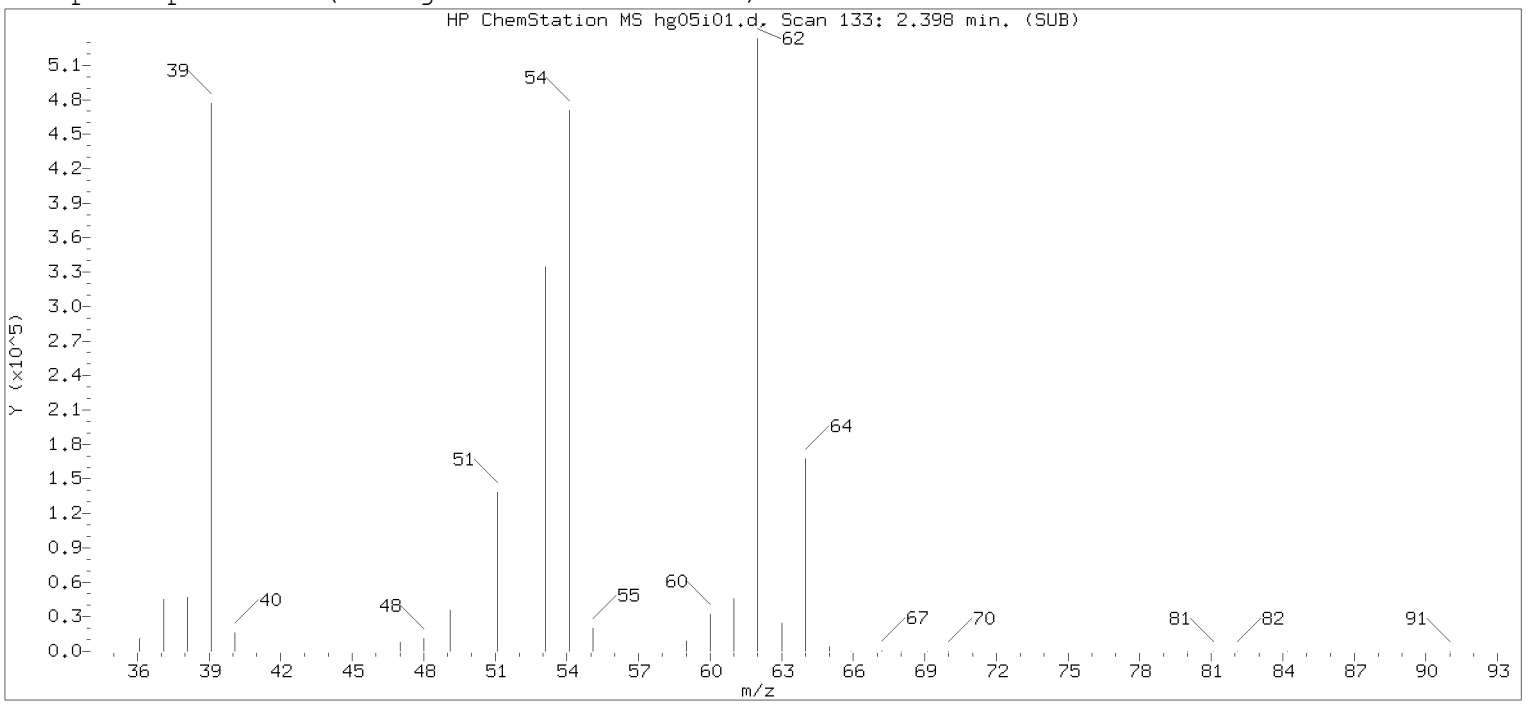
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 133
Retention Time (minutes): 2.398
Quant Ion : 39.00
Area (flag) : 1466100M
On-Column Amount (ng) : 23.3113
Integration start scan : 114 Integration stop scan: 158
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

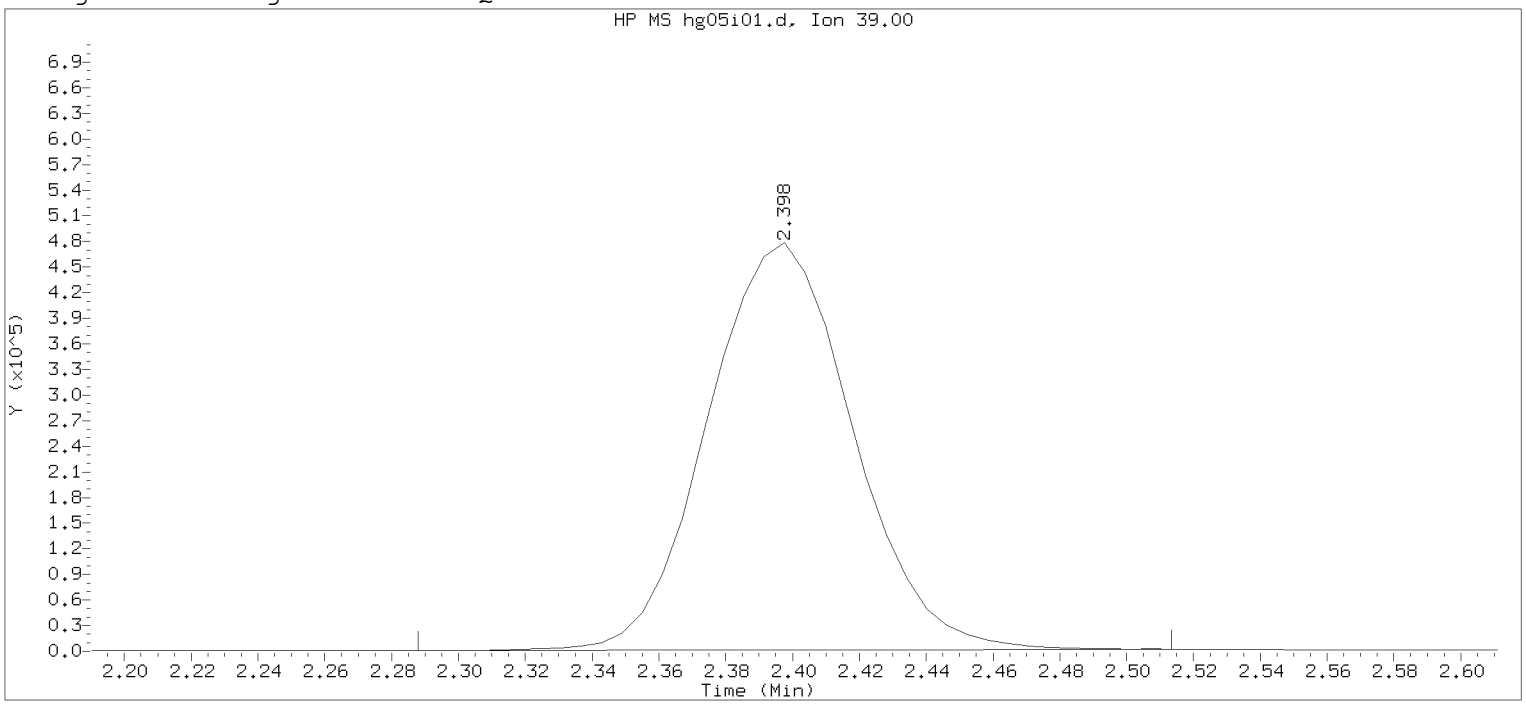
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

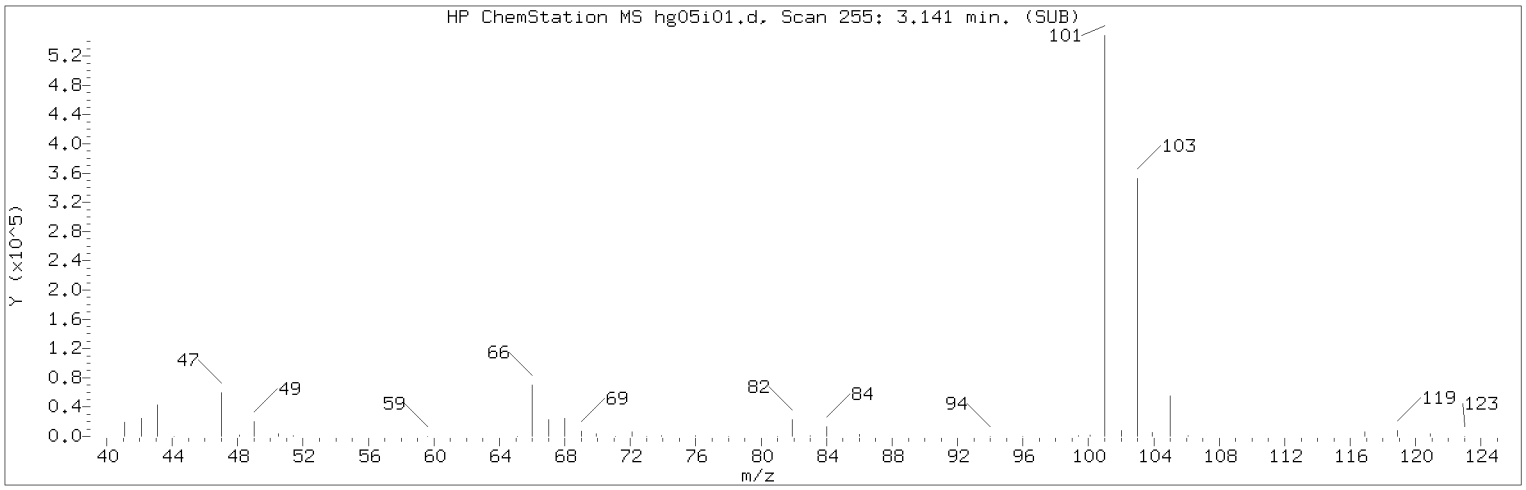
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

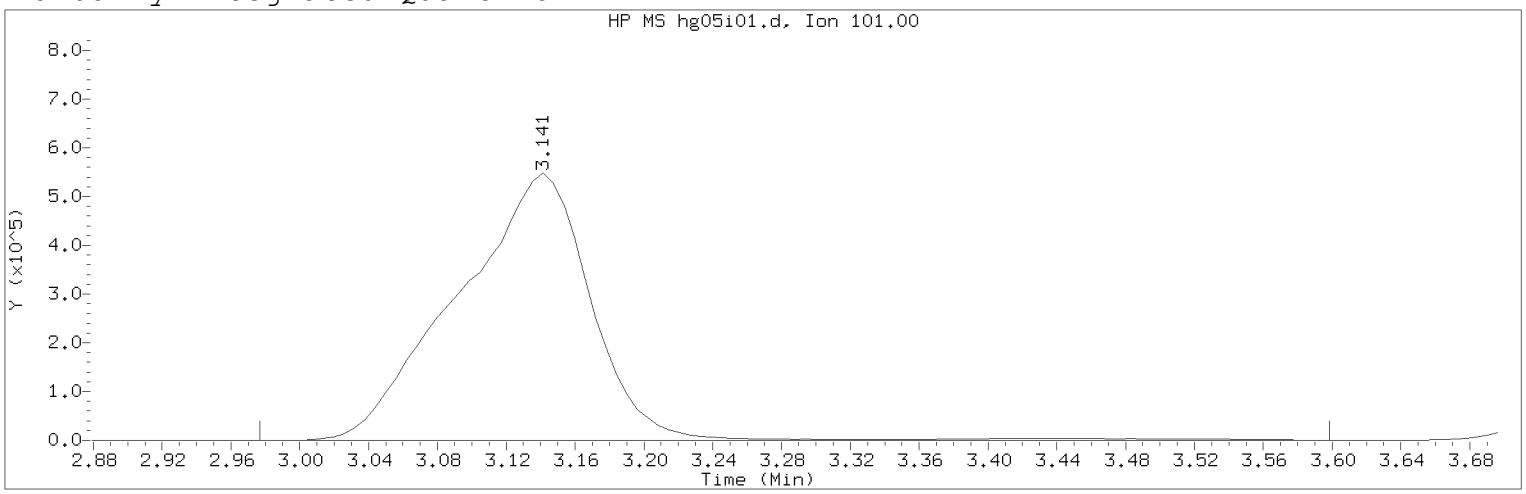
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 133
Retention Time (minutes): 2.398
Quant Ion : 39.00
Area : 1440698
On-column Amount (ng) : 24.2457
Integration start scan : 114 Integration stop scan: 151
Y at integration start : 624 Y at integration end: 2263

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

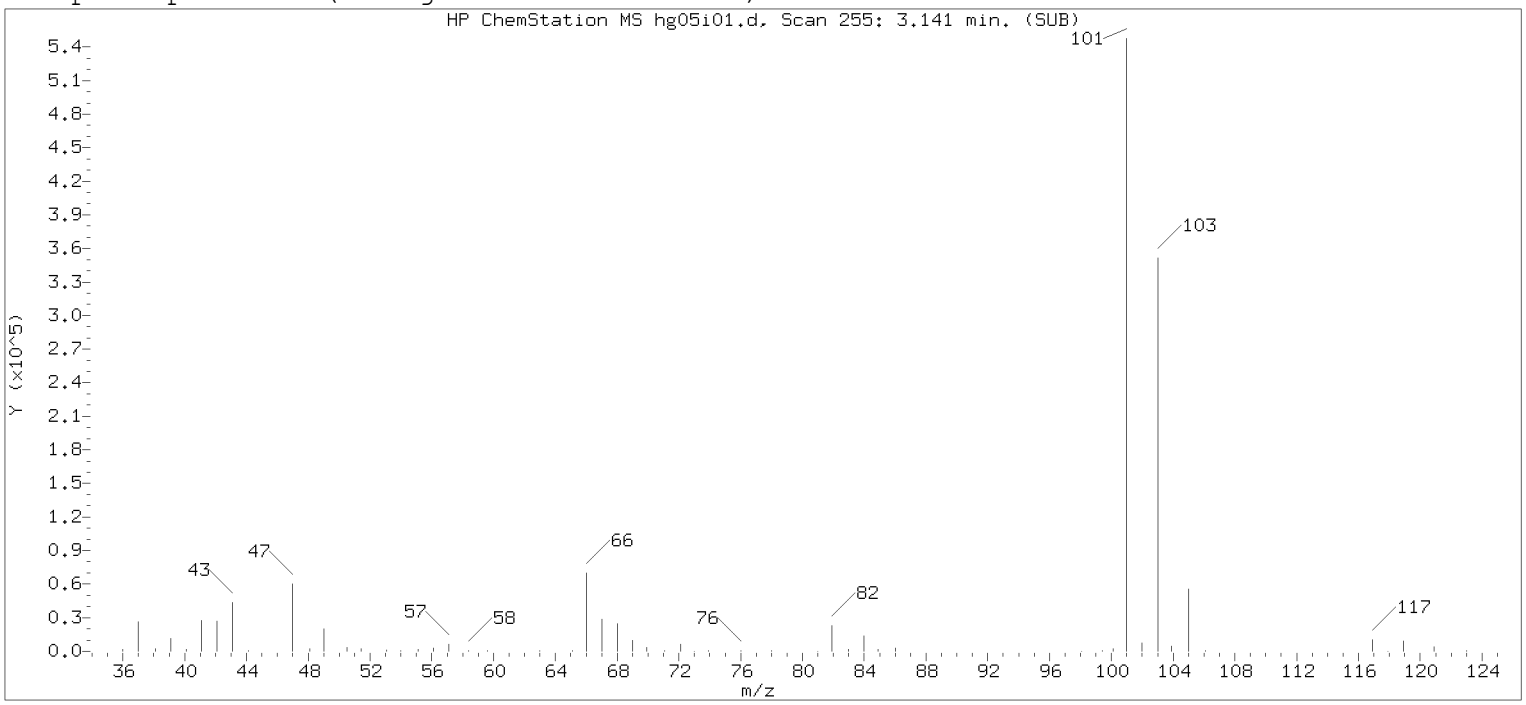
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 255
Retention Time (minutes): 3.141
Quant Ion : 101.00
Area (flag) : 2948773M
On-Column Amount (ng) : 23.7517
Integration start scan : 227 Integration stop scan: 329
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

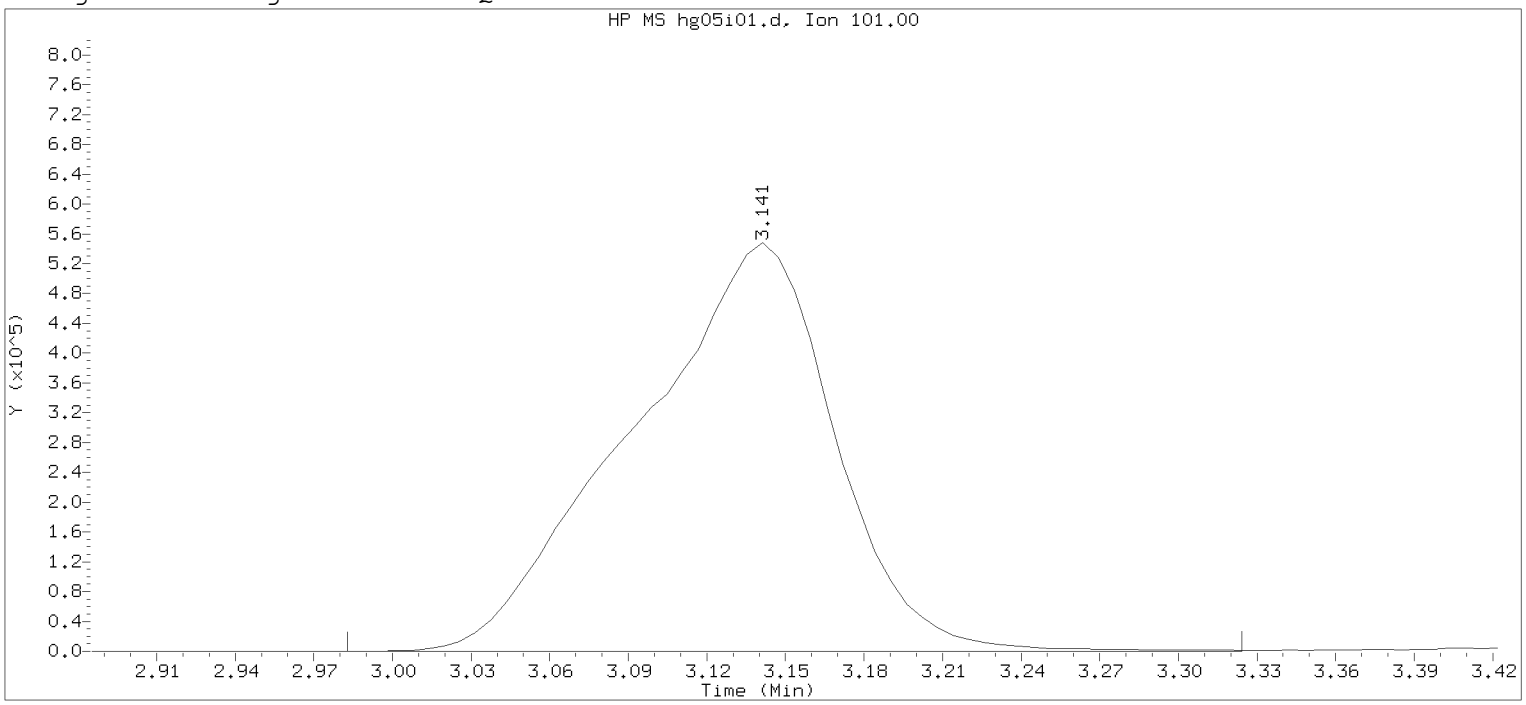
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

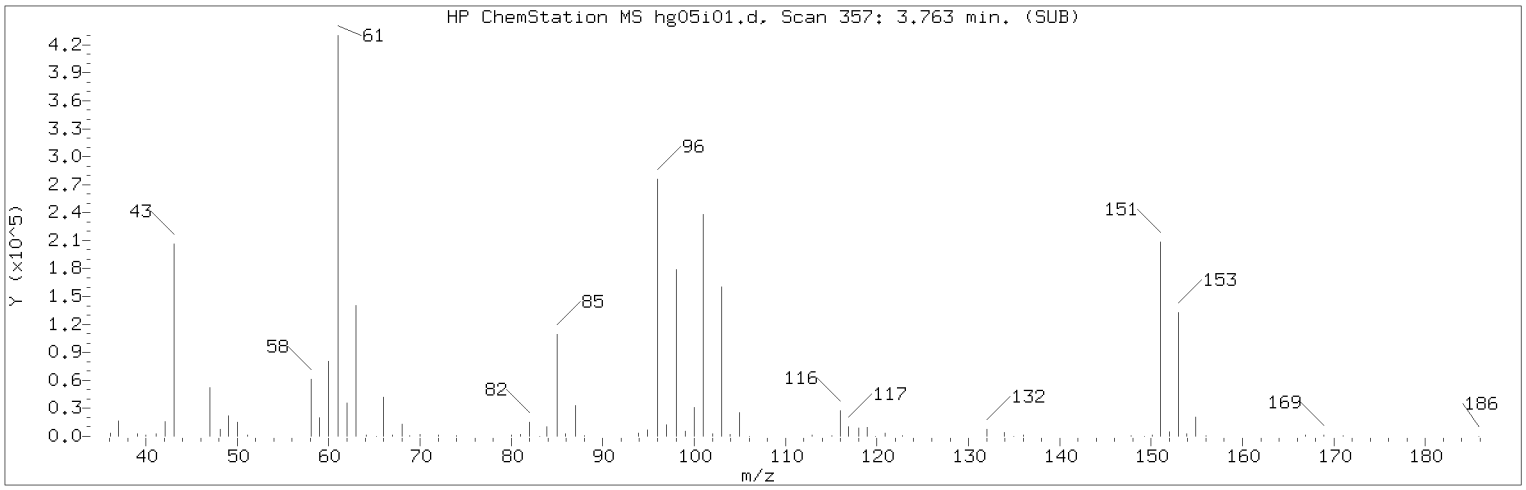
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

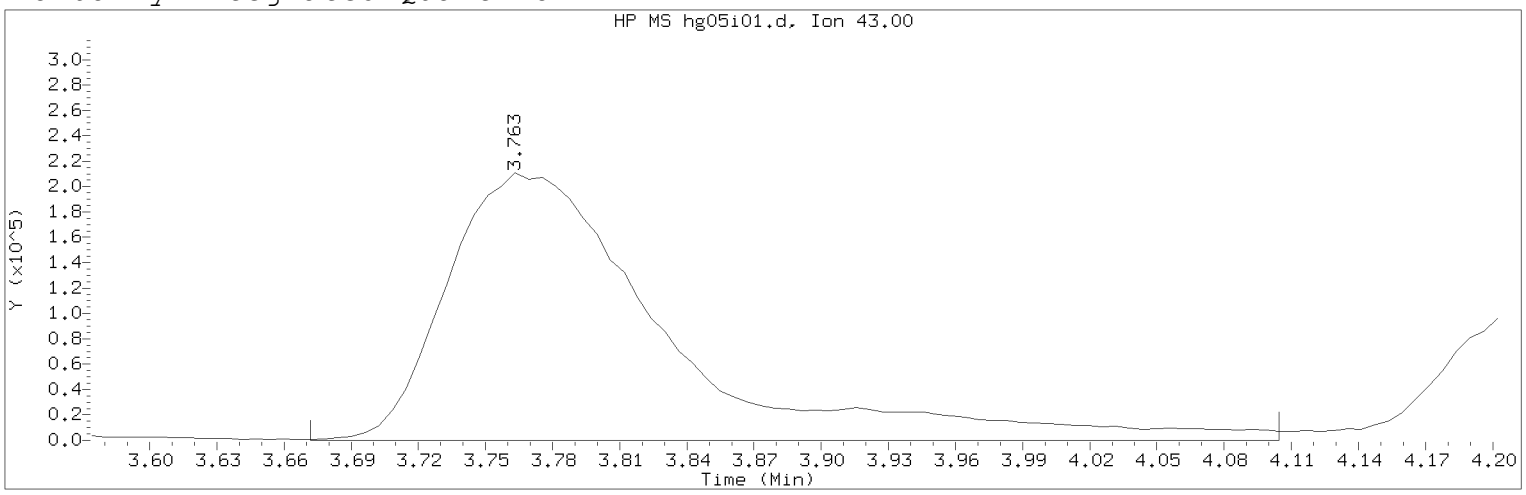
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 255
Retention Time (minutes): 3.141
Quant Ion : 101.00
Area : 2909734
On-column Amount (ng) : 24.6653
Integration start scan : 228 Integration stop scan: 284
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

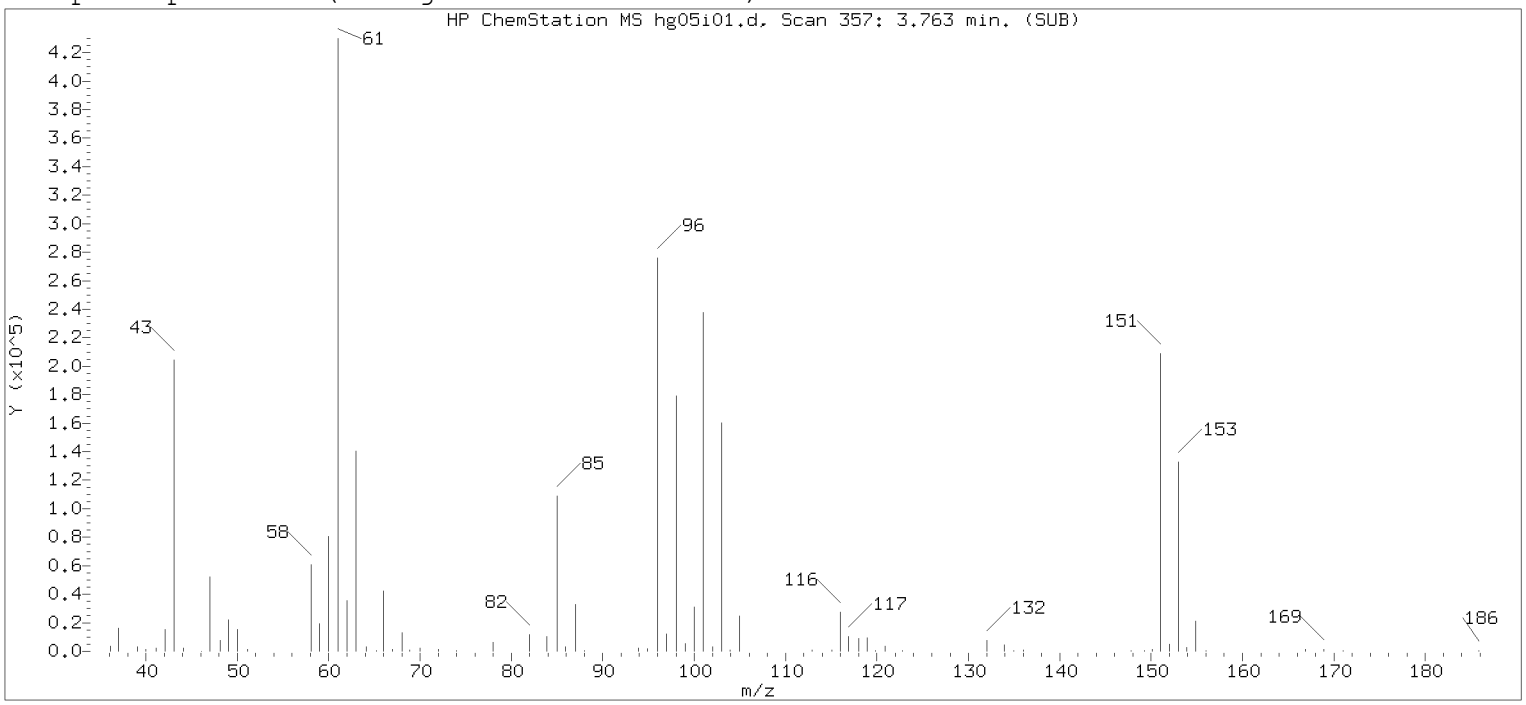
Compound Number : 14
Compound Name : Acetone
Scan Number : 357
Retention Time (minutes): 3.763
Quant Ion : 43.00
Area (flag) : 1432398M
On-Column Amount (ng) : 215.3079
Integration start scan : 341 Integration stop scan: 412
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

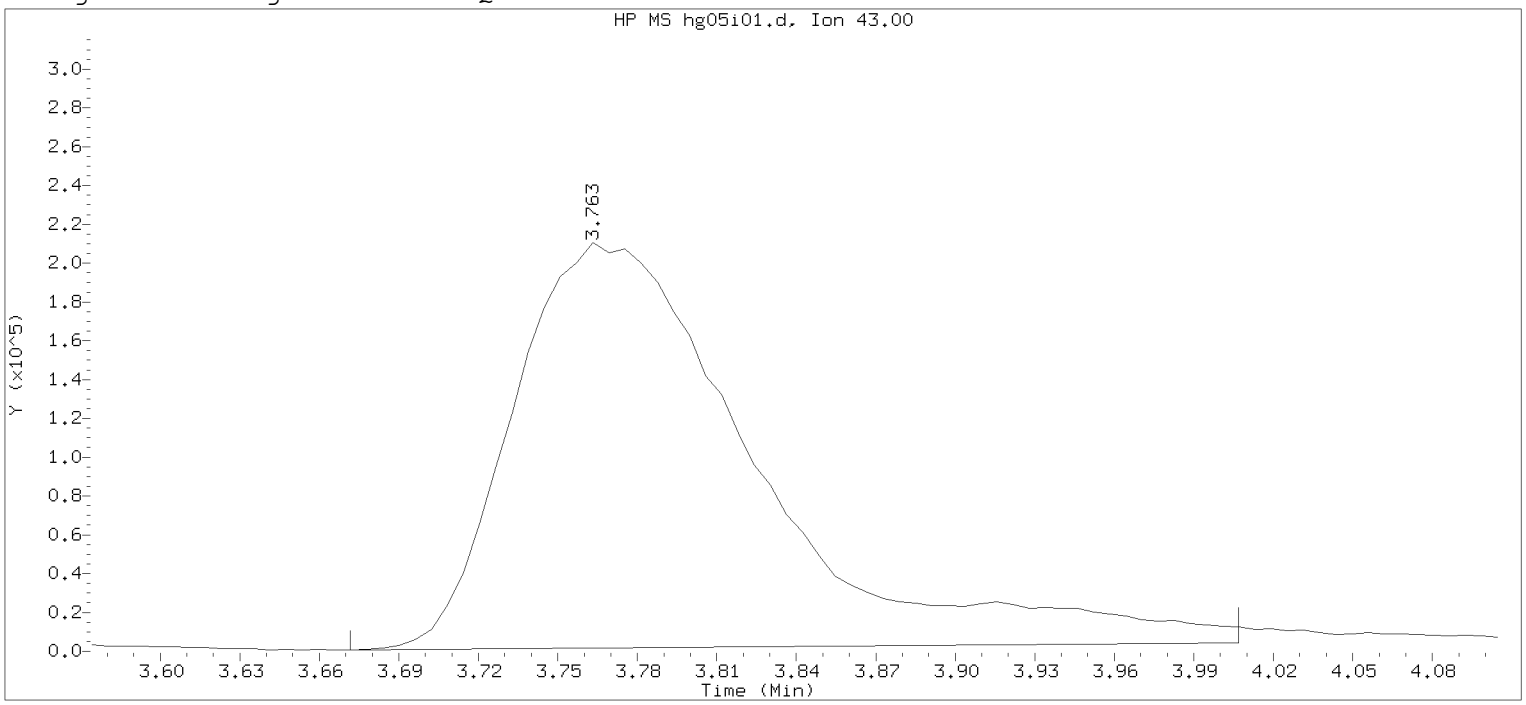
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

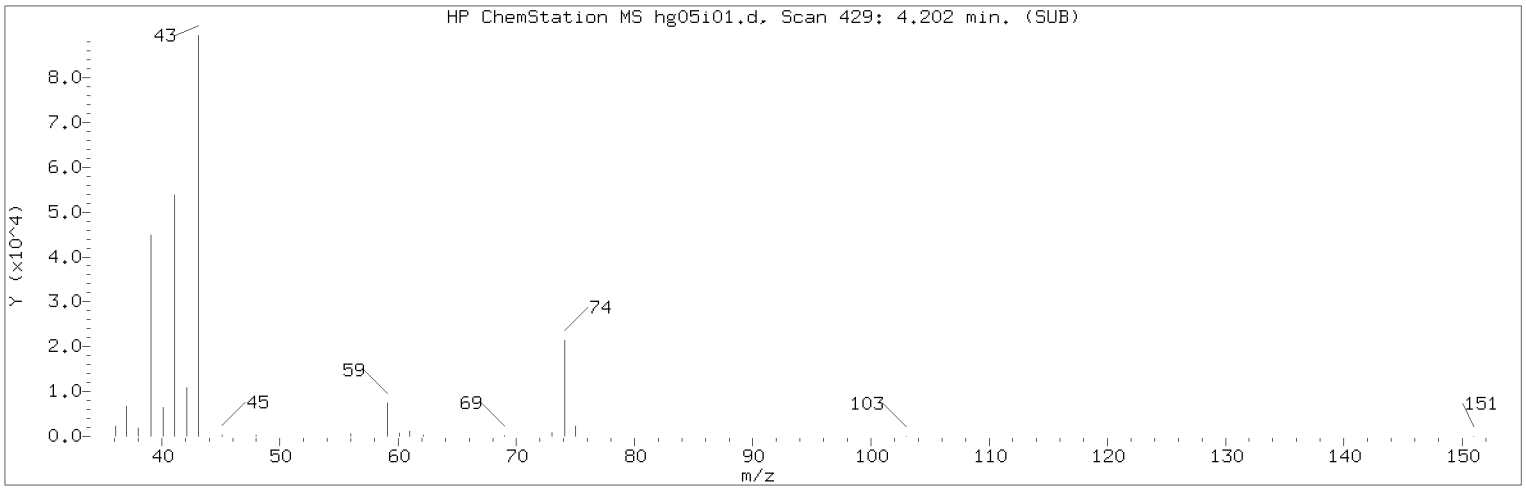
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

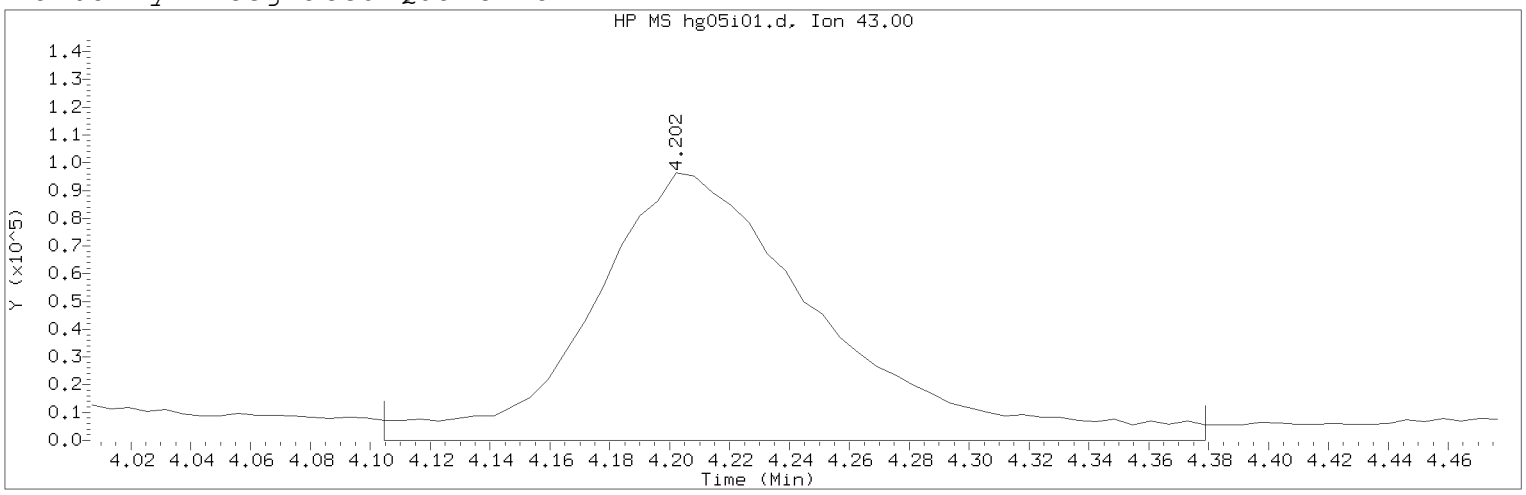
Compound Number : 14
Compound Name : Acetone
Scan Number : 357
Retention Time (minutes): 3.763
Quant Ion : 43.00
Area : 1328802
On-column Amount (ng) : 239.1659
Integration start scan : 341 Integration stop scan: 396
Y at integration start : 509 Y at integration end: 4185

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

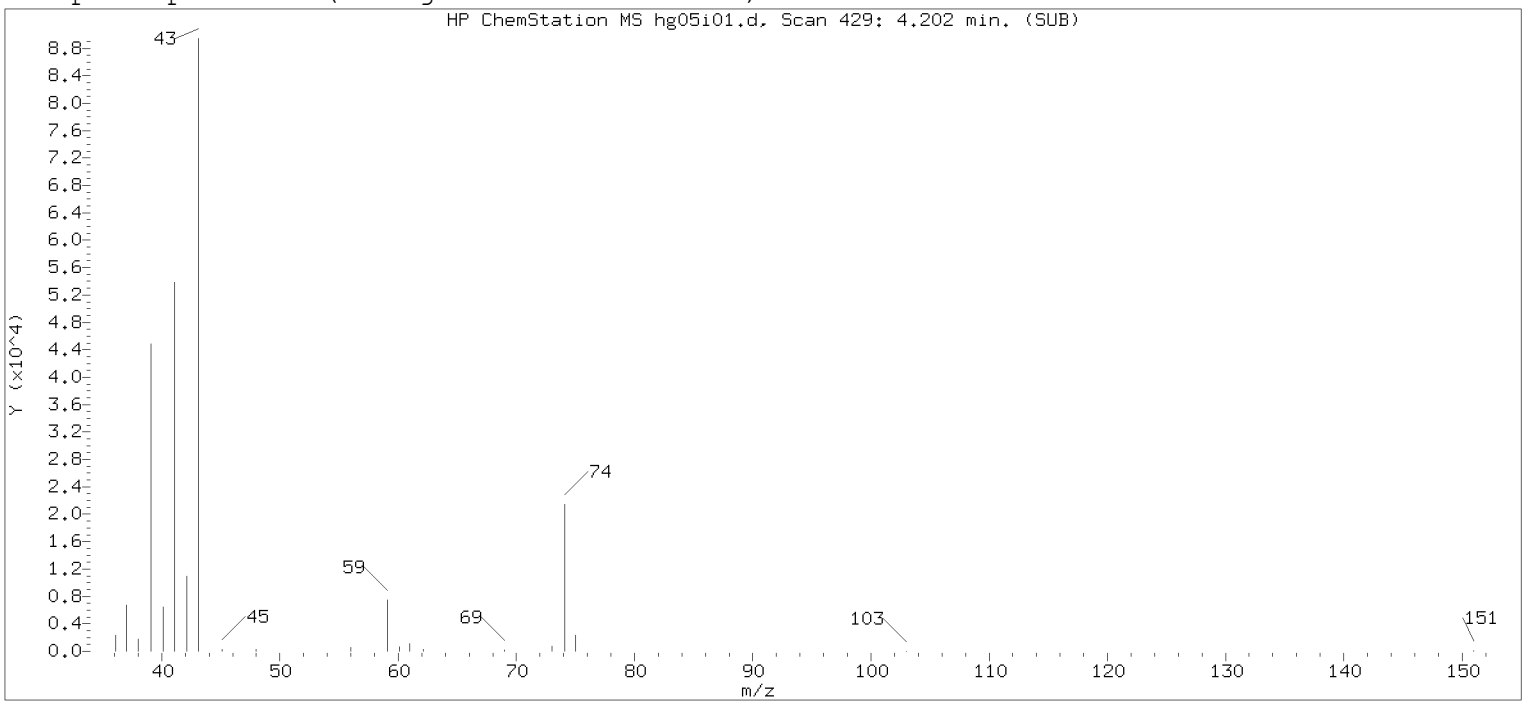
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 43.00
Area (flag) : 518185M
On-Column Amount (ng) : 25.0117
Integration start scan : 412 Integration stop scan: 457
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

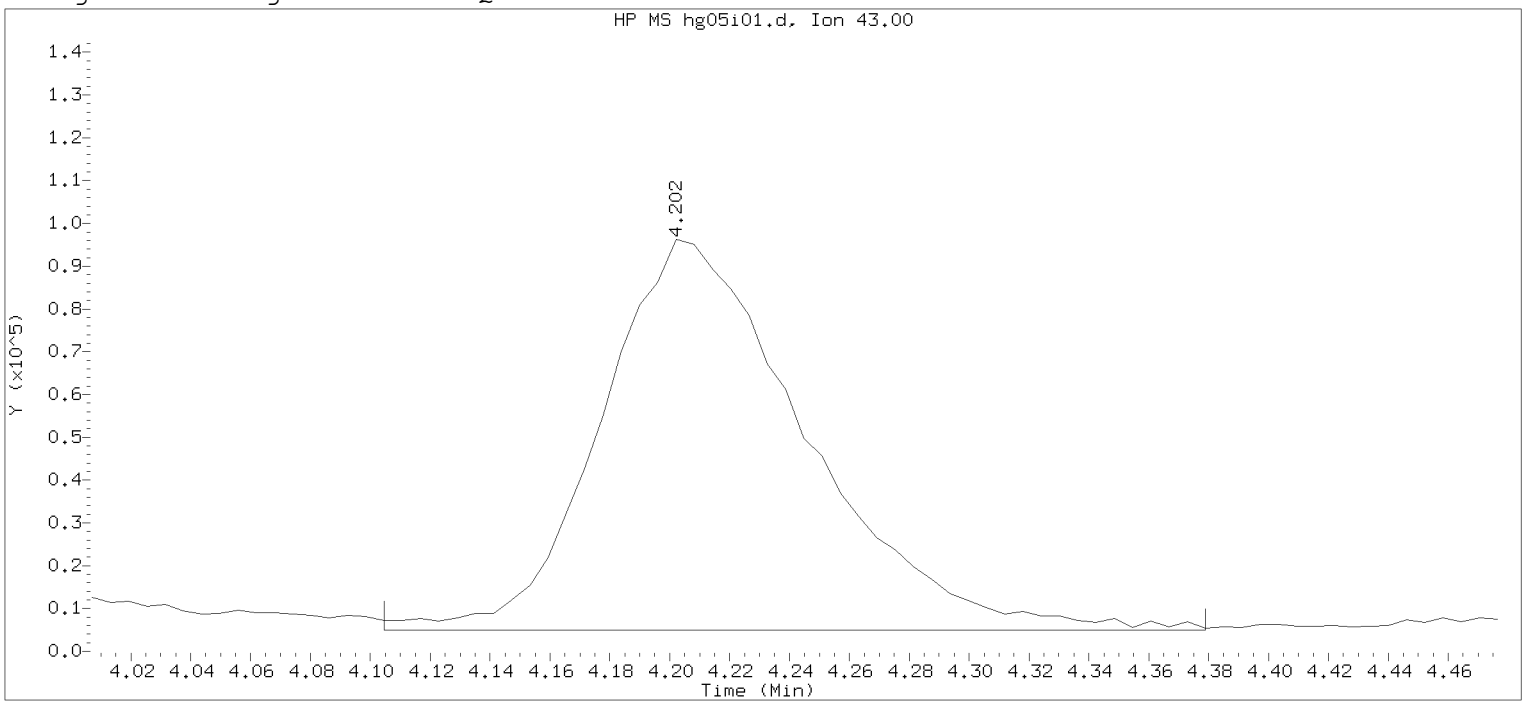
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

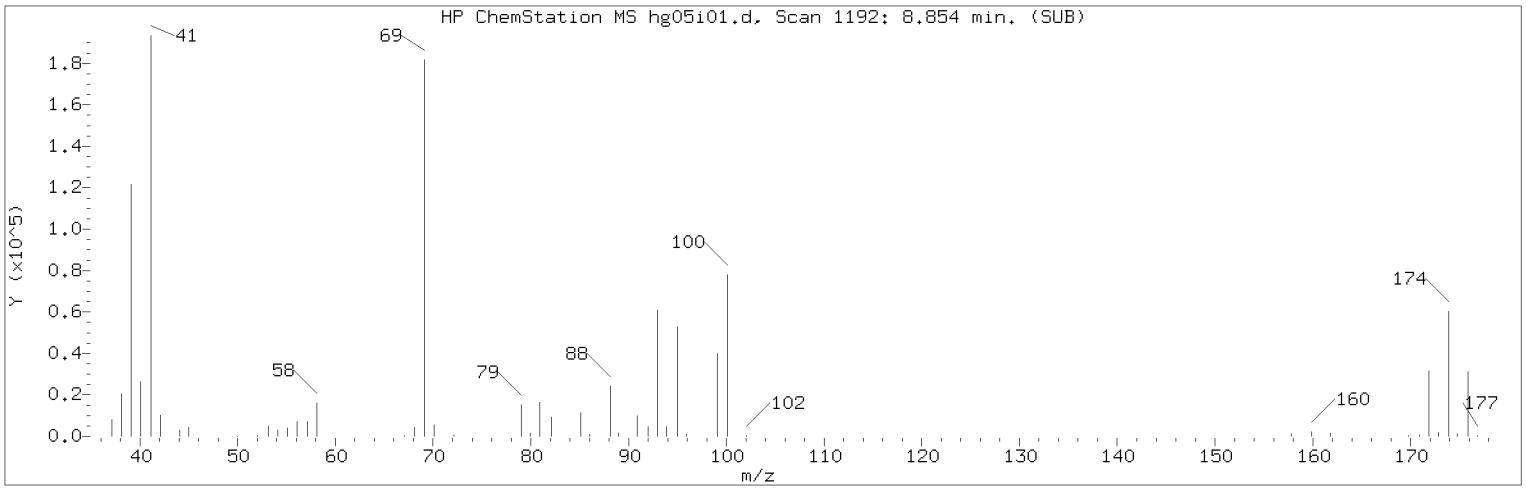
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

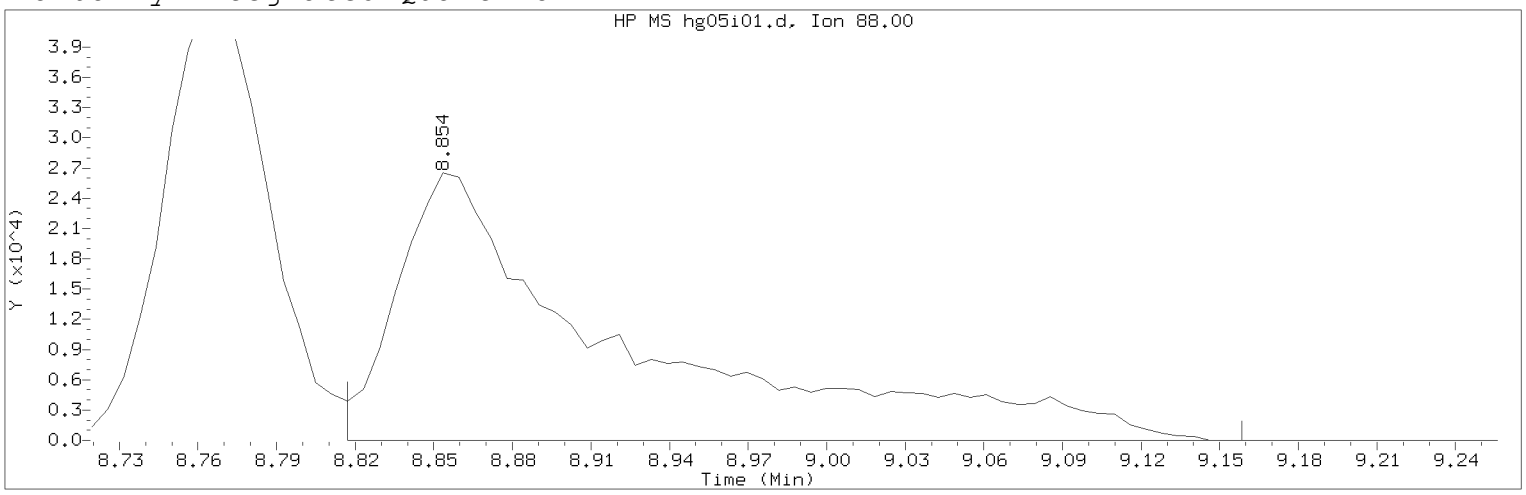
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 43.00
Area : 435040
On-column Amount (ng) : 25.5065
Integration start scan : 412 Integration stop scan: 457
Y at integration start : 4912 Y at integration end: 4912

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

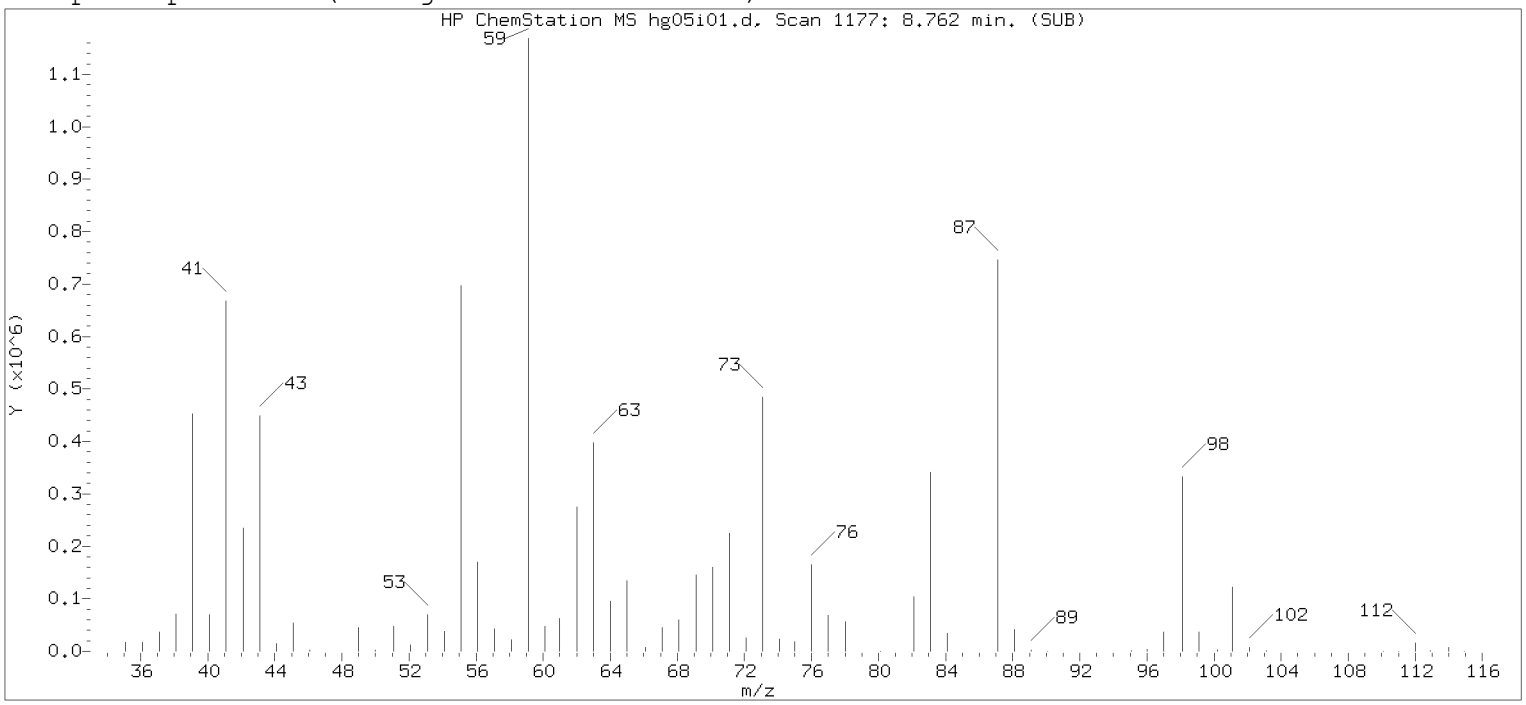
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1192
Retention Time (minutes): 8.854
Quant Ion : 88.00
Area (flag) : 158194M
On-Column Amount (ng) : 1051.0900
Integration start scan : 1185 Integration stop scan: 1241
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

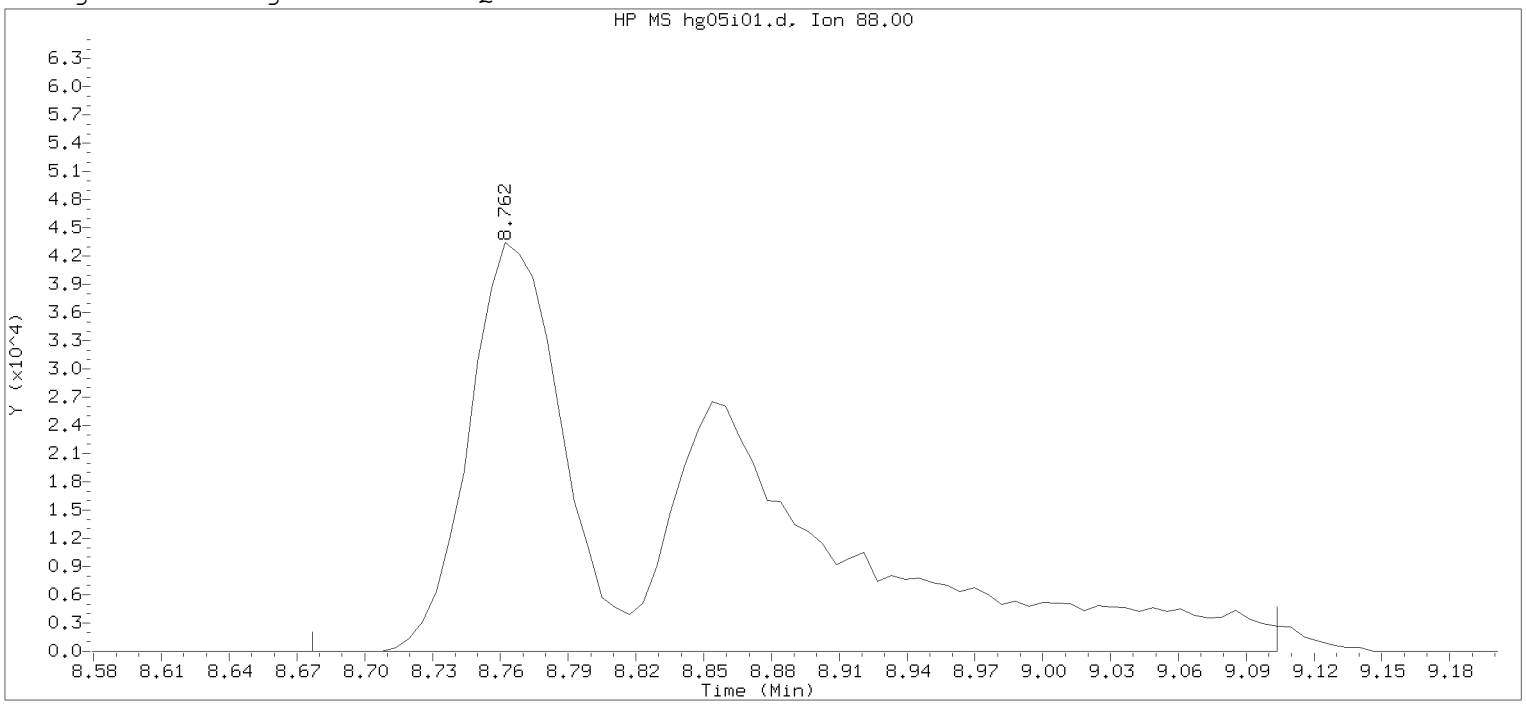
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

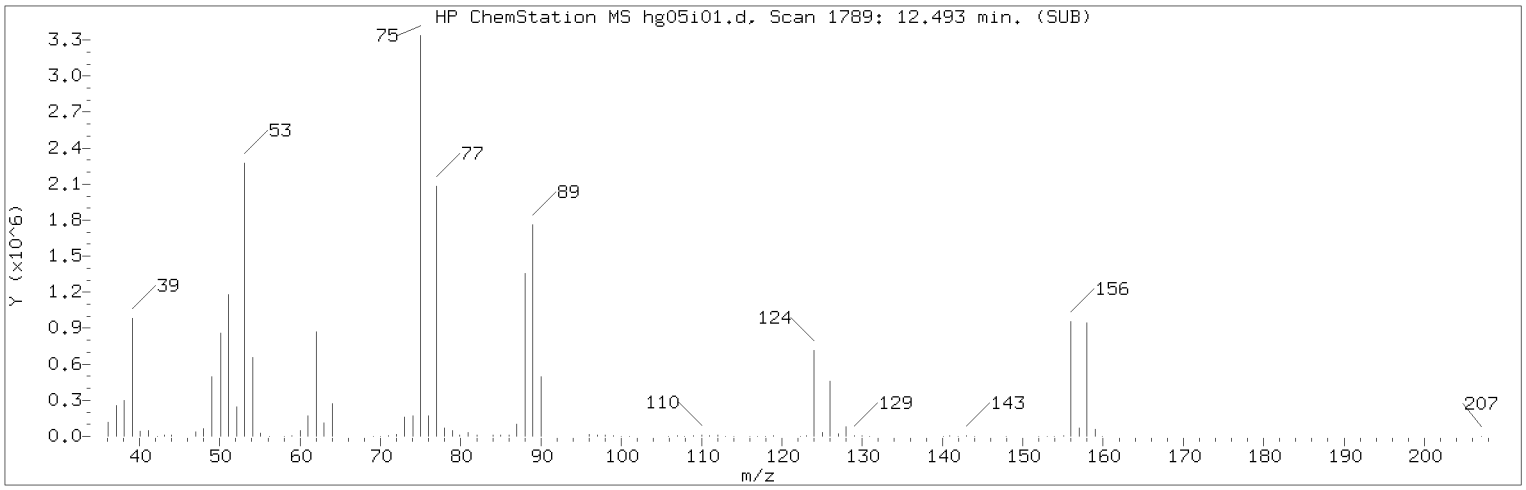
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

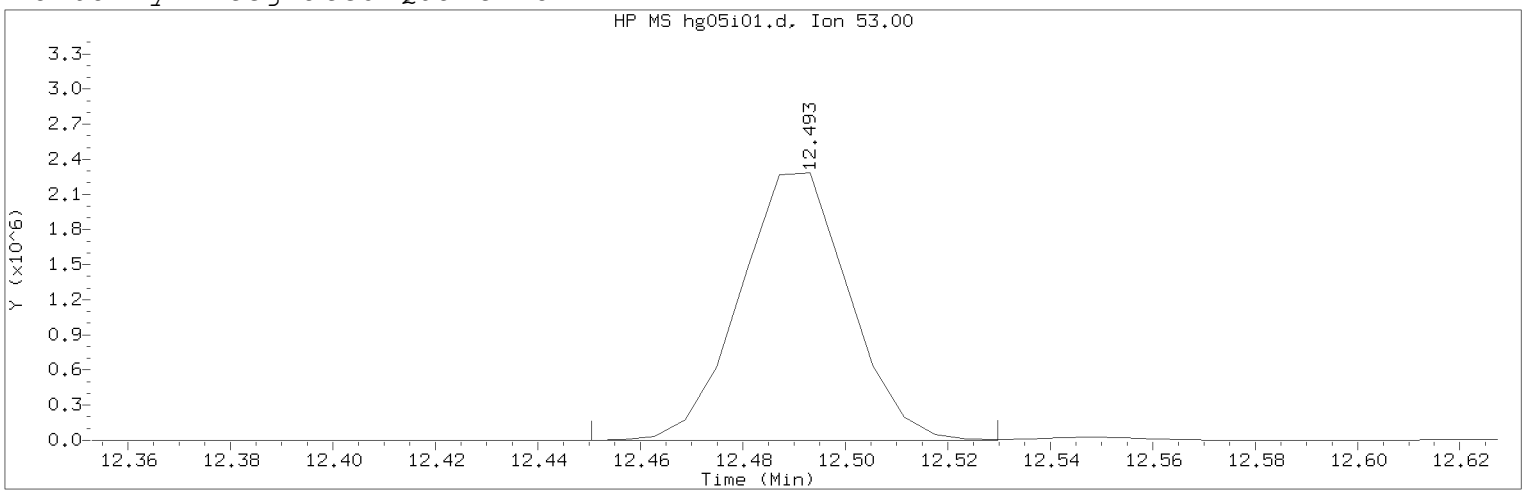
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1177
Retention Time (minutes): 8.762
Quant Ion : 88.00
Area : 277016
On-column Amount (ng) : 1407.8535
Integration start scan : 1162 Integration stop scan: 1232
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used for m8260c25.m

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

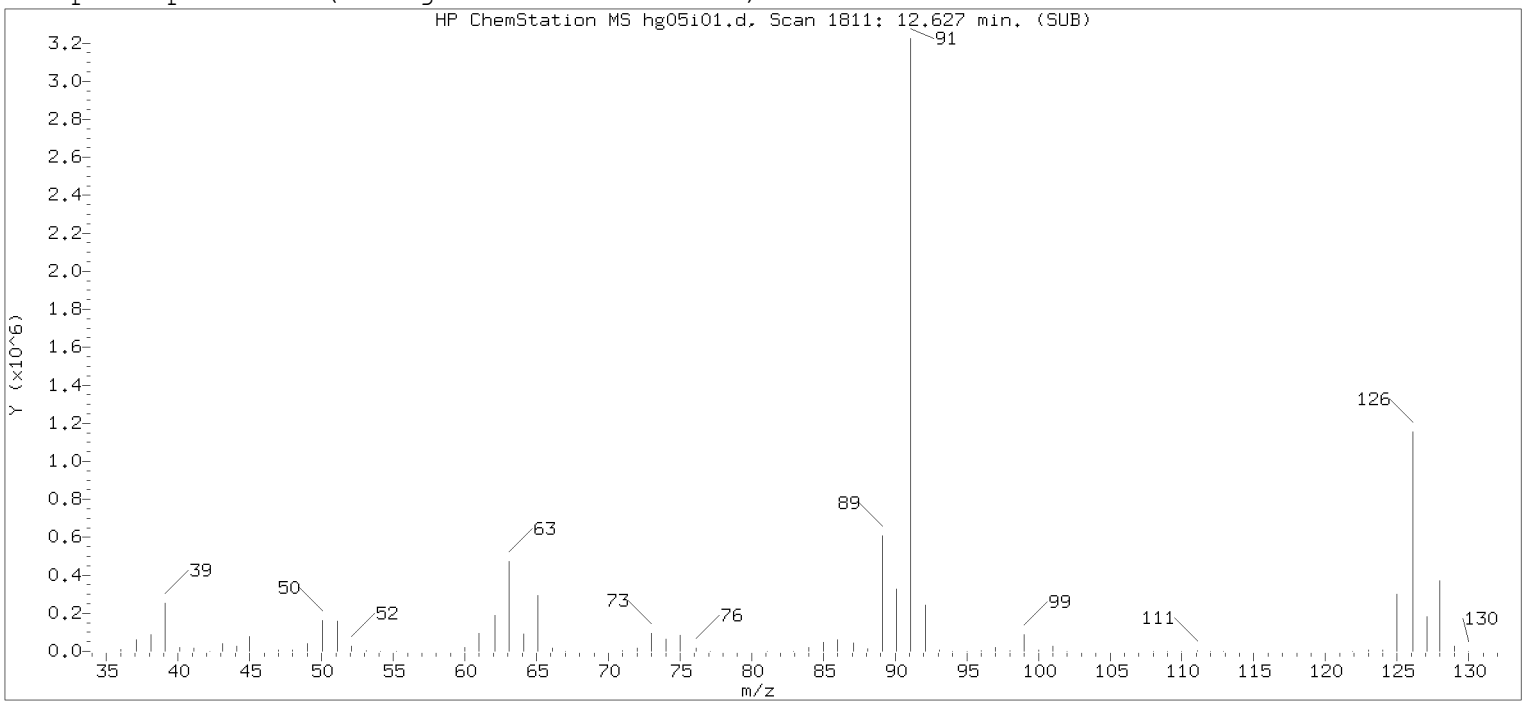
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1789
Retention Time (minutes): 12.493
Quant Ion : 53.00
Area (flag) : 3371309A
On-Column Amount (ng) : 297.8320
Integration start scan : 1781 Integration stop scan: 1794
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

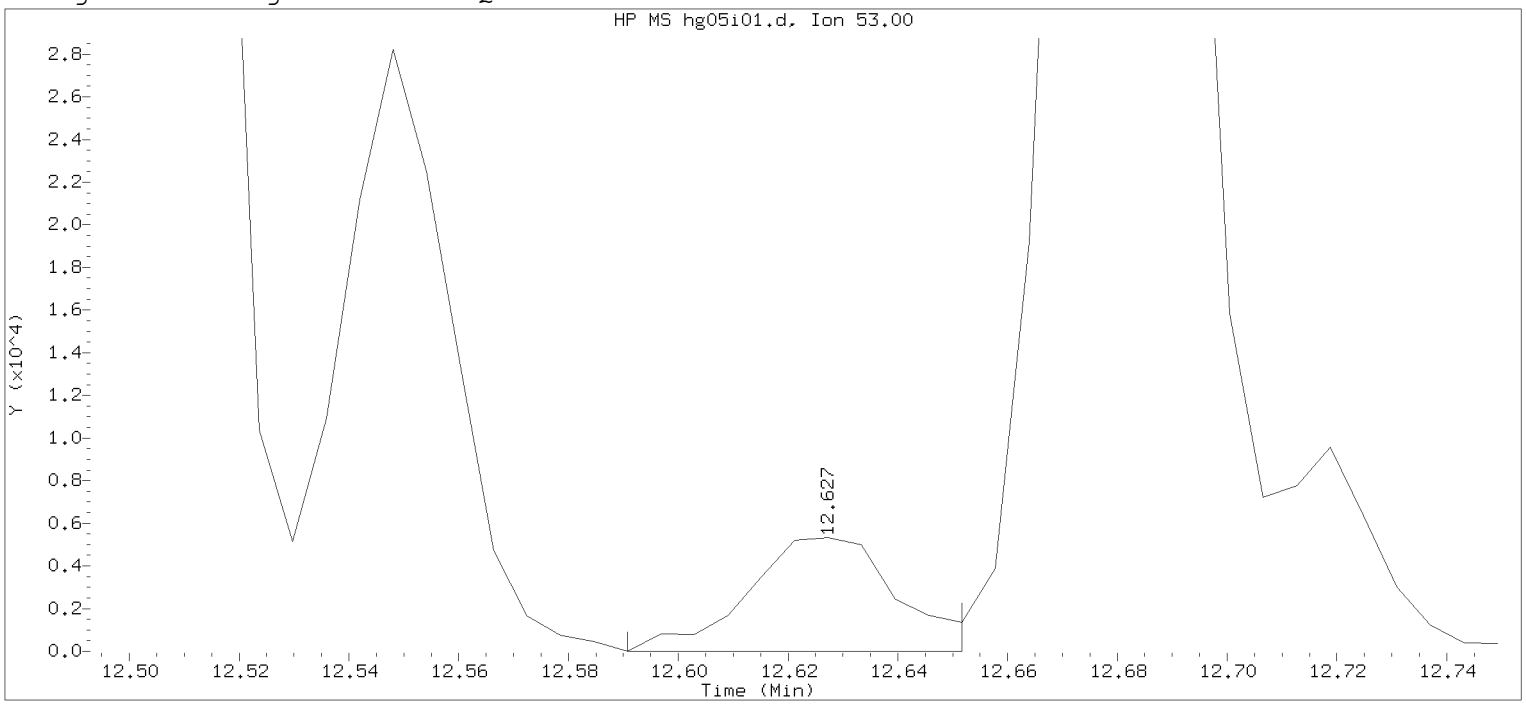
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

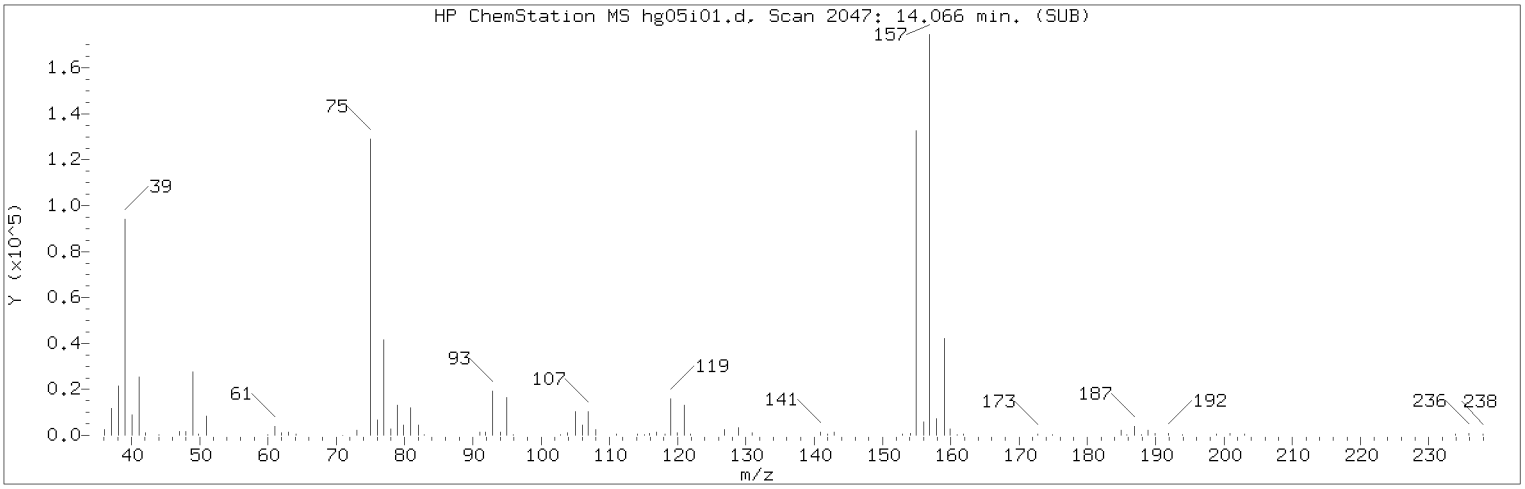
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

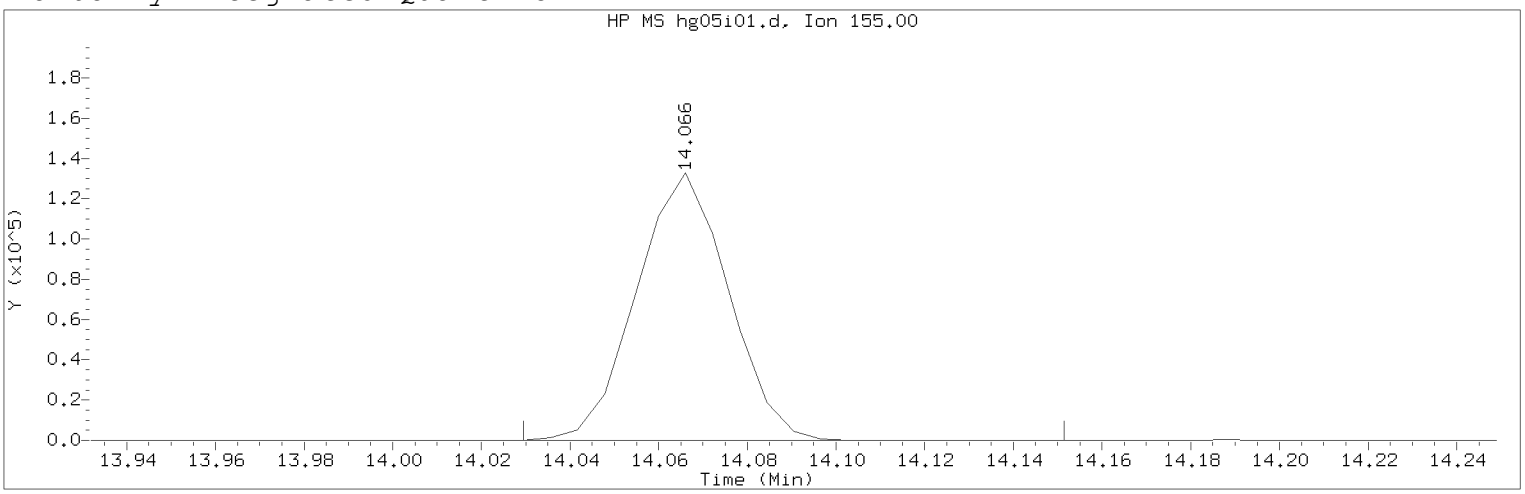
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1811
Retention Time (minutes): 12.627
Quant Ion : 53.00
Area : 9904
On-column Amount (ng) : 1.6772
Integration start scan : 1804 Integration stop scan: 1814
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

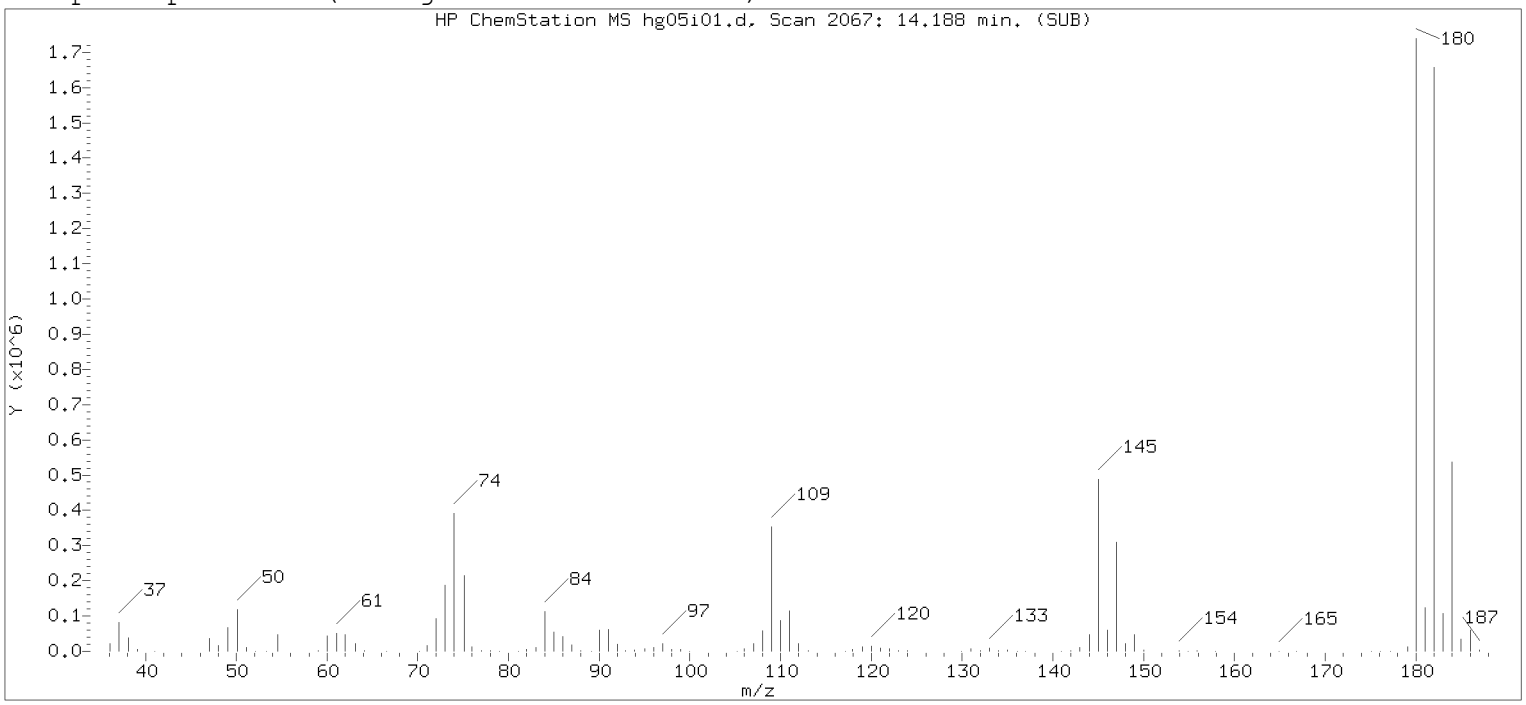
Compound Number : 143
Compound Name : 1,2-Dibromo-3-chloropropane
Scan Number : 2047
Retention Time (minutes): 14.066
Quant Ion : 155.00
Area (flag) : 190764A
On-Column Amount (ng) : 30.0353
Integration start scan : 2040 Integration stop scan: 2060
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

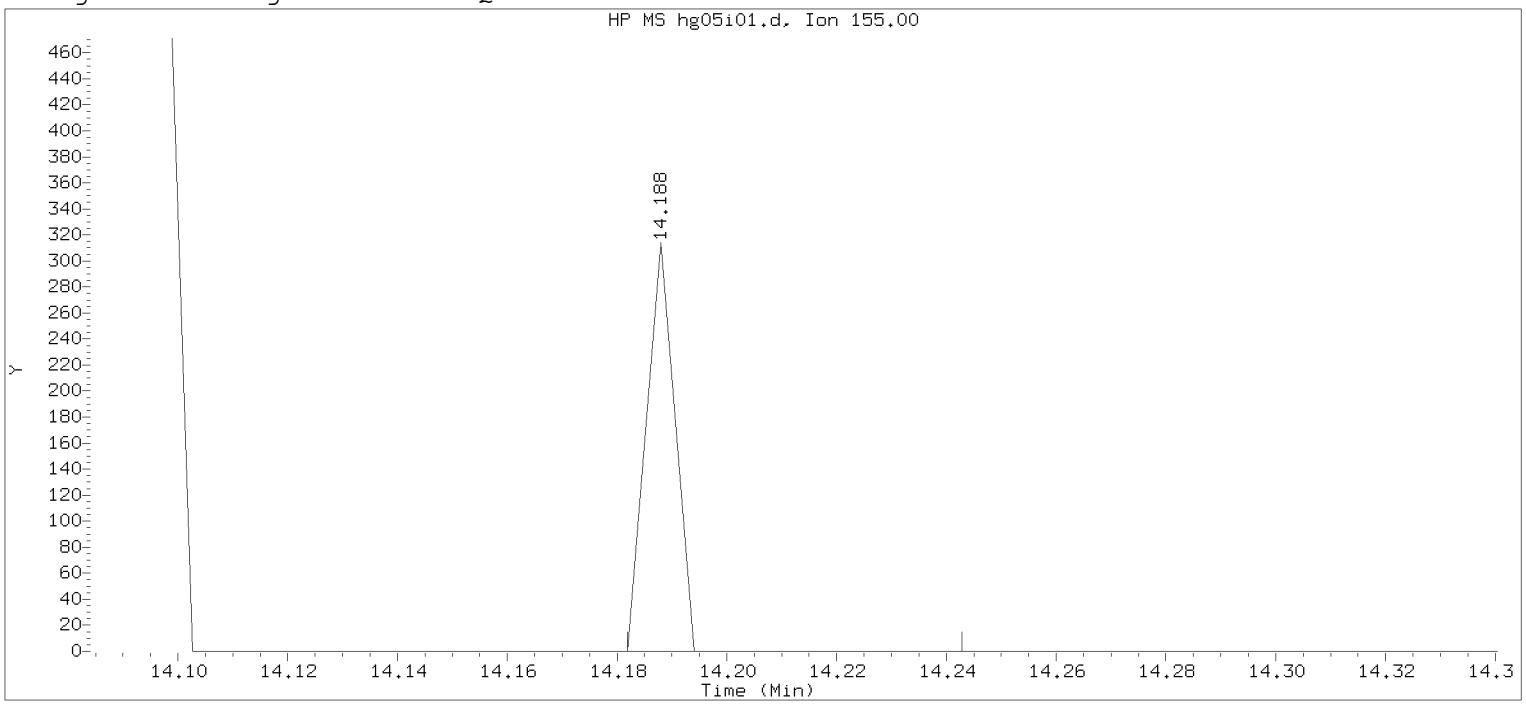
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



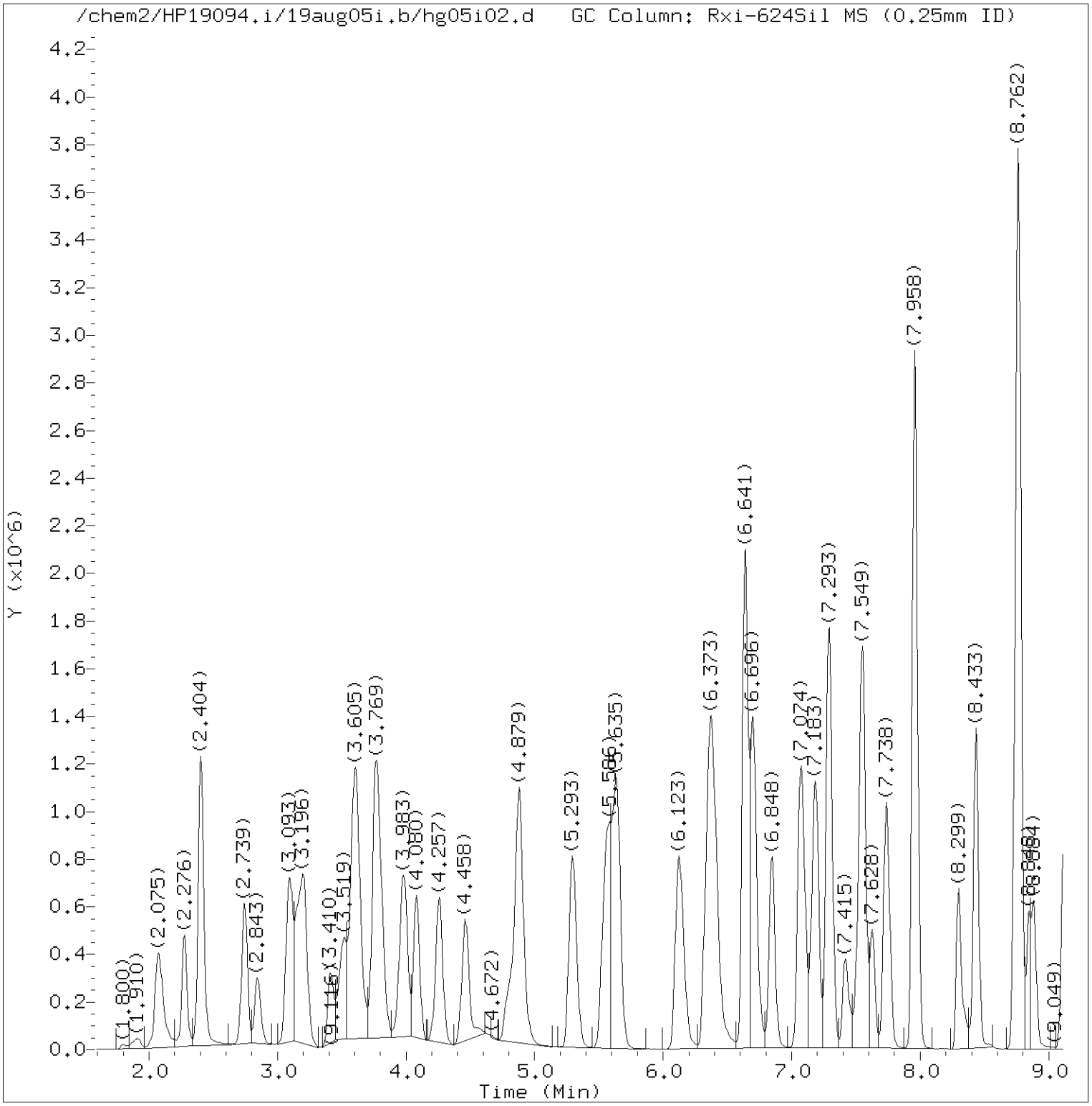
Data File: /chem2/HP19094.i/19aug05i.b/hg05i01.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:05 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compound Number : 143
Compound Name : 1,2-Dibromo-3-chloropropane
Scan Number : 2067
Retention Time (minutes): 14.188
Quant Ion : 155.00
Area : 114
On-column Amount (ng) : 0.0340
Integration start scan : 2065 Integration stop scan: 2075
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

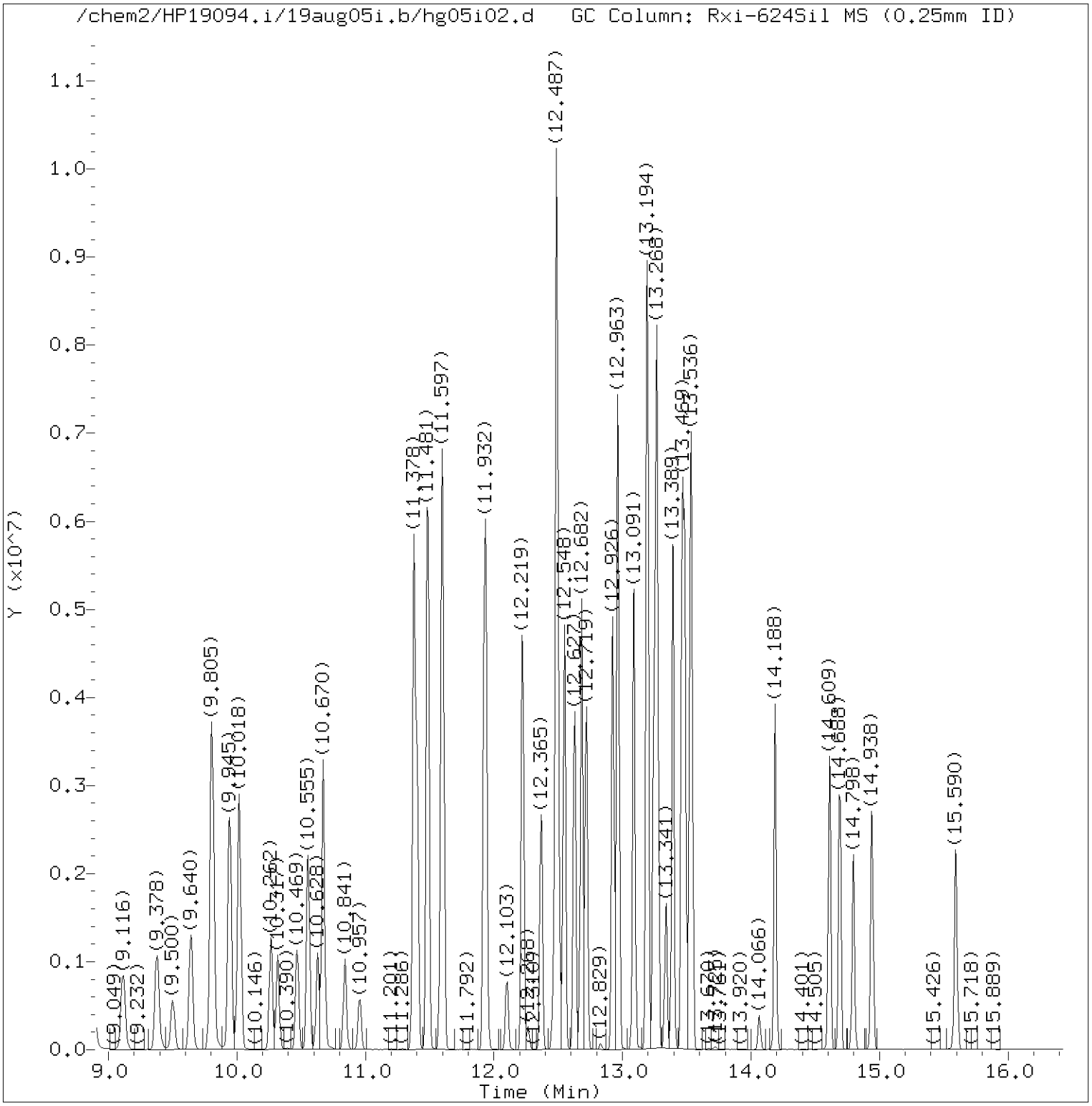
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.075	85	1062982	9.789
2) Chloromethane	(2)	2.276	50	770562	9.691
5) Vinyl Chloride	(2)	2.398	62	788011	9.851
6) 1,3-Butadiene	(2)	2.410	39	624273M	9.733
7) Bromomethane	(2)	2.739	94	694590	9.840
8) Chloroethane	(2)	2.843	64	459820	9.819
9) Dichlorofluoromethane	(2)	3.087	67	940001	9.152
10) Trichlorofluoromethane	(2)	3.148	101	1219190M	9.629
11) Ethyl ether	(2)	3.410	59	353654	10.024
12) Freon 123a	(2)	3.519	67	655797	10.181
13) Acrolein	(1)	3.605	56	2788151	507.095
15) 1,1-Dichloroethene	(2)	3.757	96	482848	10.458
14) Acetone	(1)	3.769	43	681694M	88.885
16) Freon 113	(2)	3.788	101	606868	10.509
17) Methyl Iodide	(2)	3.971	142	1132686	10.225
18) Carbon Disulfide	(2)	4.080	76	1563795	10.192
21) Methyl Acetate	(1)	4.214	43	218033M	8.992
22) Allyl Chloride	(2)	4.257	41	747867	9.548
26)*t-Butyl Alcohol-d10	(1)	4.440	65	115368	50.000
23) Methylene Chloride	(2)	4.464	84	520540	9.457
28) t-Butyl Alcohol	(1)	4.568	59	444417	206.540
29) Acrylonitrile	(1)	4.800	53	450112	50.671
31) trans-1,2-Dichloroethene	(2)	4.879	96	539947	10.187
30) Methyl Tertiary Butyl Ether	(2)	4.879	73	1225312	10.256
32) n-Hexane	(2)	5.293	57	840466	10.424
33) 1,1-Dichloroethane	(2)	5.543	63	964376	10.273
34) di-Isopropyl Ether	(2)	5.586	45	1674907	10.347
35) 2-Chloro-1,3-Butadiene	(2)	5.641	53	903628	10.382
40) 1,2-Dichloroethene (Total)	(2)		96	1149311	20.416
37) Ethyl t-butyl ether	(2)	6.123	59	1567950	10.172
38) 2-Butanone	(1)	6.330	43	1198680	96.747
39) cis-1,2-Dichloroethene	(2)	6.366	96	609364	10.229
41) 2,2-Dichloropropane	(2)	6.391	77	874299	10.256
42) Propionitrile	(1)	6.421	54	634775MA	200.280
45) Methacrylonitrile	(1)	6.635	67	1269227	100.528
47) Bromochloromethane	(2)	6.702	128	285489	10.091
48) Tetrahydrofuran	(1)	6.708	71	337320	98.253
49) Chloroform	(2)	6.848	83	1003692	10.175

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	566958	10.063
50)$Dibromofluoromethane	(2)	7.061	111	573717	10.021
51) 1,1,1-Trichloroethane	(2)	7.086	97	950875	10.355
52) Cyclohexane	(2)	7.189	56	982146	10.335
52) Cyclohexane	(2)	7.189	84	892726	10.115
52) Cyclohexane	(2)	7.189	69	311992	10.177
55) 1,1-Dichloropropene	(2)	7.287	75	765350	10.278
54) Carbon Tetrachloride	(2)	7.293	117	888516	10.345
56) Isobutyl Alcohol	(1)	7.415	41	403886	458.555
57)$1,2-Dichloroethane-d4	(2)	7.525	102	102087	9.854
57)$1,2-Dichloroethane-d4	(2)	7.519	65	501748	10.009
57)$1,2-Dichloroethane-d4	(2)	7.525	104	66031	9.948
58) Benzene	(2)	7.555	78	2151878	10.270
59) 1,2-Dichloroethane	(2)	7.628	62	586990	9.945
60) t-Amyl methyl ether	(2)	7.738	73	1417375	10.207
62) n-Heptane	(2)	7.958	43	905605	10.451
63)*Fluorobenzene	(2)	7.958	96	2071867	10.000
65) n-Butanol	(1)	8.299	56	718052	1000.056
67) Trichloroethene	(2)	8.433	95	602106	10.229
69) Methylcyclohexane	(2)	8.750	83	1061811	10.259
70) 1,2-Dichloropropane	(2)	8.775	63	534552	10.367
71) Methyl Methacrylate	(1)	8.848	69	263308A	10.250
72) 1,4-Dioxane	(1)	8.854	88	99093M	571.133
73) Dibromomethane	(2)	8.884	93	278162	10.060
74) Bromodichloromethane	(2)	9.116	83	733221	10.322
76) 2-Nitropropane	(1)	9.378	41	924192A	101.289
80) cis-1,3-Dichloropropene	(2)	9.640	75	843077	10.408
81) 4-Methyl-2-Pentanone	(1)	9.805	43	3170246A	100.934
82)$Toluene-d8	(3)	9.945	98	2107940	9.937
82)$Toluene-d8	(3)	9.945	100	1351255	9.960
83) Toluene	(3)	10.018	92	1429696	10.128
85) 1,3-Dichloropropene (total)	(3)		75	1565358	20.776
84) trans-1,3-Dichloropropene	(3)	10.262	75	722281	10.368
86) Ethyl Methacrylate	(3)	10.317	69	576665	10.357
88) 1,1,2-Trichloroethane	(3)	10.469	97	377074	9.964
89) Tetrachloroethene	(3)	10.555	166	726248	10.248
90) 1,3-Dichloropropane	(3)	10.628	76	632825	10.084
91) 2-Hexanone	(1)	10.670	43	2178591	98.739

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Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	554620	10.449
95) 1,2-Dibromoethane	(3)	10.957	107	392044	10.284
96) 1-Chlorohexane	(3)	11.378	91	852807	9.904
97)*Chlorobenzene-d5	(3)	11.378	117	1661703	10.000
98) Chlorobenzene	(3)	11.402	112	1616473	10.099
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	612911	10.268
100) Ethylbenzene	(3)	11.487	91	2848193	10.203
101) m+p-Xylene	(3)	11.597	106	2232645	20.156
105) Xylene (Total)	(3)		106	3338914	30.371
104) o-Xylene	(3)	11.926	106	1106269	10.217
106) Styrene	(3)	11.939	104	1812974	10.301
107) Bromoform	(3)	12.103	173	346348	10.480
108) Isopropylbenzene	(3)	12.219	105	2993804	10.363
111)$4-Bromofluorobenzene	(3)	12.365	95	782667	10.089
111)$4-Bromofluorobenzene	(3)	12.371	174	745002	10.043
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	464436	10.271
114) Bromobenzene	(4)	12.487	156	720234	10.194
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	1356960	103.988
116) 1,2,3-Trichloropropane	(4)	12.512	110	128225M	10.215
117) n-Propylbenzene	(4)	12.548	91	3433525	10.304
119) 2-Chlorotoluene	(4)	12.627	126	699686	10.205
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	2530398	10.404
122) 4-Chlorotoluene	(4)	12.719	126	717266	10.176
125) tert-Butylbenzene	(4)	12.926	134	561092M	10.447
126) Pentachloroethane	(4)	12.963	167	508039	10.251
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	2599169	10.322
128) sec-Butylbenzene	(4)	13.091	105	3361443	10.503
131) 1,3-Dichlorobenzene	(4)	13.188	146	1431681	10.389
132) p-Isopropyltoluene	(4)	13.194	119	2912168	10.528
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	924602	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	1391812	10.154
135) 1,2,3-Trimethylbenzene	(4)	13.274	120	1112671	9.867
136) Benzyl Chloride	(4)	13.341	126	234716	10.679
138) n-Butylbenzene	(4)	13.487	92	1440214	10.577
139) 1,2-Dichlorobenzene	(4)	13.524	146	1283476	10.382
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	77864	10.634
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	1125039	10.544
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	958621	10.744

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

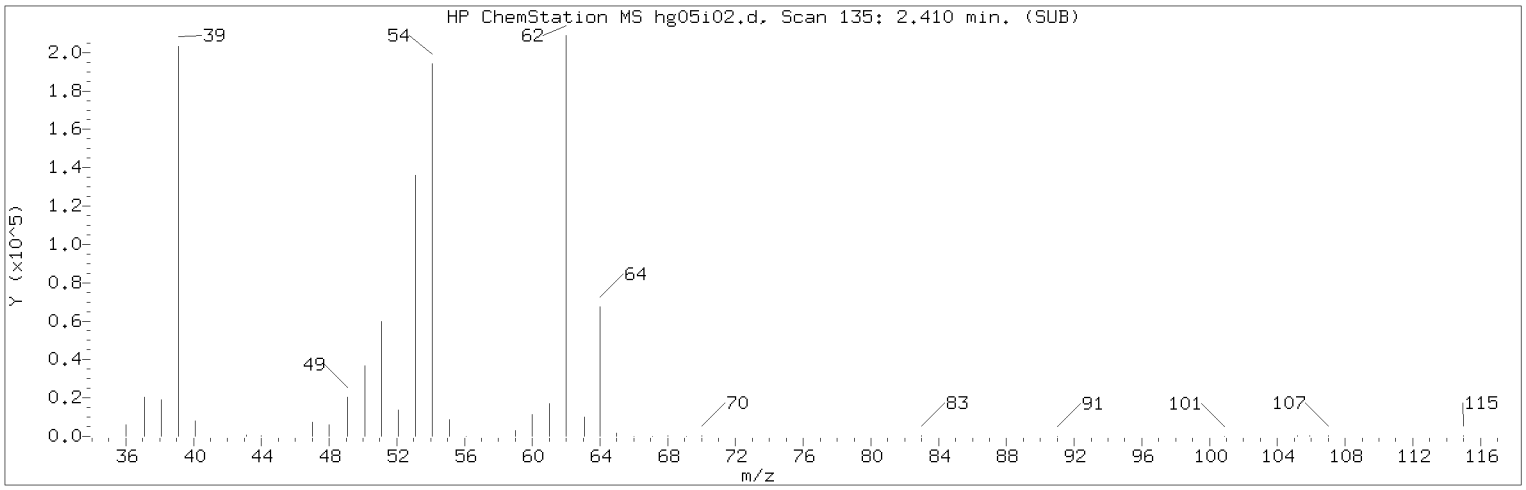
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

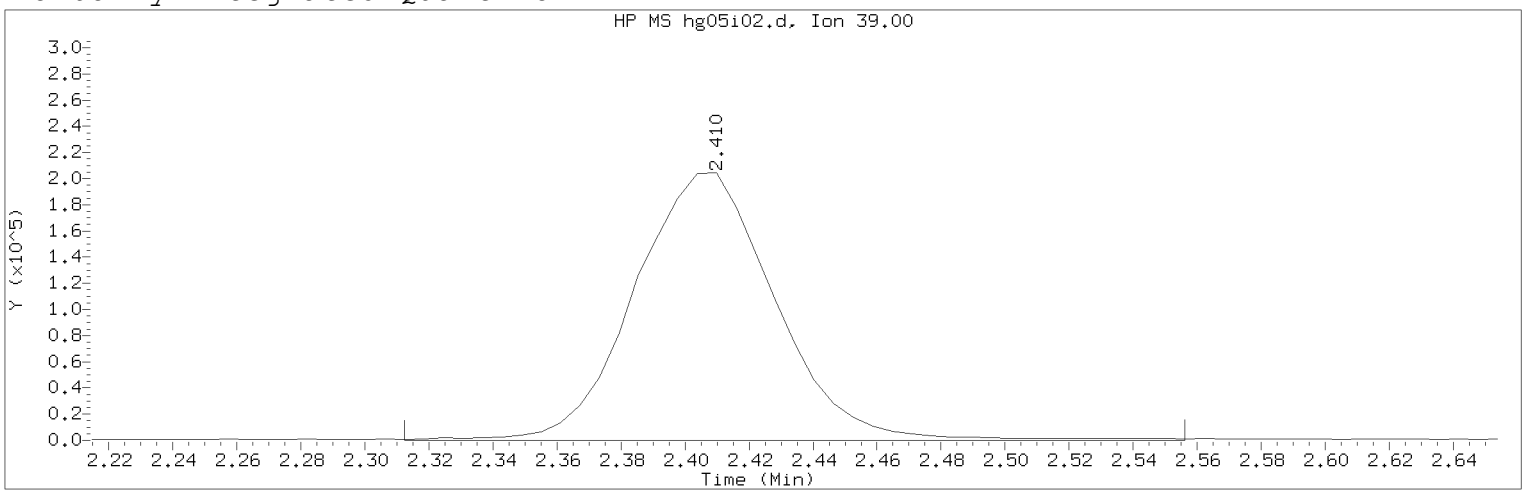
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	504718	10.907
147) Naphthalene	(4)	14.798	128	1648052	10.400
148) 1,2,3-Trichlorobenzene	(4)	14.944	180	824290	10.556

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

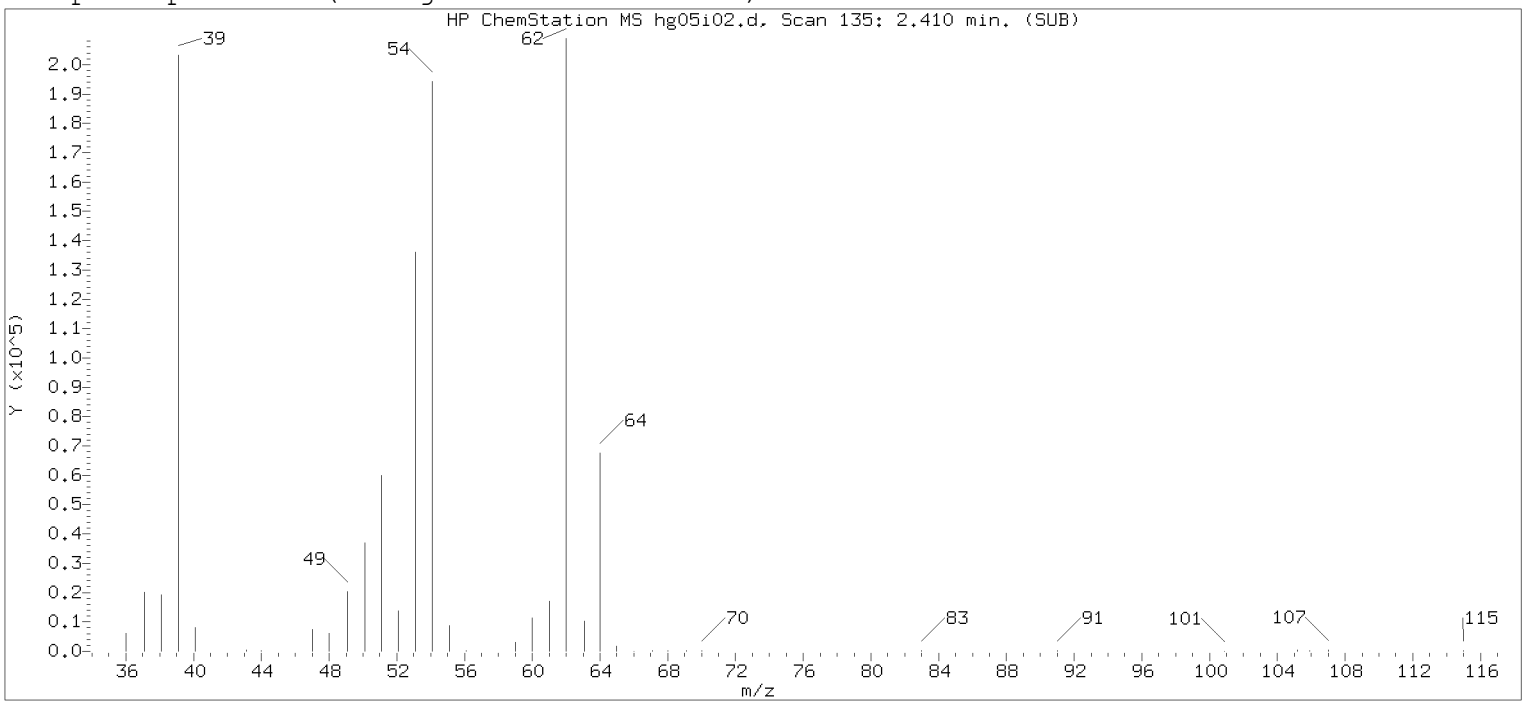
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area (flag) : 624273M
On-Column Amount (ng) : 9.7331
Integration start scan : 118 Integration stop scan: 158
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

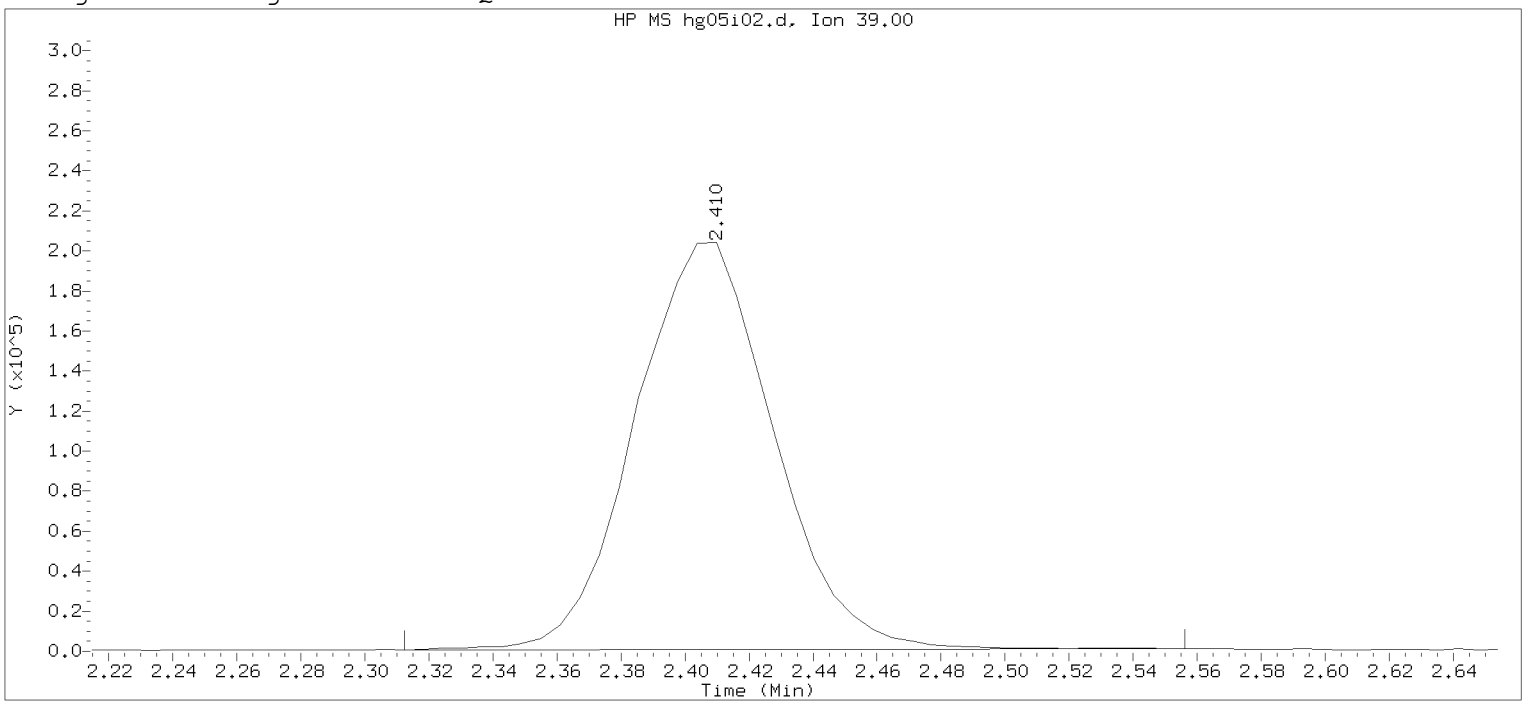
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

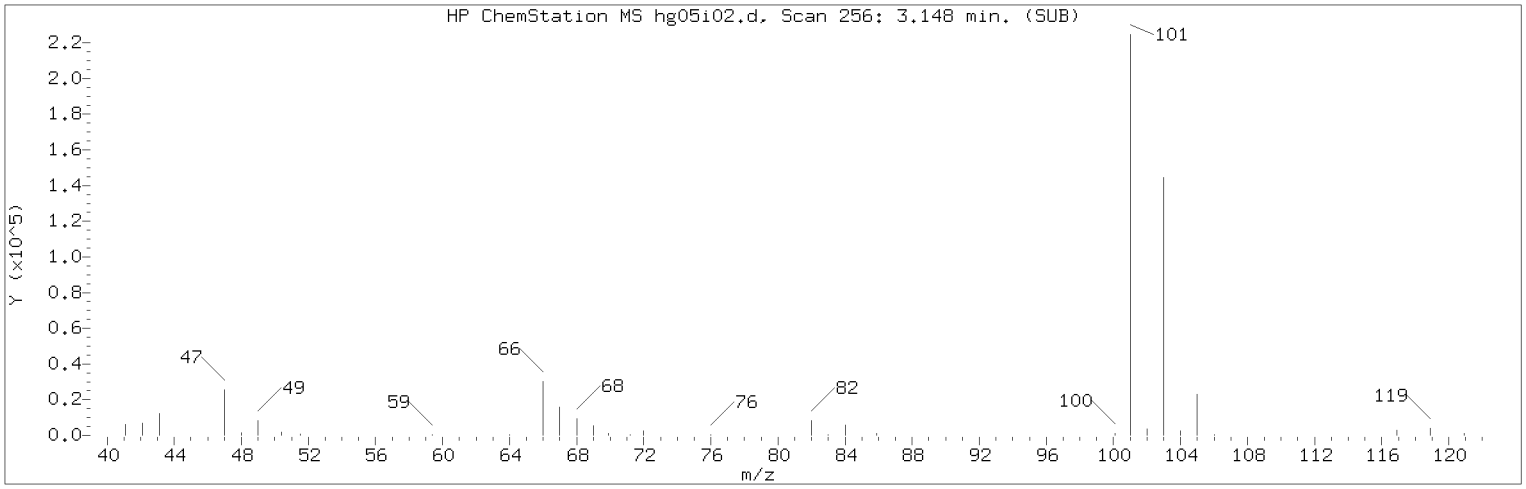
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

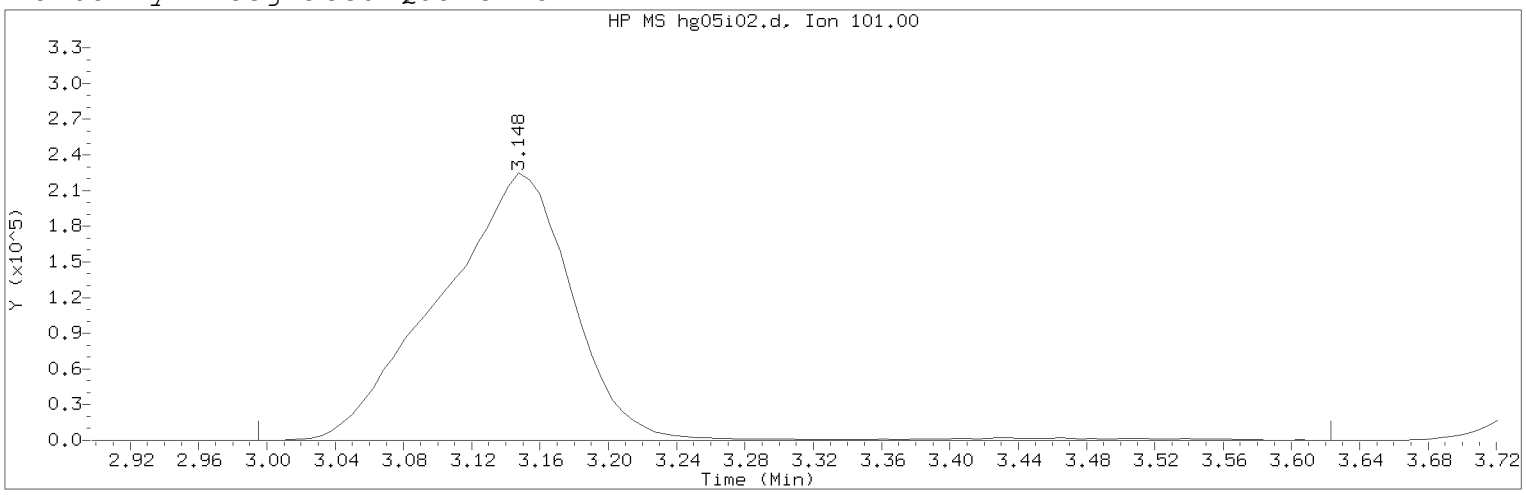
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area : 611840
On-column Amount (ng) : 9.5165
Integration start scan : 118 Integration stop scan: 158
Y at integration start : 500 Y at integration end: 1157

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

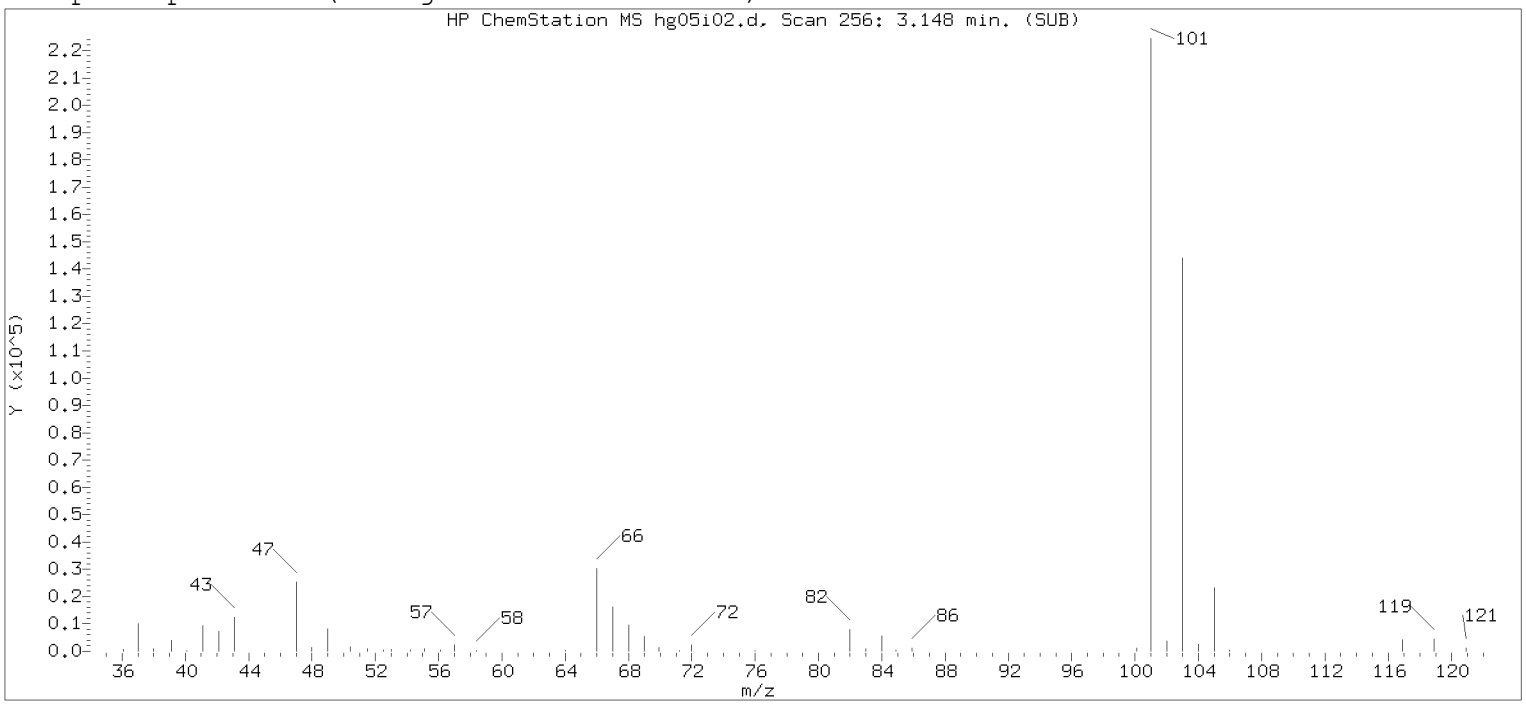
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 256
Retention Time (minutes): 3.148
Quant Ion : 101.00
Area (flag) : 1219190M
On-Column Amount (ng) : 9.6293
Integration start scan : 230 Integration stop scan: 333
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

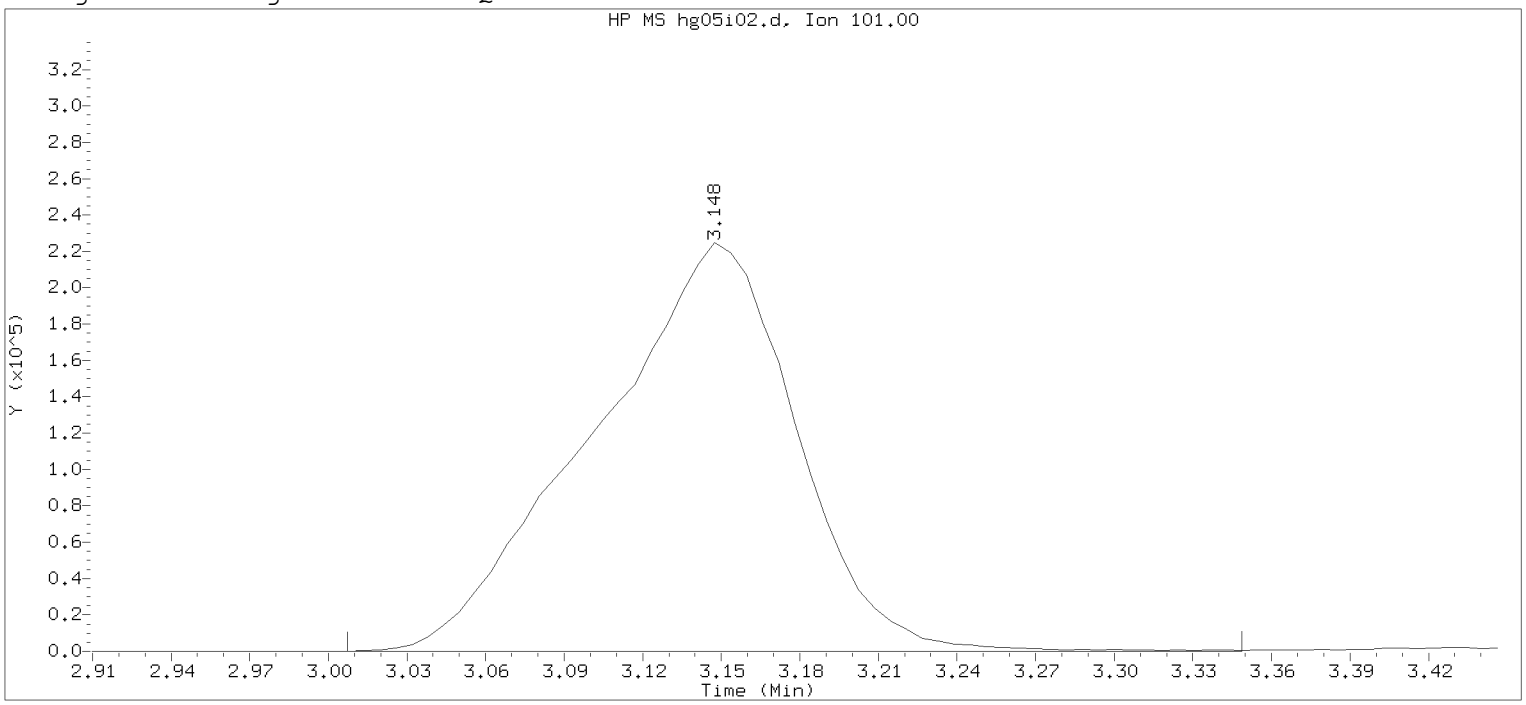
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

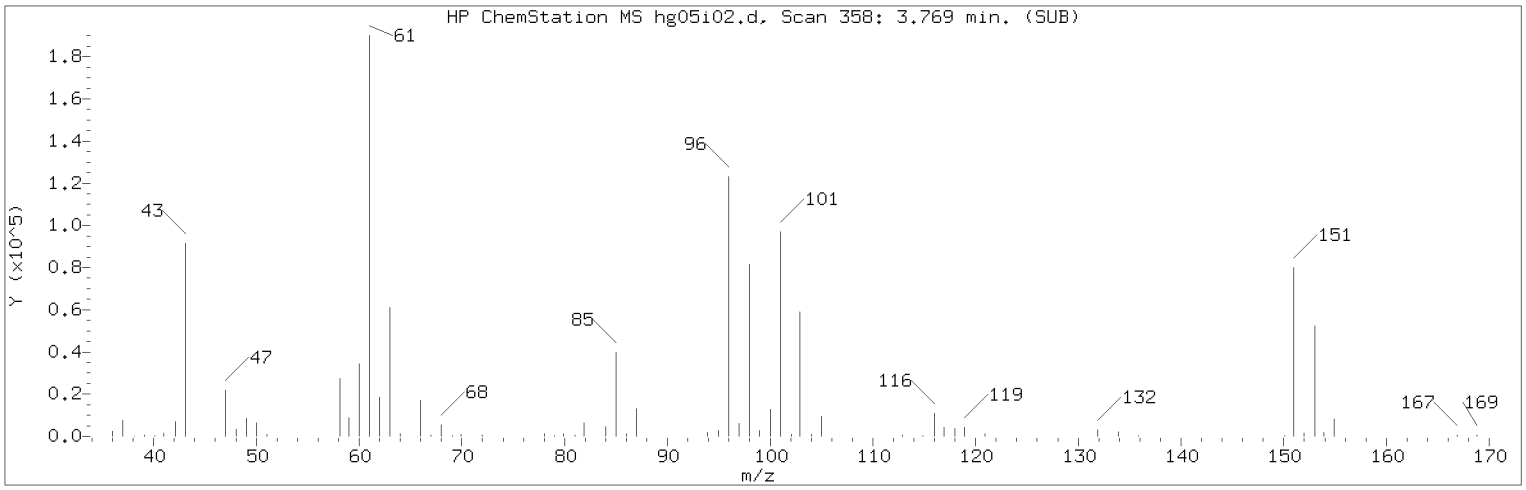
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

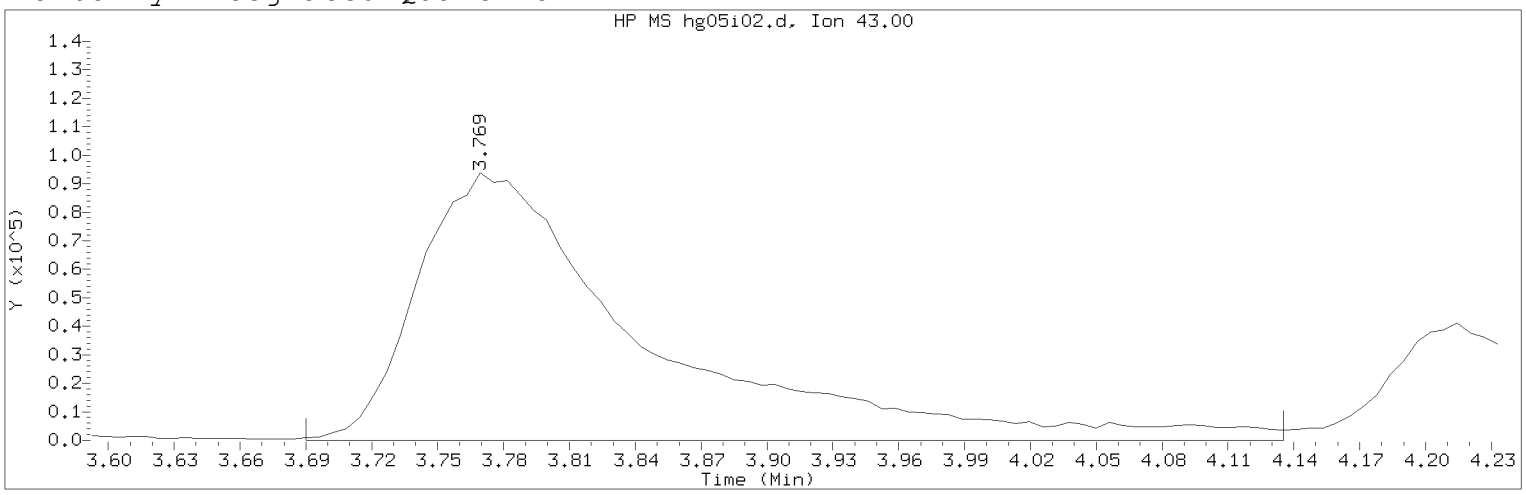
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 256
Retention Time (minutes): 3.148
Quant Ion : 101.00
Area : 1201740
On-column Amount (ng) : 10.8161
Integration start scan : 232 Integration stop scan: 288
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

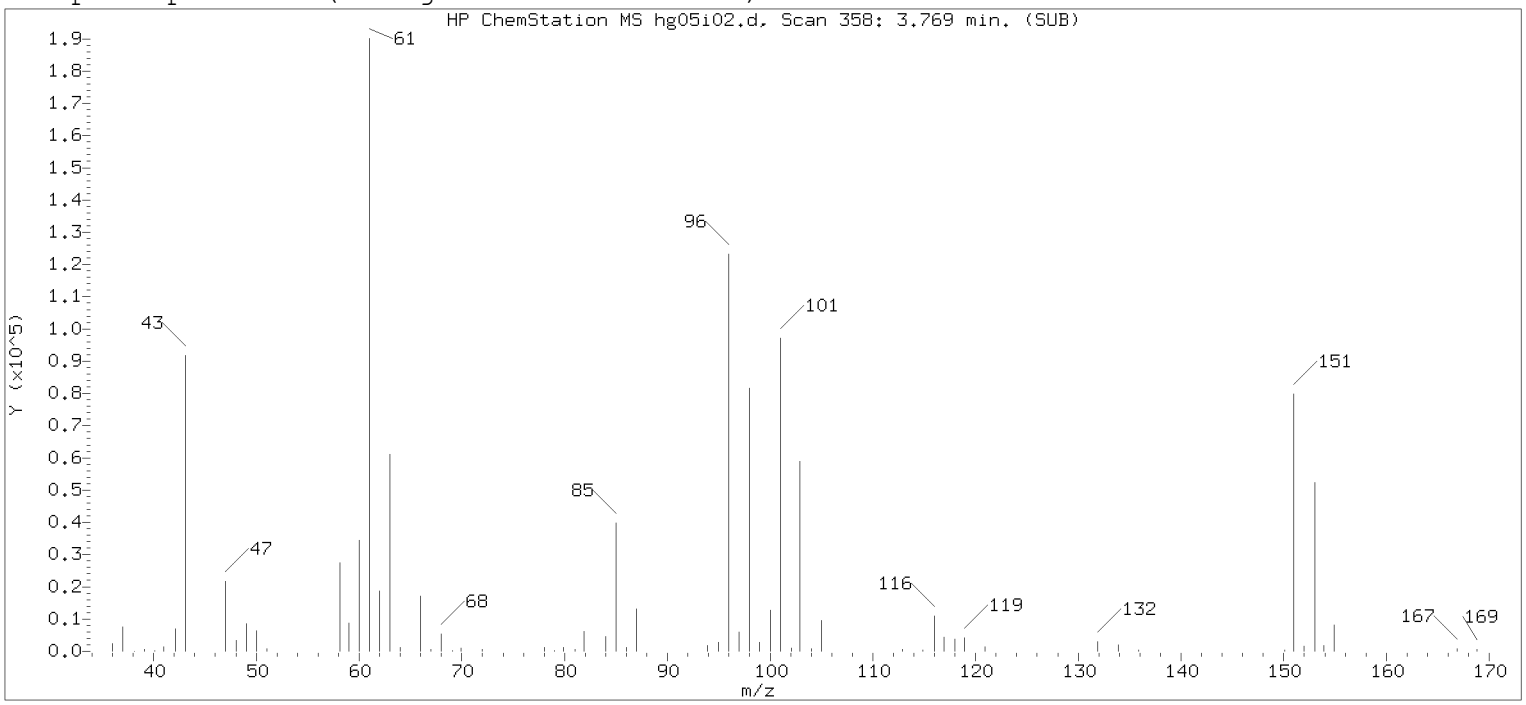
Compound Number : 14
Compound Name : Acetone
Scan Number : 358
Retention Time (minutes): 3.769
Quant Ion : 43.00
Area (flag) : 681694M
On-Column Amount (ng) : 88.8854
Integration start scan : 344 Integration stop scan: 417
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

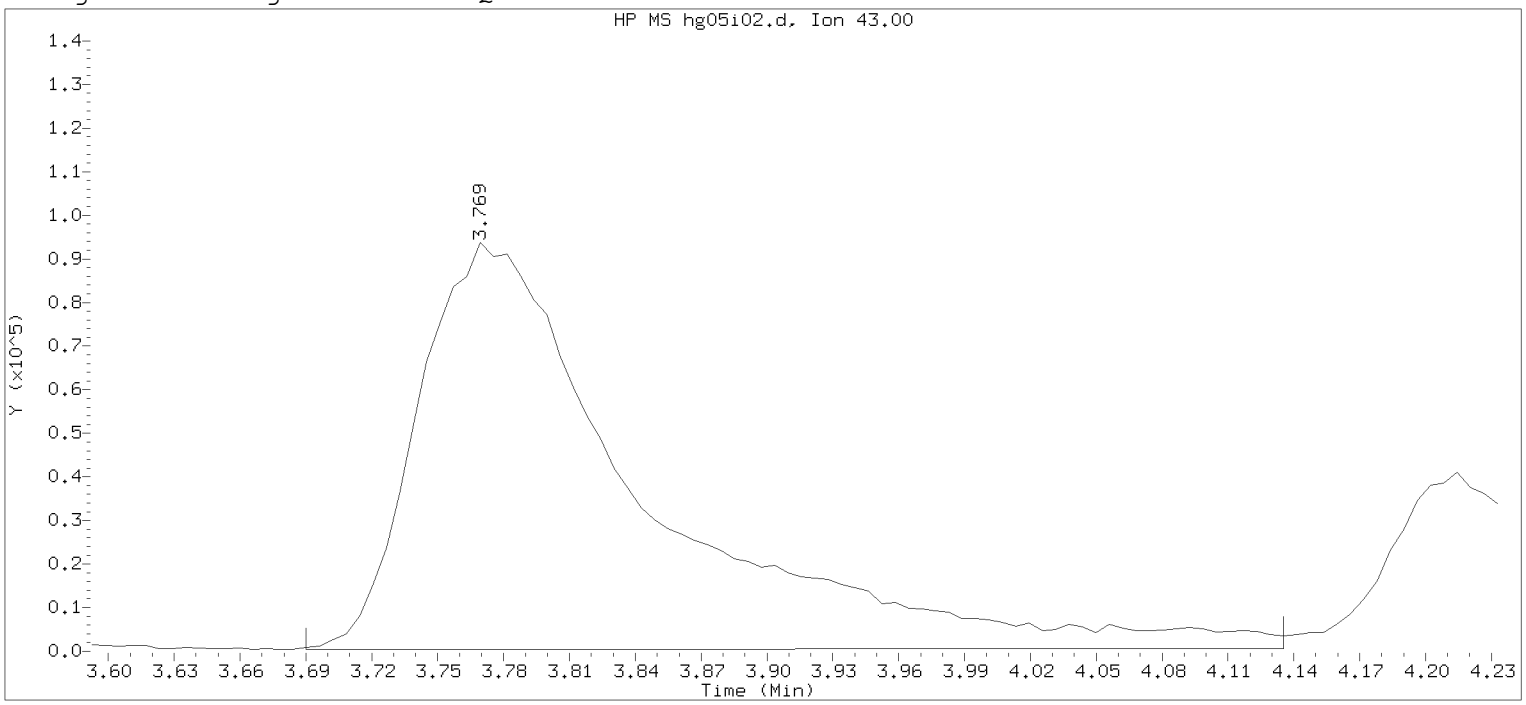
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

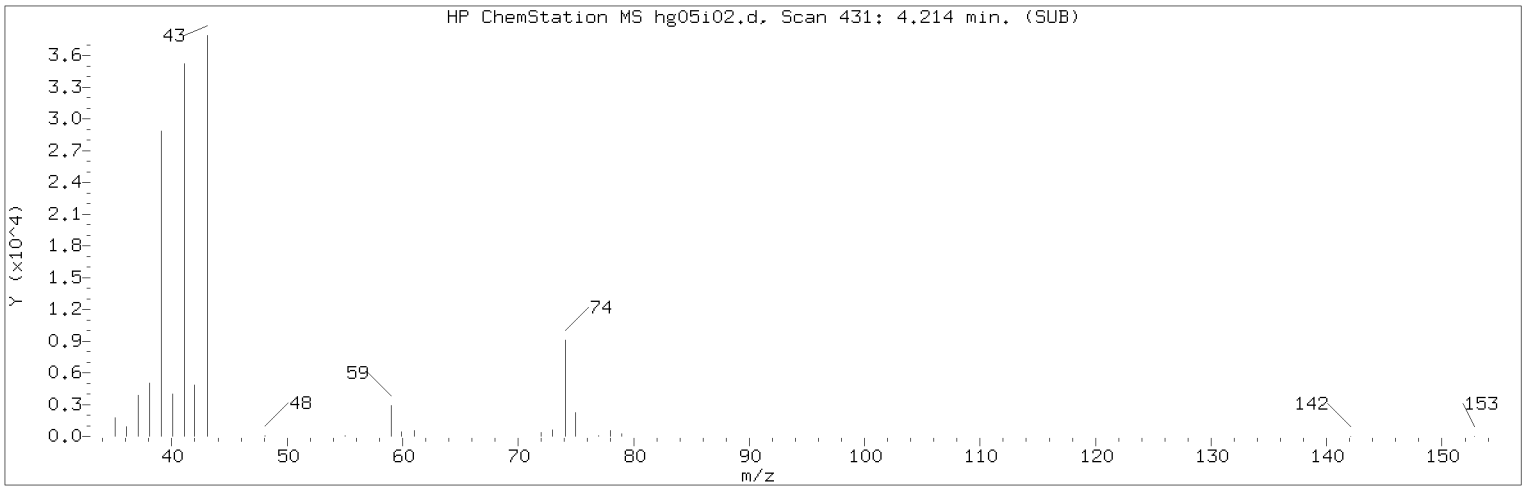
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Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

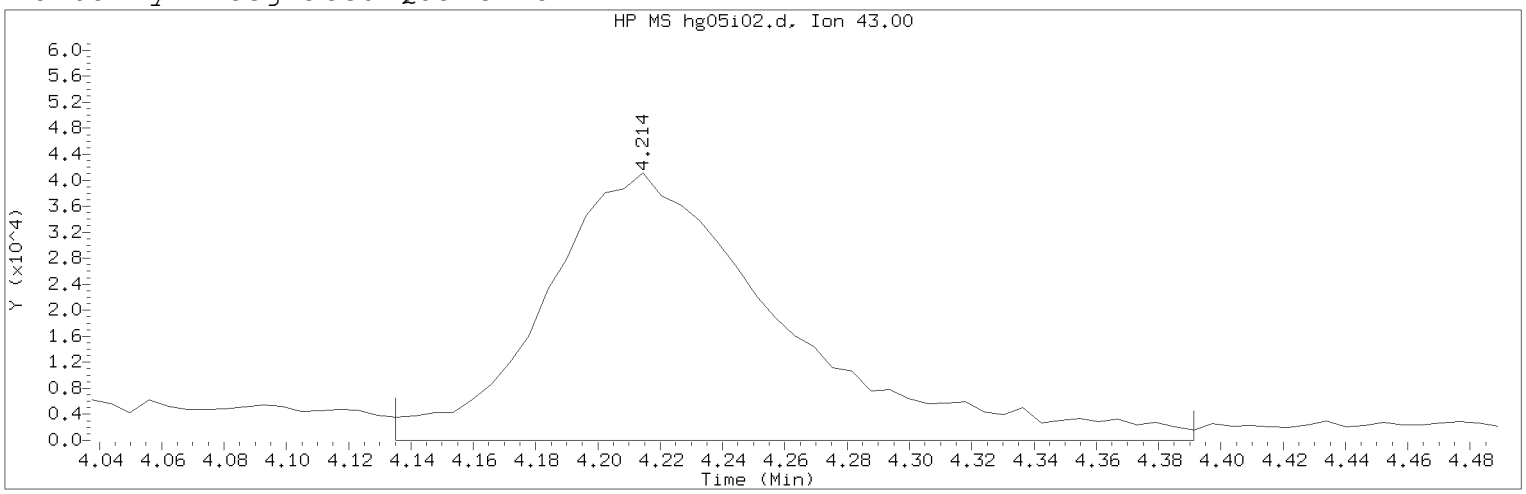
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 358		
Retention Time (minutes)	: 3.769		
Quant Ion	: 43.00		
Area	: 668252		
On-column Amount (ng)	: 83.6247		
Integration start scan	: 344	Integration stop scan:	417
Y at integration start	: 417	Y at integration end:	531

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

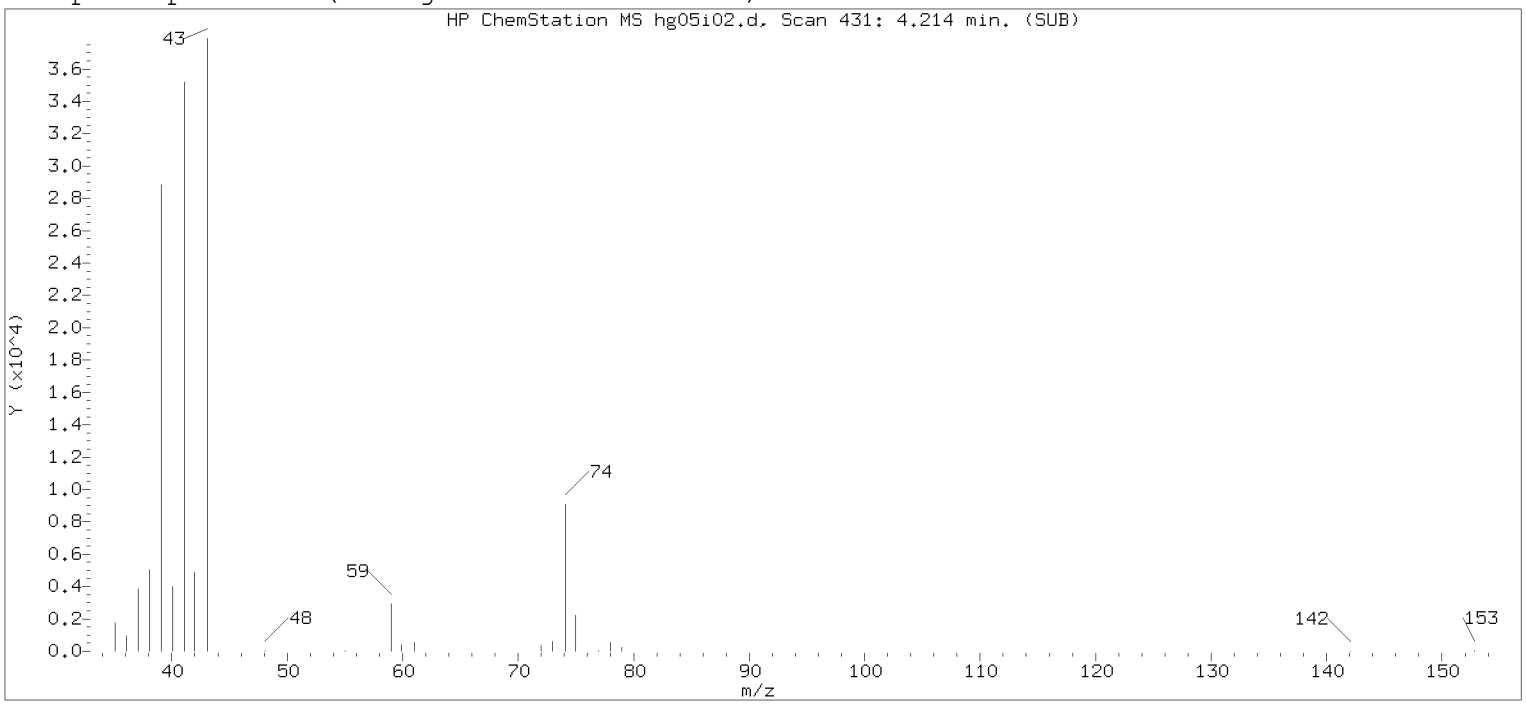
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area (flag) : 218033M
On-Column Amount (ng) : 8.9924
Integration start scan : 417 Integration stop scan: 459
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

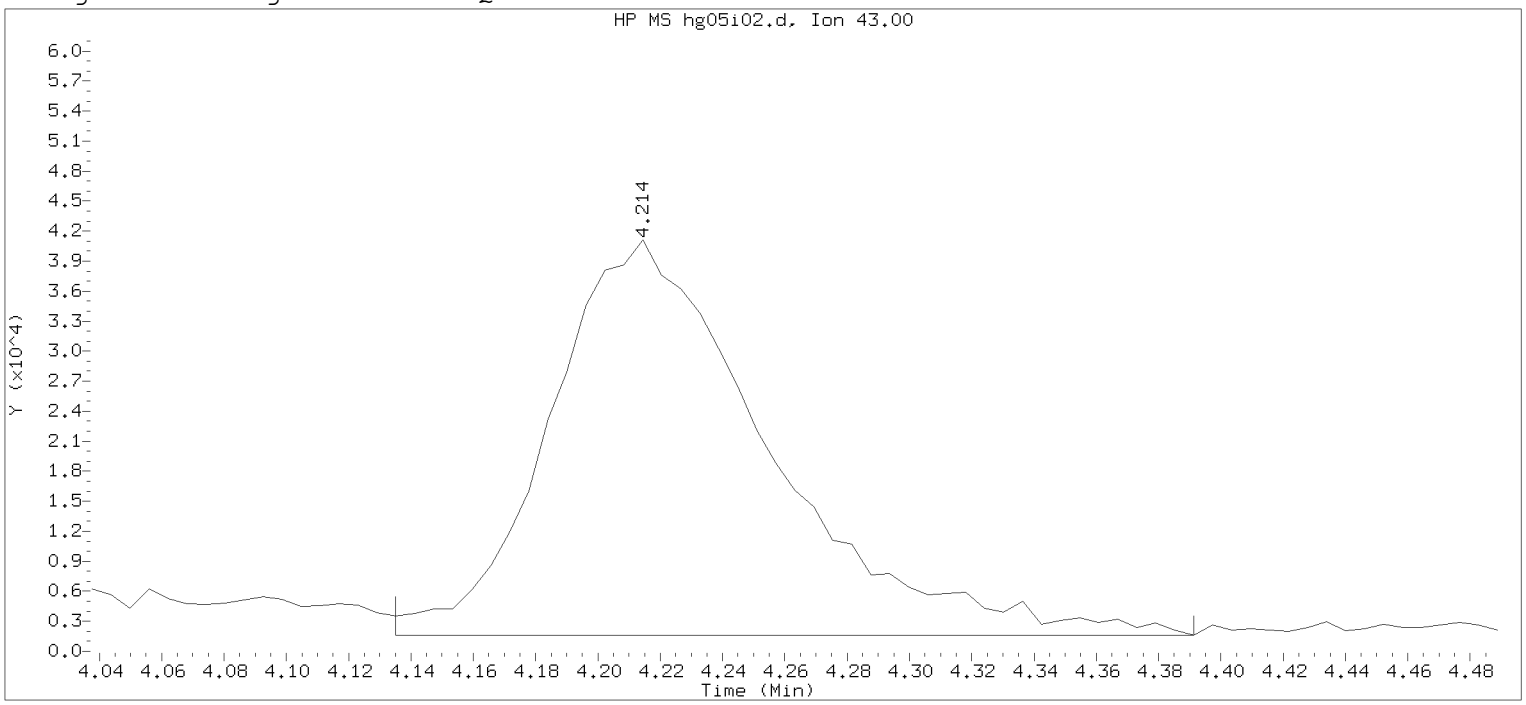
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

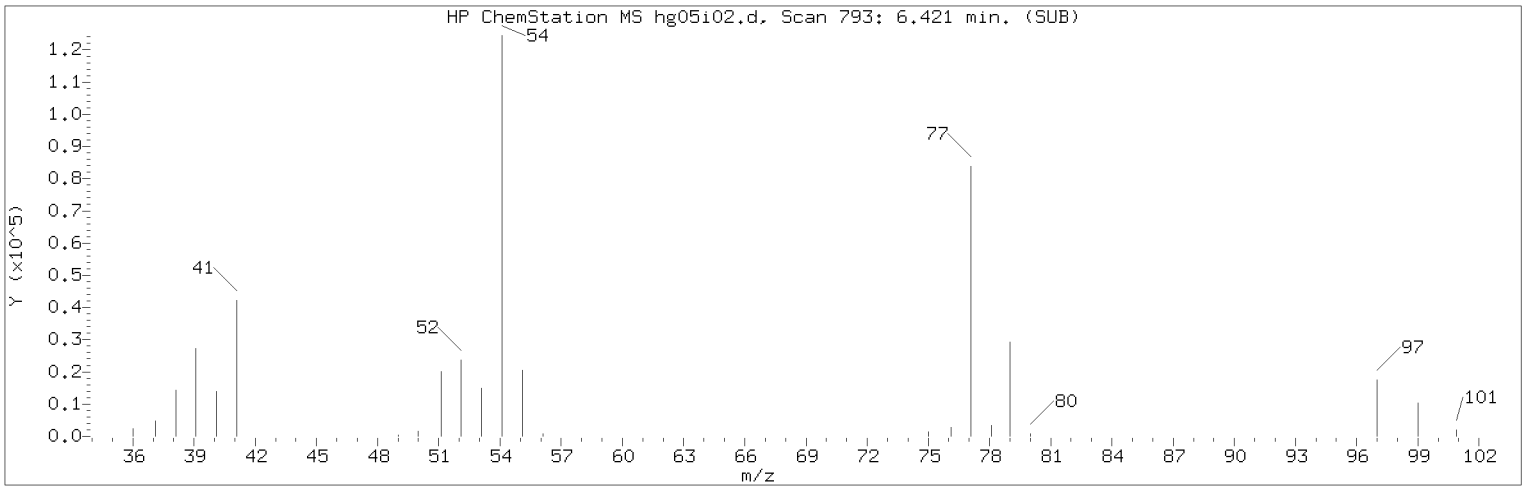
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

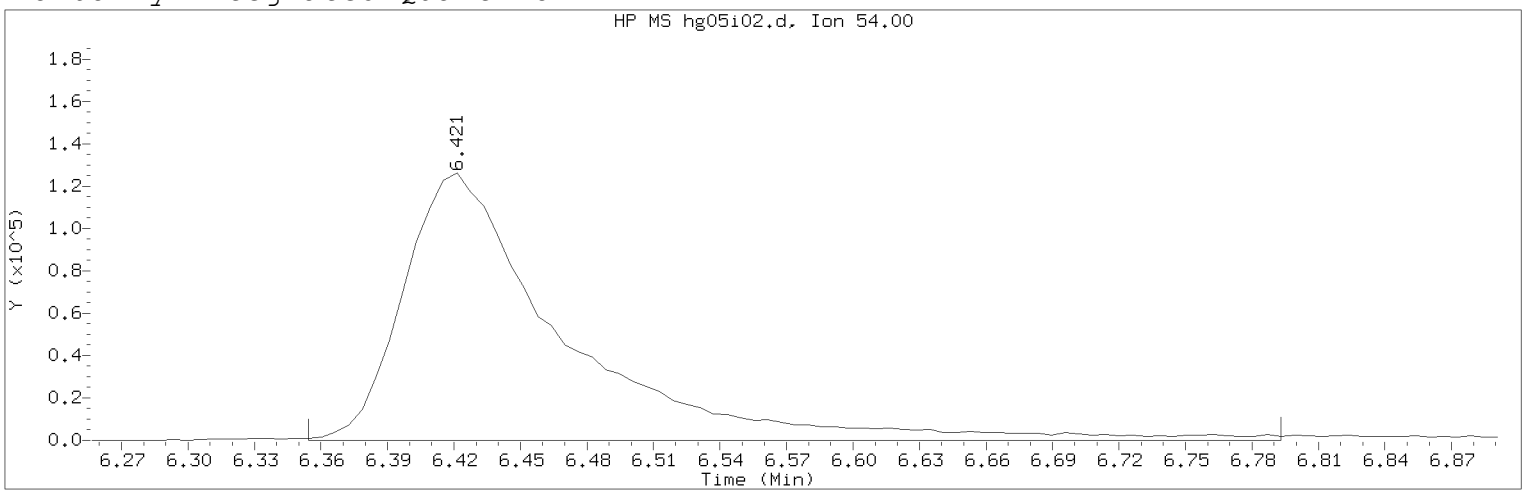
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area : 192640
On-column Amount (ng) : 7.2082
Integration start scan : 417 Integration stop scan: 459
Y at integration start : 1592 Y at integration end: 1592

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

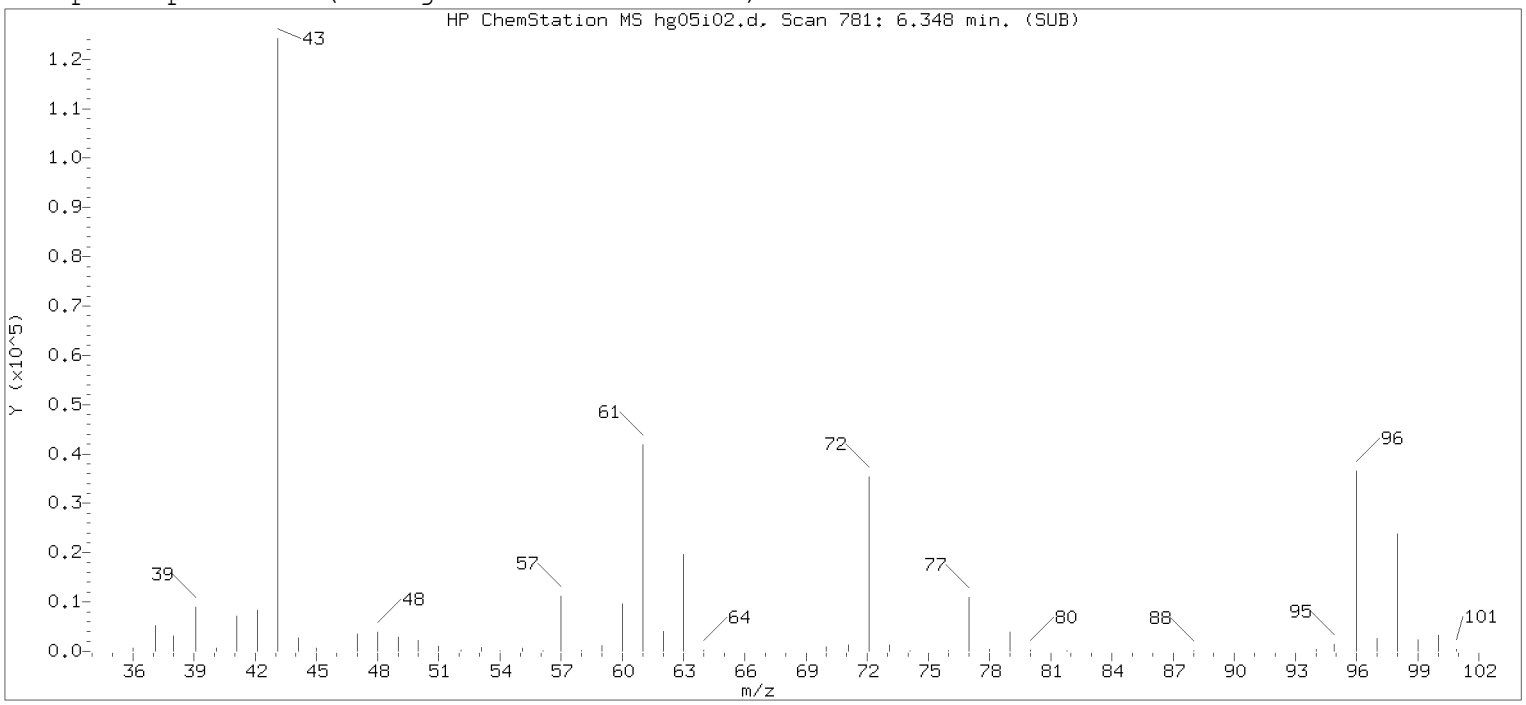
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 793
Retention Time (minutes): 6.421
Quant Ion : 54.00
Area (flag) : 634775MA
On-Column Amount (ng) : 200.2803
Integration start scan : 781 Integration stop scan: 853
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

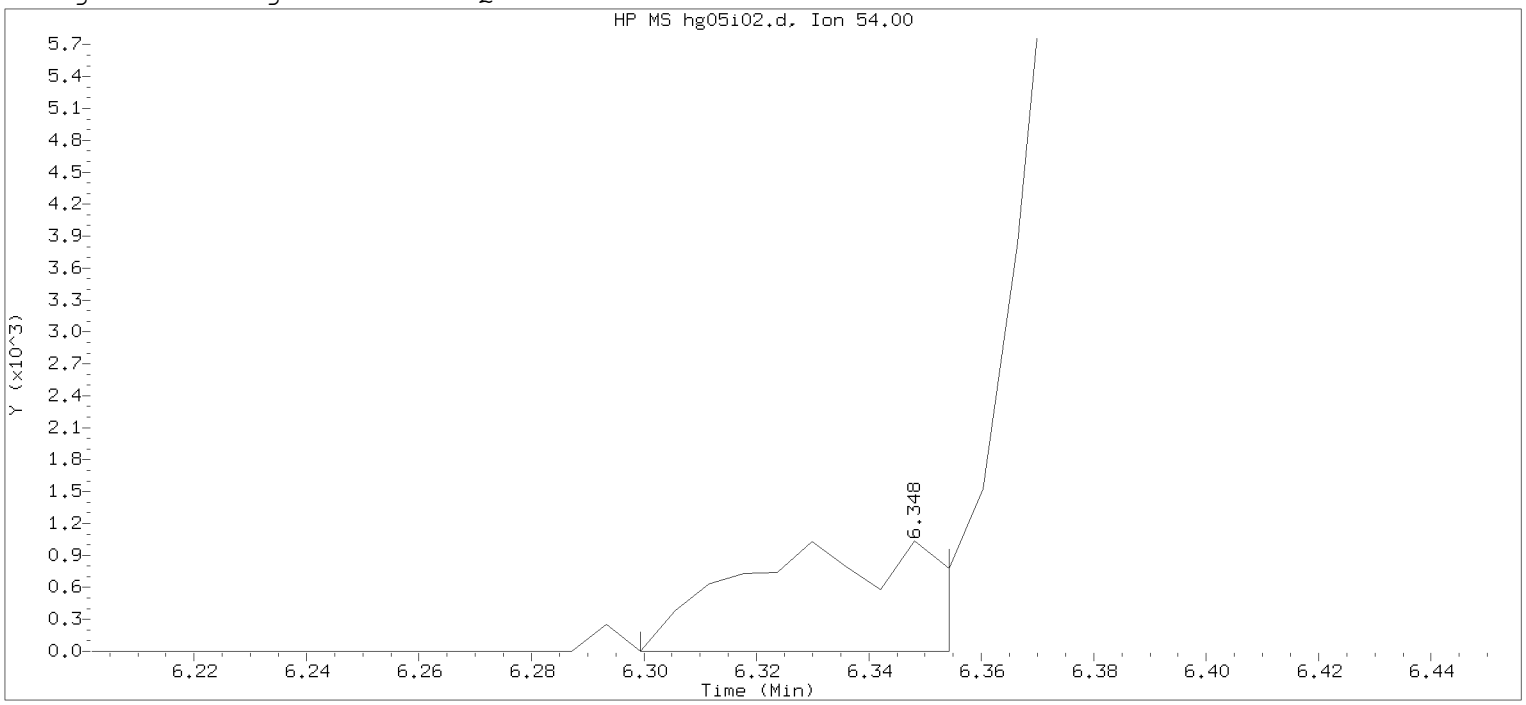
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

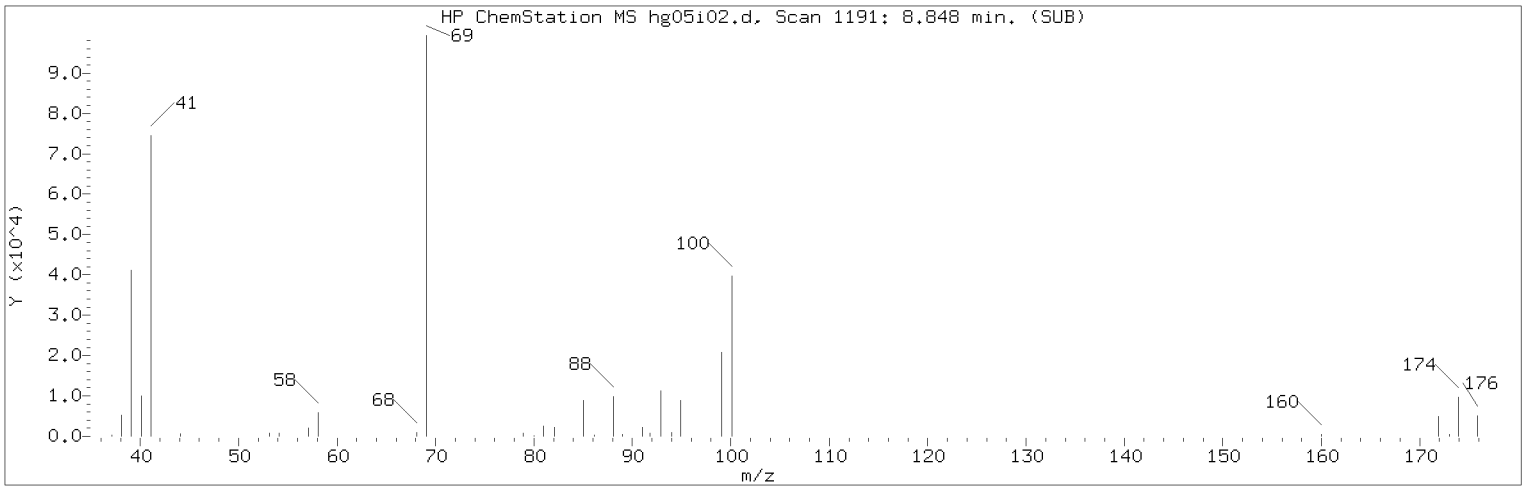
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

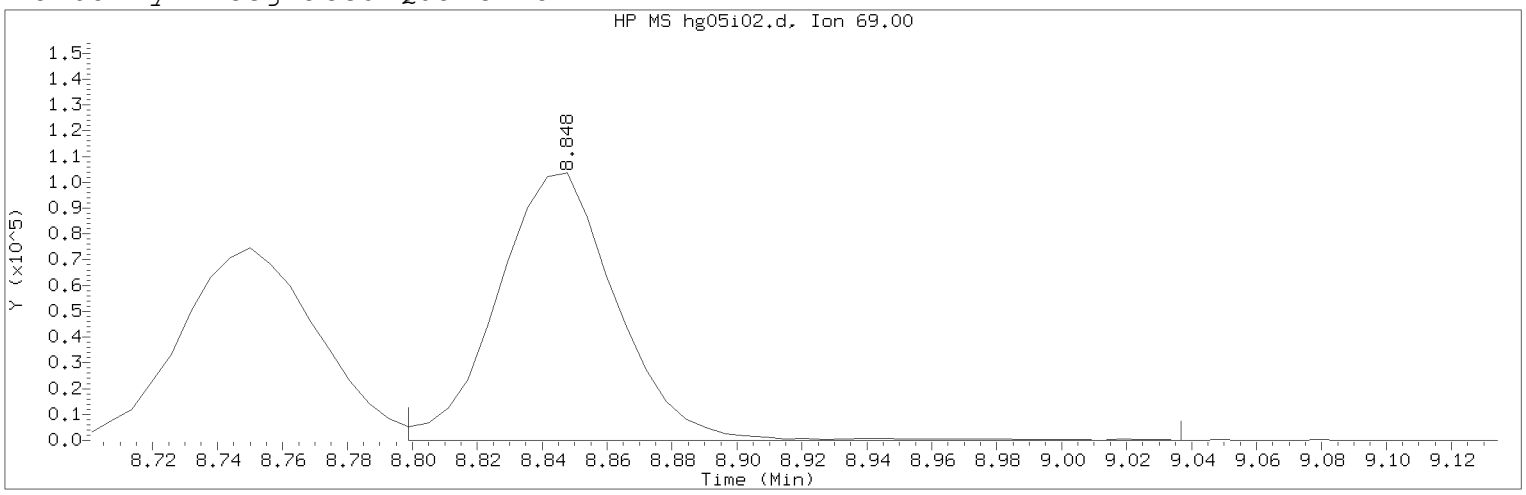
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 781
Retention Time (minutes): 6.348
Quant Ion : 54.00
Area : 2306
On-column Amount (ng) : 0.6930
Integration start scan : 772 Integration stop scan: 781
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

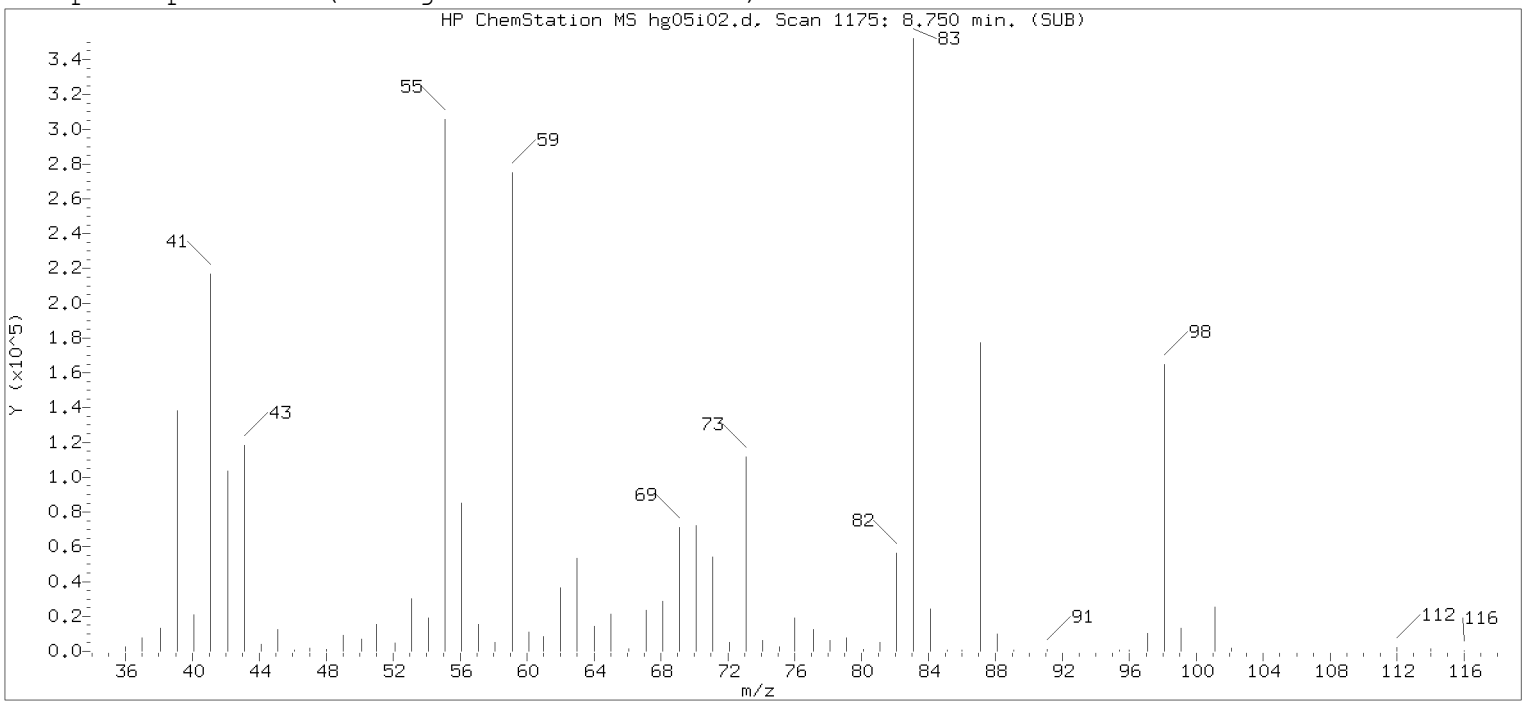
Compound Number : 71
Compound Name : Methyl Methacrylate
Scan Number : 1191
Retention Time (minutes): 8.848
Quant Ion : 69.00
Area (flag) : 263308A
On-Column Amount (ng) : 10.2498
Integration start scan : 1182 Integration stop scan: 1221
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

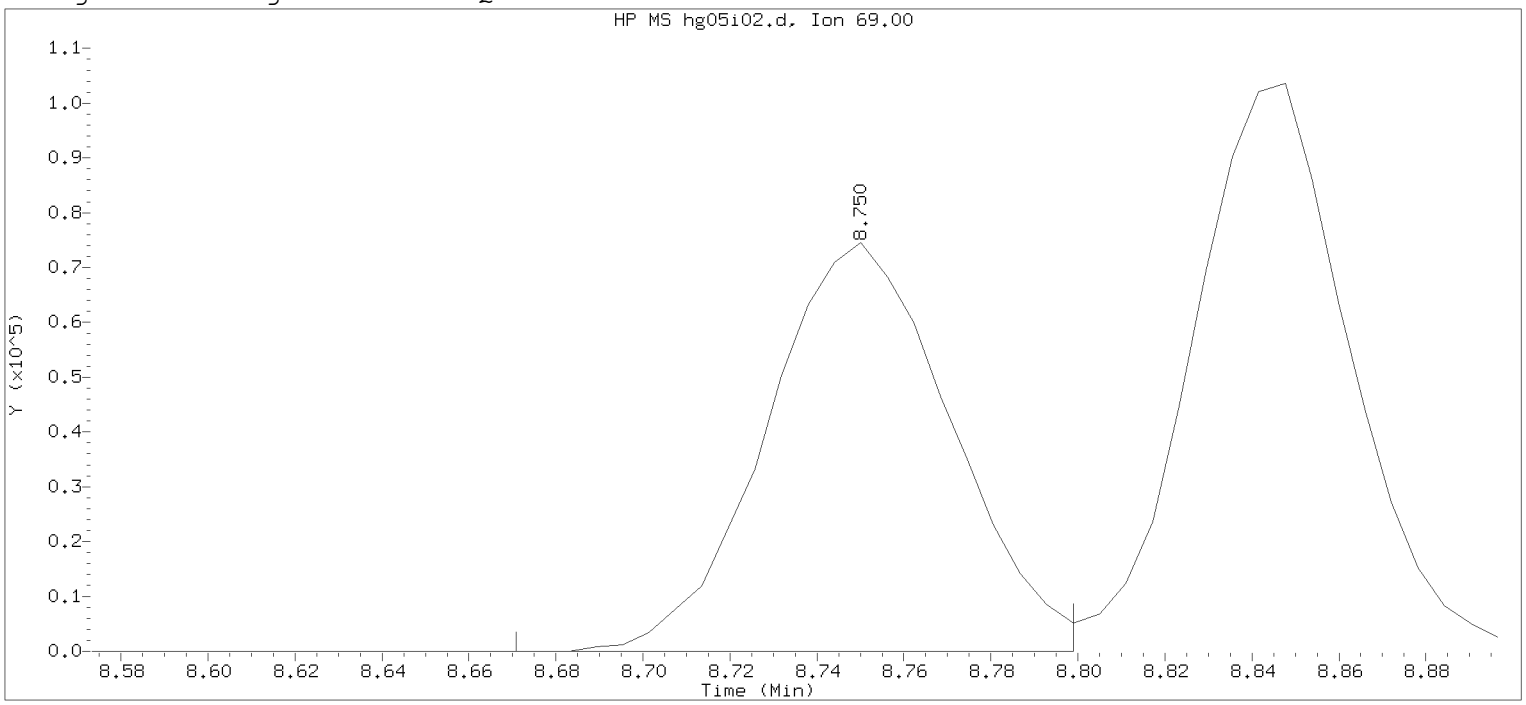
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

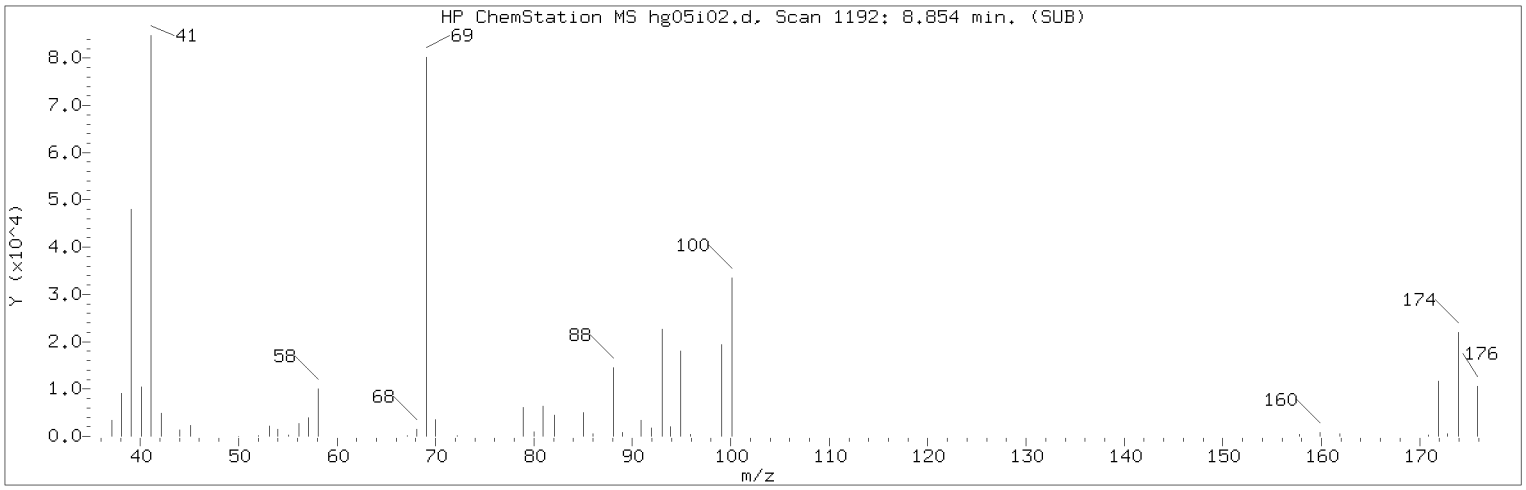
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

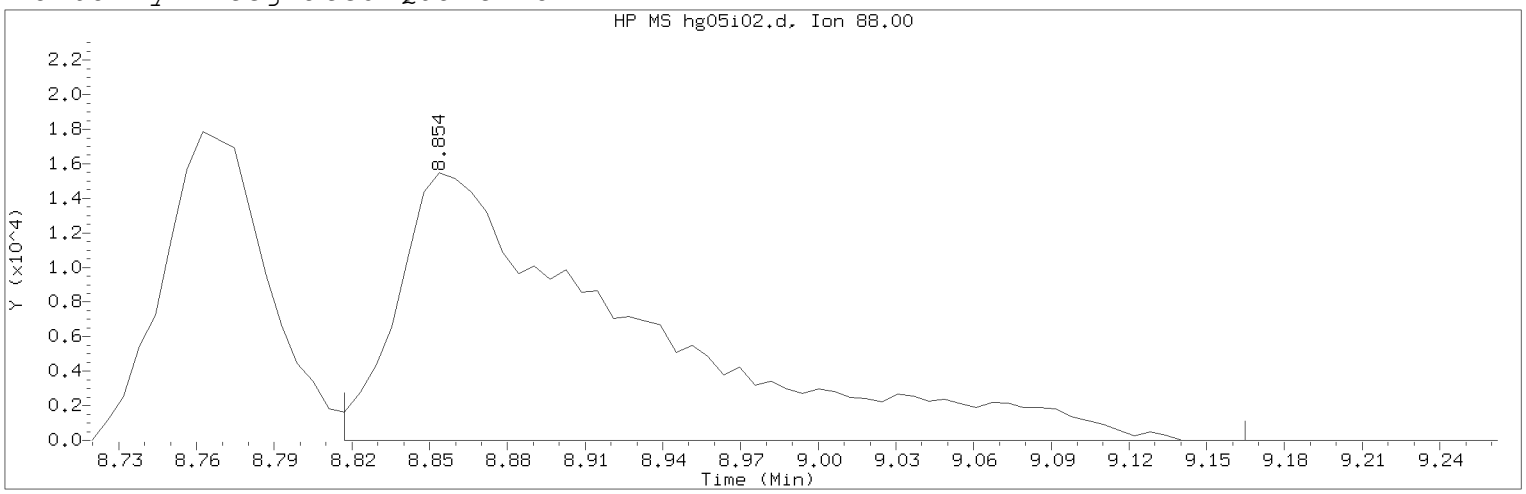
Compound Number	: 71		
Compound Name	: Methyl Methacrylate		
Scan Number	: 1175		
Retention Time (minutes)	: 8.750		
Quant Ion	: 69.00		
Area	: 218722		
On-column Amount (ng)	: 7.3592		
Integration start scan	: 1161	Integration stop scan:	1182
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

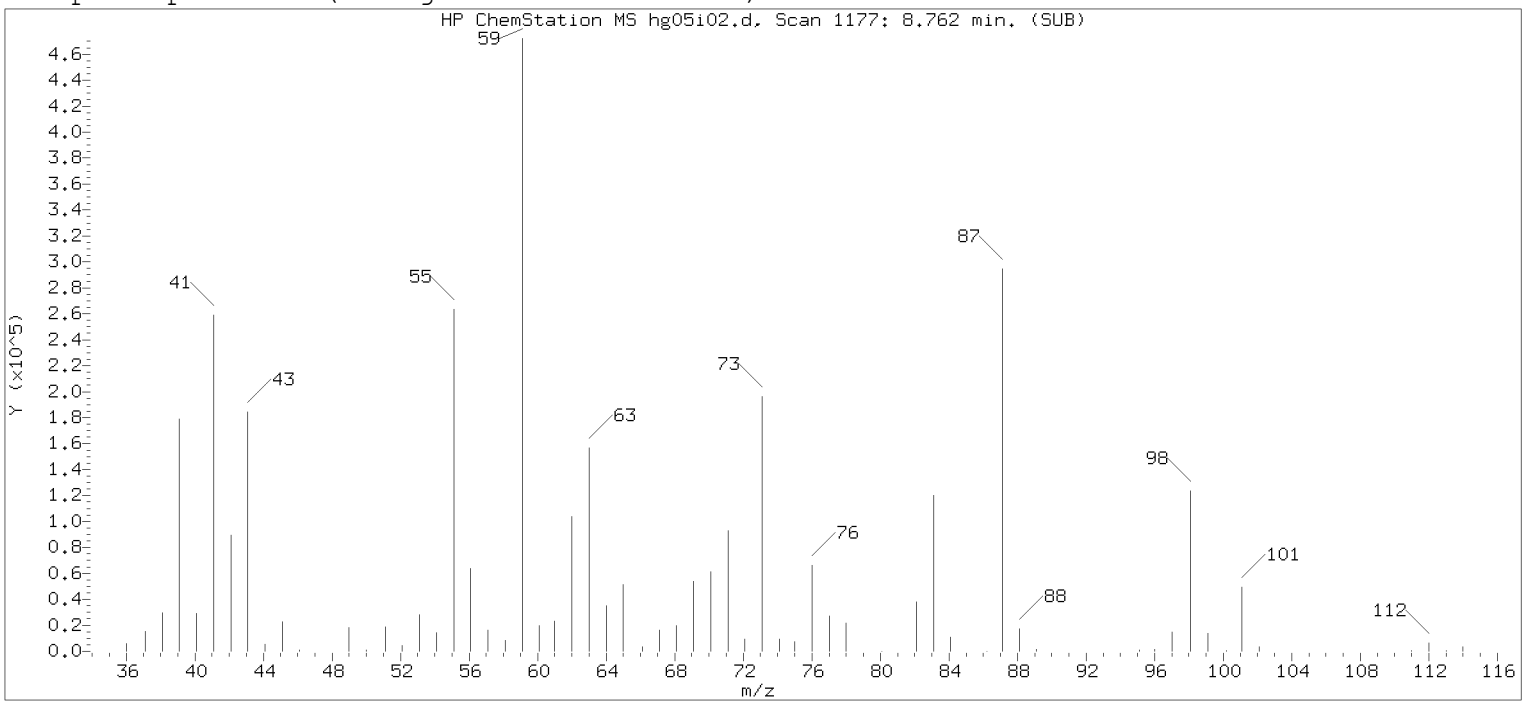
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1192
Retention Time (minutes): 8.854
Quant Ion : 88.00
Area (flag) : 99093M
On-Column Amount (ng) : 571.1333
Integration start scan : 1185 Integration stop scan: 1242
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

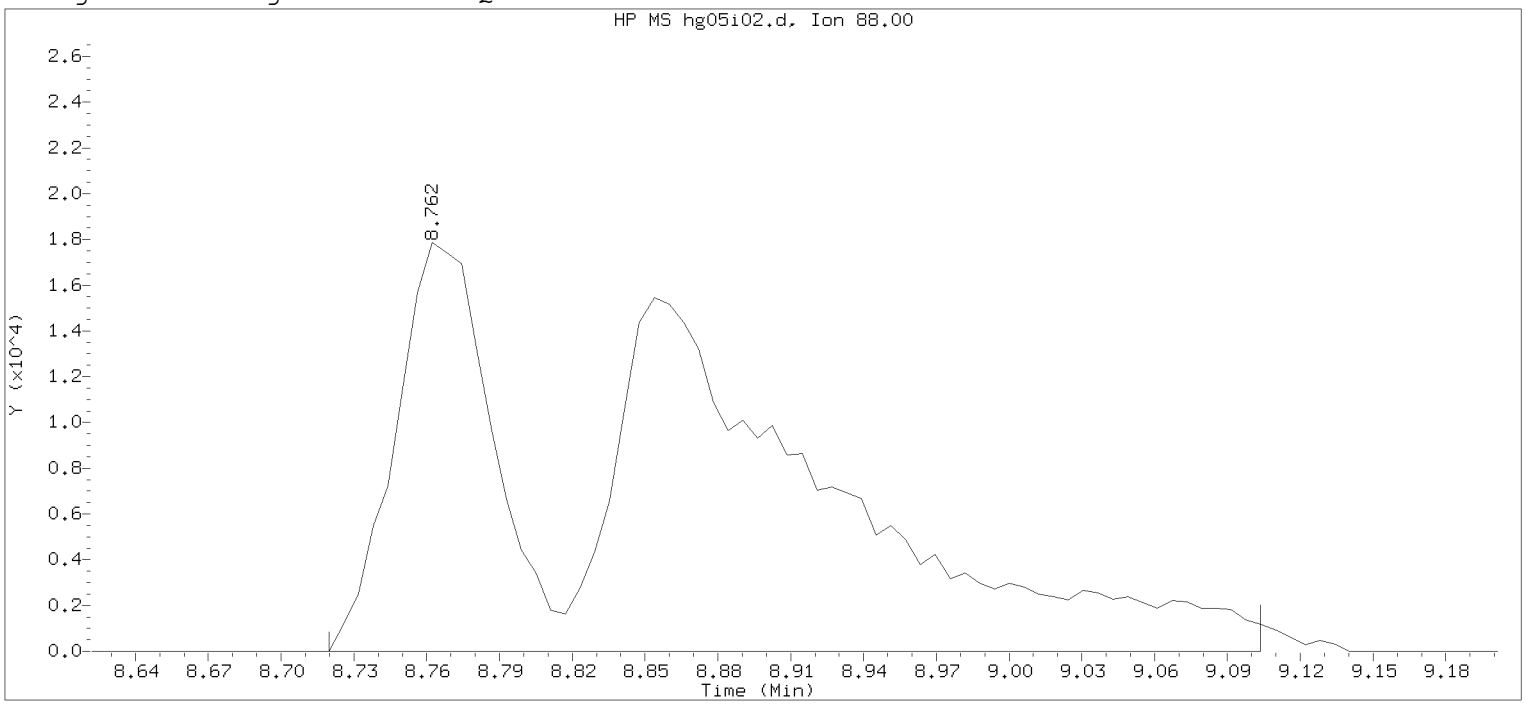
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

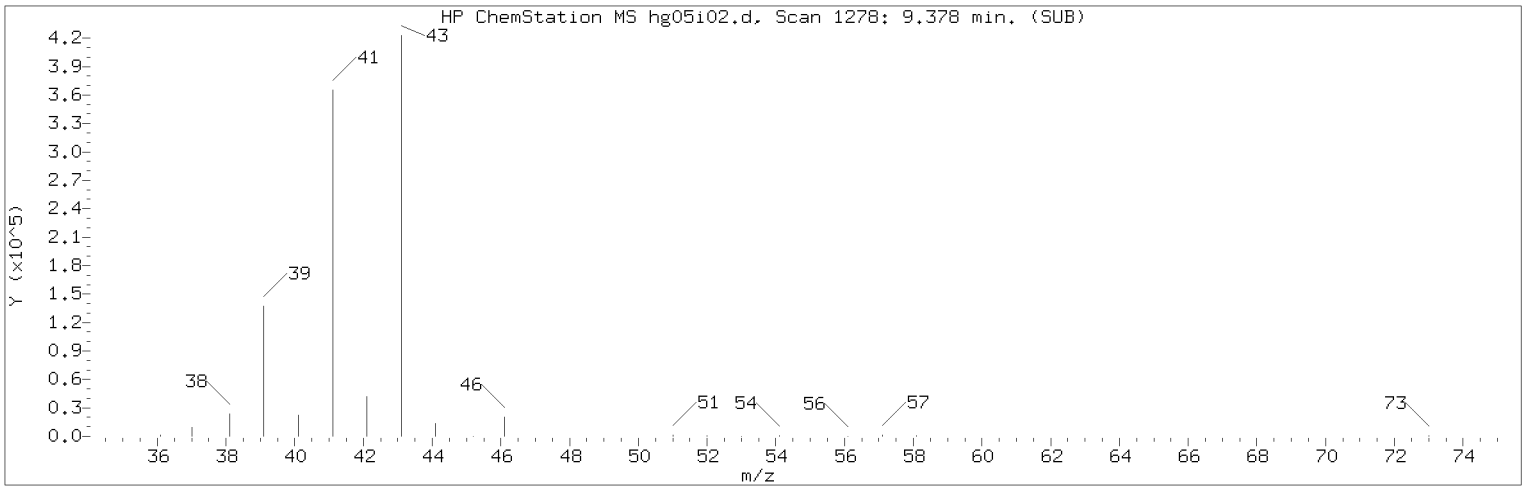
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

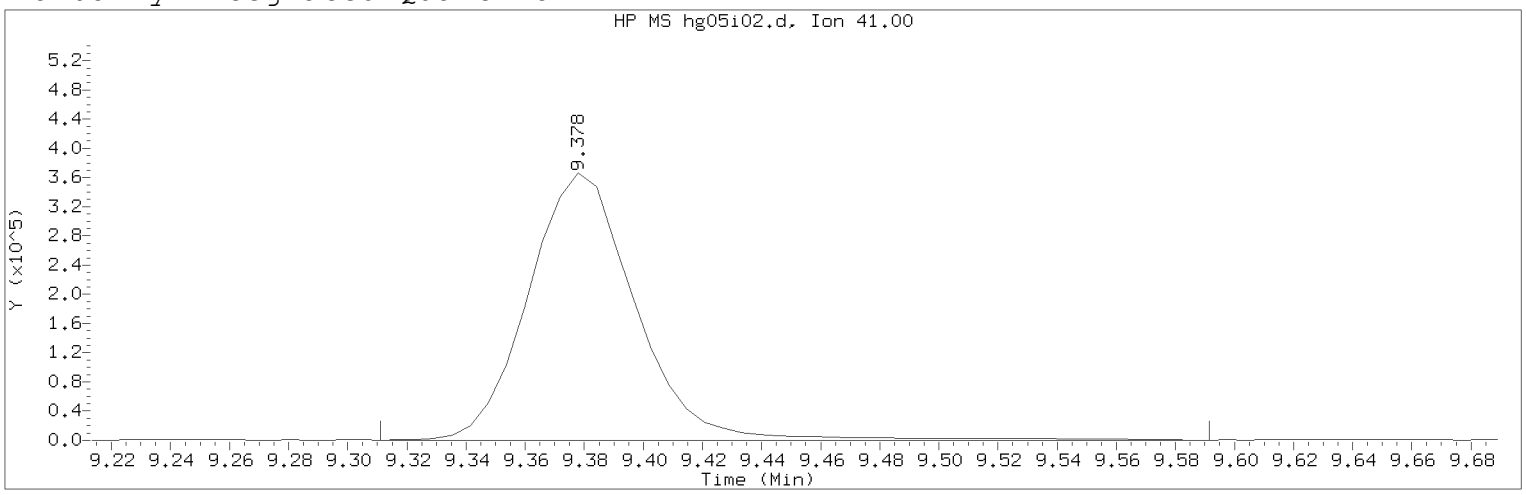
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1177		
Retention Time (minutes)	: 8.762		
Quant Ion	: 88.00		
Area	: 147330		
On-column Amount (ng)	: 582.5157		
Integration start scan	: 1169	Integration stop scan:	1232
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

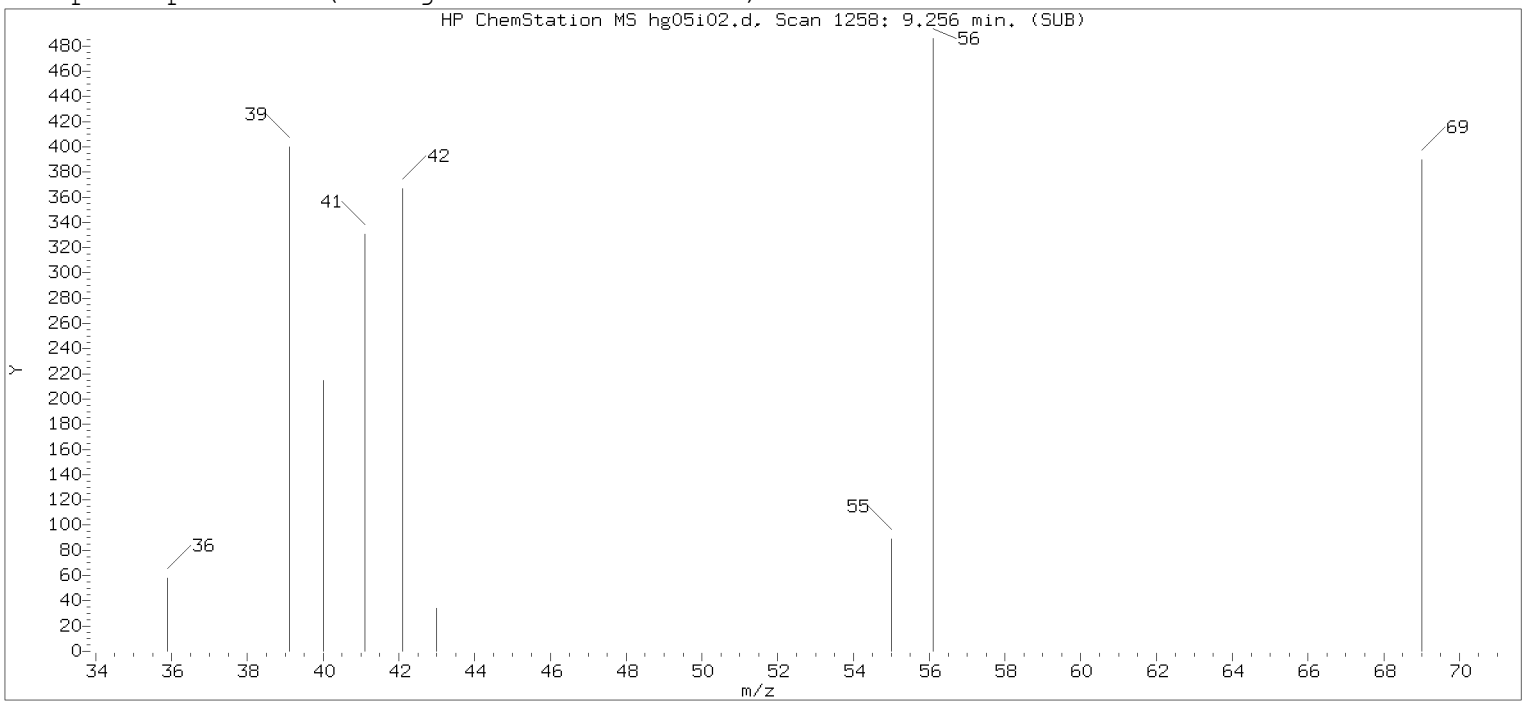
Compound Number : 76
Compound Name : 2-Nitropropane
Scan Number : 1278
Retention Time (minutes): 9.378
Quant Ion : 41.00
Area (flag) : 924192A
On-Column Amount (ng) : 101.2894
Integration start scan : 1266 Integration stop scan: 1312
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

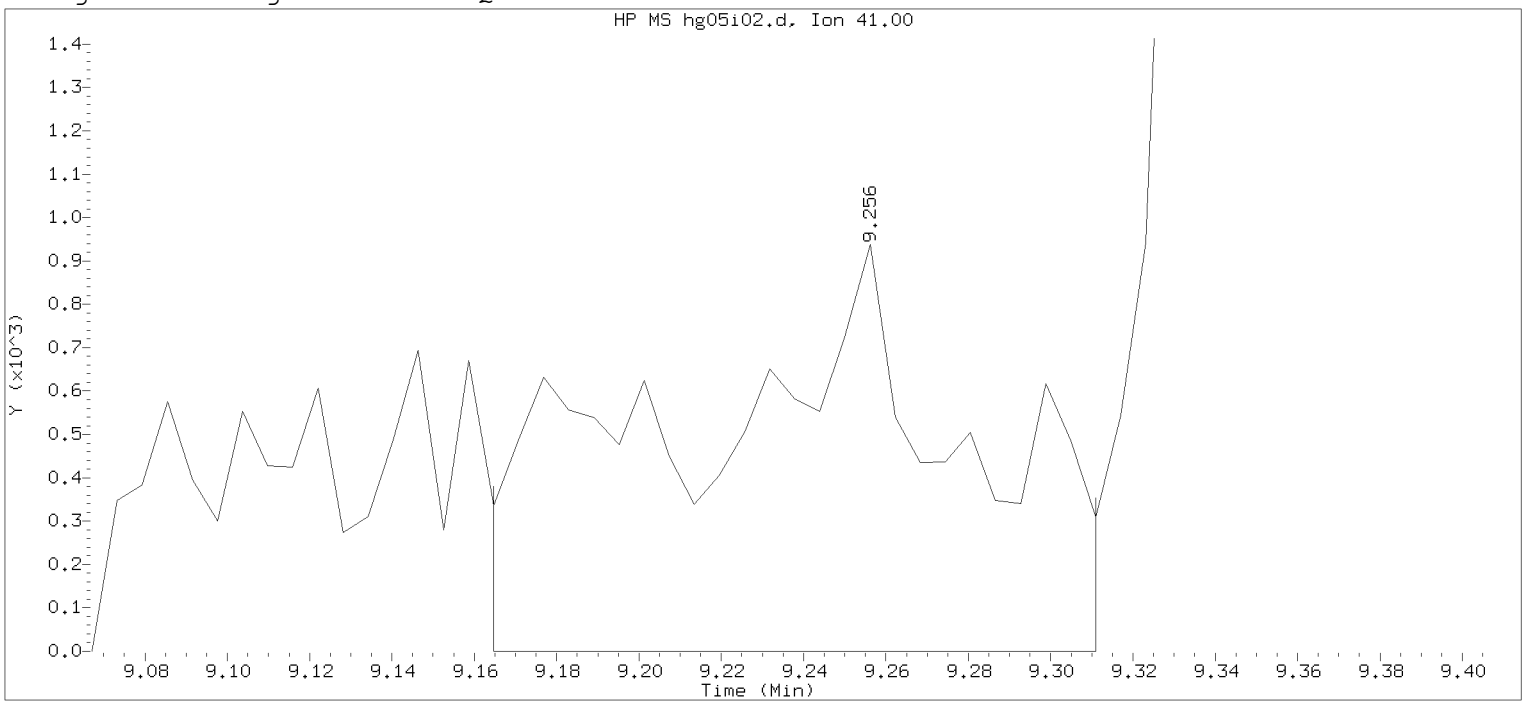
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

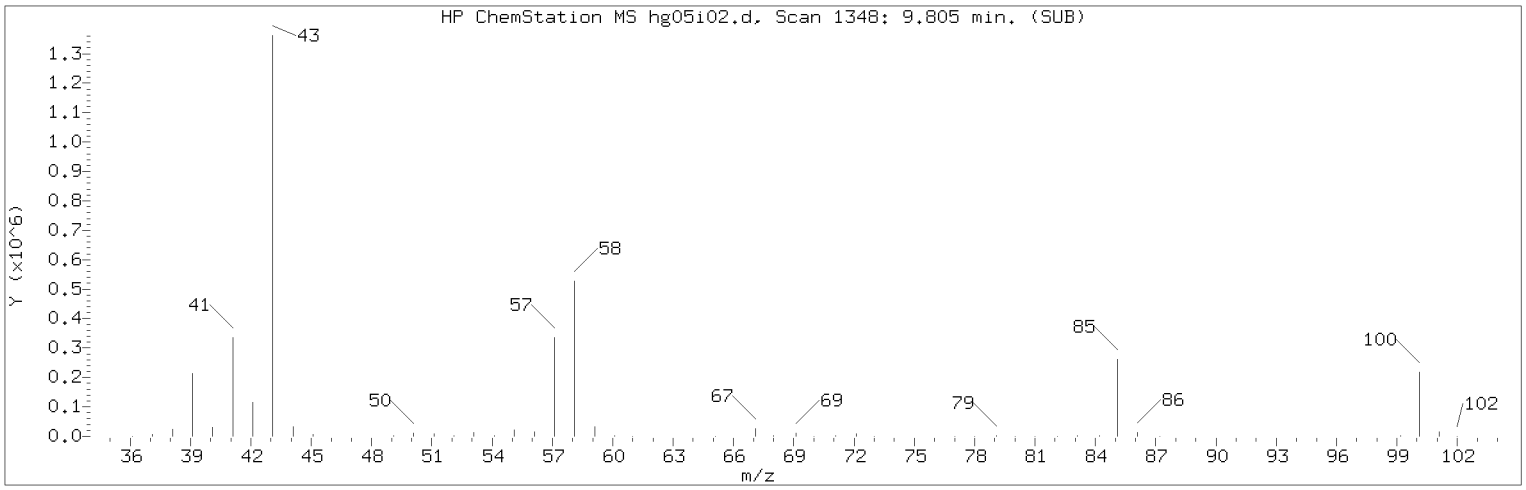
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

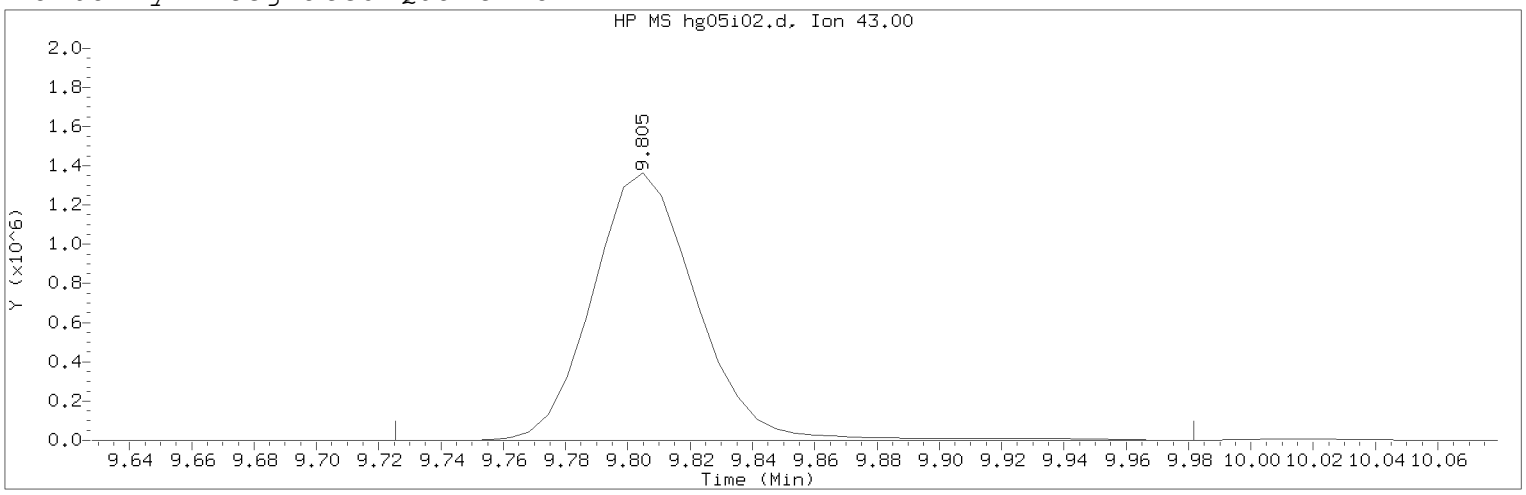
Compound Number	: 76		
Compound Name	: 2-Nitropropane		
Scan Number	: 1258		
Retention Time (minutes)	: 9.256		
Quant Ion	: 41.00		
Area	: 4570		
On-column Amount (ng)	: 0.6165		
Integration start scan	: 1242	Integration stop scan:	1266
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

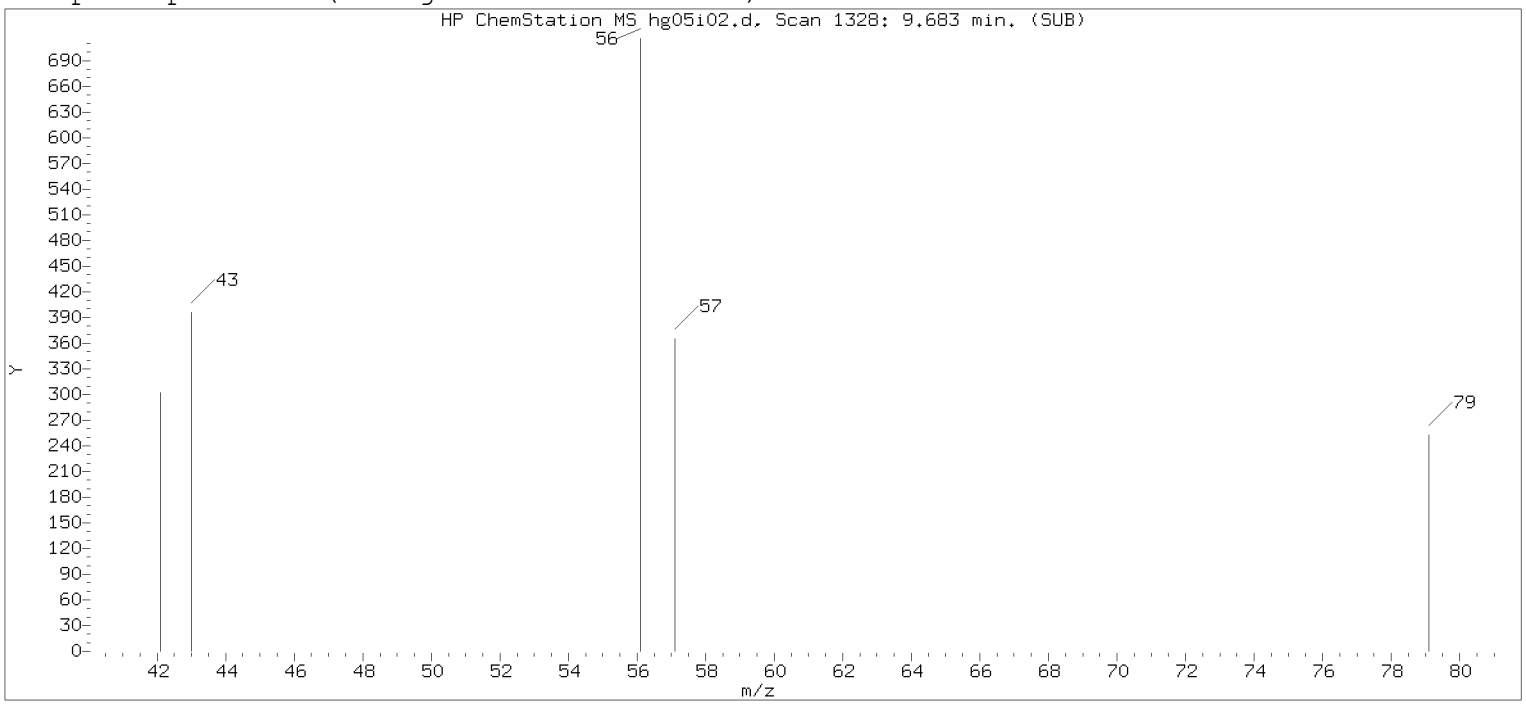
Compound Number : 81
Compound Name : 4-Methyl-2-Pentanone
Scan Number : 1348
Retention Time (minutes): 9.805
Quant Ion : 43.00
Area (flag) : 3170246A
On-Column Amount (ng) : 100.9342
Integration start scan : 1334 Integration stop scan: 1376
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

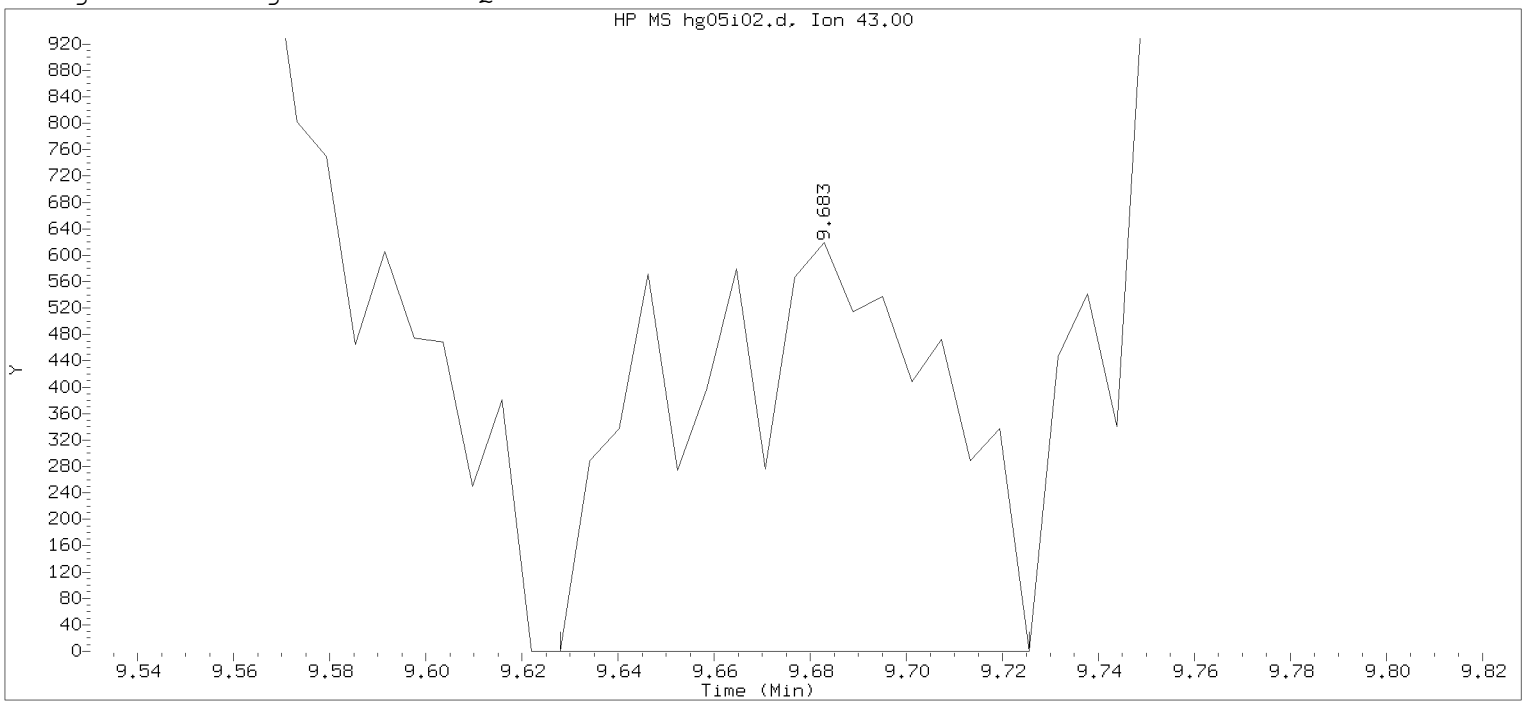
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

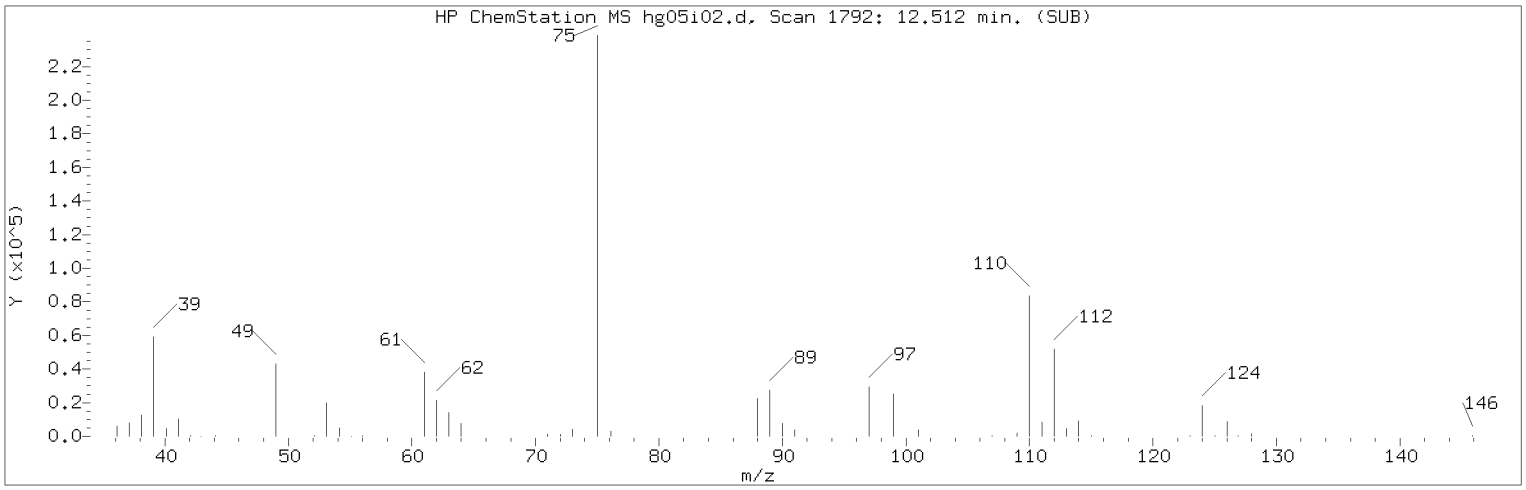
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

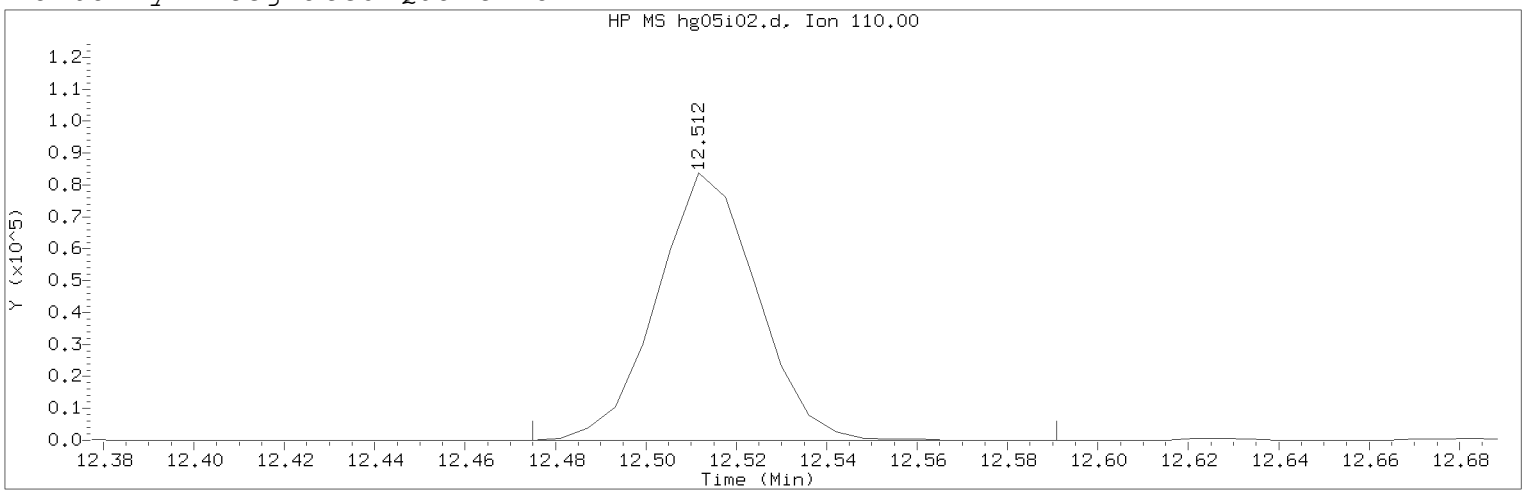
Compound Number	: 81		
Compound Name	: 4-Methyl-2-Pentanone		
Scan Number	: 1328		
Retention Time (minutes)	: 9.683		
Quant Ion	: 43.00		
Area	: 2367		
On-column Amount (ng)	: 0.0705		
Integration start scan	: 1318	Integration stop scan:	1334
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

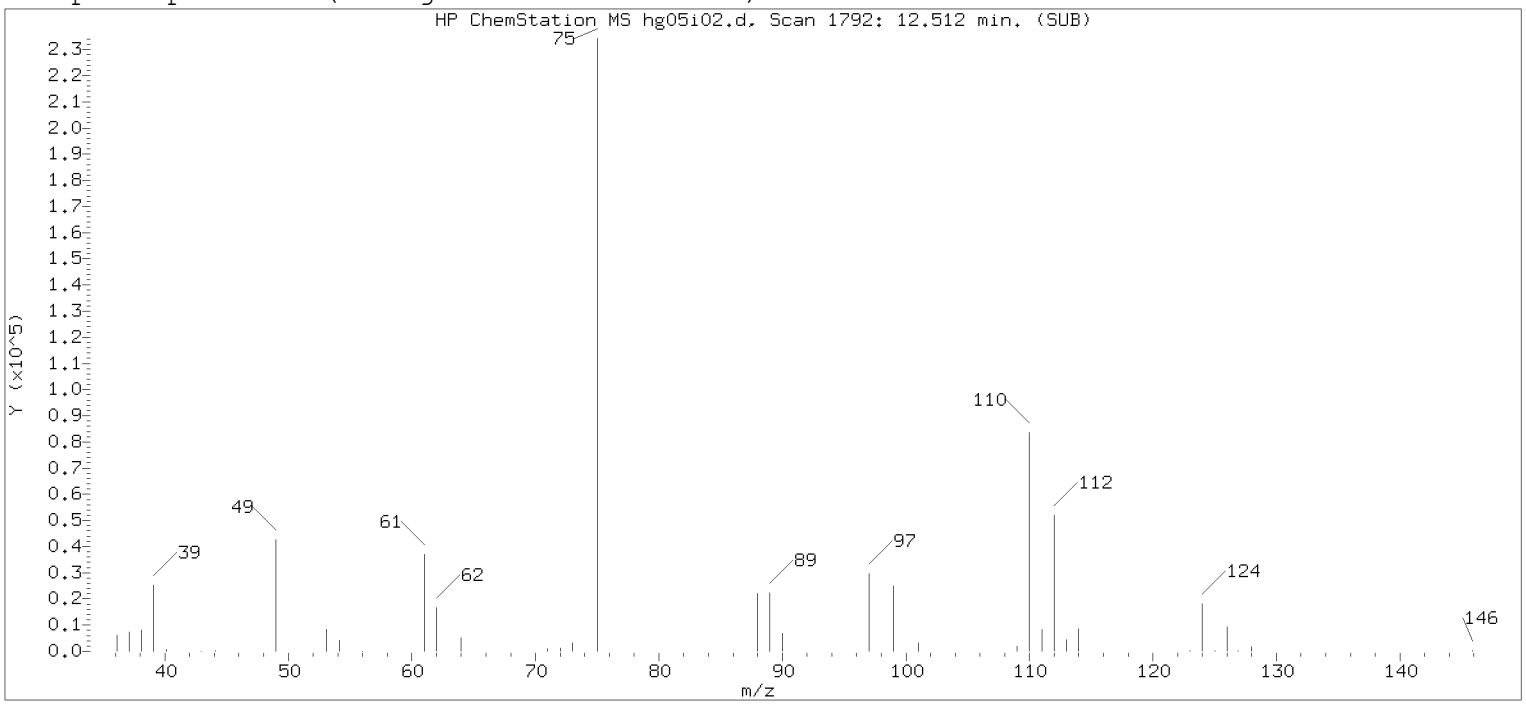
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area (flag) : 128225M
On-Column Amount (ng) : 10.2149
Integration start scan : 1785 Integration stop scan: 1804
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

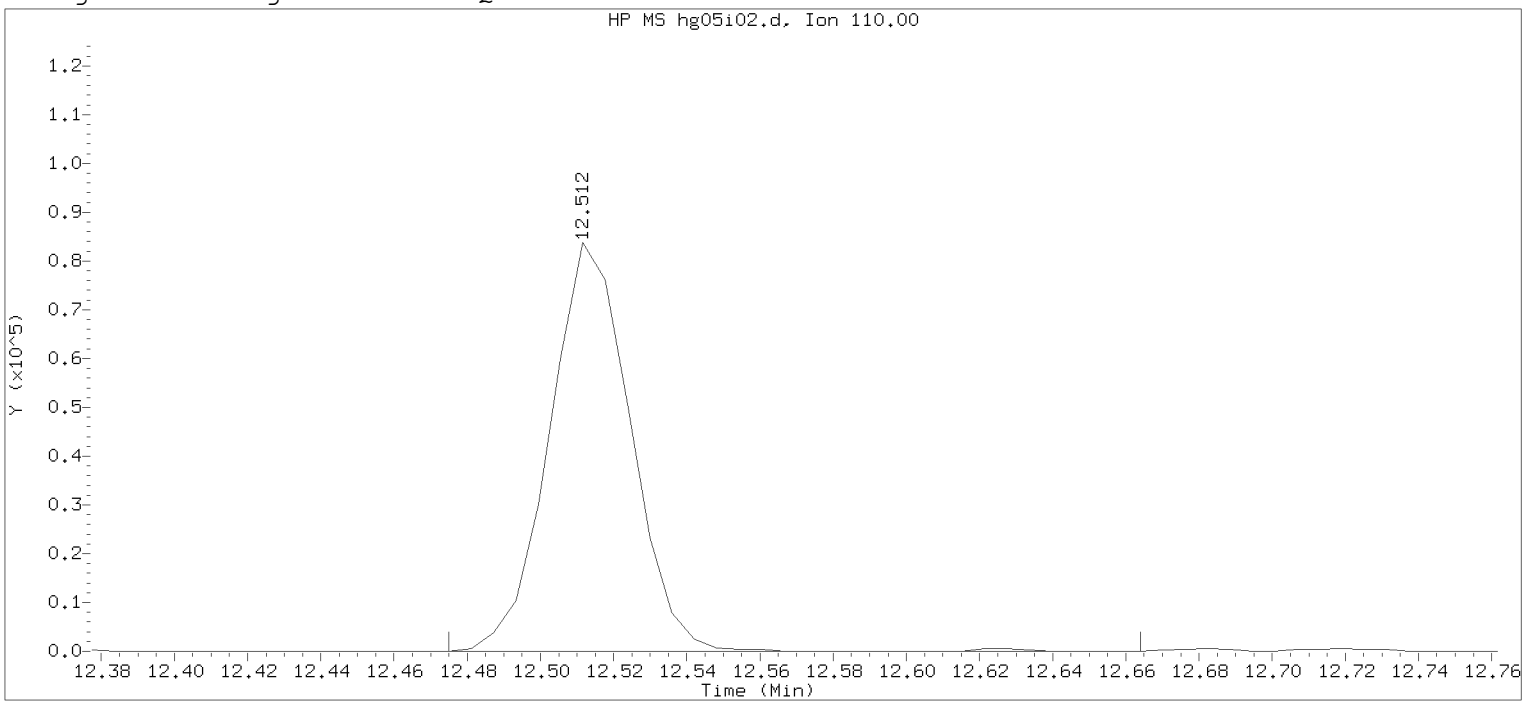
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

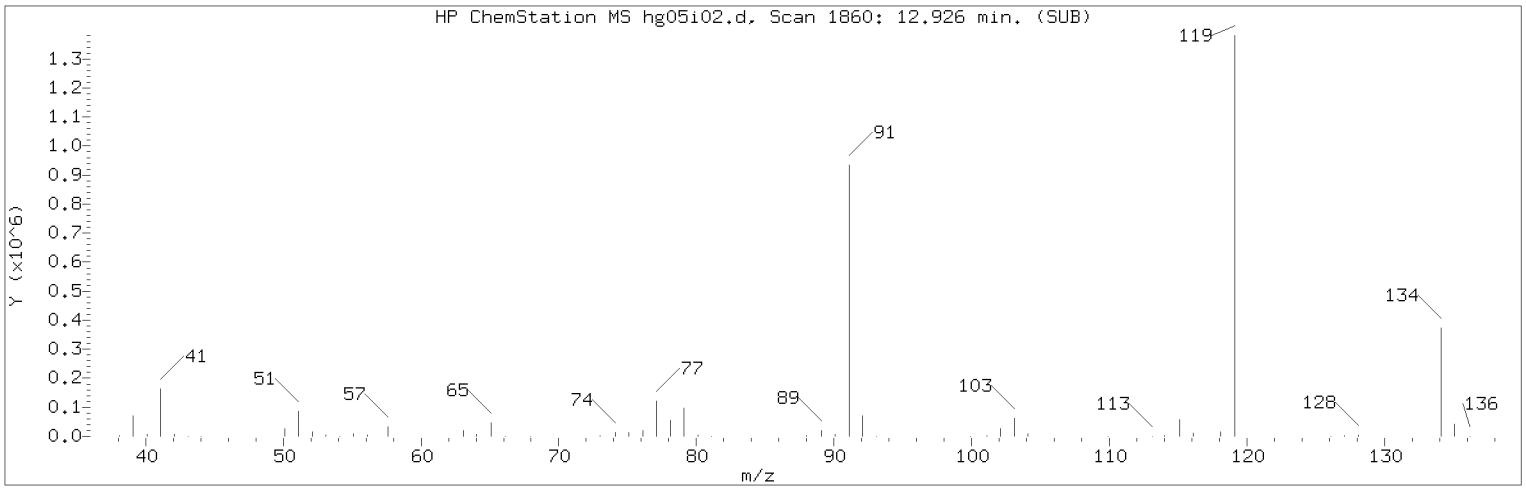
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

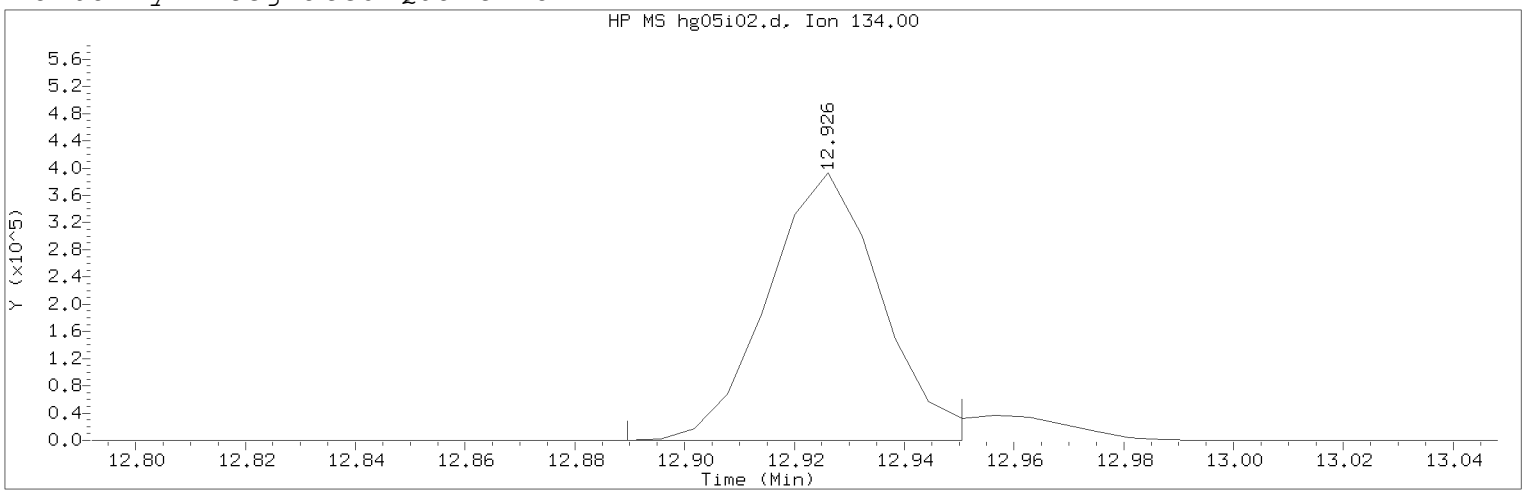
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area : 128745
On-column Amount (ng) : 9.1528
Integration start scan : 1785 Integration stop scan: 1816
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

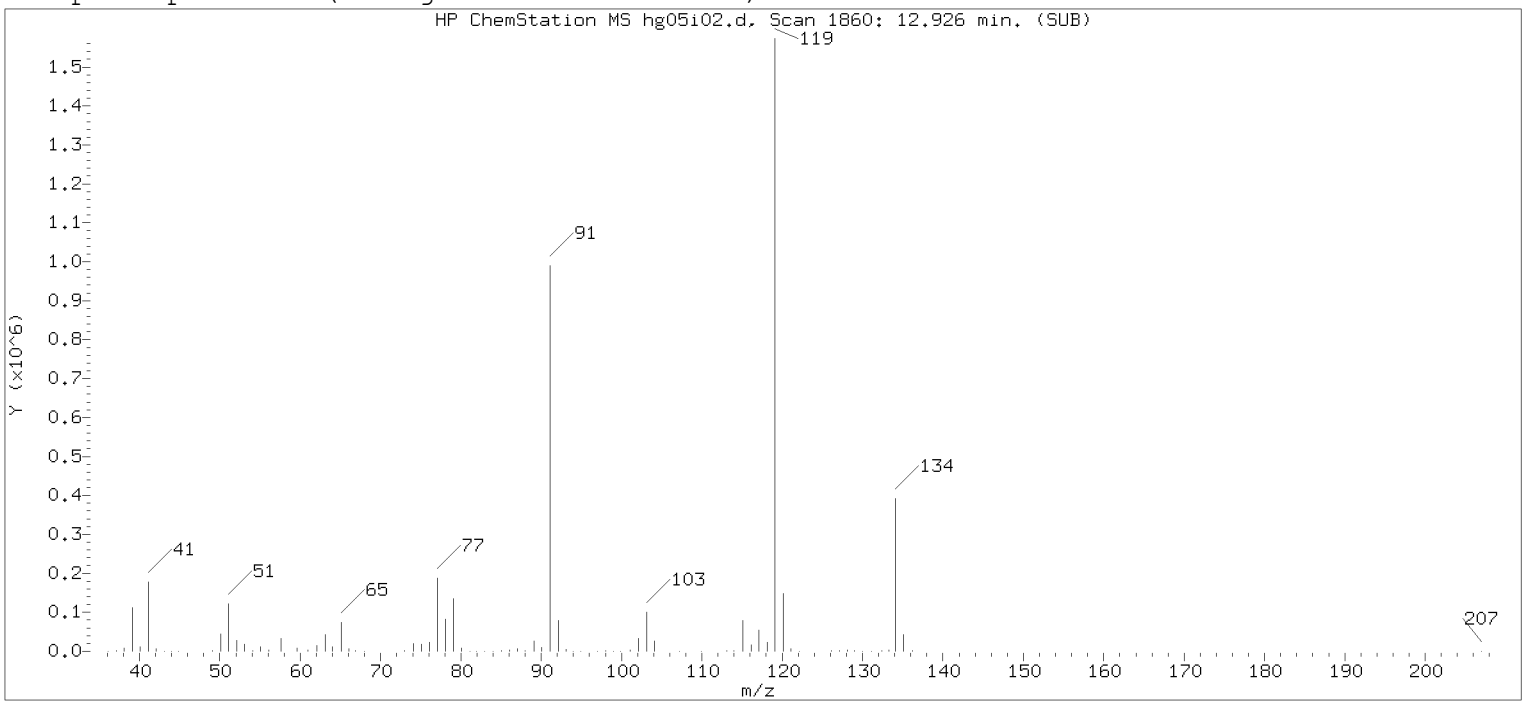
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area (flag) : 561092M
On-Column Amount (ng) : 10.4468
Integration start scan : 1853 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

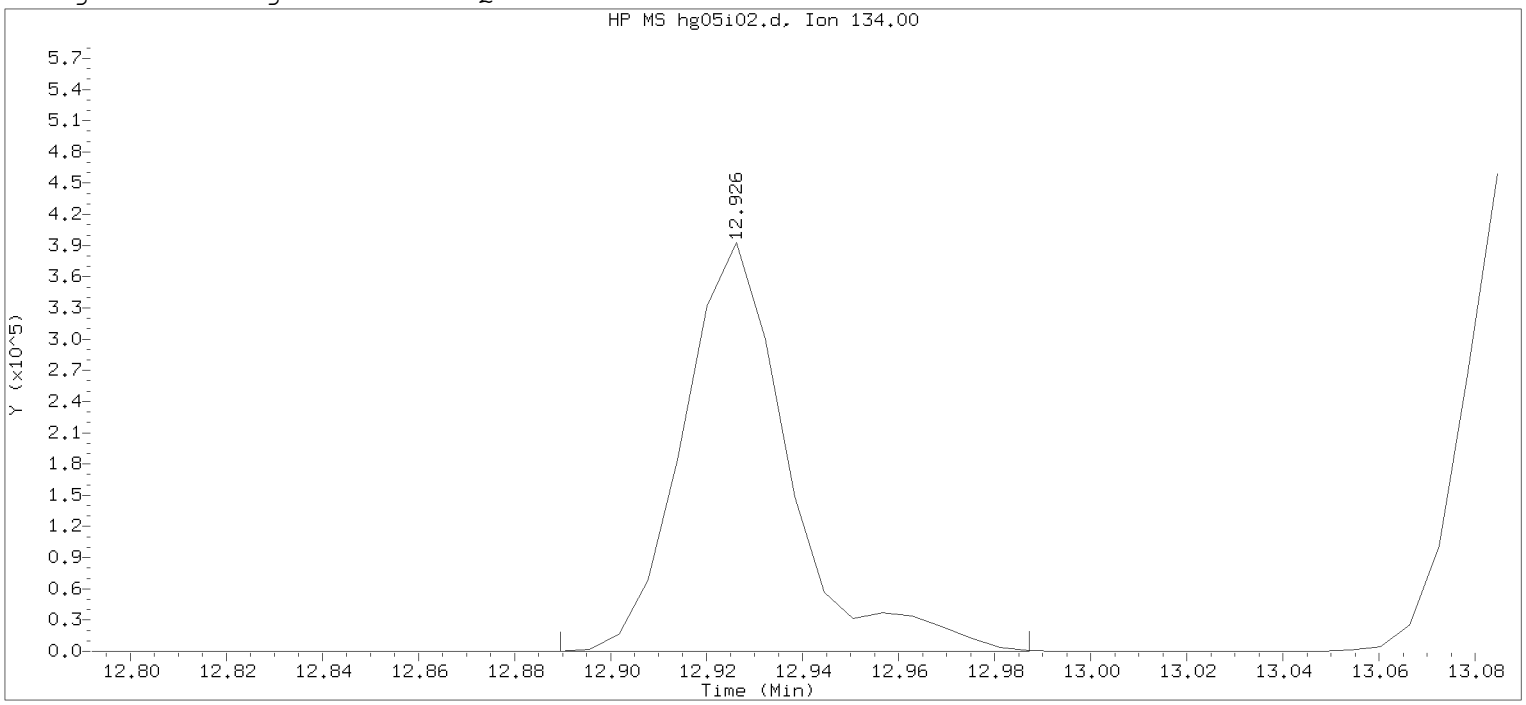
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



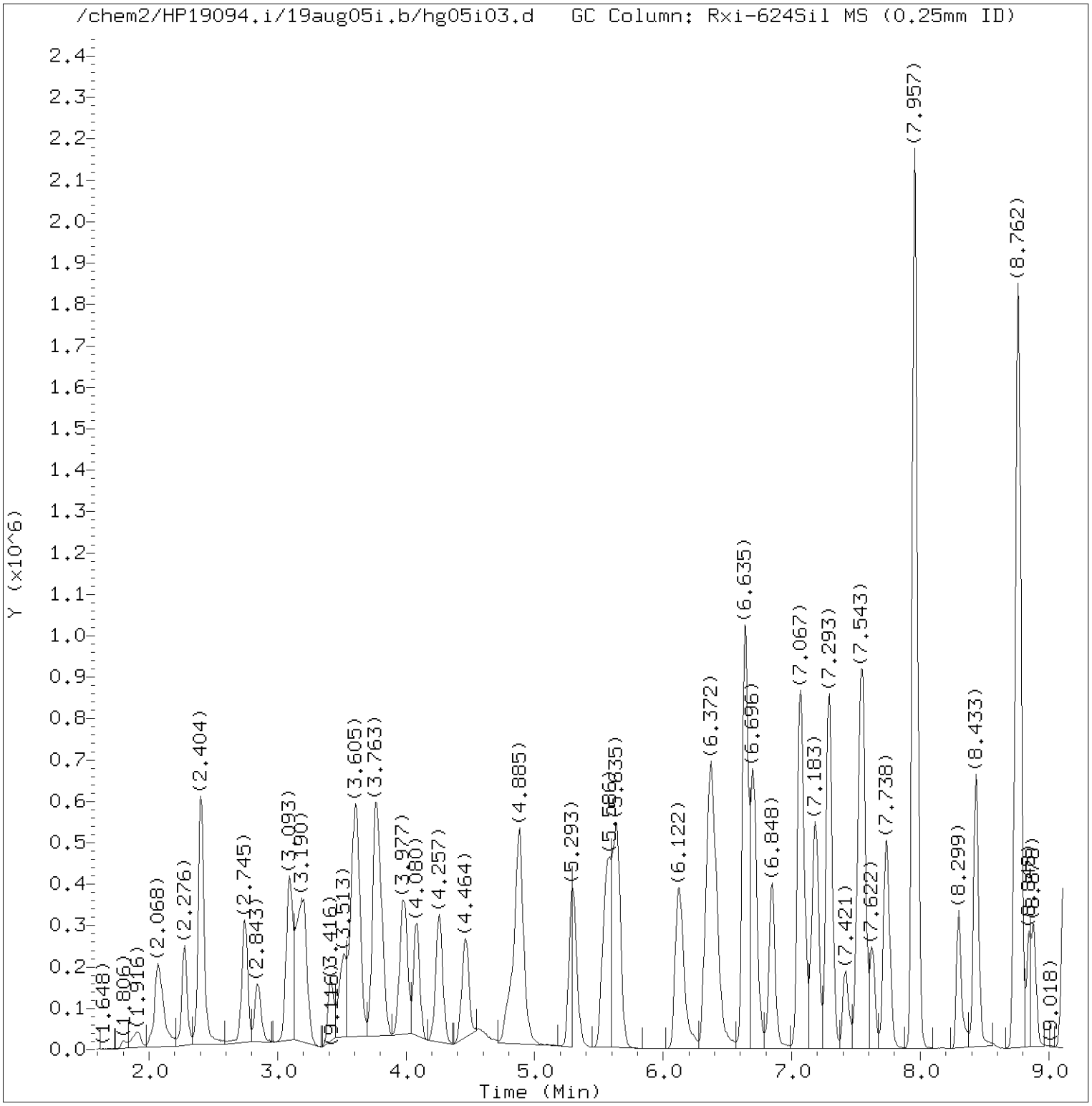
Data File: /chem2/HP19094.i/19aug05i.b/hg05i02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:26 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 18:44
Date, time and analyst ID of latest file update: 05-Aug-2019 18:44 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area : 602101
On-column Amount (ng) : 9.8942
Integration start scan : 1853 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used for m[illegible]



Total Ion Chromatogram (TIC)

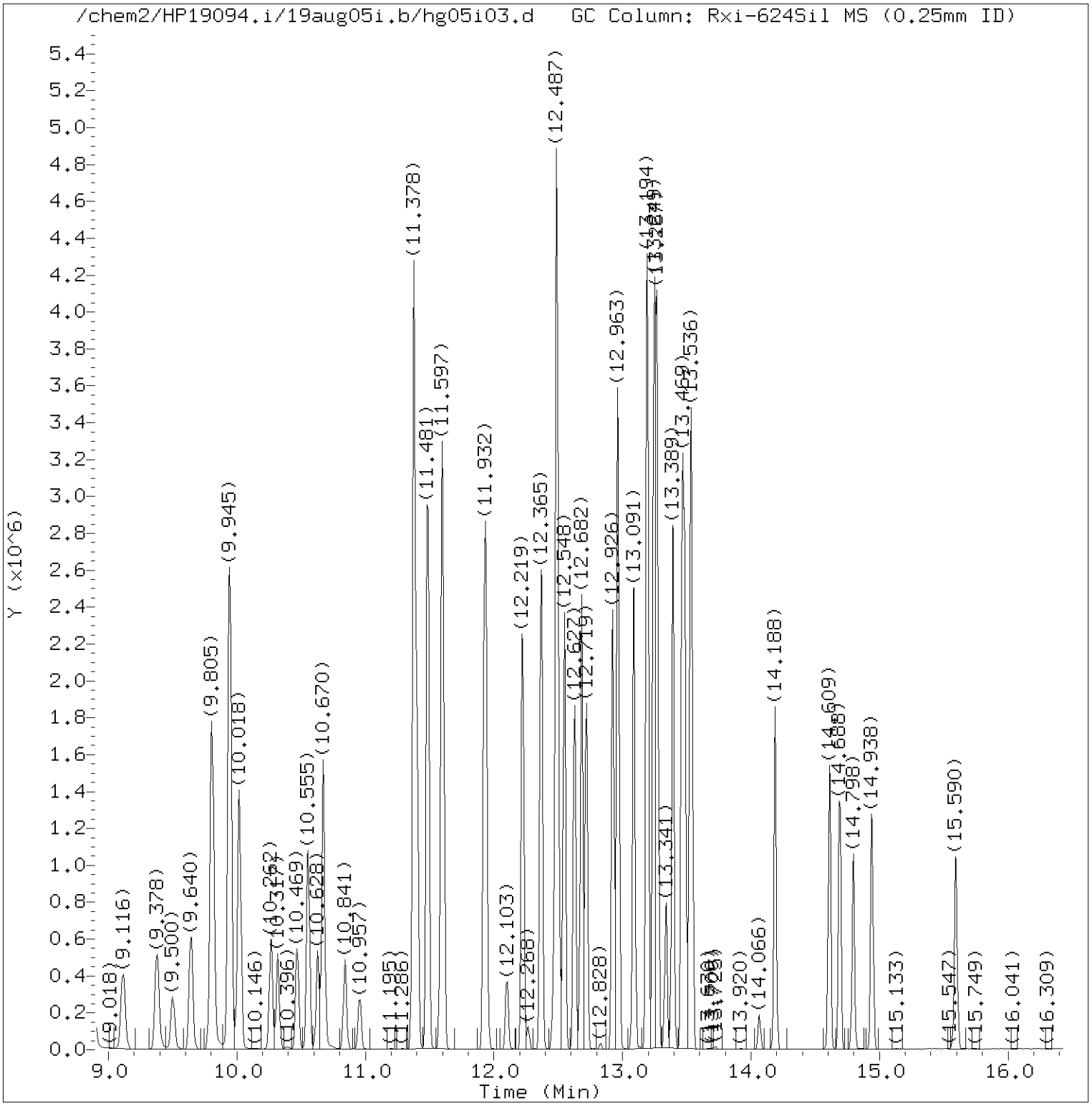
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.068	85	529825	4.931
2) Chloromethane	(2)	2.276	50	388386	4.936
5) Vinyl Chloride	(2)	2.398	62	397614	5.023
6) 1,3-Butadiene	(2)	2.410	39	310247M	4.888
7) Bromomethane	(2)	2.745	94	342926	4.909
8) Chloroethane	(2)	2.843	64	233380	5.036
9) Dichlorofluoromethane	(2)	3.093	67	499857	4.918
10) Trichlorofluoromethane	(2)	3.154	101	637341M	5.087
11) Ethyl ether	(2)	3.410	59	178476	5.112
12) Freon 123a	(2)	3.513	67	320607	5.030
13) Acrolein	(1)	3.605	56	1343511	236.289
15) 1,1-Dichloroethene	(2)	3.757	96	234475	5.132
14) Acetone	(1)	3.775	43	328208M	41.383
16) Freon 113	(2)	3.781	101	296385	5.187
17) Methyl Iodide	(2)	3.970	142	543765	4.961
18) Carbon Disulfide	(2)	4.080	76	752547	4.957
21) Methyl Acetate	(1)	4.214	43	120426M	4.693
22) Allyl Chloride	(2)	4.257	41	373938	4.825
26)*t-Butyl Alcohol-d10	(1)	4.440	65	119304	50.000
23) Methylene Chloride	(2)	4.464	84	247448	4.543
28) t-Butyl Alcohol	(1)	4.562	59	199987M	89.876
29) Acrylonitrile	(1)	4.800	53	218615	23.798
30) Methyl Tertiary Butyl Ether	(2)	4.867	73	589576	4.987
31) trans-1,2-Dichloroethene	(2)	4.885	96	260024	4.957
32) n-Hexane	(2)	5.293	57	401803	5.036
33) 1,1-Dichloroethane	(2)	5.537	63	466431	5.021
34) di-Isopropyl Ether	(2)	5.592	45	803379	5.015
35) 2-Chloro-1,3-Butadiene	(2)	5.647	53	436758	5.071
40) 1,2-Dichloroethene (Total)	(2)		96	555953	9.977
37) Ethyl t-butyl ether	(2)	6.122	59	755464	4.953
38) 2-Butanone	(1)	6.330	43	585280	45.680
39) cis-1,2-Dichloroethene	(2)	6.372	96	295929	5.020
41) 2,2-Dichloropropane	(2)	6.391	77	418566	4.962
42) Propionitrile	(1)	6.427	54	316830	96.666
45) Methacrylonitrile	(1)	6.635	67	607144	46.502
47) Bromochloromethane	(2)	6.702	128	142950	5.106
48) Tetrahydrofuran	(1)	6.708	71	167576	47.200
49) Chloroform	(2)	6.848	83	484495	4.964

M = Compound was manually integrated.
* = Compound is an internal standard.

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.067	113	553700	9.931
50)$Dibromofluoromethane	(2)	7.061	111	562663	9.932
51) 1,1,1-Trichloroethane	(2)	7.086	97	459395	5.055
52) Cyclohexane	(2)	7.183	56	477962	5.083
52) Cyclohexane	(2)	7.183	84	516547	5.914
52) Cyclohexane	(2)	7.183	69	151328	4.988
55) 1,1-Dichloropropene	(2)	7.287	75	370984	5.034
54) Carbon Tetrachloride	(2)	7.299	117	424047	4.989
56) Isobutyl Alcohol	(1)	7.421	41	198746	218.203
57)$1,2-Dichloroethane-d4	(2)	7.531	102	102222	9.972
57)$1,2-Dichloroethane-d4	(2)	7.519	65	498772	10.055
57)$1,2-Dichloroethane-d4	(2)	7.519	104	64449	9.813
58) Benzene	(2)	7.555	78	1040960	5.021
59) 1,2-Dichloroethane	(2)	7.628	62	282068	4.829
60) t-Amyl methyl ether	(2)	7.738	73	686870	4.999
62) n-Heptane	(2)	7.957	43	432387	5.043
63)*Fluorobenzene	(2)	7.957	96	2050203	10.000
65) n-Butanol	(1)	8.299	56	359248	483.830
67) Trichloroethene	(2)	8.439	95	289299	4.967
69) Methylcyclohexane	(2)	8.750	83	529842	5.173
70) 1,2-Dichloropropane	(2)	8.774	63	254256	4.983
71) Methyl Methacrylate	(1)	8.841	69	126223	4.751
72) 1,4-Dioxane	(1)	8.872	88	53690M	299.239
73) Dibromomethane	(2)	8.884	93	133904	4.894
74) Bromodichloromethane	(2)	9.116	83	349185	4.968
76) 2-Nitropropane	(1)	9.378	41	445061	47.168
80) cis-1,3-Dichloropropene	(2)	9.640	75	402329	5.019
81) 4-Methyl-2-Pentanone	(1)	9.805	43	1544763	47.560
82)$Toluene-d8	(3)	9.945	98	2086360	10.074
82)$Toluene-d8	(3)	9.945	100	1335186	10.081
83) Toluene	(3)	10.018	92	690669	5.011
85) 1,3-Dichloropropene (total)	(3)		75	743123	10.030
84) trans-1,3-Dichloropropene	(3)	10.268	75	340794	5.011
86) Ethyl Methacrylate	(3)	10.317	69	275125	5.061
88) 1,1,2-Trichloroethane	(3)	10.469	97	184705	4.999
89) Tetrachloroethene	(3)	10.555	166	346162	5.003
90) 1,3-Dichloropropane	(3)	10.628	76	303182	4.949
91) 2-Hexanone	(1)	10.670	43	1078856	47.283

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	259824	5.014
95) 1,2-Dibromoethane	(3)	10.951	107	184829	4.966
96) 1-Chlorohexane	(3)	11.378	91	406568	4.836
97)*Chlorobenzene-d5	(3)	11.378	117	1622276	10.000
98) Chlorobenzene	(3)	11.402	112	784976	5.023
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	291991	5.011
100) Ethylbenzene	(3)	11.487	91	1372148	5.035
101) m+p-Xylene	(3)	11.597	106	1087473	10.056
105) Xylene (Total)	(3)		106	1621758	15.110
104) o-Xylene	(3)	11.926	106	534285	5.054
106) Styrene	(3)	11.938	104	864991	5.034
107) Bromoform	(3)	12.103	173	164076	5.085
108) Isopropylbenzene	(3)	12.219	105	1440321	5.107
111)$4-Bromofluorobenzene	(3)	12.365	95	767750	10.137
111)$4-Bromofluorobenzene	(3)	12.371	174	737411	10.183
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	222051	4.939
114) Bromobenzene	(4)	12.487	156	350112	4.984
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	657973	48.759
116) 1,2,3-Trichloropropane	(4)	12.511	110	61784M	4.951
117) n-Propylbenzene	(4)	12.548	91	1659209	5.008
119) 2-Chlorotoluene	(4)	12.627	126	342357	5.022
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	1208985	5.000
122) 4-Chlorotoluene	(4)	12.719	126	345195	4.926
125) tert-Butylbenzene	(4)	12.926	134	266803	4.997
126) Pentachloroethane	(4)	12.963	167	249520	5.064
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	1255885	5.016
128) sec-Butylbenzene	(4)	13.091	105	1608412	5.055
131) 1,3-Dichlorobenzene	(4)	13.188	146	692524	5.055
132) p-Isopropyltoluene	(4)	13.194	119	1381729	5.024
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	919230	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	676915	4.968
135) 1,2,3-Trimethylbenzene	(4)	13.274	120	553029	4.933
136) Benzyl Chloride	(4)	13.341	126	112577	5.152
138) n-Butylbenzene	(4)	13.487	92	685009	5.060
139) 1,2-Dichlorobenzene	(4)	13.523	146	619582	5.041
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	36781	4.858
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	534168	5.036
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	445688	5.024

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

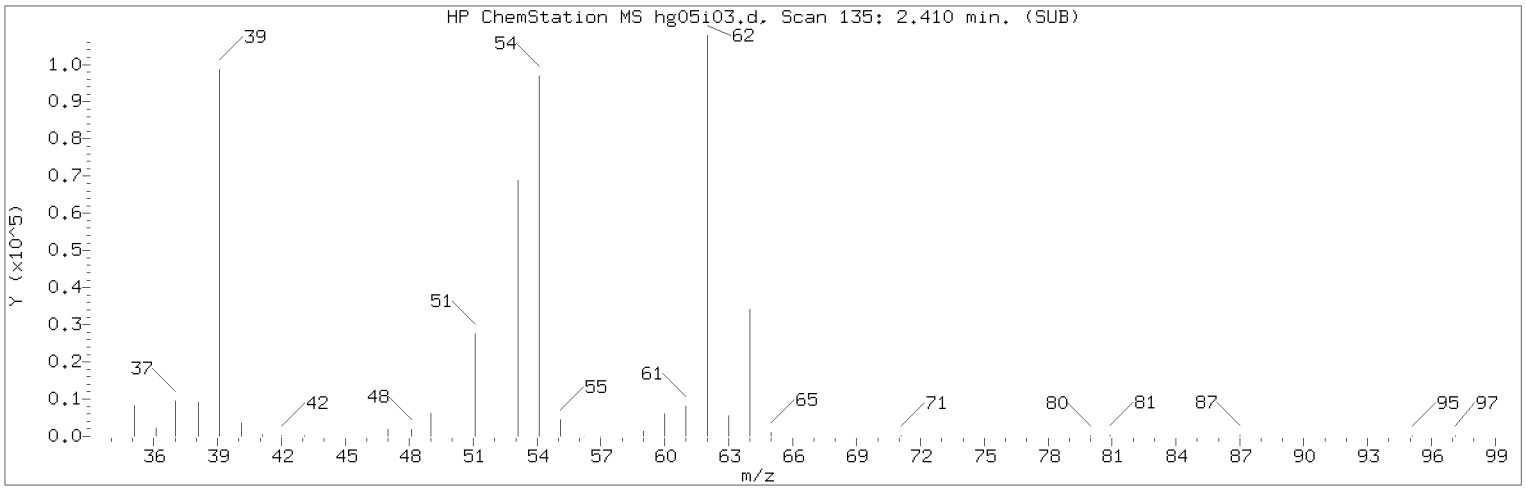
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

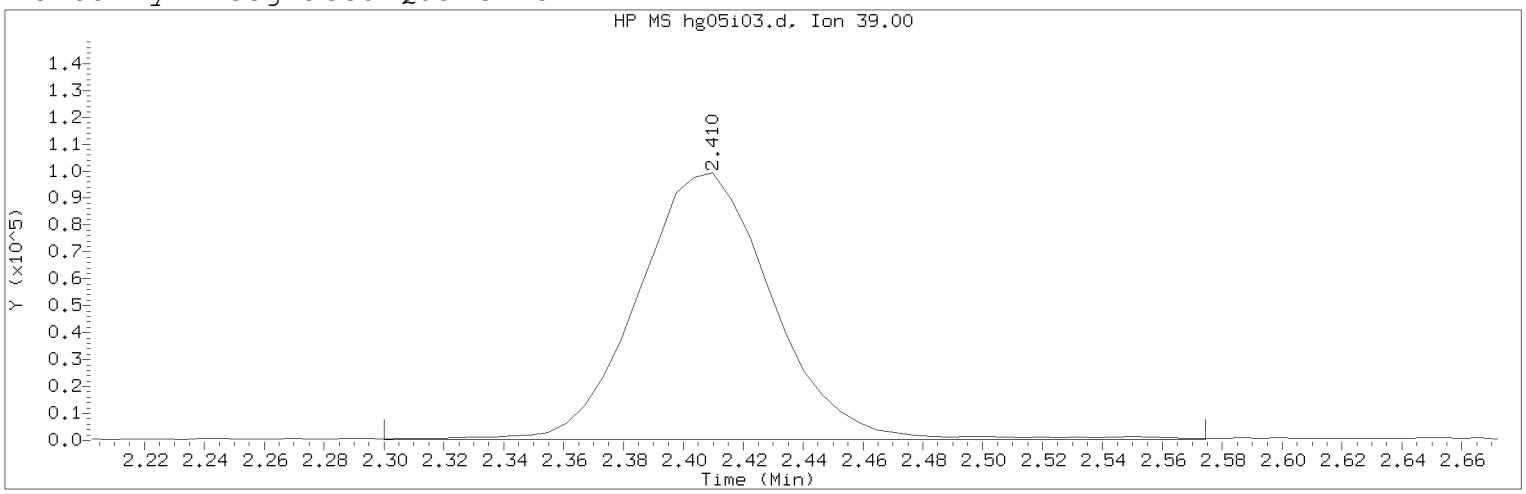
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	233679	5.079
147) Naphthalene	(4)	14.798	128	780462	4.954
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	387149	4.987

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

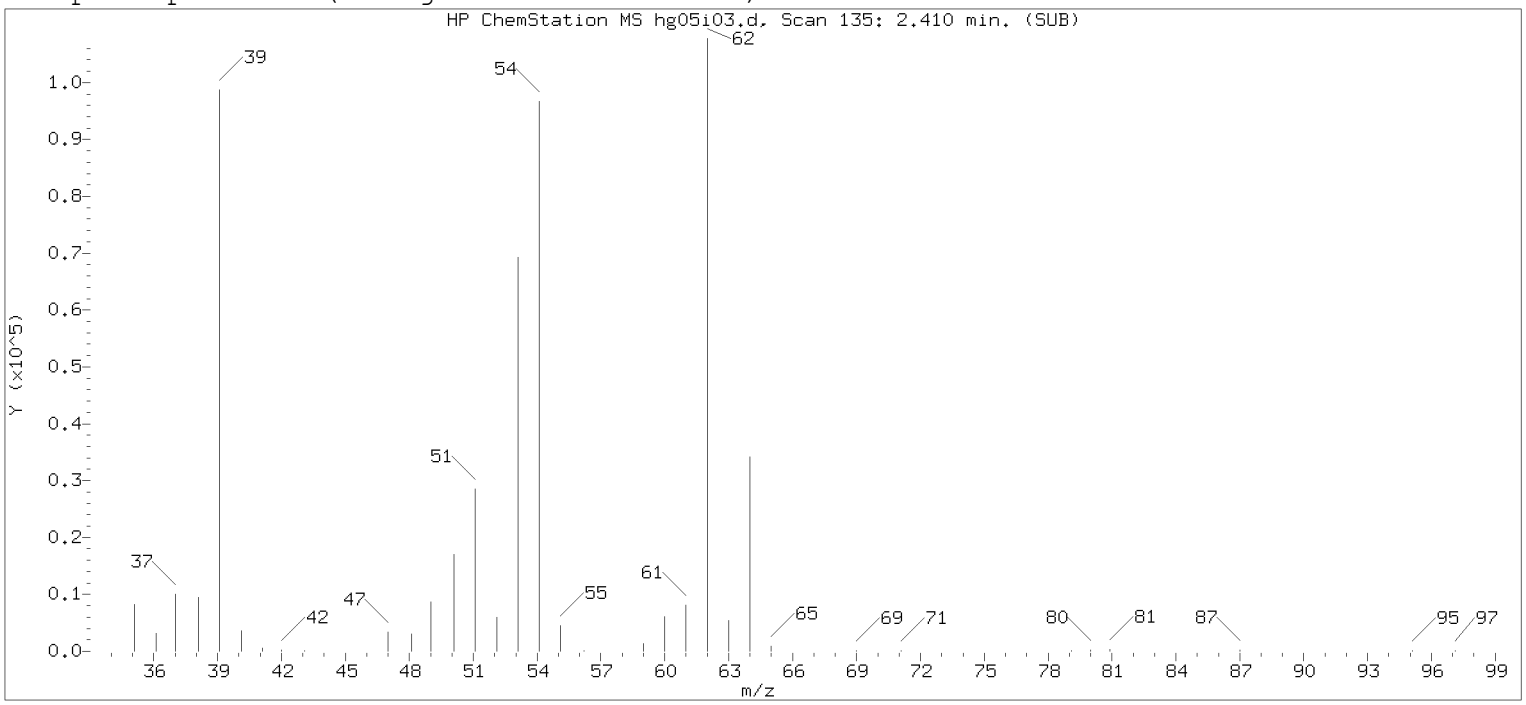
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area (flag) : 310247M
On-Column Amount (ng) : 4.8882
Integration start scan : 116 Integration stop scan: 161
Y at integration start : 288 Y at integration end: 288

Reason for manual integration: improper integration

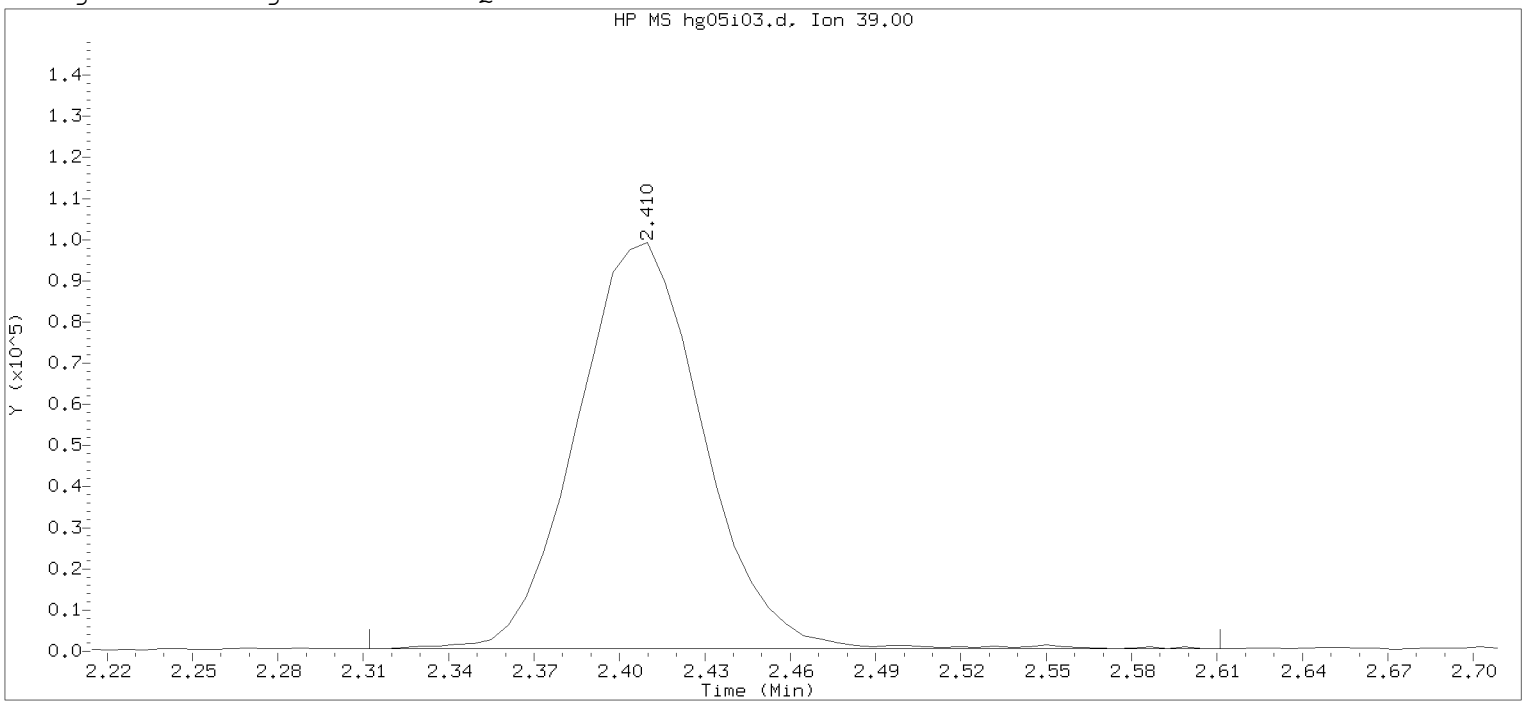
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

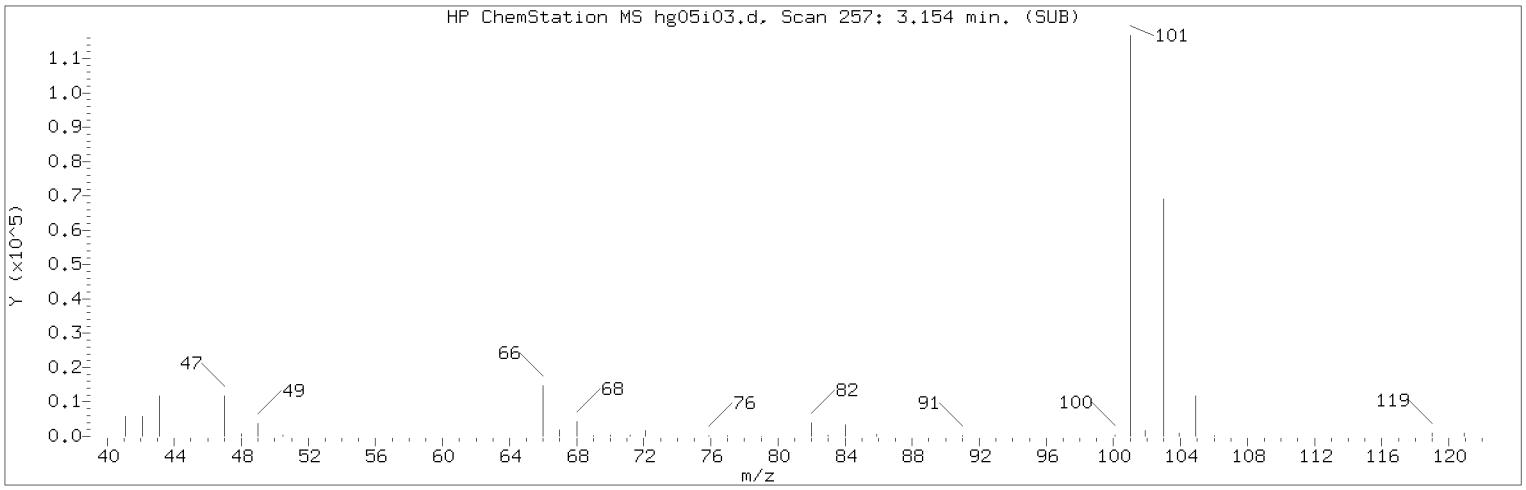
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

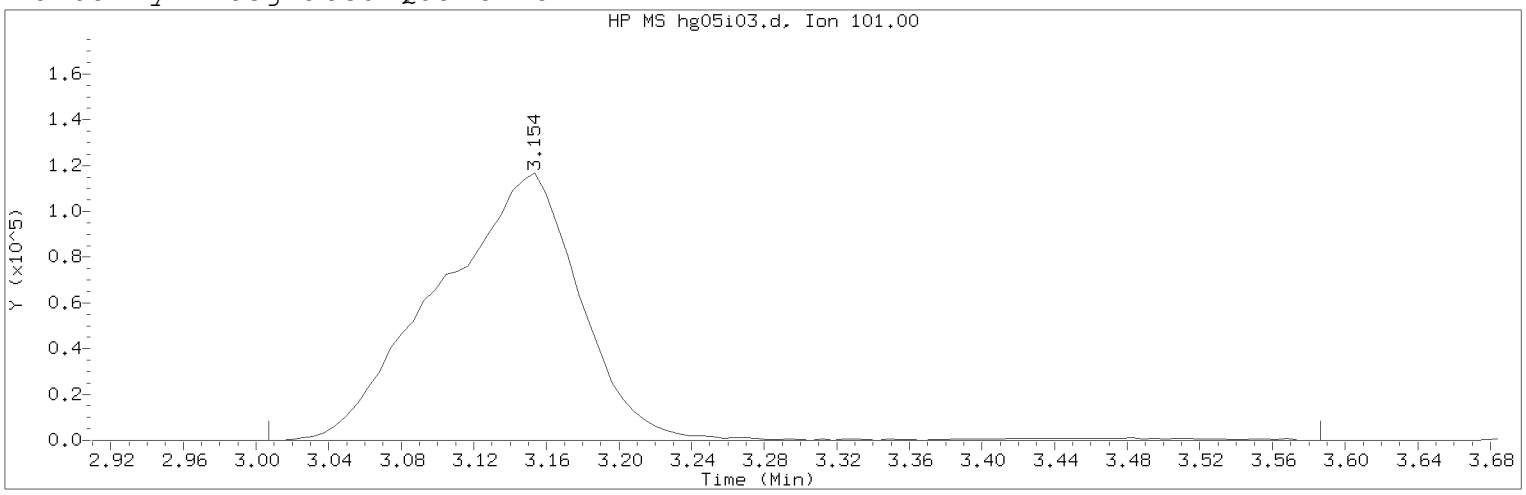
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area : 305276
On-column Amount (ng) : 5.0602
Integration start scan : 118 Integration stop scan: 167
Y at integration start : 616 Y at integration end: 602

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

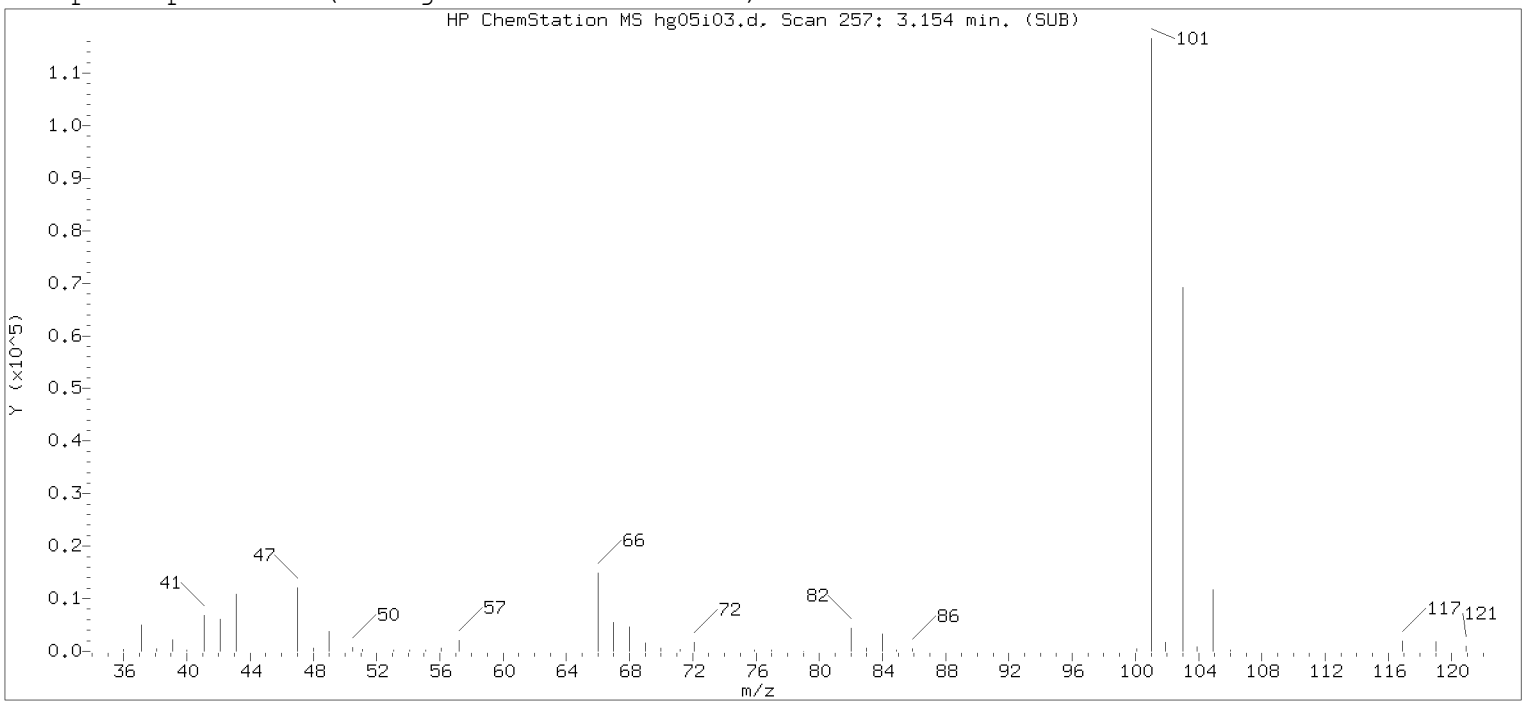
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 257
Retention Time (minutes): 3.154
Quant Ion : 101.00
Area (flag) : 637341M
On-Column Amount (ng) : 5.0870
Integration start scan : 232 Integration stop scan: 327
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

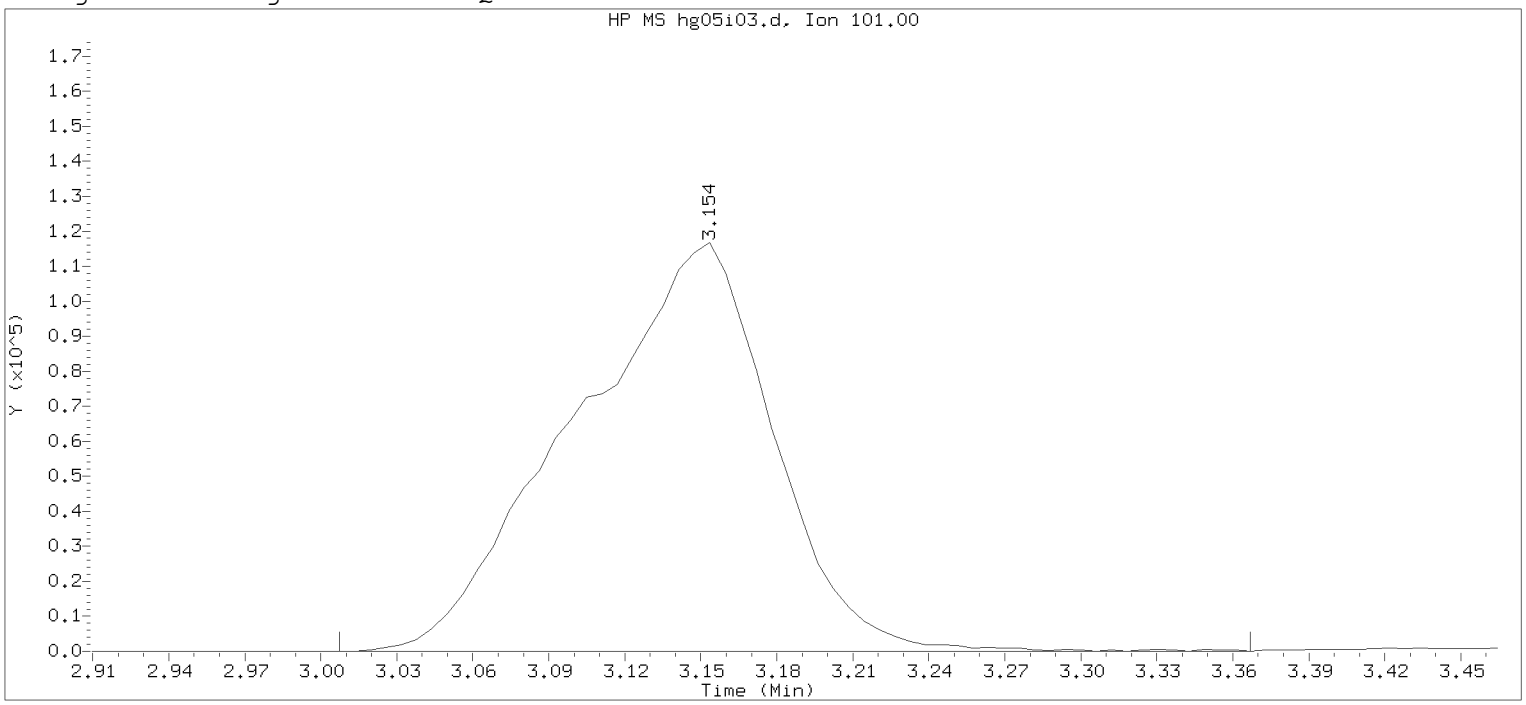
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

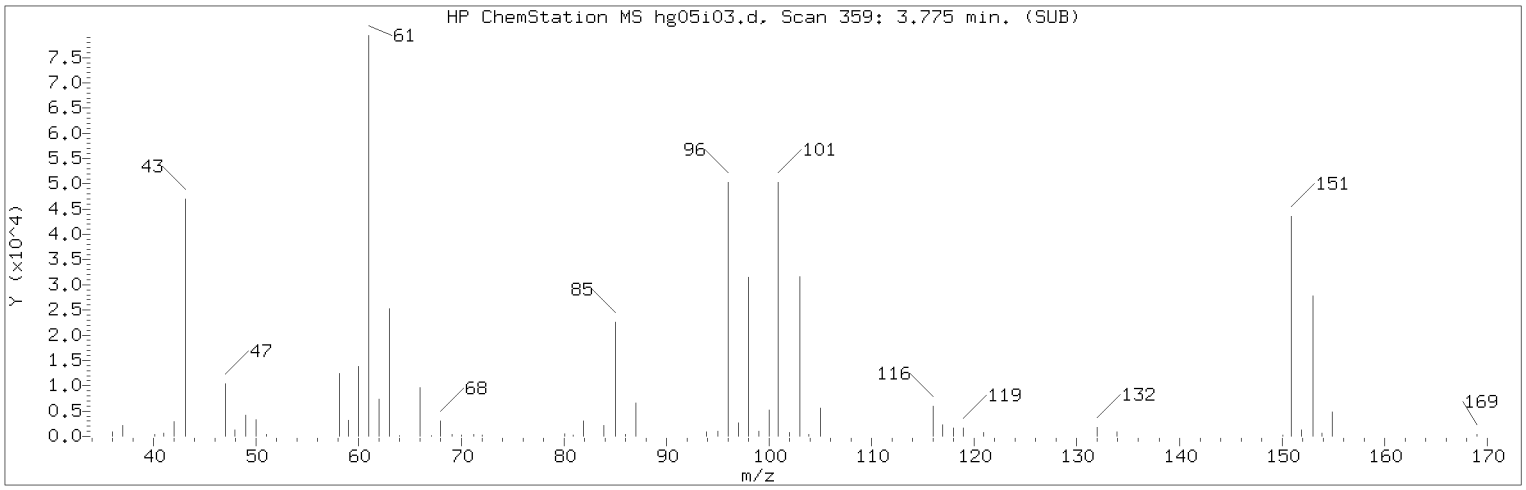
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

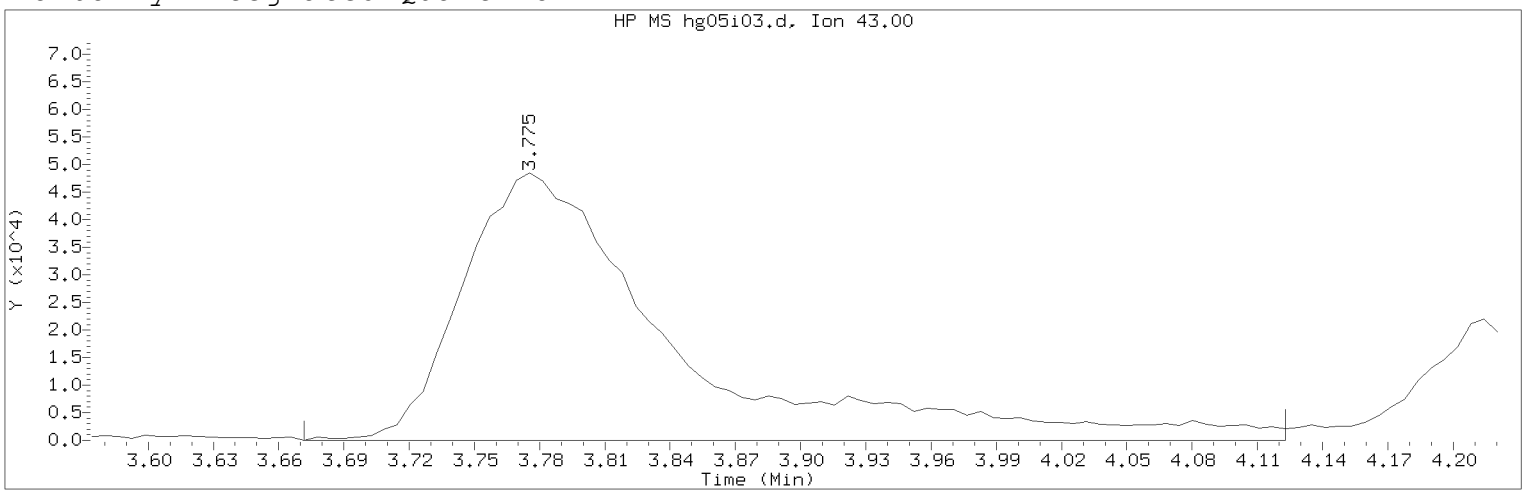
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 257
Retention Time (minutes): 3.154
Quant Ion : 101.00
Area : 629716
On-column Amount (ng) : 5.1893
Integration start scan : 232 Integration stop scan: 291
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

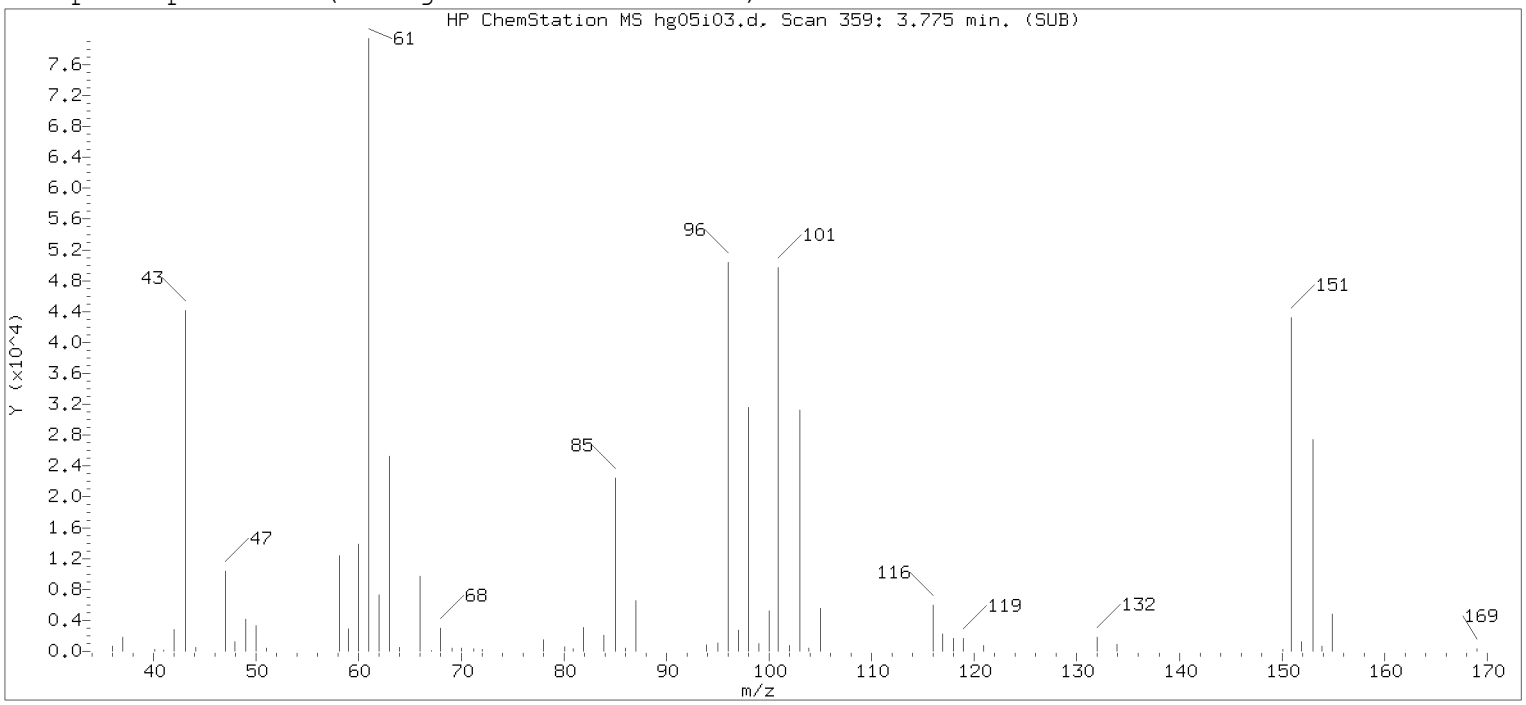
Compound Number : 14
Compound Name : Acetone
Scan Number : 359
Retention Time (minutes): 3.775
Quant Ion : 43.00
Area (flag) : 328208M
On-Column Amount (ng) : 41.3828
Integration start scan : 341 Integration stop scan: 415
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

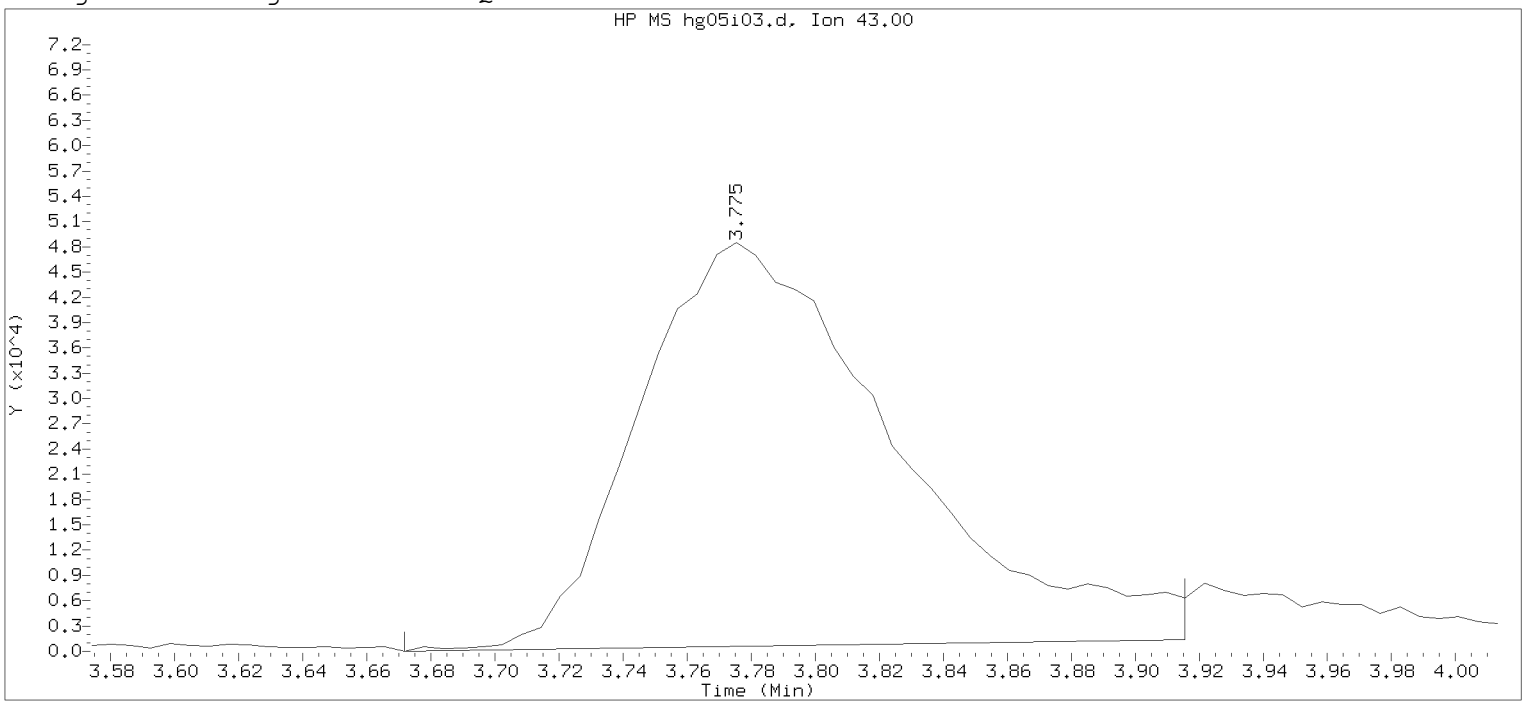
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

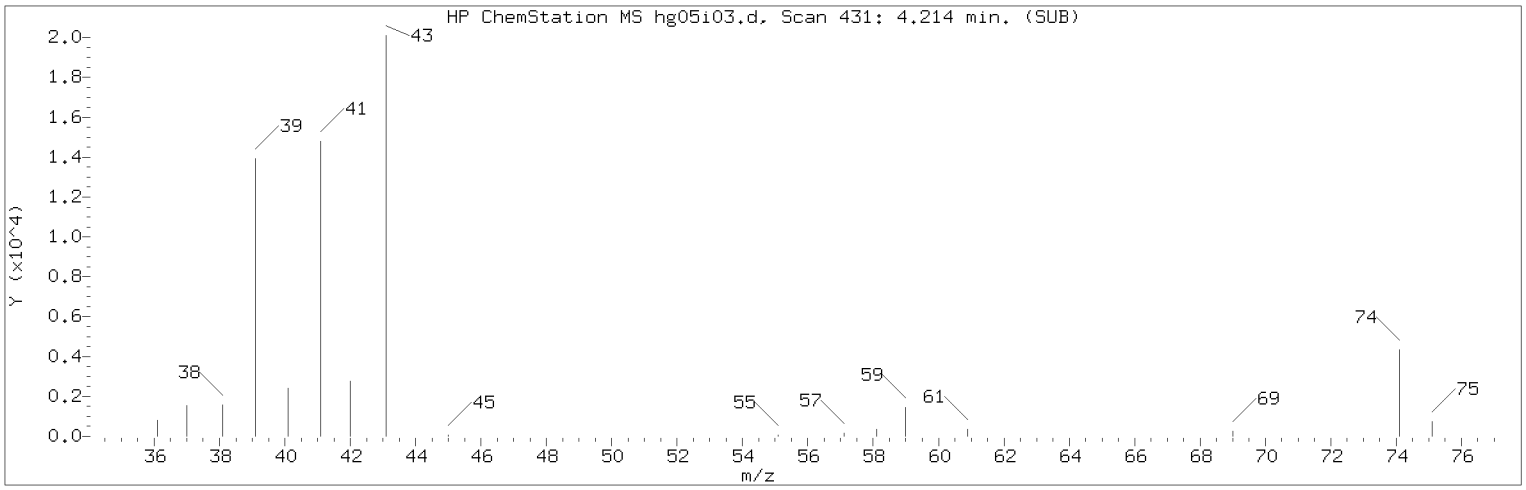
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

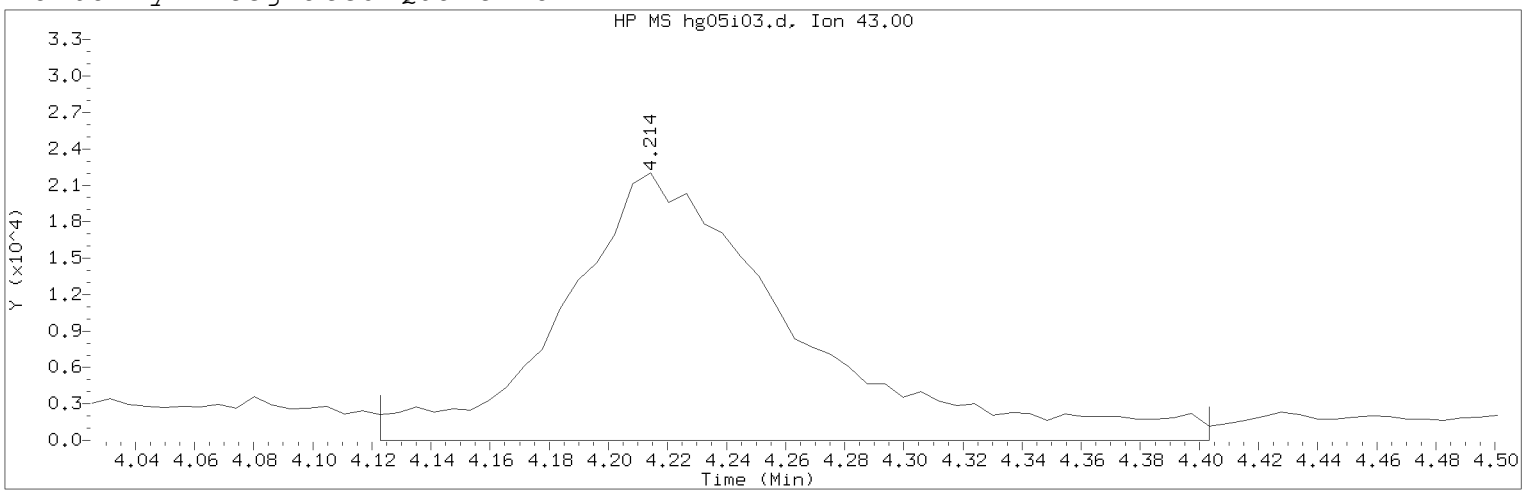
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 359		
Retention Time (minutes)	: 3.775		
Quant Ion	: 43.00		
Area	: 266969		
On-column Amount (ng)	: 43.0913		
Integration start scan	: 341	Integration stop scan:	381
Y at integration start	: 0	Y at integration end:	1367

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

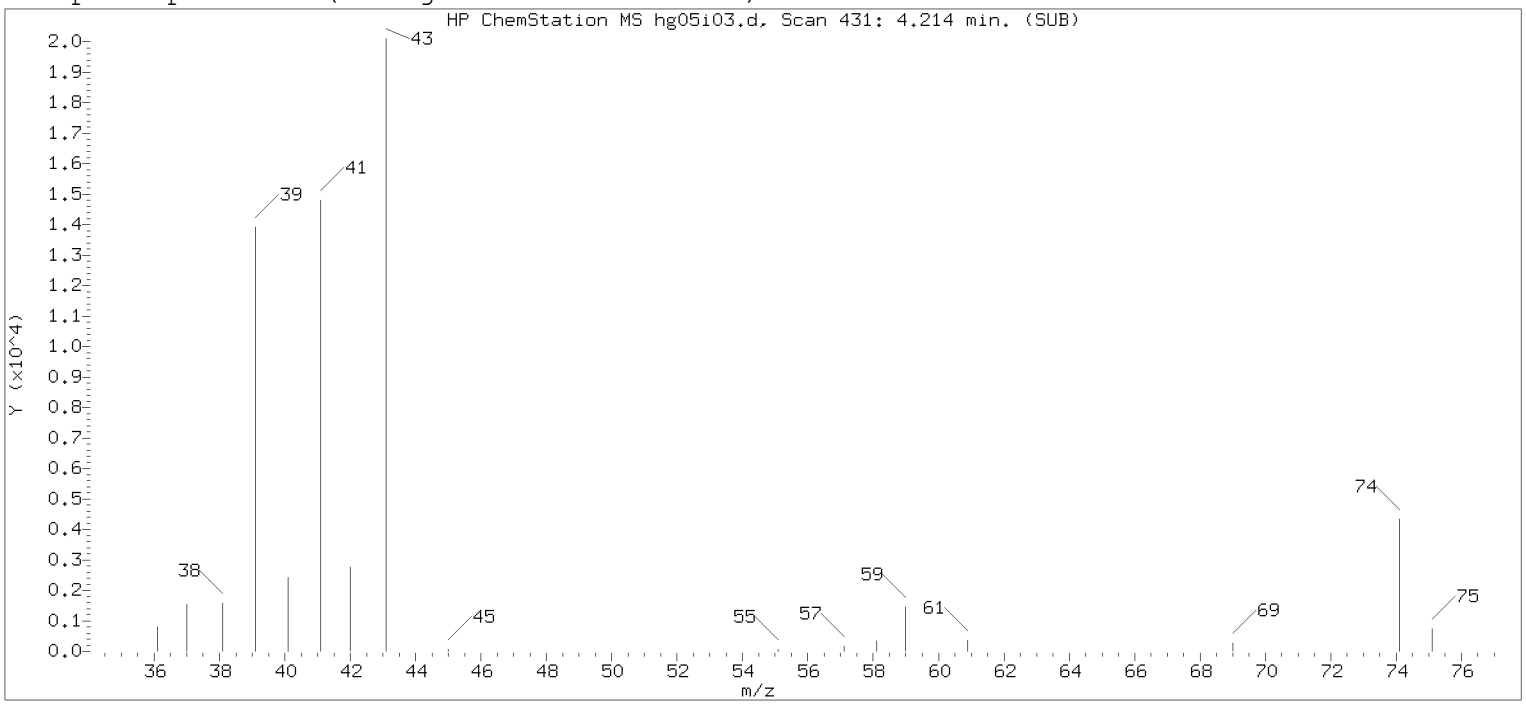
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area (flag) : 120426M
On-Column Amount (ng) : 4.6934
Integration start scan : 415 Integration stop scan: 461
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

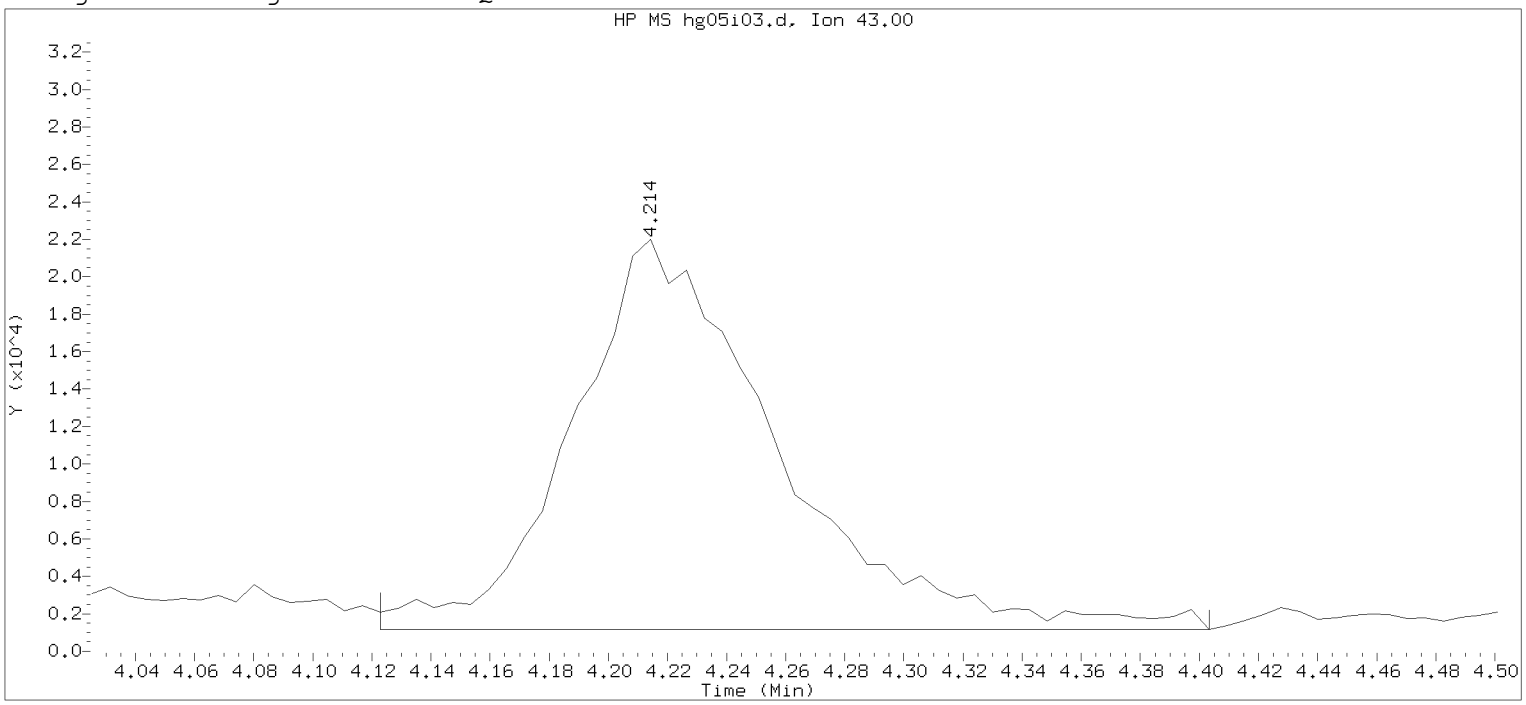
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

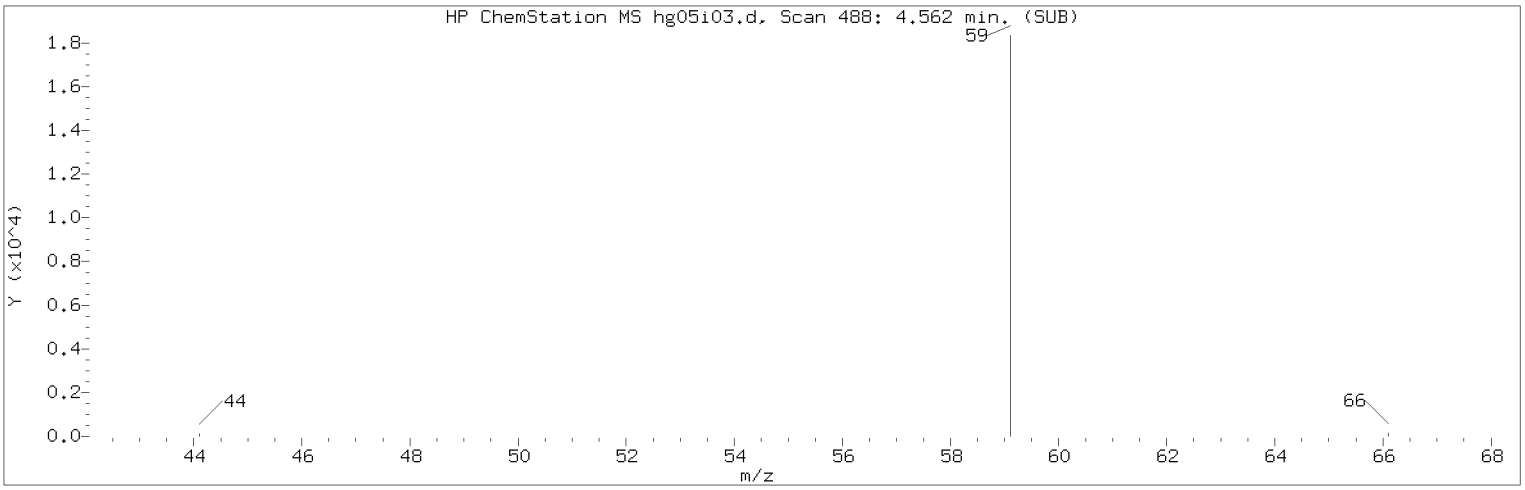
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

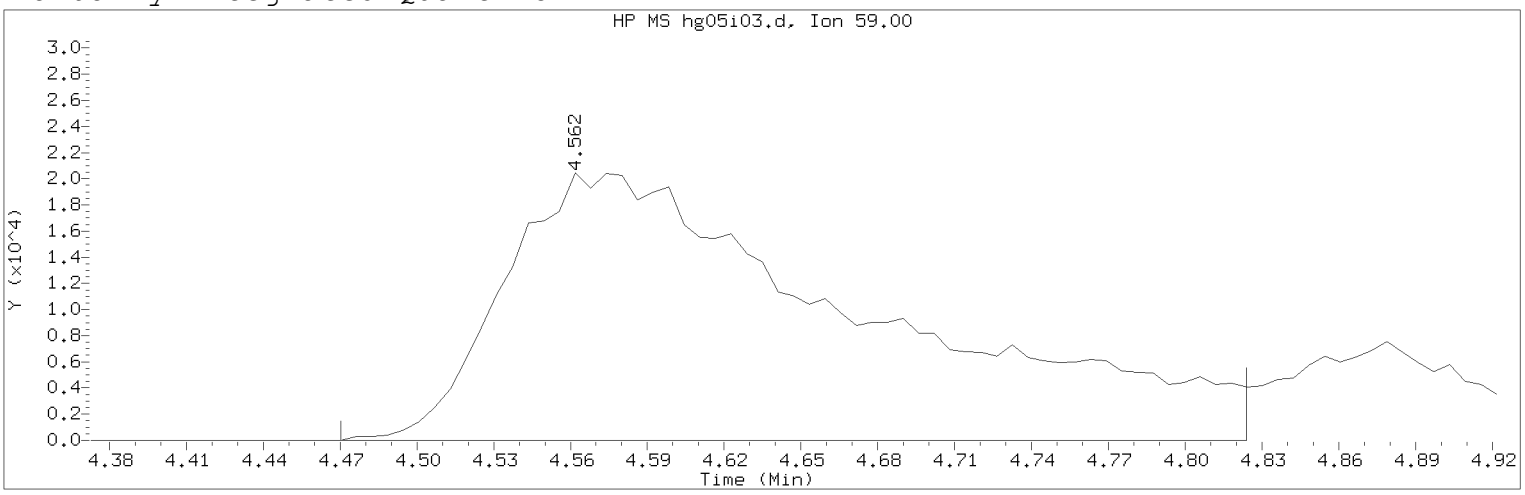
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area : 99954
On-column Amount (ng) : 4.9436
Integration start scan : 415 Integration stop scan: 461
Y at integration start : 1181 Y at integration end: 1181

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

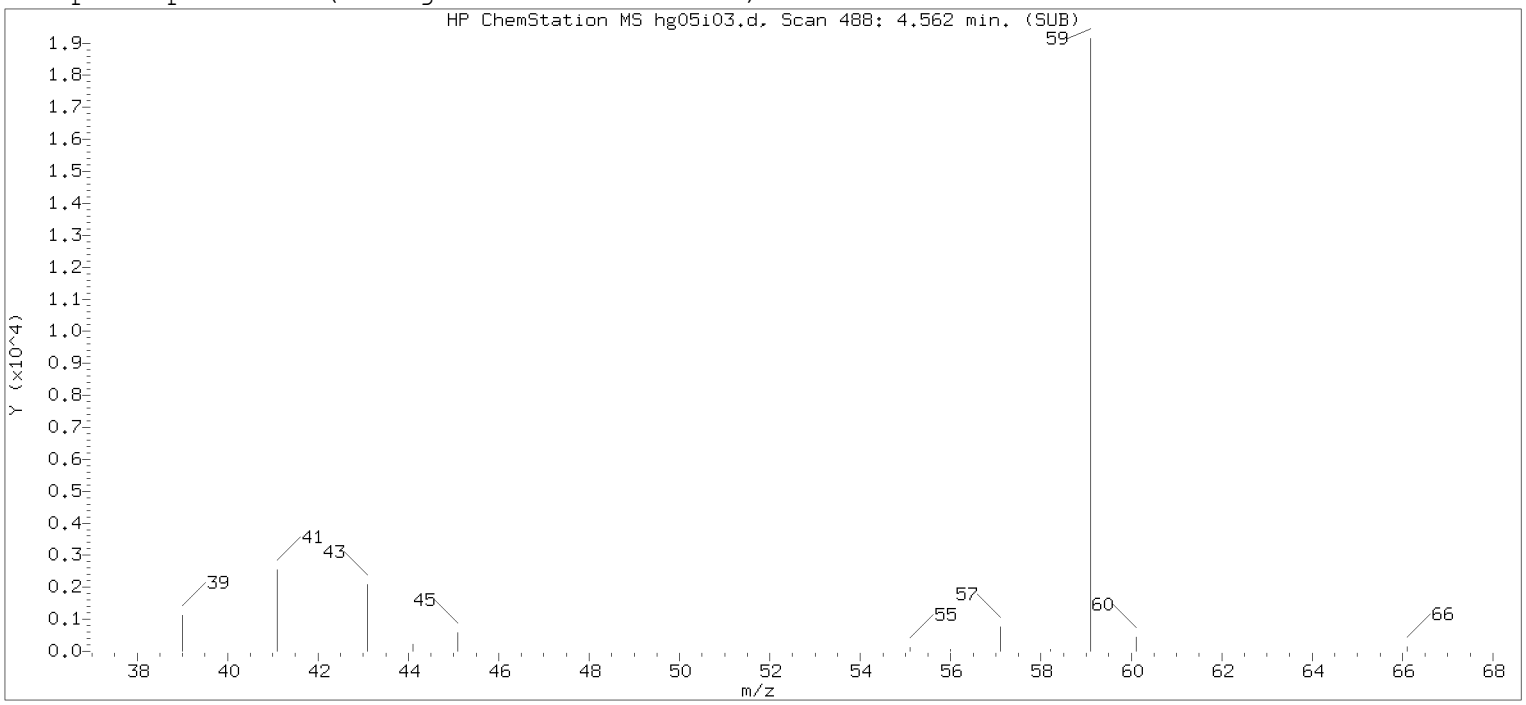
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 488
Retention Time (minutes): 4.562
Quant Ion : 59.00
Area (flag) : 199987M
On-Column Amount (ng) : 89.8764
Integration start scan : 472 Integration stop scan: 530
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

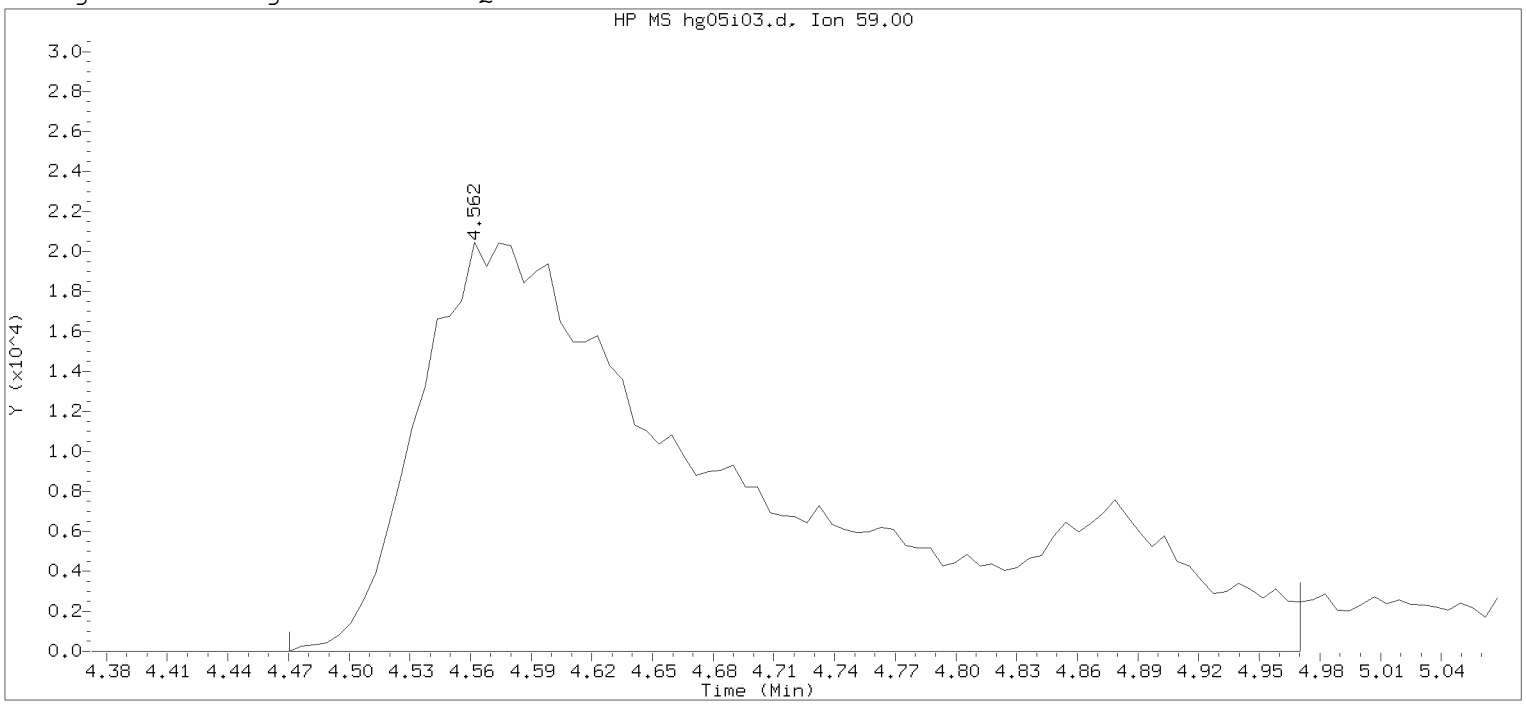
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

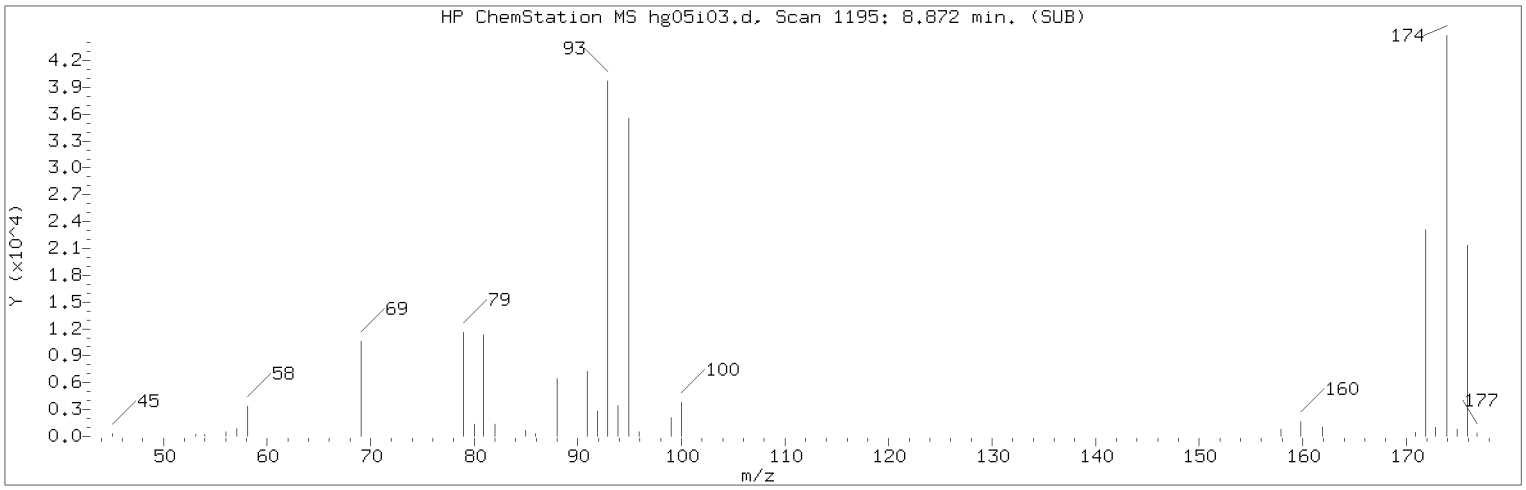
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

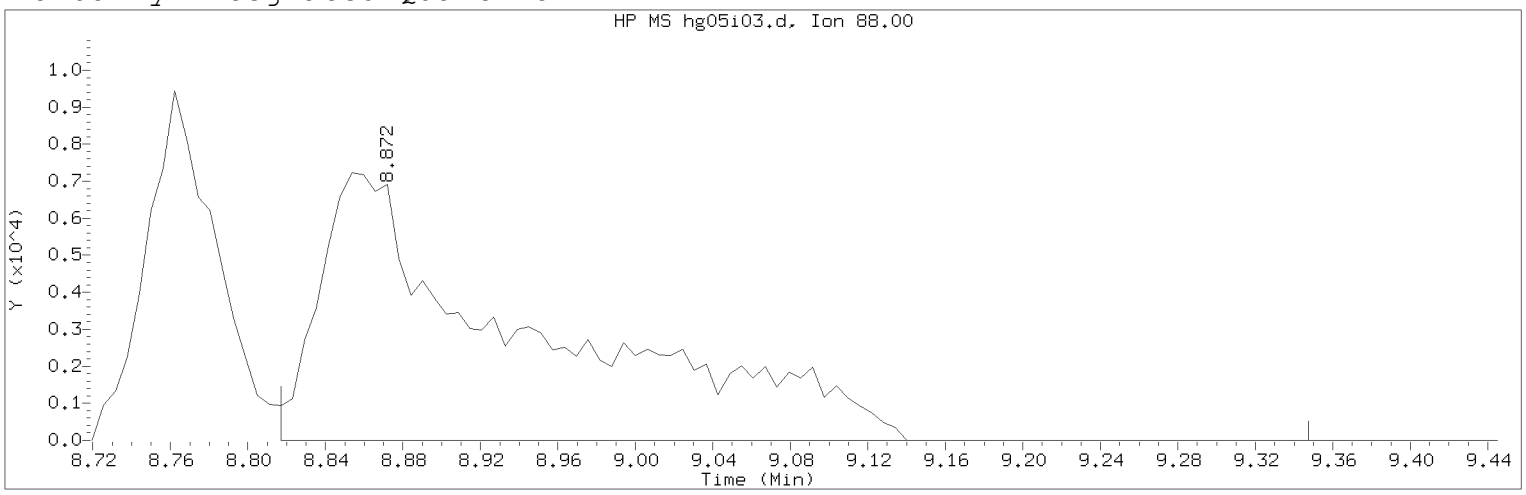
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 488
Retention Time (minutes): 4.562
Quant Ion : 59.00
Area : 240399
On-column Amount (ng) : 105.7265
Integration start scan : 472 Integration stop scan: 554
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

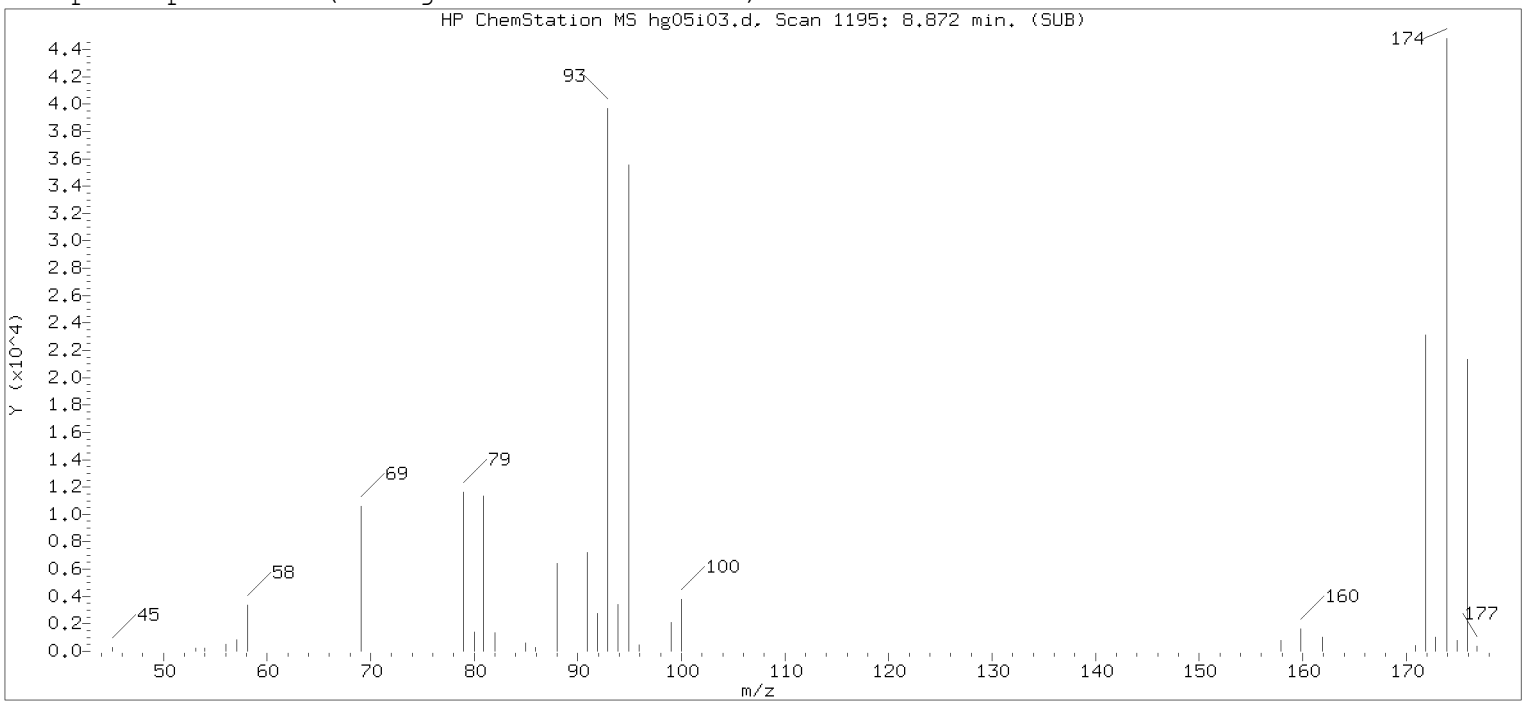
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1195
Retention Time (minutes): 8.872
Quant Ion : 88.00
Area (flag) : 53690M
On-Column Amount (ng) : 299.2390
Integration start scan : 1185 Integration stop scan: 1272
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

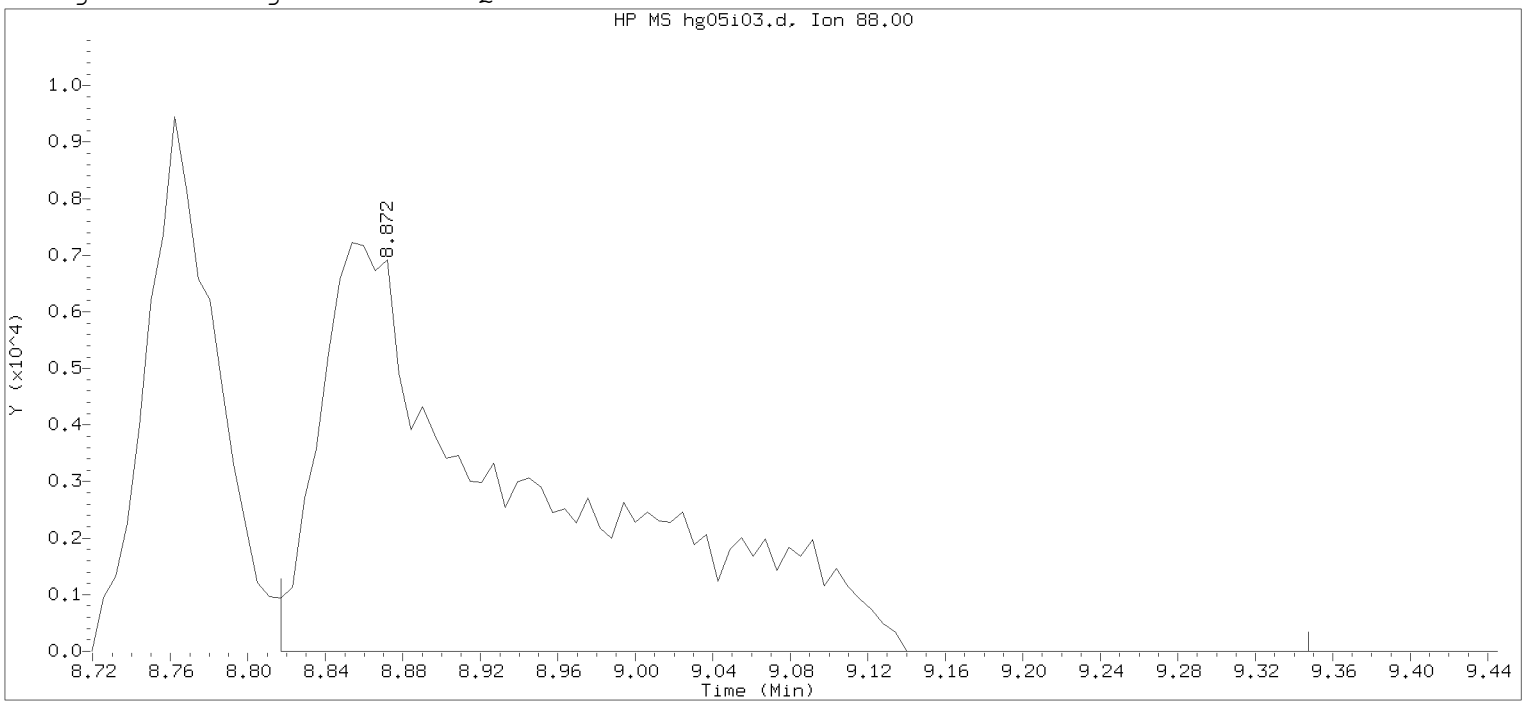
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

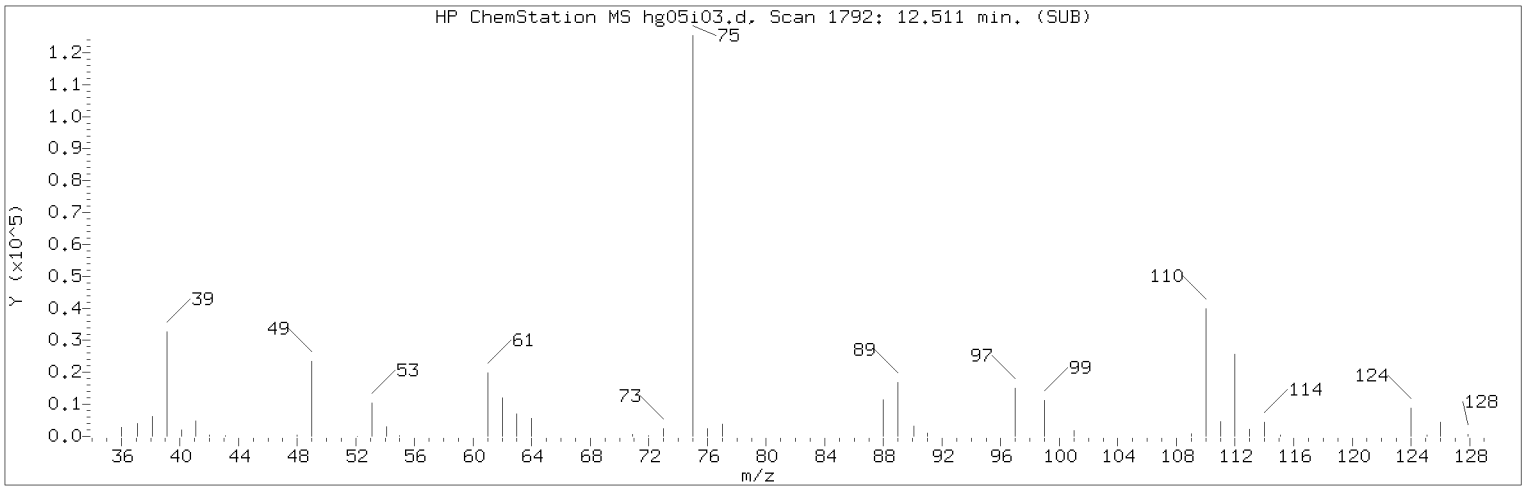
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

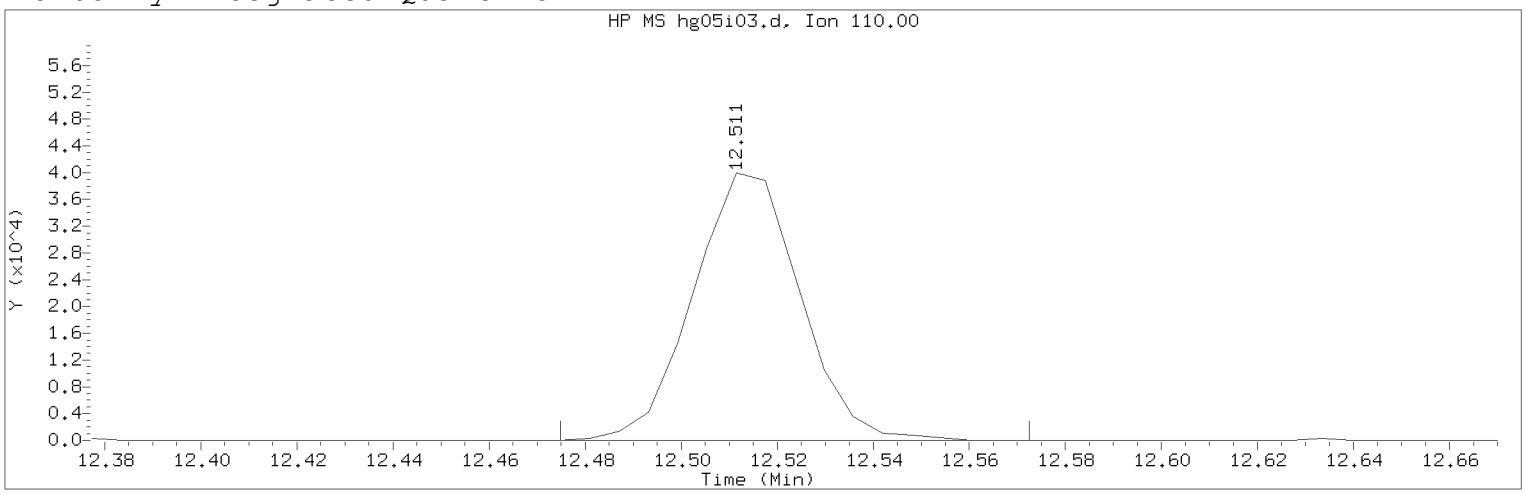
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1195		
Retention Time (minutes)	: 8.872		
Quant Ion	: 88.00		
Area	: 53690		
On-column Amount (ng)	: 235.5190		
Integration start scan	: 1185	Integration stop scan:	1272
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

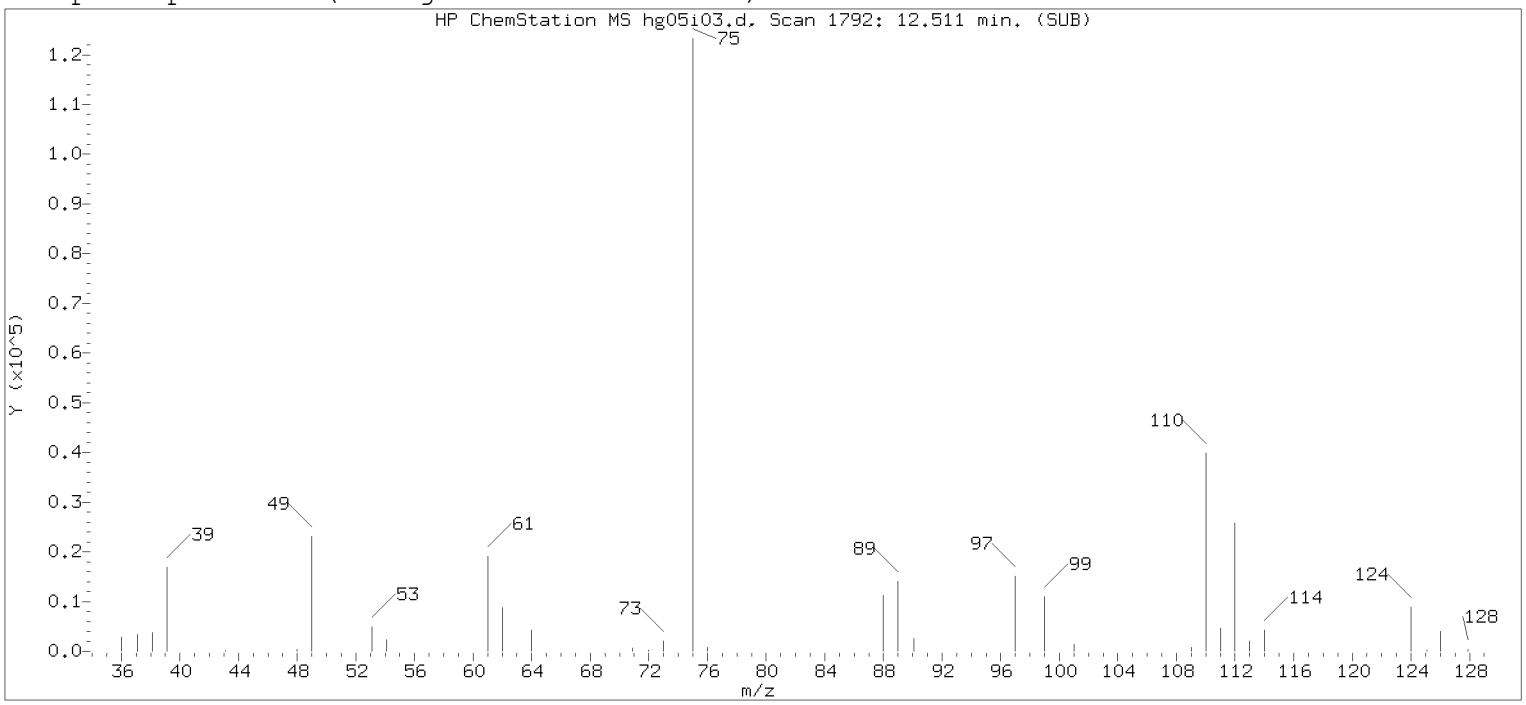
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.511
Quant Ion : 110.00
Area (flag) : 61784M
On-Column Amount (ng) : 4.9507
Integration start scan : 1785 Integration stop scan: 1801
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

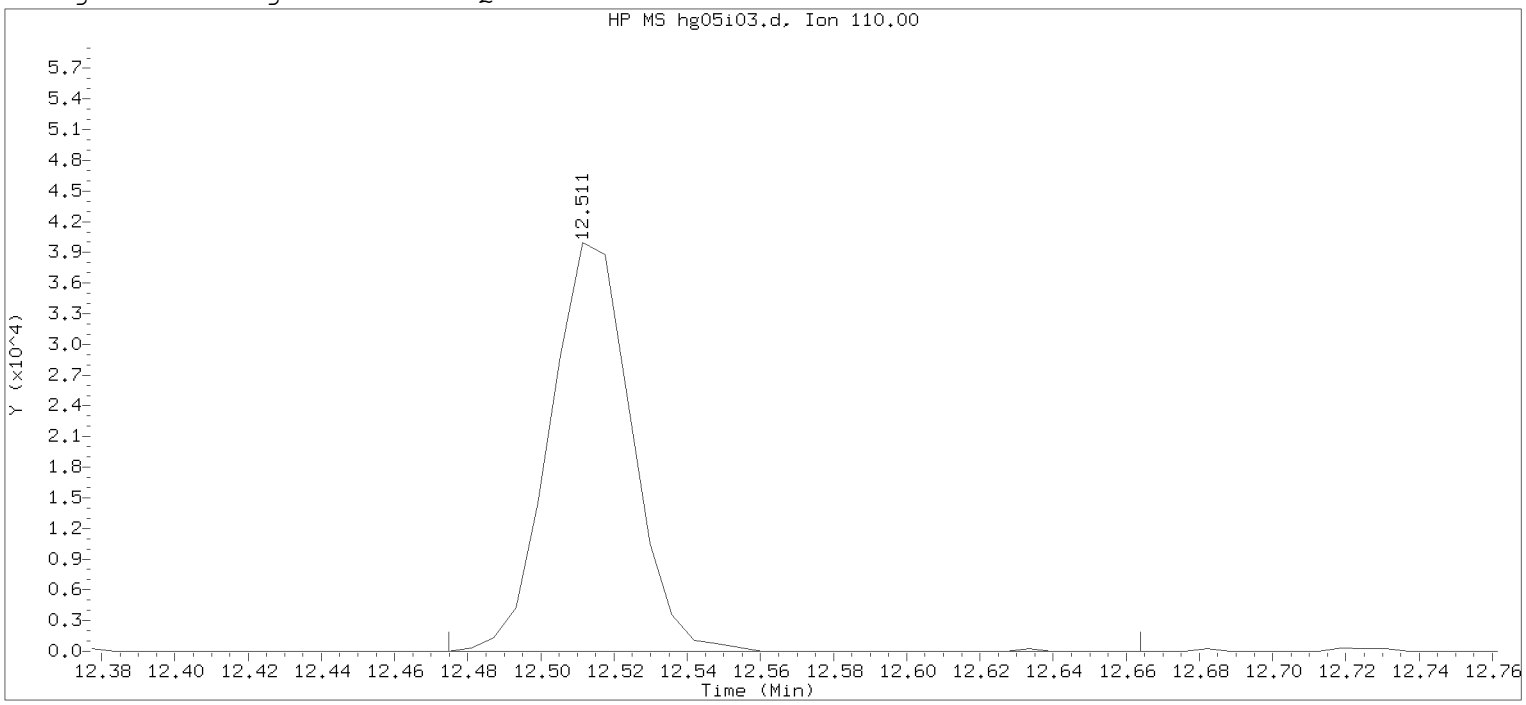
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



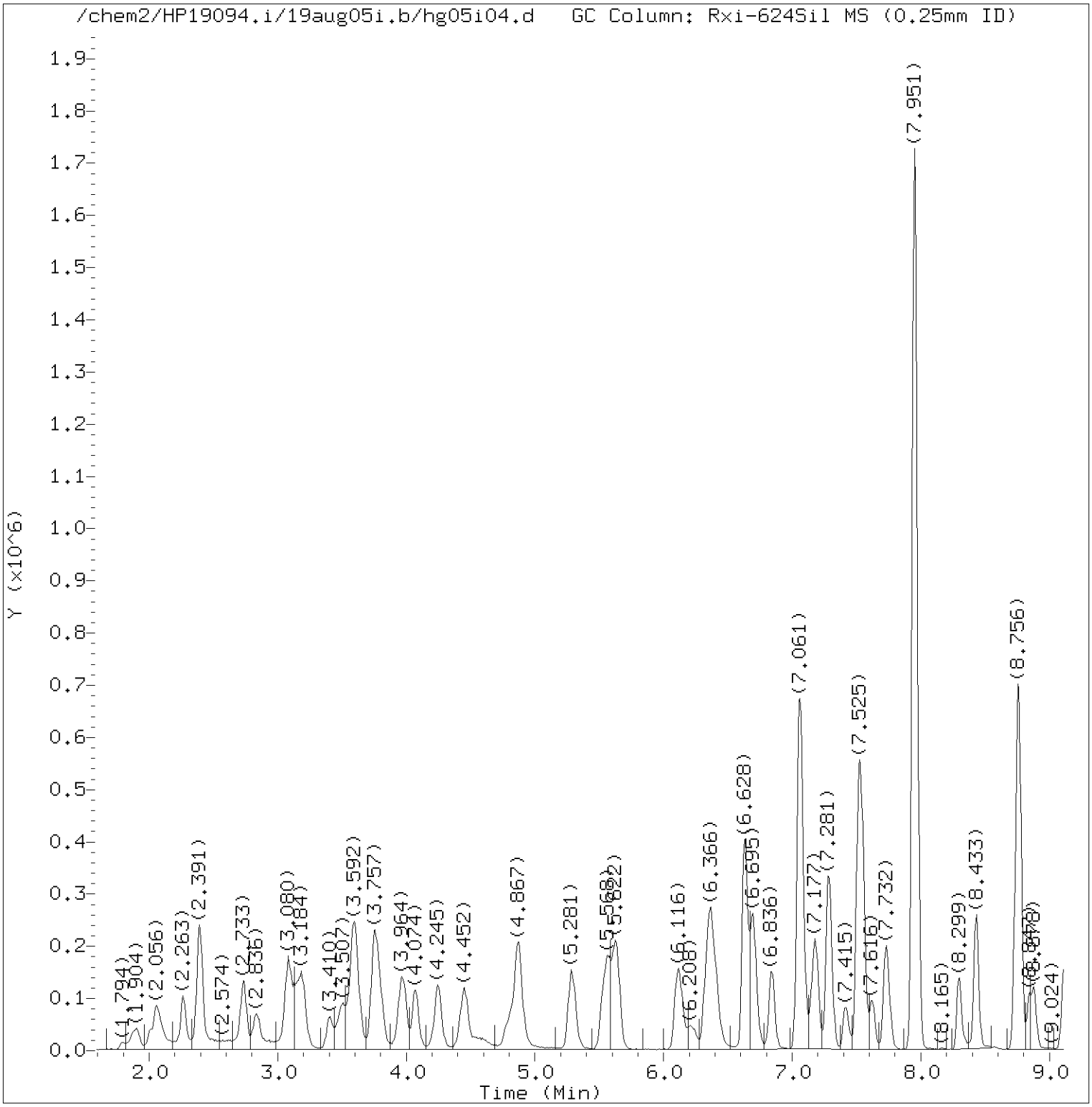
Data File: /chem2/HP19094.i/19aug05i.b/hg05i03.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 18:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.511
Quant Ion : 110.00
Area : 61882
On-column Amount (ng) : 4.9660
Integration start scan : 1785 Integration stop scan: 1816
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used. Reason: I am the author of this document



Total Ion Chromatogram (TIC)

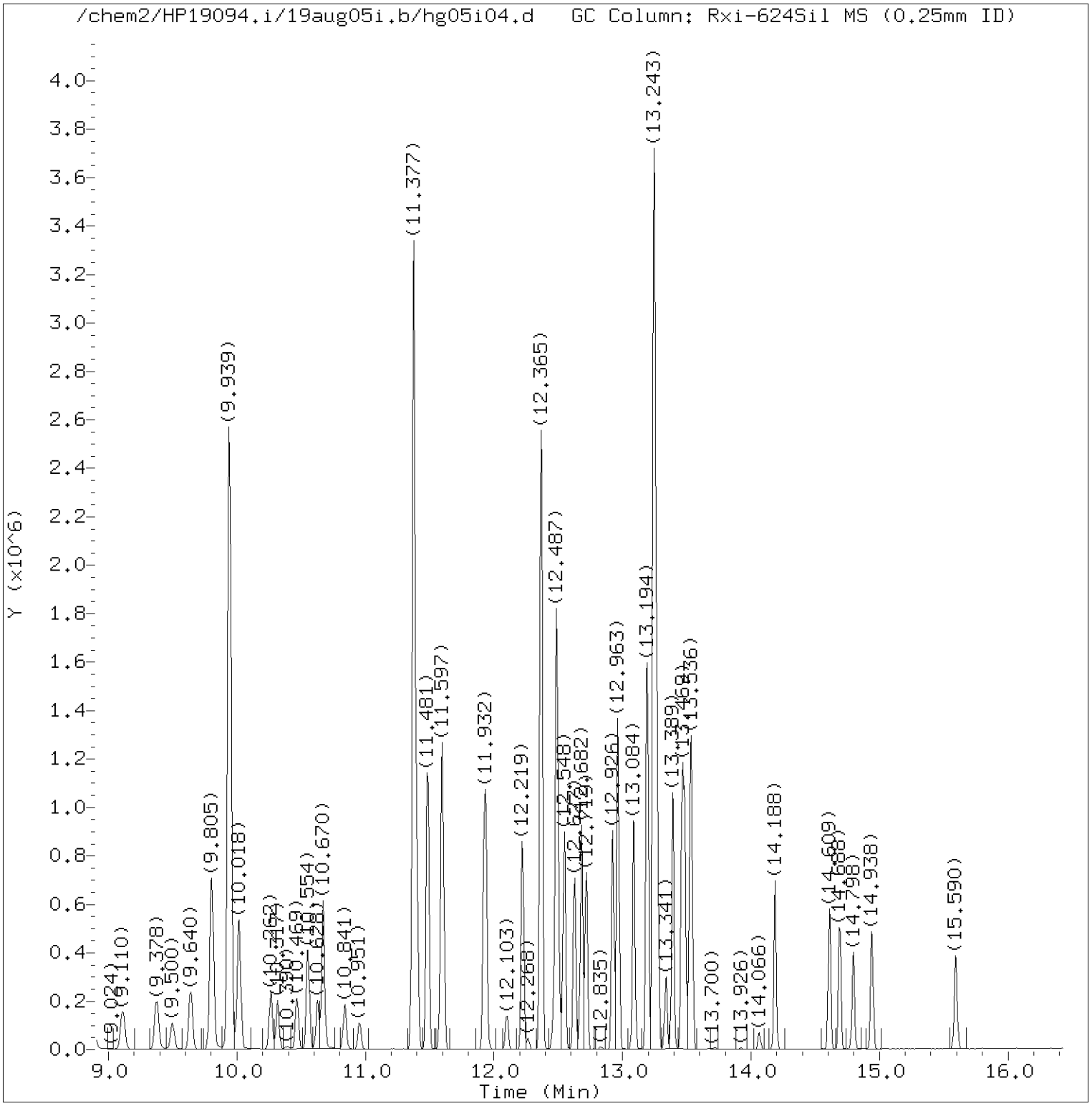
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.062	85	204059	1.934
2) Chloromethane	(2)	2.263	50	149866	1.940
5) Vinyl Chloride	(2)	2.385	62	155070	1.995
6) 1,3-Butadiene	(2)	2.391	39	119295M	1.914
7) Bromomethane	(2)	2.733	94	133235	1.943
8) Chloroethane	(2)	2.836	64	88770	1.951
9) Dichlorofluoromethane	(2)	3.080	67	198778	1.992
10) Trichlorofluoromethane	(2)	3.135	101	243184M	1.977
11) Ethyl ether	(2)	3.397	59	66862	1.950
12) Freon 123a	(2)	3.495	67	124489	1.989
13) Acrolein	(1)	3.598	56	522295	95.420
15) 1,1-Dichloroethene	(2)	3.745	96	87243	1.945
16) Freon 113	(2)	3.769	101	111769	1.992
14) Acetone	(1)	3.769	43	135068M	17.691
17) Methyl Iodide	(2)	3.958	142	208347	1.936
18) Carbon Disulfide	(2)	4.074	76	285305	1.914
21) Methyl Acetate	(1)	4.202	43	45171M	1.784
22) Allyl Chloride	(2)	4.251	41	145105	1.907
26)*t-Butyl Alcohol-d10	(1)	4.428	65	114851	50.000
23) Methylene Chloride	(2)	4.452	84	98802	1.847
28) t-Butyl Alcohol	(1)	4.574	59	79781M	37.245
29) Acrylonitrile	(1)	4.781	53	86412	9.771
31) trans-1,2-Dichloroethene	(2)	4.867	96	99913	1.940
30) Methyl Tertiary Butyl Ether	(2)	4.867	73	228998	1.973
32) n-Hexane	(2)	5.281	57	154566	1.973
33) 1,1-Dichloroethane	(2)	5.525	63	178965	1.962
34) di-Isopropyl Ether	(2)	5.580	45	307307	1.954
35) 2-Chloro-1,3-Butadiene	(2)	5.641	53	163421	1.932
40) 1,2-Dichloroethene (Total)	(2)		96	213898	3.909
37) Ethyl t-butyl ether	(2)	6.116	59	294993	1.970
38) 2-Butanone	(1)	6.330	43	229650	18.619
39) cis-1,2-Dichloroethene	(2)	6.366	96	113985	1.969
41) 2,2-Dichloropropane	(2)	6.385	77	160404	1.937
42) Propionitrile	(1)	6.421	54	122453M	38.810
45) Methacrylonitrile	(1)	6.628	67	242056	19.258
47) Bromochloromethane	(2)	6.689	128	54031	1.966
48) Tetrahydrofuran	(1)	6.702	71	64608	18.903
49) Chloroform	(2)	6.836	83	184870	1.929

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.055	113	540941	9.881
50)$Dibromofluoromethane	(2)	7.055	111	555566	9.988
51) 1,1,1-Trichloroethane	(2)	7.080	97	174309	1.954
52) Cyclohexane	(2)	7.183	56	181578	1.967
52) Cyclohexane	(2)	7.177	84	164035	1.913
52) Cyclohexane	(2)	7.183	69	58192	1.954
55) 1,1-Dichloropropene	(2)	7.287	75	141641	1.958
54) Carbon Tetrachloride	(2)	7.293	117	162648	1.949
56) Isobutyl Alcohol	(1)	7.409	41	80295	91.574
57)$1,2-Dichloroethane-d4	(2)	7.518	102	99138	9.849
57)$1,2-Dichloroethane-d4	(2)	7.518	65	485553	9.969
57)$1,2-Dichloroethane-d4	(2)	7.512	104	63709	9.879
58) Benzene	(2)	7.549	78	394299	1.937
59) 1,2-Dichloroethane	(2)	7.622	62	108111	1.885
60) t-Amyl methyl ether	(2)	7.732	73	264166	1.958
63)*Fluorobenzene	(2)	7.951	96	2013092	10.000
62) n-Heptane	(2)	7.957	43	163155	1.938
65) n-Butanol	(1)	8.293	56	141416M	197.842
67) Trichloroethene	(2)	8.433	95	109481	1.914
69) Methylcyclohexane	(2)	8.744	83	200820	1.997
70) 1,2-Dichloropropane	(2)	8.768	63	96575	1.928
71) Methyl Methacrylate	(1)	8.841	69	47084	1.841
72) 1,4-Dioxane	(1)	8.854	88	22282M	129.003
73) Dibromomethane	(2)	8.878	93	51657	1.923
74) Bromodichloromethane	(2)	9.116	83	131979	1.912
76) 2-Nitropropane	(1)	9.372	41	172633	19.005
80) cis-1,3-Dichloropropene	(2)	9.640	75	156209	1.985
81) 4-Methyl-2-Pentanone	(1)	9.805	43	588964	18.836
82)$Toluene-d8	(3)	9.939	98	2029432	9.958
82)$Toluene-d8	(3)	9.939	100	1303528	10.002
83) Toluene	(3)	10.018	92	259979	1.917
85) 1,3-Dichloropropene (total)	(3)		75	286189	3.927
84) trans-1,3-Dichloropropene	(3)	10.262	75	129980	1.942
86) Ethyl Methacrylate	(3)	10.317	69	102690	1.920
88) 1,1,2-Trichloroethane	(3)	10.469	97	70682	1.944
89) Tetrachloroethene	(3)	10.548	166	134513	1.976
90) 1,3-Dichloropropane	(3)	10.628	76	117705	1.953
91) 2-Hexanone	(1)	10.670	43	416392	18.957

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	100959	1.980
95) 1,2-Dibromoethane	(3)	10.951	107	71140	1.943
96) 1-Chlorohexane	(3)	11.377	91	158629	1.918
97)*Chlorobenzene-d5	(3)	11.377	117	1596308	10.000
98) Chlorobenzene	(3)	11.402	112	297096	1.932
100) Ethylbenzene	(3)	11.481	91	526686	1.964
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	114336	1.994
101) m+p-Xylene	(3)	11.597	106	415945	3.909
105) Xylene (Total)	(3)		106	619840	5.869
104) o-Xylene	(3)	11.926	106	203895	1.960
106) Styrene	(3)	11.938	104	328117	1.941
107) Bromoform	(3)	12.103	173	62274	1.962
108) Isopropylbenzene	(3)	12.219	105	542435	1.955
111)$4-Bromofluorobenzene	(3)	12.365	95	738485	9.909
111)$4-Bromofluorobenzene	(3)	12.371	174	712129	9.994
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	86229	1.959
114) Bromobenzene	(4)	12.487	156	131905	1.918
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	244687	18.836
116) 1,2,3-Trichloropropane	(4)	12.511	110	23336M	1.910
117) n-Propylbenzene	(4)	12.548	91	628588	1.938
119) 2-Chlorotoluene	(4)	12.627	126	130236	1.951
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	456491	1.928
122) 4-Chlorotoluene	(4)	12.719	126	134351	1.958
125) tert-Butylbenzene	(4)	12.926	134	101980	1.950
126) Pentachloroethane	(4)	12.963	167	92191	1.911
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	470151	1.918
128) sec-Butylbenzene	(4)	13.084	105	603668	1.938
131) 1,3-Dichlorobenzene	(4)	13.188	146	258472	1.927
132) p-Isopropyltoluene	(4)	13.194	119	520695	1.934
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	900092	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	253116	1.897
135) 1,2,3-Trimethylbenzene	(4)	13.273	120	207689	1.892
136) Benzyl Chloride	(4)	13.341	126	42400	1.982
138) n-Butylbenzene	(4)	13.487	92	256442	1.935
139) 1,2-Dichlorobenzene	(4)	13.523	146	233717	1.942
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	13691	1.878
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	198133	1.908
145) 1,2,4-Trichlorobenzene	(4)	14.615	180	166144	1.913

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

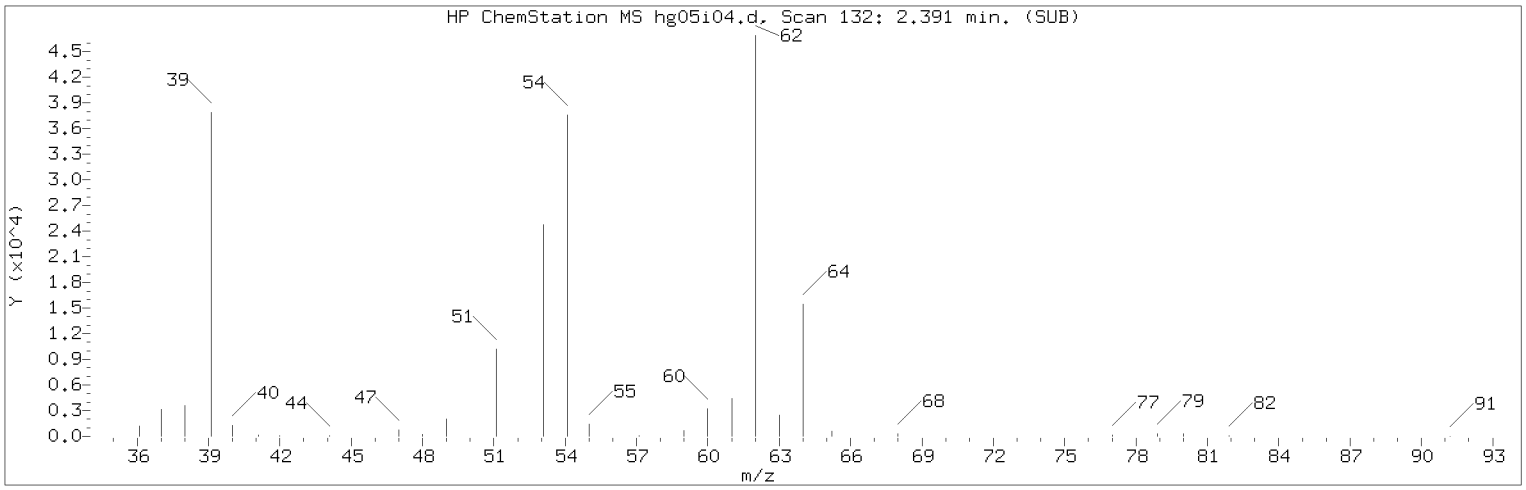
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

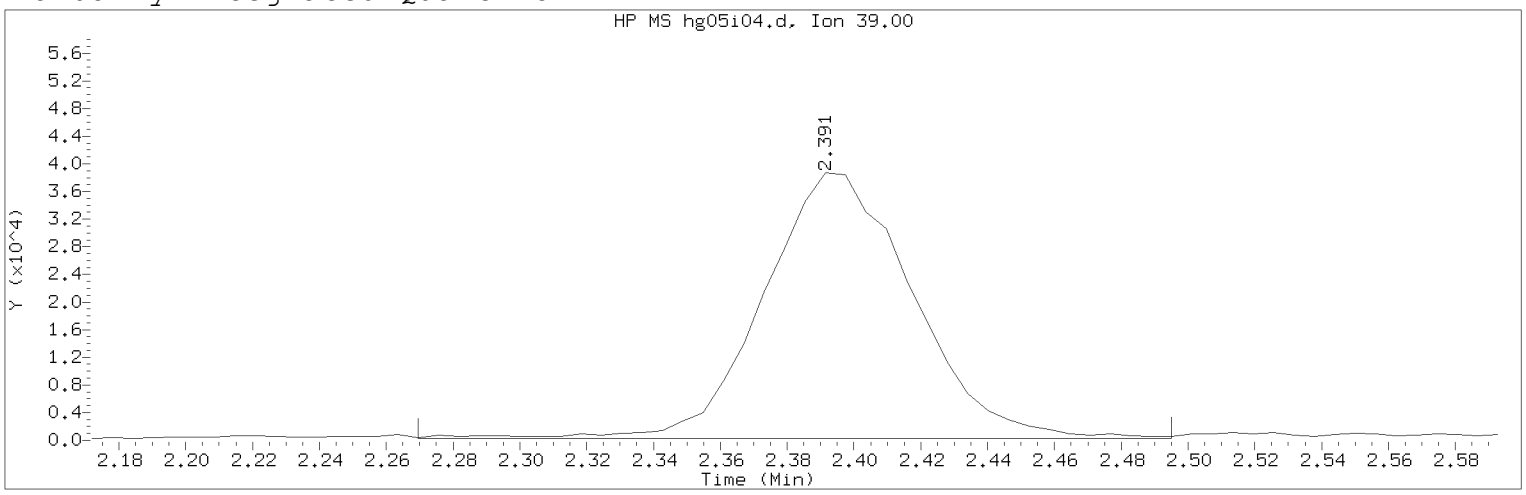
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	86571	1.922
147) Naphthalene	(4)	14.798	128	299978	1.945
148) 1,2,3-Trichlorobenzene	(4)	14.944	180	144159	1.896

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on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

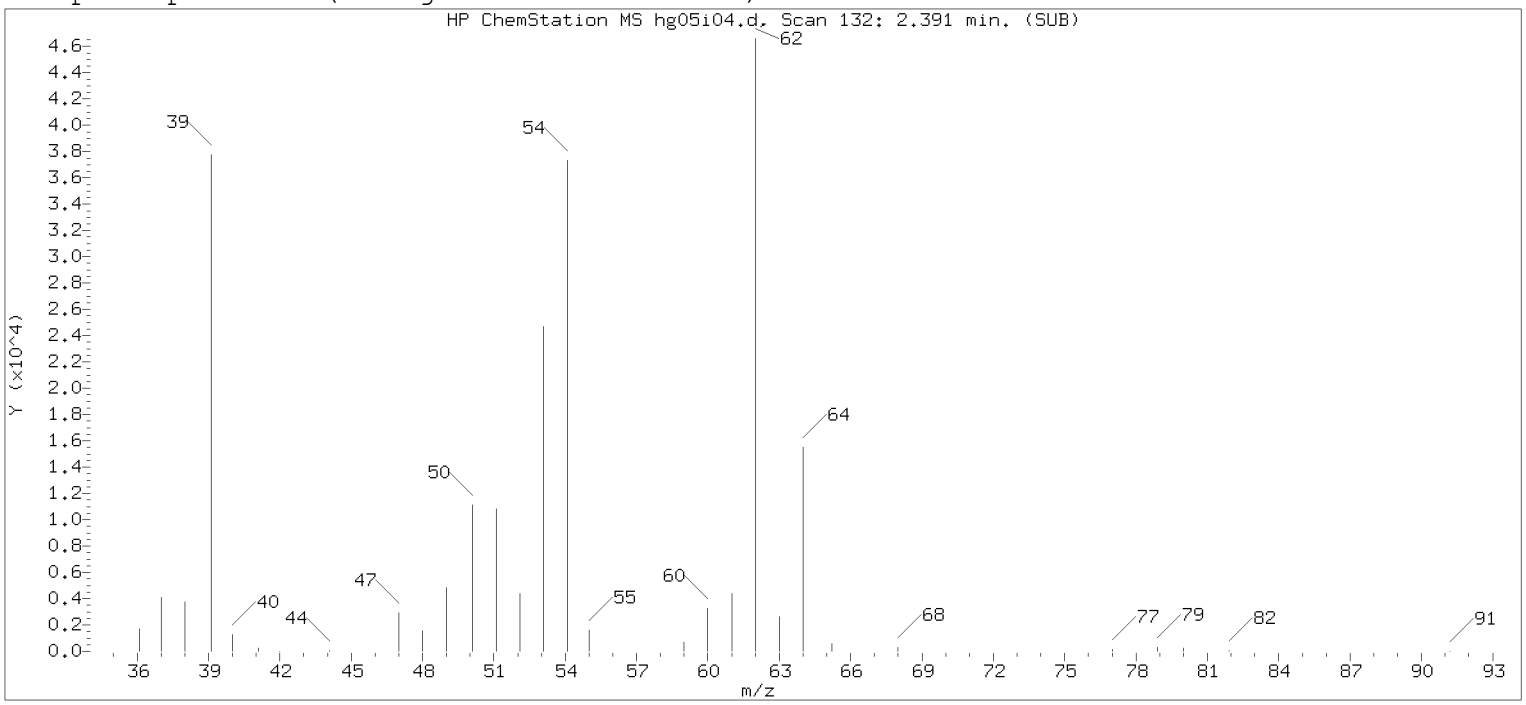
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 132
Retention Time (minutes): 2.391
Quant Ion : 39.00
Area (flag) : 119295M
On-Column Amount (ng) : 1.9142
Integration start scan : 111 Integration stop scan: 148
Y at integration start : 298 Y at integration end: 298

Reason for manual integration: improper integration

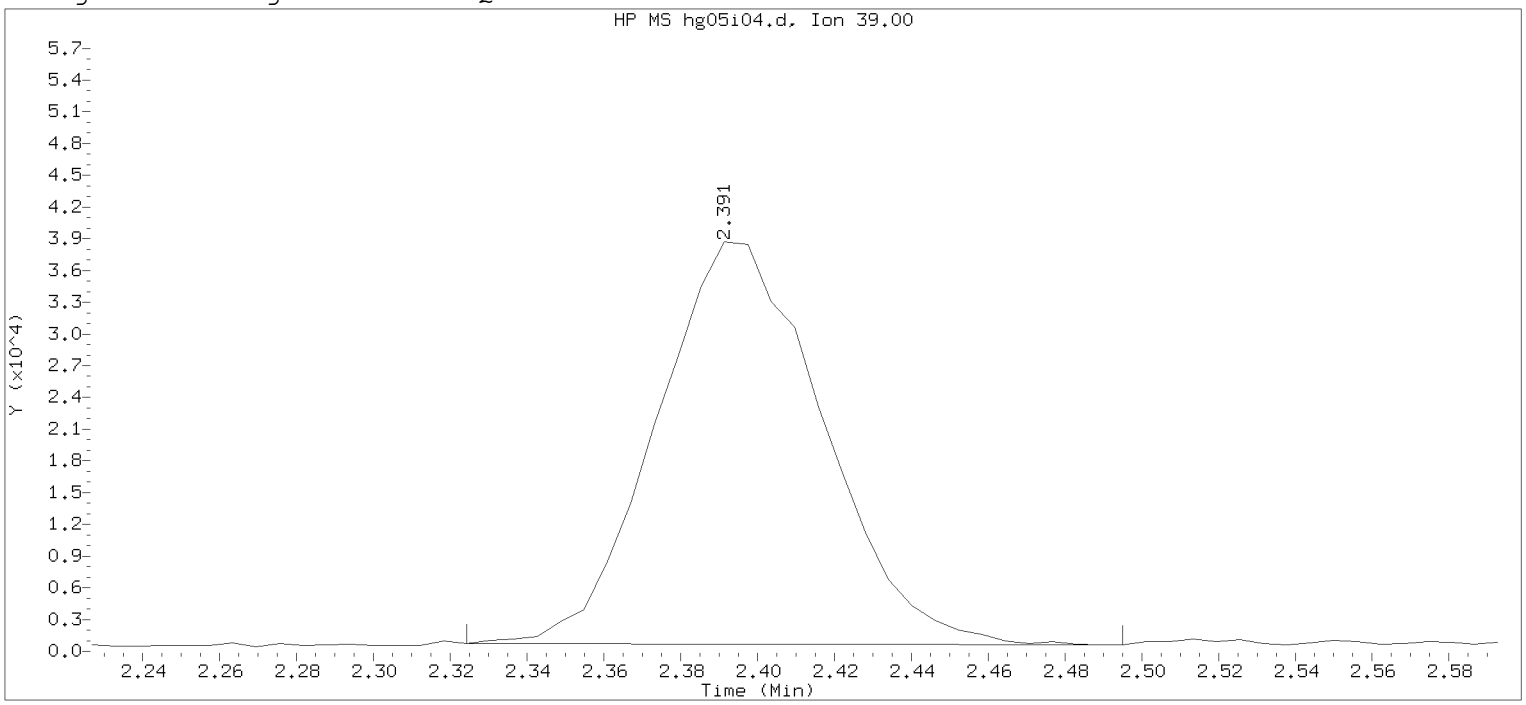
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

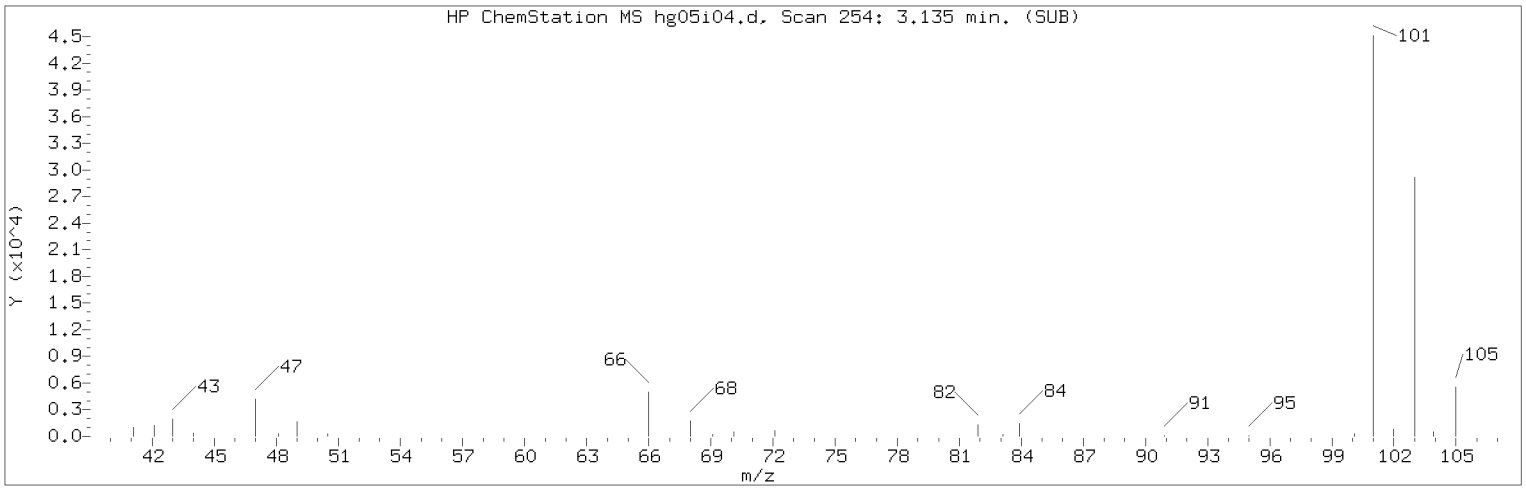
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

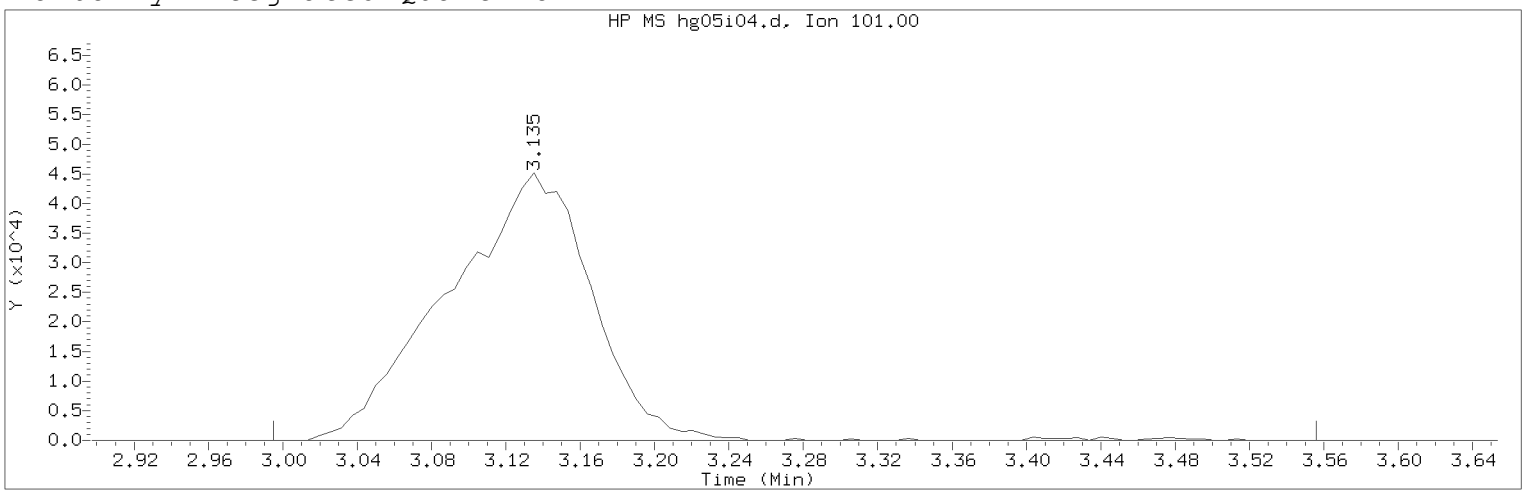
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 132
Retention Time (minutes): 2.391
Quant Ion : 39.00
Area : 114338
On-column Amount (ng) : 1.9472
Integration start scan : 120 Integration stop scan: 148
Y at integration start : 748 Y at integration end: 584

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

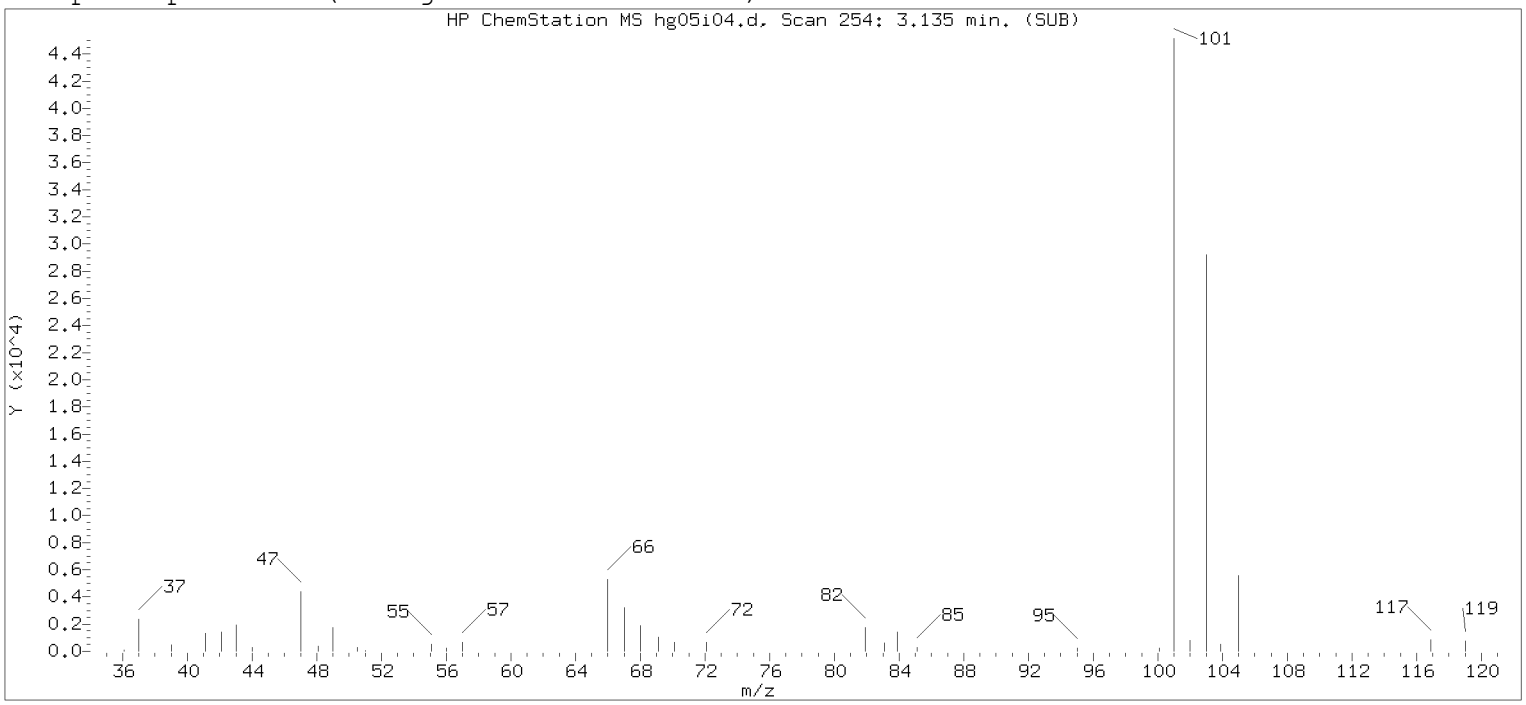
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 254
Retention Time (minutes): 3.135
Quant Ion : 101.00
Area (flag) : 243184M
On-Column Amount (ng) : 1.9768
Integration start scan : 230 Integration stop scan: 322
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

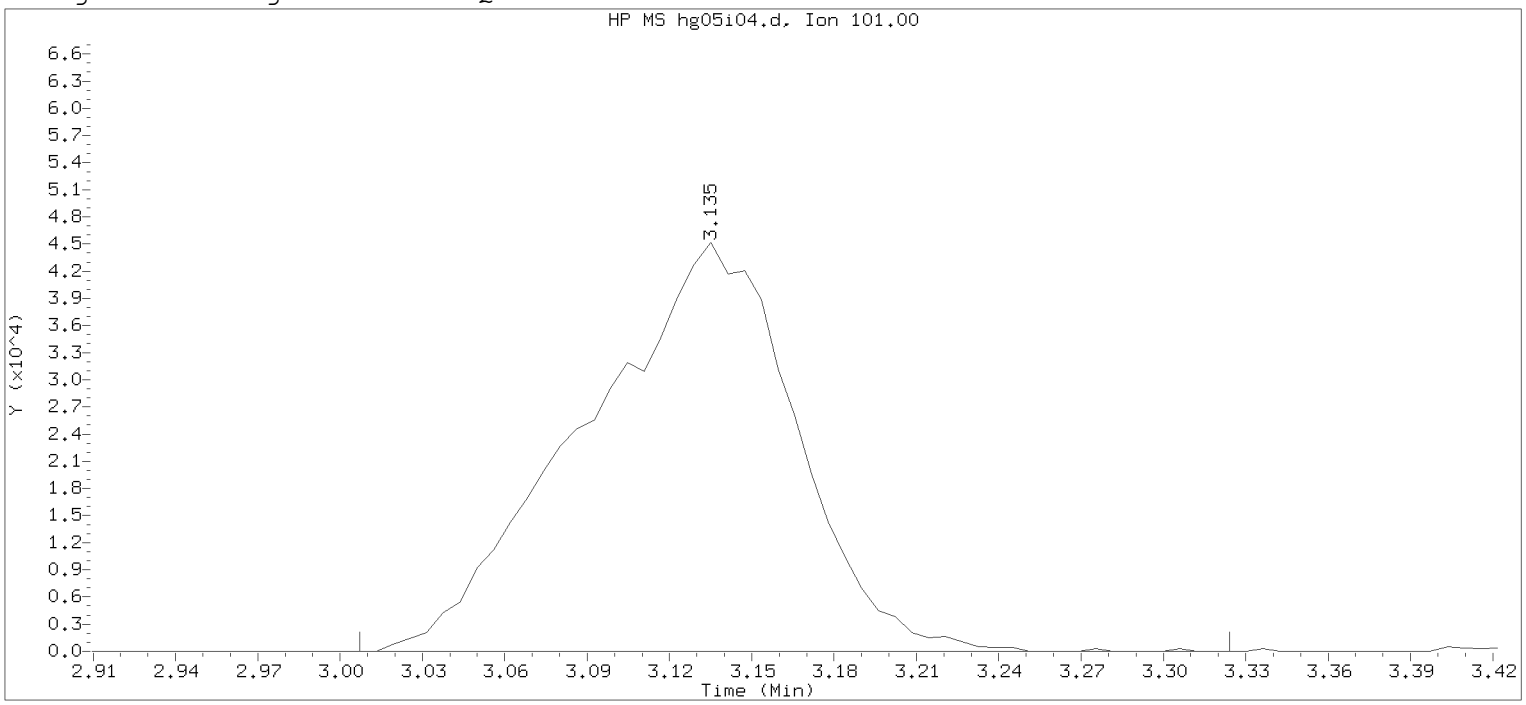
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

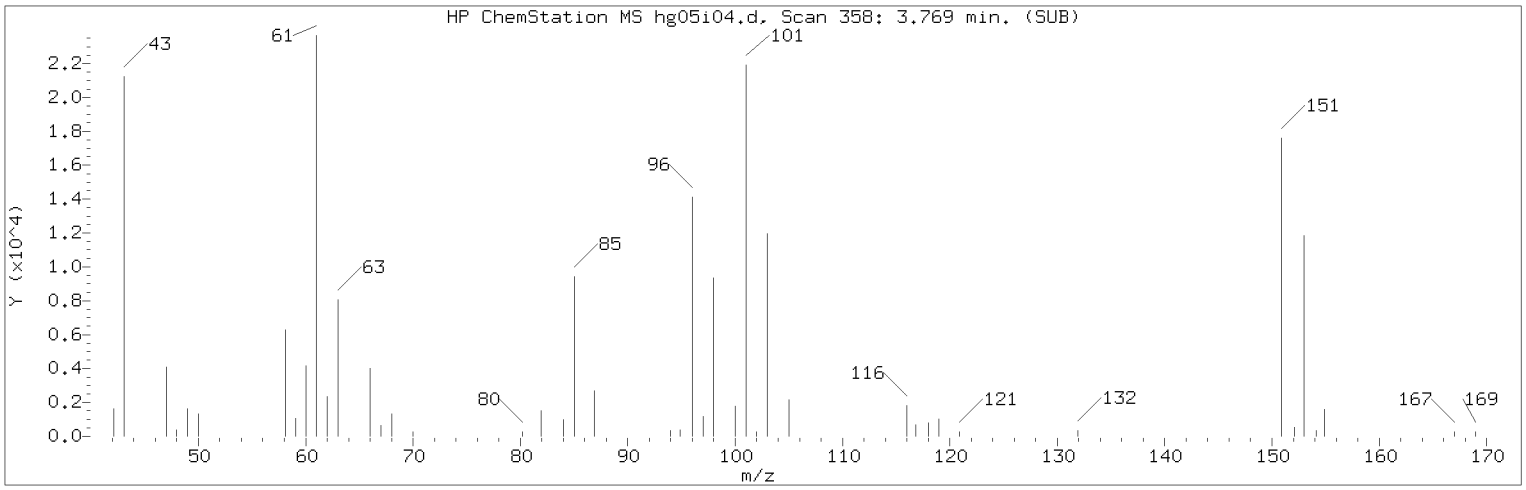
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

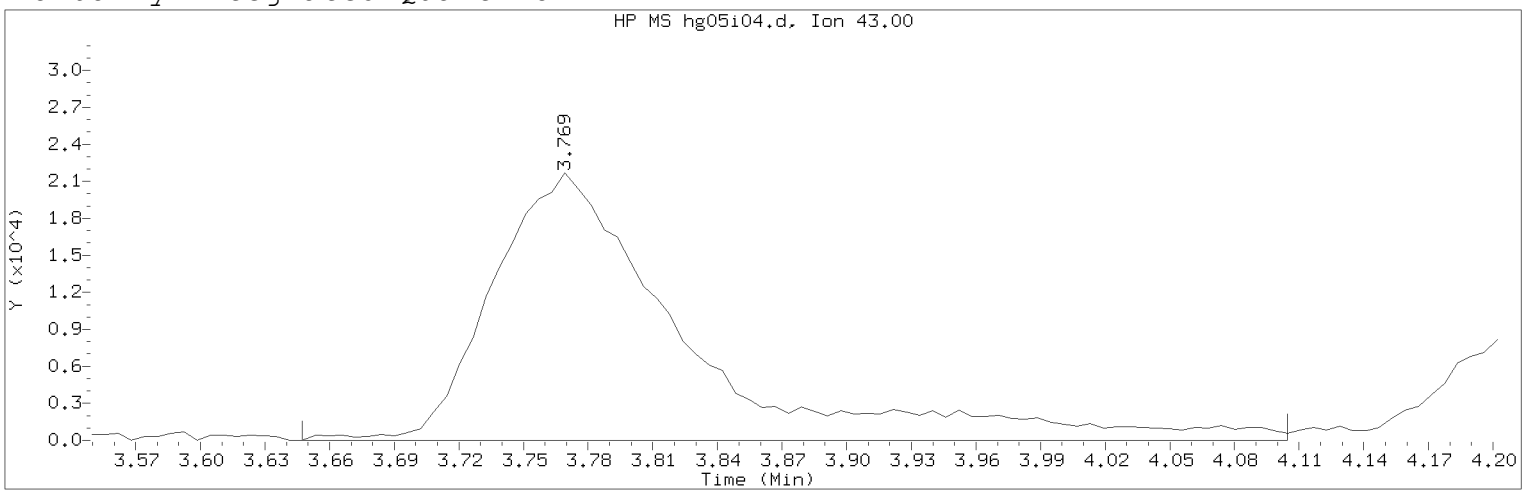
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 254
Retention Time (minutes): 3.135
Quant Ion : 101.00
Area : 241241
On-column Amount (ng) : 2.0184
Integration start scan : 232 Integration stop scan: 284
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used for m8260c25.m

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

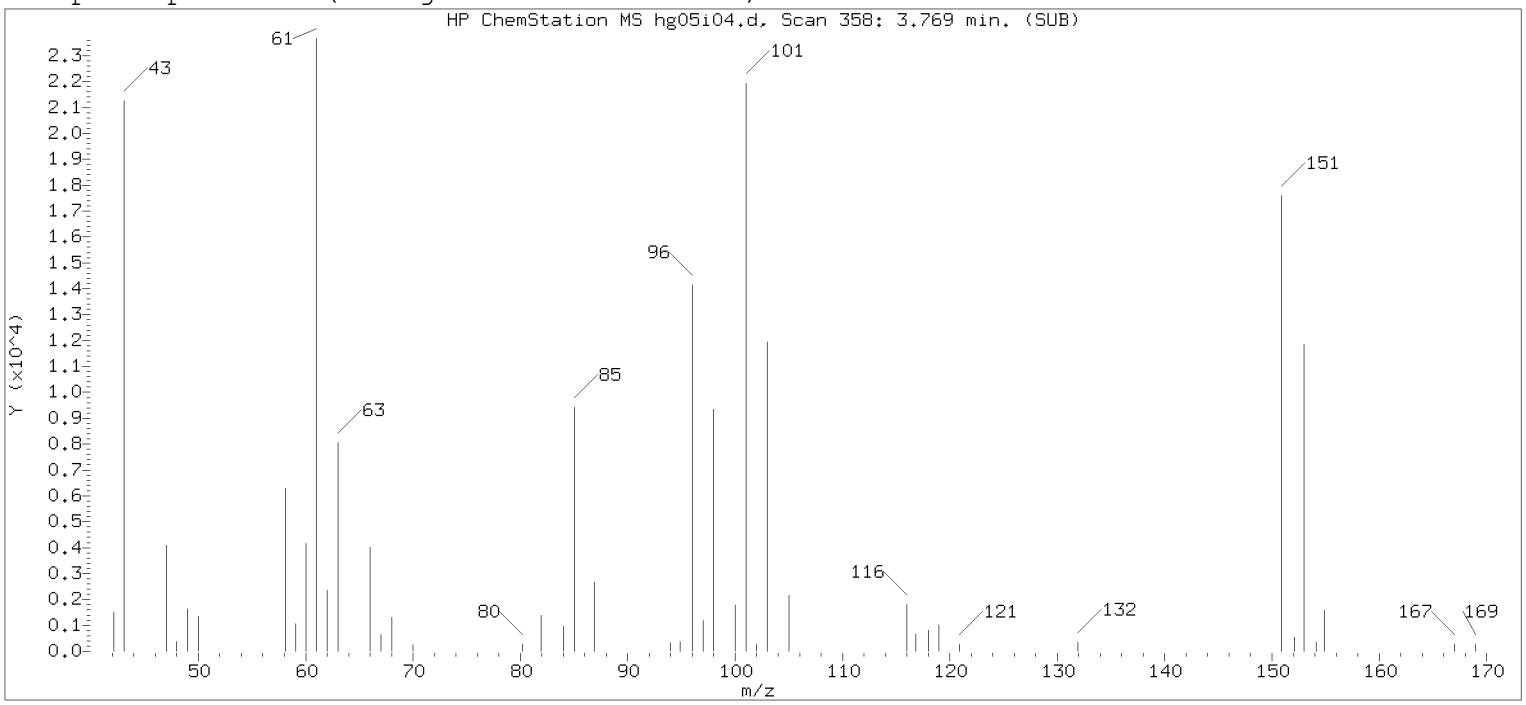
Compound Number : 14
Compound Name : Acetone
Scan Number : 358
Retention Time (minutes): 3.769
Quant Ion : 43.00
Area (flag) : 135068M
On-Column Amount (ng) : 17.6907
Integration start scan : 337 Integration stop scan: 412
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

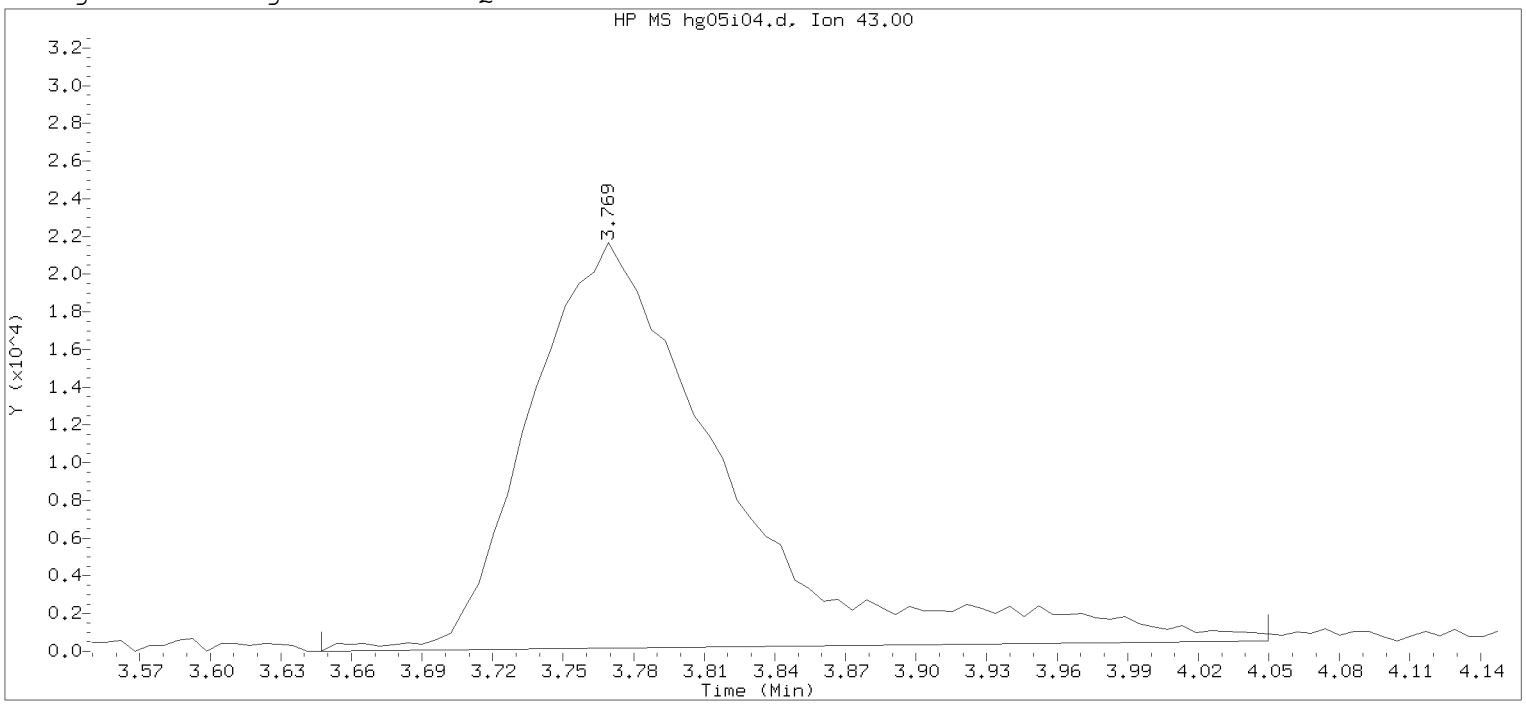
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

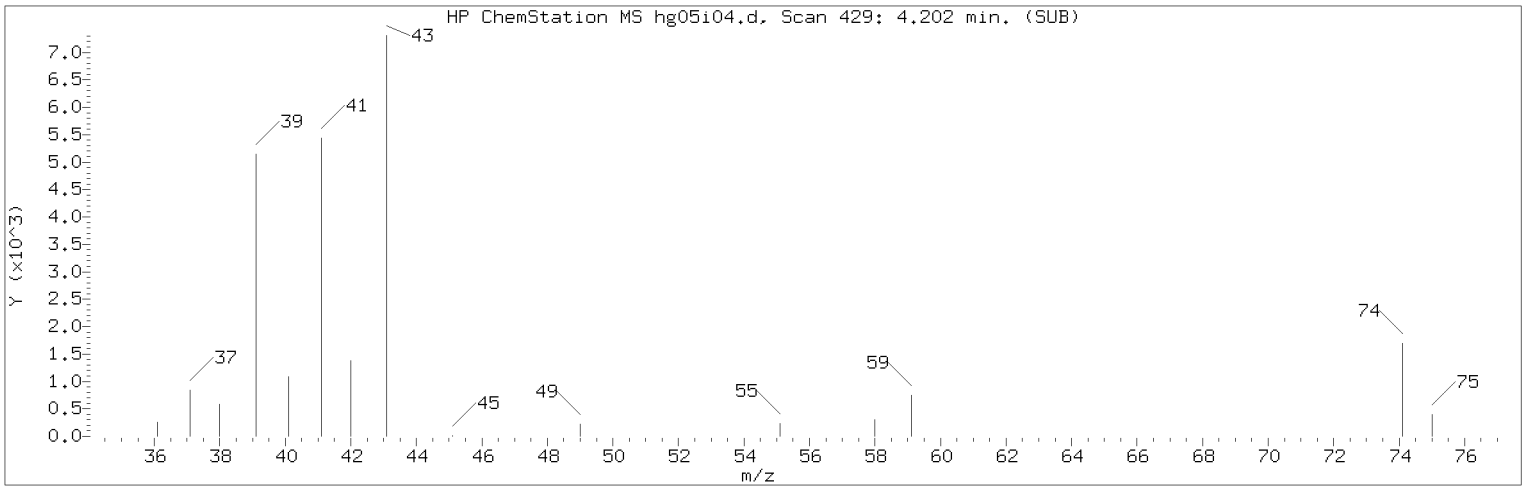
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

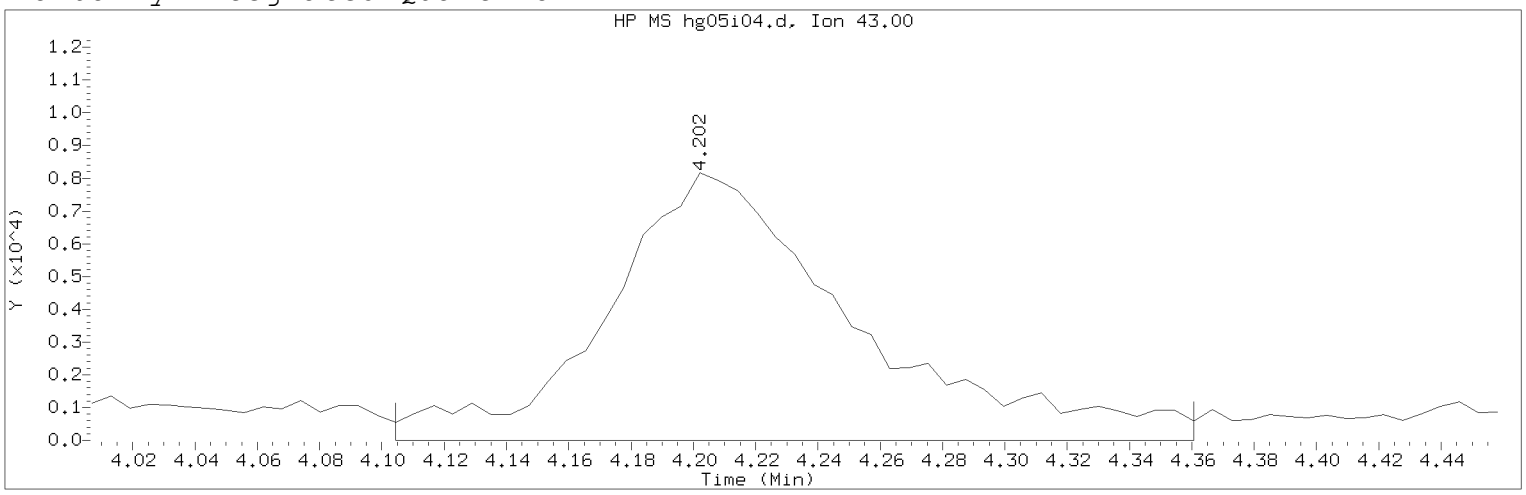
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 358		
Retention Time (minutes)	: 3.769		
Quant Ion	: 43.00		
Area	: 125107		
On-column Amount (ng)	: 20.7234		
Integration start scan	: 337	Integration stop scan:	403
Y at integration start	: 0	Y at integration end:	559

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

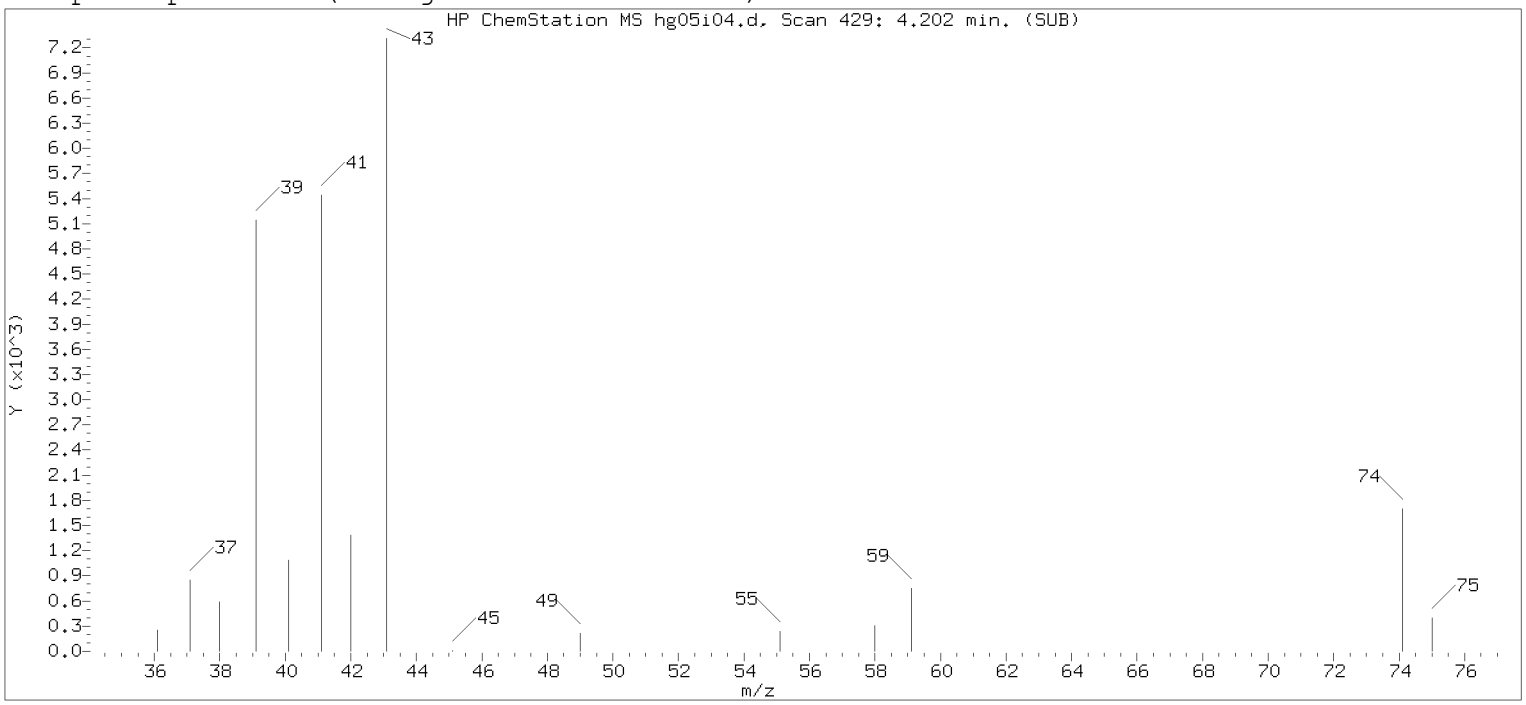
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 43.00
Area (flag) : 45171M
On-Column Amount (ng) : 1.7840
Integration start scan : 412 Integration stop scan: 454
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

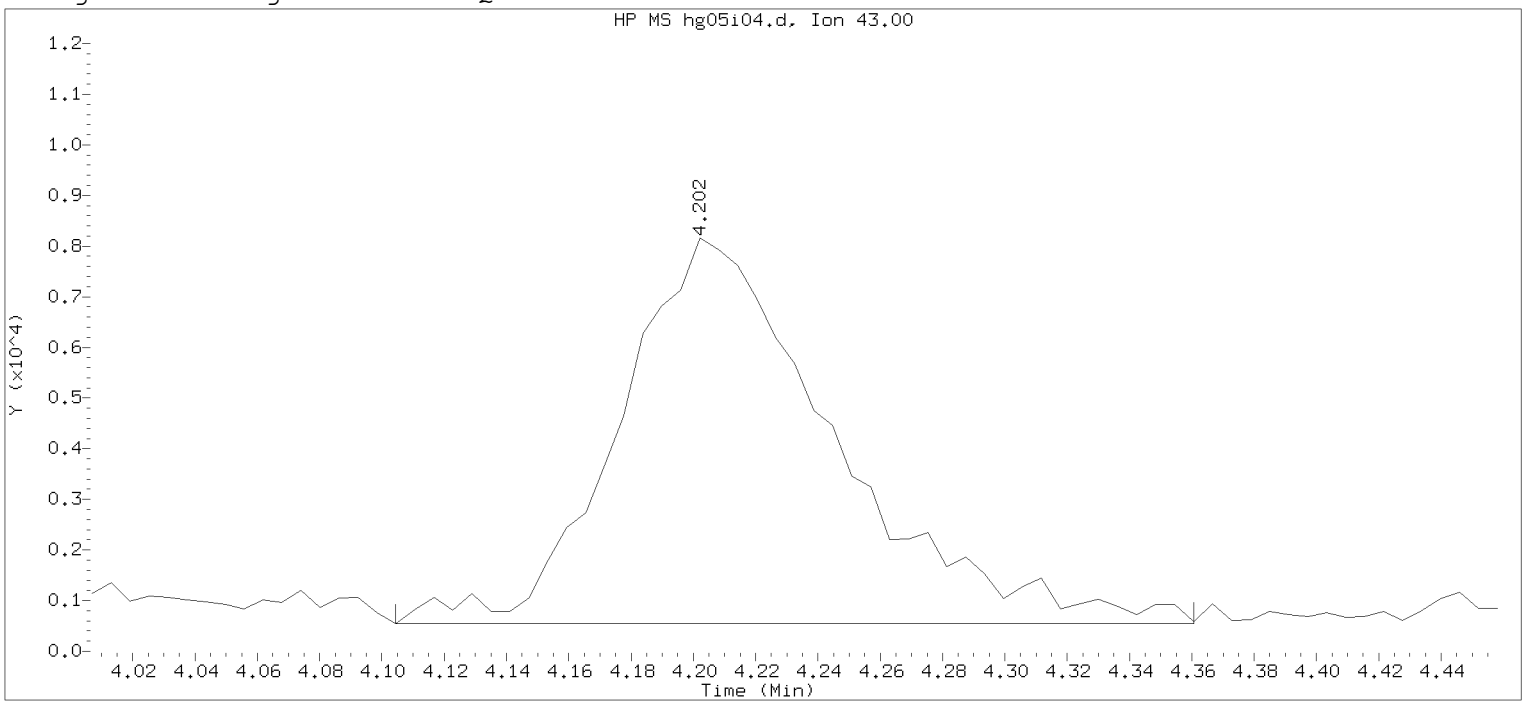
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

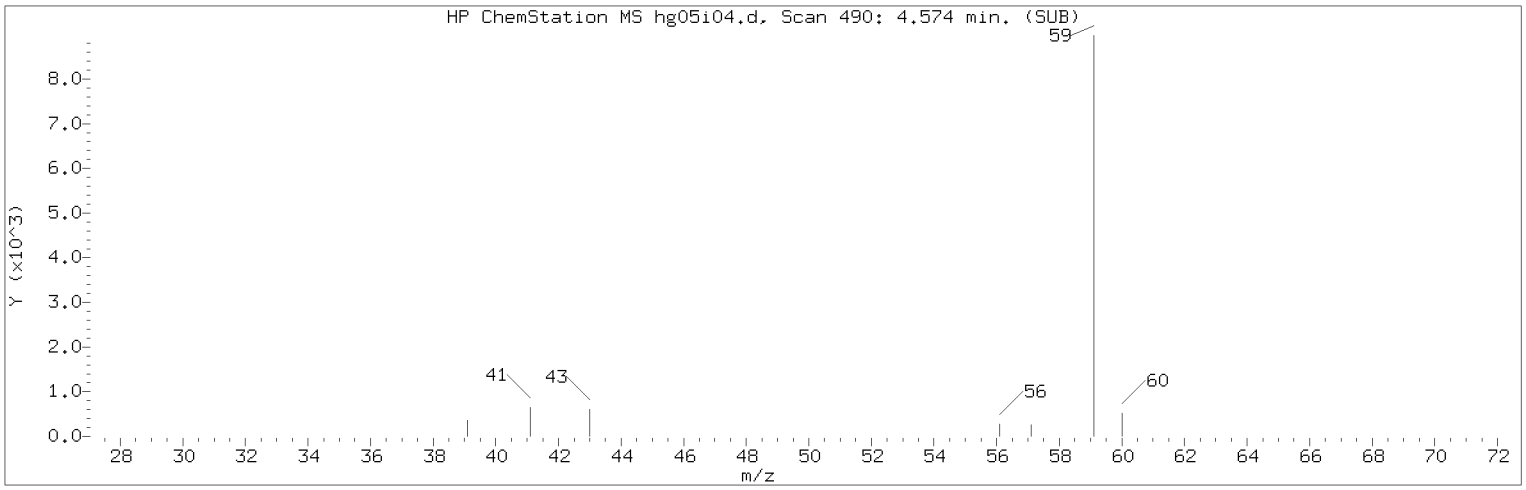
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

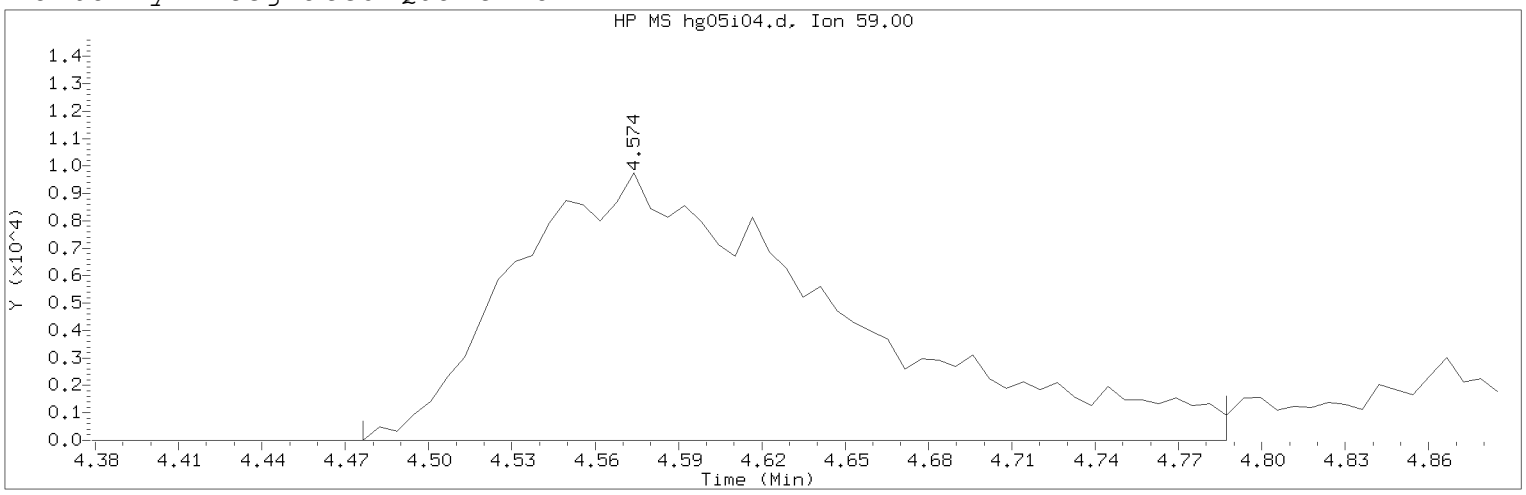
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 429
Retention Time (minutes): 4.202
Quant Ion : 43.00
Area : 36498
On-column Amount (ng) : 1.9049
Integration start scan : 412 Integration stop scan: 454
Y at integration start : 551 Y at integration end: 551

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used for meaning of signature.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

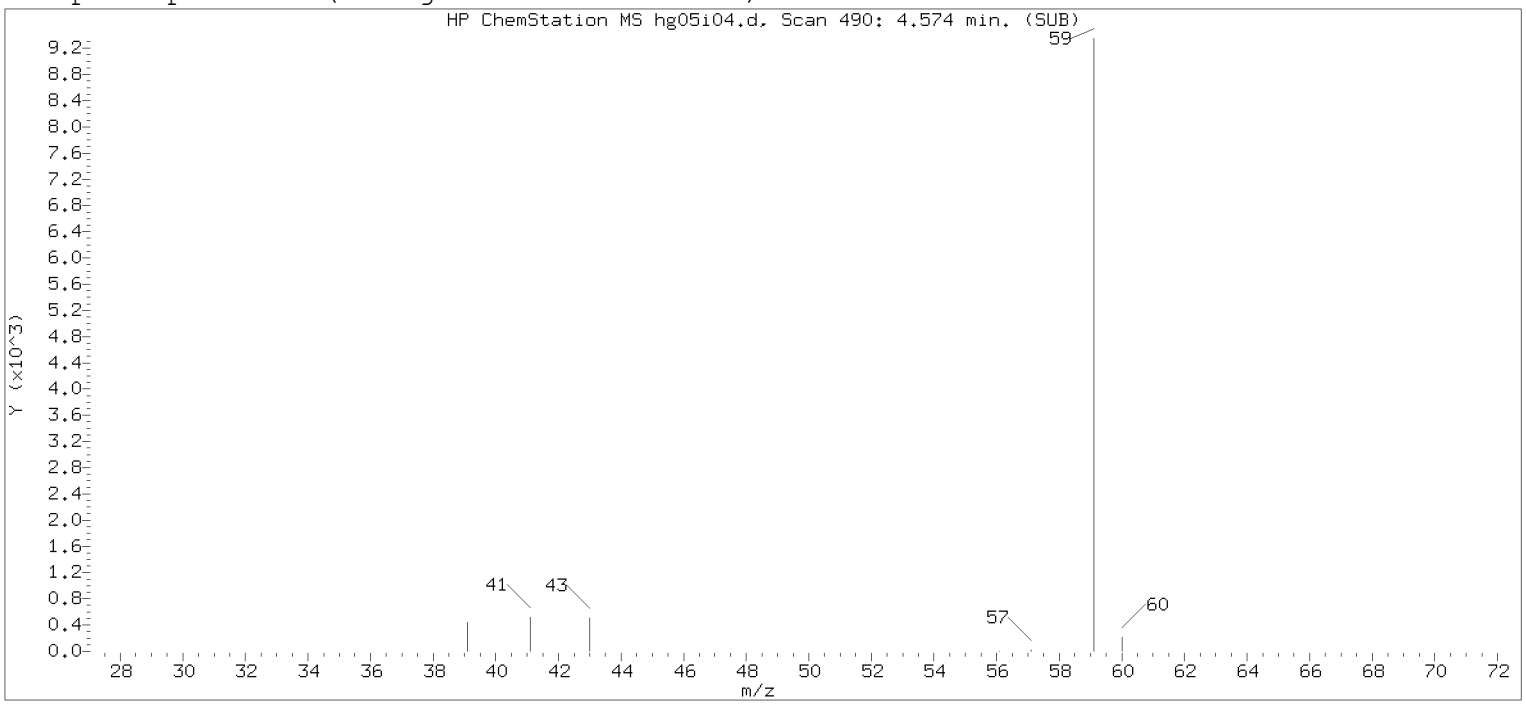
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 490
Retention Time (minutes): 4.574
Quant Ion : 59.00
Area (flag) : 79781M
On-Column Amount (ng) : 37.2446
Integration start scan : 473 Integration stop scan: 524
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

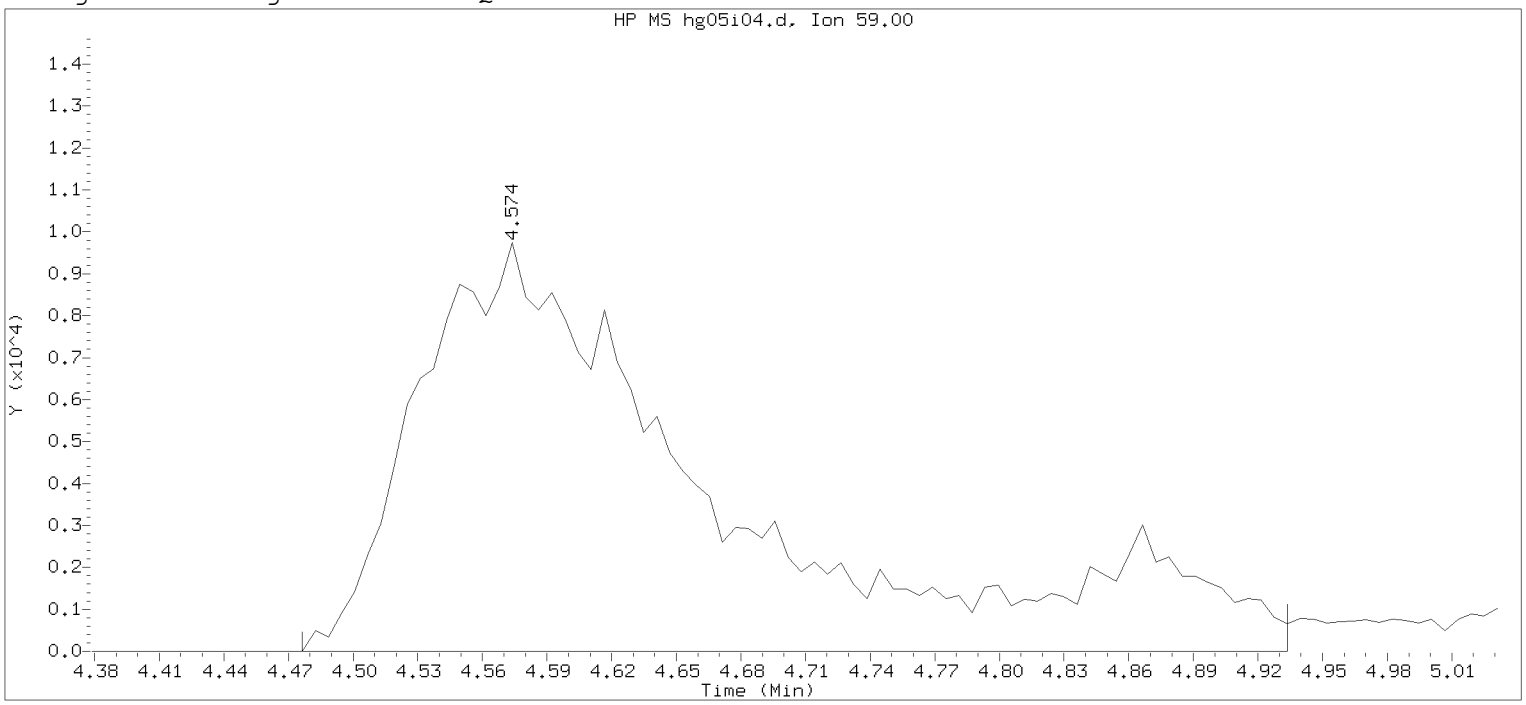
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

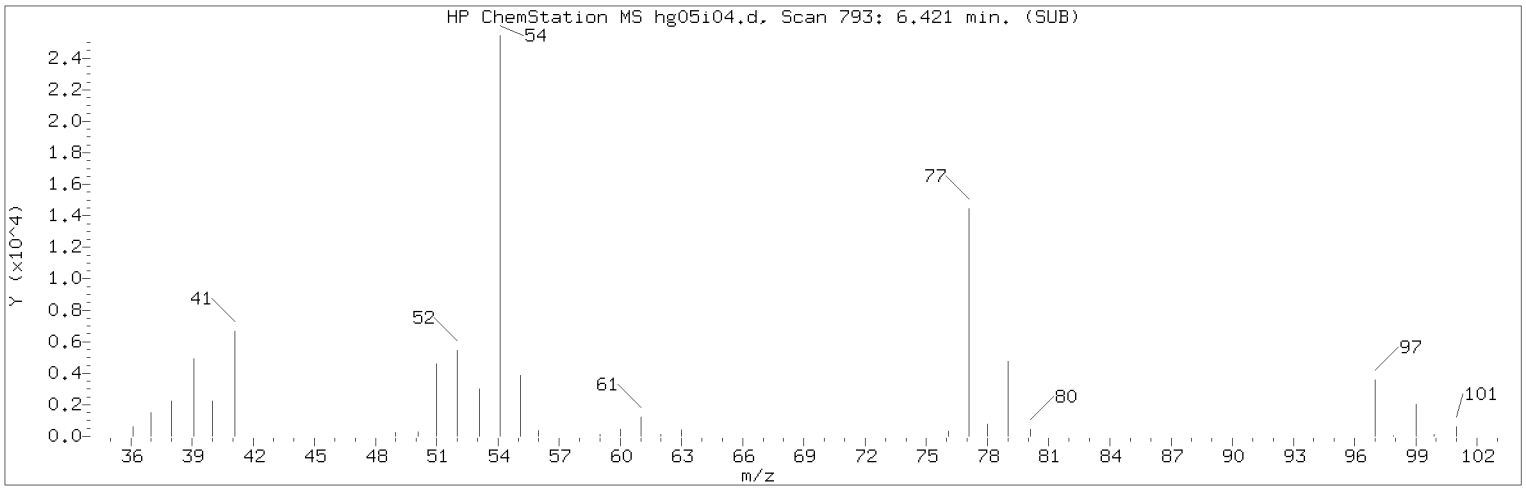
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

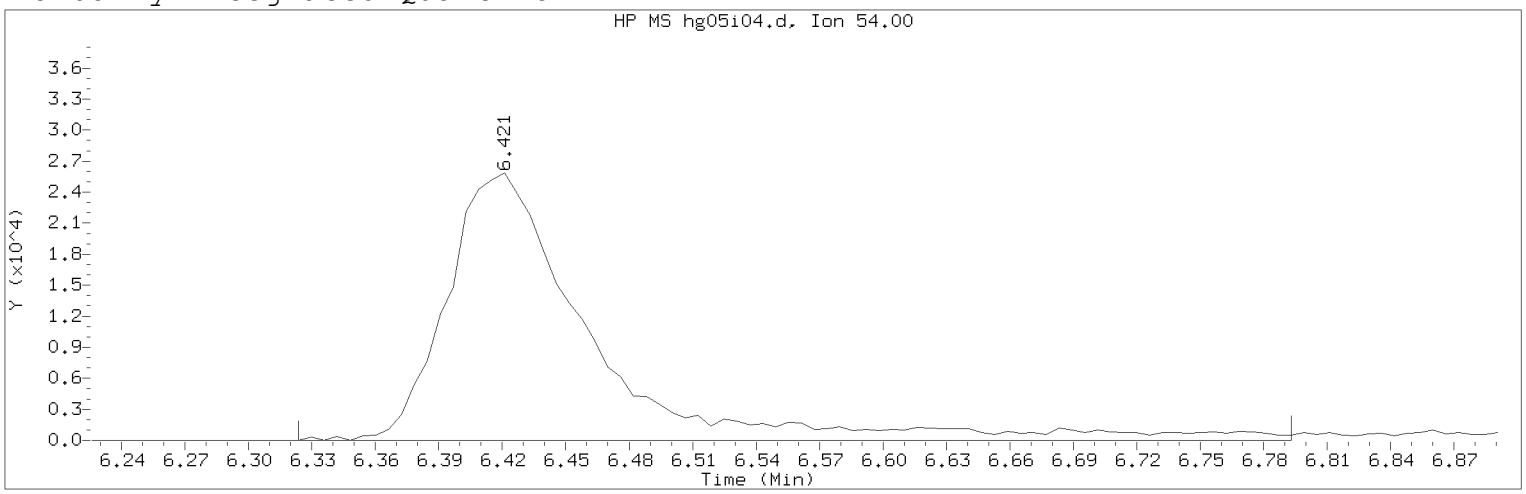
Compound Number	: 28		
Compound Name	: t-Butyl Alcohol		
Scan Number	: 490		
Retention Time (minutes)	: 4.574		
Quant Ion	: 59.00		
Area	: 93385		
On-column Amount (ng)	: 41.9641		
Integration start scan	: 473	Integration stop scan:	548
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used. AE mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

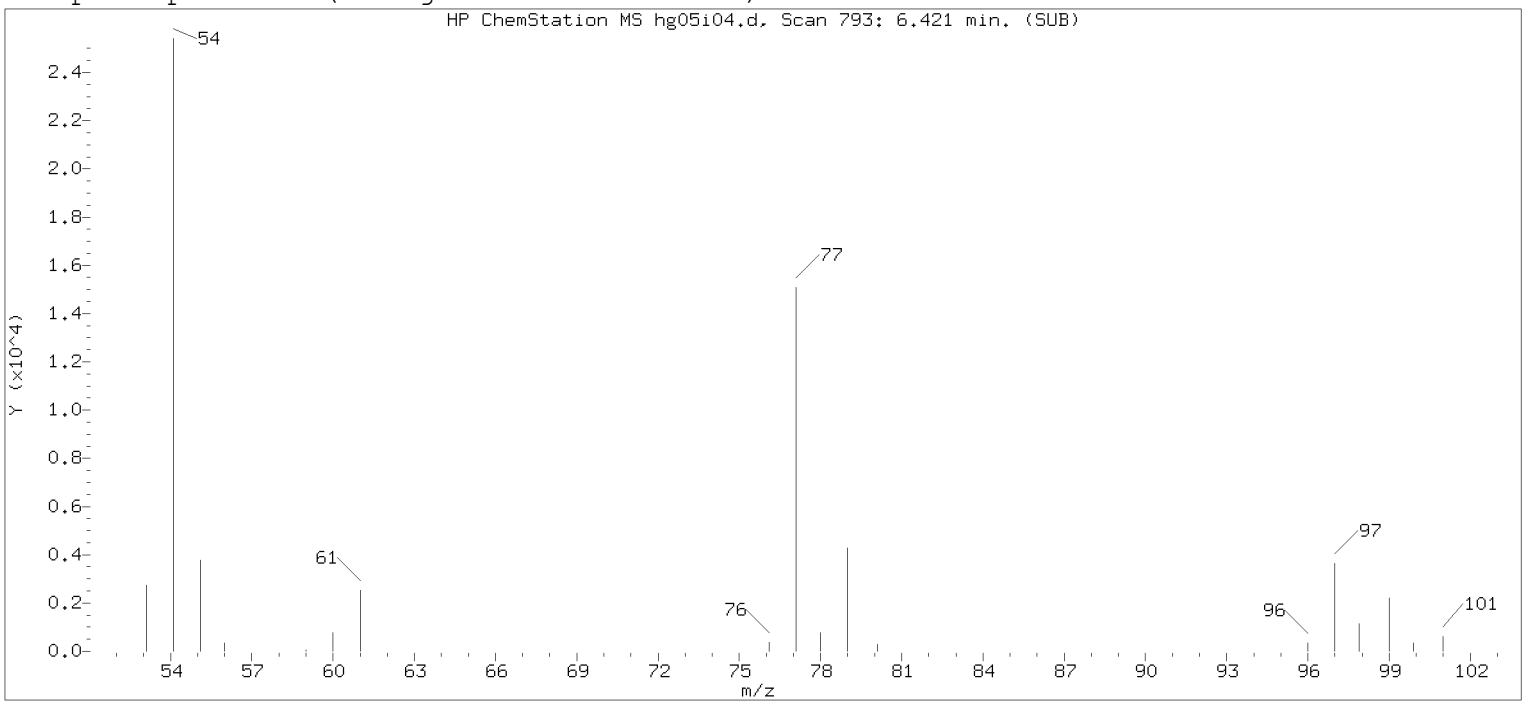
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 793
Retention Time (minutes): 6.421
Quant Ion : 54.00
Area (flag) : 122453M
On-Column Amount (ng) : 38.8095
Integration start scan : 776 Integration stop scan: 853
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

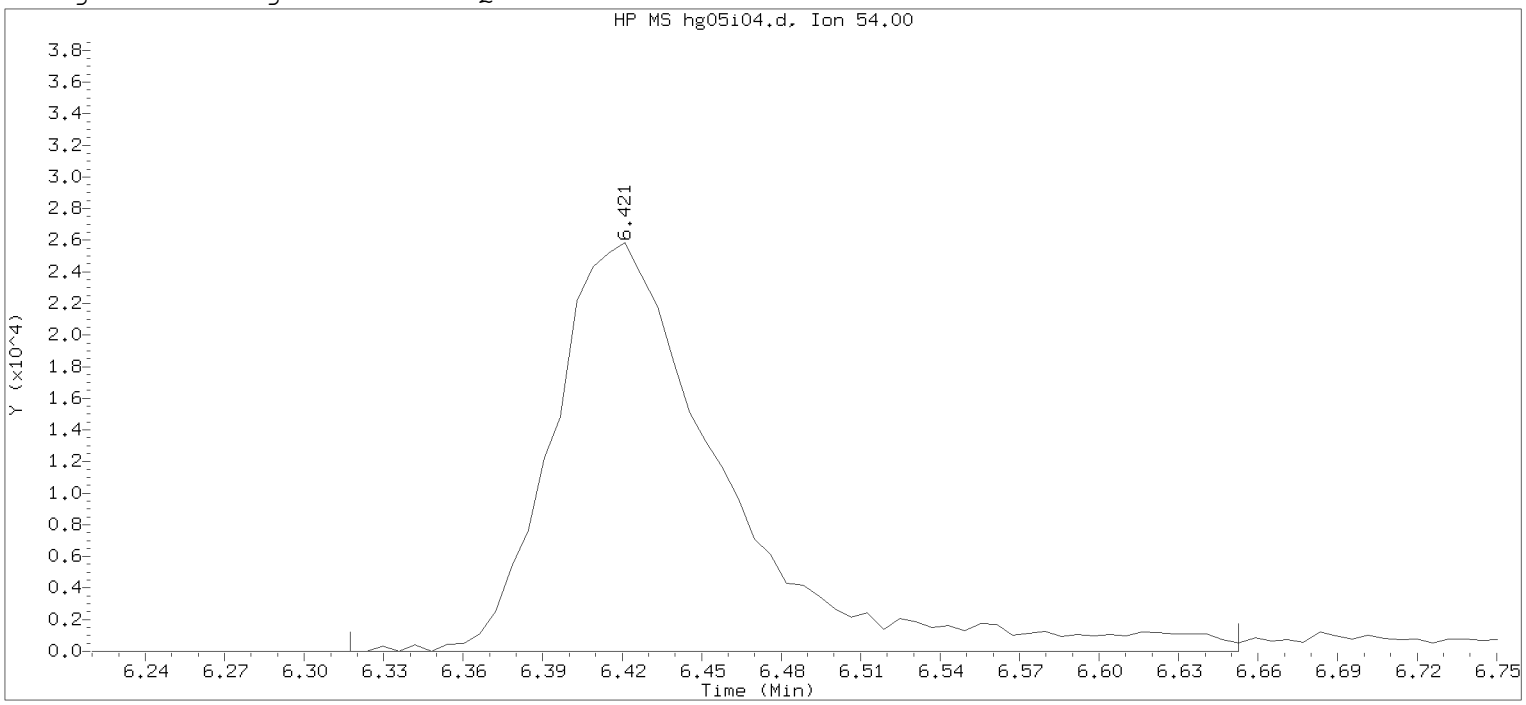
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

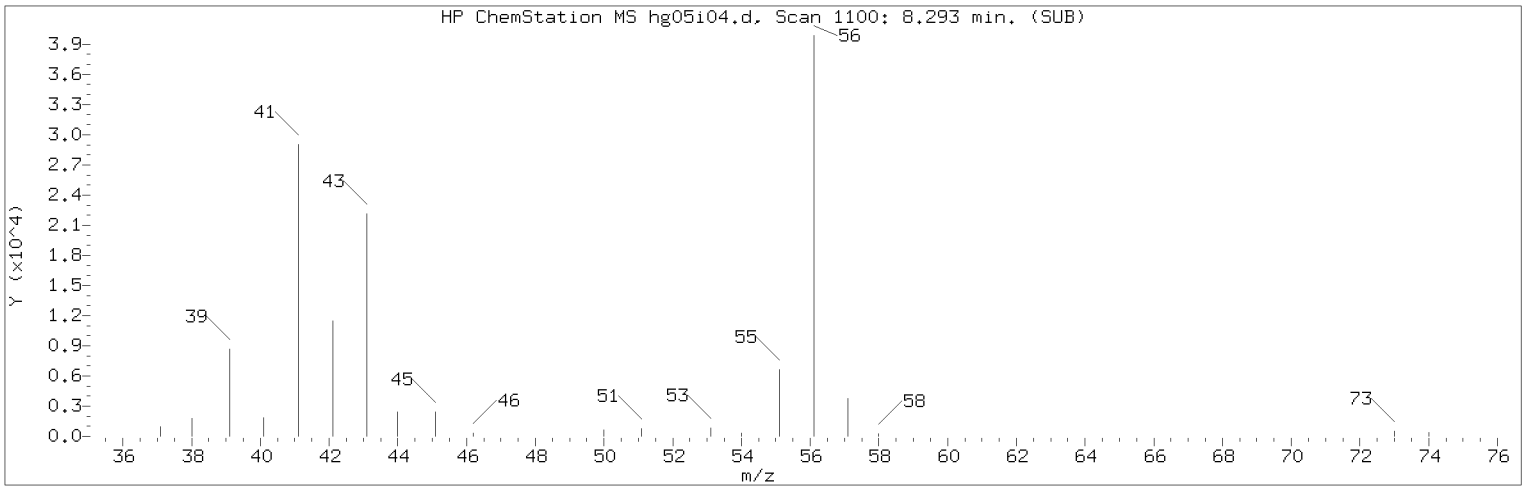
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

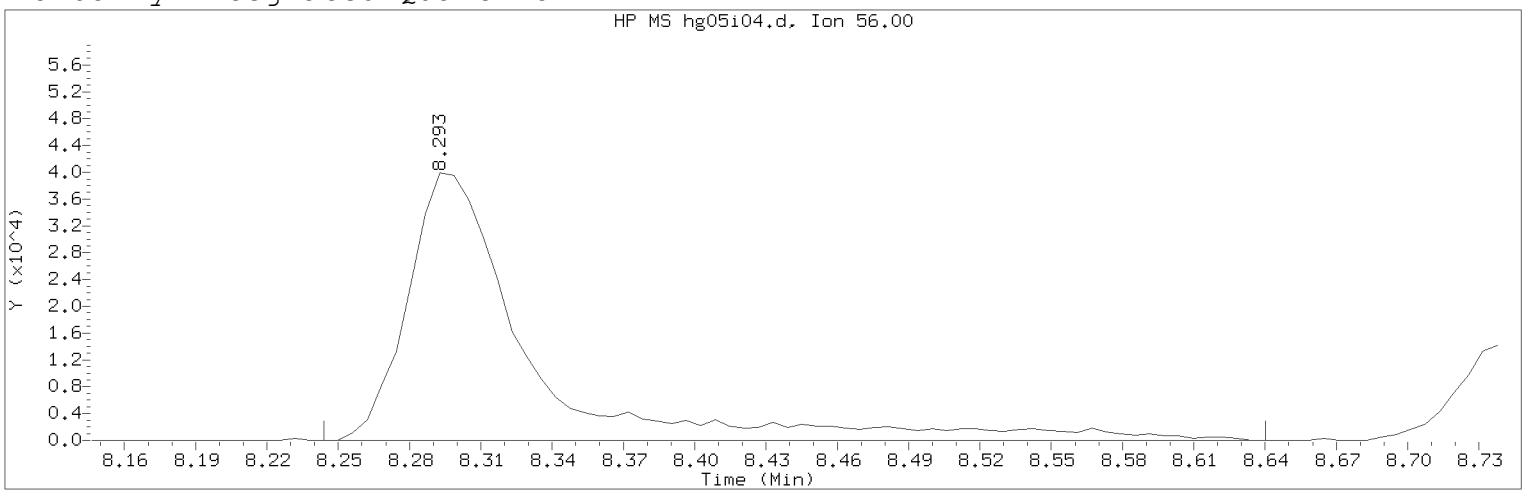
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 793
Retention Time (minutes): 6.421
Quant Ion : 54.00
Area : 116006
On-column Amount (ng) : 37.3658
Integration start scan : 775 Integration stop scan: 830
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

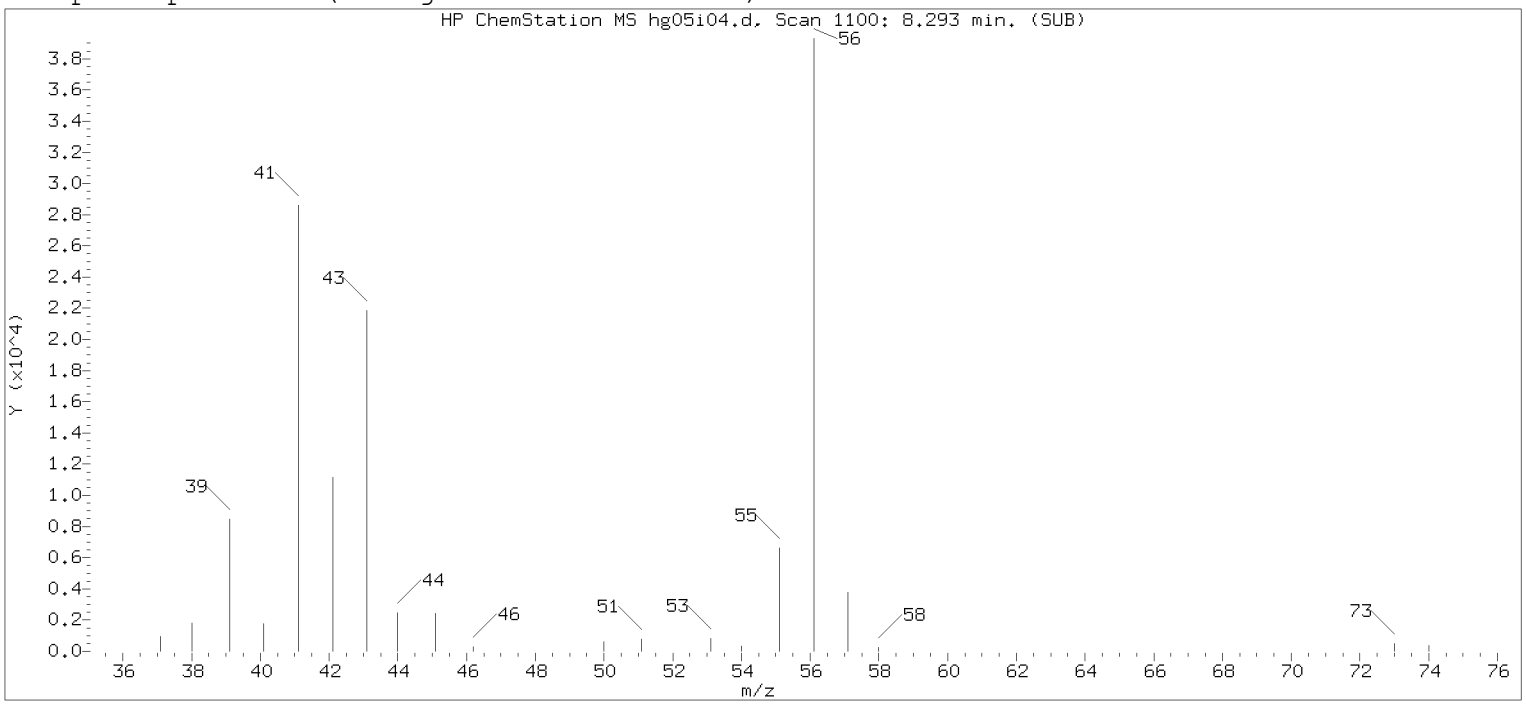
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1100
Retention Time (minutes): 8.293
Quant Ion : 56.00
Area (flag) : 141416M
On-Column Amount (ng) : 197.8416
Integration start scan : 1091 Integration stop scan: 1156
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

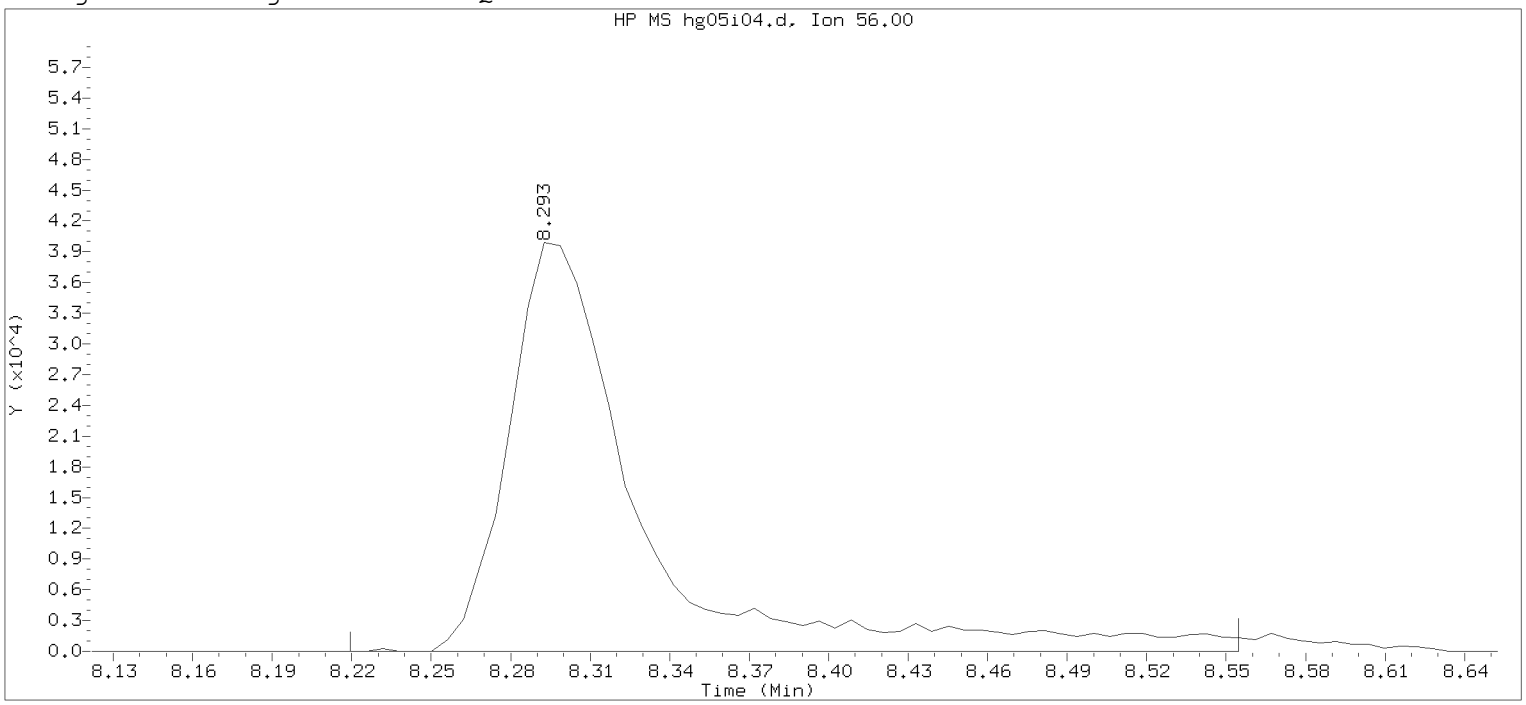
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

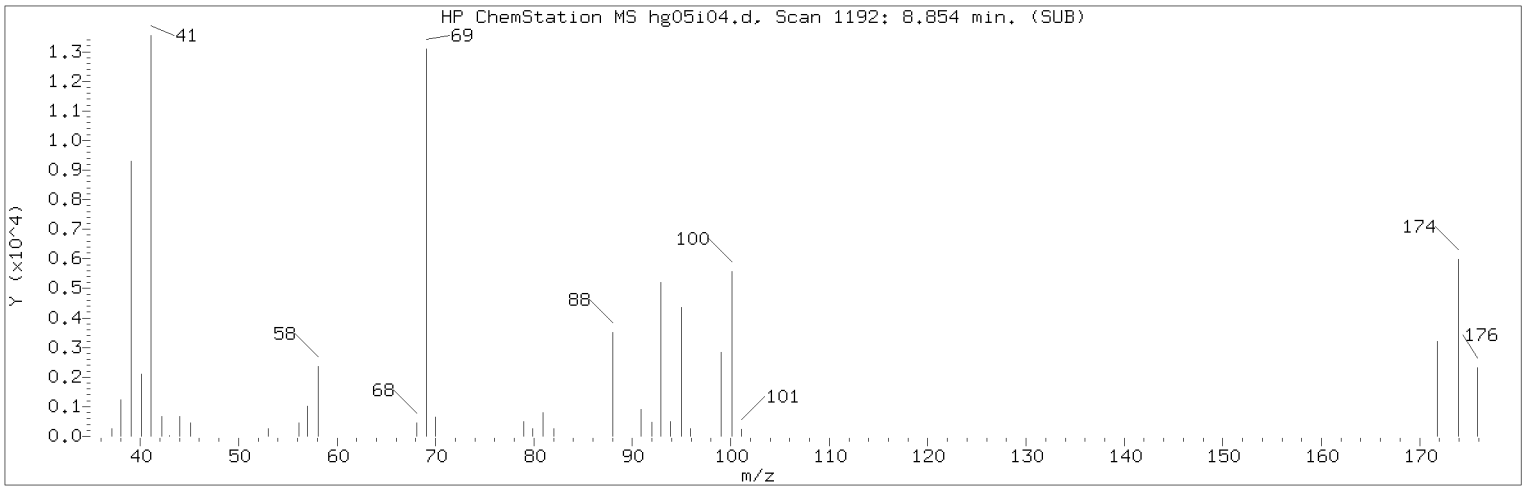
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

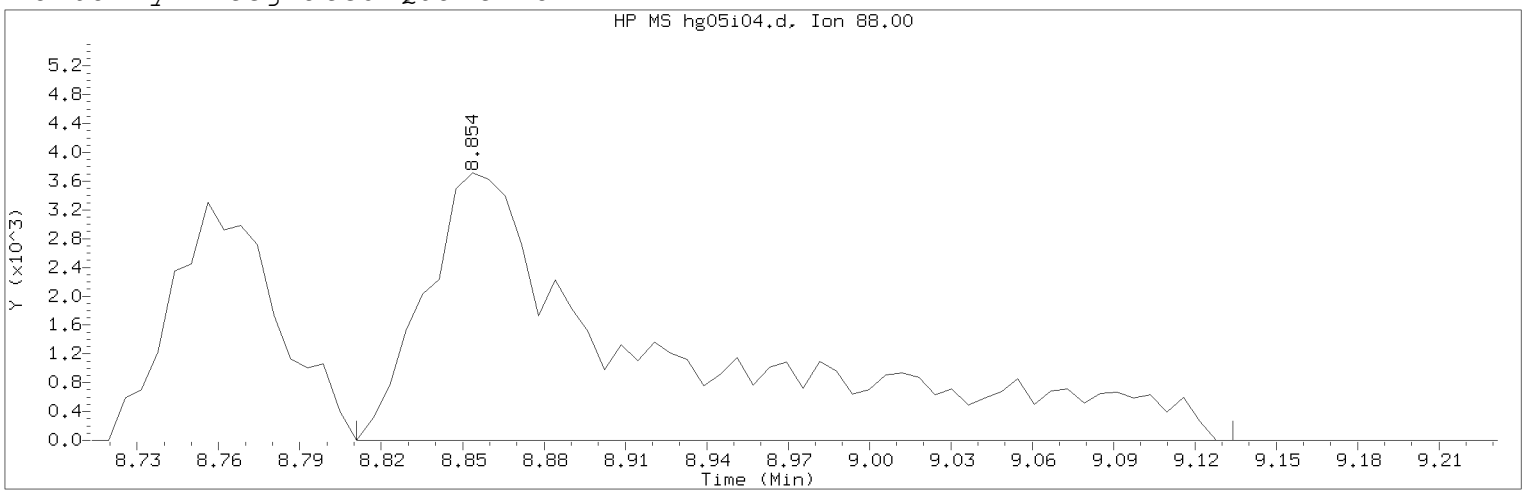
Compound Number	: 65		
Compound Name	: n-Butanol		
Scan Number	: 1100		
Retention Time (minutes)	: 8.293		
Quant Ion	: 56.00		
Area	: 137668		
On-column Amount (ng)	: 197.9410		
Integration start scan	: 1087	Integration stop scan:	1142
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used. Reason: I am the author of this document

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

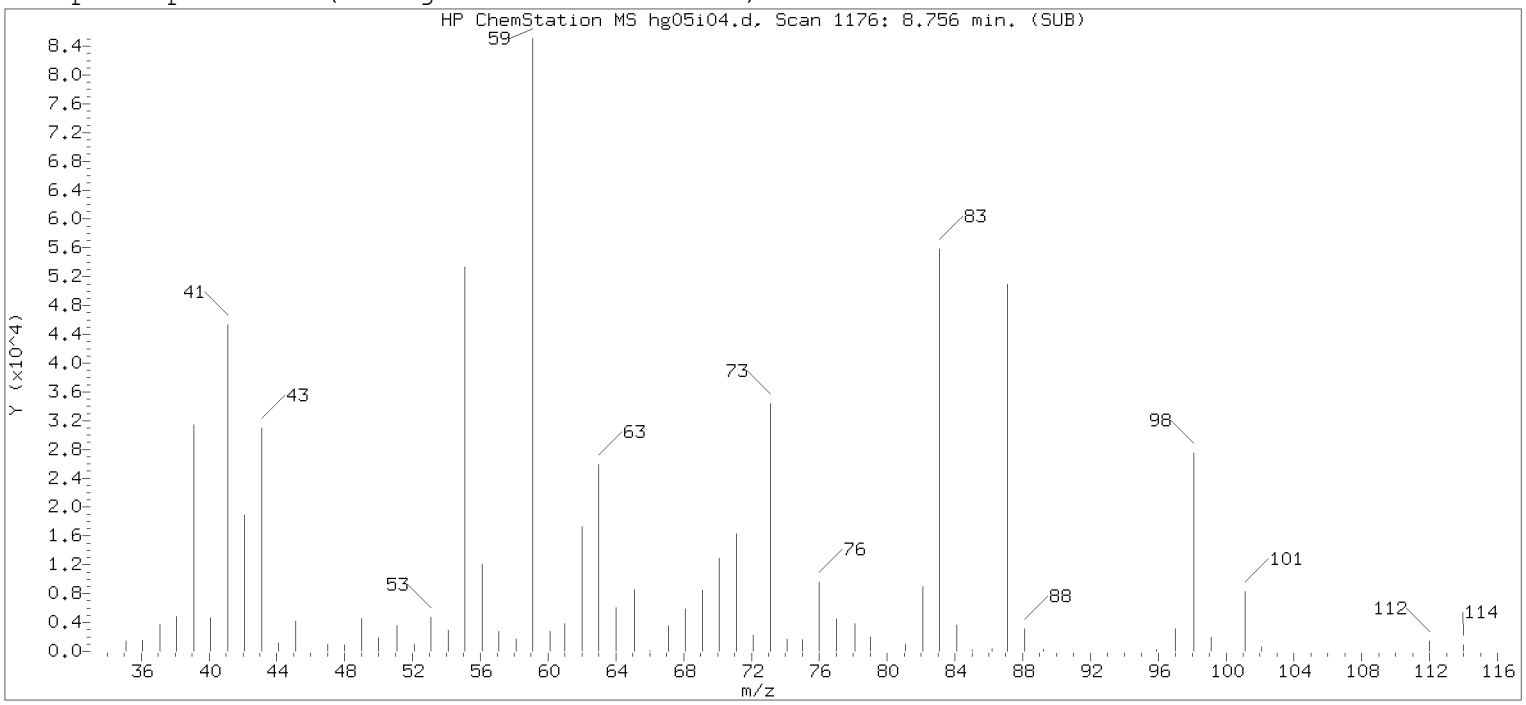
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1192
Retention Time (minutes): 8.854
Quant Ion : 88.00
Area (flag) : 22282M
On-Column Amount (ng) : 129.0028
Integration start scan : 1184 Integration stop scan: 1237
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

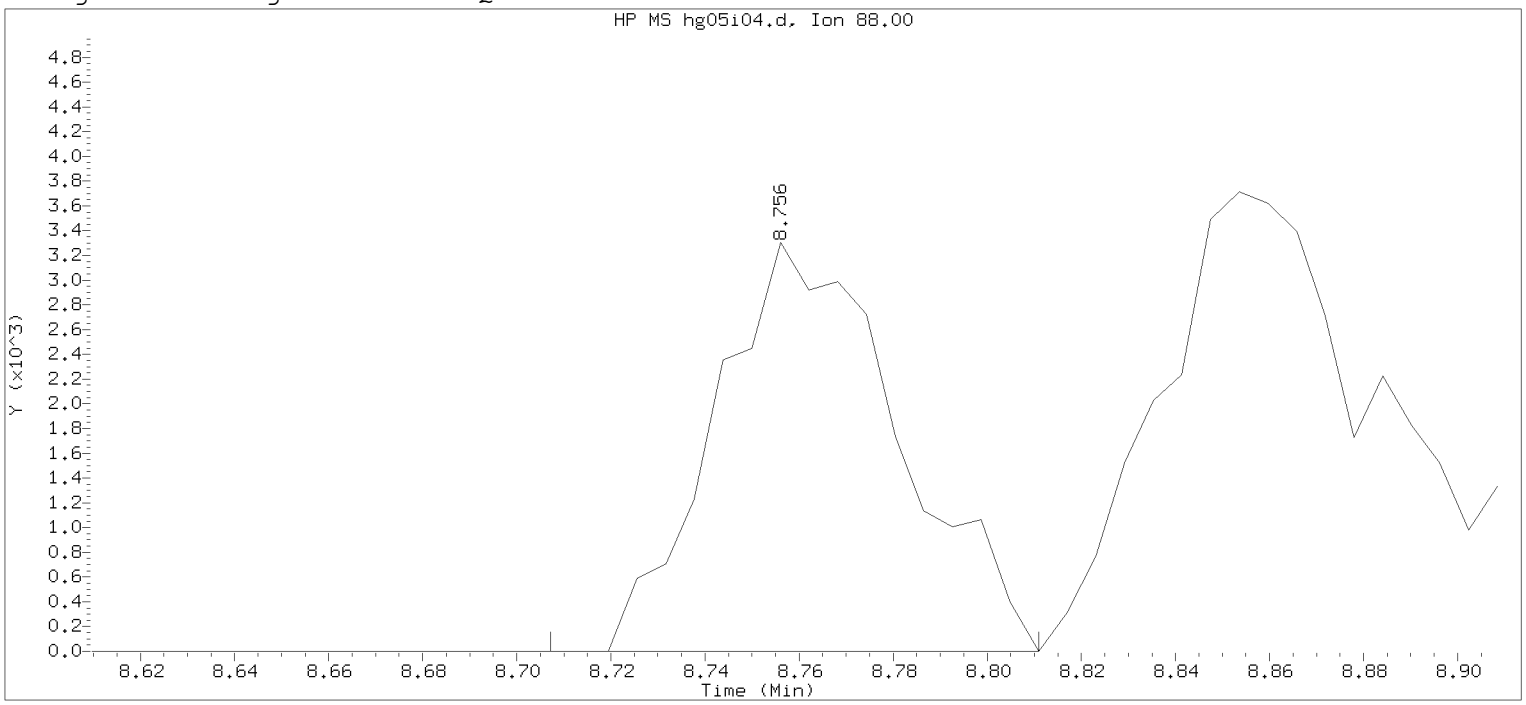
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

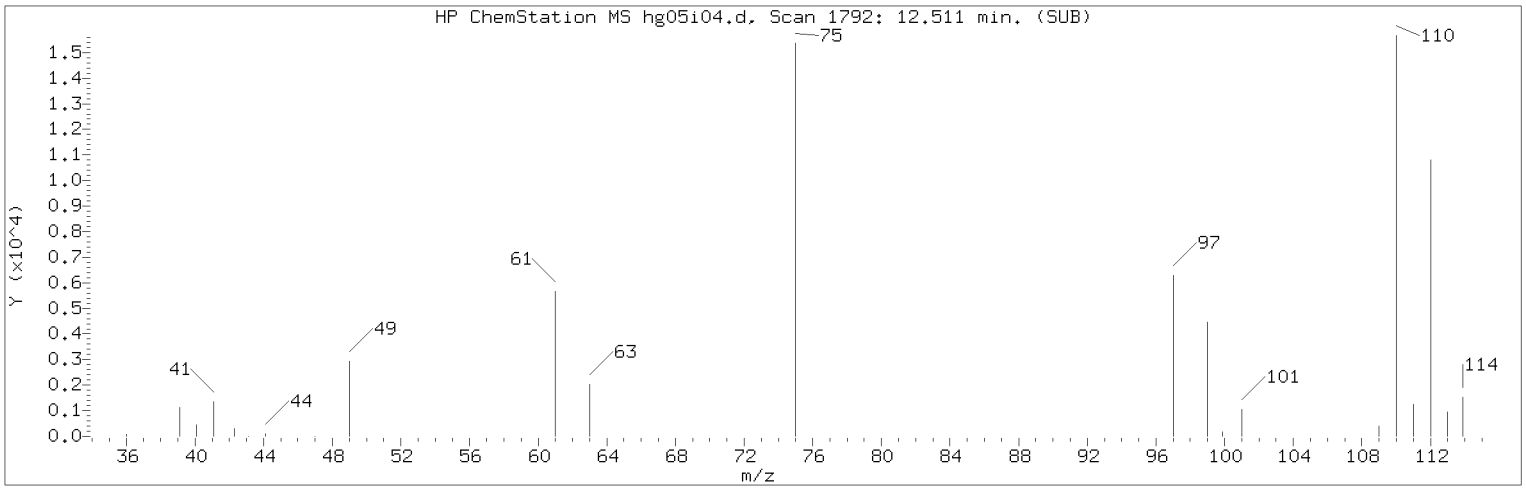
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

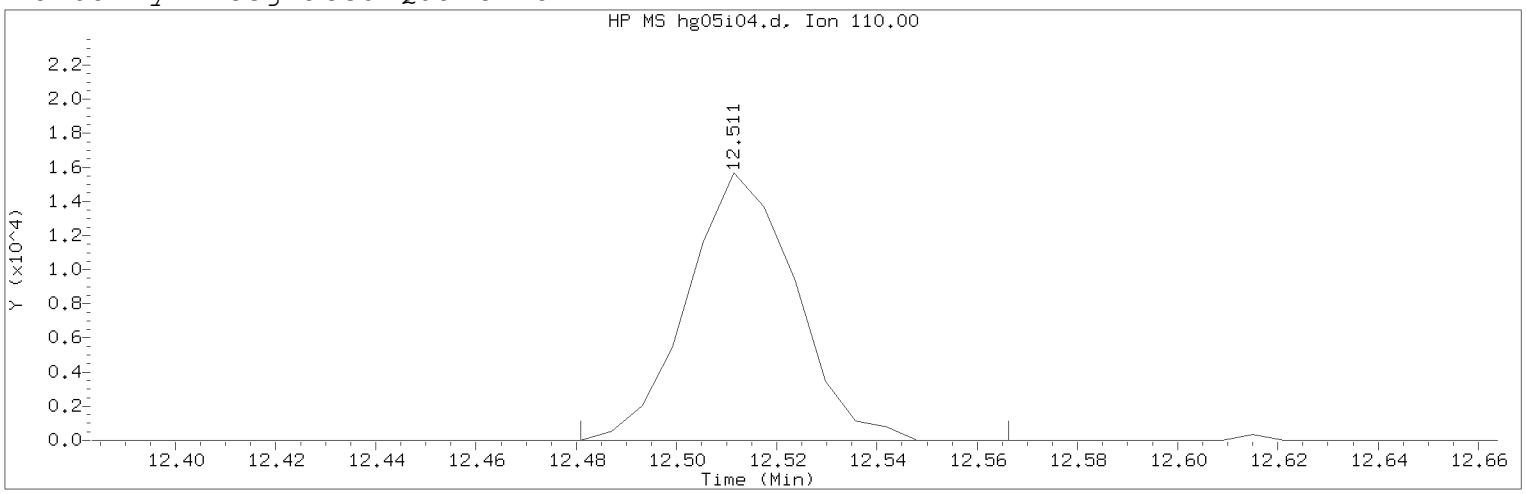
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1176		
Retention Time (minutes)	: 8.756		
Quant Ion	: 88.00		
Area	: 8995		
On-column Amount (ng)	: 48.0843		
Integration start scan	: 1167	Integration stop scan:	1184
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used. Reason: 8260/624

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:34 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

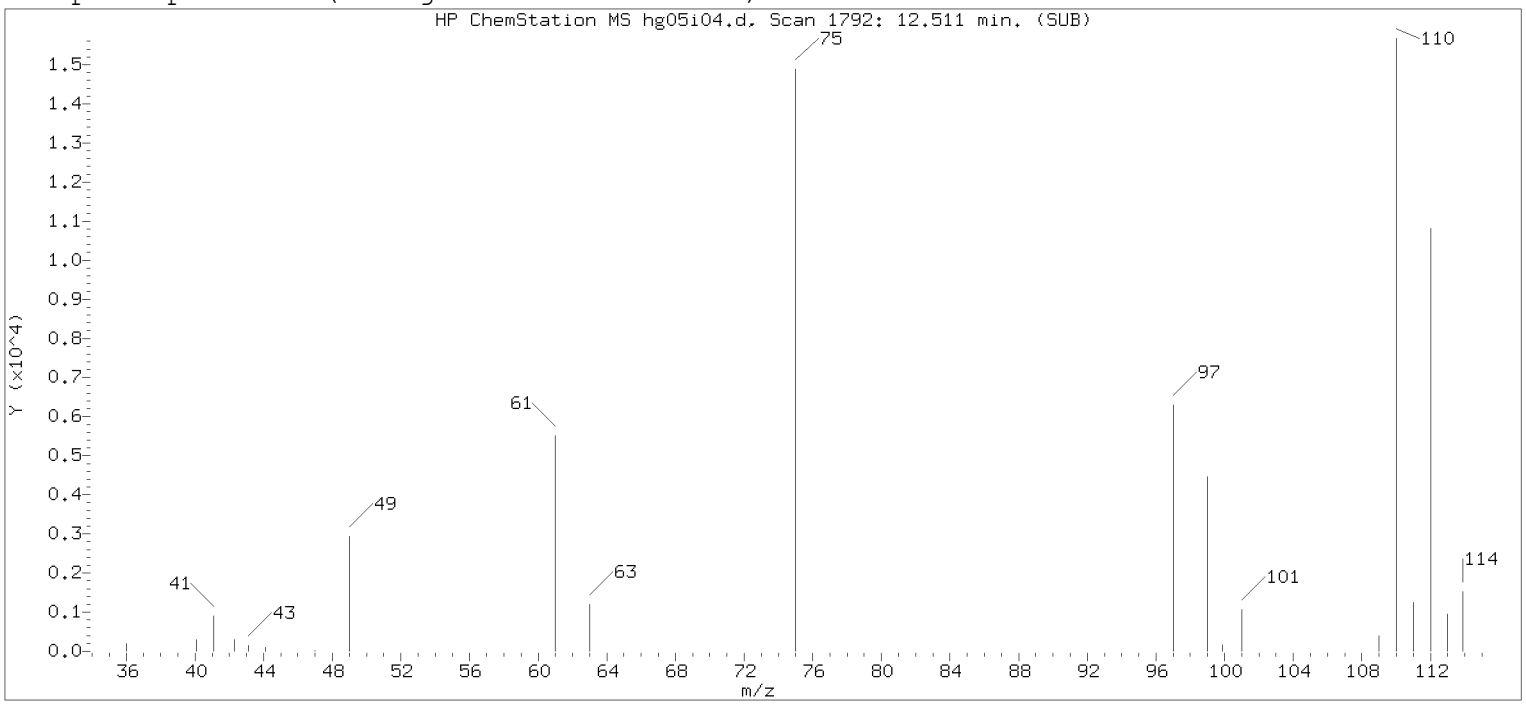
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.511
Quant Ion : 110.00
Area (flag) : 23336M
On-Column Amount (ng) : 1.9097
Integration start scan : 1786 Integration stop scan: 1800
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

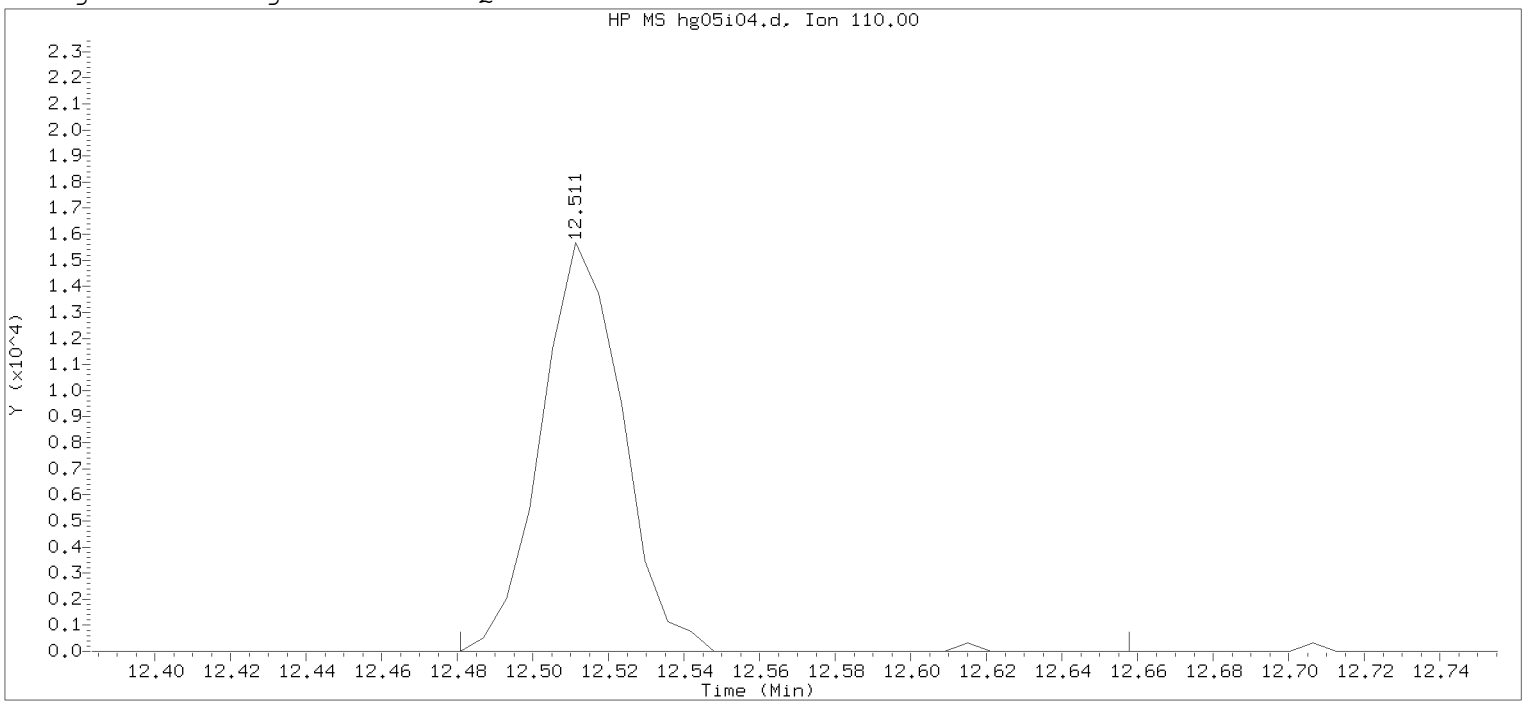
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



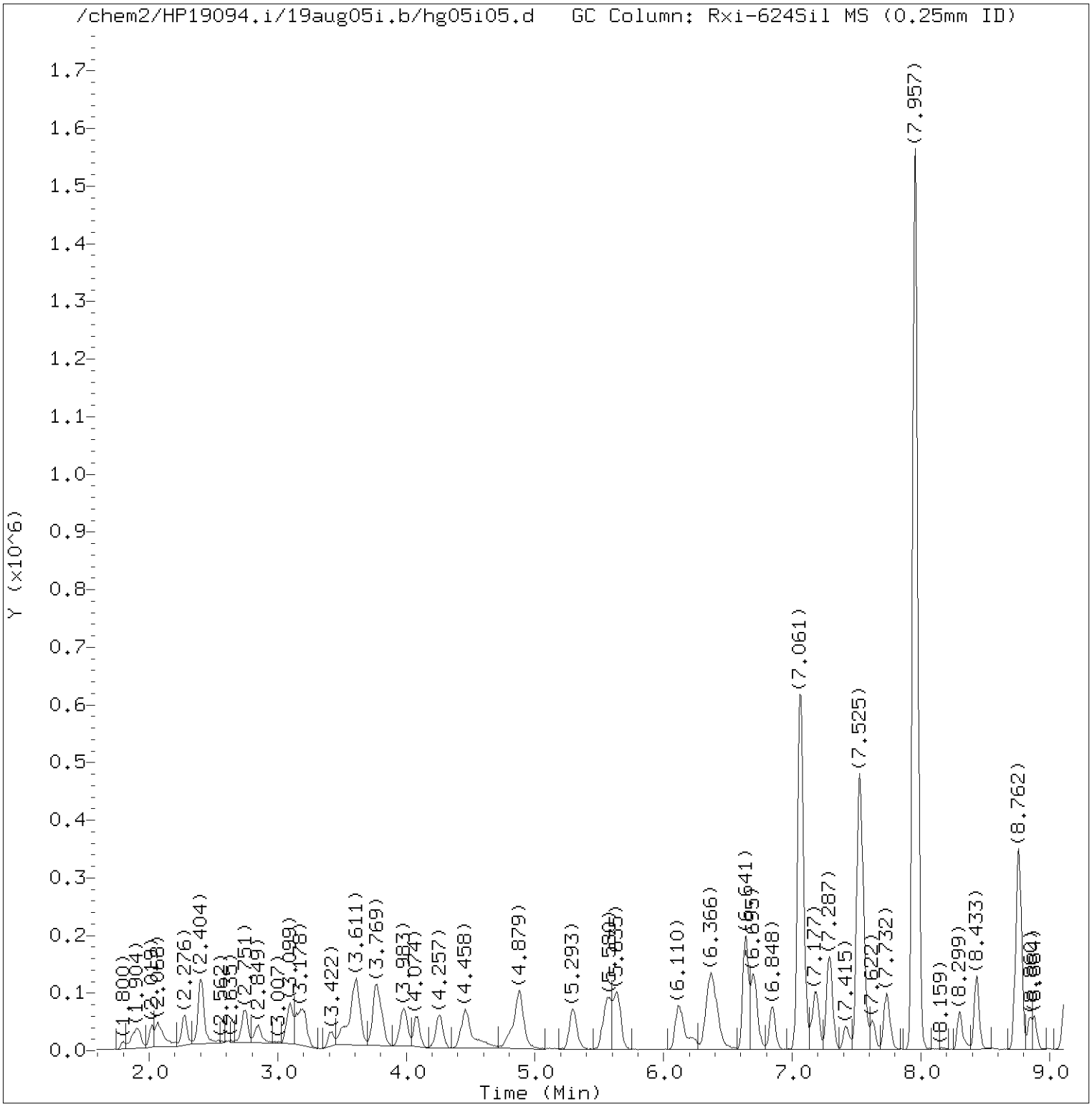
Data File: /chem2/HP19094.i/19aug05i.b/hg05i04.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:09 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.511
Quant Ion : 110.00
Area : 23455
On-column Amount (ng) : 1.9412
Integration start scan : 1786 Integration stop scan: 1815
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:38.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

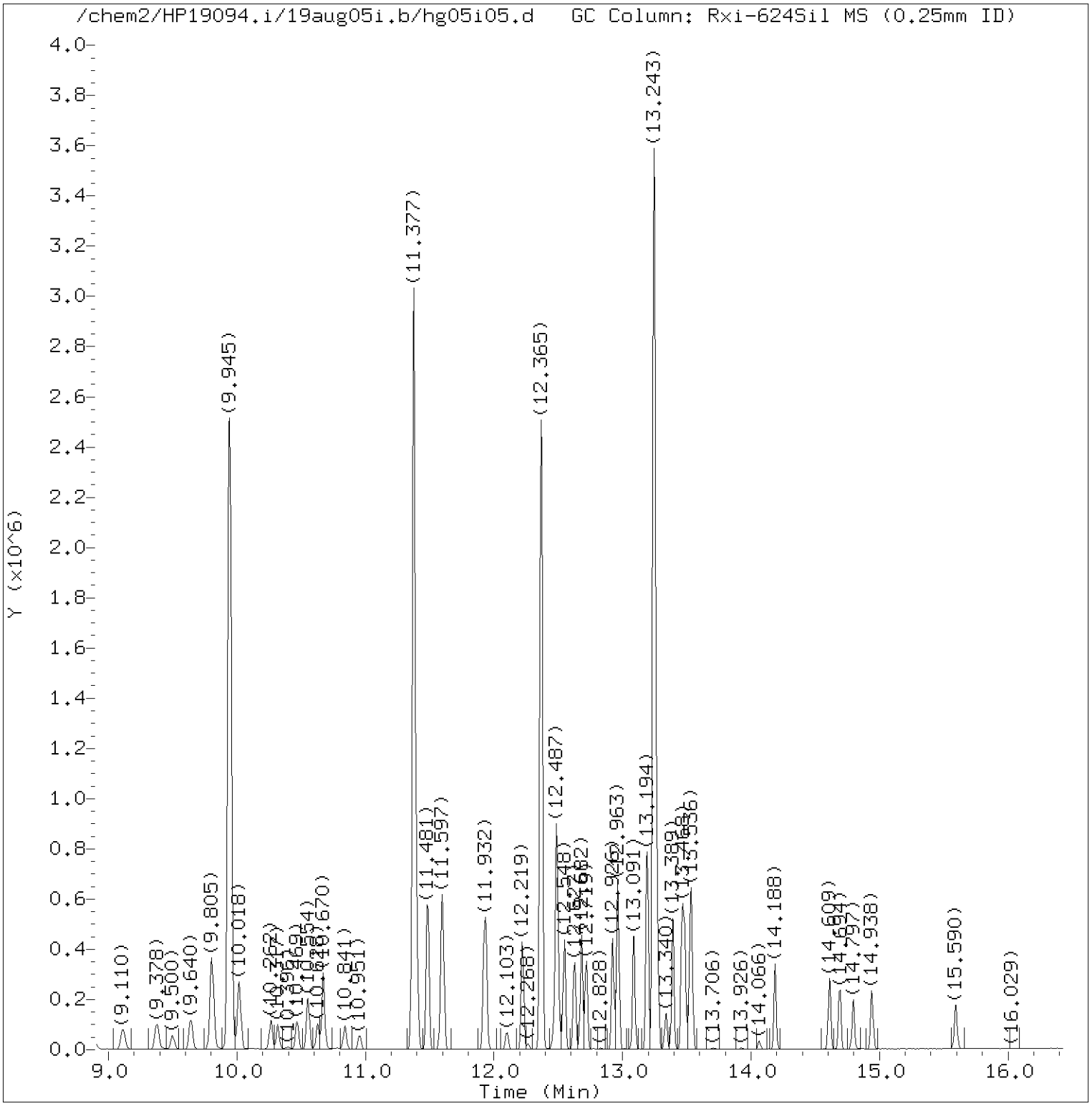
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:38.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.068	85	106767	1.029
2) Chloromethane	(2)	2.276	50	76698	1.009
5) Vinyl Chloride	(2)	2.397	62	77318	1.011
6) 1,3-Butadiene	(2)	2.410	39	57796M	0.943
7) Bromomethane	(2)	2.745	94	67800	1.005
8) Chloroethane	(2)	2.849	64	45965	1.027
9) Dichlorofluoromethane	(2)	3.086	67	96249	0.980
10) Trichlorofluoromethane	(2)	3.147	101	118907	0.982
11) Ethyl ether	(2)	3.422	59	33485	0.993
12) Freon 123a	(2)	3.525	67	59194	0.961
13) Acrolein	(1)	3.611	56	267457	49.093
15) 1,1-Dichloroethene	(2)	3.757	96	43330	0.982
14) Acetone	(1)	3.787	43	75583M	10.253
16) Freon 113	(2)	3.800	101	52695	0.955
17) Methyl Iodide	(2)	3.964	142	103839	0.981
18) Carbon Disulfide	(2)	4.086	76	143179	0.976
21) Methyl Acetate	(1)	4.214	43	23179	0.987
22) Allyl Chloride	(2)	4.257	41	72485	0.968
26)*t-Butyl Alcohol-d10	(1)	4.421	65	114313	50.000
23) Methylene Chloride	(2)	4.458	84	52313	0.994
28) t-Butyl Alcohol	(1)	4.586	59	47559	22.307
29) Acrylonitrile	(1)	4.812	53	43660	4.960
30) Methyl Tertiary Butyl Ether	(2)	4.873	73	113950	0.998
31) trans-1,2-Dichloroethene	(2)	4.885	96	49419	0.975
32) n-Hexane	(2)	5.299	57	73859	0.958
33) 1,1-Dichloroethane	(2)	5.543	63	89229	0.994
34) di-Isopropyl Ether	(2)	5.592	45	151805	0.981
35) 2-Chloro-1,3-Butadiene	(2)	5.647	53	80206	0.964
40) 1,2-Dichloroethene (Total)	(2)		96	103855	1.931
37) Ethyl t-butyl ether	(2)	6.110	59	146628	0.995
38) 2-Butanone	(1)	6.330	43	120821	9.842
39) cis-1,2-Dichloroethene	(2)	6.372	96	54436	0.956
41) 2,2-Dichloropropane	(2)	6.385	77	80067	0.983
42) Propionitrile	(1)	6.427	54	62796	19.996
45) Methacrylonitrile	(1)	6.641	67	118476	9.470
47) Bromochloromethane	(2)	6.695	128	27507	1.017
48) Tetrahydrofuran	(1)	6.708	71	32921	9.678
49) Chloroform	(2)	6.848	83	92977	0.986

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	537278	9.976
50)$Dibromofluoromethane	(2)	7.061	111	546160	9.980
51) 1,1,1-Trichloroethane	(2)	7.086	97	85271	0.971
52) Cyclohexane	(2)	7.183	56	86785	0.955
52) Cyclohexane	(2)	7.189	84	76383	0.905
52) Cyclohexane	(2)	7.177	69	28921	0.987
55) 1,1-Dichloropropene	(2)	7.287	75	69782	0.980
54) Carbon Tetrachloride	(2)	7.299	117	77079	0.939
56) Isobutyl Alcohol	(1)	7.415	41	44838	51.377
57)$1,2-Dichloroethane-d4	(2)	7.525	102	98737	9.971
57)$1,2-Dichloroethane-d4	(2)	7.525	65	473807	9.888
57)$1,2-Dichloroethane-d4	(2)	7.525	104	64916	10.232
58) Benzene	(2)	7.555	78	195785	0.978
59) 1,2-Dichloroethane	(2)	7.628	62	54445	0.965
60) t-Amyl methyl ether	(2)	7.738	73	129869	0.978
62) n-Heptane	(2)	7.957	43	79168	0.956
63)*Fluorobenzene	(2)	7.957	96	1980474	10.000
65) n-Butanol	(1)	8.305	56	69519M	97.715
67) Trichloroethene	(2)	8.439	95	54191	0.963
69) Methylcyclohexane	(2)	8.750	83	97188	0.982
70) 1,2-Dichloropropane	(2)	8.774	63	48030	0.974
71) Methyl Methacrylate	(1)	8.841	69	23645	0.929
72) 1,4-Dioxane	(1)	8.860	88	9293M	54.056
73) Dibromomethane	(2)	8.878	93	26094	0.987
74) Bromodichloromethane	(2)	9.116	83	66793	0.984
76) 2-Nitropropane	(1)	9.378	41	85831	9.494
80) cis-1,3-Dichloropropene	(2)	9.640	75	75978	0.981
81) 4-Methyl-2-Pentanone	(1)	9.805	43	294327	9.457
82)$Toluene-d8	(3)	9.945	98	2011928	10.049
82)$Toluene-d8	(3)	9.945	100	1282593	10.017
83) Toluene	(3)	10.018	92	130961	0.983
85) 1,3-Dichloropropene (total)	(3)		75	140404	1.961
84) trans-1,3-Dichloropropene	(3)	10.268	75	64426	0.980
86) Ethyl Methacrylate	(3)	10.317	69	51460	0.979
88) 1,1,2-Trichloroethane	(3)	10.469	97	36211	1.014
89) Tetrachloroethene	(3)	10.554	166	64584	0.966
90) 1,3-Dichloropropane	(3)	10.628	76	59422	1.003
91) 2-Hexanone	(1)	10.670	43	210044	9.608

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on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	48755	0.973
95) 1,2-Dibromoethane	(3)	10.957	107	34713	0.965
96) 1-Chlorohexane	(3)	11.377	91	79011	0.972
97)*Chlorobenzene-d5	(3)	11.377	117	1568277	10.000
98) Chlorobenzene	(3)	11.402	112	151571	1.003
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	55692	0.989
100) Ethylbenzene	(3)	11.487	91	259552	0.985
101) m+p-Xylene	(3)	11.597	106	205122	1.962
105) Xylene (Total)	(3)		106	305988	2.949
104) o-Xylene	(3)	11.926	106	100866	0.987
106) Styrene	(3)	11.938	104	161139	0.970
107) Bromoform	(3)	12.103	173	30004	0.962
108) Isopropylbenzene	(3)	12.219	105	263726	0.967
111)$4-Bromofluorobenzene	(3)	12.365	95	732729	10.008
111)$4-Bromofluorobenzene	(3)	12.371	174	699212	9.988
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	40532	0.944
114) Bromobenzene	(4)	12.487	156	65493	0.976
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	120049	9.285
116) 1,2,3-Trichloropropane	(4)	12.517	110	11671	0.979
117) n-Propylbenzene	(4)	12.548	91	303608	0.959
119) 2-Chlorotoluene	(4)	12.627	126	63712	0.978
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	224517	0.972
122) 4-Chlorotoluene	(4)	12.719	126	64368	0.961
125) tert-Butylbenzene	(4)	12.926	134	48430M	0.949
126) Pentachloroethane	(4)	12.956	167	45709	0.971
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	233716	0.977
128) sec-Butylbenzene	(4)	13.091	105	293760	0.966
131) 1,3-Dichlorobenzene	(4)	13.188	146	126899	0.969
132) p-Isopropyltoluene	(4)	13.194	119	253555	0.965
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	878298	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	125762	0.966
135) 1,2,3-Trimethylbenzene	(4)	13.273	120	103730	0.968
136) Benzyl Chloride	(4)	13.340	126	20177M	0.966
138) n-Butylbenzene	(4)	13.487	92	125265	0.968
139) 1,2-Dichlorobenzene	(4)	13.523	146	113984	0.971
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	6553	0.903
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	95375	0.941
145) 1,2,4-Trichlorobenzene	(4)	14.615	180	79480	0.938

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on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

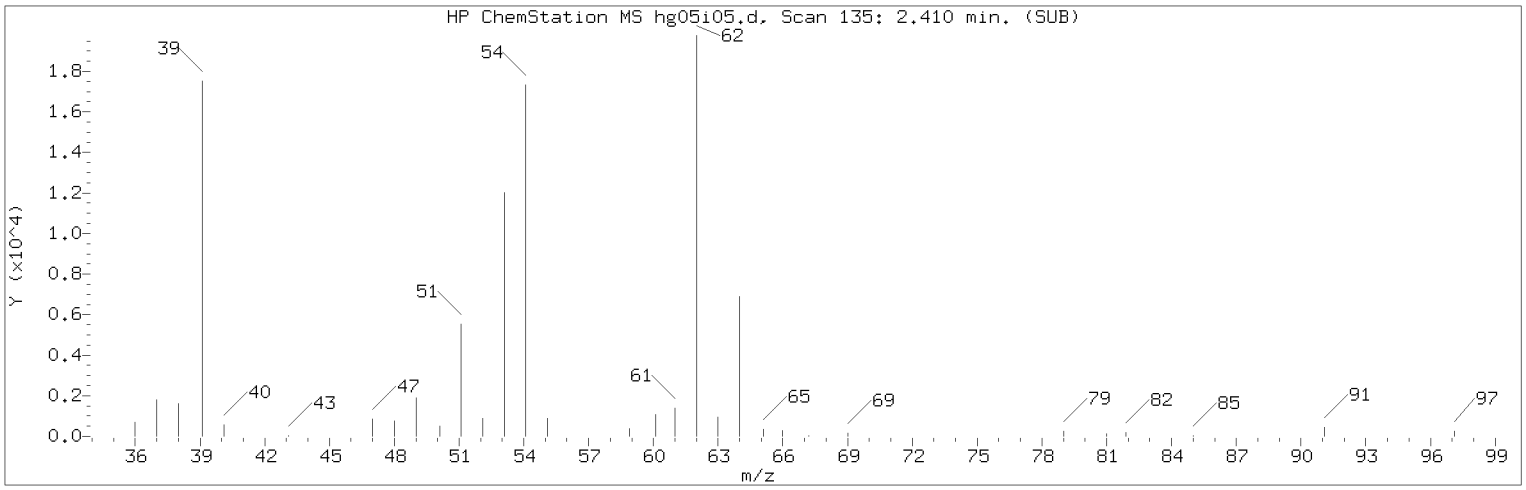
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

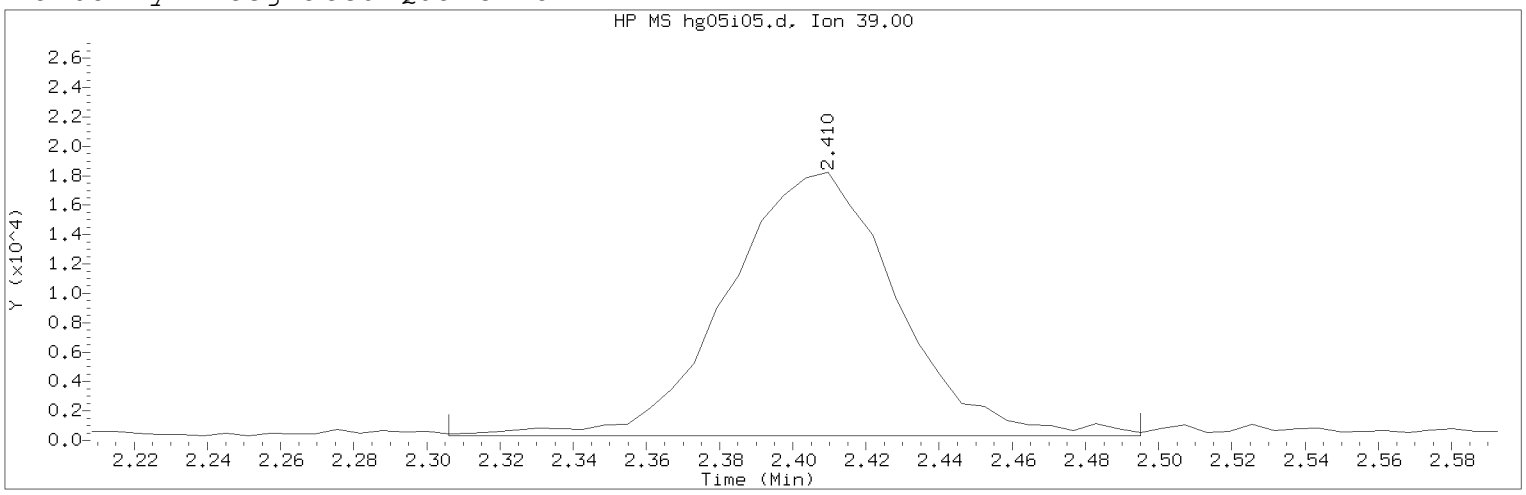
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	40269	0.916
147) Naphthalene	(4)	14.797	128	145501	0.967
148) 1,2,3-Trichlorobenzene	(4)	14.944	180	69828	0.941

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on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

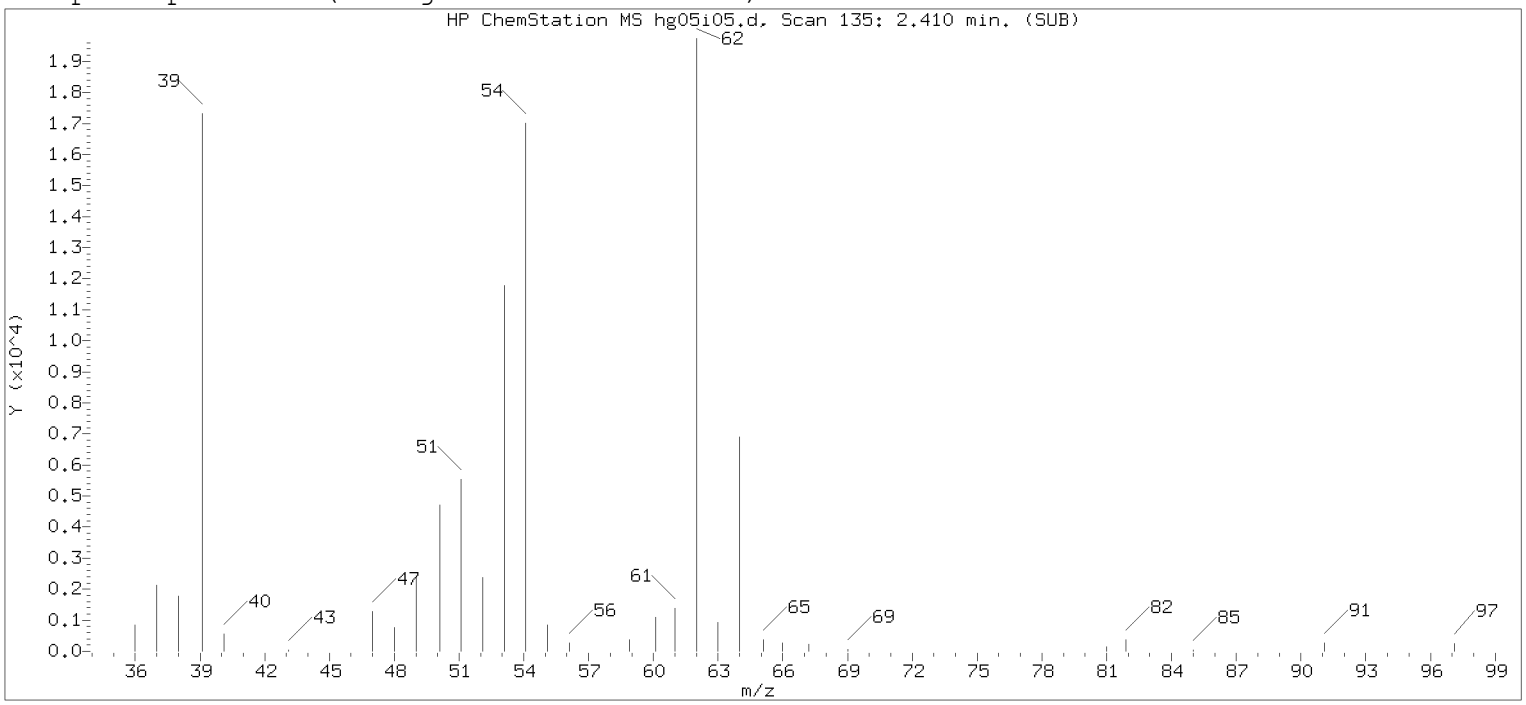
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area (flag) : 57796M
On-Column Amount (ng) : 0.9427
Integration start scan : 117 Integration stop scan: 148
Y at integration start : 305 Y at integration end: 305

Reason for manual integration: improper integration

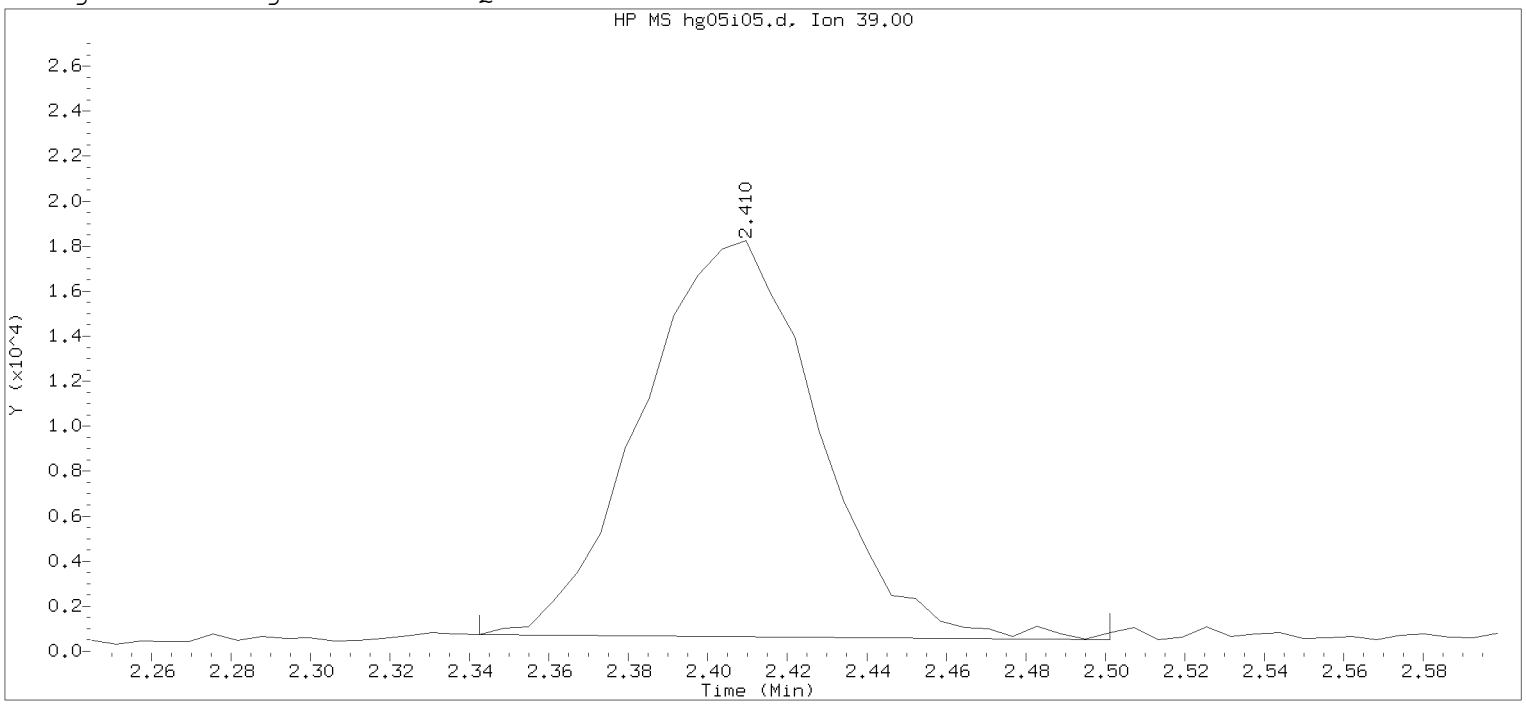
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

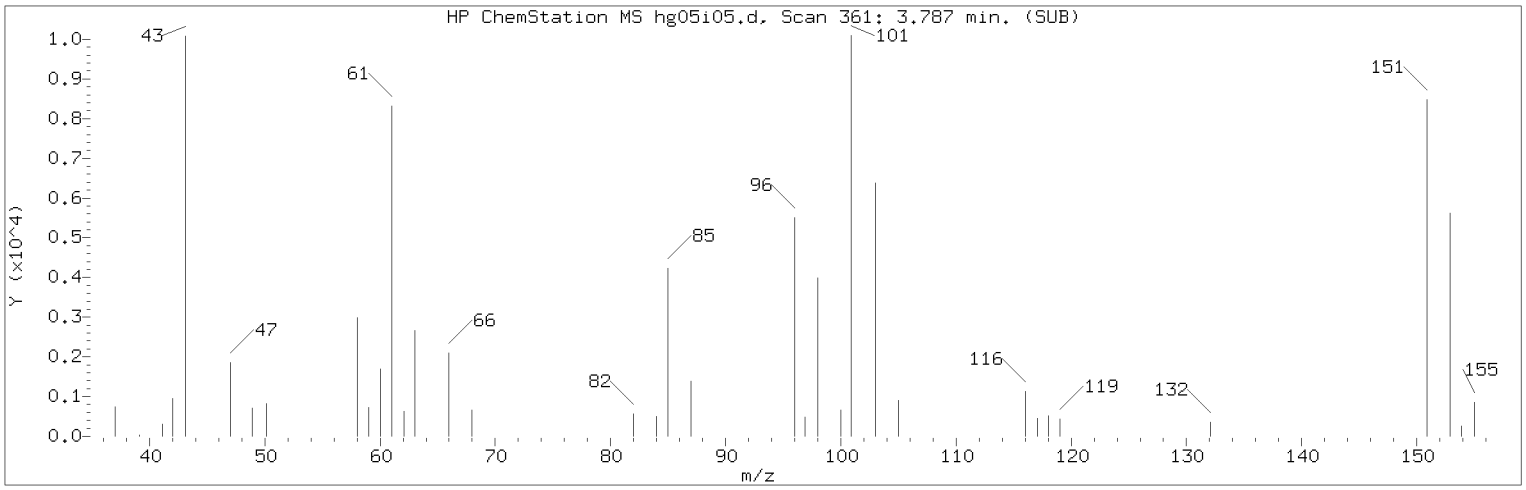
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Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

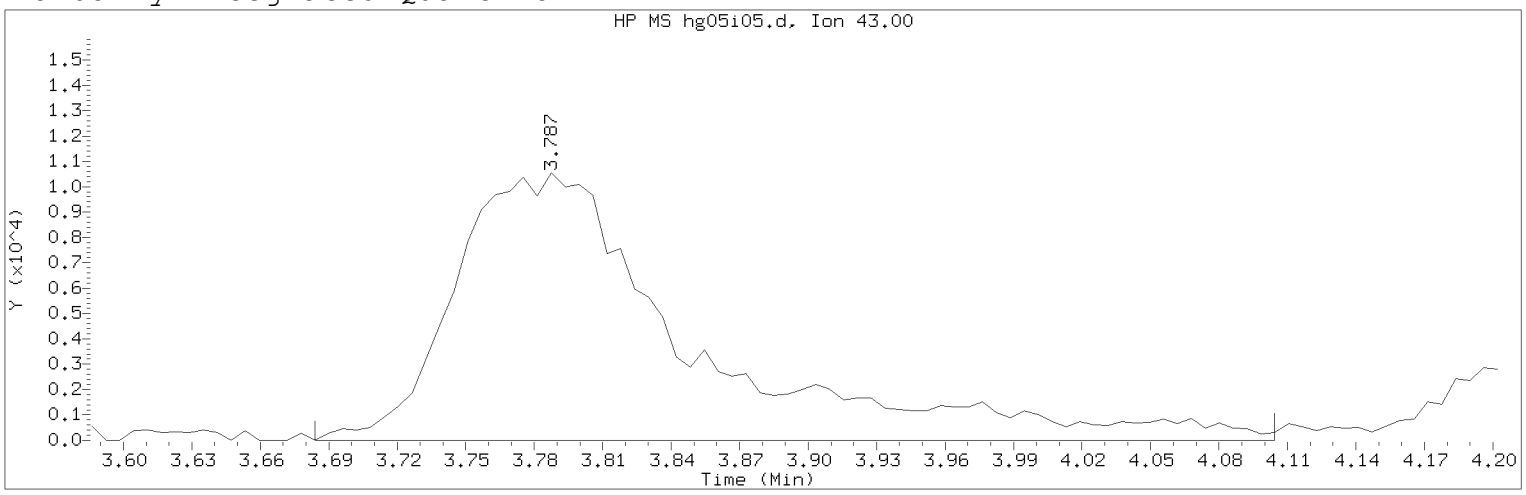
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area : 53910
On-column Amount (ng) : 0.9458
Integration start scan : 123 Integration stop scan: 149
Y at integration start : 752 Y at integration end: 527

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

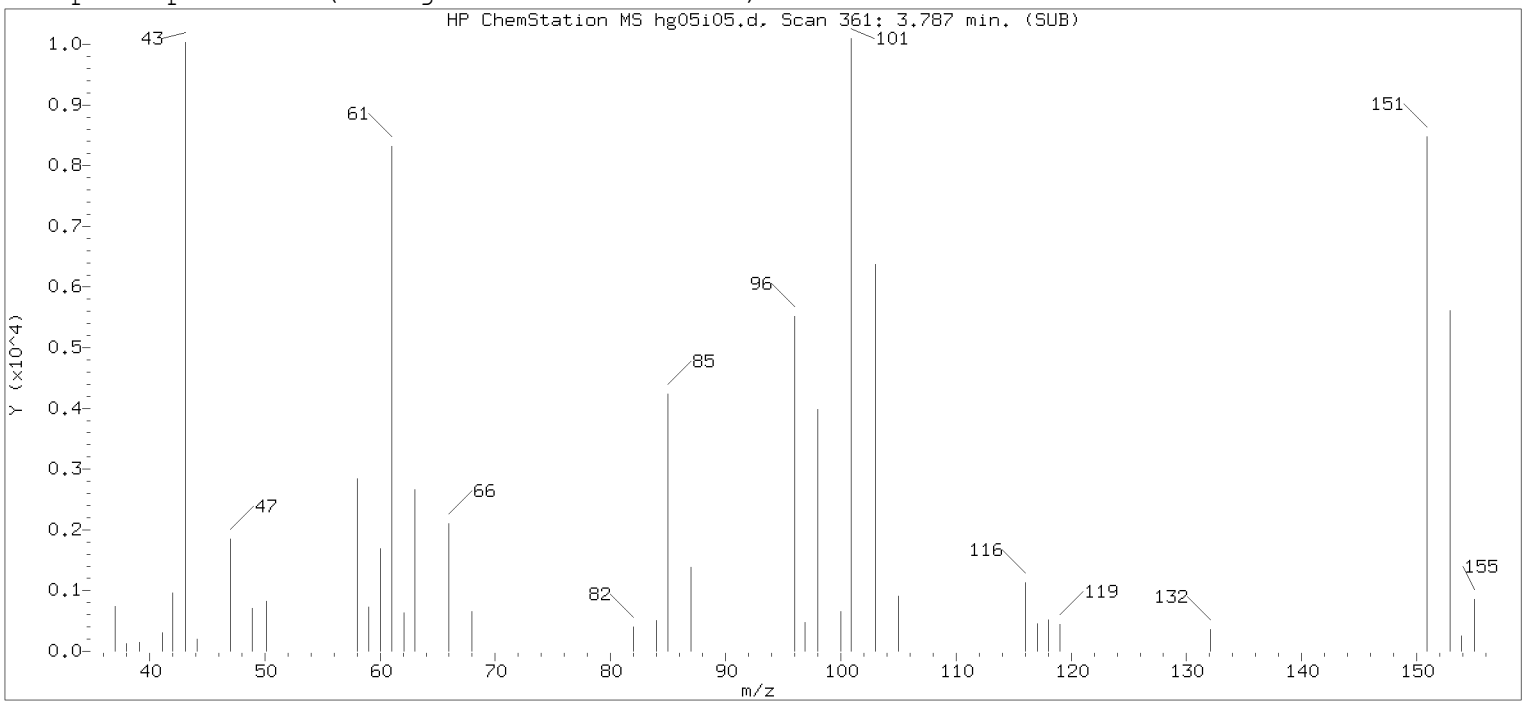
Compound Number : 14
Compound Name : Acetone
Scan Number : 361
Retention Time (minutes): 3.787
Quant Ion : 43.00
Area (flag) : 75583M
On-Column Amount (ng) : 10.2532
Integration start scan : 343 Integration stop scan: 412
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

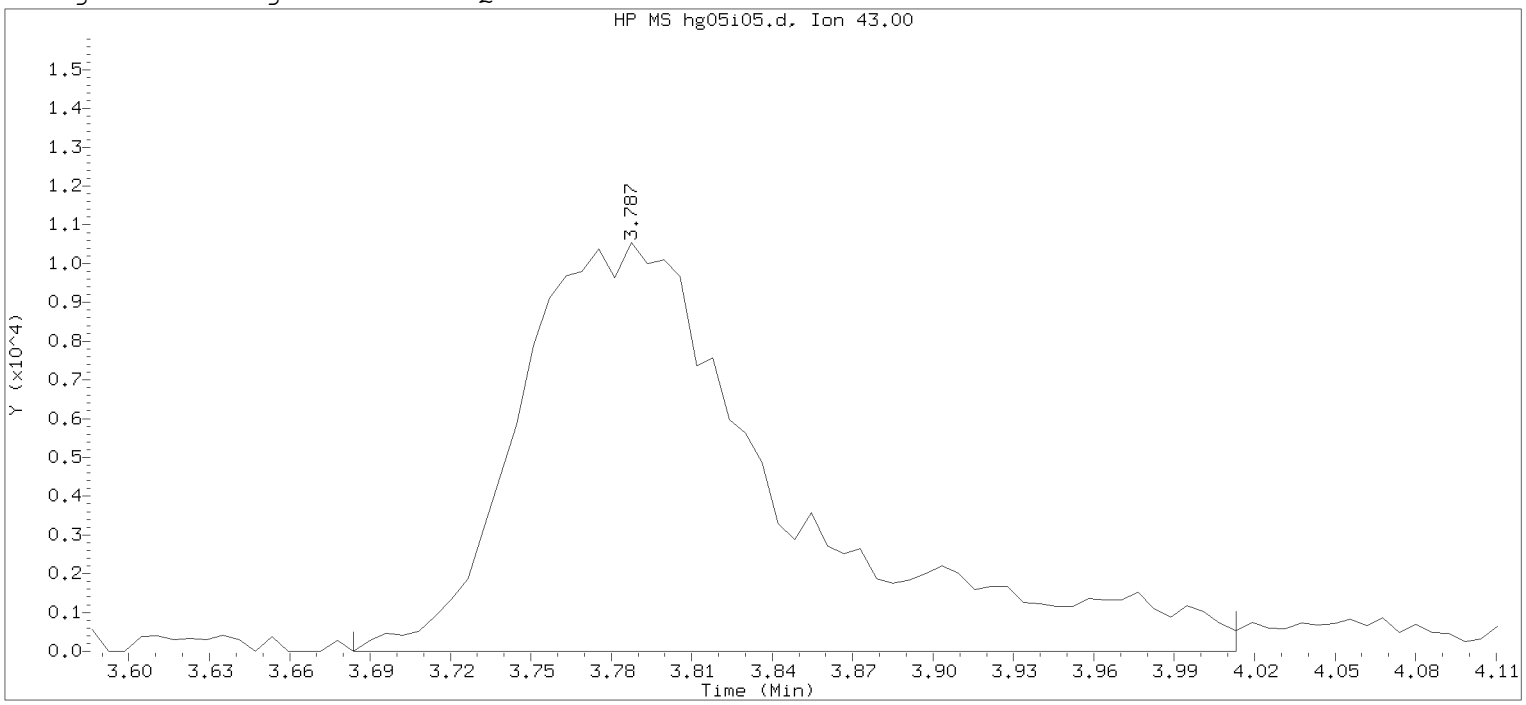
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

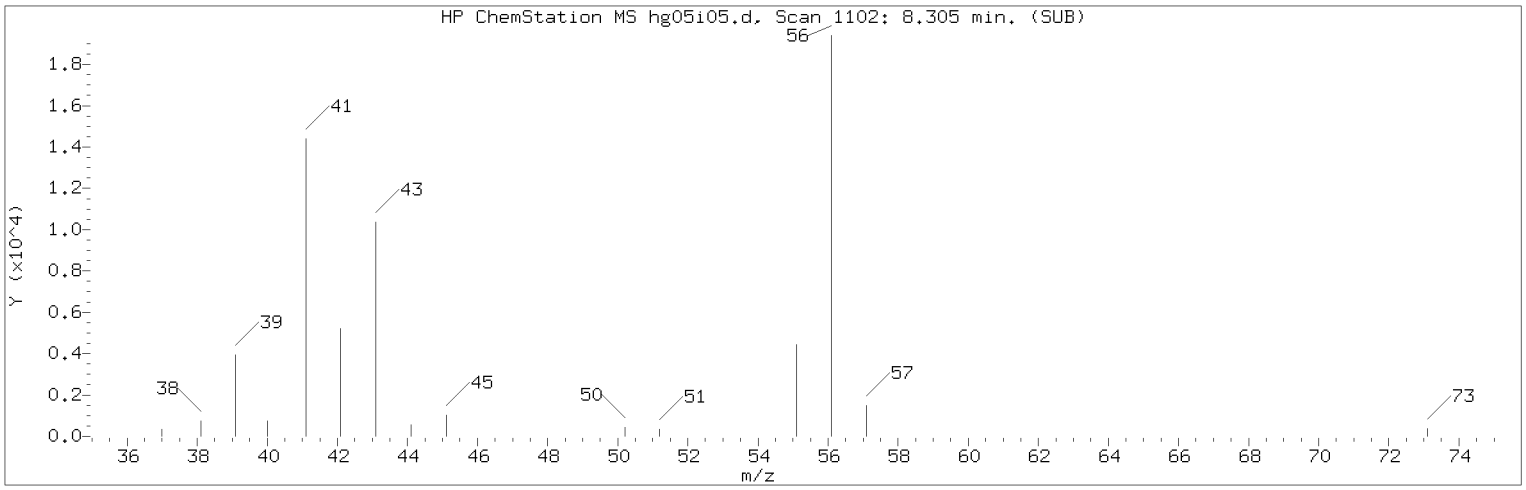
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

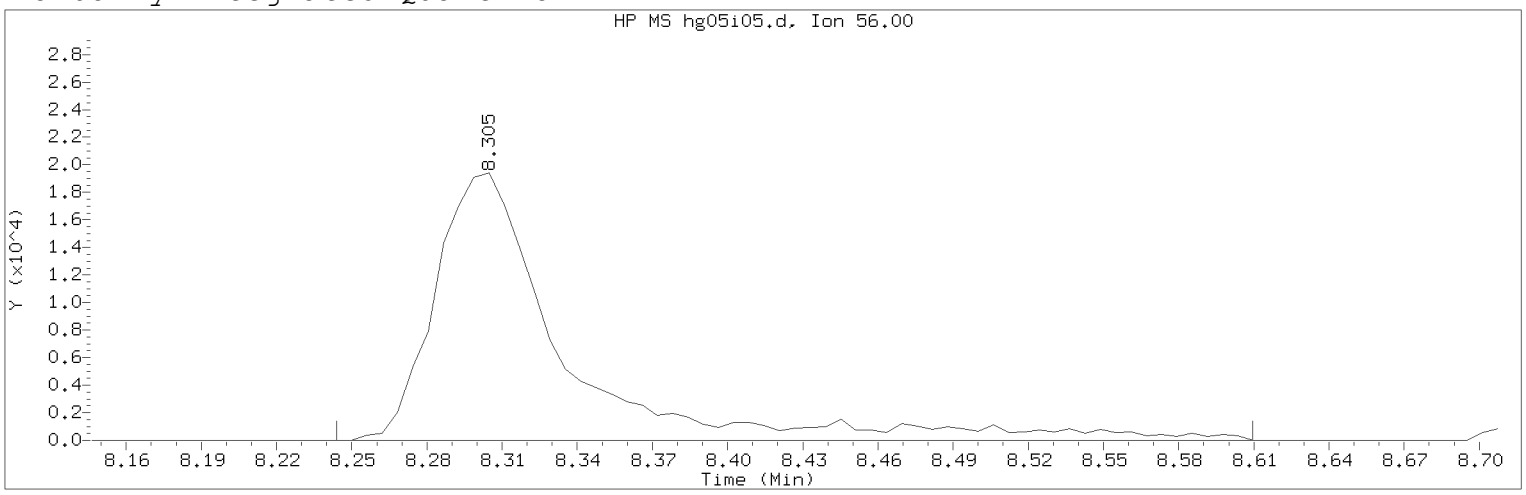
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 361		
Retention Time (minutes)	: 3.787		
Quant Ion	: 43.00		
Area	: 72170		
On-column Amount (ng)	: 11.5465		
Integration start scan	: 343	Integration stop scan:	397
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

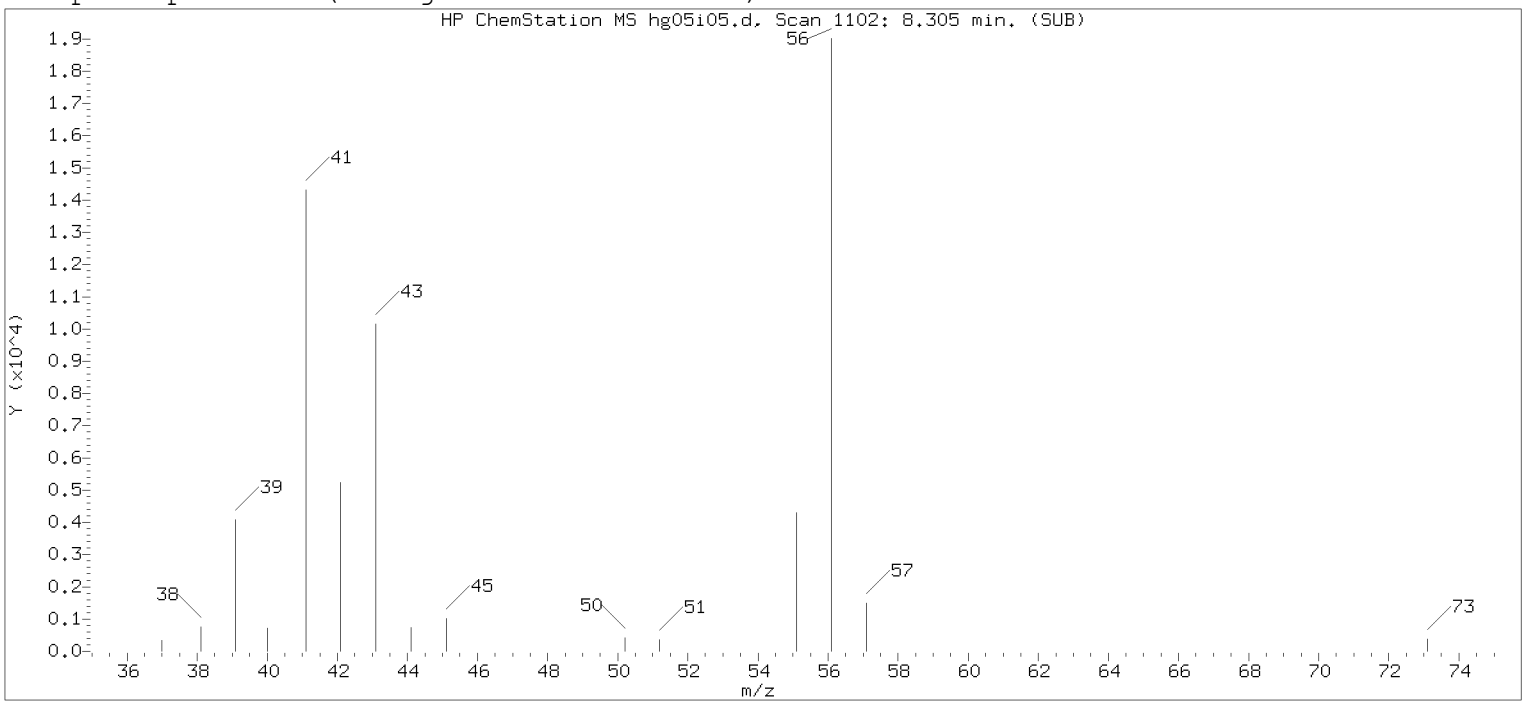
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1102
Retention Time (minutes): 8.305
Quant Ion : 56.00
Area (flag) : 69519M
On-Column Amount (ng) : 97.7151
Integration start scan : 1091 Integration stop scan: 1151
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

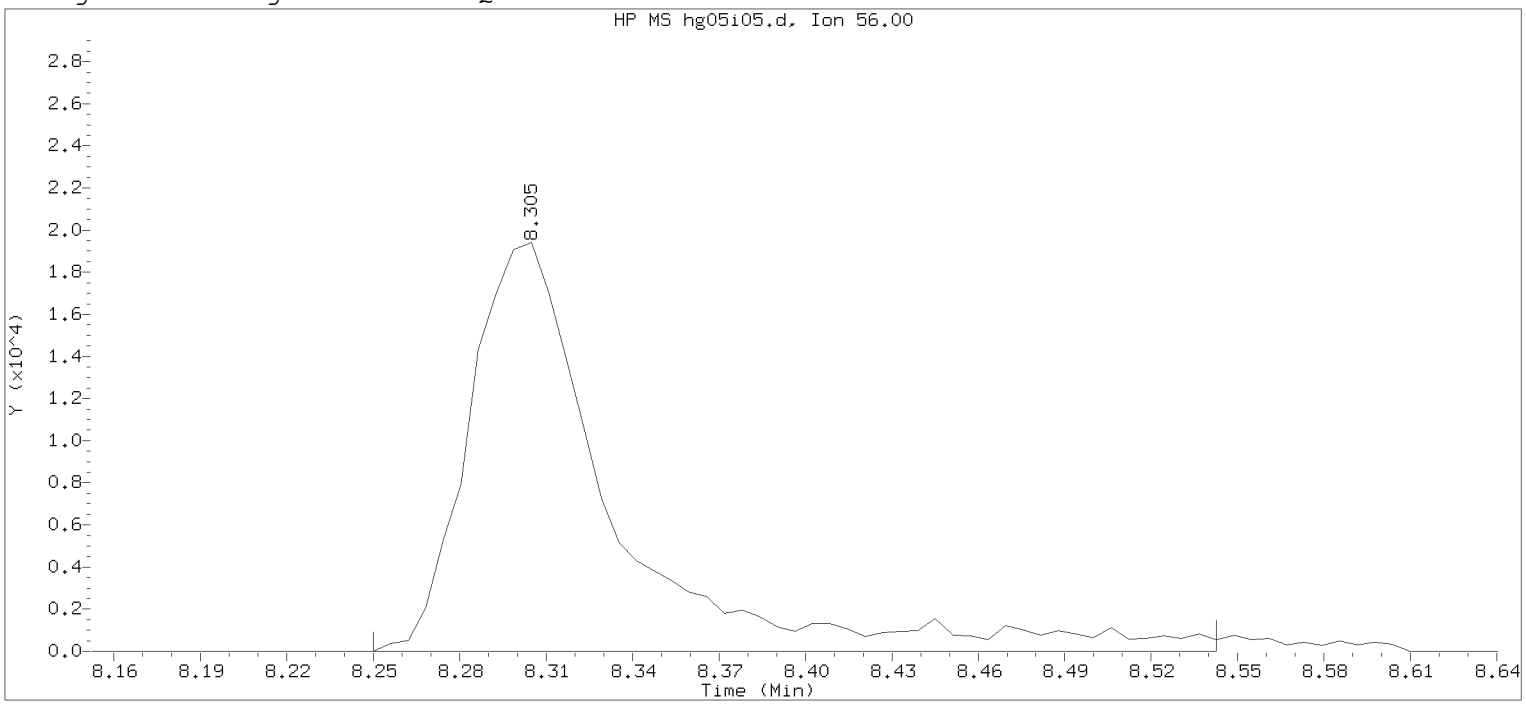
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

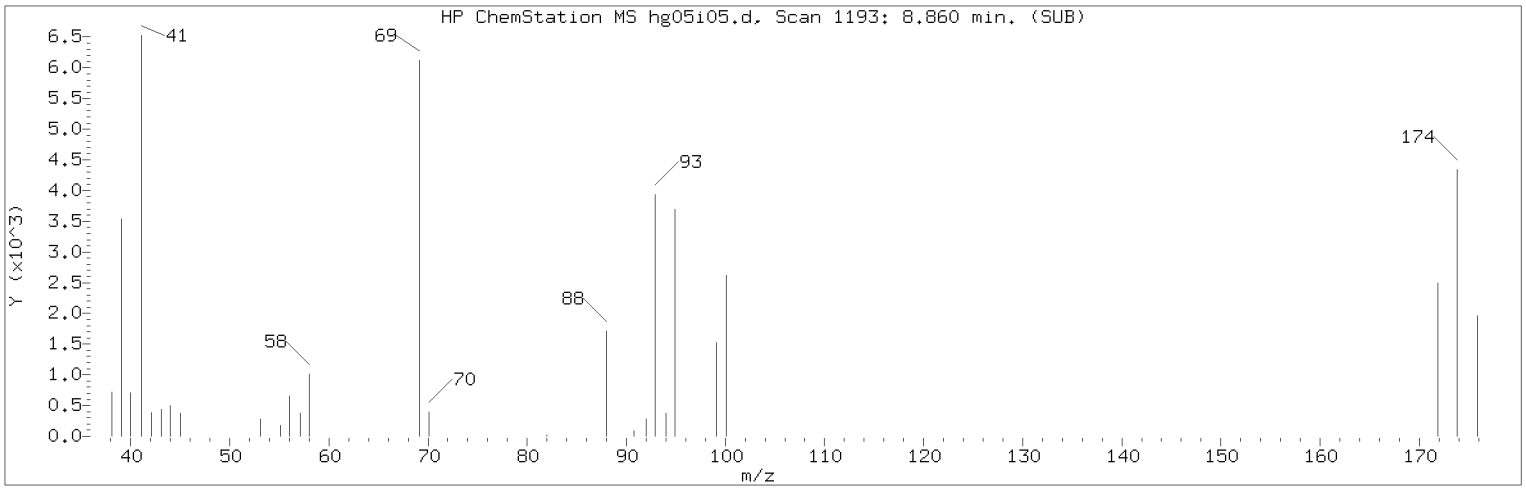
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

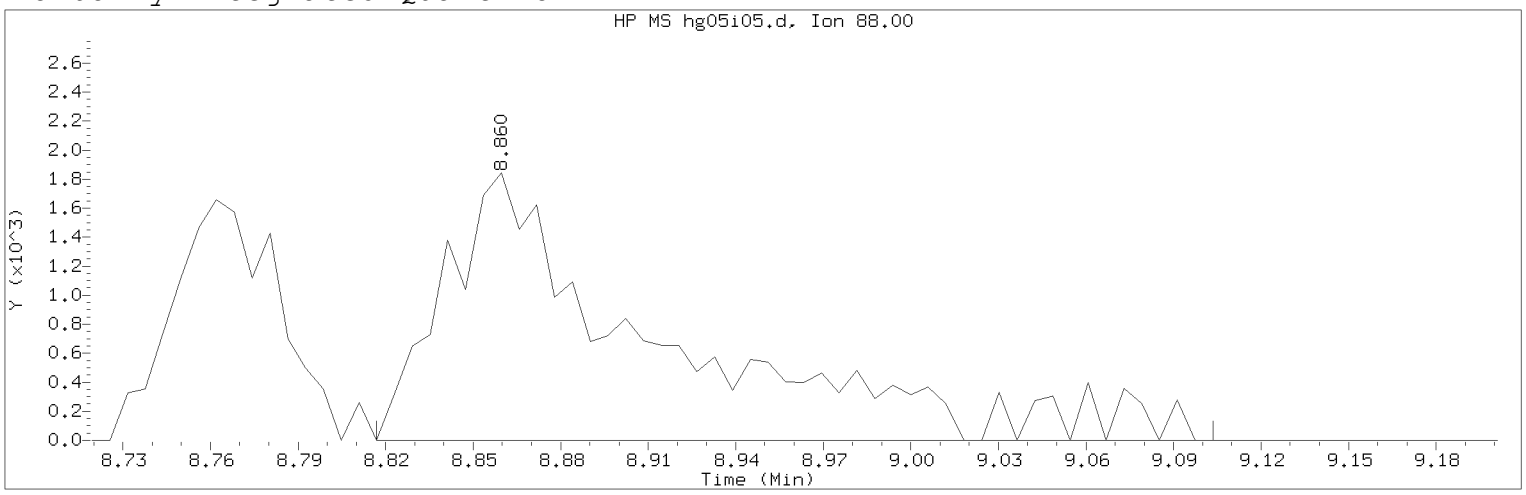
Compound Number	: 65		
Compound Name	: n-Butanol		
Scan Number	: 1102		
Retention Time (minutes)	: 8.305		
Quant Ion	: 56.00		
Area	: 67793		
On-column Amount (ng)	: 98.3393		
Integration start scan	: 1092	Integration stop scan:	1140
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

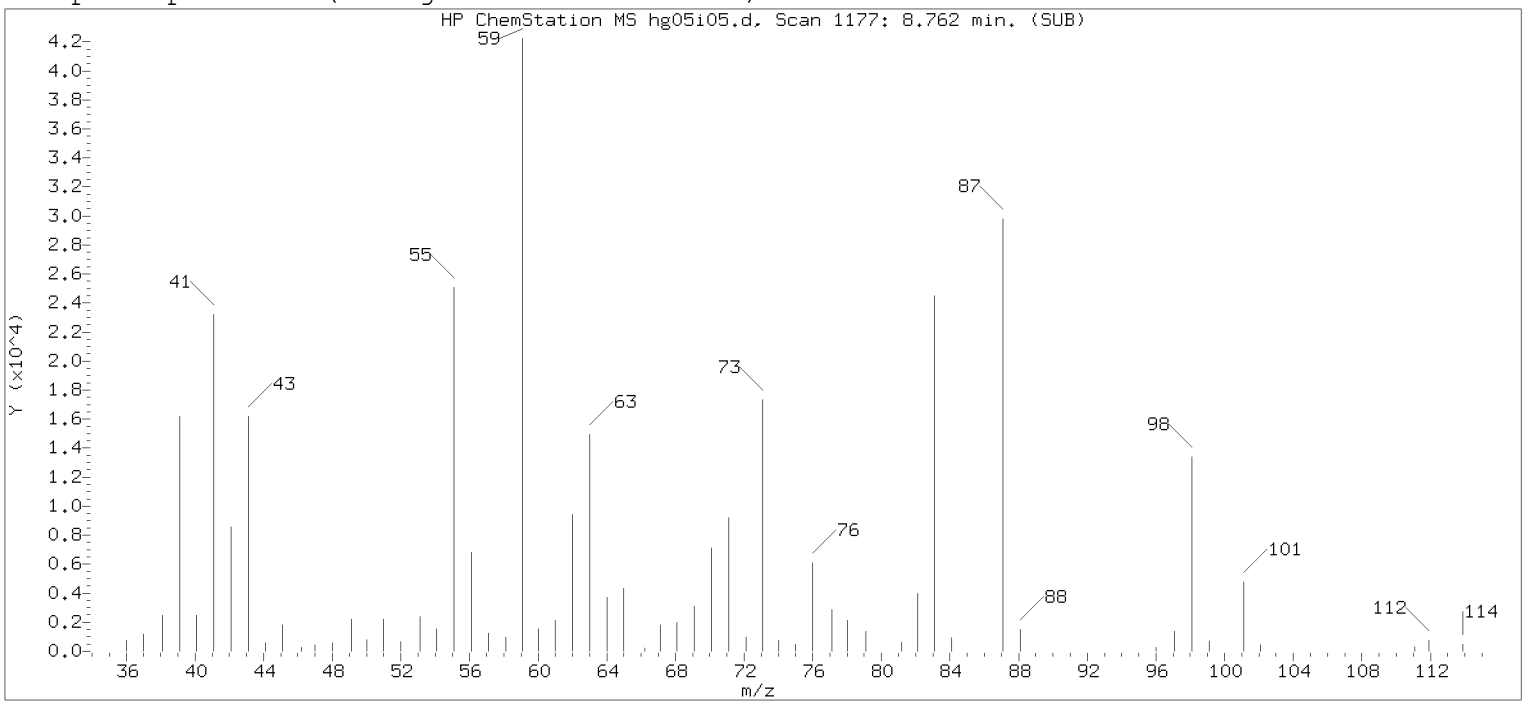
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1193
Retention Time (minutes): 8.860
Quant Ion : 88.00
Area (flag) : 9293M
On-Column Amount (ng) : 54.0555
Integration start scan : 1185 Integration stop scan: 1232
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

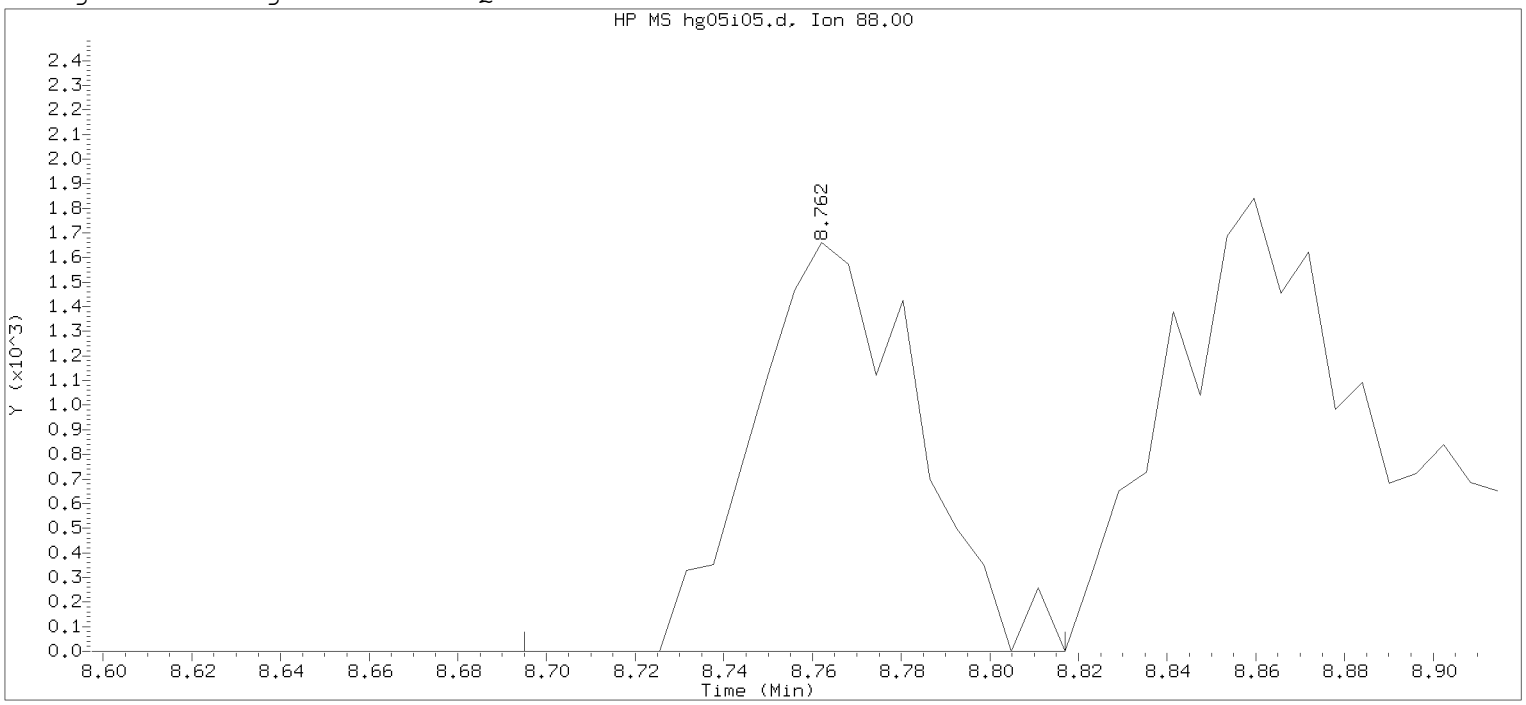
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

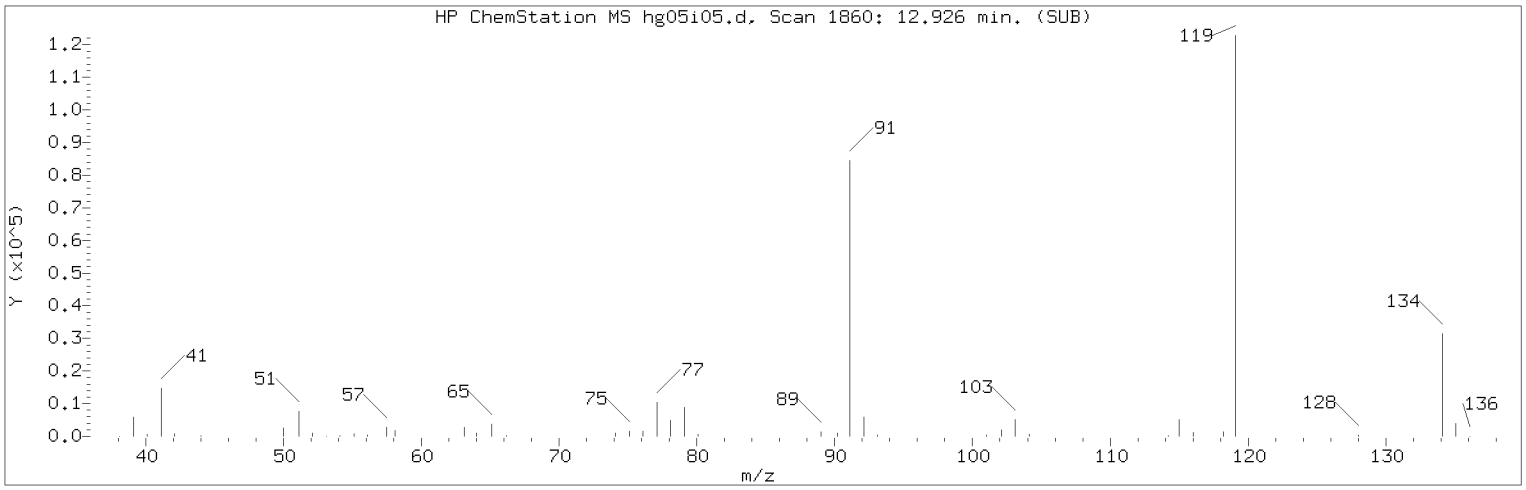
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

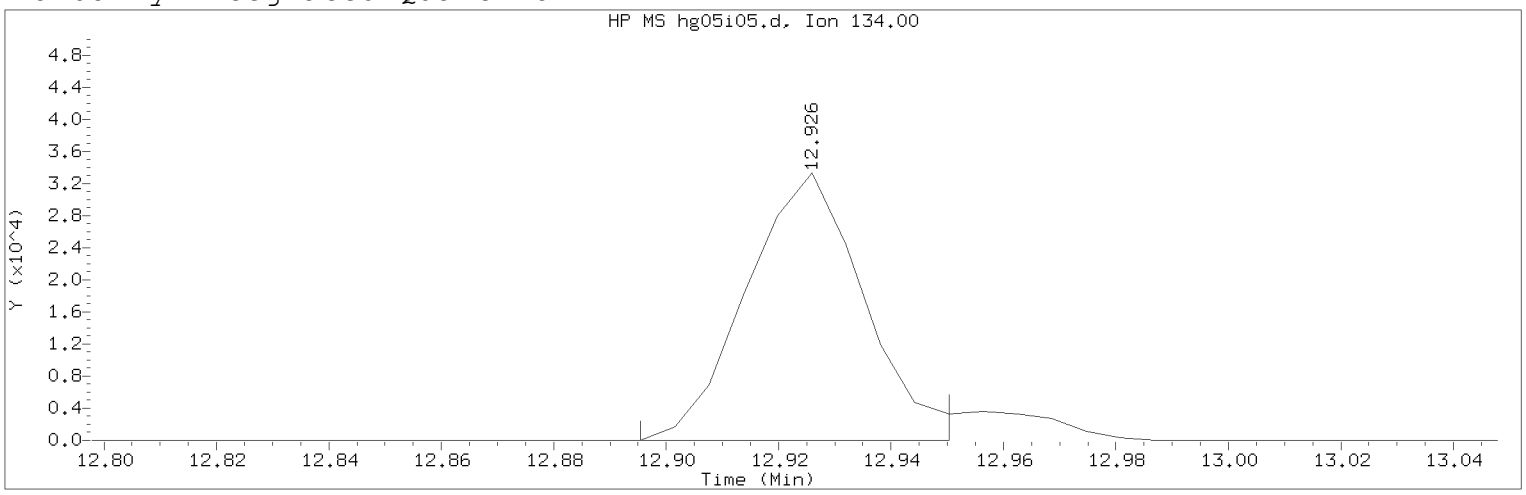
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1177		
Retention Time (minutes)	: 8.762		
Quant Ion	: 88.00		
Area	: 4243		
On-column Amount (ng)	: 25.5747		
Integration start scan	: 1165	Integration stop scan:	1185
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used. RAF48 mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

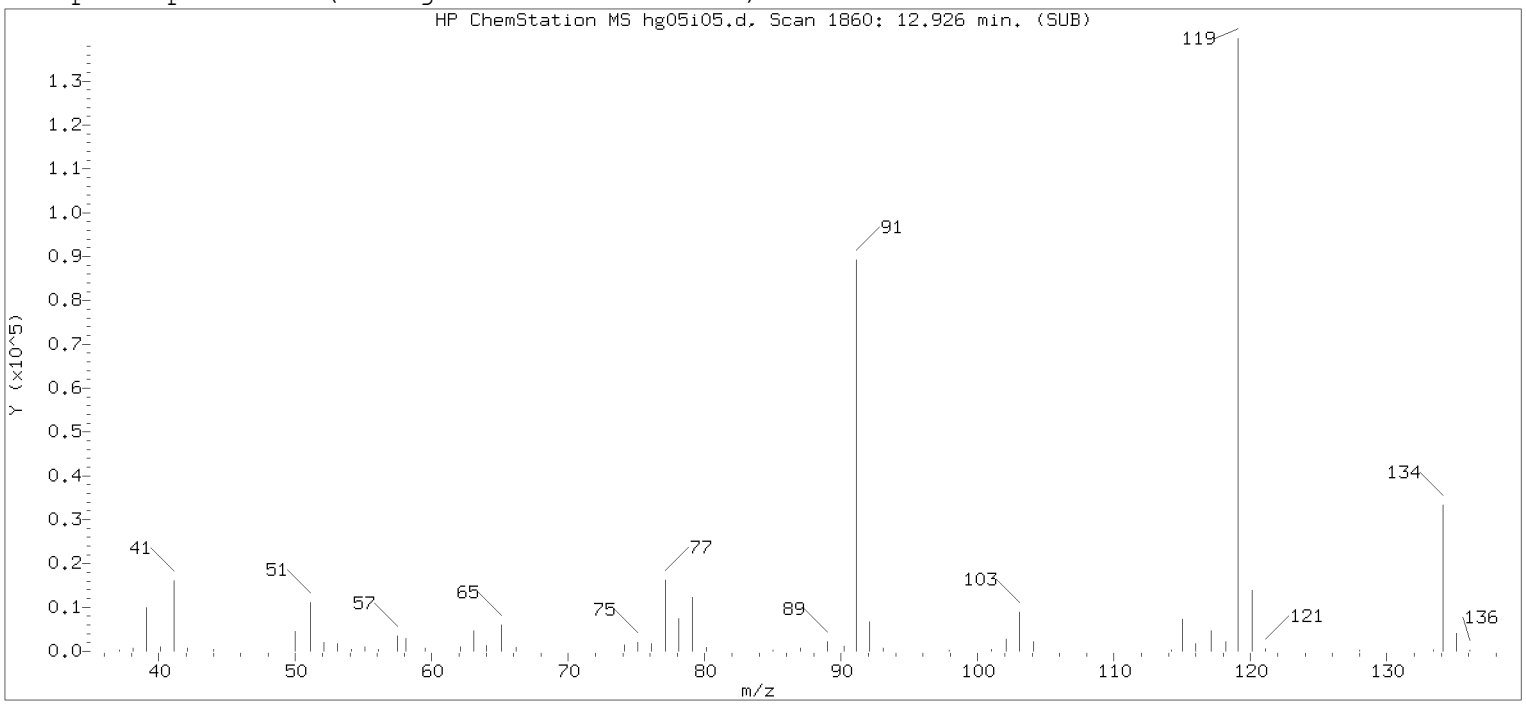
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area (flag) : 48430M
On-Column Amount (ng) : 0.9492
Integration start scan : 1854 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

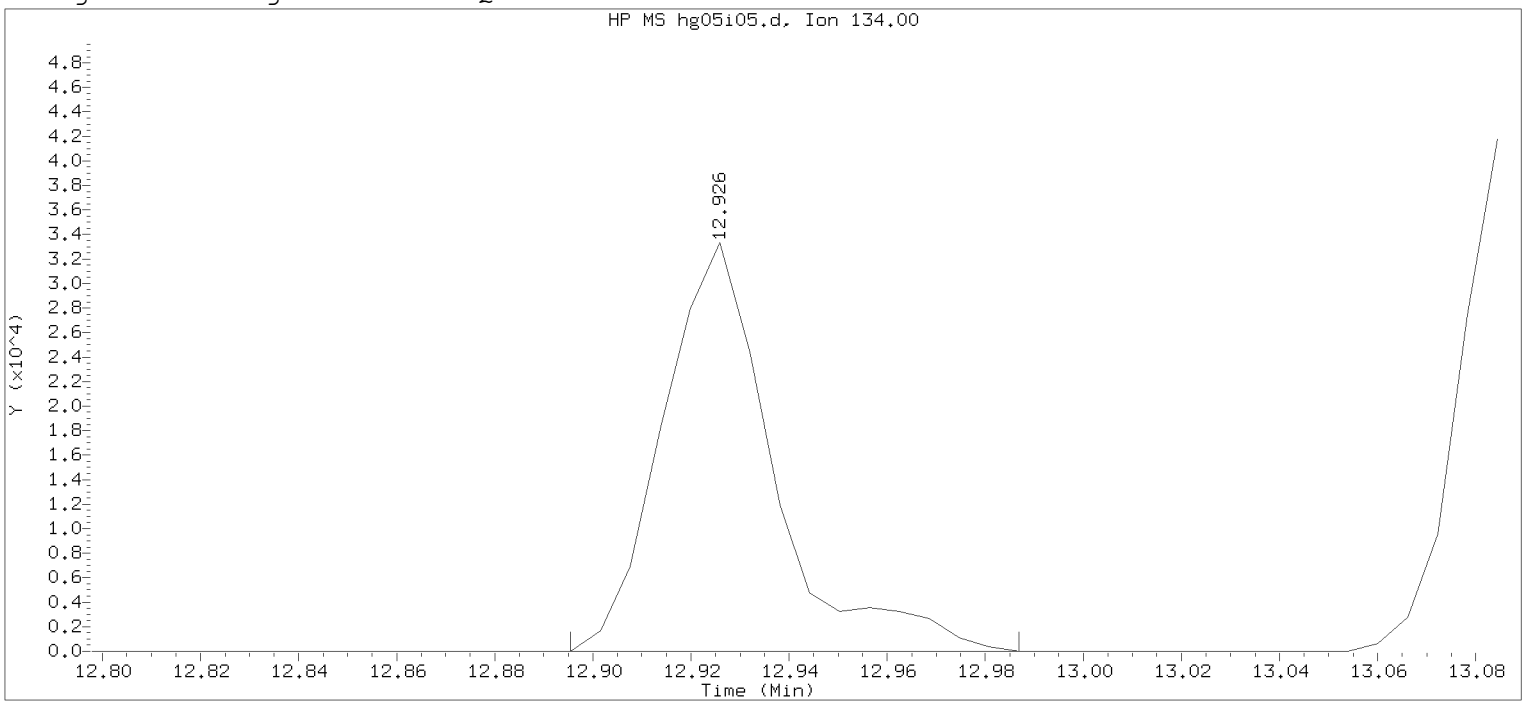
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

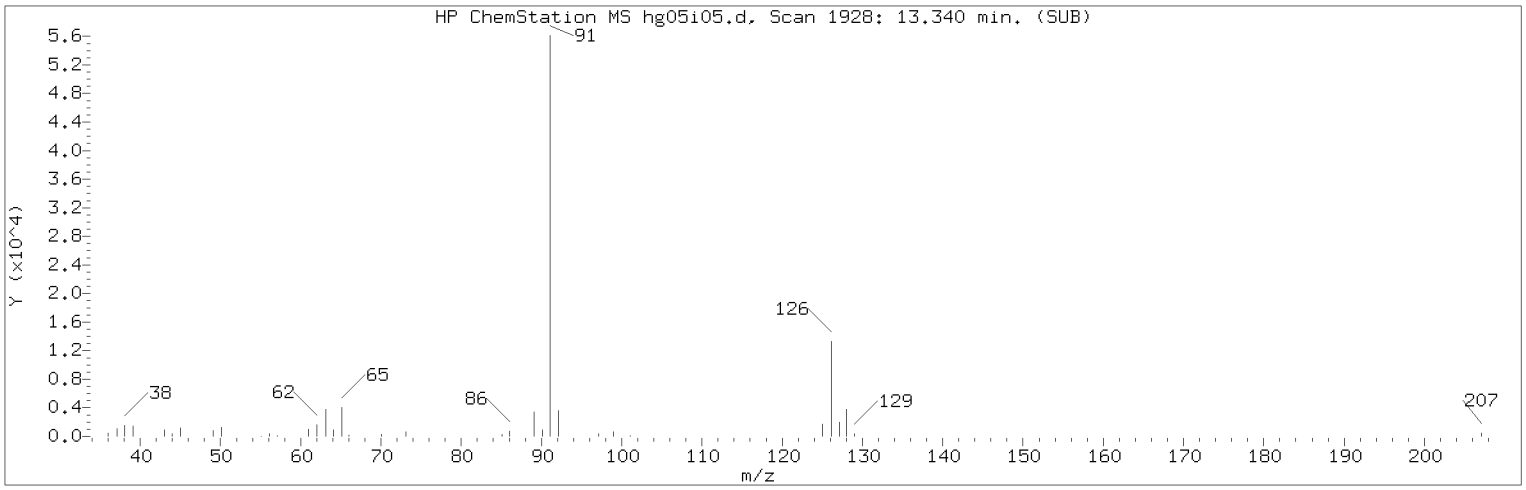
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

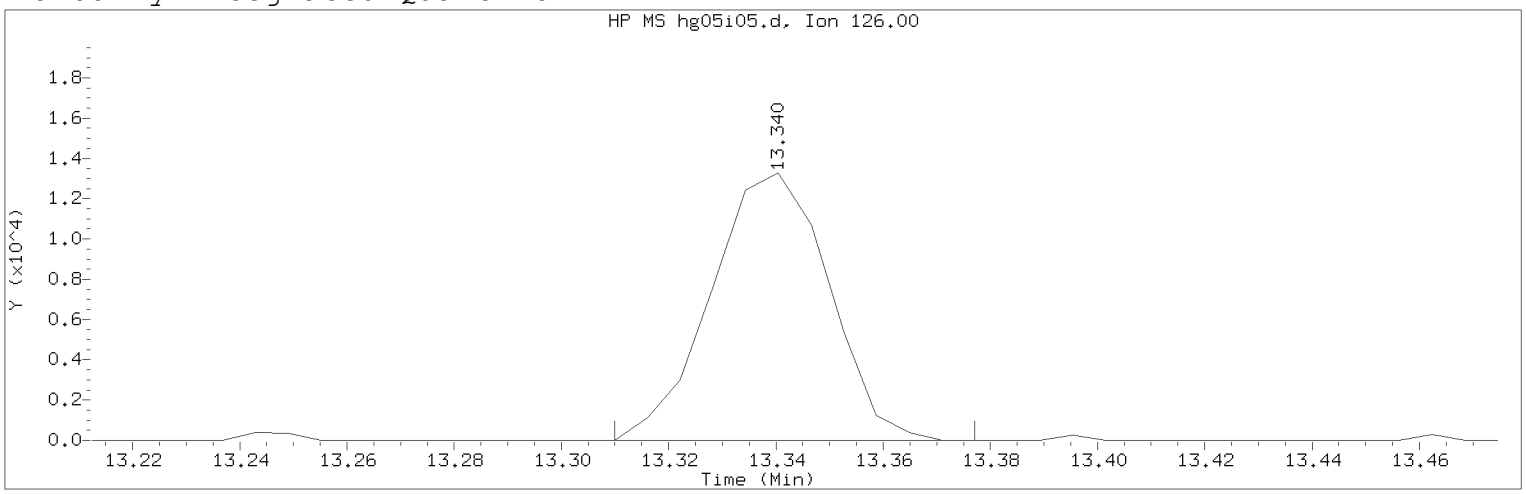
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area : 52442
On-column Amount (ng) : 1.0095
Integration start scan : 1854 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

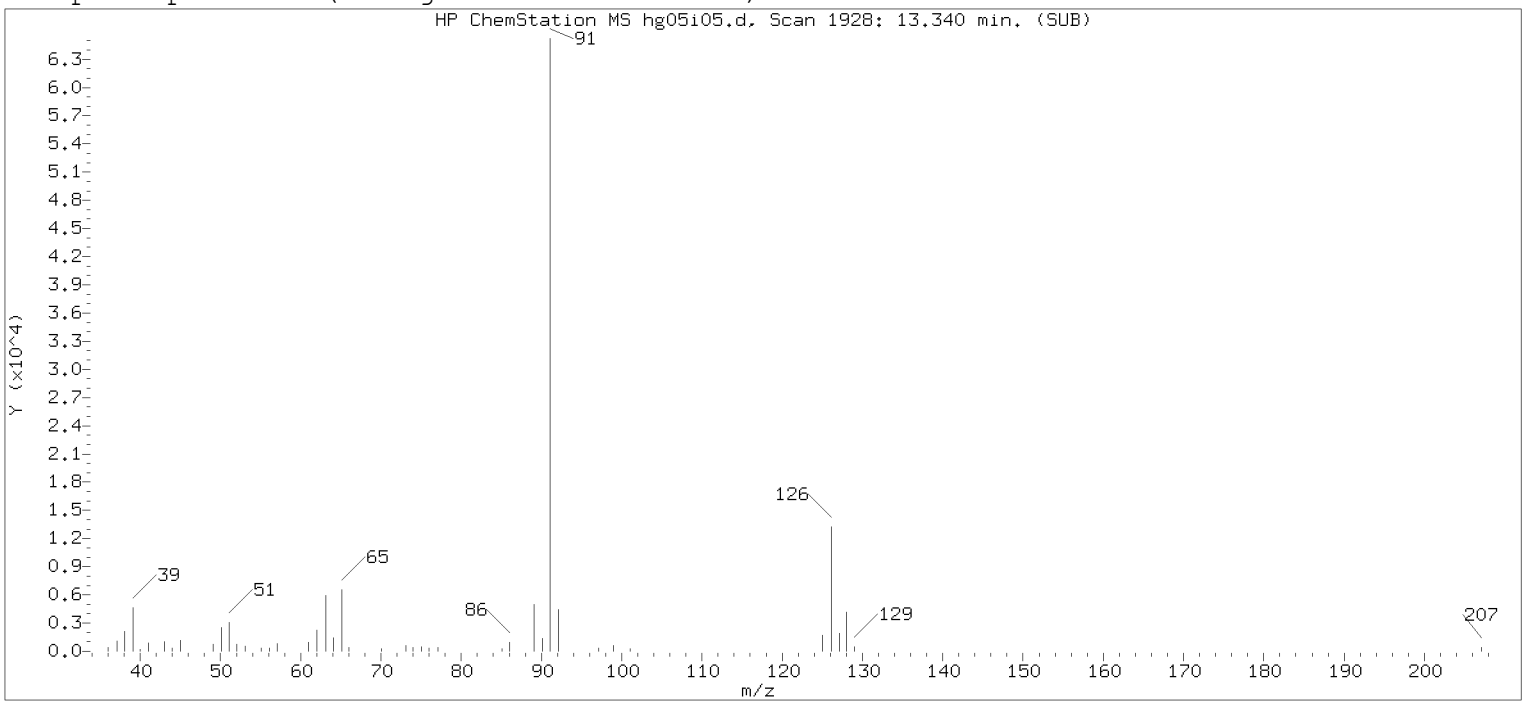
Compound Number : 136
Compound Name : Benzyl Chloride
Scan Number : 1928
Retention Time (minutes): 13.340
Quant Ion : 126.00
Area (flag) : 20177M
On-Column Amount (ng) : 0.9664
Integration start scan : 1922 Integration stop scan: 1933
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

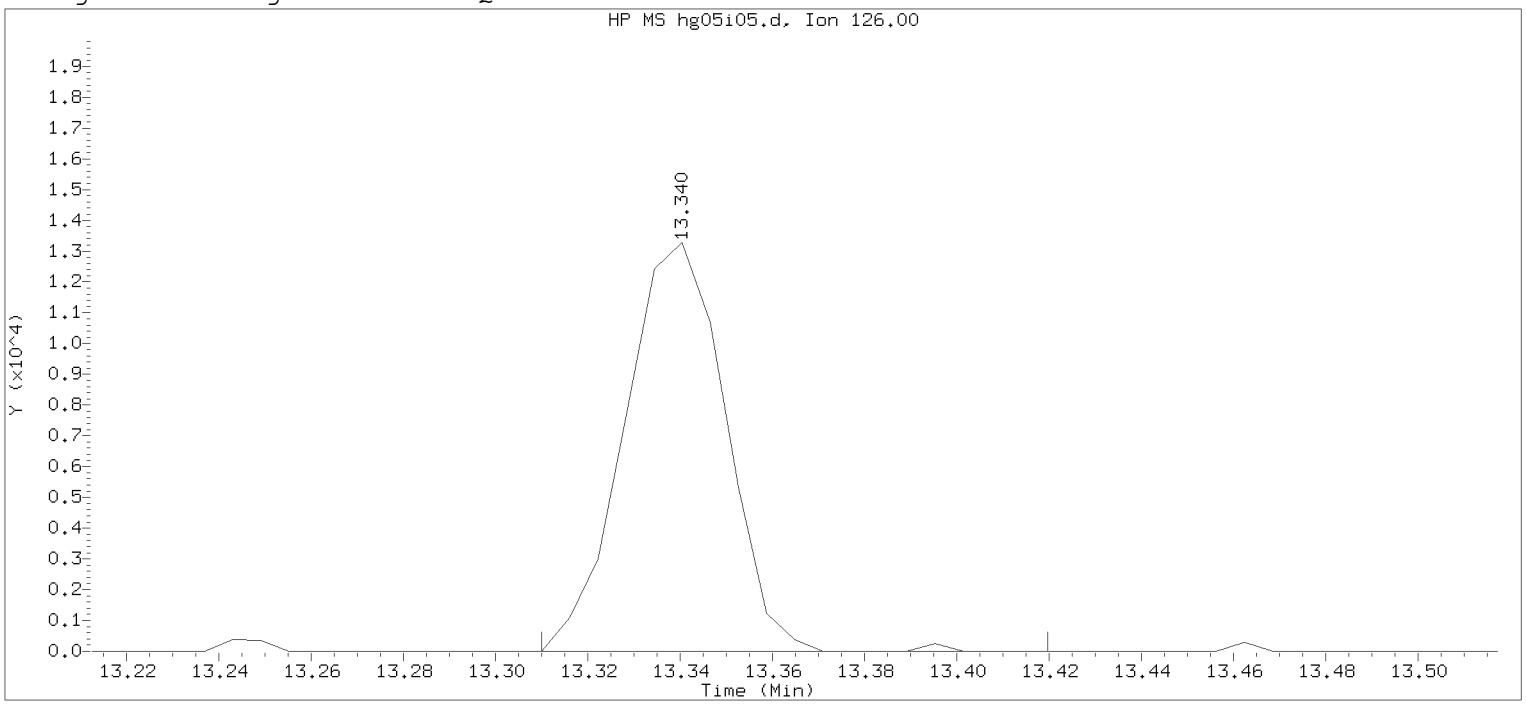
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



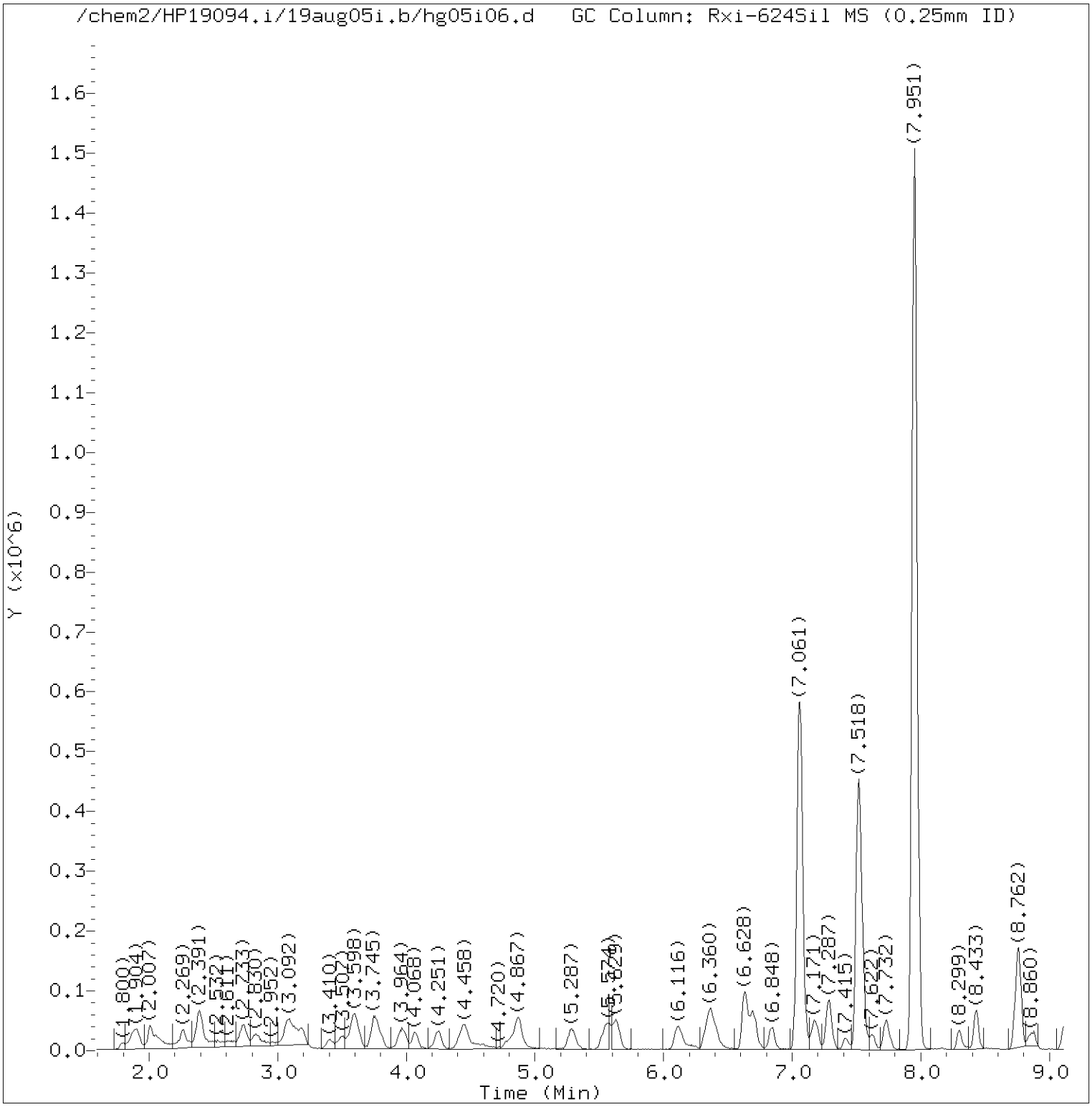
Data File: /chem2/HP19094.i/19aug05i.b/hg05i05.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:03
Date, time and analyst ID of latest file update: 05-Aug-2019 20:03 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number : 136
Compound Name : Benzyl Chloride
Scan Number : 1928
Retention Time (minutes): 13.340
Quant Ion : 126.00
Area : 20269
On-column Amount (ng) : 0.9450
Integration start scan : 1922 Integration stop scan: 1940
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

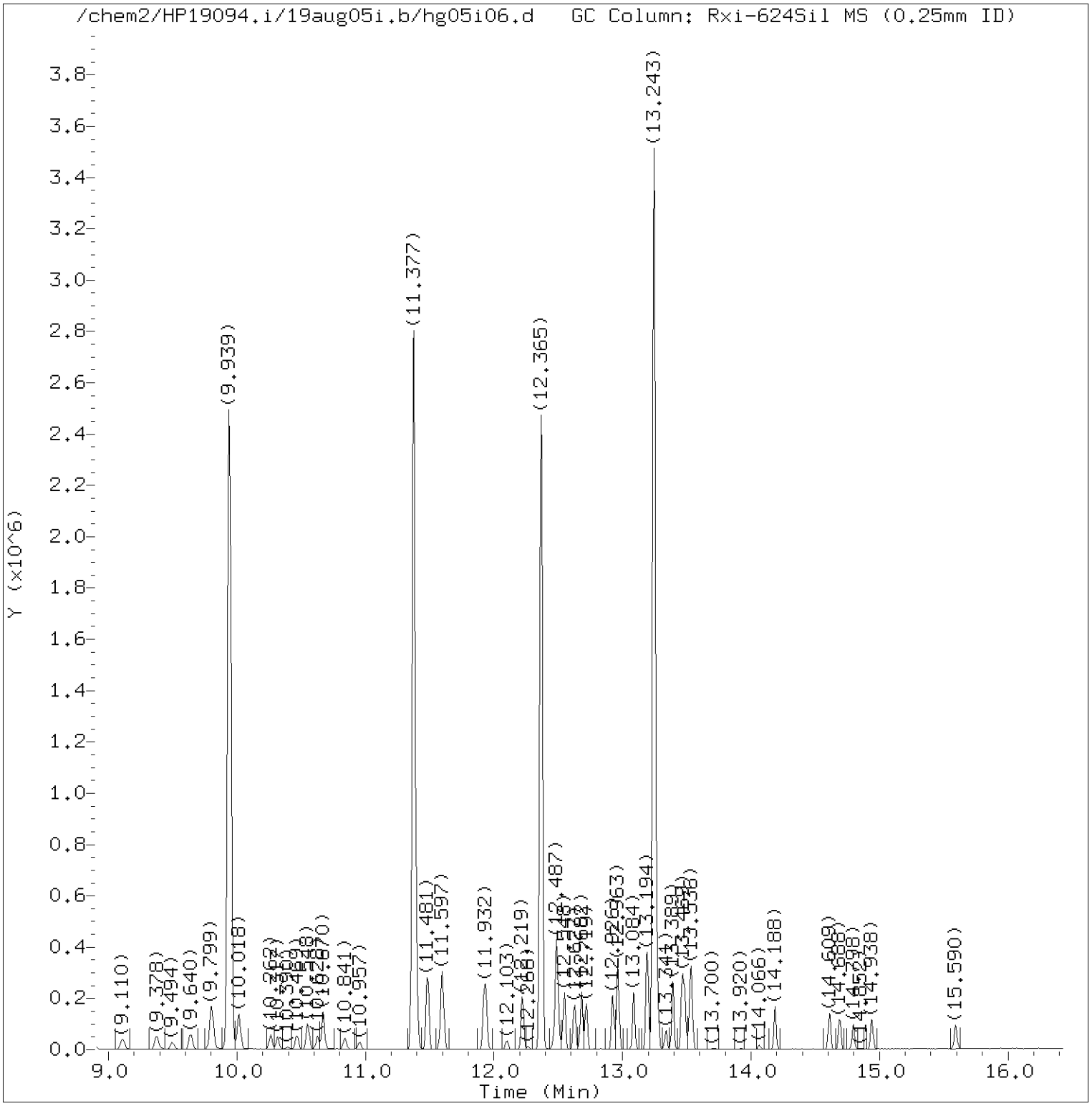
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.056	85	50652	0.496
2) Chloromethane	(2)	2.263	50	37475	0.501
5) Vinyl Chloride	(2)	2.385	62	37362	0.497
6) 1,3-Butadiene	(2)	2.398	39	30211M	0.501
7) Bromomethane	(2)	2.733	94	33938	0.511
8) Chloroethane	(2)	2.830	64	22424	0.509
9) Dichlorofluoromethane	(2)	3.074	67	50800	0.526
10) Trichlorofluoromethane	(2)	3.123	101	60404	0.507
11) Ethyl ether	(2)	3.410	59	16873	0.509
12) Freon 123a	(2)	3.495	67	29708	0.490
13) Acrolein	(1)	3.598	56	127415	24.603
15) 1,1-Dichloroethene	(2)	3.745	96	20305	0.468
14) Acetone	(1)	3.775	43	37570M	5.306
16) Freon 113	(2)	3.787	101	25003	0.460
17) Methyl Iodide	(2)	3.964	142	51884	0.498
18) Carbon Disulfide	(2)	4.068	76	70106	0.486
21) Methyl Acetate	(1)	4.226	43	13253M	0.594
22) Allyl Chloride	(2)	4.251	41	39920	0.542
26)*t-Butyl Alcohol-d10	(1)	4.434	65	108663	50.000
23) Methylene Chloride	(2)	4.458	84	26452	0.511
28) t-Butyl Alcohol	(1)	4.586	59	18574	9.165
29) Acrylonitrile	(1)	4.793	53	20307	2.427
31) trans-1,2-Dichloroethene	(2)	4.867	96	24015	0.482
30) Methyl Tertiary Butyl Ether	(2)	4.873	73	56292	0.501
32) n-Hexane	(2)	5.293	57	35083	0.463
33) 1,1-Dichloroethane	(2)	5.531	63	42949	0.487
34) di-Isopropyl Ether	(2)	5.586	45	74898	0.492
35) 2-Chloro-1,3-Butadiene	(2)	5.635	53	38981	0.476
40) 1,2-Dichloroethene (Total)	(2)		96	51463	0.972
37) Ethyl t-butyl ether	(2)	6.116	59	69752	0.481
38) 2-Butanone	(1)	6.324	43	58914	5.048
39) cis-1,2-Dichloroethene	(2)	6.360	96	27448	0.490
41) 2,2-Dichloropropane	(2)	6.378	77	39676	0.495
42) Propionitrile	(1)	6.421	54	29146M	9.763
45) Methacrylonitrile	(1)	6.628	67	57196	4.810
47) Bromochloromethane	(2)	6.695	128	13173	0.495
48) Tetrahydrofuran	(1)	6.695	71	16027	4.956
49) Chloroform	(2)	6.848	83	45428	0.490

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.055	113	530595	10.015
50)$Dibromofluoromethane	(2)	7.061	111	539908	10.029
51) 1,1,1-Trichloroethane	(2)	7.073	97	41770	0.484
52) Cyclohexane	(2)	7.183	56	43061	0.482
52) Cyclohexane	(2)	7.171	84	38257	0.461
52) Cyclohexane	(2)	7.183	69	13367	0.464
54) Carbon Tetrachloride	(2)	7.287	117	38549	0.477
55) 1,1-Dichloropropene	(2)	7.287	75	34384	0.491
56) Isobutyl Alcohol	(1)	7.415	41	21736	26.201
57)$1,2-Dichloroethane-d4	(2)	7.518	102	99886	10.254
57)$1,2-Dichloroethane-d4	(2)	7.518	65	474467	10.066
57)$1,2-Dichloroethane-d4	(2)	7.512	104	63690	10.204
58) Benzene	(2)	7.549	78	94685	0.481
59) 1,2-Dichloroethane	(2)	7.622	62	28949	0.522
60) t-Amyl methyl ether	(2)	7.738	73	64632	0.495
63)*Fluorobenzene	(2)	7.951	96	1948295	10.000
62) n-Heptane	(2)	7.957	43	39141	0.480
65) n-Butanol	(1)	8.293	56	33931M	50.173
67) Trichloroethene	(2)	8.427	95	26749	0.483
69) Methylcyclohexane	(2)	8.750	83	49252	0.506
70) 1,2-Dichloropropane	(2)	8.768	63	22690	0.468
71) Methyl Methacrylate	(1)	8.841	69	12237	0.506
73) Dibromomethane	(2)	8.878	93	12722	0.489
72) 1,4-Dioxane	(1)	8.878	88	3777M	23.112
74) Bromodichloromethane	(2)	9.110	83	32047	0.480
76) 2-Nitropropane	(1)	9.378	41	42013	4.889
80) cis-1,3-Dichloropropene	(2)	9.646	75	36317	0.477
81) 4-Methyl-2-Pentanone	(1)	9.799	43	140911	4.763
82)$Toluene-d8	(3)	9.939	98	1981615	10.069
82)$Toluene-d8	(3)	9.939	100	1263110	10.036
83) Toluene	(3)	10.018	92	63990	0.489
85) 1,3-Dichloropropene (total)	(3)		75	67099	0.953
84) trans-1,3-Dichloropropene	(3)	10.262	75	30782	0.476
86) Ethyl Methacrylate	(3)	10.317	69	26527	0.514
88) 1,1,2-Trichloroethane	(3)	10.469	97	16352	0.466
89) Tetrachloroethene	(3)	10.548	166	31424	0.478
90) 1,3-Dichloropropane	(3)	10.628	76	28987	0.498
91) 2-Hexanone	(1)	10.670	43	99969	4.810

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	23471	0.477
95) 1,2-Dibromoethane	(3)	10.957	107	17496	0.495
96) 1-Chlorohexane	(3)	11.377	91	39099	0.489
97)*Chlorobenzene-d5	(3)	11.377	117	1541573	10.000
98) Chlorobenzene	(3)	11.402	112	73194	0.493
100) Ethylbenzene	(3)	11.481	91	126366	0.488
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	26927	0.486
101) m+p-Xylene	(3)	11.597	106	99748	0.971
105) Xylene (Total)	(3)		106	147865	1.450
104) o-Xylene	(3)	11.926	106	48117	0.479
106) Styrene	(3)	11.938	104	79619	0.488
107) Bromoform	(3)	12.103	173	14163	0.462
108) Isopropylbenzene	(3)	12.219	105	128915	0.481
111)$4-Bromofluorobenzene	(3)	12.365	95	719784	10.001
111)$4-Bromofluorobenzene	(3)	12.371	174	680532	9.889
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	21003	0.498
114) Bromobenzene	(4)	12.487	156	31735	0.482
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	56461	4.594
116) 1,2,3-Trichloropropane	(4)	12.511	110	6391	0.546
117) n-Propylbenzene	(4)	12.548	91	152497	0.491
119) 2-Chlorotoluene	(4)	12.627	126	30762	0.481
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	109139	0.481
122) 4-Chlorotoluene	(4)	12.719	126	32545	0.495
125) tert-Butylbenzene	(4)	12.920	134	24487M	0.489
126) Pentachloroethane	(4)	12.963	167	23246	0.503
127) 1,2,4-Trimethylbenzene	(4)	12.963	105	115642	0.492
128) sec-Butylbenzene	(4)	13.091	105	139493M	0.467
131) 1,3-Dichlorobenzene	(4)	13.188	146	62338	0.485
132) p-Isopropyltoluene	(4)	13.194	119	120691	0.468
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	862213	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	63476	0.497
135) 1,2,3-Trimethylbenzene	(4)	13.267	120	53760	0.511
136) Benzyl Chloride	(4)	13.341	126	9338	0.456
138) n-Butylbenzene	(4)	13.487	92	59827	0.471
139) 1,2-Dichlorobenzene	(4)	13.523	146	55274	0.479
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	3293	0.478
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	48044	0.483
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	40222	0.483

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Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

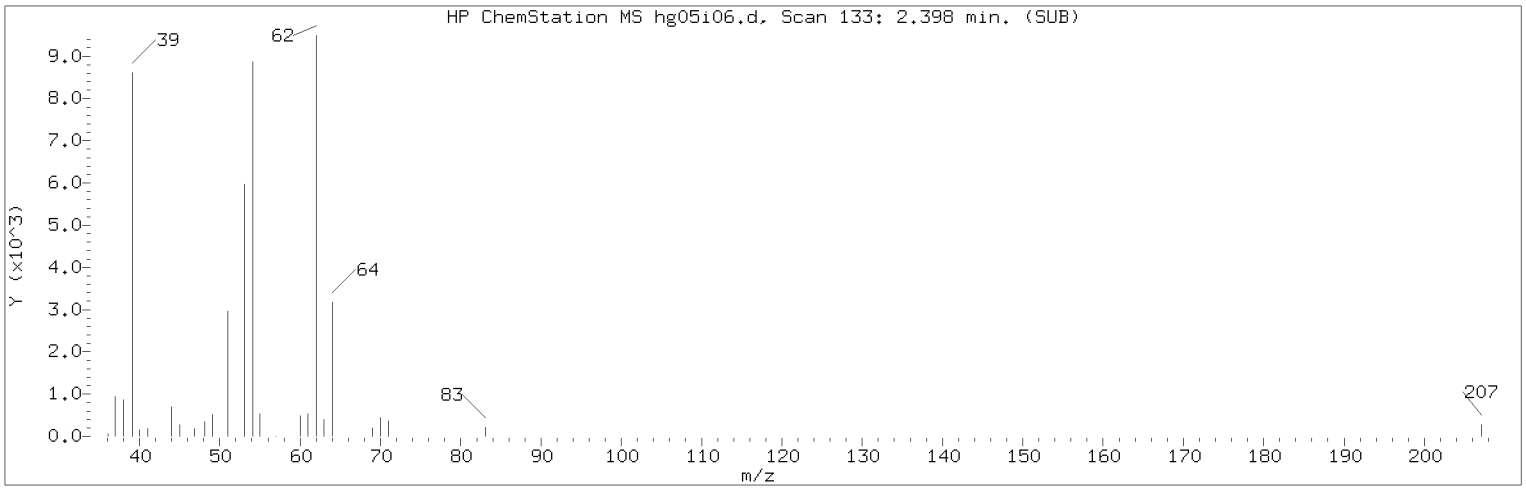
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

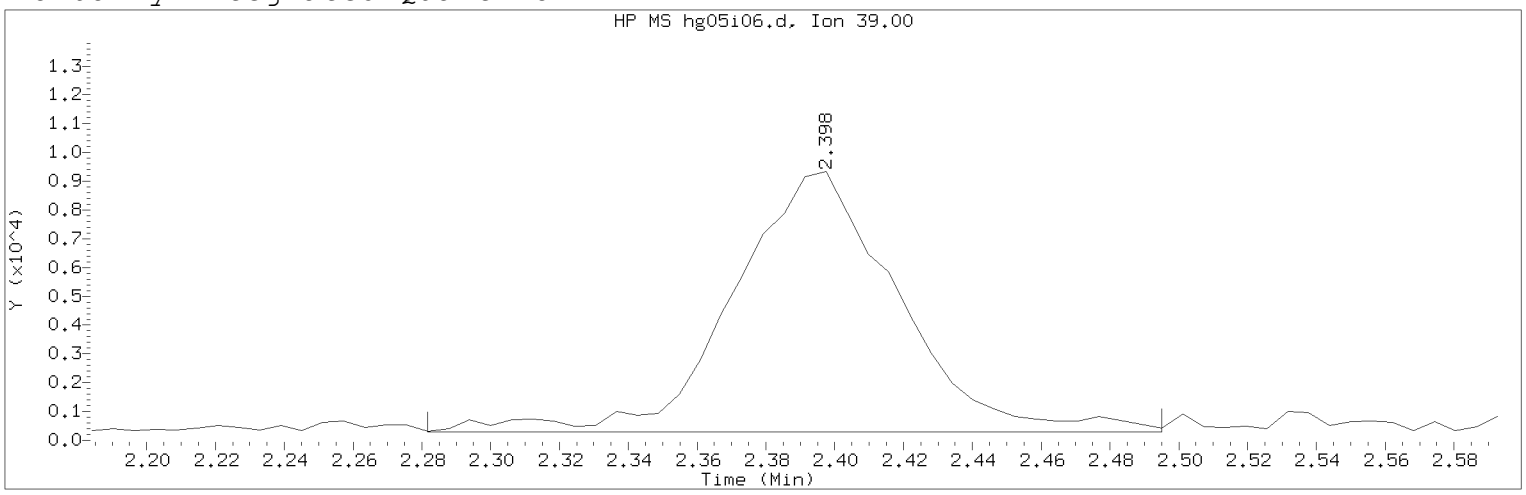
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	19341	0.448
147) Naphthalene	(4)	14.798	128	70852	0.479
148) 1,2,3-Trichlorobenzene	(4)	14.944	180	34161	0.469

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on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

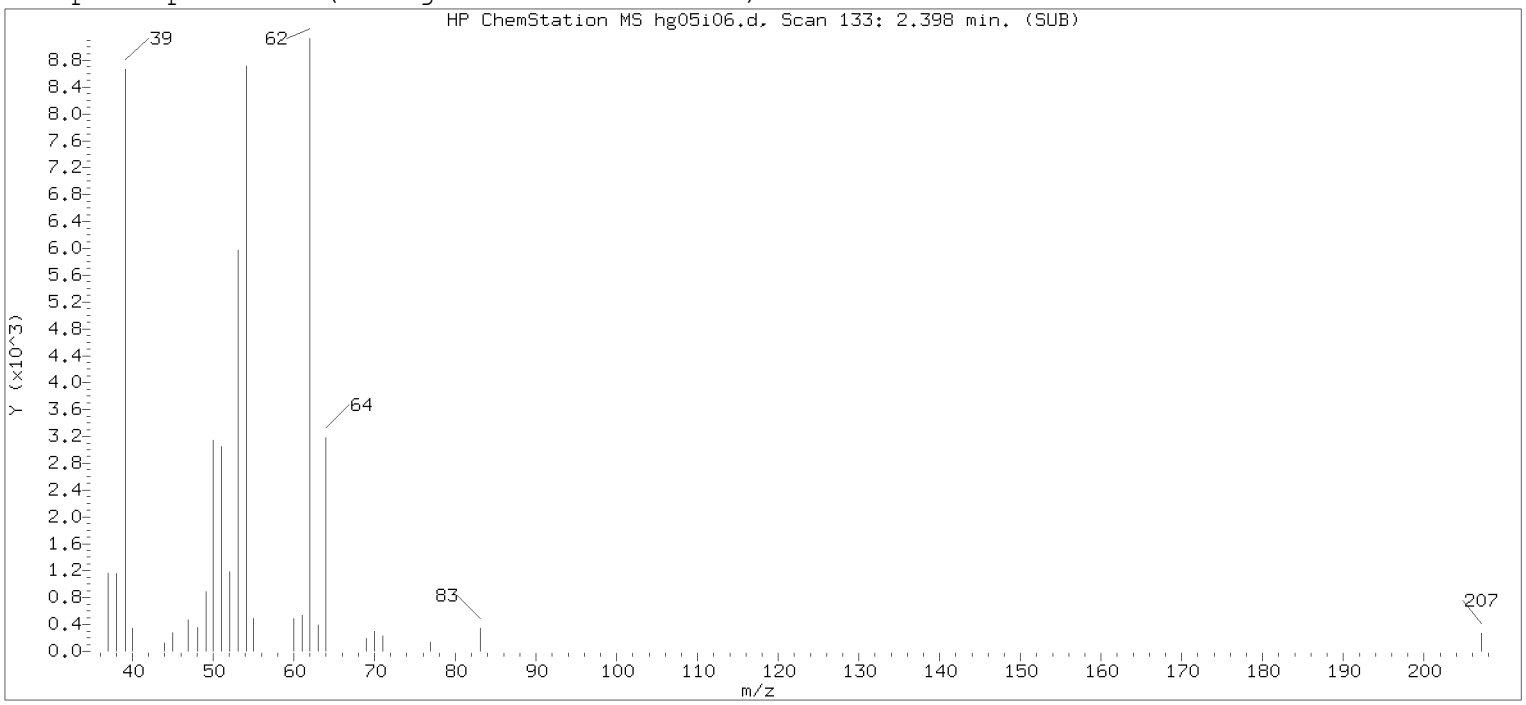
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 133
Retention Time (minutes): 2.398
Quant Ion : 39.00
Area (flag) : 30211M
On-Column Amount (ng) : 0.5009
Integration start scan : 113 Integration stop scan: 148
Y at integration start : 299 Y at integration end: 299

Reason for manual integration: improper integration

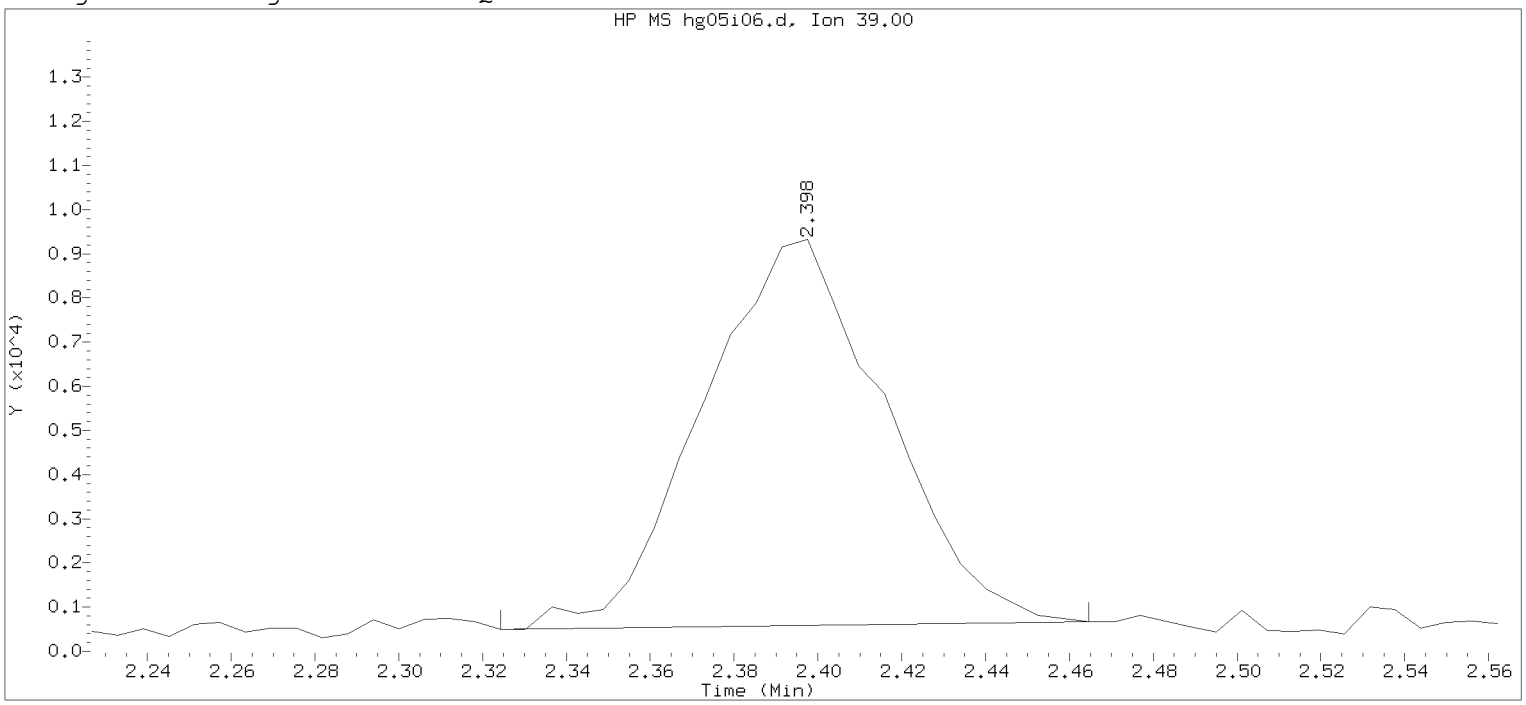
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

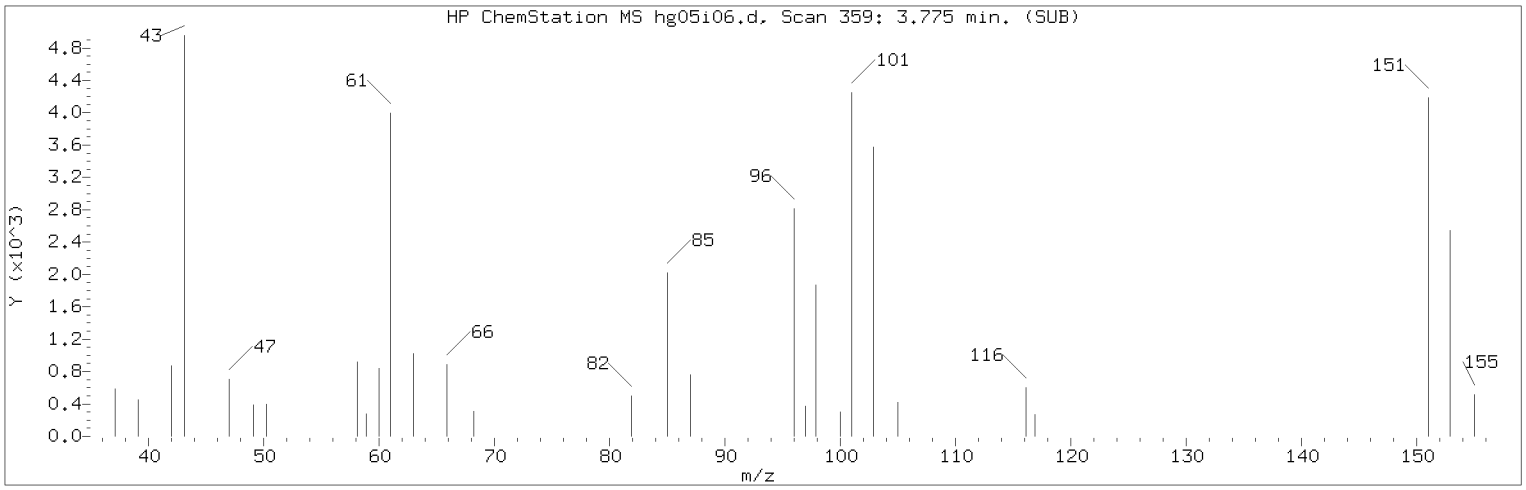
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

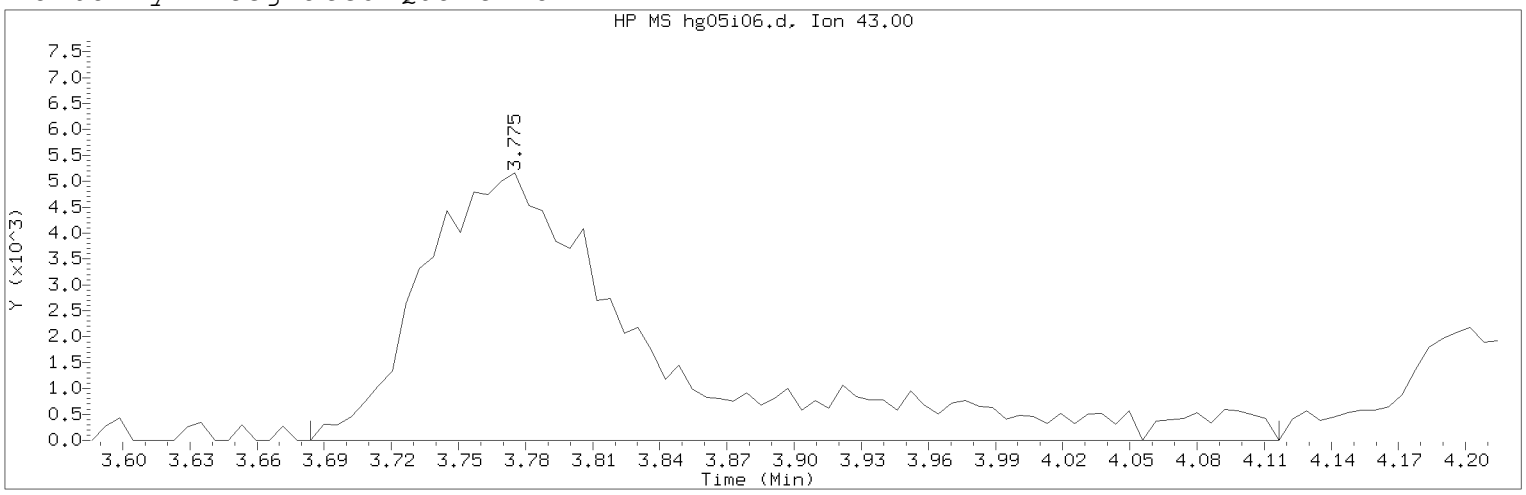
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 133
Retention Time (minutes): 2.398
Quant Ion : 39.00
Area : 26404
On-column Amount (ng) : 0.4592
Integration start scan : 120 Integration stop scan: 143
Y at integration start : 492 Y at integration end: 672

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

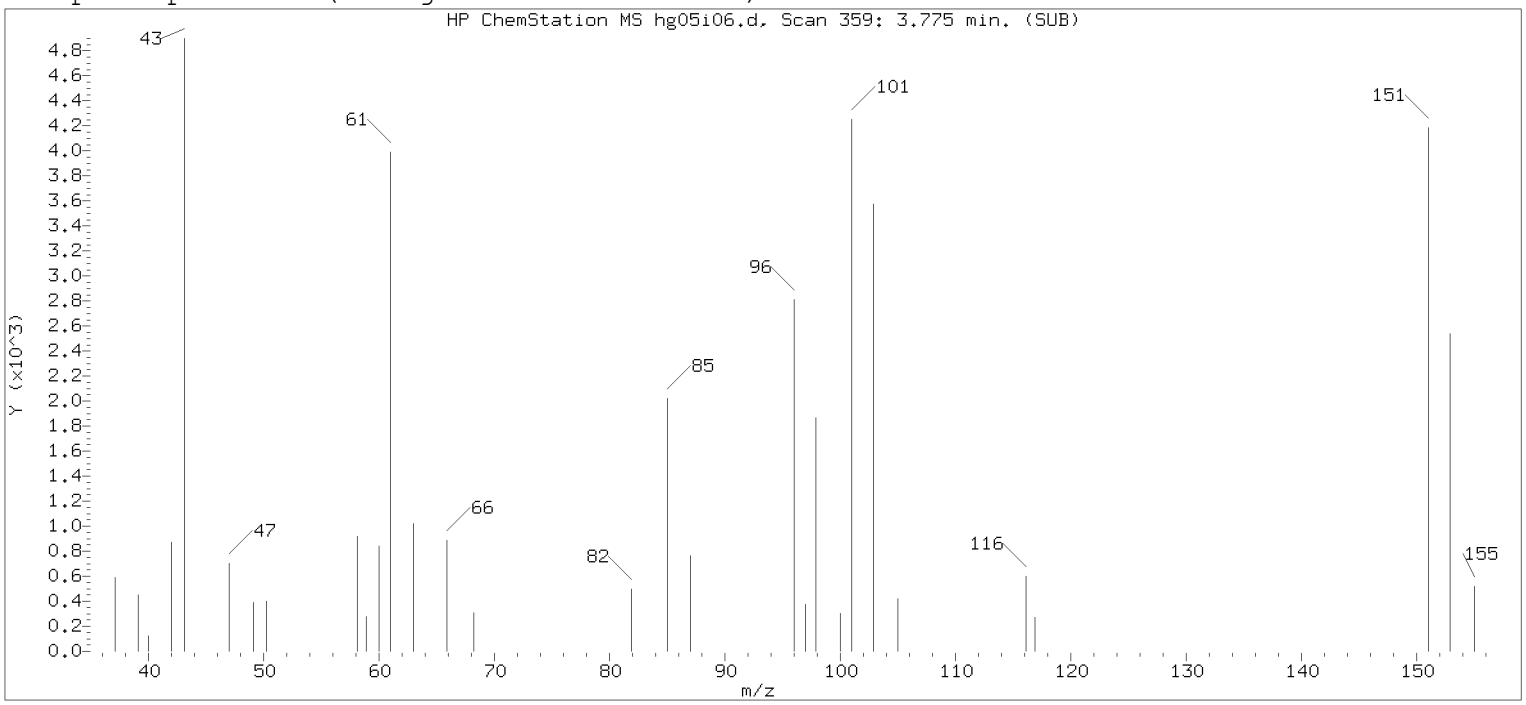
Compound Number : 14
Compound Name : Acetone
Scan Number : 359
Retention Time (minutes): 3.775
Quant Ion : 43.00
Area (flag) : 37570M
On-Column Amount (ng) : 5.3060
Integration start scan : 343 Integration stop scan: 414
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

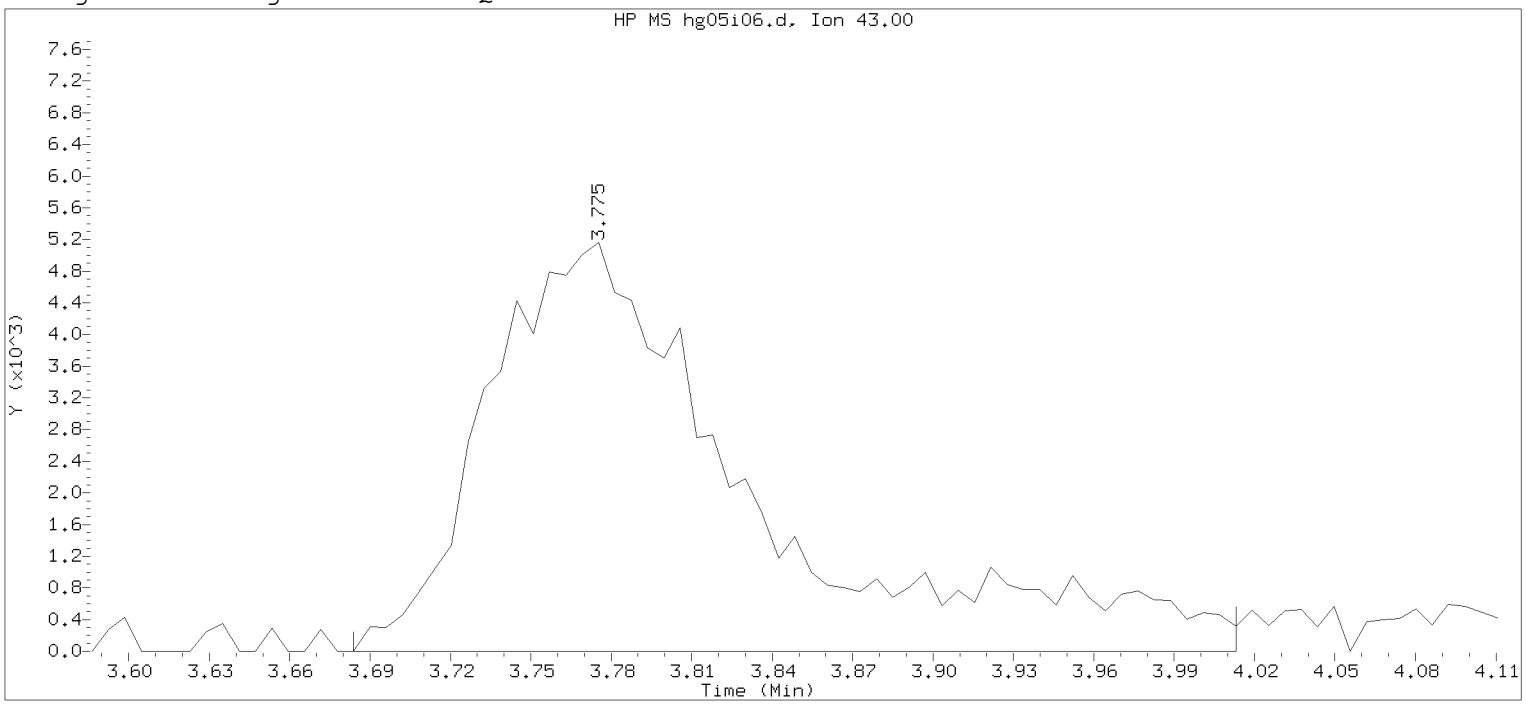
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

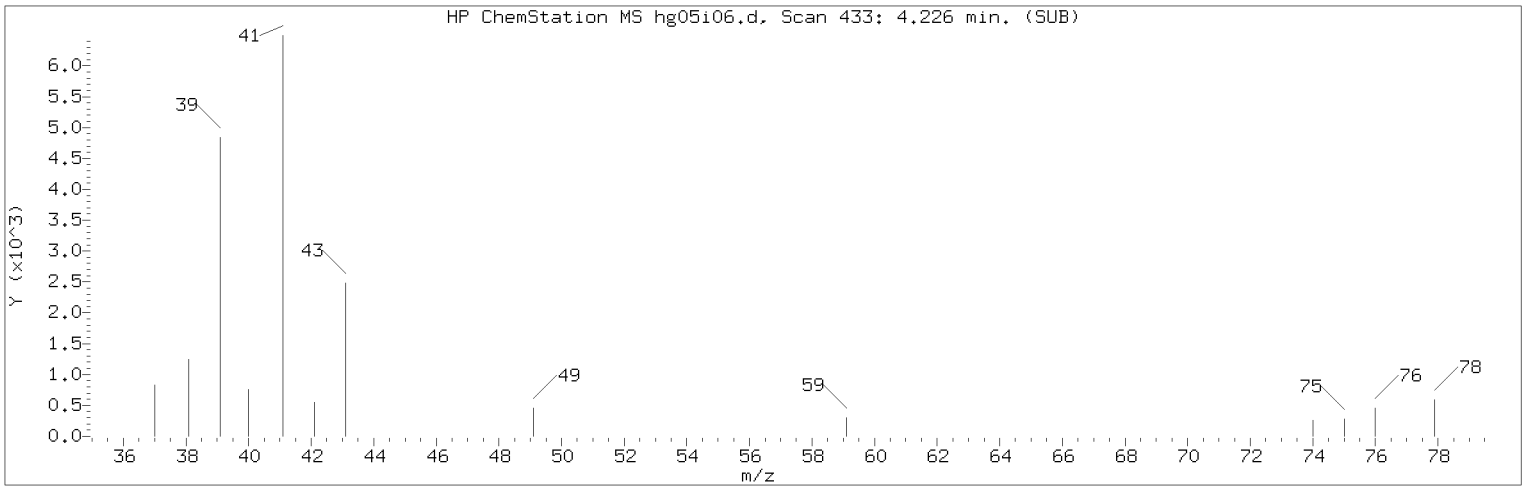
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

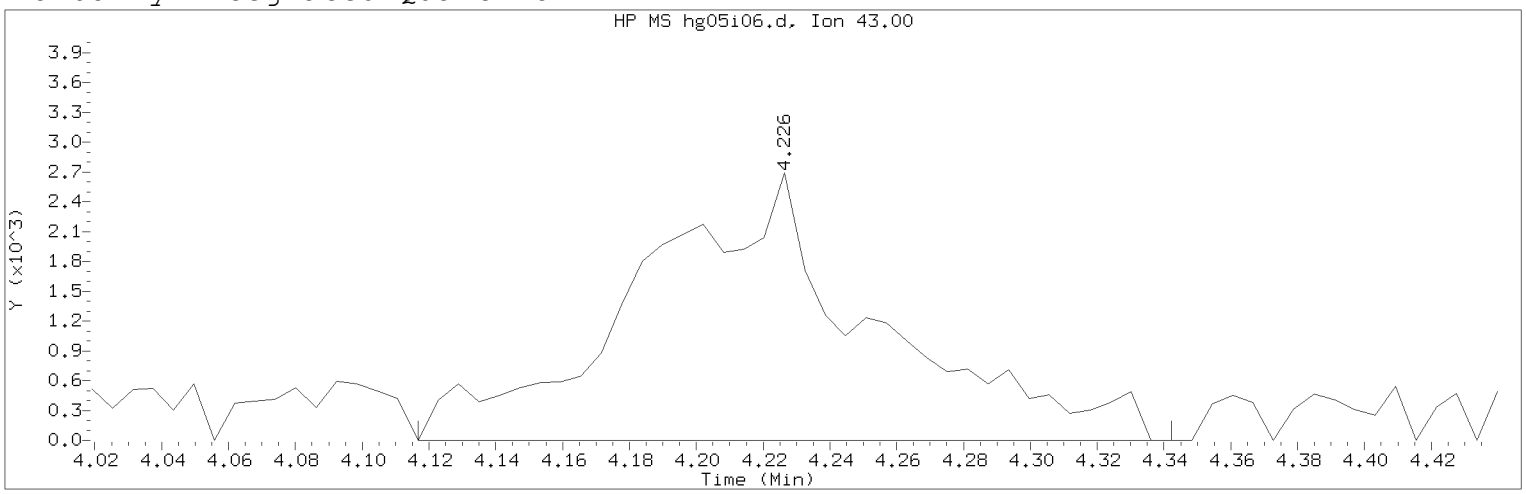
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 359		
Retention Time (minutes)	: 3.775		
Quant Ion	: 43.00		
Area	: 35000		
On-column Amount (ng)	: 5.5161		
Integration start scan	: 343	Integration stop scan:	397
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

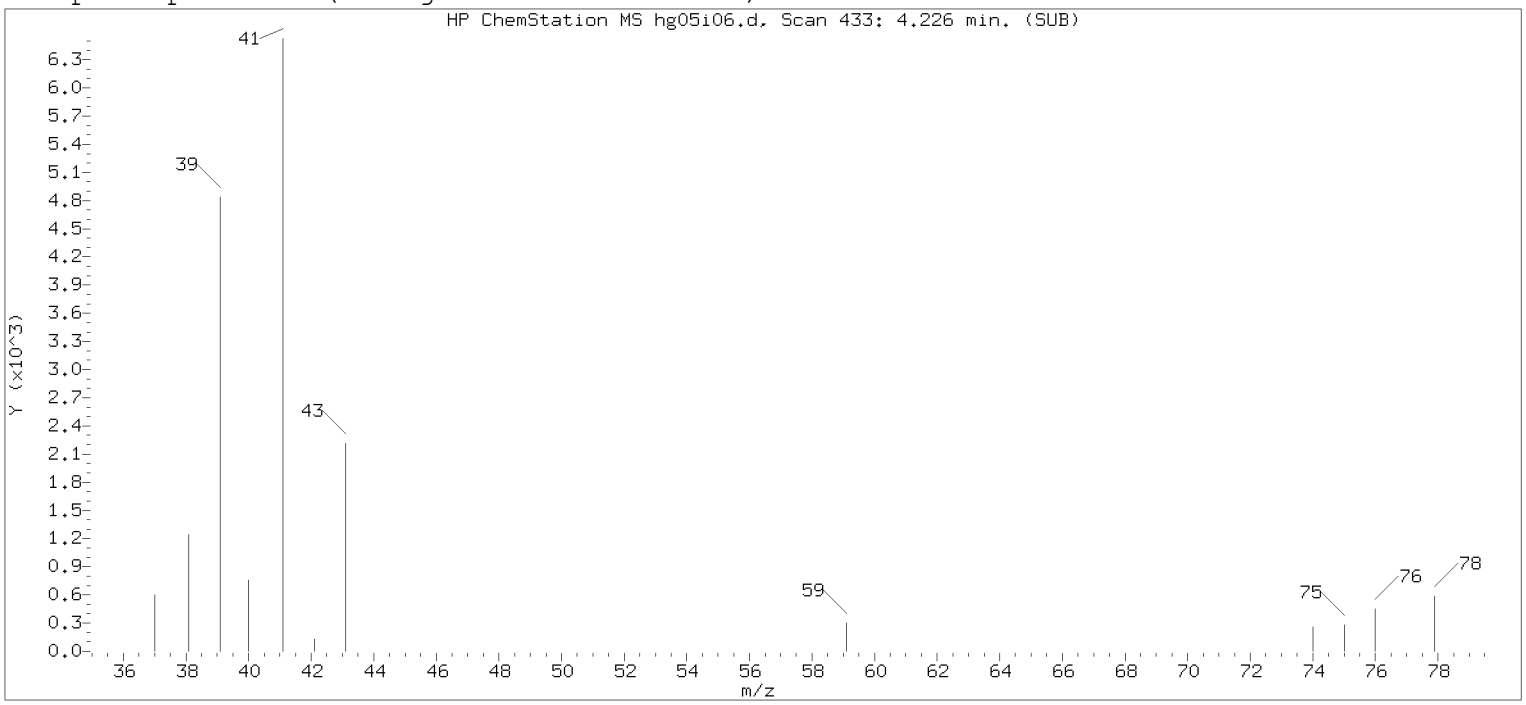
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 433
Retention Time (minutes): 4.226
Quant Ion : 43.00
Area (flag) : 13253M
On-Column Amount (ng) : 0.5935
Integration start scan : 414 Integration stop scan: 451
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

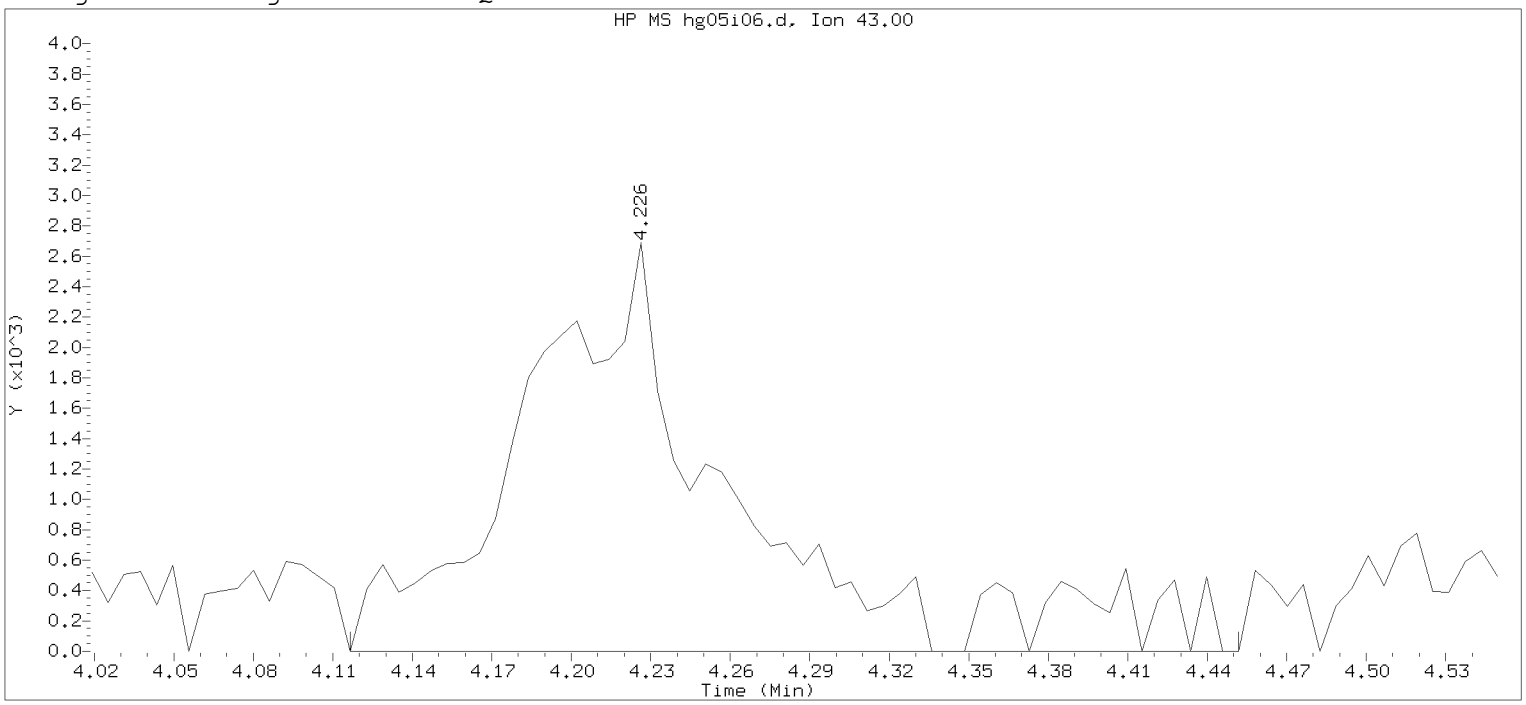
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

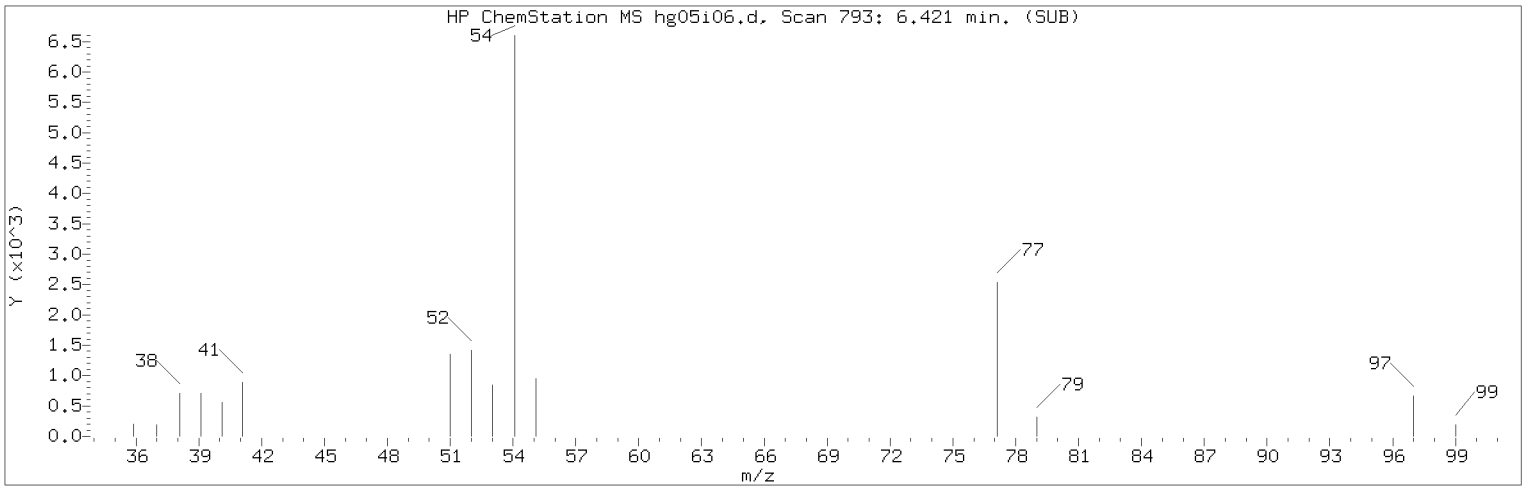
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

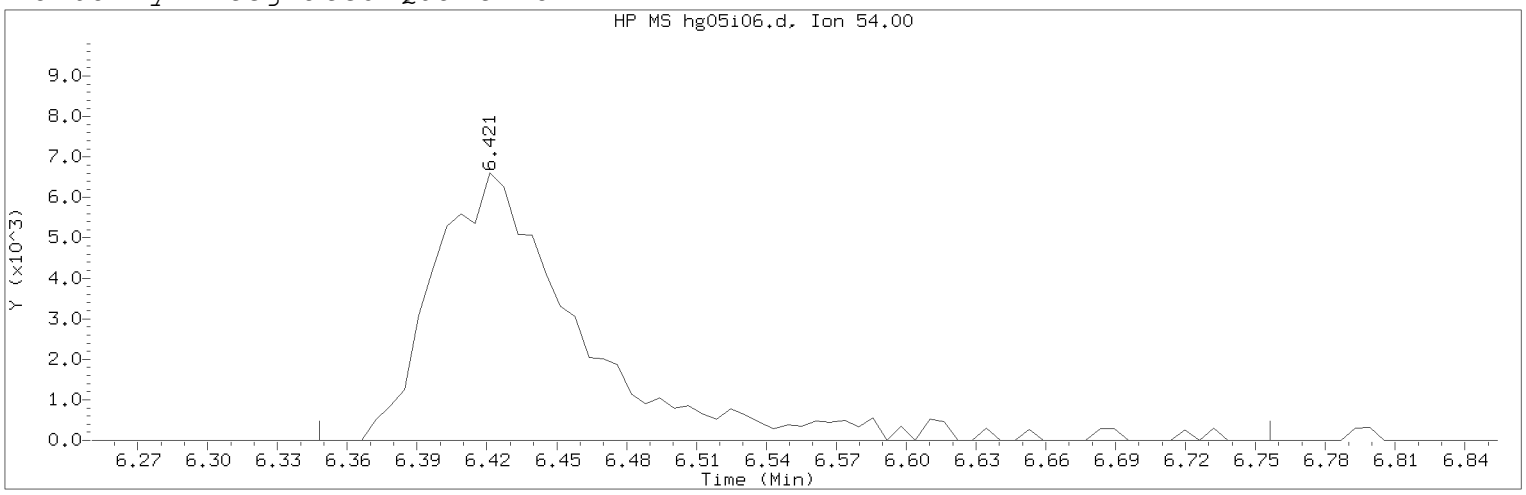
Compound Number	: 21		
Compound Name	: Methyl Acetate		
Scan Number	: 433		
Retention Time (minutes)	: 4.226		
Quant Ion	: 43.00		
Area	: 15007		
On-column Amount (ng)	: 0.7229		
Integration start scan	: 414	Integration stop scan:	469
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. Reason: I am the author of this document

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

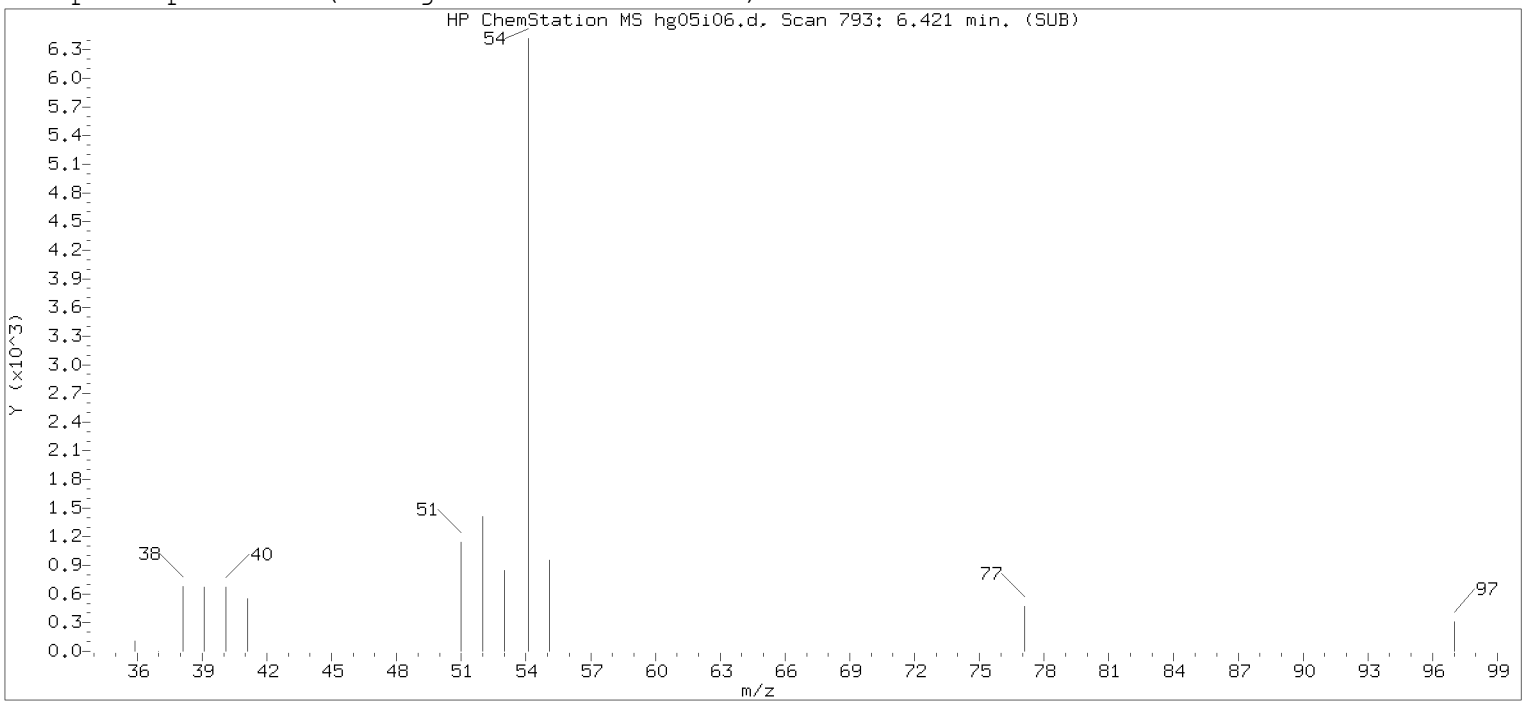
Compound Number : 42
Compound Name : Propionitrile
Scan Number : 793
Retention Time (minutes): 6.421
Quant Ion : 54.00
Area (flag) : 29146M
On-Column Amount (ng) : 9.7634
Integration start scan : 780 Integration stop scan: 847
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

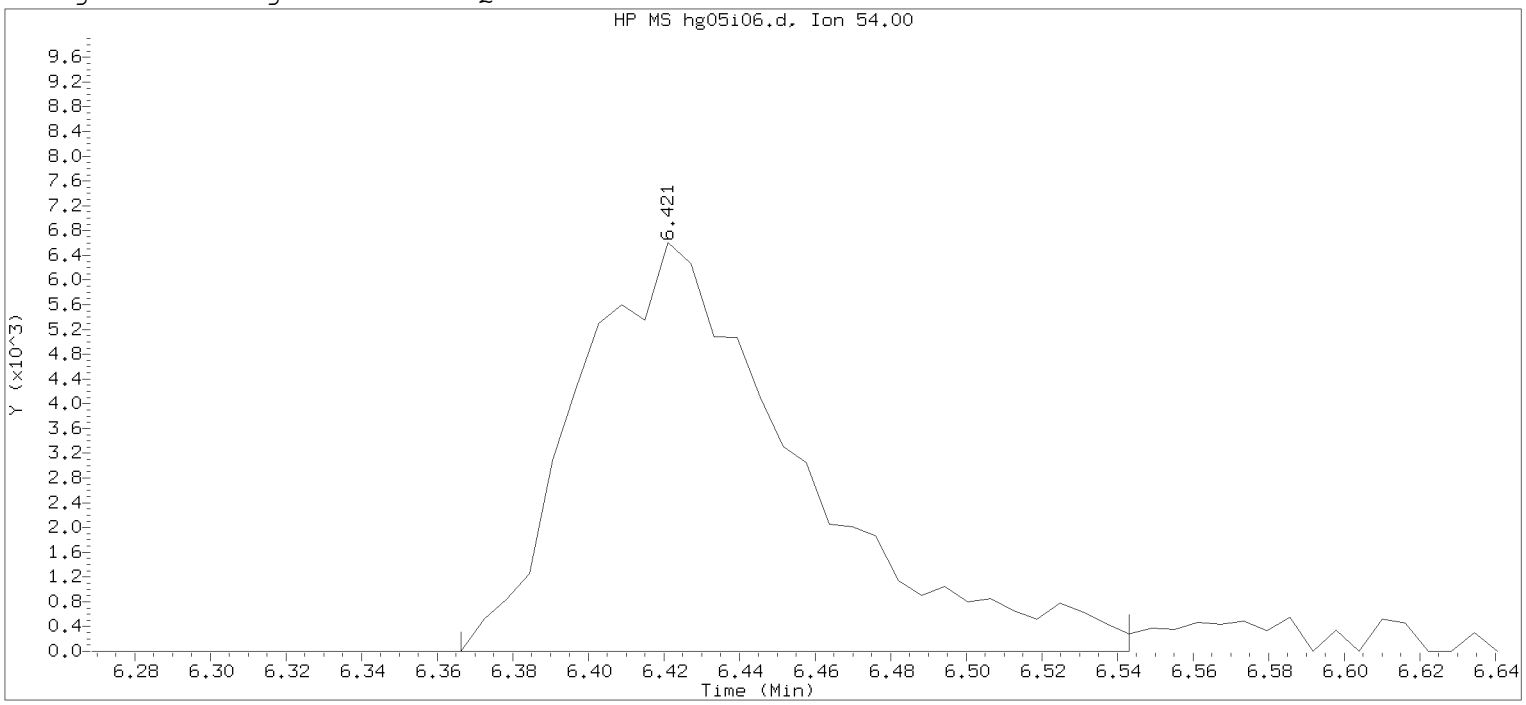
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

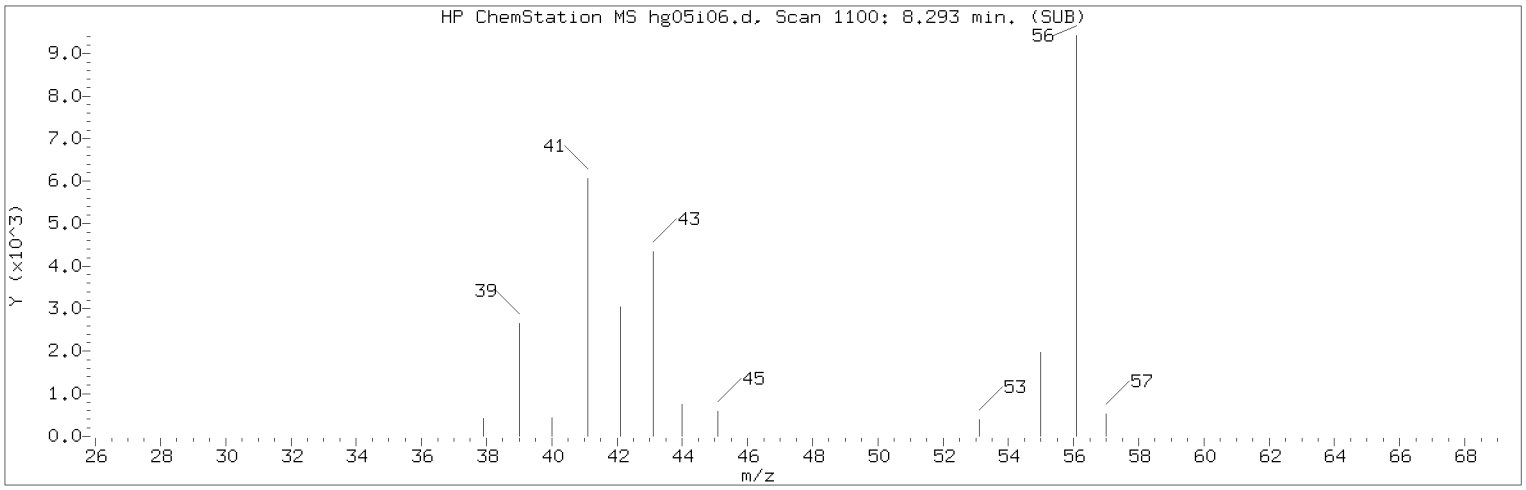
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

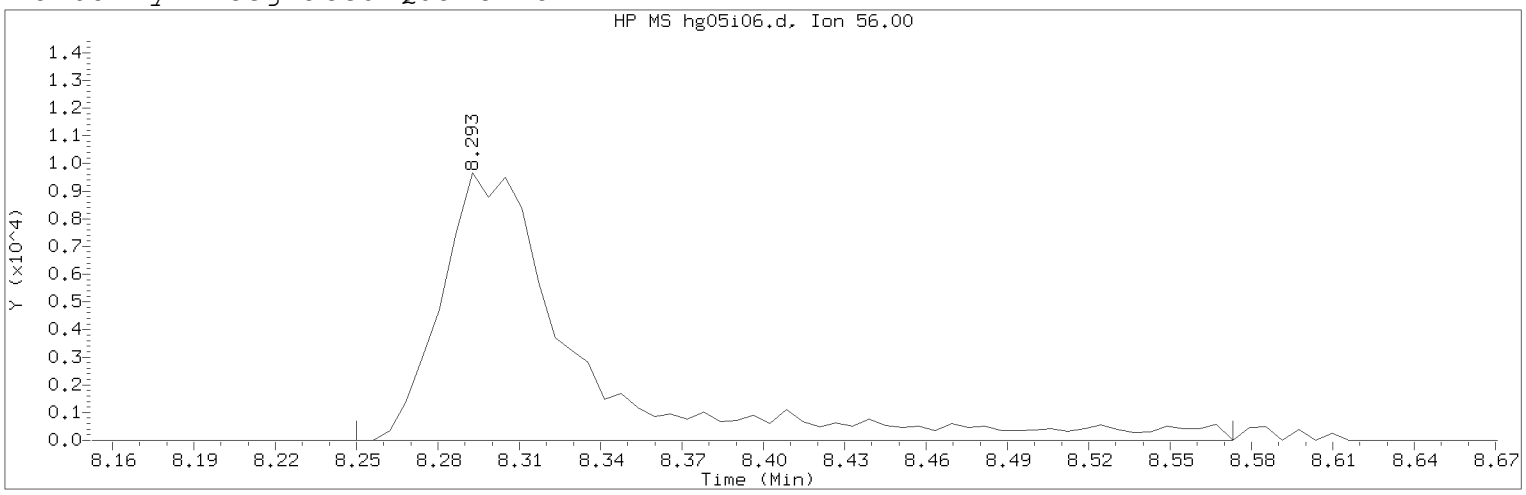
Compound Number	: 42		
Compound Name	: Propionitrile		
Scan Number	: 793		
Retention Time (minutes)	: 6.421		
Quant Ion	: 54.00		
Area	: 26893		
On-column Amount (ng)	: 9.2612		
Integration start scan	: 783	Integration stop scan:	812
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

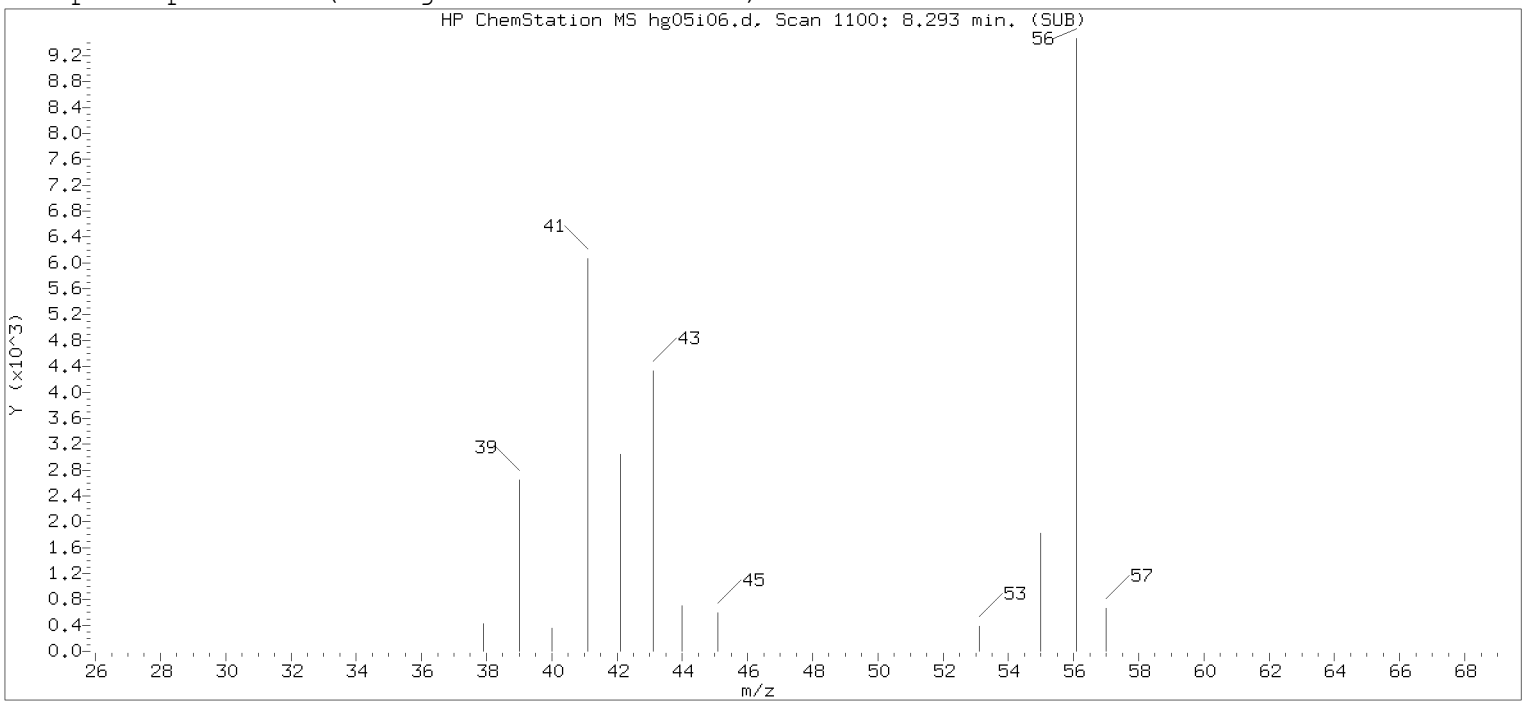
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1100
Retention Time (minutes): 8.293
Quant Ion : 56.00
Area (flag) : 33931M
On-Column Amount (ng) : 50.1729
Integration start scan : 1092 Integration stop scan: 1145
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

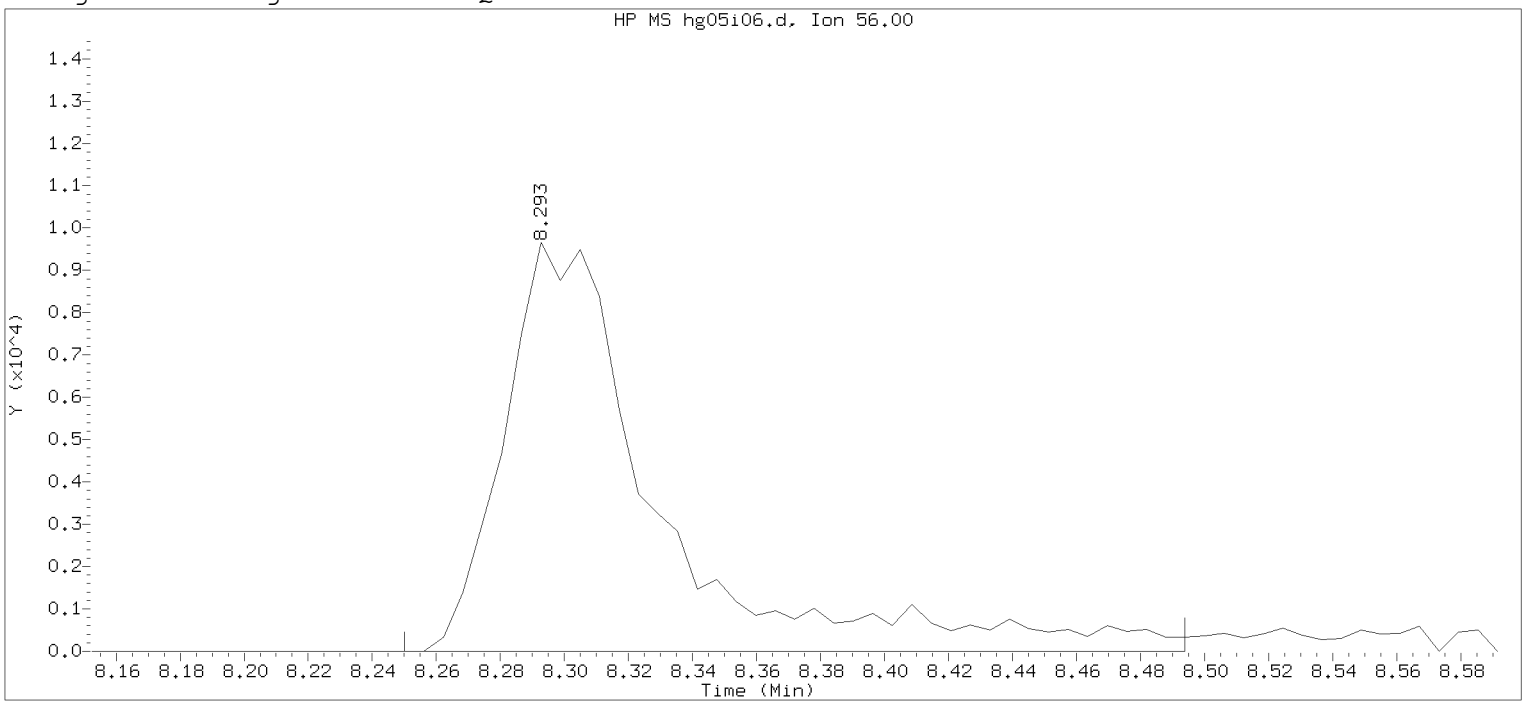
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

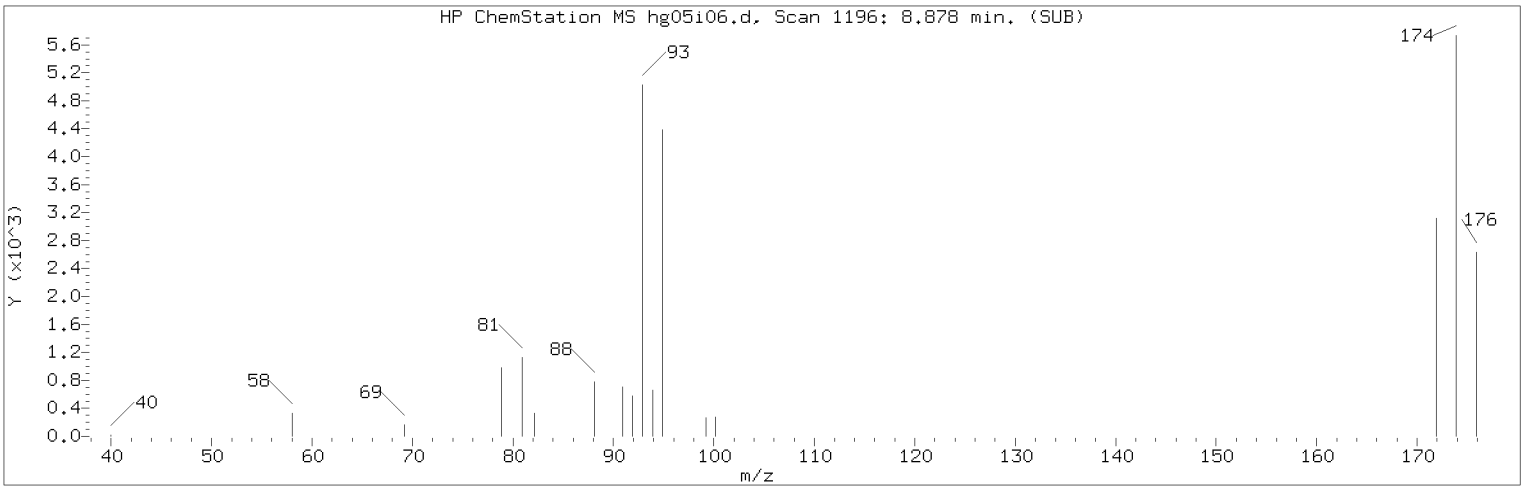
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

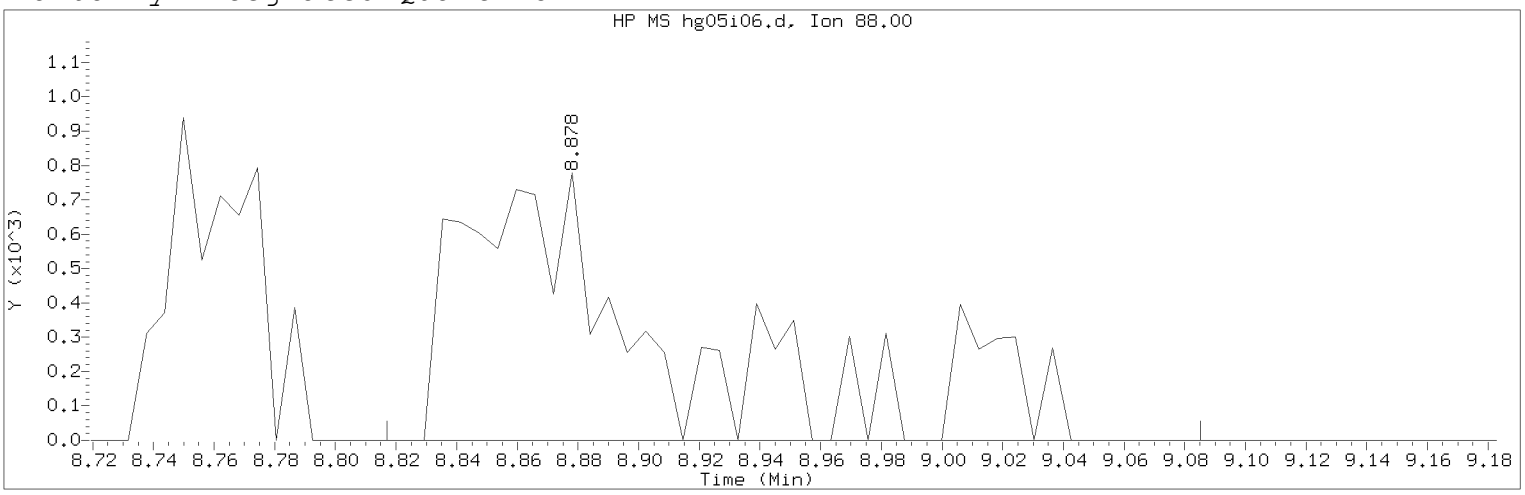
Compound Number	: 65		
Compound Name	: n-Butanol		
Scan Number	: 1100		
Retention Time (minutes)	: 8.293		
Quant Ion	: 56.00		
Area	: 32054		
On-column Amount (ng)	: 48.8712		
Integration start scan	: 1092	Integration stop scan:	1132
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. Reason: I am the author of this document

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

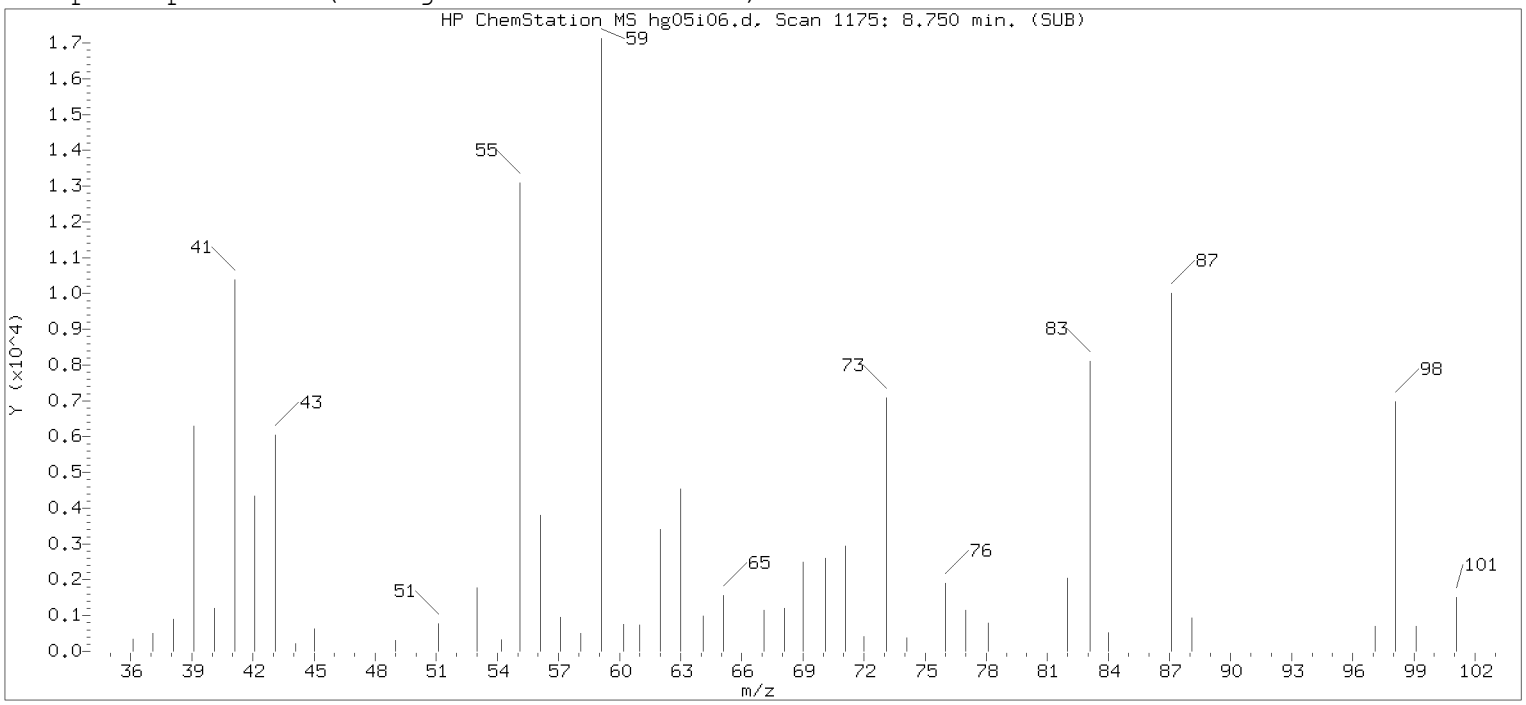
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1196
Retention Time (minutes): 8.878
Quant Ion : 88.00
Area (flag) : 3777M
On-Column Amount (ng) : 23.1124
Integration start scan : 1185 Integration stop scan: 1229
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

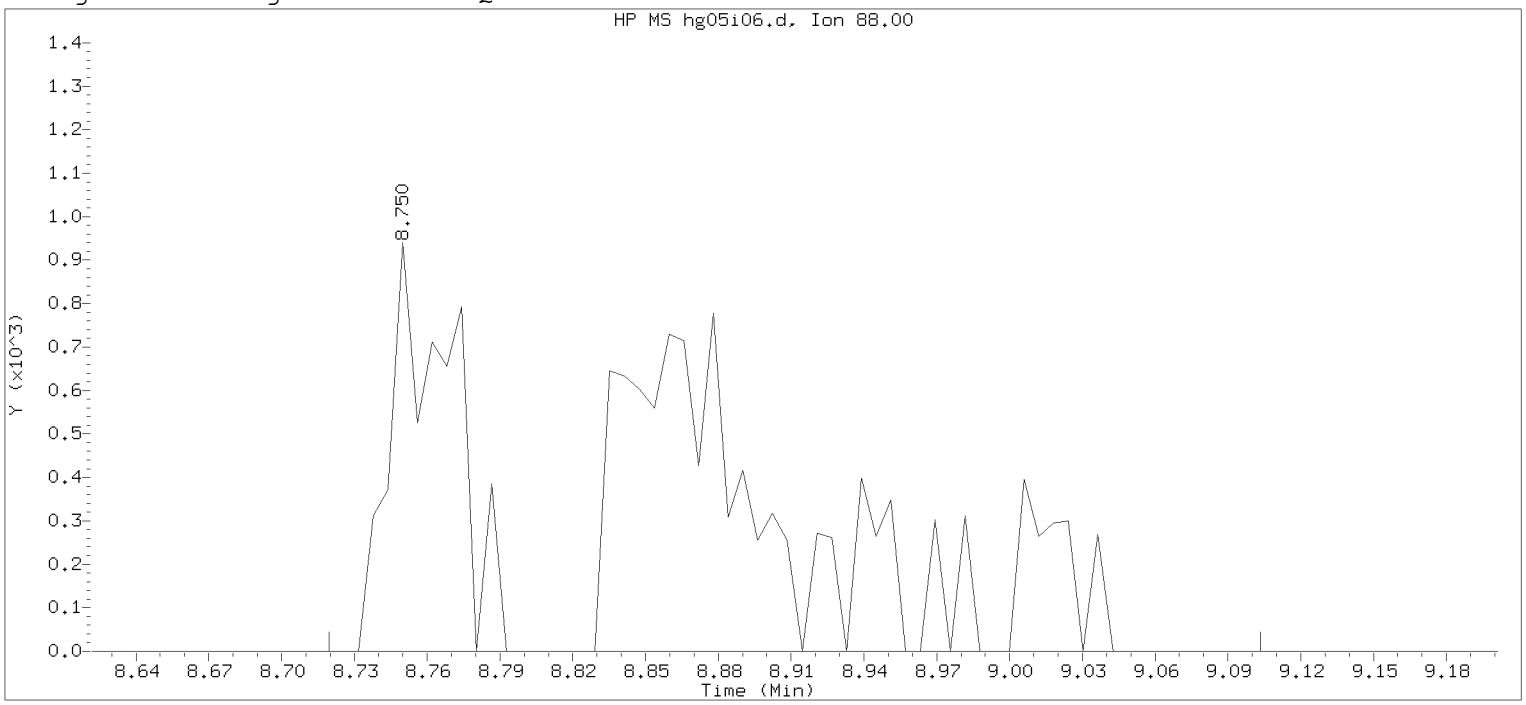
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

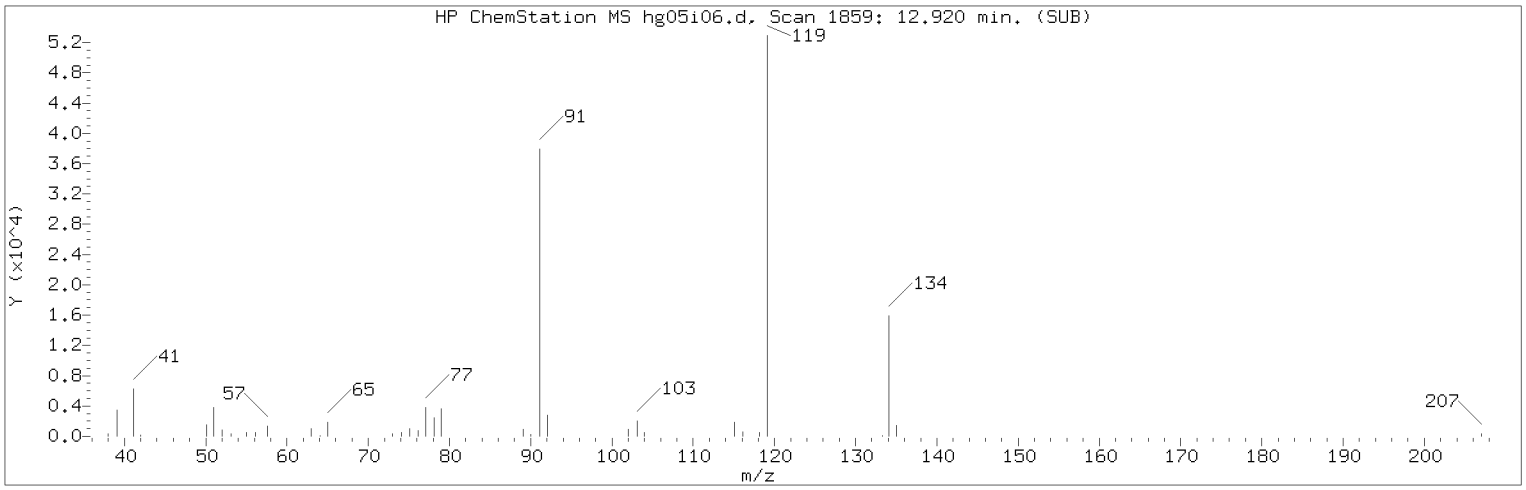
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

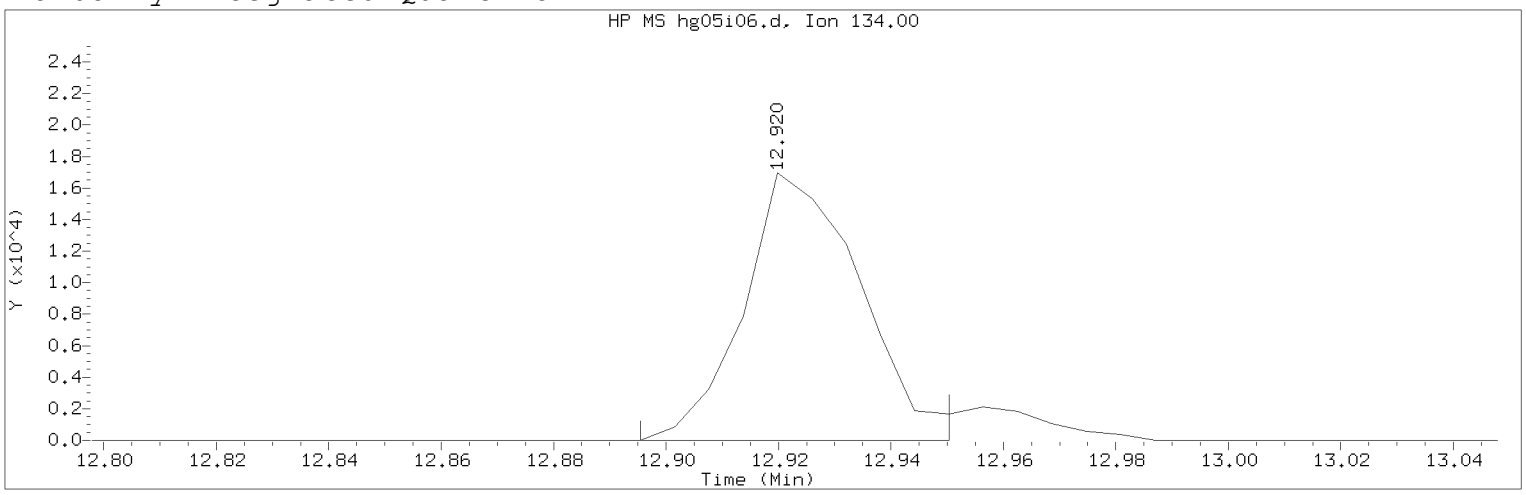
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1175		
Retention Time (minutes)	: 8.750		
Quant Ion	: 88.00		
Area	: 5494		
On-column Amount (ng)	: 29.2530		
Integration start scan	: 1169	Integration stop scan:	1232
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

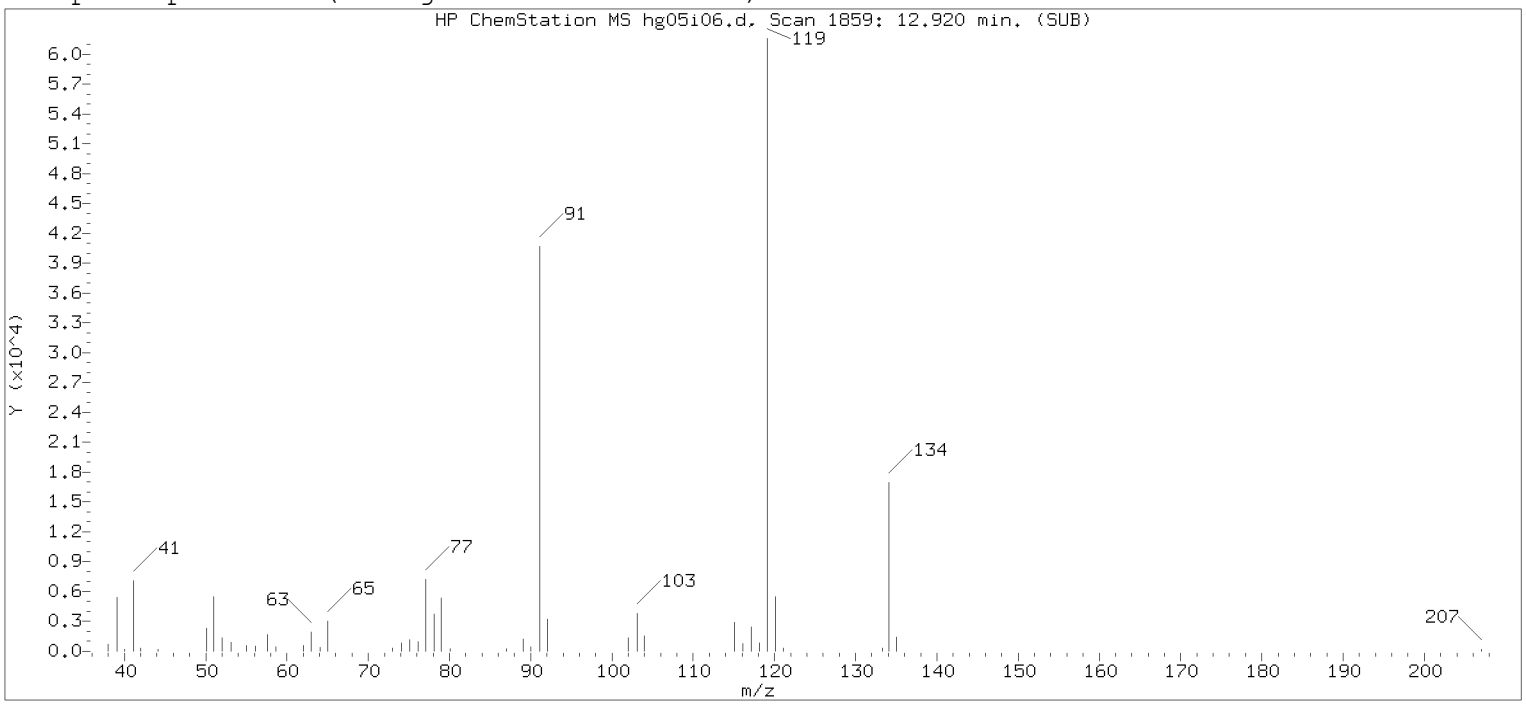
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1859
Retention Time (minutes): 12.920
Quant Ion : 134.00
Area (flag) : 24487M
On-Column Amount (ng) : 0.4889
Integration start scan : 1854 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

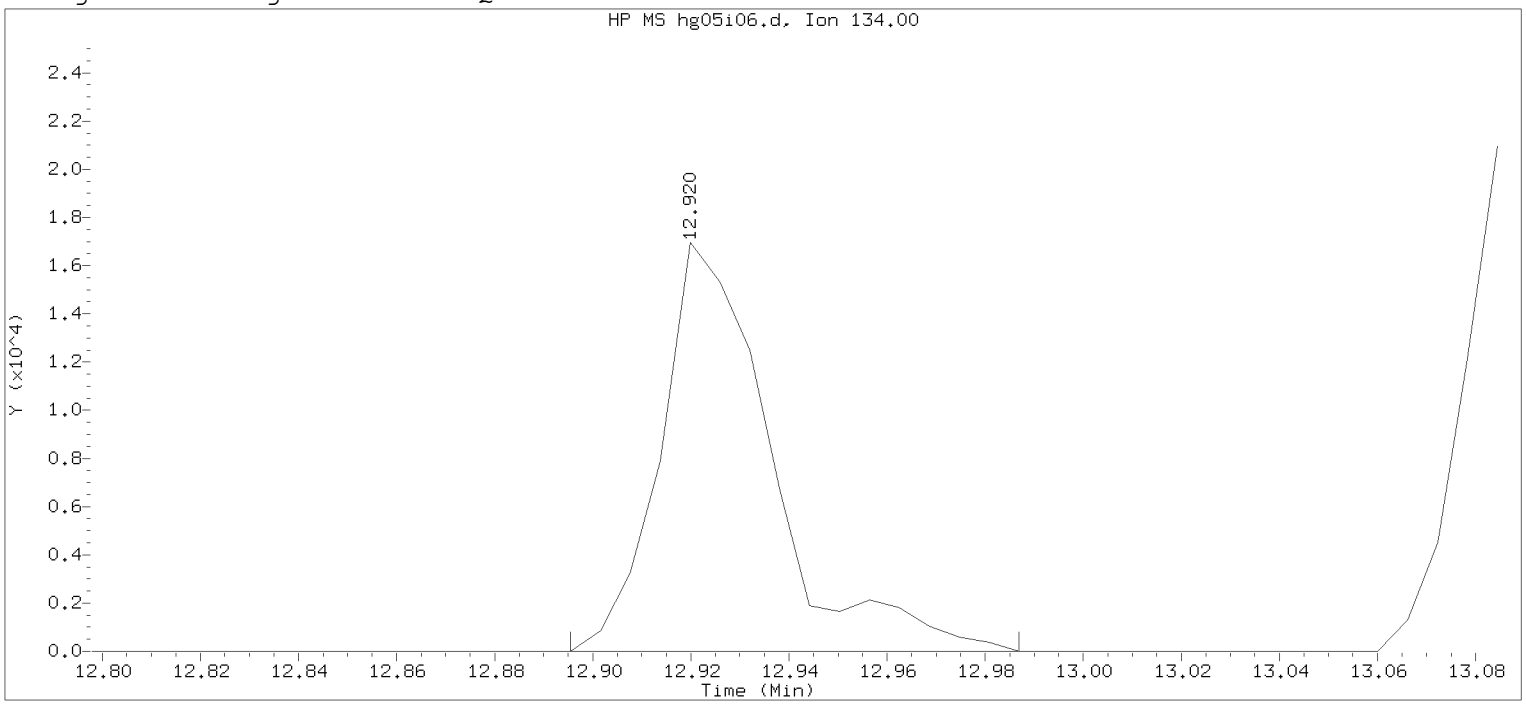
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

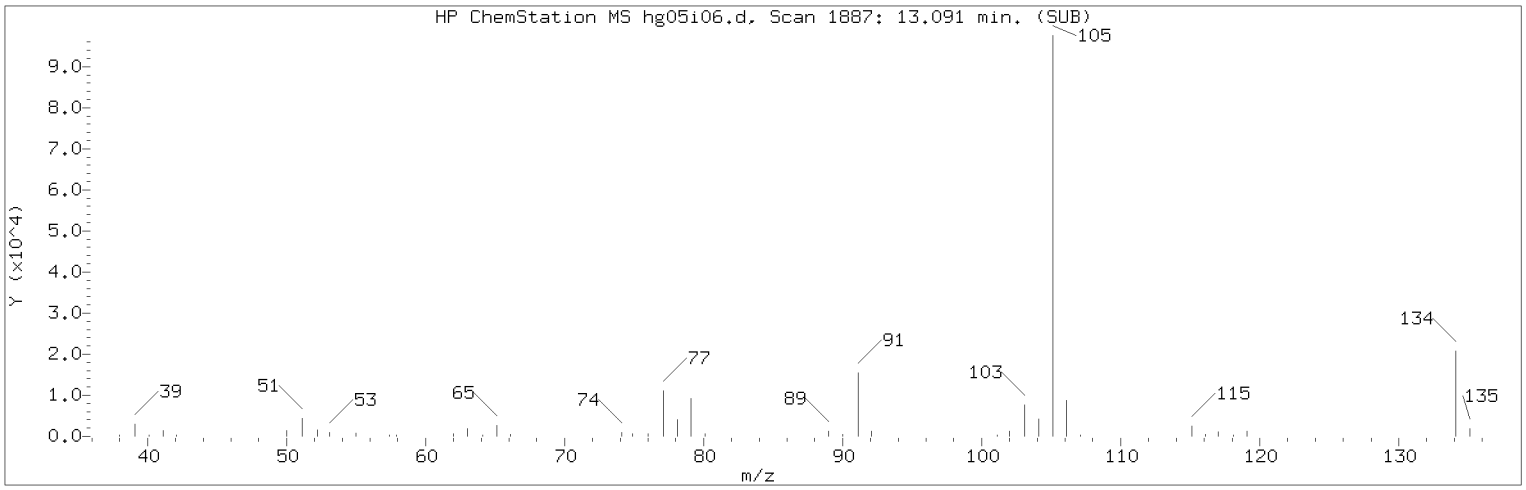
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

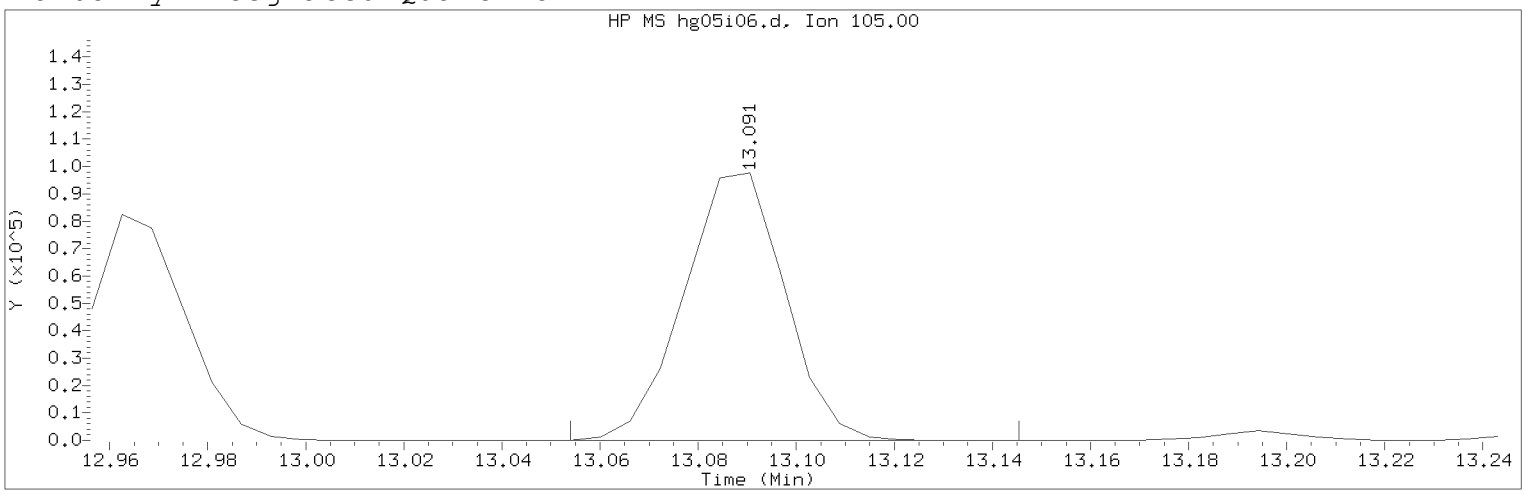
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1859
Retention Time (minutes): 12.920
Quant Ion : 134.00
Area : 26667
On-column Amount (ng) : 0.5257
Integration start scan : 1854 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

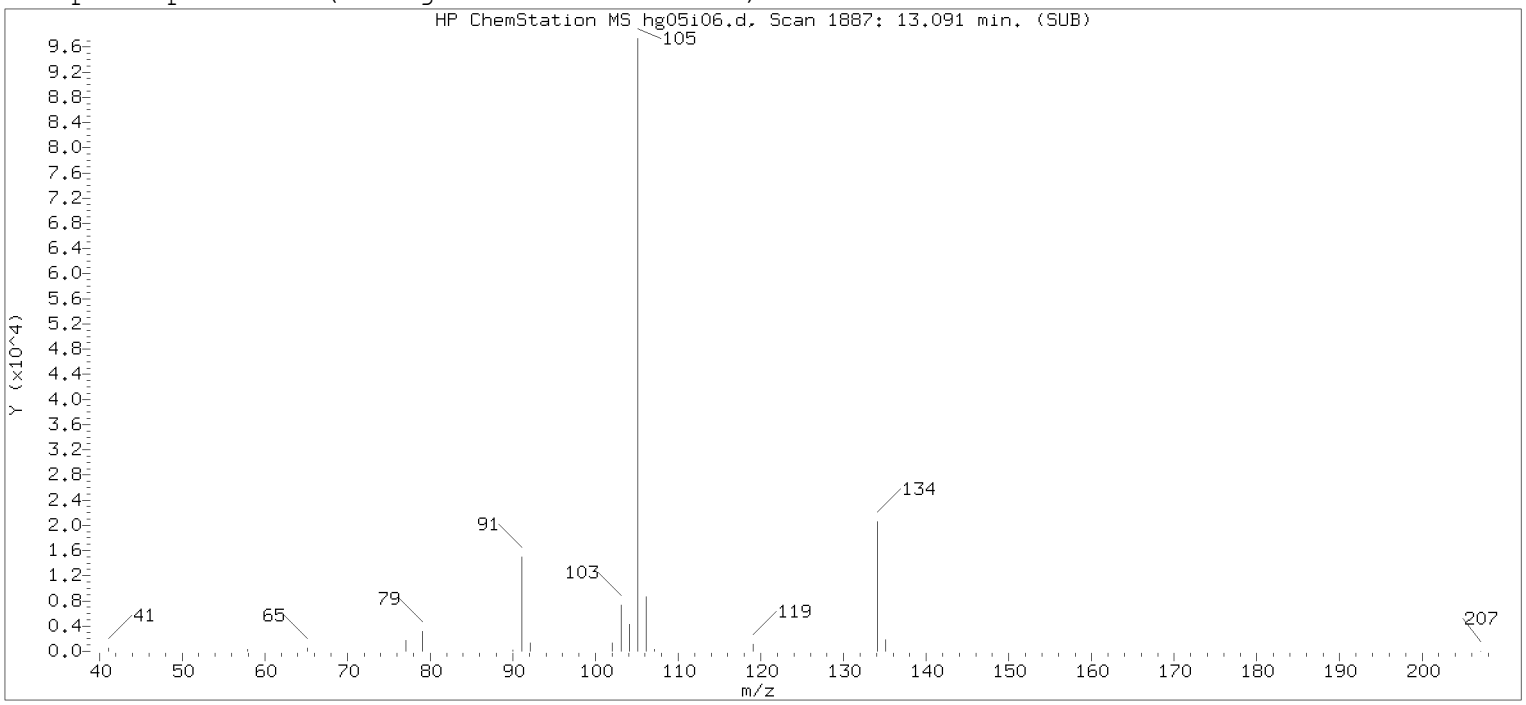
Compound Number : 128
Compound Name : sec-Butylbenzene
Scan Number : 1887
Retention Time (minutes): 13.091
Quant Ion : 105.00
Area (flag) : 139493M
On-Column Amount (ng) : 0.4674
Integration start scan : 1880 Integration stop scan: 1895
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

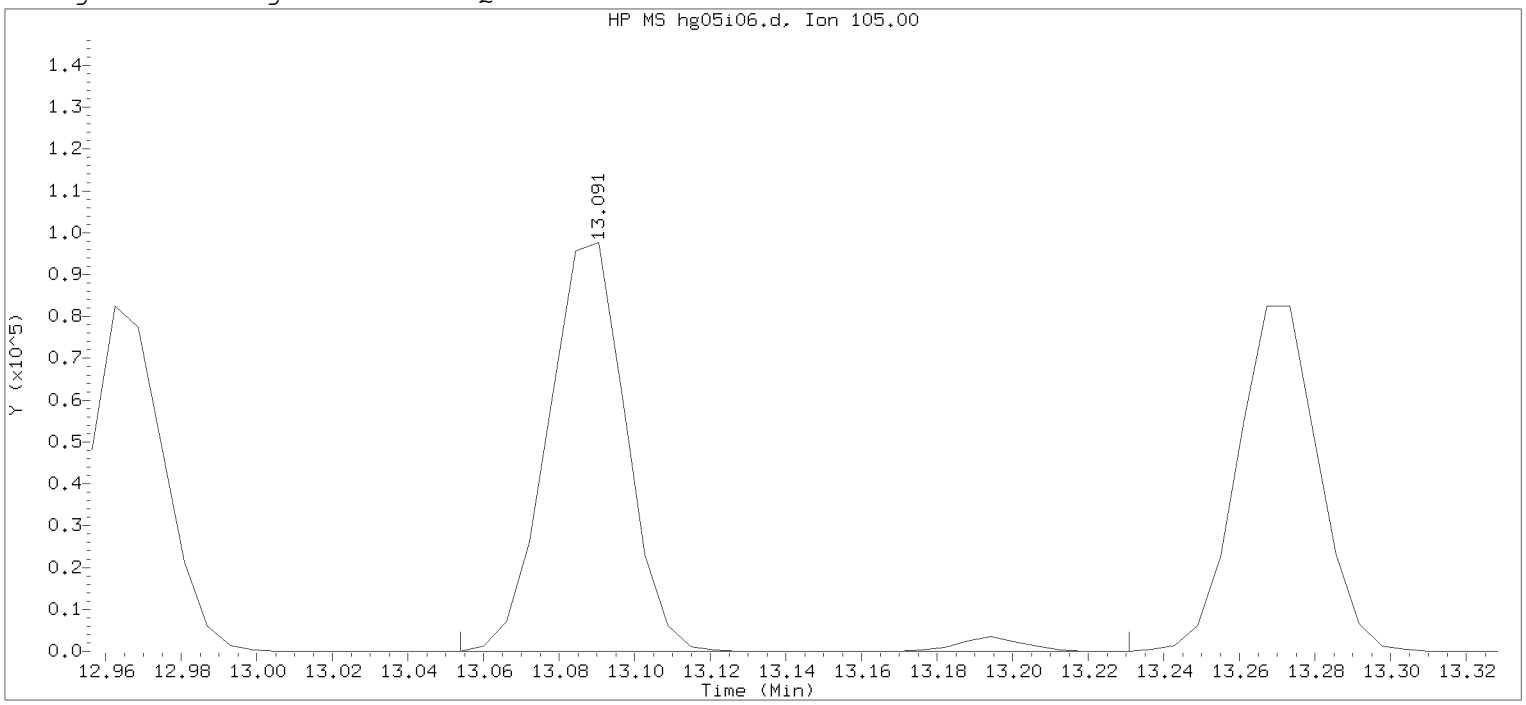
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



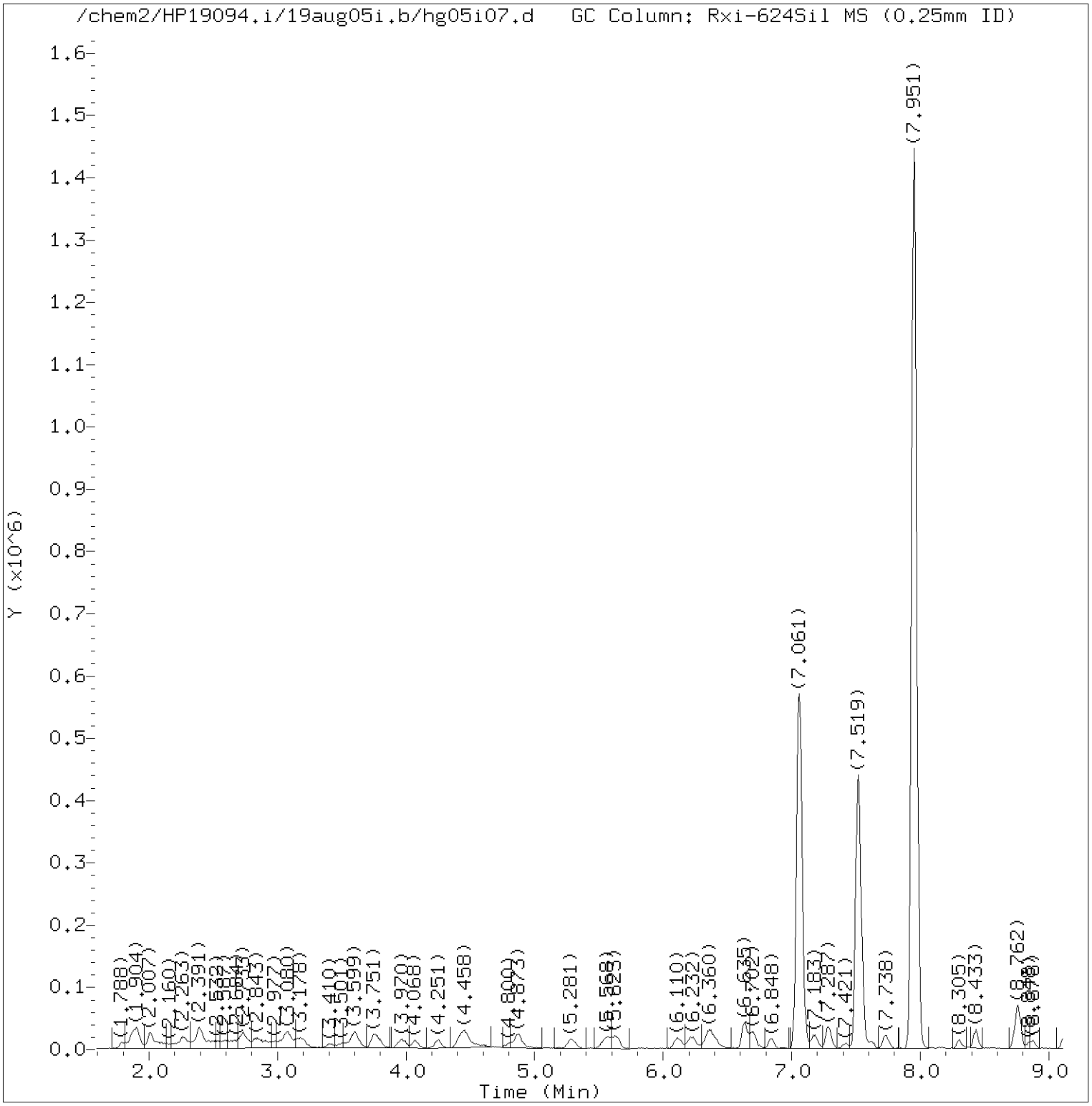
Data File: /chem2/HP19094.i/19aug05i.b/hg05i06.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 19:52 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:10
Date, time and analyst ID of latest file update: 05-Aug-2019 20:10 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compound Number : 128
Compound Name : sec-Butylbenzene
Scan Number : 1887
Retention Time (minutes): 13.091
Quant Ion : 105.00
Area : 143588
On-column Amount (ng) : 0.4804
Integration start scan : 1880 Integration stop scan: 1909
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

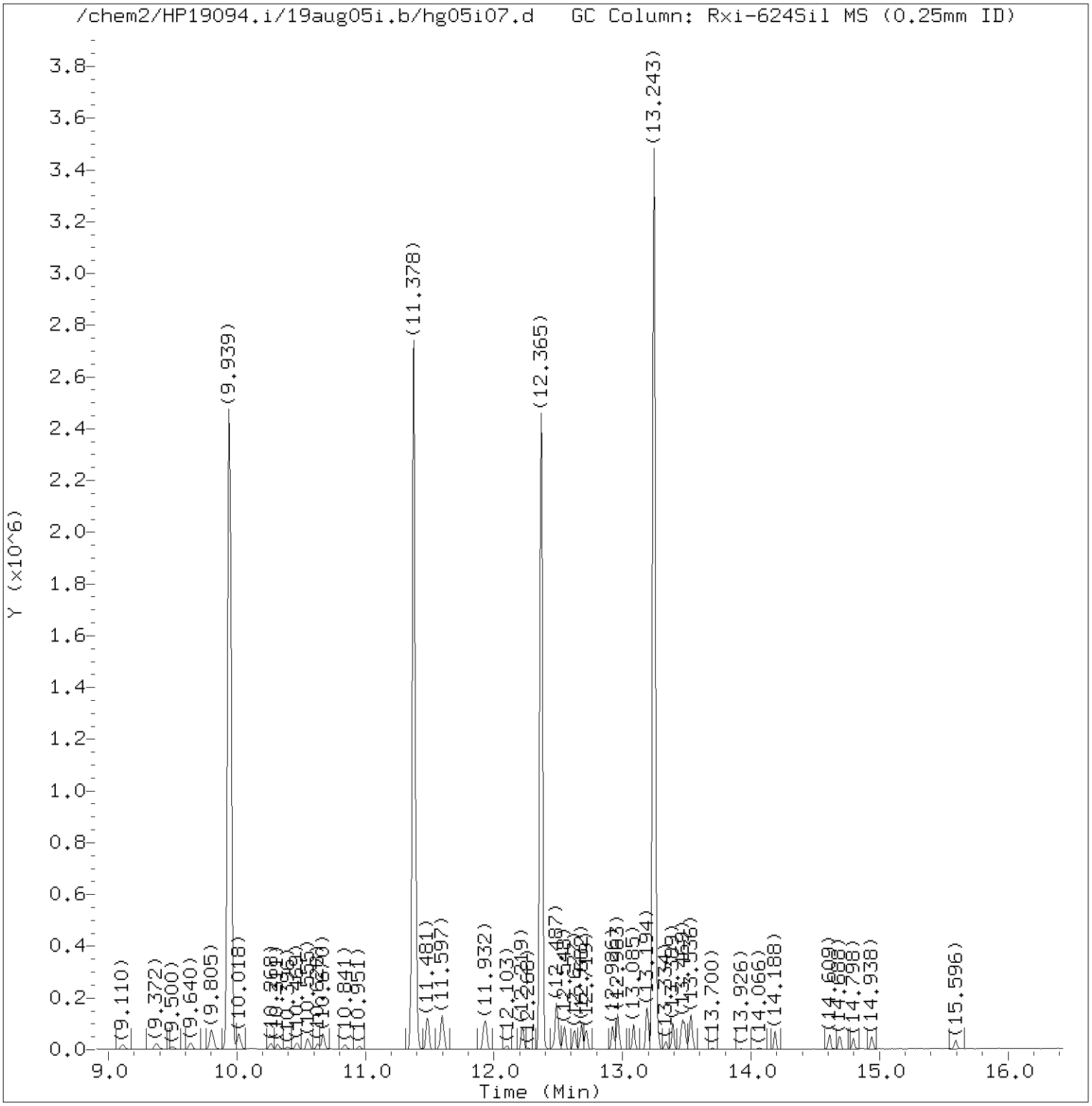
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.062	85	22594	0.223
2) Chloromethane	(2)	2.263	50	16785	0.226
5) Vinyl Chloride	(2)	2.391	62	15796	0.211
6) 1,3-Butadiene	(2)	2.404	39	14563M	0.243
7) Bromomethane	(2)	2.739	94	14196	0.215
8) Chloroethane	(2)	2.843	64	9015	0.206
9) Dichlorofluoromethane	(2)	3.080	67	22447	0.234
10) Trichlorofluoromethane	(2)	3.135	101	25649	0.217
11) Ethyl ether	(2)	3.410	59	6675	0.202
12) Freon 123a	(2)	3.513	67	12728	0.211
13) Acrolein	(1)	3.599	56	53483	10.546
15) 1,1-Dichloroethene	(2)	3.745	96	8765	0.203
16) Freon 113	(2)	3.788	101	10938	0.203
14) Acetone	(1)	3.788	43	21263M	3.006
17) Methyl Iodide	(2)	3.958	142	21804	0.211
18) Carbon Disulfide	(2)	4.068	76	31323M	0.218
21) Methyl Acetate	(1)	4.239	43	6425M	0.294
22) Allyl Chloride	(2)	4.251	41	16773	0.229
23) Methylene Chloride	(2)	4.452	84	13304	0.259
26)*t-Butyl Alcohol-d10	(1)	4.458	65	106411M	50.000
28) t-Butyl Alcohol	(1)	4.604	59	9154M	4.612
29) Acrylonitrile	(1)	4.806	53	8324	1.016
30) Methyl Tertiary Butyl Ether	(2)	4.860	73	22786	0.204
31) trans-1,2-Dichloroethene	(2)	4.879	96	10835	0.219
32) n-Hexane	(2)	5.275	57	15897M	0.211
33) 1,1-Dichloroethane	(2)	5.531	63	17916	0.204
34) di-Isopropyl Ether	(2)	5.574	45	31233	0.206
35) 2-Chloro-1,3-Butadiene	(2)	5.635	53	16905	0.208
40) 1,2-Dichloroethene (Total)	(2)		96	22451	0.427
37) Ethyl t-butyl ether	(2)	6.110	59	31384	0.218
38) 2-Butanone	(1)	6.330	43	26424	2.312
39) cis-1,2-Dichloroethene	(2)	6.360	96	11616	0.209
41) 2,2-Dichloropropane	(2)	6.391	77	16656	0.209
42) Propionitrile	(1)	6.421	54	12266	4.196
45) Methacrylonitrile	(1)	6.635	67	24988	2.146
47) Bromochloromethane	(2)	6.702	128	5177	0.196
48) Tetrahydrofuran	(1)	6.708	71	6862	2.167
49) Chloroform	(2)	6.848	83	19452	0.211

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	532793	10.121
50)$Dibromofluoromethane	(2)	7.061	111	533901	9.981
51) 1,1,1-Trichloroethane	(2)	7.080	97	17396	0.203
52) Cyclohexane	(2)	7.171	56	18061	0.203
52) Cyclohexane	(2)	7.183	84	16545	0.201
52) Cyclohexane	(2)	7.177	69	6210	0.217
55) 1,1-Dichloropropene	(2)	7.281	75	13902	0.200
54) Carbon Tetrachloride	(2)	7.299	117	17309	0.216
56) Isobutyl Alcohol	(1)	7.415	41	10727	13.204
57)$1,2-Dichloroethane-d4	(2)	7.519	102	97336	10.056
57)$1,2-Dichloroethane-d4	(2)	7.519	65	467744	9.987
57)$1,2-Dichloroethane-d4	(2)	7.512	104	61447	9.908
58) Benzene	(2)	7.549	78	40636	0.208
59) 1,2-Dichloroethane	(2)	7.622	62	12271	0.223
60) t-Amyl methyl ether	(2)	7.738	73	27241	0.210
63)*Fluorobenzene	(2)	7.951	96	1935879	10.000
62) n-Heptane	(2)	7.957	43	16163	0.200
65) n-Butanol	(1)	8.299	56	14585M	22.023
67) Trichloroethene	(2)	8.433	95	11823	0.215
69) Methylcyclohexane	(2)	8.744	83	17571	0.182
70) 1,2-Dichloropropane	(2)	8.768	63	10400	0.216
71) Methyl Methacrylate	(1)	8.835	69	4922	0.208
72) 1,4-Dioxane	(1)	8.854	88	839M	5.243
73) Dibromomethane	(2)	8.878	93	5630	0.218
74) Bromodichloromethane	(2)	9.116	83	13772	0.207
76) 2-Nitropropane	(1)	9.372	41	17696	2.103
80) cis-1,3-Dichloropropene	(2)	9.640	75	14742	0.195
81) 4-Methyl-2-Pentanone	(1)	9.805	43	62784	2.167
82)$Toluene-d8	(3)	9.939	98	1972270	10.124
82)$Toluene-d8	(3)	9.939	100	1246554	10.005
83) Toluene	(3)	10.012	92	27843	0.215
85) 1,3-Dichloropropene (total)	(3)		75	28078	0.403
84) trans-1,3-Dichloropropene	(3)	10.268	75	13336	0.208
86) Ethyl Methacrylate	(3)	10.311	69	10089	0.197
88) 1,1,2-Trichloroethane	(3)	10.469	97	7728	0.222
89) Tetrachloroethene	(3)	10.548	166	13846	0.213
90) 1,3-Dichloropropane	(3)	10.628	76	12072	0.209
91) 2-Hexanone	(1)	10.670	43	44302	2.177

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$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.835	129	9907	0.203
95) 1,2-Dibromoethane	(3)	10.951	107	7370	0.211
96) 1-Chlorohexane	(3)	11.378	91	18273	0.231
97)*Chlorobenzene-d5	(3)	11.378	117	1526049	10.000
98) Chlorobenzene	(3)	11.402	112	30365	0.207
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	11039	0.201
100) Ethylbenzene	(3)	11.487	91	52856	0.206
101) m+p-Xylene	(3)	11.597	106	43243	0.425
105) Xylene (Total)	(3)		106	63768	0.632
104) o-Xylene	(3)	11.926	106	20525	0.206
106) Styrene	(3)	11.938	104	32938	0.204
107) Bromoform	(3)	12.097	173	6192	0.204
108) Isopropylbenzene	(3)	12.225	105	53532	0.202
111)$4-Bromofluorobenzene	(3)	12.365	95	711298	9.984
111)$4-Bromofluorobenzene	(3)	12.371	174	676091	9.925
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	8771	0.211
114) Bromobenzene	(4)	12.487	156	13613	0.210
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	24183	2.009
116) 1,2,3-Trichloropropane	(4)	12.518	110	2260	0.196
117) n-Propylbenzene	(4)	12.548	91	63685	0.208
119) 2-Chlorotoluene	(4)	12.627	126	13143	0.209
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	45908	0.206
122) 4-Chlorotoluene	(4)	12.719	126	13758	0.213
125) tert-Butylbenzene	(4)	12.926	134	9960M	0.202
126) Pentachloroethane	(4)	12.963	167	9006	0.198
127) 1,2,4-Trimethylbenzene	(4)	12.963	105	46544	0.201
128) sec-Butylbenzene	(4)	13.085	105	59861M	0.204
131) 1,3-Dichlorobenzene	(4)	13.188	146	25172	0.199
132) p-Isopropyltoluene	(4)	13.194	119	50939	0.201
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	848872	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	26496	0.211
135) 1,2,3-Trimethylbenzene	(4)	13.273	120	22502	0.217
136) Benzyl Chloride	(4)	13.334	126	3860	0.191
138) n-Butylbenzene	(4)	13.487	92	24213	0.194
139) 1,2-Dichlorobenzene	(4)	13.523	146	22856	0.201
143) 1,2-Dibromo-3-chloropropane	(1)	14.054	155	1305	0.193
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	19211	0.196
145) 1,2,4-Trichlorobenzene	(4)	14.615	180	15496	0.189

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$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

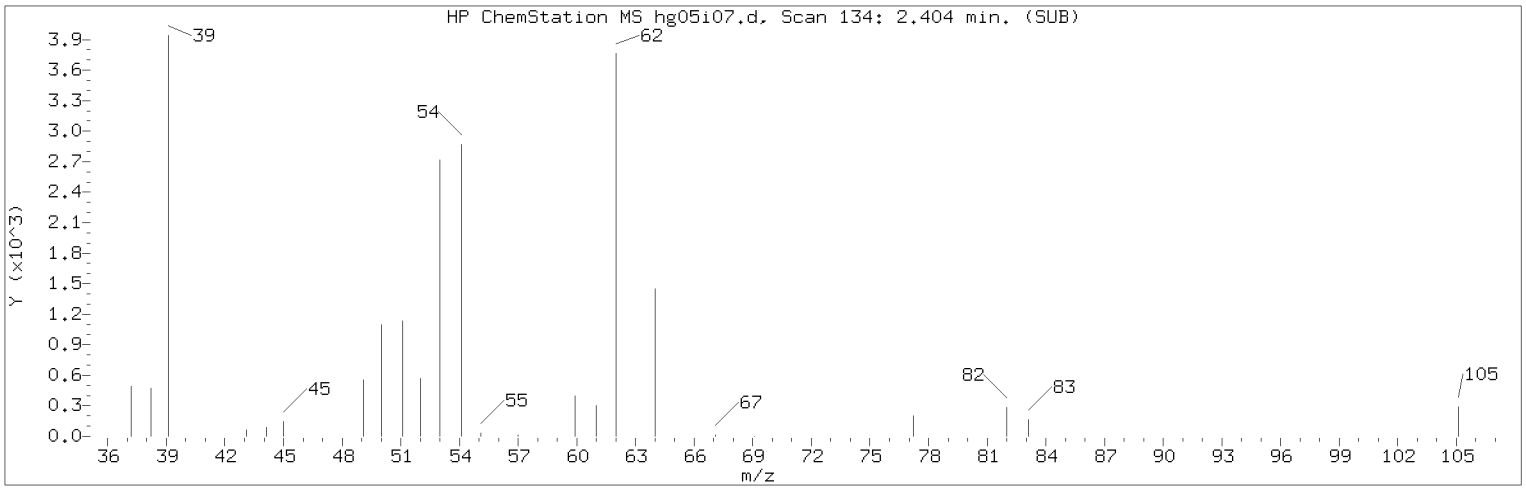
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

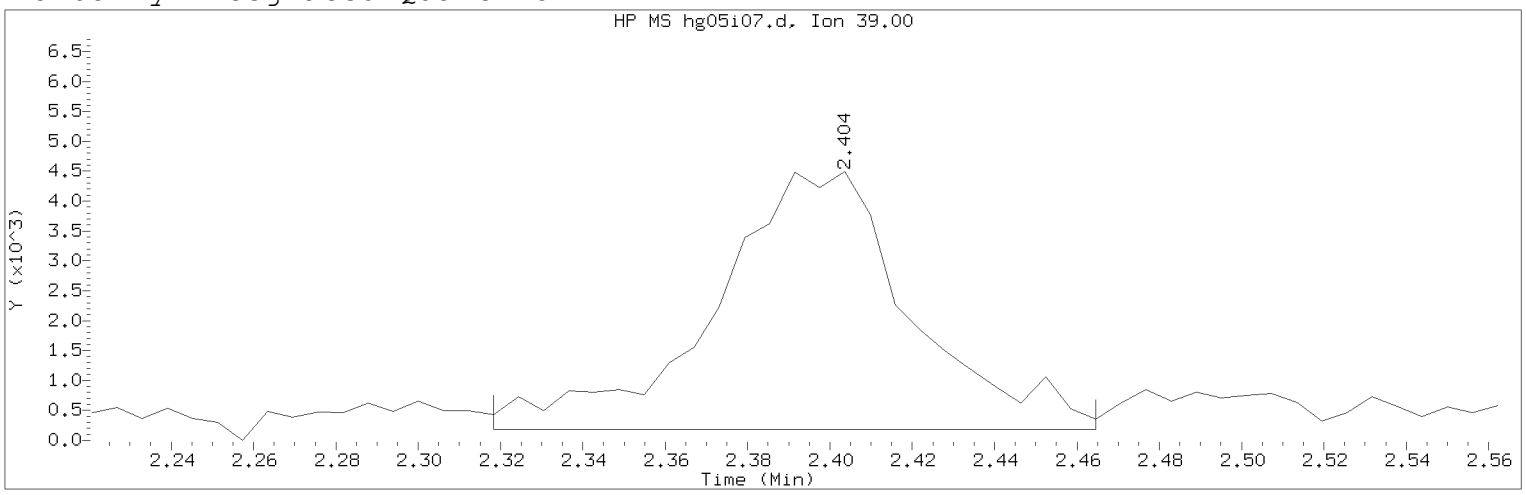
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.694	225	8308	0.196
147) Naphthalene	(4)	14.798	128	30035	0.206
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	14849	0.207

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

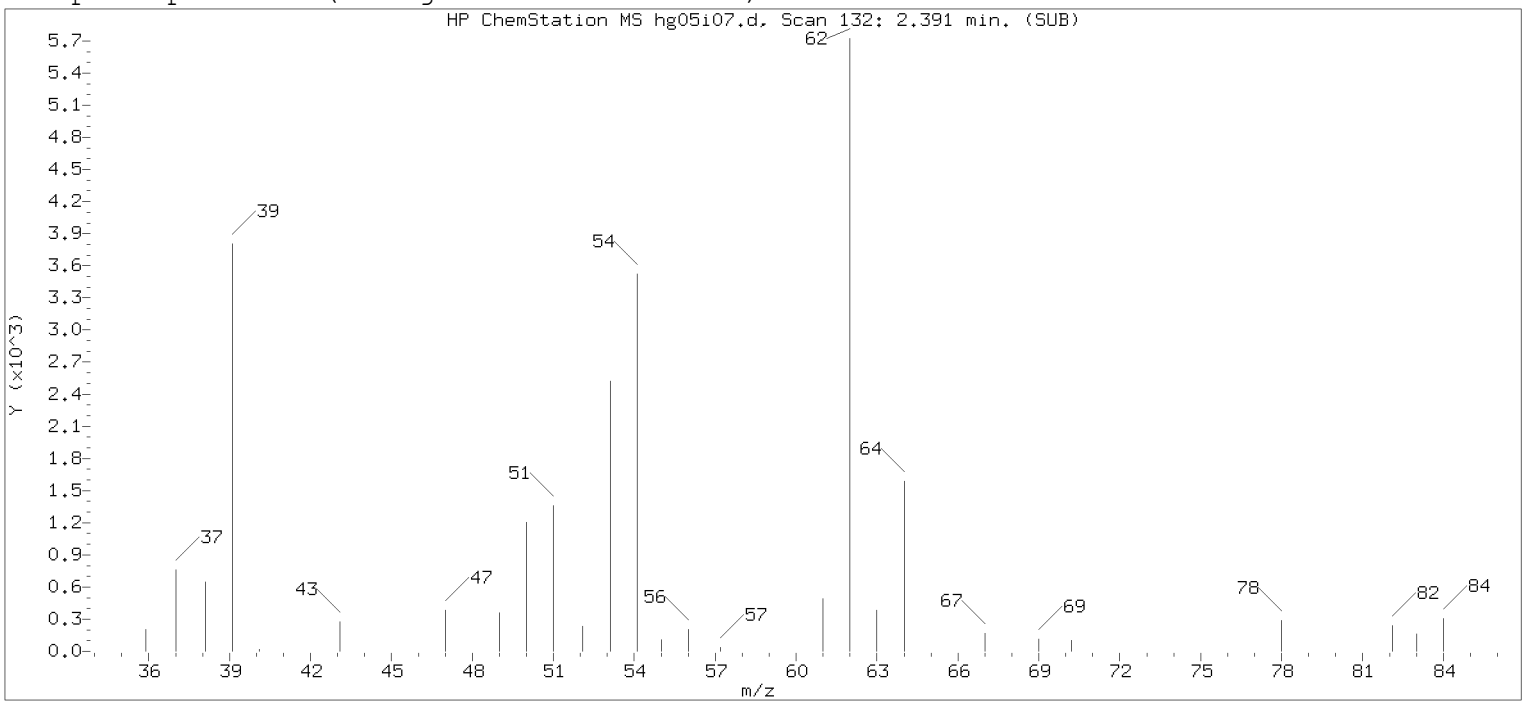
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 134
Retention Time (minutes): 2.404
Quant Ion : 39.00
Area (flag) : 14563M
On-Column Amount (ng) : 0.2430
Integration start scan : 119 Integration stop scan: 143
Y at integration start : 177 Y at integration end: 177

Reason for manual integration: improper integration

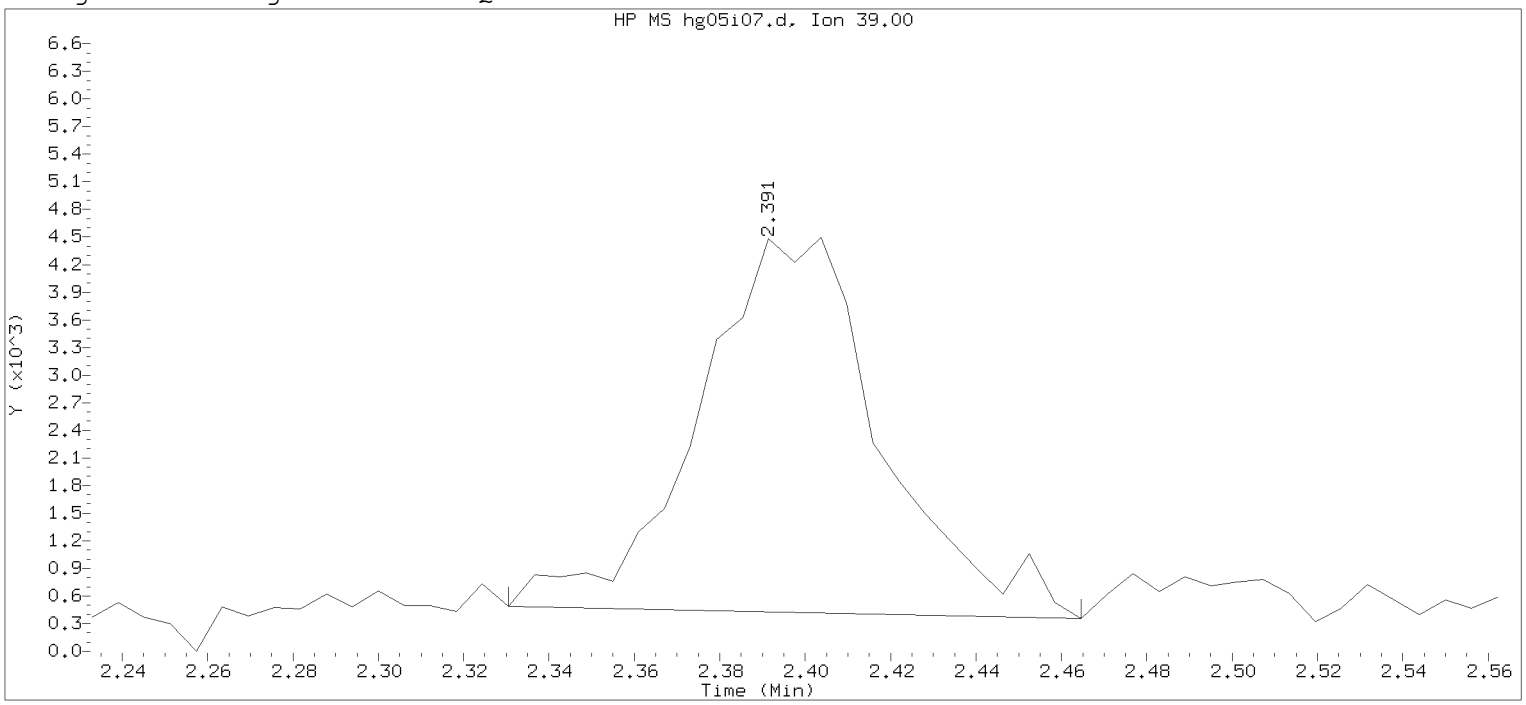
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

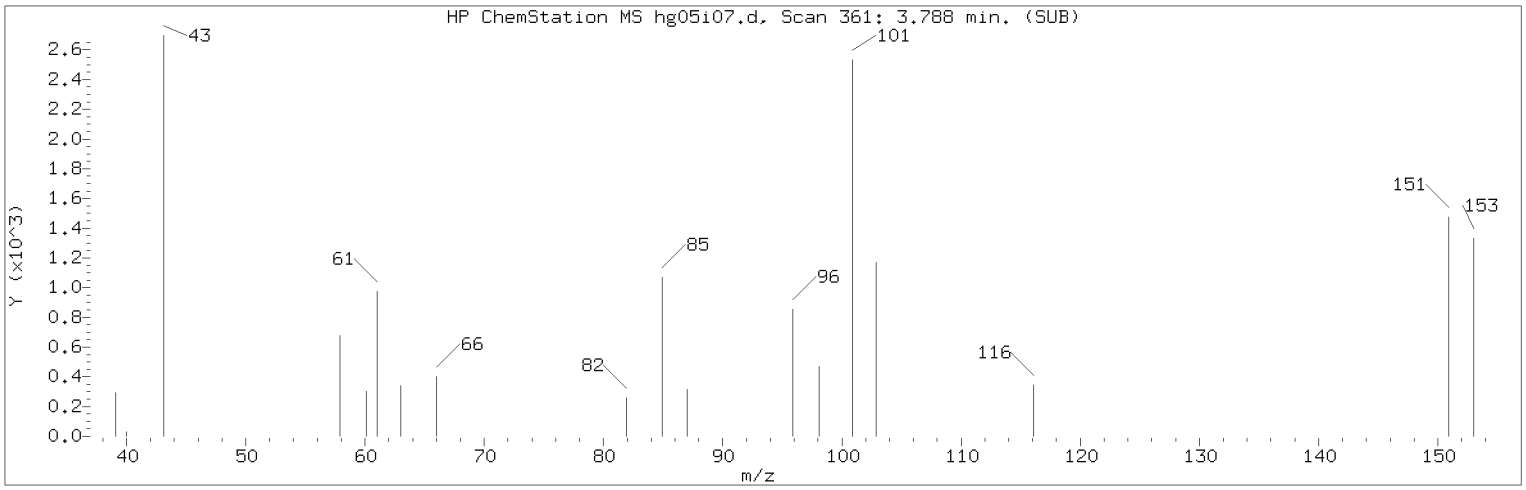
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

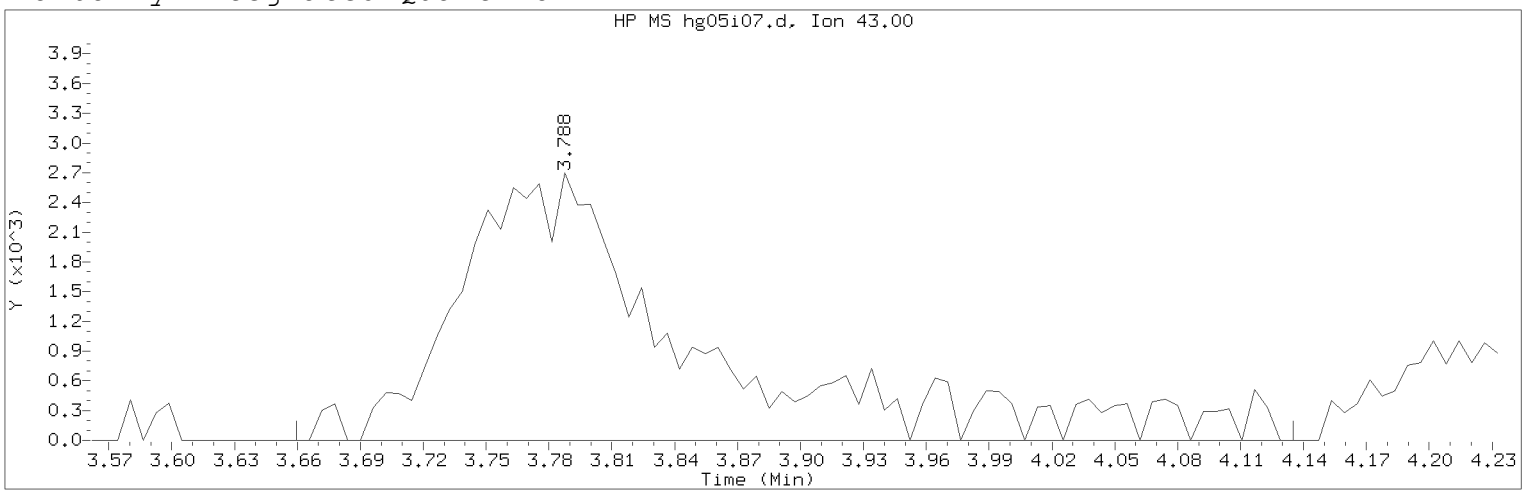
Compound Number	: 6		
Compound Name	: 1,3-Butadiene		
Scan Number	: 132		
Retention Time (minutes)	: 2.391		
Quant Ion	: 39.00		
Area	: 12198		
On-column Amount (ng)	: 0.2076		
Integration start scan	: 121	Integration stop scan:	143
Y at integration start	: 488	Y at integration end:	358

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

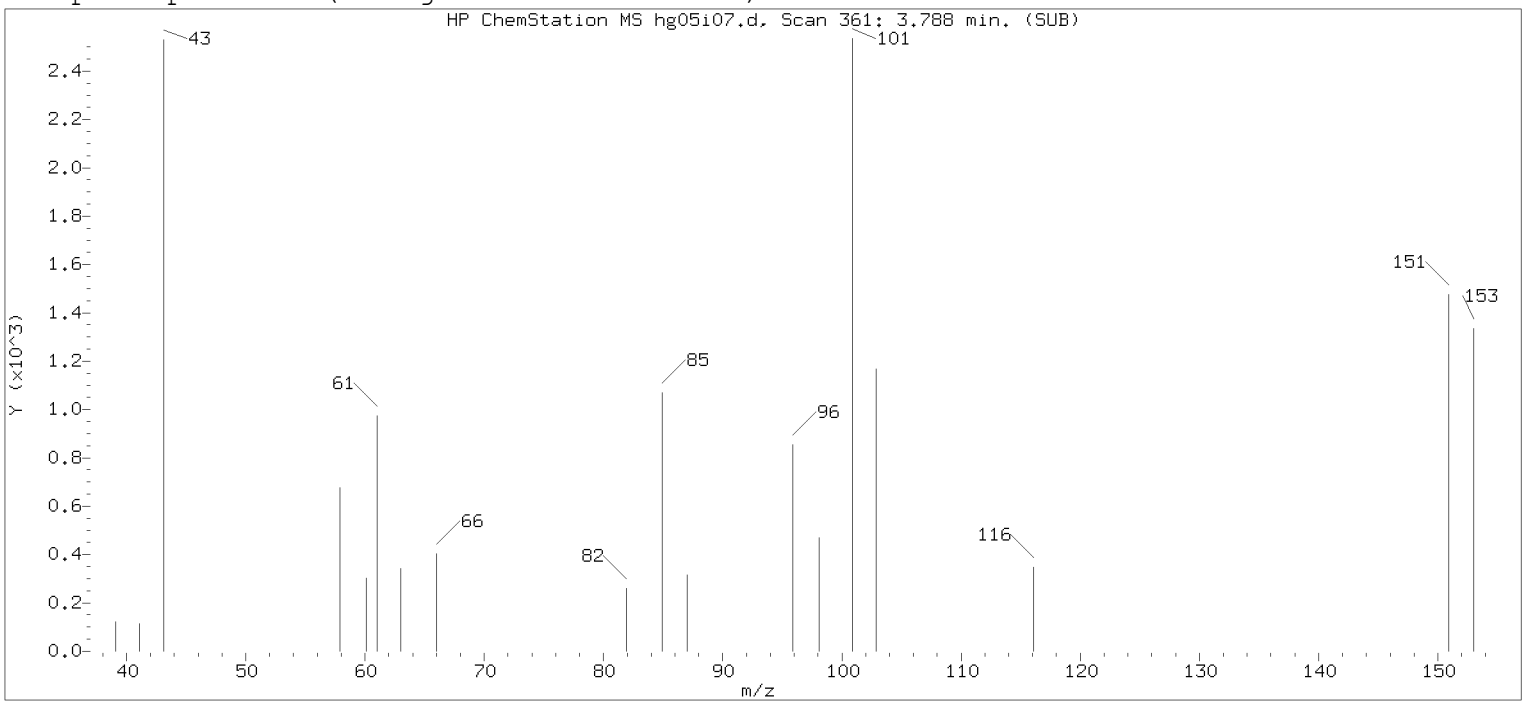
Compound Number : 14
Compound Name : Acetone
Scan Number : 361
Retention Time (minutes): 3.788
Quant Ion : 43.00
Area (flag) : 21263M
On-Column Amount (ng) : 3.0058
Integration start scan : 339 Integration stop scan: 417
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

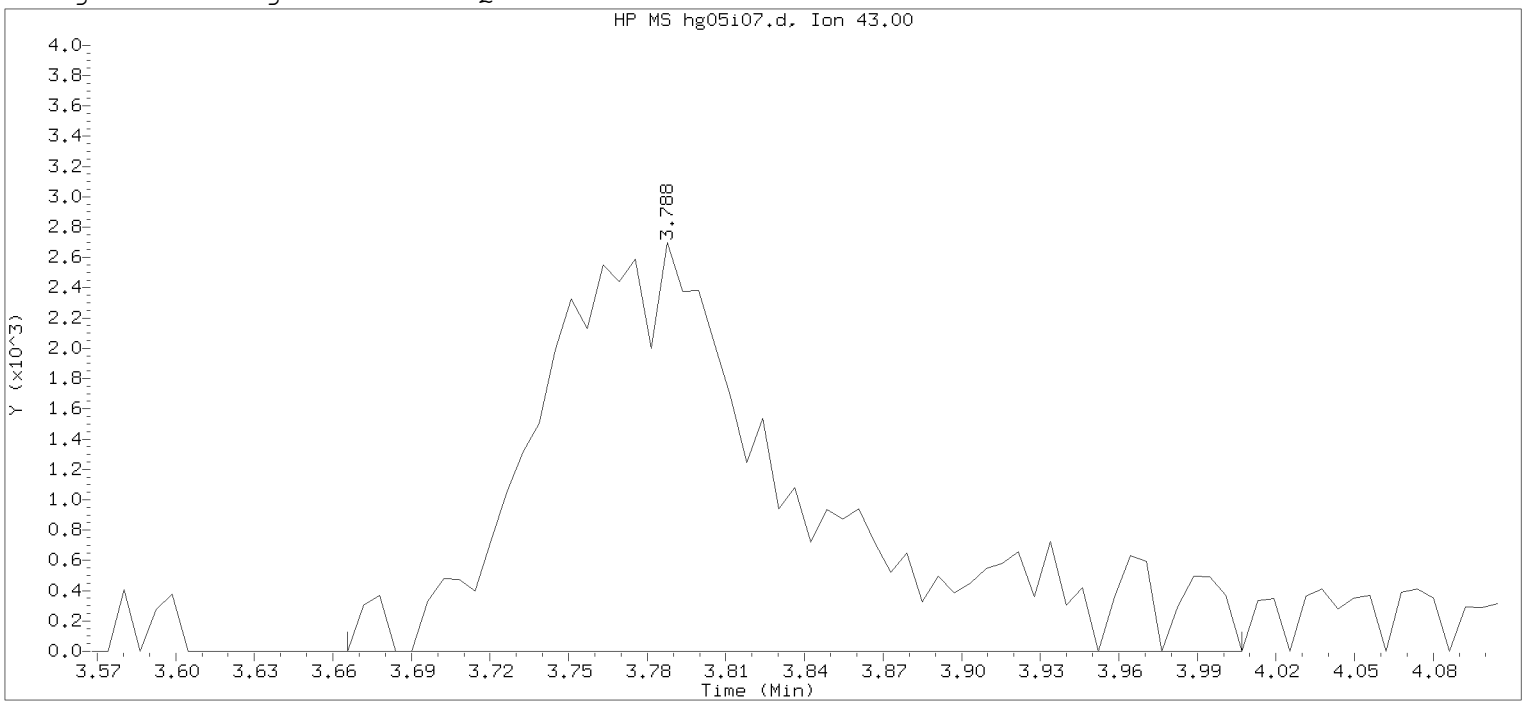
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

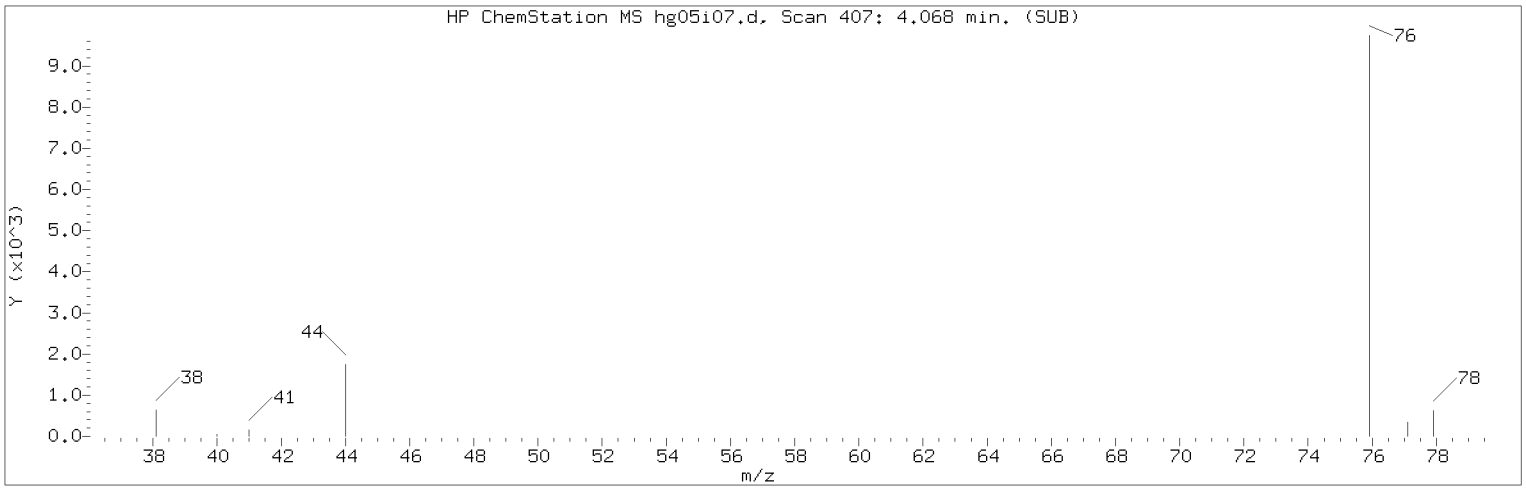
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

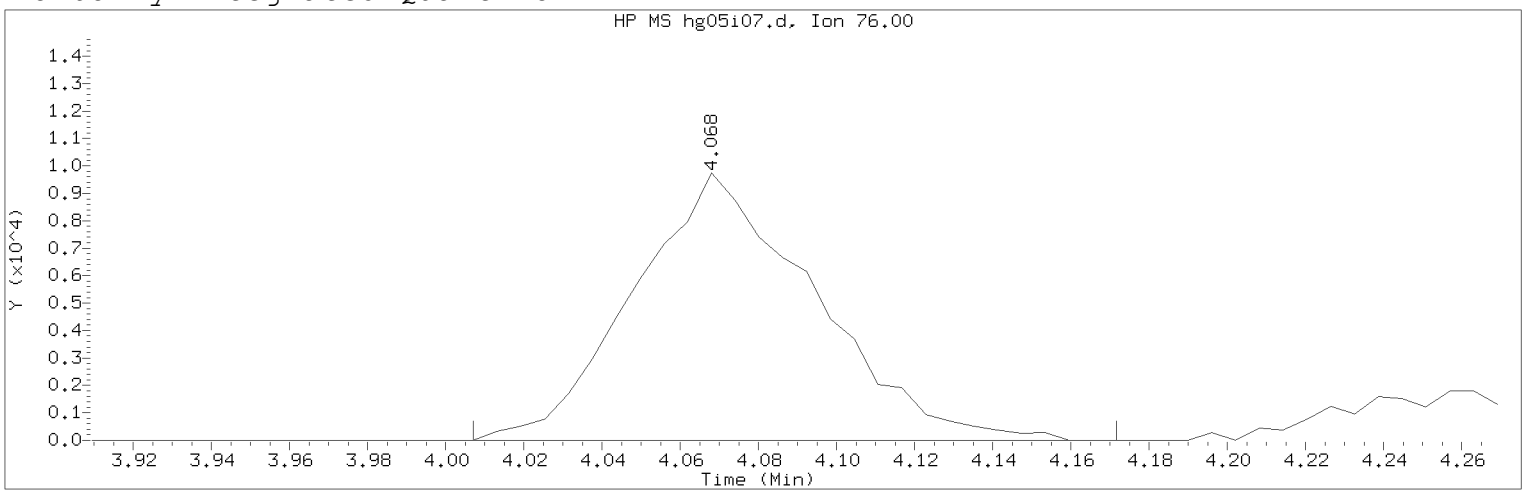
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 361		
Retention Time (minutes)	: 3.788		
Quant Ion	: 43.00		
Area	: 19305		
On-column Amount (ng)	: 3.3055		
Integration start scan	: 340	Integration stop scan:	396
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

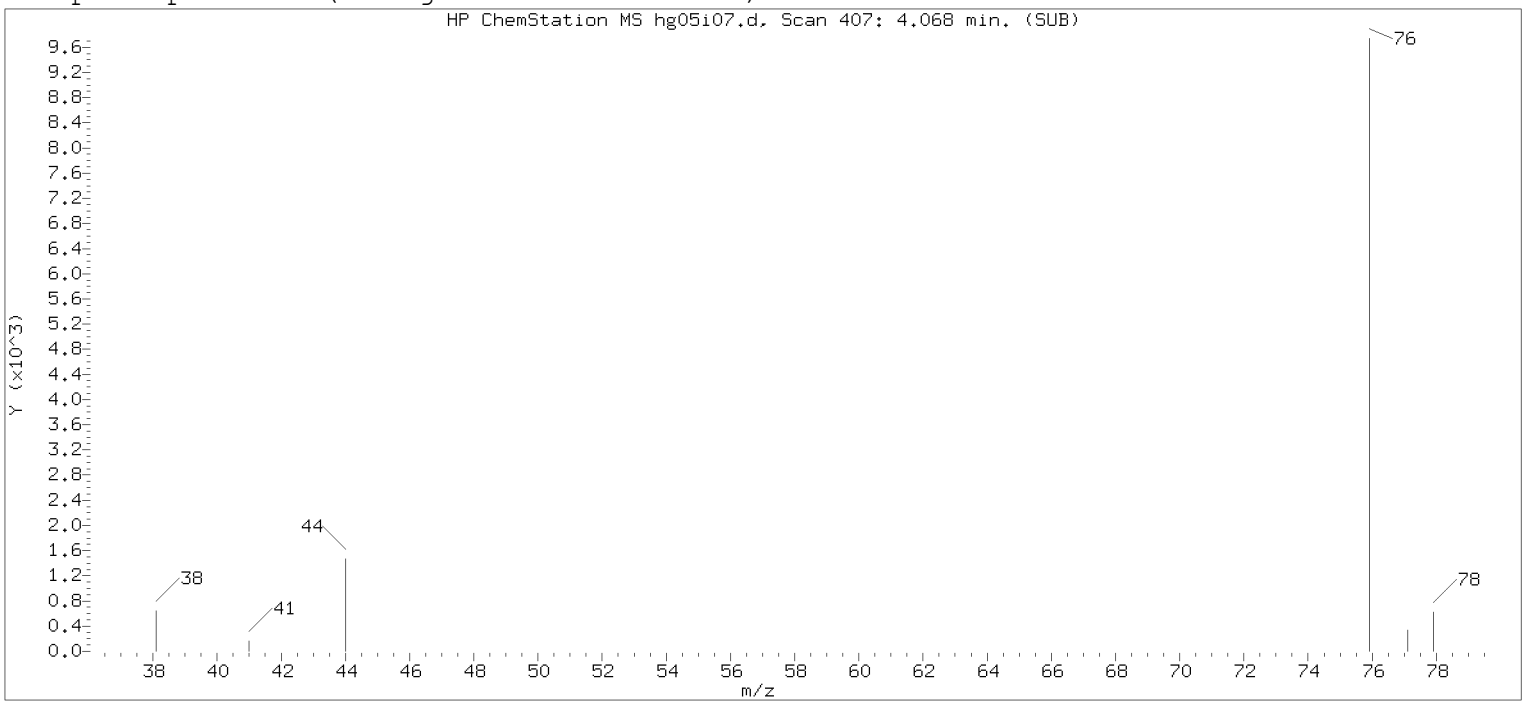
Compound Number : 18
Compound Name : Carbon Disulfide
Scan Number : 407
Retention Time (minutes): 4.068
Quant Ion : 76.00
Area (flag) : 31323M
On-Column Amount (ng) : 0.2185
Integration start scan : 396 Integration stop scan: 423
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

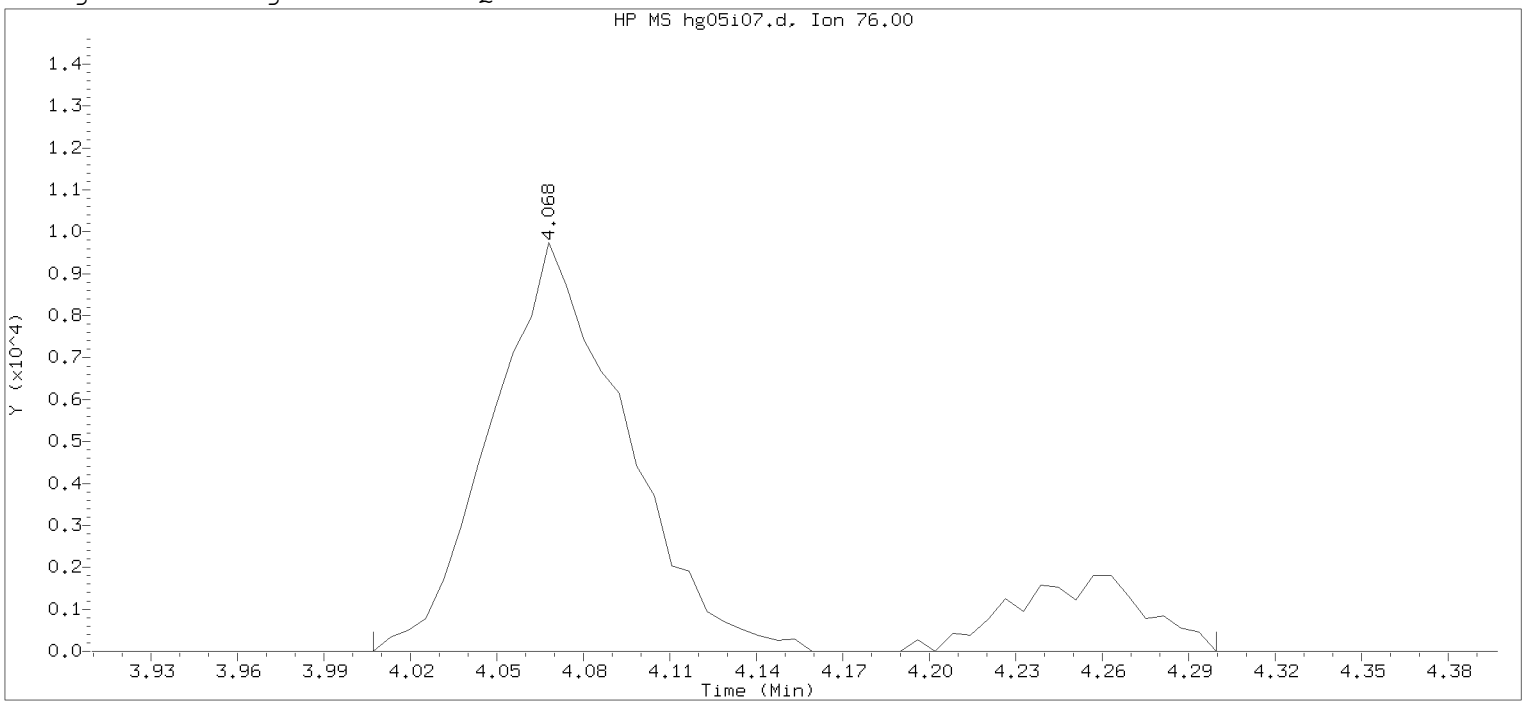
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

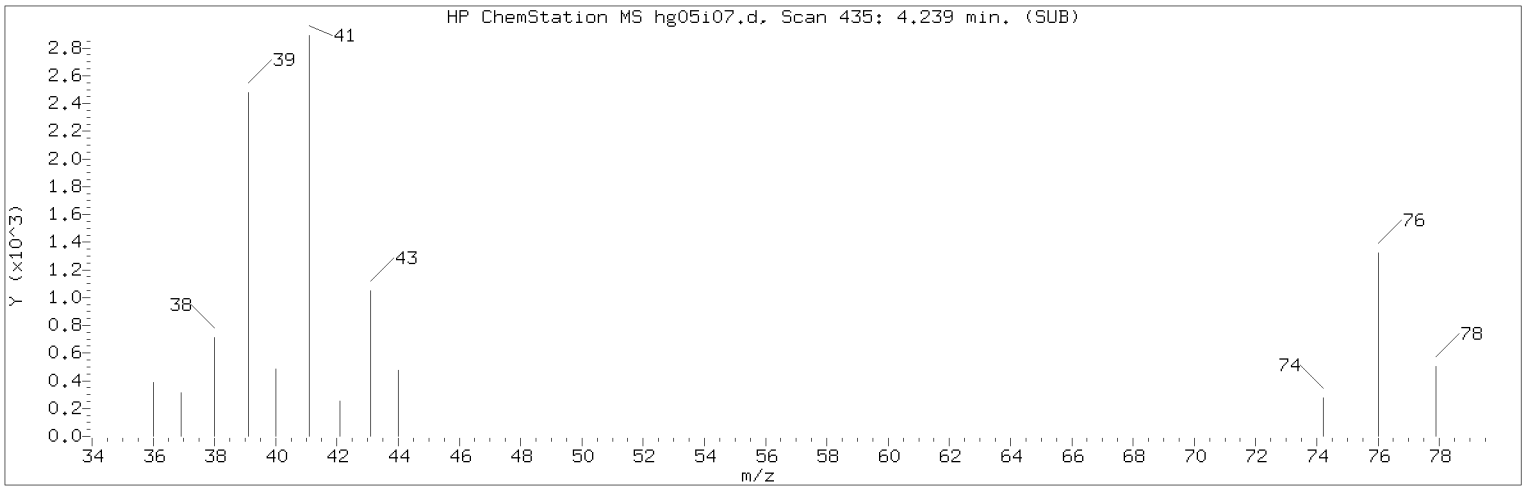
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

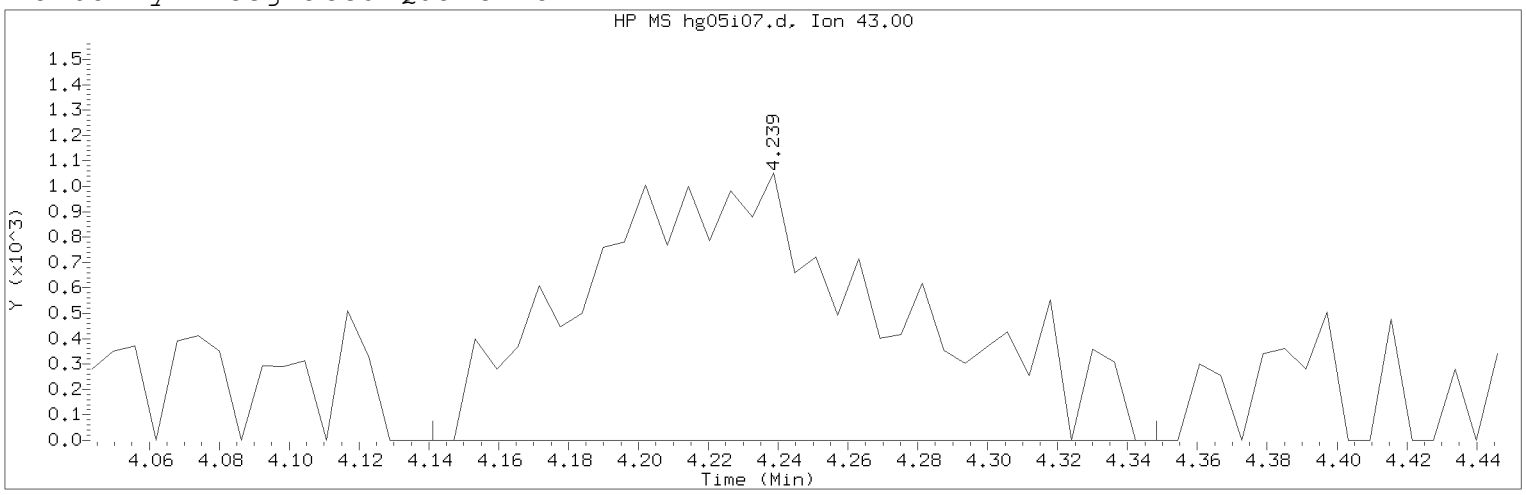
Compound Number : 18
Compound Name : Carbon Disulfide
Scan Number : 407
Retention Time (minutes): 4.068
Quant Ion : 76.00
Area : 37162
On-column Amount (ng) : 0.2519
Integration start scan : 396 Integration stop scan: 444
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

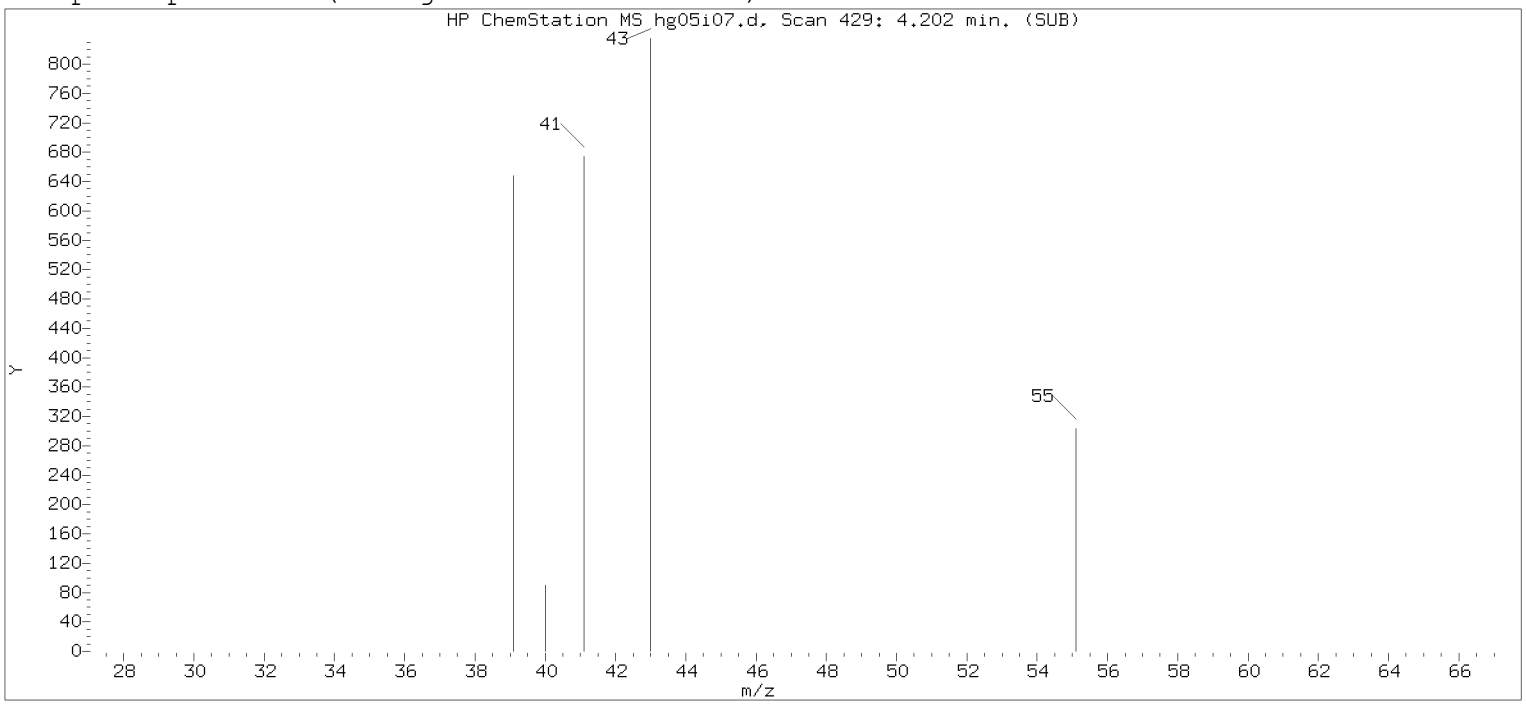
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 435
Retention Time (minutes): 4.239
Quant Ion : 43.00
Area (flag) : 6425M
On-Column Amount (ng) : 0.2938
Integration start scan : 418 Integration stop scan: 452
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

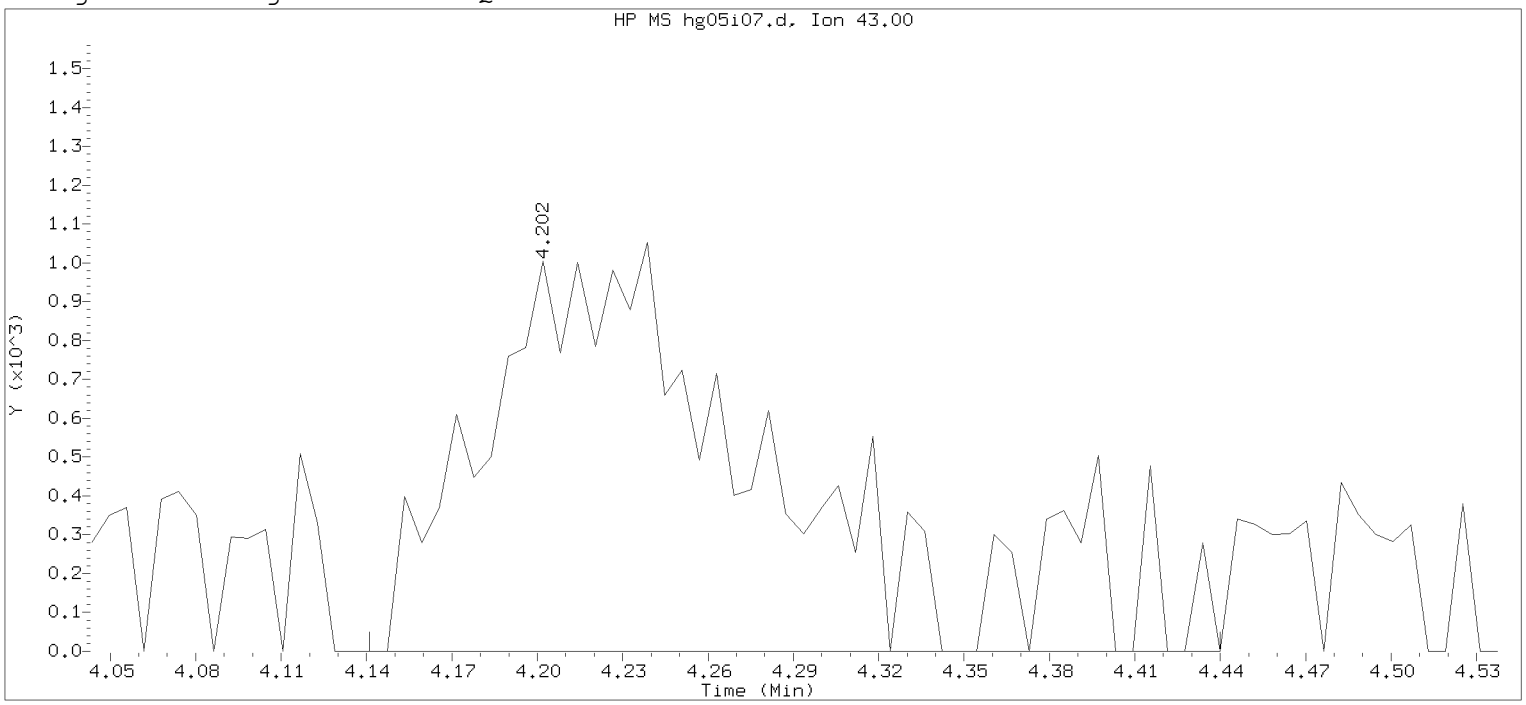
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

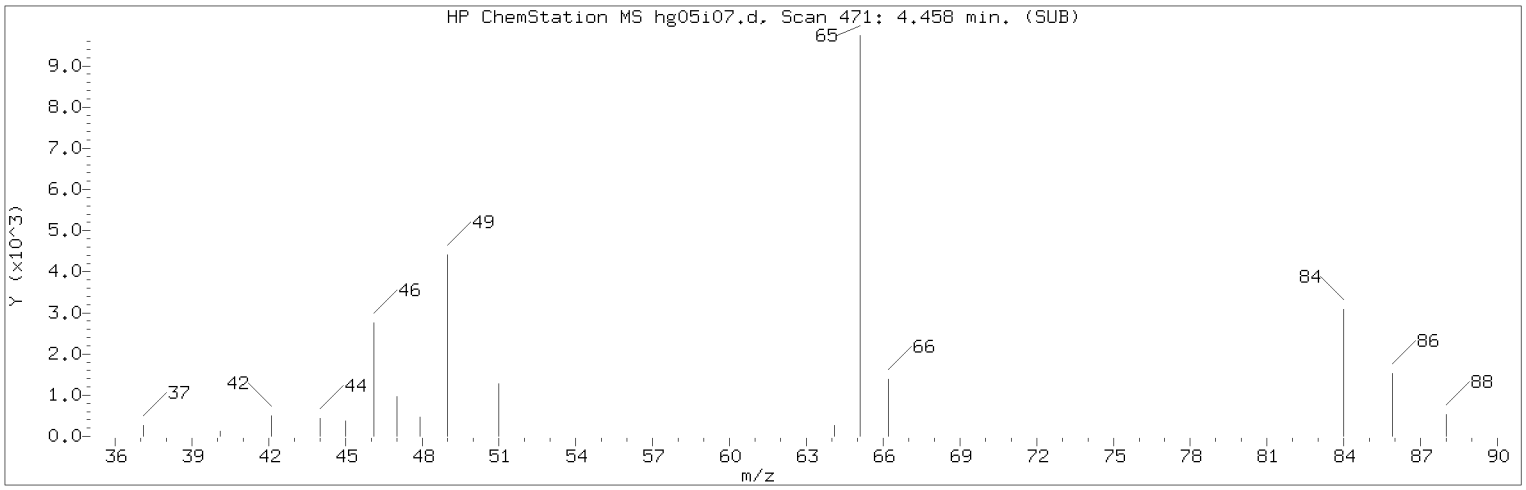
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

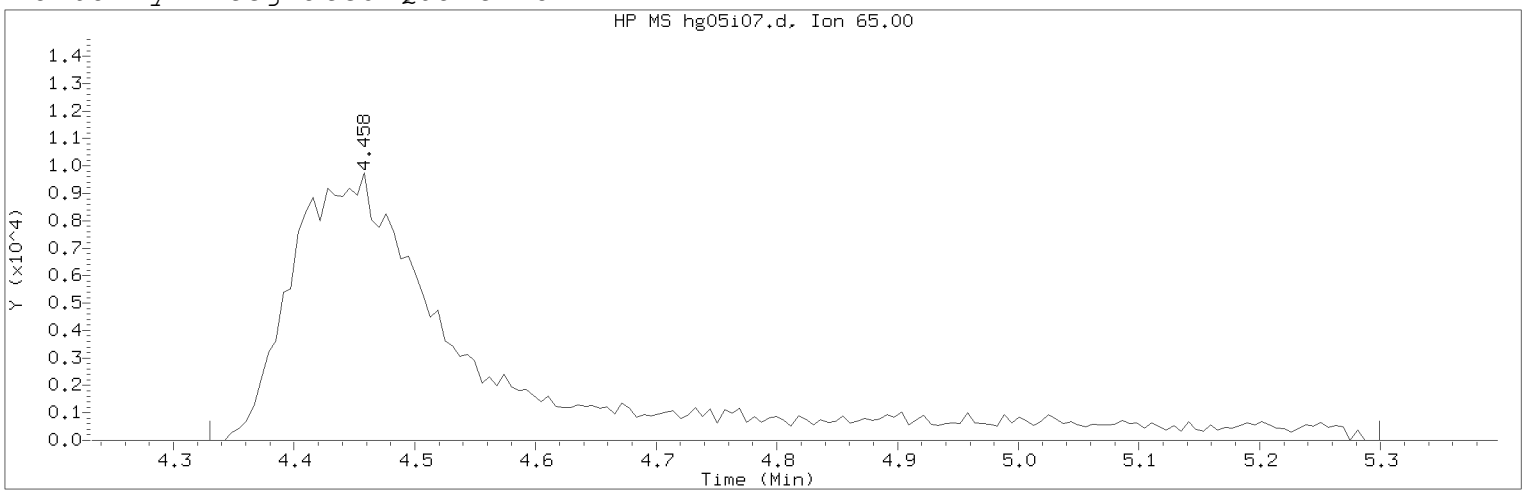
Compound Number	: 21		
Compound Name	: Methyl Acetate		
Scan Number	: 429		
Retention Time (minutes)	: 4.202		
Quant Ion	: 43.00		
Area	: 7448		
On-column Amount (ng)	: 0.3740		
Integration start scan	: 418	Integration stop scan:	467
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used. Reason: I am the author of this document

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

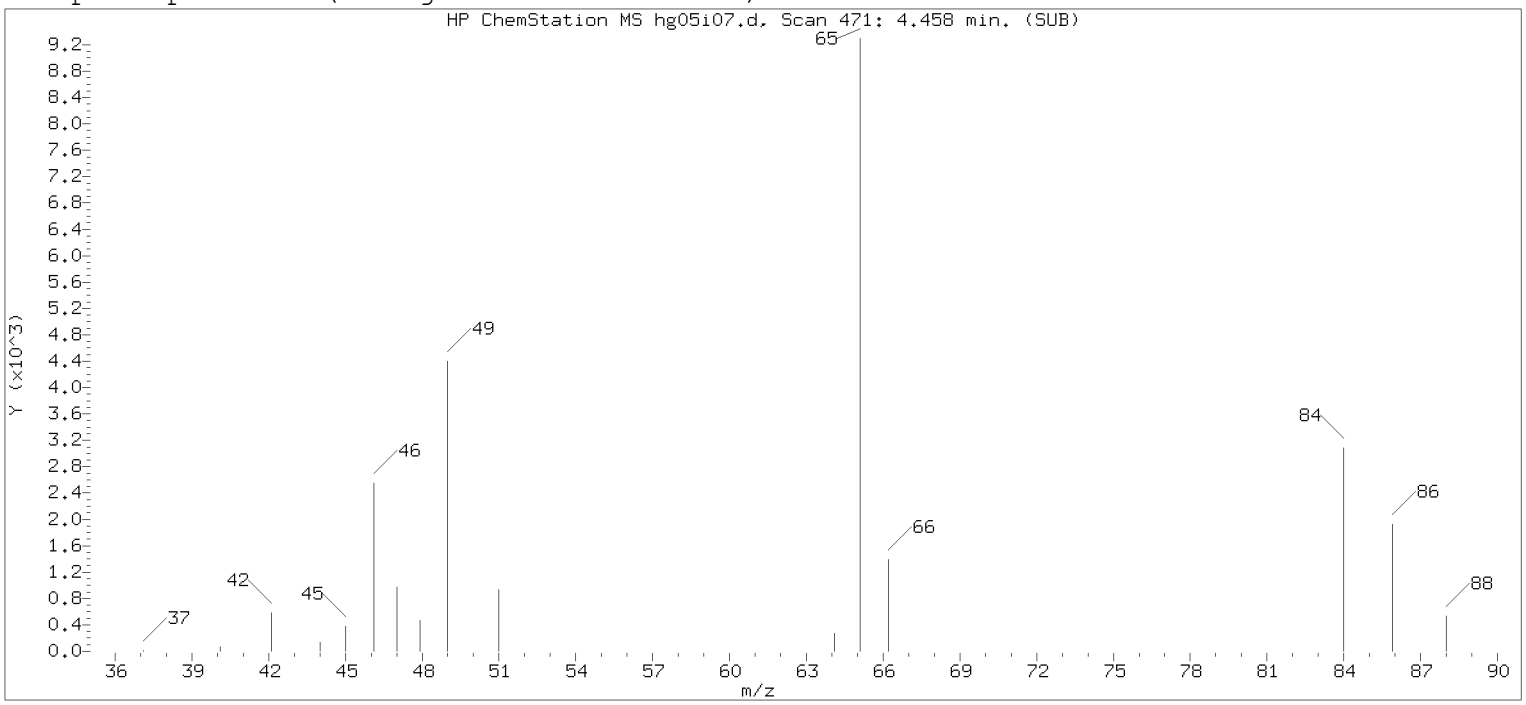
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 471
Retention Time (minutes): 4.458
Quant Ion : 65.00
Area (flag) : 106411M
On-Column Amount (ng) : 50.0000
Integration start scan : 449 Integration stop scan: 608
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

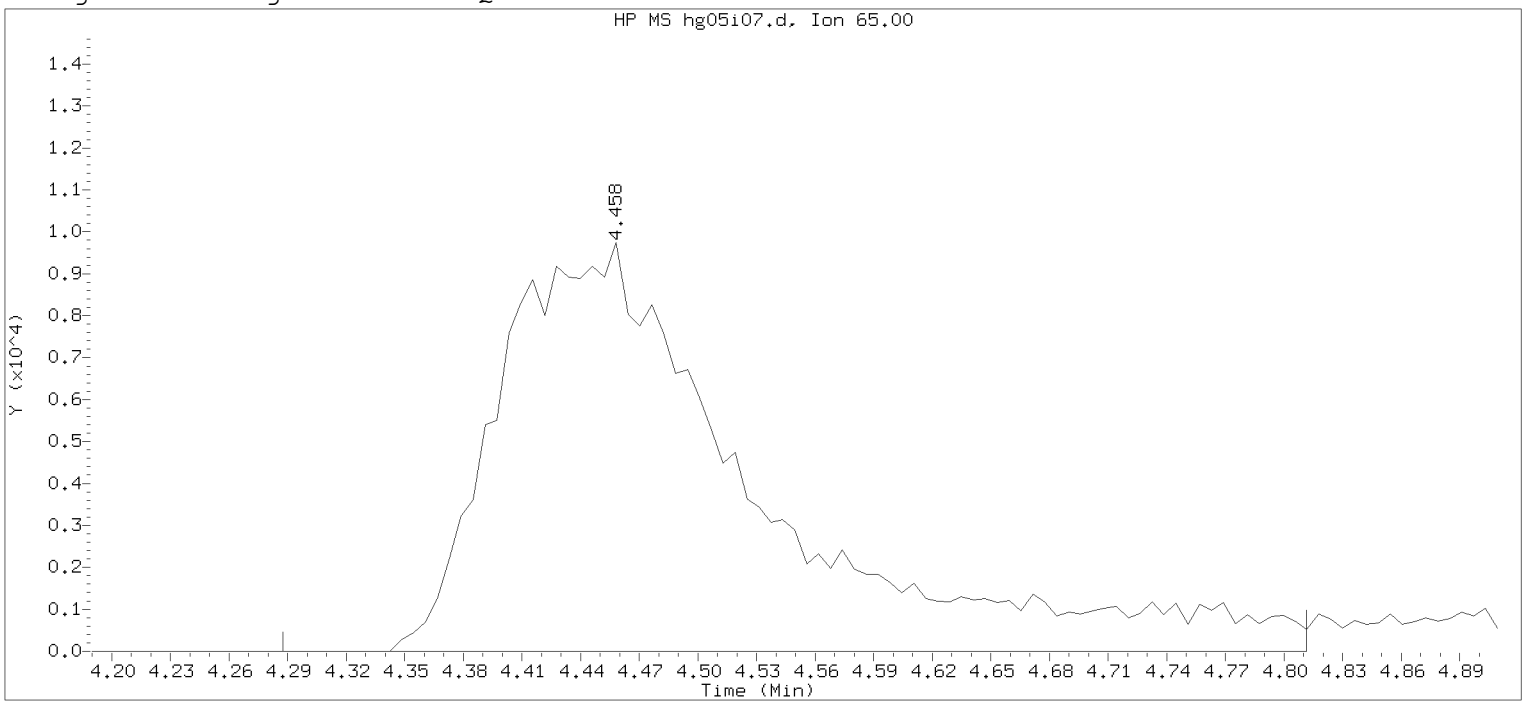
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

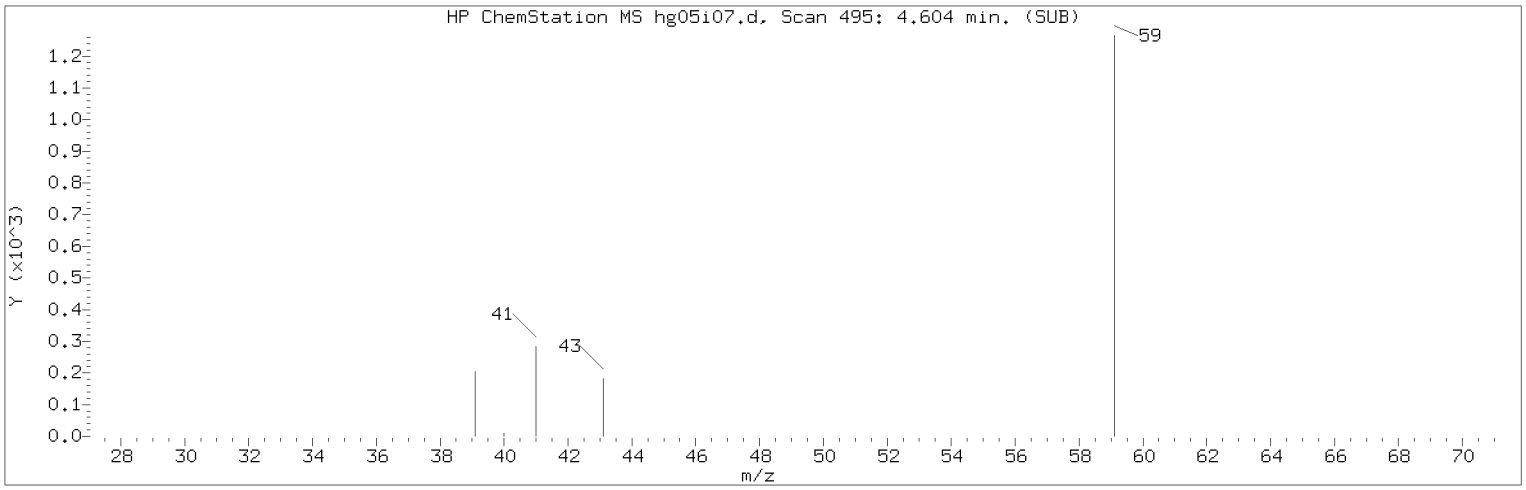
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

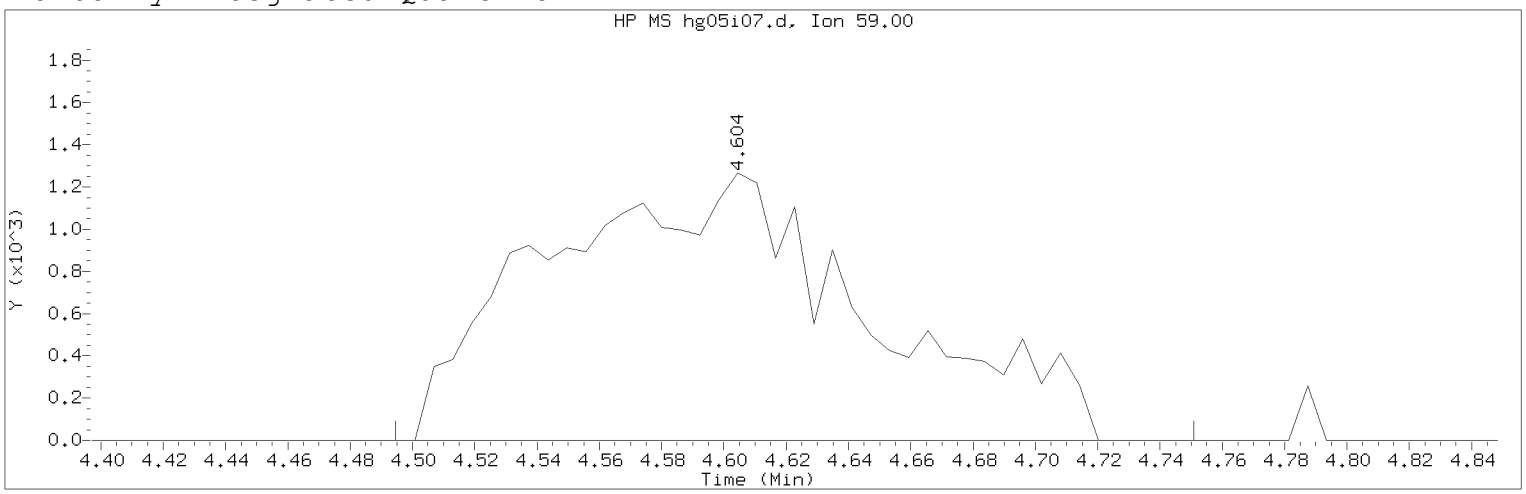
Compound Number	: 26		
Compound Name	: t-Butyl Alcohol-d10		
Scan Number	: 471		
Retention Time (minutes)	: 4.458		
Quant Ion	: 65.00		
Area	: 89137		
On-column Amount (ng)	: 50.0000		
Integration start scan	: 442	Integration stop scan:	528
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

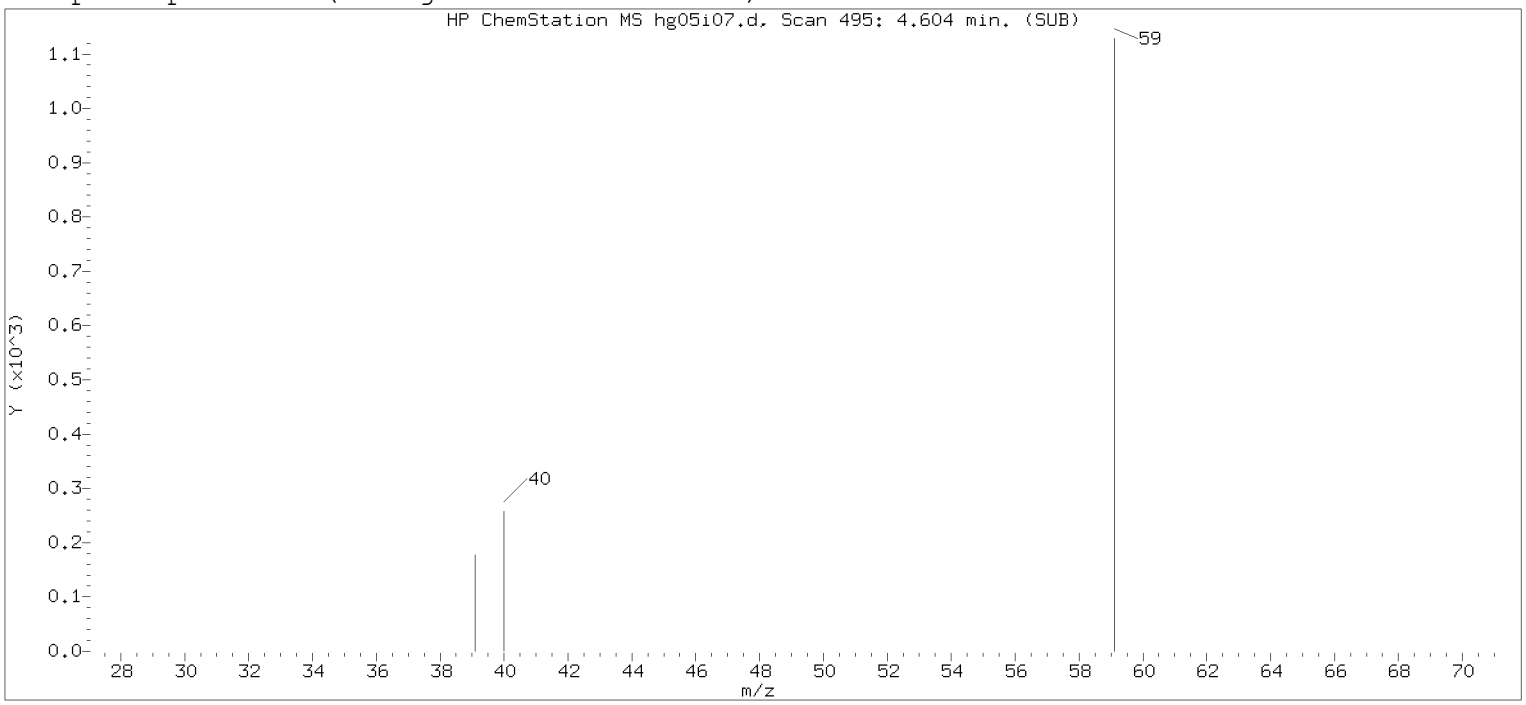
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 495
Retention Time (minutes): 4.604
Quant Ion : 59.00
Area (flag) : 9154M
On-Column Amount (ng) : 4.6124
Integration start scan : 476 Integration stop scan: 518
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

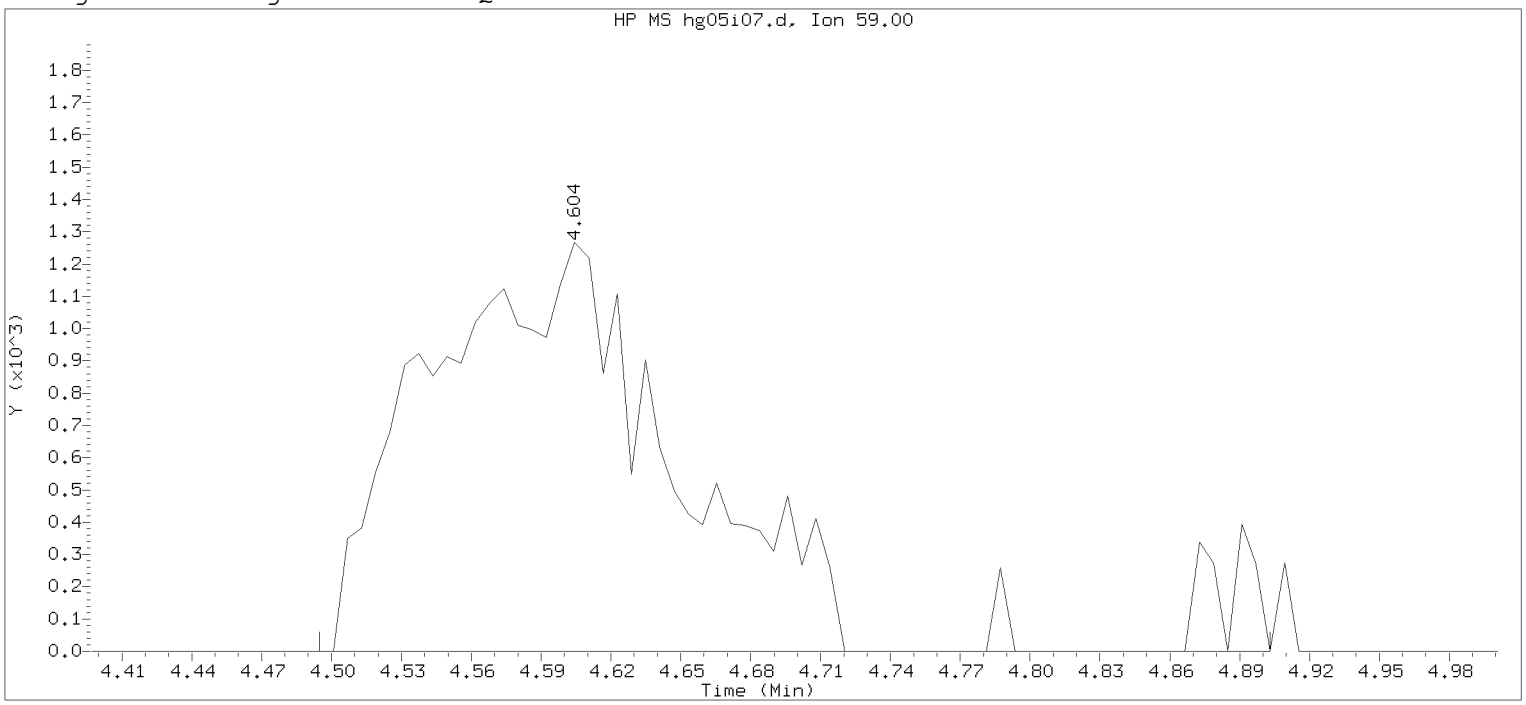
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

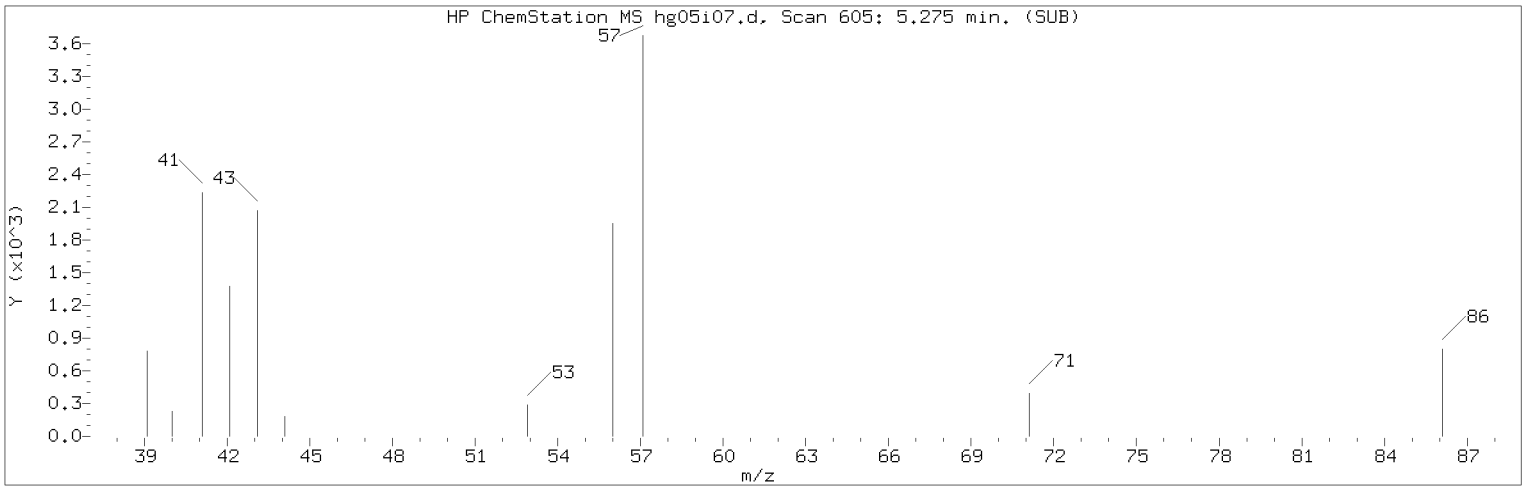
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

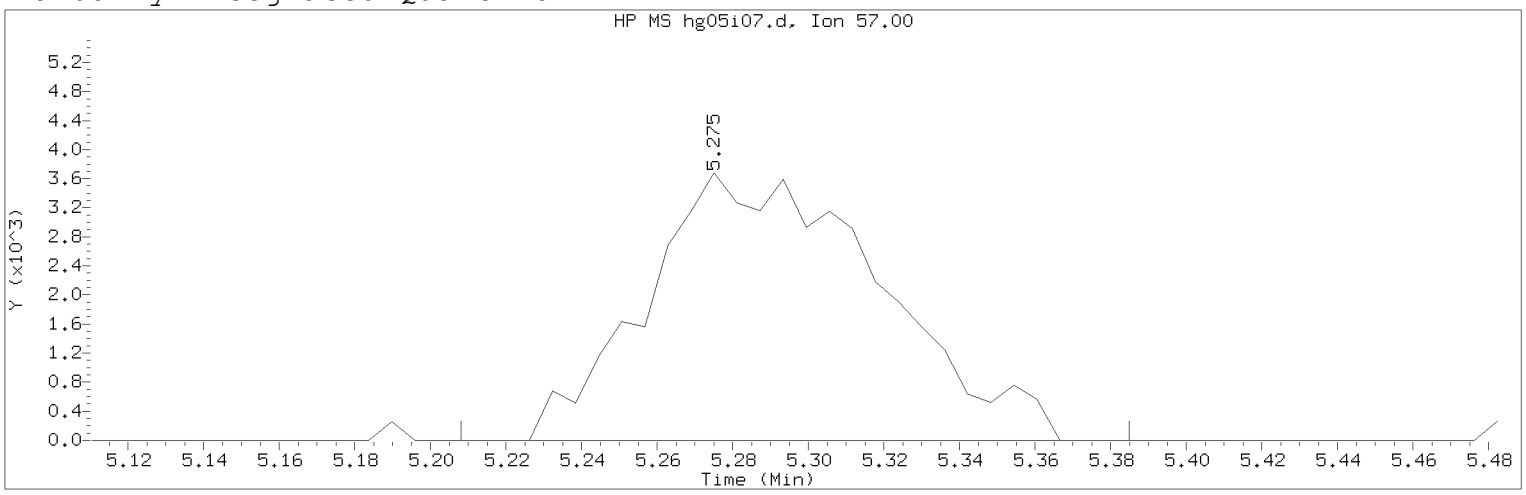
Compound Number : 28
Compound Name : t-Butyl Alcohol
Scan Number : 495
Retention Time (minutes): 4.604
Quant Ion : 59.00
Area : 9716
On-column Amount (ng) : 5.5980
Integration start scan : 476 Integration stop scan: 543
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

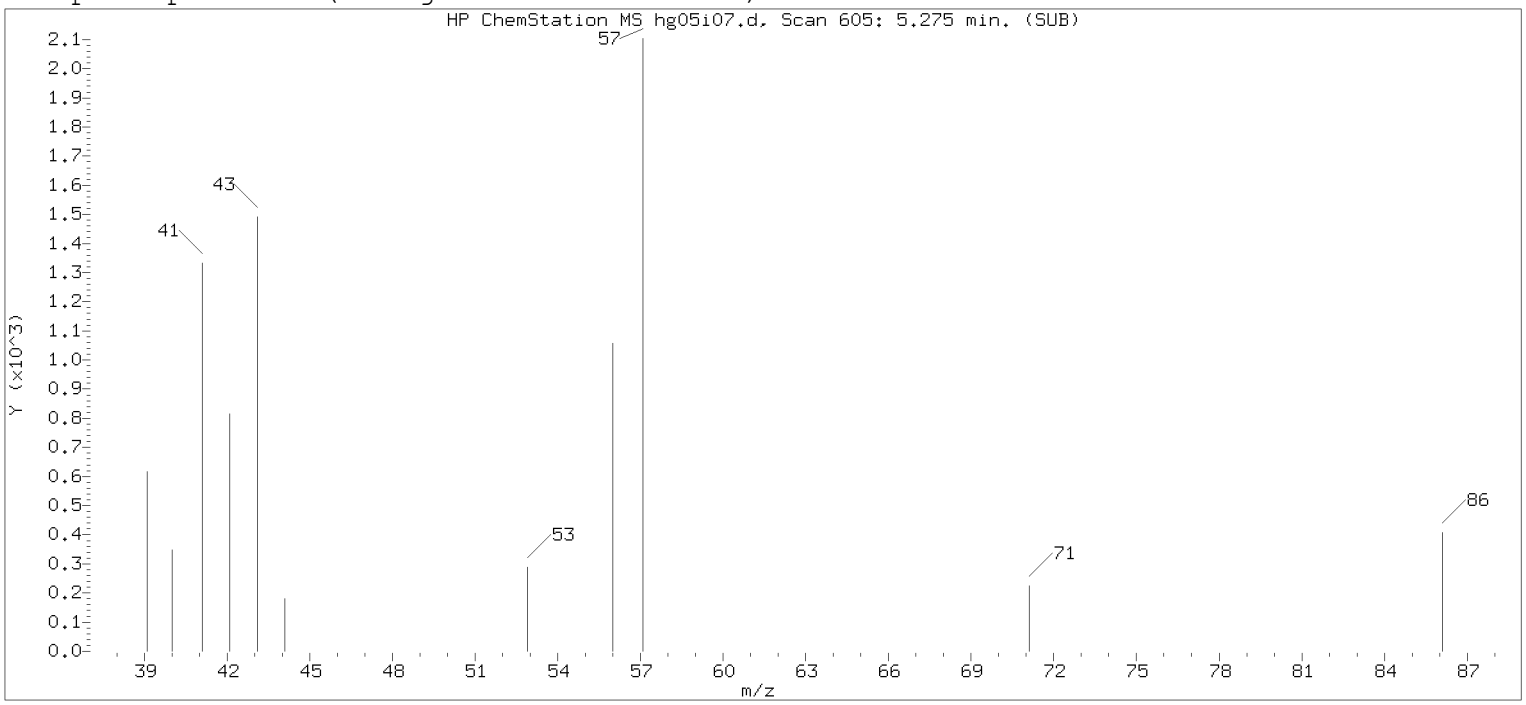
Compound Number : 32
Compound Name : n-Hexane
Scan Number : 605
Retention Time (minutes): 5.275
Quant Ion : 57.00
Area (flag) : 15897M
On-Column Amount (ng) : 0.2110
Integration start scan : 593 Integration stop scan: 622
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

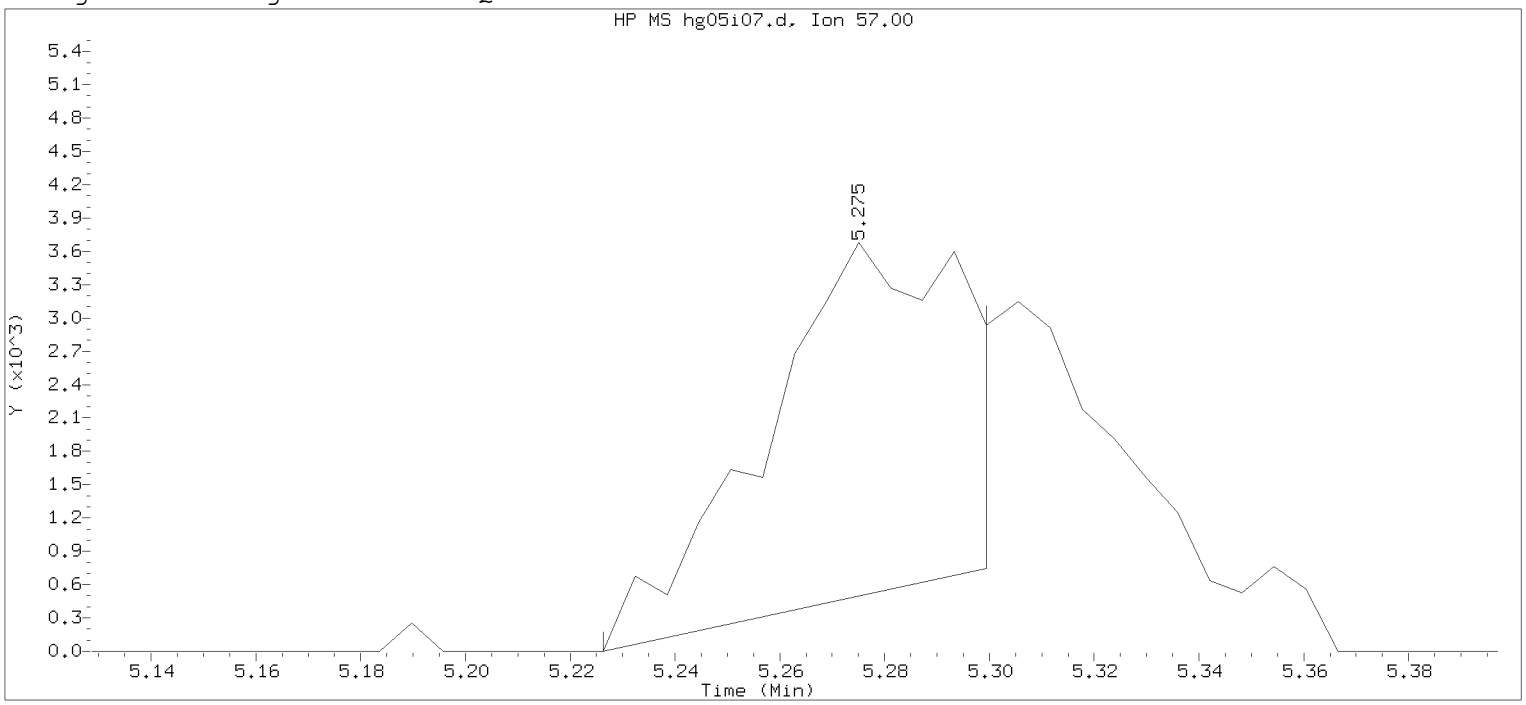
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

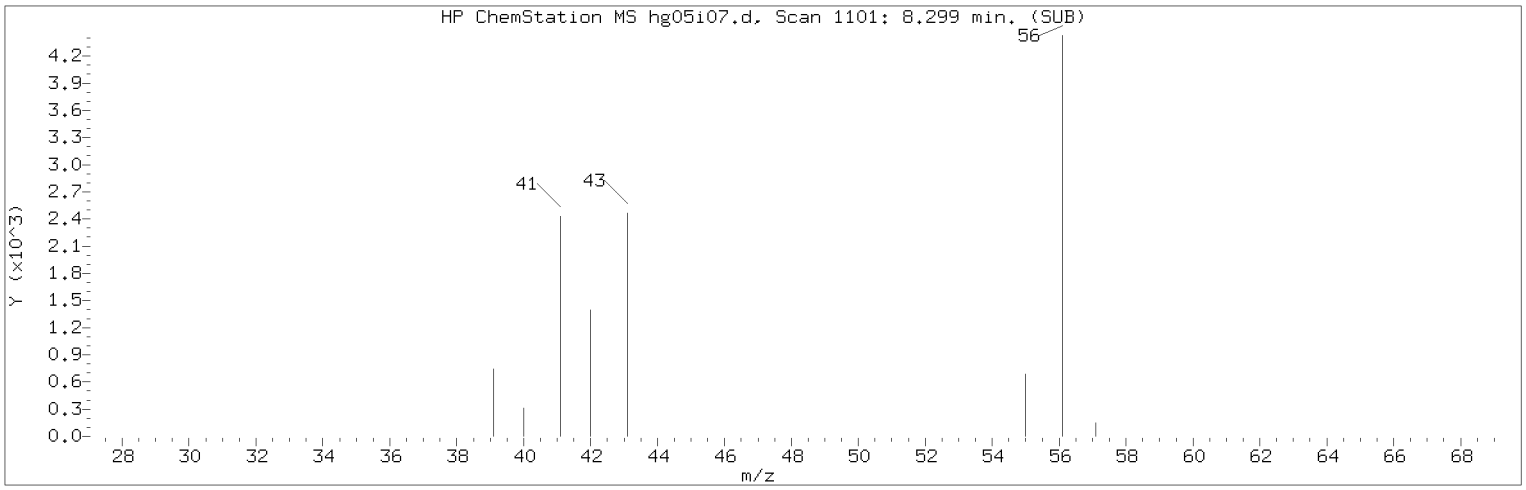
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

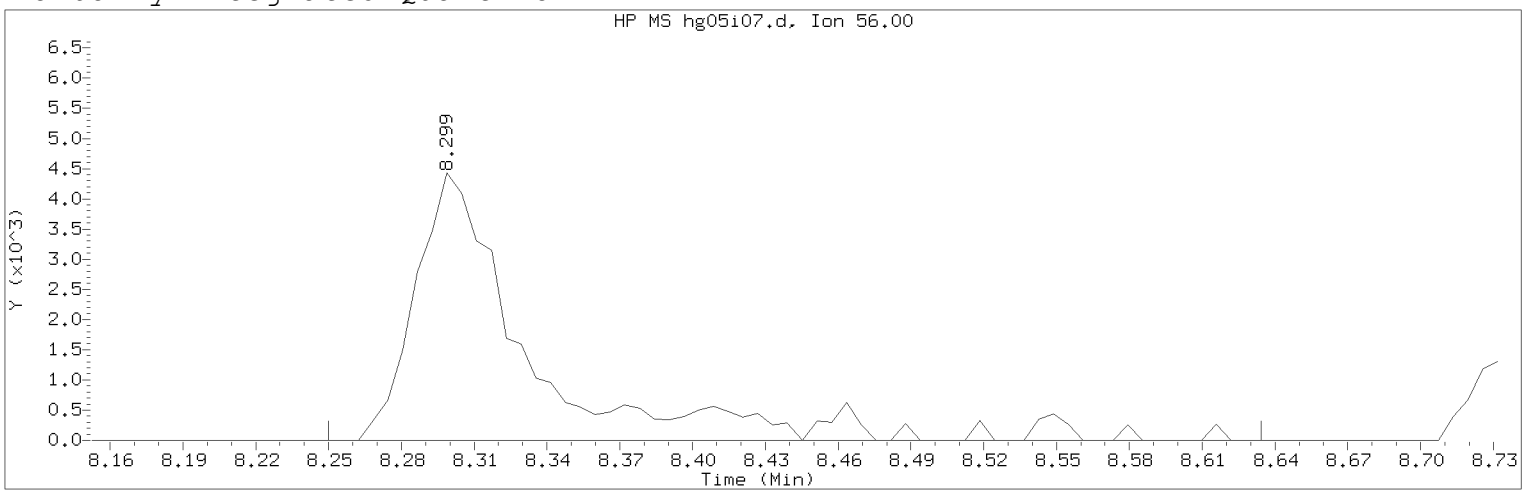
Compound Number	: 32		
Compound Name	: n-Hexane		
Scan Number	: 605		
Retention Time (minutes)	: 5.275		
Quant Ion	: 57.00		
Area	: 8074		
On-column Amount (ng)	: 0.1158		
Integration start scan	: 596	Integration stop scan:	608
Y at integration start	: 0	Y at integration end:	746

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

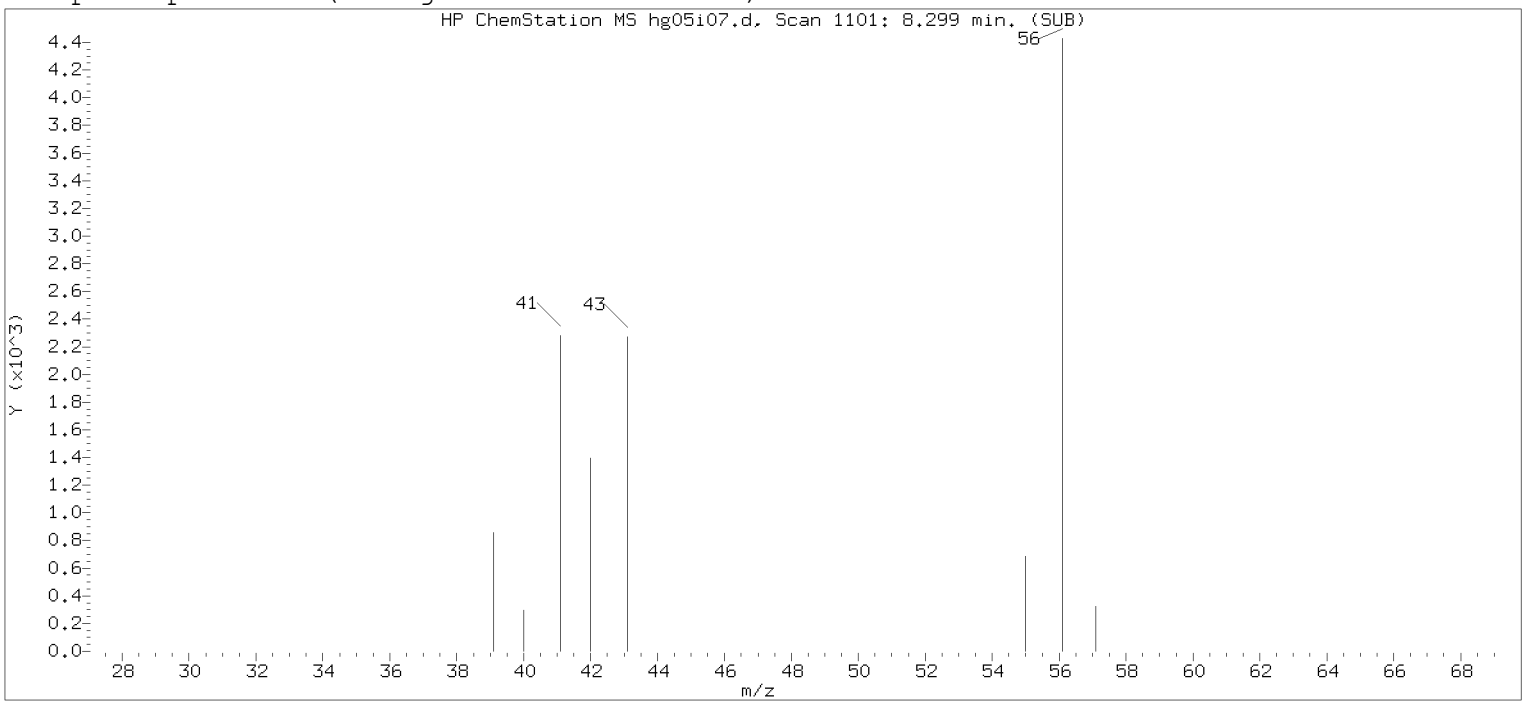
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1101
Retention Time (minutes): 8.299
Quant Ion : 56.00
Area (flag) : 14585M
On-Column Amount (ng) : 22.0229
Integration start scan : 1092 Integration stop scan: 1155
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

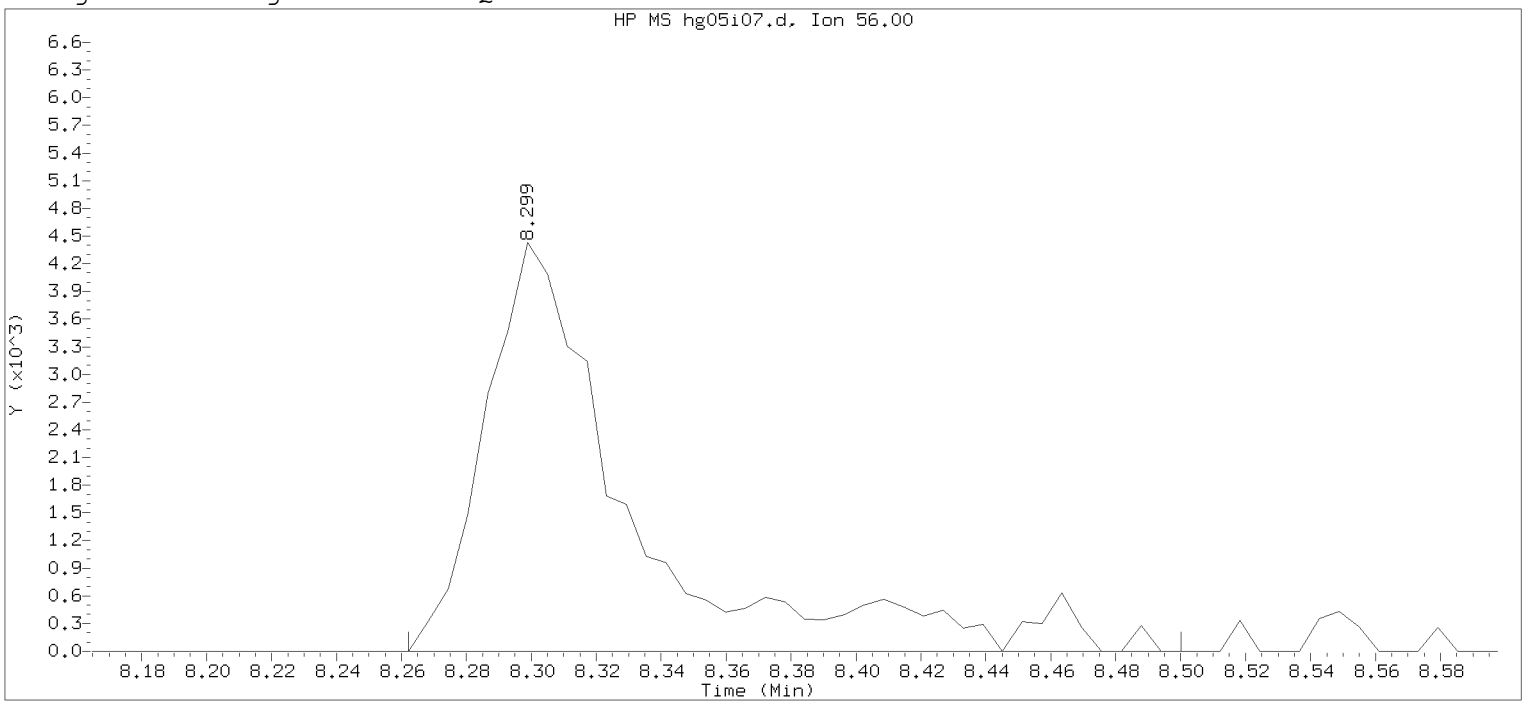
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

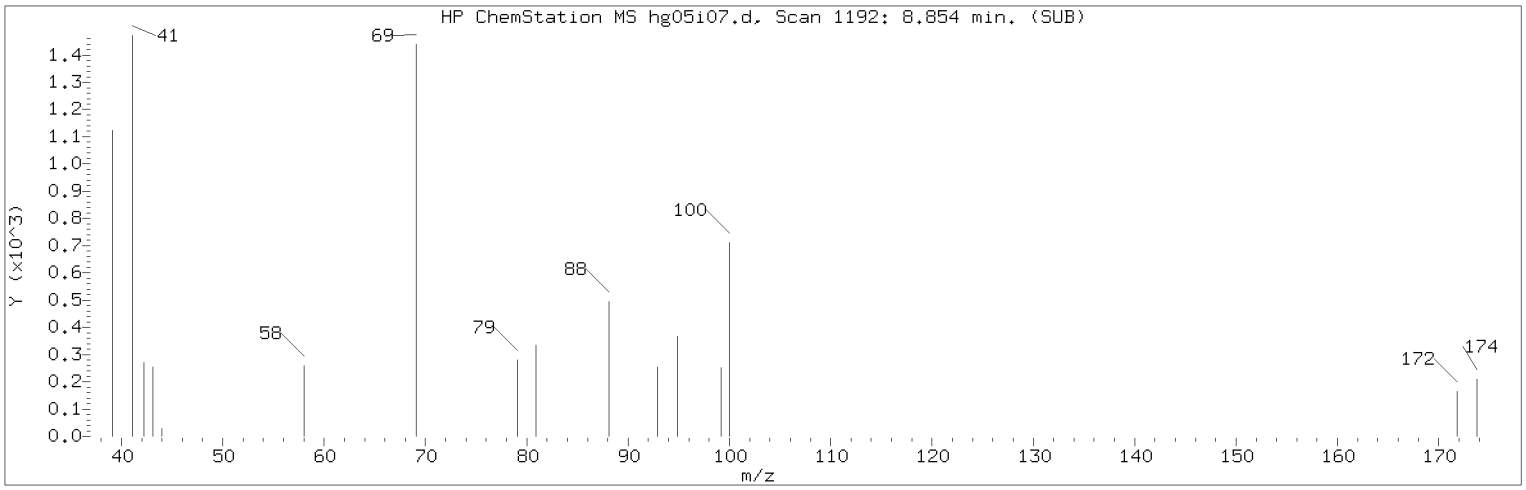
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

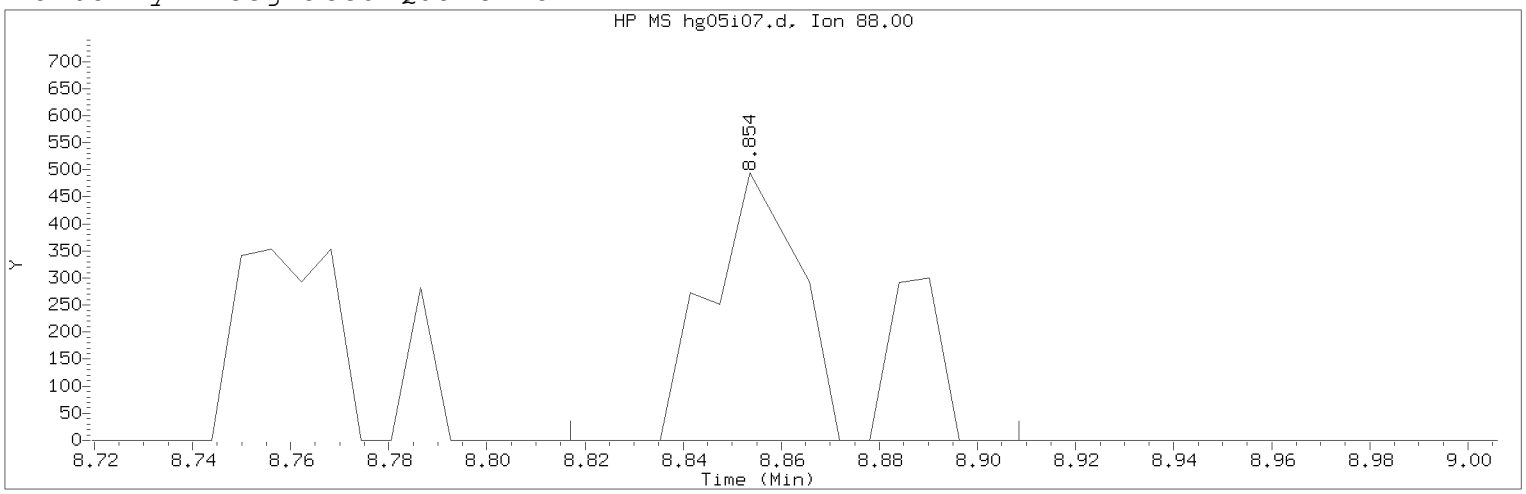
Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1101
Retention Time (minutes): 8.299
Quant Ion : 56.00
Area : 13887
On-column Amount (ng) : 24.5898
Integration start scan : 1094 Integration stop scan: 1133
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

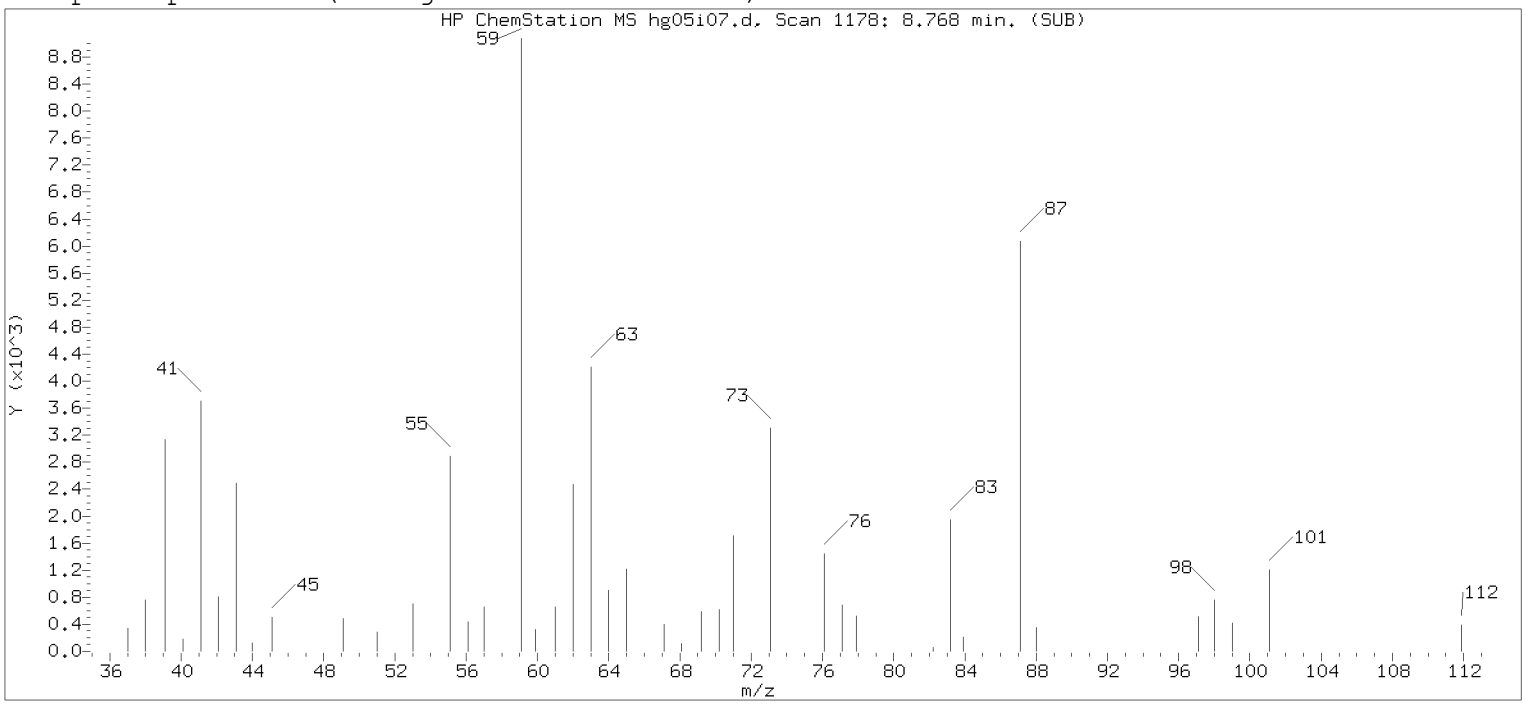
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1192
Retention Time (minutes): 8.854
Quant Ion : 88.00
Area (flag) : 839M
On-Column Amount (ng) : 5.2427
Integration start scan : 1185 Integration stop scan: 1200
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

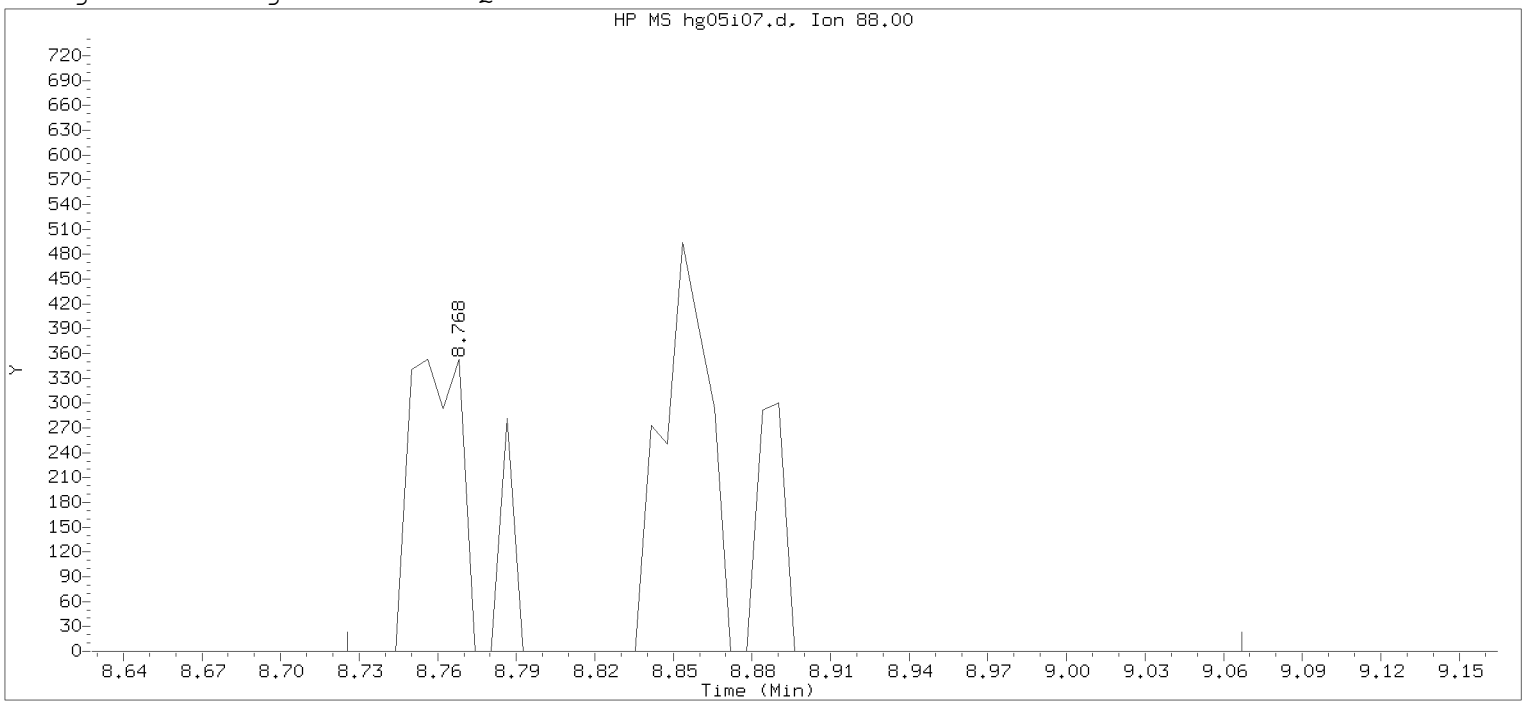
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

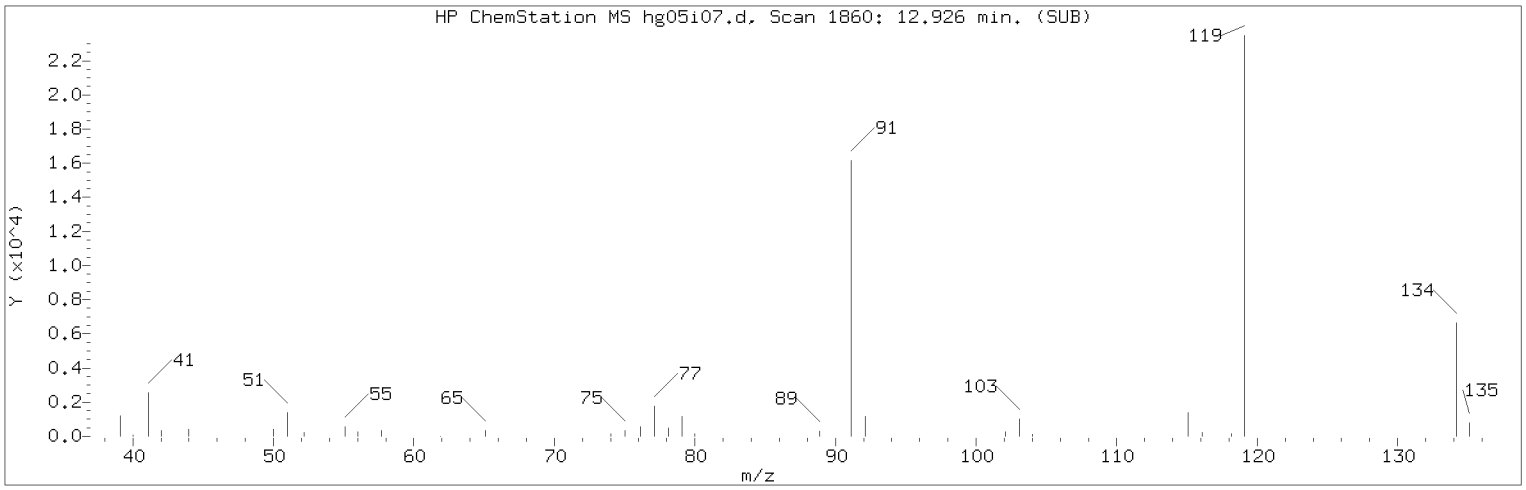
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

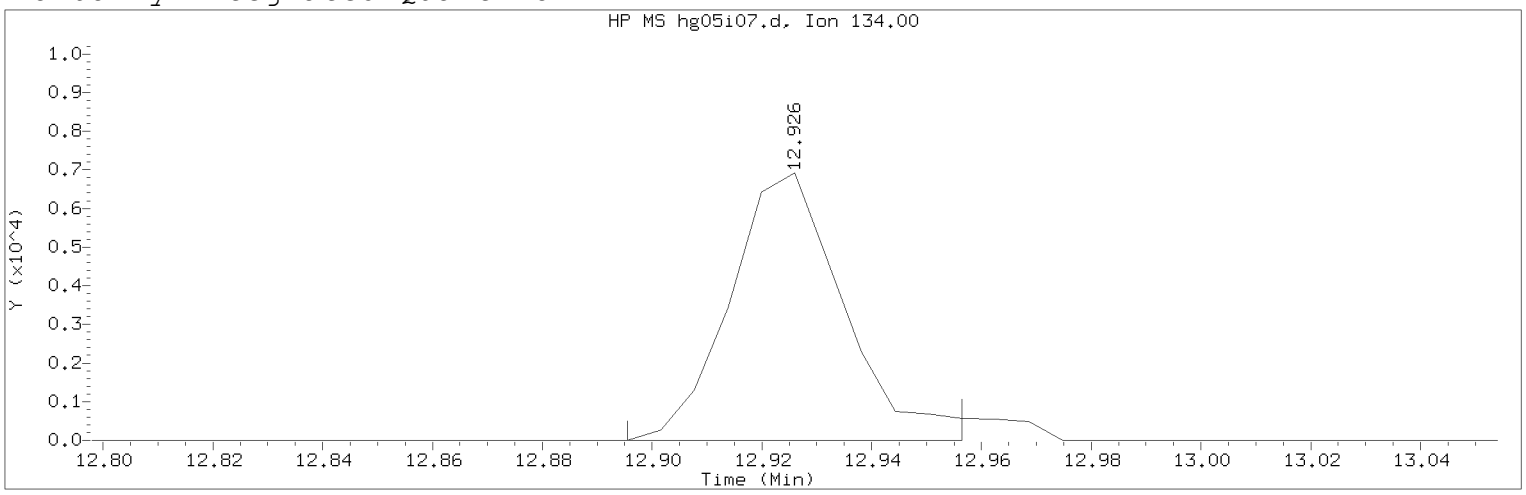
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1178
Retention Time (minutes): 8.768
Quant Ion : 88.00
Area : 1432
On-column Amount (ng) : 9.9166
Integration start scan : 1170 Integration stop scan: 1226
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

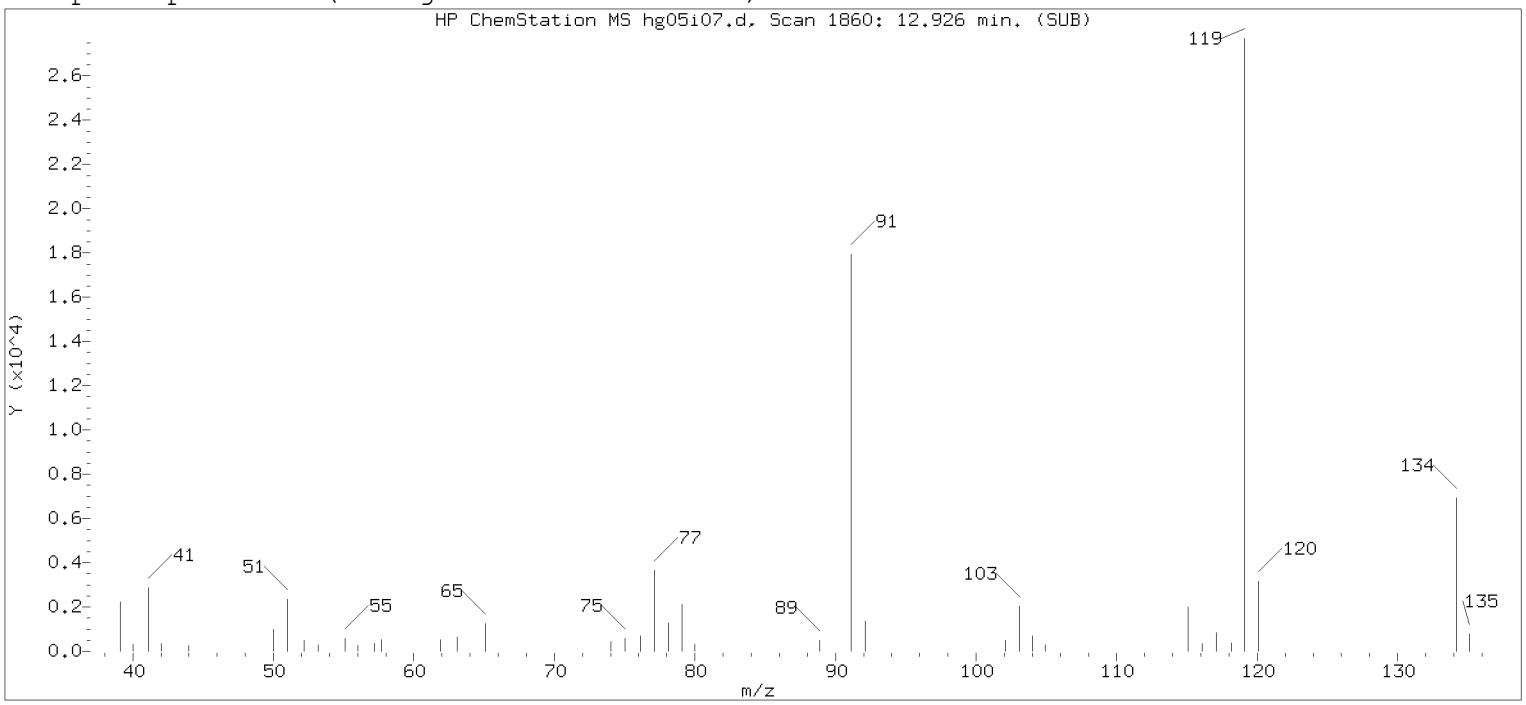
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area (flag) : 9960M
On-Column Amount (ng) : 0.2020
Integration start scan : 1854 Integration stop scan: 1864
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

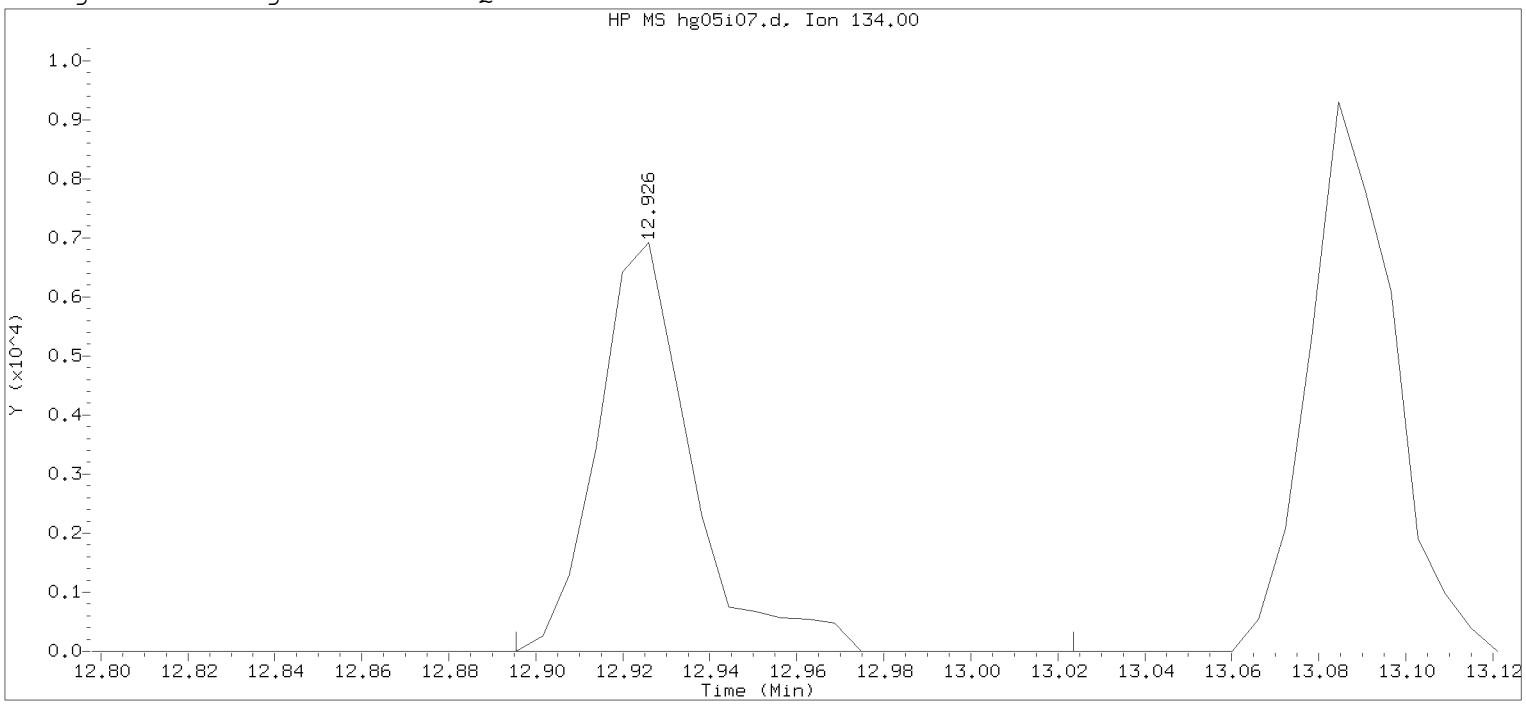
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

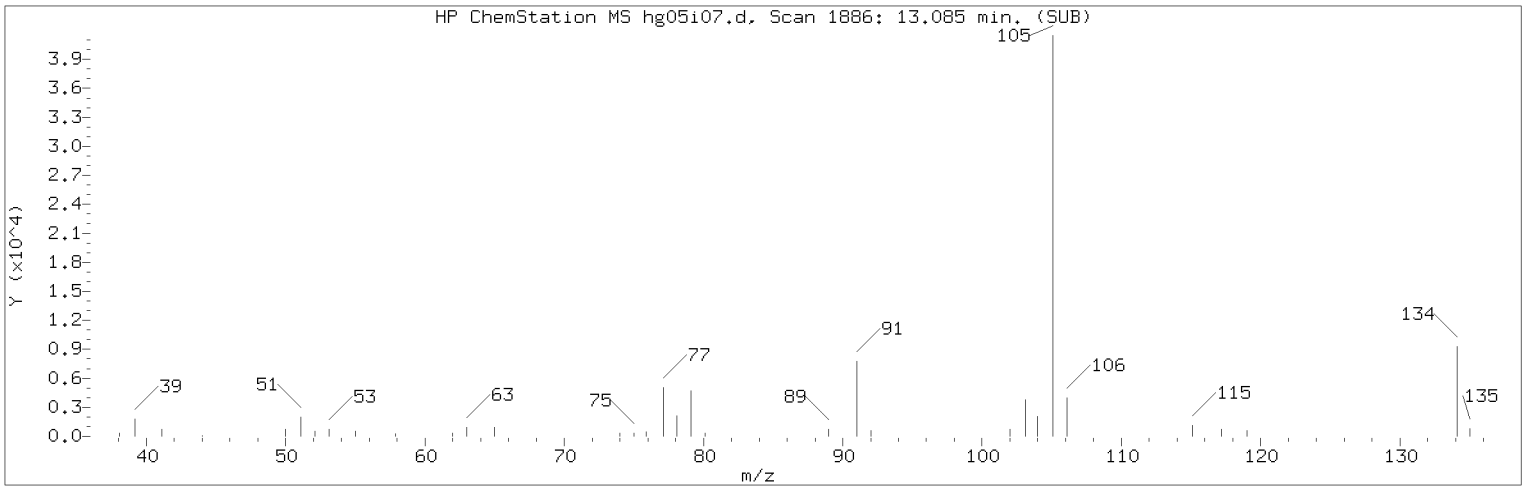
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

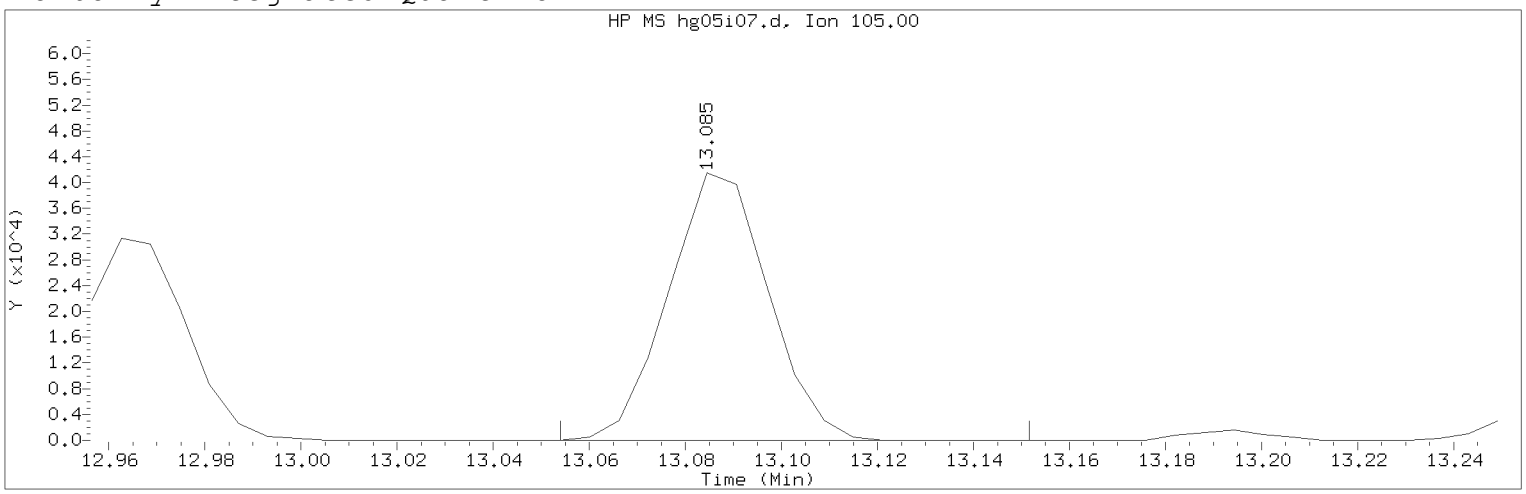
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area : 10334
On-column Amount (ng) : 0.2084
Integration start scan : 1854 Integration stop scan: 1875
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 21:33 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

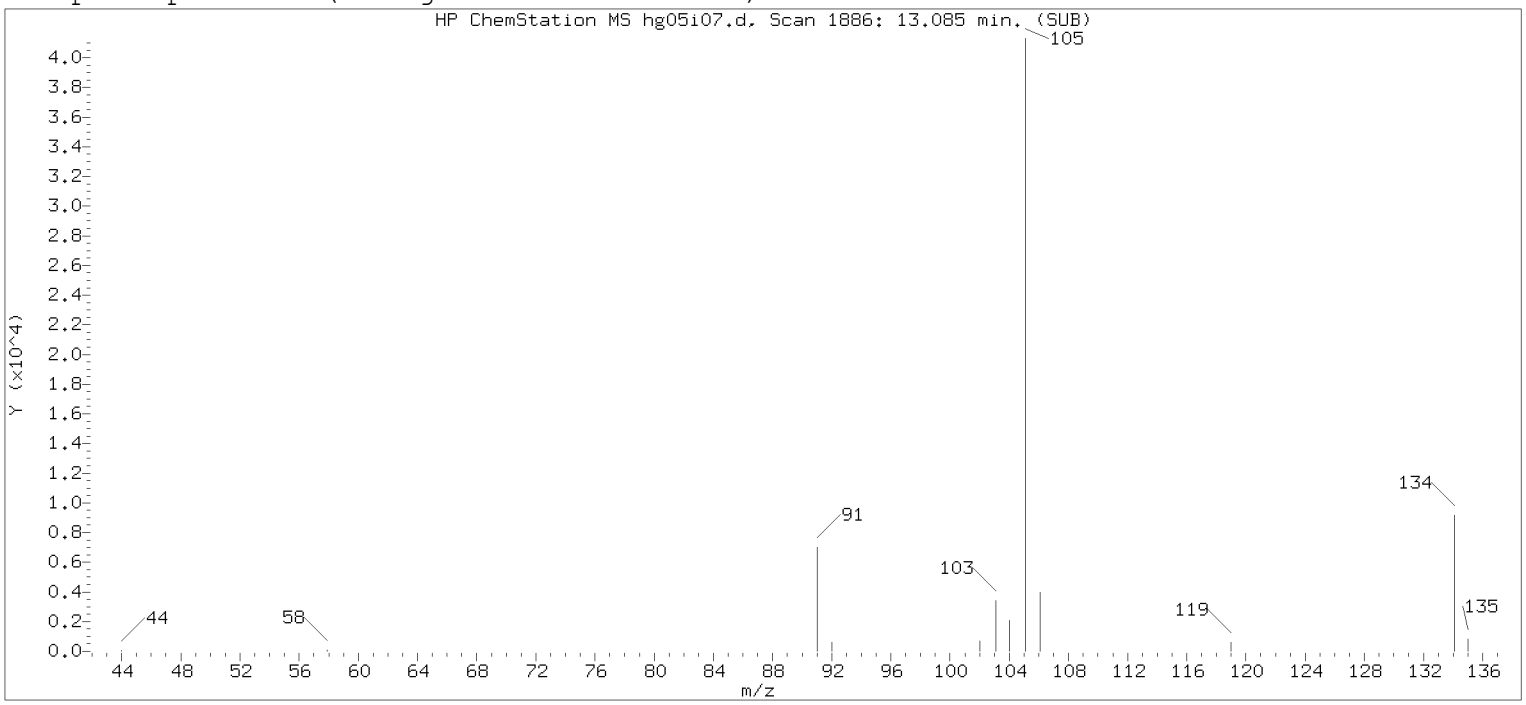
Compound Number : 128
Compound Name : sec-Butylbenzene
Scan Number : 1886
Retention Time (minutes): 13.085
Quant Ion : 105.00
Area (flag) : 59861M
On-Column Amount (ng) : 0.2037
Integration start scan : 1880 Integration stop scan: 1896
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

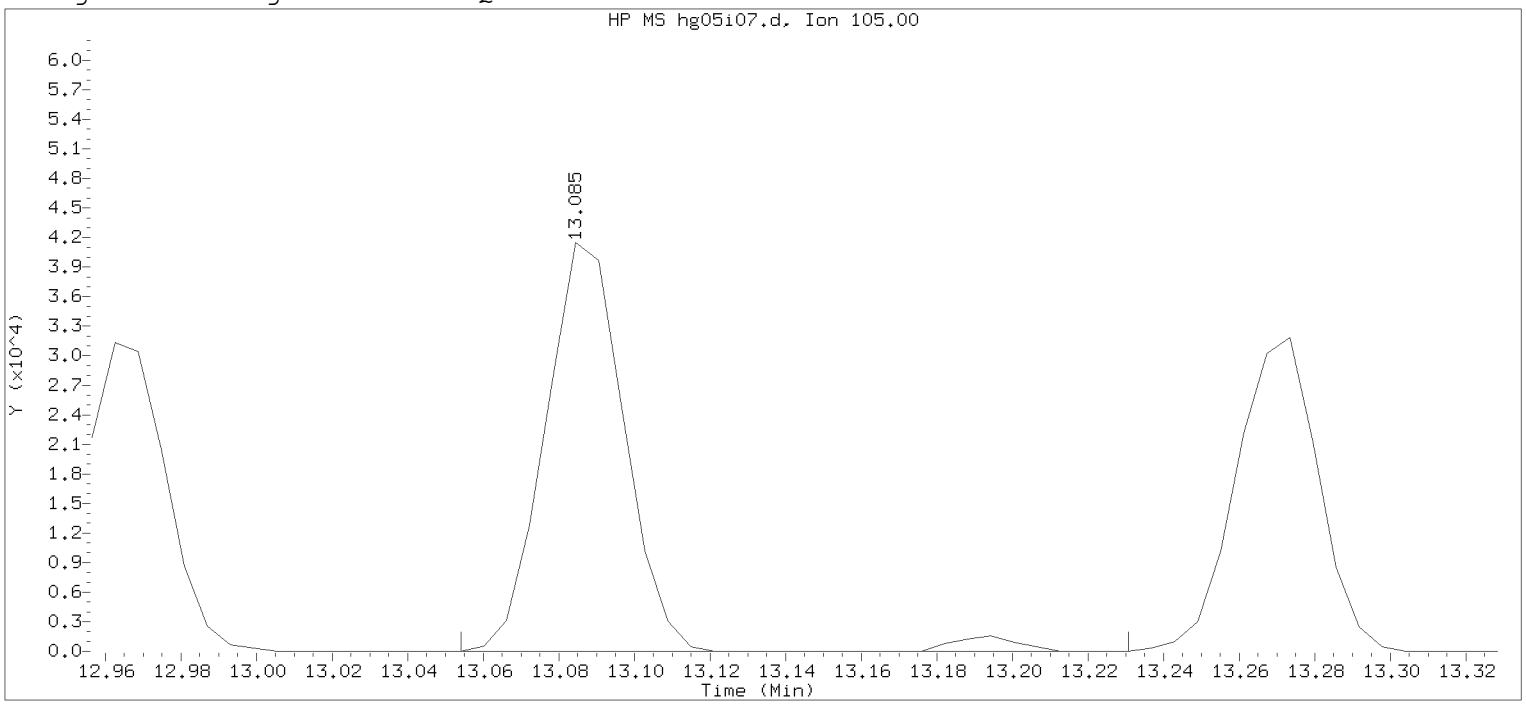
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



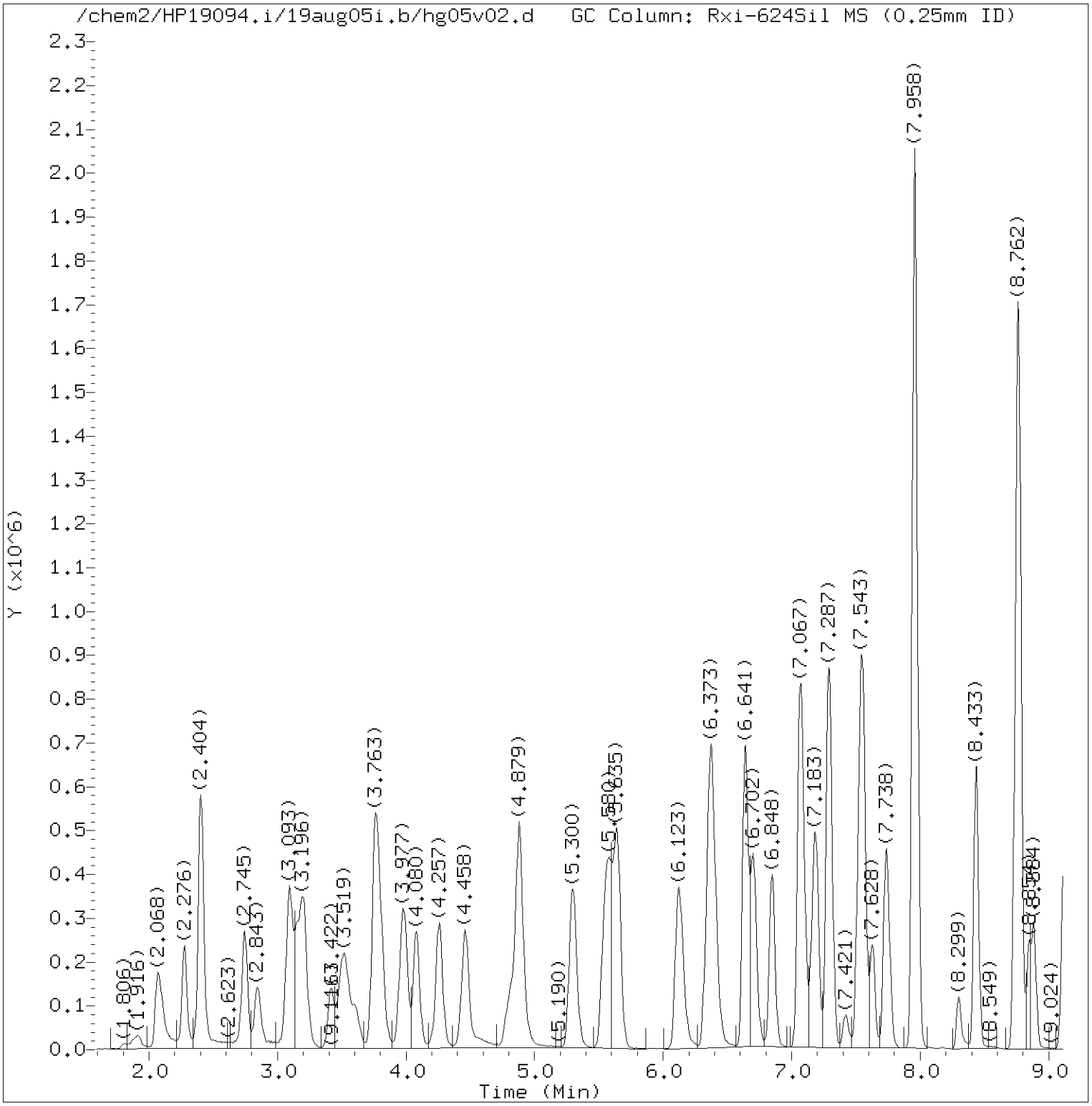
Data File: /chem2/HP19094.i/19aug05i.b/hg05i07.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 20:13 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 20:35
Date, time and analyst ID of latest file update: 05-Aug-2019 20:35 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compound Number	: 128		
Compound Name	: sec-Butylbenzene		
Scan Number	: 1886		
Retention Time (minutes)	: 13.085		
Quant Ion	: 105.00		
Area	: 61693		
On-column Amount (ng)	: 0.2090		
Integration start scan	: 1880	Integration stop scan:	1909
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 21:39.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

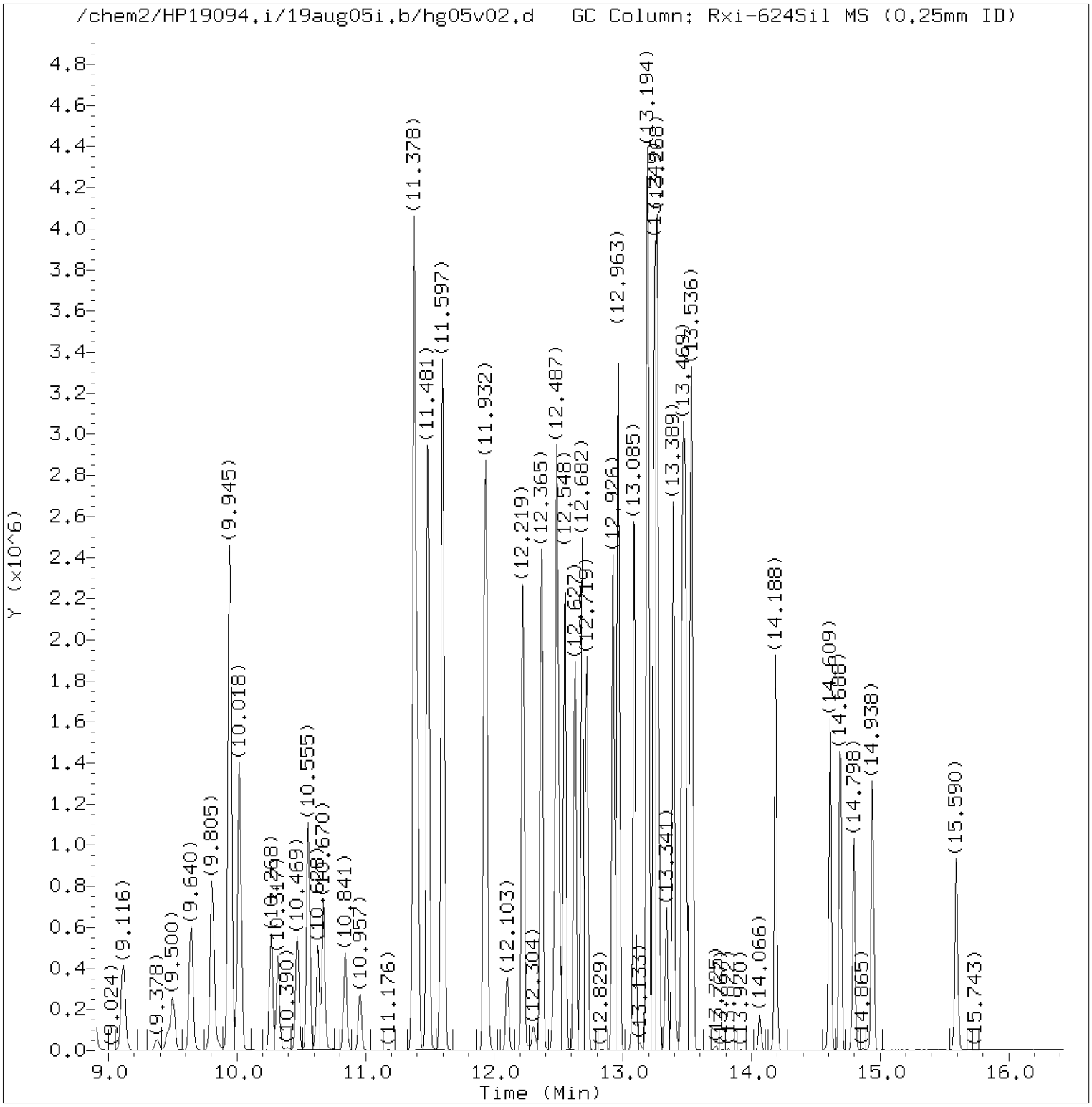
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.068	85	455770M	4.511
2) Chloromethane	(2)	2.276	50	357634	4.834
5) Vinyl Chloride	(2)	2.398	62	370030	4.971
6) 1,3-Butadiene	(2)	2.410	39	300141M	5.029
7) Bromomethane	(2)	2.745	94	288759	4.396
8) Chloroethane	(2)	2.849	64	208243	4.779
9) Dichlorofluoromethane	(2)	3.093	67	452796	4.738
10) Trichlorofluoromethane	(2)	3.148	101	561006M	4.762
11) Ethyl ether	(2)	3.416	59	147514	4.493
12) Freon 123a	(2)	3.519	67	308491	5.147
13) Acrolein	(1)	3.611	56	175100	37.402
15) 1,1-Dichloroethene	(2)	3.757	96	237647	5.532
14) Acetone	(1)	3.782	43	205167M	34.293
16) Freon 113	(2)	3.794	101	273546	5.091
17) Methyl Iodide	(2)	3.964	142	492375	4.777
18) Carbon Disulfide	(2)	4.080	76	682677	4.782
21) Methyl Acetate	(1)	4.214	43	94989M	4.386
22) Allyl Chloride	(2)	4.257	41	336918	4.623
26)*t-Butyl Alcohol-d10	(1)	4.434	65	98231	50.000
23) Methylene Chloride	(2)	4.458	84	252648	4.933
28) t-Butyl Alcohol	(1)	4.592	59	80078	43.708
29) Acrylonitrile	(1)	4.806	53	196518	25.982
30) Methyl Tertiary Butyl Ether	(2)	4.873	73	535475	4.817
31) trans-1,2-Dichloroethene	(2)	4.879	96	258991	5.251
32) n-Hexane	(2)	5.300	57	379770	5.062
33) 1,1-Dichloroethane	(2)	5.537	63	452278	5.178
34) di-Isopropyl Ether	(2)	5.592	45	733779	4.871
35) 2-Chloro-1,3-Butadiene	(2)	5.647	53	406683	5.021
40) 1,2-Dichloroethene (Total)	(2)		96	568843	10.841
37) Ethyl t-butyl ether	(2)	6.123	59	688441	4.800
38) 2-Butanone	(1)	6.330	43	383737	36.375
39) cis-1,2-Dichloroethene	(2)	6.373	96	309852	5.590
41) 2,2-Dichloropropane	(2)	6.391	77	426181	5.373
42) Propionitrile	(1)	6.427	54	98729	36.585
45) Methacrylonitrile	(1)	6.641	67	419808	39.051
47) Bromochloromethane	(2)	6.702	128	125234	4.757
48) Tetrahydrofuran	(1)	6.702	71	77193	26.407
49) Chloroform	(2)	6.848	83	483551	5.268

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	522898	9.974
51) 1,1,1-Trichloroethane	(2)	7.086	97	456471	5.342
52) Cyclohexane	(2)	7.183	56	426500	4.823
55) 1,1-Dichloropropene	(2)	7.287	75	372137	5.371
54) Carbon Tetrachloride	(2)	7.293	117	425046	5.319
56) Isobutyl Alcohol	(1)	7.421	41	78407M	104.551
57)$1,2-Dichloroethane-d4	(2)	7.525	102	94225M	9.775
58) Benzene	(2)	7.555	78	1024716	5.256
59) 1,2-Dichloroethane	(2)	7.628	62	282561	5.145
60) t-Amyl methyl ether	(2)	7.738	73	618431	4.786
62) n-Heptane	(2)	7.958	43	388218	4.815
63)*Fluorobenzene	(2)	7.958	96	1927864	10.000
65) n-Butanol	(1)	8.299	56	122615	200.562
67) Trichloroethene	(2)	8.433	95	290750	5.308
69) Methylcyclohexane	(2)	8.750	83	466073	4.839
70) 1,2-Dichloropropane	(2)	8.774	63	255902	5.333
71) Methyl Methacrylate	(1)	8.848	69	114713	5.244
72) 1,4-Dioxane	(1)	8.860	88	13187M	82.707
73) Dibromomethane	(2)	8.884	93	131900	5.127
74) Bromodichloromethane	(2)	9.116	83	356811	5.398
76) 2-Nitropropane	(1)	9.378	41	42345M	5.451
80) cis-1,3-Dichloropropene	(2)	9.640	75	398129	5.282
81) 4-Methyl-2-Pentanone	(1)	9.805	43	718998	26.885
82)$Toluene-d8	(3)	9.945	98	1957440	10.011
83) Toluene	(3)	10.018	92	690320	5.305
85) 1,3-Dichloropropene (total)	(3)		75	724898	10.371
84) trans-1,3-Dichloropropene	(3)	10.268	75	326769	5.089
86) Ethyl Methacrylate	(3)	10.317	69	244820	4.771
88) 1,1,2-Trichloroethane	(3)	10.469	97	183225	5.253
89) Tetrachloroethene	(3)	10.555	166	355751	5.446
90) 1,3-Dichloropropane	(3)	10.628	76	294833	5.097
91) 2-Hexanone	(1)	10.670	43	491744	26.175
93) Dibromochloromethane	(3)	10.841	129	261328	5.342
95) 1,2-Dibromoethane	(3)	10.957	107	184799	5.259
96) 1-Chlorohexane	(3)	11.378	91	405409	5.108
97)*Chlorobenzene-d5	(3)	11.378	117	1531596	10.000
98) Chlorobenzene	(3)	11.402	112	798456	5.412
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	294718	5.357

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

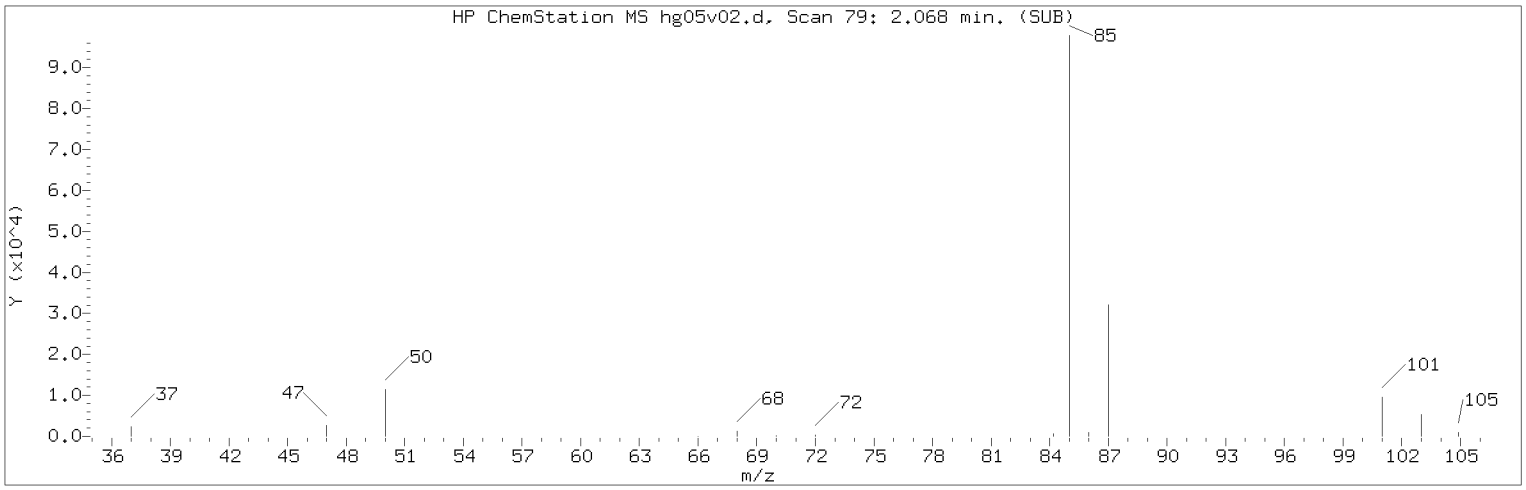
Sample Name: ICVH00 Lab Sample ID: ICVH00

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
100) Ethylbenzene	(3)	11.487	91	1382531	5.374
101) m+p-Xylene	(3)	11.597	106	1104665	10.820
105) Xylene (Total)	(3)		106	1635227	16.136
104) o-Xylene	(3)	11.926	106	530562	5.316
106) Styrene	(3)	11.938	104	884249	5.451
107) Bromoform	(3)	12.103	173	161027	5.286
108) Isopropylbenzene	(3)	12.225	105	1458134	5.476
111)$4-Bromofluorobenzene	(3)	12.365	95	709440	9.922
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	220275M	5.205
114) Bromobenzene	(4)	12.487	156	356082	5.385
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	301186	27.107
116) 1,2,3-Trichloropropane	(4)	12.512	110	63157	5.376
117) n-Propylbenzene	(4)	12.548	91	1699124	5.448
119) 2-Chlorotoluene	(4)	12.627	126	350050	5.455
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	1233928	5.421
122) 4-Chlorotoluene	(4)	12.719	126	352942	5.350
125) tert-Butylbenzene	(4)	12.926	134	272733M	5.426
126) Pentachloroethane	(4)	12.963	167	234858	5.064
127) 1,2,4-Trimethylbenzene	(4)	12.969	105	1249998	5.304
128) sec-Butylbenzene	(4)	13.091	105	1639123	5.472
131) 1,3-Dichlorobenzene	(4)	13.188	146	699280	5.422
132) p-Isopropyltoluene	(4)	13.194	119	1423684	5.499
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	865335	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	694905	5.417
135) 1,2,3-Trimethylbenzene	(4)	13.274	120	533881	5.059
136) Benzyl Chloride	(4)	13.341	126	100796	4.900
138) n-Butylbenzene	(4)	13.487	92	701279	5.503
139) 1,2-Dichlorobenzene	(4)	13.524	146	633971	5.479
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	36704	5.887
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	555029	5.558
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	465801	5.578
146) Hexachlorobutadiene	(4)	14.694	225	250813	5.791
147) Naphthalene	(4)	14.798	128	762056	5.138
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	390229	5.340

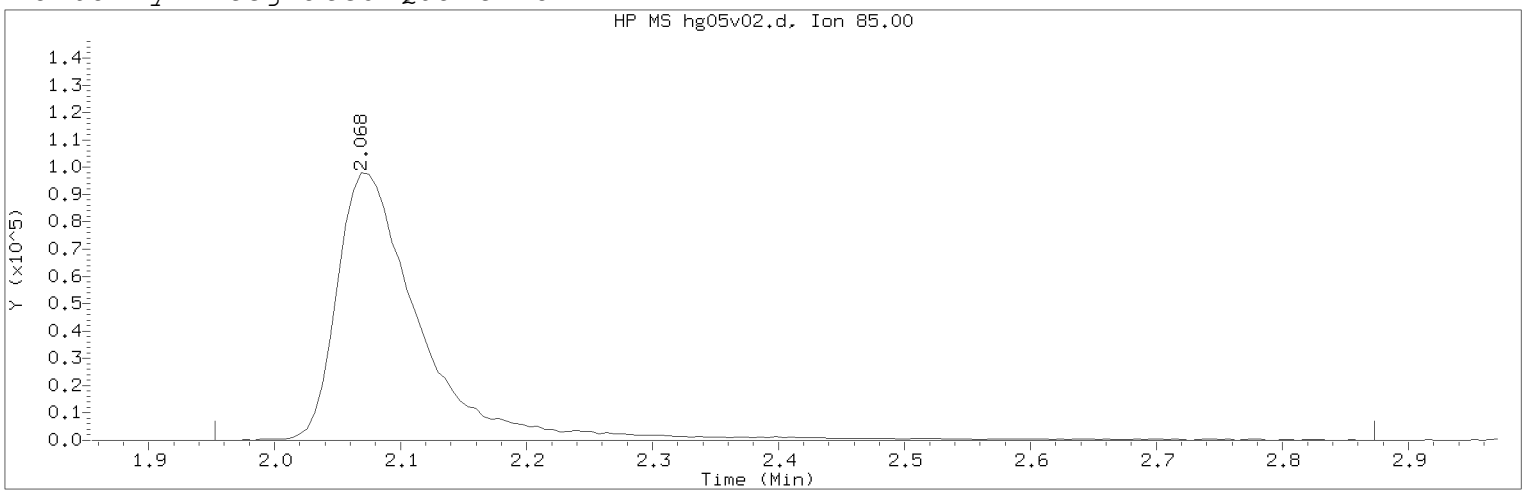
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

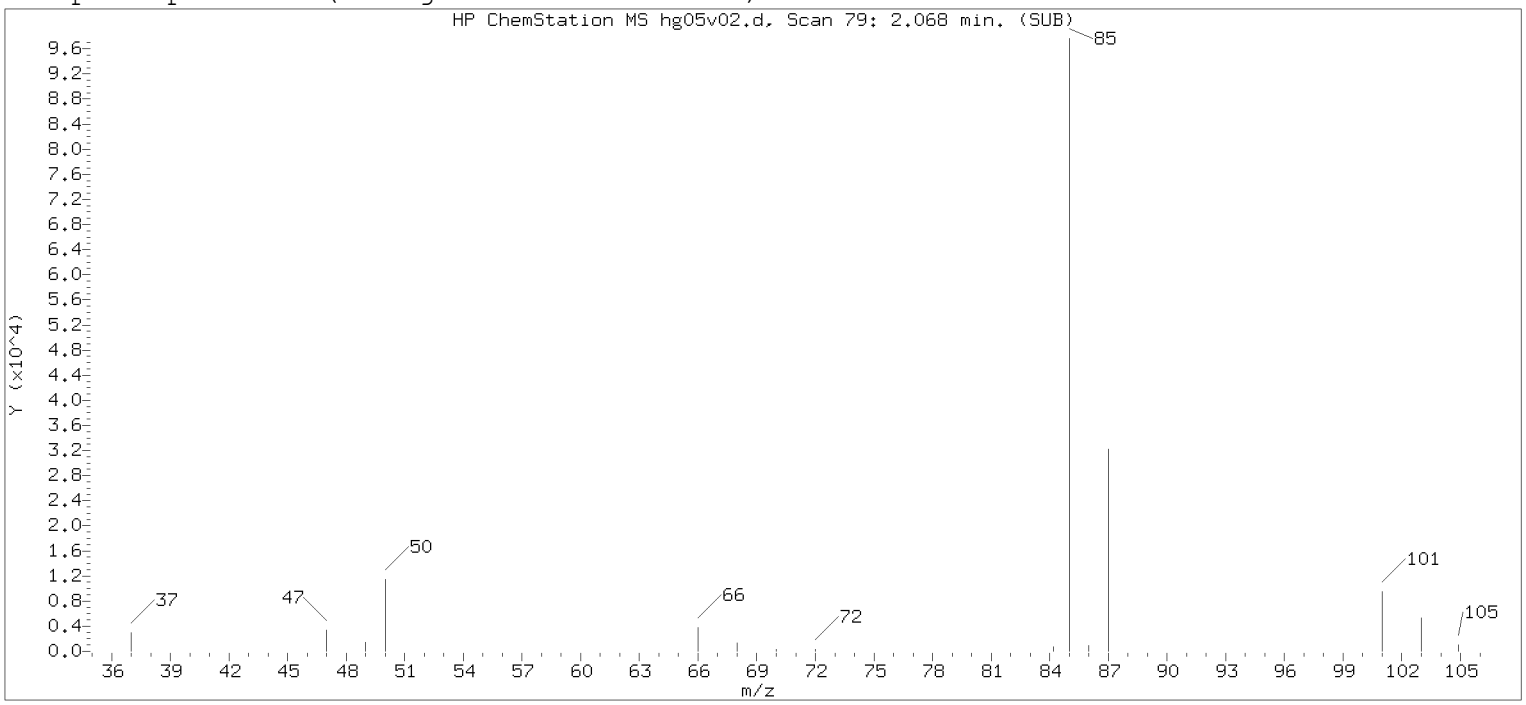
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 79
Retention Time (minutes): 2.068
Quant Ion : 85.00
Area (flag) : 455770M
On-Column Amount (ng) : 4.5108
Integration start scan : 59 Integration stop scan: 210
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

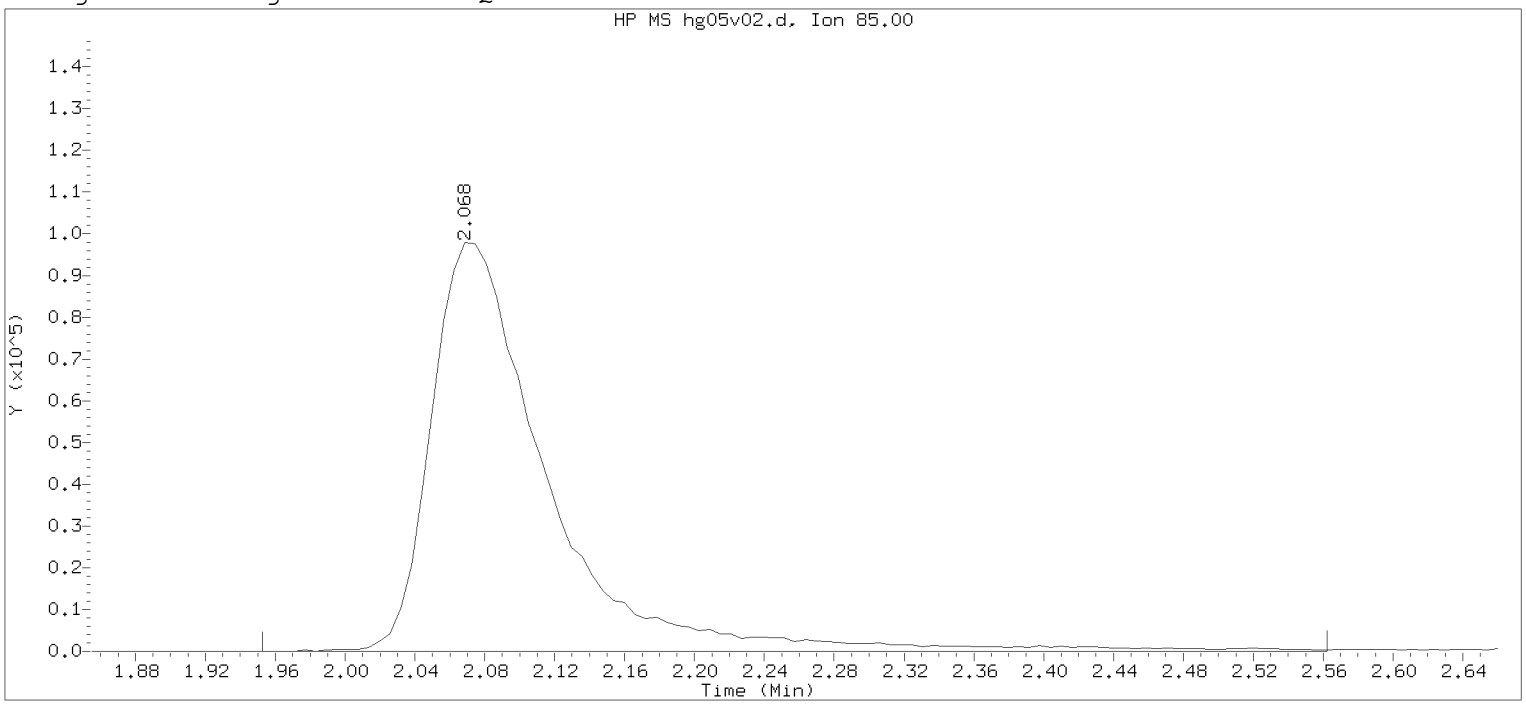
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

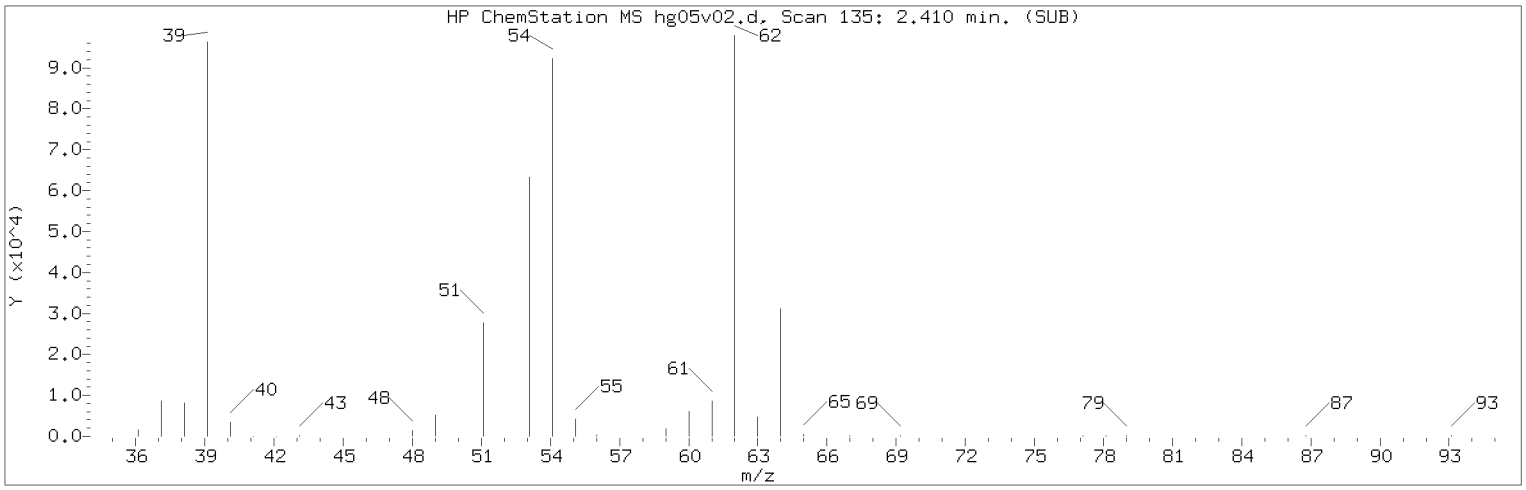
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

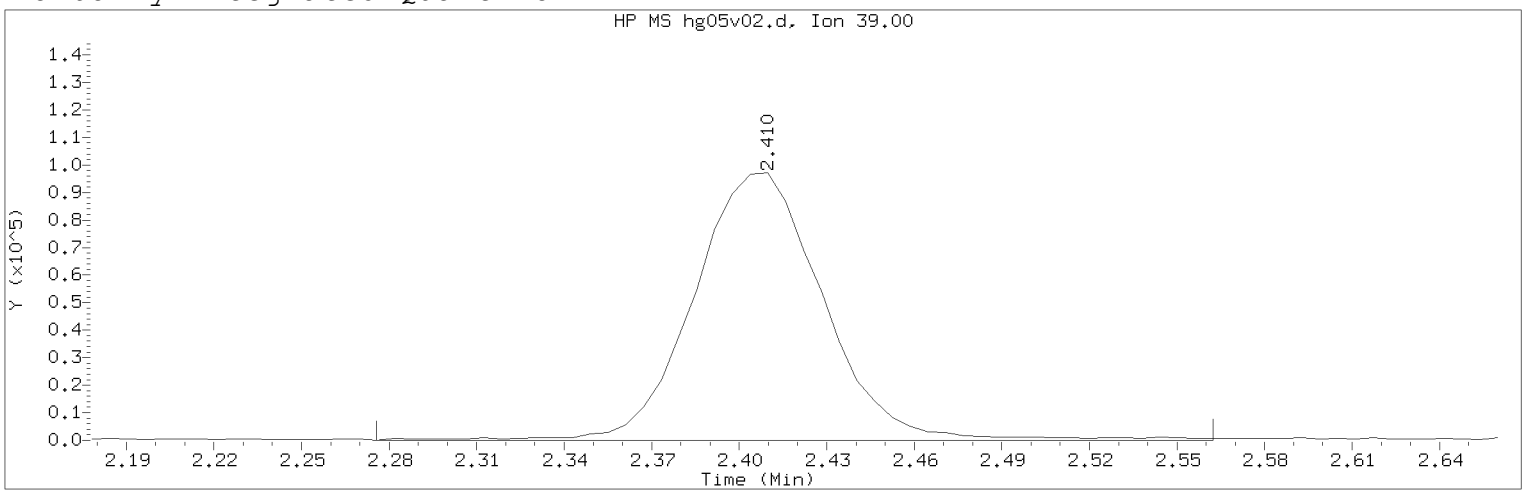
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 79
Retention Time (minutes): 2.068
Quant Ion : 85.00
Area : 450344
On-column Amount (ng) : 4.4571
Integration start scan : 59 Integration stop scan: 159
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

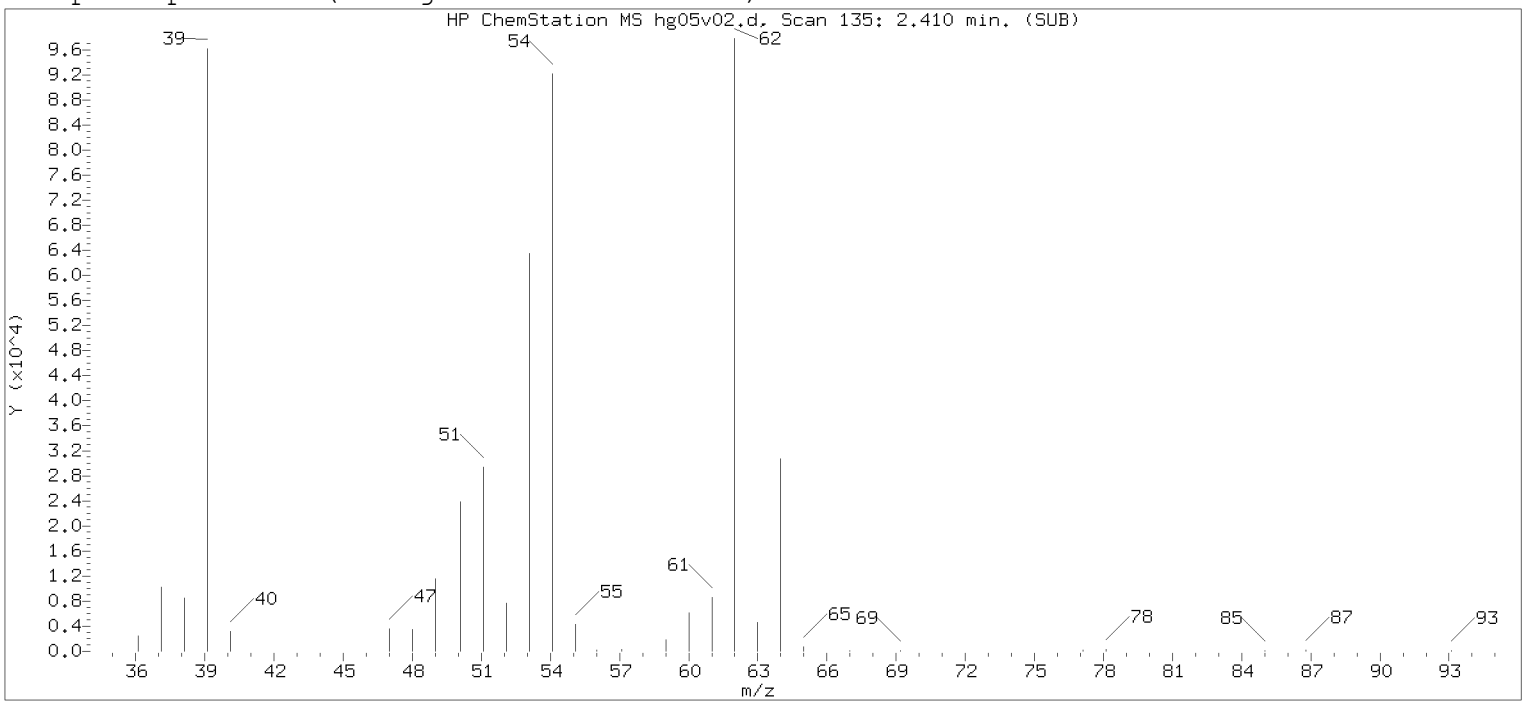
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area (flag) : 300141M
On-Column Amount (ng) : 5.0291
Integration start scan : 112 Integration stop scan: 159
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

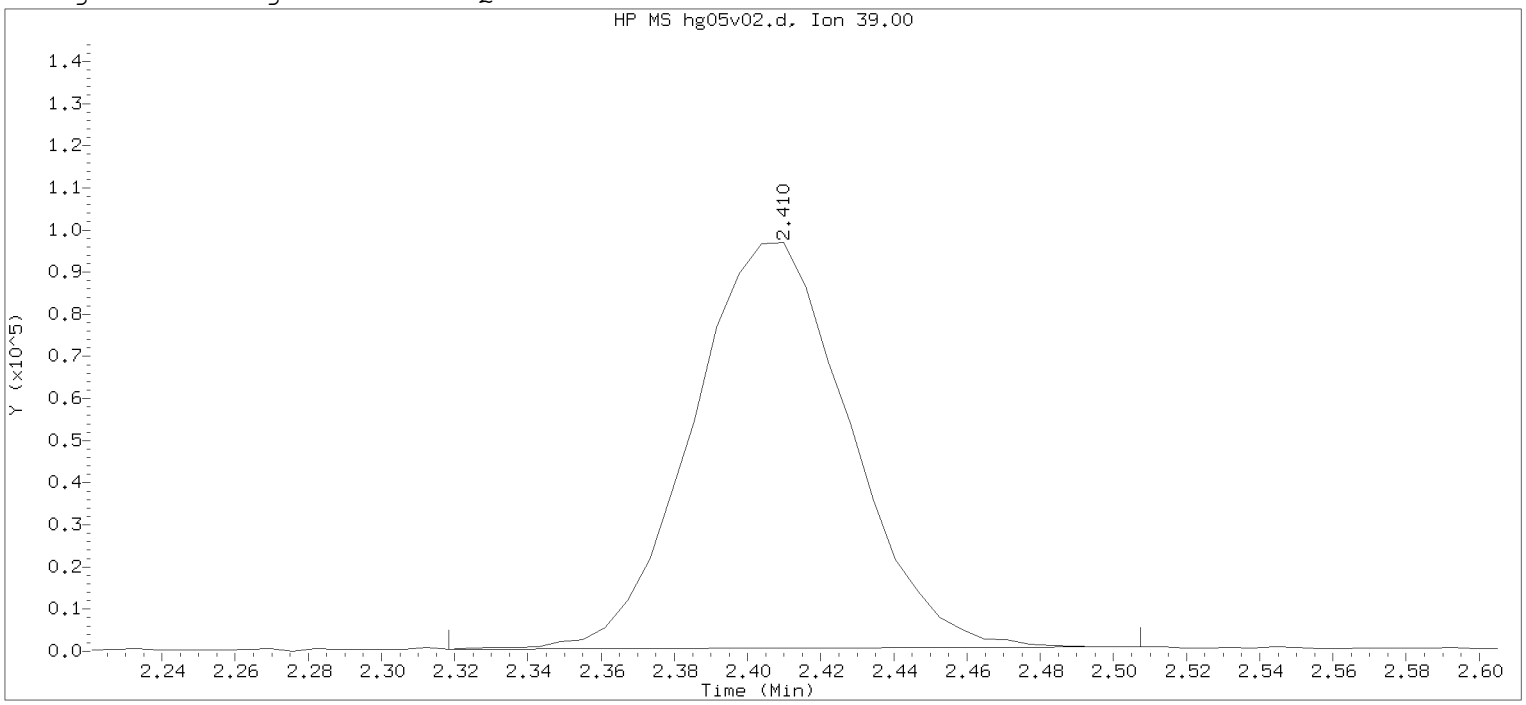
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

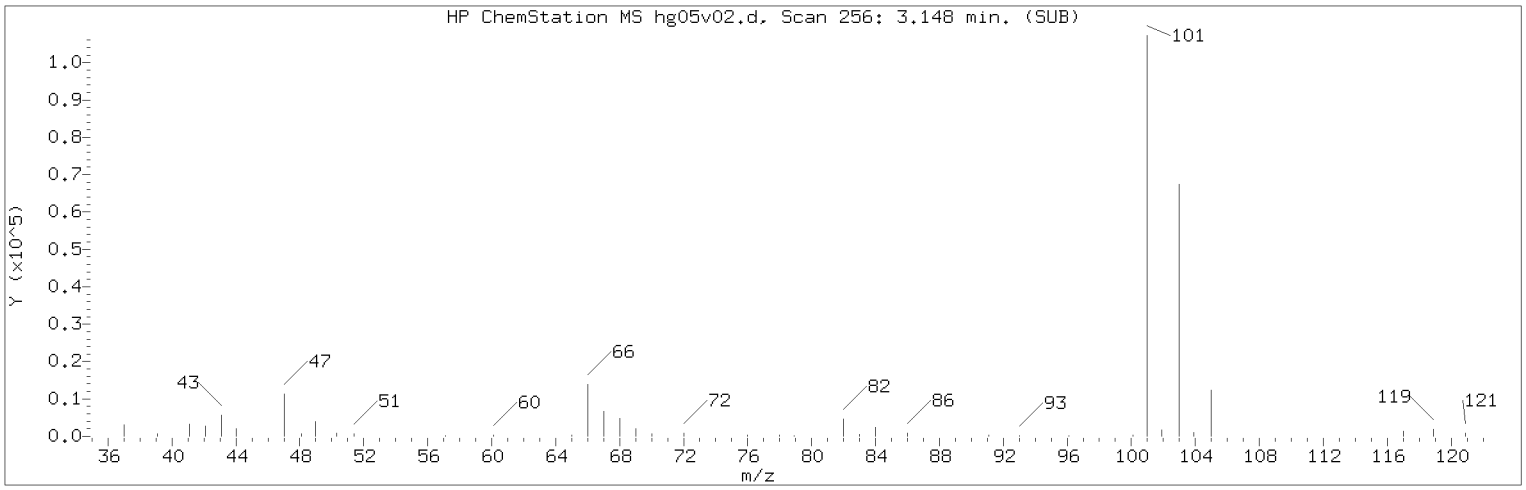
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

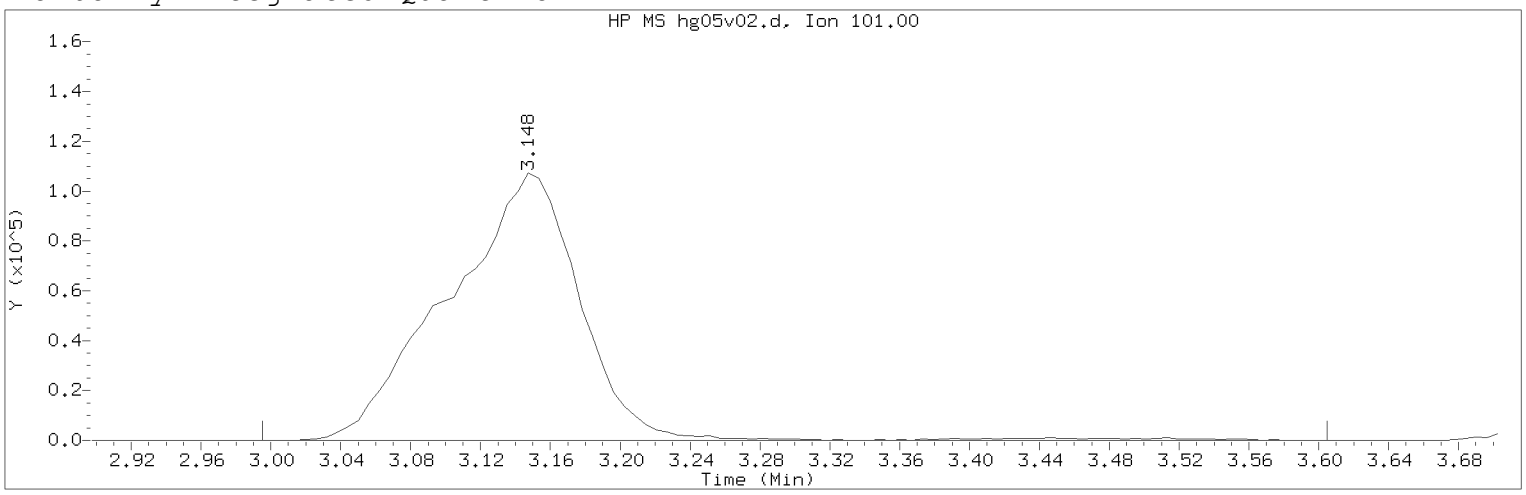
Compound Number : 6
Compound Name : 1,3-Butadiene
Scan Number : 135
Retention Time (minutes): 2.410
Quant Ion : 39.00
Area : 287157
On-column Amount (ng) : 4.8115
Integration start scan : 119 Integration stop scan: 150
Y at integration start : 529 Y at integration end: 997

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Target 3.5 esignature used: AF mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

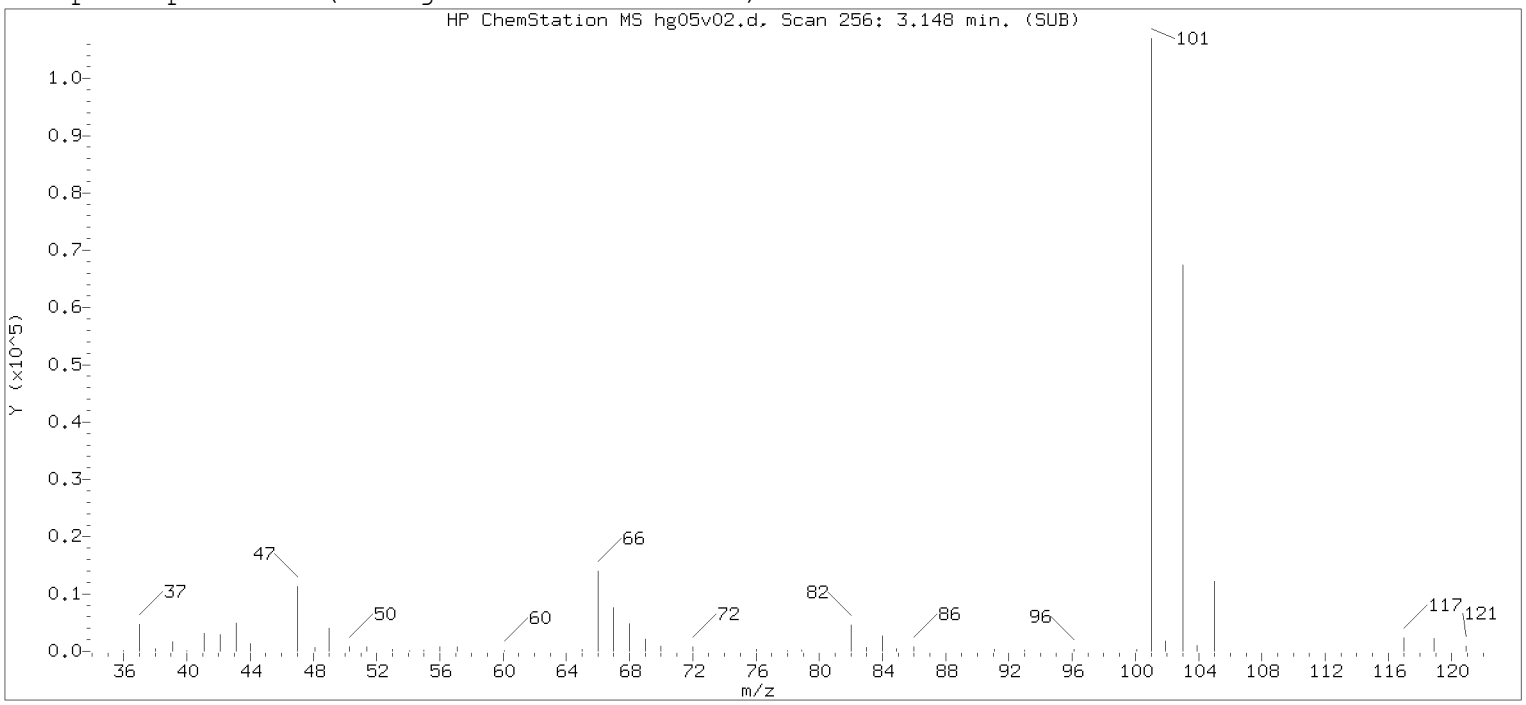
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 256
Retention Time (minutes): 3.148
Quant Ion : 101.00
Area (flag) : 561006M
On-Column Amount (ng) : 4.7619
Integration start scan : 230 Integration stop scan: 330
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

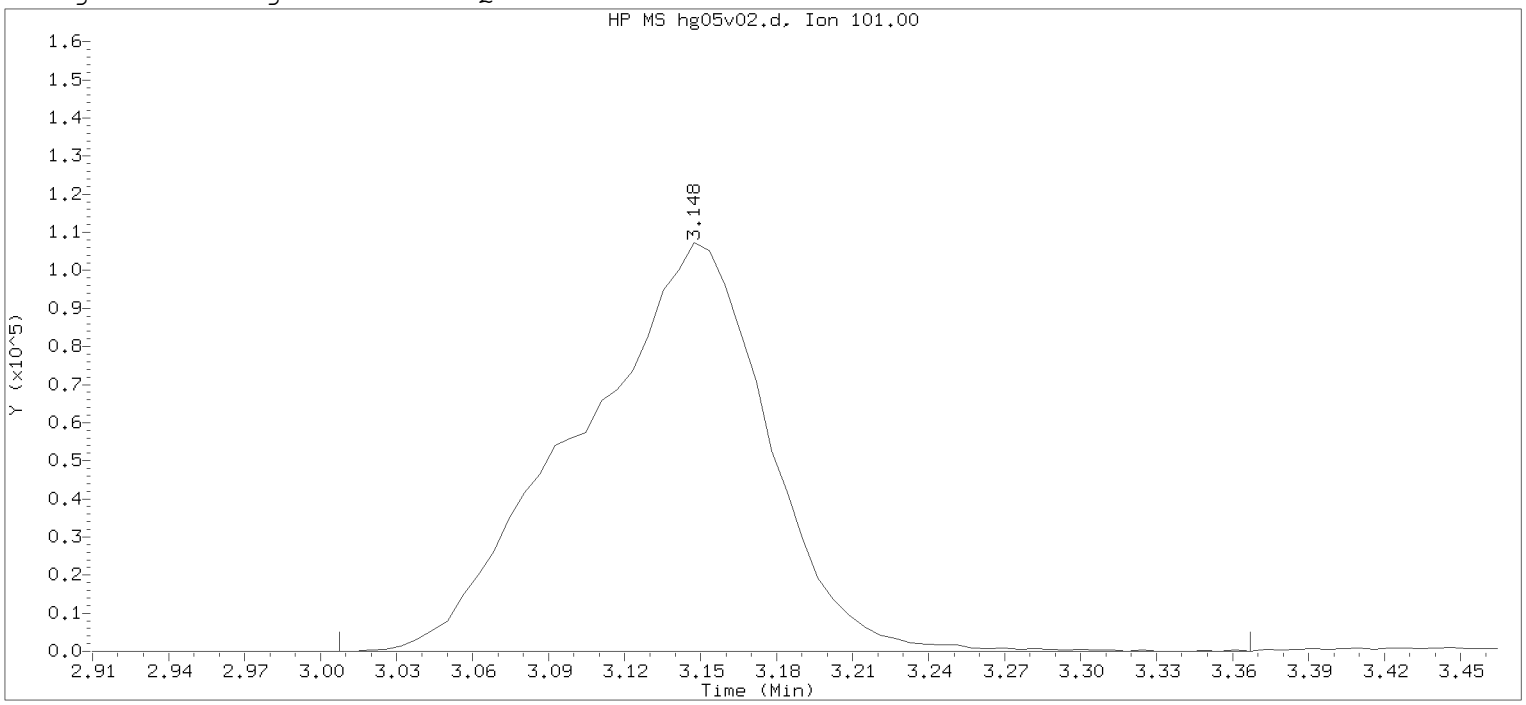
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

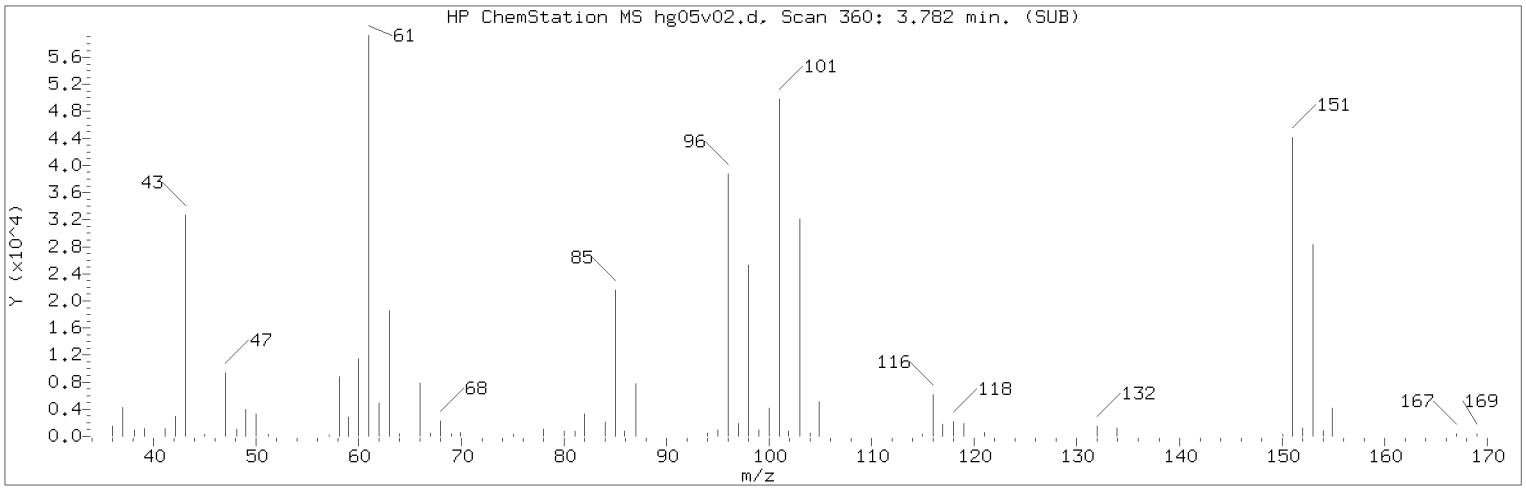
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

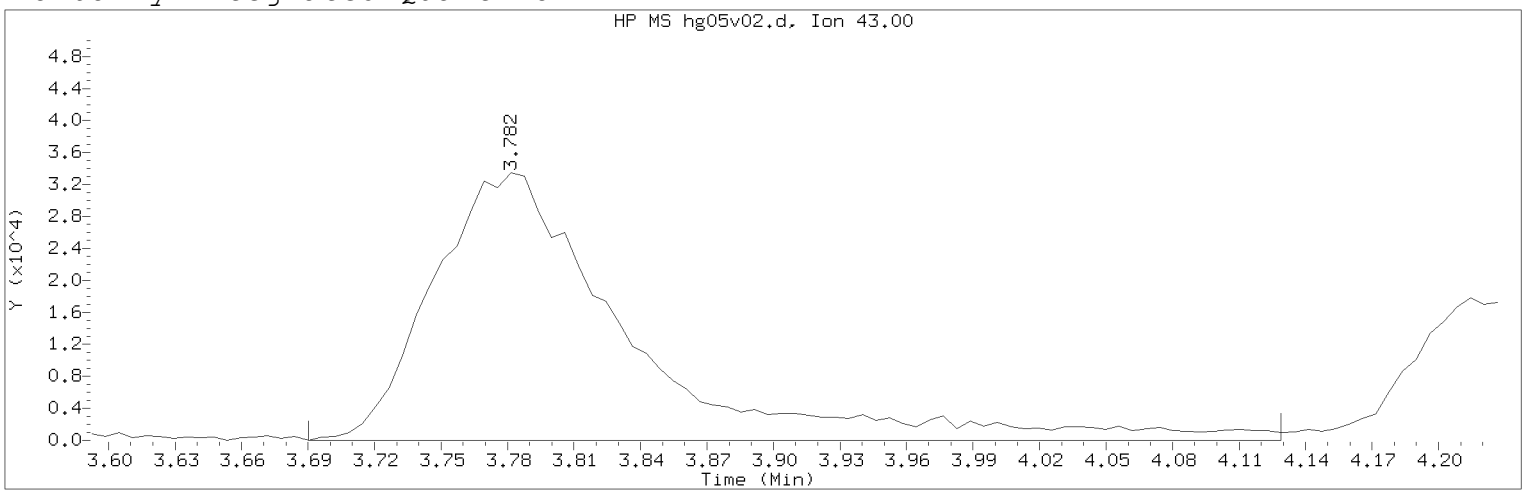
Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 256
Retention Time (minutes): 3.148
Quant Ion : 101.00
Area : 553447
On-column Amount (ng) : 4.6977
Integration start scan : 232 Integration stop scan: 291
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

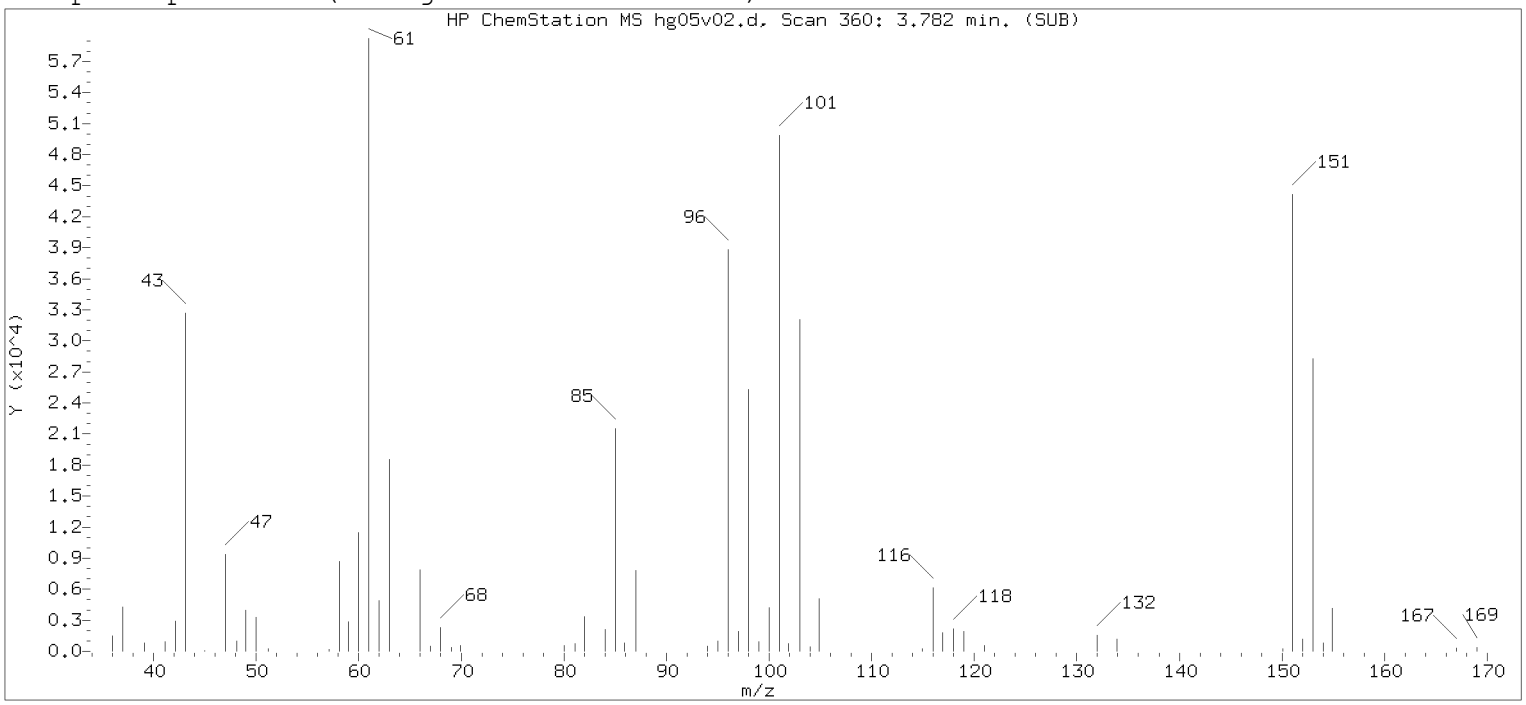
Compound Number : 14
Compound Name : Acetone
Scan Number : 360
Retention Time (minutes): 3.782
Quant Ion : 43.00
Area (flag) : 205167M
On-Column Amount (ng) : 34.2929
Integration start scan : 344 Integration stop scan: 416
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

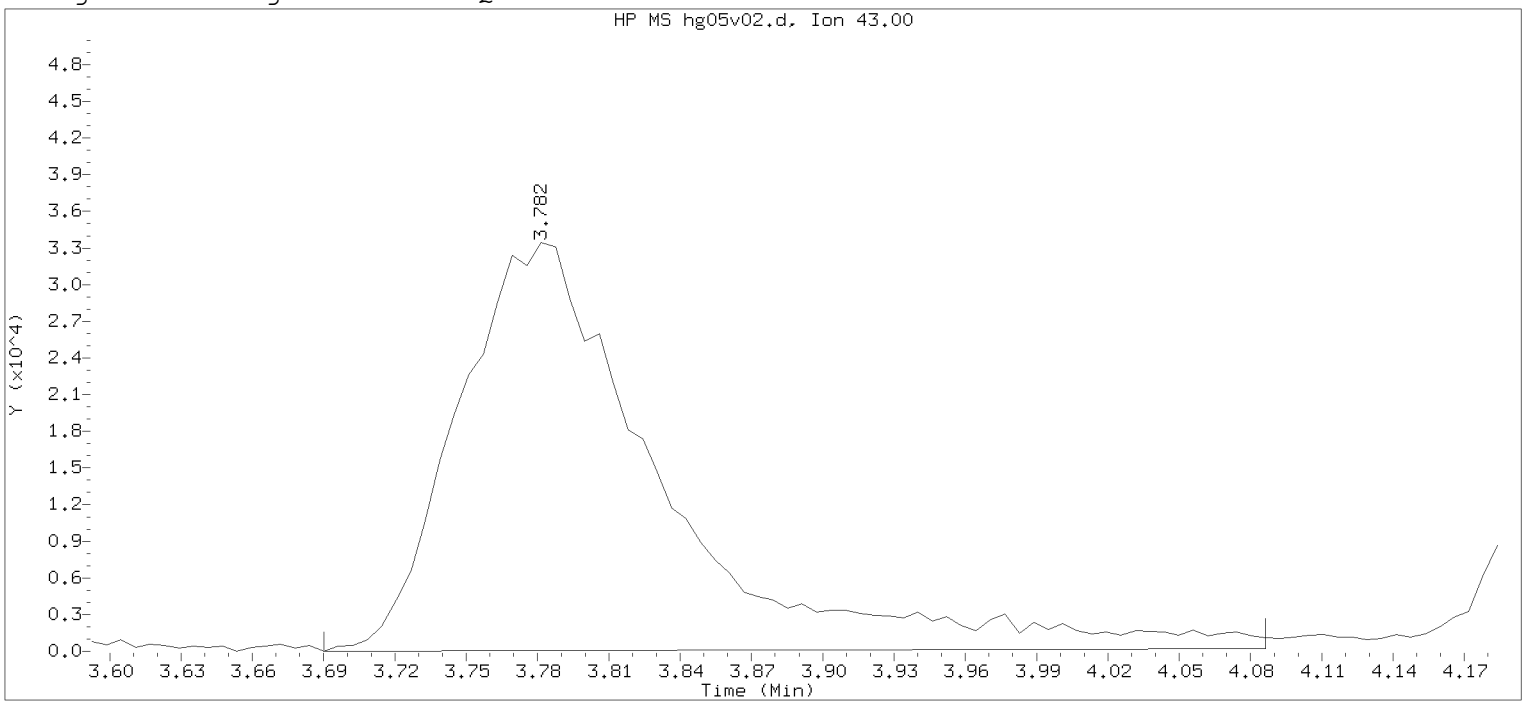
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

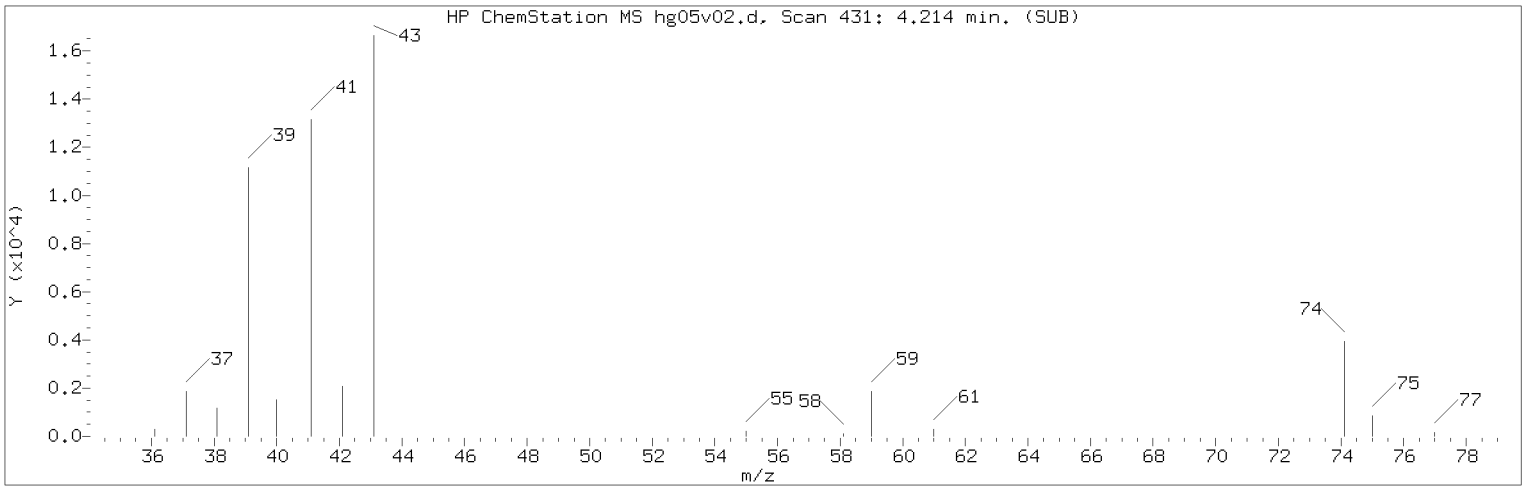
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

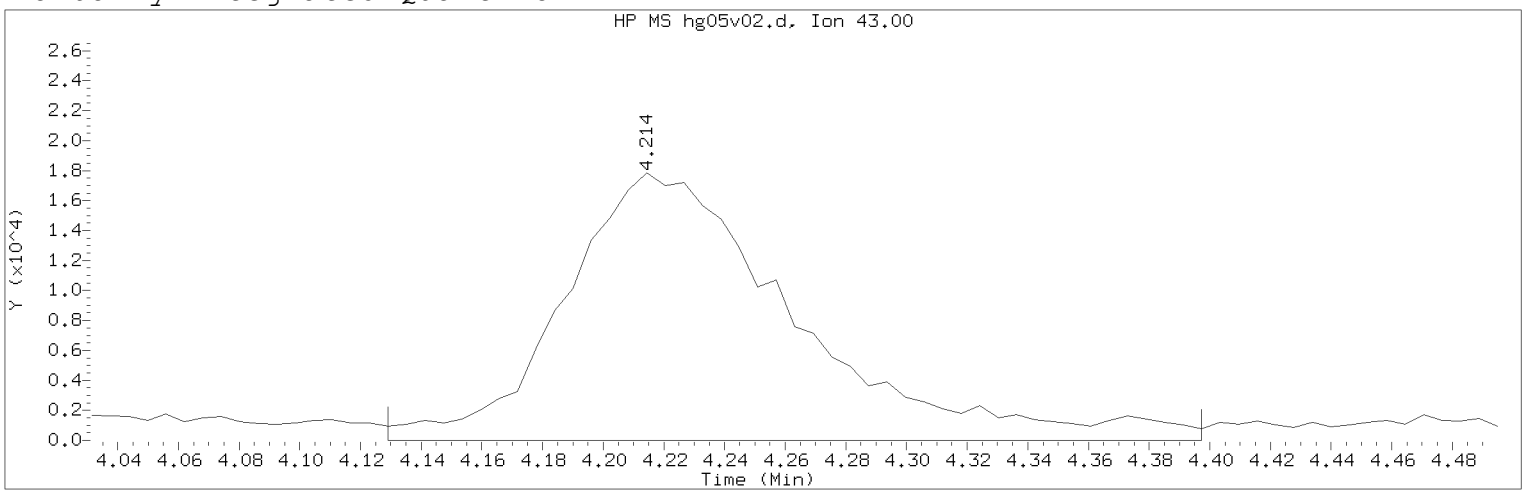
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 360		
Retention Time (minutes)	: 3.782		
Quant Ion	: 43.00		
Area	: 199642		
On-column Amount (ng)	: 33.3695		
Integration start scan	: 344	Integration stop scan:	409
Y at integration start	: 0	Y at integration end:	196

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

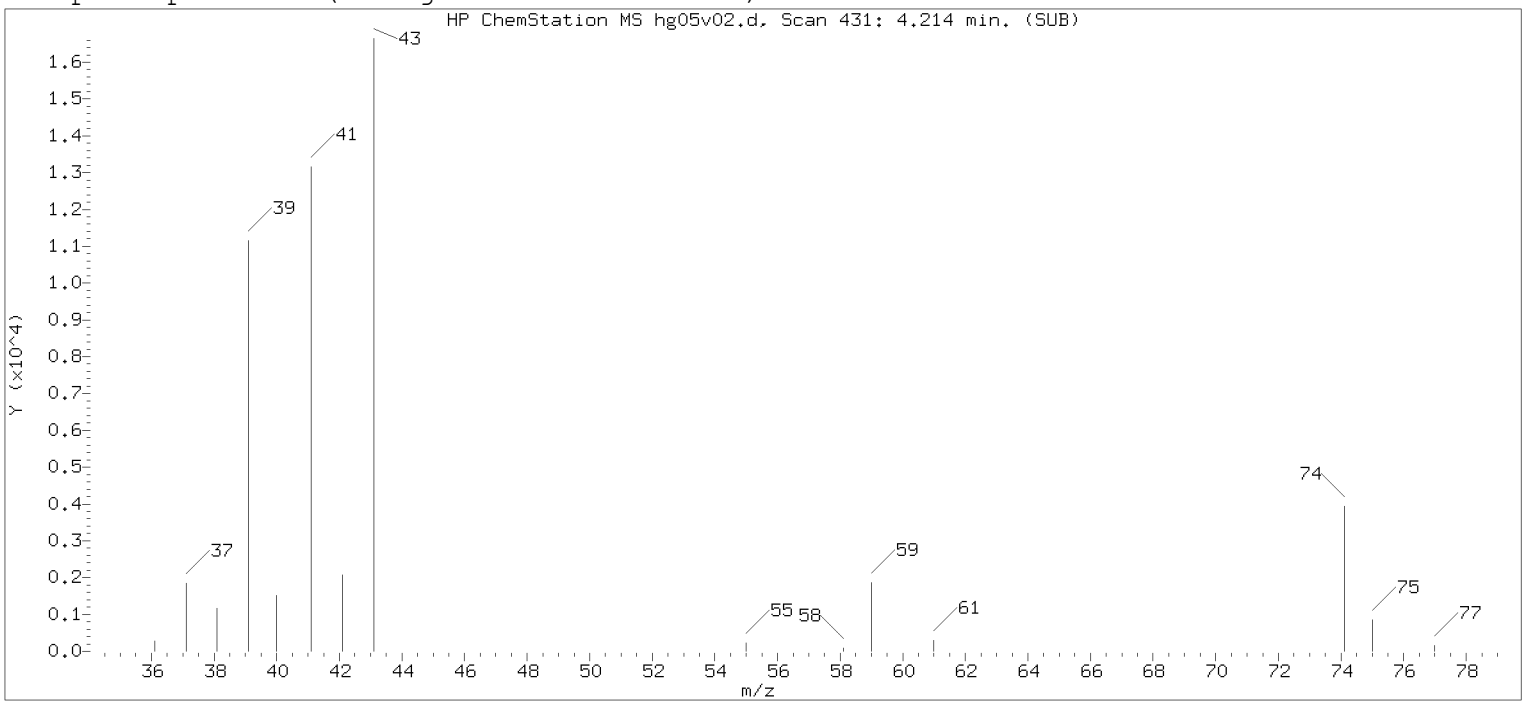
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area (flag) : 94989M
On-Column Amount (ng) : 4.3862
Integration start scan : 416 Integration stop scan: 460
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

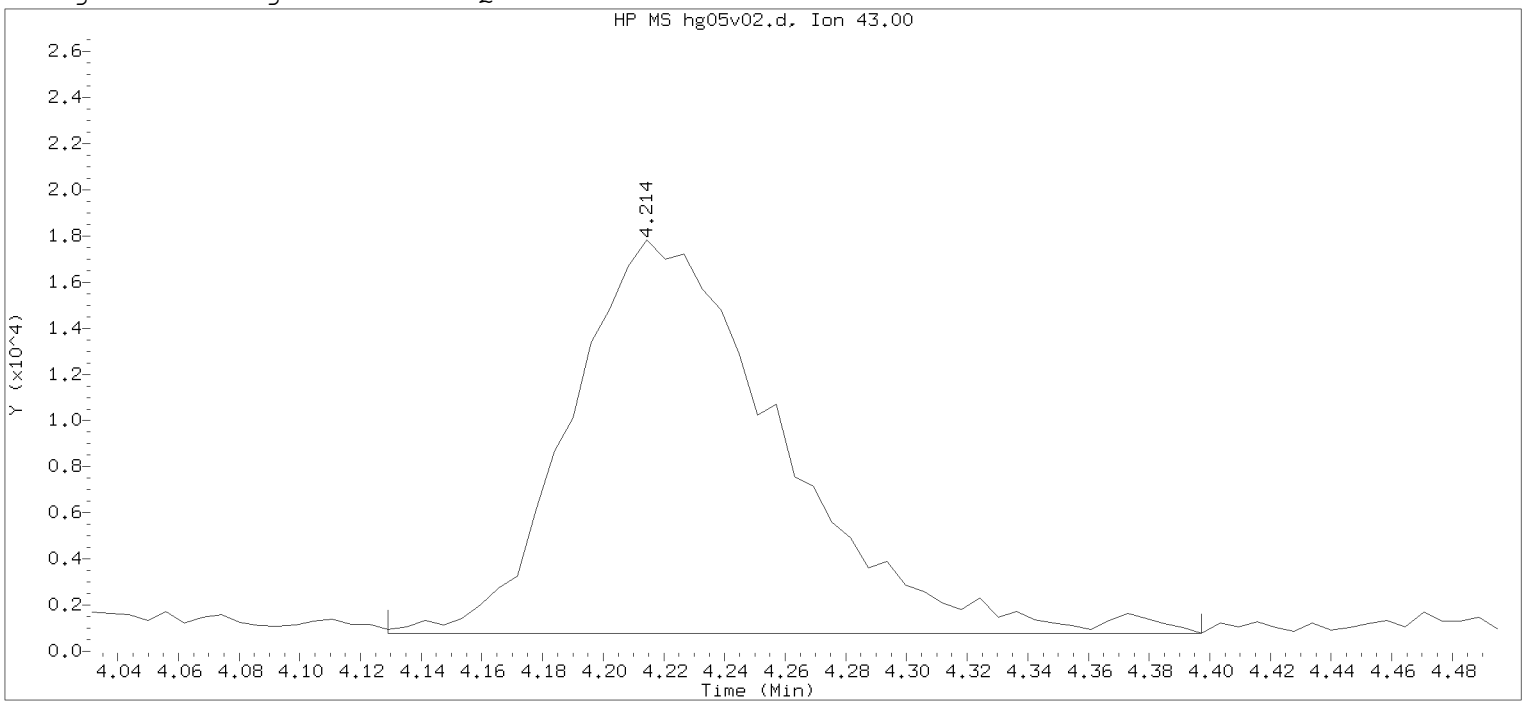
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

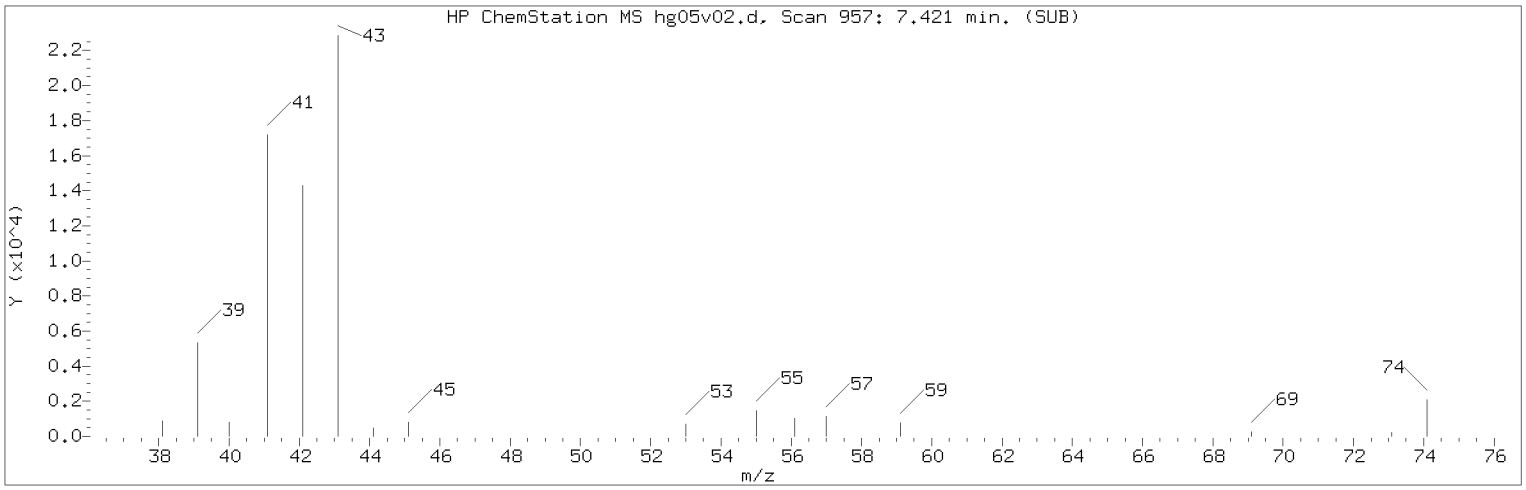
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

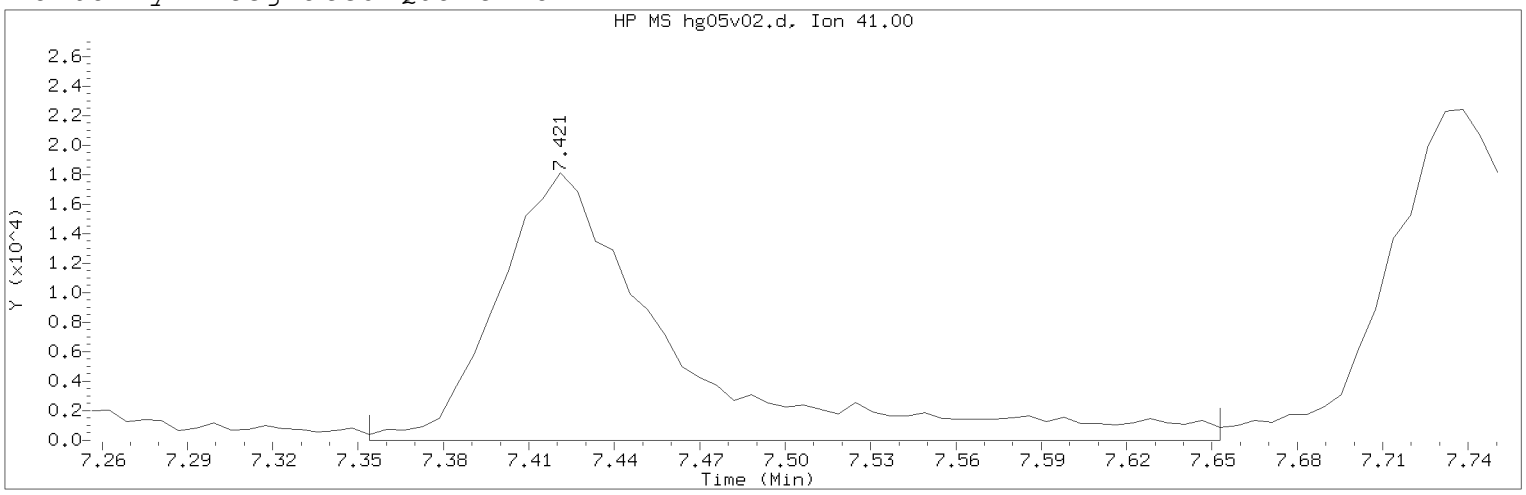
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 431
Retention Time (minutes): 4.214
Quant Ion : 43.00
Area : 82024
On-column Amount (ng) : 3.7876
Integration start scan : 416 Integration stop scan: 460
Y at integration start : 786 Y at integration end: 786

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used for mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

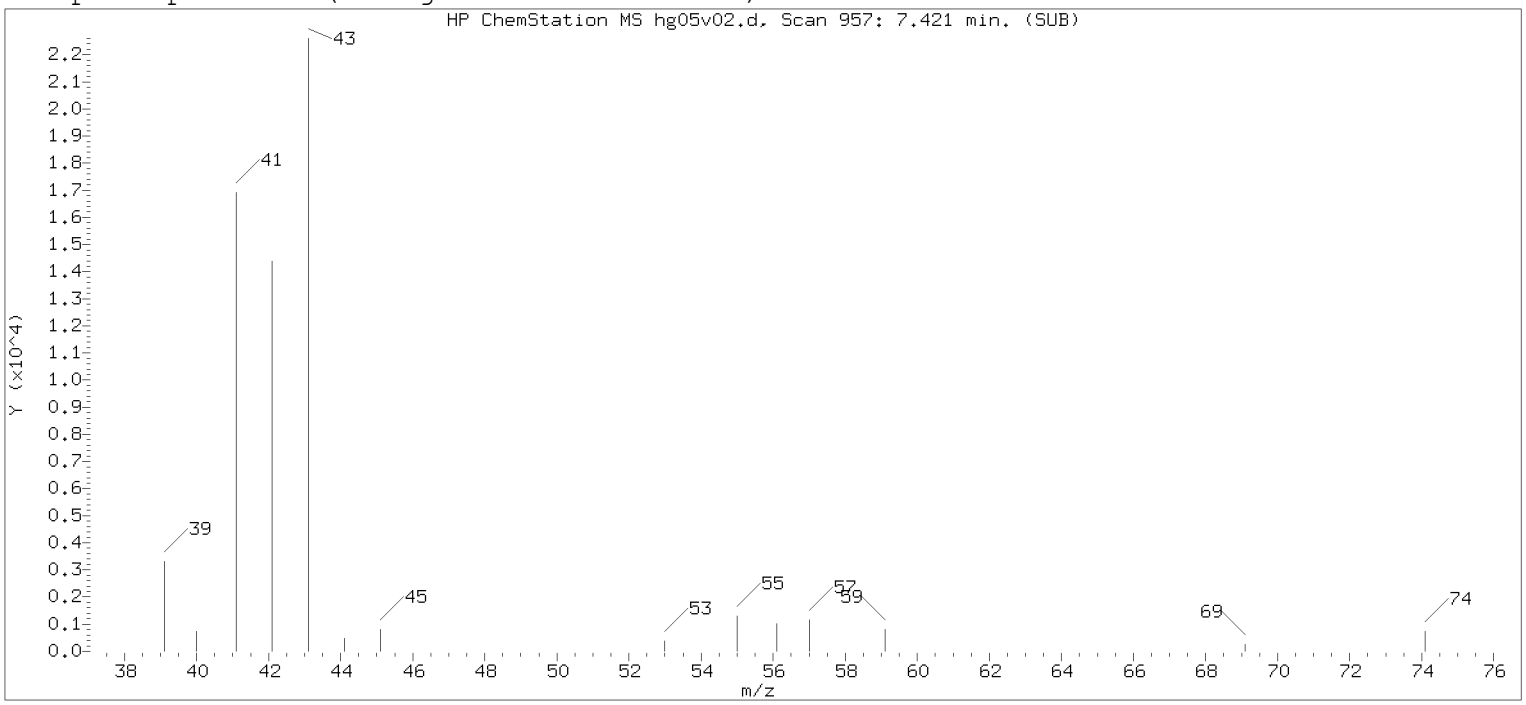
Compound Number : 56
Compound Name : Isobutyl Alcohol
Scan Number : 957
Retention Time (minutes): 7.421
Quant Ion : 41.00
Area (flag) : 78407M
On-Column Amount (ng) : 104.5512
Integration start scan : 945 Integration stop scan: 994
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

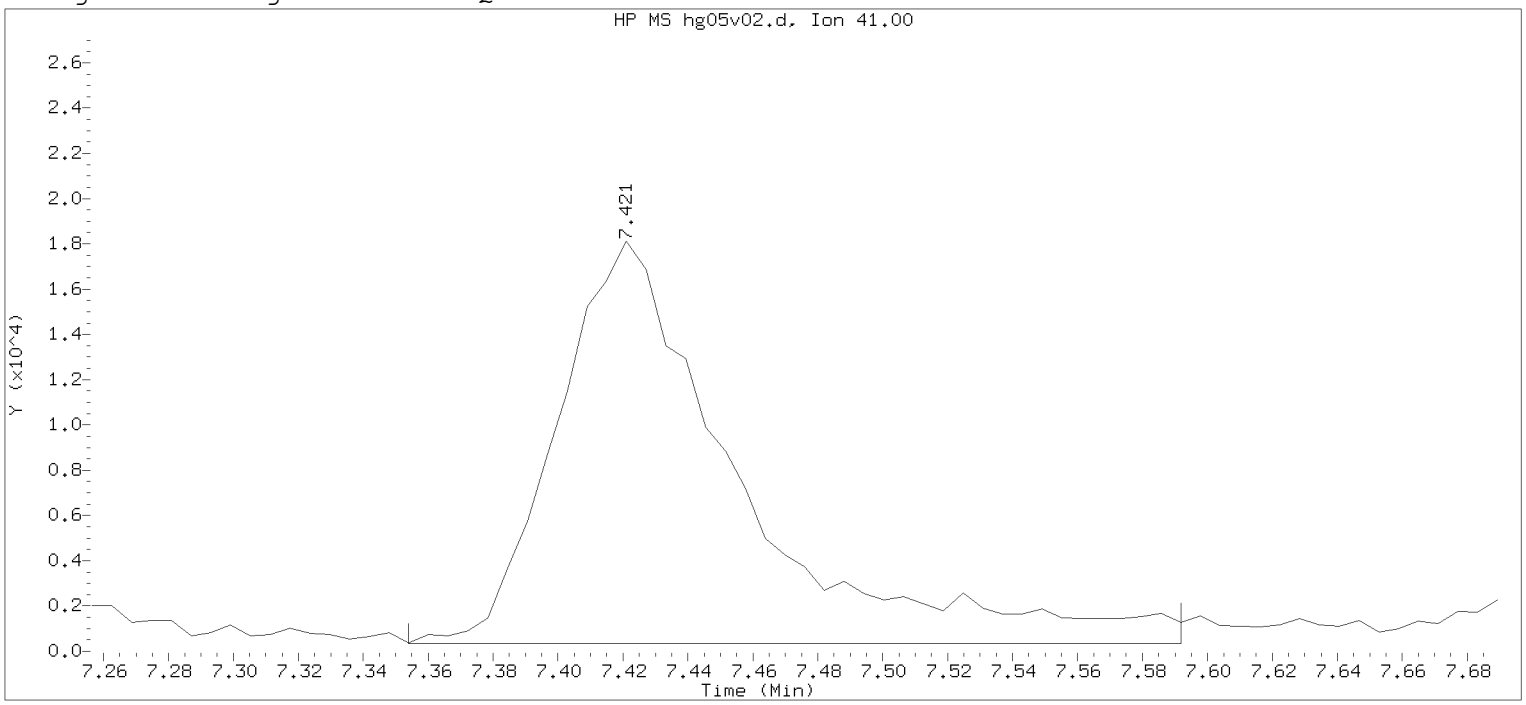
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

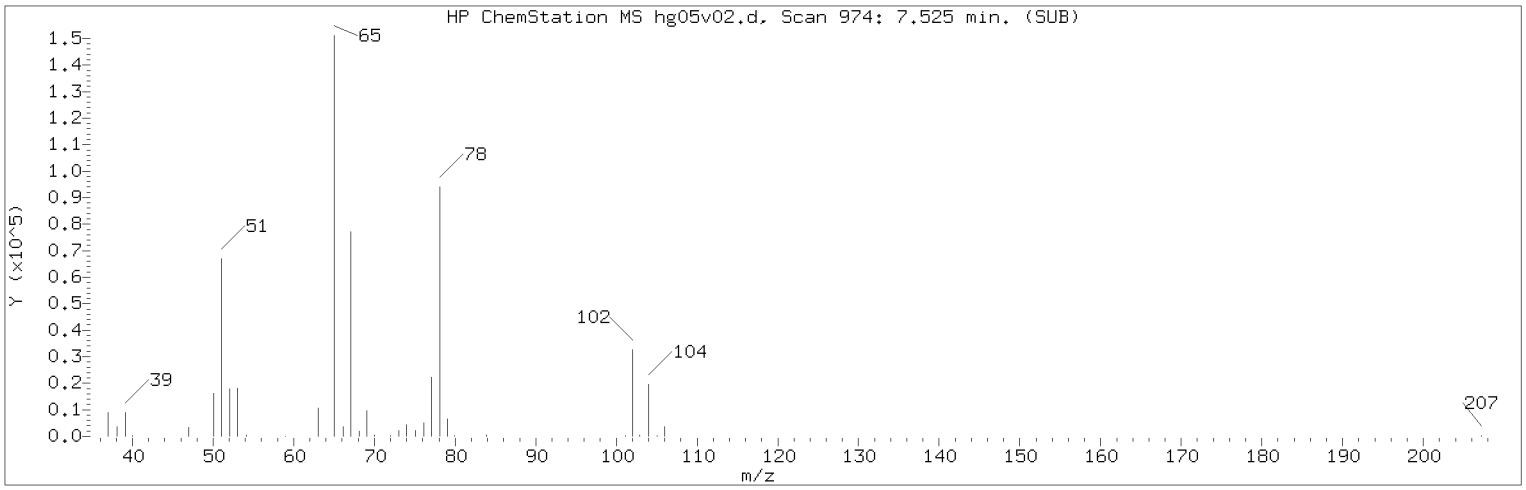
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

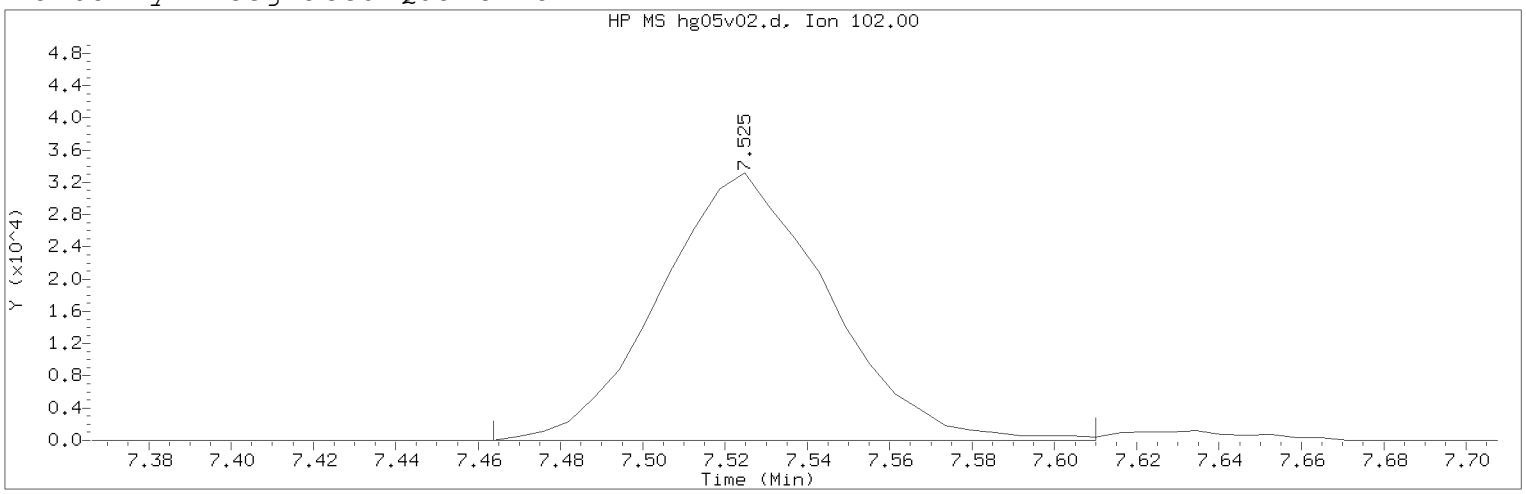
Compound Number : 56
Compound Name : Isobutyl Alcohol
Scan Number : 957
Retention Time (minutes): 7.421
Quant Ion : 41.00
Area : 69034
On-column Amount (ng) : 92.0525
Integration start scan : 945 Integration stop scan: 984
Y at integration start : 329 Y at integration end: 329

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

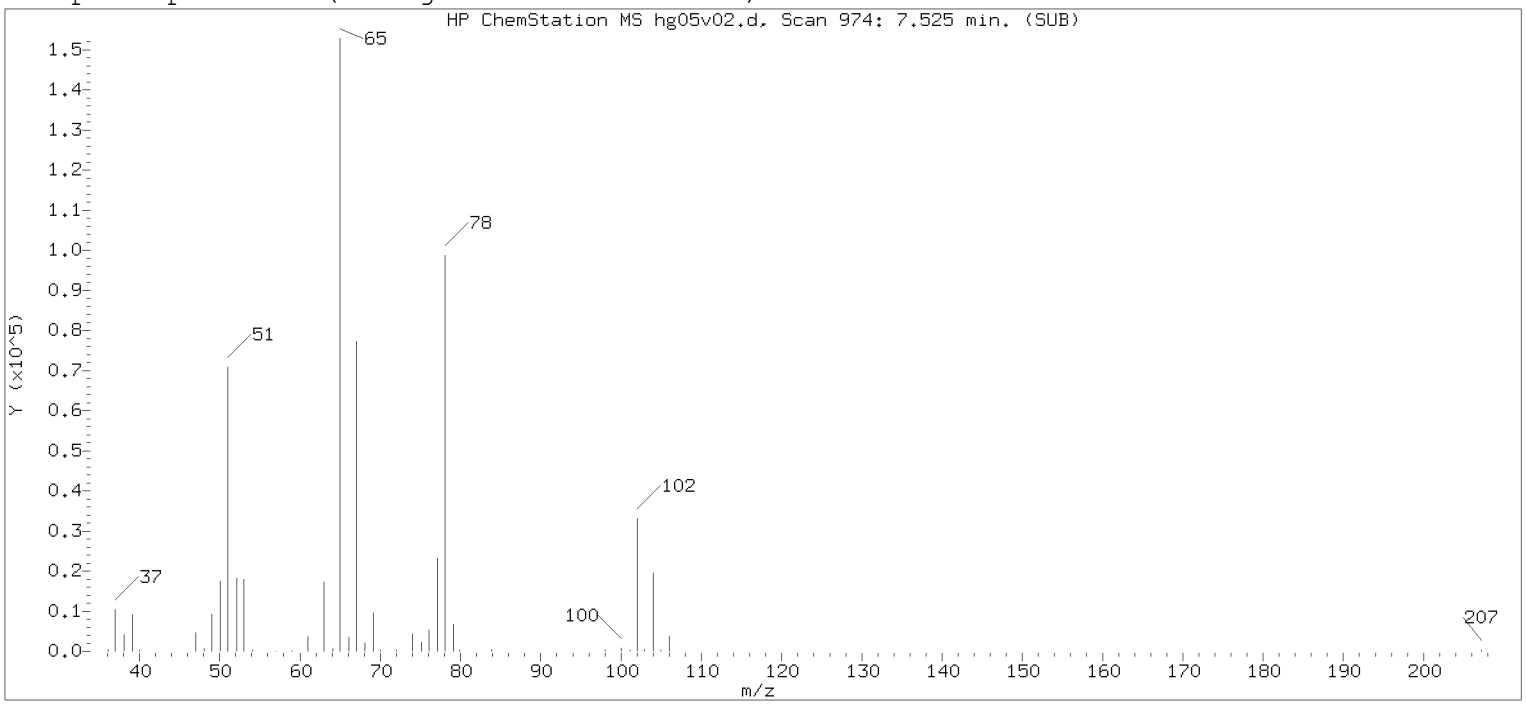
Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 974
Retention Time (minutes): 7.525
Quant Ion : 102.00
Area (flag) : 94225M
On-Column Amount (ng) : 9.7749
Integration start scan : 963 Integration stop scan: 987
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

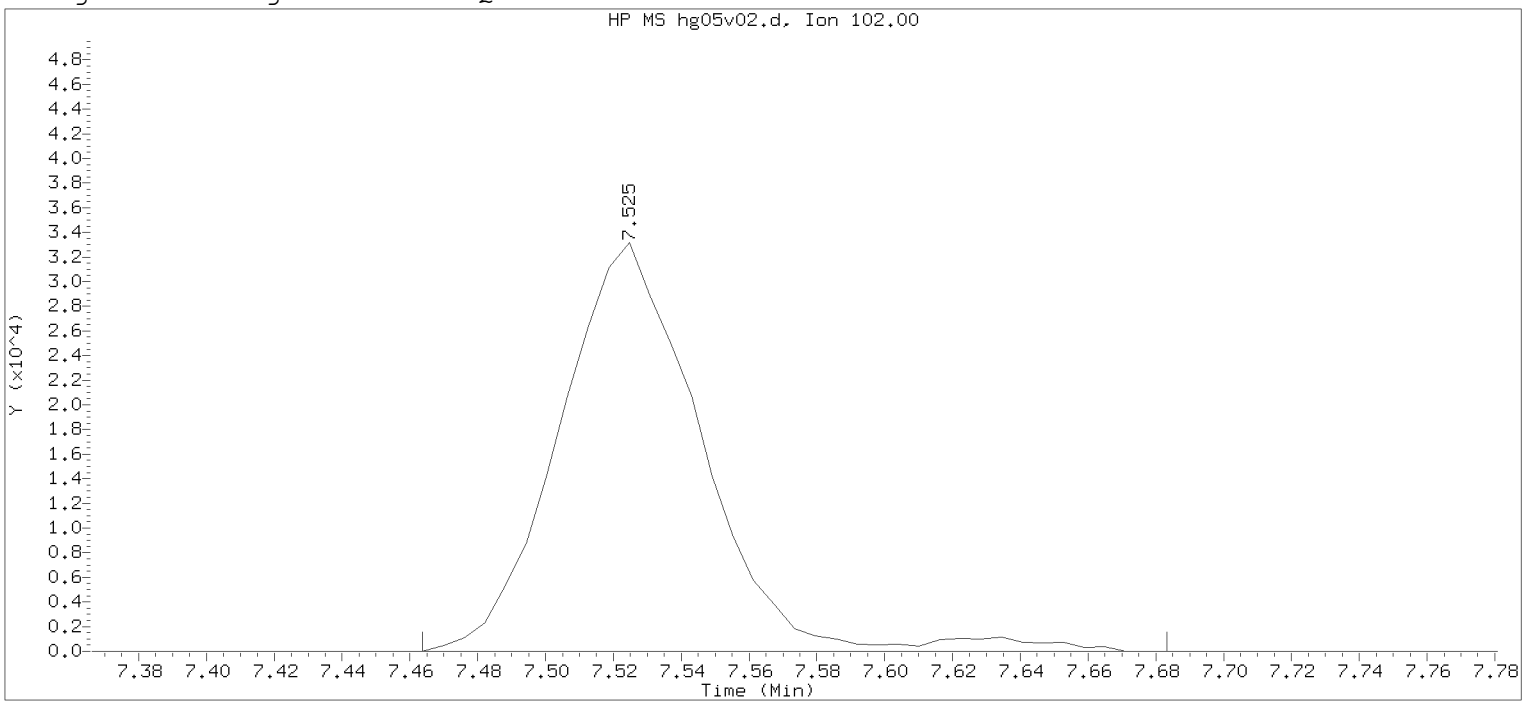
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

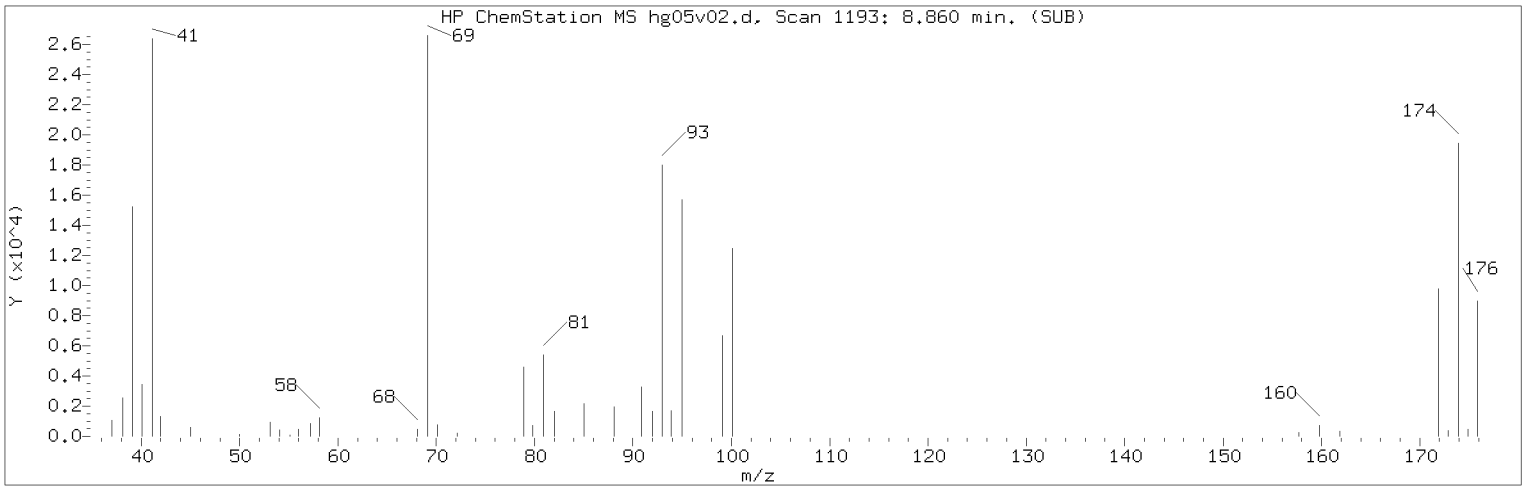
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

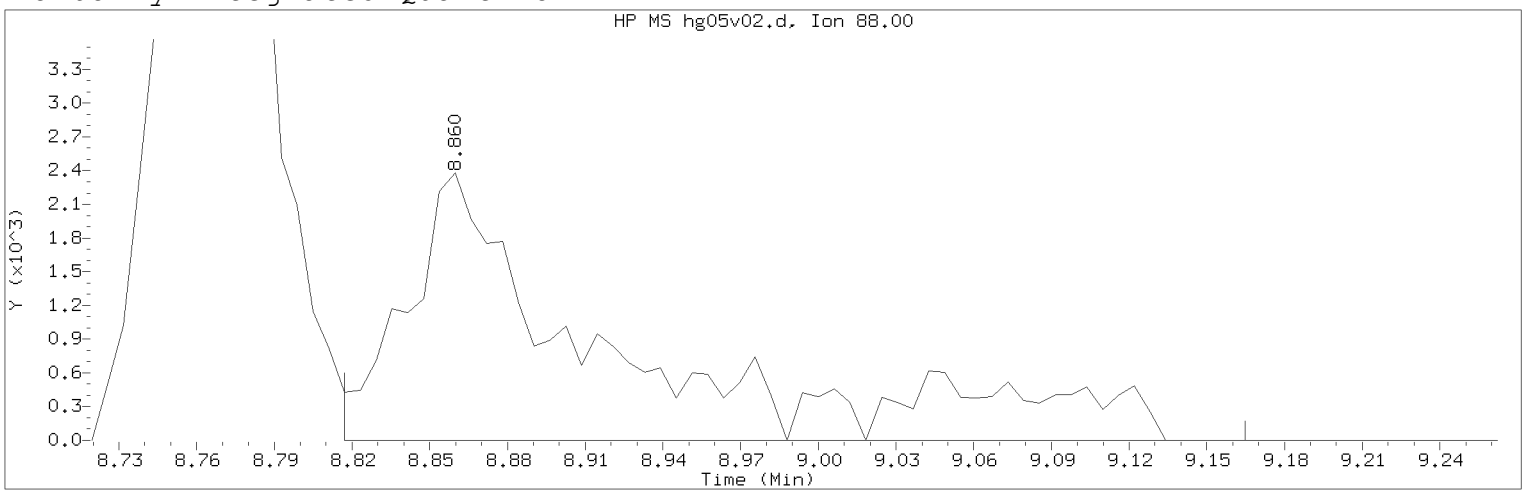
Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 974
Retention Time (minutes): 7.525
Quant Ion : 102.00
Area : 96743
On-column Amount (ng) : 10.0362
Integration start scan : 963 Integration stop scan: 999
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

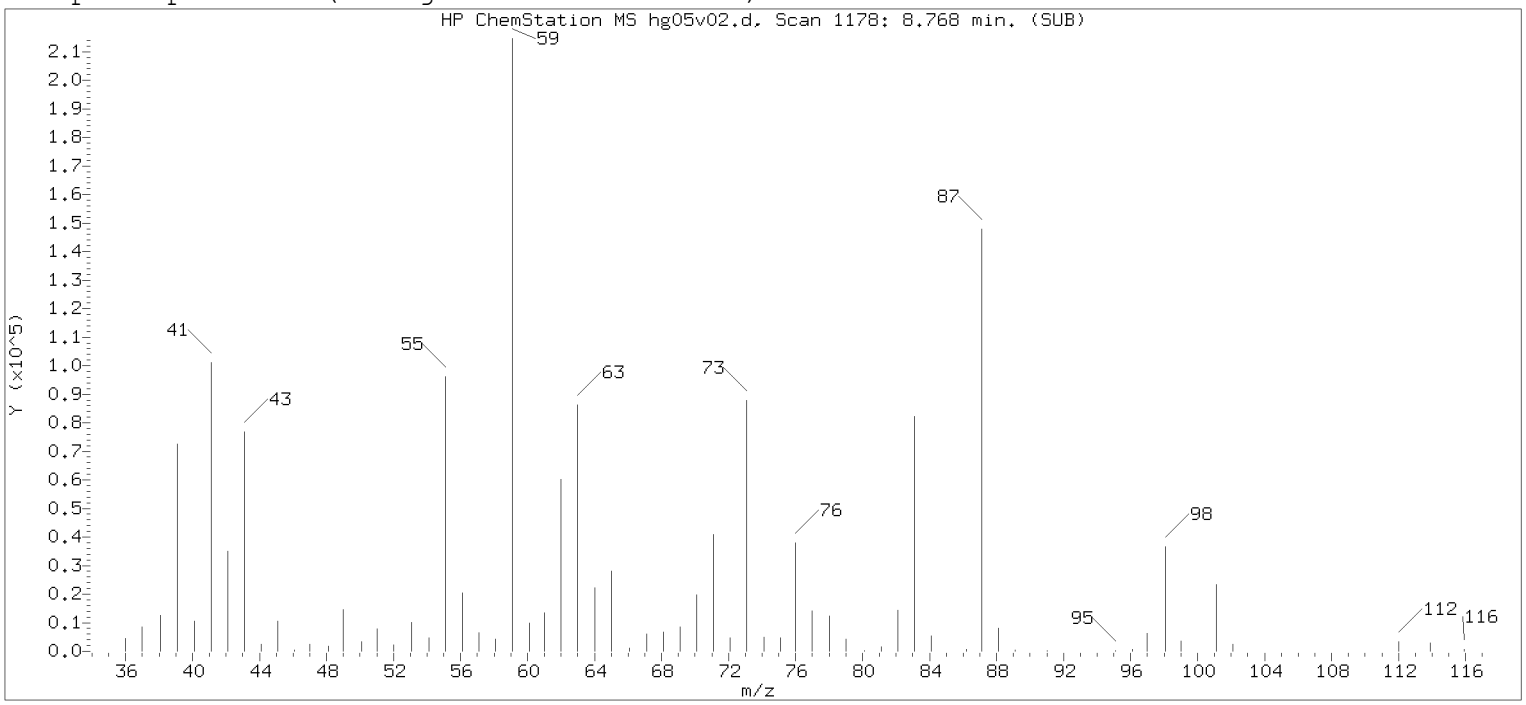
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1193
Retention Time (minutes): 8.860
Quant Ion : 88.00
Area (flag) : 13187M
On-Column Amount (ng) : 82.7065
Integration start scan : 1185 Integration stop scan: 1242
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

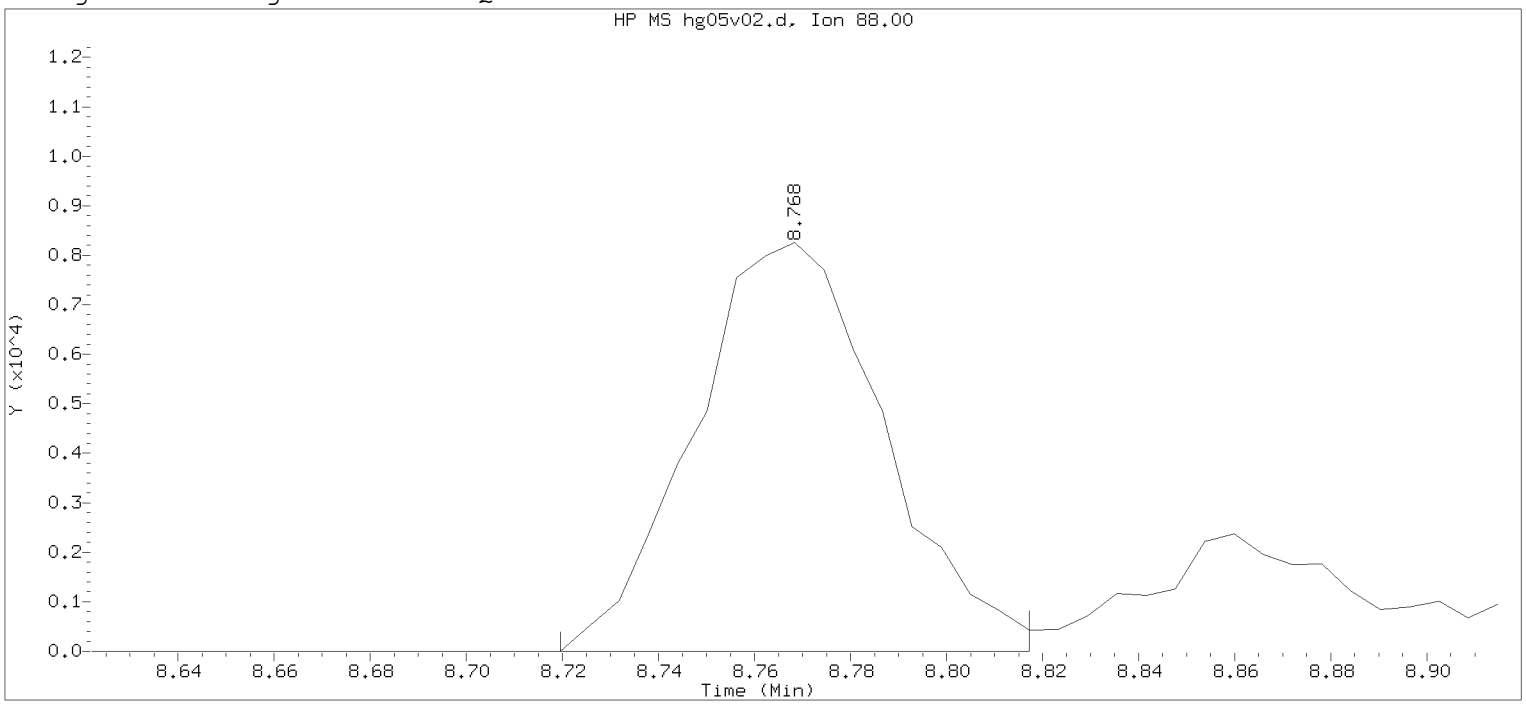
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

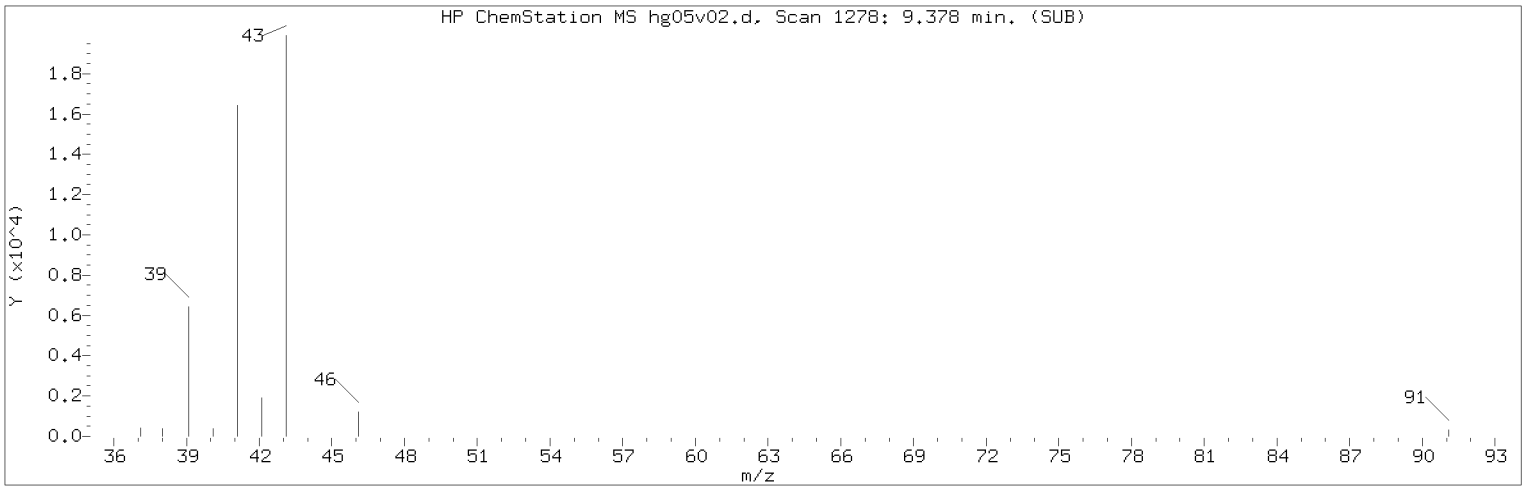
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

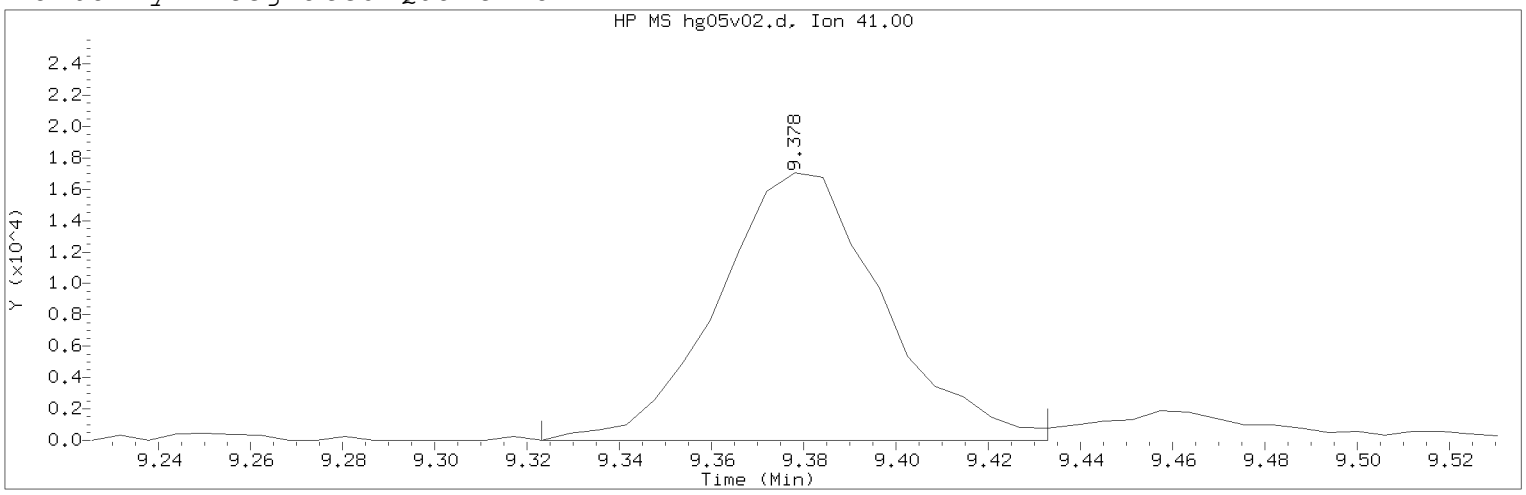
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1178		
Retention Time (minutes)	: 8.768		
Quant Ion	: 88.00		
Area	: 22577		
On-column Amount (ng)	: 141.6038		
Integration start scan	: 1169	Integration stop scan:	1185
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

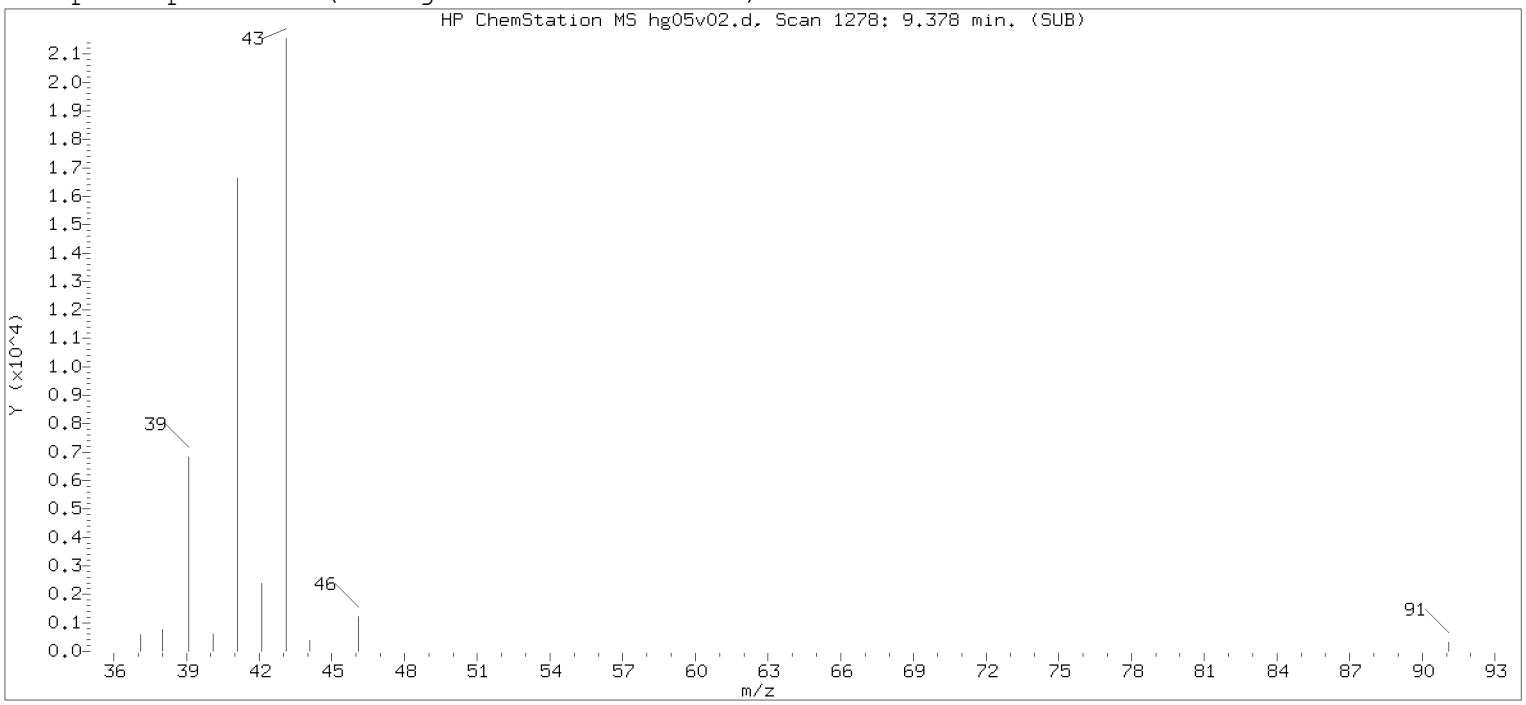
Compound Number : 76
Compound Name : 2-Nitropropane
Scan Number : 1278
Retention Time (minutes): 9.378
Quant Ion : 41.00
Area (flag) : 42345M
On-Column Amount (ng) : 5.4506
Integration start scan : 1268 Integration stop scan: 1286
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

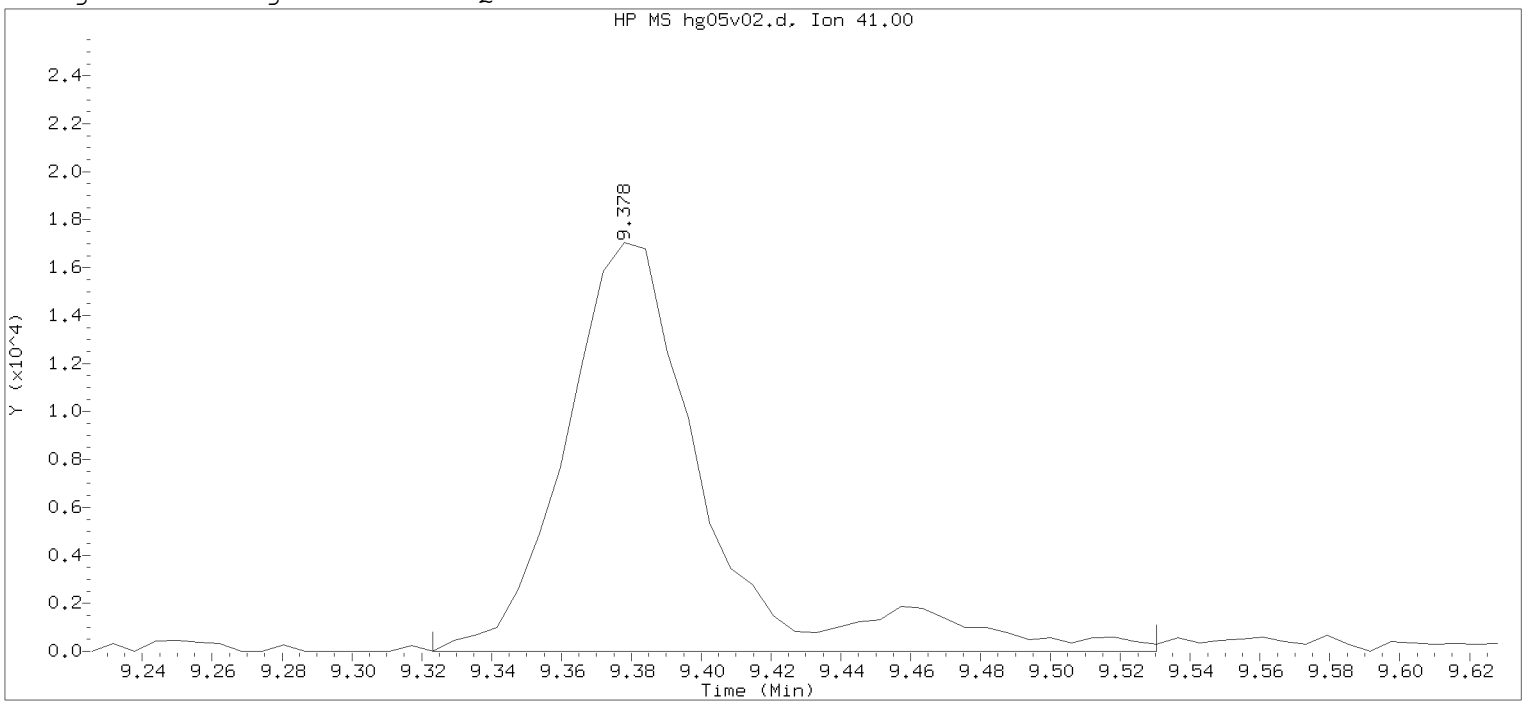
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

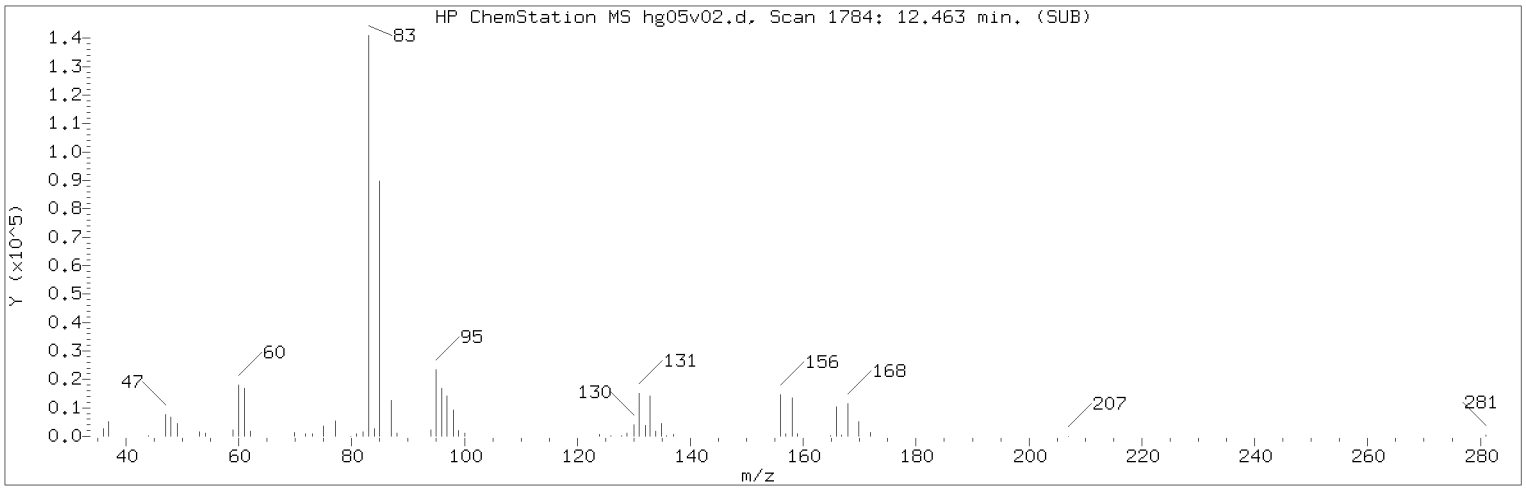
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

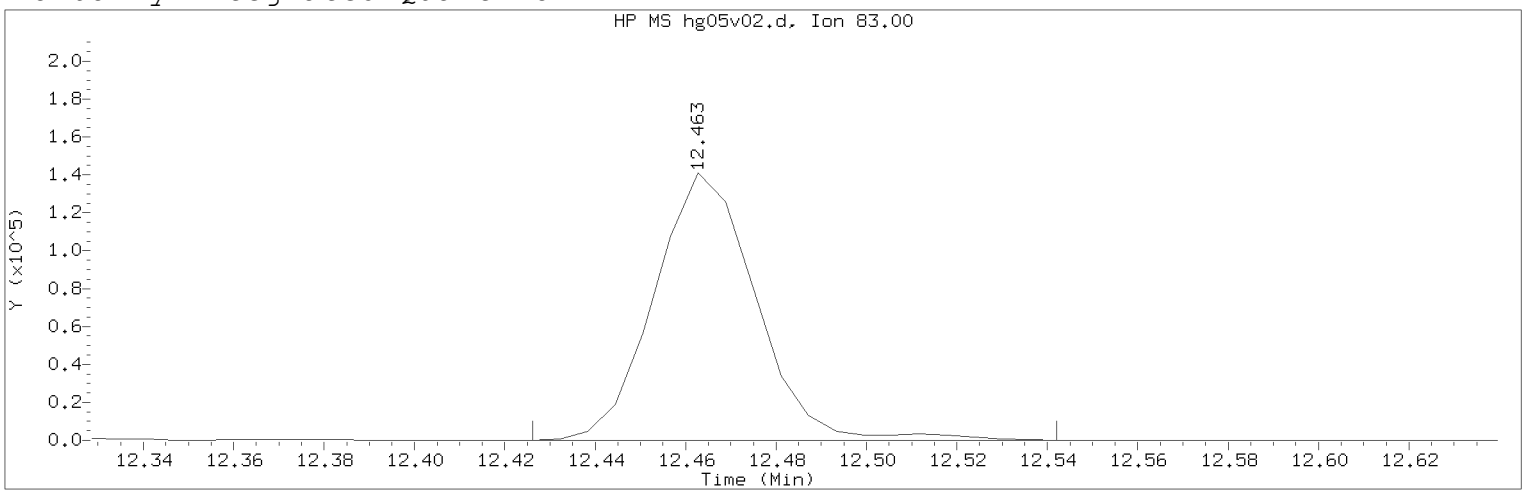
Compound Number : 76
Compound Name : 2-Nitropropane
Scan Number : 1278
Retention Time (minutes): 9.378
Quant Ion : 41.00
Area : 47621
On-column Amount (ng) : 6.1298
Integration start scan : 1268 Integration stop scan: 1302
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used in mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

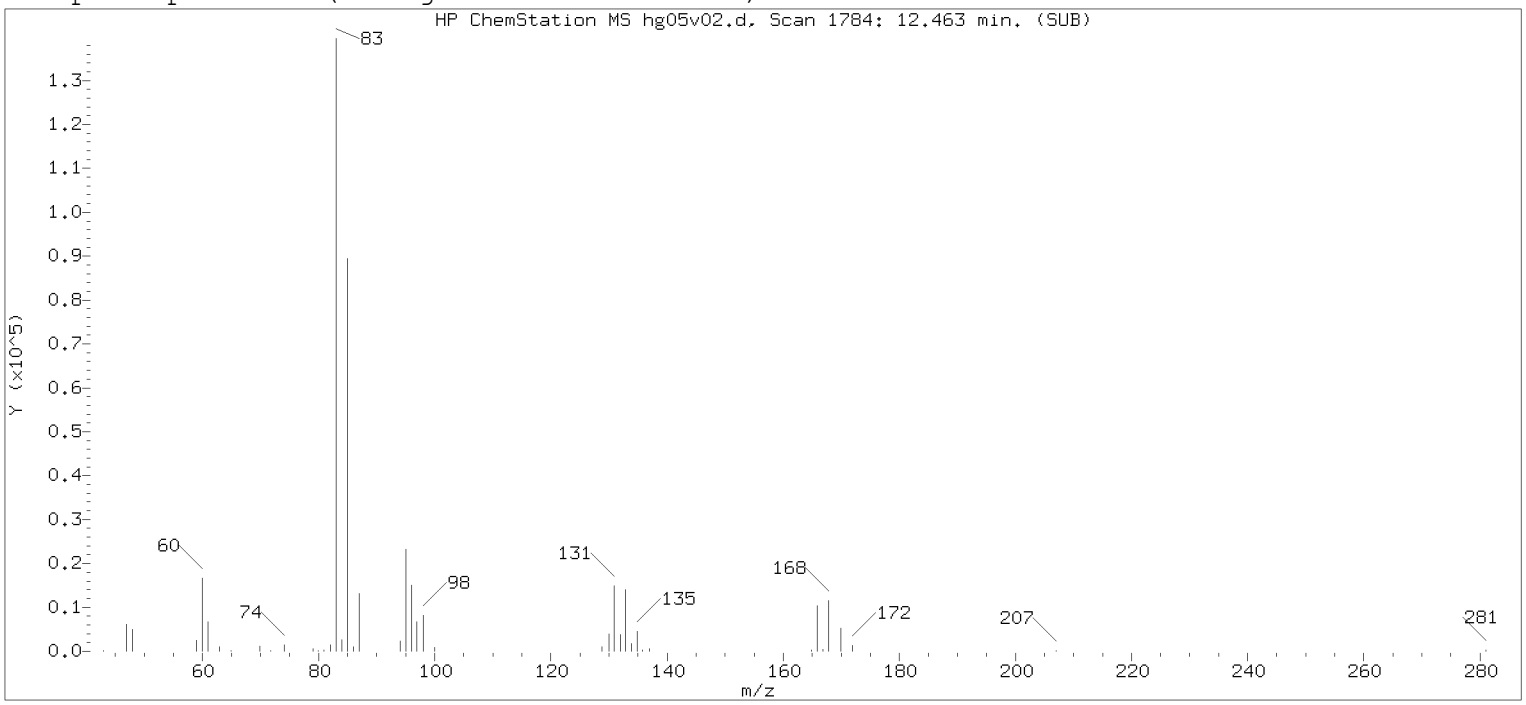
Compound Number : 113
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1784
Retention Time (minutes): 12.463
Quant Ion : 83.00
Area (flag) : 220275M
On-Column Amount (ng) : 5.2050
Integration start scan : 1777 Integration stop scan: 1796
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

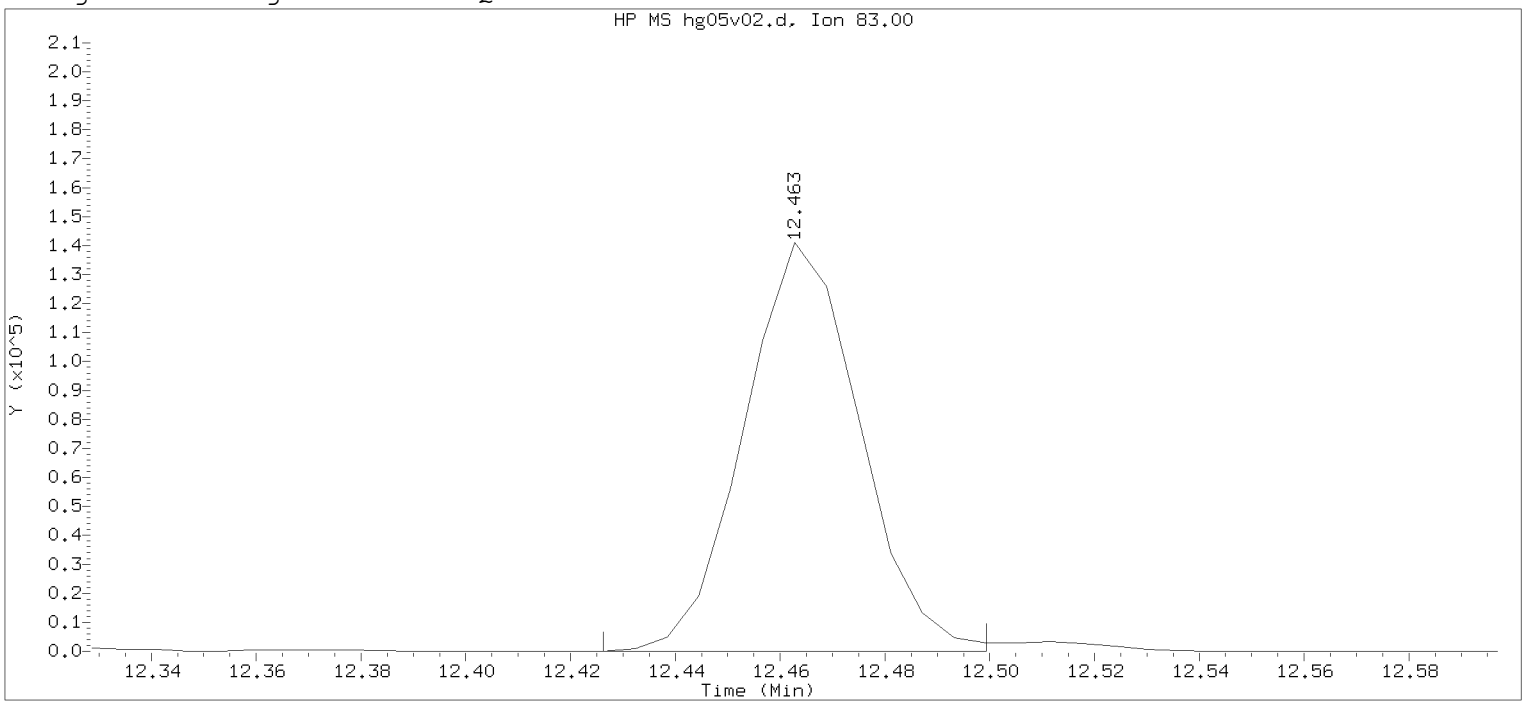
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

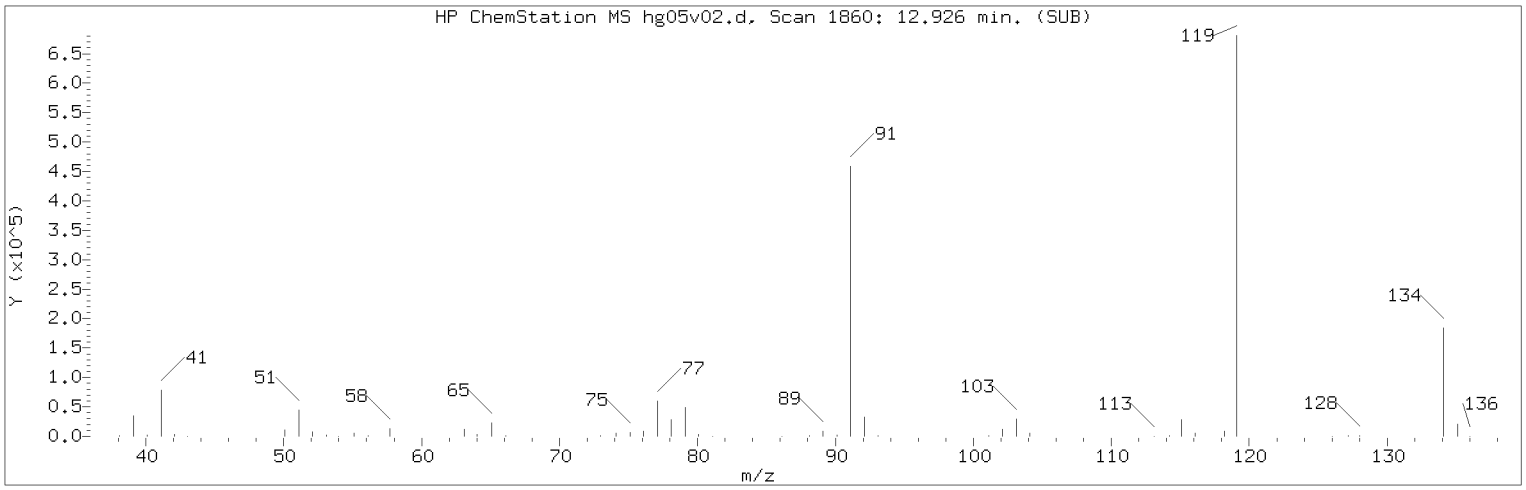
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

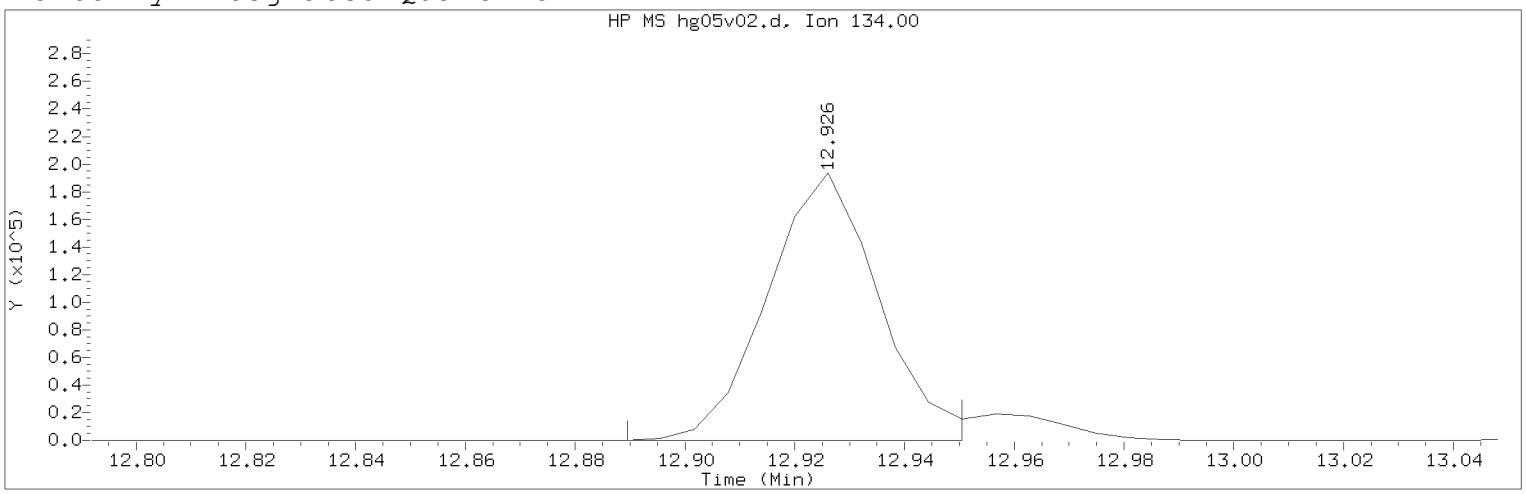
Compound Number : 113
Compound Name : 1,1,2,2-Tetrachloroethane
Scan Number : 1784
Retention Time (minutes): 12.463
Quant Ion : 83.00
Area : 215499
On-column Amount (ng) : 5.0922
Integration start scan : 1777 Integration stop scan: 1789
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:46 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

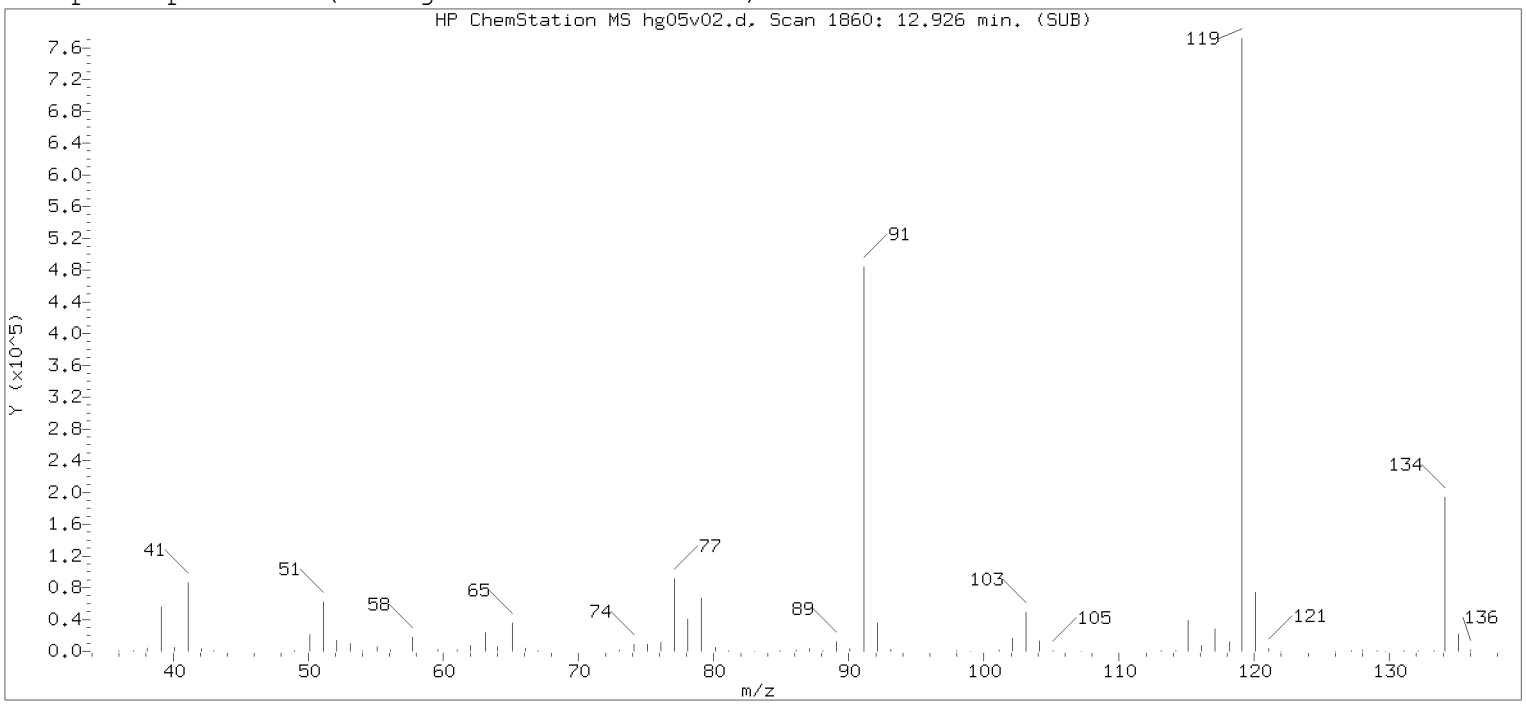
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area (flag) : 272733M
On-Column Amount (ng) : 5.4257
Integration start scan : 1853 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

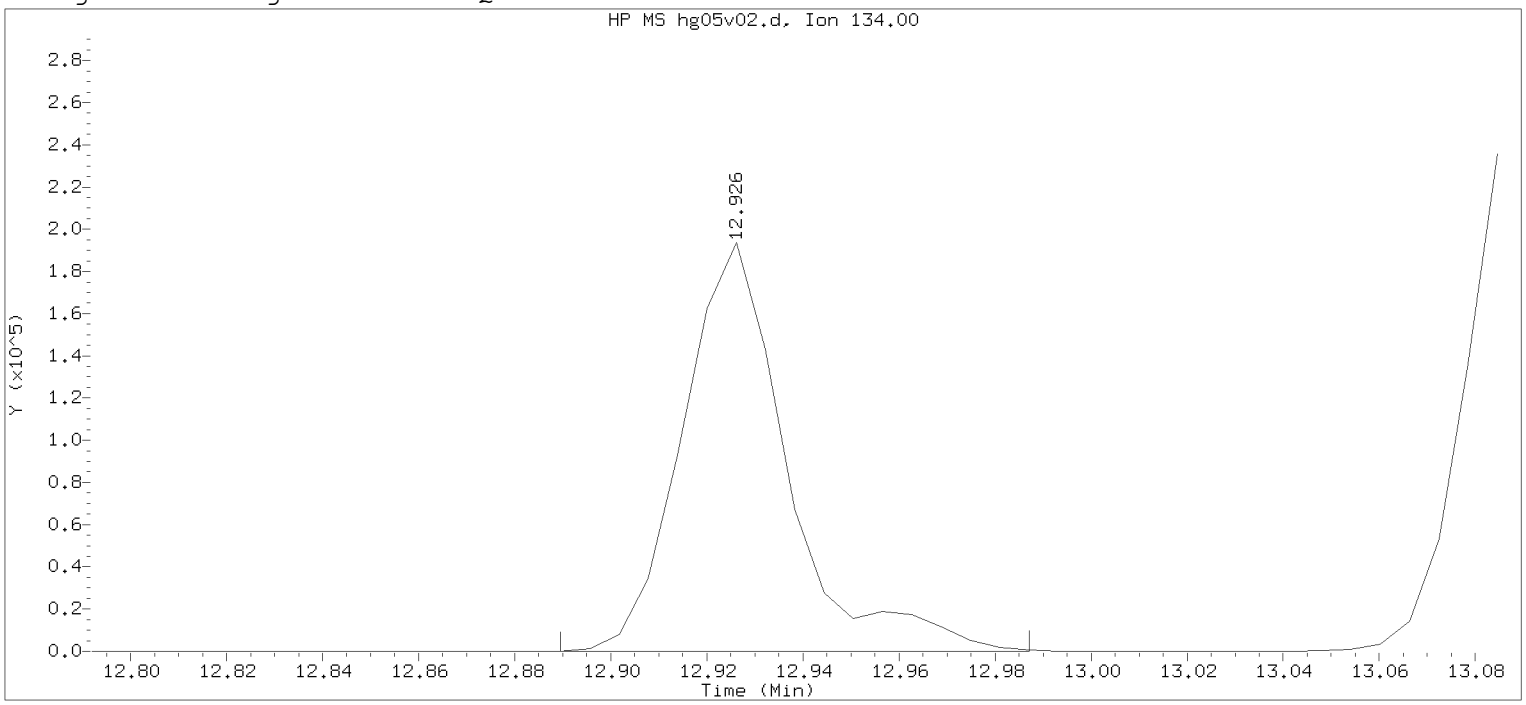
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/08/2019 at 11:22.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v02.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:21 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:39 mec29284

Sample Name: ICVH00 Lab Sample ID: ICVH00

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area : 292884
On-column Amount (ng) : 5.8266
Integration start scan : 1853 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/05/2019 at 22:47.
Target 3.5 esignature used for this report.

Data File: /chem2/HP19094.i/19oct30a.b/hc30t02.d

Date : 30-OCT-2019 07:12

Client ID: 50NG BFB

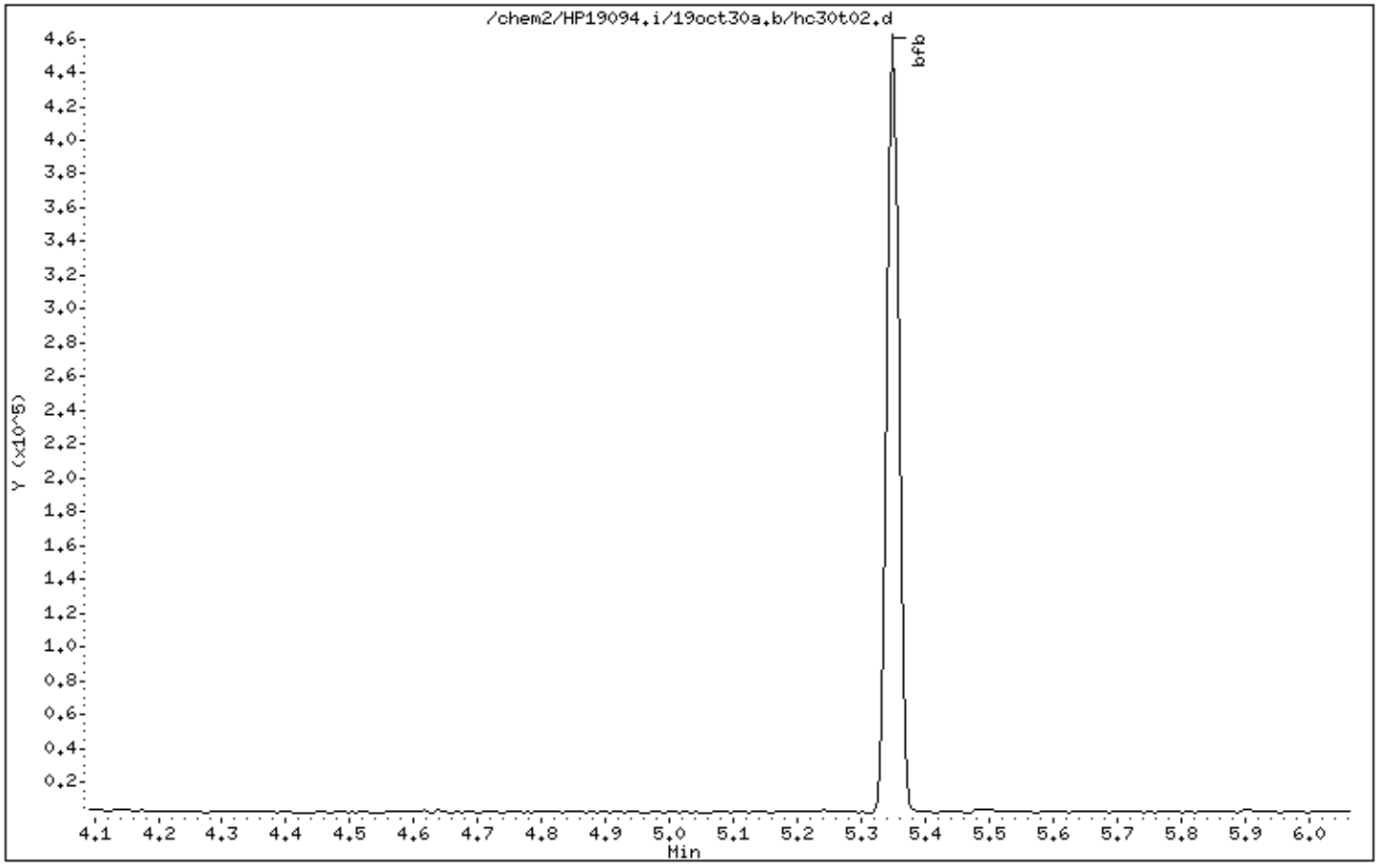
Instrument: HP19094.i

Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP19094.i/19oct30a.b/hc30t02.d

Date : 30-OCT-2019 07:12

Client ID: 50NG BFB

Instrument: HP19094.i

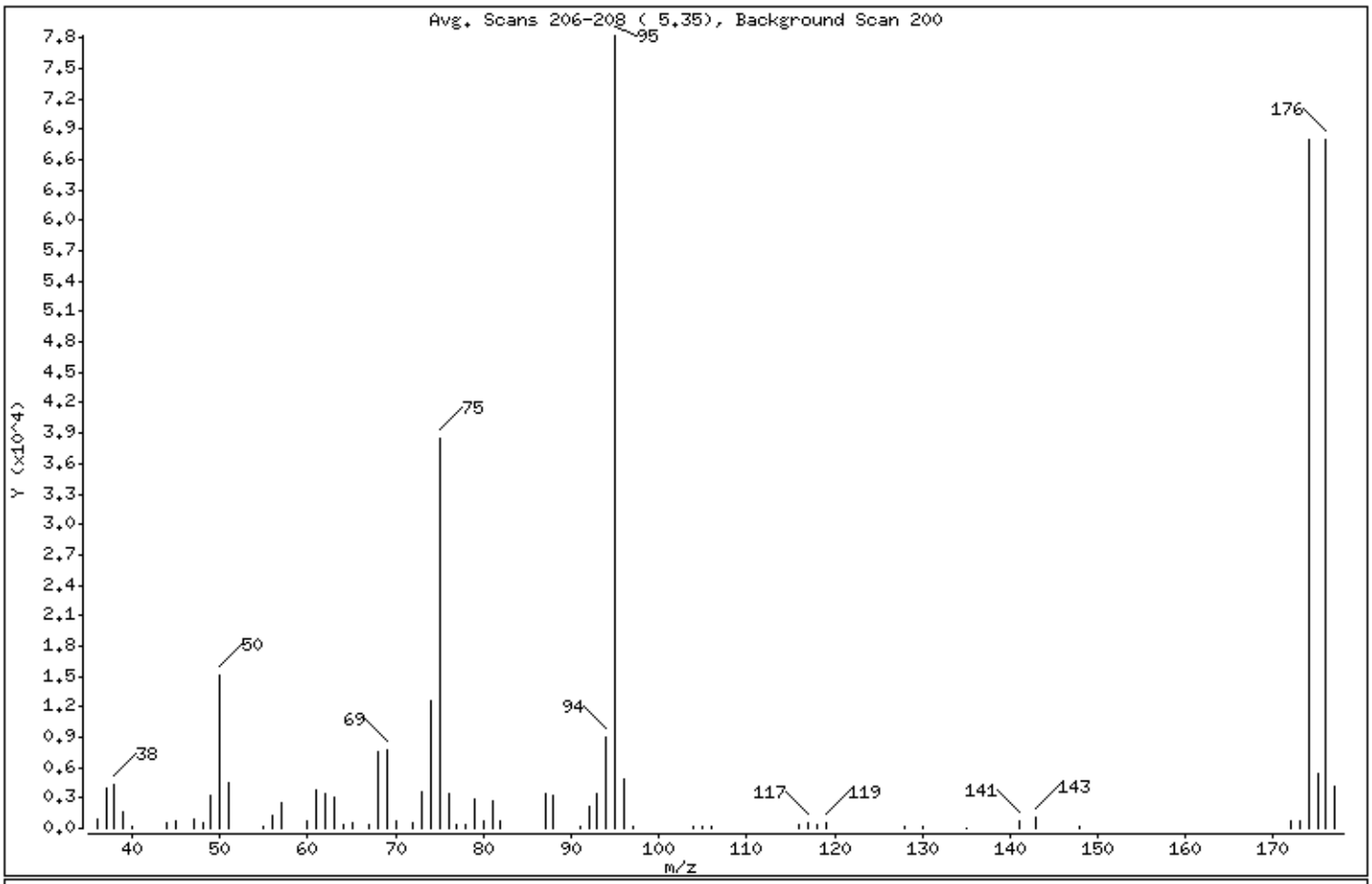
Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.40
75	30.00 - 60.00% of mass 95	49.09
96	5.00 - 9.00% of mass 95	6.11
173	Less than 2.00% of mass 174	1.01 (1.16)
174	50.00 - 100.00% of mass 95	86.84
175	5.00 - 9.00% of mass 174	6.89 (7.93)
176	95.00 - 101.00% of mass 174	86.91 (100.08)
177	5.00 - 9.00% of mass 176	5.35 (6.15)

Date : 30-OCT-2019 07:12

Client ID: 50NG BFB Instrument: HP19094.i

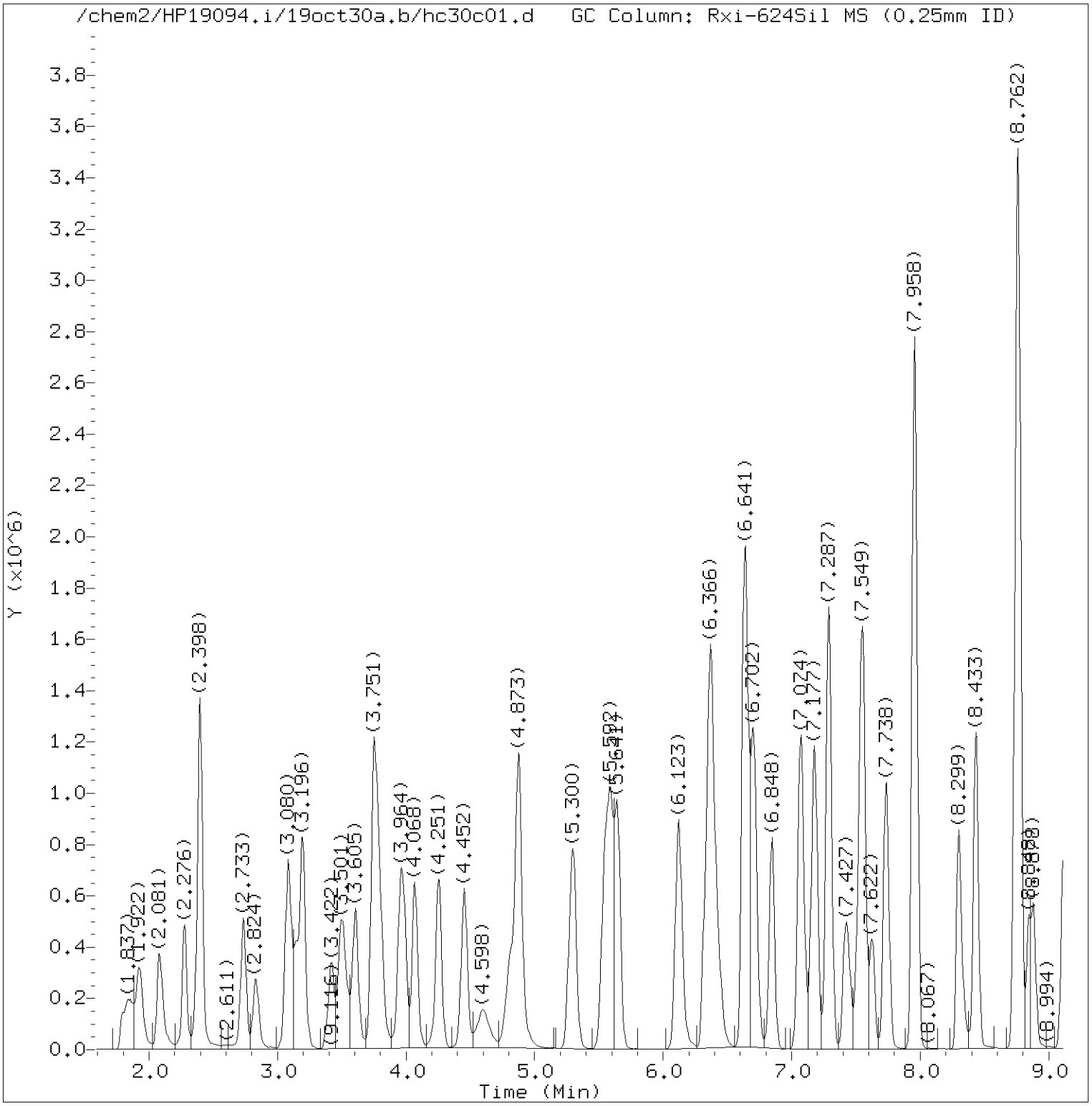
Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: hc30t02.d
Spectrum: Avg. Scans 206-208 (5.35), Background Scan 200
Location of Maximum: 95.00
Number of points: 64

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	880	62.00	3359	81.00	2740	119.00	549
37.00	4001	63.00	3013	82.00	645	128.00	152
38.00	4234	64.00	299	87.00	3416	130.00	218
39.00	1599	65.00	540	88.00	3221	135.00	87
40.00	146	67.00	335	91.00	242	141.00	697
44.00	619	68.00	7600	92.00	2161	143.00	1005
45.00	646	69.00	7721	93.00	3394	148.00	181
47.00	815	70.00	740	94.00	9050	172.00	732
48.00	574	72.00	545	95.00	78232	173.00	791
49.00	3304	73.00	3546	96.00	4784	174.00	67936
50.00	15174	74.00	12678	97.00	181	175.00	5389
51.00	4585	75.00	38408	104.00	234	176.00	67992
55.00	240	76.00	3351	105.00	123	177.00	4183
56.00	1295	77.00	318	106.00	150		
57.00	2430	78.00	338	116.00	306		
60.00	742	79.00	2865	117.00	505		
61.00	3757	80.00	643	118.00	328		



Total Ion Chromatogram (TIC)

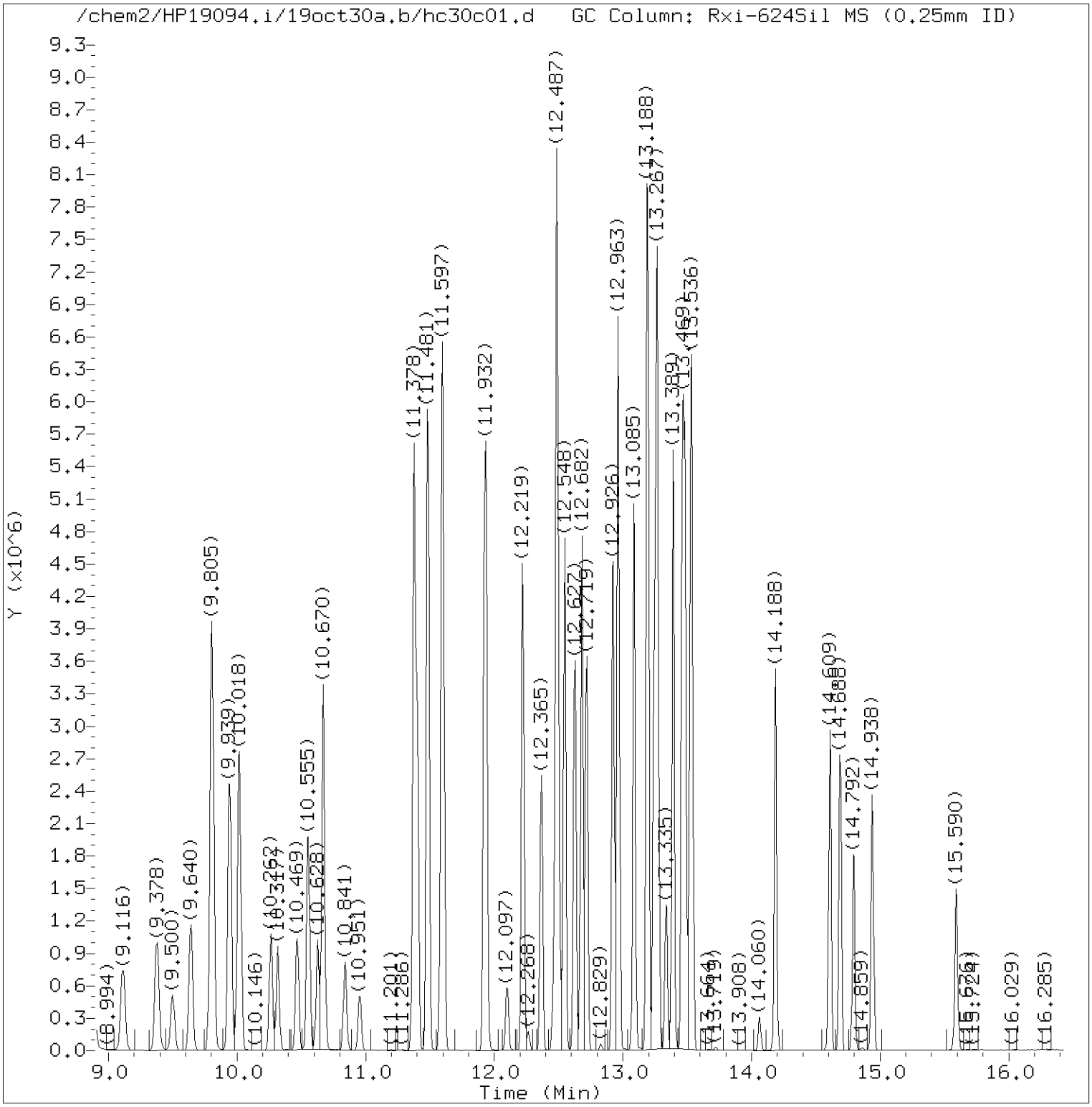
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	744793	7.221
2) Chloromethane	(2)	2.276	50	726735	9.622
5) Vinyl Chloride	(2)	2.398	62	705237	9.282
6) 1,3-Butadiene	(2)	2.398	39	683119	11.213
7) Bromomethane	(2)	2.733	94	539203	8.042
8) Chloroethane	(2)	2.837	64	414789	9.325
9) Dichlorofluoromethane	(2)	3.080	67	899912	9.224
10) Trichlorofluoromethane	(2)	3.147	101	884964	7.359
11) Ethyl ether	(2)	3.416	59	337051	10.058
12) Freon 123a	(2)	3.501	67	645909	10.557
13) Acrolein	(1)	3.605	56	893887	131.488
15) 1,1-Dichloroethene	(2)	3.745	96	453619	10.343
16) Freon 113	(2)	3.782	101	551753	10.059
14) Acetone	(1)	3.782	43	797378	91.782
17) Methyl Iodide	(2)	3.958	142	970675	9.225
18) Carbon Disulfide	(2)	4.068	76	1486234	10.198
21) Methyl Acetate	(1)	4.227	43	184246M	5.859
22) Allyl Chloride	(2)	4.251	41	658541	8.852
23) Methylene Chloride	(2)	4.452	84	496871	9.503
26)*t-Butyl Alcohol-d10	(1)	4.464	65	142644	50.000
28) t-Butyl Alcohol	(1)	4.598	59	586807	220.567
29) Acrylonitrile	(1)	4.800	53	489877	44.602
30) Methyl Tertiary Butyl Ether	(2)	4.861	73	1108379	9.767
31) trans-1,2-Dichloroethene	(2)	4.879	96	519355	10.315
32) n-Hexane	(2)	5.300	57	792333	10.345
33) 1,1-Dichloroethane	(2)	5.537	63	953127	10.689
34) di-Isopropyl Ether	(2)	5.592	45	1612895	10.489
35) 2-Chloro-1,3-Butadiene	(2)	5.647	53	868093	10.500
40) 1,2-Dichloroethene (Total)	(2)		96	1106818	20.697
37) Ethyl t-butyl ether	(2)	6.123	59	1448832	9.895
38) 2-Butanone	(1)	6.336	43	1253564	81.830
39) cis-1,2-Dichloroethene	(2)	6.366	96	587463	10.382
41) 2,2-Dichloropropane	(2)	6.385	77	791364	9.773
42) Propionitrile	(1)	6.421	54	746017	190.370
45) Methacrylonitrile	(1)	6.641	67	1256514	80.491
47) Bromochloromethane	(2)	6.702	128	240321	8.943
48) Tetrahydrofuran	(1)	6.708	71	351977	82.918
49) Chloroform	(2)	6.848	83	967123	10.322

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.061	113	515995	9.642
50)$Dibromofluoromethane	(2)	7.061	111	529274	9.733
51) 1,1,1-Trichloroethane	(2)	7.080	97	846269	9.702
52) Cyclohexane	(2)	7.177	56	943492	10.453
52) Cyclohexane	(2)	7.177	84	817682	9.753
52) Cyclohexane	(2)	7.177	69	286745	9.847
55) 1,1-Dichloropropene	(2)	7.287	75	738548	10.441
54) Carbon Tetrachloride	(2)	7.293	117	744589	9.127
56) Isobutyl Alcohol	(1)	7.427	41	497904	457.204
57)$1,2-Dichloroethane-d4	(2)	7.525	102	93240	9.476
57)$1,2-Dichloroethane-d4	(2)	7.525	65	465352	9.773
57)$1,2-Dichloroethane-d4	(2)	7.519	104	58340	9.254
58) Benzene	(2)	7.555	78	2162244	10.864
59) 1,2-Dichloroethane	(2)	7.622	62	539970M	9.631
60) t-Amyl methyl ether	(2)	7.738	73	1275181	9.668
63)*Fluorobenzene	(2)	7.951	96	1967991	10.000
62) n-Heptane	(2)	7.958	43	859556	10.443
65) n-Butanol	(1)	8.299	56	834478	939.973
67) Trichloroethene	(2)	8.433	95	582671	10.421
69) Methylcyclohexane	(2)	8.744	83	937857	9.539
70) 1,2-Dichloropropane	(2)	8.774	63	530756	10.836
71) Methyl Methacrylate	(1)	8.842	69	239585	7.543
72) 1,4-Dioxane	(1)	8.860	88	124987M	539.827
73) Dibromomethane	(2)	8.884	93	253152	9.639
74) Bromodichloromethane	(2)	9.116	83	665296	9.860
76) 2-Nitropropane	(1)	9.378	41	814977	72.240
80) cis-1,3-Dichloropropene	(2)	9.640	75	764371	9.935
81) 4-Methyl-2-Pentanone	(1)	9.805	43	3218952	82.888
82)$Toluene-d8	(3)	9.939	98	2006880	9.760
82)$Toluene-d8	(3)	9.945	100	1280392	9.736
83) Toluene	(3)	10.018	92	1387496	10.140
85) 1,3-Dichloropropene (total)	(3)		75	1386822	19.152
84) trans-1,3-Dichloropropene	(3)	10.262	75	622451	9.218
86) Ethyl Methacrylate	(3)	10.317	69	519453	9.625
88) 1,1,2-Trichloroethane	(3)	10.469	97	351534	9.583
89) Tetrachloroethene	(3)	10.555	166	643211	9.363
90) 1,3-Dichloropropane	(3)	10.628	76	601638	9.891
91) 2-Hexanone	(1)	10.670	43	2190385	80.290

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	445824	8.665
95) 1,2-Dibromoethane	(3)	10.951	107	344351	9.319
96) 1-Chlorohexane	(3)	11.378	91	792985	9.501
97)*Chlorobenzene-d5	(3)	11.378	117	1610732	10.000
98) Chlorobenzene	(3)	11.402	112	1512571	9.749
100) Ethylbenzene	(3)	11.481	91	2763260	10.212
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	540094	9.335
101) m+p-Xylene	(3)	11.597	106	2097315	19.533
105) Xylene (Total)	(3)		106	3113222	29.214
104) o-Xylene	(3)	11.926	106	1015907	9.679
106) Styrene	(3)	11.938	104	1678389	9.838
107) Bromoform	(3)	12.097	173	261647	8.168
108) Isopropylbenzene	(3)	12.219	105	2761222	9.861
111)$4-Bromofluorobenzene	(3)	12.365	95	755604	10.048
111)$4-Bromofluorobenzene	(3)	12.365	174	669396	9.310
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	428379	10.428
114) Bromobenzene	(4)	12.487	156	628941	9.799
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	1096989A	67.991
116) 1,2,3-Trichloropropane	(4)	12.512	110	113085M	9.916
117) n-Propylbenzene	(4)	12.548	91	3332907	11.009
119) 2-Chlorotoluene	(4)	12.627	126	646931	10.386
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	2345271	10.615
122) 4-Chlorotoluene	(4)	12.719	126	663651	10.364
125) tert-Butylbenzene	(4)	12.926	134	503285M	10.315
126) Pentachloroethane	(4)	12.957	167	399729	8.878
127) 1,2,4-Trimethylbenzene	(4)	12.963	105	2432320	10.632
128) sec-Butylbenzene	(4)	13.085	105	3136688	10.788
131) 1,3-Dichlorobenzene	(4)	13.188	146	1277692	10.206
132) p-Isopropyltoluene	(4)	13.194	119	2633233	10.478
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	839977	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	1231283	9.888
135) 1,2,3-Trimethylbenzene	(4)	13.267	120	992360	9.687
136) Benzyl Chloride	(4)	13.341	126	186016	9.316
138) n-Butylbenzene	(4)	13.481	92	1410158	11.400
139) 1,2-Dichlorobenzene	(4)	13.524	146	1132715	10.086
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	61789	6.825
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	1023817	10.562
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	844955	10.424

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

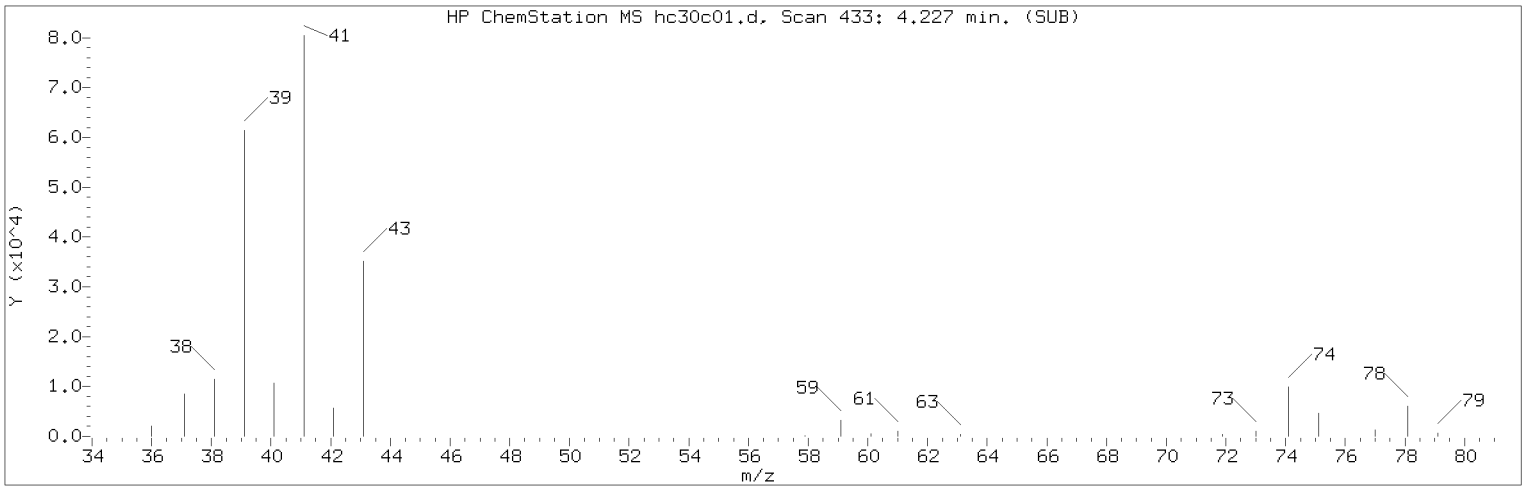
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

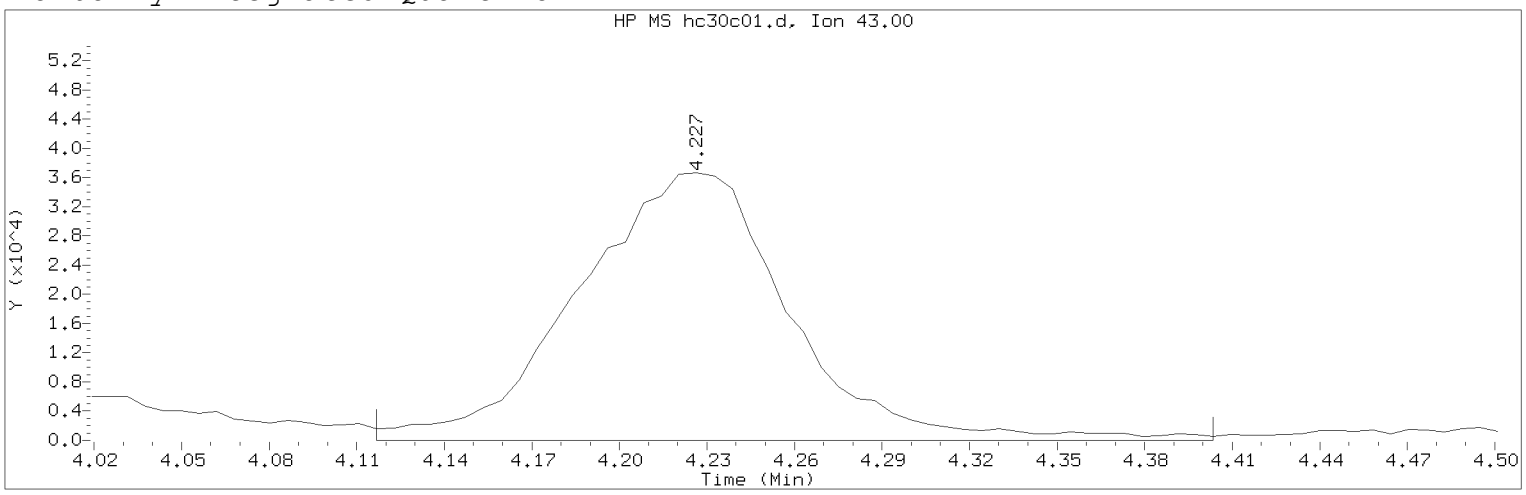
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.688	225	460429	10.952
147) Naphthalene	(4)	14.798	128	1345841	9.349
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	697604	9.834

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

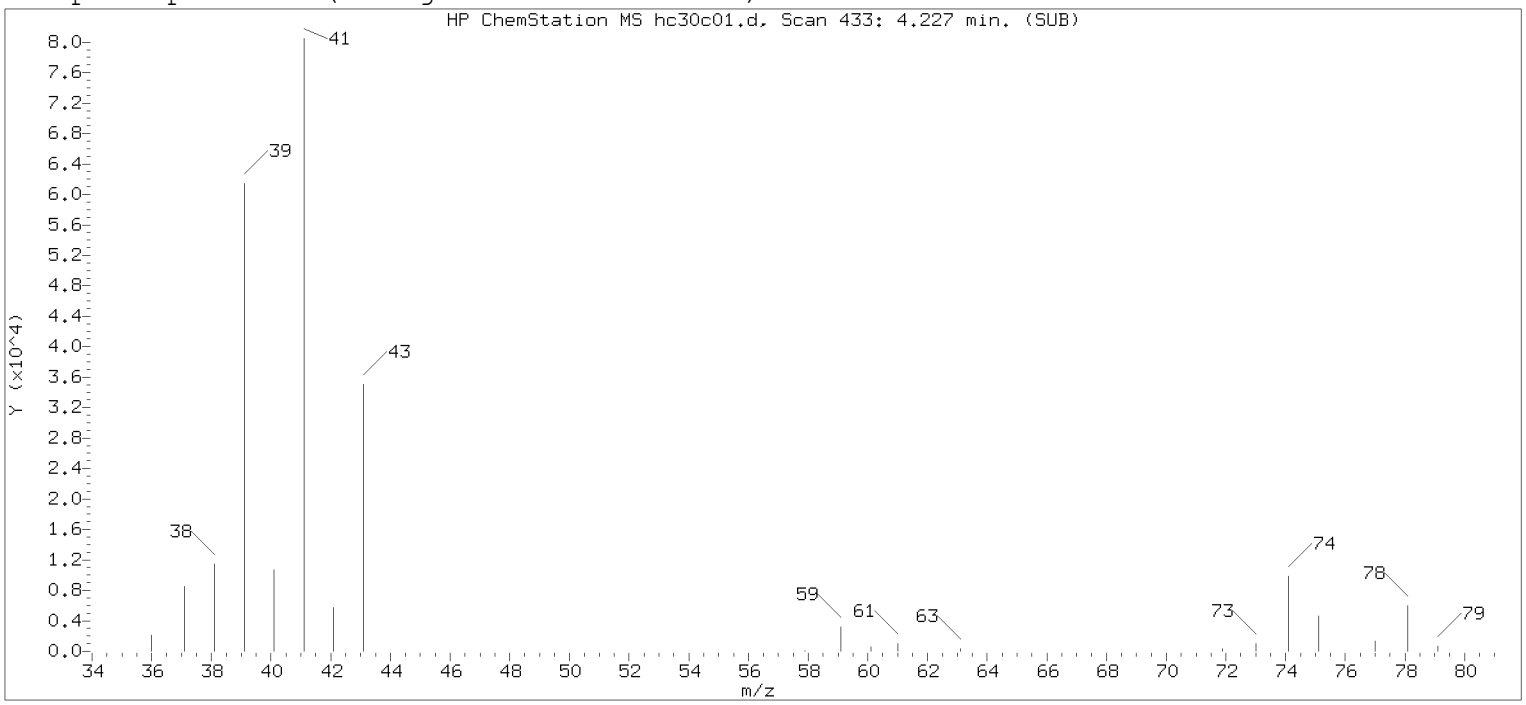
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 433
Retention Time (minutes): 4.227
Quant Ion : 43.00
Area (flag) : 184246M
On-Column Amount (ng) : 5.8589
Integration start scan : 414 Integration stop scan: 461
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

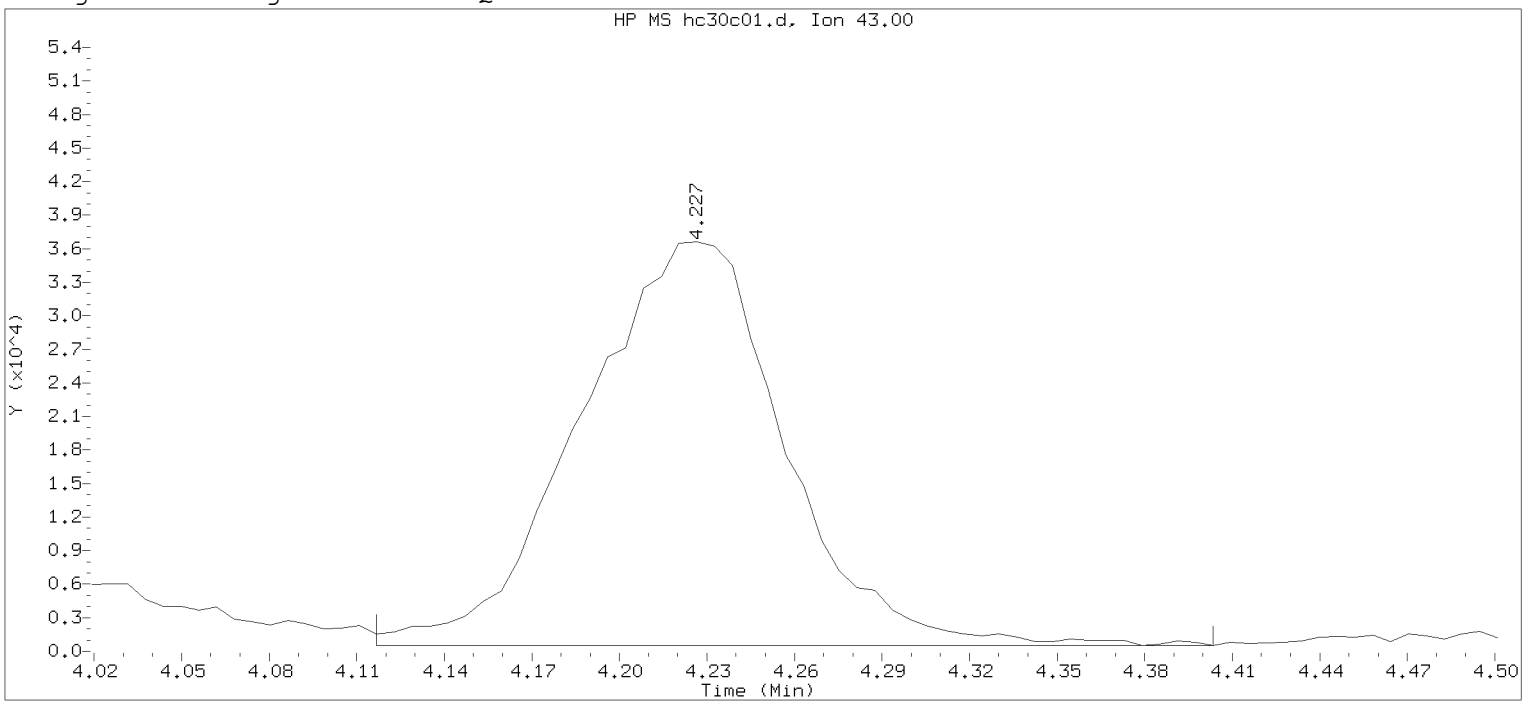
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

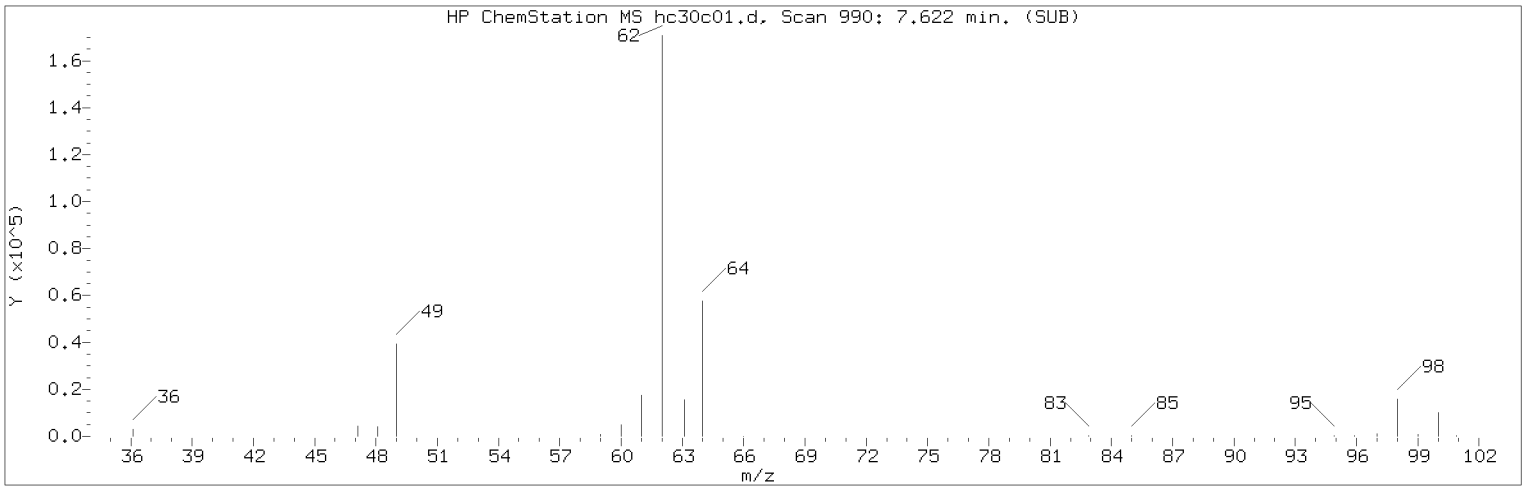
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

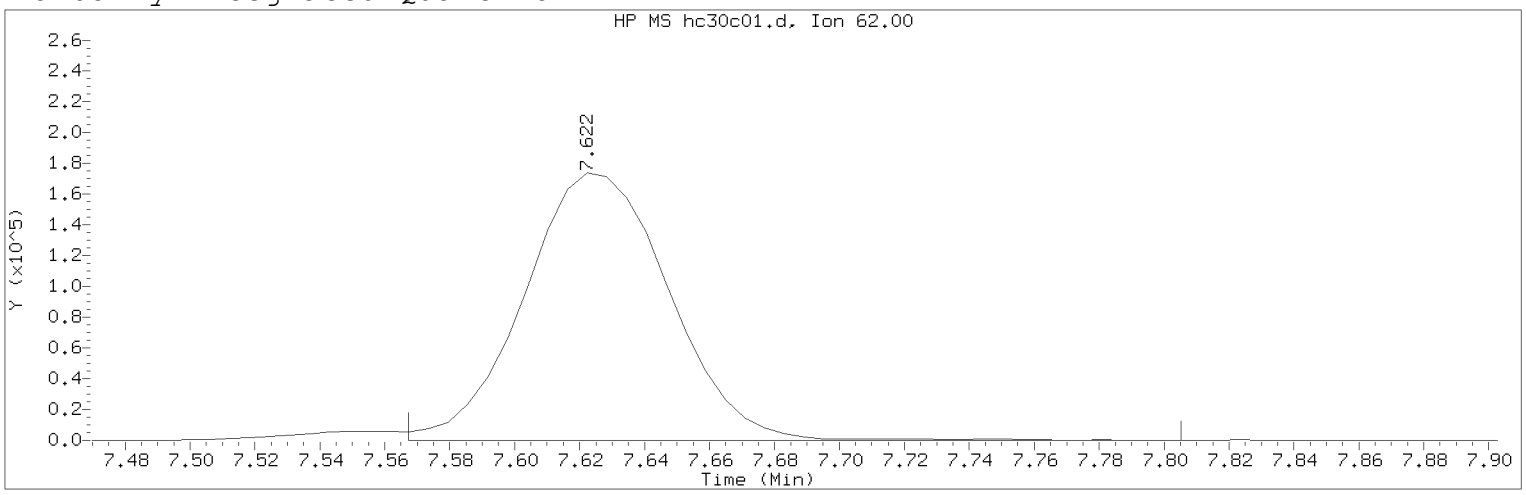
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 433
Retention Time (minutes): 4.227
Quant Ion : 43.00
Area : 174852
On-column Amount (ng) : 5.5601
Integration start scan : 414 Integration stop scan: 461
Y at integration start : 524 Y at integration end: 524

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. RAF48 Page 433 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

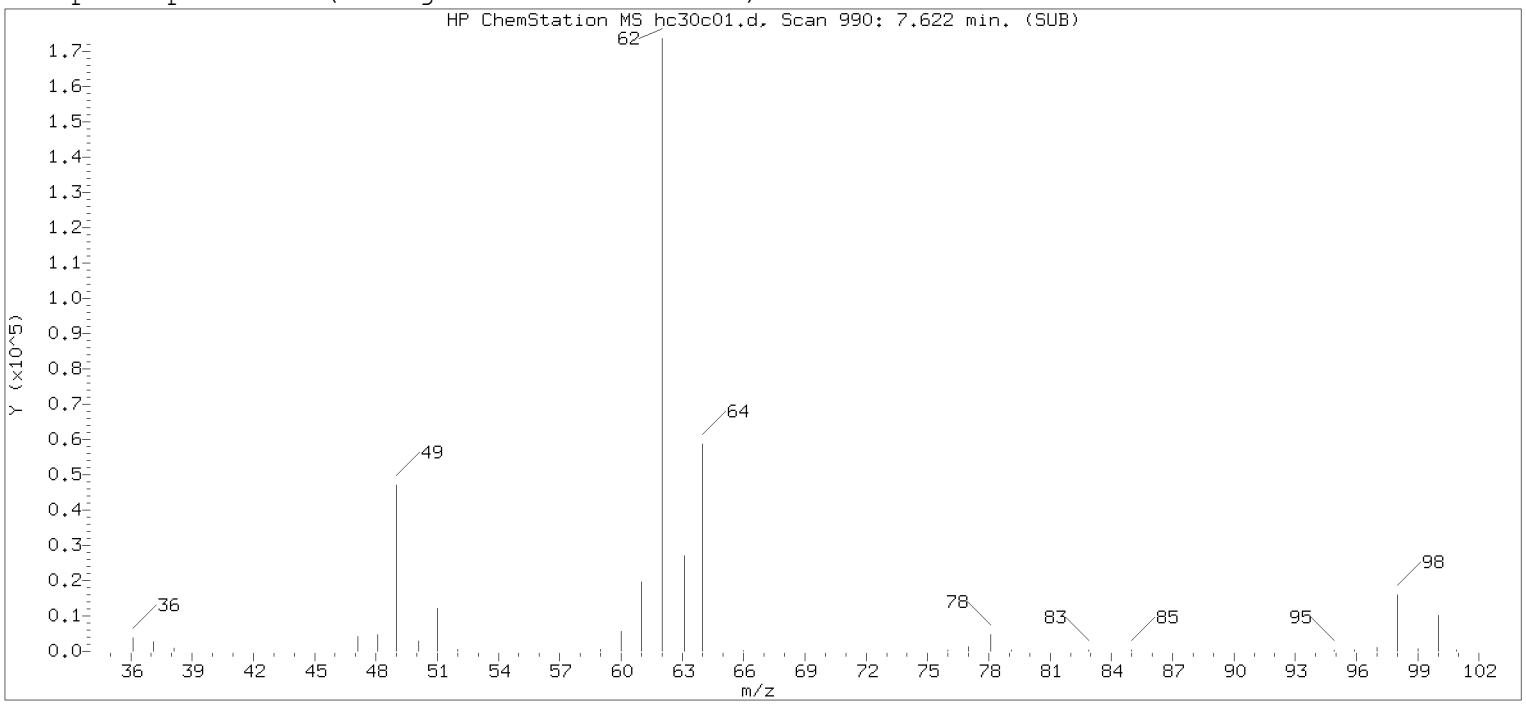
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 990
Retention Time (minutes): 7.622
Quant Ion : 62.00
Area (flag) : 539970M
On-Column Amount (ng) : 9.6313
Integration start scan : 980 Integration stop scan: 1019
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

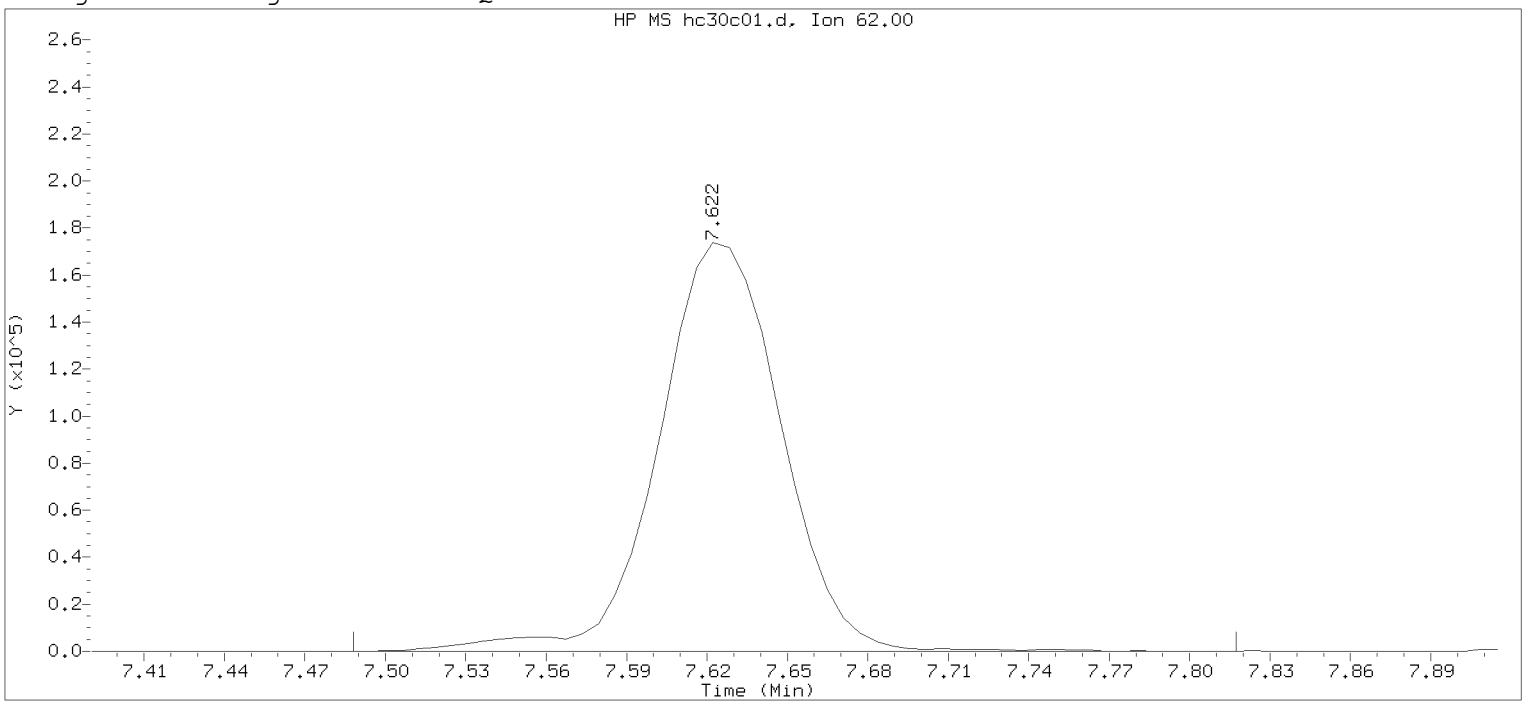
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

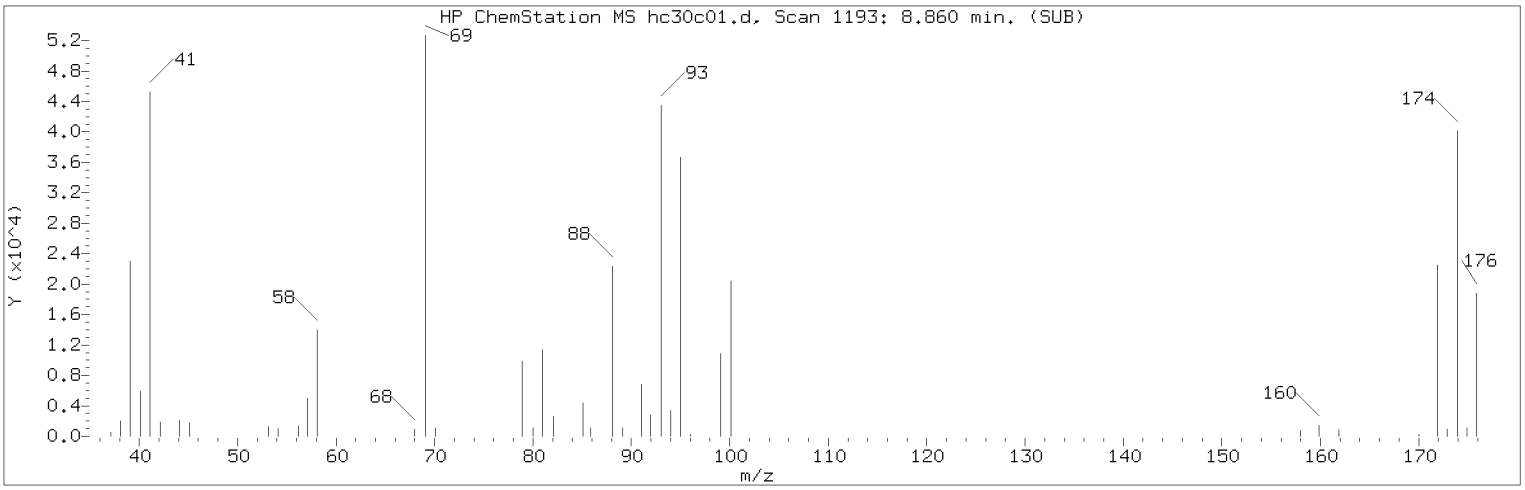
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

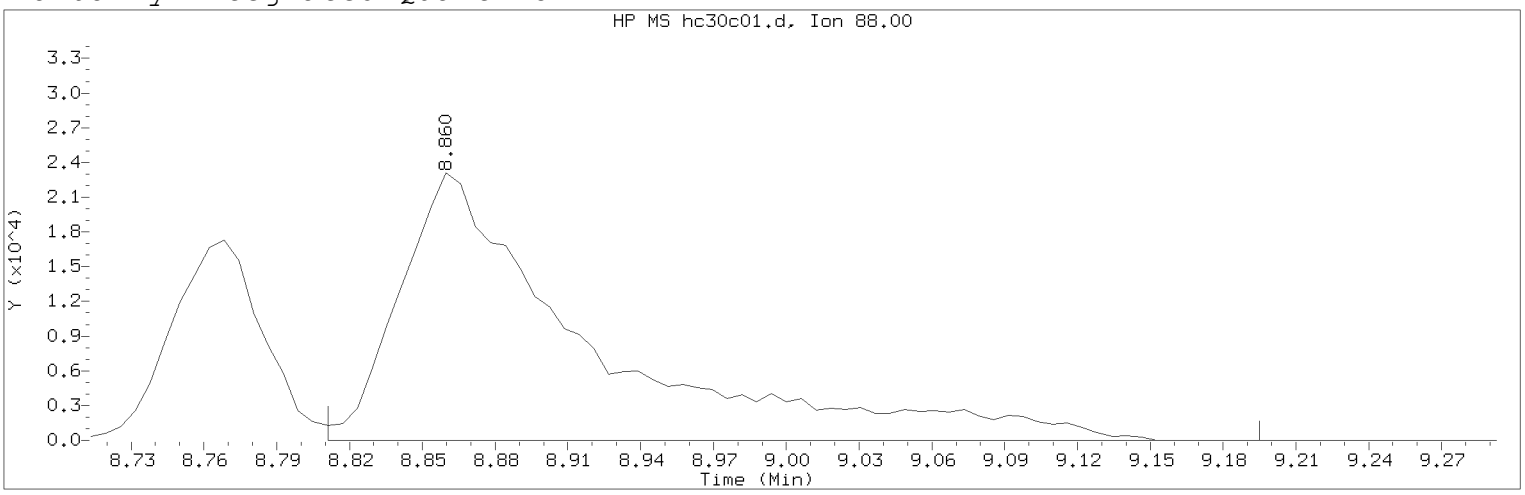
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 990
Retention Time (minutes): 7.622
Quant Ion : 62.00
Area : 553271
On-column Amount (ng) : 9.8685
Integration start scan : 967 Integration stop scan: 1021
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 435

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

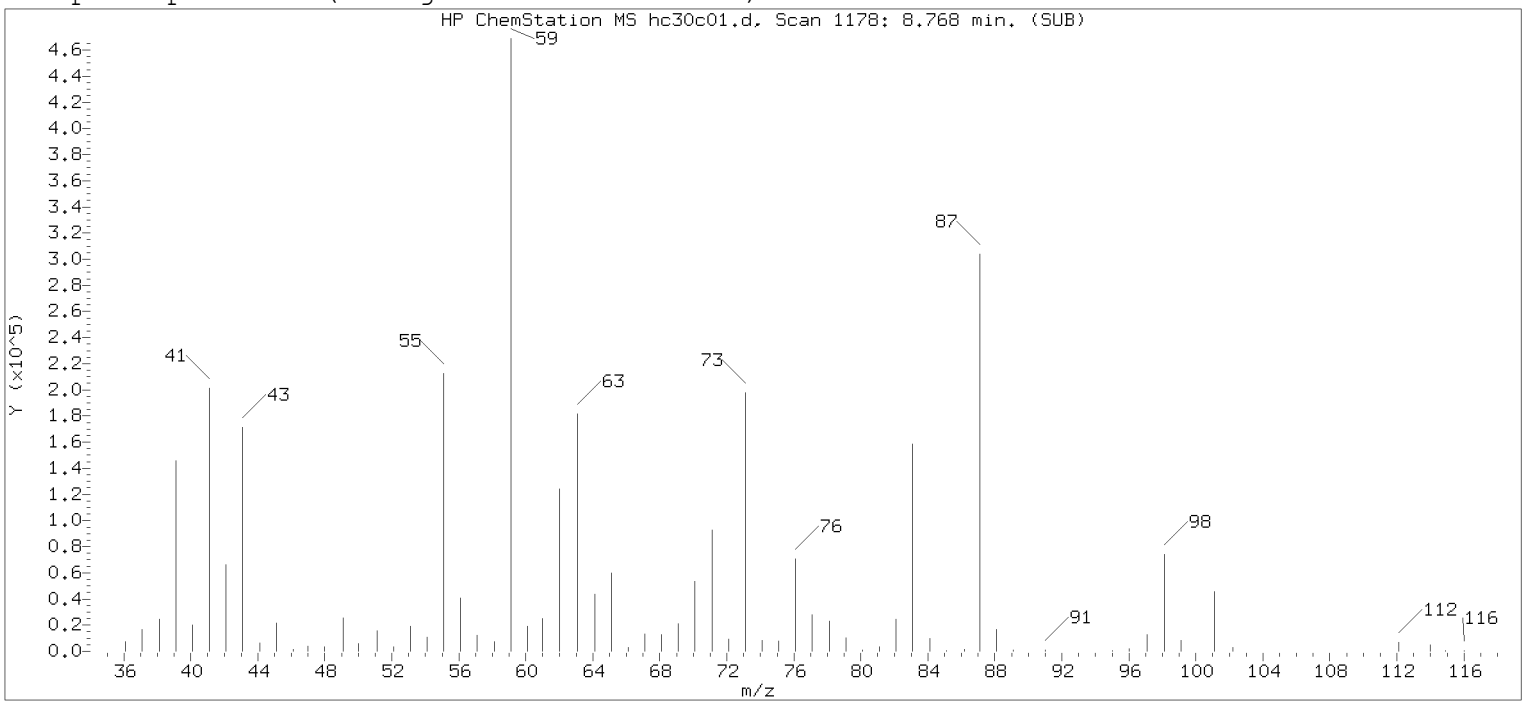
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1193
Retention Time (minutes): 8.860
Quant Ion : 88.00
Area (flag) : 124987M
On-Column Amount (ng) : 539.8275
Integration start scan : 1184 Integration stop scan: 1247
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

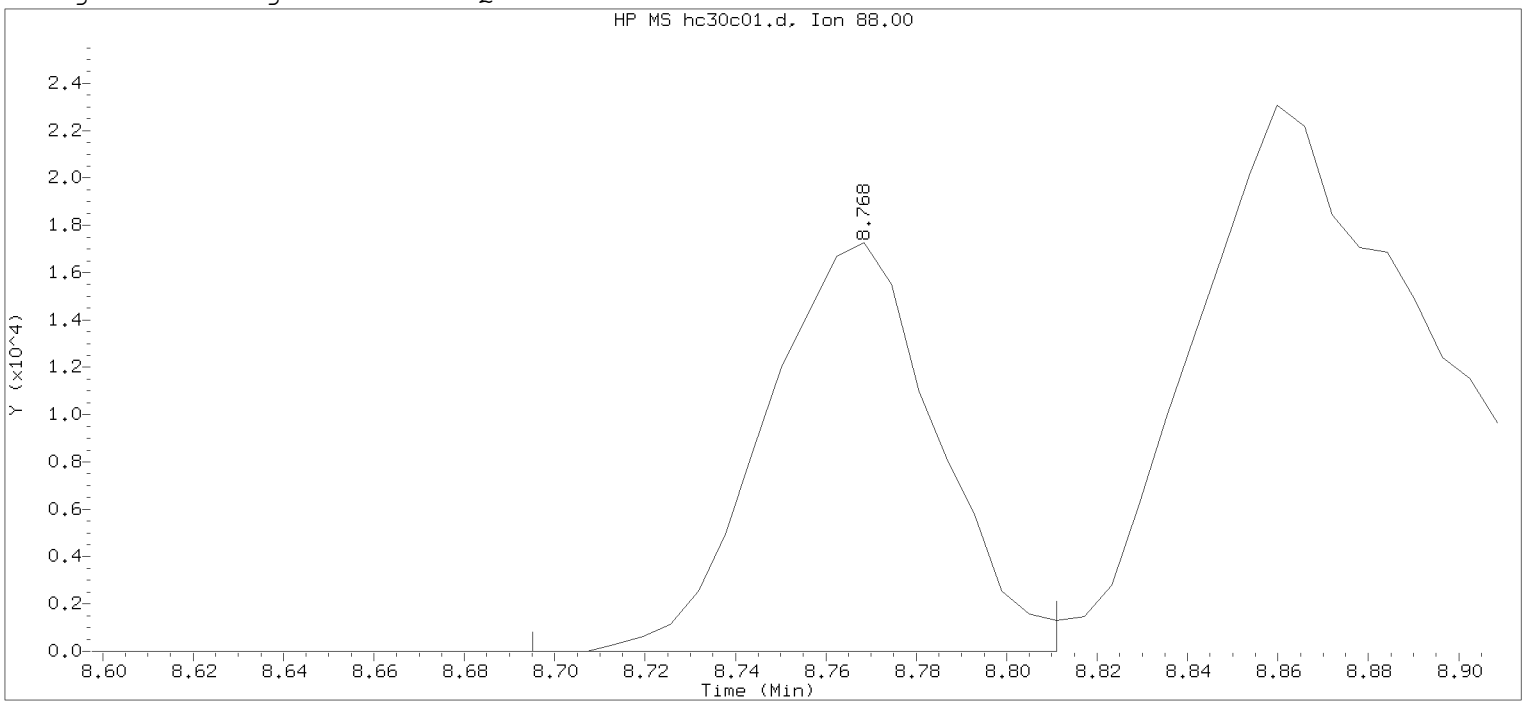
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

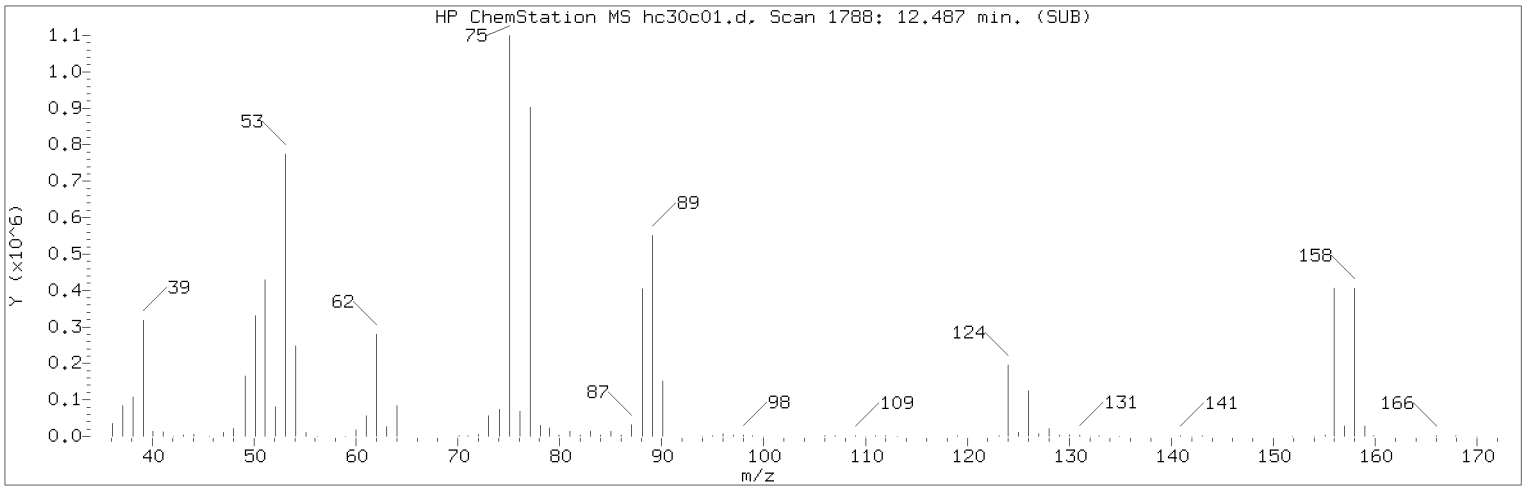
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

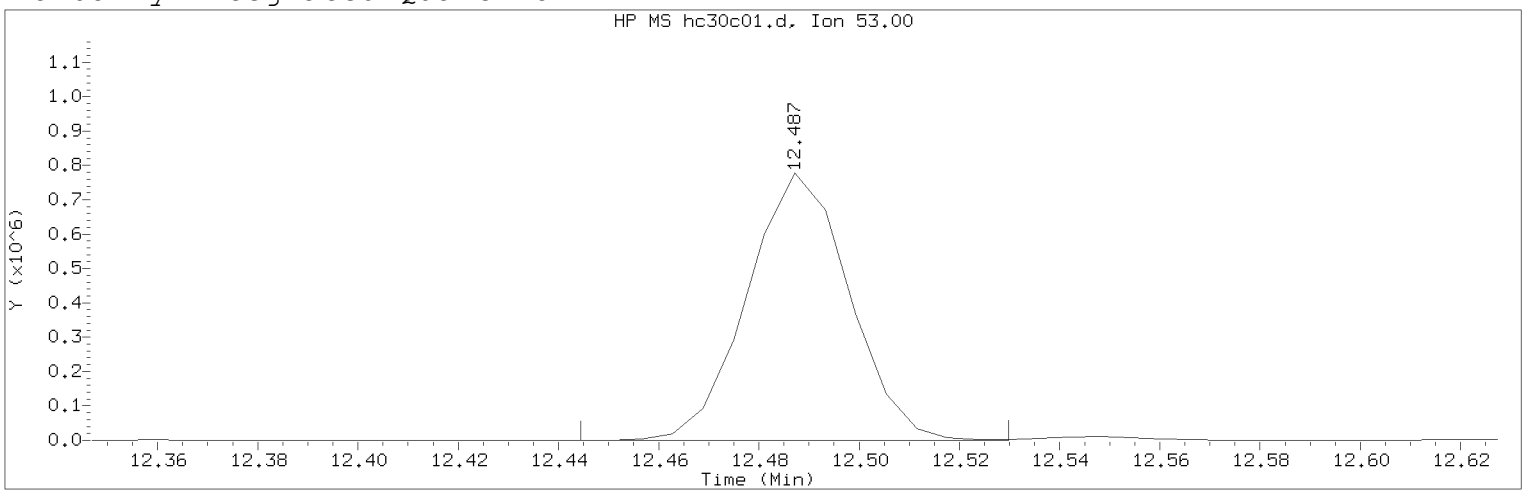
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1178		
Retention Time (minutes)	: 8.768		
Quant Ion	: 88.00		
Area	: 45207		
On-column Amount (ng)	: 195.2522		
Integration start scan	: 1165	Integration stop scan:	1184
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 437

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

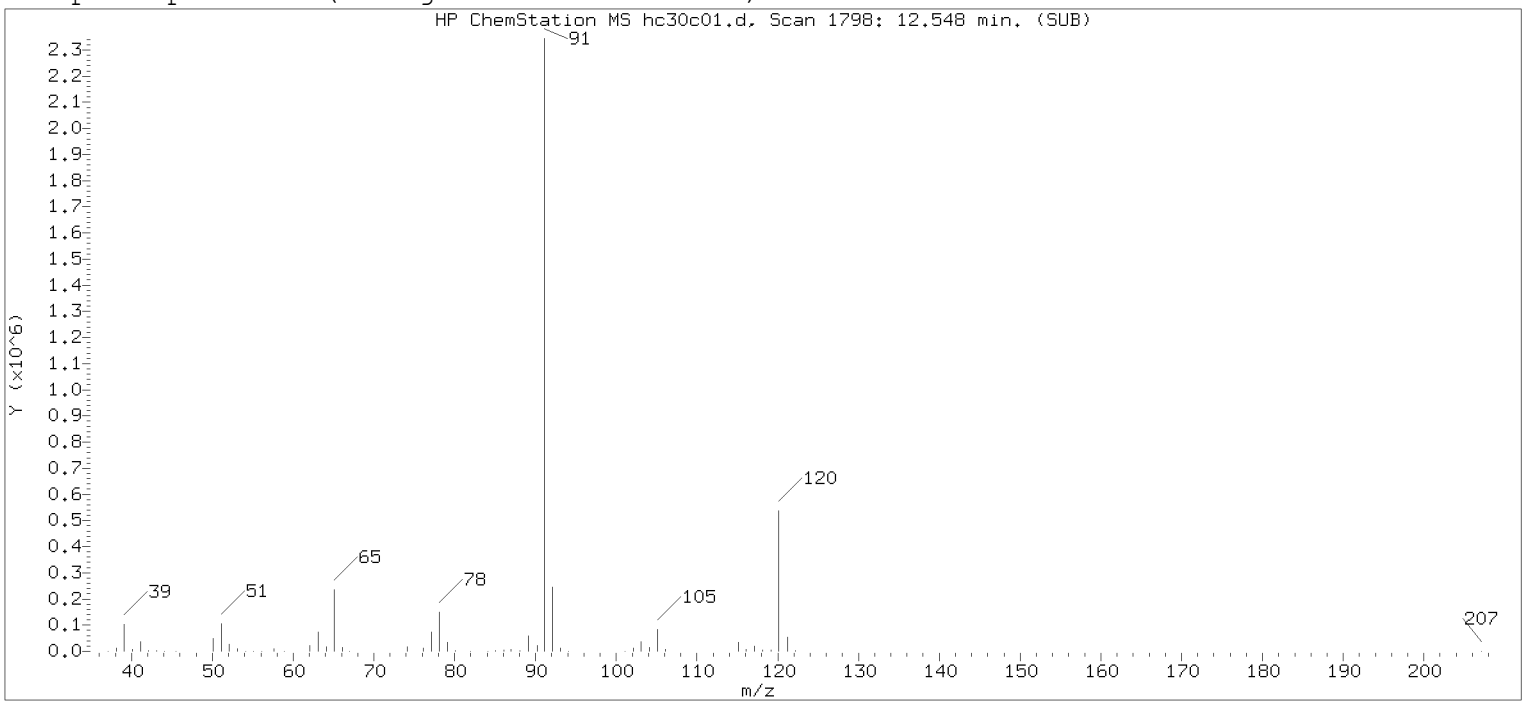
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1788
Retention Time (minutes): 12.487
Quant Ion : 53.00
Area (flag) : 1096989A
On-Column Amount (ng) : 67.9910
Integration start scan : 1780 Integration stop scan: 1794
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

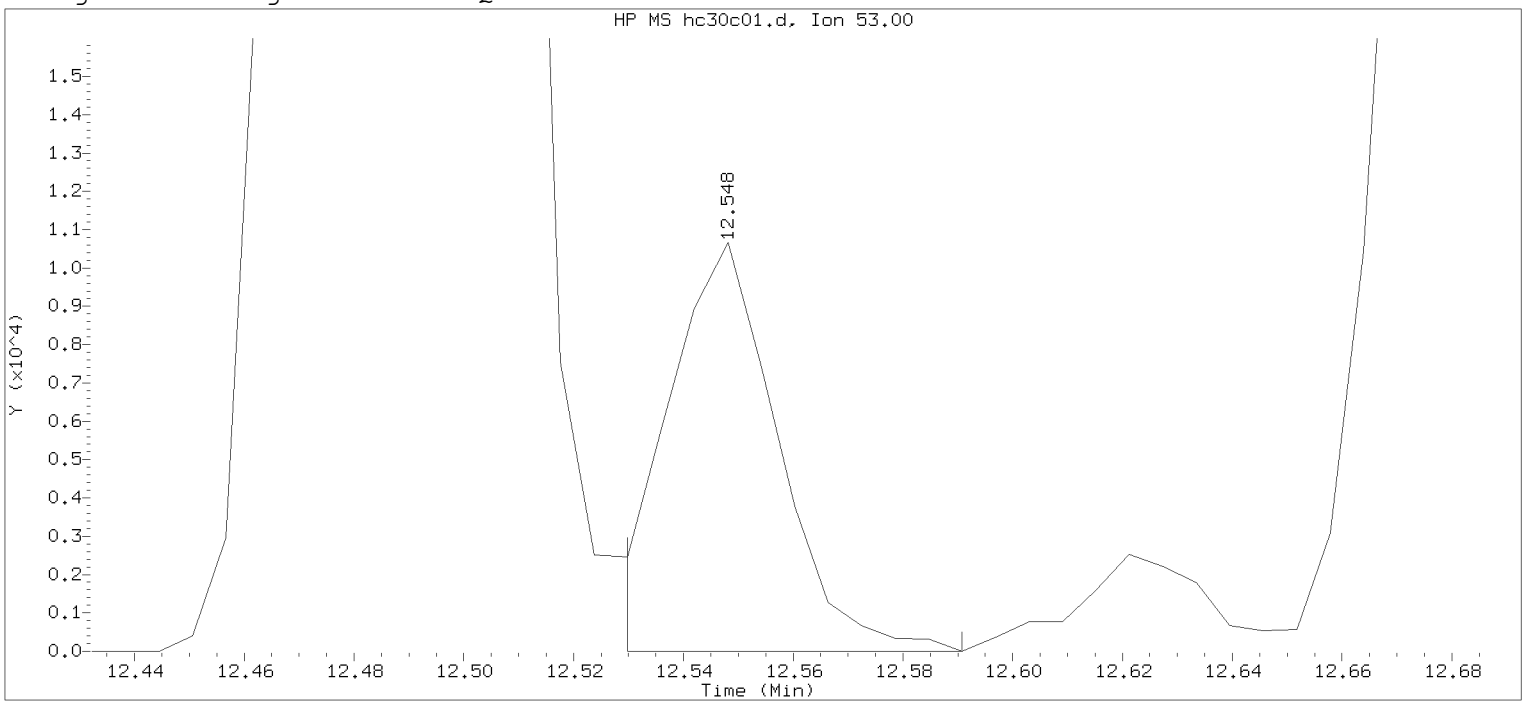
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

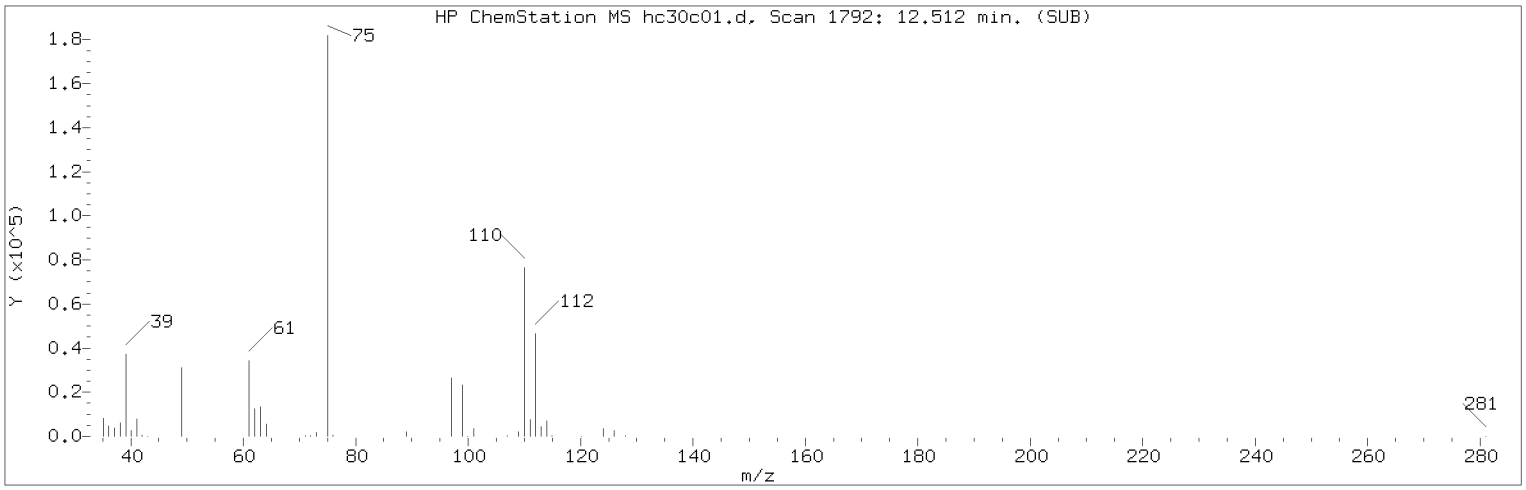
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

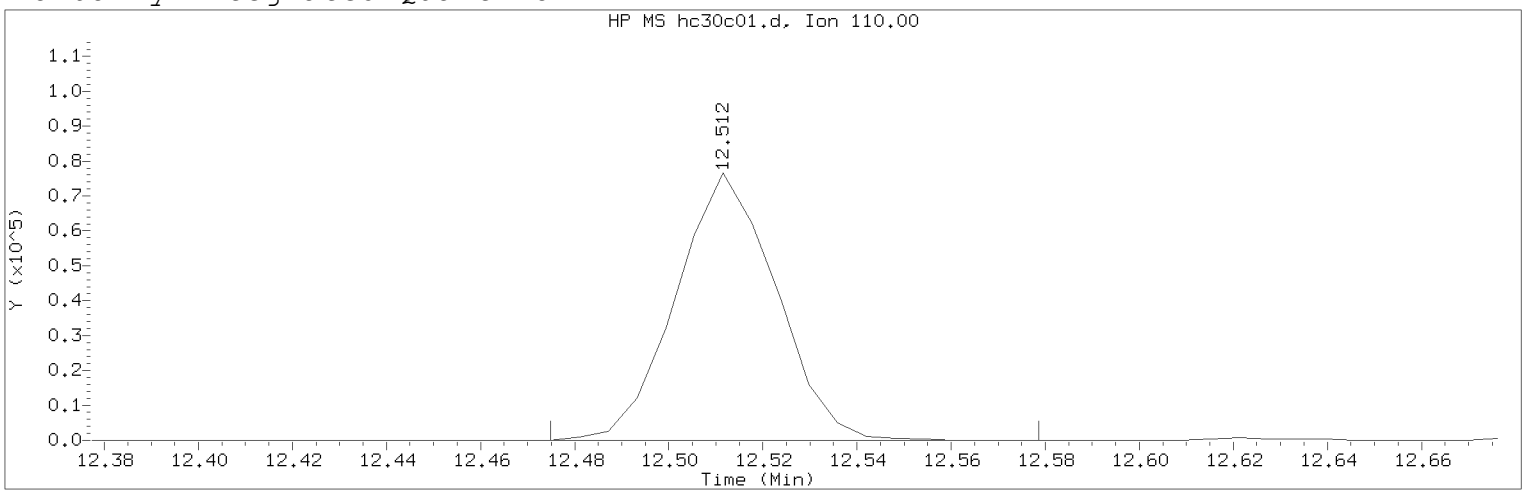
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1798
Retention Time (minutes): 12.548
Quant Ion : 53.00
Area : 14772
On-column Amount (ng) : 0.9156
Integration start scan : 1794 Integration stop scan: 1804
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 439

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

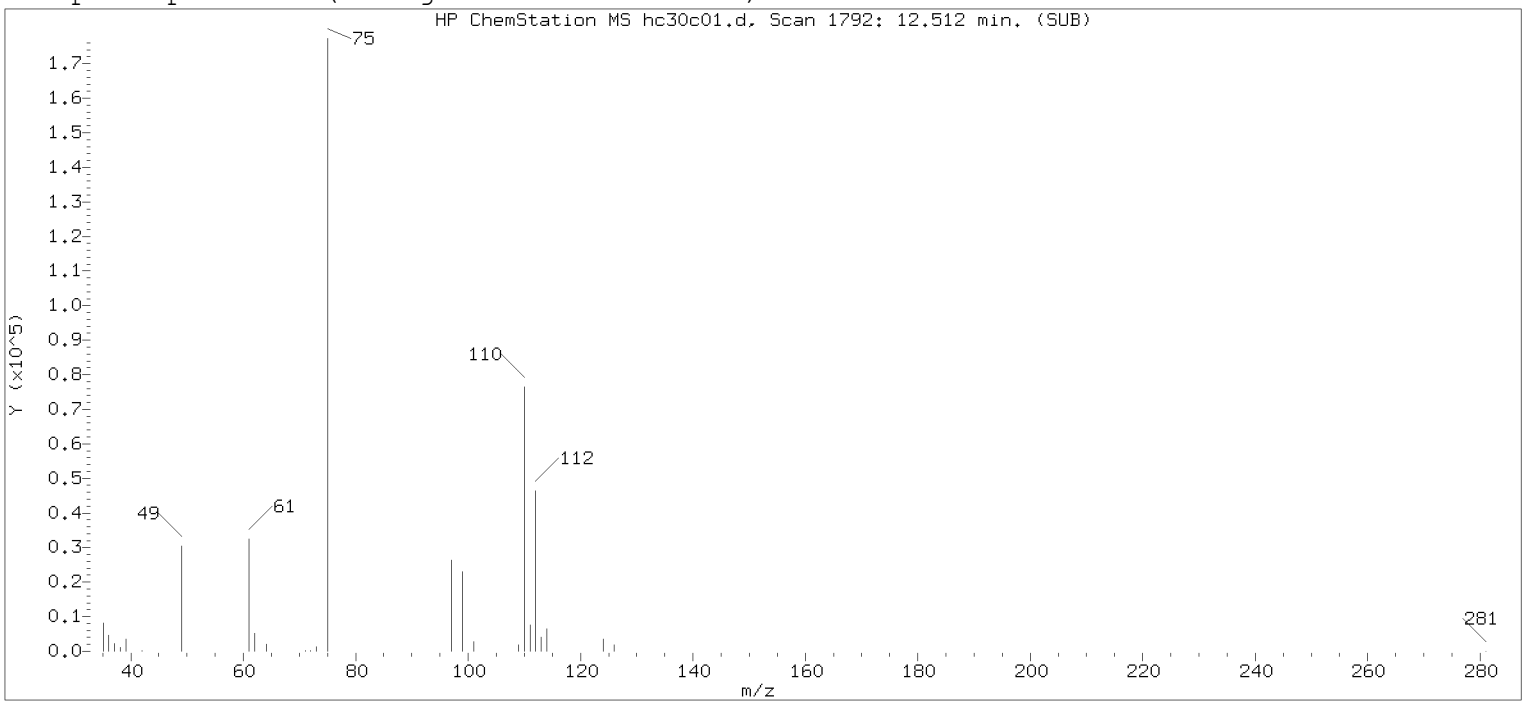
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area (flag) : 113085M
On-Column Amount (ng) : 9.9164
Integration start scan : 1785 Integration stop scan: 1802
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

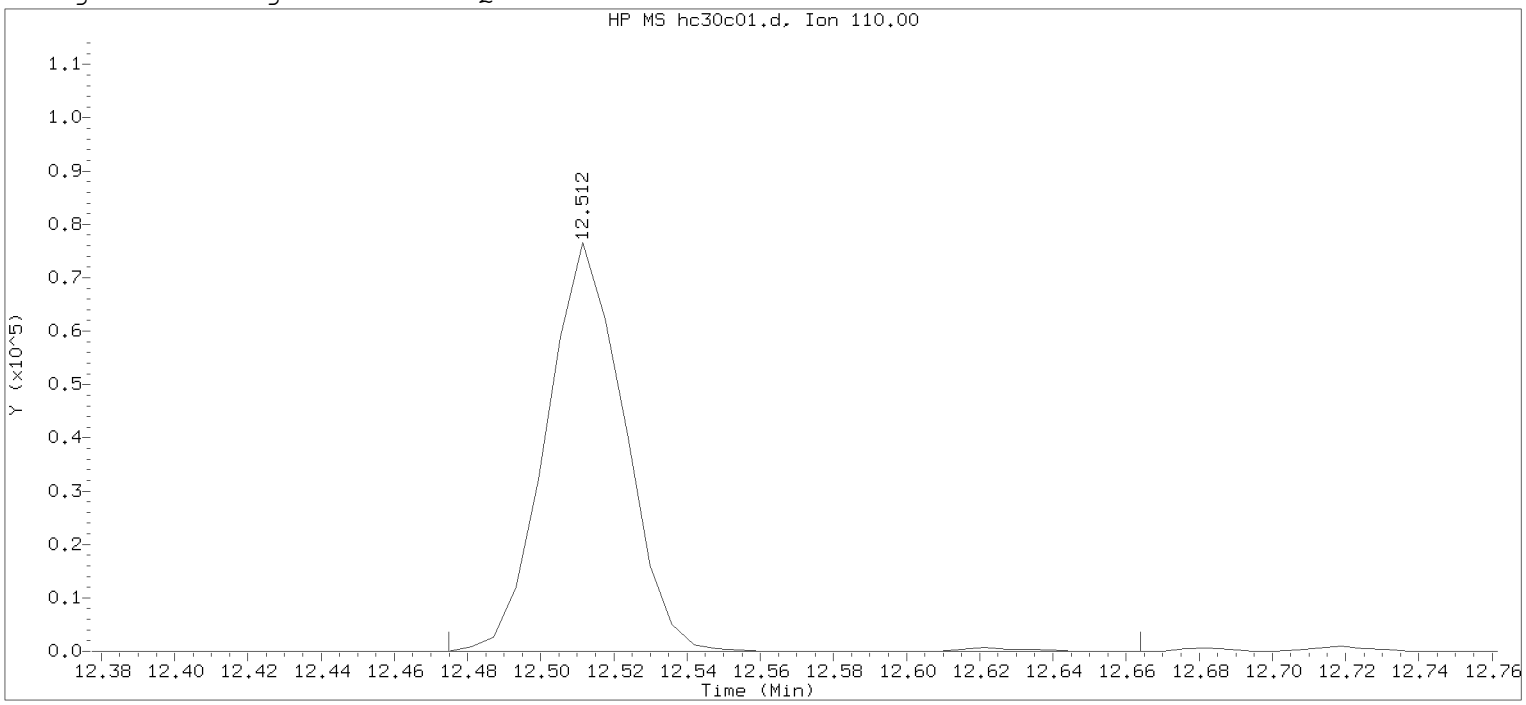
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

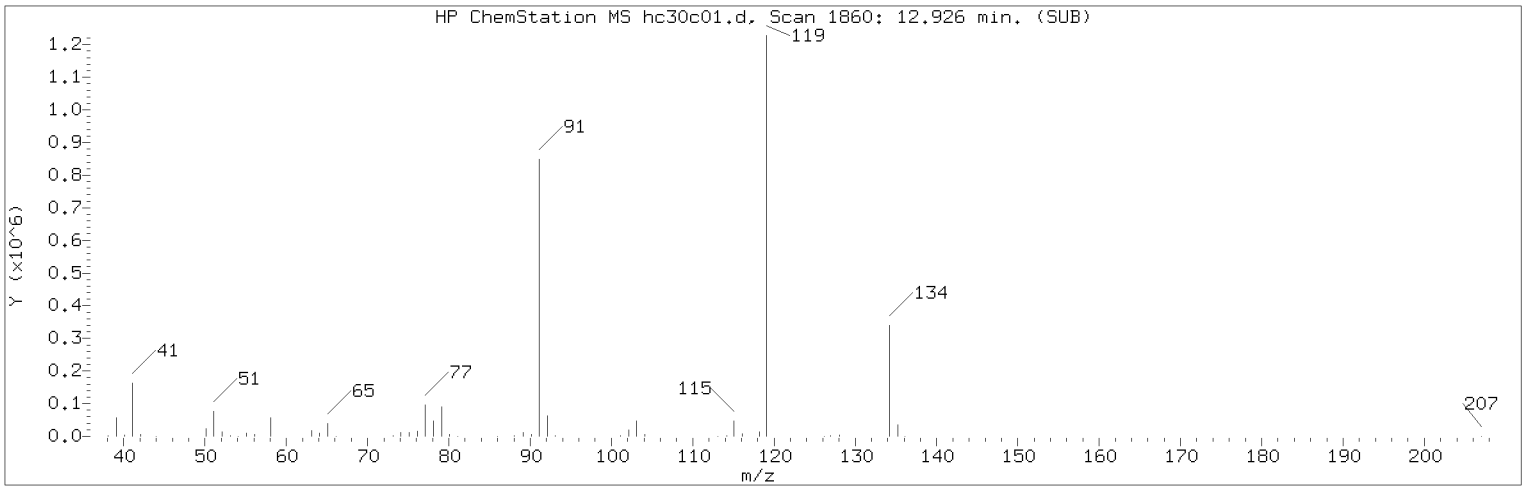
Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

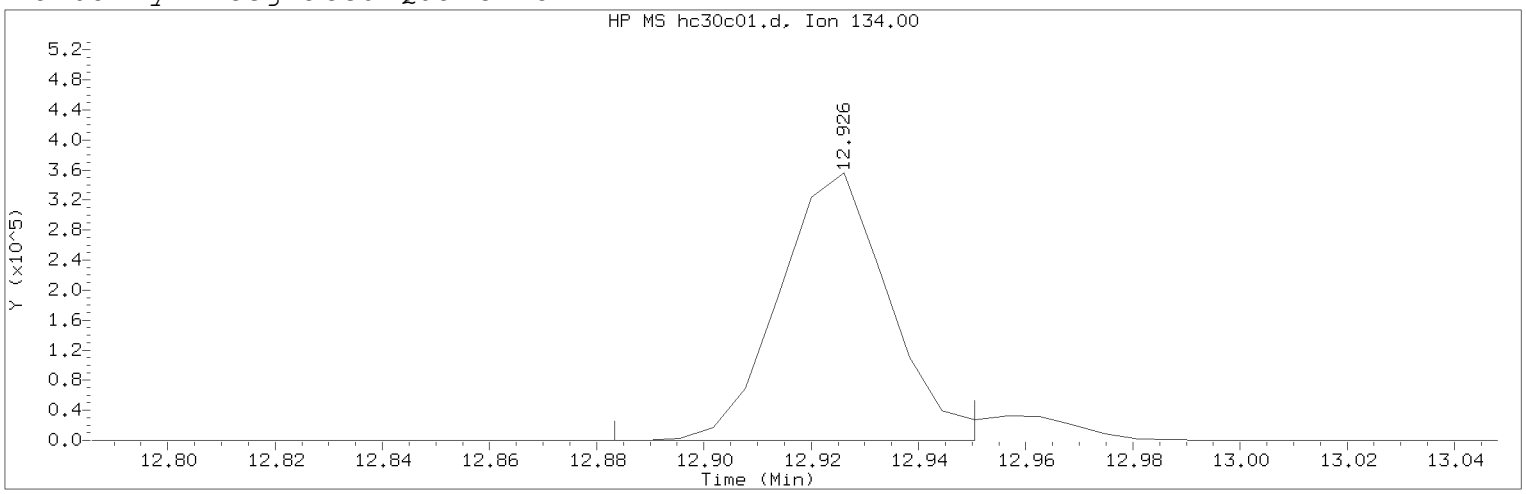
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area : 113813
On-column Amount (ng) : 9.9803
Integration start scan : 1785 Integration stop scan: 1816
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 441

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

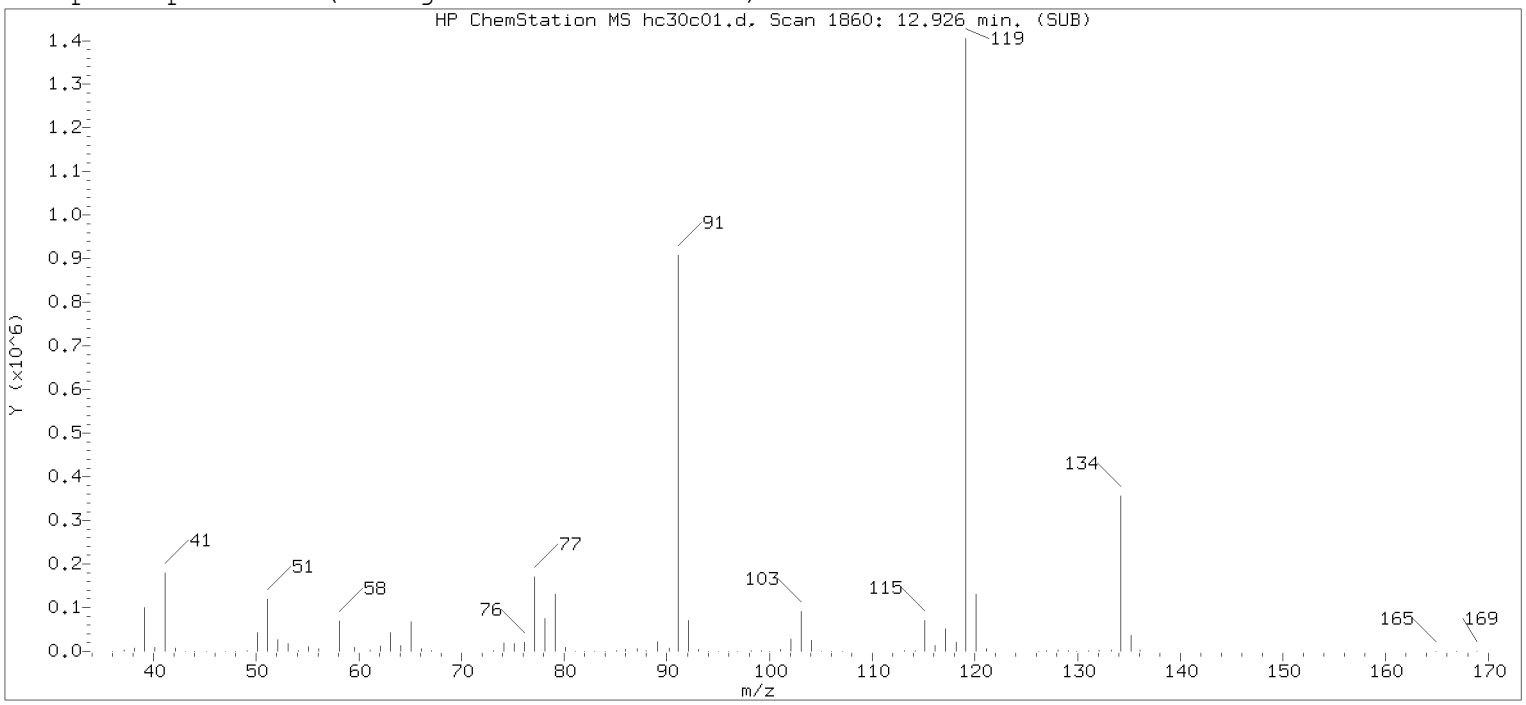
Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area (flag) : 503285M
On-Column Amount (ng) : 10.3145
Integration start scan : 1852 Integration stop scan: 1863
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

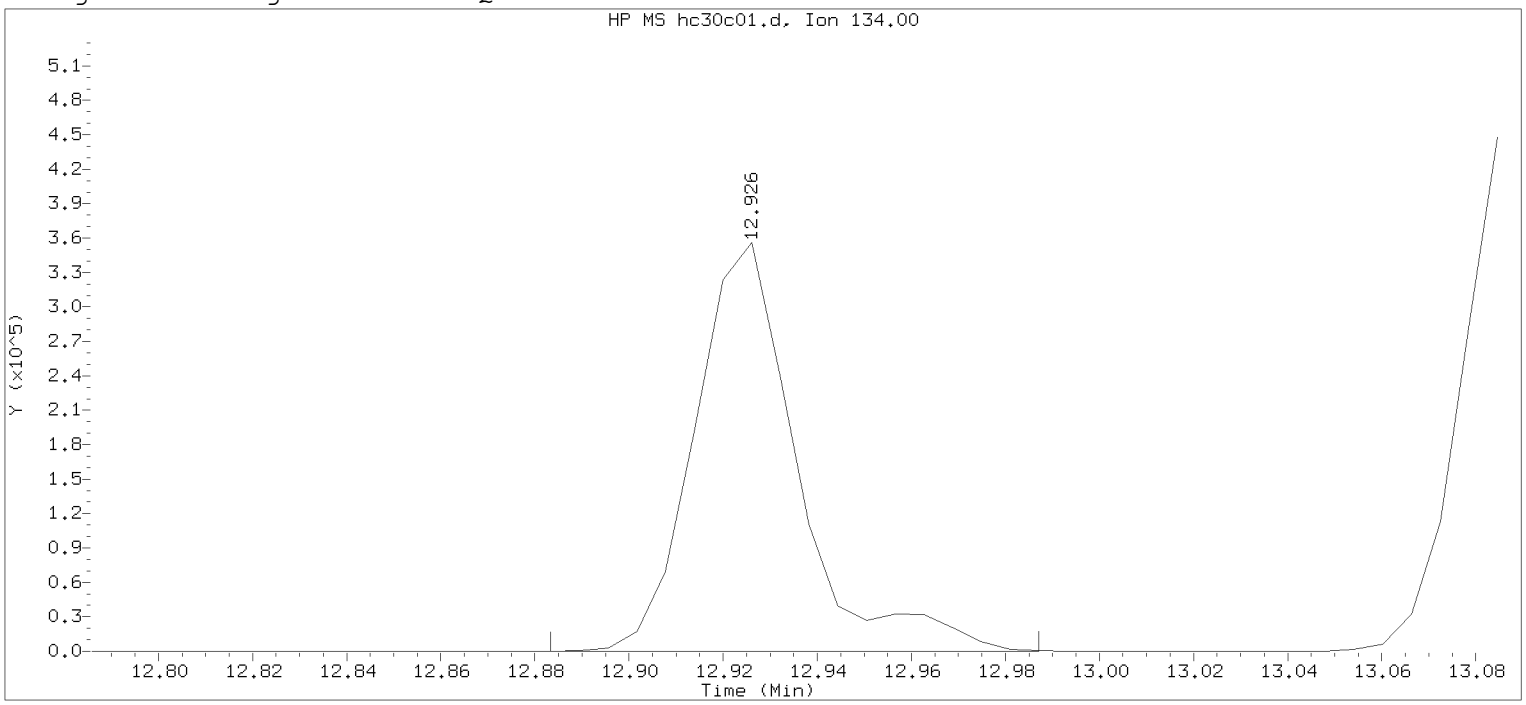
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 07:43 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 30-OCT-2019 08:01
Date, time and analyst ID of latest file update: 30-Oct-2019 08:01 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 125
Compound Name : tert-Butylbenzene
Scan Number : 1860
Retention Time (minutes): 12.926
Quant Ion : 134.00
Area : 538125
On-column Amount (ng) : 11.0285
Integration start scan : 1852 Integration stop scan: 1869
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 443 of 1181

Data File: /chem2/HP19094.i/19oct31a.b/hc31t01.d

Date : 31-OCT-2019 07:20

Client ID: 50NG BFB

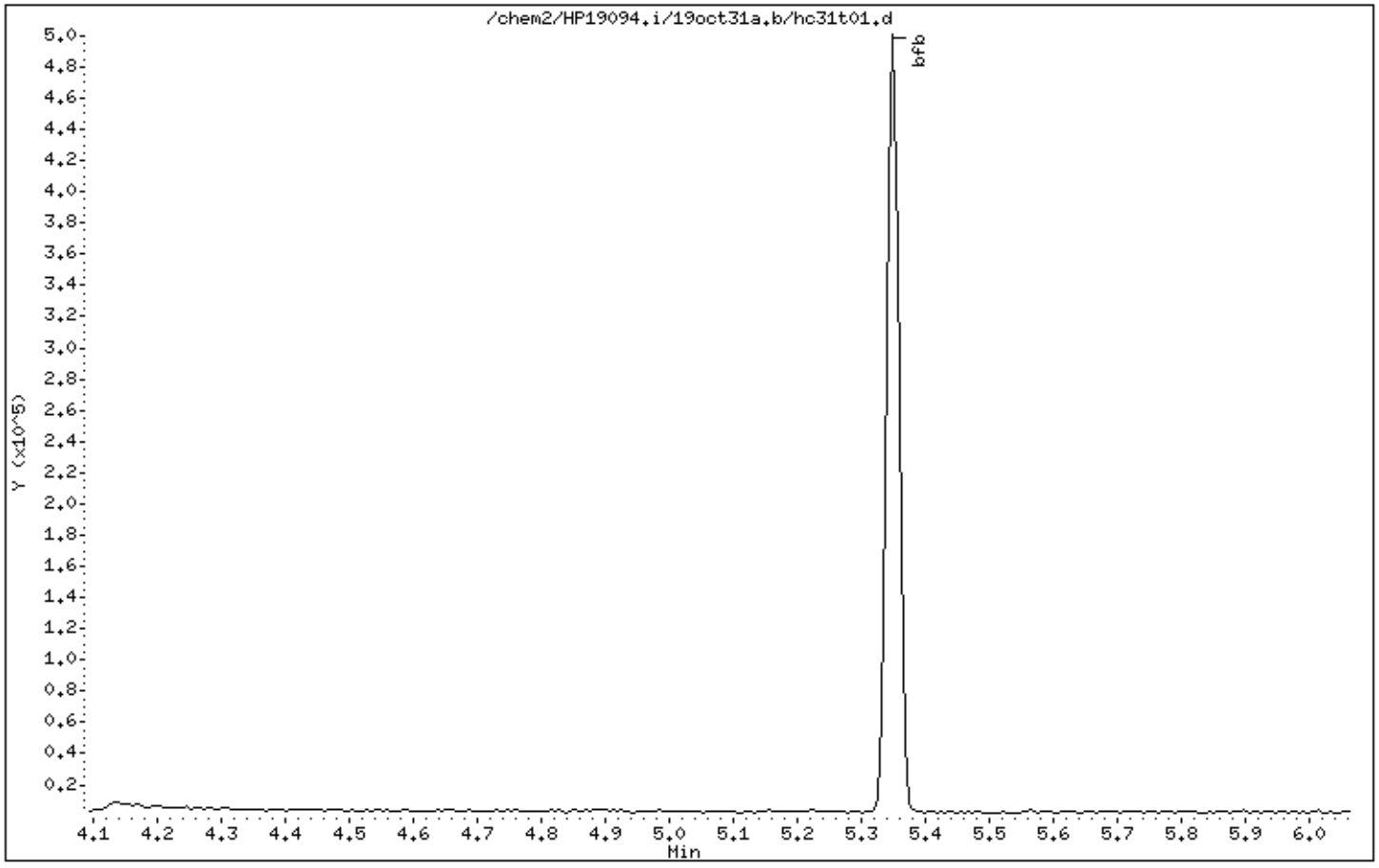
Instrument: HP19094.i

Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP19094.i/19oct31a.b/hc31t01.d

Date : 31-OCT-2019 07:20

Client ID: 50NG BFB

Instrument: HP19094.i

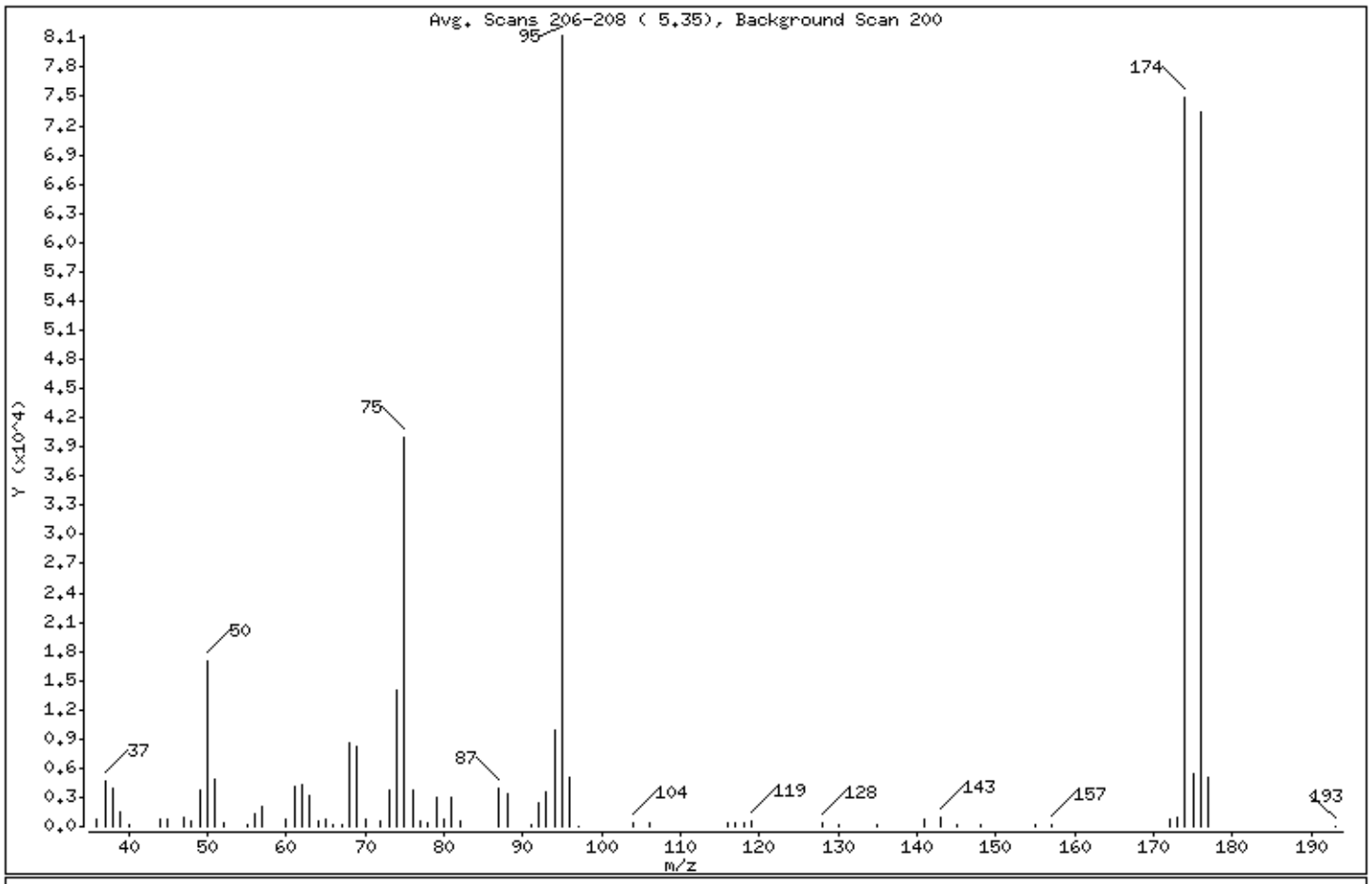
Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.88
75	30.00 - 60.00% of mass 95	49.24
96	5.00 - 9.00% of mass 95	6.23
173	Less than 2.00% of mass 174	1.12 (1.21)
174	50.00 - 100.00% of mass 95	92.15
175	5.00 - 9.00% of mass 174	6.72 (7.29)
176	95.00 - 101.00% of mass 174	90.43 (98.13)
177	5.00 - 9.00% of mass 176	6.13 (6.77)

Date : 31-OCT-2019 07:20

Client ID: 50NG BFB Instrument: HP19094.i

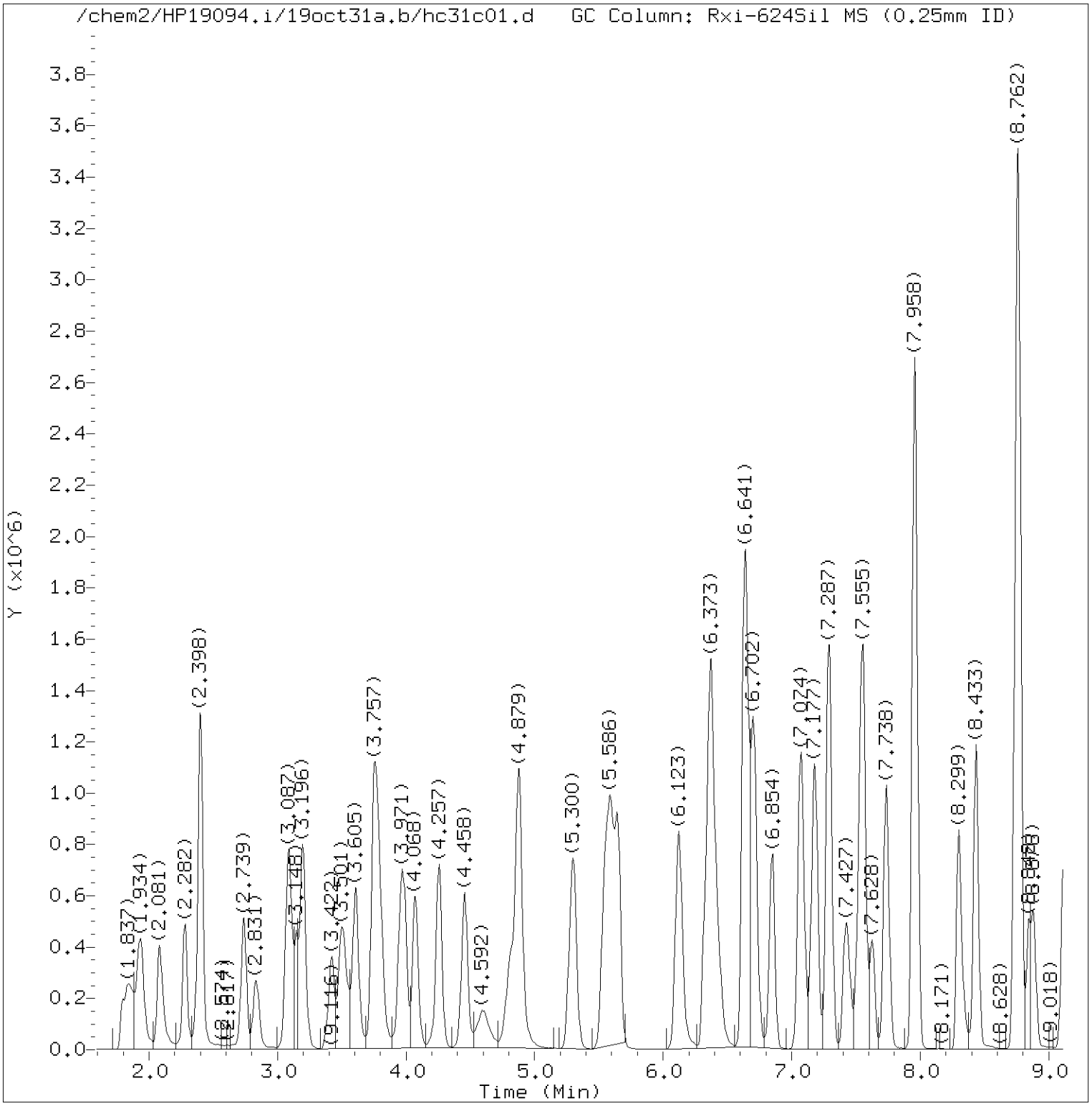
Sample Info: 50NG BFB;BFB AUG 02 2019 ;1;3;;;;;

Operator: JKH09052

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: hc31t01.d
Spectrum: Avg. Scans 206-208 (5.35), Background Scan 200
Location of Maximum: 95.00
Number of points: 69

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	840	62.00	4292	81.00	2968	130.00	241
37.00	4724	63.00	3162	82.00	613	135.00	134
38.00	3915	64.00	474	87.00	3879	141.00	748
39.00	1573	65.00	696	88.00	3283	143.00	994
40.00	155	66.00	106	91.00	215	145.00	150
44.00	679	67.00	237	92.00	2388	148.00	115
45.00	836	68.00	8598	93.00	3528	155.00	95
47.00	964	69.00	8258	94.00	9947	157.00	99
48.00	513	70.00	834	95.00	81256	172.00	815
49.00	3789	72.00	554	96.00	5063	173.00	909
50.00	16960	73.00	3829	97.00	91	174.00	74880
51.00	4857	74.00	14023	104.00	413	175.00	5460
52.00	311	75.00	40008	106.00	311	176.00	73480
55.00	201	76.00	3705	116.00	366	177.00	4977
56.00	1355	77.00	506	117.00	407	193.00	89
57.00	2134	78.00	344	118.00	429		
60.00	724	79.00	2991	119.00	552		
61.00	4052	80.00	733	128.00	312		



Total Ion Chromatogram (TIC)

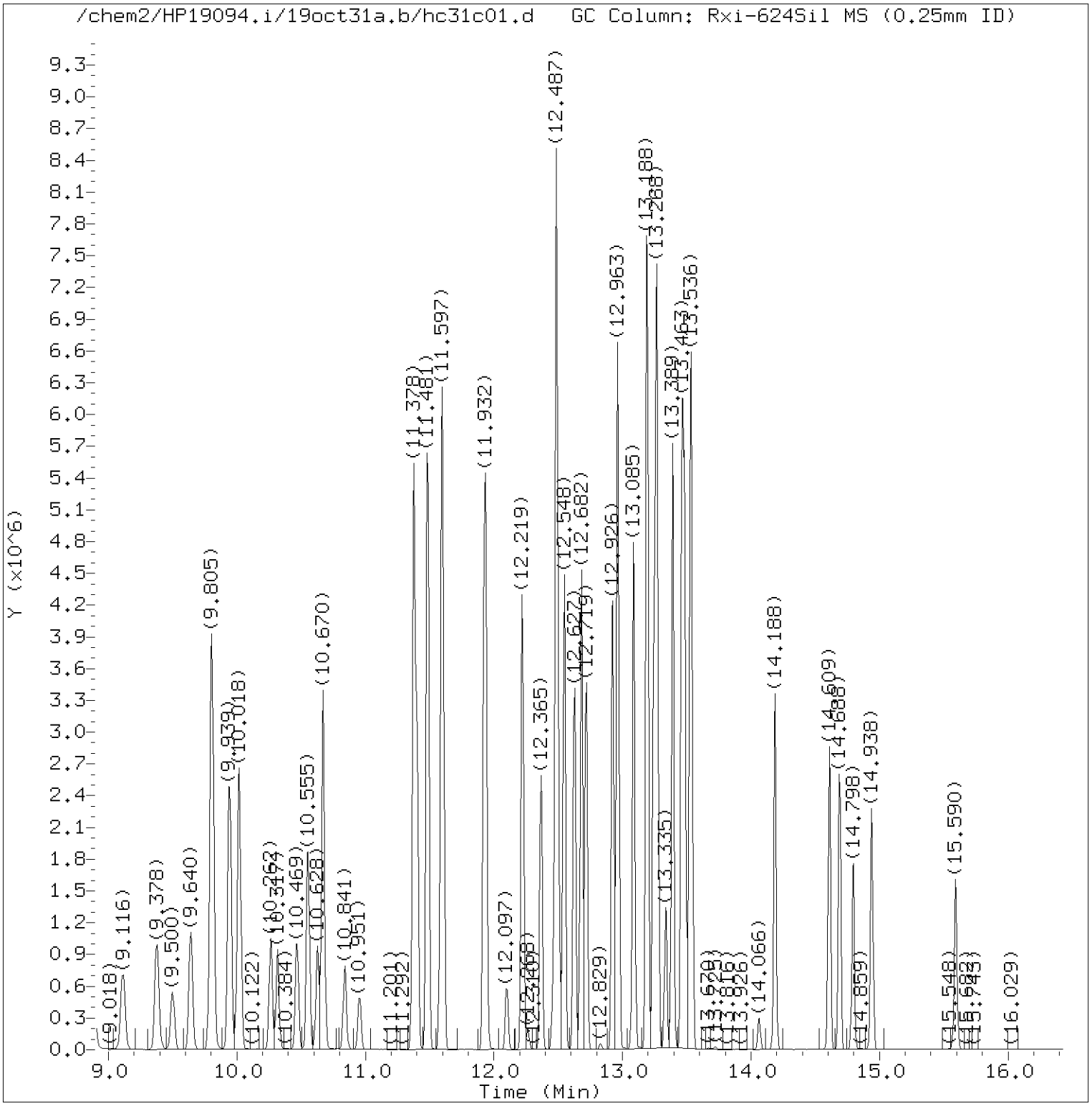
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	794642M	7.822
2) Chloromethane	(2)	2.282	50	759692	10.212
6) 1,3-Butadiene	(2)	2.398	39	621341	10.354
5) Vinyl Chloride	(2)	2.404	62	728329	9.731
7) Bromomethane	(2)	2.739	94	545646	8.262
8) Chloroethane	(2)	2.831	64	427300	9.752
9) Dichlorofluoromethane	(2)	3.080	67	1038731	10.809
10) Trichlorofluoromethane	(2)	3.148	101	905503	7.644
11) Ethyl ether	(2)	3.422	59	357957	10.844
12) Freon 123a	(2)	3.501	67	622364	10.327
13) Acrolein	(1)	3.611	56	1069603	160.964
15) 1,1-Dichloroethene	(2)	3.745	96	425489	9.850
16) Freon 113	(2)	3.782	101	520985	9.643
14) Acetone	(1)	3.782	43	800800M	94.301
17) Methyl Iodide	(2)	3.958	142	904571	8.728
18) Carbon Disulfide	(2)	4.074	76	1407993	9.808
21) Methyl Acetate	(1)	4.227	43	202949M	6.602
22) Allyl Chloride	(2)	4.257	41	728686	9.944
23) Methylene Chloride	(2)	4.458	84	481459	9.349
26)*t-Butyl Alcohol-d10	(1)	4.470	65	139429	50.000
28) t-Butyl Alcohol	(1)	4.605	59	576860	221.828
29) Acrylonitrile	(1)	4.806	53	493624	45.979
30) Methyl Tertiary Butyl Ether	(2)	4.861	73	1078334	9.647
31) trans-1,2-Dichloroethene	(2)	4.879	96	489976	9.880
32) n-Hexane	(2)	5.300	57	749151	9.931
33) 1,1-Dichloroethane	(2)	5.543	63	915549	10.424
34) di-Isopropyl Ether	(2)	5.586	45	1566343	10.342
35) 2-Chloro-1,3-Butadiene	(2)	5.647	53	829665	10.188
40) 1,2-Dichloroethene (Total)	(2)		96	1049101	19.911
37) Ethyl t-butyl ether	(2)	6.123	59	1395547	9.676
38) 2-Butanone	(1)	6.324	43	1276277	85.234
39) cis-1,2-Dichloroethene	(2)	6.366	96	559125	10.032
41) 2,2-Dichloropropane	(2)	6.385	77	752533	9.435
42) Propionitrile	(1)	6.427	54	751238	196.123
45) Methacrylonitrile	(1)	6.641	67	1248478	81.820
47) Bromochloromethane	(2)	6.702	128	250307	9.457
48) Tetrahydrofuran	(1)	6.708	71	349307	84.187
49) Chloroform	(2)	6.848	83	918224	9.949

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
50)$Dibromofluoromethane	(2)	7.068	113	505380	9.587
50)$Dibromofluoromethane	(2)	7.061	111	516642	9.646
51) 1,1,1-Trichloroethane	(2)	7.080	97	791848M	9.216
52) Cyclohexane	(2)	7.177	56	902212	10.148
52) Cyclohexane	(2)	7.177	84	769199	9.315
52) Cyclohexane	(2)	7.177	69	273217	9.525
55) 1,1-Dichloropropene	(2)	7.287	75	703324	10.095
54) Carbon Tetrachloride	(2)	7.293	117	699087	8.700
56) Isobutyl Alcohol	(1)	7.421	41	505593	474.970
57)$1,2-Dichloroethane-d4	(2)	7.525	102	93877	9.686
57)$1,2-Dichloroethane-d4	(2)	7.525	65	461889	9.848
57)$1,2-Dichloroethane-d4	(2)	7.525	104	58545	9.428
58) Benzene	(2)	7.555	78	2080093	10.610
59) 1,2-Dichloroethane	(2)	7.628	62	528576M	9.572
60) t-Amyl methyl ether	(2)	7.738	73	1233115	9.491
62) n-Heptane	(2)	7.958	43	818372	10.094
63)*Fluorobenzene	(2)	7.958	96	1938468	10.000
65) n-Butanol	(1)	8.299	56	849925	979.448
67) Trichloroethene	(2)	8.433	95	546936	9.931
69) Methylcyclohexane	(2)	8.750	83	999683	10.323
70) 1,2-Dichloropropane	(2)	8.768	63	515683	10.689
71) Methyl Methacrylate	(1)	8.842	69	237595	7.653
72) 1,4-Dioxane	(1)	8.860	88	112217M	495.848
73) Dibromomethane	(2)	8.884	93	245422	9.487
74) Bromodichloromethane	(2)	9.116	83	645015	9.705
76) 2-Nitropropane	(1)	9.378	41	805033	73.004
80) cis-1,3-Dichloropropene	(2)	9.640	75	729019	9.619
81) 4-Methyl-2-Pentanone	(1)	9.805	43	3224017A	84.933
82)$Toluene-d8	(3)	9.945	98	2013605	9.752
82)$Toluene-d8	(3)	9.945	100	1283495	9.720
83) Toluene	(3)	10.018	92	1309202	9.528
85) 1,3-Dichloropropene (total)	(3)		75	1332753	18.523
84) trans-1,3-Dichloropropene	(3)	10.262	75	603734	8.904
86) Ethyl Methacrylate	(3)	10.317	69	509497	9.402
88) 1,1,2-Trichloroethane	(3)	10.469	97	342104	9.287
89) Tetrachloroethene	(3)	10.555	166	614107	8.903
90) 1,3-Dichloropropane	(3)	10.628	76	582064	9.530
91) 2-Hexanone	(1)	10.670	43	2216795	83.132

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
93) Dibromochloromethane	(3)	10.841	129	431571	8.353
95) 1,2-Dibromoethane	(3)	10.951	107	337527	9.097
96) 1-Chlorohexane	(3)	11.378	91	747316	8.917
97)*Chlorobenzene-d5	(3)	11.378	117	1617373	10.000
98) Chlorobenzene	(3)	11.402	112	1444930	9.275
100) Ethylbenzene	(3)	11.481	91	2635850	9.701
99) 1,1,1,2-Tetrachloroethane	(3)	11.481	131	516565	8.891
101) m+p-Xylene	(3)	11.597	106	1984101	18.403
105) Xylene (Total)	(3)		106	2948175	27.552
104) o-Xylene	(3)	11.926	106	964074	9.148
106) Styrene	(3)	11.939	104	1603631	9.362
107) Bromoform	(3)	12.097	173	256120	7.962
108) Isopropylbenzene	(3)	12.219	105	2614479	9.298
111)$4-Bromofluorobenzene	(3)	12.365	95	766862	10.156
111)$4-Bromofluorobenzene	(3)	12.365	174	669841	9.278
113) 1,1,2,2-Tetrachloroethane	(4)	12.463	83	414674	9.909
114) Bromobenzene	(4)	12.487	156	603993	9.237
115) trans-1,4-Dichloro-2-butene	(1)	12.487	53	1134823A	71.958
116) 1,2,3-Trichloropropane	(4)	12.512	110	113578M	9.777
117) n-Propylbenzene	(4)	12.548	91	3166418	10.267
119) 2-Chlorotoluene	(4)	12.627	126	617458	9.731
121) 1,3,5-Trimethylbenzene	(4)	12.682	105	2225457	9.887
122) 4-Chlorotoluene	(4)	12.719	126	624915	9.580
125) tert-Butylbenzene	(4)	12.926	134	468278	9.421
126) Pentachloroethane	(4)	12.957	167	416958	9.091
127) 1,2,4-Trimethylbenzene	(4)	12.963	105	2315461	9.935
128) sec-Butylbenzene	(4)	13.085	105	2973031	10.037
131) 1,3-Dichlorobenzene	(4)	13.188	146	1211621	9.500
132) p-Isopropyltoluene	(4)	13.194	119	2506819	9.792
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	855712	10.000
134) 1,4-Dichlorobenzene	(4)	13.261	146	1186463	9.353
135) 1,2,3-Trimethylbenzene	(4)	13.268	120	1036701	9.934
136) Benzyl Chloride	(4)	13.341	126	182631	8.978
138) n-Butylbenzene	(4)	13.481	92	1342433	10.653
139) 1,2-Dichlorobenzene	(4)	13.524	146	1079783	9.438
143) 1,2-Dibromo-3-chloropropane	(1)	14.066	155	59055	6.674
144) 1,3,5-Trichlorobenzene	(4)	14.188	180	961311	9.735
145) 1,2,4-Trichlorobenzene	(4)	14.609	180	795814	9.638

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$ = Compound is a surrogate standard.

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on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

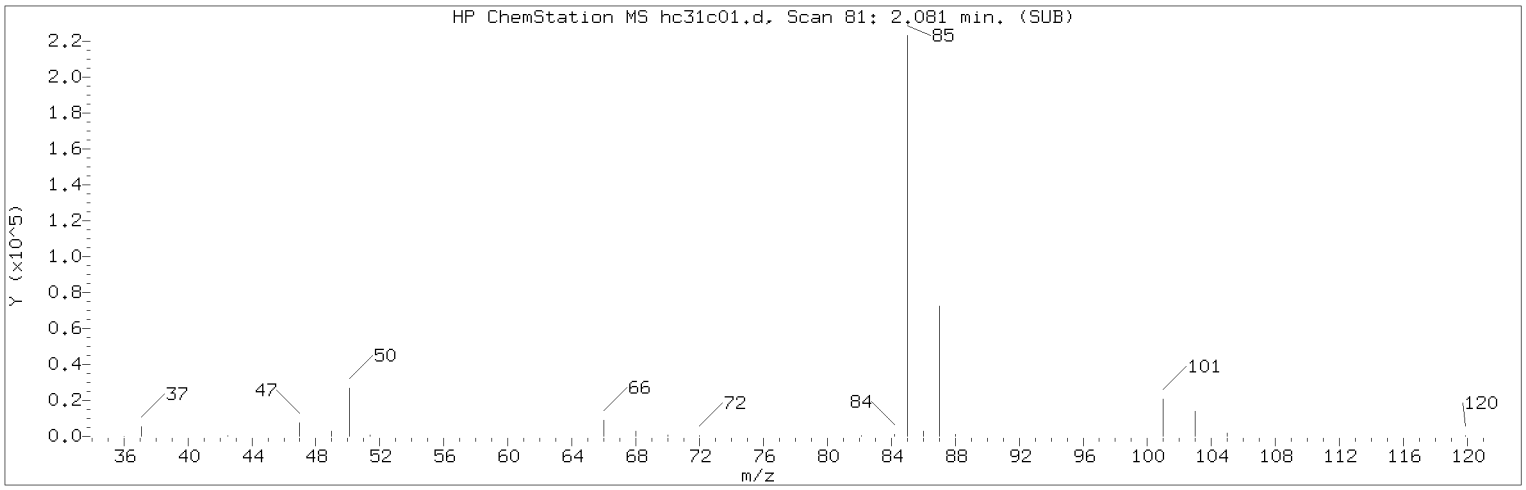
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

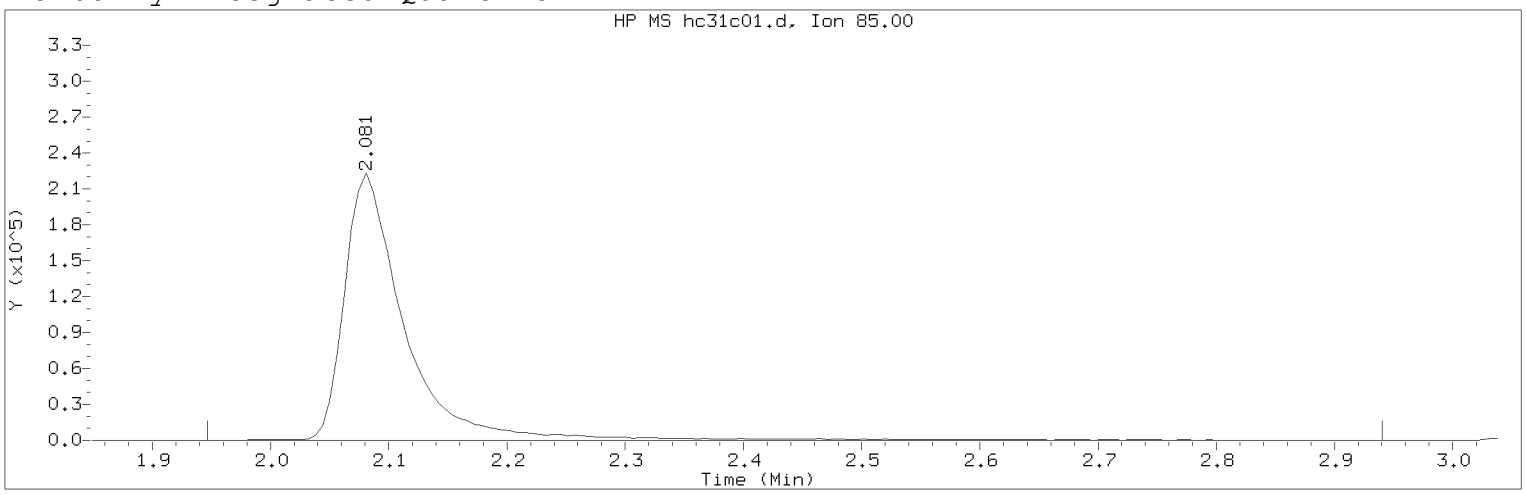
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
146) Hexachlorobutadiene	(4)	14.688	225	431891	10.085
147) Naphthalene	(4)	14.798	128	1292848	8.816
148) 1,2,3-Trichlorobenzene	(4)	14.938	180	670582	9.279

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on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

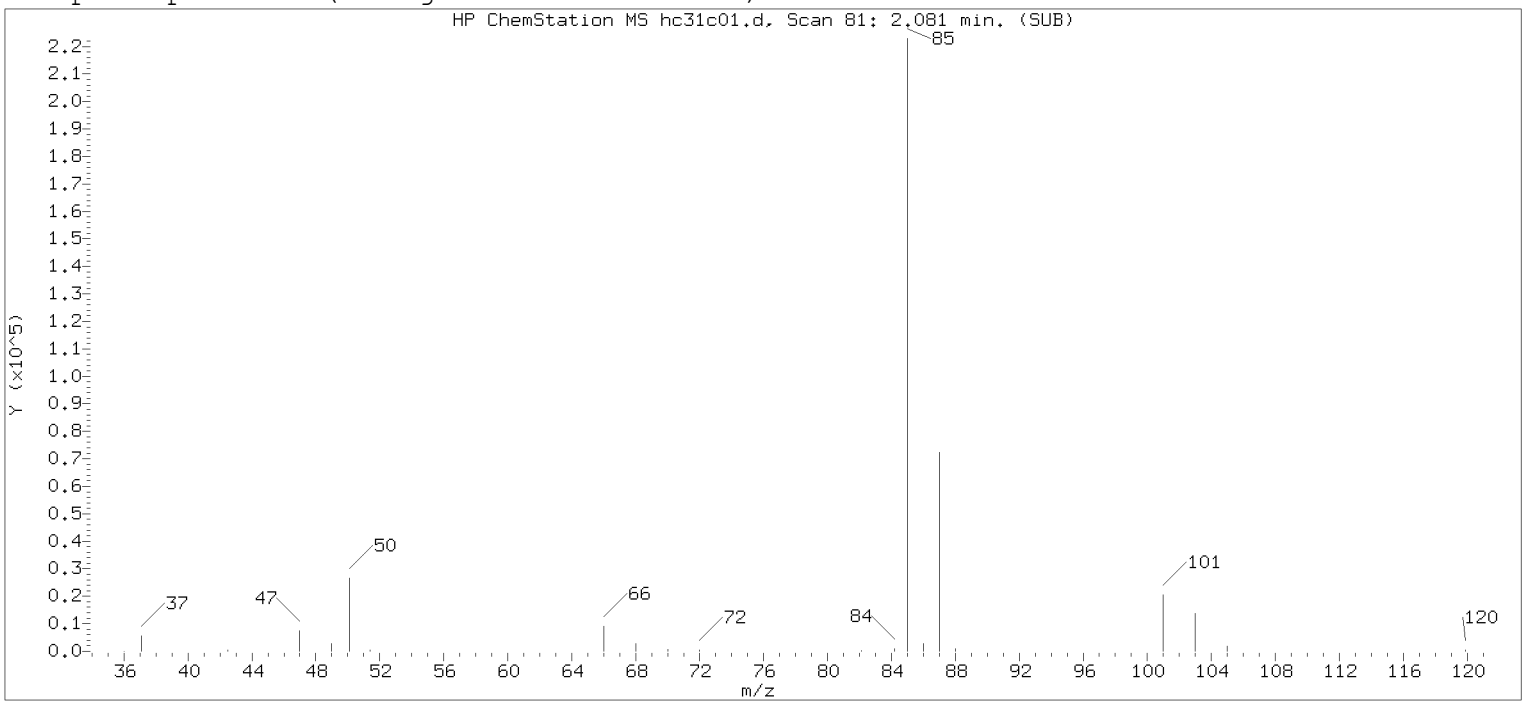
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.081
Quant Ion : 85.00
Area (flag) : 794642M
On-Column Amount (ng) : 7.8216
Integration start scan : 58 Integration stop scan: 221
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

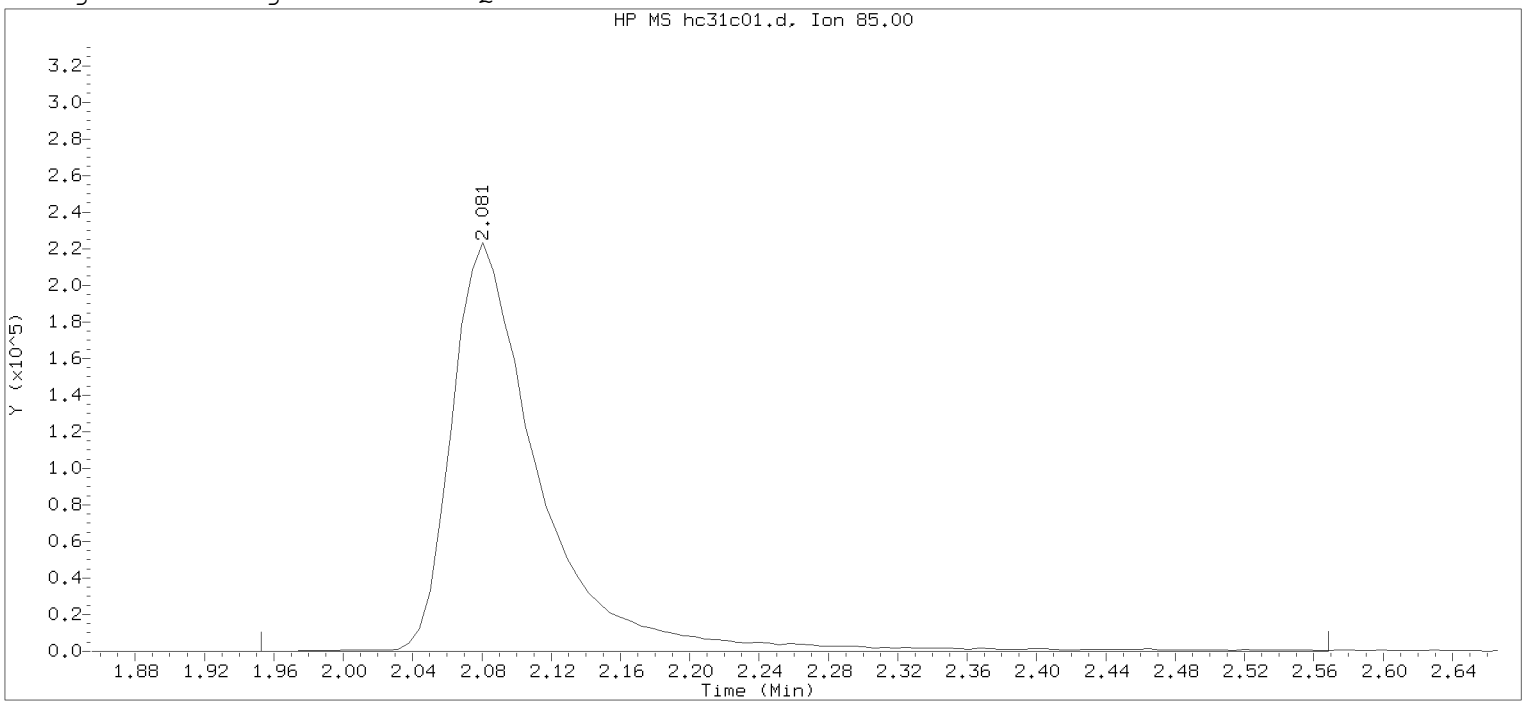
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

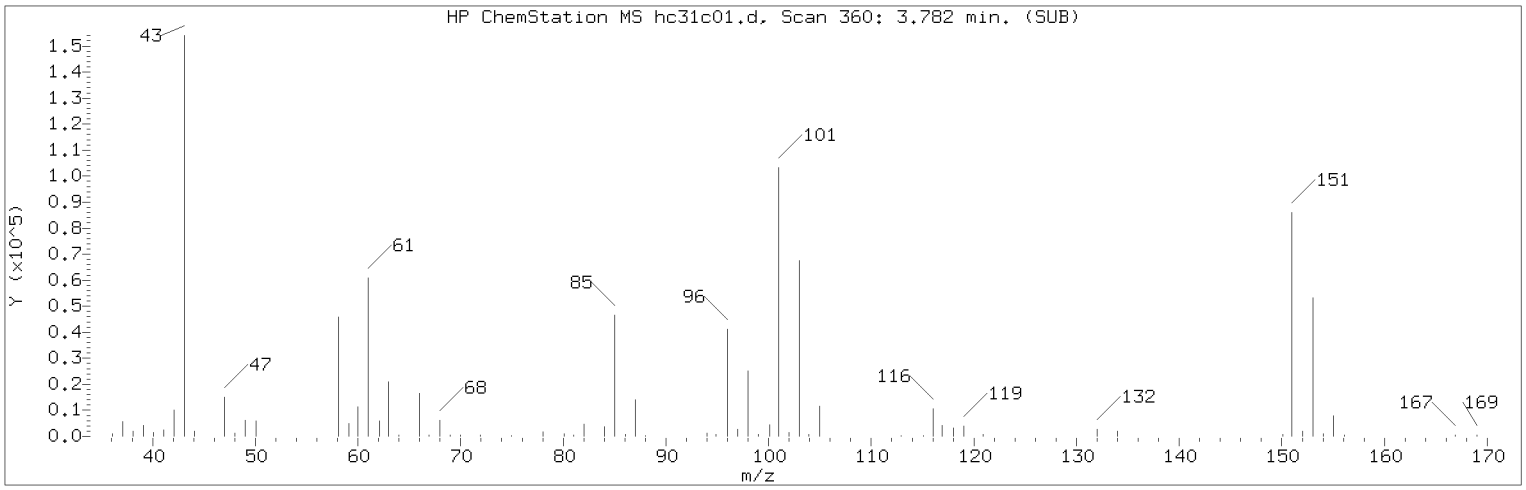
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

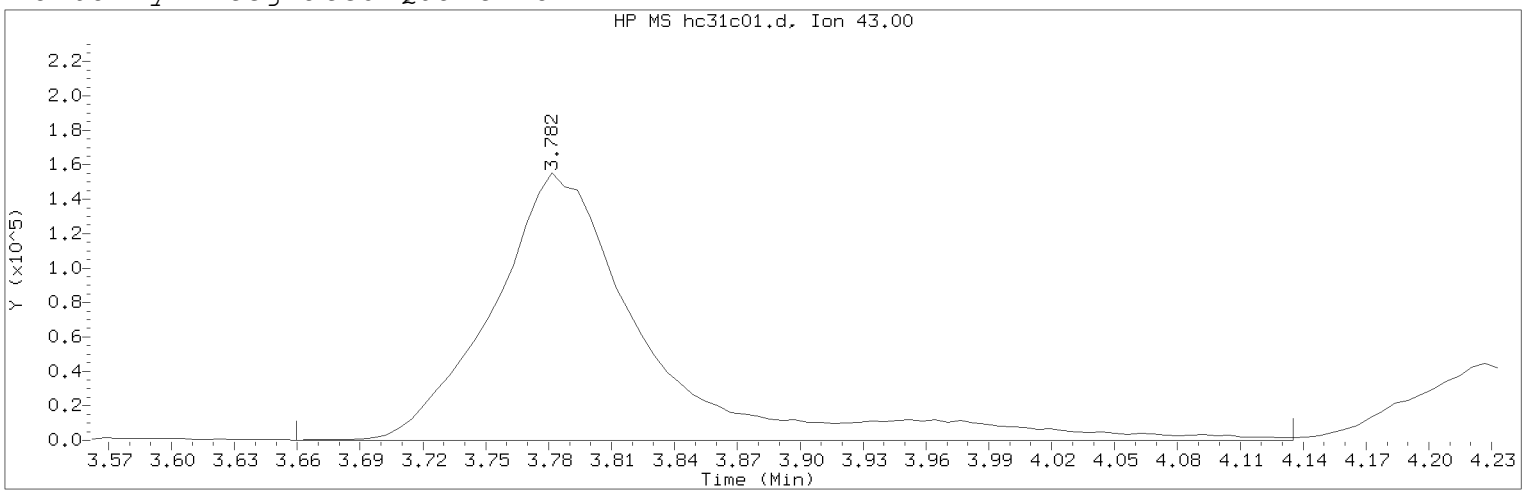
Compound Number : 1
Compound Name : Dichlorodifluoromethane
Scan Number : 81
Retention Time (minutes): 2.081
Quant Ion : 85.00
Area : 789739
On-column Amount (ng) : 7.7734
Integration start scan : 59 Integration stop scan: 160
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature used. AE48 Page 454 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

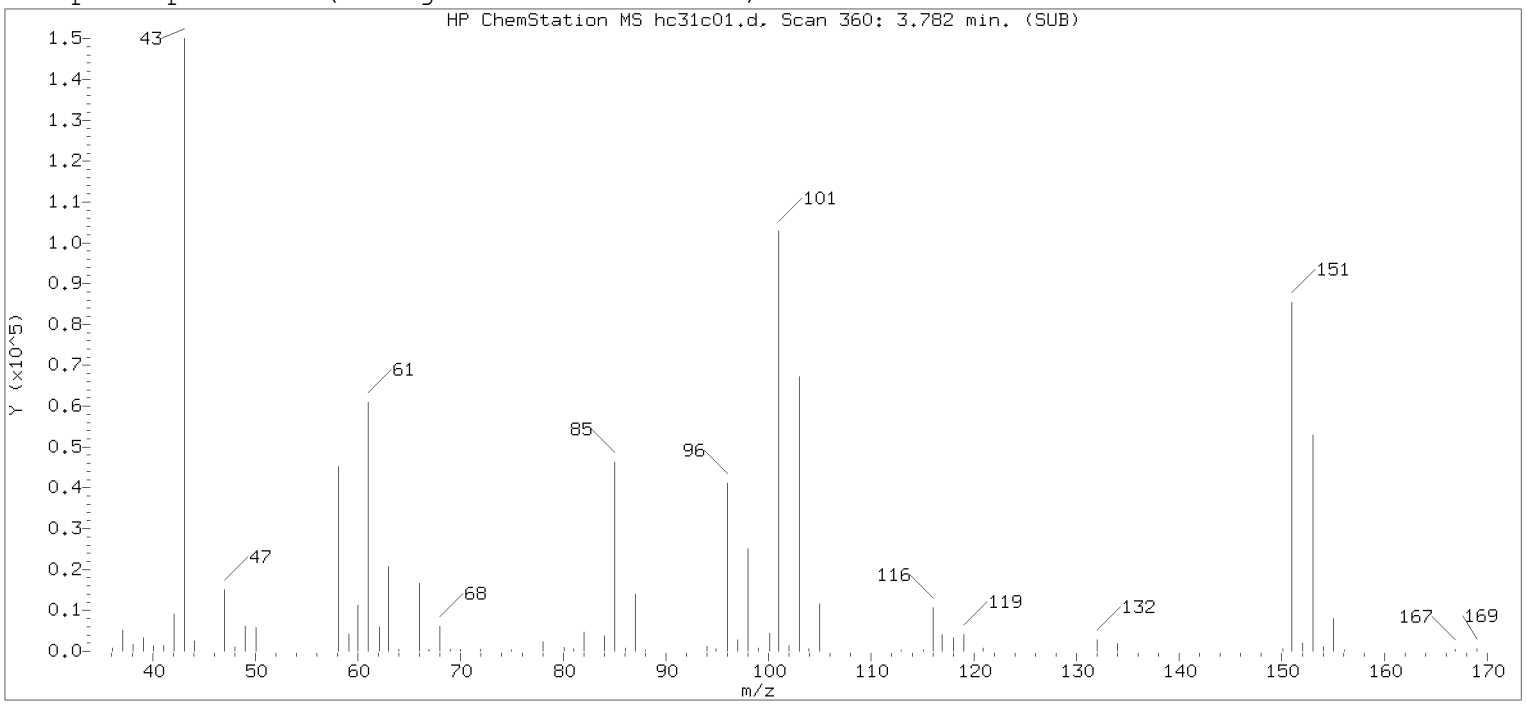
Compound Number : 14
Compound Name : Acetone
Scan Number : 360
Retention Time (minutes): 3.782
Quant Ion : 43.00
Area (flag) : 800800M
On-Column Amount (ng) : 94.3009
Integration start scan : 339 Integration stop scan: 417
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

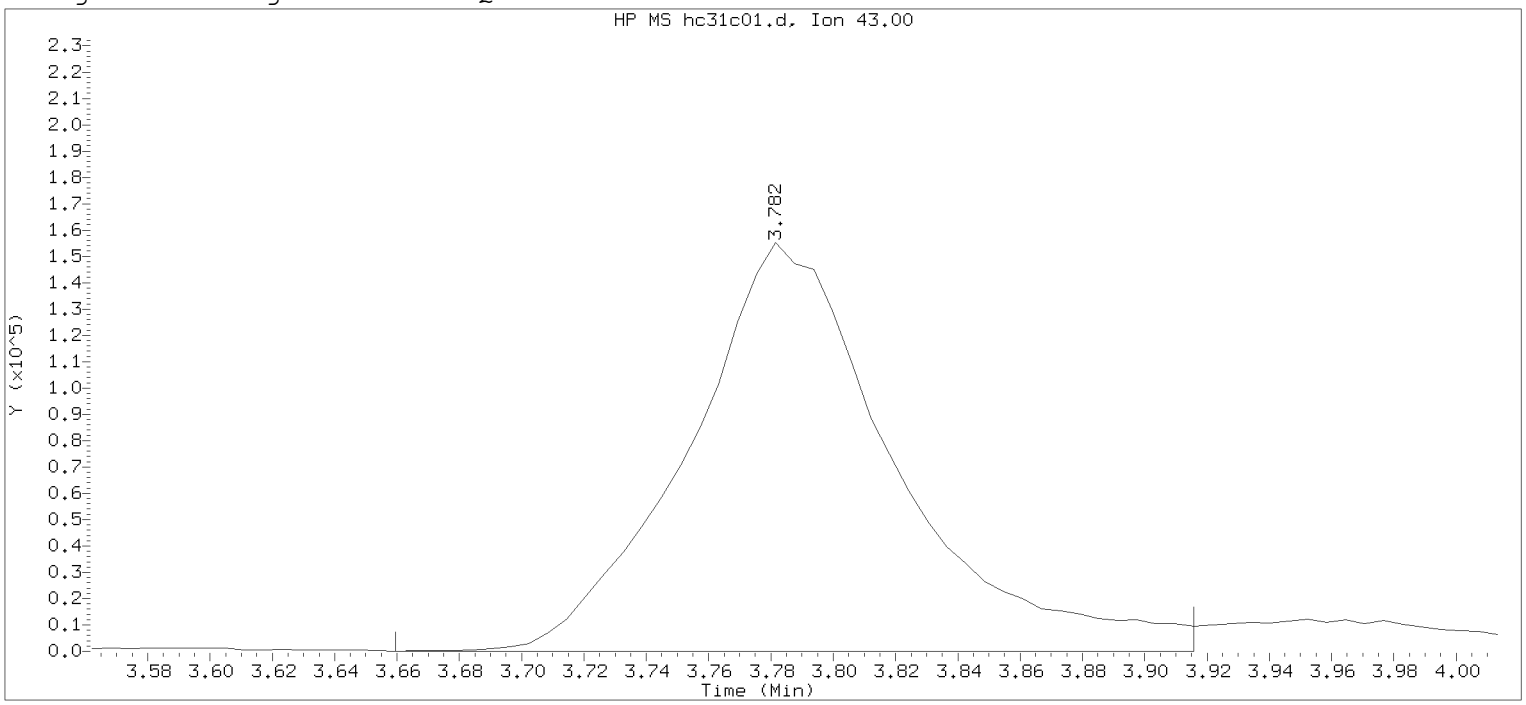
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

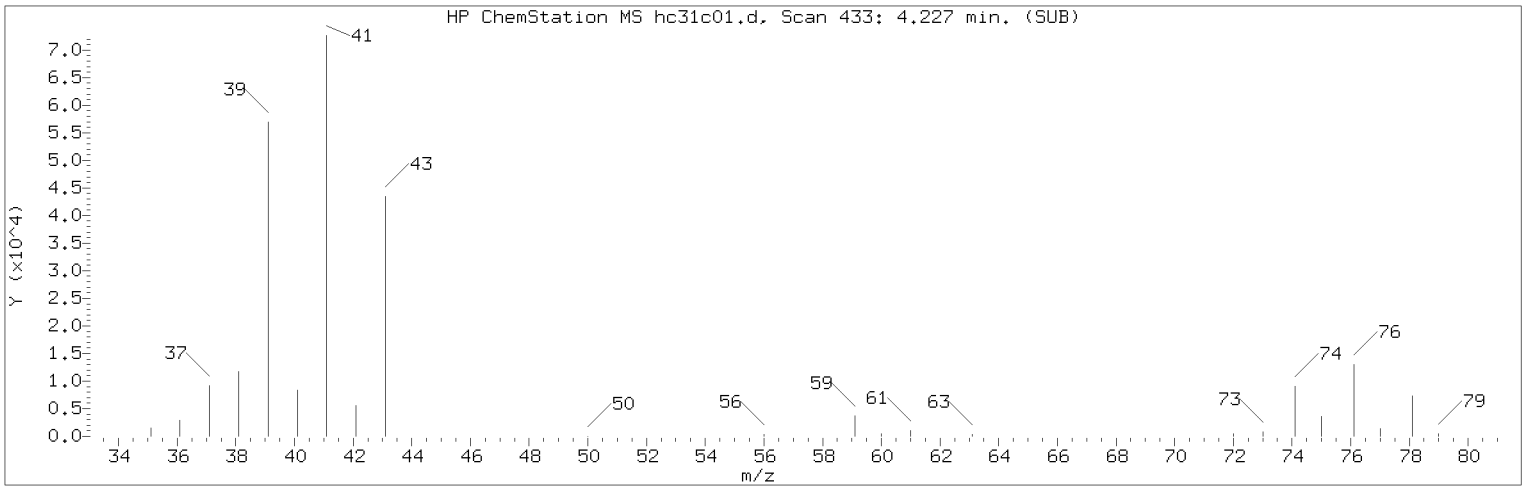
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

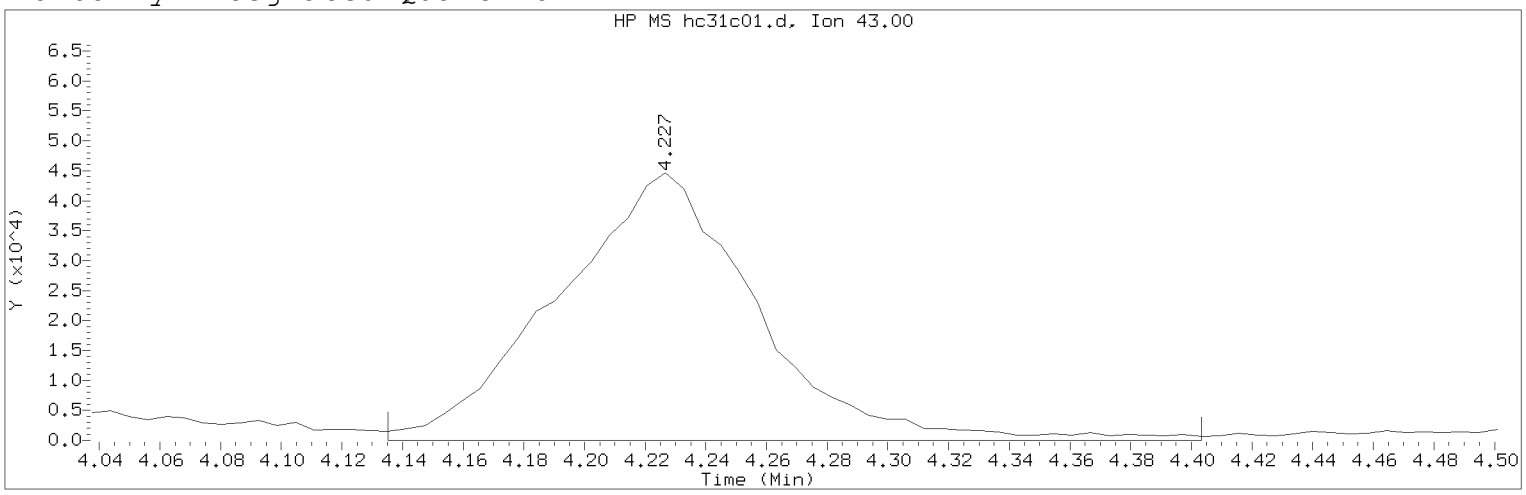
Compound Number	: 14		
Compound Name	: Acetone		
Scan Number	: 360		
Retention Time (minutes)	: 3.782		
Quant Ion	: 43.00		
Area	: 715711		
On-column Amount (ng)	: 84.2806		
Integration start scan	: 339	Integration stop scan:	381
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. AE48 Page 456 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

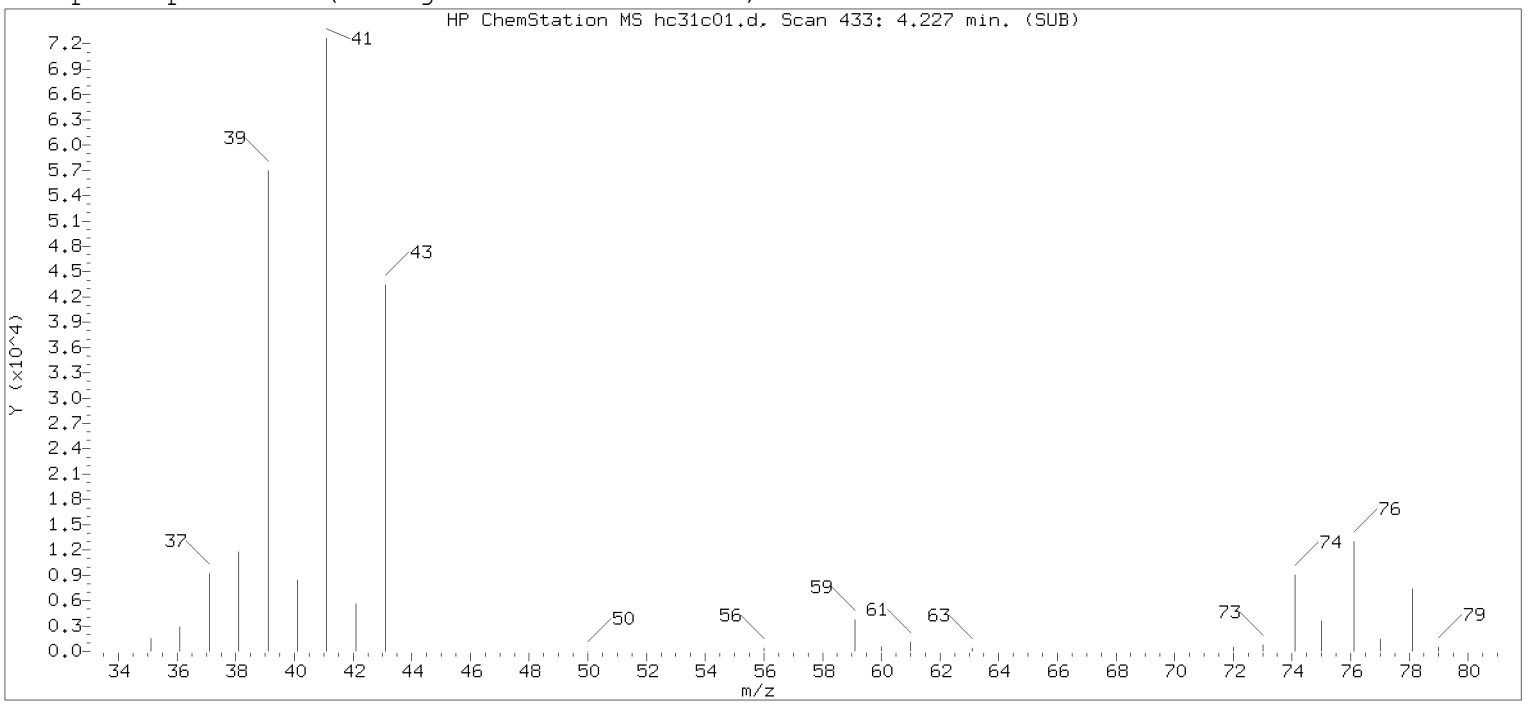
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 433
Retention Time (minutes): 4.227
Quant Ion : 43.00
Area (flag) : 202949M
On-Column Amount (ng) : 6.6024
Integration start scan : 417 Integration stop scan: 461
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

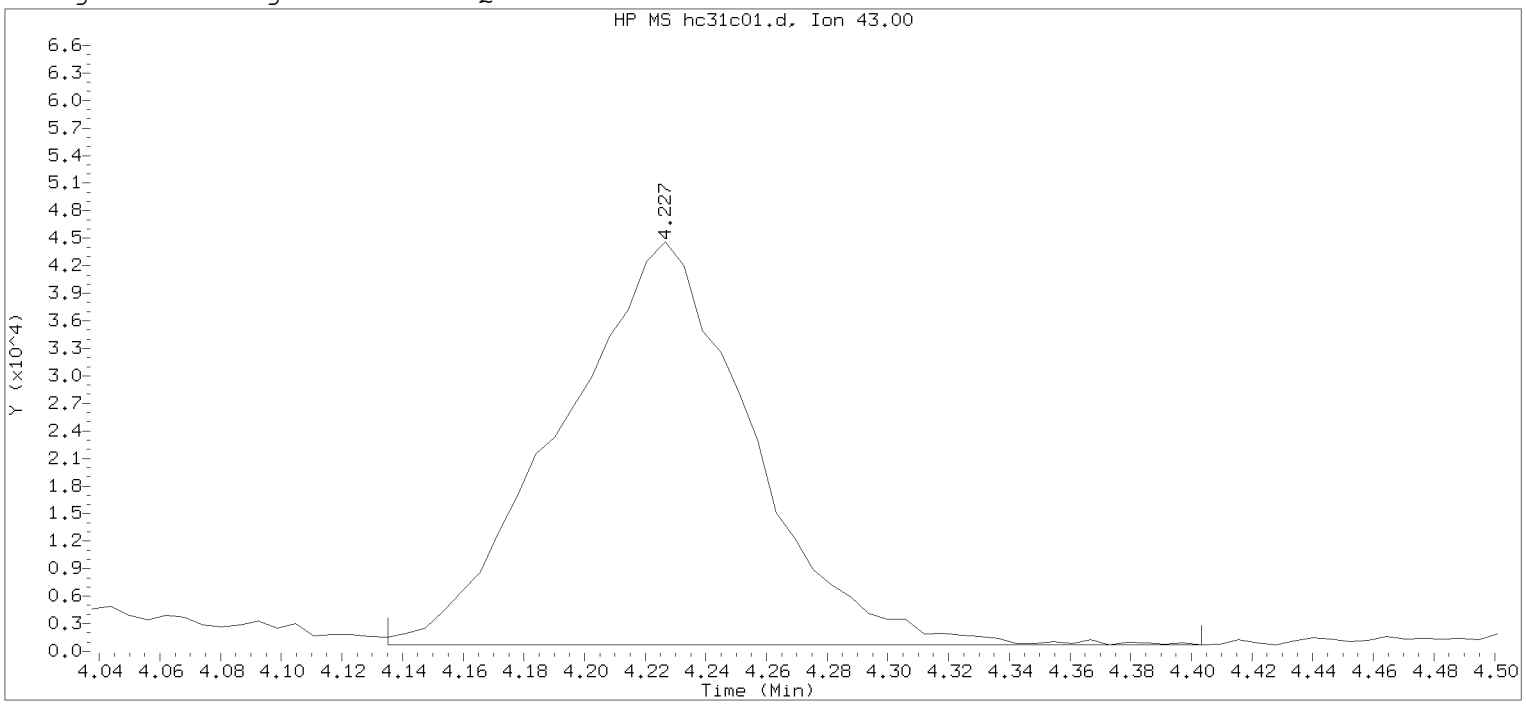
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

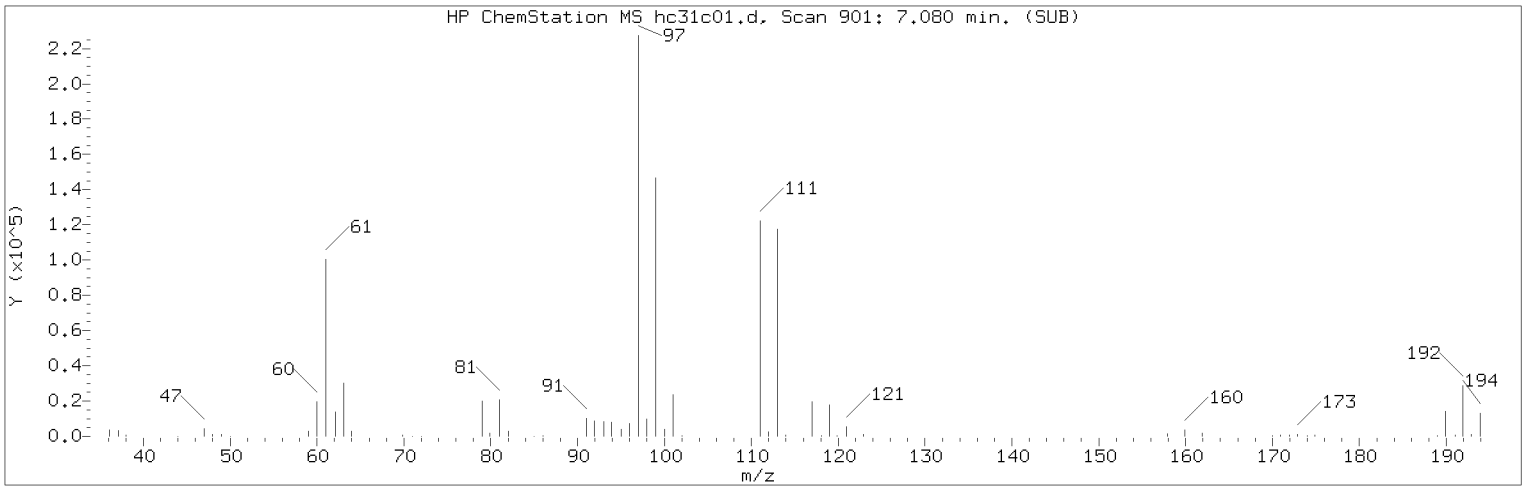
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

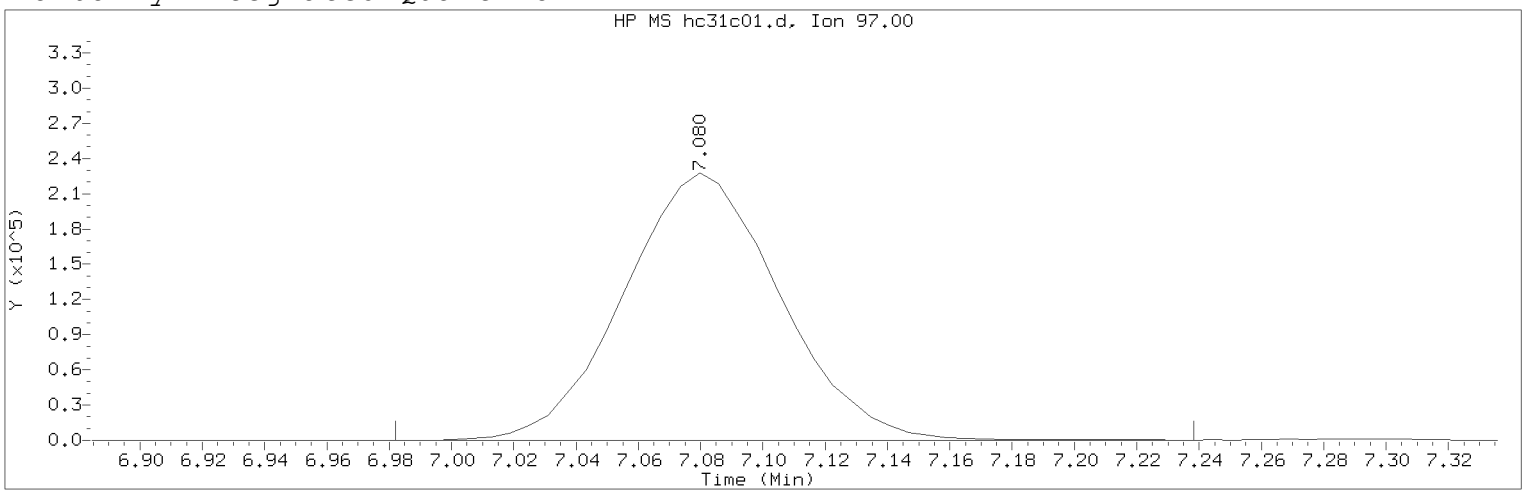
Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 433
Retention Time (minutes): 4.227
Quant Ion : 43.00
Area : 191486
On-column Amount (ng) : 6.2295
Integration start scan : 417 Integration stop scan: 461
Y at integration start : 687 Y at integration end: 687

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 458 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

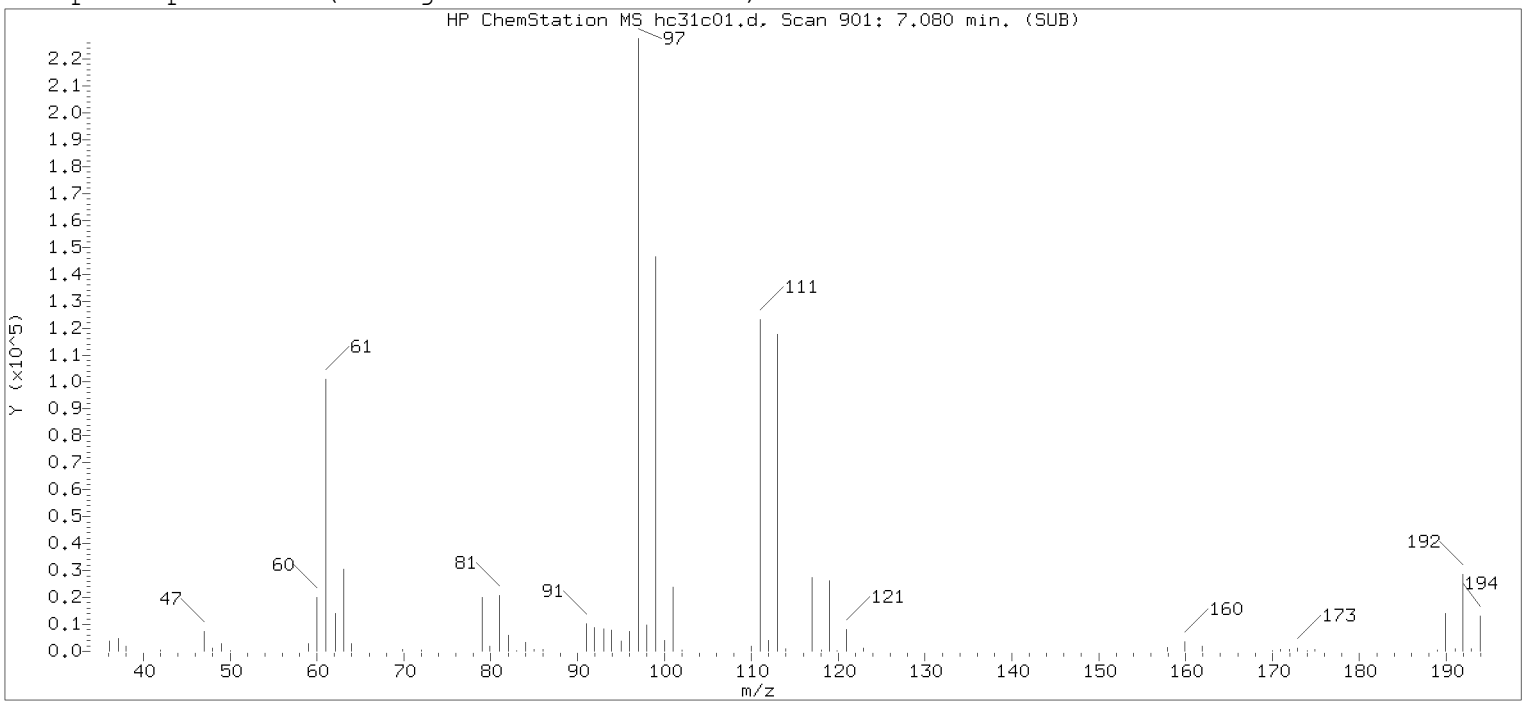
Compound Number : 51
Compound Name : 1,1,1-Trichloroethane
Scan Number : 901
Retention Time (minutes): 7.080
Quant Ion : 97.00
Area (flag) : 791848M
On-Column Amount (ng) : 9.2163
Integration start scan : 884 Integration stop scan: 926
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

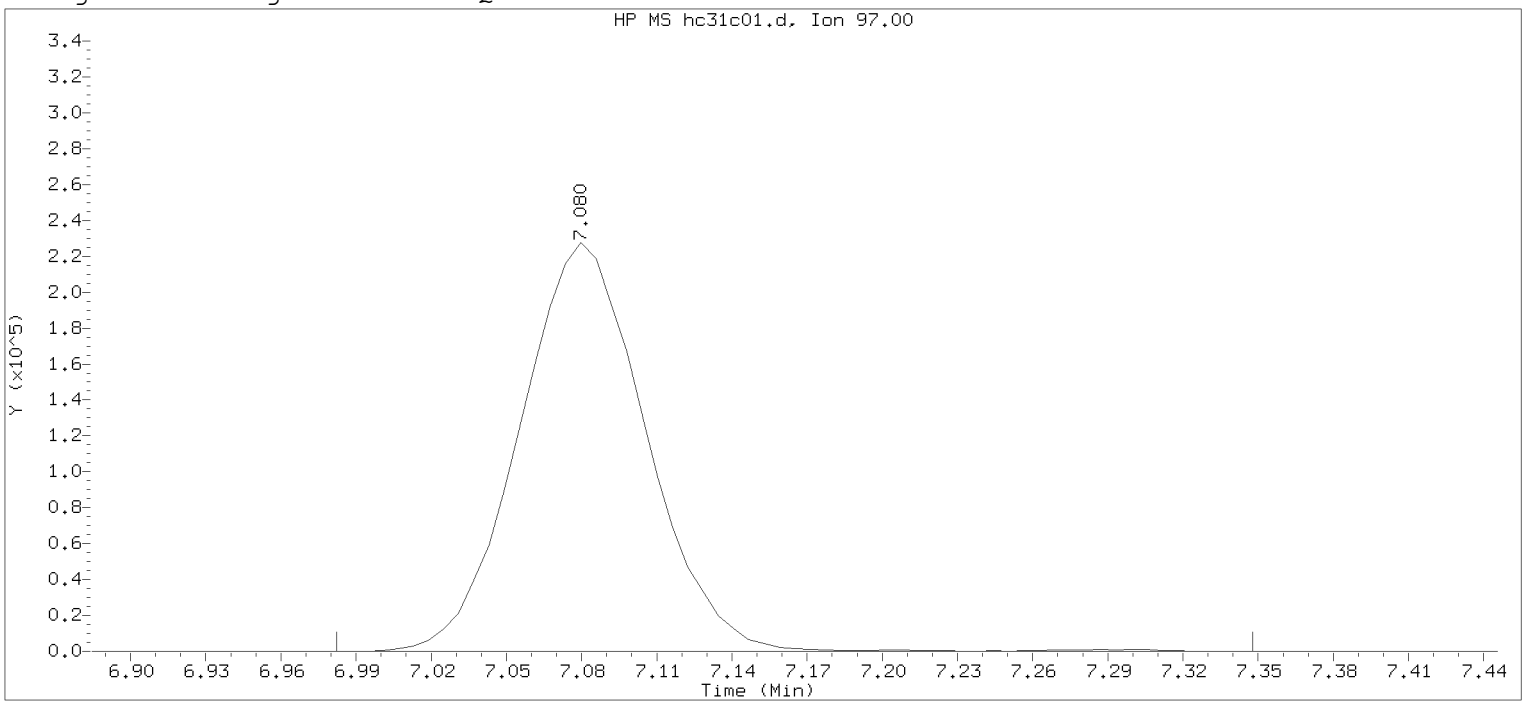
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

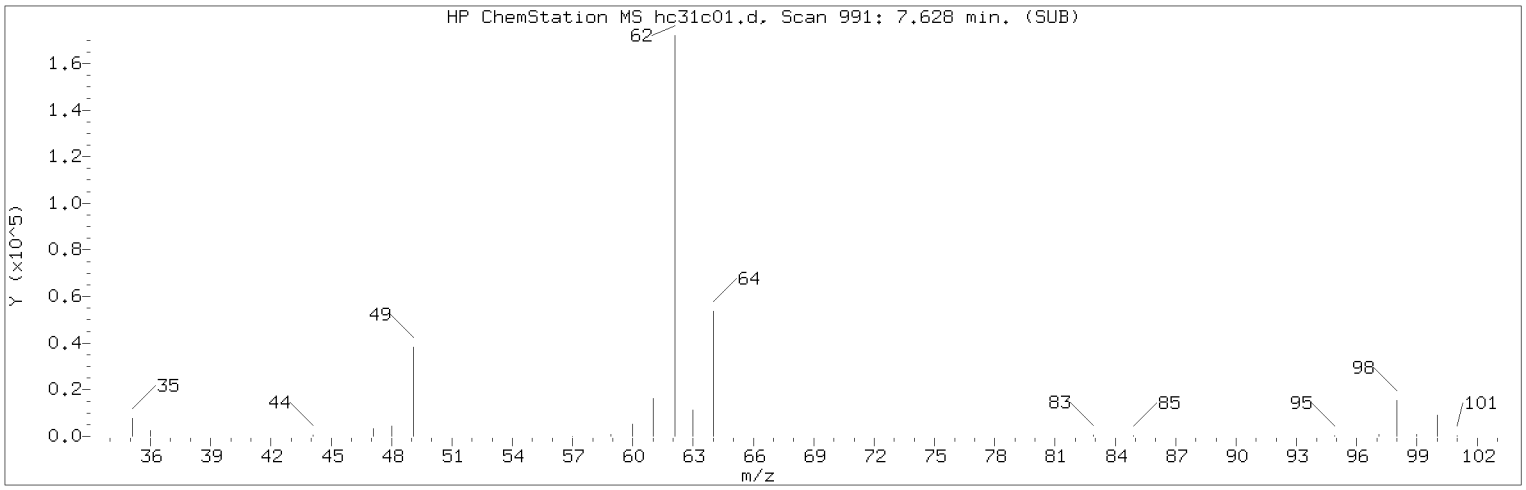
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

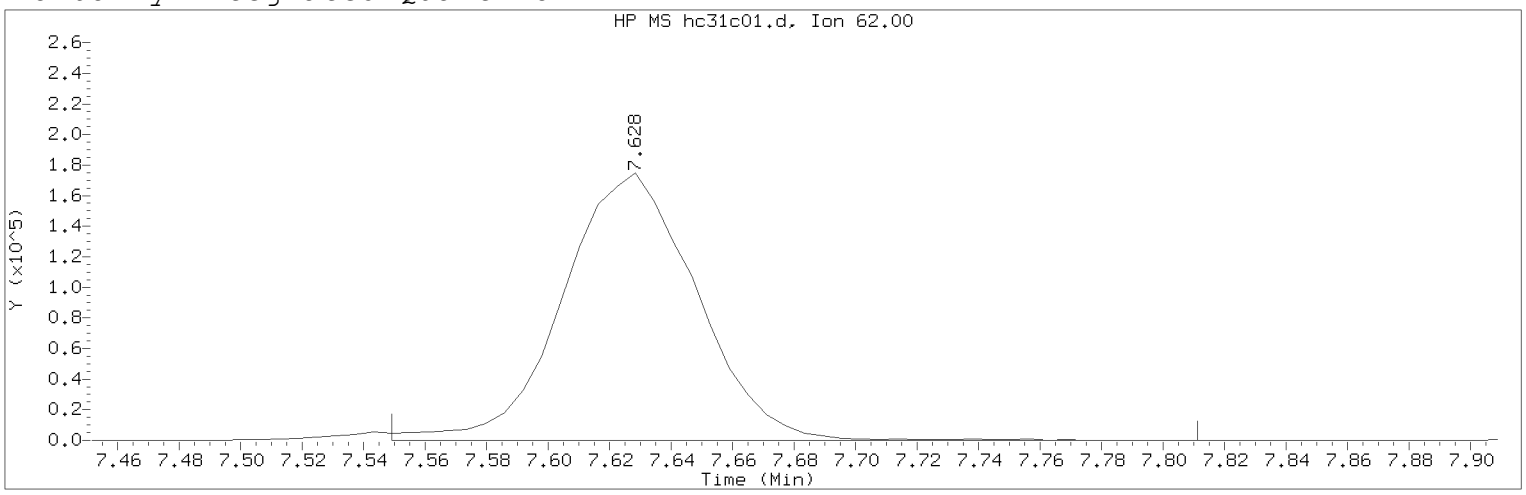
Compound Number : 51
Compound Name : 1,1,1-Trichloroethane
Scan Number : 901
Retention Time (minutes): 7.080
Quant Ion : 97.00
Area : 794960
On-column Amount (ng) : 9.2525
Integration start scan : 884 Integration stop scan: 944
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 460 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

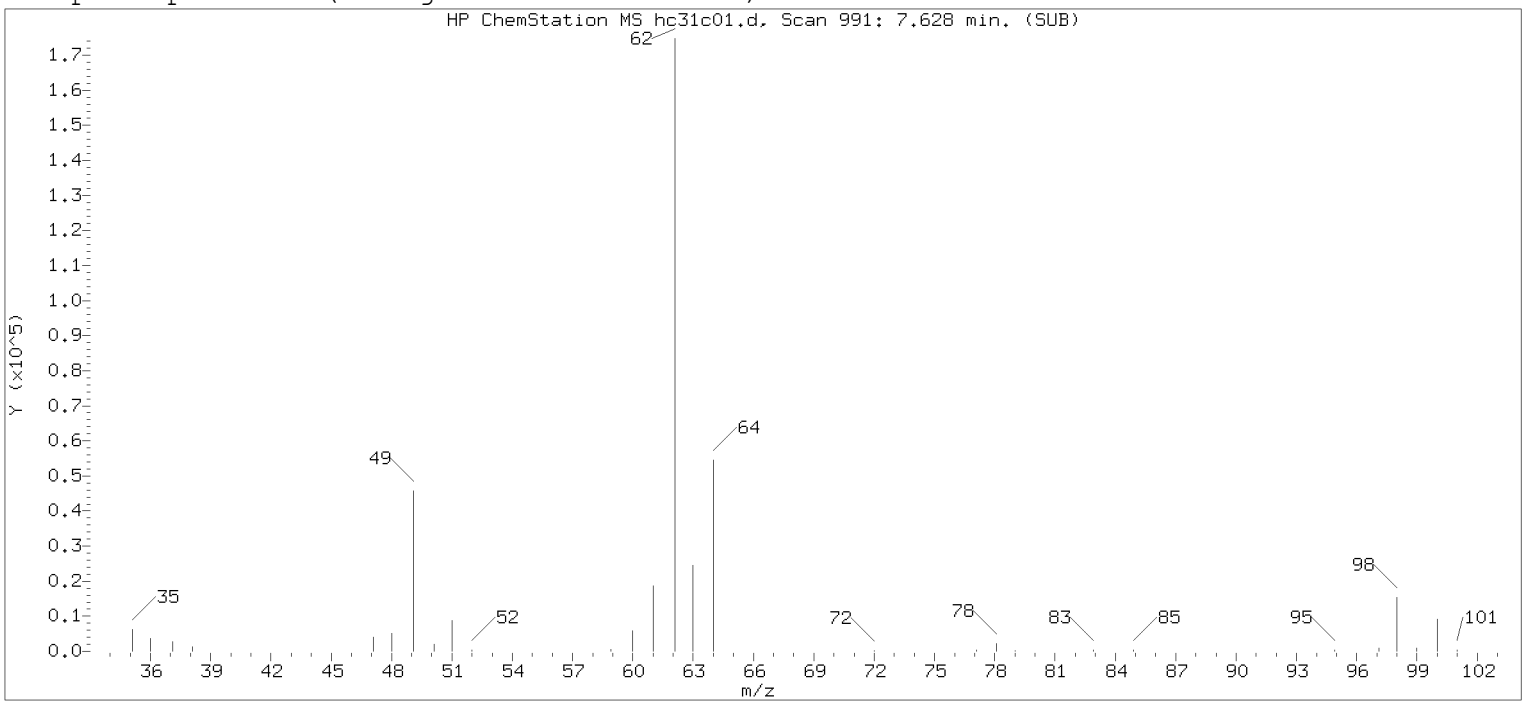
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 991
Retention Time (minutes): 7.628
Quant Ion : 62.00
Area (flag) : 528576M
On-Column Amount (ng) : 9.5717
Integration start scan : 977 Integration stop scan: 1020
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

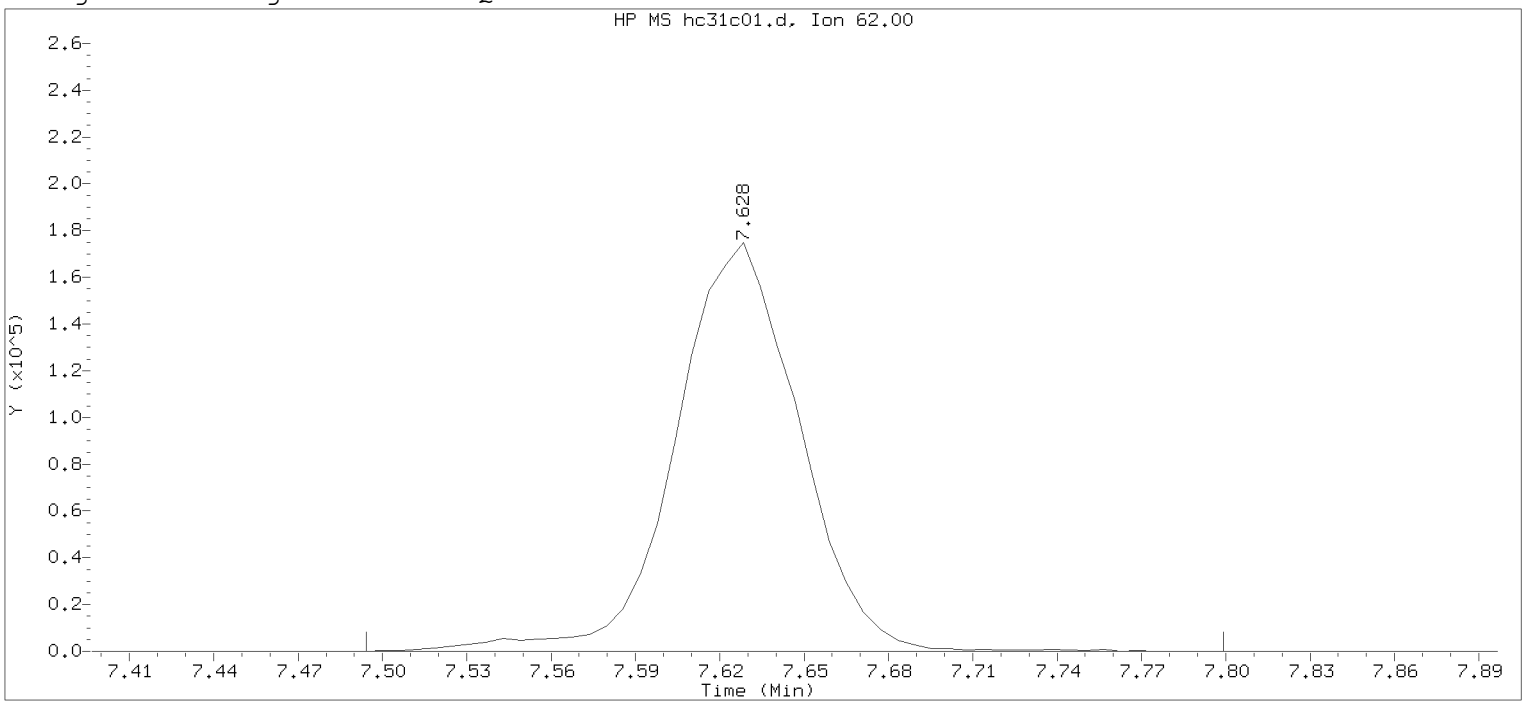
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

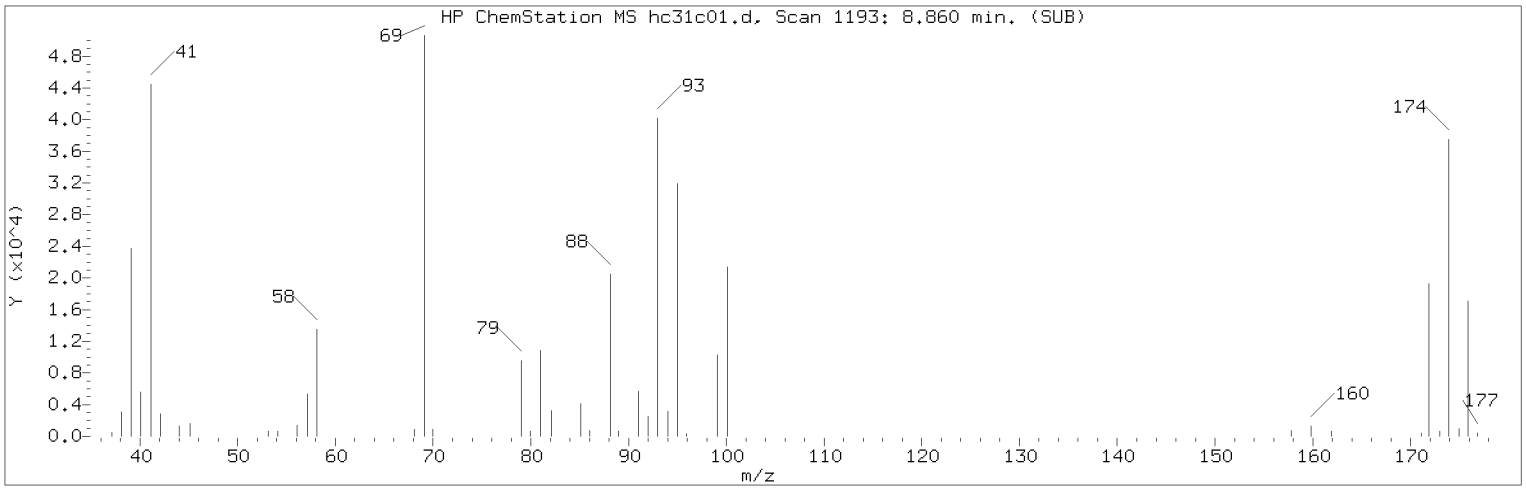
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

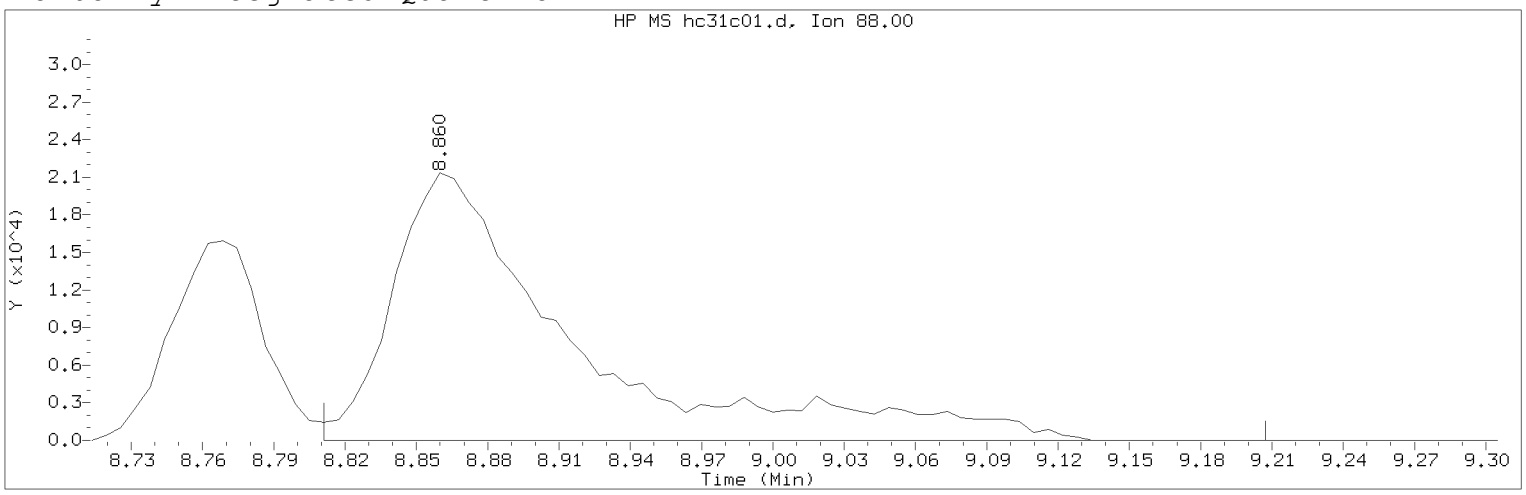
Compound Number : 59
Compound Name : 1,2-Dichloroethane
Scan Number : 991
Retention Time (minutes): 7.628
Quant Ion : 62.00
Area : 534842
On-column Amount (ng) : 9.6851
Integration start scan : 968 Integration stop scan: 1018
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. RAF48 Page 462 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

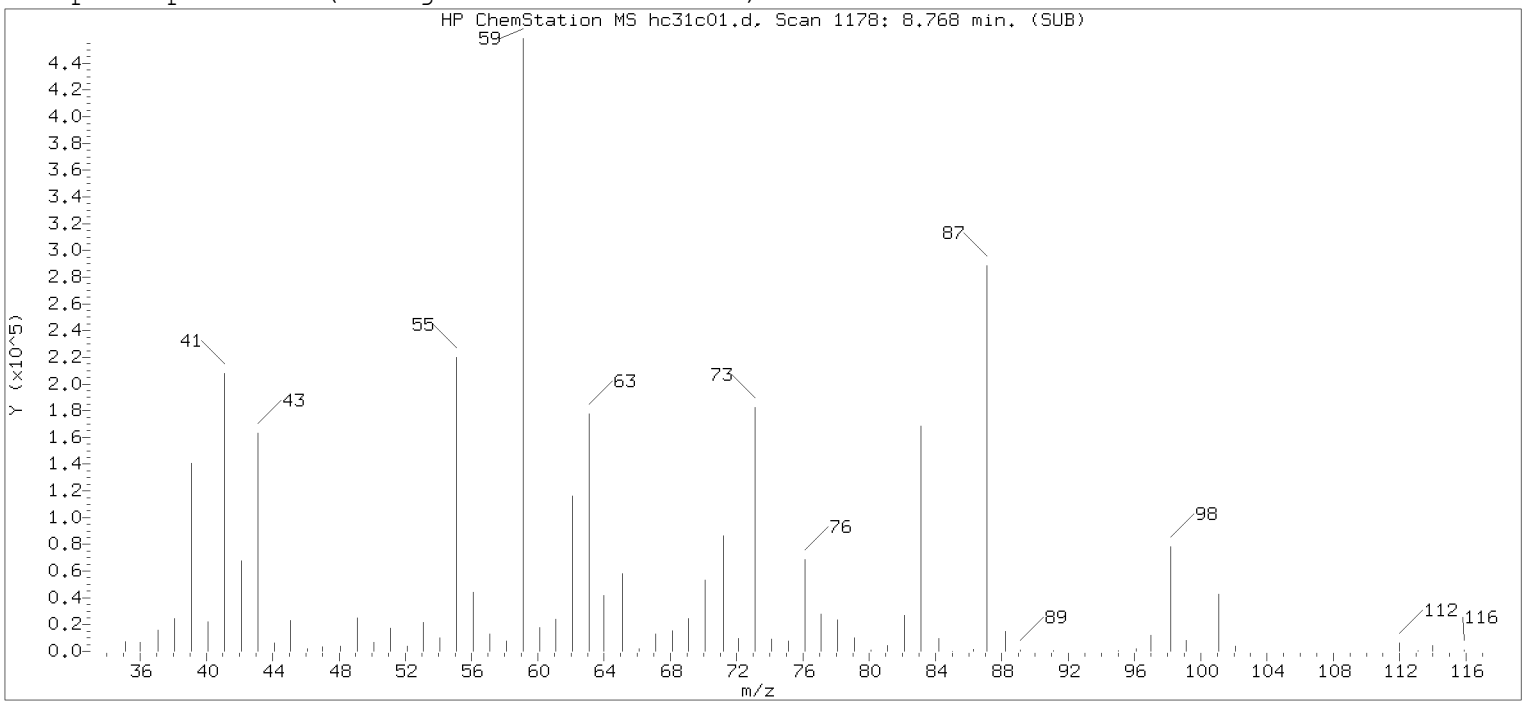
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1193
Retention Time (minutes): 8.860
Quant Ion : 88.00
Area (flag) : 112217M
On-Column Amount (ng) : 495.8476
Integration start scan : 1184 Integration stop scan: 1249
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

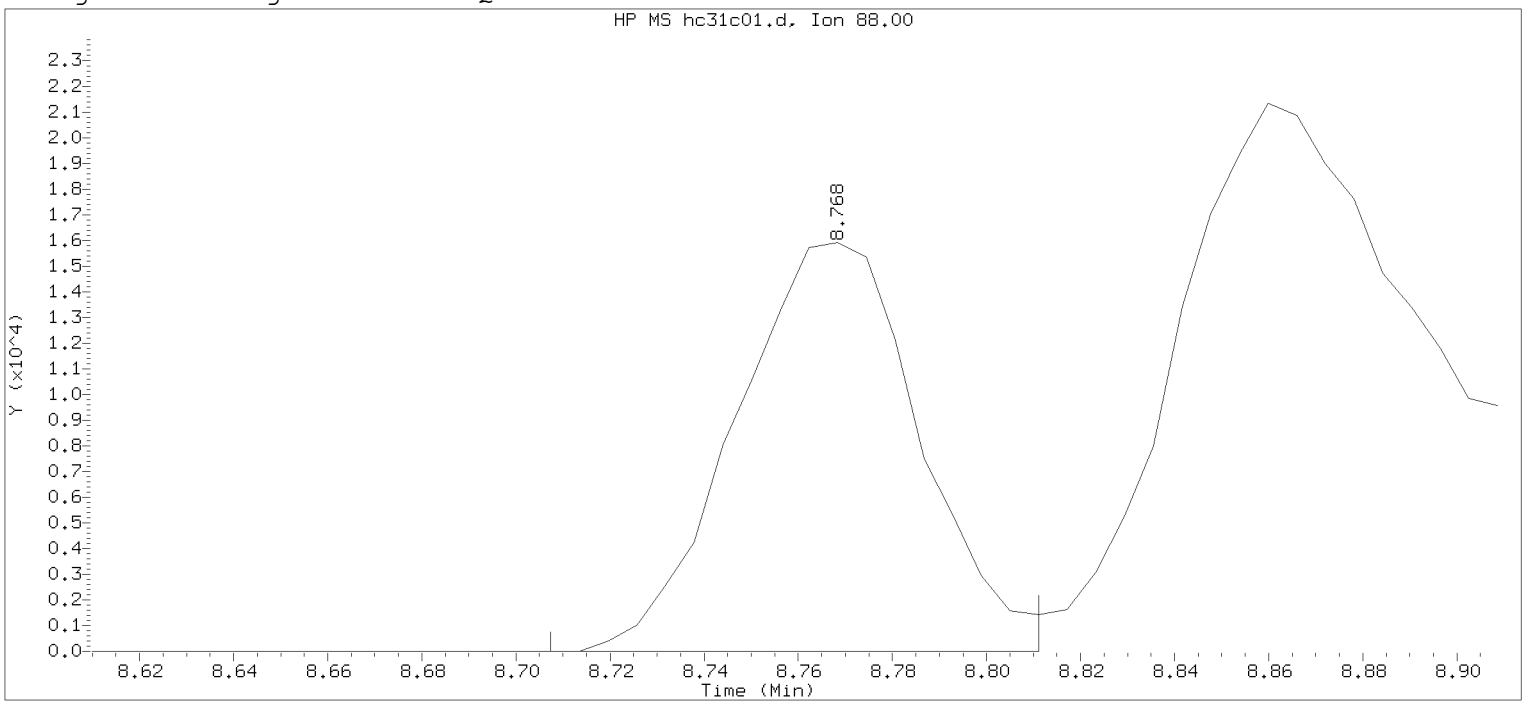
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

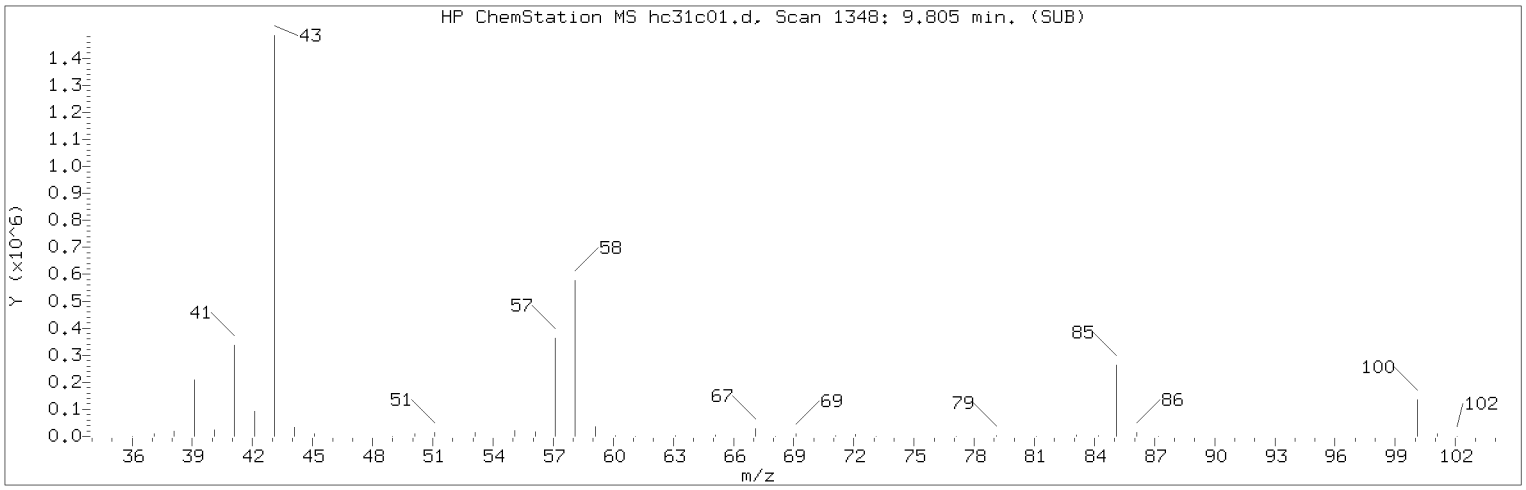
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

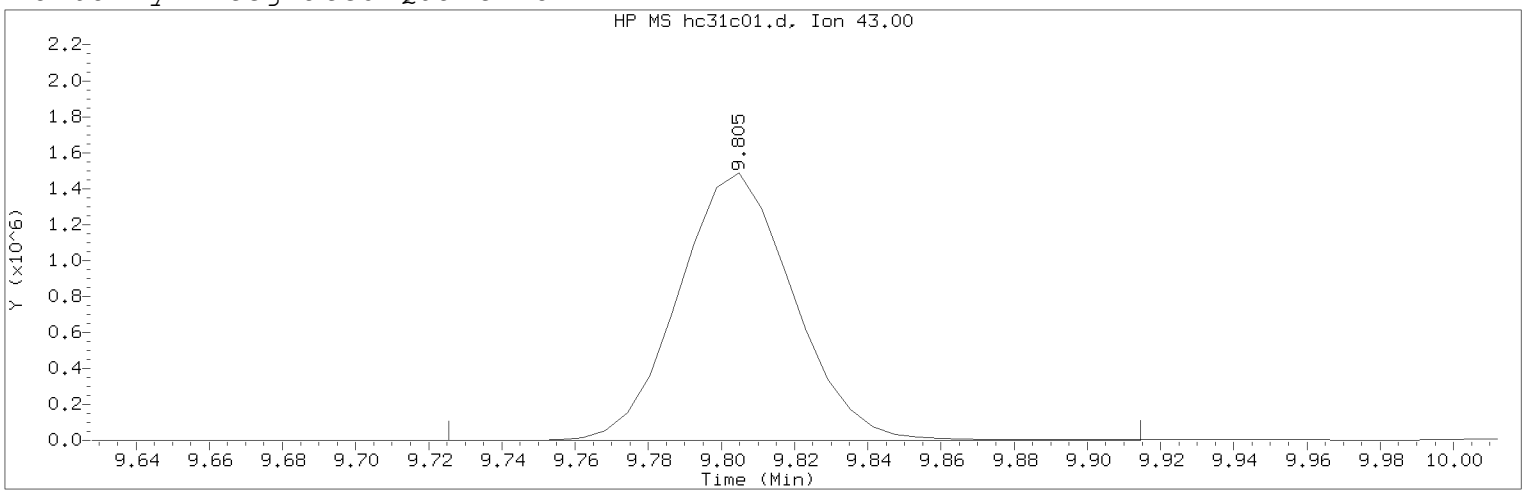
Compound Number	: 72		
Compound Name	: 1,4-Dioxane		
Scan Number	: 1178		
Retention Time (minutes)	: 8.768		
Quant Ion	: 88.00		
Area	: 42916		
On-column Amount (ng)	: 189.6310		
Integration start scan	: 1167	Integration stop scan:	1184
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 464

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

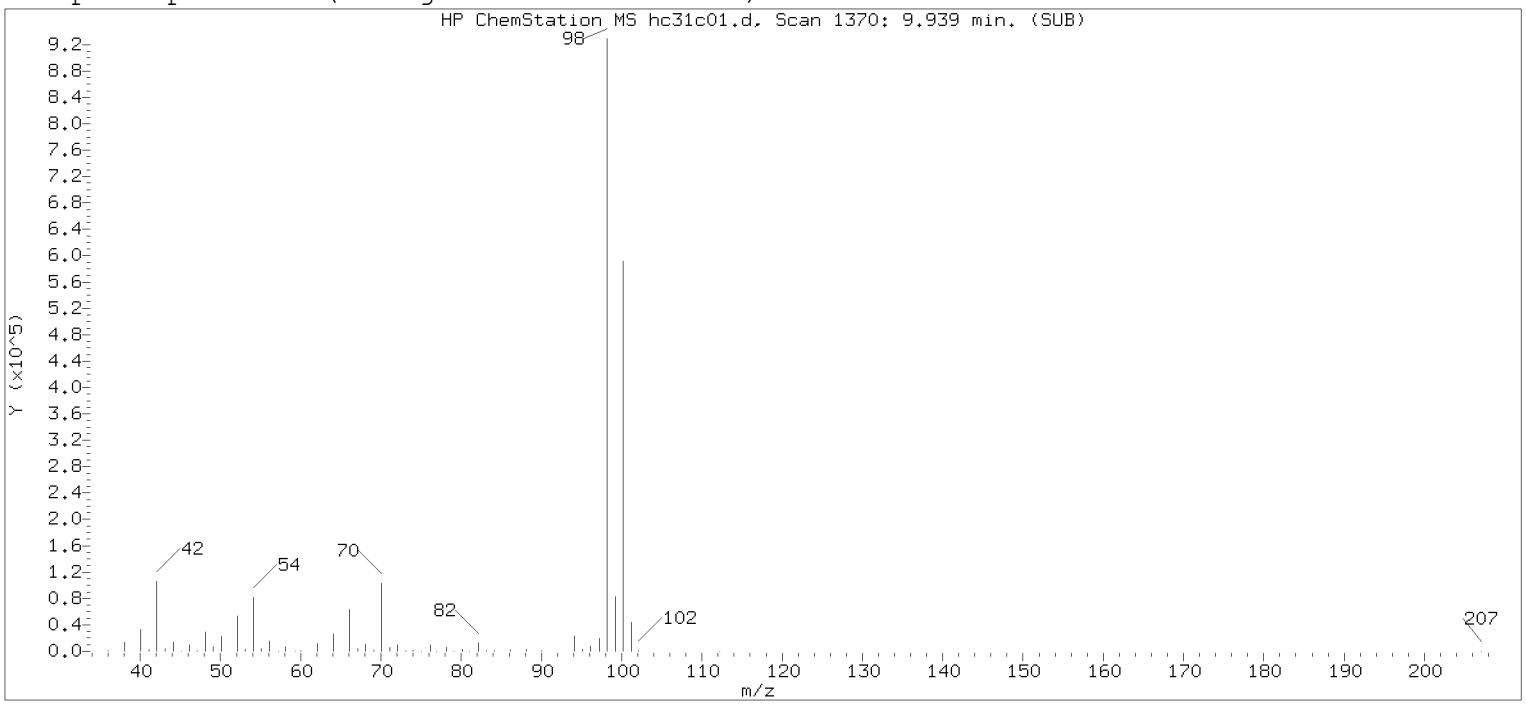
Compound Number : 81
Compound Name : 4-Methyl-2-Pentanone
Scan Number : 1348
Retention Time (minutes): 9.805
Quant Ion : 43.00
Area (flag) : 3224017A
On-Column Amount (ng) : 84.9327
Integration start scan : 1334 Integration stop scan: 1365
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

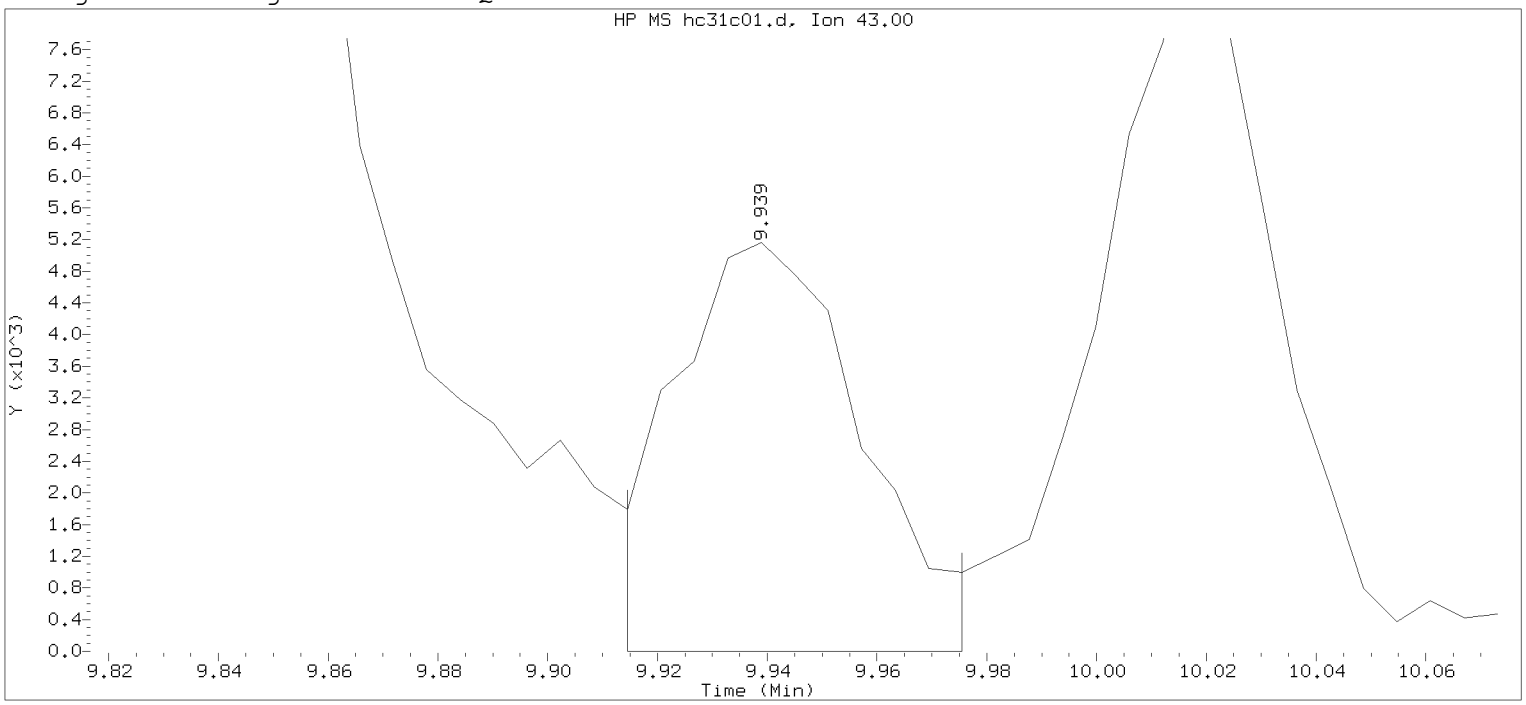
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

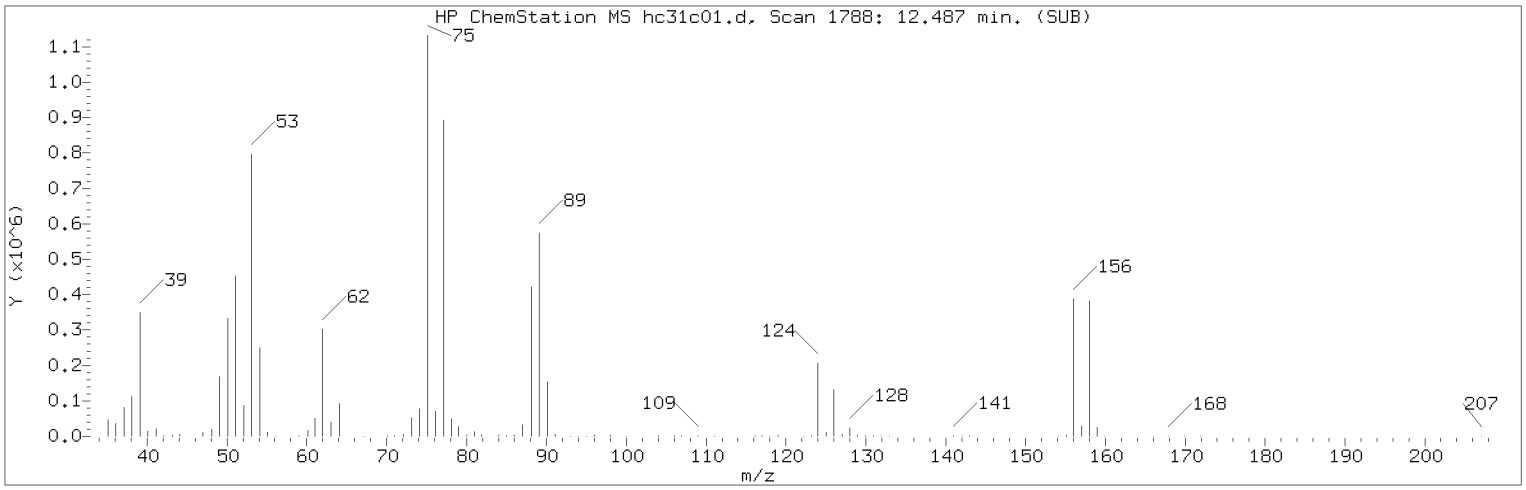
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

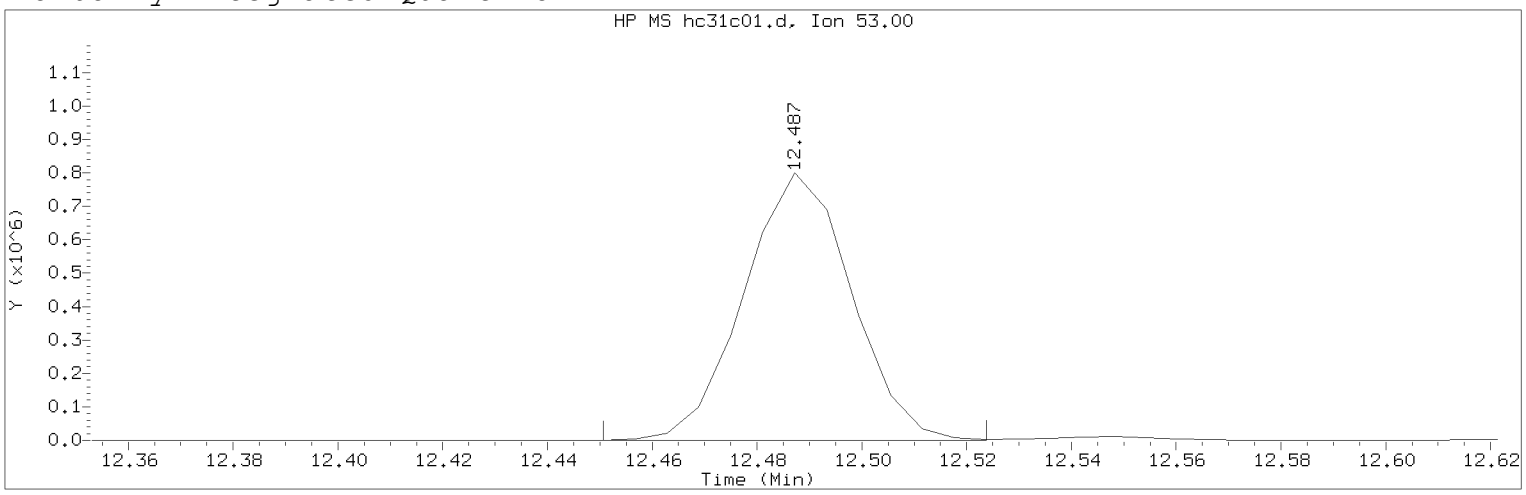
Compound Number	: 81		
Compound Name	: 4-Methyl-2-Pentanone		
Scan Number	: 1370		
Retention Time (minutes)	: 9.939		
Quant Ion	: 43.00		
Area	: 12141		
On-column Amount (ng)	: 0.3199		
Integration start scan	: 1365	Integration stop scan:	1375
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 466

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

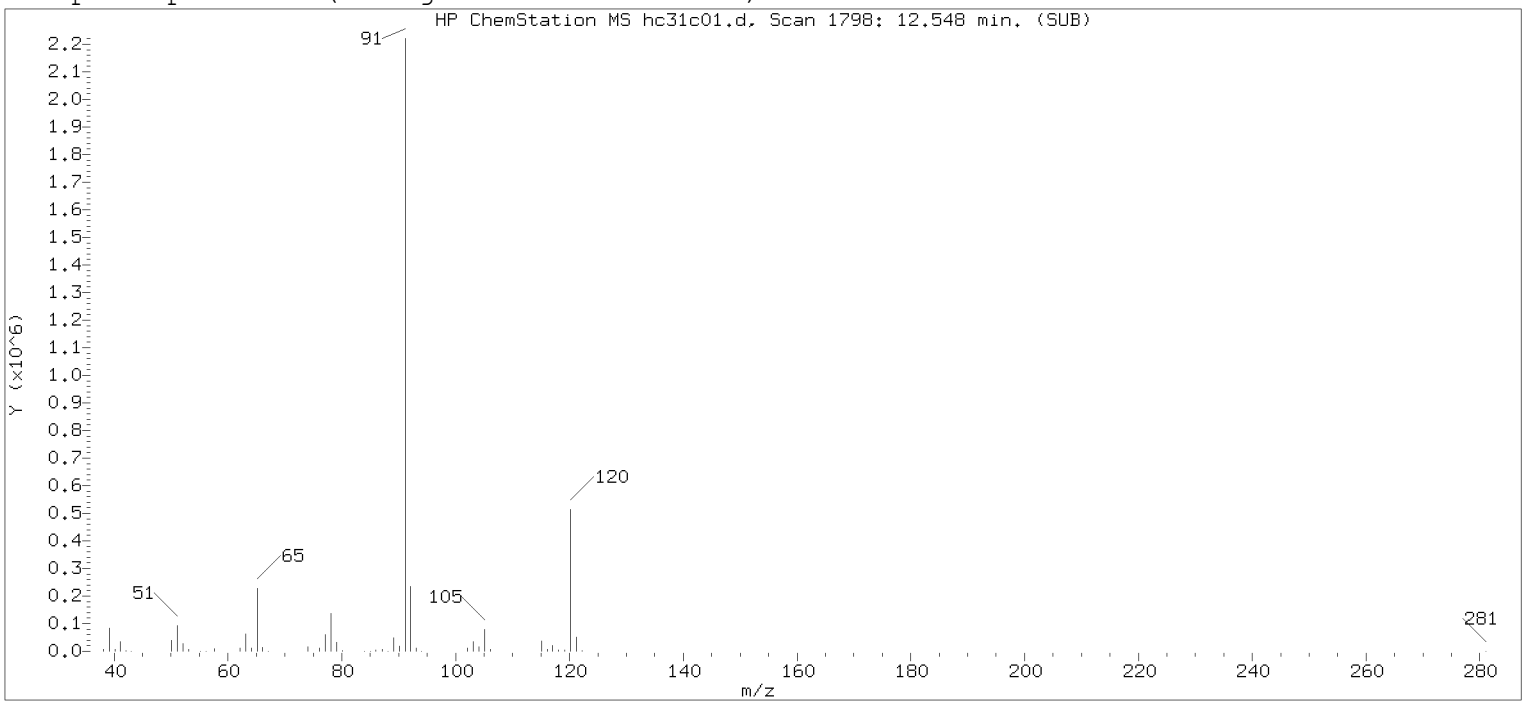
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1788
Retention Time (minutes): 12.487
Quant Ion : 53.00
Area (flag) : 1134823A
On-Column Amount (ng) : 71.9578
Integration start scan : 1781 Integration stop scan: 1793
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

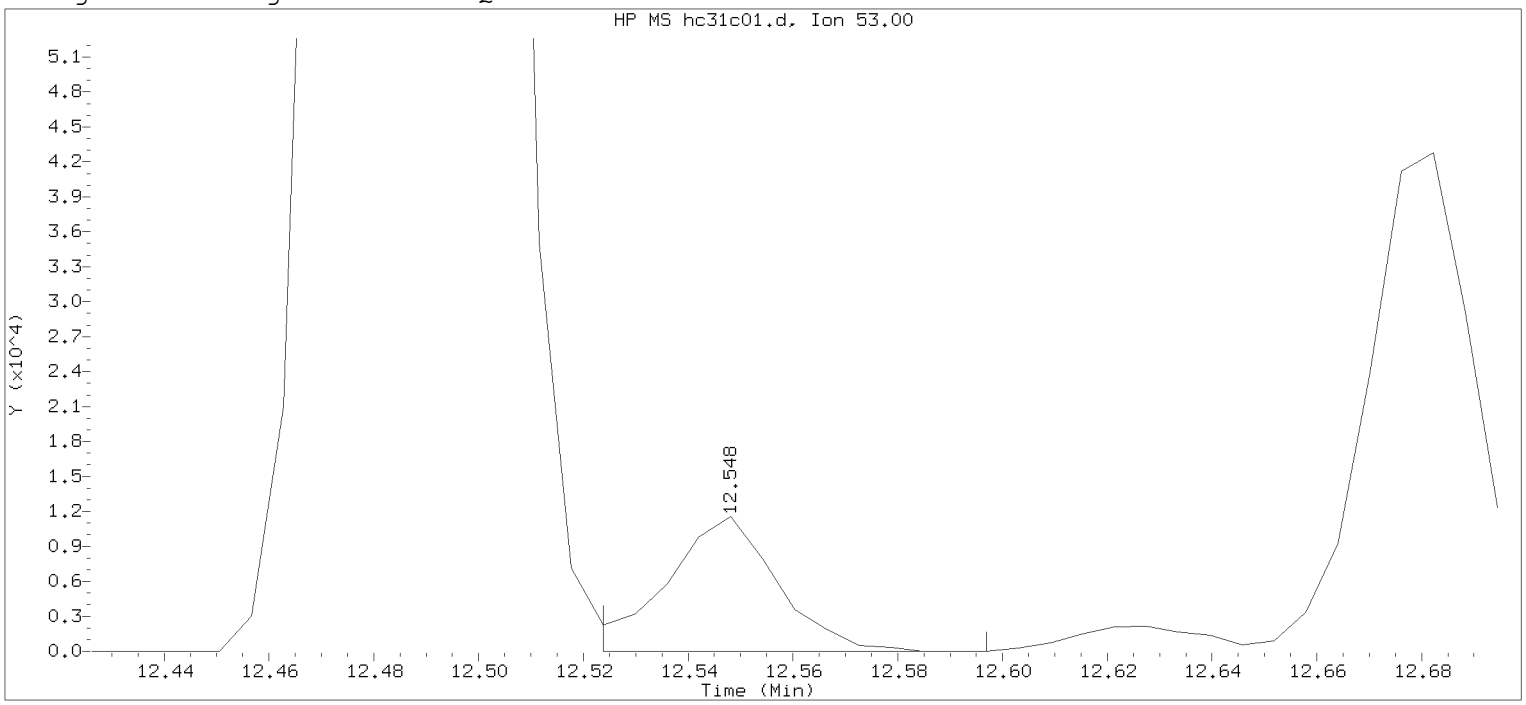
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

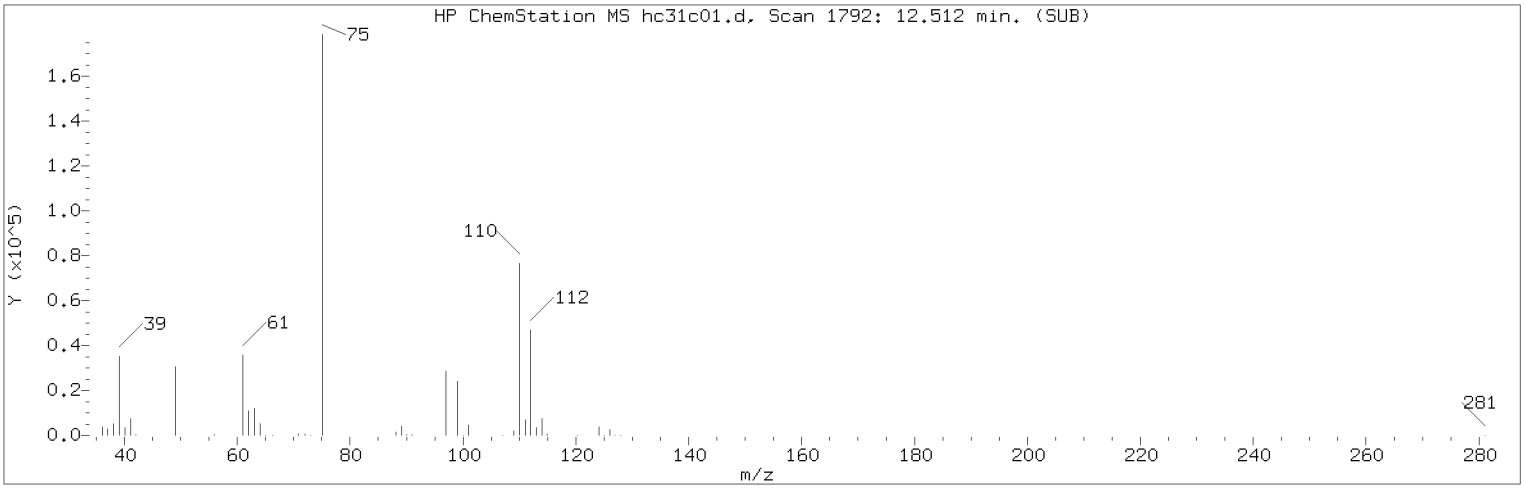
Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

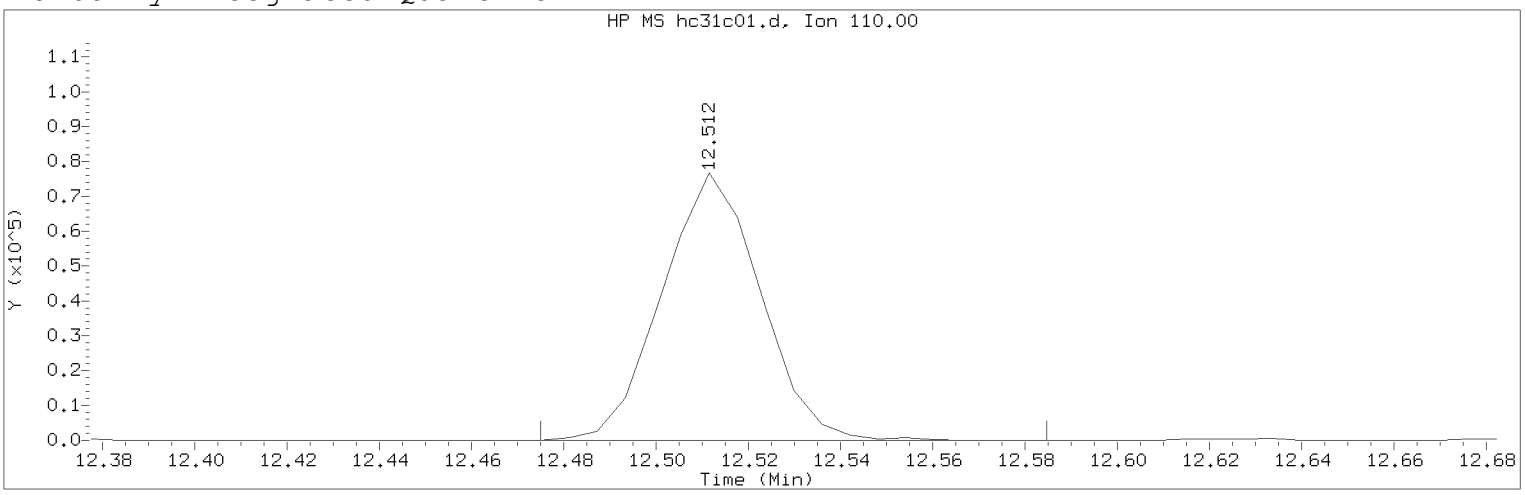
Compound Number : 115
Compound Name : trans-1,4-Dichloro-2-butene
Scan Number : 1798
Retention Time (minutes): 12.548
Quant Ion : 53.00
Area : 16703
On-column Amount (ng) : 1.0591
Integration start scan : 1793 Integration stop scan: 1805
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 468 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:26 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

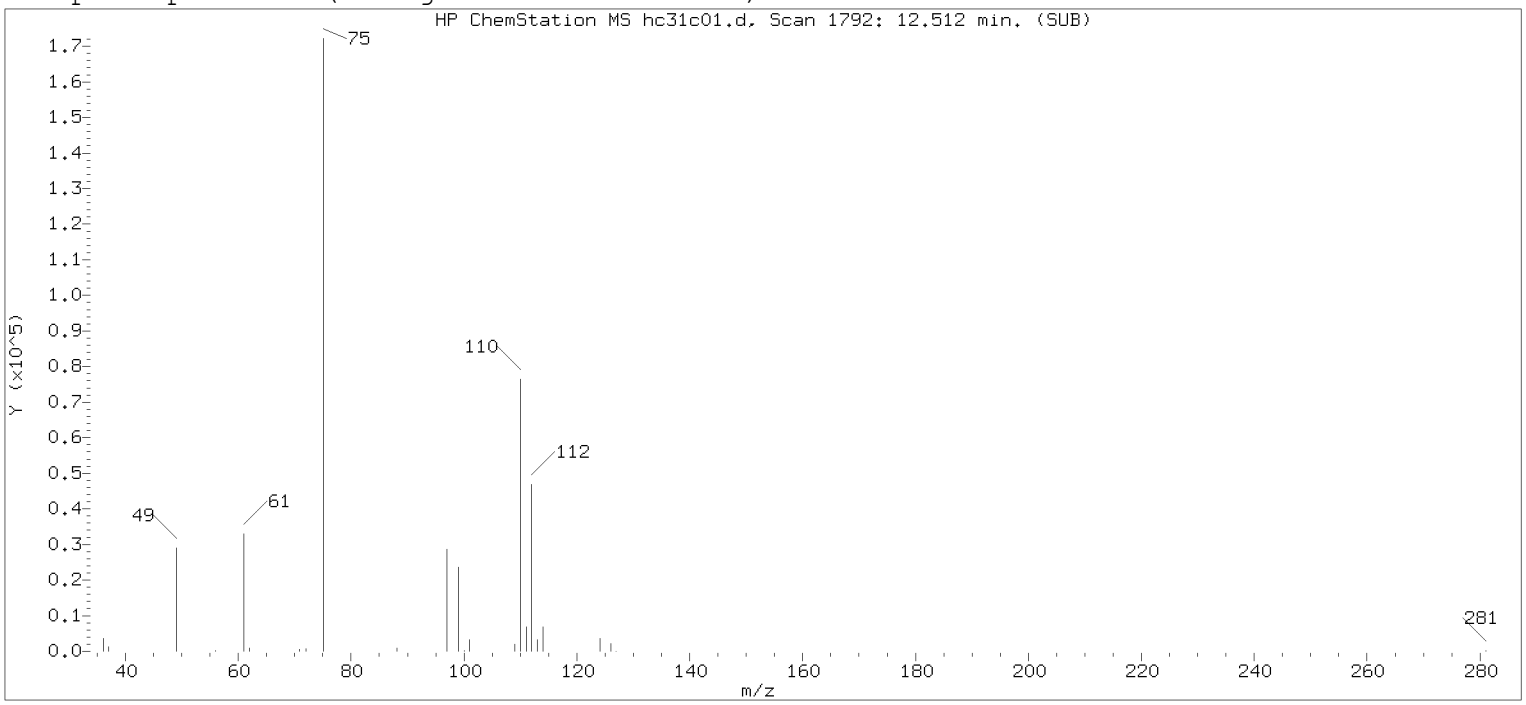
Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area (flag) : 113578M
On-Column Amount (ng) : 9.7766
Integration start scan : 1785 Integration stop scan: 1803
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

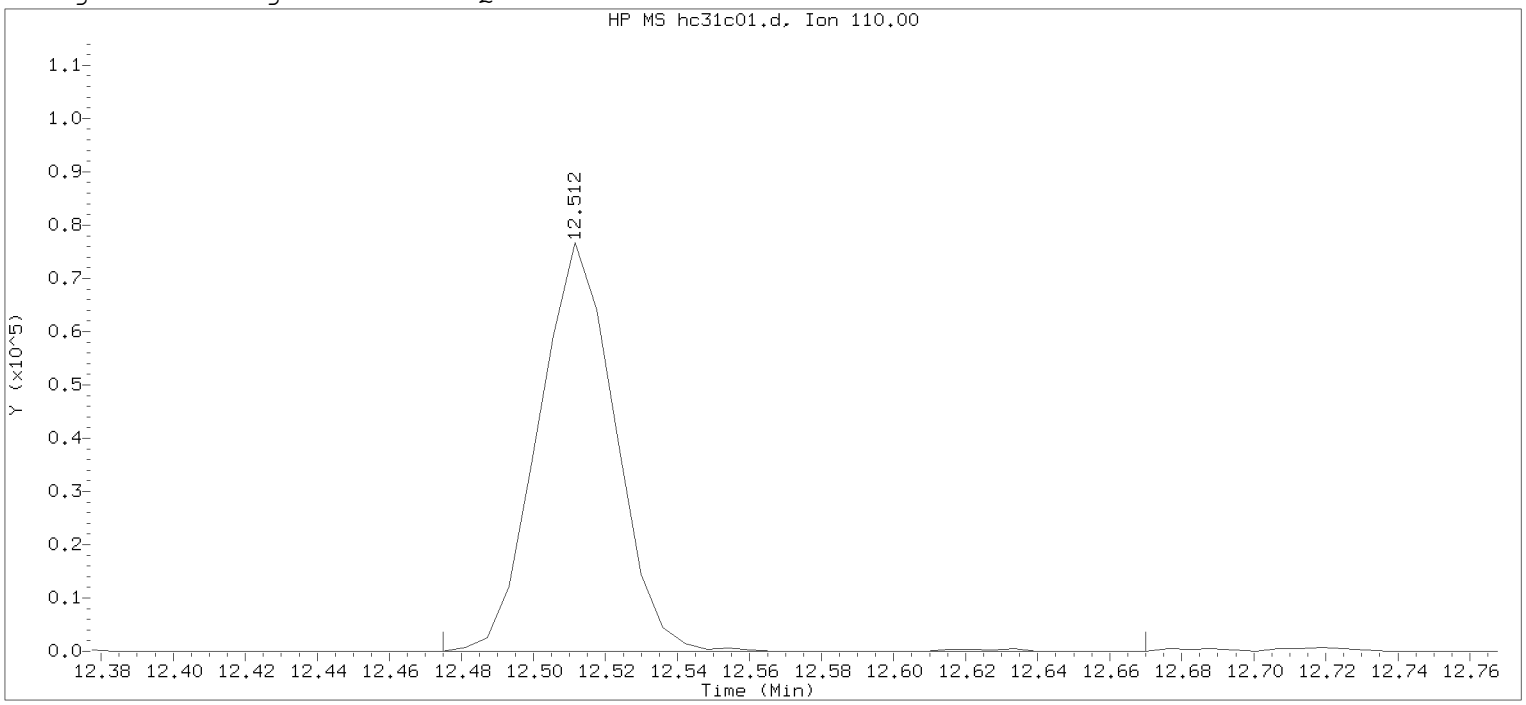
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/31/2019 at 08:26.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 20:40.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31c01.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 07:56 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 31-OCT-2019 08:14
Date, time and analyst ID of latest file update: 31-Oct-2019 08:14 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 116
Compound Name : 1,2,3-Trichloropropane
Scan Number : 1792
Retention Time (minutes): 12.512
Quant Ion : 110.00
Area : 114148
On-column Amount (ng) : 9.8256
Integration start scan : 1785 Integration stop scan: 1817
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 10/31/2019 at 08:26.
Target 3.5 esignature used. AE48 Page 472

Data File: /chem2/HP19094.i/19aug05i.b/hg05t05.d

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng

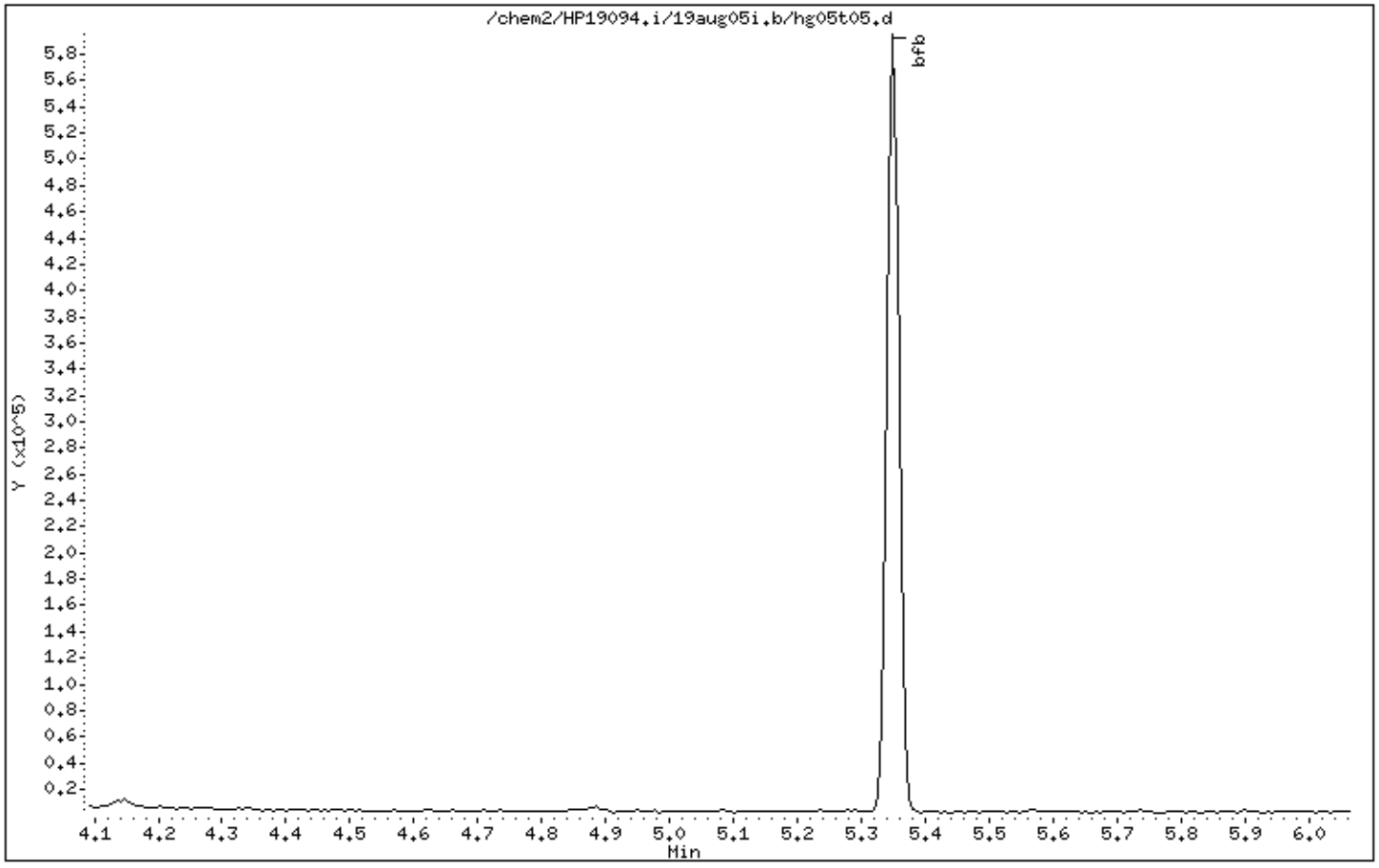
Instrument: HP19094.i

Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Data File: /chem2/HP19094.i/19aug05i.b/hg05t05.d

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng

Instrument: HP19094.i

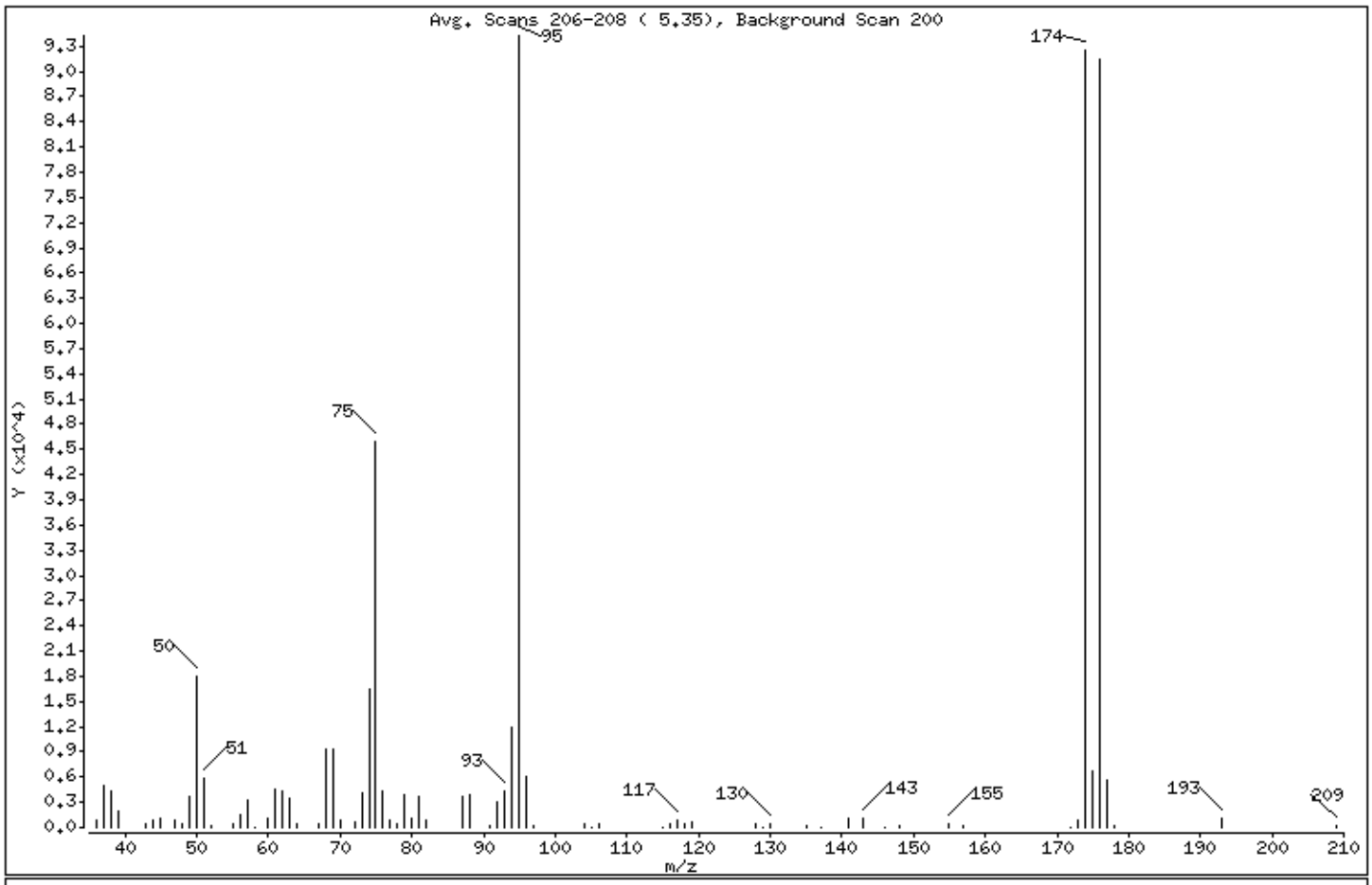
Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.02
75	30.00 - 60.00% of mass 95	48.65
96	5.00 - 9.00% of mass 95	6.54
173	Less than 2.00% of mass 174	0.85 (0.86)
174	50.00 - 100.00% of mass 95	98.21
175	5.00 - 9.00% of mass 174	7.12 (7.25)
176	95.00 - 101.00% of mass 174	97.06 (98.84)
177	5.00 - 9.00% of mass 176	6.08 (6.26)

Date : 05-AUG-2019 17:29

Client ID: BFB 50ng Instrument: HP19094.i

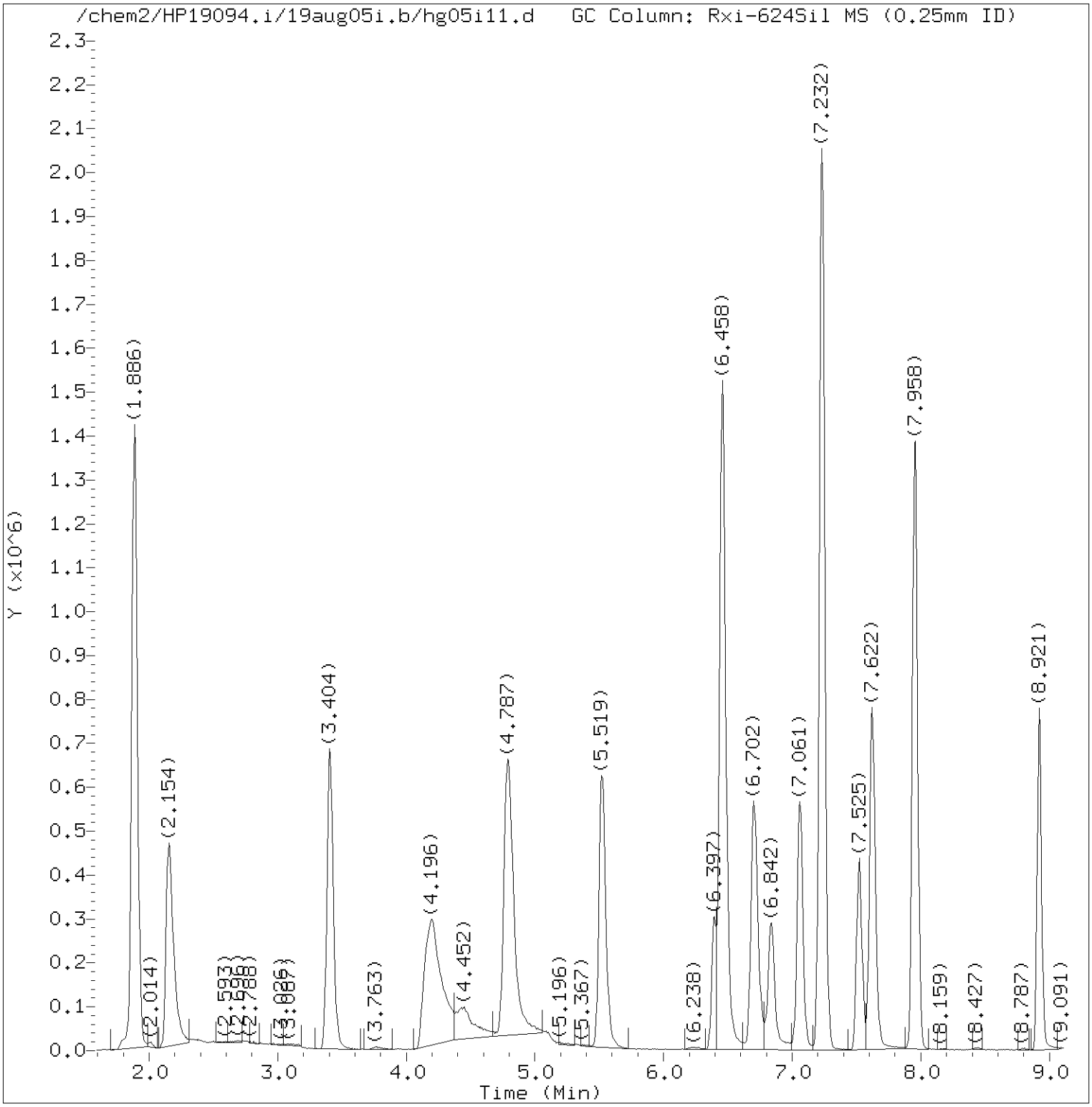
Sample Info: BFB 50ng;BFB FEB05-19;1;3;;;;;

Operator: MEC29284

Column phase: Rxi-624Sil MS Column diameter: 0.25

Data File: hg05t05.d
Spectrum: Avg. Scans 206-208 (5.35), Background Scan 200
Location of Maximum: 95.00
Number of points: 74

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	919	62.00	4430	88.00	3963	135.00	242
37.00	4926	63.00	3535	91.00	290	137.00	107
38.00	4272	64.00	330	92.00	2938	141.00	985
39.00	1971	67.00	437	93.00	4424	143.00	1055
43.00	395	68.00	9263	94.00	11847	146.00	99
44.00	957	69.00	9322	95.00	94256	148.00	145
45.00	1037	70.00	921	96.00	6167	155.00	443
47.00	895	72.00	652	97.00	222	157.00	200
48.00	487	73.00	4146	104.00	460	172.00	94
49.00	3732	74.00	16381	105.00	88	173.00	799
50.00	17928	75.00	45856	106.00	515	174.00	92560
51.00	5824	76.00	4358	115.00	93	175.00	6715
52.00	217	77.00	774	116.00	389	176.00	91488
55.00	455	78.00	348	117.00	806	177.00	5729
56.00	1567	79.00	3918	118.00	528	178.00	137
57.00	3175	80.00	1012	119.00	729	193.00	1001
58.00	97	81.00	3776	128.00	371	209.00	228
60.00	1065	82.00	952	129.00	103		
61.00	4600	87.00	3779	130.00	528		



Total Ion Chromatogram (TIC)

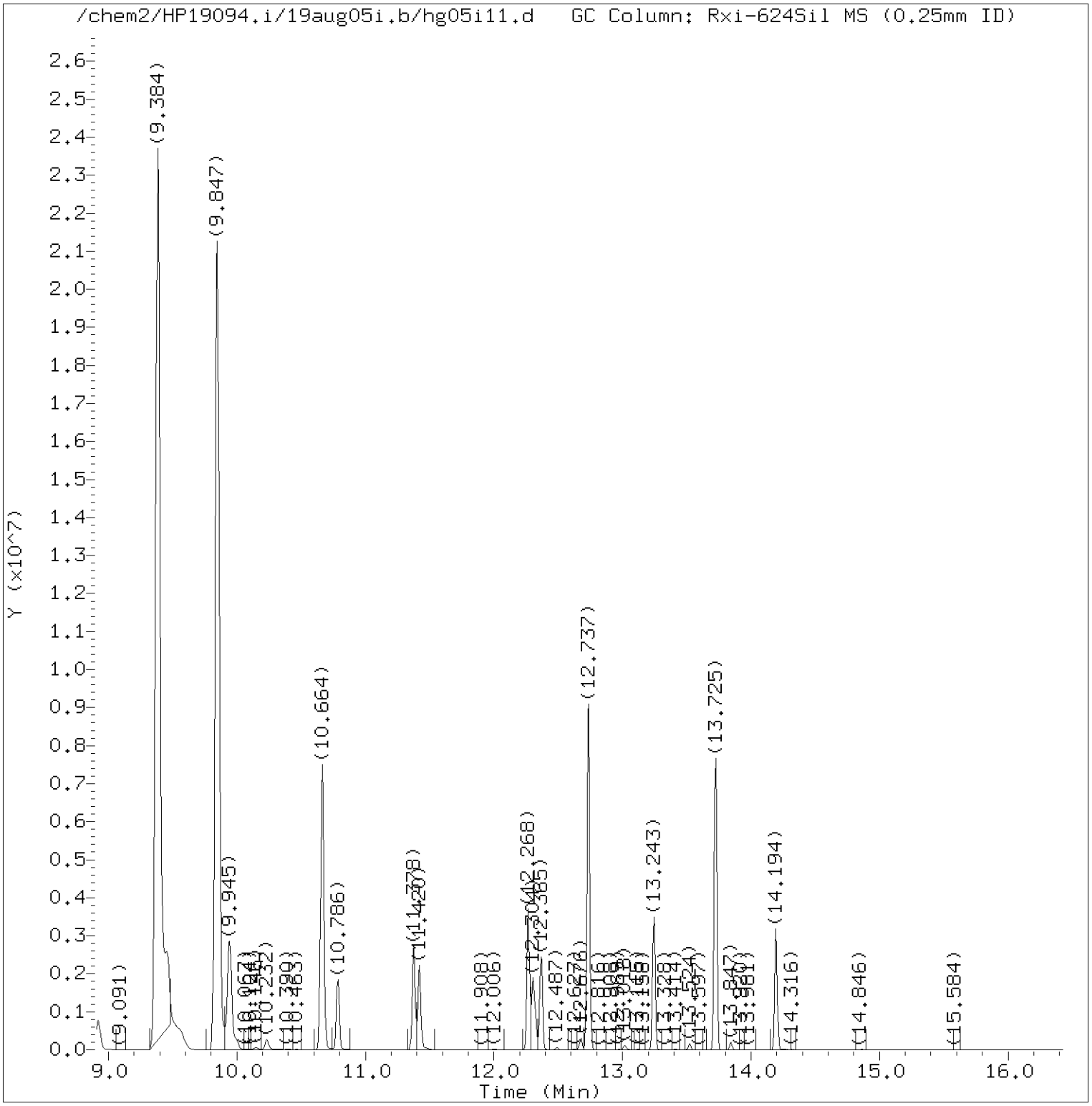
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

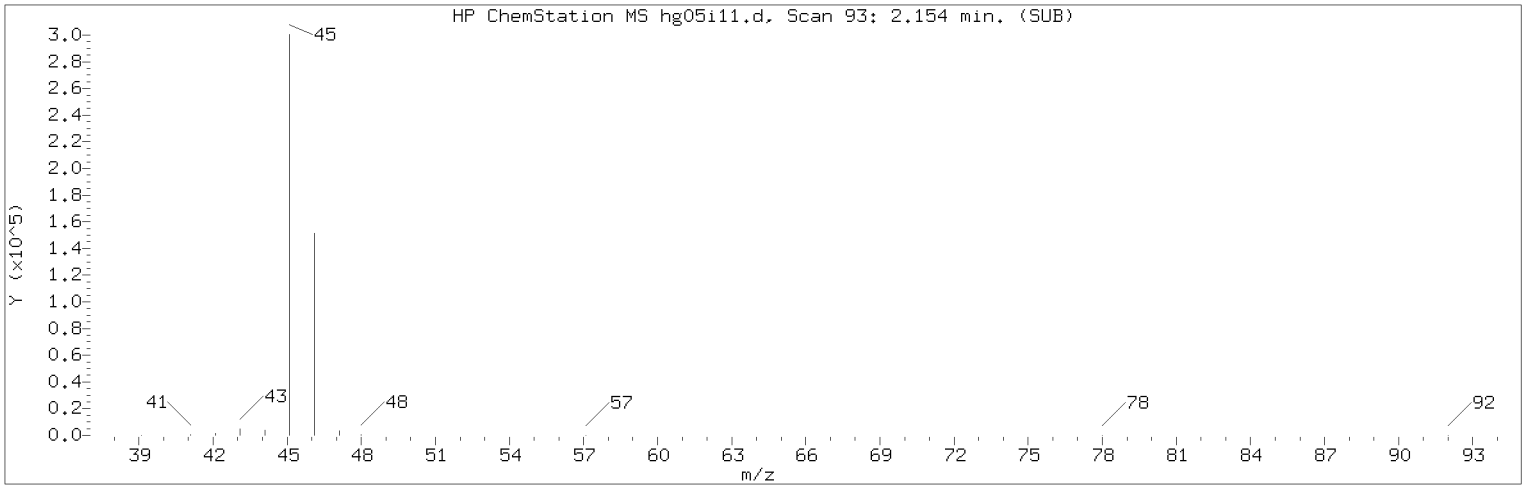
Sample Name: VSTD025 Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	1417207M	24.693
25) Acetonitrile	(1)	4.178	41	2248584M	1217.745
26)*t-Butyl Alcohol-d10	(1)	4.422	65	108362	50.000
36) Vinyl Acetate	(2)	5.519	43	1801213	24.998
43) Methyl Acrylate	(2)	6.458	55	3054354M	128.747
53) 1-Chlorobutane	(2)	7.232	56	2409263	25.459
63)*Fluorobenzene	(2)	7.958	96	1918877	10.000
77) Chloroacetonitrile	(2)	9.439	75	1772980	1419.875
78) 2-Chloroethyl vinyl ether	(2)	9.463	63	574053	25.983
97)*Chlorobenzene-d5	(3)	11.378	117	1569603M	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	858385	46.479
112) Cyclohexanone	(1)	12.304	55	924765M	1278.325
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	867449	10.000
142) Hexachloroethane	(4)	13.725	117	1402490	26.892

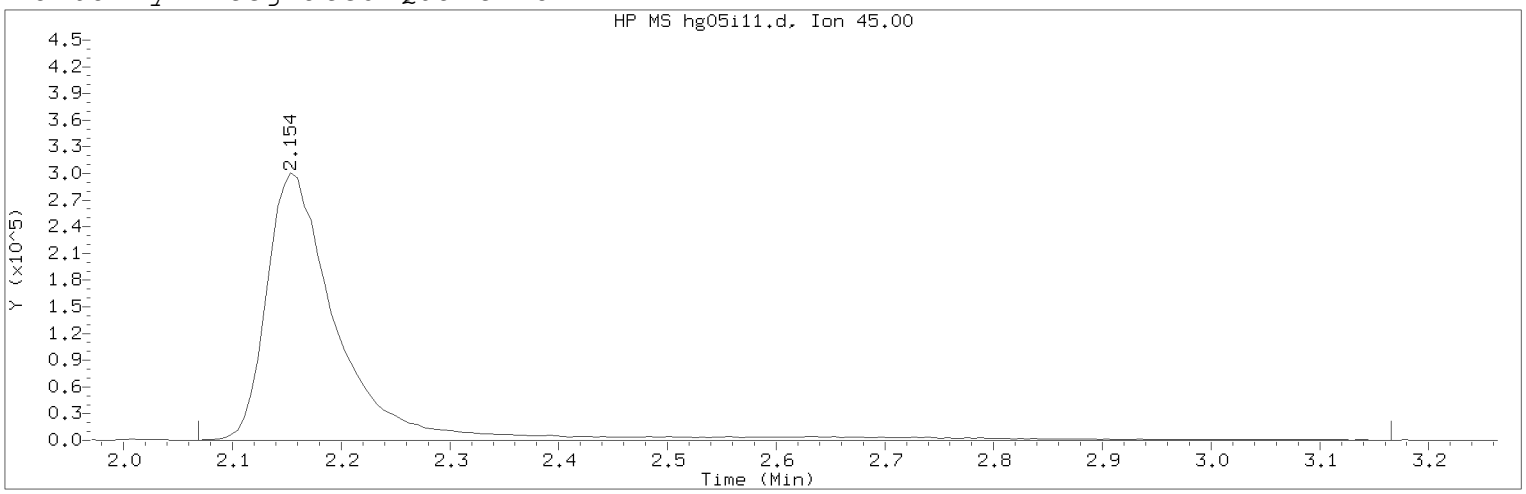
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

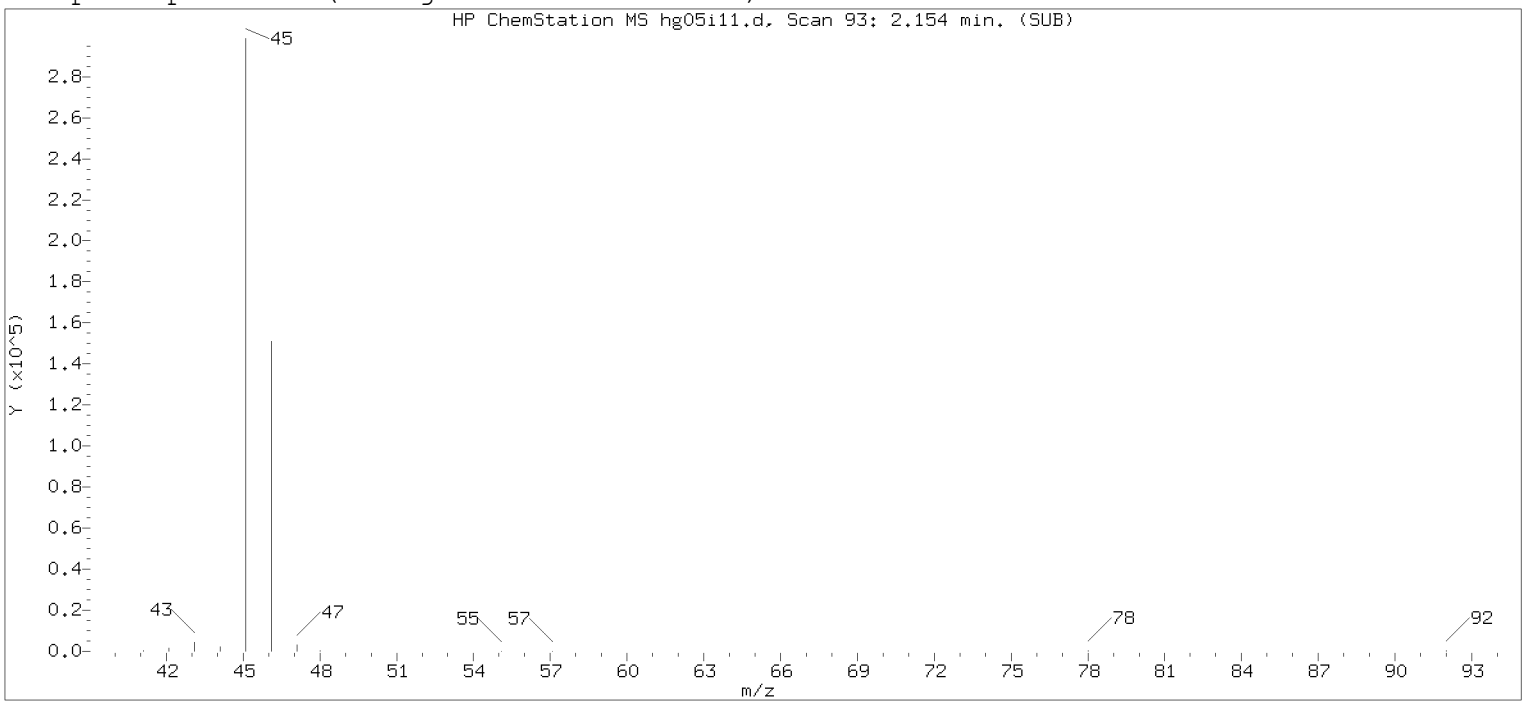
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 1417207M
On-Column Amount (ng) : 24.6929
Integration start scan : 78 Integration stop scan: 258
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

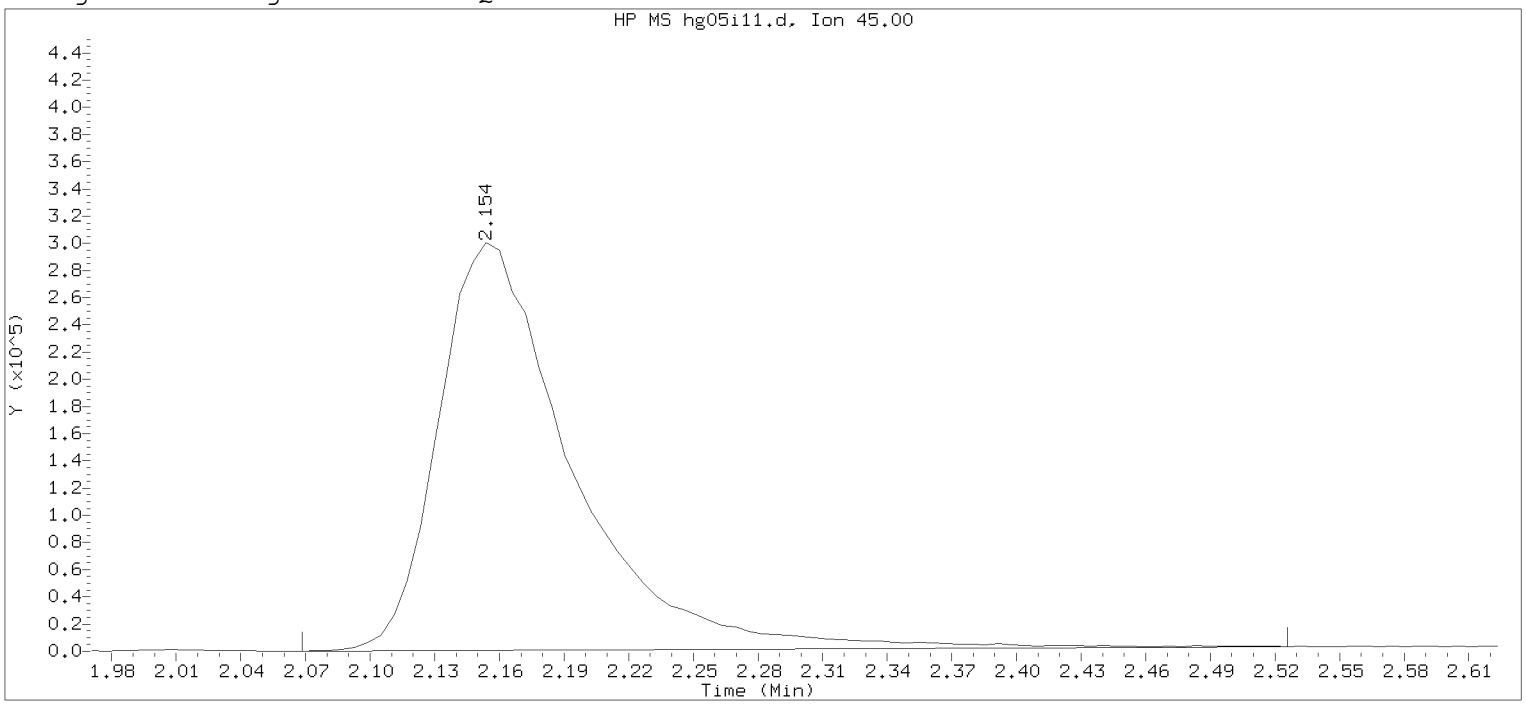
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

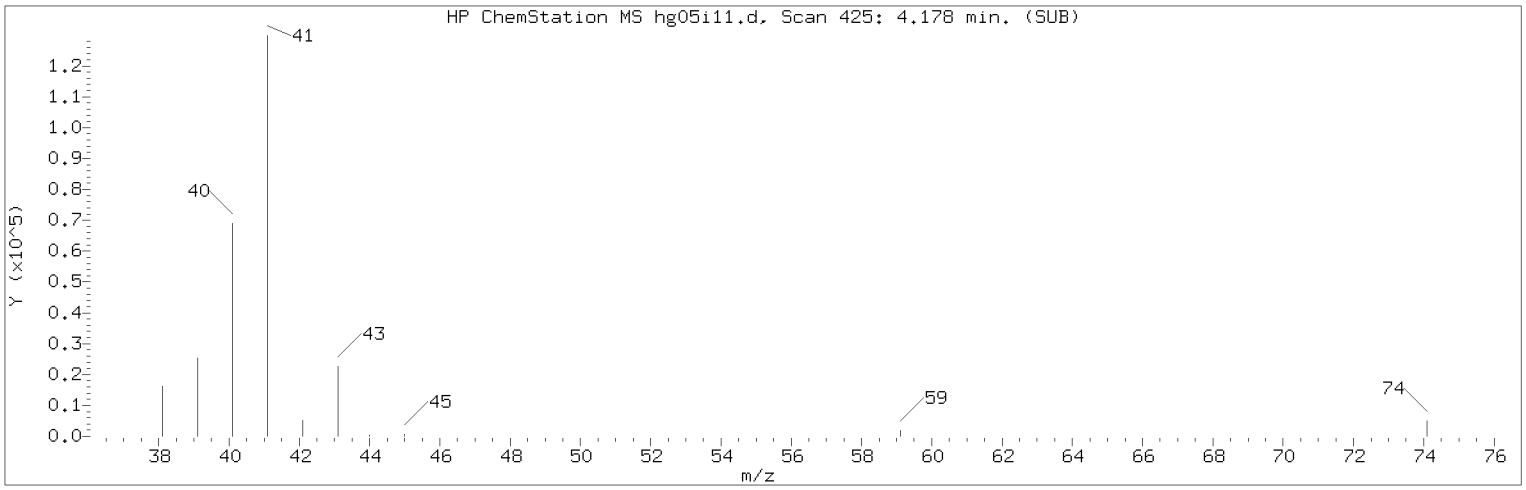
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

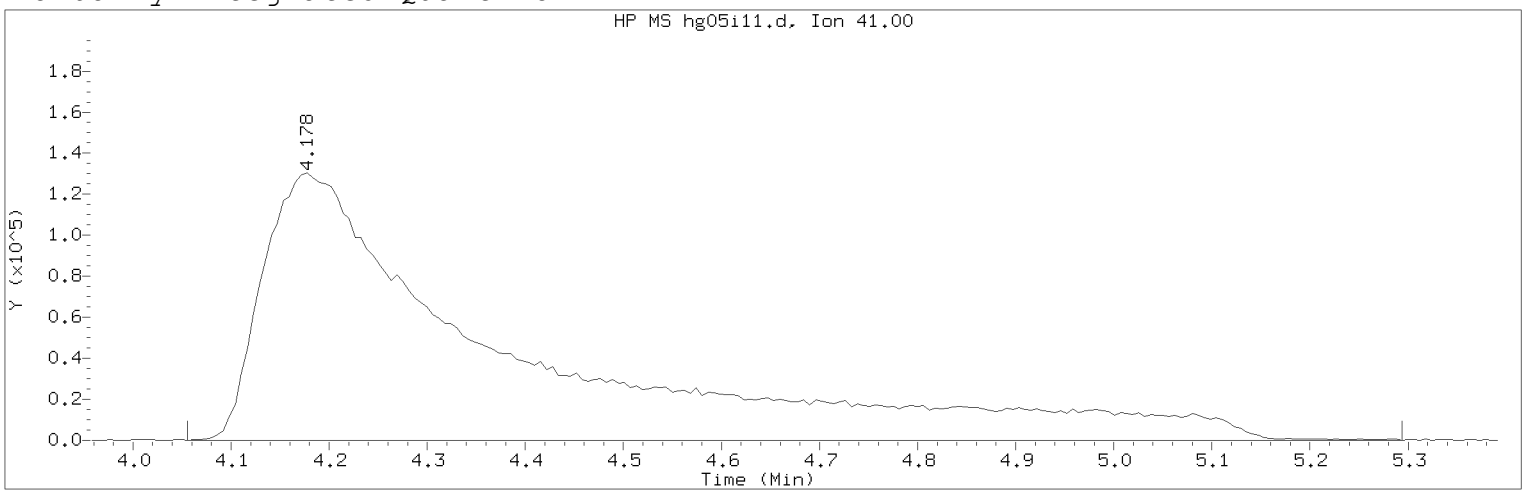
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area : 1300879
On-column Amount (ng) : 40.0202
Integration start scan : 78 Integration stop scan: 153
Y at integration start : 0 Y at integration end: 3126

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Target 3.5 esignature used for mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

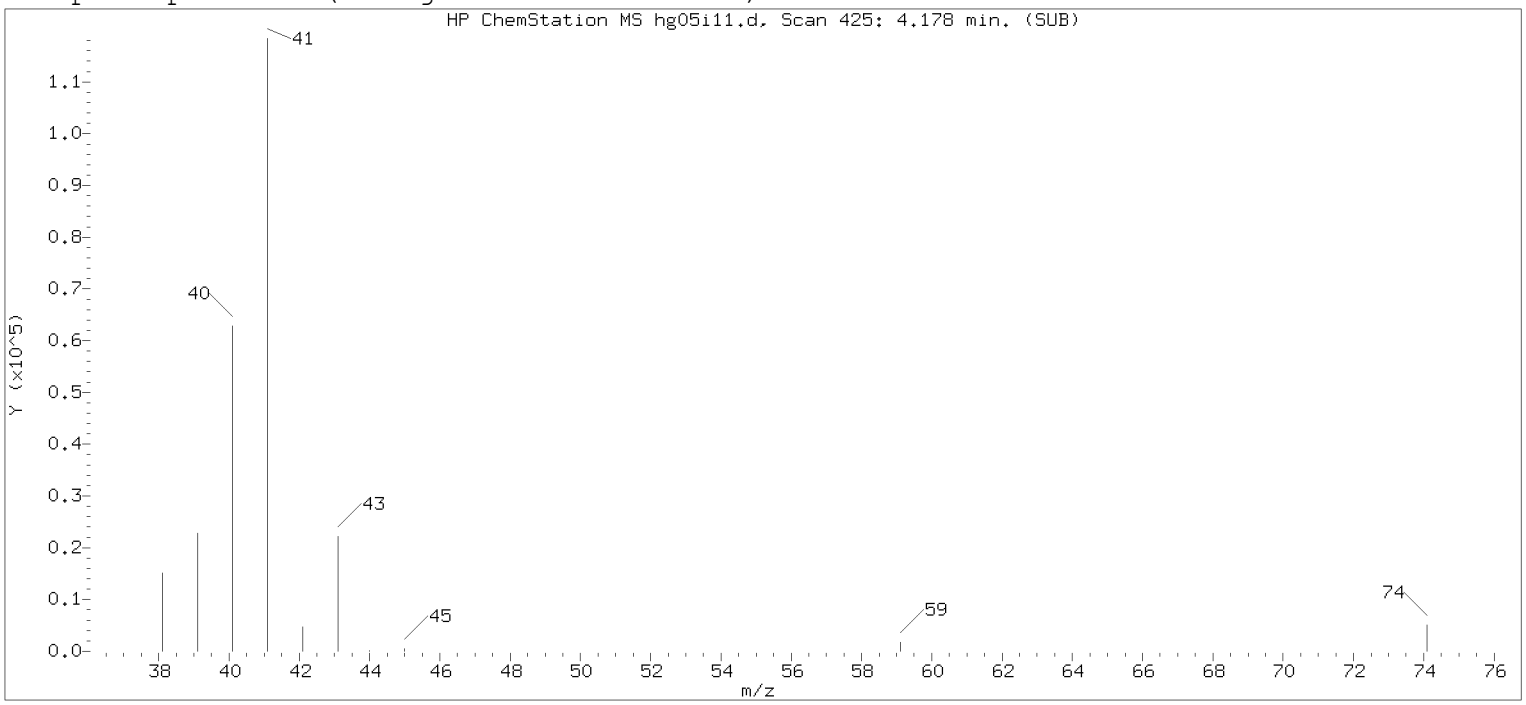
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 425
Retention Time (minutes): 4.178
Quant Ion : 41.00
Area (flag) : 2248584M
On-Column Amount (ng) : 1217.7447
Integration start scan : 404 Integration stop scan: 607
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

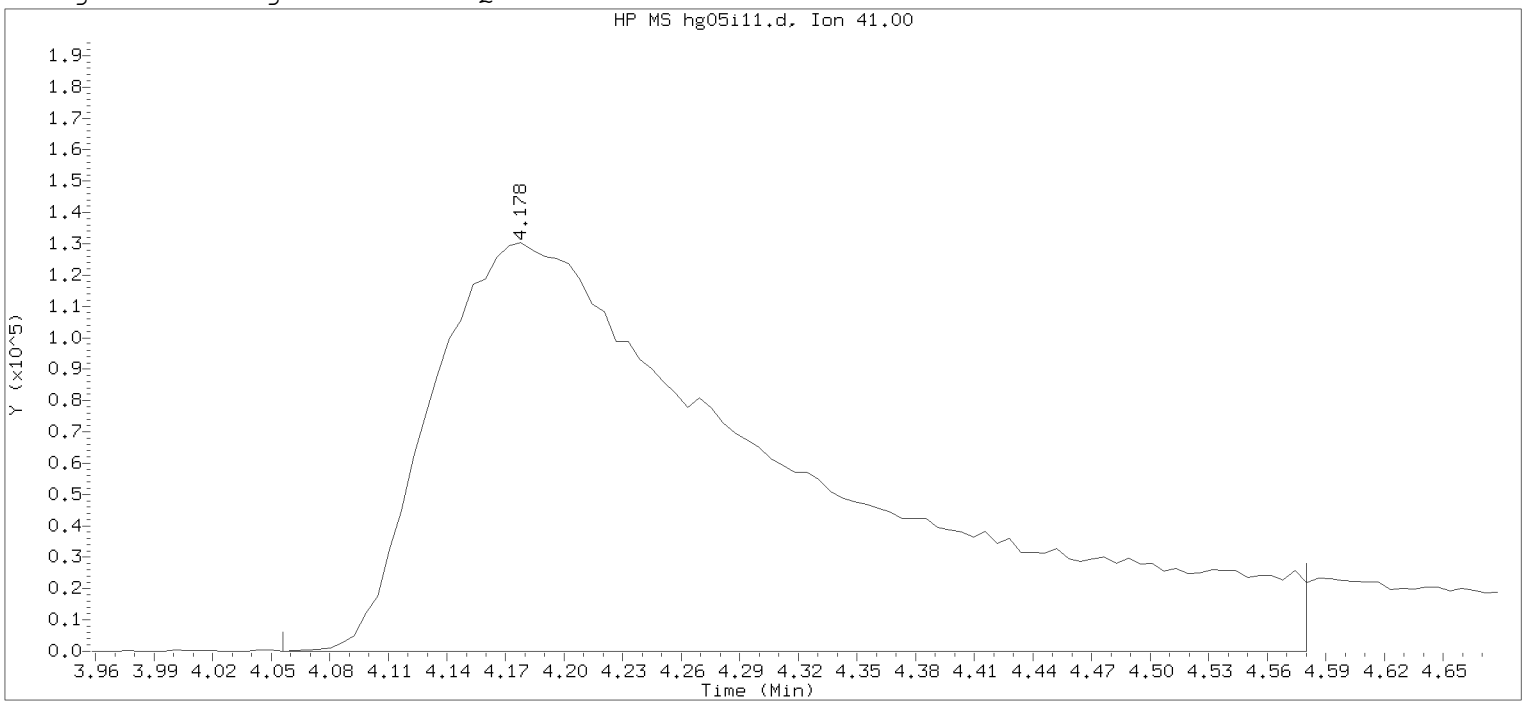
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

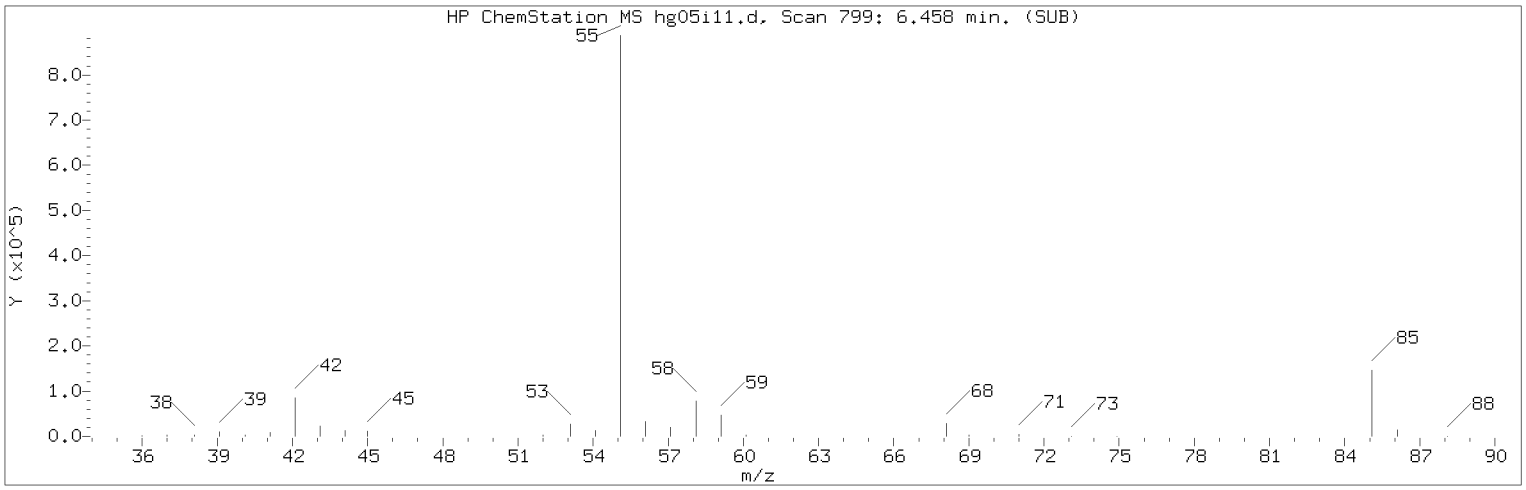
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

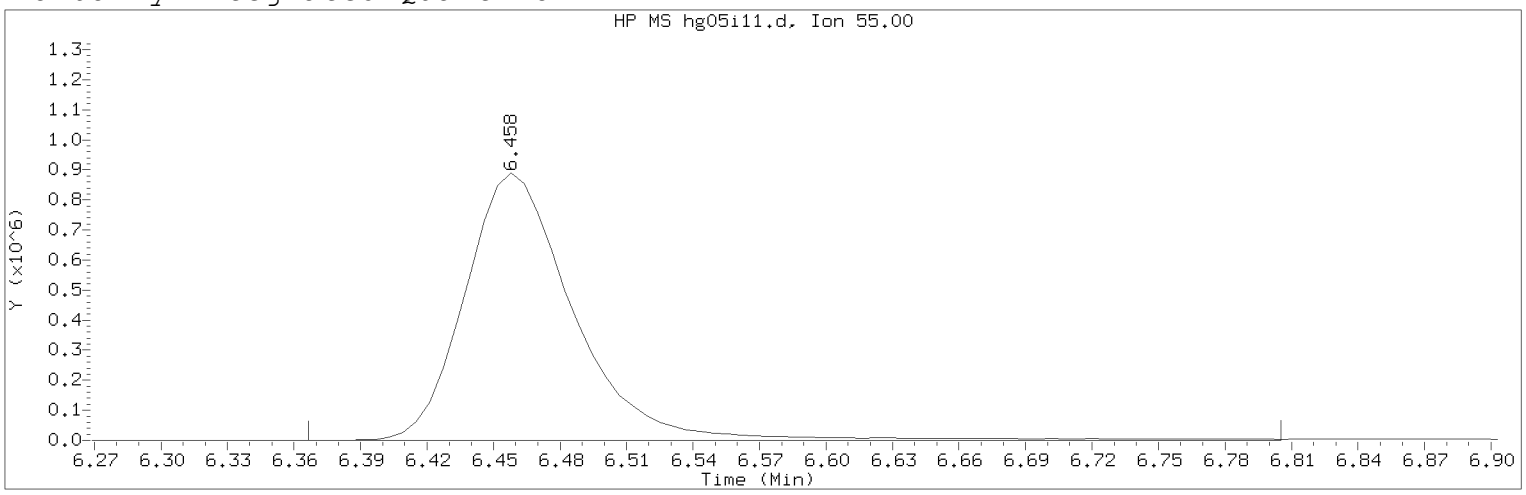
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 425
Retention Time (minutes): 4.178
Quant Ion : 41.00
Area : 1720212
On-column Amount (ng) : 971.2978
Integration start scan : 404 Integration stop scan: 490
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

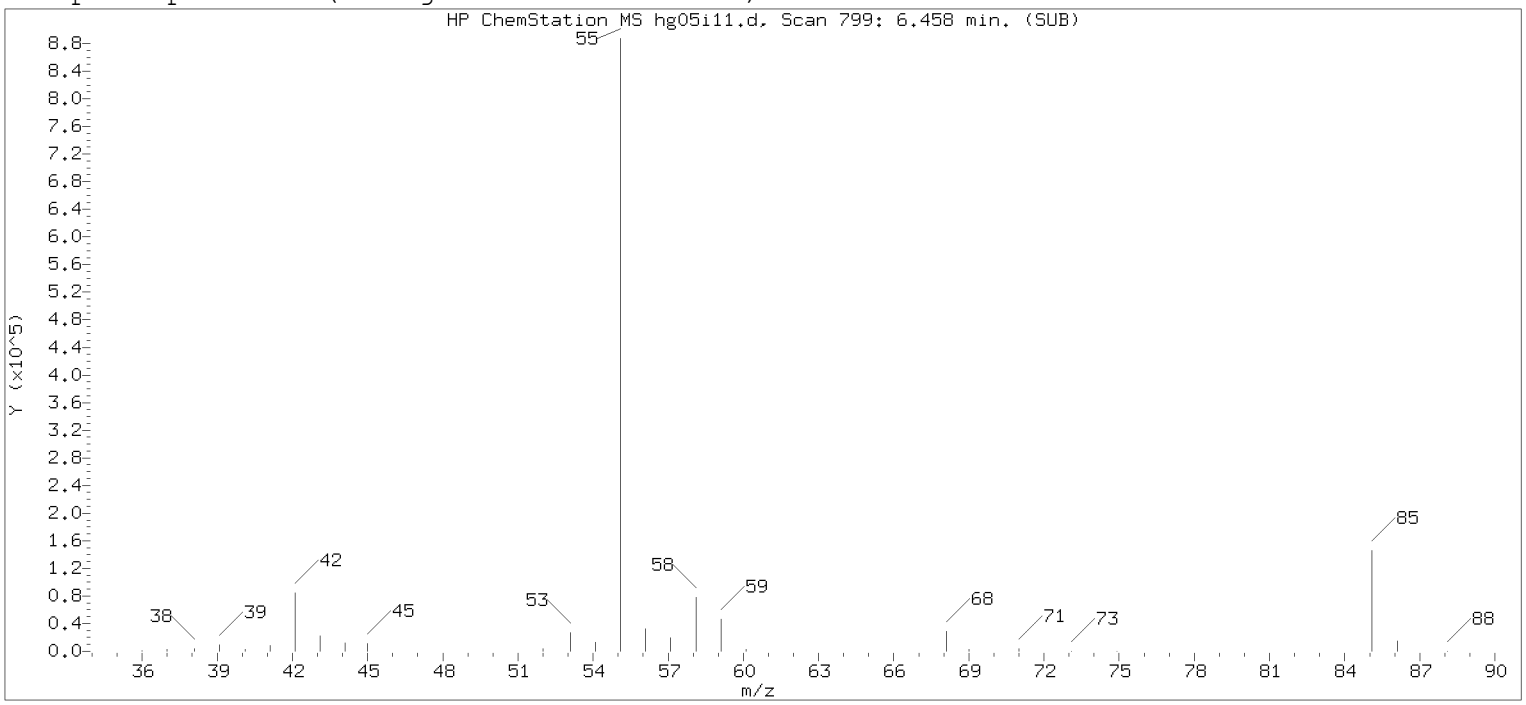
Compound Number : 43
Compound Name : Methyl Acrylate
Scan Number : 799
Retention Time (minutes): 6.458
Quant Ion : 55.00
Area (flag) : 3054354M
On-Column Amount (ng) : 128.7465
Integration start scan : 783 Integration stop scan: 855
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

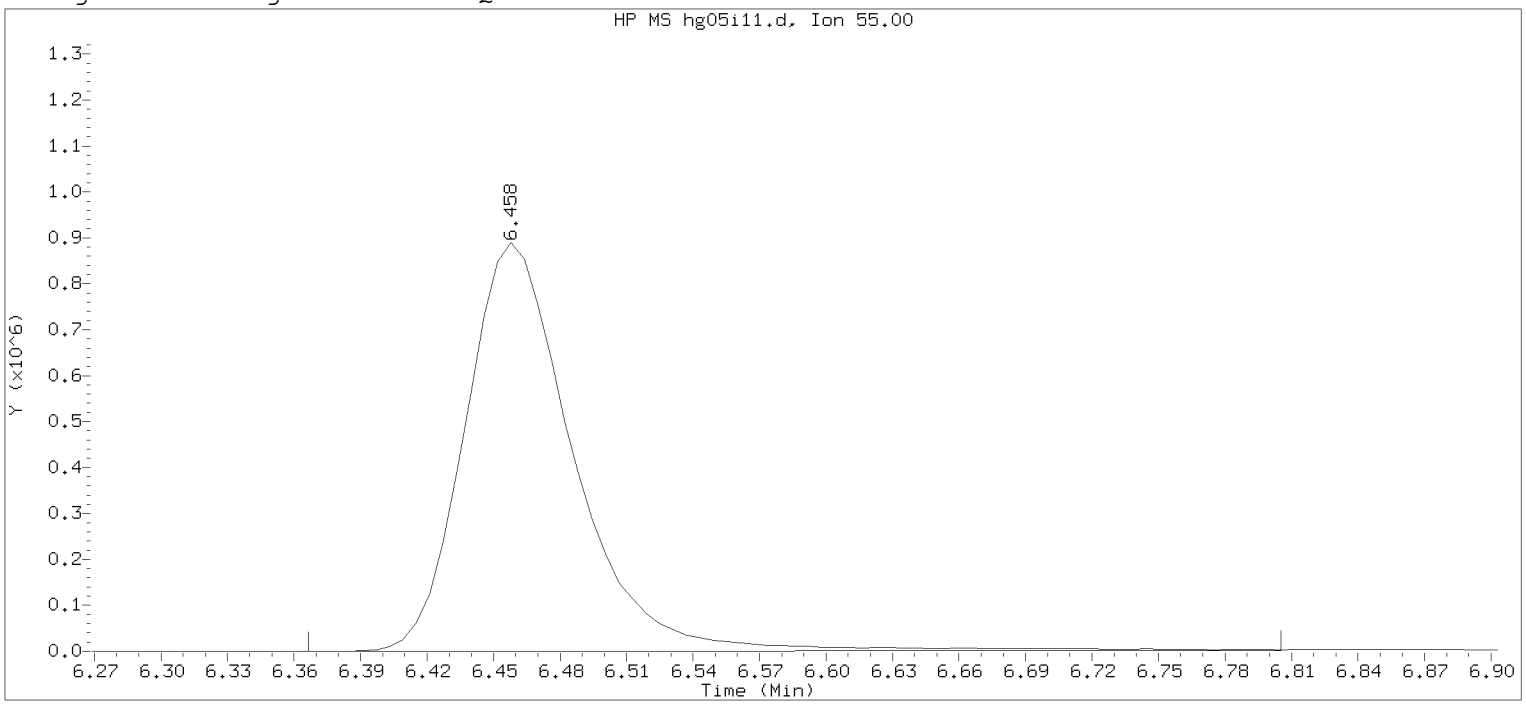
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

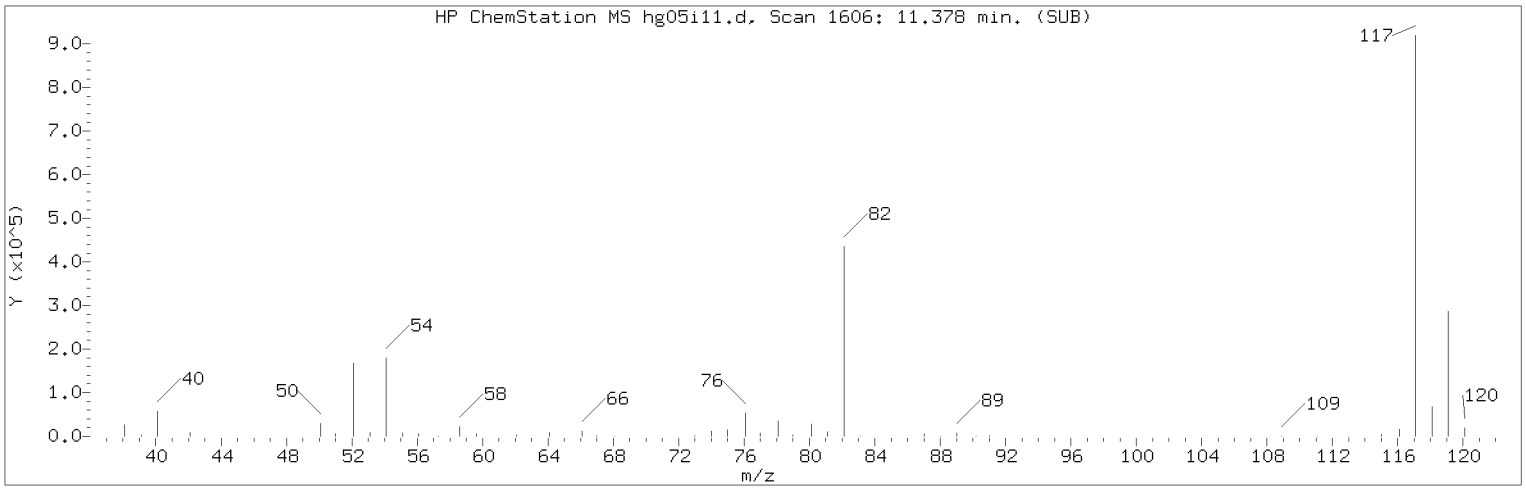
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

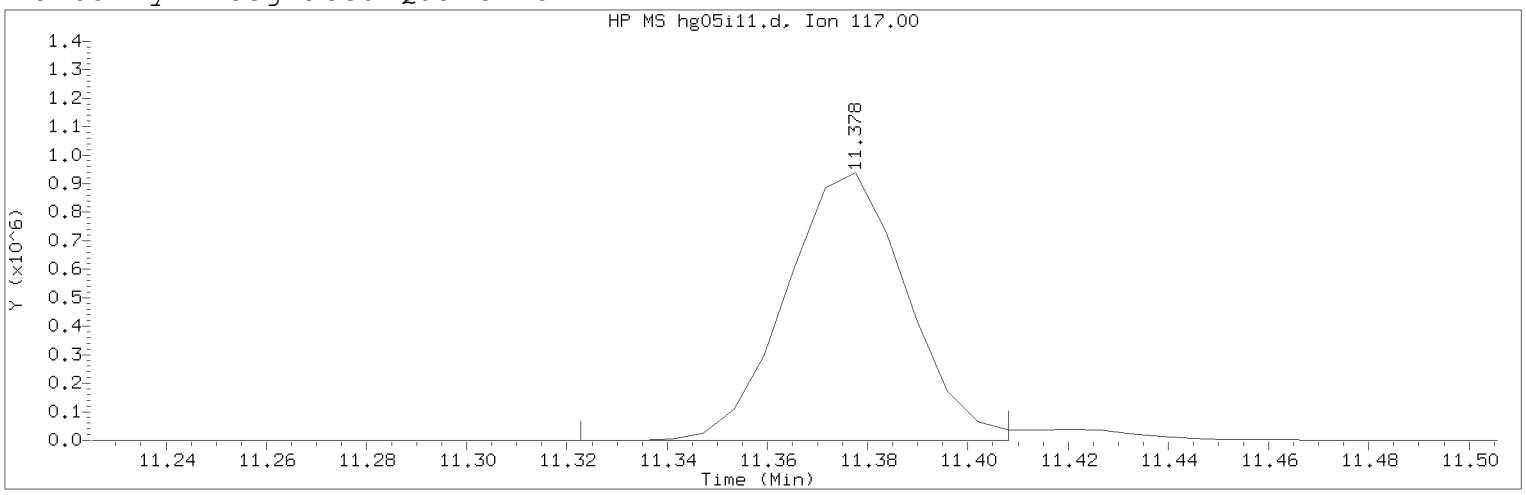
Compound Number : 43
Compound Name : Methyl Acrylate
Scan Number : 799
Retention Time (minutes): 6.458
Quant Ion : 55.00
Area : 3043846
On-column Amount (ng) : 128.3686
Integration start scan : 783 Integration stop scan: 855
Y at integration start : 0 Y at integration end: 755

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

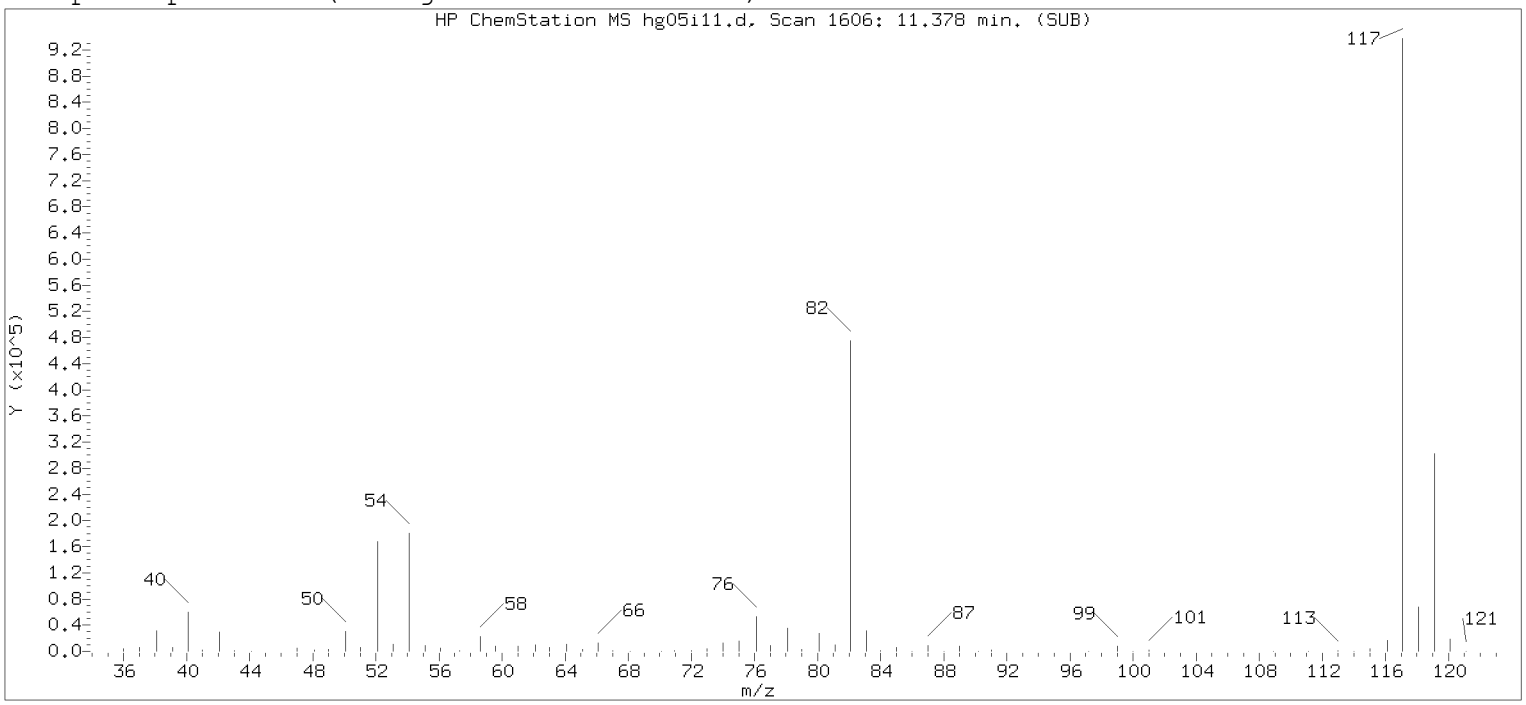
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1606
Retention Time (minutes): 11.378
Quant Ion : 117.00
Area (flag) : 1569603M
On-Column Amount (ng) : 10.0000
Integration start scan : 1596 Integration stop scan: 1610
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

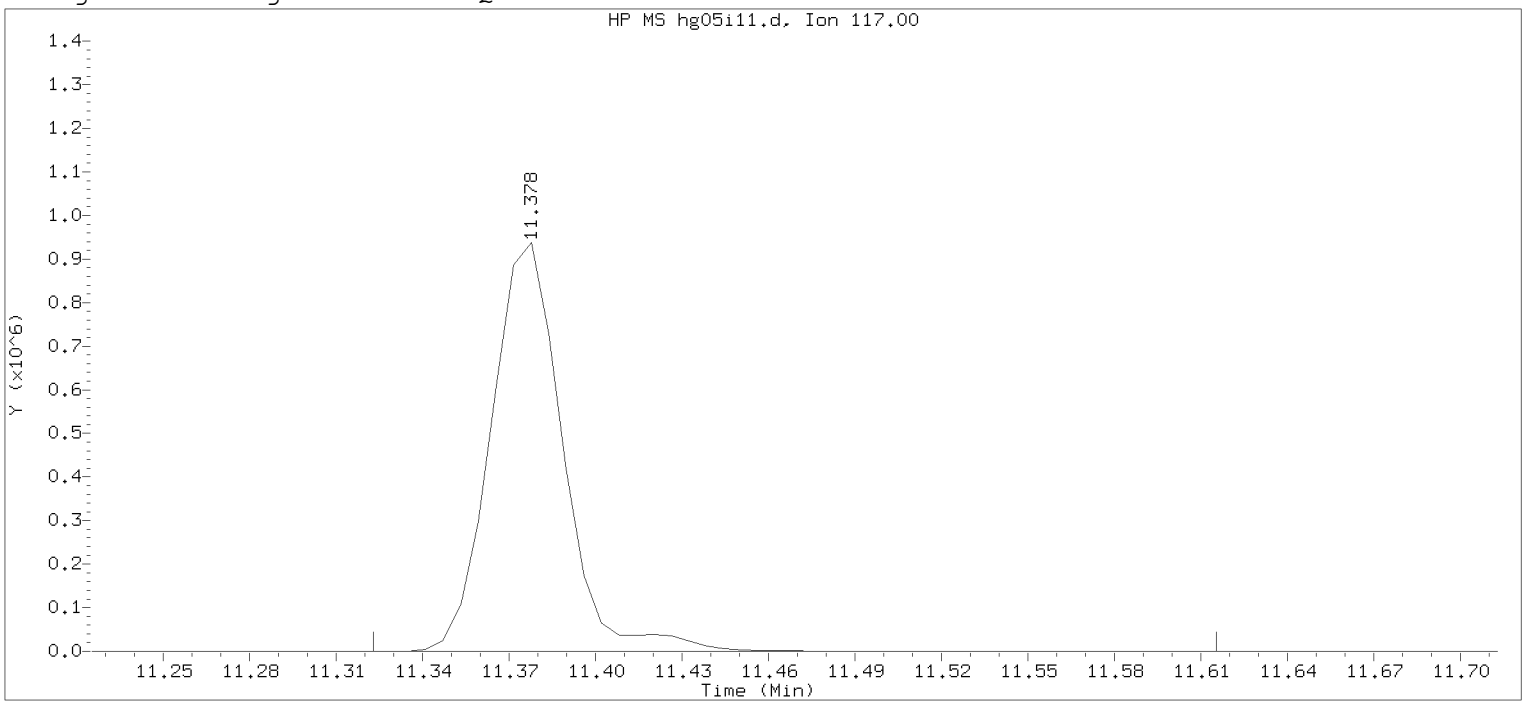
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

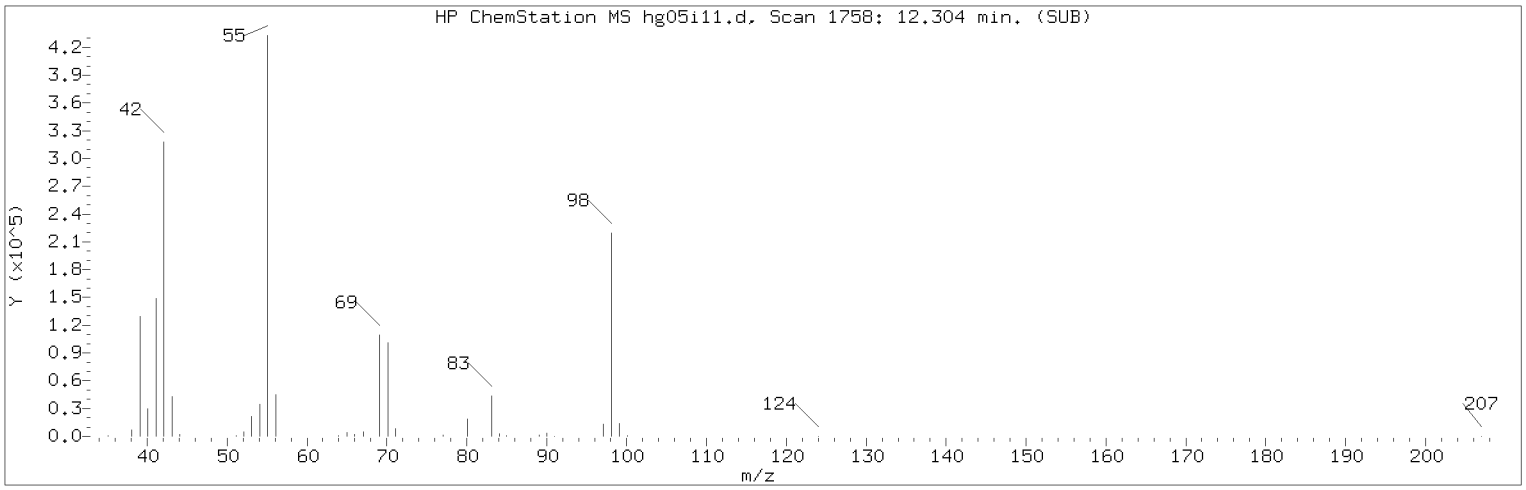
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

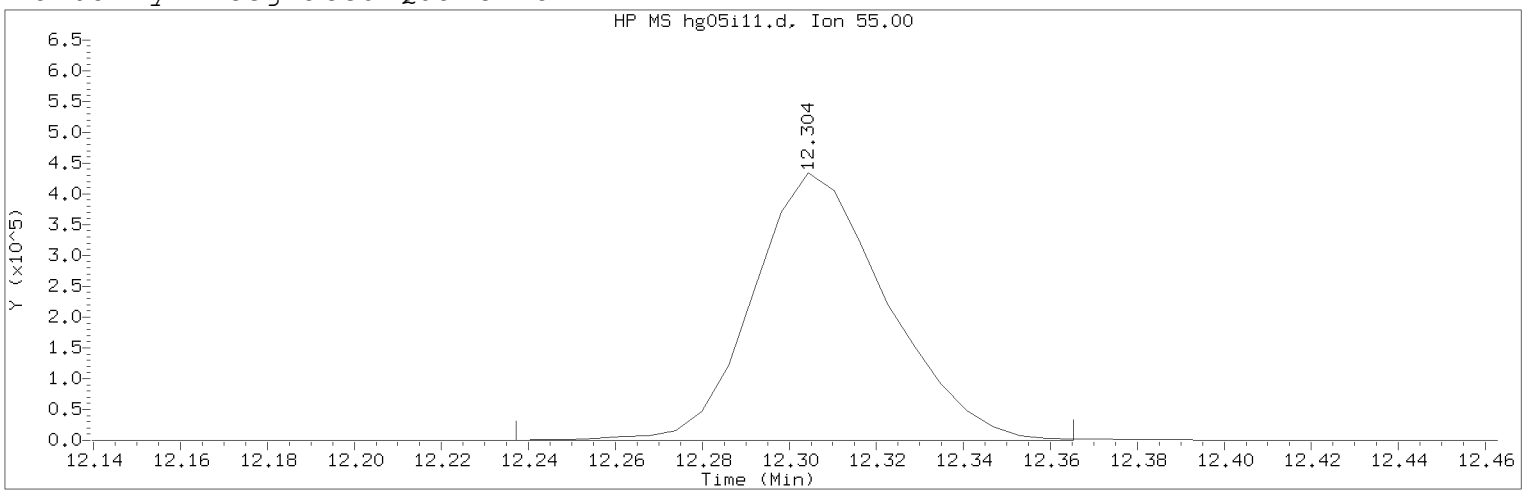
Compound Number : 97
Compound Name : Chlorobenzene-d5
Scan Number : 1606
Retention Time (minutes): 11.378
Quant Ion : 117.00
Area : 1628590
On-column Amount (ng) : 10.0000
Integration start scan : 1596 Integration stop scan: 1644
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:44 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

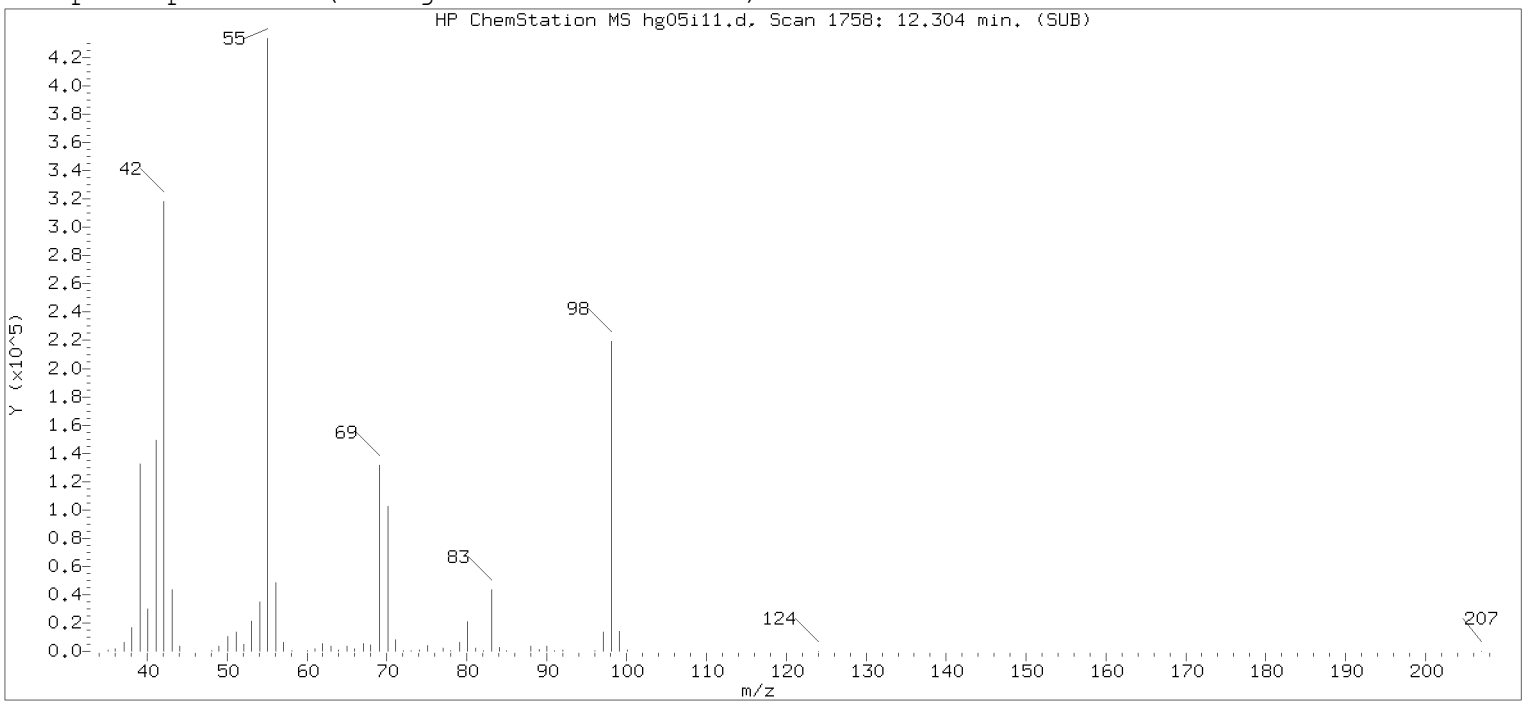
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 924765M
On-Column Amount (ng) : 1278.3253
Integration start scan : 1746 Integration stop scan: 1767
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

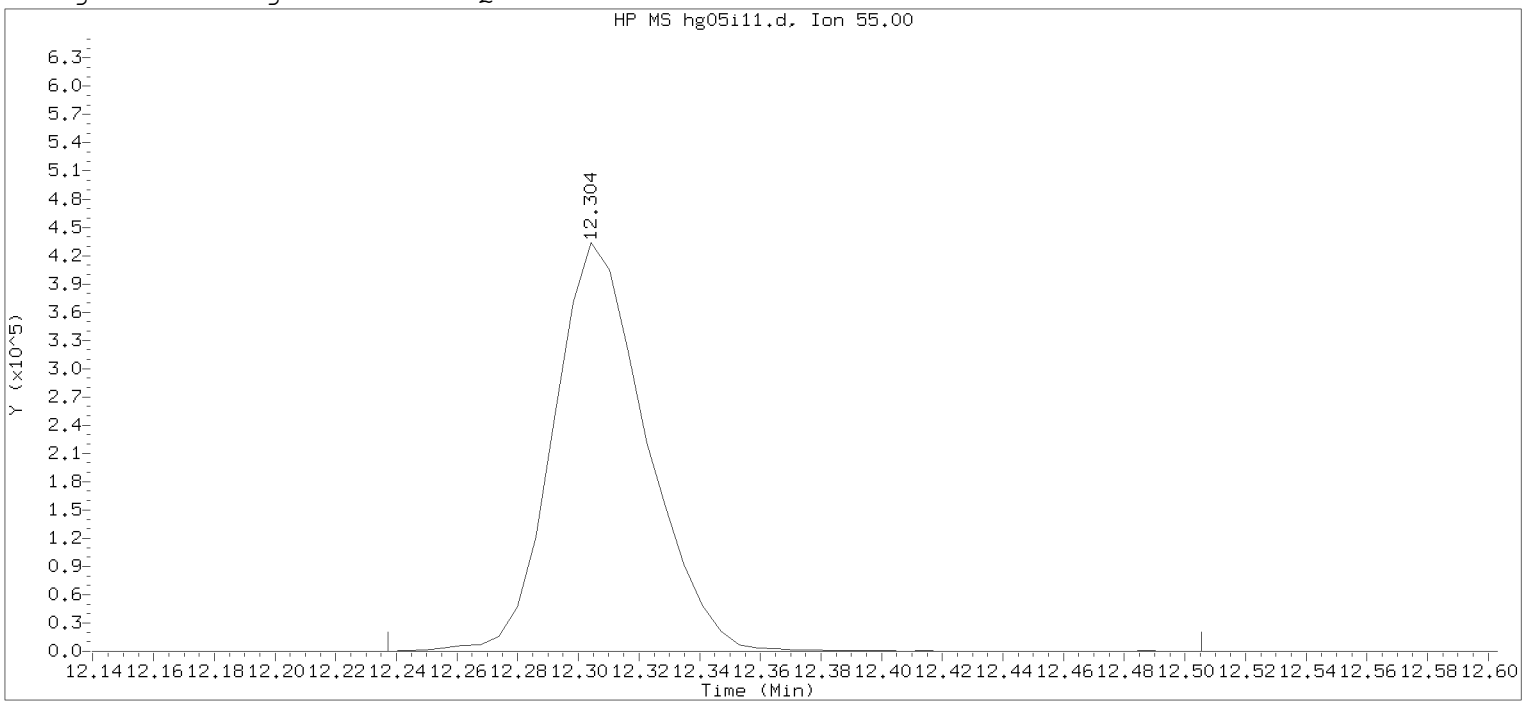
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



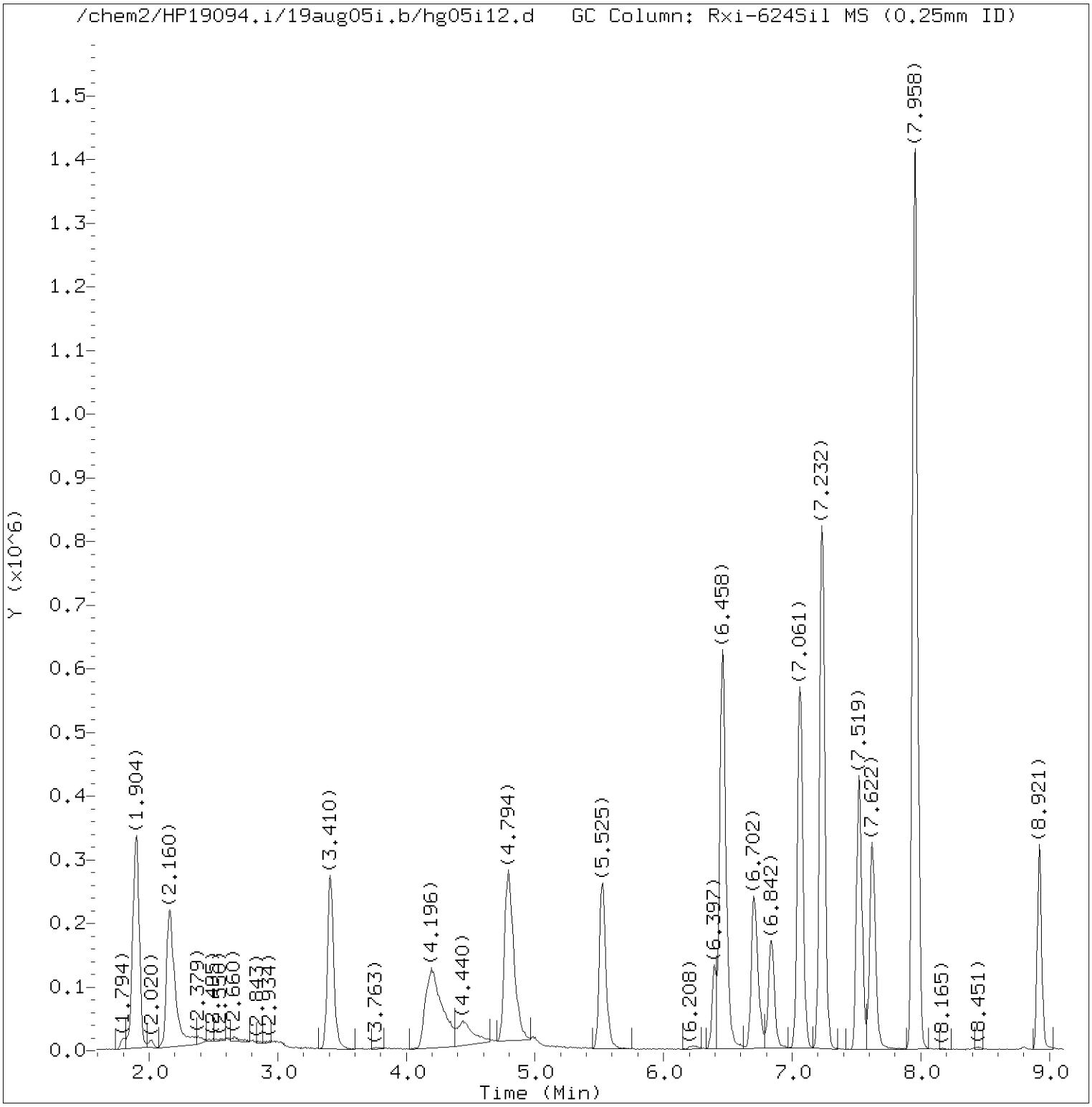
Data File: /chem2/HP19094.i/19aug05i.b/hg05i11.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 21:39 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD025 Lab Sample ID: VSTD025

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area : 927651
On-column Amount (ng) : 1281.7214
Integration start scan : 1746 Integration stop scan: 1790
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

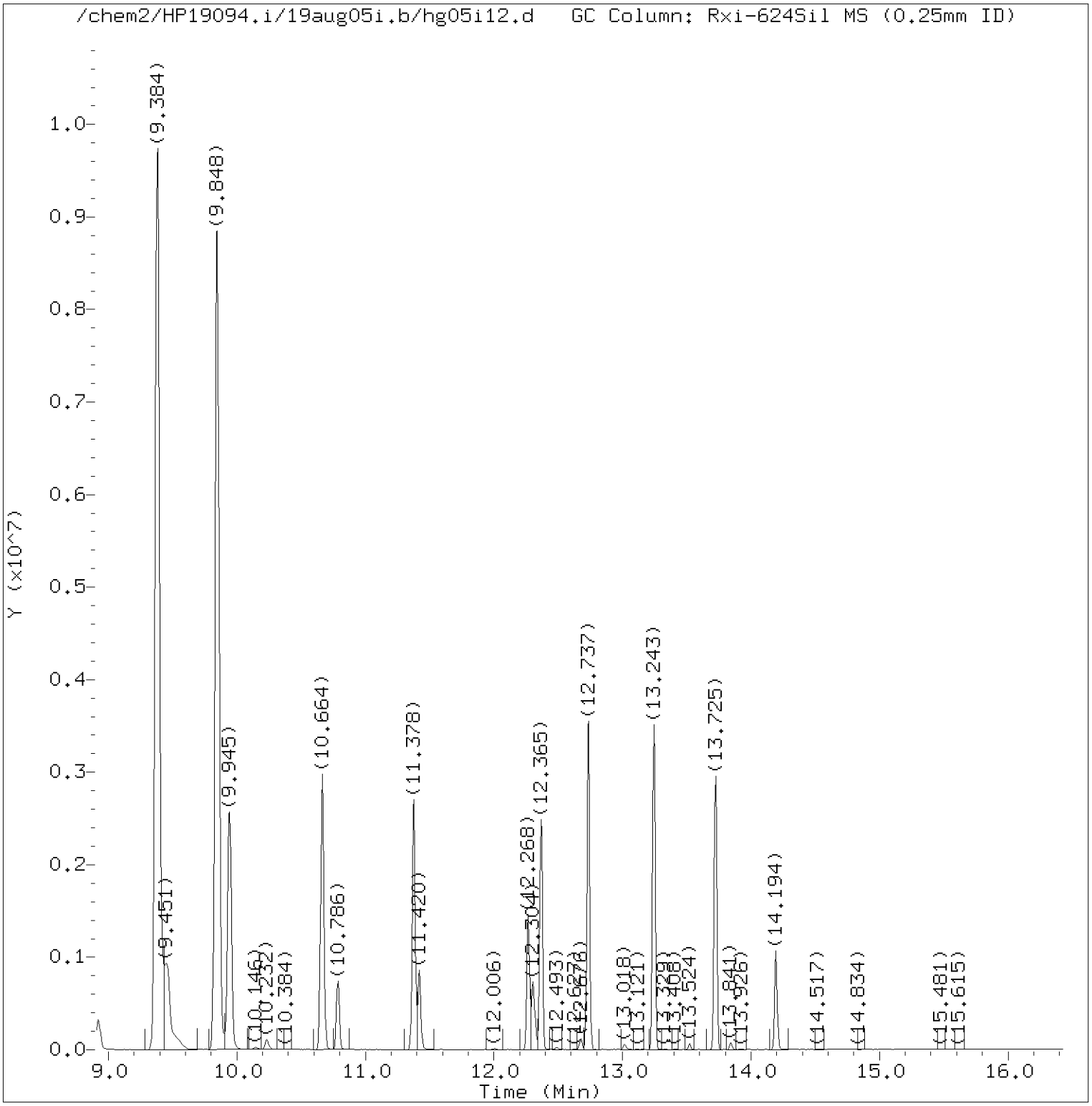
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

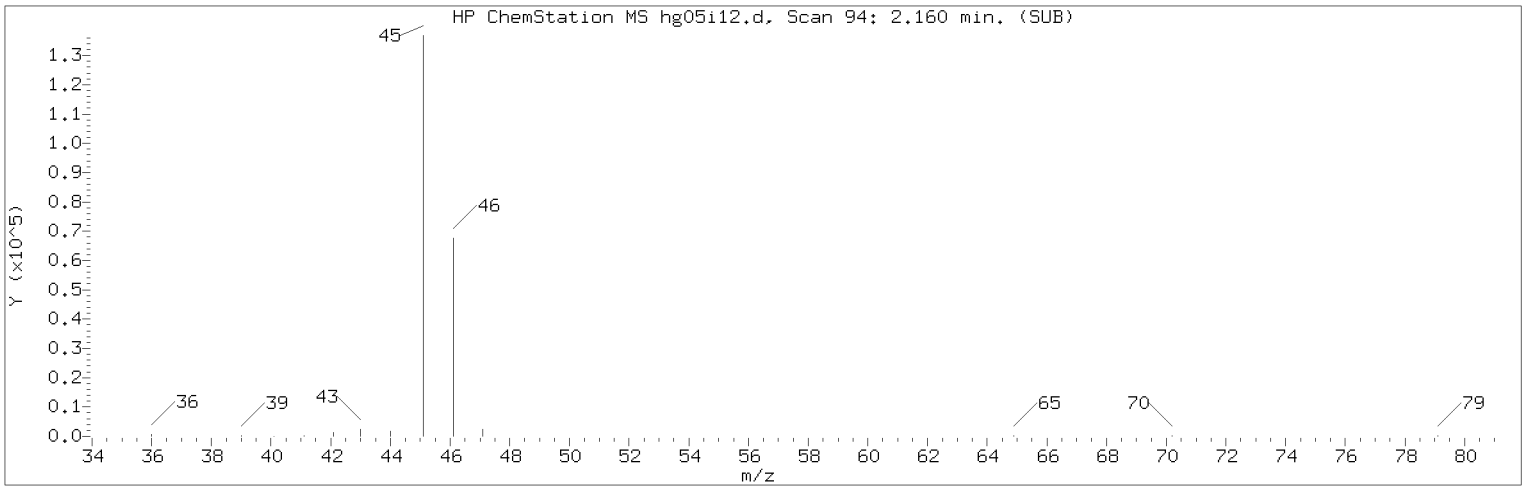
Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.160	45	656414MA	20.059
25) Acetonitrile	(1)	4.196	41	807290M	534.789
26)*t-Butyl Alcohol-d10	(1)	4.440	65	92363M	50.000
36) Vinyl Acetate	(2)	5.525	43	729549	10.064
43) Methyl Acrylate	(2)	6.458	55	1215268M	50.909
53) 1-Chlorobutane	(2)	7.232	56	952154	9.994
63)*Fluorobenzene	(2)	7.958	96	1931778	10.000
77) Chloroacetonitrile	(2)	9.439	75	632965	503.520
78) 2-Chloroethyl vinyl ether	(2)	9.463	63	231805	10.422
97)*Chlorobenzene-d5	(3)	11.378	117	1565571	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	338926	21.531
112) Cyclohexanone	(1)	12.304	55	331586M	537.511
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	859547	10.000
142) Hexachloroethane	(4)	13.725	117	533737	10.328

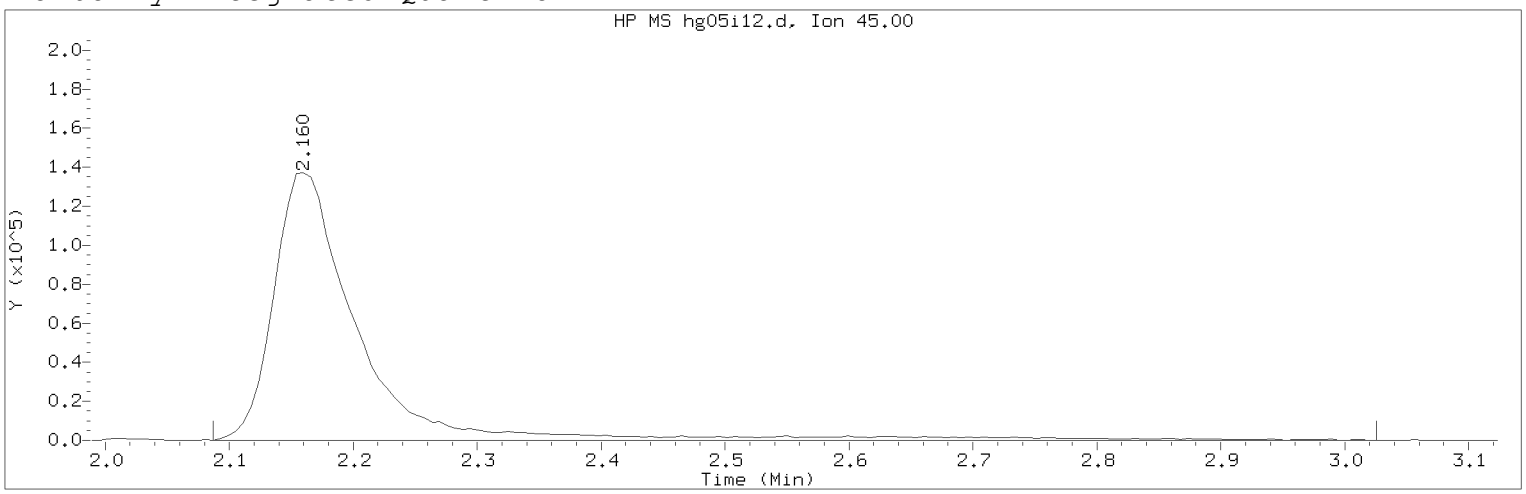
M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

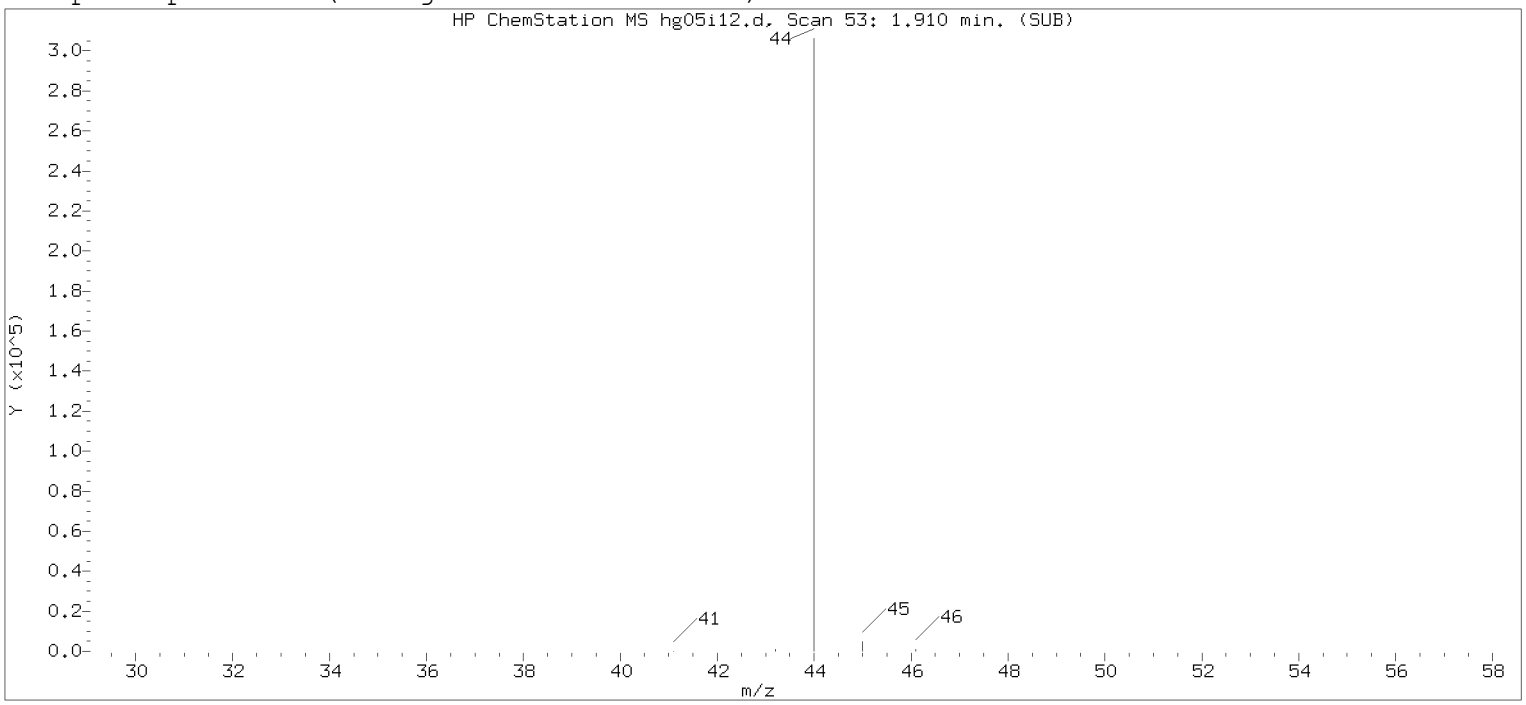
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 94
Retention Time (minutes): 2.160
Quant Ion : 45.00
Area (flag) : 656414MA
On-Column Amount (ng) : 20.0591
Integration start scan : 81 Integration stop scan: 235
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

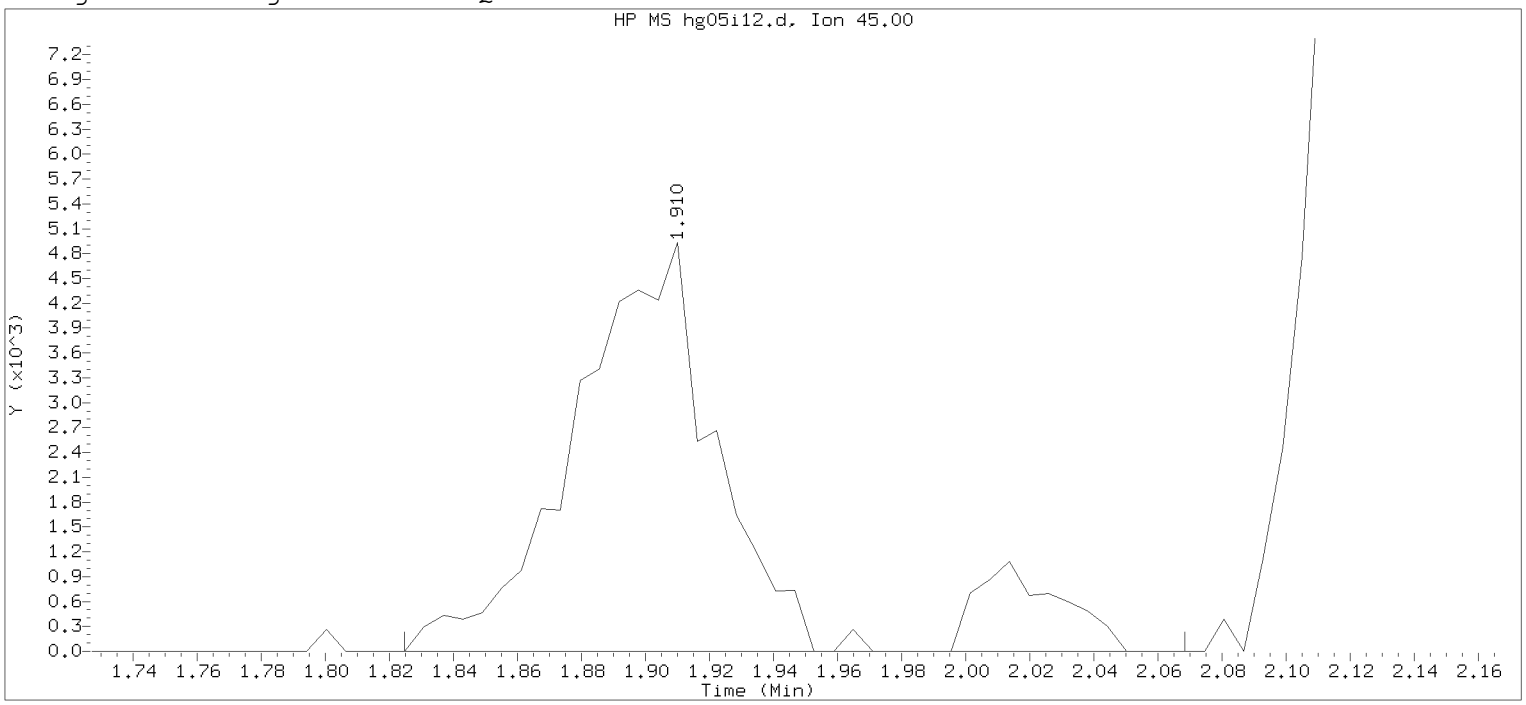
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

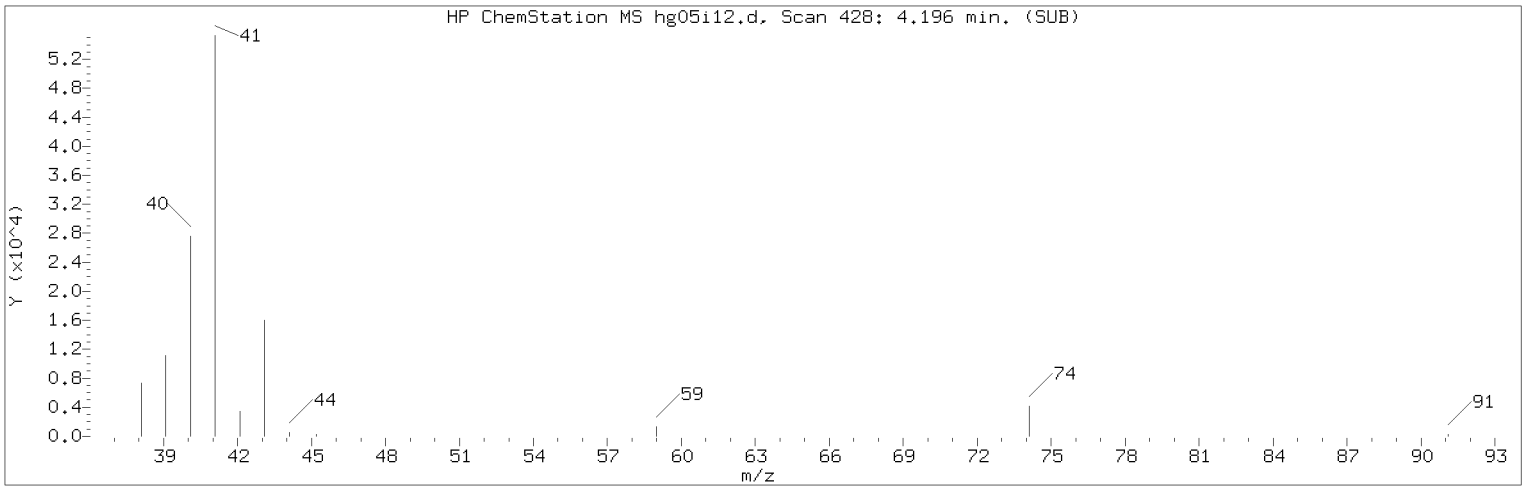
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:18 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

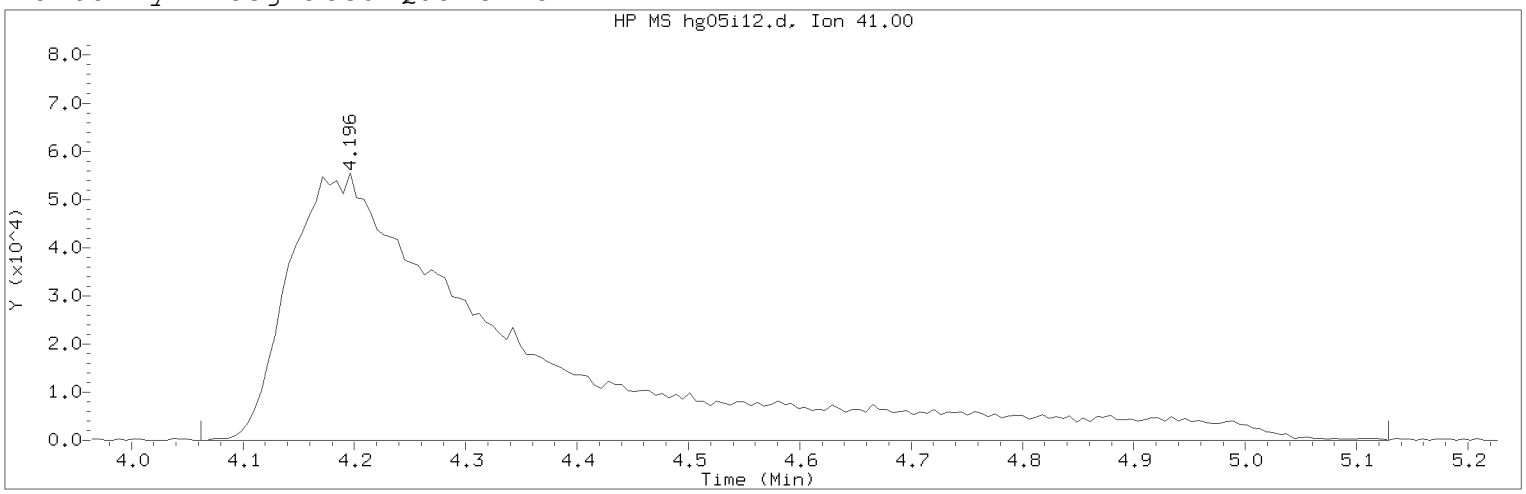
Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 53		
Retention Time (minutes)	: 1.910		
Quant Ion	: 45.00		
Area	: 16961		
On-column Amount (ng)	: 0.6273		
Integration start scan	: 38	Integration stop scan:	78
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used for meaning 'Analyst'

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

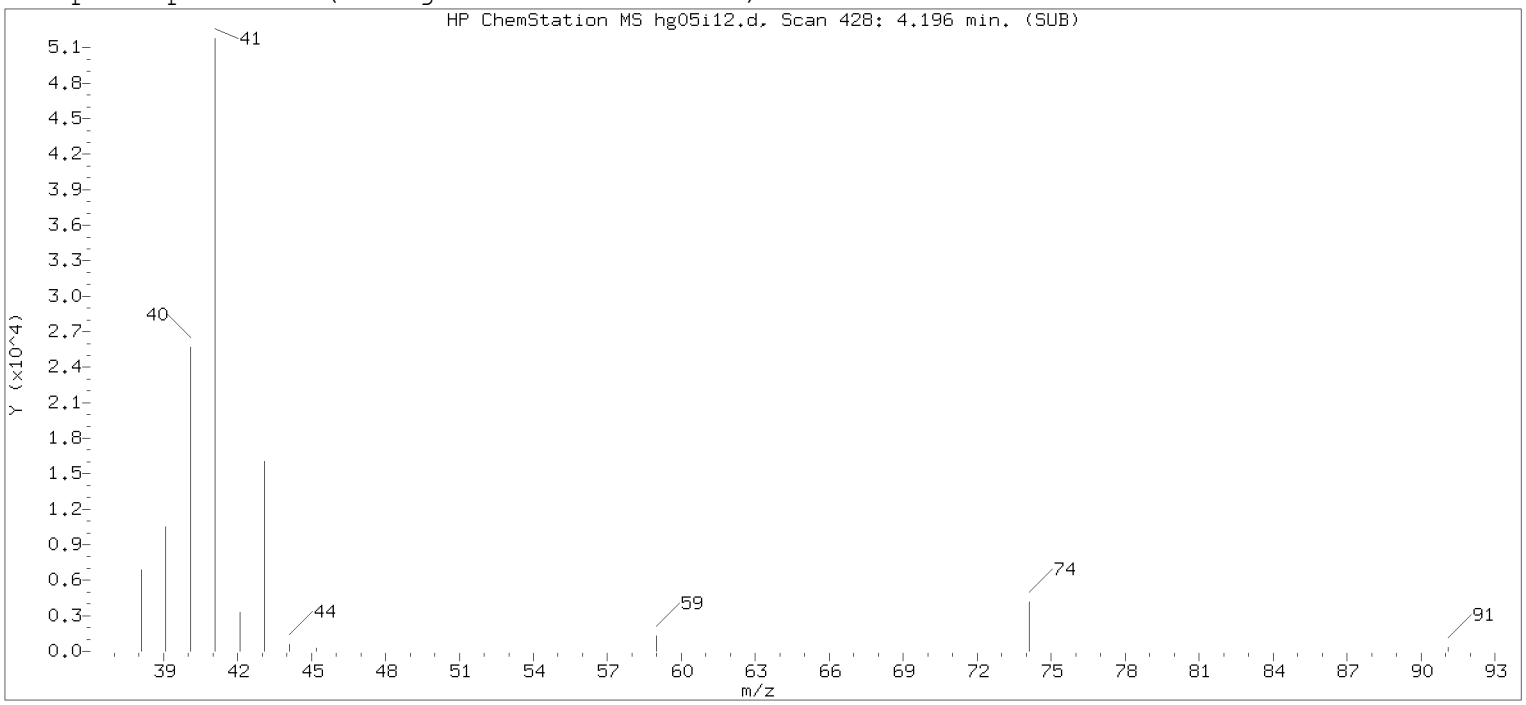
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 428
Retention Time (minutes): 4.196
Quant Ion : 41.00
Area (flag) : 807290M
On-Column Amount (ng) : 534.7893
Integration start scan : 405 Integration stop scan: 580
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

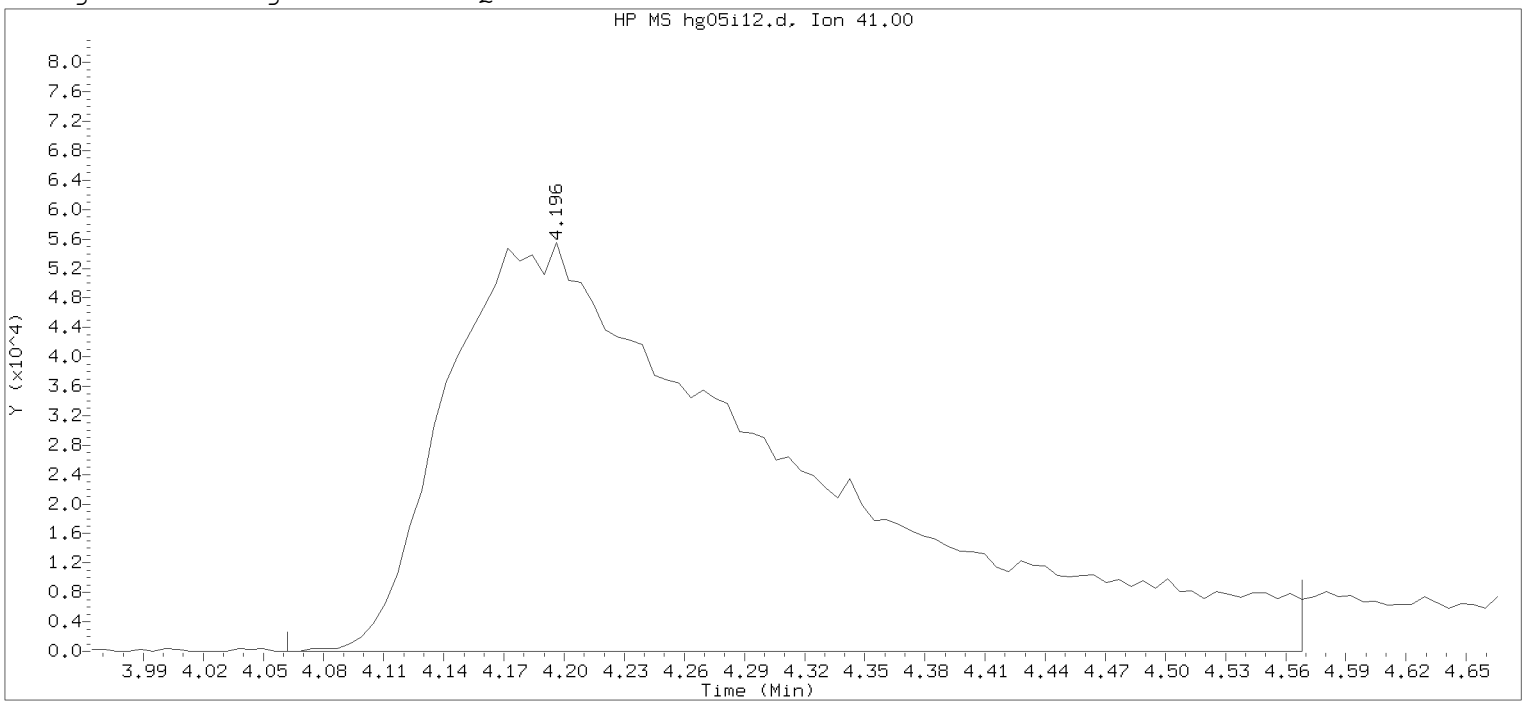
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

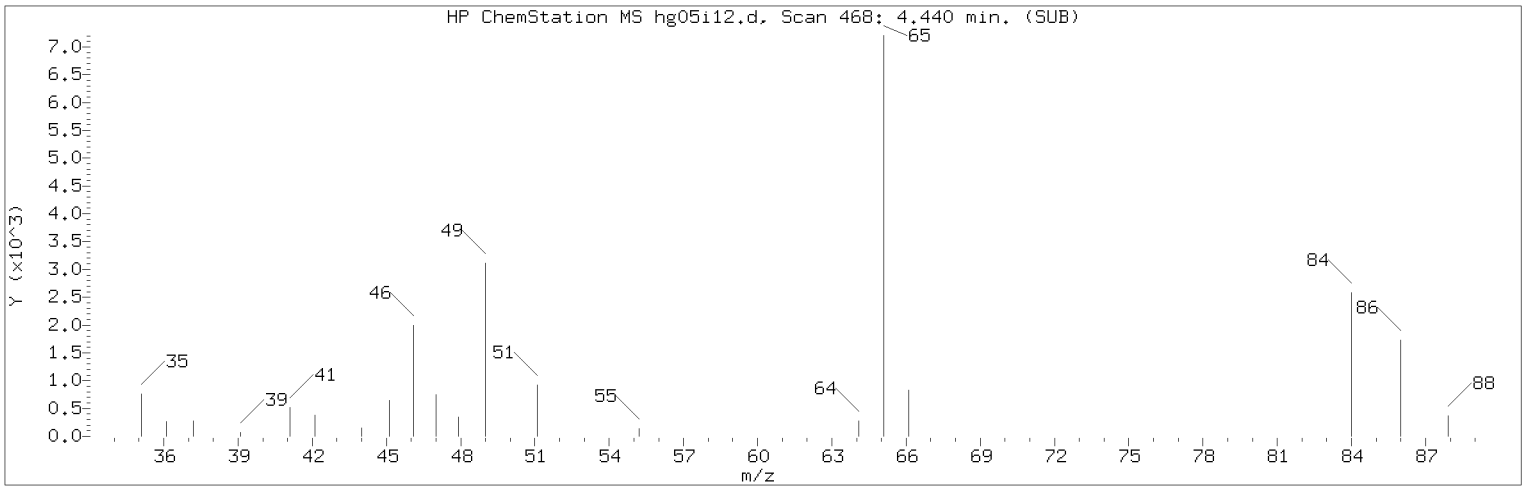
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:18 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

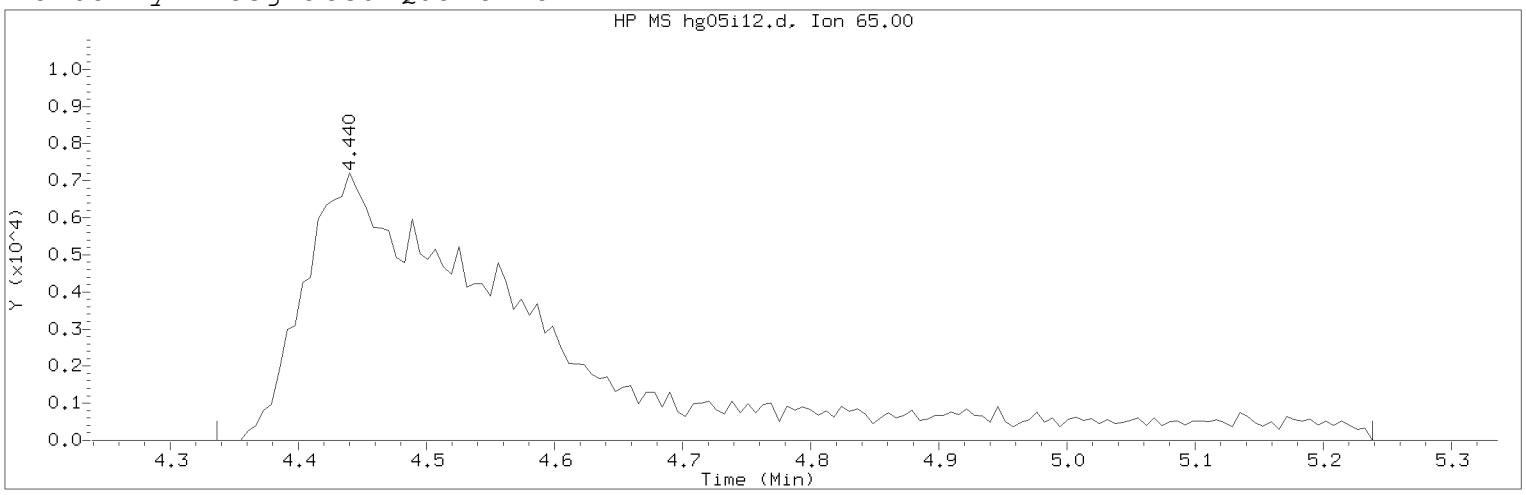
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 428
Retention Time (minutes): 4.196
Quant Ion : 41.00
Area : 663123
On-column Amount (ng) : 443.3451
Integration start scan : 405 Integration stop scan: 488
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

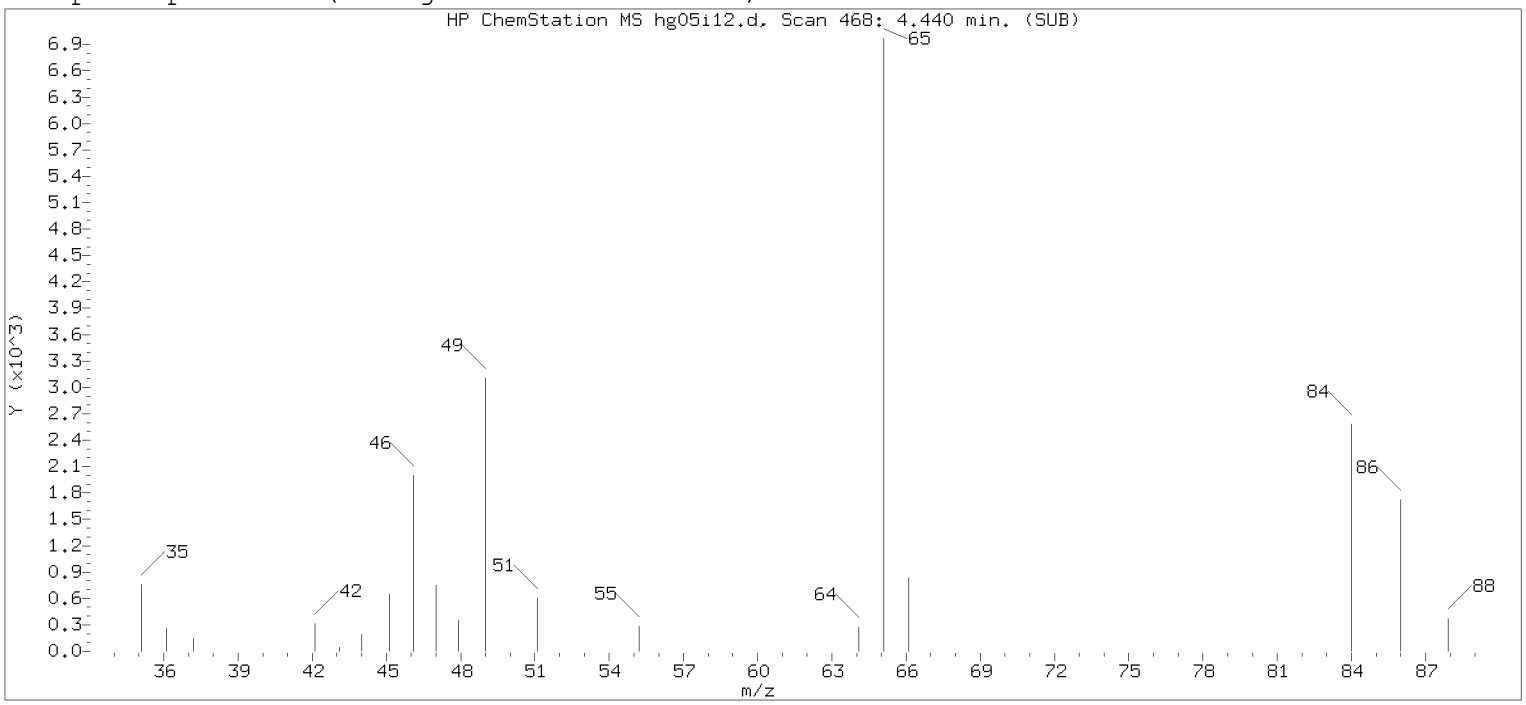
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 468
Retention Time (minutes): 4.440
Quant Ion : 65.00
Area (flag) : 92363M
On-Column Amount (ng) : 50.0000
Integration start scan : 450 Integration stop scan: 598
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

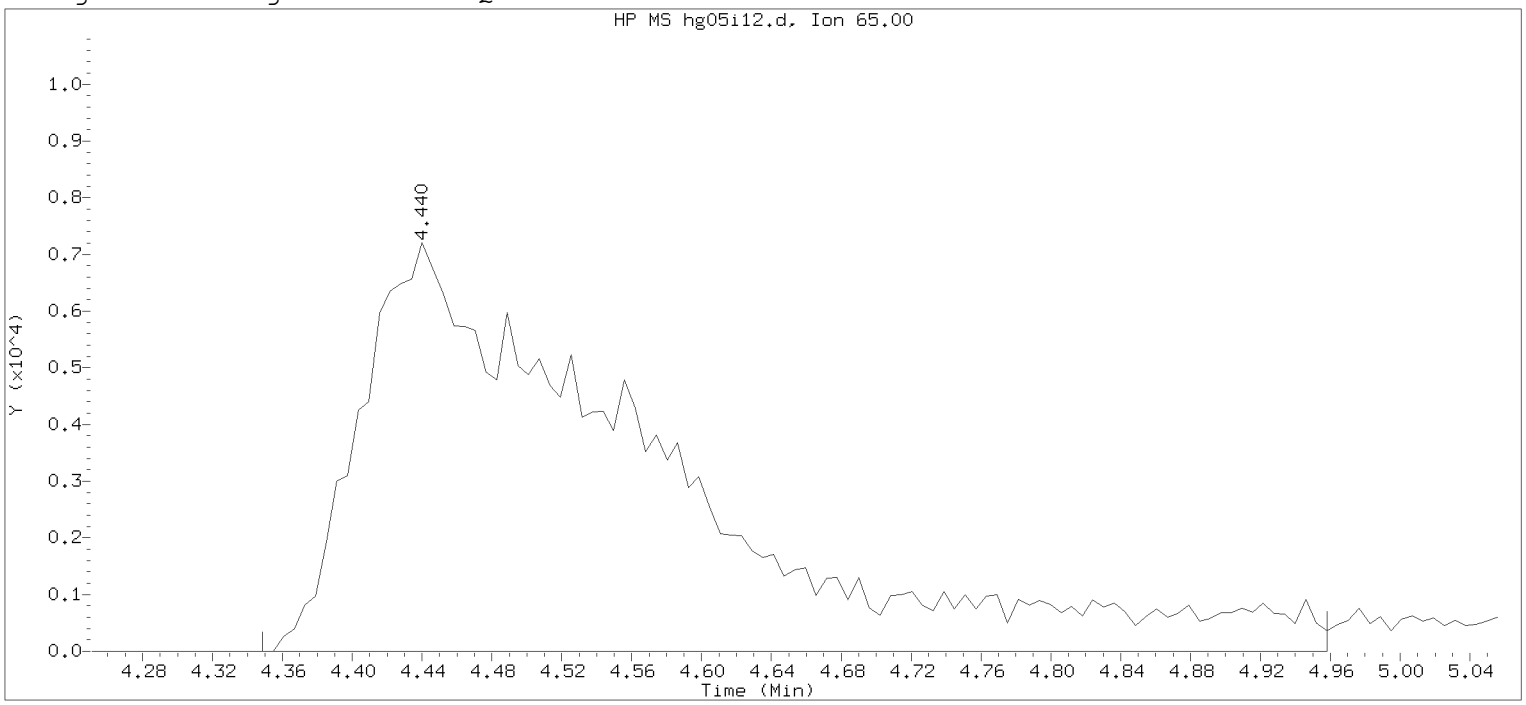
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

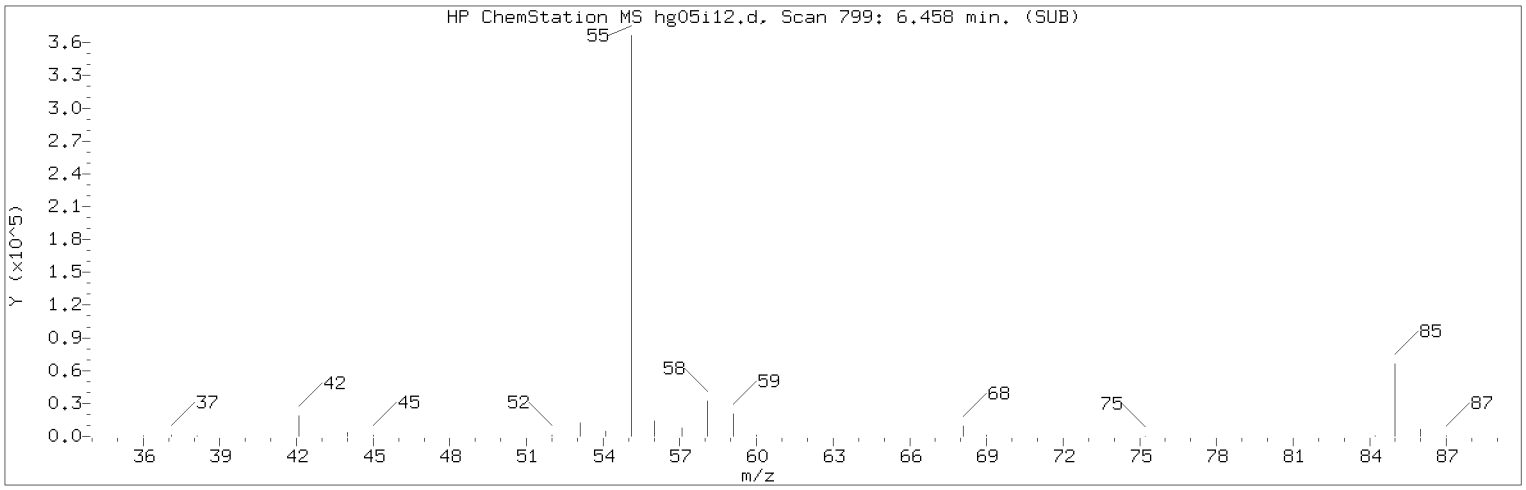
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:18 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

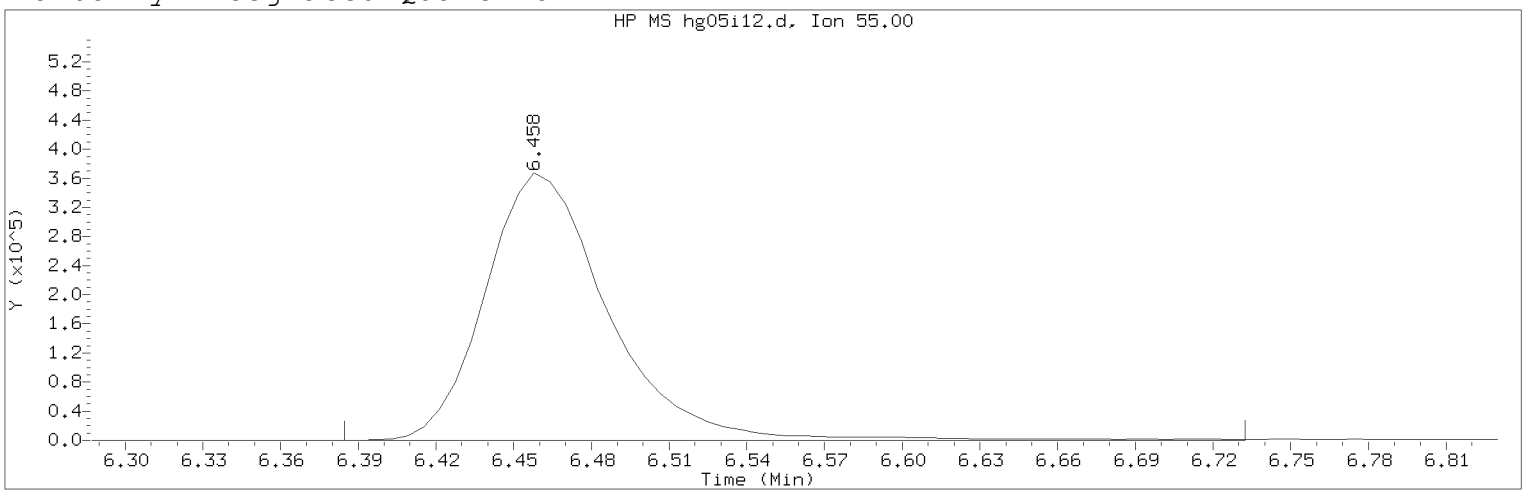
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 468
Retention Time (minutes): 4.440
Quant Ion : 65.00
Area : 84012
On-column Amount (ng) : 50.0000
Integration start scan : 452 Integration stop scan: 552
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used. AE mcampbell 0954

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

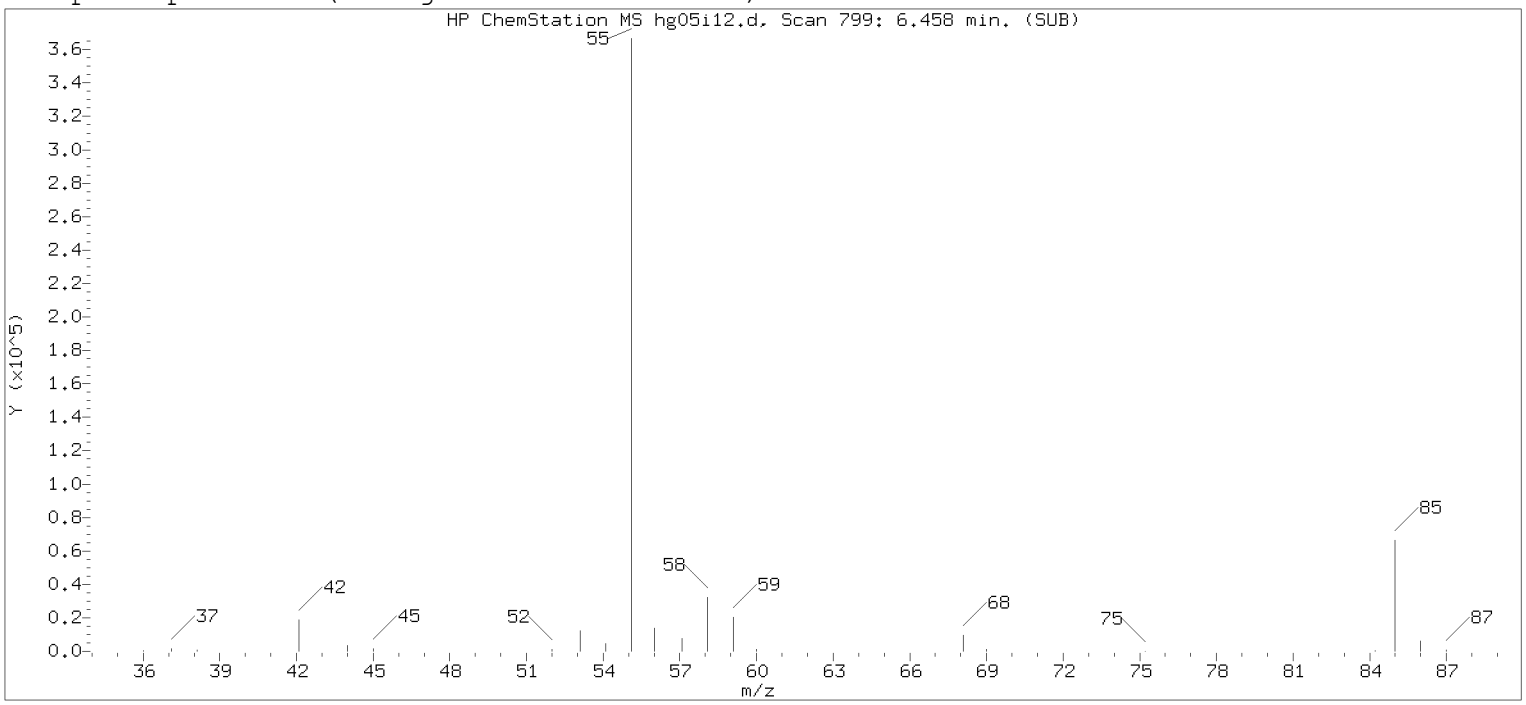
Compound Number : 43
Compound Name : Methyl Acrylate
Scan Number : 799
Retention Time (minutes): 6.458
Quant Ion : 55.00
Area (flag) : 1215268M
On-Column Amount (ng) : 50.9094
Integration start scan : 786 Integration stop scan: 843
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

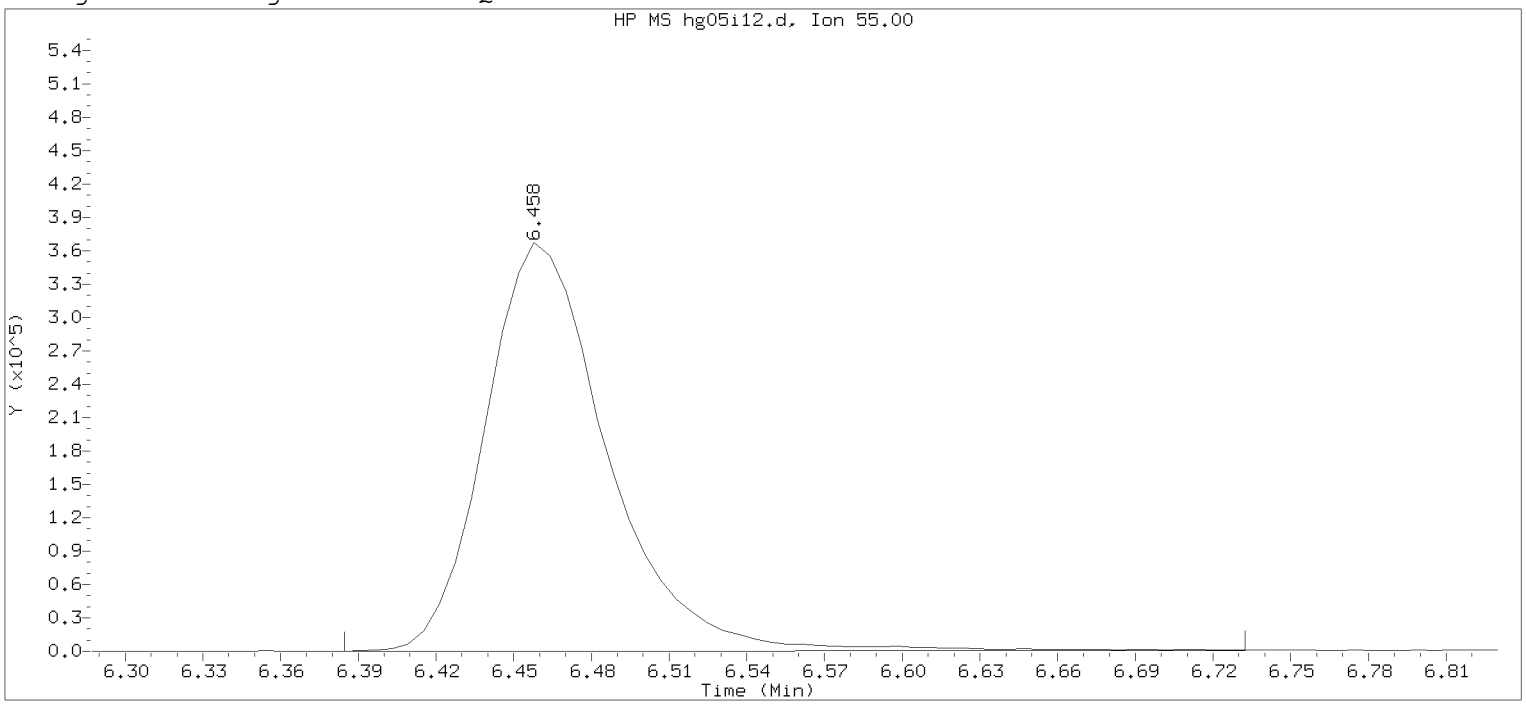
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

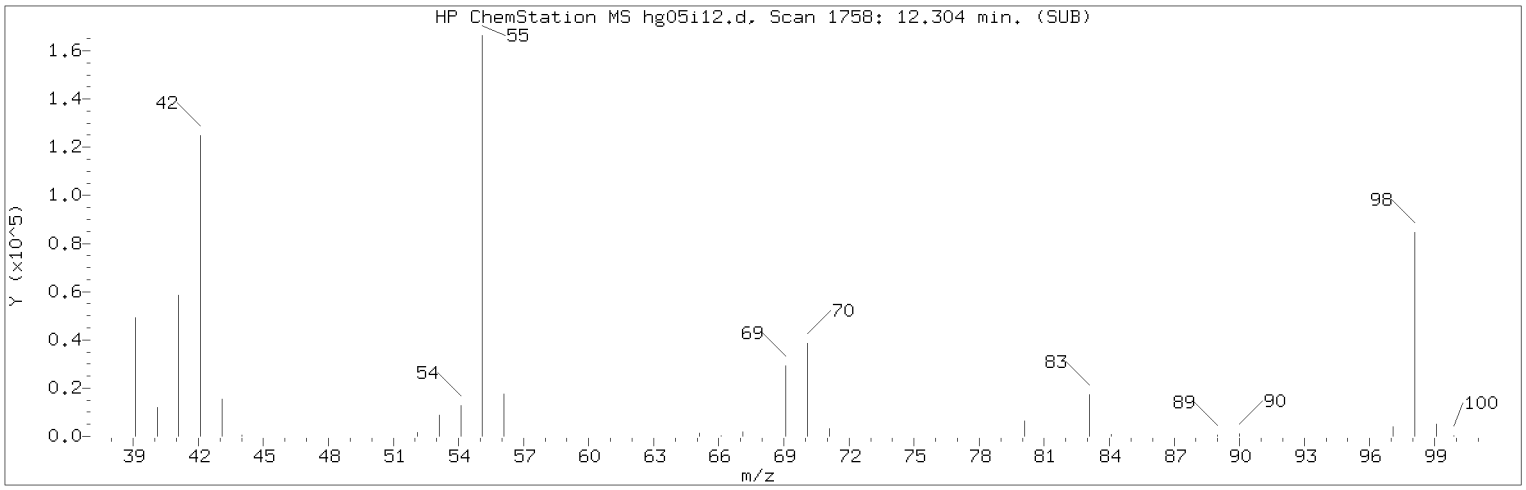
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:18 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

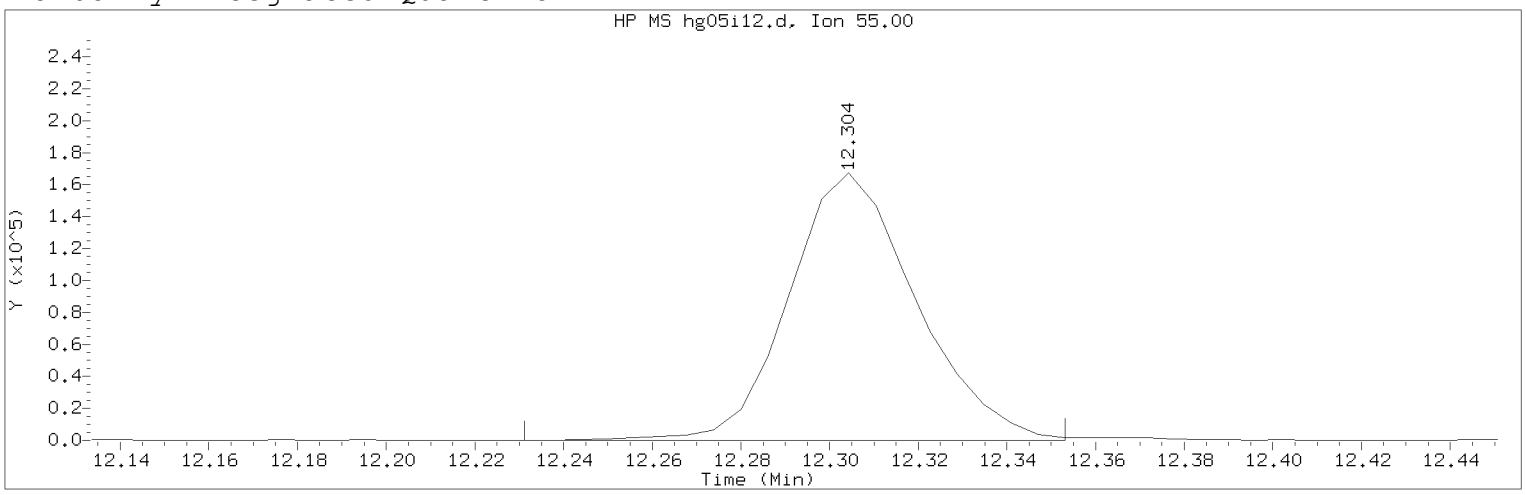
Compound Number : 43
Compound Name : Methyl Acrylate
Scan Number : 799
Retention Time (minutes): 6.458
Quant Ion : 55.00
Area : 1211083
On-column Amount (ng) : 49.6996
Integration start scan : 786 Integration stop scan: 843
Y at integration start : 0 Y at integration end: 382

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD010 Lab Sample ID: VSTD010

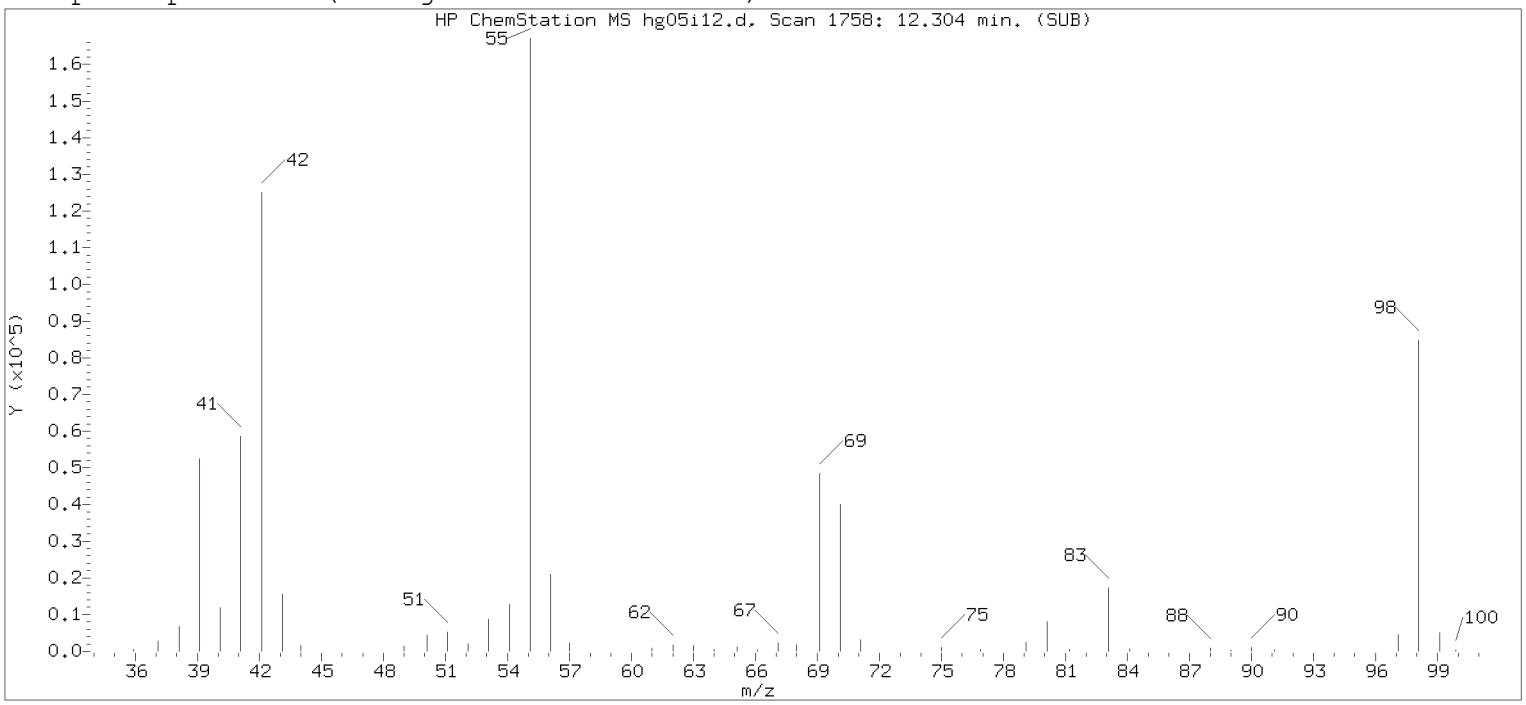
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 331586M
On-Column Amount (ng) : 537.5106
Integration start scan : 1745 Integration stop scan: 1765
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

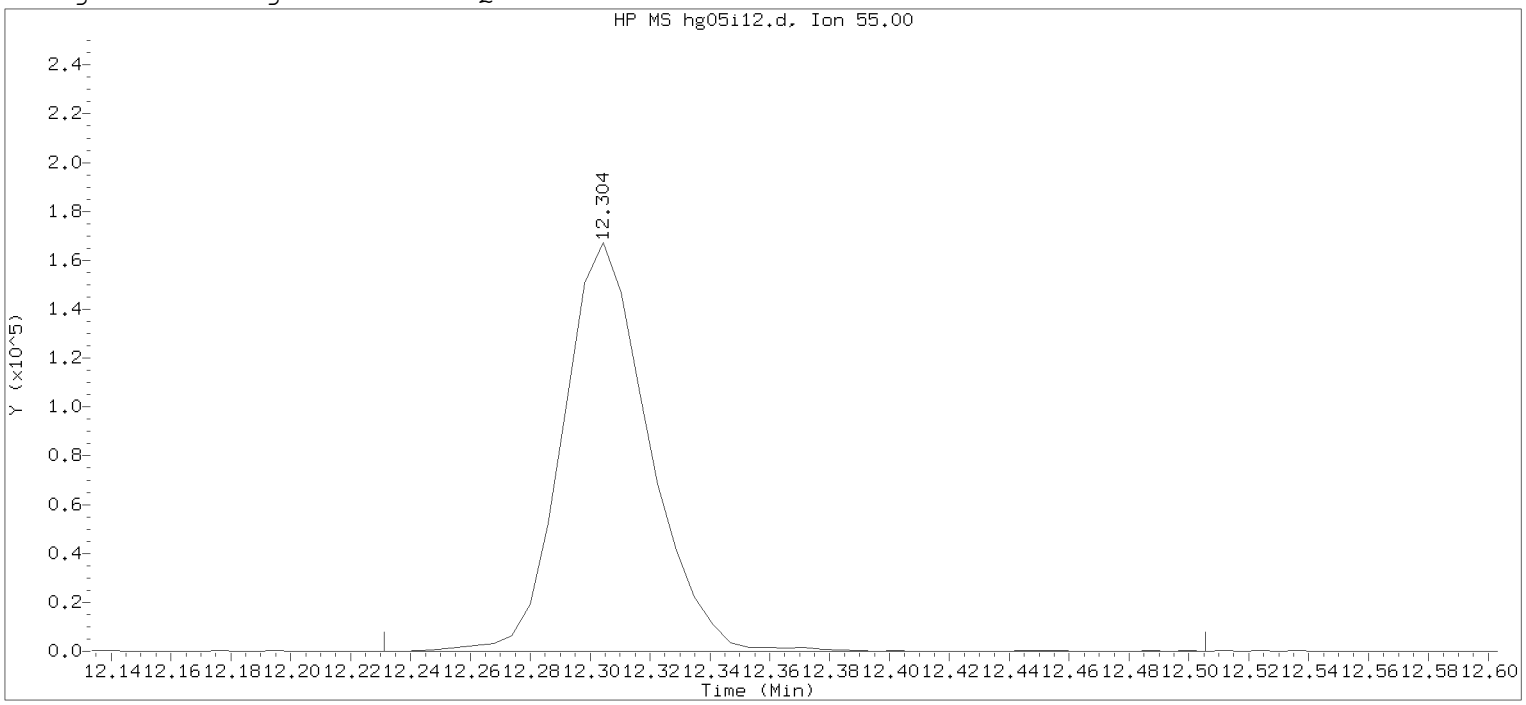
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



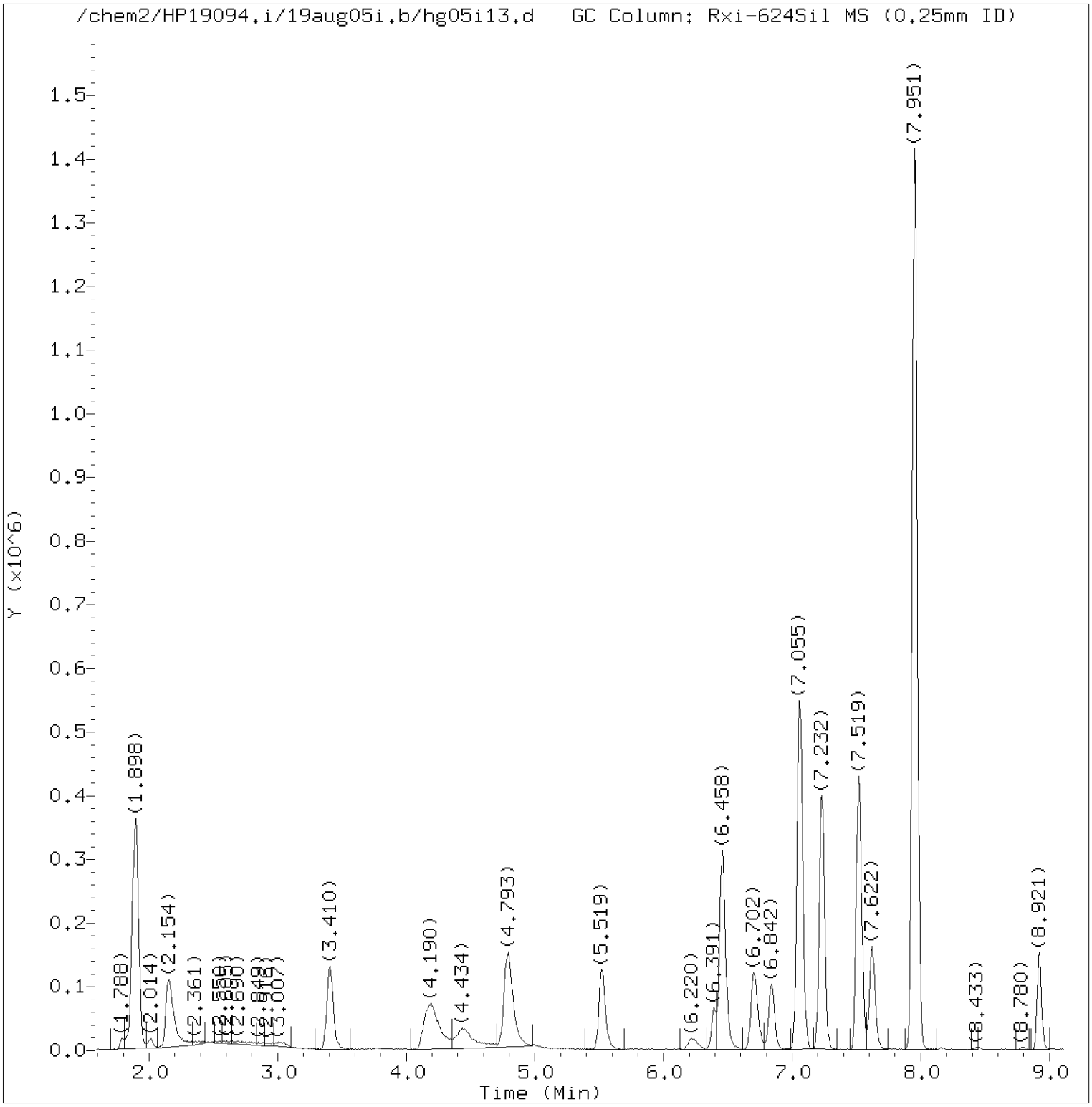
Data File: /chem2/HP19094.i/19aug05i.b/hg05i12.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 22:00 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 05-AUG-2019 22:18
Date, time and analyst ID of latest file update: 05-Aug-2019 22:18 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number	: 112		
Compound Name	: Cyclohexanone		
Scan Number	: 1758		
Retention Time (minutes)	: 12.304		
Quant Ion	: 55.00		
Area	: 334541		
On-column Amount (ng)	: 537.6559		
Integration start scan	: 1745	Integration stop scan:	1790
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:51.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

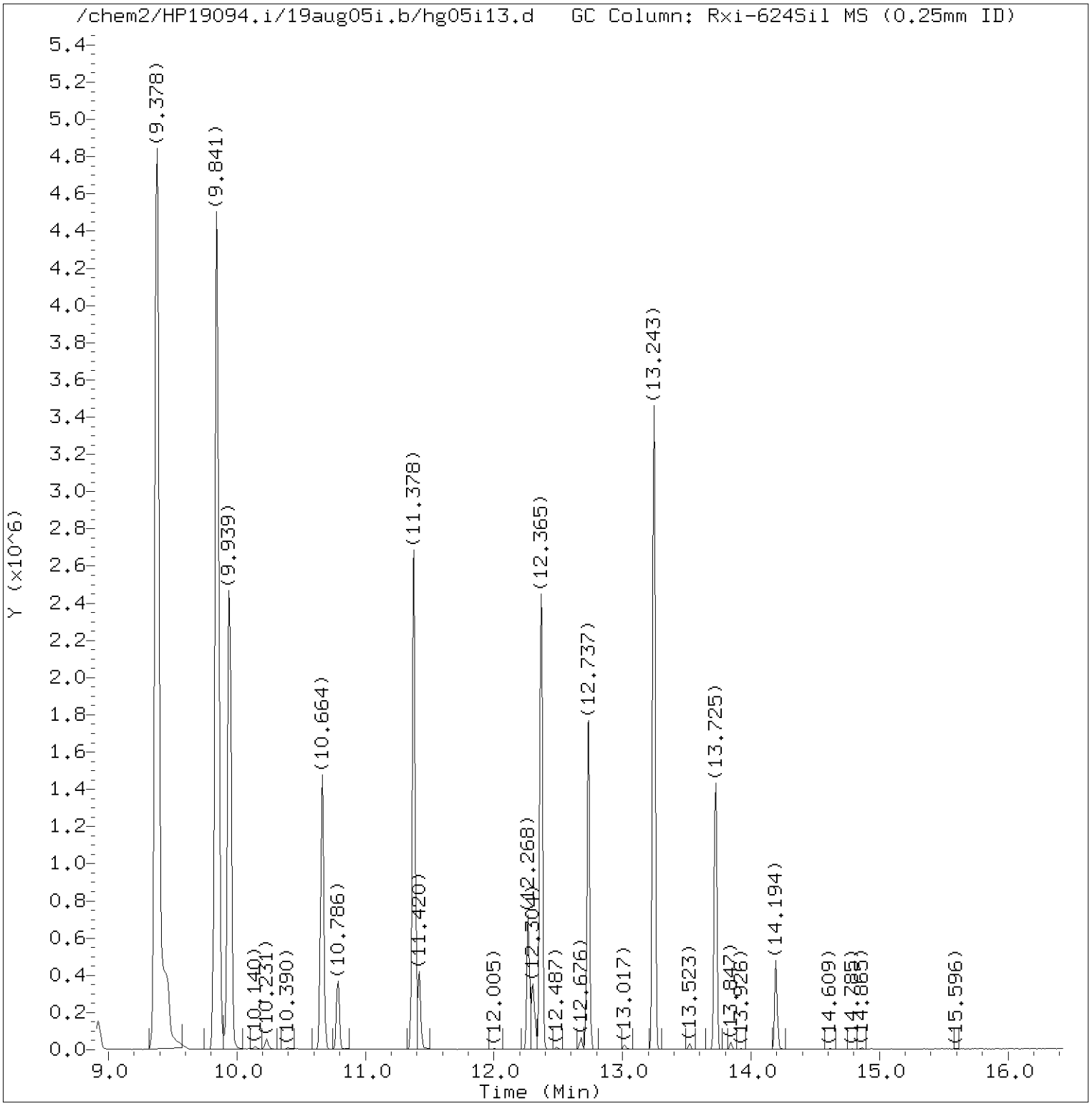
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

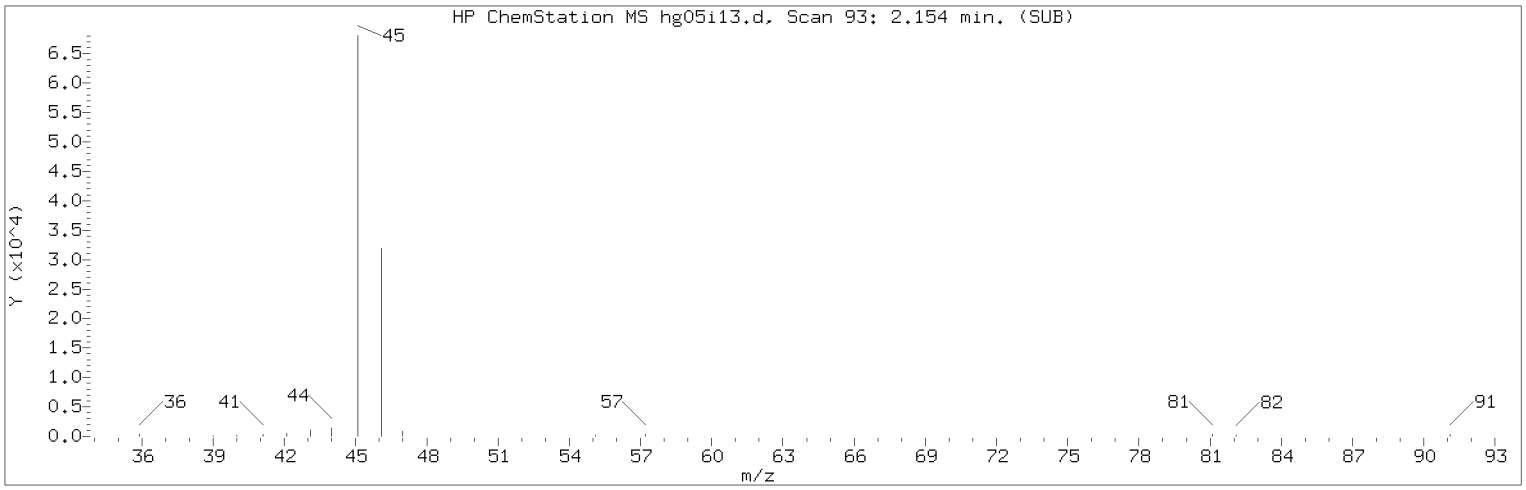
Sample Name: VSTD005 Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	321104M	5.492
25) Acetonitrile	(1)	4.172	41	423625M	234.016
26)*t-Butyl Alcohol-d10	(1)	4.428	65	102774	50.000
36) Vinyl Acetate	(2)	5.519	43	352063	4.875
43) Methyl Acrylate	(2)	6.458	55	596199	25.076
53) 1-Chlorobutane	(2)	7.232	56	463333	4.886
63)*Fluorobenzene	(2)	7.951	96	1923038	10.000
77) Chloroacetonitrile	(2)	9.433	75	318823	254.774
78) 2-Chloroethyl vinyl ether	(2)	9.457	63	109259	4.935
97)*Chlorobenzene-d5	(3)	11.378	117	1537503	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	164603	9.397
112) Cyclohexanone	(1)	12.304	55	165325M	241.497
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	857581	10.000
142) Hexachloroethane	(4)	13.725	117	256244	4.970

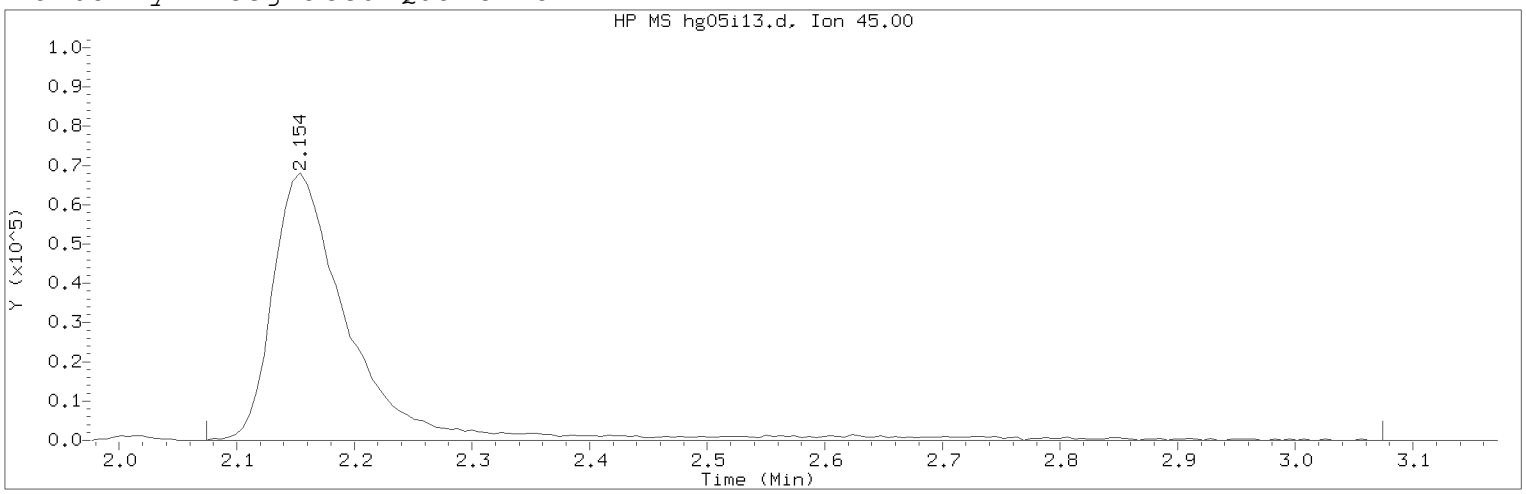
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

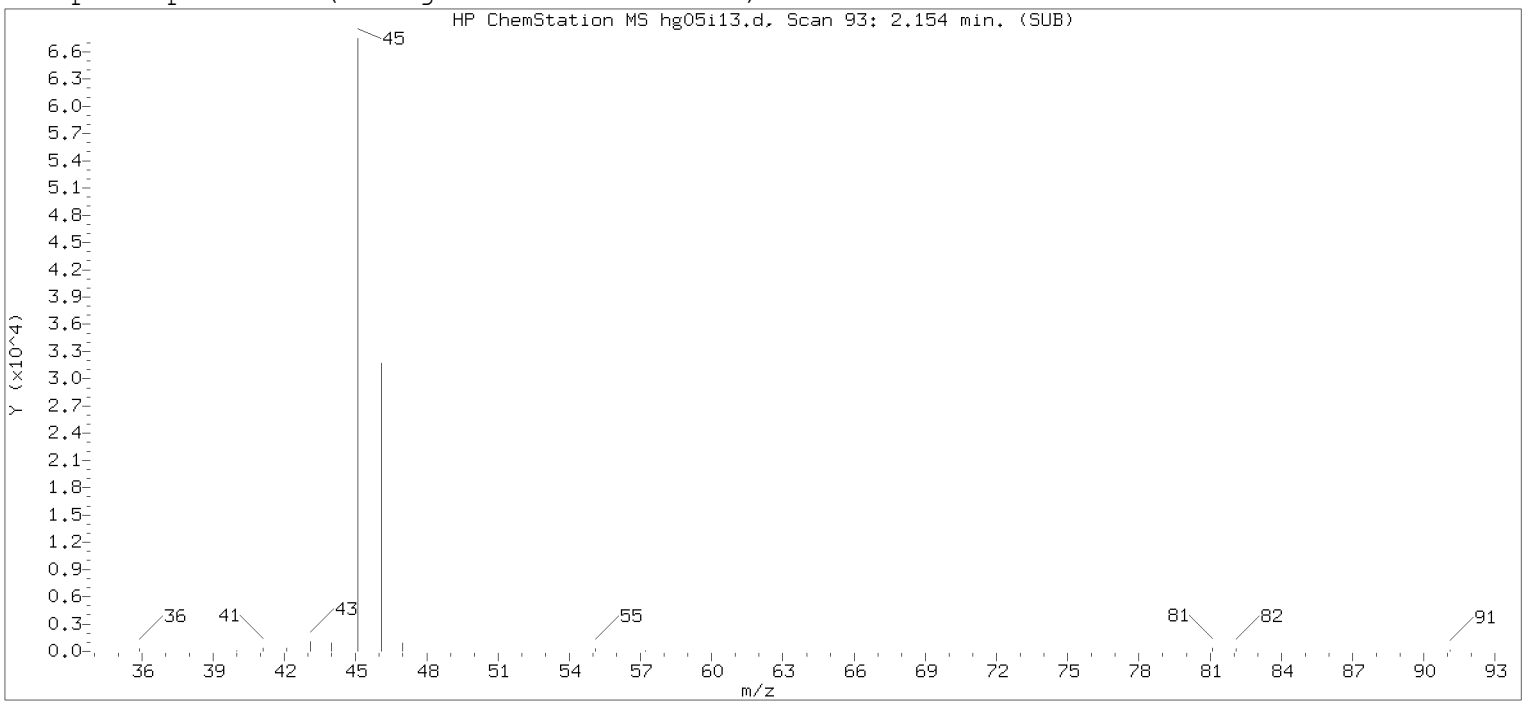
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 321104M
On-Column Amount (ng) : 5.4922
Integration start scan : 79 Integration stop scan: 243
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

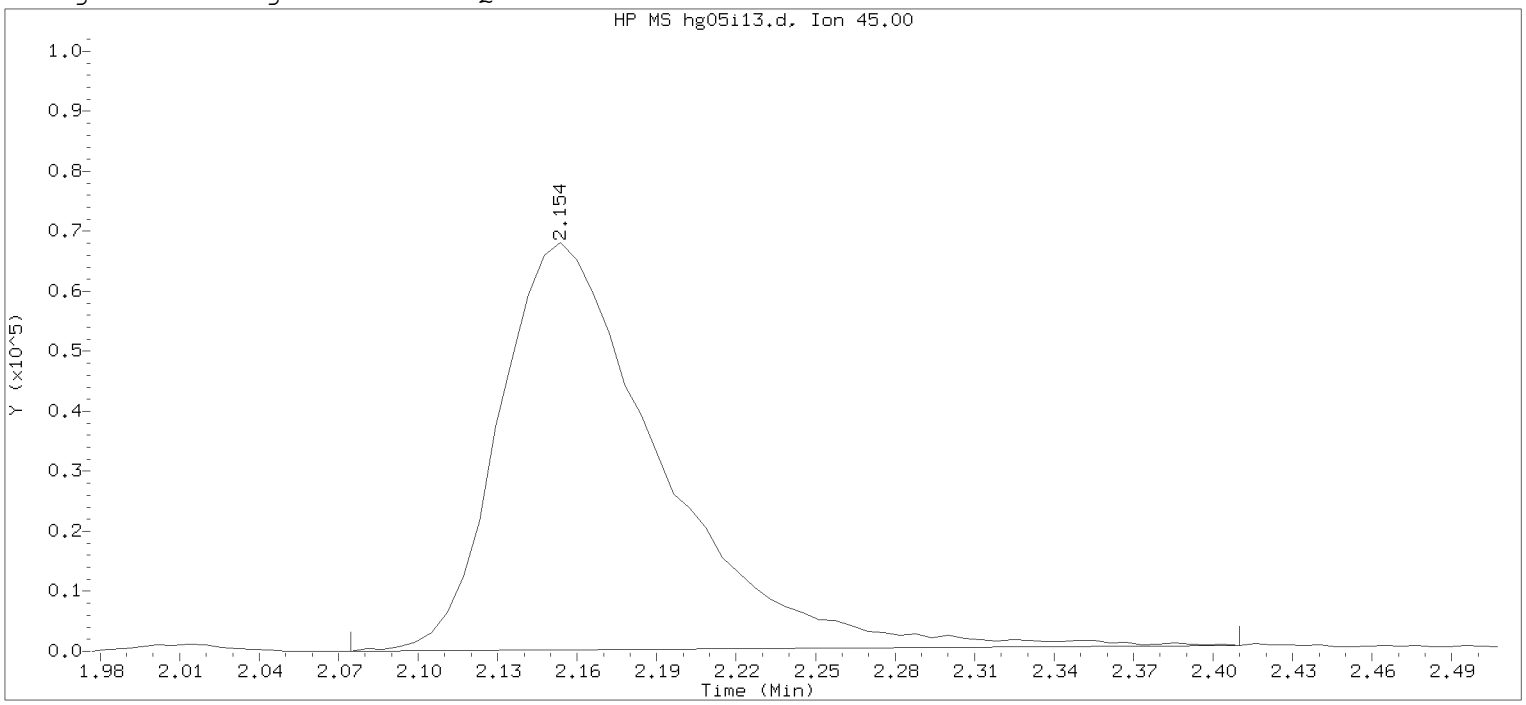
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

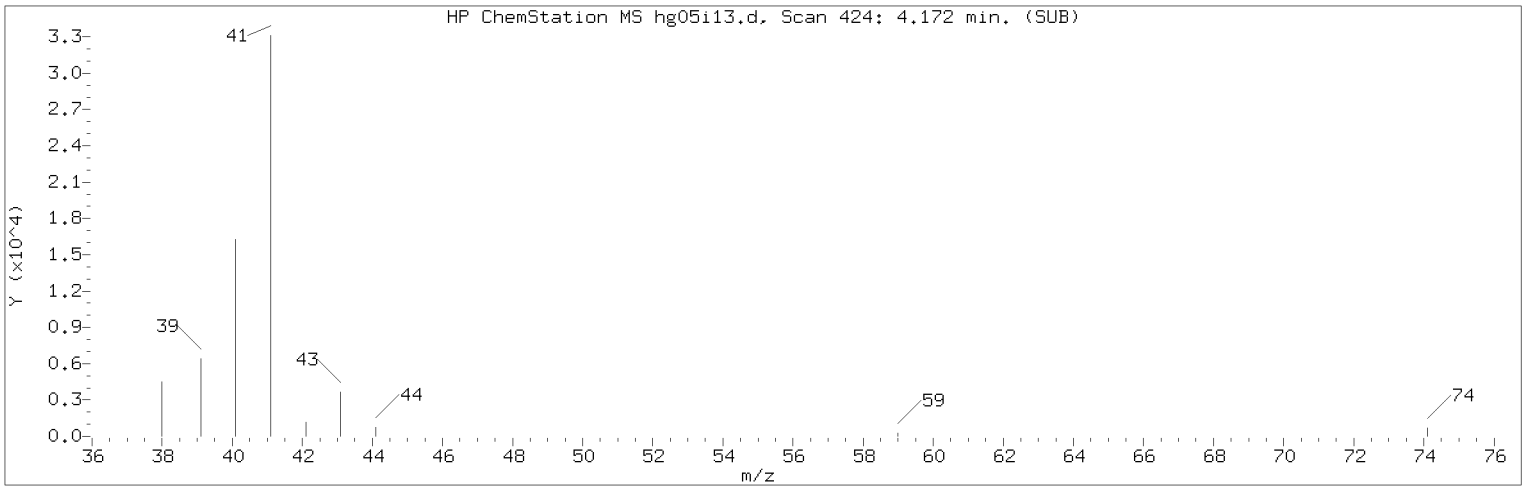
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

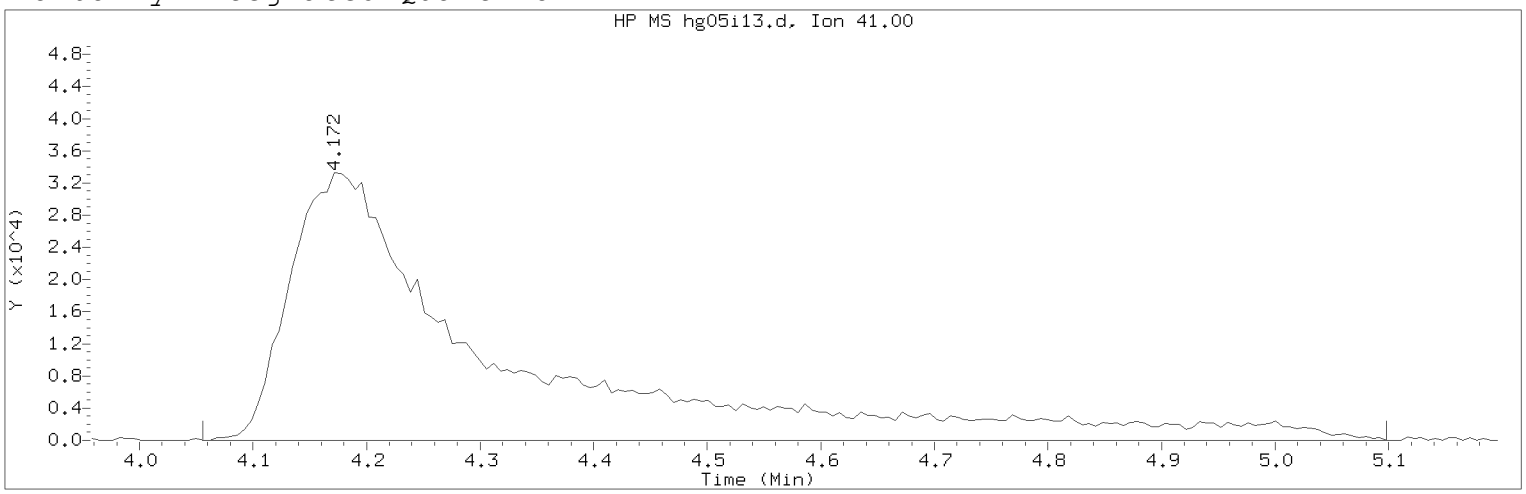
Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 93		
Retention Time (minutes)	: 2.154		
Quant Ion	: 45.00		
Area	: 287932		
On-column Amount (ng)	: 7.1490		
Integration start scan	: 79	Integration stop scan:	134
Y at integration start	: 0	Y at integration end:	913

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

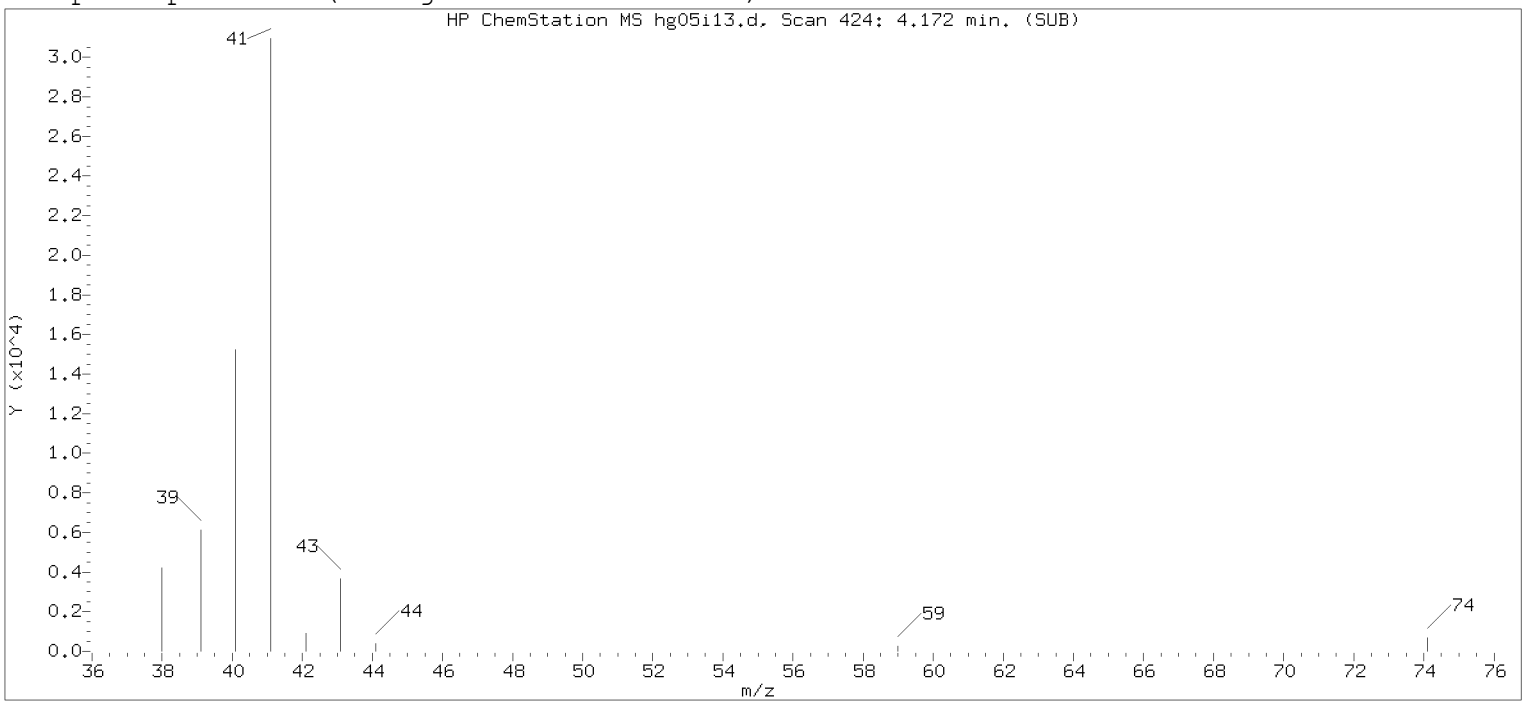
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 424
Retention Time (minutes): 4.172
Quant Ion : 41.00
Area (flag) : 423625M
On-Column Amount (ng) : 234.0162
Integration start scan : 404 Integration stop scan: 575
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

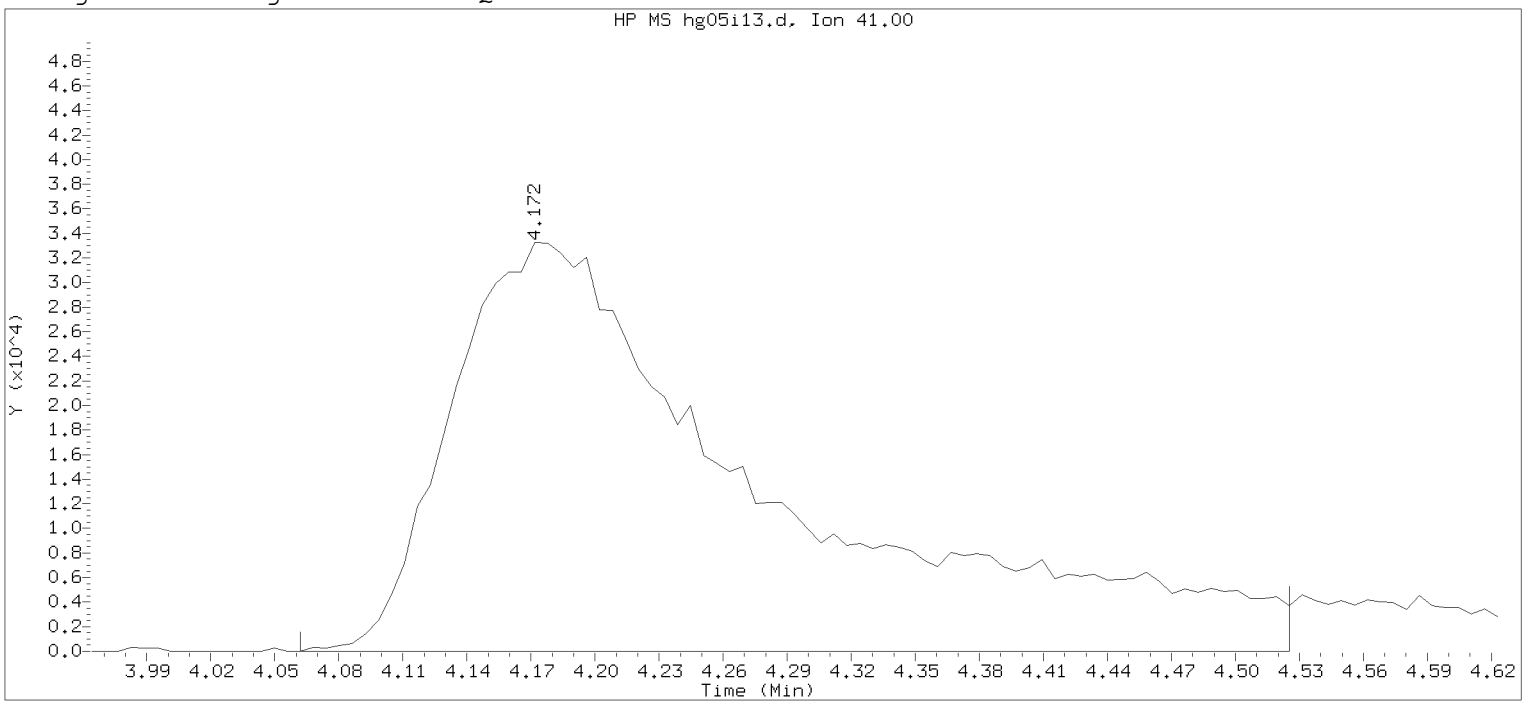
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

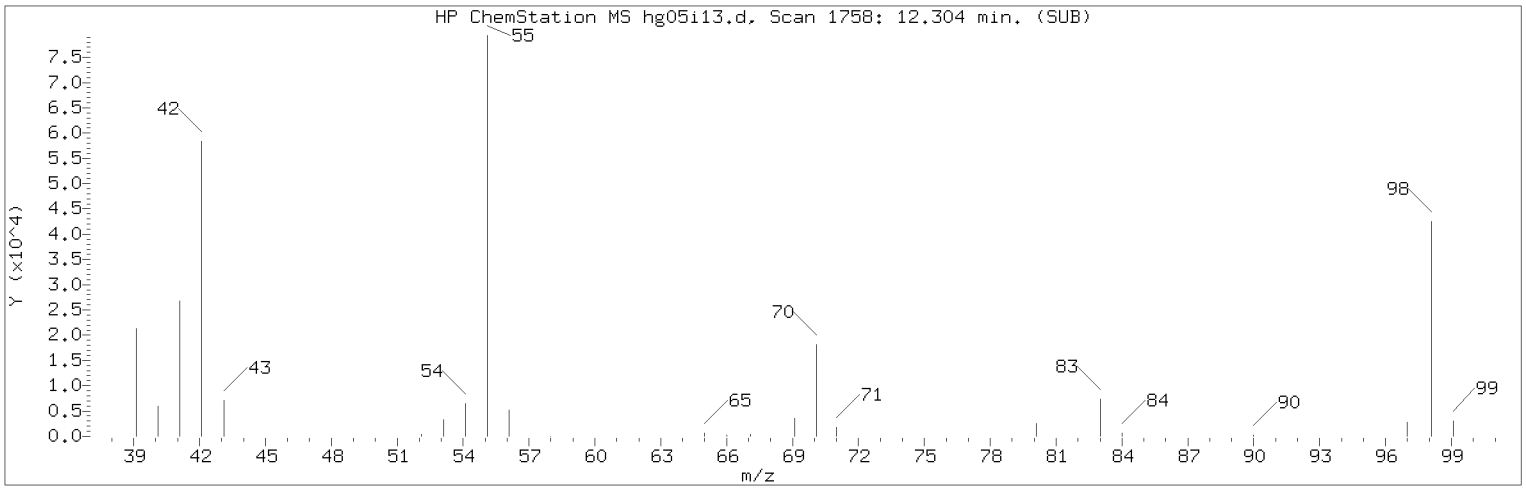
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

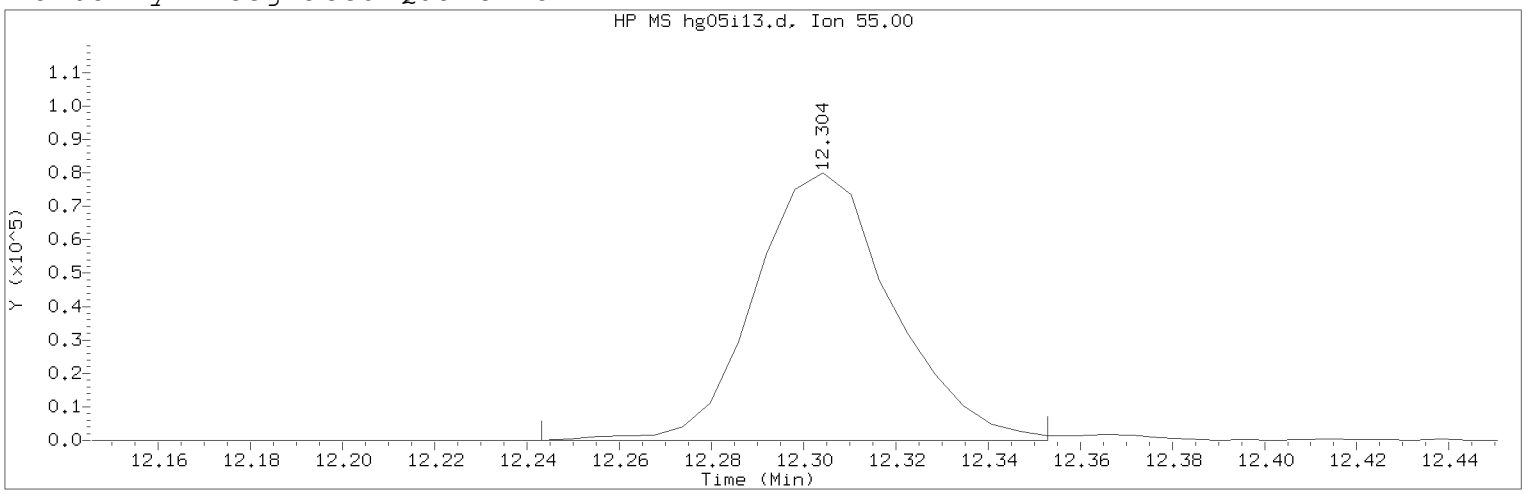
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 424
Retention Time (minutes): 4.172
Quant Ion : 41.00
Area : 341102
On-column Amount (ng) : 203.0719
Integration start scan : 405 Integration stop scan: 481
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:45 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

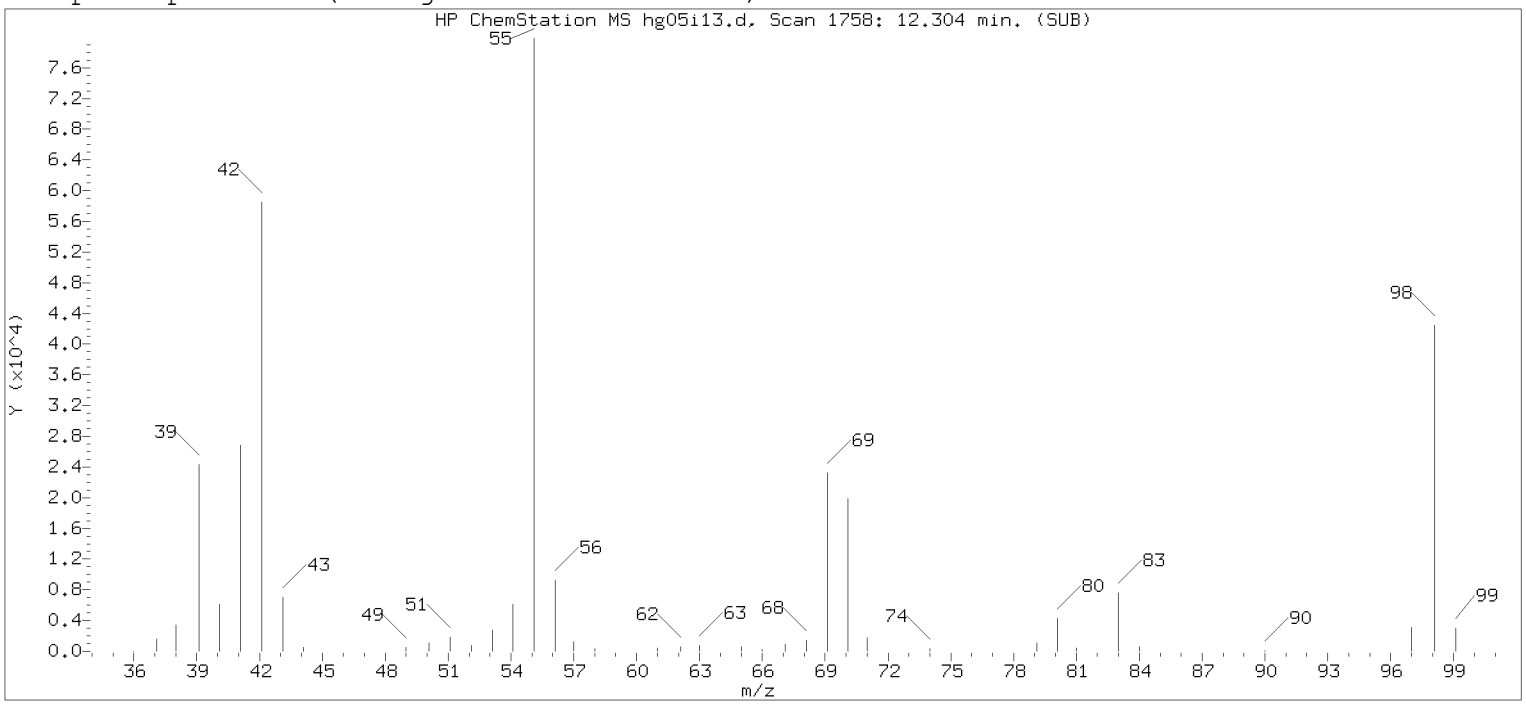
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 165325M
On-Column Amount (ng) : 241.4973
Integration start scan : 1747 Integration stop scan: 1765
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

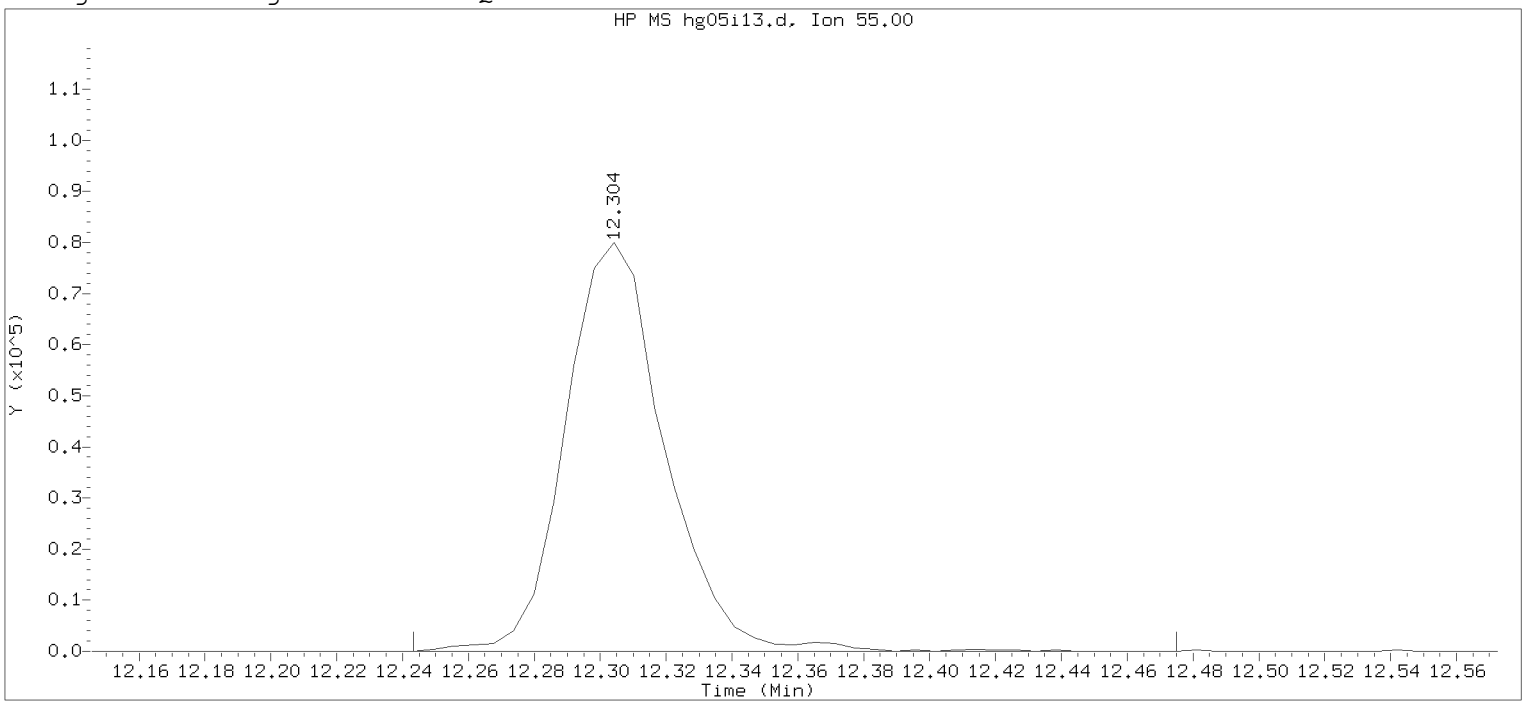
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



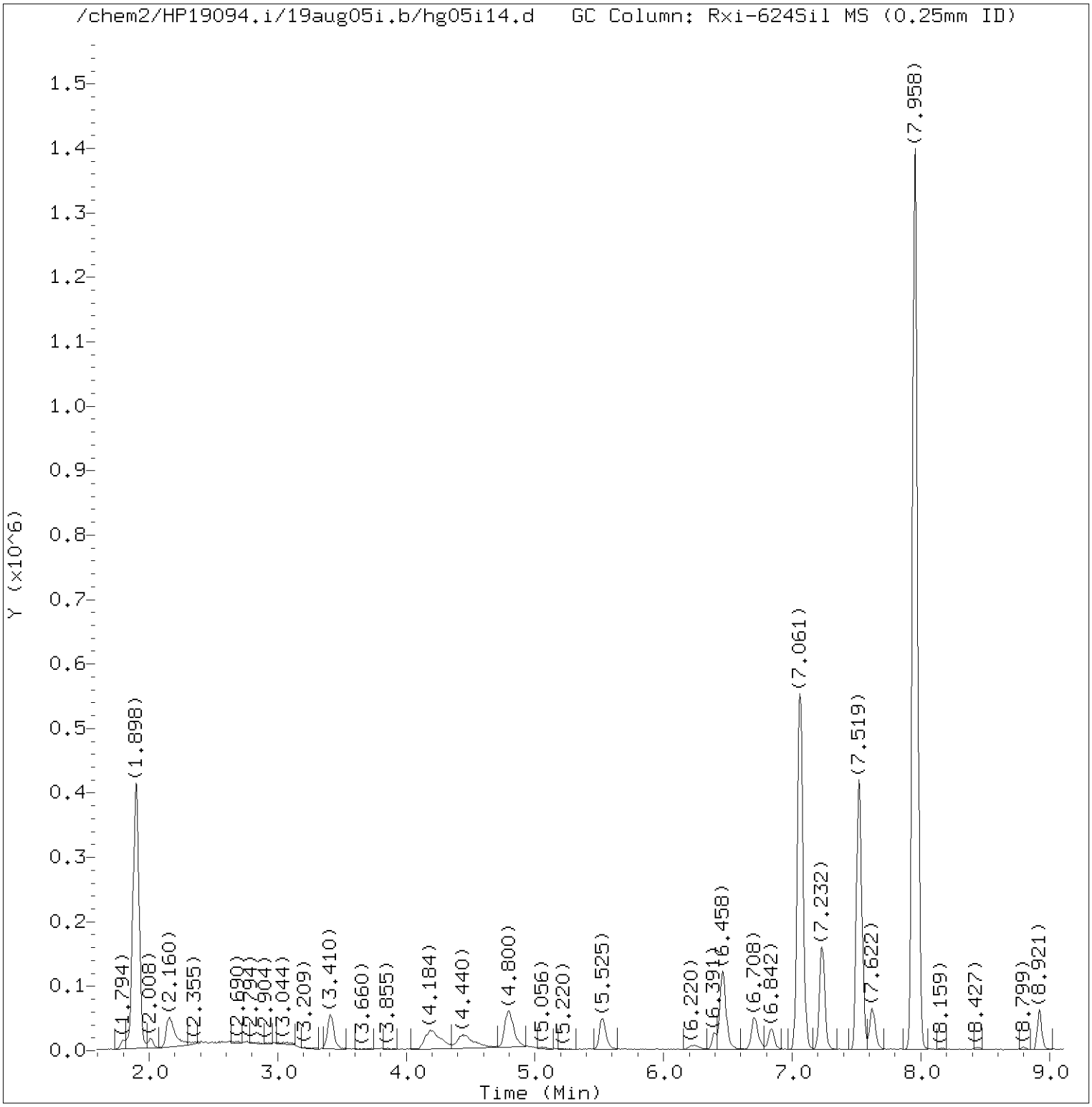
Data File: /chem2/HP19094.i/19aug05i.b/hg05i13.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:04 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD005 Lab Sample ID: VSTD005

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area : 168004
On-column Amount (ng) : 244.7503
Integration start scan : 1747 Integration stop scan: 1785
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

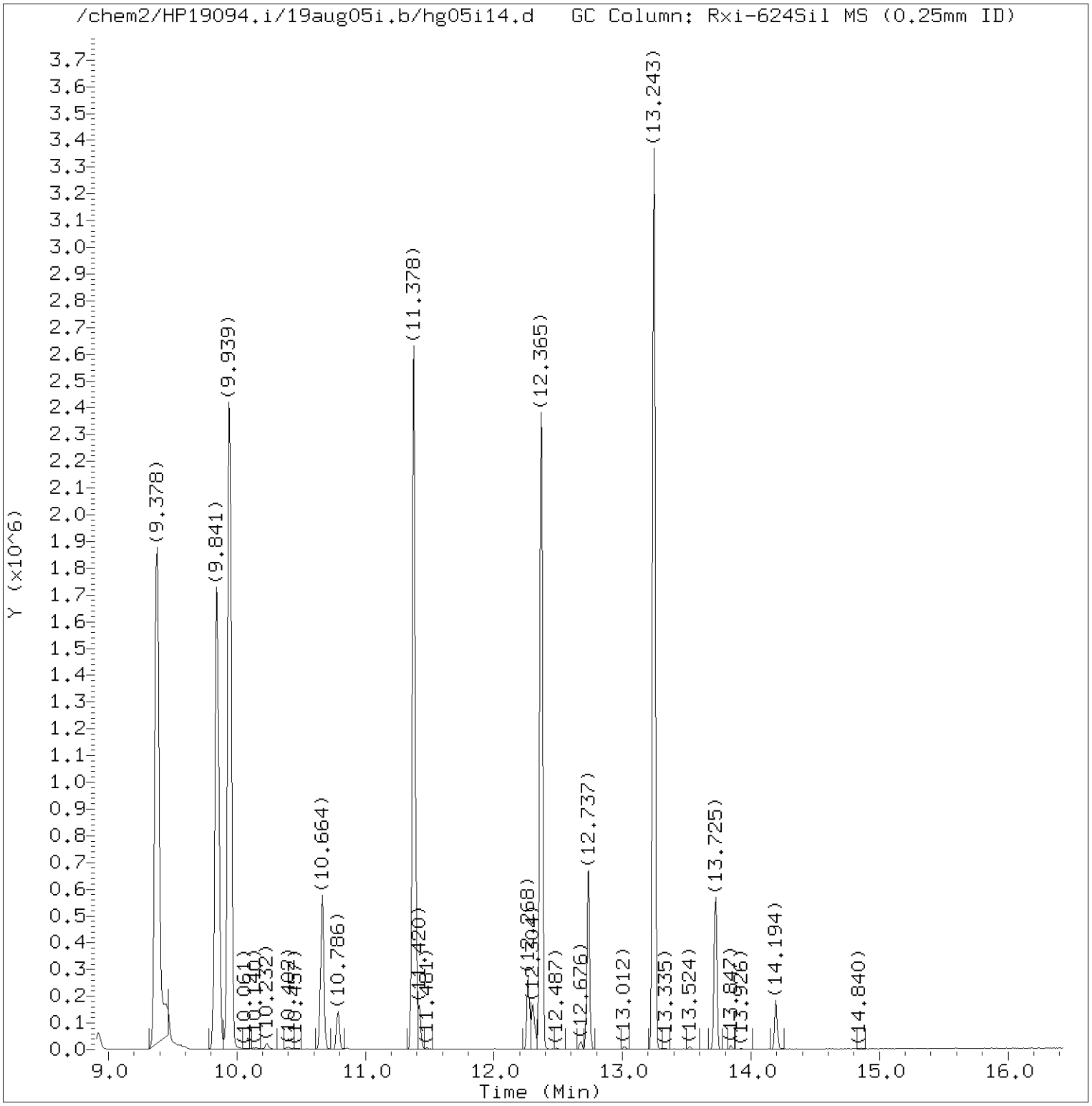
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

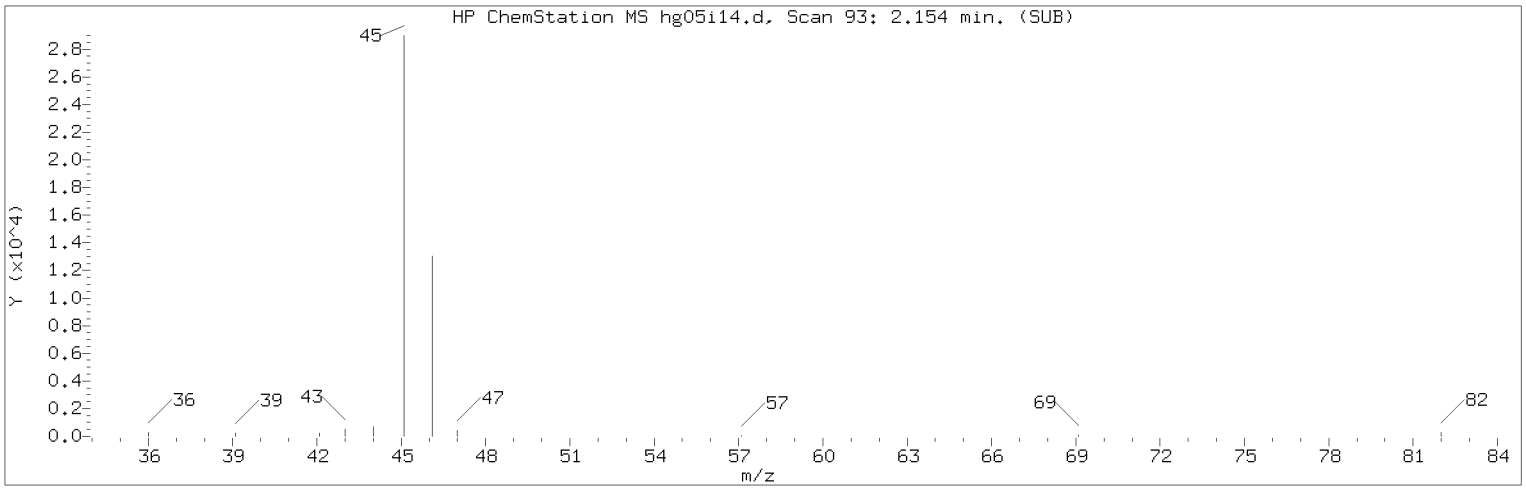
Sample Name: VSTD002 Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	143767M	2.427
25) Acetonitrile	(1)	4.190	41	182560M	97.646
26)*t-Butyl Alcohol-d10	(1)	4.428	65	103041	50.000
36) Vinyl Acetate	(2)	5.519	43	139803	1.954
43) Methyl Acrylate	(2)	6.458	55	232927	9.888
53) 1-Chlorobutane	(2)	7.232	56	187843M	1.999
63)*Fluorobenzene	(2)	7.958	96	1905299	10.000
77) Chloroacetonitrile	(2)	9.439	75	129567	104.502
78) 2-Chloroethyl vinyl ether	(2)	9.457	63	43708	1.992
97)*Chlorobenzene-d5	(3)	11.378	117	1501976	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	61852	3.522
112) Cyclohexanone	(1)	12.304	55	78922M	115.498
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	831755	10.000
142) Hexachloroethane	(4)	13.725	117	99487	1.989

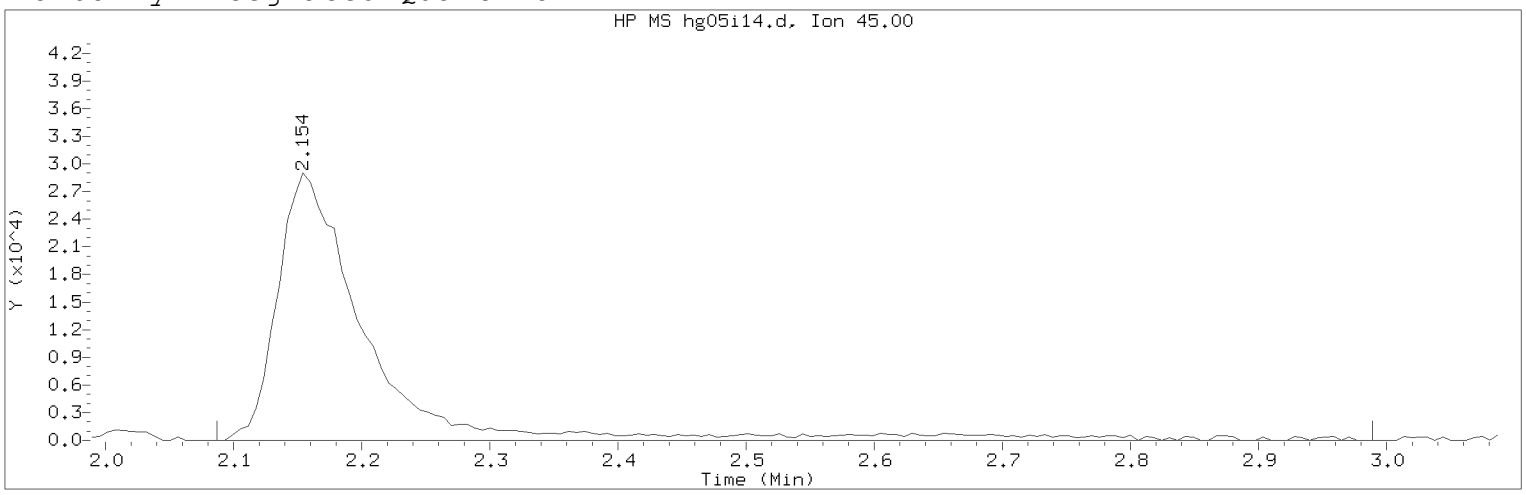
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

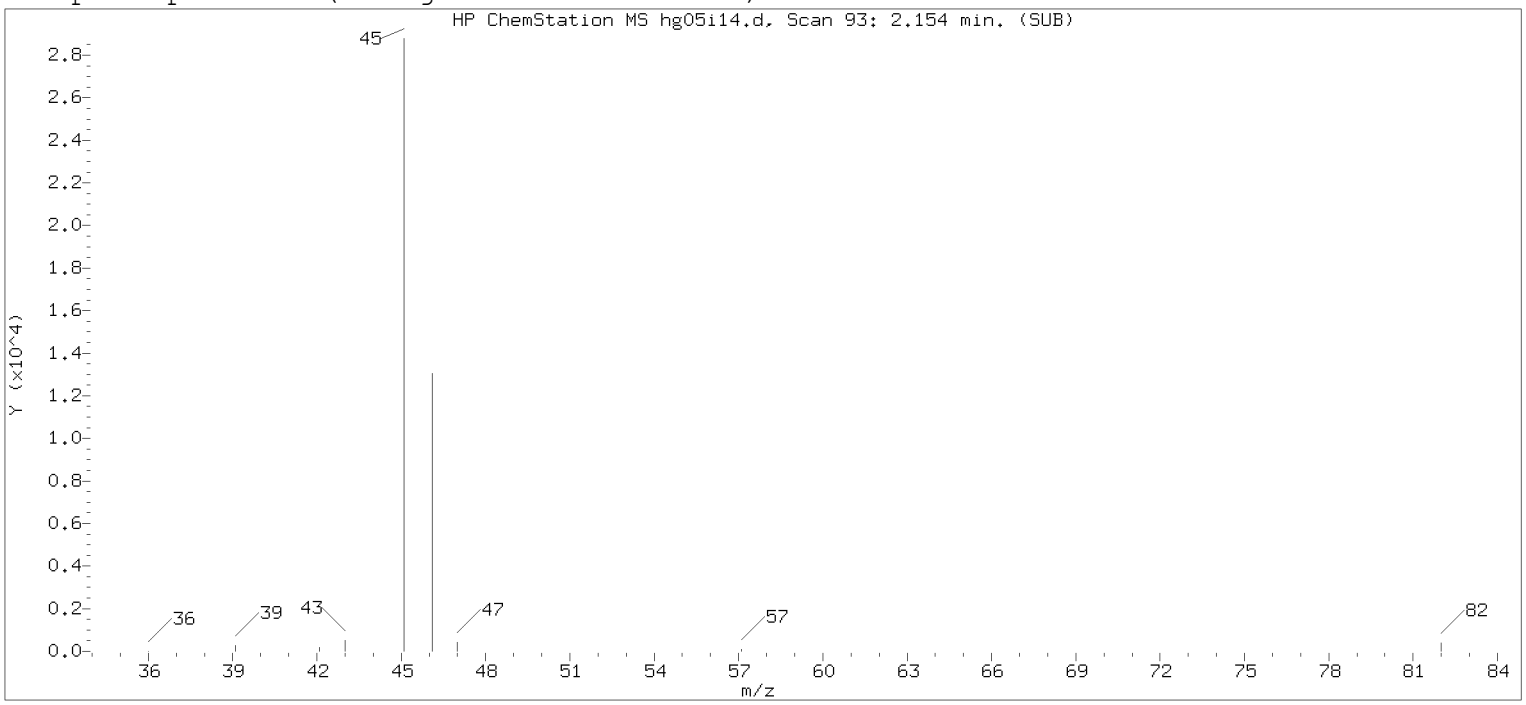
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 143767M
On-Column Amount (ng) : 2.4267
Integration start scan : 81 Integration stop scan: 229
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

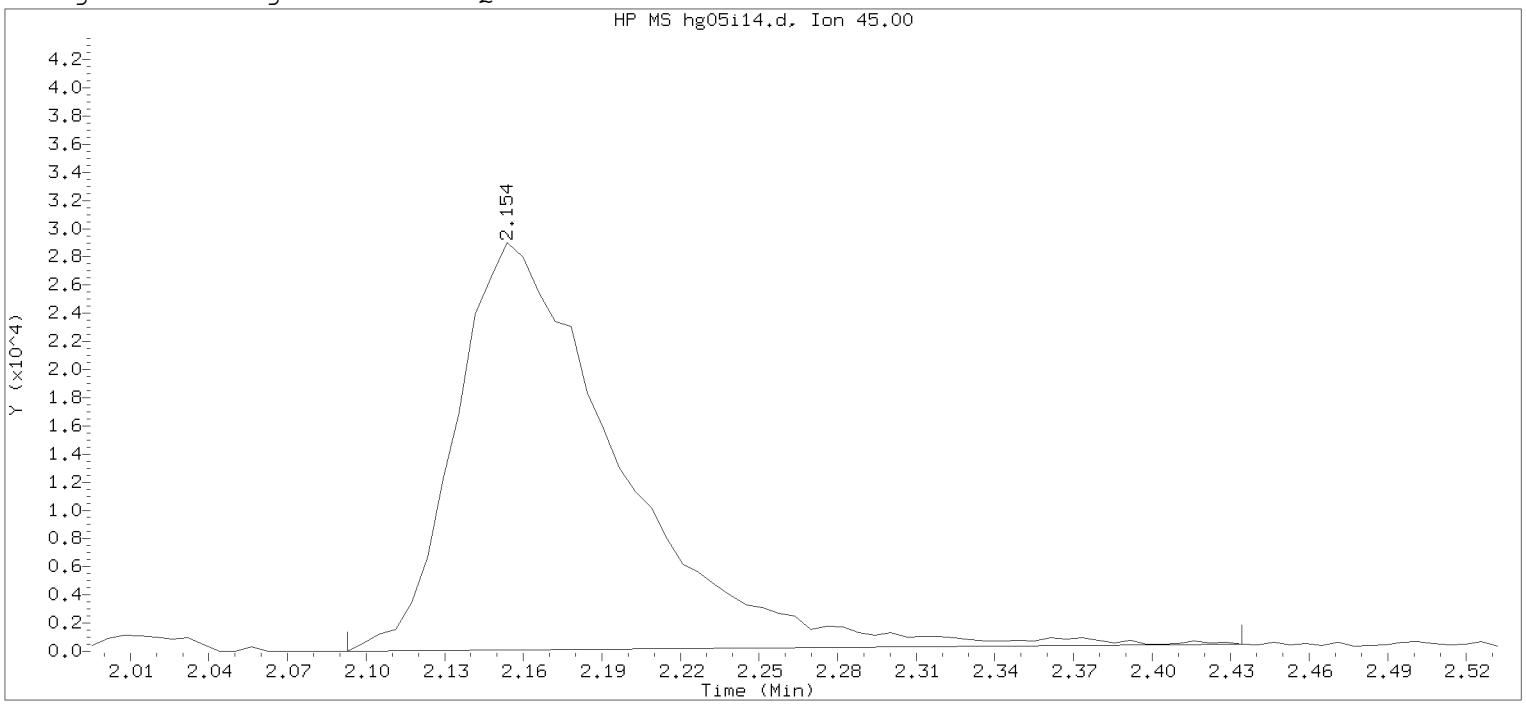
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

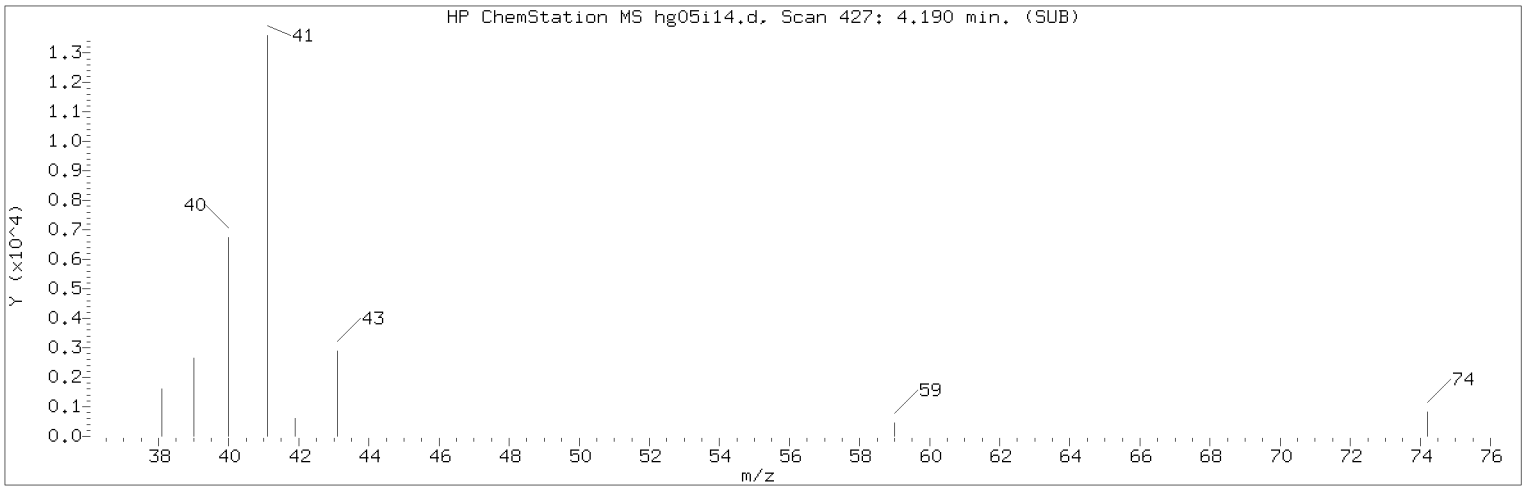
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

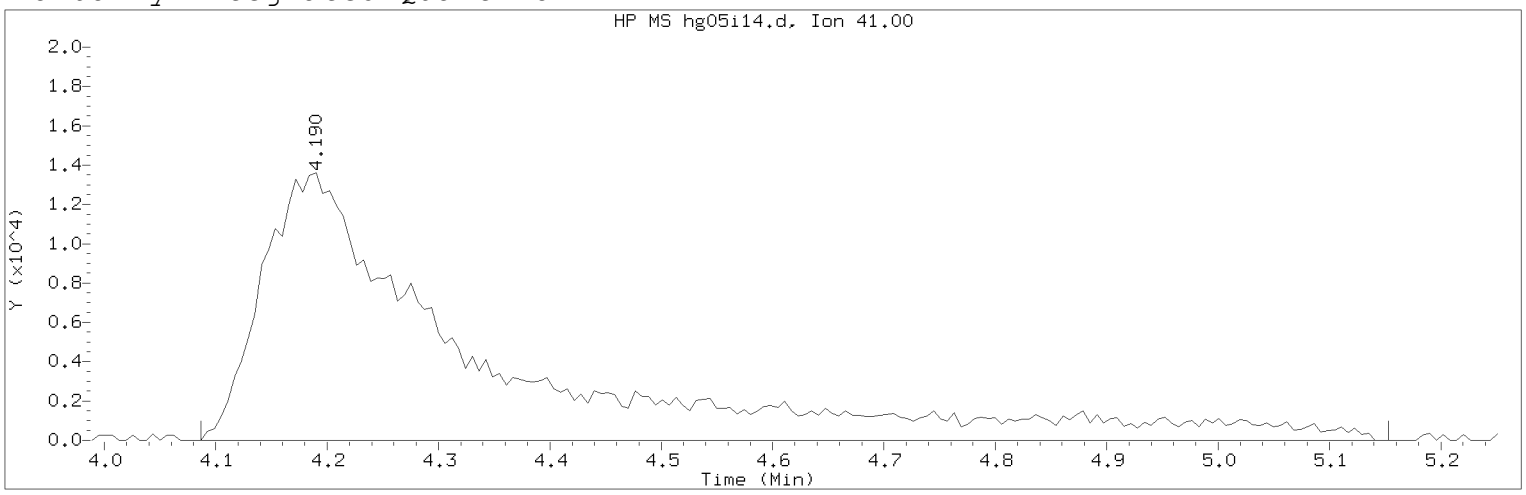
Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 93		
Retention Time (minutes)	: 2.154		
Quant Ion	: 45.00		
Area	: 125309		
On-column Amount (ng)	: 2.6391		
Integration start scan	: 82	Integration stop scan:	138
Y at integration start	: 0	Y at integration end:	487

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Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

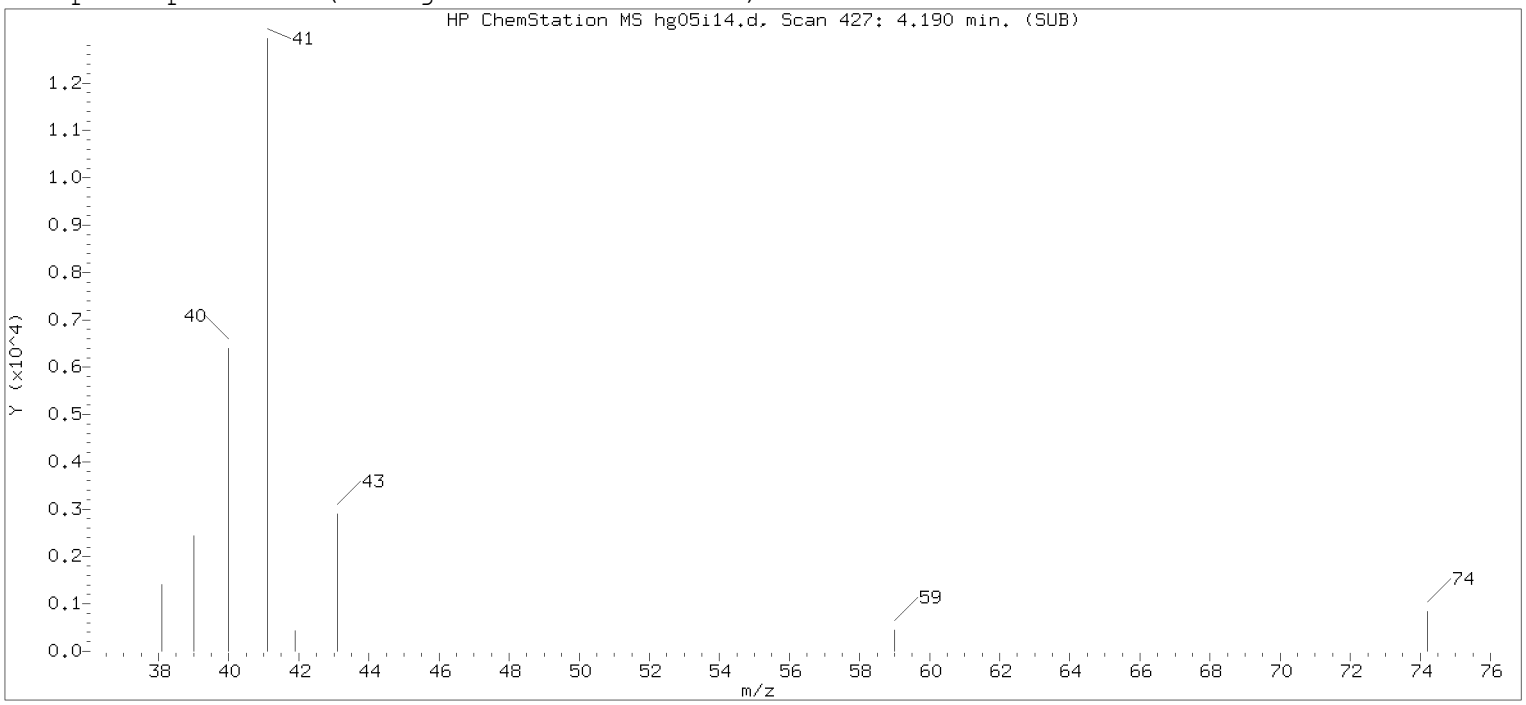
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 427
Retention Time (minutes): 4.190
Quant Ion : 41.00
Area (flag) : 182560M
On-Column Amount (ng) : 97.6464
Integration start scan : 409 Integration stop scan: 584
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

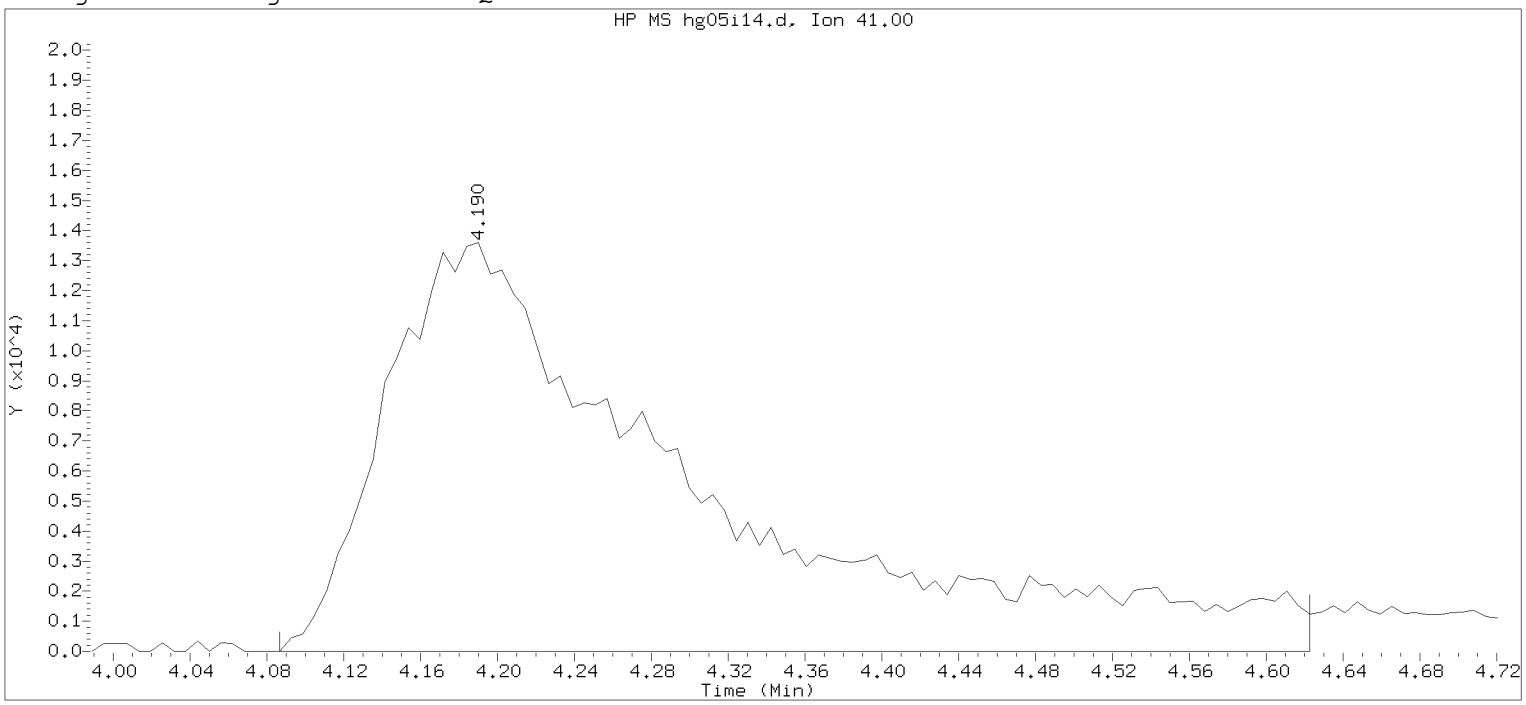
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

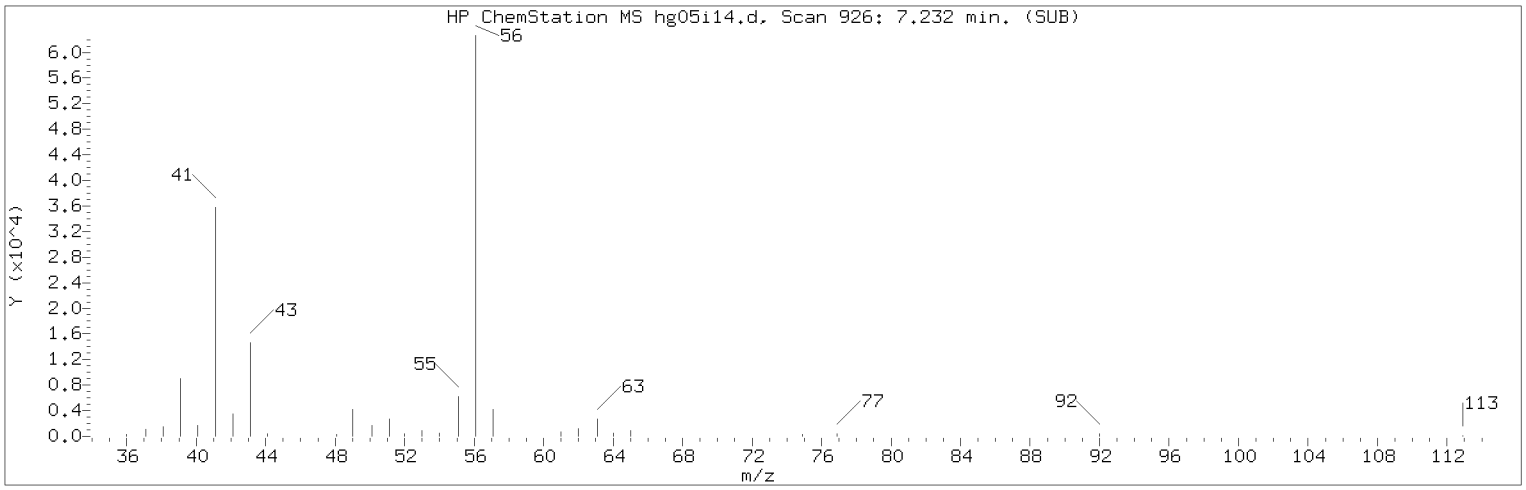
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

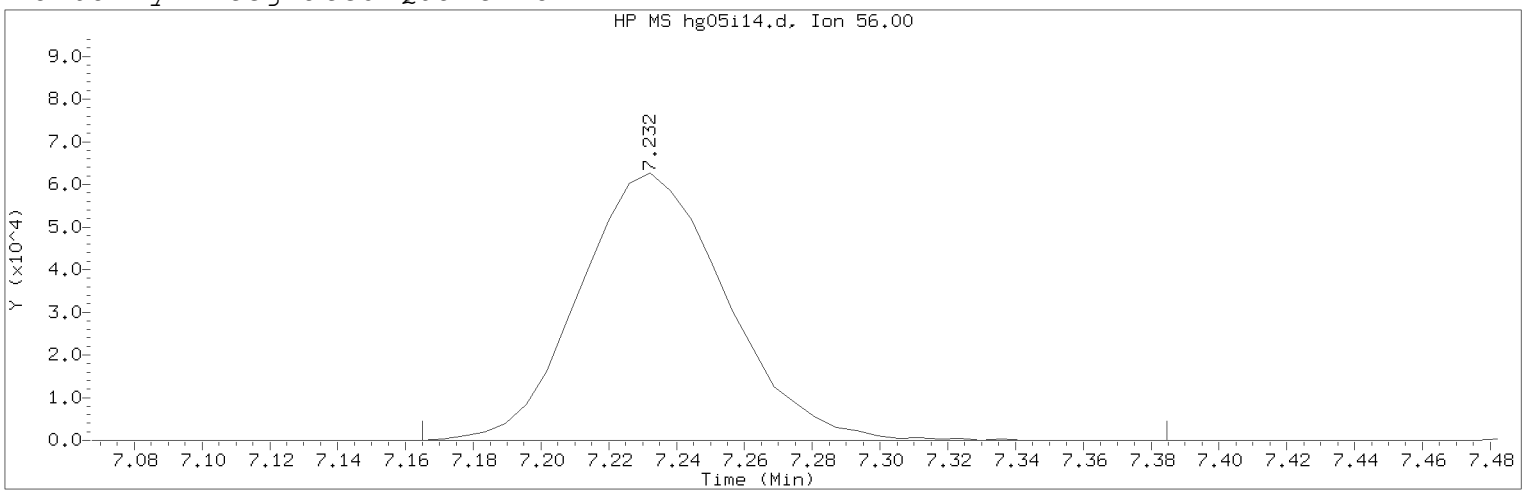
Compound Number	: 25		
Compound Name	: Acetonitrile		
Scan Number	: 427		
Retention Time (minutes)	: 4.190		
Quant Ion	: 41.00		
Area	: 151947		
On-column Amount (ng)	: 90.2258		
Integration start scan	: 409	Integration stop scan:	497
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

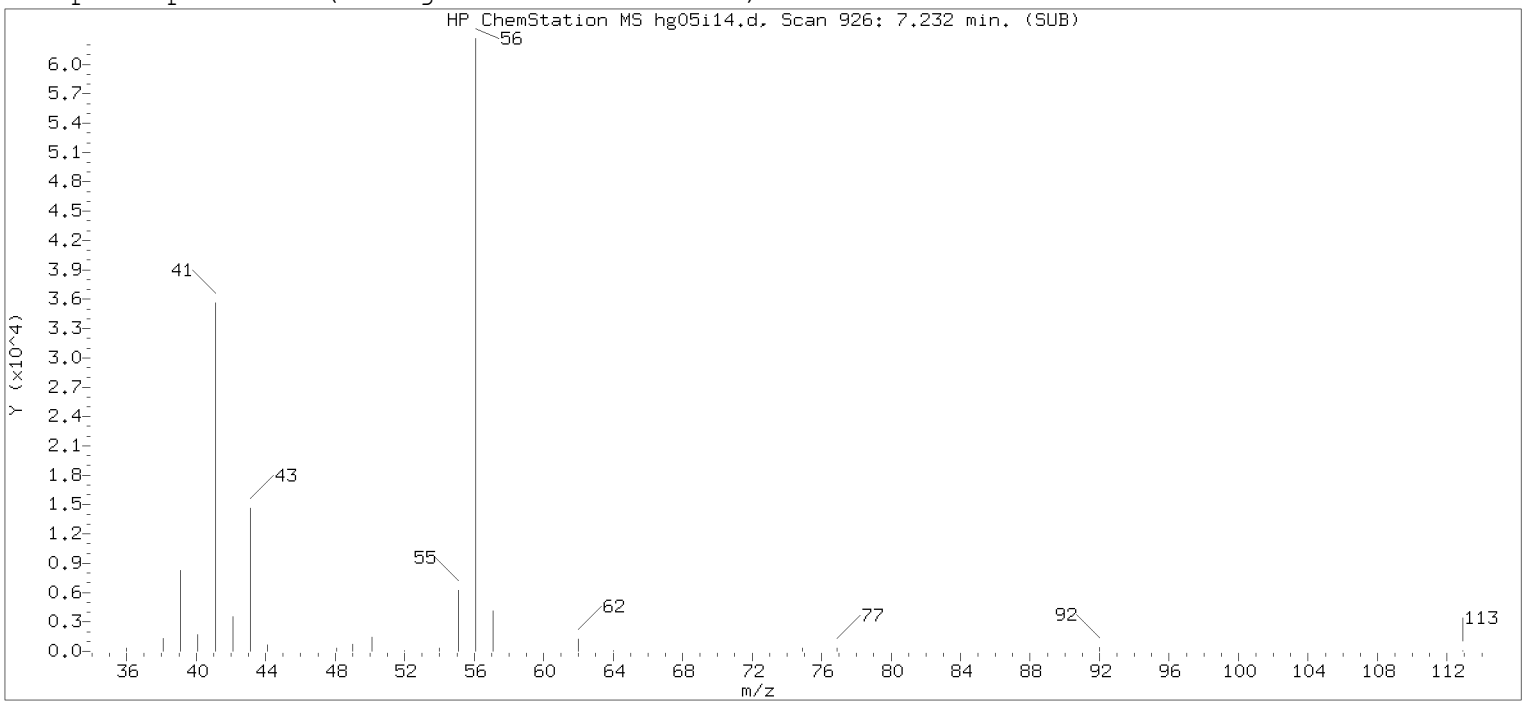
Compound Number : 53
Compound Name : 1-Chlorobutane
Scan Number : 926
Retention Time (minutes): 7.232
Quant Ion : 56.00
Area (flag) : 187843M
On-Column Amount (ng) : 1.9993
Integration start scan : 914 Integration stop scan: 950
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

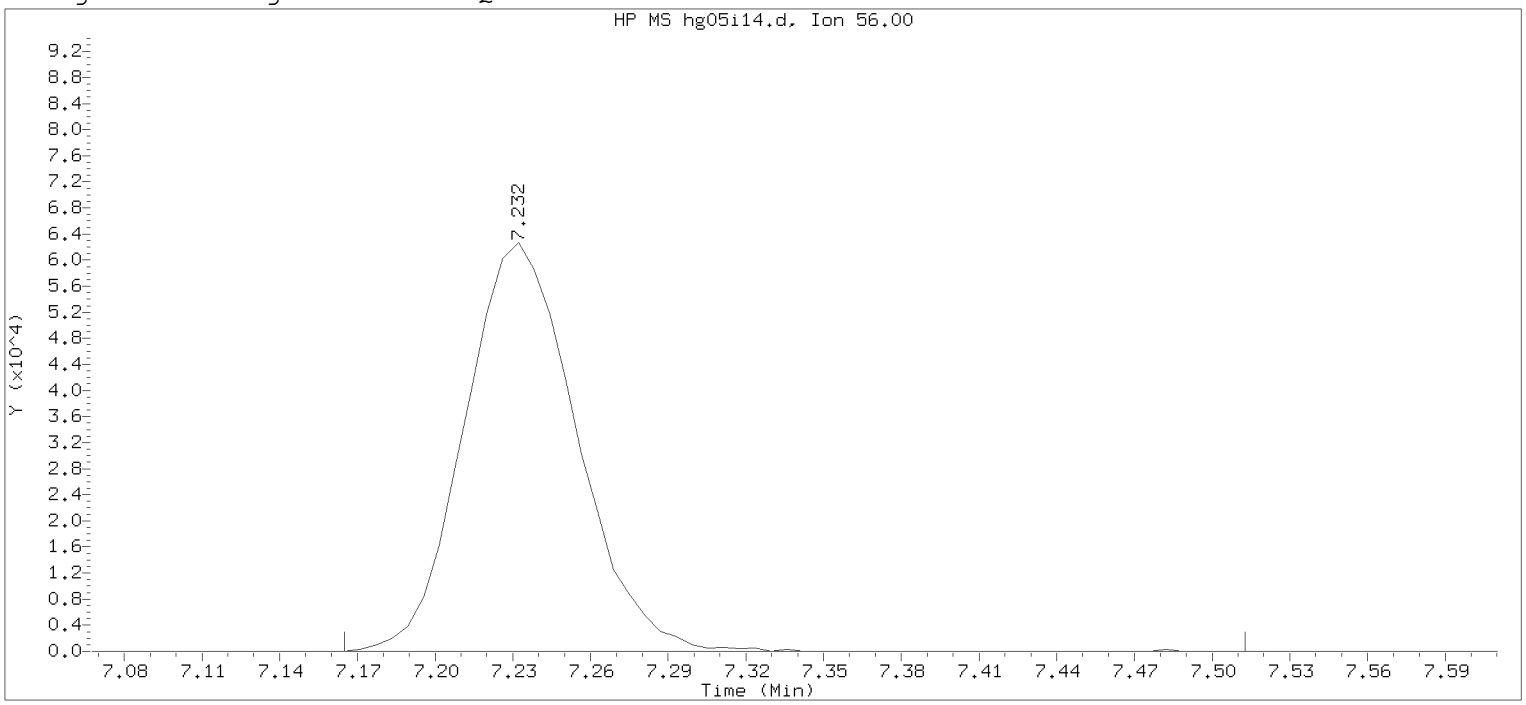
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

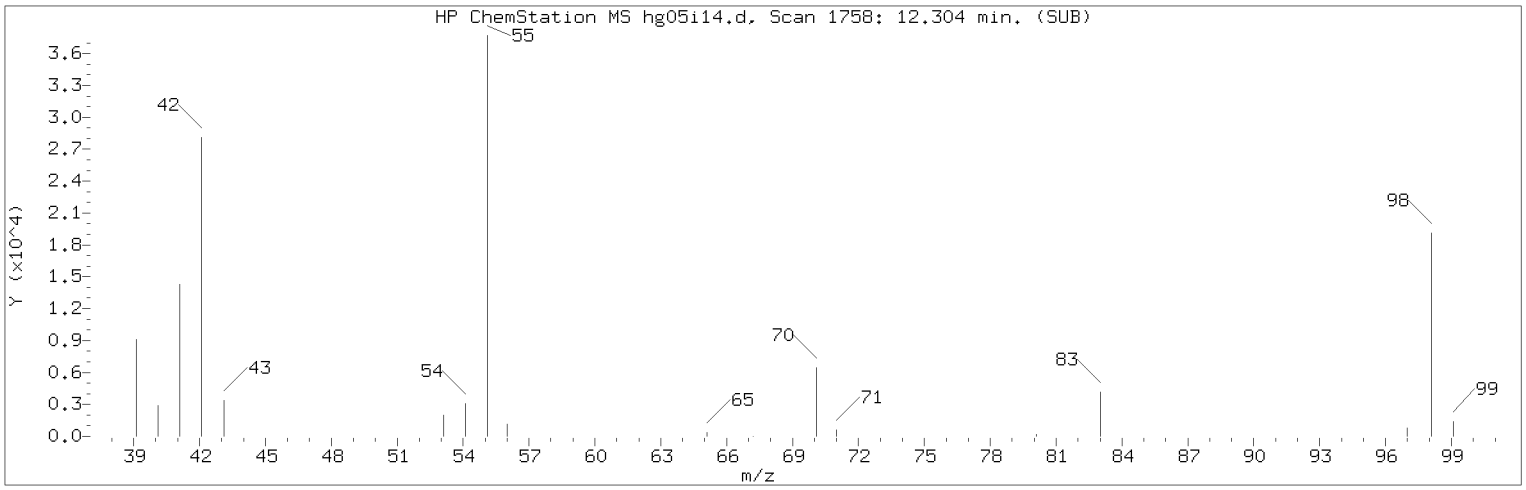
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

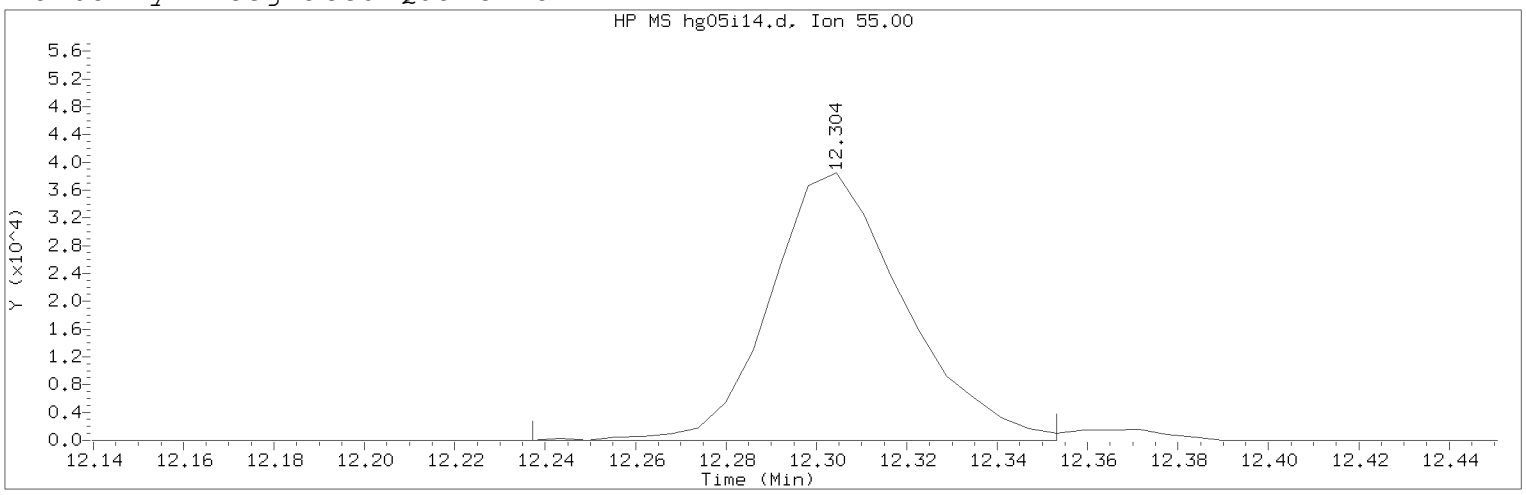
Compound Number : 53
Compound Name : 1-Chlorobutane
Scan Number : 926
Retention Time (minutes): 7.232
Quant Ion : 56.00
Area : 187962
On-column Amount (ng) : 2.0004
Integration start scan : 914 Integration stop scan: 971
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used. Reason: I am the author of this document

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:48 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

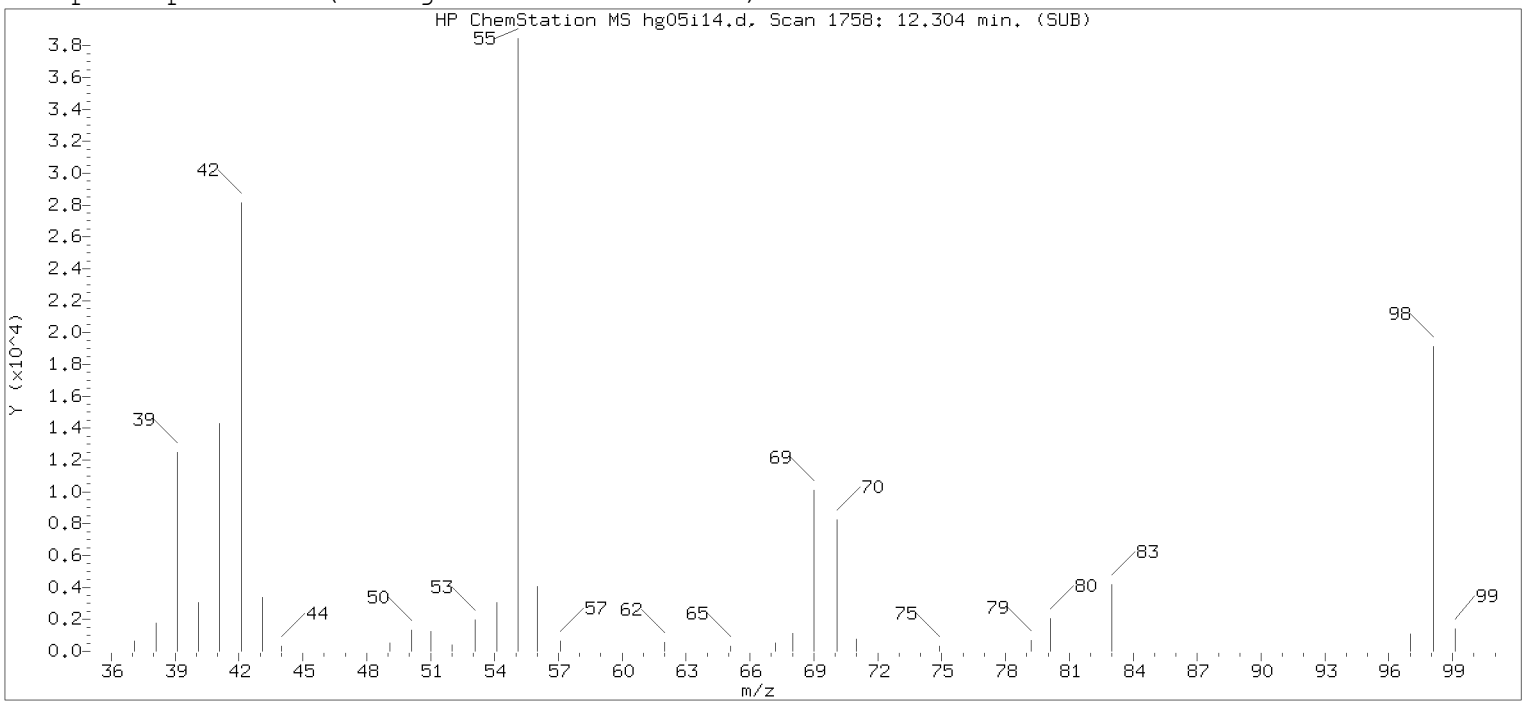
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 78922M
On-Column Amount (ng) : 115.4984
Integration start scan : 1746 Integration stop scan: 1765
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

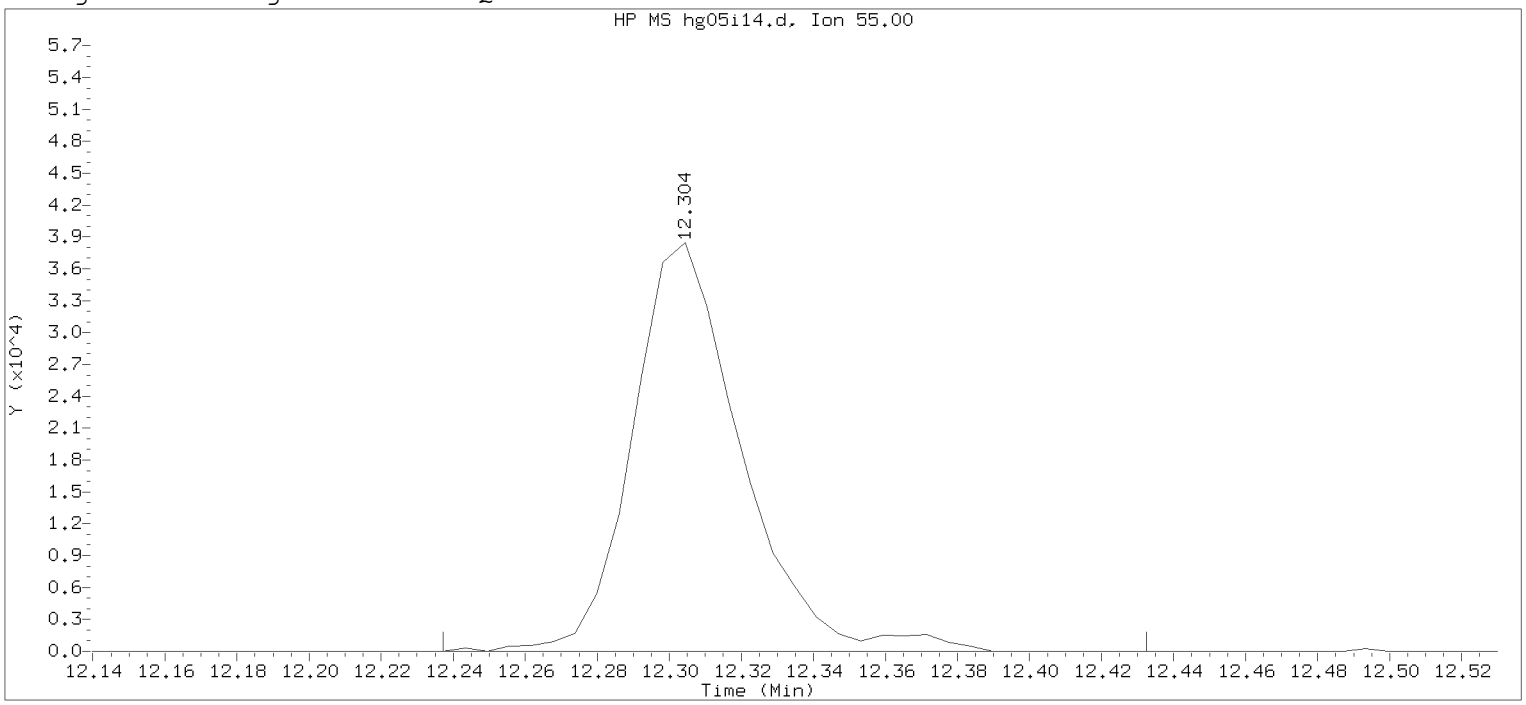
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



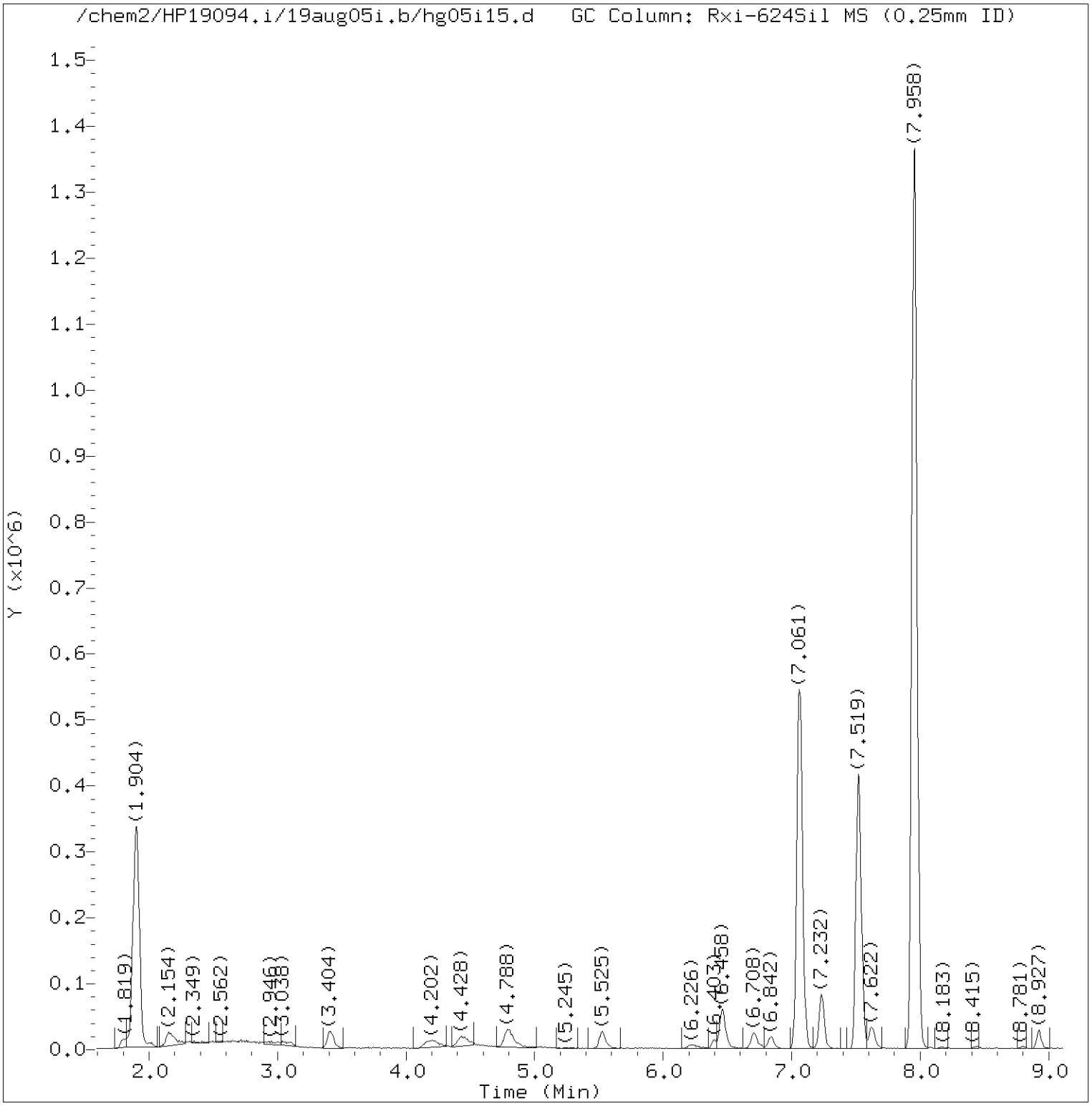
Data File: /chem2/HP19094.i/19aug05i.b/hg05i14.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:25 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD002 Lab Sample ID: VSTD002

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area : 81052
On-column Amount (ng) : 117.7719
Integration start scan : 1746 Integration stop scan: 1778
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

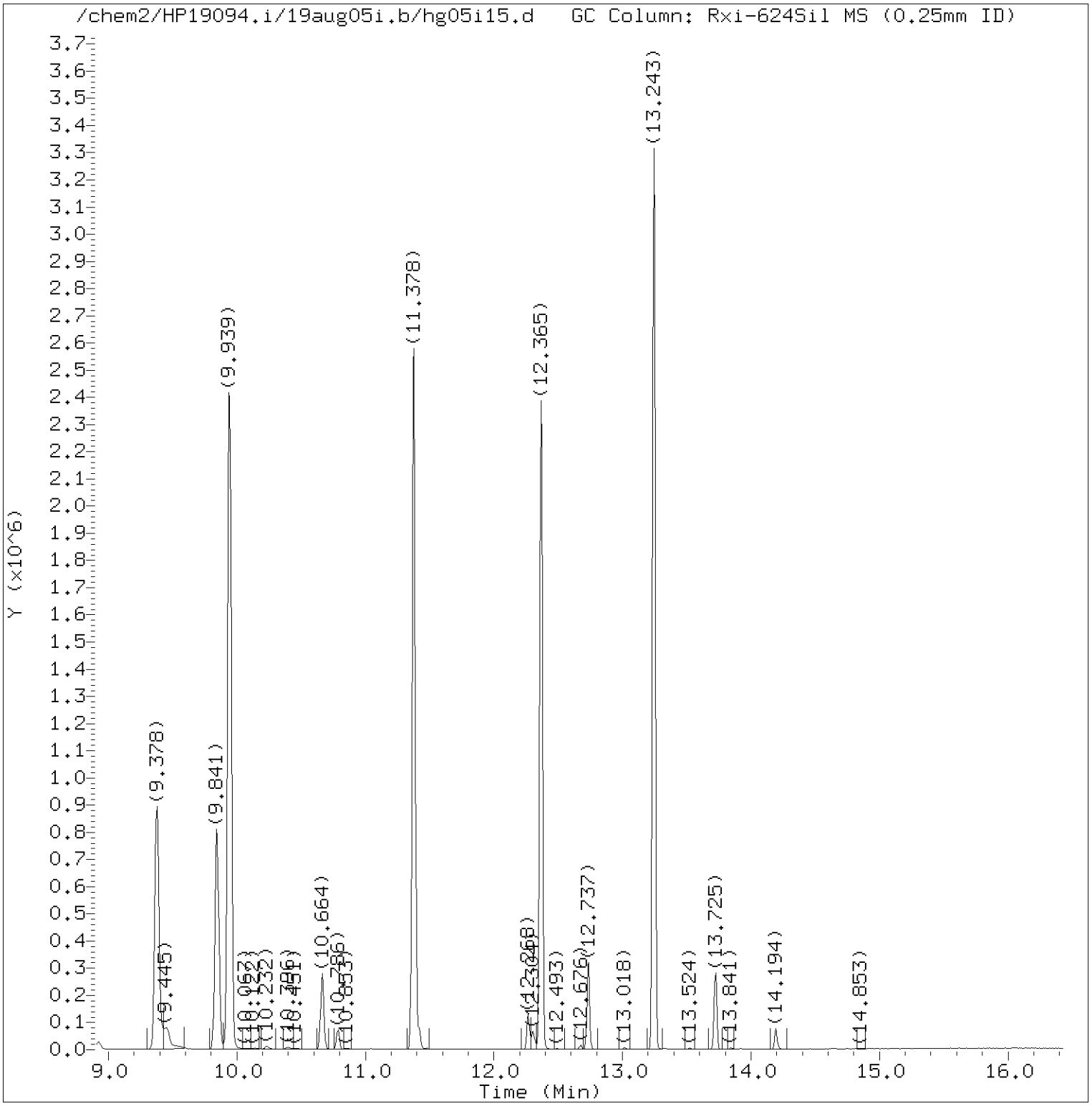
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

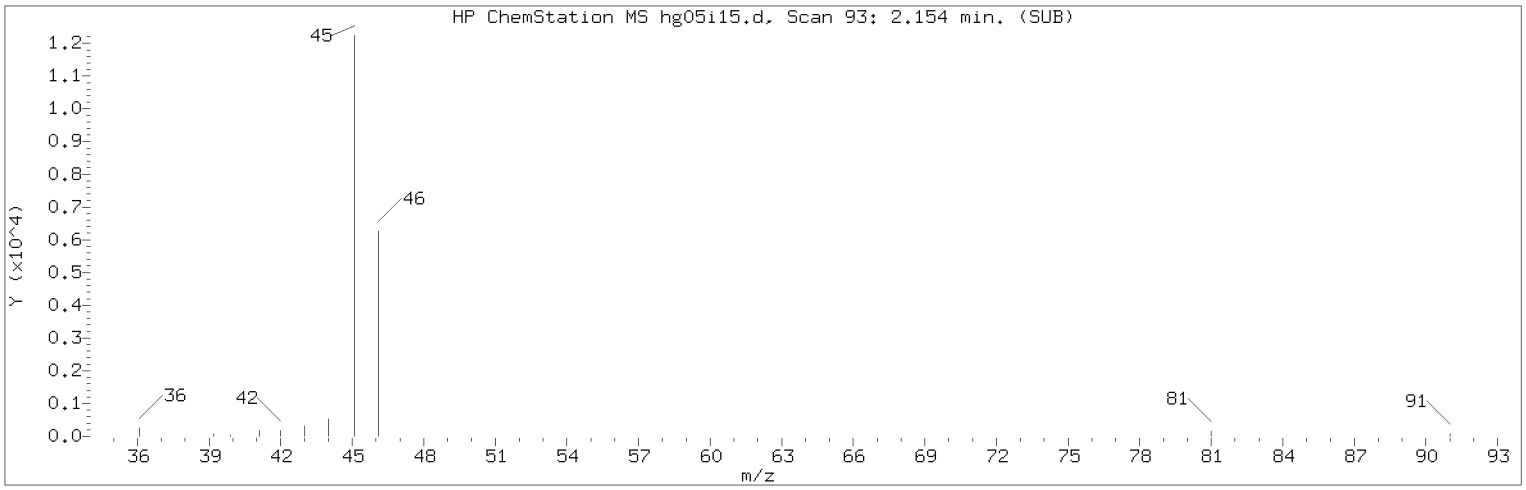
Sample Name: VSTD001 Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	66810M	1.103
25) Acetonitrile	(1)	4.172	41	83392M	47.653
26)*t-Butyl Alcohol-d10	(1)	4.428	65	88272	50.000
36) Vinyl Acetate	(2)	5.525	43	69484	0.977
43) Methyl Acrylate	(2)	6.458	55	115523	4.935
53) 1-Chlorobutane	(2)	7.232	56	93101	0.997
63)*Fluorobenzene	(2)	7.958	96	1893425	10.000
77) Chloroacetonitrile	(2)	9.433	75	56493	45.850
78) 2-Chloroethyl vinyl ether	(2)	9.463	63	21993	1.009
97)*Chlorobenzene-d5	(3)	11.378	117	1487703	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	28750	1.911
112) Cyclohexanone	(1)	12.304	55	34088M	58.765
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	822702	10.000
142) Hexachloroethane	(4)	13.725	117	48218	0.975

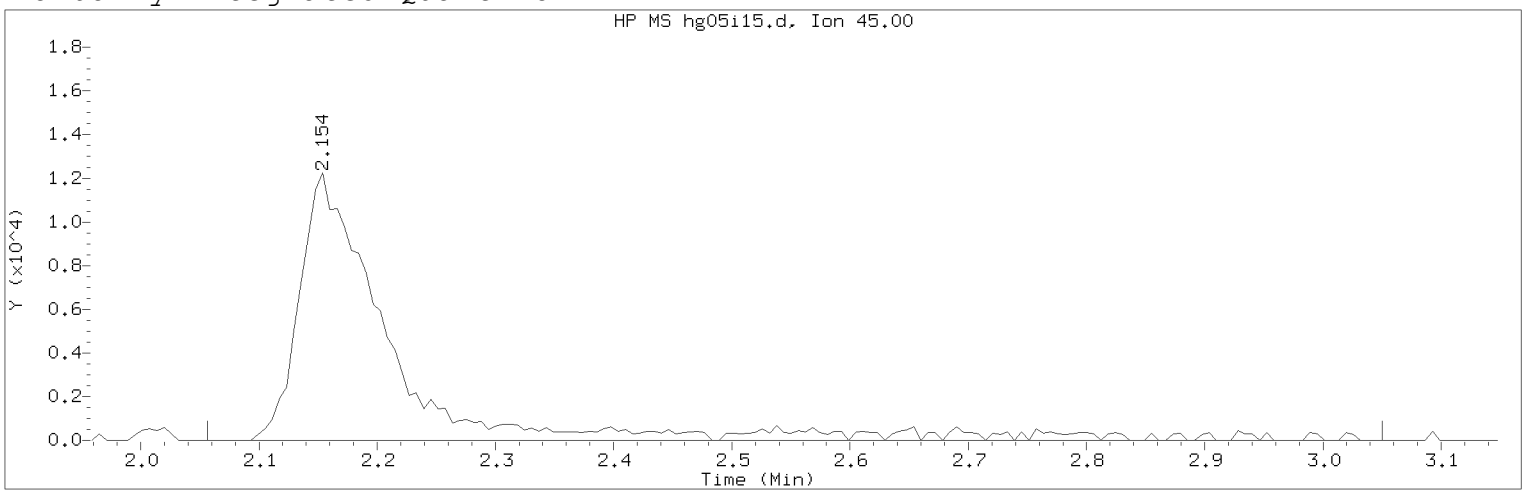
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

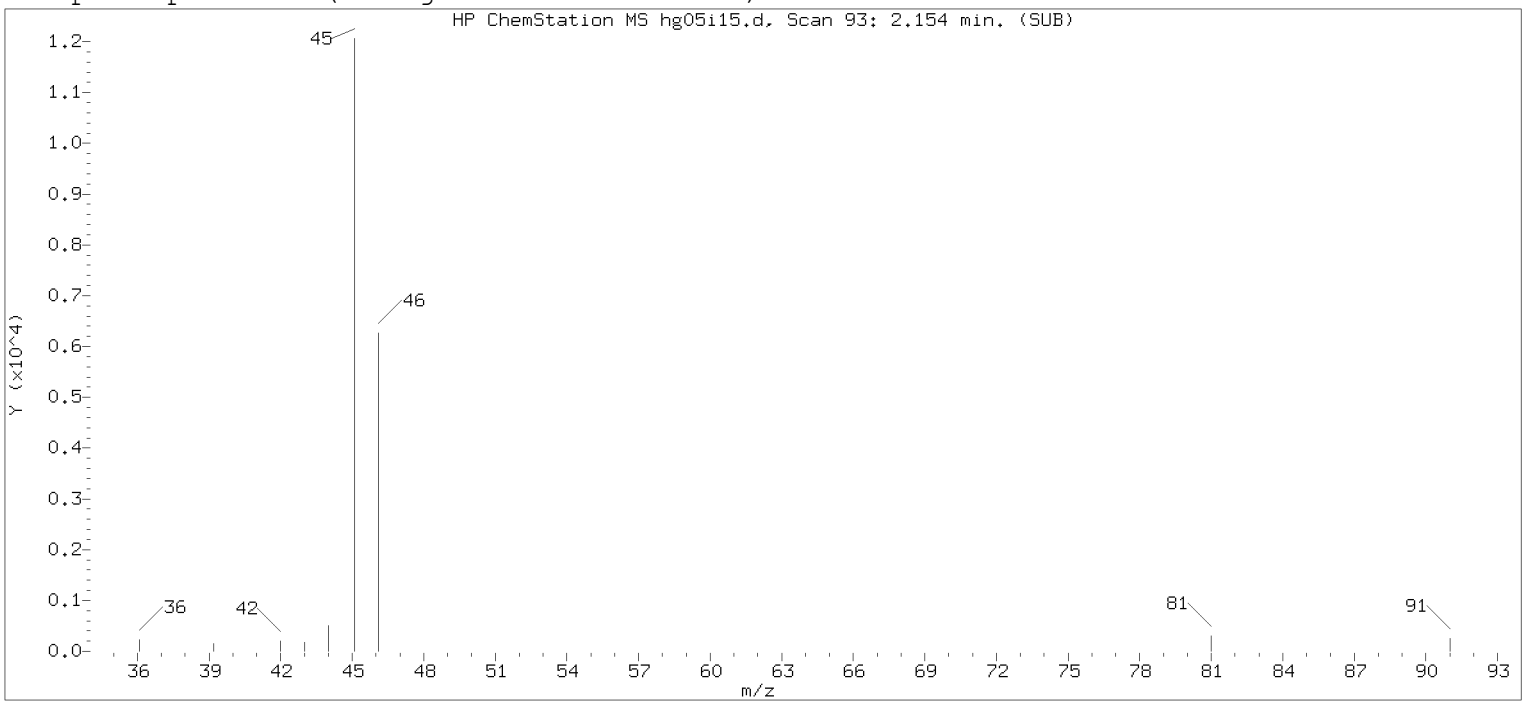
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 66810M
On-Column Amount (ng) : 1.1029
Integration start scan : 76 Integration stop scan: 239
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

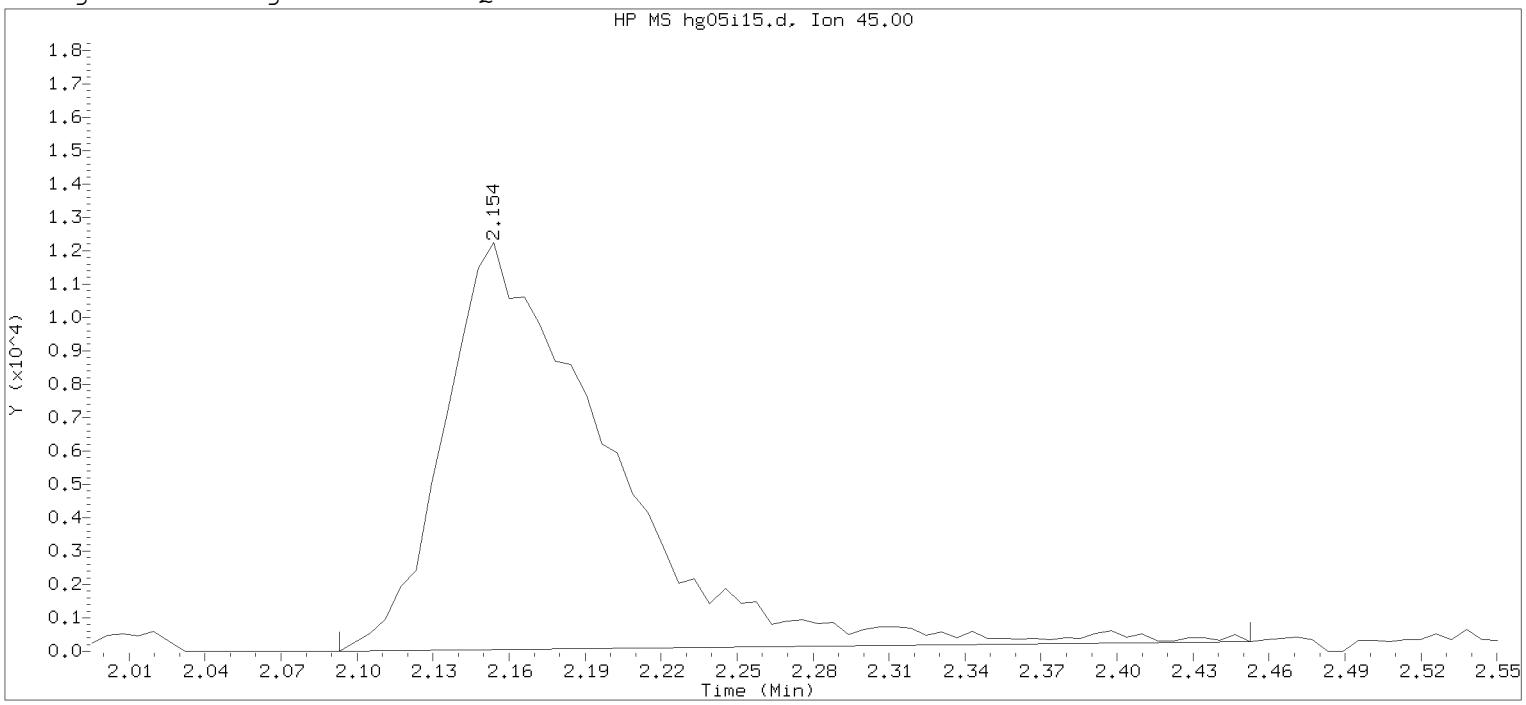
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

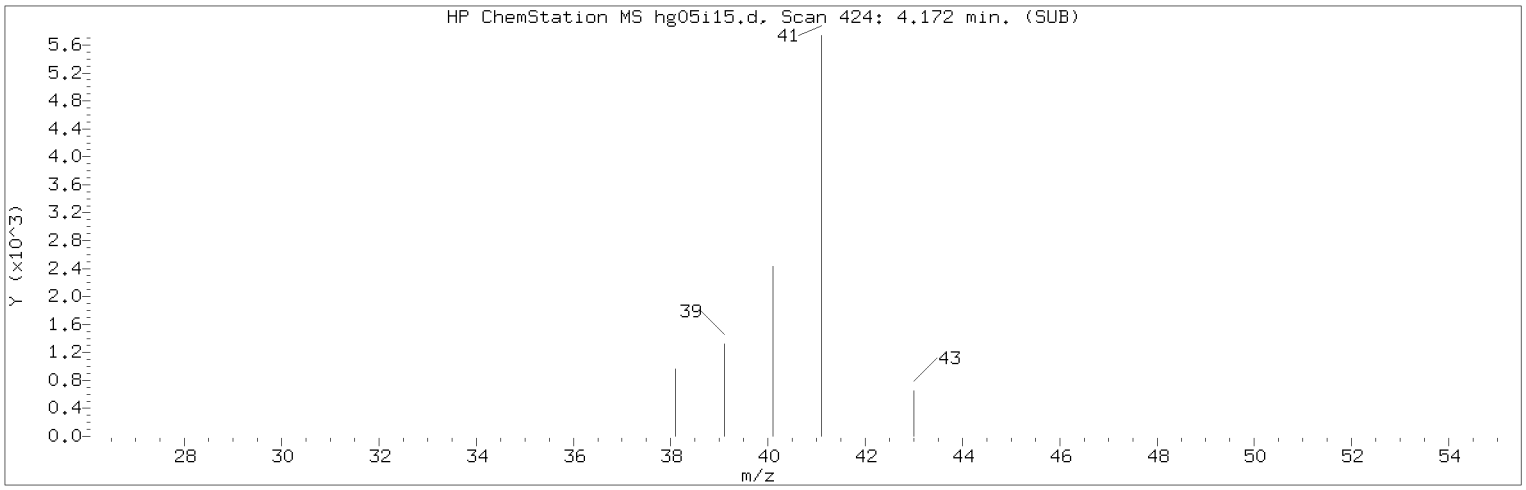
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

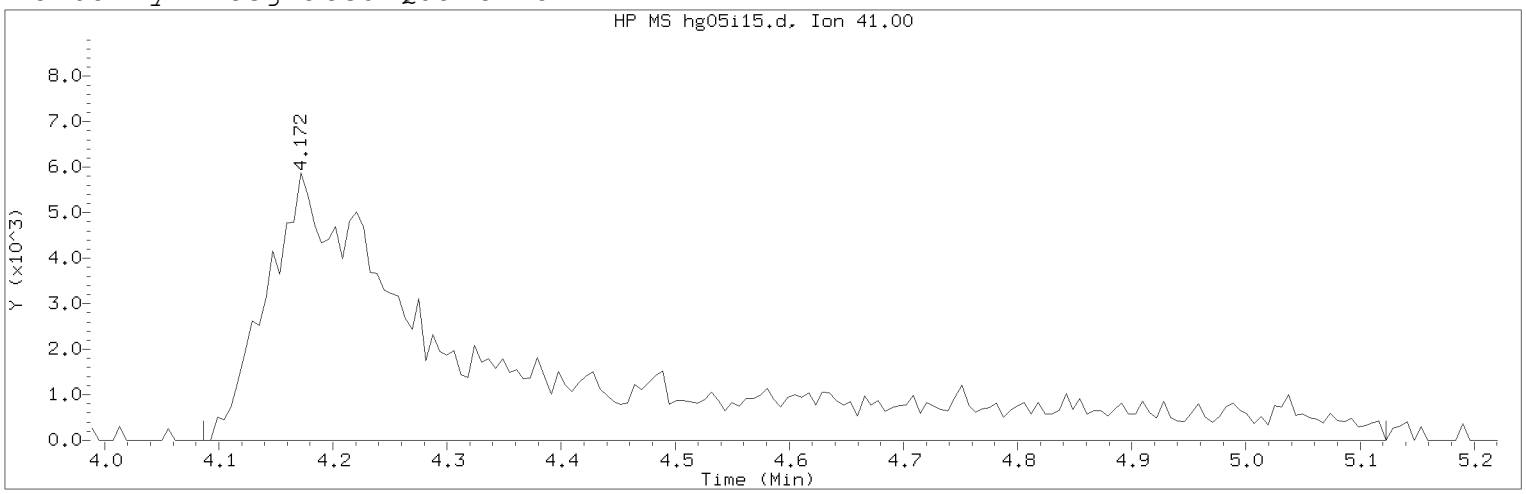
Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 93		
Retention Time (minutes)	: 2.154		
Quant Ion	: 45.00		
Area	: 54893		
On-column Amount (ng)	: 1.0383		
Integration start scan	: 82	Integration stop scan:	141
Y at integration start	: 0	Y at integration end:	297

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used in mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

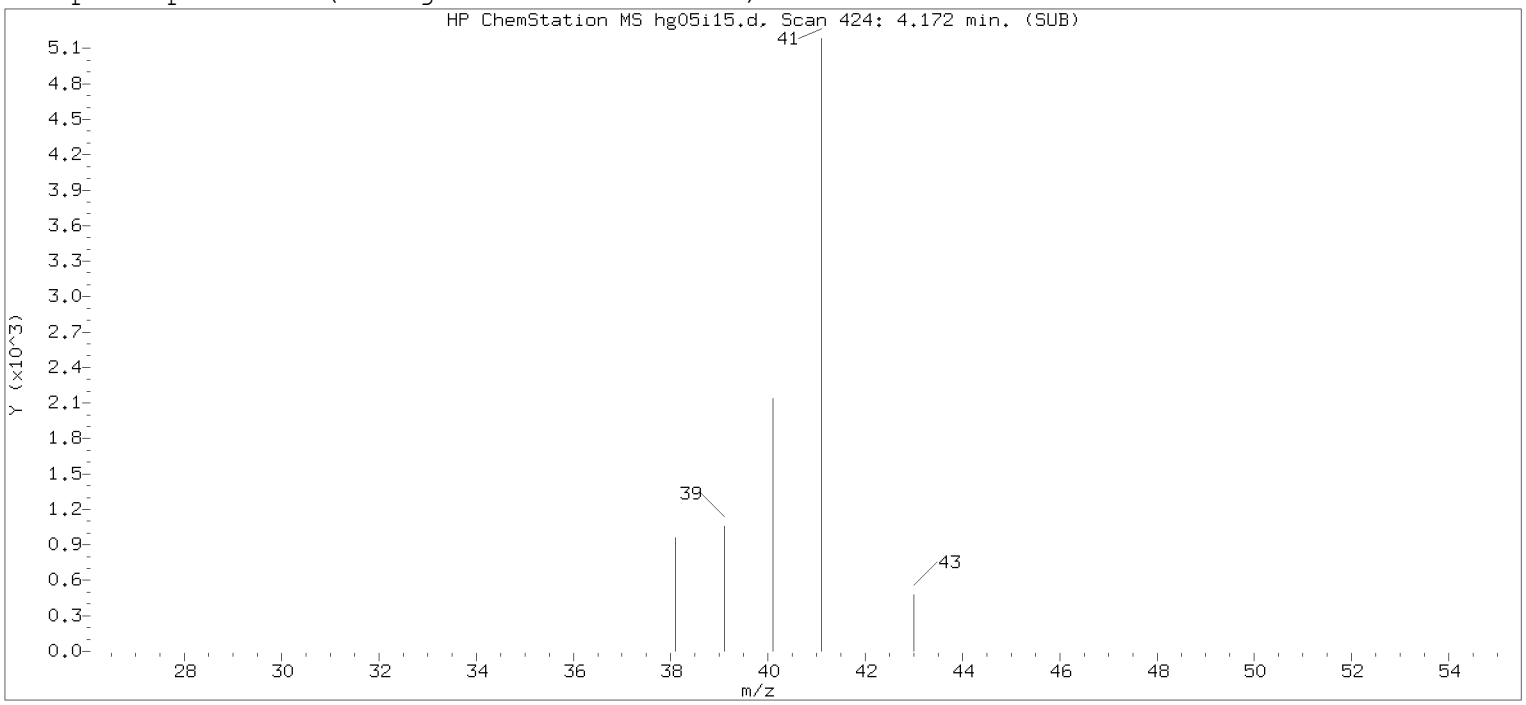
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 424
Retention Time (minutes): 4.172
Quant Ion : 41.00
Area (flag) : 83392M
On-Column Amount (ng) : 47.6534
Integration start scan : 409 Integration stop scan: 579
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

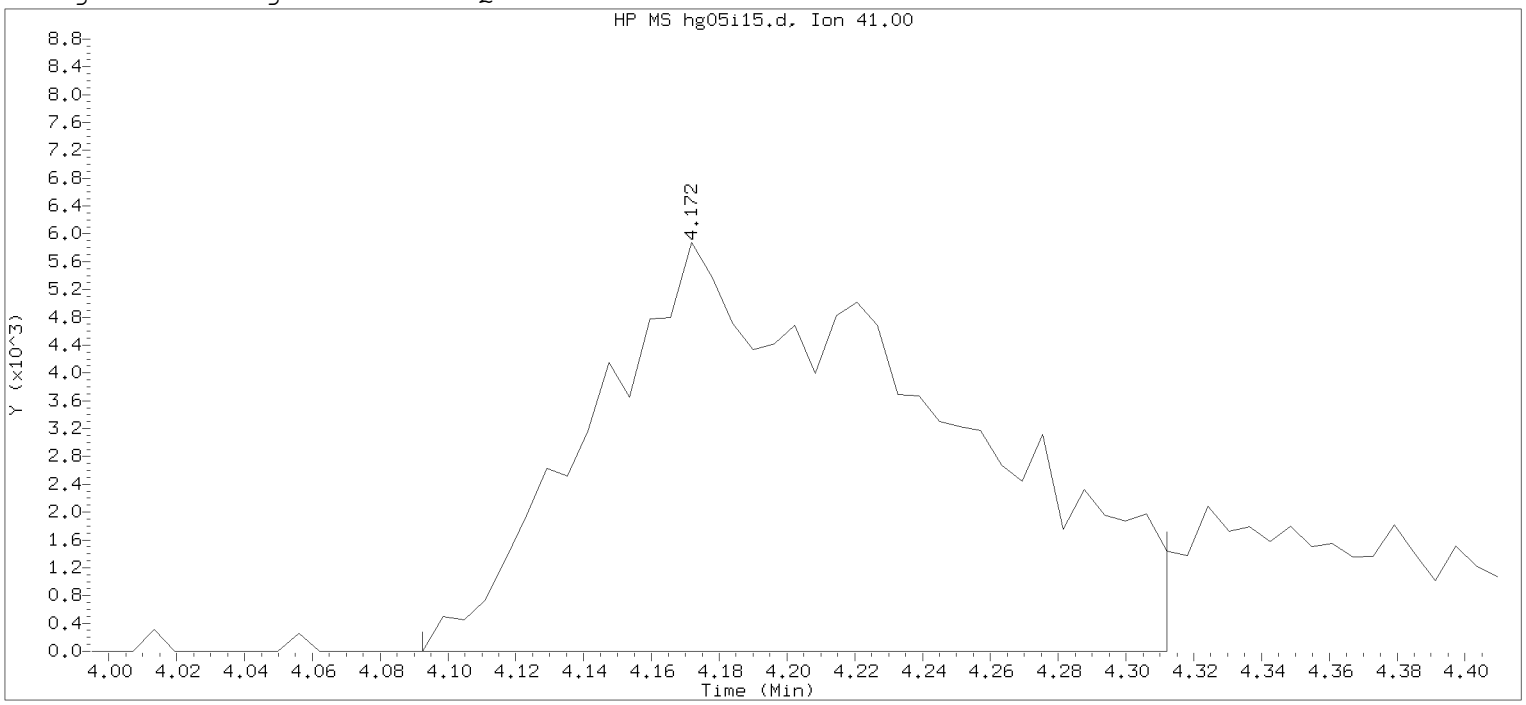
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

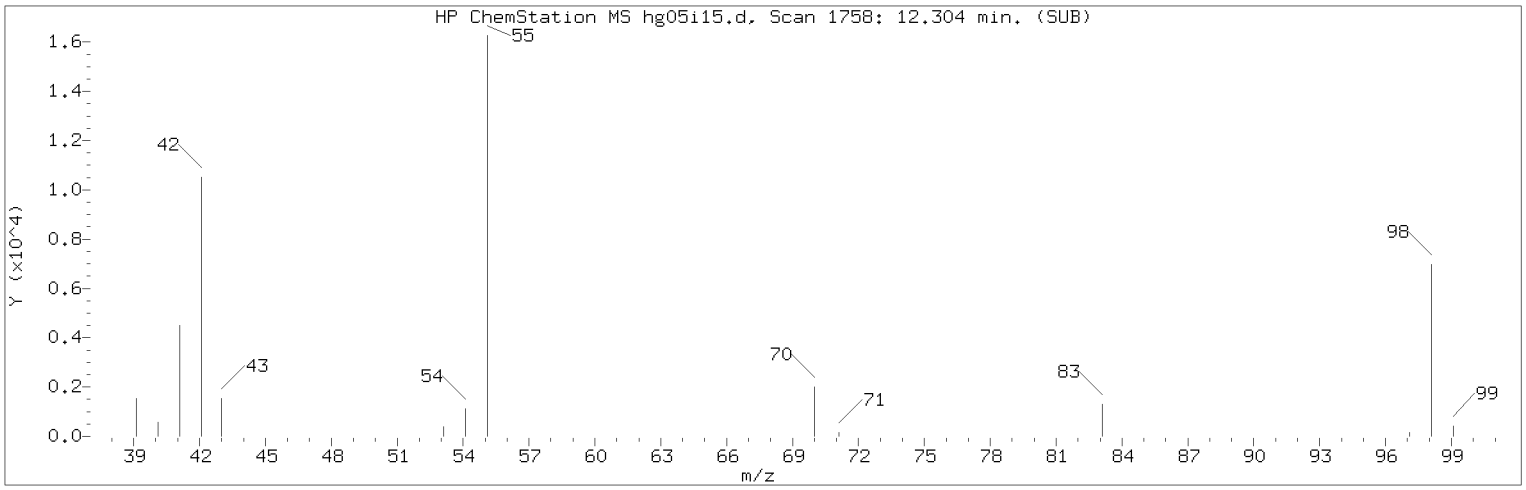
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

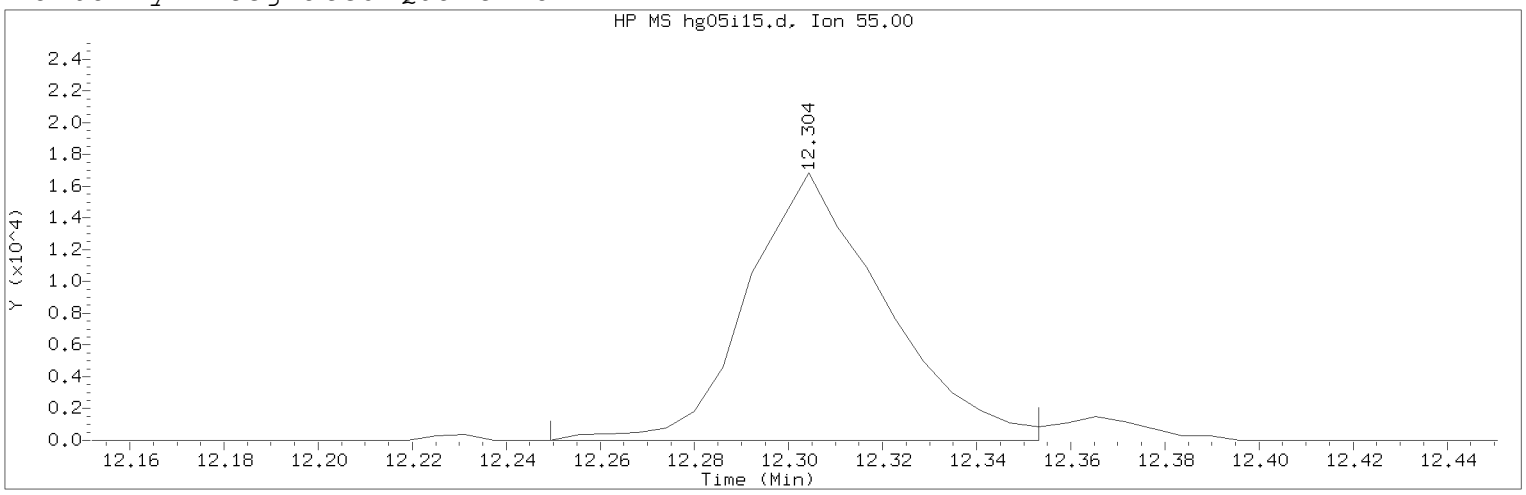
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 424
Retention Time (minutes): 4.172
Quant Ion : 41.00
Area : 41854
On-column Amount (ng) : 29.0113
Integration start scan : 410 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

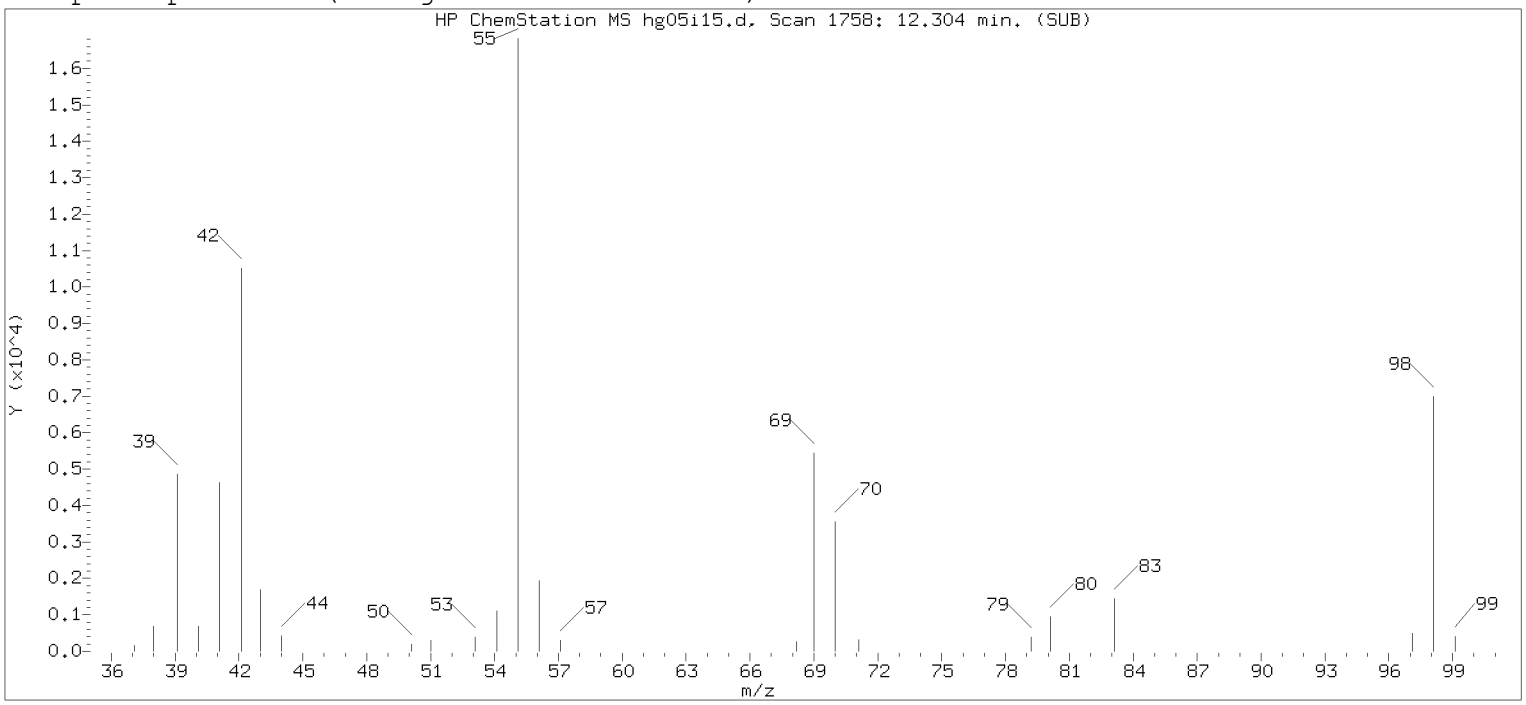
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 34088M
On-Column Amount (ng) : 58.7654
Integration start scan : 1748 Integration stop scan: 1765
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

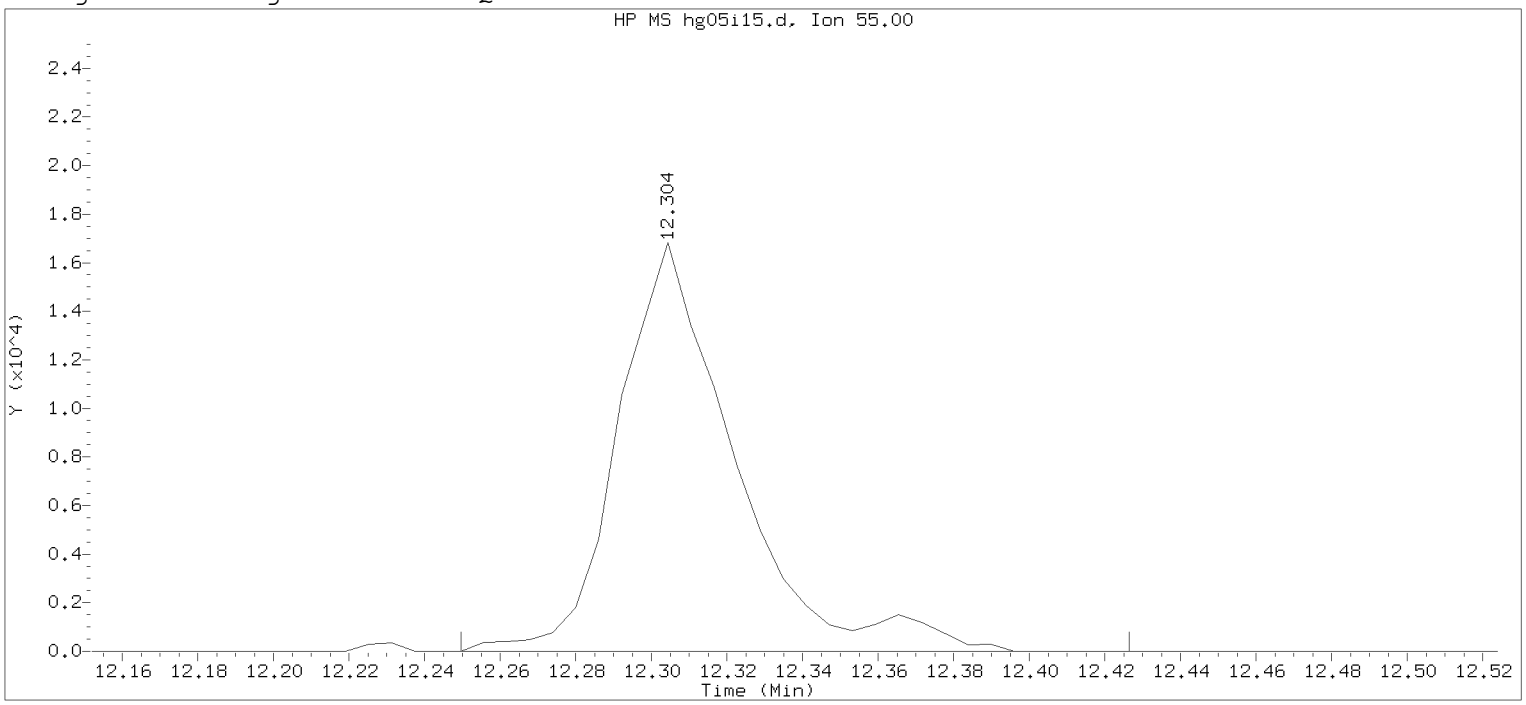
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



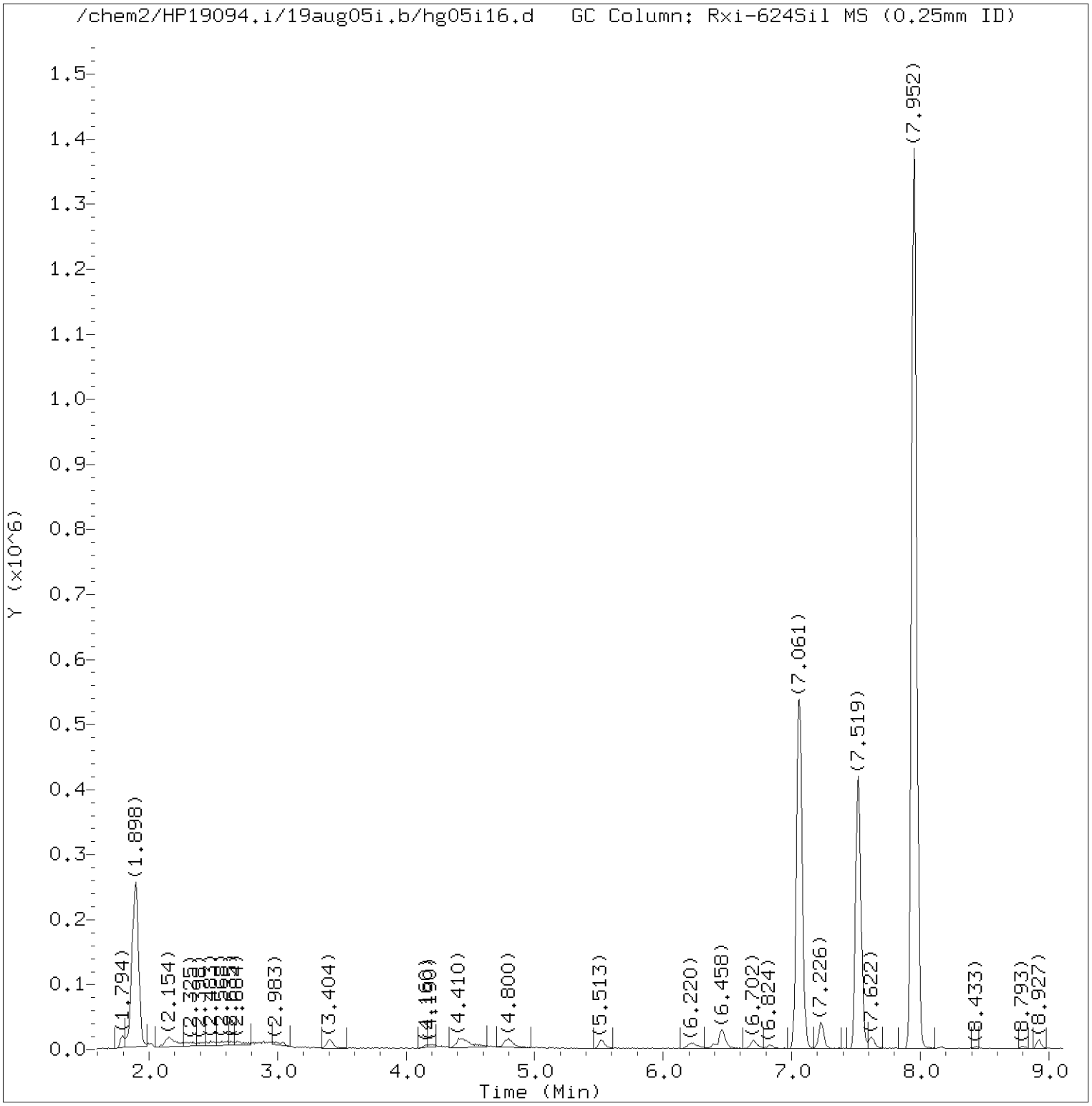
Data File: /chem2/HP19094.i/19aug05i.b/hg05i15.d Instrument ID: HP19094.i
Injection date and time: 05-AUG-2019 23:47 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD001 Lab Sample ID: VSTD001

Compound Number	: 112		
Compound Name	: Cyclohexanone		
Scan Number	: 1758		
Retention Time (minutes)	: 12.304		
Quant Ion	: 55.00		
Area	: 35946		
On-column Amount (ng)	: 60.9701		
Integration start scan	: 1748	Integration stop scan:	1777
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

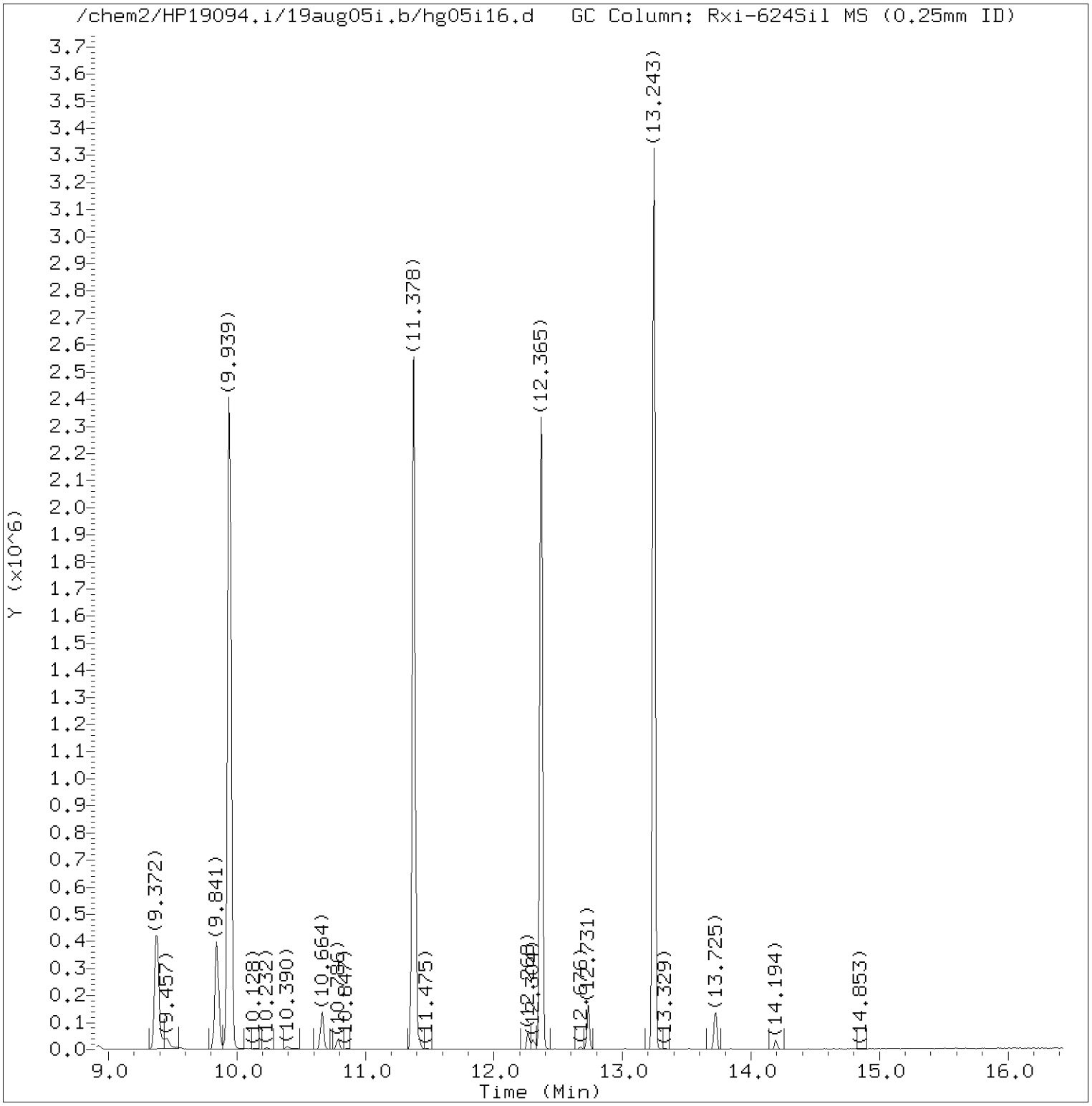
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

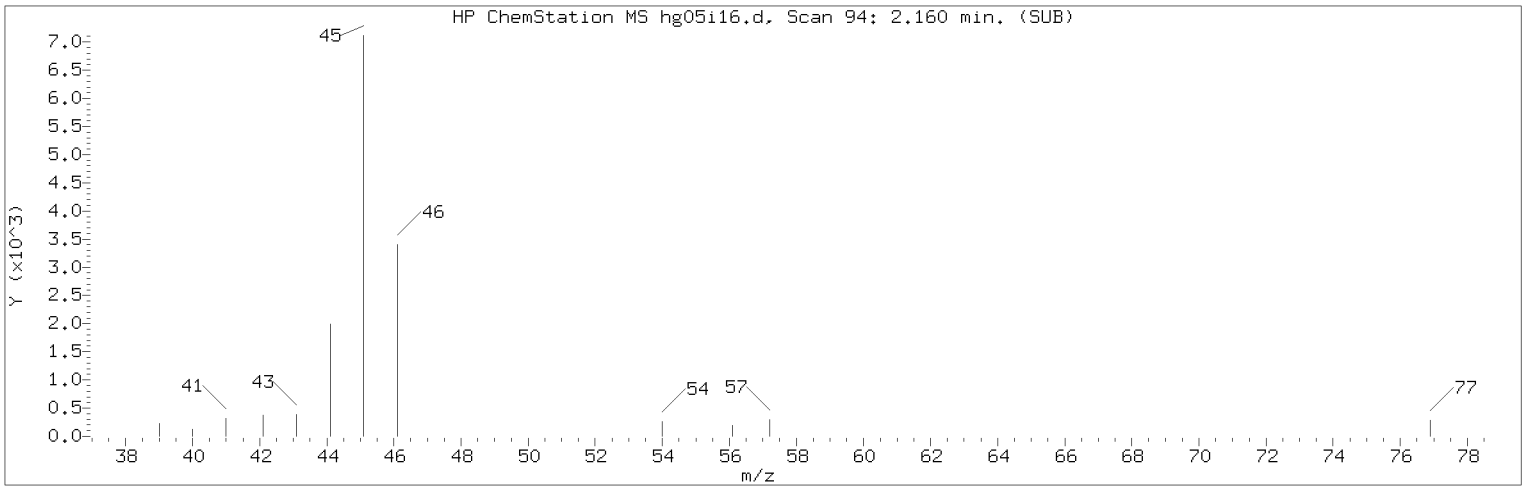
Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.160	45	38370M	0.602
25) Acetonitrile	(1)	4.160	41	46903M	24.304
26)*t-Butyl Alcohol-d10	(1)	4.410	65	89111	50.000
36) Vinyl Acetate	(2)	5.525	43	34735	0.487
43) Methyl Acrylate	(2)	6.458	55	55329	2.358
53) 1-Chlorobutane	(2)	7.232	56	45424	0.485
63)*Fluorobenzene	(2)	7.952	96	1897783	10.000
77) Chloroacetonitrile	(2)	9.427	75	28215	22.847
78) 2-Chloroethyl vinyl ether	(2)	9.457	63	10463	0.479
97)*Chlorobenzene-d5	(3)	11.378	117	1478847	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	15098	0.994
112) Cyclohexanone	(1)	12.304	55	17755MA	25.867
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	831889	10.000
142) Hexachloroethane	(4)	13.725	117	23429	0.468

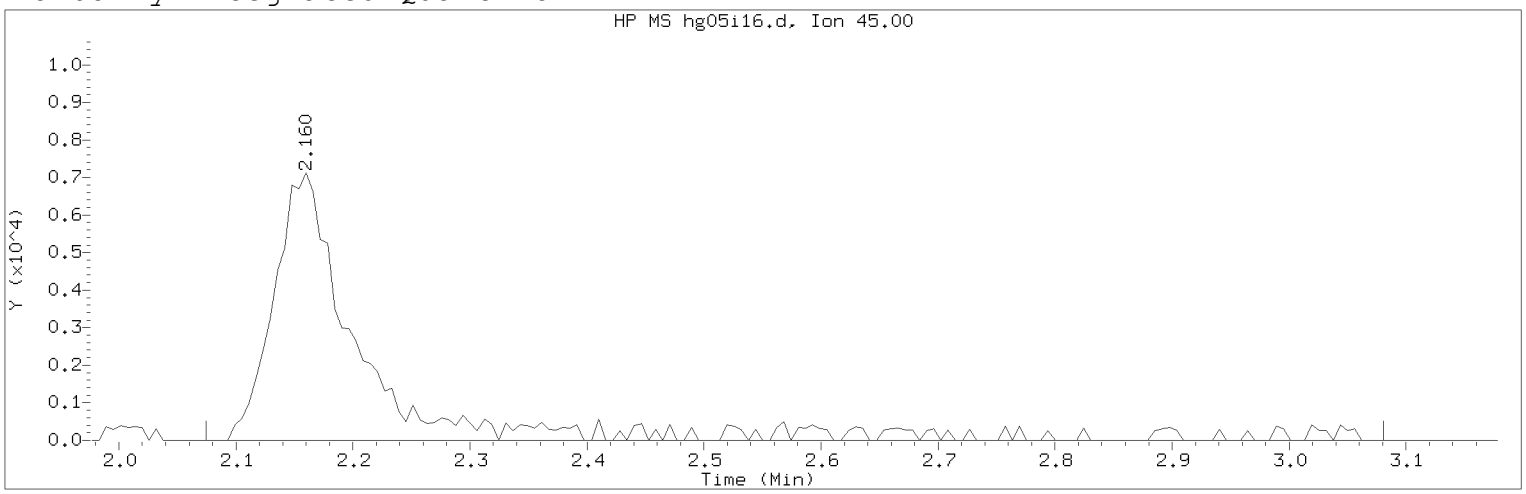
M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

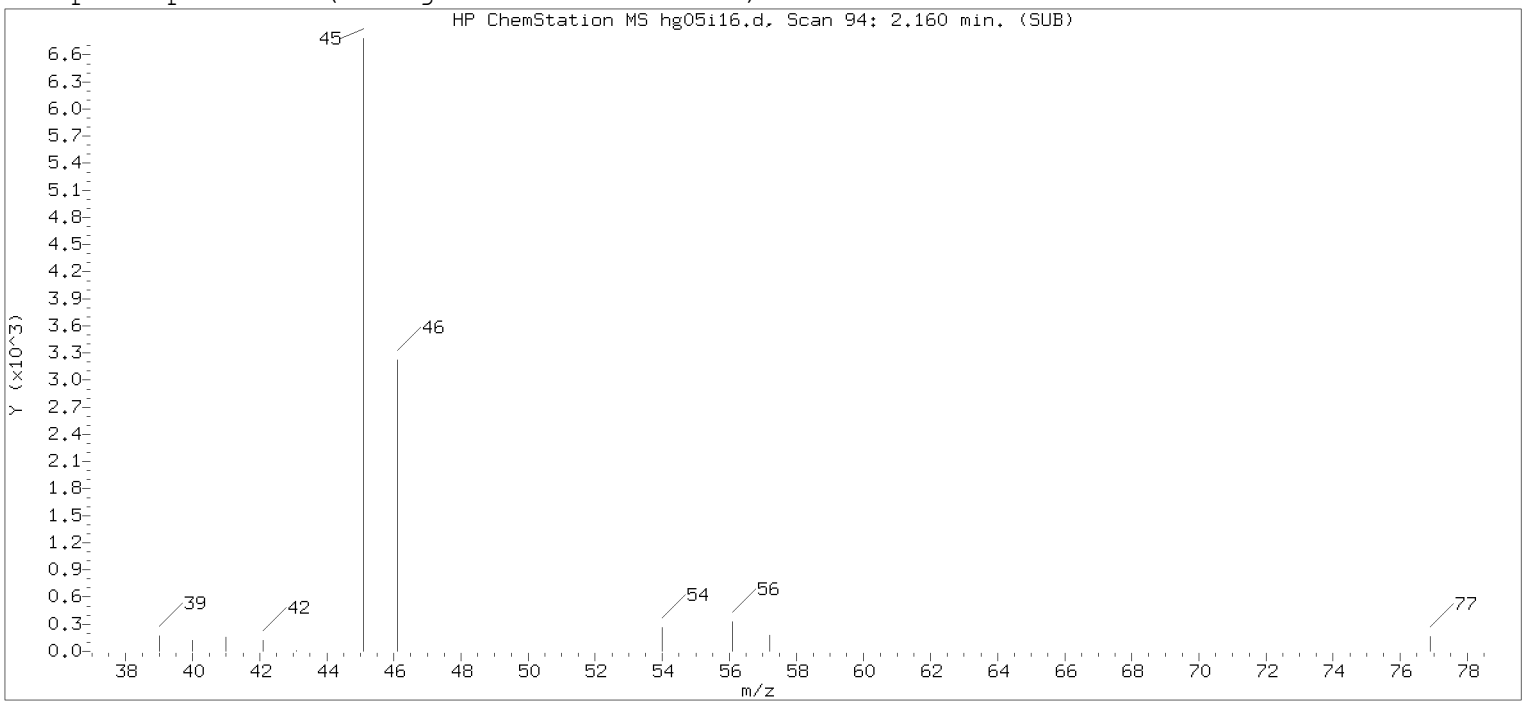
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 94
Retention Time (minutes): 2.160
Quant Ion : 45.00
Area (flag) : 38370M
On-Column Amount (ng) : 0.6023
Integration start scan : 79 Integration stop scan: 244
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

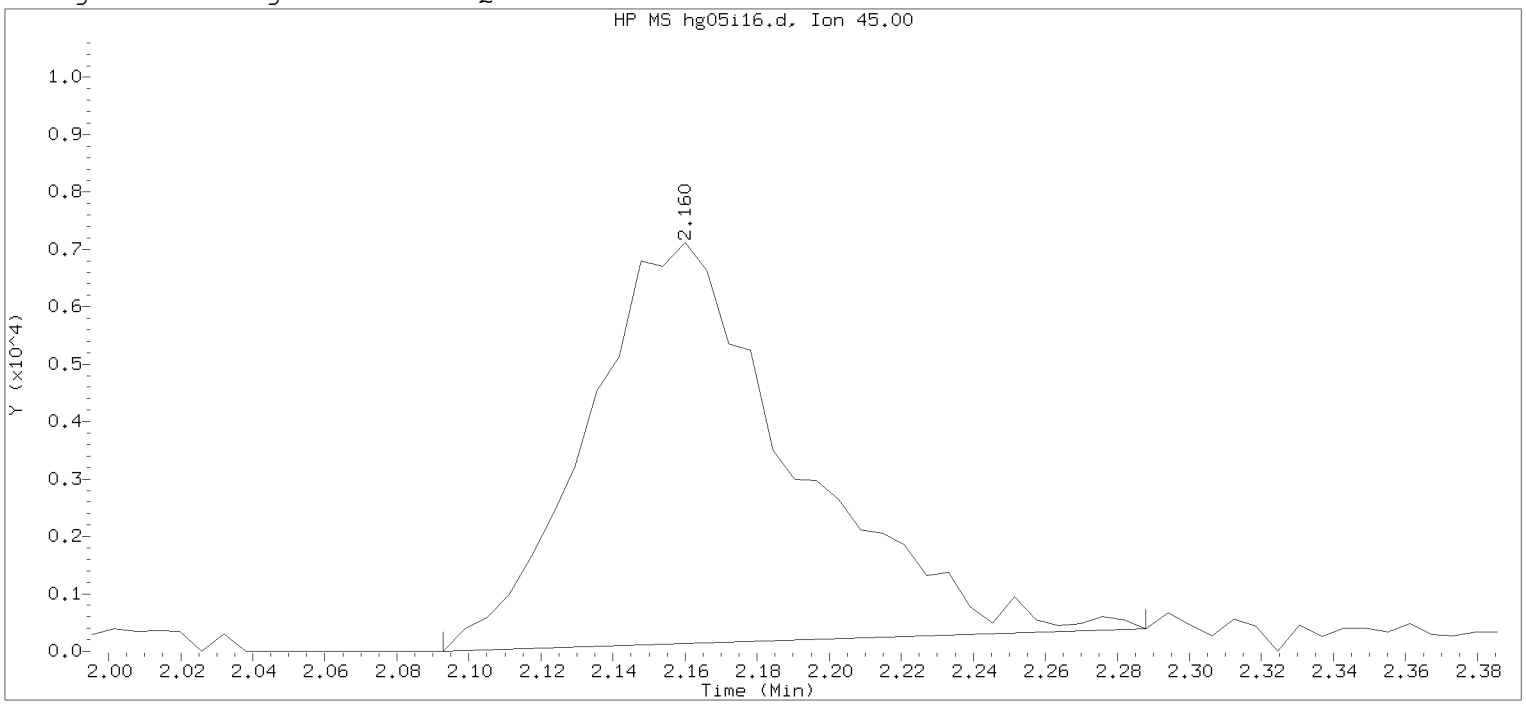
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

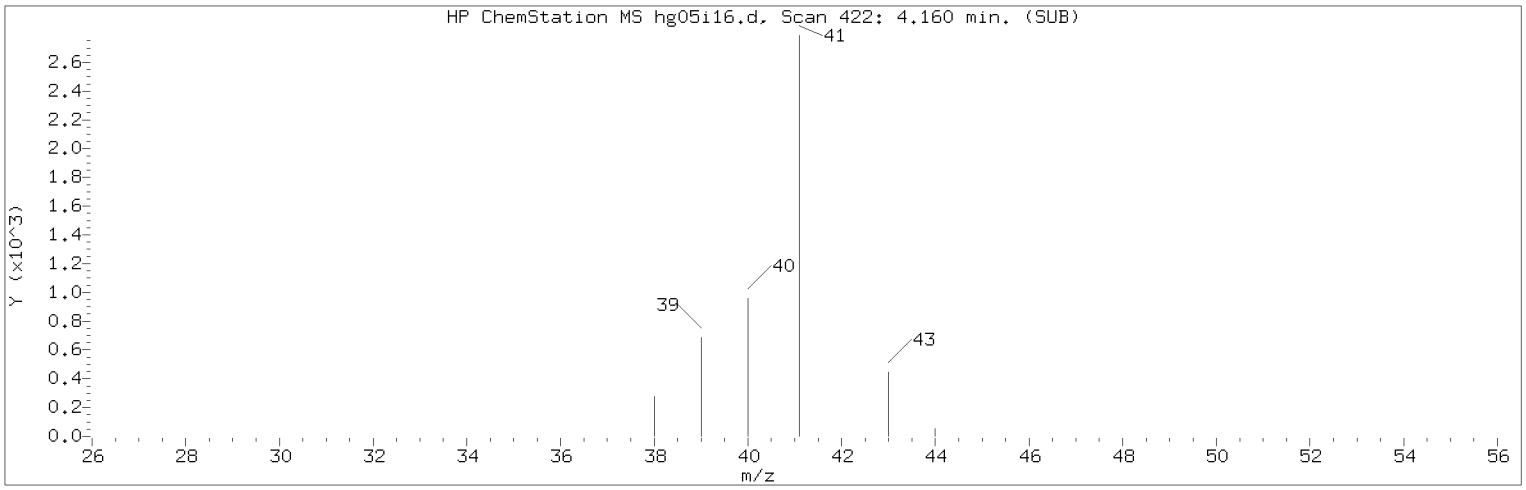
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

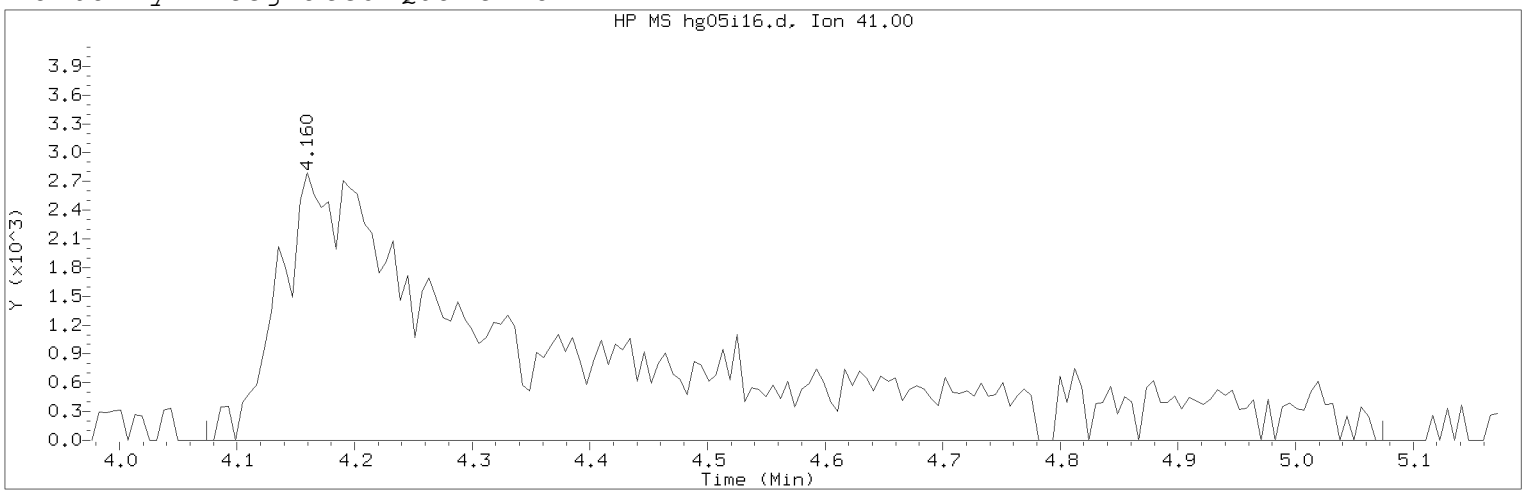
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 94
Retention Time (minutes): 2.160
Quant Ion : 45.00
Area : 27915
On-column Amount (ng) : 0.4846
Integration start scan : 82 Integration stop scan: 114
Y at integration start : 0 Y at integration end: 394

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

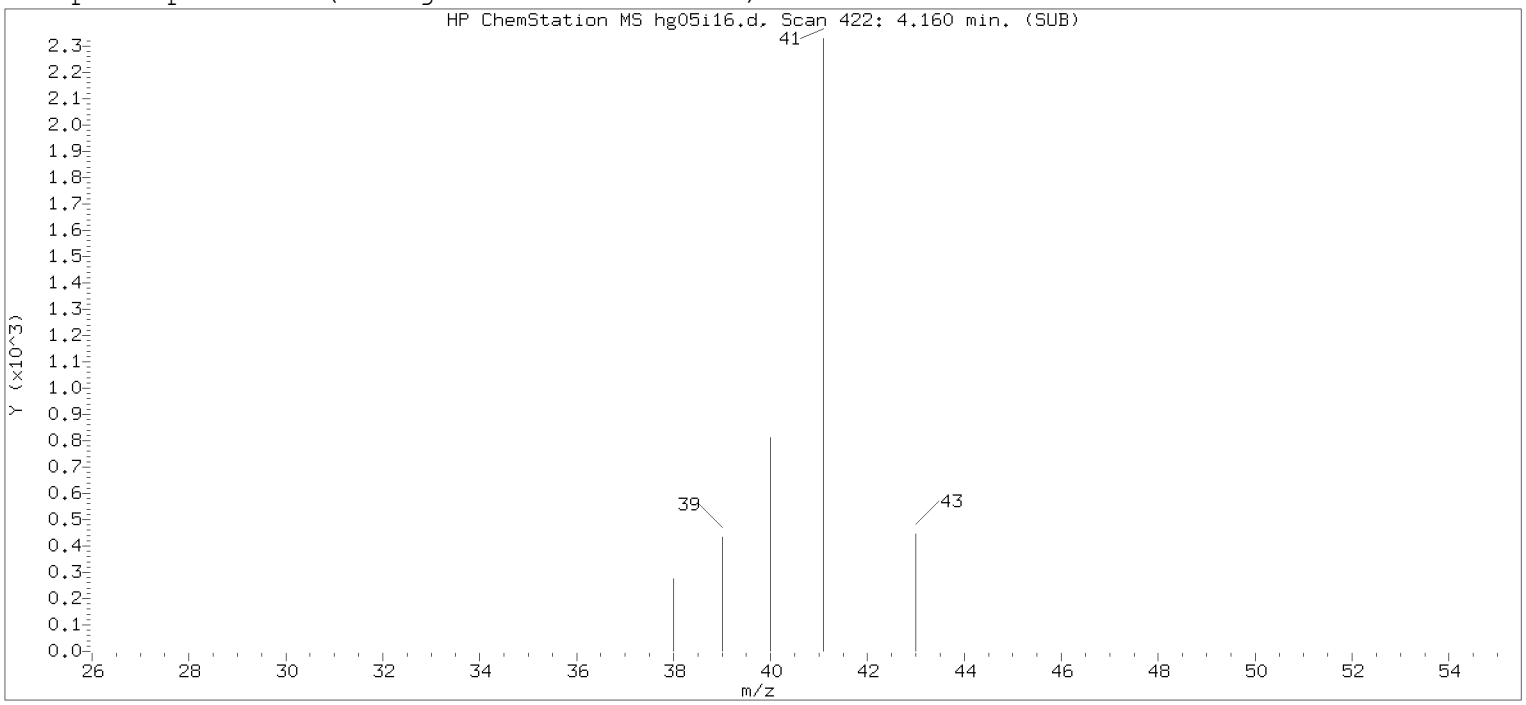
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 422
Retention Time (minutes): 4.160
Quant Ion : 41.00
Area (flag) : 46903M
On-Column Amount (ng) : 24.3043
Integration start scan : 407 Integration stop scan: 571
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

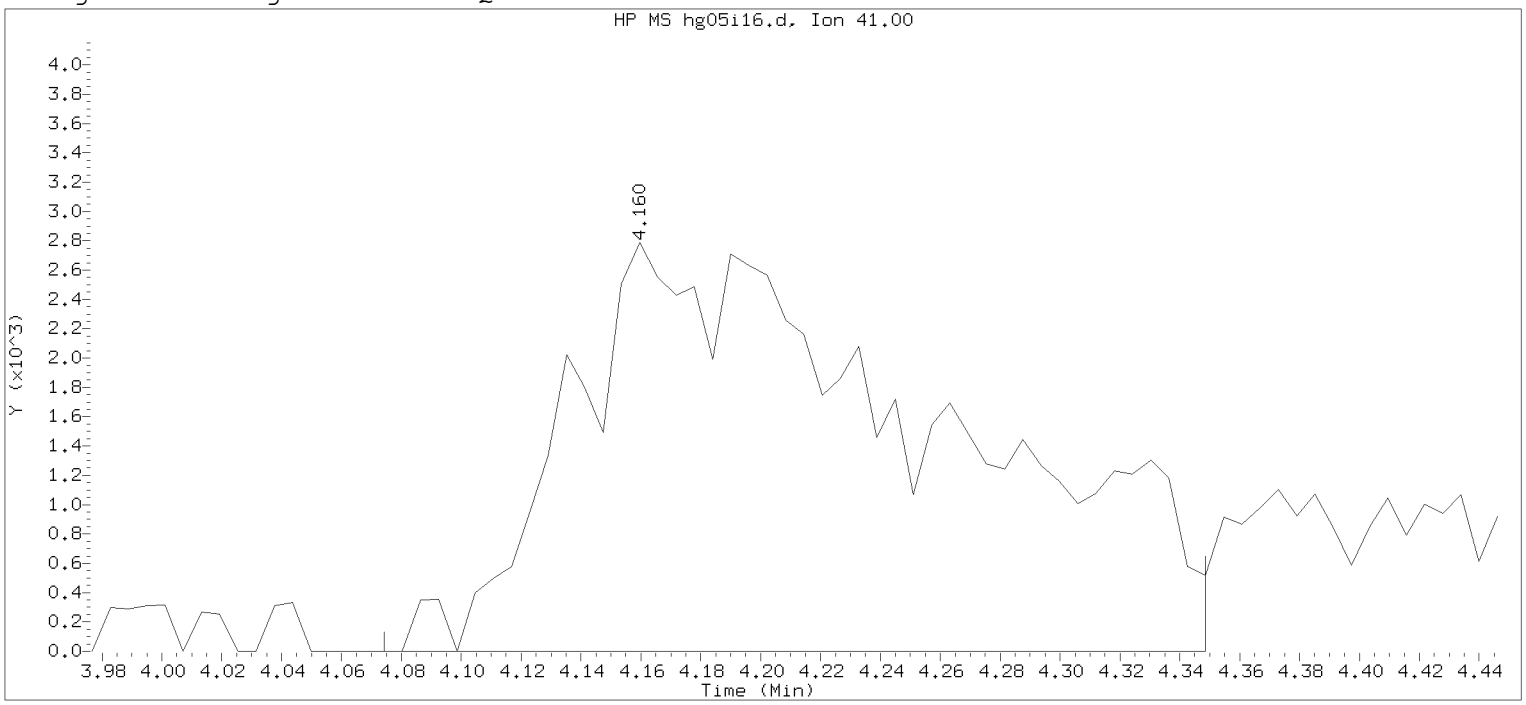
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

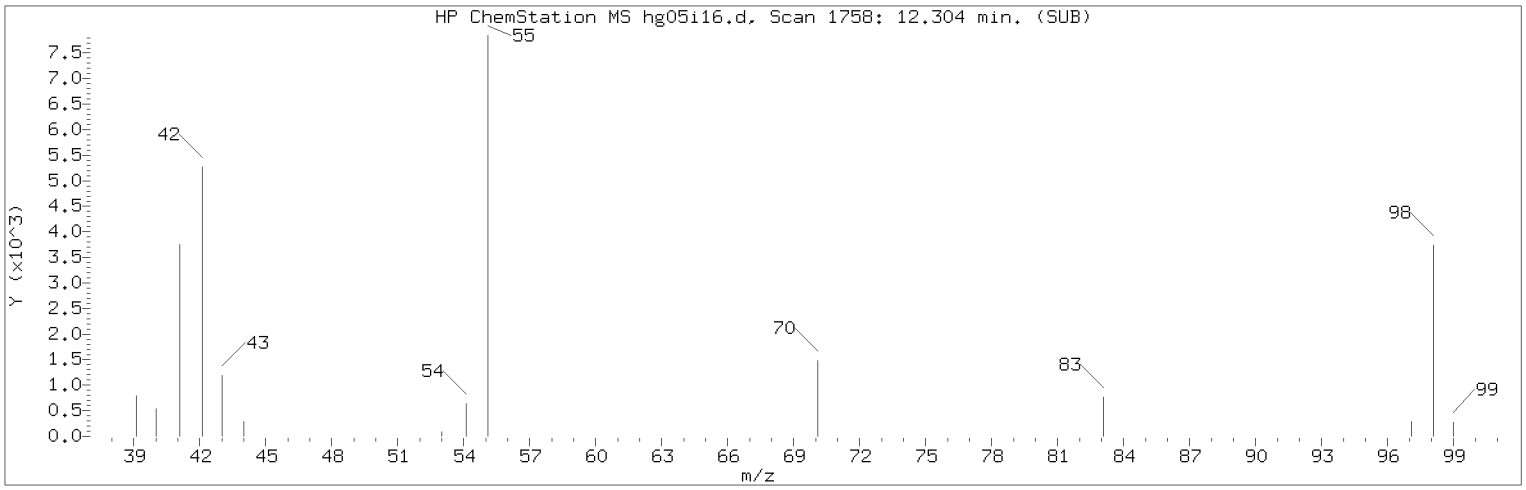
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

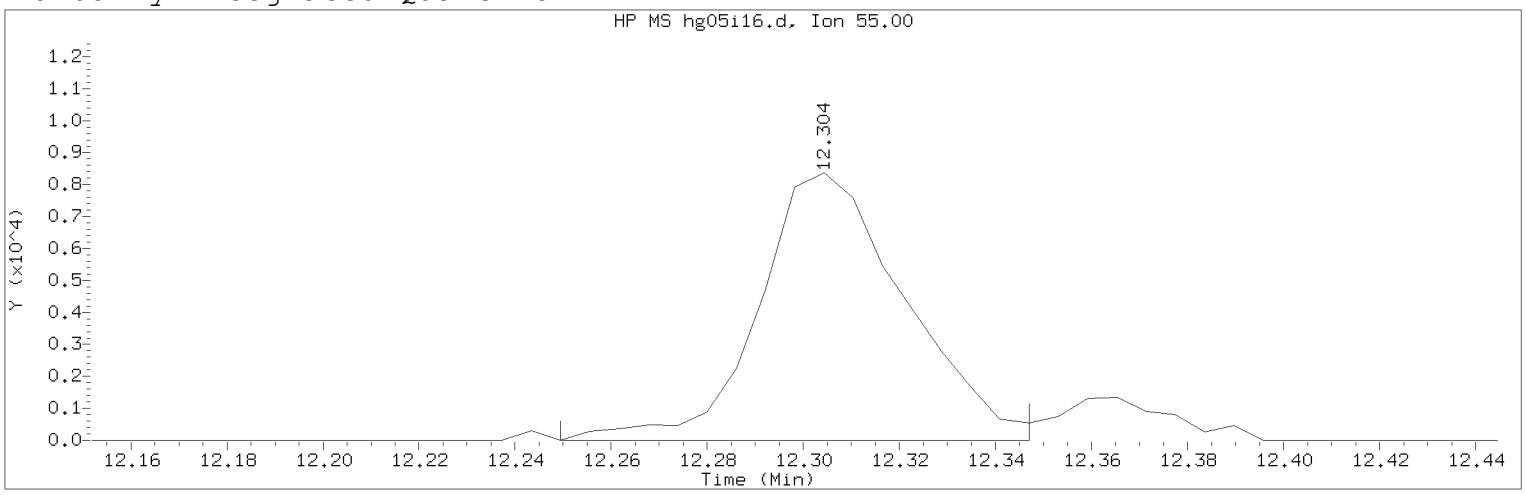
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 422
Retention Time (minutes): 4.160
Quant Ion : 41.00
Area : 24052
On-column Amount (ng) : 16.5150
Integration start scan : 407 Integration stop scan: 452
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:49 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

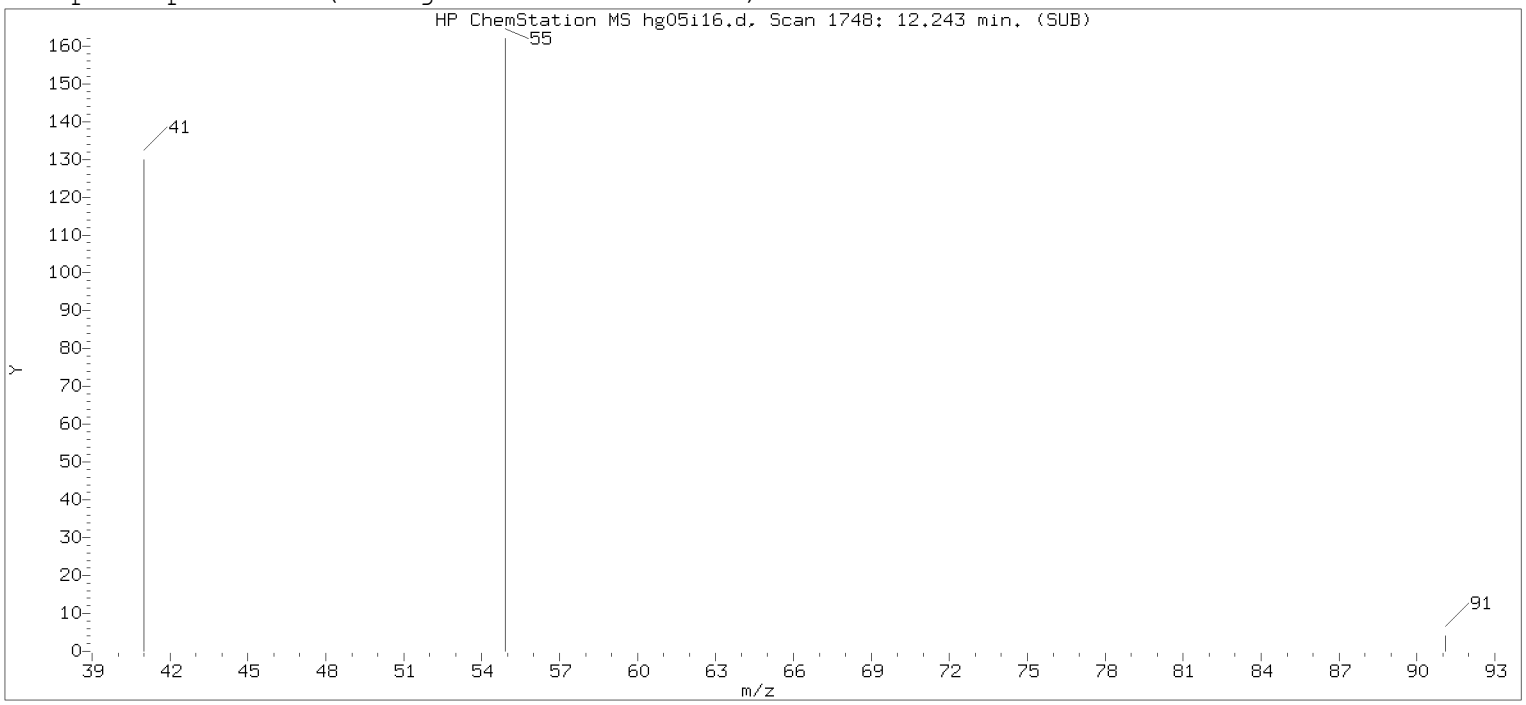
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 17755MA
On-Column Amount (ng) : 25.8674
Integration start scan : 1748 Integration stop scan: 1764
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

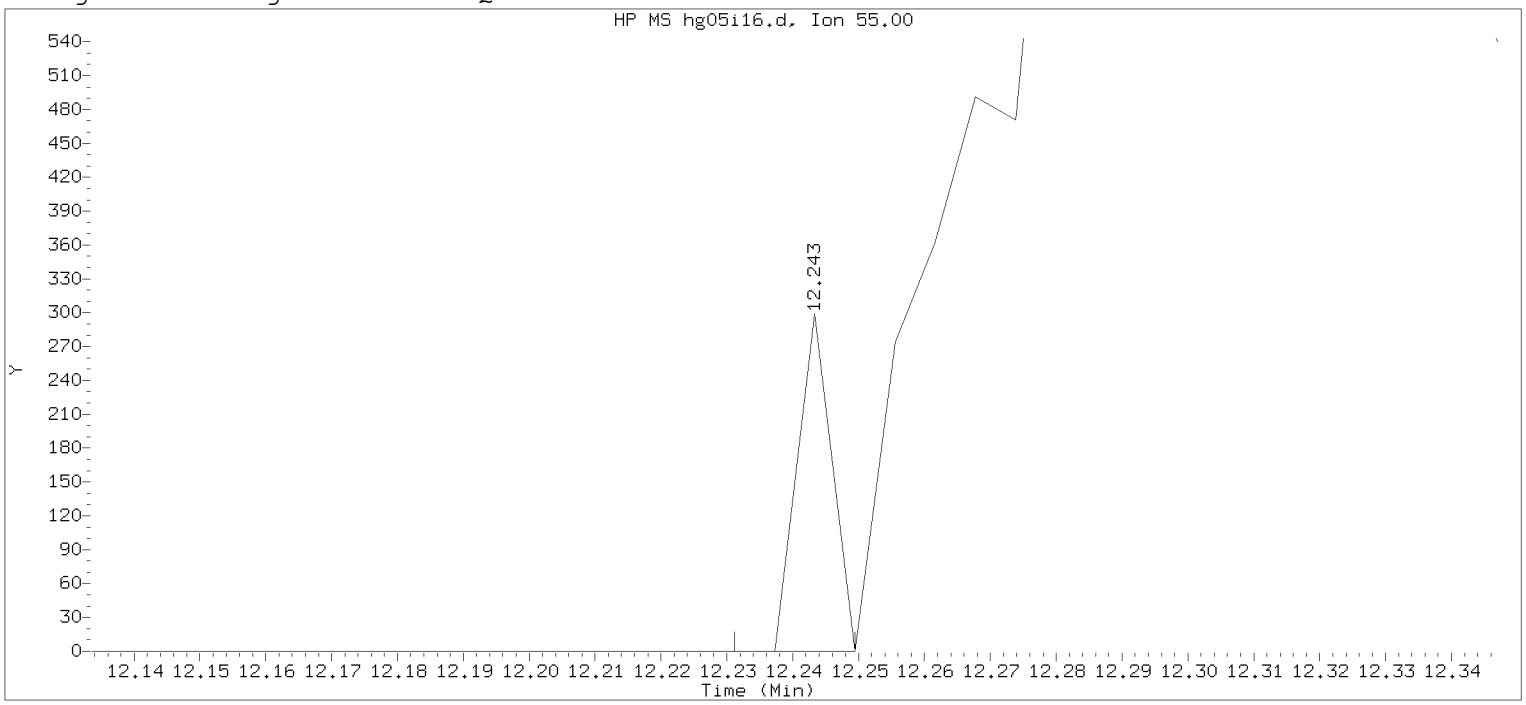
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



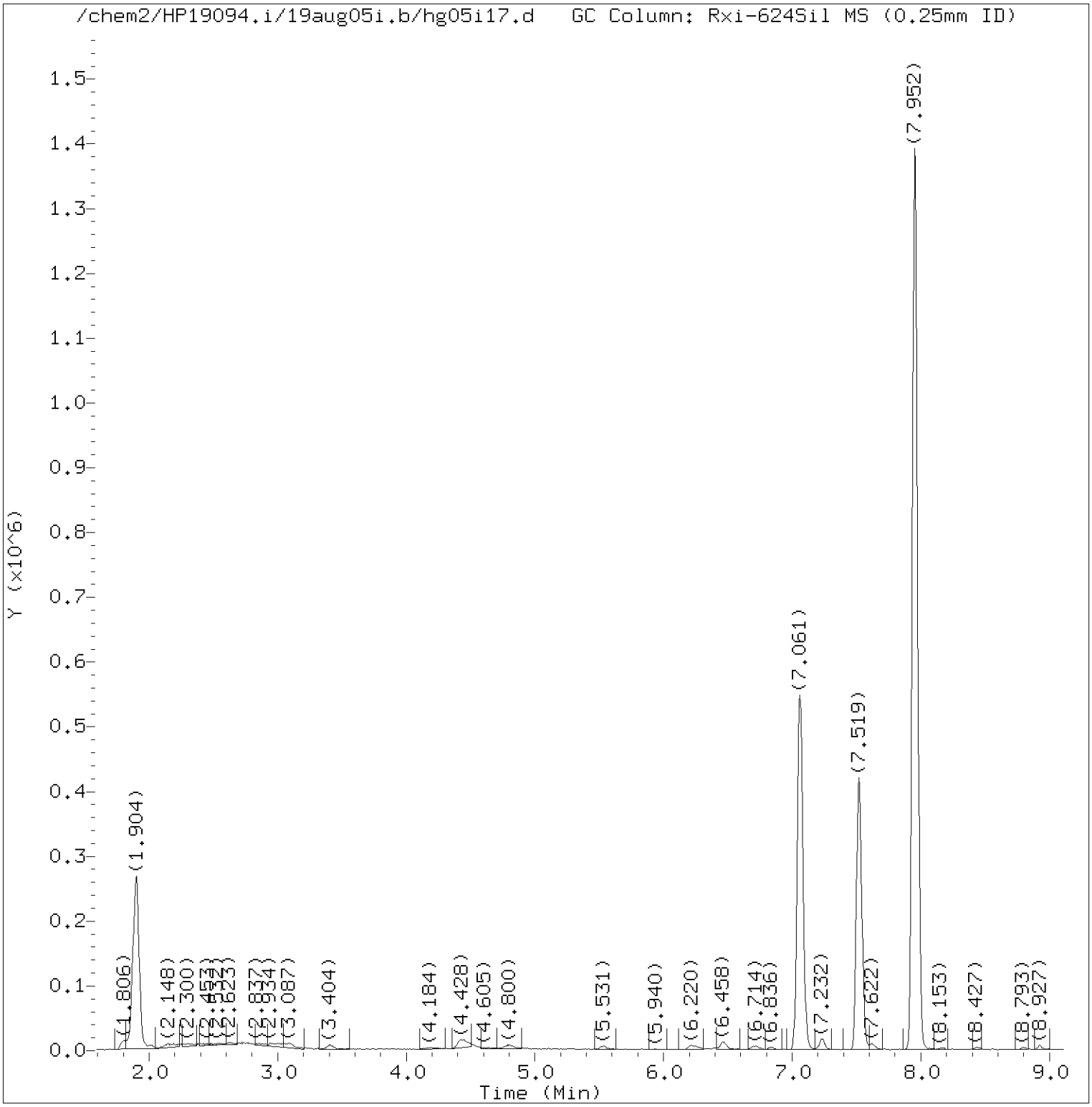
Data File: /chem2/HP19094.i/19aug05i.b/hg05i16.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:08 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.5 Lab Sample ID: VSTD0.5

Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1748
Retention Time (minutes): 12.243
Quant Ion : 55.00
Area : 109
On-column Amount (ng) : 0.1838
Integration start scan : 1745 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

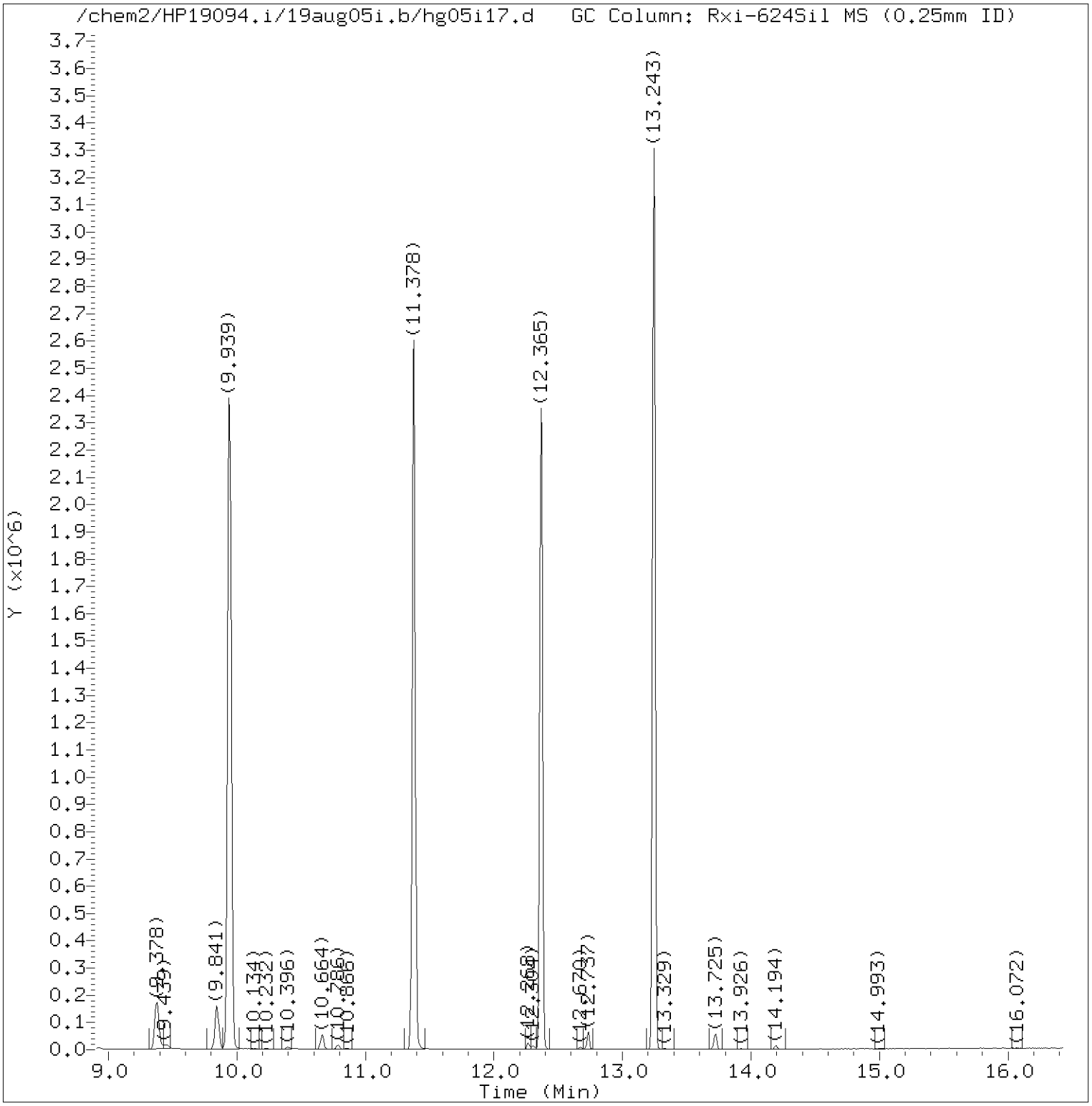
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

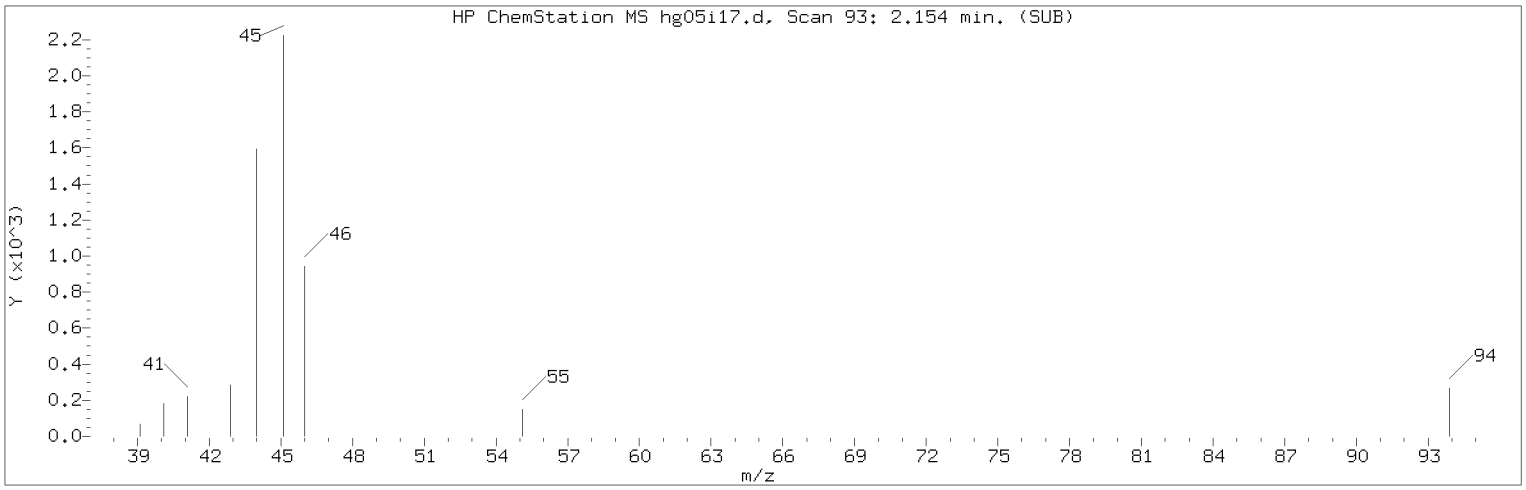
Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	15672M	0.230
25) Acetonitrile	(1)	4.160	41	22969M	10.978
26)*t-Butyl Alcohol-d10	(1)	4.428	65	87031M	50.000
36) Vinyl Acetate	(2)	5.519	43	15547	0.218
43) Methyl Acrylate	(2)	6.470	55	24188	1.030
53) 1-Chlorobutane	(2)	7.232	56	19428	0.207
63)*Fluorobenzene	(2)	7.952	96	1899034	10.000
77) Chloroacetonitrile	(2)	9.433	75	11889	9.621
78) 2-Chloroethyl vinyl ether	(2)	9.463	63	4237	0.194
97)*Chlorobenzene-d5	(3)	11.378	117	1499832	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	5325	0.377
112) Cyclohexanone	(1)	12.298	55	6462	10.147
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	827636	10.000
142) Hexachloroethane	(4)	13.725	117	9862	0.198

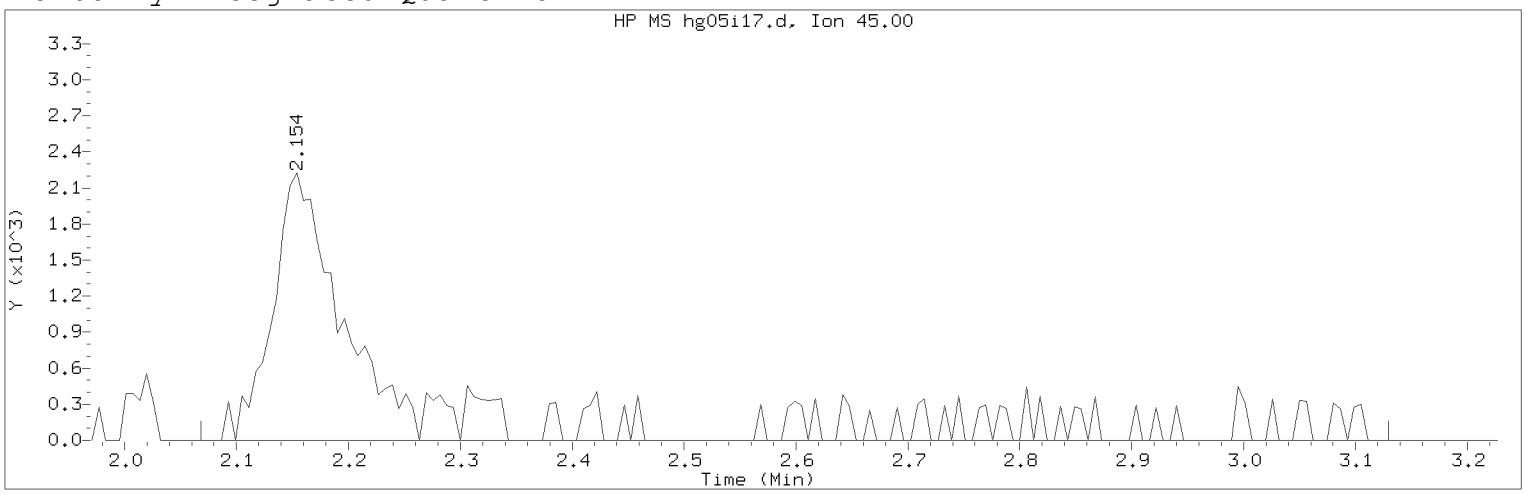
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

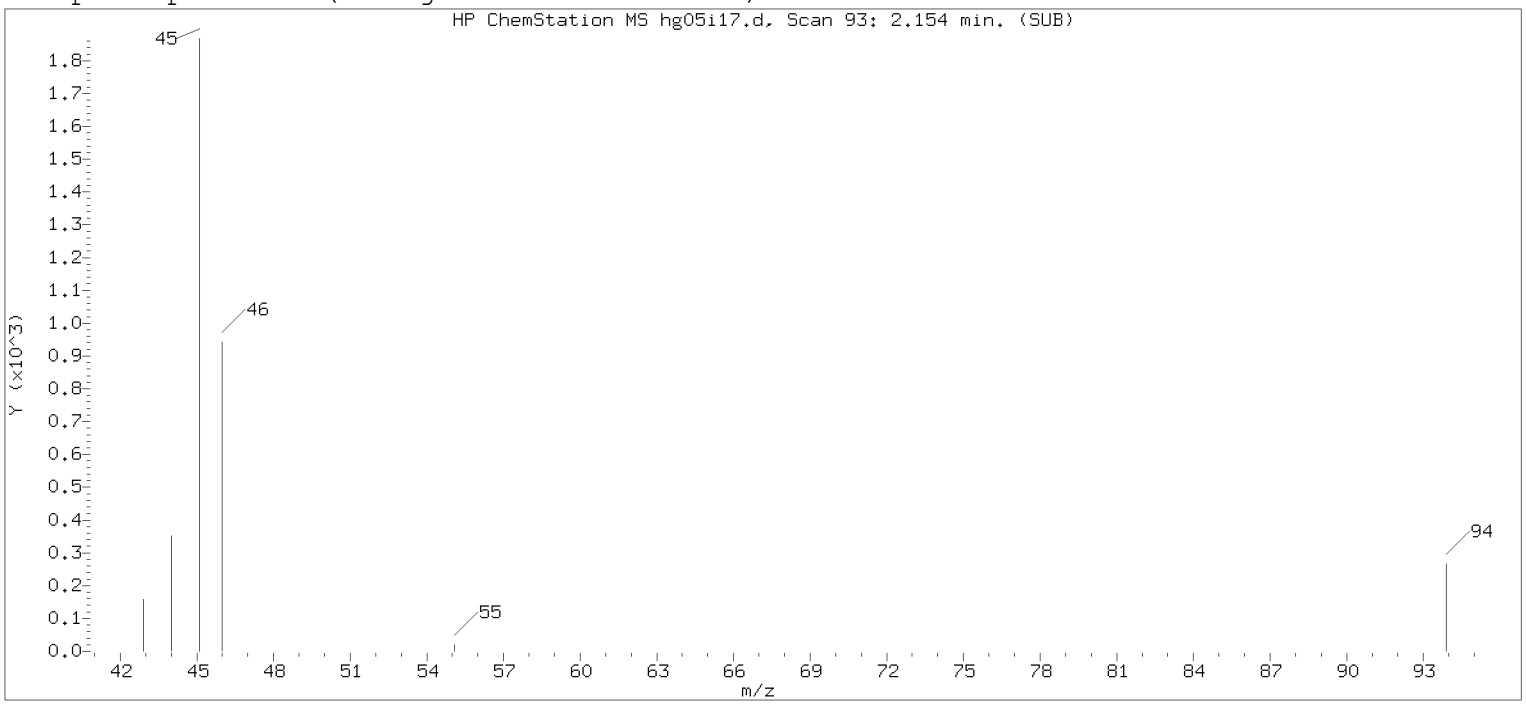
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 15672M
On-Column Amount (ng) : 0.2296
Integration start scan : 78 Integration stop scan: 252
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

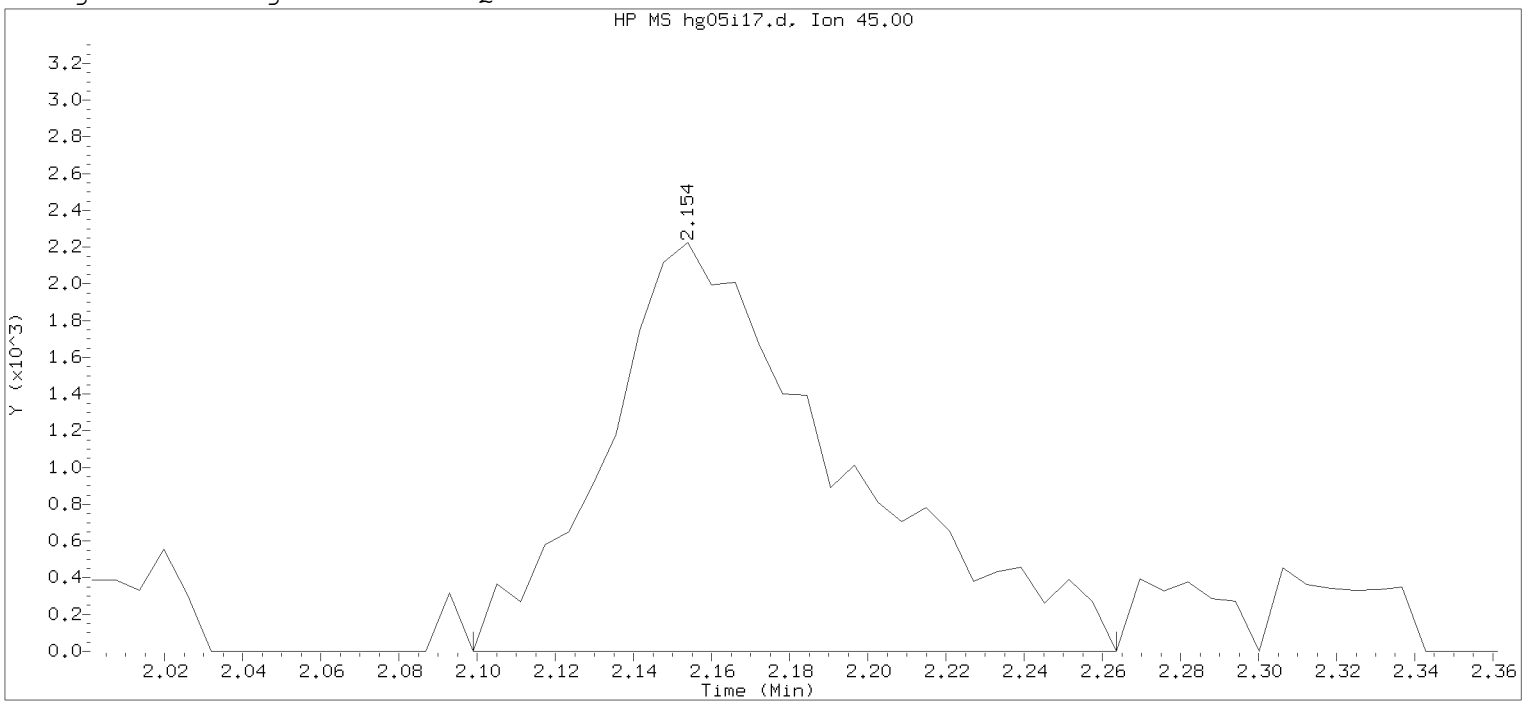
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

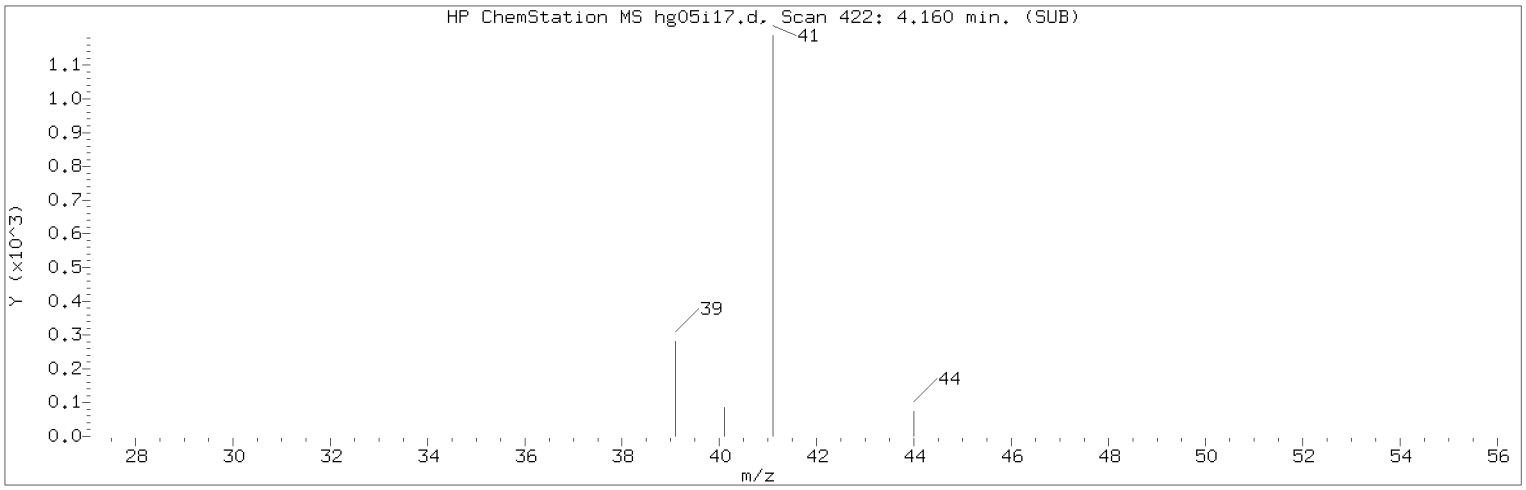
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

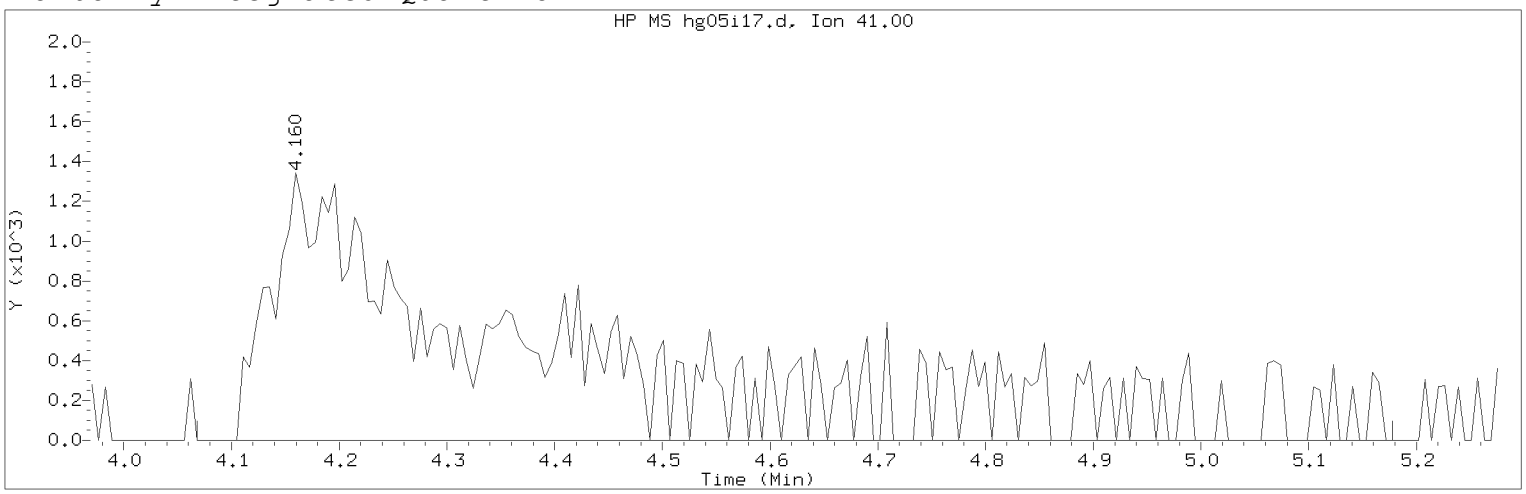
Compound Number	: 4		
Compound Name	: Dimethyl ether		
Scan Number	: 93		
Retention Time (minutes)	: 2.154		
Quant Ion	: 45.00		
Area	: 9346		
On-column Amount (ng)	: 0.1665		
Integration start scan	: 83	Integration stop scan:	110
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

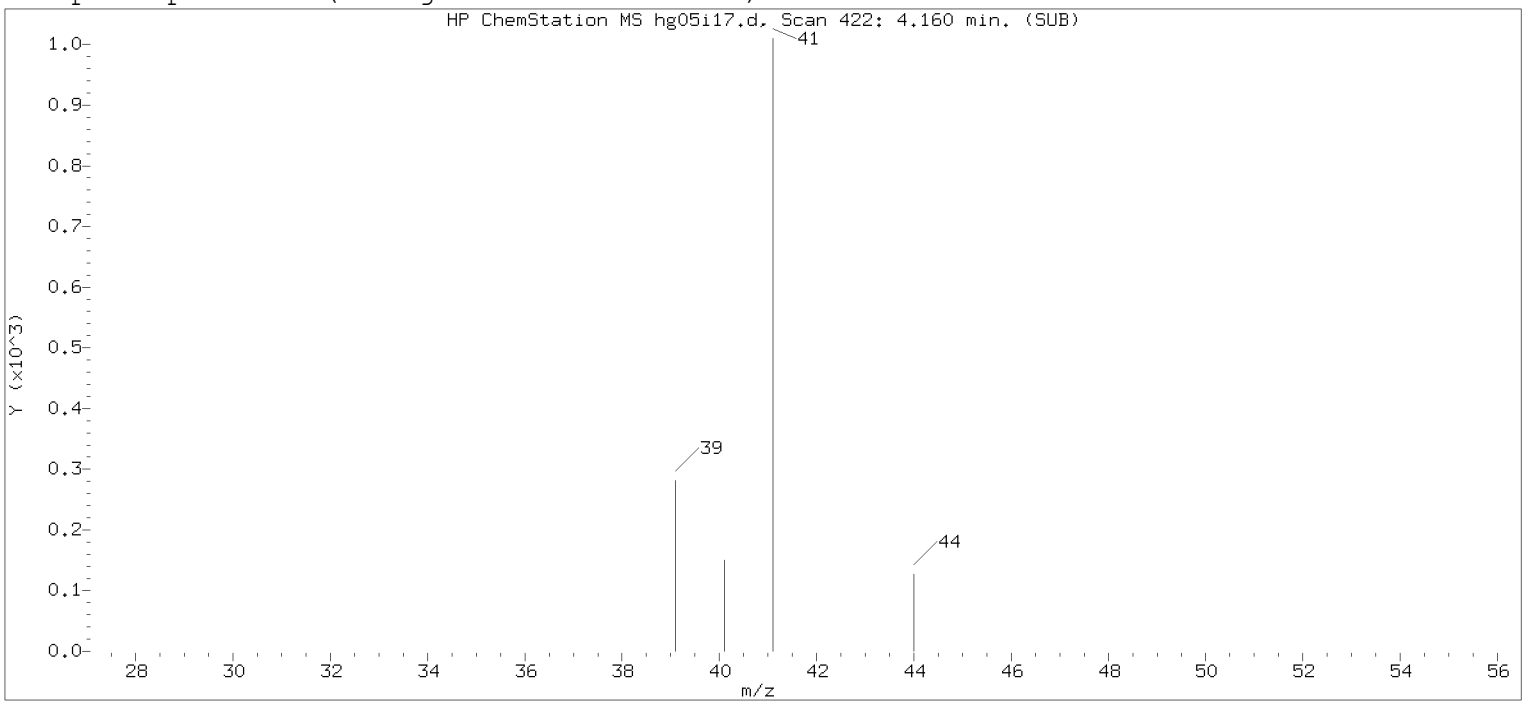
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 422
Retention Time (minutes): 4.160
Quant Ion : 41.00
Area (flag) : 22969M
On-Column Amount (ng) : 10.9783
Integration start scan : 406 Integration stop scan: 588
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

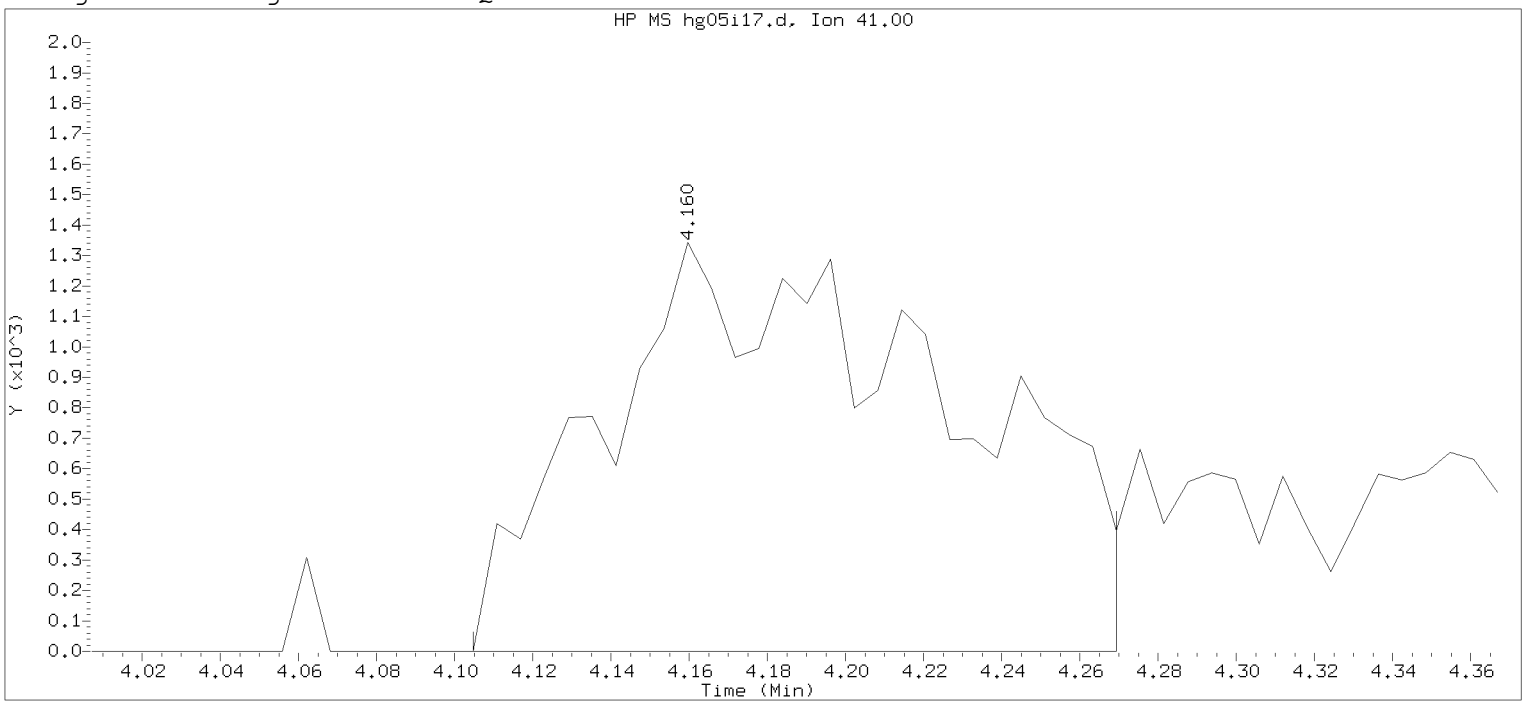
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

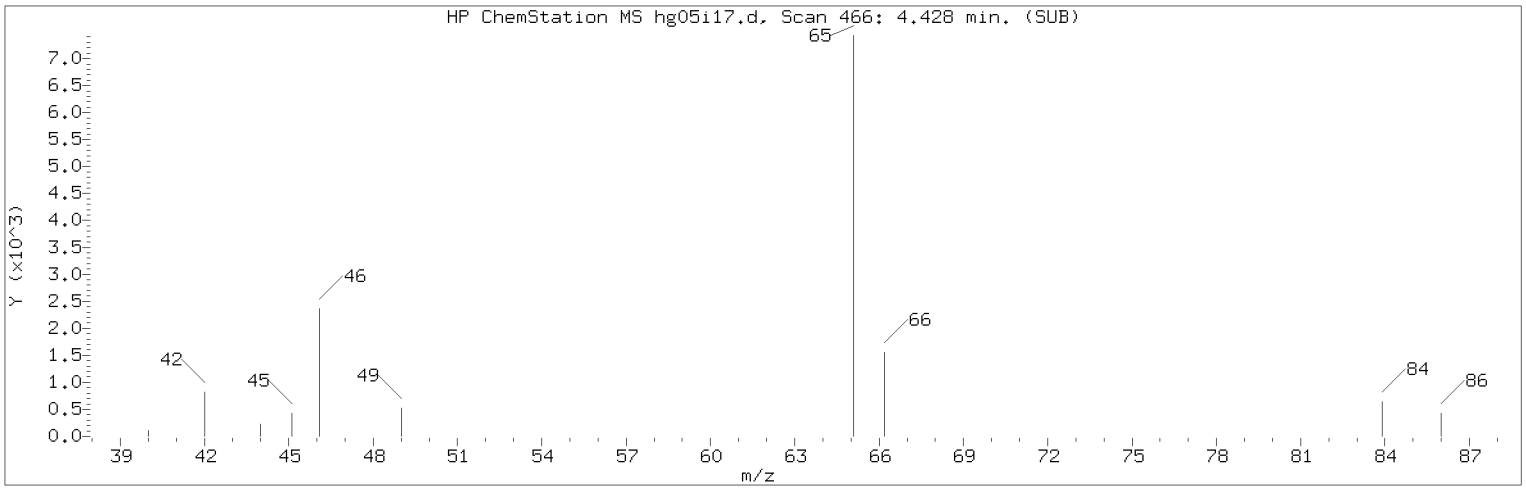
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

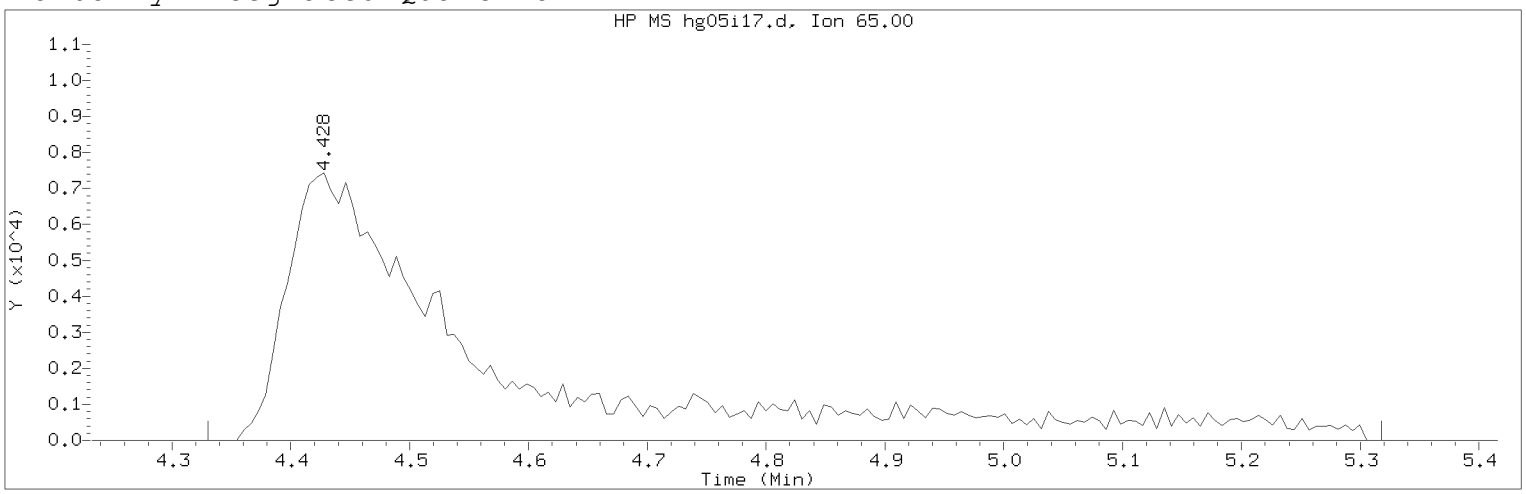
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 422
Retention Time (minutes): 4.160
Quant Ion : 41.00
Area : 8323
On-column Amount (ng) : 7.9805
Integration start scan : 412 Integration stop scan: 439
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:50 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

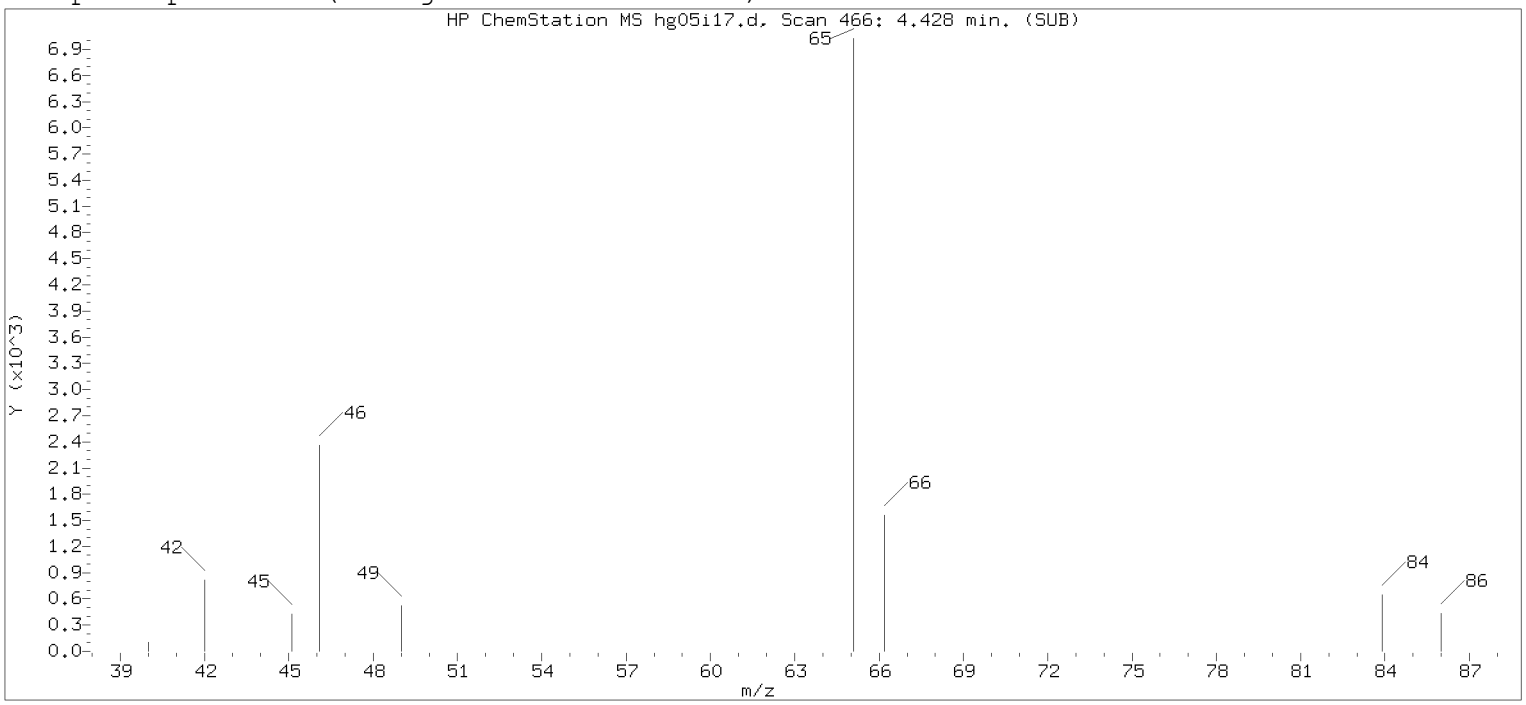
Compound Number : 26
Compound Name : t-Butyl Alcohol-d10
Scan Number : 466
Retention Time (minutes): 4.428
Quant Ion : 65.00
Area (flag) : 87031M
On-Column Amount (ng) : 50.0000
Integration start scan : 449 Integration stop scan: 611
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

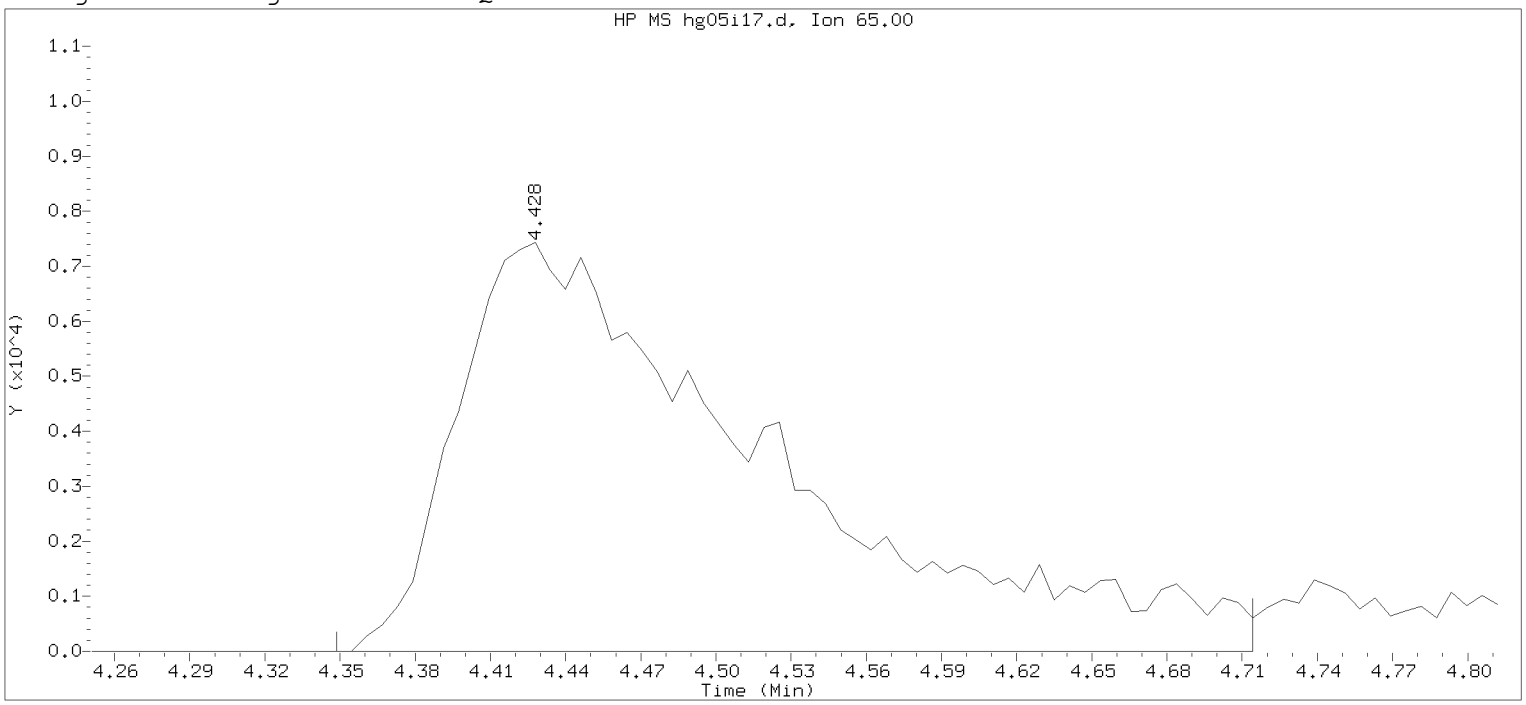
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



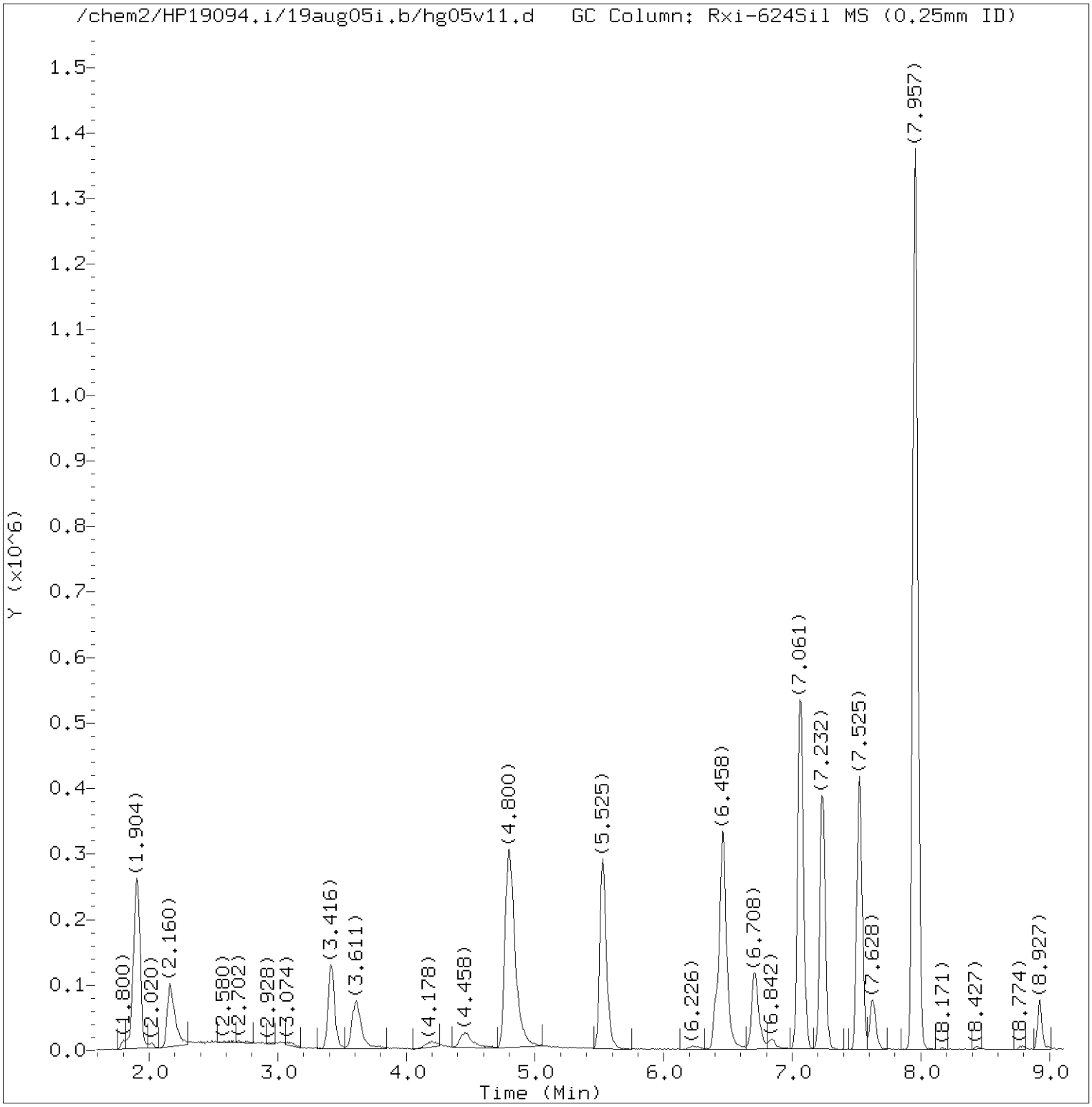
Data File: /chem2/HP19094.i/19aug05i.b/hg05i17.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:30 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 06-AUG-2019 20:43
Date, time and analyst ID of latest file update: 06-Aug-2019 20:43 mec29284

Sample Name: VSTD0.2 Lab Sample ID: VSTD0.2

Compound Number	: 26		
Compound Name	: t-Butyl Alcohol-d10		
Scan Number	: 466		
Retention Time (minutes)	: 4.428		
Quant Ion	: 65.00		
Area	: 63814		
On-column Amount (ng)	: 50.0000		
Integration start scan	: 452	Integration stop scan:	512
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:52.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

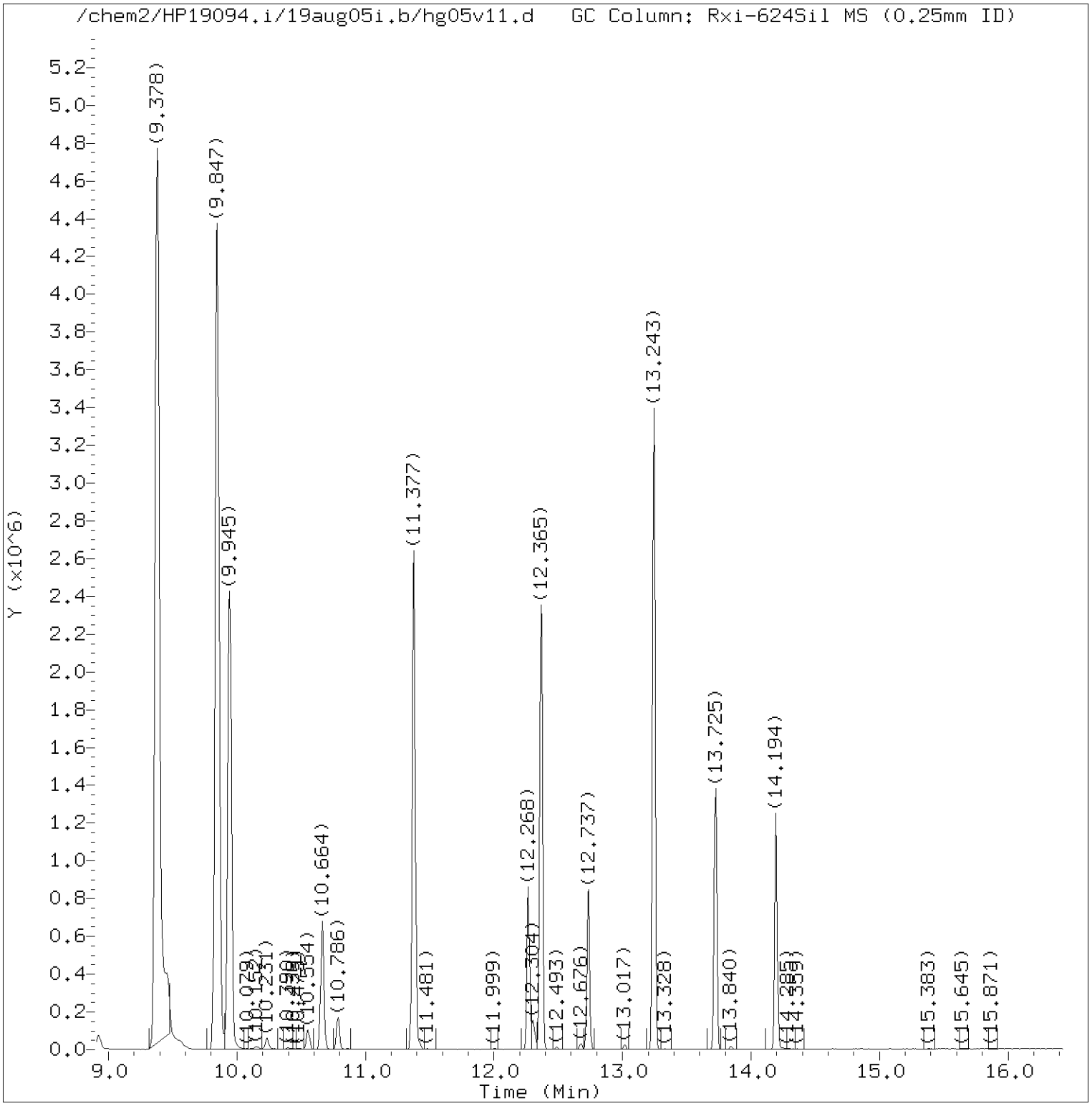
Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

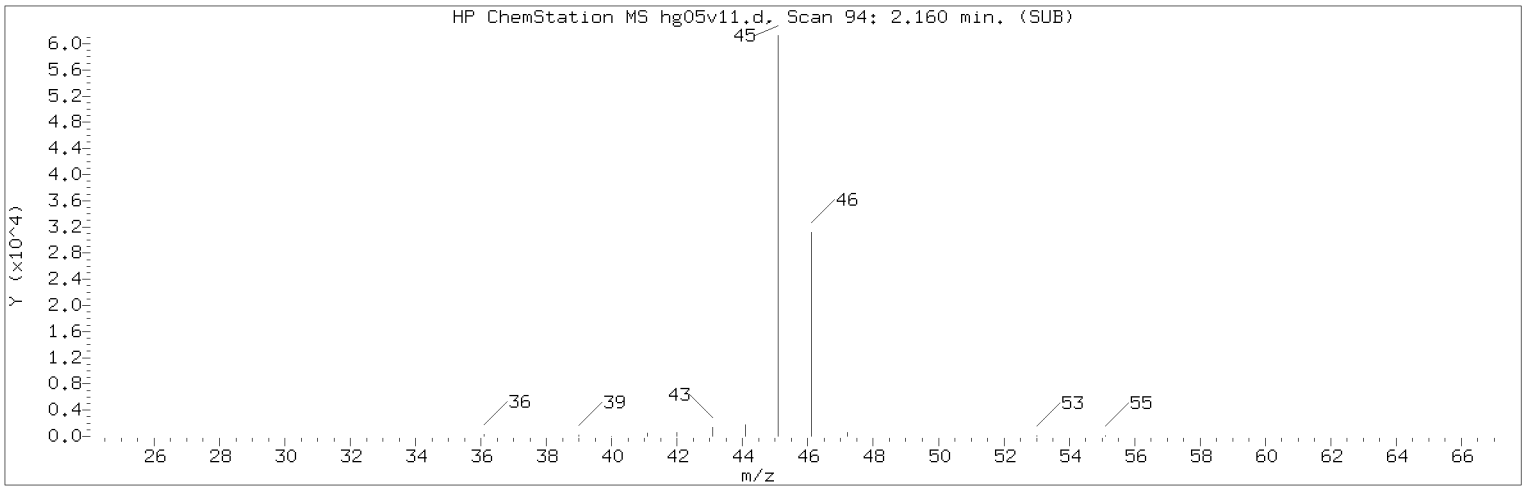
Sample Name: ICVHSM Lab Sample ID: ICVHSM

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.160	45	294891M	4.381
25) Acetonitrile	(1)	4.196	41	86385M	38.138
26)*t-Butyl Alcohol-d10	(1)	4.428	65	94219	50.000
36) Vinyl Acetate	(2)	5.525	43	814316	11.581
43) Methyl Acrylate	(2)	6.464	55	614394	26.538
50)$Dibromofluoromethane	(2)	7.061	113	506616	9.949
53) 1-Chlorobutane	(2)	7.232	56	459133	4.972
57)$1,2-Dichloroethane-d4	(2)	7.525	102	94097	10.050
63)*Fluorobenzene	(2)	7.957	96	1872568	10.000
77) Chloroacetonitrile	(2)	9.439	75	298323	244.818
78) 2-Chloroethyl vinyl ether	(2)	9.463	63	107536	4.988
82)$Toluene-d8	(3)	9.945	98	1915602	9.989
97)*Chlorobenzene-d5	(3)	11.377	117	1502153	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	195698	12.783
112) Cyclohexanone	(1)	12.304	55	74774M	108.463
111)$4-Bromofluorobenzene	(3)	12.365	95	684742	9.764
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	829452	10.000
142) Hexachloroethane	(4)	13.725	117	245538	4.924

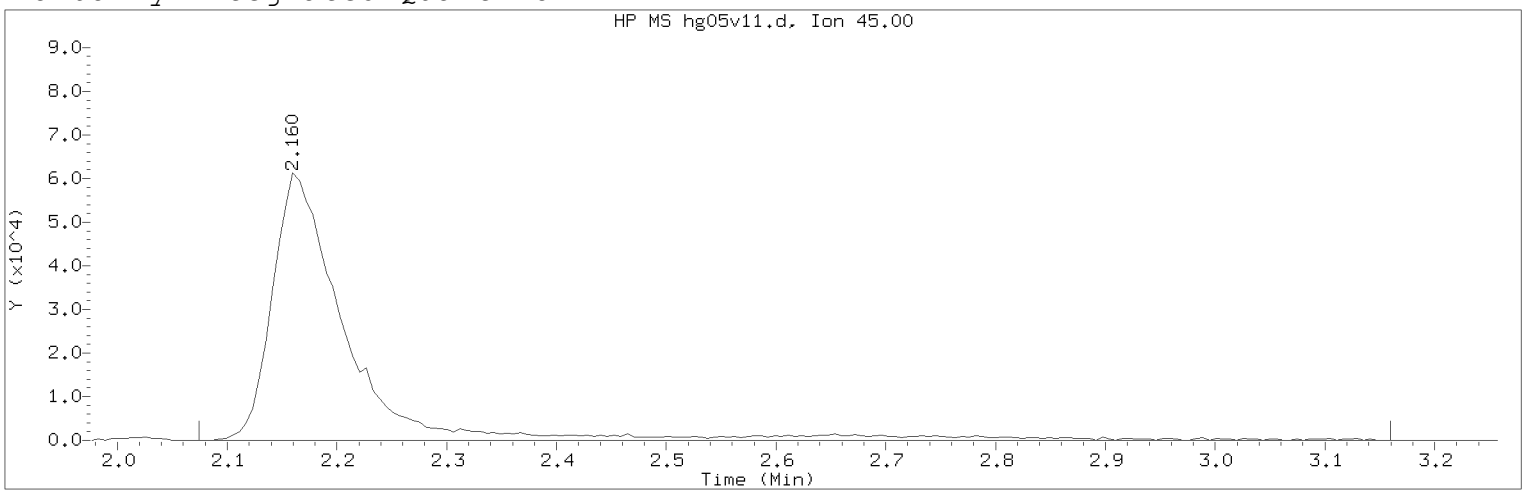
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

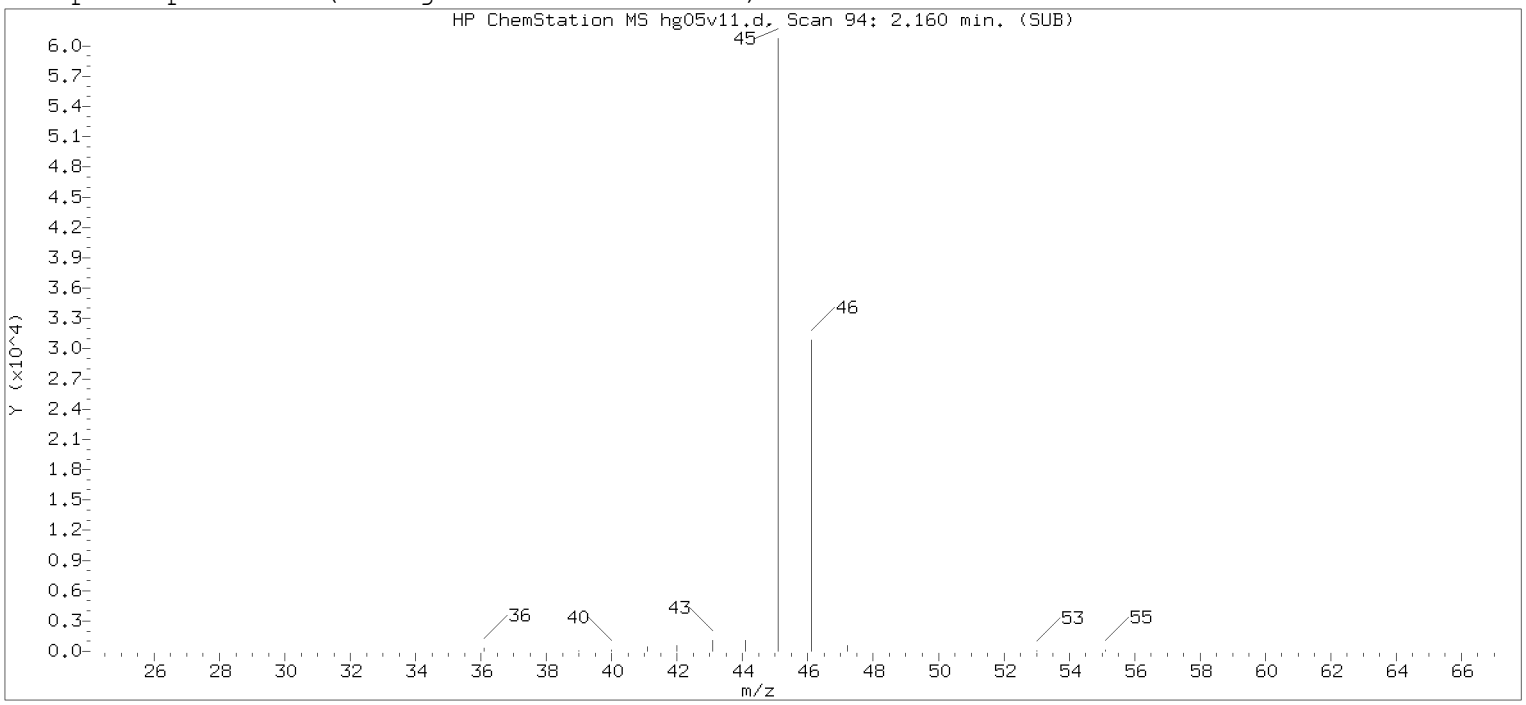
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 94
Retention Time (minutes): 2.160
Quant Ion : 45.00
Area (flag) : 294891M
On-Column Amount (ng) : 4.3808
Integration start scan : 79 Integration stop scan: 257
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

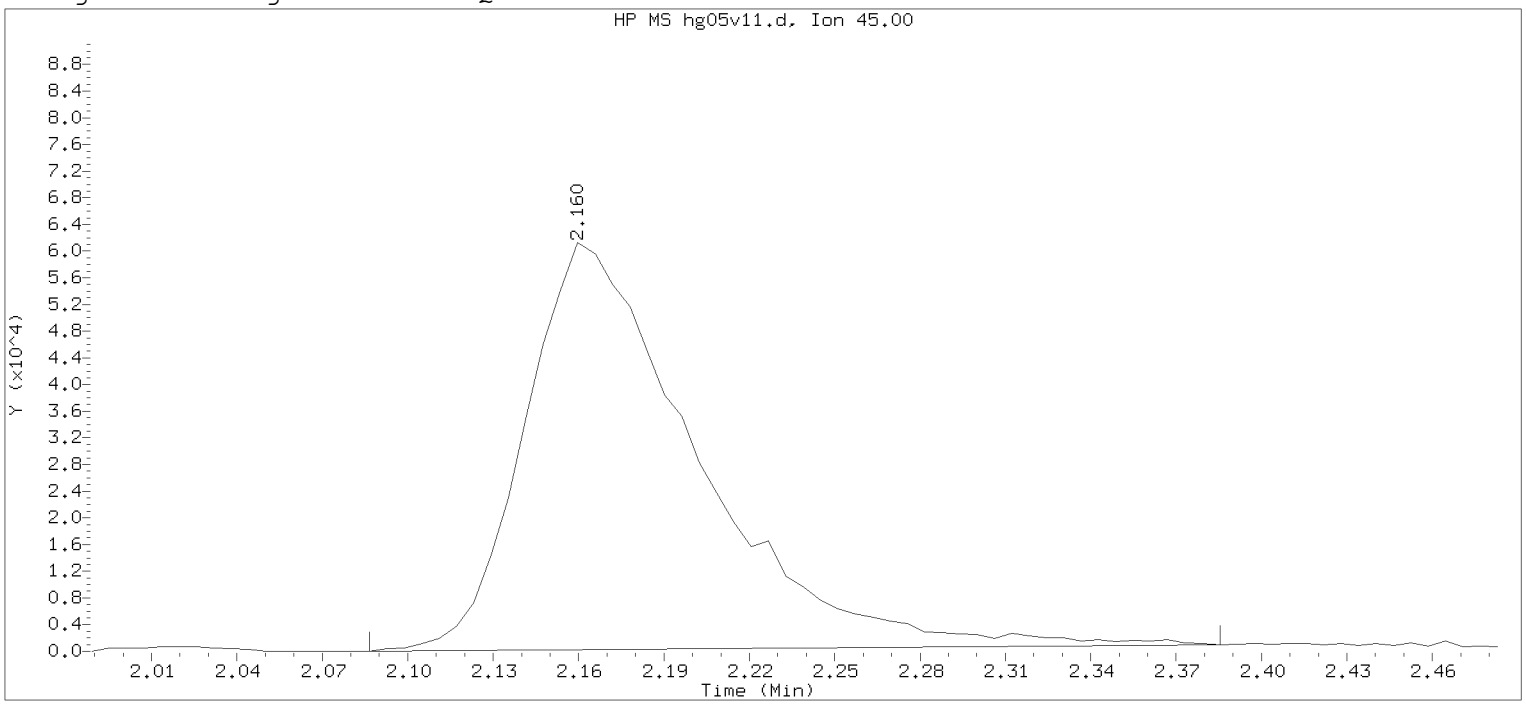
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

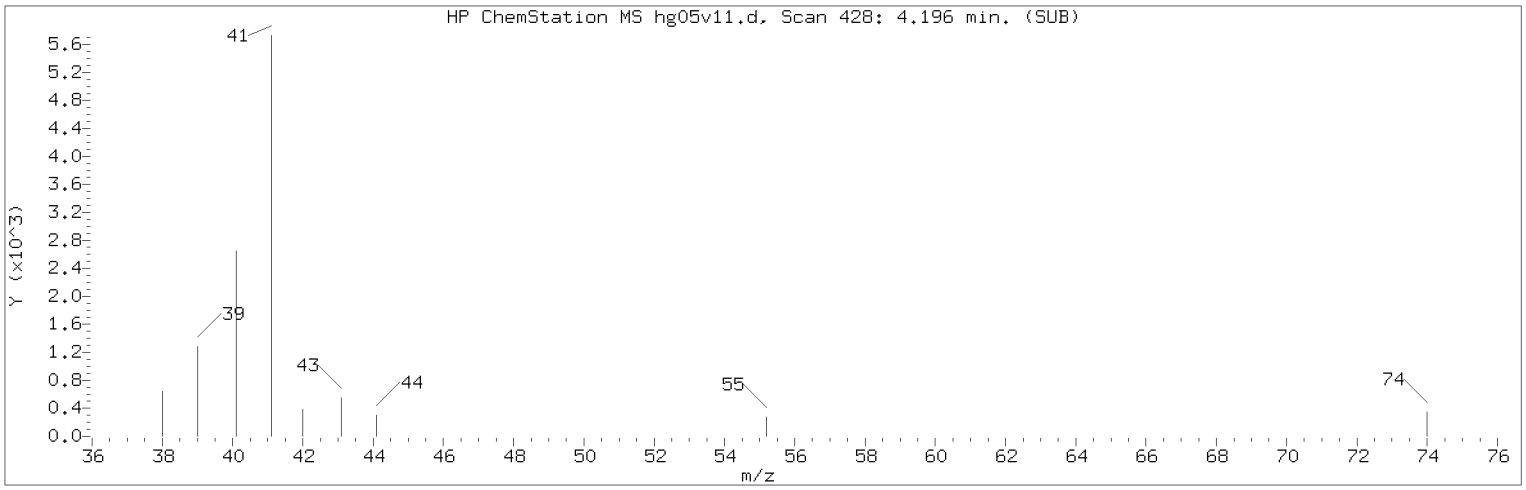
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:51 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

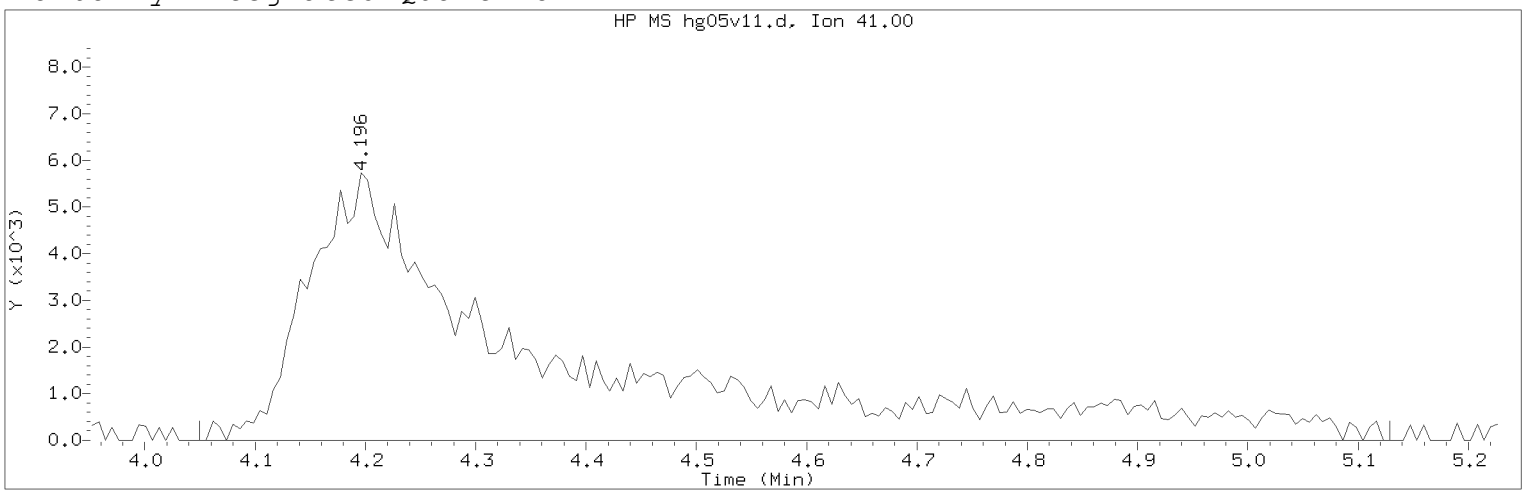
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 94
Retention Time (minutes): 2.160
Quant Ion : 45.00
Area : 256652
On-column Amount (ng) : 3.8128
Integration start scan : 81 Integration stop scan: 130
Y at integration start : 0 Y at integration end: 964

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:53.
Target 3.5 esignature used for mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

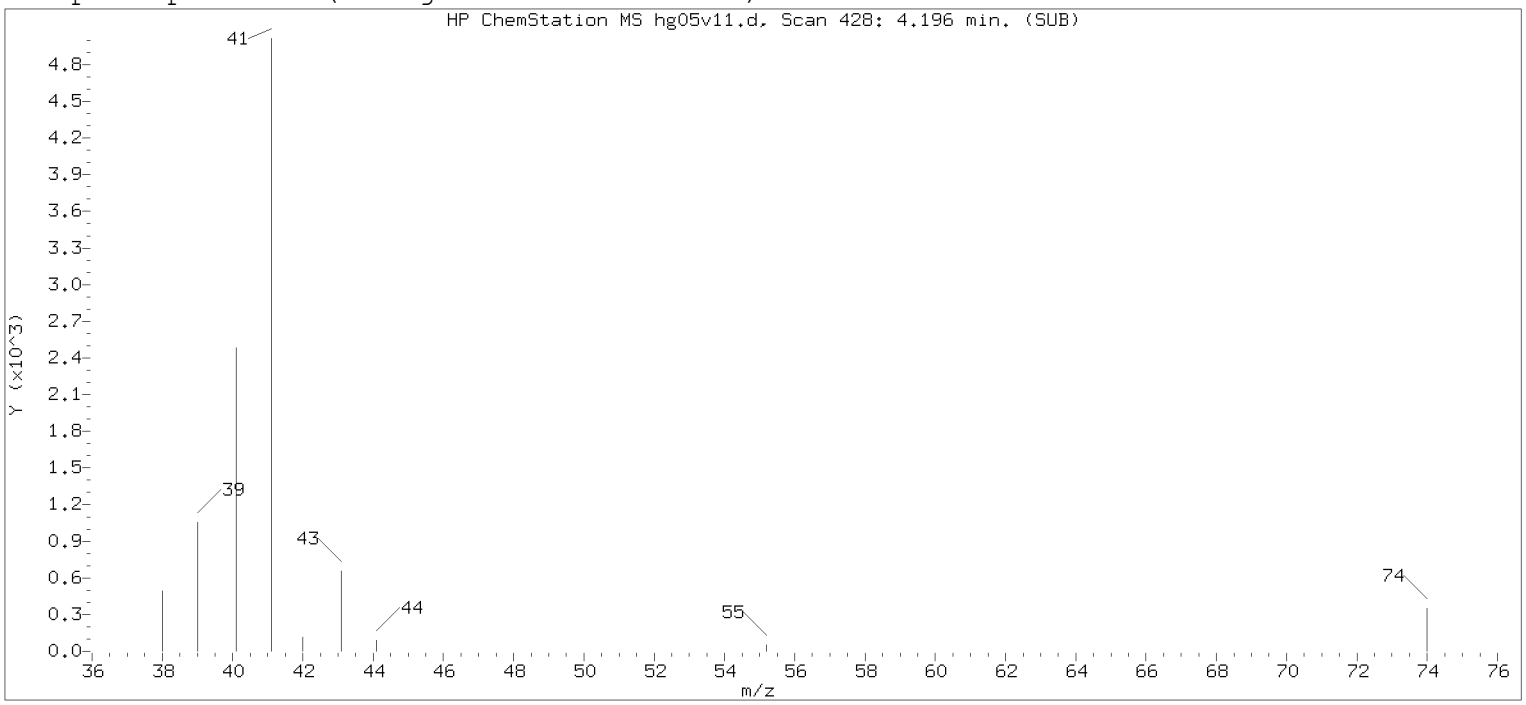
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 428
Retention Time (minutes): 4.196
Quant Ion : 41.00
Area (flag) : 86385M
On-Column Amount (ng) : 38.1380
Integration start scan : 403 Integration stop scan: 580
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

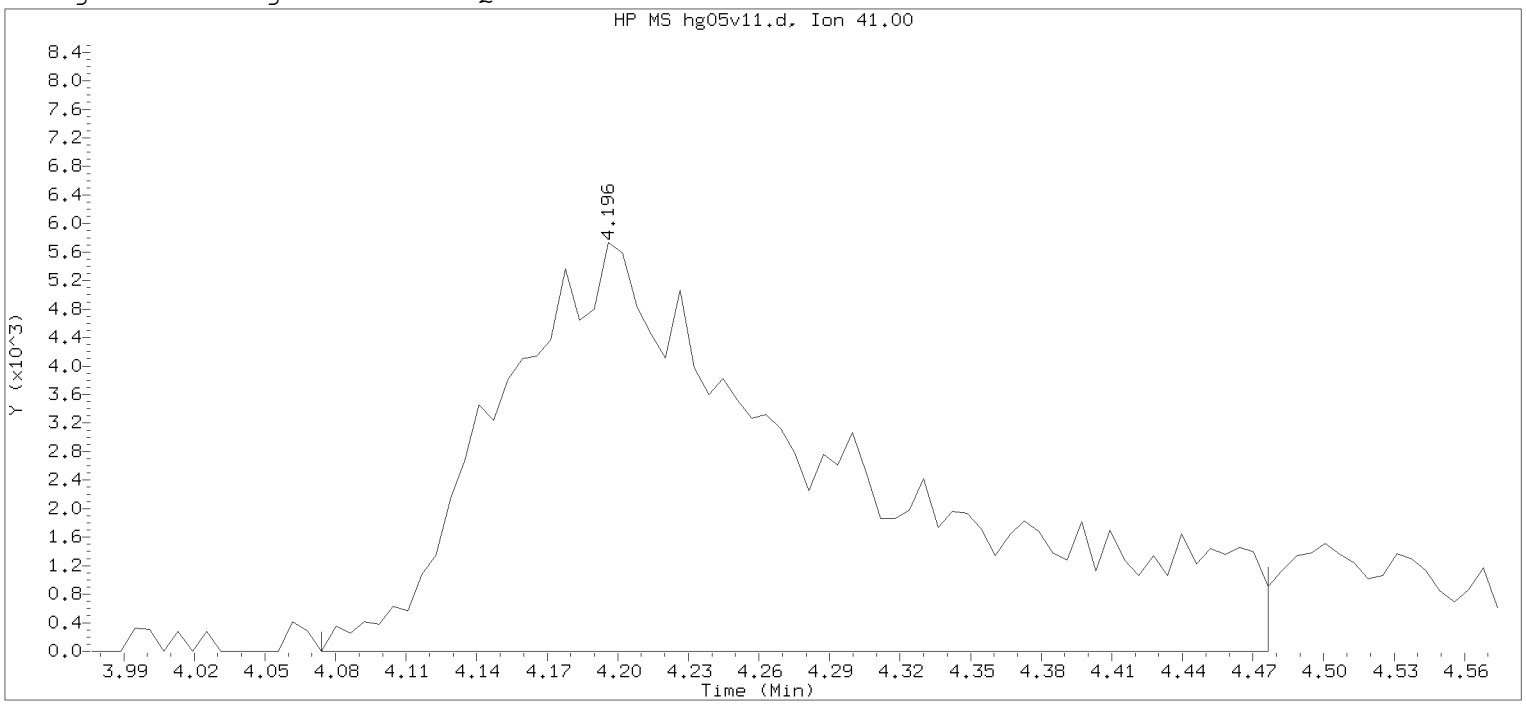
Analyst responsible for change: Digitally signed by Miranda E. Campbell
on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

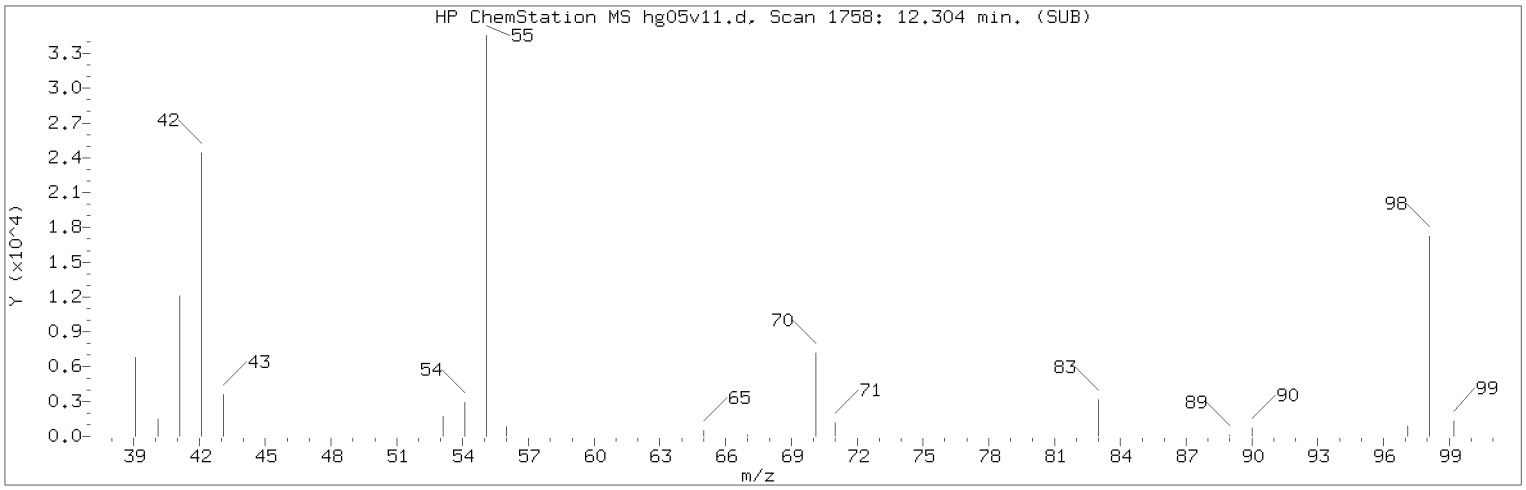
Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:51 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

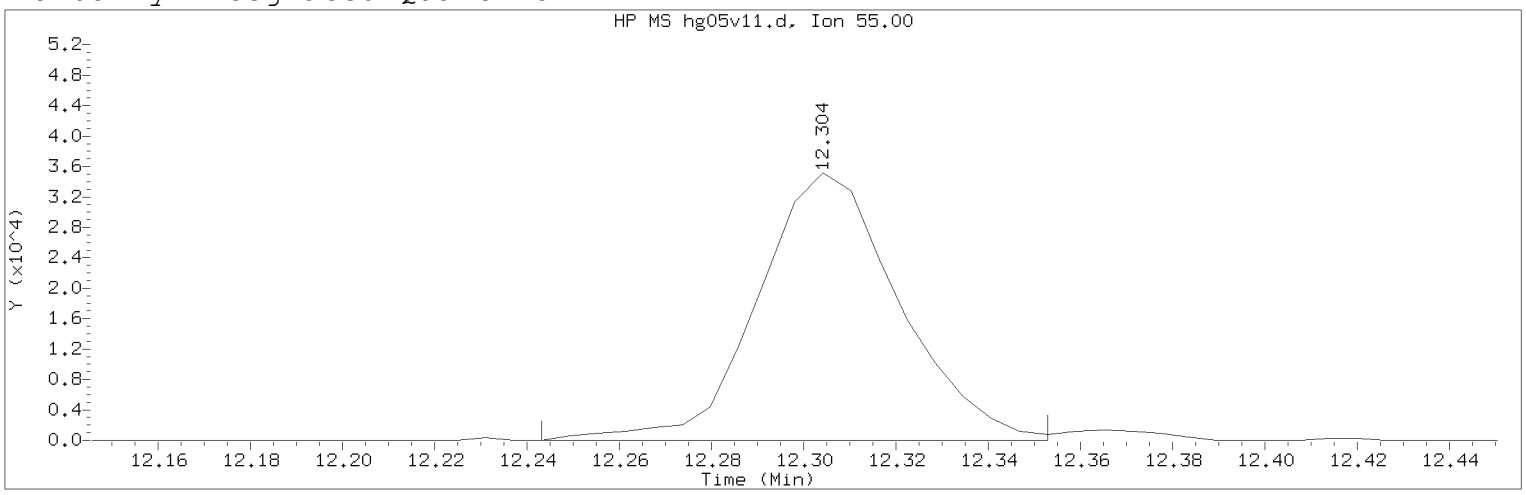
Compound Number : 25
Compound Name : Acetonitrile
Scan Number : 428
Retention Time (minutes): 4.196
Quant Ion : 41.00
Area : 58946
On-column Amount (ng) : 26.0242
Integration start scan : 407 Integration stop scan: 473
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:53.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:52 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

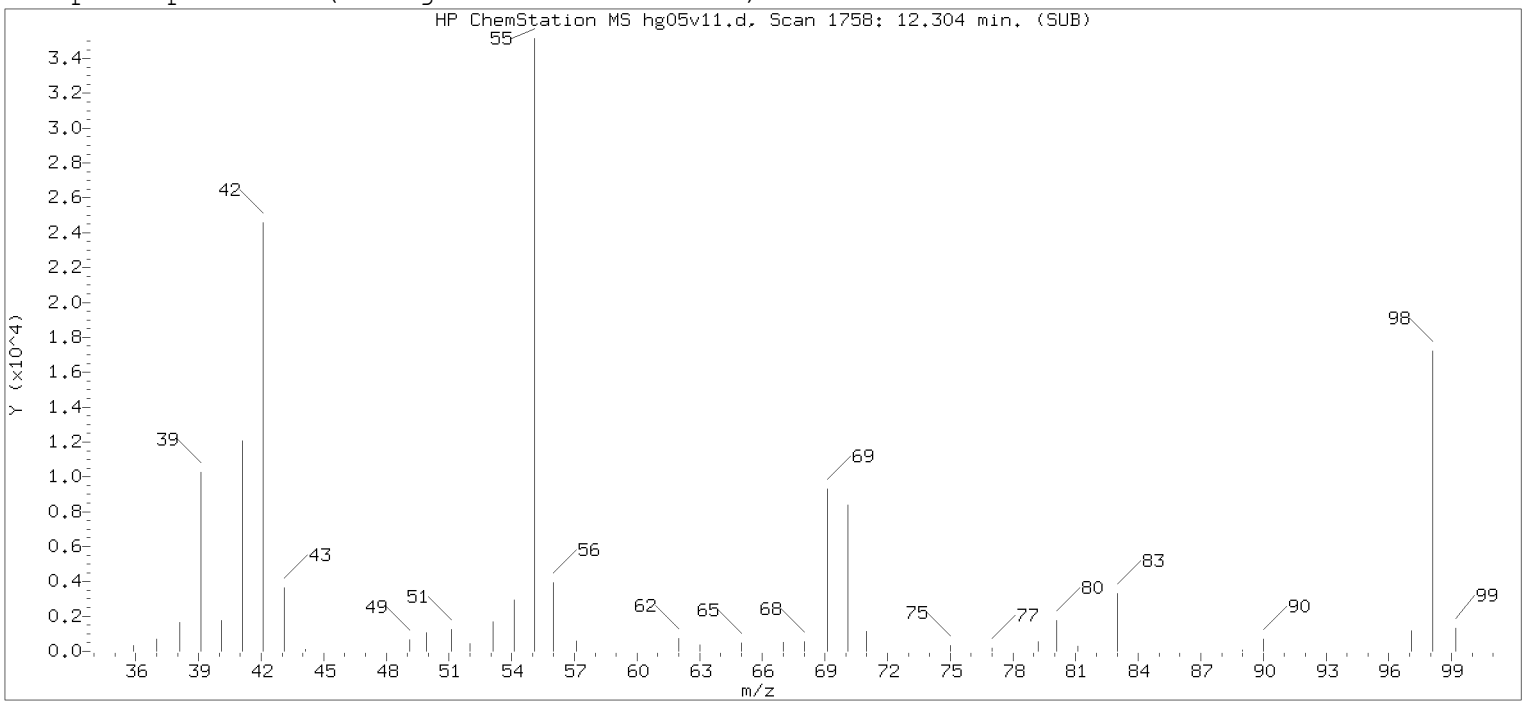
Compound Number : 112
Compound Name : Cyclohexanone
Scan Number : 1758
Retention Time (minutes): 12.304
Quant Ion : 55.00
Area (flag) : 74774M
On-Column Amount (ng) : 108.4627
Integration start scan : 1747 Integration stop scan: 1765
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

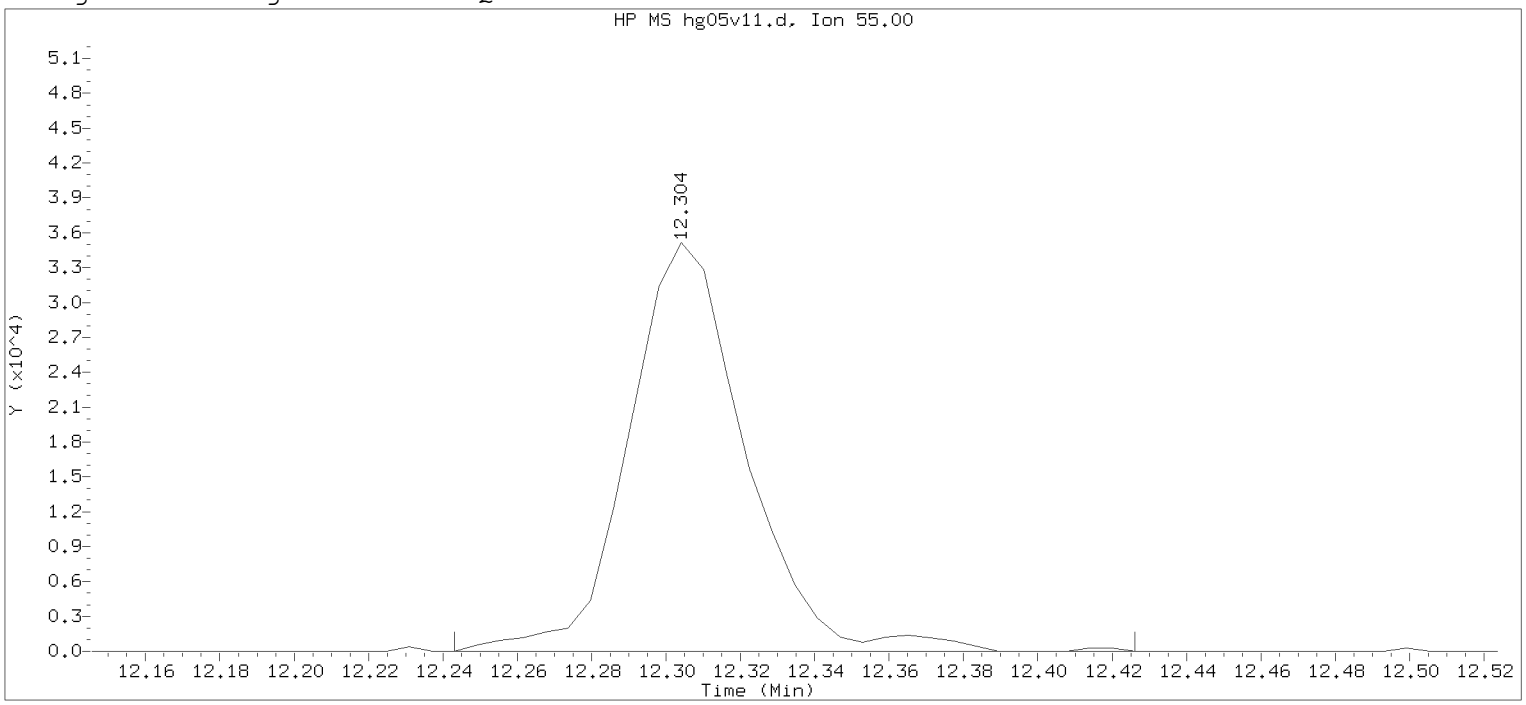
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:53.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Chelsea B. Riehl on 08/13/2019 at 17:17.
PARALLAX ID: cbs01947

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



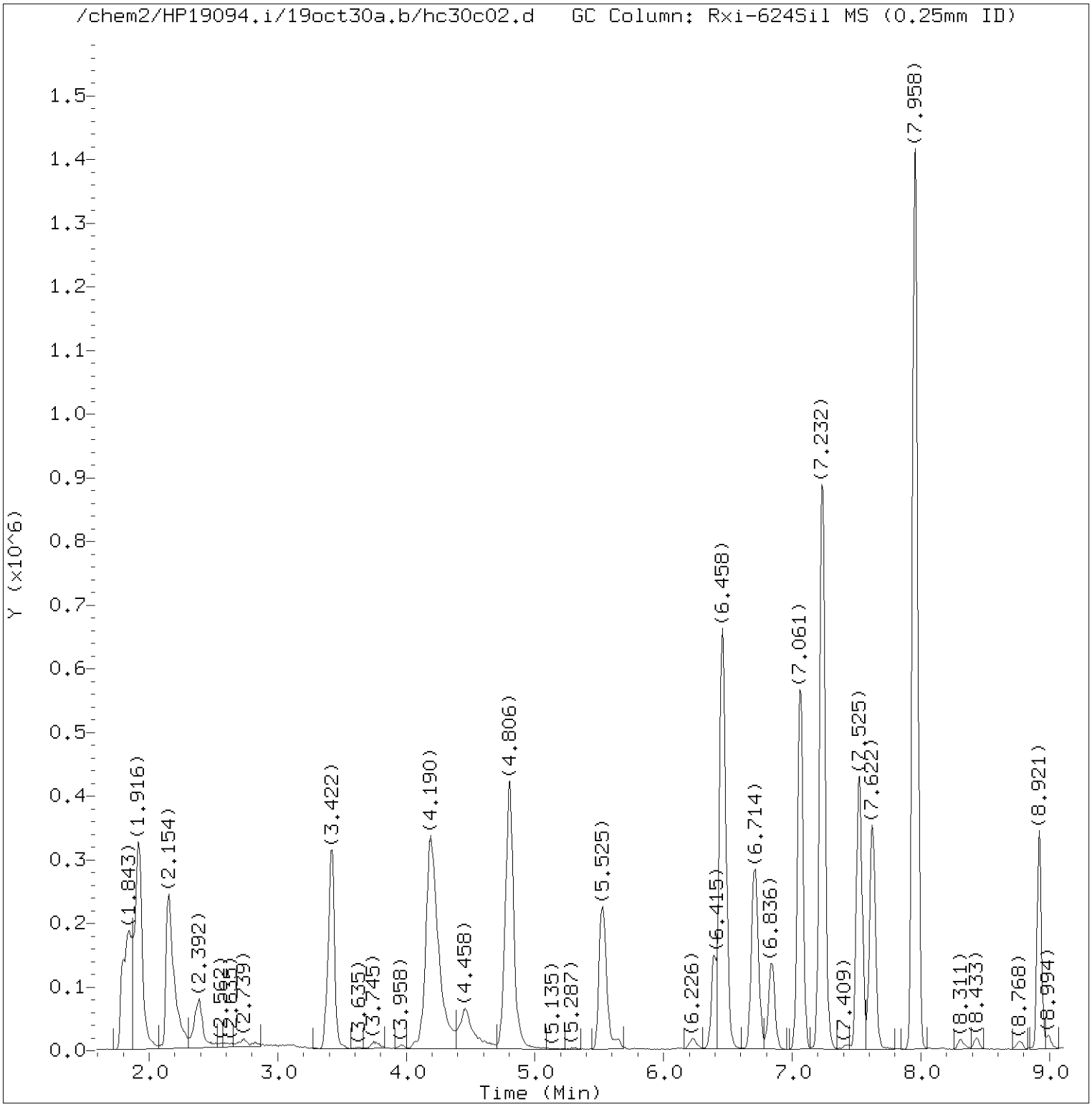
Data File: /chem2/HP19094.i/19aug05i.b/hg05v11.d Instrument ID: HP19094.i
Injection date and time: 06-AUG-2019 00:51 Analyst ID: MEC29284

Method used: /chem2/HP19094.i/19aug05i.b/m8260c25.m Sublist used: SMQC
Calibration date and time: 06-AUG-2019 20:51
Date, time and analyst ID of latest file update: 06-Aug-2019 20:51 mec29284

Sample Name: ICVHSM Lab Sample ID: ICVHSM

Compound Number	: 112		
Compound Name	: Cyclohexanone		
Scan Number	: 1758		
Retention Time (minutes)	: 12.304		
Quant Ion	: 55.00		
Area	: 76828		
On-column Amount (ng)	: 111.4423		
Integration start scan	: 1747	Integration stop scan:	1777
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Miranda E. Campbell on 08/06/2019 at 20:53.
Target 3.5 esignature used. AE mec29284



Total Ion Chromatogram (TIC)

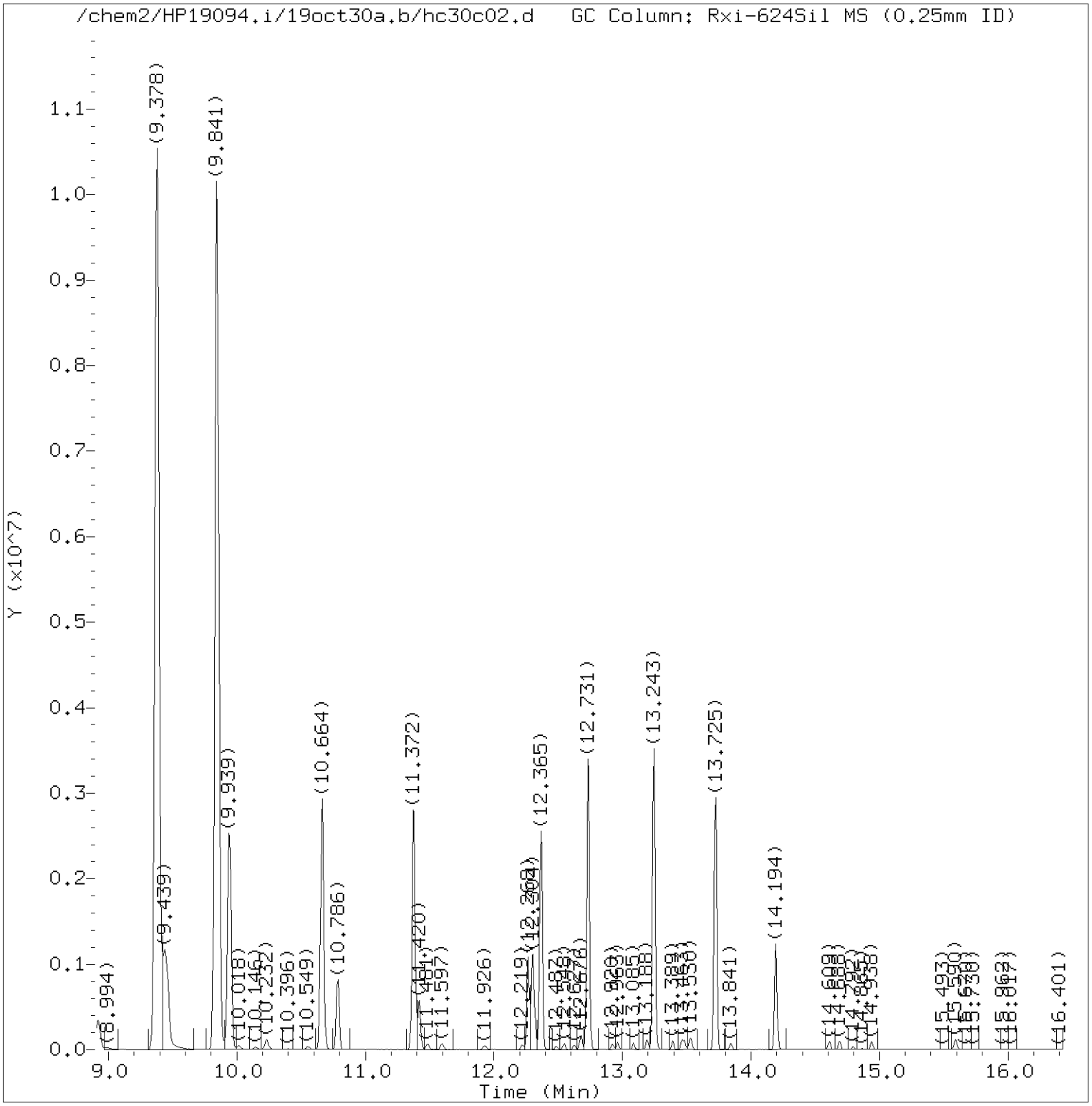
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:05 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 30-OCT-2019 08:22
Date, time and analyst ID of latest file update: 30-Oct-2019 08:27 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:27.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:05 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 30-OCT-2019 08:22
Date, time and analyst ID of latest file update: 30-Oct-2019 08:27 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:27.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30c02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:05 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 30-OCT-2019 08:22
Date, time and analyst ID of latest file update: 30-Oct-2019 08:27 jkh09052

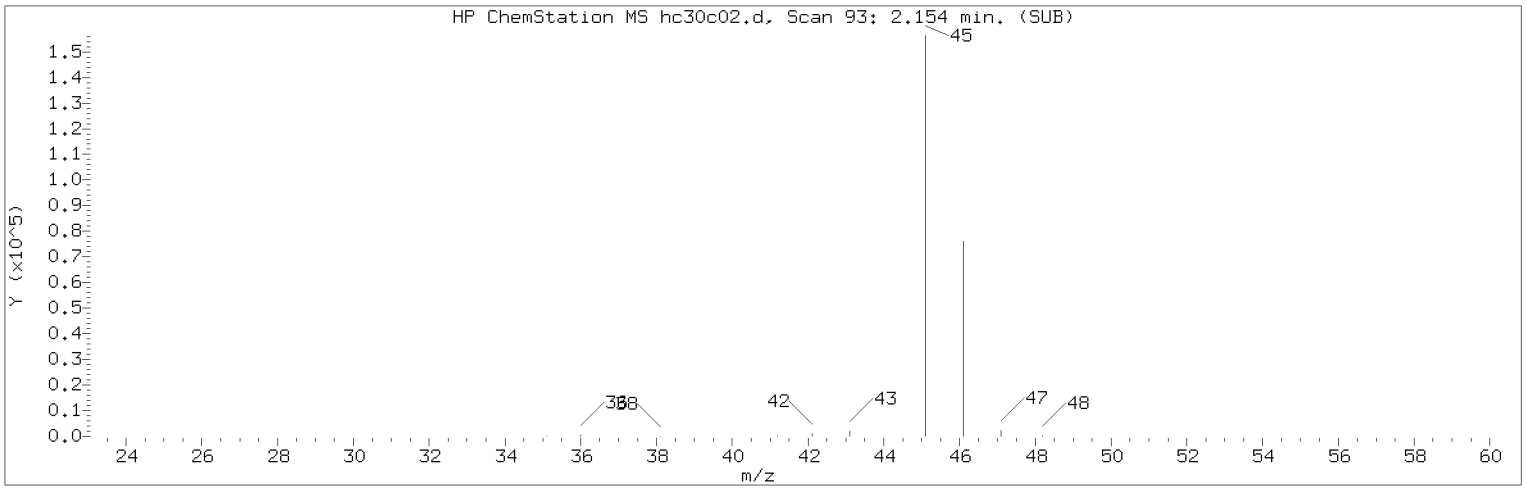
Sample Name: VSTD010 Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	693095M	9.729
25) Acetonitrile	(1)	4.178	41	1195651	348.103
26)*t-Butyl Alcohol-d10	(1)	4.470	65	142874	50.000
36) Vinyl Acetate	(2)	5.525	43	698377	9.384
43) Methyl Acrylate	(2)	6.458	55	1343615	54.835
53) 1-Chlorobutane	(2)	7.232	56	1094371	11.198
63)*Fluorobenzene	(2)	7.958	96	1981876	10.000
77) Chloroacetonitrile	(2)	9.433	75	916561	710.687
78) 2-Chloroethyl vinyl ether	(2)	9.457	63	242840	10.642
97)*Chlorobenzene-d5	(3)	11.378	117	1612721	10.000
109) cis-1,4-Dichloro-2-butene	(1)	12.268	88	233552	10.061
112) Cyclohexanone	(1)	12.304	55	501500	479.714
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	834085	10.000

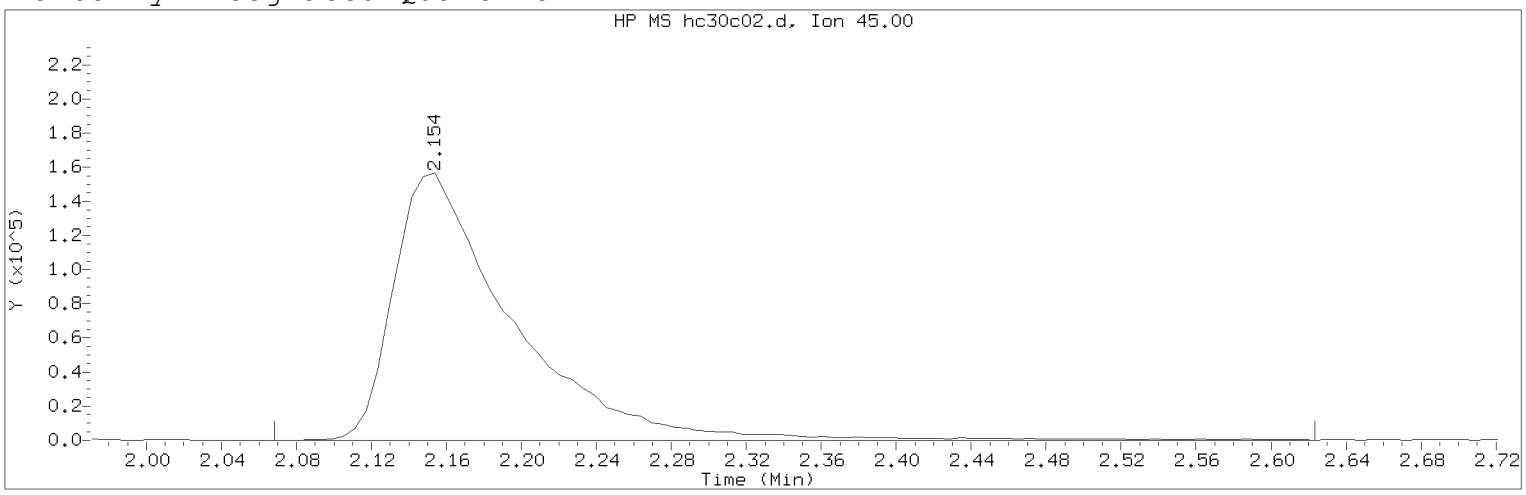
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:27.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:05 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 30-OCT-2019 08:22
Date, time and analyst ID of latest file update: 30-Oct-2019 08:27 jkh09052

Sample Name: VSTD010 Lab Sample ID: VSTD010

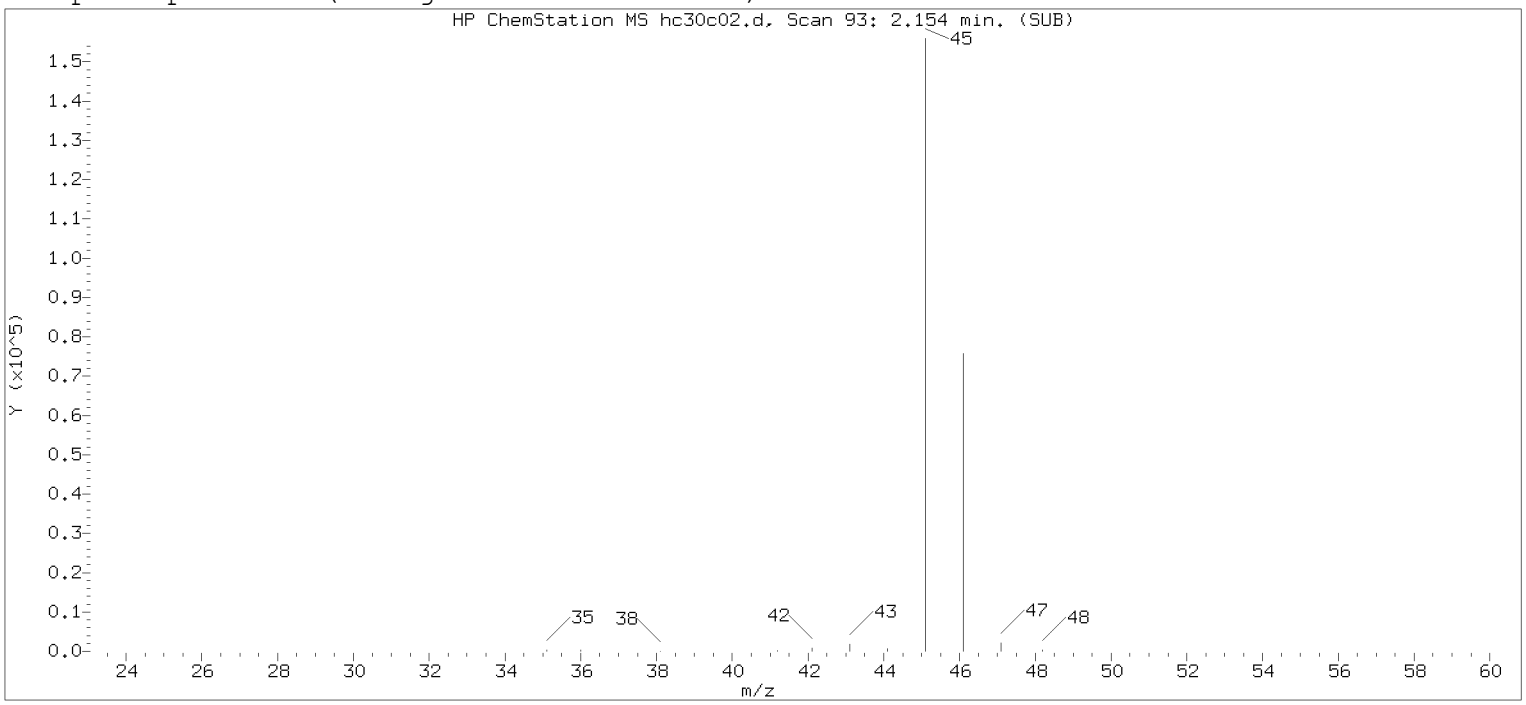
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 693095M
On-Column Amount (ng) : 9.7286
Integration start scan : 78 Integration stop scan: 169
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

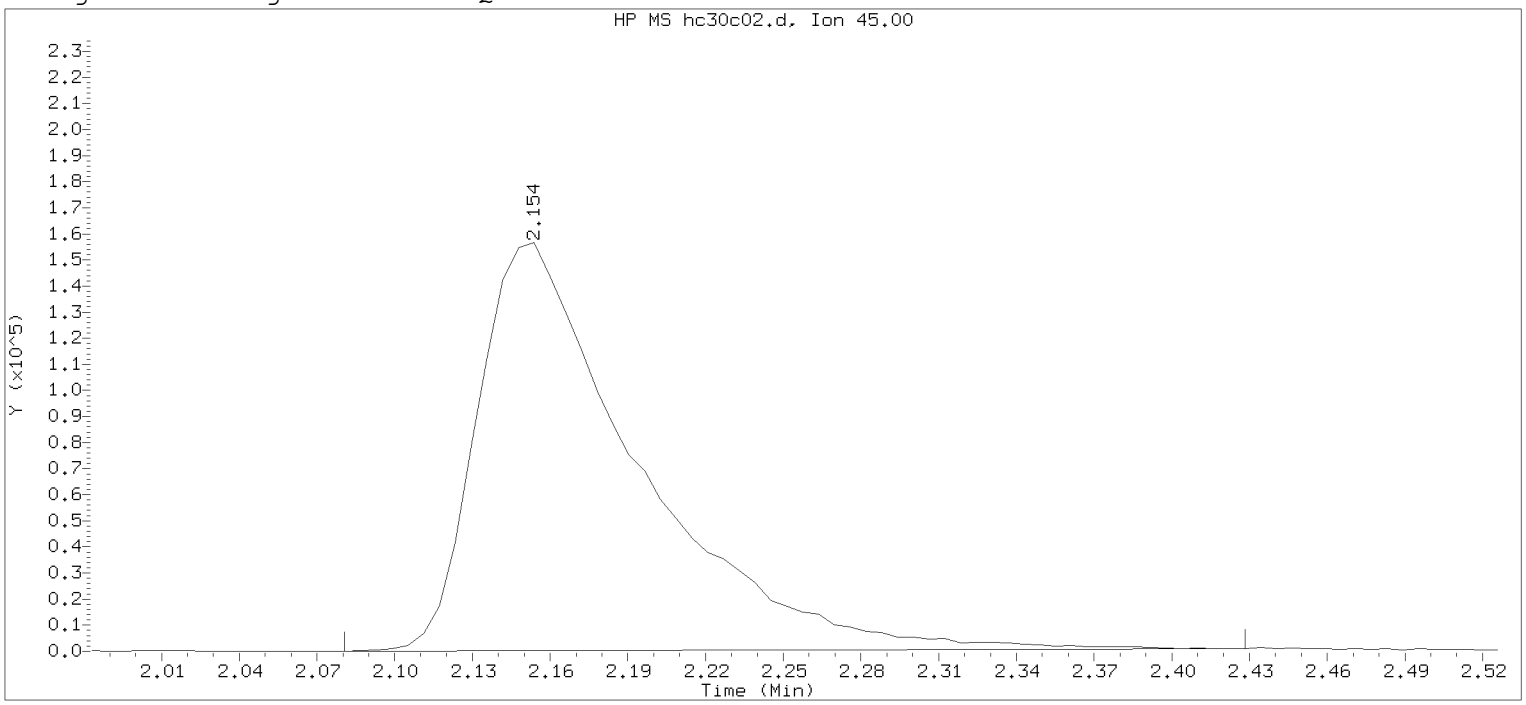
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 08:27.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30c02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:05 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: SMICAL
Calibration date and time: 30-OCT-2019 08:22
Date, time and analyst ID of latest file update: 30-Oct-2019 08:22 Automation

Sample Name: VSTD010 Lab Sample ID: VSTD010

Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area : 675955
On-column Amount (ng) : 9.4880
Integration start scan : 80 Integration stop scan: 137
Y at integration start : 0 Y at integration end: 891

Digitally signed by Jennifer K. Howe on 10/30/2019 at 08:27.
Target 3.5 esignature used. AE48 Page 560

Raw QC Data

Volatiles by GC/MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKH89

Data file: /chem2/HP19094.i/19oct30a.b/hc30b01.d
Injection date and time: **30-OCT-2019 09:09**
Data file Sample Info. Line: VBLKH89;VBLKH89;1;3;;;DRAPERLOQ;;;
Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 10:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.452	(0.012)	470	65	142768	(0)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	1944651	(-1)	10.00	
97) Chlorobenzene-d5	11.371	(0.006)	1605	117	1565331	(-3)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	815815	(-3)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	523854	9.906	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.518	(0.001)	102	94254	9.694	97%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1960113	9.809	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	710085	9.717	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
4) Dimethyl ether	(2)				Not Detected					0.04	13
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:38. Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct30a.b/hc30b01.d Injection date and time: **30-OCT-2019 09:09**
Data file Sample Info. Line: VBLKH89;VBLKH89;1;3;;;DRAPERLOQ;;; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 10:37 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

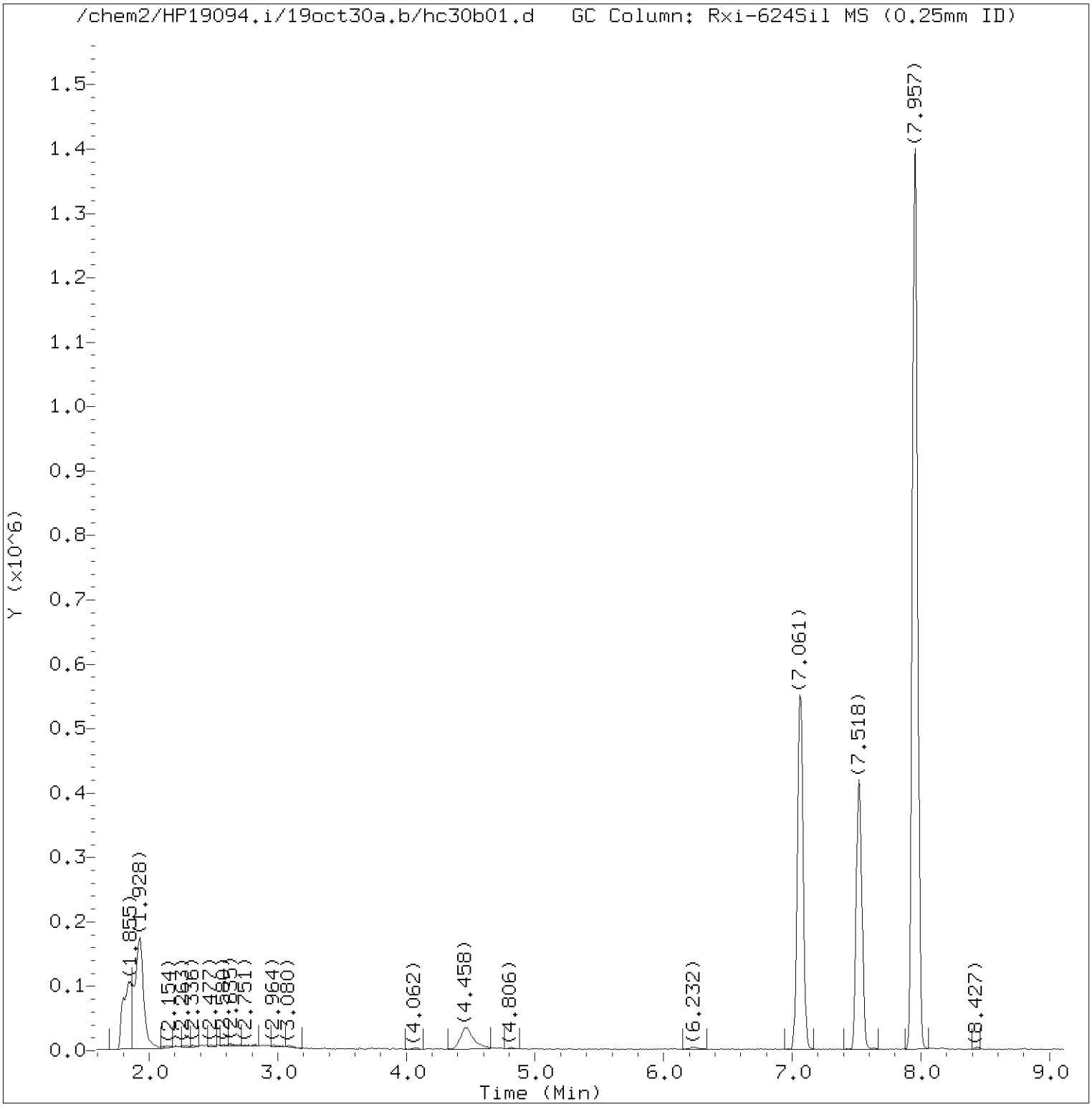
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 22

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:38. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

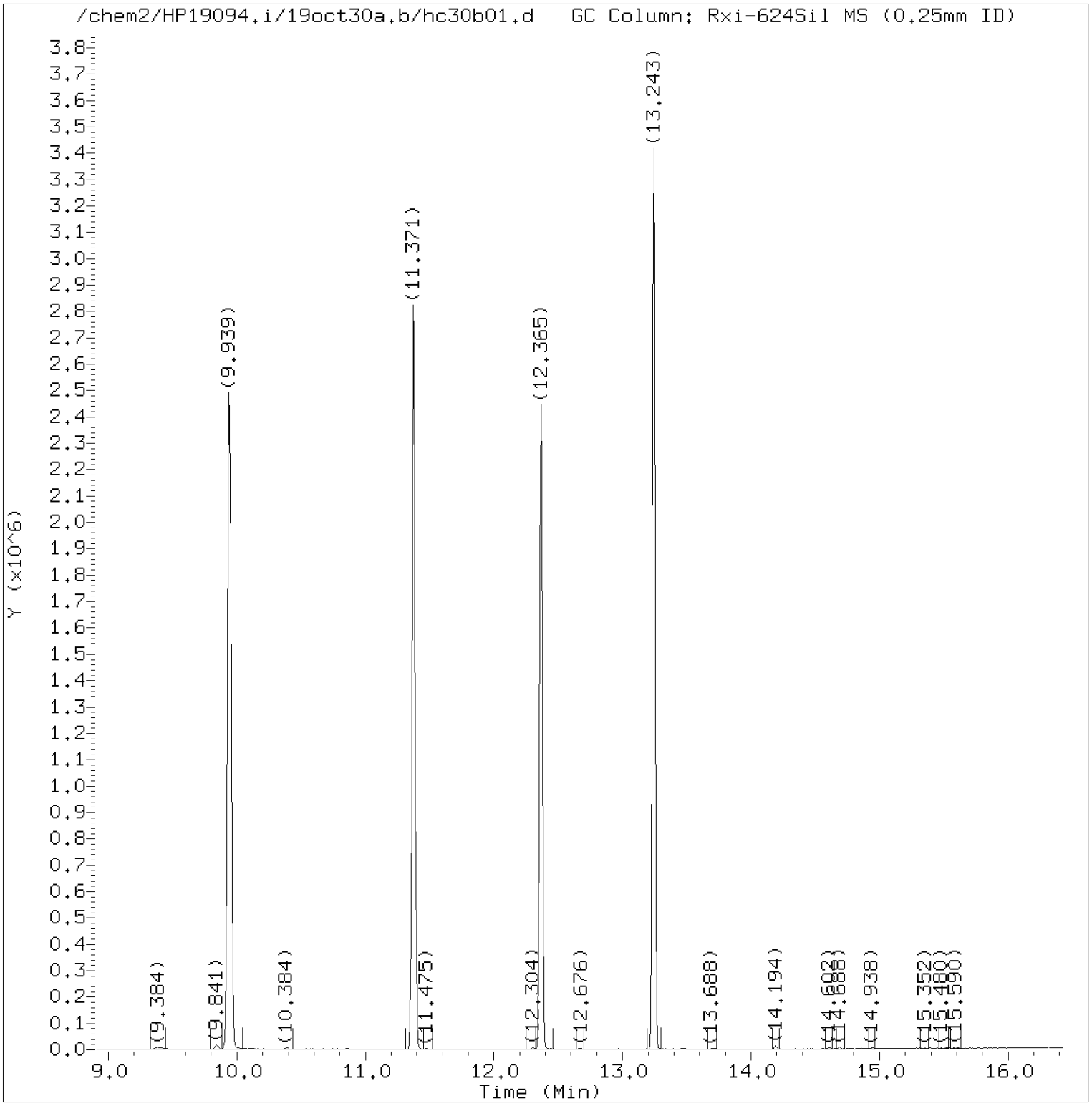
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30b01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 09:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:37 jkh09052

Sample Name: VBLKH89 Lab Sample ID: VBLKH89

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:38.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30b01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 09:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:37 jkh09052

Sample Name: VBLKH89 Lab Sample ID: VBLKH89

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:38.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30b01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 09:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:37 jkh09052

Sample Name: VBLKH89 Lab Sample ID: VBLKH89

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.452	65	142768	50.000
50)$Dibromofluoromethane	(2)	7.067	113	523854	9.906
57)$1,2-Dichloroethane-d4	(2)	7.518	102	94254	9.694
63)*Fluorobenzene	(2)	7.957	96	1944651	10.000
82)$Toluene-d8	(3)	9.939	98	1960113	9.809
97)*Chlorobenzene-d5	(3)	11.371	117	1565331	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	710085	9.717
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	815815	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:38.
Target 3.5 esignature user ID: jkh09052

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKH91

Data file: /chem2/HP19094.i/19oct31a.b/hc31b30.d Injection date and time: **31-OCT-2019 10:09**
Data file Sample Info. Line: VBLKH91;VBLKH91;1;3;;;DRAPERLOQ;;; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.470	(0.000)	473	65	140496	(1)	50.00	
63) Fluorobenzene	7.957	(0.000)	1045	96	1863531	(-4)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1563925	(-3)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	812588	(-5)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	502810	9.922	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	93712	10.057	101%		80 - 120
82) Toluene-d8	(3)	9.939	(0.001)	98	1908810	9.560	96%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	712366	9.757	98%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
1) Dichlorodifluoromethane	(2)				Not Detected					0.05	1
2) Chloromethane	(2)				Not Detected					0.06	1
8) Chloroethane	(2)				Not Detected					0.07	1
10) Trichlorofluoromethane	(2)				Not Detected					0.05	1
11) Ethyl ether	(2)				Not Detected					0.05	13
15) 1,1-Dichloroethene	(2)				Not Detected					0.06	1
16) Freon 113	(2)				Not Detected					0.06	1
23) Methylene Chloride	(2)				Not Detected					0.07	1
33) 1,1-Dichloroethane	(2)				Not Detected					0.07	1
38) 2-Butanone	(1)				Not Detected					0.6	10
48) Tetrahydrofuran	(1)				Not Detected					0.8	25
51) 1,1,1-Trichloroethane	(2)				Not Detected					0.06	1
54) Carbon Tetrachloride	(2)				Not Detected					0.07	1
58) Benzene	(2)				Not Detected					0.05	1
67) Trichloroethene	(2)				Not Detected					0.06	1
83) Toluene	(3)				Not Detected					0.07	1
89) Tetrachloroethene	(3)				Not Detected					0.06	1
100) Ethylbenzene	(3)				Not Detected					0.06	1
101) m+p-Xylene	(3)				Not Detected					0.1	0.5
104) o-Xylene	(3)				Not Detected					0.05	0.5
105) Xylene (Total)	(3)				Not Detected					0.2	3

Digitally signed by Jennifer K. Howe on 10/31/2019 at 12:12. Target 3.5 esignature user ID: jkh09052

Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct31a.b/hc31b30.d Injection date and time: **31-OCT-2019 10:09**
Data file Sample Info. Line: VBLKH91;VBLKH91;1;3;;;DRAPERLOQ;;; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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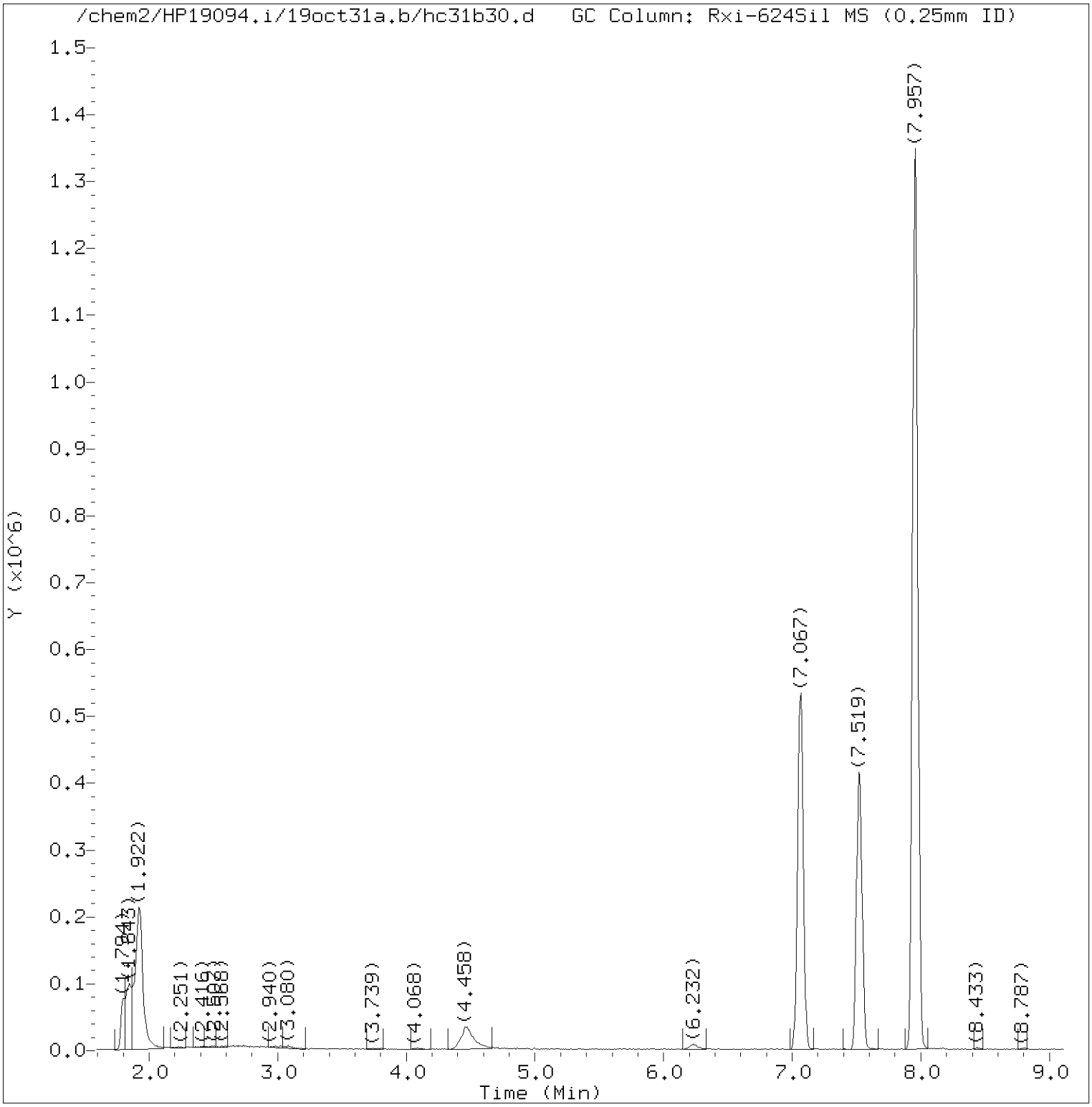
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Total number of targets = 21

Digitally signed by Jennifer K. Howe on 10/31/2019 at 12:12. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

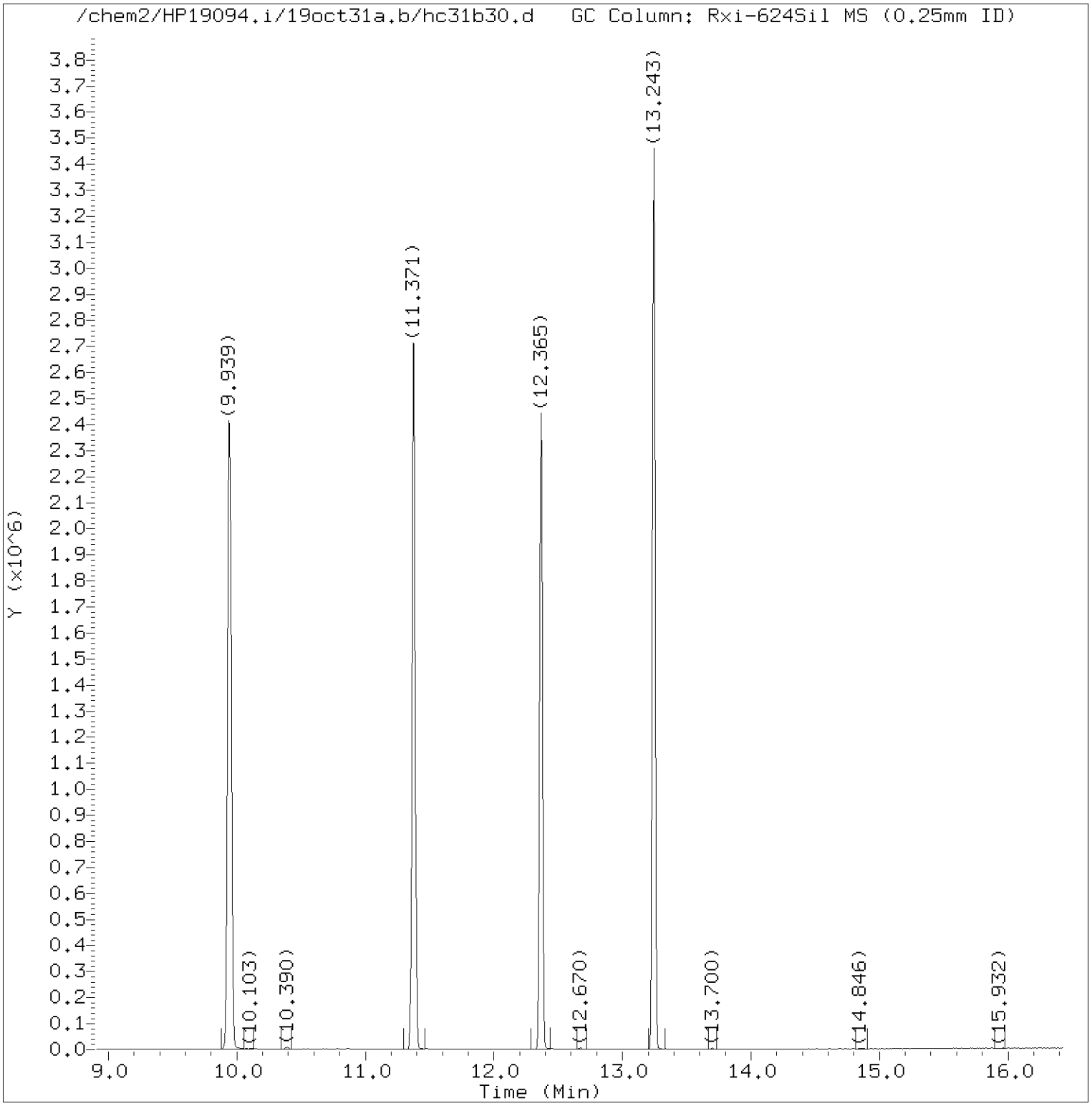
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31b30.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 10:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: VBLKH91 Lab Sample ID: VBLKH91

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 12:12.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31b30.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 10:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: VBLKH91 Lab Sample ID: VBLKH91

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 12:12.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31b30.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 10:09 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: VBLKH91 Lab Sample ID: VBLKH91

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
26)*t-Butyl Alcohol-d10	(1)	4.470	65	140496	50.000
50)$Dibromofluoromethane	(2)	7.067	113	502810	9.922
57)$1,2-Dichloroethane-d4	(2)	7.519	102	93712	10.057
63)*Fluorobenzene	(2)	7.957	96	1863531	10.000
82)$Toluene-d8	(3)	9.939	98	1908810	9.560
97)*Chlorobenzene-d5	(3)	11.378	117	1563925	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	712366	9.757
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	812588	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/31/2019 at 12:12.
Target 3.5 esignature user ID: jkh09052

F4804MS1 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183610MS

Data file: /chem2/HP19094.i/19oct30a.b/hc30s15.d Injection date and time: **30-OCT-2019 15:25**
Data file Sample Info. Line: F4804MS1;1183610MS;1;3;MS;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H19303**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:42 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	135155	(-5)	50.00	
63) Fluorobenzene	7.958	(-0.006)	1045	96	1937473	(-2)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1556753	(-3)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	811238	(-3)	10.00	

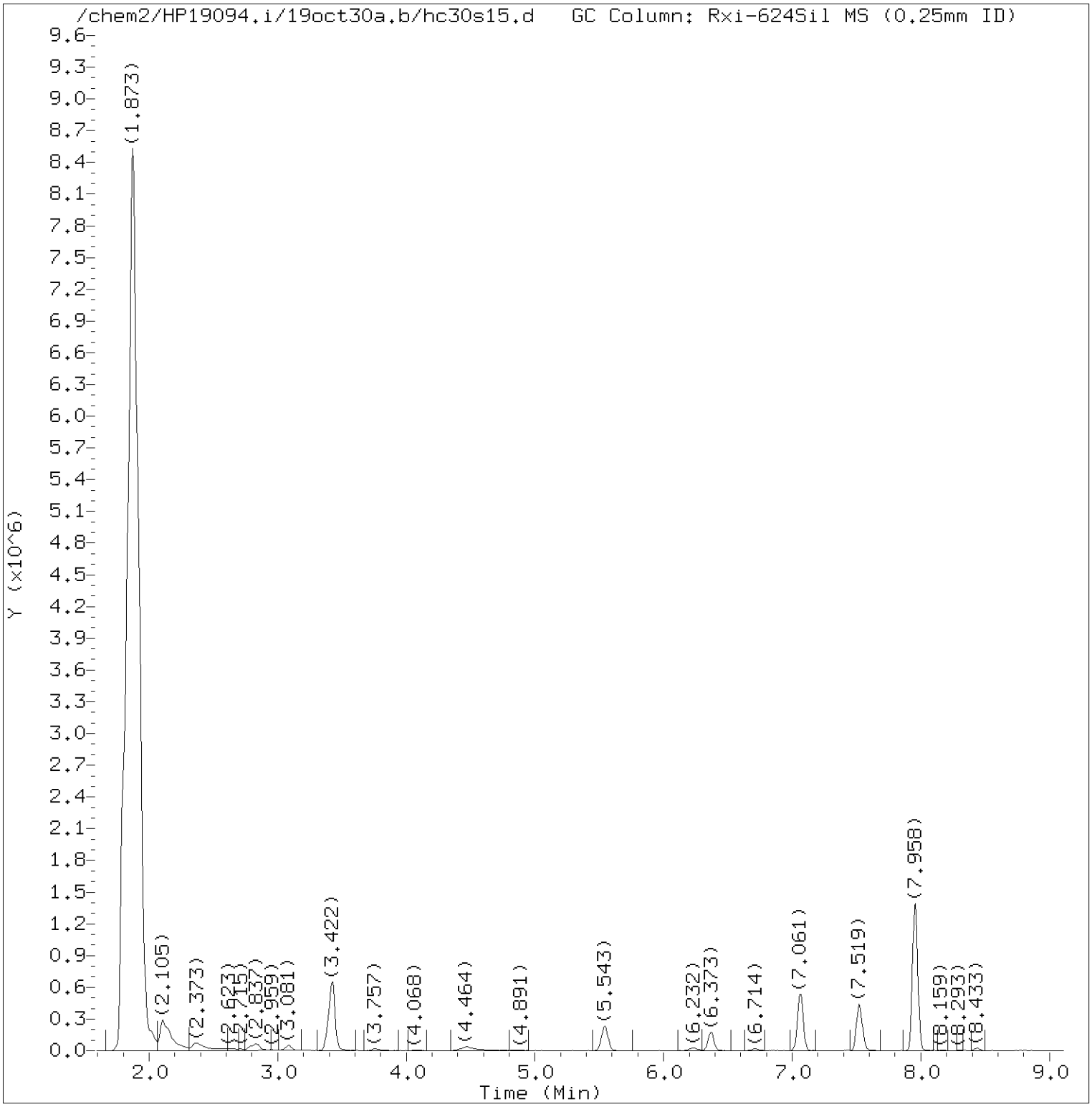
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.068	(0.000)	113	511468	9.708	97%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	91884	9.485	95%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1940395	9.763	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	705239	9.704	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
4) Dimethyl ether	(2)	2.154	(0.000)	45	381526	5.478	5.48		J	0.04	13

Total number of targets = 1

Digitally signed by Sara E. Johnson on 10/30/2019 at 16:04. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

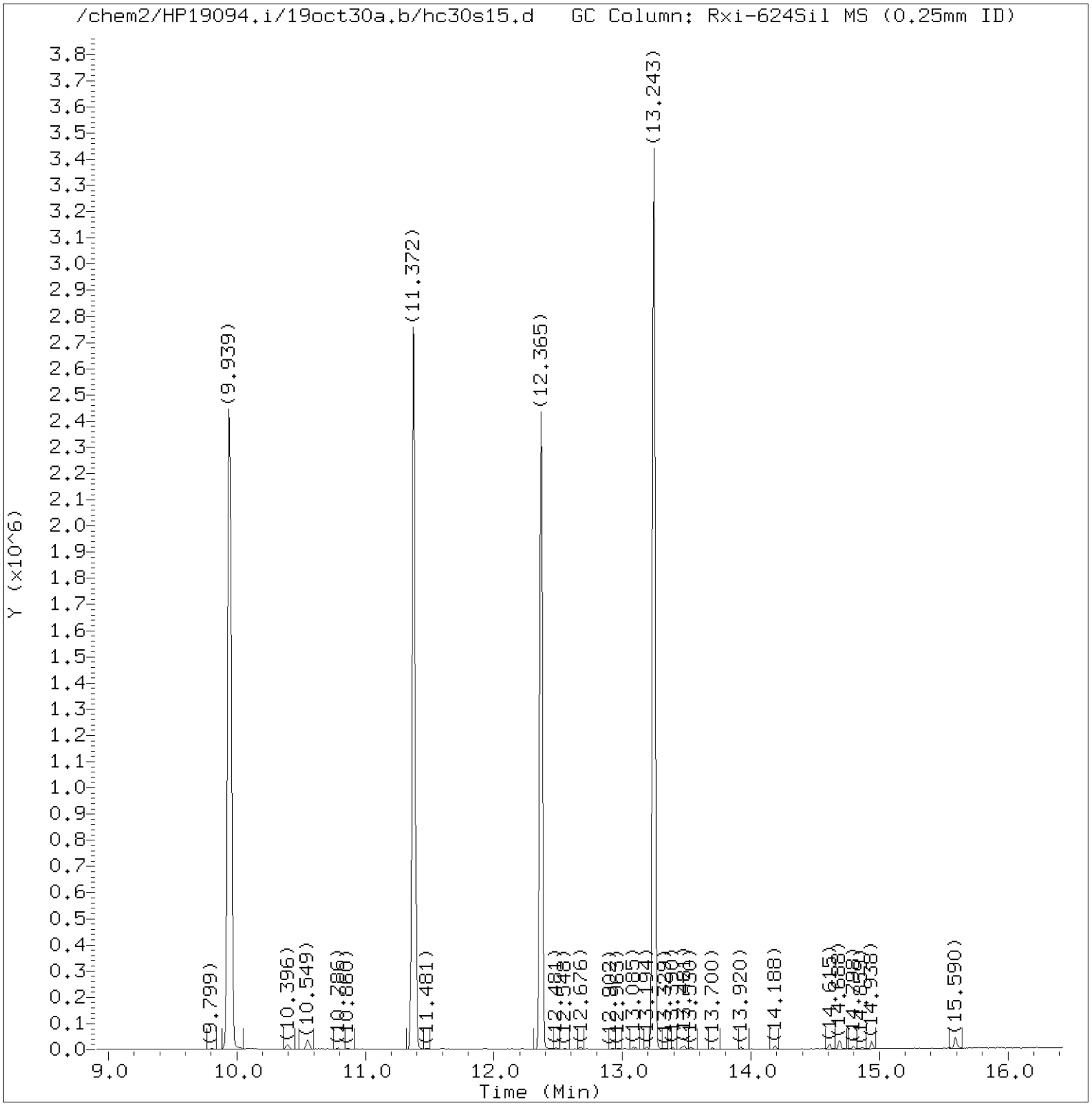
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s15.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:25 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:42 Automation

Sample Name: F4804MS1 Lab Sample ID: 1183610MS

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s15.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:25 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:42 Automation

Sample Name: F4804MS1 Lab Sample ID: 1183610MS

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s15.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:25 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:42 Automation

Sample Name: F4804MS1 Lab Sample ID: 1183610MS

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	381526	5.478
26)*t-Butyl Alcohol-d10	(1)	4.464	65	135155	50.000
50)$Dibromofluoromethane	(2)	7.068	113	511468	9.708
57)$1,2-Dichloroethane-d4	(2)	7.519	102	91884	9.485
63)*Fluorobenzene	(2)	7.958	96	1937473	10.000
82)$Toluene-d8	(3)	9.939	98	1940395	9.763
97)*Chlorobenzene-d5	(3)	11.378	117	1556753	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	705239	9.704
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	811238	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002

F4804MSD1 Lancaster Laboratories Analysis Summary for GC/MS Volatiles 1183611MSD

Data file: /chem2/HP19094.i/19oct30a.b/hc30s16.d Injection date and time: **30-OCT-2019 15:46**
Data file Sample Info. Line: F4804MSD1;1183611MSD;1;3;MSD;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H19**
Date, time and analyst ID of latest file update: 30-Oct-2019 16:04 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038B** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.464	(0.000)	472	65	133199	(-7)	50.00	
63) Fluorobenzene	7.952	(0.000)	1044	96	1894989	(-4)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1548518	(-4)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	801874	(-5)	10.00	

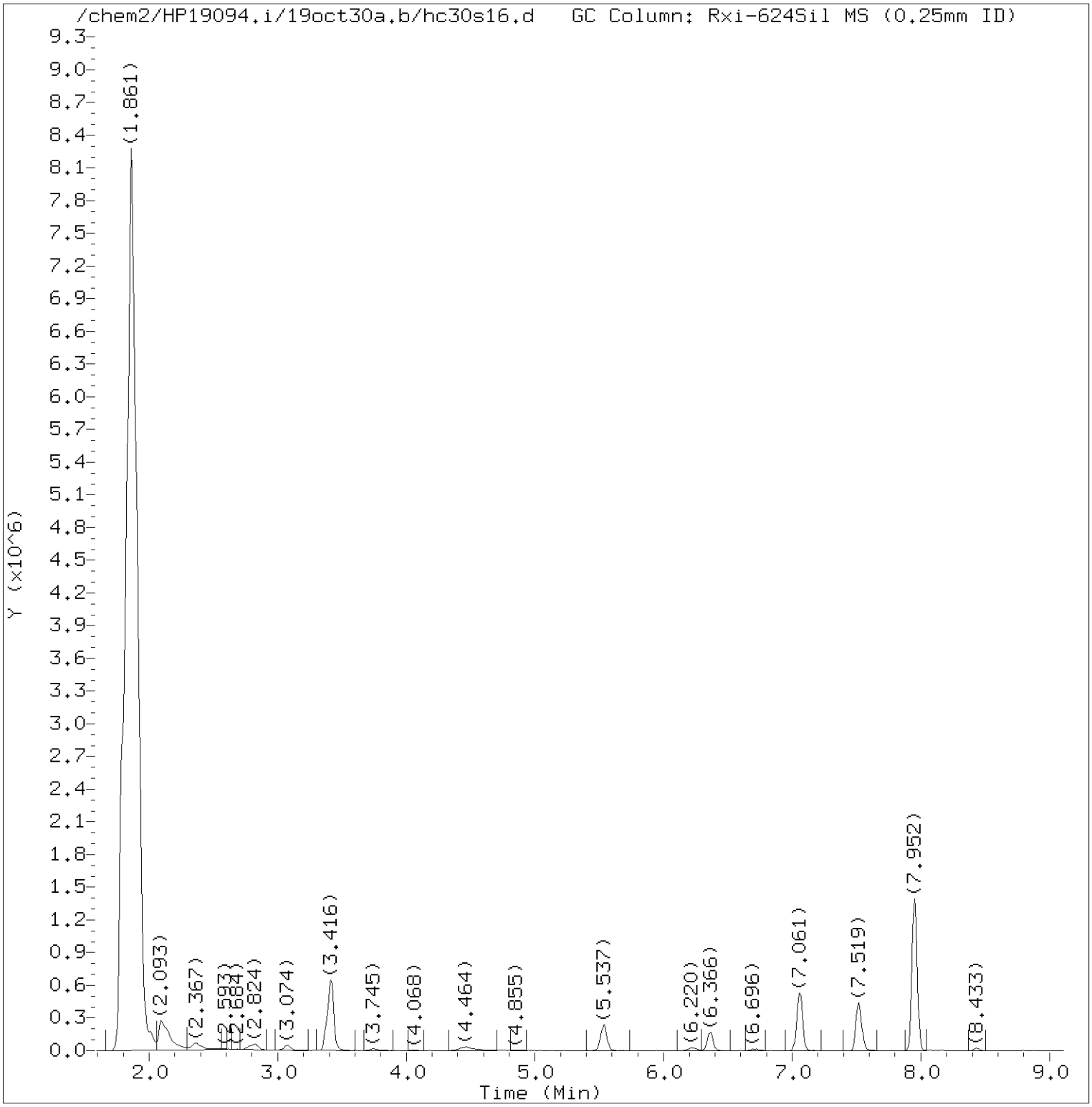
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.000)	113	504747	9.795	98%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.513	(0.002)	102	93999	9.921	99%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1919100	9.708	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	703004	9.724	97%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
4) Dimethyl ether	(2)	2.136	(0.002)	45	391160	5.742	5.74		J	0.04	13

Total number of targets = 1

Digitally signed by Sara E. Johnson on 10/30/2019 at 19:49. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

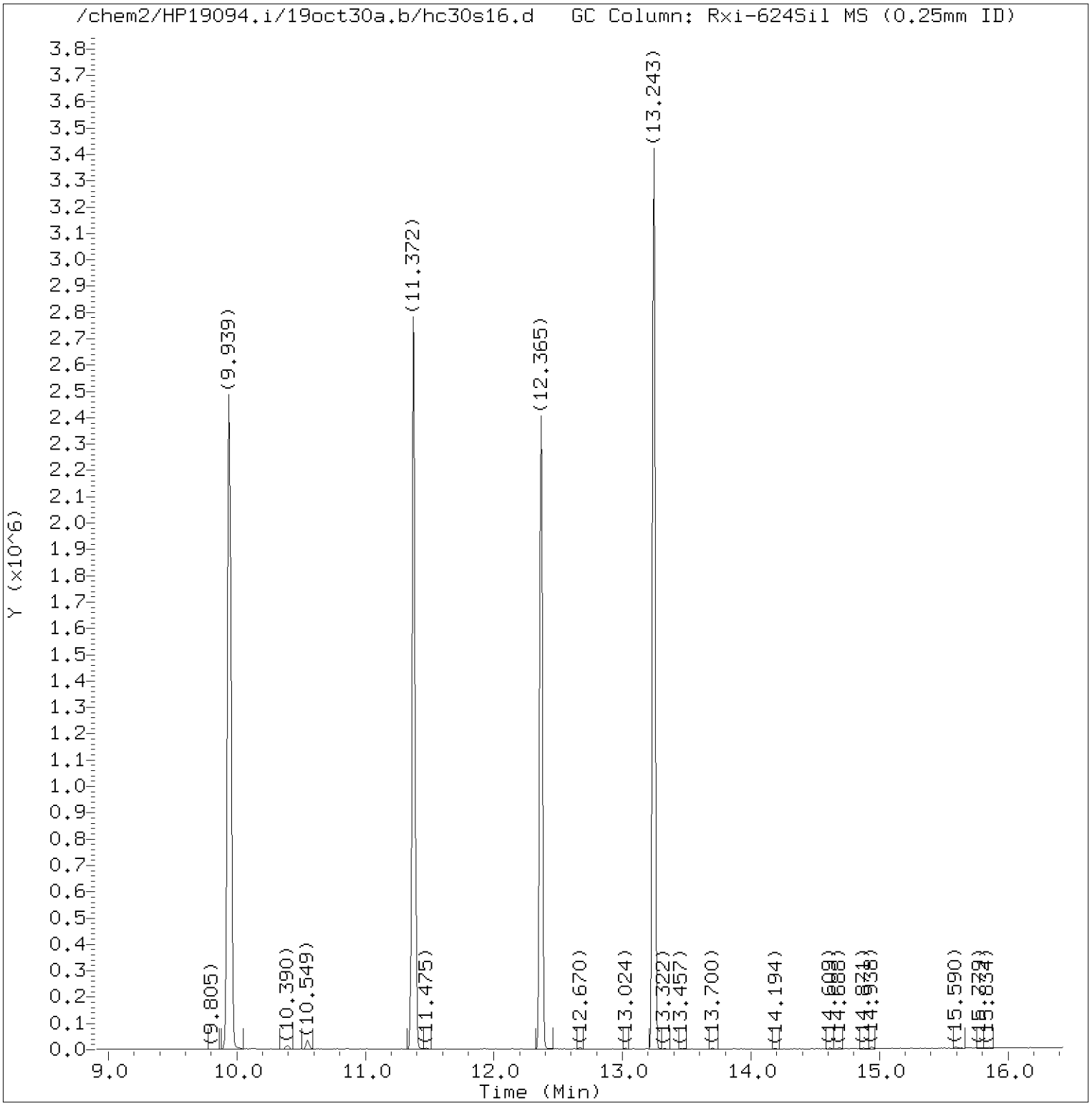
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s16.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:46 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:04 Automation

Sample Name: F4804MSD1 Lab Sample ID: 1183611MSD

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s16.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:46 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:04 Automation

Sample Name: F4804MSD1 Lab Sample ID: 1183611MSD

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s16.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:46 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 16:04 Automation

Sample Name: F4804MSD1 Lab Sample ID: 1183611MSD

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.136	45	391160	5.742
26)*t-Butyl Alcohol-d10	(1)	4.464	65	133199	50.000
50)$Dibromofluoromethane	(2)	7.061	113	504747	9.795
57)$1,2-Dichloroethane-d4	(2)	7.513	102	93999	9.921
63)*Fluorobenzene	(2)	7.952	96	1894989	10.000
82)$Toluene-d8	(3)	9.939	98	1919100	9.708
97)*Chlorobenzene-d5	(3)	11.372	117	1548518	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	703004	9.724
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	801874	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 19:49.
Target 3.5 esignature user ID: sej02002

F4804MS

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

1183610MS

Data file: /chem2/HP19094.i/19oct30a.b/hc30s13.d Injection date and time: **30-OCT-2019 14:42**
Data file Sample Info. Line: F4804MS;1183610MS;1;3;MS;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031**
Date, time and analyst ID of latest file update: 30-Oct-2019 14:59 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.477	(-0.012)	474	65	137970	(-3)	50.00	
63) Fluorobenzene	7.958	(-0.006)	1045	96	1958047	(-1)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1582039	(-2)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	834502	(-1)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	504035	9.466	95%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.525	(0.001)	102	94534	9.656	97%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	1984655	9.827	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	737845	9.990	100%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.081	(0.000)	85	400524	3.903	3.90			0.05	1
2) Chloromethane	(2)	2.282	(-0.000)	50	381594	5.078	5.08			0.06	1
8) Chloroethane	(2)	2.830	(0.001)	64	310161	7.008	7.01			0.07	1
10) Trichlorofluoromethane	(2)	3.148	(0.000)	101	552502	4.617	4.62			0.05	1
11) Ethyl ether	(2)	3.422	(-0.000)	59	888228	26.639	26.64		E	0.05	13
15) 1,1-Dichloroethene	(2)	3.751	(-0.000)	96	273639	6.271	6.27			0.06	1
16) Freon 113	(2)	3.782	(0.000)	101	300987	5.515	5.52			0.06	1
23) Methylene Chloride	(2)	4.458	(-0.000)	84	284535	5.470	5.47			0.07	1
33) 1,1-Dichloroethane	(2)	5.543	(-0.000)	63	917539	10.342	10.34			0.07	1
38) 2-Butanone	(1)	6.330	(0.005)	43	455915	30.769	30.77			0.6	10
48) Tetrahydrofuran	(1)	6.714	(0.002)	71	90270	21.986	21.99		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.080	(0.000)	97	479315	5.523	5.52			0.06	1
54) Carbon Tetrachloride	(2)	7.293	(0.000)	117	424888	5.235	5.23			0.07	1
58) Benzene	(2)	7.555	(0.000)	78	1241378	6.269	6.27			0.05	1
67) Trichloroethene	(2)	8.433	(0.000)	95	326900	5.876	5.88			0.06	1
83) Toluene	(3)	10.018	(-0.000)	92	750090	5.581	5.58			0.07	1
89) Tetrachloroethene	(3)	10.555	(0.000)	166	372359	5.519	5.52			0.06	1
100) Ethylbenzene	(3)	11.481	(0.000)	91	1492530	5.616	5.62			0.06	1
101) m+p-Xylene	(3)	11.597	(0.000)	106	1135843	10.771	10.77			0.1	0.5
104) o-Xylene	(3)	11.926	(0.000)	106	543421	5.271	5.27			0.05	0.5
105) Xylene (Total)	(3)			106	1679264	16.042	16.04			0.2	3

E = Compound concentration above calibration range.

Digitally signed by Sara E. Johnson on 10/30/2019 at 16:03. Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct30a.b/hc30s13.d Injection date and time: **30-OCT-2019 14:42**
Data file Sample Info. Line: F4804MS;1183610MS;1;3;MS;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H19303**
Date, time and analyst ID of latest file update: 30-Oct-2019 14:59 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

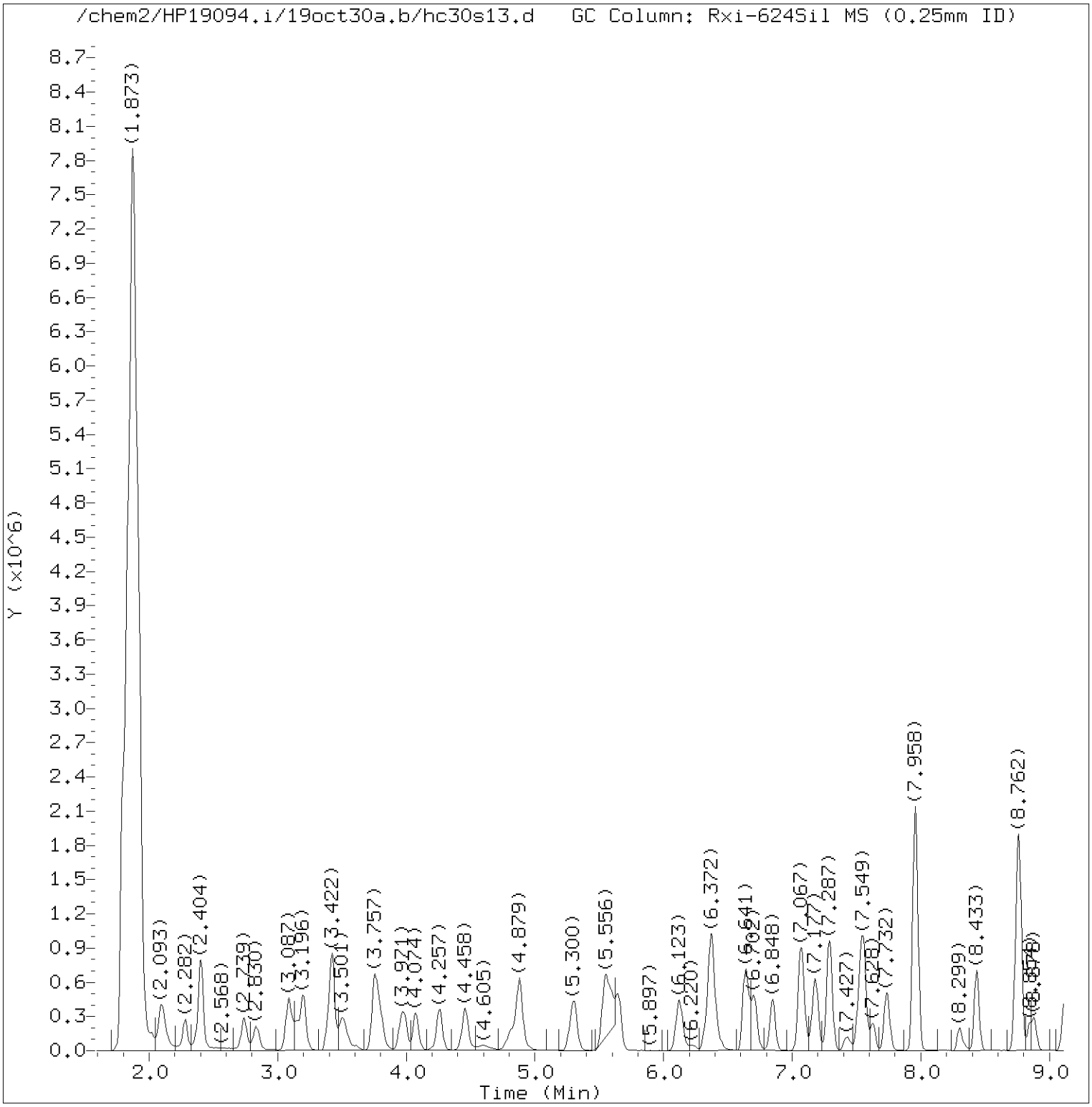
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 21

Digitally signed by Sara E. Johnson on 10/30/2019 at 16:03. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

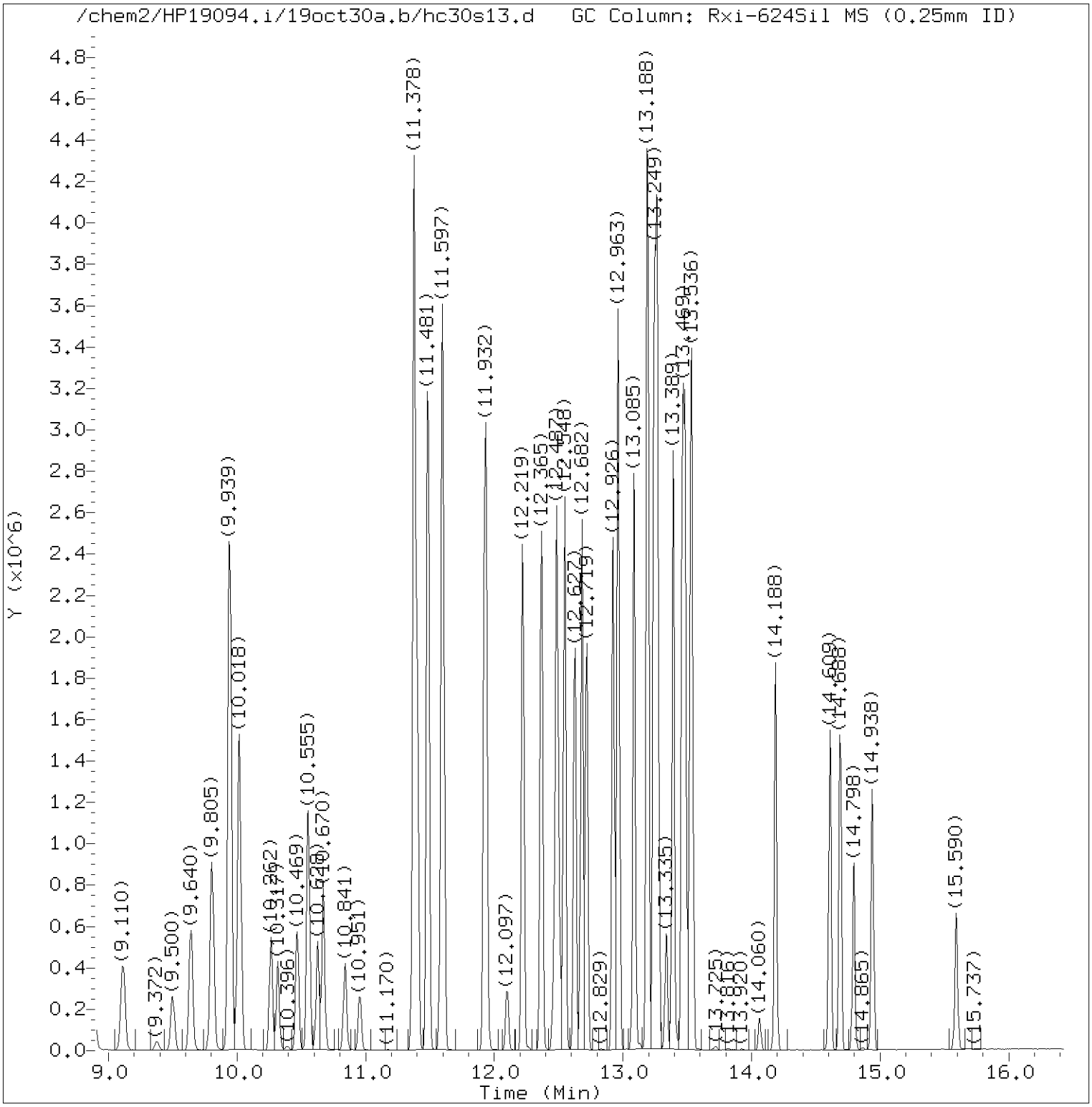
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s13.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:42 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 14:59 Automation

Sample Name: F4804MS Lab Sample ID: 1183610MS

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:03.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s13.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:42 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 14:59 Automation

Sample Name: F4804MS Lab Sample ID: 1183610MS

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:03.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s13.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 14:42 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 14:59 Automation

Sample Name: F4804MS Lab Sample ID: 1183610MS

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	400524	3.903
2) Chloromethane	(2)	2.282	50	381594	5.078
8) Chloroethane	(2)	2.830	64	310161	7.008
10) Trichlorofluoromethane	(2)	3.148	101	552502	4.617
11) Ethyl ether	(2)	3.422	59	888228	26.639
15) 1,1-Dichloroethene	(2)	3.751	96	273639	6.271
16) Freon 113	(2)	3.782	101	300987	5.515
23) Methylene Chloride	(2)	4.458	84	284535	5.470
26)*t-Butyl Alcohol-d10	(1)	4.477	65	137970	50.000
33) 1,1-Dichloroethane	(2)	5.543	63	917539	10.342
38) 2-Butanone	(1)	6.330	43	455915	30.769
48) Tetrahydrofuran	(1)	6.714	71	90270	21.986
50)$Dibromofluoromethane	(2)	7.061	113	504035	9.466
51) 1,1,1-Trichloroethane	(2)	7.080	97	479315	5.523
54) Carbon Tetrachloride	(2)	7.293	117	424888	5.235
57)$1,2-Dichloroethane-d4	(2)	7.525	102	94534	9.656
58) Benzene	(2)	7.555	78	1241378	6.269
63)*Fluorobenzene	(2)	7.958	96	1958047	10.000
67) Trichloroethene	(2)	8.433	95	326900	5.876
82)$Toluene-d8	(3)	9.939	98	1984655	9.827
83) Toluene	(3)	10.018	92	750090	5.581
89) Tetrachloroethene	(3)	10.555	166	372359	5.519
97)*Chlorobenzene-d5	(3)	11.378	117	1582039	10.000
100) Ethylbenzene	(3)	11.481	91	1492530	5.616
101) m+p-Xylene	(3)	11.597	106	1135843	10.771
105) Xylene (Total)	(3)		106	1679264	16.042
104) o-Xylene	(3)	11.926	106	543421	5.271
111)$4-Bromofluorobenzene	(3)	12.365	95	737845	9.990
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	834502	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:03.
Target 3.5 esignature user ID: sej02002

Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30s14.d Injection date and time: **30-OCT-2019 15:03**
Data file Sample Info. Line: F4804MSD;1183611MSD;1;3;MSD;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:21 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.006)	471	65	142396	(0)	50.00	
63) Fluorobenzene	7.951	(0.000)	1044	96	1999056	(2)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1625016	(1)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	853001	(2)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.000)	113	524753	9.653	97%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	96178	9.622	96%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	2036887	9.818	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	752987	9.925	99%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.074	(0.000)	85	369418	3.526	3.53			0.05	1
2) Chloromethane	(2)	2.270	(0.000)	50	362658	4.727	4.73			0.06	1
8) Chloroethane	(2)	2.824	(0.001)	64	297201	6.577	6.58			0.07	1
10) Trichlorofluoromethane	(2)	3.141	(0.000)	101	514936	4.215	4.22			0.05	1
11) Ethyl ether	(2)	3.410	(0.000)	59	918342	26.978	26.98		E	0.05	13
15) 1,1-Dichloroethene	(2)	3.739	(0.000)	96	275317	6.180	6.18			0.06	1
16) Freon 113	(2)	3.775	(0.000)	101	302972	5.438	5.44			0.06	1
23) Methylene Chloride	(2)	4.446	(0.000)	84	285512	5.376	5.38			0.07	1
33) 1,1-Dichloroethane	(2)	5.537	(0.000)	63	934254	10.314	10.31			0.07	1
38) 2-Butanone	(1)	6.324	(0.000)	43	468512	30.637	30.64			0.6	10
48) Tetrahydrofuran	(1)	6.708	(-0.002)	71	94825	22.378	22.38		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.073	(0.000)	97	487816	5.506	5.51			0.06	1
54) Carbon Tetrachloride	(2)	7.287	(0.000)	117	431087	5.202	5.20			0.07	1
58) Benzene	(2)	7.549	(0.000)	78	1262424	6.244	6.24			0.05	1
67) Trichloroethene	(2)	8.427	(0.000)	95	333052	5.864	5.86			0.06	1
83) Toluene	(3)	10.012	(0.000)	92	765184	5.543	5.54			0.07	1
89) Tetrachloroethene	(3)	10.554	(0.000)	166	374558	5.405	5.40			0.06	1
100) Ethylbenzene	(3)	11.481	(-0.000)	91	1514258	5.547	5.55			0.06	1
101) m+p-Xylene	(3)	11.597	(-0.000)	106	1155454	10.667	10.67			0.1	0.5
104) o-Xylene	(3)	11.926	(0.000)	106	546823	5.164	5.16			0.05	0.5
105) Xylene (Total)	(3)			106	1702277	15.831	15.83			0.2	3

E = Compound concentration above calibration range.

Digitally signed by Sara E. Johnson on 10/30/2019 at 16:04. Target 3.5 esignature user ID: sej02002

Data file: /chem2/HP19094.i/19oct30a.b/hc30s14.d Injection date and time: **30-OCT-2019 15:03**
Data file Sample Info. Line: F4804MSD;1183611MSD;1;3;MSD;RAF48;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193**
Date, time and analyst ID of latest file update: 30-Oct-2019 15:21 Automation

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 13:36
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: **038A** Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

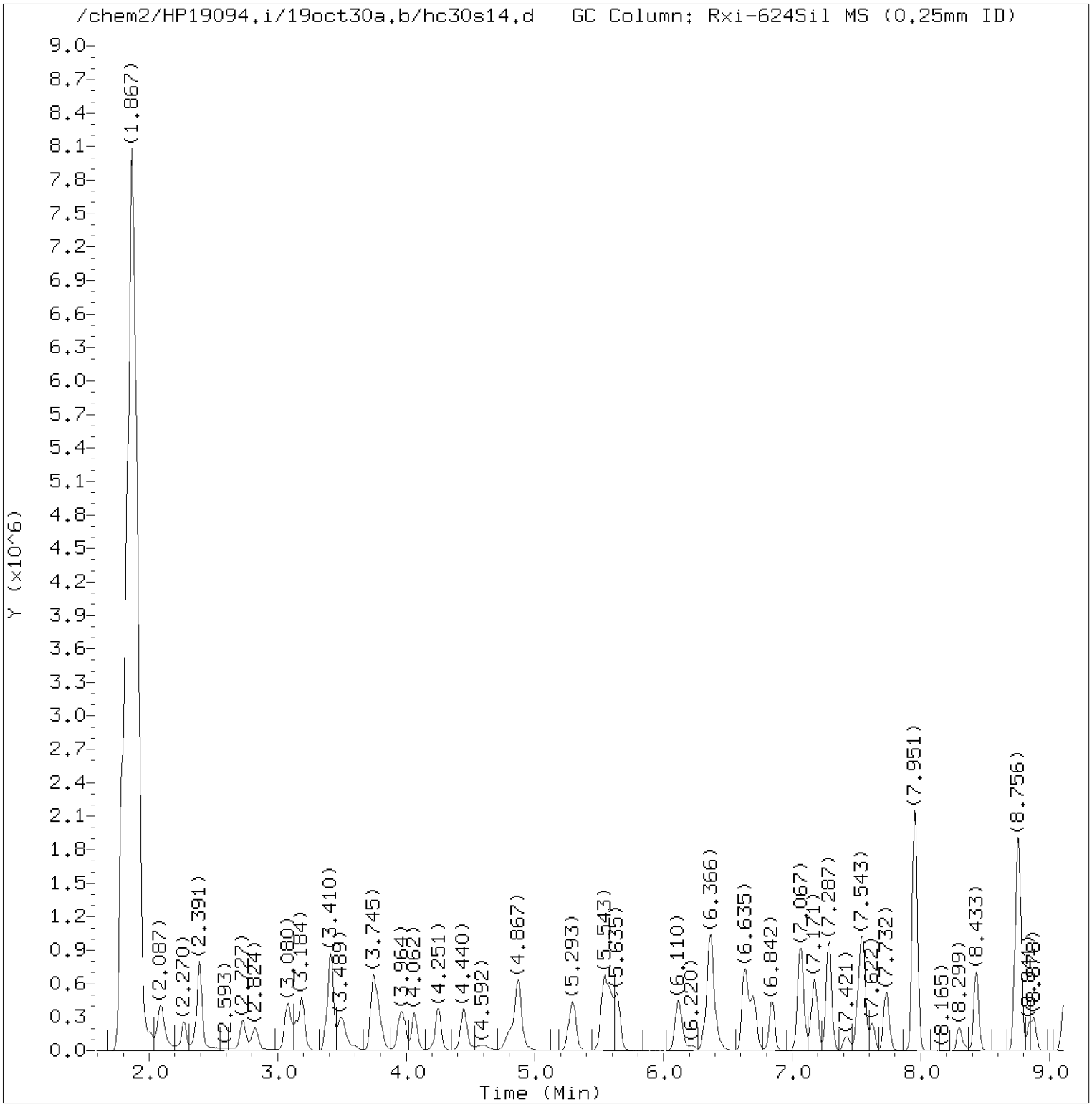
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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Total number of targets = 21

Digitally signed by Sara E. Johnson on 10/30/2019 at 16:04. Target 3.5 esignature user ID: sej02002

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:35. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

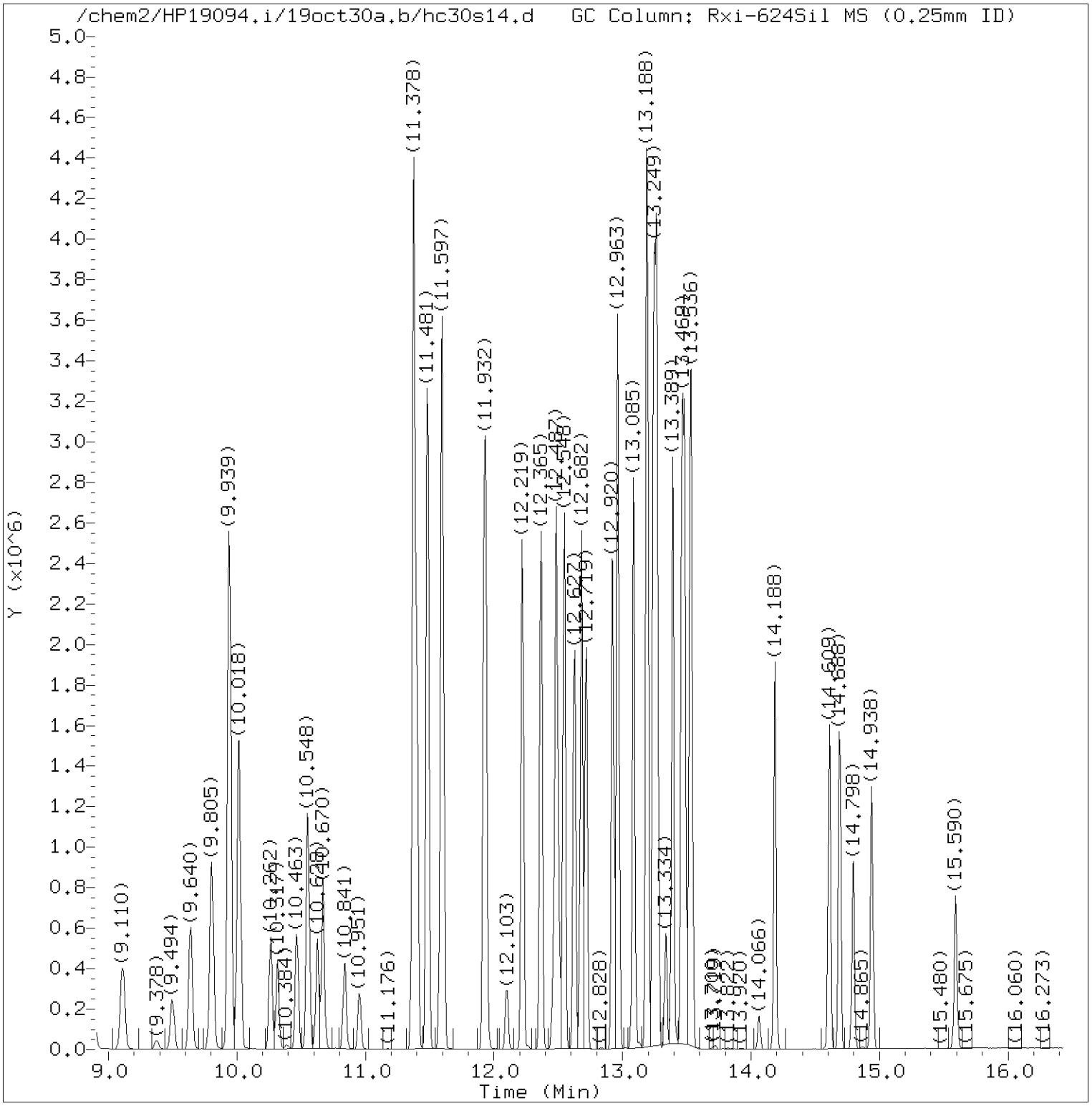
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s14.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:03 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:21 Automation

Sample Name: F4804MSD Lab Sample ID: 1183611MSD

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s14.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:03 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:21 Automation

Sample Name: F4804MSD Lab Sample ID: 1183611MSD

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30s14.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 15:03 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 13:36
Date, time and analyst ID of latest file update: 30-Oct-2019 15:21 Automation

Sample Name: F4804MSD Lab Sample ID: 1183611MSD

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.074	85	369418	3.526
2) Chloromethane	(2)	2.270	50	362658	4.727
8) Chloroethane	(2)	2.824	64	297201	6.577
10) Trichlorofluoromethane	(2)	3.141	101	514936	4.215
11) Ethyl ether	(2)	3.410	59	918342	26.978
15) 1,1-Dichloroethene	(2)	3.739	96	275317	6.180
16) Freon 113	(2)	3.775	101	302972	5.438
23) Methylene Chloride	(2)	4.446	84	285512	5.376
26)*t-Butyl Alcohol-d10	(1)	4.458	65	142396	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	934254	10.314
38) 2-Butanone	(1)	6.324	43	468512	30.637
48) Tetrahydrofuran	(1)	6.708	71	94825	22.378
50)$Dibromofluoromethane	(2)	7.061	113	524753	9.653
51) 1,1,1-Trichloroethane	(2)	7.073	97	487816	5.506
54) Carbon Tetrachloride	(2)	7.287	117	431087	5.202
57)$1,2-Dichloroethane-d4	(2)	7.519	102	96178	9.622
58) Benzene	(2)	7.549	78	1262424	6.244
63)*Fluorobenzene	(2)	7.951	96	1999056	10.000
67) Trichloroethene	(2)	8.427	95	333052	5.864
82)$Toluene-d8	(3)	9.939	98	2036887	9.818
83) Toluene	(3)	10.012	92	765184	5.543
89) Tetrachloroethene	(3)	10.555	166	374558	5.405
97)*Chlorobenzene-d5	(3)	11.378	117	1625016	10.000
100) Ethylbenzene	(3)	11.481	91	1514258	5.547
101) m+p-Xylene	(3)	11.597	106	1155454	10.667
105) Xylene (Total)	(3)		106	1702277	15.831
104) o-Xylene	(3)	11.926	106	546823	5.164
111)$4-Bromofluorobenzene	(3)	12.365	95	752987	9.925
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	853001	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sara E. Johnson
on 10/30/2019 at 16:04.
Target 3.5 esignature user ID: sej02002

Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30l02.d Injection date and time: **30-OCT-2019 08:48**
Data file Sample Info. Line: LCSH90;LCSH90;1;3;LCS;;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 10:39 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.476	(-0.012)	474	65	141299	(-1)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	1988852	(1)	10.00	
97) Chlorobenzene-d5	11.377	(0.000)	1606	117	1584313	(-2)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	818496	(-3)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	526899	9.742	97%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.518	(0.001)	102	95842	9.638	96%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	2021520	9.995	100%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	743368	10.050	101%		80 - 120

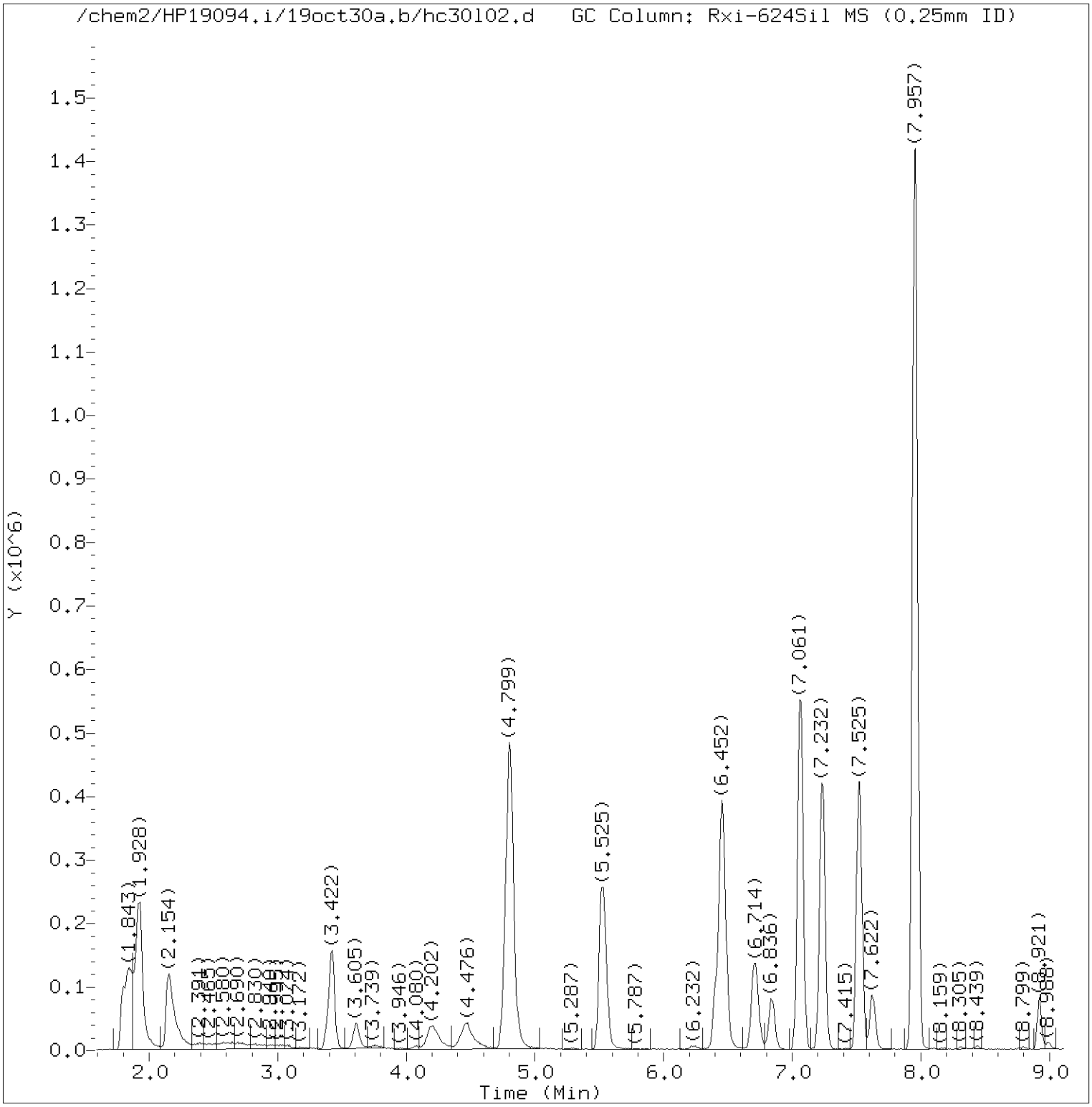
Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
4) Dimethyl ether	(2)	2.154	(0.000)	45	344184M	4.814	4.81		J	0.04	13

M = Compound was manually integrated.

Total number of targets = 1

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:39. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

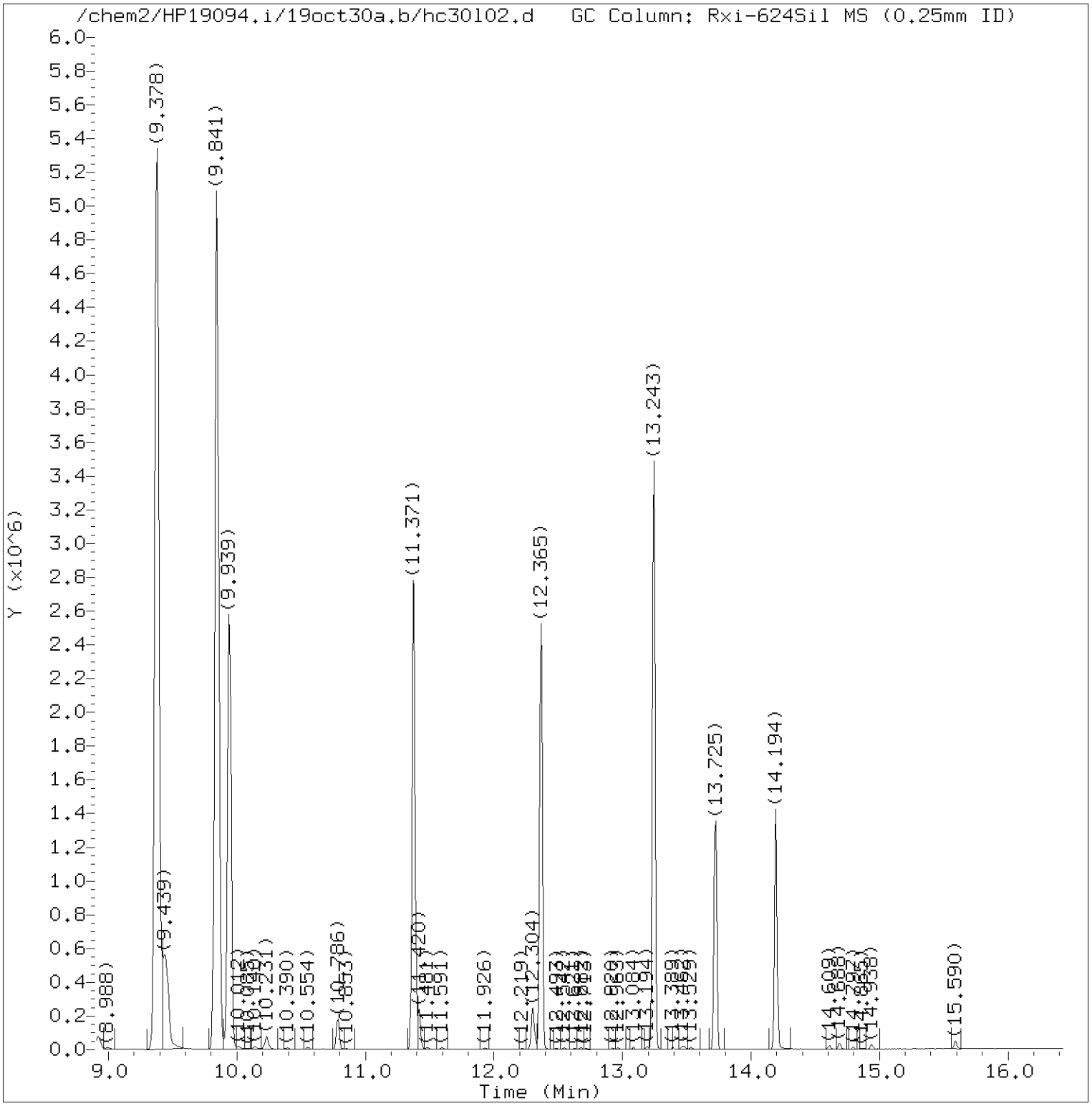
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:48 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:39 jkh09052

Sample Name: LCSH90 Lab Sample ID: LCSH90

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:48 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:39 jkh09052

Sample Name: LCSH90 Lab Sample ID: LCSH90

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l02.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:48 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:39 jkh09052

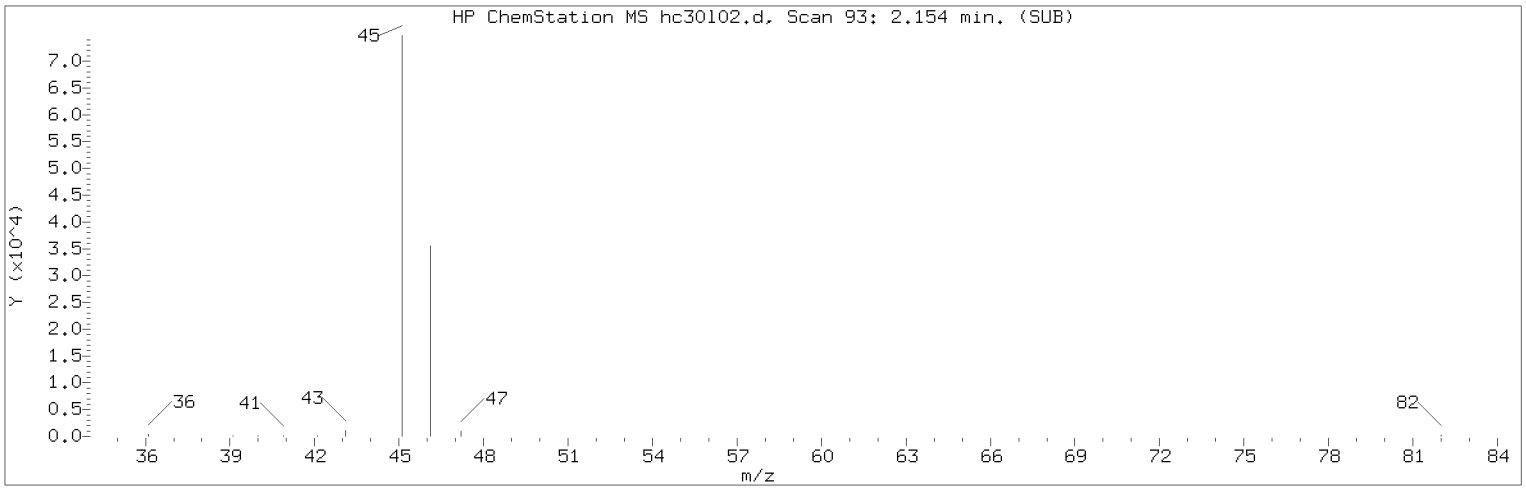
Sample Name: LCSH90 Lab Sample ID: LCSH90

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
4) Dimethyl ether	(2)	2.154	45	344184M	4.814
26)*t-Butyl Alcohol-d10	(1)	4.476	65	141299	50.000
50)$Dibromofluoromethane	(2)	7.067	113	526899	9.742
57)$1,2-Dichloroethane-d4	(2)	7.518	102	95842	9.638
63)*Fluorobenzene	(2)	7.957	96	1988852	10.000
82)$Toluene-d8	(3)	9.939	98	2021520	9.995
97)*Chlorobenzene-d5	(3)	11.377	117	1584313	10.000
111)$4-Bromofluorobenzene	(3)	12.365	95	743368	10.050
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	818496	10.000

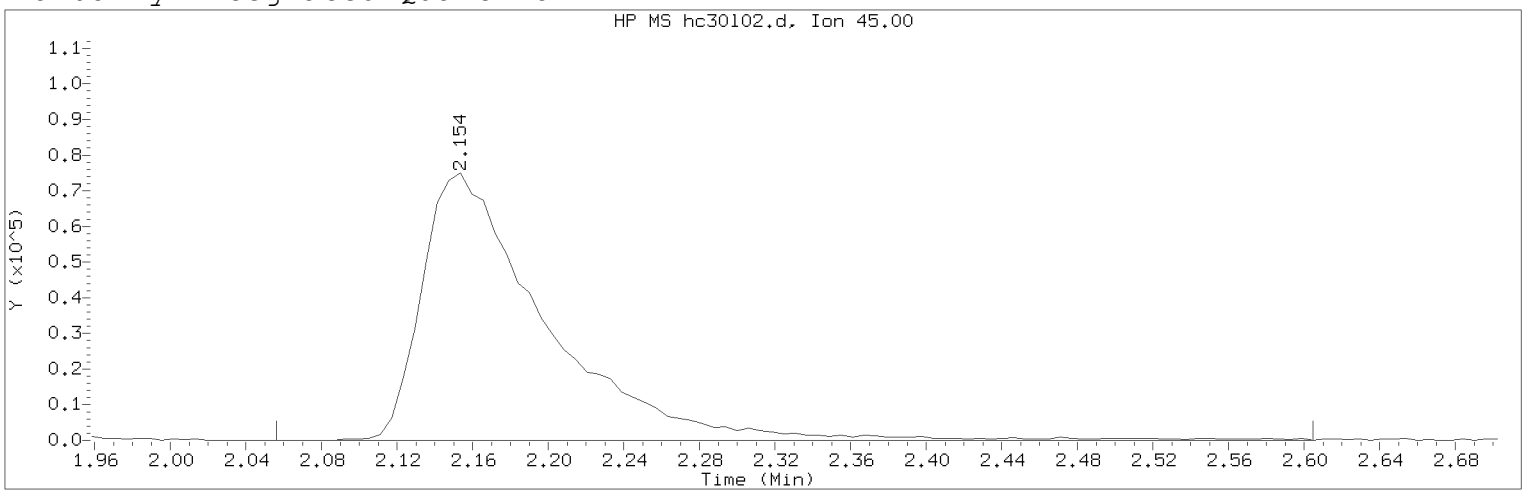
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30102.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:48 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:39 jkh09052

Sample Name: LCSH90 Lab Sample ID: LCSH90

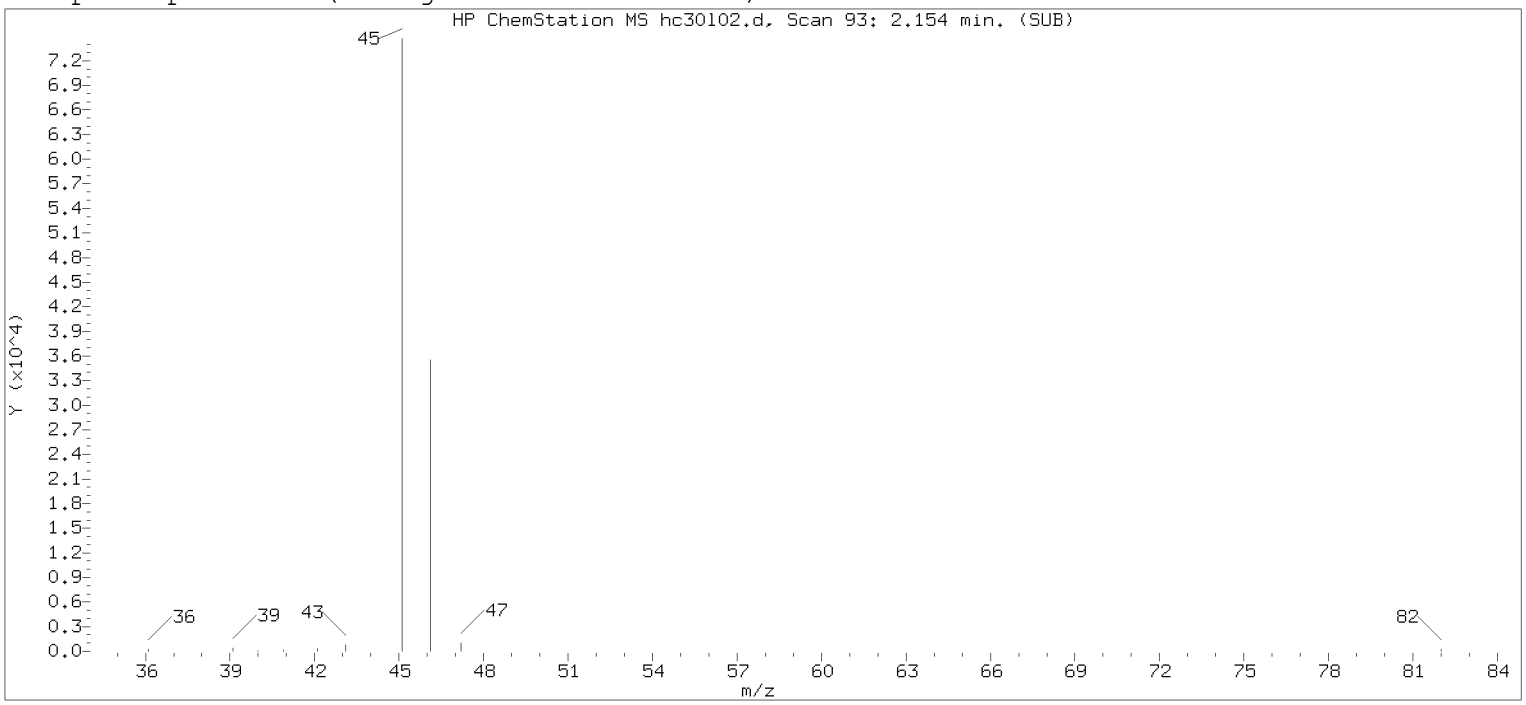
Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area (flag) : 344184M
On-Column Amount (ng) : 4.8142
Integration start scan : 76 Integration stop scan: 166
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

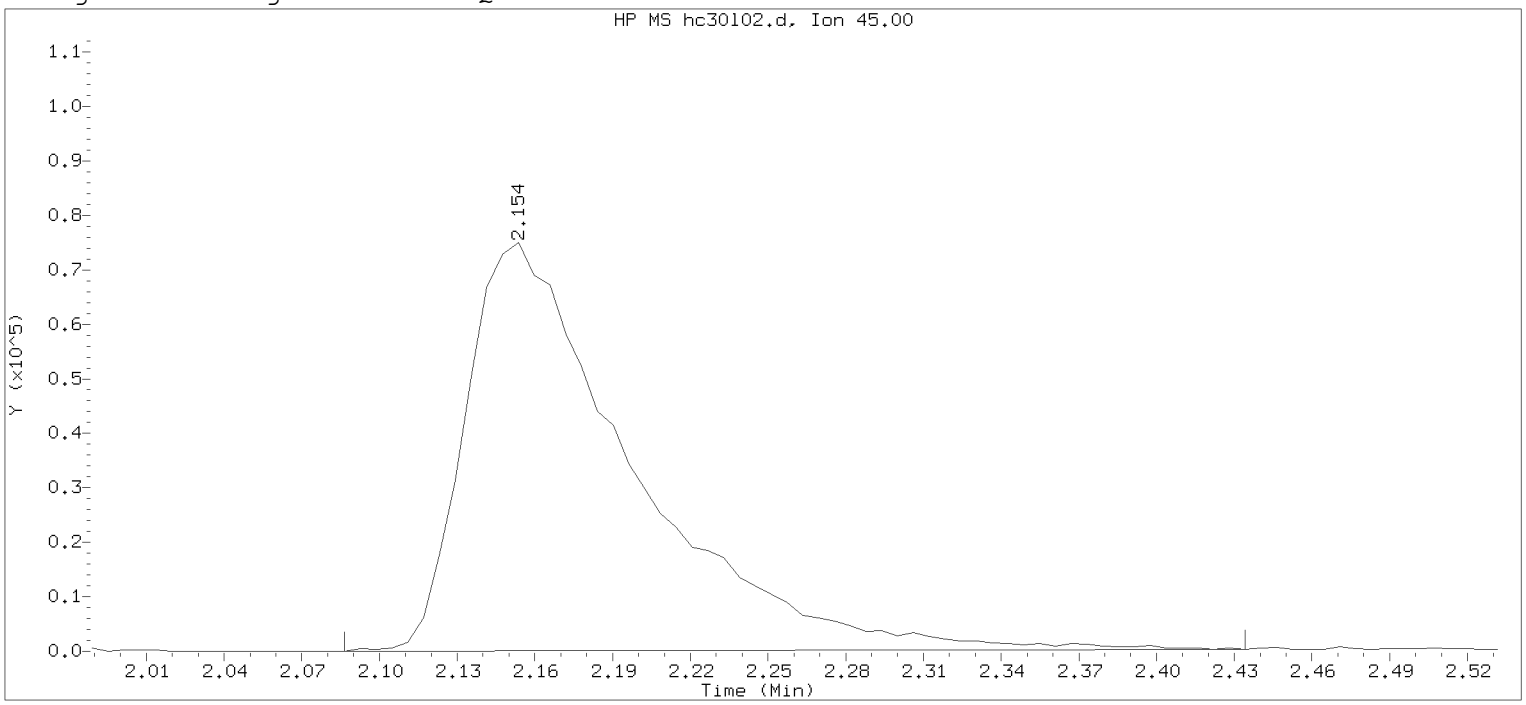
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct30a.b/hc30102.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:48 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 09:06 Automation

Sample Name: LCSH90 Lab Sample ID: LCSH90

Compound Number : 4
Compound Name : Dimethyl ether
Scan Number : 93
Retention Time (minutes): 2.154
Quant Ion : 45.00
Area : 336620
On-column Amount (ng) : 4.7084
Integration start scan : 81 Integration stop scan: 138
Y at integration start : 0 Y at integration end: 295

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:39.
Target 3.5 esignature used. AE48 Page 595 of 1181

Analysis Summary for GC/MS Volatiles

Data file: /chem2/HP19094.i/19oct30a.b/hc30l01.d Injection date and time: **30-OCT-2019 08:26**
Data file Sample Info. Line: LCSH89;LCSH89;1;3;LCS;;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 10:38 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.483	(-0.018)	475	65	143300	(0)	50.00	
63) Fluorobenzene	7.957	(-0.006)	1045	96	2003360	(2)	10.00	
97) Chlorobenzene-d5	11.378	(0.000)	1606	117	1603498	(0)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	841689	(0)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067	(0.000)	113	524187	9.622	96%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519	(0.001)	102	96511	9.635	96%		80 - 120
82) Toluene-d8	(3)	9.945	(-0.001)	98	2032472	9.929	99%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(0.000)	95	752800	10.056	101%		80 - 120

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit	LOQ (in sample)
1) Dichlorodifluoromethane	(2)	2.087	(-0.000)	85	349618	3.330	3.33			0.05	1
2) Chloromethane	(2)	2.282	(-0.000)	50	360587	4.690	4.69			0.06	1
8) Chloroethane	(2)	2.836	(0.000)	64	215472	4.758	4.76			0.07	1
10) Trichlorofluoromethane	(2)	3.147	(0.000)	101	477750	3.902	3.90			0.05	1
11) Ethyl ether	(2)	3.428	(-0.001)	59	164673	4.827	4.83		J	0.05	13
15) 1,1-Dichloroethene	(2)	3.751	(-0.000)	96	245311	5.495	5.49			0.06	1
16) Freon 113	(2)	3.781	(0.000)	101	271940	4.870	4.87			0.06	1
23) Methylene Chloride	(2)	4.458	(-0.000)	84	270886	5.090	5.09			0.07	1
33) 1,1-Dichloroethane	(2)	5.549	(-0.000)	63	494220	5.445	5.44			0.07	1
38) 2-Butanone	(1)	6.330	(0.007)	43	466578	30.318	30.32			0.6	10
48) Tetrahydrofuran	(1)	6.720	(0.003)	71	86561	20.299	20.30		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.080	(0.000)	97	441940	4.977	4.98			0.06	1
54) Carbon Tetrachloride	(2)	7.293	(0.000)	117	387929	4.671	4.67			0.07	1
58) Benzene	(2)	7.555	(0.000)	78	1123750	5.547	5.55			0.05	1
67) Trichloroethene	(2)	8.439	(0.000)	95	299408	5.260	5.26			0.06	1
83) Toluene	(3)	10.018	(0.000)	92	709660	5.210	5.21			0.07	1
89) Tetrachloroethene	(3)	10.554	(0.000)	166	336000	4.913	4.91			0.06	1
100) Ethylbenzene	(3)	11.481	(-0.000)	91	1413670	5.248	5.25			0.06	1
101) m+p-Xylene	(3)	11.597	(-0.000)	106	1073675	10.045	10.04			0.1	0.5
104) o-Xylene	(3)	11.926	(0.000)	106	509205	4.873	4.87			0.05	0.5
105) Xylene (Total)	(3)			106	1582880	14.918	14.92			0.2	3

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:39. Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct30a.b/hc30101.d Injection date and time: **30-OCT-2019 08:26**
Data file Sample Info. Line: LCSH89;LCSH89;1;3;LCS;;DRAPERLOQ;;hc30b01; Instrument ID: **HP19094.i** Batch: **H193031AA**
Date, time and analyst ID of latest file update: 30-Oct-2019 10:38 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct30a.b/hc30b01.d**

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 30-OCT-2019 08:30
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct30a.b/hc30c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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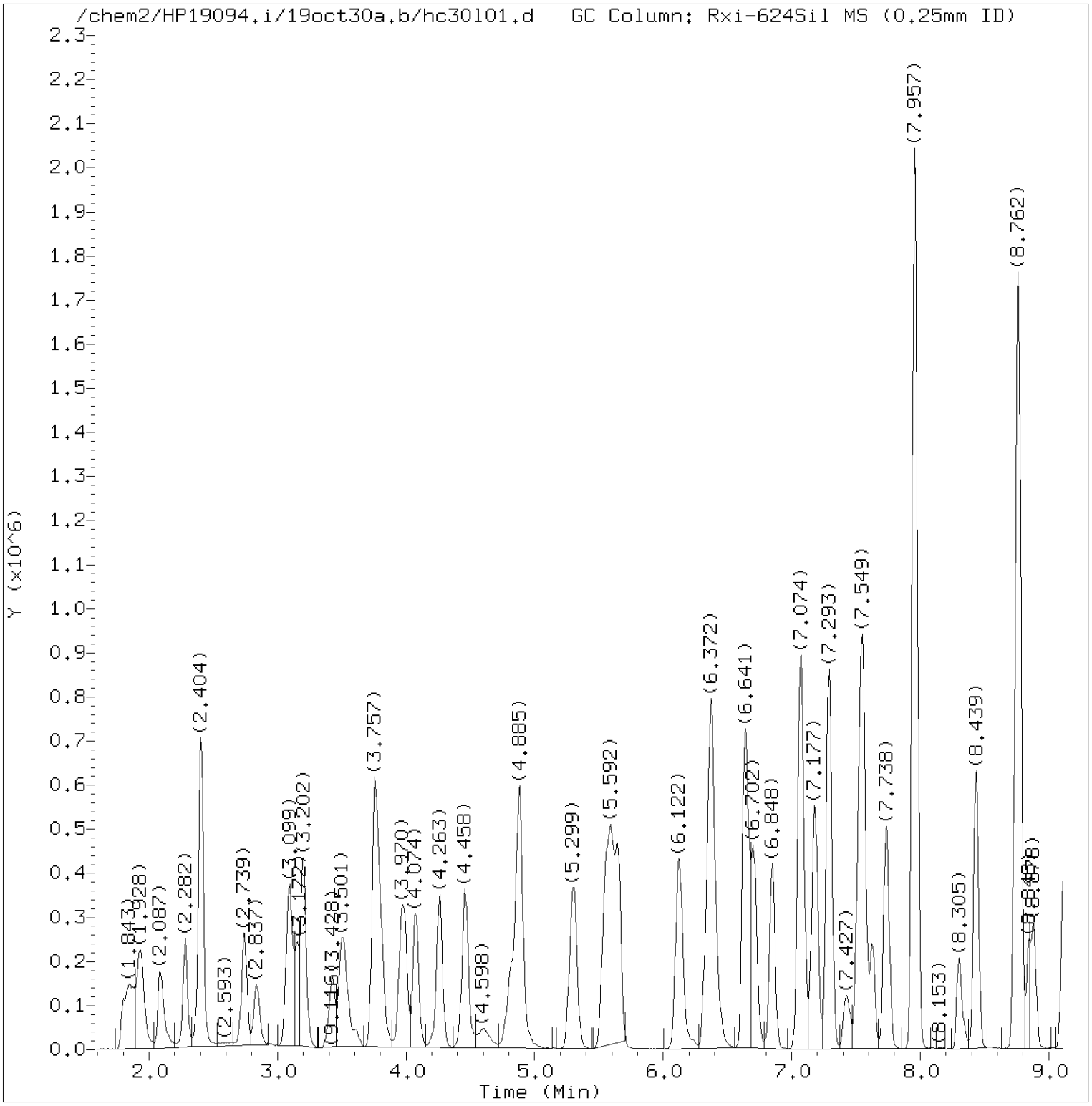
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Total number of targets = 21

Digitally signed by Jennifer K. Howe on 10/30/2019 at 10:39. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 17:32. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

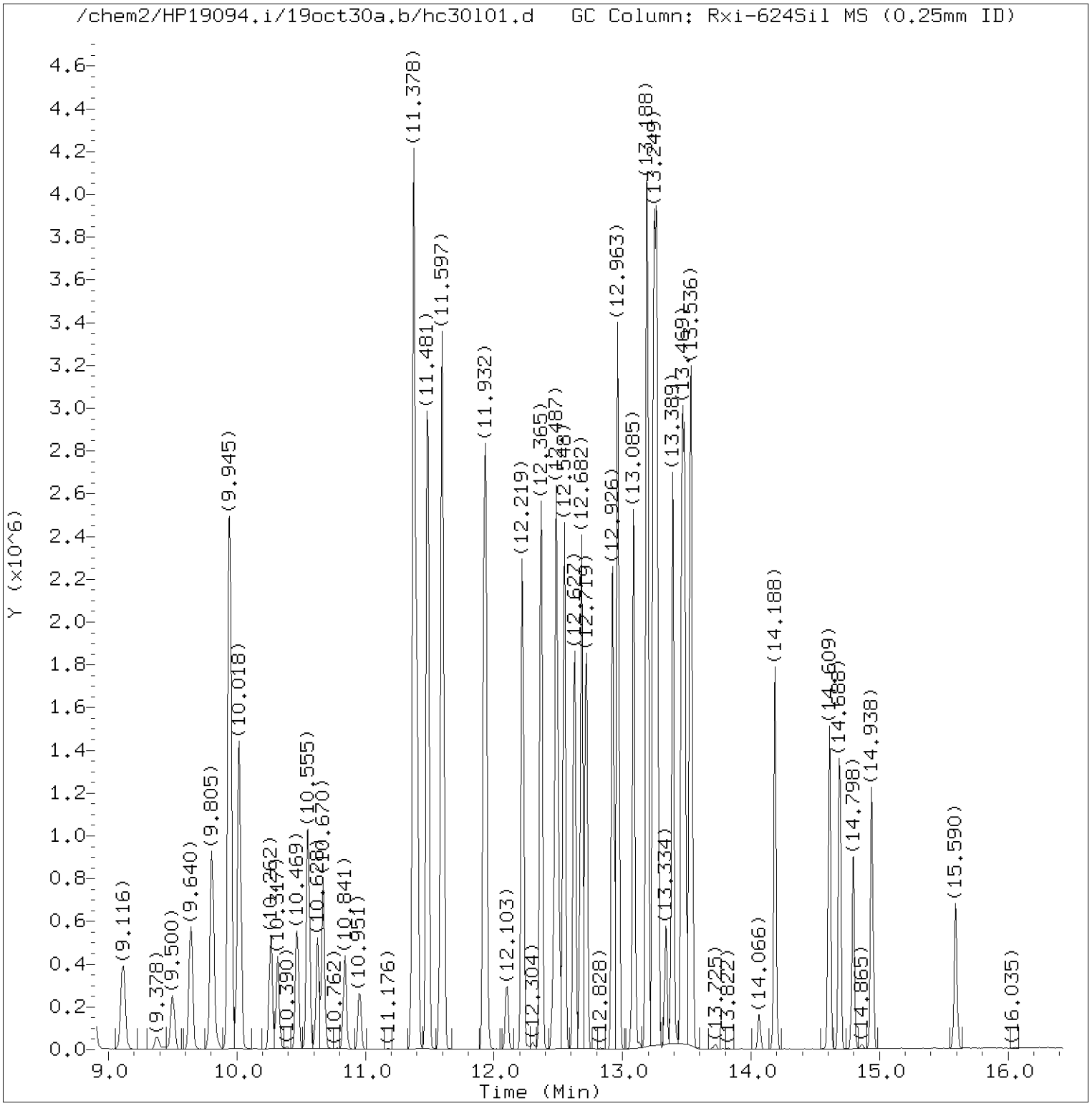
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:26 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:38 jkh09052

Sample Name: LCSH89 Lab Sample ID: LCSH89

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:26 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:38 jkh09052

Sample Name: LCSH89 Lab Sample ID: LCSH89

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct30a.b/hc30l01.d Instrument ID: HP19094.i
Injection date and time: 30-OCT-2019 08:26 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct30a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 30-OCT-2019 08:30
Date, time and analyst ID of latest file update: 30-Oct-2019 10:38 jkh09052

Sample Name: LCSH89 Lab Sample ID: LCSH89

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.087	85	349618	3.330
2) Chloromethane	(2)	2.282	50	360587	4.690
8) Chloroethane	(2)	2.837	64	215472	4.758
10) Trichlorofluoromethane	(2)	3.147	101	477750	3.902
11) Ethyl ether	(2)	3.428	59	164673	4.827
15) 1,1-Dichloroethene	(2)	3.751	96	245311	5.495
16) Freon 113	(2)	3.781	101	271940	4.870
23) Methylene Chloride	(2)	4.458	84	270886	5.090
26)*t-Butyl Alcohol-d10	(1)	4.483	65	143300	50.000
33) 1,1-Dichloroethane	(2)	5.549	63	494220	5.445
38) 2-Butanone	(1)	6.330	43	466578	30.318
48) Tetrahydrofuran	(1)	6.720	71	86561	20.299
50)$Dibromofluoromethane	(2)	7.067	113	524187	9.622
51) 1,1,1-Trichloroethane	(2)	7.080	97	441940	4.977
54) Carbon Tetrachloride	(2)	7.293	117	387929	4.671
57)$1,2-Dichloroethane-d4	(2)	7.519	102	96511	9.635
58) Benzene	(2)	7.555	78	1123750	5.547
63)*Fluorobenzene	(2)	7.957	96	2003360	10.000
67) Trichloroethene	(2)	8.439	95	299408	5.260
82)$Toluene-d8	(3)	9.945	98	2032472	9.929
83) Toluene	(3)	10.018	92	709660	5.210
89) Tetrachloroethene	(3)	10.555	166	336000	4.913
97)*Chlorobenzene-d5	(3)	11.378	117	1603498	10.000
100) Ethylbenzene	(3)	11.481	91	1413670	5.248
101) m+p-Xylene	(3)	11.597	106	1073675	10.045
105) Xylene (Total)	(3)		106	1582880	14.918
104) o-Xylene	(3)	11.926	106	509205	4.873
111)$4-Bromofluorobenzene	(3)	12.365	95	752800	10.056
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	841689	10.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Jennifer K. Howe
on 10/30/2019 at 10:39.
Target 3.5 esignature user ID: jkh09052

Data file: /chem2/HP19094.i/19oct31a.b/hc31l31.d Injection date and time: **31-OCT-2019 08:18**
Data file Sample Info. Line: LCSH91;LCSH91;1;3;LCS;;DRAPERLOQ;;hc31b30; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area (+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.476(-0.006)	474	65	146875 (5)	50.00	
63) Fluorobenzene	7.957(0.000)	1045	96	1967691 (2)	10.00	
97) Chlorobenzene-d5	11.378(0.000)	1606	117	1631132 (1)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243(0.000)	1912	152	854182 (0)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.067(0.000)	113	513266	9.592	96%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.519(0.001)	102	93256M	9.479	95%		80 - 120
82) Toluene-d8	(3)	9.939(0.001)	98	2034543	9.770	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365(0.000)	95	768730	10.095	101%		80 - 120

M = Surrogate Standard was manually integrated.

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.080(0.000)	85	367048	3.559	3.56			0.05	1
2) Chloromethane	(2)	2.282(0.000)	50	381512	5.052	5.05			0.06	1
8) Chloroethane	(2)	2.830(0.000)	64	217446	4.889	4.89			0.07	1
10) Trichlorofluoromethane	(2)	3.147(0.000)	101	477797	3.974	3.97			0.05	1
11) Ethyl ether	(2)	3.422(0.000)	59	171320	5.113	5.11		J	0.05	13
15) 1,1-Dichloroethene	(2)	3.751(-0.000)	96	229927	5.244	5.24			0.06	1
16) Freon 113	(2)	3.781(0.000)	101	253210	4.617	4.62			0.06	1
23) Methylene Chloride	(2)	4.458(0.000)	84	270621	5.177	5.18			0.07	1
33) 1,1-Dichloroethane	(2)	5.537(0.000)	63	490982	5.507	5.51			0.07	1
38) 2-Butanone	(1)	6.330(0.000)	43	485093	30.754	30.75			0.6	10
48) Tetrahydrofuran	(1)	6.720(-0.000)	71	88935	20.348	20.35		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.080(0.000)	97	432988	4.965	4.96			0.06	1
54) Carbon Tetrachloride	(2)	7.293(0.000)	117	380660	4.667	4.67			0.07	1
58) Benzene	(2)	7.549(0.000)	78	1123000	5.643	5.64			0.05	1
67) Trichloroethene	(2)	8.433(-0.000)	95	298330	5.337	5.34			0.06	1
83) Toluene	(3)	10.018(0.000)	92	713823	5.151	5.15			0.07	1
89) Tetrachloroethene	(3)	10.554(0.000)	166	331961	4.772	4.77			0.06	1
100) Ethylbenzene	(3)	11.481(0.000)	91	1414920	5.164	5.16			0.06	1
101) m+p-Xylene	(3)	11.597(-0.000)	106	1079324	9.927	9.93			0.1	0.5
104) o-Xylene	(3)	11.926(0.000)	106	514002	4.836	4.84			0.05	0.5
105) Xylene (Total)	(3)		106	1593326	14.763	14.76			0.2	3

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12. Target 3.5 esignature user ID: mec29284

Data file: /chem2/HP19094.i/19oct31a.b/hc31l31.d Injection date and time: **31-OCT-2019 08:18**
Data file Sample Info. Line: LCSH91;LCSH91;1;3;LCS;;DRAPERLOQ;;hc31b30; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

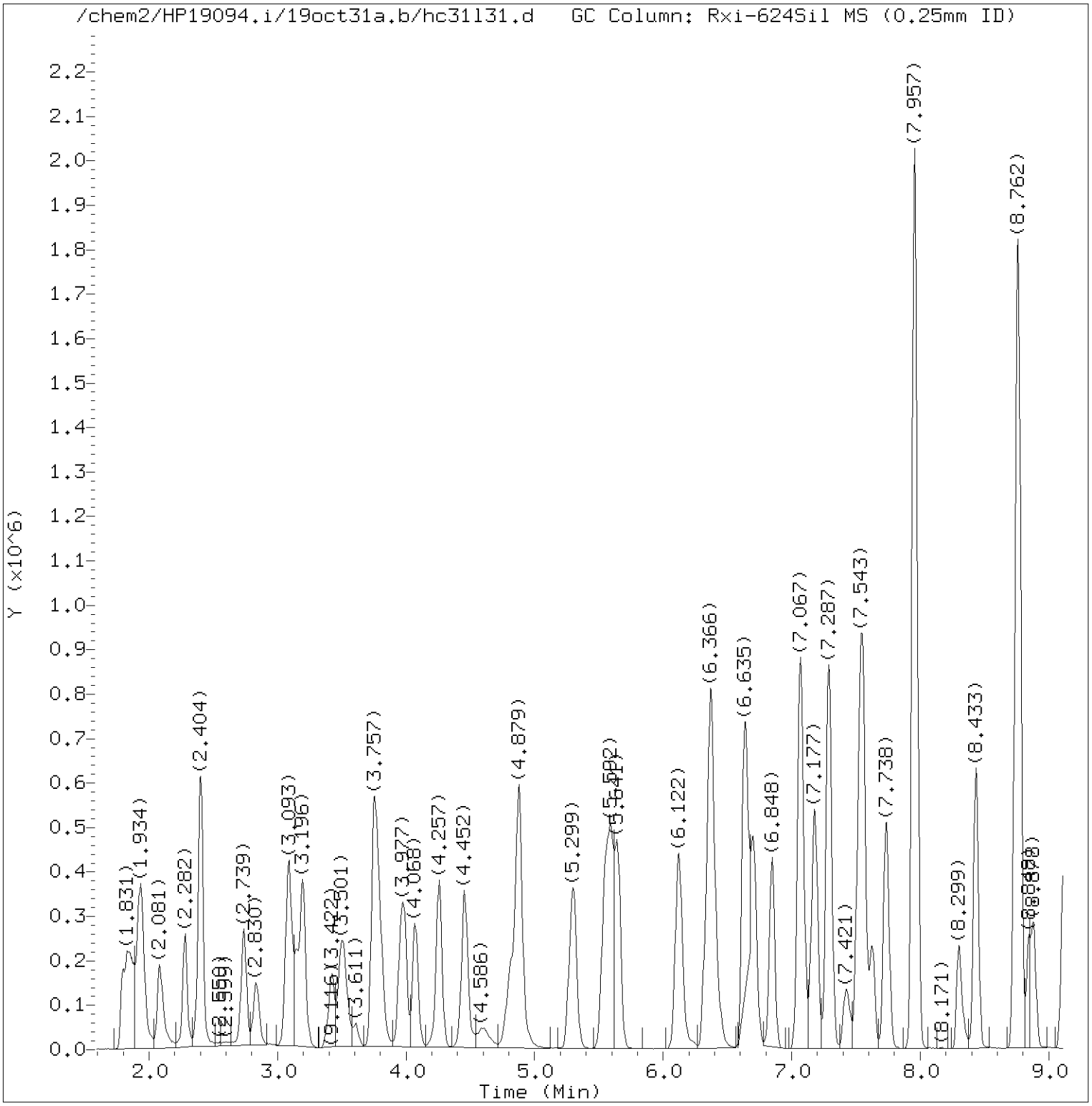
Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

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WAS LEFT
BLANK INTENTIONALLY

Total number of targets = 21

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12. Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

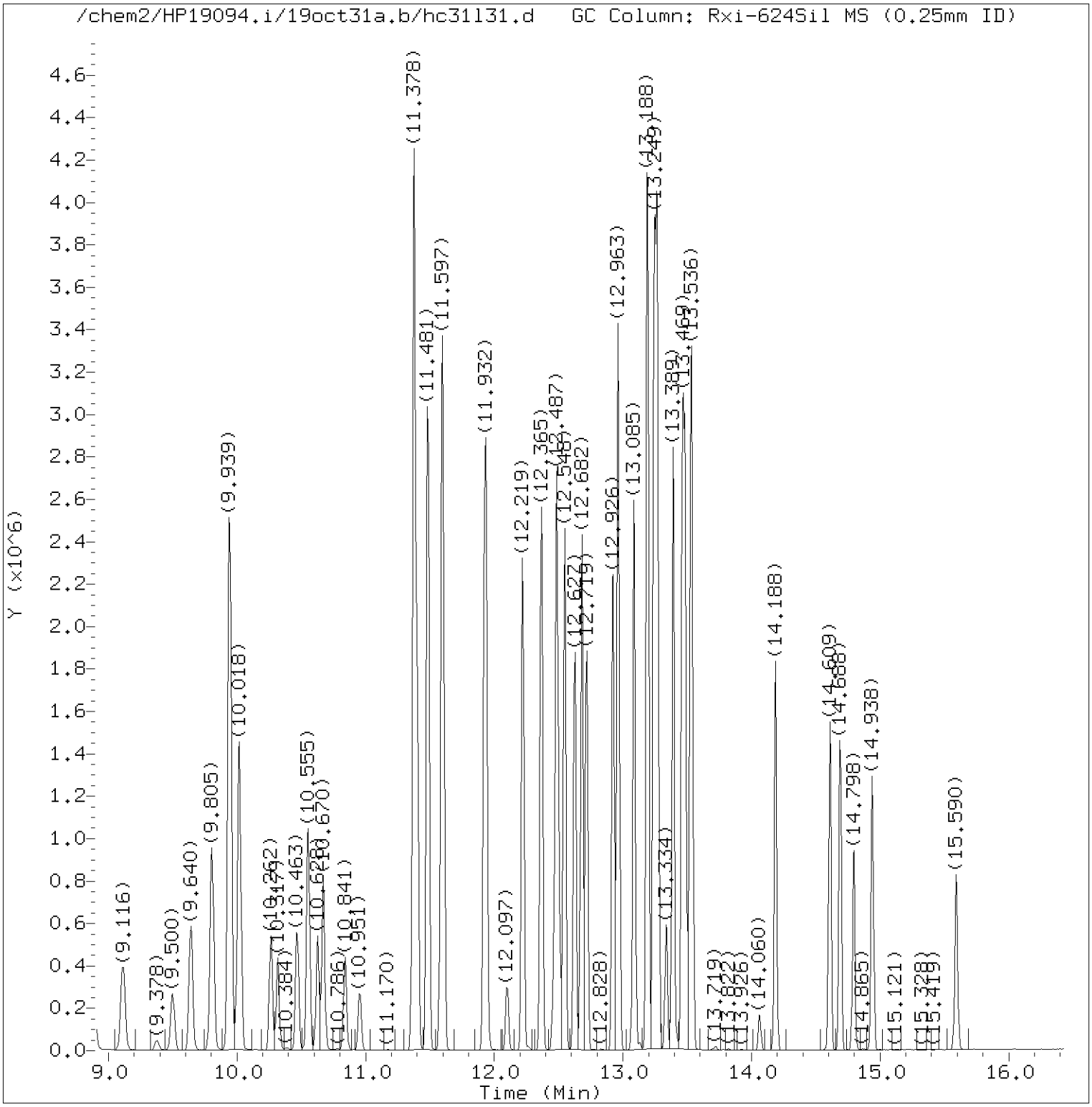
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31l31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:18 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: LCSH91 Lab Sample ID: LCSH91

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31l31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:18 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: LCSH91 Lab Sample ID: LCSH91

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31l31.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:18 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

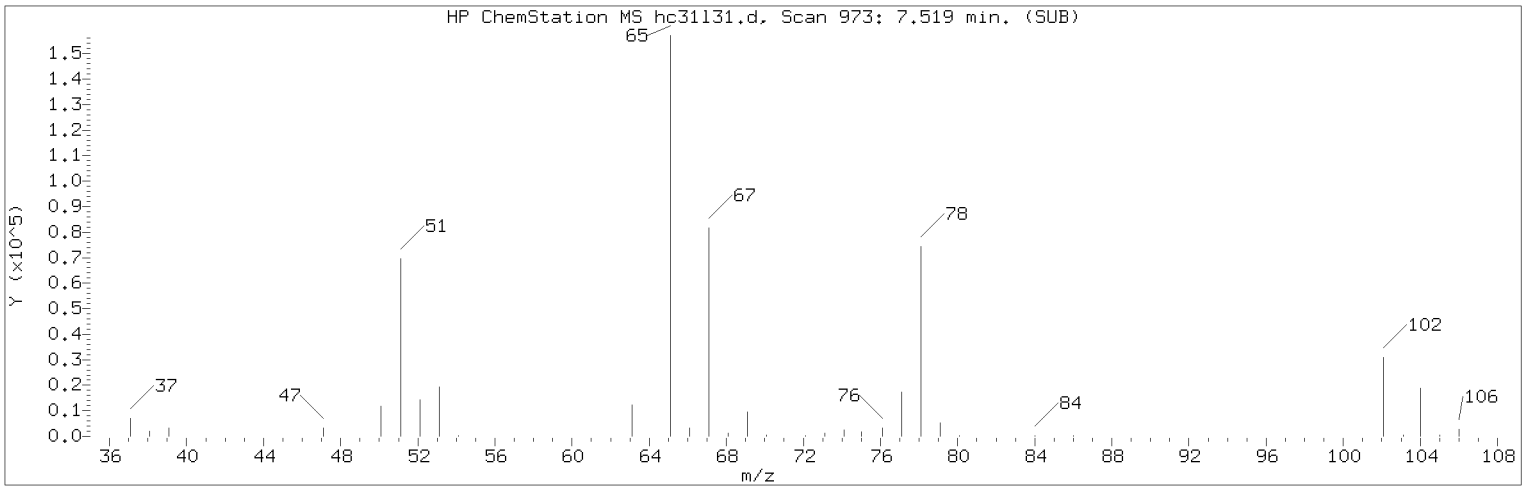
Sample Name: LCSH91 Lab Sample ID: LCSH91

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.081	85	367048	3.559
2) Chloromethane	(2)	2.282	50	381512	5.052
8) Chloroethane	(2)	2.830	64	217446	4.889
10) Trichlorofluoromethane	(2)	3.147	101	477797	3.974
11) Ethyl ether	(2)	3.422	59	171320	5.113
15) 1,1-Dichloroethene	(2)	3.751	96	229927	5.244
16) Freon 113	(2)	3.781	101	253210	4.617
23) Methylene Chloride	(2)	4.458	84	270621	5.177
26)*t-Butyl Alcohol-d10	(1)	4.476	65	146875	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	490982	5.507
38) 2-Butanone	(1)	6.330	43	485093	30.754
48) Tetrahydrofuran	(1)	6.720	71	88935	20.348
50)$Dibromofluoromethane	(2)	7.067	113	513266	9.592
51) 1,1,1-Trichloroethane	(2)	7.080	97	432988	4.965
54) Carbon Tetrachloride	(2)	7.293	117	380660	4.667
57)$1,2-Dichloroethane-d4	(2)	7.519	102	93256M	9.479
58) Benzene	(2)	7.549	78	1123000	5.643
63)*Fluorobenzene	(2)	7.957	96	1967691	10.000
67) Trichloroethene	(2)	8.433	95	298330	5.337
82)$Toluene-d8	(3)	9.939	98	2034543	9.770
83) Toluene	(3)	10.018	92	713823	5.151
89) Tetrachloroethene	(3)	10.555	166	331961	4.772
97)*Chlorobenzene-d5	(3)	11.378	117	1631132	10.000
100) Ethylbenzene	(3)	11.481	91	1414920	5.164
101) m+p-Xylene	(3)	11.597	106	1079324	9.927
105) Xylene (Total)	(3)		106	1593326	14.763
104) o-Xylene	(3)	11.926	106	514002	4.836
111)$4-Bromofluorobenzene	(3)	12.365	95	768730	10.095
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	854182	10.000

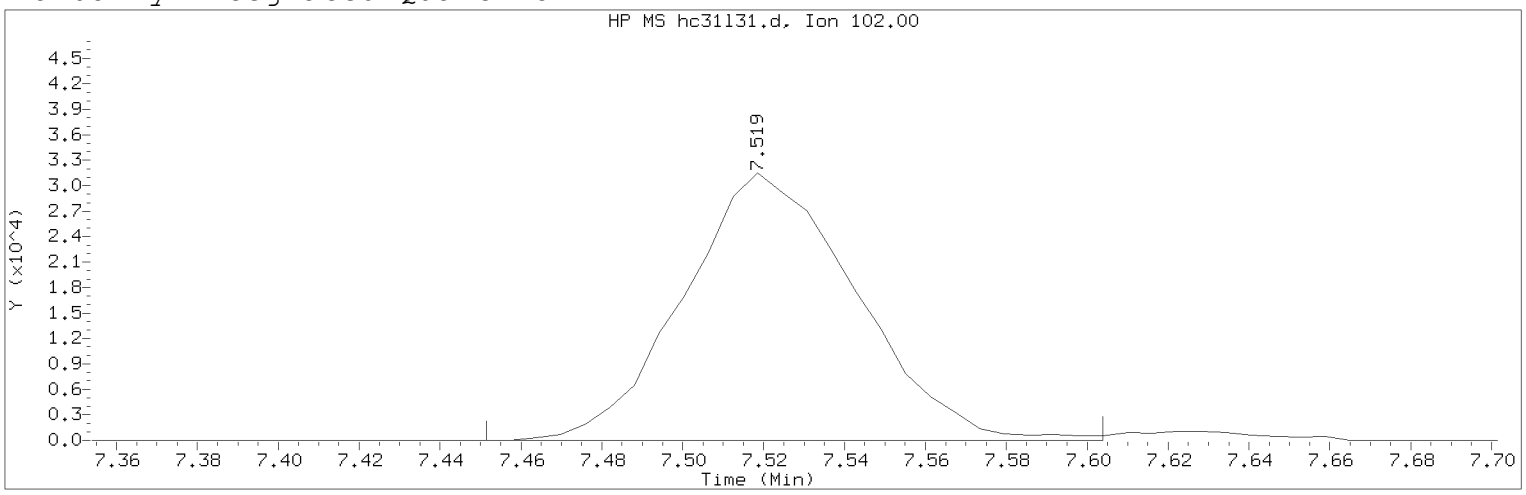
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31131.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:18 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:11 jkh09052

Sample Name: LCSH91 Lab Sample ID: LCSH91

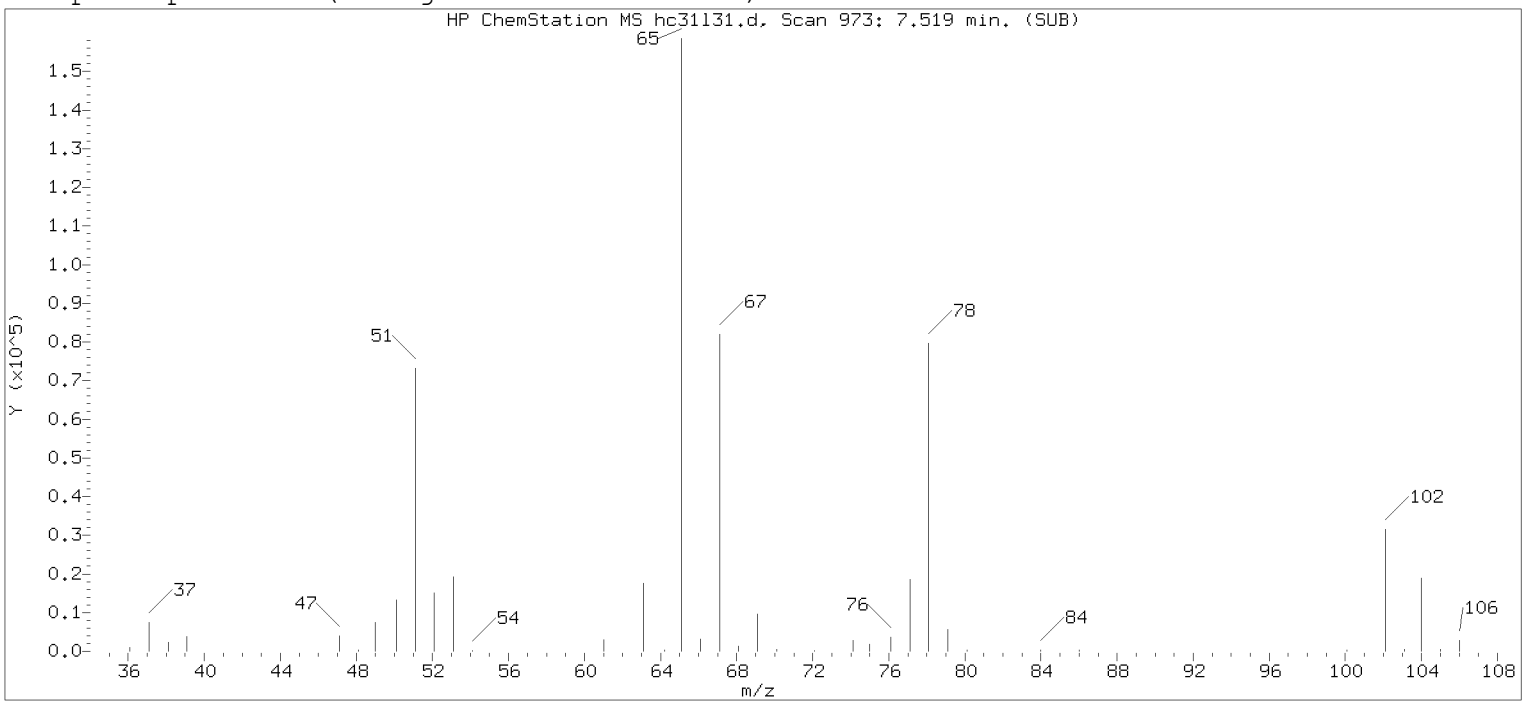
Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 973
Retention Time (minutes): 7.519
Quant Ion : 102.00
Area (flag) : 93256M
On-Column Amount (ng) : 9.4787
Integration start scan : 961 Integration stop scan: 986
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

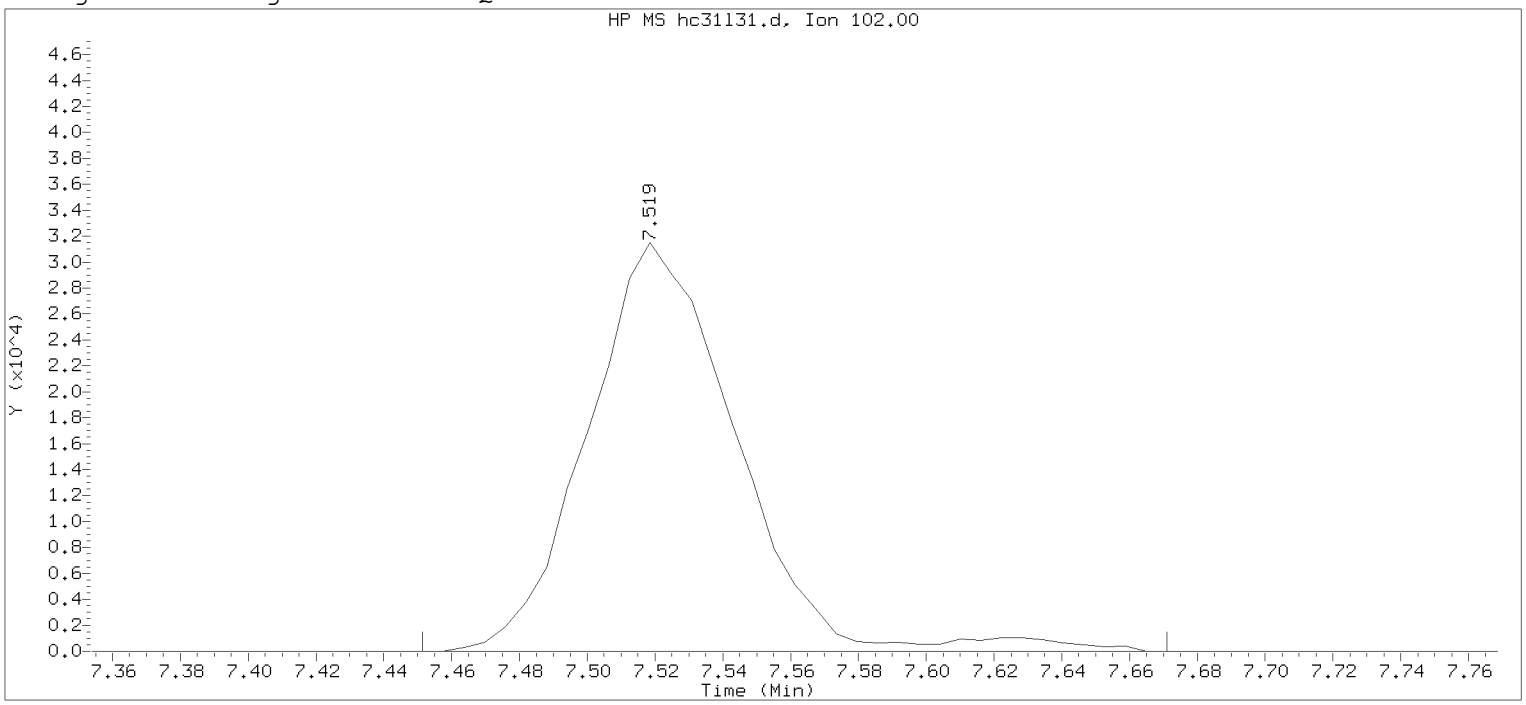
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31131.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:18 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:10 jkh09052

Sample Name: LCSH91 Lab Sample ID: LCSH91

Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 973
Retention Time (minutes): 7.519
Quant Ion : 102.00
Area : 95687
On-column Amount (ng) : 9.7258
Integration start scan : 961 Integration stop scan: 997
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12.
Target 3.5 esignature used [illegible]

Data file: /chem2/HP19094.i/19oct31a.b/hc31l32.d Injection date and time: **31-OCT-2019 08:39**
Data file Sample Info. Line: LCDH91;LCDH91;1;3;LCSD;;DRAPERLOQ;;hc31b30; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	4.458	(0.012)	471	65	147943	(6)	50.00	
63) Fluorobenzene	7.958	(0.000)	1045	96	1995398	(3)	10.00	
97) Chlorobenzene-d5	11.372	(0.006)	1605	117	1654774	(2)	10.00	
133) 1,4-Dichlorobenzene-d4	13.243	(0.000)	1912	152	867790	(1)	10.00	

Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	7.061	(0.001)	113	527018	9.712	97%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.513	(0.002)	102	98183M	9.841	98%		80 - 120
82) Toluene-d8	(3)	9.939	(0.000)	98	2051949	9.713	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.365	(-0.001)	95	781091	10.111	101%		80 - 120

M = Surrogate Standard was manually integrated.

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
1) Dichlorodifluoromethane	(2)	2.074	(0.000)	85	363766	3.478	3.48			0.05	1
2) Chloromethane	(2)	2.270	(0.001)	50	374440	4.890	4.89			0.06	1
8) Chloroethane	(2)	2.830	(0.000)	64	218517	4.845	4.84			0.07	1
10) Trichlorofluoromethane	(2)	3.135	(0.001)	101	479937	3.936	3.94			0.05	1
11) Ethyl ether	(2)	3.416	(0.000)	59	168798	4.968	4.97		J	0.05	13
15) 1,1-Dichloroethene	(2)	3.745	(0.000)	96	230932	5.193	5.19			0.06	1
16) Freon 113	(2)	3.769	(0.001)	101	253371	4.556	4.56			0.06	1
23) Methylene Chloride	(2)	4.452	(0.000)	84	267931	5.054	5.05			0.07	1
33) 1,1-Dichloroethane	(2)	5.537	(0.000)	63	502150	5.554	5.55			0.07	1
38) 2-Butanone	(1)	6.324	(-0.003)	43	490071	30.845	30.85			0.6	10
48) Tetrahydrofuran	(1)	6.708	(-0.004)	71	92854	21.091	21.09		J	0.8	25
51) 1,1,1-Trichloroethane	(2)	7.080	(0.000)	97	439728	4.972	4.97			0.06	1
54) Carbon Tetrachloride	(2)	7.287	(0.000)	117	377287	4.561	4.56			0.07	1
58) Benzene	(2)	7.549	(0.000)	78	1125744	5.579	5.58			0.05	1
67) Trichloroethene	(2)	8.433	(-0.000)	95	303507	5.354	5.35			0.06	1
83) Toluene	(3)	10.018	(-0.000)	92	713641	5.076	5.08			0.07	1
89) Tetrachloroethene	(3)	10.548	(0.000)	166	337192	4.778	4.78			0.06	1
100) Ethylbenzene	(3)	11.481	(-0.000)	91	1414883	5.090	5.09			0.06	1
101) m+p-Xylene	(3)	11.597	(-0.000)	106	1079963	9.791	9.79			0.1	0.5
104) o-Xylene	(3)	11.926	(-0.000)	106	524066	4.860	4.86			0.05	0.5
105) Xylene (Total)	(3)			106	1604029	14.651	14.65			0.2	3

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12. Target 3.5 esignature user ID: mec29284

Data file: /chem2/HP19094.i/19oct31a.b/hc31132.d Injection date and time: **31-OCT-2019 08:39**
Data file Sample Info. Line: LCDH91;LCDH91;1;3;LCSD;;DRAPERLOQ;;hc31b30; Instrument ID: **HP19094.i** Batch: **H193031AB**
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

Blank Data file reference: **/chem2/HP19094.i/19oct31a.b/hc31b30.d**

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: **22469-SM**
Calibration date and time (Last Method Edit): 31-OCT-2019 08:26
Mid Level Daily Calibration Standard Reference: **/chem2/HP19094.i/19oct31a.b/hc31c01.d**

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: **1.00**

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

THIS SPACE

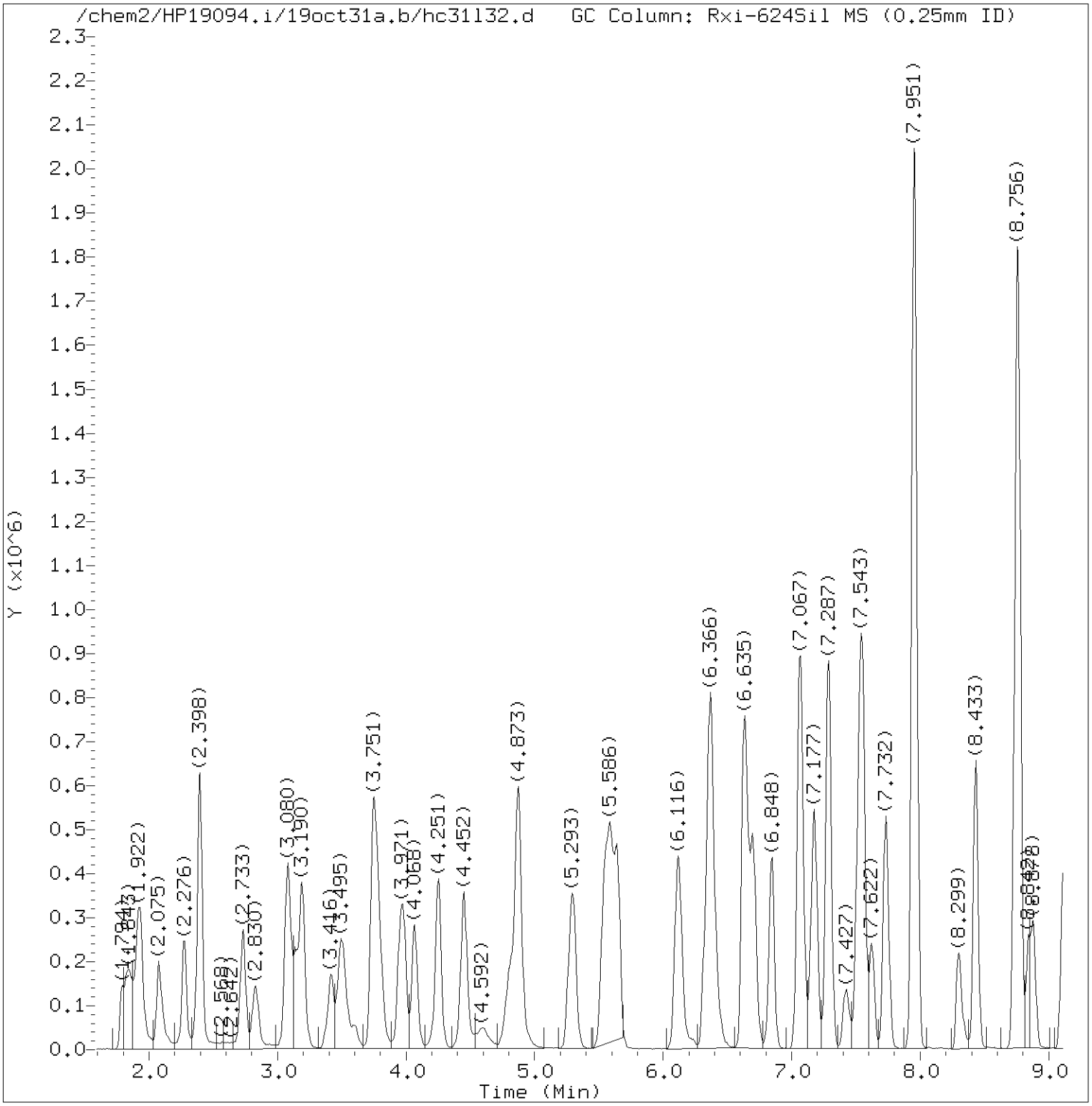
WAS LEFT

BLANK INTENTIONALLY

Total number of targets = 21

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12. Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07. PARALLAX ID: kmb29664



Total Ion Chromatogram (TIC)

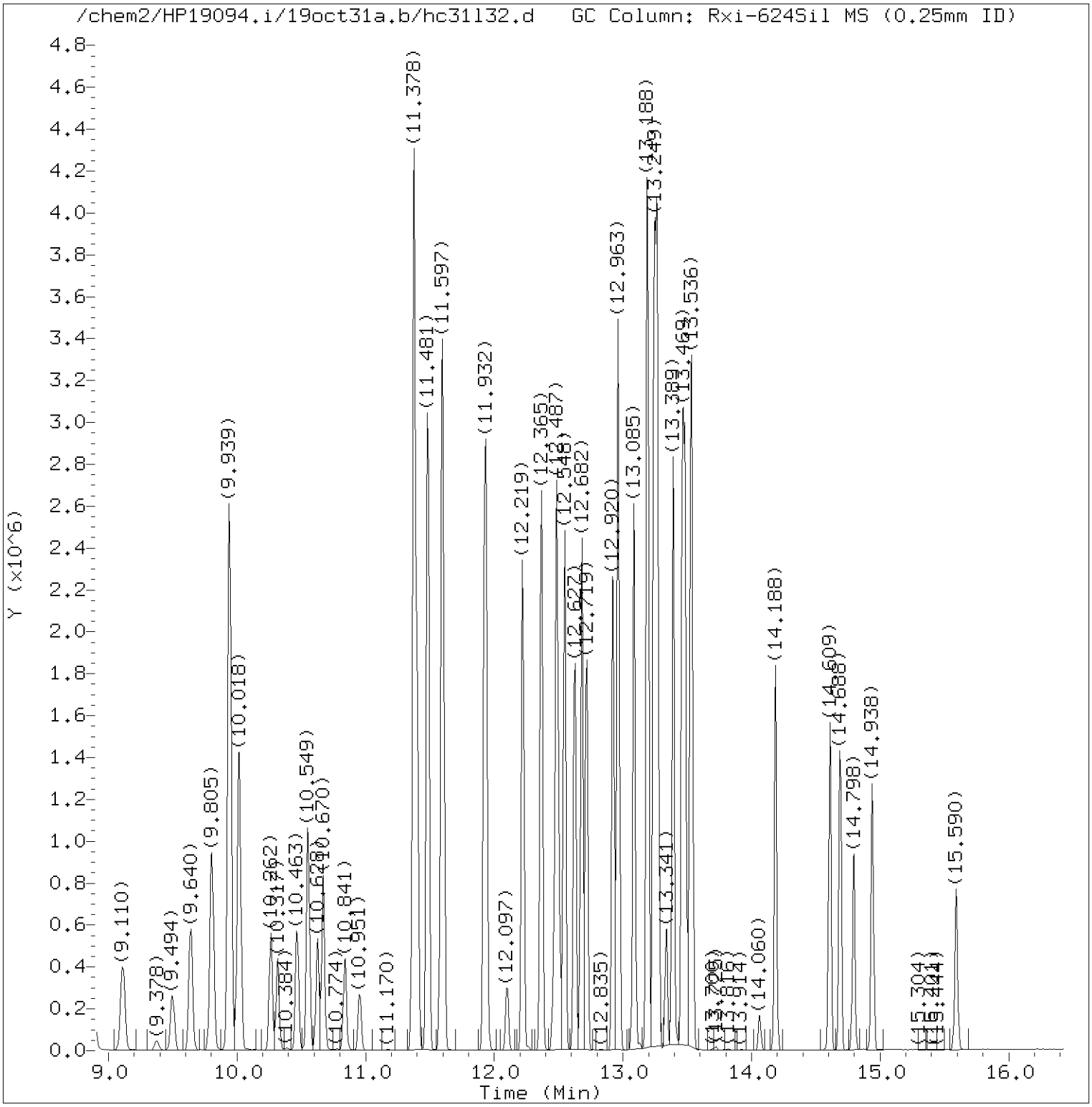
Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31l32.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:39 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

Sample Name: LCDH91 Lab Sample ID: LCDH91

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31l32.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:39 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

Sample Name: LCDH91 Lab Sample ID: LCDH91

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Quant Report

Target Revision 3.5

Data File: /chem2/HP19094.i/19oct31a.b/hc31132.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:39 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

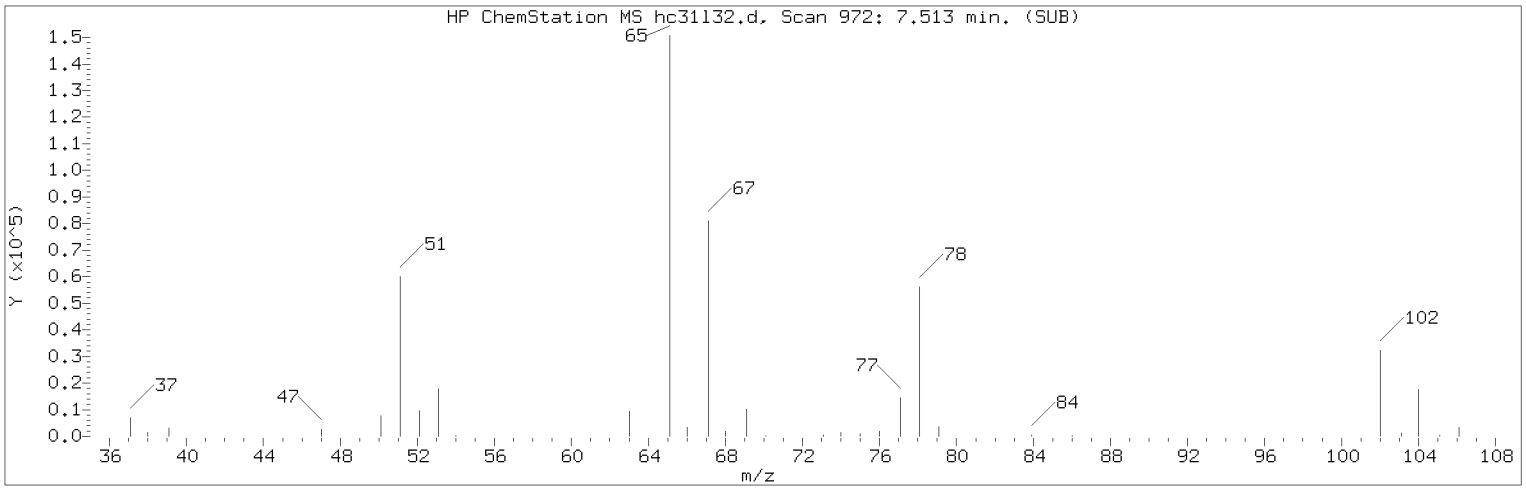
Sample Name: LCDH91 Lab Sample ID: LCDH91

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
1) Dichlorodifluoromethane	(2)	2.075	85	363766	3.478
2) Chloromethane	(2)	2.270	50	374440	4.890
8) Chloroethane	(2)	2.830	64	218517	4.845
10) Trichlorofluoromethane	(2)	3.135	101	479937	3.936
11) Ethyl ether	(2)	3.416	59	168798	4.968
15) 1,1-Dichloroethene	(2)	3.745	96	230932	5.193
16) Freon 113	(2)	3.769	101	253371	4.556
23) Methylene Chloride	(2)	4.452	84	267931	5.054
26)*t-Butyl Alcohol-d10	(1)	4.458	65	147943	50.000
33) 1,1-Dichloroethane	(2)	5.537	63	502150	5.554
38) 2-Butanone	(1)	6.324	43	490071	30.845
48) Tetrahydrofuran	(1)	6.708	71	92854	21.091
50)$Dibromofluoromethane	(2)	7.061	113	527018	9.712
51) 1,1,1-Trichloroethane	(2)	7.080	97	439728	4.972
54) Carbon Tetrachloride	(2)	7.287	117	377287	4.561
57)$1,2-Dichloroethane-d4	(2)	7.513	102	98183M	9.841
58) Benzene	(2)	7.549	78	1125744	5.579
63)*Fluorobenzene	(2)	7.958	96	1995398	10.000
67) Trichloroethene	(2)	8.433	95	303507	5.354
82)$Toluene-d8	(3)	9.939	98	2051949	9.713
83) Toluene	(3)	10.018	92	713641	5.076
89) Tetrachloroethene	(3)	10.549	166	337192	4.778
97)*Chlorobenzene-d5	(3)	11.372	117	1654774	10.000
100) Ethylbenzene	(3)	11.481	91	1414883	5.090
101) m+p-Xylene	(3)	11.597	106	1079963	9.791
105) Xylene (Total)	(3)		106	1604029	14.651
104) o-Xylene	(3)	11.926	106	524066	4.860
111)$4-Bromofluorobenzene	(3)	12.365	95	781091	10.111
133)*1,4-Dichlorobenzene-d4	(4)	13.243	152	867790	10.000

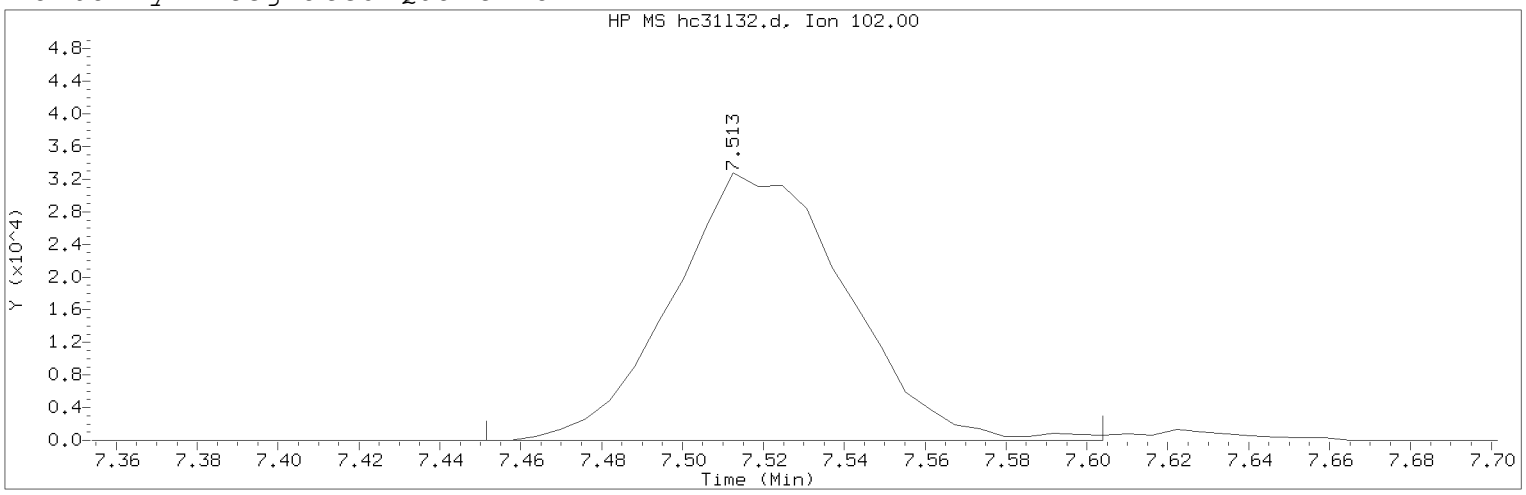
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Miranda E. Campbell
on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31132.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:39 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:12 jkh09052

Sample Name: LCDH91 Lab Sample ID: LCDH91

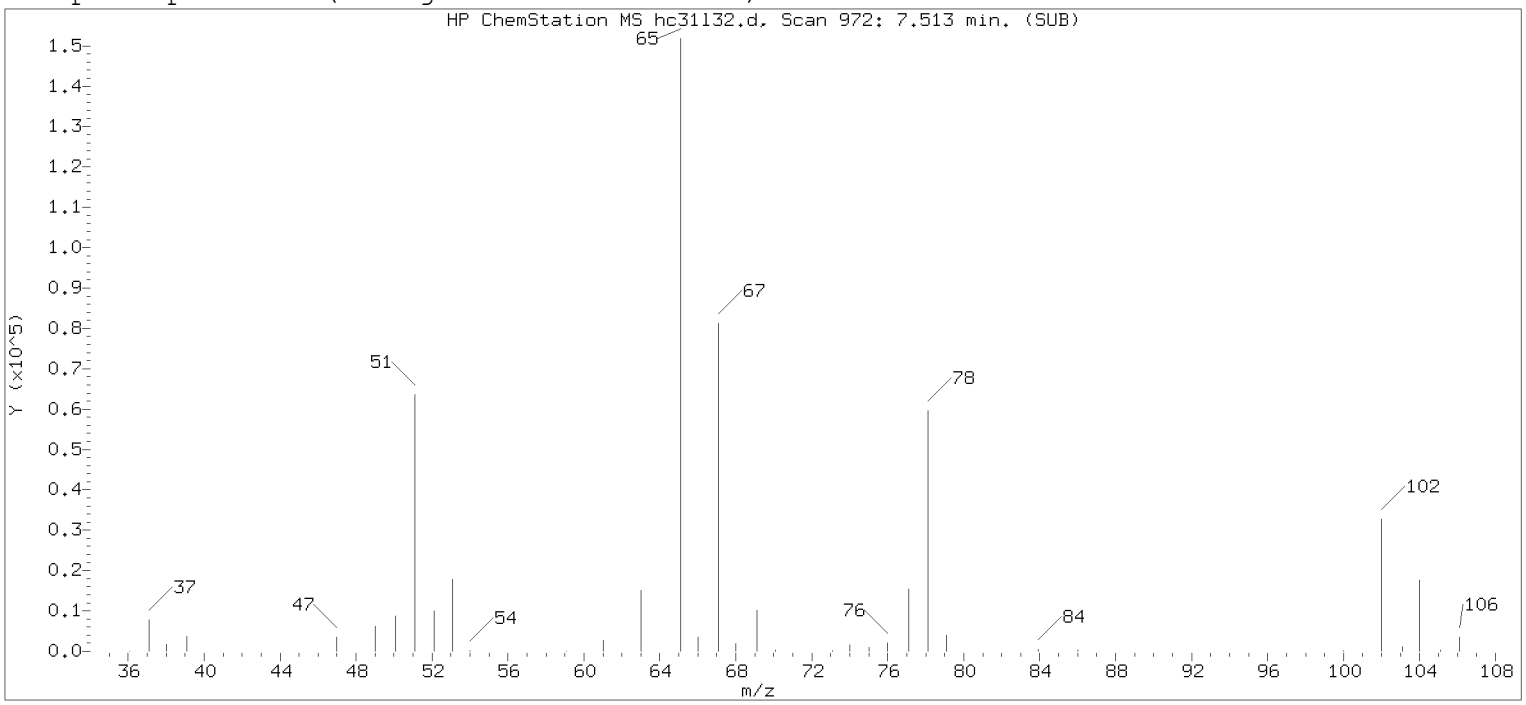
Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 972
Retention Time (minutes): 7.513
Quant Ion : 102.00
Area (flag) : 98183M
On-Column Amount (ng) : 9.8409
Integration start scan : 961 Integration stop scan: 986
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

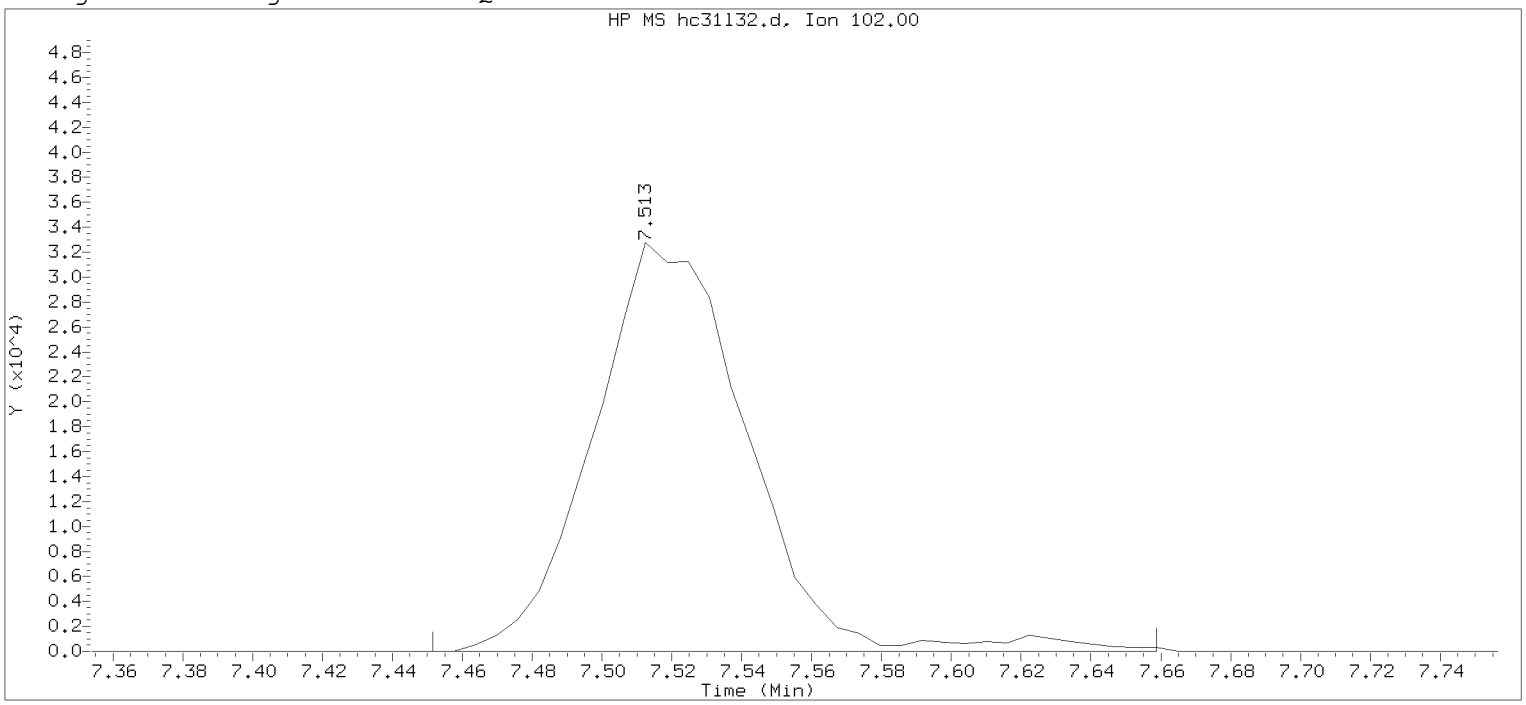
Analyst responsible for change: Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12.
Target 3.5 esignature user ID: mec29284

Secondary review performed and digitally signed by Kari Becker on 10/31/2019 at 22:07.
PARALLAX ID: kmb29664

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP19094.i/19oct31a.b/hc31132.d Instrument ID: HP19094.i
Injection date and time: 31-OCT-2019 08:39 Analyst ID: jkh09052

Method used: /chem2/HP19094.i/19oct31a.b/m8260c25.m Sublist used: 22469-SM
Calibration date and time: 31-OCT-2019 08:26
Date, time and analyst ID of latest file update: 31-Oct-2019 12:10 jkh09052

Sample Name: LCDH91 Lab Sample ID: LCDH91

Compound Number : 57
Compound Name : 1,2-Dichloroethane-d4
Scan Number : 972
Retention Time (minutes): 7.513
Quant Ion : 102.00
Area : 100354
On-column Amount (ng) : 10.0584
Integration start scan : 961 Integration stop scan: 995
Y at integration start : 0 Y at integration end: 0

Digitally signed by Miranda E. Campbell on 10/31/2019 at 20:12.
Target 3.5 esignature used [illegible]

Semivolatiles by GC/MS Data

Case Narrative/Conformance Summary

Semivolatiles by GC/MS

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

GC/MS Semivolatiles

Fraction: Semivolatiles by GC/MS

Sample #	Client ID	Matrix Liquid	Matrix Solid	DF	Comments
1183606	16C1	X		1	
1183607	16MW8	X		1	
1183608	16MW9	X		1	
1183609	16WC1A	X		1	Unspiked
1183610	16WC1A MS	X		1	Matrix Spike
1183611	16WC1A MSD	X		1	Matrix Spike Duplicate
1183612	16WDUP	X		1	Field Duplicate Sample
1183613	16WC1B	X		1	
1183614	16-2	X		1	
1183615	16-3	X		1	
1183616	16-5	X		1	
1183617	16WC2B	X		1	
1183618	16SPRING	X		1	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC is within specification.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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Case Narrative/Conformance Summary

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

GC/MS Semivolatiles

Fraction: Semivolatiles by GC/MS

Abbreviation Key

UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
+MS = Matrix Spike	MDL = Method Detection Limit
MSD = Matrix Spike Duplicate	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	E= out of calibration range
LCS = Lab Control Sample	RE = Repreparation/Reanalysis
LCSD = Lab Control Sample Duplicate	* = Out of Specification

Quality Control and Calibration Summary Forms

Semivolatiles by GC/MS

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Quality Control Reference List
GC/MS Semivolatiles

CLIENT: Draper Aden Associates, Inc.
SDG: RAF48

Fraction: Semivolatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
3 SVOCs 8270D	19302WAY026	SBLKWY302	11/04/2019 13:00
		302WYLCS	11/04/2019 13:29
		1183614	11/04/2019 16:53
		1183616	11/04/2019 17:22
		1183617	11/04/2019 17:51
		1183618	11/04/2019 18:20
3 SVOCs 8270D	19303WAG026	SBLKWG303	11/05/2019 11:24
		303WGLCS	11/05/2019 11:53
		1183606	11/05/2019 14:18
		1183607	11/05/2019 14:47
		1183608	11/05/2019 15:16
		1183609 UNSPK	11/05/2019 15:45
		1183610 MS	11/05/2019 16:14
		1183611 MSD	11/05/2019 16:43
		1183612	11/05/2019 17:12
		1183613	11/06/2019 00:30
		1183615	11/06/2019 00:58

Quality Control Summary
Method Blank
GC/MS Semivolatiles
SDG: RAF48
Matrix: LIQUID

Fraction: Semivolatiles by GC/MS

19302WAY026 / SBLKWY302 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
2,6-Dinitrotoluene	11/04/19	N.D.	ug/l	0.5	10
2,4-Dinitrotoluene	11/04/19	N.D.	ug/l	1	10
Diethylphthalate	11/04/19	N.D.	ug/l	2	5

19303WAG026 / SBLKWG303 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
2,6-Dinitrotoluene	11/05/19	N.D.	ug/l	0.5	10
2,4-Dinitrotoluene	11/05/19	N.D.	ug/l	1	10
Diethylphthalate	11/05/19	N.D.	ug/l	2	5

Quality Control Summary
Surrogates
GC/MS Semivolatiles
SDG: RAF48
Matrix: LIQUID

Fraction: Semivolatiles by GC/MS

19302WAY026	2-Fluorobiphenyl		Nitrobenzene-d5		Terphenyl-d14	
	Spike Added	100 ug/l	Spike Added	100 ug/l	Spike Added	100 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
SBLKWY302	66	44 - 102	107	33 - 113	81	39 - 125
302WYLCS	83	44 - 102	66	33 - 113	88	39 - 125
1183614	74	44 - 102	80	33 - 113	83	39 - 125
1183616	66	44 - 102	79	33 - 113	80	39 - 125
1183617	66	44 - 102	67	33 - 113	83	39 - 125
1183618	63	44 - 102	71	33 - 113	84	39 - 125

19303WAG026	2-Fluorobiphenyl		Nitrobenzene-d5		Terphenyl-d14	
	Spike Added	100 ug/l	Spike Added	100 ug/l	Spike Added	100 ug/l
Sample	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
SBLKWG303	51	44 - 102	63	33 - 113	83	39 - 125
303WGLCS	68	44 - 102	75	33 - 113	86	39 - 125
1183606	70	44 - 102	80	33 - 113	94	39 - 125
1183607	64	44 - 102	78	33 - 113	60	39 - 125
1183608	62	44 - 102	72	33 - 113	91	39 - 125
1183609 UNSPK	55	44 - 102	68	33 - 113	72	39 - 125
1183610 MS	78	44 - 102	83	33 - 113	91	39 - 125
1183611 MSD	77	44 - 102	83	33 - 113	86	39 - 125
1183612	67	44 - 102	81	33 - 113	78	39 - 125
1183613	64	44 - 102	73	33 - 113	43	39 - 125
1183615	61	44 - 102	72	33 - 113	93	39 - 125

GC/MS Semivolatiles

Fraction: Semivolatiles by GC/MS

UNSPK: 1183609 MS: 1183610 MSD: 1183611 **Analyte**	Batch: **19303WAG026** (Sample number(s): 1183606-1183613, 1183615)								
	Spike Added ug/l	**Unspiked Conc ug/l**	**MS Conc ug/l**	**MSD Conc ug/l**	**MS %Rec**	**MSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
2,6-Dinitrotoluene	50.2	N.D.	48.47	49.3	97	98	63-122	2	30
2,4-Dinitrotoluene	50.2	N.D.	49.19	49.56	98	99	69-117	1	30
Diethylphthalate	50.2	N.D.	49.78	47.01	99	94	48-113	6	30

Comments:
(2) The unspiked sample result is greater than four times the spike added.
* = Out of Specification

Results are being reported on an as received basis.

Quality Control Summary
Laboratory Control Standard (LCS)
Laboratory Control Standard Duplicate(LCSD)

SDG: RAF48
Matrix: LIQUID

GC/MS Semivolatiles

Fraction: Semivolatiles by GC/MS

LCS: 302WYLCS	Batch: **19302WAY026** (Sample number(s): 1183614, 1183616-1183618)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
2,6-Dinitrotoluene	50	47.47	NA	95	NA	63-122	NA	NA
2,4-Dinitrotoluene	50	45.07	NA	90	NA	69-117	NA	NA
Diethylphthalate	50	42.38	NA	85	NA	48-113	NA	NA

LCS: 303WGLCS	Batch: **19303WAG026** (Sample number(s): 1183606-1183613, 1183615)							
Analyte	**Spike Added ug/l**	**LCS Conc ug/l**	**LCSD Conc ug/l**	**LCS %Rec**	**LCSD %Rec**	**%Rec Limits**	**%RPD**	**%RPD Limits**
2,6-Dinitrotoluene	50	47.1	NA	94	NA	63-122	NA	NA
2,4-Dinitrotoluene	50	47.33	NA	95	NA	69-117	NA	NA
Diethylphthalate	50	43.63	NA	87	NA	48-113	NA	NA

Fraction: Semivolatiles by GC/MS

14241: 3 SVOCs 8270D Analyte Name	Default MDL	Default LOQ	Units
2,6-Dinitrotoluene	0.5	10	ug/l
2,4-Dinitrotoluene	1	10	ug/l
Diethylphthalate	2	5	ug/l

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hj1600d.d DFTPP Injection Date: 10/29/19

Instrument ID: HP18831 DFTPP Injection Time: 22:04

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	59.8
68	Less than 2.0% of mass 69	0.62 (1.34)1
69	Mass 69 relative abundance	46.5
70	Less than 2.0% of mass 69	0.22 (0.47)1
127	10.0 - 80.00% of mass 198	49.6
197	Less than 2.0% of mass 198	0.69
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.35
275	10.0 - 60.0% of mass 198	19.7
365	Greater than 1.00% of mass 198	2.14
441	Present, and less than mass 443	9.65
442	Greater than 50.00% of mass 198	62.6
443	15.00 - 24.00% of mass 442	11.3 (18.1)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	rvSTD2709 - SSTD12.5	hj1601d.d	10/29/19	22:20
02	rvSTD2709 - SSTD.125	hj1602d.d	10/29/19	22:54
03	rvSTD2709 - SSTD30	hj1603d.d	10/29/19	23:23
04	rvSTD2709 - SSTD20	hj1604d.d	10/29/19	23:52
05	rvSTD2709 - SSTD7.5	hj1605d.d	10/30/19	00:21
06	rvSTD2709 - SSTD3.75	hj1606d.d	10/30/19	00:50
07	rvSTD2709 - SSTD1.25	hj1607d.d	10/30/19	01:20
08	rvSTD2709 - SSTD.25	hj1608d.d	10/30/19	01:49
09	rvSTD2709 - SSTD0.125	hj1609d.d	10/30/19	02:18
10	rvSTD2709 - SSTD0.025	hj1610d.d	10/30/19	02:47
11	rvICV2339 - SSTD12.5	hj1611d.d	10/30/19	03:16
12	rvBASICV2339 - SSTD12.5	hj1612d.d	10/30/19	03:45
13	rvDMPICV2609 - SSTD12.5	hj1614d.d	10/30/19	04:44
14	rvHCCPDICV2959 - SSTD12.5	hj1615d.d	10/30/19	05:13

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hk0030a.d DFTPP Injection Date: 11/04/19

Instrument ID: HP18831 DFTPP Injection Time: 08:43

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	64.6
68	Less than 2.0% of mass 69	0.62 (1.27)1
69	Mass 69 relative abundance	48.7
70	Less than 2.0% of mass 69	0.21 (0.43)1
127	10.0 - 80.00% of mass 198	55.3
197	Less than 2.0% of mass 198	0.88
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.08
275	10.0 - 60.0% of mass 198	23.0
365	Greater than 1.00% of mass 198	2.91
441	Present, and less than mass 443	12.4
442	Greater than 50.00% of mass 198	85.3
443	15.00 - 24.00% of mass 442	17.4 (20.4)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	rvSTD2709 - SSTD7.5	hk0031a.d	11/04/19	10:51
02	SBLKWC302	hk0032.d	11/04/19	13:00
03	SBLKWX302	hk0033.d	11/04/19	13:00
04	SBLKWY302	hk0034.d	11/04/19	13:00
05	302WCLCS	hk0035.d	11/04/19	13:29
06	302WXLCS	hk0036.d	11/04/19	13:29
07	302WYLCS	hk0037.d	11/04/19	13:29
08	1184294	hk0038.d	11/04/19	13:58
09	302WXUS	hk0039.d	11/04/19	13:58
10	302WYUS	hk0040.d	11/04/19	13:58
11	1184295MS	hk0041.d	11/04/19	14:27
12	302WXMSMS	hk0042.d	11/04/19	14:27
13	302WYMSMS	hk0043.d	11/04/19	14:27
14	1184296MSD	hk0044.d	11/04/19	14:56
15	302WXMSDMSD	hk0045.d	11/04/19	14:56
16	302WYMSDMSD	hk0046.d	11/04/19	14:56
17	1184298	hk0047.d	11/04/19	15:25
18	1184305	hk0048.d	11/04/19	15:55

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: hk0030a.d DFTPP Injection Date: 11/04/19

Instrument ID: HP18831 DFTPP Injection Time: 08:43

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	64.6
68	Less than 2.0% of mass 69	0.62 (1.27)1
69	Mass 69 relative abundance	48.7
70	Less than 2.0% of mass 69	0.21 (0.43)1
127	10.0 - 80.00% of mass 198	55.3
197	Less than 2.0% of mass 198	0.88
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.08
275	10.0 - 60.0% of mass 198	23.0
365	Greater than 1.00% of mass 198	2.91
441	Present, and less than mass 443	12.4
442	Greater than 50.00% of mass 198	85.3
443	15.00 - 24.00% of mass 442	17.4 (20.4)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	1183008	hk0049.d	11/04/19	16:24
20	1183614	hk0050.d	11/04/19	16:53
21	1183616	hk0051.d	11/04/19	17:22
22	1183617	hk0052.d	11/04/19	17:51
23	1183618	hk0053.d	11/04/19	18:20

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: lk0070.d DFTPP Injection Date: 11/04/19

Instrument ID: HP20296 DFTPP Injection Time: 13:13

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	61.6
68	Less than 2.0% of mass 69	1.35 (1.5)1
69	Mass 69 relative abundance	90.4
70	Less than 2.0% of mass 69	0.38 (0.42)1
127	10.0 - 80.00% of mass 198	66.0
197	Less than 2.0% of mass 198	0.76
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.99
275	10.0 - 60.0% of mass 198	20.2
365	Greater than 1.00% of mass 198	3.07
441	Present, and less than mass 443	14.2
442	Greater than 50.00% of mass 198	85.9
443	15.00 - 24.00% of mass 442	17.0 (19.8)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	RVSTD3089 - SSTD7.5	lk0071.d	11/04/19	14:10
02	RVSTD2709 - SSTD.125	lk0072.d	11/04/19	15:01
03	RVSTD2709 - SSTD30	lk0073.d	11/04/19	15:30
04	RVSTD2709 - SSTD20	lk0074.d	11/04/19	15:59
05	RVSTD3809 - SSTD12.5	lk0075.d	11/04/19	16:28
06	RVSTD2709 - SSTD3.75	lk0076.d	11/04/19	16:57
07	RVSTD2709 - SSTD1.25	lk0077.d	11/04/19	17:26
08	RVSTD2709 - SSTD.25	lk0078.d	11/04/19	17:55
09	RVSTD2709 - SSTD0.125	lk0079.d	11/04/19	18:24
10	RVSTD2709 - SSTD0.025	lk0080.d	11/04/19	18:52
11	RVICV3089 - SSTD12.5	lk0081.d	11/04/19	19:21
12	RVBASICV2399 - SSTD12.5	lk0082.d	11/04/19	19:50
13	RVHCCPDICV2959 - SSTD25	lk0083.d	11/04/19	20:19
14	RVDMPICV2609 - SSTD25	lk0084.d	11/04/19	20:48
15	1183660	lk0085.d	11/04/19	23:32
16	1183661	lk0086.d	11/05/19	00:00

FORM V SV

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: lk0090.d DFTPP Injection Date: 11/05/19

Instrument ID: HP20296 DFTPP Injection Time: 06:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	68.3
68	Less than 2.0% of mass 69	1.47 (1.42)1
69	Mass 69 relative abundance	103.0
70	Less than 2.0% of mass 69	0.52 (0.5)1
127	10.0 - 80.00% of mass 198	69.0
197	Less than 2.0% of mass 198	0.45
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.85
275	10.0 - 60.0% of mass 198	20.8
365	Greater than 1.00% of mass 198	2.37
441	Present, and less than mass 443	13.2
442	Greater than 50.00% of mass 198	80.2
443	15.00 - 24.00% of mass 442	14.9 (18.5)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	RVSTD3089 - SSTD7.5	lk0091.d	11/05/19	07:13
02	SBLKWA308	lk0092.d	11/05/19	08:31
03	308WALCS	lk0093.d	11/05/19	09:00
04	308WALCSD	lk0094.d	11/05/19	09:29
05	SBLKWD308	lk0095.d	11/05/19	09:58
06	308WDLCS	lk0096.d	11/05/19	10:26
07	308WDLCSD	lk0097.d	11/05/19	10:55
08	SBLKWG303	lk0098.d	11/05/19	11:24
09	303WGLCS	lk0099.d	11/05/19	11:53
10	1190888	lk0100.d	11/05/19	12:22
11	1190889	lk0101.d	11/05/19	12:51
12	1190890	lk0102.d	11/05/19	13:20
13	1190786	lk0103.d	11/05/19	13:49
14	1183606	lk0104.d	11/05/19	14:18
15	1183607	lk0105.d	11/05/19	14:47
16	1183608	lk0106.d	11/05/19	15:16
17	1183609	lk0107.d	11/05/19	15:45
18	1183610MS	lk0108.d	11/05/19	16:14

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: lk0090.d DFTPP Injection Date: 11/05/19

Instrument ID: HP20296 DFTPP Injection Time: 06:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	68.3
68	Less than 2.0% of mass 69	1.47 (1.42)1
69	Mass 69 relative abundance	103.0
70	Less than 2.0% of mass 69	0.52 (0.5)1
127	10.0 - 80.00% of mass 198	69.0
197	Less than 2.0% of mass 198	0.45
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.85
275	10.0 - 60.0% of mass 198	20.8
365	Greater than 1.00% of mass 198	2.37
441	Present, and less than mass 443	13.2
442	Greater than 50.00% of mass 198	80.2
443	15.00 - 24.00% of mass 442	14.9 (18.5)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	1183611MSD	lk0109.d	11/05/19	16:43
20	1183612	lk0110.d	11/05/19	17:12
21	rvSTD2709	lk0118.d	11/05/19	17:41

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID: lk0150.d DFTPP Injection Date: 11/05/19

Instrument ID: HP20296 DFTPP Injection Time: 18:13

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.00% of mass 198	59.2
68	Less than 2.0% of mass 69	1.47 (1.6)1
69	Mass 69 relative abundance	91.5
70	Less than 2.0% of mass 69	0.47 (0.51)1
127	10.0 - 80.00% of mass 198	67.2
197	Less than 2.0% of mass 198	0.53
198	Base peak, 100% relative abundance	100.0
199	5.00 to 9.00% of mass 198	6.6
275	10.0 - 60.0% of mass 198	19.5
365	Greater than 1.00% of mass 198	3.06
441	Present, and less than mass 443	14.4
442	Greater than 50.00% of mass 198	86.0
443	15.00 - 24.00% of mass 442	17.0 (19.8)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	RVAMIN2059 - SSTD12.5	lk0151.d	11/05/19	18:26
02	RVSTD3089 - SSTD7.5	lk0152.d	11/05/19	19:34
03	RVAMIN2059 - SSTD30	lk0153.d	11/05/19	21:07
04	RVAMIN2059 - SSTD20	lk0154.d	11/05/19	21:36
05	RVAMIN2059 - SSTD7.5	lk0155.d	11/05/19	22:05
06	RVAMIN2059 - SSTD3.75	lk0156.d	11/05/19	22:34
07	RVAMIN2059 - SSTD1.25	lk0157.d	11/05/19	23:03
08	RVAMIN2059 - SSTD.25	lk0158.d	11/05/19	23:32
09	RVAMIN2059 - SSTD0.125	lk0159.d	11/06/19	00:01
10	1183613	lk0160.d	11/06/19	00:30
11	1183615	lk0161.d	11/06/19	00:58

FORM V SV

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date(s): 10/29/19 10/30/19

Calibration Times: 22:20 01:49

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = hj1602d.d RRF0.25 = hj1608d.d RRF1.25 = hj1607d.d RRF3.75 = hj1606d.d
RRF7.5 = hj1605d.d RRF12.5 = hj1601d.d RRF20 = hj1604d.d RRF30 = hj1603d.d

COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{RRF}$	% RSD	CAL. METHOD
1,4-Dioxane			0.897	0.674	0.796	0.648	0.867	0.663	0.758	15	AVG
N-Nitrosodimethylamine			1.156	0.902	1.248	0.972	1.325	0.996	1.100	15	AVG
Pyridine			2.111	1.662	2.186	1.636	2.213	1.703	1.918	15	AVG
2-Picoline			2.186	1.793	2.310	1.749	2.345	1.793	2.030	14	AVG
N-Nitrosomethylethylamine			0.937	0.746	0.987	0.729	0.965	0.760	0.854	14	AVG
Methyl methanesulfonate			1.057	0.841	1.091	0.827	0.820	0.840	0.913	14	AVG
N-Nitrosodiethylamine		0.711	0.968	0.762	0.980	0.758	0.703	0.770	0.808	14	AVG
Ethyl methanesulfonate		0.749	1.020	0.764	0.947	0.768	0.724	0.771	0.821	14	AVG
Benzaldehyde	1.201	1.221	1.683	1.246	1.176	1.099	0.950		1.225	18	AVG
Phenol		2.068	2.704	2.237	2.021	2.150	1.980	2.141	2.186	11	AVG
Aniline		2.201	3.193	2.530	2.338	2.473	2.281	2.482	2.500	13	AVG
a-methylstyrene			0.812	0.636	0.588	0.596	0.569	0.590	0.632	14	AVG
bis(2-Chloroethyl)ether		1.770	2.088	1.683	1.521	1.597	1.474	1.602	1.676	12	AVG
2-Chlorophenol		1.308	1.823	1.452	1.398	1.417	1.412	1.436	1.464	11	AVG
1,3-Dichlorobenzene		1.545	1.561	1.613	1.523	1.553	1.553	1.578	1.561	2	AVG
1,4-Dichlorobenzene		1.483	1.645	1.699	1.534	1.578	1.589	1.594	1.589	4	AVG
Benzyl alcohol			0.834	0.970	0.891	0.971	0.933	0.966	0.928	6	AVG
1,2-Dichlorobenzene		1.360	1.564	1.578	1.477	1.469	1.519	1.513	1.497	5	AVG
Indene			2.118	2.315	2.102	2.210	2.124	2.186	2.176	4	AVG
2-Methylphenol		1.170	1.337	1.438	1.291	1.397	1.351	1.423	1.344	7	AVG
2,2'-oxybis(1-Chloropropane)		3.081	2.944	3.286	2.830	3.217	2.882	3.237	3.068	6	AVG
bis(2-Chloroisopropyl)ether		3.081	2.944	3.286	2.830	3.217	2.882	3.237	3.068	6	AVG
N-Nitrosopyrrolidine		0.608	0.676	0.790	0.731	0.782	0.758	0.801	0.735	10	AVG
Acetophenone		2.123	2.009	2.225	1.956	2.042	2.009	2.080	2.064	4	AVG
4-Methylphenol		1.439	1.488	1.484	1.349	1.442	1.425	1.579	1.458	5	AVG
Total Cresols		1.304	1.412	1.461	1.320	1.419	1.388	1.501	1.401	5	AVG
N-Nitroso-di-n-propylamine		0.982	1.100	1.170	1.019	1.132	1.048	1.124	1.082	6	AVG
N-Nitrosomorpholine			1.274	1.424	1.263	1.386	1.276	1.363	1.331	5	AVG
o-Toluidine		2.205	2.278	2.342	2.166	2.322	2.261	2.313	2.269	3	AVG
Hexachloroethane			0.605	0.684	0.643	0.645	0.649	0.661	0.648	4	AVG
Nitrobenzene		0.426	0.404	0.455	0.390	0.441	0.411	0.440	0.424	5	AVG
N-Nitrosopiperidine		0.199	0.191	0.191	0.177	0.197	0.189	0.198	0.192	4	AVG
Isophorone		0.697	0.710	0.828	0.730	0.812	0.780	0.825	0.769	7	AVG
2-Nitrophenol		0.170	0.195	0.205	0.189	0.202	0.205	0.210	0.197	7	AVG
2,4-Dimethylphenol		0.417	0.413	0.403	0.381	0.394	0.402	0.402	0.402	3	AVG
O,O,O-Triethylphosphorothioat			0.190	0.183	0.174	0.170	0.180	0.179	0.179	4	AVG
bis(2-Chloroethoxy)methane		0.481	0.451	0.512	0.455	0.497	0.463	0.496	0.479	5	AVG
Benzoic acid			0.198	0.261	0.259	0.267	0.269	0.292	0.258	12	AVG
2,4-Dichlorophenol		0.269	0.281	0.304	0.305	0.300	0.315	0.311	0.298	6	AVG
1,2,4-Trichlorobenzene		0.316	0.344	0.319	0.317	0.310	0.332	0.322	0.323	4	AVG
Naphthalene	1.161	0.999	1.106	1.090	1.037	1.082	1.084	1.100	1.082	4	AVG
4-Chloroaniline		0.368	0.416	0.432	0.411	0.433	0.438	0.436	0.419	6	AVG
2,6-Dichlorophenol		0.250	0.306	0.303	0.291	0.292	0.299	0.299	0.292	7	AVG
Hexachloropropene			0.169	0.175	0.188	0.173	0.192	0.179	0.179	5	AVG
Hexachlorobutadiene		0.163	0.206	0.191	0.197	0.184	0.200	0.190	0.190	7	AVG
Quinoline			0.647	0.651	0.634	0.658	0.647	0.669	0.651	2	AVG
Caprolactam			0.090	0.110	0.103	0.108	0.110	0.112	0.106	8	AVG
N-Nitrosodi-n-butylamine			0.257	0.273	0.264	0.356	0.332	0.357	0.306	15	AVG
4-Chloro-3-methylphenol		0.294	0.328	0.336	0.329	0.344	0.341	0.344	0.331	5	AVG
Safrole			0.301	0.260	0.267	0.277	0.284	0.281	0.278	5	AVG
2-Methylnaphthalene	0.755	0.678	0.710	0.710	0.694	0.727	0.742	0.728	0.718	3	AVG
1-Methylnaphthalene	0.625	0.648	0.689	0.567	0.652	0.676	0.683	0.680	0.652	6	AVG

4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date(s): 10/29/19 10/30/19

Calibration Times: 22:20 01:49

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = hj1602d.d RRF0.25 = hj1608d.d RRF1.25 = hj1607d.d RRF3.75 = hj1606d.d
RRF7.5 = hj1605d.d RRF12.5 = hj1601d.d RRF20 = hj1604d.d RRF30 = hj1603d.d

COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{RRF}$	% RSD	CAL. METHOD
Hexachlorocyclopentadiene			0.454	0.512	0.473	0.456	0.487	0.461	0.474	5	AVG
1,2,4,5-Tetrachlorobenzene		0.635	0.699	0.708	0.672	0.651	0.688	0.680	0.676	4	AVG
cis-Isosafrole			0.638	0.680	0.625	0.633	0.651	0.663	0.648	3	AVG
2,4,6-Trichlorophenol		0.334	0.467	0.453	0.457	0.464	0.470	0.471	0.445	11	AVG
2,4,5-Trichlorophenol		0.432	0.475	0.499	0.476	0.481	0.486	0.491	0.477	4	AVG
trans-Isosafrole			0.694	0.680	0.666	0.700	0.717	0.702	0.693	3	AVG
Isosafrole			0.685	0.680	0.659	0.688	0.706	0.695	0.686	2	AVG
1,1'-Biphenyl		1.851	1.935	1.995	1.724	1.855	1.811	1.868	1.863	5	AVG
2-Chloronaphthalene		1.375	1.421	1.488	1.352	1.399	1.465	1.439	1.420	3	AVG
1-Chloronaphthalene		1.278	1.377	1.412	1.363	1.327	1.242	1.331	1.333	4	AVG
Diphenyl ether		1.007	1.037	1.041	1.006	0.992	0.989	1.012	1.012	2	AVG
2-Nitroaniline		0.367	0.507	0.520	0.516	0.514	0.499	0.519	0.492	11	AVG
1,4-Naphthoquinone			0.545	0.632	0.614	0.618	0.621	0.617	0.608	5	AVG
1,4-Dinitrobenzene			0.244	0.260	0.263	0.256	0.264	0.269	0.260	3	AVG
Dimethylphthalate			1.602	1.583	1.559	1.507	1.489	1.587	1.555	3	AVG
1,3-Dinitrobenzene			0.284	0.284	0.299	0.290	0.280	0.294	0.288	3	AVG
2,6-Dinitrotoluene		0.299	0.372	0.388	0.366	0.349	0.357	0.361	0.356	8	AVG
Acenaphthylene	2.229	2.217	2.330	2.332	2.252	2.331	2.285	2.376	2.294	2	AVG
3-Nitroaniline		0.353	0.421	0.393	0.397	0.423	0.404	0.431	0.403	7	AVG
Acenaphthene	1.486	1.348	1.617	1.521	1.492	1.524	1.501	1.514	1.500	5	AVG
2,4-Dinitrophenol				0.246	0.246	0.250	0.267	0.271	0.256	5	AVG
4-Nitrophenol				0.263	0.277	0.285	0.280	0.280	0.277	3	AVG
Pentachlorobenzene		0.547	0.584	0.658	0.609	0.579	0.607	0.581	0.595	6	AVG
2,4-Dinitrotoluene			0.471	0.486	0.481	0.477	0.482	0.482	0.480	1	AVG
2,4_2,6-Dinitrotoluenes		0.345	0.422	0.437	0.424	0.413	0.420	0.421	0.412	7	AVG
Dibenzofuran		1.848	2.125	2.109	2.053	2.121	1.998	2.049	2.043	5	AVG
1-Naphthylamine				1.388	1.334	1.413	1.397	1.459	1.398	3	AVG
2,3,4,6-Tetrachlorophenol		0.386	0.380	0.411	0.398	0.372	0.403	0.389	0.391	4	AVG
2-Naphthylamine				1.348	1.286	1.398	1.466	1.388	1.377	5	AVG
Diethylphthalate			1.750	1.725	1.646	1.656	1.711	1.708	1.699	2	AVG
Thionazin			0.352	0.339	0.302	0.320	0.306	0.309	0.321	6	AVG
Fluorene	1.745	1.548	1.767	1.730	1.665	1.685	1.624	1.629	1.674	4	AVG
4-Chlorophenyl-phenylether		0.773	0.840	0.807	0.776	0.750	0.765	0.731	0.777	5	AVG
5-Nitro-o-toluidine		0.393	0.570	0.490	0.480	0.492	0.497	0.485	0.487	11	AVG
4-Nitroaniline		0.342	0.449	0.446	0.414	0.448	0.429	0.427	0.422	9	AVG
4,6-Dinitro-2-methylphenol				0.141	0.146	0.147	0.157	0.186	0.156	12	AVG
N-Nitrosodiphenylamine (1)		0.738	0.735	0.696	0.729	0.707	0.709	0.850	0.738	7	AVG
NDPA as diphenylamine		0.738	0.735	0.696	0.729	0.707	0.709	0.850	0.738	7	AVG
1,2-Diphenylhydrazine		0.970	0.858	0.828	0.831	0.930	0.804	0.990	0.887	8	AVG
Tetraethyldithiopyrophosphate			0.143	0.150	0.154	0.161	0.153	0.172	0.155	6	AVG
Diallate (peak 1)			0.404	0.392	0.407	0.443	0.404	0.441	0.415	5	AVG
Phorate		0.539	0.520	0.489	0.523	0.590	0.518	0.563	0.535	6	AVG
Phenacetin		0.434	0.403	0.451	0.456	0.464	0.454	0.482	0.449	6	AVG
4-Bromophenyl-phenylether		0.207	0.216	0.219	0.222	0.203	0.214	0.222	0.215	3	AVG
Diallate (peak 2)			0.322	0.320	0.339	0.372	0.337	0.371	0.344	7	AVG
Diallate trans/cis			0.390	0.379	0.395	0.431	0.393	0.429	0.403	5	AVG
Hexachlorobenzene	0.165	0.191	0.233	0.229	0.234	0.215	0.233	0.235	0.217	12	AVG
Dimethoate			0.317	0.329	0.347	0.383	0.346	0.330	0.342	7	AVG
Atrazine			0.207	0.216	0.206	0.182	0.190	0.155	0.193	12	AVG
Pentachlorophenol			0.132	0.156	0.163	0.159	0.181	0.165	0.159	10	AVG
4-Aminobiphenyl		0.440	0.463	0.481	0.510	0.509	0.513	0.439	0.479	7	AVG
Pentachloronitrobenzene			0.097	0.100	0.099	0.098	0.104	0.095	0.099	3	AVG

(1) Cannot be separated from Diphenylamine
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date(s): 10/29/19 10/30/19

Calibration Times: 22:20 01:49

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = hj1602d.d RRF0.25 = hj1608d.d RRF1.25 = hj1607d.d RRF3.75 = hj1606d.d
RRF7.5 = hj1605d.d RRF12.5 = hj1601d.d RRF20 = hj1604d.d RRF30 = hj1603d.d

COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{RRF}$	% RSD	CAL. METHOD
Pronamide		0.282	0.362	0.374	0.402	0.381	0.399	0.376	0.368	11	AVG
Dinoseb			0.197	0.209	0.247	0.237	0.254	0.249	0.232	10	AVG
Phenanthrene	1.088	1.168	1.145	1.119	1.145	1.135	1.155	1.161	1.139	2	AVG
Anthracene	1.088	1.129	1.215	1.171	1.173	1.163	1.170	1.161	1.159	3	AVG
Carbazole		1.094	1.133	1.111	1.190	1.170	1.174	1.130	1.143	3	AVG
Methyl parathion			0.256	0.271	0.306	0.313	0.298	0.278	0.287	8	AVG
Di-n-butylphthalate			1.443	1.494	1.568	1.575	1.605	1.499	1.531	4	AVG
Parathion			0.144	0.183	0.198	0.202	0.198	0.188	0.185	12	AVG
4-Nitroquinoline-1-oxide				0.126	0.142	0.150	0.159	0.155	0.146	9	AVG
Octachlorostyrene			0.102	0.093	0.093	0.086	0.091	0.086	0.092	6	AVG
Isodrin		0.124	0.156	0.144	0.144	0.142	0.149	0.136	0.142	7	AVG
Fluoranthene	1.214	1.242	1.335	1.353	1.419	1.405	1.412	1.329	1.339	6	AVG
Benzidine				0.880	0.896	0.932	0.888	0.858	0.891	3	AVG
Pyrene	1.441	1.431	1.437	1.471	1.433	1.458	1.531	1.448	1.456	2	AVG
p-Dimethylaminoazobenzene		0.161	0.240	0.242	0.244	0.235	0.282	0.246	0.236	16	AVG
Chlorobenzilate			0.433	0.470	0.471	0.485	0.574	0.466	0.483	10	AVG
3,3'-Dimethylbenzidine			0.794	0.866	0.897	0.929	1.072	0.916	0.913	10	AVG
Butylbenzylphthalate			0.674	0.702	0.711	0.739	0.809	0.719	0.725	6	AVG
2-Acetylaminofluorene			0.463	0.525	0.543	0.553	0.634	0.575	0.549	10	AVG
3,3'-Dichlorobenzidine			0.452	0.495	0.497	0.509	0.506	0.501	0.493	4	AVG
4,4'-Methylenebis(2-chloroani				0.260	0.270	0.264	0.267	0.272	0.267	2	AVG
Benzo(a)anthracene	1.099	1.088	1.289	1.280	1.276	1.285	1.275	1.294	1.236	7	AVG
Chrysene	1.144	1.251	1.299	1.339	1.312	1.268	1.258	1.290	1.270	5	AVG
bis(2-Ethylhexyl)phthalate			0.964	1.043	1.044	1.066	1.055	1.066	1.040	4	AVG
6-Methylchrysene			0.830	0.888	0.901	0.889	0.916	0.943	0.895	4	AVG
Di-n-octylphthalate			1.592	1.736	1.804	1.916	1.821	1.751	1.770	6	AVG
Benzo(b)fluoranthene	1.167	1.034	1.216	1.290	1.266	1.257	1.282	1.270	1.223	7	AVG
7,12-Dimethylbenz[a]anthracen		0.475	0.517	0.571	0.535	0.536	0.570	0.564	0.538	6	AVG
Benzo(k)fluoranthene	1.098	1.257	1.287	1.294	1.240	1.249	1.251	1.233	1.239	5	AVG
Benzo(a)pyrene	0.907	1.035	1.183	1.237	1.231	1.227	1.229	1.313	1.170	11	AVG
3-Methylcholanthrene		0.455	0.492	0.547	0.549	0.546	0.581	0.528	0.528	8	AVG
Dibenz(a,h)acridine			0.916	1.008	0.996	0.989	1.017	0.940	0.978	4	AVG
Dibenz(a,j)acridine			0.914	0.975	1.014	0.965	1.006	0.929	0.967	4	AVG
Indeno(1,2,3-cd)pyrene	0.933	0.901	1.052	1.123	1.148	1.133	1.150	1.037	1.060	9	AVG
Dibenz(a,h)anthracene	0.932	0.917	1.094	1.176	1.171	1.149	1.154	1.055	1.081	10	AVG
Benzo(g,h,i)perylene	0.959	1.030	1.143	1.195	1.184	1.158	1.143	1.049	1.108	8	AVG
Total PAHs	1.088	1.245	1.106	1.169	1.105	1.133	1.105	1.127	1.135	5	AVG
2-Fluorophenol		1.202	1.907	1.469	1.881	1.467	1.377	1.466	1.539	17	AVG
Phenol-d6		1.910	2.525	1.931	1.855	1.938	1.798	1.930	1.984	12	AVG
Nitrobenzene-d5		0.406	0.397	0.456	0.400	0.436	0.412	0.439	0.421	5	AVG
2-Fluorobiphenyl		1.638	1.721	1.697	1.615	1.704	1.657	1.702	1.676	2	AVG
2,4,6-Tribromophenol		0.212	0.237	0.246	0.234	0.210	0.244	0.208	0.227	7	AVG
Terphenyl-d14		0.835	0.909	0.900	0.900	0.877	1.126	0.881	0.918	10	AVG

Average %RSD 7

4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5,15,30 standards.

Internal Standard
Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP18831.i/19oct29d.b/hj1601d.d SSTD12.5
/chem/HP18831.i/19oct29d.b/hj1602d.d SSTD0.125
/chem/HP18831.i/19oct29d.b/hj1603d.d SSTD030
/chem/HP18831.i/19oct29d.b/hj1604d.d SSTD020
/chem/HP18831.i/19oct29d.b/hj1605d.d SSTD7.5
/chem/HP18831.i/19oct29d.b/hj1606d.d SSTD3.75
/chem/HP18831.i/19oct29d.b/hj1607d.d SSTD1.25
/chem/HP18831.i/19oct29d.b/hj1608d.d SSTD0.25

Area Summary

	File ID:										
Internal Standard Name	hj1601d.d	hj1602d.d	hj1603d.d	hj1604d.d	hj1605d.d	hj1606d.d	hj1607d.d	hj1608d.d	Avg. Area	%RSD	In Spec
1,4-Dichlorobenzene-d4	330144	301945	269916	198289	197833	230873	171841	264166	245626	23	Yes
Naphthalene-d8	1252858	1167674	1030739	758390	766200	881837	660699	1028485	943360	22	Yes
Acenaphthene-d10	574909	528844	472375	362685	360600	298814	308960	464636	421478	24	Yes
Phenanthrene-d10	1154472	1054924	775987	720713	697178	612136	622085	891227	816090	25	Yes
Pyrene-d10	1119081	1001446	717724	725251	702269	600605	618792	884702	796234	23	Yes
Perylene-d12	1140009	965927	818963	750100	727451	615357	635204	692821	793229	23	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

	File ID:								
Internal Standard Name	hj1601d.d	hj1602d.d	hj1603d.d	hj1604d.d	hj1605d.d	hj1606d.d	hj1607d.d	hj1608d.d	Avg. RT
1,4-Dichlorobenzene-d4	7.035	7.034	7.034	7.034	7.034	7.035	7.034	7.035	7.034
Naphthalene-d8	8.976	8.969	8.975	8.975	8.970	8.970	8.970	8.970	8.972
Acenaphthene-d10	11.744	11.744	11.750	11.744	11.744	11.744	11.744	11.744	11.745
Phenanthrene-d10	13.627	13.621	13.627	13.627	13.621	13.621	13.621	13.621	13.623
Pyrene-d10	15.632	15.626	15.632	15.632	15.626	15.626	15.626	15.626	15.628
Perylene-d12	20.149	20.143	20.149	20.149	20.143	20.143	20.143	20.143	20.145

Comments:_____

_____

Report generated on 11/01/2019 at 10:39

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP18831

Method: SW-846 8270D MINI | File ID: hj1611d.d

ICV SAMPLE ID: rvICV2339 | BATCH: 19OCT29A026 | Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
1,4-Dioxane	12.50	9.86	-21	30	YES
N-Nitrosodimethylamine	12.50	10.90	-13	30	YES
Pyridine	12.50	9.78	-22	30	YES
2-Picoline	12.50	10.39	-17	30	YES
N-Nitrosomethylethylamine	12.50	10.45	-16	30	YES
Methyl methanesulfonate	12.50	12.27	-2	30	YES
N-Nitrosodiethylamine	12.50	11.58	-7	30	YES
Ethyl methanesulfonate	12.50	11.04	-12	30	YES
Phenol	12.50	12.11	-3	30	YES
Aniline	12.50	10.84	-13	30	YES
bis(2-Chloroethyl)ether	12.50	11.65	-7	30	YES
2-Chlorophenol	12.50	12.10	-3	30	YES
1,3-Dichlorobenzene	12.50	12.43	-1	30	YES
1,4-Dichlorobenzene	12.50	12.51	0	30	YES
Benzyl alcohol	12.50	13.82	11	30	YES
1,2-Dichlorobenzene	12.50	12.66	1	30	YES
Indene	12.50	14.90	19	30	YES
2-Methylphenol	12.50	12.88	3	30	YES
2,2'-oxybis(1-Chloropropane	12.50	12.35	-1	30	YES
bis(2-Chloroisopropyl)ether	12.50	12.35	-1	30	YES
N-Nitrosopyrrolidine	12.50	13.46	8	30	YES
Acetophenone	12.50	12.69	1	30	YES
4-Methylphenol	12.50	12.42	-1	30	YES
N-Nitroso-di-n-propylamine	12.50	13.19	6	30	YES
N-Nitrosomorpholine	12.50	12.66	1	30	YES
o-Toluidine	12.50	12.39	-1	30	YES
Total Cresols	25.00	25.30	1	30	YES
Hexachloroethane	12.50	12.69	1	30	YES
Nitrobenzene	12.50	12.62	1	30	YES
N-Nitrosopiperidine	12.50	12.07	-3	30	YES
Isophorone	12.50	12.72	2	30	YES
2-Nitrophenol	12.50	12.64	1	30	YES
bis(2-Chloroethoxy)methane	12.50	12.69	1	30	YES
Benzoic acid	25.00	25.99	4	30	YES
O,O,O-Triethylphosphorothio	12.50	11.79	-6	30	YES
2,4-Dichlorophenol	12.50	12.06	-4	30	YES
1,2,4-Trichlorobenzene	12.50	12.03	-4	30	YES

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP18831

Method: SW-846 8270D MINI File ID: hj1611d.d

ICV SAMPLE ID: rvICV2339 BATCH: 19OCT29A026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Naphthalene	12.50	12.37	-1	30	YES
4-Chloroaniline	12.50	12.29	-2	30	YES
2,6-Dichlorophenol	12.50	12.12	-3	30	YES
Hexachloropropene	12.50	14.66	17	30	YES
Hexachlorobutadiene	12.50	12.43	-1	30	YES
Quinoline	12.50	12.87	3	30	YES
N-Nitrosodi-n-butylamine	12.50	11.43	-9	30	YES
4-Chloro-3-methylphenol	12.50	12.60	1	30	YES
Safrole	12.50	11.62	-7	30	YES
2-Methylnaphthalene	12.50	12.29	-2	30	YES
1-Methylnaphthalene	12.50	12.27	-2	30	YES
1,2,4,5-Tetrachlorobenzene	12.50	11.69	-6	30	YES
cis-Isosafrole	1.50	1.47	-2	30	YES
2,4,6-Trichlorophenol	12.50	12.18	-3	30	YES
2,4,5-Trichlorophenol	12.50	12.01	-4	30	YES
trans-Isosafrole	11.00	11.25	2	30	YES
1,1'-Biphenyl	12.50	12.48	0	30	YES
2-Chloronaphthalene	12.50	12.03	-4	30	YES
Isosafrole	12.50	12.72	2	30	YES
1-Chloronaphthalene	12.50	11.46	-8	30	YES
Diphenyl ether	12.50	11.54	-8	30	YES
2-Nitroaniline	12.50	12.64	1	30	YES
1,4-Naphthoquinone	15.63	15.27	-2	30	YES
1,4-Dinitrobenzene	12.50	11.72	-6	30	YES
Dimethylphthalate	12.50	11.49	-8	30	YES
1,3-Dinitrobenzene	12.50	11.67	-7	30	YES
2,6-Dinitrotoluene	12.50	11.84	-5	30	YES
Acenaphthylene	12.50	11.52	-8	30	YES
3-Nitroaniline	12.50	12.84	3	30	YES
Acenaphthene	12.50	11.97	-4	30	YES
2,4-Dinitrophenol	25.00	23.99	-4	30	YES
4-Nitrophenol	12.50	12.32	-1	30	YES
Pentachlorobenzene	12.50	11.49	-8	30	YES
2,4-Dinitrotoluene	12.50	11.87	-5	30	YES
Dibenzofuran	12.50	12.36	-1	30	YES
2,4_2,6-Dinitrotoluenes	25.00	23.71	-5	30	YES
1-Naphthylamine	25.00	22.01	-12	30	YES

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP18831

Method: SW-846 8270D MINI File ID: hj1611d.d

ICV SAMPLE ID: rvICV2339 BATCH: 19OCT29A026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
2,3,4,6-Tetrachlorophenol	12.50	11.80	-6	30	YES
2-Naphthylamine	25.00	21.39	-14	30	YES
Diethylphthalate	12.50	11.42	-9	30	YES
Thionazin	12.50	12.56	1	30	YES
Fluorene	12.50	12.16	-3	30	YES
4-Chlorophenyl-phenylether	12.50	11.61	-7	30	YES
5-Nitro-o-toluidine	12.50	12.12	-3	30	YES
4-Nitroaniline	12.50	12.55	0	30	YES
4,6-Dinitro-2-methylphenol	12.50	11.81	-6	30	YES
N-Nitrosodiphenylamine	12.50	11.47	-8	30	YES
NDPA as diphenylamine	12.50	11.47	-8	30	YES
1,2-Diphenylhydrazine	12.50	13.03	4	30	YES
Tetraethyldithiopyrophospha	12.50	12.82	3	30	YES
Diallate (peak 1)	9.38	9.25	-1	30	YES
Phorate	12.50	13.66	9	30	YES
Phenacetin	12.50	12.58	1	30	YES
4-Bromophenyl-phenylether	12.50	11.59	-7	30	YES
Diallate (peak 2)	3.13	3.76	20	30	YES
Hexachlorobenzene	12.50	11.49	-8	30	YES
Diallate trans/cis	12.50	13.01	4	30	YES
Dimethoate	12.50	14.60	17	30	YES
Pentachlorophenol	12.50	12.40	-1	30	YES
4-Aminobiphenyl	12.50	22.84	83	30	NO*
Pentachloronitrobenzene	12.50	12.11	-3	30	YES
Pronamide	12.50	13.15	5	30	YES
Dinoseb	12.50	12.49	0	30	YES
Phenanthrene	12.50	12.50	0	30	YES
Anthracene	12.50	12.27	-2	30	YES
Carbazole	12.50	12.92	3	30	YES
Methyl parathion	12.50	14.05	12	30	YES
Di-n-butylphthalate	12.50	12.54	0	30	YES
Parathion	12.50	14.34	15	30	YES
4-Nitroquinoline-1-oxide	150.00	176.22	17	30	YES
Octachlorostyrene	12.50	10.69	-14	30	YES
Isodrin	12.50	12.74	2	30	YES
Fluoranthene	12.50	12.47	0	30	YES
Benzidine	62.50	56.96	-9	30	YES

NC = Could not calculate

Comments: *Rerun any detections under a valid ICV

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP18831

Method: SW-846 8270D MINI File ID: hj1611d.d

ICV SAMPLE ID: rvICV2339 BATCH: 19OCT29A026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Pyrene	12.50	11.64	-7	30	YES
p-Dimethylaminoazobenzene	12.50	14.29	14	30	YES
Chlorobenzilate	12.50	12.06	-4	30	YES
3,3'-Dimethylbenzidine	25.00	19.57	-22	30	YES
Butylbenzylphthalate	12.50	11.96	-4	30	YES
2-Acetylaminofluorene	12.50	11.74	-6	30	YES
3,3'-Dichlorobenzidine	12.50	11.56	-8	30	YES
Benzo(a)anthracene	12.50	12.87	3	30	YES
Chrysene	12.50	11.65	-7	30	YES
4,4'-Methylenebis(2-chloroa	12.50	11.99	-4	30	YES
bis(2-Ethylhexyl)phthalate	12.50	12.21	-2	30	YES
6-Methylchrysene	12.50	11.56	-8	30	YES
Di-n-octylphthalate	12.50	13.21	6	30	YES
Benzo(b)fluoranthene	12.50	13.03	4	30	YES
7,12-Dimethylbenz[a]anthrac	12.50	13.23	6	30	YES
Benzo(k)fluoranthene	12.50	12.64	1	30	YES
Benzo(a)pyrene	12.50	12.50	0	30	YES
3-Methylcholanthrene	12.50	14.77	18	30	YES
Dibenz(a,h)acridine	12.50	12.38	-1	30	YES
Dibenz(a,j)acridine	12.50	12.05	-4	30	YES
Indeno(1,2,3-cd)pyrene	12.50	12.49	0	30	YES
Dibenz(a,h)anthracene	12.50	12.97	4	30	YES
Benzo(g,h,i)perylene	12.50	12.48	0	30	YES
Total PAHs	225.00	222.10	-1	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP18831

Method: SW-846 8270D MINI File ID: hj1612d.d

ICV SAMPLE ID: rvBASICV2339 BATCH: 19OCT29A026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Benzaldehyde	12.50	14.37	15	30	YES
Caprolactam	12.50	12.85	3	30	YES
Atrazine	12.50	13.43	7	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP18831

Method: SW-846 8270D MINI | File ID: hj1614d.d

ICV SAMPLE ID: rvDMPICV2609 | BATCH: 19OCT29A026 | Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
2,4-Dimethylphenol	12.50	11.58	-7	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP18831

Method: SW-846 8270D MINI File ID: hj1615d.d

ICV SAMPLE ID: rvHCCPDICV2959 BATCH: 19OCT29A026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Hexachlorocyclopentadiene	25.00	25.99	4	30	YES

NC = Could not calculate

Comments: _____

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Page 1 of 1

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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date(s): 11/04/19 11/04/19

Calibration Times: 14:10 17:55

Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = lk0072.d RRF0.25 = lk0078.d RRF1.25 = lk0077.d RRF3.75 = lk0076.d
RRF7.5 = lk0071.d RRF12.5 = lk0075.d RRF20 = lk0074.d RRF30 = lk0073.d

COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{RRF}$	% RSD	CAL. METHOD
1,4-Dioxane			1.013	0.942	0.995	0.929	0.950	0.983	0.969	3	AVG
N-Nitrosodimethylamine			1.670	1.664	1.657	1.564	1.631	1.704	1.648	3	AVG
Pyridine			3.011	2.830	2.882	2.562	2.762	2.772	2.803	5	AVG
2-Picoline			2.606	2.658	2.687	2.570	2.681	2.645	2.641	2	AVG
N-Nitrosomethylethylamine			1.136	1.073	1.076	1.072	1.114	1.120	1.098	3	AVG
Methyl methanesulfonate			1.325	1.344	1.323	1.255	1.310	1.307	1.311	2	AVG
N-Nitrosodiethylamine		0.784	1.076	1.042	1.053	0.980	1.030	1.037	1.000	10	AVG
Ethyl methanesulfonate		1.029	0.992	1.060	1.044	0.974	1.048	1.037	1.026	3	AVG
Benzaldehyde			2.364	2.194	1.575	1.971	1.743	1.522	1.895	18	AVG
Phenol		3.285	3.245	3.295	3.302	3.056	3.200	3.129	3.216	3	AVG
Aniline		3.671	3.927	3.959	3.926	3.630	3.809	3.659	3.797	4	AVG
a-methylstyrene			0.782	0.776	0.792	0.718	0.736	0.733	0.756	4	AVG
bis(2-Chloroethyl)ether		2.632	2.520	2.520	2.549	2.311	2.462	2.428	2.489	4	AVG
2-Chlorophenol		1.706	1.639	1.680	1.666	1.613	1.695	1.669	1.667	2	AVG
1,3-Dichlorobenzene		1.828	1.799	1.686	1.722	1.607	1.658	1.600	1.700	5	AVG
1,4-Dichlorobenzene		1.735	1.759	1.791	1.698	1.611	1.669	1.618	1.697	4	AVG
Benzyl alcohol			1.310	1.366	1.363	1.279	1.323	1.290	1.322	3	AVG
1,2-Dichlorobenzene		1.771	1.878	1.650	1.648	1.530	1.606	1.552	1.662	7	AVG
Indene			3.065	3.113	3.154	2.856	2.926	2.862	2.996	4	AVG
2-Methylphenol		1.701	1.934	1.930	1.951	1.835	1.938	1.902	1.884	5	AVG
2,2'-oxybis(1-Chloropropane)		2.762	2.797	2.934	2.831	2.628	2.763	2.760	2.782	3	AVG
bis(2-Chloroisopropyl)ether		2.762	2.797	2.934	2.831	2.628	2.763	2.760	2.782	3	AVG
N-Nitrosopyrrolidine		1.118	1.062	1.158	1.179	1.103	1.181	1.157	1.137	4	AVG
Acetophenone		3.195	3.255	3.228	3.218	2.951	3.068	2.950	3.124	4	AVG
4-Methylphenol		2.214	2.004	2.023	2.004	2.089	1.996	2.098	2.061	4	AVG
Total Cresols		1.958	1.969	1.976	1.977	1.962	1.967	2.000	1.973	1	AVG
N-Nitroso-di-n-propylamine		1.951	2.192	2.183	2.079	1.939	2.008	1.983	2.048	5	AVG
N-Nitrosomorpholine			1.364	1.328	1.328	1.244	1.287	1.242	1.299	4	AVG
o-Toluidine		3.341	3.414	3.491	3.464	3.207	3.376	3.198	3.356	3	AVG
Hexachloroethane			0.895	0.907	0.893	0.849	0.881	0.858	0.881	3	AVG
Nitrobenzene		0.647	0.699	0.690	0.697	0.679	0.695	0.708	0.688	3	AVG
N-Nitrosopiperidine		0.222	0.223	0.223	0.232	0.226	0.236	0.240	0.229	3	AVG
Isophorone		1.194	1.220	1.239	1.222	1.213	1.238	1.263	1.227	2	AVG
2-Nitrophenol			0.119	0.145	0.134	0.155	0.169	0.164	0.148	13	AVG
2,4-Dimethylphenol		0.549	0.522	0.504	0.510	0.505	0.505	0.517	0.516	3	AVG
O,O,O-Triethylphosphorothioat			0.140	0.140	0.139	0.133	0.138	0.135	0.138	2	AVG
bis(2-Chloroethoxy)methane		0.728	0.773	0.759	0.749	0.735	0.713	0.704	0.737	3	AVG
Benzoic acid			0.155	0.212	0.198	0.236	0.247	0.260	0.218	18	AVG
2,4-Dichlorophenol		0.250	0.258	0.284	0.275	0.273	0.278	0.277	0.271	4	AVG
1,2,4-Trichlorobenzene		0.277	0.295	0.291	0.283	0.274	0.278	0.280	0.282	3	AVG
Naphthalene	1.111	1.222	1.219	1.192	1.161	1.131	1.153	1.167	1.170	3	AVG
4-Chloroaniline		0.420	0.514	0.483	0.499	0.479	0.484	0.487	0.481	6	AVG
2,6-Dichlorophenol		0.196	0.283	0.266	0.259	0.263	0.258	0.259	0.255	11	AVG
Hexachloropropene			0.134	0.135	0.132	0.134	0.135	0.136	0.134	1	AVG
Hexachlorobutadiene		0.166	0.143	0.142	0.137	0.131	0.133	0.130	0.140	9	AVG
Quinoline			0.724	0.710	0.703	0.685	0.705	0.706	0.706	2	AVG
Caprolactam			0.120	0.133	0.124	0.117	0.112	0.112	0.120	7	AVG
N-Nitrosodi-n-butylamine		0.407	0.464	0.451	0.458	0.434	0.543	0.549	0.472	11	AVG
4-Chloro-3-methylphenol		0.397	0.395	0.435	0.431	0.424	0.437	0.448	0.424	5	AVG
Safrole			0.230	0.249	0.237	0.241	0.246	0.247	0.242	3	AVG
2-Methylnaphthalene	0.649	0.663	0.719	0.704	0.694	0.675	0.691	0.692	0.686	3	AVG
1-Methylnaphthalene	0.739	0.648	0.669	0.660	0.671	0.635	0.653	0.655	0.666	5	AVG

4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date(s): 11/04/19 11/04/19

Calibration Times: 14:10 17:55

Min $\overline{\text{RRF}}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = lk0072.d RRF0.25 = lk0078.d RRF1.25 = lk0077.d RRF3.75 = lk0076.d
RRF7.5 = lk0071.d RRF12.5 = lk0075.d RRF20 = lk0074.d RRF30 = lk0073.d

COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{\text{RRF}}$	% RSD	CAL. METHOD
Hexachlorocyclopentadiene			0.340	0.341	0.345	0.318	0.333	0.318	0.333	4	AVG
1,2,4,5-Tetrachlorobenzene		0.550	0.624	0.615	0.564	0.533	0.560	0.559	0.572	6	AVG
cis-Isosafrole			0.697	0.643	0.643	0.612	0.636	0.660	0.648	4	AVG
2,4,6-Trichlorophenol		0.279	0.381	0.389	0.367	0.362	0.394	0.410	0.369	12	AVG
2,4,5-Trichlorophenol		0.320	0.367	0.453	0.401	0.399	0.426	0.418	0.398	11	AVG
trans-Isosafrole			0.680	0.692	0.666	0.653	0.688	0.691	0.678	2	AVG
Isosafrole			0.683	0.683	0.662	0.646	0.679	0.686	0.673	2	AVG
1,1'-Biphenyl		1.899	1.943	2.016	1.915	1.789	1.806	1.753	1.874	5	AVG
2-Chloronaphthalene		1.589	1.542	1.578	1.462	1.380	1.526	1.537	1.516	5	AVG
1-Chloronaphthalene		1.141	1.448	1.405	1.397	1.348	1.284	1.217	1.320	8	AVG
Diphenyl ether		0.948	0.943	0.985	0.909	0.861	0.891	0.893	0.919	5	AVG
2-Nitroaniline			0.422	0.480	0.458	0.483	0.526	0.515	0.481	8	AVG
1,4-Naphthoquinone			0.624	0.620	0.607	0.592	0.631	0.622	0.616	2	AVG
1,4-Dinitrobenzene			0.116	0.160	0.155	0.184	0.204	0.185	0.167	19	AVG
Dimethylphthalate			1.729	1.722	1.588	1.489	1.482	1.418	1.571	8	AVG
1,3-Dinitrobenzene			0.158	0.213	0.197	0.211	0.231	0.217	0.205	12	AVG
2,6-Dinitrotoluene		0.251	0.333	0.346	0.331	0.325	0.356	0.329	0.324	11	AVG
Acenaphthylene	1.871	2.290	2.404	2.358	2.340	2.186	2.312	2.263	2.253	7	AVG
3-Nitroaniline			0.403	0.420	0.399	0.424	0.455	0.437	0.423	5	AVG
Acenaphthene	1.485	1.662	1.673	1.606	1.495	1.464	1.529	1.490	1.550	5	AVG
2,4-Dinitrophenol				0.072	0.059	0.082	0.095	0.099	0.081	20	1STDEG
4-Nitrophenol				0.341	0.299	0.341	0.373	0.362	0.343	8	AVG
Pentachlorobenzene		0.503	0.505	0.474	0.464	0.442	0.451	0.429	0.467	6	AVG
2,4-Dinitrotoluene			0.348	0.452	0.412	0.426	0.424	0.428	0.415	9	AVG
2,4_2,6-Dinitrotoluenes		0.270	0.341	0.399	0.372	0.375	0.390	0.378	0.361	12	AVG
Dibenzofuran		2.032	2.065	1.940	1.820	1.795	1.857	1.786	1.899	6	AVG
1-Naphthylamine				1.625	1.540	1.520	1.622	1.531	1.568	3	AVG
2,3,4,6-Tetrachlorophenol		0.176	0.240	0.262	0.240	0.244	0.268	0.265	0.242	13	AVG
2-Naphthylamine				1.574	1.509	1.497	1.537	1.437	1.511	3	AVG
Diethylphthalate			1.869	1.800	1.686	1.597	1.629	1.623	1.701	6	AVG
Thionazin			0.475	0.449	0.434	0.418	0.422	0.393	0.432	7	AVG
Fluorene	1.596	1.741	1.632	1.567	1.495	1.443	1.470	1.434	1.547	7	AVG
4-Chlorophenyl-phenylether		0.603	0.622	0.639	0.618	0.586	0.602	0.565	0.605	4	AVG
5-Nitro-o-toluidine		0.407	0.478	0.459	0.425	0.444	0.444	0.428	0.441	5	AVG
4-Nitroaniline		0.292	0.413	0.481	0.459	0.434	0.448	0.440	0.424	15	AVG
4,6-Dinitro-2-methylphenol				0.063	0.059	0.072	0.086	0.091	0.074	19	AVG
N-Nitrosodiphenylamine (1)		0.824	0.745	0.792	0.732	0.719	0.716	0.730	0.751	5	AVG
NDPA as diphenylamine		0.824	0.745	0.792	0.732	0.719	0.716	0.730	0.751	5	AVG
1,2-Diphenylhydrazine		1.935	1.939	1.957	1.867	1.792	1.796	1.881	1.881	4	AVG
Tetraethyldithiopyrophosphate			0.288	0.288	0.281	0.265	0.270	0.273	0.278	4	AVG
Diallate (peak 1)			0.784	0.825	0.776	0.740	0.748	0.760	0.772	4	AVG
Phorate		1.067	1.146	1.222	1.200	1.135	1.154	1.197	1.160	4	AVG
Phenacetin		0.637	0.719	0.740	0.744	0.718	0.769	0.787	0.731	7	AVG
4-Bromophenyl-phenylether		0.162	0.196	0.199	0.179	0.167	0.178	0.178	0.180	8	AVG
Diallate (peak 2)			0.662	0.693	0.663	0.639	0.641	0.677	0.663	3	AVG
Diallate trans/cis			0.763	0.803	0.757	0.722	0.730	0.746	0.753	4	AVG
Hexachlorobenzene	0.218	0.214	0.225	0.209	0.202	0.205	0.211	0.221	0.213	4	AVG
Dimethoate			0.629	0.706	0.684	0.667	0.713	0.725	0.687	5	AVG
Atrazine			0.215	0.225	0.214	0.192	0.185	0.174	0.201	10	AVG
Pentachlorophenol			0.091	0.109	0.101	0.110	0.114	0.123	0.108	10	AVG
4-Aminobiphenyl		0.553	0.528	0.579	0.560	0.544	0.552	0.544	0.552	3	AVG
Pentachloronitrobenzene			0.076	0.095	0.086	0.086	0.088	0.092	0.087	7	AVG

(1) Cannot be separated from Diphenylamine
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date(s): 11/04/19 11/04/19

Calibration Times: 14:10 17:55

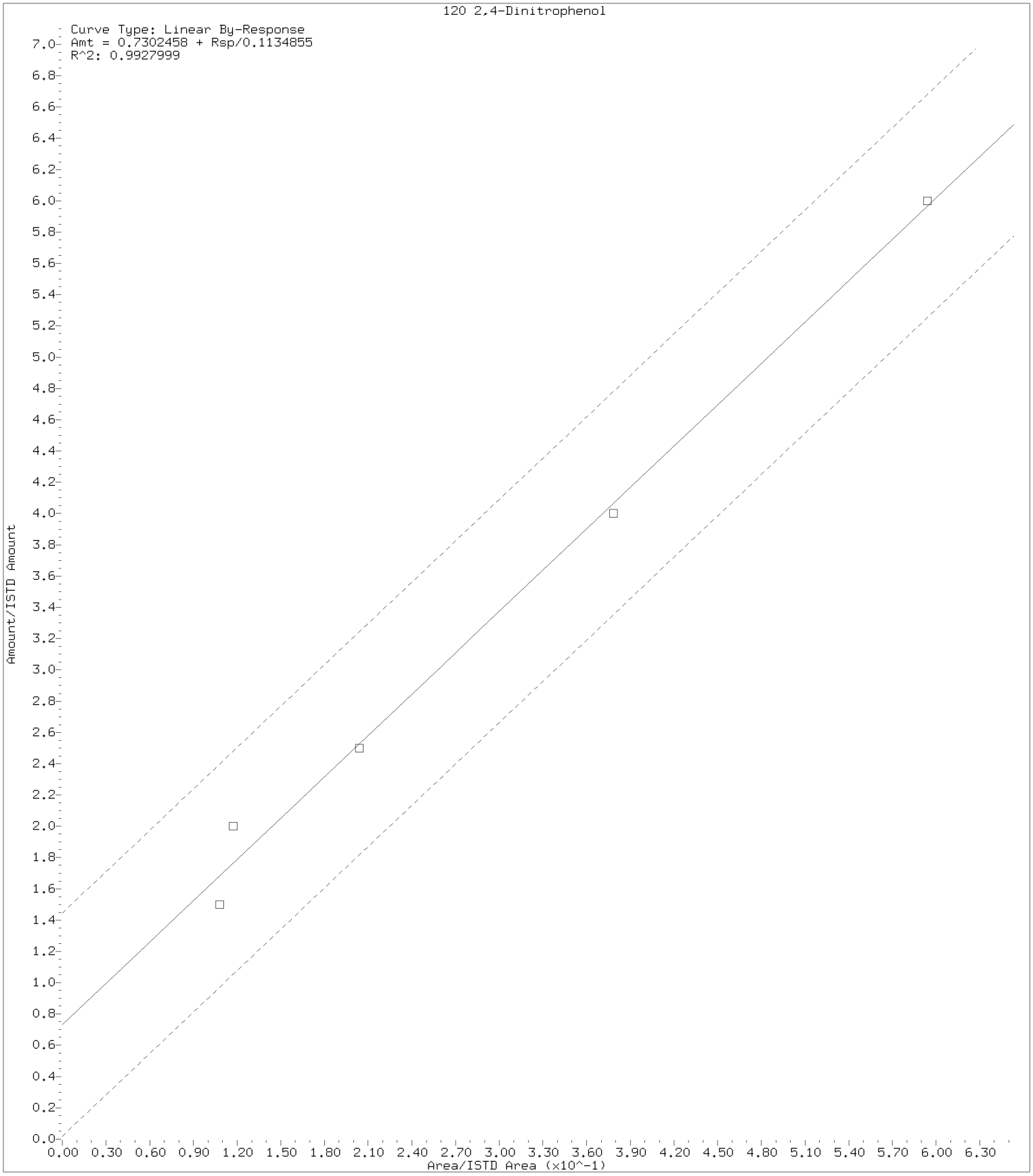
Min $\overline{RRF}$ for SPCC(#) = 0.050 Max %RSD for CCC(*) = 30%

LAB FILE ID:RRF0.125 = lk0072.d RRF0.25 = lk0078.d RRF1.25 = lk0077.d RRF3.75 = lk0076.d
RRF7.5 = lk0071.d RRF12.5 = lk0075.d RRF20 = lk0074.d RRF30 = lk0073.d

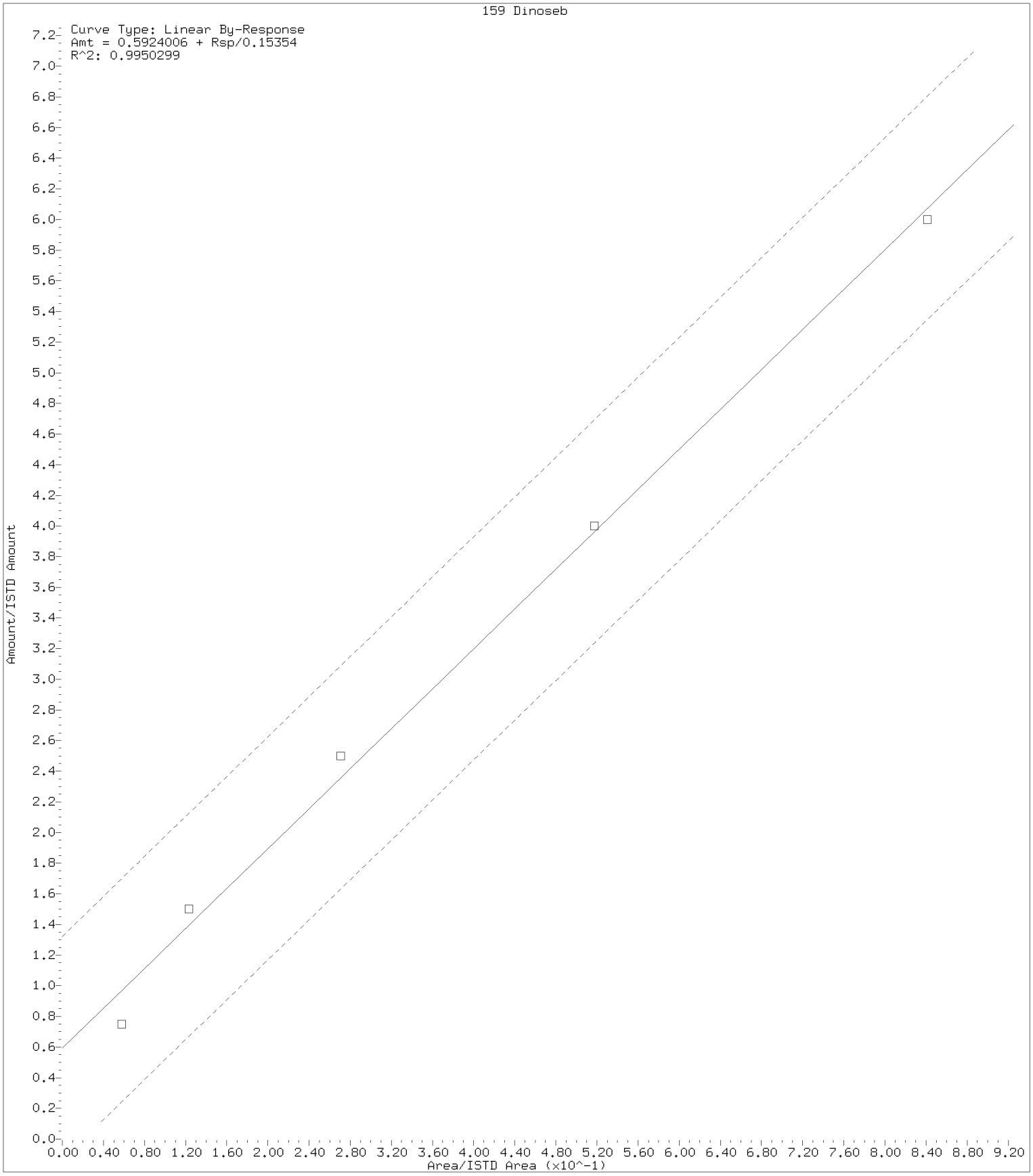
COMPOUND	RRF0.125	RRF0.25	RRF1.25	RRF3.75	RRF7.5	RRF12.5	RRF20	RRF30	$\overline{RRF}$	% RSD	CAL. METHOD
Pronamide		0.369	0.414	0.437	0.432	0.415	0.428	0.440	0.419	6	AVG
Dinoseb				0.077	0.082	0.108	0.129	0.140	0.107	26	1STDEG
Phenanthrene	1.057	1.274	1.329	1.280	1.202	1.207	1.262	1.273	1.236	7	AVG
Anthracene	1.178	1.057	1.265	1.315	1.246	1.199	1.251	1.271	1.223	6	AVG
Carbazole		1.204	1.198	1.291	1.231	1.171	1.228	1.254	1.225	3	AVG
Methyl parathion			0.333	0.432	0.417	0.445	0.477	0.492	0.433	13	AVG
Di-n-butylphthalate			1.747	1.848	1.785	1.743	1.842	1.871	1.806	3	AVG
Parathion			0.200	0.272	0.286	0.292	0.313	0.329	0.282	16	AVG
4-Nitroquinoline-1-oxide				0.079	0.090	0.115	0.135	0.137	0.111	24	1STDEG
Octachlorostyrene			0.086	0.100	0.083	0.079	0.081	0.086	0.086	9	AVG
Isodrin		0.179	0.149	0.153	0.137	0.139	0.147	0.147	0.150	9	AVG
Fluoranthene	1.073	1.227	1.278	1.312	1.250	1.207	1.287	1.312	1.243	6	AVG
Benzidine			0.947	0.997	0.930	0.938	0.949	0.877	0.940	4	AVG
Pyrene	1.308	1.557	1.430	1.421	1.405	1.360	1.418	1.353	1.406	5	AVG
p-Dimethylaminoazobenzene			0.174	0.203	0.201	0.195	0.208	0.207	0.198	6	AVG
Chlorobenzilate			0.569	0.635	0.630	0.617	0.657	0.647	0.626	5	AVG
3,3'-Dimethylbenzidine				0.873	0.810	0.892	0.909	0.885	0.874	4	AVG
Butylbenzylphthalate			0.748	0.840	0.840	0.866	0.912	0.887	0.849	7	AVG
2-Acetylaminofluorene				0.510	0.520	0.580	0.635	0.652	0.579	11	AVG
3,3'-Dichlorobenzidine			0.440	0.469	0.448	0.463	0.469	0.460	0.458	3	AVG
4,4'-Methylenebis(2-chloroani			0.241	0.240	0.219	0.230	0.234	0.228	0.232	4	AVG
Benzo(a)anthracene	1.048	1.128	1.140	1.188	1.200	1.161	1.213	1.166	1.155	5	AVG
Chrysene	1.153	1.080	1.178	1.215	1.184	1.188	1.225	1.197	1.177	4	AVG
bis(2-Ethylhexyl)phthalate			1.117	1.256	1.231	1.276	1.329	1.321	1.255	6	AVG
6-Methylchrysene			0.792	0.814	0.803	0.829	0.860	0.853	0.825	3	AVG
Di-n-octylphthalate			2.069	2.373	2.388	2.411	2.518	2.449	2.368	7	AVG
Benzo(b)fluoranthene	1.155	1.150	1.362	1.370	1.340	1.243	1.302	1.263	1.273	7	AVG
7,12-Dimethylbenz[a]anthracen			0.504	0.533	0.582	0.538	0.545	0.540	0.540	5	AVG
Benzo(k)fluoranthene	1.322	1.196	1.298	1.327	1.318	1.265	1.259	1.251	1.279	4	AVG
Benzo(a)pyrene	1.004	1.063	1.233	1.239	1.234	1.228	1.246	1.244	1.186	8	AVG
3-Methylcholanthrene			0.504	0.546	0.548	0.527	0.561	0.557	0.540	4	AVG
Dibenz(a,h)acridine			0.948	1.002	0.995	0.973	1.011	1.018	0.991	3	AVG
Dibenz(a,j)acridine			0.963	0.993	0.993	0.970	0.993	0.998	0.985	1	AVG
Indeno(1,2,3-cd)pyrene	0.975	0.908	1.031	1.131	1.125	1.148	1.168	1.171	1.082	9	AVG
Dibenz(a,h)anthracene	0.983	1.029	1.140	1.219	1.164	1.162	1.180	1.176	1.132	7	AVG
Benzo(g,h,i)perylene	1.027	1.124	1.155	1.180	1.157	1.141	1.162	1.164	1.139	4	AVG
Total PAHs	1.256	1.259	1.349	1.341	1.335	1.245	1.272	1.230	1.286	4	AVG
2-Fluorophenol		1.809	1.933	1.898	1.871	1.812	1.885	1.849	1.865	2	AVG
Phenol-d6		2.548	2.731	2.772	2.766	2.603	2.722	2.665	2.687	3	AVG
Nitrobenzene-d5		0.609	0.647	0.642	0.648	0.634	0.645	0.658	0.641	2	AVG
2-Fluorobiphenyl		1.576	1.579	1.610	1.530	1.433	1.493	1.466	1.527	4	AVG
2,4,6-Tribromophenol		0.130	0.155	0.154	0.142	0.155	0.160	0.151	0.149	7	AVG
Terphenyl-d14		0.736	0.822	0.778	0.789	0.764	0.780	0.755	0.775	4	AVG

Average %RSD 6

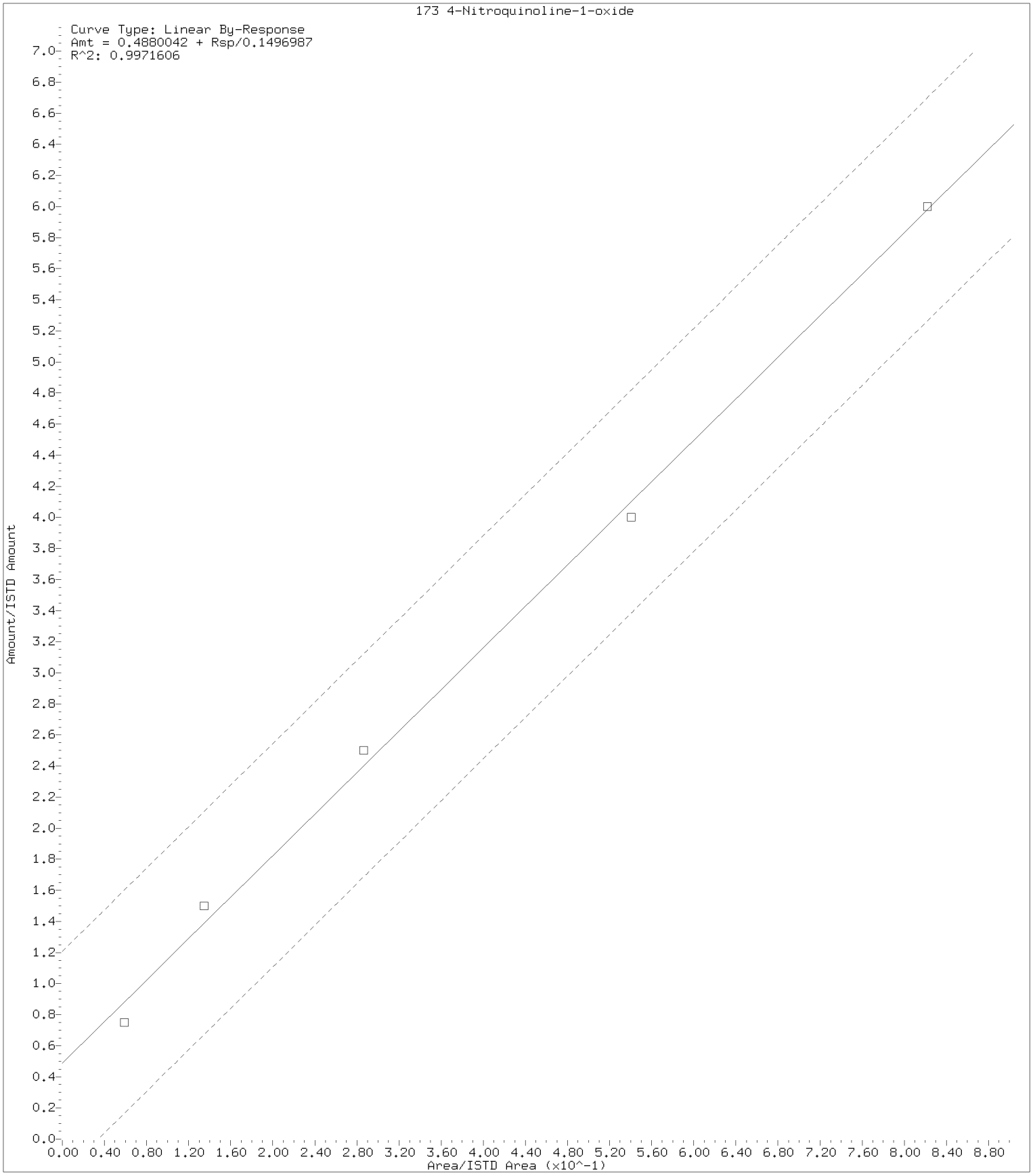
4,6-Dinitro-2-methylphenol and 4-Nitrophenol are at 10 ng/ul in the 5 standard.
Benzidine Levels in the 5,15,30,50,80,120 standards are 15,45,90,150,240,360 ng/ul, respectively.
Benzoic acid and 2,4-Dinitrophenol are at 15 ng/ul, 30 ng/ul,40 ng/ul in the 5,15,30 standards.



Digitally signed by Chad A. Moline on 11/05/2019 at 14:13.
Target 3.5 esignature user ID: cam01237



Digitally signed by Chad A. Moline on 11/05/2019 at 14:13.
Target 3.5 esignature user ID: cam01237



Digitally signed by Chad A. Moline on 11/05/2019 at 14:13.
Target 3.5 esignature user ID: cam01237

Internal Standard
Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP20296.i/19nov04.b/lk0071.d SSTD7.5
/chem/HP20296.i/19nov04.b/lk0072.d SSTD0.125
/chem/HP20296.i/19nov04.b/lk0073.d SSTD30
/chem/HP20296.i/19nov04.b/lk0074.d SSTD20
/chem/HP20296.i/19nov04.b/lk0075.d SSTD12.5
/chem/HP20296.i/19nov04.b/lk0076.d SSTD3.75
/chem/HP20296.i/19nov04.b/lk0077.d SSTD1.25
/chem/HP20296.i/19nov04.b/lk0078.d SSTD0.25

Area Summary

File ID:

Internal Standard Name	lk0071.d	lk0072.d	lk0073.d	lk0074.d	lk0075.d	lk0076.d	lk0077.d	lk0078.d	Avg. Area	%RSD	In Spec
1,4-Dichlorobenzene-d4	151514	158854	187994	162229	160939	156179	161049	177655	164552	7	Yes
Naphthalene-d8	638706	663915	765490	686191	659321	659810	681098	736418	686369	6	Yes
Acenaphthene-d10	272181	275797	324815	287870	286729	273757	283928	301655	288342	6	Yes
Phenanthrene-d10	471785	490220	528291	496202	497830	481645	506998	530155	500391	4	Yes
Pyrene-d10	442937	457506	517783	466938	463746	460788	475782	503664	473643	5	Yes
Perylene-d12	388516	387197	509032	444594	432557	410397	418552	454963	430726	9	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

Internal Standard Name	lk0071.d	lk0072.d	lk0073.d	lk0074.d	lk0075.d	lk0076.d	lk0077.d	lk0078.d	Avg. RT
1,4-Dichlorobenzene-d4	7.038	7.038	7.038	7.038	7.038	7.038	7.038	7.038	7.038
Naphthalene-d8	9.023	9.017	9.022	9.023	9.022	9.017	9.017	9.017	9.020
Acenaphthene-d10	11.841	11.841	11.846	11.847	11.841	11.841	11.841	11.841	11.843
Phenanthrene-d10	13.772	13.772	13.777	13.772	13.772	13.767	13.767	13.767	13.771
Pyrene-d10	15.832	15.832	15.837	15.831	15.831	15.826	15.826	15.826	15.830
Perylene-d12	20.431	20.431	20.436	20.431	20.431	20.426	20.426	20.426	20.430

Comments:_____

_____

Report generated on 11/04/2019 at 22:55

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP20296

Method: SW-846 8270D MINI | File ID: lk0081.d

ICV SAMPLE ID: RVICV3089 | BATCH: 19NOV04026 | Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
1,4-Dioxane	12.50	12.28	-2	30	YES
N-Nitrosodimethylamine	12.50	13.30	6	30	YES
Pyridine	12.50	11.53	-8	30	YES
2-Picoline	12.50	12.94	4	30	YES
N-Nitrosomethylethylamine	12.50	12.15	-3	30	YES
Methyl methanesulfonate	12.50	14.42	15	30	YES
N-Nitrosodiethylamine	12.50	12.69	2	30	YES
Ethyl methanesulfonate	12.50	12.31	-2	30	YES
Phenol	12.50	12.45	0	30	YES
Aniline	12.50	11.11	-11	30	YES
bis(2-Chloroethyl)ether	12.50	12.54	0	30	YES
2-Chlorophenol	12.50	12.36	-1	30	YES
1,3-Dichlorobenzene	12.50	12.61	1	30	YES
1,4-Dichlorobenzene	12.50	12.54	0	30	YES
Benzyl alcohol	12.50	13.20	6	30	YES
1,2-Dichlorobenzene	12.50	12.53	0	30	YES
Indene	12.50	14.54	16	30	YES
2-Methylphenol	12.50	12.71	2	30	YES
2,2'-oxybis(1-Chloropropane	12.50	12.68	1	30	YES
bis(2-Chloroisopropyl)ether	12.50	12.68	1	30	YES
N-Nitrosopyrrolidine	12.50	12.43	-1	30	YES
Acetophenone	12.50	12.44	-1	30	YES
4-Methylphenol	12.50	12.03	-4	30	YES
N-Nitroso-di-n-propylamine	12.50	12.89	3	30	YES
N-Nitrosomorpholine	12.50	12.59	1	30	YES
o-Toluidine	12.50	12.46	0	30	YES
Total Cresols	25.00	24.74	-1	30	YES
Hexachloroethane	12.50	12.94	4	30	YES
Nitrobenzene	12.50	12.27	-2	30	YES
N-Nitrosopiperidine	12.50	12.39	-1	30	YES
Isophorone	12.50	12.37	-1	30	YES
2-Nitrophenol	12.50	11.36	-9	30	YES
bis(2-Chloroethoxy)methane	12.50	12.66	1	30	YES
Benzoic acid	25.00	24.68	-1	30	YES
O,O,O-Triethylphosphorothio	12.50	12.05	-4	30	YES
2,4-Dichlorophenol	12.50	12.28	-2	30	YES
1,2,4-Trichlorobenzene	12.50	12.46	0	30	YES

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP20296

Method: SW-846 8270D MINI File ID: lk0081.d

ICV SAMPLE ID: RVICV3089 BATCH: 19NOV04026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Naphthalene	12.50	12.64	1	30	YES
4-Chloroaniline	12.50	12.58	1	30	YES
2,6-Dichlorophenol	12.50	12.91	3	30	YES
Hexachloropropene	12.50	15.25	22	30	YES
Hexachlorobutadiene	12.50	12.29	-2	30	YES
Quinoline	12.50	13.15	5	30	YES
N-Nitrosodi-n-butylamine	12.50	11.64	-7	30	YES
4-Chloro-3-methylphenol	12.50	12.39	-1	30	YES
Safrole	12.50	12.16	-3	30	YES
2-Methylnaphthalene	12.50	12.77	2	30	YES
1-Methylnaphthalene	12.50	11.99	-4	30	YES
1,2,4,5-Tetrachlorobenzene	12.50	12.52	0	30	YES
cis-Isosafrole	1.50	1.57	5	30	YES
2,4,6-Trichlorophenol	12.50	13.06	4	30	YES
2,4,5-Trichlorophenol	12.50	13.33	7	30	YES
trans-Isosafrole	11.00	11.74	7	30	YES
1,1'-Biphenyl	12.50	12.75	2	30	YES
2-Chloronaphthalene	12.50	12.28	-2	30	YES
Isosafrole	12.50	13.31	6	30	YES
1-Chloronaphthalene	12.50	12.45	0	30	YES
Diphenyl ether	12.50	11.90	-5	30	YES
2-Nitroaniline	12.50	13.05	4	30	YES
1,4-Naphthoquinone	15.63	16.41	5	30	YES
1,4-Dinitrobenzene	12.50	12.93	3	30	YES
Dimethylphthalate	12.50	12.81	3	30	YES
1,3-Dinitrobenzene	12.50	13.03	4	30	YES
2,6-Dinitrotoluene	12.50	13.03	4	30	YES
Acenaphthylene	12.50	12.00	-4	30	YES
3-Nitroaniline	12.50	13.72	10	30	YES
Acenaphthene	12.50	12.45	0	30	YES
2,4-Dinitrophenol	25.00	22.82	-9	30	YES
4-Nitrophenol	12.50	12.86	3	30	YES
Pentachlorobenzene	12.50	11.92	-5	30	YES
2,4-Dinitrotoluene	12.50	13.26	6	30	YES
Dibenzofuran	12.50	12.70	2	30	YES
2,4_2,6-Dinitrotoluenes	25.00	26.29	5	30	YES
1-Naphthylamine	25.00	22.30	-11	30	YES

NC = Could not calculate

Comments: _____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP20296

Method: SW-846 8270D MINI File ID: lk0081.d

ICV SAMPLE ID: RVICV3089 BATCH: 19NOV04026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
2,3,4,6-Tetrachlorophenol	12.50	13.40	7	30	YES
2-Naphthylamine	25.00	21.89	-12	30	YES
Diethylphthalate	12.50	12.36	-1	30	YES
Thionazin	12.50	11.31	-10	30	YES
Fluorene	12.50	12.30	-2	30	YES
4-Chlorophenyl-phenylether	12.50	12.36	-1	30	YES
5-Nitro-o-toluidine	12.50	12.75	2	30	YES
4-Nitroaniline	12.50	13.32	7	30	YES
4,6-Dinitro-2-methylphenol	12.50	12.46	0	30	YES
N-Nitrosodiphenylamine	12.50	12.47	0	30	YES
NDPA as diphenylamine	12.50	12.47	0	30	YES
1,2-Diphenylhydrazine	12.50	13.29	6	30	YES
Tetraethyldithiopyrophospha	12.50	12.08	-3	30	YES
1,3,5-Trinitrobenzene	12.50	.00	0	30	YES
Diallate (peak 1)	9.38	8.72	-7	30	YES
Phorate	12.50	12.65	1	30	YES
Phenacetin	12.50	12.55	0	30	YES
4-Bromophenyl-phenylether	12.50	12.54	0	30	YES
Diallate (peak 2)	3.13	3.46	11	30	YES
Hexachlorobenzene	12.50	12.53	0	30	YES
Diallate trans/cis	12.50	12.18	-3	30	YES
Dimethoate	12.50	12.60	1	30	YES
Pentachlorophenol	12.50	12.71	2	30	YES
4-Aminobiphenyl	12.50	22.06	77	30	NO*
Pentachloronitrobenzene	12.50	13.24	6	30	YES
Pronamide	12.50	12.58	1	30	YES
Dinoseb	12.50	11.76	-6	30	YES
Phenanthrene	12.50	12.56	0	30	YES
Anthracene	12.50	12.80	2	30	YES
Carbazole	12.50	12.72	2	30	YES
Methyl parathion	12.50	13.33	7	30	YES
Di-n-butylphthalate	12.50	12.58	1	30	YES
Parathion	12.50	12.67	1	30	YES
4-Nitroquinoline-1-oxide	150.00	140.66	-6	30	YES
Isodrin	12.50	12.22	-2	30	YES
Fluoranthene	12.50	12.60	1	30	YES
Benzidine	62.50	54.15	-13	30	YES

NC = Could not calculate

Comments: _____*Compound out high, run any hits under valid ICV_____

Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP20296

Method: SW-846 8270D MINI File ID: lk0081.d

ICV SAMPLE ID: RVICV3089 BATCH: 19NOV04026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Pyrene	12.50	11.90	-5	30	YES
p-Dimethylaminoazobenzene	12.50	15.44	24	30	YES
Chlorobenzilate	12.50	12.08	-3	30	YES
3,3'-Dimethylbenzidine	25.00	20.53	-18	30	YES
Butylbenzylphthalate	12.50	12.88	3	30	YES
2-Acetylaminofluorene	12.50	11.88	-5	30	YES
3,3'-Dichlorobenzidine	12.50	11.47	-8	30	YES
Benzo(a)anthracene	12.50	12.97	4	30	YES
Chrysene	12.50	12.20	-2	30	YES
4,4'-Methylenebis(2-chloroa	12.50	12.64	1	30	YES
bis(2-Ethylhexyl)phthalate	12.50	13.13	5	30	YES
6-Methylchrysene	12.50	11.87	-5	30	YES
Di-n-octylphthalate	12.50	12.85	3	30	YES
Benzo(b)fluoranthene	12.50	12.80	2	30	YES
7,12-Dimethylbenz[a]anthrac	12.50	12.80	2	30	YES
Benzo(k)fluoranthene	12.50	12.56	0	30	YES
Benzo(a)pyrene	12.50	12.94	4	30	YES
3-Methylcholanthrene	12.50	14.80	18	30	YES
Dibenz(a,h)acridine	12.50	12.67	1	30	YES
Dibenz(a,j)acridine	12.50	11.90	-5	30	YES
Indeno(1,2,3-cd)pyrene	12.50	13.06	4	30	YES
Dibenz(a,h)anthracene	12.50	13.20	6	30	YES
Benzo(g,h,i)perylene	12.50	12.81	2	30	YES
Total PAHs	225.00	226.57	1	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP20296

Method: SW-846 8270D MINI File ID: lk0082.d

ICV SAMPLE ID: RVBASICV2399 BATCH: 19NOV04026 Sample Name: SSTD12.5

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Benzaldehyde	12.50	15.46	24	30	YES
Caprolactam	12.50	12.62	1	30	YES
Atrazine	12.50	13.11	5	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP20296

Method: SW-846 8270D MINI File ID: lk0083.d

ICV SAMPLE ID: RVHCCPDICV2959 BATCH: 19NOV04026 Sample Name: SSTD25

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
Hexachlorocyclopentadiene	25.00	27.39	10	30	YES

NC = Could not calculate

Comments: _____

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Lancaster Laboratories, Inc.
Semi Volatile Initial Calibration Verification

LAB NAME: LANCASTER LABS | LAB CODE: LANCAS | INSTRUMENT: HP20296

Method: SW-846 8270D MINI | File ID: lk0084.d

ICV SAMPLE ID: RVDMPICV2609 | BATCH: 19NOV04026 | Sample Name: SSTD25

COMPOUND NAME	TRUE CONC.	ACTUAL CONC.	% DRIFT	%D window	INSPEC
2,4-Dimethylphenol	12.50	11.49	-8	30	YES

NC = Could not calculate

Comments: _____

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Page 1 of 1

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SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date: 11/04/19 Time: 10:51

Lab File ID: hk0031a.d Init. Calib. Date(s): 10/29/19 10/30/19

Init. Calib. Times(s): 22:20 01:49

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
1,4-Dioxane	0.758	0.511	5.060	7.5	-33
N-Nitrosodimethylamine	1.100	0.797	5.430	7.5	-28
Pyridine	1.918	1.295	5.060	7.5	-33
2-Picoline	2.030	1.190	4.400	7.5	-41
N-Nitrosomethylethylamine	0.854	0.663	5.820	7.5	-22
Methyl methanesulfonate	0.913	0.719	5.910	7.5	-21
N-Nitrosodiethylamine	0.808	0.758	7.040	7.5	-6
Ethyl methanesulfonate	0.821	0.775	7.090	7.5	-6
Benzaldehyde	1.225	1.018	6.230	7.5	-17
Phenol	2.186	2.106	7.230	7.5	-4
Aniline	2.500	2.389	7.170	7.5	-4
a-methylstyrene	0.632	0.593	7.040	7.5	-6
bis(2-Chloroethyl)ether	1.676	1.531	6.850	7.5	-9
2-Chlorophenol	1.464	1.536	7.870	7.5	5
1,3-Dichlorobenzene	1.561	1.514	7.270	7.5	-3
1,4-Dichlorobenzene	1.589	1.538	7.260	7.5	-3
Benzyl alcohol	0.928	0.959	7.750	7.5	3
1,2-Dichlorobenzene	1.497	1.449	7.260	7.5	-3
Indene	2.176	2.248	7.750	7.5	3
2-Methylphenol	1.344	1.405	7.840	7.5	5
2,2'-oxybis(1-Chloropropane)	3.068	3.307	8.080	7.5	8
bis(2-Chloroisopropyl)ether	3.068	3.307	8.080	7.5	8
N-Nitrosopyrrolidine	0.735	0.783	7.990	7.5	7
Acetophenone	2.064	2.039	7.410	7.5	-1
4-Methylphenol	1.458	1.603	8.250	7.5	10
Total Cresols	1.401	1.504	16.090	15.0	7
N-Nitroso-di-n-propylamine	1.082	1.112	7.710	7.5	3
N-Nitrosomorpholine	1.331	1.527	8.600	7.5	15
o-Toluidine	2.269	2.340	7.730	7.5	3
Hexachloroethane	0.648	0.683	7.900	7.5	5
Nitrobenzene	0.424	0.438	7.750	7.5	3
N-Nitrosopiperidine	0.192	0.205	8.000	7.5	7
Isophorone	0.769	0.810	7.910	7.5	5
2-Nitrophenol	0.197	0.201	7.660	7.5	2
2,4-Dimethylphenol	0.402	0.423	7.900	7.5	5
O,O,O-Triethylphosphorothioate	0.179	0.178	7.440	7.5	-1

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date: 11/04/19 Time: 10:51

Lab File ID: hk0031a.d Init. Calib. Date(s): 10/29/19 10/30/19

Init. Calib. Times(s): 22:20 01:49

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
bis(2-Chloroethoxy)methane	0.479	0.497	7.770	7.5	4
Benzoic acid	0.258	0.268	10.380	10.0	4
2,4-Dichlorophenol	0.298	0.312	7.860	7.5	5
1,2,4-Trichlorobenzene	0.323	0.314	7.300	7.5	-3
Naphthalene	1.082	1.169	8.100	7.5	8
4-Chloroaniline	0.419	0.469	8.390	7.5	12
2,6-Dichlorophenol	0.292	0.309	7.940	7.5	6
Hexachloropropene	0.179	0.180	7.530	7.5	0
Hexachlorobutadiene	0.190	0.190	7.490	7.5	0
Quinoline	0.651	0.719	8.290	7.5	10
Caprolactam	0.106	0.114	8.130	7.5	8
N-Nitrosodi-n-butylamine	0.306	0.292	7.160	7.5	-5
4-Chloro-3-methylphenol	0.331	0.370	8.390	7.5	12
Safrole	0.278	0.282	7.600	7.5	1
2-Methylnaphthalene	0.718	0.736	7.690	7.5	3
1-Methylnaphthalene	0.652	0.688	7.910	7.5	5
Hexachlorocyclopentadiene	0.474	0.431	6.830	7.5	-9
1,2,4,5-Tetrachlorobenzene	0.676	0.624	6.920	7.5	-8
cis-Isosafrole	0.648	0.611	1.200	1.3	-6
2,4,6-Trichlorophenol	0.445	0.446	7.510	7.5	0
2,4,5-Trichlorophenol	0.477	0.469	7.370	7.5	-2
trans-Isosafrole	0.693	0.661	5.930	6.2	-5
Isosafrole	0.686	0.652	7.130	7.5	-5
1,1'-Biphenyl	1.863	1.669	6.720	7.5	-10
2-Chloronaphthalene	1.420	1.324	6.990	7.5	-7
1-Chloronaphthalene	1.333	1.305	7.340	7.5	-2
Diphenyl ether	1.012	0.956	7.090	7.5	-6
2-Nitroaniline	0.492	0.479	7.300	7.5	-3
1,4-Naphthoquinone	0.608	0.600	7.400	7.5	-1
1,4-Dinitrobenzene	0.260	0.248	7.170	7.5	-4
Dimethylphthalate	1.555	1.573	7.590	7.5	1
1,3-Dinitrobenzene	0.288	0.280	7.270	7.5	-3
2,6-Dinitrotoluene	0.356	0.356	7.490	7.5	0
Acenaphthylene	2.294	2.254	7.370	7.5	-2
3-Nitroaniline	0.403	0.381	7.100	7.5	-5
Acenaphthene	1.500	1.489	7.440	7.5	-1

7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date: 11/04/19 Time: 10:51

Lab File ID: hk0031a.d Init. Calib. Date(s): 10/29/19 10/30/19

Init. Calib. Times(s): 22:20 01:49

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
2,4-Dinitrophenol	0.256	0.231	9.000	10.0	-10
4-Nitrophenol	0.277	0.293	7.930	7.5	6
Pentachlorobenzene	0.595	0.582	7.330	7.5	-2
2,4-Dinitrotoluene	0.480	0.461	7.210	7.5	-4
2,4_2,6-Dinitrotoluenes	0.412	0.409	14.700	15.0	-2
Dibenzofuran	2.043	1.997	7.330	7.5	-2
1-Naphthylamine	1.398	1.289	6.920	7.5	-8
2,3,4,6-Tetrachlorophenol	0.391	0.365	6.980	7.5	-7
2-Naphthylamine	1.377	1.154	6.280	7.5	-16
Diethylphthalate	1.699	1.583	6.990	7.5	-7
Thionazin	0.321	0.321	7.490	7.5	0
Fluorene	1.674	1.608	7.200	7.5	-4
4-Chlorophenyl-phenylether	0.777	0.721	6.960	7.5	-7
5-Nitro-o-toluidine	0.487	0.461	7.100	7.5	-5
4-Nitroaniline	0.422	0.400	7.100	7.5	-5
4,6-Dinitro-2-methylphenol	0.156	0.156	7.510	7.5	0
N-Nitrosodiphenylamine (1)	0.738	0.731	7.430	7.5	-1
NDPA as diphenylamine	0.738	0.731	7.430	7.5	-1
1,2-Diphenylhydrazine	0.887	0.914	7.730	7.5	3
Tetraethyldithiopyrophosphate	0.155	0.170	8.220	7.5	10
Diallate (peak 1)	0.415	0.444	6.660	6.2	7
Phorate	0.535	0.568	7.970	7.5	6
Phenacetin	0.449	0.483	8.070	7.5	8
4-Bromophenyl-phenylether	0.215	0.218	7.600	7.5	1
Diallate (peak 2)	0.344	0.365	1.350	1.3	6
Diallate trans/cis	0.403	0.431	8.010	7.5	7
Hexachlorobenzene	0.217	0.257	8.870	7.5	18
Dimethoate	0.342	0.368	8.080	7.5	8
Atrazine	0.193	0.210	8.190	7.5	9
Pentachlorophenol	0.159	0.169	7.950	7.5	6
4-Aminobiphenyl	0.479	0.504	7.890	7.5	5
Pentachloronitrobenzene	0.099	0.110	8.330	7.5	11
Pronamide	0.368	0.400	8.150	7.5	9
Dinoseb	0.232	0.238	7.690	7.5	3
Phenanthrene	1.139	1.171	7.710	7.5	3
Anthracene	1.159	1.206	7.800	7.5	4

(1) Cannot be Separated from Diphenylamine

7C cont
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date: 11/04/19 Time: 10:51

Lab File ID: hk0031a.d Init. Calib. Date(s): 10/29/19 10/30/19

Init. Calib. Times(s): 22:20 01:49

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Carbazole	1.143	1.175	7.710	7.5	3
Methyl parathion	0.287	0.328	8.570	7.5	14
Di-n-butylphthalate	1.531	1.588	7.780	7.5	4
Parathion	0.185	0.187	7.570	7.5	1
4-Nitroquinoline-1-oxide	0.146	0.125	6.400	7.5	-15
Octachlorostyrene	0.092	0.076	6.200	7.5	-17
Isodrin	0.142	0.109	5.780	7.5	-23
Fluoranthene	1.339	1.006	5.630	7.5	-25
Benzidine	0.891	0.856	21.630	22.5	-4
Pyrene	1.456	1.412	7.270	7.5	-3
p-Dimethylaminoazobenzene	0.236	0.236	7.530	7.5	0
Chlorobenzilate	0.483	0.494	7.670	7.5	2
3,3'-Dimethylbenzidine	0.913	0.900	7.390	7.5	-1
Butylbenzylphthalate	0.725	0.722	7.460	7.5	-1
2-Acetylaminofluorene	0.549	0.563	7.700	7.5	3
3,3'-Dichlorobenzidine	0.493	0.503	7.650	7.5	2
4,4'-Methylenebis(2-chloroanil	0.267	0.273	7.680	7.5	2
Benzo(a)anthracene	1.235	1.255	7.620	7.5	2
Chrysene	1.270	1.256	7.410	7.5	-1
bis(2-Ethylhexyl)phthalate	1.039	1.063	7.670	7.5	2
6-Methylchrysene	0.895	0.902	7.560	7.5	1
Di-n-octylphthalate	1.770	1.856	7.860	7.5	5
Benzo(b)fluoranthene	1.223	1.335	8.190	7.5	9
7,12-Dimethylbenz[a]anthracene	0.538	0.570	7.940	7.5	6
Benzo(k)fluoranthene	1.239	1.254	7.590	7.5	1
Benzo(a)pyrene	1.170	1.201	7.700	7.5	3
3-Methylcholanthrene	0.528	0.623	8.850	7.5	18
Dibenz(a,h)acridine	0.978	1.123	8.610	7.5	15
Dibenz(a,j)acridine	0.967	1.109	8.600	7.5	15
Indeno(1,2,3-cd)pyrene	1.060	1.235	8.740	7.5	17
Dibenz(a,h)anthracene	1.081	1.301	9.020	7.5	20
Benzo(g,h,i)perylene	1.108	1.303	8.820	7.5	18
Total PAHs	1.135	1.319	139.240	135.0	3
2-Fluorophenol	1.538	1.513	14.750	15.0	-2
Phenol-d6	1.984	1.895	14.330	15.0	-4

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SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP18831 Calibration Date: 11/04/19 Time: 10:51

Lab File ID: hk0031a.d Init. Calib. Date(s): 10/29/19 10/30/19

Init. Calib. Times(s): 22:20 01:49

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Nitrobenzene-d5	0.421	0.440	15.690	15.0	5
2-Fluorobiphenyl	1.676	1.609	14.400	15.0	-4
2,4,6-Tribromophenol	0.227	0.249	16.420	15.0	9
Terphenyl-d14	0.918	0.869	14.200	15.0	-5
			Average %Drift:		7

Continuing Calibration
Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP18831.i/19oct29d.b/hj1601d.d
/chem/HP18831.i/19oct29d.b/hj1602d.d
/chem/HP18831.i/19oct29d.b/hj1603d.d
/chem/HP18831.i/19oct29d.b/hj1604d.d
/chem/HP18831.i/19oct29d.b/hj1605d.d **
/chem/HP18831.i/19oct29d.b/hj1606d.d
/chem/HP18831.i/19oct29d.b/hj1607d.d
/chem/HP18831.i/19oct29d.b/hj1608d.d

** indicates the Mid Level Calibration Standard.

Mid Level Calibration Standard is used for comparison.

Current Continuing Calibration Standard:

/chem/HP18831.i/19nov04.b/hk0031a.d

Area Summary

File ID:

Internal Standard Name	hk0031a.d	ICAL Area	Low Limit	High Limit	In Spec
1,4-Dichlorobenzene-d4	216328	197833	98916	395666	Yes
Naphthalene-d8	804839	766200	383100	1532400	Yes
Acenaphthene-d10	400760	360600	180300	721200	Yes
Phenanthrene-d10	733649	697178	348589	1394356	Yes
Pyrene-d10	532805	702269	351134	1404538	Yes
Perylene-d12	546055	727451	363726	1454902	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

RT Summary

File ID:

Internal Standard Name	hk0031a.d	ICAL RT	In Spec
1,4-Dichlorobenzene-d4	6.930	7.034	Yes
Naphthalene-d8	8.865	8.970	Yes
Acenaphthene-d10	11.651	11.744	Yes
Phenanthrene-d10	13.528	13.621	Yes
Pyrene-d10	15.515	15.626	Yes
Perylene-d12	20.015	20.143	Yes

A "No" indicates the retention time is greater than 10 seconds from the RT of the referenced standard.

Comments: _____

Report generated on 11/04/2019 at 11:31

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 07:13

Lab File ID: lk0091.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
1,4-Dioxane	0.969	1.009	7.810	7.5	4
N-Nitrosodimethylamine	1.648	1.625	7.390	7.5	-1
Pyridine	2.803	2.722	7.280	7.5	-3
2-Picoline	2.641	2.618	7.430	7.5	-1
N-Nitrosomethylethylamine	1.099	1.099	7.510	7.5	0
Methyl methanesulfonate	1.311	1.320	7.550	7.5	1
N-Nitrosodiethylamine	1.000	0.981	7.360	7.5	-2
Ethyl methanesulfonate	1.026	1.016	7.430	7.5	-1
Benzaldehyde	1.895	1.528	6.050	7.5	-19
Phenol	3.216	3.204	7.470	7.5	0
Aniline	3.797	3.676	7.260	7.5	-3
a-methylstyrene	0.756	0.752	7.470	7.5	0
bis(2-Chloroethyl)ether	2.489	2.419	7.290	7.5	-3
2-Chlorophenol	1.667	1.608	7.230	7.5	-4
1,3-Dichlorobenzene	1.700	1.640	7.240	7.5	-4
1,4-Dichlorobenzene	1.697	1.670	7.380	7.5	-2
Benzyl alcohol	1.322	1.282	7.270	7.5	-3
1,2-Dichlorobenzene	1.662	1.549	6.990	7.5	-7
Indene	2.996	2.899	7.260	7.5	-3
2-Methylphenol	1.884	1.832	7.290	7.5	-3
2,2'-oxybis(1-Chloropropane)	2.782	2.676	7.210	7.5	-4
bis(2-Chloroisopropyl)ether	2.782	2.676	7.210	7.5	-4
N-Nitrosopyrrolidine	1.137	1.073	7.080	7.5	-6
Acetophenone	3.124	3.151	7.570	7.5	1
4-Methylphenol	2.061	1.939	7.060	7.5	-6
Total Cresols	1.973	1.886	14.350	15.0	-4
N-Nitroso-di-n-propylamine	2.048	2.025	7.420	7.5	-1
N-Nitrosomorpholine	1.299	1.299	7.500	7.5	0
o-Toluidine	3.356	3.263	7.290	7.5	-3
Hexachloroethane	0.881	0.853	7.260	7.5	-3
Nitrobenzene	0.688	0.727	7.930	7.5	6
N-Nitrosopiperidine	0.229	0.233	7.640	7.5	2
Isophorone	1.227	1.245	7.610	7.5	1
2-Nitrophenol	0.148	0.133	6.740	7.5	-10
2,4-Dimethylphenol	0.516	0.506	7.350	7.5	-2
O,O,O-Triethylphosphorothioate	0.138	0.138	7.500	7.5	0

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7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 07:13

Lab File ID: lk0091.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
bis(2-Chloroethoxy)methane	0.737	0.756	7.690	7.5	3
Benzoic acid	0.218	0.197	9.030	10.0	-10
2,4-Dichlorophenol	0.271	0.270	7.470	7.5	0
1,2,4-Trichlorobenzene	0.282	0.290	7.710	7.5	3
Naphthalene	1.170	1.193	7.650	7.5	2
4-Chloroaniline	0.481	0.497	7.750	7.5	3
2,6-Dichlorophenol	0.255	0.266	7.840	7.5	5
Hexachloropropene	0.134	0.132	7.370	7.5	-2
Hexachlorobutadiene	0.140	0.138	7.390	7.5	-1
Quinoline	0.706	0.684	7.270	7.5	-3
Caprolactam	0.120	0.116	7.290	7.5	-3
N-Nitrosodi-n-butylamine	0.472	0.446	7.080	7.5	-6
4-Chloro-3-methylphenol	0.424	0.428	7.580	7.5	1
Safrole	0.242	0.245	7.610	7.5	1
2-Methylnaphthalene	0.686	0.707	7.730	7.5	3
1-Methylnaphthalene	0.666	0.653	7.350	7.5	-2
Hexachlorocyclopentadiene	0.333	0.337	7.590	7.5	1
1,2,4,5-Tetrachlorobenzene	0.572	0.569	7.470	7.5	0
cis-Isosafrole	0.648	0.628	1.240	1.3	-3
2,4,6-Trichlorophenol	0.369	0.354	7.200	7.5	-4
2,4,5-Trichlorophenol	0.398	0.412	7.760	7.5	4
trans-Isosafrole	0.678	0.685	6.280	6.2	1
Isosafrole	0.673	0.675	7.520	7.5	0
1,1'-Biphenyl	1.874	1.903	7.620	7.5	2
2-Chloronaphthalene	1.516	1.448	7.160	7.5	-5
1-Chloronaphthalene	1.320	1.413	8.020	7.5	7
Diphenyl ether	0.919	0.915	7.470	7.5	0
2-Nitroaniline	0.481	0.478	7.460	7.5	-1
1,4-Naphthoquinone	0.616	0.593	7.220	7.5	-4
1,4-Dinitrobenzene	0.167	0.161	7.210	7.5	-4
Dimethylphthalate	1.571	1.606	7.670	7.5	2
1,3-Dinitrobenzene	0.205	0.207	7.580	7.5	1
2,6-Dinitrotoluene	0.324	0.338	7.810	7.5	4
Acenaphthylene	2.253	2.225	7.410	7.5	-1
3-Nitroaniline	0.423	0.403	7.140	7.5	-5
Acenaphthene	1.550	1.573	7.610	7.5	1

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 07:13

Lab File ID: lk0091.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
2,4-Dinitrophenol	0.081	0.066	9.460	10.0	-5
4-Nitrophenol	0.343	0.305	6.670	7.5	-11
Pentachlorobenzene	0.467	0.461	7.410	7.5	-1
2,4-Dinitrotoluene	0.415	0.428	7.740	7.5	3
2,4_2,6-Dinitrotoluenes	0.361	0.383	15.540	15.0	4
Dibenzofuran	1.899	1.897	7.490	7.5	0
1-Naphthylamine	1.568	1.526	7.300	7.5	-3
2,3,4,6-Tetrachlorophenol	0.242	0.230	7.110	7.5	-5
2-Naphthylamine	1.510	1.467	7.280	7.5	-3
Diethylphthalate	1.701	1.705	7.520	7.5	0
Thionazin	0.432	0.435	7.560	7.5	1
Fluorene	1.547	1.480	7.180	7.5	-4
4-Chlorophenyl-phenylether	0.605	0.627	7.780	7.5	4
5-Nitro-o-toluidine	0.441	0.454	7.730	7.5	3
4-Nitroaniline	0.424	0.430	7.600	7.5	1
4,6-Dinitro-2-methylphenol	0.074	0.057	5.740	7.5	-23
N-Nitrosodiphenylamine (1)	0.751	0.739	7.380	7.5	-2
NDPA as diphenylamine	0.751	0.739	7.380	7.5	-2
1,2-Diphenylhydrazine	1.881	1.882	7.500	7.5	0
Tetraethyldithiopyrophosphate	0.278	0.295	7.960	7.5	6
Diallate (peak 1)	0.772	0.797	6.430	6.2	3
Phorate	1.160	1.206	7.800	7.5	4
Phenacetin	0.731	0.744	7.640	7.5	2
4-Bromophenyl-phenylether	0.180	0.179	7.470	7.5	0
Diallate (peak 2)	0.663	0.679	1.310	1.3	3
Diallate trans/cis	0.753	0.777	7.730	7.5	3
Hexachlorobenzene	0.213	0.207	7.300	7.5	-3
Dimethoate	0.687	0.688	7.500	7.5	0
Atrazine	0.201	0.205	7.630	7.5	2
Pentachlorophenol	0.108	0.102	7.120	7.5	-5
4-Aminobiphenyl	0.552	0.553	7.520	7.5	0
Pentachloronitrobenzene	0.087	0.091	7.820	7.5	4
Pronamide	0.419	0.420	7.510	7.5	0
Dinoseb	0.107	0.087	7.220	7.5	-4
Phenanthrene	1.236	1.214	7.370	7.5	-2
Anthracene	1.223	1.249	7.660	7.5	2

(1) Cannot be Separated from Diphenylamine

7C cont
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 07:13

Lab File ID: 1k0091.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Carbazole	1.225	1.197	7.330	7.5	-2
Methyl parathion	0.433	0.415	7.190	7.5	-4
Di-n-butylphthalate	1.806	1.808	7.510	7.5	0
Parathion	0.282	0.274	7.280	7.5	-3
4-Nitroquinoline-1-oxide	0.111	0.091	7.000	7.5	-7
Octachlorostyrene	0.086	0.087	7.600	7.5	1
Isodrin	0.150	0.143	7.160	7.5	-5
Fluoranthene	1.243	1.244	7.510	7.5	0
Benzidine	0.940	0.907	21.710	22.5	-4
Pyrene	1.406	1.386	7.390	7.5	-1
p-Dimethylaminoazobenzene	0.198	0.188	7.130	7.5	-5
Chlorobenzilate	0.626	0.613	7.350	7.5	-2
3,3'-Dimethylbenzidine	0.874	0.814	6.980	7.5	-7
Butylbenzylphthalate	0.849	0.852	7.530	7.5	0
2-Acetylaminofluorene	0.579	0.547	7.080	7.5	-6
3,3'-Dichlorobenzidine	0.458	0.443	7.260	7.5	-3
4,4'-Methylenebis(2-chloroanil	0.232	0.235	7.590	7.5	1
Benzo(a)anthracene	1.155	1.172	7.610	7.5	1
Chrysene	1.177	1.192	7.590	7.5	1
bis(2-Ethylhexyl)phthalate	1.255	1.255	7.500	7.5	0
6-Methylchrysene	0.825	0.808	7.340	7.5	-2
Di-n-octylphthalate	2.368	2.381	7.540	7.5	1
Benzo(b)fluoranthene	1.273	1.297	7.640	7.5	2
7,12-Dimethylbenz[a]anthracene	0.540	0.547	7.590	7.5	1
Benzo(k)fluoranthene	1.280	1.295	7.590	7.5	1
Benzo(a)pyrene	1.186	1.237	7.820	7.5	4
3-Methylcholanthrene	0.540	0.533	7.400	7.5	-1
Dibenz(a,h)acridine	0.991	1.009	7.640	7.5	2
Dibenz(a,j)acridine	0.985	1.014	7.720	7.5	3
Indeno(1,2,3-cd)pyrene	1.082	1.178	8.160	7.5	9
Dibenz(a,h)anthracene	1.132	1.221	8.090	7.5	8
Benzo(g,h,i)perylene	1.139	1.167	7.690	7.5	2
Total PAHs	1.286	1.286	137.030	135.0	2
2-Fluorophenol	1.865	1.862	14.980	15.0	0
Phenol-d6	2.687	2.631	14.690	15.0	-2

FORM VII SV-1

7C cont

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 07:13

Lab File ID: lk0091.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Nitrobenzene-d5	0.641	0.653	15.280	15.0	2
2-Fluorobiphenyl	1.527	1.553	15.260	15.0	2
2,4,6-Tribromophenol	0.149	0.146	14.620	15.0	-3
Terphenyl-d14	0.775	0.756	14.640	15.0	-2
			Average %Drift:		3

FORM VII SV-1

Continuing Calibration
Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP20296.i/19nov04.b/lk0071.d **
/chem/HP20296.i/19nov04.b/lk0072.d
/chem/HP20296.i/19nov04.b/lk0073.d
/chem/HP20296.i/19nov04.b/lk0074.d
/chem/HP20296.i/19nov04.b/lk0075.d
/chem/HP20296.i/19nov04.b/lk0076.d
/chem/HP20296.i/19nov04.b/lk0077.d
/chem/HP20296.i/19nov04.b/lk0078.d

** indicates the Mid Level Calibration Standard.

Mid Level Calibration Standard is used for comparison.

Current Continuing Calibration Standard:

/chem/HP20296.i/19nov05.b/lk0091.d

Area Summary

File ID:

Internal Standard Name	lk0091.d	ICAL Area	Low Limit	High Limit	In Spec
1,4-Dichlorobenzene-d4	150928	151514	75757	303028	Yes
Naphthalene-d8	604221	638706	319353	1277412	Yes
Acenaphthene-d10	255085	272181	136090	544362	Yes
Phenanthrene-d10	442737	471785	235892	943570	Yes
Pyrene-d10	421173	442937	221468	885874	Yes
Perylene-d12	387856	388516	194258	777032	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

RT Summary

File ID:

Internal Standard Name	lk0091.d	ICAL RT	In Spec
1,4-Dichlorobenzene-d4	7.038	7.038	Yes
Naphthalene-d8	9.022	9.023	Yes
Acenaphthene-d10	11.847	11.841	Yes
Phenanthrene-d10	13.772	13.772	Yes
Pyrene-d10	15.831	15.832	Yes
Perylene-d12	20.431	20.431	Yes

A "No" indicates the retention time is greater than 10 seconds from the RT of the referenced standard.

Comments: _____

Report generated on 11/05/2019 at 07:54

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 19:34

Lab File ID: lk0152.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
1,4-Dioxane	0.969	1.000	7.750	7.5	3
N-Nitrosodimethylamine	1.648	1.699	7.730	7.5	3
Pyridine	2.803	2.821	7.550	7.5	1
2-Picoline	2.641	2.664	7.560	7.5	1
N-Nitrosomethylethylamine	1.099	1.157	7.900	7.5	5
Methyl methanesulfonate	1.311	1.370	7.840	7.5	5
N-Nitrosodiethylamine	1.000	1.014	7.600	7.5	1
Ethyl methanesulfonate	1.026	1.084	7.920	7.5	6
Benzaldehyde	1.895	1.832	7.250	7.5	-3
Phenol	3.216	3.275	7.640	7.5	2
Aniline	3.797	3.783	7.470	7.5	0
a-methylstyrene	0.756	0.760	7.540	7.5	0
bis(2-Chloroethyl)ether	2.489	2.539	7.650	7.5	2
2-Chlorophenol	1.667	1.701	7.650	7.5	2
1,3-Dichlorobenzene	1.700	1.674	7.390	7.5	-2
1,4-Dichlorobenzene	1.697	1.703	7.520	7.5	0
Benzyl alcohol	1.322	1.306	7.410	7.5	-1
1,2-Dichlorobenzene	1.662	1.635	7.380	7.5	-2
Indene	2.996	3.000	7.510	7.5	0
2-Methylphenol	1.884	1.960	7.800	7.5	4
2,2'-oxybis(1-Chloropropane)	2.782	2.824	7.610	7.5	2
bis(2-Chloroisopropyl)ether	2.782	2.824	7.610	7.5	2
N-Nitrosopyrrolidine	1.137	1.176	7.760	7.5	3
Acetophenone	3.124	3.012	7.230	7.5	-4
4-Methylphenol	2.061	2.007	7.300	7.5	-3
Total Cresols	1.973	1.983	15.100	15.0	1
N-Nitroso-di-n-propylamine	2.048	2.133	7.810	7.5	4
N-Nitrosomorpholine	1.299	1.410	8.140	7.5	9
o-Toluidine	3.356	3.462	7.740	7.5	3
Hexachloroethane	0.881	0.919	7.820	7.5	4
Nitrobenzene	0.688	0.713	7.770	7.5	4
N-Nitrosopiperidine	0.229	0.235	7.720	7.5	3
Isophorone	1.227	1.230	7.520	7.5	0
2-Nitrophenol	0.148	0.150	7.630	7.5	2
2,4-Dimethylphenol	0.516	0.517	7.520	7.5	0
O,O,O-Triethylphosphorothioate	0.138	0.137	7.440	7.5	-1

FORM VII SV-1

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 19:34

Lab File ID: lk0152.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
bis(2-Chloroethoxy)methane	0.737	0.772	7.850	7.5	5
Benzoic acid	0.218	0.226	10.380	10.0	4
2,4-Dichlorophenol	0.271	0.270	7.470	7.5	0
1,2,4-Trichlorobenzene	0.282	0.279	7.410	7.5	-1
Naphthalene	1.170	1.169	7.500	7.5	0
4-Chloroaniline	0.481	0.488	7.600	7.5	1
2,6-Dichlorophenol	0.255	0.267	7.850	7.5	5
Hexachloropropene	0.134	0.131	7.300	7.5	-3
Hexachlorobutadiene	0.140	0.138	7.400	7.5	-1
Quinoline	0.706	0.712	7.570	7.5	1
Caprolactam	0.120	0.112	7.000	7.5	-7
N-Nitrosodi-n-butylamine	0.472	0.454	7.210	7.5	-4
4-Chloro-3-methylphenol	0.424	0.437	7.730	7.5	3
Safrole	0.242	0.251	7.780	7.5	4
2-Methylnaphthalene	0.686	0.707	7.740	7.5	3
1-Methylnaphthalene	0.666	0.649	7.310	7.5	-3
Hexachlorocyclopentadiene	0.333	0.323	7.290	7.5	-3
1,2,4,5-Tetrachlorobenzene	0.572	0.561	7.360	7.5	-2
cis-Isosafrole	0.648	0.642	1.260	1.3	-1
2,4,6-Trichlorophenol	0.369	0.386	7.860	7.5	5
2,4,5-Trichlorophenol	0.398	0.433	8.170	7.5	9
trans-Isosafrole	0.678	0.705	6.470	6.2	4
Isosafrole	0.673	0.694	7.730	7.5	3
1,1'-Biphenyl	1.874	1.795	7.180	7.5	-4
2-Chloronaphthalene	1.516	1.473	7.290	7.5	-3
1-Chloronaphthalene	1.320	1.390	7.890	7.5	5
Diphenyl ether	0.919	0.919	7.500	7.5	0
2-Nitroaniline	0.481	0.505	7.880	7.5	5
1,4-Naphthoquinone	0.616	0.624	7.590	7.5	1
1,4-Dinitrobenzene	0.167	0.191	8.550	7.5	14
Dimethylphthalate	1.571	1.667	7.960	7.5	6
1,3-Dinitrobenzene	0.205	0.229	8.400	7.5	12
2,6-Dinitrotoluene	0.324	0.353	8.170	7.5	9
Acenaphthylene	2.253	2.319	7.720	7.5	3
3-Nitroaniline	0.423	0.435	7.720	7.5	3
Acenaphthene	1.550	1.565	7.570	7.5	1

FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 19:34

Lab File ID: 1k0152.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
2,4-Dinitrophenol	0.081	0.091	11.650	10.0	16
4-Nitrophenol	0.343	0.361	7.890	7.5	5
Pentachlorobenzene	0.467	0.473	7.600	7.5	1
2,4-Dinitrotoluene	0.415	0.451	8.150	7.5	9
2,4_2,6-Dinitrotoluenes	0.361	0.402	16.320	15.0	9
Dibenzofuran	1.899	1.942	7.670	7.5	2
1-Naphthylamine	1.568	1.545	7.390	7.5	-1
2,3,4,6-Tetrachlorophenol	0.242	0.261	8.080	7.5	8
2-Naphthylamine	1.510	1.533	7.610	7.5	2
Diethylphthalate	1.701	1.765	7.780	7.5	4
Thionazin	0.432	0.413	7.160	7.5	-4
Fluorene	1.547	1.524	7.390	7.5	-1
4-Chlorophenyl-phenylether	0.605	0.019	7.430	7.5	-1
5-Nitro-o-toluidine	0.441	0.474	8.070	7.5	8
4-Nitroaniline	0.424	0.463	8.190	7.5	9
4,6-Dinitro-2-methylphenol	0.074	0.076	7.660	7.5	2
N-Nitrosodiphenylamine (1)	0.751	0.749	7.470	7.5	0
NDPA as diphenylamine	0.751	0.749	7.470	7.5	0
1,2-Diphenylhydrazine	1.881	1.918	7.650	7.5	2
Tetraethyldithiopyrophosphate	0.278	0.293	7.920	7.5	6
Diallate (peak 1)	0.772	0.786	6.340	6.2	2
Phorate	1.160	1.211	7.830	7.5	4
Phenacetin	0.731	0.752	7.720	7.5	3
4-Bromophenyl-phenylether	0.180	0.185	7.690	7.5	3
Diallate (peak 2)	0.663	0.691	1.330	1.3	4
Diallate trans/cis	0.753	0.770	7.670	7.5	2
Hexachlorobenzene	0.213	0.217	7.650	7.5	2
Dimethoate	0.687	0.695	7.580	7.5	1
Atrazine	0.201	0.199	7.410	7.5	-1
Pentachlorophenol	0.108	0.116	8.090	7.5	8
4-Aminobiphenyl	0.552	0.556	7.560	7.5	1
Pentachloronitrobenzene	0.087	0.089	7.660	7.5	2
Pronamide	0.419	0.430	7.700	7.5	3
Dinoseb	0.107	0.106	8.130	7.5	8
Phenanthrene	1.236	1.215	7.370	7.5	-2
Anthracene	1.223	1.271	7.790	7.5	4

(1) Cannot be Separated from Diphenylamine

7C cont
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 19:34

Lab File ID: lk0152.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Carbazole	1.225	1.228	7.510	7.5	0
Methyl parathion	0.433	0.462	8.010	7.5	7
Di-n-butylphthalate	1.806	1.843	7.650	7.5	2
Parathion	0.282	0.300	7.970	7.5	6
4-Nitroquinoline-1-oxide	0.111	0.105	7.680	7.5	2
Octachlorostyrene	0.086	0.084	7.330	7.5	-2
Isodrin	0.150	0.148	7.370	7.5	-2
Fluoranthene	1.243	1.284	7.740	7.5	3
Benzidine	0.940	0.937	22.430	22.5	0
Pyrene	1.406	1.394	7.430	7.5	-1
p-Dimethylaminoazobenzene	0.198	0.195	7.400	7.5	-1
Chlorobenzilate	0.626	0.637	7.640	7.5	2
3,3'-Dimethylbenzidine	0.874	0.881	7.560	7.5	1
Butylbenzylphthalate	0.849	0.873	7.710	7.5	3
2-Acetylaminofluorene	0.579	0.561	7.270	7.5	-3
3,3'-Dichlorobenzidine	0.458	0.471	7.710	7.5	3
4,4'-Methylenebis(2-chloroanil	0.232	0.240	7.750	7.5	3
Benzo(a)anthracene	1.155	1.197	7.770	7.5	4
Chrysene	1.177	1.197	7.630	7.5	2
bis(2-Ethylhexyl)phthalate	1.255	1.289	7.700	7.5	3
6-Methylchrysene	0.825	0.832	7.560	7.5	1
Di-n-octylphthalate	2.368	2.432	7.700	7.5	3
Benzo(b)fluoranthene	1.273	1.298	7.650	7.5	2
7,12-Dimethylbenz[a]anthracene	0.540	0.502	6.960	7.5	-7
Benzo(k)fluoranthene	1.280	1.273	7.460	7.5	-1
Benzo(a)pyrene	1.186	1.236	7.810	7.5	4
3-Methylcholanthrene	0.540	0.533	7.400	7.5	-1
Dibenz(a,h)acridine	0.991	1.005	7.610	7.5	1
Dibenz(a,j)acridine	0.985	0.978	7.450	7.5	-1
Indeno(1,2,3-cd)pyrene	1.082	1.133	7.850	7.5	5
Dibenz(a,h)anthracene	1.132	1.186	7.860	7.5	5
Benzo(g,h,i)perylene	1.139	1.164	7.670	7.5	2
Total PAHs	1.286	1.261	137.270	135.0	2
2-Fluorophenol	1.865	1.878	15.100	15.0	1
Phenol-d6	2.687	2.769	15.460	15.0	3

FORM VII SV-1

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Instrument ID: HP20296 Calibration Date: 11/05/19 Time: 19:34

Lab File ID: lk0152.d Init. Calib. Date(s): 11/04/19 11/04/19

Init. Calib. Times(s): 14:10 17:55

Min RRF for SPCC(#) = 0.050 Max %Drift for CCC(*) = 20%

COMPOUND	RRF	RRF7.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
Nitrobenzene-d5	0.641	0.658	15.420	15.0	3
2-Fluorobiphenyl	1.527	1.545	15.180	15.0	1
2,4,6-Tribromophenol	0.149	0.150	15.070	15.0	0
Terphenyl-d14	0.775	0.763	14.780	15.0	-1
			Average %Drift:		3

Continuing Calibration
Internal Standard Area and Retention Time Summary

Initial Calibration Standards:

/chem/HP20296.i/19nov04.b/lk0071.d **
/chem/HP20296.i/19nov04.b/lk0072.d
/chem/HP20296.i/19nov04.b/lk0073.d
/chem/HP20296.i/19nov04.b/lk0074.d
/chem/HP20296.i/19nov04.b/lk0075.d
/chem/HP20296.i/19nov04.b/lk0076.d
/chem/HP20296.i/19nov04.b/lk0077.d
/chem/HP20296.i/19nov04.b/lk0078.d

** indicates the Mid Level Calibration Standard.

Mid Level Calibration Standard is used for comparison.

Current Continuing Calibration Standard:

/chem/HP20296.i/19nov05a.b/lk0152.d

Area Summary

File ID:

Internal Standard Name	lk0152.d	ICAL Area	Low Limit	High Limit	In Spec
1,4-Dichlorobenzene-d4	207641	151514	75757	303028	Yes
Naphthalene-d8	880046	638706	319353	1277412	Yes
Acenaphthene-d10	372899	272181	136090	544362	Yes
Phenanthrene-d10	660552	471785	235892	943570	Yes
Pyrene-d10	635061	442937	221468	885874	Yes
Perylene-d12	593009	388516	194258	777032	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

RT Summary

File ID:

Internal Standard Name	lk0152.d	ICAL RT	In Spec
1,4-Dichlorobenzene-d4	7.037	7.038	Yes
Naphthalene-d8	9.022	9.023	Yes
Acenaphthene-d10	11.846	11.841	Yes
Phenanthrene-d10	13.777	13.772	Yes
Pyrene-d10	15.836	15.832	Yes
Perylene-d12	20.436	20.431	Yes

A "No" indicates the retention time is greater than 10 seconds from the RT of the referenced standard.

Comments: _____

Report generated on 11/05/2019 at 21:28

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hk0031a.d Date Analyzed: 11/04/19

Instrument ID: HP18831 Time Analyzed: 10:51

	IS1(DCB)		IS2(NPT)		IS3(ANT)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	216328	6.930	804839	8.865	400760	11.651
UPPER LIMIT	432656	7.430	1609678	9.365	801520	12.151
LOWER LIMIT	108164	6.430	402420	8.365	200380	11.151
LLI SAMPLE NO.						
01 SBLKWC302	155681	6.930	408267	8.865	288852	11.645
02 SBLKWX302	155681	6.930	408267	8.865	288852	11.645
03 SBLKWY302	155681	6.930	408267	8.865	288852	11.645
04 302WCLCS	133049	6.929	614048	8.865	291064	11.651
05 302WXLCS	133049	6.929	614048	8.865	291064	11.651
06 302WYLCS	133049	6.929	614048	8.865	291064	11.651
07 1184294	166843	6.930	647185	8.865	300725	11.645
08 302WXUS	166843	6.930	647185	8.865	300725	11.645
09 302WYUS	166843	6.930	647185	8.865	300725	11.645
10 1184295MS	119981	6.929	622474	8.865	201548	11.651
11 302WXMS	119981	6.929	622474	8.865	201548	11.651
12 302WYMS	119981	6.929	622474	8.865	201548	11.651
13 1184296MSD	163890	6.929	606536	8.865	284534	11.651
14 302WXMSD	163890	6.929	606536	8.865	284534	11.651
15 302WYMSD	163890	6.929	606536	8.865	284534	11.651
16 1184298	176405	6.930	650225	8.865	308293	11.645
17 1184305	167724	6.930	640091	8.865	295609	11.645

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hk0031a.d Date Analyzed: 11/04/19

Instrument ID: HP18831 Time Analyzed: 10:51

		IS4(PHN)		IS5(PYR)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	733649	13.528	532805	15.515	546055	20.015
	UPPER LIMIT	1467298	14.028	1065610	16.015	1092110	20.515
	LOWER LIMIT	366825	13.028	266403	15.015	273028	19.515
	LLI SAMPLE NO.						
01	SBLKWC302	535790	13.528	373894	15.509	381397	20.009
02	SBLKWX302	535790	13.528	373894	15.509	381397	20.009
03	SBLKWY302	535790	13.528	373894	15.509	381397	20.009
04	302WCLCS	497321	13.528	381491	15.515	392983	20.015
05	302WXLCS	497321	13.528	381491	15.515	392983	20.015
06	302WYLCS	497321	13.528	381491	15.515	392983	20.015
07	1184294	557552	13.528	534834	15.515	431533	20.009
08	302WXUS	557552	13.528	534834	15.515	431533	20.009
09	302WYUS	557552	13.528	534834	15.515	431533	20.009
10	1184295MS	387355	13.527	411742	15.515	443141	20.015
11	302WXMS	387355	13.527	411742	15.515	443141	20.015
12	302WYMS	387355	13.527	411742	15.515	443141	20.015
13	1184296MSD	507535	13.527	514325	15.515	481185	20.009
14	302WXMSD	507535	13.527	514325	15.515	481185	20.009
15	302WYMSD	507535	13.527	514325	15.515	481185	20.009
16	1184298	589844	13.528	564565	15.515	558668	20.009
17	1184305	543660	13.528	527533	15.515	501284	20.009

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hk0031a.d Date Analyzed: 11/04/19

Instrument ID: HP18831 Time Analyzed: 10:51

		IS1(DCB)		IS2(NPT)		IS3(ANT)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	216328	6.930	804839	8.865	400760	11.651
	UPPER LIMIT	432656	7.430	1609678	9.365	801520	12.151
	LOWER LIMIT	108164	6.430	402420	8.365	200380	11.151
	LLI SAMPLE NO.						
18	1183008	166469	6.929	626883	8.865	293293	11.645
19	1183614	166879	6.930	633440	8.865	289703	11.645
20	1183616	143263	6.930	597749	8.865	265571	11.645
21	1183617	121504	6.929	436703	8.865	261297	11.645
22	1183618	156345	6.930	424093	8.865	296147	11.645

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): hk0031a.d Date Analyzed: 11/04/19

Instrument ID: HP18831 Time Analyzed: 10:51

		IS4(PHN)		IS5(PYR)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	733649	13.528	532805	15.515	546055	20.015
	UPPER LIMIT	1467298	14.028	1065610	16.015	1092110	20.515
	LOWER LIMIT	366825	13.028	266403	15.015	273028	19.515
	LLI SAMPLE NO.						
18	1183008	553339	13.527	526580	15.515	528935	20.009
19	1183614	562497	13.528	516883	15.515	519180	20.009
20	1183616	438044	13.528	482132	15.509	426047	20.009
21	1183617	559885	13.527	518649	15.509	390558	20.009
22	1183618	402757	13.528	375437	15.515	385964	20.009

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0091.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 07:13

		IS1(DCB)		IS2(NPT)		IS3(ANT)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	150928	7.038	604221	9.022	255085	11.847
	UPPER LIMIT	301856	7.538	1208442	9.522	510170	12.347
	LOWER LIMIT	75464	6.538	302111	8.522	127543	11.347
	LLI SAMPLE NO.						
01	SBLKWA308	156638	7.038	636715	9.023	260272	11.841
02	308WALCS	139538	7.043	617474	9.022	262270	11.846
03	308WALCSD	149643	7.043	620478	9.022	263952	11.846
04	SBLKWD308	151495	7.038	653111	9.017	267249	11.841
05	308WDLCS	153916	7.043	629560	9.022	268343	11.841
06	308WDLCSD	148749	7.044	621300	9.023	259811	11.847
07	SBLKWG303	152635	7.043	635394	9.017	267408	11.841
08	303WGLCS	152551	7.043	638076	9.022	260703	11.847
09	1190888	152002	7.038	651412	9.023	271728	11.841
10	1190889	182360	7.038	765766	9.022	339681	11.841
11	1190890	176123	7.043	735218	9.022	319846	11.841
12	1190786	169183	7.043	693621	9.022	302190	11.841
13	1183606	155828	7.038	647636	9.023	262078	11.842
14	1183607	149819	7.038	629463	9.022	269779	11.841
15	1183608	147383	7.043	619424	9.022	248389	11.841
16	1183609	149715	7.038	589101	9.022	251294	11.841
17	1183610MS	152800	7.044	635308	9.023	261577	11.847

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0091.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 07:13

		IS4(PHN)		IS5(PYR)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	442737	13.772	421173	15.831	387856	20.431
	UPPER LIMIT	885474	14.272	842346	16.331	775712	20.931
	LOWER LIMIT	221369	13.272	210587	15.331	193928	19.931
	LLI SAMPLE NO.						
01	SBLKWA308	429223	13.772	394865	15.831	362399	20.431
02	308WALCS	428491	13.772	425581	15.831	376862	20.431
03	308WALCSD	445570	13.772	430890	15.831	380602	20.431
04	SBLKWD308	470453	13.772	422972	15.831	380714	20.431
05	308WDLCS	455471	13.772	432675	15.831	411517	20.431
06	308WDLCSD	456328	13.772	436393	15.831	401493	20.431
07	SBLKWG303	471695	13.767	434406	15.831	368596	20.431
08	303WGLCS	447387	13.772	441498	15.831	406229	20.431
09	1190888	490722	13.772	439090	15.831	413388	20.431
10	1190889	598447	13.772	553373	15.831	490789	20.431
11	1190890	574011	13.772	518264	15.831	480454	20.431
12	1190786	533876	13.772	481198	15.831	425592	20.431
13	1183606	454524	13.772	407380	15.832	377568	20.431
14	1183607	450357	13.772	418327	15.831	372170	20.431
15	1183608	441436	13.772	396632	15.831	348498	20.431
16	1183609	447439	13.772	399494	15.831	355188	20.431
17	1183610MS	456527	13.772	450994	15.831	411397	20.431

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0091.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 07:13

		IS1(DCB)		IS2(NPT)		IS3(ANT)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	150928	7.038	604221	9.022	255085	11.847
	UPPER LIMIT	301856	7.538	1208442	9.522	510170	12.347
	LOWER LIMIT	75464	6.538	302111	8.522	127543	11.347
	LLI SAMPLE NO.						
18	1183611MSD	151132	7.044	642684	9.023	266629	11.841
19	1183612	155678	7.038	654967	9.017	273897	11.841
20	rvSTD2709	254846	7.038	1036322	9.023	436064	11.847

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0091.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 07:13

		IS4(PHN)		IS5(PYR)		IS6(PRY)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	442737	13.772	421173	15.831	387856	20.431
	UPPER LIMIT	885474	14.272	842346	16.331	775712	20.931
	LOWER LIMIT	221369	13.272	210587	15.331	193928	19.931
	LLI SAMPLE NO.						
18	1183611MSD	456545	13.772	452345	15.831	406081	20.431
19	1183612	491115	13.767	450649	15.831	392766	20.426
20	rvSTD2709	760806	13.772	733067	15.837	711117	20.437

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0152.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 19:34

	IS1(DCB)		IS2(NPT)		IS3(ANT)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	207642	7.037	880048	9.022	372900	11.846
UPPER LIMIT	415284	7.537	1760096	9.522	745800	12.346
LOWER LIMIT	103821	6.537	440024	8.522	186450	11.346
LLI SAMPLE NO.						
01 1183613	142062	7.032	601730	9.016	234735	11.835
02 1183615	143428	7.032	565754	9.016	233592	11.835

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____

Lab File ID (Standard): lk0152.d Date Analyzed: 11/05/19

Instrument ID: HP20296 Time Analyzed: 19:34

	IS4(PHN)		IS5(PYR)		IS6(PRY)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	660553	13.777	635062	15.836	593000	20.436
UPPER LIMIT	1321106	14.277	1270124	16.336	1186000	20.936
LOWER LIMIT	330277	13.277	317531	15.336	296500	19.936
LLI SAMPLE NO.						
01 1183613	432918	13.766	395406	15.825	332633	20.425
02 1183615	419659	13.766	377487	15.825	327906	20.425

IS4 (PHN) = Phenanthrene-d10
IS5 (PYR) = Pyrene-d10
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

Sample Data

Semivolatiles by GC/MS

F4801 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183606

Data file: /chem/HP20296.i/19nov05.b/lk0104.d Injection date and time: **05-NOV-2019 14:18**
Data file Sample Info. Line: F4801;1183606;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 248 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.038	(0.000)	907	152	155828	(3)	5.00	
68) Naphthalene-d8	9.023	(0.000)	1278	136	647636	(7)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	262078	(3)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	454524	(3)	5.00	
180) Pyrene-d10	15.832	(0.000)	2551	212	407380	(-3)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	377568	(-3)	5.00	

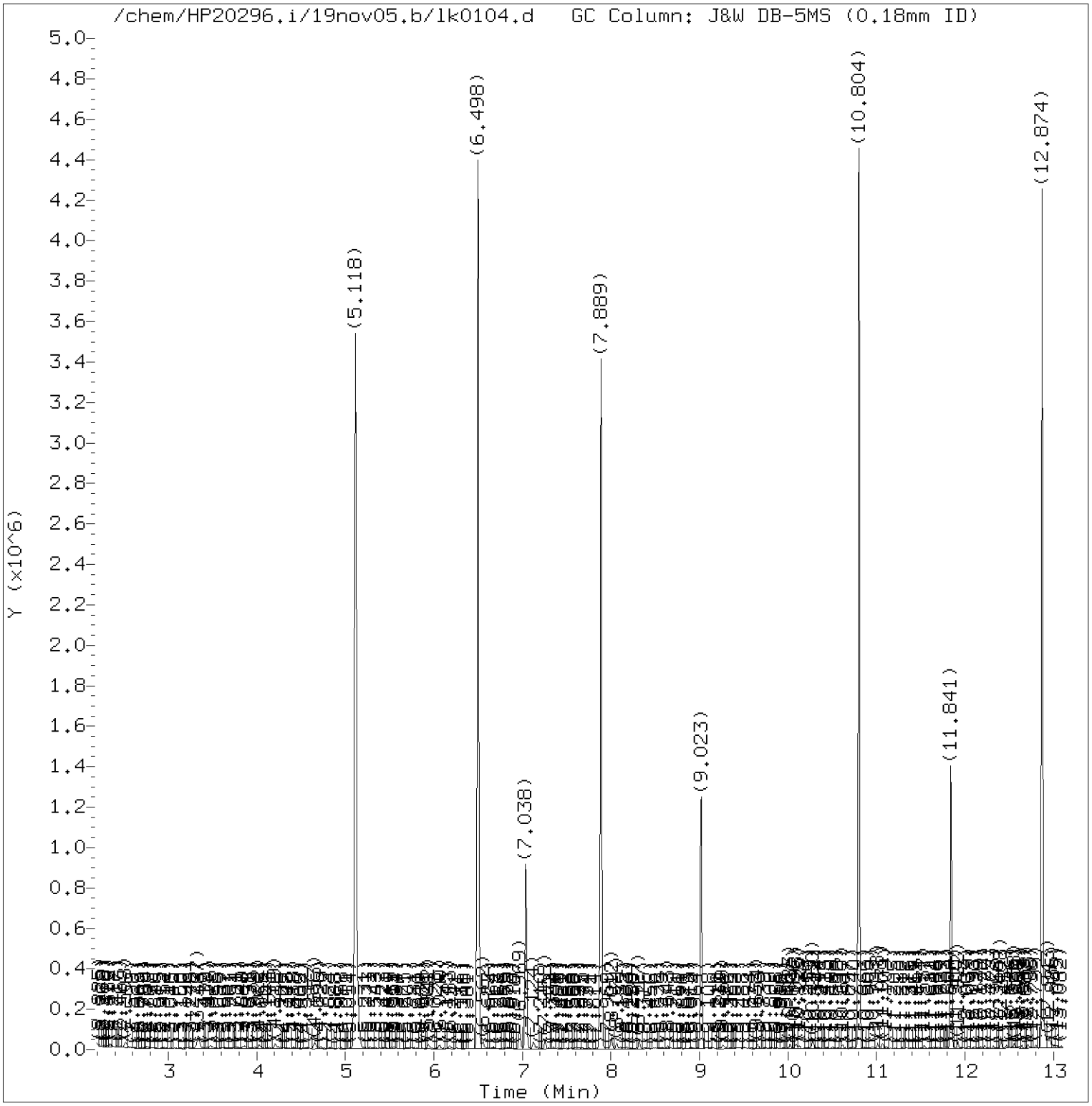
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.889	(0.000)	82	1655552	19.954	80%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.804	(0.000)	172	1403388	17.538	70%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1489958	23.601	94%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

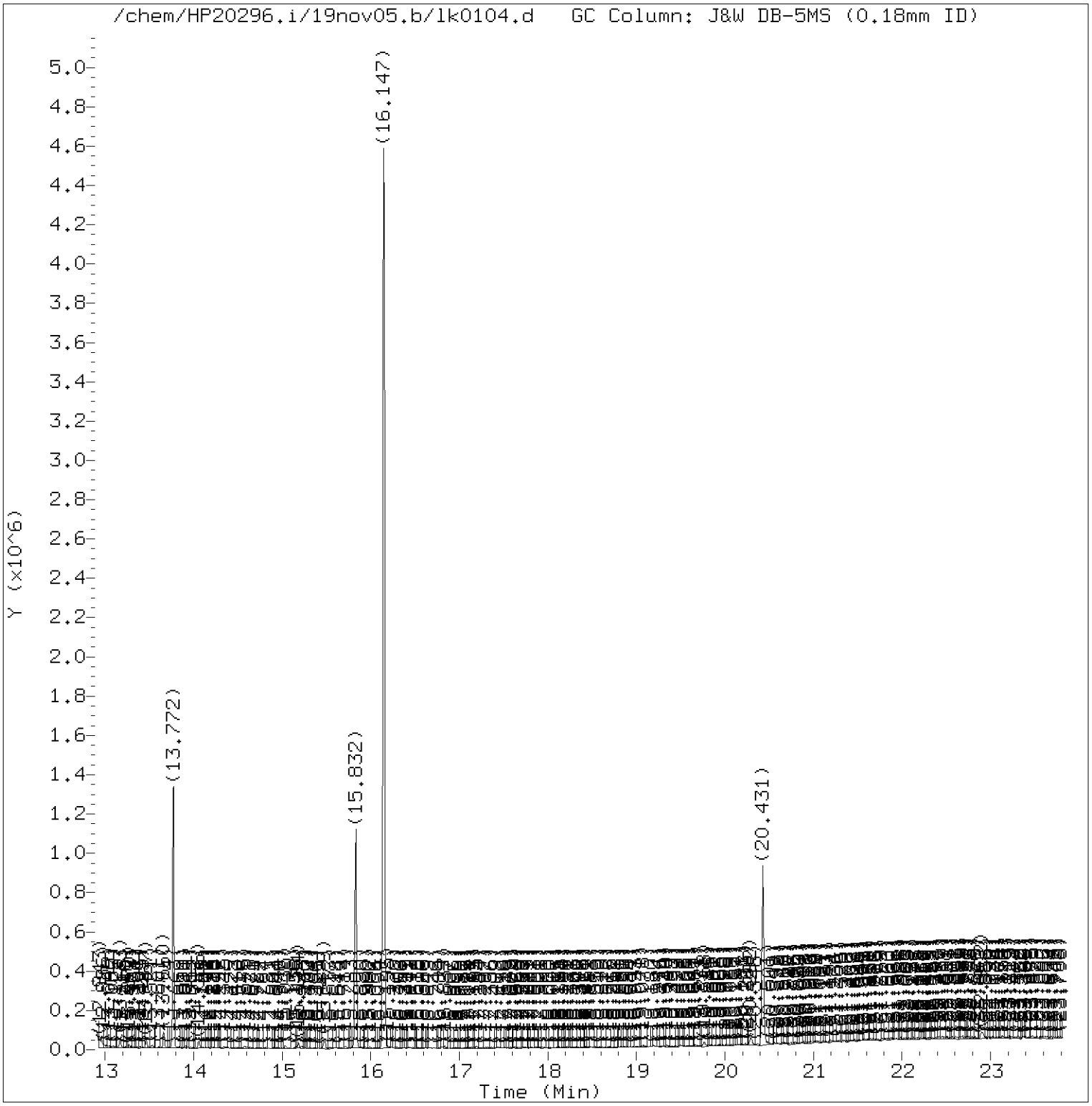
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0104.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:18 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4801 Lab Sample ID: 1183606

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0104.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:18 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4801 Lab Sample ID: 1183606

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0104.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:18 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4801 Lab Sample ID: 1183606

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	155828	5.000
45)$Nitrobenzene-d5	(2)	7.889	82	1655552	19.954
68)*Naphthalene-d8	(2)	9.023	136	647636	5.000
96)$2-Fluorobiphenyl	(3)	10.804	172	1403388	17.538
118)*Acenaphthene-d10	(3)	11.841	164	262078	5.000
158)*Phenanthrene-d10	(4)	13.772	188	454524	5.000
180)*Pyrene-d10	(5)	15.832	212	407380	5.000
184)$Terphenyl-d14	(5)	16.147	244	1489958	23.601
218)*Perylene-d12	(6)	20.431	264	377568	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

F4802 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183607

Data file: /chem/HP20296.i/19nov05.b/lk0105.d Injection date and time: **05-NOV-2019 14:47**
Data file Sample Info. Line: F4802;1183607;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.038	(0.000)	907	152	149819	(-1)	5.00	
68) Naphthalene-d8	9.022	(0.000)	1278	136	629463	(4)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	269779	(6)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	450357	(2)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	418327	(-1)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	372170	(-4)	5.00	

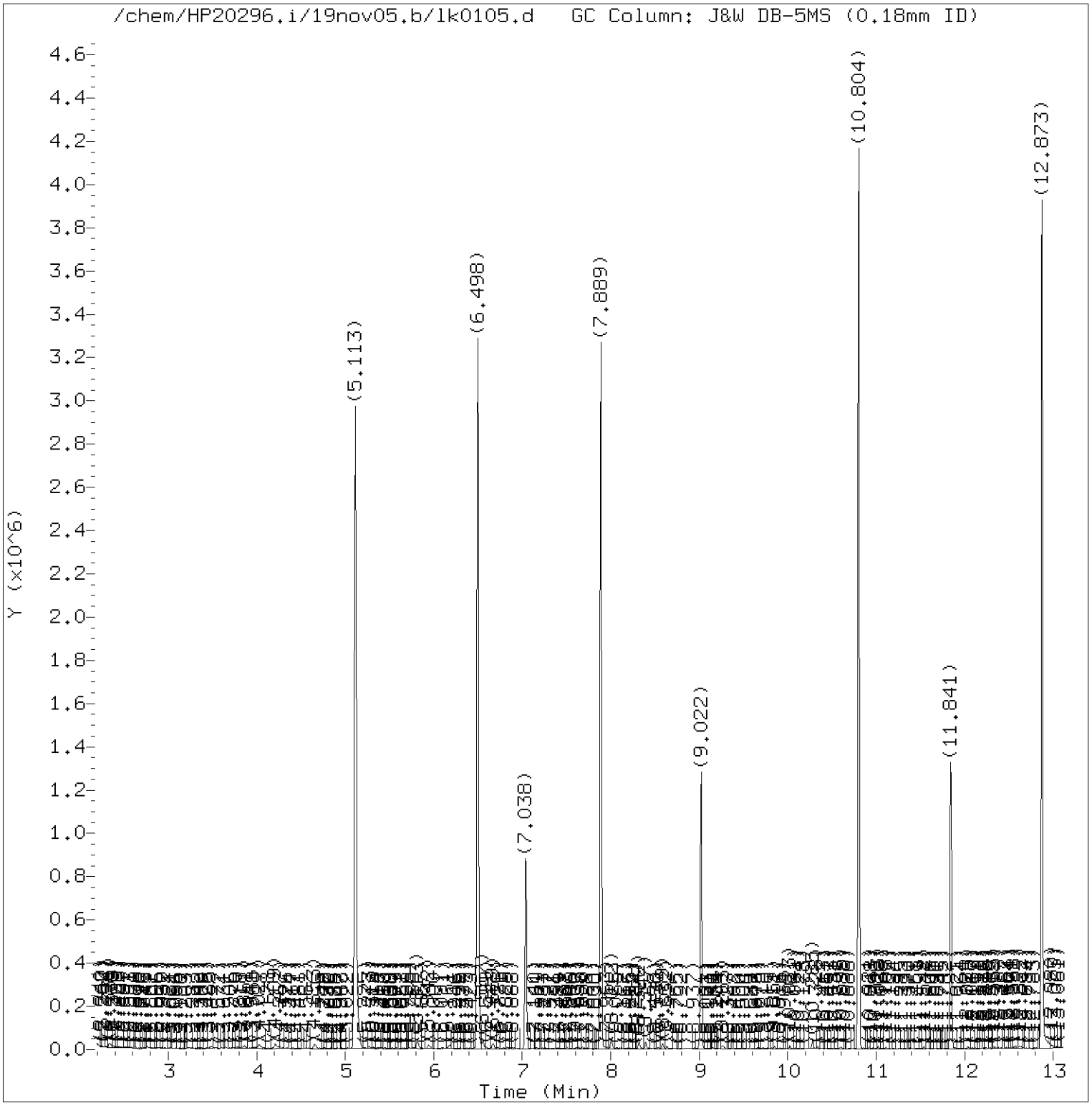
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.889	(0.000)	82	1567834	19.442	78%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.804	(0.000)	172	1322613	16.057	64%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	972509	15.001	60%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

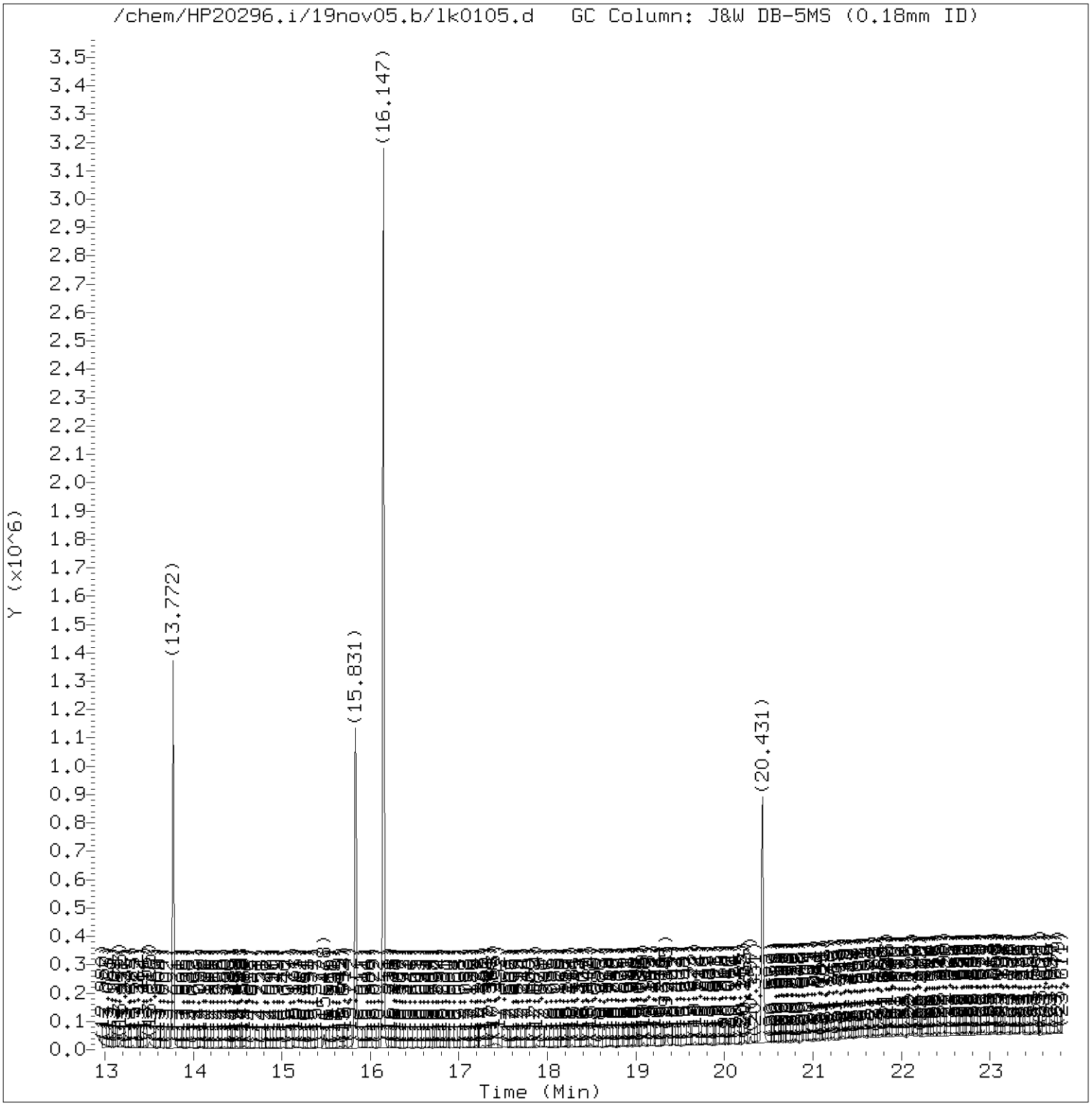
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0105.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:47 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4802 Lab Sample ID: 1183607

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0105.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:47 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4802 Lab Sample ID: 1183607

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0105.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 14:47 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: F4802 Lab Sample ID: 1183607

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	149819	5.000
45)$Nitrobenzene-d5	(2)	7.889	82	1567834	19.442
68)*Naphthalene-d8	(2)	9.022	136	629463	5.000
96)$2-Fluorobiphenyl	(3)	10.804	172	1322613	16.057
118)*Acenaphthene-d10	(3)	11.841	164	269779	5.000
158)*Phenanthrene-d10	(4)	13.772	188	450357	5.000
180)*Pyrene-d10	(5)	15.831	212	418327	5.000
184)$Terphenyl-d14	(5)	16.147	244	972509	15.001
218)*Perylene-d12	(6)	20.431	264	372170	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Lancaster Laboratories, Inc.
Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP20296.i/19nov05.b/lk0106.d
Injection date and time: **05-NOV-2019 15:16**
Data file Sample Info. Line: F4803;1183608;1;0;SAMPLE;;RAAPVA;
Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 247 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.043	(-0.005)	908	152	147383	(-2)	5.00	
68) Naphthalene-d8	9.022	(0.000)	1278	136	619424	(3)	5.00	
118) Acenaphthene-d10	11.841	(0.006)	1805	164	248389	(-3)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	441436	(0)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	396632	(-6)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	348498	(-10)	5.00	

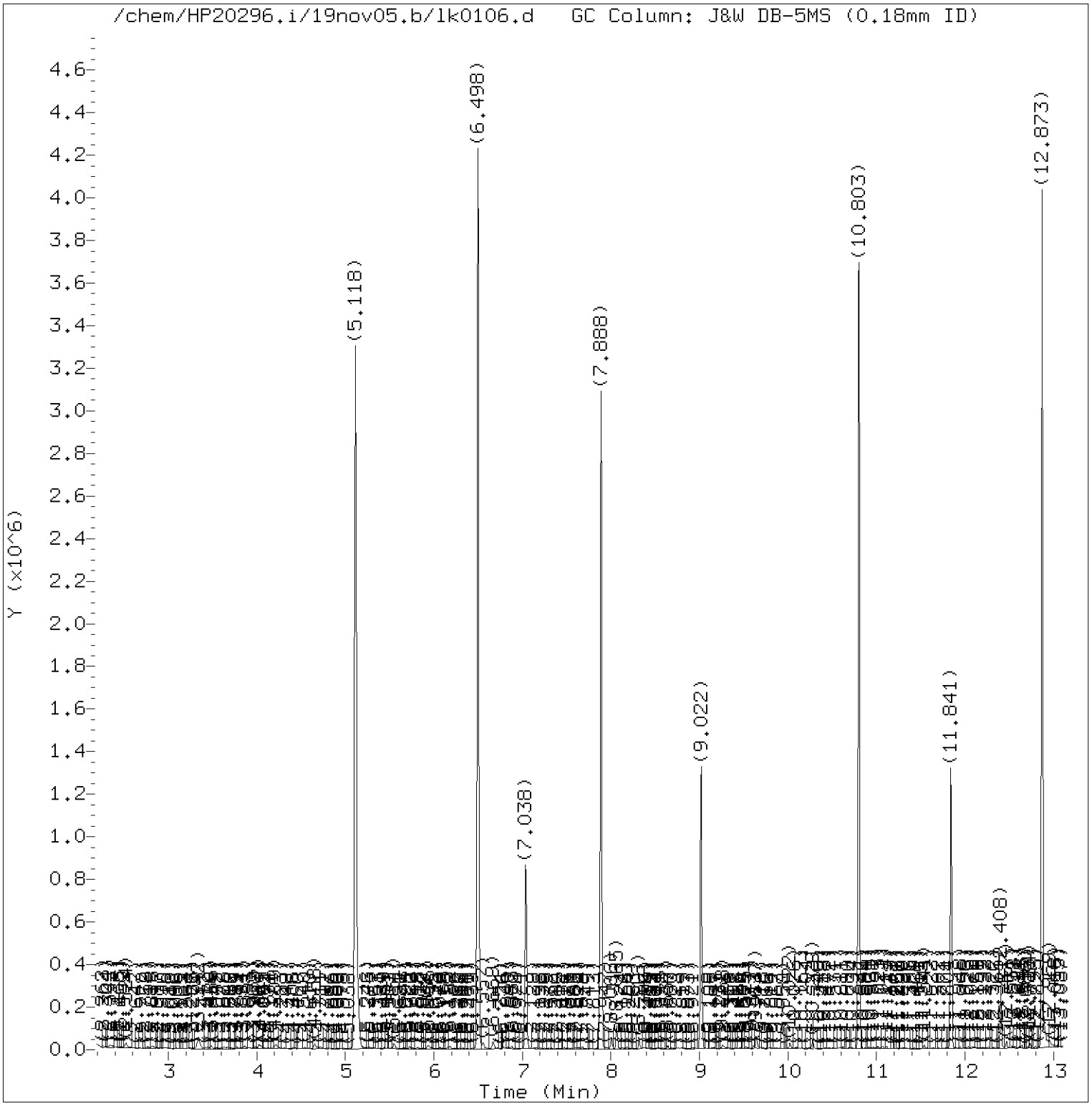
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.888	(0.000)	82	1428815	18.006	72%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.803	(0.000)	172	1177003	15.520	62%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1403492	22.834	91%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

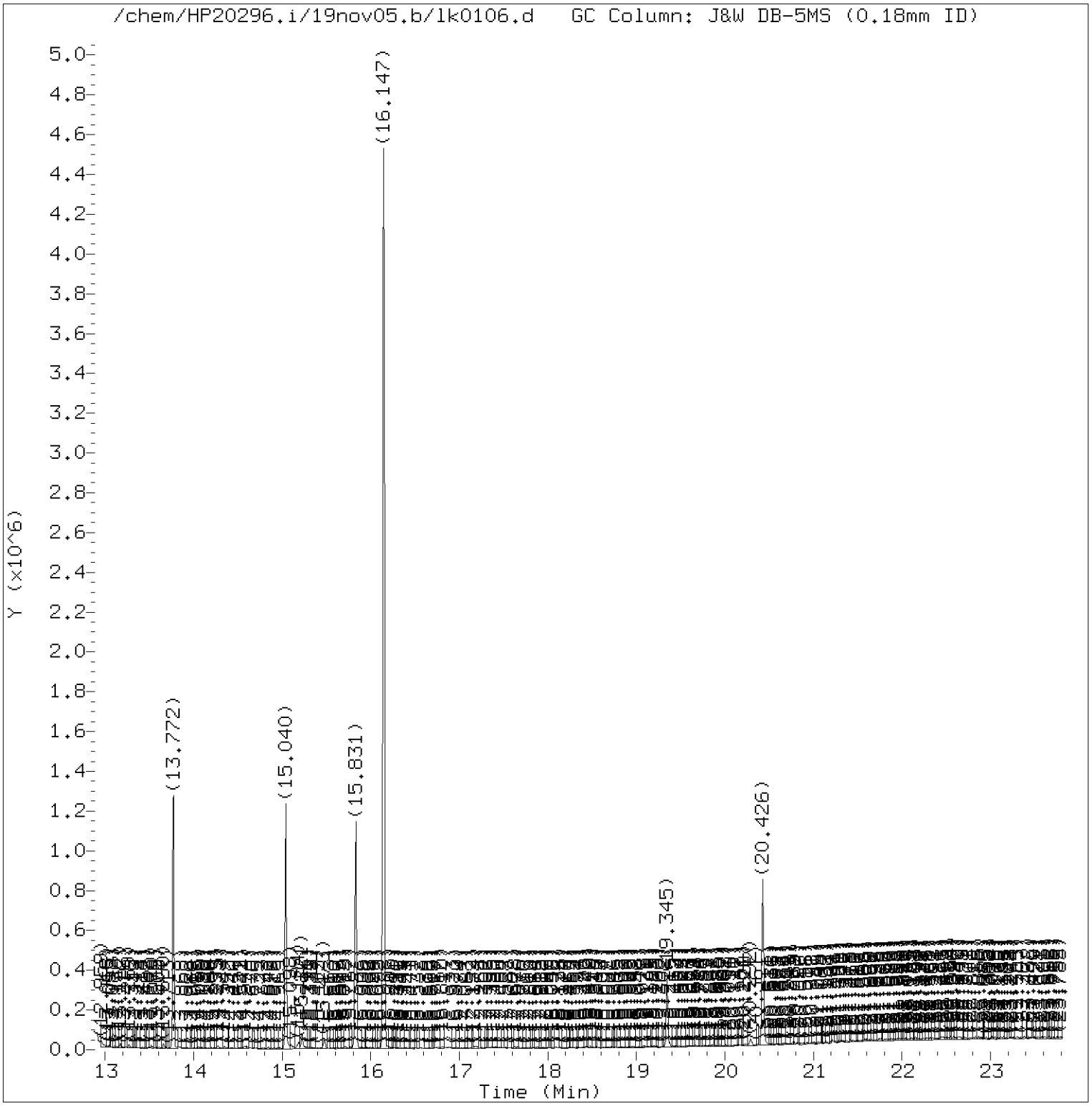
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0106.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:16 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4803 Lab Sample ID: 1183608

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0106.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:16 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4803 Lab Sample ID: 1183608

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0106.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:16 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4803 Lab Sample ID: 1183608

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.043	152	147383	5.000
45)$Nitrobenzene-d5	(2)	7.888	82	1428815	18.006
68)*Naphthalene-d8	(2)	9.022	136	619424	5.000
96)$2-Fluorobiphenyl	(3)	10.803	172	1177003	15.520
118)*Acenaphthene-d10	(3)	11.841	164	248389	5.000
158)*Phenanthrene-d10	(4)	13.772	188	441436	5.000
180)*Pyrene-d10	(5)	15.831	212	396632	5.000
184)$Terphenyl-d14	(5)	16.147	244	1403492	22.834
218)*Perylene-d12	(6)	20.431	264	348498	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Lancaster Laboratories, Inc.
Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP20296.i/19nov05.b/lk0107.d
Injection date and time: **05-NOV-2019 15:45**
Data file Sample Info. Line: F4804;1183609;1;0;SAMPLE;;RAAPVA;
Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 248 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.038	(0.000)	907	152	149715	(-1)	5.00	
68) Naphthalene-d8	9.022	(0.000)	1278	136	589101	(-3)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	251294	(-1)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	447439	(1)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	399494	(-5)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	355188	(-8)	5.00	

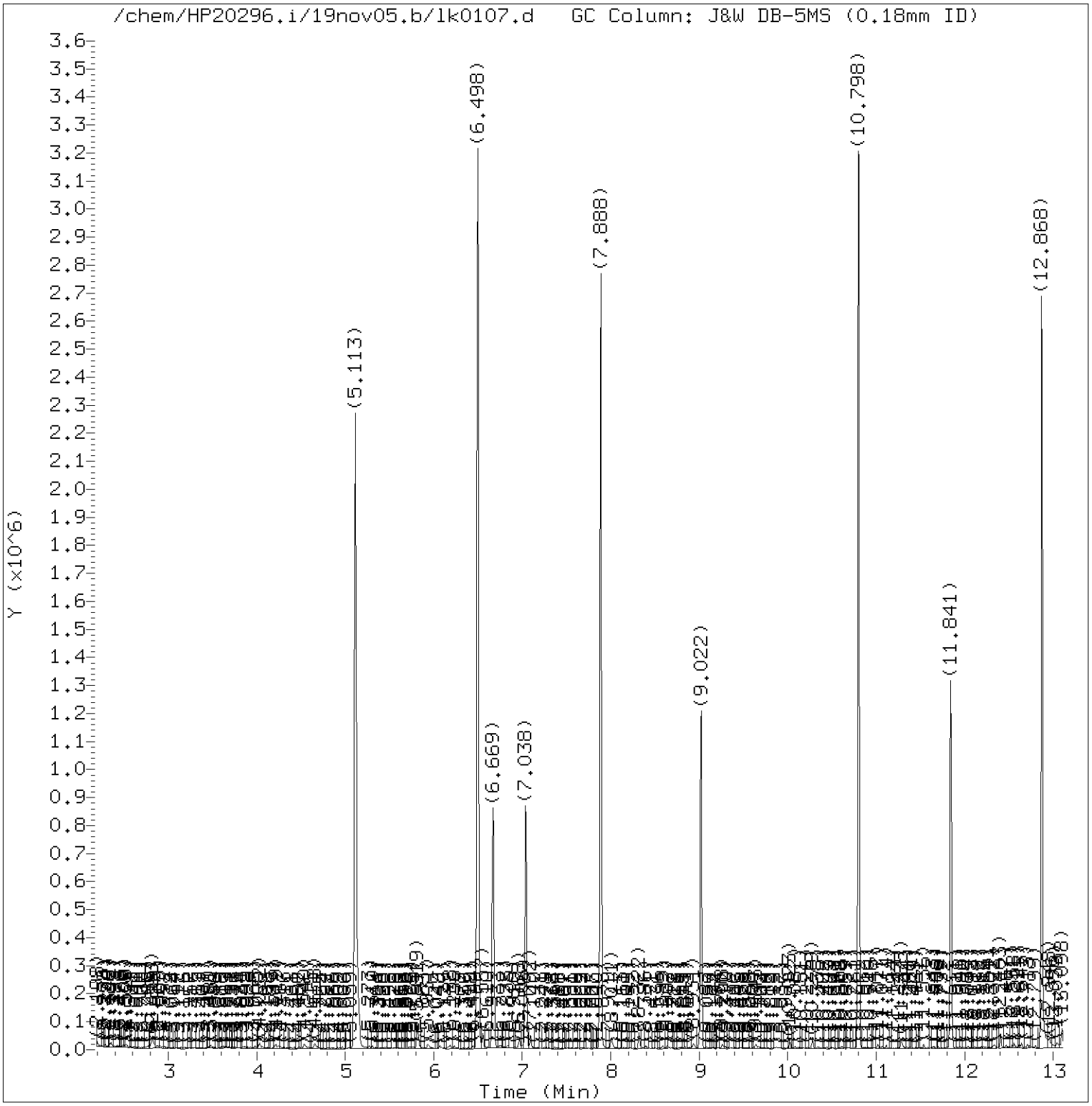
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.888	(0.000)	82	1275383	16.899	68%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.803	(0.000)	172	1050514	13.692	55%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1107270	17.885	72%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

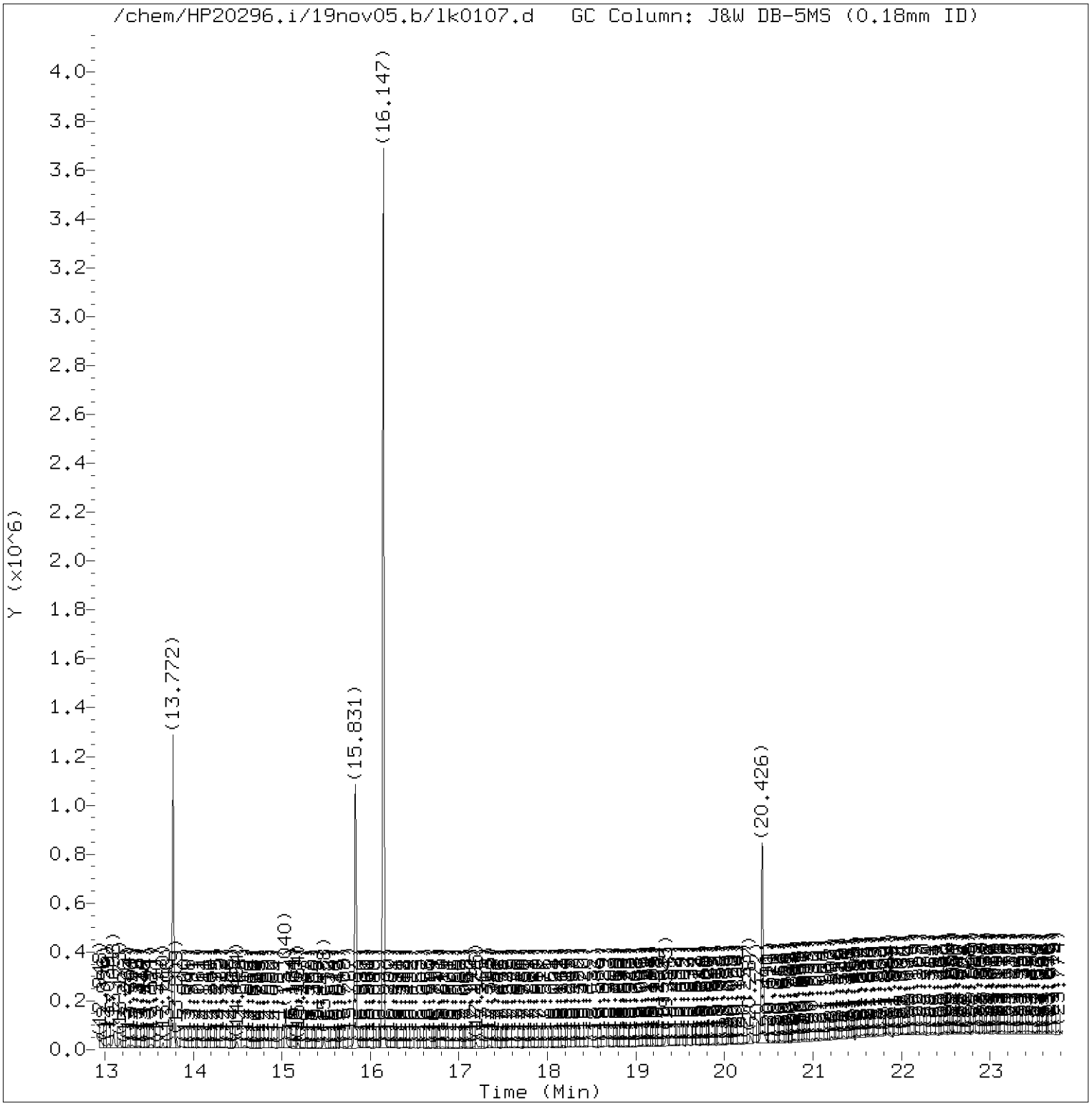
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0107.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:45 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804 Lab Sample ID: 1183609

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0107.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:45 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804 Lab Sample ID: 1183609

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0107.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 15:45 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804 Lab Sample ID: 1183609

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	149715	5.000
45)$Nitrobenzene-d5	(2)	7.888	82	1275383	16.899
68)*Naphthalene-d8	(2)	9.022	136	589101	5.000
96)$2-Fluorobiphenyl	(3)	10.803	172	1050514	13.692
118)*Acenaphthene-d10	(3)	11.841	164	251294	5.000
158)*Phenanthrene-d10	(4)	13.772	188	447439	5.000
180)*Pyrene-d10	(5)	15.831	212	399494	5.000
184)$Terphenyl-d14	(5)	16.147	244	1107270	17.885
218)*Perylene-d12	(6)	20.431	264	355188	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

F4805 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183612

Data file: /chem/HP20296.i/19nov05.b/lk0110.d Injection date and time: **05-NOV-2019 17:12**
Data file Sample Info. Line: F4805;1183612;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.038	(0.000)	907	152	155678	(3)	5.00	
68) Naphthalene-d8	9.017	(0.005)	1277	136	654967	(8)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	273897	(7)	5.00	
158) Phenanthrene-d10	13.767	(0.005)	2165	188	491115	(11)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	450649	(7)	5.00	
218) Perylene-d12	20.426	(0.005)	3410	264	392766	(1)	5.00	

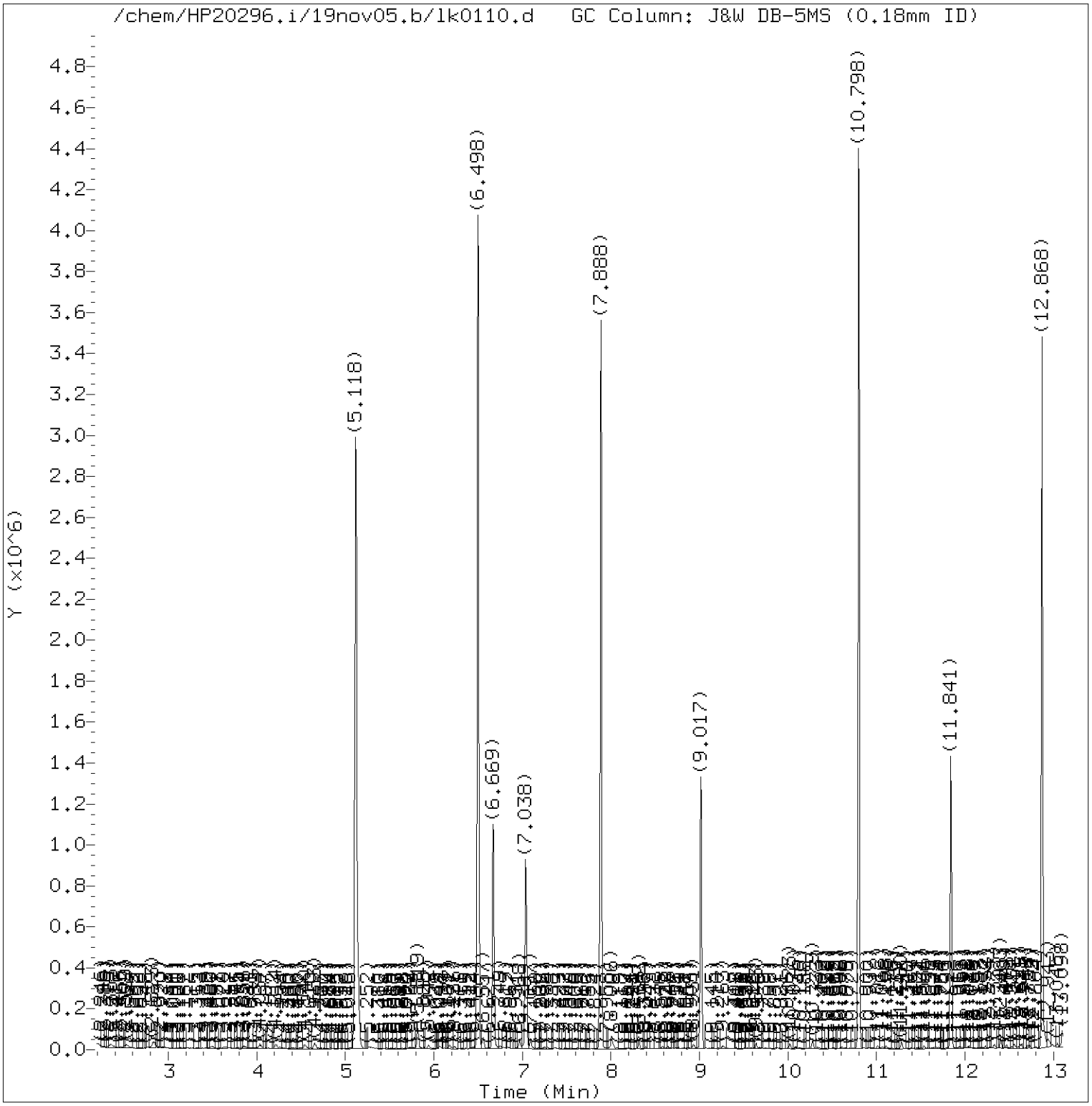
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.888	(-0.001)	82	1704136	20.310	81%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.798	(0.000)	172	1410113	16.862	67%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1366650	19.569	78%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:13. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

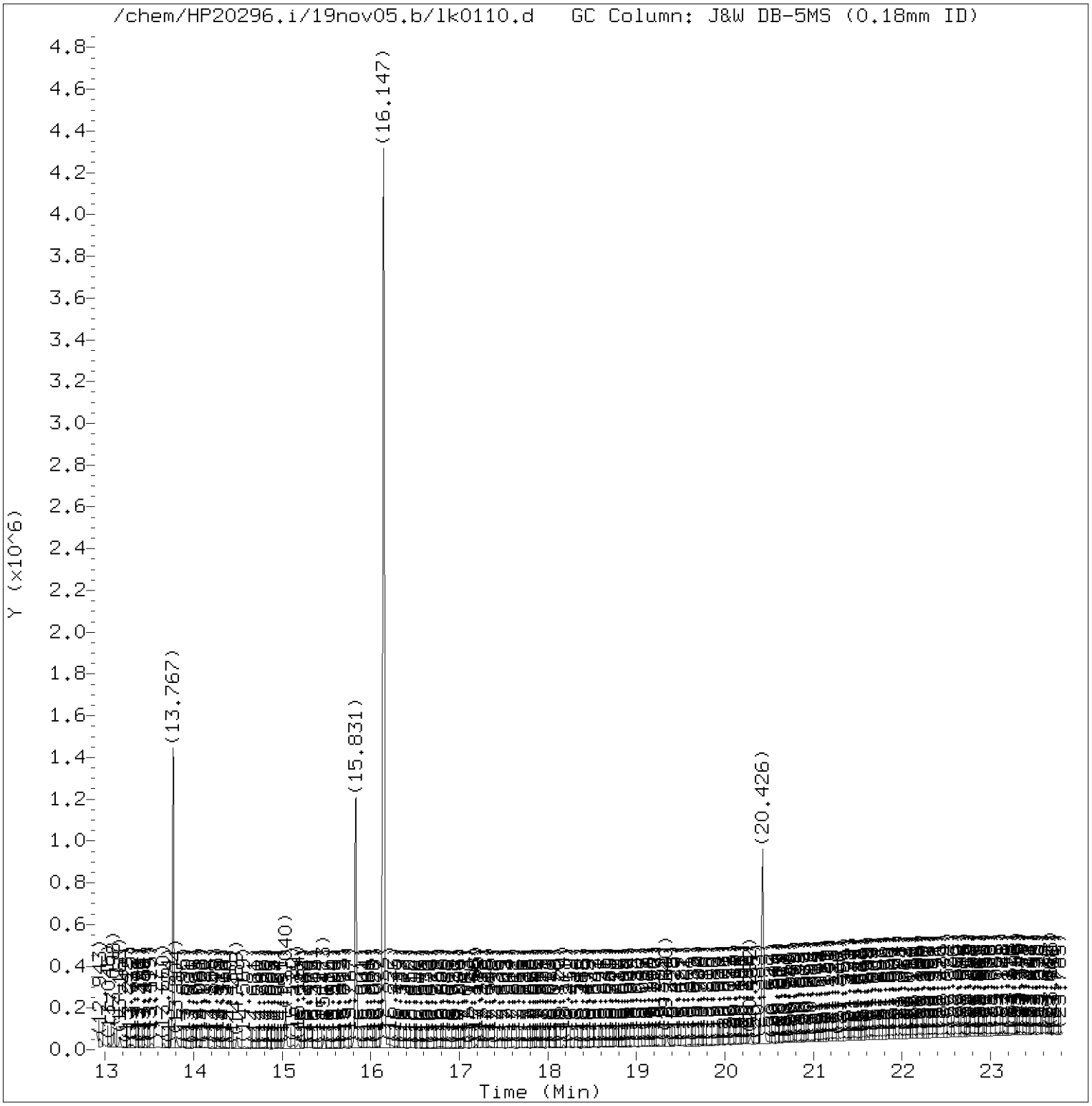
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0110.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 17:12 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4805 Lab Sample ID: 1183612

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:13.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0110.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 17:12 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4805 Lab Sample ID: 1183612

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:13.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0110.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 17:12 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4805 Lab Sample ID: 1183612

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	155678	5.000
45)$Nitrobenzene-d5	(2)	7.888	82	1704136	20.310
68)*Naphthalene-d8	(2)	9.017	136	654967	5.000
96)$2-Fluorobiphenyl	(3)	10.798	172	1410113	16.862
118)*Acenaphthene-d10	(3)	11.841	164	273897	5.000
158)*Phenanthrene-d10	(4)	13.767	188	491115	5.000
180)*Pyrene-d10	(5)	15.831	212	450649	5.000
184)$Terphenyl-d14	(5)	16.147	244	1366650	19.569
218)*Perylene-d12	(6)	20.426	264	392766	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:13.
Target 3.5 esignature user ID: art12405

F4806 Lancaster Laboratories, Inc. 1183613
Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP20296.i/19nov05a.b/lk0160.d Injection date and time: **06-NOV-2019 00:30**
Data file Sample Info. Line: F4806;1183613;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 06-Nov-2019 08:48 knb25316

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 06-NOV-2019 08:48
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05a.b/lk0152.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 243 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.032	(0.005)	1018	152	142062	(-32)	5.00	
68) Naphthalene-d8	9.016	(0.005)	1389	136	601730	(-32)	5.00	
118) Acenaphthene-d10	11.835	(0.011)	1916	164	234735	(-37)	5.00	
158) Phenanthrene-d10	13.766	(0.011)	2277	188	432918	(-34)	5.00	
180) Pyrene-d10	15.825	(0.011)	2662	212	395406	(-38)	5.00	
218) Perylene-d12	20.425	(0.011)	3522	264	332633	(-44)	5.00	

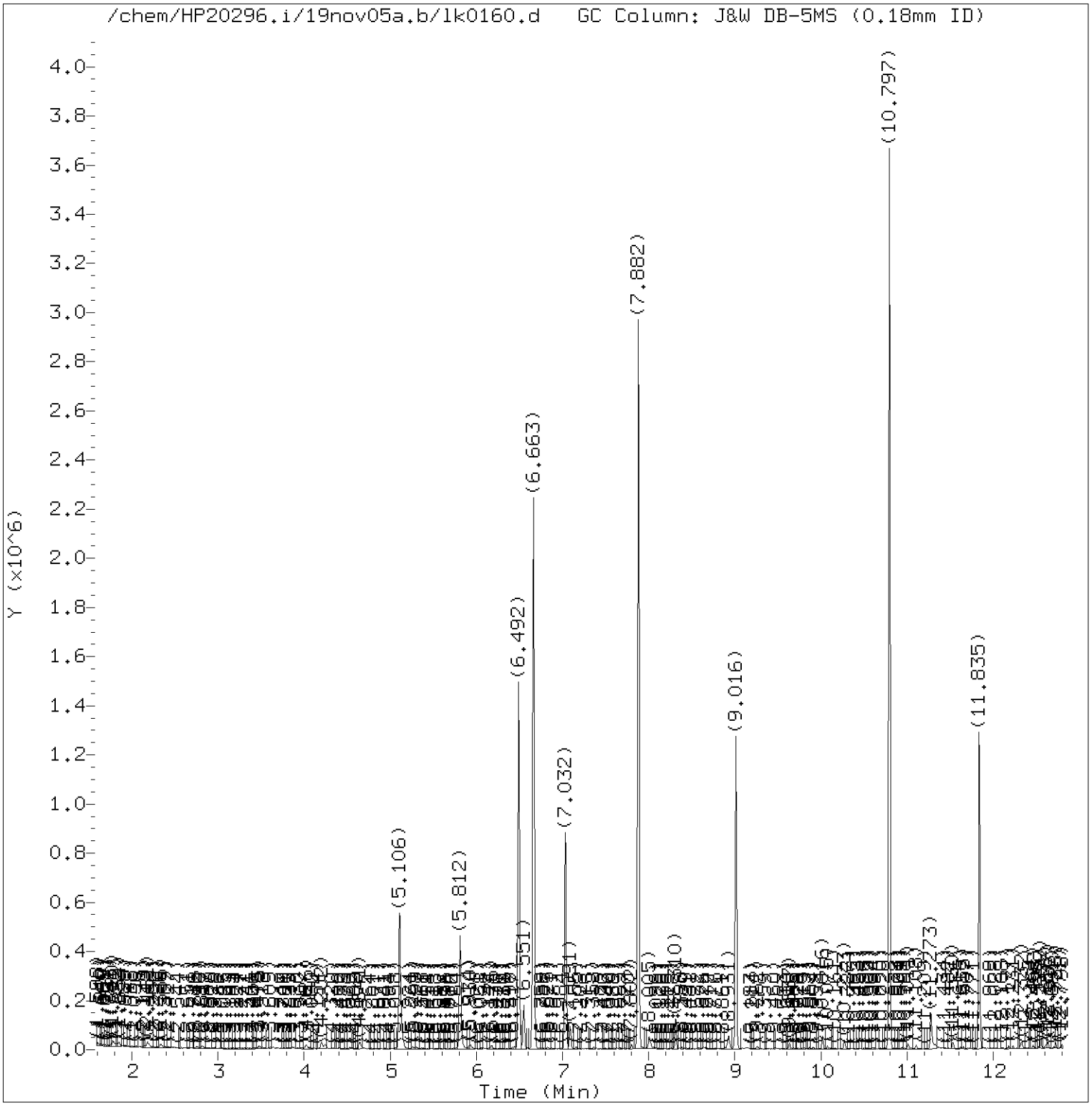
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.882	(0.001)	82	1416102	18.370	73%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.797	(0.000)	172	1141067	15.921	64%		44 - 102
184) Terphenyl-d14	(5)	16.141	(0.000)	244	660946	10.786	43%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Kira N. Beck on 11/06/2019 at 08:50. Target 3.5 esignature user ID: knb25316

Secondary review performed and digitally signed by Matthew E. Barton on 11/06/2019 at 10:23. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

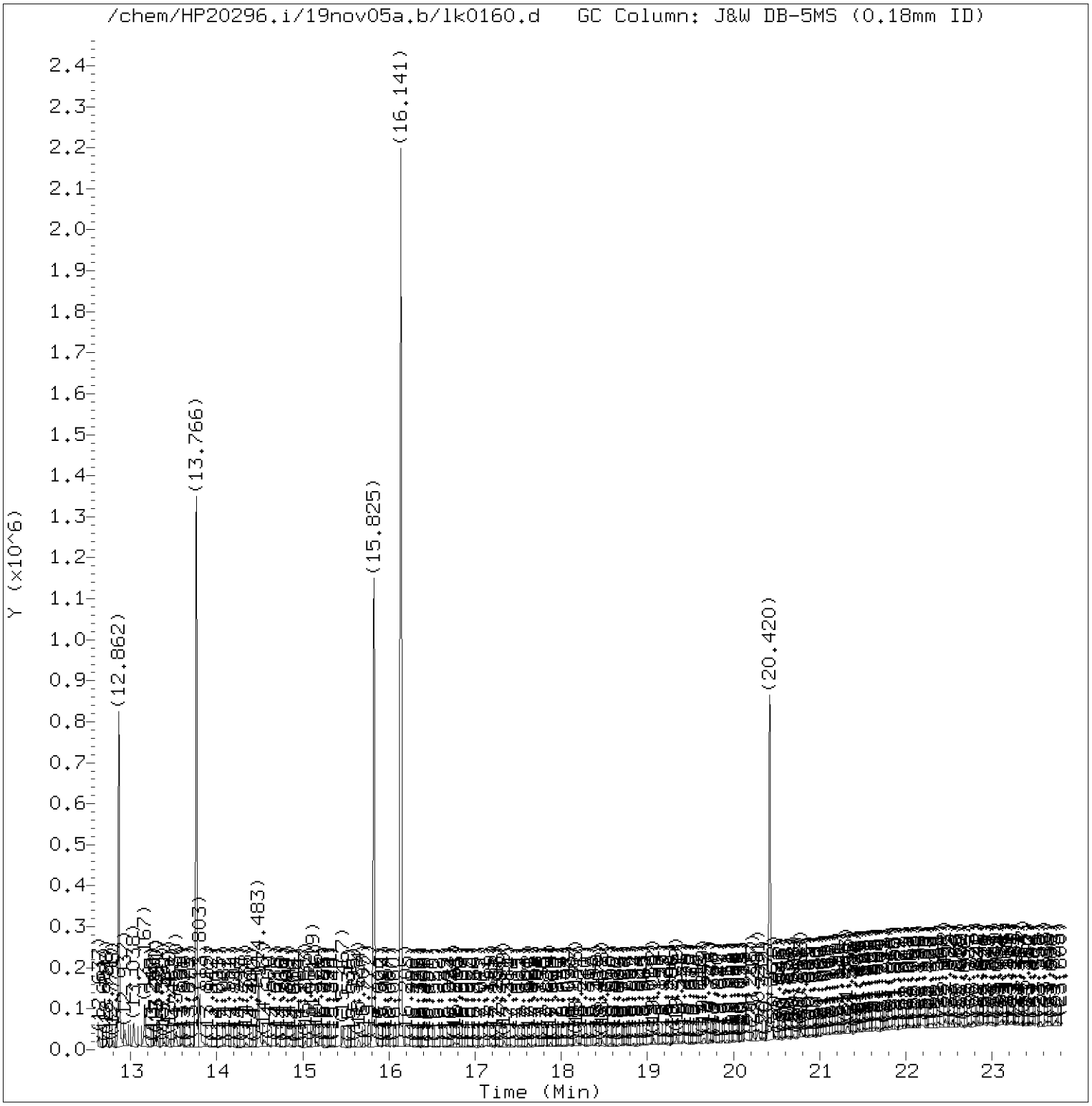
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0160.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:30 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:48 knb25316

Sample Name: F4806 Lab Sample ID: 1183613

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0160.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:30 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:48 knb25316

Sample Name: F4806 Lab Sample ID: 1183613

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0160.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:30 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:48 knb25316

Sample Name: F4806 Lab Sample ID: 1183613

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.032	152	142062	5.000
45)$Nitrobenzene-d5	(2)	7.882	82	1416102	18.370
68)*Naphthalene-d8	(2)	9.016	136	601730	5.000
96)$2-Fluorobiphenyl	(3)	10.797	172	1141067	15.921
118)*Acenaphthene-d10	(3)	11.835	164	234735	5.000
158)*Phenanthrene-d10	(4)	13.766	188	432918	5.000
180)*Pyrene-d10	(5)	15.825	212	395406	5.000
184)$Terphenyl-d14	(5)	16.141	244	660946	10.786
218)*Perylene-d12	(6)	20.425	264	332633	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316

F4807 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183614

Data file: /chem/HP18831.i/19nov04.b/hk0050.d Injection date and time: **04-NOV-2019 16:53**
Data file Sample Info. Line: F4807;1183614;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 249 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.930	(0.000)	848	152	166879	(-23)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	633440	(-21)	5.00	
118) Acenaphthene-d10	11.645	(0.006)	1657	164	289703	(-28)	5.00	
158) Phenanthrene-d10	13.528	(0.000)	1980	188	562497	(-23)	5.00	
180) Pyrene-d10	15.515	(0.000)	2321	212	516883	(-3)	5.00	
218) Perylene-d12	20.009	(0.006)	3092	264	519180	(-5)	5.00	

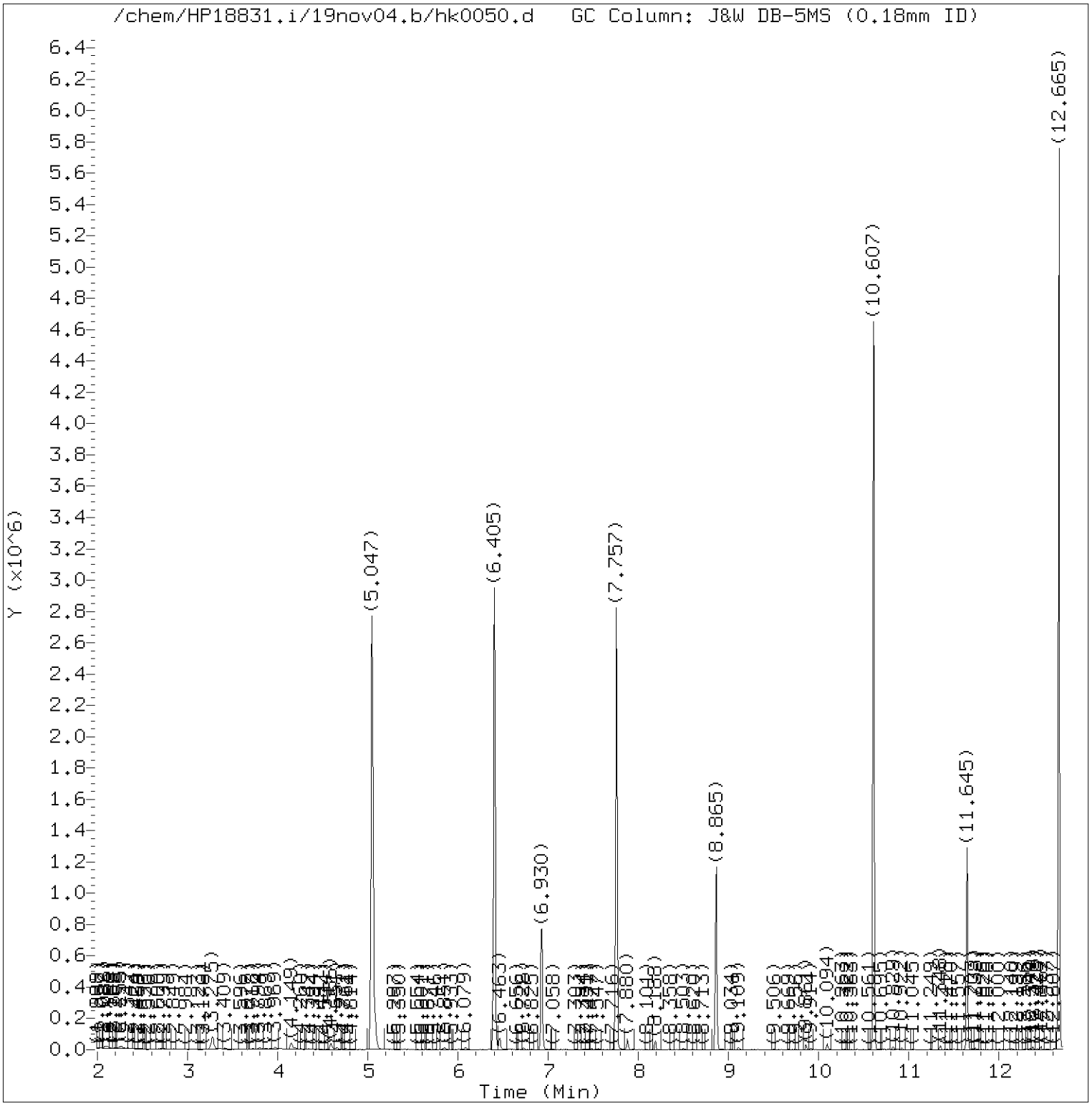
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.757	(0.001)	82	1061560	19.909	80%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.607	(0.000)	172	1786087	18.388	74%		44 - 102
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1976656	20.828	83%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Sylvester Williams on 11/04/2019 at 18:56. Target 3.5 esignature user ID: sw30417

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

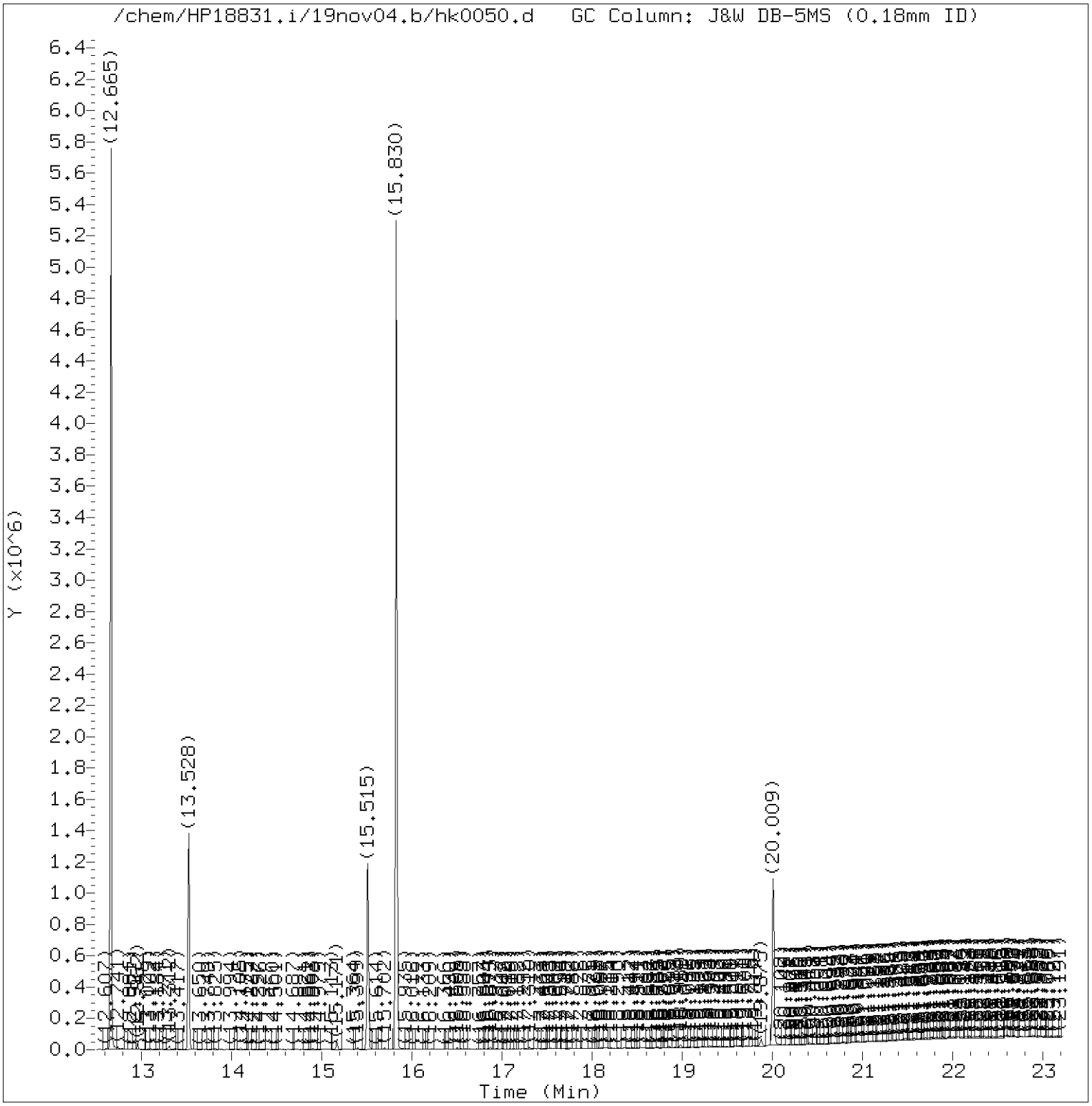
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0050.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 16:53 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4807 Lab Sample ID: 1183614

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0050.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 16:53 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4807 Lab Sample ID: 1183614

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0050.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 16:53 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4807 Lab Sample ID: 1183614

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.930	152	166879	5.000
45)$Nitrobenzene-d5	(2)	7.757	82	1061560	19.909
68)*Naphthalene-d8	(2)	8.865	136	633440	5.000
96)$2-Fluorobiphenyl	(3)	10.607	172	1786087	18.388
118)*Acenaphthene-d10	(3)	11.645	164	289703	5.000
158)*Phenanthrene-d10	(4)	13.528	188	562497	5.000
180)*Pyrene-d10	(5)	15.515	212	516883	5.000
184)$Terphenyl-d14	(5)	15.830	244	1976656	20.828
218)*Perylene-d12	(6)	20.009	264	519180	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417

Lancaster Laboratories, Inc.
Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP20296.i/19nov05a.b/lk0161.d
Data file Sample Info. Line: F4808;1183615;1;0;SAMPLE;;RAAPVA;
Date, time and analyst ID of latest file update: 06-Nov-2019 08:49 knb25316

Injection date and time: **06-NOV-2019 00:58**
Instrument ID: **HP20296.i** Batch: **19303WAG**

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 06-NOV-2019 08:48
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05a.b/lk0152.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.032	(0.005)	1018	152	143428	(-31)	5.00	
68) Naphthalene-d8	9.016	(0.005)	1389	136	565754	(-36)	5.00	
118) Acenaphthene-d10	11.835	(0.011)	1916	164	233592	(-37)	5.00	
158) Phenanthrene-d10	13.766	(0.011)	2277	188	419659	(-36)	5.00	
180) Pyrene-d10	15.825	(0.011)	2662	212	377487	(-41)	5.00	
218) Perylene-d12	20.425	(0.011)	3522	264	327906	(-45)	5.00	

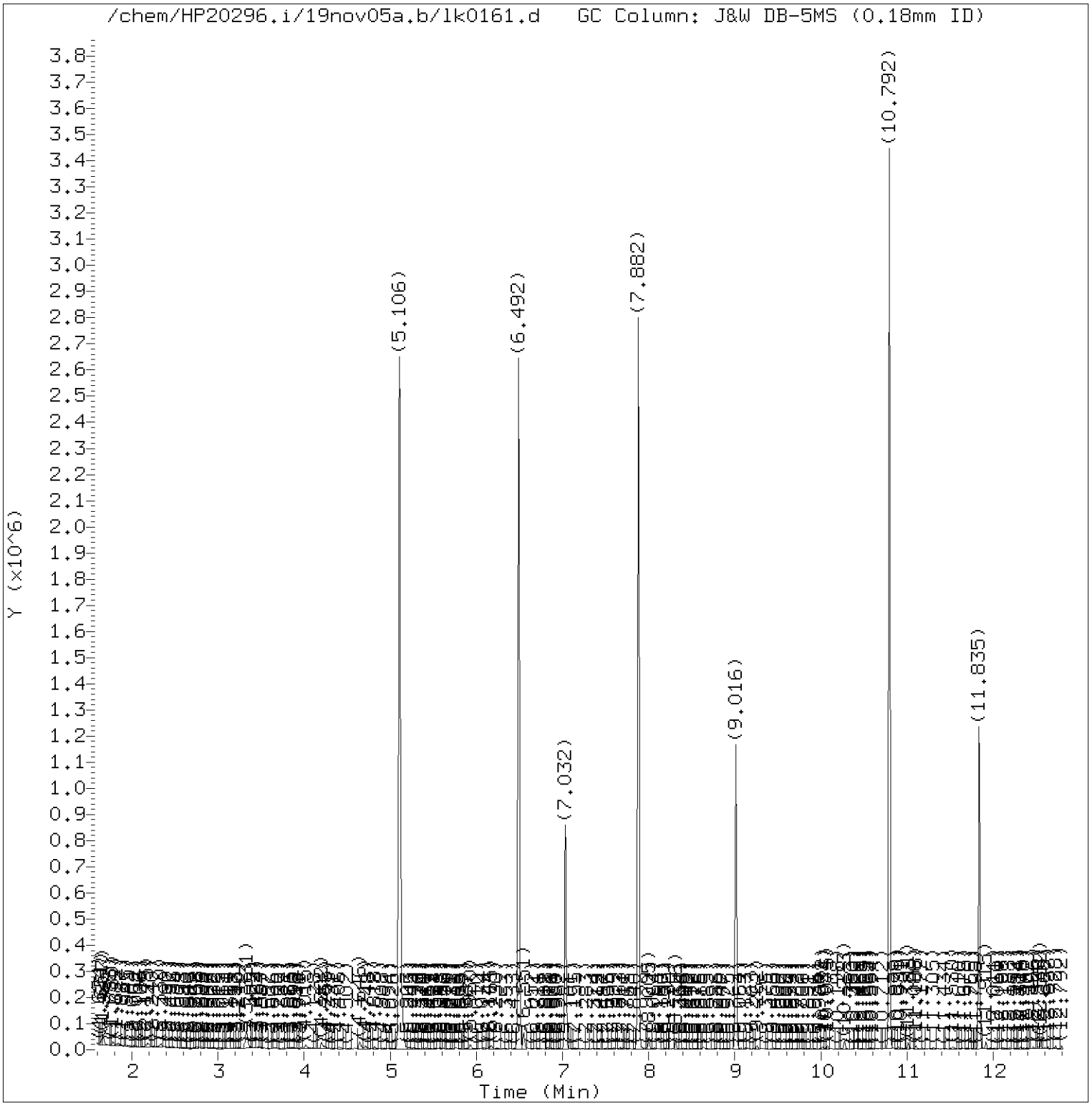
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.882	(0.001)	82	1307551	18.041	72%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.797	(0.000)	172	1082389	15.176	61%		44 - 102
184) Terphenyl-d14	(5)	16.141	(0.000)	244	1363885	23.315	93%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Kira N. Beck on 11/06/2019 at 08:50. Target 3.5 esignature user ID: knb25316

Secondary review performed and digitally signed by Matthew E. Barton on 11/06/2019 at 10:23. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

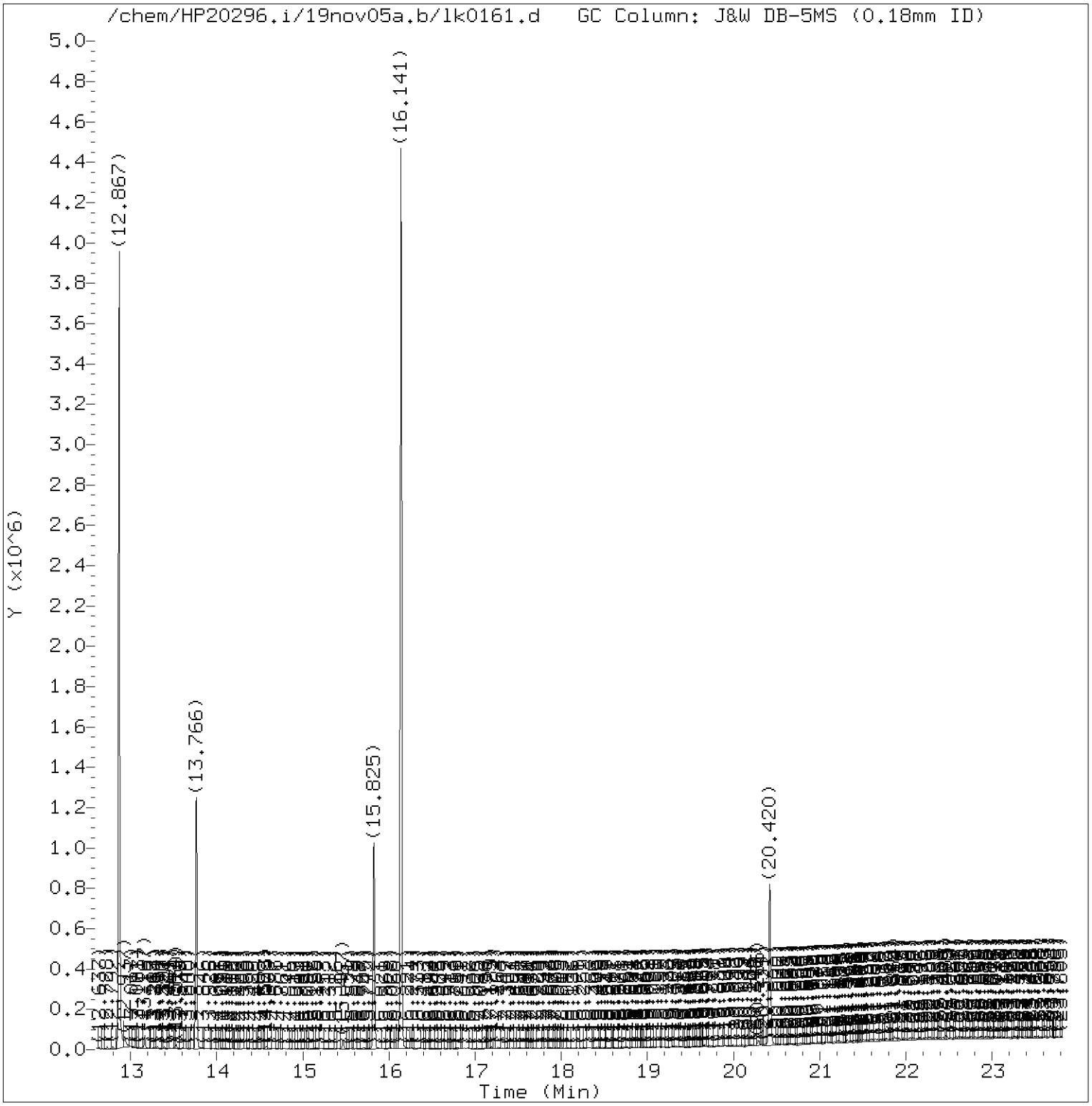
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0161.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:58 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:49 knb25316

Sample Name: F4808 Lab Sample ID: 1183615

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0161.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:58 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:49 knb25316

Sample Name: F4808 Lab Sample ID: 1183615

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0161.d Instrument ID: HP20296.i
Injection date and time: 06-NOV-2019 00:58 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 06-NOV-2019 08:48
Date, time and analyst ID of latest file update: 06-Nov-2019 08:49 knb25316

Sample Name: F4808 Lab Sample ID: 1183615

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.032	152	143428	5.000
45)$Nitrobenzene-d5	(2)	7.882	82	1307551	18.041
68)*Naphthalene-d8	(2)	9.016	136	565754	5.000
96)$2-Fluorobiphenyl	(3)	10.797	172	1082389	15.176
118)*Acenaphthene-d10	(3)	11.835	164	233592	5.000
158)*Phenanthrene-d10	(4)	13.766	188	419659	5.000
180)*Pyrene-d10	(5)	15.825	212	377487	5.000
184)$Terphenyl-d14	(5)	16.141	244	1363885	23.315
218)*Perylene-d12	(6)	20.425	264	327906	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 08:50.
Target 3.5 esignature user ID: knb25316

F4809 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183616

Data file: /chem/HP18831.i/19nov04.b/hk0051.d Injection date and time: **04-NOV-2019 17:22**
Data file Sample Info. Line: F4809;1183616;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.930	(0.000)	848	152	143263	(-34)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	597749	(-26)	5.00	
118) Acenaphthene-d10	11.645	(0.006)	1657	164	265571	(-34)	5.00	
158) Phenanthrene-d10	13.528	(0.000)	1980	188	438044	(-40)	5.00	
180) Pyrene-d10	15.509	(0.006)	2320	212	482132	(-10)	5.00	
218) Perylene-d12	20.009	(0.006)	3092	264	426047	(-22)	5.00	

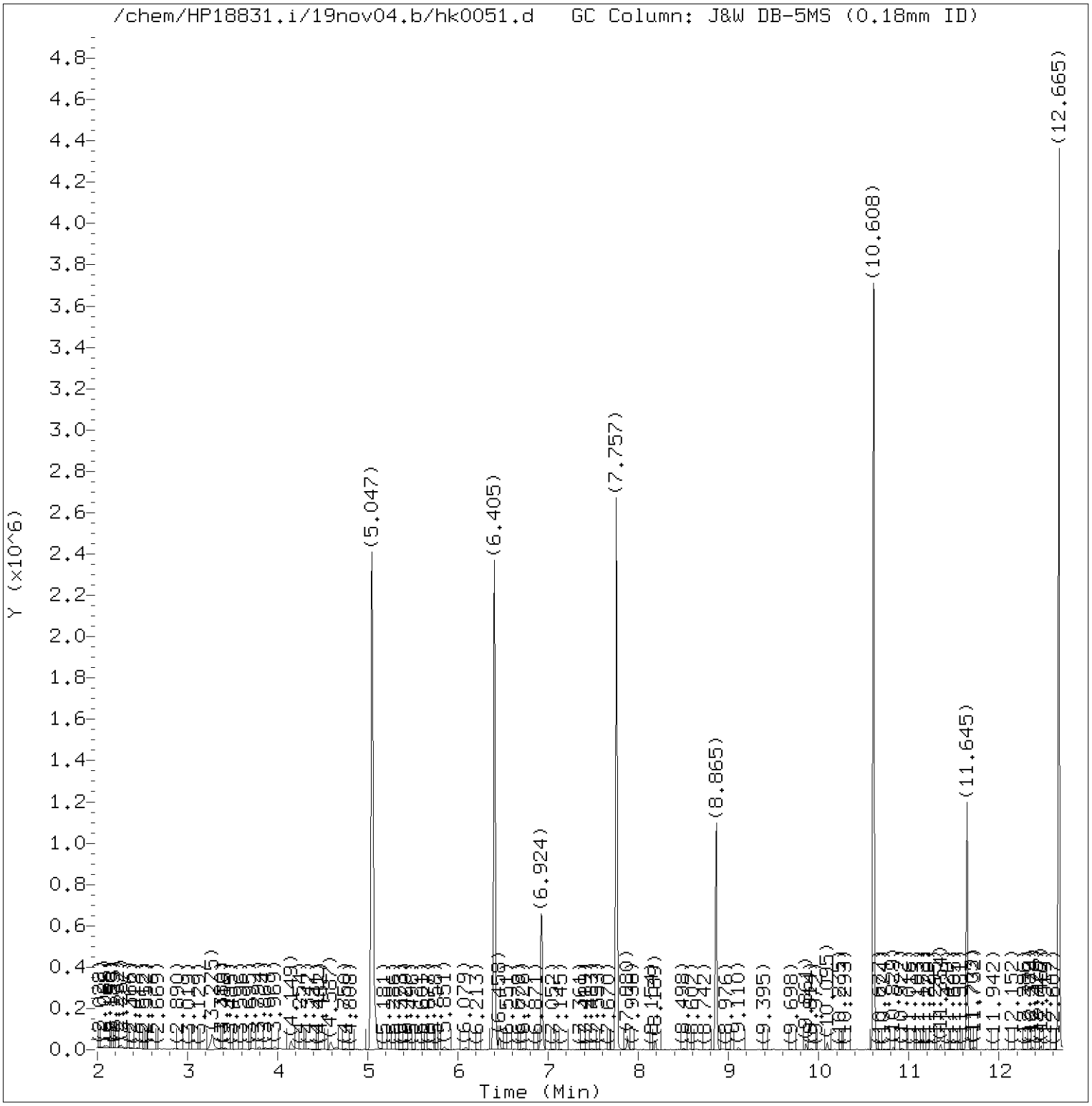
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.757	(0.001)	82	999345	19.861	79%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.613	(0.000)	172	1471261	16.524	66%		44 - 102
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1764629	19.934	80%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Sylvester Williams on 11/04/2019 at 18:56. Target 3.5 esignature user ID: sw30417

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

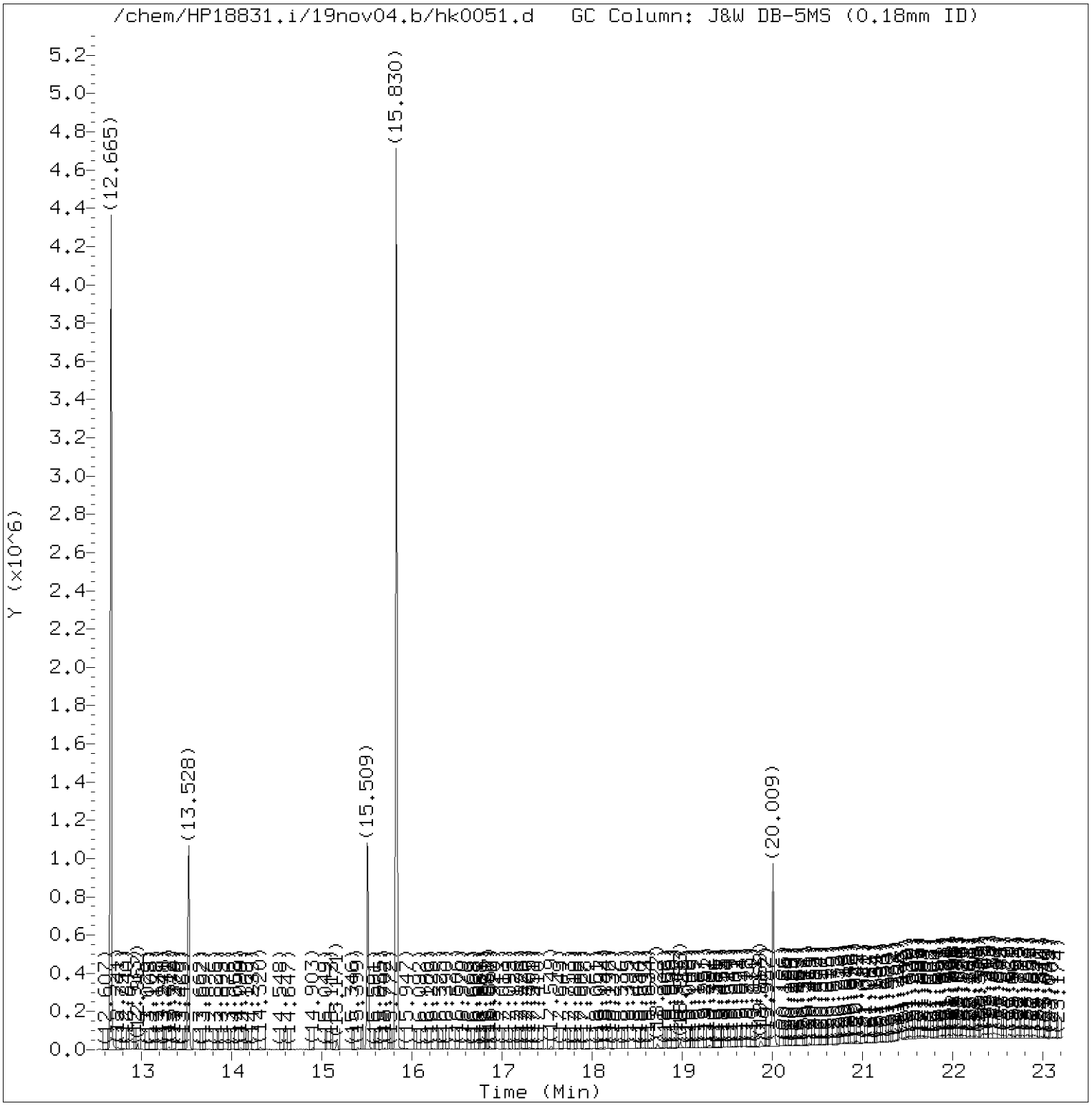
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0051.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:22 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4809 Lab Sample ID: 1183616

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0051.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:22 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4809 Lab Sample ID: 1183616

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0051.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:22 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4809 Lab Sample ID: 1183616

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.930	152	143263	5.000
45)$Nitrobenzene-d5	(2)	7.757	82	999345	19.861
68)*Naphthalene-d8	(2)	8.865	136	597749	5.000
96)$2-Fluorobiphenyl	(3)	10.613	172	1471261	16.524
118)*Acenaphthene-d10	(3)	11.645	164	265571	5.000
158)*Phenanthrene-d10	(4)	13.528	188	438044	5.000
180)*Pyrene-d10	(5)	15.509	212	482132	5.000
184)$Terphenyl-d14	(5)	15.830	244	1764629	19.934
218)*Perylene-d12	(6)	20.009	264	426047	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:56.
Target 3.5 esignature user ID: sw30417

F4810 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183617

Data file: /chem/HP18831.i/19nov04.b/hk0052.d Injection date and time: **04-NOV-2019 17:51**
Data file Sample Info. Line: F4810;1183617;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 246 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.929	(0.000)	848	152	121504	(-44)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	436703	(-46)	5.00	
118) Acenaphthene-d10	11.645	(0.006)	1657	164	261297	(-35)	5.00	
158) Phenanthrene-d10	13.527	(0.000)	1980	188	559885	(-24)	5.00	
180) Pyrene-d10	15.509	(0.006)	2320	212	518649	(-3)	5.00	
218) Perylene-d12	20.009	(0.006)	3092	264	390558	(-28)	5.00	

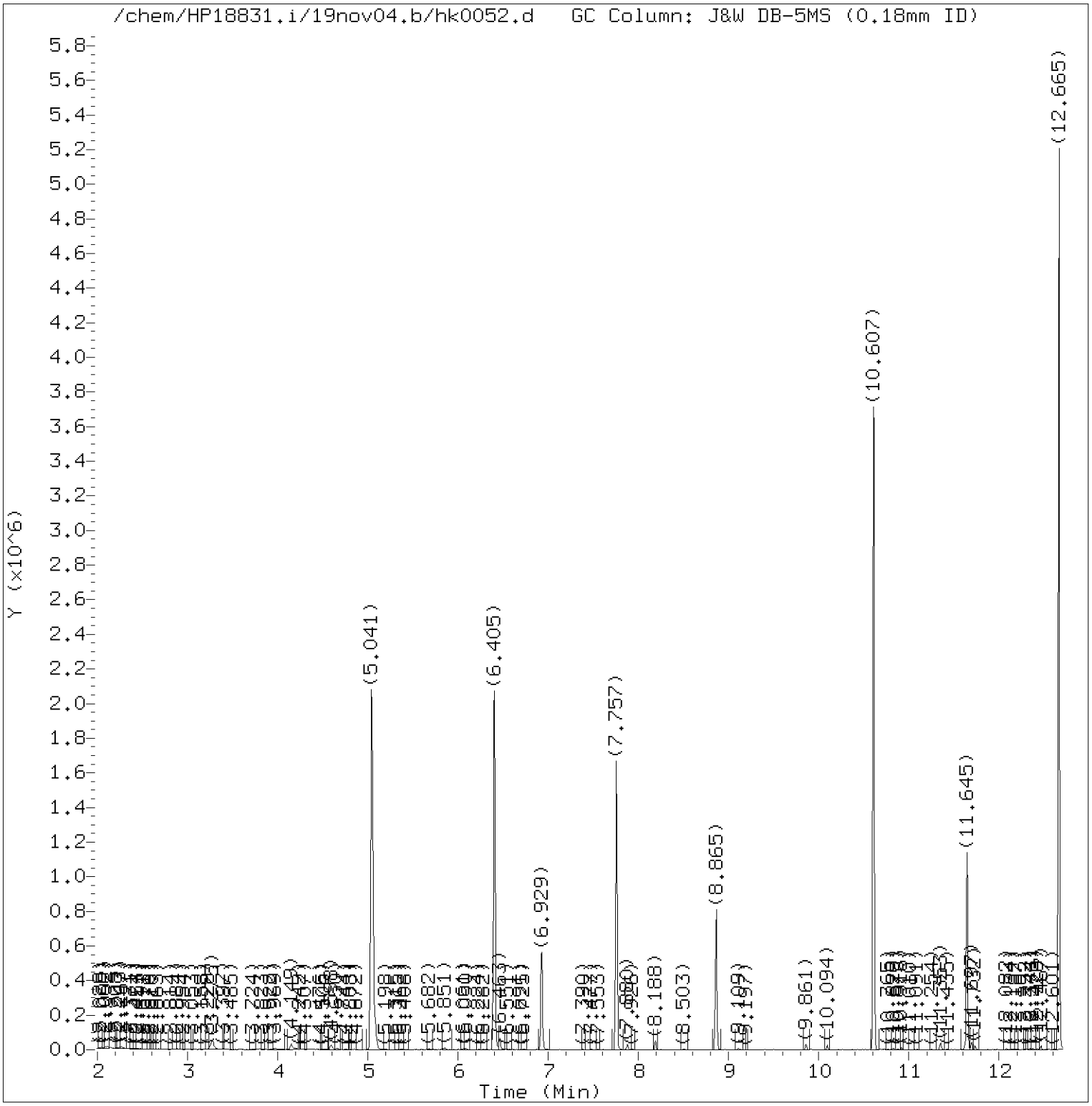
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.757	(0.001)	82	616109	16.760	67%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.607	(0.000)	172	1455543	16.614	66%		44 - 102
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1973077	20.720	83%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Sylvester Williams on 11/04/2019 at 18:57. Target 3.5 esignature user ID: sw30417

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

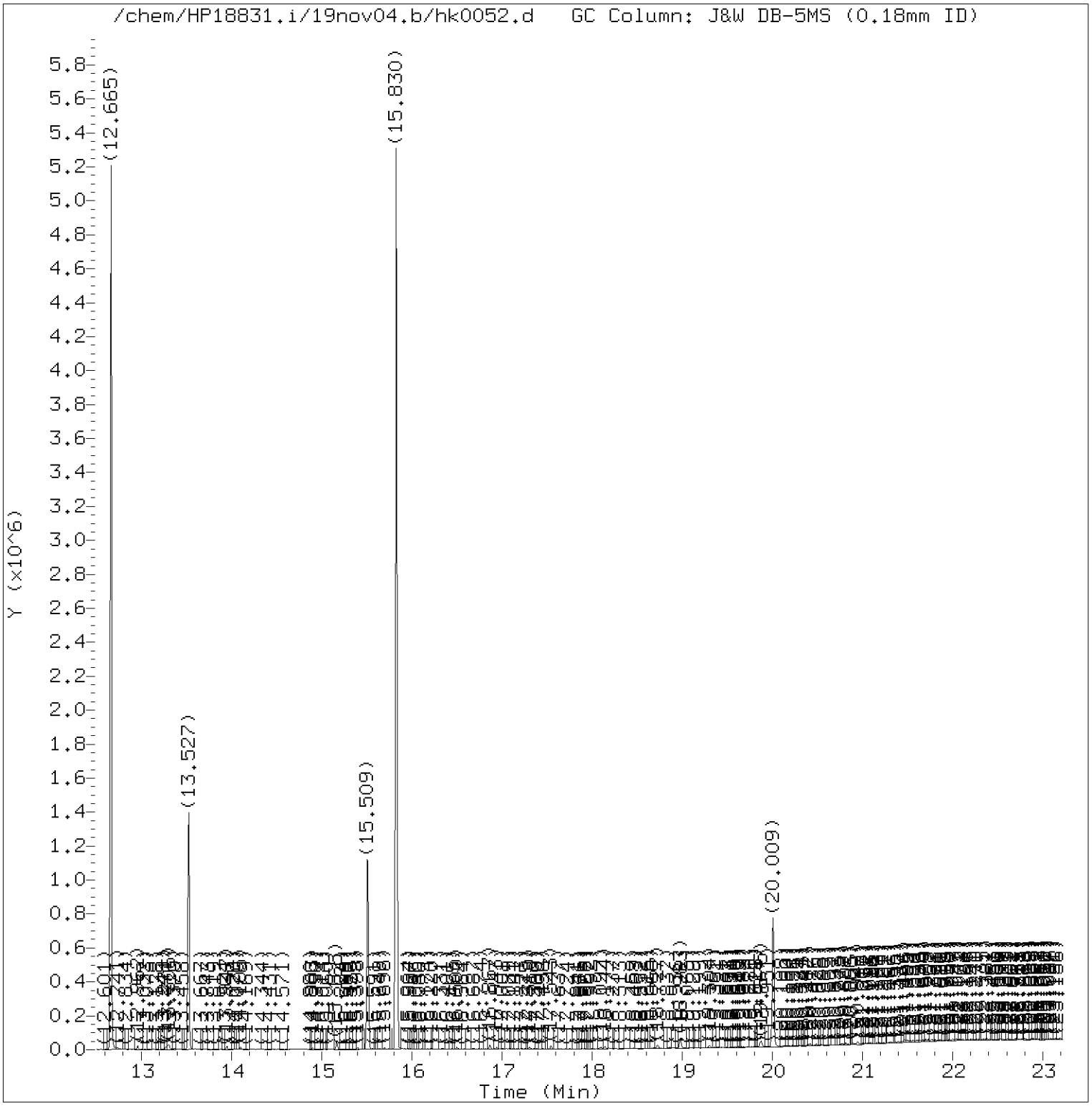
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0052.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4810 Lab Sample ID: 1183617

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0052.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4810 Lab Sample ID: 1183617

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0052.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 17:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: F4810 Lab Sample ID: 1183617

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.929	152	121504	5.000
45)$Nitrobenzene-d5	(2)	7.757	82	616109	16.760
68)*Naphthalene-d8	(2)	8.865	136	436703	5.000
96)$2-Fluorobiphenyl	(3)	10.607	172	1455543	16.614
118)*Acenaphthene-d10	(3)	11.645	164	261297	5.000
158)*Phenanthrene-d10	(4)	13.527	188	559885	5.000
180)*Pyrene-d10	(5)	15.509	212	518649	5.000
184)$Terphenyl-d14	(5)	15.830	244	1973077	20.720
218)*Perylene-d12	(6)	20.009	264	390558	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417

F4811 Lancaster Laboratories, Inc. Analysis Summary for GC/MS Semivolatiles 1183618

Data file: /chem/HP18831.i/19nov04.b/hk0053.d Injection date and time: **04-NOV-2019 18:20**
Data file Sample Info. Line: F4811;1183618;1;0;SAMPLE;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:52 Automation

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 236 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.930	(0.000)	848	152	156345	(-28)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	424093	(-47)	5.00	
118) Acenaphthene-d10	11.645	(0.006)	1657	164	296147	(-26)	5.00	
158) Phenanthrene-d10	13.528	(0.000)	1980	188	402757	(-45)	5.00	
180) Pyrene-d10	15.515	(0.000)	2321	212	375437	(-30)	5.00	
218) Perylene-d12	20.009	(0.006)	3092	264	385964	(-29)	5.00	

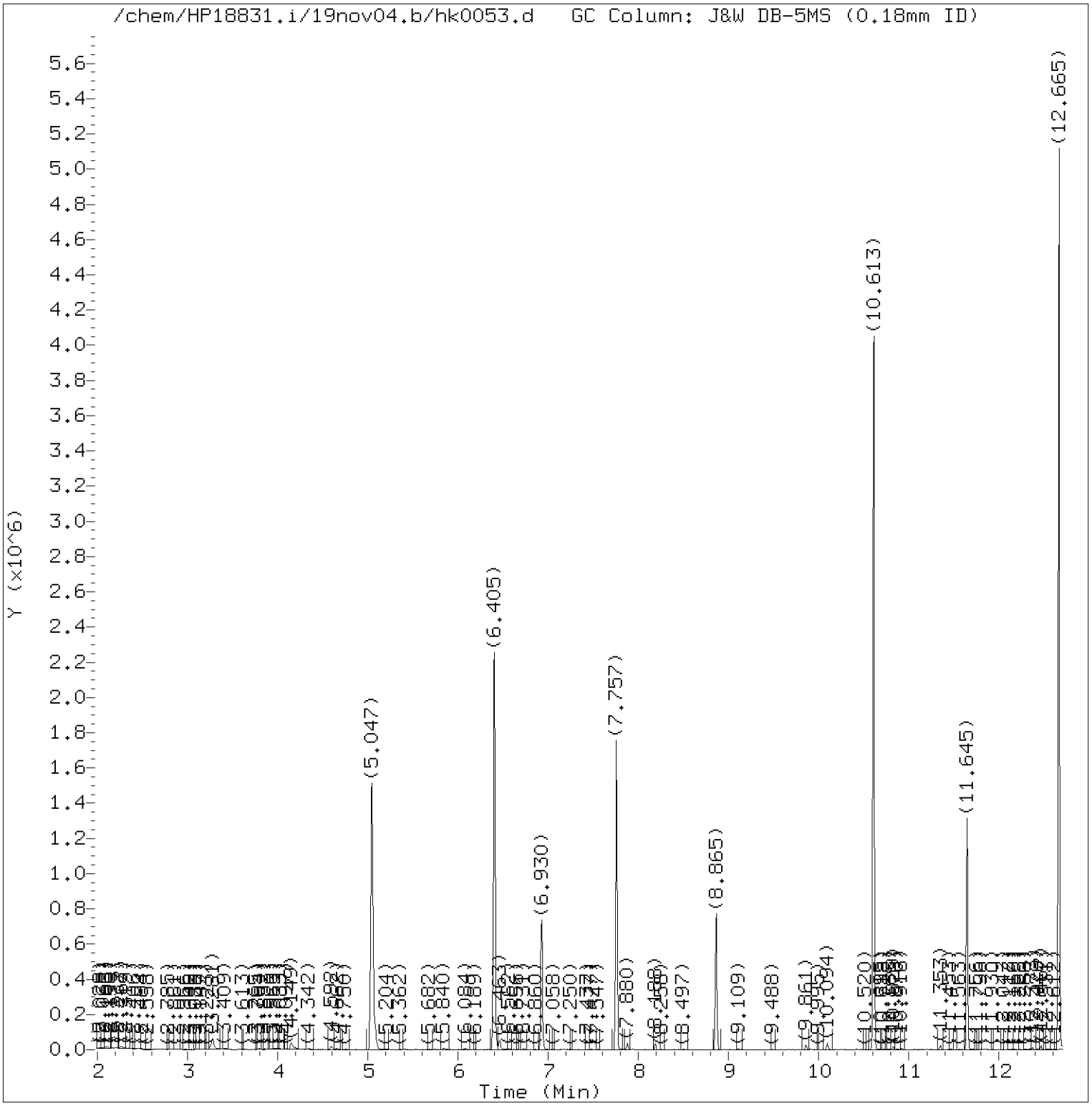
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.757	(0.001)	82	632893	17.729	71%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.613	(0.000)	172	1572059	15.833	63%		44 - 102
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1451499	21.057	84%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Sylvester Williams on 11/04/2019 at 18:57. Target 3.5 esignature user ID: sw30417

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

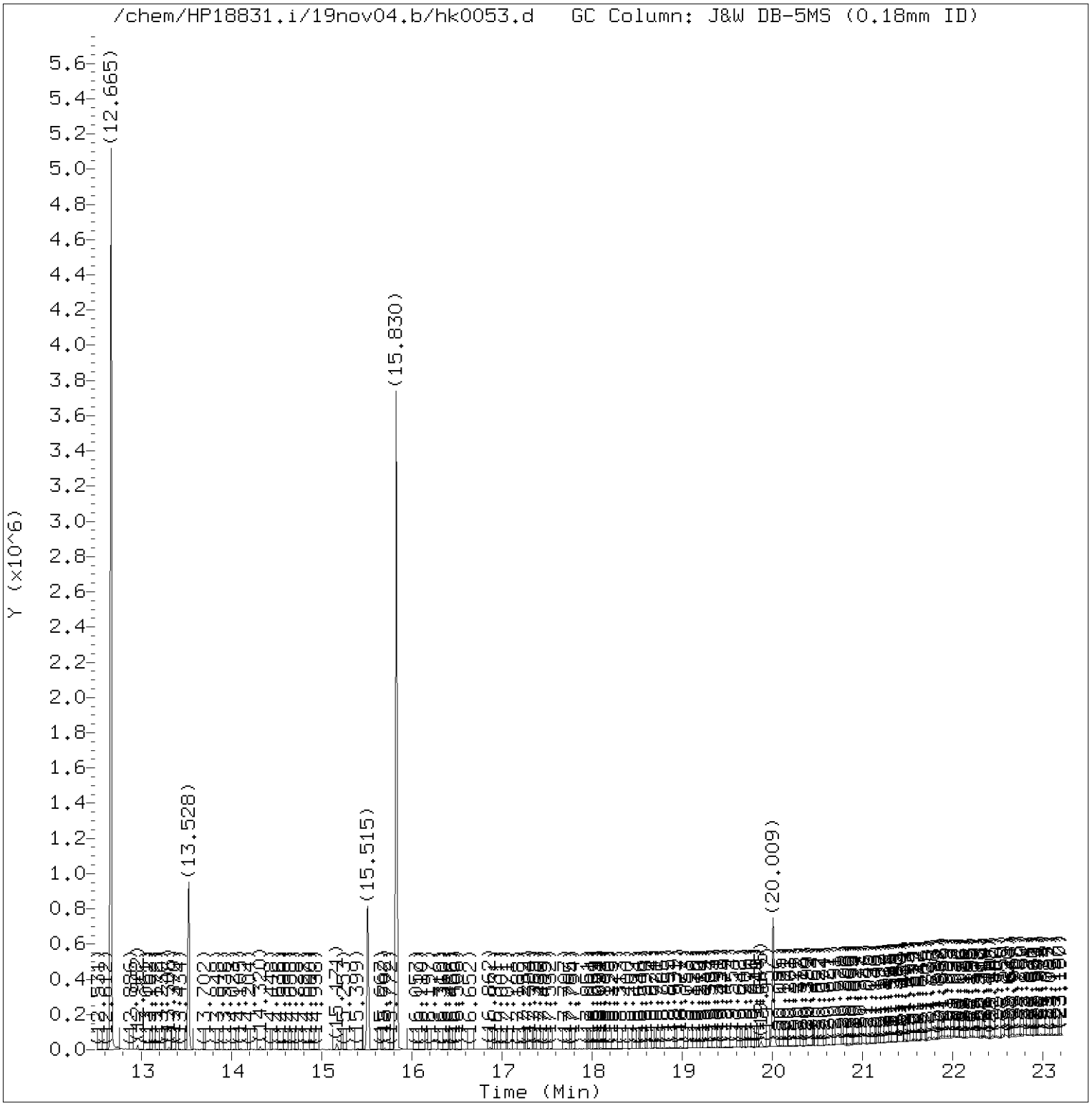
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0053.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 18:20 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:52 Automation

Sample Name: F4811 Lab Sample ID: 1183618

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0053.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 18:20 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:52 Automation

Sample Name: F4811 Lab Sample ID: 1183618

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0053.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 18:20 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:52 Automation

Sample Name: F4811 Lab Sample ID: 1183618

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.930	152	156345	5.000
45)$Nitrobenzene-d5	(2)	7.757	82	632893	17.729
68)*Naphthalene-d8	(2)	8.865	136	424093	5.000
96)$2-Fluorobiphenyl	(3)	10.613	172	1572059	15.833
118)*Acenaphthene-d10	(3)	11.645	164	296147	5.000
158)*Phenanthrene-d10	(4)	13.528	188	402757	5.000
180)*Pyrene-d10	(5)	15.515	212	375437	5.000
184)$Terphenyl-d14	(5)	15.830	244	1451499	21.057
218)*Perylene-d12	(6)	20.009	264	385964	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Sylvester Williams
on 11/04/2019 at 18:57.
Target 3.5 esignature user ID: sw30417

Standards Data

Semivolatiles by GC/MS

SAMPLE INFORMATION SUMMARY

BATCH: /chem/HP18831.i/19oct29d.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
hj1600d.d	29-OCT-2019 22:04	DFTPP	1.00	HP18831	rvdftpp8270d.m	19oct29d.b
hj1601d.d	29-OCT-2019 22:20	Cal Level 6	1.00	HP18831	rv8270d.m	19oct29d.b
hj1602d.d	29-OCT-2019 22:54	Cal Level 1	1.00	HP18831	rv8270d.m	19oct29d.b
hj1603d.d	29-OCT-2019 23:23	Cal Level 8	1.00	HP18831	rv8270d.m	19oct29d.b
hj1604d.d	29-OCT-2019 23:52	Cal Level 7	1.00	HP18831	rv8270d.m	19oct29d.b
hj1605d.d	30-OCT-2019 00:21	Cal Level 5	1.00	HP18831	rv8270d.m	19oct29d.b
hj1606d.d	30-OCT-2019 00:50	Cal Level 4	1.00	HP18831	rv8270d.m	19oct29d.b
hj1607d.d	30-OCT-2019 01:20	Cal Level 3	1.00	HP18831	rv8270d.m	19oct29d.b
hj1608d.d	30-OCT-2019 01:49	Cal Level 2	1.00	HP18831	rv8270d.m	19oct29d.b
hj1609d.d	30-OCT-2019 02:18	MDL/LOQ	1.00	HP18831	rv8270d.m	19oct29d.b
hj1610d.d	30-OCT-2019 02:47	MDL/LOQ	1.00	HP18831	rv8270d.m	19oct29d.b
hj1611d.d	30-OCT-2019 03:16	ICV	1.00	HP18831	rv8270d.m	19oct29d.b
hj1612d.d	30-OCT-2019 03:45	ICV	1.00	HP18831	rv8270d.m	19oct29d.b
hj1613d.d	30-OCT-2019 04:14	ICV	1.00	HP18831	rv8270d.m	19oct29d.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
hj1600d.d	LIQUID	SV	rvDFTPP2709	19oct29a	DFTPP	19oct29a
hj1601d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD12.5	19oct29a
hj1602d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD0.125	19oct29a
hj1603d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD030	19oct29a
hj1604d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD020	19oct29a
hj1605d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD7.5	19oct29a
hj1606d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD3.75	19oct29a
hj1607d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD1.25	19oct29a
hj1608d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD0.25	19oct29a
hj1609d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD0.125	19oct29a
hj1610d.d	LIQUID	SV	rvSTD2709	19oct29a	SSTD0.025	19oct29a
hj1611d.d	LIQUID	SV	rvICV2339	19oct29a	SSTD12.5	19oct29a
hj1612d.d	LIQUID	SV	rvBASICV2339	19oct29a	SSTD12.5	19oct29a
hj1613d.d	LIQUID	SV	rvBACID2559	19oct29a	SSTD12.5	19oct29a

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
hj1600d.d	all.sub		202927331	202927346	200002637	202927345
hj1601d.d	all1-s.sub		202927339	202927346	202927384	202927344
hj1602d.d	all1-s.sub		202927356	202927346	202927384	202927344
hj1603d.d	all1-s.sub		202927358	202927346	202927384	202927344
hj1604d.d	all1-s.sub		202927360	202927346	202927384	202927344
hj1605d.d	all1-s.sub		202927362	202927346	202927384	202927344
hj1606d.d	all1-s.sub		202927364	202927346	202927384	202927344
hj1607d.d	all1-s.sub		202927366	202927346	202927384	202927344
hj1608d.d	all1-s.sub		202927368	202927346	202927384	202927344
hj1609d.d	mdlall1-s.sub		202927370	202927346	202927384	202927344
hj1610d.d	pahmdlall1.sub		202927372	202927346	202927384	202927344
hj1611d.d	icvall1-s.sub	ICV4X.spk	202927374	202927346	202927384	202927344
hj1612d.d	basicvall1.sub	ICV4X.spk	202927376	202927346	202927384	202927344
hj1613d.d	all.sub	ICV4X.spk	202927378	202927346	202927384	202927344

SAMPLE INFORMATION SUMMARY

BATCH: /chem/HP18831.i/19oct29d.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
hj1614d.d	30-OCT-2019 04:44	ICV	1.00	HP18831	rv8270d.m	19oct29d.b
hj1615d.d	30-OCT-2019 05:13	ICV	1.00	HP18831	rv8270d.m	19oct29d.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
hj1614d.d	LIQUID	SV	rvDMPICV2609	19oct29a	SSTD12.5	19oct29a
hj1615d.d	LIQUID	SV	rvHCCPDICV2959	19oct29a	SSTD12.5	19oct29a

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
hj1614d.d	dmp.sub	ICV4X.spk	202927380	202927346	202927384	202927344
hj1615d.d	hccpd.sub	ICV4X.spk	202927382	202927346	202927384	202927344

Lancaster Laboratories
Semi-Volatiles
Runlog for Agilent GC/MS System HP18831 **HP #08**

Data Directory Path is - C:\msdchem\1\data\19nov04\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
whs02991	HK0030.D	rvDFTPP2709	11/04/2019	08:29		
whs02991	HK0030a.D	rvDFTPP2709	11/04/2019	08:43		
whs02991	HK0031.D	rvSTD2709	11/04/2019	08:57		
whs02991	HK0031a.D	rvSTD2709	11/04/2019	10:51		
whs02991	HK0031x.D	rvSTD2709	11/04/2019	11:58		
whs02991	HK0031y.D	rvSTD2709	11/04/2019	12:29		
whs02991	HK0032.D	SBLKWC302	11/04/2019	13:00	19302WAC	
whs02991	HK0035.D	302WCLCS	11/04/2019	13:29	19302WAC	
whs02991	HK0038.D	1184294	11/04/2019	13:58	19302WAC	
whs02991	HK0041.D	1184295	11/04/2019	14:27	19302WAC	
whs02991	HK0044.D	1184296	11/04/2019	14:56	19302WAC	
whs02991	HK0047.D	1184298	11/04/2019	15:25	19302WAC	
whs02991	HK0053.D	1183618	11/04/2019	18:20	19302WAY	

SAMPLE INFORMATION SUMMARY

BATCH: /chem/HP20296.i/19nov04.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
lk0011a.d	03-NOV-2019 15:24	Continuing Cal	1.00	HP20296	rv8270d.m	19nov04.b
lk0060.d	04-NOV-2019 12:10	DFTPP	1.00	HP20296	rvdftpp8270d.m	19nov04.b
lk0070.d	04-NOV-2019 13:13	DFTPP	1.00	HP20296	rvdftpp8270d.m	19nov04.b
lk0071.d	04-NOV-2019 14:10	Cal Level 5	1.00	HP20296	rv8270d.m	19nov04.b
lk0072.d	04-NOV-2019 15:01	Cal Level 1	1.00	HP20296	rv8270d.m	19nov04.b
lk0073.d	04-NOV-2019 15:30	Cal Level 8	1.00	HP20296	rv8270d.m	19nov04.b
lk0074.d	04-NOV-2019 15:59	Cal Level 7	1.00	HP20296	rv8270d.m	19nov04.b
lk0075.d	04-NOV-2019 16:28	Cal Level 6	1.00	HP20296	rv8270d.m	19nov04.b
lk0076.d	04-NOV-2019 16:57	Cal Level 4	1.00	HP20296	rv8270d.m	19nov04.b
lk0077.d	04-NOV-2019 17:26	Cal Level 3	1.00	HP20296	rv8270d.m	19nov04.b
lk0078.d	04-NOV-2019 17:55	Cal Level 2	1.00	HP20296	rv8270d.m	19nov04.b
lk0079.d	04-NOV-2019 18:24	MDL/LOQ	1.00	HP20296	rv8270d.m	19nov04.b
lk0080.d	04-NOV-2019 18:52	MDL/LOQ	1.00	HP20296	rv8270d.m	19nov04.b
lk0081.d	04-NOV-2019 19:21	ICV	1.00	HP20296	rv8270d.m	19nov04.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
lk0011a.d	LIQUID	SV	RVSTD2709	19nov03	SSTD7.5	19nov03
lk0060.d	LIQUID	SV	rvDFTPP2689	19nov04	DFTPP12.5	19nov04
lk0070.d	LIQUID	SV	rvDFTPP2689	19nov04	DFTPP12.5	19nov04
lk0071.d	LIQUID	SV	RVSTD3089	19nov04	SSTD7.5	19nov04
lk0072.d	LIQUID	SV	RVSTD2709	19nov04	SSTD0.125	19nov04
lk0073.d	LIQUID	SV	RVSTD2709	19nov04	SSTD30	19nov04
lk0074.d	LIQUID	SV	RVSTD2709	19nov04	SSTD20	19nov04
lk0075.d	LIQUID	SV	RVSTD3809	19nov04	SSTD12.5	19nov04
lk0076.d	LIQUID	SV	RVSTD2709	19nov04	SSTD3.75	19nov04
lk0077.d	LIQUID	SV	RVSTD2709	19nov04	SSTD1.25	19nov04
lk0078.d	LIQUID	SV	RVSTD2709	19nov04	SSTD0.25	19nov04
lk0079.d	LIQUID	SV	RVSTD2709	19nov04	SSTD0.125	19nov04
lk0080.d	LIQUID	SV	RVSTD2709	19nov04	SSTD0.025	19nov04
lk0081.d	LIQUID	SV	RVICV3089	19nov04	SSTD12.5	19nov04

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
lk0011a.d	all1.sub		202929273	202928012	202874465	202929240
lk0060.d	all.sub		202929077	202929078	200002637	202929076
lk0070.d	all.sub		202929146	202929147	200002637	202929076
lk0071.d	all1.sub		202929241	202929147	202929808	202929240
lk0072.d	all1.sub		202929317	202929147	202929808	202929240
lk0073.d	all1.sub		202929349	202929147	202929808	202929240
lk0074.d	all1.sub		202929368	202929147	202929808	202929240
lk0075.d	all1.sub		202929403	202929147	202929808	202929240
lk0076.d	all1.sub		202929437	202929147	202929808	202929240
lk0077.d	all1.sub		202929459	202929147	202929808	202929240
lk0078.d	all1.sub		202929494	202929147	202929808	202929240
lk0079.d	mdlall1.sub		202929528	202929147	202929808	202929240
lk0080.d	pahmdlall1.sub		202929560	202929147	202929808	202929240
lk0081.d	icv1.sub	ICV4X.spk	202929604	202929147	202929808	202929240

SAMPLE INFORMATION SUMMARY

BATCH: /chem/HP20296.i/19nov04.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
lk0082.d	04-NOV-2019 19:50	ICV	1.00	HP20296	rv8270d.m	19nov04.b
lk0083.d	04-NOV-2019 20:19	ICV	1.00	HP20296	rv8270d.m	19nov04.b
lk0084.d	04-NOV-2019 20:48	ICV	1.00	HP20296	rv8270d.m	19nov04.b
lk0085.d	04-NOV-2019 23:32	Unknown	1.00	HP20296	rv8270d.m	19nov04.b
lk0086.d	05-NOV-2019 00:00	Unknown	1.00	HP20296	rv8270d.m	19nov04.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
lk0082.d	LIQUID	SV	RVBASICV2399	19nov04	SSTD12.5	19nov04
lk0083.d	LIQUID	SV	RVHCCPDICV2959	19nov04	SSTD25	19nov04
lk0084.d	LIQUID	SV	RVDMPICV2609	19nov04	SSTD25	19nov04
lk0085.d	LIQUID	SV	1183660	19302WAA	TURFD	19nov04
lk0086.d	LIQUID	SV	1183661	19302WAA	TUREB	19nov04

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
lk0082.d	basicval11.sub	ICV4X.spk	202929647	202929147	202929808	202929240
lk0083.d	hccpd.sub	ICV4X.spk	202929689	202929147	202929808	202929240
lk0084.d	dmp.sub	ICV4X.spk	202929734	202929147	202929808	202929240
lk0085.d	33667M.sub		202929862	202929147	202929808	202929240
lk0086.d	33667M.sub		202929890	202929147	202929808	202929240

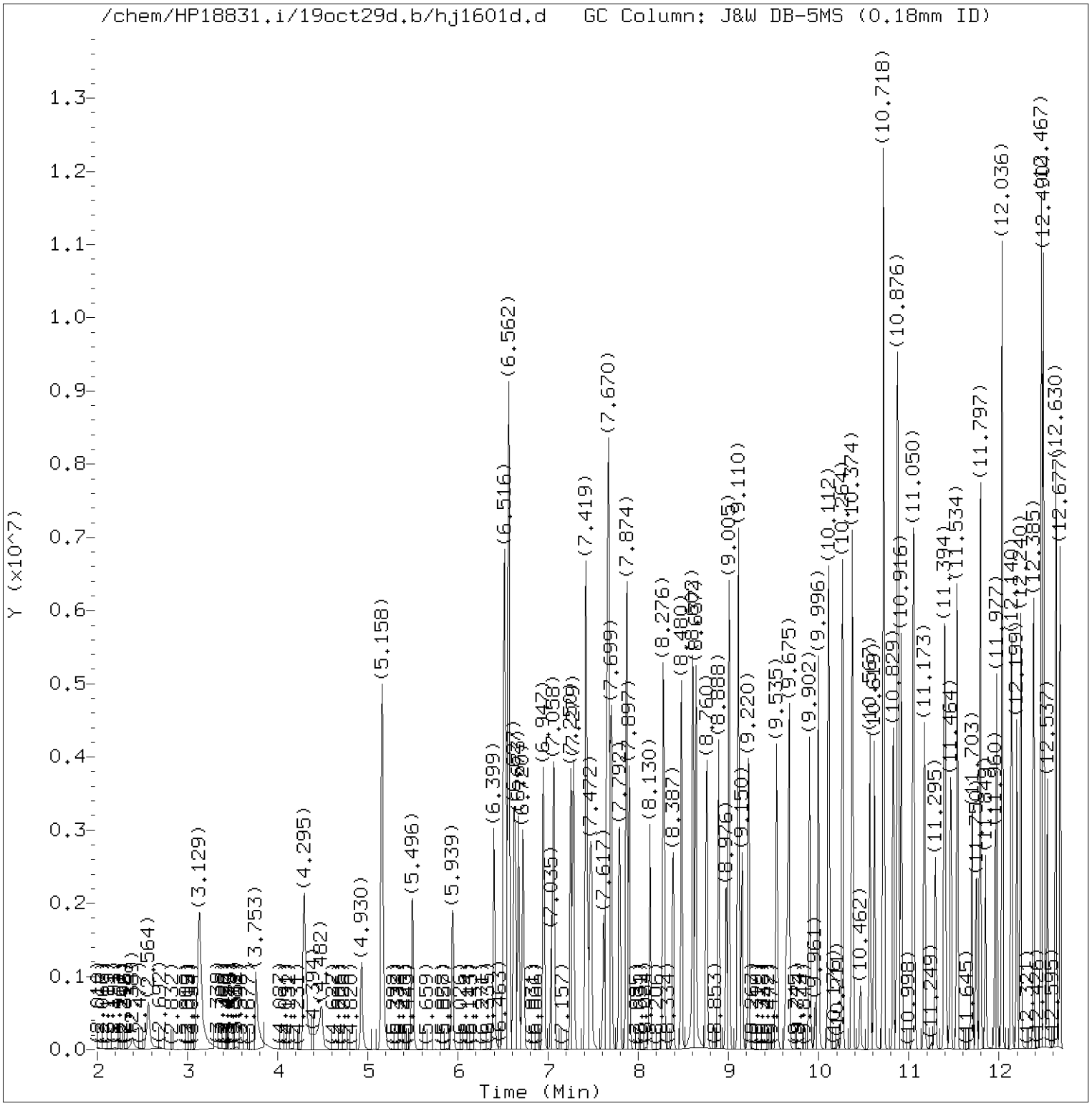
Lancaster Laboratories
Semi-Volatiles
Runlog for Agilent GC/MS System HP20296 **HP #12**

Data Directory Path is - D:\data\19nov05\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
knb25316	LK0090.D	rvDFTPP2689	11/05/2019	06:58		
knb25316	LK0092.D	SBLKWA308	11/05/2019	08:31	19308WAA	
knb25316	LK0093.D	308WALCS	11/05/2019	09:00	19308WAA	
knb25316	LK0094.D	308WALCSD	11/05/2019	09:29	19308WAA	
knb25316	LK0095.D	SBLKWD308	11/05/2019	09:58	19308WAD	
knb25316	LK0096.D	308WDLCS	11/05/2019	10:26	19308WAD	
knb25316	LK0097.D	308WDLCSD	11/05/2019	10:55	19308WAD	
knb25316	LK0098.D	SBLKWG303	11/05/2019	11:24	19303WAG	
knb25316	LK0099.D	303WGLCS	11/05/2019	11:53	19303WAG	
knb25316	LK0100.D	1190888	11/05/2019	12:22	19308WAA	
knb25316	LK0101.D	1190889	11/05/2019	12:51	19308WAA	
knb25316	LK0102.D	1190890	11/05/2019	13:20	19308WAA	
knb25316	LK0103.D	1190786	11/05/2019	13:49	19308WAD	
knb25316	LK0104.D	1183606	11/05/2019	14:18	19303WAG	
knb25316	LK0105.D	1183607	11/05/2019	14:47	19303WAG	
knb25316	LK0106.D	1183608	11/05/2019	15:16	19303WAG	
knb25316	LK0107.D	1183609	11/05/2019	15:45	19303WAG	
knb25316	LK0108.D	1183610	11/05/2019	16:14	19303WAG	
knb25316	LK0109.D	1183611	11/05/2019	16:43	19303WAG	
knb25316	LK0110.D	1183612	11/05/2019	17:12	19303WAG	
knb25316	LK0118.D	rvSTD2709	11/05/2019	17:41		

Lancaster Laboratories
Semi-Volatiles
Runlog for Agilent GC/MS System HP20296 **HP #12**
Data Directory Path is - D:\data\19nov05a\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
art12405	LK0150.D	rvDFTPP2689	11/05/2019	18:13		
art12405	LK0151.D	RVAMIN2059	11/05/2019	18:26		
art12405	LK0152.D	RVSTD3089	11/05/2019	19:34		
art12405	LK0153.D	RVAMIN2059	11/05/2019	21:07		
art12405	LK0154.D	RVAMIN2059	11/05/2019	21:36		
art12405	LK0155.D	RVAMIN2059	11/05/2019	22:05		
art12405	LK0156.D	RVAMIN2059	11/05/2019	22:34		
art12405	LK0157.D	RVAMIN2059	11/05/2019	23:03		
art12405	LK0158.D	RVAMIN2059	11/05/2019	23:32		
art12405	LK0159.D	RVAMIN2059	11/06/2019	00:01		
art12405	LK0160.D	1183613	11/06/2019	00:30	19303WAG	
art12405	LK0161.D	1183615	11/06/2019	00:58	19303WAG	
art12405	LK0162.D	1190893	11/06/2019	01:27	19308WAA	
art12405	LK0163.D	1190783	11/06/2019	01:56	19308WAD	



Total Ion Chromatogram (TIC)

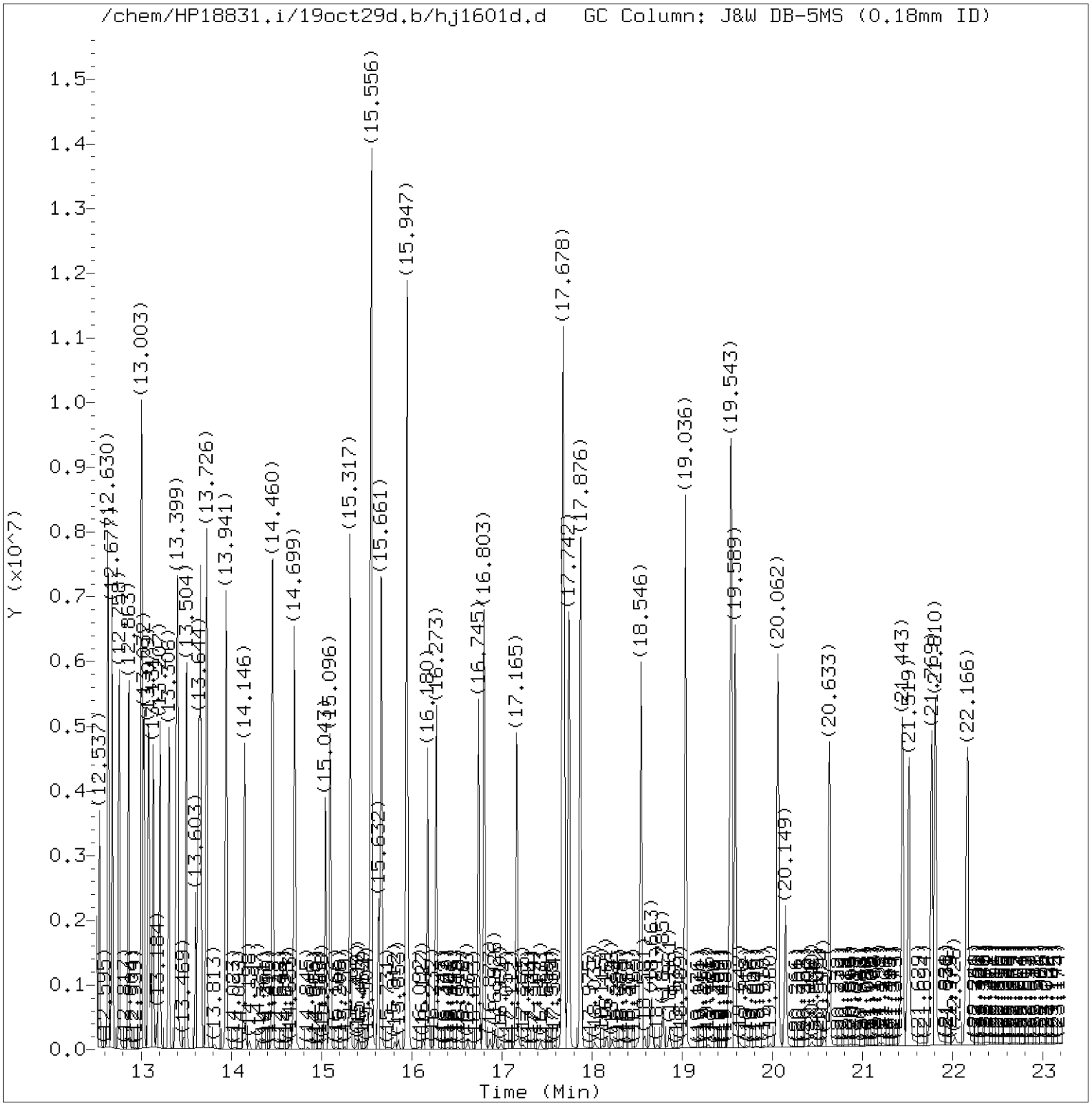
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

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Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.564	88	535177	10.697
5) N-Nitrosodimethylamine	(1)	3.112	74	802443	11.050
6) Pyridine	(1)	3.135	79	1349987	10.658
8) 2-Picoline	(1)	4.289	93	1443949	10.775
9) N-Nitrosomethylethylamine	(1)	4.482	88	601363	10.664
10) Methyl methanesulfonate	(1)	4.930	80	682799	11.330
12)$2-Fluorophenol	(1)	5.158	112	2421550	23.837
14) N-Nitrosodiethylamine	(1)	5.496	102	625584	11.731
43) Total Cresols	(1)			2343089	25.357
16) Ethyl methanesulfonate	(1)	5.945	109	634089	11.704
17) Benzaldehyde	(1)	6.399	77	907117	11.707
18)$Phenol-d6	(1)	6.510	99	3199728	24.426
19) Phenol	(1)	6.533	94	1774568	12.294
20) Aniline	(1)	6.557	93	2041488	12.369
21) a-methylstyrene	(1)	6.632	118	491643	11.787
23) bis(2-Chloroethyl)ether	(1)	6.673	93	1318096	11.909
24) 2-Chlorophenol	(1)	6.720	128	1169520	12.100
25) 1,3-Dichlorobenzene	(1)	6.947	146	1281999	12.438
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	330144	5.000
27) 1,4-Dichlorobenzene	(1)	7.064	146	1302782	12.418
28) Benzyl alcohol	(1)	7.250	108	801508	13.086
29) 1,2-Dichlorobenzene	(1)	7.279	146	1212841	12.270
100) Isosafrole	(3)			989219	12.545
31) Indene	(1)	7.413	115	1823803	12.695
32) 2-Methylphenol	(1)	7.425	108	1153021	12.994
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	2655001	13.106
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	2655001	13.106
36) N-Nitrosopyrrolidine	(1)	7.617	100	645240	13.293
37) Acetophenone	(1)	7.647	105	1685292	12.368
38) 4-Methylphenol	(1)	7.664	108	1190068	12.363
39) N-Nitroso-di-n-propylamine	(1)	7.670	70	934292	13.077
40) N-Nitrosomorpholine	(1)	7.687	56	1144155	13.019
41) o-Toluidine	(1)	7.699	106	1916581	12.790
44) Hexachloroethane	(1)	7.792	117	532581	12.449
45)$Nitrobenzene-d5	(2)	7.874	82	2731696	25.902
46) Nitrobenzene	(2)	7.897	77	1382010	13.006
125) 2,4_2,6-Dinitrotoluenes	(3)			1187499	24.680
50) N-Nitrosopiperidine	(2)	8.130	114	618216	12.873
52) Isophorone	(2)	8.276	82	2542888	13.200
53) 2-Nitrophenol	(2)	8.387	139	633683	12.859

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Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.480	107	1232637	12.244
59) O,O,O-Triethylphosphorothioate	(2)	8.608	198	531233	11.825
57) bis(2-Chloroethoxy)methane	(2)	8.637	93	1556672	12.959
58) Benzoic acid	(2)	8.637	105	835174	12.936
62) 2,4-Dichlorophenol	(2)	8.760	162	940884	12.596
151) Diallate trans/cis	(4)			1244661	13.379
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	970002	11.988
68)*Naphthalene-d8	(2)	8.976	136	1252858	5.000
69) Naphthalene	(2)	9.005	128	3389982	12.498
70) 4-Chloroaniline	(2)	9.110	127	1355270	12.909
71) 2,6-Dichlorophenol	(2)	9.115	162	915815	12.538
72) Hexachloropropene	(2)	9.150	213	541390	12.043
74) Hexachlorobutadiene	(2)	9.226	225	575872	12.070
78) Quinoline	(2)	9.535	129	2060285	12.631
79) Caprolactam	(2)	9.657	113	337158	12.742
80) N-Nitrosodi-n-butylamine	(2)	9.675	84	1115573	14.526
83) 4-Chloro-3-methylphenol	(2)	9.902	107	1076859	12.985
85) Safrole	(2)	9.996	162	866260	12.431
86) 2-Methylnaphthalene	(2)	10.112	142	2276133	12.652
87) 1-Methylnaphthalene	(2)	10.264	142	2117774	12.953
88) Hexachlorocyclopentadiene	(3)	10.369	237	655112	12.027
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	935890	12.039
91) cis-Isosafrole	(3)	10.462	162	154566	2.073
93) 2,4,6-Trichlorophenol	(3)	10.567	196	666242	13.026
95) 2,4,5-Trichlorophenol	(3)	10.619	196	691702	12.604
96)$2-Fluorobiphenyl	(3)	10.718	172	4897873	25.410
97) trans-Isosafrole	(3)	10.829	162	834653	10.472
98) 1,1'-Biphenyl	(3)	10.870	154	2665774	12.447
99) 2-Chloronaphthalene	(3)	10.881	162	2011176	12.320
101) 1-Chloronaphthalene	(3)	10.916	162	1907085	12.443
103) Diphenyl ether	(3)	11.050	170	1426025	12.253
104) 2-Nitroaniline	(3)	11.062	138	738803	13.066
108) 1,4-Naphthoquinone	(3)	11.173	158	888893	12.720
109) 1,4-Dinitrobenzene	(3)	11.295	168	368478	12.341
110) Dimethylphthalate	(3)	11.394	163	2165866	12.116
111) 1,3-Dinitrobenzene	(3)	11.406	168	417465	12.587
113) 2,6-Dinitrotoluene	(3)	11.470	165	501712	12.253
114) Acenaphthylene	(3)	11.534	152	3350852	12.703
117) 3-Nitroaniline	(3)	11.703	138	607364	13.110
118)*Acenaphthene-d10	(3)	11.744	164	574909	5.000

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Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.797	153	2191083	12.700
120) 2,4-Dinitrophenol	(3)	11.849	184	359047	12.191
121) 4-Nitrophenol	(3)	11.960	109	409784	12.857
122) Pentachlorobenzene	(3)	11.977	250	832123	12.163
123) 2,4-Dinitrotoluene	(3)	12.036	165	685787	12.427
124) Dibenzofuran	(3)	12.036	168	3048714	12.977
126) 1-Naphthylamine	(3)	12.140	143	2031345	12.635
127) 2,3,4,6-Tetrachlorophenol	(3)	12.199	232	534169	11.868
128) 2-Naphthylamine	(3)	12.240	143	2009522	12.691
129) Diethylphthalate	(3)	12.385	149	2380732	12.184
131) Fluorene	(3)	12.467	166	2422388	12.584
130) Thionazin	(3)	12.473	107	460163	12.456
133) 5-Nitro-o-toluidine	(3)	12.490	152	707830	12.646
132) 4-Chlorophenyl-phenylether	(3)	12.490	204	1078402	12.064
134) 4-Nitroaniline	(3)	12.502	138	643340	13.252
135) 4,6-Dinitro-2-methylphenol	(4)	12.537	198	425432	11.842
137) NDPA as diphenylamine	(4)	12.630	169	2040832	11.984
136) N-Nitrosodiphenylamine	(4)	12.630	169	2040832	11.984
139) 1,2-Diphenylhydrazine	(4)	12.677	77	2682743	13.096
140)$2,4,6-Tribromophenol	(3)	12.758	330	603450	23.096
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	464009	12.934
145) Diallate (peak 1)	(4)	13.003	86	1062129	11.078
146) Phorate	(4)	13.009	75	1702699	13.794
147) Phenacetin	(4)	13.032	108	1338153	12.908
148) 4-Bromophenyl-phenylether	(4)	13.085	248	587177	11.842
149) Diallate (peak 2)	(4)	13.102	86	182532	2.301
150) Hexachlorobenzene	(4)	13.131	284	621612	12.411
152) Dimethoate	(4)	13.207	87	1105647	13.998
153) Atrazine	(4)	13.312	200	525052	11.801
154) Pentachlorophenol	(4)	13.388	266	458875	12.471
155) 4-Aminobiphenyl	(4)	13.405	169	1468892	13.273
156) Pentachloronitrobenzene	(4)	13.405	237	281826	12.332
157) Pronamide	(4)	13.504	173	1099717	12.946
158)*Phenanthrene-d10	(4)	13.627	188	1154472	5.000
159) Dinoseb	(4)	13.644	211	682755	12.741
160) Phenanthrene	(4)	13.662	178	3276762	12.455
162) Anthracene	(4)	13.726	178	3356474	12.546
168) Carbazole	(4)	13.941	167	3376249	12.791
169) Methyl parathion	(4)	14.146	109	904108	13.639
170) Di-n-butylphthalate	(4)	14.460	149	4546340	12.863

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Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

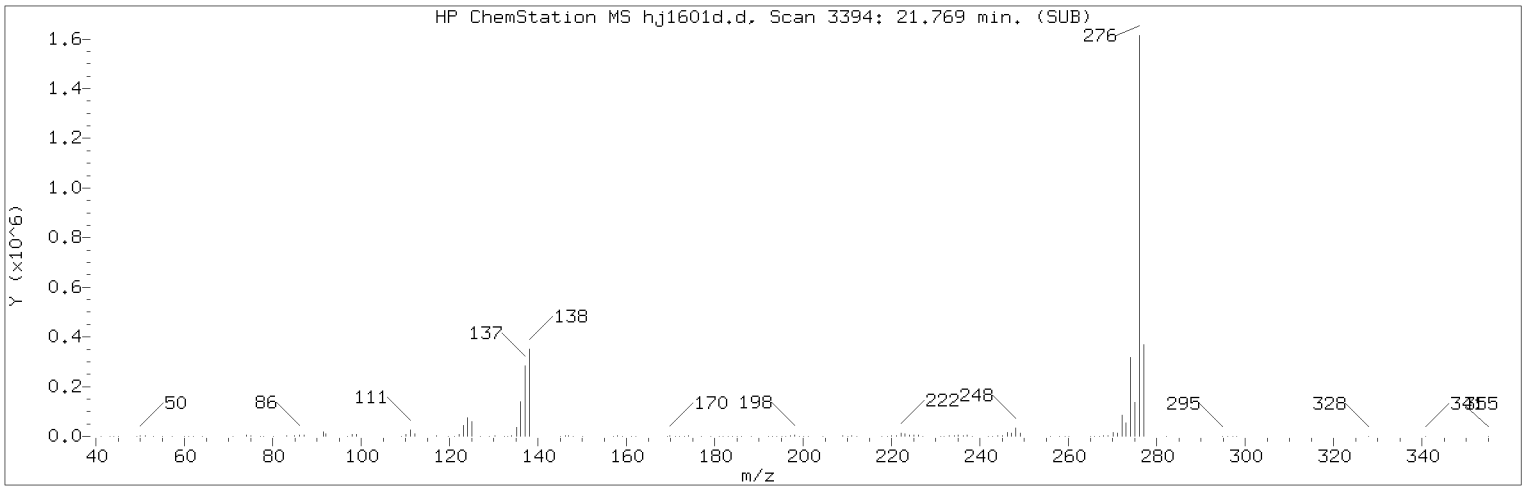
Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.693	109	582371	13.613
173) 4-Nitroquinoline-1-oxide	(4)	14.711	190	432511	12.795
227) Total PAHs	(6)			58102402	230.488
174) Octachlorostyrene	(4)	15.049	308	247640	11.684
176) Isodrin	(4)	15.096	193	410690	12.526
178) Fluoranthene	(4)	15.317	202	4054413	13.119
179) Benzidine	(5)	15.556	184	7823969	39.244
180)*Pyrene-d10	(5)	15.632	212	1119081	5.000
182) Pyrene	(5)	15.667	202	4080318	12.518
184)$Terphenyl-d14	(5)	15.947	244	4905288	23.873
187) p-Dimethylaminoazobenzene	(5)	16.180	225	657034	12.460
190) Chlorobenzilate	(5)	16.273	139	1357475	12.551
192) 3,3'-Dimethylbenzidine	(5)	16.745	212	2600450	12.732
193) Butylbenzylphthalate	(5)	16.803	149	2066474	12.725
196) 2-Acetylaminofluorene	(5)	17.165	181	1546210	12.594
198) 3,3'-Dichlorobenzidine	(5)	17.672	252	1422692	12.884
200) Benzo(a)anthracene	(5)	17.683	228	3595724	13.003
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.695	231	738130	12.363
201) Chrysene	(5)	17.742	228	3546699	12.476
204) bis(2-Ethylhexyl)phthalate	(5)	17.876	149	2982284	12.818
208) 6-Methylchrysene	(5)	18.546	242	2487384	12.425
210) Di-n-octylphthalate	(6)	19.036	149	5460589	13.529
211) Benzo(b)fluoranthene	(6)	19.537	252	3581941	12.850
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.543	256	1528071	12.451
213) Benzo(k)fluoranthene	(6)	19.589	252	3559715	12.605
216) Benzo(a)pyrene	(6)	20.062	252	3497473	13.108
218)*Perylene-d12	(6)	20.149	264	1140009	5.000
220) 3-Methylcholanthrene	(6)	20.633	268	1555999	12.916
222) Dibenz(a,h)acridine	(6)	21.443	279	2819712	12.648
223) Dibenz(a,j)acridine	(6)	21.519	279	2749422	12.469
224) Indeno(1,2,3-cd)pyrene	(6)	21.769	276	3227930M	13.359
225) Dibenz(a,h)anthracene	(6)	21.810	278	3275115	13.287
226) Benzo(g,h,i)perylene	(6)	22.166	276	3301626	13.073

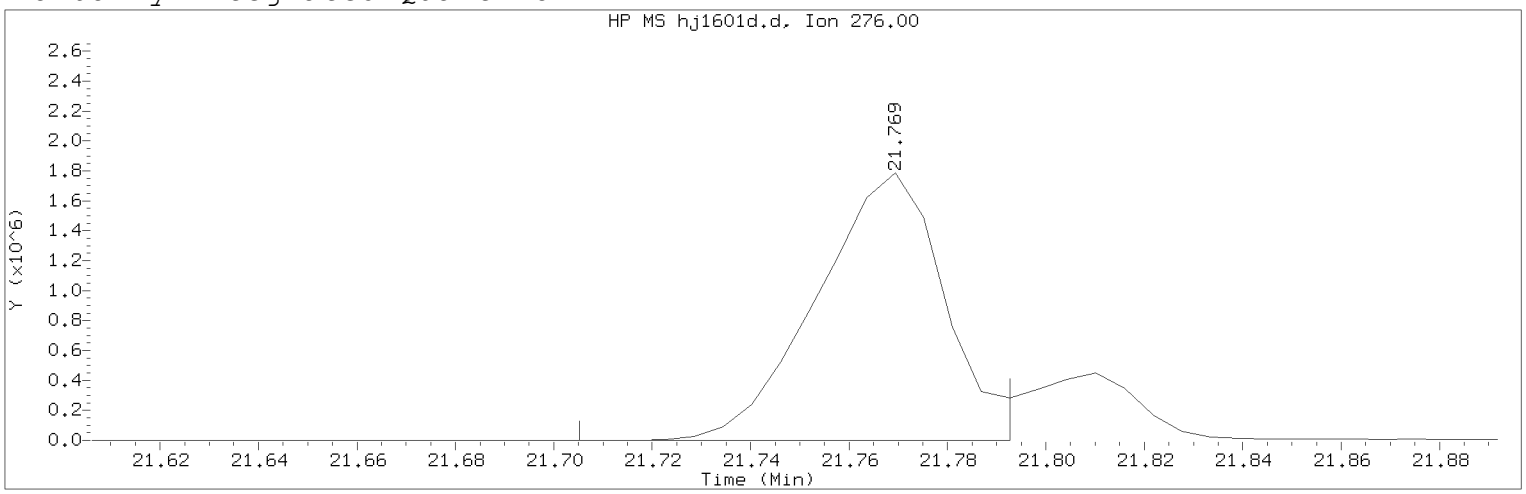
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:35
Date, time and analyst ID of latest file update: 01-Nov-2019 10:35 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

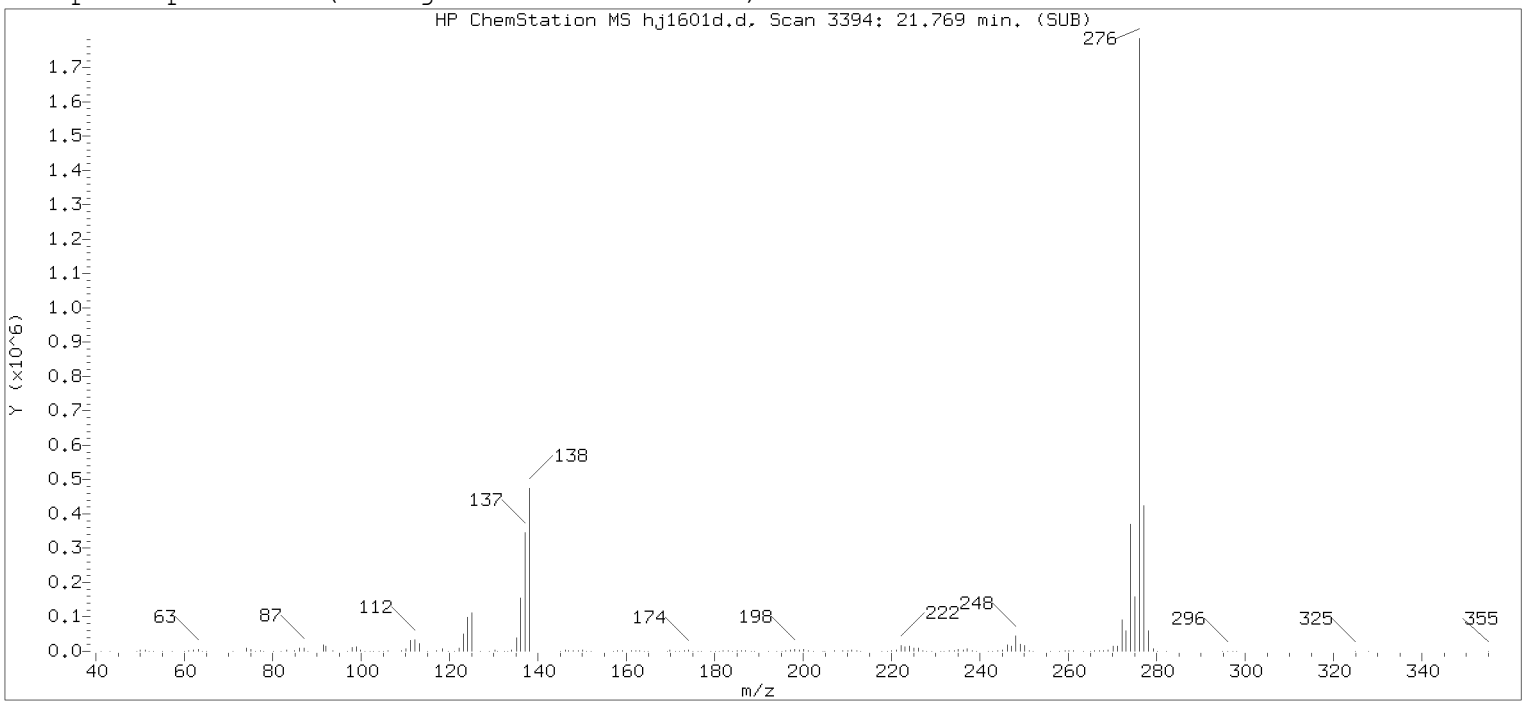
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3394
Retention Time (minutes) : 21.769
Quant Ion : 276.00
Area (flag) : 3227930M
On-Column Amount (ng/ul) : 13.3595
Integration start scan : 3382 Integration stop scan: 3397
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

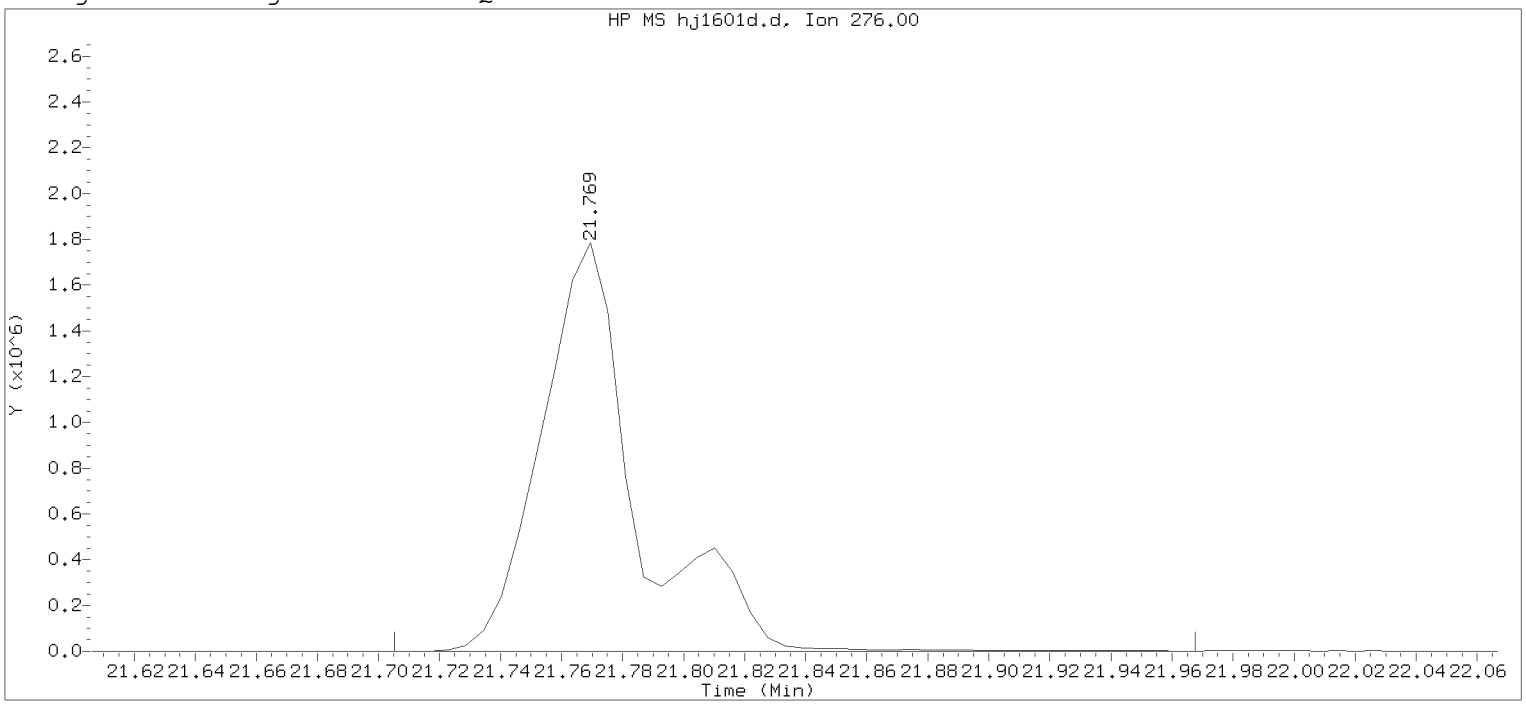
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



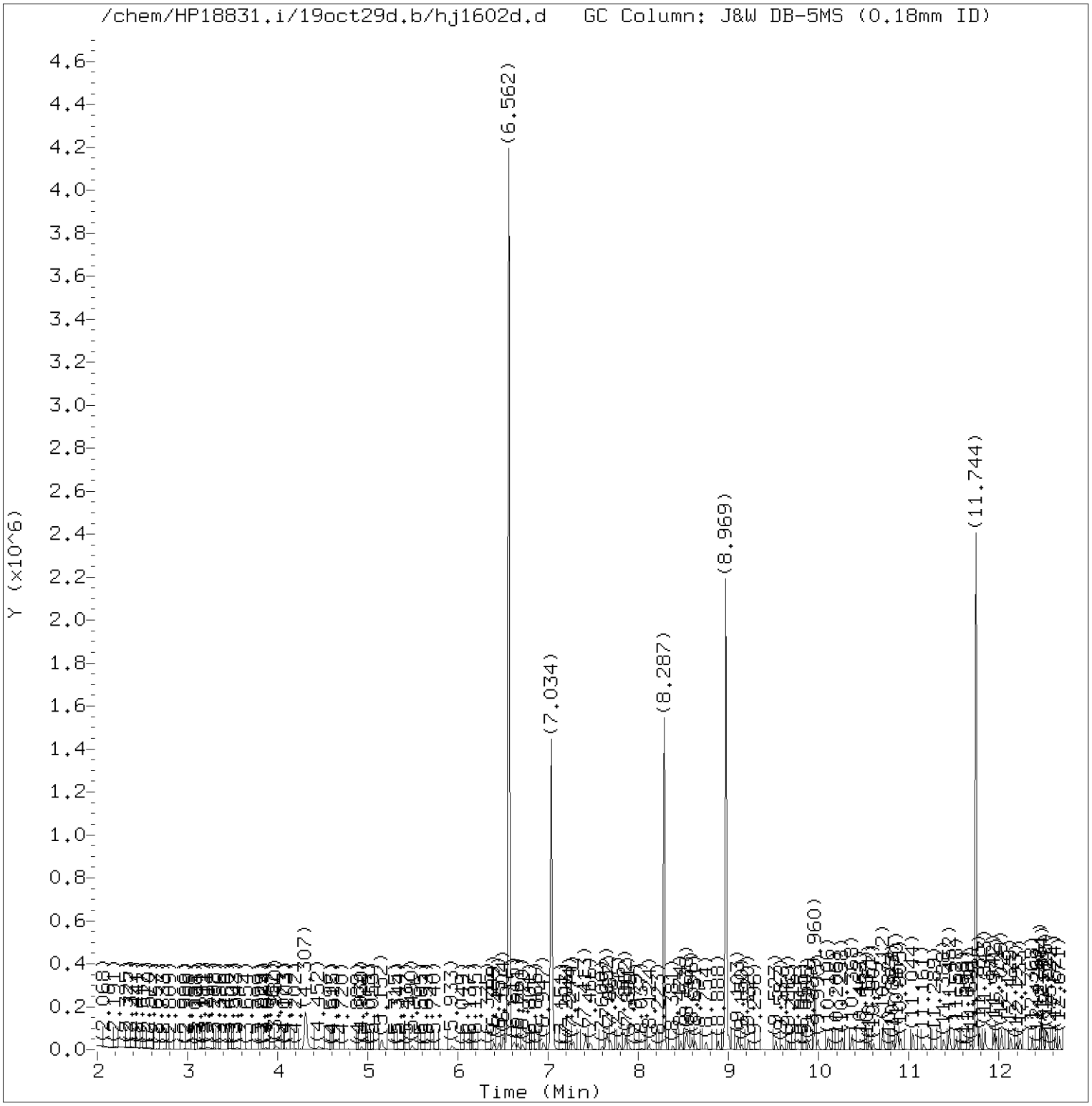
Data File: /chem/HP18831.i/19oct29d.b/hj1601d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3394		
Retention Time (minutes)	: 21.769		
Quant Ion	: 276.00		
Area	: 3893454		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 3382	Integration stop scan:	3427
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used with rv8270d.



Total Ion Chromatogram (TIC)

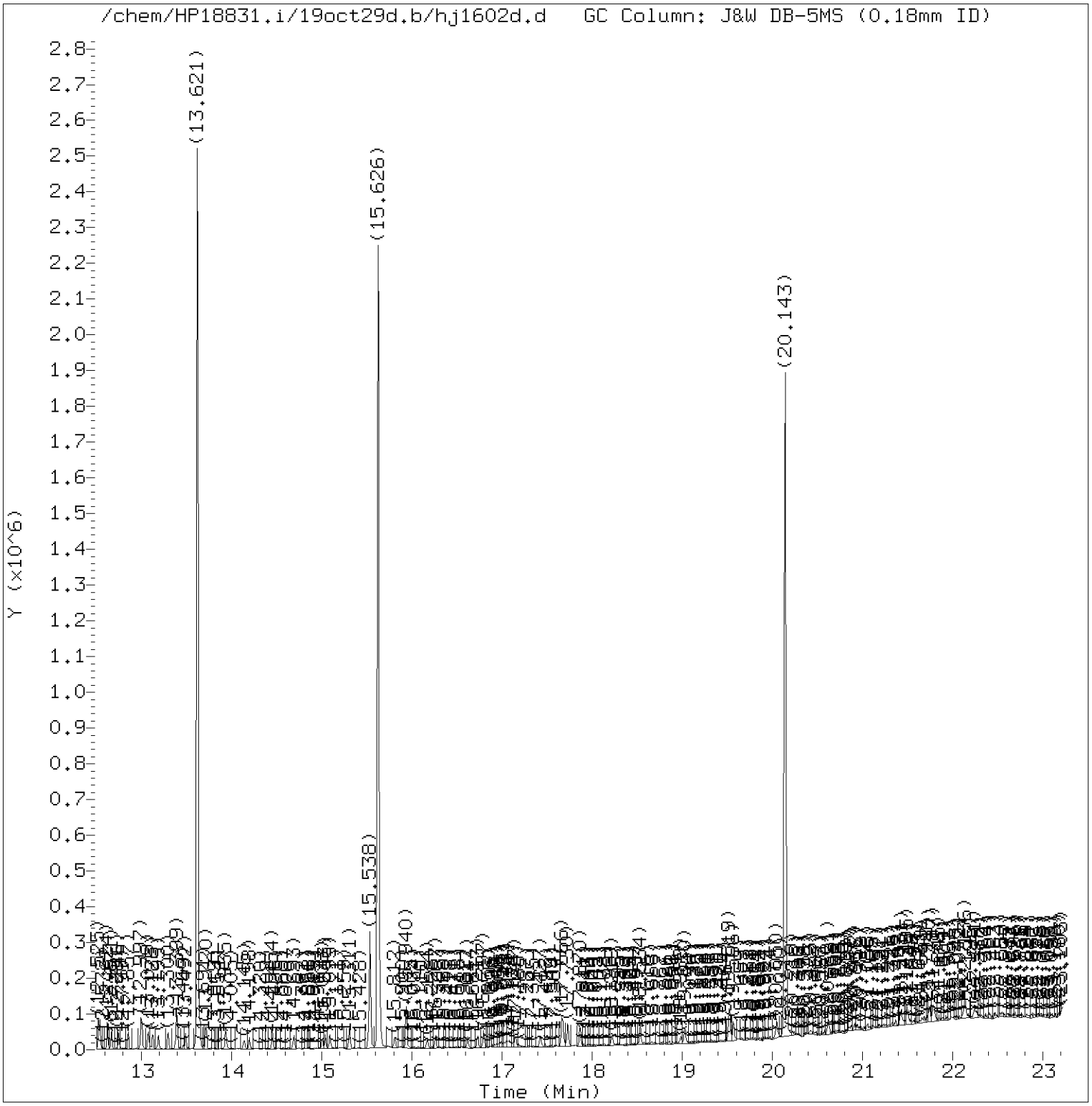
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.587	88	4018M	0.085
5) N-Nitrosodimethylamine	(1)	3.152	74	6165	0.091
6) Pyridine	(1)	3.217	79	9882M	0.083
8) 2-Picoline	(1)	4.318	93	12996M	0.104
9) N-Nitrosomethylethylamine	(1)	4.417	88	6073M	0.117
10) Methyl methanesulfonate	(1)	4.930	80	7037	0.125
12)$2-Fluorophenol	(1)	5.157	112	18940	0.202
14) N-Nitrosodiethylamine	(1)	5.484	102	6438	0.131
43) Total Cresols	(1)			20549	0.263
16) Ethyl methanesulfonate	(1)	5.939	109	5988	0.120
17) Benzaldehyde	(1)	6.399	77	9068	0.126
18)$Phenol-d6	(1)	6.498	99	27030	0.225
19) Phenol	(1)	6.521	94	16717	0.126
20) Aniline	(1)	6.556	93	17546	0.116
21) a-methylstyrene	(1)	6.632	118	5178	0.134
23) bis(2-Chloroethyl)ether	(1)	6.667	93	10639	0.104
24) 2-Chlorophenol	(1)	6.720	128	9049	0.102
25) 1,3-Dichlorobenzene	(1)	6.947	146	11791	0.125
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	301945	5.000
27) 1,4-Dichlorobenzene	(1)	7.063	146	11417	0.119
28) Benzyl alcohol	(1)	7.244	108	6105	0.110
29) 1,2-Dichlorobenzene	(1)	7.279	146	11372	0.125
100) Isosafrole	(3)			9066	0.125
31) Indene	(1)	7.413	115	15211	0.116
32) 2-Methylphenol	(1)	7.419	108	10752	0.133
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.466	45	25237	0.137
35) bis(2-Chloroisopropyl)ether	(1)	7.466	45	25237	0.137
36) N-Nitrosopyrrolidine	(1)	7.600	100	5163	0.118
37) Acetophenone	(1)	7.641	105	13789	0.110
39) N-Nitroso-di-n-propylamine	(1)	7.652	70	8638	0.133
38) 4-Methylphenol	(1)	7.658	108	9797	0.129
40) N-Nitrosomorpholine	(1)	7.670	56	9916	0.124
41) o-Toluidine	(1)	7.693	106	15410	0.113
44) Hexachloroethane	(1)	7.792	117	6549	0.167
45)$Nitrobenzene-d5	(2)	7.862	82	24416	0.250
46) Nitrobenzene	(2)	7.885	77	11806	0.120
125) 2,4_2,6-Dinitrotoluenes	(3)			9331	0.214
50) N-Nitrosopiperidine	(2)	8.124	114	4803	0.108
52) Isophorone	(2)	8.270	82	19024	0.107
53) 2-Nitrophenol	(2)	8.375	139	4089	0.089

M = Compound was manually integrated.
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on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.474	107	10539	0.112
58) Benzoic acid	(2)	8.538	105	35185	0.589
59) O,O,O-Triethylphosphorothioate	(2)	8.602	198	6381	0.151
57) bis(2-Chloroethoxy)methane	(2)	8.631	93	14110	0.127
62) 2,4-Dichlorophenol	(2)	8.754	162	7115	0.102
151) Diallate trans/cis	(4)			10912	0.129
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	8881	0.117
68)*Naphthalene-d8	(2)	8.969	136	1167674	5.000
69) Naphthalene	(2)	8.999	128	33890	0.134
70) 4-Chloroaniline	(2)	9.103	127	13131	0.135
71) 2,6-Dichlorophenol	(2)	9.109	162	8487	0.125
72) Hexachloropropene	(2)	9.150	213	5039	0.119
74) Hexachlorobutadiene	(2)	9.220	225	5305	0.119
78) Quinoline	(2)	9.523	129	19429	0.128
79) Caprolactam	(2)	9.593	113	2259	0.092
80) N-Nitrosodi-n-butylamine	(2)	9.669	84	6655	0.096
83) 4-Chloro-3-methylphenol	(2)	9.890	107	7807	0.102
85) Safrole	(2)	9.995	162	5995	0.092
86) 2-Methylnaphthalene	(2)	10.106	142	22034	0.132
87) 1-Methylnaphthalene	(2)	10.258	142	18255	0.120
88) Hexachlorocyclopentadiene	(3)	10.368	237	5850	0.116
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	8041	0.112
91) cis-Isosafrole	(3)	10.462	162	1254	0.018
93) 2,4,6-Trichlorophenol	(3)	10.561	196	5405	0.116
95) 2,4,5-Trichlorophenol	(3)	10.607	196	5691	0.113
96)$2-Fluorobiphenyl	(3)	10.712	172	44253	0.250
97) trans-Isosafrole	(3)	10.823	162	7812	0.107
98) 1,1'-Biphenyl	(3)	10.864	154	23918	0.121
99) 2-Chloronaphthalene	(3)	10.875	162	17821	0.118
101) 1-Chloronaphthalene	(3)	10.910	162	17195	0.122
103) Diphenyl ether	(3)	11.044	170	12454	0.116
104) 2-Nitroaniline	(3)	11.050	138	5554	0.108
108) 1,4-Naphthoquinone	(3)	11.167	158	6456	0.101
109) 1,4-Dinitrobenzene	(3)	11.283	168	2417	0.088
110) Dimethylphthalate	(3)	11.382	163	19481	0.118
111) 1,3-Dinitrobenzene	(3)	11.400	168	2615	0.086
113) 2,6-Dinitrotoluene	(3)	11.458	165	4449	0.118
114) Acenaphthylene	(3)	11.528	152	29475	0.122
117) 3-Nitroaniline	(3)	11.697	138	5176	0.122
118)*Acenaphthene-d10	(3)	11.744	164	528844	5.000

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$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.790	153	19650	0.124
120) 2,4-Dinitrophenol	(3)	11.843	184	12331	0.452
121) 4-Nitrophenol	(3)	11.948	109	10216	0.351
122) Pentachlorobenzene	(3)	11.971	250	8376	0.133
123) 2,4-Dinitrotoluene	(3)	12.024	165	4882	0.096
124) Dibenzofuran	(3)	12.029	168	26061	0.121
126) 1-Naphthylamine	(3)	12.129	143	18913	0.128
127) 2,3,4,6-Tetrachlorophenol	(3)	12.198	232	5212	0.125
128) 2-Naphthylamine	(3)	12.233	143	18699	0.129
129) Diethylphthalate	(3)	12.368	149	22296	0.123
131) Fluorene	(3)	12.461	166	23070	0.130
130) Thionazin	(3)	12.461	107	3268	0.096
133) 5-Nitro-o-toluidine	(3)	12.478	152	5516	0.107
134) 4-Nitroaniline	(3)	12.484	138	4334	0.098
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	8682	0.105
135) 4,6-Dinitro-2-methylphenol	(4)	12.531	198	10704	0.322
137) NDPA as diphenylamine	(4)	12.624	169	15512	0.099
136) N-Nitrosodiphenylamine	(4)	12.624	169	15512	0.099
139) 1,2-Diphenylhydrazine	(4)	12.671	77	23259	0.125
140)$2,4,6-Tribromophenol	(3)	12.752	330	5629	0.231
142) Tetraethyldithiopyrophosphate	(4)	12.851	97	3230	0.099
145) Diallate (peak 1)	(4)	12.997	86	9920	0.115
146) Phorate	(4)	13.003	75	13217	0.119
147) Phenacetin	(4)	13.009	108	8737	0.093
148) 4-Bromophenyl-phenylether	(4)	13.079	248	5512M	0.121
149) Diallate (peak 2)	(4)	13.108	86	992	0.014
150) Hexachlorobenzene	(4)	13.125	284	4356	0.095
152) Dimethoate	(4)	13.189	87	7357	0.104
153) Atrazine	(4)	13.300	200	5634	0.137
154) Pentachlorophenol	(4)	13.382	266	2266	0.067
155) 4-Aminobiphenyl	(4)	13.399	169	11109	0.111
156) Pentachloronitrobenzene	(4)	13.399	237	2113	0.101
157) Pronamide	(4)	13.492	173	8558	0.111
158)*Phenanthrene-d10	(4)	13.621	188	1054924	5.000
159) Dinoseb	(4)	13.632	211	2159	0.044
160) Phenanthrene	(4)	13.656	178	28683	0.119
162) Anthracene	(4)	13.720	178	28692	0.117
168) Carbazole	(4)	13.941	167	23575	0.098
169) Methyl parathion	(4)	14.139	109	5379	0.090
170) Di-n-butylphthalate	(4)	14.454	149	31556	0.098

M = Compound was manually integrated.
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Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

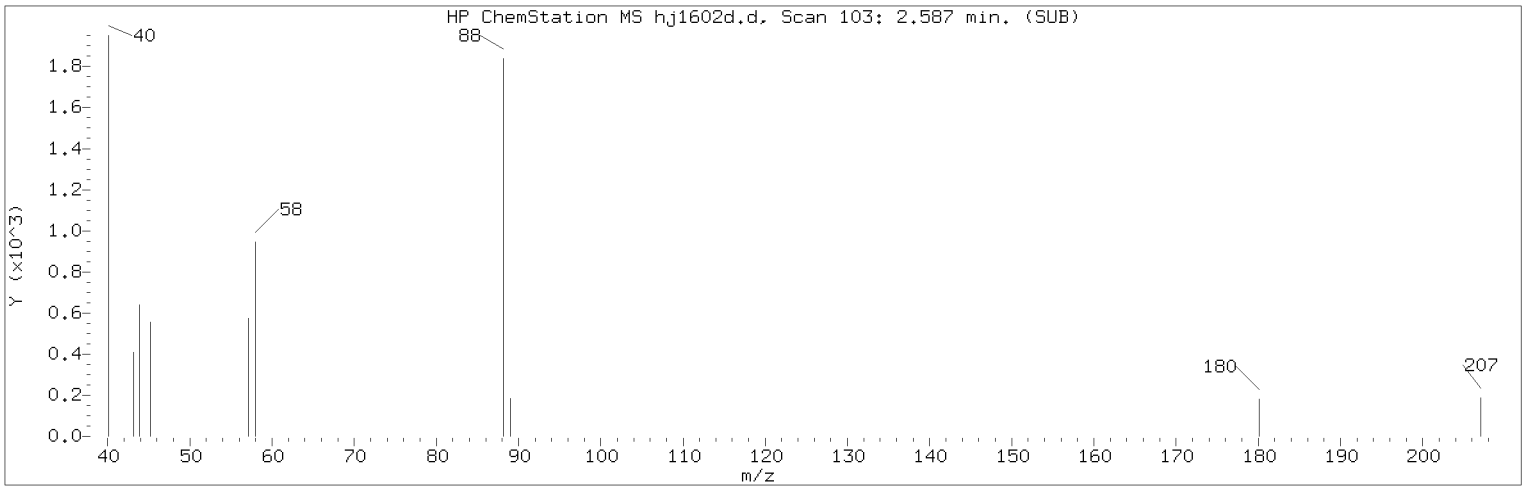
Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.687	109	2988	0.078
173) 4-Nitroquinoline-1-oxide	(4)	14.705	190	2021	0.066
227) Total PAHs	(6)			472799	2.099
174) Octachlorostyrene	(4)	15.043	308	1962	0.100
176) Isodrin	(4)	15.089	193	4356	0.145
178) Fluoranthene	(4)	15.311	202	32021	0.114
179) Benzidine	(5)	15.538	184	161406	0.915
180)*Pyrene-d10	(5)	15.626	212	1001446	5.000
182) Pyrene	(5)	15.655	202	36084	0.124
184)$Terphenyl-d14	(5)	15.940	244	41510	0.224
187) p-Dimethylaminoazobenzene	(5)	16.179	225	2509	0.053
190) Chlorobenzilate	(5)	16.261	139	8501	0.088
192) 3,3'-Dimethylbenzidine	(5)	16.727	212	16000	0.088
193) Butylbenzylphthalate	(5)	16.797	149	12208	0.084
196) 2-Acetylaminofluorene	(5)	17.147	181	6465	0.059
198) 3,3'-Dichlorobenzidine	(5)	17.660	252	8815	0.090
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.677	231	4029	0.075
200) Benzo(a)anthracene	(5)	17.677	228	27504	0.112
201) Chrysene	(5)	17.730	228	28636	0.113
204) bis(2-Ethylhexyl)phthalate	(5)	17.870	149	17386	0.084
208) 6-Methylchrysene	(5)	18.534	242	17880	0.100
210) Di-n-octylphthalate	(6)	19.030	149	24236	0.072
211) Benzo(b)fluoranthene	(6)	19.519	252	28176	0.120
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.531	256	10974	0.105
213) Benzo(k)fluoranthene	(6)	19.572	252	26524	0.111
216) Benzo(a)pyrene	(6)	20.050	252	21897M	0.098
218)*Perylene-d12	(6)	20.143	264	965927	5.000
220) 3-Methylcholanthrene	(6)	20.621	268	11056	0.109
222) Dibenz(a,h)acridine	(6)	21.425	279	17998	0.096
223) Dibenz(a,j)acridine	(6)	21.495	279	20500	0.110
224) Indeno(1,2,3-cd)pyrene	(6)	21.746	276	22534M	0.092
225) Dibenz(a,h)anthracene	(6)	21.792	278	22517	0.109
226) Benzo(g,h,i)perylene	(6)	22.136	276	23156	0.109

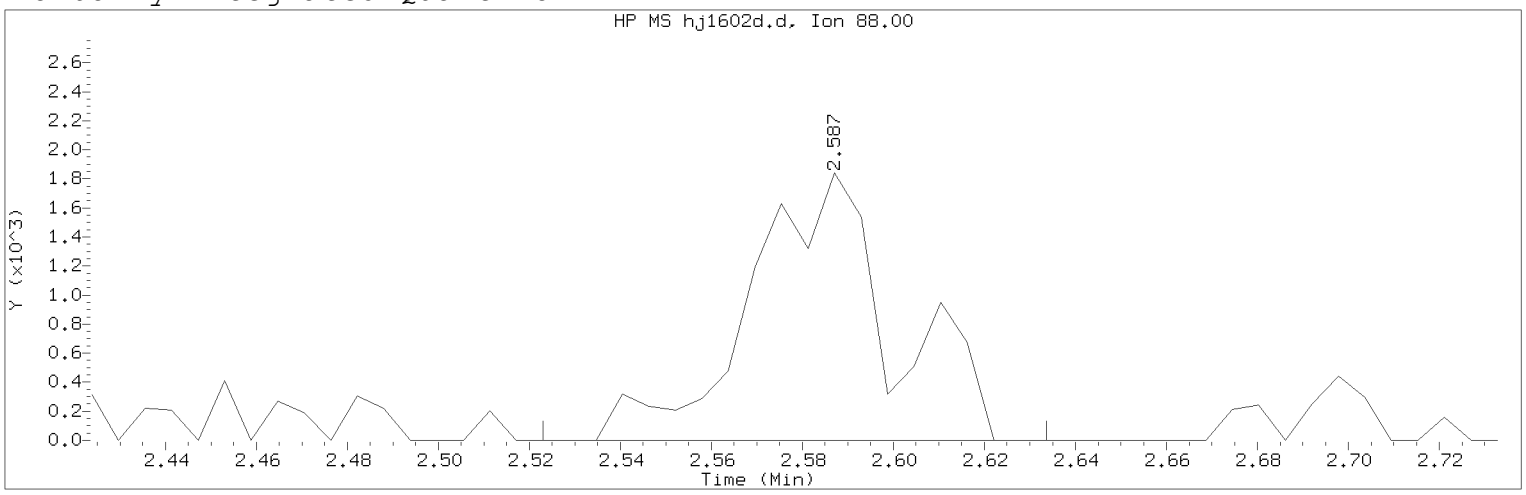
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

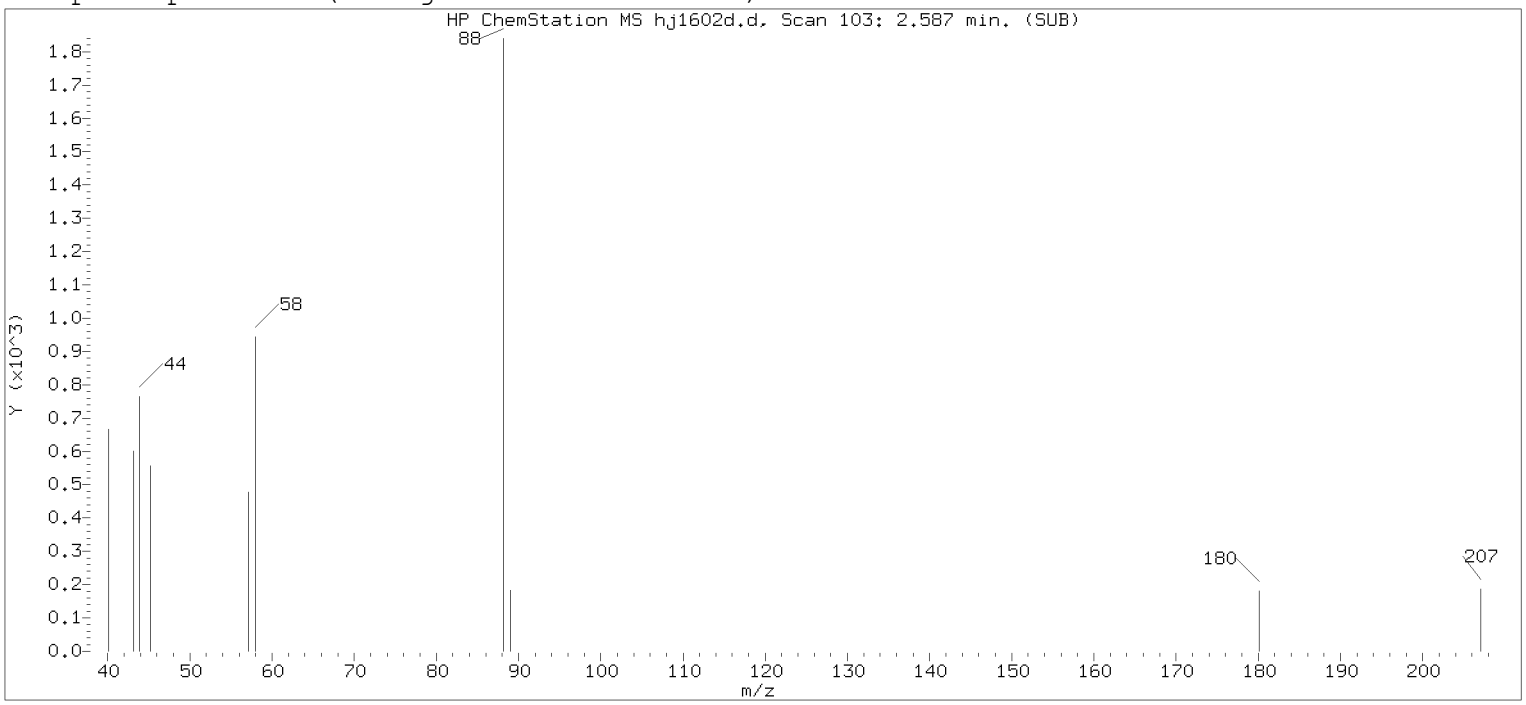
Compound Number	: 1		
Compound Name	: 1,4-Dioxane		
Scan Number	: 103		
Retention Time (minutes)	: 2.587		
Quant Ion	: 88.00		
Area (flag)	: 4018M		
On-Column Amount (ng/ul)	: 0.0854		
Integration start scan	: 91	Integration stop scan:	110
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

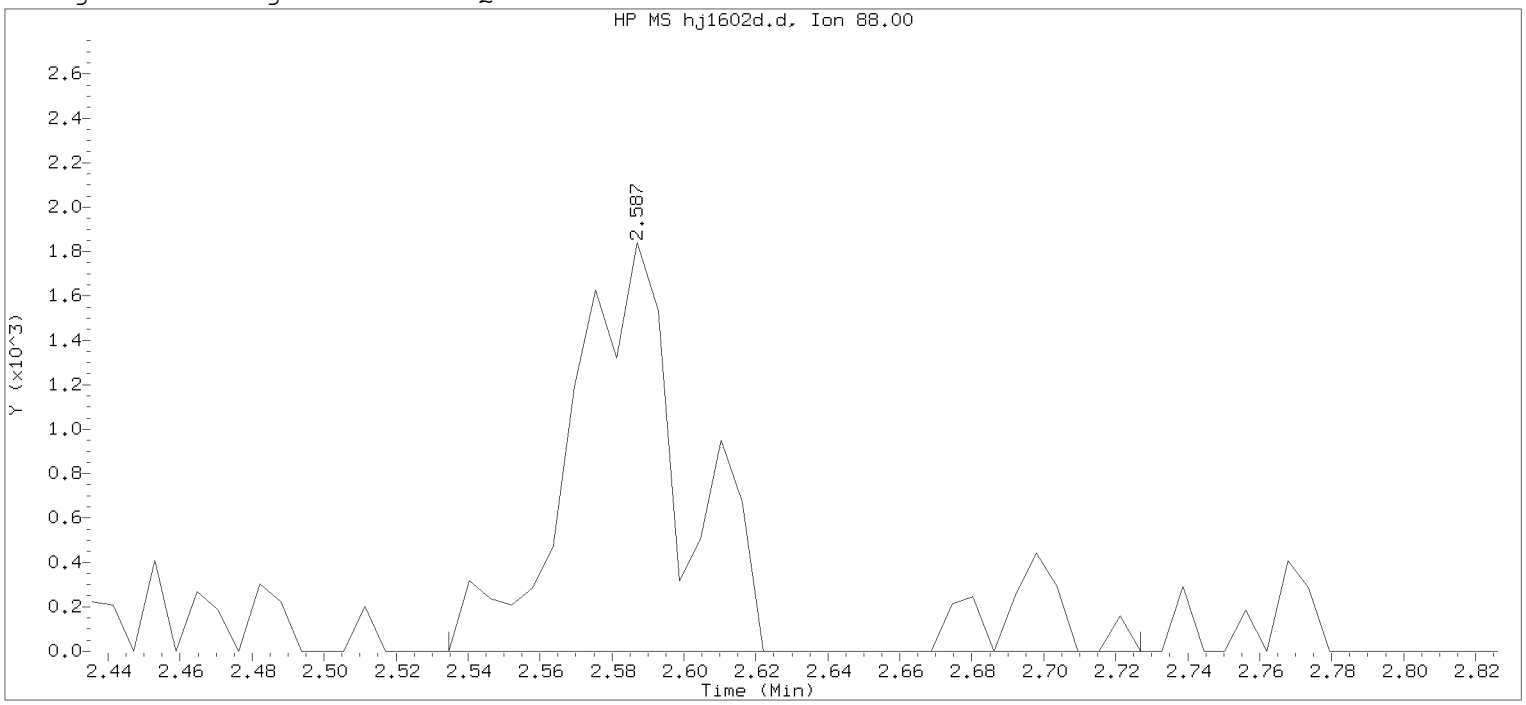
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

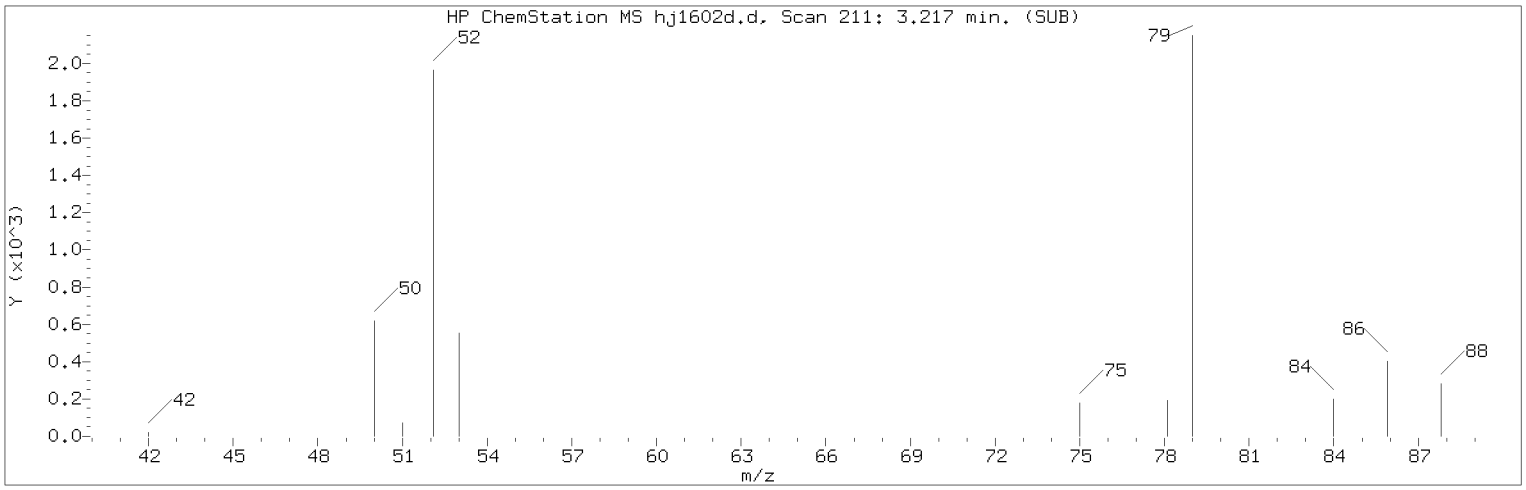
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

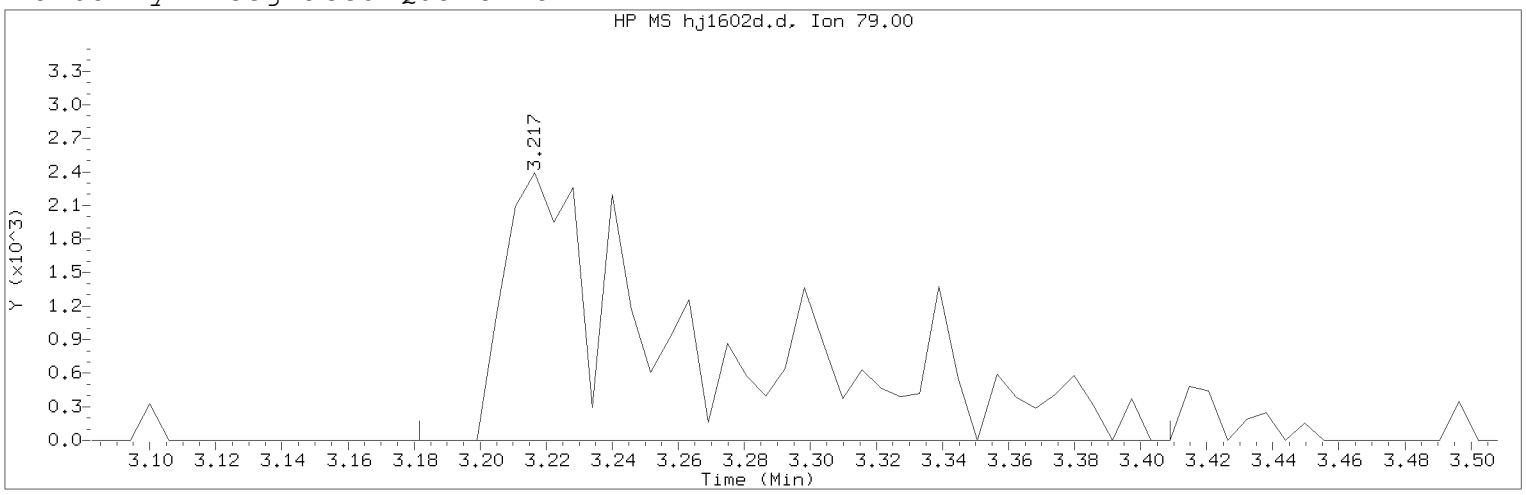
Compound Number	: 1		
Compound Name	: 1,4-Dioxane		
Scan Number	: 103		
Retention Time (minutes)	: 2.587		
Quant Ion	: 88.00		
Area	: 4579		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 93	Integration stop scan:	126
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with w2270.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

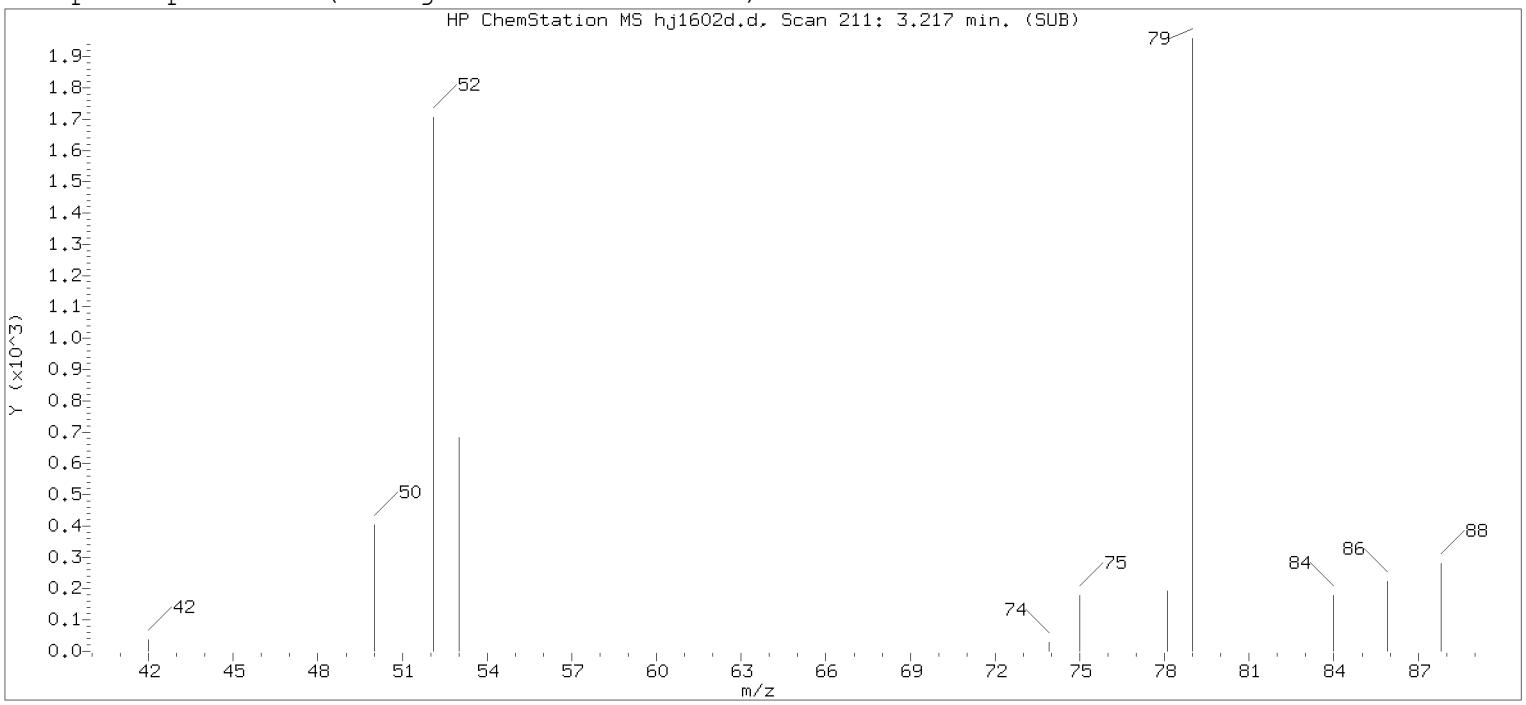
Compound Number : 6
Compound Name : Pyridine
Scan Number : 211
Retention Time (minutes) : 3.217
Quant Ion : 79.00
Area (flag) : 9882M
On-Column Amount (ng/ul) : 0.0829
Integration start scan : 204 Integration stop scan: 243
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

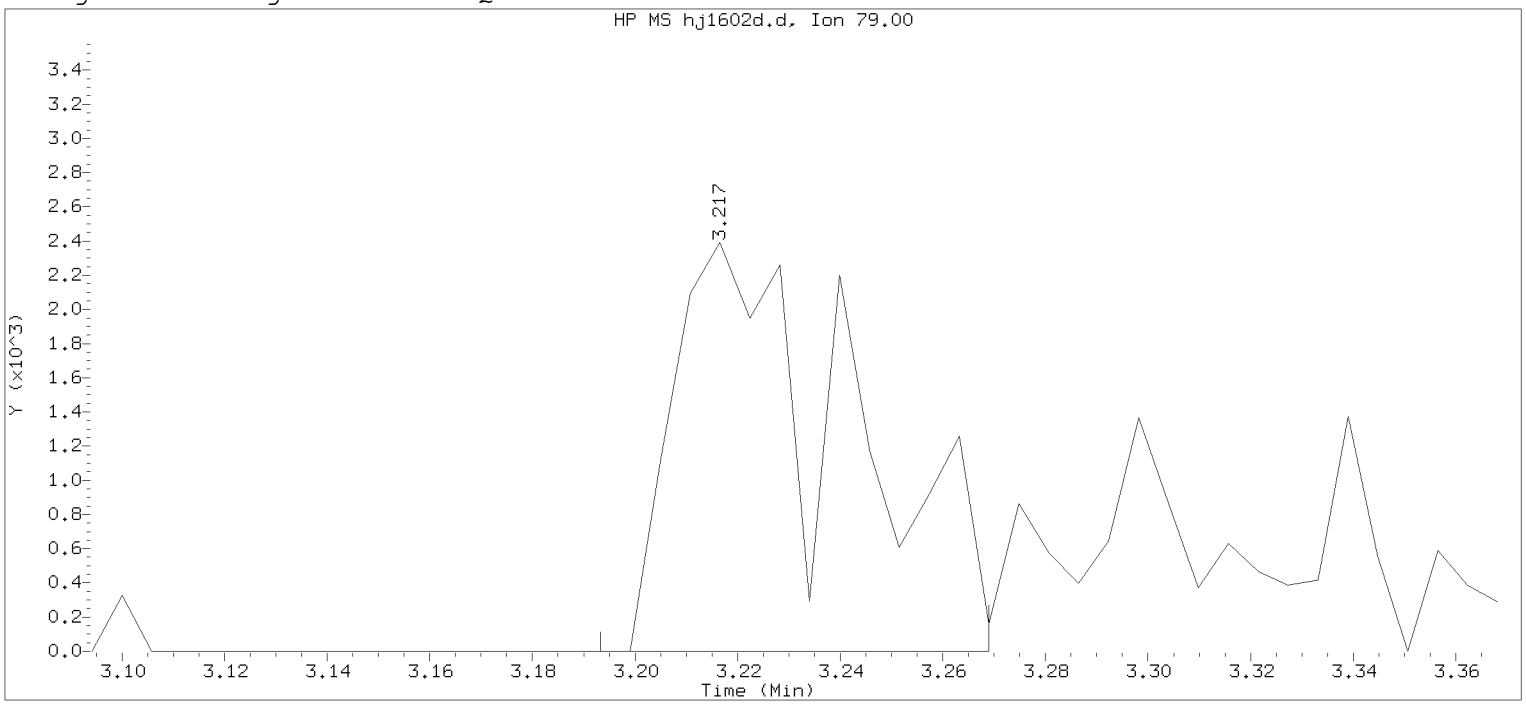
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

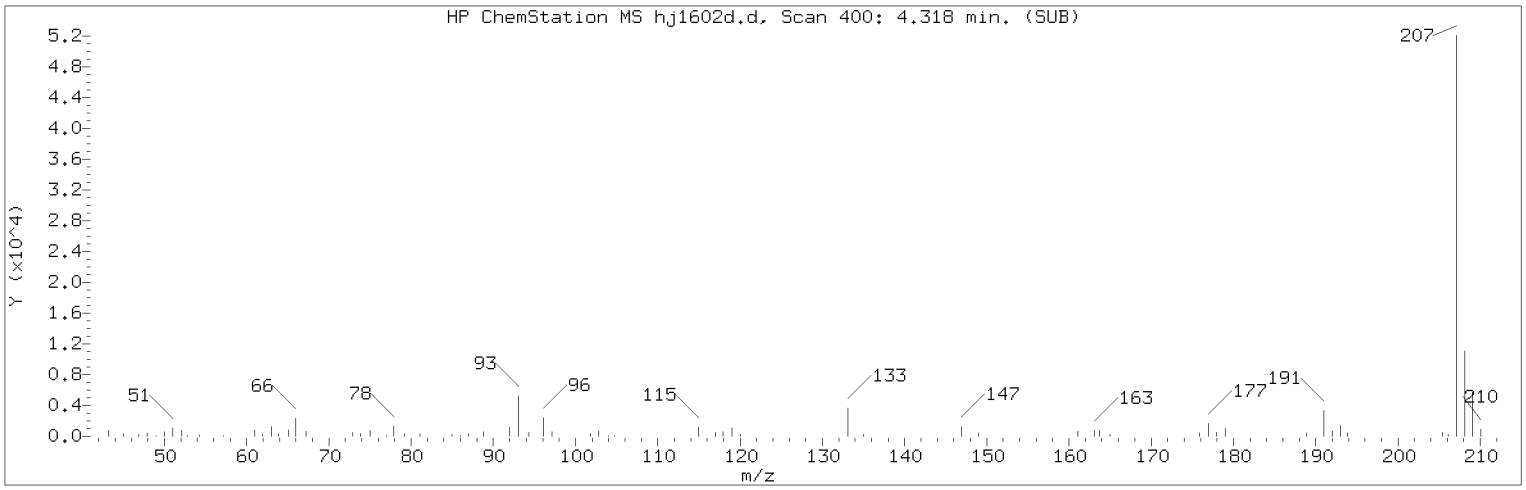
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

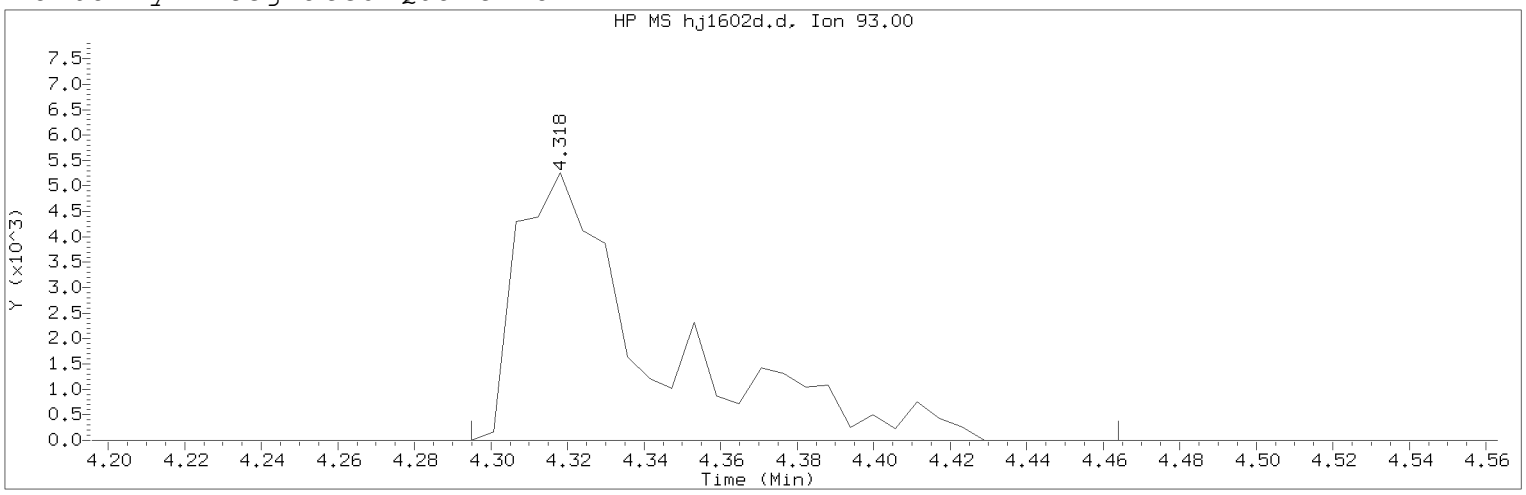
Compound Number	: 6		
Compound Name	: Pyridine		
Scan Number	: 211		
Retention Time (minutes)	: 3.217		
Quant Ion	: 79.00		
Area	: 5710		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 206	Integration stop scan:	219
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with w2270d.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

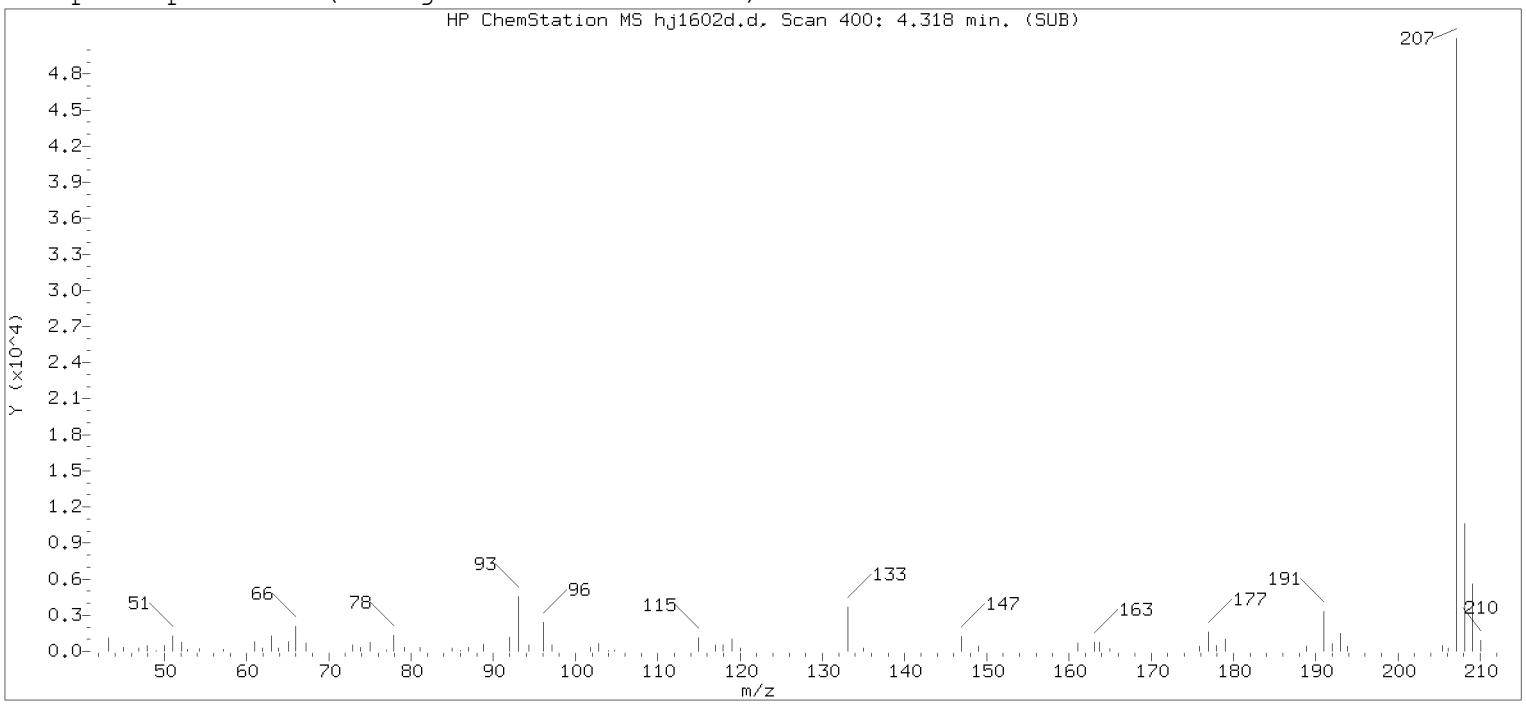
Compound Number : 8
Compound Name : 2-Picoline
Scan Number : 400
Retention Time (minutes) : 4.318
Quant Ion : 93.00
Area (flag) : 12996M
On-Column Amount (ng/ul) : 0.1036
Integration start scan : 395 Integration stop scan: 424
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

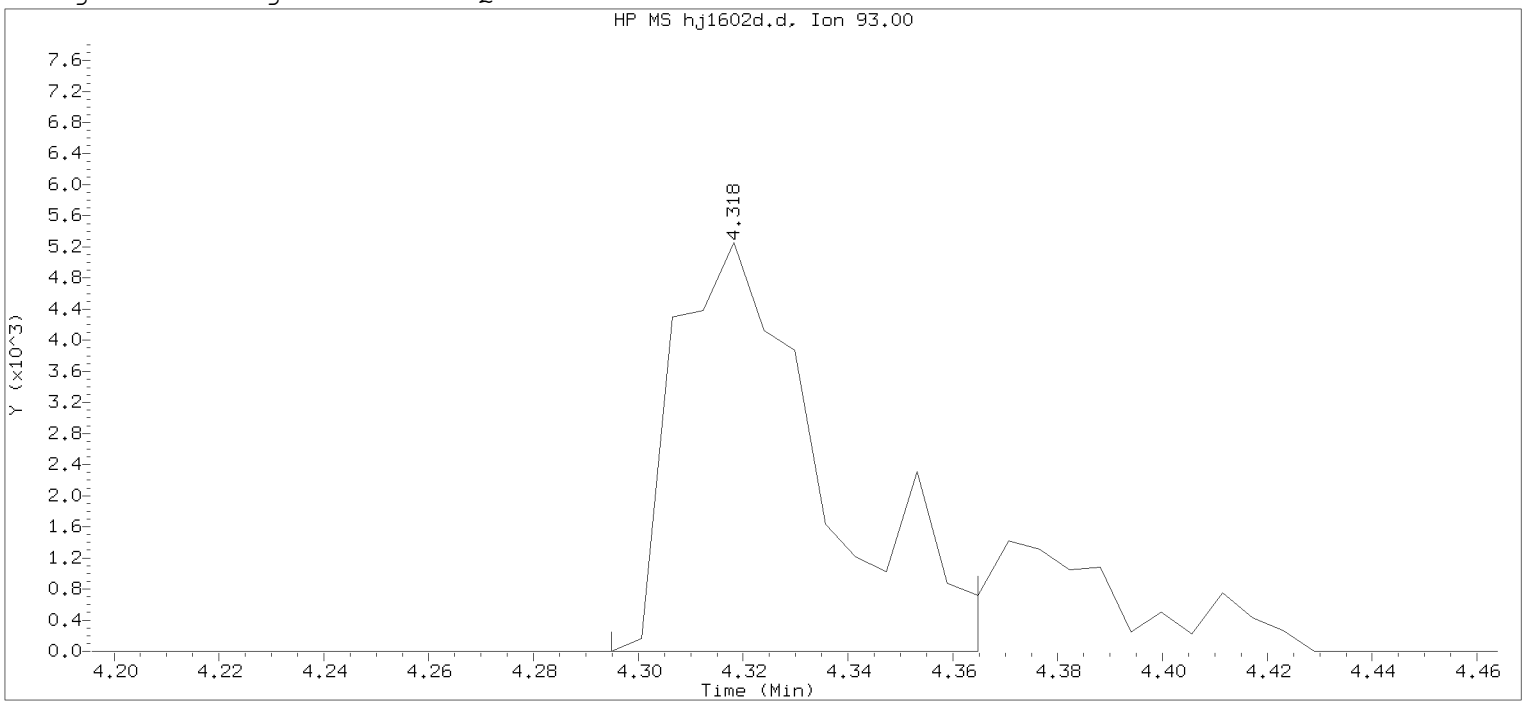
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

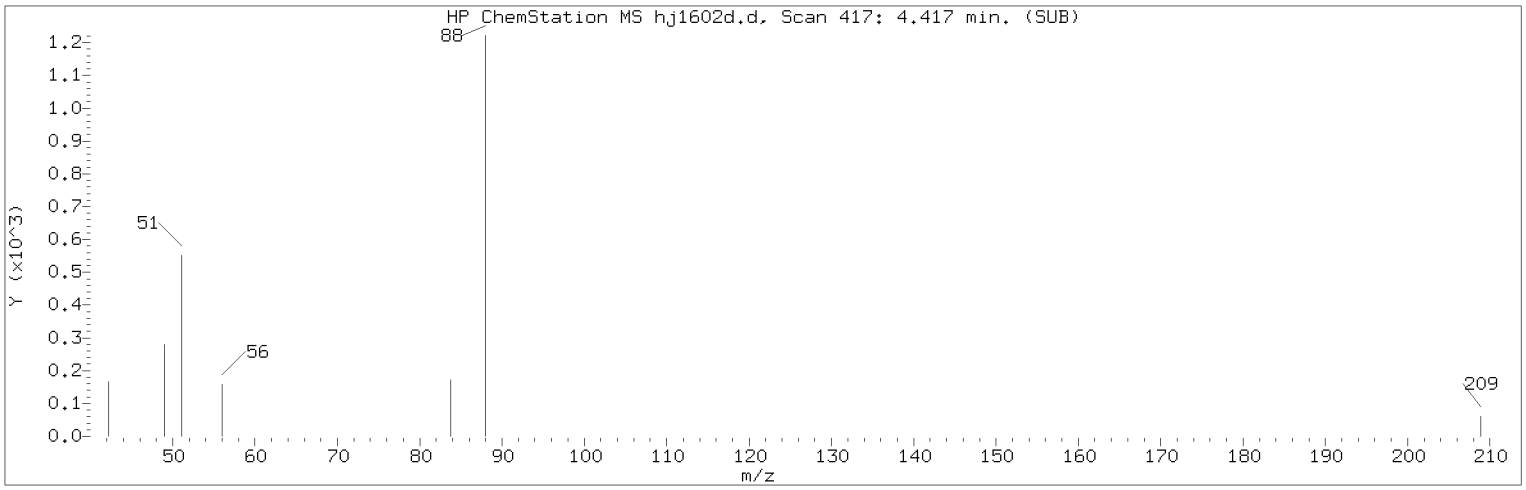
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

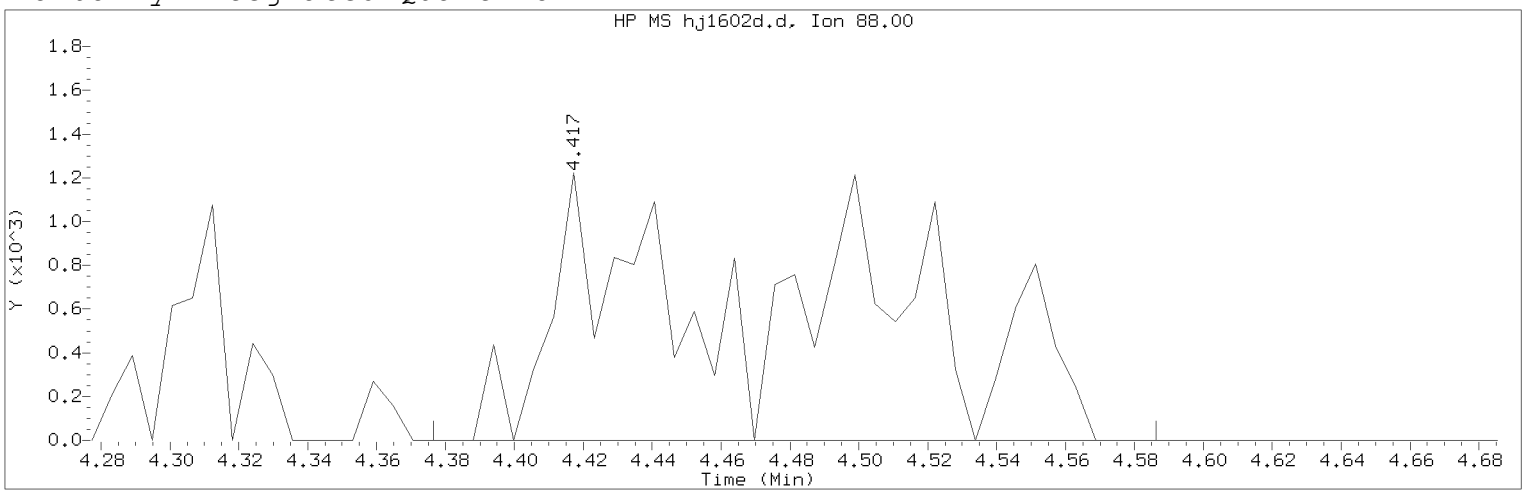
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 400		
Retention Time (minutes)	: 4.318		
Quant Ion	: 93.00		
Area	: 10323		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 395	Integration stop scan:	407
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used with w2270

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

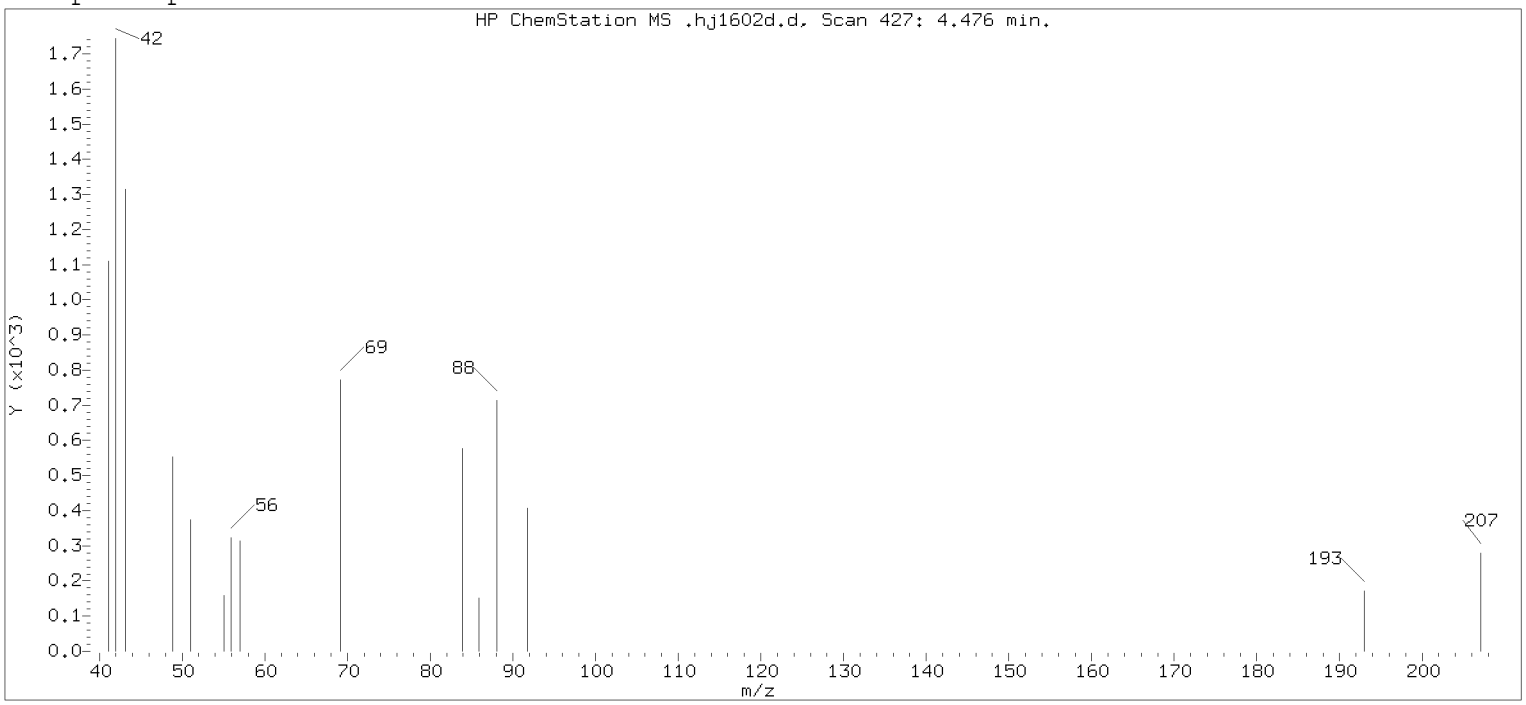
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 417
Retention Time (minutes) : 4.417
Quant Ion : 88.00
Area (flag) : 6073M
On-Column Amount (ng/ul) : 0.1170
Integration start scan : 409 Integration stop scan: 445
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

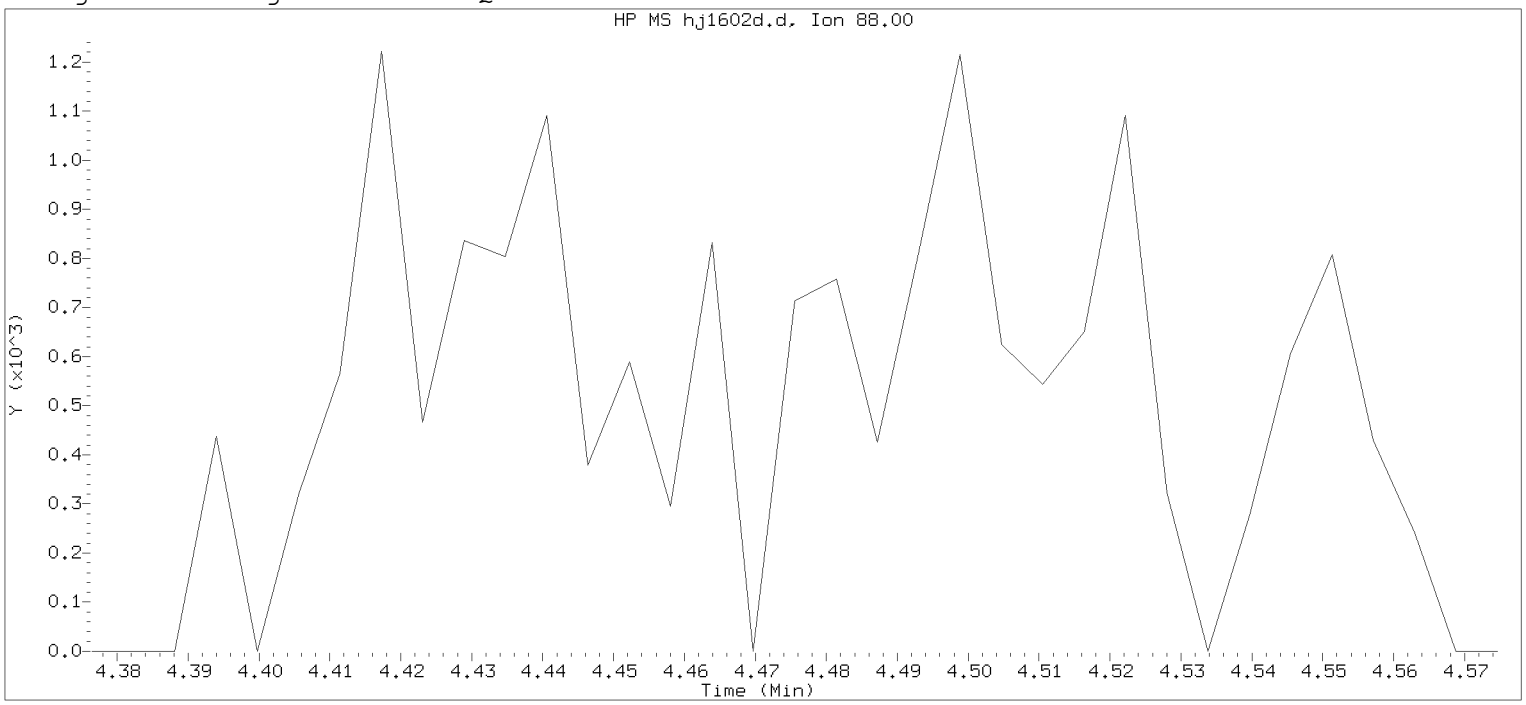
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

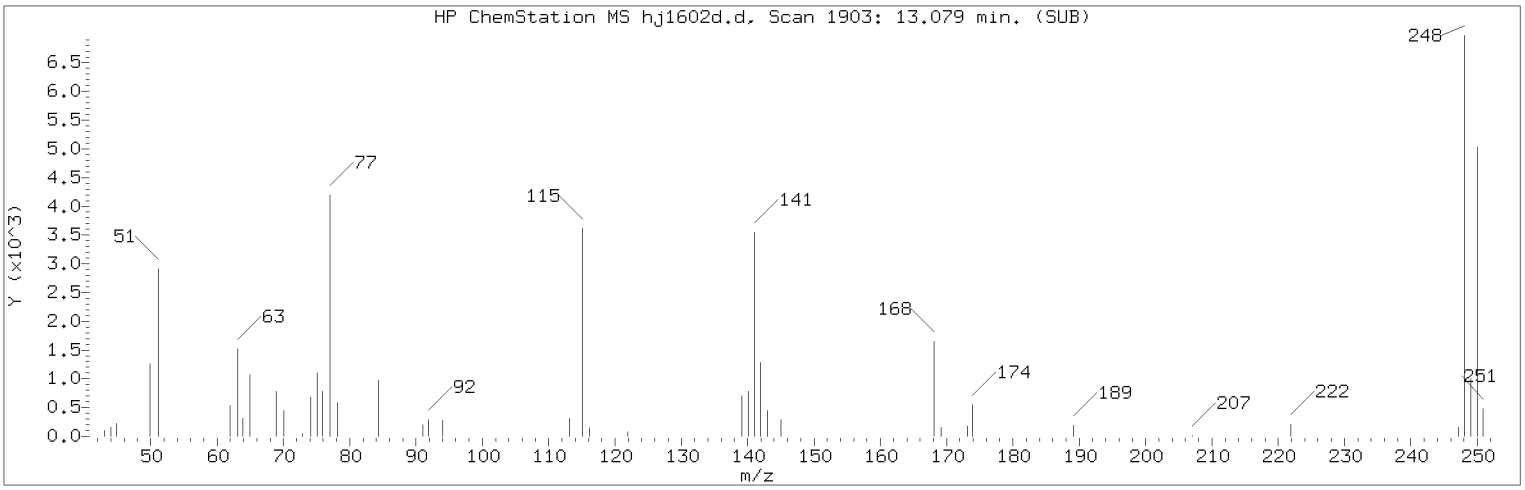
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

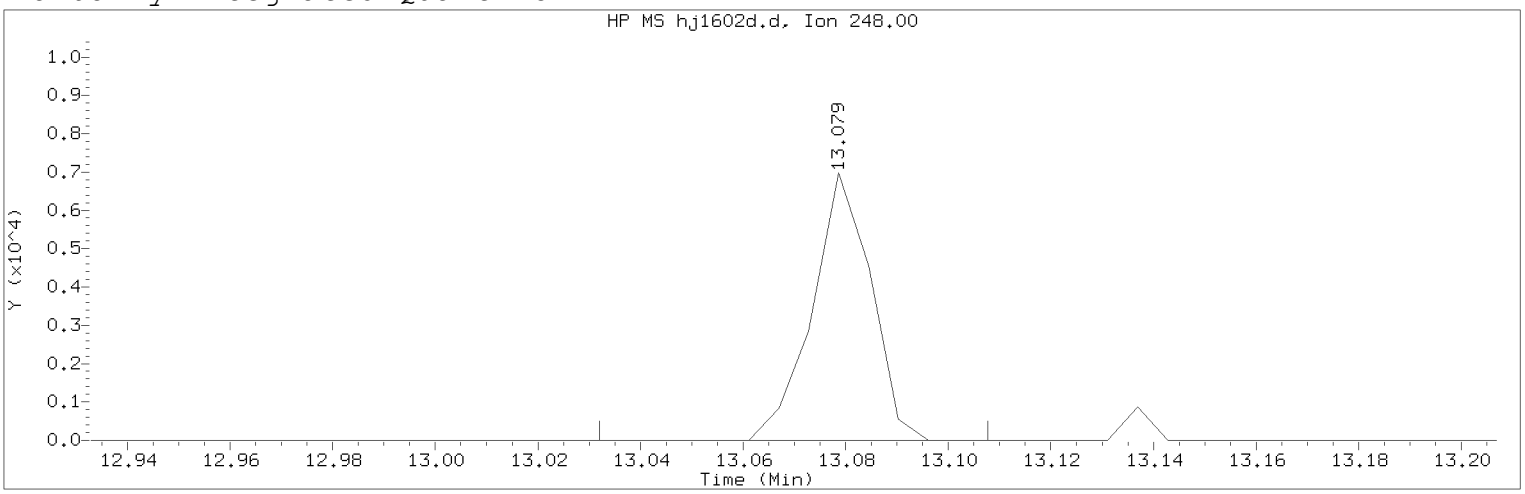
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.476
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

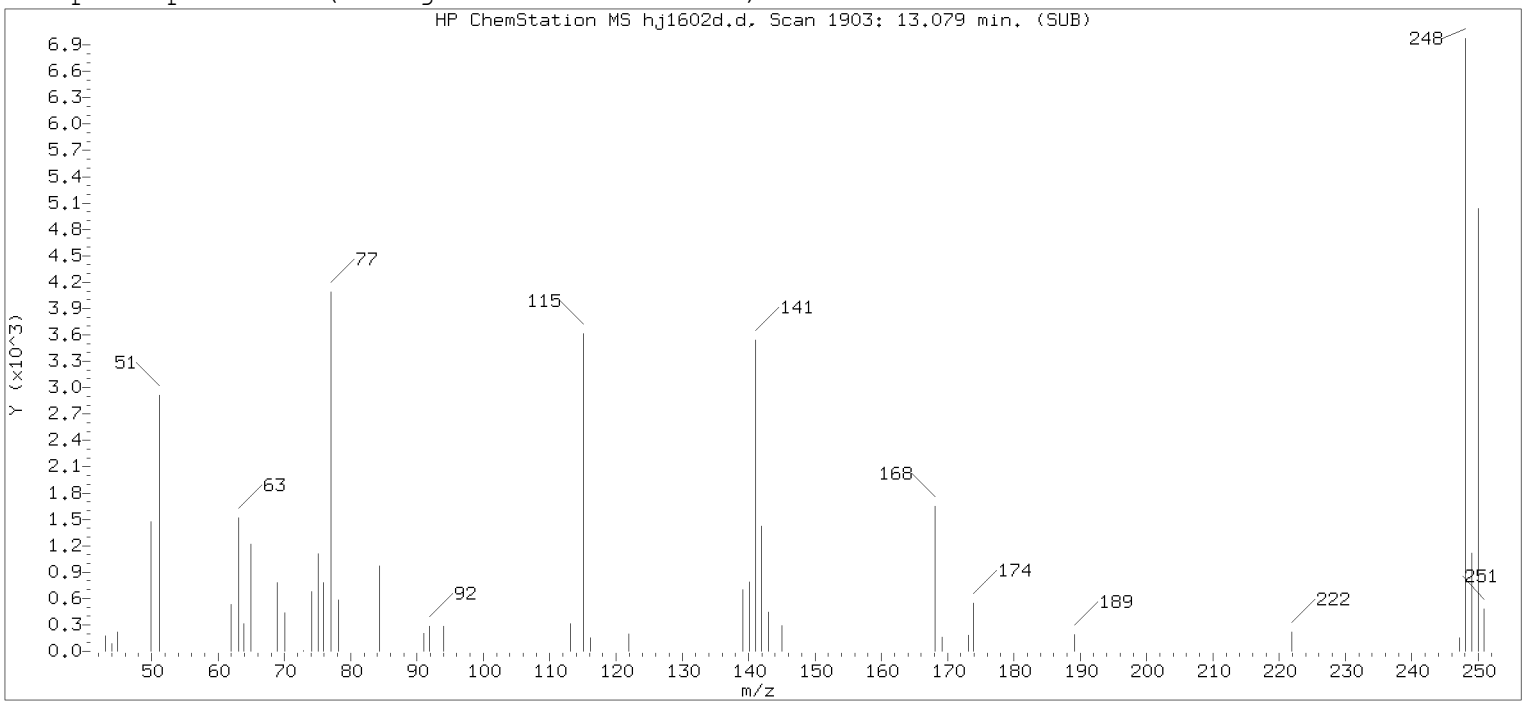
Compound Number : 148
Compound Name : 4-Bromophenyl-phenylether
Scan Number : 1903
Retention Time (minutes) : 13.079
Quant Ion : 248.00
Area (flag) : 5512M
On-Column Amount (ng/ul) : 0.1206
Integration start scan : 1894 Integration stop scan: 1907
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

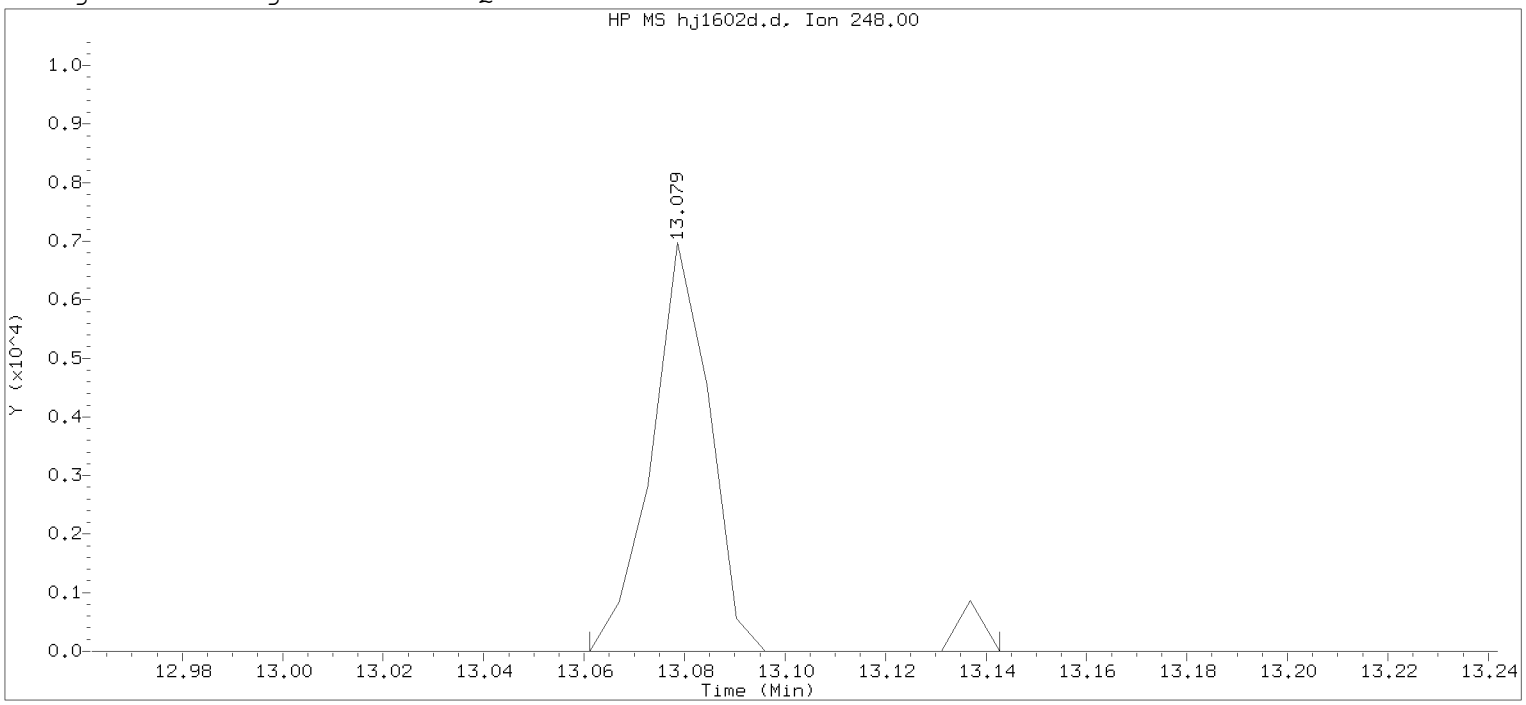
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

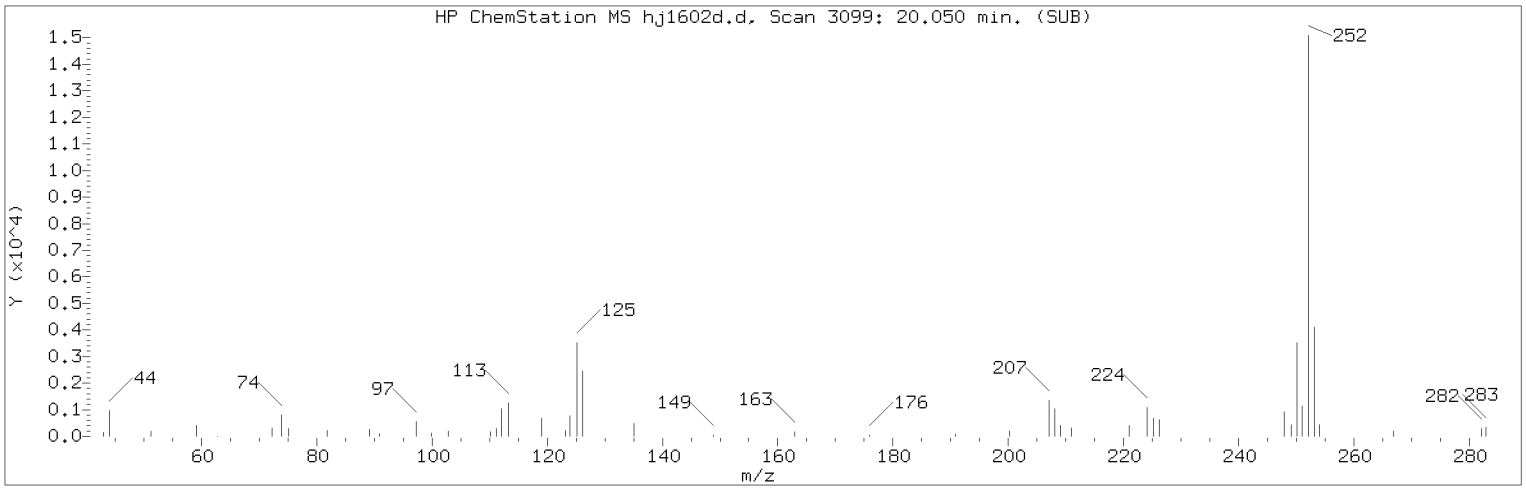
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

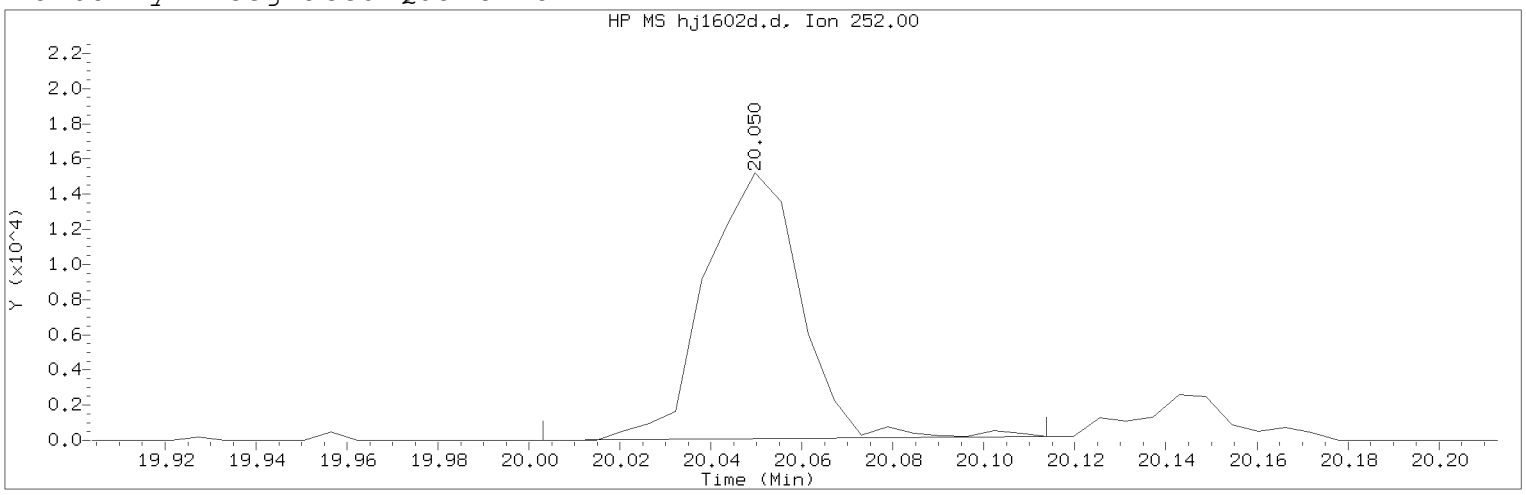
Compound Number	: 148		
Compound Name	: 4-Bromophenyl-phenylether		
Scan Number	: 1903		
Retention Time (minutes)	: 13.079		
Quant Ion	: 248.00		
Area	: 5814		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 1899	Integration stop scan:	1913
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used: RV8270.PRF

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

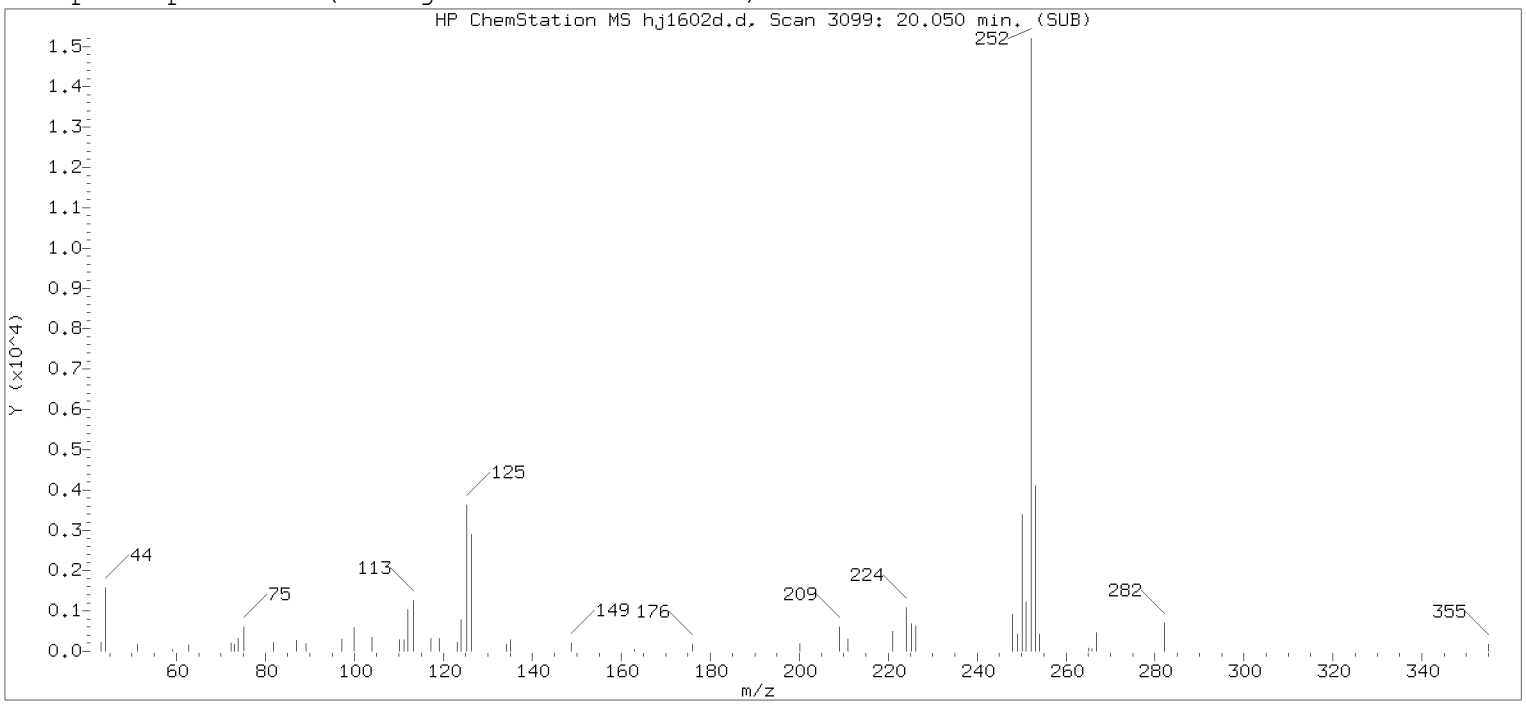
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3099
Retention Time (minutes) : 20.050
Quant Ion : 252.00
Area (flag) : 21897M
On-Column Amount (ng/ul) : 0.0975
Integration start scan : 3090 Integration stop scan: 3109
Y at integration start : 0 Y at integration end: 216

Reason for manual integration: improper integration

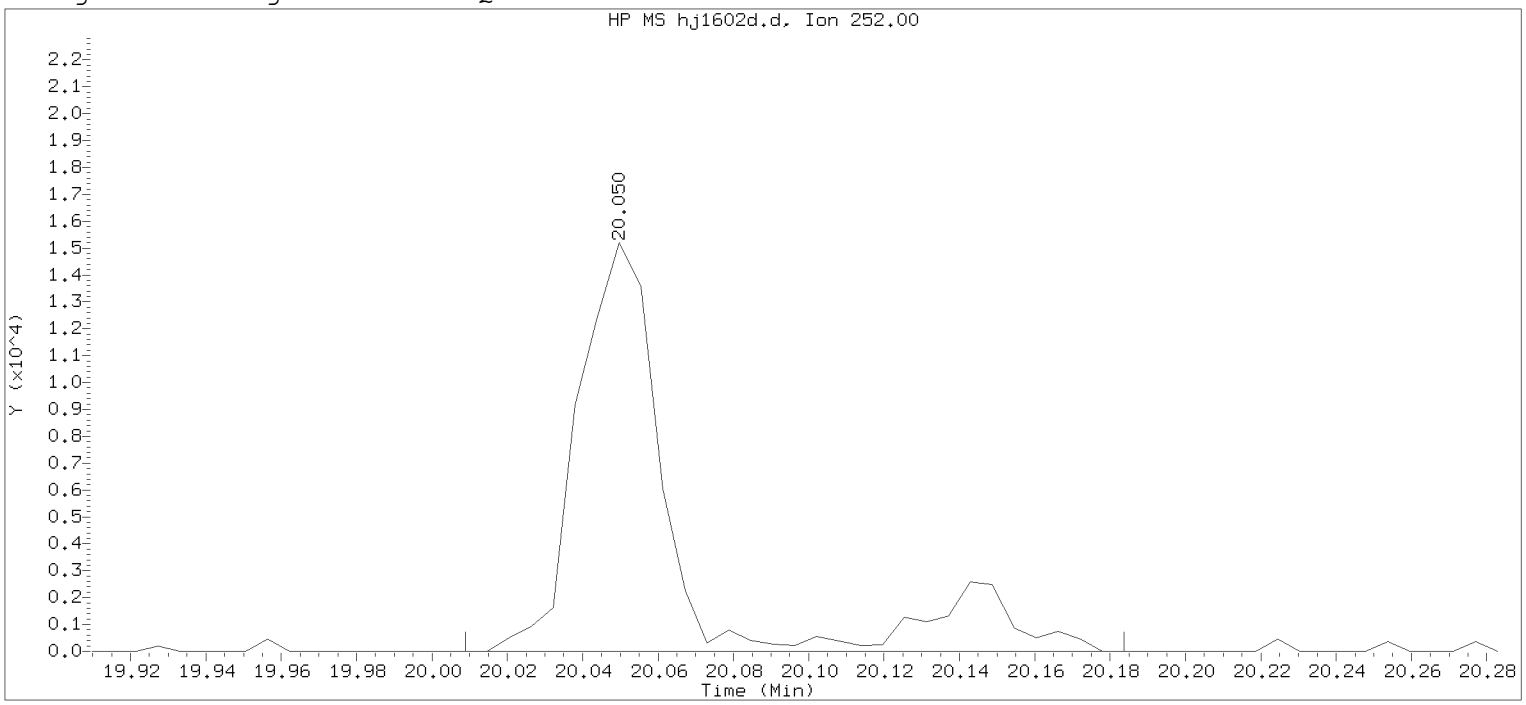
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

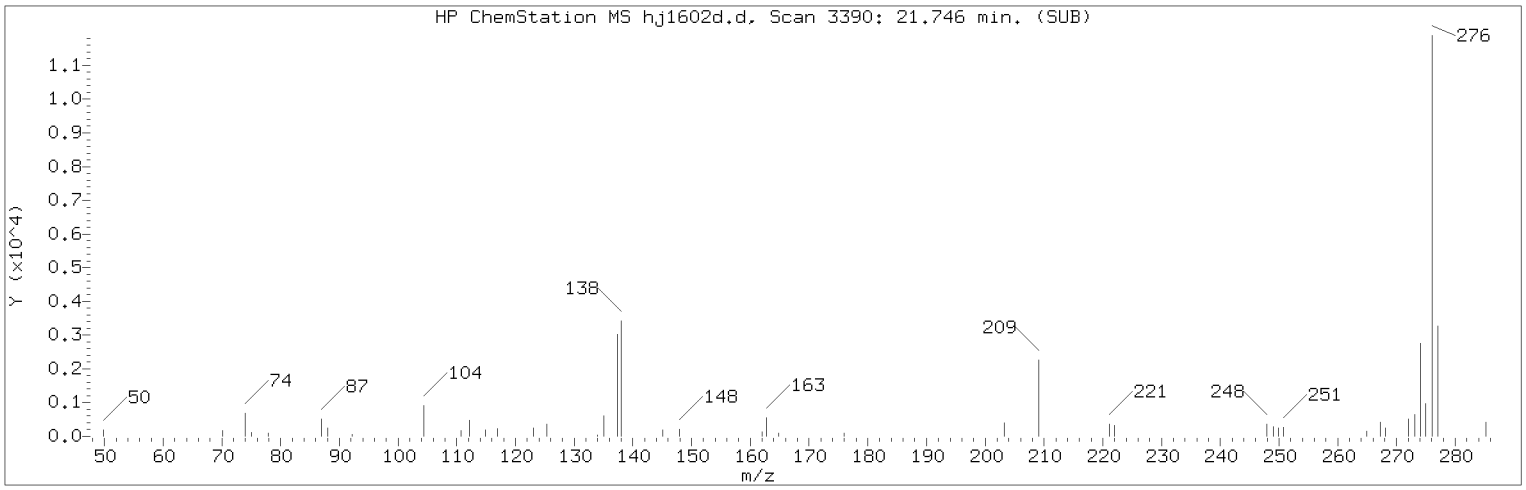
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

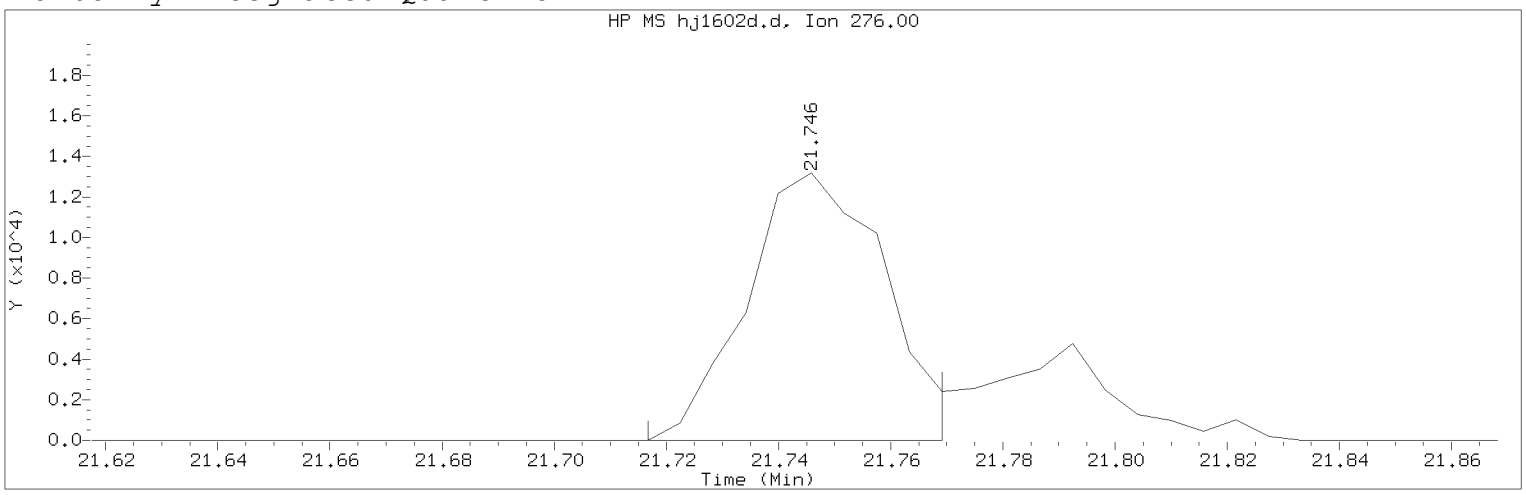
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3099
Retention Time (minutes) : 20.050
Quant Ion : 252.00
Area : 26688
On-column Amount (ng/ul) : 0.1250
Integration start scan : 3091 Integration stop scan: 3121
Y at integration start : 0 Y at integration end: 0

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:27 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

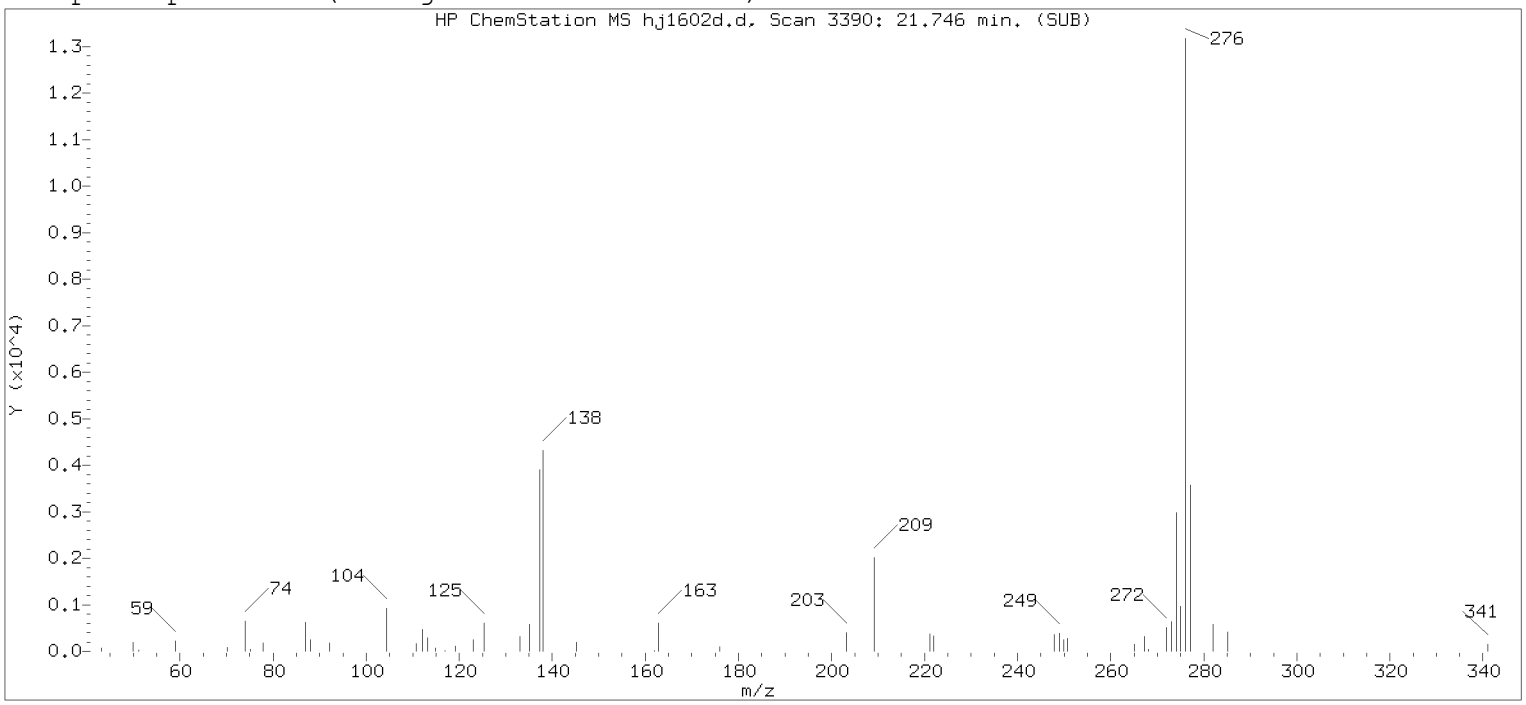
Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area (flag)	: 22534M		
On-Column Amount (ng/ul)	: 0.0917		
Integration start scan	: 3384	Integration stop scan:	3393
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

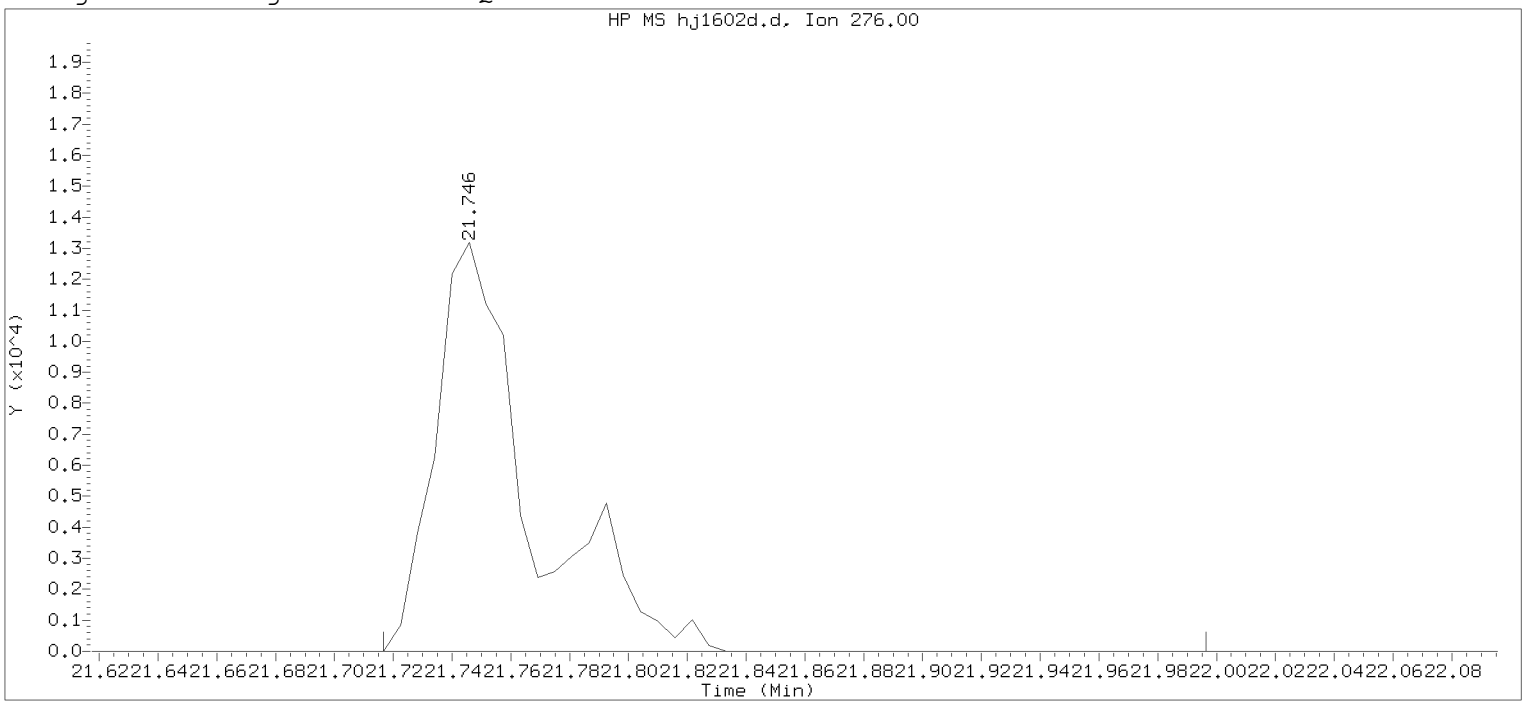
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:38.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



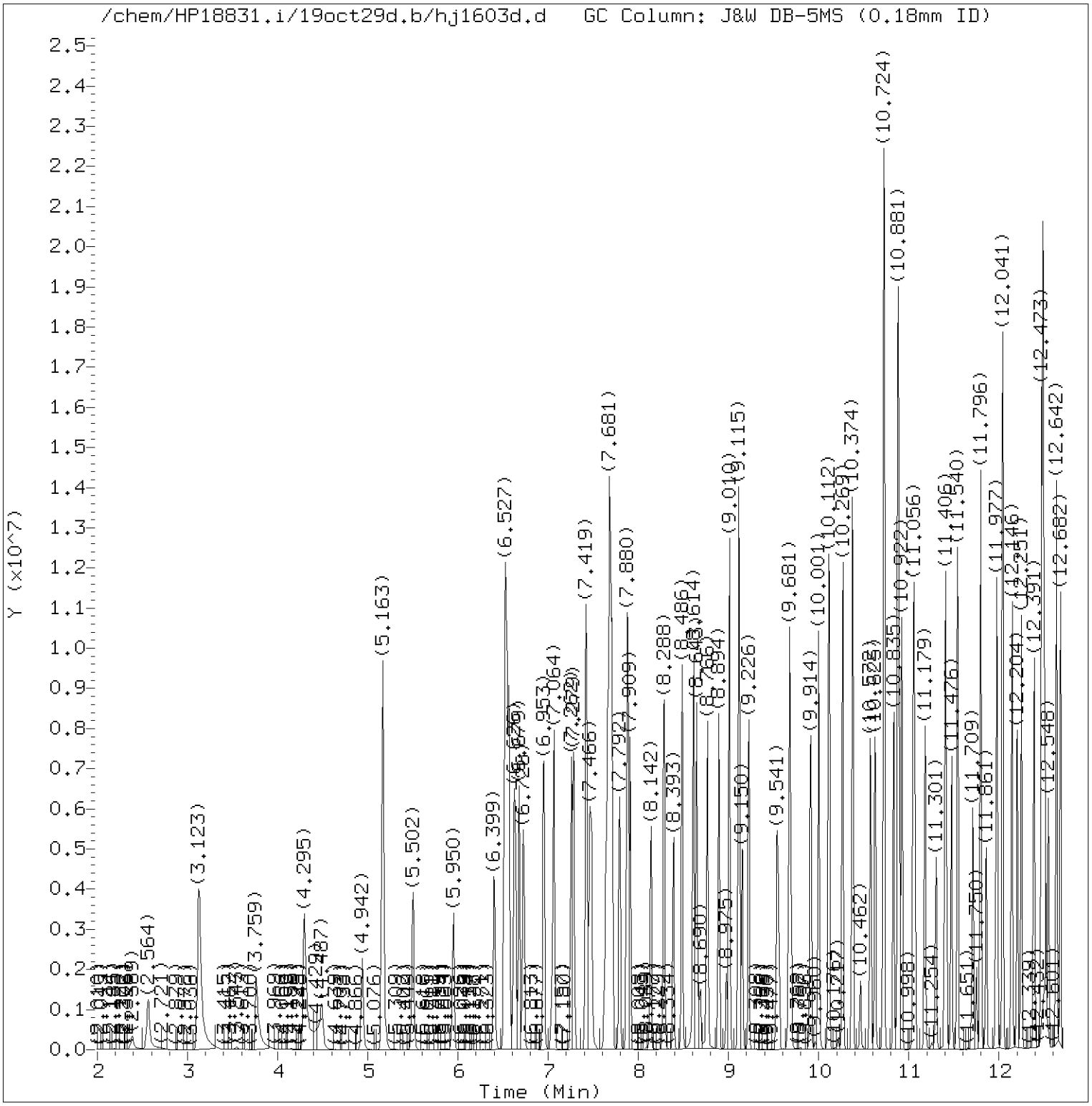
Data File: /chem/HP18831.i/19oct29d.b/hj1602d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 22:54 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area	: 29601		
On-column Amount (ng/ul)	: 0.1250		
Integration start scan	: 3384	Integration stop scan:	3432
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:38.
Target 3.5 esignature used with rv8270d



Total Ion Chromatogram (TIC)

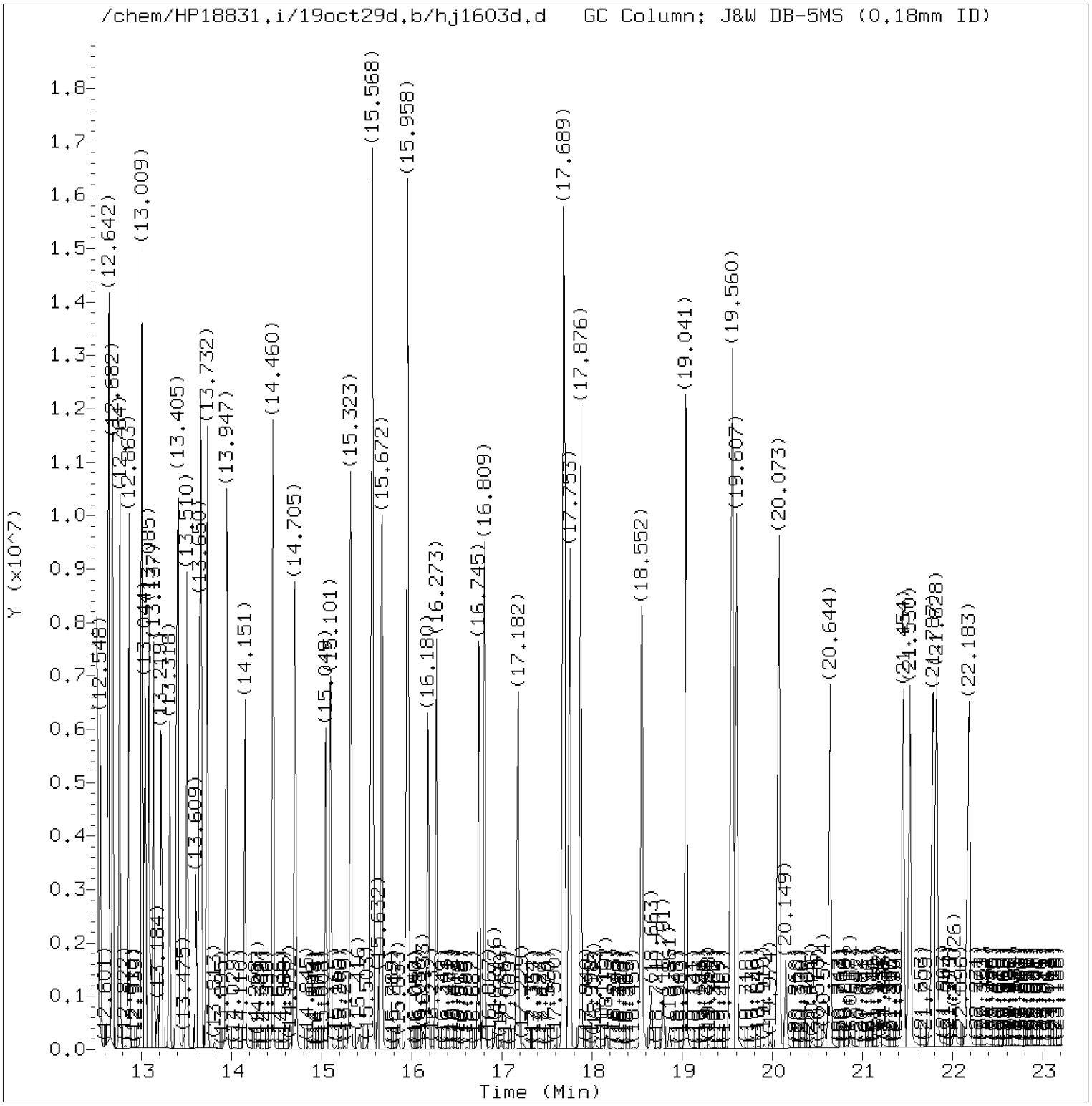
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.564	88	1073660	25.512
5) N-Nitrosodimethylamine	(1)	3.118	74	1612235	26.540
6) Pyridine	(1)	3.135	79	2757364	25.865
8) 2-Picoline	(1)	4.295	93	2903782M	25.792
9) N-Nitrosomethylethylamine	(1)	4.487	88	1231402	26.543
10) Methyl methanesulfonate	(1)	4.942	80	1361052	27.116
12)$2-Fluorophenol	(1)	5.163	112	4748908	56.738
14) N-Nitrosodiethylamine	(1)	5.502	102	1246947	28.311
43) Total Cresols	(1)			4861753	69.701
16) Ethyl methanesulfonate	(1)	5.950	109	1249235	27.908
17) Benzaldehyde	(1)	6.399	77	1438249	22.418
18)$Phenol-d6	(1)	6.527	99	6250413	58.139
19) Phenol	(1)	6.545	94	3467620	29.305
20) Aniline	(1)	6.562	93	4019321	29.734
21) a-methylstyrene	(1)	6.638	118	955044	27.691
23) bis(2-Chloroethyl)ether	(1)	6.679	93	2594860	28.451
24) 2-Chlorophenol	(1)	6.726	128	2325848	29.278
25) 1,3-Dichlorobenzene	(1)	6.953	146	2556308	30.310
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	269916	5.000
27) 1,4-Dichlorobenzene	(1)	7.064	146	2581308	30.061
28) Benzyl alcohol	(1)	7.262	108	1564402	31.536
29) 1,2-Dichlorobenzene	(1)	7.279	146	2449740	30.221
100) Isosafrole	(3)			1970587	30.449
31) Indene	(1)	7.419	115	3539573	30.230
32) 2-Methylphenol	(1)	7.431	108	2305100	31.985
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.477	45	5242945	31.913
35) bis(2-Chloroisopropyl)ether	(1)	7.477	45	5242945	31.913
36) N-Nitrosopyrrolidine	(1)	7.635	100	1296872	33.027
37) Acetophenone	(1)	7.658	105	3368830	30.188
38) 4-Methylphenol	(1)	7.681	108	2556653	37.717
39) N-Nitroso-di-n-propylamine	(1)	7.693	70	1819967	31.398
40) N-Nitrosomorpholine	(1)	7.699	56	2207342	30.977
41) o-Toluidine	(1)	7.711	106	3745634	30.693
44) Hexachloroethane	(1)	7.792	117	1070704	30.587
45)$Nitrobenzene-d5	(2)	7.880	82	5435025	63.020
46) Nitrobenzene	(2)	7.909	77	2724167	31.374
125) 2,4_2,6-Dinitrotoluenes	(3)			2388111	60.378
50) N-Nitrosopiperidine	(2)	8.142	114	1226177	31.191
52) Isophorone	(2)	8.282	82	5102475	32.498
53) 2-Nitrophenol	(2)	8.393	139	1299227	32.200

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.486	107	2488995	29.950
59) O,O,O-Triethylphosphorothioate	(2)	8.614	198	1107833	29.653
57) bis(2-Chloroethoxy)methane	(2)	8.643	93	3069209	31.247
58) Benzoic acid	(2)	8.690	105	1802899	34.180
62) 2,4-Dichlorophenol	(2)	8.766	162	1920504	31.291
151) Diallate trans/cis	(4)			1999466	32.433
65) 1,2,4-Trichlorobenzene	(2)	8.894	180	1990949	29.706
68)*Naphthalene-d8	(2)	8.975	136	1030739	5.000
69) Naphthalene	(2)	9.010	128	6805954	30.499
70) 4-Chloroaniline	(2)	9.115	127	2696037	31.384
71) 2,6-Dichlorophenol	(2)	9.121	162	1848500	30.776
72) Hexachloropropene	(2)	9.156	213	1108673	29.759
74) Hexachlorobutadiene	(2)	9.226	225	1177169	29.819
78) Quinoline	(2)	9.541	129	4140142	30.917
80) N-Nitrosodi-n-butylamine	(2)	9.681	84	2210279	36.154
79) Caprolactam	(2)	9.692	113	694274	32.017
83) 4-Chloro-3-methylphenol	(2)	9.914	107	2129533	31.416
85) Safrole	(2)	10.001	162	1736385	30.254
86) 2-Methylnaphthalene	(2)	10.112	142	4505100	30.492
87) 1-Methylnaphthalene	(2)	10.269	142	4207187	31.442
88) Hexachlorocyclopentadiene	(3)	10.374	237	1307662	28.998
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.380	216	1927168	29.986
91) cis-Isosafrole	(3)	10.462	162	319426	5.189
93) 2,4,6-Trichlorophenol	(3)	10.578	196	1333687	31.959
95) 2,4,5-Trichlorophenol	(3)	10.631	196	1391093	30.893
96)$2-Fluorobiphenyl	(3)	10.724	172	9649047	61.092
97) trans-Isosafrole	(3)	10.835	162	1651161	25.260
98) 1,1'-Biphenyl	(3)	10.876	154	5293863	30.061
99) 2-Chloronaphthalene	(3)	10.893	162	4078488	30.333
101) 1-Chloronaphthalene	(3)	10.922	162	3772831	29.937
103) Diphenyl ether	(3)	11.050	170	2869392	29.908
104) 2-Nitroaniline	(3)	11.068	138	1471087	31.904
108) 1,4-Naphthoquinone	(3)	11.179	158	1748613	30.561
109) 1,4-Dinitrobenzene	(3)	11.301	168	763046	31.024
110) Dimethylphthalate	(3)	11.406	163	4498014	30.438
111) 1,3-Dinitrobenzene	(3)	11.418	168	832931	30.608
113) 2,6-Dinitrotoluene	(3)	11.476	165	1023059	30.308
114) Acenaphthylene	(3)	11.540	152	6732948	31.138
117) 3-Nitroaniline	(3)	11.709	138	1220471	32.325
118)*Acenaphthene-d10	(3)	11.750	164	472375	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.796	153	4290988	30.339
120) 2,4-Dinitrophenol	(3)	11.861	184	768953	31.580
121) 4-Nitrophenol	(3)	11.971	109	794063	30.539
122) Pentachlorobenzene	(3)	11.977	250	1646173	29.154
124) Dibenzofuran	(3)	12.041	168	5806647	30.273
123) 2,4-Dinitrotoluene	(3)	12.047	165	1365052	30.070
126) 1-Naphthylamine	(3)	12.146	143	4135207	31.389
127) 2,3,4,6-Tetrachlorophenol	(3)	12.204	232	1102970	29.575
128) 2-Naphthylamine	(3)	12.251	143	3934402	30.357
129) Diethylphthalate	(3)	12.391	149	4841104	30.002
131) Fluorene	(3)	12.473	166	4617893	29.224
130) Thionazin	(3)	12.484	107	874746	28.797
132) 4-Chlorophenyl-phenylether	(3)	12.490	204	2071169	28.036
133) 5-Nitro-o-toluidine	(3)	12.502	152	1373301	29.919
134) 4-Nitroaniline	(3)	12.519	138	1210781	30.661
135) 4,6-Dinitro-2-methylphenol	(4)	12.548	198	866429	35.416
137) NDPA as diphenylamine	(4)	12.642	169	3958586	34.347
136) N-Nitrosodiphenylamine	(4)	12.642	169	3958586	34.347
139) 1,2-Diphenylhydrazine	(4)	12.682	77	4607684	33.730
140)$2,4,6-Tribromophenol	(3)	12.764	330	1180969	54.320
142) Tetraethyldithiopyrophosphate	(4)	12.863	97	799330	33.379
145) Diallate (peak 1)	(4)	13.003	86	1705641	26.831
146) Phorate	(4)	13.015	75	2621273	32.148
147) Phenacetin	(4)	13.044	108	2242545	32.358
148) 4-Bromophenyl-phenylether	(4)	13.085	248	1032520	30.709
149) Diallate (peak 2)	(4)	13.108	86	293825	5.602
150) Hexachlorobenzene	(4)	13.137	284	1094352	32.474
152) Dimethoate	(4)	13.219	87	1536853	29.658
153) Atrazine	(4)	13.318	200	722141	23.879
154) Pentachlorophenol	(4)	13.393	266	769092	31.082
155) 4-Aminobiphenyl	(4)	13.405	169	2045922	27.791
156) Pentachloronitrobenzene	(4)	13.411	237	442695	28.743
157) Pronamide	(4)	13.510	173	1748598	30.809
158)*Phenanthrene-d10	(4)	13.627	188	775987	5.000
159) Dinoseb	(4)	13.644	211	1157004	32.245
160) Phenanthrene	(4)	13.662	178	5404579	30.547
162) Anthracene	(4)	13.732	178	5406114	30.078
168) Carbazole	(4)	13.947	167	5259979	29.764
169) Methyl parathion	(4)	14.151	109	1295894	29.625
170) Di-n-butylphthalate	(4)	14.460	149	6980085	29.553

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

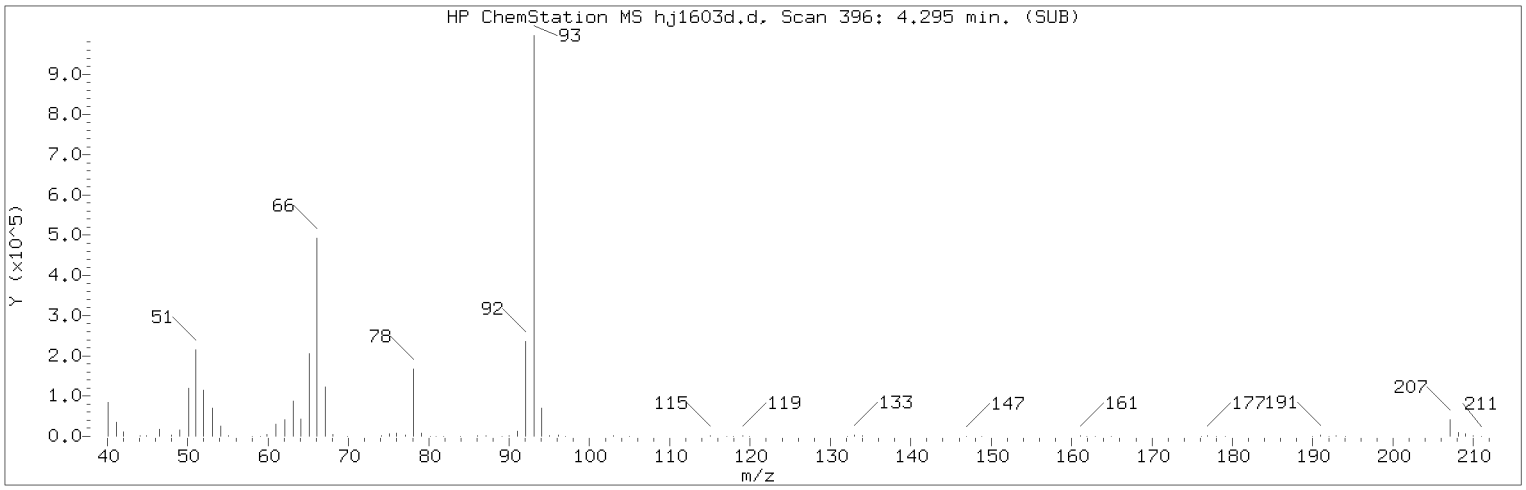
Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.699	109	873589	30.932
173) 4-Nitroquinoline-1-oxide	(4)	14.717	190	723188	32.017
227) Total PAHs	(6)			99708521	543.932
174) Octachlorostyrene	(4)	15.049	308	398452	27.609
176) Isodrin	(4)	15.101	193	631349	28.658
178) Fluoranthene	(4)	15.323	202	6187252	29.996
179) Benzidine	(5)	15.568	184	11090453	87.757
180)*Pyrene-d10	(5)	15.632	212	717724	5.000
182) Pyrene	(5)	15.672	202	6235945	29.837
184)$Terphenyl-d14	(5)	15.958	244	7586245	57.139
187) p-Dimethylaminoazobenzene	(5)	16.180	225	1059240	31.303
190) Chlorobenzilate	(5)	16.273	139	2005964	28.941
192) 3,3'-Dimethylbenzidine	(5)	16.751	212	3946408	30.239
193) Butylbenzylphthalate	(5)	16.809	149	3094609	29.821
196) 2-Acetylaminofluorene	(5)	17.182	181	2475974	31.492
198) 3,3'-Dichlorobenzidine	(5)	17.678	252	2157137	30.649
200) Benzo(a)anthracene	(5)	17.689	228	5571964	31.598
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.701	231	1173425	30.560
201) Chrysene	(5)	17.759	228	5553932	30.454
204) bis(2-Ethylhexyl)phthalate	(5)	17.876	149	4591475	30.927
208) 6-Methylchrysene	(5)	18.558	242	4060680	31.588
210) Di-n-octylphthalate	(6)	19.047	149	8605411	30.175
211) Benzo(b)fluoranthene	(6)	19.554	252	6239970	31.286
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.560	256	2770986	31.410
213) Benzo(k)fluoranthene	(6)	19.607	252	6056851	29.891
216) Benzo(a)pyrene	(6)	20.073	252	6453132	33.901
218)*Perylene-d12	(6)	20.149	264	818963	5.000
220) 3-Methylcholanthrene	(6)	20.644	268	2592379	30.121
222) Dibenz(a,h)acridine	(6)	21.454	279	4619738	28.915
223) Dibenz(a,j)acridine	(6)	21.530	279	4564921	28.805
224) Indeno(1,2,3-cd)pyrene	(6)	21.781	276	5097496M	25.058
225) Dibenz(a,h)anthracene	(6)	21.828	278	5184396	29.543
226) Benzo(g,h,i)perylene	(6)	22.183	276	5156820	28.610

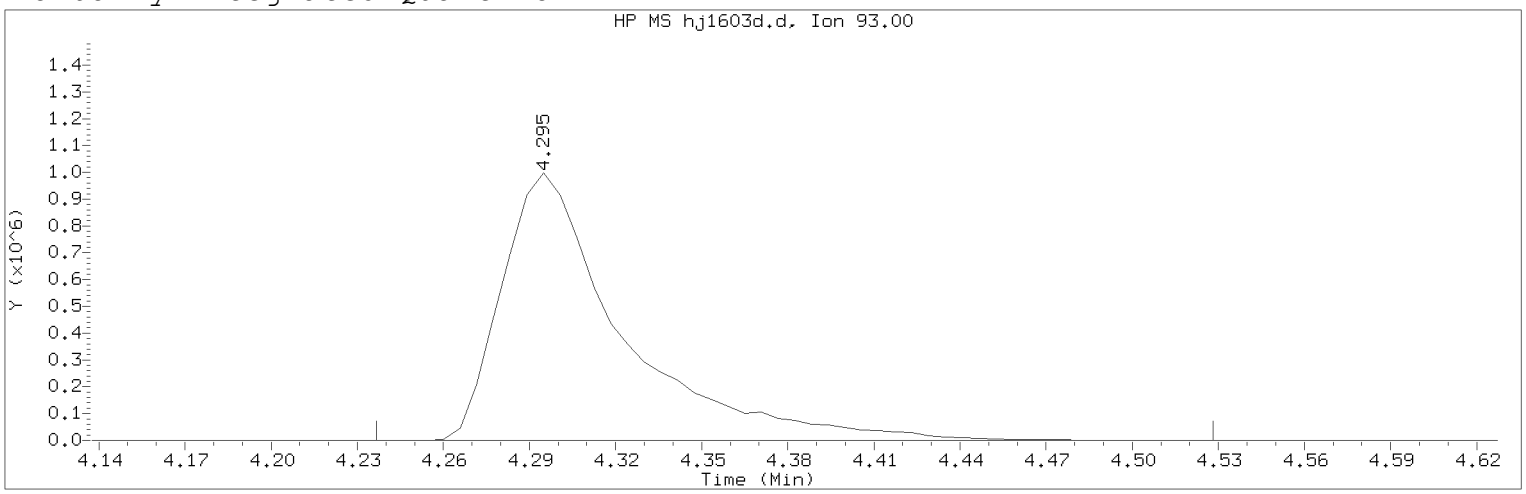
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

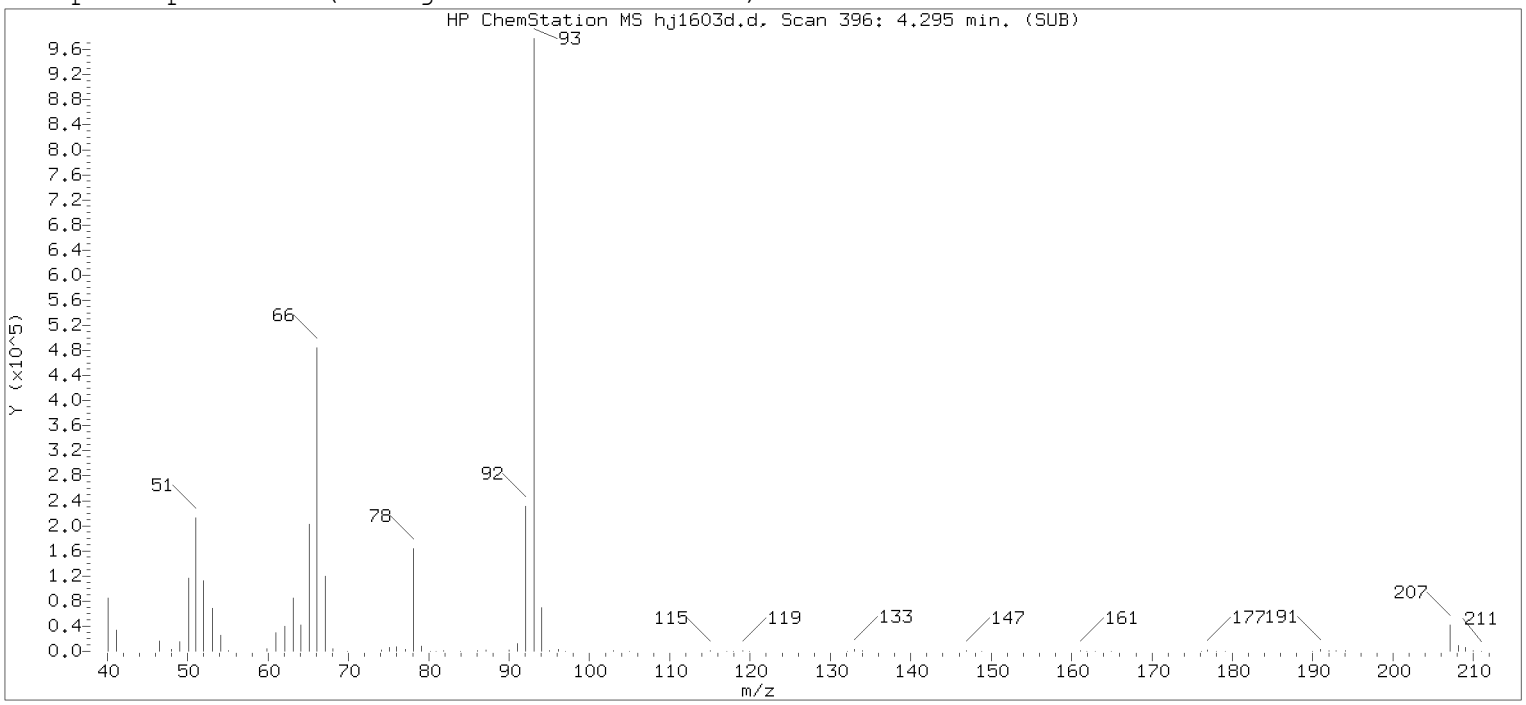
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 396		
Retention Time (minutes)	: 4.295		
Quant Ion	: 93.00		
Area (flag)	: 2903782M		
On-Column Amount (ng/ul)	: 25.7923		
Integration start scan	: 385	Integration stop scan:	435
Y at integration start	: 0	Y at integration end:	943

Reason for manual integration: improper integration

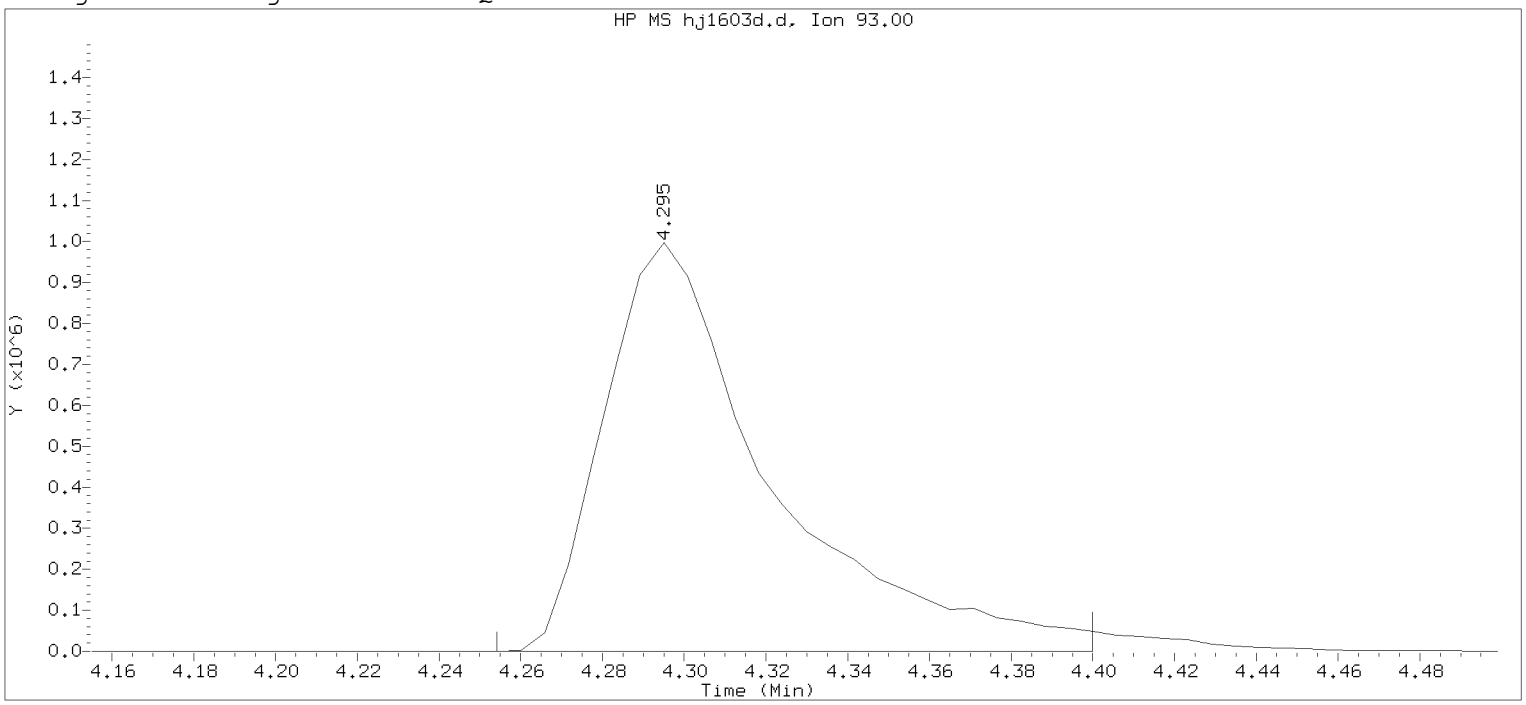
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

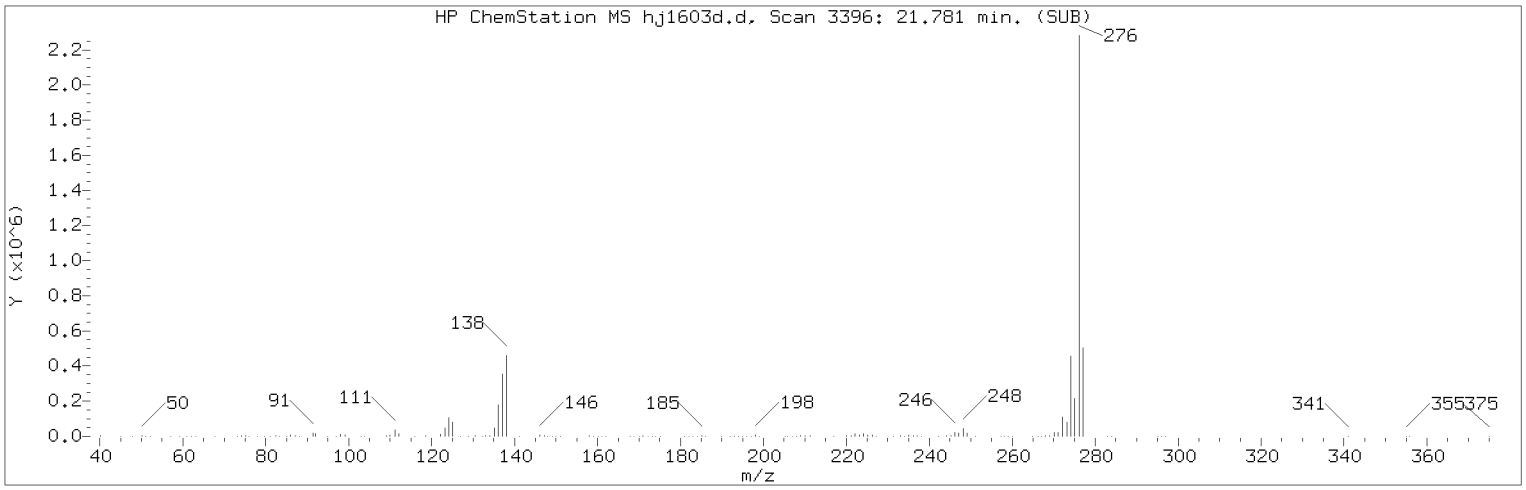
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

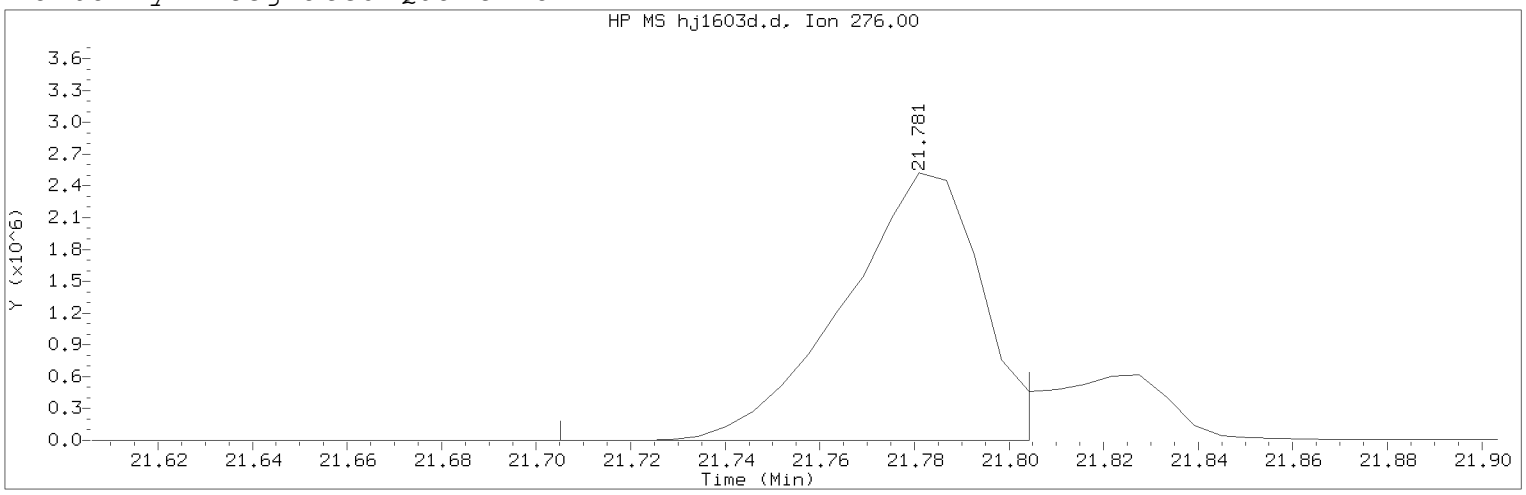
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 396		
Retention Time (minutes)	: 4.295		
Quant Ion	: 93.00		
Area	: 2832954		
On-column Amount (ng/ul)	: 30.0000		
Integration start scan	: 388	Integration stop scan:	413
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. RAF48 w/ 8270d

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:28 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

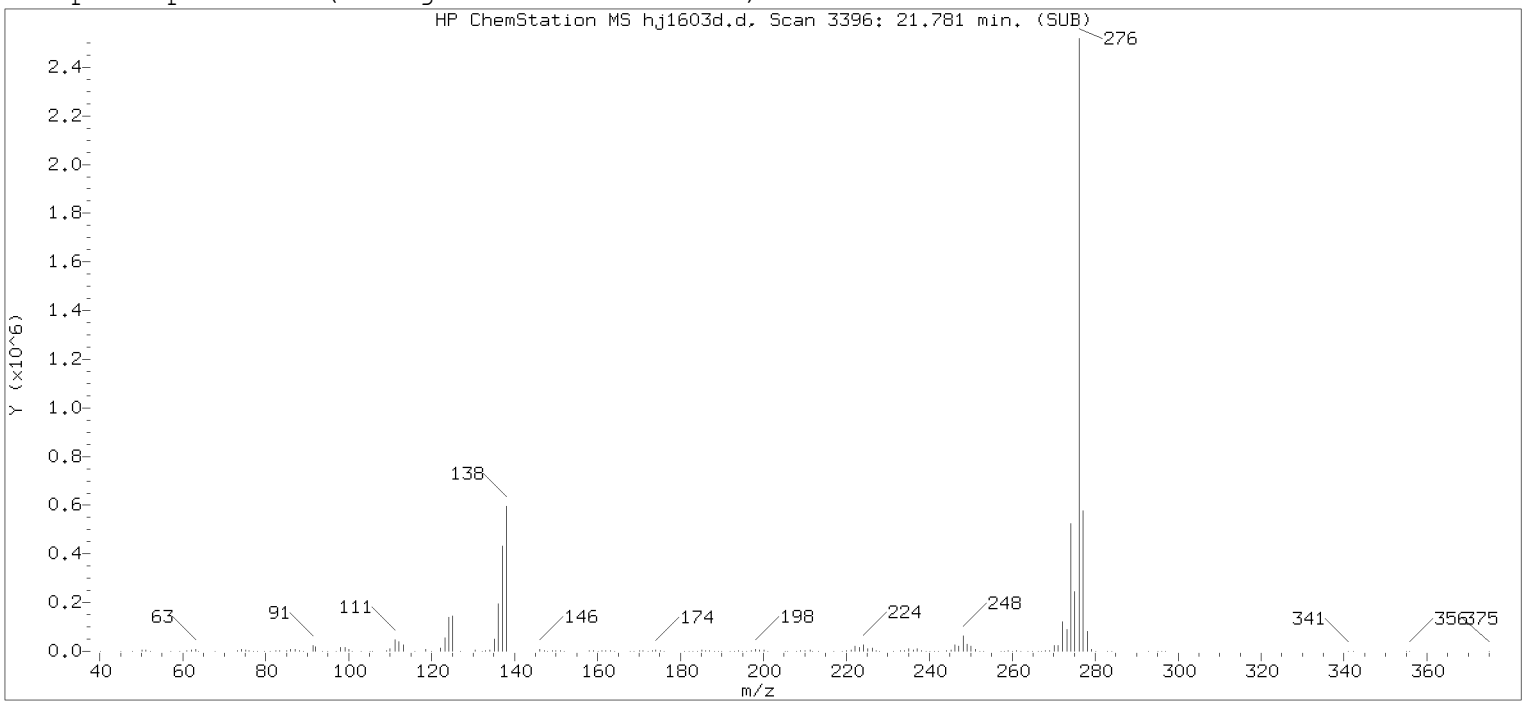
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3396
Retention Time (minutes) : 21.781
Quant Ion : 276.00
Area (flag) : 5097496M
On-Column Amount (ng/ul) : 25.0584
Integration start scan : 3382 Integration stop scan: 3399
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

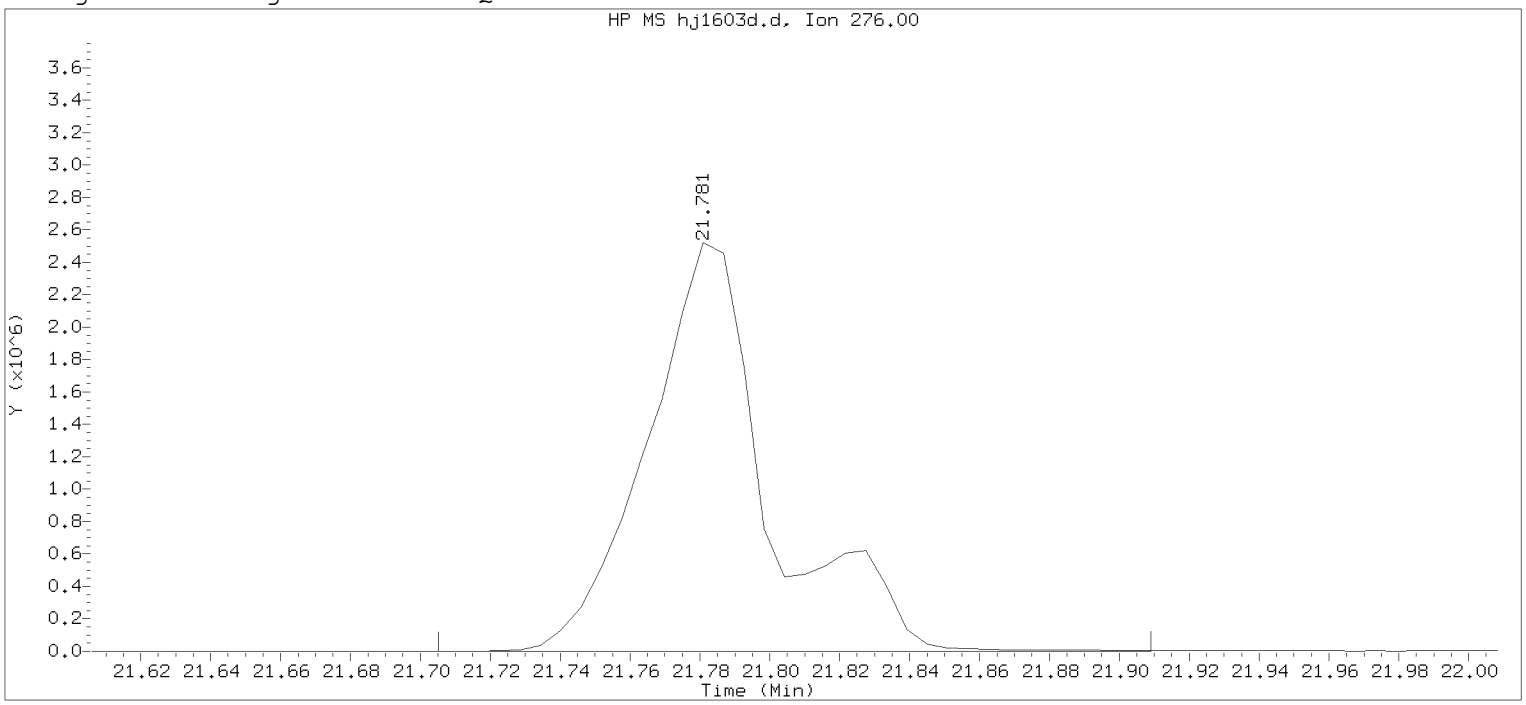
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



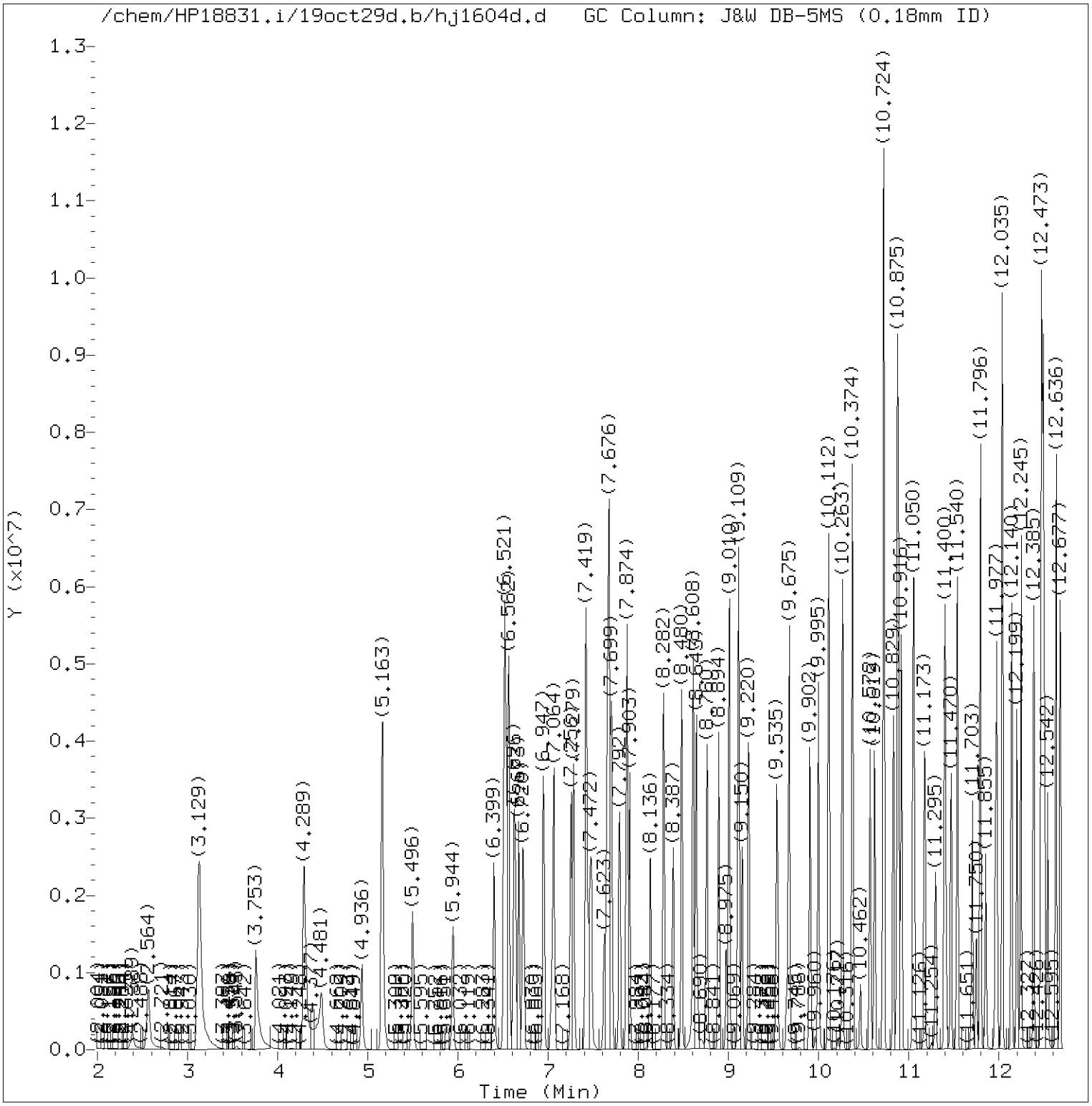
Data File: /chem/HP18831.i/19oct29d.b/hj1603d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:23 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD030 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3396		
Retention Time (minutes)	: 21.781		
Quant Ion	: 276.00		
Area	: 6116584		
On-column Amount (ng/ul)	: 30.2304		
Integration start scan	: 3382	Integration stop scan:	3417
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with 8270D



Total Ion Chromatogram (TIC)

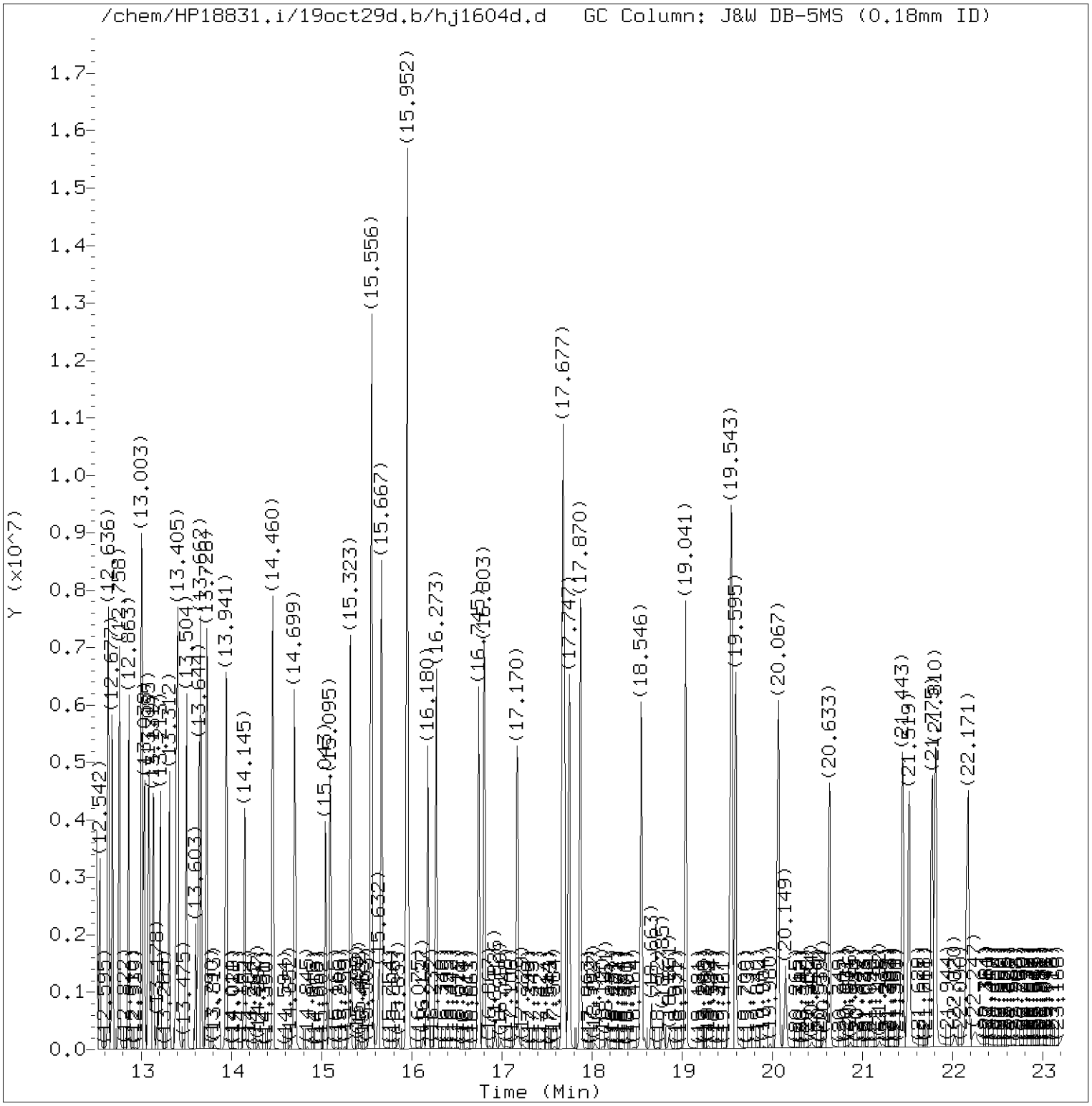
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.570	88	687543	22.239
5) N-Nitrosodimethylamine	(1)	3.112	74	1051179	23.555
6) Pyridine	(1)	3.135	79	1755080	22.410
8) 2-Picoline	(1)	4.289	93	1860103	22.490
9) N-Nitrosomethylethylamine	(1)	4.487	88	765275	22.455
10) Methyl methanesulfonate	(1)	4.936	80	650241	17.634
12)$2-Fluorophenol	(1)	5.163	112	2185029	35.536
14) N-Nitrosodiethylamine	(1)	5.496	102	557788	17.239
43) Total Cresols	(1)			2201572	42.932
16) Ethyl methanesulfonate	(1)	5.944	109	574194	17.461
17) Benzaldehyde	(1)	6.399	77	753436	15.986
18)$Phenol-d6	(1)	6.516	99	2851676	36.107
19) Phenol	(1)	6.533	94	1570842	18.070
20) Aniline	(1)	6.556	93	1808891	18.216
21) a-methylstyrene	(1)	6.632	118	451400	17.816
23) bis(2-Chloroethyl)ether	(1)	6.673	93	1168840	17.445
24) 2-Chlorophenol	(1)	6.720	128	1119903	19.189
25) 1,3-Dichlorobenzene	(1)	6.947	146	1232137	19.887
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	198289	5.000
27) 1,4-Dichlorobenzene	(1)	7.064	146	1260278	19.978
28) Benzyl alcohol	(1)	7.256	108	740273	20.313
29) 1,2-Dichlorobenzene	(1)	7.279	146	1204425	20.226
100) Isosafrole	(3)			1023928	20.600
31) Indene	(1)	7.419	115	1684869	19.588
32) 2-Methylphenol	(1)	7.431	108	1071313	20.235
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.477	45	2285557	18.937
35) bis(2-Chloroisopropyl)ether	(1)	7.477	45	2285557	18.937
36) N-Nitrosopyrrolidine	(1)	7.623	100	600980	20.834
37) Acetophenone	(1)	7.652	105	1593831	19.441
38) 4-Methylphenol	(1)	7.670	108	1130259	22.697
39) N-Nitroso-di-n-propylamine	(1)	7.681	70	831186	19.519
40) N-Nitrosomorpholine	(1)	7.693	56	1011721	19.327
41) o-Toluidine	(1)	7.705	106	1793144	20.001
44) Hexachloroethane	(1)	7.792	117	514986	20.026
45)$Nitrobenzene-d5	(2)	7.874	82	2498440	39.373
46) Nitrobenzene	(2)	7.903	77	1247280	19.524
125) 2,4_2,6-Dinitrotoluenes	(3)			1218141	40.079
50) N-Nitrosopiperidine	(2)	8.136	114	573704	19.834
52) Isophorone	(2)	8.282	82	2365050	20.473
53) 2-Nitrophenol	(2)	8.387	139	622496	20.968

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.480	107	1219029	19.936
59) O,O,O-Triethylphosphorothioate	(2)	8.608	198	546451	19.879
57) bis(2-Chloroethoxy)methane	(2)	8.643	93	1405636	19.449
58) Benzoic acid	(2)	8.661	105	817093	21.054
62) 2,4-Dichlorophenol	(2)	8.760	162	956662	21.184
151) Diallate trans/cis	(4)			1131865	19.764
65) 1,2,4-Trichlorobenzene	(2)	8.894	180	1008186	20.445
68)*Naphthalene-d8	(2)	8.975	136	758390	5.000
69) Naphthalene	(2)	9.010	128	3289656	20.035
70) 4-Chloroaniline	(2)	9.109	127	1327280	20.999
71) 2,6-Dichlorophenol	(2)	9.115	162	907443	20.534
72) Hexachloropropene	(2)	9.150	213	582211	21.240
74) Hexachlorobutadiene	(2)	9.226	225	607983	20.931
78) Quinoline	(2)	9.535	129	1962640	19.920
79) Caprolactam	(2)	9.675	113	332719	20.854
80) N-Nitrosodi-n-butylamine	(2)	9.675	84	1005701	22.358
83) 4-Chloro-3-methylphenol	(2)	9.902	107	1034313	20.739
85) Safrole	(2)	10.001	162	861395	20.398
86) 2-Methylnaphthalene	(2)	10.112	142	2249752	20.696
87) 1-Methylnaphthalene	(2)	10.263	142	2071288	21.038
88) Hexachlorocyclopentadiene	(3)	10.368	237	705825	20.386
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.380	216	997942	20.224
91) cis-Isosafrole	(3)	10.462	162	160666	3.399
93) 2,4,6-Trichlorophenol	(3)	10.572	196	681598	21.273
95) 2,4,5-Trichlorophenol	(3)	10.619	196	704805	20.386
96)$2-Fluorobiphenyl	(3)	10.724	172	4808170	39.649
97) trans-Isosafrole	(3)	10.829	162	863262	17.200
98) 1,1'-Biphenyl	(3)	10.875	154	2626865	19.428
99) 2-Chloronaphthalene	(3)	10.887	162	2125116	20.586
101) 1-Chloronaphthalene	(3)	10.916	162	1802439	18.628
103) Diphenyl ether	(3)	11.050	170	1435437	19.487
104) 2-Nitroaniline	(3)	11.062	138	724350	20.461
108) 1,4-Naphthoquinone	(3)	11.179	158	900819	20.506
109) 1,4-Dinitrobenzene	(3)	11.295	168	383489	20.307
110) Dimethylphthalate	(3)	11.400	163	2160464	19.041
111) 1,3-Dinitrobenzene	(3)	11.412	168	406353	19.449
113) 2,6-Dinitrotoluene	(3)	11.470	165	518436	20.004
114) Acenaphthylene	(3)	11.540	152	3314280	19.963
117) 3-Nitroaniline	(3)	11.703	138	585716	20.205
118)*Acenaphthene-d10	(3)	11.744	164	362685	5.000

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.796	153	2177996	20.057
120) 2,4-Dinitrophenol	(3)	11.855	184	387440	20.724
121) 4-Nitrophenol	(3)	11.960	109	406898	20.382
122) Pentachlorobenzene	(3)	11.977	250	880617	20.313
124) Dibenzofuran	(3)	12.035	168	2899076	19.685
123) 2,4-Dinitrotoluene	(3)	12.041	165	699705	20.075
126) 1-Naphthylamine	(3)	12.140	143	2026089	20.031
127) 2,3,4,6-Tetrachlorophenol	(3)	12.199	232	585301	20.441
128) 2-Naphthylamine	(3)	12.245	143	2126306	21.368
129) Diethylphthalate	(3)	12.385	149	2481644	20.031
131) Fluorene	(3)	12.467	166	2356146	19.420
130) Thionazin	(3)	12.478	107	444076	19.041
132) 4-Chlorophenyl-phenylether	(3)	12.490	204	1109795	19.566
133) 5-Nitro-o-toluidine	(3)	12.496	152	721633	20.476
134) 4-Nitroaniline	(3)	12.508	138	622350	20.526
135) 4,6-Dinitro-2-methylphenol	(4)	12.542	198	452595	19.919
137) NDPA as diphenylamine	(4)	12.636	169	2042980	19.085
136) N-Nitrosodiphenylamine	(4)	12.636	169	2042980	19.085
139) 1,2-Diphenylhydrazine	(4)	12.677	77	2317641	18.267
140)$2,4,6-Tribromophenol	(3)	12.758	330	707401	42.378
142) Tetraethyldithiopyrophosphate	(4)	12.863	97	442079	19.876
145) Diallate (peak 1)	(4)	13.003	86	966515	16.370
146) Phorate	(4)	13.009	75	1493778	19.725
147) Phenacetin	(4)	13.038	108	1307425	20.312
148) 4-Bromophenyl-phenylether	(4)	13.085	248	616859	19.754
149) Diallate (peak 2)	(4)	13.108	86	165350	3.394
150) Hexachlorobenzene	(4)	13.137	284	670973	21.438
152) Dimethoate	(4)	13.213	87	996383	20.703
153) Atrazine	(4)	13.312	200	547432	19.490
154) Pentachlorophenol	(4)	13.388	266	522125	22.720
155) 4-Aminobiphenyl	(4)	13.405	169	1479677	21.641
156) Pentachloronitrobenzene	(4)	13.405	237	299482	20.936
157) Pronamide	(4)	13.504	173	1149752	21.811
158)*Phenanthrene-d10	(4)	13.627	188	720713	5.000
159) Dinoseb	(4)	13.644	211	733165	22.000
160) Phenanthrene	(4)	13.662	178	3328373	20.255
162) Anthracene	(4)	13.726	178	3372589	20.203
168) Carbazole	(4)	13.947	167	3384935	20.623
169) Methyl parathion	(4)	14.145	109	859855	21.164
170) Di-n-butylphthalate	(4)	14.460	149	4627198	21.093

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

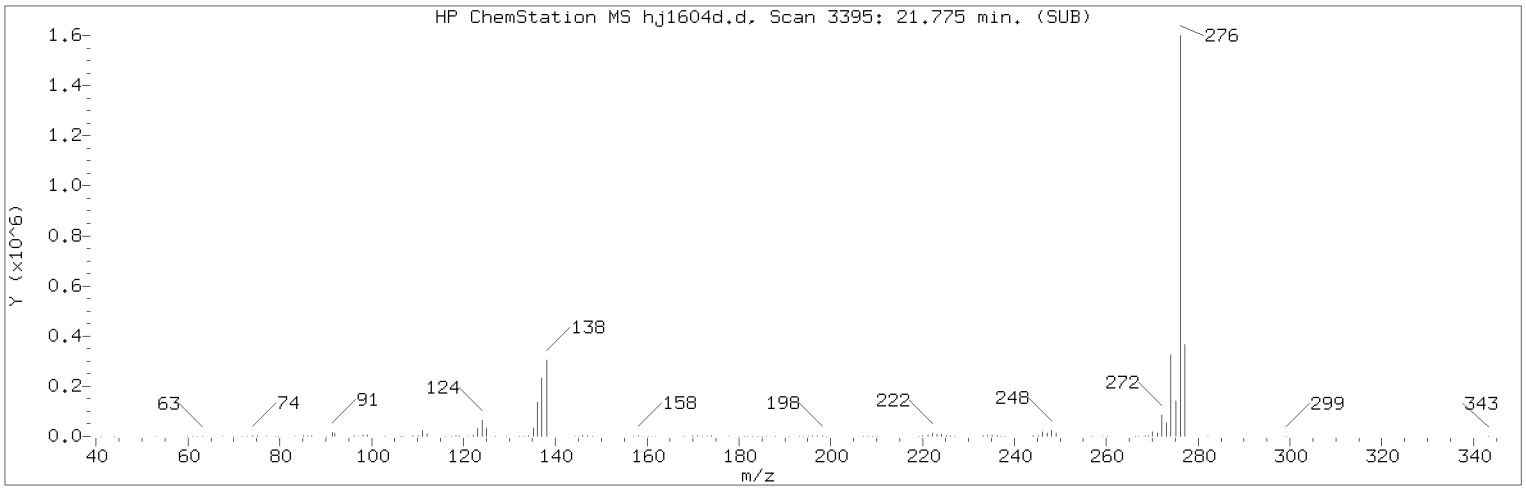
Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.699	109	569412	21.708
173) 4-Nitroquinoline-1-oxide	(4)	14.711	190	456946	21.781
227) Total PAHs	(6)			59651557	368.254
174) Octachlorostyrene	(4)	15.049	308	263485	19.657
176) Isodrin	(4)	15.095	193	429306	20.981
178) Fluoranthene	(4)	15.323	202	4069508	21.242
179) Benzidine	(5)	15.556	184	7728244	60.518
180)*Pyrene-d10	(5)	15.632	212	725251	5.000
182) Pyrene	(5)	15.667	202	4441945	21.032
184)$Terphenyl-d14	(5)	15.952	244	6531567	48.685
187) p-Dimethylaminoazobenzene	(5)	16.180	225	817927	23.921
190) Chlorobenzilate	(5)	16.273	139	1665279	23.777
192) 3,3'-Dimethylbenzidine	(5)	16.745	212	3111300	23.593
193) Butylbenzylphthalate	(5)	16.803	149	2347092	22.383
196) 2-Acetylaminofluorene	(5)	17.170	181	1838144	23.136
198) 3,3'-Dichlorobenzidine	(5)	17.672	252	1468645	20.650
200) Benzo(a)anthracene	(5)	17.683	228	3698085	20.754
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.695	231	775191	19.979
201) Chrysene	(5)	17.747	228	3650217	19.808
204) bis(2-Ethylhexyl)phthalate	(5)	17.876	149	3059722	20.396
208) 6-Methylchrysene	(5)	18.546	242	2656082	20.447
210) Di-n-octylphthalate	(6)	19.041	149	5464428	20.920
211) Benzo(b)fluoranthene	(6)	19.543	252	3845859	21.052
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.548	256	1709866	21.161
213) Benzo(k)fluoranthene	(6)	19.595	252	3754610	20.230
216) Benzo(a)pyrene	(6)	20.067	252	3687611	21.151
218)*Perylene-d12	(6)	20.149	264	750100	5.000
220) 3-Methylcholanthrene	(6)	20.633	268	1742084	22.100
222) Dibenz(a,h)acridine	(6)	21.449	279	3052374	20.859
223) Dibenz(a,j)acridine	(6)	21.519	279	3019060	20.799
224) Indeno(1,2,3-cd)pyrene	(6)	21.775	276	3451777M	19.002
225) Dibenz(a,h)anthracene	(6)	21.816	278	3461119	21.534
226) Benzo(g,h,i)perylene	(6)	22.171	276	3430746	20.781

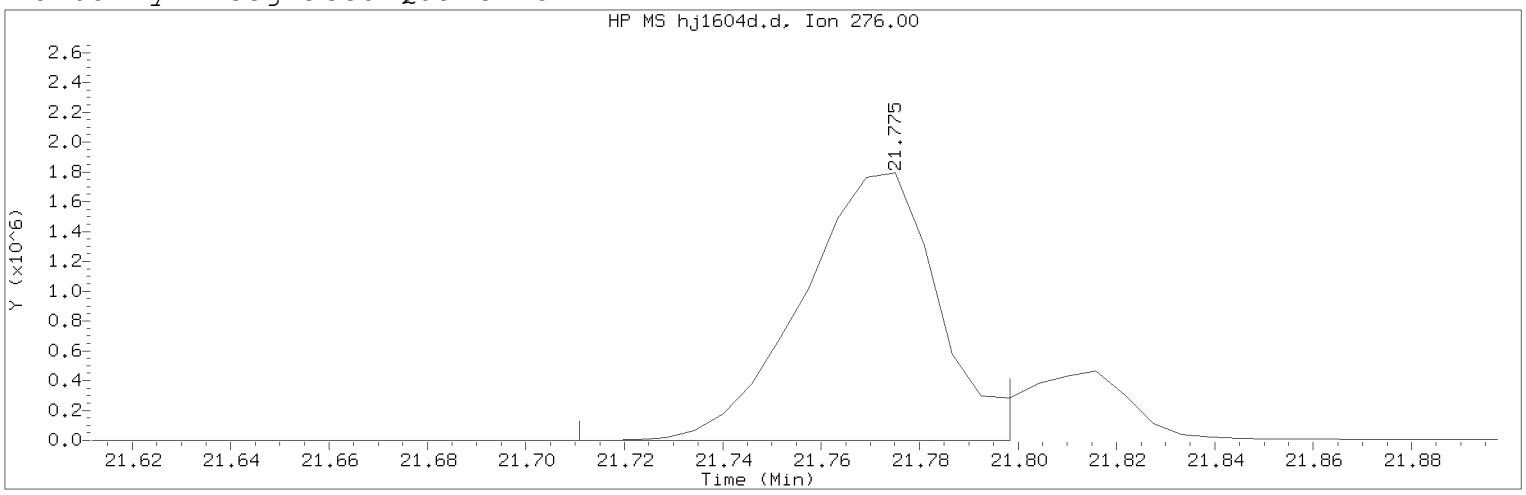
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

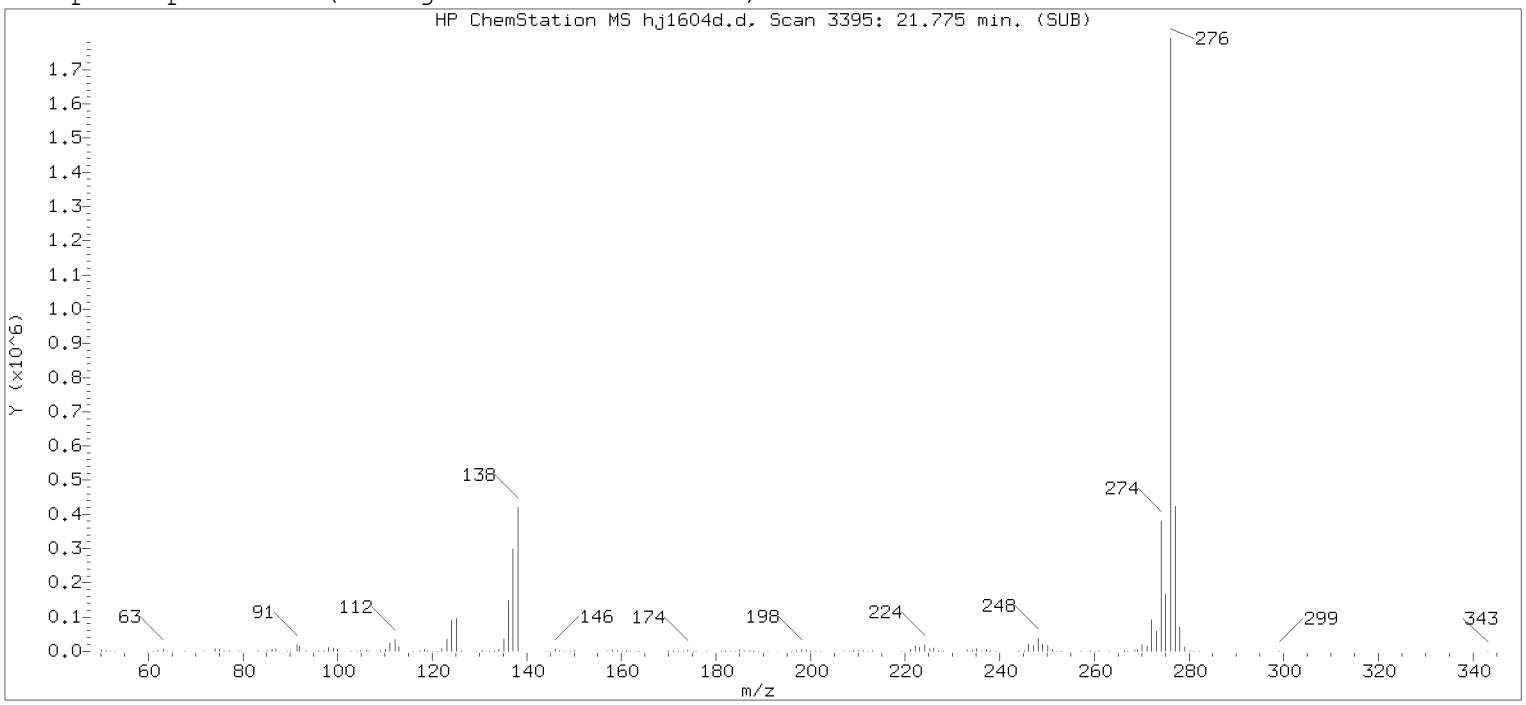
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3395
Retention Time (minutes) : 21.775
Quant Ion : 276.00
Area (flag) : 3451777M
On-Column Amount (ng/ul) : 19.0018
Integration start scan : 3383 Integration stop scan: 3398
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

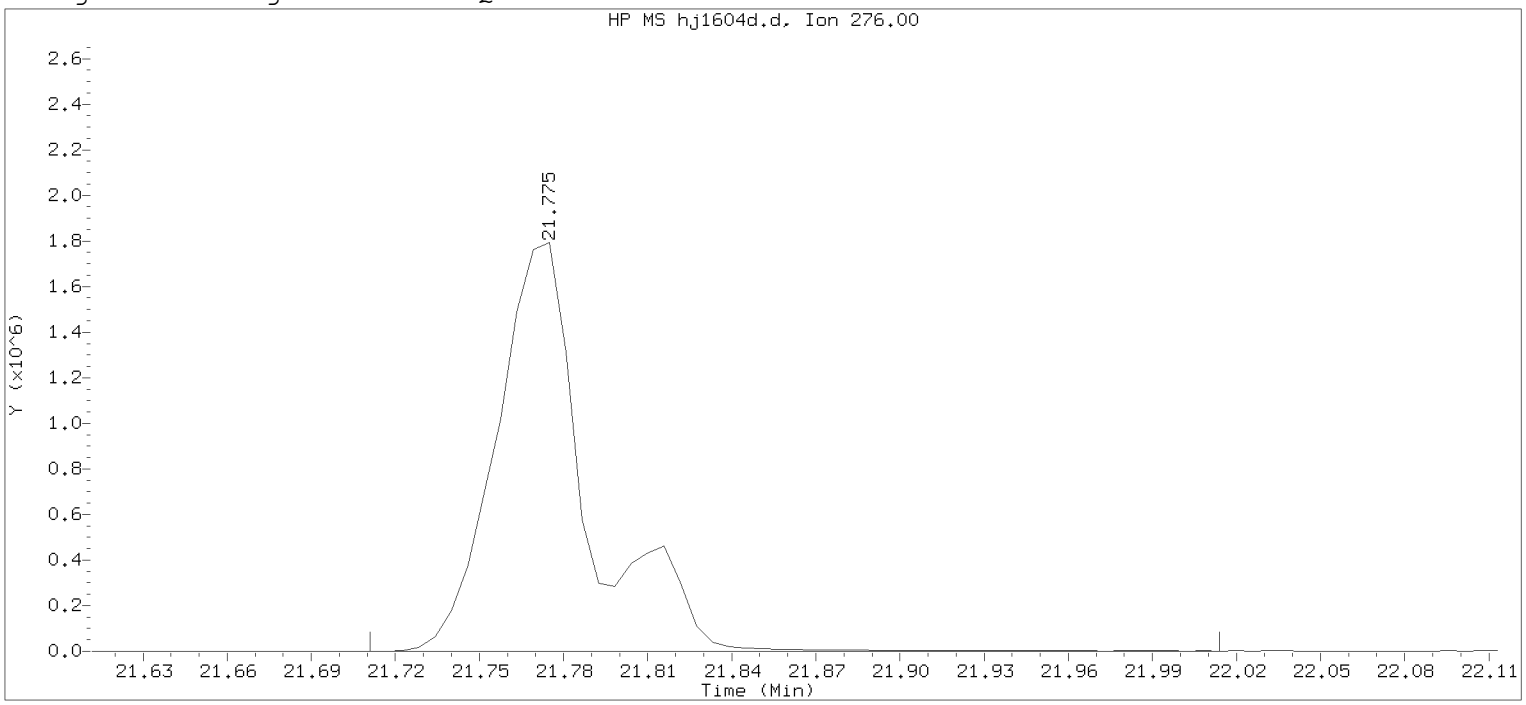
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



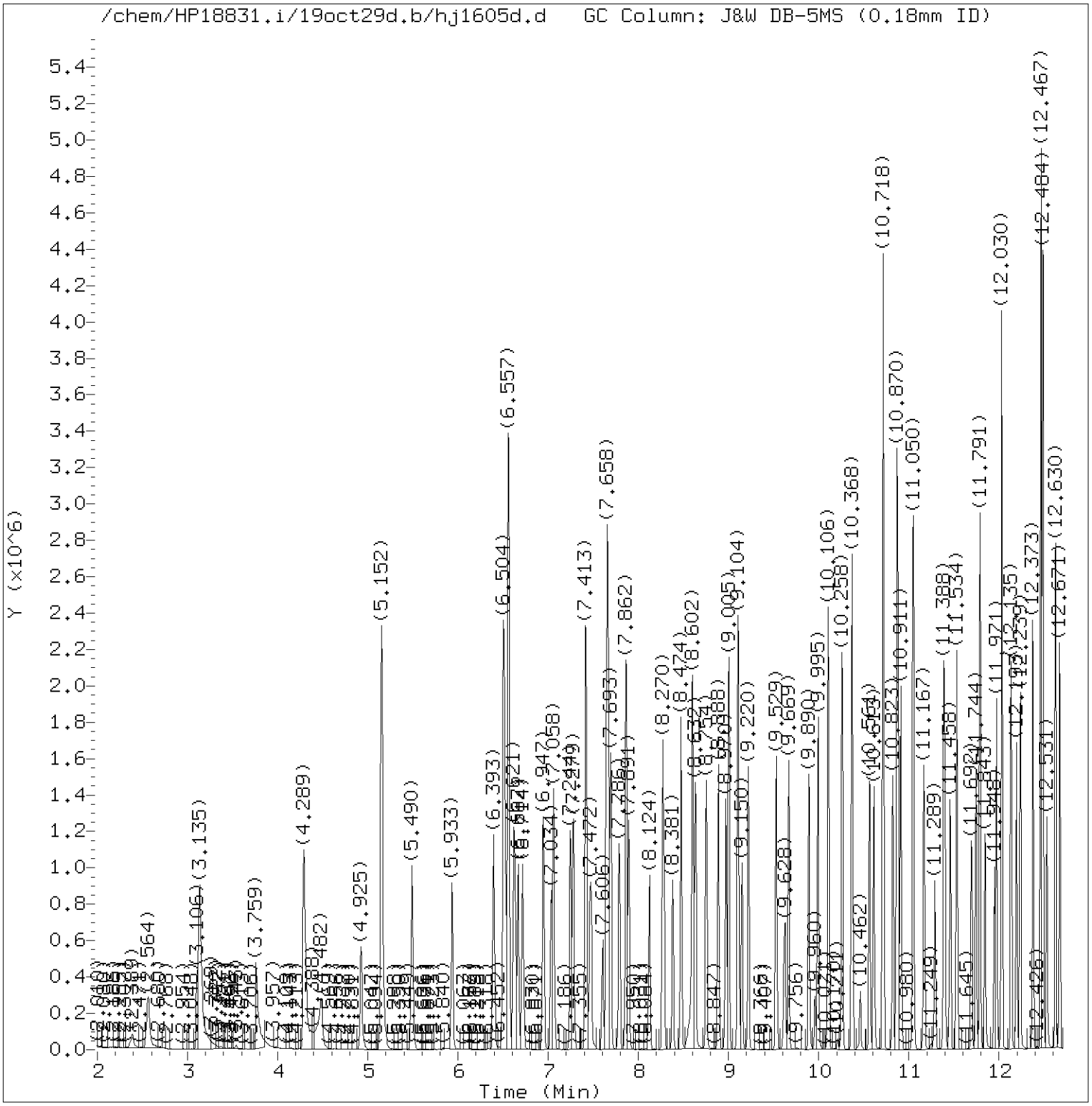
Data File: /chem/HP18831.i/19oct29d.b/hj1604d.d Instrument ID: HP18831.i
Injection date and time: 29-OCT-2019 23:52 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD020 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3395		
Retention Time (minutes)	: 21.775		
Quant Ion	: 276.00		
Area	: 4104793		
On-column Amount (ng/ul)	: 21.3837		
Integration start scan	: 3383	Integration stop scan:	3435
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with rv8270d.



Total Ion Chromatogram (TIC)

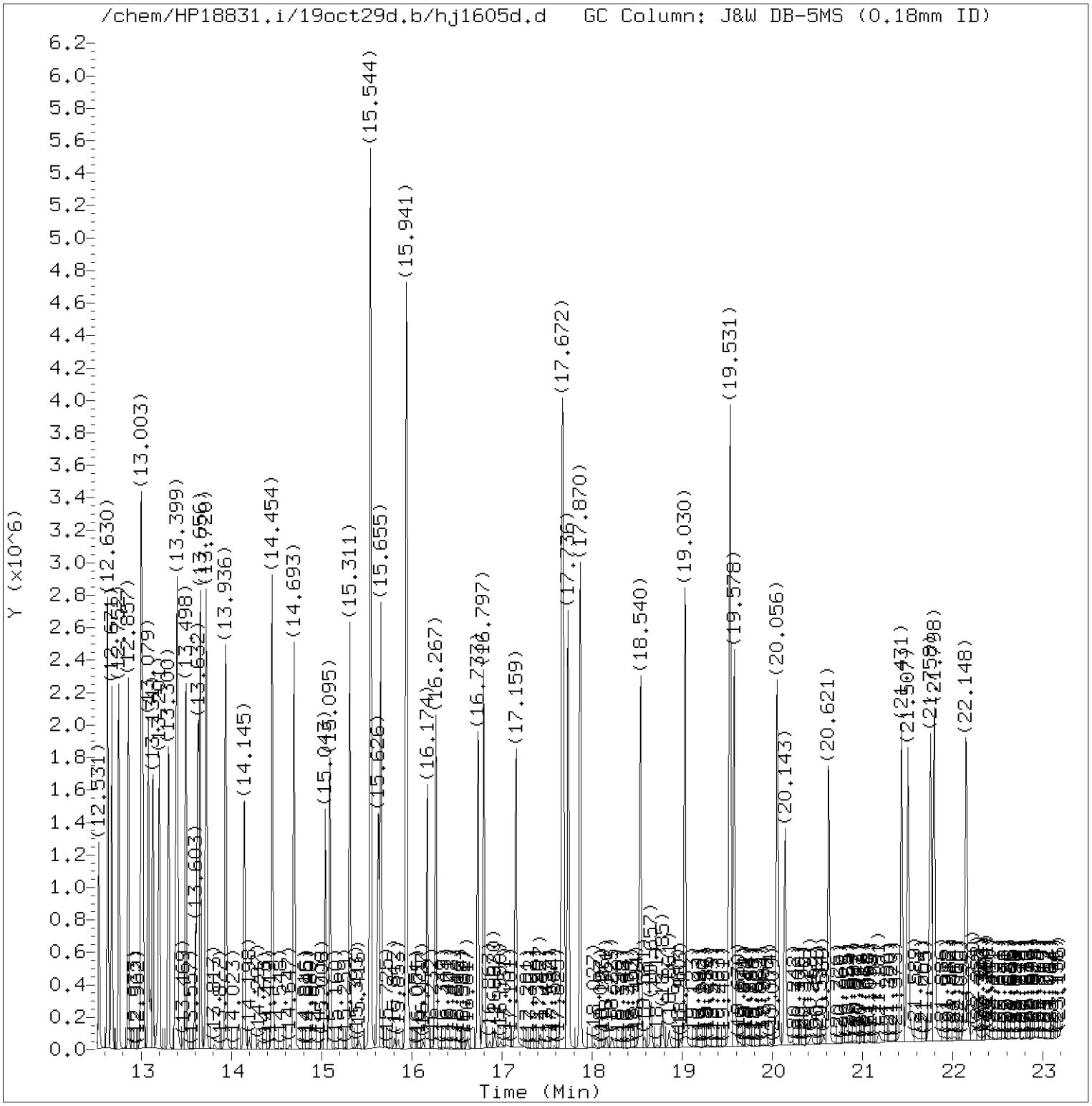
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.564	88	236351	7.662
5) N-Nitrosodimethylamine	(1)	3.106	74	370369	8.318
6) Pyridine	(1)	3.135	79	648697	8.302
8) 2-Picoline	(1)	4.289	93	685565	8.308
9) N-Nitrosomethylethylamine	(1)	4.476	88	292984	8.616
10) Methyl methanesulfonate	(1)	4.925	80	323678	8.798
12)$2-Fluorophenol	(1)	5.152	112	1116564	18.201
14) N-Nitrosodiethylamine	(1)	5.490	102	290959	9.013
43) Total Cresols	(1)			783273	15.307
16) Ethyl methanesulfonate	(1)	5.933	109	281074	8.567
17) Benzaldehyde	(1)	6.393	77	348852	7.419
18)$Phenol-d6	(1)	6.504	99	1101080	13.974
19) Phenol	(1)	6.522	94	599754	6.915
20) Aniline	(1)	6.551	93	693891	7.004
21) a-methylstyrene	(1)	6.632	118	174456	6.901
23) bis(2-Chloroethyl)ether	(1)	6.667	93	451267	6.751
24) 2-Chlorophenol	(1)	6.720	128	414872	7.125
25) 1,3-Dichlorobenzene	(1)	6.947	146	451970	7.312
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	197833	5.000
27) 1,4-Dichlorobenzene	(1)	7.058	146	455203	7.233
28) Benzyl alcohol	(1)	7.244	108	264508	7.275
29) 1,2-Dichlorobenzene	(1)	7.279	146	438196	7.375
100) Isosafrole	(3)			356634	7.218
31) Indene	(1)	7.413	115	623648	7.267
32) 2-Methylphenol	(1)	7.419	108	383067	7.252
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	839756	6.974
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	839756	6.974
36) N-Nitrosopyrrolidine	(1)	7.606	100	217028	7.541
37) Acetophenone	(1)	7.646	105	580561	7.098
38) 4-Methylphenol	(1)	7.658	108	400206	8.055
39) N-Nitroso-di-n-propylamine	(1)	7.664	70	302425	7.118
40) N-Nitrosomorpholine	(1)	7.676	56	374826	7.177
41) o-Toluidine	(1)	7.693	106	642627	7.185
44) Hexachloroethane	(1)	7.786	117	190839	7.438
45)$Nitrobenzene-d5	(2)	7.862	82	919422	14.342
46) Nitrobenzene	(2)	7.891	77	448464	6.948
125) 2,4_2,6-Dinitrotoluenes	(3)			458173	15.189
50) N-Nitrosopiperidine	(2)	8.124	114	202889	6.943
52) Isophorone	(2)	8.270	82	839126	7.190
53) 2-Nitrophenol	(2)	8.381	139	216773	7.227

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.474	107	437737	7.086
59) O,O,O-Triethylphosphorothioate	(2)	8.602	198	200000	7.202
58) Benzoic acid	(2)	8.620	105	397373	10.135
57) bis(2-Chloroethoxy)methane	(2)	8.632	93	523138	7.165
62) 2,4-Dichlorophenol	(2)	8.754	162	350931	7.692
151) Diallate trans/cis	(4)			413594	7.465
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	364260	7.311
68)*Naphthalene-d8	(2)	8.970	136	766200	5.000
69) Naphthalene	(2)	9.005	128	1192280	7.187
70) 4-Chloroaniline	(2)	9.104	127	471794	7.388
71) 2,6-Dichlorophenol	(2)	9.109	162	334061	7.482
72) Hexachloropropene	(2)	9.150	213	215614	7.786
74) Hexachlorobutadiene	(2)	9.220	225	226654	7.724
78) Quinoline	(2)	9.529	129	728338	7.317
79) Caprolactam	(2)	9.628	113	118951	7.379
80) N-Nitrosodi-n-butylamine	(2)	9.669	84	303017	6.668
83) 4-Chloro-3-methylphenol	(2)	9.890	107	378658	7.515
85) Safrole	(2)	9.995	162	306464	7.183
86) 2-Methylnaphthalene	(2)	10.106	142	797602	7.262
87) 1-Methylnaphthalene	(2)	10.258	142	749860	7.539
88) Hexachlorocyclopentadiene	(3)	10.368	237	255750	7.429
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	363605	7.411
91) cis-Isosafrole	(3)	10.462	162	57511	1.224
93) 2,4,6-Trichlorophenol	(3)	10.567	196	246928	7.751
95) 2,4,5-Trichlorophenol	(3)	10.613	196	257592	7.494
96)$2-Fluorobiphenyl	(3)	10.718	172	1746803	14.488
97) trans-Isosafrole	(3)	10.823	162	299123	5.994
98) 1,1'-Biphenyl	(3)	10.864	154	932578	6.937
99) 2-Chloronaphthalene	(3)	10.881	162	731279	7.125
101) 1-Chloronaphthalene	(3)	10.911	162	737388	7.665
103) Diphenyl ether	(3)	11.045	170	544243	7.431
104) 2-Nitroaniline	(3)	11.056	138	279259	7.934
108) 1,4-Naphthoquinone	(3)	11.167	158	332087	7.603
109) 1,4-Dinitrobenzene	(3)	11.289	168	142461	7.587
110) Dimethylphthalate	(3)	11.388	163	843276	7.475
111) 1,3-Dinitrobenzene	(3)	11.400	168	161764	7.787
113) 2,6-Dinitrotoluene	(3)	11.464	165	197781	7.676
114) Acenaphthylene	(3)	11.534	152	1218146	7.380
117) 3-Nitroaniline	(3)	11.697	138	214576	7.445
118)*Acenaphthene-d10	(3)	11.744	164	360600	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.791	153	806872	7.473
120) 2,4-Dinitrophenol	(3)	11.849	184	177647	9.557
121) 4-Nitrophenol	(3)	11.948	109	149724	7.543
122) Pentachlorobenzene	(3)	11.971	250	329677	7.648
123) 2,4-Dinitrotoluene	(3)	12.030	165	260392	7.514
124) Dibenzofuran	(3)	12.030	168	1110256	7.582
126) 1-Naphthylamine	(3)	12.135	143	721582	7.175
127) 2,3,4,6-Tetrachlorophenol	(3)	12.193	232	215290	7.562
128) 2-Naphthylamine	(3)	12.239	143	695558	7.030
129) Diethylphthalate	(3)	12.373	149	890548	7.230
131) Fluorene	(3)	12.461	166	900450	7.465
130) Thionazin	(3)	12.467	107	163174	7.037
133) 5-Nitro-o-toluidine	(3)	12.484	152	259710	7.412
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	419942	7.446
134) 4-Nitroaniline	(3)	12.490	138	224075	7.433
135) 4,6-Dinitro-2-methylphenol	(4)	12.531	198	152812	6.952
137) NDPA as diphenylamine	(4)	12.630	169	761970	7.359
136) N-Nitrosodiphenylamine	(4)	12.630	169	761970	7.359
139) 1,2-Diphenylhydrazine	(4)	12.671	77	868998	7.081
140)$2,4,6-Tribromophenol	(3)	12.752	330	253072	15.249
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	160615	7.465
145) Diallate (peak 1)	(4)	12.997	86	353409	6.188
146) Phorate	(4)	13.003	75	547416	7.473
147) Phenacetin	(4)	13.020	108	476884	7.659
148) 4-Bromophenyl-phenylether	(4)	13.079	248	232239	7.688
149) Diallate (peak 2)	(4)	13.102	86	60185	1.277
150) Hexachlorobenzene	(4)	13.131	284	244506	8.076
152) Dimethoate	(4)	13.201	87	362806	7.793
153) Atrazine	(4)	13.306	200	215120	7.917
154) Pentachlorophenol	(4)	13.382	266	170099	7.651
155) 4-Aminobiphenyl	(4)	13.399	169	533625	8.068
156) Pentachloronitrobenzene	(4)	13.399	237	103946	7.512
157) Pronamide	(4)	13.498	173	420816	8.253
158)*Phenanthrene-d10	(4)	13.621	188	697178	5.000
159) Dinoseb	(4)	13.638	211	258283	8.012
160) Phenanthrene	(4)	13.656	178	1197613	7.534
162) Anthracene	(4)	13.720	178	1226720	7.597
168) Carbazole	(4)	13.936	167	1244637	7.839
169) Methyl parathion	(4)	14.145	109	319761	8.136
170) Di-n-butylphthalate	(4)	14.454	149	1639982	7.728

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$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

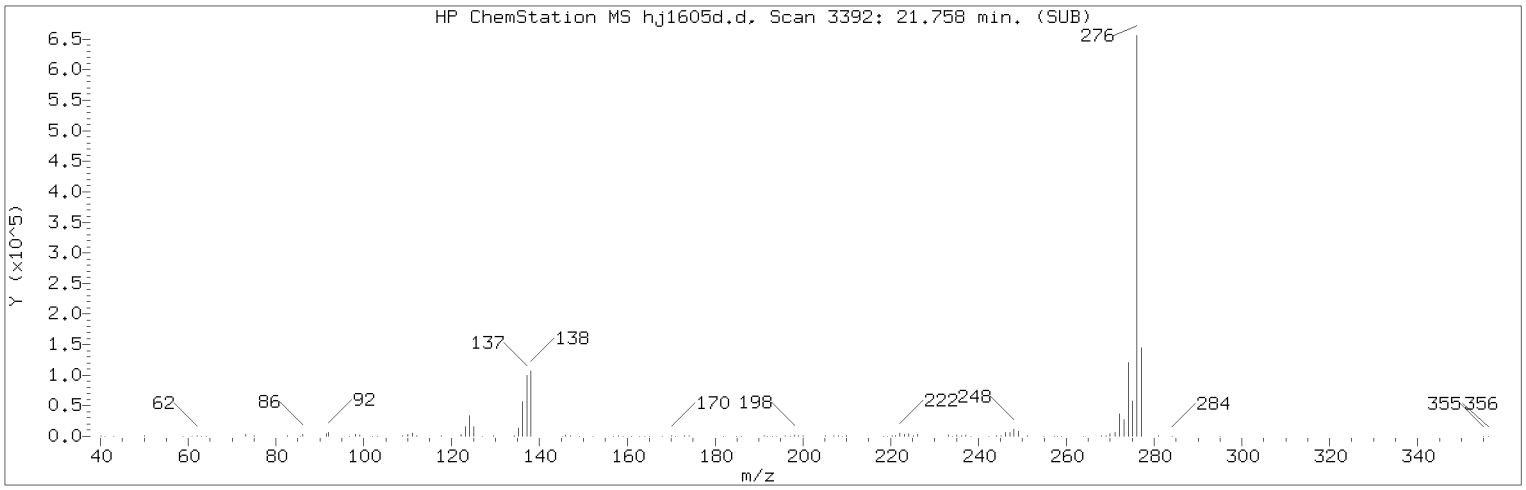
Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.693	109	207546	8.179
173) 4-Nitroquinoline-1-oxide	(4)	14.705	190	148356	7.310
227) Total PAHs	(6)			21708220	137.211
174) Octachlorostyrene	(4)	15.043	308	97191	7.496
176) Isodrin	(4)	15.095	193	150192	7.588
178) Fluoranthene	(4)	15.311	202	1483643	8.006
179) Benzidine	(5)	15.544	184	2830106	22.887
180)*Pyrene-d10	(5)	15.626	212	702269	5.000
182) Pyrene	(5)	15.655	202	1509020	7.379
184)$Terphenyl-d14	(5)	15.941	244	1895142	14.588
187) p-Dimethylaminoazobenzene	(5)	16.174	225	256827	7.757
190) Chlorobenzilate	(5)	16.267	139	496593	7.322
192) 3,3'-Dimethylbenzidine	(5)	16.733	212	944451	7.396
193) Butylbenzylphthalate	(5)	16.797	149	748562	7.372
196) 2-Acetylaminofluorene	(5)	17.159	181	571670	7.431
198) 3,3'-Dichlorobenzidine	(5)	17.666	252	523438	7.601
200) Benzo(a)anthracene	(5)	17.672	228	1343717	7.788
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.683	231	284653	7.576
201) Chrysene	(5)	17.736	228	1382120	7.745
204) bis(2-Ethylhexyl)phthalate	(5)	17.870	149	1099823	7.571
208) 6-Methylchrysene	(5)	18.540	242	948921	7.544
210) Di-n-octylphthalate	(6)	19.030	149	1968914	7.773
211) Benzo(b)fluoranthene	(6)	19.531	252	1381409	7.797
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.531	256	583908	7.451
213) Benzo(k)fluoranthene	(6)	19.578	252	1353320	7.519
216) Benzo(a)pyrene	(6)	20.056	252	1342775	7.942
218)*Perylene-d12	(6)	20.143	264	727451	5.000
220) 3-Methylcholanthrene	(6)	20.627	268	599451	7.841
222) Dibenz(a,h)acridine	(6)	21.431	279	1086778	7.658
223) Dibenz(a,j)acridine	(6)	21.507	279	1106287	7.859
224) Indeno(1,2,3-cd)pyrene	(6)	21.758	276	1253081M	7.332
225) Dibenz(a,h)anthracene	(6)	21.798	278	1278103	8.199
226) Benzo(g,h,i)perylene	(6)	22.154	276	1291489	8.066

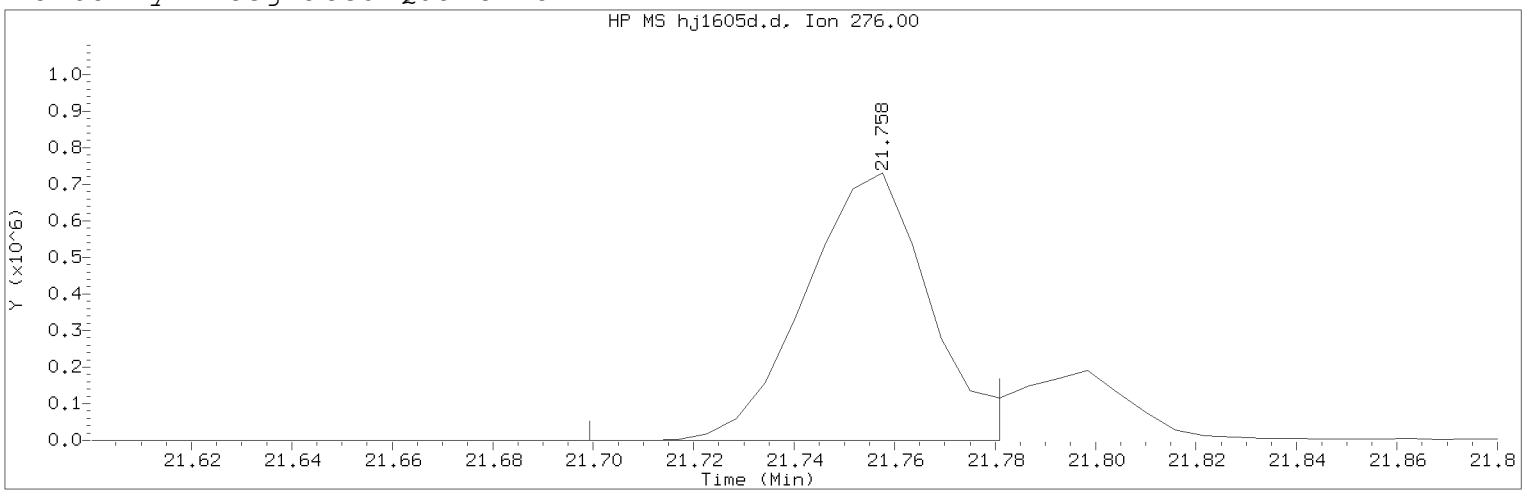
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:29 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

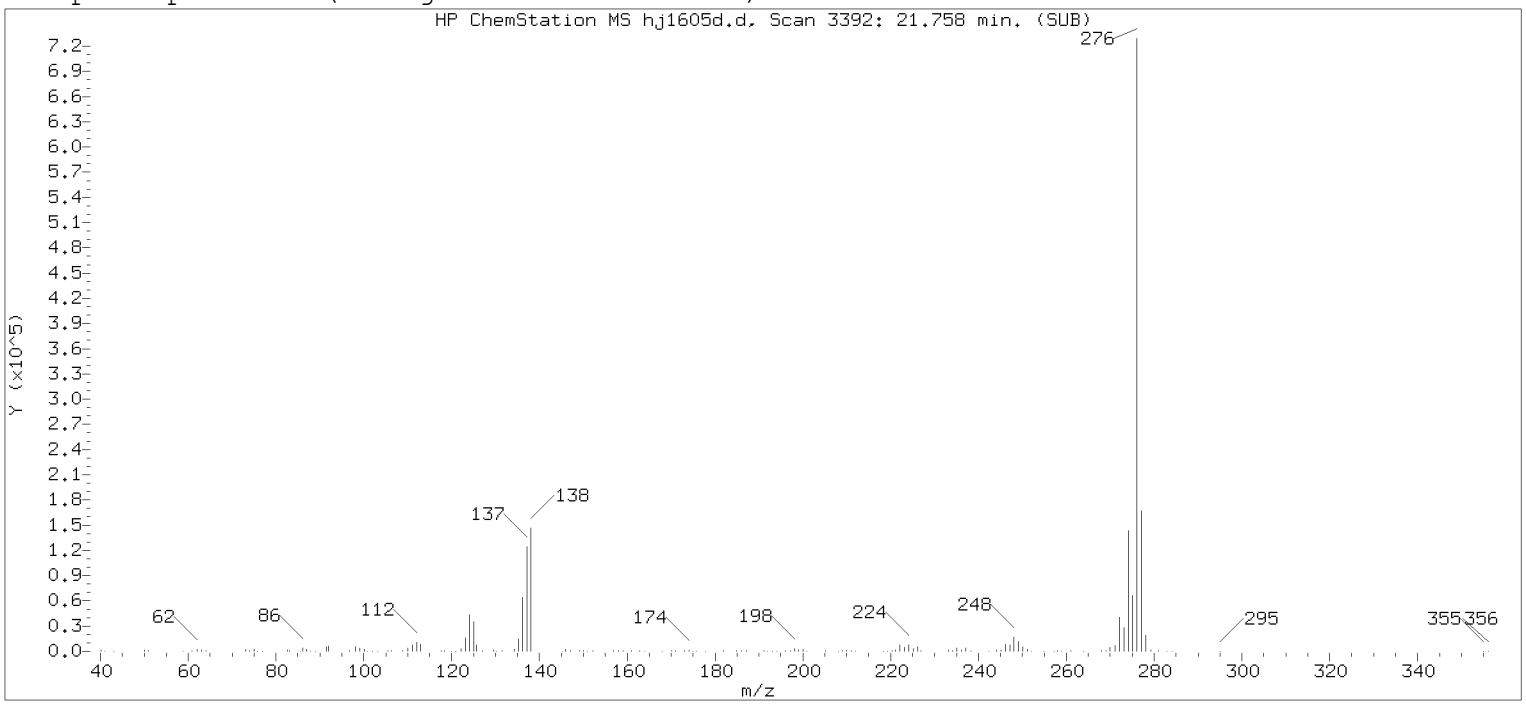
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3392
Retention Time (minutes) : 21.758
Quant Ion : 276.00
Area (flag) : 1253081M
On-Column Amount (ng/ul) : 7.3322
Integration start scan : 3381 Integration stop scan: 3395
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

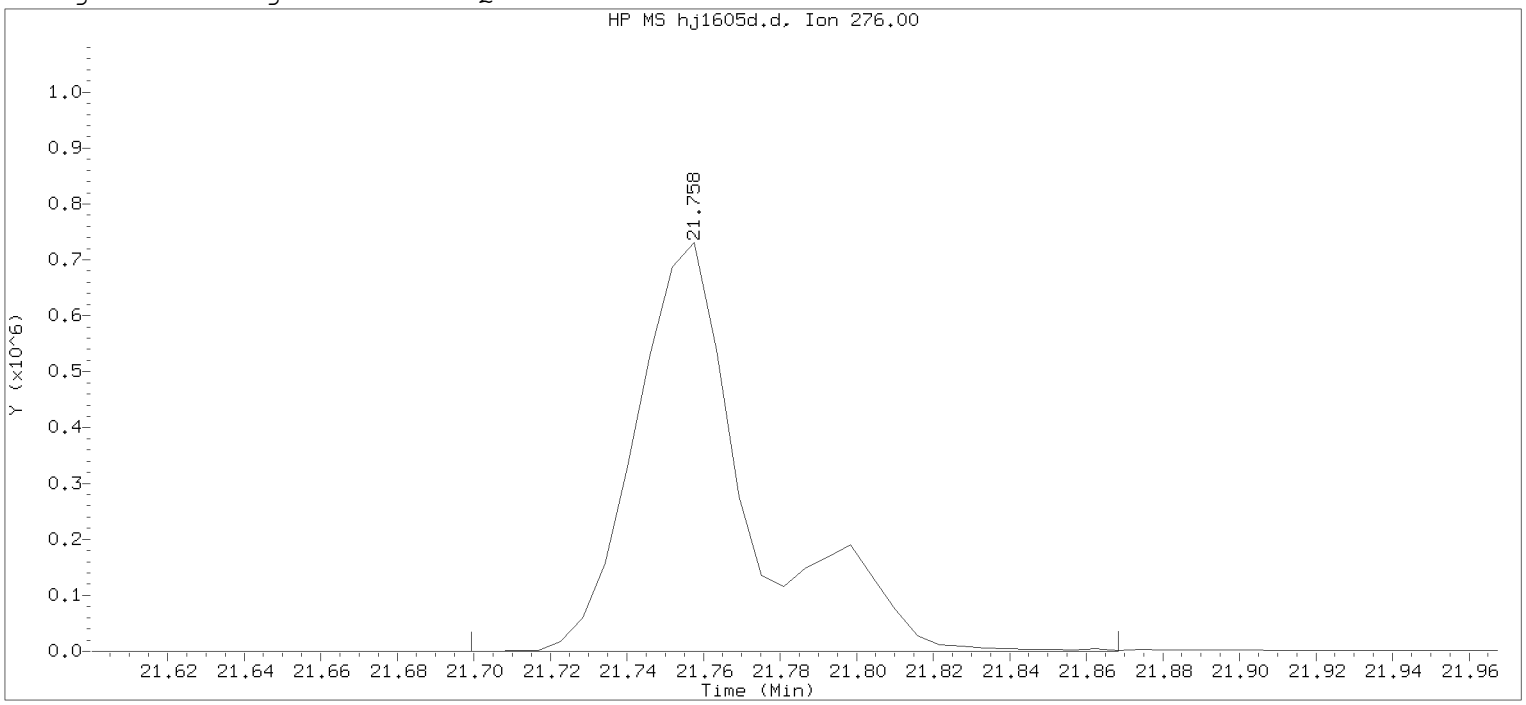
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



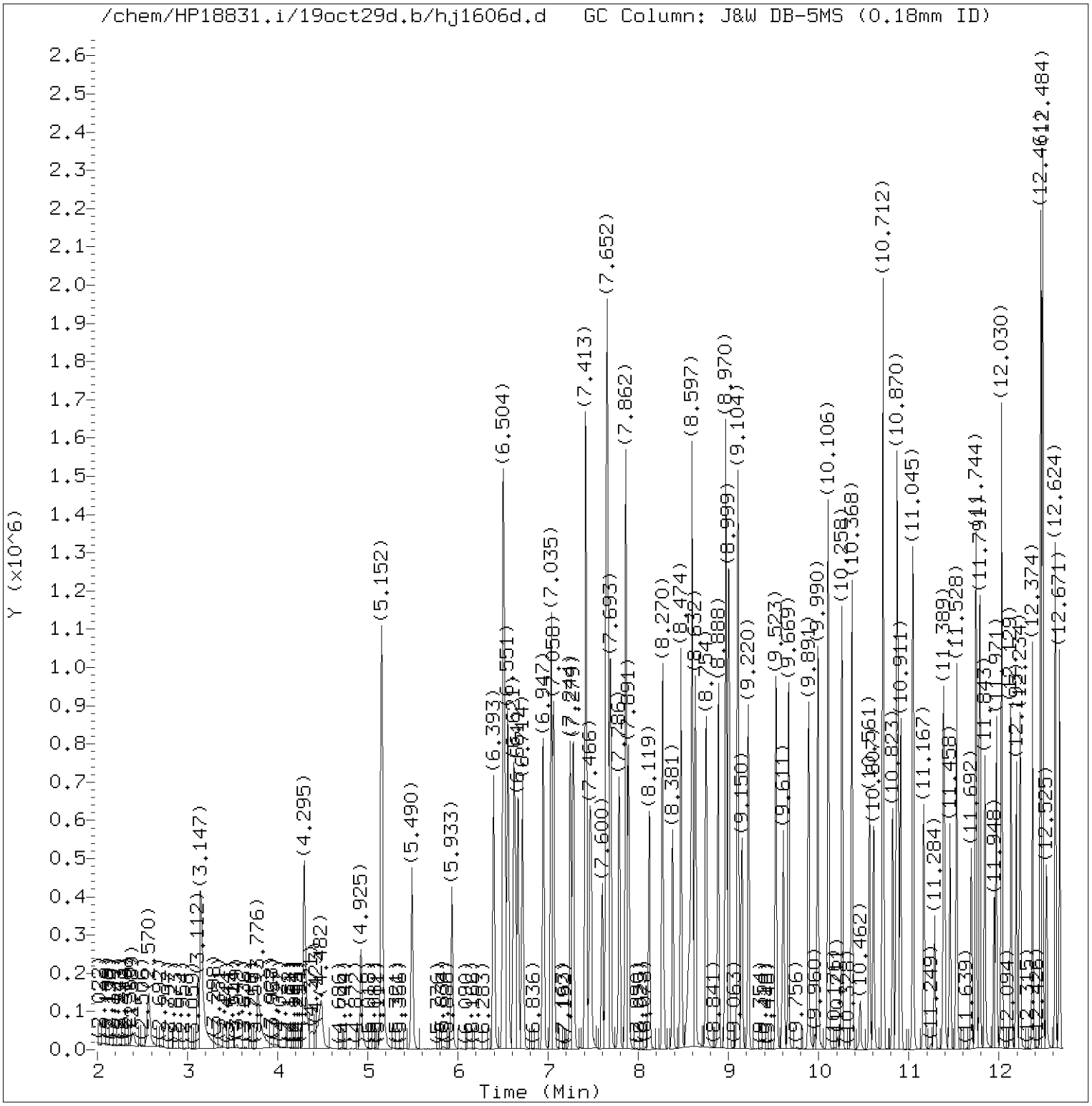
Data File: /chem/HP18831.i/19oct29d.b/hj1605d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:21 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3392		
Retention Time (minutes)	: 21.758		
Quant Ion	: 276.00		
Area	: 1529670		
On-column Amount (ng/ul)	: 8.0251		
Integration start scan	: 3381	Integration stop scan:	3410
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with rv8270d



Total Ion Chromatogram (TIC)

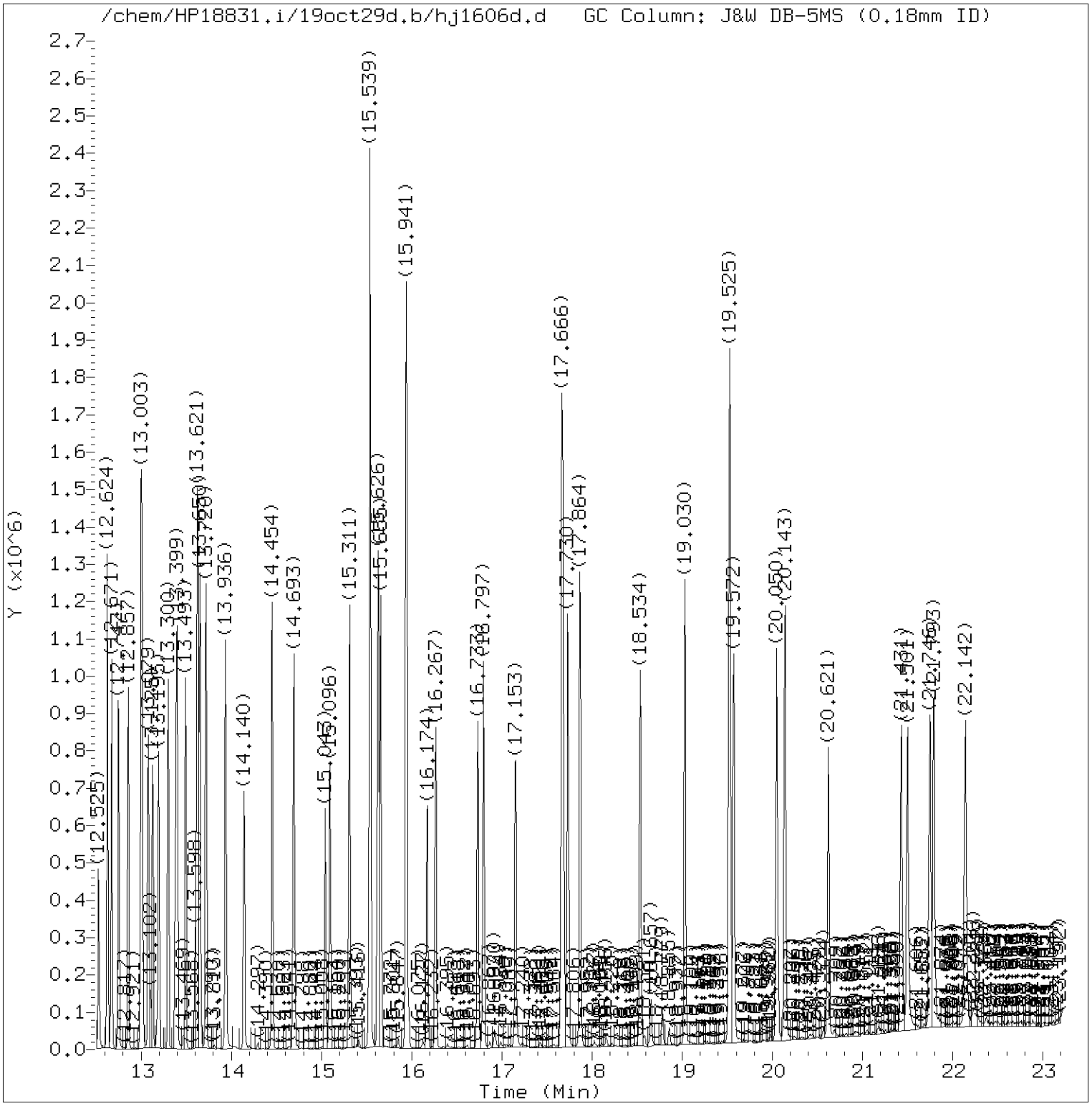
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.570	88	116773	3.244
5) N-Nitrosodimethylamine	(1)	3.112	74	156188	3.006
6) Pyridine	(1)	3.147	79	287789	3.156
8) 2-Picoline	(1)	4.295	93	310493	3.224
9) N-Nitrosomethylethylamine	(1)	4.476	88	129138M	3.181
10) Methyl methanesulfonate	(1)	4.925	80	145582	3.391
12)$2-Fluorophenol	(1)	5.152	112	508726	7.106
14) N-Nitrosodiethylamine	(1)	5.490	102	132029	3.505
43) Total Cresols	(1)			506081	8.473
16) Ethyl methanesulfonate	(1)	5.933	109	132204	3.453
17) Benzaldehyde	(1)	6.393	77	215706	3.931
18)$Phenol-d6	(1)	6.498	99	668817	7.273
19) Phenol	(1)	6.522	94	387266	3.826
20) Aniline	(1)	6.551	93	438099	3.789
21) a-methylstyrene	(1)	6.632	118	110043	3.730
23) bis(2-Chloroethyl)ether	(1)	6.661	93	291366	3.735
24) 2-Chlorophenol	(1)	6.714	128	251447	3.700
25) 1,3-Dichlorobenzene	(1)	6.947	146	279349	3.872
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	230873	5.000
27) 1,4-Dichlorobenzene	(1)	7.058	146	294159	4.005
28) Benzyl alcohol	(1)	7.244	108	168020	3.960
29) 1,2-Dichlorobenzene	(1)	7.279	146	273271	3.941
100) Isosafrole	(3)			152446	3.725
31) Indene	(1)	7.413	115	400856	4.002
32) 2-Methylphenol	(1)	7.419	108	249070	4.040
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	569006	4.049
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	569006	4.049
36) N-Nitrosopyrrolidine	(1)	7.600	100	136848	4.074
37) Acetophenone	(1)	7.641	105	385342	4.037
38) 4-Methylphenol	(1)	7.652	108	257011	4.433
39) N-Nitroso-di-n-propylamine	(1)	7.658	70	202612	4.087
40) N-Nitrosomorpholine	(1)	7.670	56	246606	4.046
41) o-Toluidine	(1)	7.693	106	405497	3.885
44) Hexachloroethane	(1)	7.786	117	118466	3.957
45)$Nitrobenzene-d5	(2)	7.862	82	602951	8.172
46) Nitrobenzene	(2)	7.891	77	301099	4.053
125) 2,4_2,6-Dinitrotoluenes	(3)			195914	7.868
50) N-Nitrosopiperidine	(2)	8.119	114	126187	3.752
52) Isophorone	(2)	8.270	82	547553	4.076
53) 2-Nitrophenol	(2)	8.381	139	135407	3.923

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.474	107	266529	3.749
58) Benzoic acid	(2)	8.591	105	345305	7.652
59) O,O,O-Triethylphosphorothioate	(2)	8.597	198	121006	3.786
57) bis(2-Chloroethoxy)methane	(2)	8.632	93	338848	4.032
62) 2,4-Dichlorophenol	(2)	8.754	162	201244	3.832
151) Diallate trans/cis	(4)			174227	3.580
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	211004	3.680
68)*Naphthalene-d8	(2)	8.970	136	881837	5.000
69) Naphthalene	(2)	9.005	128	720724	3.775
70) 4-Chloroaniline	(2)	9.098	127	285786	3.889
71) 2,6-Dichlorophenol	(2)	9.110	162	200494	3.902
72) Hexachloropropene	(2)	9.150	213	115949	3.638
74) Hexachlorobutadiene	(2)	9.220	225	126410	3.743
78) Quinoline	(2)	9.523	129	430280	3.756
79) Caprolactam	(2)	9.611	113	72791	3.924
80) N-Nitrosodi-n-butylamine	(2)	9.669	84	180674	3.454
83) 4-Chloro-3-methylphenol	(2)	9.891	107	221991	3.828
85) Safrole	(2)	9.990	162	172017	3.503
86) 2-Methylnaphthalene	(2)	10.106	142	469515	3.714
87) 1-Methylnaphthalene	(2)	10.258	142	374761	3.274
88) Hexachlorocyclopentadiene	(3)	10.368	237	114773	4.023
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	158586	3.901
91) cis-Isosafrole	(3)	10.462	162	25922	0.666
93) 2,4,6-Trichlorophenol	(3)	10.561	196	101437	3.843
95) 2,4,5-Trichlorophenol	(3)	10.607	196	111859	3.927
96)$2-Fluorobiphenyl	(3)	10.712	172	760778	7.615
97) trans-Isosafrole	(3)	10.823	162	126524	3.060
98) 1,1'-Biphenyl	(3)	10.864	154	447194	4.014
99) 2-Chloronaphthalene	(3)	10.876	162	333418	3.920
101) 1-Chloronaphthalene	(3)	10.911	162	316391	3.969
103) Diphenyl ether	(3)	11.045	170	233384	3.845
104) 2-Nitroaniline	(3)	11.050	138	116501	3.994
108) 1,4-Naphthoquinone	(3)	11.167	158	141534	3.910
109) 1,4-Dinitrobenzene	(3)	11.289	168	58369	3.752
110) Dimethylphthalate	(3)	11.389	163	354855	3.796
111) 1,3-Dinitrobenzene	(3)	11.400	168	63569	3.693
113) 2,6-Dinitrotoluene	(3)	11.458	165	87047	4.077
114) Acenaphthylene	(3)	11.528	152	522692	3.821
117) 3-Nitroaniline	(3)	11.692	138	88031	3.686
118)*Acenaphthene-d10	(3)	11.744	164	298814	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.791	153	340906	3.810
120) 2,4-Dinitrophenol	(3)	11.843	184	110370	7.166
121) 4-Nitrophenol	(3)	11.948	109	59036	3.589
122) Pentachlorobenzene	(3)	11.971	250	147478	4.129
123) 2,4-Dinitrotoluene	(3)	12.030	165	108867	3.791
124) Dibenzofuran	(3)	12.030	168	472733	3.896
126) 1-Naphthylamine	(3)	12.129	143	311112	3.733
127) 2,3,4,6-Tetrachlorophenol	(3)	12.193	232	92182	3.907
128) 2-Naphthylamine	(3)	12.234	143	302007	3.684
129) Diethylphthalate	(3)	12.374	149	386506	3.787
131) Fluorene	(3)	12.461	166	387652	3.878
130) Thionazin	(3)	12.461	107	76052	3.958
134) 4-Nitroaniline	(3)	12.484	138	99981	4.002
133) 5-Nitro-o-toluidine	(3)	12.484	152	109788	3.781
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	180852	3.870
135) 4,6-Dinitro-2-methylphenol	(4)	12.531	198	64883	3.362
137) NDPA as diphenylamine	(4)	12.624	169	319484	3.514
136) N-Nitrosodiphenylamine	(4)	12.624	169	319484	3.514
139) 1,2-Diphenylhydrazine	(4)	12.671	77	380324	3.529
140)$2,4,6-Tribromophenol	(3)	12.752	330	110148	8.009
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	68729	3.638
145) Diallate (peak 1)	(4)	12.997	86	149235	2.976
146) Phorate	(4)	13.003	75	224280	3.487
147) Phenacetin	(4)	13.015	108	207049	3.787
148) 4-Bromophenyl-phenylether	(4)	13.079	248	100653	3.795
149) Diallate (peak 2)	(4)	13.102	86	24992	0.604
150) Hexachlorobenzene	(4)	13.131	284	105297	3.961
152) Dimethoate	(4)	13.195	87	151253	3.700
153) Atrazine	(4)	13.300	200	99302	4.163
154) Pentachlorophenol	(4)	13.382	266	71651	3.671
156) Pentachloronitrobenzene	(4)	13.394	237	46072	3.792
155) 4-Aminobiphenyl	(4)	13.399	169	220611	3.799
157) Pronamide	(4)	13.493	173	171695	3.835
158)*Phenanthrene-d10	(4)	13.621	188	612136	5.000
159) Dinoseb	(4)	13.638	211	96045	3.393
160) Phenanthrene	(4)	13.650	178	513611	3.680
162) Anthracene	(4)	13.720	178	537788	3.793
168) Carbazole	(4)	13.936	167	510138	3.659
169) Methyl parathion	(4)	14.140	109	124450	3.606
170) Di-n-butylphthalate	(4)	14.454	149	685828	3.681

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

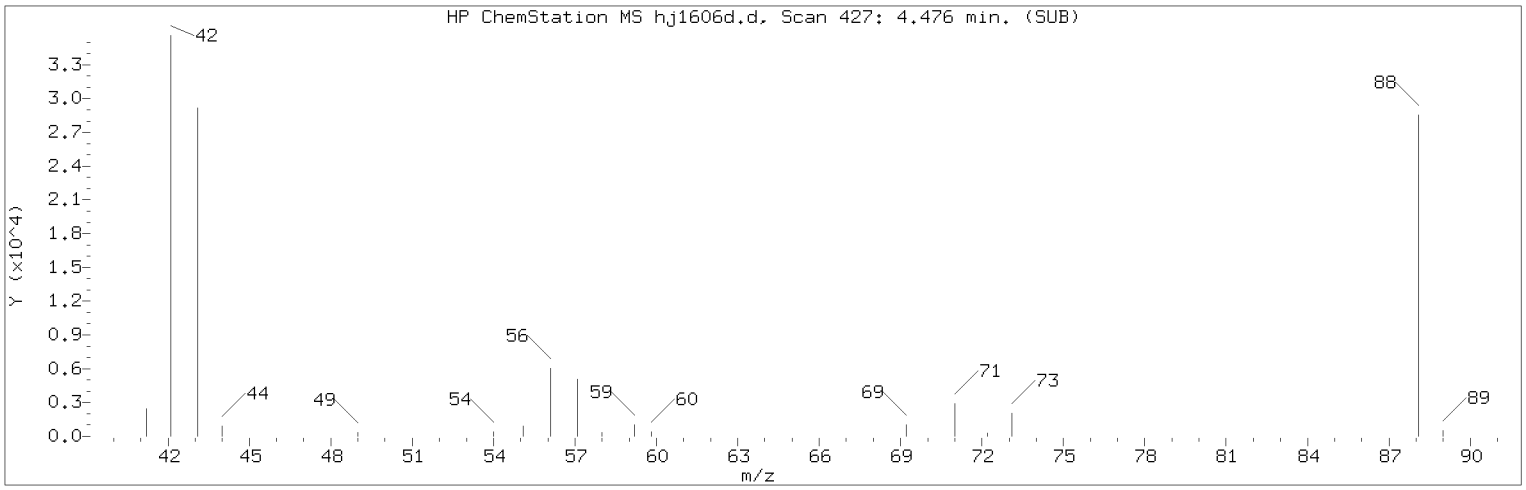
Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.688	109	83788	3.761
173) 4-Nitroquinoline-1-oxide	(4)	14.699	190	58063	3.259
227) Total PAHs	(6)			9707188	68.998
174) Octachlorostyrene	(4)	15.043	308	42880	3.766
176) Isodrin	(4)	15.096	193	66078	3.802
178) Fluoranthene	(4)	15.311	202	621032	3.817
179) Benzidine	(5)	15.539	184	1188670	11.240
180)*Pyrene-d10	(5)	15.626	212	600605	5.000
182) Pyrene	(5)	15.655	202	662789	3.790
184)$Terphenyl-d14	(5)	15.941	244	810647	7.296
187) p-Dimethylaminoazobenzene	(5)	16.174	225	109071	3.852
190) Chlorobenzilate	(5)	16.267	139	211766	3.651
192) 3,3'-Dimethylbenzidine	(5)	16.733	212	390028	3.571
193) Butylbenzylphthalate	(5)	16.797	149	316232	3.642
196) 2-Acetylaminofluorene	(5)	17.153	181	236418	3.593
198) 3,3'-Dichlorobenzidine	(5)	17.660	252	223172	3.789
200) Benzo(a)anthracene	(5)	17.672	228	576412	3.906
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.683	231	117143	3.646
201) Chrysene	(5)	17.730	228	603248	3.953
204) bis(2-Ethylhexyl)phthalate	(5)	17.864	149	469720	3.781
208) 6-Methylchrysene	(5)	18.534	242	399990	3.718
210) Di-n-octylphthalate	(6)	19.030	149	801384	3.740
211) Benzo(b)fluoranthene	(6)	19.525	252	595263	3.972
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.525	256	263384	3.973
213) Benzo(k)fluoranthene	(6)	19.572	252	597145	3.922
216) Benzo(a)pyrene	(6)	20.050	252	571097	3.993
218)*Perylene-d12	(6)	20.143	264	615357	5.000
220) 3-Methylcholanthrene	(6)	20.621	268	252524	3.905
222) Dibenz(a,h)acridine	(6)	21.431	279	465076	3.874
223) Dibenz(a,j)acridine	(6)	21.501	279	449958	3.779
224) Indeno(1,2,3-cd)pyrene	(6)	21.746	276	518231M	3.711
225) Dibenz(a,h)anthracene	(6)	21.793	278	542864	4.117
226) Benzo(g,h,i)perylene	(6)	22.142	276	551458	4.072

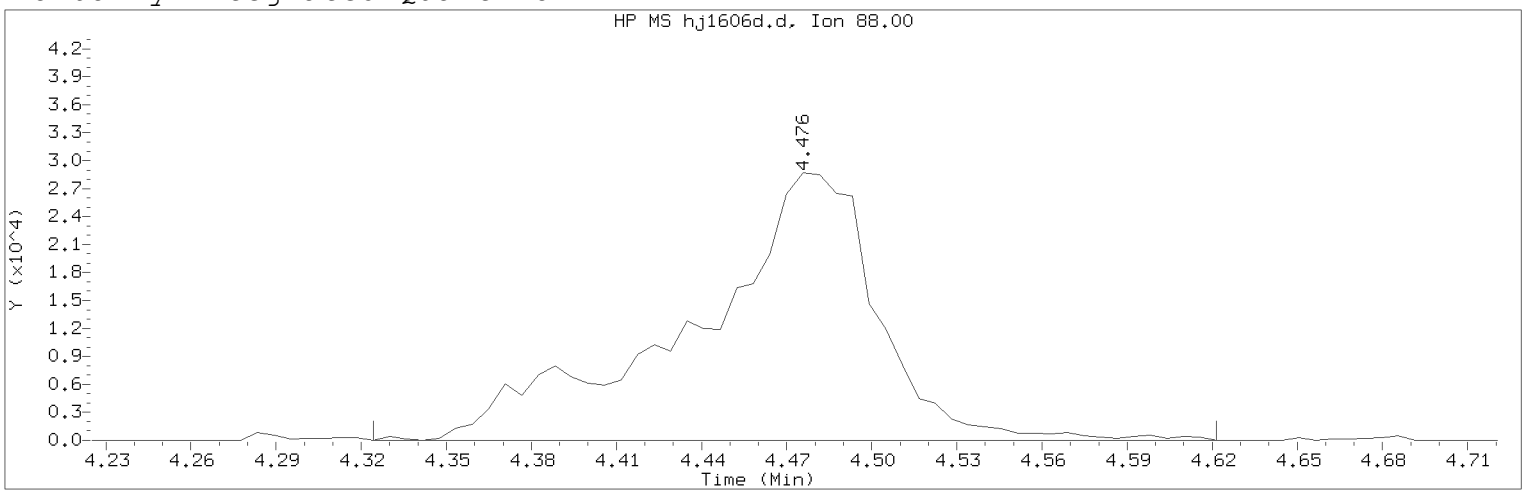
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

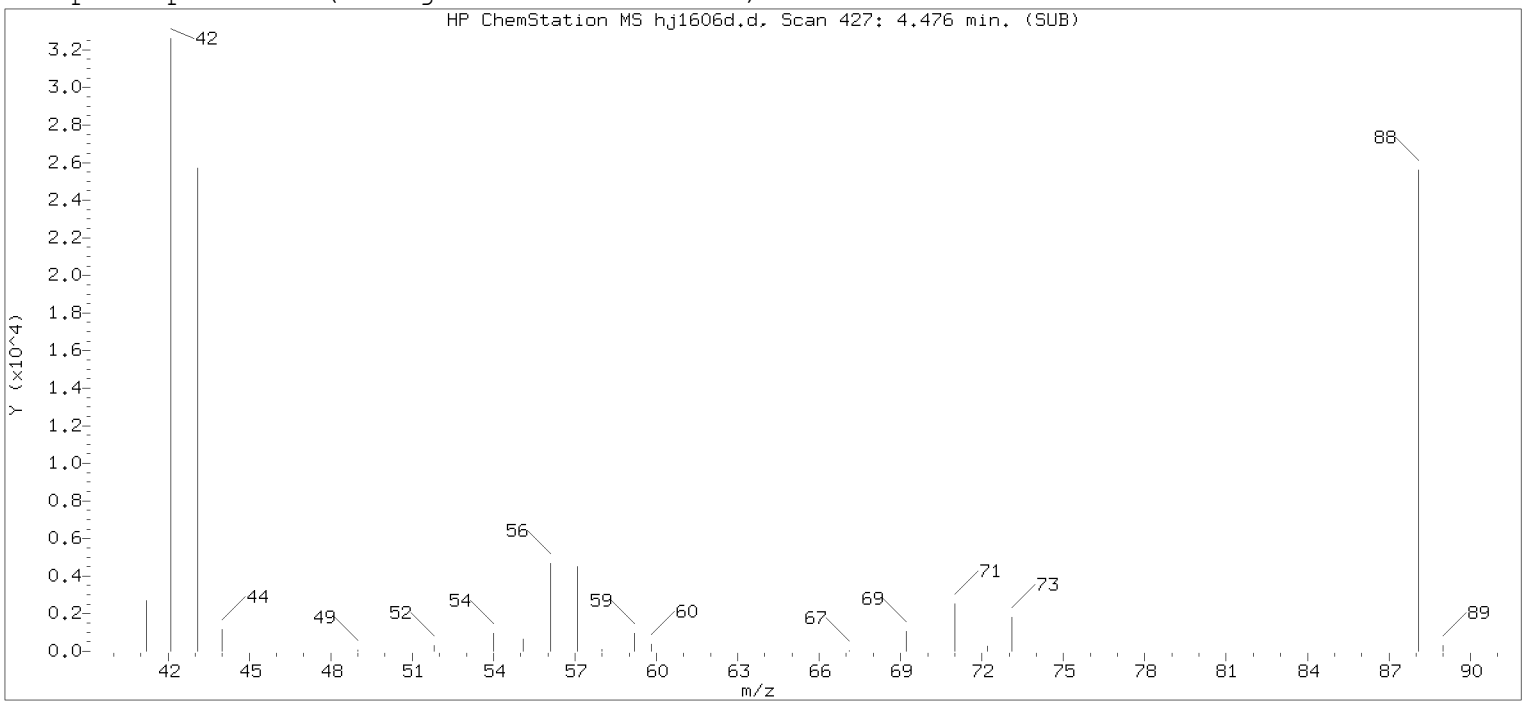
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 427
Retention Time (minutes) : 4.476
Quant Ion : 88.00
Area (flag) : 129138M
On-Column Amount (ng/ul) : 3.1812
Integration start scan : 400 Integration stop scan: 451
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

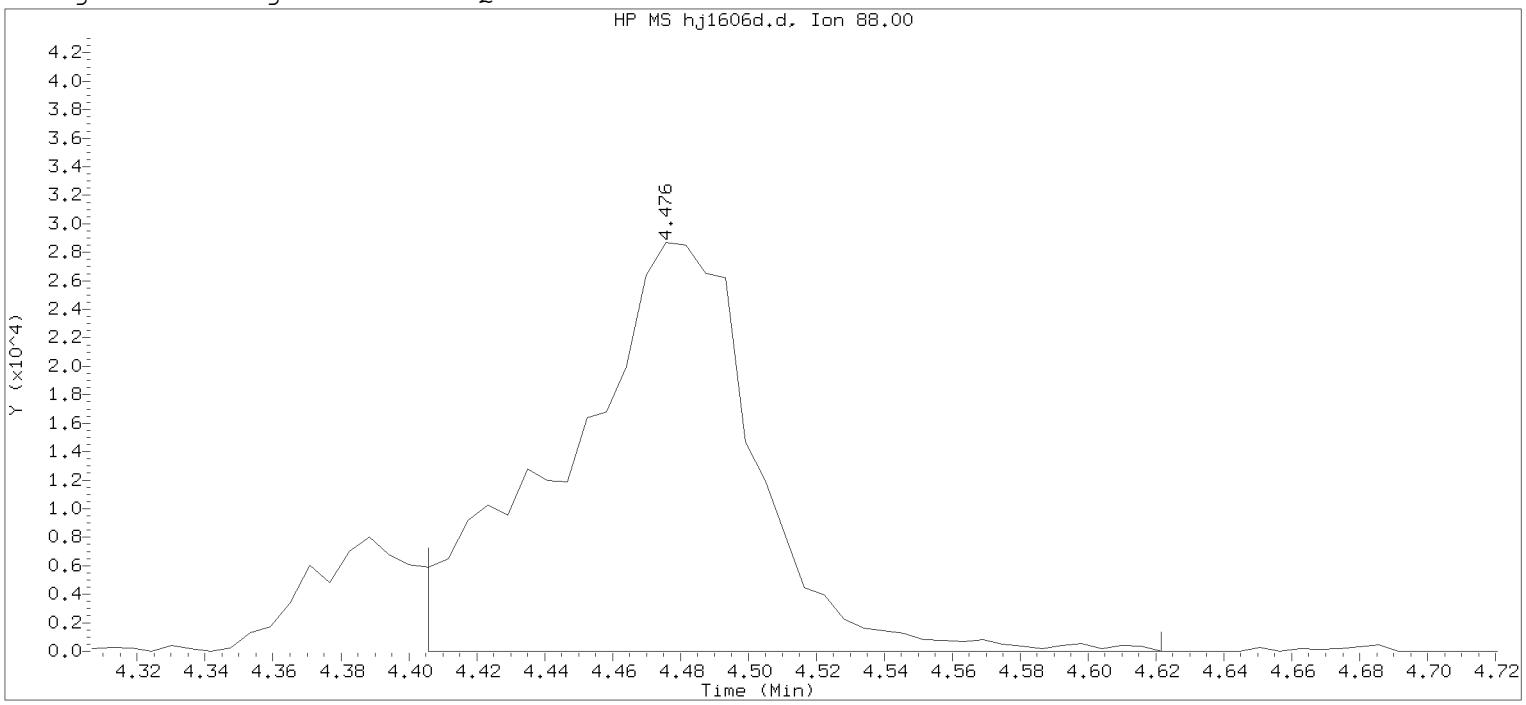
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

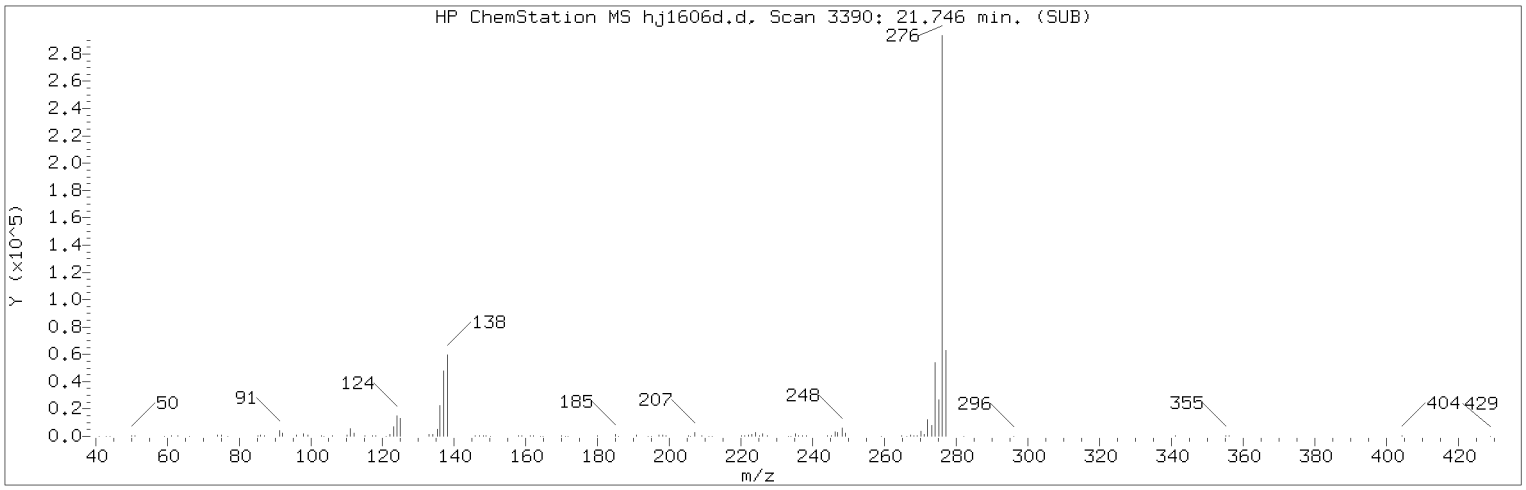
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

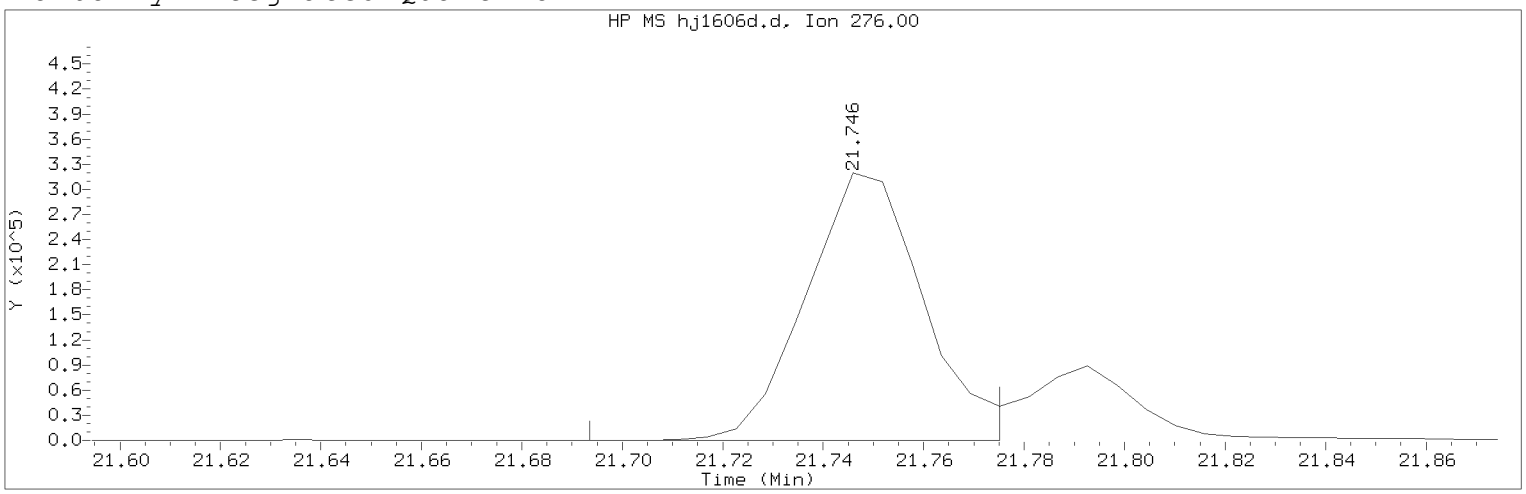
Compound Number	: 9		
Compound Name	: N-Nitrosomethylethylamine		
Scan Number	: 427		
Retention Time (minutes)	: 4.476		
Quant Ion	: 88.00		
Area	: 112027		
On-column Amount (ng/ul)	: 2.8887		
Integration start scan	: 414	Integration stop scan:	451
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:30 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

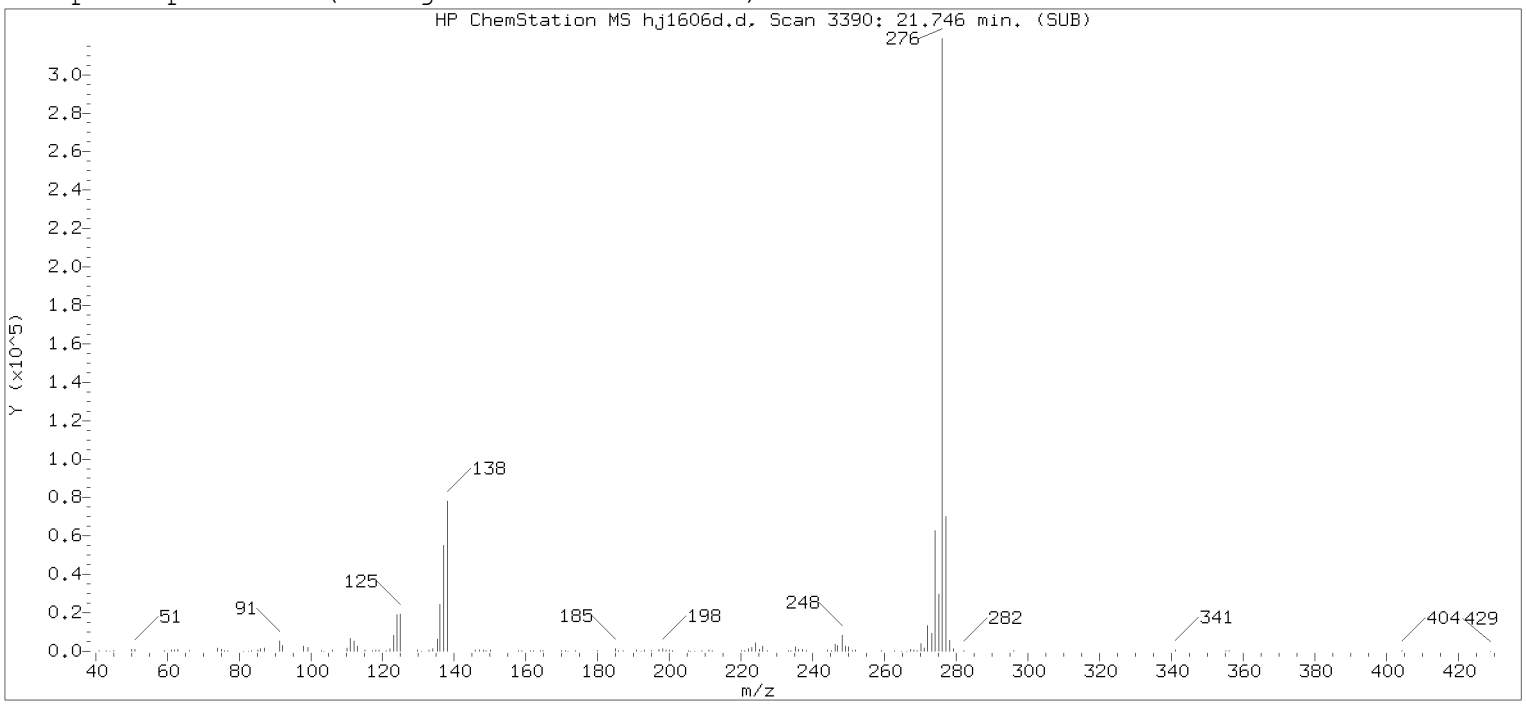
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3390
Retention Time (minutes) : 21.746
Quant Ion : 276.00
Area (flag) : 518231M
On-Column Amount (ng/ul) : 3.7109
Integration start scan : 3380 Integration stop scan: 3394
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

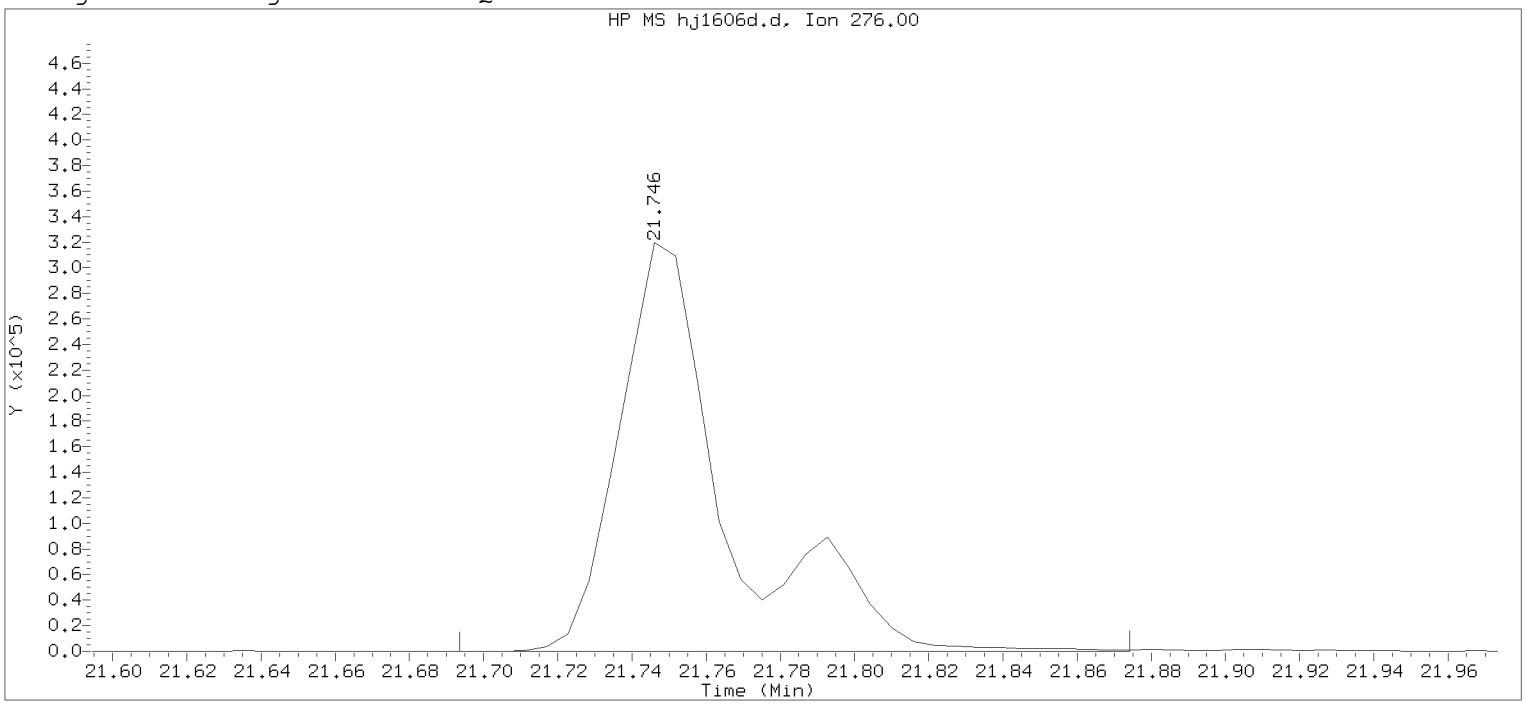
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



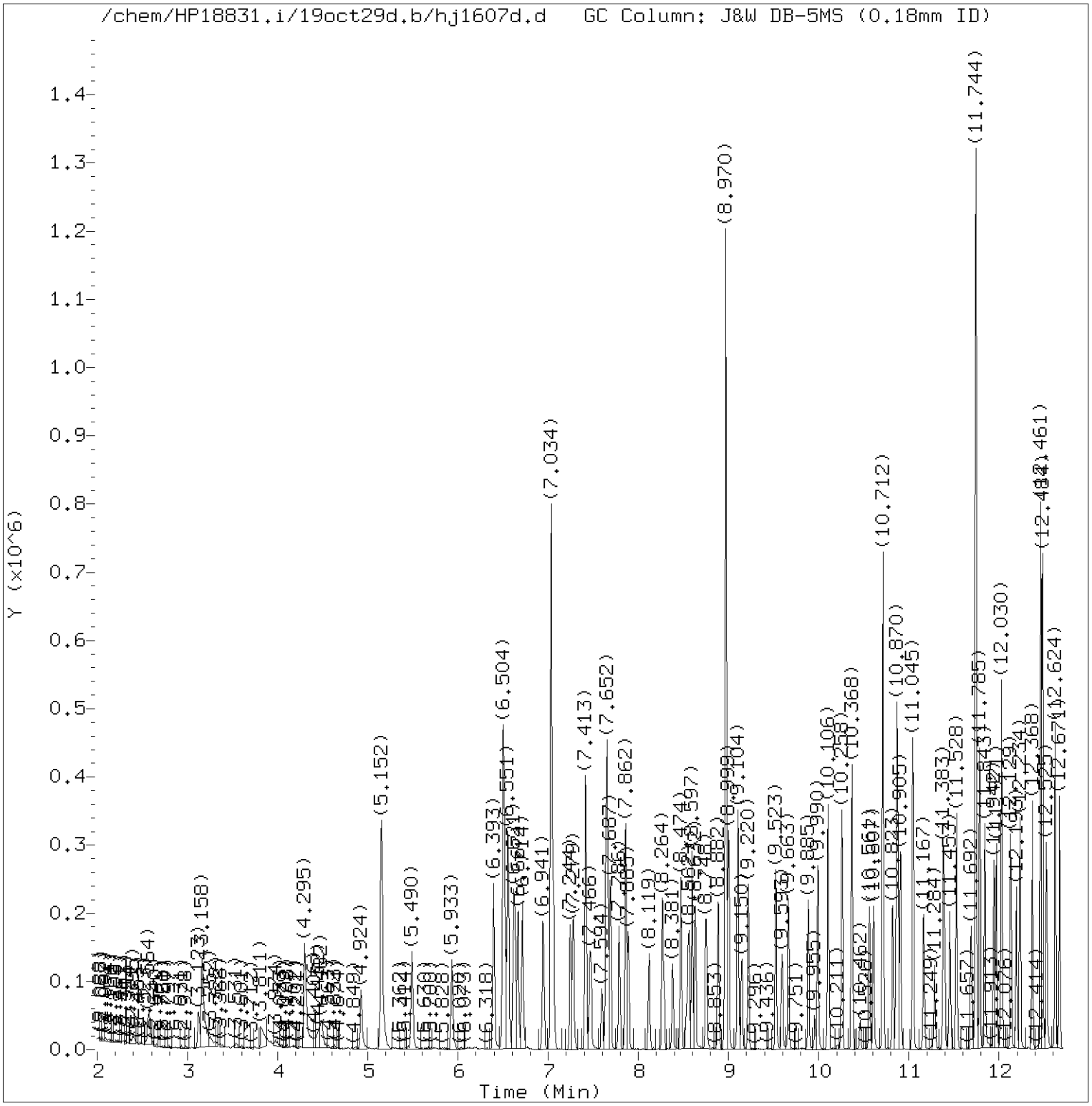
Data File: /chem/HP18831.i/19oct29d.b/hj1606d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 00:50 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD3.75 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area	: 647287		
On-column Amount (ng/ul)	: 3.9586		
Integration start scan	: 3380	Integration stop scan:	3411
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with w2021



Total Ion Chromatogram (TIC)

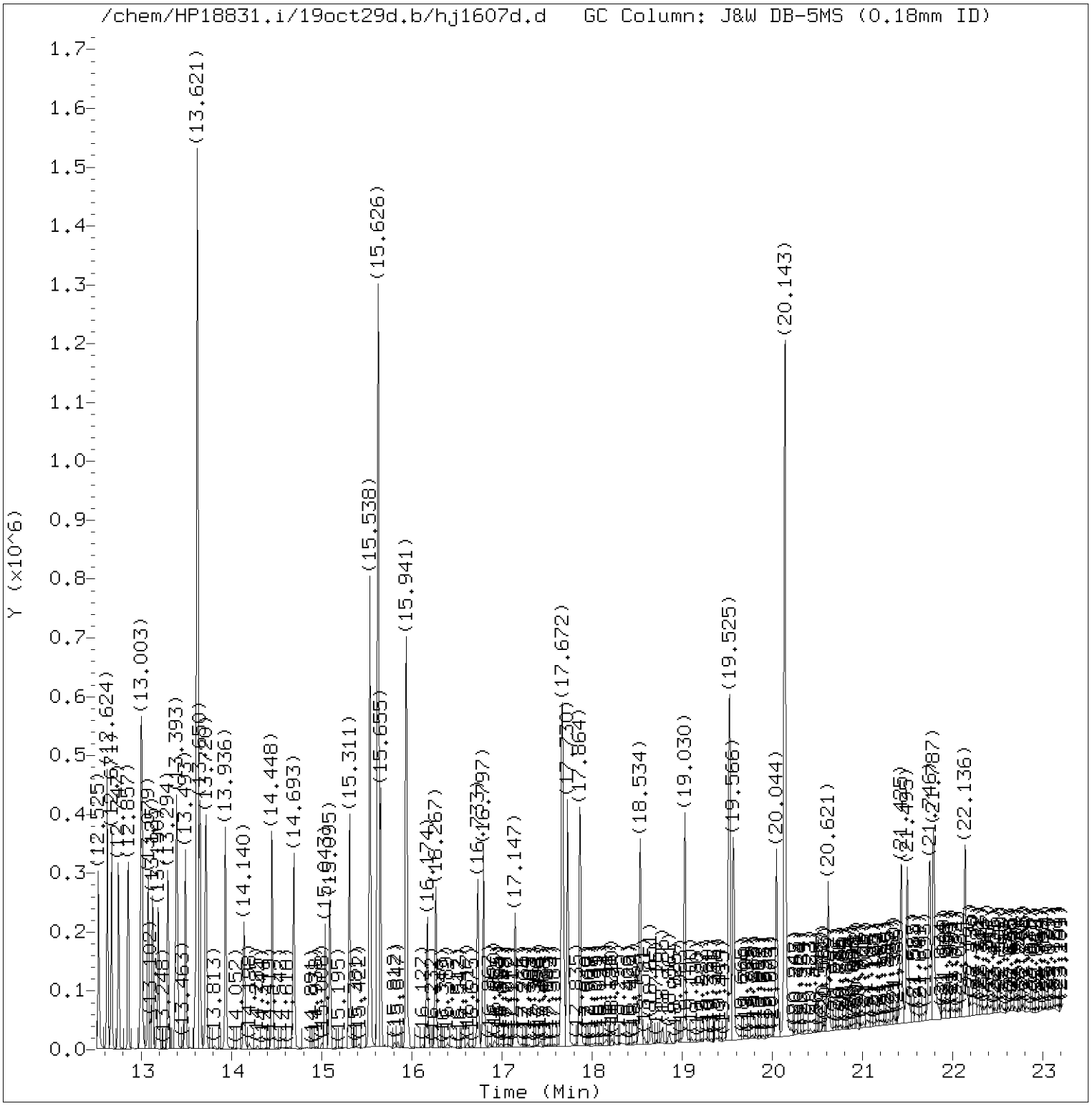
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.576	88	38545	1.439
5) N-Nitrosodimethylamine	(1)	3.123	74	49646	1.284
6) Pyridine	(1)	3.158	79	90671	1.336
8) 2-Picoline	(1)	4.301	93	93911	1.310
9) N-Nitrosomethylethylamine	(1)	4.482	88	40271	1.333
10) Methyl methanesulfonate	(1)	4.924	80	45422	1.421
12)$2-Fluorophenol	(1)	5.152	112	163859	3.075
14) N-Nitrosodiethylamine	(1)	5.490	102	41578	1.483
43) Total Cresols	(1)			121360	2.733
16) Ethyl methanesulfonate	(1)	5.933	109	43816	1.538
17) Benzaldehyde	(1)	6.393	77	72299	1.770
18)$Phenol-d6	(1)	6.498	99	216969	3.170
19) Phenol	(1)	6.522	94	116178	1.542
20) Aniline	(1)	6.551	93	137152	1.594
21) a-methylstyrene	(1)	6.632	118	34895	1.589
23) bis(2-Chloroethyl)ether	(1)	6.661	93	89687	1.545
24) 2-Chlorophenol	(1)	6.714	128	78306	1.548
25) 1,3-Dichlorobenzene	(1)	6.947	146	67062	1.249
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	171841	5.000
27) 1,4-Dichlorobenzene	(1)	7.058	146	70671	1.293
28) Benzyl alcohol	(1)	7.244	108	35814	1.134
29) 1,2-Dichlorobenzene	(1)	7.273	146	67179	1.302
100) Isosafrole	(3)			52880	1.249
31) Indene	(1)	7.413	115	91009	1.221
32) 2-Methylphenol	(1)	7.419	108	57428	1.252
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	126486	1.209
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	126486	1.209
36) N-Nitrosopyrrolidine	(1)	7.594	100	29039	1.162
37) Acetophenone	(1)	7.641	105	86321	1.215
38) 4-Methylphenol	(1)	7.652	108	63932	1.481
39) N-Nitroso-di-n-propylamine	(1)	7.652	70	47237	1.280
40) N-Nitrosomorpholine	(1)	7.670	56	54736	1.207
41) o-Toluidine	(1)	7.687	106	97857	1.260
44) Hexachloroethane	(1)	7.786	117	25971	1.165
45)$Nitrobenzene-d5	(2)	7.862	82	131147	2.372
46) Nitrobenzene	(2)	7.891	77	66754	1.199
125) 2,4_2,6-Dinitrotoluenes	(3)			65159	2.528
50) N-Nitrosopiperidine	(2)	8.124	114	31514	1.251
52) Isophorone	(2)	8.264	82	117252	1.165
53) 2-Nitrophenol	(2)	8.381	139	32289	1.248

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.474	107	68251	1.281
58) Benzoic acid	(2)	8.562	105	98170	2.904
59) O,O,O-Triethylphosphorothioate	(2)	8.597	198	31365	1.310
57) bis(2-Chloroethoxy)methane	(2)	8.632	93	74463	1.183
62) 2,4-Dichlorophenol	(2)	8.748	162	46496	1.182
151) Diallate trans/cis	(4)			60668	1.226
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	56815	1.322
68)*Naphthalene-d8	(2)	8.970	136	660699	5.000
69) Naphthalene	(2)	8.999	128	182671	1.277
70) 4-Chloroaniline	(2)	9.104	127	68787	1.249
71) 2,6-Dichlorophenol	(2)	9.109	162	50569	1.313
72) Hexachloropropene	(2)	9.150	213	27995	1.172
74) Hexachlorobutadiene	(2)	9.220	225	34105	1.348
78) Quinoline	(2)	9.523	129	106900	1.245
79) Caprolactam	(2)	9.593	113	14940	1.075
80) N-Nitrosodi-n-butylamine	(2)	9.669	84	42460	1.084
83) 4-Chloro-3-methylphenol	(2)	9.885	107	54198	1.247
85) Safrole	(2)	9.990	162	49649	1.350
86) 2-Methylnaphthalene	(2)	10.106	142	117275	1.238
87) 1-Methylnaphthalene	(2)	10.258	142	113742	1.326
88) Hexachlorocyclopentadiene	(3)	10.368	237	35049	1.188
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	53992	1.284
91) cis-Isosafrole	(3)	10.462	162	8373	0.208
93) 2,4,6-Trichlorophenol	(3)	10.561	196	36084	1.322
95) 2,4,5-Trichlorophenol	(3)	10.607	196	36712	1.247
96)$2-Fluorobiphenyl	(3)	10.712	172	265866	2.574
97) trans-Isosafrole	(3)	10.823	162	44507	1.041
98) 1,1'-Biphenyl	(3)	10.864	154	149457	1.298
99) 2-Chloronaphthalene	(3)	10.876	162	109751	1.248
101) 1-Chloronaphthalene	(3)	10.911	162	106372	1.290
103) Diphenyl ether	(3)	11.045	170	80084	1.276
104) 2-Nitroaniline	(3)	11.050	138	39136	1.298
108) 1,4-Naphthoquinone	(3)	11.161	158	42075	1.124
109) 1,4-Dinitrobenzene	(3)	11.289	168	18871	1.173
110) Dimethylphthalate	(3)	11.383	163	123758	1.280
111) 1,3-Dinitrobenzene	(3)	11.394	168	21898	1.230
113) 2,6-Dinitrotoluene	(3)	11.458	165	28745	1.302
114) Acenaphthylene	(3)	11.528	152	180004	1.273
117) 3-Nitroaniline	(3)	11.692	138	32555	1.318
118)*Acenaphthene-d10	(3)	11.744	164	308960	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.785	153	124928	1.350
120) 2,4-Dinitrophenol	(3)	11.843	184	44188	2.775
121) 4-Nitrophenol	(3)	11.942	109	36422	2.142
122) Pentachlorobenzene	(3)	11.971	250	45104	1.221
123) 2,4-Dinitrotoluene	(3)	12.024	165	36414	1.226
124) Dibenzofuran	(3)	12.030	168	164125	1.308
126) 1-Naphthylamine	(3)	12.129	143	112326	1.304
127) 2,3,4,6-Tetrachlorophenol	(3)	12.193	232	29355	1.203
128) 2-Naphthylamine	(3)	12.234	143	115049	1.357
129) Diethylphthalate	(3)	12.368	149	135172	1.281
131) Fluorene	(3)	12.461	166	136514	1.321
130) Thionazin	(3)	12.461	107	27178	1.368
133) 5-Nitro-o-toluidine	(3)	12.478	152	44039	1.467
134) 4-Nitroaniline	(3)	12.484	138	34693	1.343
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	64869	1.343
135) 4,6-Dinitro-2-methylphenol	(4)	12.531	198	37430	1.908
137) NDPA as diphenylamine	(4)	12.624	169	114251	1.237
136) N-Nitrosodiphenylamine	(4)	12.624	169	114251	1.237
139) 1,2-Diphenylhydrazine	(4)	12.671	77	133436	1.218
140)$2,4,6-Tribromophenol	(3)	12.752	330	36636	2.576
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	22269	1.160
145) Diallate (peak 1)	(4)	12.991	86	52143	1.023
146) Phorate	(4)	13.003	75	80886	1.237
147) Phenacetin	(4)	13.009	108	62693	1.128
148) 4-Bromophenyl-phenylether	(4)	13.079	248	33572	1.246
149) Diallate (peak 2)	(4)	13.102	86	8525	0.203
150) Hexachlorobenzene	(4)	13.131	284	36193	1.340
152) Dimethoate	(4)	13.190	87	49356	1.188
153) Atrazine	(4)	13.294	200	32239	1.330
154) Pentachlorophenol	(4)	13.382	266	20552	1.036
155) 4-Aminobiphenyl	(4)	13.399	169	71965	1.219
156) Pentachloronitrobenzene	(4)	13.399	237	15162	1.228
157) Pronamide	(4)	13.493	173	56278	1.237
158)*Phenanthrene-d10	(4)	13.621	188	622085	5.000
159) Dinoseb	(4)	13.632	211	30636	1.065
160) Phenanthrene	(4)	13.650	178	178140	1.256
162) Anthracene	(4)	13.720	178	188940	1.311
168) Carbazole	(4)	13.936	167	176168	1.243
169) Methyl parathion	(4)	14.140	109	39791	1.135
170) Di-n-butylphthalate	(4)	14.448	149	224425	1.185

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

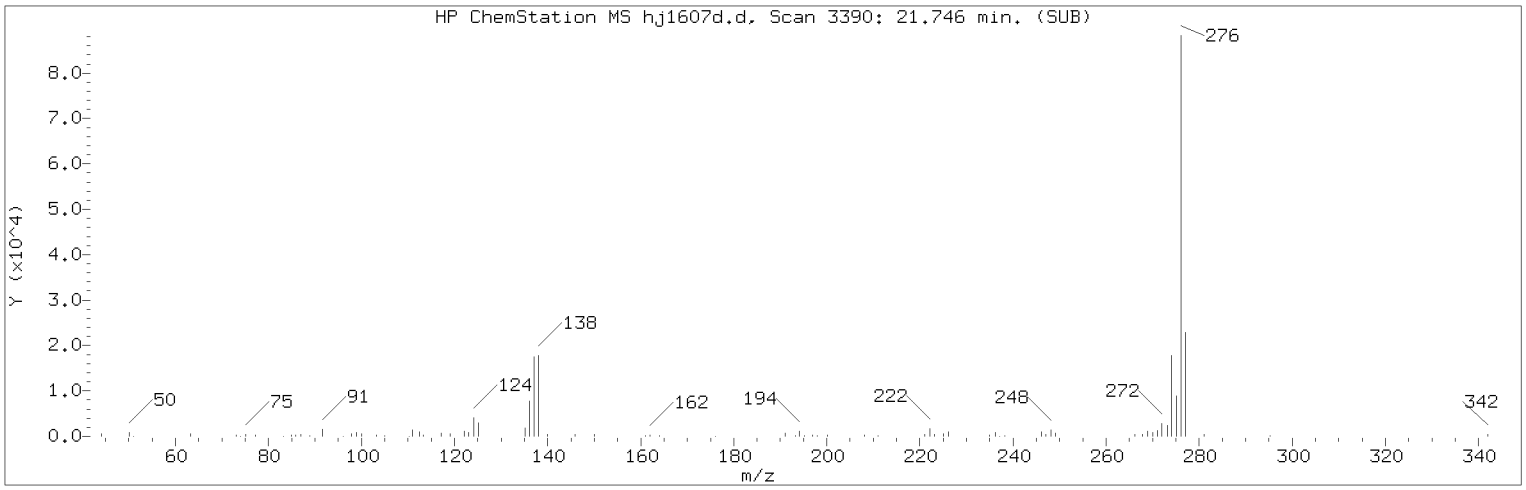
Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.687	109	22361	0.988
173) 4-Nitroquinoline-1-oxide	(4)	14.693	190	12609	0.696
227) Total PAHs	(6)			3160108	23.034
174) Octachlorostyrene	(4)	15.037	308	15808	1.366
176) Isodrin	(4)	15.095	193	24247	1.373
178) Fluoranthene	(4)	15.311	202	207610	1.256
179) Benzidine	(5)	15.538	184	394633	3.622
180)*Pyrene-d10	(5)	15.626	212	618792	5.000
182) Pyrene	(5)	15.655	202	222289	1.234
184)$Terphenyl-d14	(5)	15.941	244	281175	2.456
187) p-Dimethylaminoazobenzene	(5)	16.174	225	37116	1.272
190) Chlorobenzilate	(5)	16.267	139	66966	1.121
192) 3,3'-Dimethylbenzidine	(5)	16.733	212	122902	1.092
193) Butylbenzylphthalate	(5)	16.797	149	104316	1.166
196) 2-Acetylaminofluorene	(5)	17.147	181	71551	1.056
198) 3,3'-Dichlorobenzidine	(5)	17.660	252	69937	1.153
200) Benzo(a)anthracene	(5)	17.672	228	199402	1.312
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.683	231	36746	1.110
201) Chrysene	(5)	17.730	228	201016	1.278
204) bis(2-Ethylhexyl)phthalate	(5)	17.864	149	149054	1.165
208) 6-Methylchrysene	(5)	18.534	242	128475	1.159
210) Di-n-octylphthalate	(6)	19.030	149	252863	1.143
211) Benzo(b)fluoranthene	(6)	19.519	252	193105	1.248
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.525	256	82069	1.199
213) Benzo(k)fluoranthene	(6)	19.566	252	204318	1.300
216) Benzo(a)pyrene	(6)	20.050	252	187877	1.273
218)*Perylene-d12	(6)	20.143	264	635204	5.000
220) 3-Methylcholanthrene	(6)	20.615	268	78208	1.172
222) Dibenz(a,h)acridine	(6)	21.431	279	145464	1.174
223) Dibenz(a,j)acridine	(6)	21.495	279	145104	1.180
224) Indeno(1,2,3-cd)pyrene	(6)	21.746	276	167070M	1.206
225) Dibenz(a,h)anthracene	(6)	21.787	278	173754	1.277
226) Benzo(g,h,i)perylene	(6)	22.136	276	181453	1.298

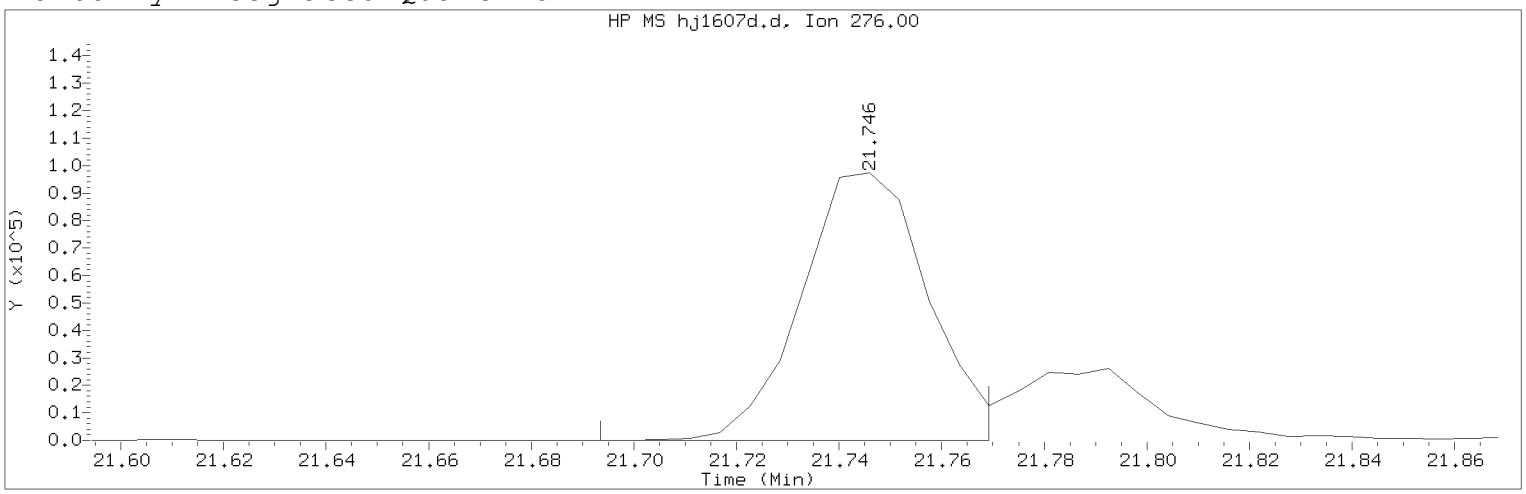
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:31 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

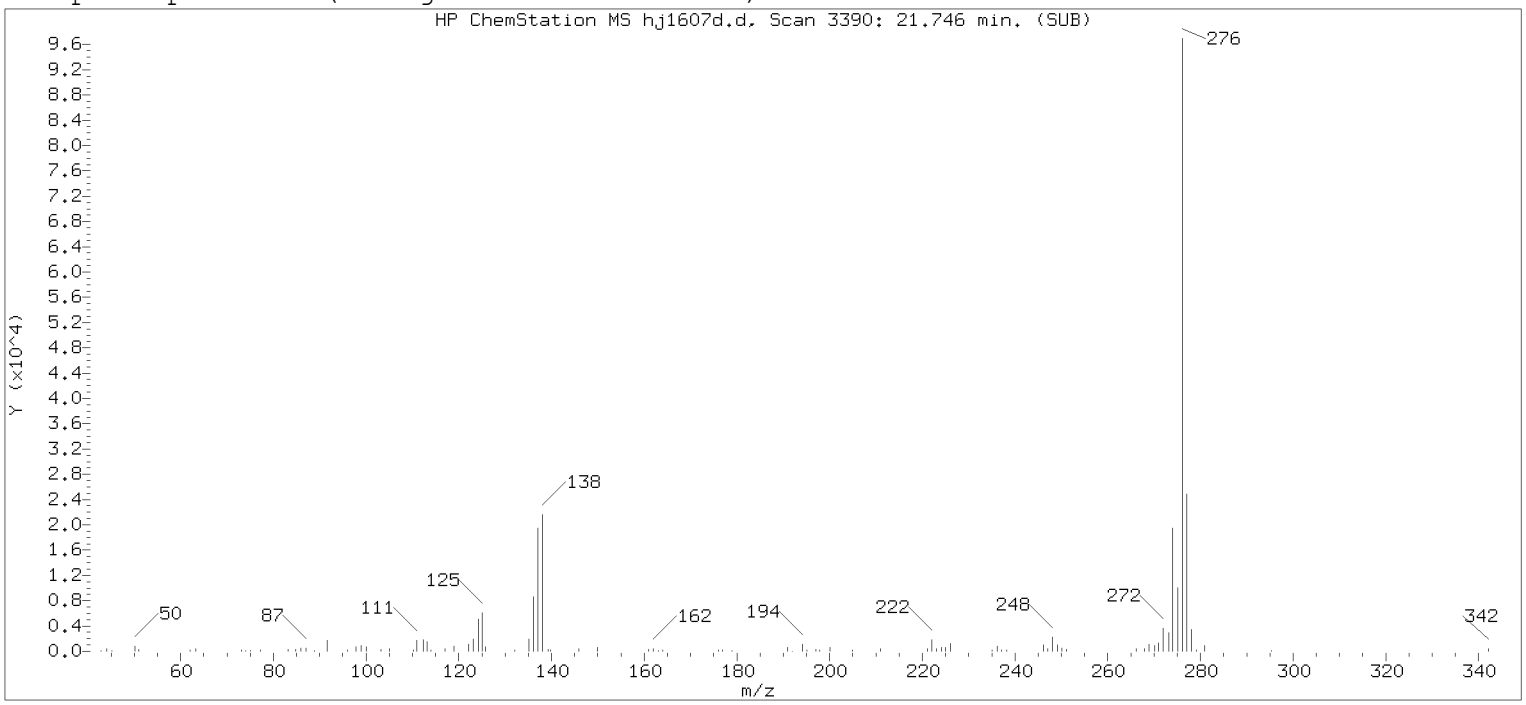
Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area (flag)	: 167070M		
On-Column Amount (ng/ul)	: 1.2063		
Integration start scan	: 3380	Integration stop scan:	3393
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

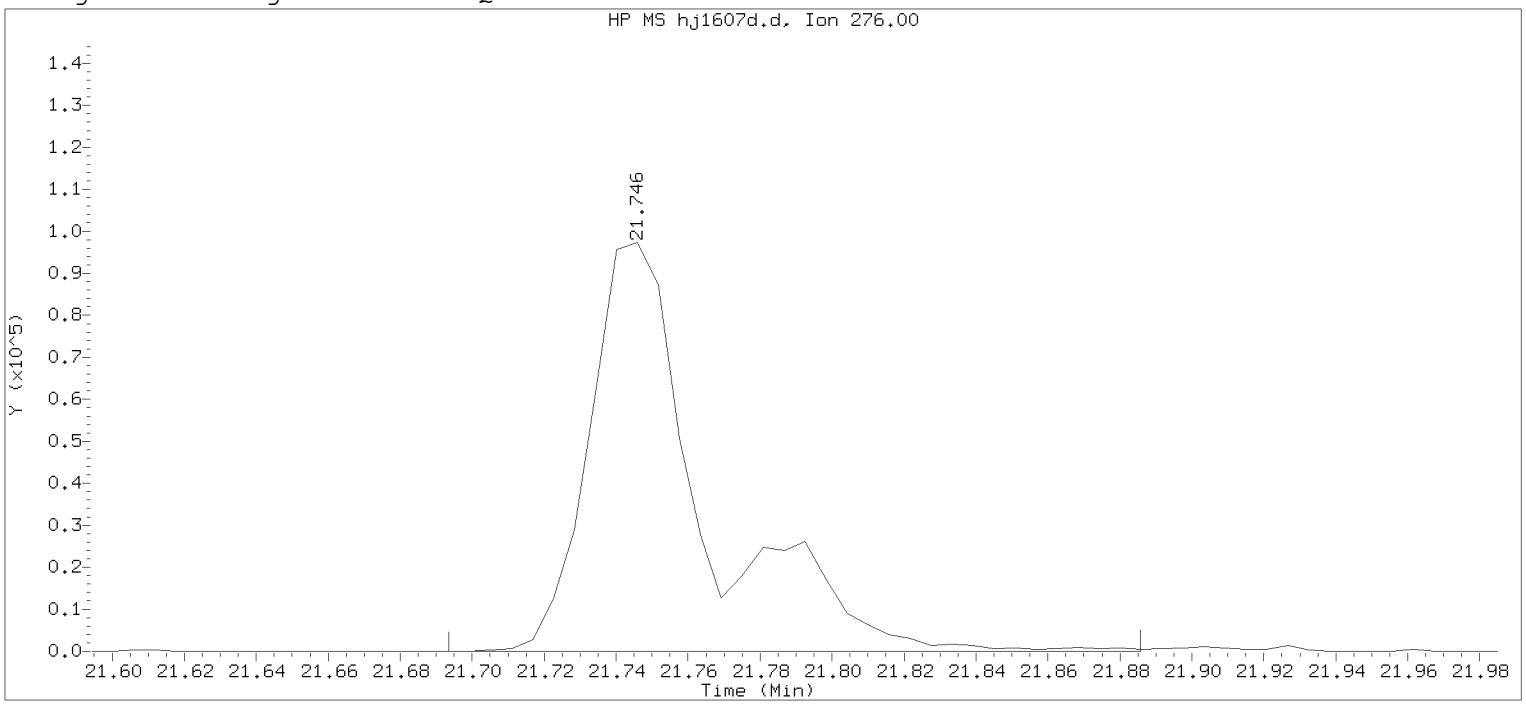
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



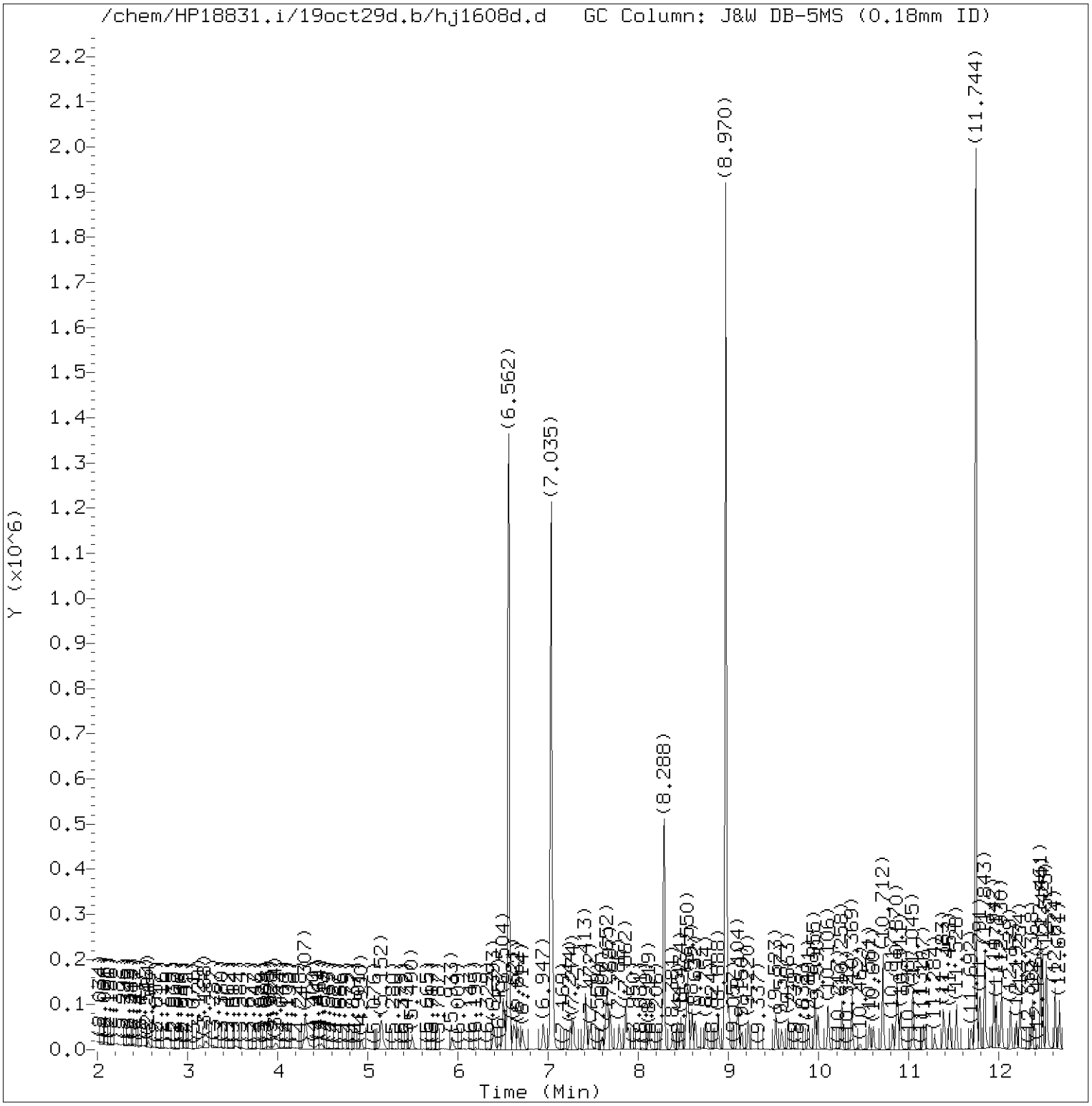
Data File: /chem/HP18831.i/19oct29d.b/hj1607d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:20 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:23
Date, time and analyst ID of latest file update: 01-Nov-2019 10:23 whs02991

Sample Name: SSTD1.25 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area	: 216590		
On-column Amount (ng/ul)	: 1.2776		
Integration start scan	: 3380	Integration stop scan:	3413
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with w2020.1



Total Ion Chromatogram (TIC)

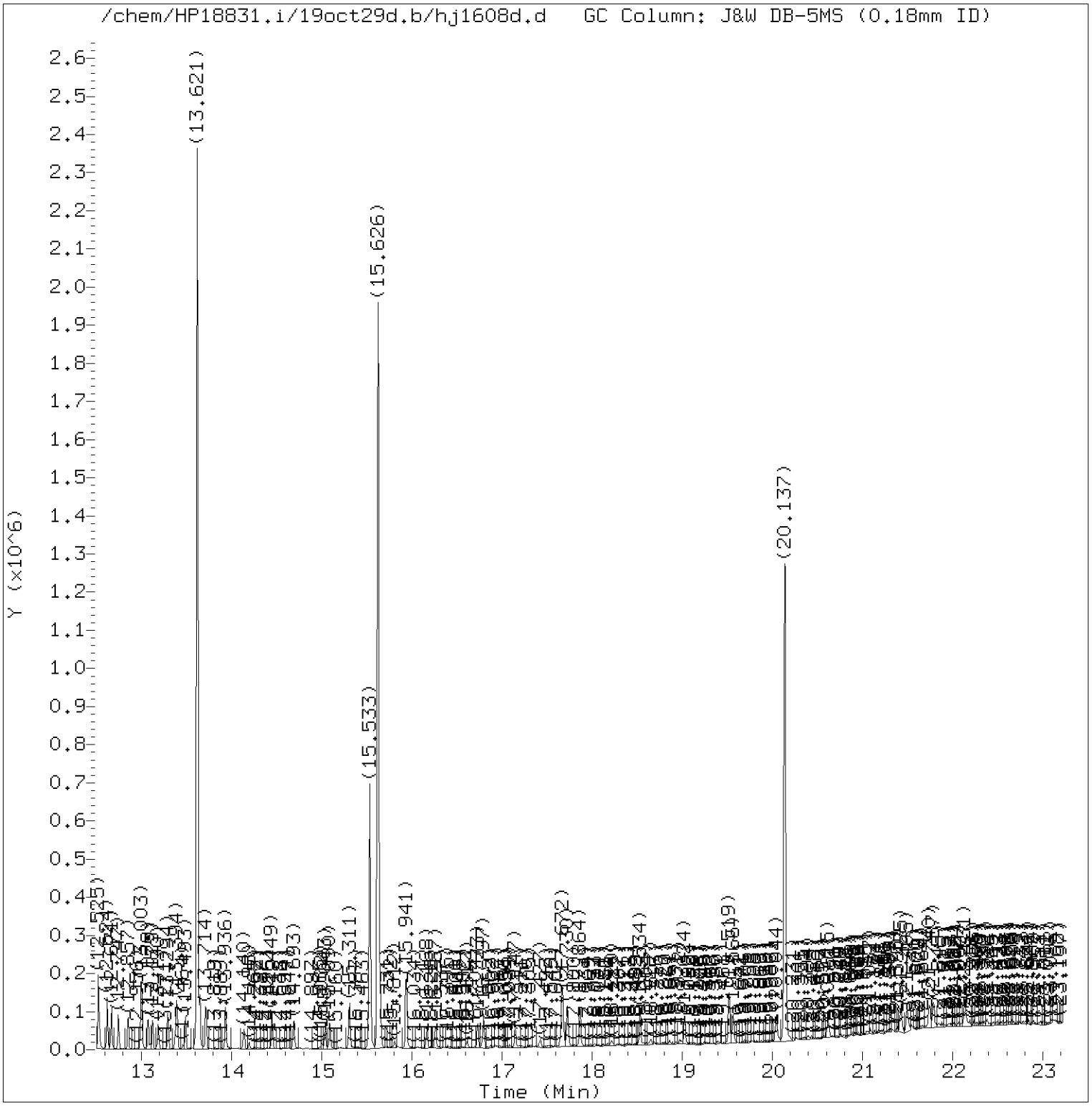
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.576	88	7944	0.193
5) N-Nitrosodimethylamine	(1)	3.135	74	11323M	0.190
6) Pyridine	(1)	3.193	79	20739M	0.199
8) 2-Picoline	(1)	4.313	93	22788M	0.207
9) N-Nitrosomethylethylamine	(1)	4.487	88	8722M	0.188
10) Methyl methanesulfonate	(1)	4.930	80	9974	0.203
12)$2-Fluorophenol	(1)	5.152	112	31746	0.388
14) N-Nitrosodiethylamine	(1)	5.490	102	9396	0.218
43) Total Cresols	(1)			34456	0.465
16) Ethyl methanesulfonate	(1)	5.939	109	9897	0.226
17) Benzaldehyde	(1)	6.393	77	16122	0.257
18)$Phenol-d6	(1)	6.504	99	50455	0.480
19) Phenol	(1)	6.516	94	27319	0.236
20) Aniline	(1)	6.551	93	29070	0.220
21) a-methylstyrene	(1)	6.632	118	7183	0.213
23) bis(2-Chloroethyl)ether	(1)	6.667	93	23381	0.262
24) 2-Chlorophenol	(1)	6.714	128	17283	0.222
25) 1,3-Dichlorobenzene	(1)	6.947	146	20402	0.247
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	264166	5.000
27) 1,4-Dichlorobenzene	(1)	7.058	146	19593	0.233
28) Benzyl alcohol	(1)	7.244	108	11866	0.244
29) 1,2-Dichlorobenzene	(1)	7.274	146	17960	0.226
100) Isosafrole	(3)			14958	0.235
31) Indene	(1)	7.413	115	28919	0.252
32) 2-Methylphenol	(1)	7.419	108	15454	0.219
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	40689	0.253
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	40689	0.253
36) N-Nitrosopyrrolidine	(1)	7.600	100	8033	0.209
37) Acetophenone	(1)	7.641	105	28036	0.257
39) N-Nitroso-di-n-propylamine	(1)	7.652	70	12970	0.229
38) 4-Methylphenol	(1)	7.658	108	19002M	0.246
40) N-Nitrosomorpholine	(1)	7.670	56	18916	0.271
41) o-Toluidine	(1)	7.687	106	29124	0.244
44) Hexachloroethane	(1)	7.786	117	8942	0.261
45)$Nitrobenzene-d5	(2)	7.862	82	41766	0.485
46) Nitrobenzene	(2)	7.886	77	21901	0.253
125) 2,4_2,6-Dinitrotoluenes	(3)			16011	0.412
50) N-Nitrosopiperidine	(2)	8.119	114	10217	0.260
52) Isophorone	(2)	8.270	82	35853	0.229
53) 2-Nitrophenol	(2)	8.381	139	8755	0.217

M = Compound was manually integrated.
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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.474	107	21467	0.259
58) Benzoic acid	(2)	8.550	105	73866	1.403
59) O,O,O-Triethylphosphorothioate	(2)	8.597	198	7826	0.210
57) bis(2-Chloroethoxy)methane	(2)	8.632	93	24730	0.252
62) 2,4-Dichlorophenol	(2)	8.754	162	13852	0.226
151) Diallate trans/cis	(4)			18811	0.266
65) 1,2,4-Trichlorobenzene	(2)	8.882	180	16275	0.243
68)*Naphthalene-d8	(2)	8.970	136	1028485	5.000
69) Naphthalene	(2)	9.005	128	51355	0.231
70) 4-Chloroaniline	(2)	9.104	127	18910	0.221
71) 2,6-Dichlorophenol	(2)	9.110	162	12863	0.215
72) Hexachloropropene	(2)	9.145	213	7938	0.214
74) Hexachlorobutadiene	(2)	9.220	225	8404	0.213
78) Quinoline	(2)	9.523	129	29071	0.218
79) Caprolactam	(2)	9.593	113	5140	0.238
80) N-Nitrosodi-n-butylamine	(2)	9.663	84	14060	0.230
83) 4-Chloro-3-methylphenol	(2)	9.891	107	15136	0.224
85) Safrole	(2)	9.990	162	12236	0.214
86) 2-Methylnaphthalene	(2)	10.106	142	34871	0.237
87) 1-Methylnaphthalene	(2)	10.258	142	33299	0.249
88) Hexachlorocyclopentadiene	(3)	10.357	237	9388	0.212
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.369	216	14751	0.233
91) cis-Isosafrole	(3)	10.456	162	2685	0.044
93) 2,4,6-Trichlorophenol	(3)	10.561	196	7750	0.189
95) 2,4,5-Trichlorophenol	(3)	10.607	196	10047	0.227
96)$2-Fluorobiphenyl	(3)	10.712	172	76124	0.490
97) trans-Isosafrole	(3)	10.817	162	12273	0.191
98) 1,1'-Biphenyl	(3)	10.864	154	43003	0.248
99) 2-Chloronaphthalene	(3)	10.876	162	31935	0.241
101) 1-Chloronaphthalene	(3)	10.911	162	29690	0.240
103) Diphenyl ether	(3)	11.045	170	23392	0.248
104) 2-Nitroaniline	(3)	11.050	138	8531	0.188
108) 1,4-Naphthoquinone	(3)	11.167	158	10326	0.183
109) 1,4-Dinitrobenzene	(3)	11.284	168	4139	0.171
110) Dimethylphthalate	(3)	11.383	163	34696	0.239
111) 1,3-Dinitrobenzene	(3)	11.400	168	5303	0.198
113) 2,6-Dinitrotoluene	(3)	11.458	165	6951	0.209
114) Acenaphthylene	(3)	11.528	152	51503	0.242
117) 3-Nitroaniline	(3)	11.692	138	8190	0.221
118)*Acenaphthene-d10	(3)	11.744	164	464636	5.000

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on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.791	153	31309	0.225
120) 2,4-Dinitrophenol	(3)	11.843	184	28640	1.196
121) 4-Nitrophenol	(3)	11.942	109	23154	0.905
122) Pentachlorobenzene	(3)	11.971	250	12700	0.229
123) 2,4-Dinitrotoluene	(3)	12.024	165	9060	0.203
124) Dibenzofuran	(3)	12.030	168	42927	0.228
126) 1-Naphthylamine	(3)	12.129	143	29575	0.228
127) 2,3,4,6-Tetrachlorophenol	(3)	12.193	232	8979	0.245
128) 2-Naphthylamine	(3)	12.234	143	34645	0.272
129) Diethylphthalate	(3)	12.368	149	37694	0.237
131) Fluorene	(3)	12.461	166	35963	0.231
130) Thionazin	(3)	12.461	107	7640	0.256
133) 5-Nitro-o-toluidine	(3)	12.478	152	9129	0.202
134) 4-Nitroaniline	(3)	12.484	138	7950	0.205
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	17955	0.247
135) 4,6-Dinitro-2-methylphenol	(4)	12.525	198	21991	0.783
137) NDPA as diphenylamine	(4)	12.624	169	32874	0.248
136) N-Nitrosodiphenylamine	(4)	12.624	169	32874	0.248
139) 1,2-Diphenylhydrazine	(4)	12.671	77	43235	0.276
140)$2,4,6-Tribromophenol	(3)	12.747	330	9839	0.460
142) Tetraethyldithiopyrophosphate	(4)	12.852	97	6801	0.247
145) Diallate (peak 1)	(4)	12.997	86	16099	0.221
146) Phorate	(4)	13.003	75	24019	0.256
147) Phenacetin	(4)	13.009	108	19343	0.243
148) 4-Bromophenyl-phenylether	(4)	13.079	248	9221	0.239
149) Diallate (peak 2)	(4)	13.102	86	2712	0.045
150) Hexachlorobenzene	(4)	13.131	284	8516	0.220
152) Dimethoate	(4)	13.195	87	12998	0.218
153) Atrazine	(4)	13.294	200	8862	0.255
154) Pentachlorophenol	(4)	13.376	266	5918	0.208
156) Pentachloronitrobenzene	(4)	13.394	237	3917	0.221
155) 4-Aminobiphenyl	(4)	13.399	169	19602	0.232
157) Pronamide	(4)	13.493	173	12548	0.192
158)*Phenanthrene-d10	(4)	13.621	188	891227	5.000
159) Dinoseb	(4)	13.638	211	4435	0.108
160) Phenanthrene	(4)	13.650	178	52041	0.256
162) Anthracene	(4)	13.720	178	50291	0.244
168) Carbazole	(4)	13.936	167	48762	0.240
169) Methyl parathion	(4)	14.140	109	10294	0.205
170) Di-n-butylphthalate	(4)	14.449	149	54775	0.202

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Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

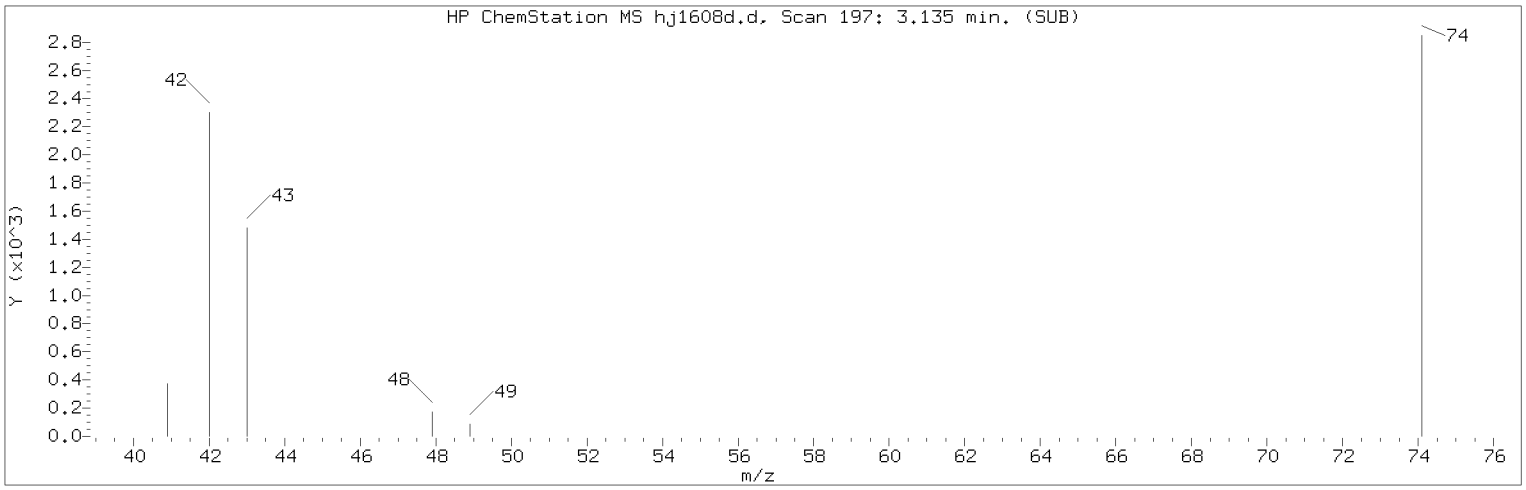
Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.688	109	4307	0.133
173) 4-Nitroquinoline-1-oxide	(4)	14.699	190	2685	0.103
227) Total PAHs	(6)			776592	4.213
174) Octachlorostyrene	(4)	15.031	308	2952	0.178
176) Isodrin	(4)	15.090	193	5514	0.218
178) Fluoranthene	(4)	15.311	202	55367	0.234
179) Benzidine	(5)	15.539	184	341614	2.193
180)*Pyrene-d10	(5)	15.626	212	884702	5.000
182) Pyrene	(5)	15.655	202	63289	0.246
184)$Terphenyl-d14	(5)	15.935	244	73861	0.451
187) p-Dimethylaminoazobenzene	(5)	16.168	225	7105	0.170
190) Chlorobenzilate	(5)	16.267	139	16703	0.196
192) 3,3'-Dimethylbenzidine	(5)	16.733	212	29823	0.185
193) Butylbenzylphthalate	(5)	16.797	149	23787	0.186
196) 2-Acetylaminofluorene	(5)	17.147	181	14070	0.145
198) 3,3'-Dichlorobenzidine	(5)	17.660	252	15958	0.184
200) Benzo(a)anthracene	(5)	17.666	228	48115	0.221
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.689	231	6572	0.139
201) Chrysene	(5)	17.730	228	55334	0.246
204) bis(2-Ethylhexyl)phthalate	(5)	17.870	149	32595	0.178
208) 6-Methylchrysene	(5)	18.534	242	33537	0.212
210) Di-n-octylphthalate	(6)	19.024	149	46196	0.191
211) Benzo(b)fluoranthene	(6)	19.519	252	35809	0.212
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.525	256	16462	0.221
213) Benzo(k)fluoranthene	(6)	19.566	252	43535	0.254
216) Benzo(a)pyrene	(6)	20.044	252	35846	0.223
218)*Perylene-d12	(6)	20.143	264	692821	5.000
220) 3-Methylcholanthrene	(6)	20.615	268	15778	0.217
222) Dibenz(a,h)acridine	(6)	21.425	279	27078	0.200
223) Dibenz(a,j)acridine	(6)	21.495	279	27790	0.207
224) Indeno(1,2,3-cd)pyrene	(6)	21.746	276	31210M	0.215
225) Dibenz(a,h)anthracene	(6)	21.787	278	31764	0.214
226) Benzo(g,h,i)perylene	(6)	22.142	276	35691	0.234

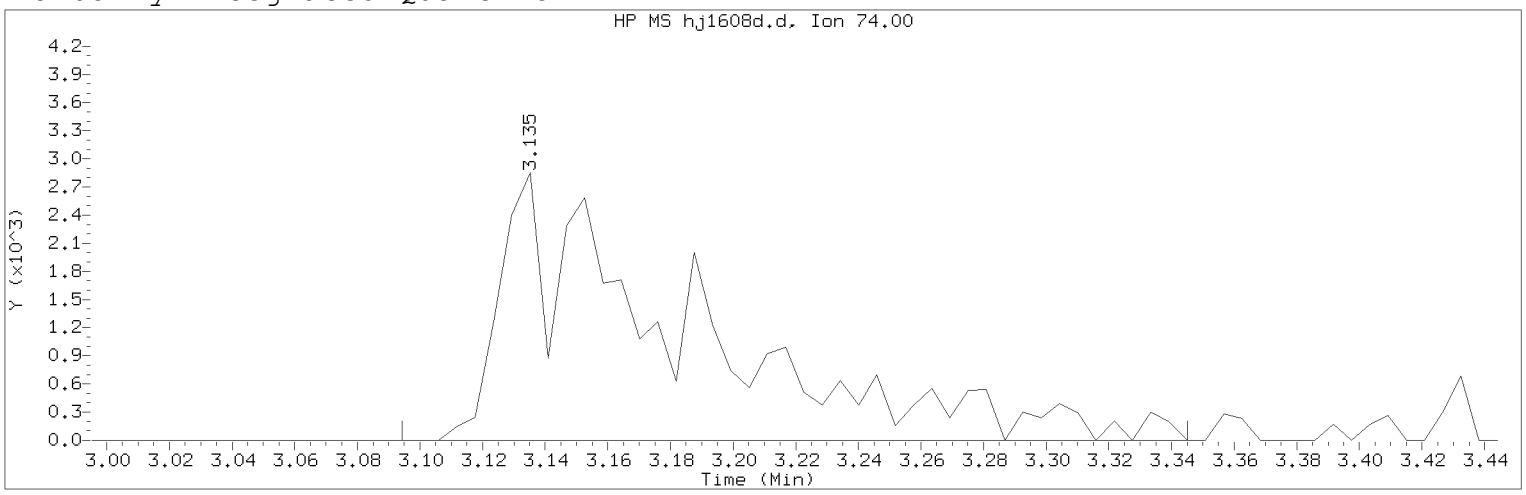
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

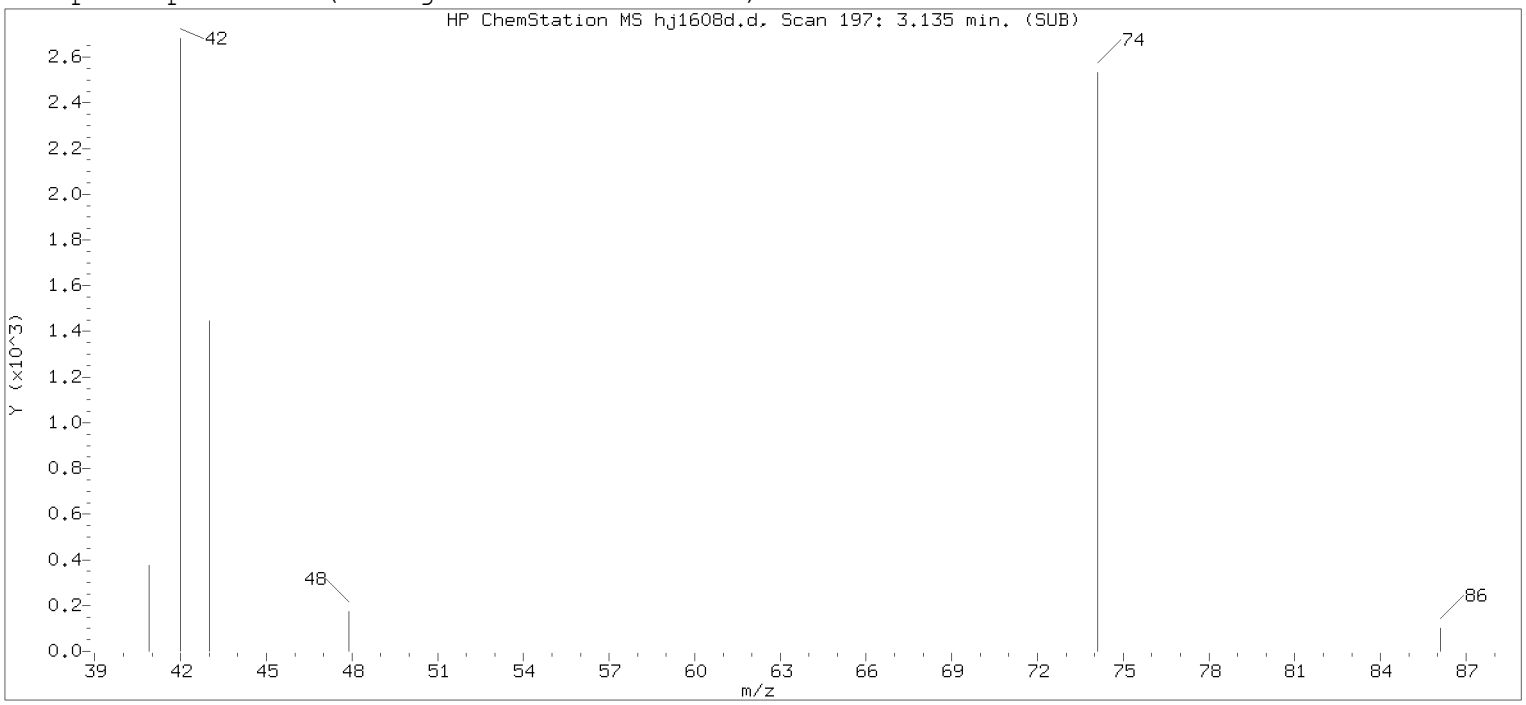
Compound Number : 5
Compound Name : N-Nitrosodimethylamine
Scan Number : 197
Retention Time (minutes) : 3.135
Quant Ion : 74.00
Area (flag) : 11323M
On-Column Amount (ng/ul) : 0.1905
Integration start scan : 189 Integration stop scan: 232
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

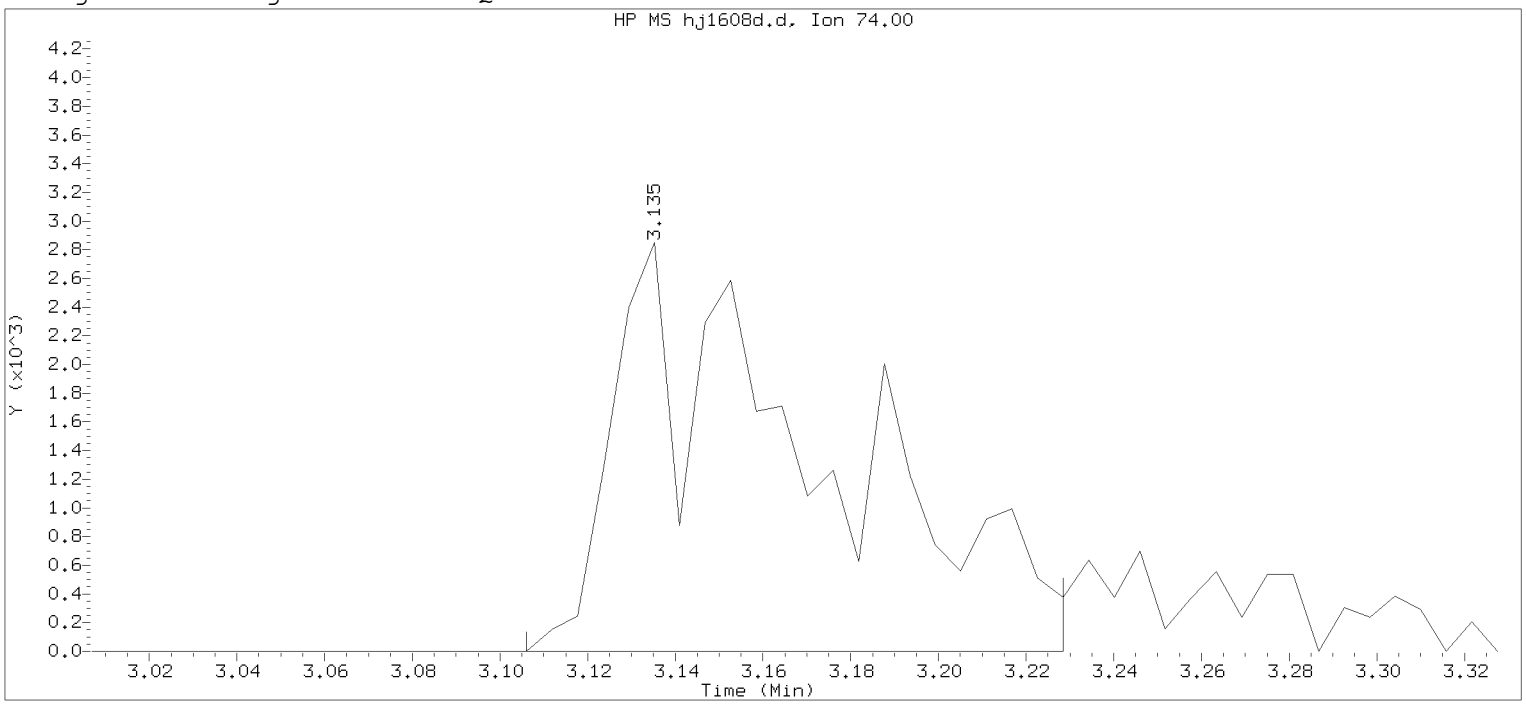
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

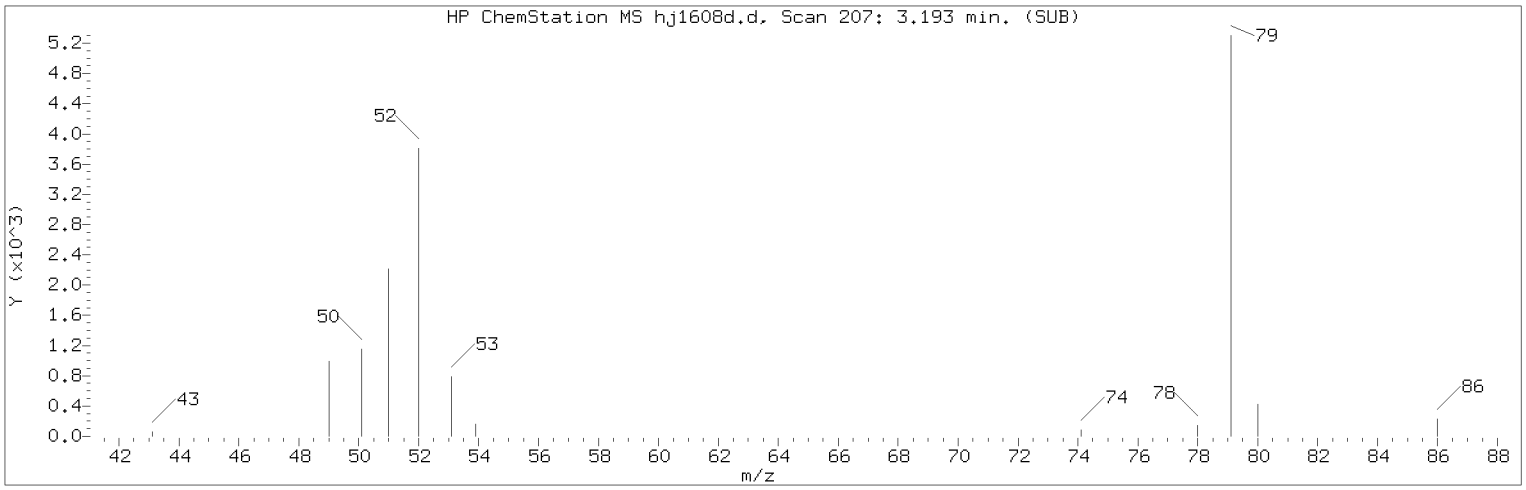
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

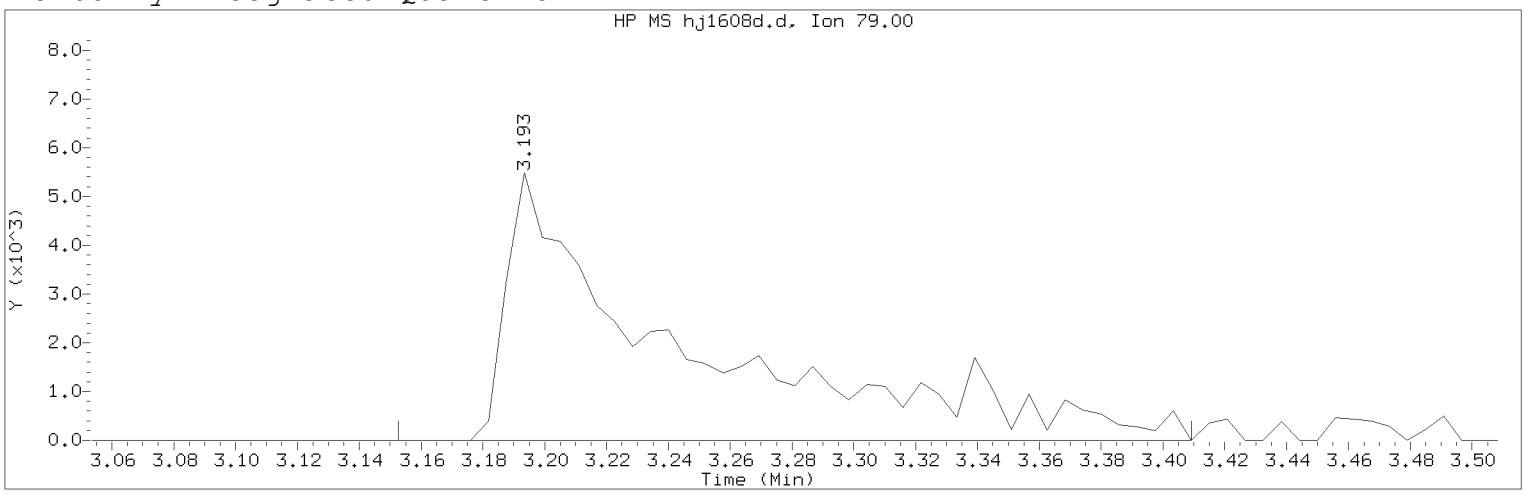
Compound Number	: 5		
Compound Name	: N-Nitrosodimethylamine		
Scan Number	: 197		
Retention Time (minutes)	: 3.135		
Quant Ion	: 74.00		
Area	: 9150		
On-column Amount (ng/ul)	: 0.1539		
Integration start scan	: 191	Integration stop scan:	212
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used. whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

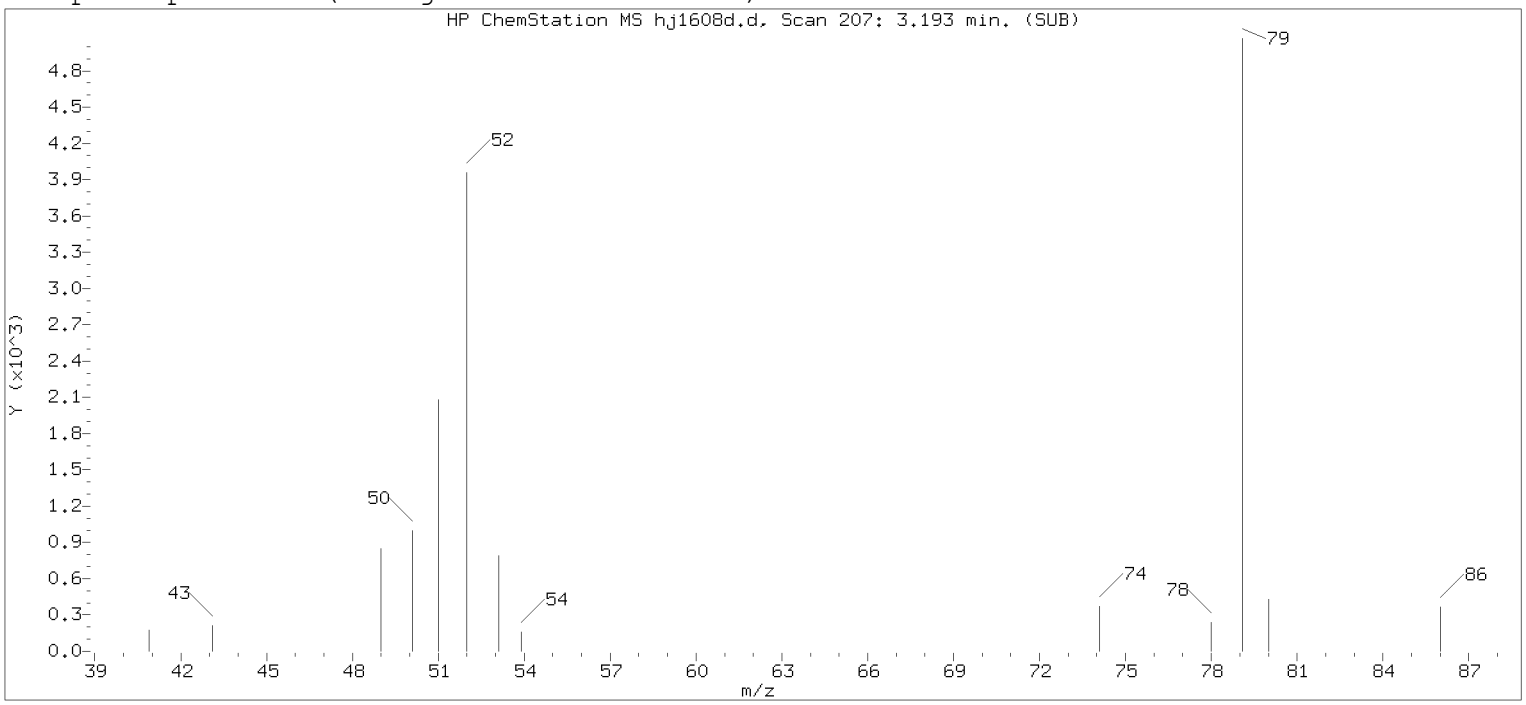
Compound Number : 6
Compound Name : Pyridine
Scan Number : 207
Retention Time (minutes) : 3.193
Quant Ion : 79.00
Area (flag) : 20739M
On-Column Amount (ng/ul) : 0.1988
Integration start scan : 199 Integration stop scan: 243
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

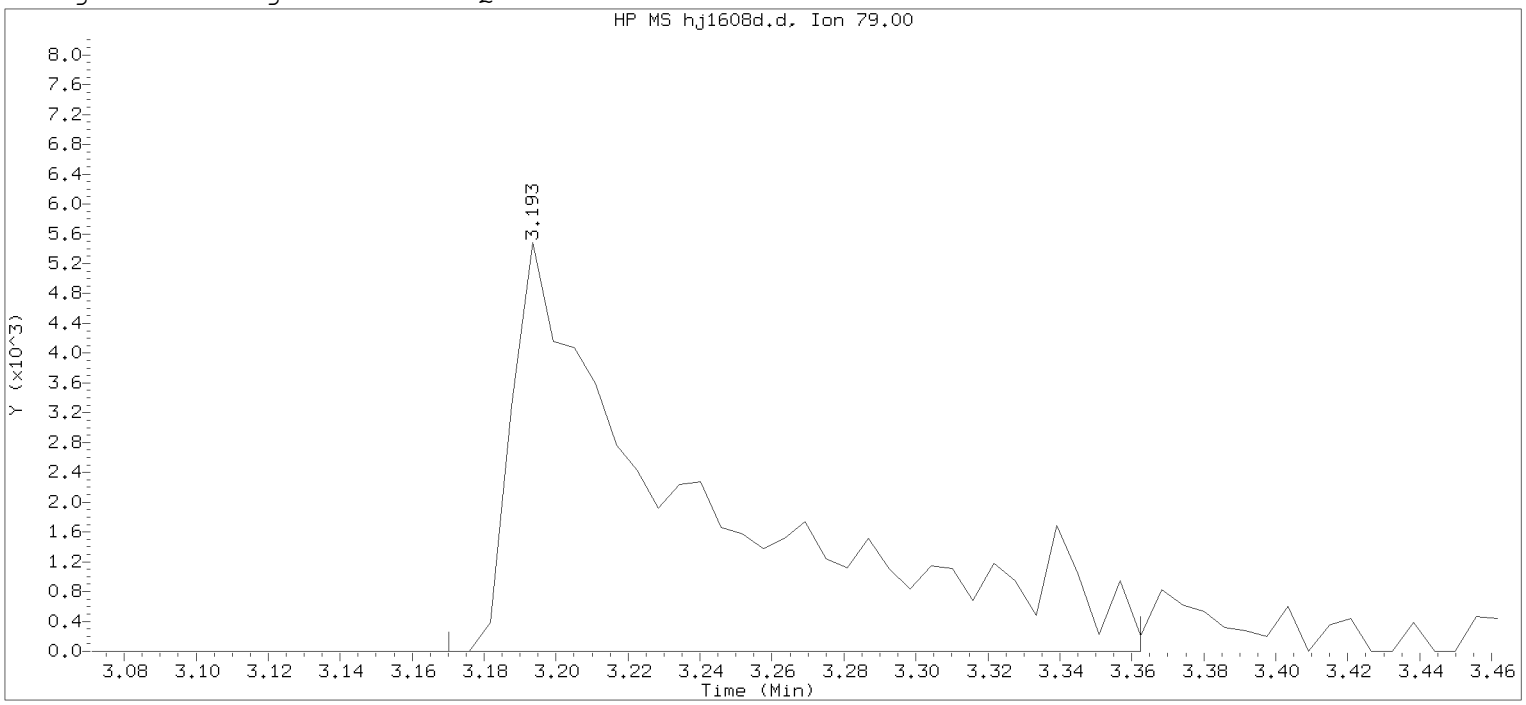
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

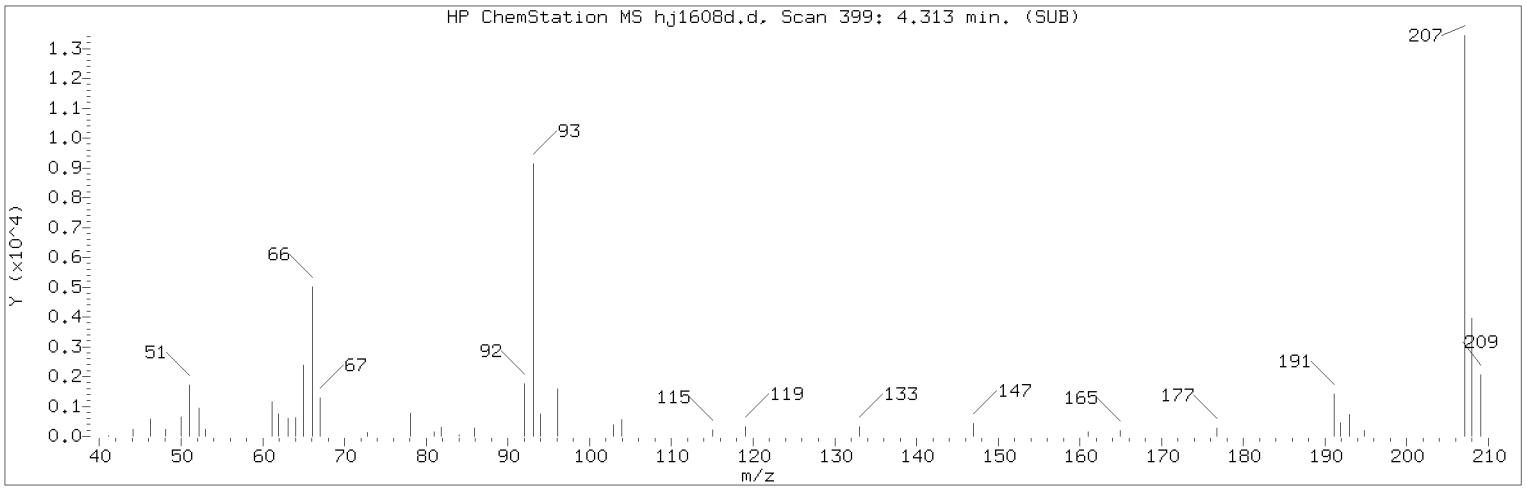
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

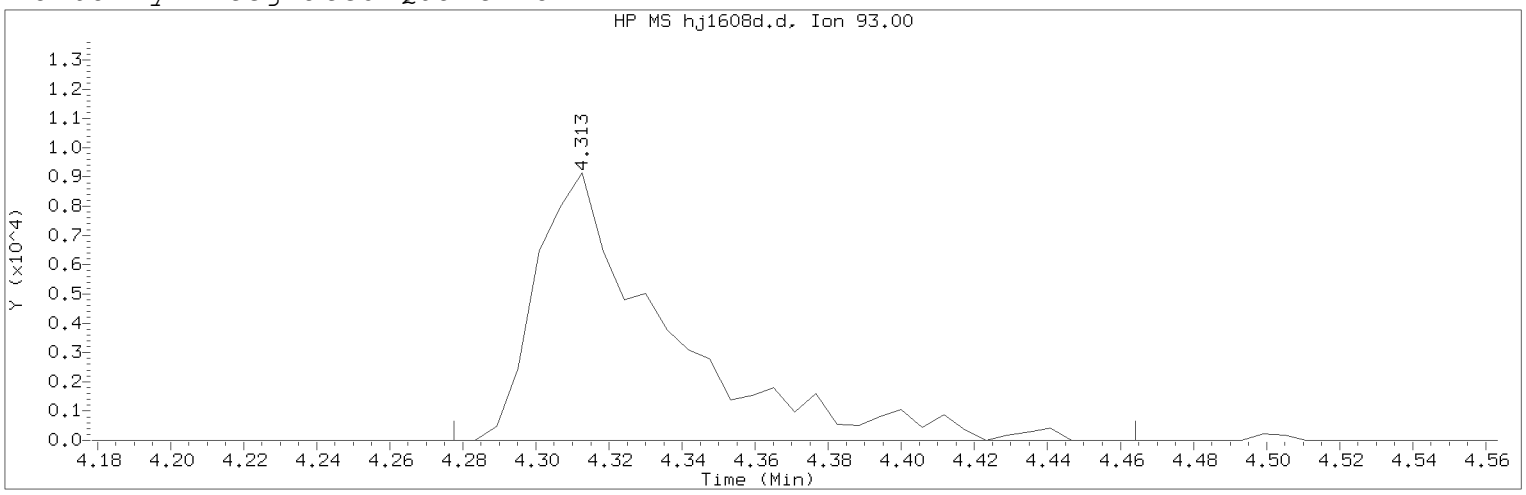
Compound Number	: 6		
Compound Name	: Pyridine		
Scan Number	: 207		
Retention Time (minutes)	: 3.193		
Quant Ion	: 79.00		
Area	: 19523		
On-column Amount (ng/ul)	: 0.1871		
Integration start scan	: 202	Integration stop scan:	235
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with w2020

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

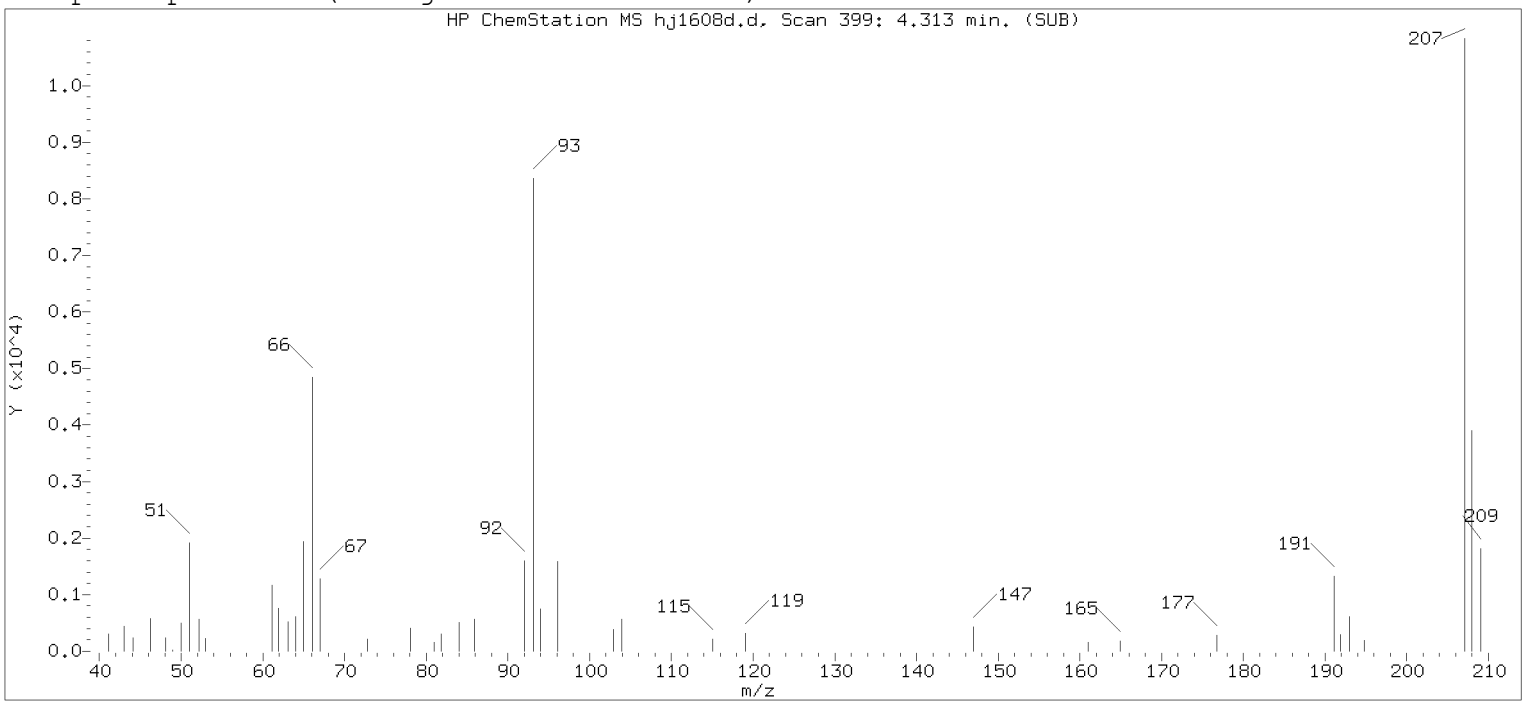
Compound Number : 8
Compound Name : 2-Picoline
Scan Number : 399
Retention Time (minutes) : 4.313
Quant Ion : 93.00
Area (flag) : 22788M
On-Column Amount (ng/ul) : 0.2068
Integration start scan : 392 Integration stop scan: 424
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

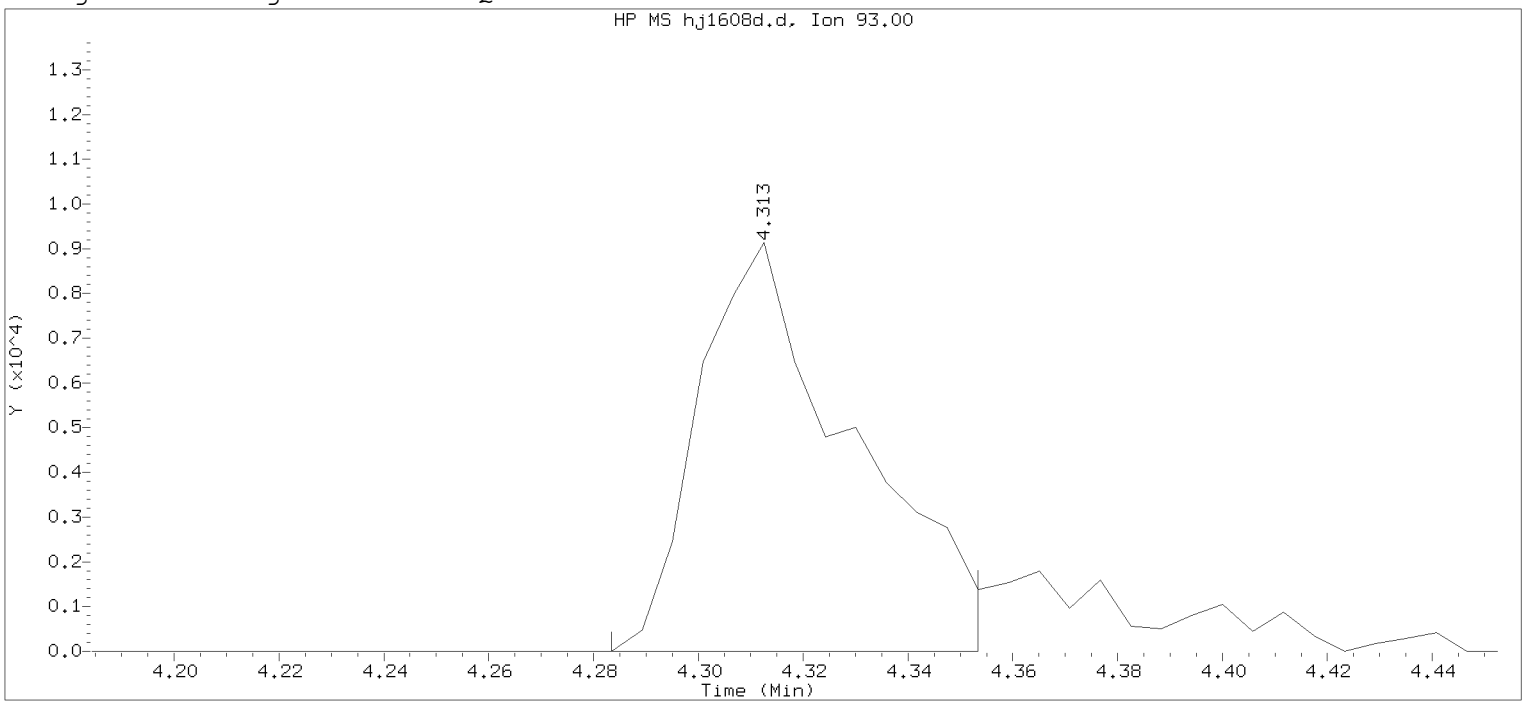
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

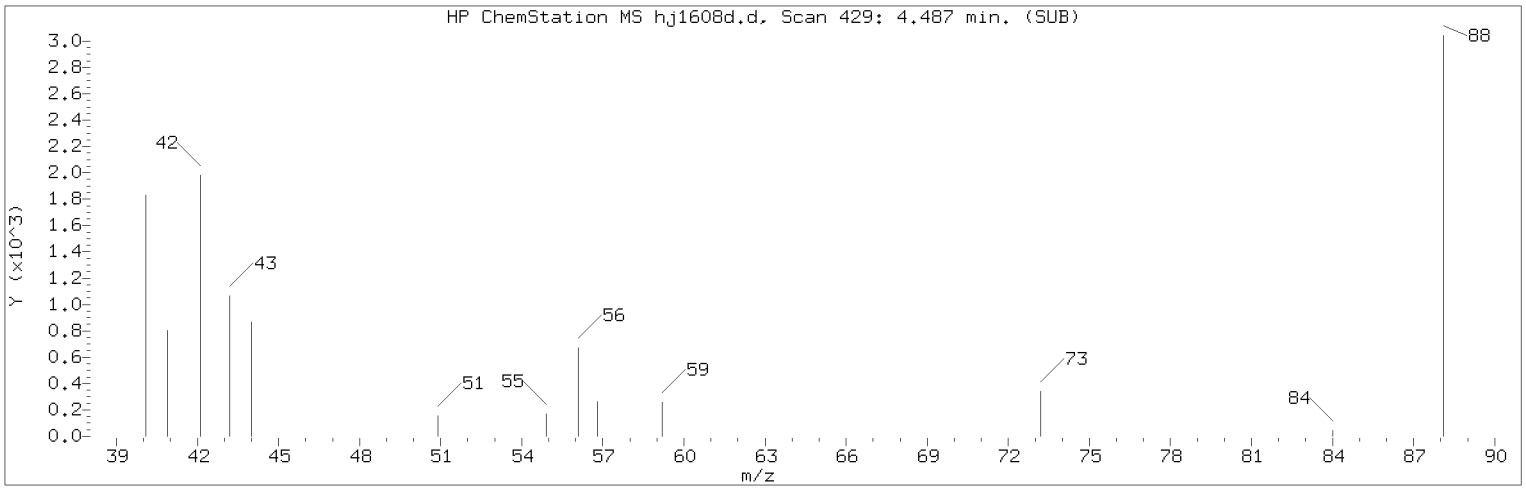
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

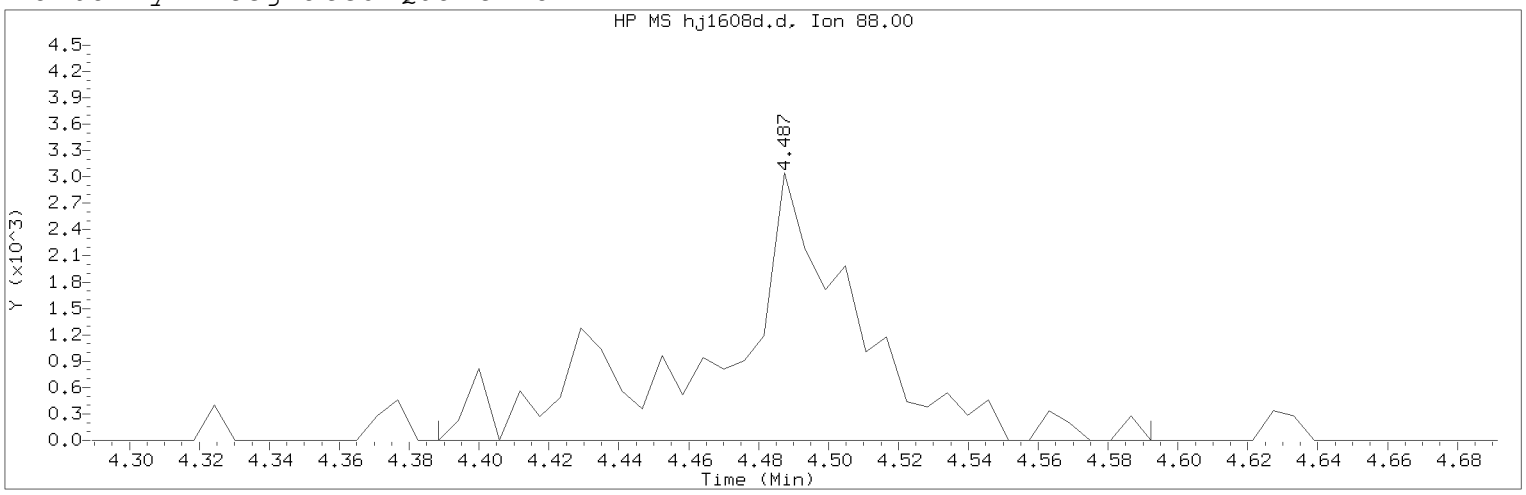
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 399		
Retention Time (minutes)	: 4.313		
Quant Ion	: 93.00		
Area	: 18575		
On-column Amount (ng/ul)	: 0.1693		
Integration start scan	: 393	Integration stop scan:	405
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

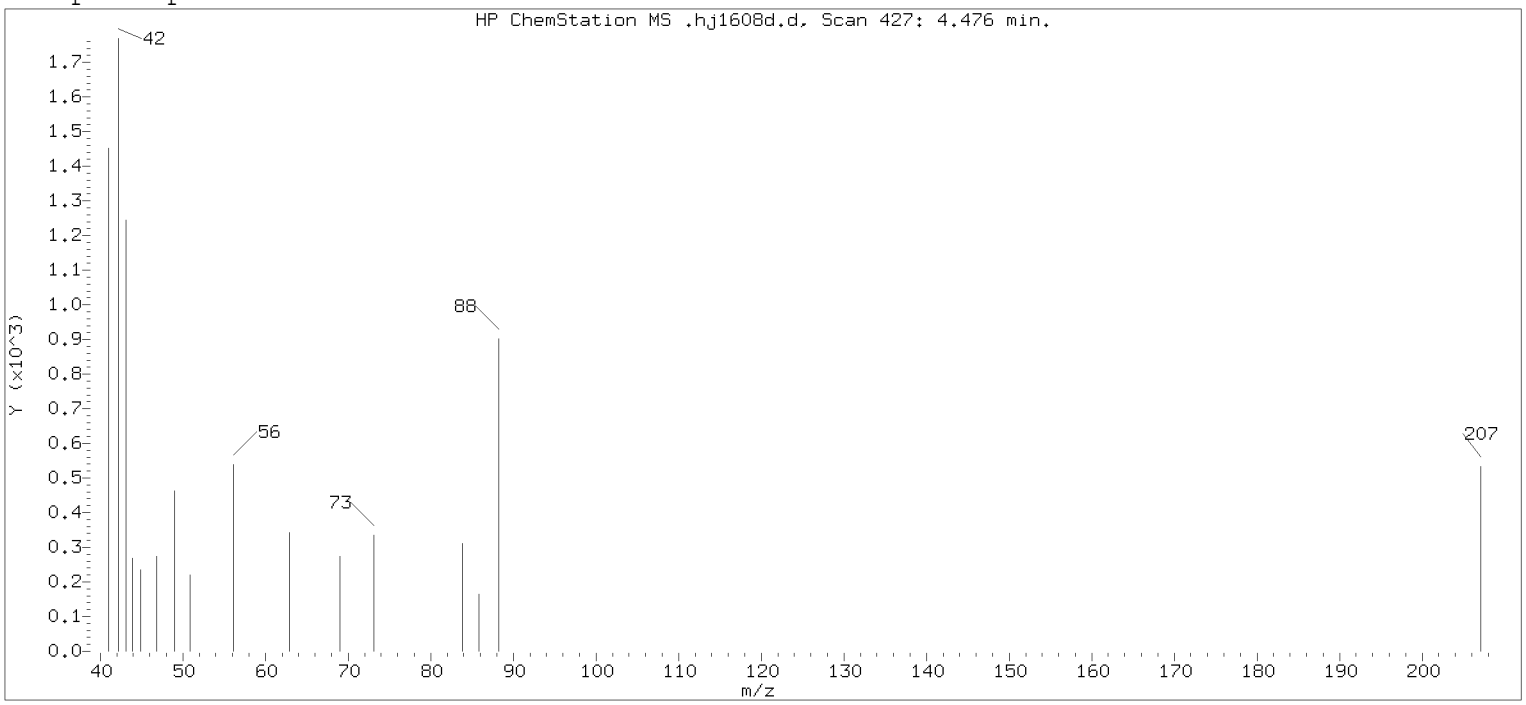
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 429
Retention Time (minutes) : 4.487
Quant Ion : 88.00
Area (flag) : 8722M
On-Column Amount (ng/ul) : 0.1878
Integration start scan : 411 Integration stop scan: 446
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

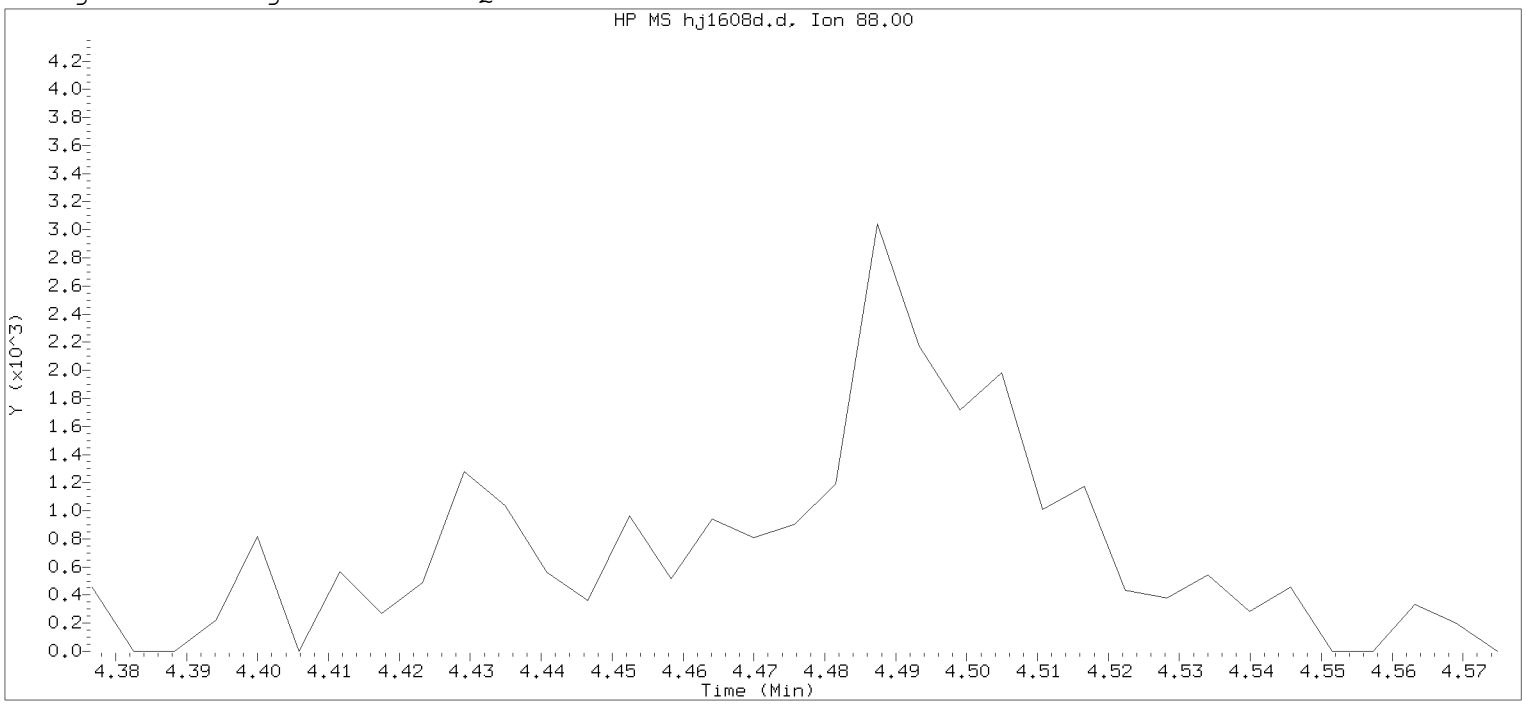
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

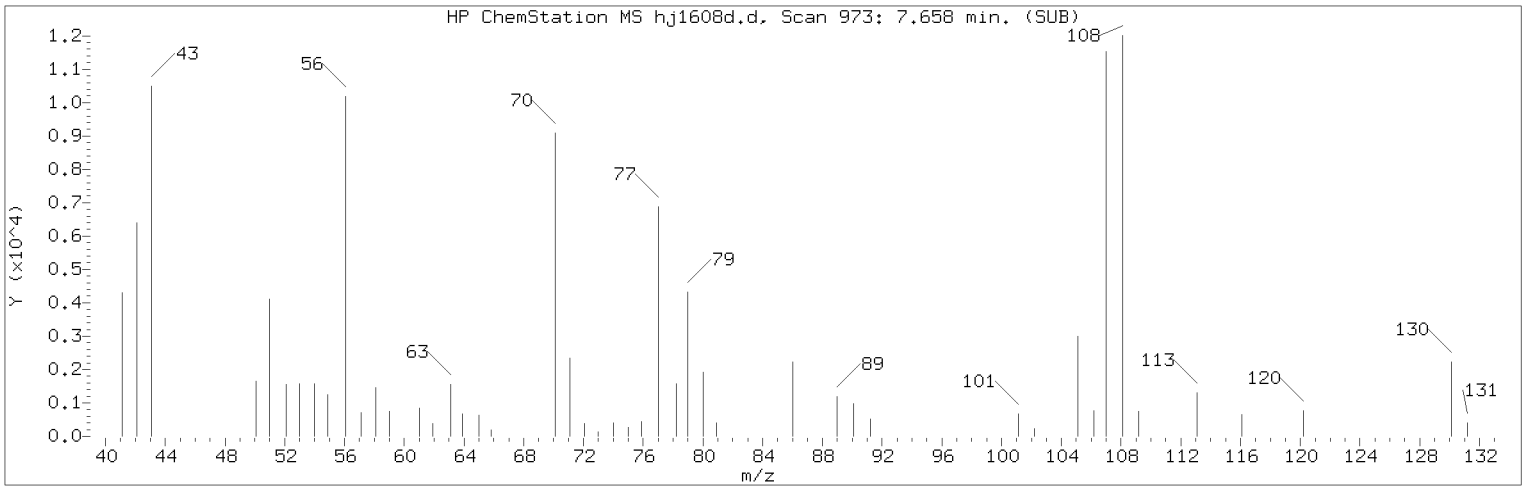
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

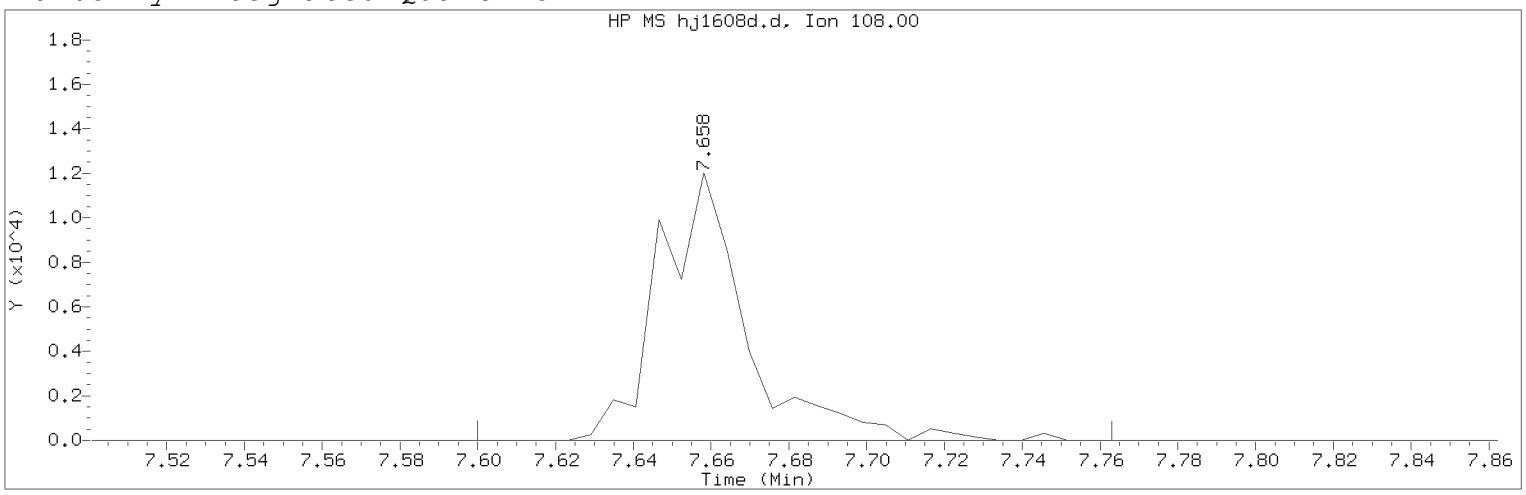
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.476
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used [illegible]

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

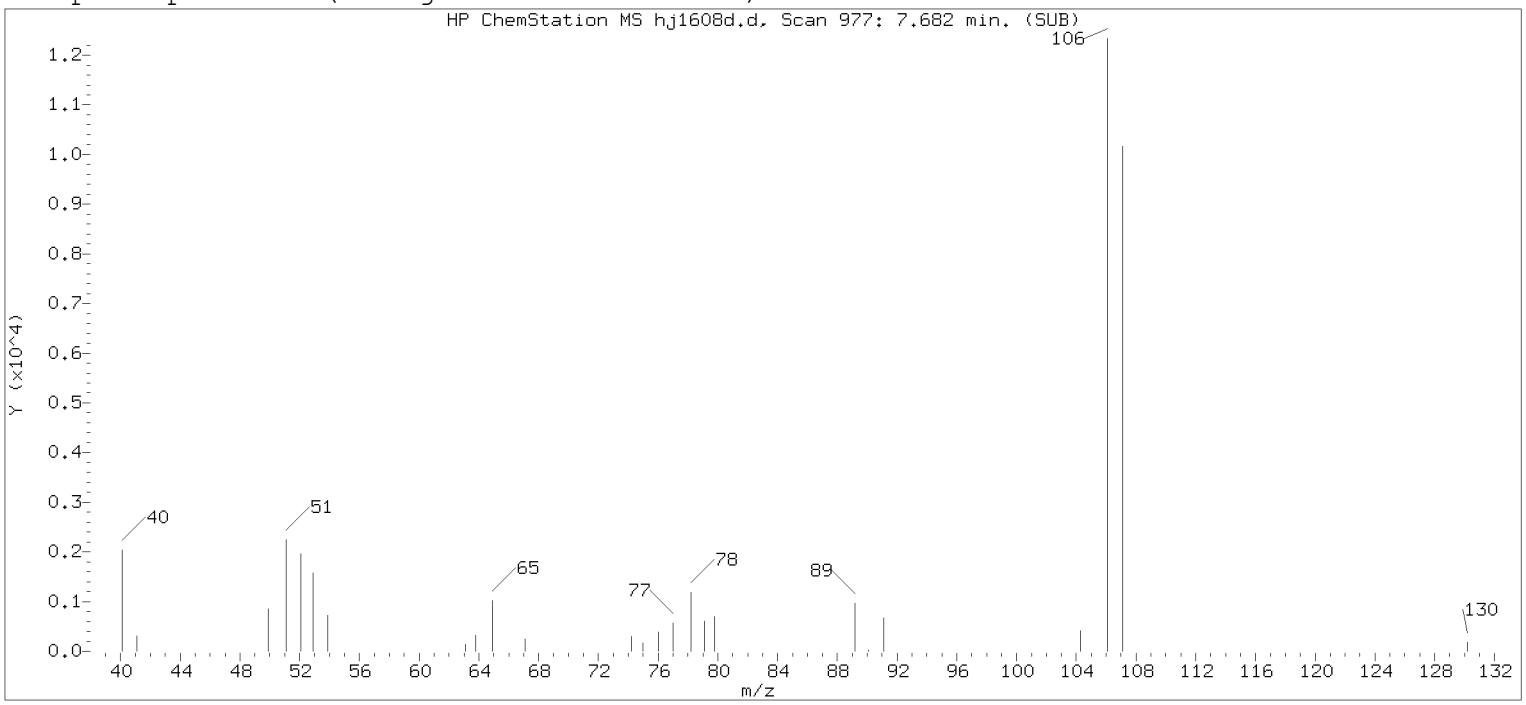
Compound Number : 38
Compound Name : 4-Methylphenol
Scan Number : 973
Retention Time (minutes) : 7.658
Quant Ion : 108.00
Area (flag) : 19002M
On-Column Amount (ng/ul) : 0.2463
Integration start scan : 962 Integration stop scan: 990
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

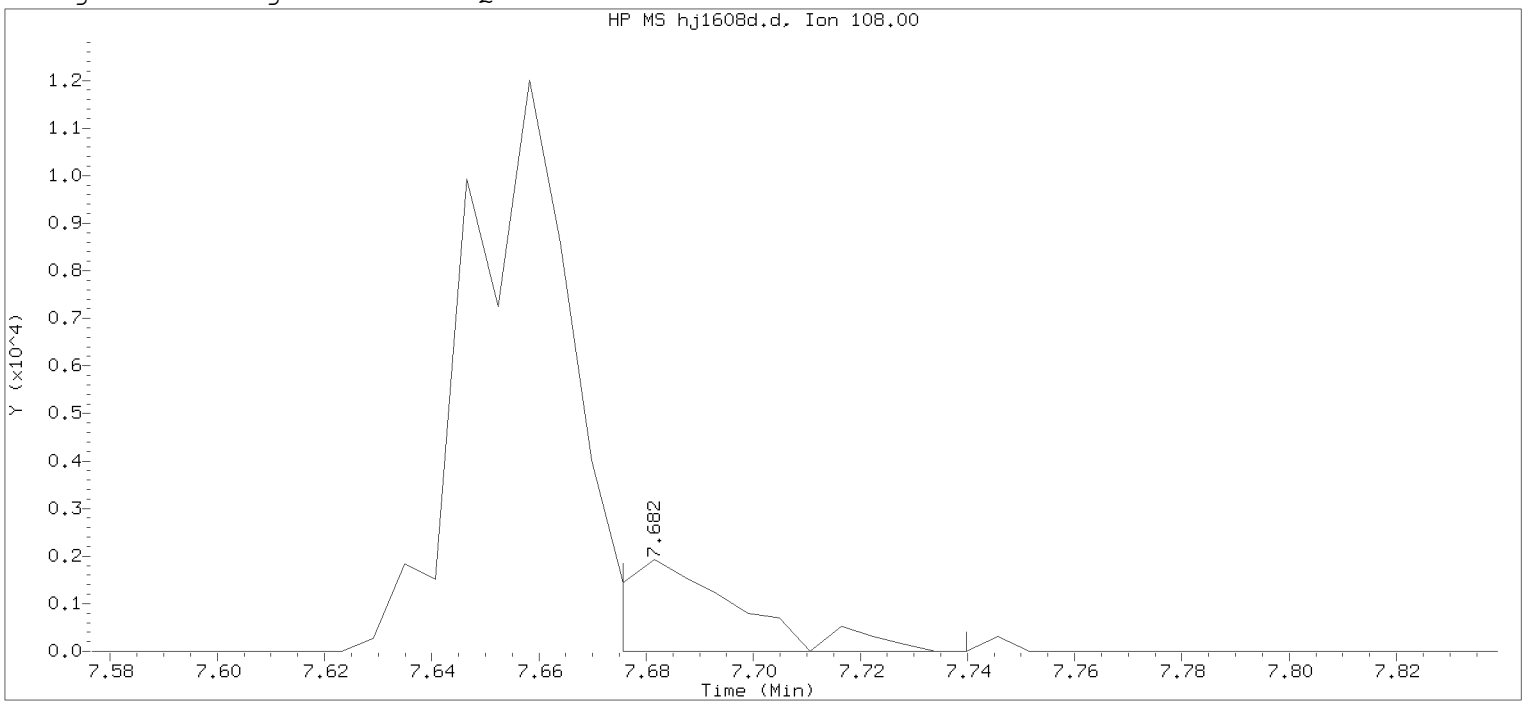
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

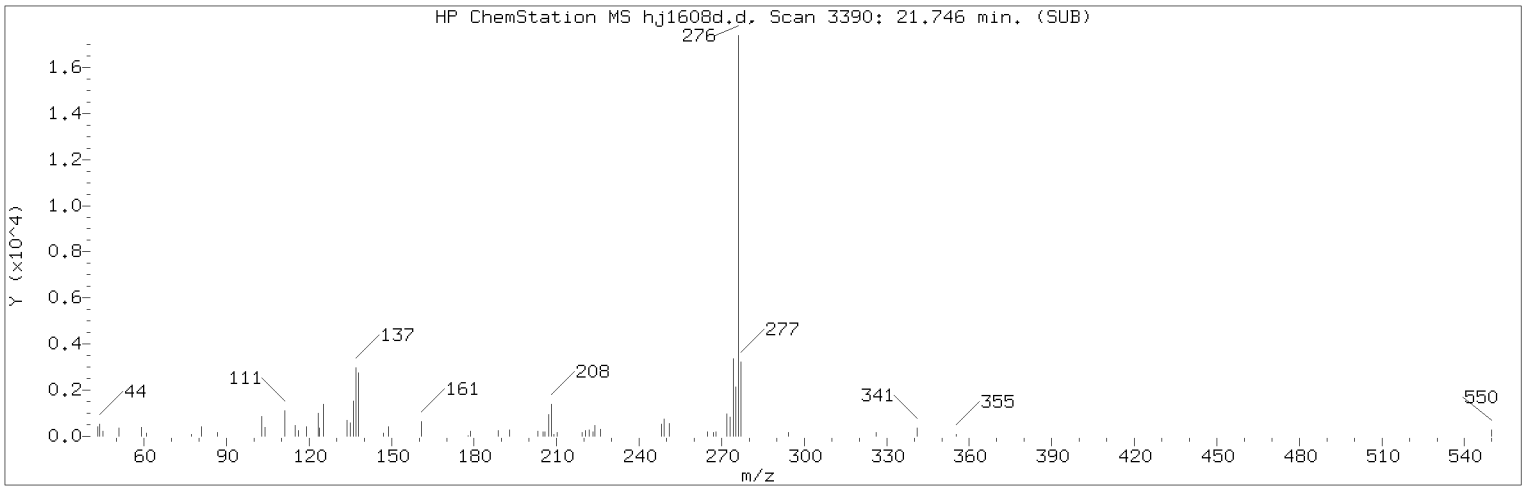
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

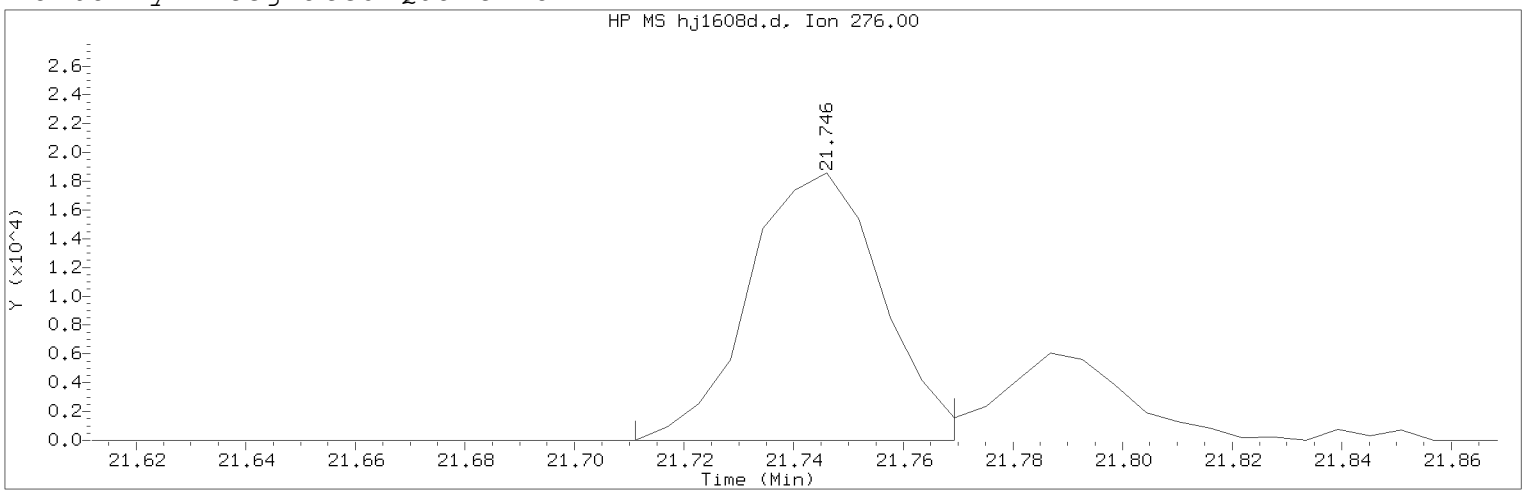
Compound Number	: 38		
Compound Name	: 4-Methylphenol		
Scan Number	: 977		
Retention Time (minutes)	: 7.682		
Quant Ion	: 108.00		
Area	: 2765		
On-column Amount (ng/ul)	: 0.0417		
Integration start scan	: 975	Integration stop scan:	986
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:32 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

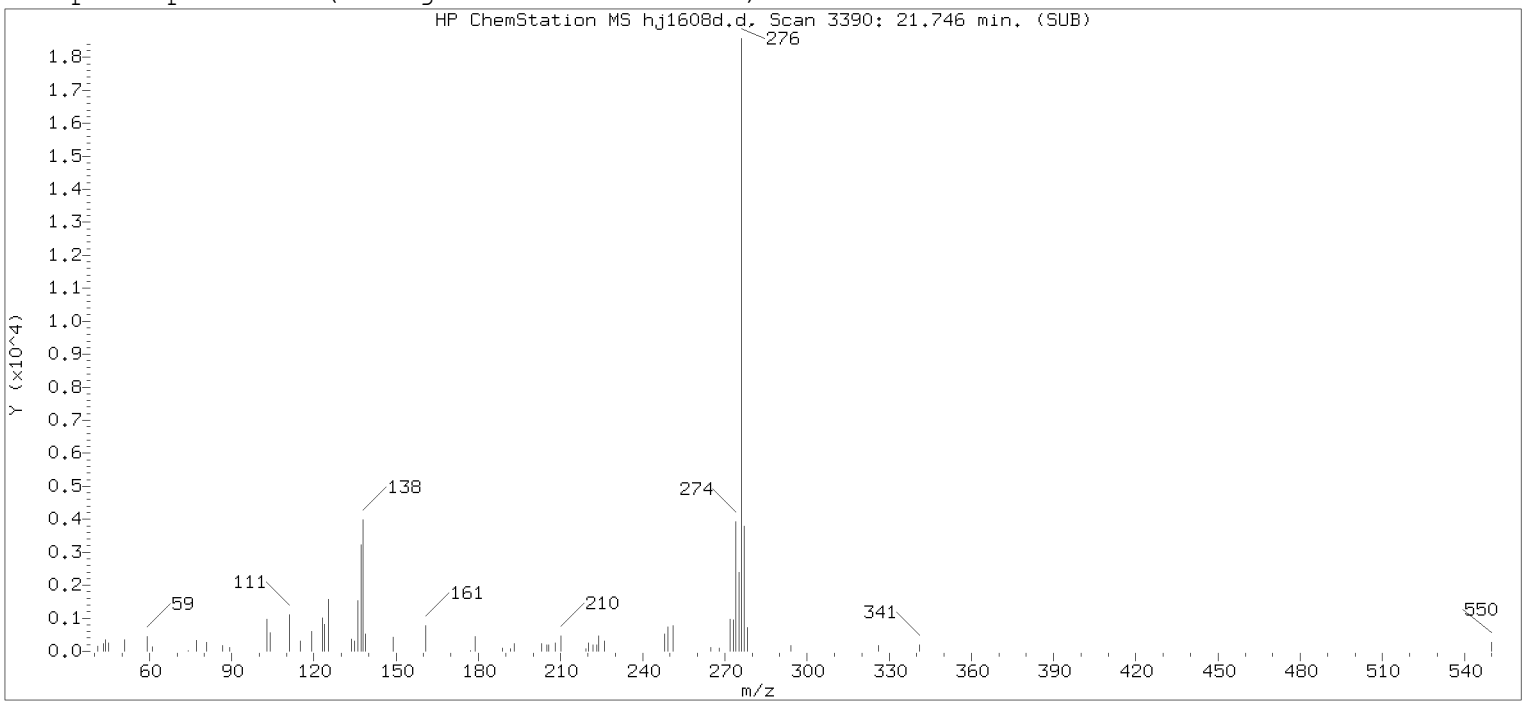
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3390
Retention Time (minutes) : 21.746
Quant Ion : 276.00
Area (flag) : 31210M
On-Column Amount (ng/ul) : 0.2147
Integration start scan : 3383 Integration stop scan: 3393
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

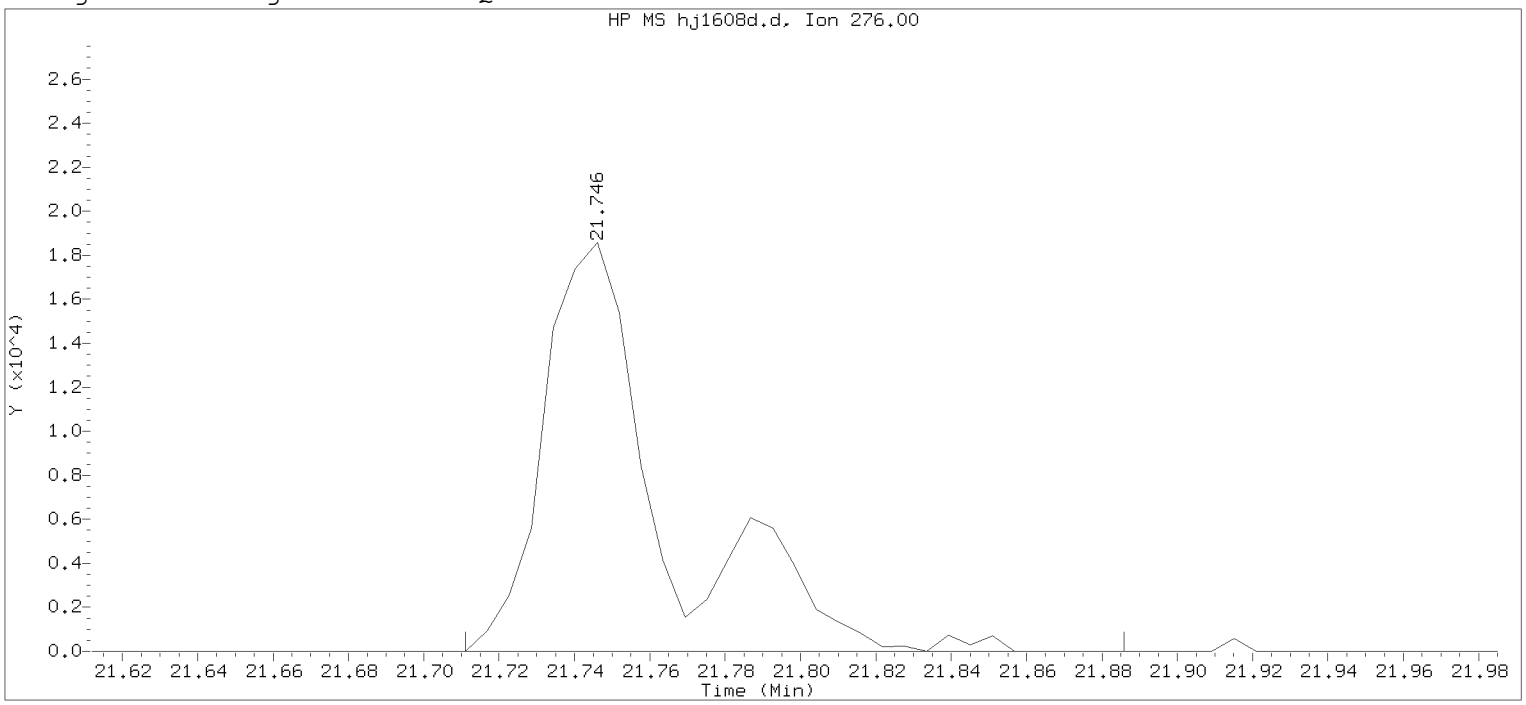
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



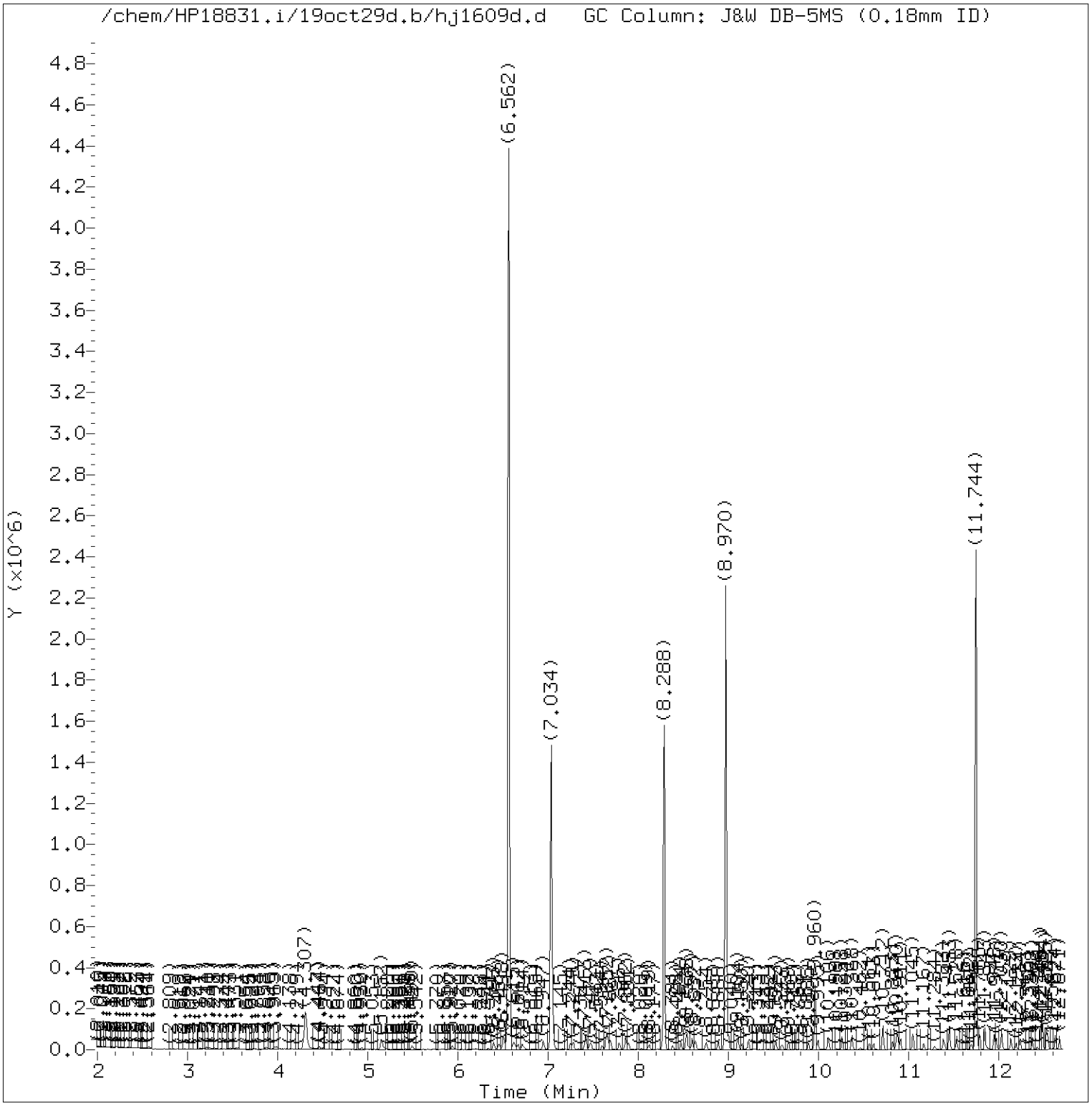
Data File: /chem/HP18831.i/19oct29d.b/hj1608d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 01:49 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.25 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3390		
Retention Time (minutes)	: 21.746		
Quant Ion	: 276.00		
Area	: 41114		
On-column Amount (ng/ul)	: 0.2259		
Integration start scan	: 3383	Integration stop scan:	3413
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with 2021 version



Total Ion Chromatogram (TIC)

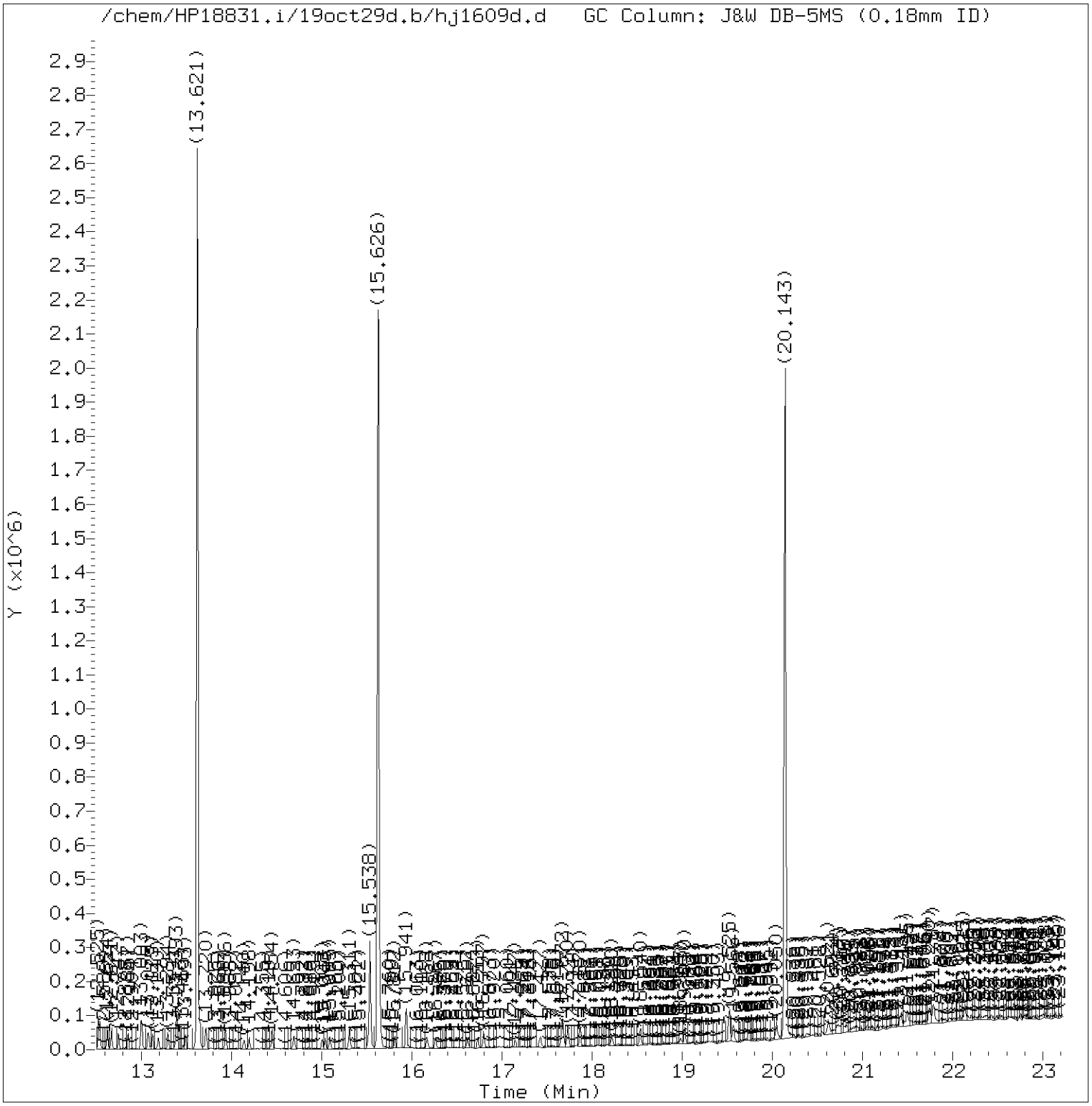
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.576	88	5068	0.105
5) N-Nitrosodimethylamine	(1)	3.147	74	4334	0.062
6) Pyridine	(1)	3.223	79	11249M	0.092
8) 2-Picoline	(1)	4.312	93	11692	0.091
9) N-Nitrosomethylethylamine	(1)	4.476	88	4995	0.092
10) Methyl methanesulfonate	(1)	4.936	80	4939	0.085
12)$2-Fluorophenol	(1)	5.152	112	17775	0.182
14) N-Nitrosodiethylamine	(1)	5.484	102	6748	0.131
43) Total Cresols	(1)			20165	0.226
16) Ethyl methanesulfonate	(1)	5.927	109	4487	0.086
17) Benzaldehyde	(1)	6.399	77	8782	0.113
18)$Phenol-d6	(1)	6.498	99	28174	0.223
19) Phenol	(1)	6.522	94	11906	0.086
20) Aniline	(1)	6.551	93	17251	0.108
23) bis(2-Chloroethyl)ether	(1)	6.667	93	10951	0.103
24) 2-Chlorophenol	(1)	6.720	128	10241	0.110
25) 1,3-Dichlorobenzene	(1)	6.953	146	13796	0.139
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	318095	5.000
27) 1,4-Dichlorobenzene	(1)	7.064	146	11308	0.112
28) Benzyl alcohol	(1)	7.244	108	7134	0.121
29) 1,2-Dichlorobenzene	(1)	7.279	146	11812	0.124
100) Isosafrole	(3)			7783	0.103
31) Indene	(1)	7.413	115	16224	0.117
32) 2-Methylphenol	(1)	7.419	108	8881	0.104
35) bis(2-Chloroisopropyl)ether	(1)	7.466	45	26329	0.135
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.466	45	26329	0.135
36) N-Nitrosopyrrolidine	(1)	7.600	100	6063	0.130
37) Acetophenone	(1)	7.641	105	15580	0.119
38) 4-Methylphenol	(1)	7.652	108	11284	0.122
39) N-Nitroso-di-n-propylamine	(1)	7.658	70	8039	0.117
40) N-Nitrosomorpholine	(1)	7.670	56	10051	0.119
41) o-Toluidine	(1)	7.687	106	16628	0.115
44) Hexachloroethane	(1)	7.786	117	5564	0.135
45)$Nitrobenzene-d5	(2)	7.856	82	26399	0.259
46) Nitrobenzene	(2)	7.891	77	11915	0.116
125) 2,4_2,6-Dinitrotoluenes	(3)			9270	0.198
50) N-Nitrosopiperidine	(2)	8.113	114	4840	0.104
52) Isophorone	(2)	8.270	82	22742	0.122
53) 2-Nitrophenol	(2)	8.387	139	4351	0.091
55) 2,4-Dimethylphenol	(2)	8.474	107	10988	0.113

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
58) Benzoic acid	(2)	8.532	105	32619M	0.522
59) O,O,O-Triethylphosphorothioate	(2)	8.597	198	4819	0.111
57) bis(2-Chloroethoxy)methane	(2)	8.632	93	16099	0.139
62) 2,4-Dichlorophenol	(2)	8.754	162	8232	0.114
151) Diallate trans/cis	(4)			10108	0.118
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	8974	0.115
68)*Naphthalene-d8	(2)	8.970	136	1211602	5.000
70) 4-Chloroaniline	(2)	9.104	127	11732	0.116
71) 2,6-Dichlorophenol	(2)	9.109	162	7587	0.107
72) Hexachloropropene	(2)	9.150	213	4808	0.111
74) Hexachlorobutadiene	(2)	9.220	225	4514	0.098
78) Quinoline	(2)	9.523	129	19411	0.123
79) Caprolactam	(2)	9.599	113	2483M	0.097
80) N-Nitrosodi-n-butylamine	(2)	9.663	84	7987	0.108
83) 4-Chloro-3-methylphenol	(2)	9.885	107	9462	0.118
85) Safrole	(2)	9.995	162	8005	0.119
88) Hexachlorocyclopentadiene	(3)	10.368	237	5944	0.114
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.368	216	8476	0.114
91) cis-Isosafrole	(3)	10.462	162	1142	0.016
93) 2,4,6-Trichlorophenol	(3)	10.561	196	4314	0.088
95) 2,4,5-Trichlorophenol	(3)	10.613	196	4944	0.094
96)$2-Fluorobiphenyl	(3)	10.712	172	45308	0.246
97) trans-Isosafrole	(3)	10.823	162	6641	0.087
98) 1,1'-Biphenyl	(3)	10.870	154	23286	0.114
101) 1-Chloronaphthalene	(3)	10.911	162	16046	0.110
103) Diphenyl ether	(3)	11.045	170	13694	0.123
104) 2-Nitroaniline	(3)	11.050	138	5016	0.093
108) 1,4-Naphthoquinone	(3)	11.167	158	5723	0.086
109) 1,4-Dinitrobenzene	(3)	11.284	168	2132	0.075
110) Dimethylphthalate	(3)	11.383	163	19637	0.115
111) 1,3-Dinitrobenzene	(3)	11.400	168	2657	0.084
113) 2,6-Dinitrotoluene	(3)	11.458	165	3377	0.086
117) 3-Nitroaniline	(3)	11.692	138	3516	0.079
118)*Acenaphthene-d10	(3)	11.744	164	549326	5.000
120) 2,4-Dinitrophenol	(3)	11.843	184	13765	0.489
121) 4-Nitrophenol	(3)	11.948	109	9573	0.314
122) Pentachlorobenzene	(3)	11.971	250	7643	0.117
123) 2,4-Dinitrotoluene	(3)	12.030	165	5893	0.112
124) Dibenzofuran	(3)	12.030	168	28873	0.129
126) 1-Naphthylamine	(3)	12.129	143	17415	0.113

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
127) 2,3,4,6-Tetrachlorophenol	(3)	12.193	232	3576	0.083
128) 2-Naphthylamine	(3)	12.234	143	17166	0.113
129) Diethylphthalate	(3)	12.368	149	19681	0.105
130) Thionazin	(3)	12.461	107	3947	0.112
132) 4-Chlorophenyl-phenylether	(3)	12.484	204	10034	0.117
134) 4-Nitroaniline	(3)	12.484	138	5004	0.108
133) 5-Nitro-o-toluidine	(3)	12.484	152	5468	0.102
135) 4,6-Dinitro-2-methylphenol	(4)	12.525	198	11586	0.350
136) N-Nitrosodiphenylamine	(4)	12.624	169	17567	0.112
137) NDPA as diphenylamine	(4)	12.624	169	17567	0.112
139) 1,2-Diphenylhydrazine	(4)	12.671	77	24358	0.129
140)$2,4,6-Tribromophenol	(3)	12.752	330	5143	0.206
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	3636	0.110
145) Diallate (peak 1)	(4)	12.997	86	8582	0.097
146) Phorate	(4)	13.003	75	12947	0.114
147) Phenacetin	(4)	13.009	108	9716	0.102
148) 4-Bromophenyl-phenylether	(4)	13.079	248	5135	0.112
149) Diallate (peak 2)	(4)	13.102	86	1526	0.021
152) Dimethoate	(4)	13.190	87	7500	0.103
153) Atrazine	(4)	13.294	200	3970	0.097
154) Pentachlorophenol	(4)	13.376	266	1434	0.042
156) Pentachloronitrobenzene	(4)	13.393	237	2422	0.115
155) 4-Aminobiphenyl	(4)	13.399	169	11629	0.114
157) Pronamide	(4)	13.493	173	7979	0.102
158)*Phenanthrene-d10	(4)	13.621	188	1063177	5.000
159) Dinoseb	(4)	13.638	211	1917	0.039
168) Carbazole	(4)	13.936	167	27891	0.115
169) Methyl parathion	(4)	14.140	109	5280	0.086
170) Di-n-butylphthalate	(4)	14.454	149	29799	0.092
172) Parathion	(4)	14.693	109	2660	0.068
173) 4-Nitroquinoline-1-oxide	(4)	14.699	190	1065	0.034
174) Octachlorostyrene	(4)	15.043	308	1871	0.096
176) Isodrin	(4)	15.095	193	4116	0.136
179) Benzidine	(5)	15.538	184	148844	0.818
180)*Pyrene-d10	(5)	15.626	212	1020800	5.000
184)$Terphenyl-d14	(5)	15.941	244	39617	0.211
187) p-Dimethylaminoazobenzene	(5)	16.180	225	4569	0.095
190) Chlorobenzilate	(5)	16.267	139	8325	0.084
192) 3,3'-Dimethylbenzidine	(5)	16.733	212	13894	0.075
193) Butylbenzylphthalate	(5)	16.797	149	12237	0.083

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

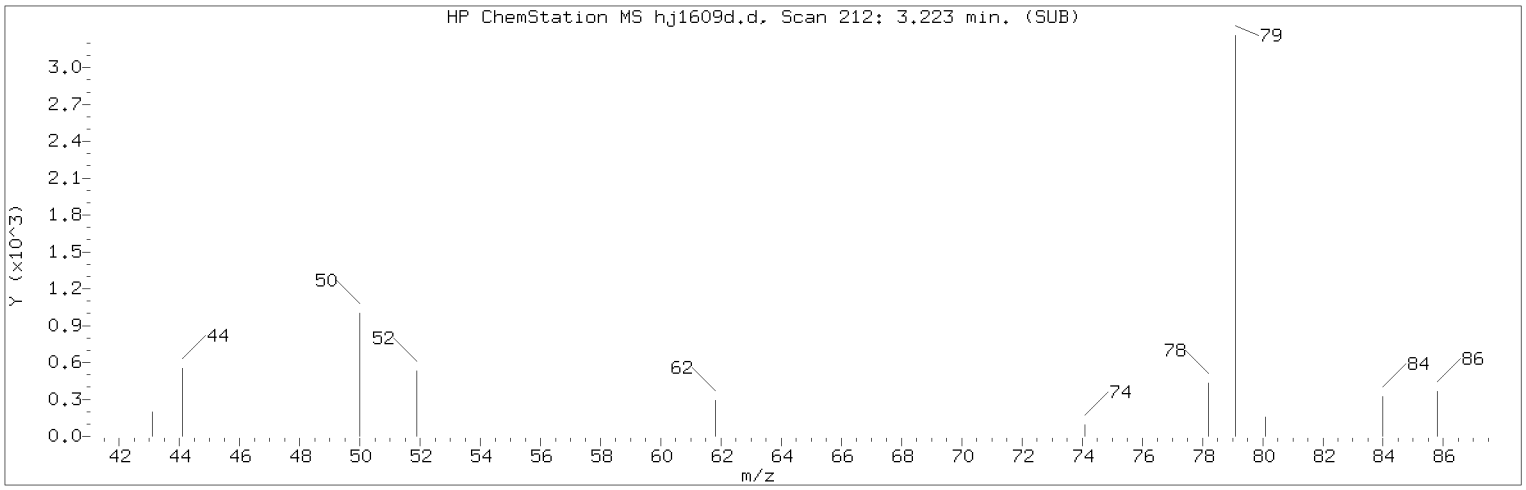
Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
196) 2-Acetylaminofluorene	(5)	17.147	181	5369	0.048
198) 3,3'-Dichlorobenzidine	(5)	17.660	252	8421	0.084
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.672	231	5886	0.108
204) bis(2-Ethylhexyl)phthalate	(5)	17.870	149	16988	0.080
208) 6-Methylchrysene	(5)	18.540	242	19067	0.104
210) Di-n-octylphthalate	(6)	19.030	149	27331	0.079
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.525	256	9184	0.087
218)*Perylene-d12	(6)	20.143	264	980837	5.000
220) 3-Methylcholanthrene	(6)	20.621	268	10872	0.105
222) Dibenz(a,h)acridine	(6)	21.431	279	19756	0.103
223) Dibenz(a,j)acridine	(6)	21.501	279	18132	0.096

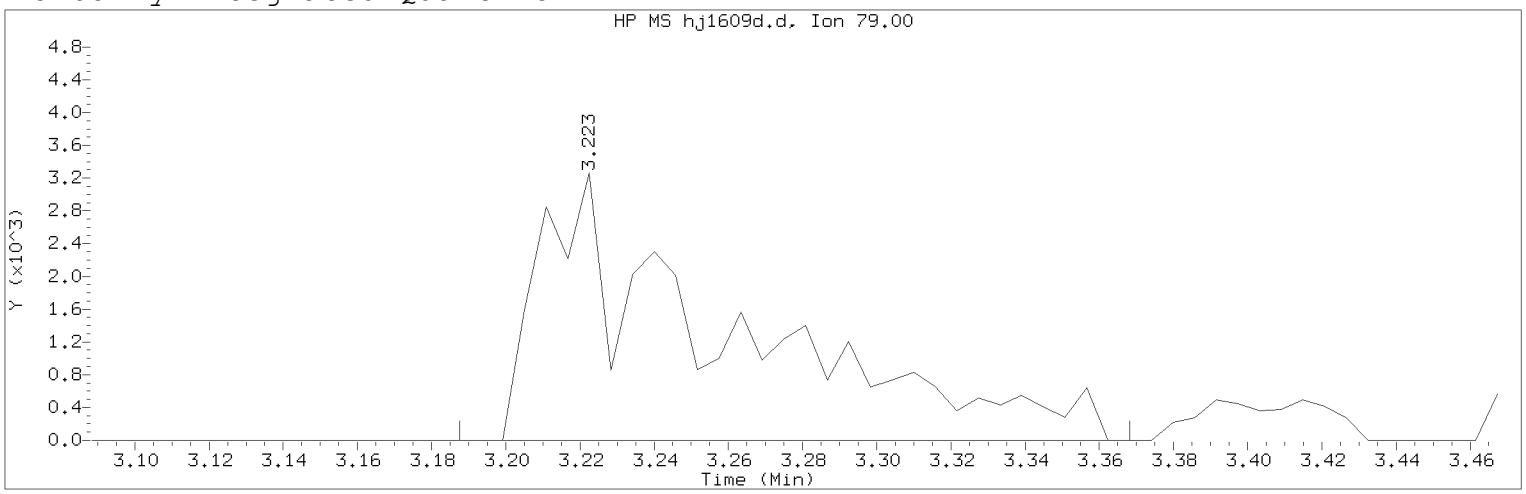
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

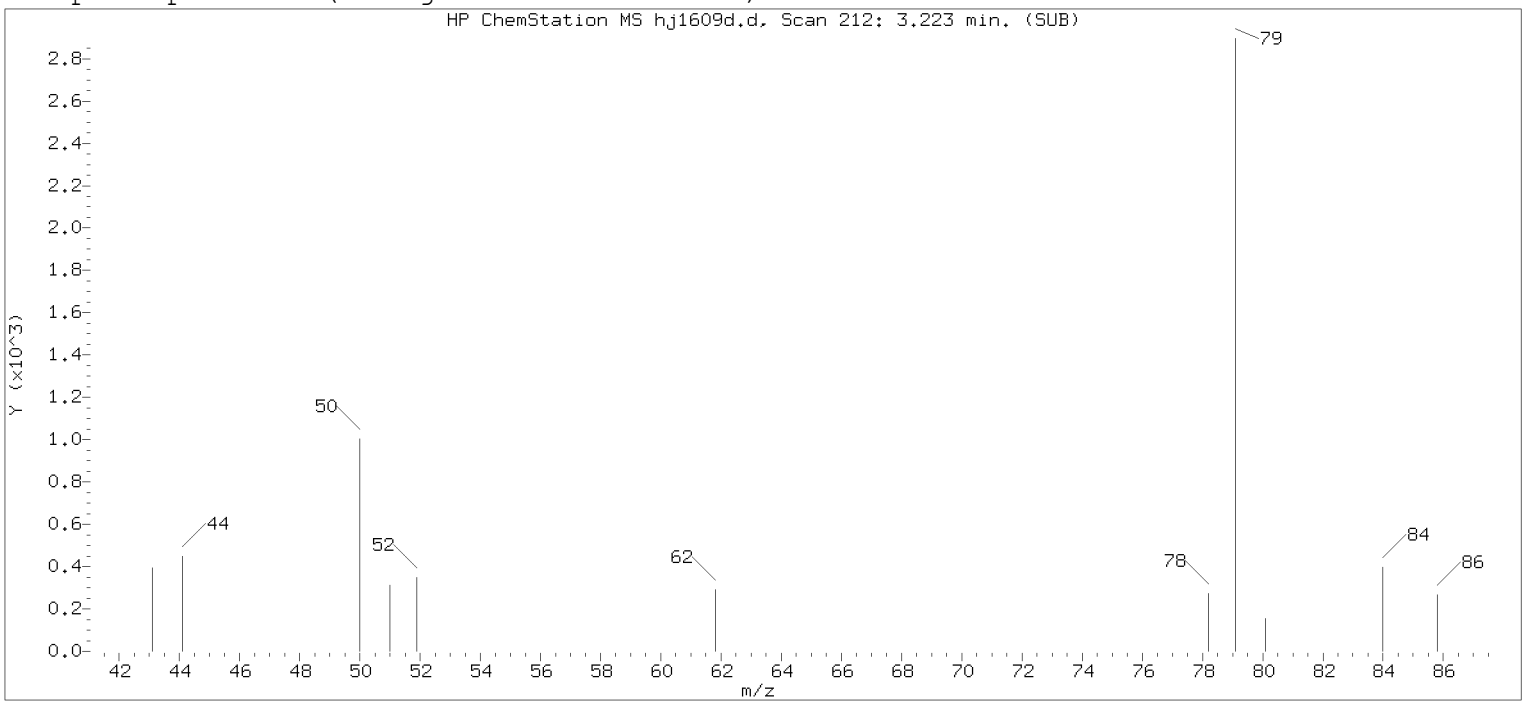
Compound Number : 6
Compound Name : Pyridine
Scan Number : 212
Retention Time (minutes) : 3.223
Quant Ion : 79.00
Area (flag) : 11249M
On-Column Amount (ng/ul) : 0.0922
Integration start scan : 205 Integration stop scan: 236
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

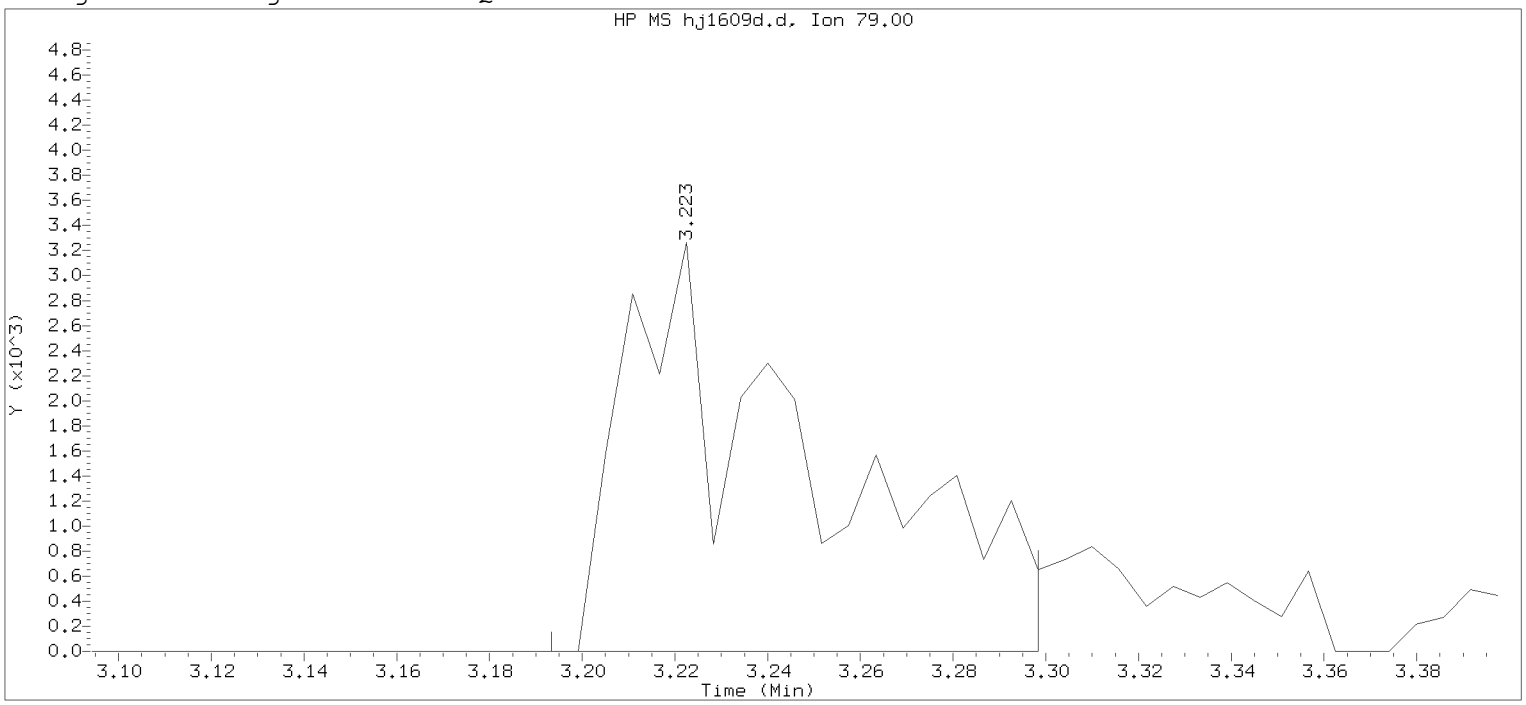
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

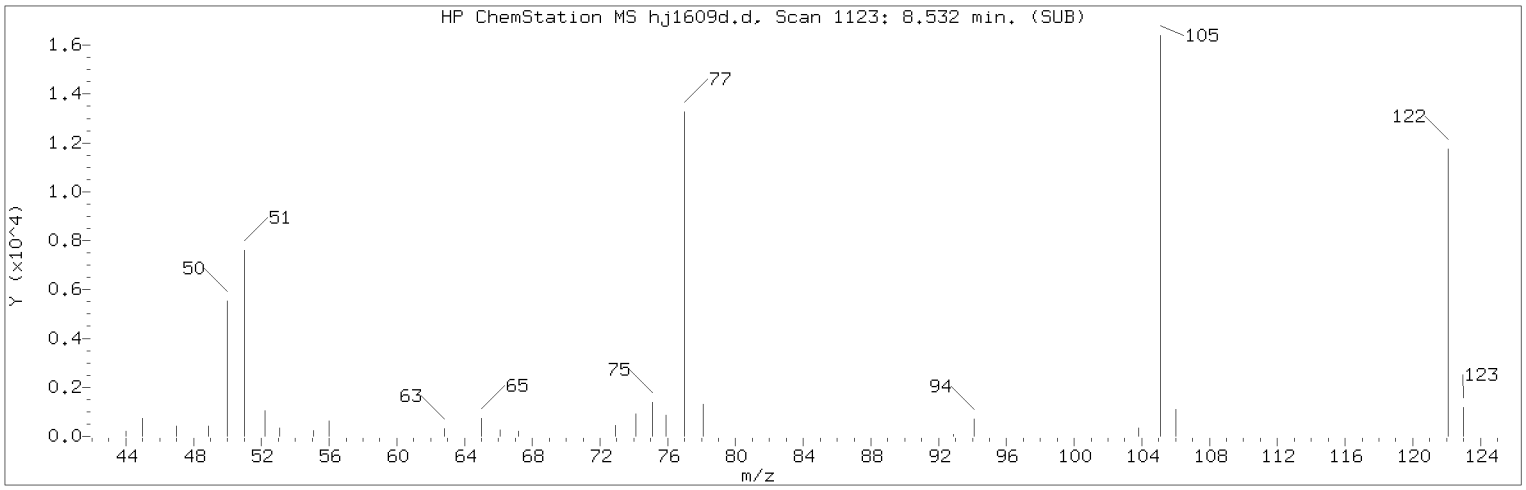
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

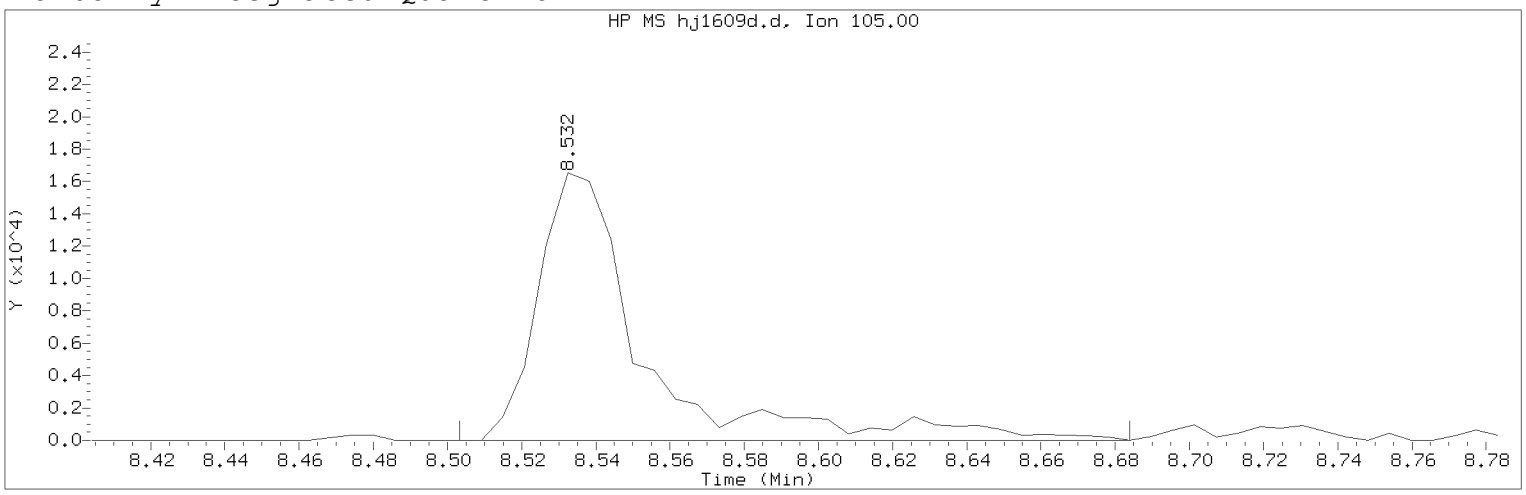
Compound Number	: 6		
Compound Name	: Pyridine		
Scan Number	: 212		
Retention Time (minutes)	: 3.223		
Quant Ion	: 79.00		
Area	: 9244		
On-column Amount (ng/ul)	: 0.0736		
Integration start scan	: 206	Integration stop scan:	224
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

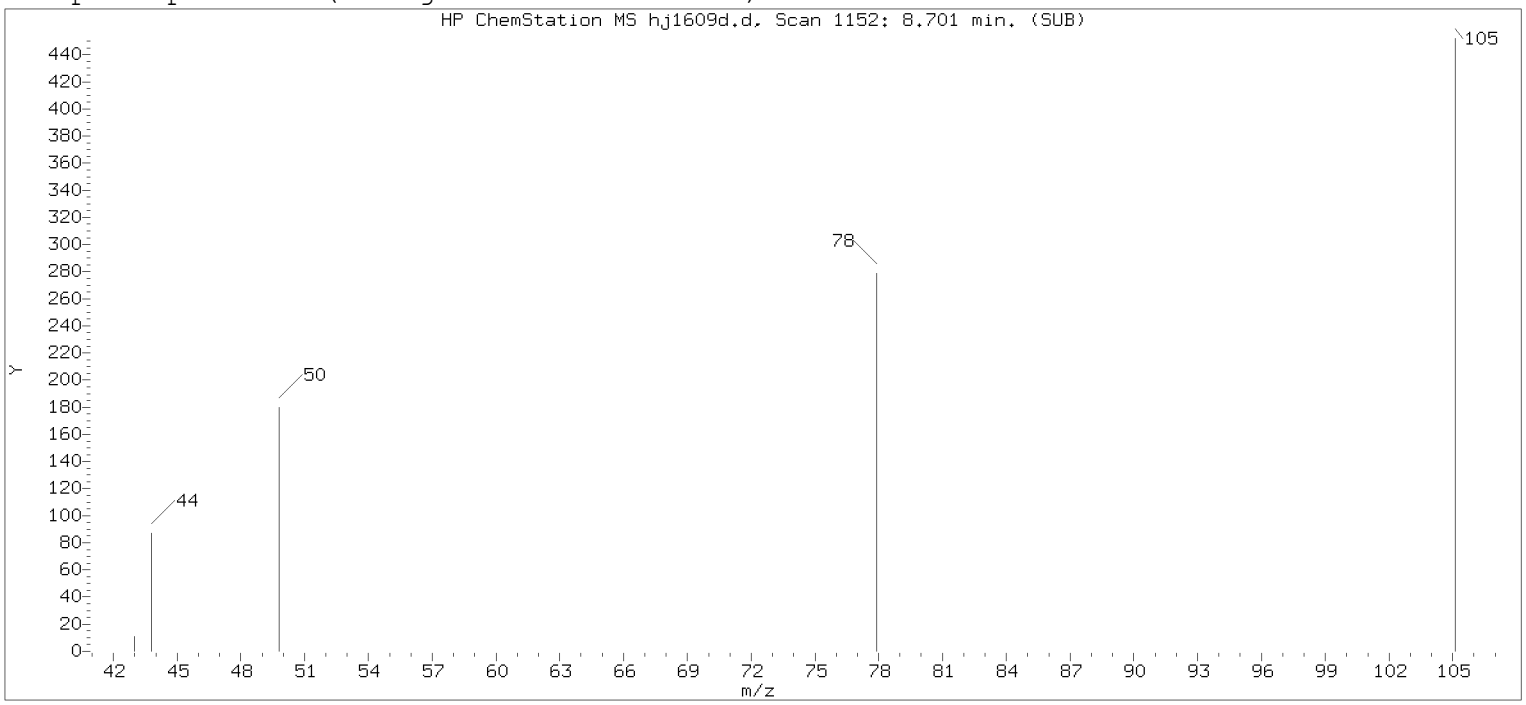
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1123		
Retention Time (minutes)	: 8.532		
Quant Ion	: 105.00		
Area (flag)	: 32619M		
On-Column Amount (ng/ul)	: 0.5224		
Integration start scan	: 1117	Integration stop scan:	1148
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

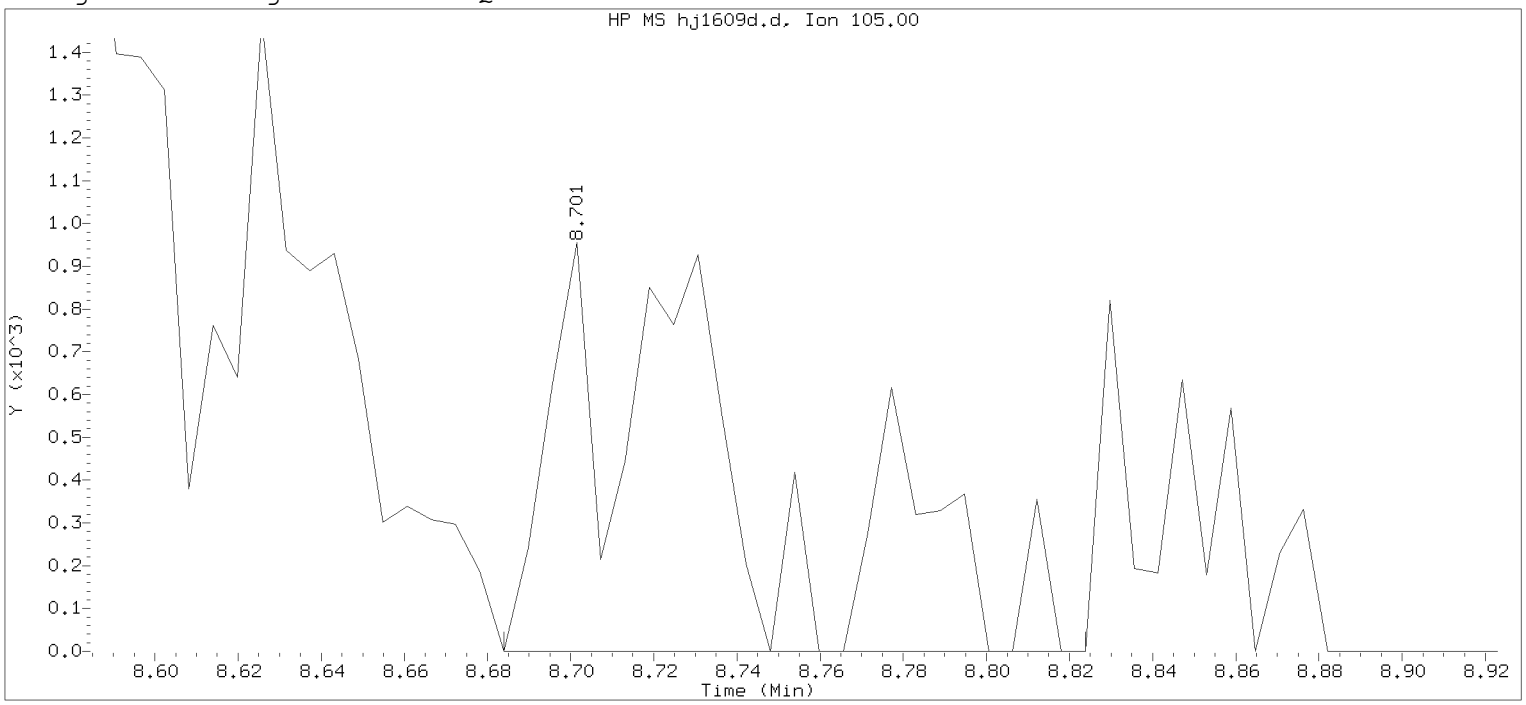
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

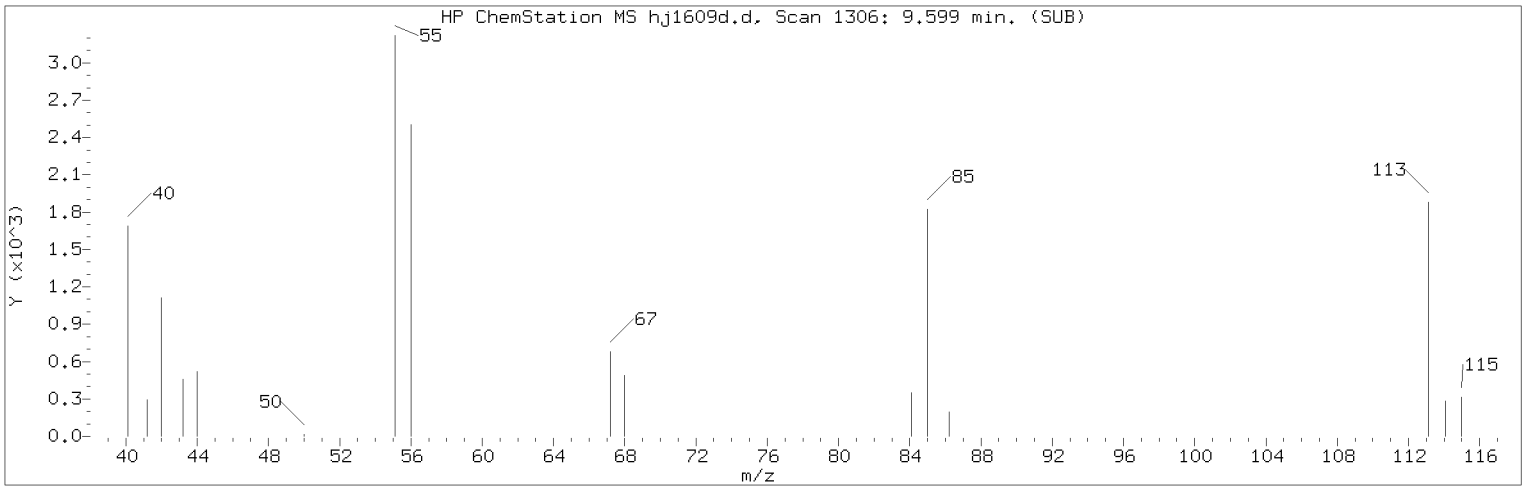
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

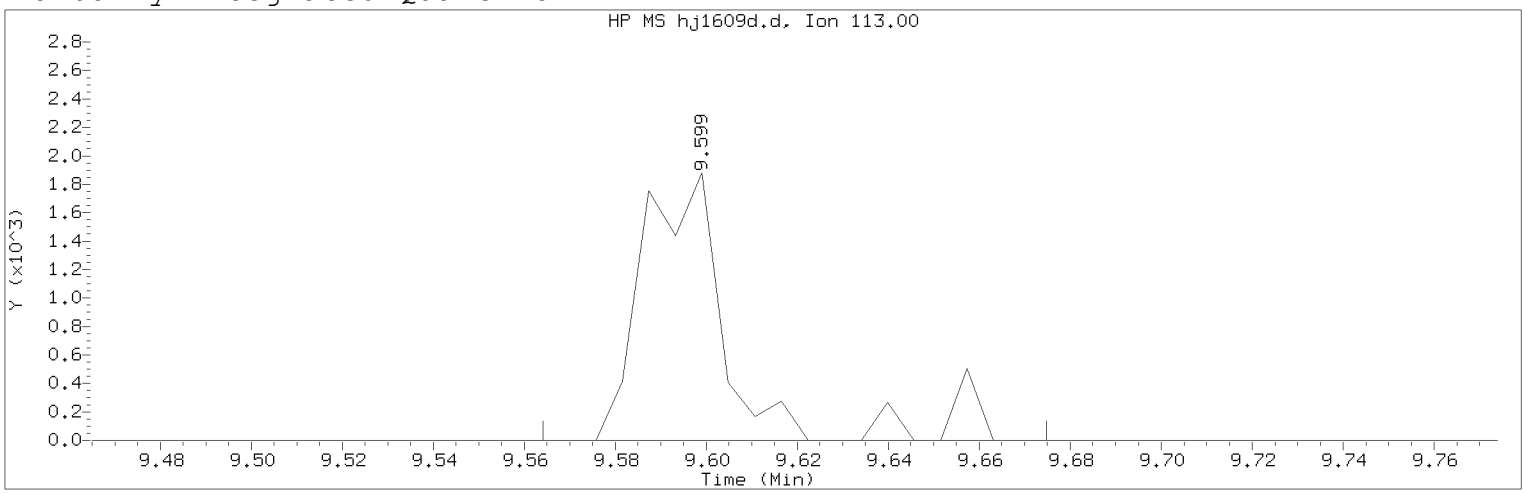
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1152		
Retention Time (minutes)	: 8.701		
Quant Ion	: 105.00		
Area	: 2959		
On-column Amount (ng/ul)	: 0.0477		
Integration start scan	: 1148	Integration stop scan:	1172
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used. RAF48 w/ 2838

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

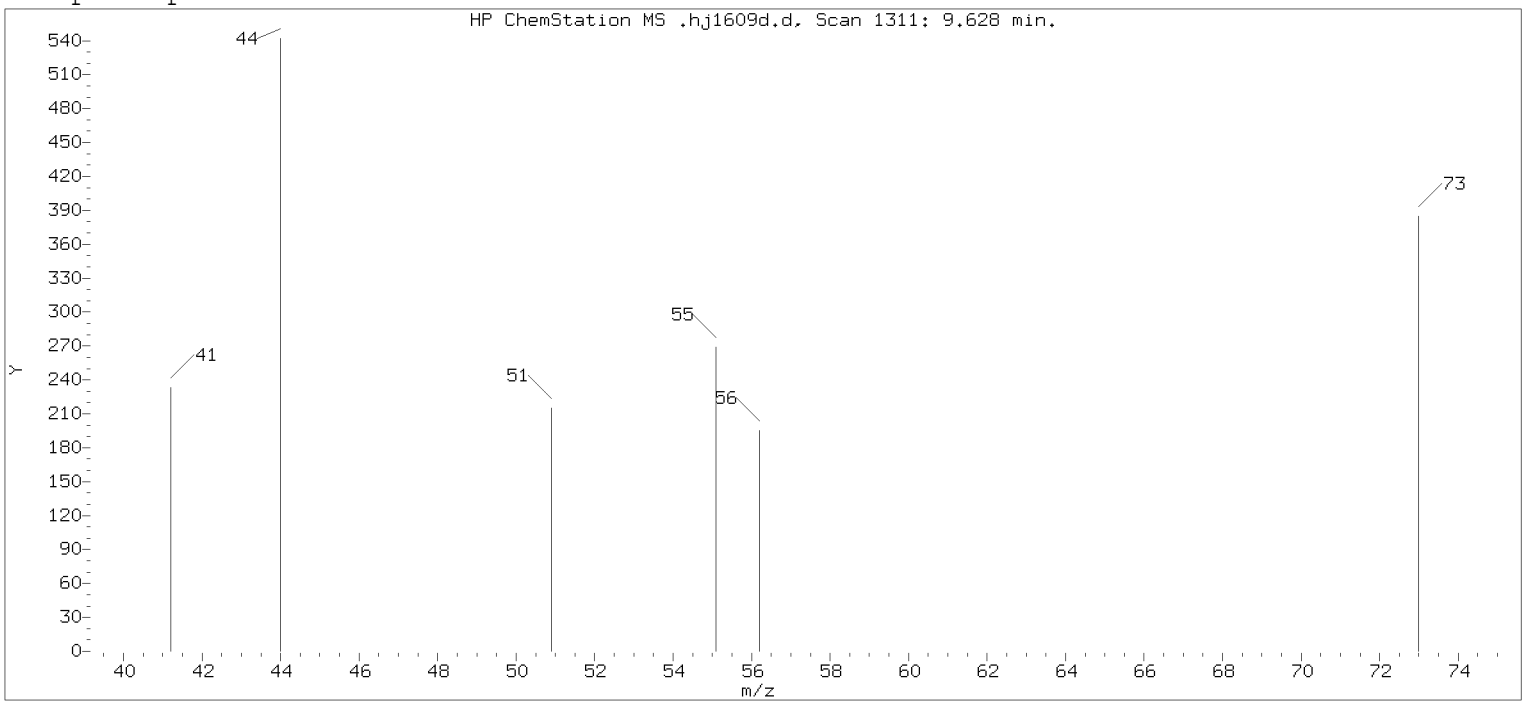
Compound Number : 79
Compound Name : Caprolactam
Scan Number : 1306
Retention Time (minutes) : 9.599
Quant Ion : 113.00
Area (flag) : 2483M
On-Column Amount (ng/ul) : 0.0970
Integration start scan : 1299 Integration stop scan: 1318
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

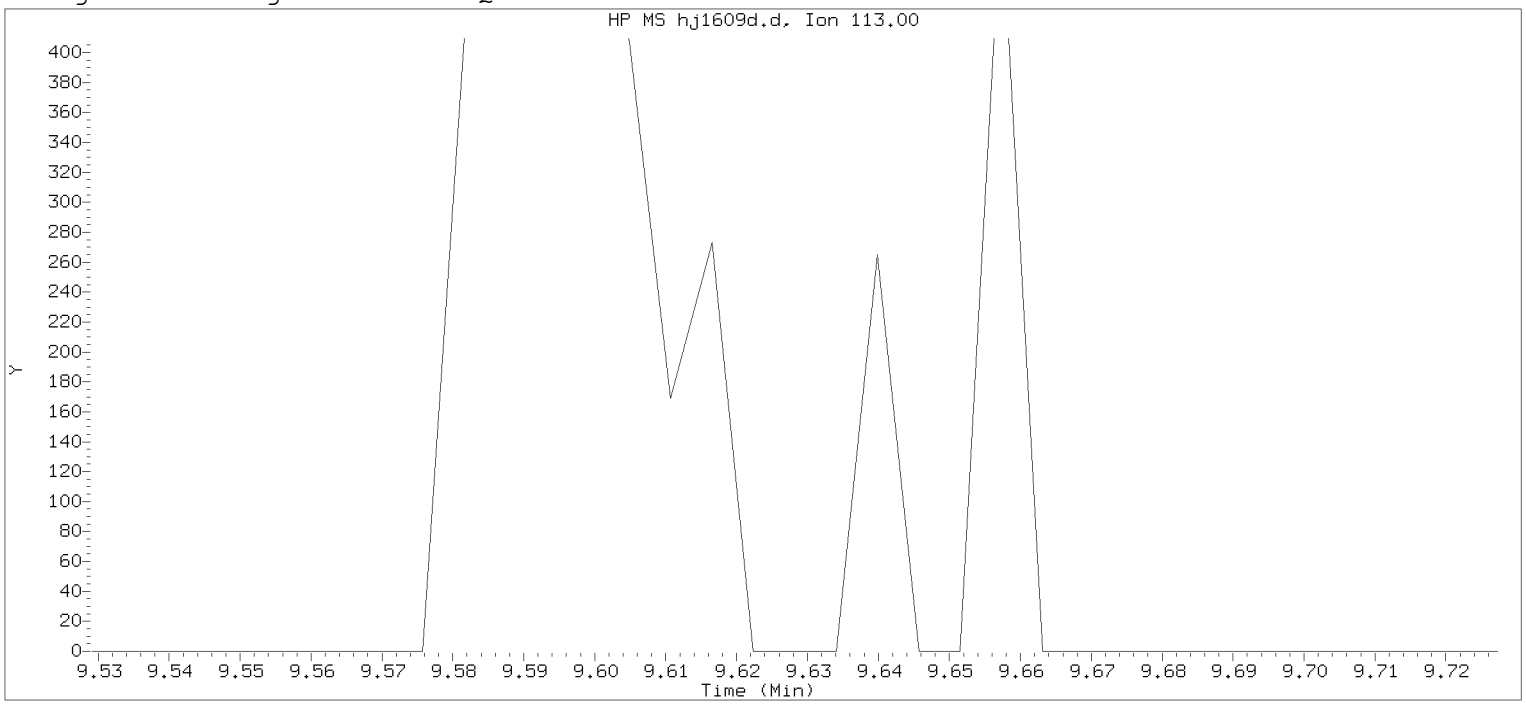
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:39.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



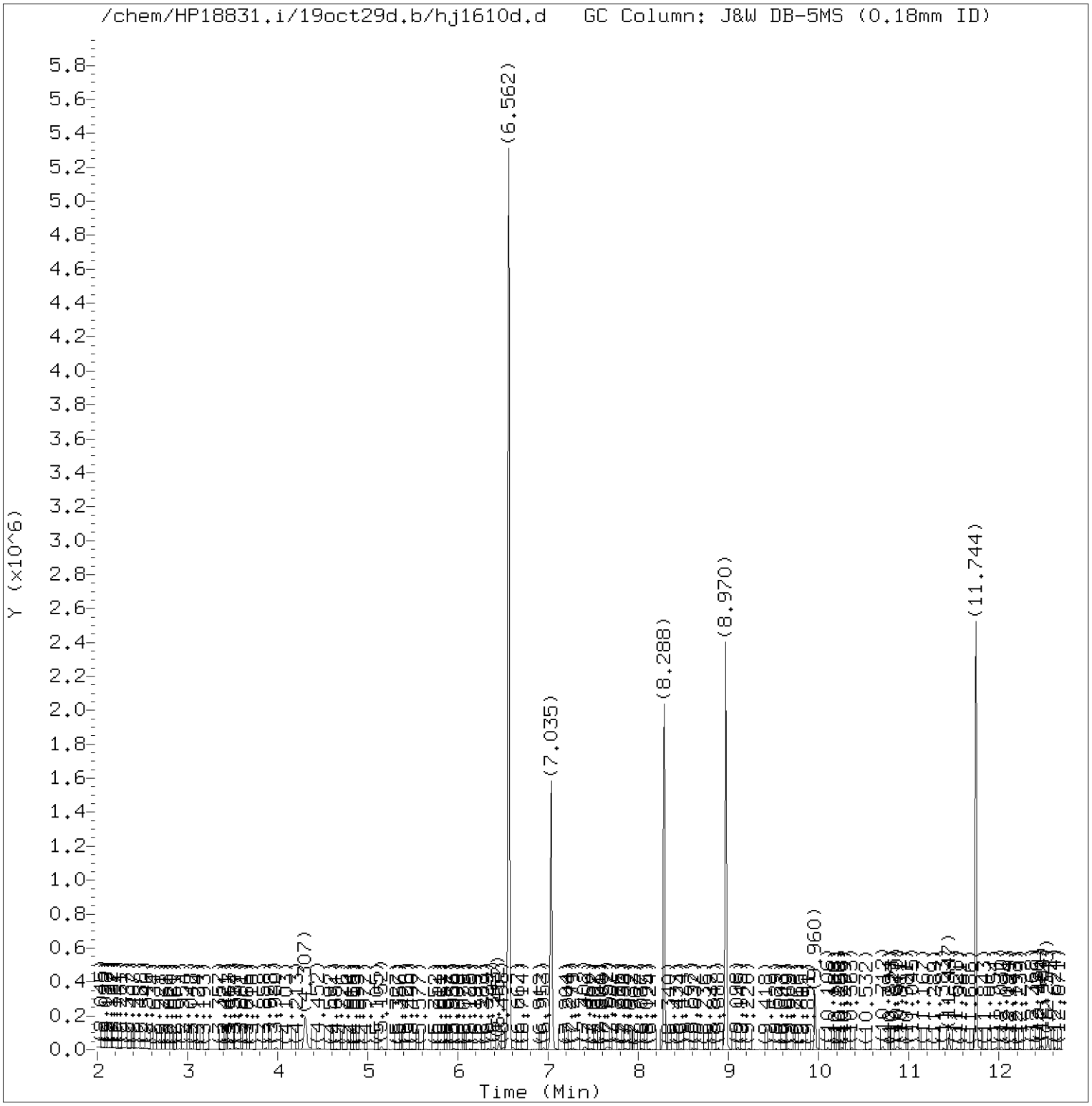
Data File: /chem/HP18831.i/19oct29d.b/hj1609d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:18 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: mdlall1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:24 whs02991

Sample Name: SSTD0.125 Lab Sample ID: rvSTD2709

Compound Number : 79
Compound Name : Caprolactam
Expected RT (minutes) : 9.628
Quant Ion : 113.00

Digitally signed by William H Saadeh on 11/01/2019 at 10:39.
Target 3.5 esignature used [illegible]



Total Ion Chromatogram (TIC)

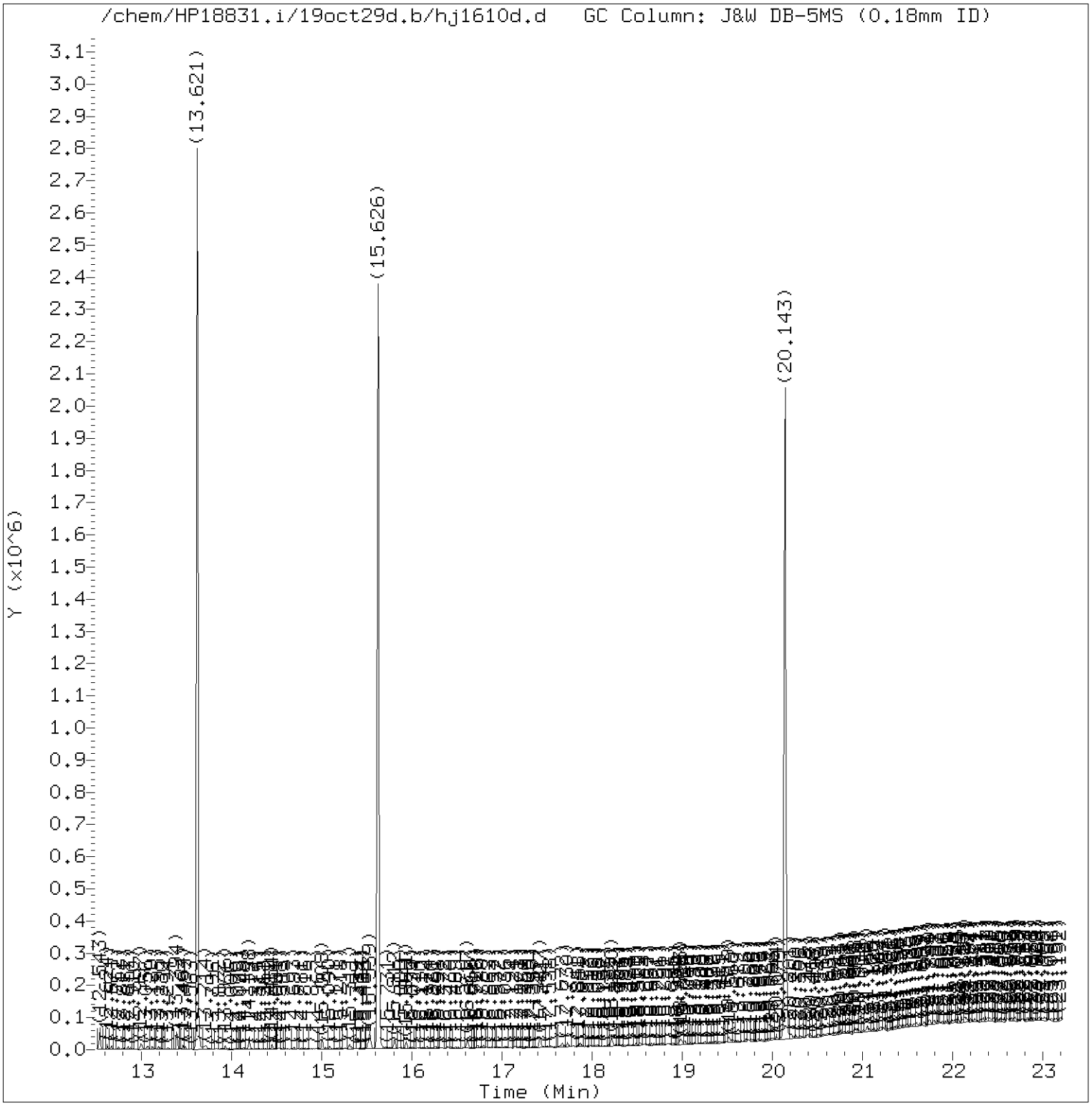
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1610d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:47 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.025 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1610d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:47 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.025 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1610d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:47 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

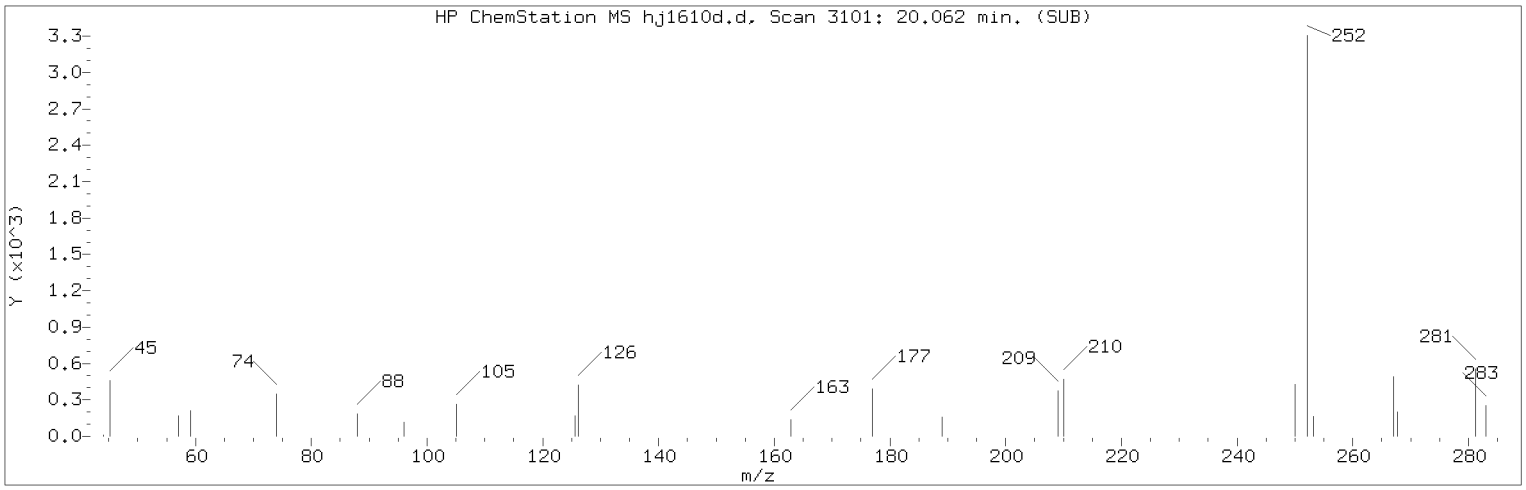
Sample Name: SSTD0.025 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	336026	5.000
45)$Nitrobenzene-d5	(2)	7.856	82	4000	0.037
68)*Naphthalene-d8	(2)	8.970	136	1291388	5.000
69) Naphthalene	(2)	8.999	128	6164	0.022
86) 2-Methylnaphthalene	(2)	10.100	142	4092	0.022
87) 1-Methylnaphthalene	(2)	10.252	142	4627	0.027
96)$2-Fluorobiphenyl	(3)	10.712	172	9155	0.047
99) 2-Chloronaphthalene	(3)	10.876	162	2894	0.018
114) Acenaphthylene	(3)	11.528	152	5453	0.020
118)*Acenaphthene-d10	(3)	11.744	164	580230	5.000
119) Acenaphthene	(3)	11.785	153	4140	0.024
131) Fluorene	(3)	12.461	166	3856	0.020
150) Hexachlorobenzene	(4)	13.120	284	1018	0.021
158)*Phenanthrene-d10	(4)	13.621	188	1139146	5.000
160) Phenanthrene	(4)	13.650	178	5559	0.021
162) Anthracene	(4)	13.714	178	5667	0.021
227) Total PAHs	(6)			92683	0.387
178) Fluoranthene	(4)	15.311	202	5050	0.017
180)*Pyrene-d10	(5)	15.626	212	1077372	5.000
182) Pyrene	(5)	15.655	202	7658	0.024
184)$Terphenyl-d14	(5)	15.941	244	7478	0.038
200) Benzo(a)anthracene	(5)	17.666	228	4769	0.018
201) Chrysene	(5)	17.724	228	4712	0.017
211) Benzo(b)fluoranthene	(6)	19.519	252	4689	0.019
213) Benzo(k)fluoranthene	(6)	19.572	252	5070	0.020
216) Benzo(a)pyrene	(6)	20.062	252	4597M	0.019
218)*Perylene-d12	(6)	20.143	264	1028401	5.000
224) Indeno(1,2,3-cd)pyrene	(6)	21.746	276	5731	0.026
225) Dibenz(a,h)anthracene	(6)	21.793	278	4956	0.022
226) Benzo(g,h,i)perylene	(6)	22.137	276	5893	0.026

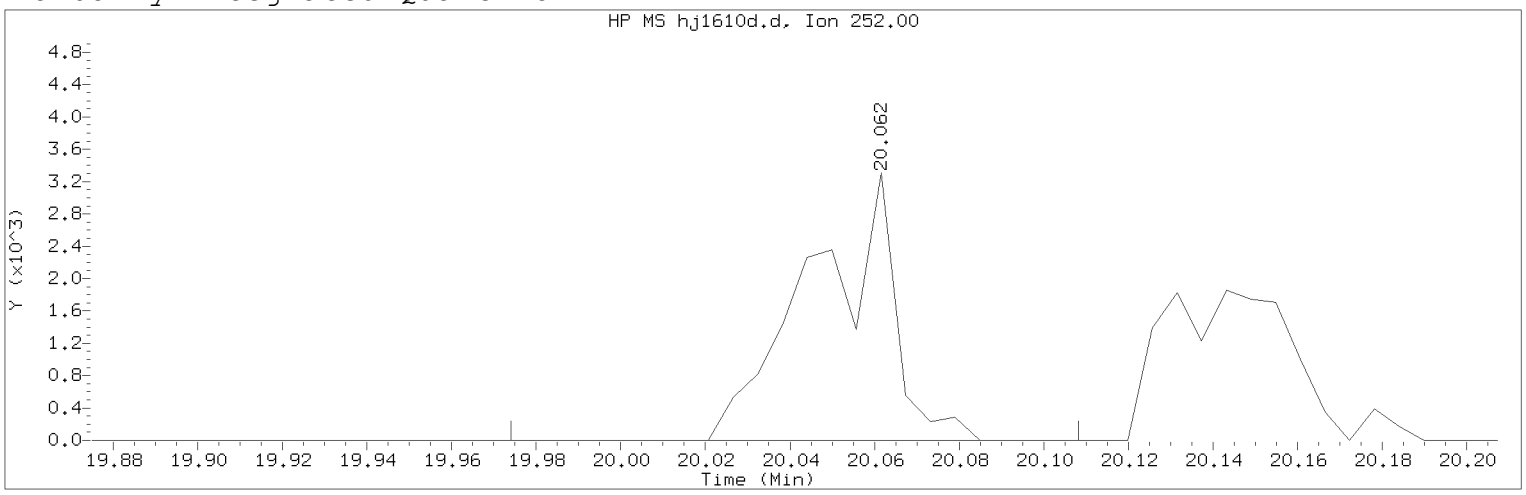
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1610d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:47 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD0.025 Lab Sample ID: rvSTD2709

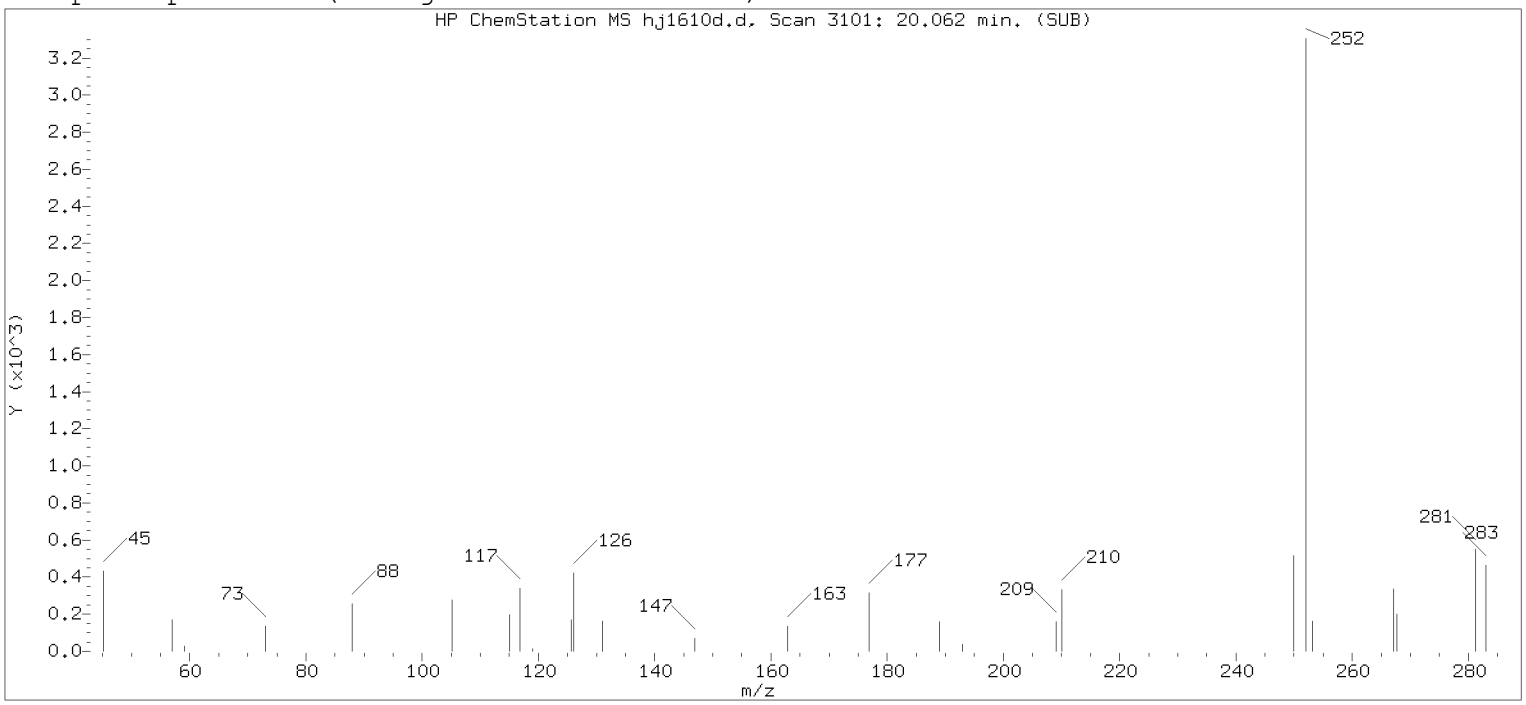
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3101
Retention Time (minutes) : 20.062
Quant Ion : 252.00
Area (flag) : 4597M
On-Column Amount (ng/ul) : 0.0191
Integration start scan : 3085 Integration stop scan: 3108
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

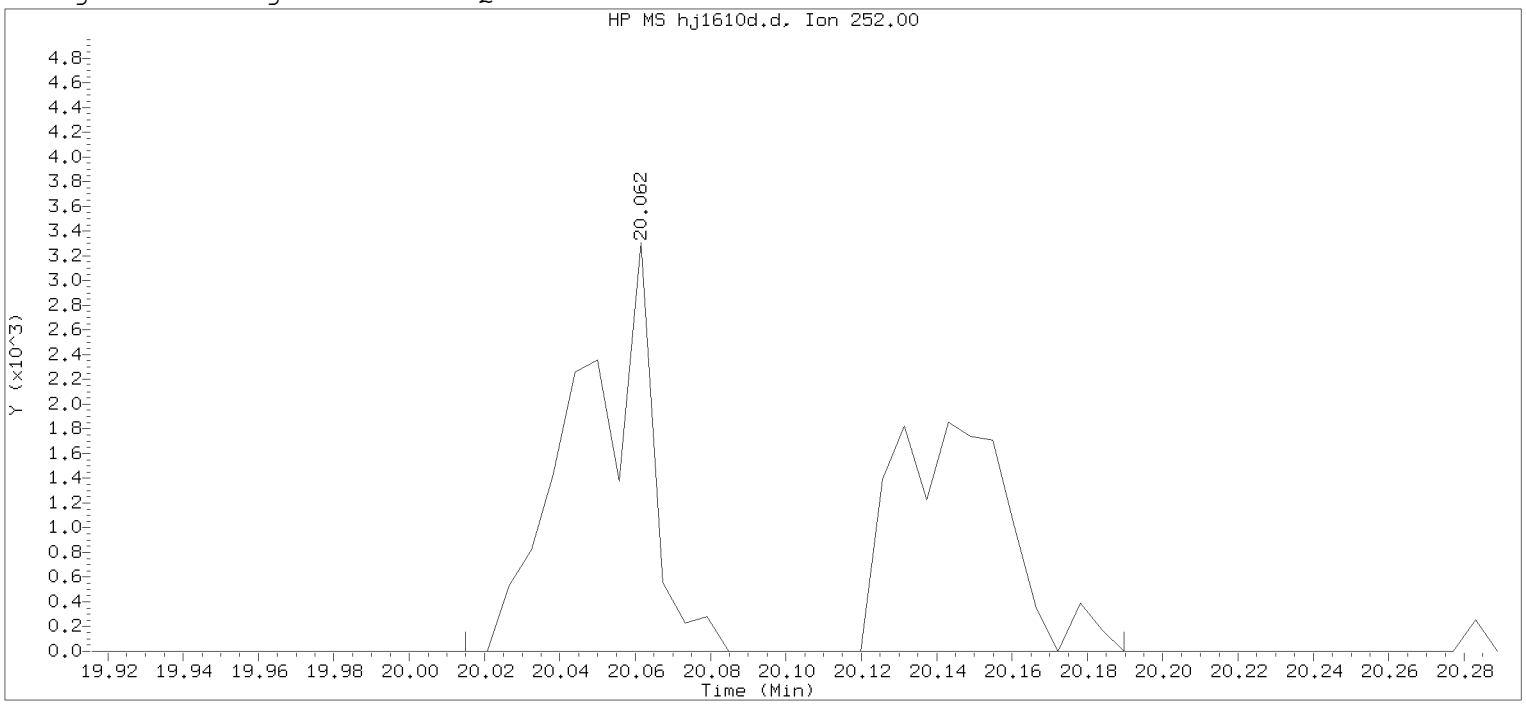
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



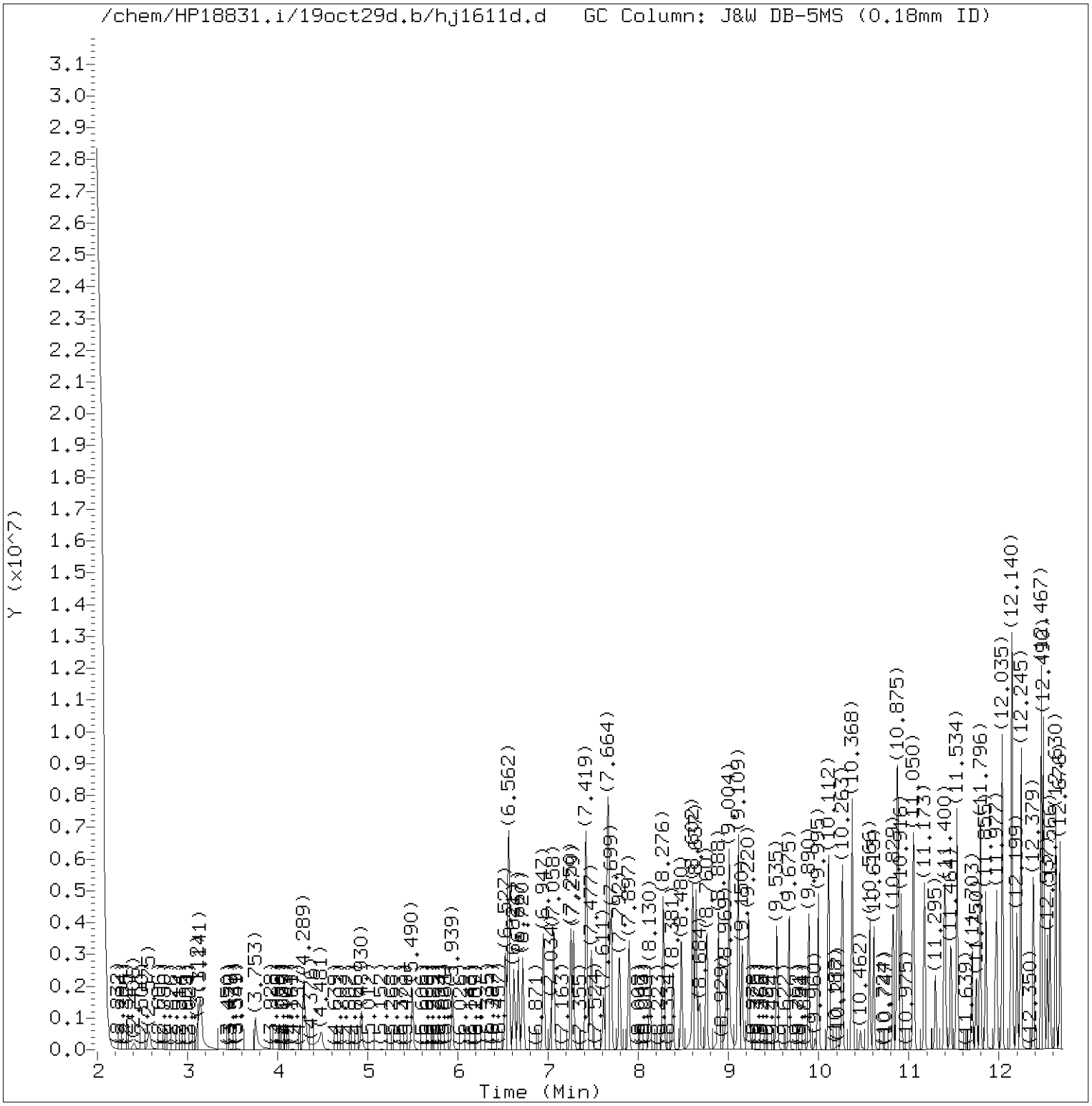
Data File: /chem/HP18831.i/19oct29d.b/hj1610d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 02:47 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:25 whs02991

Sample Name: SSTD0.025 Lab Sample ID: rvSTD2709

Compound Number	: 216		
Compound Name	: Benzo(a)pyrene		
Scan Number	: 3101		
Retention Time (minutes)	: 20.062		
Quant Ion	: 252.00		
Area	: 8676		
On-column Amount (ng/ul)	: 0.0354		
Integration start scan	: 3092	Integration stop scan:	3122
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:40.
Target 3.5 esignature used. Ver: 2.0.2.5



Total Ion Chromatogram (TIC)

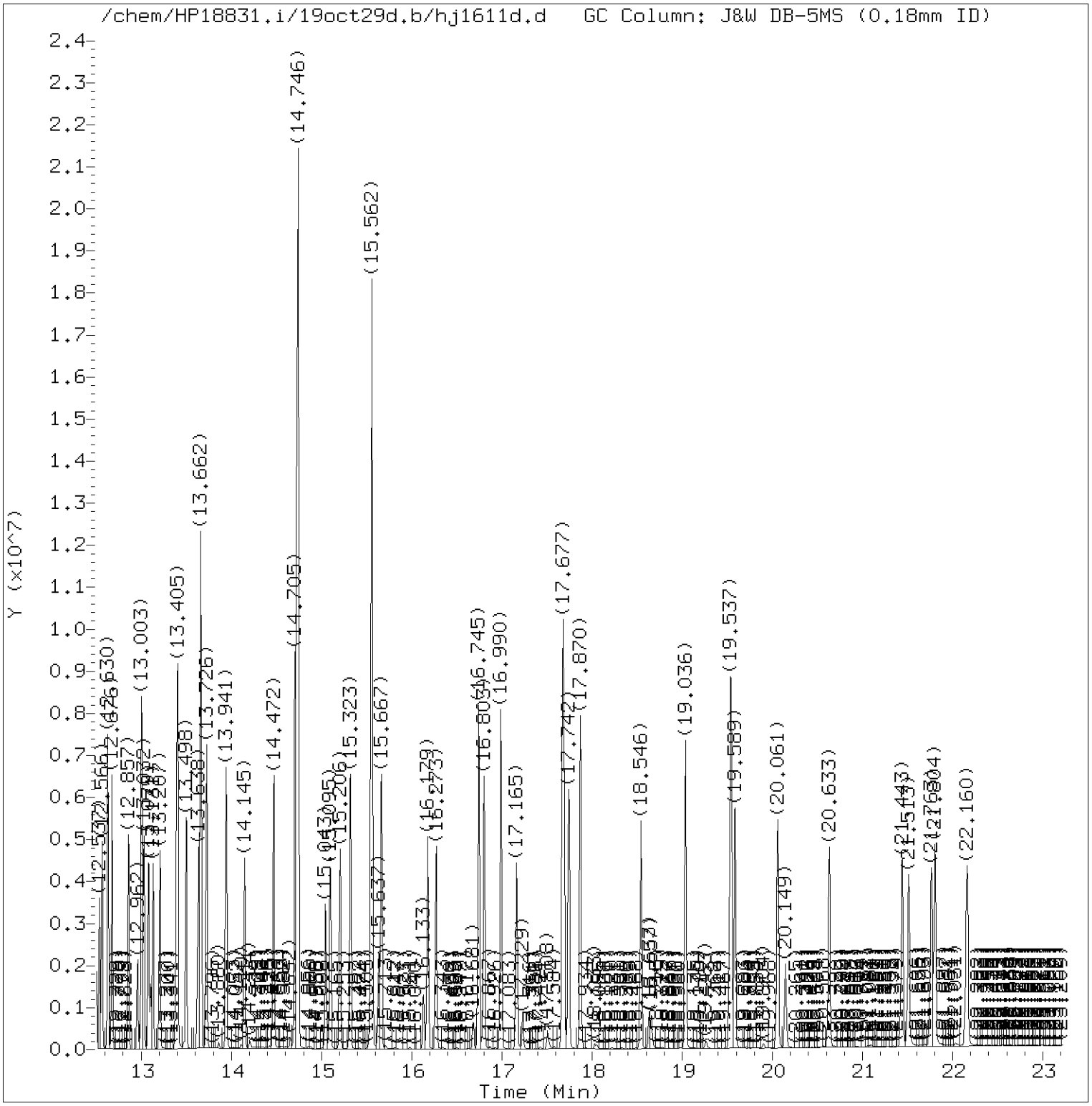
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

	Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1)	1,4-Dioxane	(1)	2.575	88	463006	9.863
5)	N-Nitrosodimethylamine	(1)	3.112	74	742564	10.899
6)	Pyridine	(1)	3.141	79	1162391	9.781
8)	2-Picoline	(1)	4.289	93	1306699	10.393
9)	N-Nitrosomethylethylamine	(1)	4.481	88	552920	10.450
10)	Methyl methanesulfonate	(1)	4.930	80	693789	12.270
14)	N-Nitrosodiethylamine	(1)	5.490	102	579207	11.576
43)	Total Cresols	(1)	5.660	100	2194087	25.300
16)	Ethyl methanesulfonate	(1)	5.939	109	561426	11.045
19)	Phenol	(1)	6.527	94	1639936	12.109
20)	Aniline	(1)	6.556	93	1678285	10.838
23)	bis(2-Chloroethyl)ether	(1)	6.667	93	1209860	11.650
24)	2-Chlorophenol	(1)	6.720	128	1097157	12.099
25)	1,3-Dichlorobenzene	(1)	6.947	146	1202301	12.432
26)*	1,4-Dichlorobenzene-d4	(1)	7.034	152	309758	5.000
27)	1,4-Dichlorobenzene	(1)	7.064	146	1231181	12.507
28)	Benzyl alcohol	(1)	7.250	108	794450	13.824
29)	1,2-Dichlorobenzene	(1)	7.279	146	1174251	12.662
100)	Isosafrole	(3)	7.383	162	968908	12.720
31)	Indene	(1)	7.413	115	2007786	14.895
32)	2-Methylphenol	(1)	7.425	108	1072674	12.884
35)	bis(2-Chloroisopropyl)ether	(1)	7.477	45	2347597	12.351
34)	2,2'-oxybis(1-Chloropropane)	(1)	7.477	45	2347597	12.351
36)	N-Nitrosopyrrolidine	(1)	7.611	100	613247	13.465
37)	Acetophenone	(1)	7.646	105	1621820	12.686
38)	4-Methylphenol	(1)	7.664	108	1121413	12.416
39)	N-Nitroso-di-n-propylamine	(1)	7.670	70	884106	13.189
40)	N-Nitrosomorpholine	(1)	7.681	56	1043941	12.660
41)	o-Toluidine	(1)	7.699	106	1742557	12.394
44)	Hexachloroethane	(1)	7.792	117	509177	12.685
46)	Nitrobenzene	(2)	7.897	77	1275829	12.620
125)	2,4_2,6-Dinitrotoluenes	(3)	8.050	165	1097553	23.711
50)	N-Nitrosopiperidine	(2)	8.130	114	551573	12.072
52)	Isophorone	(2)	8.276	82	2331534	12.721
53)	2-Nitrophenol	(2)	8.387	139	592668	12.641
59)	O,O,O-Triethylphosphorothioate	(2)	8.602	198	504054	11.793
57)	bis(2-Chloroethoxy)methane	(2)	8.637	93	1449928	12.686
58)	Benzoic acid	(2)	8.684	105	1596525	25.991
62)	2,4-Dichlorophenol	(2)	8.760	162	856984	12.059
151)	Diallate trans/cis	(4)	8.775	86	1095755	13.007

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
65) 1,2,4-Trichlorobenzene	(2)	8.888	180	925709	12.025
68)*Naphthalene-d8	(2)	8.969	136	1191980	5.000
69) Naphthalene	(2)	9.004	128	3193276	12.374
70) 4-Chloroaniline	(2)	9.104	127	1227181	12.286
71) 2,6-Dichlorophenol	(2)	9.115	162	842025	12.117
72) Hexachloropropene	(2)	9.150	213	627191	14.664
74) Hexachlorobutadiene	(2)	9.220	225	564042	12.426
78) Quinoline	(2)	9.535	129	1996993	12.869
80) N-Nitrosodi-n-butylamine	(2)	9.675	84	835468	11.434
83) 4-Chloro-3-methylphenol	(2)	9.890	107	993950	12.598
85) Safrole	(2)	9.995	162	770641	11.624
86) 2-Methylnaphthalene	(2)	10.112	142	2103855	12.292
87) 1-Methylnaphthalene	(2)	10.263	142	1908229	12.268
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.374	216	875147	11.691
91) cis-Isosafrole	(3)	10.462	162	105794	1.474
93) 2,4,6-Trichlorophenol	(3)	10.566	196	599778	12.178
95) 2,4,5-Trichlorophenol	(3)	10.613	196	634862	12.014
97) trans-Isosafrole	(3)	10.829	162	863114	11.246
98) 1,1'-Biphenyl	(3)	10.870	154	2573372	12.478
99) 2-Chloronaphthalene	(3)	10.881	162	1890650	12.028
101) 1-Chloronaphthalene	(3)	10.916	162	1691610	11.463
103) Diphenyl ether	(3)	11.050	170	1293601	11.544
104) 2-Nitroaniline	(3)	11.062	138	688464	12.645
108) 1,4-Naphthoquinone	(3)	11.173	158	1027484	15.270
109) 1,4-Dinitrobenzene	(3)	11.295	168	336930	11.719
110) Dimethylphthalate	(3)	11.394	163	1977747	11.491
111) 1,3-Dinitrobenzene	(3)	11.406	168	372694	11.671
113) 2,6-Dinitrotoluene	(3)	11.470	165	466921	11.843
114) Acenaphthylene	(3)	11.534	152	2925358	11.518
117) 3-Nitroaniline	(3)	11.703	138	572974	12.844
118)*Acenaphthene-d10	(3)	11.750	164	553569	5.000
119) Acenaphthene	(3)	11.796	153	1988395	11.969
120) 2,4-Dinitrophenol	(3)	11.855	184	680366	23.991
121) 4-Nitrophenol	(3)	11.960	109	377963	12.316
122) Pentachlorobenzene	(3)	11.977	250	756656	11.486
124) Dibenzofuran	(3)	12.035	168	2796961	12.364
123) 2,4-Dinitrotoluene	(3)	12.041	165	630632	11.868
126) 1-Naphthylamine	(3)	12.140	143	3406957	22.008
127) 2,3,4,6-Tetrachlorophenol	(3)	12.199	232	511428	11.801
128) 2-Naphthylamine	(3)	12.245	143	3260764	21.387

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
129) Diethylphthalate	(3)	12.379	149	2149434	11.424
131) Fluorene	(3)	12.467	166	2254562	12.163
130) Thionazin	(3)	12.472	107	446951	12.565
132) 4-Chlorophenyl-phenylether	(3)	12.490	204	999305	11.610
133) 5-Nitro-o-toluidine	(3)	12.490	152	653298	12.122
134) 4-Nitroaniline	(3)	12.502	138	586889	12.555
135) 4,6-Dinitro-2-methylphenol	(4)	12.537	198	392334	11.810
137) NDPA as diphenylamine	(4)	12.630	169	1805979	11.468
136) N-Nitrosodiphenylamine	(4)	12.630	169	1805979	11.468
139) 1,2-Diphenylhydrazine	(4)	12.676	77	2468576	13.031
142) Tetraethyldithiopyrophosphate	(4)	12.857	97	425228	12.818
145) Diallate (peak 1)	(4)	12.997	86	820027	9.249
146) Phorate	(4)	13.009	75	1559604	13.664
147) Phenacetin	(4)	13.032	108	1205831	12.578
148) 4-Bromophenyl-phenylether	(4)	13.084	248	531642	11.595
149) Diallate (peak 2)	(4)	13.102	86	275728	3.758
150) Hexachlorobenzene	(4)	13.131	284	532329	11.494
152) Dimethoate	(4)	13.207	87	1066149	14.597
154) Pentachlorophenol	(4)	13.388	266	422053	12.404
155) 4-Aminobiphenyl	(4)	13.405	169	2336995	22.837
156) Pentachloronitrobenzene	(4)	13.405	237	255975	12.113
157) Pronamide	(4)	13.504	173	1032593	13.146
158)*Phenanthrene-d10	(4)	13.627	188	1067553	5.000
159) Dinoseb	(4)	13.644	211	619095	12.493
160) Phenanthrene	(4)	13.656	178	3041378	12.501
162) Anthracene	(4)	13.726	178	3035975	12.272
168) Carbazole	(4)	13.941	167	3152458	12.916
169) Methyl parathion	(4)	14.145	109	861453	14.054
170) Di-n-butylphthalate	(4)	14.472	149	4099459	12.543
172) Parathion	(4)	14.699	109	567311	14.341
173) 4-Nitroquinoline-1-oxide	(4)	14.746	190	5508393	176.219
227) Total PAHs	(6)	15.000	100	52073426	222.096
174) Octachlorostyrene	(4)	15.049	308	209533	10.691
176) Isodrin	(4)	15.095	193	386324	12.742
178) Fluoranthene	(4)	15.323	202	3563263	12.468
179) Benzidine	(5)	15.562	184	10788555	56.956
180)*Pyrene-d10	(5)	15.637	212	1063246	5.000
182) Pyrene	(5)	15.667	202	3606241	11.645
187) p-Dimethylaminoazobenzene	(5)	16.179	225	716145	14.294
190) Chlorobenzilate	(5)	16.273	139	1239493	12.062

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

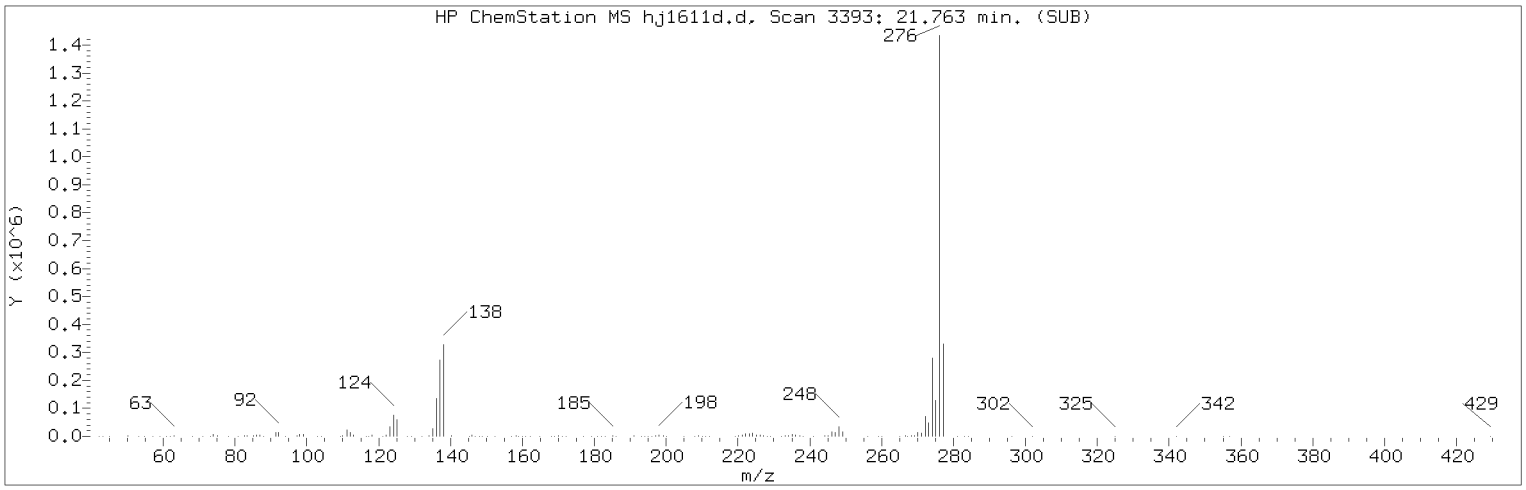
Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
192) 3,3'-Dimethylbenzidine	(5)	16.745	212	3797026	19.567
193) Butylbenzylphthalate	(5)	16.803	149	1845075	11.959
196) 2-Acetylaminofluorene	(5)	17.165	181	1369094	11.737
198) 3,3'-Dichlorobenzidine	(5)	17.672	252	1212522	11.558
200) Benzo(a)anthracene	(5)	17.683	228	3381213	12.869
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.689	231	679951	11.986
201) Chrysene	(5)	17.742	228	3145428	11.646
204) bis(2-Ethylhexyl)phthalate	(5)	17.870	149	2698021	12.205
208) 6-Methylchrysene	(5)	18.546	242	2199104	11.561
210) Di-n-octylphthalate	(6)	19.036	149	4802738	13.212
211) Benzo(b)fluoranthene	(6)	19.537	252	3271514	13.031
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.543	256	1462627	13.233
213) Benzo(k)fluoranthene	(6)	19.589	252	3215678	12.643
216) Benzo(a)pyrene	(6)	20.061	252	3003687	12.499
218)*Perylene-d12	(6)	20.149	264	1026721	5.000
220) 3-Methylcholanthrene	(6)	20.633	268	1602512	14.770
222) Dibenz(a,h)acridine	(6)	21.443	279	2486603	12.385
223) Dibenz(a,j)acridine	(6)	21.513	279	2392874	12.050
224) Indeno(1,2,3-cd)pyrene	(6)	21.763	276	2717647M	12.489
225) Dibenz(a,h)anthracene	(6)	21.804	278	2879029	12.969
226) Benzo(g,h,i)perylene	(6)	22.160	276	2838698	12.480

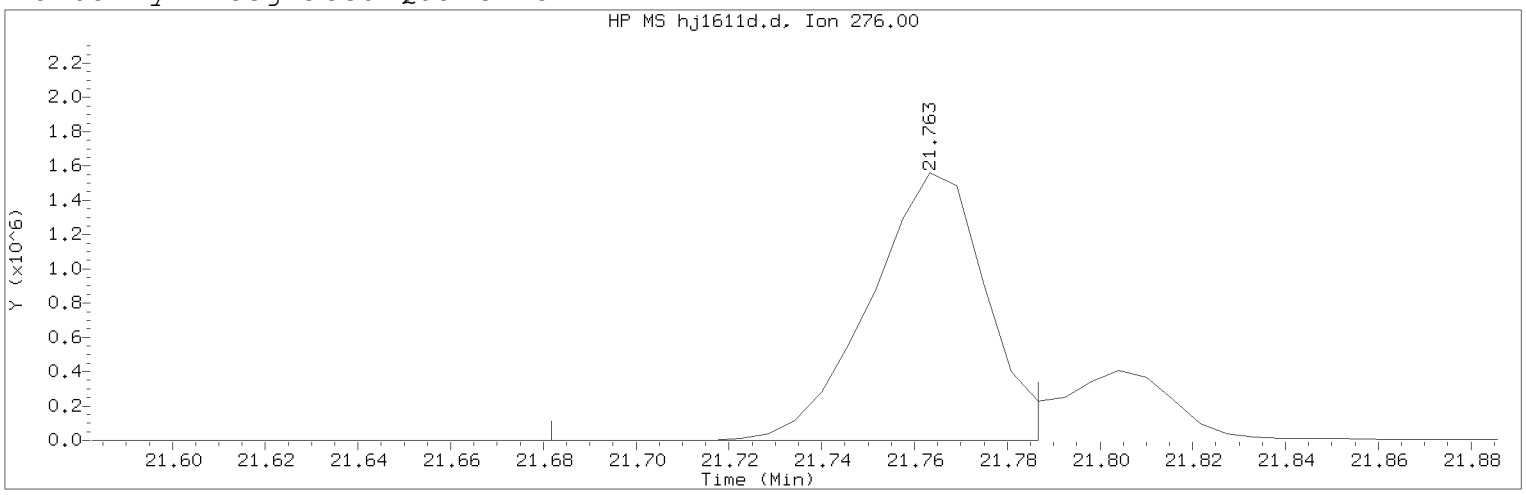
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

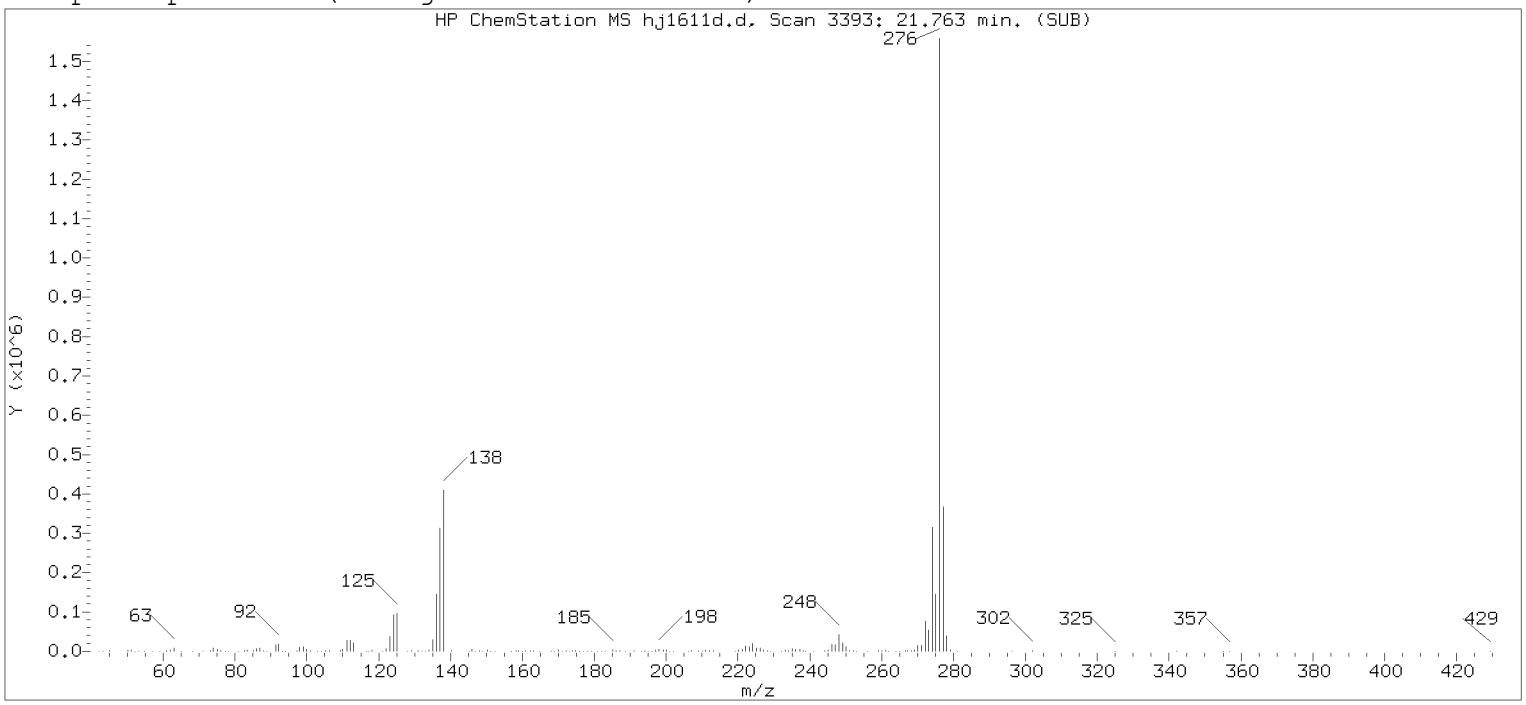
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3393
Retention Time (minutes) : 21.763
Quant Ion : 276.00
Area (flag) : 2717647M
On-Column Amount (ng/ul) : 12.4886
Integration start scan : 3378 Integration stop scan: 3396
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

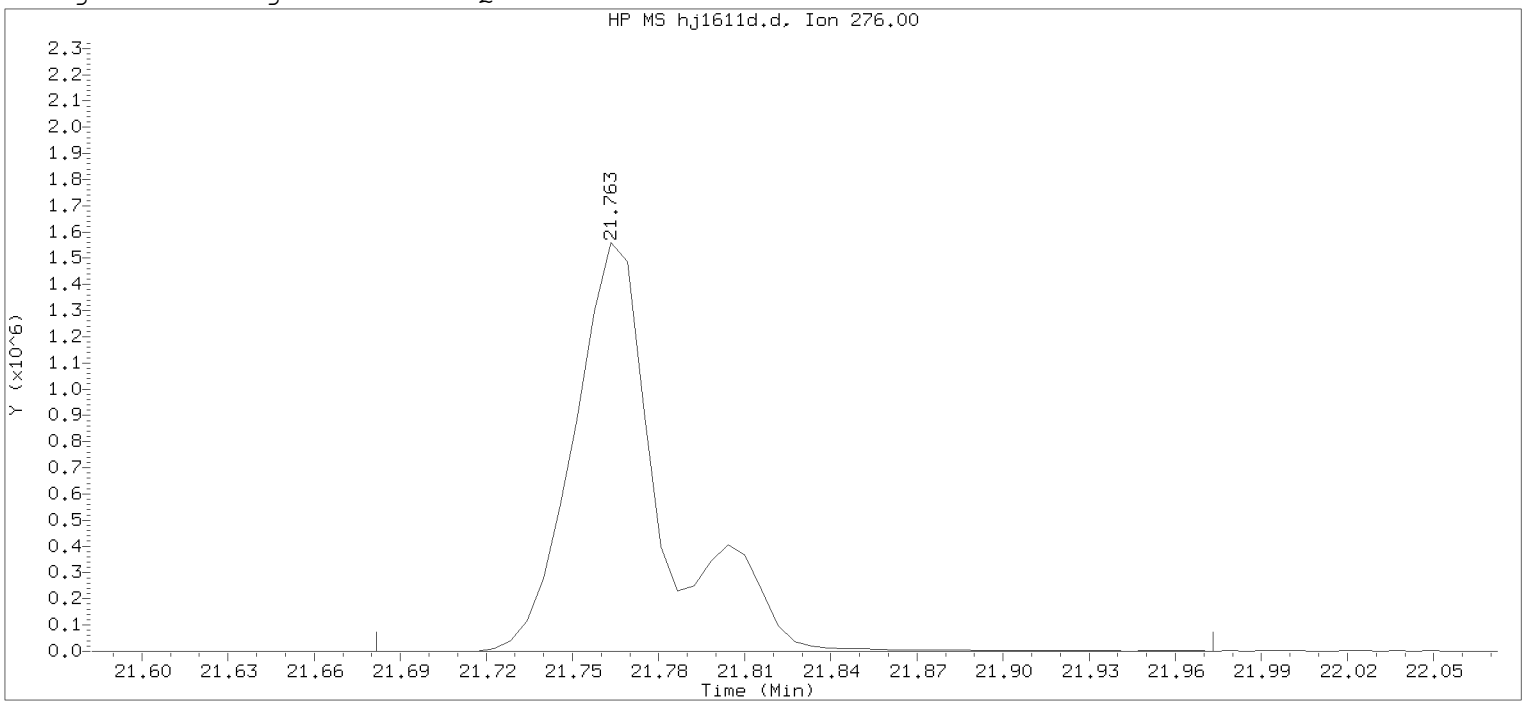
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/01/2019 at 11:09.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



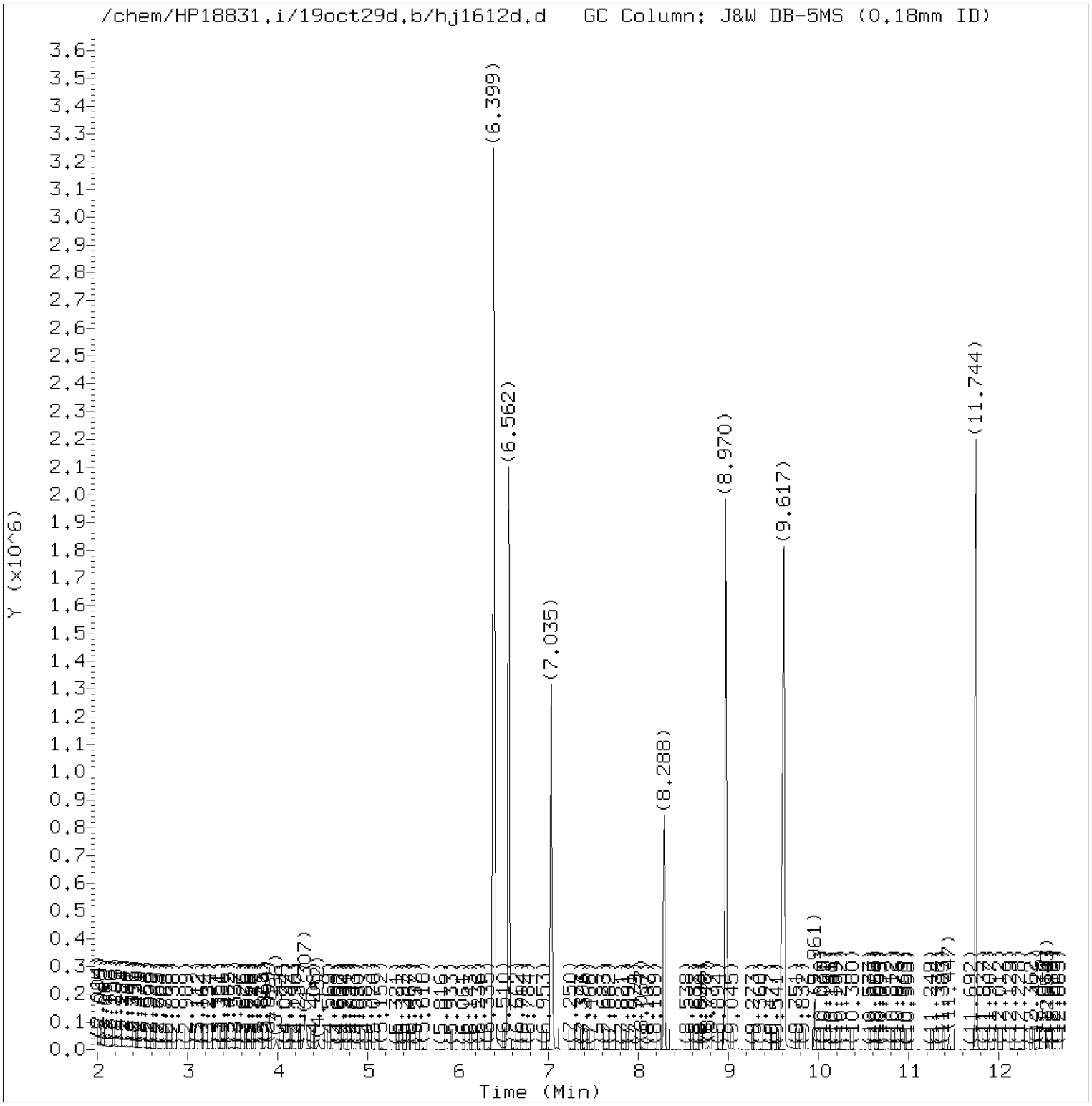
Data File: /chem/HP18831.i/19oct29d.b/hj1611d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:16 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: icvall1-s
Calibration date and time: 01-NOV-2019 10:24
Date, time and analyst ID of latest file update: 01-Nov-2019 10:25 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvICV2339

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3393		
Retention Time (minutes)	: 21.763		
Quant Ion	: 276.00		
Area	: 3364818		
On-column Amount (ng/ul)	: 12.4762		
Integration start scan	: 3378	Integration stop scan:	3428
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/01/2019 at 10:40.
Target 3.5 esignature used. Ver: 2.0.2.1



Total Ion Chromatogram (TIC)

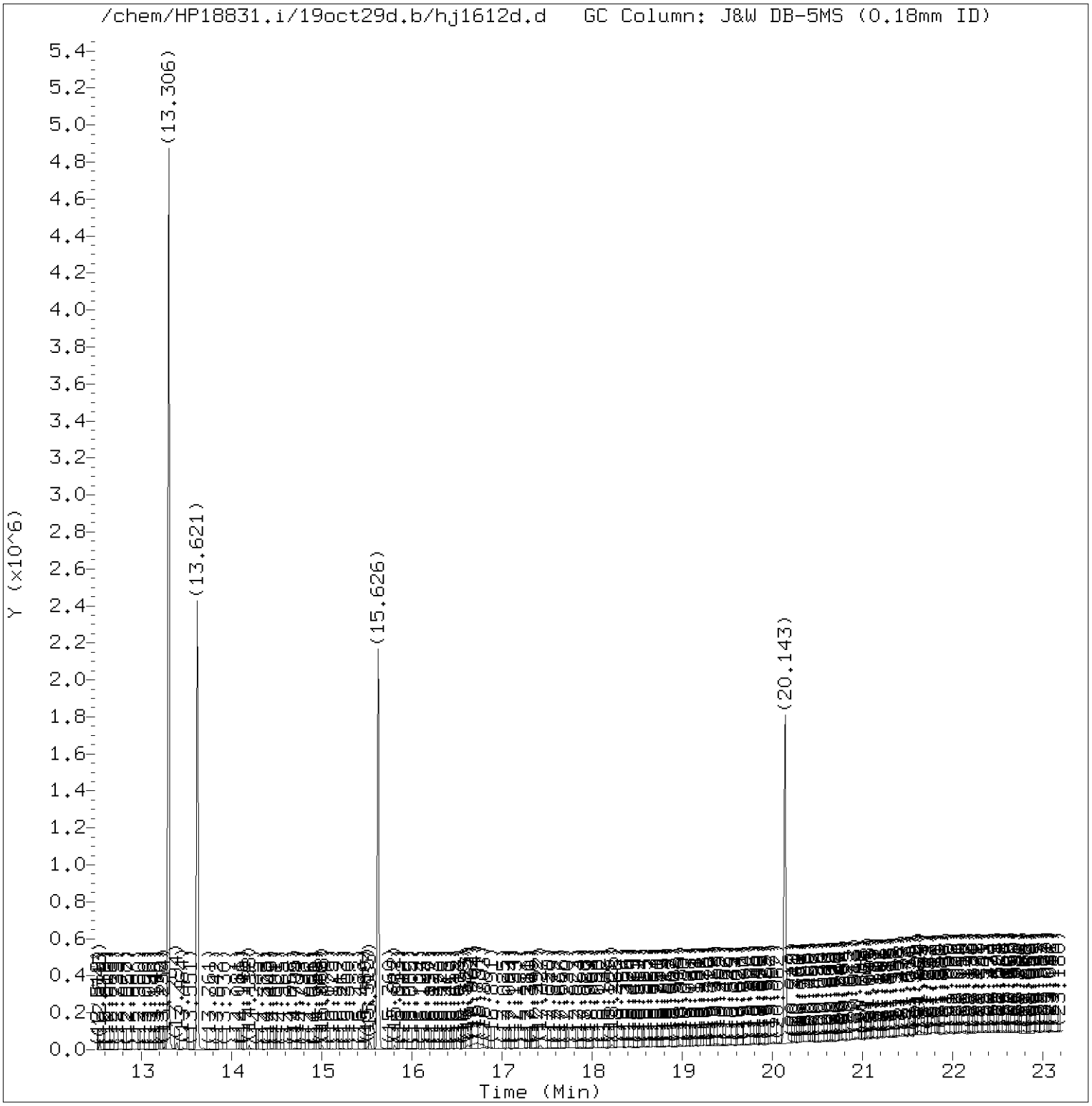
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1612d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:45 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV2339

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1612d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:45 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV2339

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1612d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 03:45 Analyst ID: sw30417

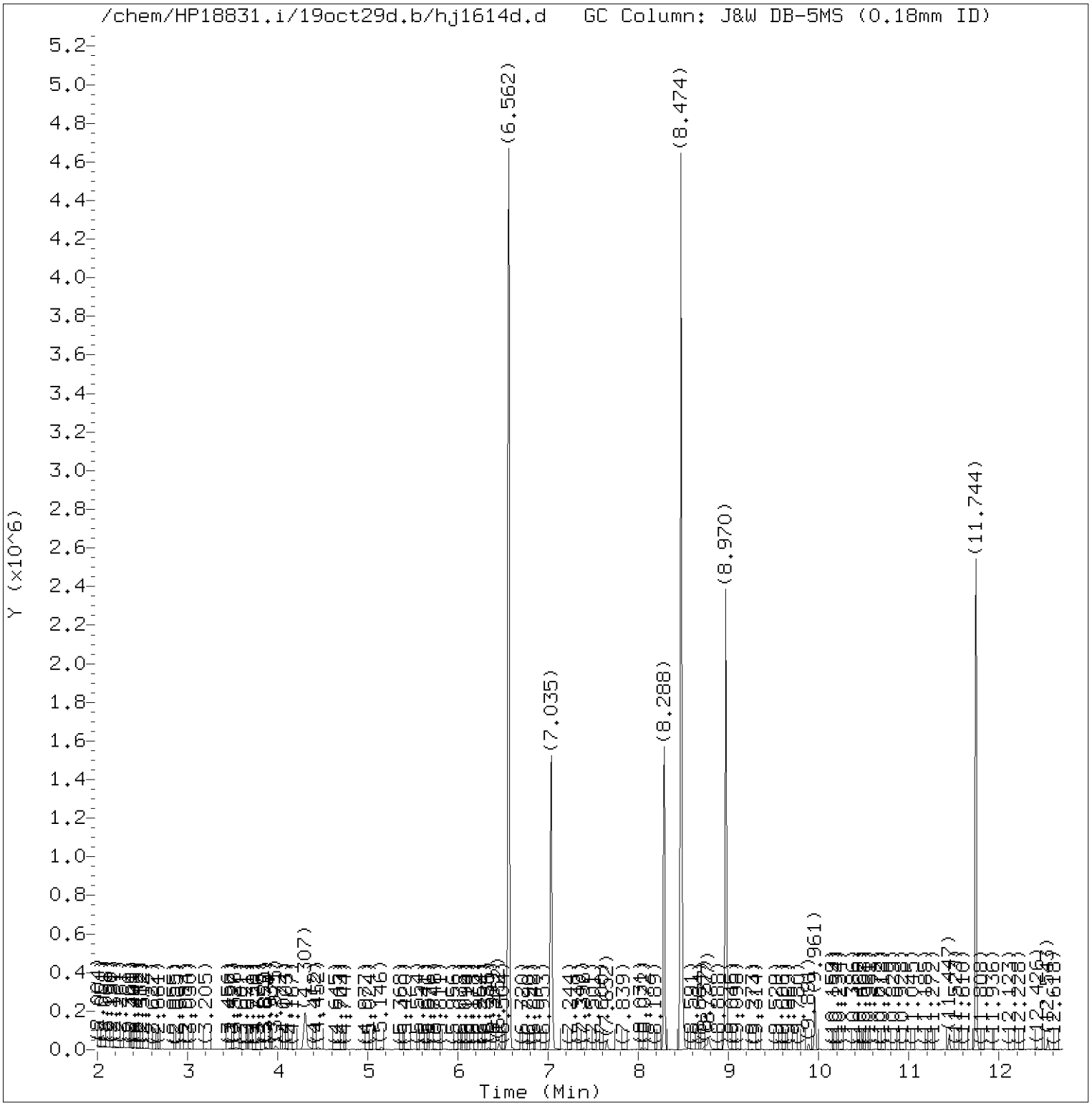
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvBASICV2339

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
17) Benzaldehyde	(1)	6.399	77	985620	14.372
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	279916	5.000
68)*Naphthalene-d8	(2)	8.970	136	1104673	5.000
79) Caprolactam	(2)	9.617	113	299909	12.855
118)*Acenaphthene-d10	(3)	11.744	164	497753	5.000
153) Atrazine	(4)	13.306	200	505484	13.427
158)*Phenanthrene-d10	(4)	13.621	188	976850	5.000
180)*Pyrene-d10	(5)	15.626	212	954558	5.000
218)*Perylene-d12	(6)	20.143	264	918883	5.000

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

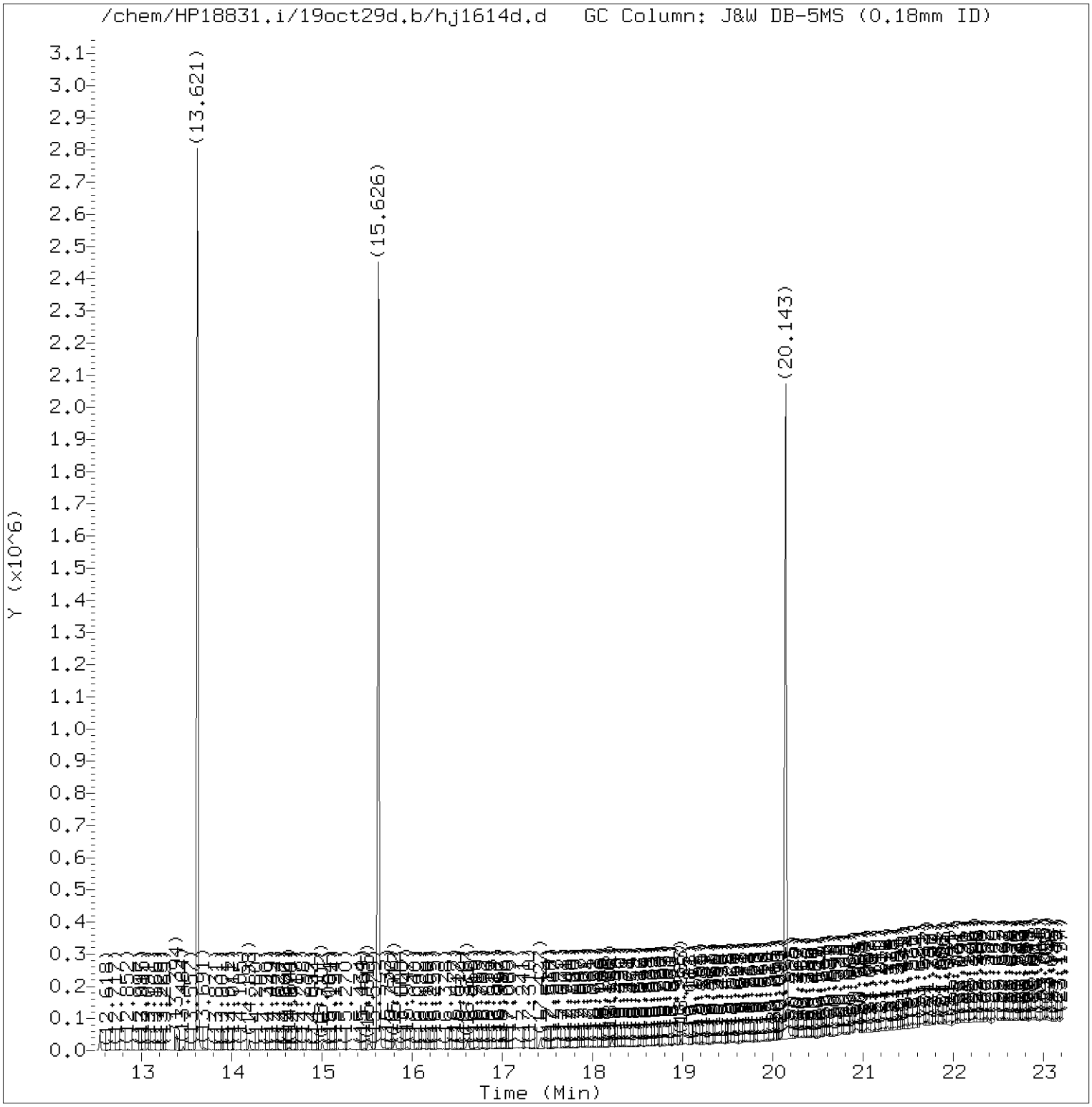
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1614d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 04:44 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: dmp
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvDMPICV2609

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1614d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 04:44 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: dmp
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvDMPICV2609

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1614d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 04:44 Analyst ID: sw30417

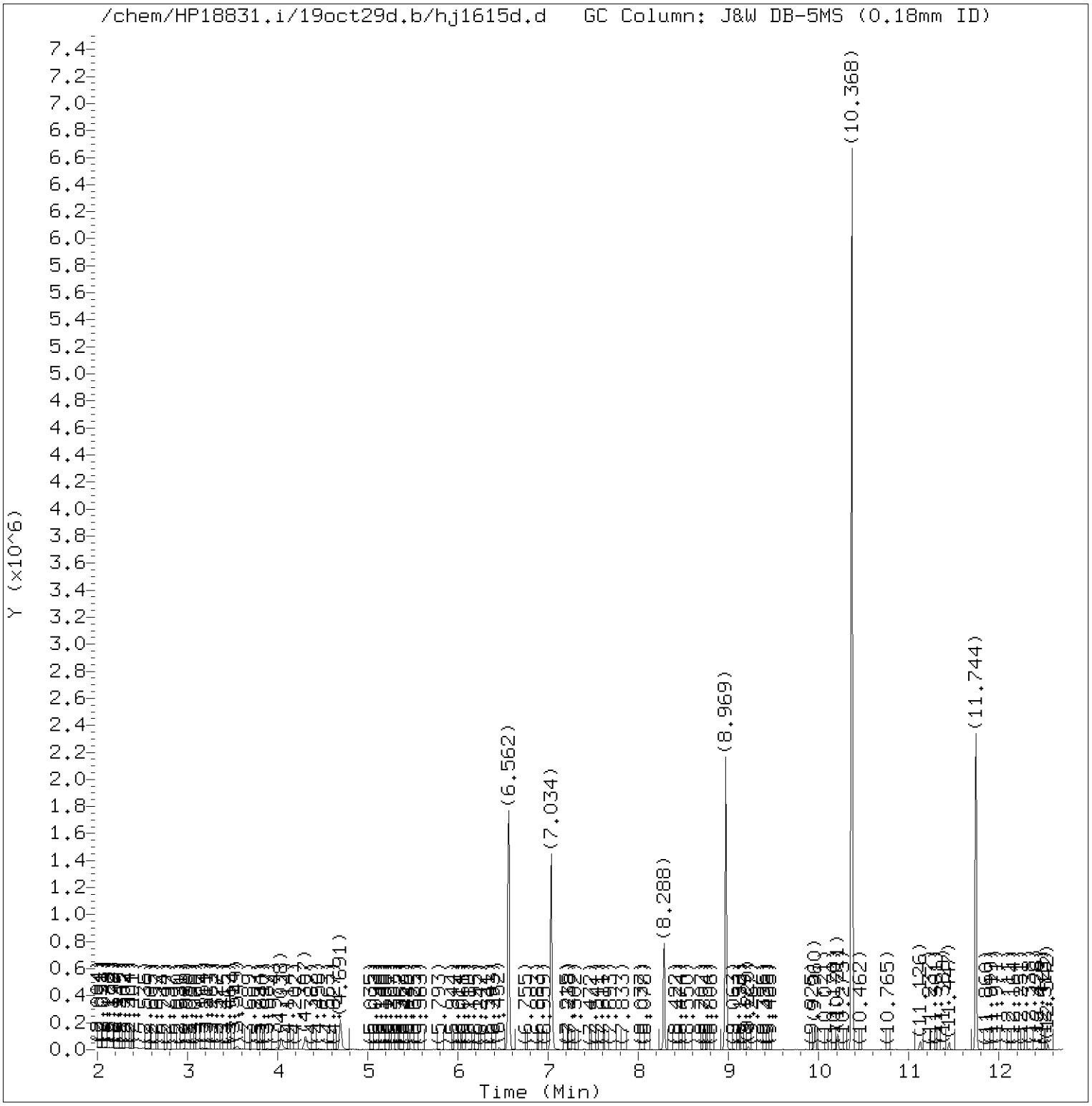
Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: dmp
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvDMPICV2609

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.035	152	327815	5.000
55) 2,4-Dimethylphenol	(2)	8.474	107	1197945	11.581
68)*Naphthalene-d8	(2)	8.970	136	1287346	5.000
118)*Acenaphthene-d10	(3)	11.744	164	568517	5.000
158)*Phenanthrene-d10	(4)	13.621	188	1114165	5.000
180)*Pyrene-d10	(5)	15.626	212	1070305	5.000
218)*Perylene-d12	(6)	20.143	264	1028057	5.000

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

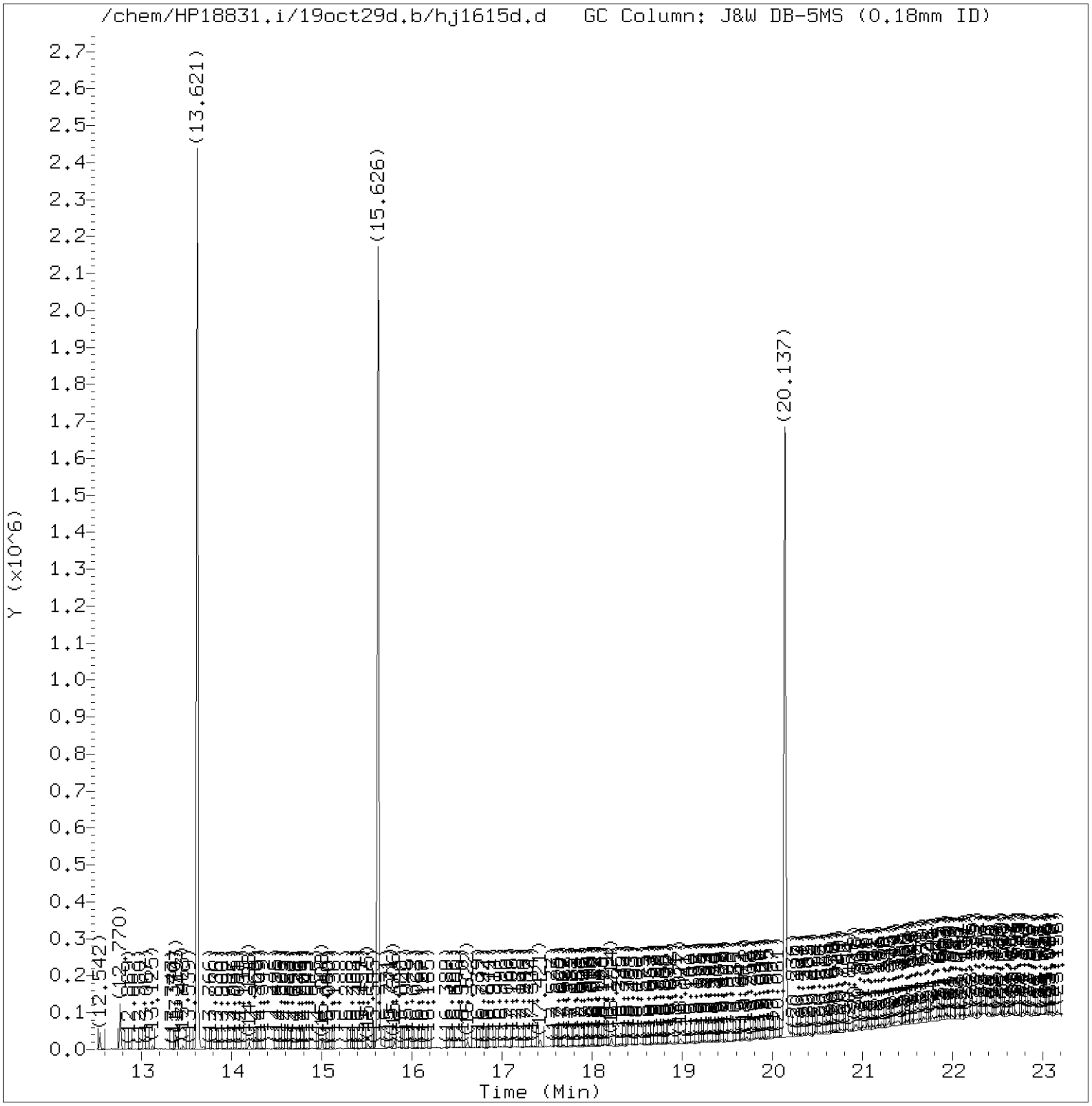
Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1615d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 05:13 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvHCCPDICV2959

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1615d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 05:13 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvHCCPDICV2959

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19oct29d.b/hj1615d.d Instrument ID: HP18831.i
Injection date and time: 30-OCT-2019 05:13 Analyst ID: sw30417

Method used: /chem/HP18831.i/19oct29d.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 01-NOV-2019 10:37
Date, time and analyst ID of latest file update: 01-Nov-2019 10:38 whs02991

Sample Name: SSTD12.5 Lab Sample ID: rvHCCPDICV2959

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.034	152	303518	5.000
68)*Naphthalene-d8	(2)	8.969	136	1156884	5.000
88) Hexachlorocyclopentadiene	(3)	10.368	237	1287406	25.988
118)*Acenaphthene-d10	(3)	11.744	164	522857	5.000
158)*Phenanthrene-d10	(4)	13.621	188	978785	5.000
180)*Pyrene-d10	(5)	15.626	212	955393	5.000
218)*Perylene-d12	(6)	20.137	264	875282	5.000

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/01/2019 at 10:40.
Target 3.5 esignature user ID: whs02991

Data File: /chem/HP18831.i/19nov04.b/hk0030a.d

Page 1

Date : 04-NOV-2019 08:43

Client ID: DFTPP

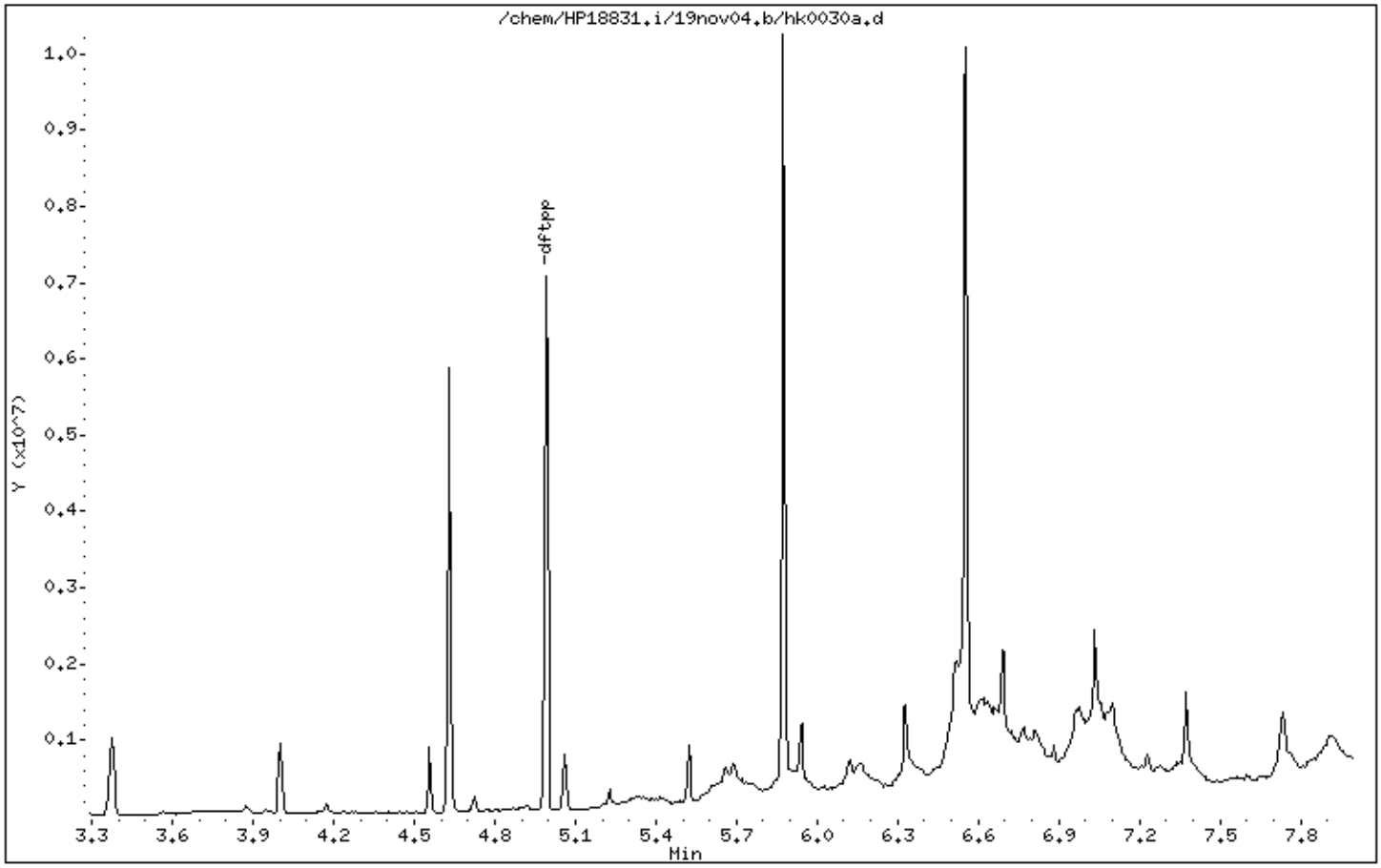
Instrument: HP18831.i

Sample Info: DFTPP;rvDFTPP2709;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS

Column diameter: 0.18



Data File: /chem/HP18831.i/19nov04.b/hk0030a.d

Date : 04-NOV-2019 08:43

Client ID: DFTPP

Instrument: HP18831.i

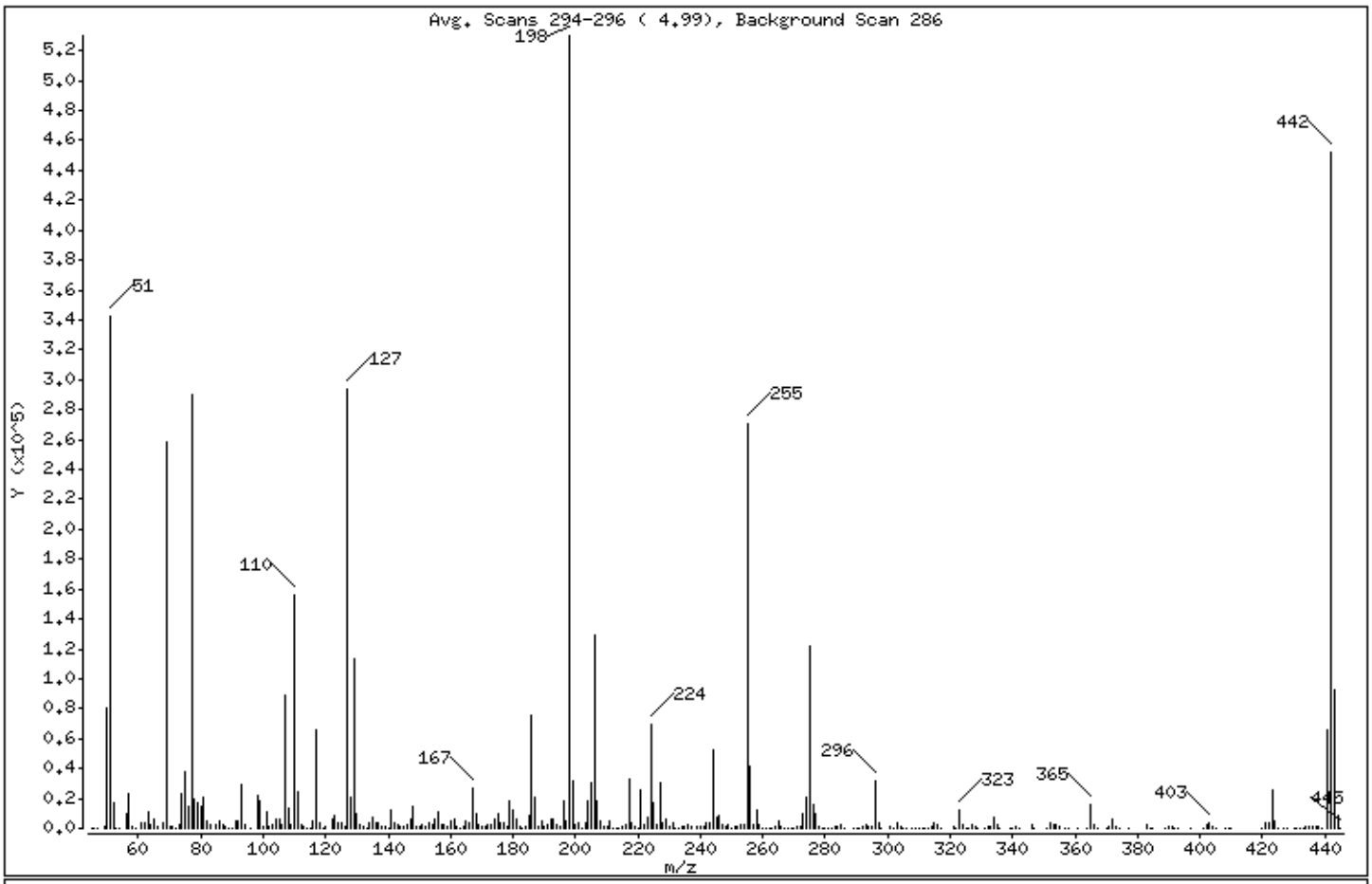
Sample Info: DFTPP;rvDFTPP2709;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	64.64
68	Less than 2.00% of mass 69	0.62 (1.27)
69	Mass 69 relative abundance	48.72
70	Less than 2.00% of mass 69	0.21 (0.43)
127	10.00 - 80.00% of mass 198	55.33
197	Less than 2.00% of mass 198	0.88
199	5.00 - 9.00% of mass 198	6.08
275	10.00 - 60.00% of mass 198	23.05
365	Greater than 1.00% of mass 198	2.91
441	0.01 - 24.00% of mass 442	12.40 (14.54)
442	50.00 - 99.99% of mass 198	85.29
443	15.00 - 24.00% of mass 442	17.40 (20.40)

Date : 04-NOV-2019 08:43

Client ID: DFTPP Instrument: HP18831.i

Sample Info: DFTPP;rvDFTPP2709;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS Column diameter: 0.18

Data File: hk0030a.d
Spectrum: Avg. Scans 294-296 (4.99), Background Scan 286
Location of Maximum: 198.00
Number of points: 338

m/z	Y	m/z	Y	m/z	Y	m/z	Y
45.00	468	138.00	1405	223.00	7087	314.00	1487
46.00	59	139.00	1000	224.00	69512	315.00	3984
47.00	60	140.00	603	225.00	17056	316.00	2371
49.00	1683	141.00	12354	226.00	2250	317.00	305
50.00	80264	142.00	3710	227.00	30432	321.00	942
51.00	342592	143.00	2831	228.00	3576	322.00	506
52.00	16600	144.00	1041	229.00	6397	323.00	12416
53.00	41	145.00	702	230.00	1201	324.00	2489
54.00	27	146.00	2282	231.00	3347	325.00	491
56.00	9291	147.00	5628	232.00	602	326.00	136
57.00	23592	148.00	14026	233.00	435	327.00	1997
58.00	1121	149.00	1122	234.00	1359	328.00	1427
59.00	486	150.00	1057	235.00	1656	329.00	58
61.00	4036	151.00	2606	236.00	2011	331.00	126
62.00	4120	152.00	1335	237.00	1454	332.00	711
63.00	11252	153.00	3586	239.00	1178	333.00	1038
64.00	1890	154.00	2906	240.00	876	334.00	7195
65.00	6179	155.00	6329	241.00	1755	335.00	2217
66.00	819	156.00	10796	242.00	3511	336.00	549
68.00	3280	157.00	1912	243.00	3820	339.00	237
69.00	258176	158.00	2110	244.00	52736	340.00	362
70.00	1101	159.00	1823	245.00	6809	341.00	1433
71.00	1022	160.00	4532	246.00	9071	342.00	291
72.00	201	161.00	6305	247.00	2209	346.00	2253
73.00	2178	162.00	1612	248.00	740	347.00	441
74.00	23704	163.00	566	249.00	1982	351.00	266
75.00	37696	164.00	959	250.00	455	352.00	3347
76.00	14079	165.00	4952	251.00	715	353.00	2786
77.00	290112	166.00	3298	252.00	856	354.00	2927
78.00	18888	167.00	27216	253.00	2059	355.00	1034
79.00	17016	168.00	9424	254.00	2857	357.00	55
80.00	14699	169.00	2372	255.00	269888	358.00	143
81.00	20160	170.00	828	256.00	41256	361.00	115
82.00	4576	171.00	1141	257.00	2949	364.00	172
83.00	2864	172.00	2138	258.00	12105	365.00	15417

Date : 04-NOV-2019 08:43

Client ID: DFTPP Instrument: HP18831.i

Sample Info: DFTPP;rvDFTPP2709;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS Column diameter: 0.18

Data File: hk0030a.d
Spectrum: Avg. Scans 294-296 (4.99), Background Scan 286
Location of Maximum: 198.00
Number of points: 338

m/z	Y	m/z	Y	m/z	Y	m/z	Y
85.00	2217	173.00	2748	259.00	2153	366.00	2413
86.00	5152	174.00	5516	260.00	298	367.00	217
87.00	2401	175.00	9960	261.00	480	370.00	346
88.00	895	176.00	3240	262.00	204	371.00	1364
89.00	500	177.00	4164	263.00	399	372.00	5918
90.00	161	178.00	1817	264.00	722	373.00	1782
91.00	4353	179.00	18240	265.00	5472	374.00	341
92.00	4893	180.00	12241	266.00	903	377.00	156
93.00	29072	181.00	5932	267.00	281	383.00	2176
94.00	1892	182.00	1032	268.00	33	384.00	398
96.00	71	183.00	413	269.00	445	385.00	166
98.00	21464	184.00	1801	270.00	330	389.00	52
99.00	18472	185.00	7962	271.00	759	390.00	1131
100.00	1281	186.00	75072	272.00	994	391.00	632
101.00	11181	187.00	20320	273.00	9153	392.00	350
102.00	739	188.00	1766	274.00	20728	393.00	58
103.00	2818	189.00	4580	275.00	122160	397.00	53
104.00	5986	190.00	749	276.00	15833	401.00	370
105.00	5912	191.00	1941	277.00	9149	402.00	2737
106.00	1951	192.00	5559	278.00	1276	403.00	3794
107.00	88672	193.00	5973	279.00	430	404.00	1431
108.00	13065	194.00	2034	280.00	73	405.00	260
109.00	2652	195.00	1549	281.00	450	408.00	188
110.00	156224	196.00	18416	282.00	423	409.00	142
111.00	23952	197.00	4645	283.00	1089	410.00	113
112.00	2984	198.00	529984	284.00	1210	420.00	167
113.00	738	199.00	32224	285.00	1963	421.00	3420
114.00	525	200.00	2168	286.00	352	422.00	3670
115.00	314	201.00	3364	289.00	402	423.00	25760
116.00	4335	202.00	595	290.00	512	424.00	4270
117.00	65496	203.00	3869	291.00	398	425.00	218
118.00	4061	204.00	17952	292.00	692	427.00	144
119.00	386	205.00	30552	293.00	2362	428.00	91
120.00	1196	206.00	128792	294.00	856	430.00	128
122.00	5870	207.00	18832	295.00	723	431.00	257

Date : 04-NOV-2019 08:43

Client ID: DFTPP Instrument: HP18831.i

Sample Info: DFTPP;rvDFTPP2709;1;3;DFTPP;

Operator: whs02991

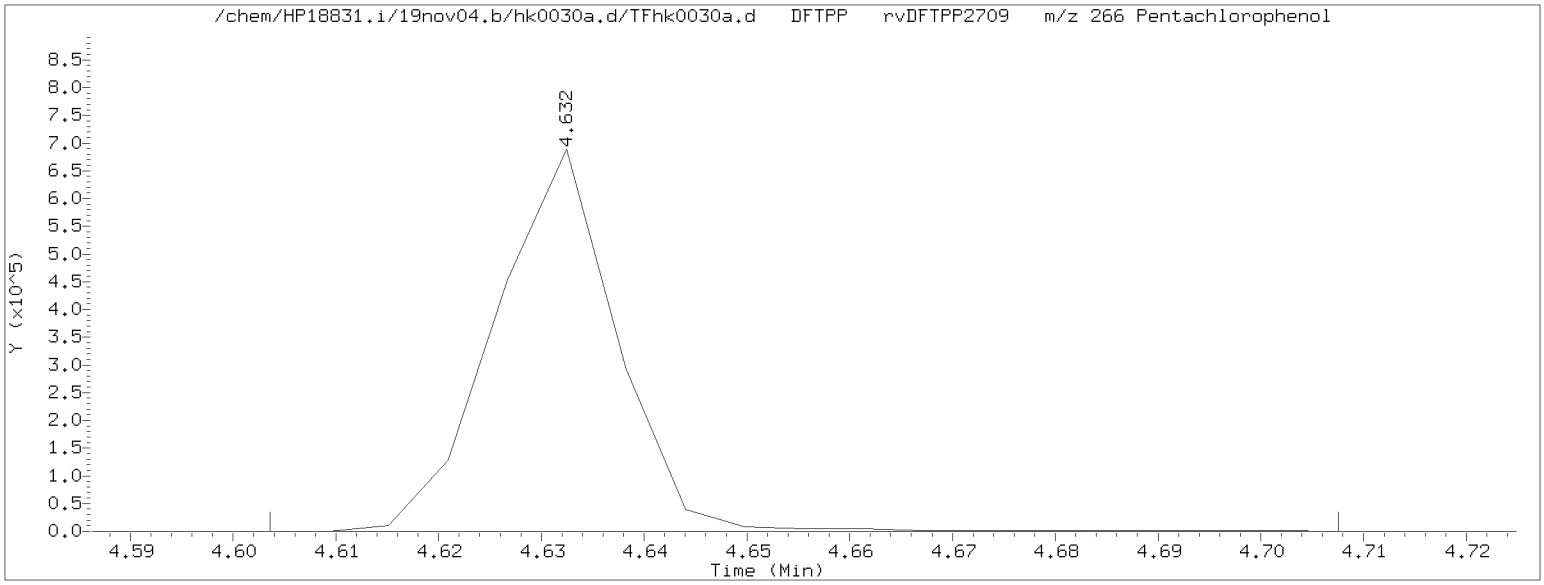
Column phase: DB-5MS Column diameter: 0.18

Data File: hk0030a.d
Spectrum: Avg. Scans 294-296 (4.99), Background Scan 286
Location of Maximum: 198.00
Number of points: 338

m/z	Y	m/z	Y	m/z	Y	m/z	Y
123.00	8578	208.00	4334	296.00	31264	432.00	355
124.00	3543	209.00	1264	297.00	4039	433.00	542
125.00	3787	210.00	1163	298.00	207	434.00	652
126.00	1732	211.00	4277	301.00	695	435.00	1140
127.00	293184	212.00	514	302.00	266	436.00	883
128.00	20648	213.00	216	303.00	4153	437.00	761
129.00	113504	214.00	59	304.00	956	438.00	790
130.00	9408	215.00	1001	305.00	50	439.00	566
131.00	1915	216.00	2966	306.00	103	441.00	65720
132.00	1164	217.00	32560	308.00	561	442.00	451968
133.00	475	218.00	3990	309.00	333	443.00	92200
134.00	3429	219.00	660	310.00	554	444.00	8175
135.00	7659	220.00	407	311.00	82	445.00	247
136.00	3233	221.00	24984	312.00	102		
137.00	3916	222.00	2305	313.00	395		

Assessment of GC Column Performance and Injection Port Inertness for

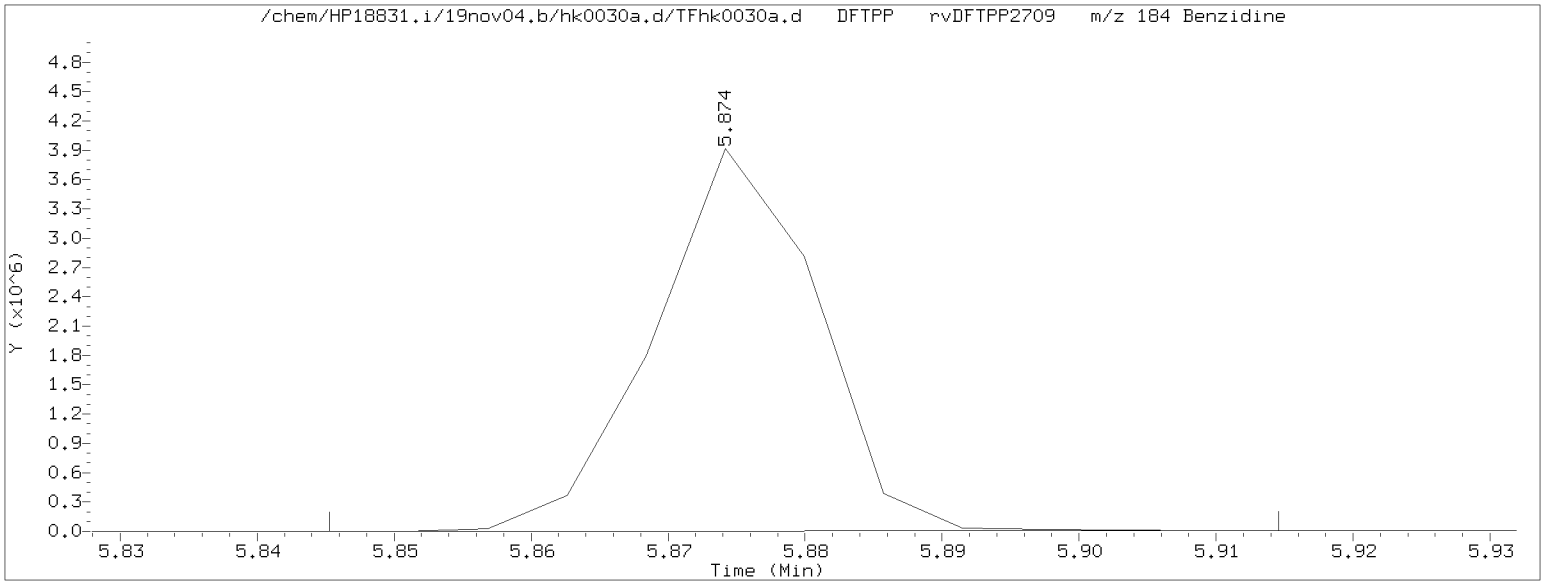
Instrument ID: HP18831.i Injection Date: 04-NOV-2019 08:43 Operator: whs02991



Pentachlorophenol EICP peak height = 689216 EICP peak height at 10% = 68922 Pentachlorophenol EICP area = 567290

Pentachlorophenol EICP peak apex (min.) = 4.632
RT at 10% of front half of EICP (min.) = 4.618 'Front' peak width (min.) = 0.0144333333
RT at 10% of back half of EICP (min.) = 4.643 'Tailing' peak width (min.) = 0.0108666667

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0108666667}{0.0144333333} = 0.753$$



Benzidine EICP peak height = 3912447 EICP peak height at 10% = 391245 Benzidine EICP area = 3239806

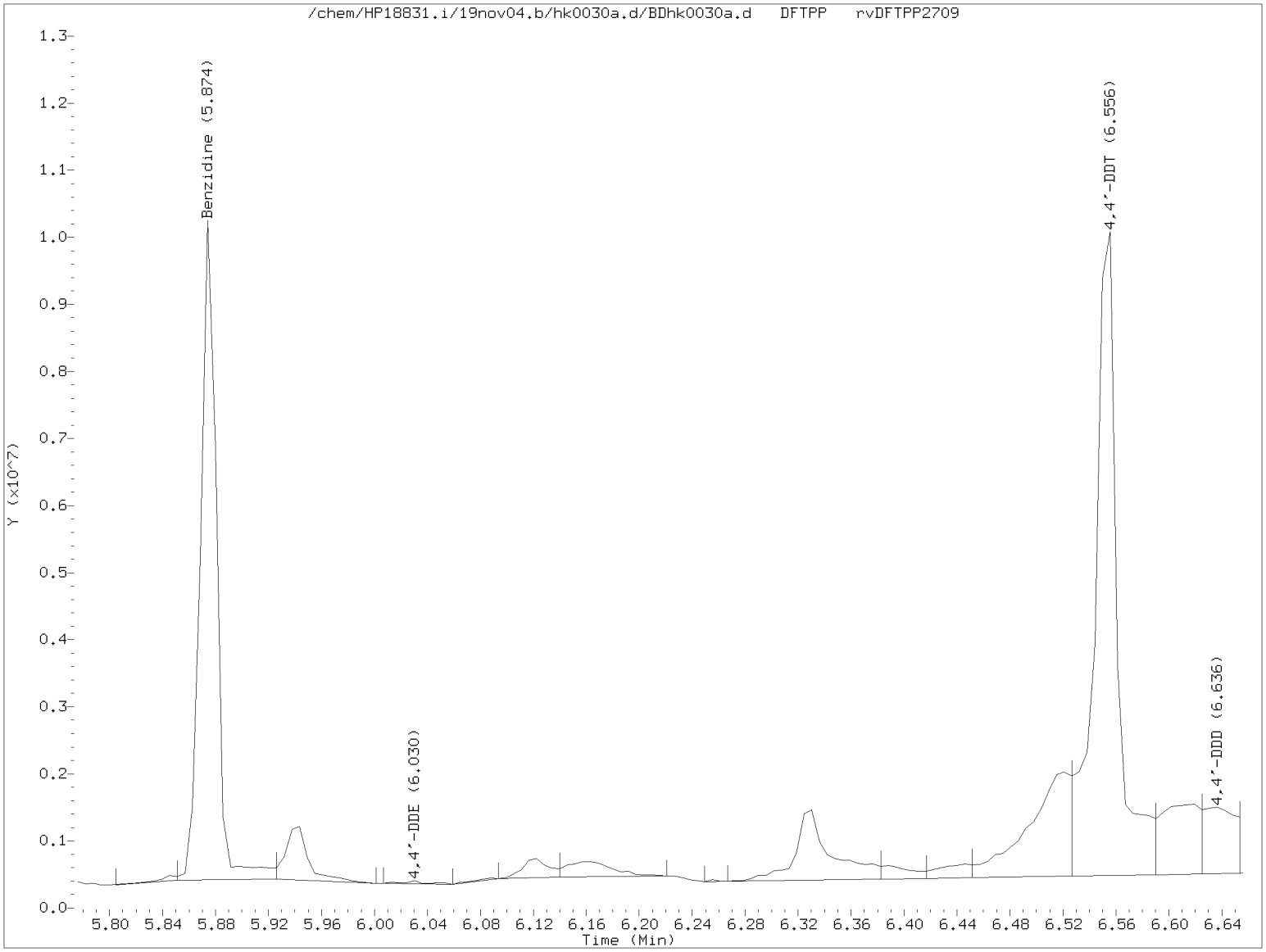
Benzidine EICP peak apex (min.) = 5.874
RT at 10% of front half of EICP (min.) = 5.863 'Front' peak width (min.) = 0.0114500000
RT at 10% of back half of EICP (min.) = 5.886 'Tailing' peak width (min.) = 0.0115333333

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0115333333}{0.0114500000} = 1.007$$

Secondary review performed and digitally signed by Chad A. Moline on 11/04/2019 at 16:16. PARALLAX ID: cam01237

Assessment of GC Column Performance and Injection Port Inertness for

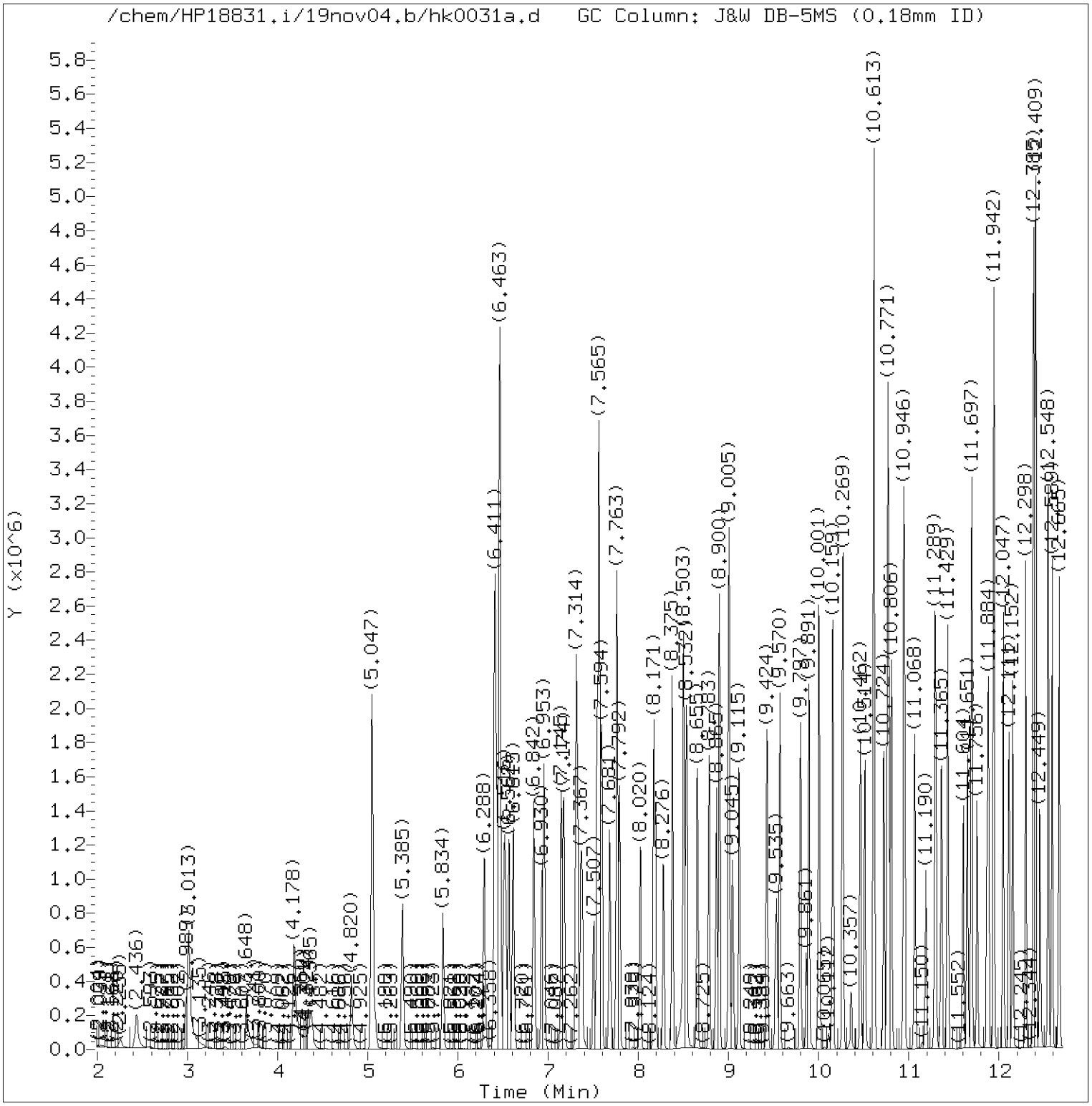
Instrument ID: HP18831.i Injection Date: 04-NOV-2019 08:43 Operator: whs02991



$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{56850 + 1623774}{56850 + 1623774 + 11578788} \times 100 = 12.7$$

Secondary review performed and digitally signed by Chad A. Moline on 11/04/2019 at 16:16. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

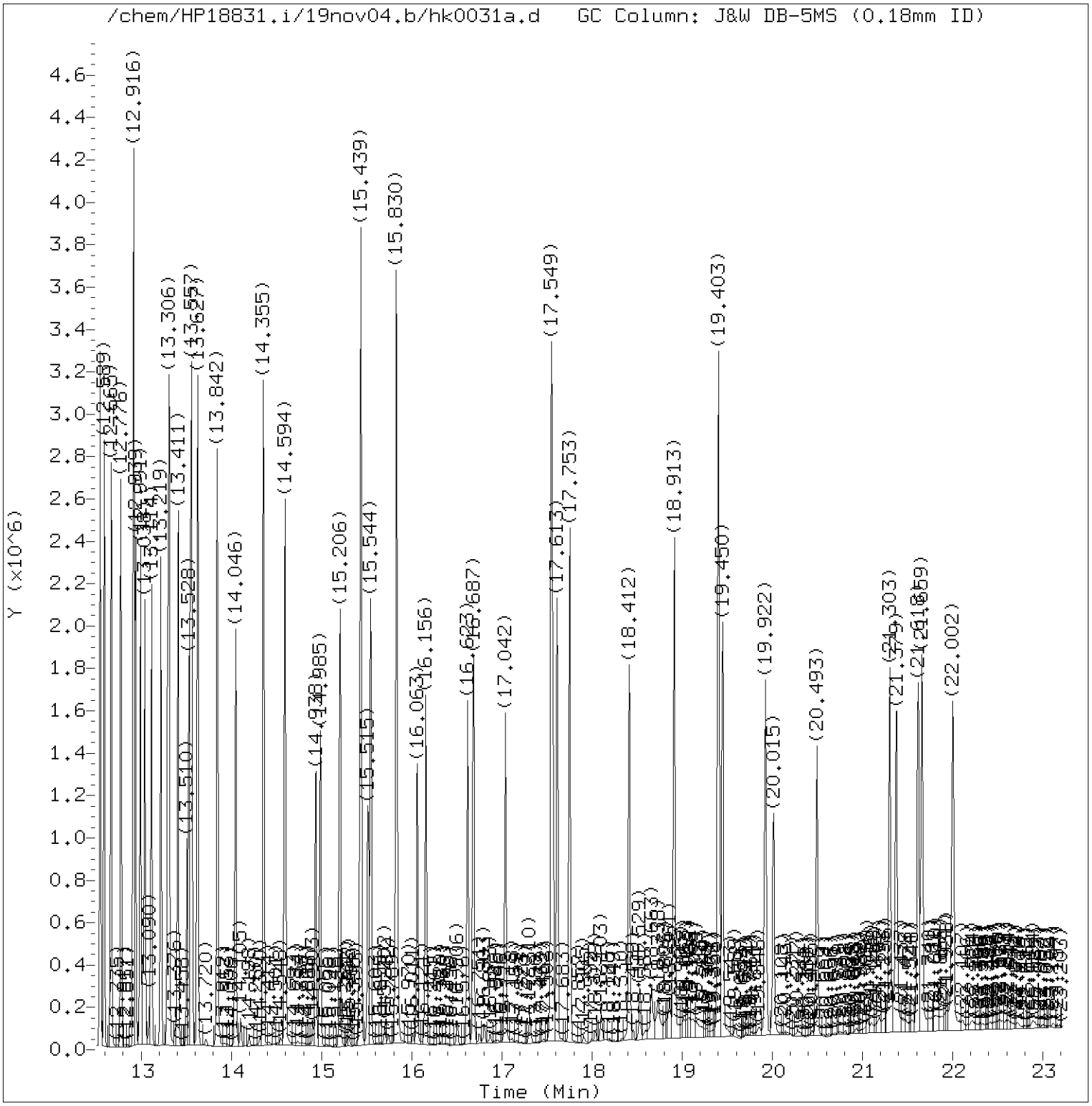
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.436	88	165744M	5.056
5) N-Nitrosodimethylamine	(1)	2.989	74	258472	5.432
6) Pyridine	(1)	3.013	79	420097	5.062
8) 2-Picoline	(1)	4.178	93	386131M	4.397
9) N-Nitrosomethylethylamine	(1)	4.377	88	215136	5.822
10) Methyl methanesulfonate	(1)	4.820	80	233443	5.912
12)$2-Fluorophenol	(1)	5.047	112	981703	14.748
14) N-Nitrosodiethylamine	(1)	5.385	102	246053	7.042
43) Total Cresols	(1)			976138	16.089
16) Ethyl methanesulfonate	(1)	5.834	109	251586	7.087
17) Benzaldehyde	(1)	6.294	77	330352	6.233
18)$Phenol-d6	(1)	6.411	99	1230000	14.330
19) Phenol	(1)	6.428	94	683532	7.227
20) Aniline	(1)	6.452	93	775071	7.167
21) a-methylstyrene	(1)	6.527	118	192299	7.036
23) bis(2-Chloroethyl)ether	(1)	6.562	93	496708	6.849
24) 2-Chlorophenol	(1)	6.615	128	498562	7.872
25) 1,3-Dichlorobenzene	(1)	6.842	146	491149	7.272
26)*1,4-Dichlorobenzene-d4	(1)	6.930	152	216328	5.000
27) 1,4-Dichlorobenzene	(1)	6.953	146	499006	7.259
28) Benzyl alcohol	(1)	7.145	108	311029	7.750
29) 1,2-Dichlorobenzene	(1)	7.174	146	470350	7.262
31) Indene	(1)	7.308	115	729509	7.750
32) 2-Methylphenol	(1)	7.320	108	456025	7.843
35) bis(2-Chloroisopropyl)ether	(1)	7.367	45	1073066	8.084
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.367	45	1073066	8.084
100) Isosafrole	(3)			392074	7.134
36) N-Nitrosopyrrolidine	(1)	7.507	100	254193	7.992
37) Acetophenone	(1)	7.542	105	661783	7.412
38) 4-Methylphenol	(1)	7.565	108	520113	8.246
39) N-Nitroso-di-n-propylamine	(1)	7.565	70	360869	7.708
40) N-Nitrosomorpholine	(1)	7.577	56	495492	8.604
41) o-Toluidine	(1)	7.594	106	759162	7.732
44) Hexachloroethane	(1)	7.681	117	221577	7.904
45)$Nitrobenzene-d5	(2)	7.763	82	1062935	15.689
46) Nitrobenzene	(2)	7.792	77	528748	7.746
50) N-Nitrosopiperidine	(2)	8.025	114	246906	8.003
125) 2,4_2,6-Dinitrotoluenes	(3)			491155	14.700
52) Isophorone	(2)	8.171	82	978447	7.906
53) 2-Nitrophenol	(2)	8.282	139	242485	7.660

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.375	107	510616	7.896
59) O,O,O-Triethylphosphorothioate	(2)	8.503	198	214735	7.441
58) Benzoic acid	(2)	8.527	105	430651	10.383
57) bis(2-Chloroethoxy)methane	(2)	8.538	93	599526	7.769
62) 2,4-Dichlorophenol	(2)	8.655	162	377255	7.862
151) Diallate trans/cis	(4)			473940	8.012
65) 1,2,4-Trichlorobenzene	(2)	8.783	180	379327	7.298
68)*Naphthalene-d8	(2)	8.865	136	804839	5.000
69) Naphthalene	(2)	8.900	128	1411651	8.102
70) 4-Chloroaniline	(2)	8.999	127	565787	8.389
71) 2,6-Dichlorophenol	(2)	9.010	162	372726	7.943
72) Hexachloropropene	(2)	9.045	213	217334	7.526
74) Hexachlorobutadiene	(2)	9.121	225	229550	7.489
78) Quinoline	(2)	9.424	129	868130	8.285
79) Caprolactam	(2)	9.535	113	138224	8.132
80) N-Nitrosodi-n-butylamine	(2)	9.570	84	353042	7.156
83) 4-Chloro-3-methylphenol	(2)	9.797	107	446719	8.385
85) Safrole	(2)	9.896	162	340225	7.600
86) 2-Methylnaphthalene	(2)	10.001	142	888511	7.688
87) 1-Methylnaphthalene	(2)	10.159	142	830937	7.912
88) Hexachlorocyclopentadiene	(3)	10.264	237	259347	6.830
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.269	216	375219	6.924
91) cis-Isosafrole	(3)	10.363	162	62479	1.202
93) 2,4,6-Trichlorophenol	(3)	10.462	196	267872	7.513
95) 2,4,5-Trichlorophenol	(3)	10.514	196	281885	7.368
96)$2-Fluorobiphenyl	(3)	10.613	172	1934635	14.398
97) trans-Isosafrole	(3)	10.724	162	329595	5.932
98) 1,1'-Biphenyl	(3)	10.765	154	1003112	6.719
99) 2-Chloronaphthalene	(3)	10.777	162	795642	6.992
101) 1-Chloronaphthalene	(3)	10.806	162	784713	7.345
103) Diphenyl ether	(3)	10.946	170	574889	7.086
104) 2-Nitroaniline	(3)	10.951	138	287688	7.299
108) 1,4-Naphthoquinone	(3)	11.068	158	360449	7.399
109) 1,4-Dinitrobenzene	(3)	11.190	168	149146	7.166
110) Dimethylphthalate	(3)	11.289	163	945610	7.589
111) 1,3-Dinitrobenzene	(3)	11.301	168	168171	7.274
113) 2,6-Dinitrotoluene	(3)	11.365	165	213829	7.491
114) Acenaphthylene	(3)	11.429	152	1354844	7.368
117) 3-Nitroaniline	(3)	11.604	138	229304	7.100
118)*Acenaphthene-d10	(3)	11.651	164	400760	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.697	153	895115	7.443
120) 2,4-Dinitrophenol	(3)	11.756	184	184757	8.999
121) 4-Nitrophenol	(3)	11.866	109	176080	7.925
122) Pentachlorobenzene	(3)	11.884	250	349682	7.332
124) Dibenzofuran	(3)	11.942	168	1200434	7.330
123) 2,4-Dinitrotoluene	(3)	11.948	165	277326	7.209
126) 1-Naphthylamine	(3)	12.047	143	774981	6.915
127) 2,3,4,6-Tetrachlorophenol	(3)	12.111	232	219135	6.984
128) 2-Naphthylamine	(3)	12.152	143	693466	6.283
129) Diethylphthalate	(3)	12.298	149	951806	6.988
131) Fluorene	(3)	12.379	166	966556	7.203
130) Thionazin	(3)	12.391	107	192934	7.492
133) 5-Nitro-o-toluidine	(3)	12.409	152	277005	7.099
132) 4-Chlorophenyl-phenylether	(3)	12.409	204	433549	6.958
134) 4-Nitroaniline	(3)	12.414	138	240435	7.105
135) 4,6-Dinitro-2-methylphenol	(4)	12.455	198	171492	7.512
137) NDPA as diphenylamine	(4)	12.548	169	804073	7.430
136) N-Nitrosodiphenylamine	(4)	12.548	169	804073	7.430
139) 1,2-Diphenylhydrazine	(4)	12.589	77	1006282	7.730
140)$2,4,6-Tribromophenol	(3)	12.665	330	299038	16.418
142) Tetraethyldithiopyrophosphate	(4)	12.776	97	187294	8.215
145) Diallate (peak 1)	(4)	12.910	86	405627	6.658
146) Phorate	(4)	12.921	75	624815	7.965
147) Phenacetin	(4)	12.939	108	531372	8.066
148) 4-Bromophenyl-phenylether	(4)	12.991	248	239549	7.602
149) Diallate (peak 2)	(4)	13.015	86	68313	1.355
150) Hexachlorobenzene	(4)	13.038	284	282307	8.870
152) Dimethoate	(4)	13.114	87	405443	8.077
153) Atrazine	(4)	13.219	200	231502	8.187
154) Pentachlorophenol	(4)	13.294	266	185926	7.951
156) Pentachloronitrobenzene	(4)	13.306	237	120945	8.328
155) 4-Aminobiphenyl	(4)	13.312	169	554939	7.891
157) Pronamide	(4)	13.411	173	439929	8.150
158)*Phenanthrene-d10	(4)	13.528	188	733649	5.000
159) Dinoseb	(4)	13.545	211	261918	7.691
160) Phenanthrene	(4)	13.563	178	1288453	7.707
162) Anthracene	(4)	13.627	178	1326868	7.804
168) Carbazole	(4)	13.842	167	1293047	7.709
169) Methyl parathion	(4)	14.046	109	360833	8.566
170) Di-n-butylphthalate	(4)	14.355	149	1747502	7.780

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$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

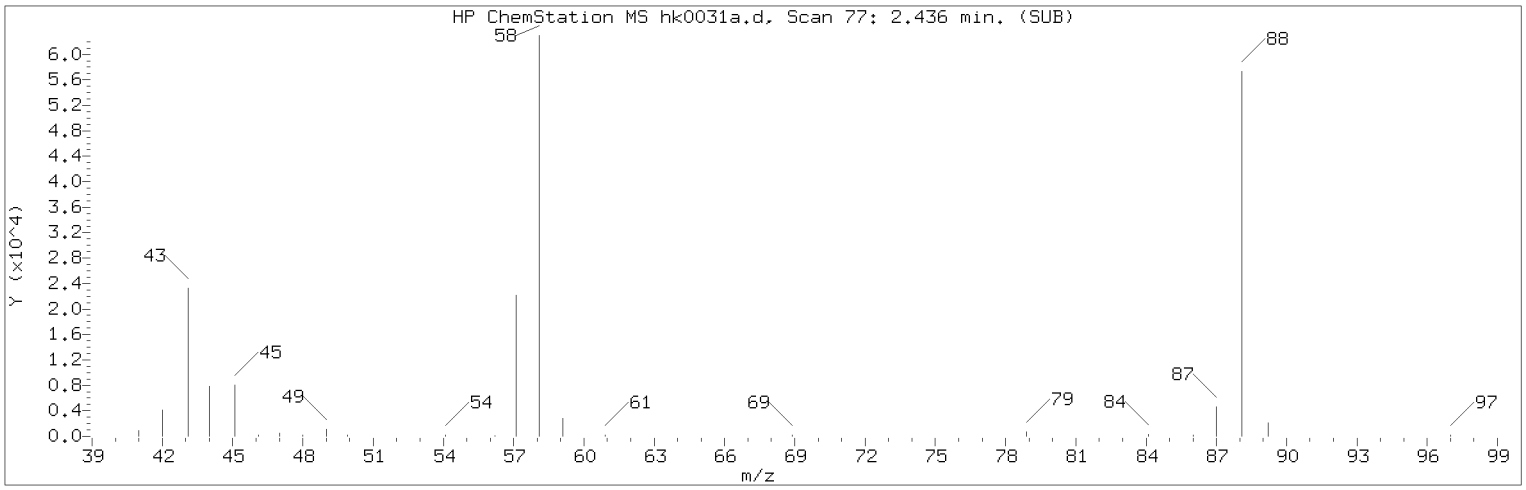
Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.588	109	205677	7.566
173) 4-Nitroquinoline-1-oxide	(4)	14.600	190	137450	6.398
174) Octachlorostyrene	(4)	14.938	308	83513	6.200
176) Isodrin	(4)	14.985	193	120345	5.776
227) Total PAHs	(6)			19453770	139.236
178) Fluoranthene	(4)	15.206	202	1106721	5.635
179) Benzidine	(5)	15.439	184	2052901	21.628
180)*Pyrene-d10	(5)	15.515	212	532805	5.000
182) Pyrene	(5)	15.544	202	1128548	7.272
184)$Terphenyl-d14	(5)	15.830	244	1389489	14.204
187) p-Dimethylaminoazobenzene	(5)	16.063	225	189009	7.528
190) Chlorobenzilate	(5)	16.156	139	395074	7.672
192) 3,3'-Dimethylbenzidine	(5)	16.623	212	718919	7.393
193) Butylbenzylphthalate	(5)	16.687	149	576813	7.461
196) 2-Acetylaminofluorene	(5)	17.042	181	449965	7.698
198) 3,3'-Dichlorobenzidine	(5)	17.544	252	402263	7.652
200) Benzo(a)anthracene	(5)	17.549	228	1002769	7.616
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.567	231	218366	7.682
201) Chrysene	(5)	17.613	228	1003577	7.415
204) bis(2-Ethylhexyl)phthalate	(5)	17.753	149	849329	7.667
208) 6-Methylchrysene	(5)	18.412	242	720592	7.560
210) Di-n-octylphthalate	(6)	18.913	149	1520377	7.864
211) Benzo(b)fluoranthene	(6)	19.403	252	1093830	8.192
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.409	256	466540	7.937
213) Benzo(k)fluoranthene	(6)	19.450	252	1026977	7.592
216) Benzo(a)pyrene	(6)	19.927	252	983539	7.696
218)*Perylene-d12	(6)	20.015	264	546055	5.000
220) 3-Methylcholanthrene	(6)	20.493	268	510486	8.847
222) Dibenz(a,h)acridine	(6)	21.303	279	919474	8.611
223) Dibenz(a,j)acridine	(6)	21.379	279	908553	8.602
224) Indeno(1,2,3-cd)pyrene	(6)	21.618	276	1011806M	8.742
225) Dibenz(a,h)anthracene	(6)	21.659	278	1065492	9.024
226) Benzo(g,h,i)perylene	(6)	22.002	276	1067576	8.825

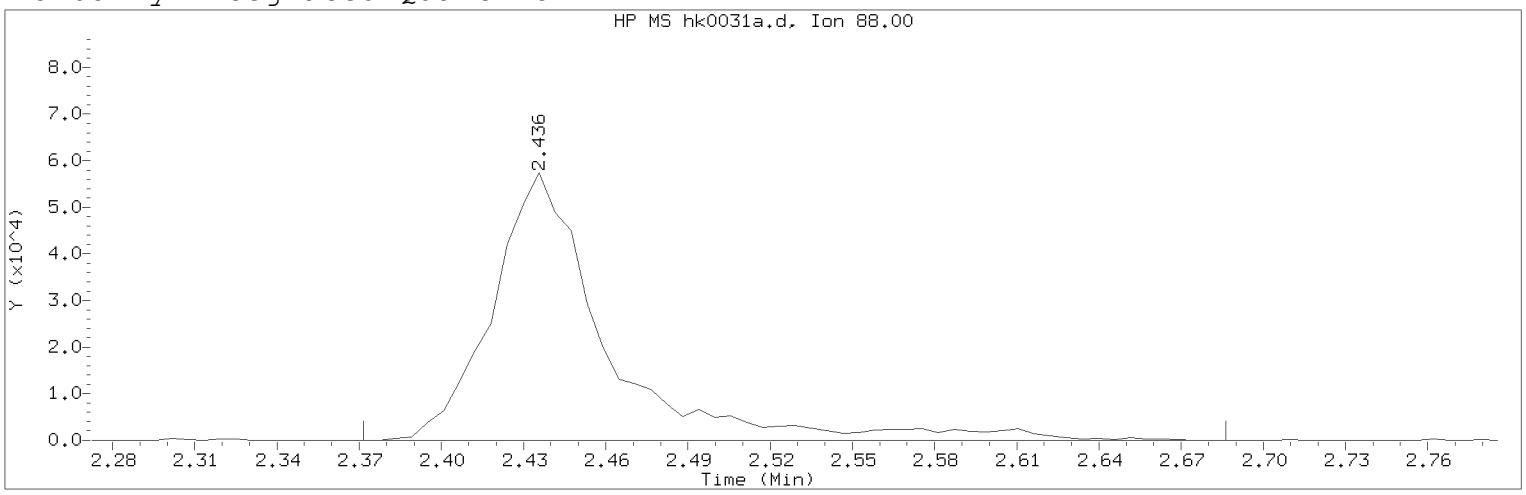
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

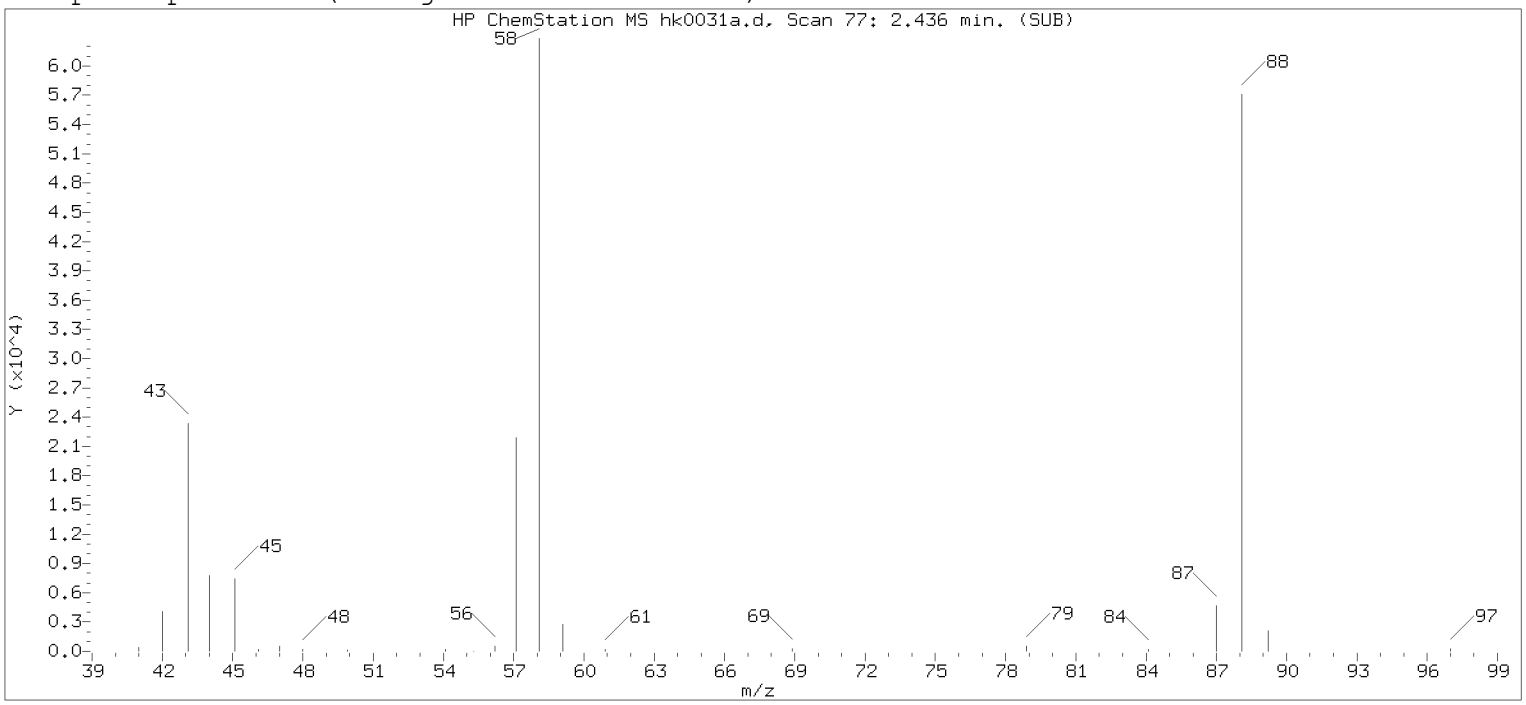
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 77
Retention Time (minutes) : 2.436
Quant Ion : 88.00
Area (flag) : 165744M
On-Column Amount (ng/ul) : 5.0558
Integration start scan : 65 Integration stop scan: 119
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

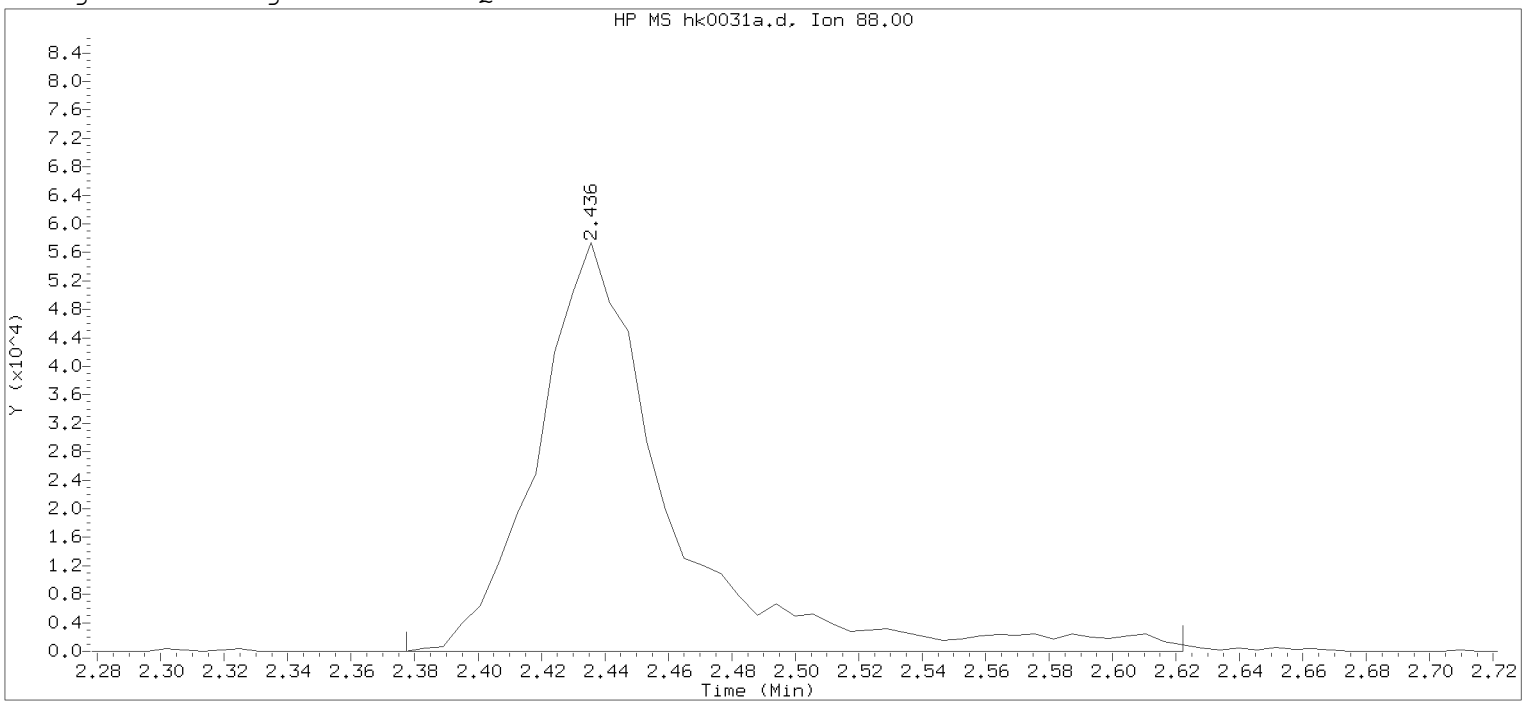
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/04/2019 at 16:16.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

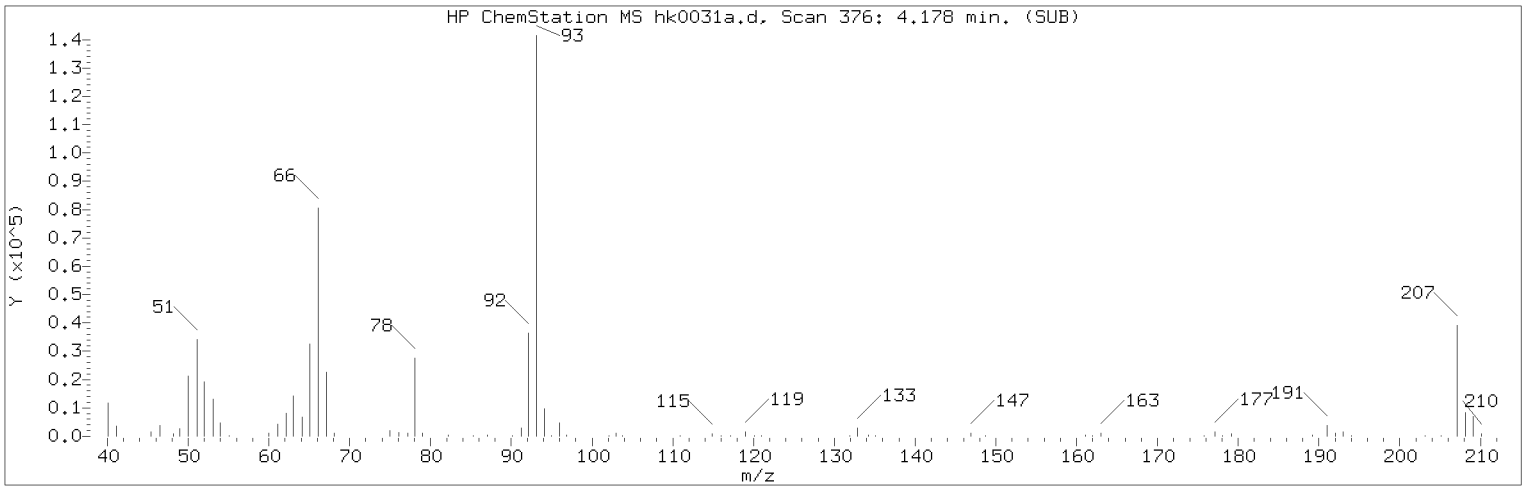
Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:23
Date, time and analyst ID of latest file update: 04-Nov-2019 11:23 Automation

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

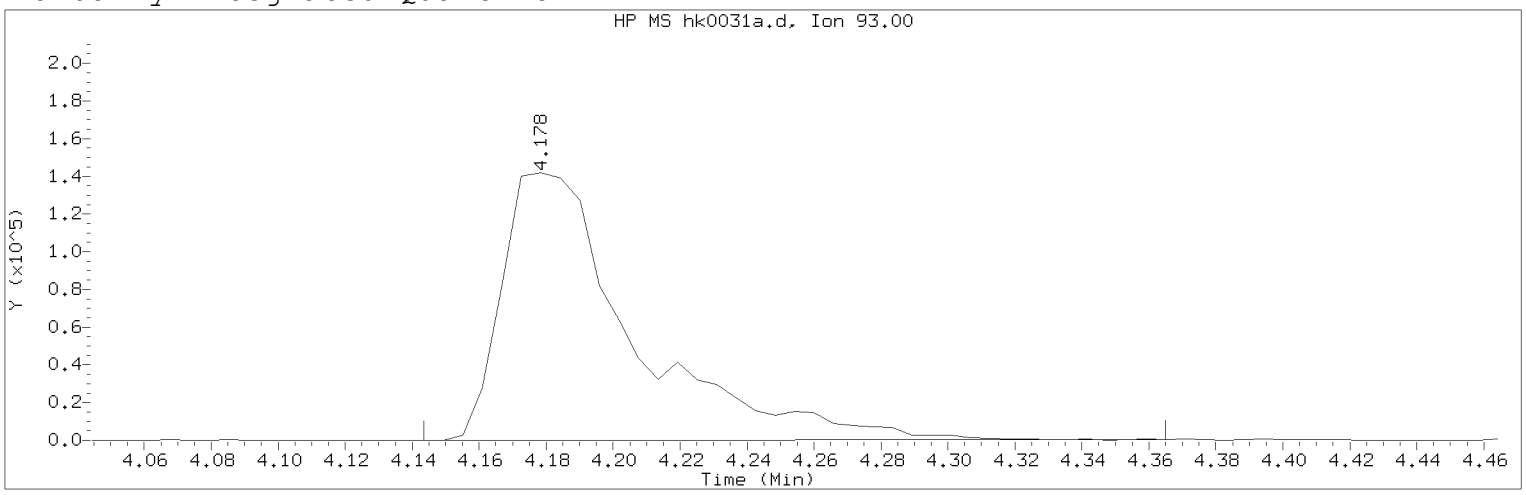
Compound Number	: 1		
Compound Name	: 1,4-Dioxane		
Scan Number	: 77		
Retention Time (minutes)	: 2.436		
Quant Ion	: 88.00		
Area	: 164670		
On-column Amount (ng/ul)	: 5.0230		
Integration start scan	: 66	Integration stop scan:	108
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/04/2019 at 12:55.
Target 3.5 esignature used: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

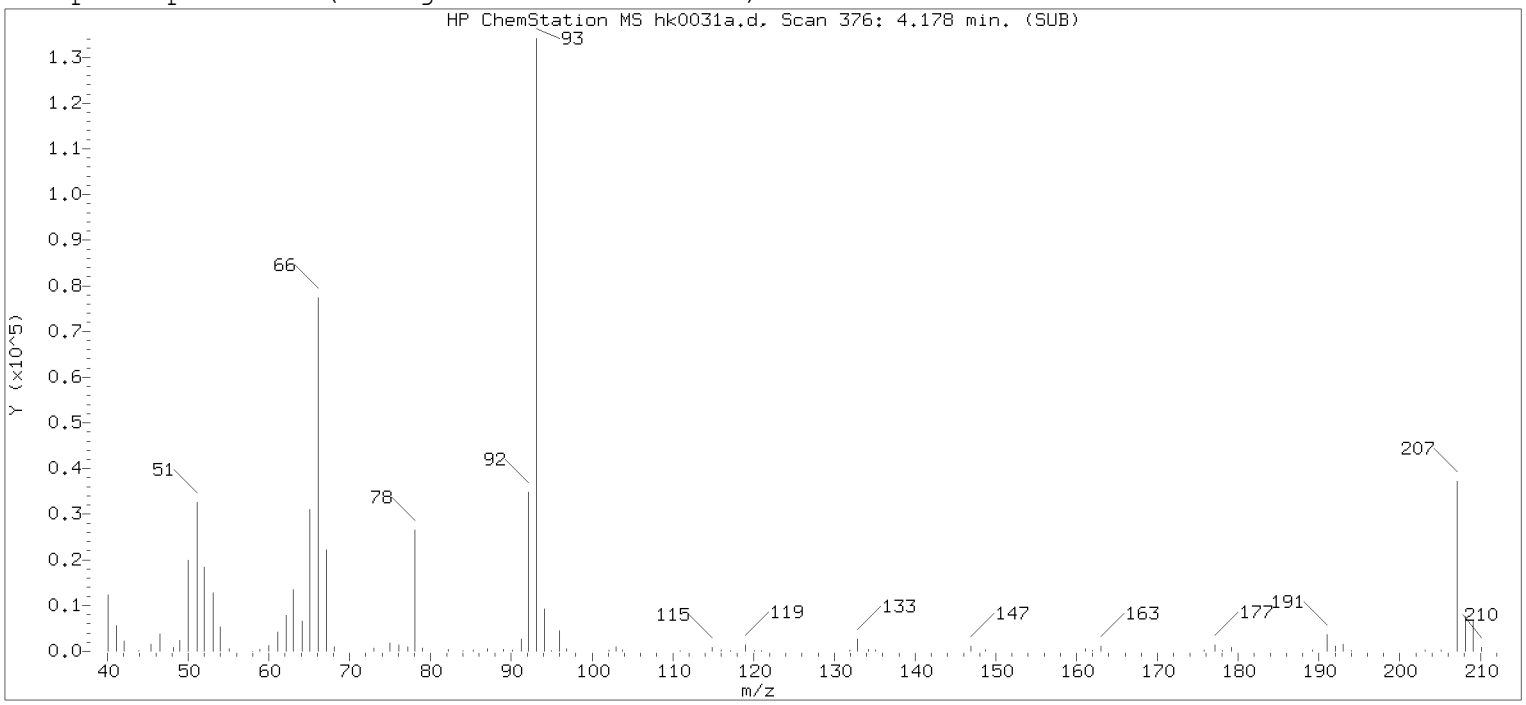
Compound Number : 8
Compound Name : 2-Picoline
Scan Number : 376
Retention Time (minutes) : 4.178
Quant Ion : 93.00
Area (flag) : 386131M
On-Column Amount (ng/ul) : 4.3974
Integration start scan : 369 Integration stop scan: 407
Y at integration start : 0 Y at integration end: 465

Reason for manual integration: improper integration

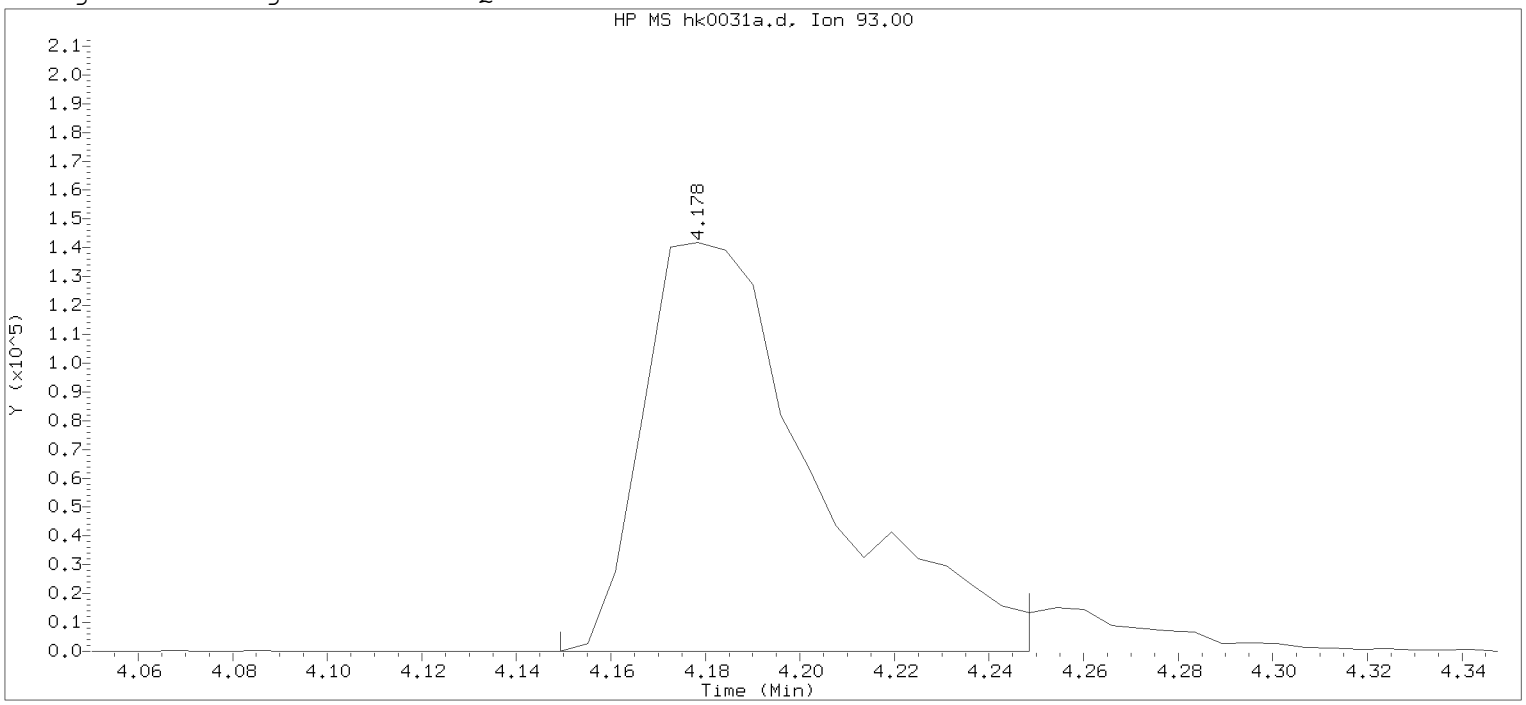
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/04/2019 at 16:16.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

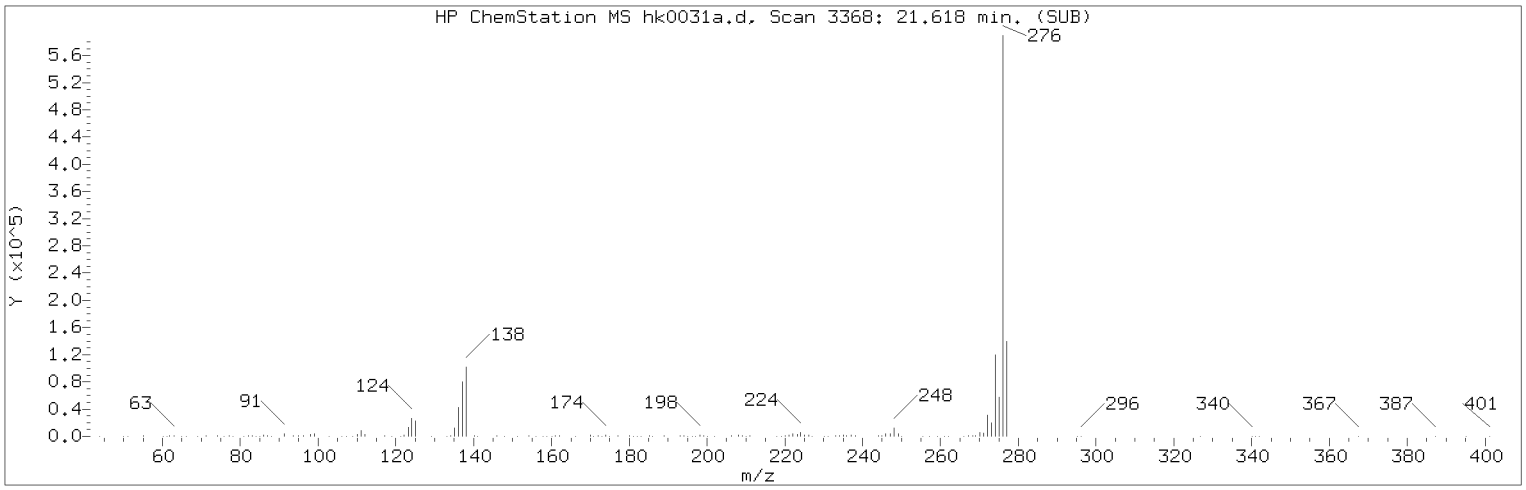
Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:23
Date, time and analyst ID of latest file update: 04-Nov-2019 11:23 Automation

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

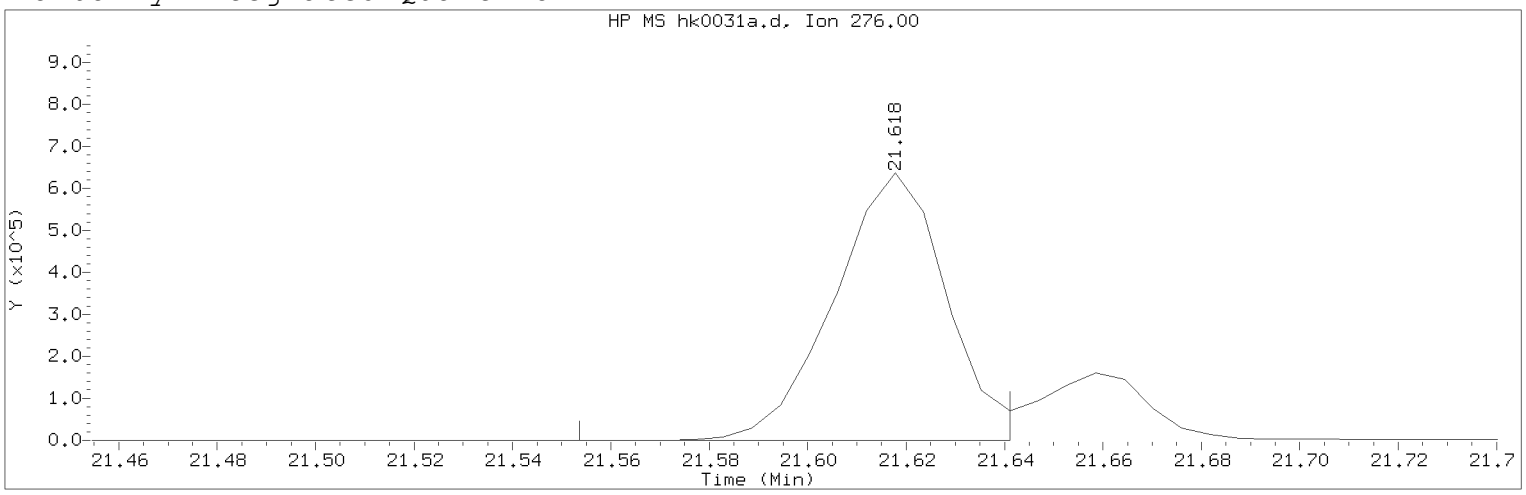
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 376		
Retention Time (minutes)	: 4.178		
Quant Ion	: 93.00		
Area	: 360478		
On-column Amount (ng/ul)	: 4.1053		
Integration start scan	: 370	Integration stop scan:	387
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/04/2019 at 12:55.
Target 3.5 esignature used with w2991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:31
Date, time and analyst ID of latest file update: 04-Nov-2019 11:31 whs02991

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

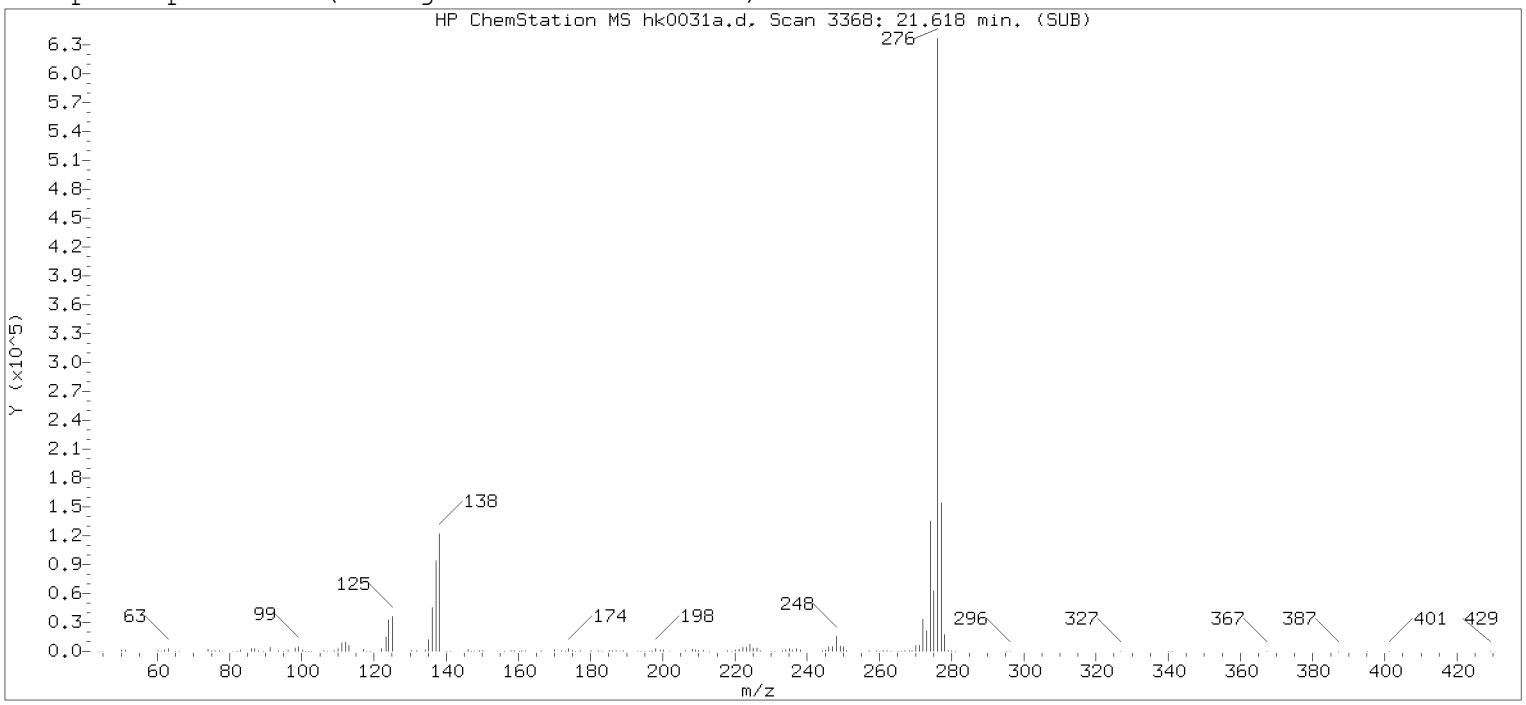
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3368
Retention Time (minutes) : 21.618
Quant Ion : 276.00
Area (flag) : 1011806M
On-Column Amount (ng/ul) : 8.7425
Integration start scan : 3356 Integration stop scan: 3371
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

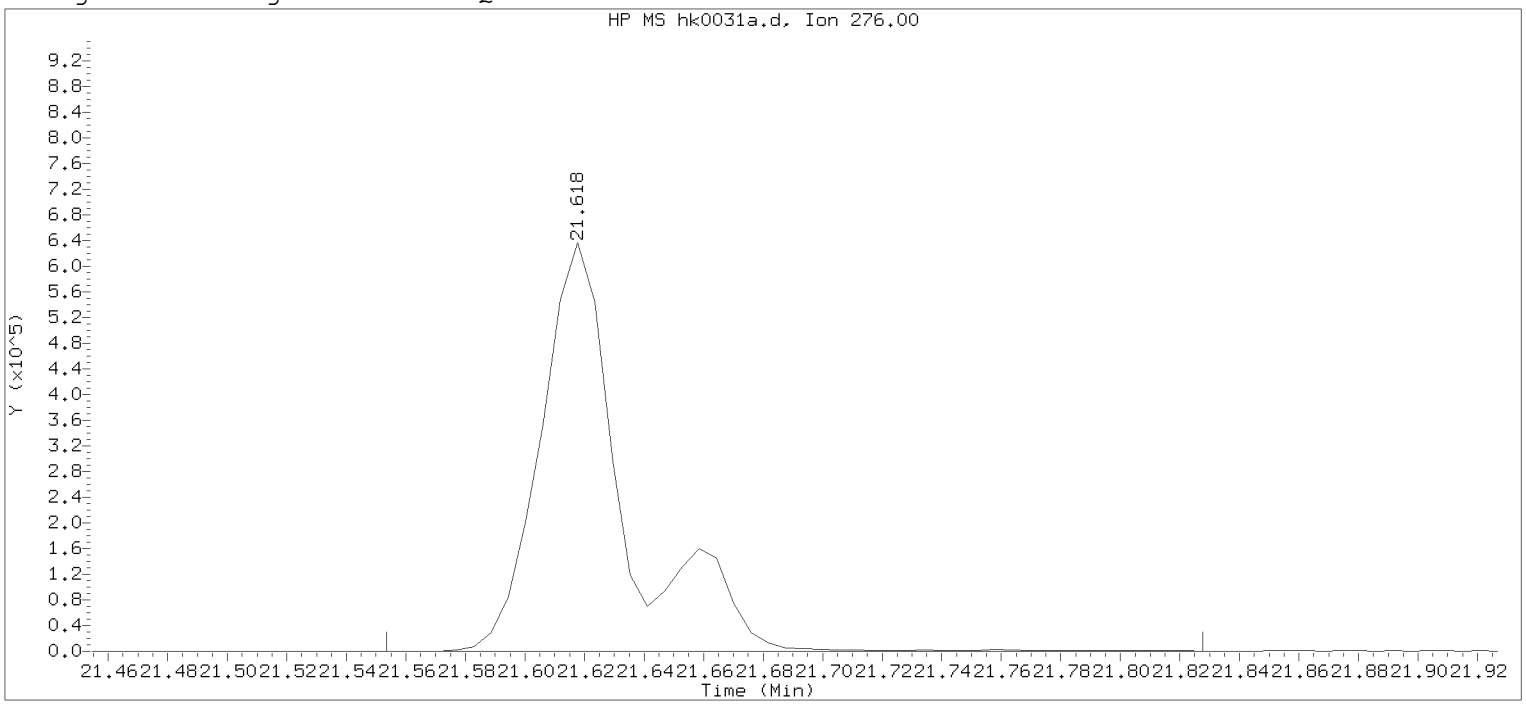
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/04/2019 at 12:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/04/2019 at 16:16.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP18831.i/19nov04.b/hk0031a.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 10:51 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: all1-s
Calibration date and time: 04-NOV-2019 11:23
Date, time and analyst ID of latest file update: 04-Nov-2019 11:23 Automation

Sample Name: SSTD7.5 Lab Sample ID: rvSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3368		
Retention Time (minutes)	: 21.618		
Quant Ion	: 276.00		
Area	: 1251673		
On-column Amount (ng/ul)	: 10.8150		
Integration start scan	: 3356	Integration stop scan:	3403
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/04/2019 at 12:55.
Target 3.5 esignature used with password.

Data File: /chem/HP20296.i/19nov04.b/lk0070.d

Page 1

Date : 04-NOV-2019 13:13

Client ID: DFTPP12.5

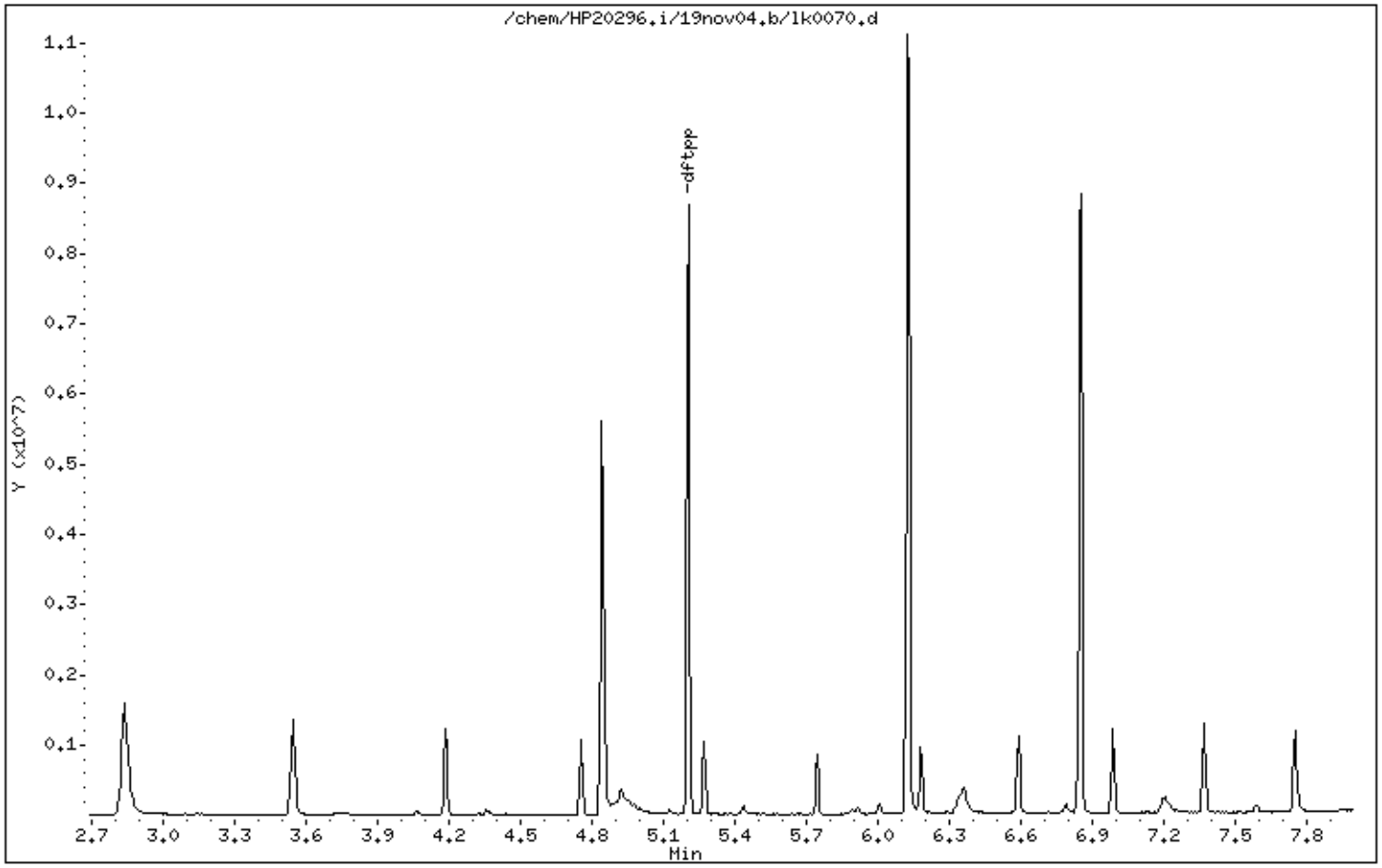
Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS

Column diameter: 0.18



Data File: /chem/HP20296.i/19nov04.b/lk0070.d

Date : 04-NOV-2019 13:13

Client ID: DFTPP12.5

Instrument: HP20296.i

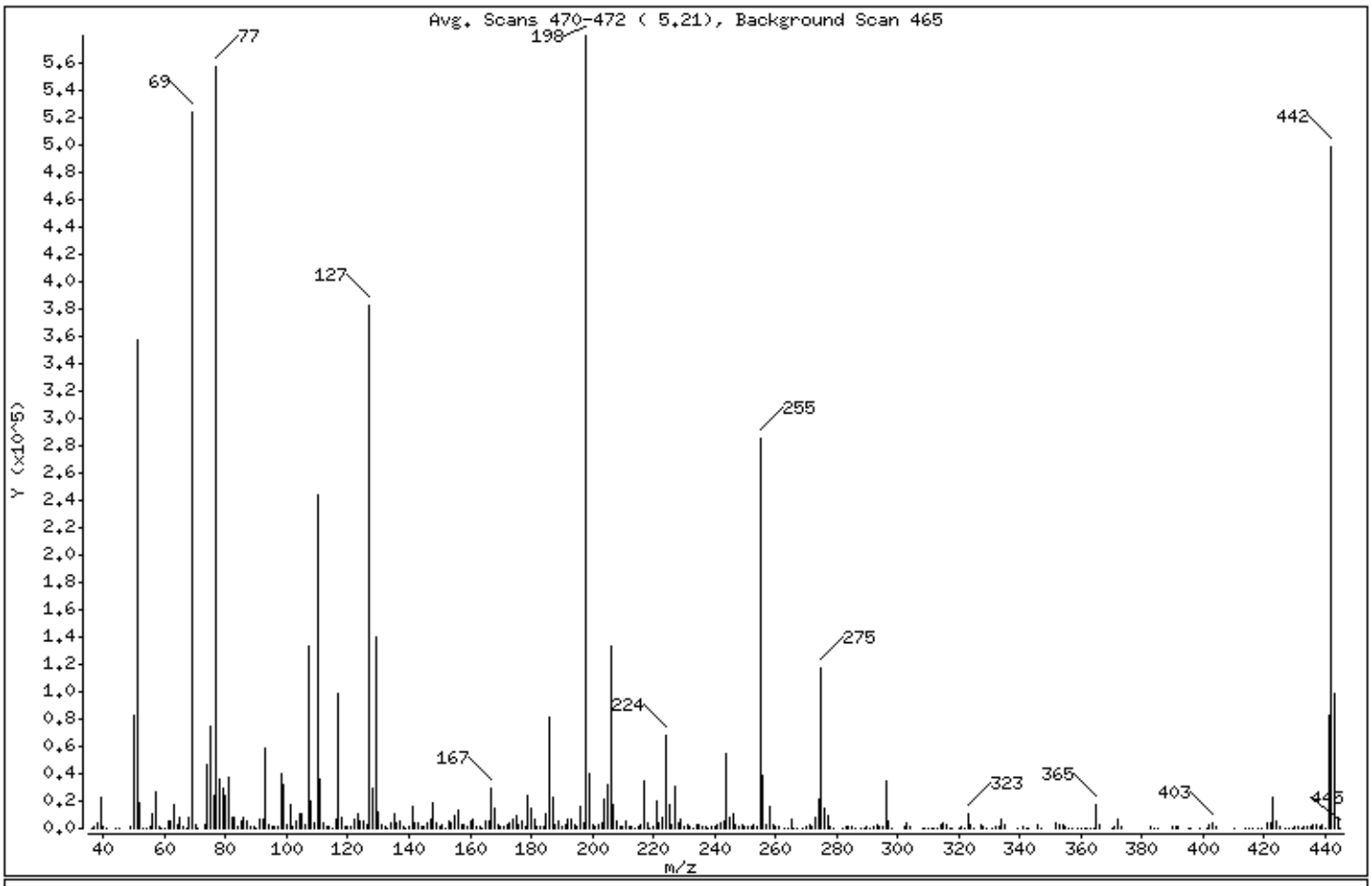
Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	61.59
68	Less than 2.00% of mass 69	1.35 (1.50)
69	Mass 69 relative abundance	90.38
70	Less than 2.00% of mass 69	0.38 (0.42)
127	10.00 - 80.00% of mass 198	65.97
197	Less than 2.00% of mass 198	0.76
199	5.00 - 9.00% of mass 198	6.99
275	10.00 - 60.00% of mass 198	20.21
365	Greater than 1.00% of mass 198	3.07
441	0.01 - 24.00% of mass 442	14.19 (16.52)
442	50.00 - 99.99% of mass 198	85.87
443	15.00 - 24.00% of mass 442	17.00 (19.79)

Date : 04-NOV-2019 13:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0070.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 465
Location of Maximum: 198.00
Number of points: 347

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	473	129.00	139648	216.00	2866	314.00	2346
37.00	1061	130.00	11839	217.00	34216	315.00	3677
38.00	3863	131.00	2348	218.00	4452	316.00	2046
39.00	23096	132.00	964	219.00	419	317.00	339
40.00	869	133.00	258	220.00	1133	318.00	183
41.00	27	134.00	3560	221.00	20272	320.00	264
44.00	430	135.00	10960	222.00	3639	321.00	1234
45.00	539	136.00	4403	223.00	7710	322.00	643
49.00	863	137.00	4785	224.00	67784	323.00	11196
50.00	82152	138.00	1463	225.00	17472	324.00	2120
51.00	357056	139.00	558	226.00	2343	325.00	123
52.00	18792	140.00	1613	227.00	30104	327.00	2224
53.00	626	141.00	16068	228.00	4137	328.00	878
54.00	132	142.00	4575	229.00	6820	329.00	213
55.00	1611	143.00	4045	230.00	880	331.00	85
56.00	10791	144.00	1106	231.00	2576	332.00	1168
57.00	27096	145.00	1660	232.00	678	333.00	1192
58.00	701	146.00	3462	233.00	555	334.00	7177
59.00	425	147.00	6840	234.00	2555	335.00	2315
60.00	571	148.00	19112	235.00	2173	339.00	128
61.00	5005	149.00	3607	236.00	1405	341.00	1439
62.00	5094	150.00	1263	237.00	1844	342.00	415
63.00	17296	151.00	2204	238.00	439	343.00	366
64.00	2650	152.00	561	239.00	1323	346.00	2900
65.00	8531	153.00	5125	240.00	1260	347.00	217
66.00	847	154.00	4592	241.00	2474	352.00	4299
67.00	543	155.00	9479	242.00	4664	353.00	2312
68.00	7850	156.00	13917	243.00	5111	354.00	2496
69.00	524032	157.00	2672	244.00	54176	355.00	723
70.00	2218	158.00	2208	245.00	7843	356.00	393
71.00	290	159.00	1819	246.00	10271	357.00	145
73.00	3062	160.00	4712	247.00	2069	359.00	214
74.00	46888	161.00	6812	248.00	725	360.00	160
75.00	75040	162.00	1761	249.00	2579	361.00	248
76.00	24360	163.00	833	250.00	1302	362.00	300

Date : 04-NOV-2019 13:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: whs02991

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0070.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 465
Location of Maximum: 198.00
Number of points: 347

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	556480	164.00	205	251.00	1491	363.00	433
78.00	35888	165.00	5779	252.00	1648	364.00	389
79.00	29984	166.00	4708	253.00	2693	365.00	17776
80.00	24296	167.00	29584	254.00	957	366.00	2555
81.00	37344	168.00	14183	255.00	284736	370.00	381
82.00	7795	169.00	2732	256.00	38864	371.00	967
83.00	7750	170.00	887	257.00	3006	372.00	6328
84.00	1168	171.00	1462	258.00	15684	373.00	1548
85.00	4858	172.00	2960	259.00	2438	383.00	1285
86.00	8589	173.00	3382	260.00	719	384.00	522
87.00	4759	174.00	7045	261.00	777	385.00	325
88.00	1911	175.00	9835	263.00	480	390.00	954
89.00	723	176.00	3206	264.00	212	391.00	1265
90.00	173	177.00	4847	265.00	6075	392.00	747
91.00	7012	178.00	1931	266.00	525	395.00	105
92.00	6182	179.00	23472	267.00	300	396.00	131
93.00	59176	180.00	14381	269.00	137	399.00	122
94.00	2877	181.00	6195	270.00	832	401.00	555
95.00	825	182.00	1057	271.00	2550	402.00	2967
96.00	1848	183.00	799	272.00	796	403.00	3721
97.00	732	184.00	1723	273.00	8183	404.00	1160
98.00	40384	185.00	10397	274.00	21208	410.00	199
99.00	31768	186.00	80888	275.00	117160	414.00	308
100.00	2717	187.00	22344	276.00	14098	415.00	359
101.00	16752	188.00	2628	277.00	9850	416.00	142
102.00	1153	189.00	4871	278.00	1739	418.00	371
103.00	5462	190.00	923	279.00	289	419.00	518
104.00	10275	191.00	2433	282.00	105	421.00	4032
105.00	10211	192.00	7226	283.00	821	422.00	3400
106.00	3107	193.00	6816	284.00	880	423.00	23024
107.00	133248	194.00	2060	285.00	1829	424.00	5130
108.00	20096	195.00	1228	286.00	461	425.00	972
109.00	4196	196.00	15995	288.00	148	427.00	480
110.00	243776	197.00	4394	289.00	354	428.00	397
111.00	35440	198.00	579776	290.00	768	429.00	501

Date : 04-NOV-2019 13:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: whs02991

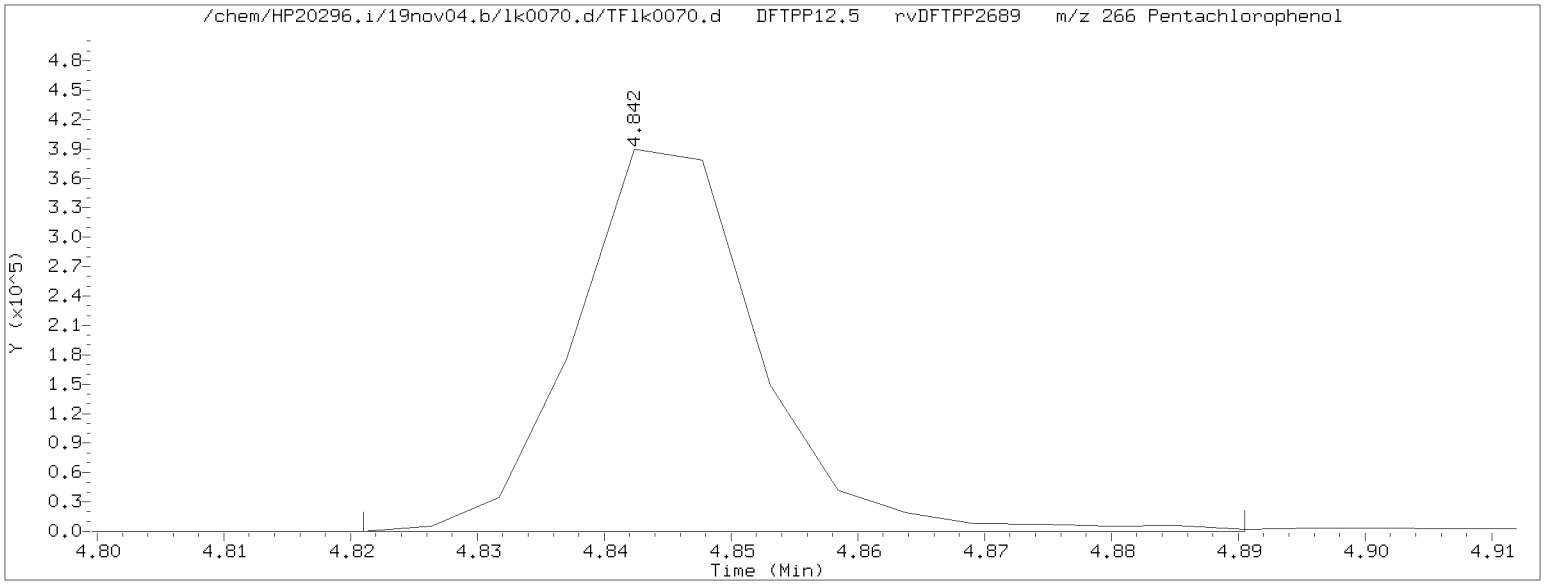
Column phase: DB-5MS Column diameter: 0.18

Data File: lk0070.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 465
Location of Maximum: 198.00
Number of points: 347

m/z	Y	m/z	Y	m/z	Y	m/z	Y
112.00	4552	199.00	40536	291.00	146	430.00	847
113.00	1324	200.00	2890	292.00	1461	431.00	868
114.00	704	201.00	1339	293.00	2555	432.00	639
115.00	164	202.00	2500	294.00	973	433.00	1342
116.00	6910	203.00	4229	295.00	815	434.00	1419
117.00	99184	204.00	21008	296.00	34328	435.00	1411
118.00	7930	205.00	31392	297.00	4968	436.00	2379
119.00	1308	206.00	133312	298.00	257	437.00	2289
120.00	1375	207.00	16696	302.00	886	438.00	1758
121.00	758	208.00	5004	303.00	4142	439.00	2250
122.00	6414	209.00	1215	304.00	1439	440.00	434
123.00	11051	210.00	1293	308.00	573	441.00	82272
124.00	5925	211.00	4937	309.00	334	442.00	497856
125.00	5152	212.00	735	310.00	629	443.00	98552
126.00	2408	213.00	764	311.00	300	444.00	8660
127.00	382464	214.00	327	312.00	326	445.00	409
128.00	28656	215.00	1398	313.00	139		

Assessment of GC Column Performance and Injection Port Inertness for

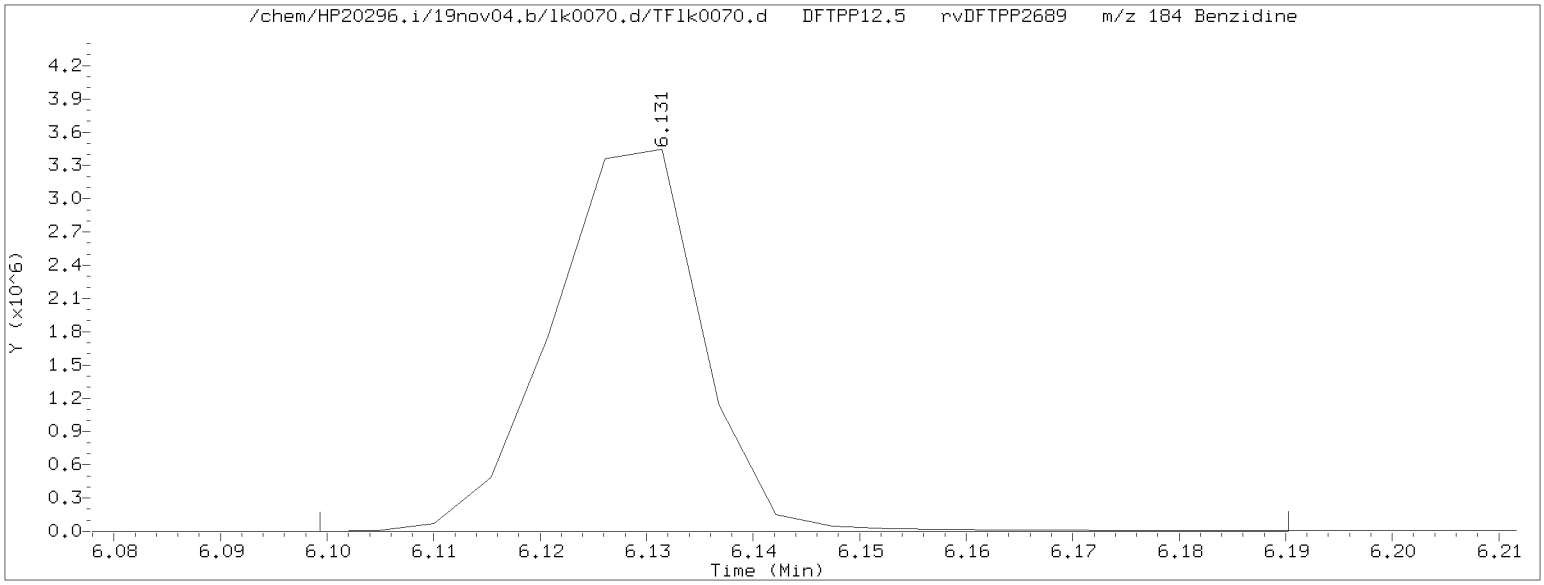
Instrument ID: HP20296.i Injection Date: 04-NOV-2019 13:13 Operator: whs02991



Pentachlorophenol EICP peak height = 389888 EICP peak height at 10% = 38989 Pentachlorophenol EICP area = 391922

Pentachlorophenol EICP peak apex (min.) = 4.842
RT at 10% of front half of EICP (min.) = 4.832 'Front' peak width (min.) = 0.0105000000
RT at 10% of back half of EICP (min.) = 4.859 'Tailing' peak width (min.) = 0.0165333333

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0165333333}{0.0105000000} = 1.575$$



Benzidine EICP peak height = 3447808 EICP peak height at 10% = 344781 Benzidine EICP area = 3386360

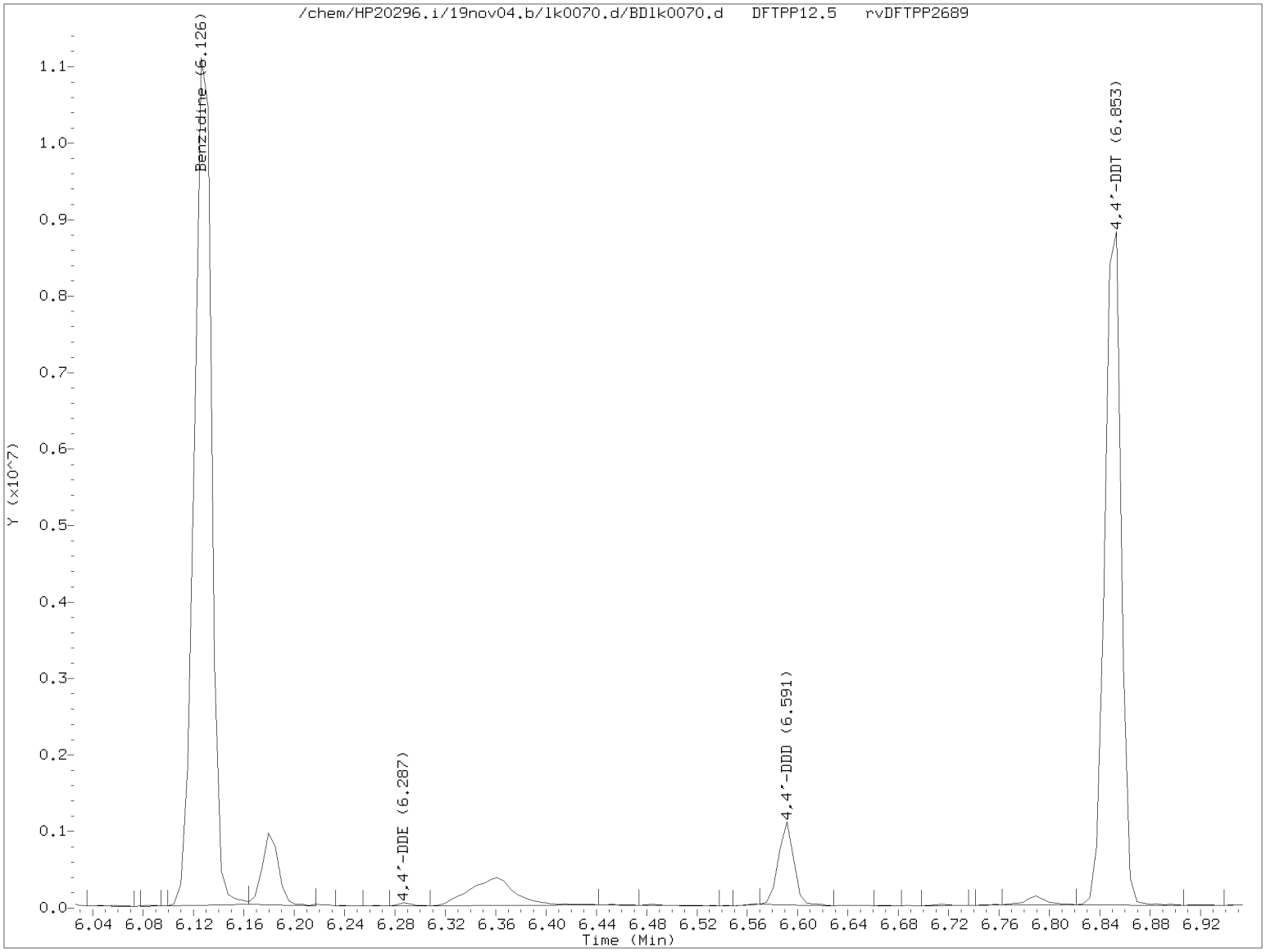
Benzidine EICP peak apex (min.) = 6.131
RT at 10% of front half of EICP (min.) = 6.114 'Front' peak width (min.) = 0.0178500000
RT at 10% of back half of EICP (min.) = 6.141 'Tailing' peak width (min.) = 0.0096333333

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0096333333}{0.0178500000} = 0.540$$

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 14:14. PARALLAX ID: cam01237

Assessment of GC Column Performance and Injection Port Inertness for

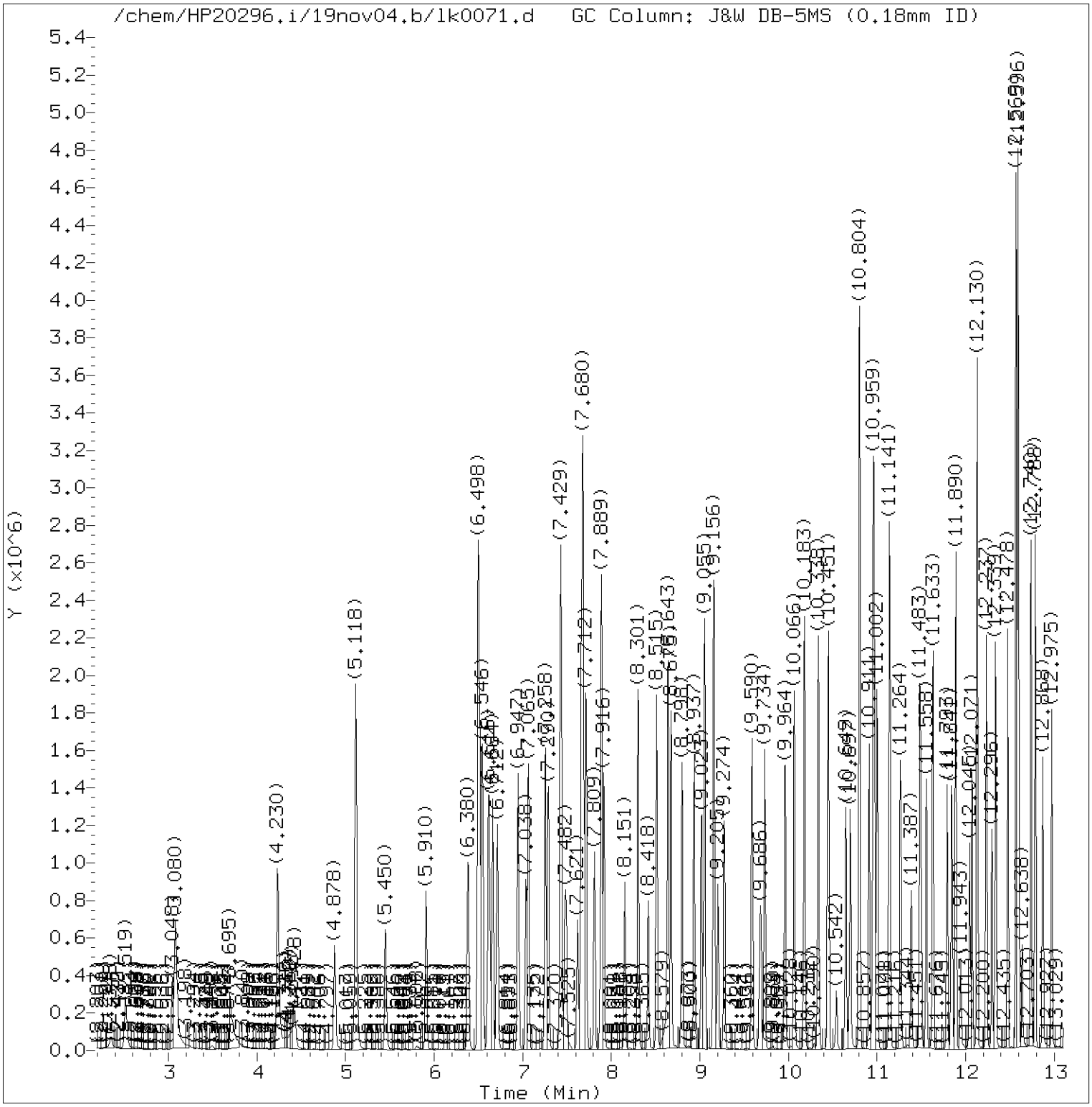
Instrument ID: HP20296.i Injection Date: 04-NOV-2019 13:13 Operator: whs02991



$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{26718 + 928882}{26718 + 928882 + 8178454} \times 100 = 10.5$$

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 14:14. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

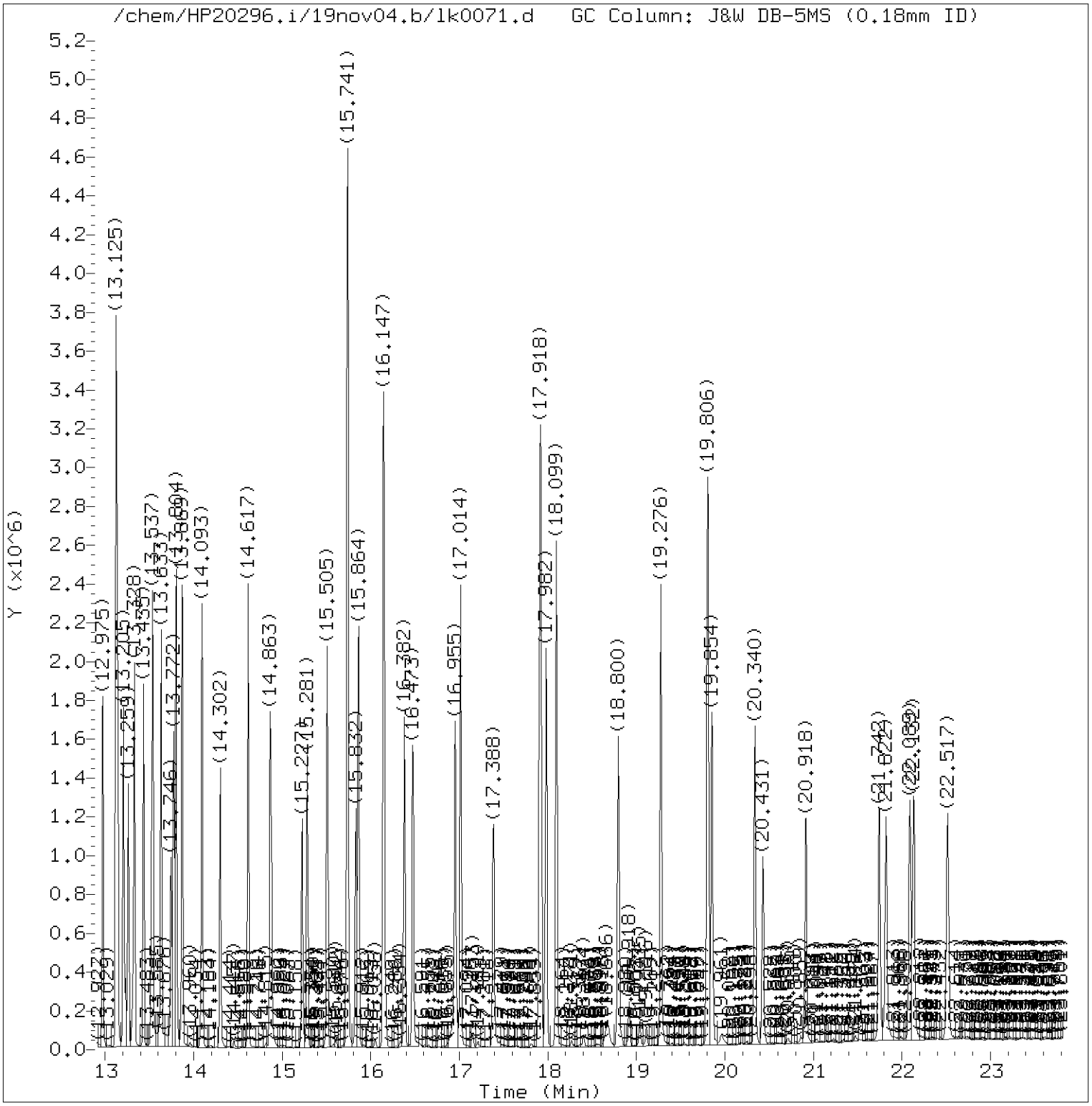
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.519	88	226093	7.702
5) N-Nitrosodimethylamine	(1)	3.048	74	376661	7.540
6) Pyridine	(1)	3.080	79	654998	7.711
8) 2-Picoline	(1)	4.230	93	610694	7.630
9) N-Nitrosomethylethylamine	(1)	4.428	88	244477M	7.345
10) Methyl methanesulfonate	(1)	4.878	80	300749M	7.572
12)$2-Fluorophenol	(1)	5.118	112	850267M	15.044
14) N-Nitrosodiethylamine	(1)	5.450	102	239296	7.894
43) Total Cresols	(1)			898672	15.055
16) Ethyl methanesulfonate	(1)	5.910	109	237194	7.627
17) Benzaldehyde	(1)	6.380	77	358023	6.235
18)$Phenol-d6	(1)	6.498	99	1257168	15.441
19) Phenol	(1)	6.520	94	750519	7.701
20) Aniline	(1)	6.546	93	892178	7.754
21) a-methylstyrene	(1)	6.627	118	179909	7.853
23) bis(2-Chloroethyl)ether	(1)	6.664	93	579362	7.682
24) 2-Chlorophenol	(1)	6.712	128	378637	7.497
25) 1,3-Dichlorobenzene	(1)	6.947	146	391324	7.596
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	151514	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	385844	7.502
28) Benzyl alcohol	(1)	7.258	108	309690	7.731
29) 1,2-Dichlorobenzene	(1)	7.290	146	374634M	7.438
100) Isosafrole	(3)			270140	7.372
31) Indene	(1)	7.429	115	716705	7.894
32) 2-Methylphenol	(1)	7.440	108	443319	7.764
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.488	45	643476	7.632
35) bis(2-Chloroisopropyl)ether	(1)	7.488	45	643476	7.632
36) N-Nitrosopyrrolidine	(1)	7.621	100	267990	7.779
37) Acetophenone	(1)	7.664	105	731290	7.726
38) 4-Methylphenol	(1)	7.680	108	455353	7.291
39) N-Nitroso-di-n-propylamine	(1)	7.680	70	472522	7.614
40) N-Nitrosomorpholine	(1)	7.691	56	301834	7.668
41) o-Toluidine	(1)	7.712	106	787158	7.741
44) Hexachloroethane	(1)	7.809	117	202918	7.605
45)$Nitrobenzene-d5	(2)	7.889	82	1241785	15.176
46) Nitrobenzene	(2)	7.916	77	668099	7.604
125) 2,4_2,6-Dinitrotoluenes	(3)			303628	15.113
50) N-Nitrosopiperidine	(2)	8.156	114	221806	7.592
52) Isophorone	(2)	8.301	82	1171191	7.472
53) 2-Nitrophenol	(2)	8.418	139	128551	6.816

M = Compound was manually integrated.
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$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.515	107	488160	7.406
59) O,O,O-Triethylphosphorothioate	(2)	8.643	198	132919	7.563
58) Benzoic acid	(2)	8.648	105	253403M	9.094
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	717739	7.621
151) Diallate trans/cis	(4)			535519	7.531
62) 2,4-Dichlorophenol	(2)	8.798	162	263365	7.612
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	270914	7.511
68)*Naphthalene-d8	(2)	9.023	136	638706	5.000
69) Naphthalene	(2)	9.055	128	1112672	7.447
70) 4-Chloroaniline	(2)	9.156	127	477658	7.777
71) 2,6-Dichlorophenol	(2)	9.167	162	247685	7.611
72) Hexachloropropene	(2)	9.205	213	126185	7.361
74) Hexachlorobutadiene	(2)	9.279	225	130922	7.307
78) Quinoline	(2)	9.590	129	673363M	7.470
79) Caprolactam	(2)	9.686	113	119167	7.790
80) N-Nitrosodi-n-butylamine	(2)	9.734	84	439214	7.278
83) 4-Chloro-3-methylphenol	(2)	9.964	107	413050	7.630
85) Safrole	(2)	10.066	162	226872	7.355
86) 2-Methylnaphthalene	(2)	10.183	142	664847	7.589
87) 1-Methylnaphthalene	(2)	10.338	142	642802	7.553
88) Hexachlorocyclopentadiene	(3)	10.445	237	141015	7.788
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.456	216	230089	7.389
91) cis-Isosafrole	(3)	10.542	162	44603	1.264
93) 2,4,6-Trichlorophenol	(3)	10.649	196	149896	7.466
95) 2,4,5-Trichlorophenol	(3)	10.697	196	163624	7.558
96)$2-Fluorobiphenyl	(3)	10.804	172	1249505	15.035
97) trans-Isosafrole	(3)	10.911	162	225537	6.108
98) 1,1'-Biphenyl	(3)	10.959	154	781734	7.662
99) 2-Chloronaphthalene	(3)	10.970	162	596832	7.231
101) 1-Chloronaphthalene	(3)	11.002	162	570491	7.938
103) Diphenyl ether	(3)	11.141	170	371038	7.420
104) 2-Nitroaniline	(3)	11.146	138	186831	7.140
108) 1,4-Naphthoquinone	(3)	11.264	158	247618	7.386
109) 1,4-Dinitrobenzene	(3)	11.387	168	63133	6.937
110) Dimethylphthalate	(3)	11.483	163	648485	7.581
111) 1,3-Dinitrobenzene	(3)	11.499	168	80429	7.224
113) 2,6-Dinitrotoluene	(3)	11.558	165	135221	7.659
114) Acenaphthylene	(3)	11.633	152	955235	7.789
117) 3-Nitroaniline	(3)	11.793	138	162900	7.074
118)*Acenaphthene-d10	(3)	11.841	164	272181	5.000

M = Compound was manually integrated.
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Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.890	153	610315	7.231
120) 2,4-Dinitrophenol	(3)	11.948	184	31901	8.815
121) 4-Nitrophenol	(3)	12.045	109	122056M	6.532
122) Pentachlorobenzene	(3)	12.071	250	189411	7.456
123) 2,4-Dinitrotoluene	(3)	12.130	165	168407	7.453
124) Dibenzofuran	(3)	12.130	168	742902	7.185
126) 1-Naphthylamine	(3)	12.237	143	628811	7.367
127) 2,3,4,6-Tetrachlorophenol	(3)	12.301	232	98029	7.440
128) 2-Naphthylamine	(3)	12.339	143	615879	7.490
129) Diethylphthalate	(3)	12.478	149	688226	7.434
131) Fluorene	(3)	12.569	166	610471	7.248
130) Thionazin	(3)	12.569	107	177157A	7.535
133) 5-Nitro-o-toluidine	(3)	12.590	152	173468M	7.233
132) 4-Chlorophenyl-phenylether	(3)	12.596	204	252354M	7.663
134) 4-Nitroaniline	(3)	12.601	138	187384	8.121
135) 4,6-Dinitro-2-methylphenol	(4)	12.644	198	41910	5.970
137) NDPA as diphenylamine	(4)	12.740	169	517956	7.308
136) N-Nitrosodiphenylamine	(4)	12.740	169	517956	7.308
139) 1,2-Diphenylhydrazine	(4)	12.788	77	1321275	7.445
140)$2,4,6-Tribromophenol	(3)	12.874	332	115648	14.209
142) Tetraethyldithiopyrophosphate	(4)	12.975	97	199018	7.599
145) Diallate (peak 1)	(4)	13.120	86	455755	6.255
146) Phorate	(4)	13.125	75	849249	7.759
147) Phenacetin	(4)	13.141	108	526546	7.637
148) 4-Bromophenyl-phenylether	(4)	13.205	248	126389	7.447
149) Diallate (peak 2)	(4)	13.227	86	79764	1.276
150) Hexachlorobenzene	(4)	13.264	284	142707	7.097
152) Dimethoate	(4)	13.328	87	484188	7.465
153) Atrazine	(4)	13.435	200	151092	7.970
154) Pentachlorophenol	(4)	13.521	266	71414	7.017
155) 4-Aminobiphenyl	(4)	13.537	169	396503	7.619
156) Pentachloronitrobenzene	(4)	13.542	237	60979	7.426
157) Pronamide	(4)	13.633	173	305484	7.721
158)*Phenanthrene-d10	(4)	13.772	188	471785	5.000
159) Dinoseb	(4)	13.783	211	58002	6.966
160) Phenanthrene	(4)	13.804	178	850704	7.296
162) Anthracene	(4)	13.869	178	882043	7.644
168) Carbazole	(4)	14.093	167	870895	7.533
169) Methyl parathion	(4)	14.302	109	295165	7.228
170) Di-n-butylphthalate	(4)	14.617	149	1263550	7.414

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

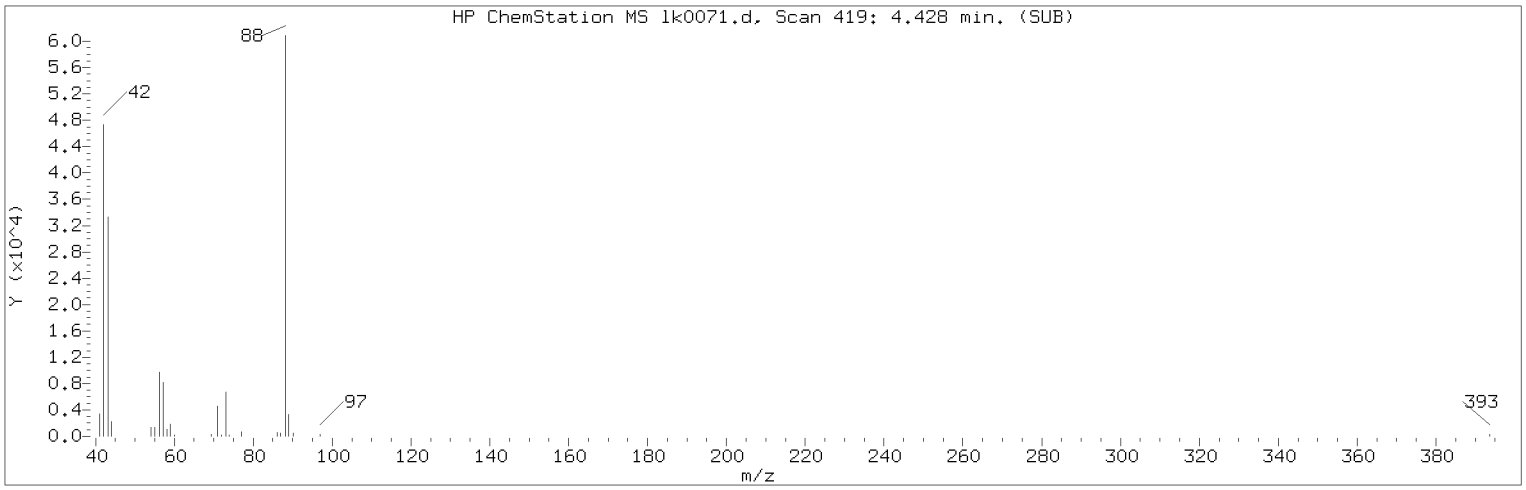
Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.863	109	202392	7.609
173) 4-Nitroquinoline-1-oxide	(4)	14.879	190	63624M	6.944
227) Total PAHs	(6)			14008731	136.729
174) Octachlorostyrene	(4)	15.227	308	59023	7.278
176) Isodrin	(4)	15.281	193	97253	6.867
178) Fluoranthene	(4)	15.511	202	884780	7.542
179) Benzidine	(5)	15.741	184	1854575	22.274
180)*Pyrene-d10	(5)	15.832	212	442937	5.000
182) Pyrene	(5)	15.864	202	933294	7.491
184)$Terphenyl-d14	(5)	16.147	244	1048956	15.282
187) p-Dimethylaminoazobenzene	(5)	16.382	225	133533	7.612
190) Chlorobenzilate	(5)	16.473	139	418589	7.550
192) 3,3'-Dimethylbenzidine	(5)	16.955	212	538155	6.952
193) Butylbenzylphthalate	(5)	17.019	149	558213	7.423
196) 2-Acetylaminofluorene	(5)	17.388	181	345601	6.734
198) 3,3'-Dichlorobenzidine	(5)	17.907	252	297643	7.334
200) Benzo(a)anthracene	(5)	17.918	228	797464	7.792
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.923	231	145432	7.077
201) Chrysene	(5)	17.982	228	786722	7.543
204) bis(2-Ethylhexyl)phthalate	(5)	18.099	149	817757	7.356
208) 6-Methylchrysene	(5)	18.800	242	533714	7.302
210) Di-n-octylphthalate	(6)	19.276	149	1391377	7.562
211) Benzo(b)fluoranthene	(6)	19.806	252	781085	7.896
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.806	256	339216	8.079
213) Benzo(k)fluoranthene	(6)	19.854	252	768284	7.728
216) Benzo(a)pyrene	(6)	20.340	252	719374	7.803
218)*Perylene-d12	(6)	20.431	264	388516	5.000
220) 3-Methylcholanthrene	(6)	20.918	268	319246	7.603
222) Dibenz(a,h)acridine	(6)	21.747	279	579633	7.527
223) Dibenz(a,j)acridine	(6)	21.822	279	578766	7.563
224) Indeno(1,2,3-cd)pyrene	(6)	22.095	276	655698M	7.798
225) Dibenz(a,h)anthracene	(6)	22.138	278	678616	7.718
226) Benzo(g,h,i)perylene	(6)	22.517	276	674325	7.621

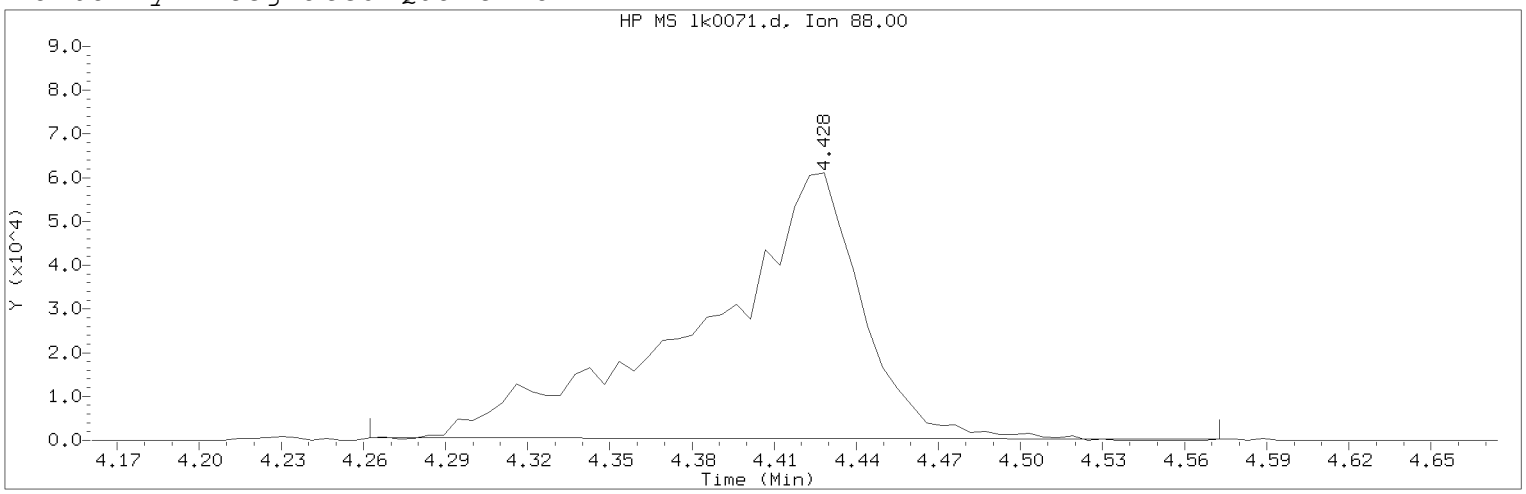
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

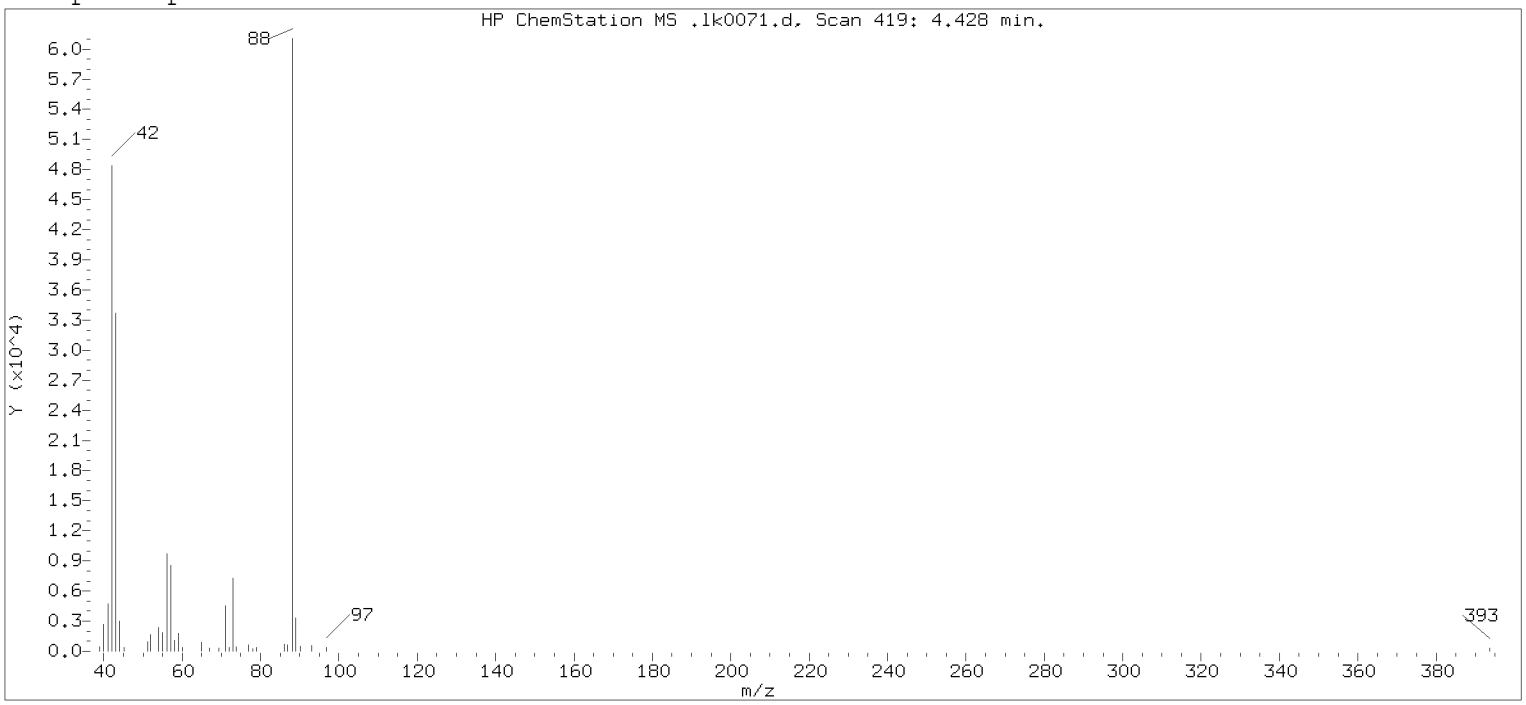
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 419
Retention Time (minutes) : 4.428
Quant Ion : 88.00
Area (flag) : 244477M
On-Column Amount (ng/ul) : 7.3446
Integration start scan : 387 Integration stop scan: 445
Y at integration start : 558 Y at integration end: 308

Reason for manual integration: missed peak

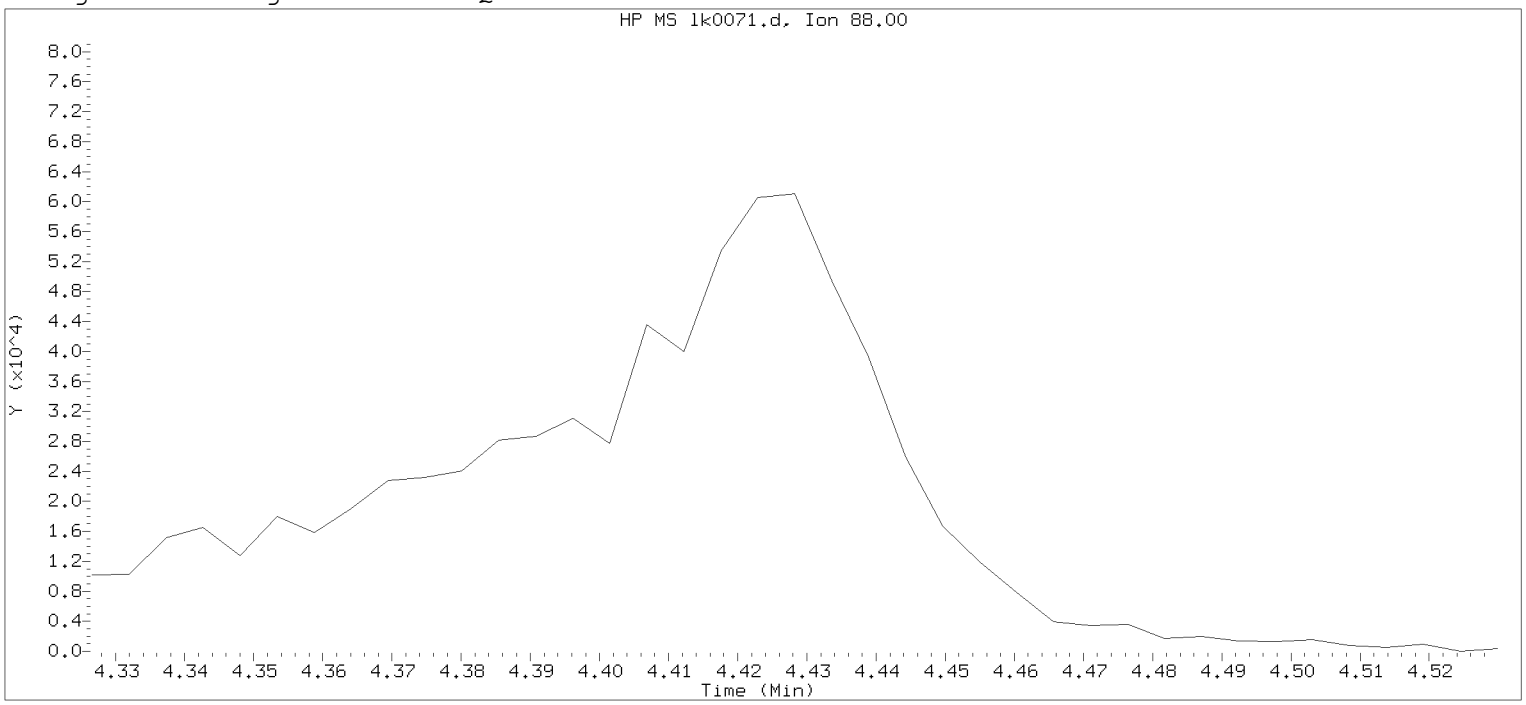
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

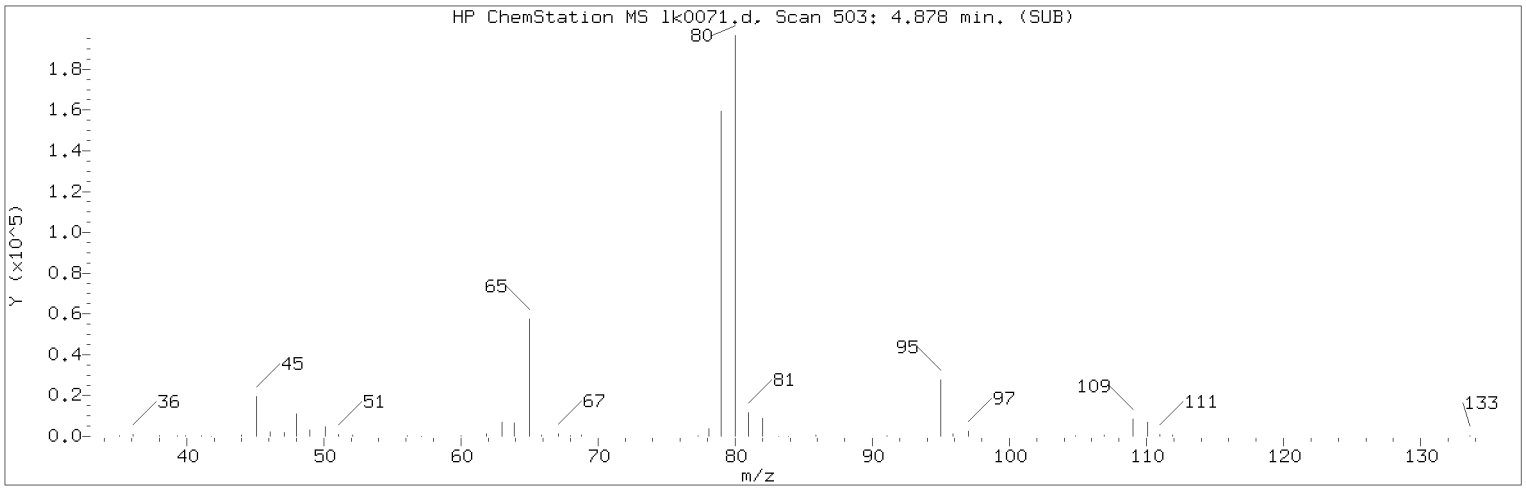
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

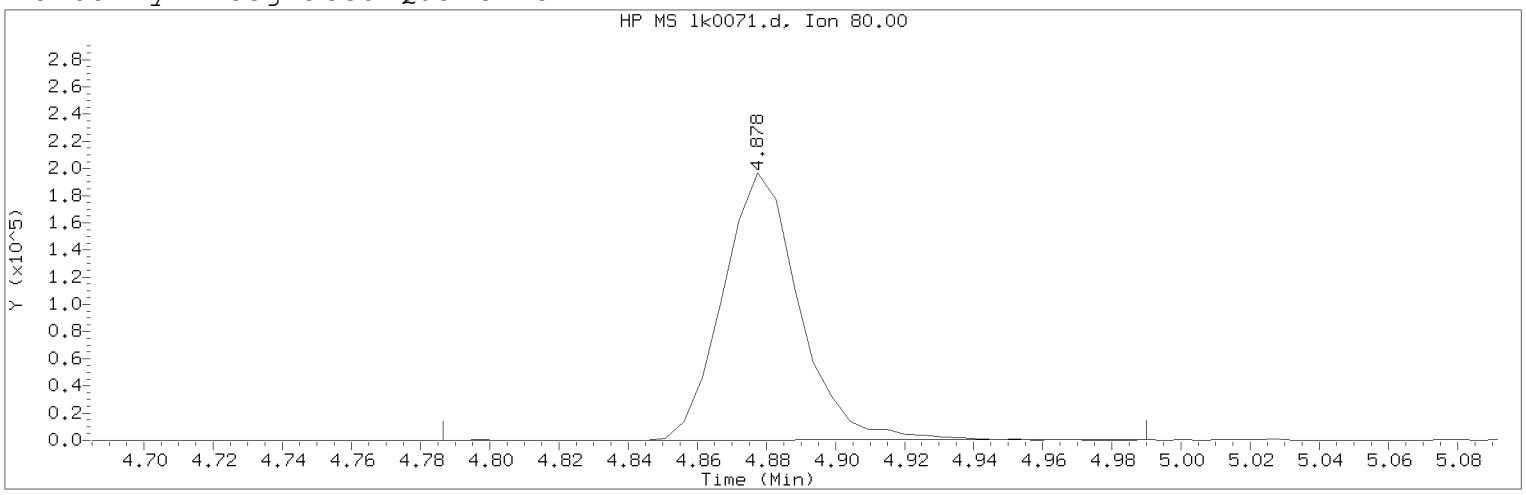
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.428
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

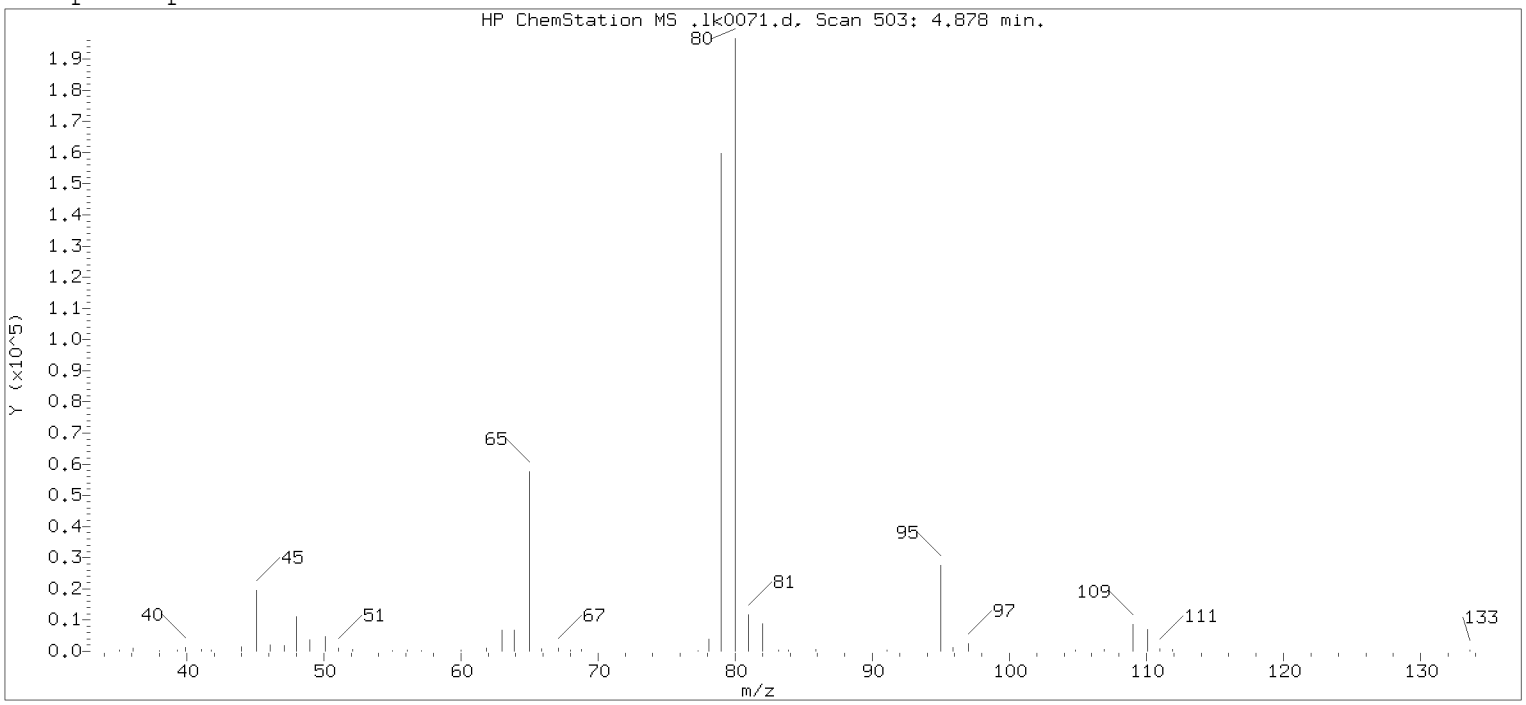
Compound Number : 10
Compound Name : Methyl methanesulfonate
Scan Number : 503
Retention Time (minutes) : 4.878
Quant Ion : 80.00
Area (flag) : 300749M
On-Column Amount (ng/ul) : 7.5718
Integration start scan : 485 Integration stop scan: 523
Y at integration start : 0 Y at integration end: 544

Reason for manual integration: missed peak

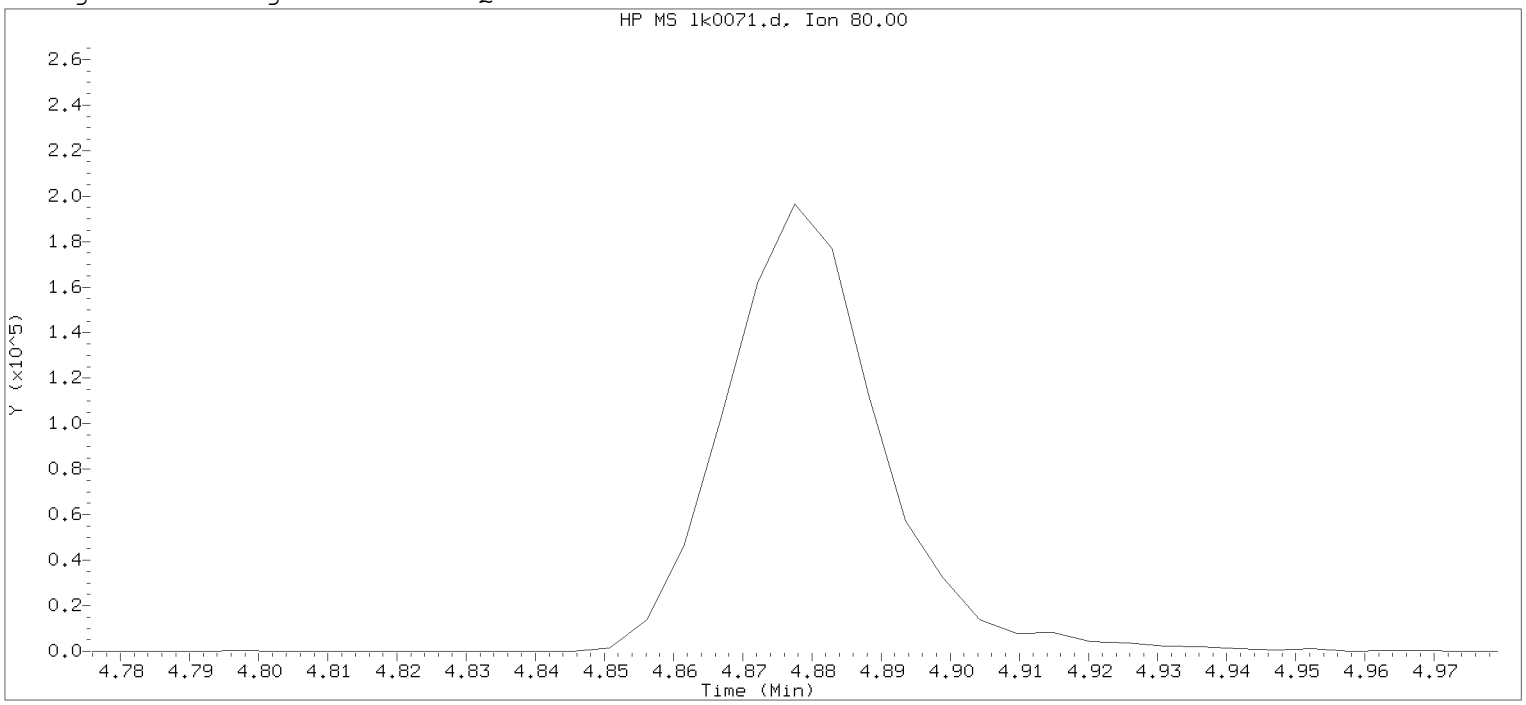
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

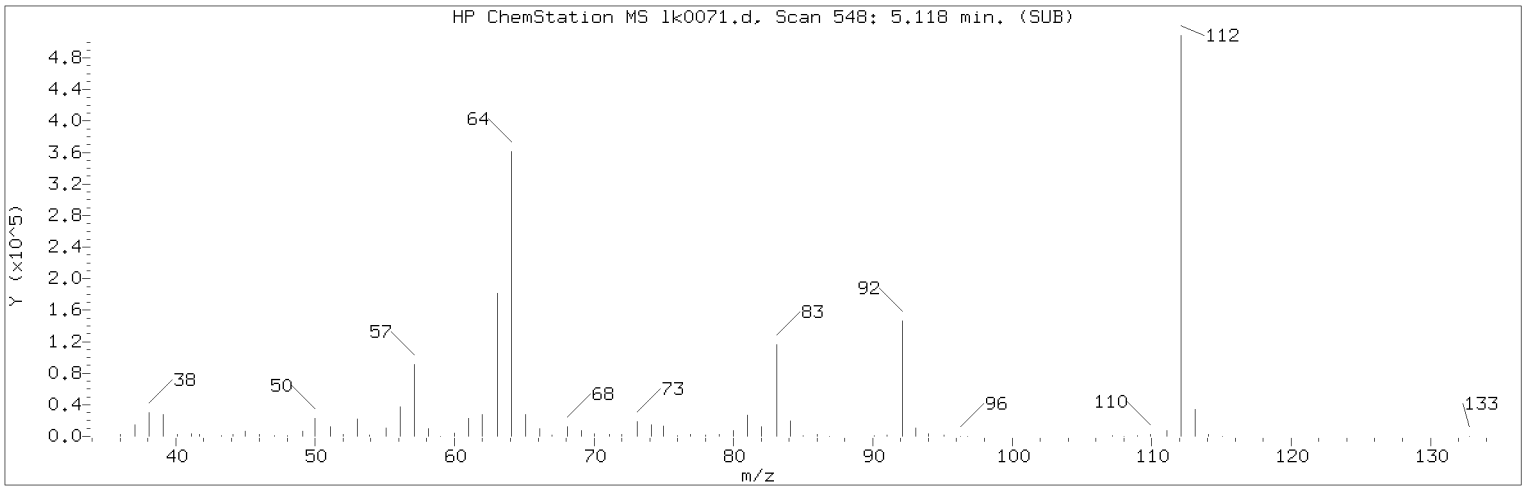
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

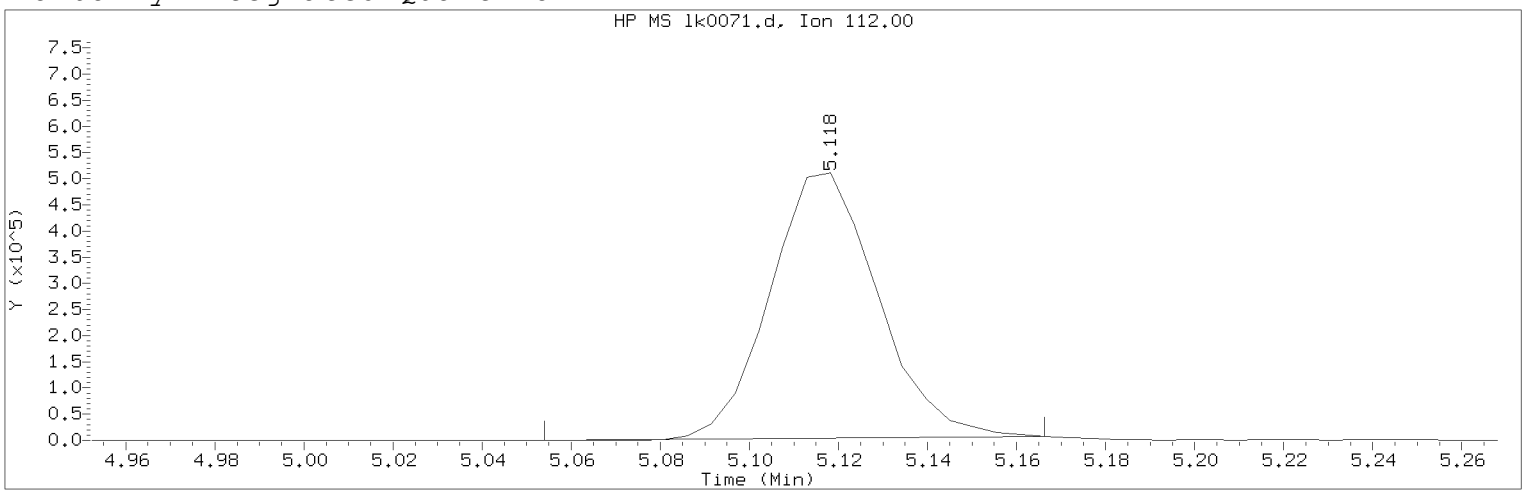
Compound Number : 10
Compound Name : Methyl methanesulfonate
Expected RT (minutes) : 4.878
Quant Ion : 80.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 20296

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

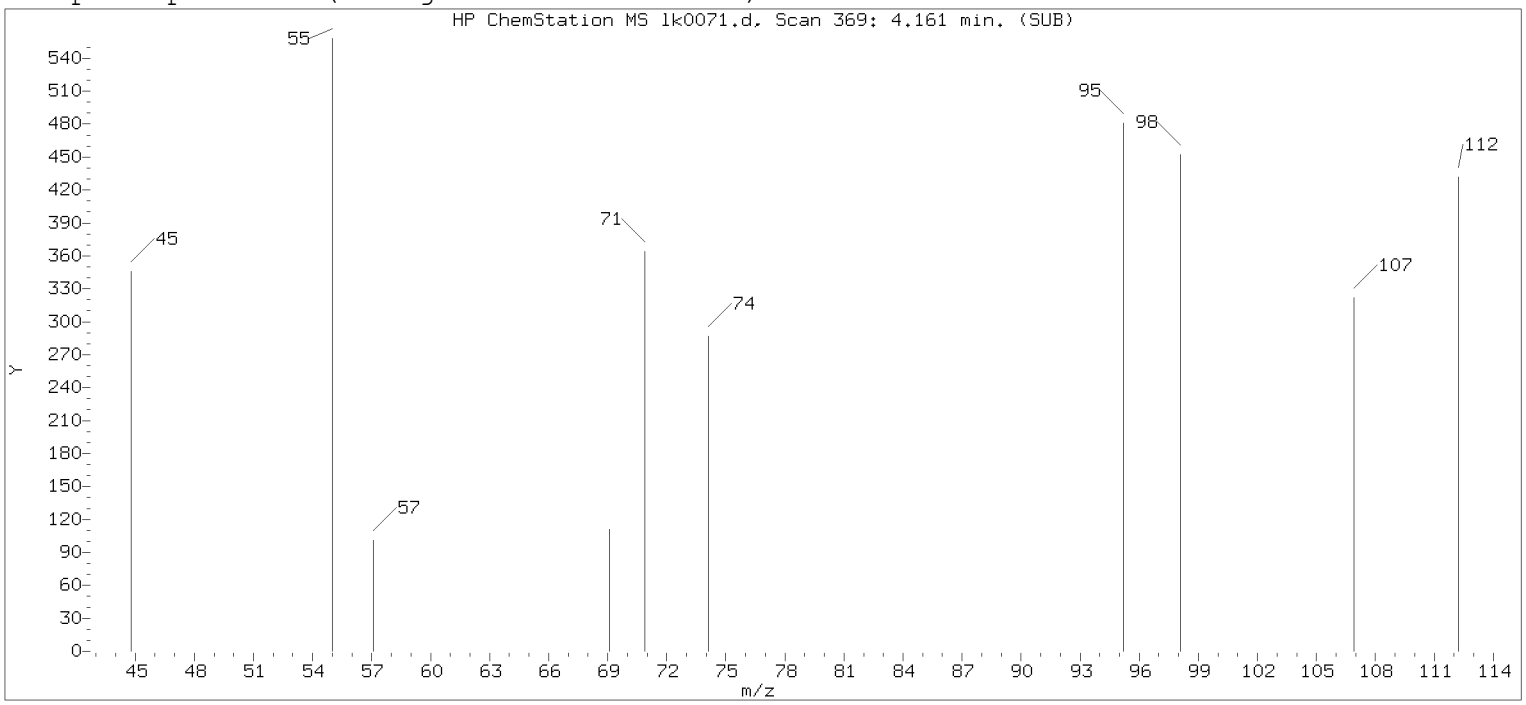
Compound Number : 12
Compound Name : 2-Fluorophenol
Scan Number : 548
Retention Time (minutes) : 5.118
Quant Ion : 112.00
Area (flag) : 850267M
On-Column Amount (ng/ul) : 15.0439
Integration start scan : 535 Integration stop scan: 556
Y at integration start : 0 Y at integration end: 7844

Reason for manual integration: improper integration

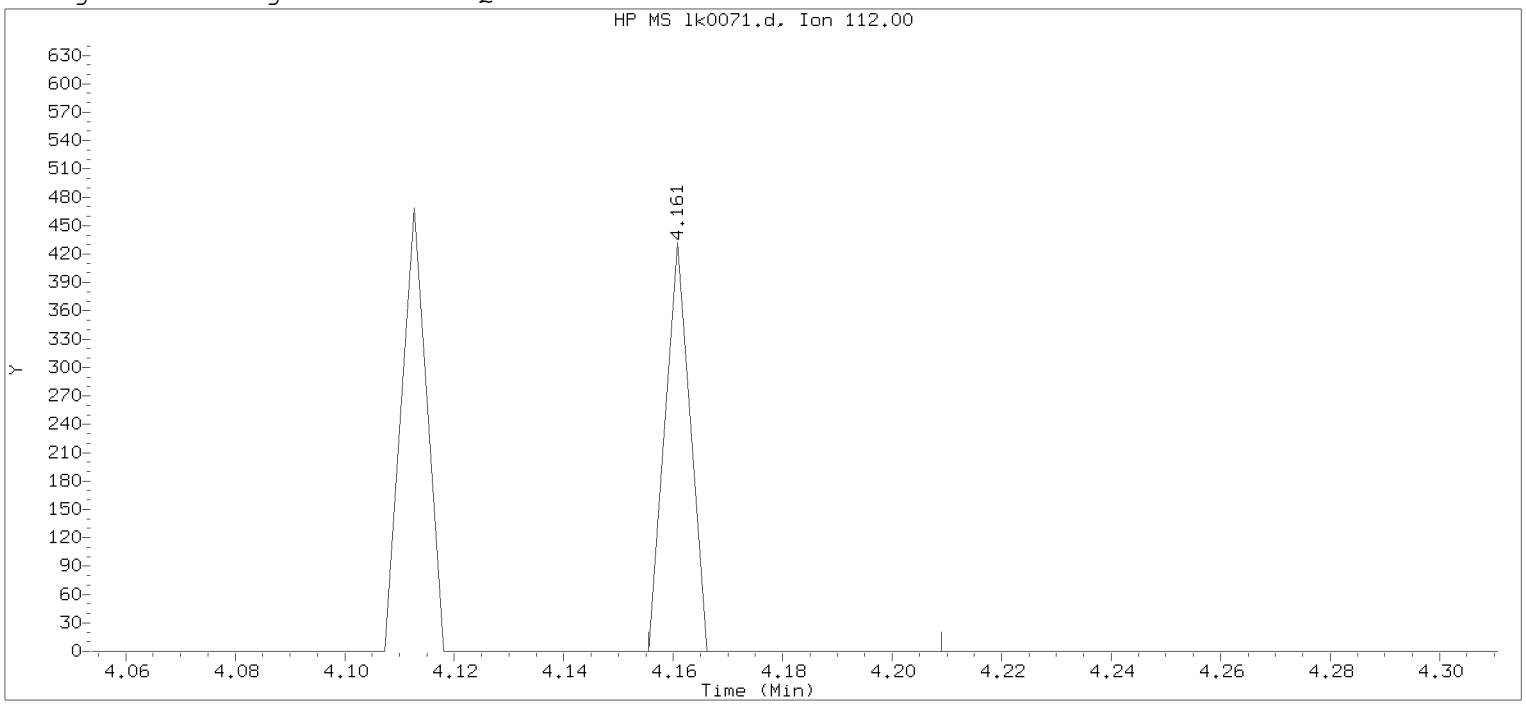
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

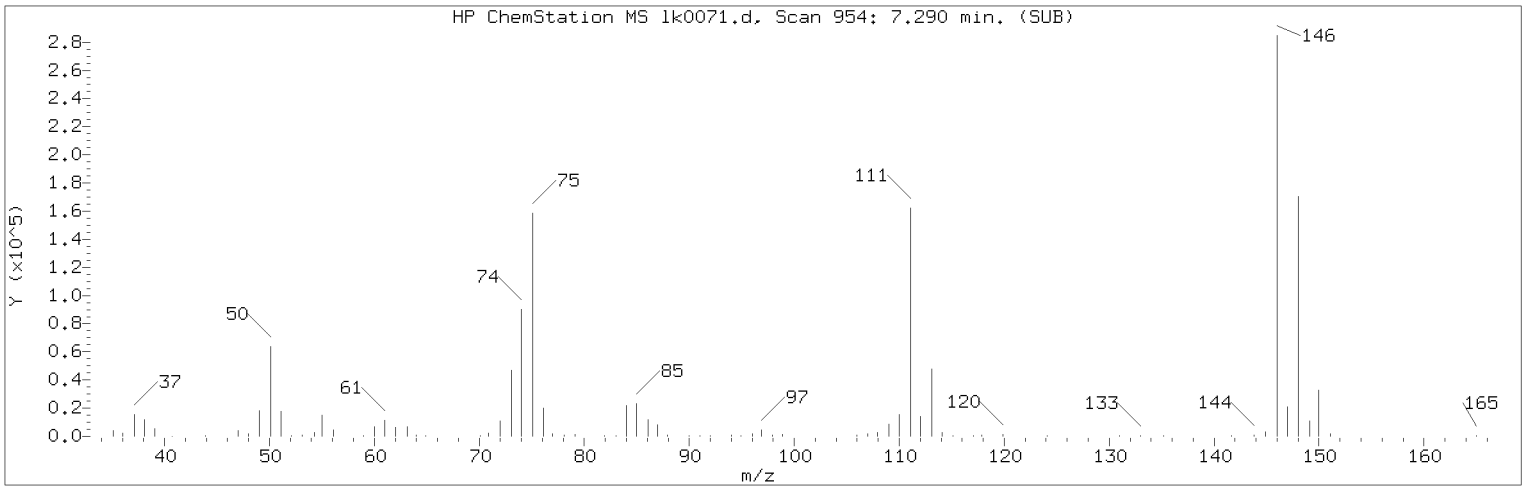
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

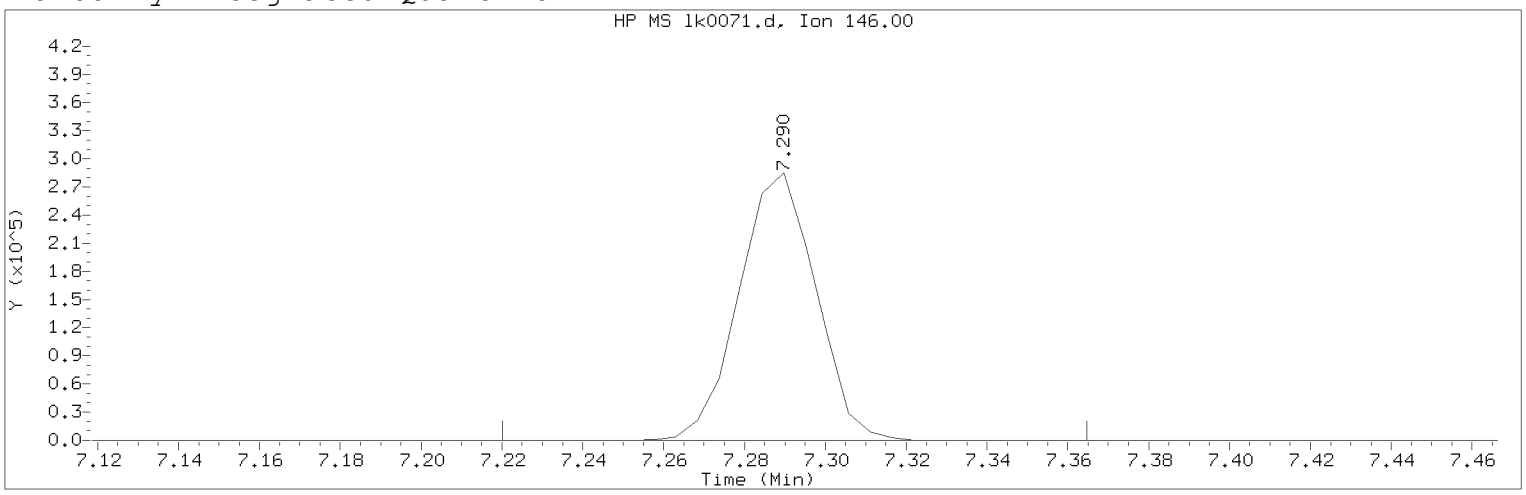
Compound Number	: 12		
Compound Name	: 2-Fluorophenol		
Scan Number	: 369		
Retention Time (minutes)	: 4.161		
Quant Ion	: 112.00		
Area	: 138		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 367	Integration stop scan:	377
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2190

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

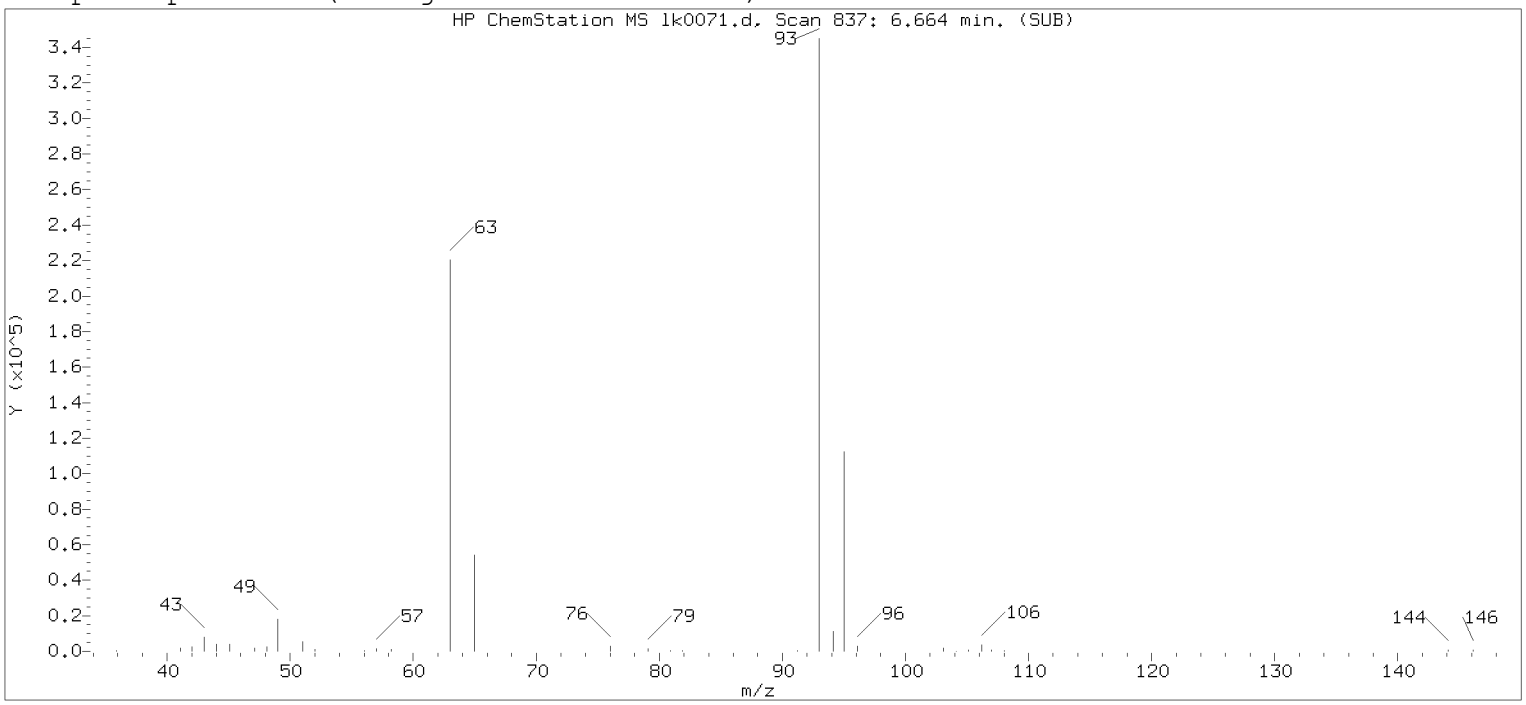
Compound Number : 29
Compound Name : 1,2-Dichlorobenzene
Scan Number : 954
Retention Time (minutes) : 7.290
Quant Ion : 146.00
Area (flag) : 374634M
On-Column Amount (ng/ul) : 7.4377
Integration start scan : 940 Integration stop scan: 967
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

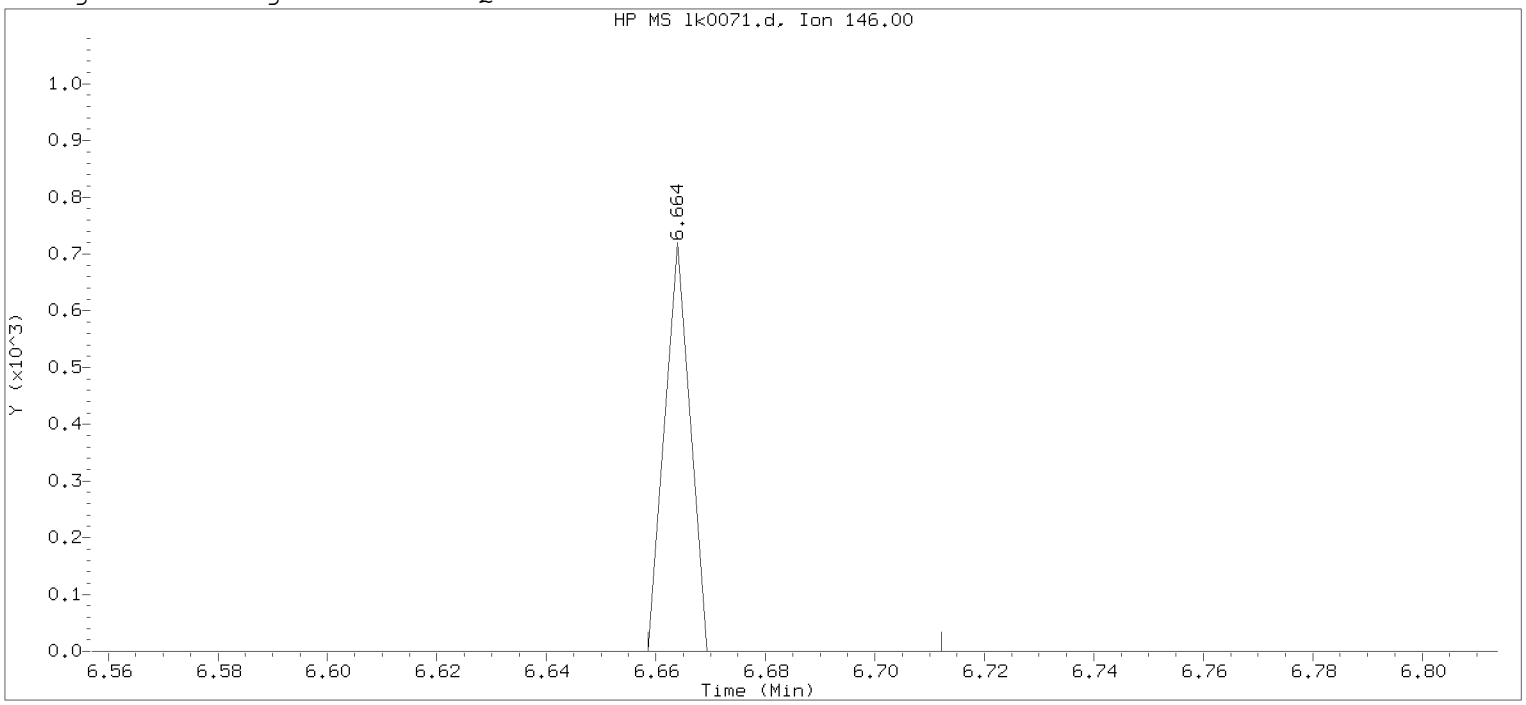
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

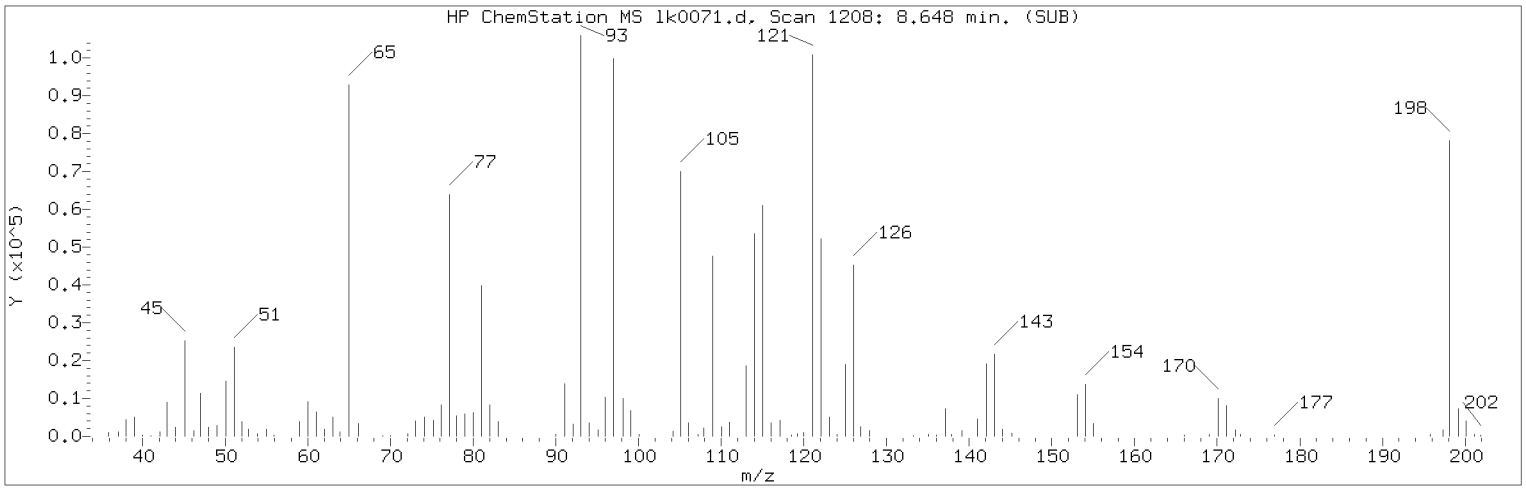
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

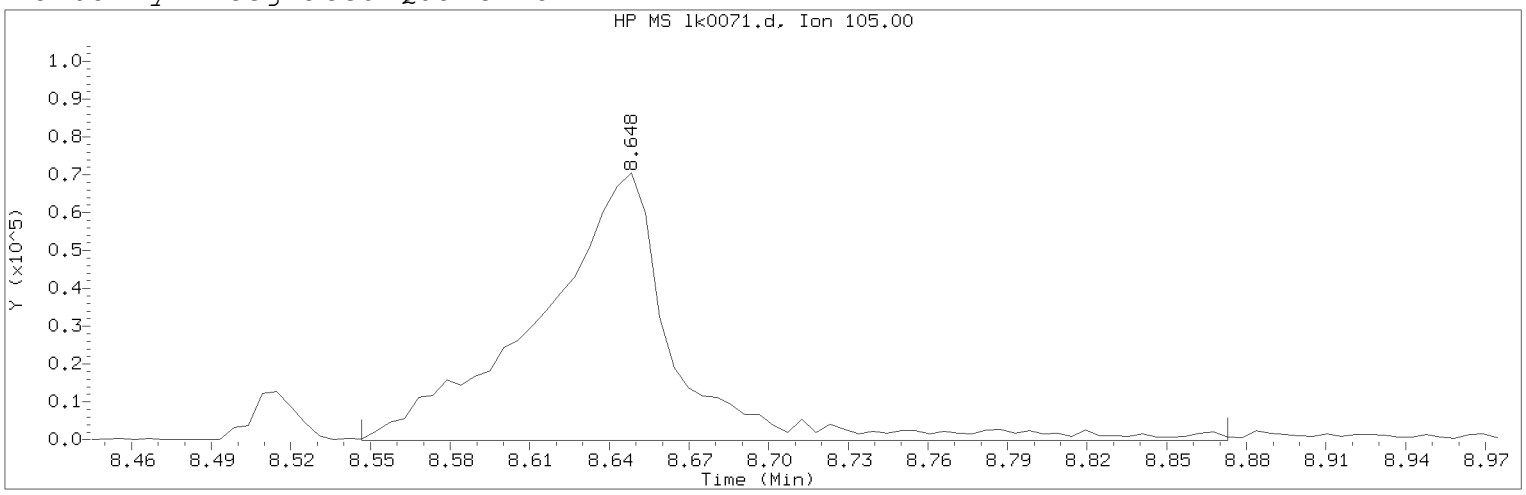
Compound Number	: 29		
Compound Name	: 1,2-Dichlorobenzene		
Scan Number	: 837		
Retention Time (minutes)	: 6.664		
Quant Ion	: 146.00		
Area	: 231		
On-column Amount (ng/ul)	: 0.0000		
Integration start scan	: 835	Integration stop scan:	845
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 8270D.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

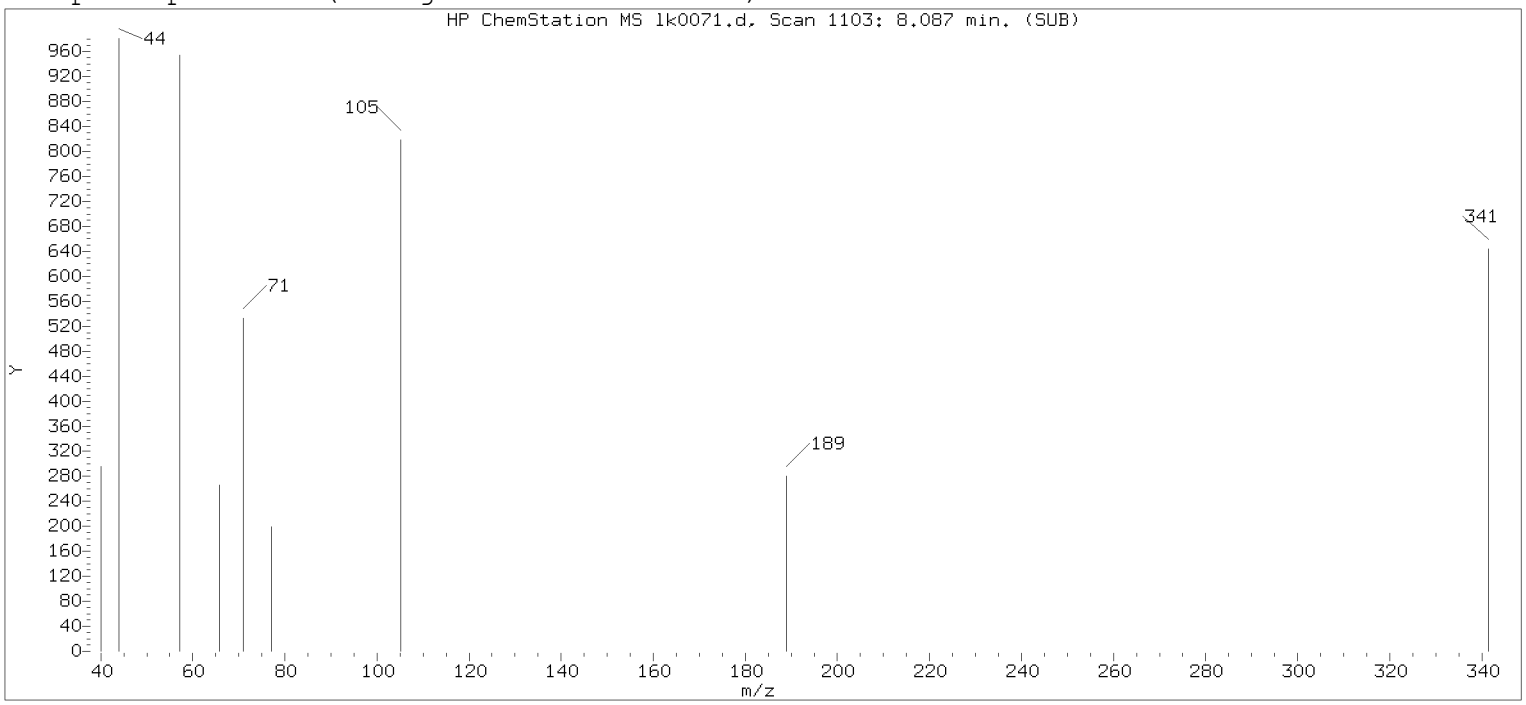
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1208
Retention Time (minutes) : 8.648
Quant Ion : 105.00
Area (flag) : 253403M
On-Column Amount (ng/ul) : 9.0937
Integration start scan : 1188 Integration stop scan: 1249
Y at integration start : -116 Y at integration end: -116

Reason for manual integration: improper integration

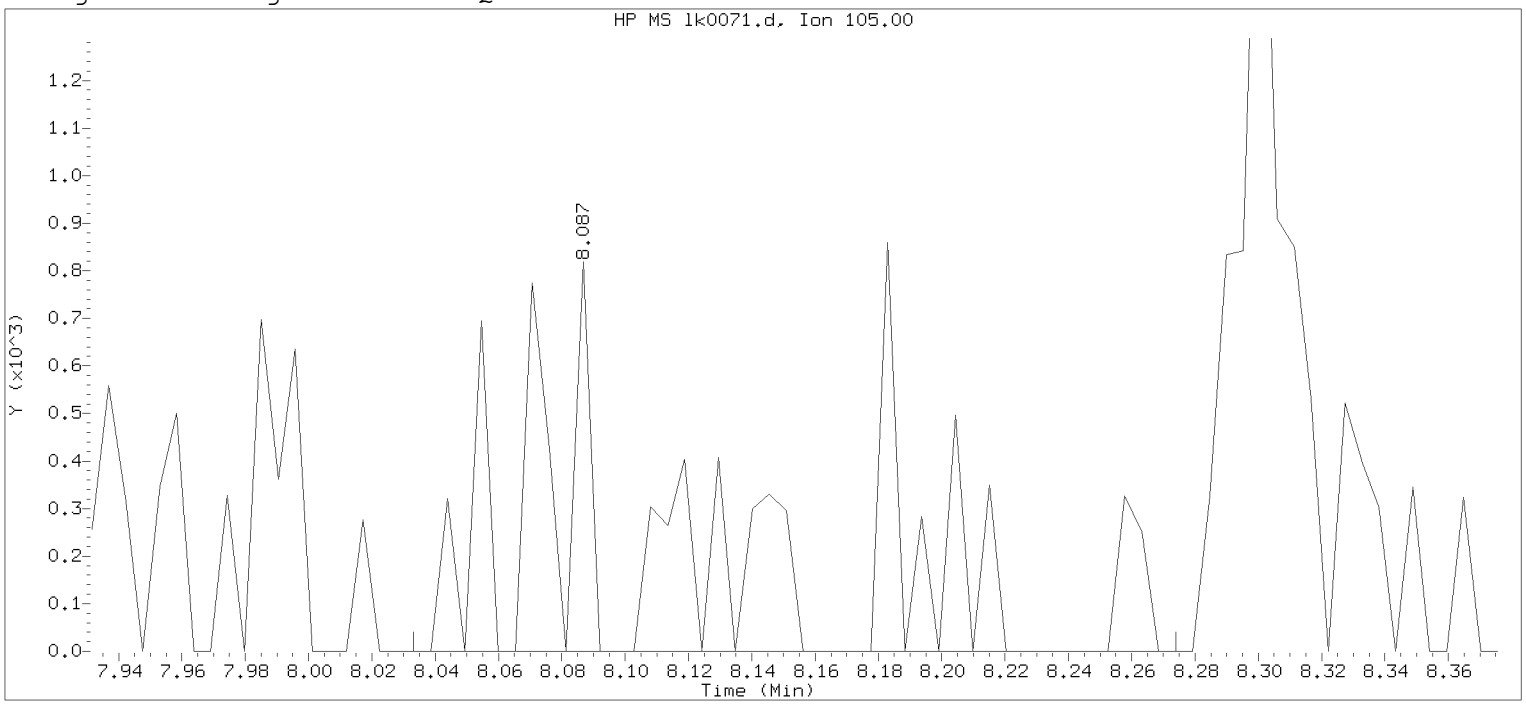
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

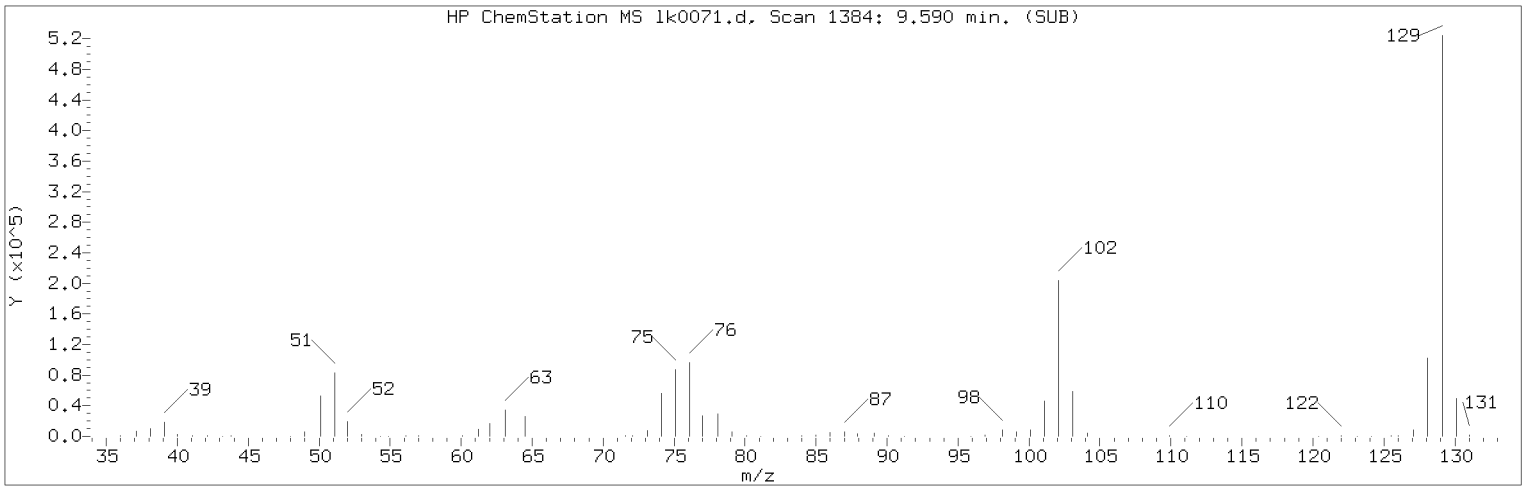
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

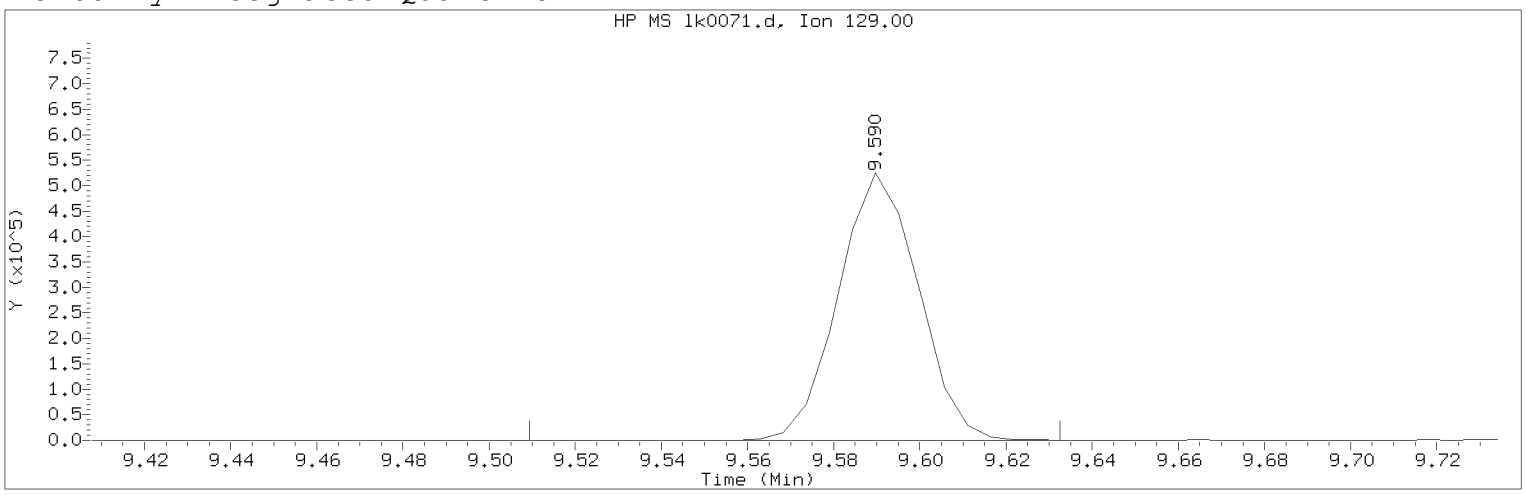
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1103		
Retention Time (minutes)	: 8.087		
Quant Ion	: 105.00		
Area	: 2537		
On-column Amount (ng/ul)	: 148.3327		
Integration start scan	: 1092	Integration stop scan:	1137
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2190

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

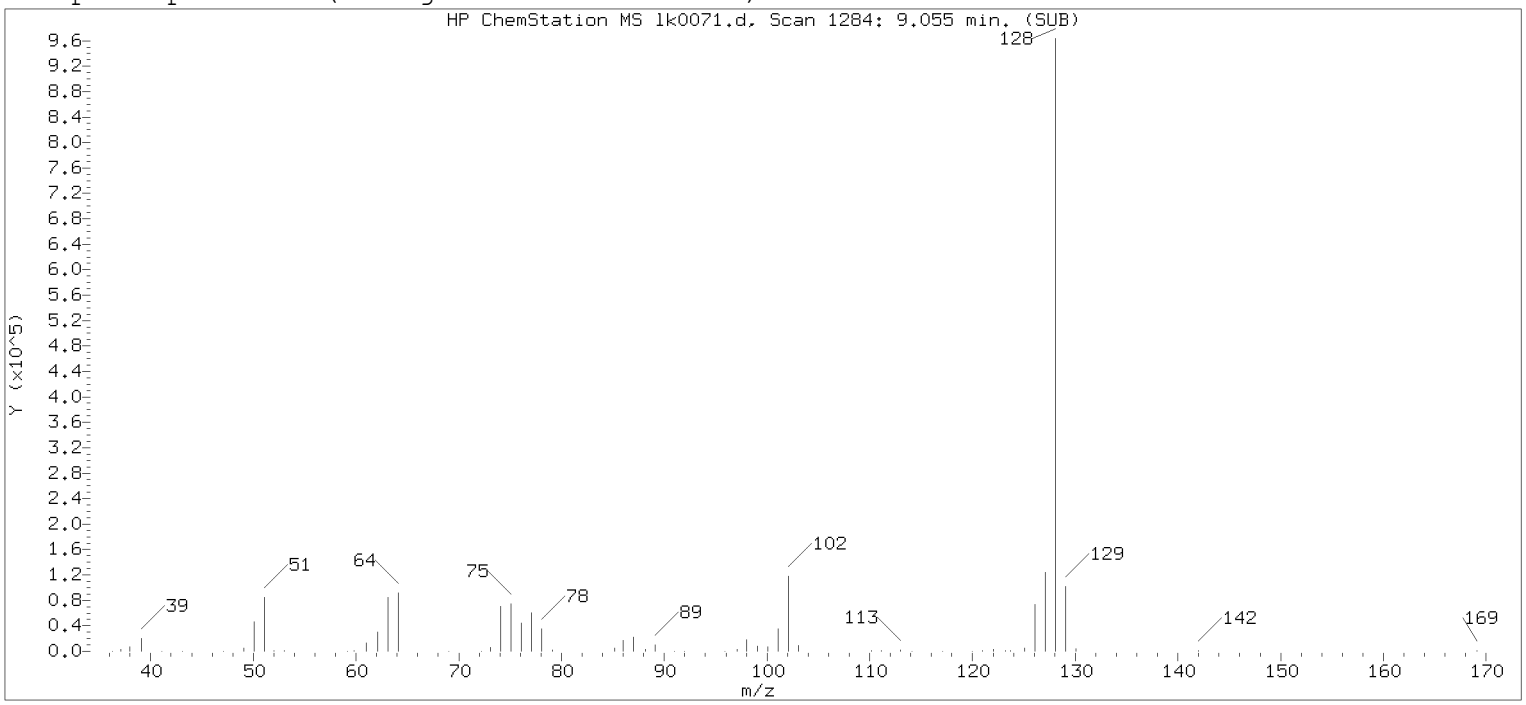
Compound Number : 78
Compound Name : Quinoline
Scan Number : 1384
Retention Time (minutes) : 9.590
Quant Ion : 129.00
Area (flag) : 673363M
On-Column Amount (ng/ul) : 7.4699
Integration start scan : 1368 Integration stop scan: 1391
Y at integration start : 0 Y at integration end: 376

Reason for manual integration: improper integration

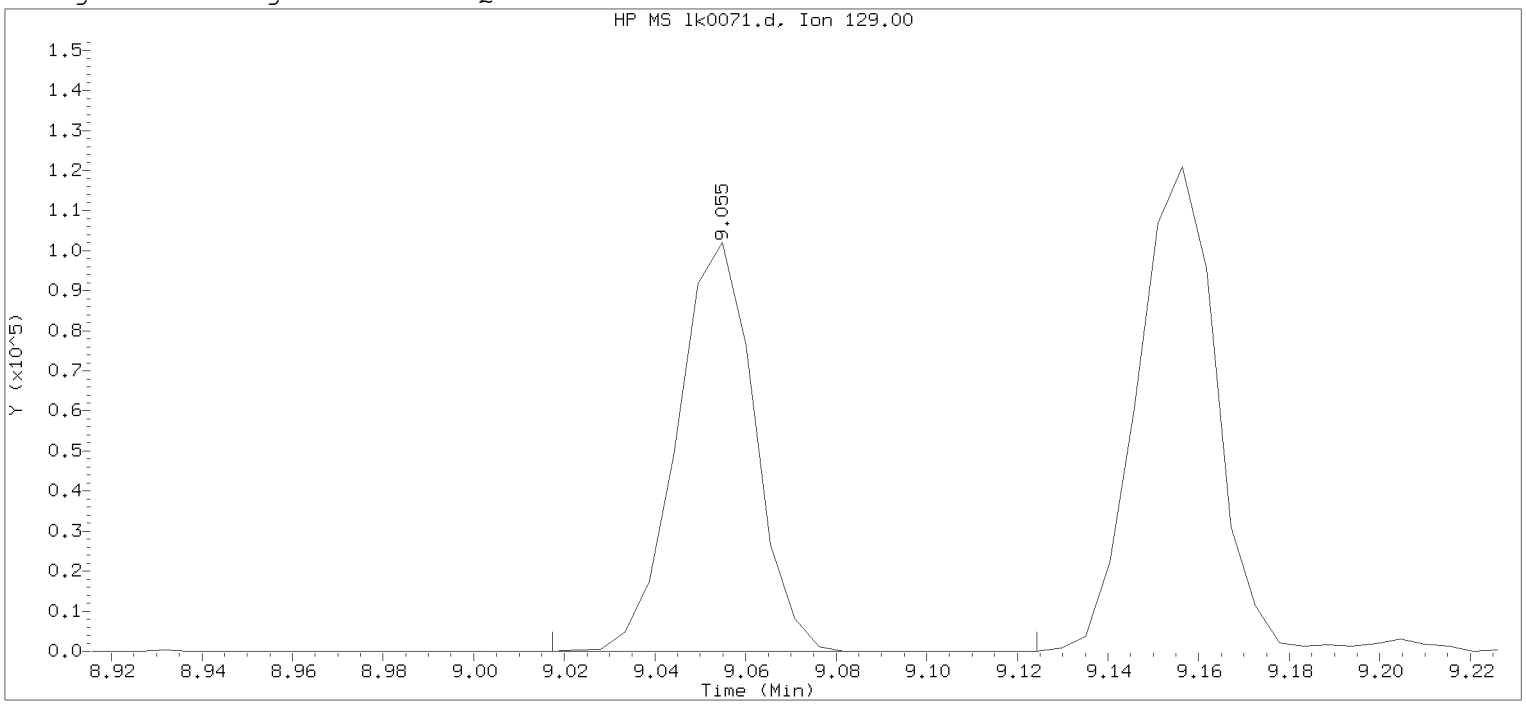
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

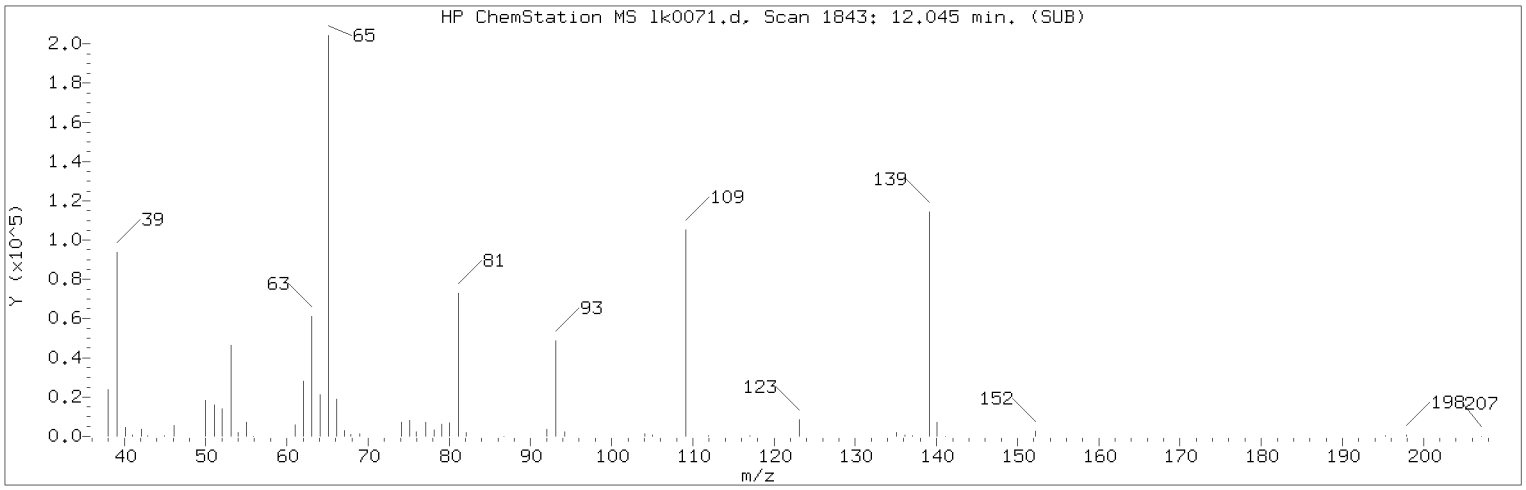
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

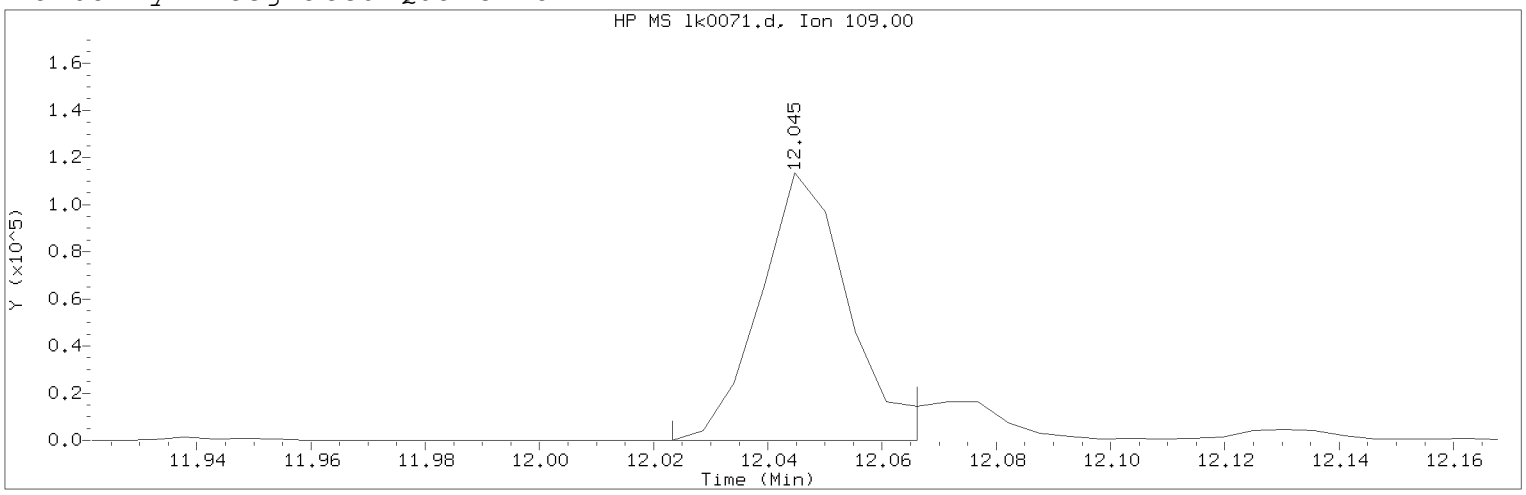
Compound Number	: 78		
Compound Name	: Quinoline		
Scan Number	: 1284		
Retention Time (minutes)	: 9.055		
Quant Ion	: 129.00		
Area	: 121305		
On-column Amount (ng/ul)	: 1714.7529		
Integration start scan	: 1276	Integration stop scan:	1296
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2016

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

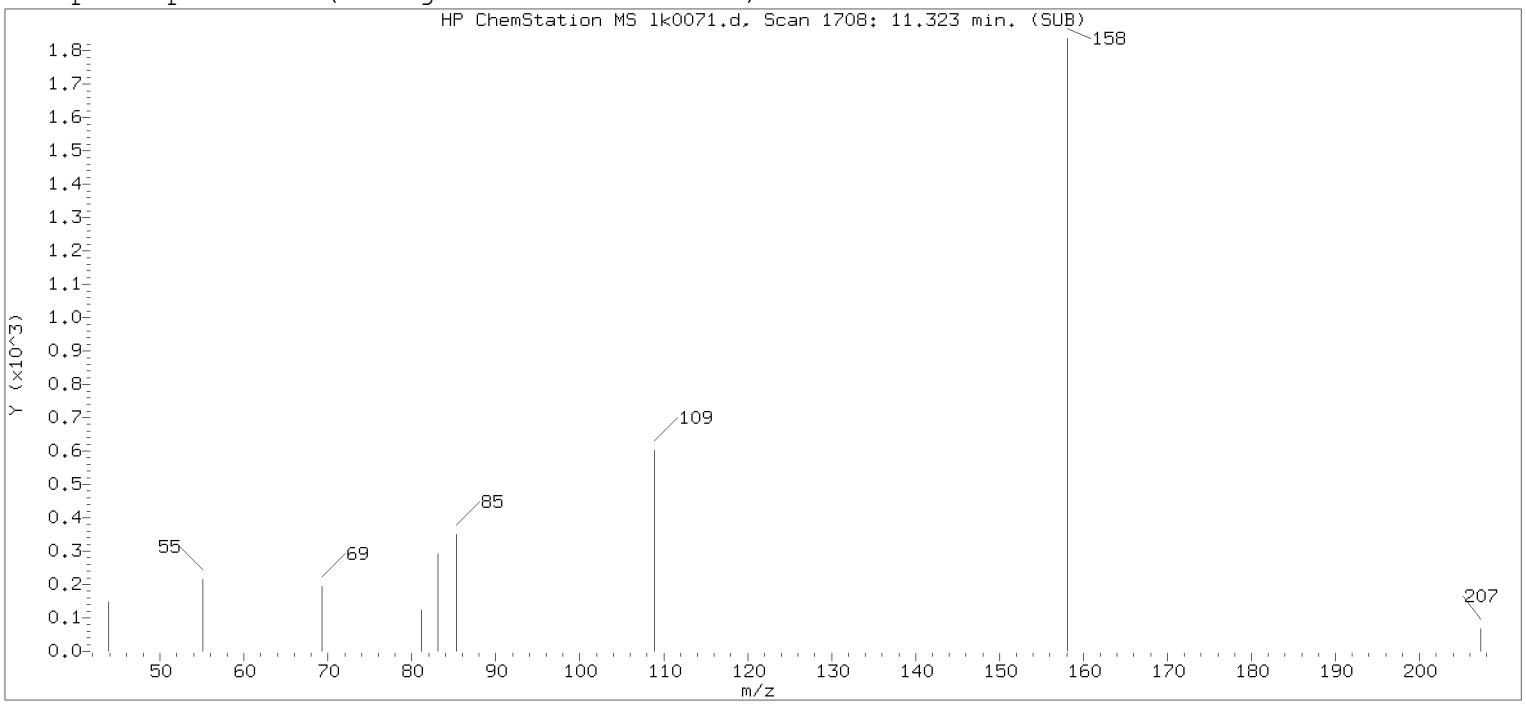
Compound Number : 121
Compound Name : 4-Nitrophenol
Scan Number : 1843
Retention Time (minutes) : 12.045
Quant Ion : 109.00
Area (flag) : 122056M
On-Column Amount (ng/ul) : 6.5324
Integration start scan : 1838 Integration stop scan: 1846
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

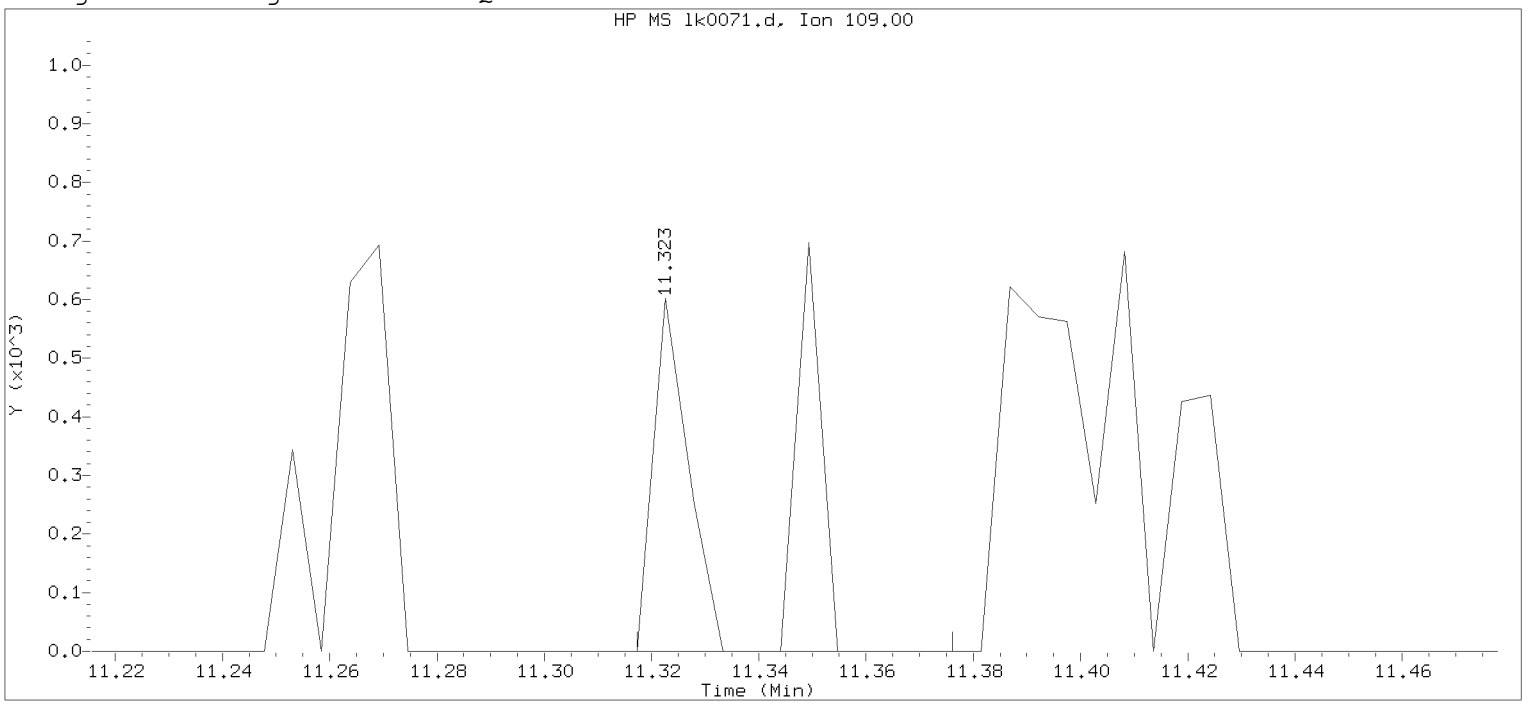
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

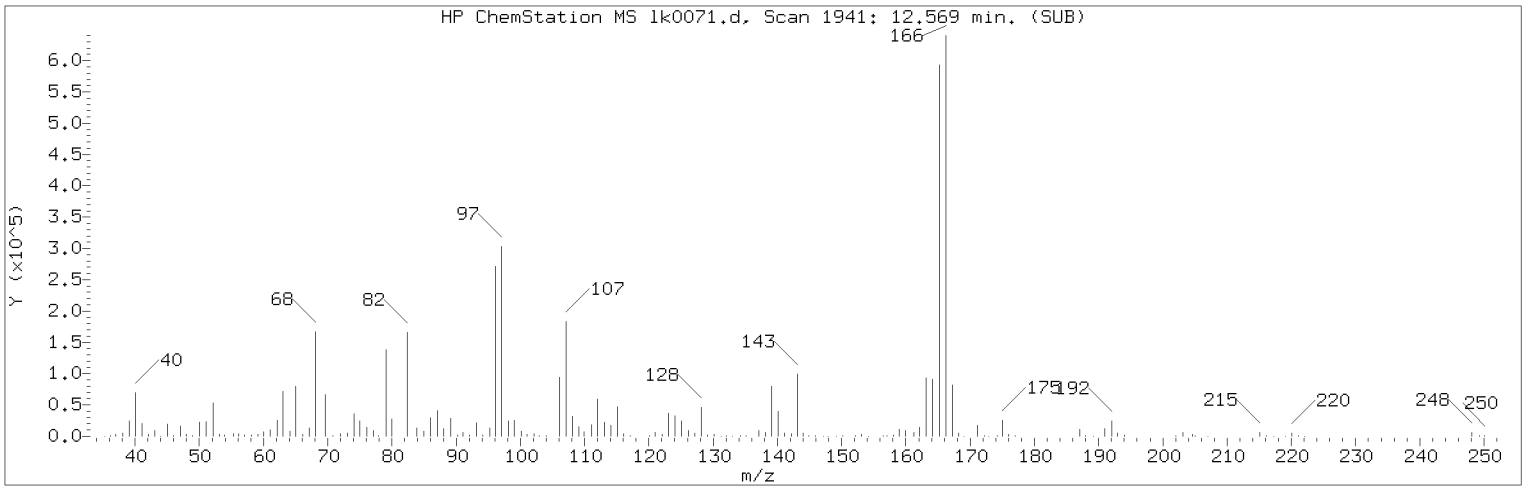
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

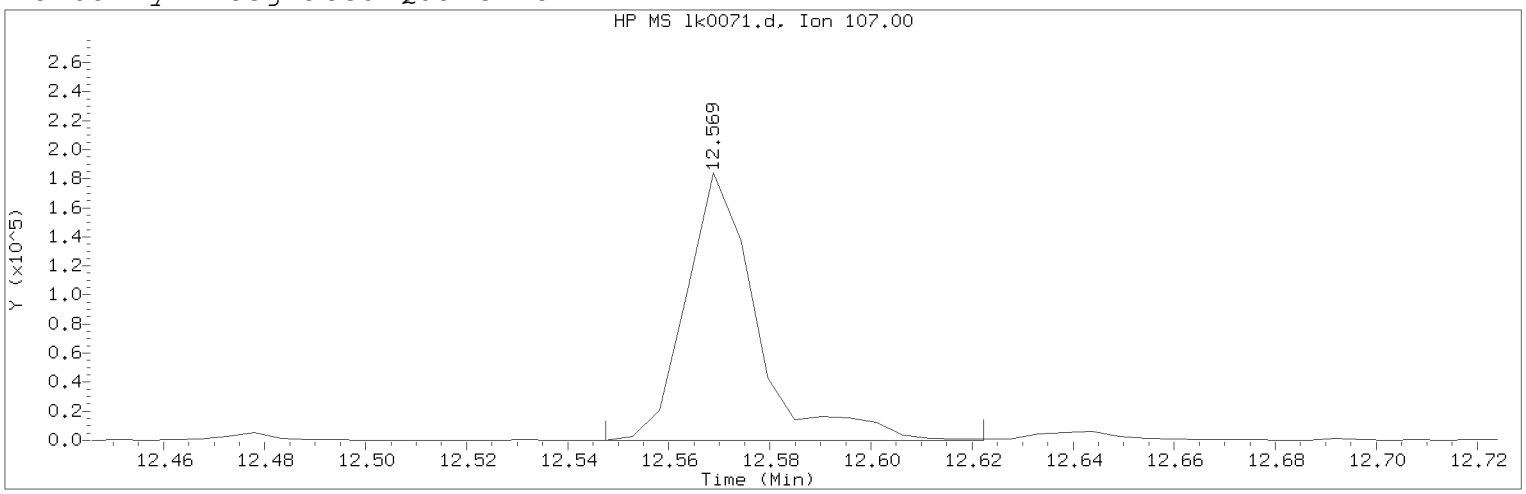
Compound Number	: 121		
Compound Name	: 4-Nitrophenol		
Scan Number	: 1708		
Retention Time (minutes)	: 11.323		
Quant Ion	: 109.00		
Area	: 497		
On-column Amount (ng/ul)	: 0.0463		
Integration start scan	: 1706	Integration stop scan:	1717
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with RAF 2081

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

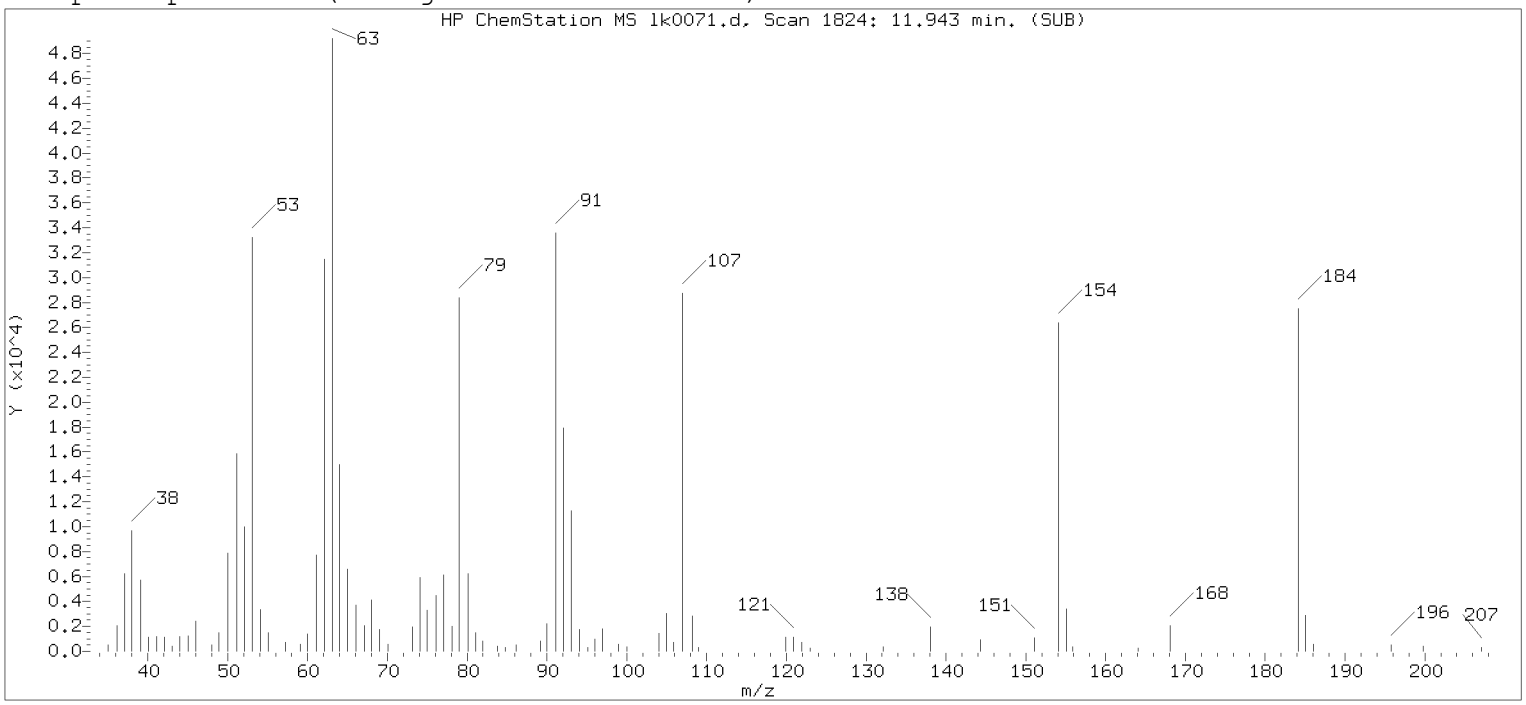
Compound Number : 130
Compound Name : Thionazin
Scan Number : 1941
Retention Time (minutes) : 12.569
Quant Ion : 107.00
Area (flag) : 177157A
On-Column Amount (ng/ul) : 7.5346
Integration start scan : 1936 Integration stop scan: 1950
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

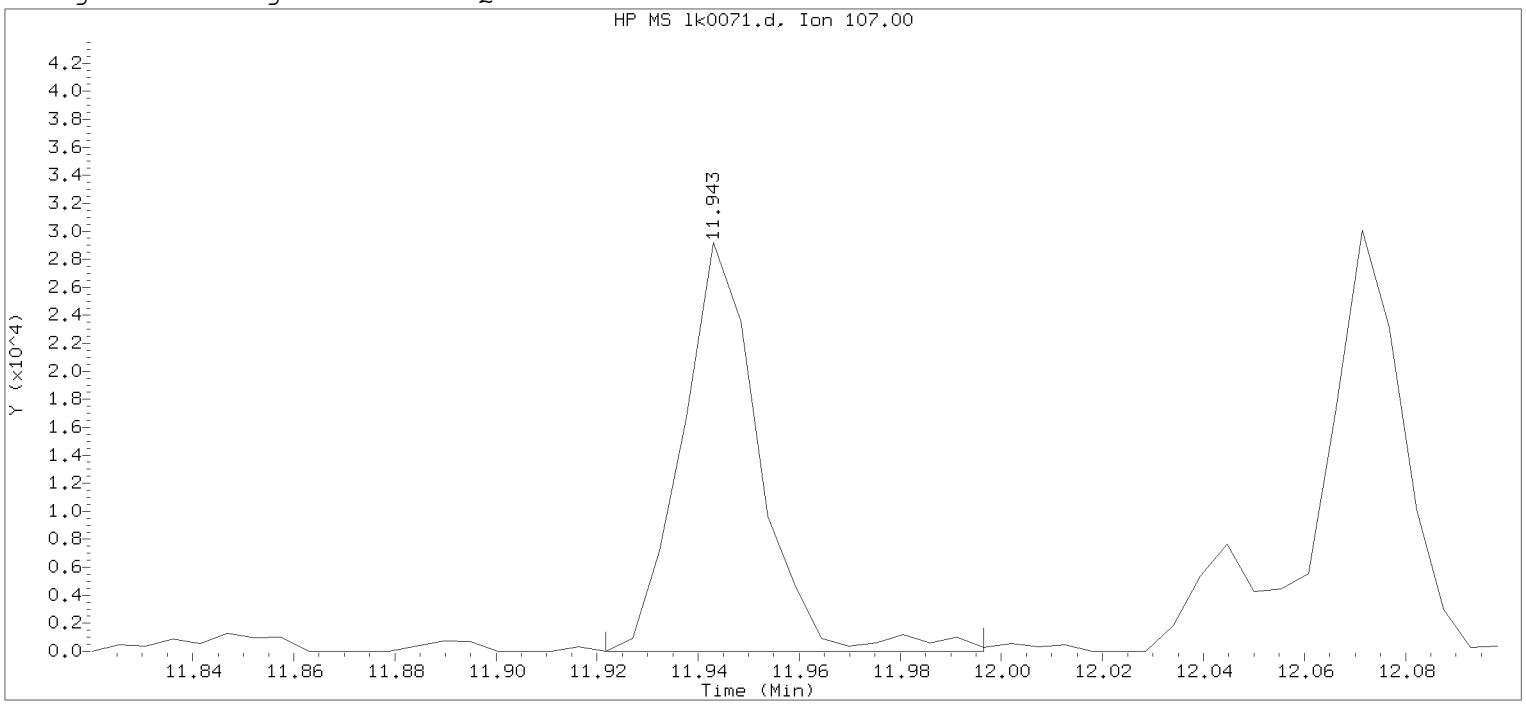
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

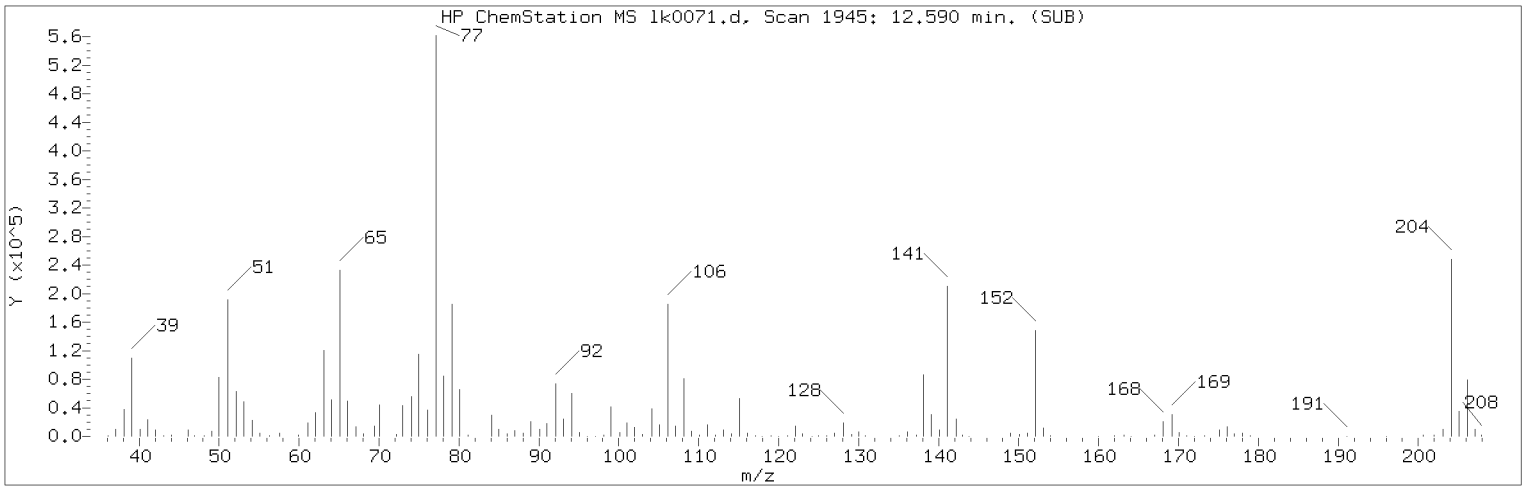
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

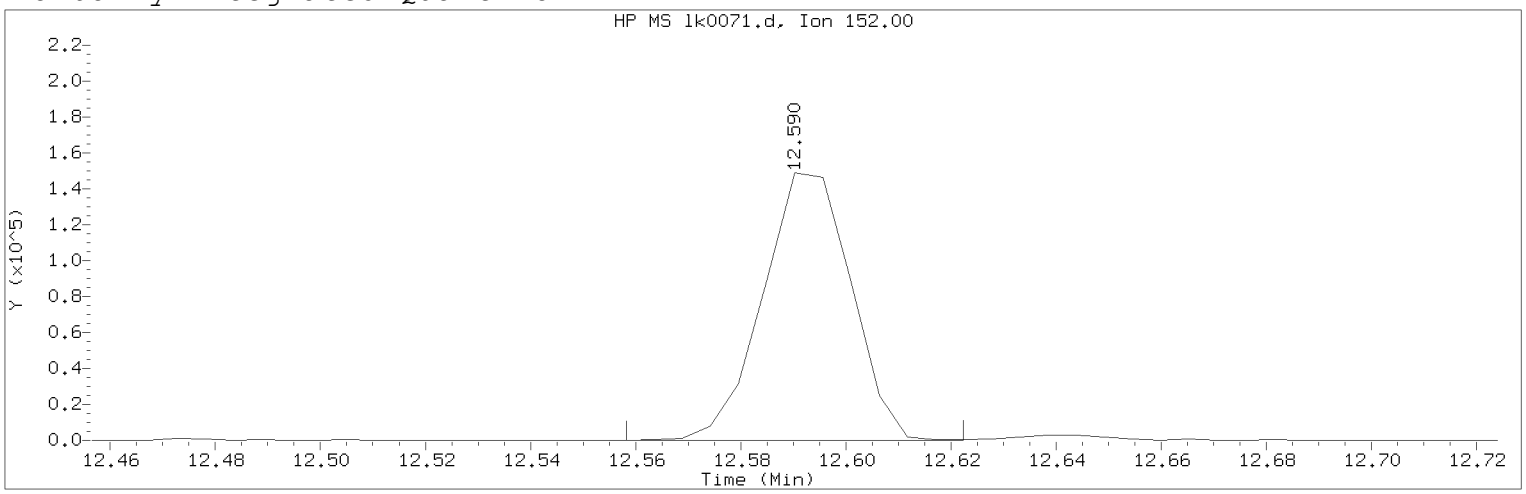
Compound Number	: 130		
Compound Name	: Thionazin		
Scan Number	: 1824		
Retention Time (minutes)	: 11.943		
Quant Ion	: 107.00		
Area	: 31066		
On-column Amount (ng/ul)	: 2.5700		
Integration start scan	: 1819	Integration stop scan:	1833
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2130

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

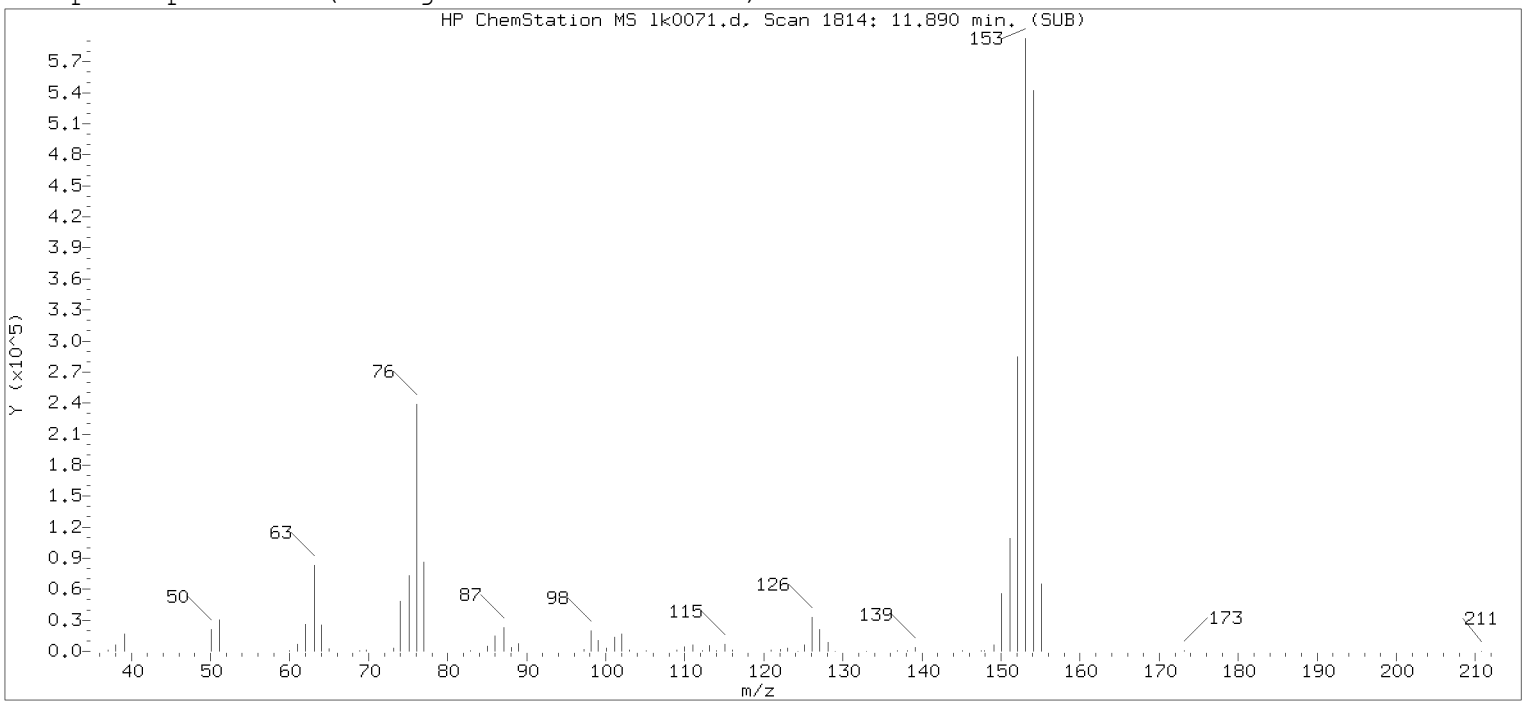
Compound Number : 133
Compound Name : 5-Nitro-o-toluidine
Scan Number : 1945
Retention Time (minutes) : 12.590
Quant Ion : 152.00
Area (flag) : 173468M
On-Column Amount (ng/ul) : 7.2325
Integration start scan : 1938 Integration stop scan: 1950
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

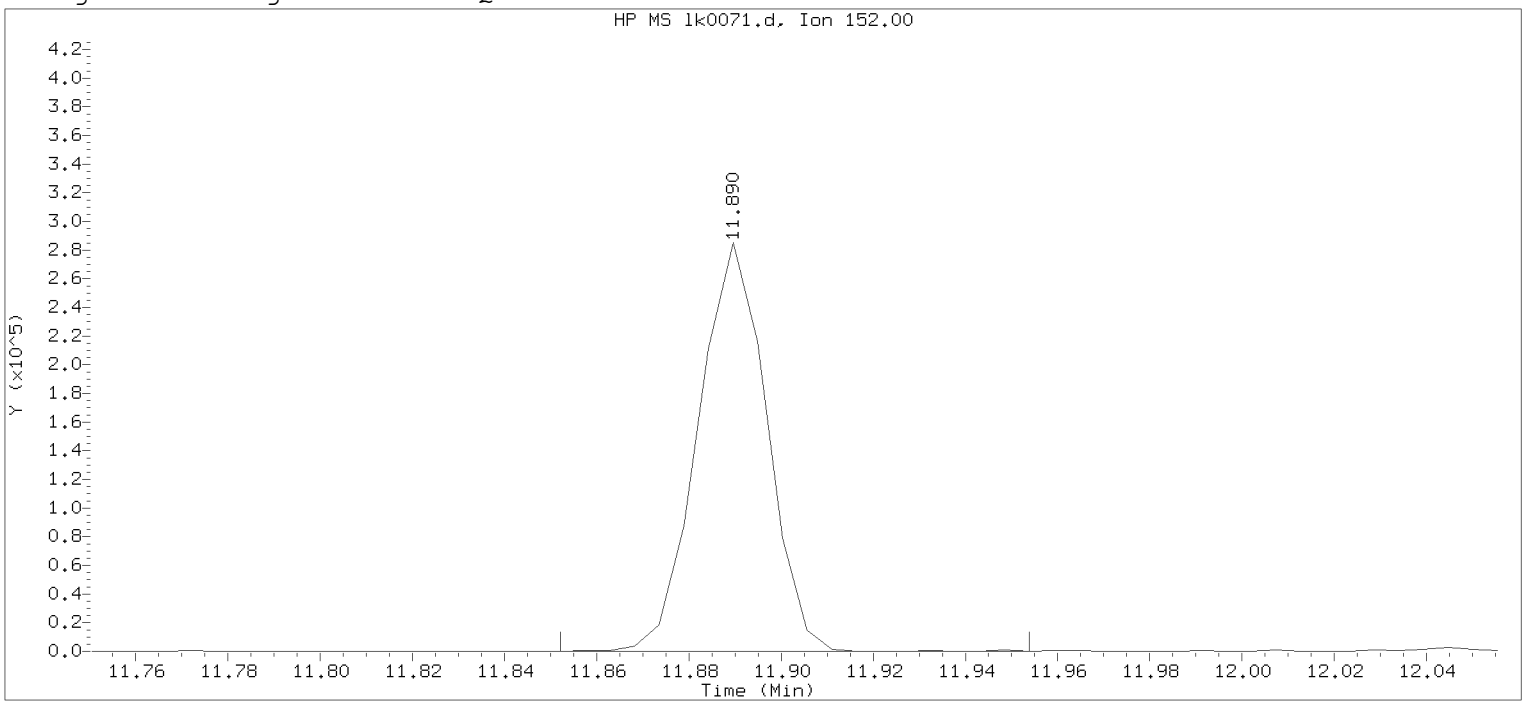
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

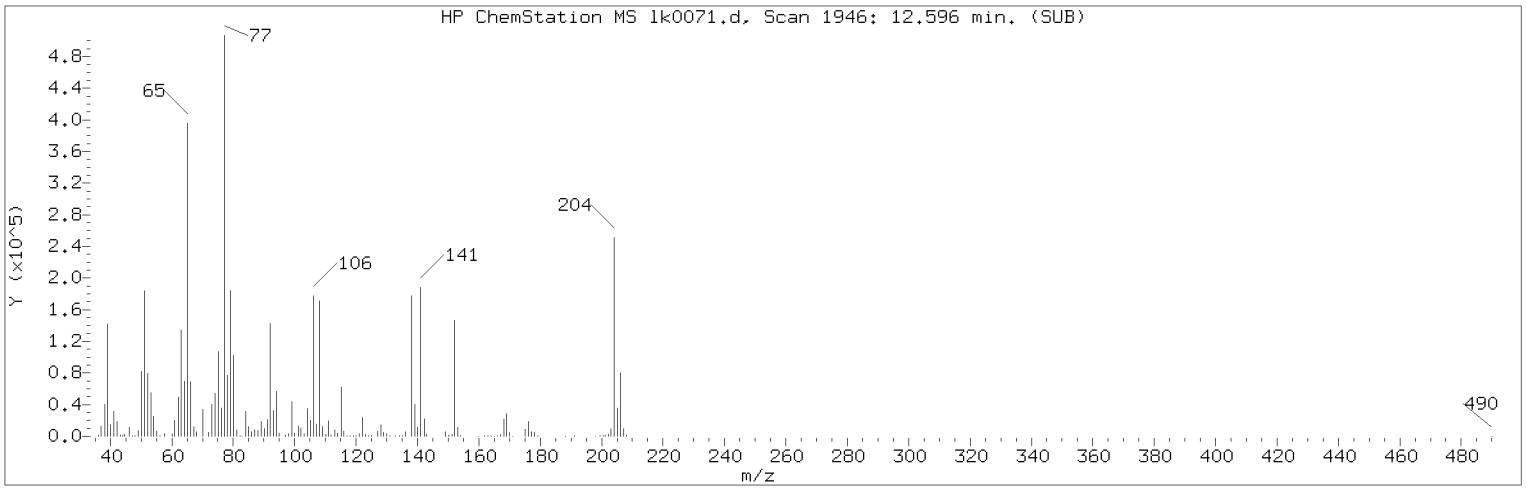
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

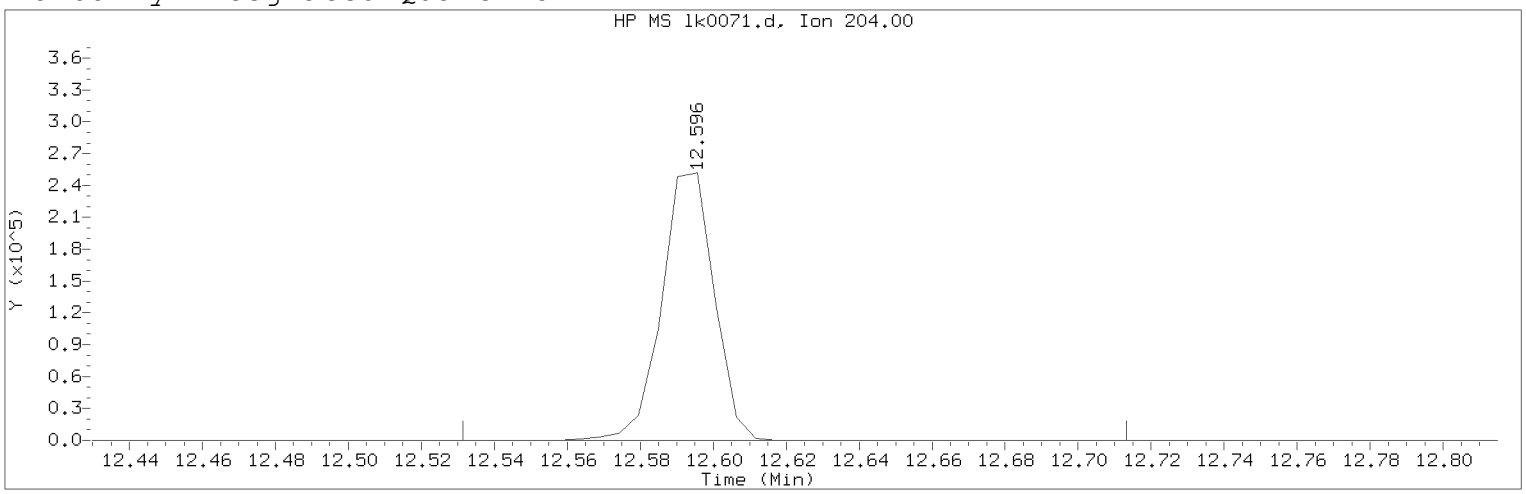
Compound Number	: 133		
Compound Name	: 5-Nitro-o-toluidine		
Scan Number	: 1814		
Retention Time (minutes)	: 11.890		
Quant Ion	: 152.00		
Area	: 294580		
On-column Amount (ng/ul)	: 18.1430		
Integration start scan	: 1806	Integration stop scan:	1825
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

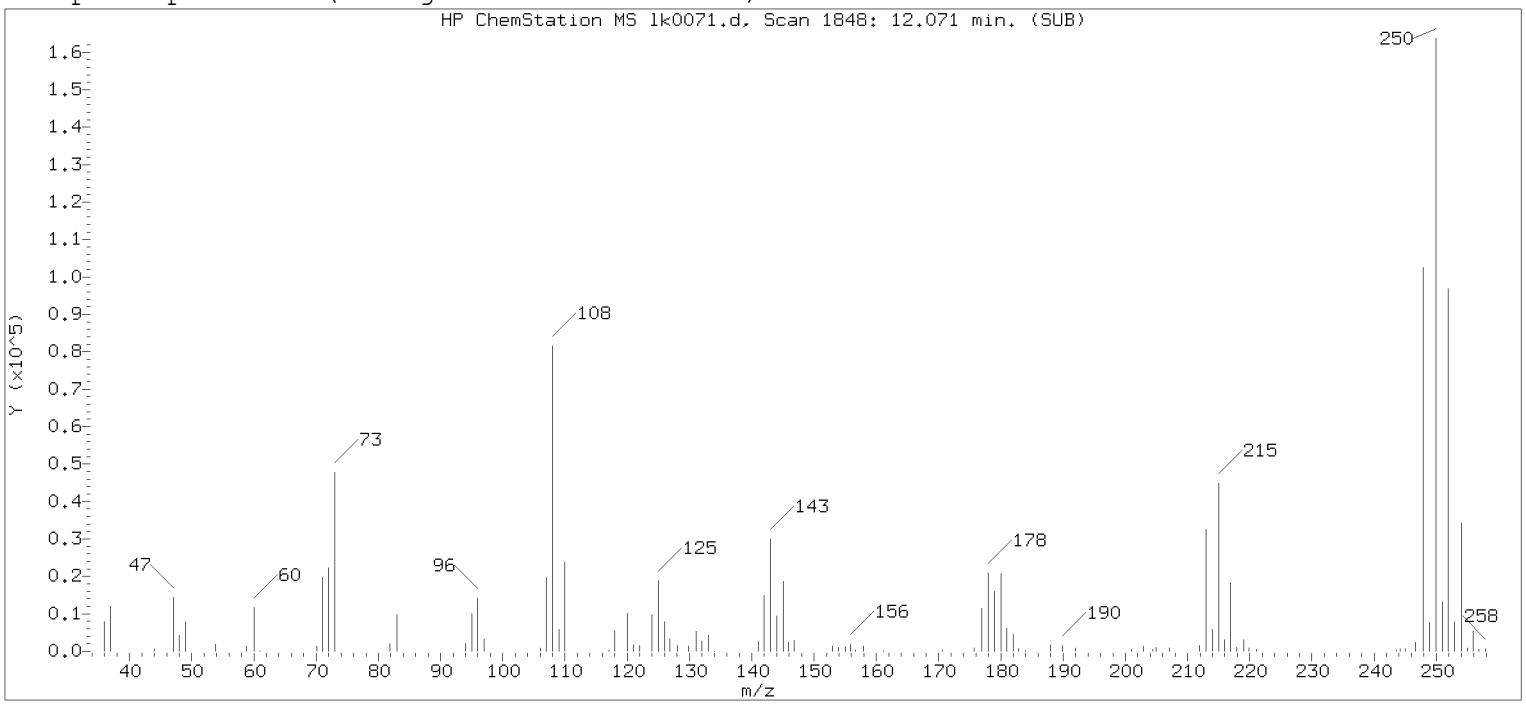
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.596
Quant Ion : 204.00
Area (flag) : 252354M
On-Column Amount (ng/ul) : 7.6630
Integration start scan : 1933 Integration stop scan: 1967
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

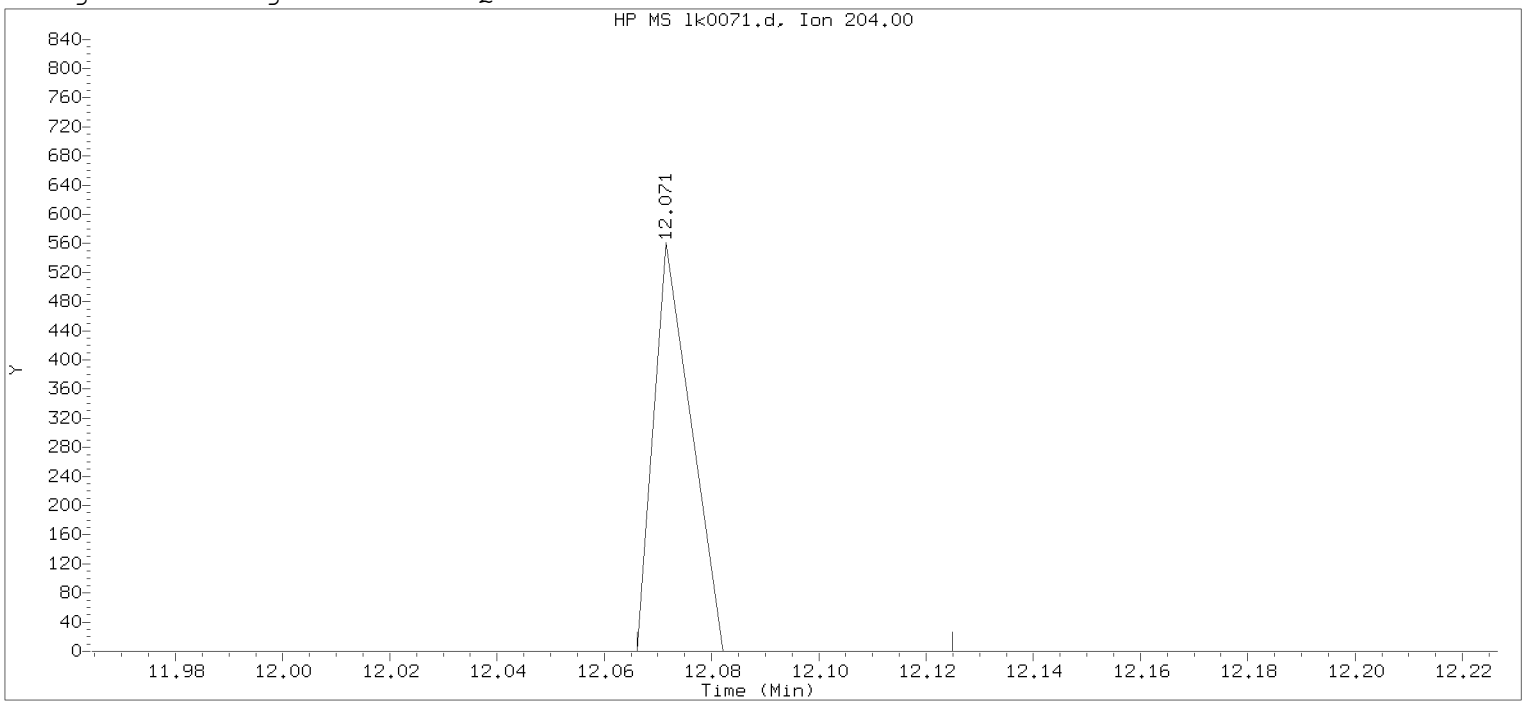
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

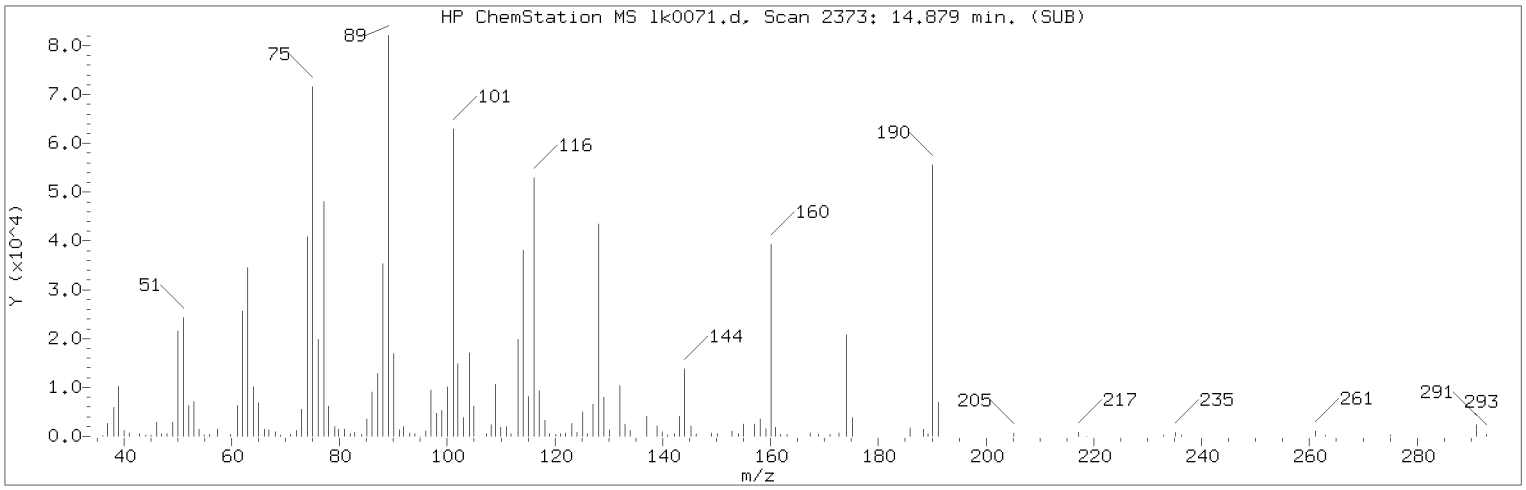
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

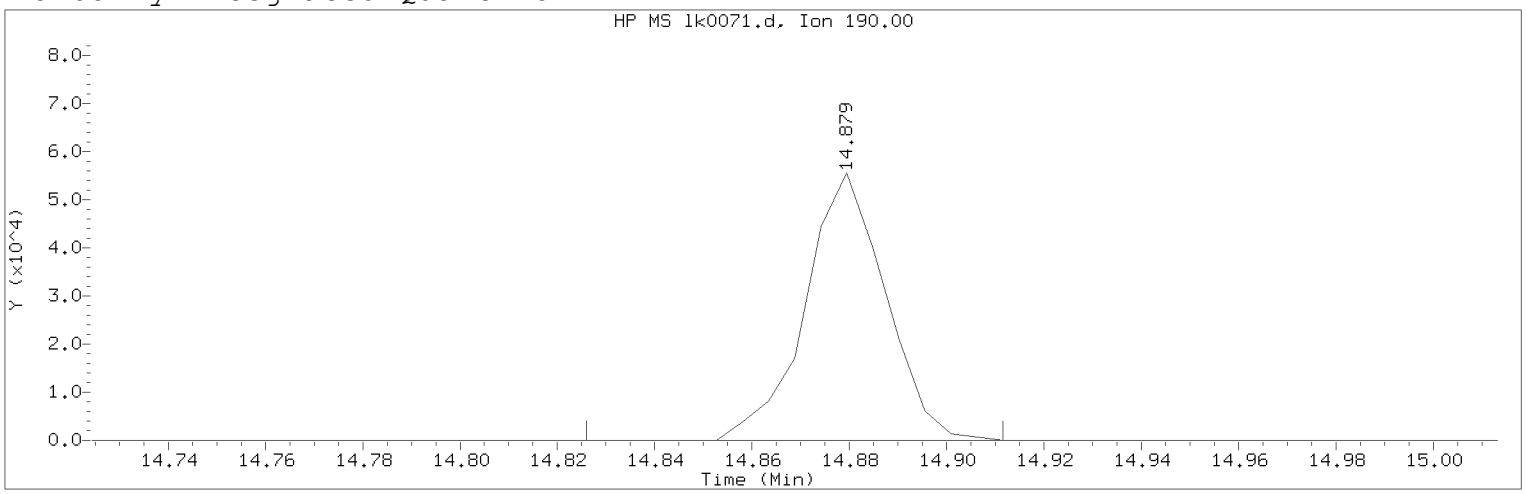
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 1848		
Retention Time (minutes)	: 12.071		
Quant Ion	: 204.00		
Area	: 271		
On-column Amount (ng/ul)	: 0.0108		
Integration start scan	: 1846	Integration stop scan:	1857
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

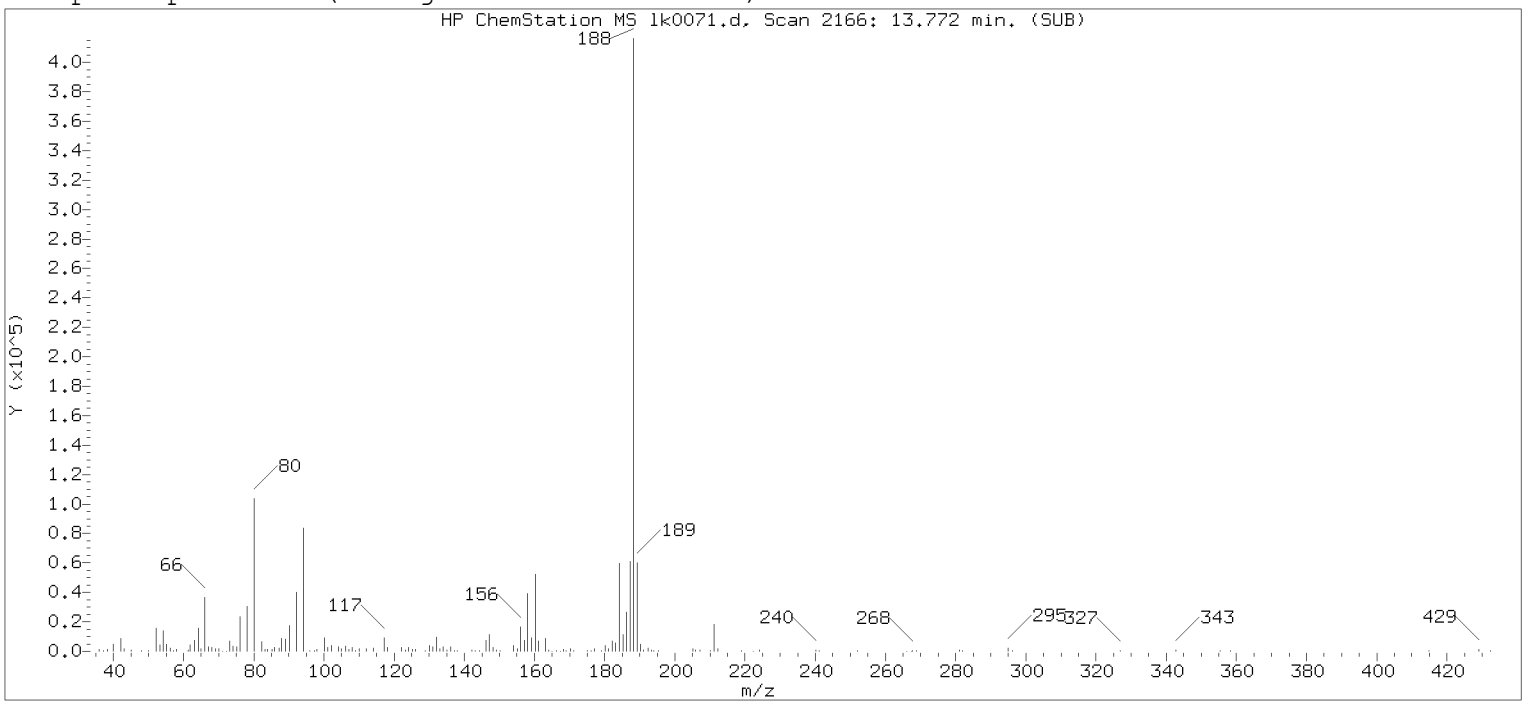
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Scan Number : 2373
Retention Time (minutes) : 14.879
Quant Ion : 190.00
Area (flag) : 63624M
On-Column Amount (ng/ul) : 6.9443
Integration start scan : 2362 Integration stop scan: 2378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

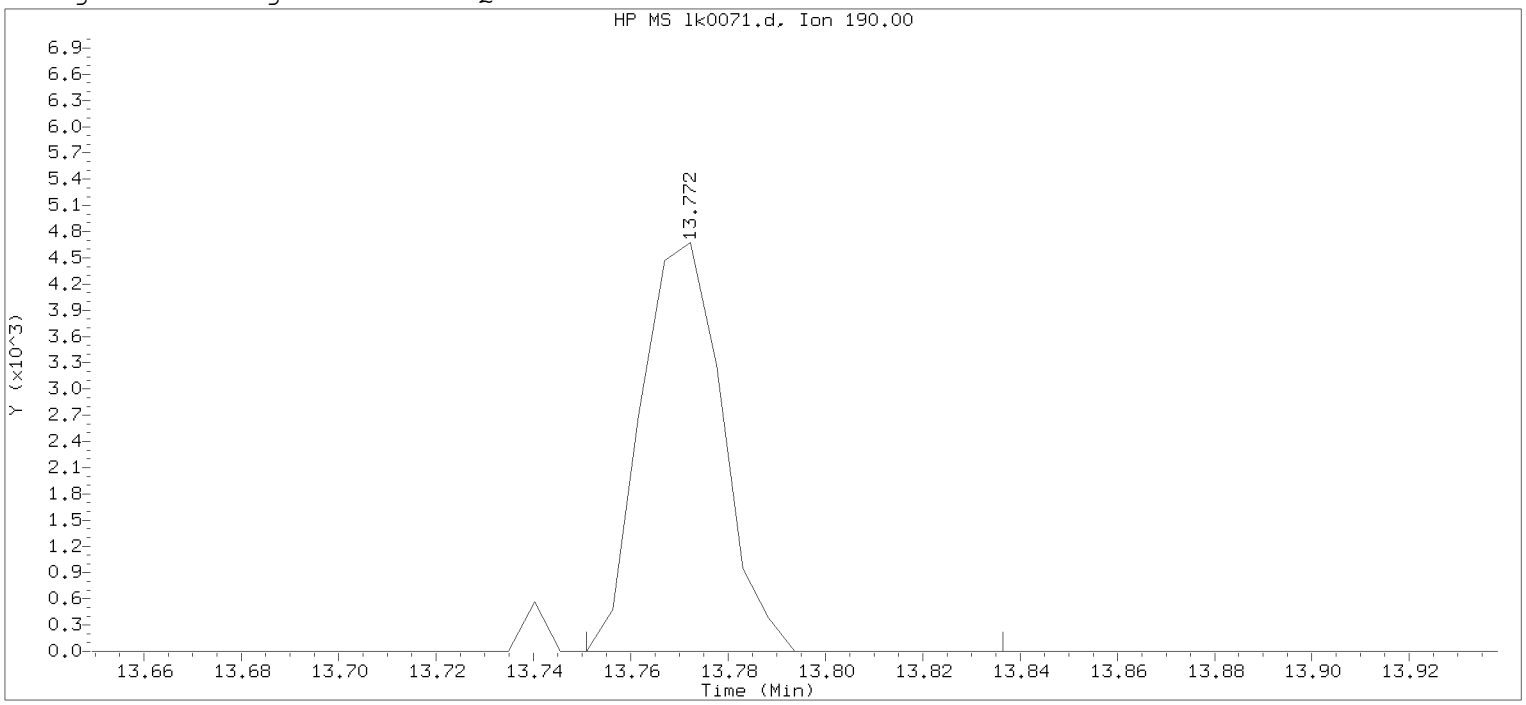
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

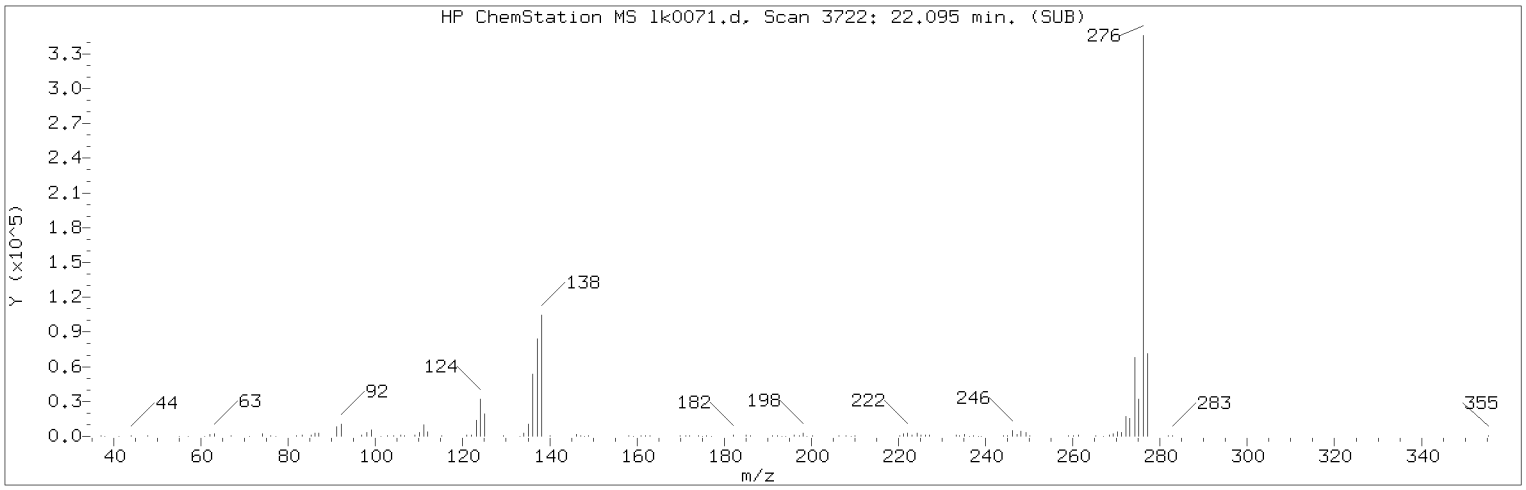
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

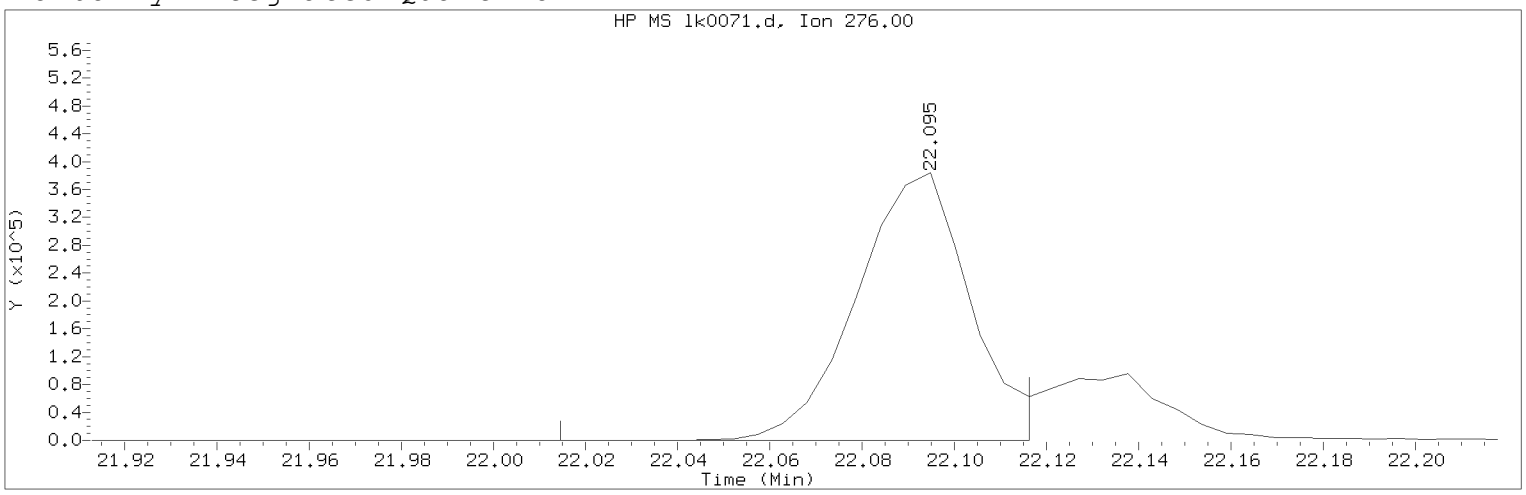
Compound Number	: 173		
Compound Name	: 4-Nitroquinoline-1-oxide		
Scan Number	: 2166		
Retention Time (minutes)	: 13.772		
Quant Ion	: 190.00		
Area	: 5428		
On-column Amount (ng/ul)	: 230.7764		
Integration start scan	: 2161	Integration stop scan:	2177
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 2016

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

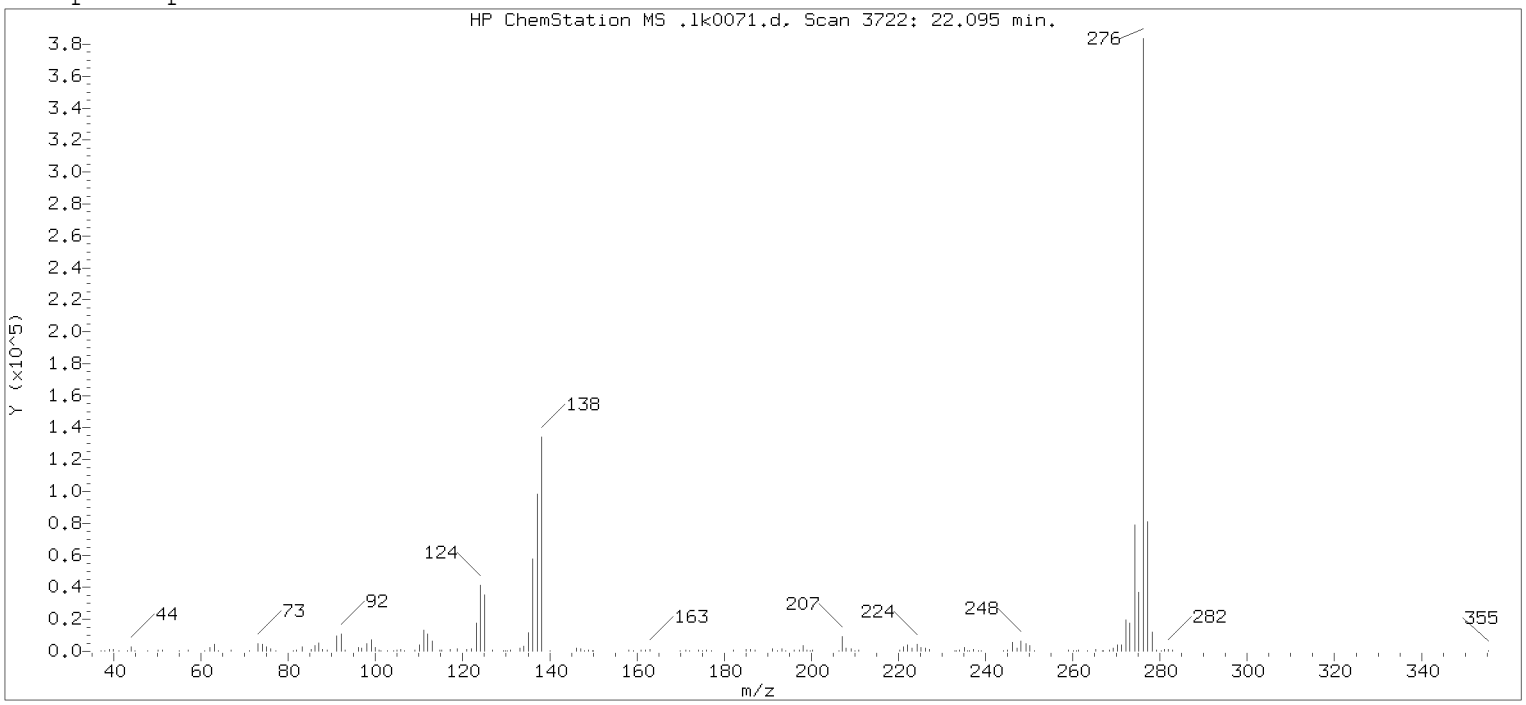
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3722
Retention Time (minutes) : 22.095
Quant Ion : 276.00
Area (flag) : 655698M
On-Column Amount (ng/ul) : 7.7984
Integration start scan : 3706 Integration stop scan: 3725
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

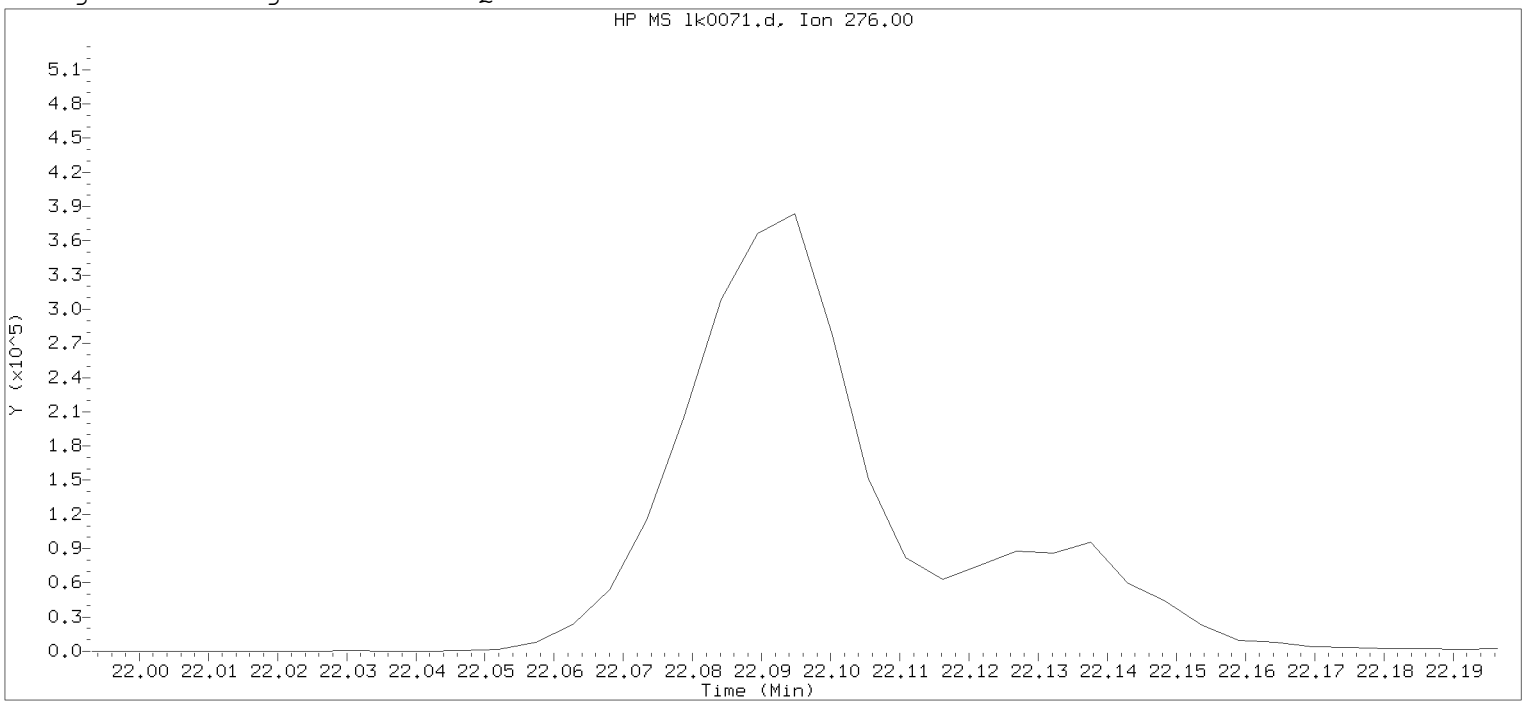
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:55.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



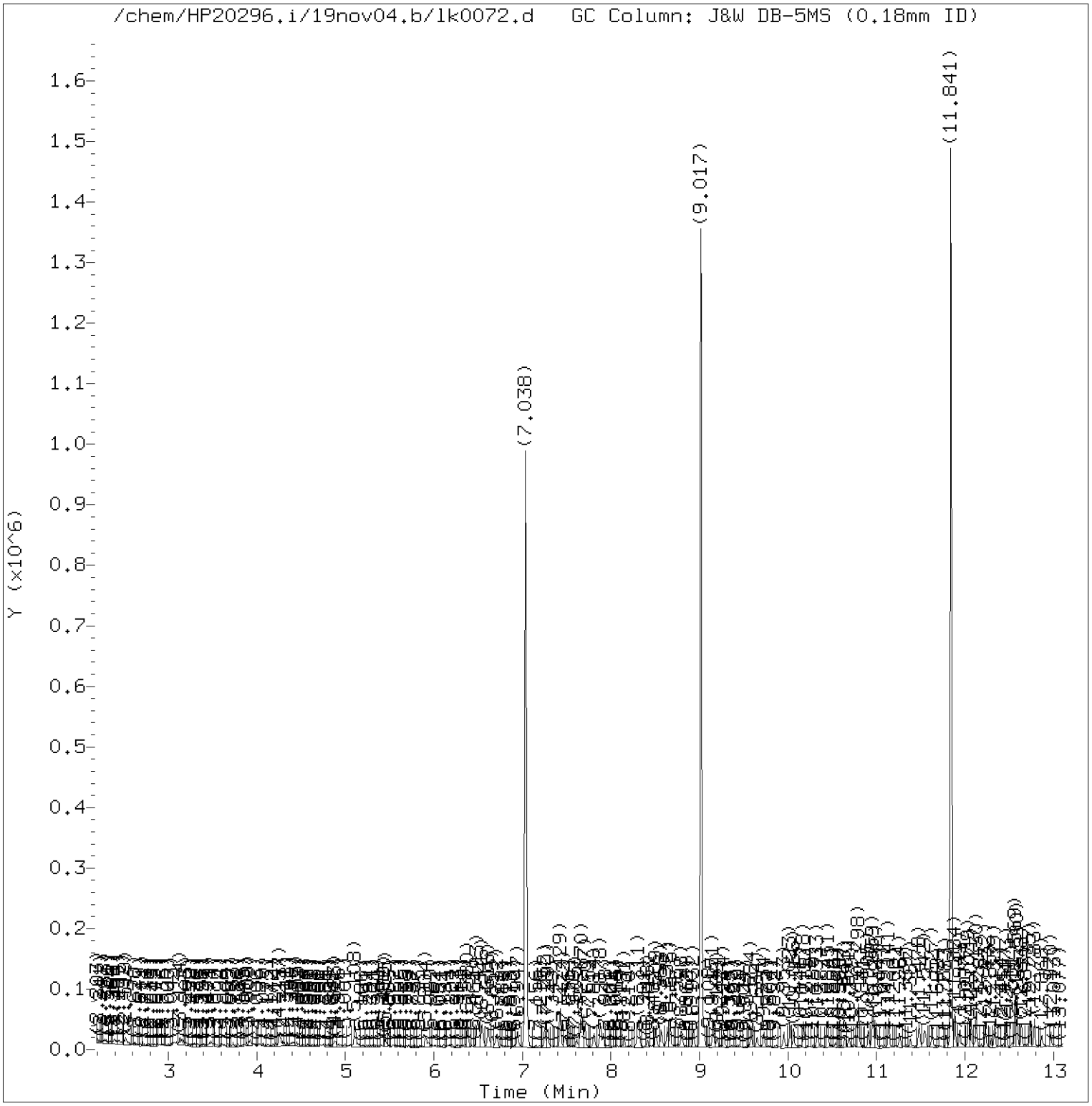
Data File: /chem/HP20296.i/19nov04.b/lk0071.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 14:10 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:01
Date, time and analyst ID of latest file update: 04-Nov-2019 15:01 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Expected RT (minutes) : 22.095
Quant Ion : 276.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:55.
Target 3.5 esignature used with 2018



Total Ion Chromatogram (TIC)

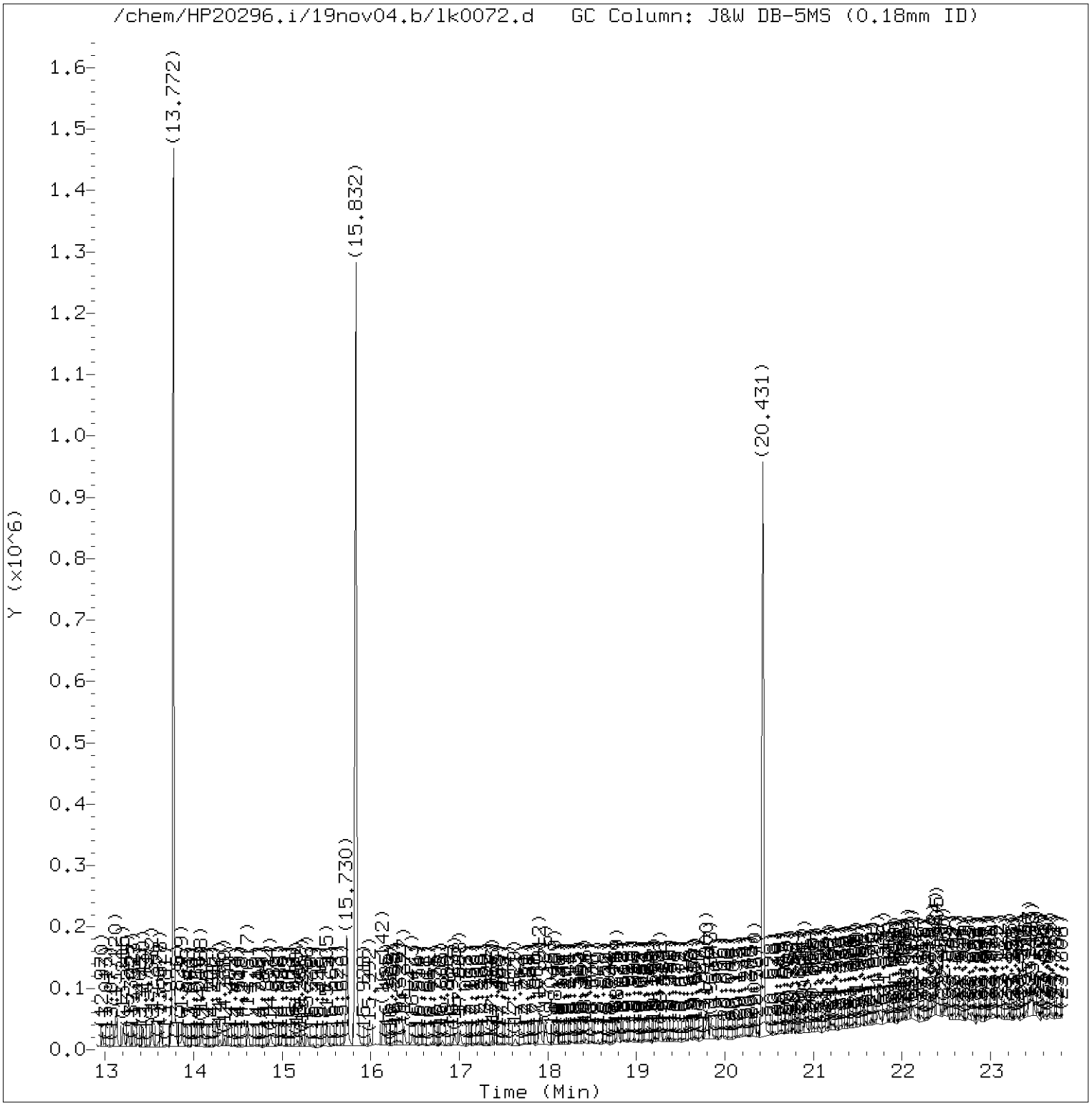
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

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on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.519	88	5258	0.171
5) N-Nitrosodimethylamine	(1)	3.070	74	4692	0.090
6) Pyridine	(1)	3.134	79	14121M	0.159
8) 2-Picoline	(1)	4.257	93	10966M	0.131
9) N-Nitrosomethylethylamine	(1)	4.444	88	4471M	0.128
10) Methyl methanesulfonate	(1)	4.888	80	4597	0.110
12)$2-Fluorophenol	(1)	5.113	112	13984	0.236
14) N-Nitrosodiethylamine	(1)	5.455	102	4626	0.146
43) Total Cresols	(1)			15272	0.244
16) Ethyl methanesulfonate	(1)	5.915	109	4026	0.123
17) Benzaldehyde	(1)	6.380	77	12551	0.208
18)$Phenol-d6	(1)	6.493	99	18381	0.215
19) Phenol	(1)	6.509	94	12981	0.127
20) Aniline	(1)	6.546	93	14247	0.118
21) a-methylstyrene	(1)	6.621	118	3381M	0.141
23) bis(2-Chloroethyl)ether	(1)	6.659	93	10357	0.131
24) 2-Chlorophenol	(1)	6.707	128	6661	0.126
25) 1,3-Dichlorobenzene	(1)	6.942	146	6313	0.117
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	158854	5.000
27) 1,4-Dichlorobenzene	(1)	7.060	146	5911	0.110
28) Benzyl alcohol	(1)	7.252	108	4818	0.115
29) 1,2-Dichlorobenzene	(1)	7.290	146	7313	0.138
100) Isosafrole	(3)			4920	0.133
31) Indene	(1)	7.429	115	13660	0.144
32) 2-Methylphenol	(1)	7.429	108	7597	0.127
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.472	45	11592	0.131
35) bis(2-Chloroisopropyl)ether	(1)	7.472	45	11592	0.131
36) N-Nitrosopyrrolidine	(1)	7.616	100	4202	0.116
37) Acetophenone	(1)	7.653	105	12492	0.126
38) 4-Methylphenol	(1)	7.675	108	7675	0.117
39) N-Nitroso-di-n-propylamine	(1)	7.675	70	9099M	0.140
40) N-Nitrosomorpholine	(1)	7.680	56	5582	0.135
41) o-Toluidine	(1)	7.712	106	13335	0.125
44) Hexachloroethane	(1)	7.803	117	4458	0.159
45)$Nitrobenzene-d5	(2)	7.878	82	17725	0.208
46) Nitrobenzene	(2)	7.910	77	9804	0.107
125) 2,4_2,6-Dinitrotoluenes	(3)			3919	0.193
50) N-Nitrosopiperidine	(2)	8.151	114	4049	0.133
52) Isophorone	(2)	8.301	82	19115	0.117
53) 2-Nitrophenol	(2)	8.418	139	1964	0.100

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.509	107	7711	0.113
58) Benzoic acid	(2)	8.568	105	14511M	0.501
59) O,O,O-Triethylphosphorothioate	(2)	8.632	198	1564	0.086
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	12190	0.125
151) Diallate trans/cis	(4)			9439	0.128
62) 2,4-Dichlorophenol	(2)	8.798	162	4177	0.116
65) 1,2,4-Trichlorobenzene	(2)	8.932	180	4748	0.127
68)*Naphthalene-d8	(2)	9.017	136	663915	5.000
69) Naphthalene	(2)	9.055	128	18432	0.119
70) 4-Chloroaniline	(2)	9.146	127	7692	0.120
71) 2,6-Dichlorophenol	(2)	9.162	162	4224	0.125
72) Hexachloropropene	(2)	9.205	213	1985	0.111
74) Hexachlorobutadiene	(2)	9.274	225	2624	0.141
78) Quinoline	(2)	9.584	129	13877	0.148
79) Caprolactam	(2)	9.654	113	1925M	0.121
80) N-Nitrosodi-n-butylamine	(2)	9.734	84	7754	0.124
83) 4-Chloro-3-methylphenol	(2)	9.959	107	4700	0.084
85) Safrole	(2)	10.050	162	4342	0.135
86) 2-Methylnaphthalene	(2)	10.178	142	10768	0.118
87) 1-Methylnaphthalene	(2)	10.338	142	12272	0.139
88) Hexachlorocyclopentadiene	(3)	10.440	237	1510	0.082
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.456	216	3784	0.120
91) cis-Isosafrole	(3)	10.536	162	1251	0.035
93) 2,4,6-Trichlorophenol	(3)	10.643	196	2452	0.121
95) 2,4,5-Trichlorophenol	(3)	10.691	196	1881	0.086
96)$2-Fluorobiphenyl	(3)	10.798	172	19567	0.232
97) trans-Isosafrole	(3)	10.900	162	3669	0.098
98) 1,1'-Biphenyl	(3)	10.954	154	12891	0.125
99) 2-Chloronaphthalene	(3)	10.970	162	10081	0.121
101) 1-Chloronaphthalene	(3)	10.996	162	8863	0.122
103) Diphenyl ether	(3)	11.141	170	6856	0.135
104) 2-Nitroaniline	(3)	11.141	138	2592	0.098
108) 1,4-Naphthoquinone	(3)	11.264	158	2854	0.084
109) 1,4-Dinitrobenzene	(3)	11.381	168	783M	0.085
110) Dimethylphthalate	(3)	11.483	163	11174	0.129
111) 1,3-Dinitrobenzene	(3)	11.499	168	1017M	0.090
113) 2,6-Dinitrotoluene	(3)	11.553	165	1822	0.102
114) Acenaphthylene	(3)	11.627	152	12901	0.104
117) 3-Nitroaniline	(3)	11.788	138	2118	0.091
118)*Acenaphthene-d10	(3)	11.841	164	275797	5.000

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Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.884	153	10236	0.120
120) 2,4-Dinitrophenol	(3)	11.943	184	2517	4.053
121) 4-Nitrophenol	(3)	12.039	109	7057	0.373
122) Pentachlorobenzene	(3)	12.071	250	3437	0.134
123) 2,4-Dinitrotoluene	(3)	12.125	165	2097	0.092
124) Dibenzofuran	(3)	12.130	168	14391	0.137
126) 1-Naphthylamine	(3)	12.232	143	9858	0.114
127) 2,3,4,6-Tetrachlorophenol	(3)	12.296	232	1058	0.079
128) 2-Naphthylamine	(3)	12.339	143	12912	0.155
129) Diethylphthalate	(3)	12.473	149	10467	0.112
131) Fluorene	(3)	12.569	166	11005	0.129
130) Thionazin	(3)	12.569	107	2746	0.115
133) 5-Nitro-o-toluidine	(3)	12.585	152	1850	0.076
134) 4-Nitroaniline	(3)	12.590	138	2271	0.097
132) 4-Chlorophenyl-phenylether	(3)	12.596	204	3830M	0.115
135) 4,6-Dinitro-2-methylphenol	(4)	12.638	198	1962	0.269
137) NDPA as diphenylamine	(4)	12.735	169	7291	0.099
136) N-Nitrosodiphenylamine	(4)	12.735	169	7291	0.099
139) 1,2-Diphenylhydrazine	(4)	12.783	77	21476	0.116
140)$2,4,6-Tribromophenol	(3)	12.868	332	1247	0.151
142) Tetraethyldithiopyrophosphate	(4)	12.970	97	3038	0.112
145) Diallate (peak 1)	(4)	13.114	86	7848	0.104
146) Phorate	(4)	13.125	75	11835	0.104
147) Phenacetin	(4)	13.136	108	6094	0.085
148) 4-Bromophenyl-phenylether	(4)	13.211	248	2020	0.115
149) Diallate (peak 2)	(4)	13.227	86	1591	0.024
150) Hexachlorobenzene	(4)	13.253	284	2674	0.128
152) Dimethoate	(4)	13.323	87	5371	0.080
153) Atrazine	(4)	13.430	200	2118	0.108
154) Pentachlorophenol	(4)	13.521	266	723	0.068
155) 4-Aminobiphenyl	(4)	13.532	169	4442	0.082
156) Pentachloronitrobenzene	(4)	13.542	237	817M	0.096
157) Pronamide	(4)	13.628	173	4122	0.100
158)*Phenanthrene-d10	(4)	13.772	188	490220	5.000
159) Dinoseb	(4)	13.783	211	749M	3.012
160) Phenanthrene	(4)	13.799	178	12953	0.107
162) Anthracene	(4)	13.869	178	14442	0.120
168) Carbazole	(4)	14.088	167	12461	0.104
169) Methyl parathion	(4)	14.302	109	3542	0.083
170) Di-n-butylphthalate	(4)	14.617	149	17421	0.098

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Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

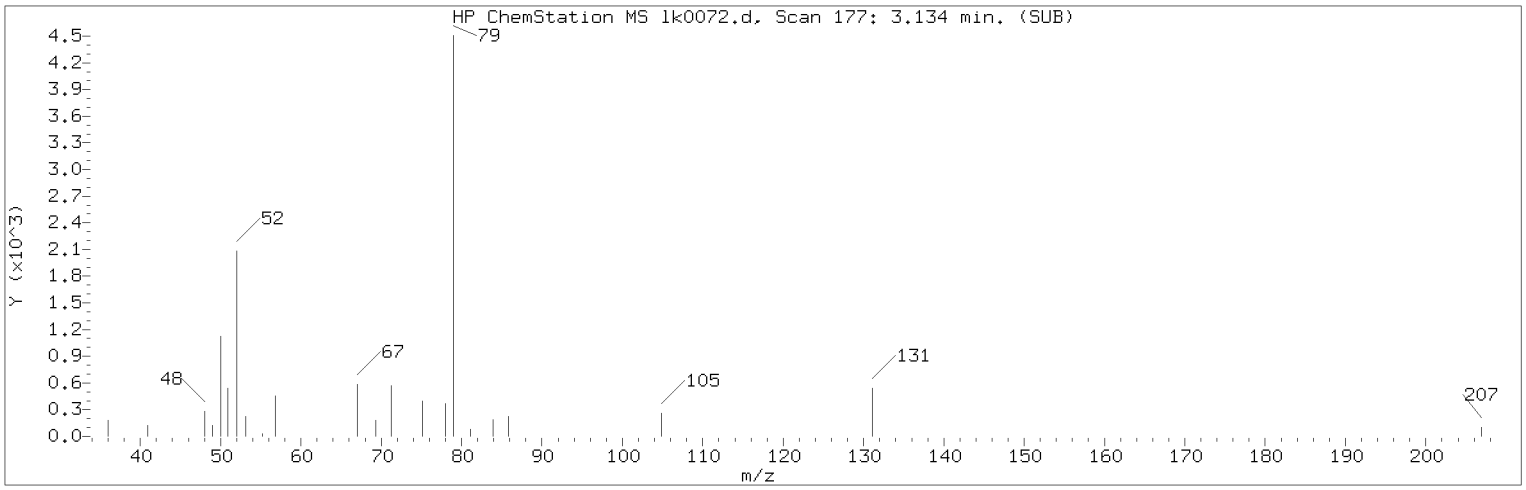
Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.863	109	1282M	0.046
173) 4-Nitroquinoline-1-oxide	(4)	14.879	190	717M	2.489
227) Total PAHs	(6)			218878	2.098
174) Octachlorostyrene	(4)	15.227	308	1264	0.150
176) Isodrin	(4)	15.281	193	2062	0.140
178) Fluoranthene	(4)	15.500	202	13147	0.108
179) Benzidine	(5)	15.730	184	76207	0.886
180)*Pyrene-d10	(5)	15.832	212	457506	5.000
182) Pyrene	(5)	15.858	202	14966	0.116
184)$Terphenyl-d14	(5)	16.147	244	17549	0.248
187) p-Dimethylaminoazobenzene	(5)	16.382	225	1932	0.107
190) Chlorobenzilate	(5)	16.473	139	4842	0.085
192) 3,3'-Dimethylbenzidine	(5)	16.949	212	7606	0.095
193) Butylbenzylphthalate	(5)	17.014	149	4877	0.063
196) 2-Acetylaminofluorene	(5)	17.377	181	1982	0.037
198) 3,3'-Dichlorobenzidine	(5)	17.896	252	4366	0.104
200) Benzo(a)anthracene	(5)	17.907	228	11988	0.113
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.912	231	2535M	0.119
201) Chrysene	(5)	17.976	228	13183	0.122
204) bis(2-Ethylhexyl)phthalate	(5)	18.089	149	8780	0.076
208) 6-Methylchrysene	(5)	18.795	242	8513	0.113
210) Di-n-octylphthalate	(6)	19.271	149	12270	0.067
211) Benzo(b)fluoranthene	(6)	19.795	252	11176	0.113
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.800	256	4099	0.098
213) Benzo(k)fluoranthene	(6)	19.848	252	12797	0.129
216) Benzo(a)pyrene	(6)	20.335	252	9716	0.106
218)*Perylene-d12	(6)	20.431	264	387197	5.000
220) 3-Methylcholanthrene	(6)	20.913	268	4826	0.115
222) Dibenz(a,h)acridine	(6)	21.742	279	6908M	0.090
223) Dibenz(a,j)acridine	(6)	21.817	279	7432M	0.097
224) Indeno(1,2,3-cd)pyrene	(6)	22.079	276	9437M	0.113
225) Dibenz(a,h)anthracene	(6)	22.127	278	9515	0.109
226) Benzo(g,h,i)perylene	(6)	22.507	276	9944	0.113

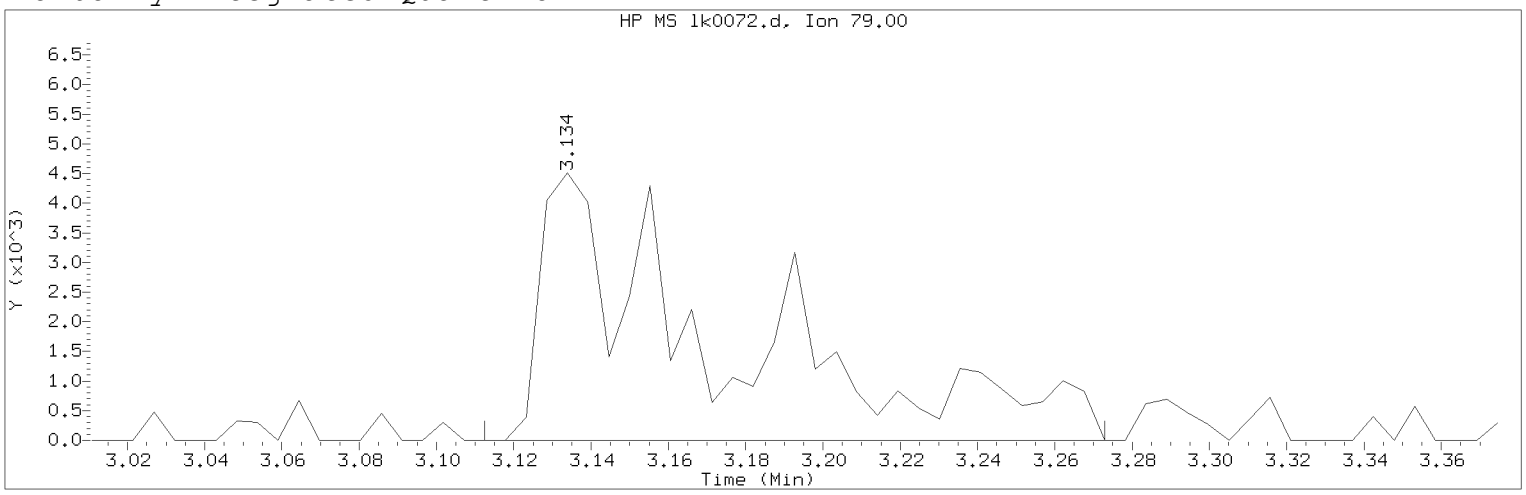
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

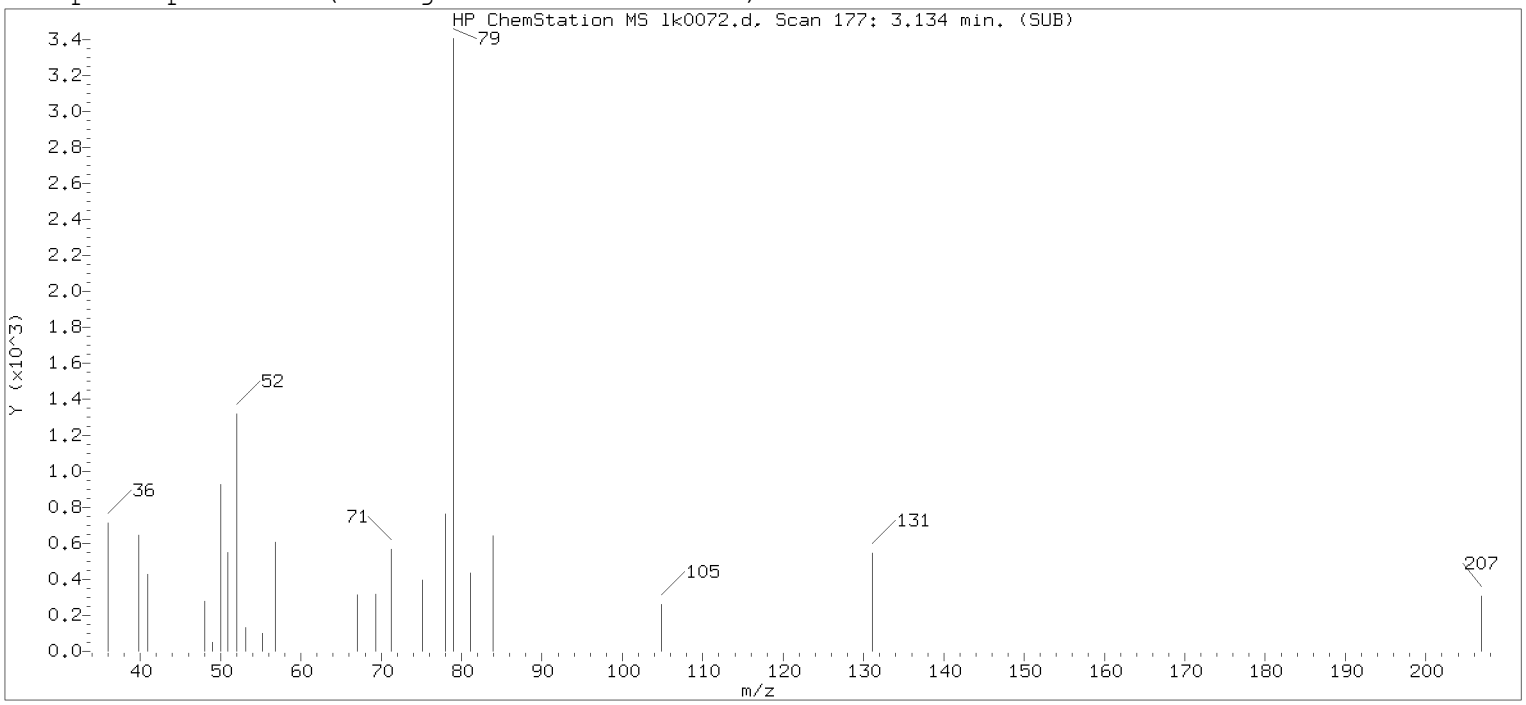
Compound Number : 6
Compound Name : Pyridine
Scan Number : 177
Retention Time (minutes) : 3.134
Quant Ion : 79.00
Area (flag) : 14121M
On-Column Amount (ng/ul) : 0.1586
Integration start scan : 172 Integration stop scan: 202
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

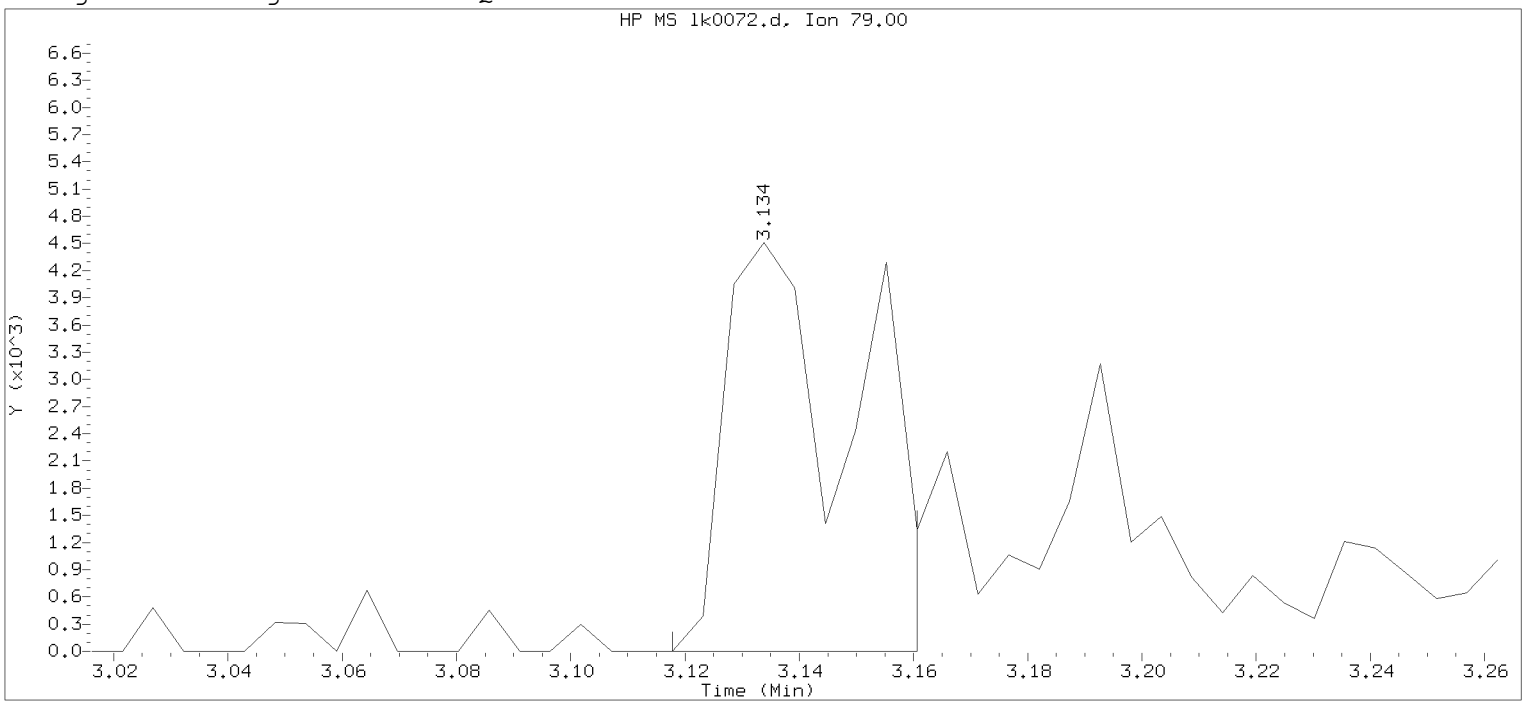
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

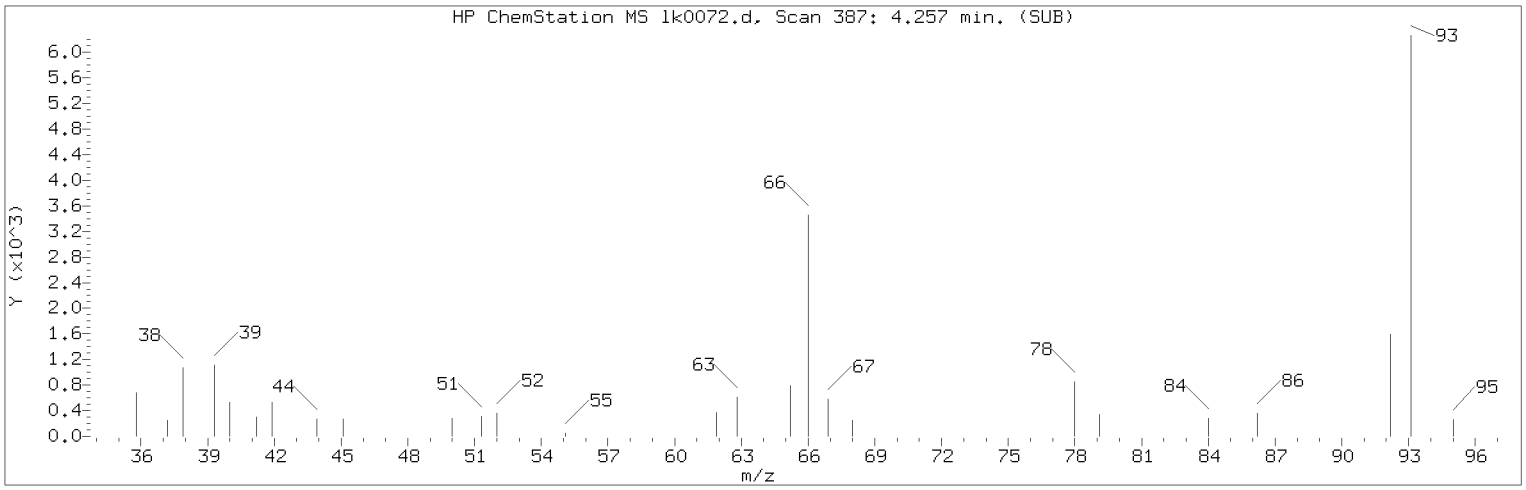
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

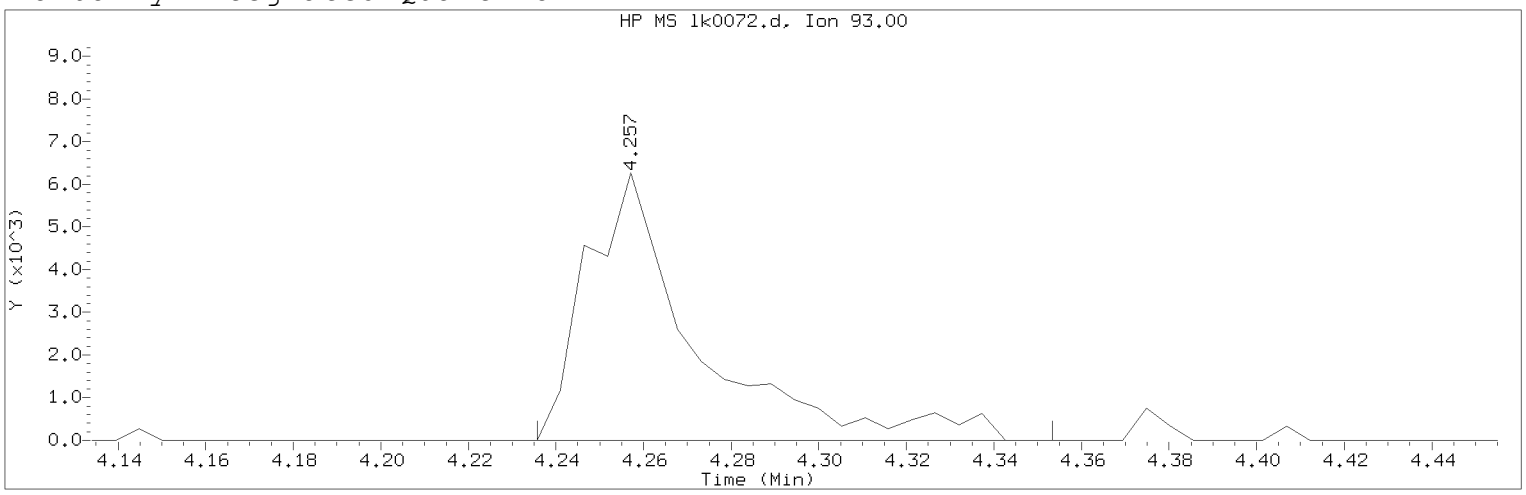
Compound Number	: 6		
Compound Name	: Pyridine		
Scan Number	: 177		
Retention Time (minutes)	: 3.134		
Quant Ion	: 79.00		
Area	: 6982		
On-column Amount (ng/ul)	: 0.1205		
Integration start scan	: 173	Integration stop scan:	181
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 2020

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

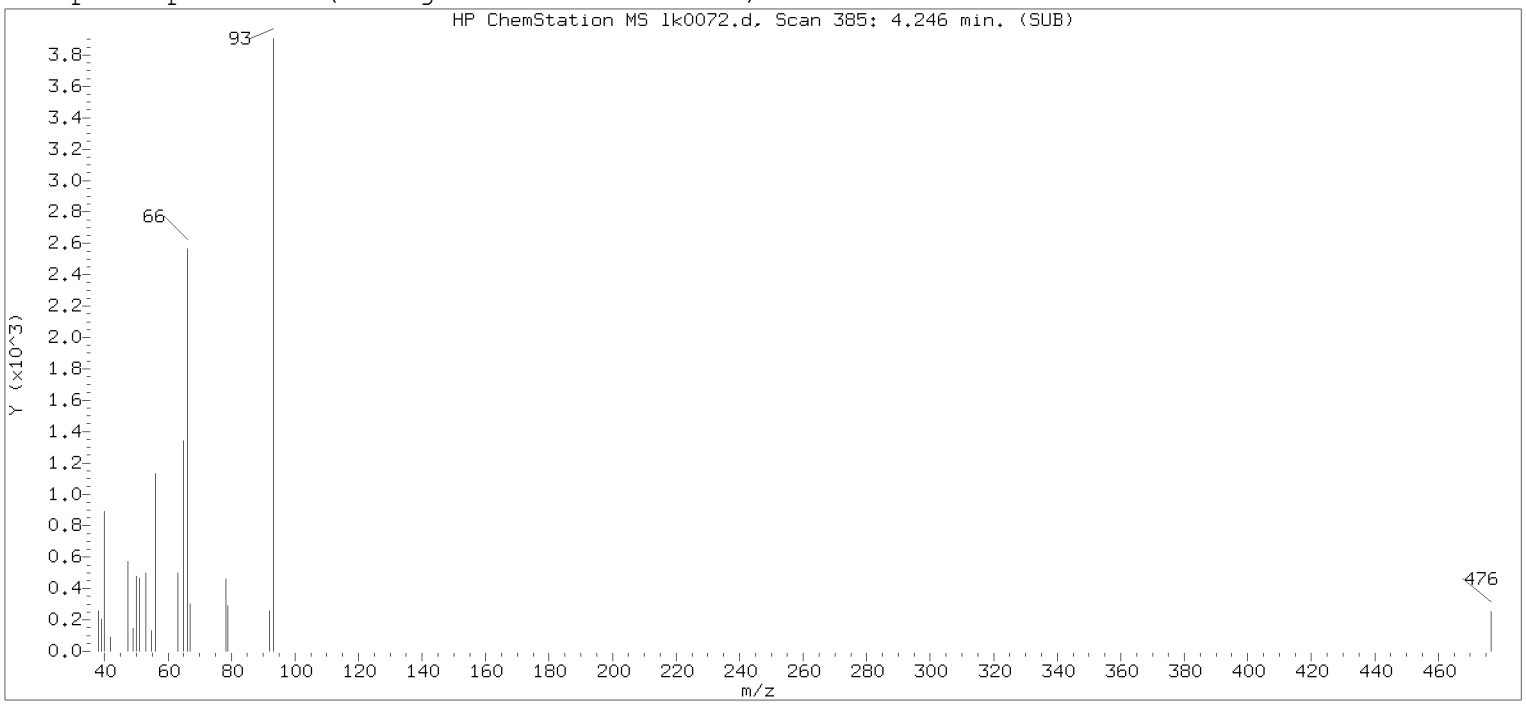
Compound Number : 8
Compound Name : 2-Picoline
Scan Number : 387
Retention Time (minutes) : 4.257
Quant Ion : 93.00
Area (flag) : 10966M
On-Column Amount (ng/ul) : 0.1307
Integration start scan : 382 Integration stop scan: 404
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

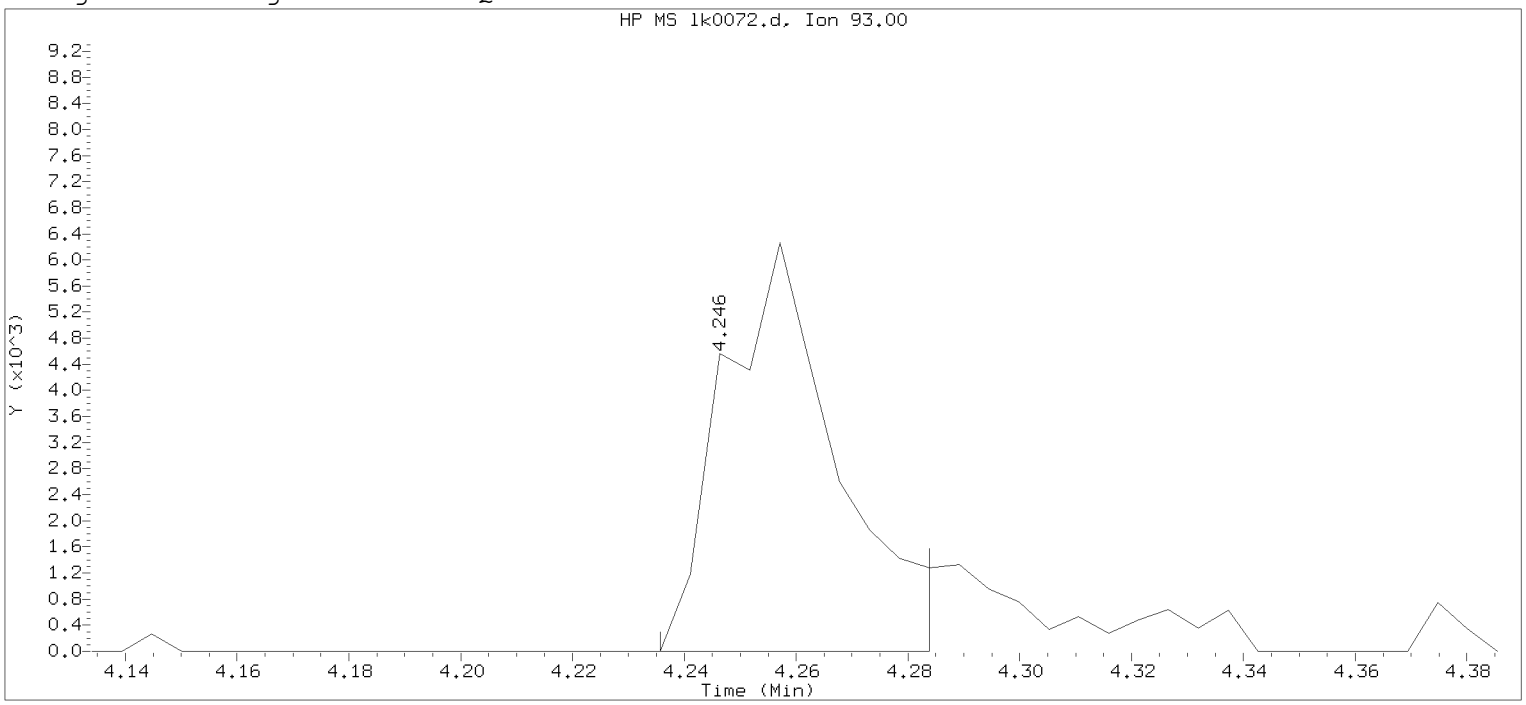
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

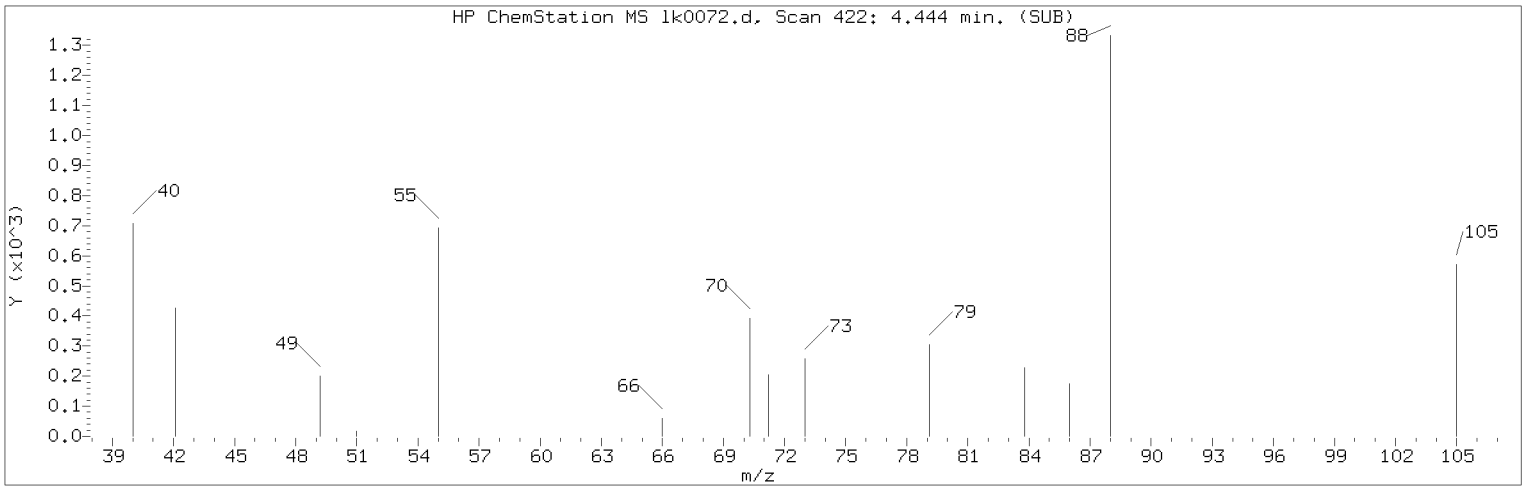
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

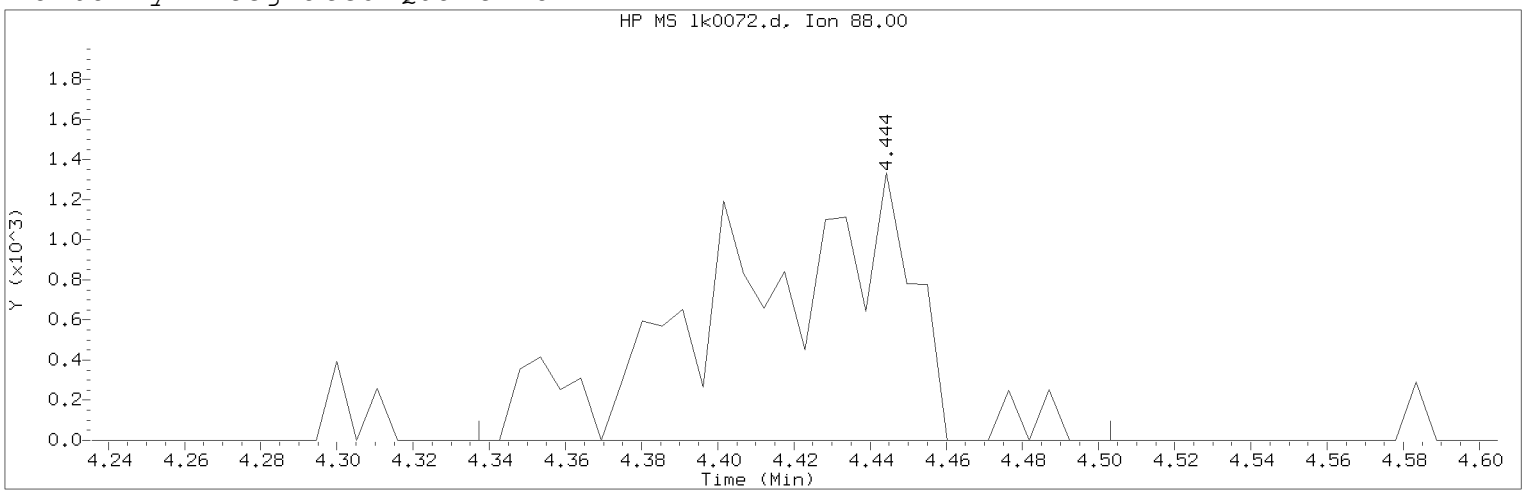
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 385		
Retention Time (minutes)	: 4.246		
Quant Ion	: 93.00		
Area	: 8747		
On-column Amount (ng/ul)	: 0.1400		
Integration start scan	: 382	Integration stop scan:	391
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 2021 RAF.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

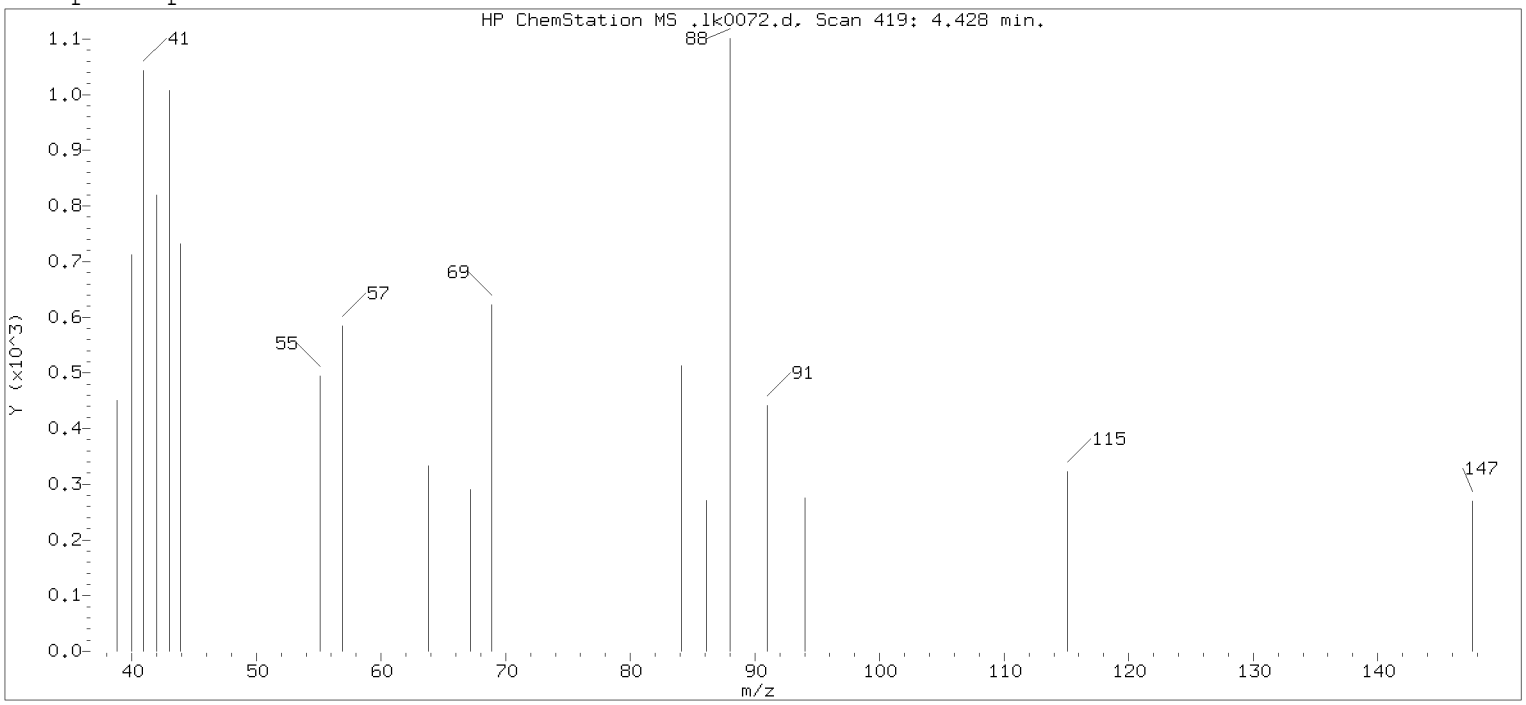
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 422
Retention Time (minutes) : 4.444
Quant Ion : 88.00
Area (flag) : 4471M
On-Column Amount (ng/ul) : 0.1281
Integration start scan : 401 Integration stop scan: 432
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

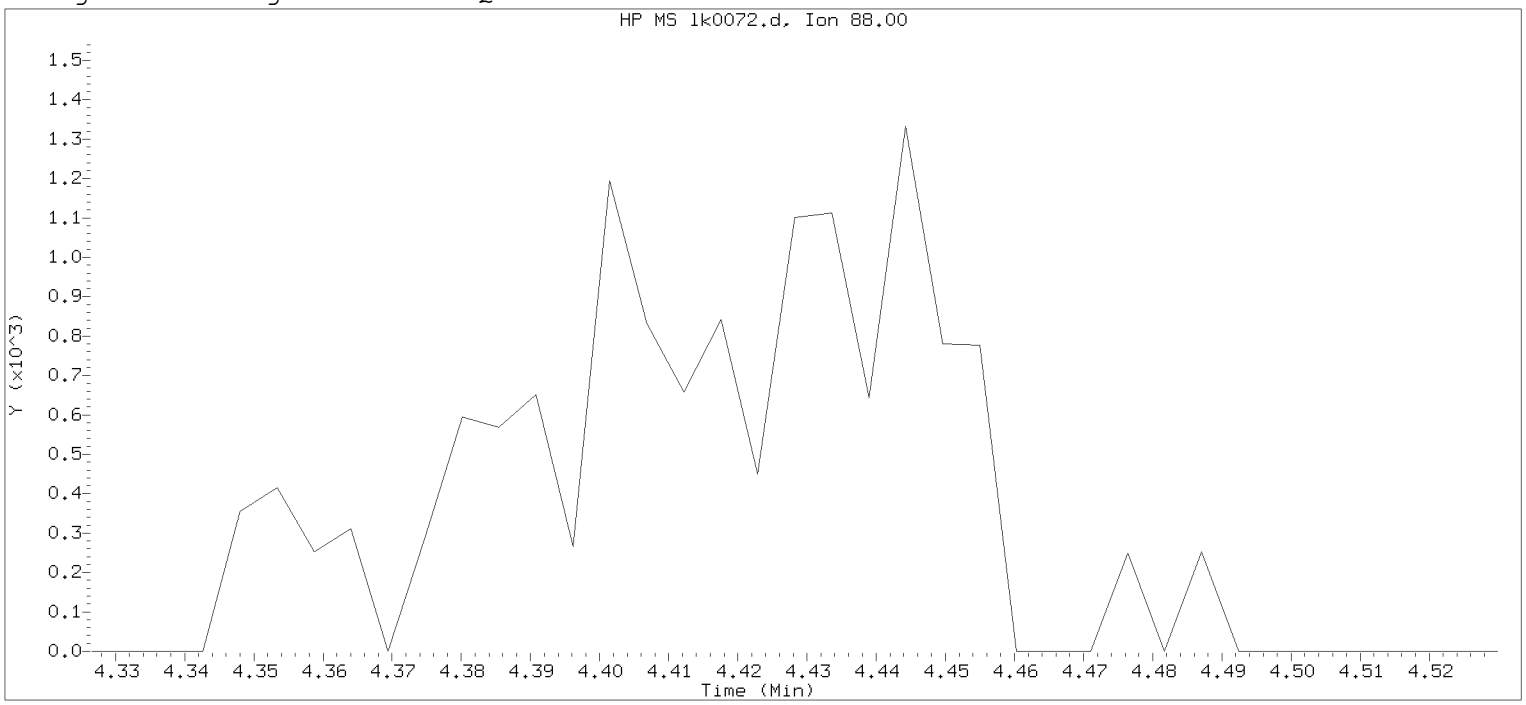
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

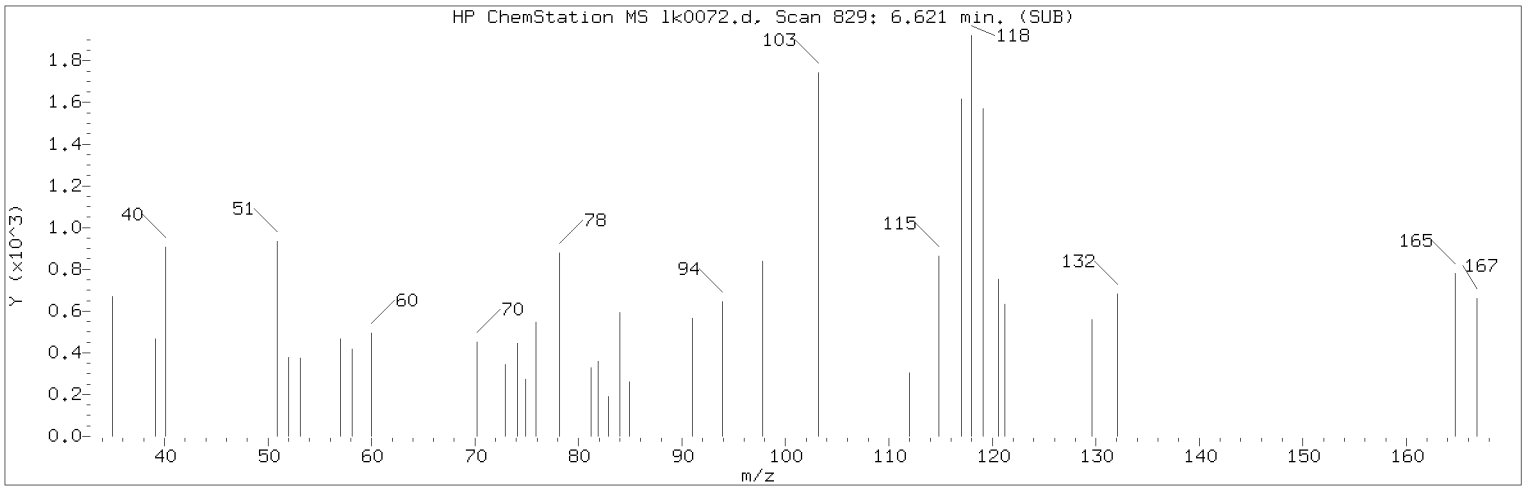
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

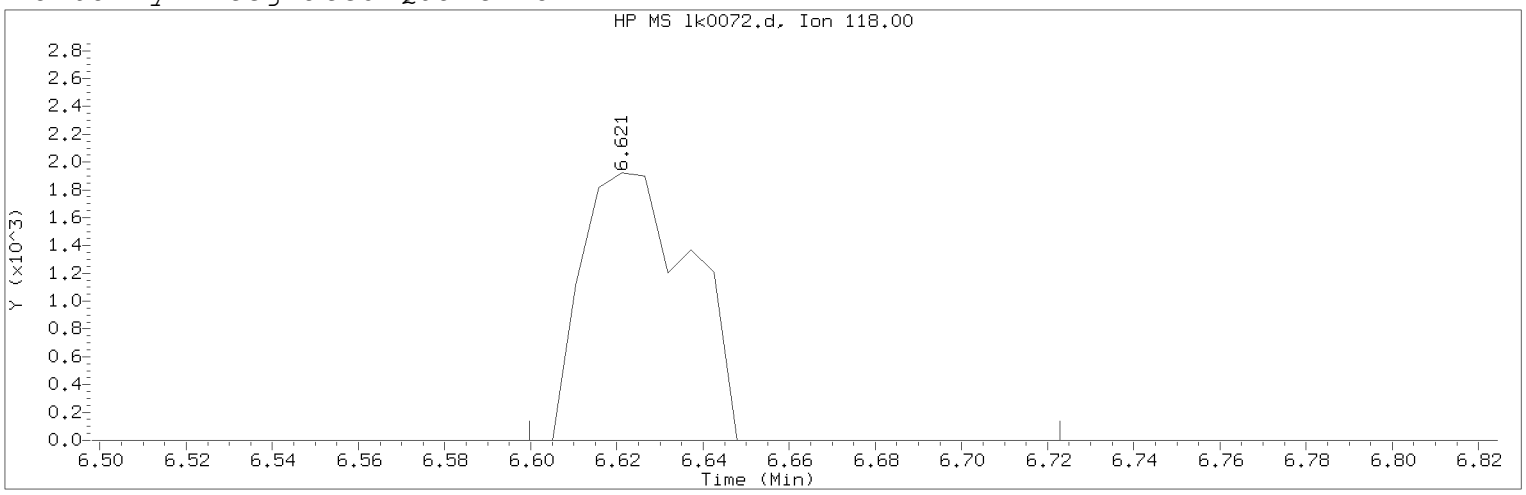
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.428
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2130

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

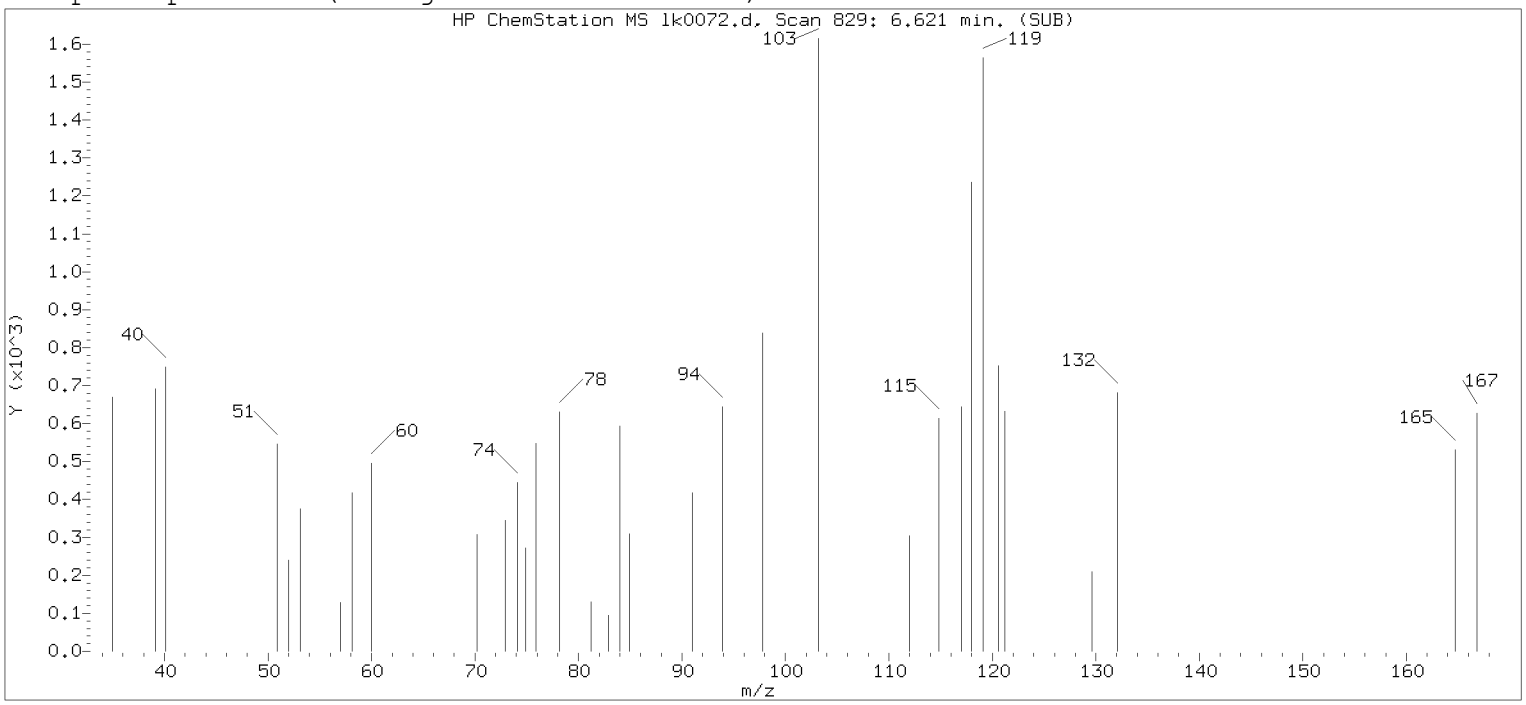
Compound Number : 21
Compound Name : a-methylstyrene
Scan Number : 829
Retention Time (minutes) : 6.621
Quant Ion : 118.00
Area (flag) : 3381M
On-Column Amount (ng/ul) : 0.1408
Integration start scan : 824 Integration stop scan: 847
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

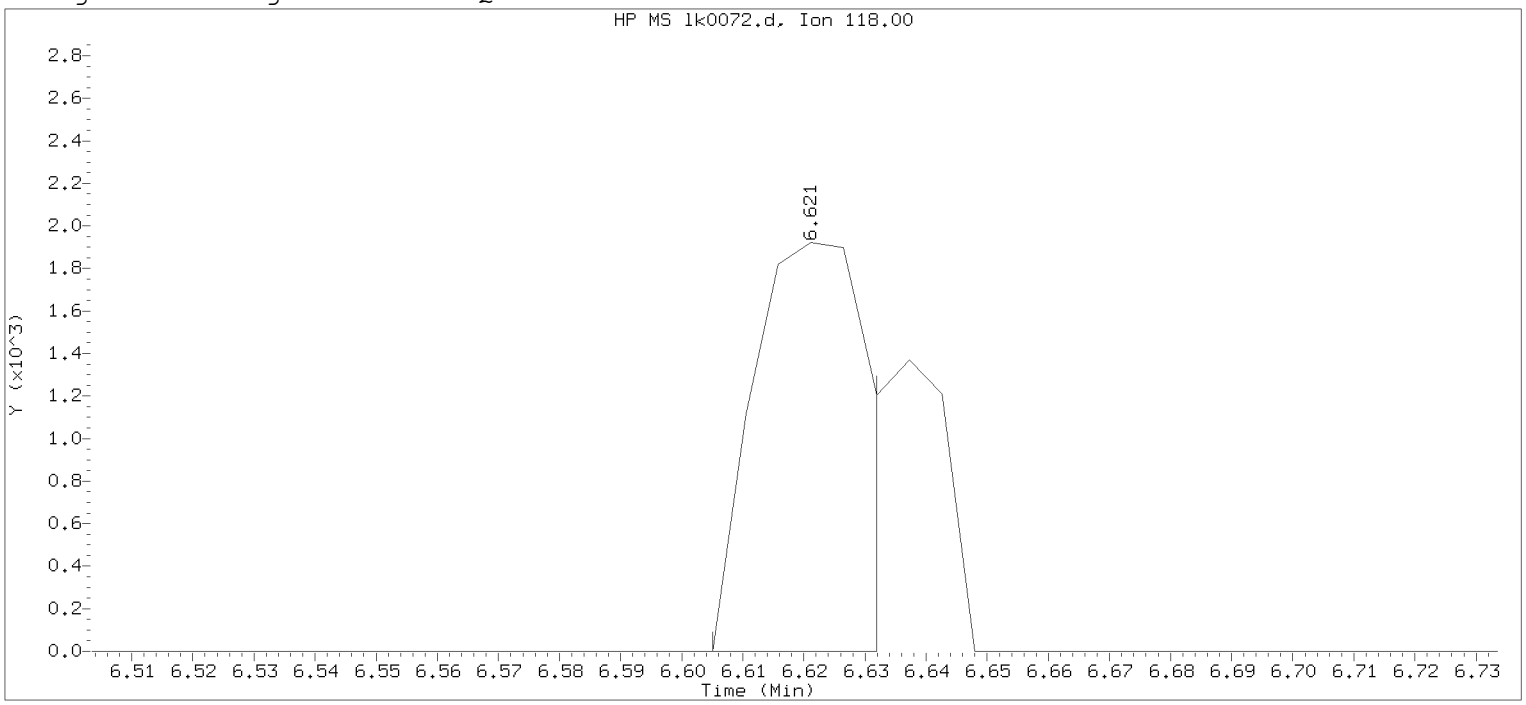
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

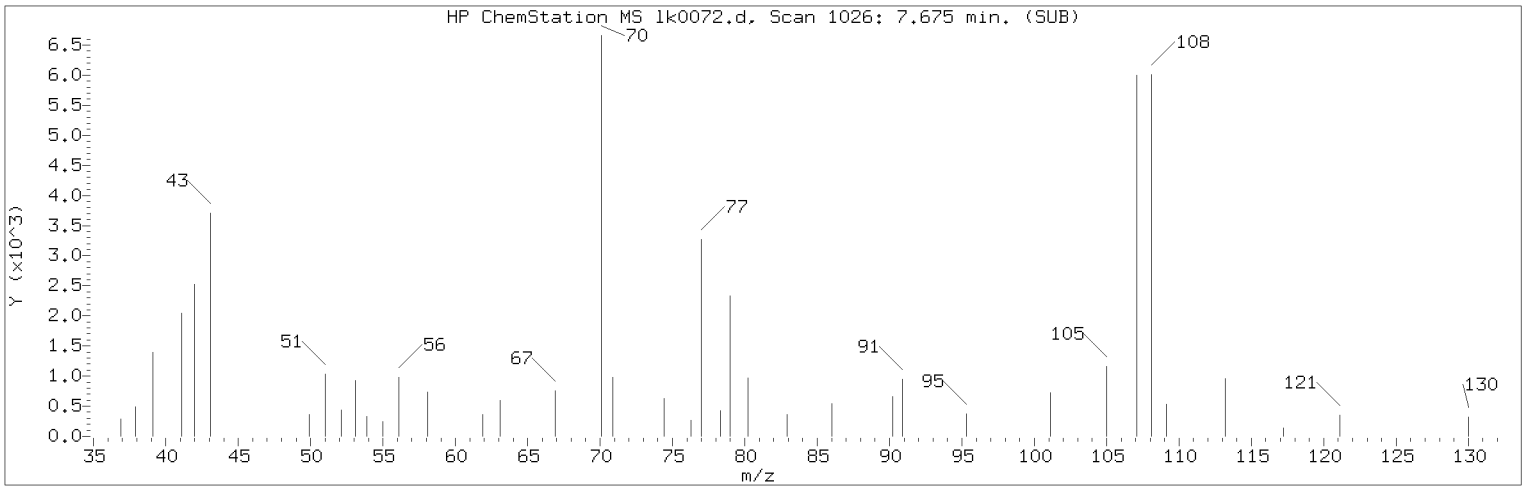
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

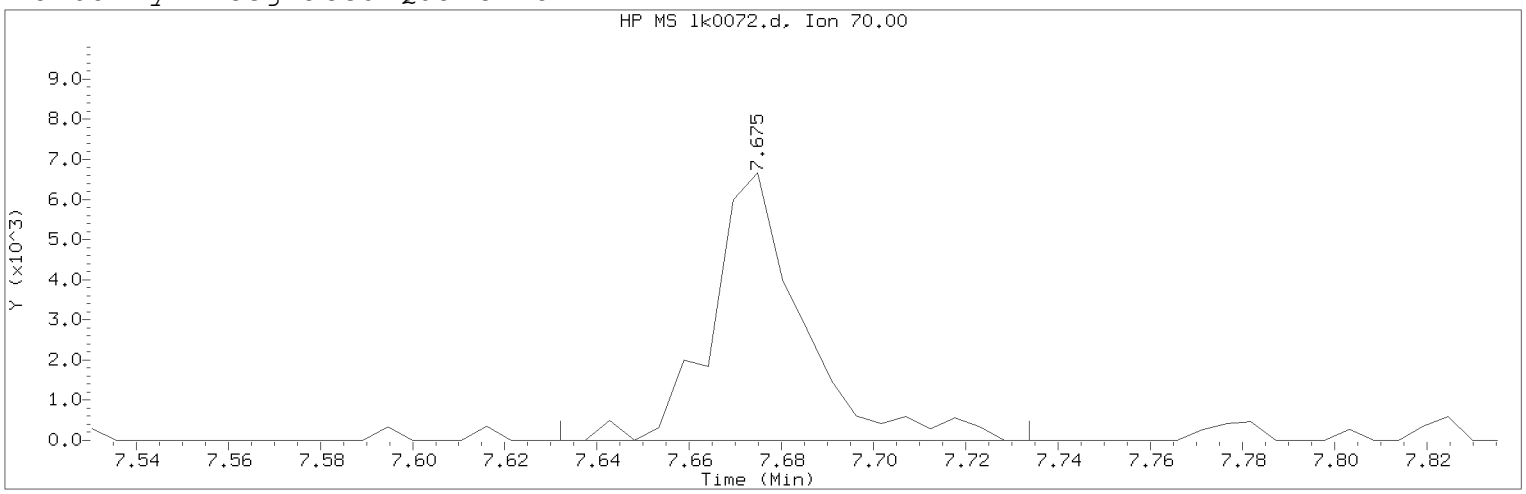
Compound Number	: 21		
Compound Name	: a-methylstyrene		
Scan Number	: 829		
Retention Time (minutes)	: 6.621		
Quant Ion	: 118.00		
Area	: 2360		
On-column Amount (ng/ul)	: 0.2648		
Integration start scan	: 825	Integration stop scan:	830
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021 version

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

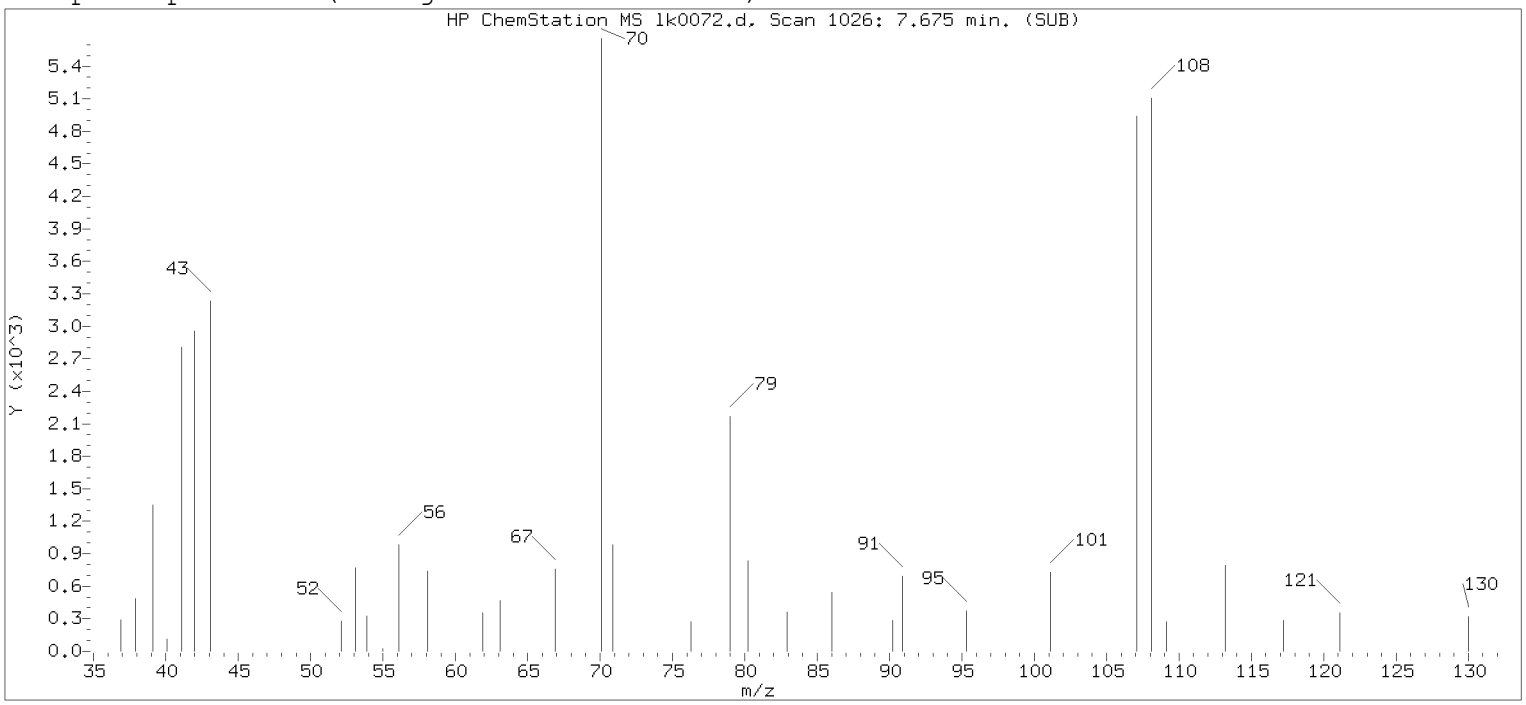
Compound Number : 39
Compound Name : N-Nitroso-di-n-propylamine
Scan Number : 1026
Retention Time (minutes) : 7.675
Quant Ion : 70.00
Area (flag) : 9099M
On-Column Amount (ng/ul) : 0.1398
Integration start scan : 1017 Integration stop scan: 1036
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

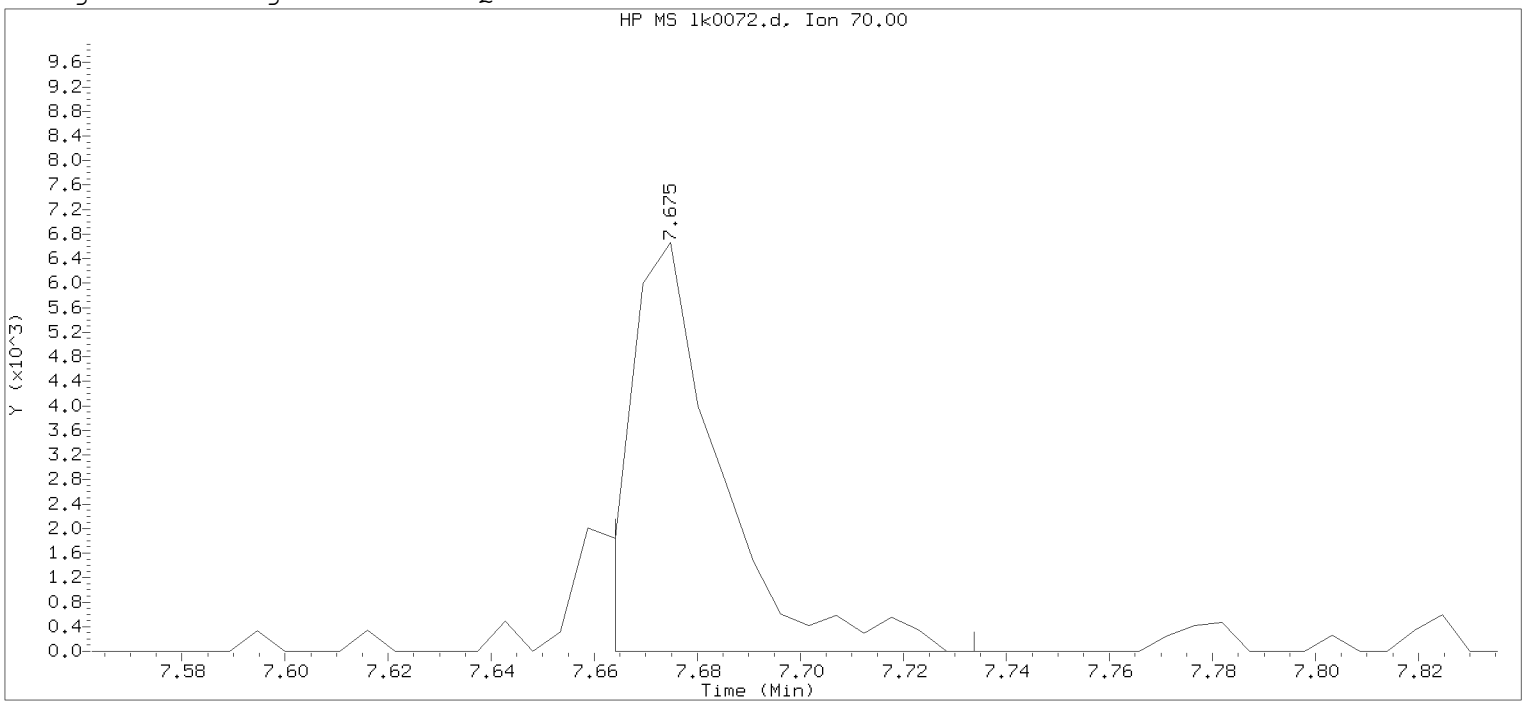
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

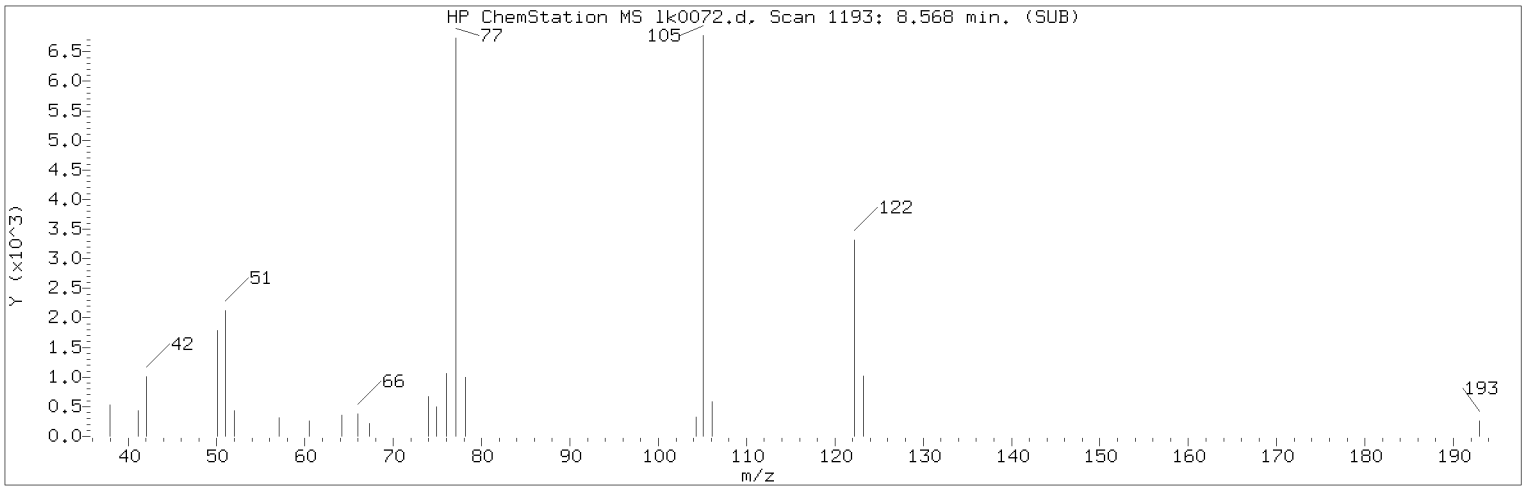
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

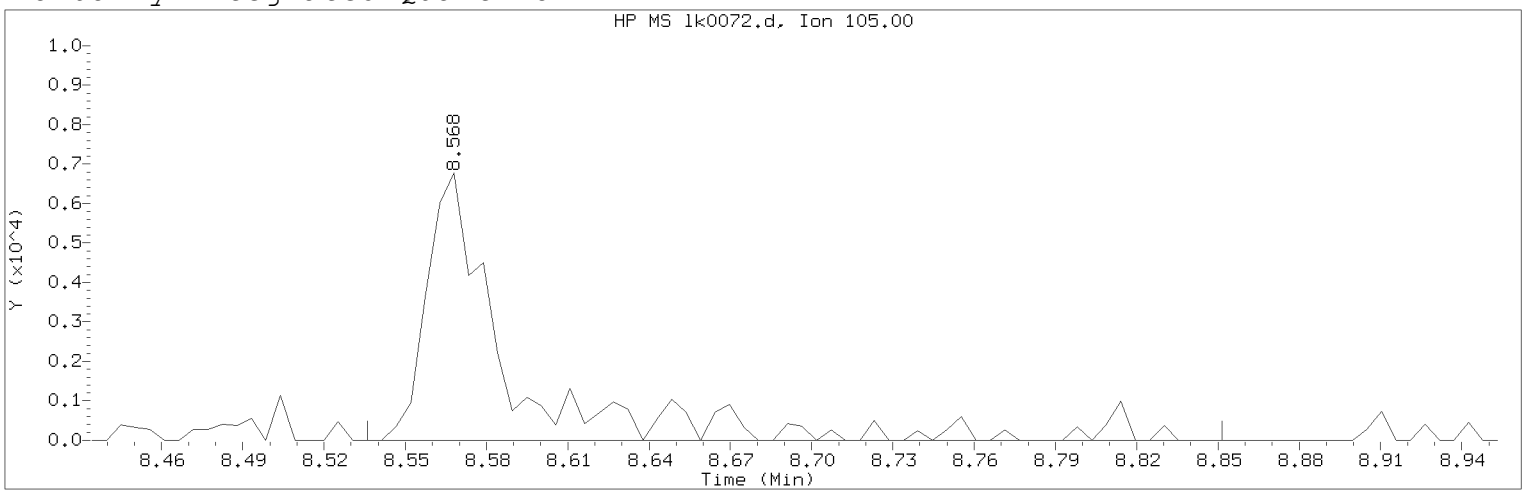
Compound Number	: 39		
Compound Name	: N-Nitroso-di-n-propylamine		
Scan Number	: 1026		
Retention Time (minutes)	: 7.675		
Quant Ion	: 70.00		
Area	: 7898		
On-column Amount (ng/ul)	: 0.1811		
Integration start scan	: 1023	Integration stop scan:	1036
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

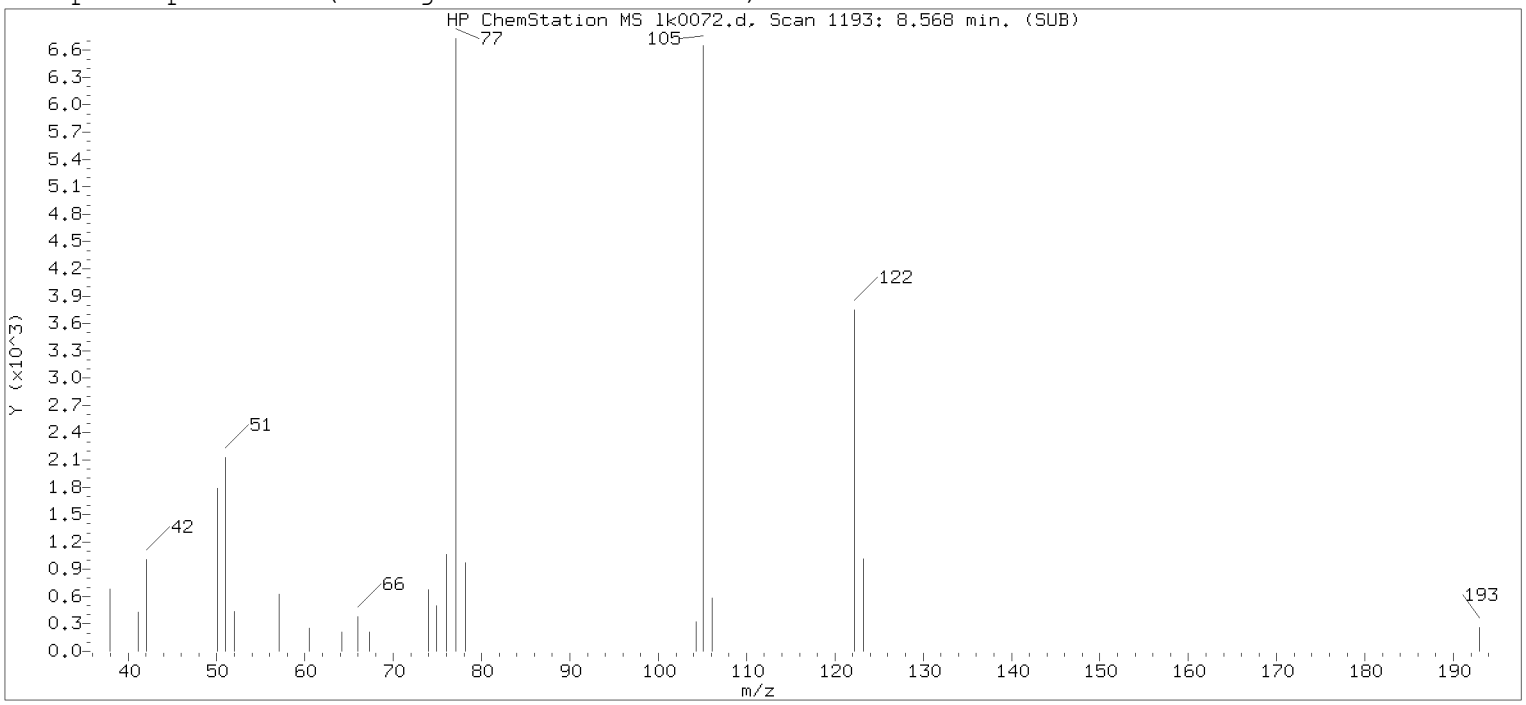
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1193
Retention Time (minutes) : 8.568
Quant Ion : 105.00
Area (flag) : 14511M
On-Column Amount (ng/ul) : 0.5010
Integration start scan : 1186 Integration stop scan: 1245
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

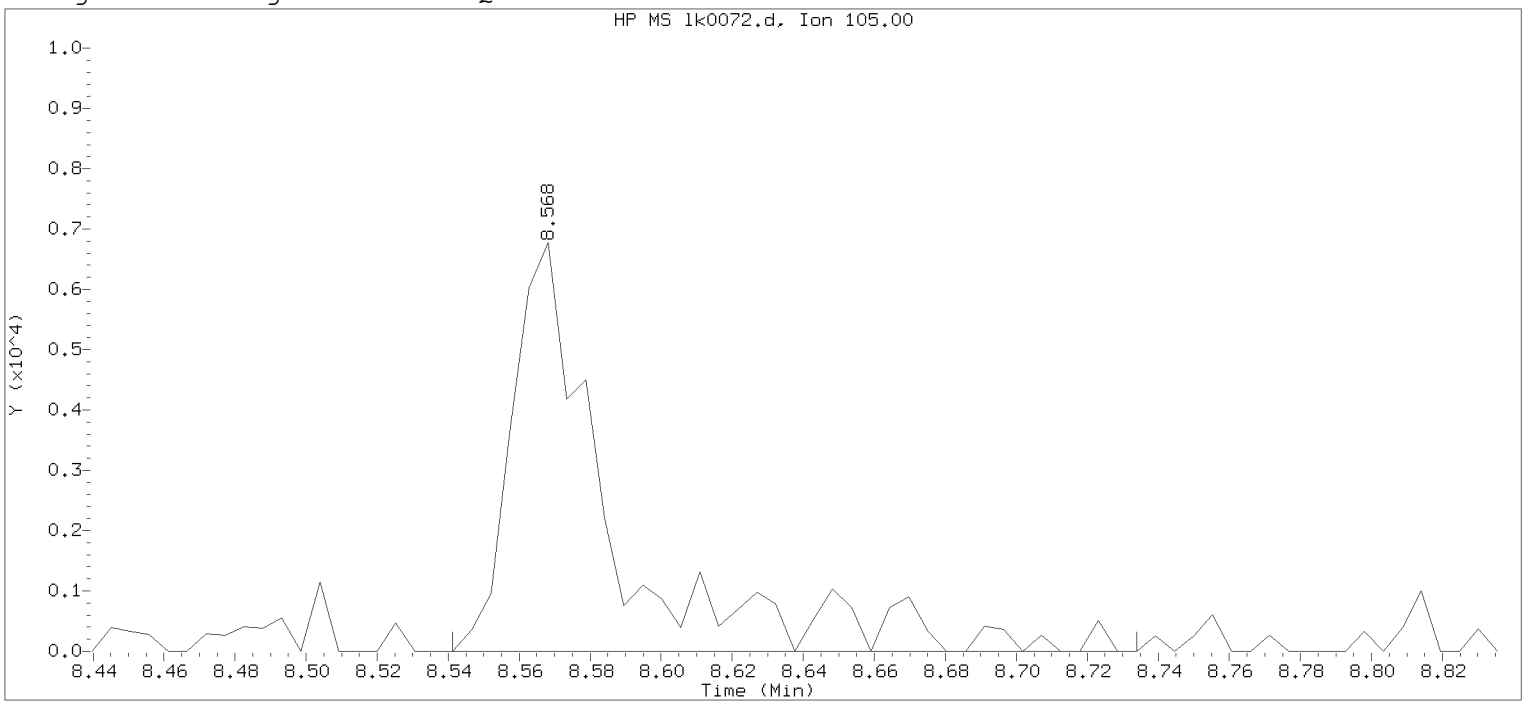
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

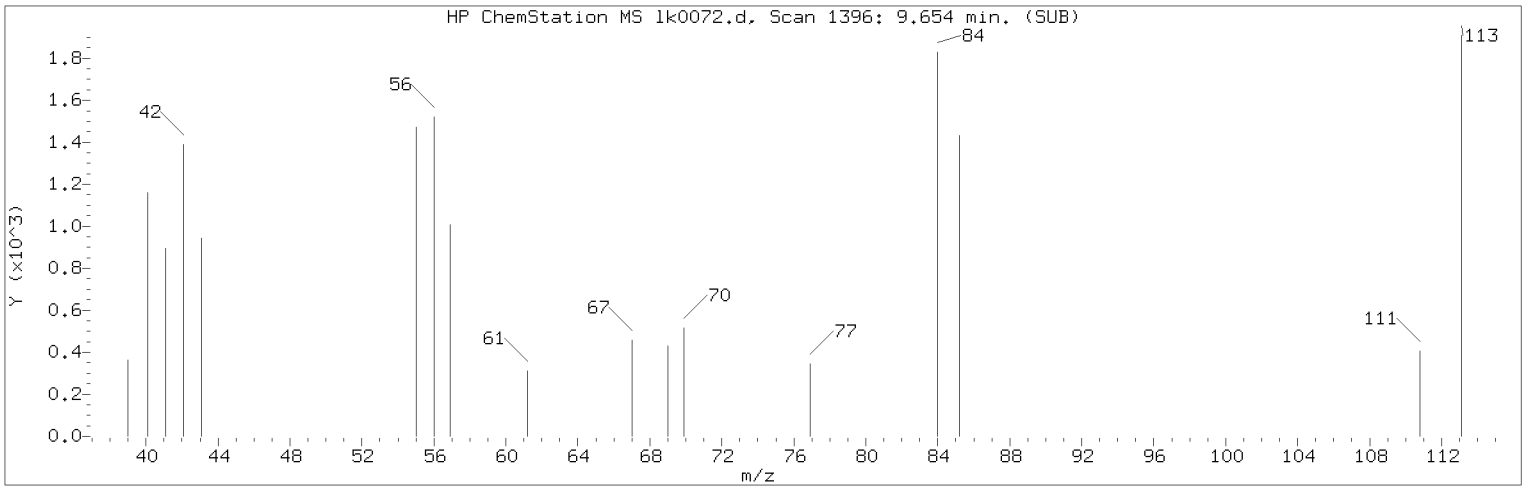
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

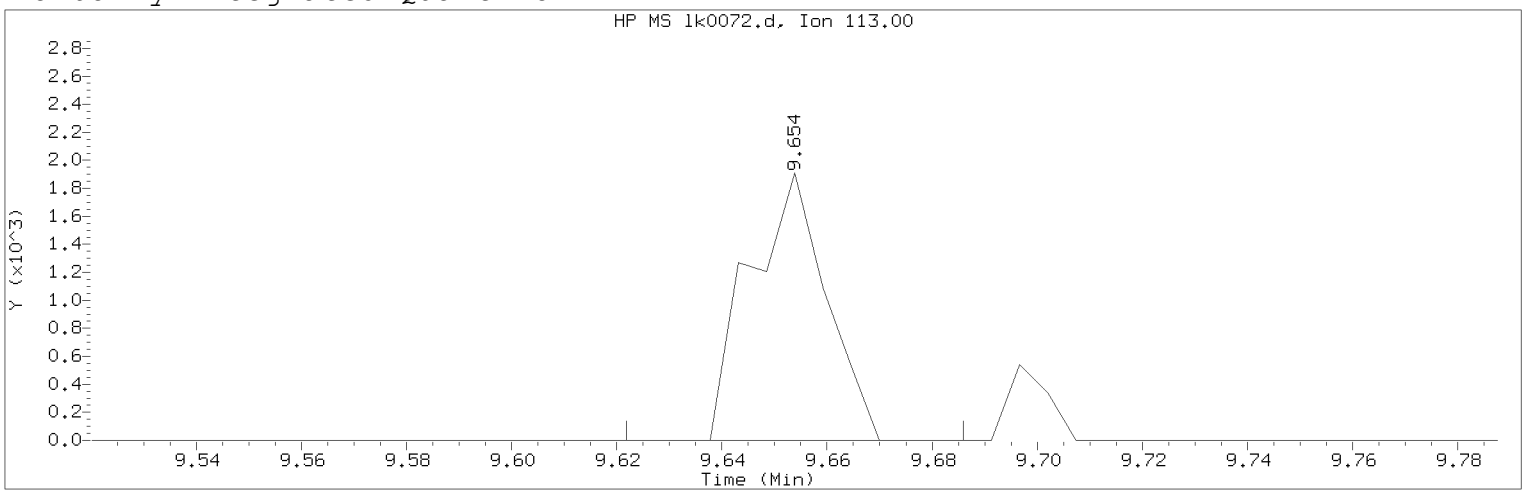
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1193		
Retention Time (minutes)	: 8.568		
Quant Ion	: 105.00		
Area	: 13400		
On-column Amount (ng/ul)	: 0.6184		
Integration start scan	: 1187	Integration stop scan:	1223
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 21 CFR Part 11

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

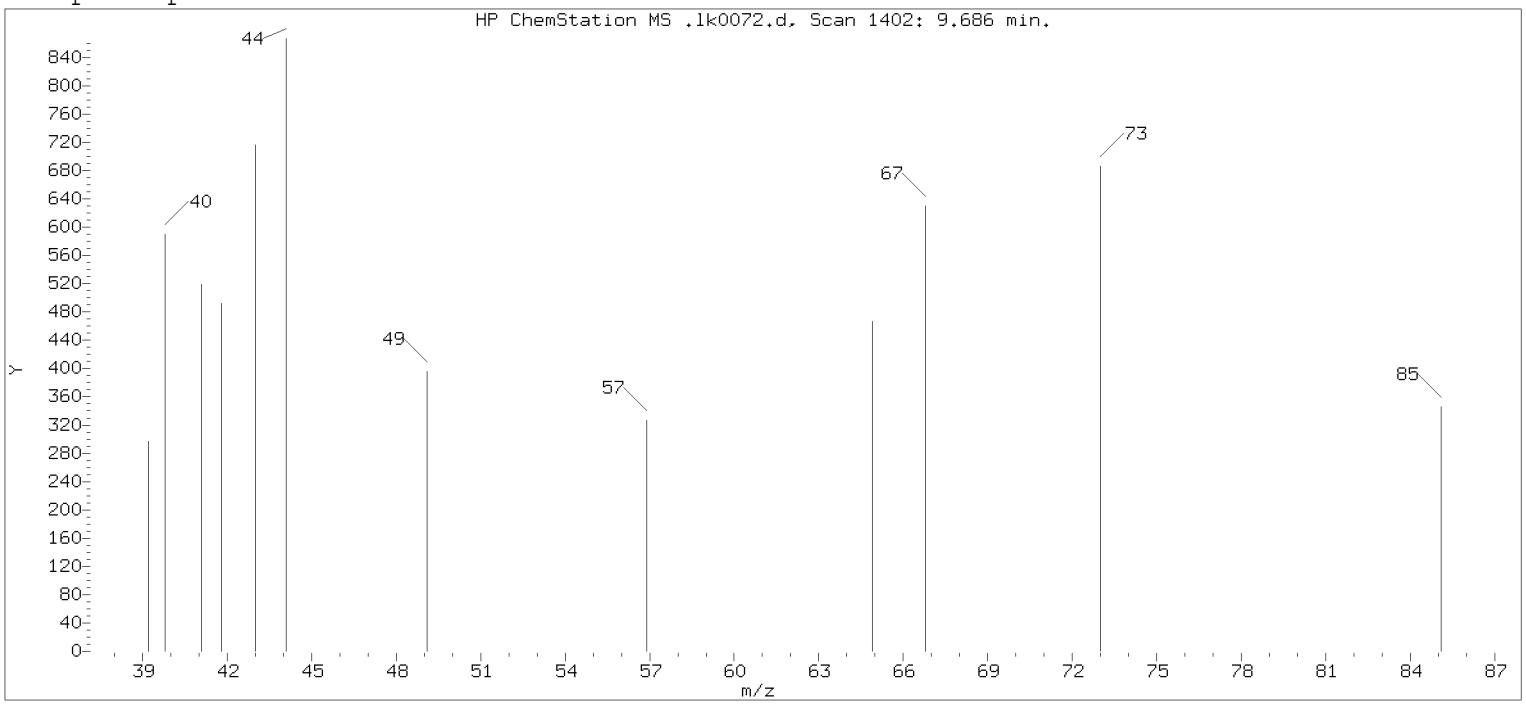
Compound Number : 79
Compound Name : Caprolactam
Scan Number : 1396
Retention Time (minutes) : 9.654
Quant Ion : 113.00
Area (flag) : 1925M
On-Column Amount (ng/ul) : 0.1211
Integration start scan : 1389 Integration stop scan: 1401
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

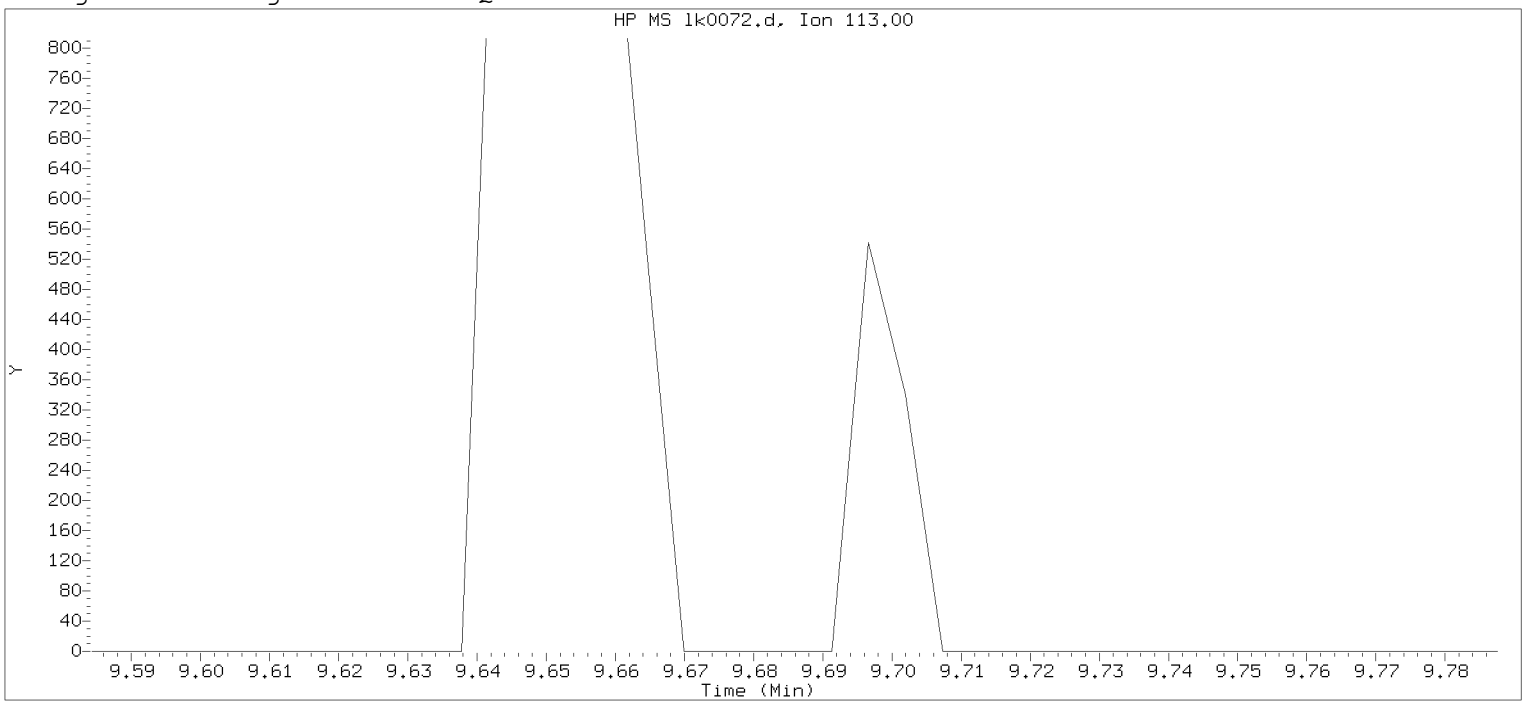
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

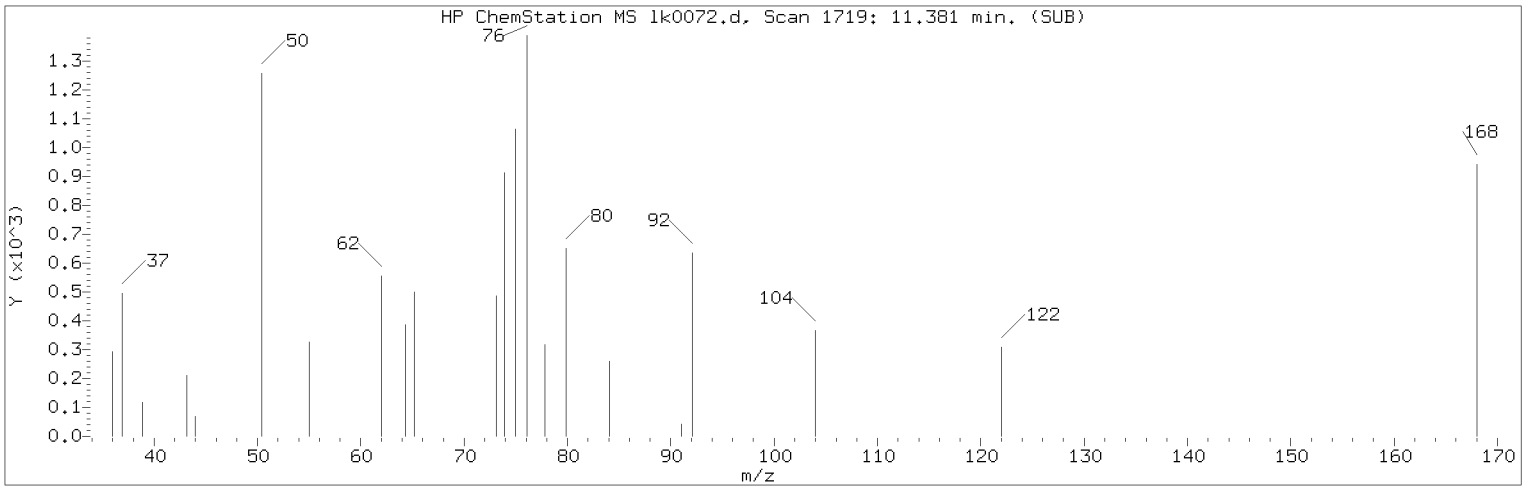
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

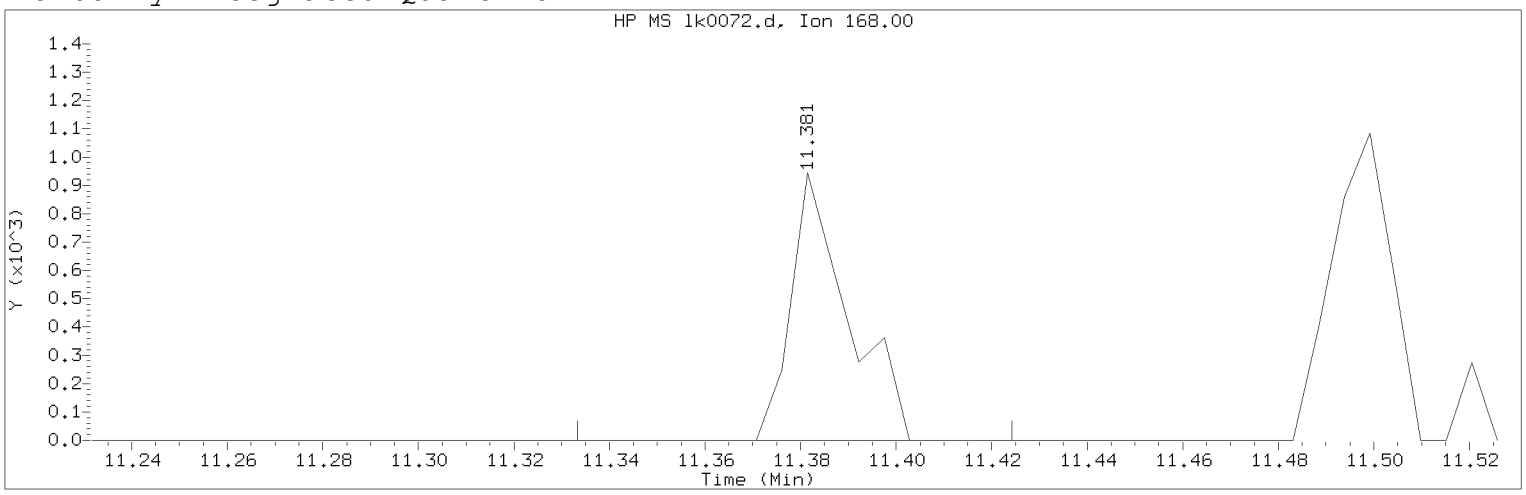
Compound Number : 79
Compound Name : Caprolactam
Expected RT (minutes) : 9.686
Quant Ion : 113.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2038

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

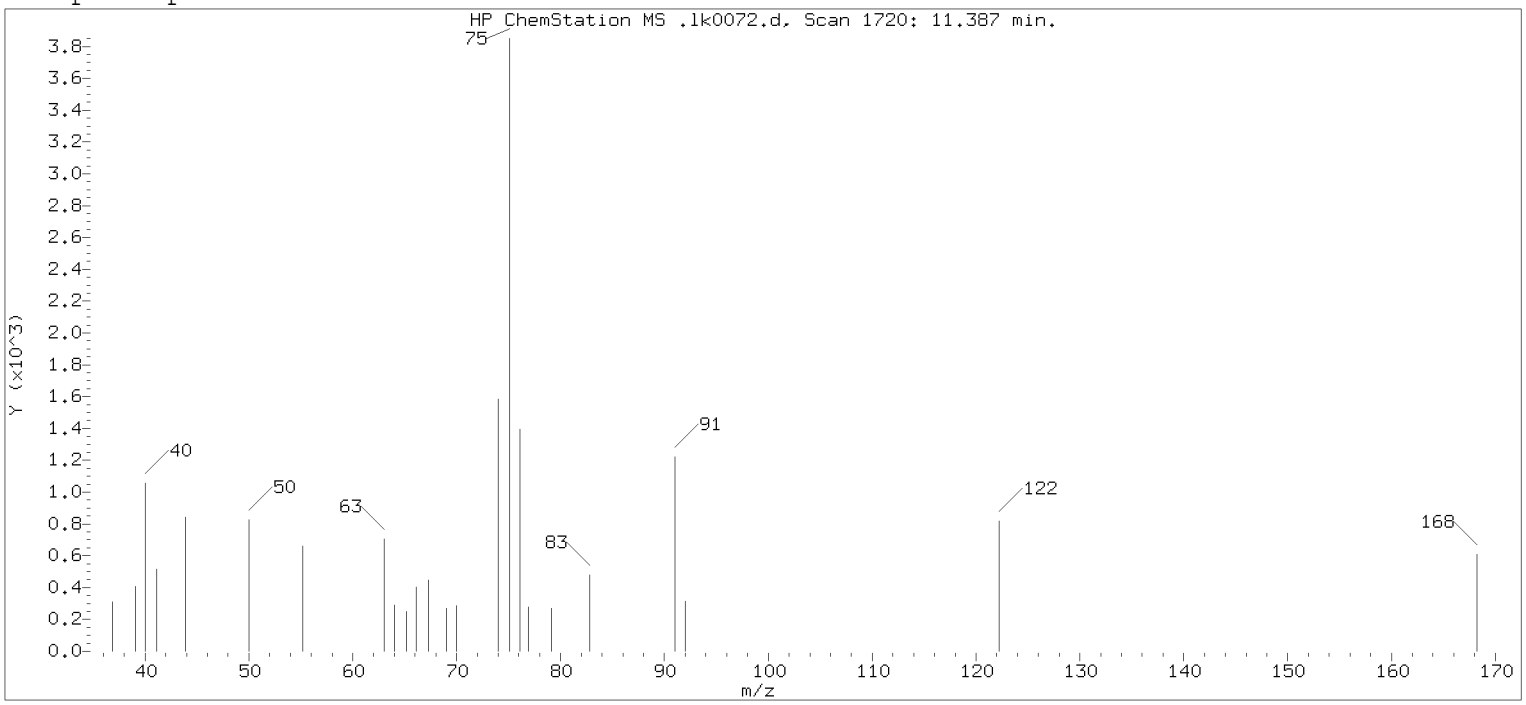
Compound Number : 109
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1719
Retention Time (minutes) : 11.381
Quant Ion : 168.00
Area (flag) : 783M
On-Column Amount (ng/ul) : 0.0849
Integration start scan : 1709 Integration stop scan: 1726
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

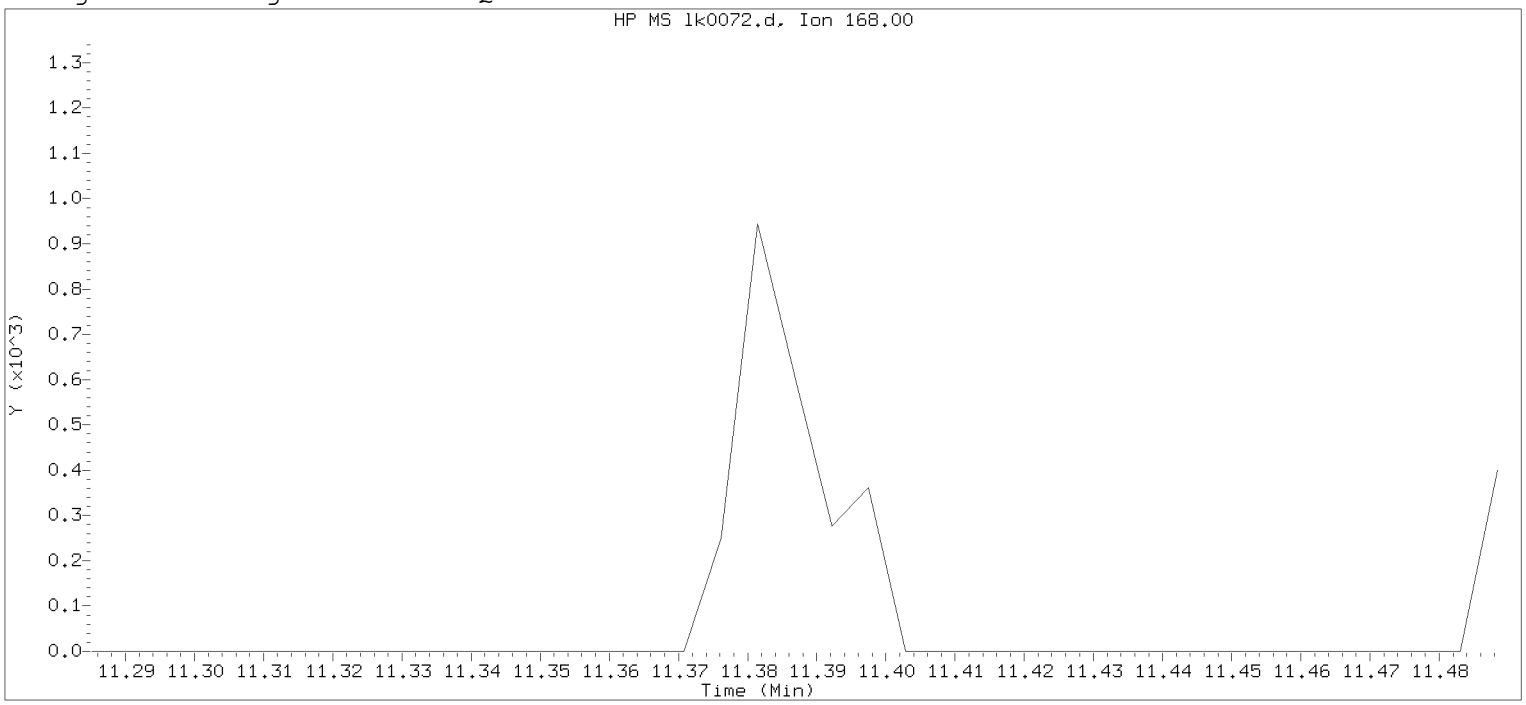
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

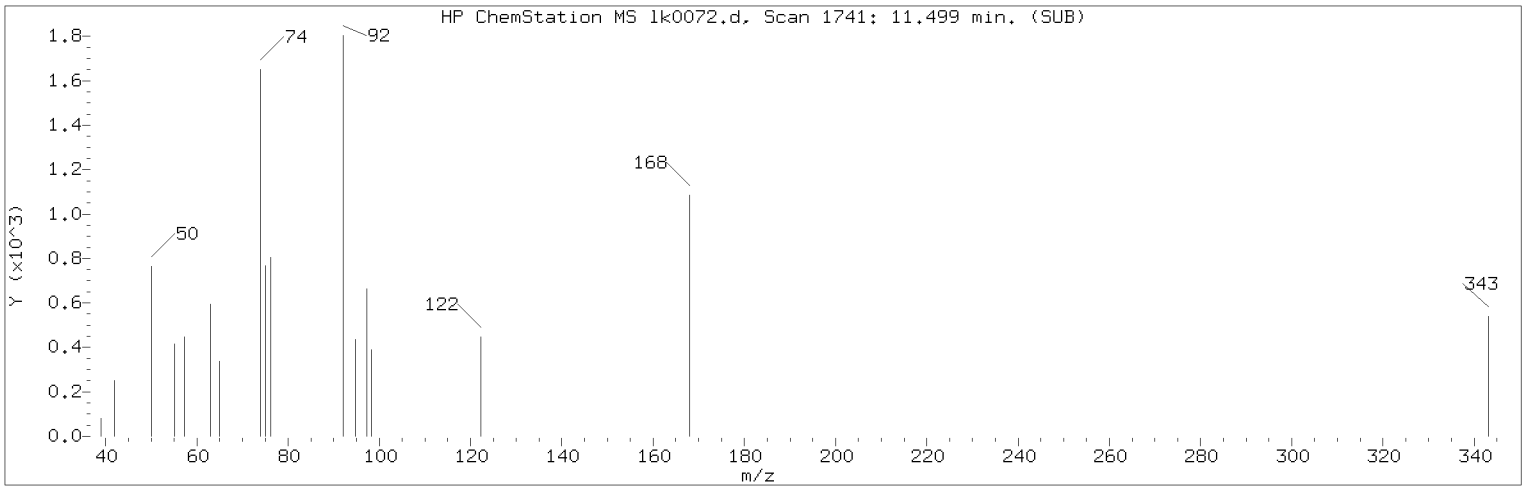
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

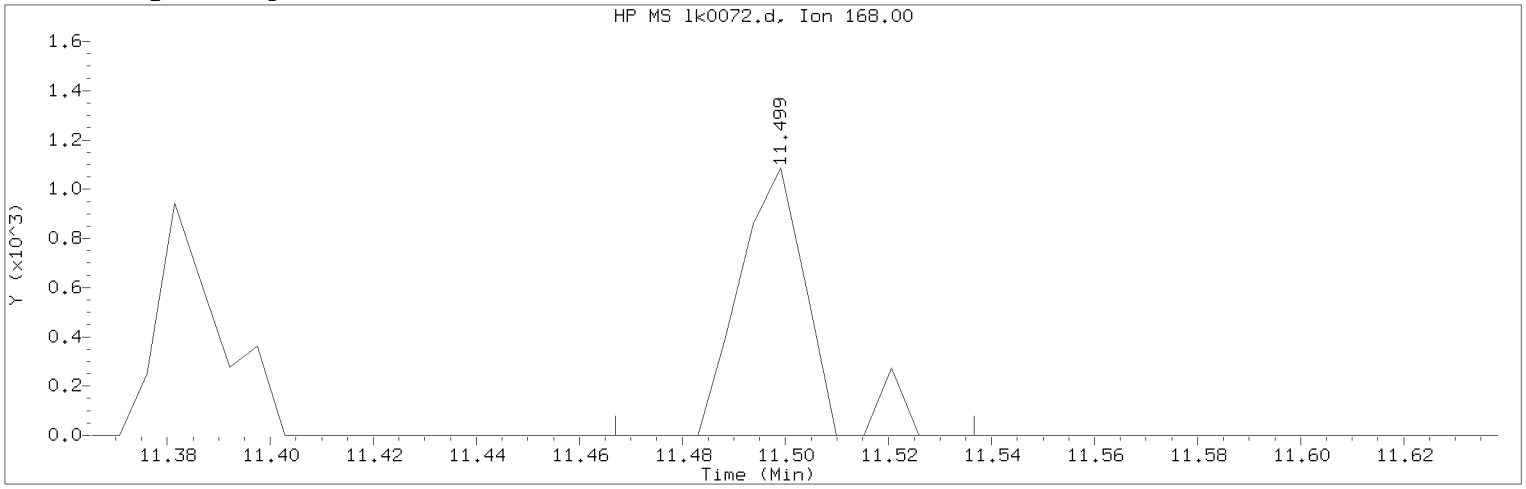
Compound Number : 109
Compound Name : 1,4-Dinitrobenzene
Expected RT (minutes) : 11.387
Quant Ion : 168.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2190

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

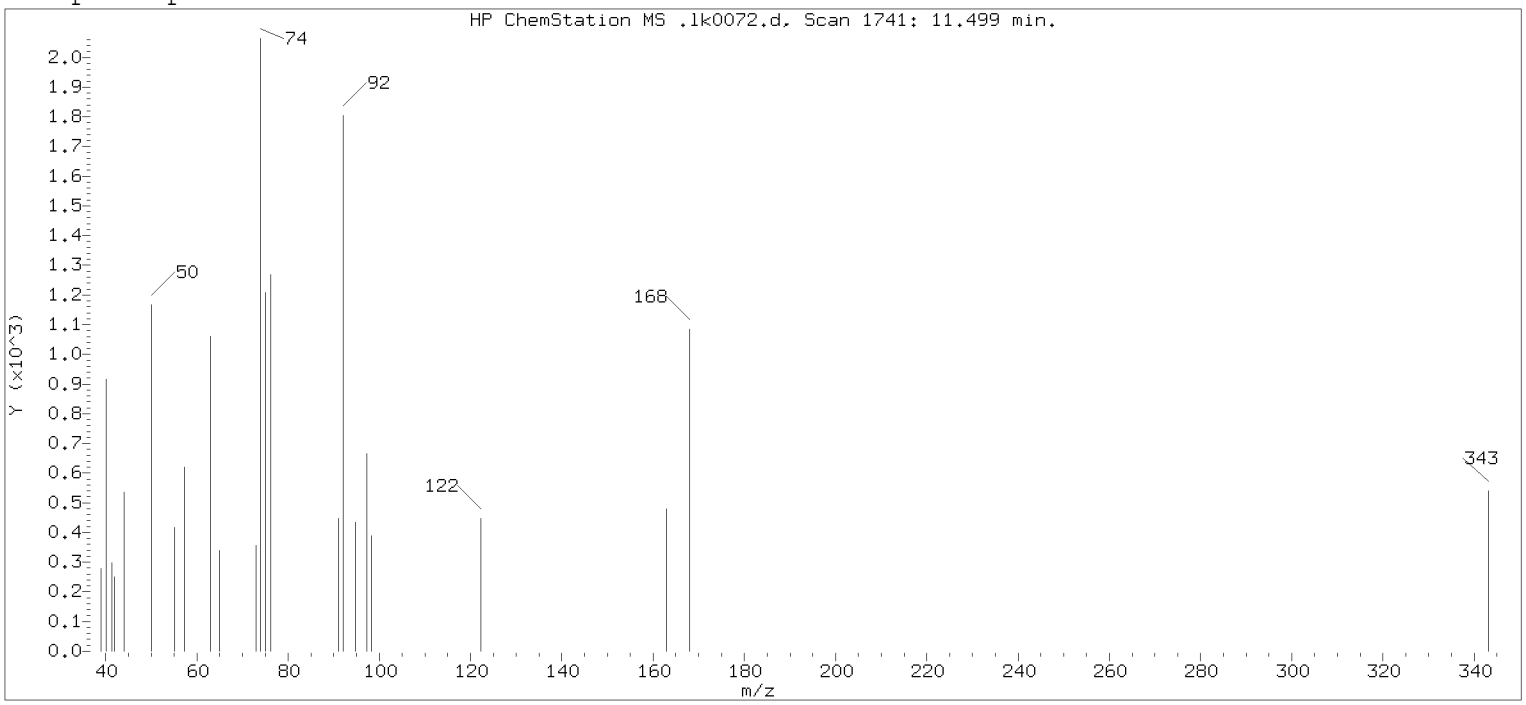
Compound Number : 111
Compound Name : 1,3-Dinitrobenzene
Scan Number : 1741
Retention Time (minutes) : 11.499
Quant Ion : 168.00
Area (flag) : 1017M
On-Column Amount (ng/ul) : 0.0901
Integration start scan : 1734 Integration stop scan: 1747
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

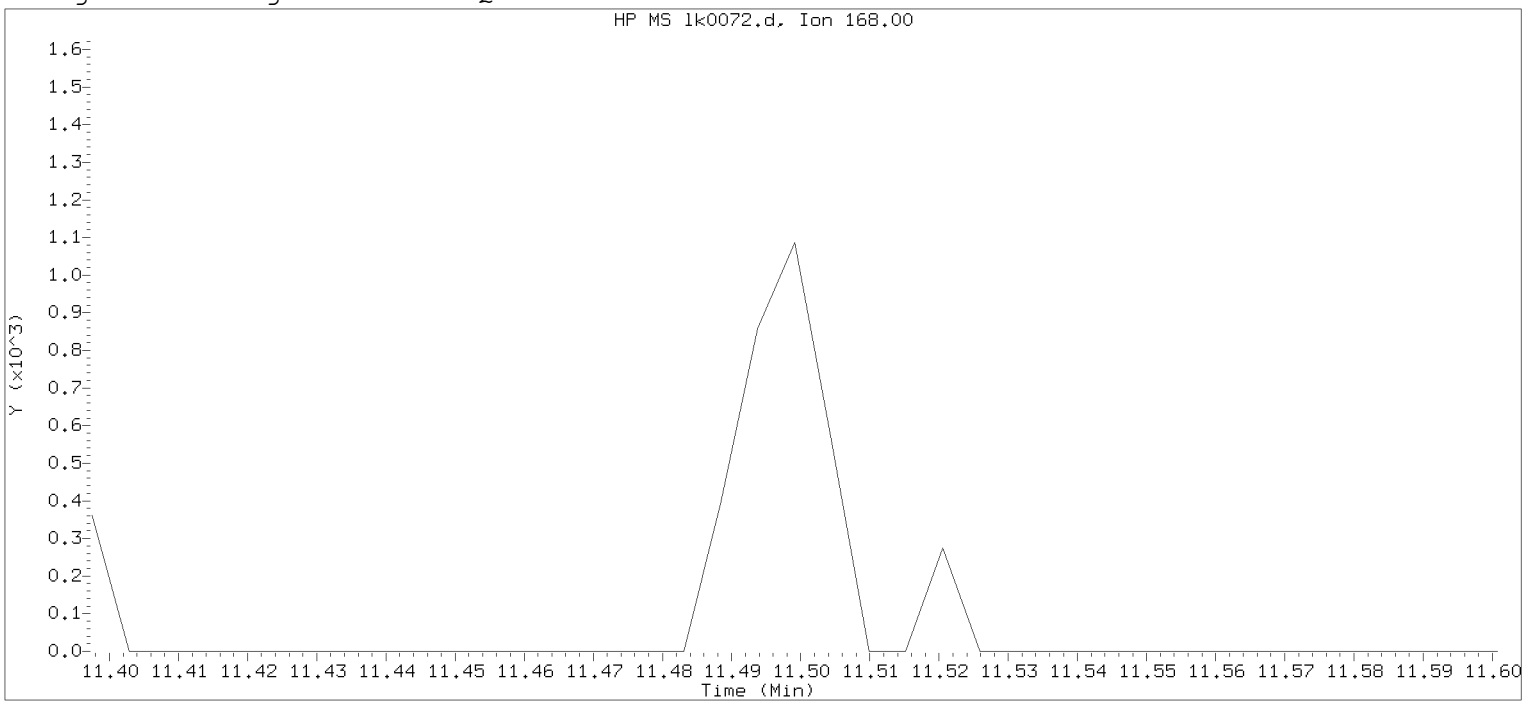
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

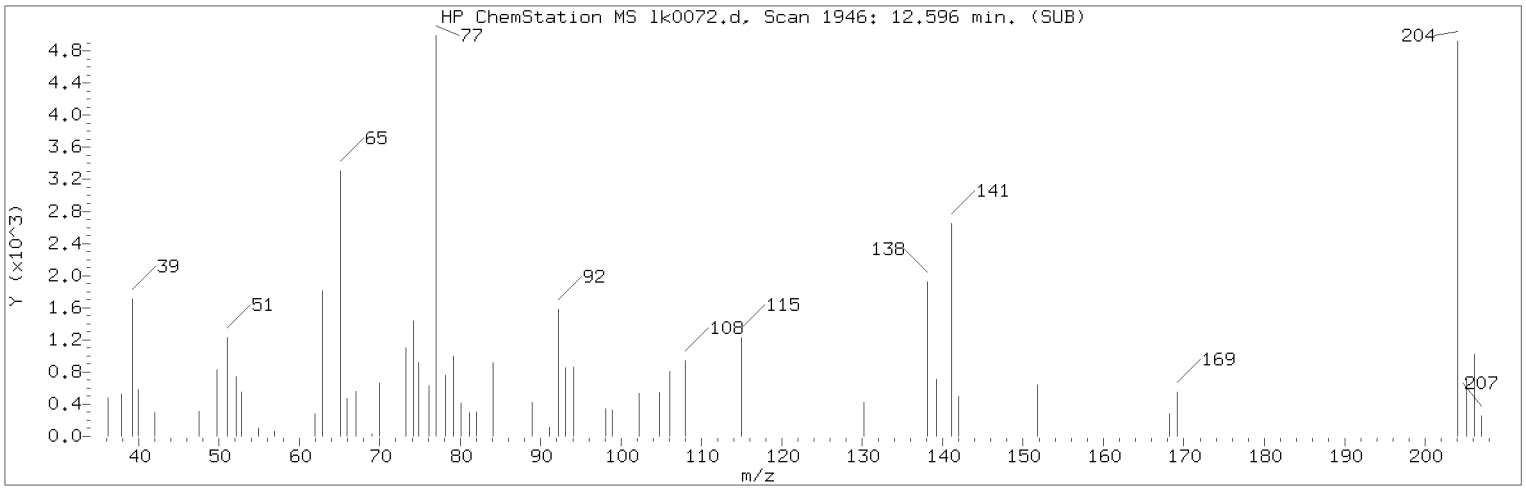
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

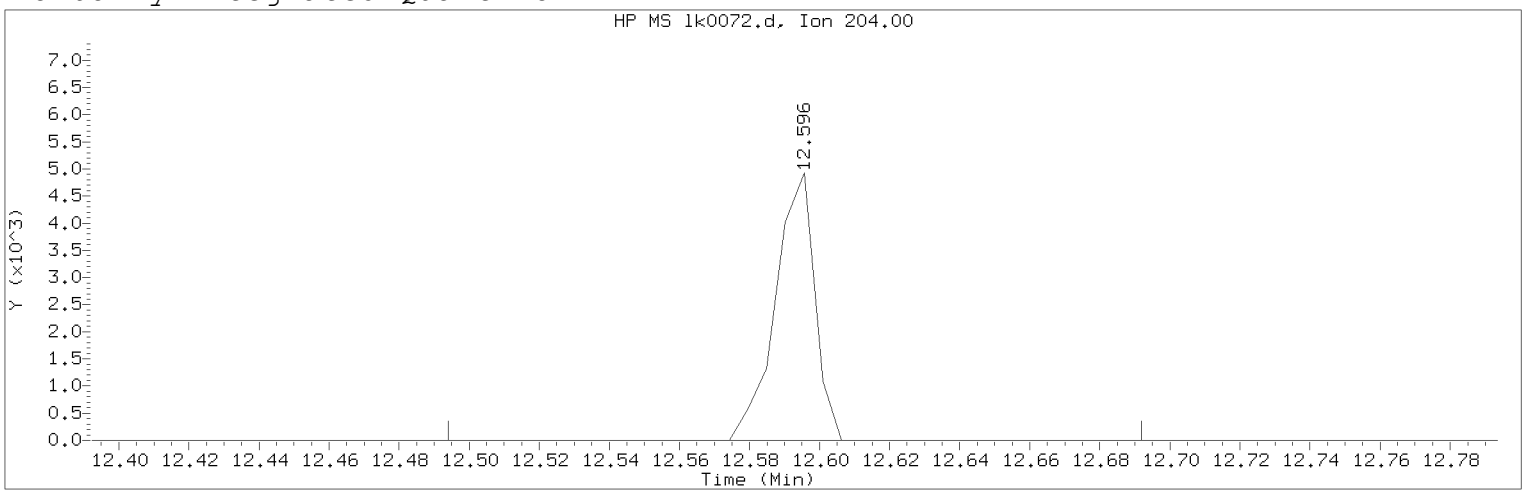
Compound Number : 111
Compound Name : 1,3-Dinitrobenzene
Expected RT (minutes) : 11.499
Quant Ion : 168.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

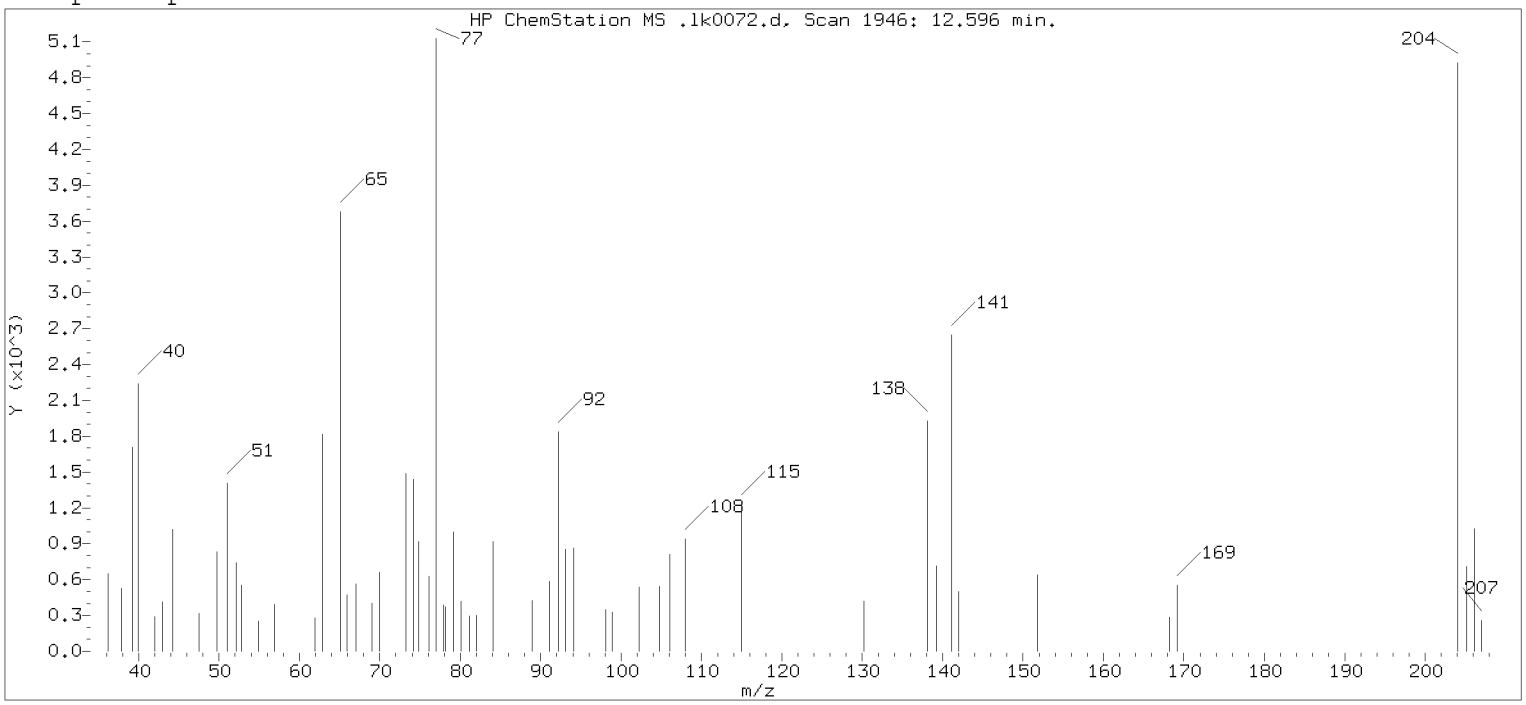
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.596
Quant Ion : 204.00
Area (flag) : 3830M
On-Column Amount (ng/ul) : 0.1148
Integration start scan : 1926 Integration stop scan: 1963
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

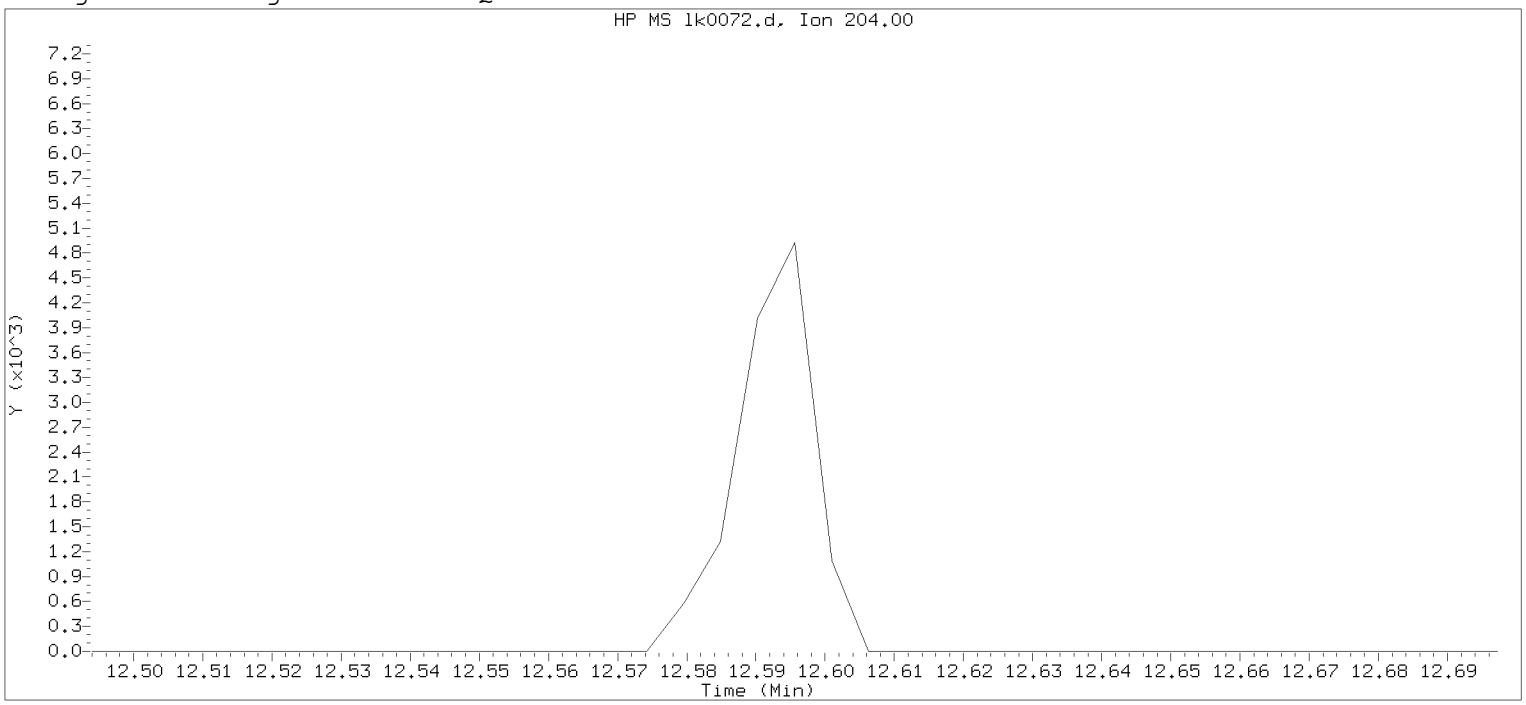
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

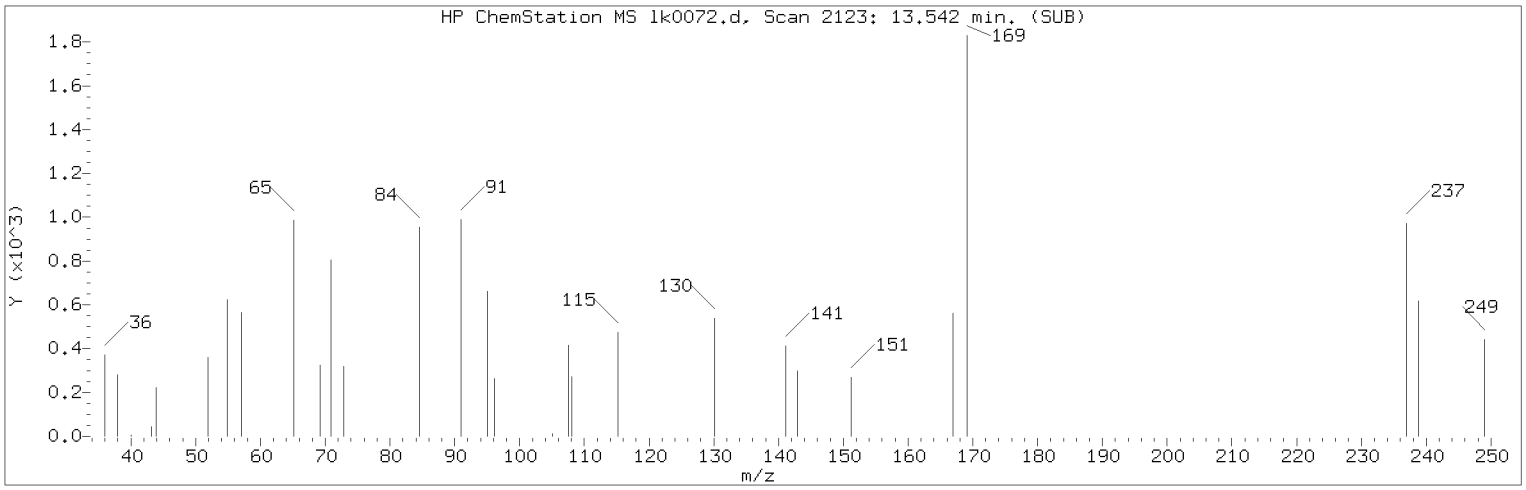
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

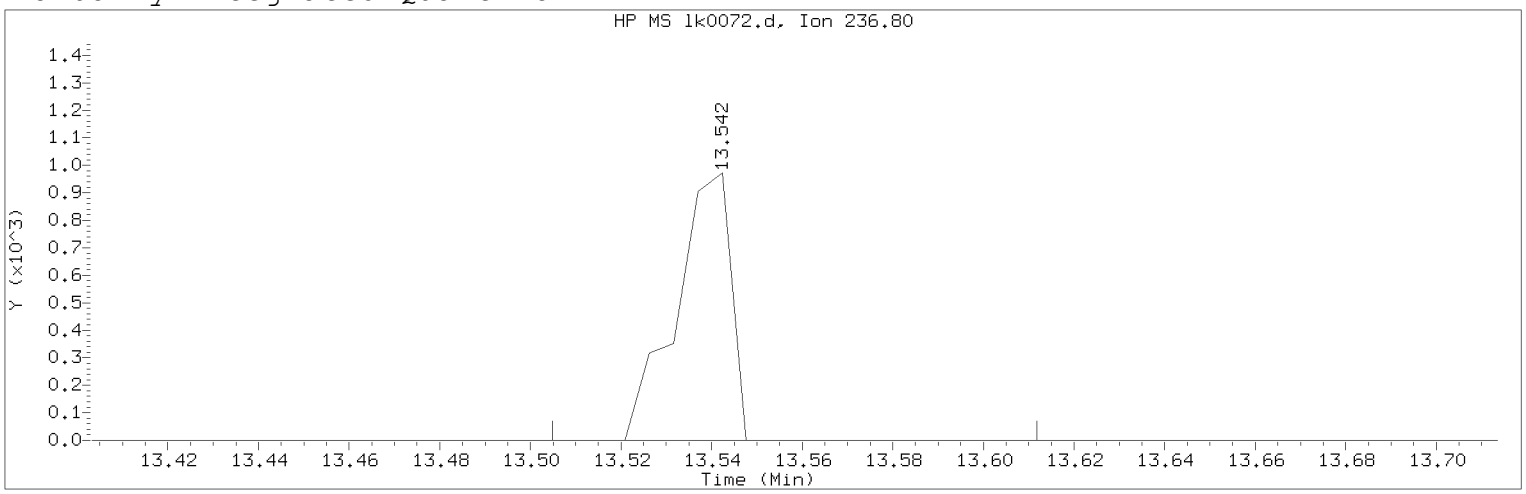
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Expected RT (minutes) : 12.596
Quant Ion : 204.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

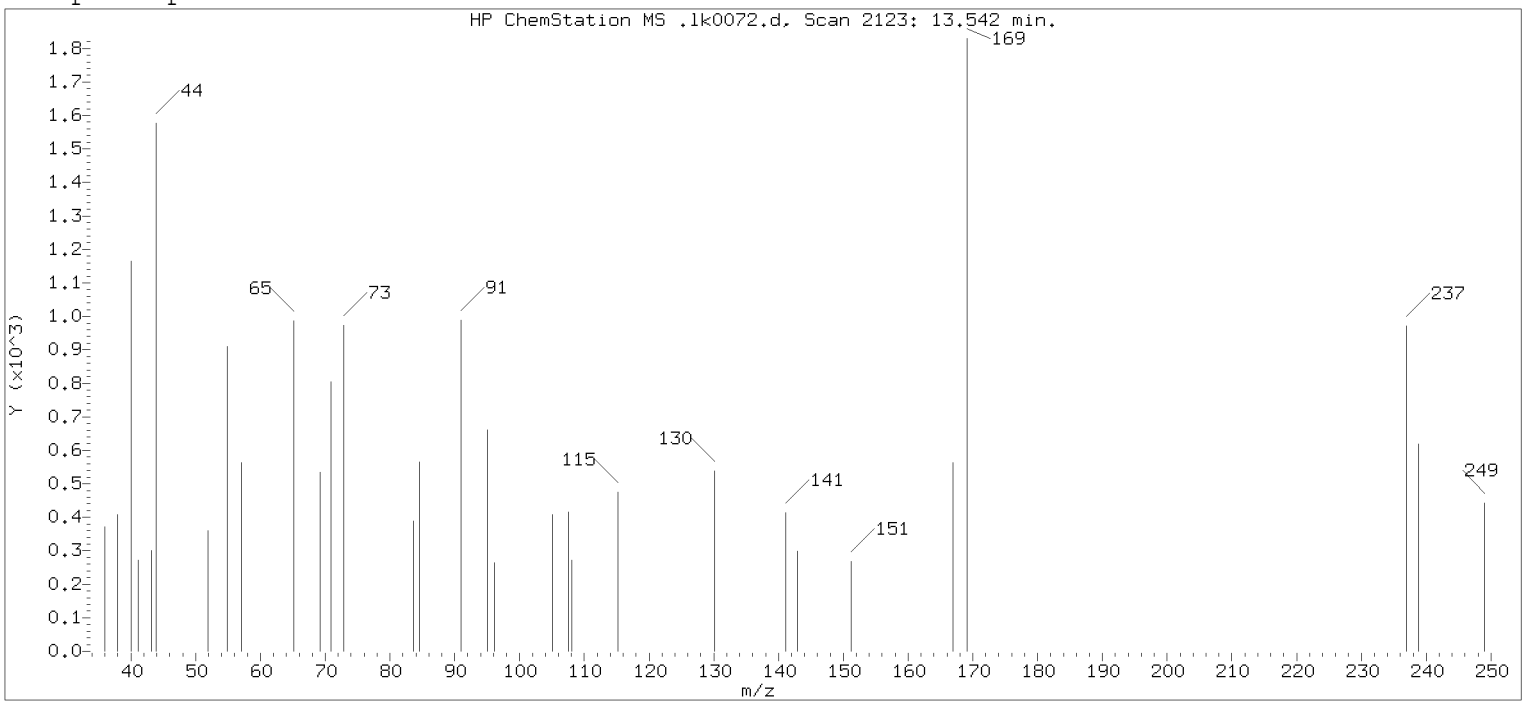
Compound Number : 156
Compound Name : Pentachloronitrobenzene
Scan Number : 2123
Retention Time (minutes) : 13.542
Quant Ion : 237.00
Area (flag) : 817M
On-Column Amount (ng/ul) : 0.0958
Integration start scan : 2115 Integration stop scan: 2135
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

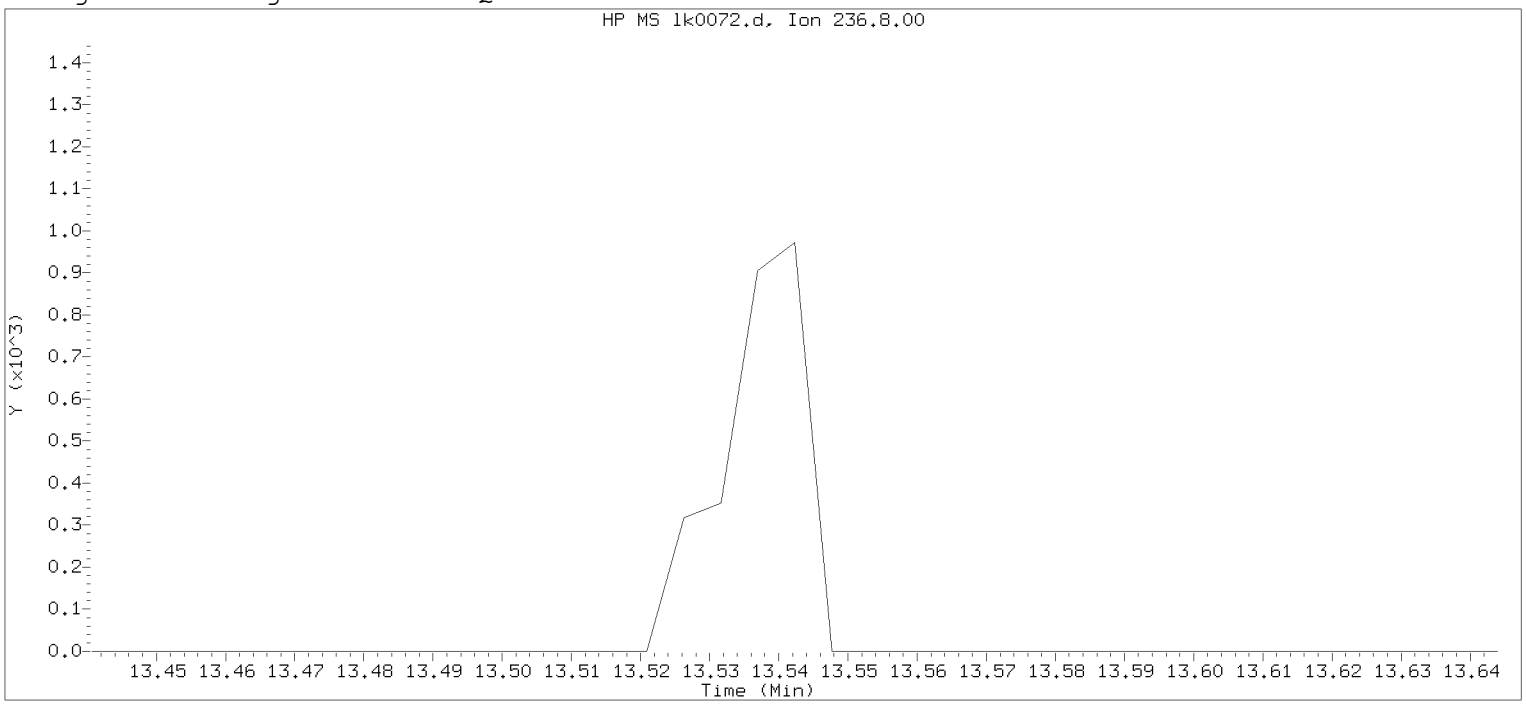
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

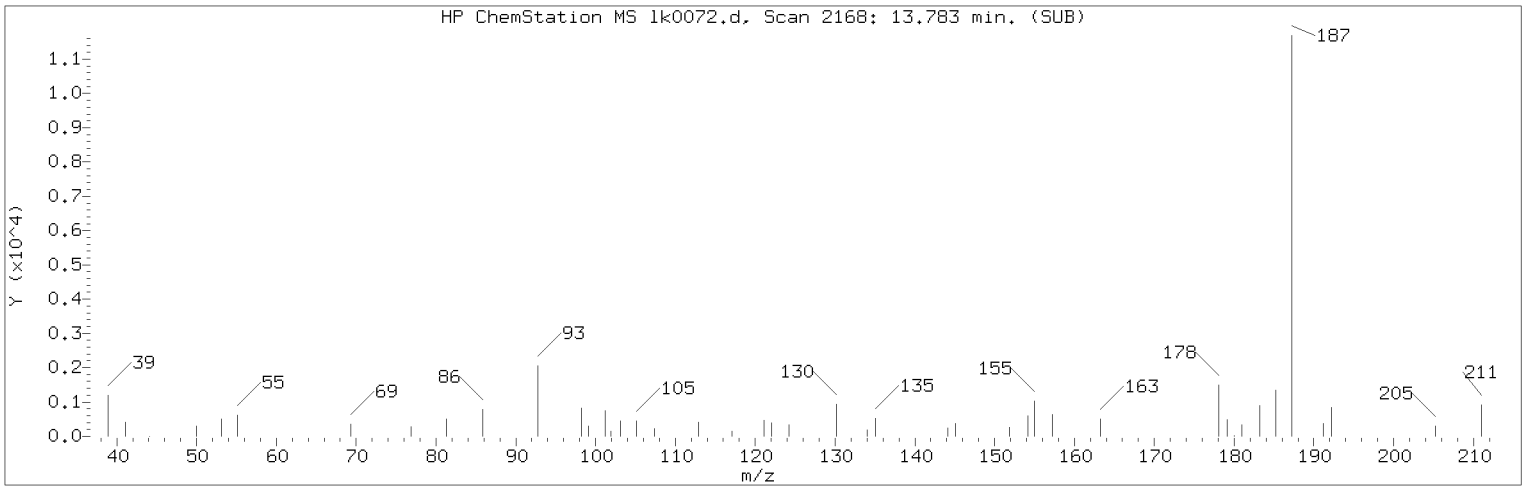
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

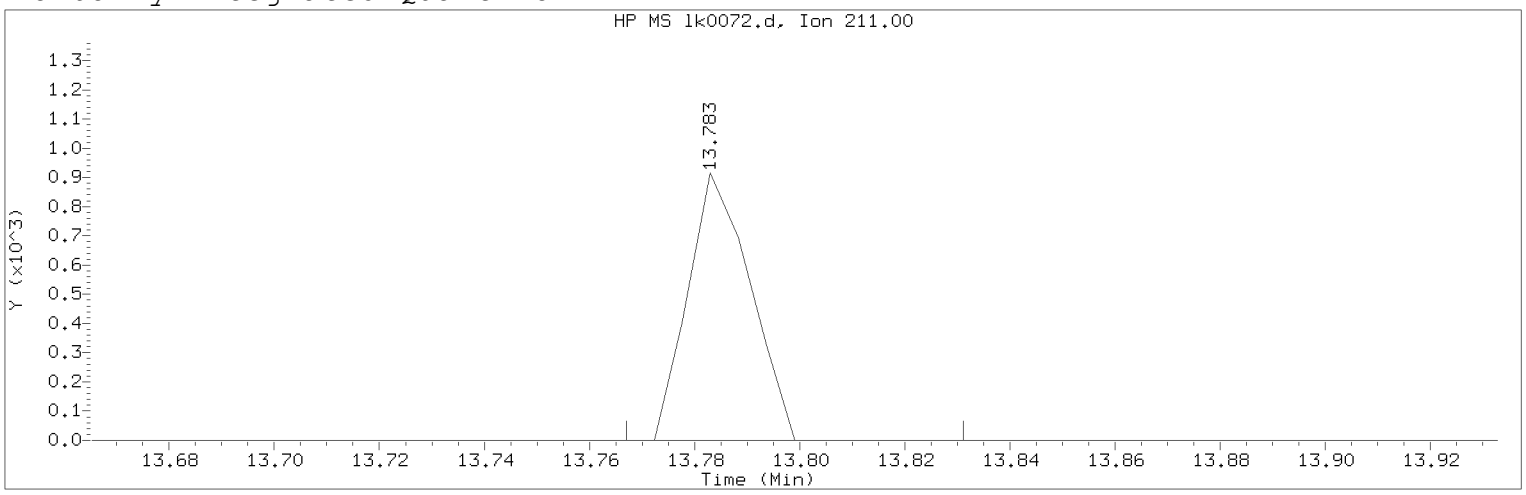
Compound Number : 156
Compound Name : Pentachloronitrobenzene
Expected RT (minutes) : 13.542
Quant Ion : 237.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2016

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

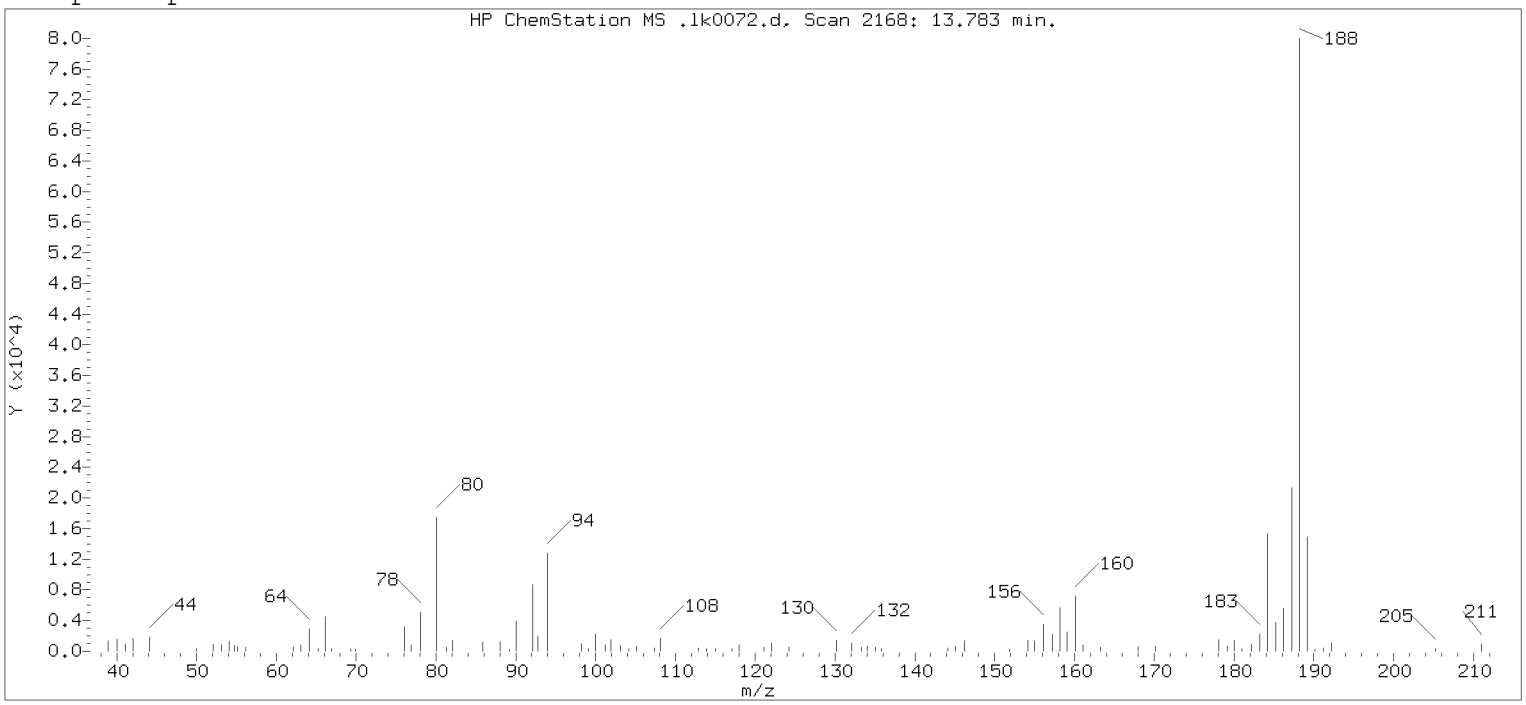
Compound Number : 159
Compound Name : Dinoseb
Scan Number : 2168
Retention Time (minutes) : 13.783
Quant Ion : 211.00
Area (flag) : 749M
On-Column Amount (ng/ul) : 3.0118
Integration start scan : 2164 Integration stop scan: 2176
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

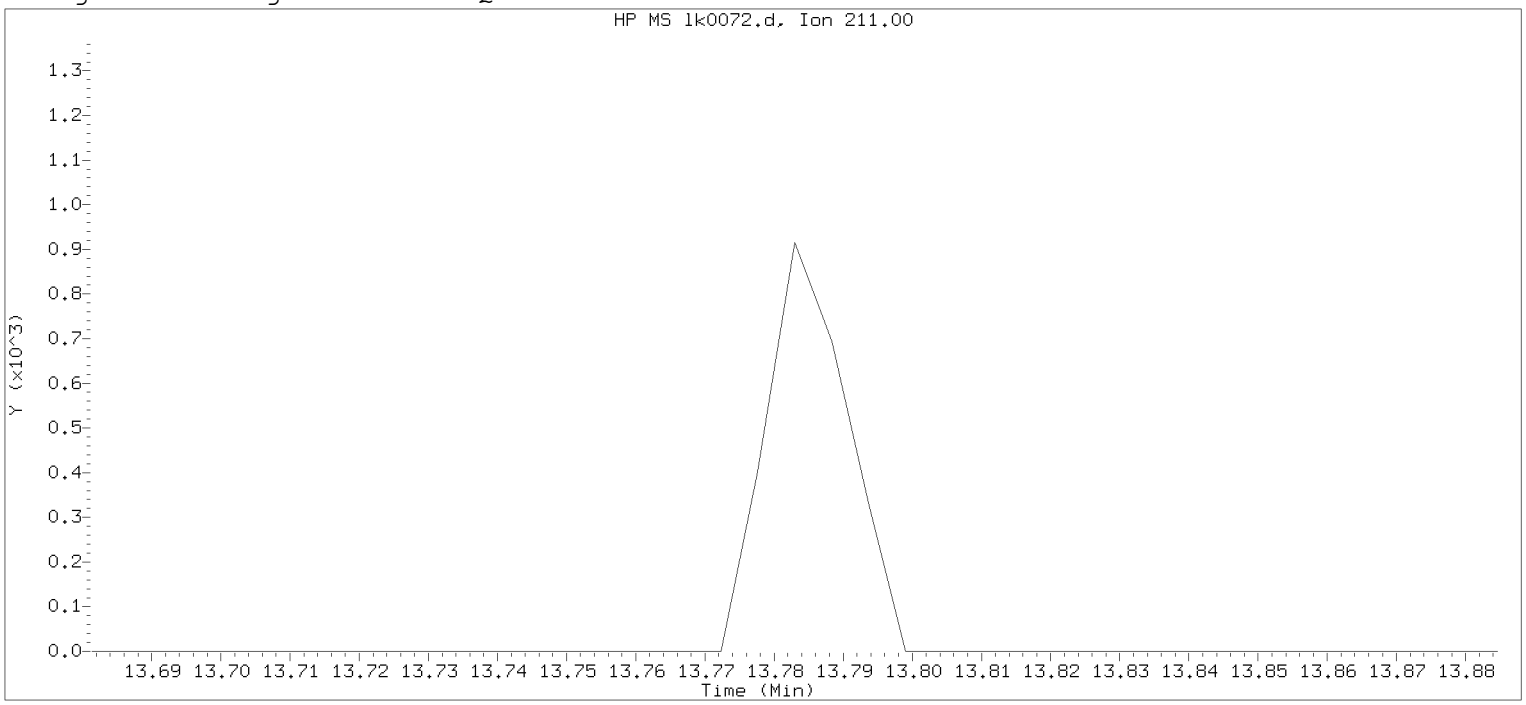
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

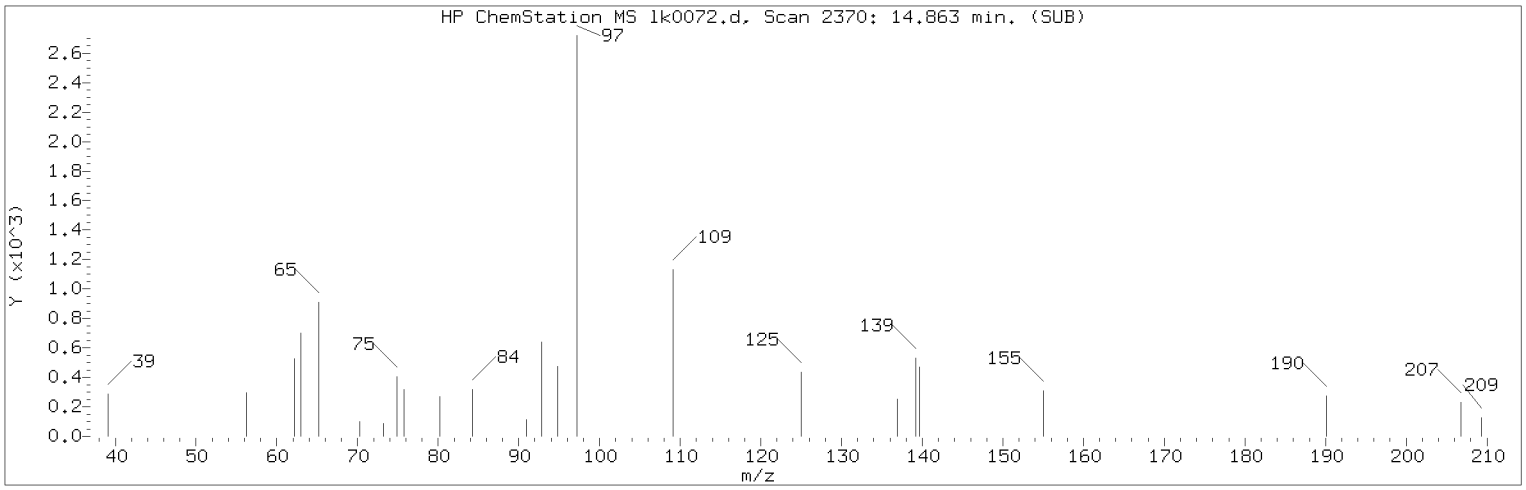
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

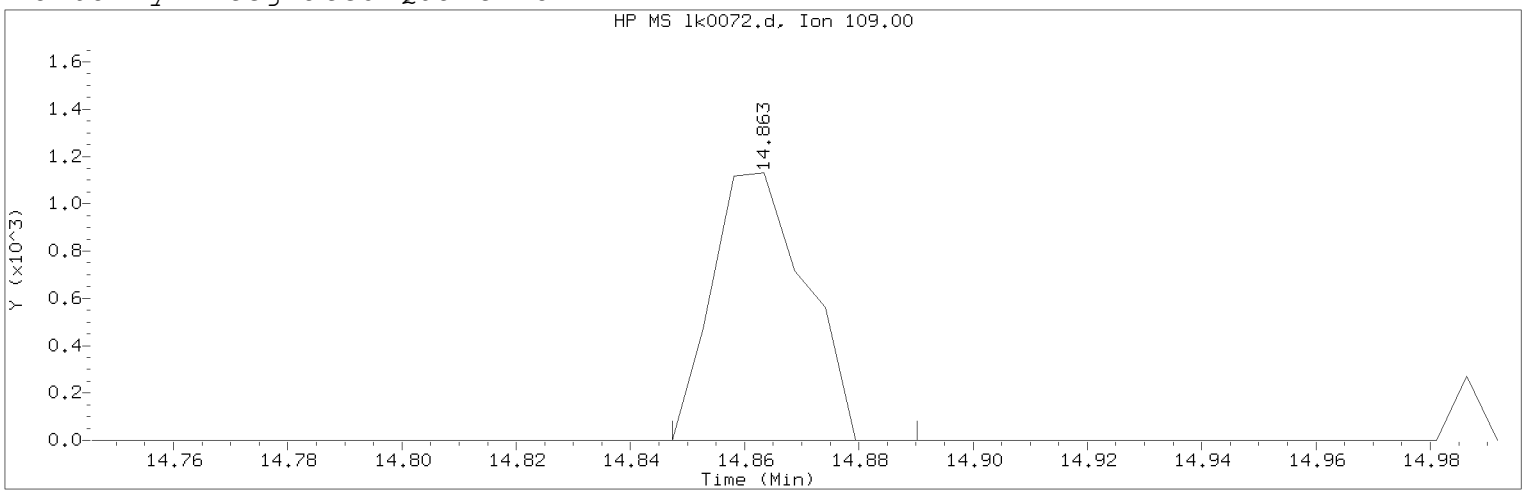
Compound Number : 159
Compound Name : Dinoseb
Expected RT (minutes) : 13.783
Quant Ion : 211.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

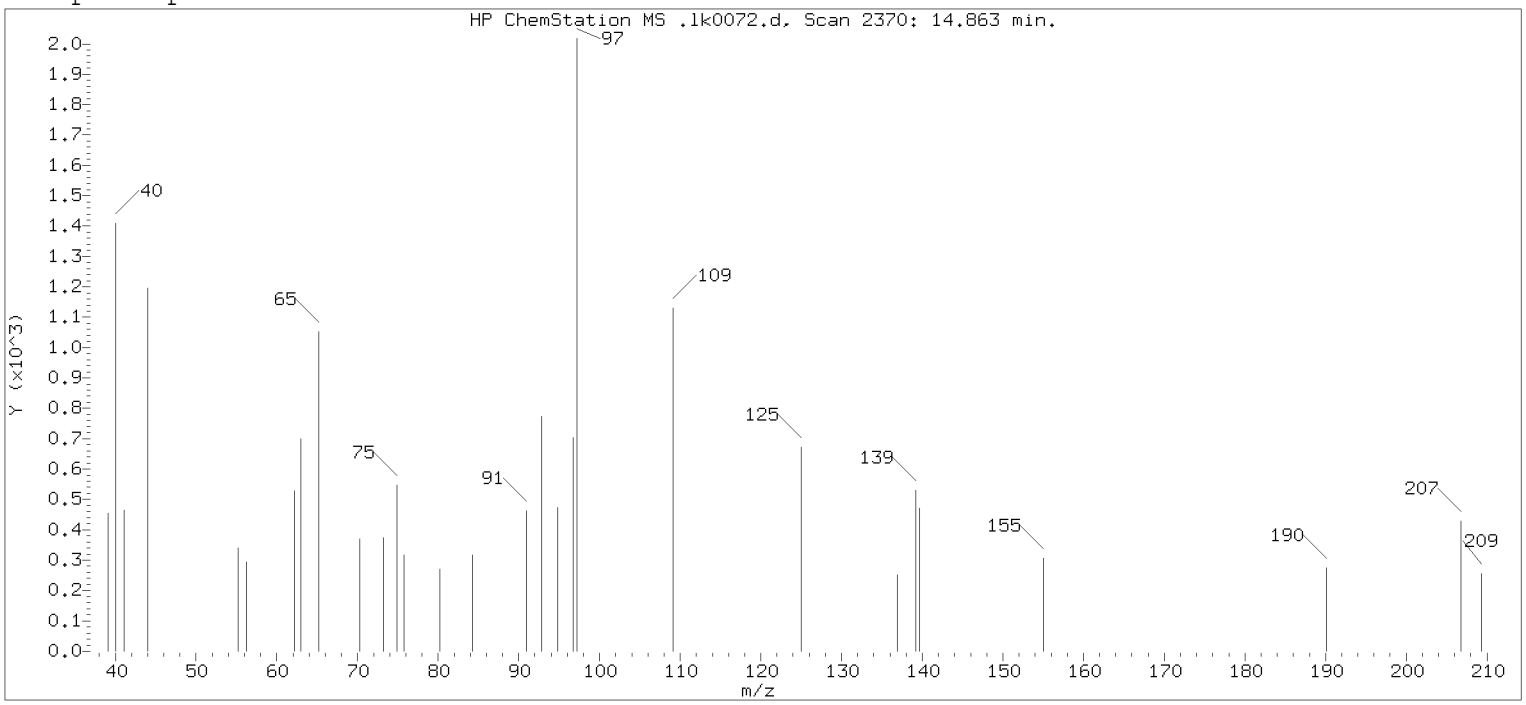
Compound Number : 172
Compound Name : Parathion
Scan Number : 2370
Retention Time (minutes) : 14.863
Quant Ion : 109.00
Area (flag) : 1282M
On-Column Amount (ng/ul) : 0.0464
Integration start scan : 2366 Integration stop scan: 2374
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

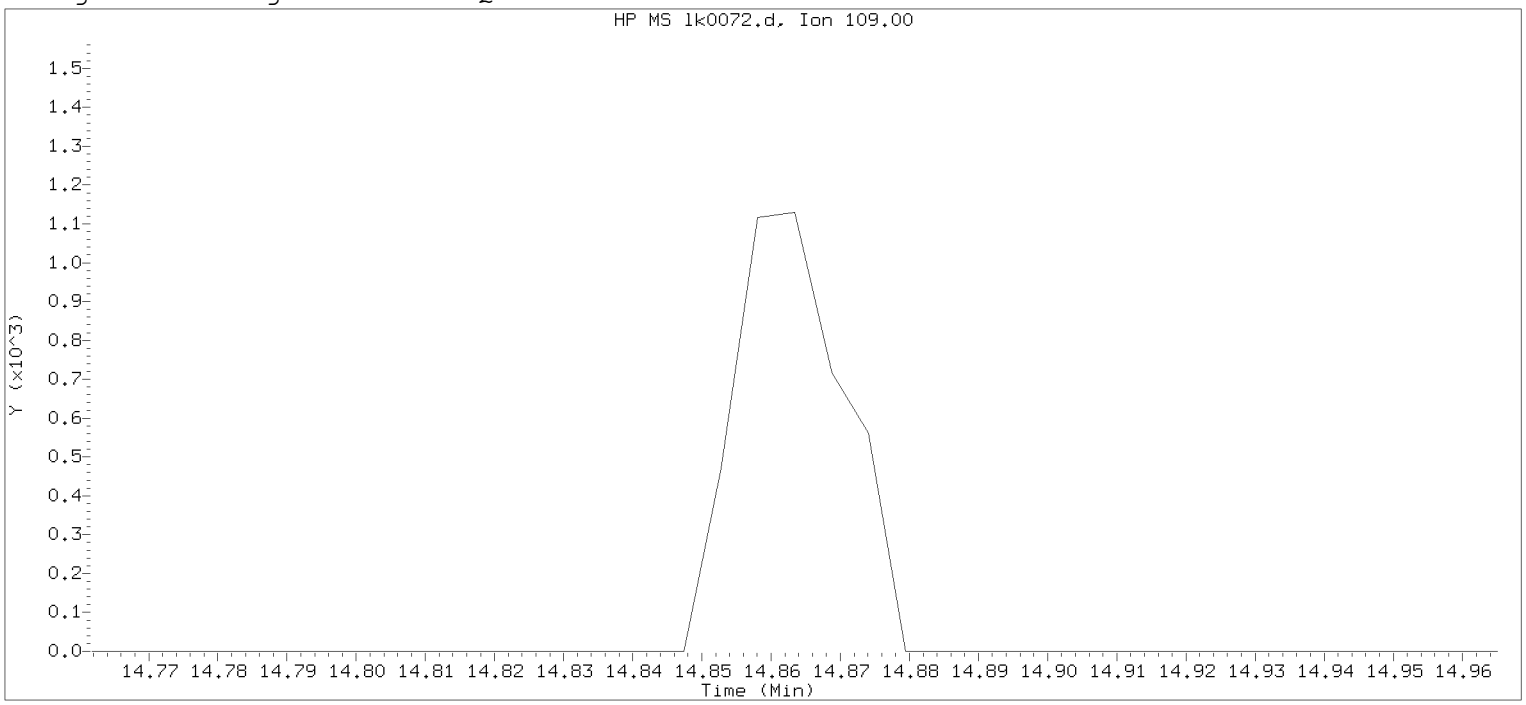
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

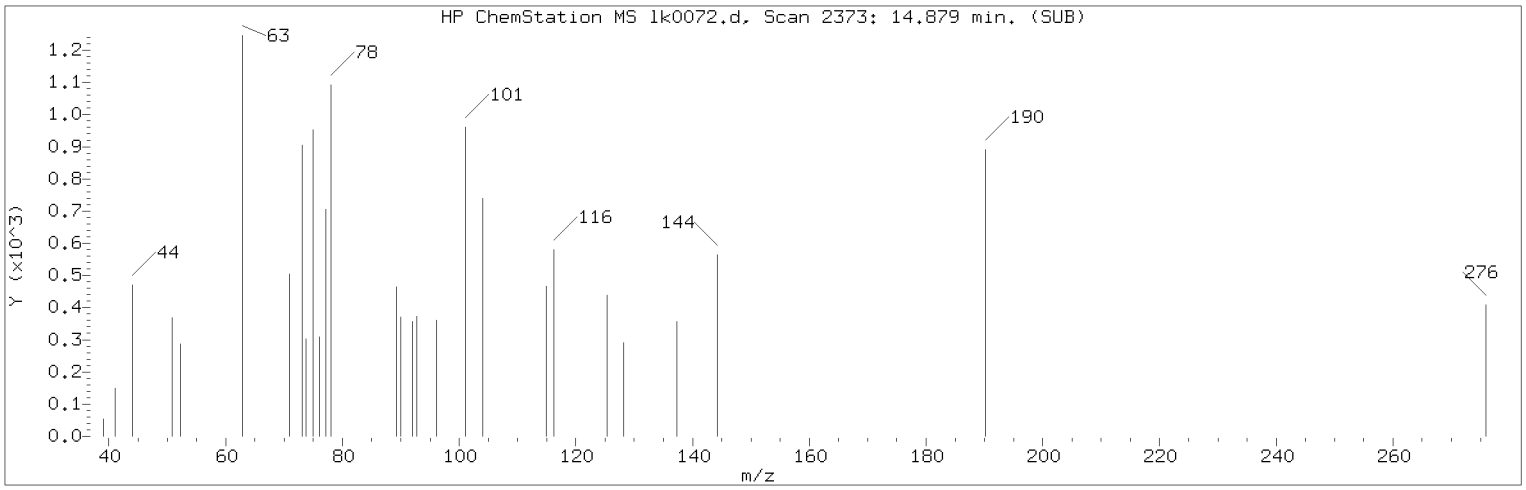
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

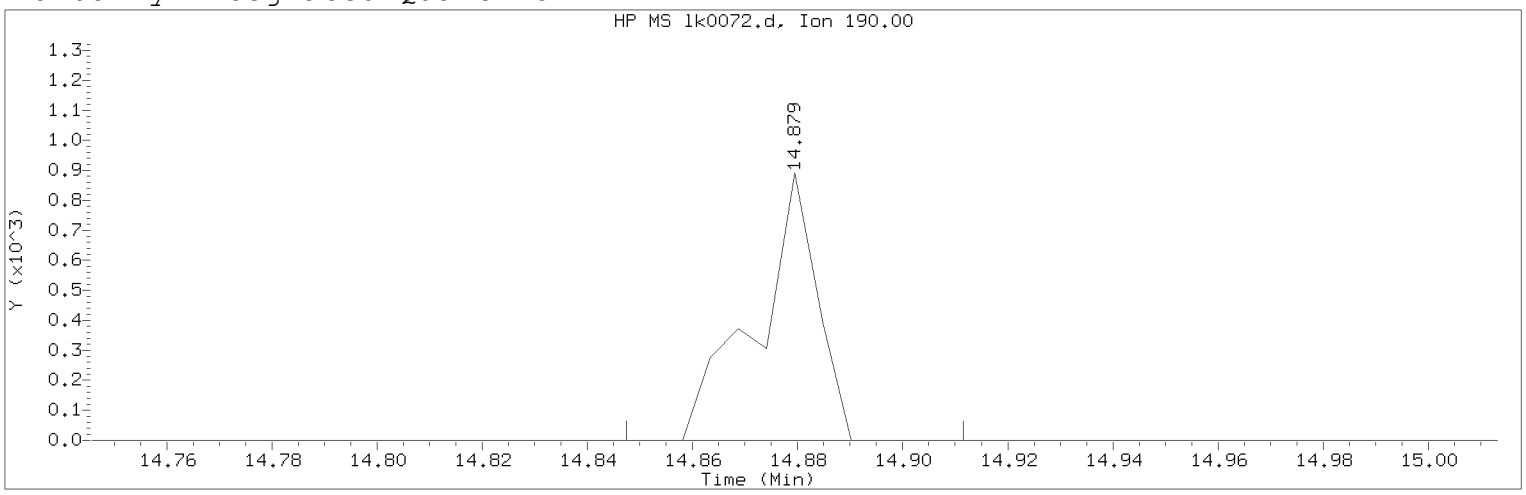
Compound Number : 172
Compound Name : Parathion
Expected RT (minutes) : 14.863
Quant Ion : 109.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

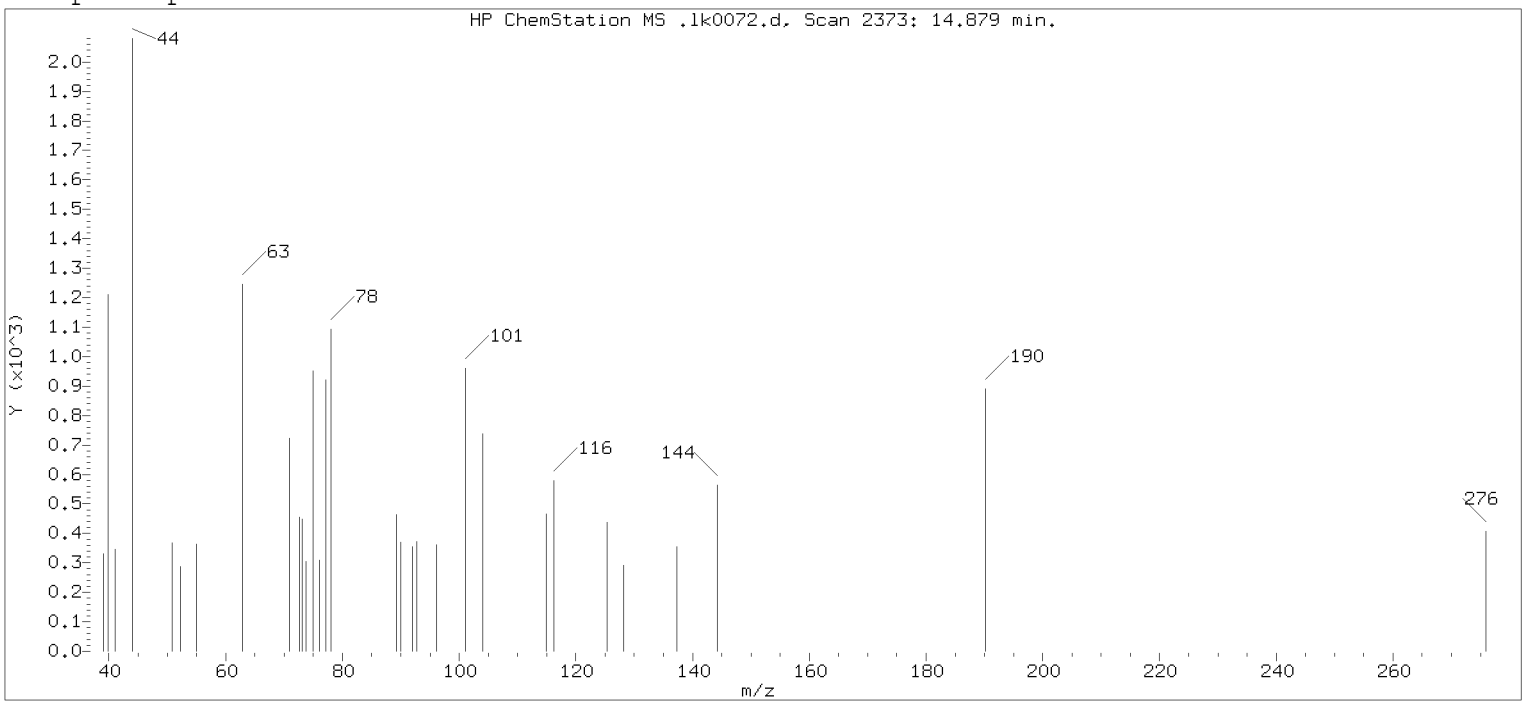
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Scan Number : 2373
Retention Time (minutes) : 14.879
Quant Ion : 190.00
Area (flag) : 717M
On-Column Amount (ng/ul) : 2.4889
Integration start scan : 2366 Integration stop scan: 2378
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

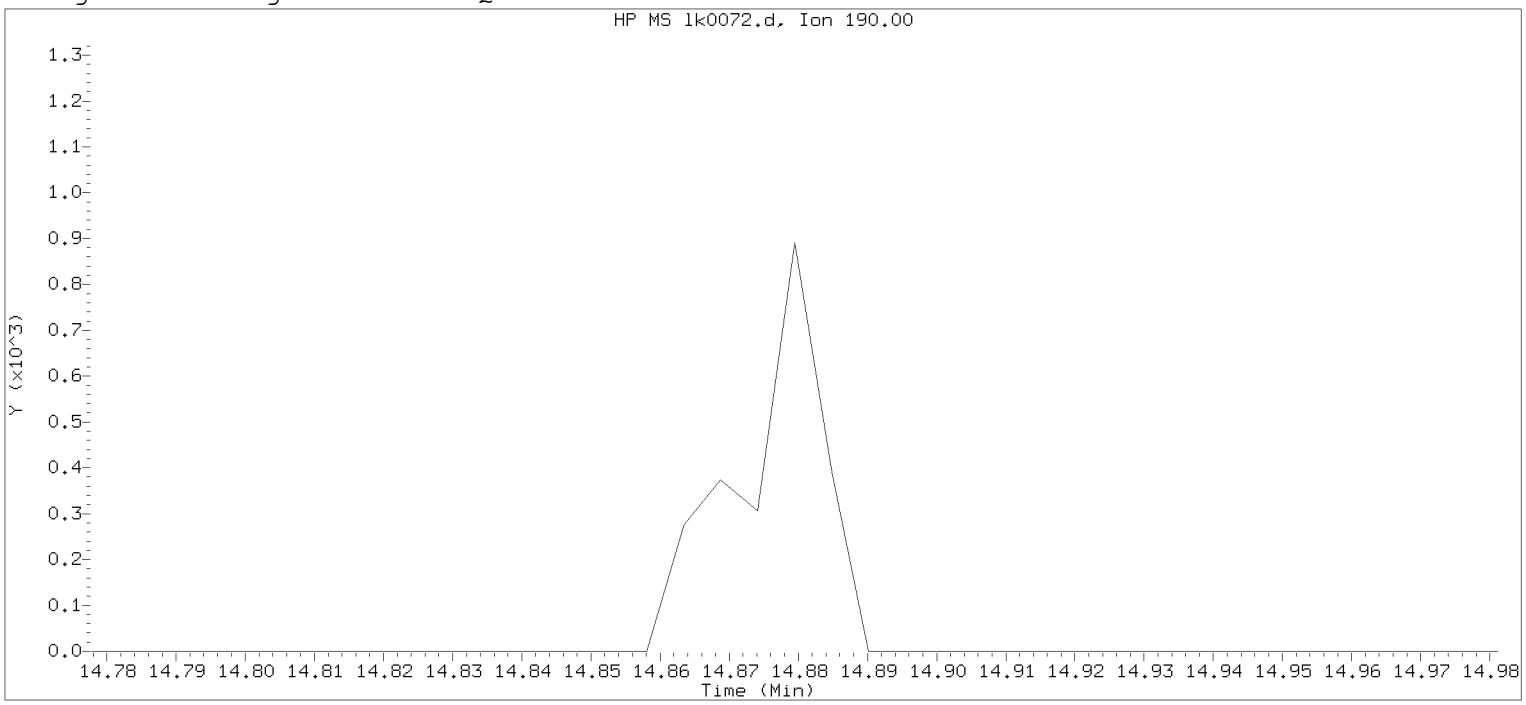
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

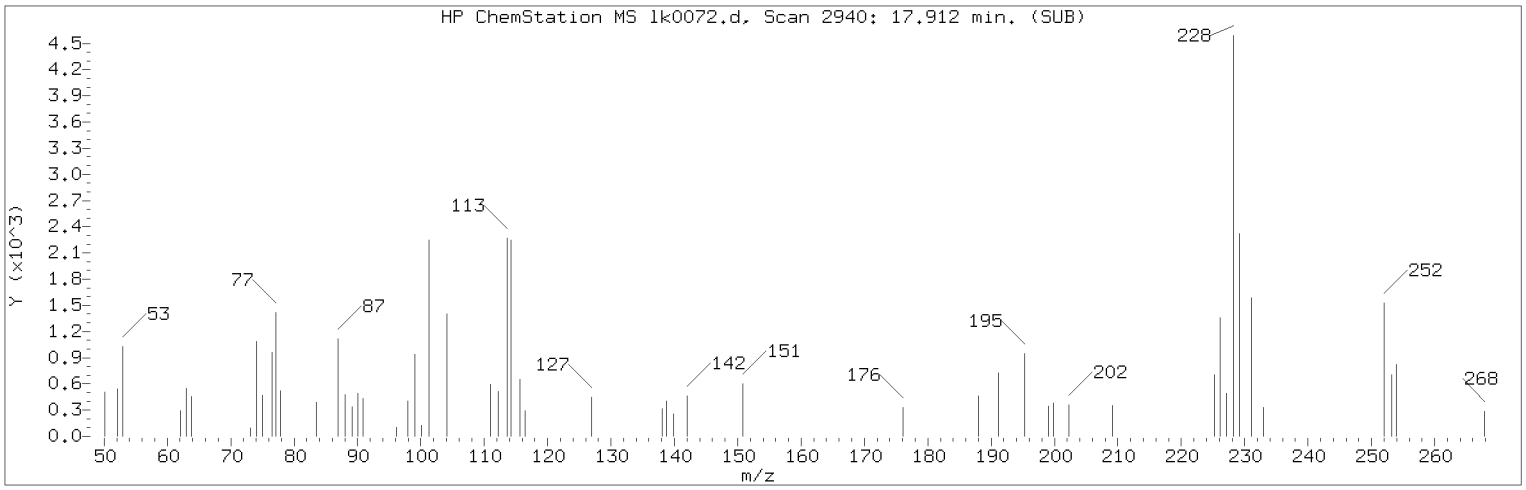
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

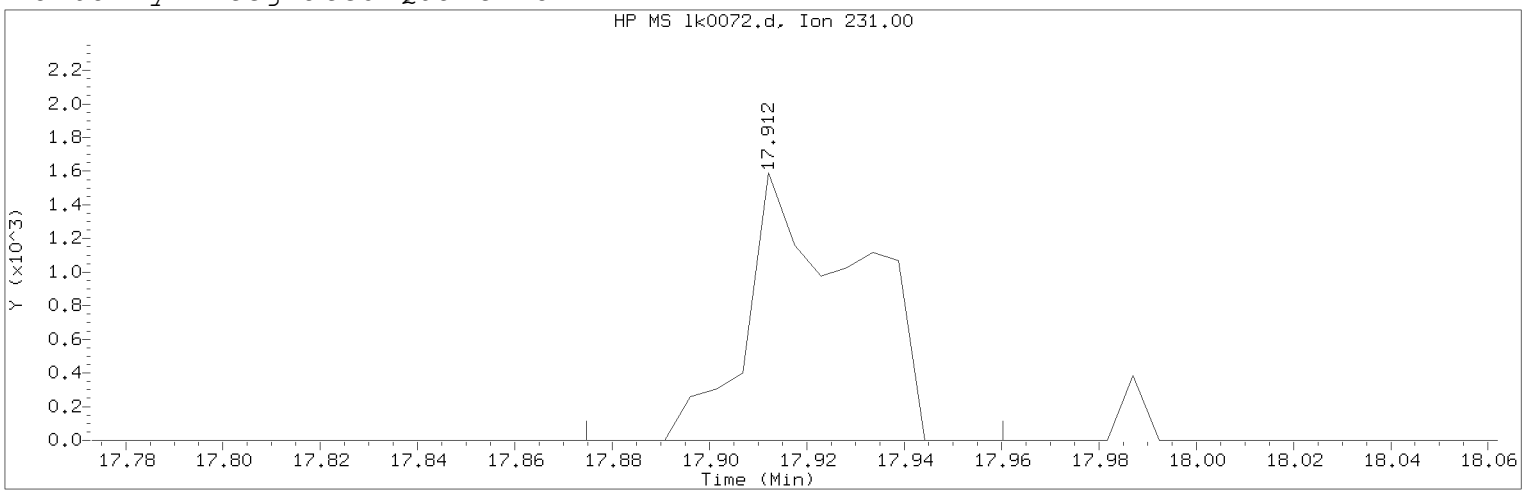
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Expected RT (minutes) : 14.879
Quant Ion : 190.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

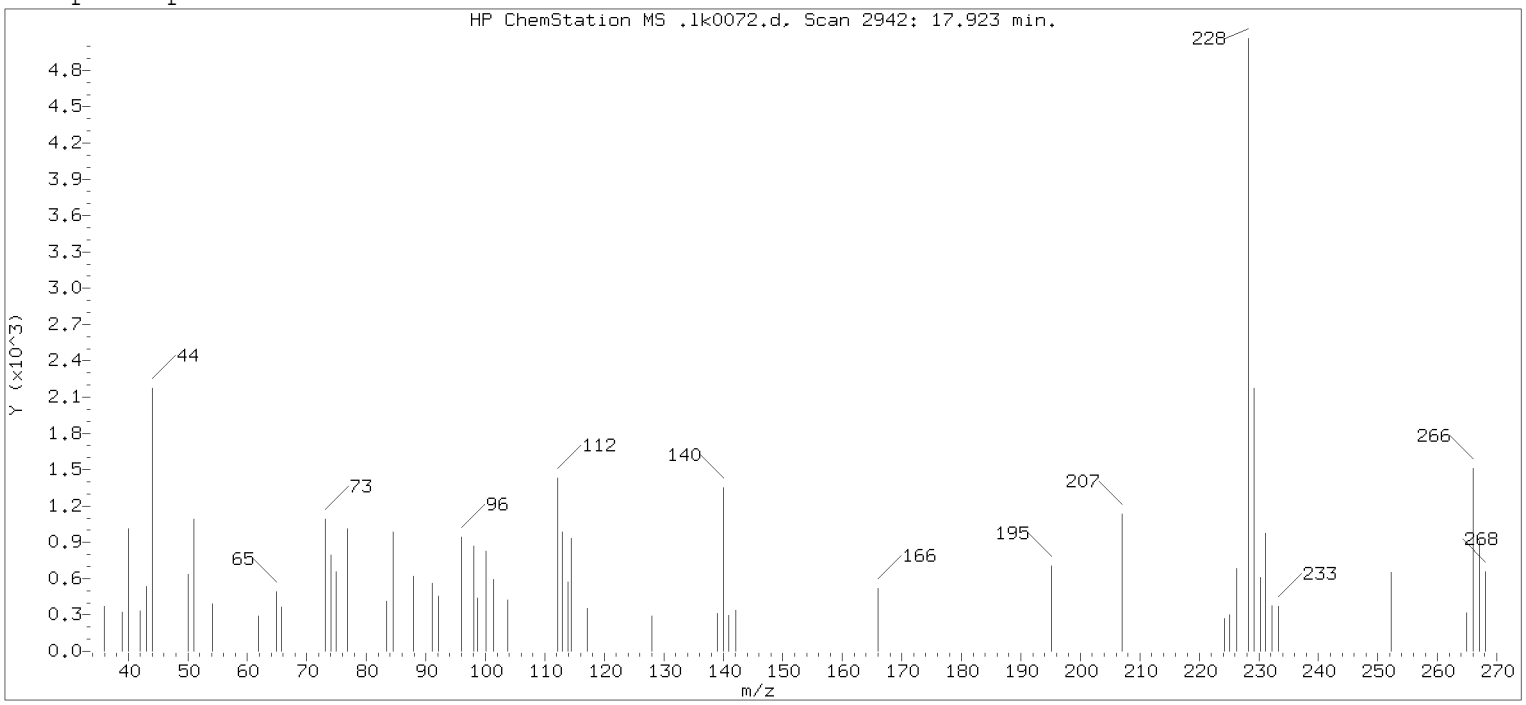
Compound Number : 203
Compound Name : 4,4'-Methylenebis(2-chloroanil
Scan Number : 2940
Retention Time (minutes) : 17.912
Quant Ion : 231.00
Area (flag) : 2535M
On-Column Amount (ng/ul) : 0.1194
Integration start scan : 2932 Integration stop scan: 2948
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

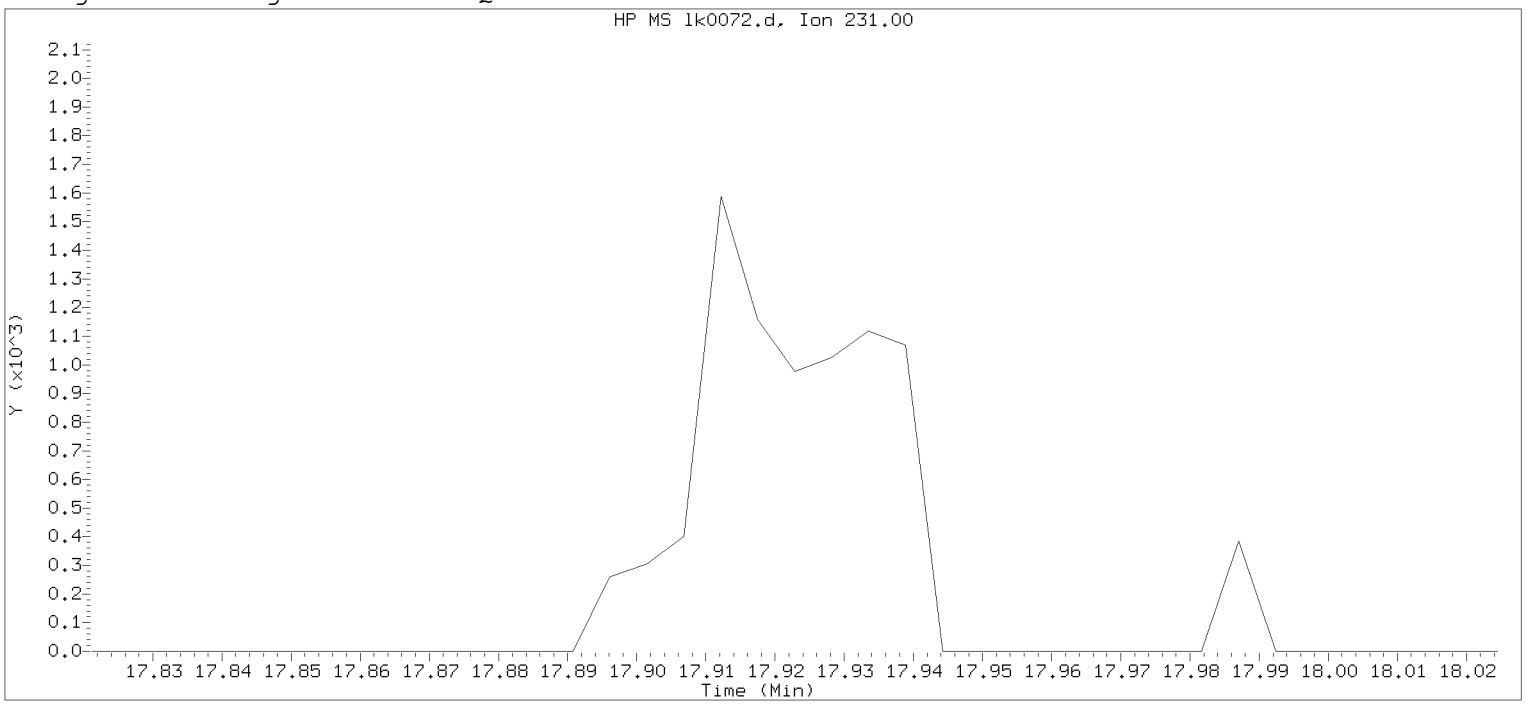
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

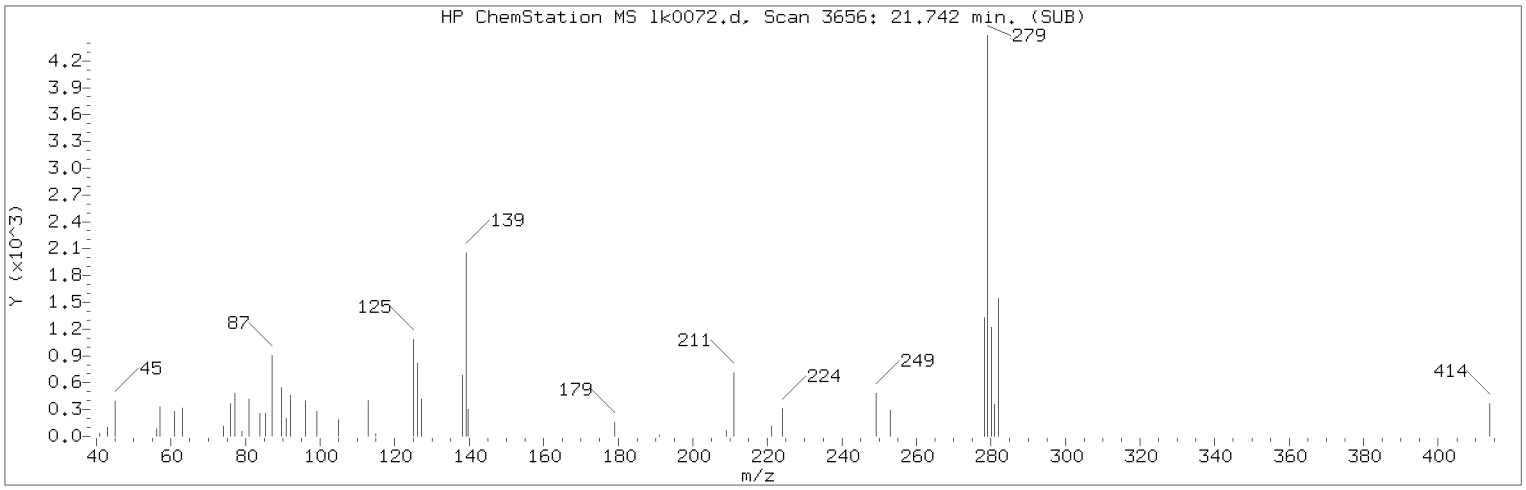
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

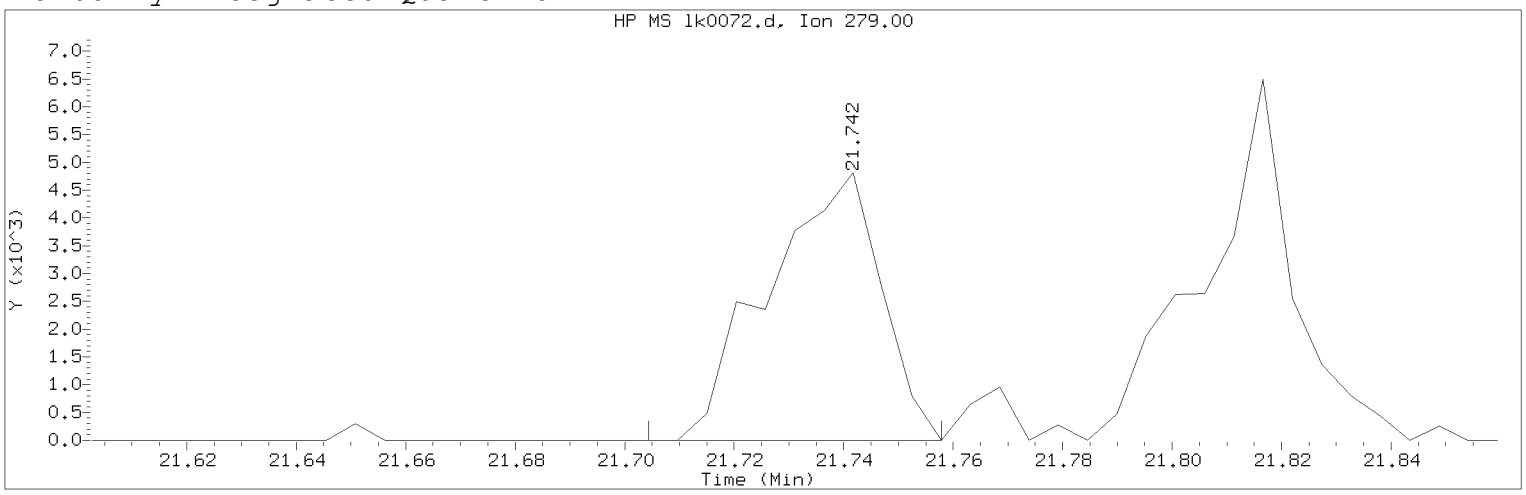
Compound Number : 203
Compound Name : 4,4'-Methylenebis(2-chloroanil
Expected RT (minutes) : 17.923
Quant Ion : 231.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

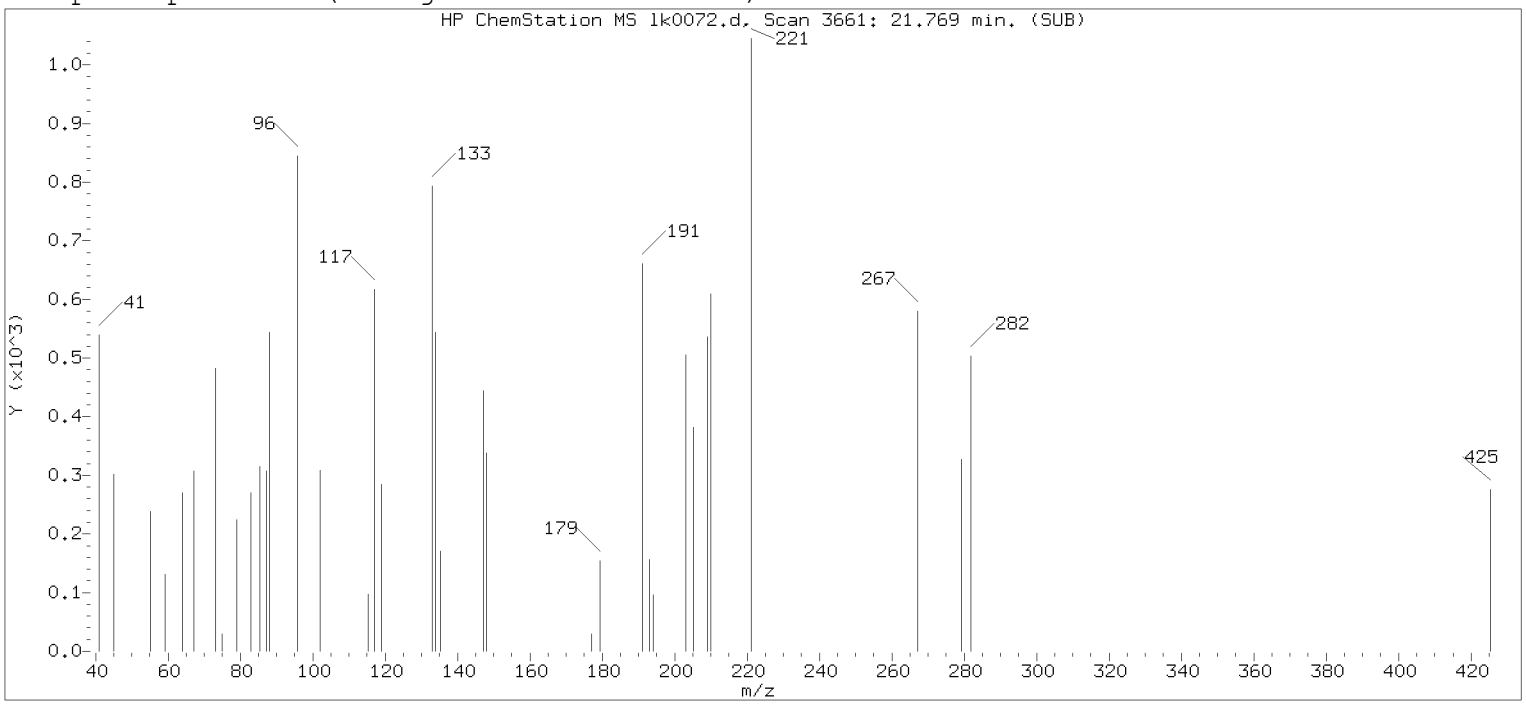
Compound Number	: 222		
Compound Name	: Dibenz(a,h)acridine		
Scan Number	: 3656		
Retention Time (minutes)	: 21.742		
Quant Ion	: 279.00		
Area (flag)	: 6908M		
On-Column Amount (ng/ul)	: 0.0900		
Integration start scan	: 3648	Integration stop scan:	3658
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

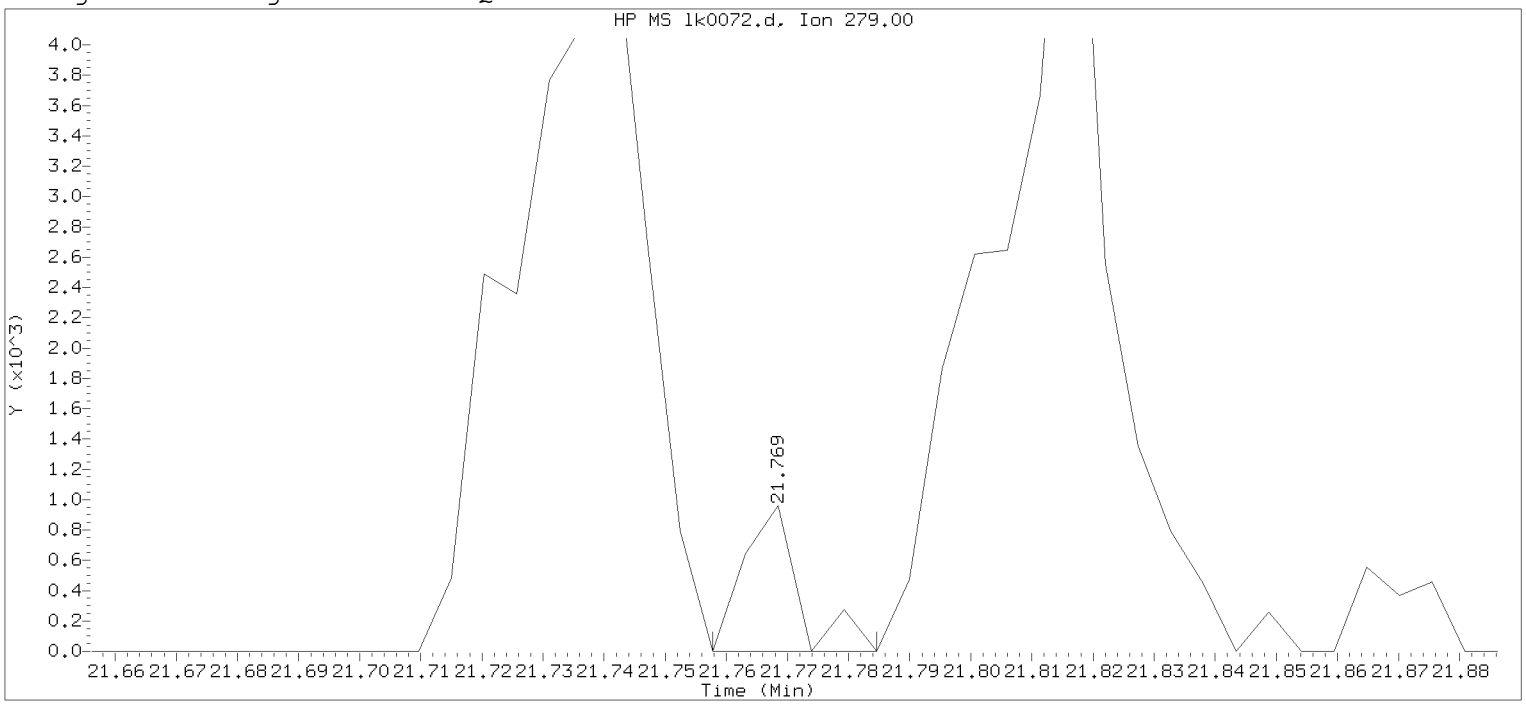
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

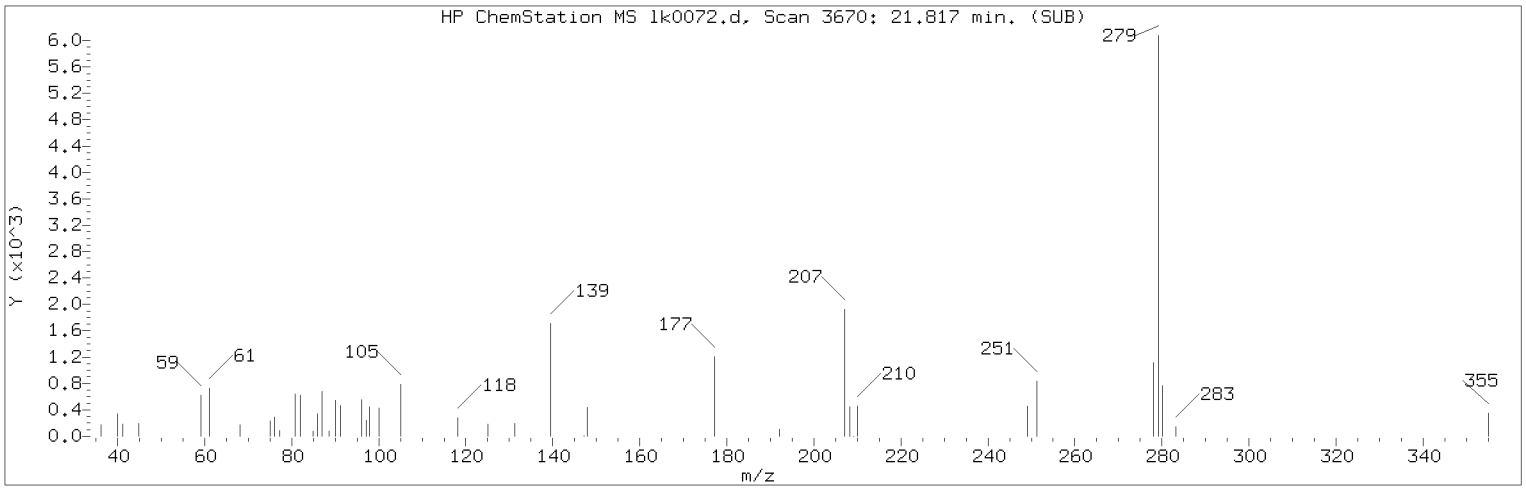
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

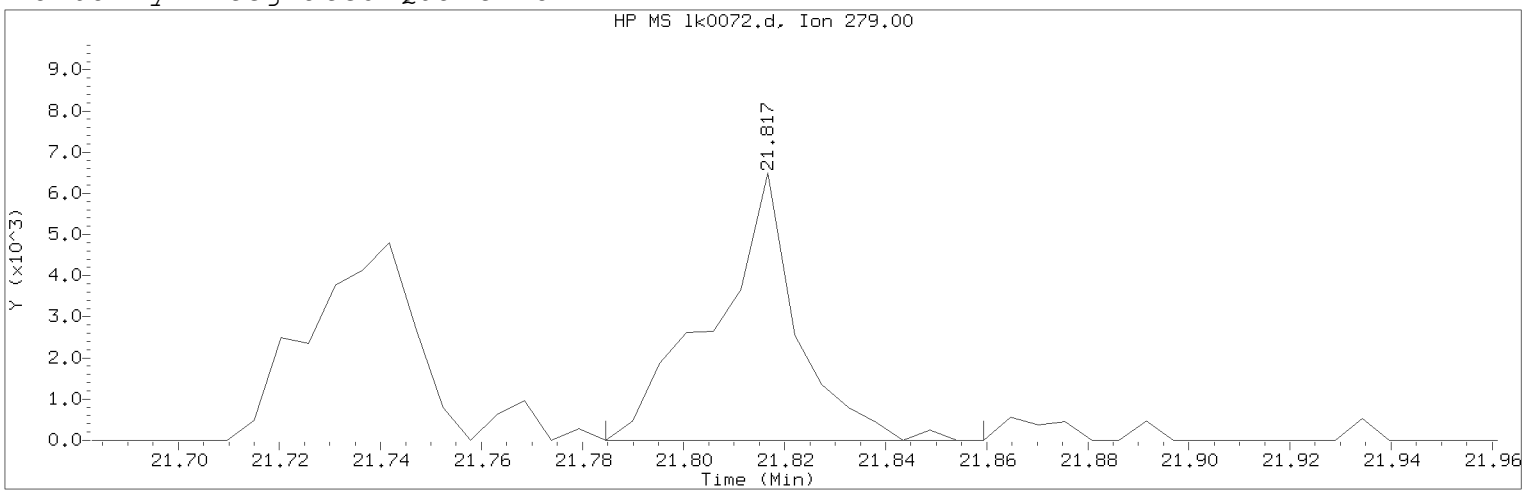
Compound Number	: 222		
Compound Name	: Dibenz(a,h)acridine		
Scan Number	: 3661		
Retention Time (minutes)	: 21.769		
Quant Ion	: 279.00		
Area	: 603		
On-column Amount (ng/ul)	: 0.0078		
Integration start scan	: 3658	Integration stop scan:	3663
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2016

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

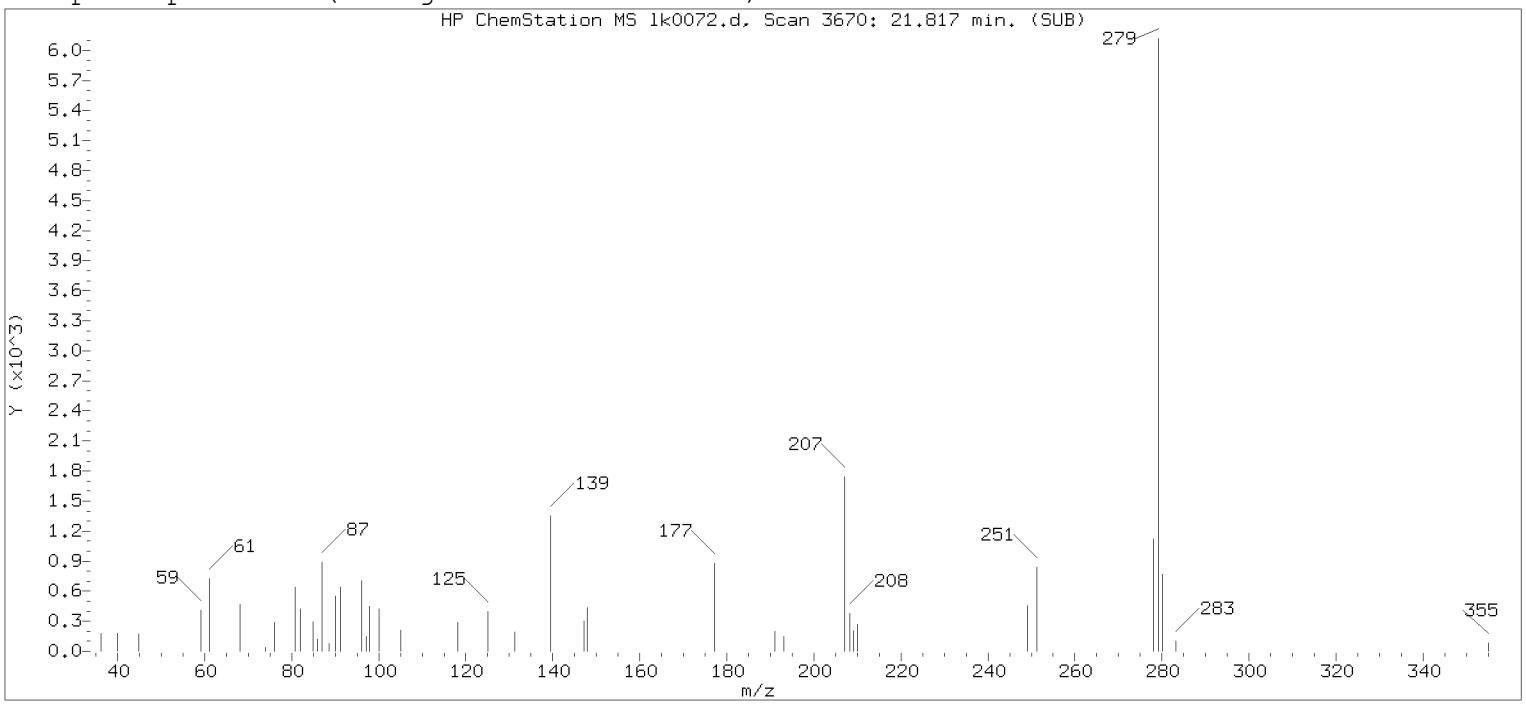
Compound Number : 223
Compound Name : Dibenz(a,j)acridine
Scan Number : 3670
Retention Time (minutes) : 21.817
Quant Ion : 279.00
Area (flag) : 7432M
On-Column Amount (ng/ul) : 0.0975
Integration start scan : 3663 Integration stop scan: 3677
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

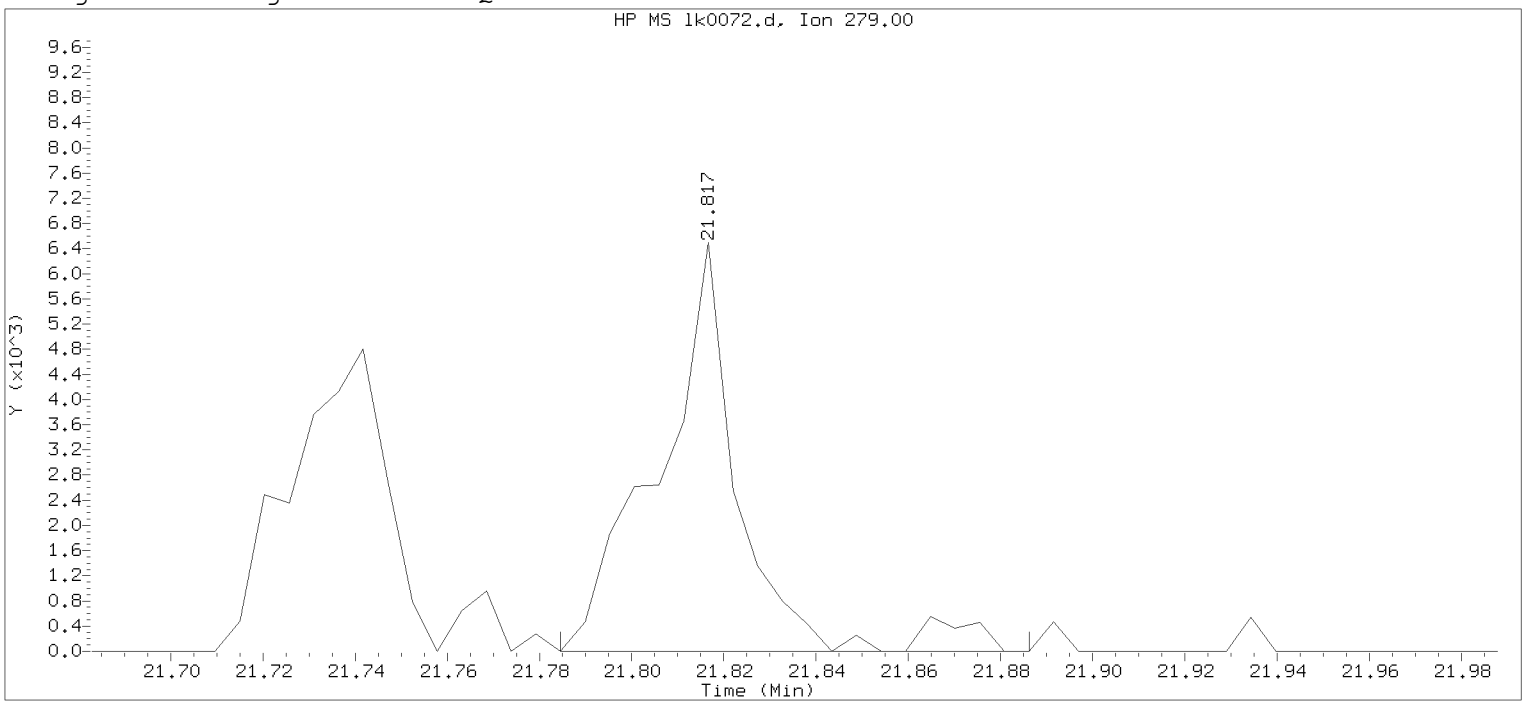
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

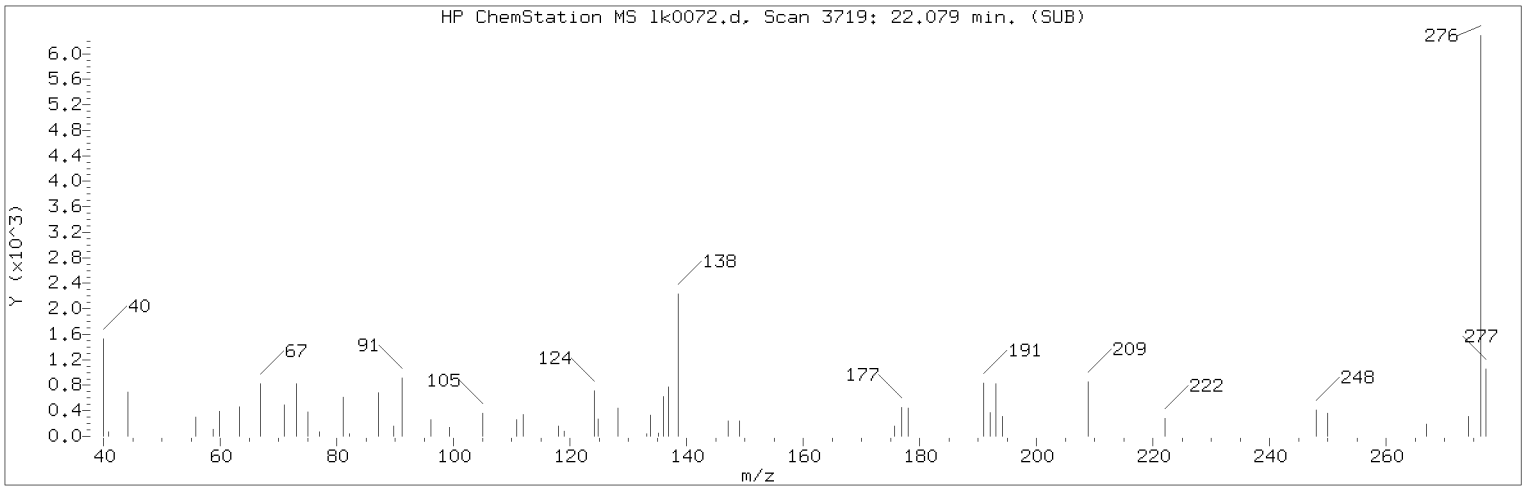
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

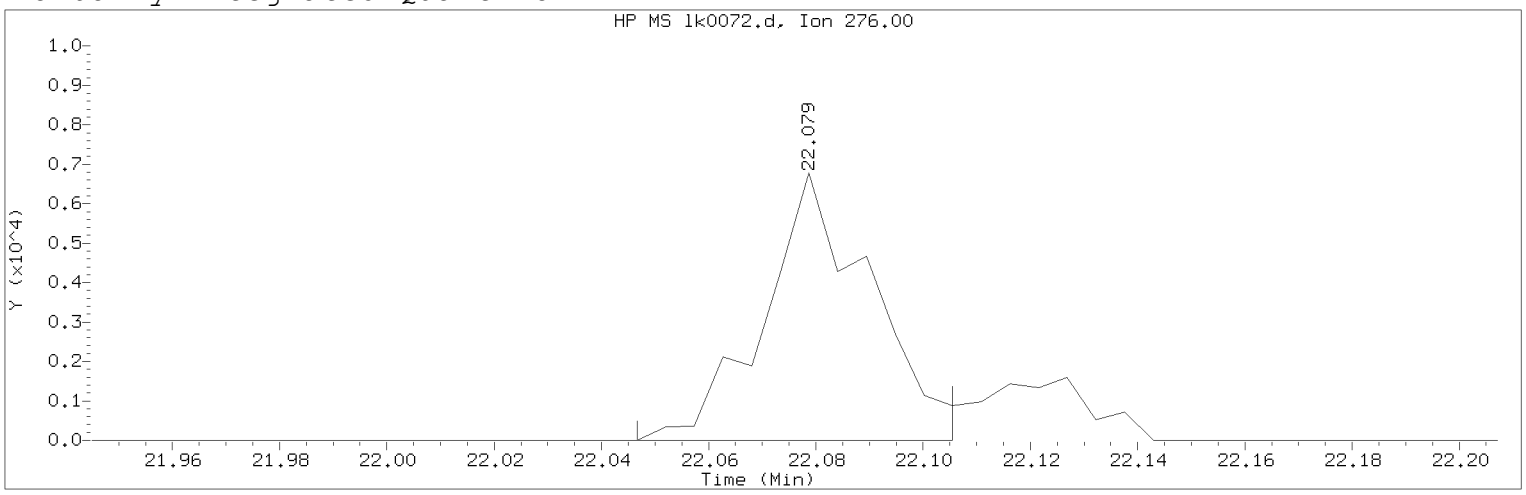
Compound Number	: 223		
Compound Name	: Dibenz(a,j)acridine		
Scan Number	: 3670		
Retention Time (minutes)	: 21.817		
Quant Ion	: 279.00		
Area	: 7875		
On-column Amount (ng/ul)	: 0.0997		
Integration start scan	: 3663	Integration stop scan:	3682
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

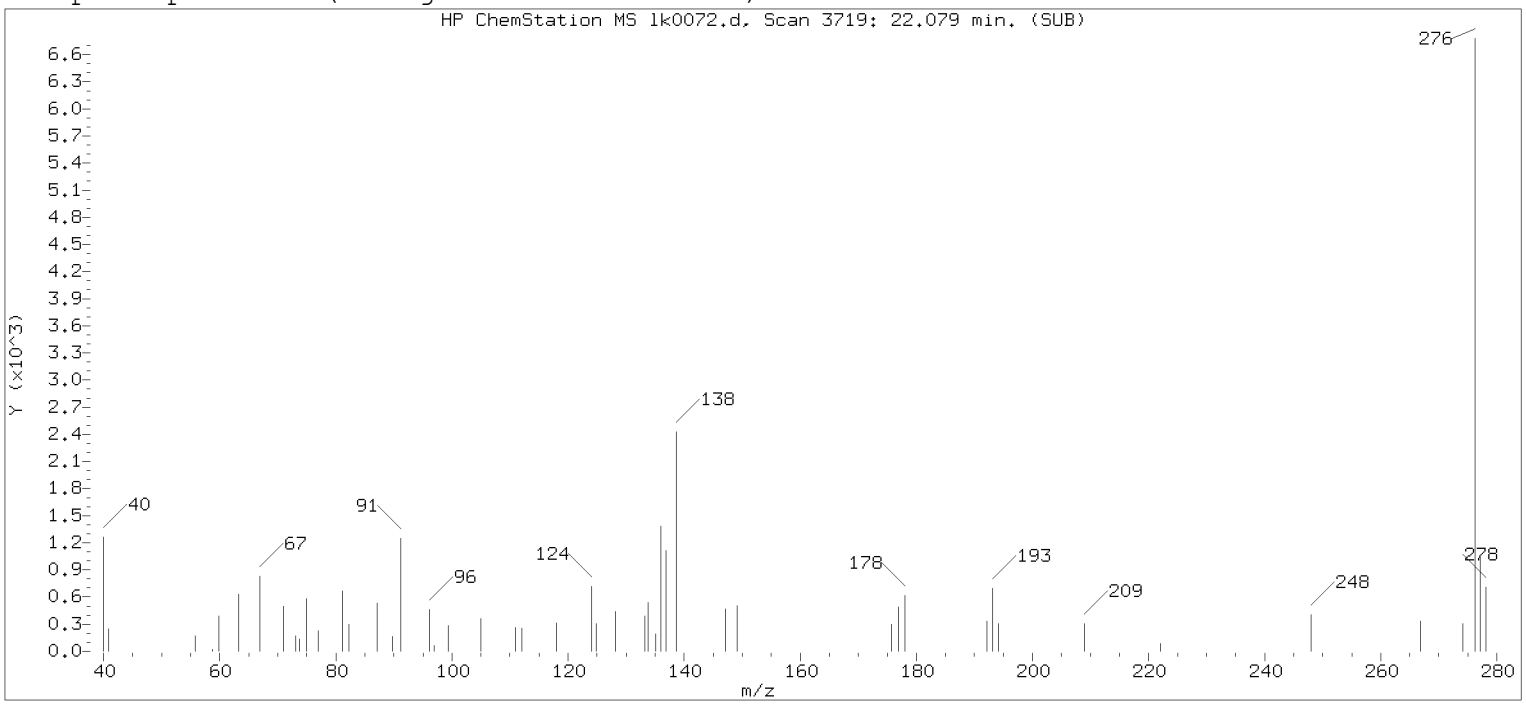
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3719
Retention Time (minutes) : 22.079
Quant Ion : 276.00
Area (flag) : 9437M
On-Column Amount (ng/ul) : 0.1126
Integration start scan : 3712 Integration stop scan: 3723
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

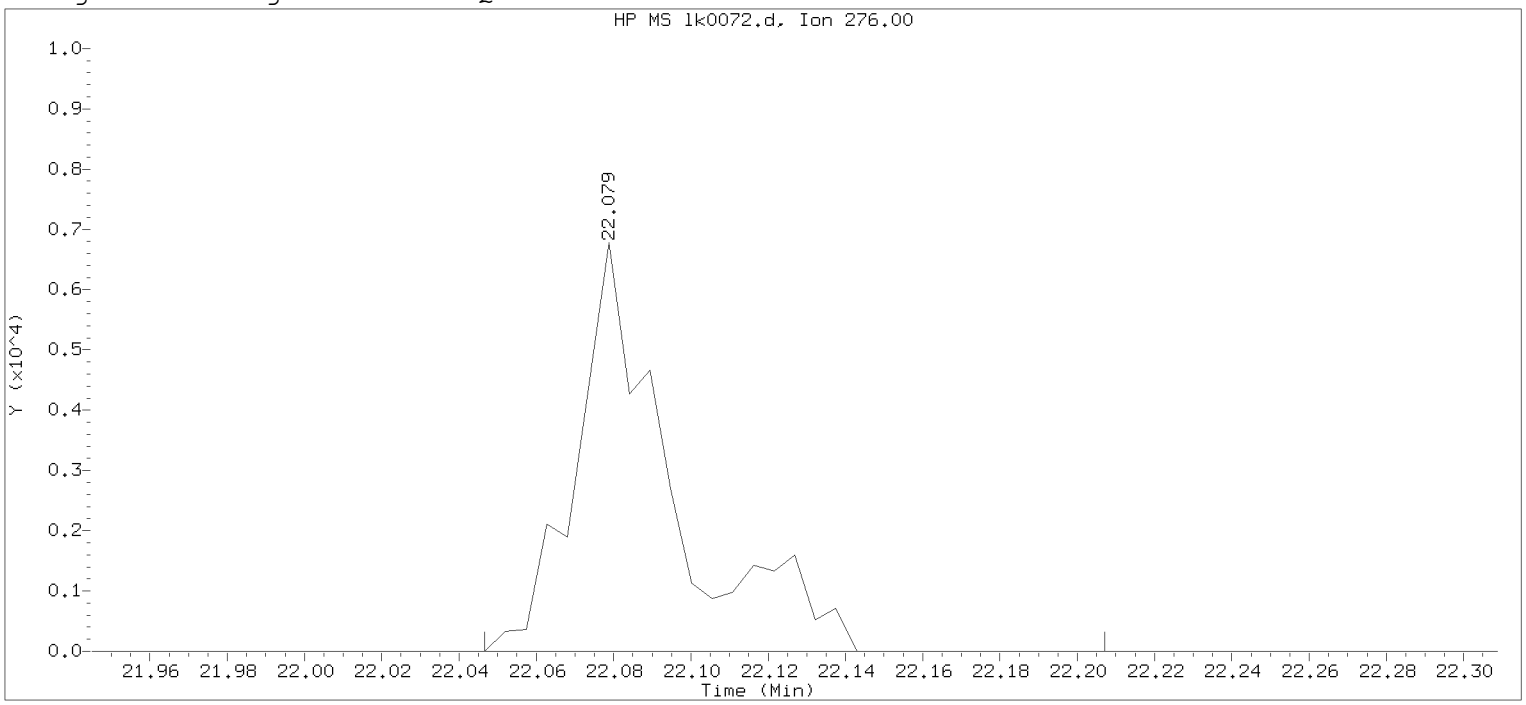
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



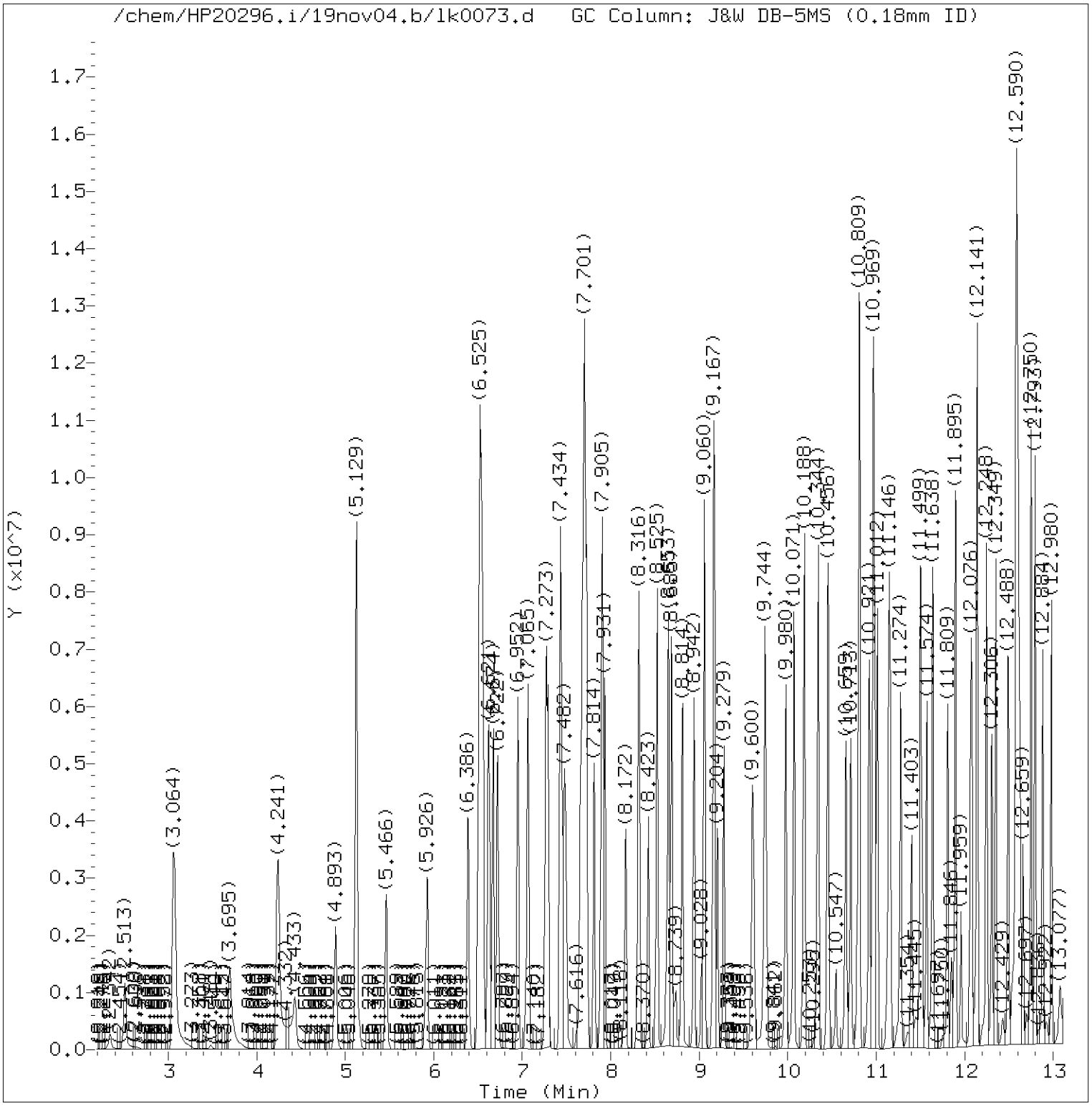
Data File: /chem/HP20296.i/19nov04.b/lk0072.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:01 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 15:34
Date, time and analyst ID of latest file update: 04-Nov-2019 15:34 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3719		
Retention Time (minutes)	: 22.079		
Quant Ion	: 276.00		
Area	: 11546		
On-column Amount (ng/ul)	: 0.1302		
Integration start scan	: 3712	Integration stop scan:	3742
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2190



Total Ion Chromatogram (TIC)

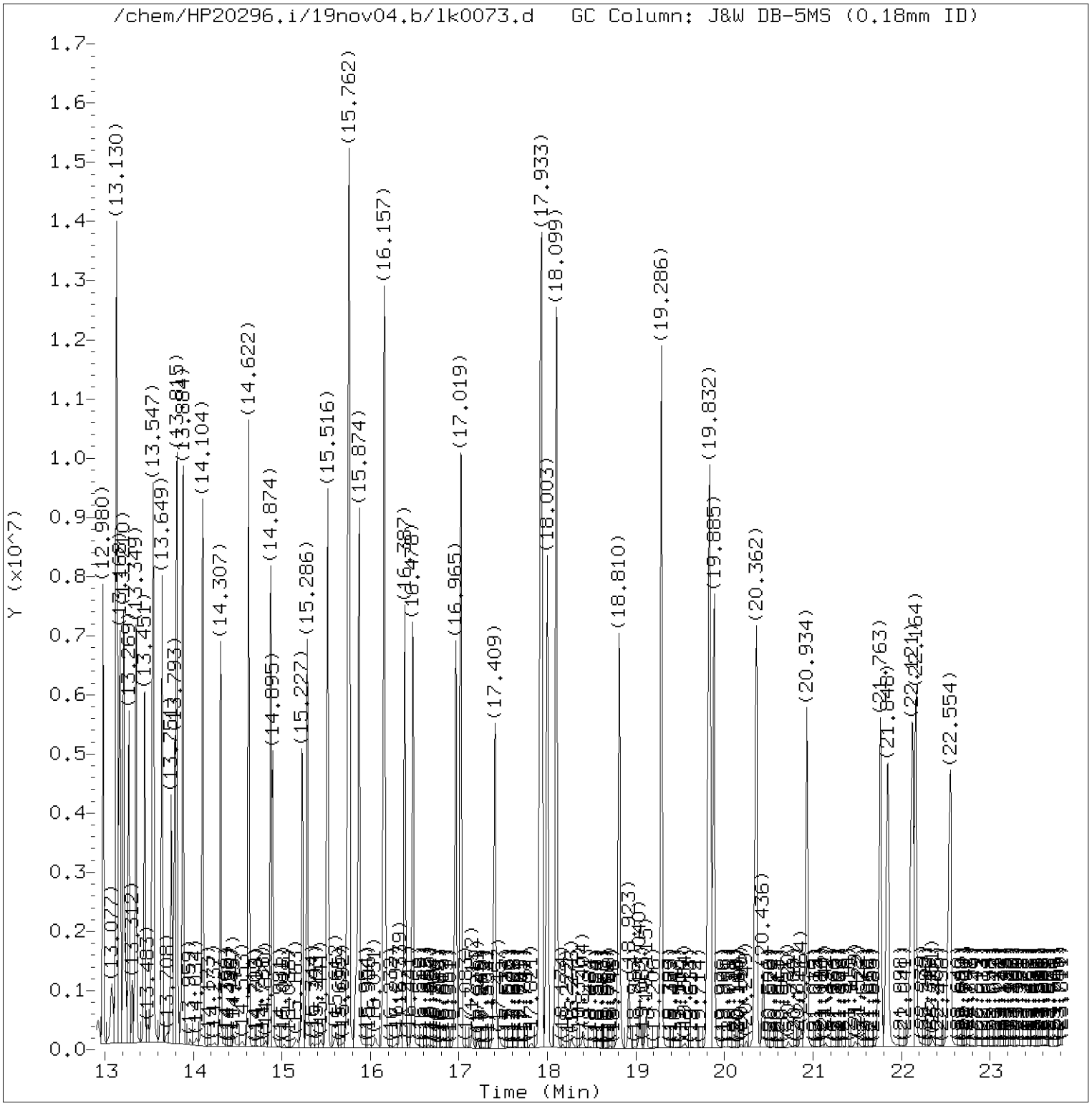
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.508	88	1109312	30.455
5) N-Nitrosodimethylamine	(1)	3.053	74	1922030	31.011
6) Pyridine	(1)	3.075	79	3126370	29.665
8) 2-Picoline	(1)	4.235	93	2983526	30.044
9) N-Nitrosomethylethylamine	(1)	4.433	88	1263168	30.584
10) Methyl methanesulfonate	(1)	4.893	80	1474797	29.925
12)$2-Fluorophenol	(1)	5.129	112	4170742	59.474
14) N-Nitrosodiethylamine	(1)	5.466	102	1170089	31.109
43) Total Cresols	(1)			4511807	60.820
16) Ethyl methanesulfonate	(1)	5.926	109	1170118	30.326
17) Benzaldehyde	(1)	6.386	77	1717107	24.099
18)$Phenol-d6	(1)	6.519	99	6012500	59.516
19) Phenol	(1)	6.541	94	3529755	29.192
20) Aniline	(1)	6.551	93	4126781	28.905
21) a-methylstyrene	(1)	6.626	118	826593	29.081
23) bis(2-Chloroethyl)ether	(1)	6.674	93	2738830	29.268
24) 2-Chlorophenol	(1)	6.722	128	1882585	30.040
25) 1,3-Dichlorobenzene	(1)	6.952	146	1804794	28.236
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	187994	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	1824684	28.593
28) Benzyl alcohol	(1)	7.268	108	1455240	29.280
29) 1,2-Dichlorobenzene	(1)	7.289	146	1750865	28.015
100) Isosafrole	(3)			1336763	30.566
31) Indene	(1)	7.429	115	3228492	28.660
32) 2-Methylphenol	(1)	7.450	108	2145359	30.283
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.487	45	3113521	29.763
35) bis(2-Chloroisopropyl)ether	(1)	7.487	45	3113521	29.763
36) N-Nitrosopyrrolidine	(1)	7.659	100	1304740	30.524
37) Acetophenone	(1)	7.680	105	3327379	28.333
38) 4-Methylphenol	(1)	7.701	108	2366448	30.537
39) N-Nitroso-di-n-propylamine	(1)	7.712	70	2236802	29.049
40) N-Nitrosomorpholine	(1)	7.723	56	1400891	28.684
41) o-Toluidine	(1)	7.728	106	3607126	28.588
44) Hexachloroethane	(1)	7.814	117	967859	29.234
45)$Nitrobenzene-d5	(2)	7.905	82	6045384	61.646
46) Nitrobenzene	(2)	7.931	77	3252496	30.889
125) 2,4_2,6-Dinitrotoluenes	(3)			1474265	61.321
50) N-Nitrosopiperidine	(2)	8.172	114	1102169	31.478
52) Isophorone	(2)	8.316	82	5801454	30.880
53) 2-Nitrophenol	(2)	8.423	139	755503	33.425

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.525	107	2373078	30.041
59) O,O,O-Triethylphosphorothioate	(2)	8.653	198	622026	29.533
57) bis(2-Chloroethoxy)methane	(2)	8.685	93	3232529	28.639
58) Benzoic acid	(2)	8.739	105	1194462M	35.765
151) Diallate trans/cis	(4)			2364722	29.725
62) 2,4-Dichlorophenol	(2)	8.814	162	1271929	30.674
65) 1,2,4-Trichlorobenzene	(2)	8.942	180	1284686	29.717
68)*Naphthalene-d8	(2)	9.022	136	765490	5.000
69) Naphthalene	(2)	9.060	128	5359559	29.932
70) 4-Chloroaniline	(2)	9.167	127	2237752	30.398
71) 2,6-Dichlorophenol	(2)	9.172	162	1188025	30.459
72) Hexachloropropene	(2)	9.204	213	623505	30.348
74) Hexachlorobutadiene	(2)	9.279	225	598794	27.883
78) Quinoline	(2)	9.600	129	3244437	30.031
80) N-Nitrosodi-n-butylamine	(2)	9.744	84	2522777	34.880
79) Caprolactam	(2)	9.761	113	513238A	27.994
83) 4-Chloro-3-methylphenol	(2)	9.980	107	2058775	31.733
85) Safrole	(2)	10.071	162	1133107	30.650
86) 2-Methylnaphthalene	(2)	10.188	142	3178192	30.270
87) 1-Methylnaphthalene	(2)	10.344	142	3007728	29.486
88) Hexachlorocyclopentadiene	(3)	10.450	237	620023	28.694
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.461	216	1089390	29.316
91) cis-Isosafrole	(3)	10.547	162	218621	5.191
93) 2,4,6-Trichlorophenol	(3)	10.659	196	798375	33.320
95) 2,4,5-Trichlorophenol	(3)	10.713	196	814994	31.547
96)$2-Fluorobiphenyl	(3)	10.809	172	5713927	57.615
97) trans-Isosafrole	(3)	10.921	162	1118142	25.374
98) 1,1'-Biphenyl	(3)	10.964	154	3415450	28.050
99) 2-Chloronaphthalene	(3)	10.980	162	2994818	30.404
101) 1-Chloronaphthalene	(3)	11.012	162	2372218	27.659
103) Diphenyl ether	(3)	11.146	170	1740240	29.164
104) 2-Nitroaniline	(3)	11.162	138	1003866	32.147
108) 1,4-Naphthoquinone	(3)	11.274	158	1211479	30.279
109) 1,4-Dinitrobenzene	(3)	11.403	168	360275	33.174
110) Dimethylphthalate	(3)	11.499	163	2763424	27.070
111) 1,3-Dinitrobenzene	(3)	11.515	168	422034	31.764
113) 2,6-Dinitrotoluene	(3)	11.574	165	640283	30.391
114) Acenaphthylene	(3)	11.638	152	4410185	30.134
117) 3-Nitroaniline	(3)	11.809	138	850917	30.963
118)*Acenaphthene-d10	(3)	11.846	164	324815	5.000

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Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.895	153	2904067	28.834
120) 2,4-Dinitrophenol	(3)	11.959	184	192904	29.817
121) 4-Nitrophenol	(3)	12.066	109	705561	31.642
122) Pentachlorobenzene	(3)	12.082	250	836134	27.579
124) Dibenzofuran	(3)	12.141	168	3480150	28.206
123) 2,4-Dinitrotoluene	(3)	12.146	165	833982	30.930
126) 1-Naphthylamine	(3)	12.248	143	2984156	29.298
127) 2,3,4,6-Tetrachlorophenol	(3)	12.306	232	517041	32.883
128) 2-Naphthylamine	(3)	12.349	143	2800114	28.535
129) Diethylphthalate	(3)	12.494	149	3163767	28.636
131) Fluorene	(3)	12.579	166	2794432	27.802
130) Thionazin	(3)	12.590	107	766131	27.304
132) 4-Chlorophenyl-phenylether	(3)	12.595	204	1101559M	28.030
133) 5-Nitro-o-toluidine	(3)	12.606	152	833869	29.133
134) 4-Nitroaniline	(3)	12.627	138	858329	31.171
135) 4,6-Dinitro-2-methylphenol	(4)	12.659	198	289977	36.890
137) NDPA as diphenylamine	(4)	12.750	169	2313679	29.152
136) N-Nitrosodiphenylamine	(4)	12.750	169	2313679	29.152
139) 1,2-Diphenylhydrazine	(4)	12.793	77	5963813	30.008
140)$2,4,6-Tribromophenol	(3)	12.884	332	588449	60.582
142) Tetraethyldithiopyrophosphate	(4)	12.980	97	864783	29.487
145) Diallate (peak 1)	(4)	13.125	86	1999807	24.513
146) Phorate	(4)	13.136	75	3793057	30.949
147) Phenacetin	(4)	13.173	108	2495077	32.319
148) 4-Bromophenyl-phenylether	(4)	13.216	248	563373	29.646
149) Diallate (peak 2)	(4)	13.232	86	364915	5.213
150) Hexachlorobenzene	(4)	13.269	284	701426	31.151
152) Dimethoate	(4)	13.349	87	2298598	31.648
153) Atrazine	(4)	13.451	200	552731	26.036
154) Pentachlorophenol	(4)	13.531	266	391029	34.310
155) 4-Aminobiphenyl	(4)	13.547	169	1723385	29.574
156) Pentachloronitrobenzene	(4)	13.547	237	291126	31.663
157) Pronamide	(4)	13.649	173	1396191	31.516
158)*Phenanthrene-d10	(4)	13.777	188	528291	5.000
159) Dinoseb	(4)	13.793	211	444374	30.354
160) Phenanthrene	(4)	13.815	178	4036141	30.914
162) Anthracene	(4)	13.884	178	4029782	31.186
168) Carbazole	(4)	14.104	167	3975095	30.704
169) Methyl parathion	(4)	14.307	109	1559920	34.115
170) Di-n-butylphthalate	(4)	14.622	149	5930027	31.072

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on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

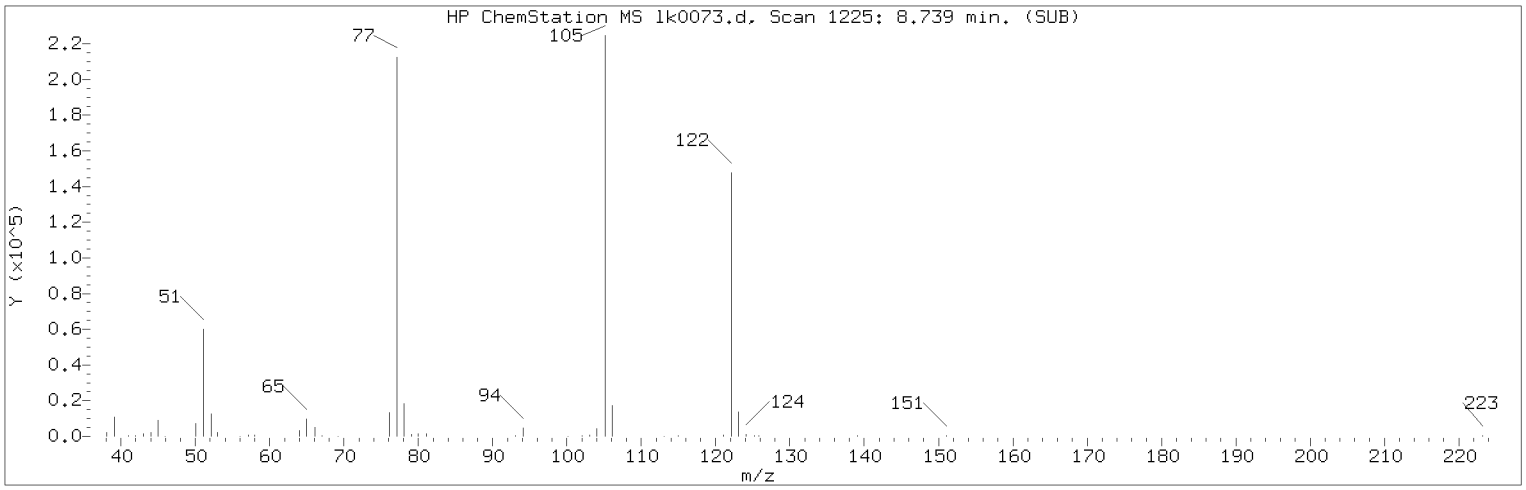
Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.874	109	1041987	34.985
173) 4-Nitroquinoline-1-oxide	(4)	14.895	190	434142	29.888
227) Total PAHs	(6)			67622075	544.692
174) Octachlorostyrene	(4)	15.232	308	271334	29.879
176) Isodrin	(4)	15.286	193	464885	29.316
178) Fluoranthene	(4)	15.516	202	4160097	31.667
179) Benzidine	(5)	15.762	184	8177766	84.022
180)*Pyrene-d10	(5)	15.837	212	517783	5.000
182) Pyrene	(5)	15.874	202	4202765	28.856
184)$Terphenyl-d14	(5)	16.157	244	4692751	58.484
187) p-Dimethylaminoazobenzene	(5)	16.387	225	642099	31.312
190) Chlorobenzilate	(5)	16.478	139	2008562	30.993
192) 3,3'-Dimethylbenzidine	(5)	16.965	212	2749926	30.388
193) Butylbenzylphthalate	(5)	17.024	149	2756744	31.360
196) 2-Acetylaminofluorene	(5)	17.409	181	2025259	33.757
198) 3,3'-Dichlorobenzidine	(5)	17.917	252	1428685	30.115
200) Benzo(a)anthracene	(5)	17.933	228	3621459	30.268
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.939	231	706959	29.427
201) Chrysene	(5)	18.003	228	3718015	30.494
204) bis(2-Ethylhexyl)phthalate	(5)	18.104	149	4104815	31.585
208) 6-Methylchrysene	(5)	18.816	242	2651281	31.028
210) Di-n-octylphthalate	(6)	19.286	149	7479345	31.026
211) Benzo(b)fluoranthene	(6)	19.832	252	3857005	29.759
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.832	256	1648813	29.971
213) Benzo(k)fluoranthene	(6)	19.885	252	3819749A	29.324
216) Benzo(a)pyrene	(6)	20.362	252	3800618	31.466
218)*Perylene-d12	(6)	20.436	264	509032	5.000
220) 3-Methylcholanthrene	(6)	20.934	268	1700363	30.908
222) Dibenz(a,h)acridine	(6)	21.768	279	3109954	30.823
223) Dibenz(a,j)acridine	(6)	21.848	279	3047348	30.394
224) Indeno(1,2,3-cd)pyrene	(6)	22.121	276	3576585M	32.466
225) Dibenz(a,h)anthracene	(6)	22.164	278	3590369	31.165
226) Benzo(g,h,i)perylene	(6)	22.549	276	3555327	30.669

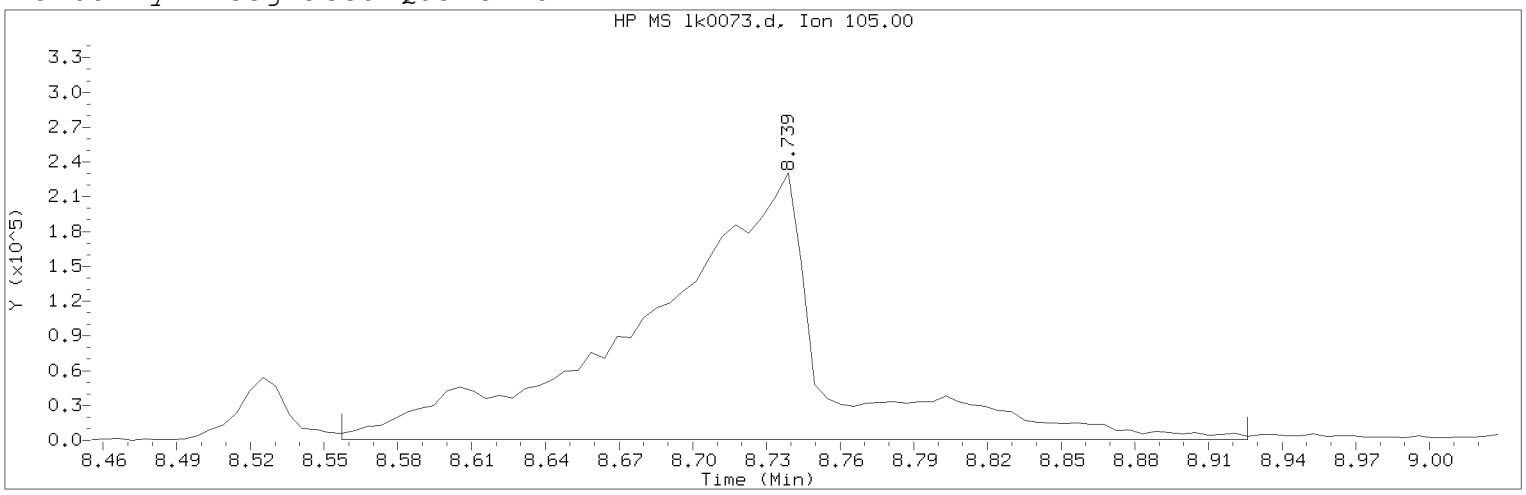
M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

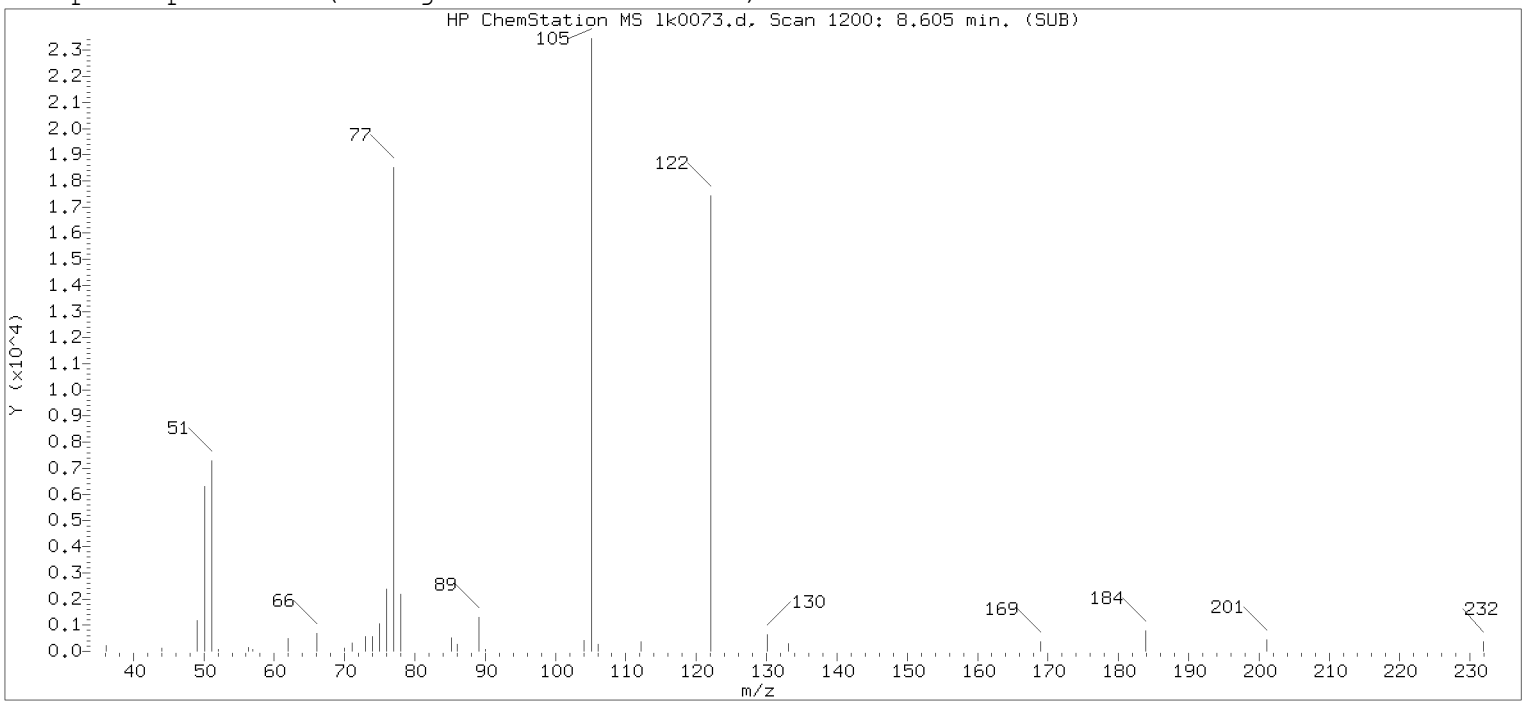
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1225
Retention Time (minutes) : 8.739
Quant Ion : 105.00
Area (flag) : 1194462M
On-Column Amount (ng/ul) : 35.7654
Integration start scan : 1190 Integration stop scan: 1259
Y at integration start : 449 Y at integration end: 449

Reason for manual integration: improper integration

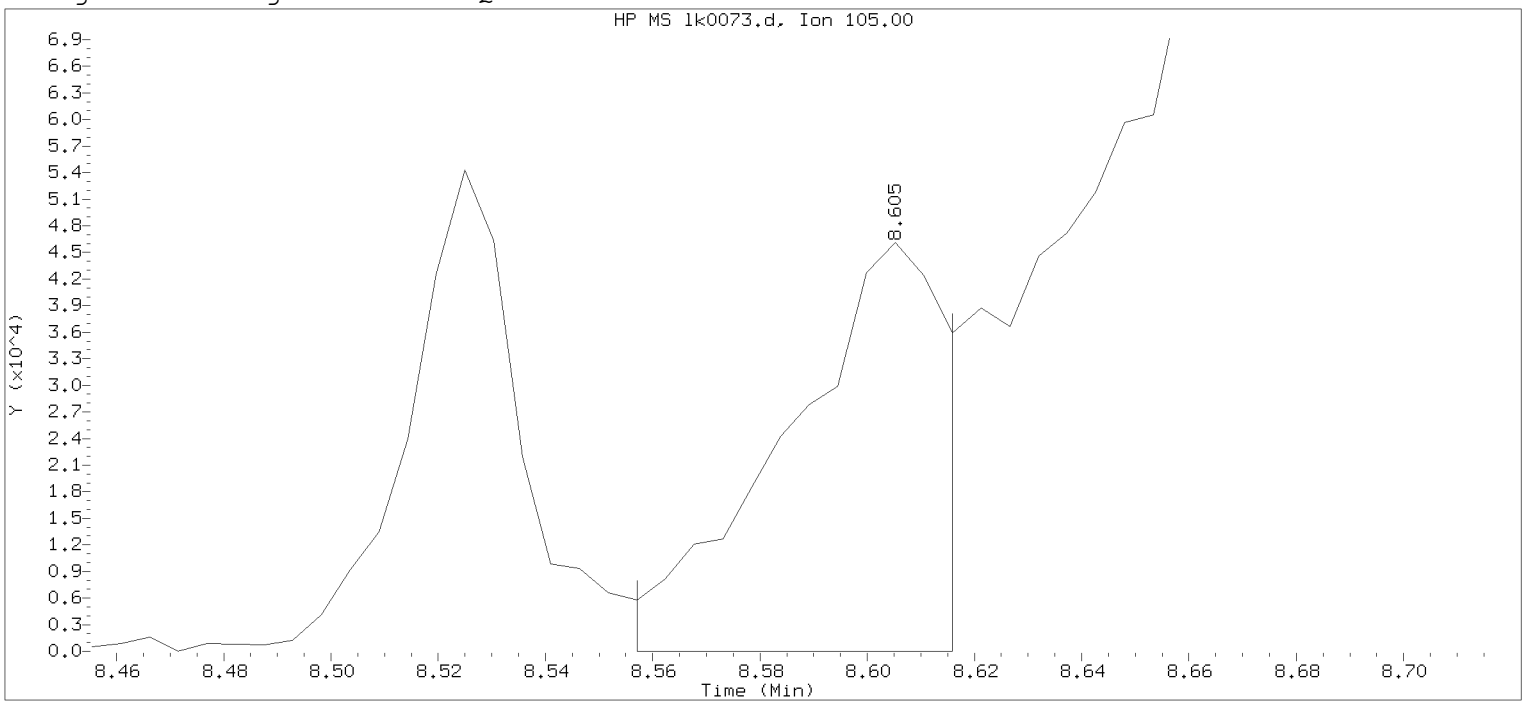
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

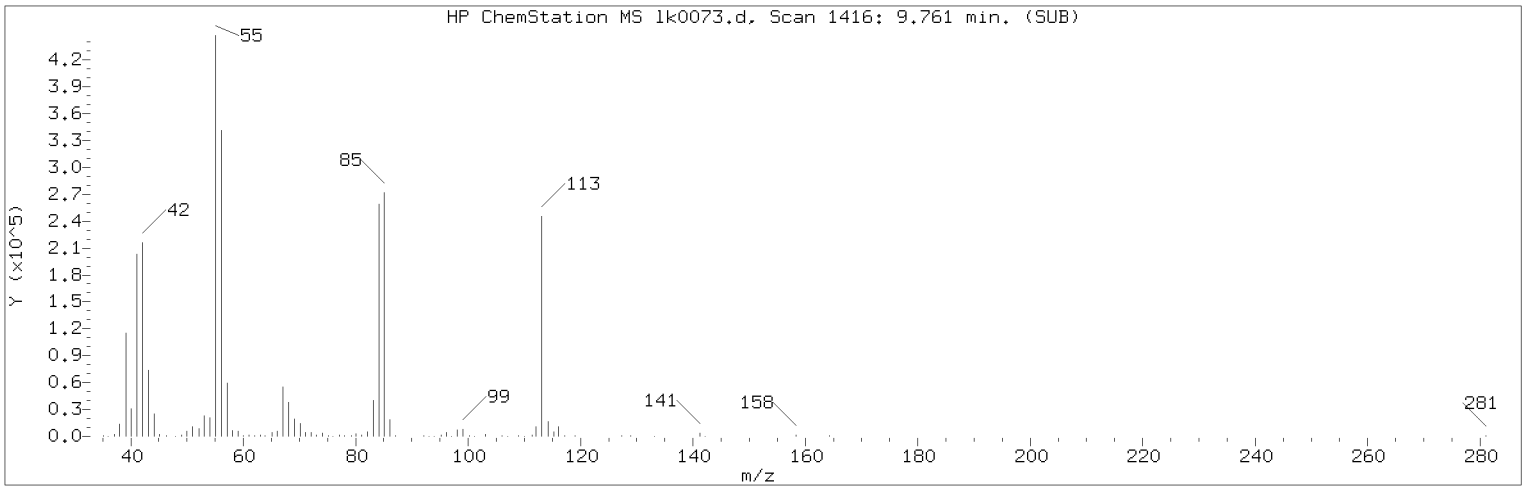
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:03
Date, time and analyst ID of latest file update: 04-Nov-2019 16:03 Unknown

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

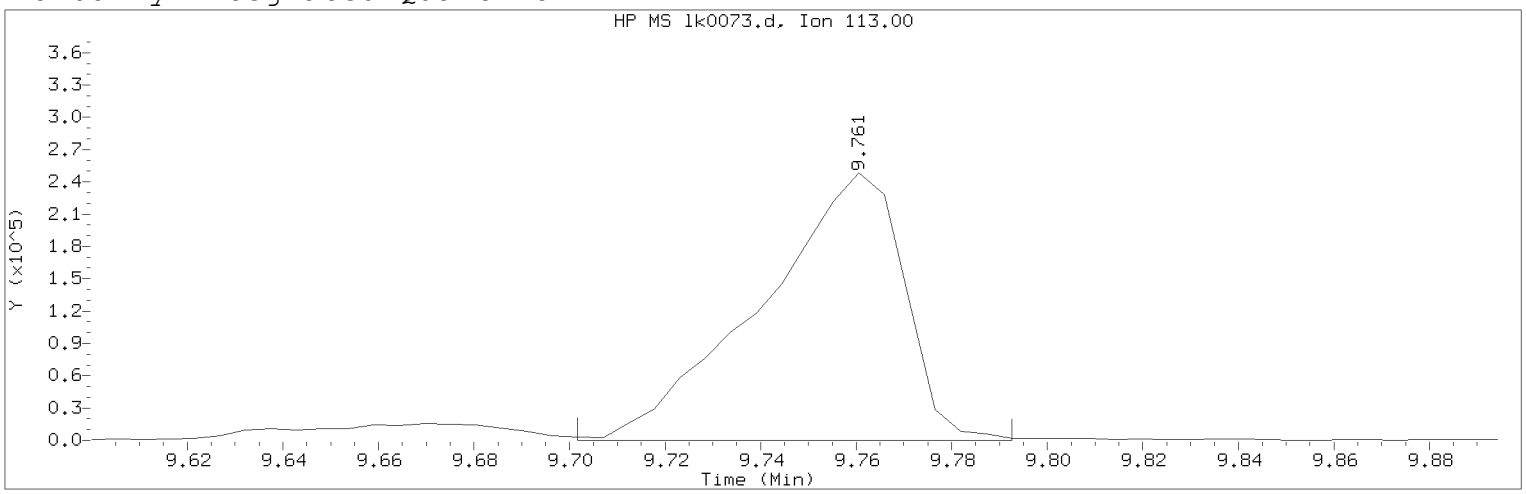
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1200		
Retention Time (minutes)	: 8.605		
Quant Ion	: 105.00		
Area	: 91624		
On-column Amount (ng/ul)	: 3.6668		
Integration start scan	: 1190	Integration stop scan:	1201
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 2021 ver

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

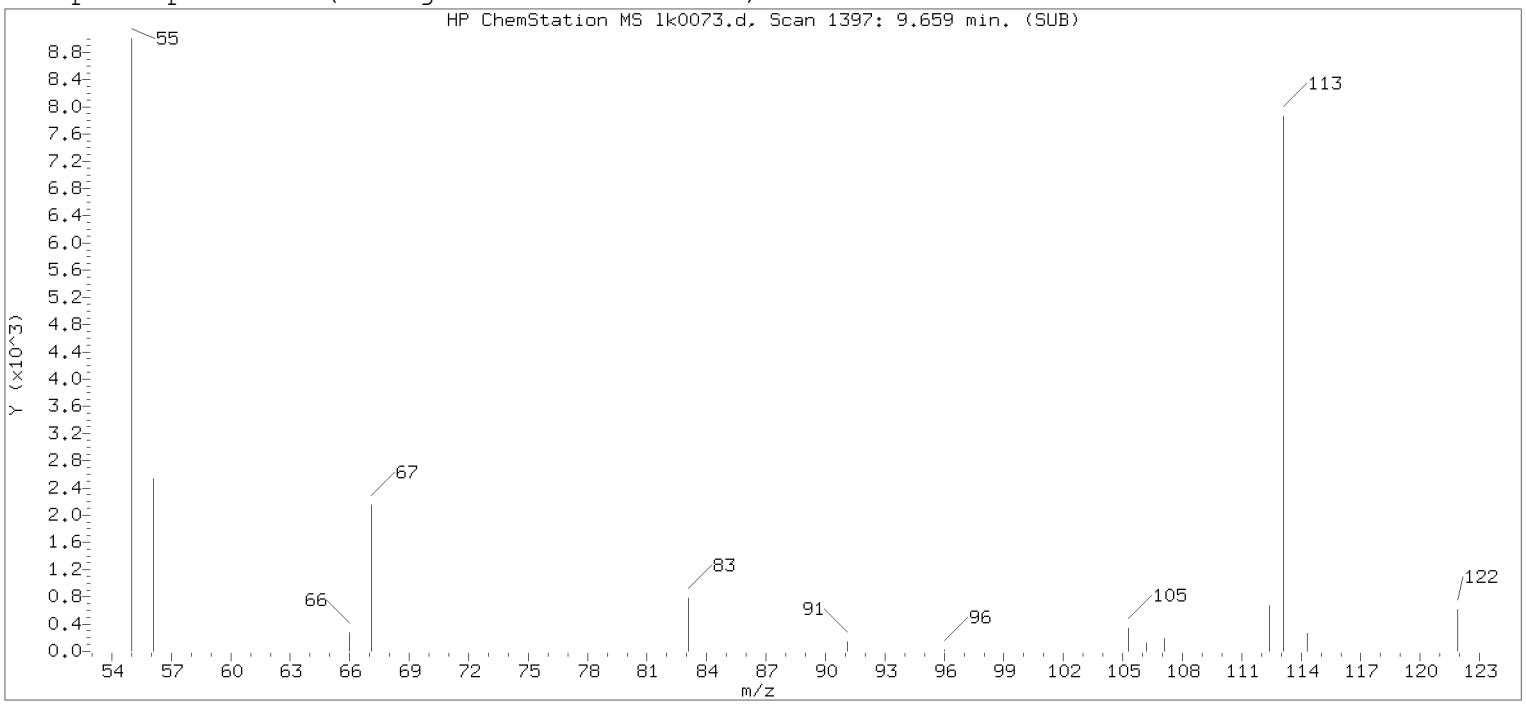
Compound Number : 79
Compound Name : Caprolactam
Scan Number : 1416
Retention Time (minutes) : 9.761
Quant Ion : 113.00
Area (flag) : 513238A
On-Column Amount (ng/ul) : 27.9941
Integration start scan : 1404 Integration stop scan: 1421
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

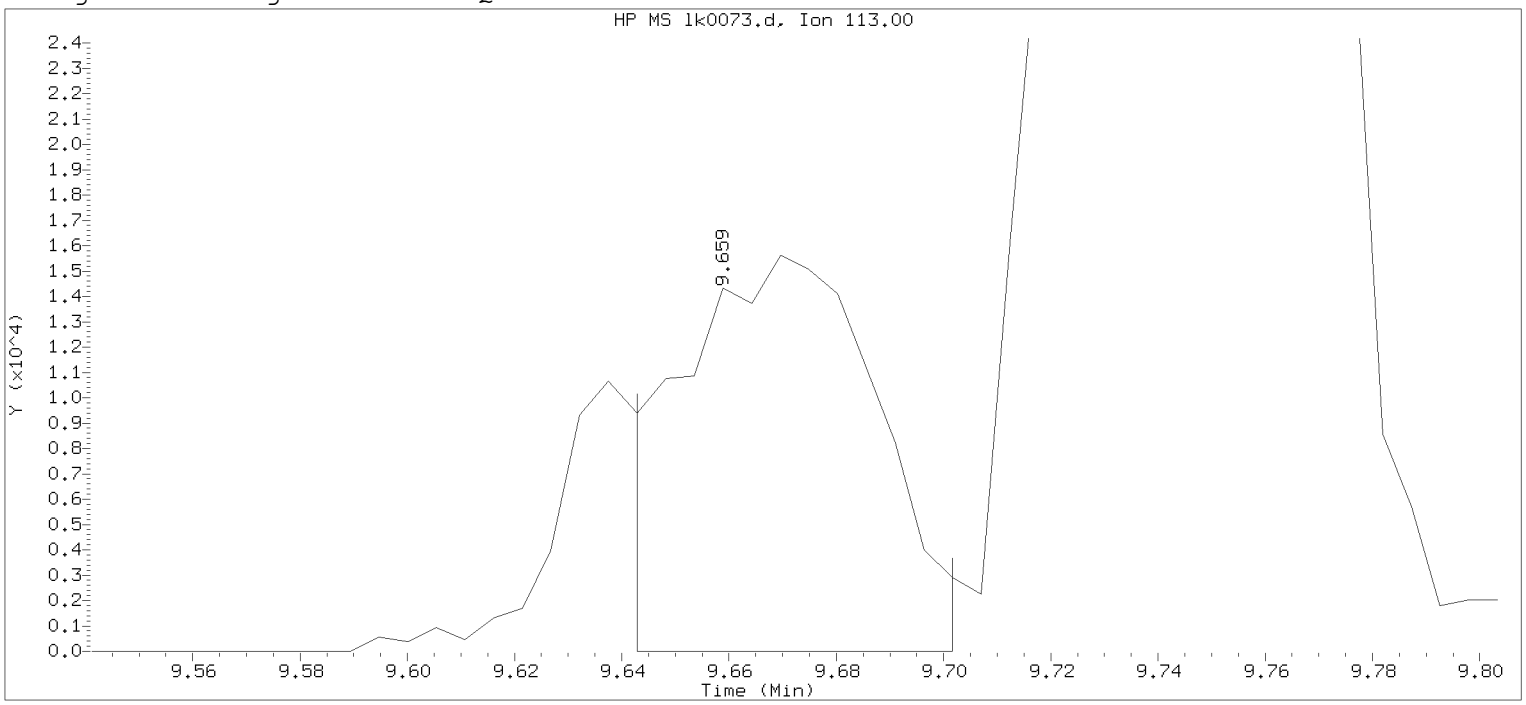
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

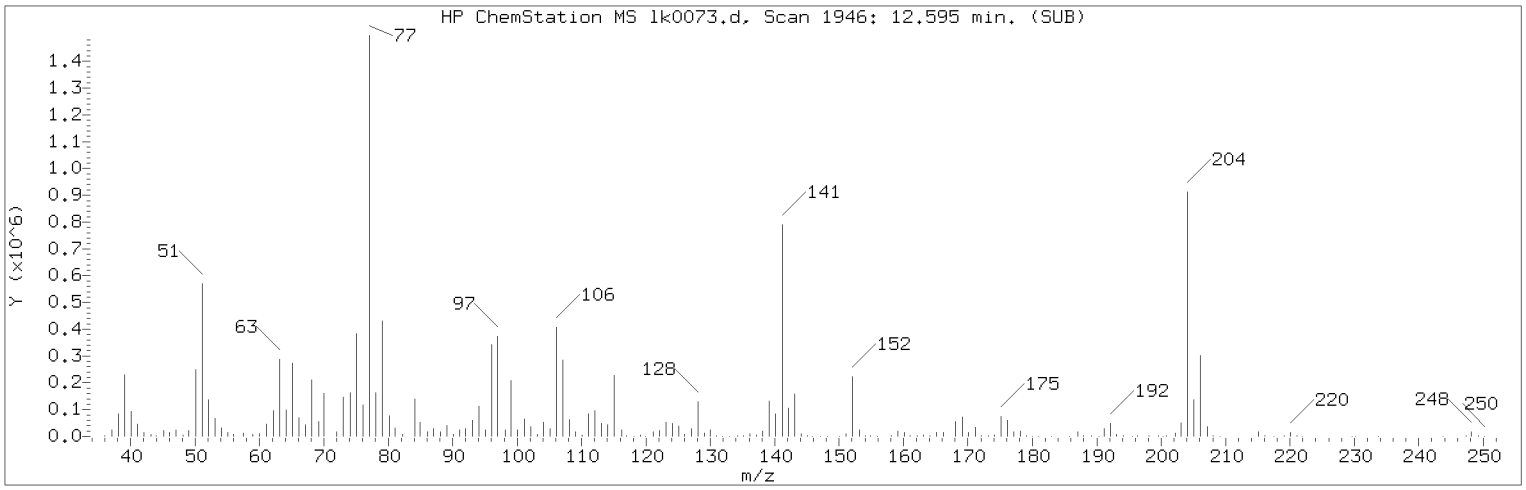
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:03
Date, time and analyst ID of latest file update: 04-Nov-2019 16:03 Unknown

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

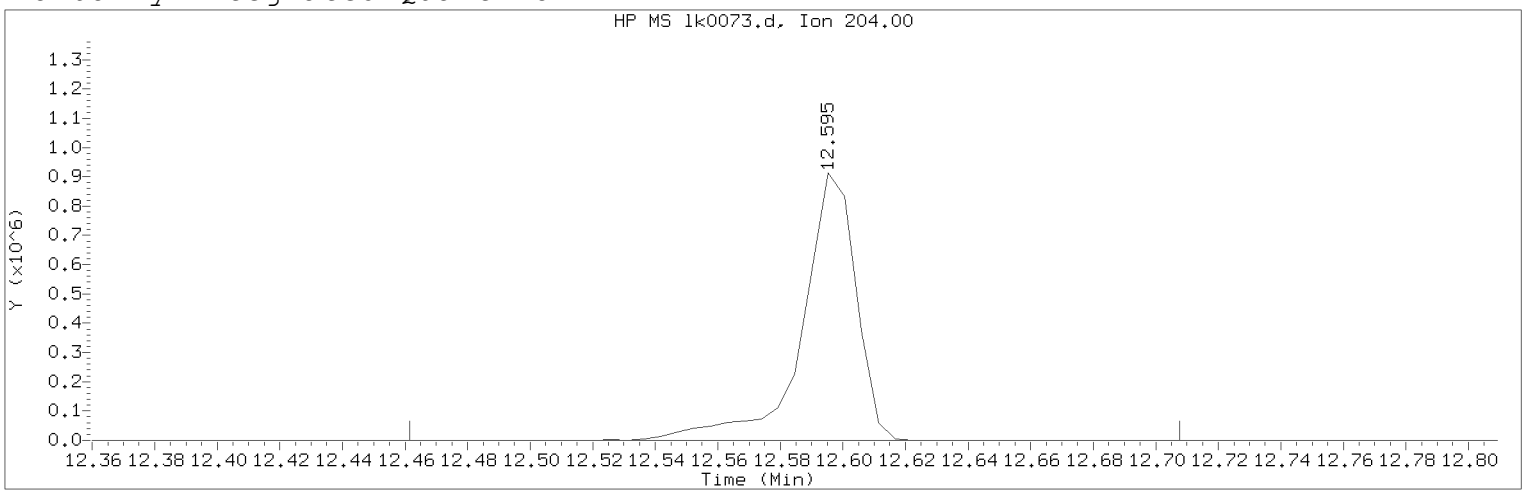
Compound Number	: 79		
Compound Name	: Caprolactam		
Scan Number	: 1397		
Retention Time (minutes)	: 9.659		
Quant Ion	: 113.00		
Area	: 39781		
On-column Amount (ng/ul)	: 2.5065		
Integration start scan	: 1393	Integration stop scan:	1404
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 8270D

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

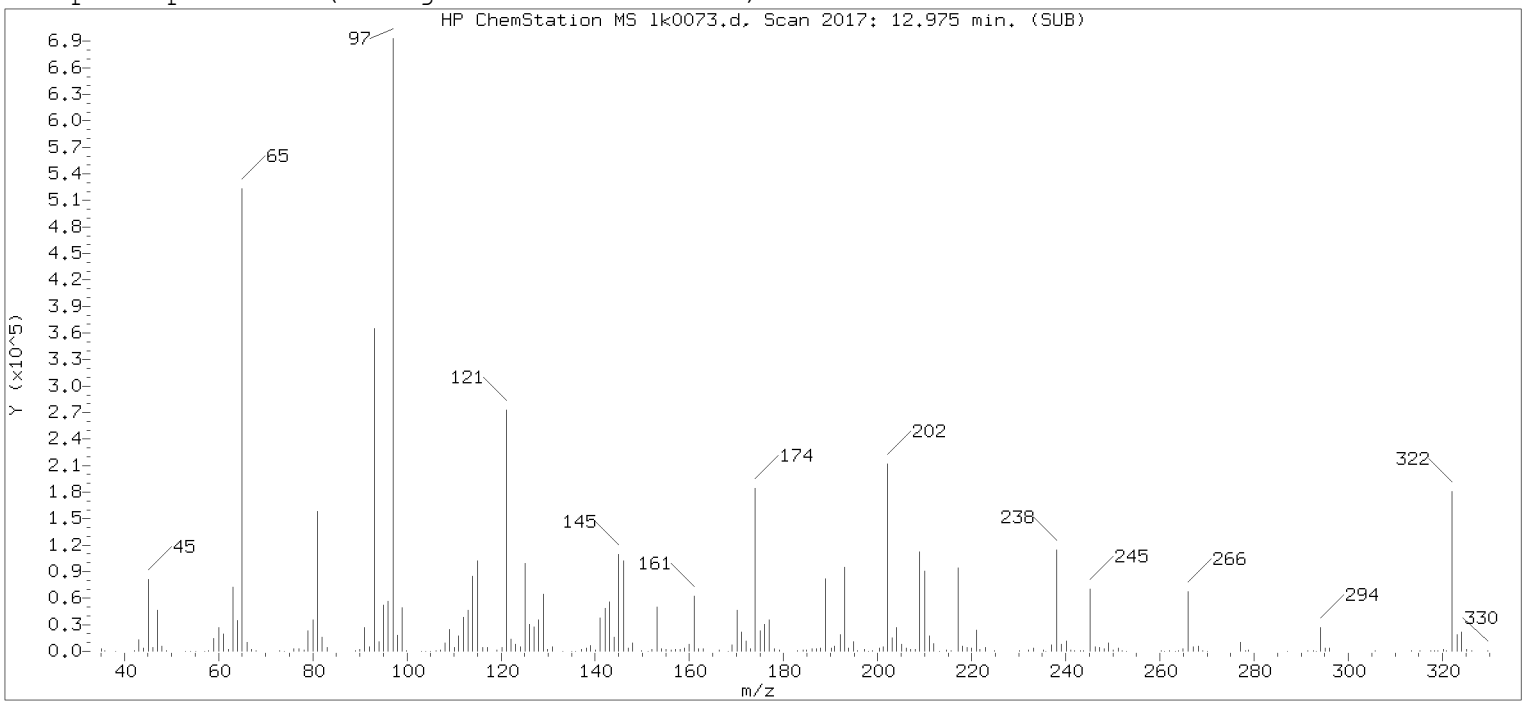
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.595
Quant Ion : 204.00
Area (flag) : 1101559M
On-Column Amount (ng/ul) : 28.0298
Integration start scan : 1920 Integration stop scan: 1966
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

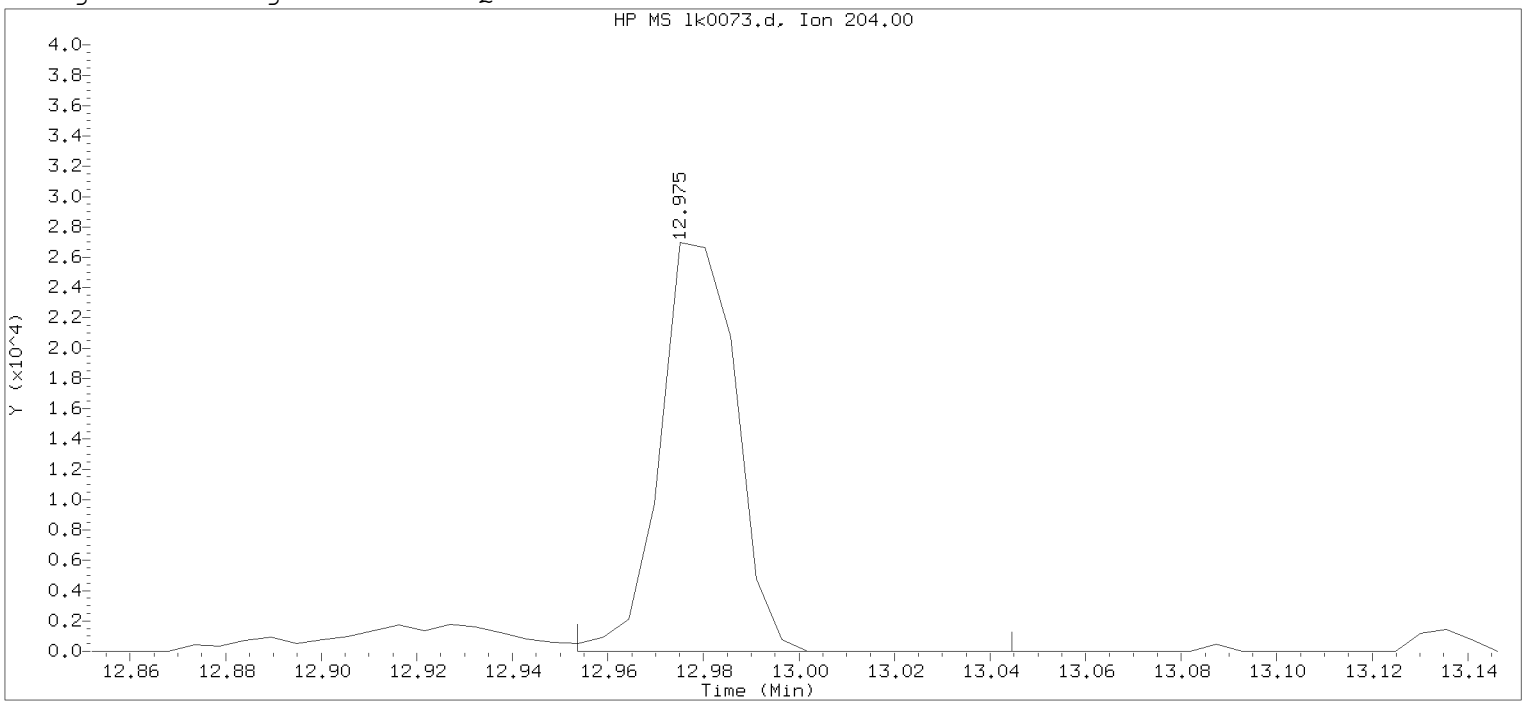
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

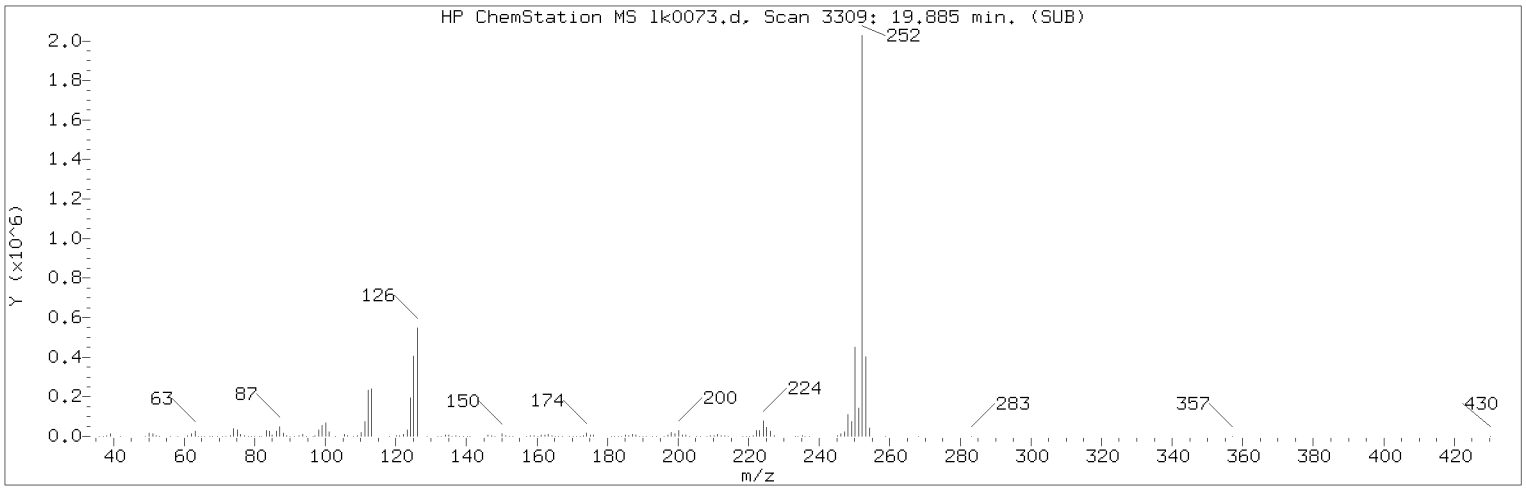
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:03
Date, time and analyst ID of latest file update: 04-Nov-2019 16:03 Unknown

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

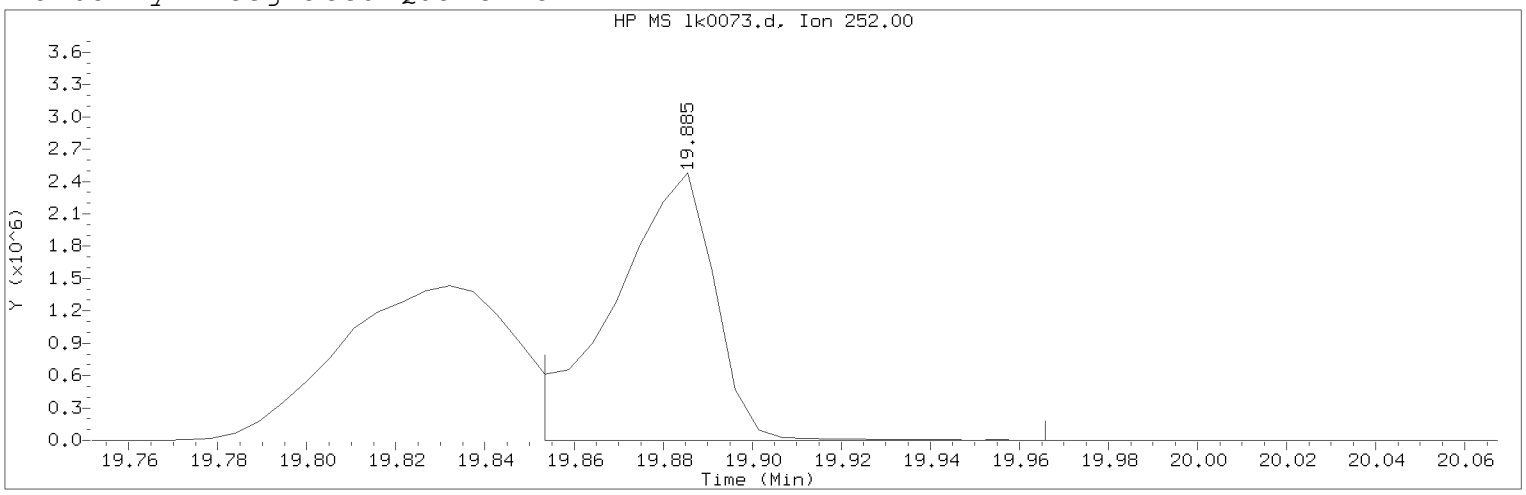
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2017		
Retention Time (minutes)	: 12.975		
Quant Ion	: 204.00		
Area	: 29816		
On-column Amount (ng/ul)	: 0.6703		
Integration start scan	: 2012	Integration stop scan:	2029
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

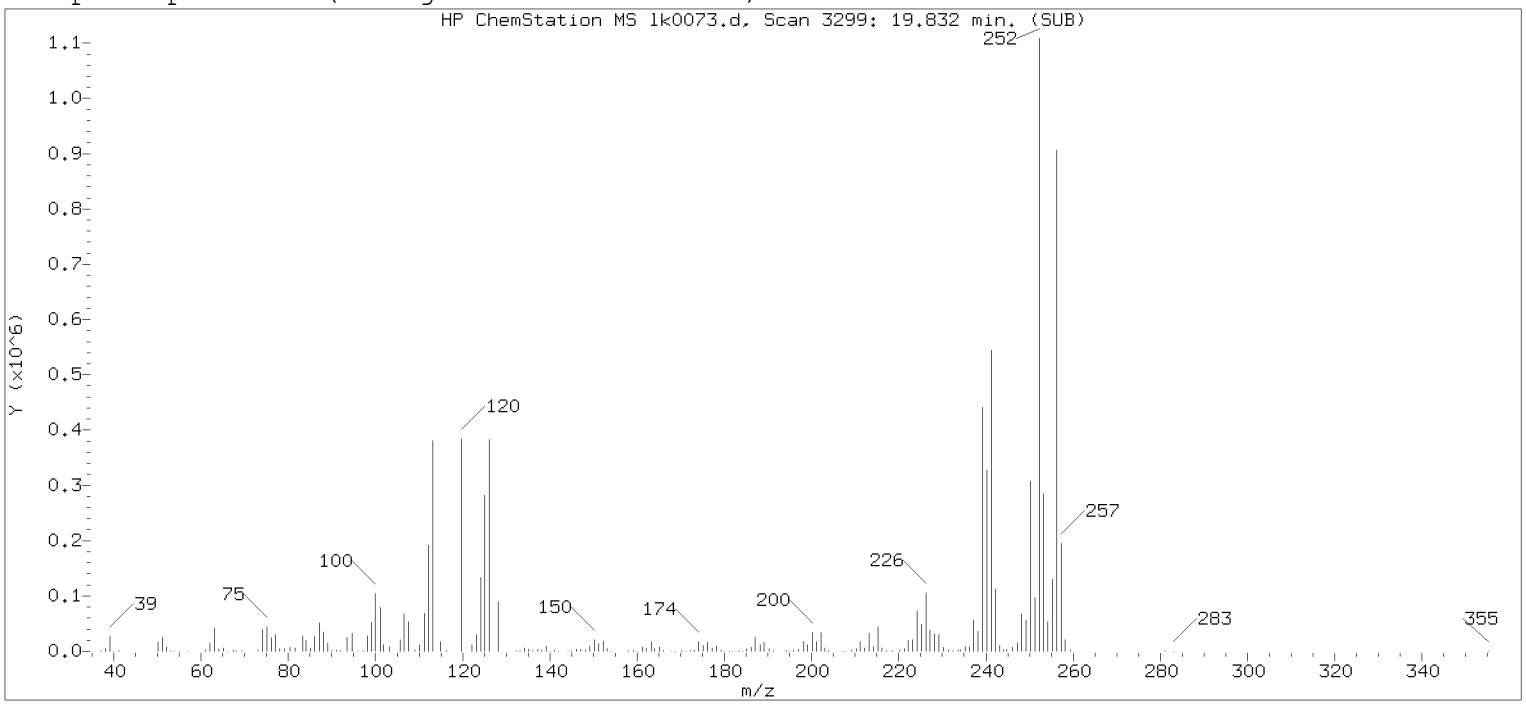
Compound Number : 213
Compound Name : Benzo(k)fluoranthene
Scan Number : 3309
Retention Time (minutes) : 19.885
Quant Ion : 252.00
Area (flag) : 3819749A
On-Column Amount (ng/ul) : 29.3241
Integration start scan : 3302 Integration stop scan: 3323
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

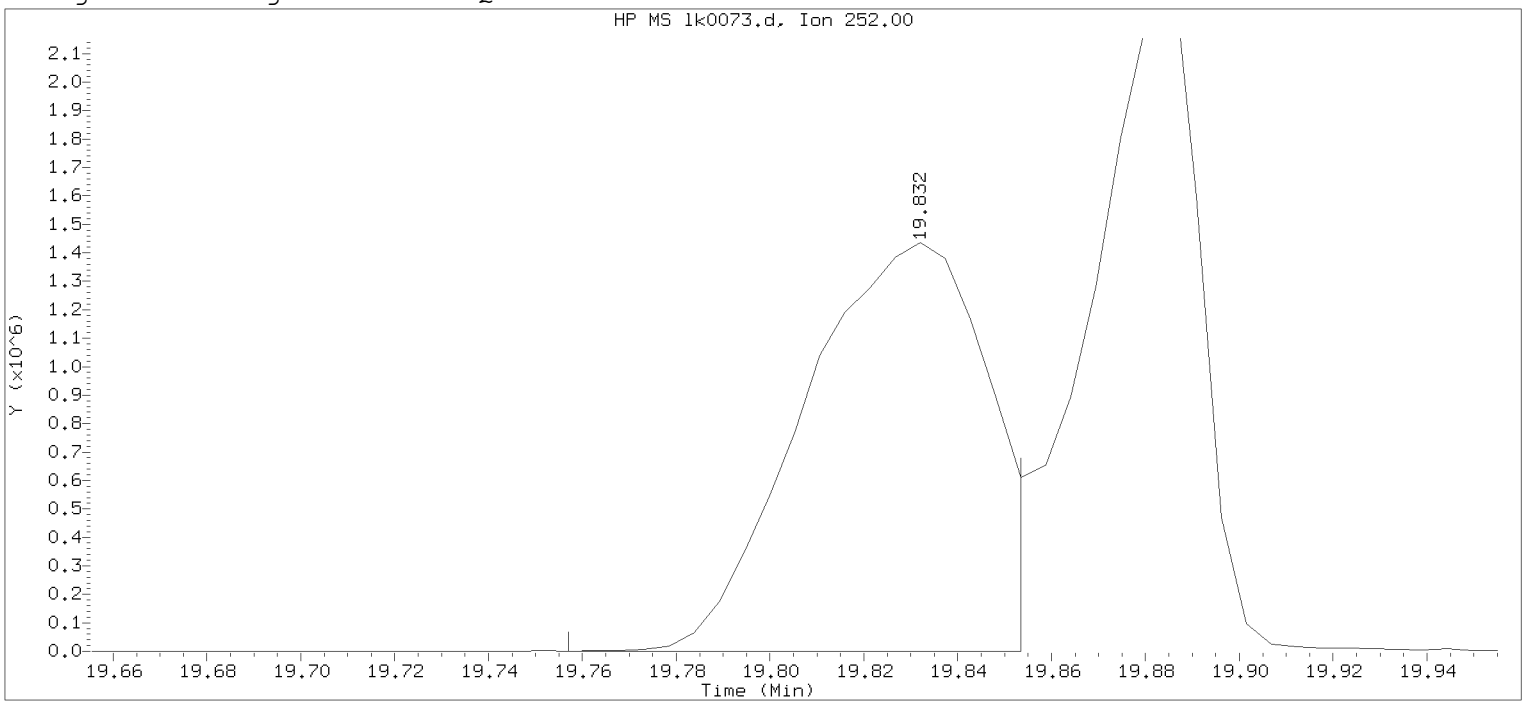
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

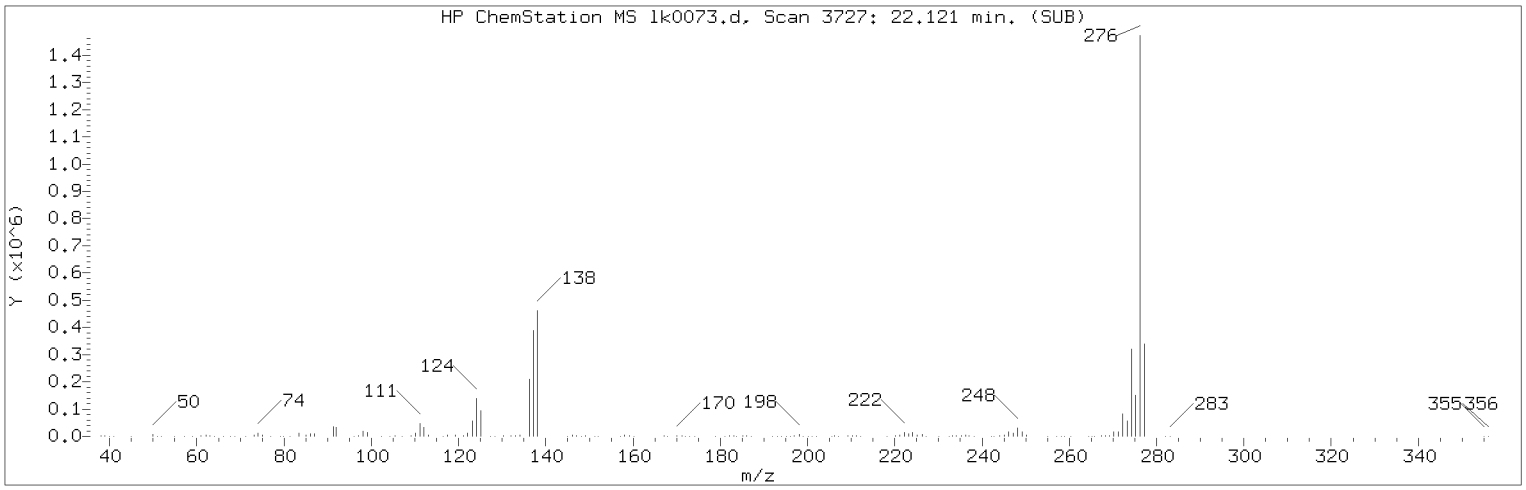
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:03
Date, time and analyst ID of latest file update: 04-Nov-2019 16:03 Unknown

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

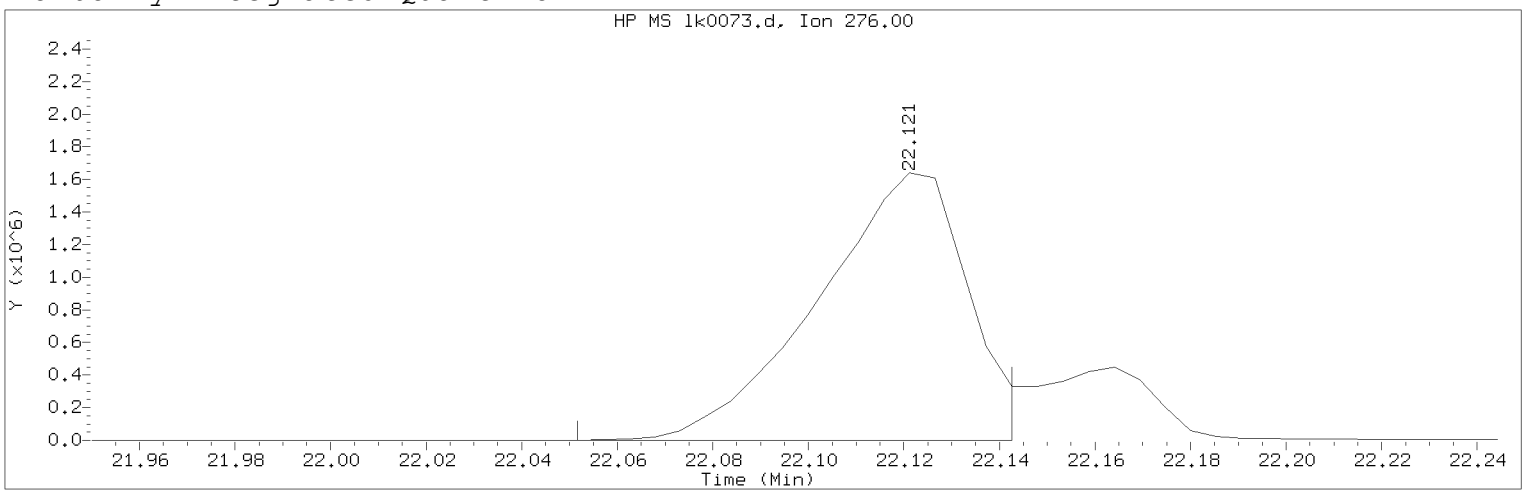
Compound Number	: 213		
Compound Name	: Benzo(k)fluoranthene		
Scan Number	: 3299		
Retention Time (minutes)	: 19.832		
Quant Ion	: 252.00		
Area	: 3857005		
On-column Amount (ng/ul)	: 0.9720		
Integration start scan	: 3284	Integration stop scan:	3302
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

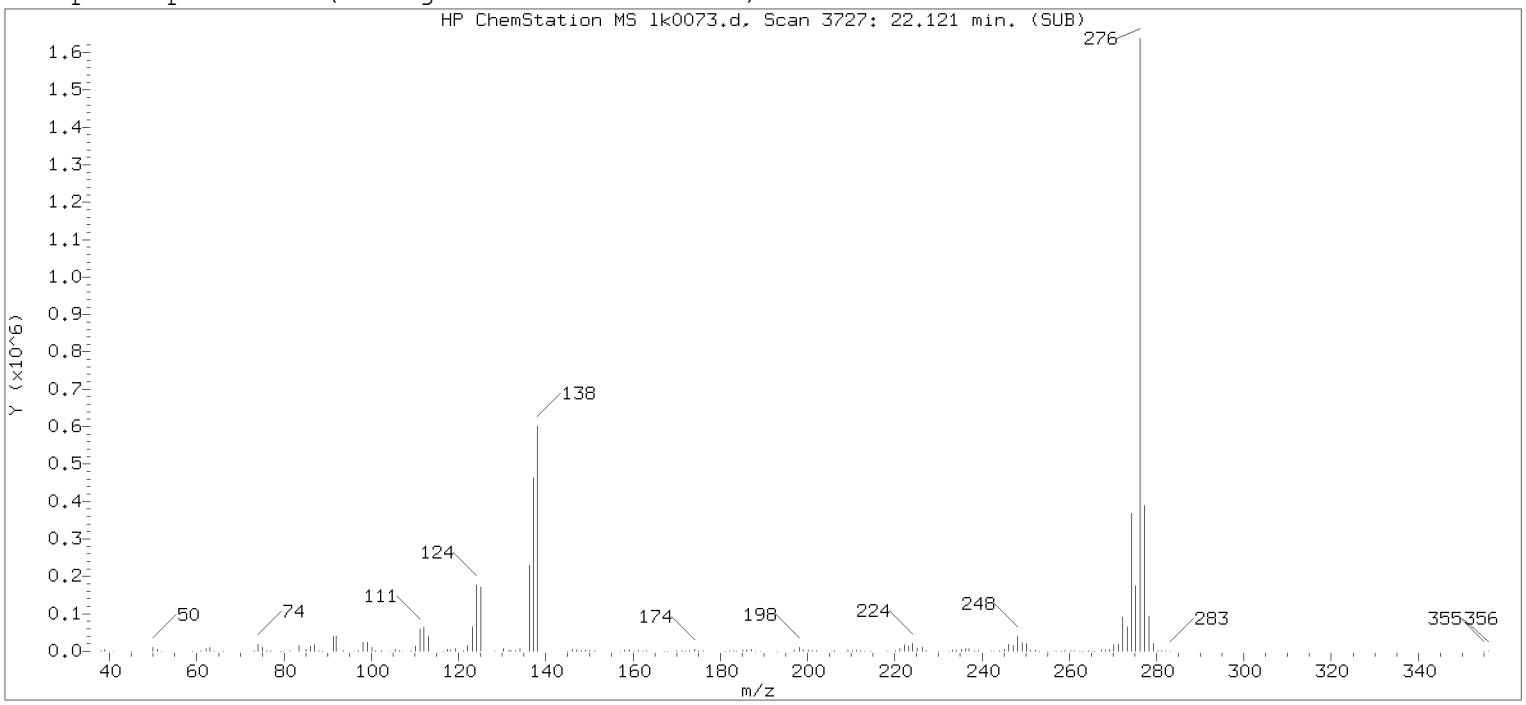
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3727
Retention Time (minutes) : 22.121
Quant Ion : 276.00
Area (flag) : 3576585M
On-Column Amount (ng/ul) : 32.4662
Integration start scan : 3713 Integration stop scan: 3730
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

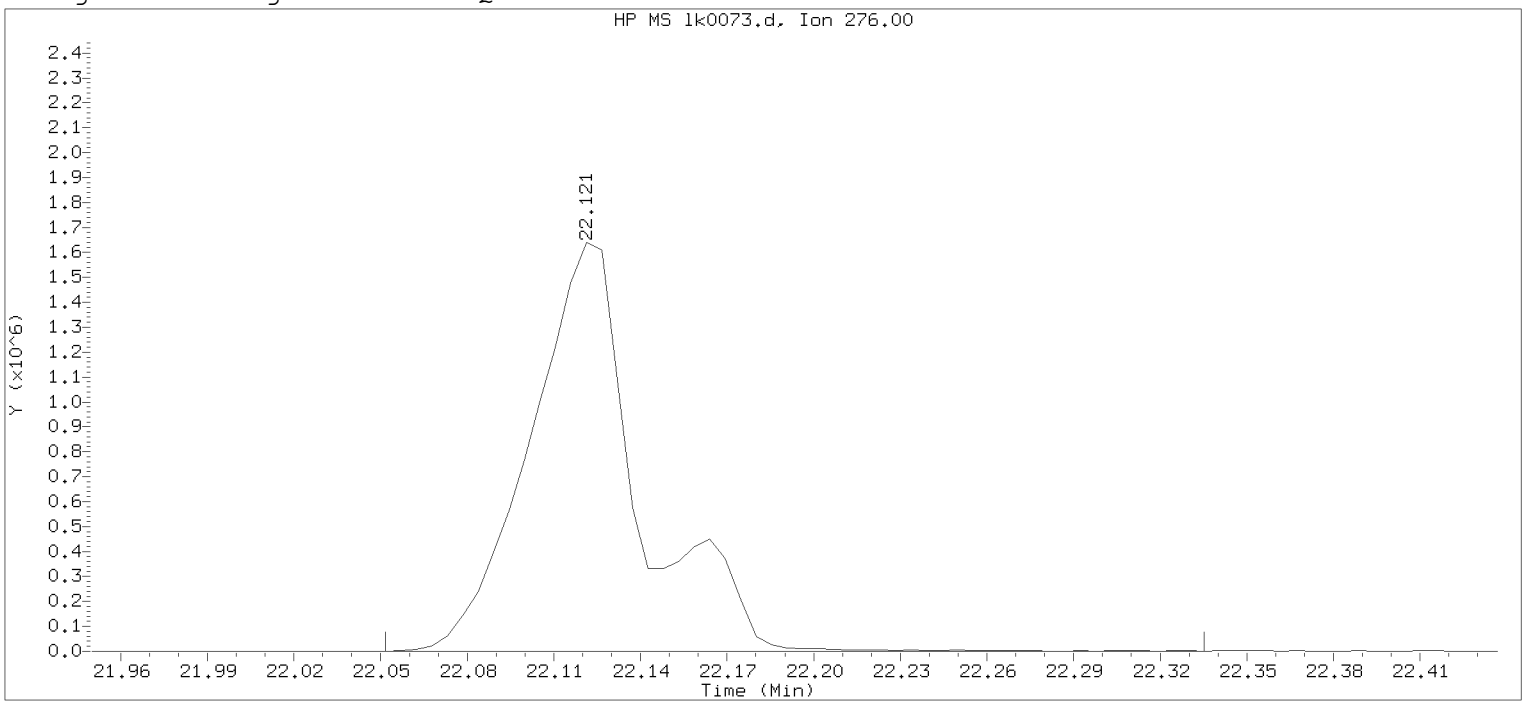
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



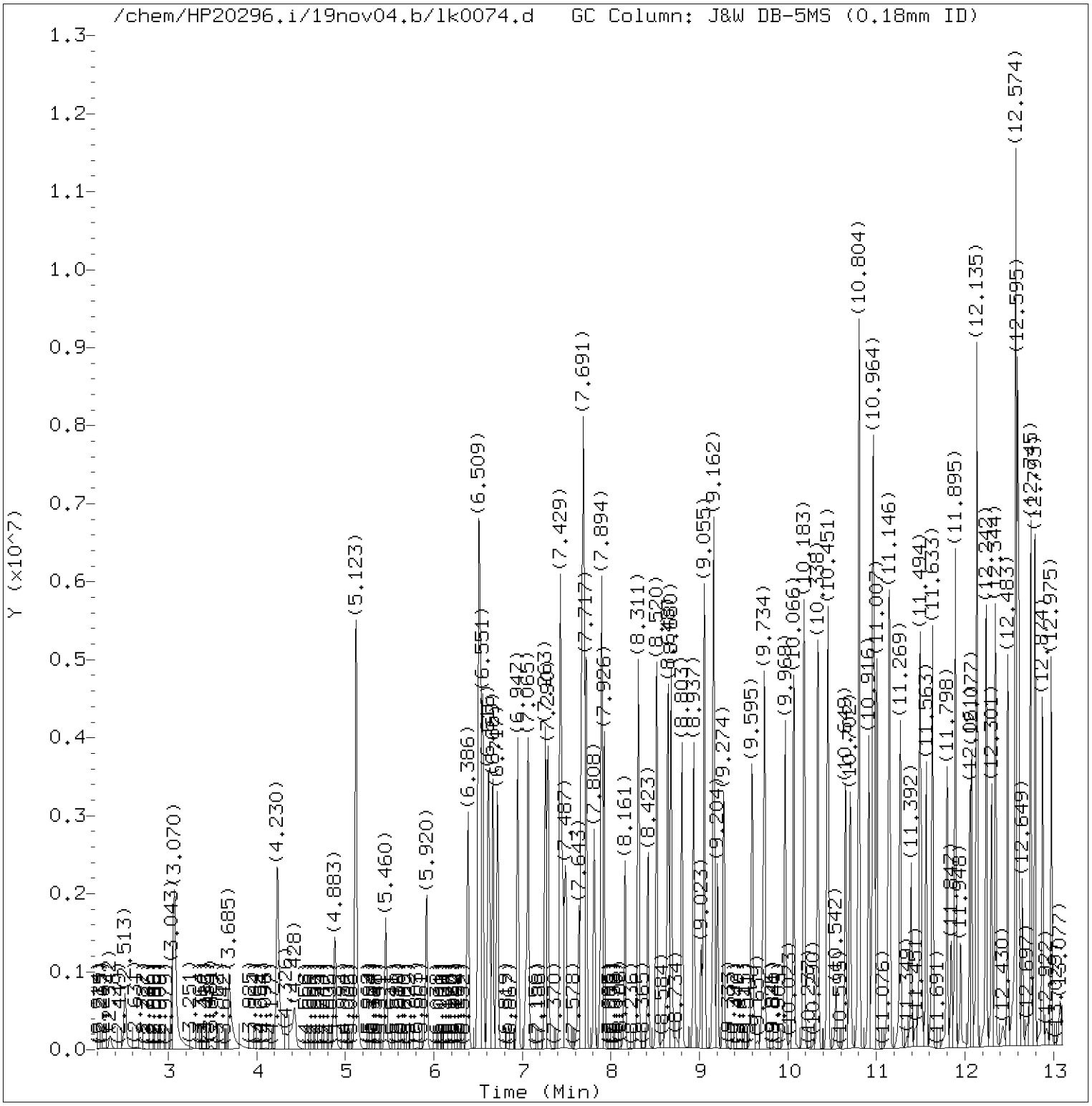
Data File: /chem/HP20296.i/19nov04.b/lk0073.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:30 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:03
Date, time and analyst ID of latest file update: 04-Nov-2019 16:03 Unknown

Sample Name: SSTD30 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3727		
Retention Time (minutes)	: 22.121		
Quant Ion	: 276.00		
Area	: 4324462		
On-column Amount (ng/ul)	: 0.9771		
Integration start scan	: 3713	Integration stop scan:	3766
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2176



Total Ion Chromatogram (TIC)

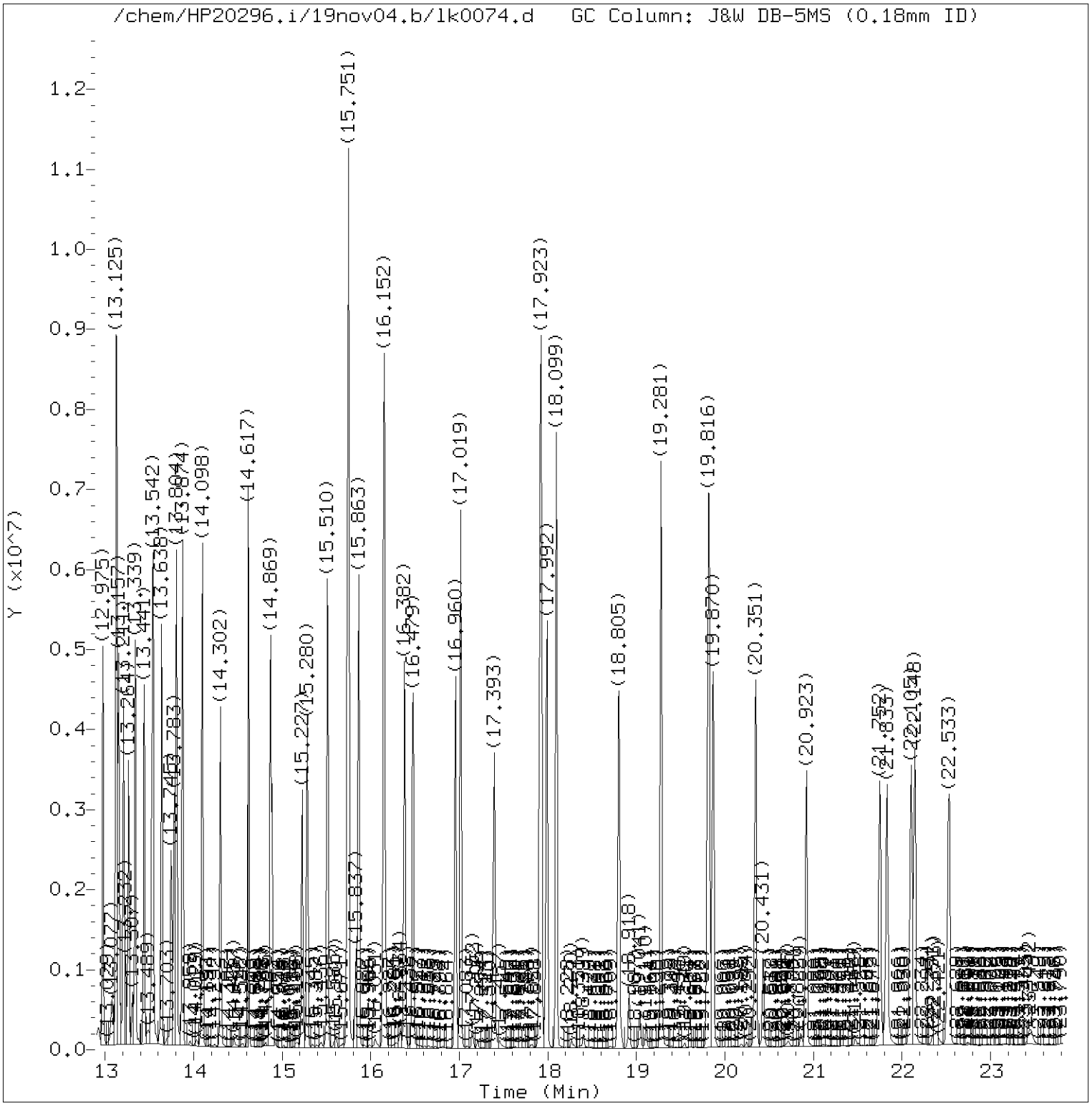
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.513	88	616397	19.610
5) N-Nitrosodimethylamine	(1)	3.043	74	1058454	19.790
6) Pyridine	(1)	3.070	79	1792473	19.709
8) 2-Picoline	(1)	4.236	93	1739449	20.298
9) N-Nitrosomethylethylamine	(1)	4.423	88	722907	20.283
10) Methyl methanesulfonate	(1)	4.883	80	849986	19.986
12)$2-Fluorophenol	(1)	5.123	112	2446920	40.434
14) N-Nitrosodiethylamine	(1)	5.460	102	668347	20.591
43) Total Cresols	(1)			2552886	39.940
16) Ethyl methanesulfonate	(1)	5.920	109	679911	20.420
17) Benzaldehyde	(1)	6.386	77	1131316	18.400
18)$Phenol-d6	(1)	6.509	99	3532644	40.522
19) Phenol	(1)	6.530	94	2076349	19.899
20) Aniline	(1)	6.551	93	2471956	20.064
21) a-methylstyrene	(1)	6.632	118	477536	19.469
23) bis(2-Chloroethyl)ether	(1)	6.669	93	1597842	19.787
24) 2-Chlorophenol	(1)	6.717	128	1099930	20.339
25) 1,3-Dichlorobenzene	(1)	6.947	146	1076045	19.508
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	162229	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	1083300	19.671
28) Benzyl alcohol	(1)	7.263	108	858649	20.020
29) 1,2-Dichlorobenzene	(1)	7.290	146	1042199	19.324
100) Isosafrole	(3)			782383	20.181
31) Indene	(1)	7.429	115	1899025	19.535
32) 2-Methylphenol	(1)	7.439	108	1257638	20.572
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.487	45	1792949	19.861
35) bis(2-Chloroisopropyl)ether	(1)	7.487	45	1792949	19.861
36) N-Nitrosopyrrolidine	(1)	7.643	100	766505	20.780
37) Acetophenone	(1)	7.669	105	1990920	19.645
38) 4-Methylphenol	(1)	7.691	108	1295248	19.369
39) N-Nitroso-di-n-propylamine	(1)	7.696	70	1302943	19.608
40) N-Nitrosomorpholine	(1)	7.707	56	835448	19.823
41) o-Toluidine	(1)	7.723	106	2190677	20.120
44) Hexachloroethane	(1)	7.808	117	571823	20.015
45)$Nitrobenzene-d5	(2)	7.894	82	3542781	40.301
46) Nitrobenzene	(2)	7.926	77	1907366	20.208
125) 2,4_2,6-Dinitrotoluenes	(3)			897923	42.369
50) N-Nitrosopiperidine	(2)	8.161	114	648140	20.650
52) Isophorone	(2)	8.311	82	3397989	20.177
53) 2-Nitrophenol	(2)	8.423	139	462542	22.829

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.520	107	1385624	19.568
59) O,O,O-Triethylphosphorothioate	(2)	8.648	198	379617	20.106
57) bis(2-Chloroethoxy)methane	(2)	8.680	93	1956455	19.337
58) Benzoic acid	(2)	8.691	105	677264M	22.623
151) Diallate trans/cis	(4)			1448753	19.373
62) 2,4-Dichlorophenol	(2)	8.803	162	763671	20.545
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	762290	19.671
68)*Naphthalene-d8	(2)	9.023	136	686191	5.000
69) Naphthalene	(2)	9.055	128	3165582	19.722
70) 4-Chloroaniline	(2)	9.162	127	1327652	20.120
71) 2,6-Dichlorophenol	(2)	9.167	162	709174	20.283
72) Hexachloropropene	(2)	9.204	213	370621	20.124
74) Hexachlorobutadiene	(2)	9.279	225	364518	18.936
78) Quinoline	(2)	9.595	129	1936347	19.994
79) Caprolactam	(2)	9.729	113	307101A	18.686
80) N-Nitrosodi-n-butylamine	(2)	9.739	84	1489247	22.970
83) 4-Chloro-3-methylphenol	(2)	9.969	107	1198529	20.608
85) Safrole	(2)	10.066	162	674752	20.361
86) 2-Methylnaphthalene	(2)	10.183	142	1897615	20.162
87) 1-Methylnaphthalene	(2)	10.338	142	1792952	19.608
88) Hexachlorocyclopentadiene	(3)	10.451	237	382928	19.996
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.456	216	644927	19.582
91) cis-Isosafrole	(3)	10.542	162	124424	3.334
93) 2,4,6-Trichlorophenol	(3)	10.649	196	453342	21.348
95) 2,4,5-Trichlorophenol	(3)	10.702	196	490092	21.405
96)$2-Fluorobiphenyl	(3)	10.804	172	3437368	39.108
97) trans-Isosafrole	(3)	10.916	162	657959	16.848
98) 1,1'-Biphenyl	(3)	10.959	154	2079485	19.270
99) 2-Chloronaphthalene	(3)	10.975	162	1757579	20.133
101) 1-Chloronaphthalene	(3)	11.007	162	1478514	19.451
103) Diphenyl ether	(3)	11.141	170	1026267	19.406
104) 2-Nitroaniline	(3)	11.157	138	605904	21.893
108) 1,4-Naphthoquinone	(3)	11.269	158	726325	20.483
109) 1,4-Dinitrobenzene	(3)	11.392	168	235377	24.455
110) Dimethylphthalate	(3)	11.494	163	1706412	18.861
111) 1,3-Dinitrobenzene	(3)	11.510	168	266488	22.631
113) 2,6-Dinitrotoluene	(3)	11.563	165	409419	21.927
114) Acenaphthylene	(3)	11.633	152	2661678	20.521
117) 3-Nitroaniline	(3)	11.798	138	524451	21.533
118)*Acenaphthene-d10	(3)	11.847	164	287870	5.000

M = Compound was manually integrated.
A = User selected an alternate hit.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.895	153	1760543	19.723
120) 2,4-Dinitrophenol	(3)	11.954	184	108924	20.322
121) 4-Nitrophenol	(3)	12.061	109	429919	21.755
122) Pentachlorobenzene	(3)	12.077	250	518774	19.307
124) Dibenzofuran	(3)	12.135	168	2137849	19.551
123) 2,4-Dinitrotoluene	(3)	12.141	165	488504	20.442
126) 1-Naphthylamine	(3)	12.242	143	1868041	20.694
127) 2,3,4,6-Tetrachlorophenol	(3)	12.301	232	308229	22.119
128) 2-Naphthylamine	(3)	12.344	143	1770015	20.353
129) Diethylphthalate	(3)	12.483	149	1875764	19.157
131) Fluorene	(3)	12.574	166	1692989	19.005
130) Thionazin	(3)	12.579	107	486159	19.550
132) 4-Chlorophenyl-phenylether	(3)	12.595	204	692779M	19.891
133) 5-Nitro-o-toluidine	(3)	12.601	152	510738	20.134
134) 4-Nitroaniline	(3)	12.611	138	515479	21.123
135) 4,6-Dinitro-2-methylphenol	(4)	12.649	198	171356	23.209
137) NDPA as diphenylamine	(4)	12.745	169	1420576	19.056
136) N-Nitrosodiphenylamine	(4)	12.745	169	1420576	19.056
139) 1,2-Diphenylhydrazine	(4)	12.793	77	3564132	19.093
140)$2,4,6-Tribromophenol	(3)	12.879	332	369447	42.917
142) Tetraethyldithiopyrophosphate	(4)	12.975	97	535374	19.435
145) Diallate (peak 1)	(4)	13.120	86	1232425	16.083
146) Phorate	(4)	13.130	75	2290821	19.900
147) Phenacetin	(4)	13.157	108	1527173	21.061
148) 4-Bromophenyl-phenylether	(4)	13.211	248	353452	19.802
149) Diallate (peak 2)	(4)	13.232	86	216328	3.290
150) Hexachlorobenzene	(4)	13.264	284	419579	19.839
152) Dimethoate	(4)	13.339	87	1415522	20.750
153) Atrazine	(4)	13.441	200	368002	18.456
154) Pentachlorophenol	(4)	13.526	266	225727	21.087
155) 4-Aminobiphenyl	(4)	13.542	169	1095910	20.023
156) Pentachloronitrobenzene	(4)	13.542	237	173881	20.134
157) Pronamide	(4)	13.638	173	848757	20.398
158)*Phenanthrene-d10	(4)	13.772	188	496202	5.000
159) Dinoseb	(4)	13.788	211	256691	19.808
160) Phenanthrene	(4)	13.810	178	2505355	20.431
162) Anthracene	(4)	13.874	178	2483829	20.465
168) Carbazole	(4)	14.098	167	2437160	20.043
169) Methyl parathion	(4)	14.302	109	946370	22.035
170) Di-n-butylphthalate	(4)	14.617	149	3656955	20.401

M = Compound was manually integrated.
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Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

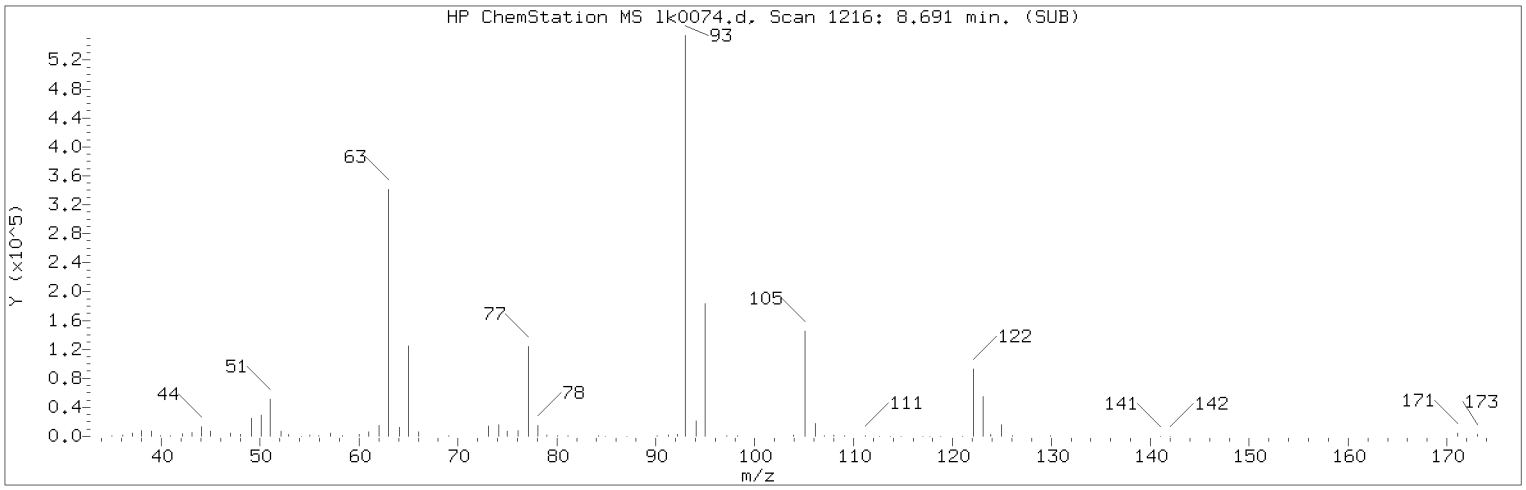
Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.863	109	620491	22.180
173) 4-Nitroquinoline-1-oxide	(4)	14.890	190	268250	20.496
227) Total PAHs	(6)			40730450	366.310
174) Octachlorostyrene	(4)	15.227	308	160655	18.835
176) Isodrin	(4)	15.286	193	290863	19.528
178) Fluoranthene	(4)	15.510	202	2554450	20.702
179) Benzidine	(5)	15.751	184	5316854	60.576
180)*Pyrene-d10	(5)	15.831	212	466938	5.000
182) Pyrene	(5)	15.863	202	2649232	20.170
184)$Terphenyl-d14	(5)	16.152	244	2912490	40.250
187) p-Dimethylaminoazobenzene	(5)	16.382	225	388210	20.992
190) Chlorobenzilate	(5)	16.479	139	1227257	20.999
192) 3,3'-Dimethylbenzidine	(5)	16.960	212	1698127	20.808
193) Butylbenzylphthalate	(5)	17.019	149	1703084	21.483
196) 2-Acetylaminofluorene	(5)	17.393	181	1186770	21.935
198) 3,3'-Dichlorobenzidine	(5)	17.912	252	876463	20.486
200) Benzo(a)anthracene	(5)	17.923	228	2265091	20.993
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.928	231	437884	20.212
201) Chrysene	(5)	17.992	228	2288006	20.809
204) bis(2-Ethylhexyl)phthalate	(5)	18.099	149	2482990	21.186
208) 6-Methylchrysene	(5)	18.805	242	1606130	20.843
210) Di-n-octylphthalate	(6)	19.281	149	4477110	21.264
211) Benzo(b)fluoranthene	(6)	19.816	252	2315018	20.450
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.821	256	968531	20.157
213) Benzo(k)fluoranthene	(6)	19.870	252	2239802	19.687
216) Benzo(a)pyrene	(6)	20.351	252	2215754	21.003
218)*Perylene-d12	(6)	20.431	264	444594	5.000
220) 3-Methylcholanthrene	(6)	20.923	268	996966	20.749
222) Dibenz(a,h)acridine	(6)	21.752	279	1797452	20.397
223) Dibenz(a,j)acridine	(6)	21.833	279	1765478	20.161
224) Indeno(1,2,3-cd)pyrene	(6)	22.105	276	2077175M	21.588
225) Dibenz(a,h)anthracene	(6)	22.148	278	2099042	20.861
226) Benzo(g,h,i)perylene	(6)	22.533	276	2066337	20.408

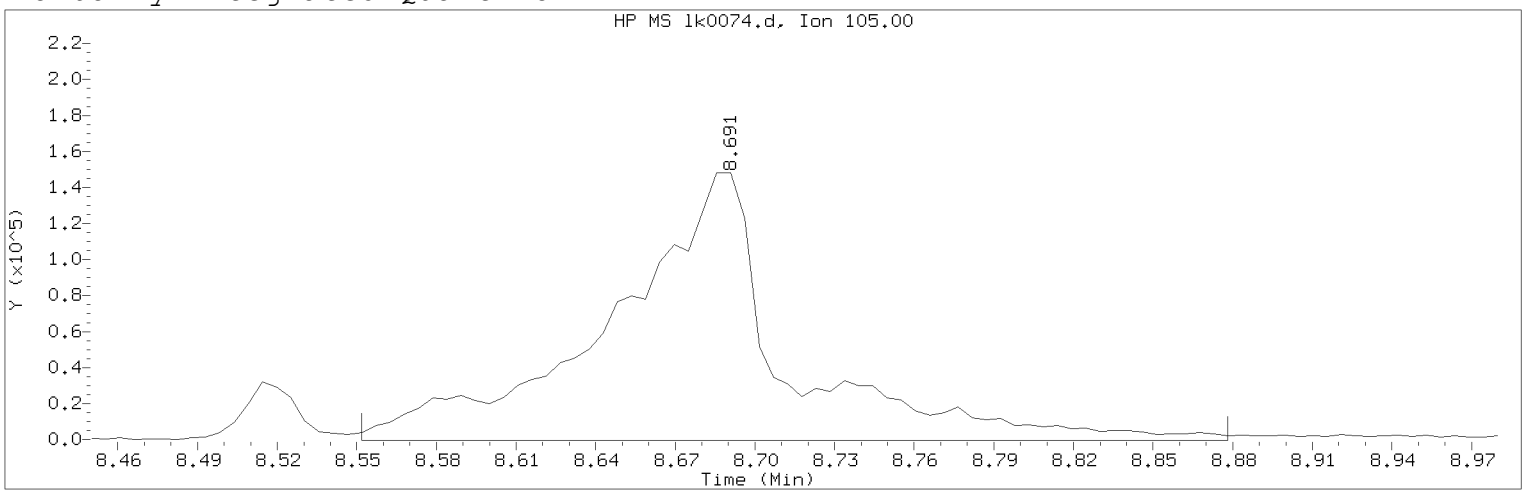
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

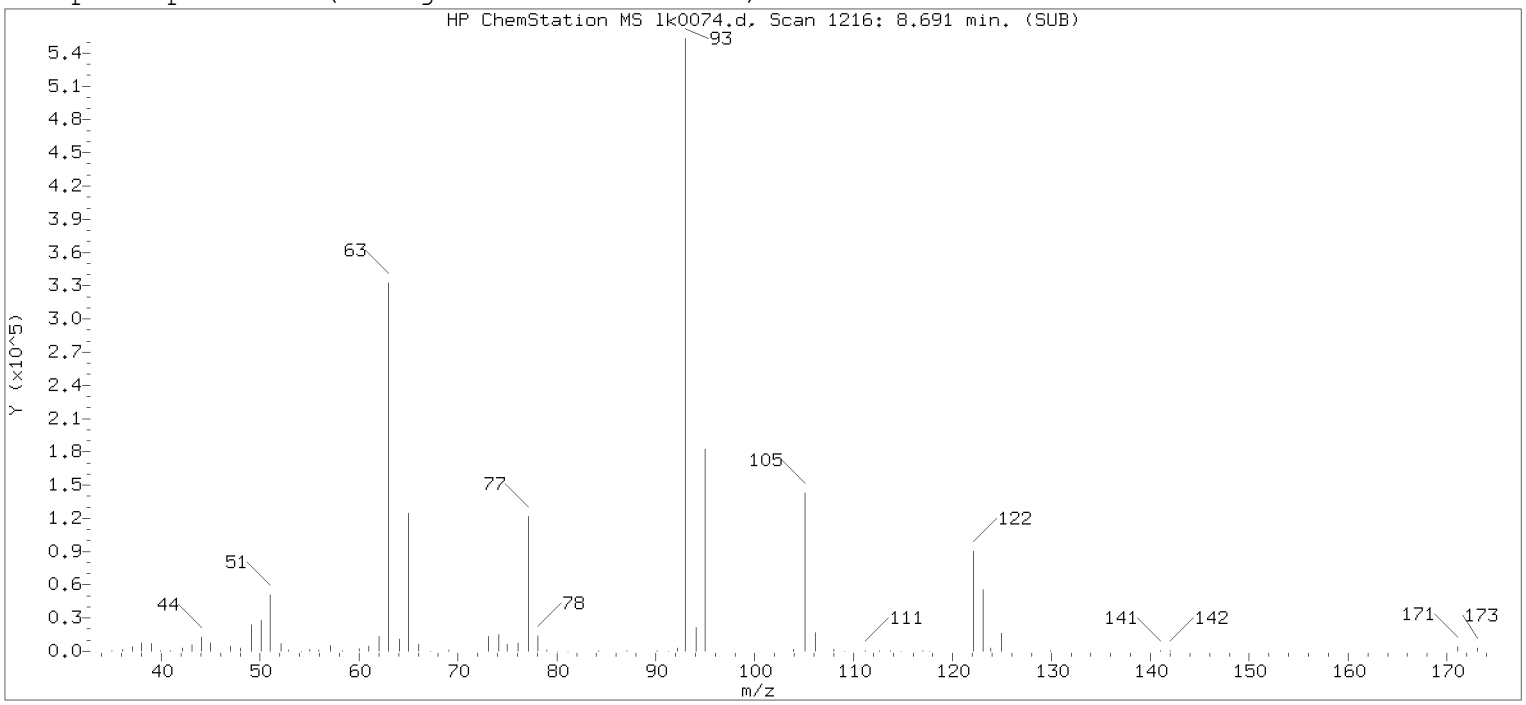
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1216
Retention Time (minutes) : 8.691
Quant Ion : 105.00
Area (flag) : 677264M
On-Column Amount (ng/ul) : 22.6227
Integration start scan : 1189 Integration stop scan: 1250
Y at integration start : -331 Y at integration end: -331

Reason for manual integration: improper integration

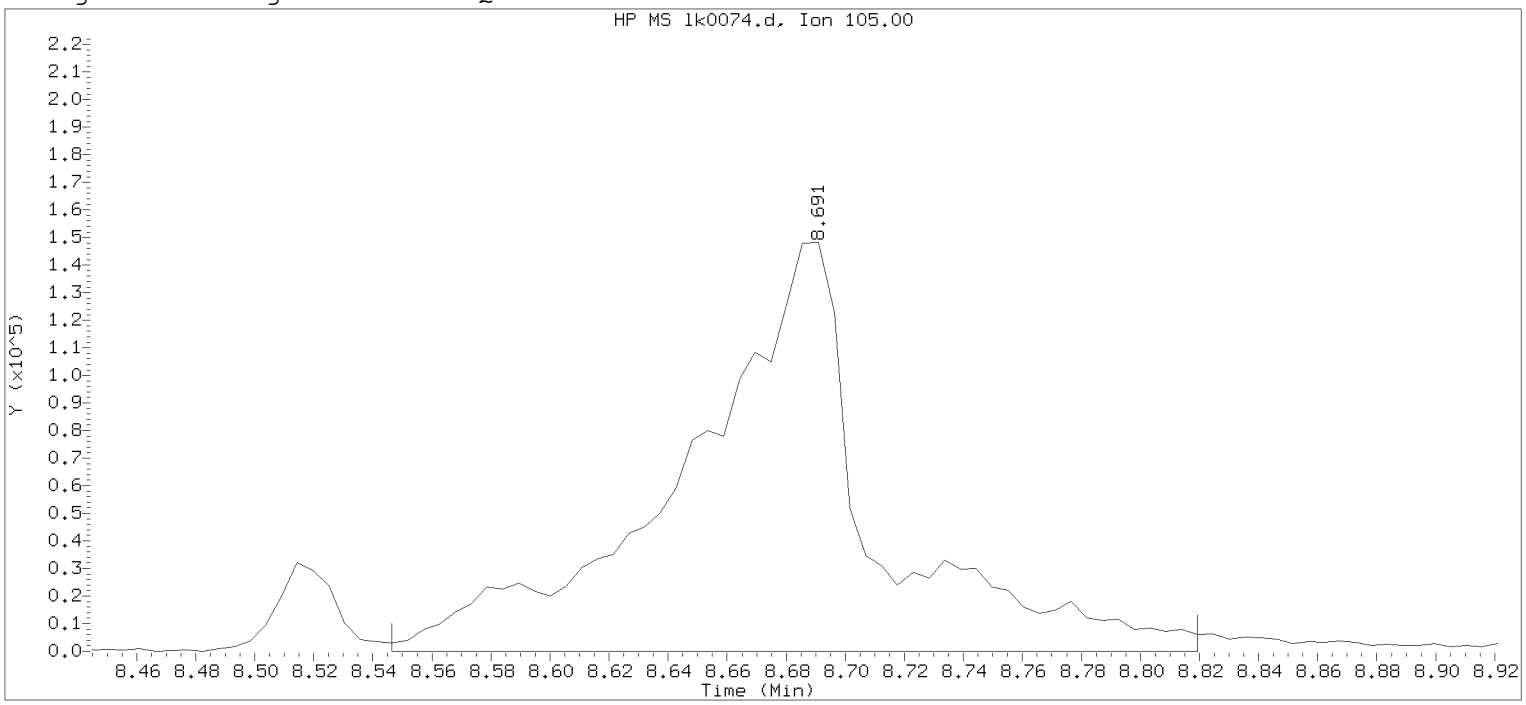
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

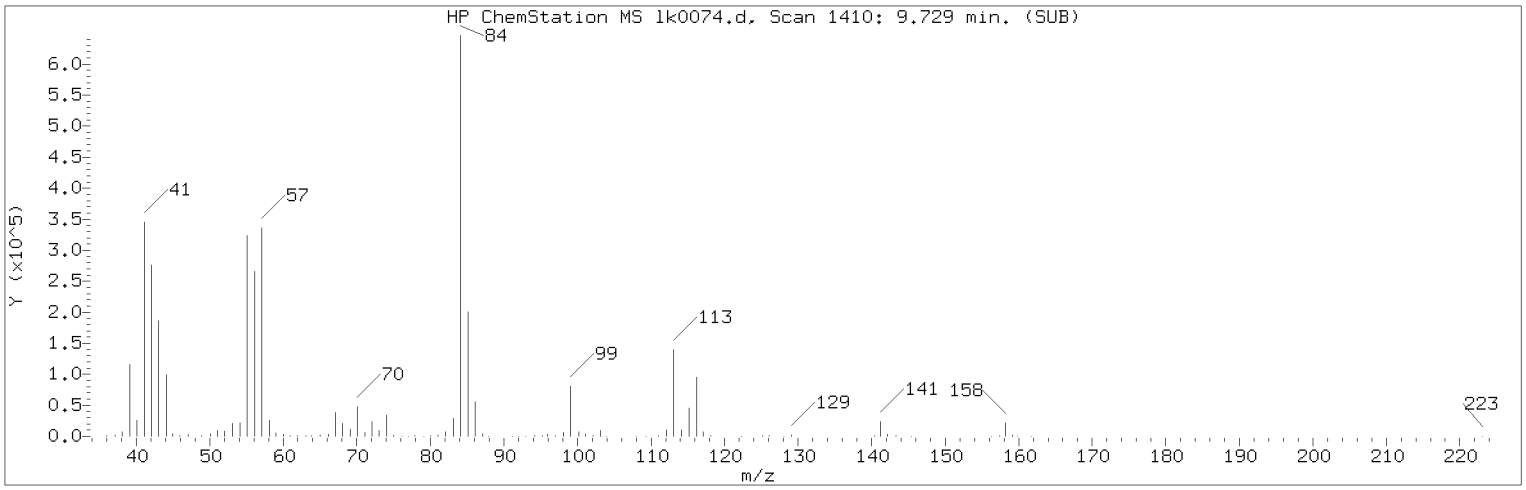
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:32
Date, time and analyst ID of latest file update: 04-Nov-2019 16:33 Unknown

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

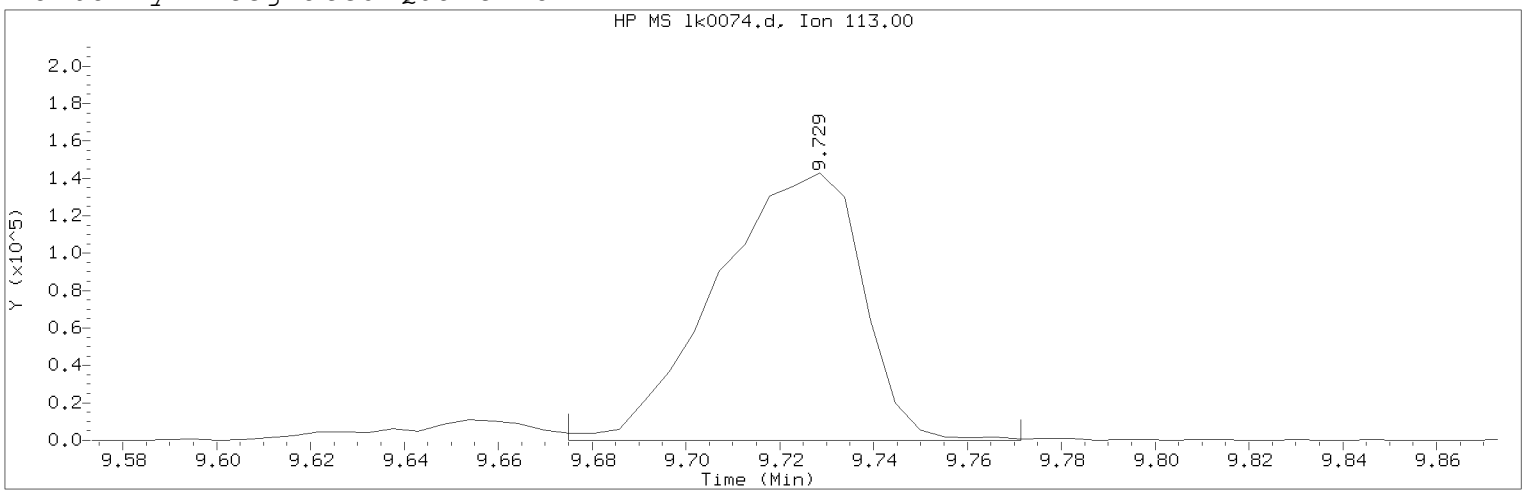
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1216		
Retention Time (minutes)	: 8.691		
Quant Ion	: 105.00		
Area	: 656184		
On-column Amount (ng/ul)	: 29.2953		
Integration start scan	: 1188	Integration stop scan:	1239
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 2021

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

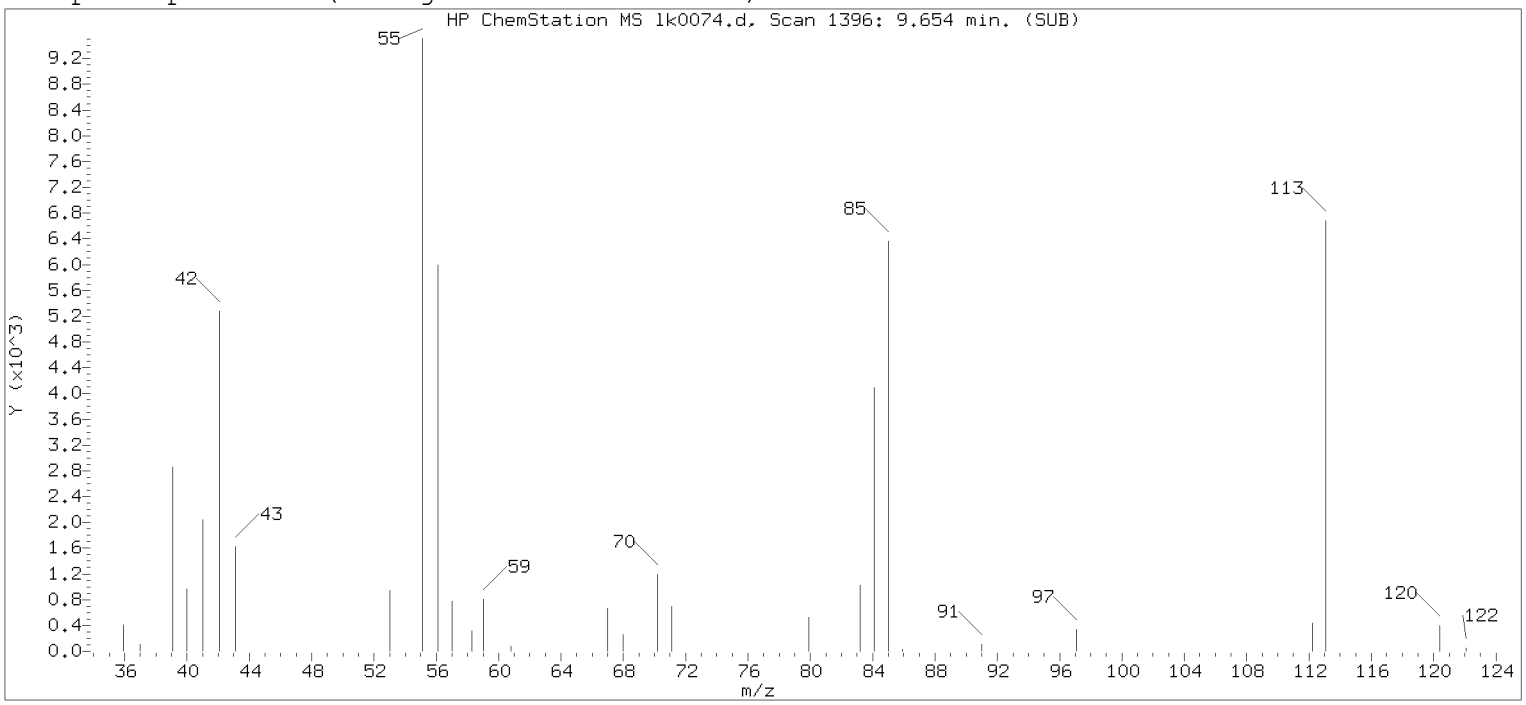
Compound Number : 79
Compound Name : Caprolactam
Scan Number : 1410
Retention Time (minutes) : 9.729
Quant Ion : 113.00
Area (flag) : 307101A
On-Column Amount (ng/ul) : 18.6863
Integration start scan : 1399 Integration stop scan: 1417
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

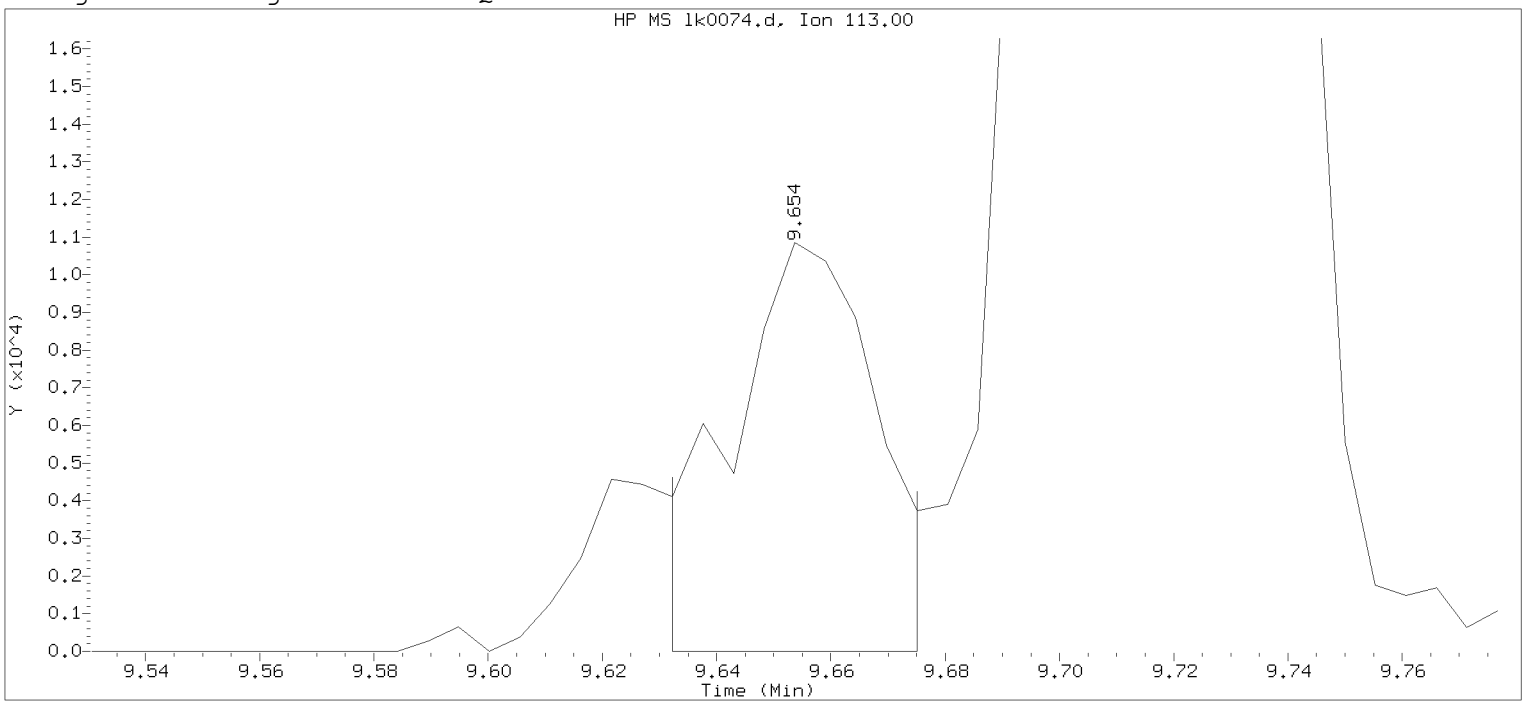
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

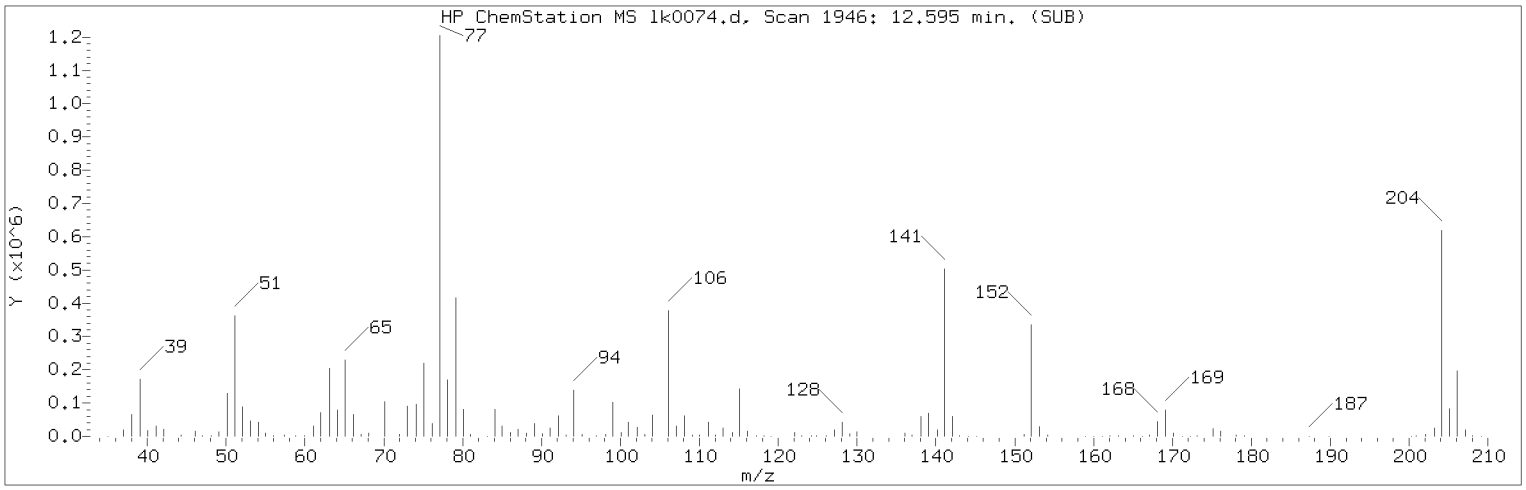
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:32
Date, time and analyst ID of latest file update: 04-Nov-2019 16:33 Unknown

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

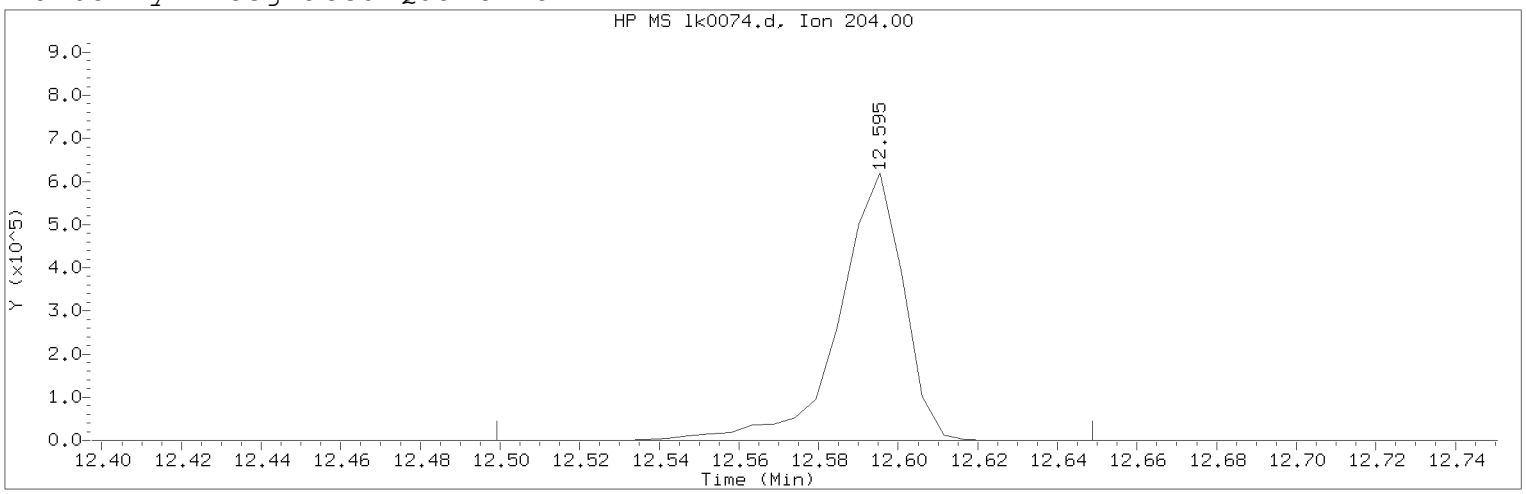
Compound Number	: 79		
Compound Name	: Caprolactam		
Scan Number	: 1396		
Retention Time (minutes)	: 9.654		
Quant Ion	: 113.00		
Area	: 18866		
On-column Amount (ng/ul)	: 1.3261		
Integration start scan	: 1391	Integration stop scan:	1399
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with RAF48.

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

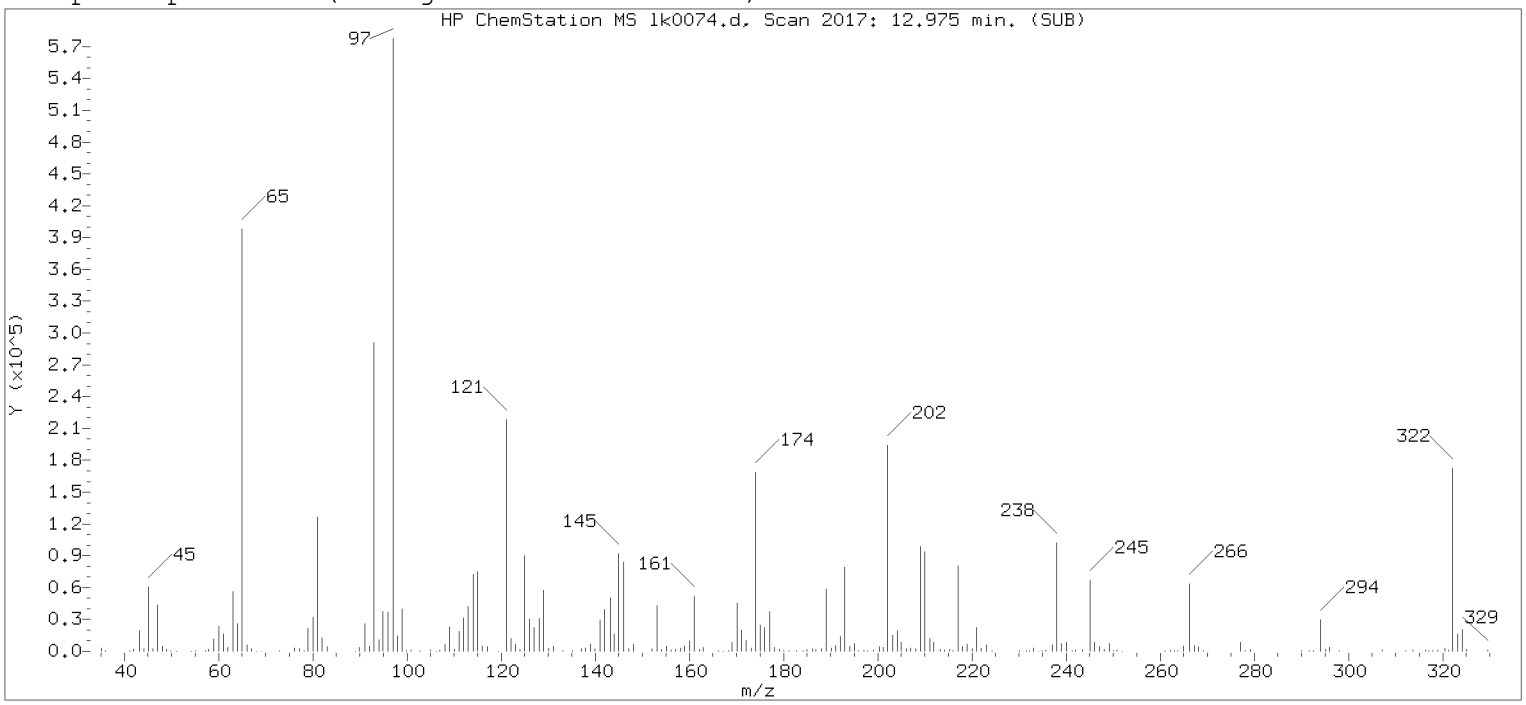
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.595
Quant Ion : 204.00
Area (flag) : 692779M
On-Column Amount (ng/ul) : 19.8906
Integration start scan : 1927 Integration stop scan: 1955
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

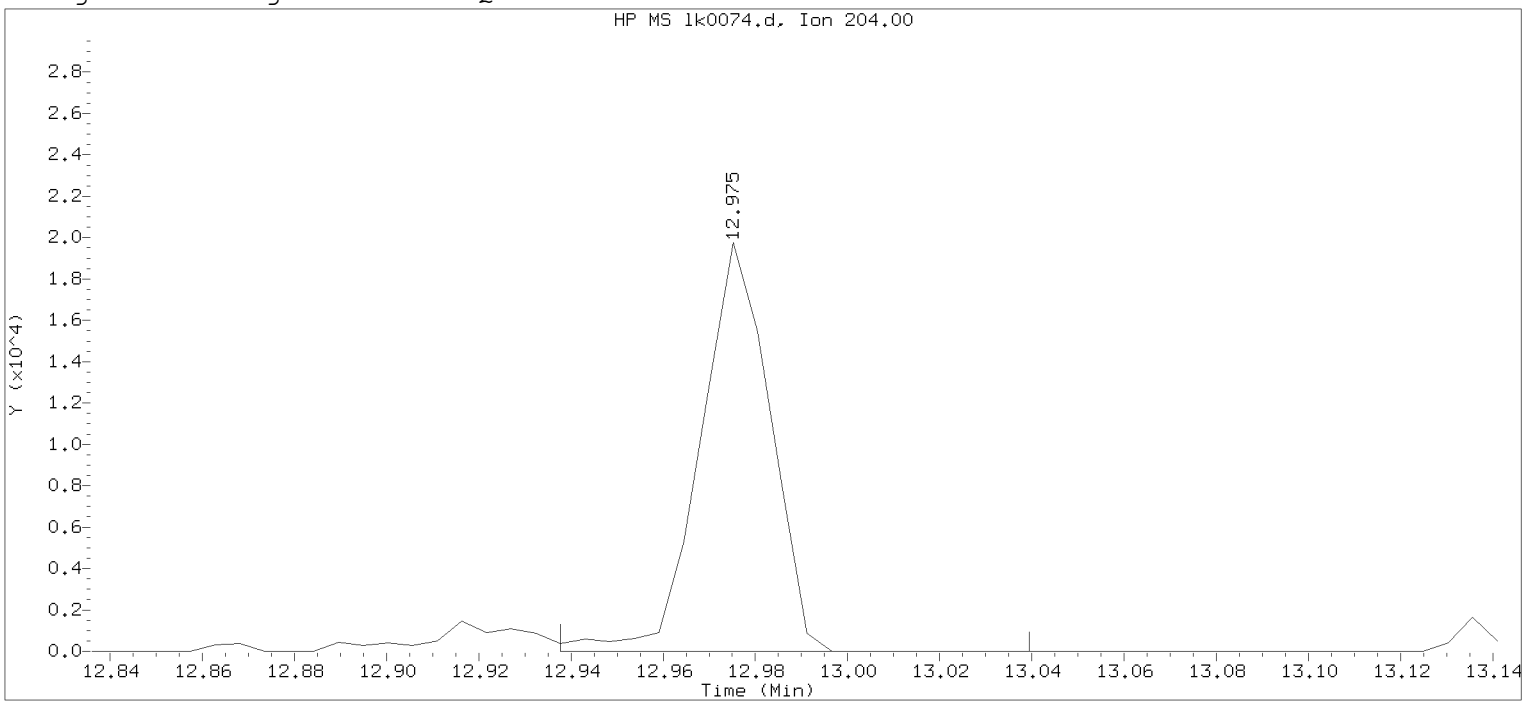
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

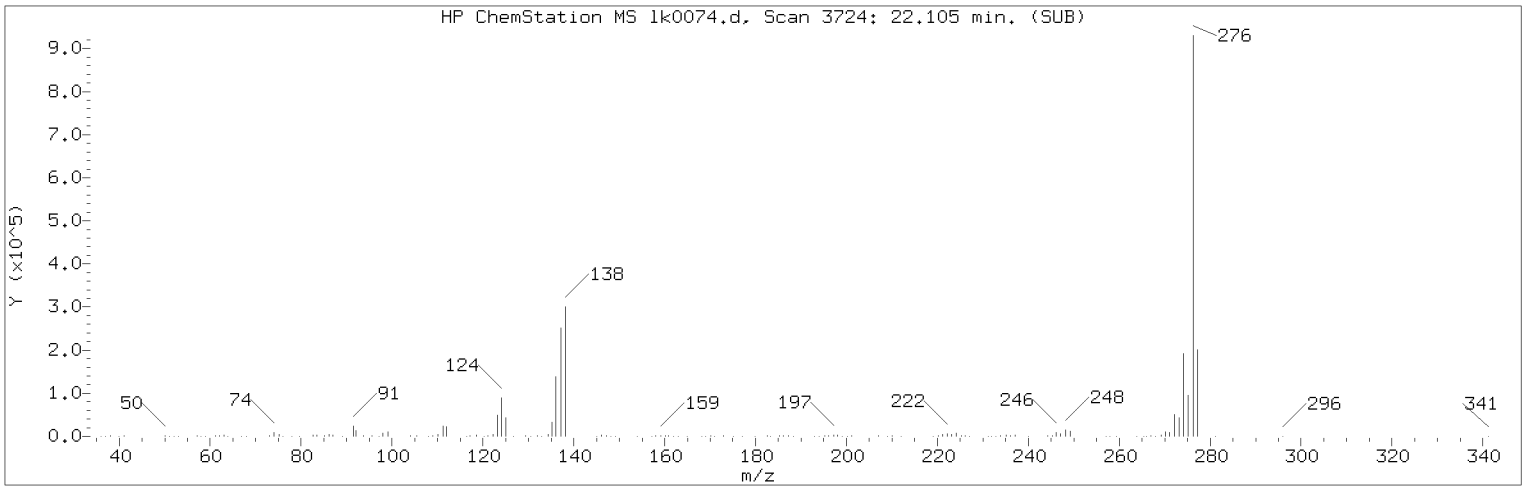
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:32
Date, time and analyst ID of latest file update: 04-Nov-2019 16:33 Unknown

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

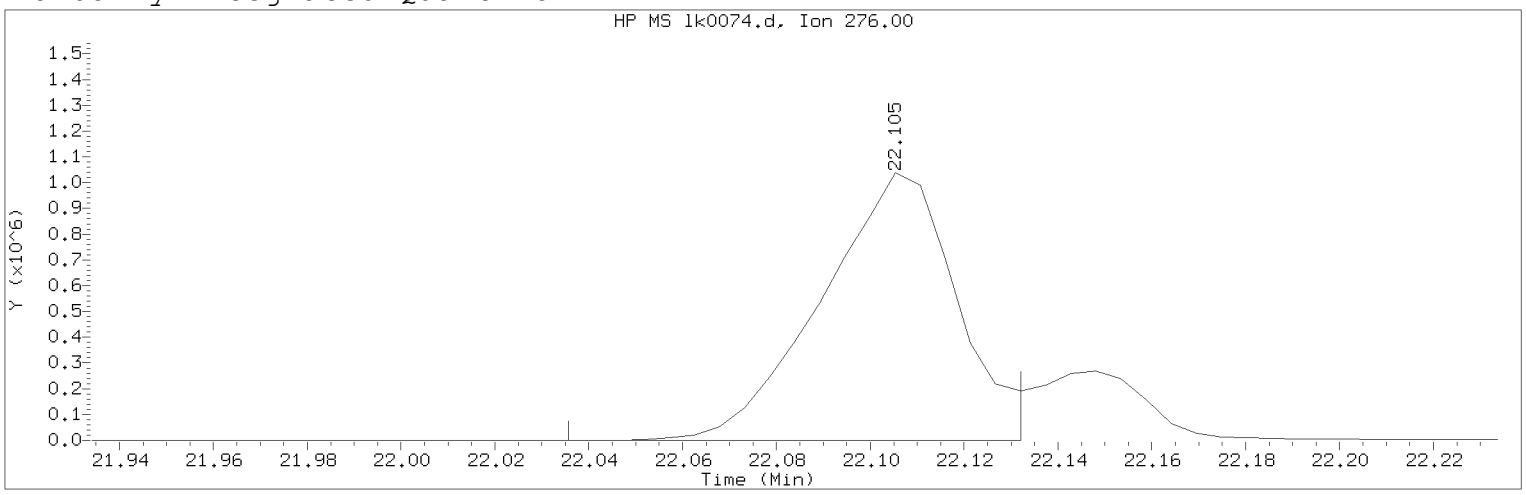
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2017		
Retention Time (minutes)	: 12.975		
Quant Ion	: 204.00		
Area	: 20730		
On-column Amount (ng/ul)	: 0.5258		
Integration start scan	: 2009	Integration stop scan:	2028
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used with 21 CFR Part 11

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

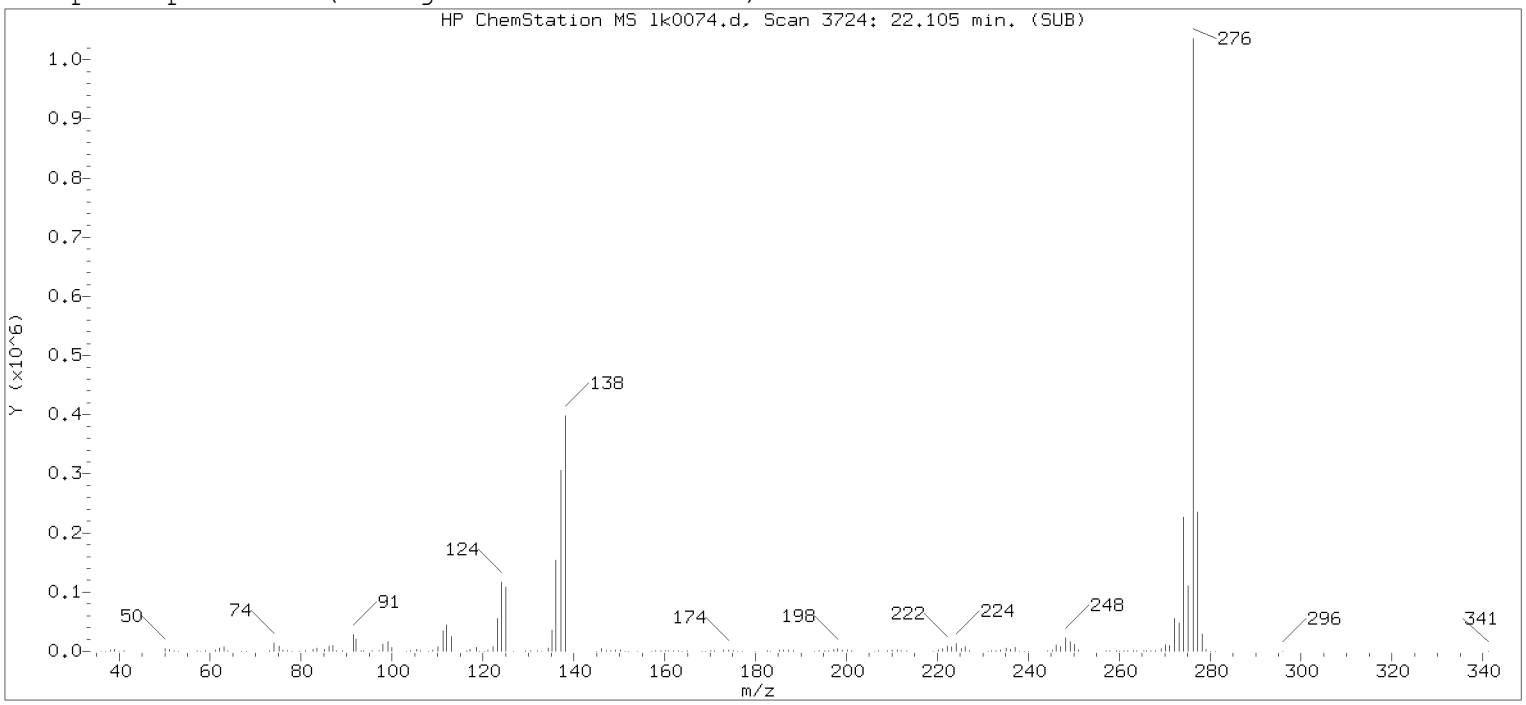
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3724
Retention Time (minutes) : 22.105
Quant Ion : 276.00
Area (flag) : 2077175M
On-Column Amount (ng/ul) : 21.5883
Integration start scan : 3710 Integration stop scan: 3728
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

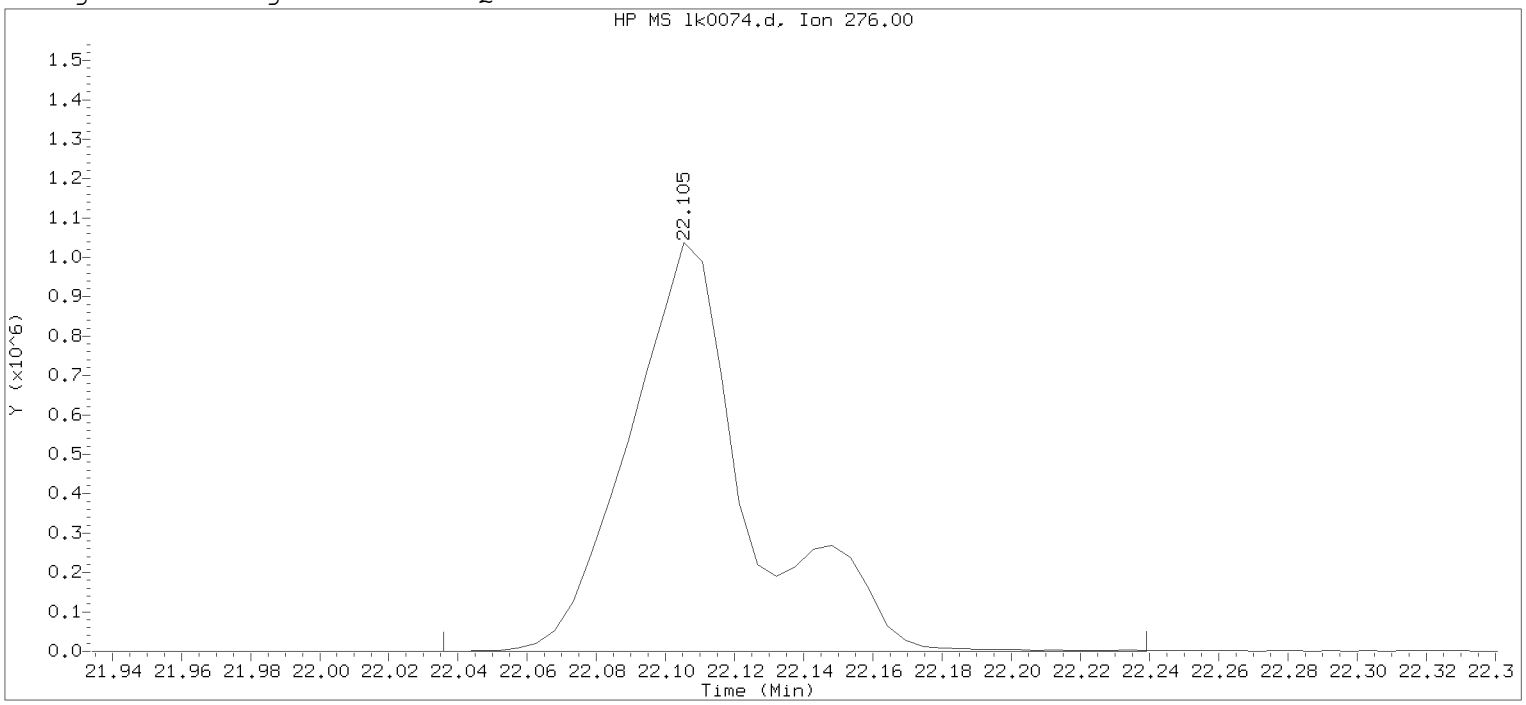
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



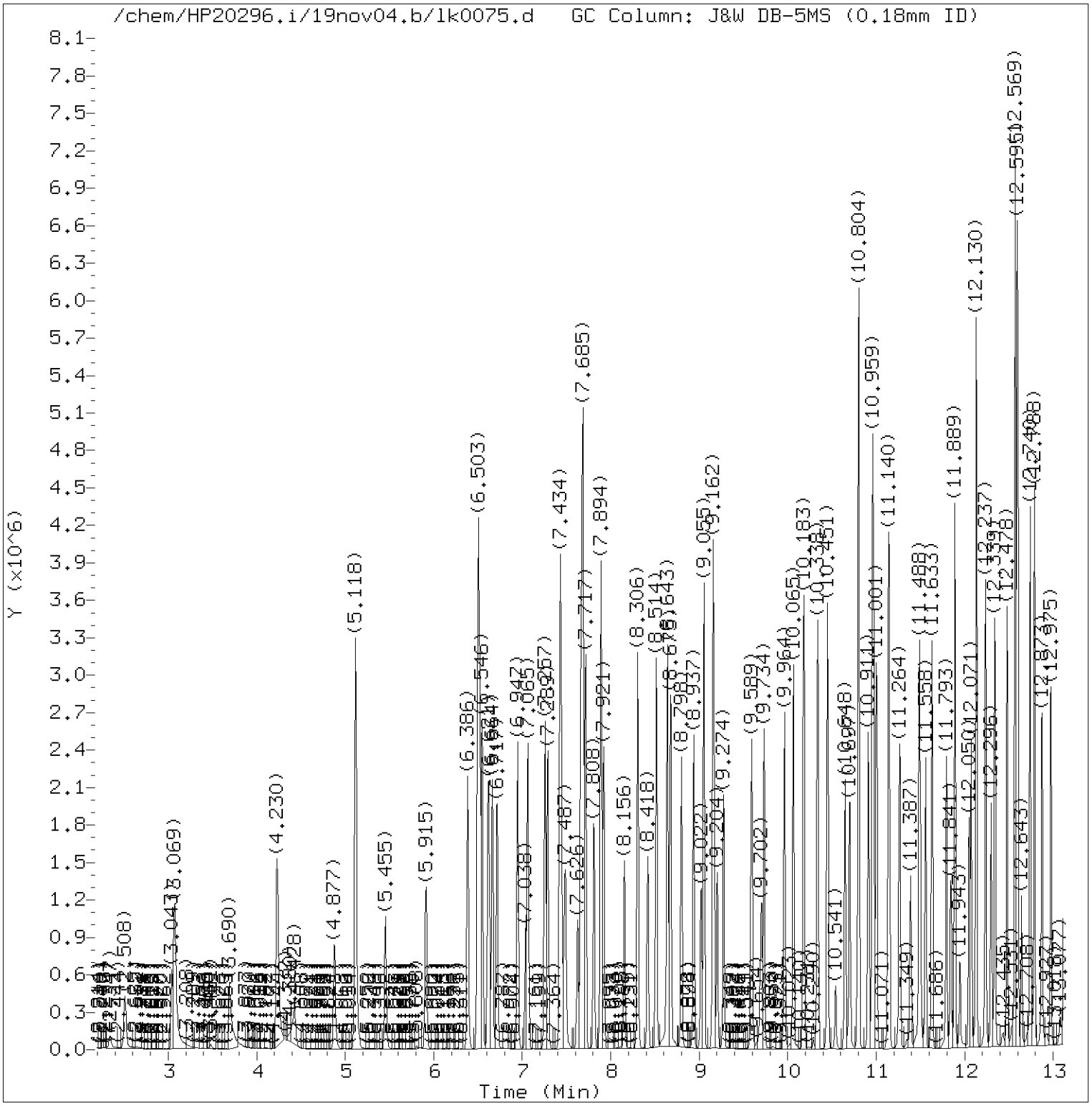
Data File: /chem/HP20296.i/19nov04.b/lk0074.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 15:59 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 16:32
Date, time and analyst ID of latest file update: 04-Nov-2019 16:33 Unknown

Sample Name: SSTD20 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3724		
Retention Time (minutes)	: 22.105		
Quant Ion	: 276.00		
Area	: 2489375		
On-column Amount (ng/ul)	: 0.9656		
Integration start scan	: 3710	Integration stop scan:	3748
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021 Rev.



Total Ion Chromatogram (TIC)

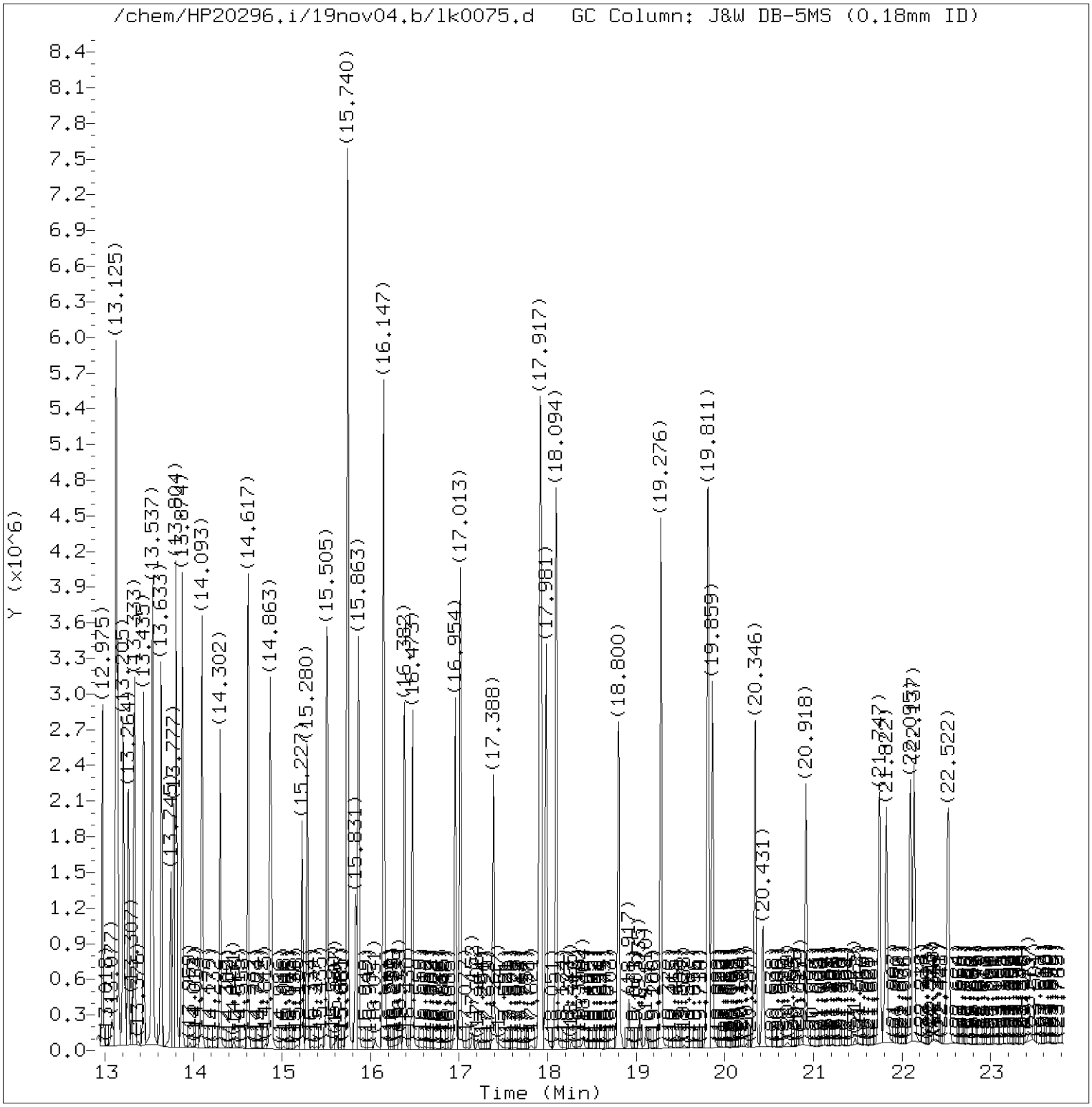
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.513	88	373808	11.988
5) N-Nitrosodimethylamine	(1)	3.043	74	629217	11.859
6) Pyridine	(1)	3.075	79	1030644	11.423
8) 2-Picoline	(1)	4.230	93	1034172	12.165
9) N-Nitrosomethylethylamine	(1)	4.423	88	431243	12.197
10) Methyl methanesulfonate	(1)	4.883	80	505049	11.971
12)$2-Fluorophenol	(1)	5.118	112	1457970	24.285
14) N-Nitrosodiethylamine	(1)	5.455	102	394172	12.242
43) Total Cresols	(1)			1578675	24.841
16) Ethyl methanesulfonate	(1)	5.915	109	392058	11.869
17) Benzaldehyde	(1)	6.386	77	792851	12.998
18)$Phenol-d6	(1)	6.503	99	2094999	24.224
19) Phenol	(1)	6.519	94	1229376	11.876
20) Aniline	(1)	6.546	93	1460527	11.950
21) a-methylstyrene	(1)	6.626	118	288872	11.871
23) bis(2-Chloroethyl)ether	(1)	6.664	93	929888	11.608
24) 2-Chlorophenol	(1)	6.717	128	648833	12.094
25) 1,3-Dichlorobenzene	(1)	6.947	146	646612	11.817
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	160939	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	648341	11.867
28) Benzyl alcohol	(1)	7.257	108	514564	12.094
29) 1,2-Dichlorobenzene	(1)	7.289	146	615446	11.503
100) Isosafrole	(3)			463111	11.994
31) Indene	(1)	7.429	115	1149073	11.915
32) 2-Methylphenol	(1)	7.439	108	738119	12.170
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.482	45	1057360	11.807
35) bis(2-Chloroisopropyl)ether	(1)	7.482	45	1057360	11.807
36) N-Nitrosopyrrolidine	(1)	7.626	100	443642	12.124
37) Acetophenone	(1)	7.664	105	1187246	11.809
38) 4-Methylphenol	(1)	7.680	108	840556	12.670
39) N-Nitroso-di-n-propylamine	(1)	7.685	70	780353	11.838
40) N-Nitrosomorpholine	(1)	7.696	56	500569	11.973
41) o-Toluidine	(1)	7.717	106	1290340	11.946
44) Hexachloroethane	(1)	7.808	117	341601	12.053
45)$Nitrobenzene-d5	(2)	7.894	82	2091159	24.758
46) Nitrobenzene	(2)	7.921	77	1118398	12.332
125) 2,4_2,6-Dinitrotoluenes	(3)			538167	25.346
50) N-Nitrosopiperidine	(2)	8.156	114	371855	12.330
52) Isophorone	(2)	8.306	82	2000021	12.360
53) 2-Nitrophenol	(2)	8.418	139	254781	13.087

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.514	107	832947	12.242
59) O,O,O-Triethylphosphorothioate	(2)	8.643	198	218888	12.066
58) Benzoic acid	(2)	8.659	105	389678	13.547
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	1211731	12.464
151) Diallate trans/cis	(4)			899146	11.986
62) 2,4-Dichlorophenol	(2)	8.798	162	450310	12.608
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	451062	12.114
68)*Naphthalene-d8	(2)	9.022	136	659321	5.000
69) Naphthalene	(2)	9.055	128	1864270	12.088
70) 4-Chloroaniline	(2)	9.156	127	790282	12.464
71) 2,6-Dichlorophenol	(2)	9.167	162	433011	12.889
72) Hexachloropropene	(2)	9.204	213	220262	12.447
74) Hexachlorobutadiene	(2)	9.274	225	215876	11.671
78) Quinoline	(2)	9.595	129	1129796	12.141
79) Caprolactam	(2)	9.707	113	193428	12.249
80) N-Nitrosodi-n-butylamine	(2)	9.734	84	714617	11.471
83) 4-Chloro-3-methylphenol	(2)	9.964	107	698795	12.505
85) Safrole	(2)	10.065	162	396732	12.460
86) 2-Methylnaphthalene	(2)	10.183	142	1112725	12.305
87) 1-Methylnaphthalene	(2)	10.338	142	1046055	11.906
88) Hexachlorocyclopentadiene	(3)	10.445	237	228259	11.967
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.451	216	381872	11.641
91) cis-Isosafrole	(3)	10.541	162	74546	2.005
93) 2,4,6-Trichlorophenol	(3)	10.648	196	259282	12.258
95) 2,4,5-Trichlorophenol	(3)	10.702	196	285695	12.528
96)$2-Fluorobiphenyl	(3)	10.804	172	2054796	23.471
97) trans-Isosafrole	(3)	10.911	162	388565	9.989
98) 1,1'-Biphenyl	(3)	10.959	154	1282601	11.933
99) 2-Chloronaphthalene	(3)	10.969	162	989445	11.379
101) 1-Chloronaphthalene	(3)	11.001	162	966590	12.767
103) Diphenyl ether	(3)	11.140	170	617332	11.720
104) 2-Nitroaniline	(3)	11.151	138	346509	12.570
108) 1,4-Naphthoquinone	(3)	11.264	158	424520	12.019
109) 1,4-Dinitrobenzene	(3)	11.392	168	131823	13.750
110) Dimethylphthalate	(3)	11.488	163	1067470	11.846
111) 1,3-Dinitrobenzene	(3)	11.504	168	151302	12.900
113) 2,6-Dinitrotoluene	(3)	11.558	165	232745	12.515
114) Acenaphthylene	(3)	11.633	152	1566730	12.127
117) 3-Nitroaniline	(3)	11.793	138	304054	12.534
118)*Acenaphthene-d10	(3)	11.841	164	286729	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.889	153	1049129	11.800
120) 2,4-Dinitrophenol	(3)	11.948	184	58444	12.632
121) 4-Nitrophenol	(3)	12.050	109	244525	12.423
122) Pentachlorobenzene	(3)	12.071	250	316680	11.833
123) 2,4-Dinitrotoluene	(3)	12.130	165	305422	12.832
124) Dibenzofuran	(3)	12.130	168	1286879	11.815
126) 1-Naphthylamine	(3)	12.237	143	1089919	12.122
127) 2,3,4,6-Tetrachlorophenol	(3)	12.301	232	174749	12.590
128) 2-Naphthylamine	(3)	12.339	143	1072778	12.385
129) Diethylphthalate	(3)	12.478	149	1144533	11.735
131) Fluorene	(3)	12.569	166	1034249	11.657
130) Thionazin	(3)	12.569	107	299654	12.098
133) 5-Nitro-o-toluidine	(3)	12.595	152	318349	12.600
132) 4-Chlorophenyl-phenylether	(3)	12.595	204	420109M	12.110
134) 4-Nitroaniline	(3)	12.601	138	311094	12.798
135) 4,6-Dinitro-2-methylphenol	(4)	12.643	198	89105	12.029
137) NDPA as diphenylamine	(4)	12.740	169	895172	11.969
136) N-Nitrosodiphenylamine	(4)	12.740	169	895172	11.969
139) 1,2-Diphenylhydrazine	(4)	12.788	77	2230039	11.907
140)$2,4,6-Tribromophenol	(3)	12.873	332	221846	25.873
142) Tetraethyldithiopyrophosphate	(4)	12.970	97	329608	11.926
145) Diallate (peak 1)	(4)	13.120	86	763954	9.937
146) Phorate	(4)	13.130	75	1412306	12.229
147) Phenacetin	(4)	13.146	108	893005	12.275
148) 4-Bromophenyl-phenylether	(4)	13.205	248	207953	11.612
149) Diallate (peak 2)	(4)	13.226	86	135192	2.049
150) Hexachlorobenzene	(4)	13.264	284	254960	12.016
152) Dimethoate	(4)	13.333	87	829698	12.123
153) Atrazine	(4)	13.435	200	238862	11.940
154) Pentachlorophenol	(4)	13.526	266	136697	12.728
155) 4-Aminobiphenyl	(4)	13.537	169	677299	12.334
156) Pentachloronitrobenzene	(4)	13.542	237	107549	12.413
157) Pronamide	(4)	13.633	173	516834	12.380
158)*Phenanthrene-d10	(4)	13.772	188	497830	5.000
159) Dinoseb	(4)	13.783	211	134714	11.774
160) Phenanthrene	(4)	13.804	178	1502339	12.211
162) Anthracene	(4)	13.874	178	1492505	12.257
168) Carbazole	(4)	14.093	167	1457082	11.943
169) Methyl parathion	(4)	14.302	109	554336	12.865
170) Di-n-butylphthalate	(4)	14.617	149	2169816	12.065

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

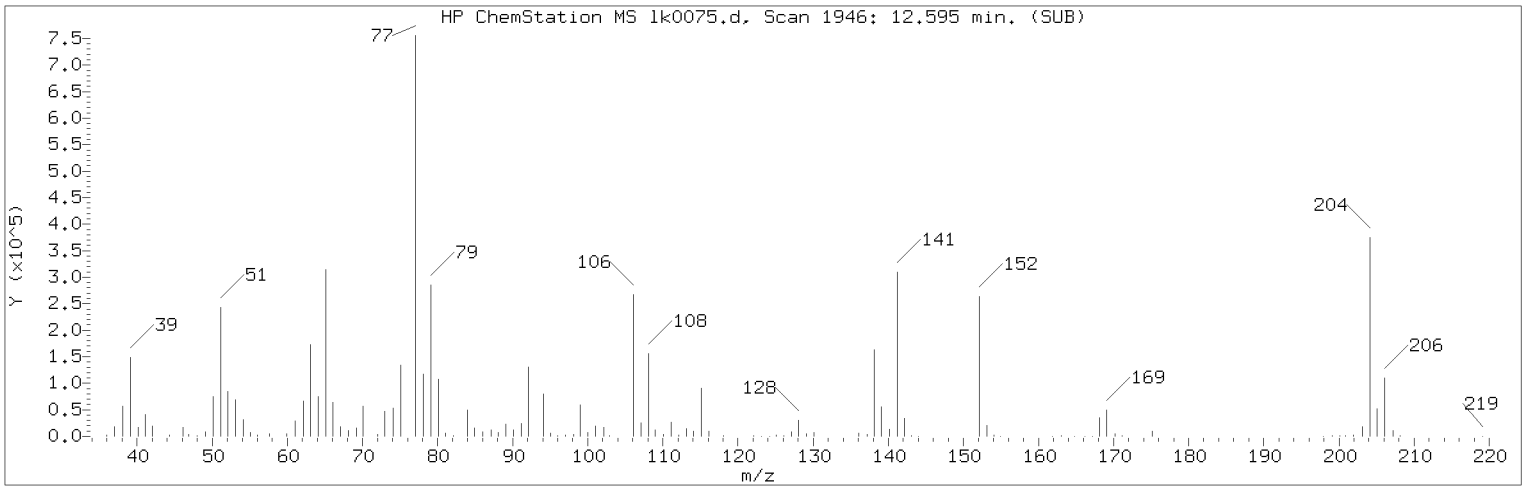
Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.863	109	363279	12.944
173) 4-Nitroquinoline-1-oxide	(4)	14.879	190	142635	12.010
227) Total PAHs	(6)			24240508	221.854
174) Octachlorostyrene	(4)	15.227	308	98379	11.496
176) Isodrin	(4)	15.280	193	173057	11.581
178) Fluoranthene	(4)	15.505	202	1502021	12.133
179) Benzidine	(5)	15.740	184	3262519	37.426
180)*Pyrene-d10	(5)	15.831	212	463746	5.000
182) Pyrene	(5)	15.863	202	1576247	12.084
184)$Terphenyl-d14	(5)	16.147	244	1772257	24.661
187) p-Dimethylaminoazobenzene	(5)	16.382	225	226322	12.323
190) Chlorobenzilate	(5)	16.473	139	715871	12.333
192) 3,3'-Dimethylbenzidine	(5)	16.954	212	1034002	12.757
193) Butylbenzylphthalate	(5)	17.013	149	1003487	12.746
196) 2-Acetylaminofluorene	(5)	17.388	181	671965	12.505
198) 3,3'-Dichlorobenzidine	(5)	17.907	252	536254	12.621
200) Benzo(a)anthracene	(5)	17.917	228	1346179	12.562
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.923	231	266619	12.391
201) Chrysene	(5)	17.981	228	1376910	12.609
204) bis(2-Ethylhexyl)phthalate	(5)	18.094	149	1478884	12.705
208) 6-Methylchrysene	(5)	18.800	242	960559	12.551
210) Di-n-octylphthalate	(6)	19.276	149	2607175	12.727
211) Benzo(b)fluoranthene	(6)	19.805	252	1344462	12.207
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.811	256	581941	12.448
213) Benzo(k)fluoranthene	(6)	19.859	252	1367855	12.358
216) Benzo(a)pyrene	(6)	20.346	252	1328016	12.939
218)*Perylene-d12	(6)	20.431	264	432557	5.000
220) 3-Methylcholanthrene	(6)	20.918	268	569587	12.184
222) Dibenz(a,h)acridine	(6)	21.747	279	1051747	12.267
223) Dibenz(a,j)acridine	(6)	21.822	279	1048984	12.312
224) Indeno(1,2,3-cd)pyrene	(6)	22.095	276	1241131M	13.258
225) Dibenz(a,h)anthracene	(6)	22.137	278	1256108	12.831
226) Benzo(g,h,i)perylene	(6)	22.522	276	1233577	12.522

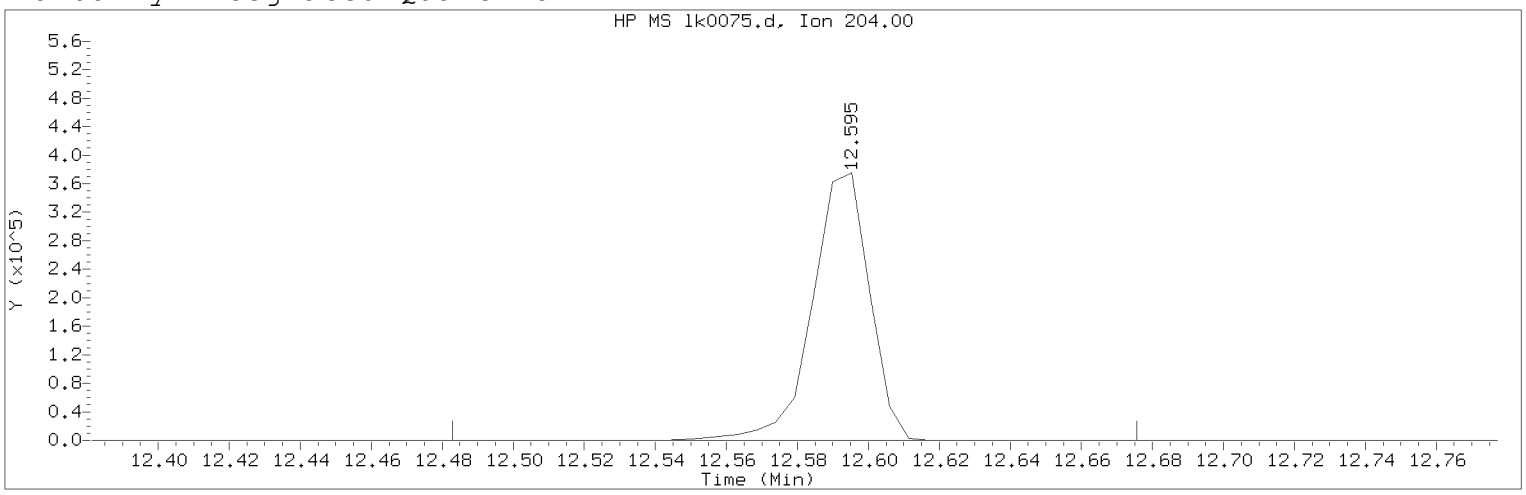
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

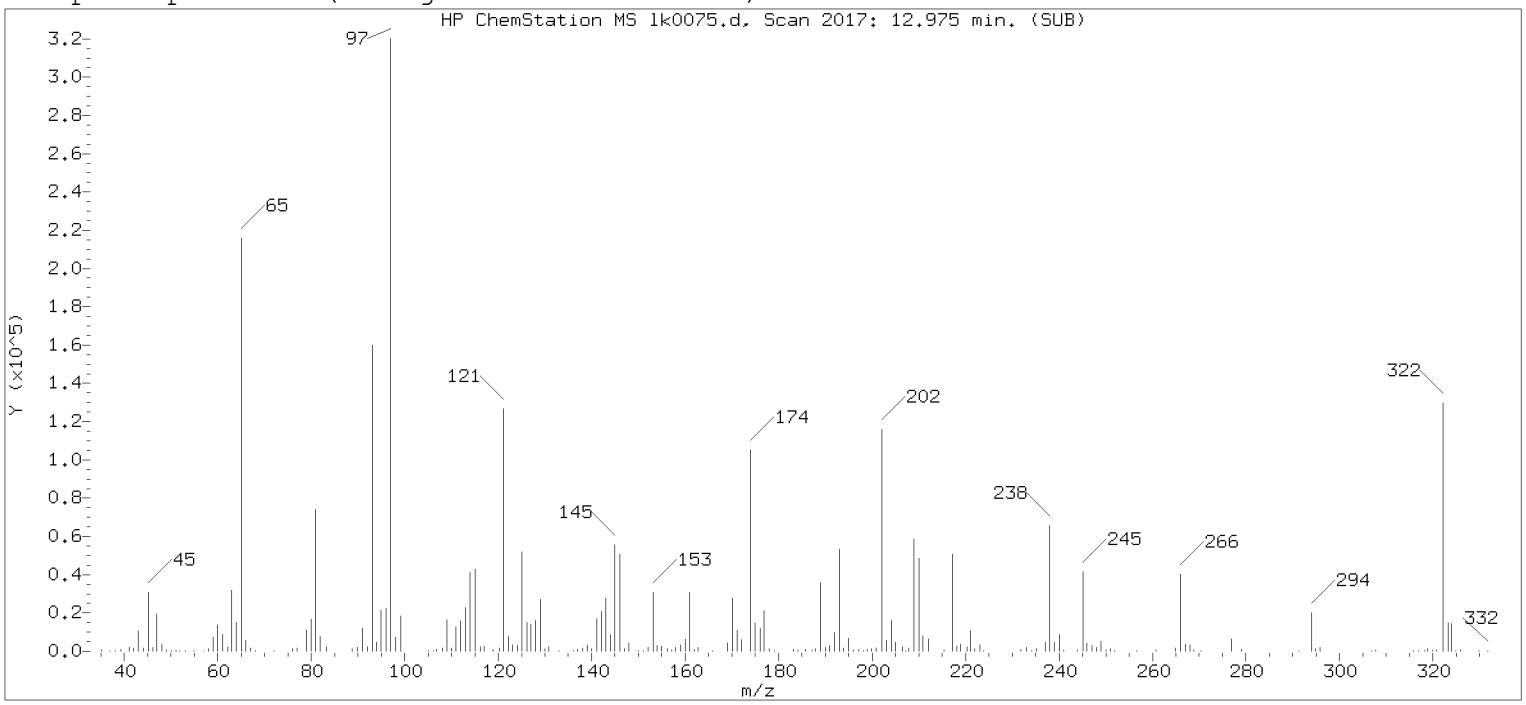
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.595
Quant Ion : 204.00
Area (flag) : 420109M
On-Column Amount (ng/ul) : 12.1099
Integration start scan : 1924 Integration stop scan: 1960
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

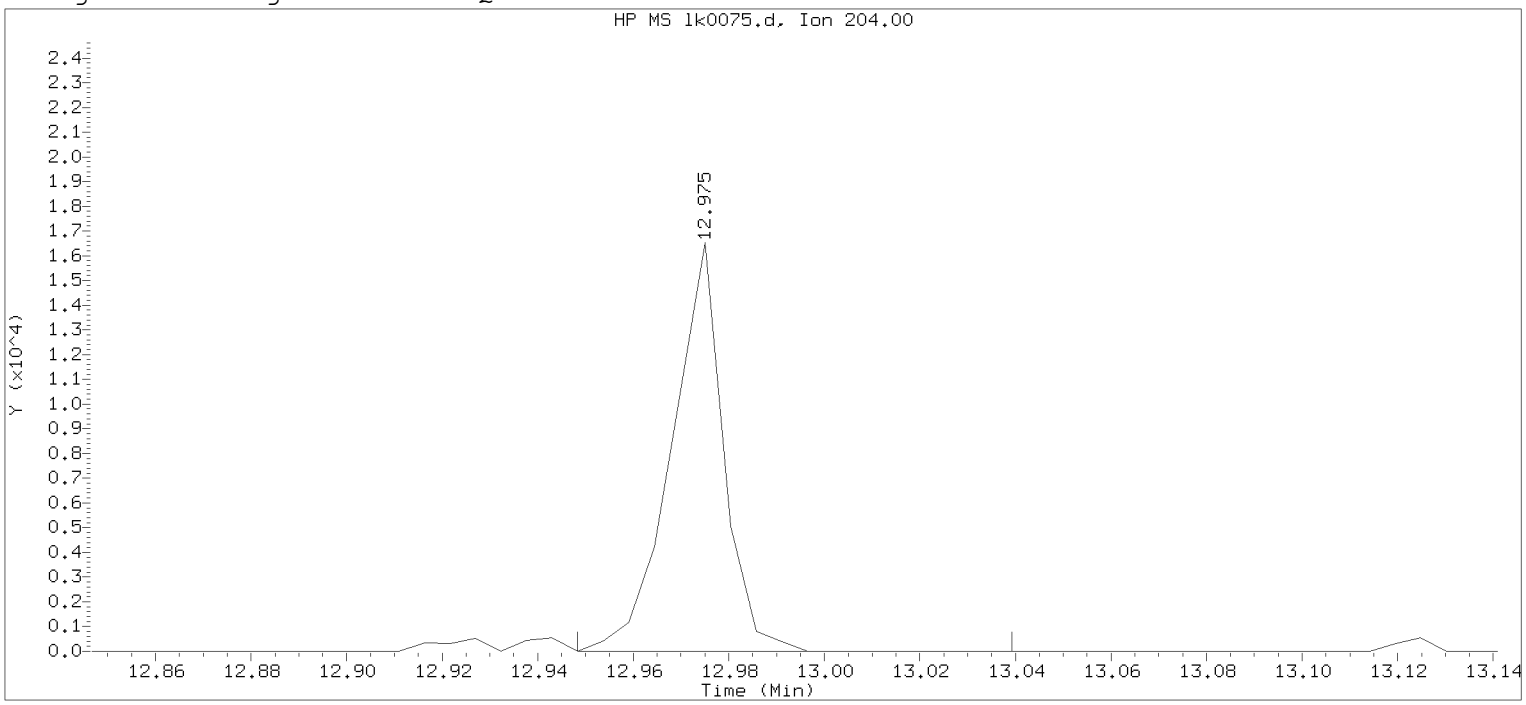
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

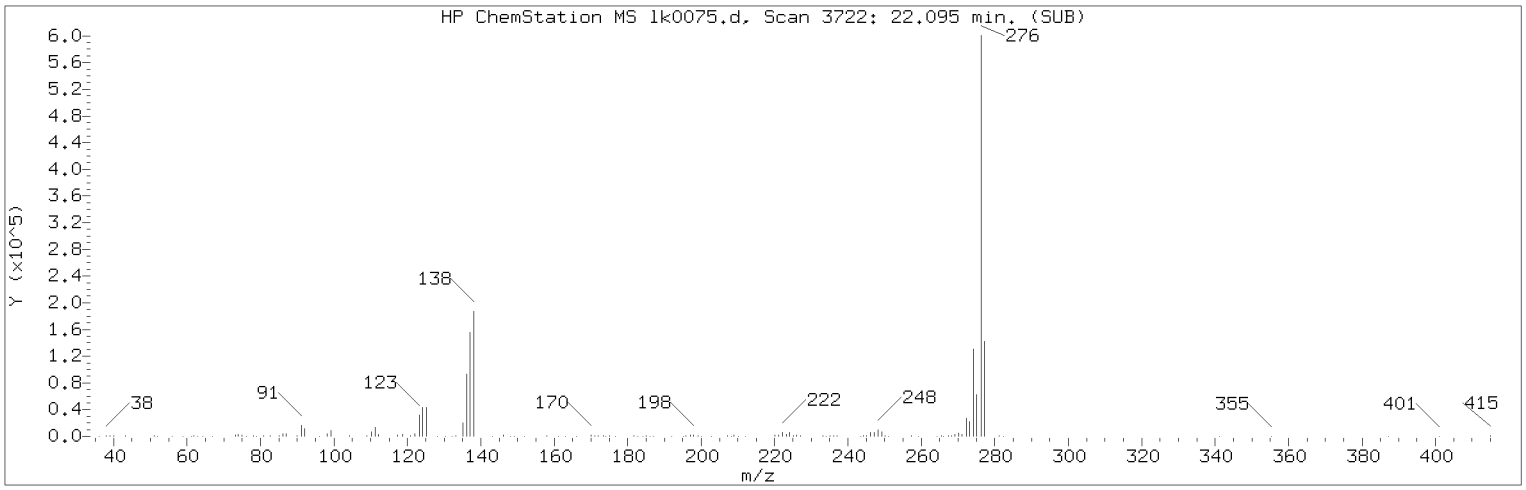
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:01
Date, time and analyst ID of latest file update: 04-Nov-2019 17:01 Unknown

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

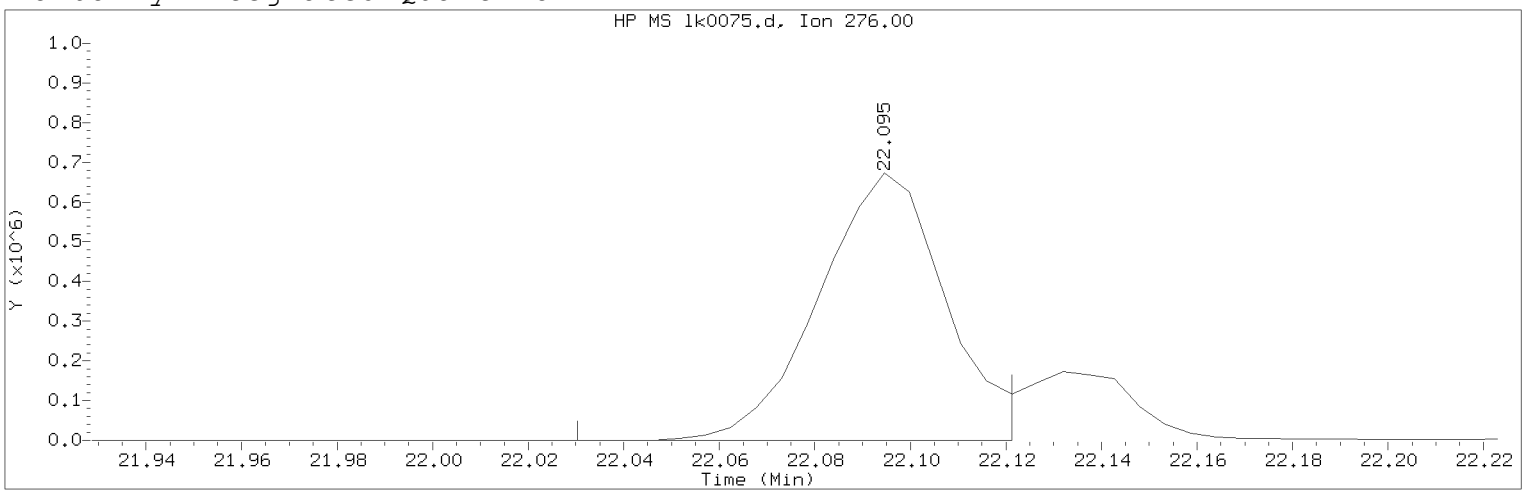
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2017		
Retention Time (minutes)	: 12.975		
Quant Ion	: 204.00		
Area	: 12514		
On-column Amount (ng/ul)	: 0.3187		
Integration start scan	: 2011	Integration stop scan:	2028
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature used with 2021 version

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

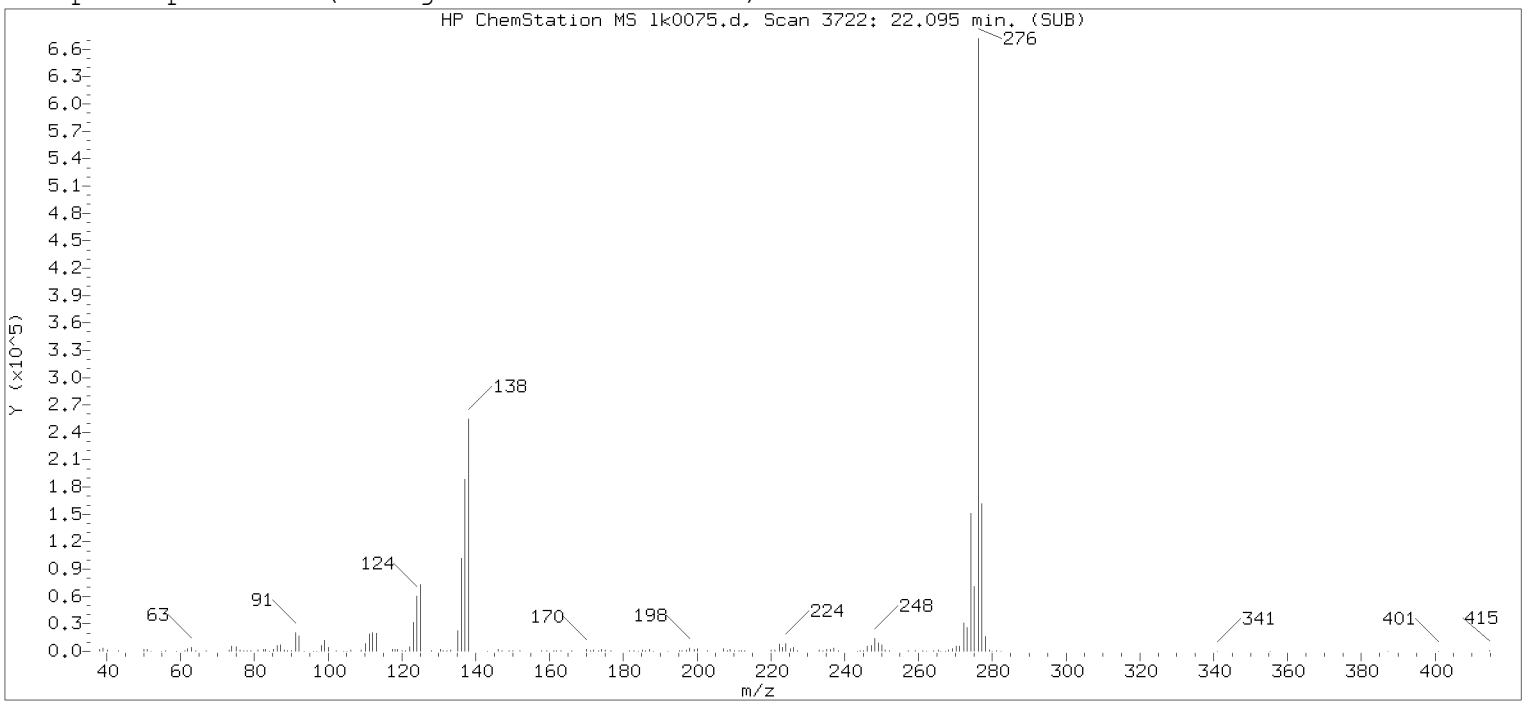
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3722
Retention Time (minutes) : 22.095
Quant Ion : 276.00
Area (flag) : 1241131M
On-Column Amount (ng/ul) : 13.2581
Integration start scan : 3709 Integration stop scan: 3726
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

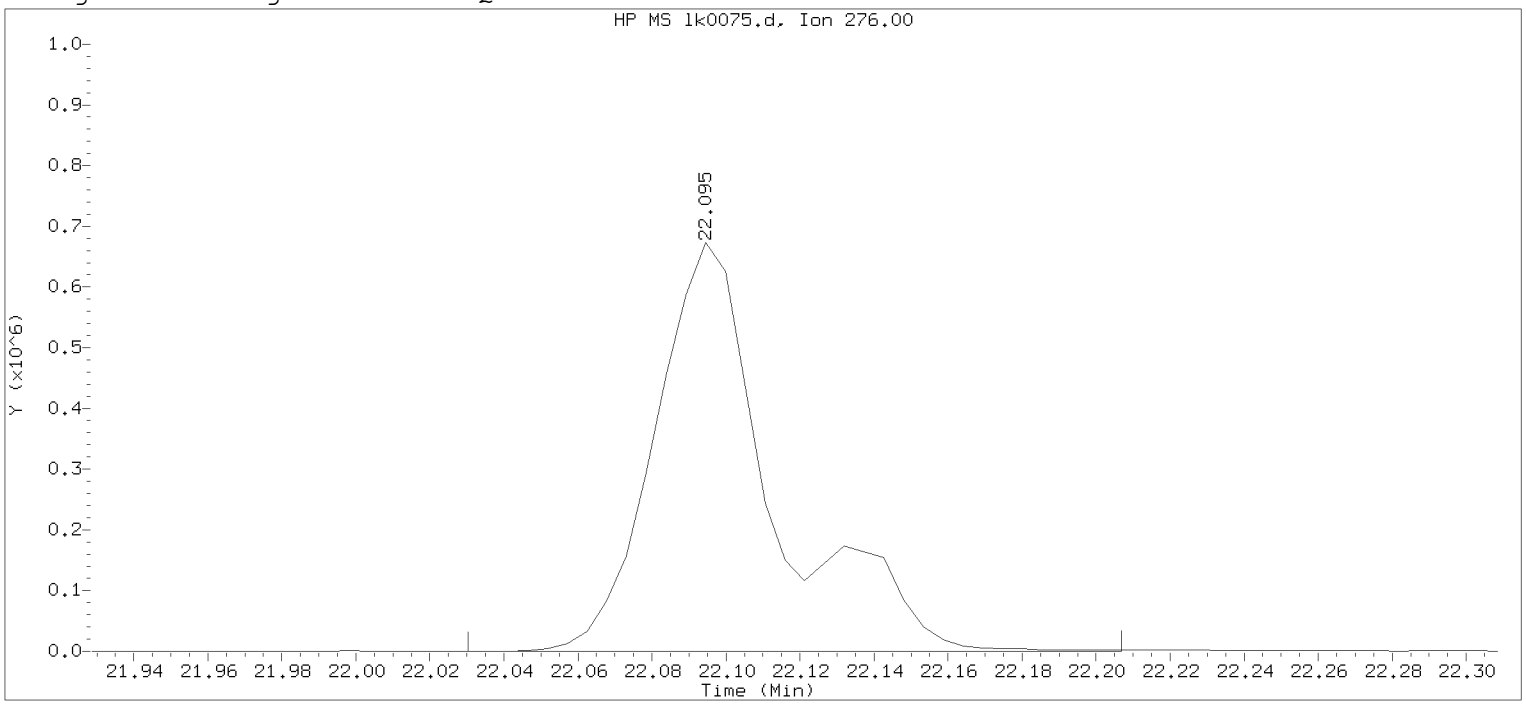
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:56.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



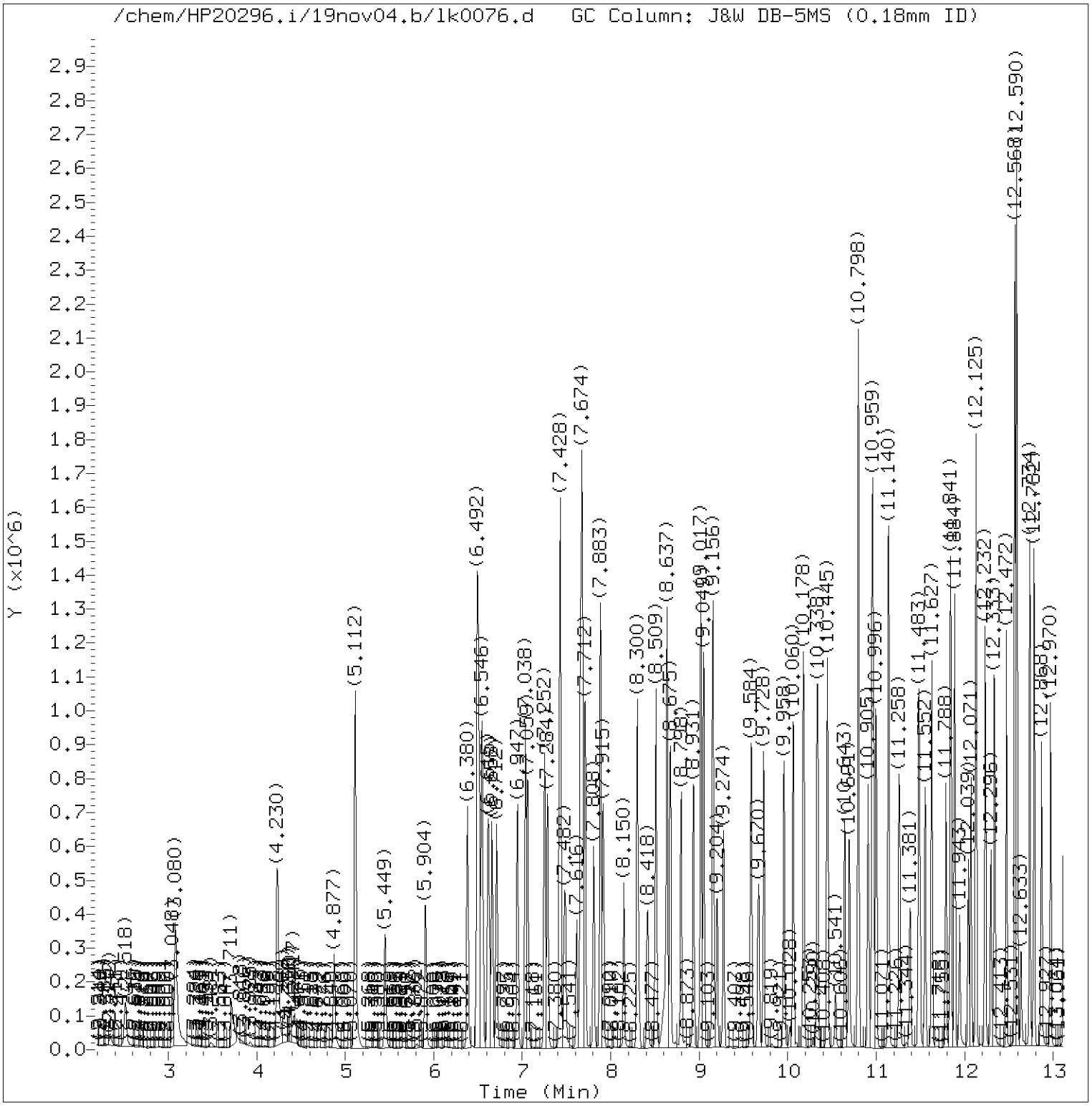
Data File: /chem/HP20296.i/19nov04.b/lk0075.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:28 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:01
Date, time and analyst ID of latest file update: 04-Nov-2019 17:01 Unknown

Sample Name: SSTD12.5 Lab Sample ID: RVSTD3809

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3722		
Retention Time (minutes)	: 22.095		
Quant Ion	: 276.00		
Area	: 1501161		
On-column Amount (ng/ul)	: 0.9457		
Integration start scan	: 3709	Integration stop scan:	3742
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:56.
Target 3.5 esignature user RAF48 was used.



Total Ion Chromatogram (TIC)

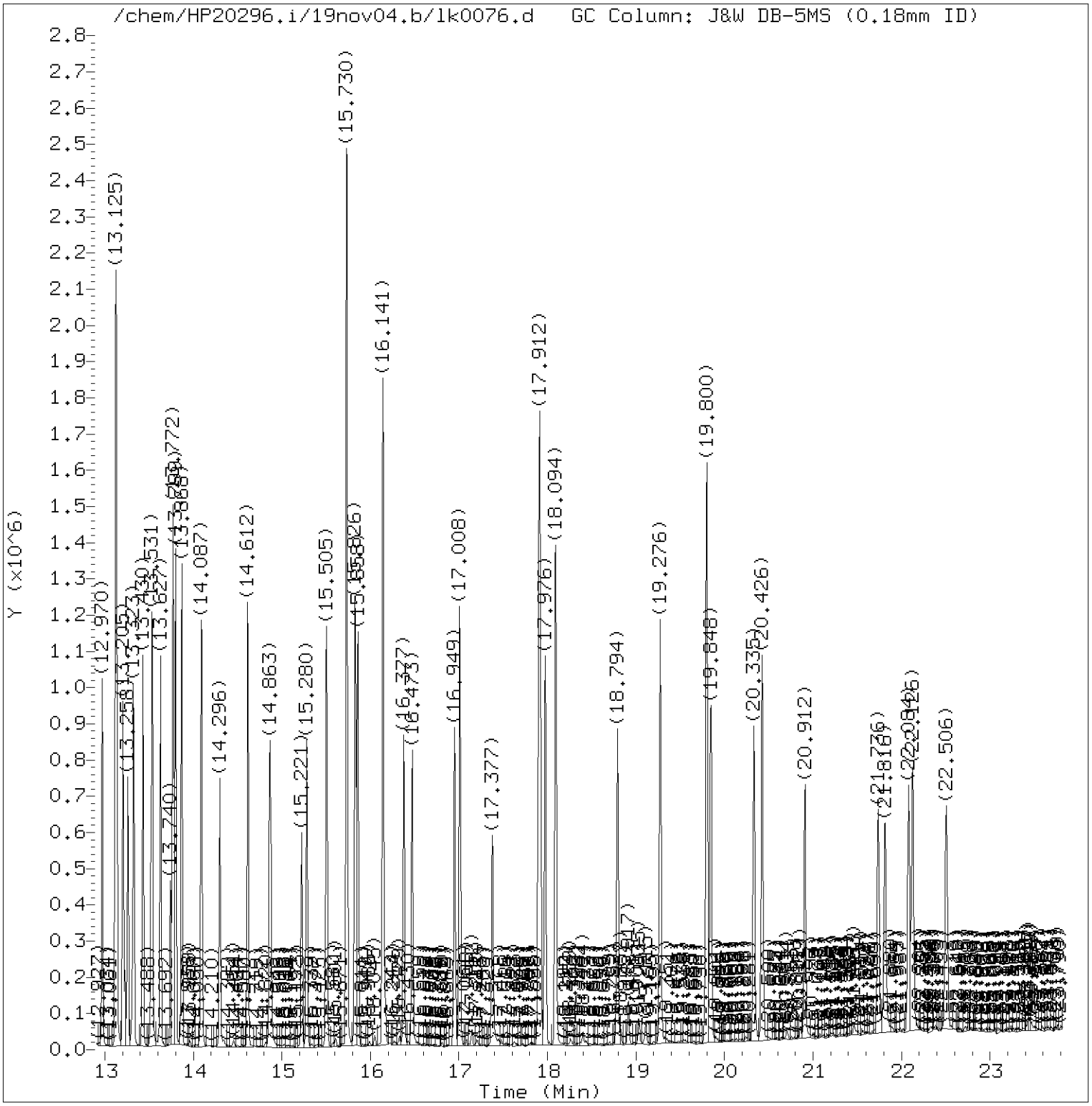
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.518	88	110374	3.647
5) N-Nitrosodimethylamine	(1)	3.043	74	194921	3.786
6) Pyridine	(1)	3.080	79	331468	3.786
8) 2-Picoline	(1)	4.235	93	311307	3.773
9) N-Nitrosomethylethylamine	(1)	4.423	88	125739	3.665
10) Methyl methanesulfonate	(1)	4.877	80	157388	3.844
12)$2-Fluorophenol	(1)	5.112	112	444546	7.631
14) N-Nitrosodiethylamine	(1)	5.455	102	122024	3.905
43) Total Cresols	(1)			462954	7.521
16) Ethyl methanesulfonate	(1)	5.909	109	124144	3.873
17) Benzaldehyde	(1)	6.380	77	257019	4.342
18)$Phenol-d6	(1)	6.492	99	649507	7.739
19) Phenol	(1)	6.514	94	385975	3.842
20) Aniline	(1)	6.546	93	463712	3.910
21) a-methylstyrene	(1)	6.626	118	90905	3.850
23) bis(2-Chloroethyl)ether	(1)	6.658	93	295130	3.796
24) 2-Chlorophenol	(1)	6.712	128	196786	3.780
25) 1,3-Dichlorobenzene	(1)	6.947	146	197545	3.720
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	156179	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	209792	3.957
28) Benzyl alcohol	(1)	7.252	108	160024	3.876
29) 1,2-Dichlorobenzene	(1)	7.284	146	193287	3.723
100) Isosafrole	(3)			140299	3.806
31) Indene	(1)	7.423	115	364649	3.896
32) 2-Methylphenol	(1)	7.434	108	226026	3.840
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.482	45	343683	3.955
35) bis(2-Chloroisopropyl)ether	(1)	7.482	45	343683	3.955
36) N-Nitrosopyrrolidine	(1)	7.616	100	135651	3.820
37) Acetophenone	(1)	7.658	105	378129	3.876
38) 4-Methylphenol	(1)	7.674	108	236928	3.680
39) N-Nitroso-di-n-propylamine	(1)	7.674	70	255740	3.998
40) N-Nitrosomorpholine	(1)	7.685	56	155601	3.835
41) o-Toluidine	(1)	7.712	106	408962	3.902
44) Hexachloroethane	(1)	7.808	117	106221	3.862
45)$Nitrobenzene-d5	(2)	7.883	82	635573	7.519
46) Nitrobenzene	(2)	7.915	77	341370	3.761
125) 2,4_2,6-Dinitrotoluenes	(3)			163809	8.083
50) N-Nitrosopiperidine	(2)	8.150	114	110364	3.657
52) Isophorone	(2)	8.300	82	613277	3.787
53) 2-Nitrophenol	(2)	8.418	139	71905	3.691

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.509	107	249493	3.664
58) Benzoic acid	(2)	8.637	105	210037M	7.296
59) O,O,O-Triethylphosphorothioate	(2)	8.637	198	69290	3.817
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	375457	3.859
151) Diallate trans/cis	(4)			289898	3.992
62) 2,4-Dichlorophenol	(2)	8.798	162	140631	3.935
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	143791	3.859
68)*Naphthalene-d8	(2)	9.017	136	659810	5.000
69) Naphthalene	(2)	9.049	128	590072	3.823
70) 4-Chloroaniline	(2)	9.151	127	238792	3.763
71) 2,6-Dichlorophenol	(2)	9.161	162	131741	3.919
72) Hexachloropropene	(2)	9.204	213	66778	3.771
74) Hexachlorobutadiene	(2)	9.274	225	70156	3.790
78) Quinoline	(2)	9.584	129	351334	3.773
79) Caprolactam	(2)	9.670	113	65714	4.158
80) N-Nitrosodi-n-butylamine	(2)	9.728	84	223407	3.584
83) 4-Chloro-3-methylphenol	(2)	9.958	107	215139	3.847
85) Safrole	(2)	10.060	162	123082	3.863
86) 2-Methylnaphthalene	(2)	10.178	142	348267	3.848
87) 1-Methylnaphthalene	(2)	10.338	142	326362	3.712
88) Hexachlorocyclopentadiene	(3)	10.445	237	70028	3.845
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.450	216	126226	4.030
91) cis-Isosafrole	(3)	10.541	162	22429	0.632
93) 2,4,6-Trichlorophenol	(3)	10.643	196	79917	3.957
95) 2,4,5-Trichlorophenol	(3)	10.696	196	93029	4.273
96)$2-Fluorobiphenyl	(3)	10.798	172	660934	7.907
97) trans-Isosafrole	(3)	10.910	162	117870	3.174
98) 1,1'-Biphenyl	(3)	10.953	154	413839	4.033
99) 2-Chloronaphthalene	(3)	10.964	162	324026	3.903
101) 1-Chloronaphthalene	(3)	10.996	162	288515	3.991
103) Diphenyl ether	(3)	11.135	170	202176	4.020
104) 2-Nitroaniline	(3)	11.146	138	98550	3.744
108) 1,4-Naphthoquinone	(3)	11.263	158	127291	3.775
109) 1,4-Dinitrobenzene	(3)	11.381	168	32764	3.580
110) Dimethylphthalate	(3)	11.477	163	353465	4.108
111) 1,3-Dinitrobenzene	(3)	11.493	168	43760	3.908
113) 2,6-Dinitrotoluene	(3)	11.552	165	71044	4.001
114) Acenaphthylene	(3)	11.627	152	484221	3.926
117) 3-Nitroaniline	(3)	11.788	138	86254	3.724
118)*Acenaphthene-d10	(3)	11.841	164	273757	5.000

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.884	153	329810	3.885
120) 2,4-Dinitrophenol	(3)	11.943	184	29594	8.414
121) 4-Nitrophenol	(3)	12.039	109	69957	3.723
122) Pentachlorobenzene	(3)	12.071	250	97382	3.811
123) 2,4-Dinitrotoluene	(3)	12.125	165	92765	4.082
124) Dibenzofuran	(3)	12.130	168	398407	3.831
126) 1-Naphthylamine	(3)	12.232	143	333696	3.887
127) 2,3,4,6-Tetrachlorophenol	(3)	12.296	232	53712	4.053
128) 2-Naphthylamine	(3)	12.333	143	323091	3.907
129) Diethylphthalate	(3)	12.472	149	369671	3.970
130) Thionazin	(3)	12.563	107	92255	3.901
131) Fluorene	(3)	12.568	166	321749	3.798
133) 5-Nitro-o-toluidine	(3)	12.585	152	94190	3.905
134) 4-Nitroaniline	(3)	12.590	138	98757	4.255
132) 4-Chlorophenyl-phenylether	(3)	12.590	204	131102M	3.958
135) 4,6-Dinitro-2-methylphenol	(4)	12.638	198	22884	3.193
137) NDPA as diphenylamine	(4)	12.734	169	286215	3.955
136) N-Nitrosodiphenylamine	(4)	12.734	169	286215	3.955
139) 1,2-Diphenylhydrazine	(4)	12.782	77	706819	3.901
140)$2,4,6-Tribromophenol	(3)	12.868	332	63329	7.736
142) Tetraethyldithiopyrophosphate	(4)	12.970	97	104213	3.898
145) Diallate (peak 1)	(4)	13.114	86	247323	3.325
146) Phorate	(4)	13.125	75	441344	3.950
147) Phenacetin	(4)	13.135	108	267455	3.800
148) 4-Bromophenyl-phenylether	(4)	13.205	248	71870	4.148
149) Diallate (peak 2)	(4)	13.226	86	42575	0.667
150) Hexachlorobenzene	(4)	13.258	284	75526	3.679
152) Dimethoate	(4)	13.323	87	255048	3.852
153) Atrazine	(4)	13.430	200	81415	4.206
154) Pentachlorophenol	(4)	13.521	266	39223	3.775
155) 4-Aminobiphenyl	(4)	13.531	169	209211	3.938
156) Pentachloronitrobenzene	(4)	13.537	237	34138	4.072
157) Pronamide	(4)	13.633	173	157918	3.910
158)*Phenanthrene-d10	(4)	13.767	188	481645	5.000
159) Dinoseb	(4)	13.777	211	27897	4.848
160) Phenanthrene	(4)	13.799	178	462496	3.886
162) Anthracene	(4)	13.868	178	474965	4.032
168) Carbazole	(4)	14.093	167	466515	3.952
169) Methyl parathion	(4)	14.296	109	156143	3.745
170) Di-n-butylphthalate	(4)	14.612	149	667732	3.838

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

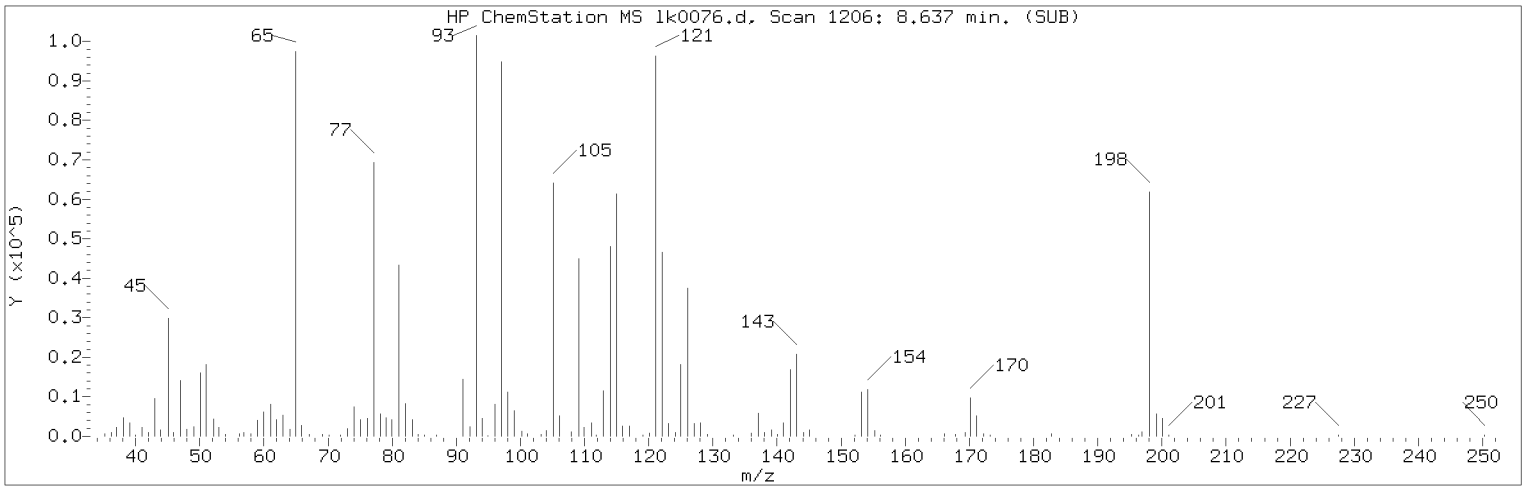
Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.858	109	98388	3.623
173) 4-Nitroquinoline-1-oxide	(4)	14.874	190	28429	4.411
227) Total PAHs	(6)			7431144	70.064
174) Octachlorostyrene	(4)	15.227	308	36200	4.372
176) Isodrin	(4)	15.280	193	55256	3.822
178) Fluoranthene	(4)	15.505	202	473996	3.958
179) Benzidine	(5)	15.735	184	1034138	11.939
180)*Pyrene-d10	(5)	15.826	212	460788	5.000
182) Pyrene	(5)	15.858	202	491130	3.789
184)$Terphenyl-d14	(5)	16.141	244	537798	7.531
187) p-Dimethylaminoazobenzene	(5)	16.377	225	70292	3.852
190) Chlorobenzilate	(5)	16.473	139	219554	3.807
192) 3,3'-Dimethylbenzidine	(5)	16.949	212	301753	3.747
193) Butylbenzylphthalate	(5)	17.008	149	290253	3.710
196) 2-Acetylaminofluorene	(5)	17.377	181	176140	3.299
198) 3,3'-Dichlorobenzidine	(5)	17.901	252	162096	3.839
200) Benzo(a)anthracene	(5)	17.912	228	410458	3.855
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.917	231	82986	3.882
201) Chrysene	(5)	17.976	228	419807	3.869
204) bis(2-Ethylhexyl)phthalate	(5)	18.094	149	434001	3.753
208) 6-Methylchrysene	(5)	18.794	242	281332	3.700
210) Di-n-octylphthalate	(6)	19.276	149	730380	3.758
211) Benzo(b)fluoranthene	(6)	19.800	252	421826	4.037
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.805	256	164092	3.700
213) Benzo(k)fluoranthene	(6)	19.843	252	408413	3.889
216) Benzo(a)pyrene	(6)	20.335	252	381218	3.915
218)*Perylene-d12	(6)	20.426	264	410397	5.000
220) 3-Methylcholanthrene	(6)	20.912	268	168176	3.792
222) Dibenz(a,h)acridine	(6)	21.741	279	308529	3.793
223) Dibenz(a,j)acridine	(6)	21.816	279	305497	3.779
224) Indeno(1,2,3-cd)pyrene	(6)	22.084	276	348062M	3.919
225) Dibenz(a,h)anthracene	(6)	22.126	278	375127	4.039
226) Benzo(g,h,i)perylene	(6)	22.506	276	363165	3.886

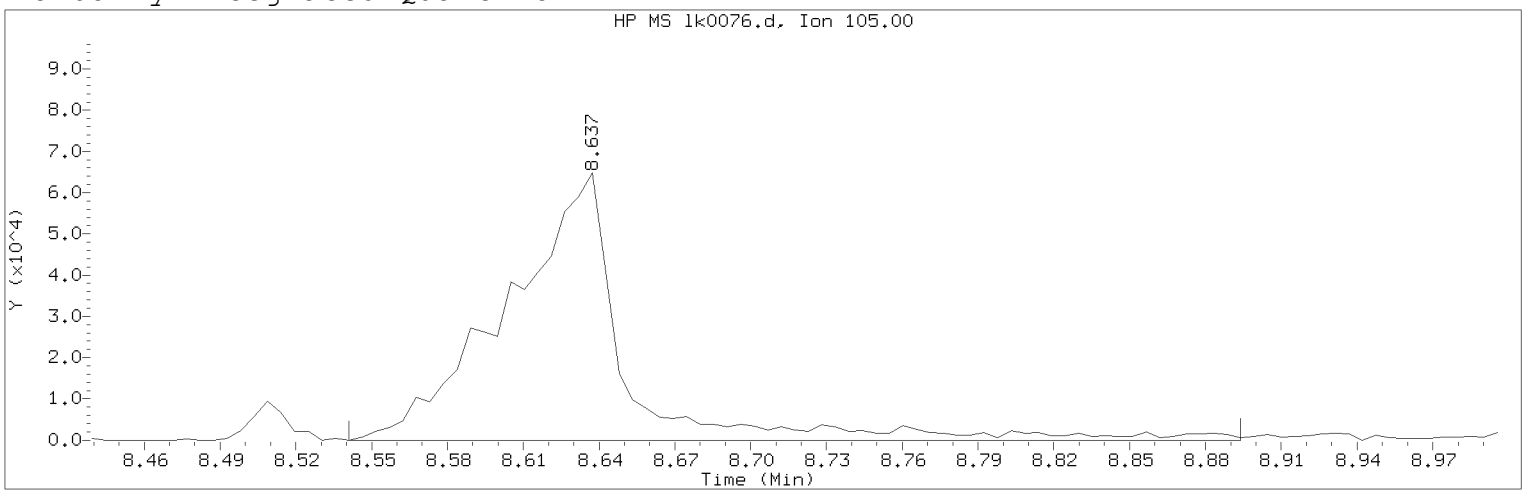
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

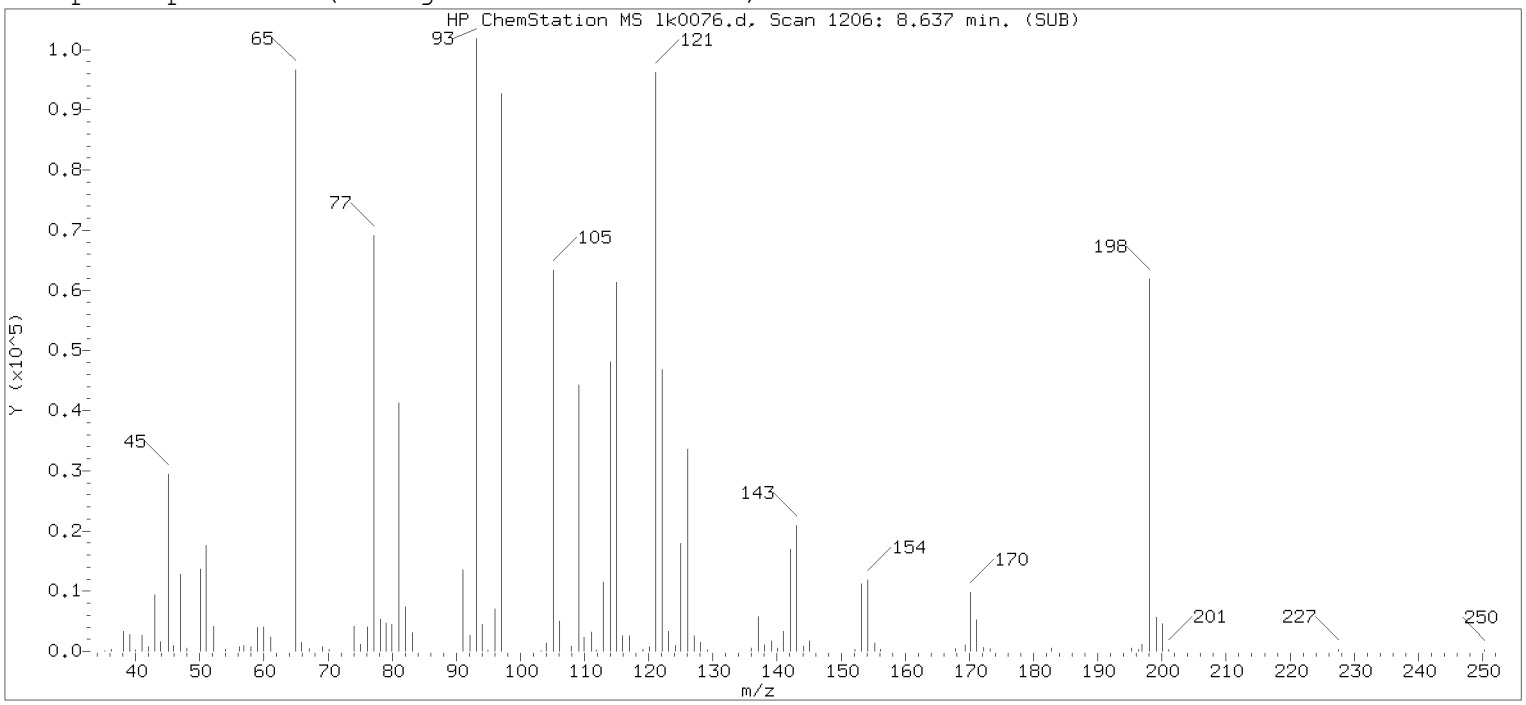
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1206
Retention Time (minutes) : 8.637
Quant Ion : 105.00
Area (flag) : 210037M
On-Column Amount (ng/ul) : 7.2964
Integration start scan : 1187 Integration stop scan: 1253
Y at integration start : -55 Y at integration end: -55

Reason for manual integration: improper integration

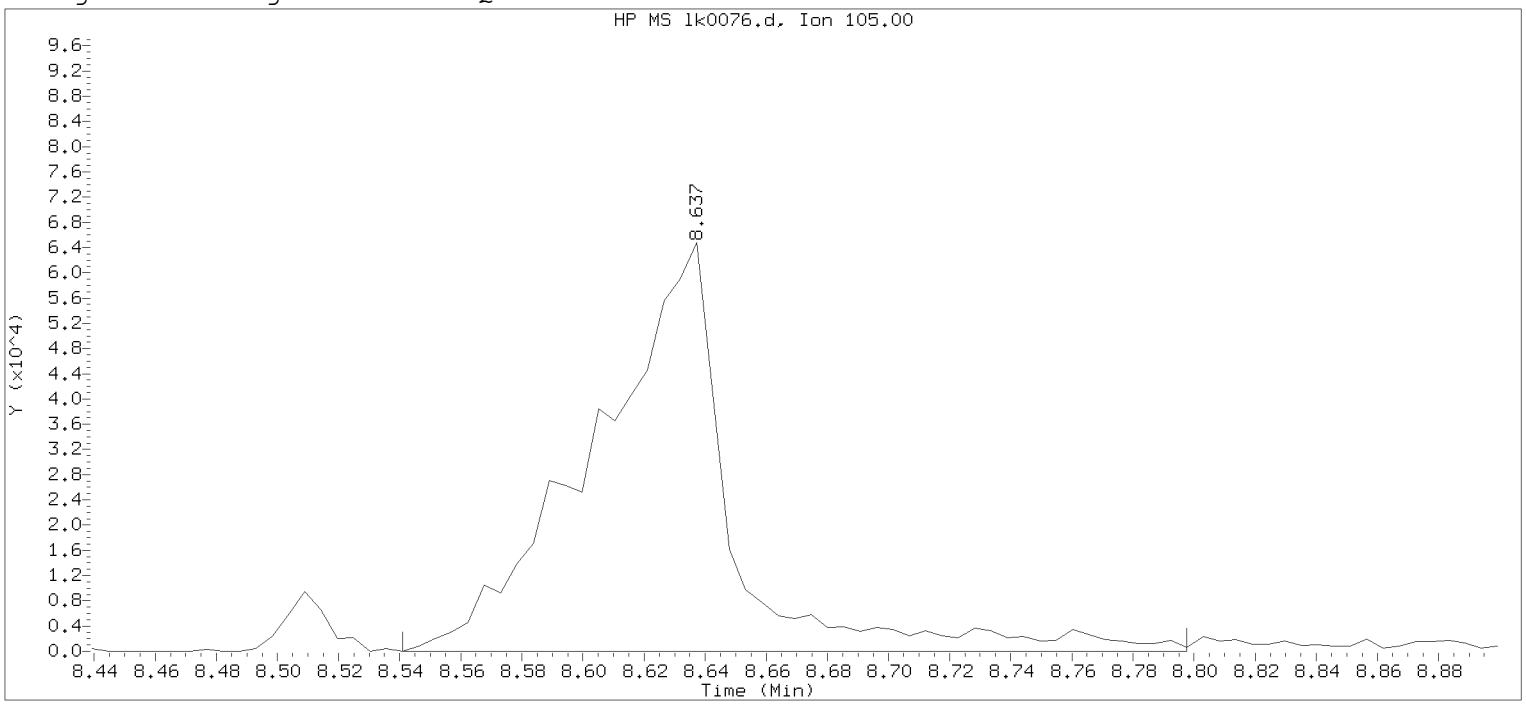
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

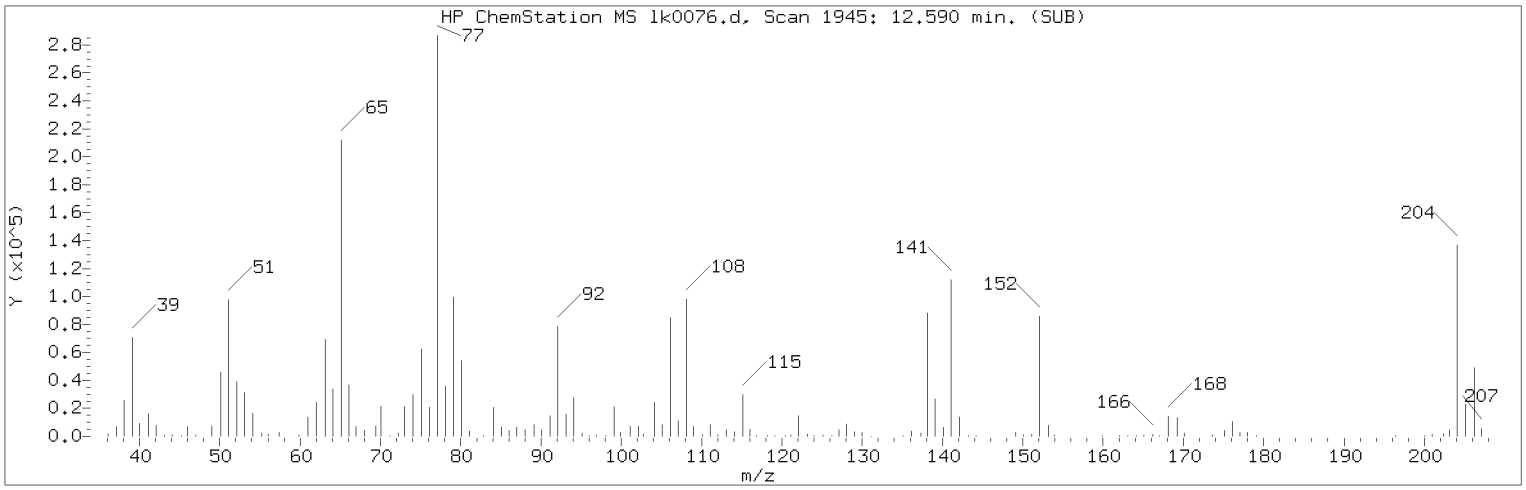
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:30
Date, time and analyst ID of latest file update: 04-Nov-2019 17:30 Unknown

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

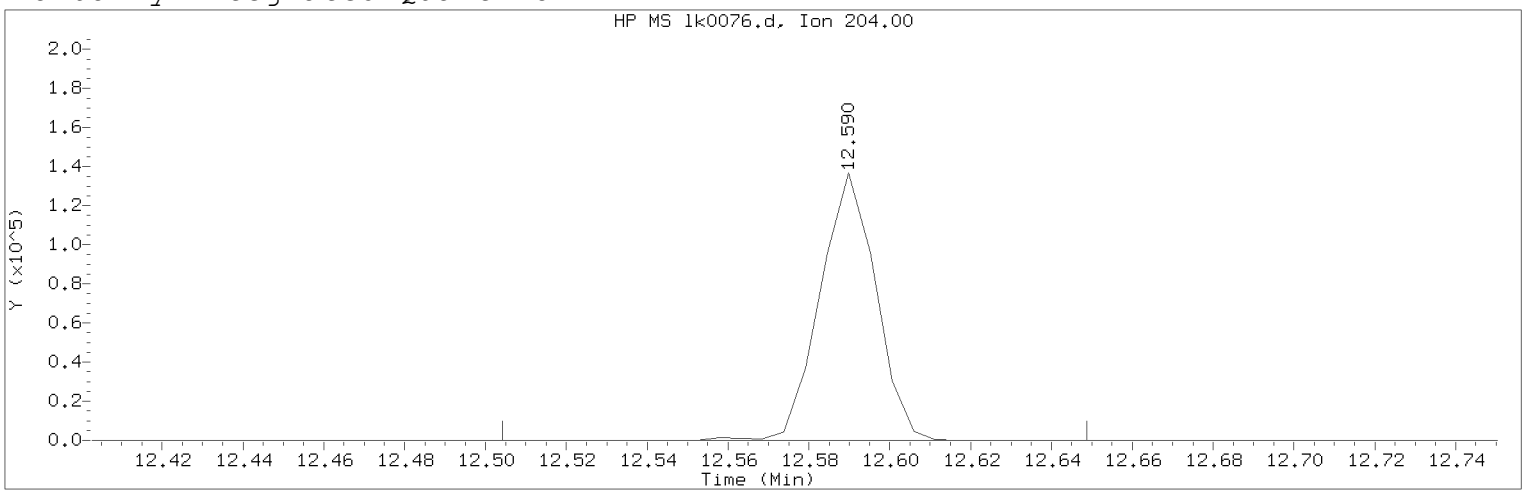
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1206		
Retention Time (minutes)	: 8.637		
Quant Ion	: 105.00		
Area	: 201385		
On-column Amount (ng/ul)	: 9.3503		
Integration start scan	: 1187	Integration stop scan:	1235
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user RAF48 Page 1008 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

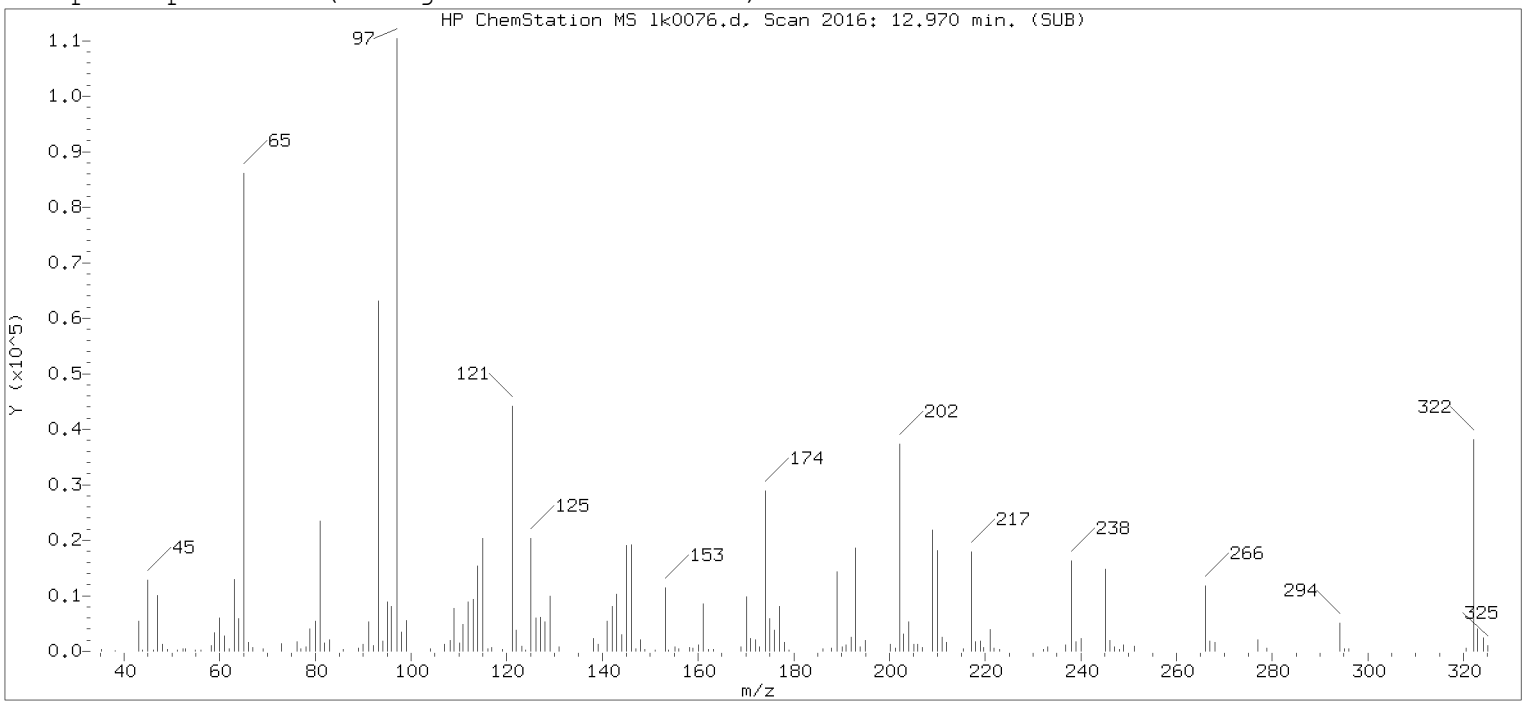
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1945
Retention Time (minutes) : 12.590
Quant Ion : 204.00
Area (flag) : 131102M
On-Column Amount (ng/ul) : 3.9582
Integration start scan : 1928 Integration stop scan: 1955
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

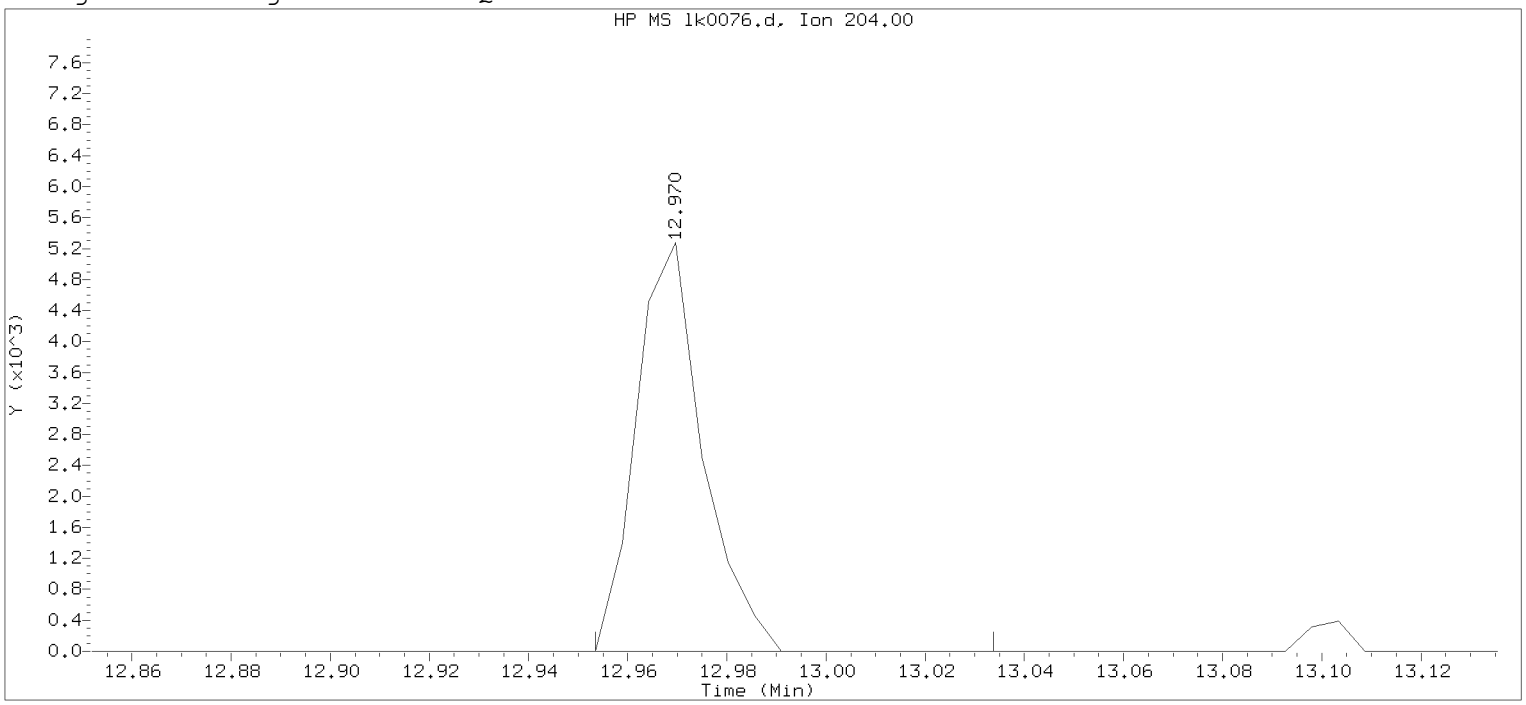
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

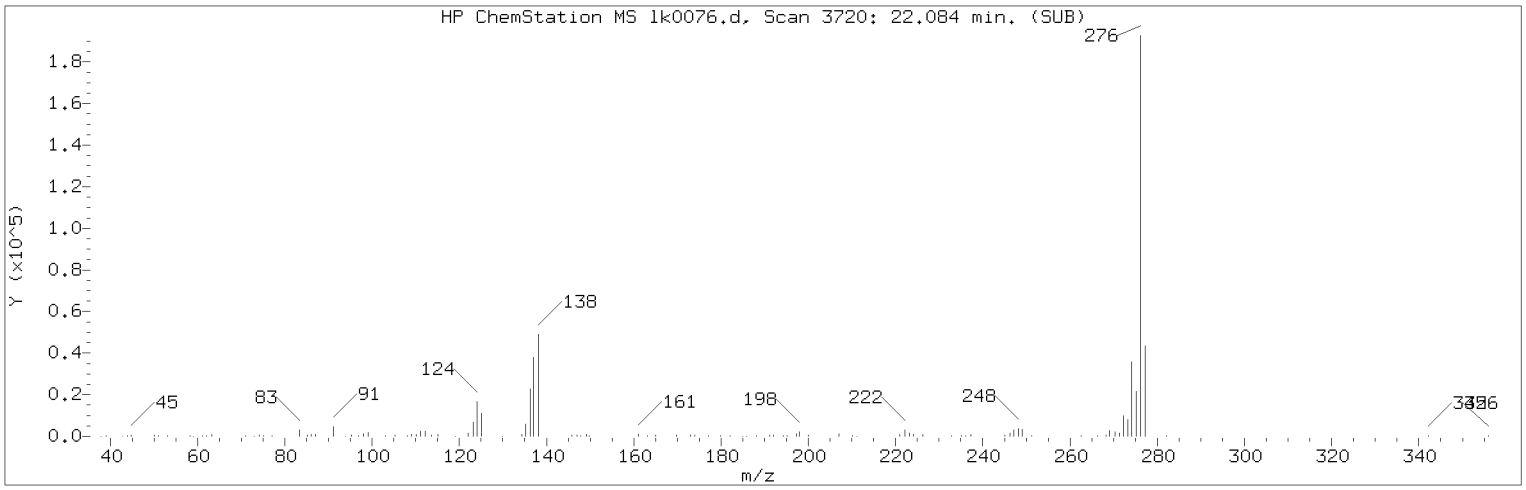
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:30
Date, time and analyst ID of latest file update: 04-Nov-2019 17:30 Unknown

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

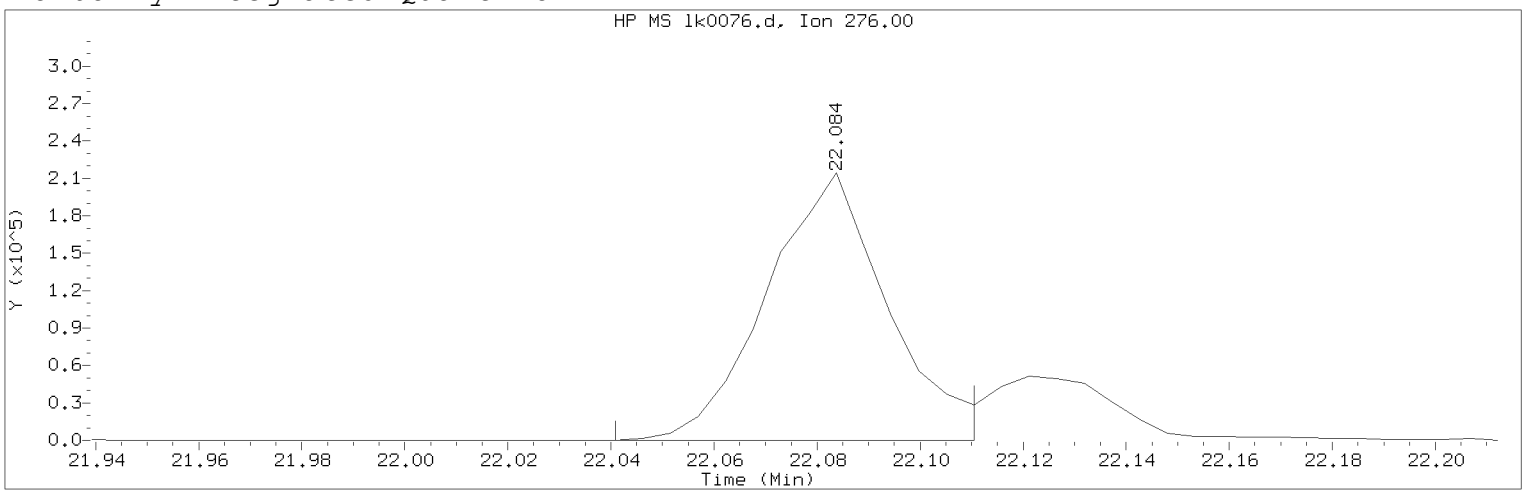
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2016		
Retention Time (minutes)	: 12.970		
Quant Ion	: 204.00		
Area	: 4912		
On-column Amount (ng/ul)	: 0.1310		
Integration start scan	: 2012	Integration stop scan:	2027
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature used for this report

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

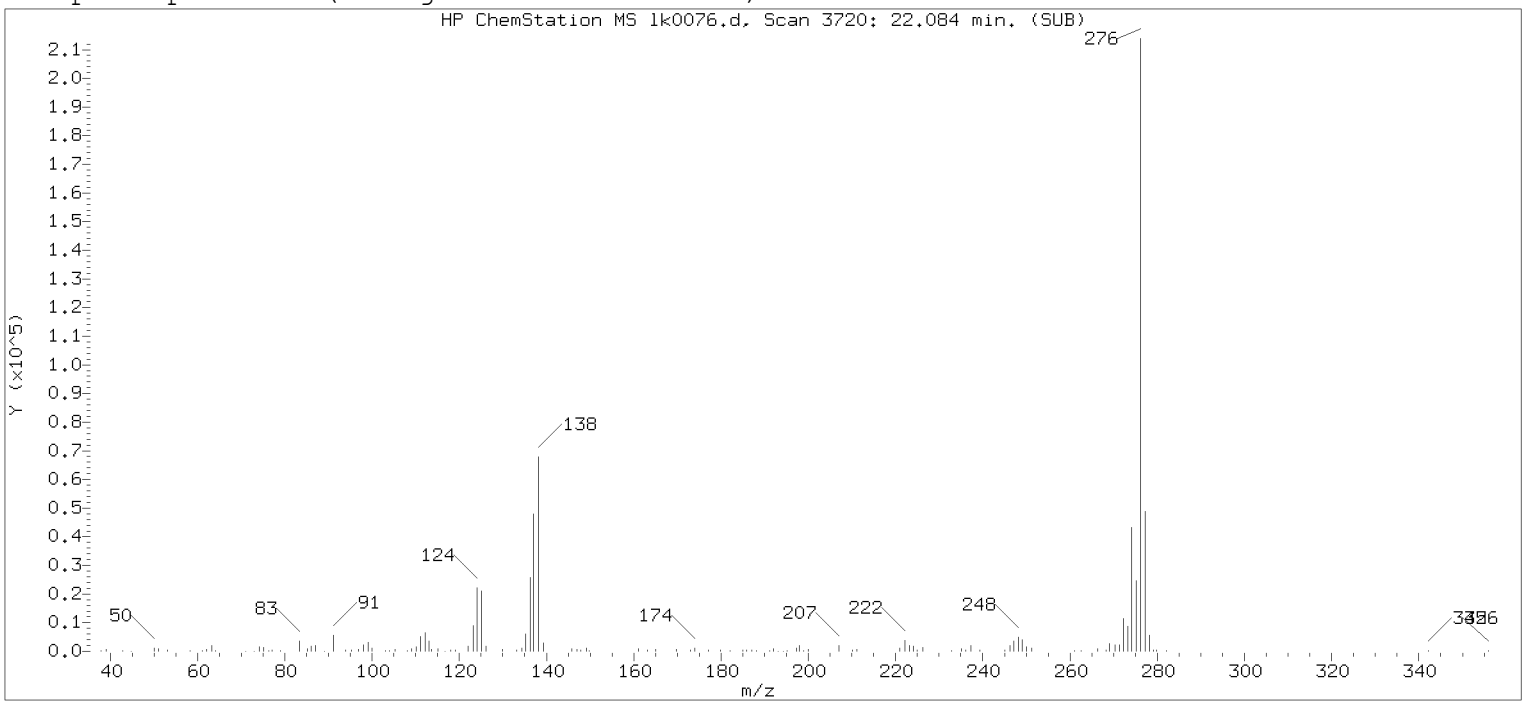
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3720
Retention Time (minutes) : 22.084
Quant Ion : 276.00
Area (flag) : 348062M
On-Column Amount (ng/ul) : 3.9189
Integration start scan : 3711 Integration stop scan: 3724
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

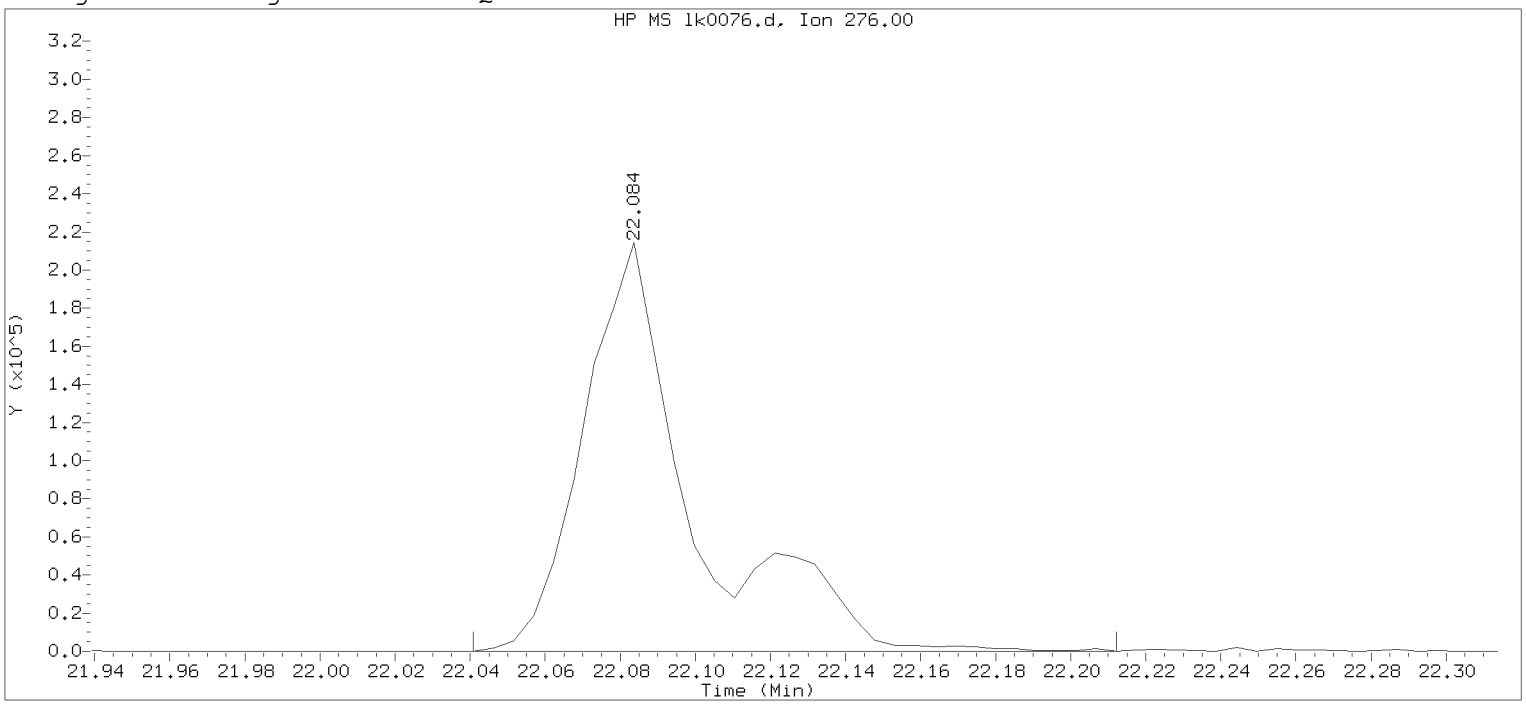
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



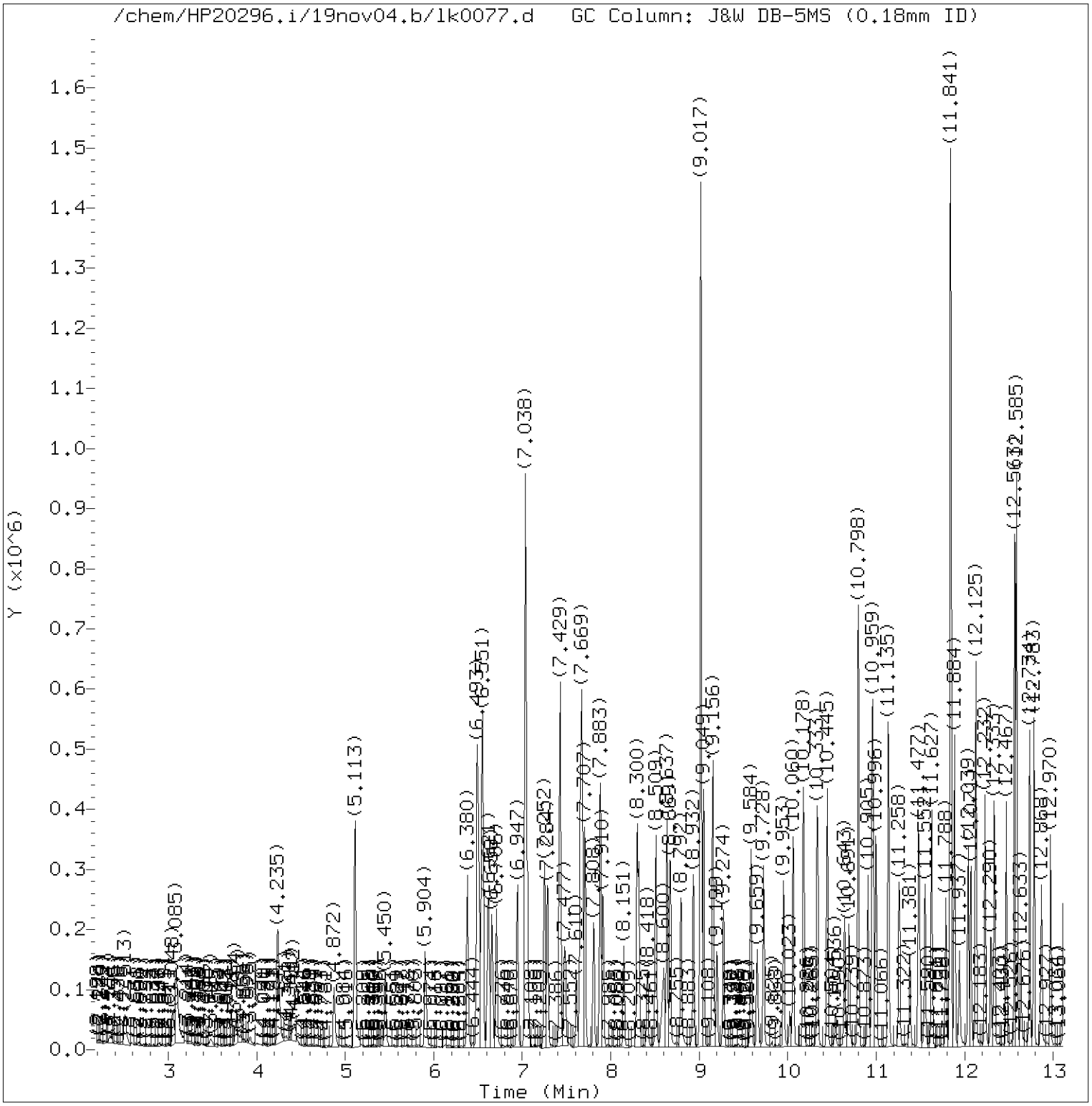
Data File: /chem/HP20296.i/19nov04.b/lk0076.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 16:57 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:30
Date, time and analyst ID of latest file update: 04-Nov-2019 17:30 Unknown

Sample Name: SSTD3.75 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3720		
Retention Time (minutes)	: 22.084		
Quant Ion	: 276.00		
Area	: 432358		
On-column Amount (ng/ul)	: 0.8409		
Integration start scan	: 3711	Integration stop scan:	3743
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user F48 Page 1012



Total Ion Chromatogram (TIC)

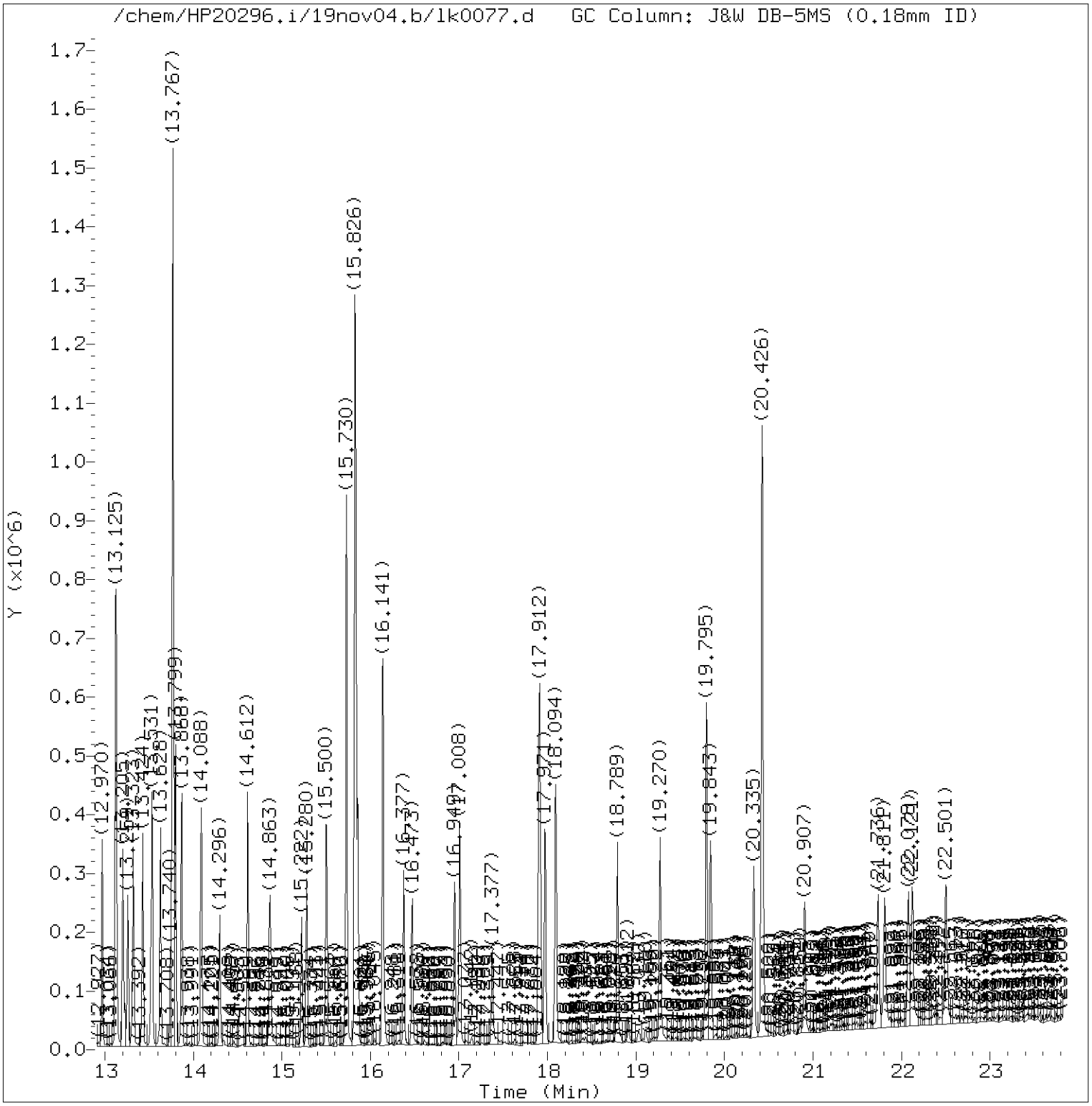
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.513	88	40792	1.307
5) N-Nitrosodimethylamine	(1)	3.053	74	67249	1.267
6) Pyridine	(1)	3.085	79	121223	1.343
8) 2-Picoline	(1)	4.235	93	104940	1.234
9) N-Nitrosomethylethylamine	(1)	4.428	88	45735	1.293
10) Methyl methanesulfonate	(1)	4.872	80	53346	1.264
12)$2-Fluorophenol	(1)	5.113	112	155652	2.591
14) N-Nitrosodiethylamine	(1)	5.455	102	43341	1.345
43) Total Cresols	(1)			158532	2.498
16) Ethyl methanesulfonate	(1)	5.904	109	39931	1.208
17) Benzaldehyde	(1)	6.380	77	95197	1.560
18)$Phenol-d6	(1)	6.493	99	219914	2.541
19) Phenol	(1)	6.509	94	130649	1.261
20) Aniline	(1)	6.541	93	158116	1.293
21) a-methylstyrene	(1)	6.626	118	31465	1.292
23) bis(2-Chloroethyl)ether	(1)	6.658	93	101443	1.265
24) 2-Chlorophenol	(1)	6.706	128	65985	1.229
25) 1,3-Dichlorobenzene	(1)	6.947	146	72419	1.323
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	161049	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	70810	1.295
28) Benzyl alcohol	(1)	7.252	108	52749	1.239
29) 1,2-Dichlorobenzene	(1)	7.289	146	75632	1.413
100) Isosafrole	(3)			48470	1.268
31) Indene	(1)	7.423	115	123408	1.279
32) 2-Methylphenol	(1)	7.429	108	77849	1.283
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.477	45	112627	1.257
35) bis(2-Chloroisopropyl)ether	(1)	7.477	45	112627	1.257
36) N-Nitrosopyrrolidine	(1)	7.616	100	42747	1.167
37) Acetophenone	(1)	7.659	105	131042	1.303
39) N-Nitroso-di-n-propylamine	(1)	7.669	70	88270	1.338
38) 4-Methylphenol	(1)	7.675	108	80683	1.215
40) N-Nitrosomorpholine	(1)	7.685	56	54900	1.312
41) o-Toluidine	(1)	7.707	106	137446	1.272
44) Hexachloroethane	(1)	7.808	117	36046	1.271
45)$Nitrobenzene-d5	(2)	7.883	82	220393	2.526
46) Nitrobenzene	(2)	7.915	77	118954	1.270
125) 2,4_2,6-Dinitrotoluenes	(3)			48355	2.333
50) N-Nitrosopiperidine	(2)	8.151	114	37896	1.216
52) Isophorone	(2)	8.300	82	207704	1.243
53) 2-Nitrophenol	(2)	8.418	139	20222	1.006

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.509	107	88955	1.266
58) Benzoic acid	(2)	8.600	105	79196M	2.665
59) O,O,O-Triethylphosphorothioate	(2)	8.637	198	23864	1.273
57) bis(2-Chloroethoxy)methane	(2)	8.669	93	131687	1.311
151) Diallate trans/cis	(4)			96765	1.266
62) 2,4-Dichlorophenol	(2)	8.792	162	43959	1.191
65) 1,2,4-Trichlorobenzene	(2)	8.932	180	50208	1.305
68)*Naphthalene-d8	(2)	9.017	136	681098	5.000
69) Naphthalene	(2)	9.049	128	207603	1.303
70) 4-Chloroaniline	(2)	9.151	127	87584	1.337
71) 2,6-Dichlorophenol	(2)	9.162	162	48165	1.388
72) Hexachloropropene	(2)	9.199	213	22838	1.249
74) Hexachlorobutadiene	(2)	9.274	225	24331	1.273
78) Quinoline	(2)	9.584	129	123269	1.282
79) Caprolactam	(2)	9.659	113	20493	1.256
80) N-Nitrosodi-n-butylamine	(2)	9.728	84	79066	1.229
83) 4-Chloro-3-methylphenol	(2)	9.953	107	67210	1.164
85) Safrole	(2)	10.065	162	39176	1.191
86) 2-Methylnaphthalene	(2)	10.178	142	122373	1.310
87) 1-Methylnaphthalene	(2)	10.333	142	113968	1.256
88) Hexachlorocyclopentadiene	(3)	10.445	237	24144	1.278
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.451	216	44265	1.363
91) cis-Isosafrole	(3)	10.536	162	8412	0.229
93) 2,4,6-Trichlorophenol	(3)	10.643	196	27052	1.292
95) 2,4,5-Trichlorophenol	(3)	10.697	196	26053	1.154
96)$2-Fluorobiphenyl	(3)	10.798	172	224160	2.586
97) trans-Isosafrole	(3)	10.905	162	40058	1.040
98) 1,1'-Biphenyl	(3)	10.953	154	137928	1.296
99) 2-Chloronaphthalene	(3)	10.964	162	109420	1.271
101) 1-Chloronaphthalene	(3)	11.001	162	102791	1.371
103) Diphenyl ether	(3)	11.135	170	66913	1.283
104) 2-Nitroaniline	(3)	11.140	138	29946	1.097
108) 1,4-Naphthoquinone	(3)	11.264	158	44315	1.267
109) 1,4-Dinitrobenzene	(3)	11.381	168	8211	0.865
110) Dimethylphthalate	(3)	11.477	163	122757	1.376
111) 1,3-Dinitrobenzene	(3)	11.493	168	11213	0.965
113) 2,6-Dinitrotoluene	(3)	11.552	165	23665	1.285
114) Acenaphthylene	(3)	11.627	152	170642	1.334
117) 3-Nitroaniline	(3)	11.788	138	28596	1.190
118)*Acenaphthene-d10	(3)	11.841	164	283928	5.000

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.884	153	118731	1.349
120) 2,4-Dinitrophenol	(3)	11.937	184	11818	5.485
121) 4-Nitrophenol	(3)	12.039	109	40278	2.066
122) Pentachlorobenzene	(3)	12.071	250	35824	1.352
123) 2,4-Dinitrotoluene	(3)	12.125	165	24690	1.048
124) Dibenzofuran	(3)	12.130	168	146575	1.359
126) 1-Naphthylamine	(3)	12.232	143	112921	1.268
127) 2,3,4,6-Tetrachlorophenol	(3)	12.296	232	17006	1.237
128) 2-Naphthylamine	(3)	12.333	143	120566	1.406
129) Diethylphthalate	(3)	12.472	149	132663	1.374
130) Thionazin	(3)	12.563	107	33715	1.375
131) Fluorene	(3)	12.569	166	115809	1.318
133) 5-Nitro-o-toluidine	(3)	12.585	152	33920	1.356
134) 4-Nitroaniline	(3)	12.590	138	29348	1.219
132) 4-Chlorophenyl-phenylether	(3)	12.590	204	44176M	1.286
135) 4,6-Dinitro-2-methylphenol	(4)	12.638	198	11371	1.507
137) NDPA as diphenylamine	(4)	12.734	169	94487	1.241
136) N-Nitrosodiphenylamine	(4)	12.734	169	94487	1.241
139) 1,2-Diphenylhydrazine	(4)	12.783	77	245816	1.289
140)$2,4,6-Tribromophenol	(3)	12.868	332	21958	2.586
142) Tetraethyldithiopyrophosphate	(4)	12.970	97	36545	1.298
145) Diallate (peak 1)	(4)	13.114	86	82505	1.054
146) Phorate	(4)	13.125	75	145201	1.235
147) Phenacetin	(4)	13.130	108	91189	1.231
148) 4-Bromophenyl-phenylether	(4)	13.205	248	24871	1.364
149) Diallate (peak 2)	(4)	13.226	86	14260	0.212
150) Hexachlorobenzene	(4)	13.259	284	28480	1.318
152) Dimethoate	(4)	13.323	87	79750	1.144
153) Atrazine	(4)	13.424	200	27244	1.337
154) Pentachlorophenol	(4)	13.521	266	11505	1.052
155) 4-Aminobiphenyl	(4)	13.531	169	66904	1.196
156) Pentachloronitrobenzene	(4)	13.531	237	9582	1.086
157) Pronamide	(4)	13.628	173	52499	1.235
158)*Phenanthrene-d10	(4)	13.767	188	506998	5.000
159) Dinoseb	(4)	13.777	211	8067	3.480
160) Phenanthrene	(4)	13.799	178	168494	1.345
162) Anthracene	(4)	13.868	178	160321	1.293
168) Carbazole	(4)	14.088	167	151898	1.223
169) Methyl parathion	(4)	14.296	109	42202	0.962
170) Di-n-butylphthalate	(4)	14.612	149	221413	1.209

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

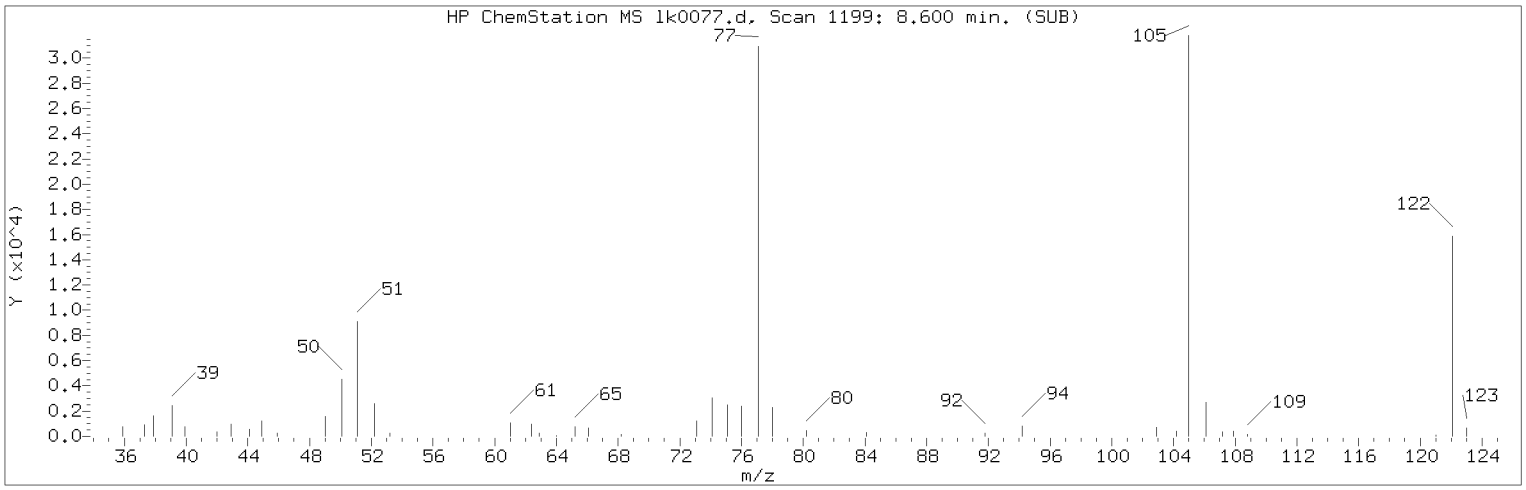
Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.858	109	25315	0.886
173) 4-Nitroquinoline-1-oxide	(4)	14.868	190	8650	3.010
227) Total PAHs	(6)			2541028	23.169
174) Octachlorostyrene	(4)	15.222	308	10961	1.258
176) Isodrin	(4)	15.280	193	18940	1.245
178) Fluoranthene	(4)	15.500	202	162015	1.285
179) Benzidine	(5)	15.730	184	337907	3.778
180)*Pyrene-d10	(5)	15.826	212	475782	5.000
182) Pyrene	(5)	15.858	202	170056	1.271
184)$Terphenyl-d14	(5)	16.141	244	195462	2.651
187) p-Dimethylaminoazobenzene	(5)	16.377	225	20699	1.098
190) Chlorobenzilate	(5)	16.473	139	67625	1.136
192) 3,3'-Dimethylbenzidine	(5)	16.949	212	96713	1.163
193) Butylbenzylphthalate	(5)	17.008	149	89028	1.102
196) 2-Acetylaminofluorene	(5)	17.377	181	51334	0.931
198) 3,3'-Dichlorobenzidine	(5)	17.896	252	52341	1.201
200) Benzo(a)anthracene	(5)	17.912	228	135553	1.233
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.917	231	28659	1.298
201) Chrysene	(5)	17.971	228	140113	1.251
204) bis(2-Ethylhexyl)phthalate	(5)	18.094	149	132854	1.113
208) 6-Methylchrysene	(5)	18.789	242	94154	1.199
210) Di-n-octylphthalate	(6)	19.270	149	216540	1.092
211) Benzo(b)fluoranthene	(6)	19.795	252	142476	1.337
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.800	256	52784	1.167
213) Benzo(k)fluoranthene	(6)	19.843	252	135784	1.268
216) Benzo(a)pyrene	(6)	20.335	252	129062	1.300
218)*Perylene-d12	(6)	20.426	264	418552	5.000
220) 3-Methylcholanthrene	(6)	20.912	268	52740	1.166
222) Dibenz(a,h)acridine	(6)	21.736	279	99180	1.195
223) Dibenz(a,j)acridine	(6)	21.811	279	100743	1.222
224) Indeno(1,2,3-cd)pyrene	(6)	22.078	276	107881M	1.191
225) Dibenz(a,h)anthracene	(6)	22.121	278	119313	1.260
226) Benzo(g,h,i)perylene	(6)	22.506	276	120834	1.268

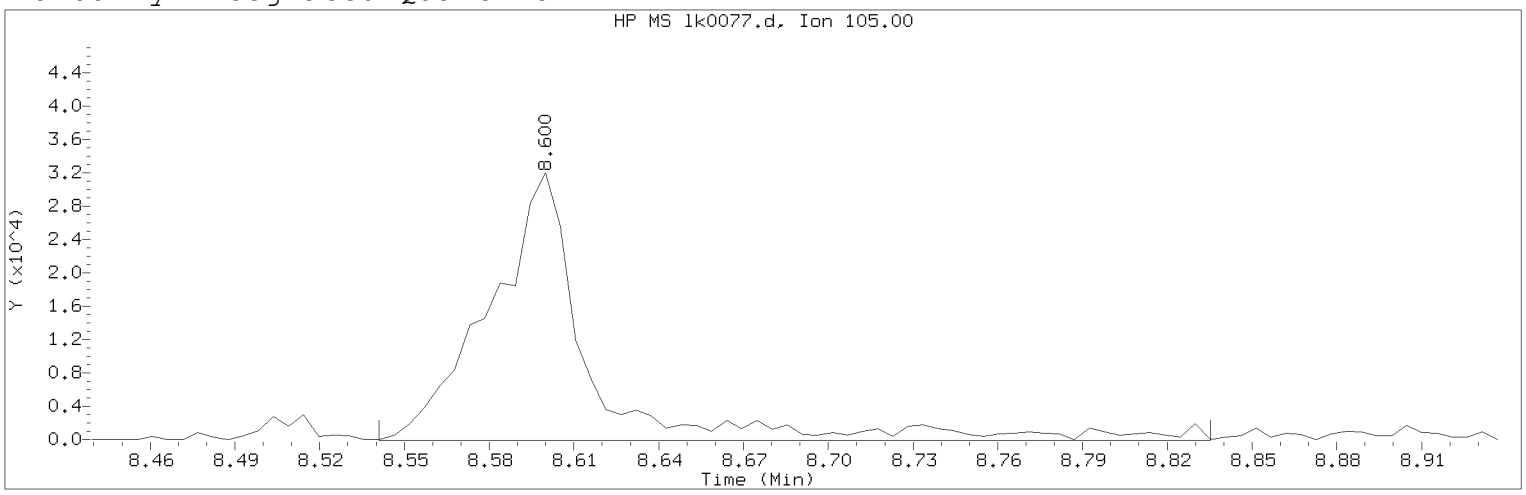
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

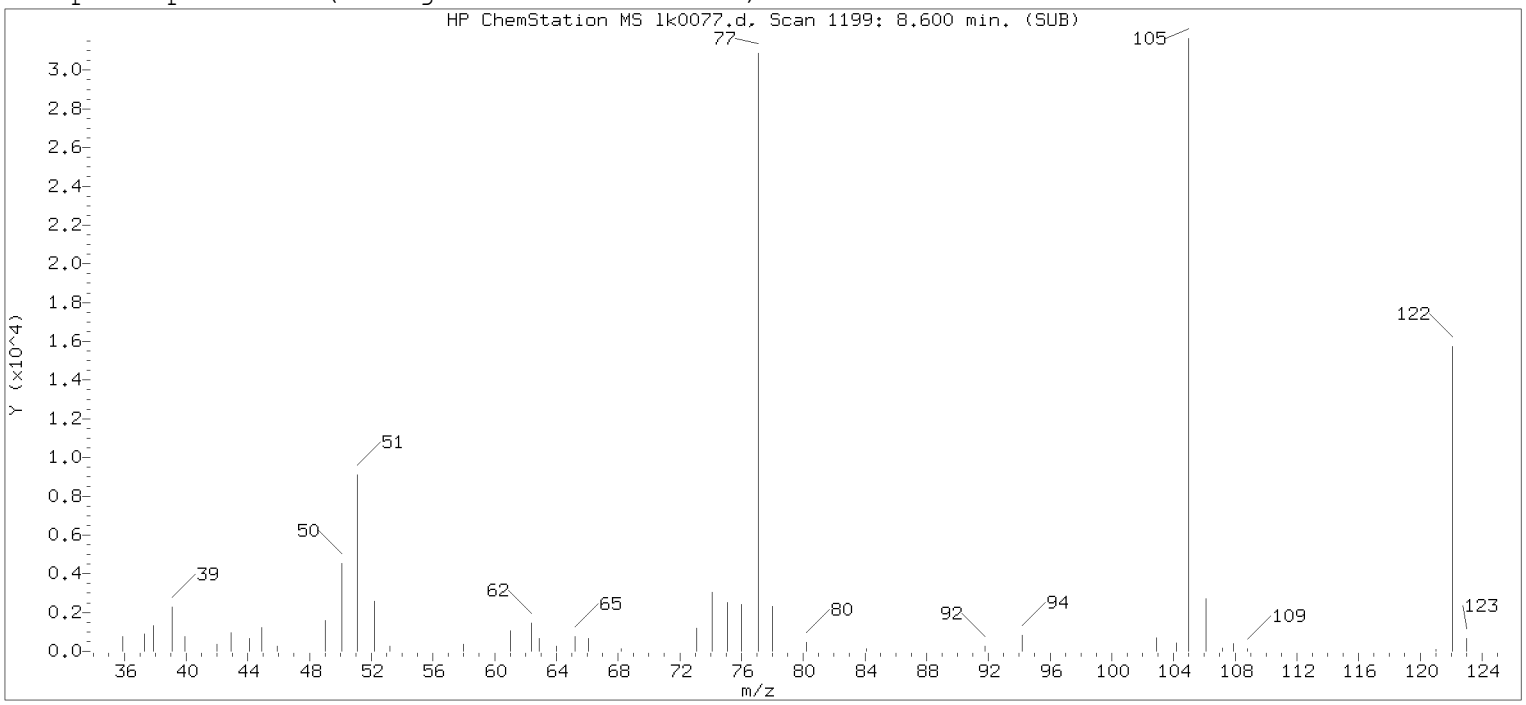
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1199
Retention Time (minutes) : 8.600
Quant Ion : 105.00
Area (flag) : 79196M
On-Column Amount (ng/ul) : 2.6652
Integration start scan : 1187 Integration stop scan: 1242
Y at integration start : -64 Y at integration end: -64

Reason for manual integration: improper integration

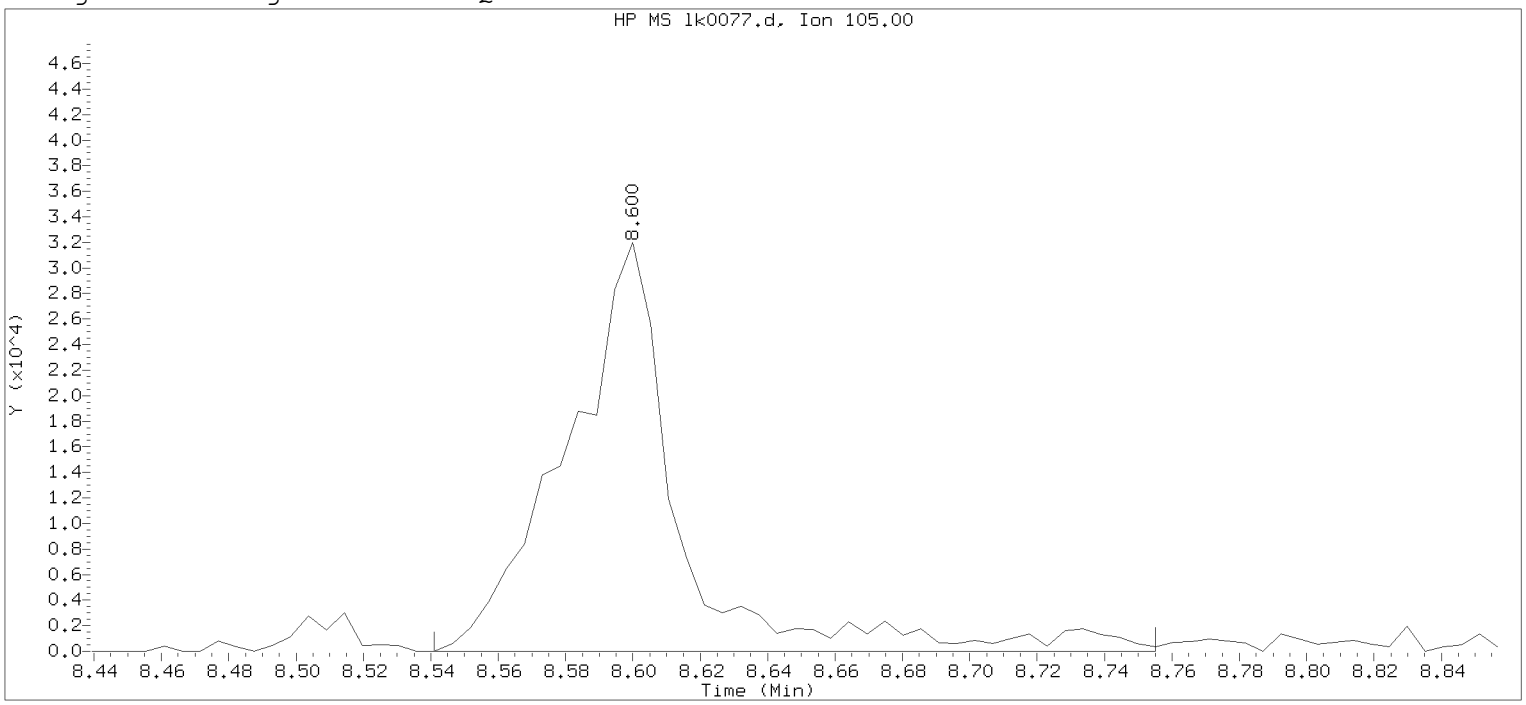
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

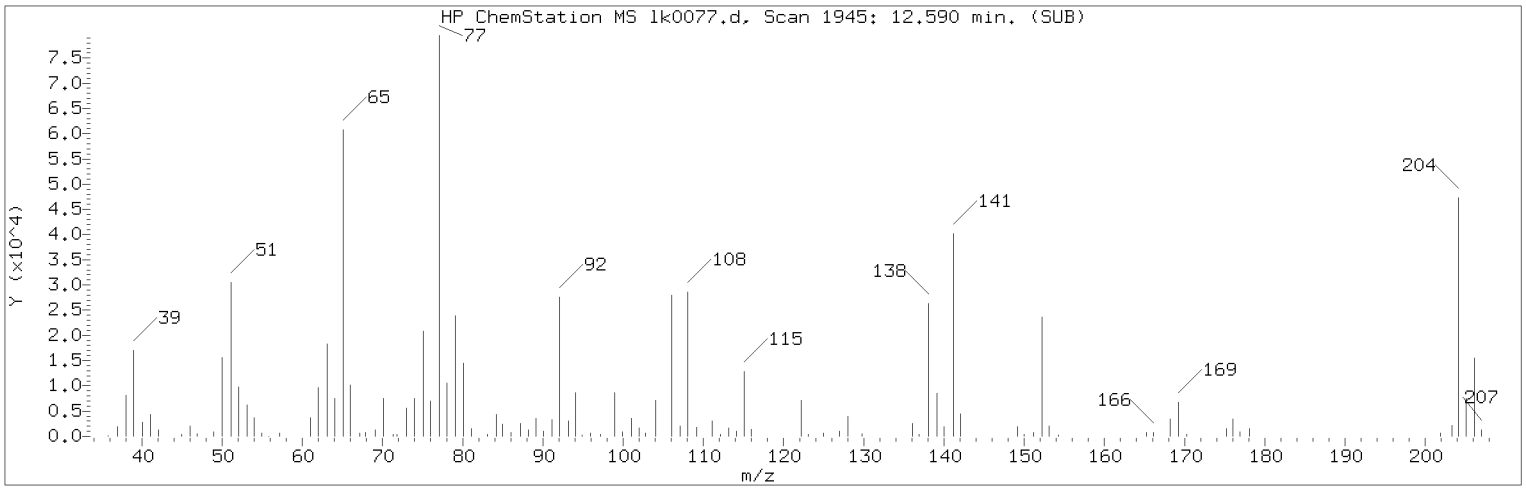
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:58
Date, time and analyst ID of latest file update: 04-Nov-2019 17:58 Unknown

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

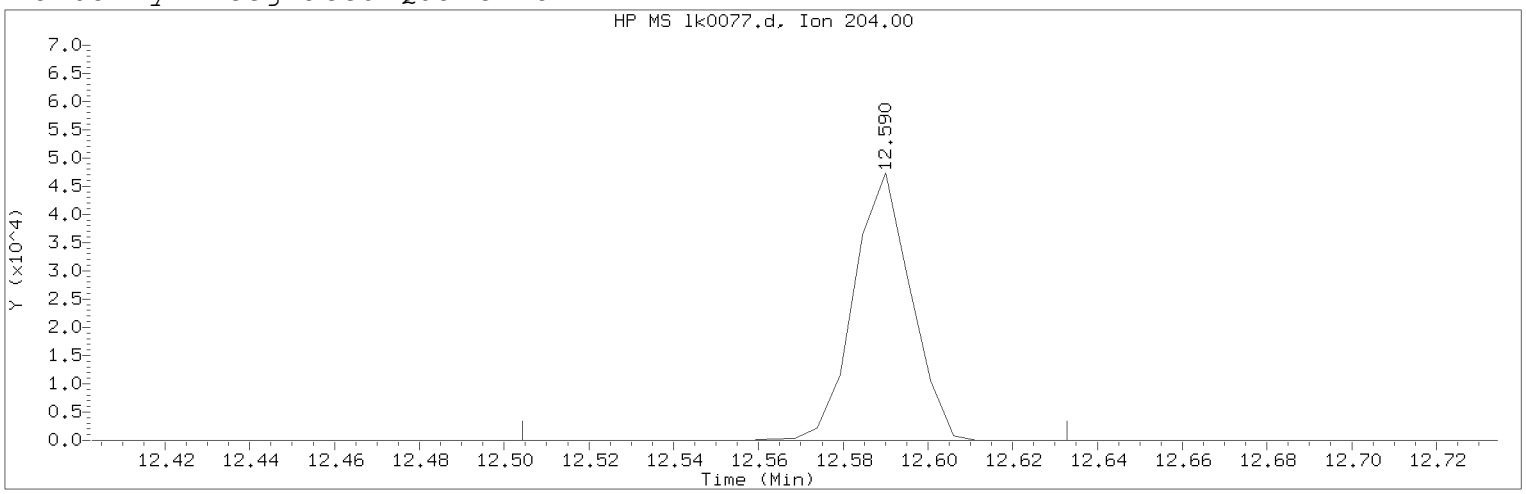
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1199		
Retention Time (minutes)	: 8.600		
Quant Ion	: 105.00		
Area	: 74406		
On-column Amount (ng/ul)	: 3.3467		
Integration start scan	: 1187	Integration stop scan:	1227
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user RAF48 Page 1020 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

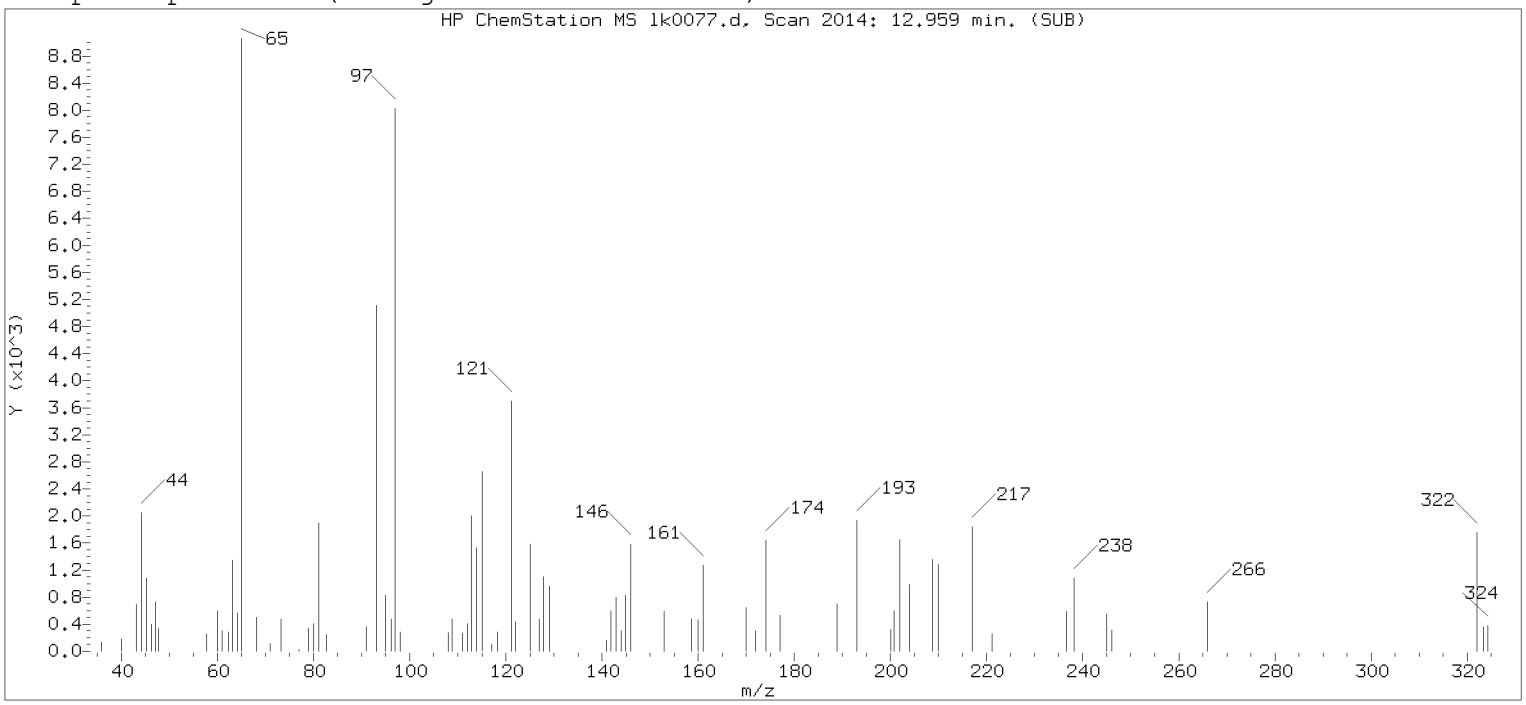
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1945
Retention Time (minutes) : 12.590
Quant Ion : 204.00
Area (flag) : 44176M
On-Column Amount (ng/ul) : 1.2860
Integration start scan : 1928 Integration stop scan: 1952
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

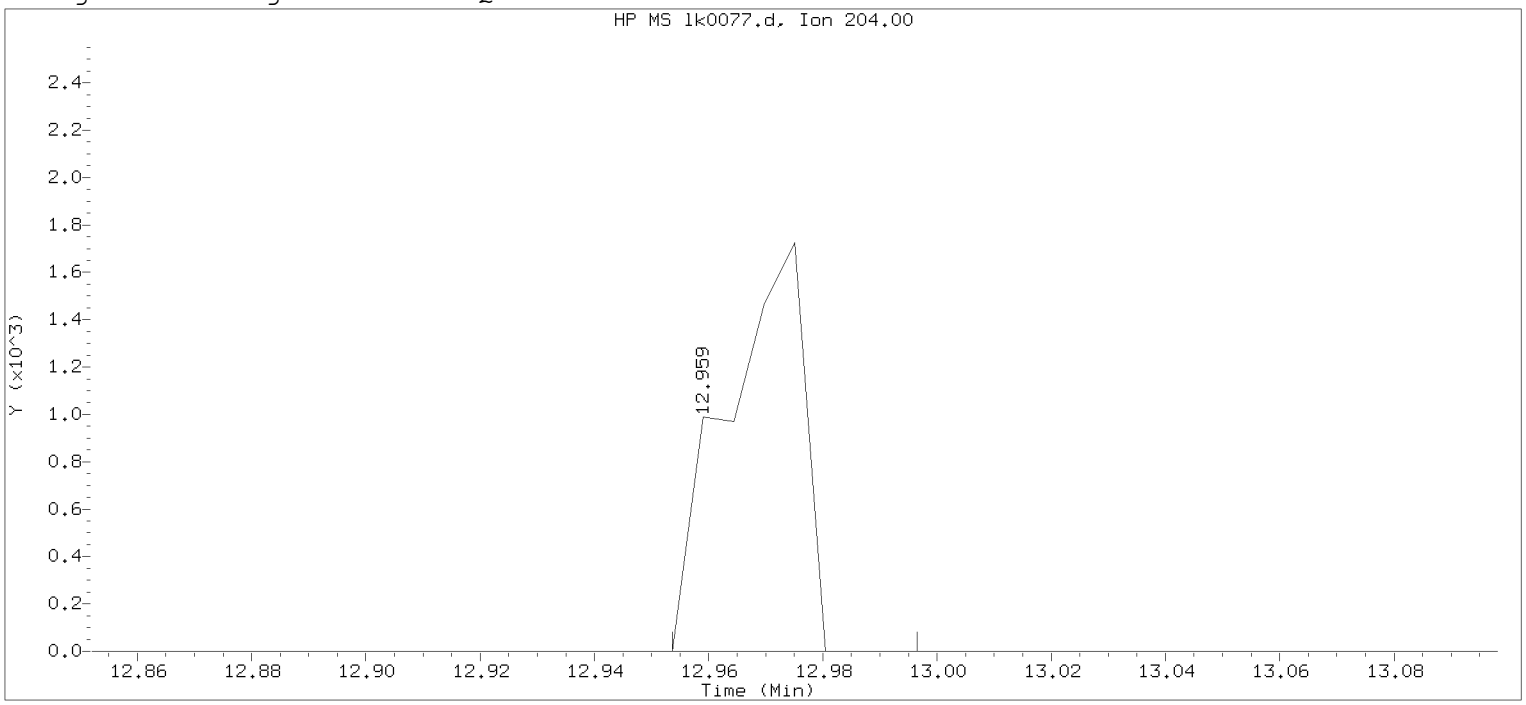
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

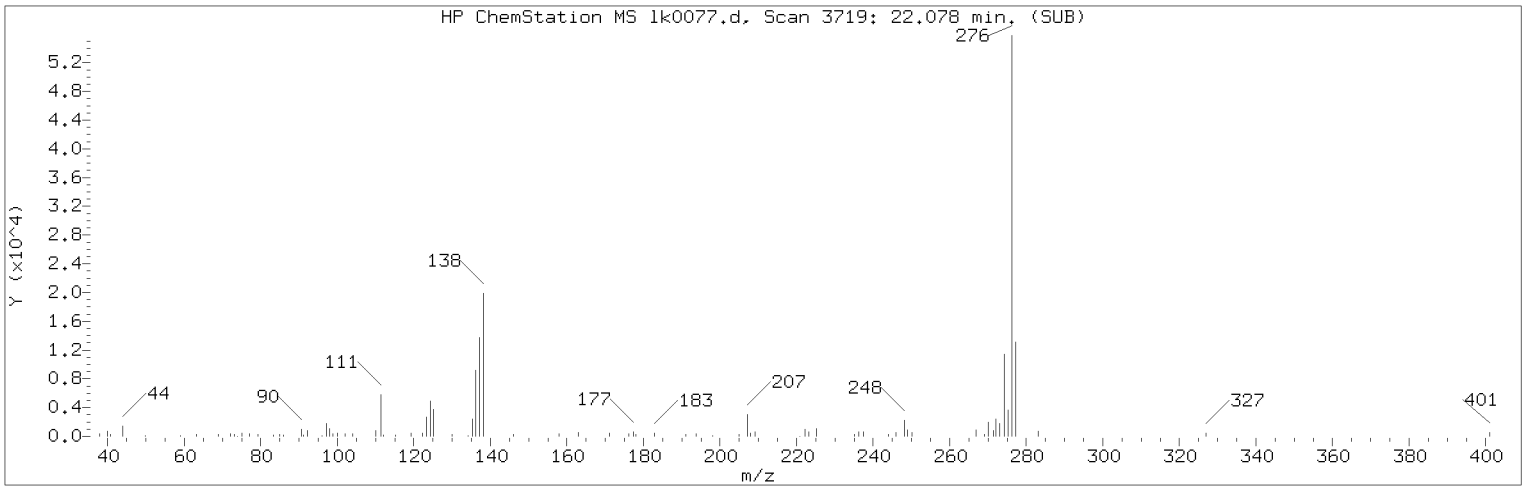
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:58
Date, time and analyst ID of latest file update: 04-Nov-2019 17:58 Unknown

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

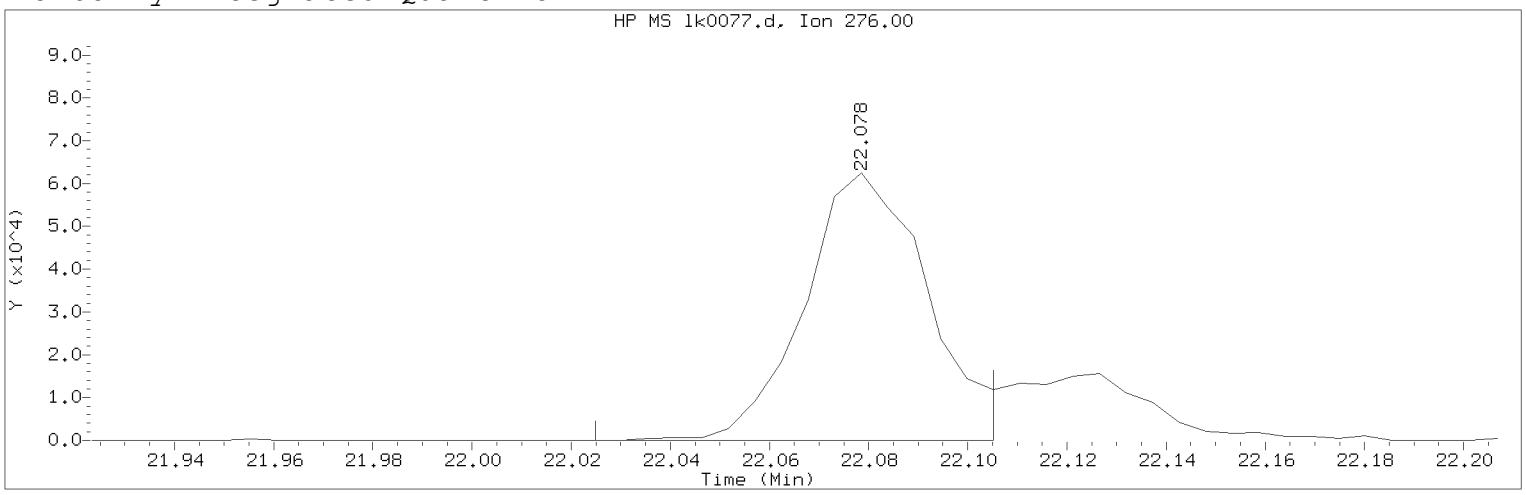
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2014		
Retention Time (minutes)	: 12.959		
Quant Ion	: 204.00		
Area	: 1652		
On-column Amount (ng/ul)	: 0.0425		
Integration start scan	: 2012	Integration stop scan:	2020
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1022

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:53
Date, time and analyst ID of latest file update: 05-Nov-2019 14:53 whs02991

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

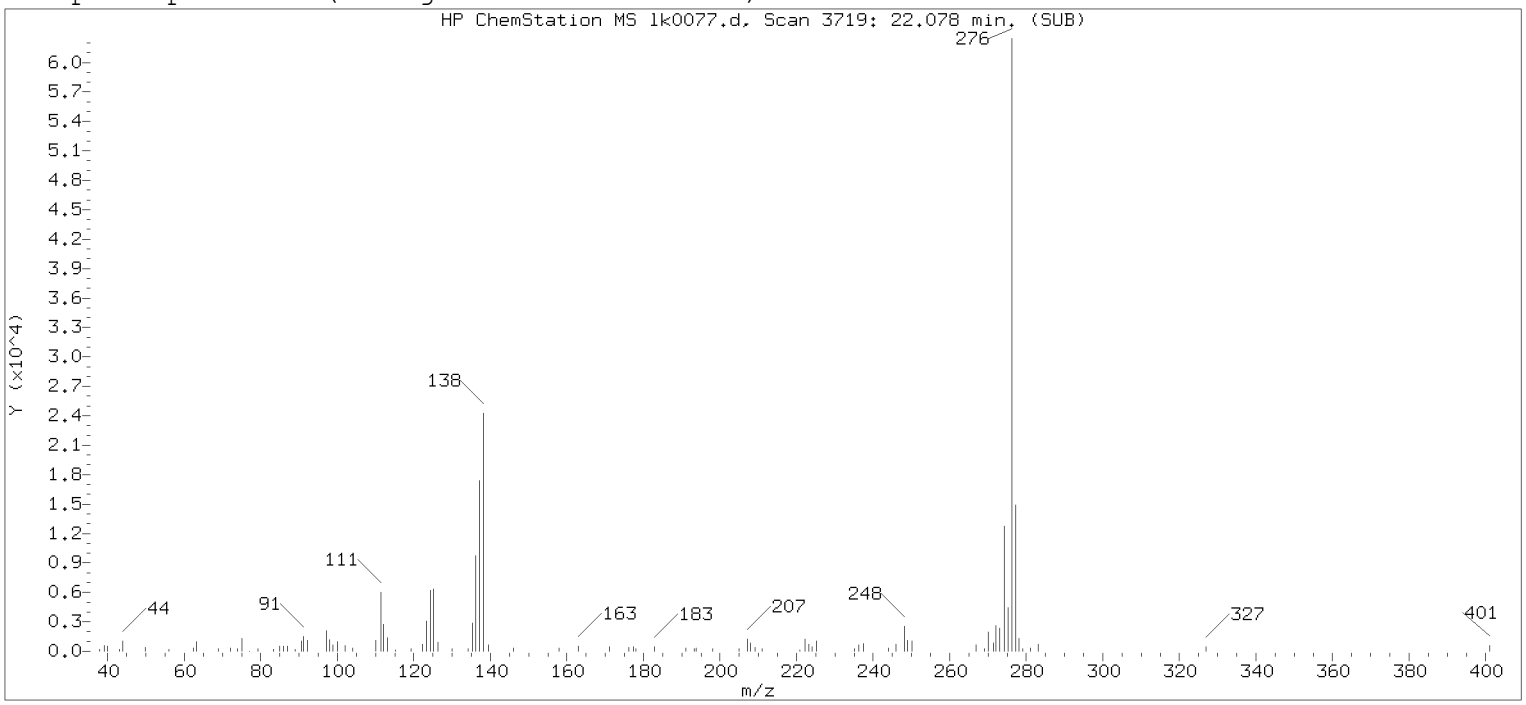
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3719
Retention Time (minutes) : 22.078
Quant Ion : 276.00
Area (flag) : 107881M
On-Column Amount (ng/ul) : 1.1910
Integration start scan : 3708 Integration stop scan: 3723
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

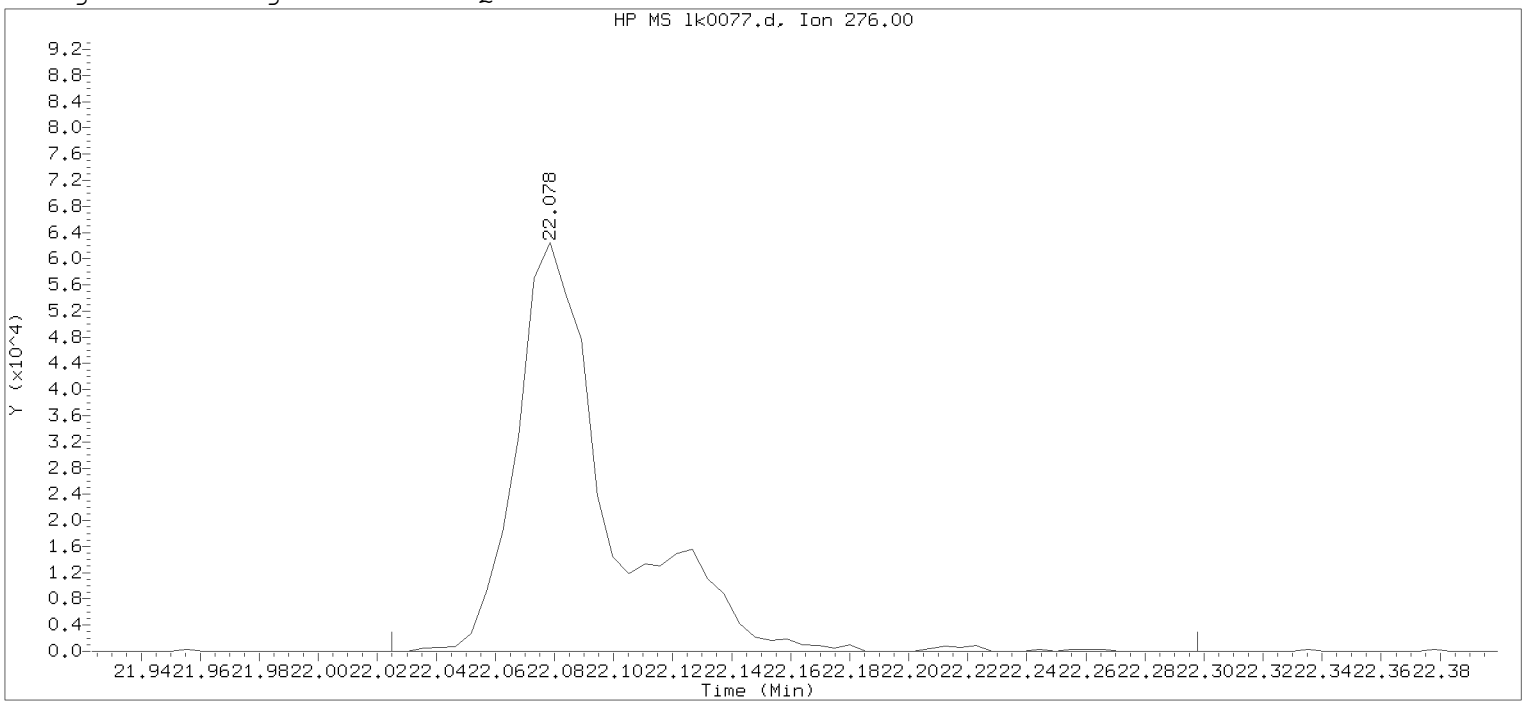
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



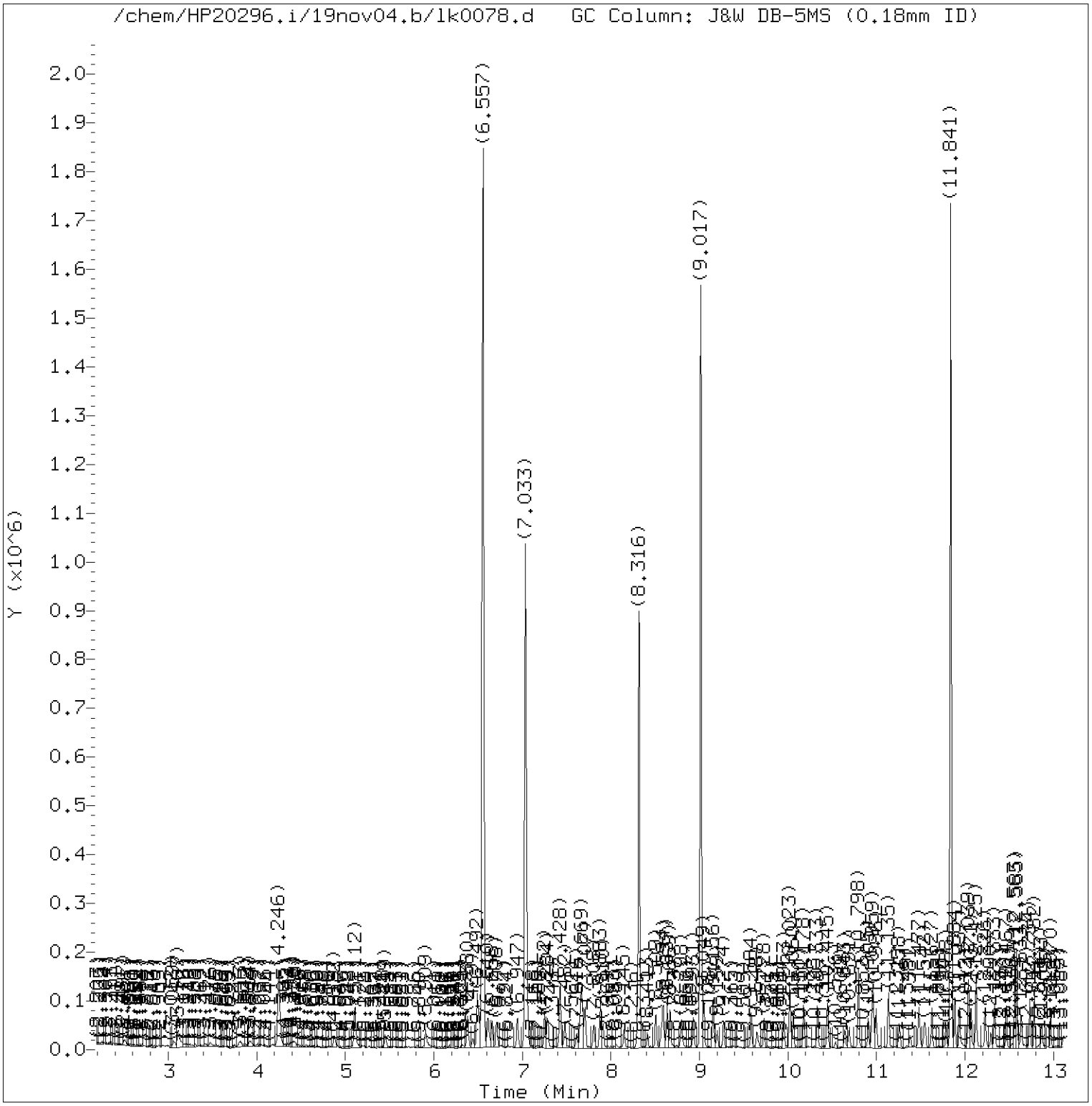
Data File: /chem/HP20296.i/19nov04.b/lk0077.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:26 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 17:58
Date, time and analyst ID of latest file update: 04-Nov-2019 17:58 Unknown

Sample Name: SSTD1.25 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3719		
Retention Time (minutes)	: 22.078		
Quant Ion	: 276.00		
Area	: 138025		
On-column Amount (ng/ul)	: 0.6233		
Integration start scan	: 3708	Integration stop scan:	3759
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1024 of 1181



Total Ion Chromatogram (TIC)

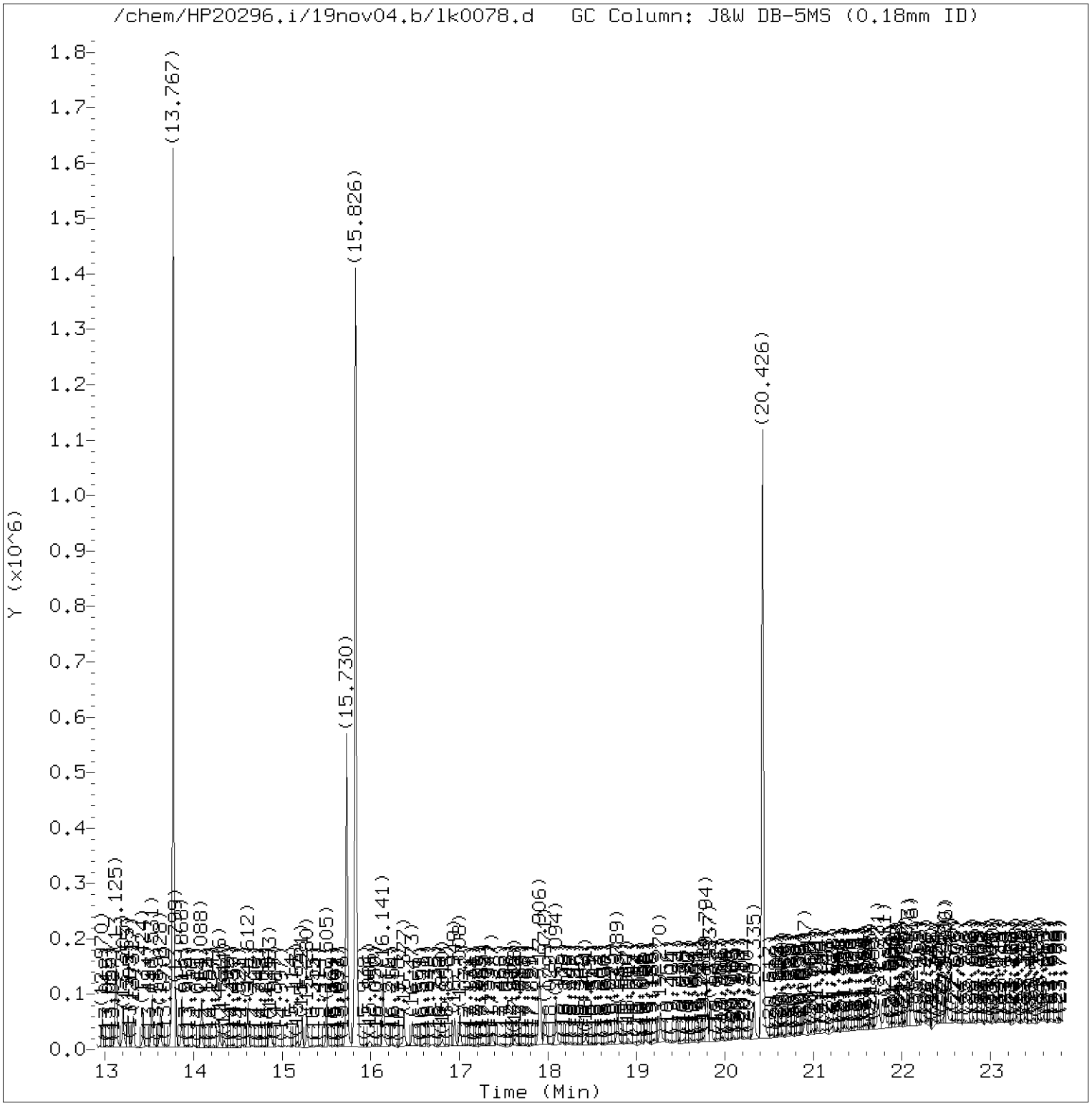
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.508	88	10204M	0.296
5) N-Nitrosodimethylamine	(1)	3.064	74	13549	0.231
6) Pyridine	(1)	3.112	79	28994	0.291
8) 2-Picoline	(1)	4.246	93	24828	0.265
9) N-Nitrosomethylethylamine	(1)	4.439	88	11349M	0.291
10) Methyl methanesulfonate	(1)	4.872	80	12054	0.259
12)$2-Fluorophenol	(1)	5.112	112	32134	0.485
14) N-Nitrosodiethylamine	(1)	5.444	102	6968	0.196
43) Total Cresols	(1)			34779	0.494
16) Ethyl methanesulfonate	(1)	5.909	109	9138	0.251
17) Benzaldehyde	(1)	6.380	77	22658	0.337
18)$Phenol-d6	(1)	6.492	99	45271	0.474
19) Phenol	(1)	6.508	94	29178	0.255
20) Aniline	(1)	6.535	93	32609	0.242
21) a-methylstyrene	(1)	6.626	118	6568	0.245
23) bis(2-Chloroethyl)ether	(1)	6.658	93	23377	0.264
24) 2-Chlorophenol	(1)	6.706	128	15153	0.256
25) 1,3-Dichlorobenzene	(1)	6.947	146	16235	0.269
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	177655	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	15412	0.256
28) Benzyl alcohol	(1)	7.252	108	12396	0.264
29) 1,2-Dichlorobenzene	(1)	7.284	146	15727	0.266
100) Isosafrole	(3)			11144	0.275
31) Indene	(1)	7.423	115	27836	0.261
32) 2-Methylphenol	(1)	7.428	108	15110	0.226
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.482	45	24536	0.248
35) bis(2-Chloroisopropyl)ether	(1)	7.482	45	24536	0.248
36) N-Nitrosopyrrolidine	(1)	7.610	100	9935	0.246
37) Acetophenone	(1)	7.653	105	28382	0.256
39) N-Nitroso-di-n-propylamine	(1)	7.669	70	17327	0.238
38) 4-Methylphenol	(1)	7.674	108	19669	0.269
40) N-Nitrosomorpholine	(1)	7.680	56	10997	0.238
41) o-Toluidine	(1)	7.707	106	29678	0.249
44) Hexachloroethane	(1)	7.808	117	8891	0.284
45)$Nitrobenzene-d5	(2)	7.883	82	44816	0.475
46) Nitrobenzene	(2)	7.910	77	23823	0.235
125) 2,4_2,6-Dinitrotoluenes	(3)			8155	0.368
50) N-Nitrosopiperidine	(2)	8.145	114	8178	0.243
52) Isophorone	(2)	8.300	82	43955	0.243
53) 2-Nitrophenol	(2)	8.413	139	3335	0.153

M = Compound was manually integrated.
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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.514	107	20209	0.266
58) Benzoic acid	(2)	8.589	105	49782M	1.549
59) O,O,O-Triethylphosphorothioate	(2)	8.637	198	4744	0.234
57) bis(2-Chloroethoxy)methane	(2)	8.669	93	26797	0.247
151) Diallate trans/cis	(4)			17521	0.220
62) 2,4-Dichlorophenol	(2)	8.798	162	9218	0.231
65) 1,2,4-Trichlorobenzene	(2)	8.931	180	10212	0.246
68)*Naphthalene-d8	(2)	9.017	136	736418	5.000
69) Naphthalene	(2)	9.054	128	44989	0.261
70) 4-Chloroaniline	(2)	9.156	127	15463	0.218
71) 2,6-Dichlorophenol	(2)	9.161	162	7217	0.192
72) Hexachloropropene	(2)	9.210	213	4627	0.234
74) Hexachlorobutadiene	(2)	9.274	225	6128	0.297
78) Quinoline	(2)	9.584	129	25880	0.249
79) Caprolactam	(2)	9.653	113	3614	0.205
80) N-Nitrosodi-n-butylamine	(2)	9.728	84	14998	0.216
83) 4-Chloro-3-methylphenol	(2)	9.953	107	14615	0.234
85) Safrole	(2)	10.065	162	8836	0.248
86) 2-Methylnaphthalene	(2)	10.178	142	24405	0.242
87) 1-Methylnaphthalene	(2)	10.338	142	23873	0.243
88) Hexachlorocyclopentadiene	(3)	10.445	237	5012	0.250
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.450	216	8302	0.241
91) cis-Isosafrole	(3)	10.547	162	2362	0.060
93) 2,4,6-Trichlorophenol	(3)	10.643	196	4213	0.189
95) 2,4,5-Trichlorophenol	(3)	10.691	196	4834	0.201
96)$2-Fluorobiphenyl	(3)	10.798	172	47538	0.516
97) trans-Isosafrole	(3)	10.905	162	8782	0.215
98) 1,1'-Biphenyl	(3)	10.953	154	28646	0.253
99) 2-Chloronaphthalene	(3)	10.964	162	23965	0.262
101) 1-Chloronaphthalene	(3)	11.001	162	17213	0.216
103) Diphenyl ether	(3)	11.135	170	14302	0.258
104) 2-Nitroaniline	(3)	11.135	138	5153	0.178
108) 1,4-Naphthoquinone	(3)	11.258	158	6158	0.166
109) 1,4-Dinitrobenzene	(3)	11.376	168	1579M	0.157
110) Dimethylphthalate	(3)	11.477	163	25302	0.267
111) 1,3-Dinitrobenzene	(3)	11.493	168	2324	0.188
113) 2,6-Dinitrotoluene	(3)	11.558	165	3782	0.193
114) Acenaphthylene	(3)	11.627	152	34536	0.254
117) 3-Nitroaniline	(3)	11.788	138	4242	0.166
118)*Acenaphthene-d10	(3)	11.841	164	301655	5.000

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.889	153	25068	0.268
120) 2,4-Dinitrophenol	(3)	11.943	184	6731	4.634
121) 4-Nitrophenol	(3)	12.039	109	18206	0.879
122) Pentachlorobenzene	(3)	12.071	250	7581	0.269
124) Dibenzofuran	(3)	12.125	168	30655	0.268
123) 2,4-Dinitrotoluene	(3)	12.125	165	4373	0.175
126) 1-Naphthylamine	(3)	12.232	143	22272	0.235
127) 2,3,4,6-Tetrachlorophenol	(3)	12.290	232	2658	0.182
128) 2-Naphthylamine	(3)	12.338	143	24102	0.264
129) Diethylphthalate	(3)	12.467	149	23632	0.230
131) Fluorene	(3)	12.563	166	26256	0.281
130) Thionazin	(3)	12.563	107	5395	0.207
133) 5-Nitro-o-toluidine	(3)	12.585	152	6141	0.231
134) 4-Nitroaniline	(3)	12.590	138	4398	0.172
132) 4-Chlorophenyl-phenylether	(3)	12.590	204	9091M	0.249
135) 4,6-Dinitro-2-methylphenol	(4)	12.633	198	5095	0.646
137) NDPA as diphenylamine	(4)	12.734	169	21830	0.274
136) N-Nitrosodiphenylamine	(4)	12.734	169	21830	0.274
139) 1,2-Diphenylhydrazine	(4)	12.782	77	51285	0.257
140)$2,4,6-Tribromophenol	(3)	12.868	332	3921	0.435
142) Tetraethyldithiopyrophosphate	(4)	12.964	97	7689	0.261
145) Diallate (peak 1)	(4)	13.114	86	14581	0.178
146) Phorate	(4)	13.125	75	28276	0.230
147) Phenacetin	(4)	13.125	108	16879	0.218
148) 4-Bromophenyl-phenylether	(4)	13.200	248	4303	0.226
149) Diallate (peak 2)	(4)	13.226	86	2940	0.042
150) Hexachlorobenzene	(4)	13.258	284	5666	0.251
152) Dimethoate	(4)	13.317	87	13254	0.182
153) Atrazine	(4)	13.424	200	4671	0.219
154) Pentachlorophenol	(4)	13.521	266	2107	0.184
155) 4-Aminobiphenyl	(4)	13.531	169	14667	0.251
156) Pentachloronitrobenzene	(4)	13.531	237	2041	0.221
157) Pronamide	(4)	13.628	173	9772	0.220
158)*Phenanthrene-d10	(4)	13.767	188	530155	5.000
159) Dinoseb	(4)	13.777	211	1736M	3.069
160) Phenanthrene	(4)	13.799	178	33769	0.258
162) Anthracene	(4)	13.868	178	28029	0.216
168) Carbazole	(4)	14.088	167	31912	0.246
169) Methyl parathion	(4)	14.296	109	5813	0.127
170) Di-n-butylphthalate	(4)	14.612	149	38353	0.200

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

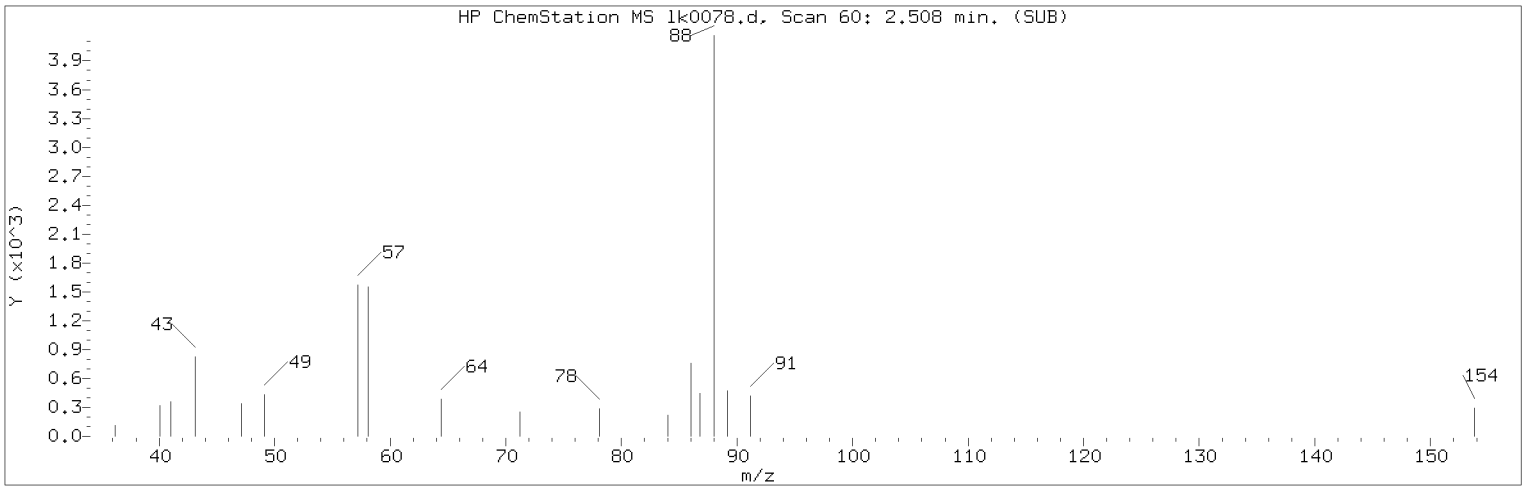
Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.858	109	4123	0.138
173) 4-Nitroquinoline-1-oxide	(4)	14.874	190	907M	2.497
227) Total PAHs	(6)			515425	4.387
174) Octachlorostyrene	(4)	15.227	308	3430	0.376
176) Isodrin	(4)	15.280	193	4732	0.297
178) Fluoranthene	(4)	15.500	202	32527	0.247
179) Benzidine	(5)	15.730	184	220350	2.327
180)*Pyrene-d10	(5)	15.826	212	503664	5.000
182) Pyrene	(5)	15.853	202	39202	0.277
184)$Terphenyl-d14	(5)	16.141	244	37045	0.475
187) p-Dimethylaminoazobenzene	(5)	16.377	225	3393	0.170
190) Chlorobenzilate	(5)	16.473	139	11229	0.178
192) 3,3'-Dimethylbenzidine	(5)	16.949	212	16248	0.185
193) Butylbenzylphthalate	(5)	17.008	149	13247	0.155
196) 2-Acetylaminofluorene	(5)	17.377	181	6558	0.112
198) 3,3'-Dichlorobenzidine	(5)	17.896	252	8028	0.174
200) Benzo(a)anthracene	(5)	17.906	228	28397	0.244
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.912	231	4996M	0.214
201) Chrysene	(5)	17.971	228	27202	0.229
204) bis(2-Ethylhexyl)phthalate	(5)	18.094	149	21212	0.168
208) 6-Methylchrysene	(5)	18.789	242	18268	0.220
210) Di-n-octylphthalate	(6)	19.270	149	31678	0.147
211) Benzo(b)fluoranthene	(6)	19.794	252	26159	0.226
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.800	256	10223	0.208
213) Benzo(k)fluoranthene	(6)	19.843	252	27206	0.234
216) Benzo(a)pyrene	(6)	20.329	252	24178M	0.224
218)*Perylene-d12	(6)	20.426	264	454963	5.000
220) 3-Methylcholanthrene	(6)	20.907	268	9600	0.195
222) Dibenz(a,h)acridine	(6)	21.731	279	17299	0.192
223) Dibenz(a,j)acridine	(6)	21.816	279	18131	0.202
224) Indeno(1,2,3-cd)pyrene	(6)	22.084	276	20657M	0.210
225) Dibenz(a,h)anthracene	(6)	22.127	278	23409	0.227
226) Benzo(g,h,i)perylene	(6)	22.506	276	25563	0.247

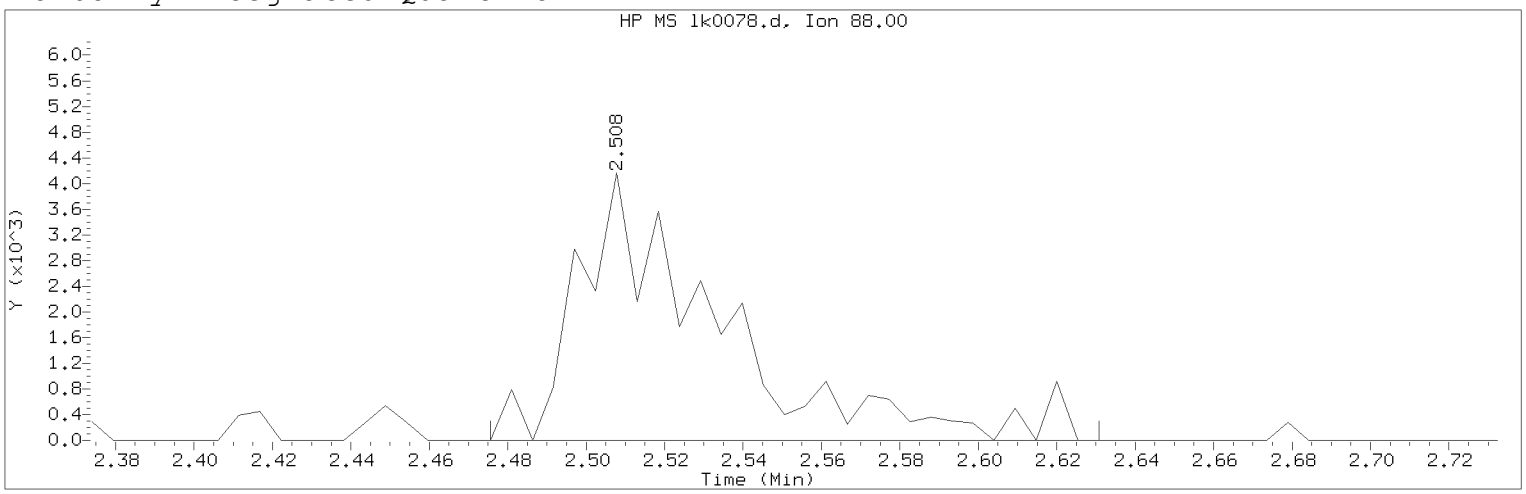
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Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

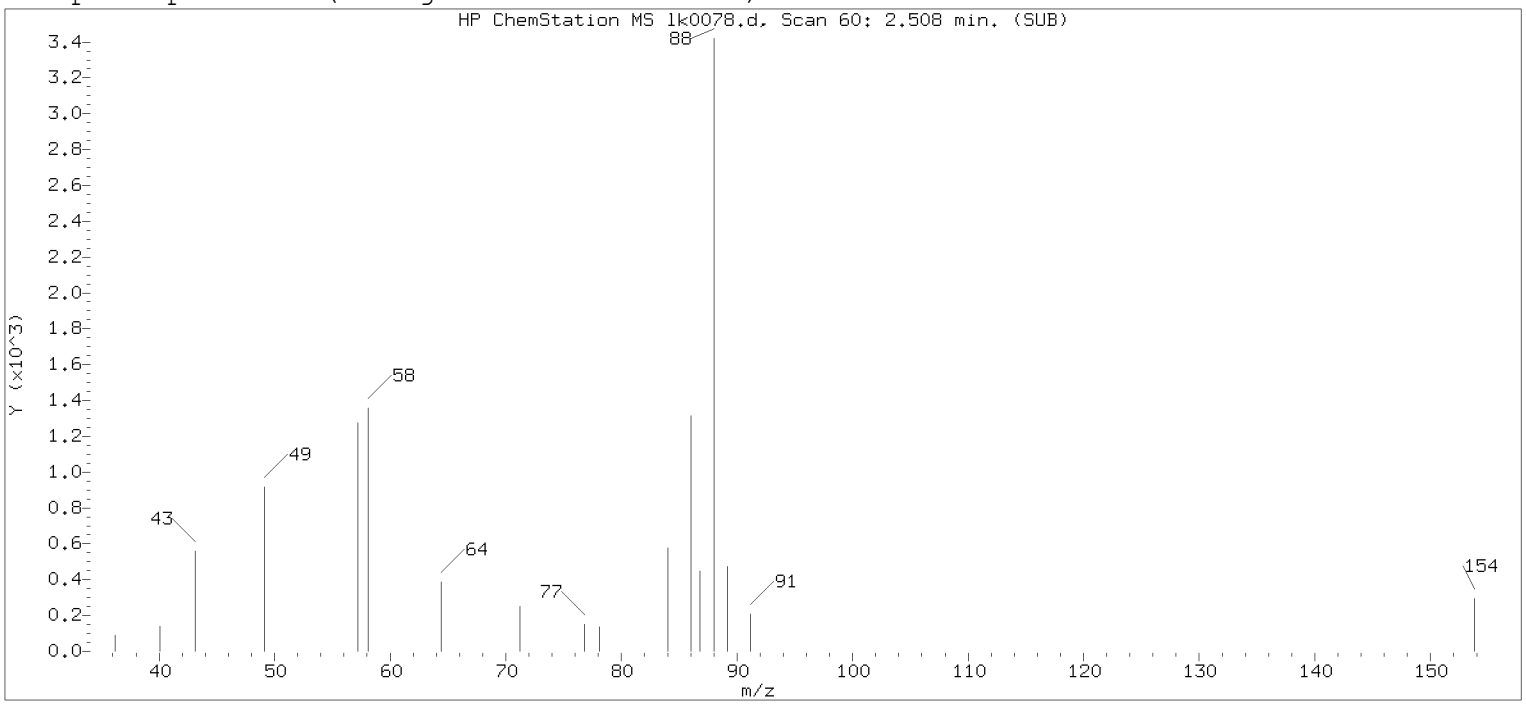
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 60
Retention Time (minutes) : 2.508
Quant Ion : 88.00
Area (flag) : 10204M
On-Column Amount (ng/ul) : 0.2964
Integration start scan : 53 Integration stop scan: 82
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

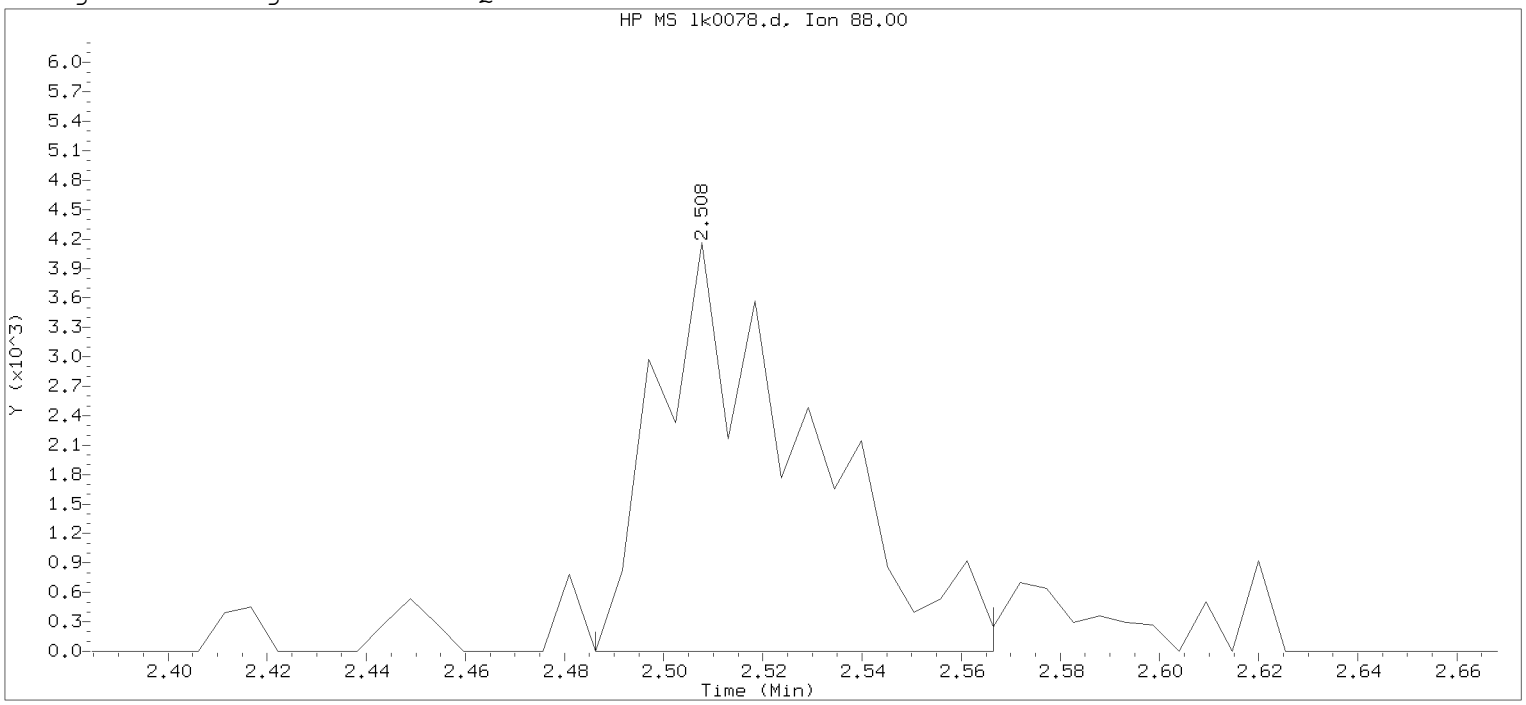
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

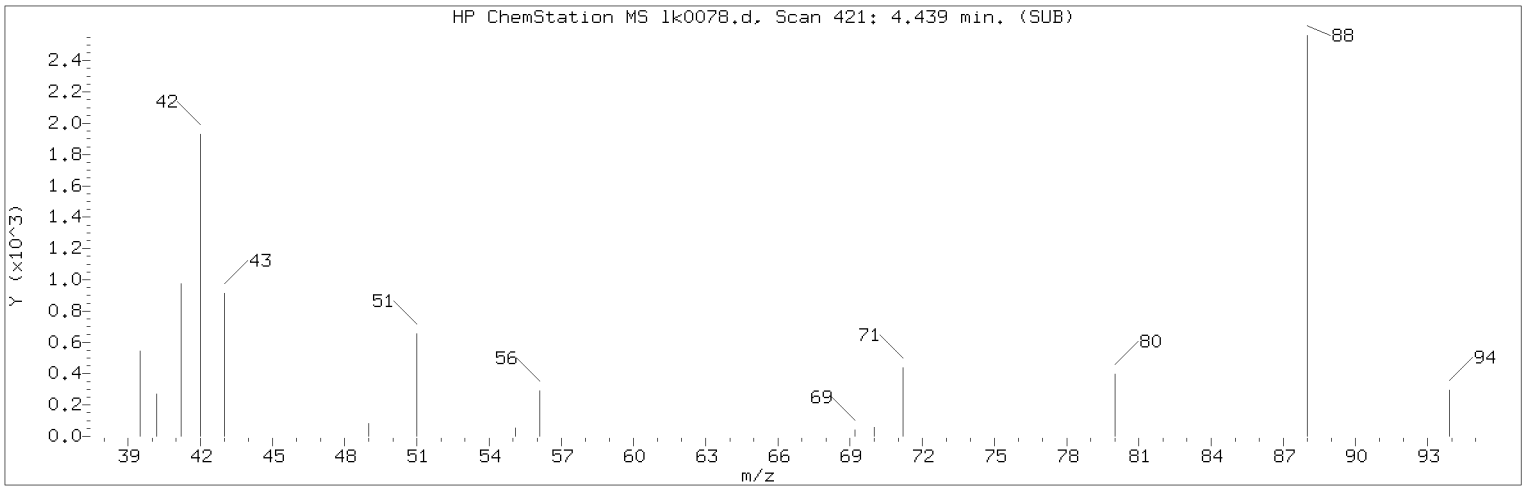
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

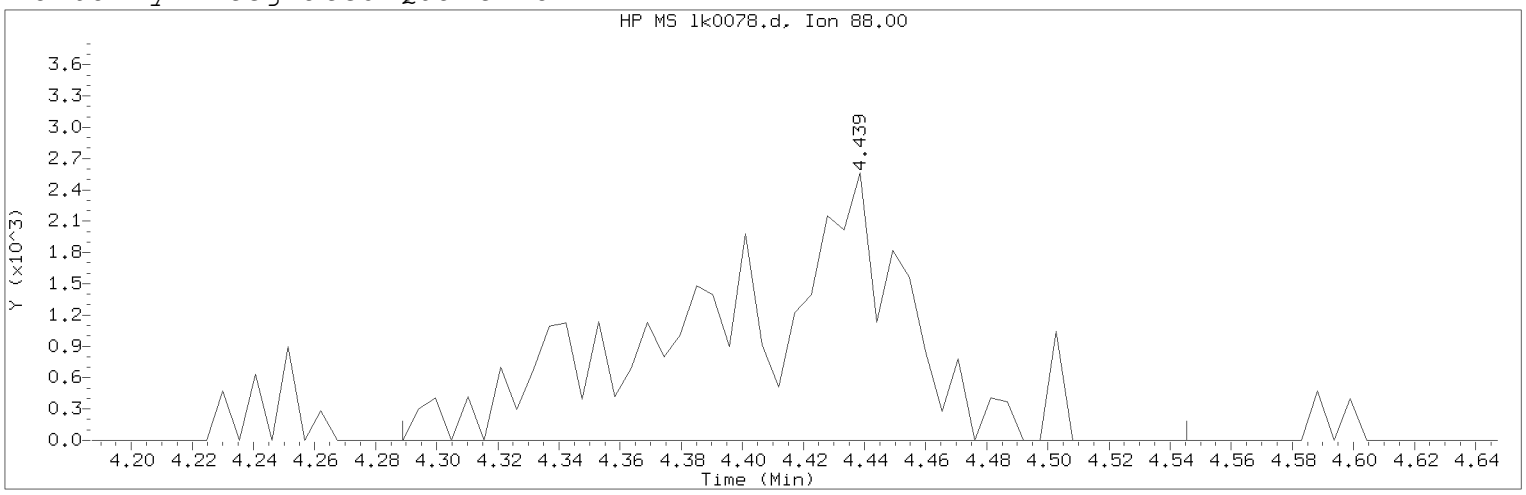
Compound Number	: 1		
Compound Name	: 1,4-Dioxane		
Scan Number	: 60		
Retention Time (minutes)	: 2.508		
Quant Ion	: 88.00		
Area	: 8634		
On-column Amount (ng/ul)	: 0.3314		
Integration start scan	: 55	Integration stop scan:	70
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user RAF48 Page 1032 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

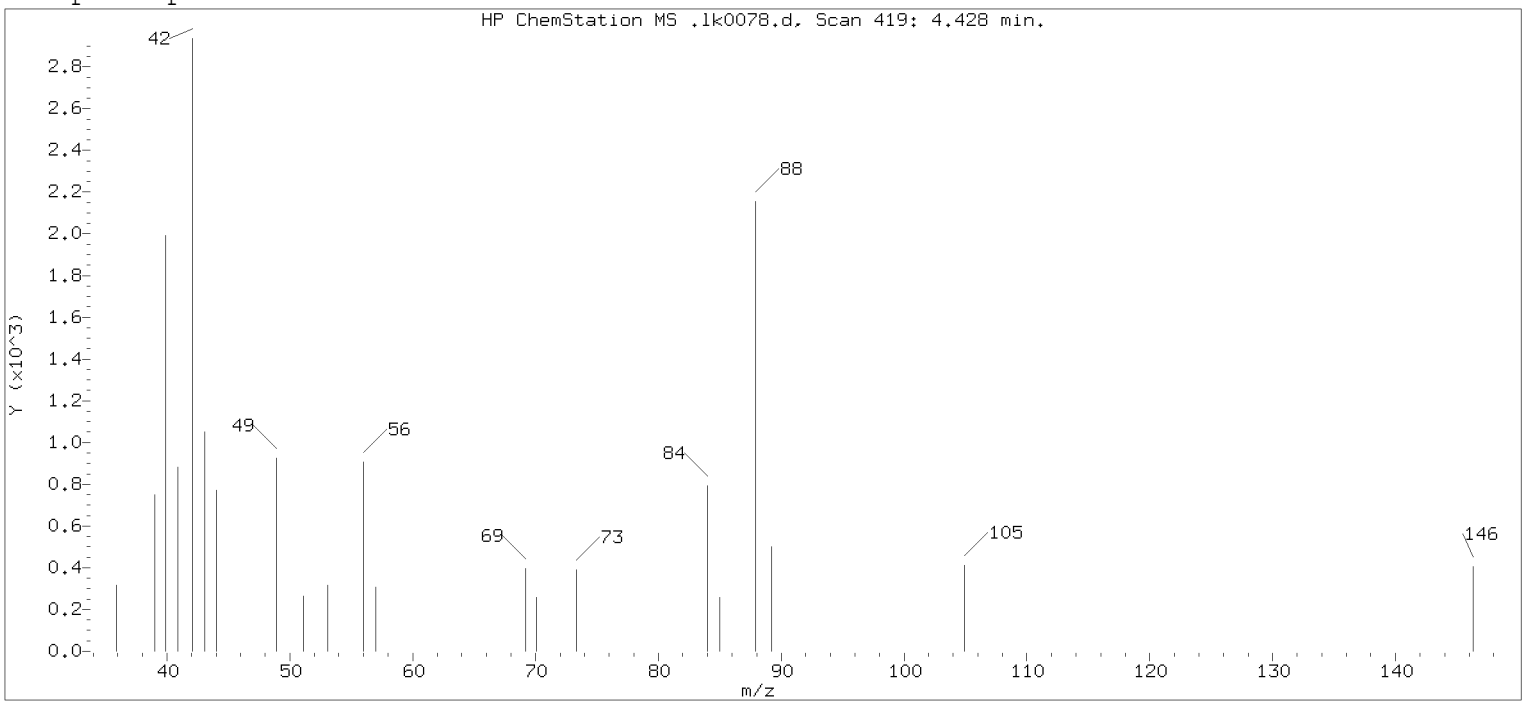
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Scan Number : 421
Retention Time (minutes) : 4.439
Quant Ion : 88.00
Area (flag) : 11349M
On-Column Amount (ng/ul) : 0.2908
Integration start scan : 392 Integration stop scan: 440
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

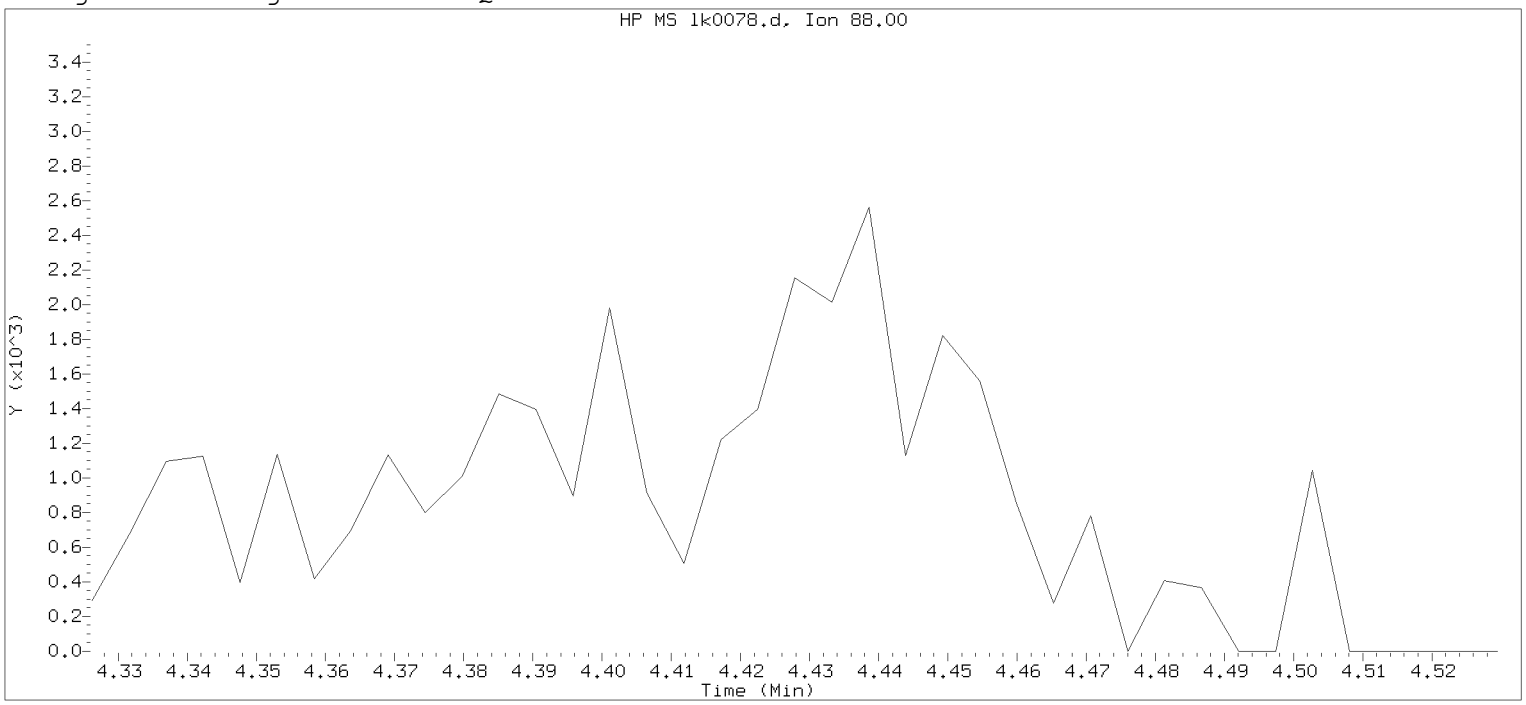
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

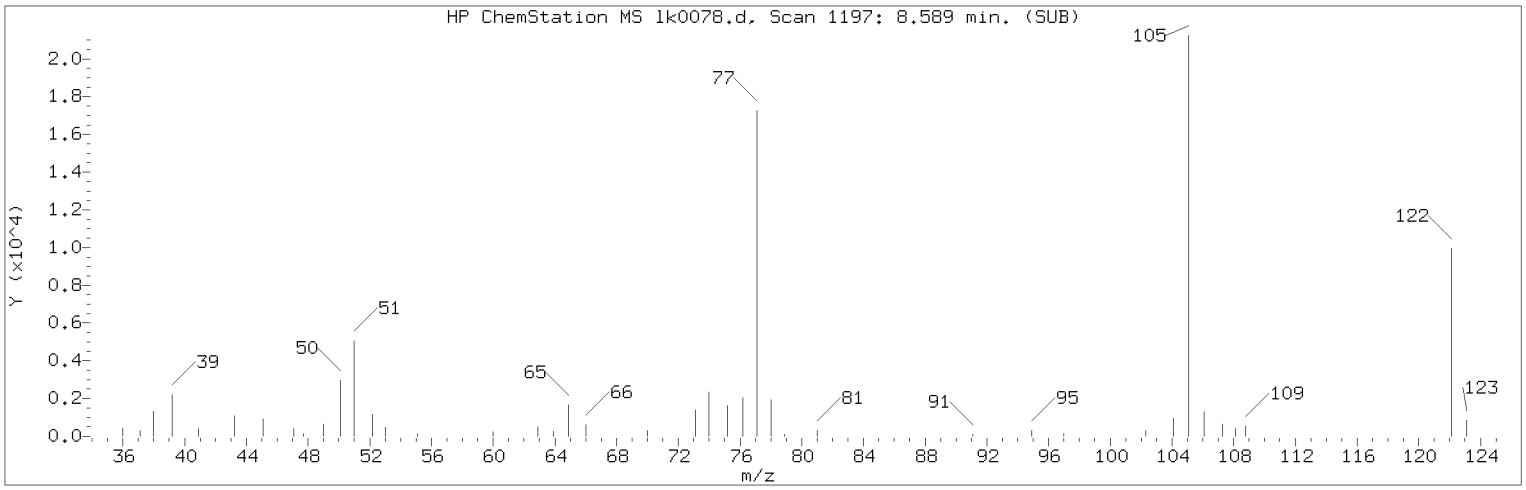
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

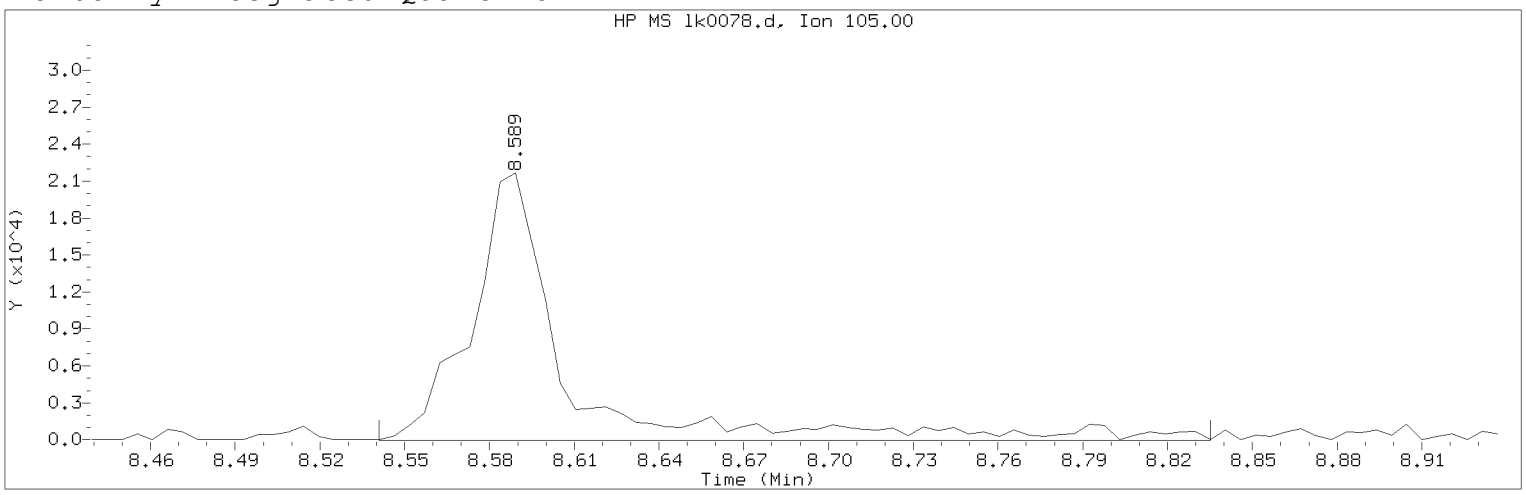
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.428
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature used. RAF48 Page 1034 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

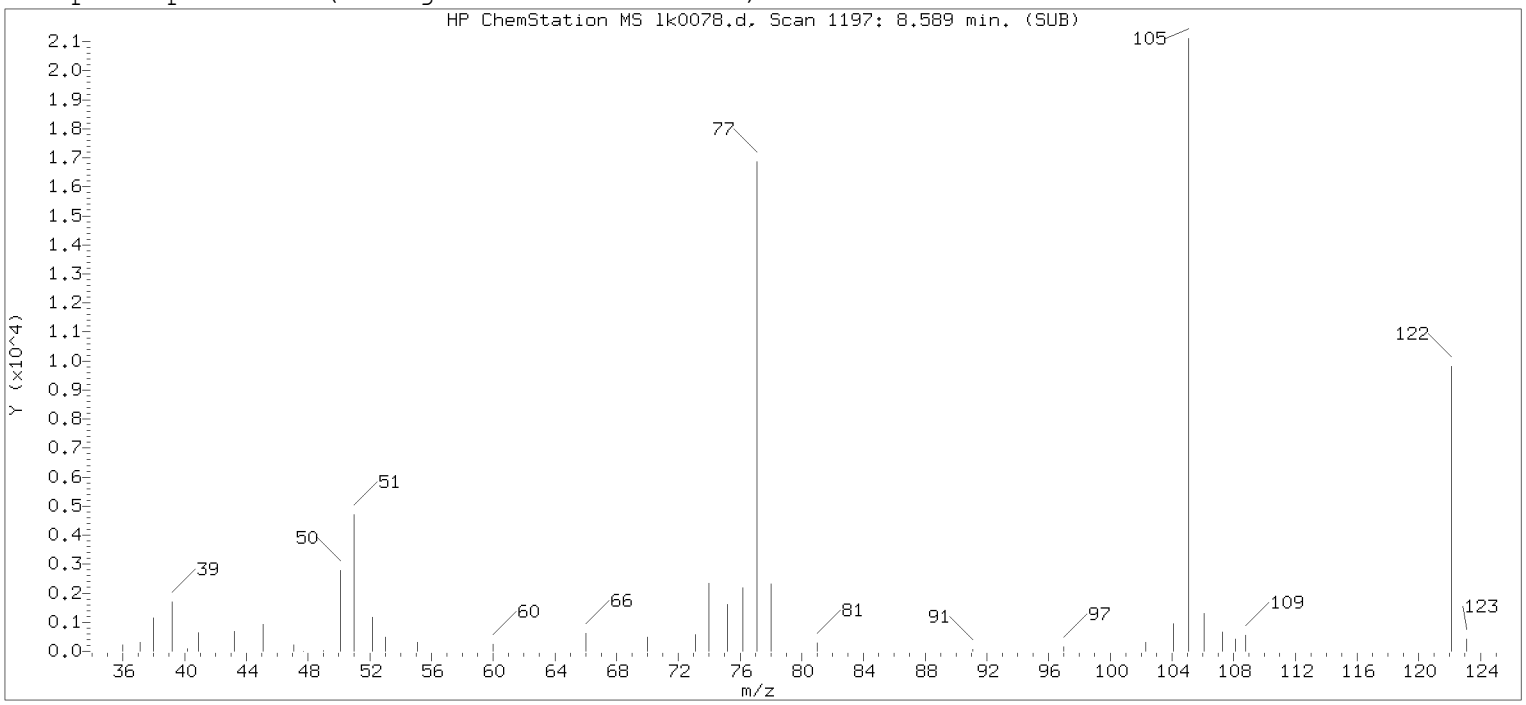
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1197
Retention Time (minutes) : 8.589
Quant Ion : 105.00
Area (flag) : 49782M
On-Column Amount (ng/ul) : 1.5495
Integration start scan : 1187 Integration stop scan: 1242
Y at integration start : -28 Y at integration end: -28

Reason for manual integration: improper integration

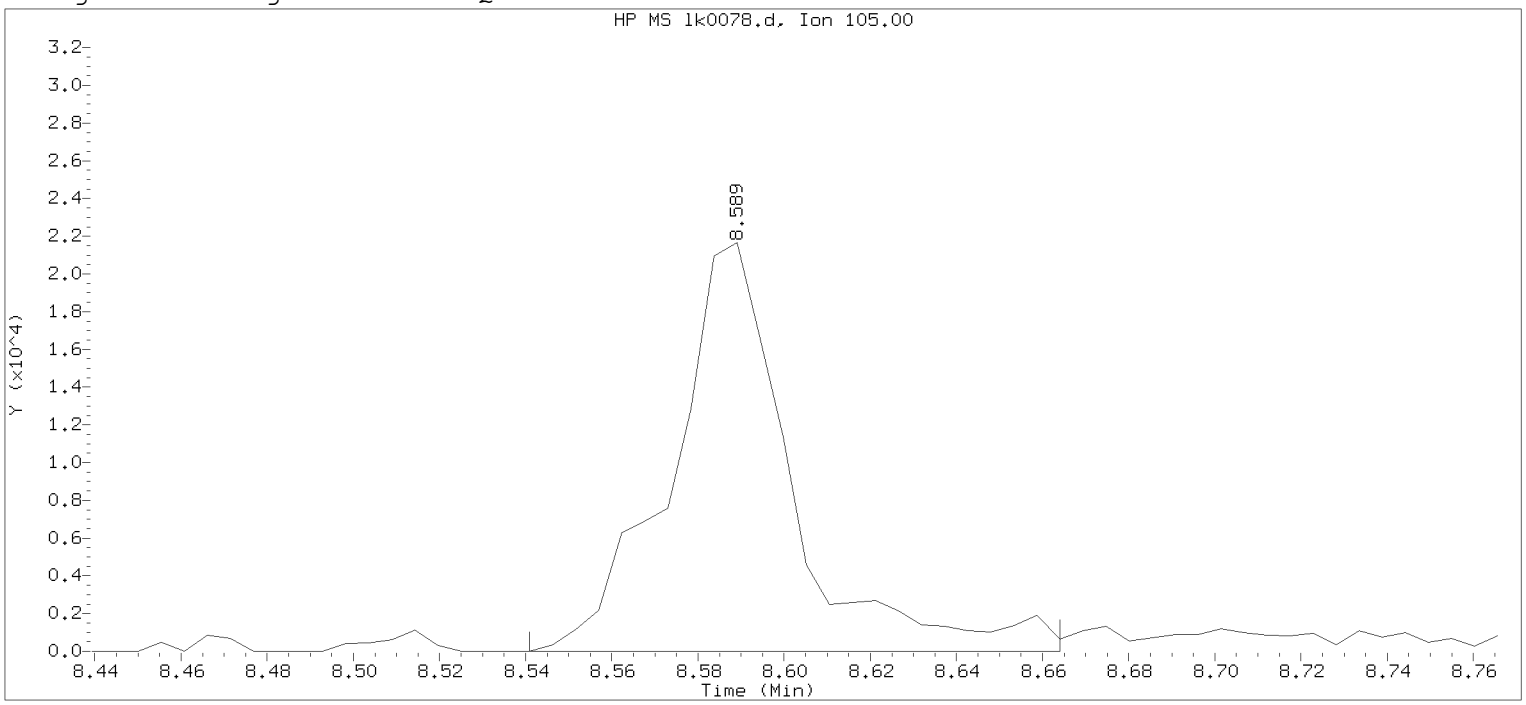
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

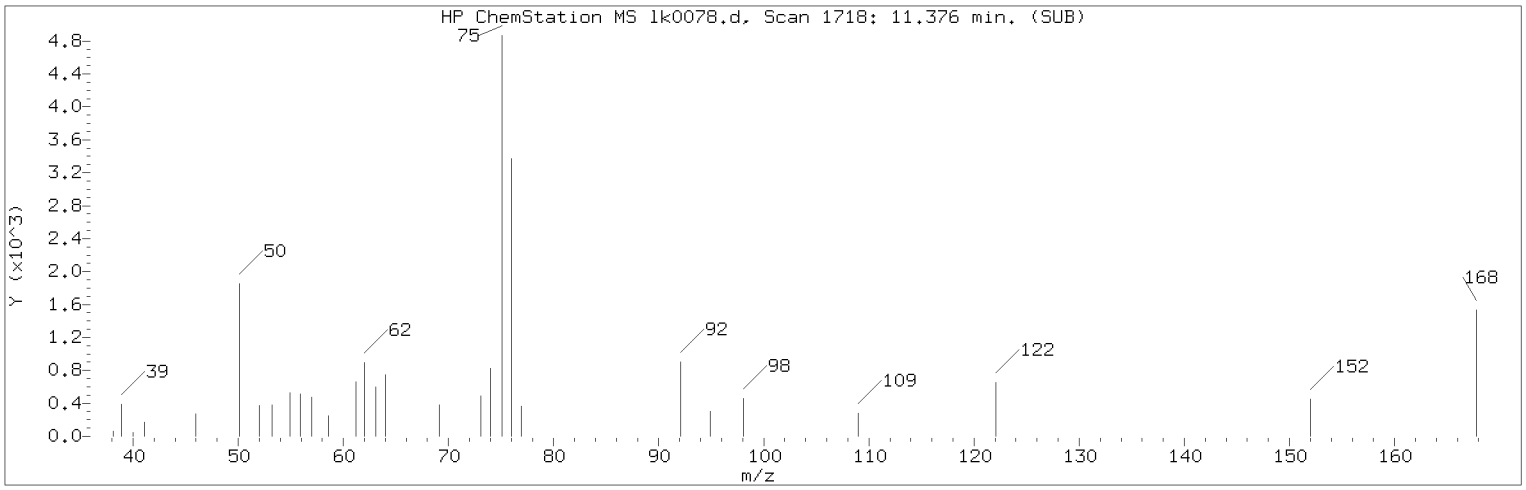
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

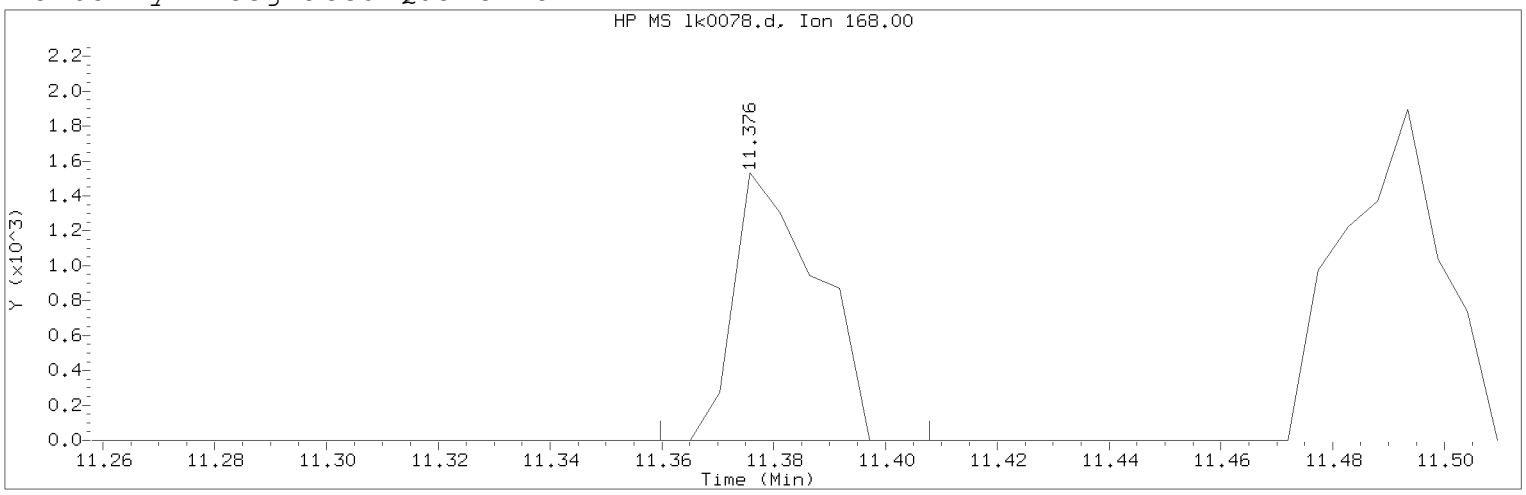
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1197		
Retention Time (minutes)	: 8.589		
Quant Ion	: 105.00		
Area	: 41953		
On-column Amount (ng/ul)	: 1.7453		
Integration start scan	: 1187	Integration stop scan:	1210
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user ID: WHS0136

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

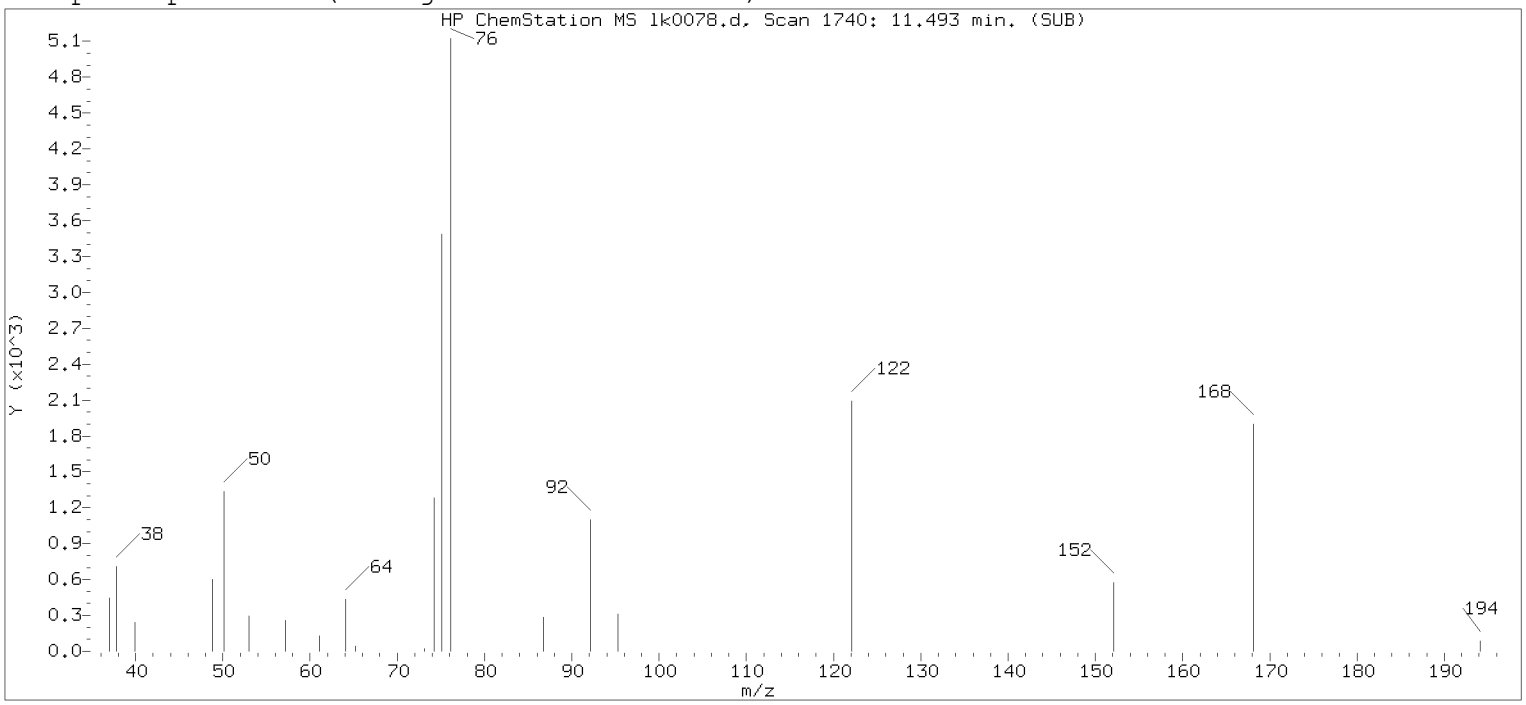
Compound Number : 109
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1718
Retention Time (minutes) : 11.376
Quant Ion : 168.00
Area (flag) : 1579M
On-Column Amount (ng/ul) : 0.1566
Integration start scan : 1714 Integration stop scan: 1723
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

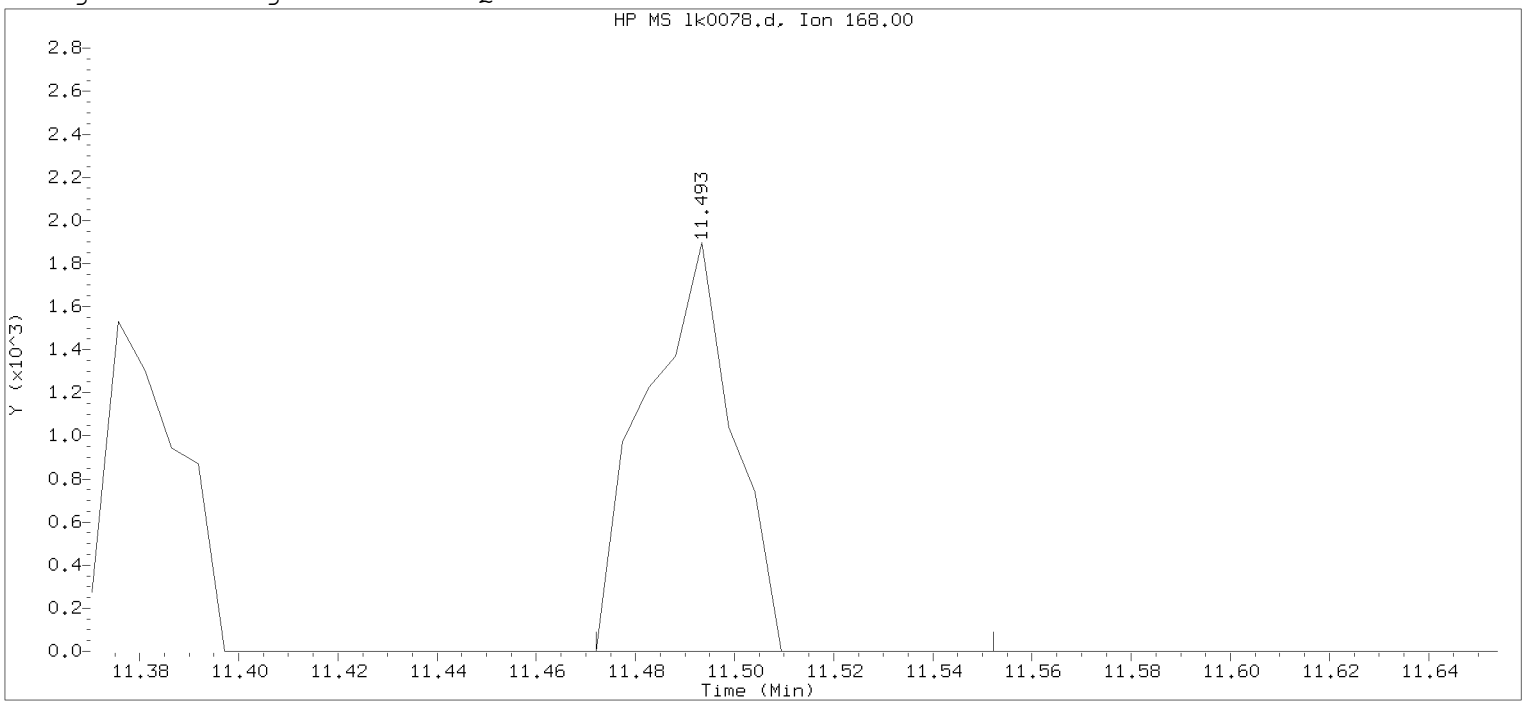
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

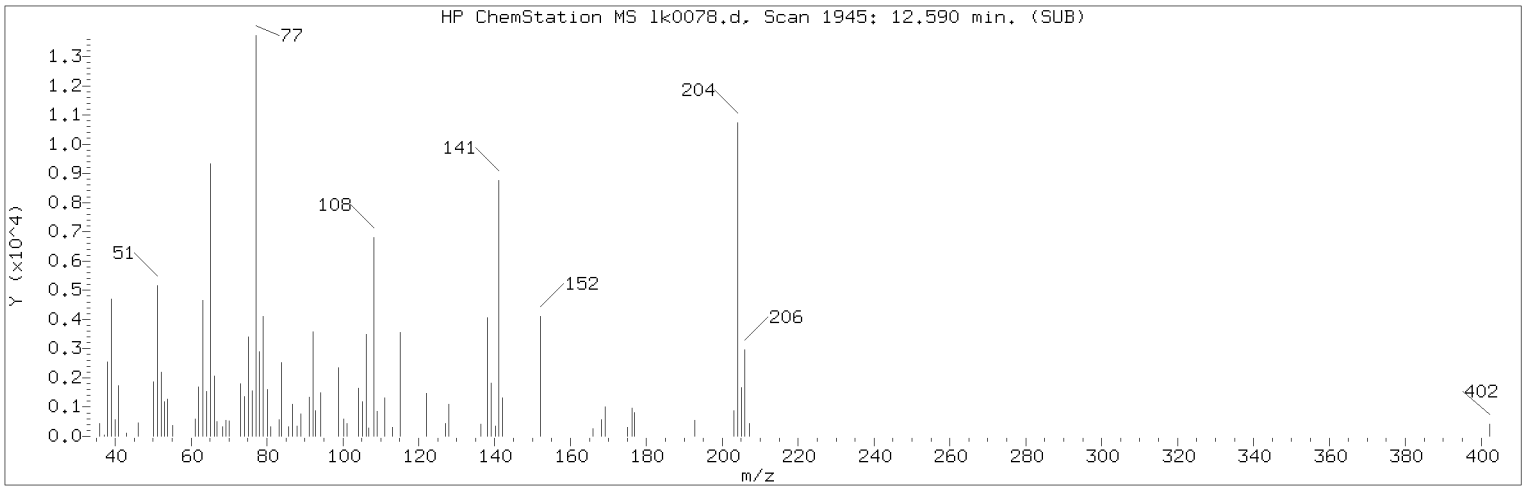
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

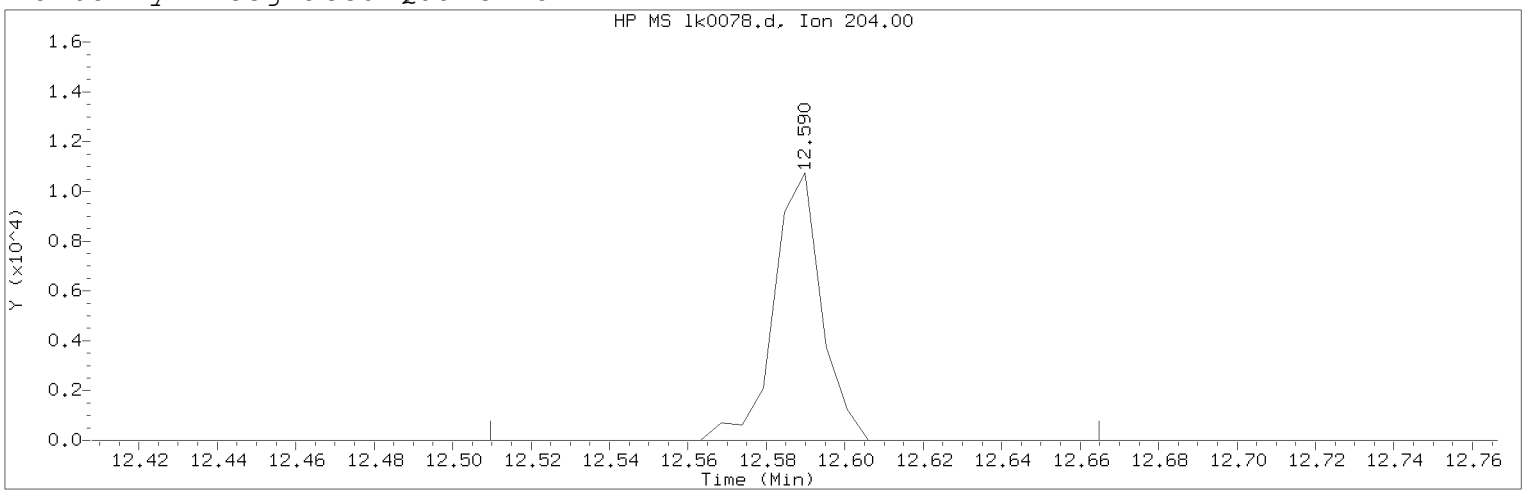
Compound Number	: 109		
Compound Name	: 1,4-Dinitrobenzene		
Scan Number	: 1740		
Retention Time (minutes)	: 11.493		
Quant Ion	: 168.00		
Area	: 2324		
On-column Amount (ng/ul)	: 0.1830		
Integration start scan	: 1735	Integration stop scan:	1750
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1038 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

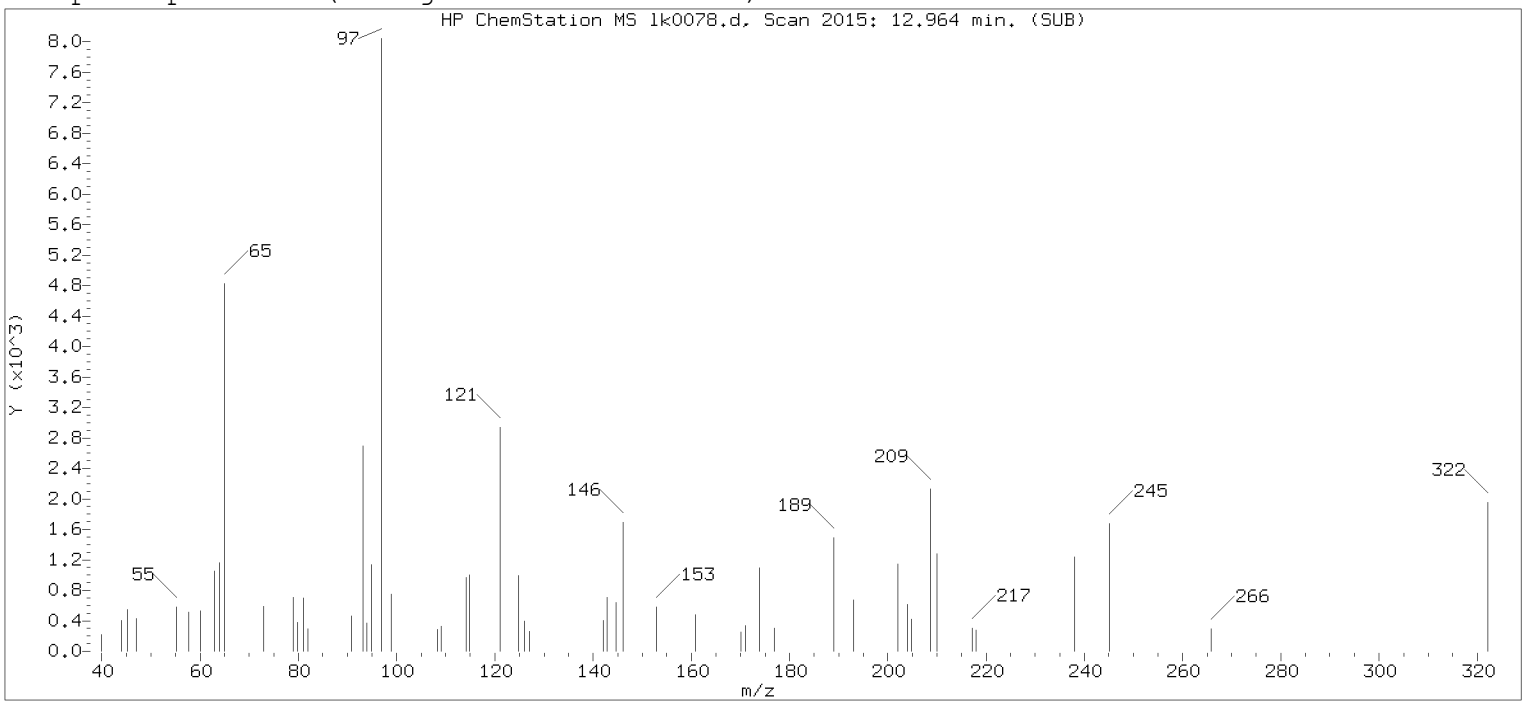
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1945
Retention Time (minutes) : 12.590
Quant Ion : 204.00
Area (flag) : 9091M
On-Column Amount (ng/ul) : 0.2491
Integration start scan : 1929 Integration stop scan: 1958
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

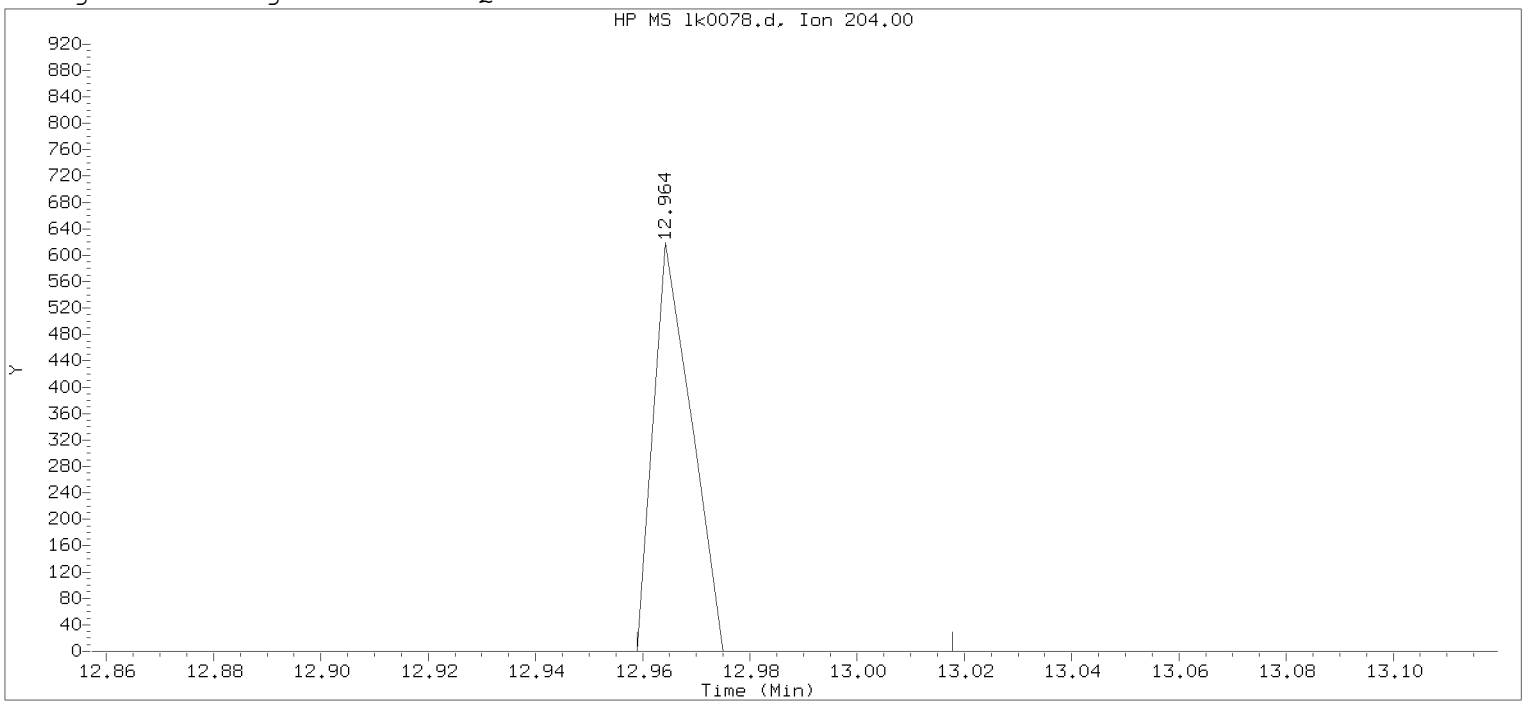
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

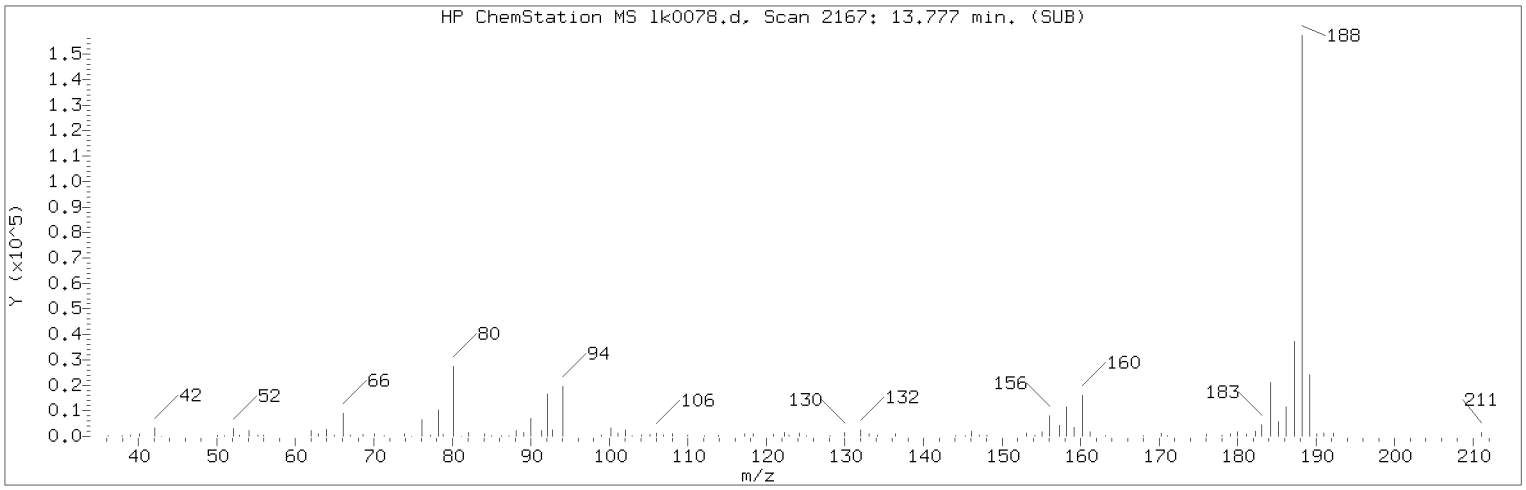
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

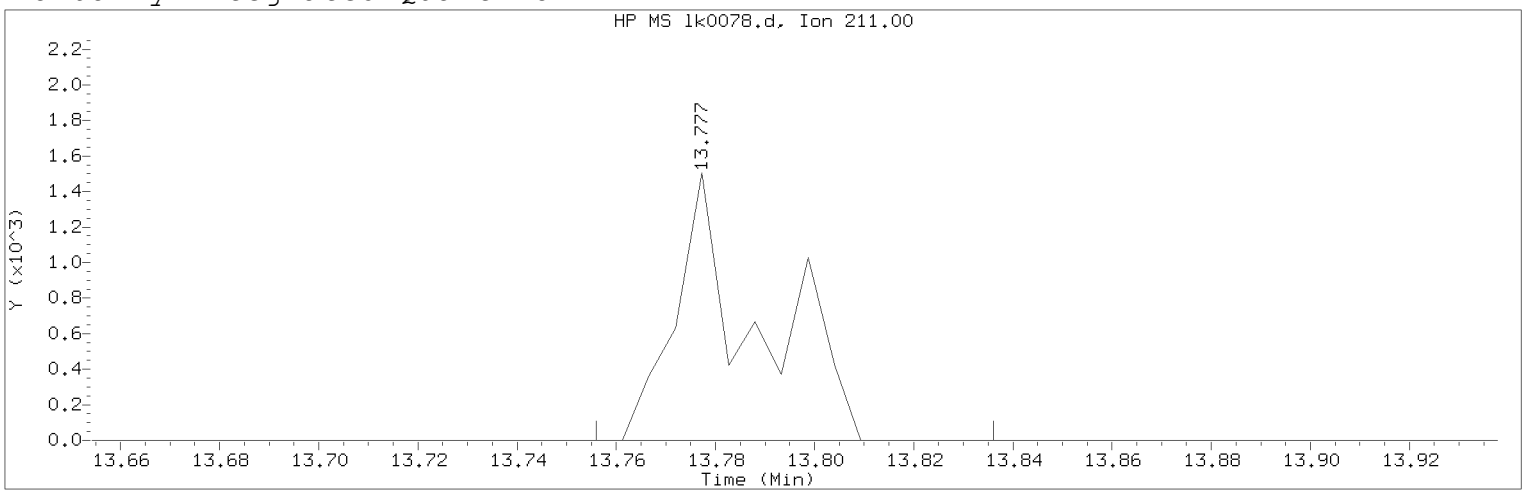
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2015		
Retention Time (minutes)	: 12.964		
Quant Ion	: 204.00		
Area	: 302		
On-column Amount (ng/ul)	: 0.0073		
Integration start scan	: 2013	Integration stop scan:	2024
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user F48 Page 1040

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

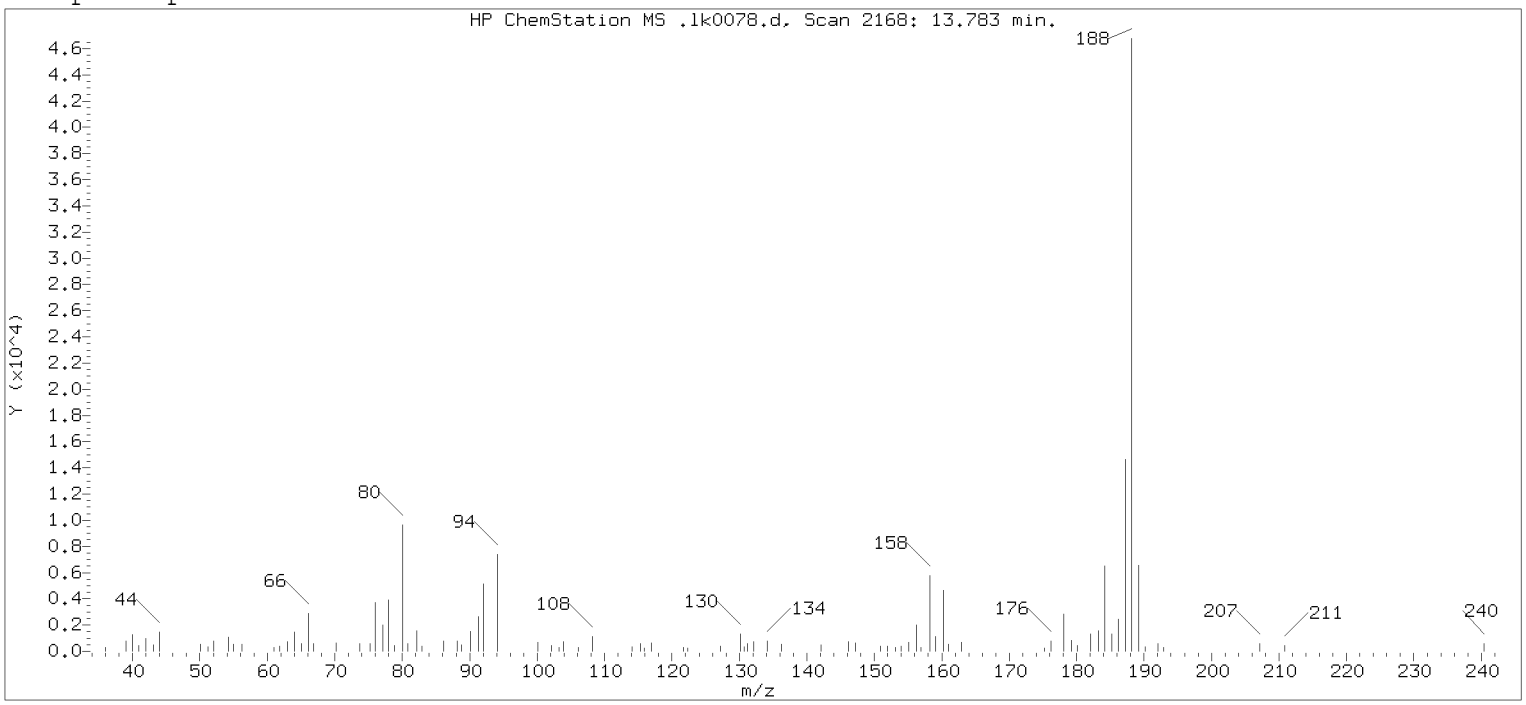
Compound Number : 159
Compound Name : Dinoseb
Scan Number : 2167
Retention Time (minutes) : 13.777
Quant Ion : 211.00
Area (flag) : 1736M
On-Column Amount (ng/ul) : 3.0686
Integration start scan : 2162 Integration stop scan: 2177
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

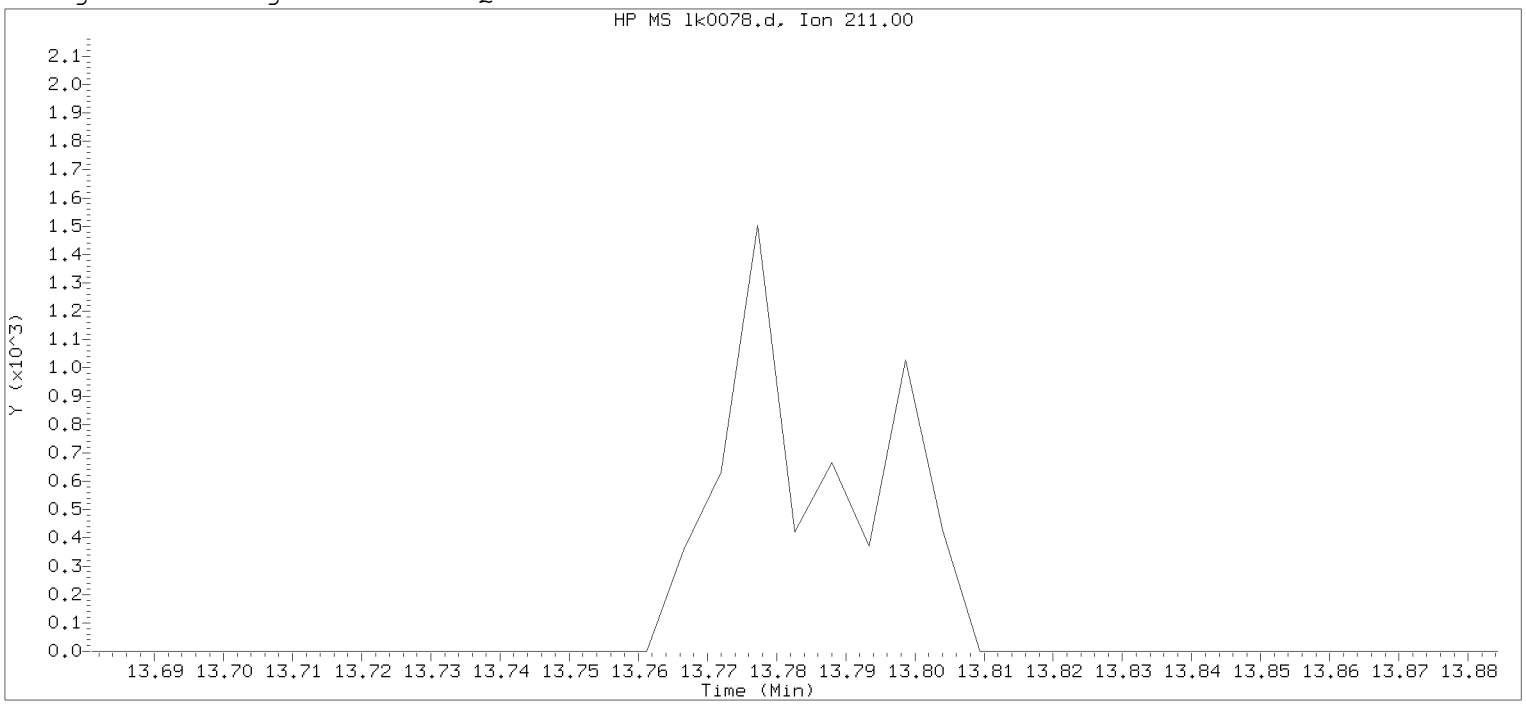
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

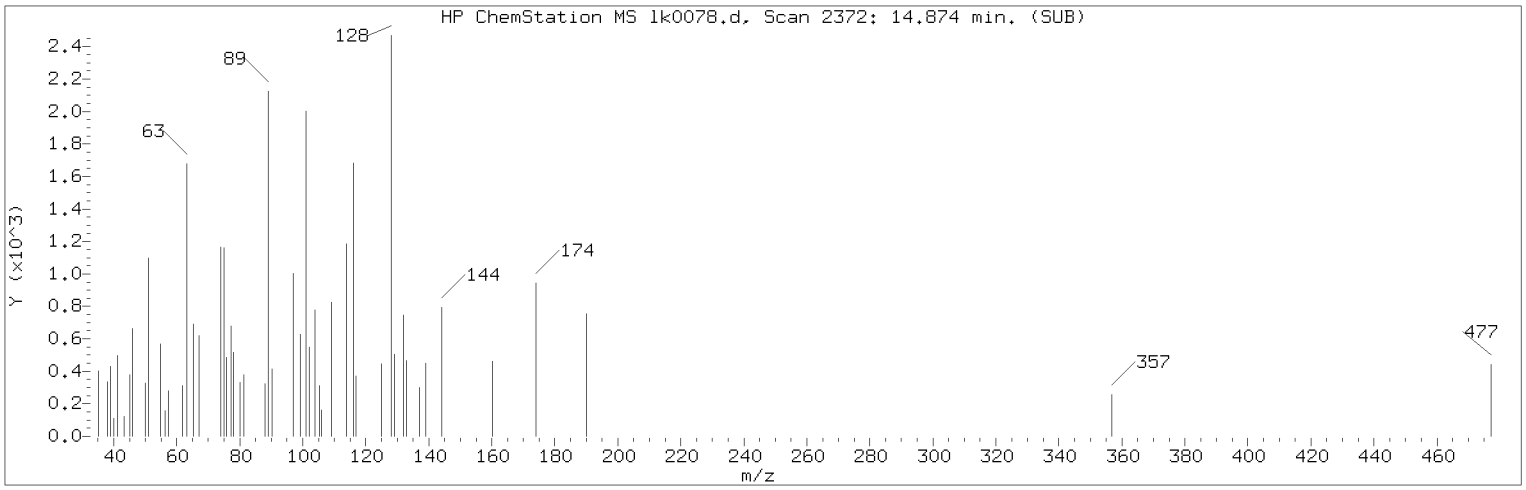
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

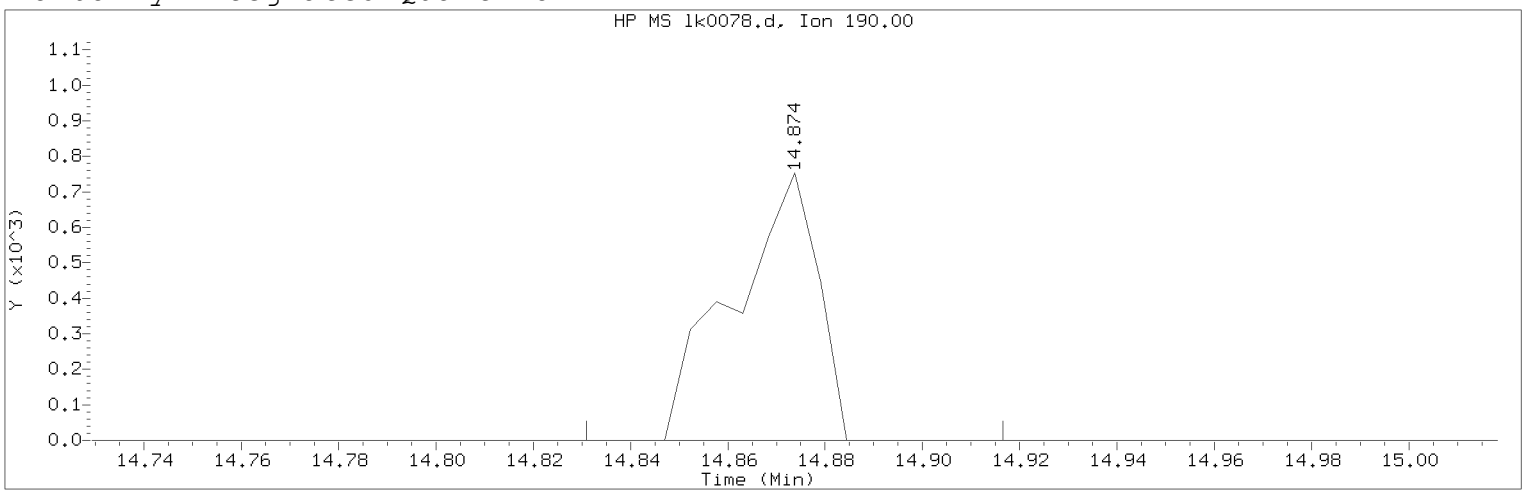
Compound Number : 159
Compound Name : Dinoseb
Expected RT (minutes) : 13.783
Quant Ion : 211.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user RAF48 Page 1042 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

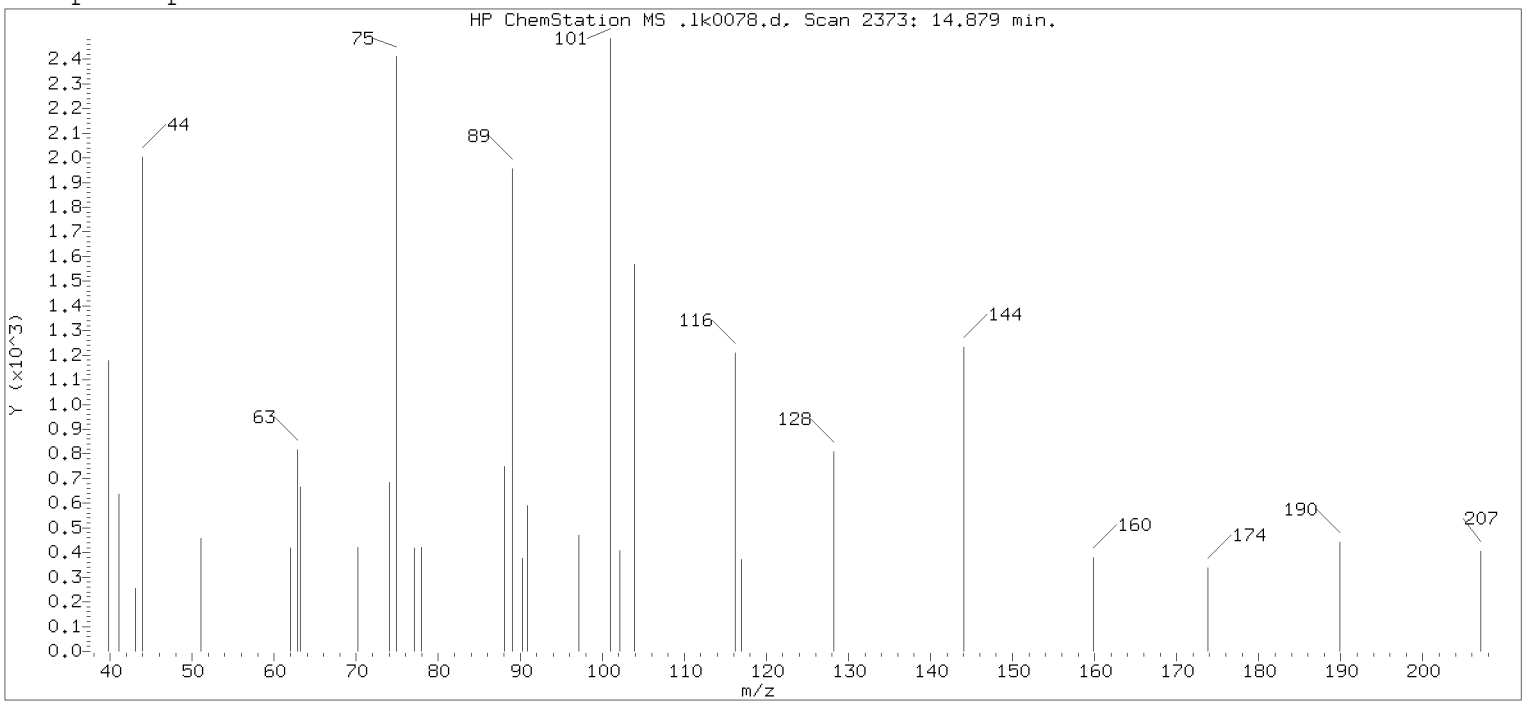
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Scan Number : 2372
Retention Time (minutes) : 14.874
Quant Ion : 190.00
Area (flag) : 907M
On-Column Amount (ng/ul) : 2.4972
Integration start scan : 2363 Integration stop scan: 2379
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

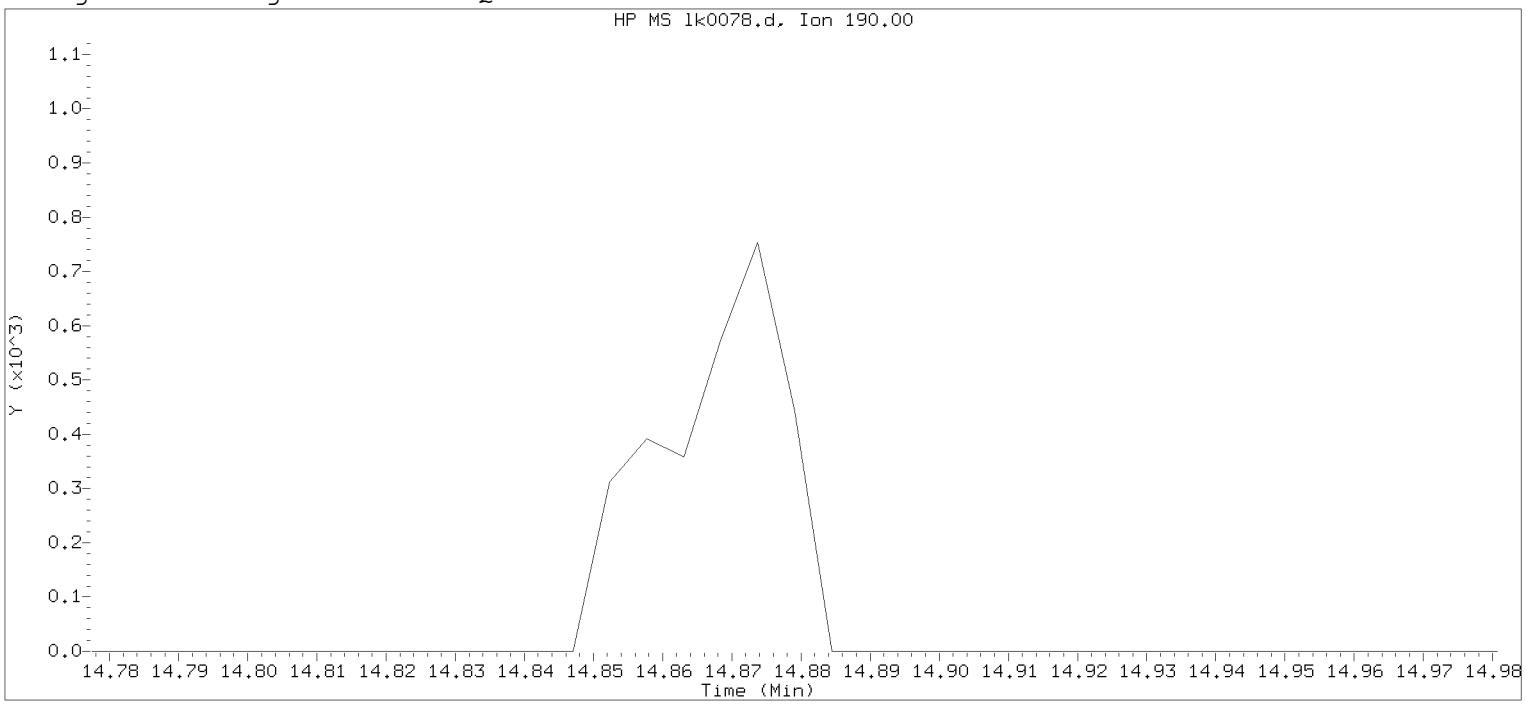
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

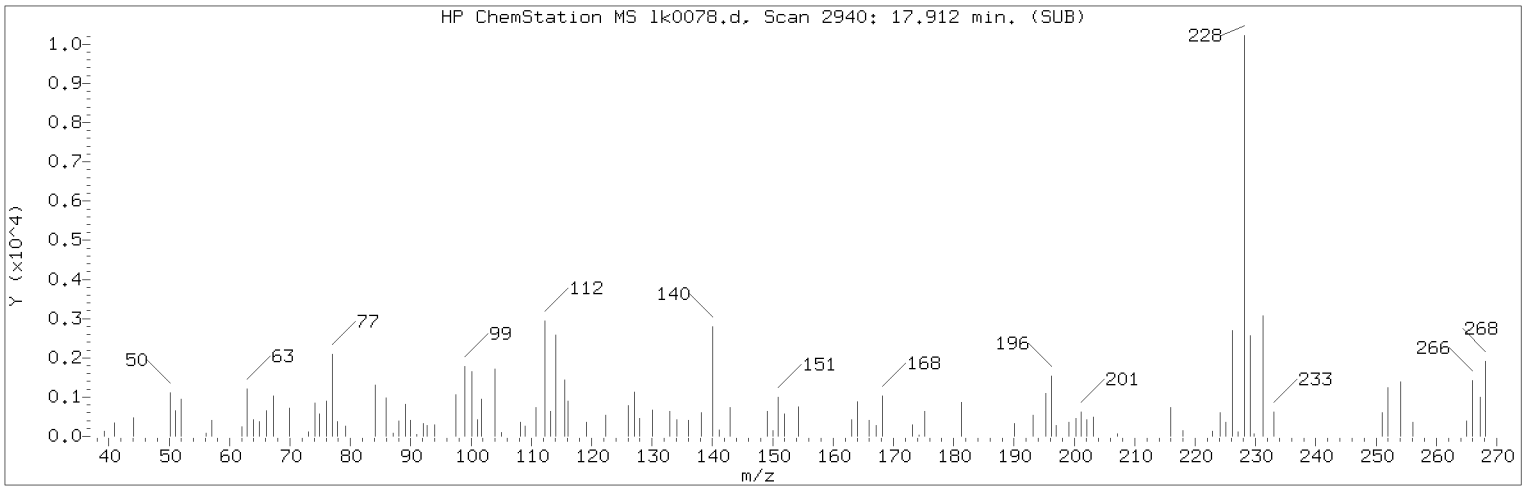
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

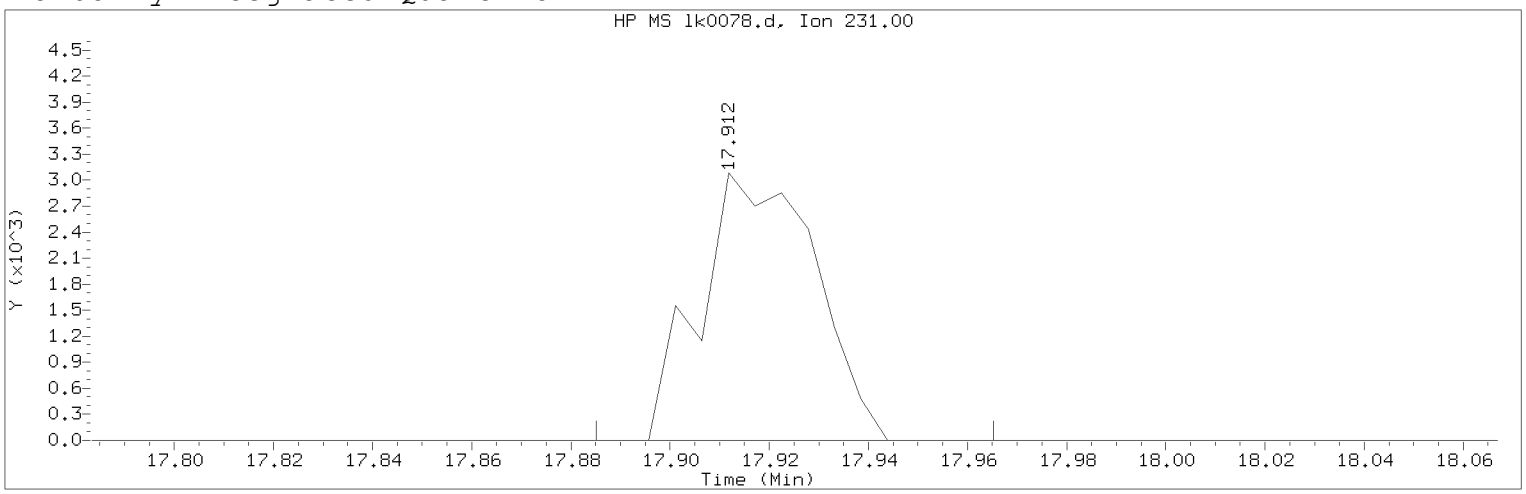
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Expected RT (minutes) : 14.879
Quant Ion : 190.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: 11044

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

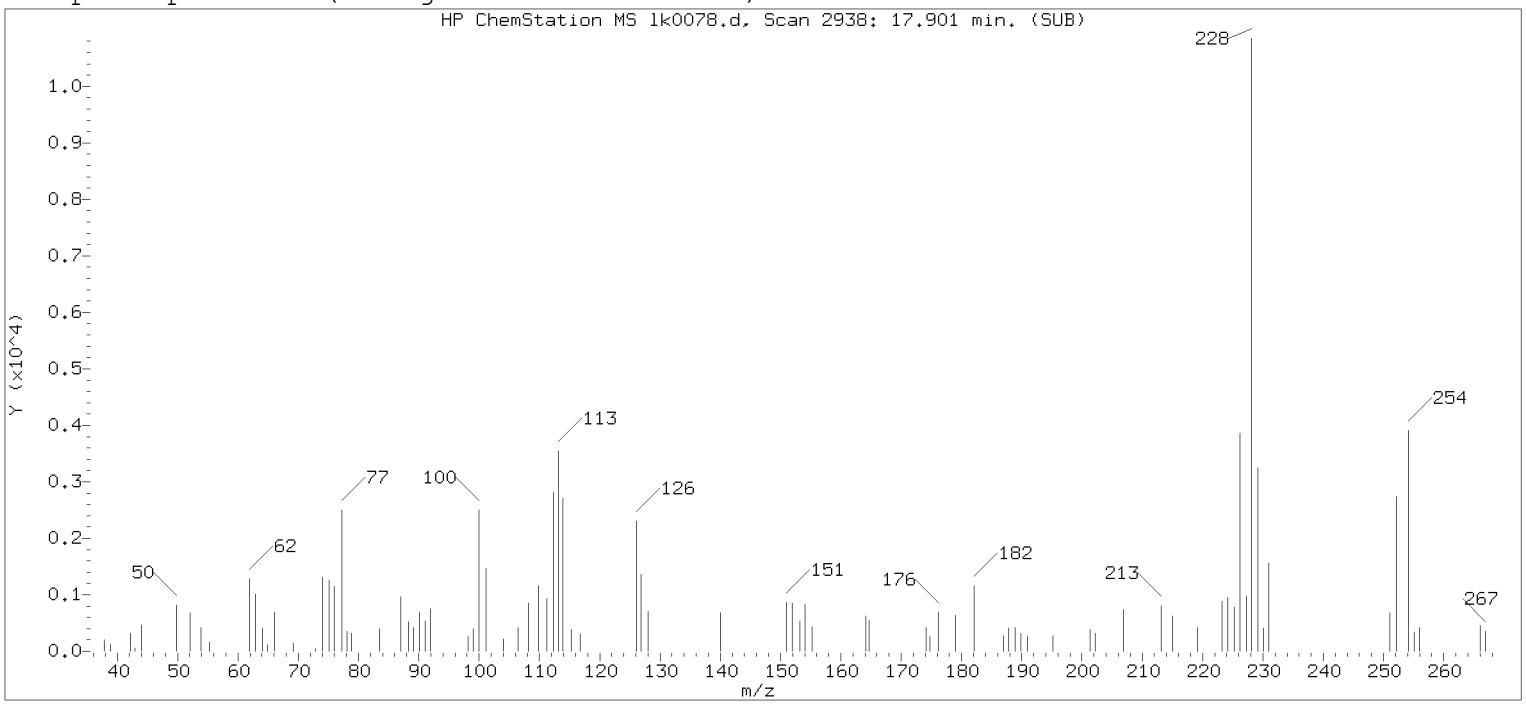
Compound Number : 203
Compound Name : 4,4'-Methylenebis(2-chloroanil
Scan Number : 2940
Retention Time (minutes) : 17.912
Quant Ion : 231.00
Area (flag) : 4996M
On-Column Amount (ng/ul) : 0.2138
Integration start scan : 2934 Integration stop scan: 2949
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

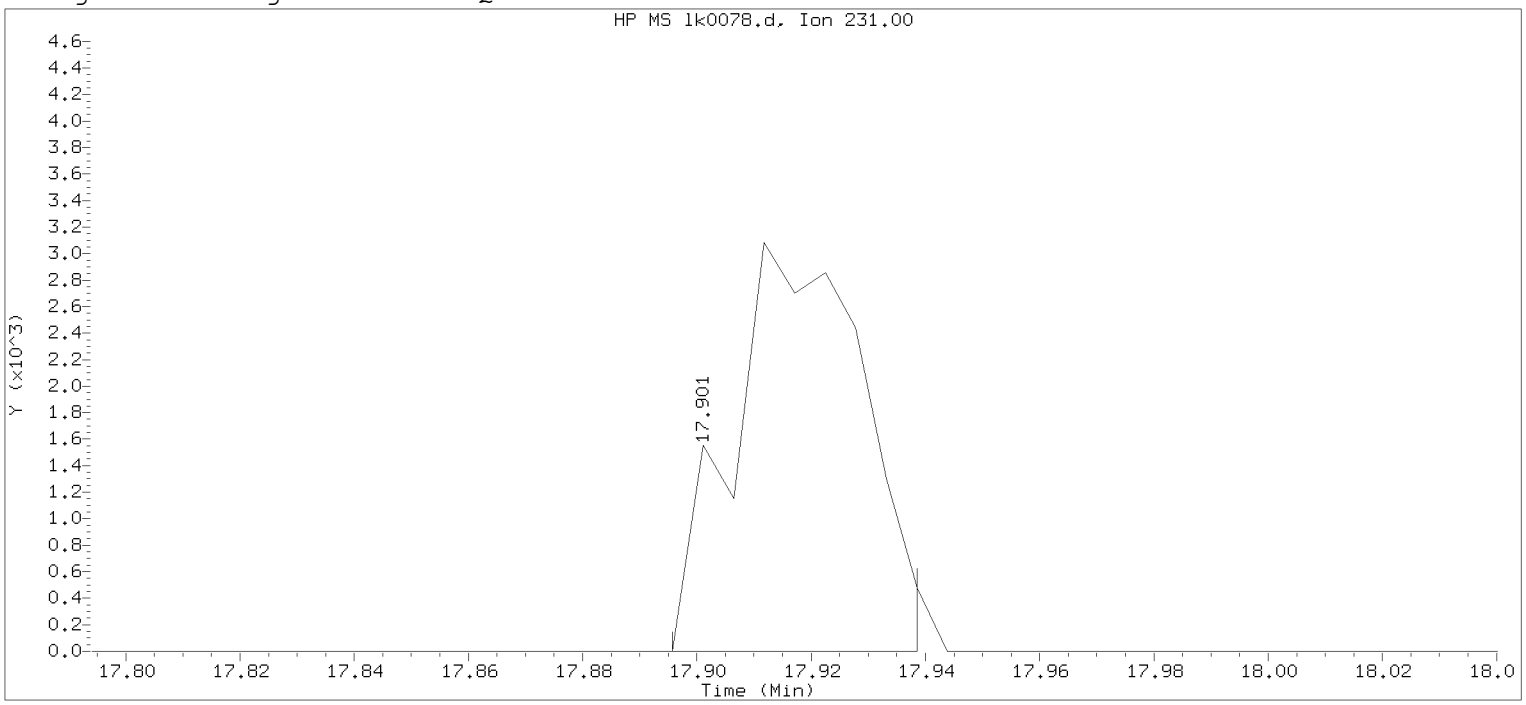
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

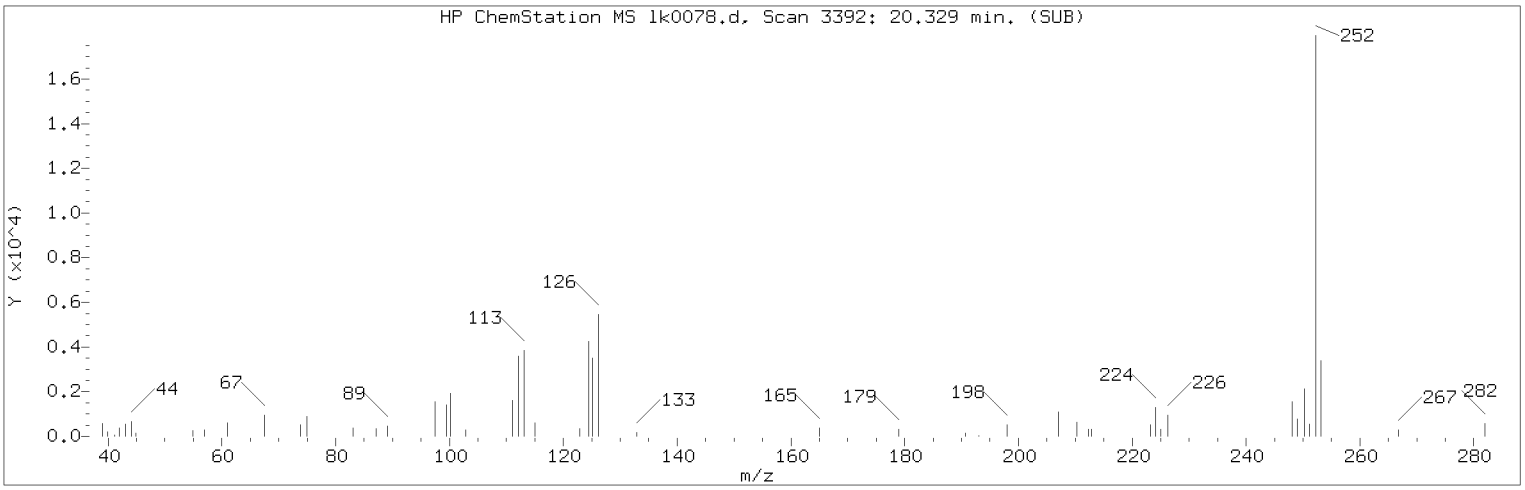
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

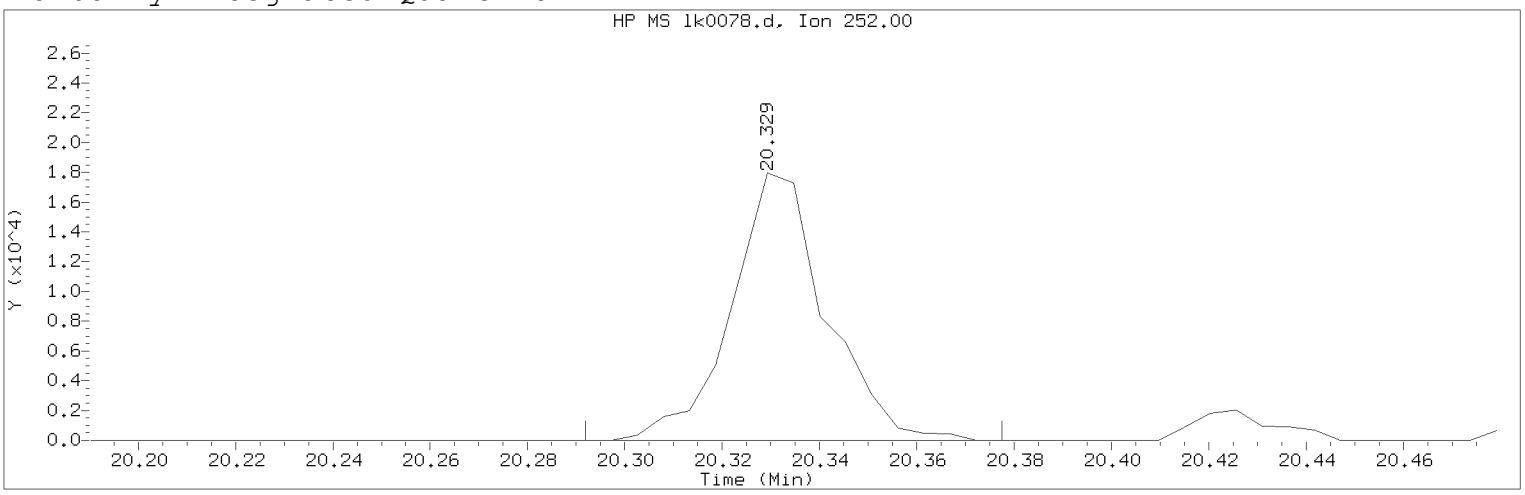
Compound Number	: 203		
Compound Name	: 4,4'-Methylenebis(2-chloroanil		
Scan Number	: 2938		
Retention Time (minutes)	: 17.901		
Quant Ion	: 231.00		
Area	: 4919		
On-column Amount (ng/ul)	: 0.1984		
Integration start scan	: 2936	Integration stop scan:	2944
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1046

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

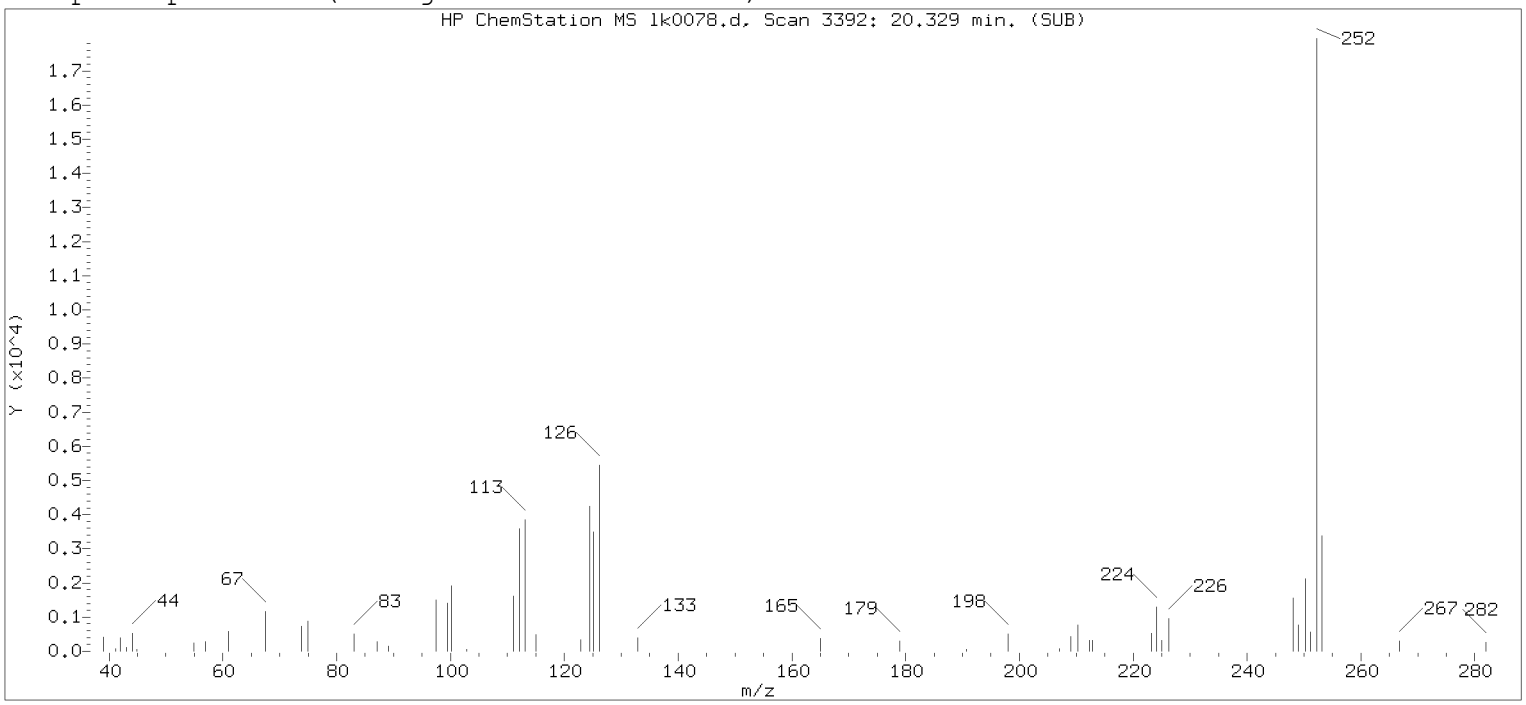
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3392
Retention Time (minutes) : 20.329
Quant Ion : 252.00
Area (flag) : 24178M
On-Column Amount (ng/ul) : 0.2240
Integration start scan : 3384 Integration stop scan: 3400
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

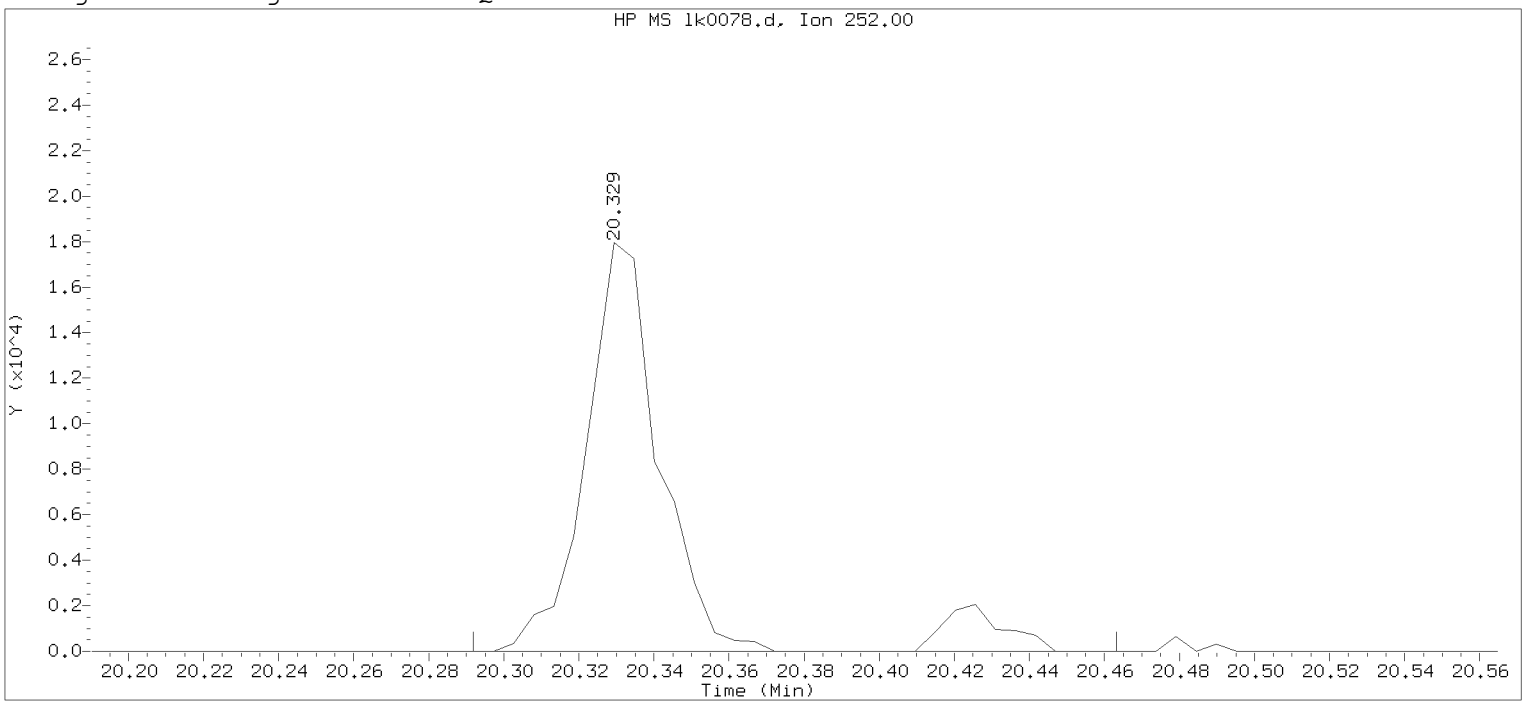
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

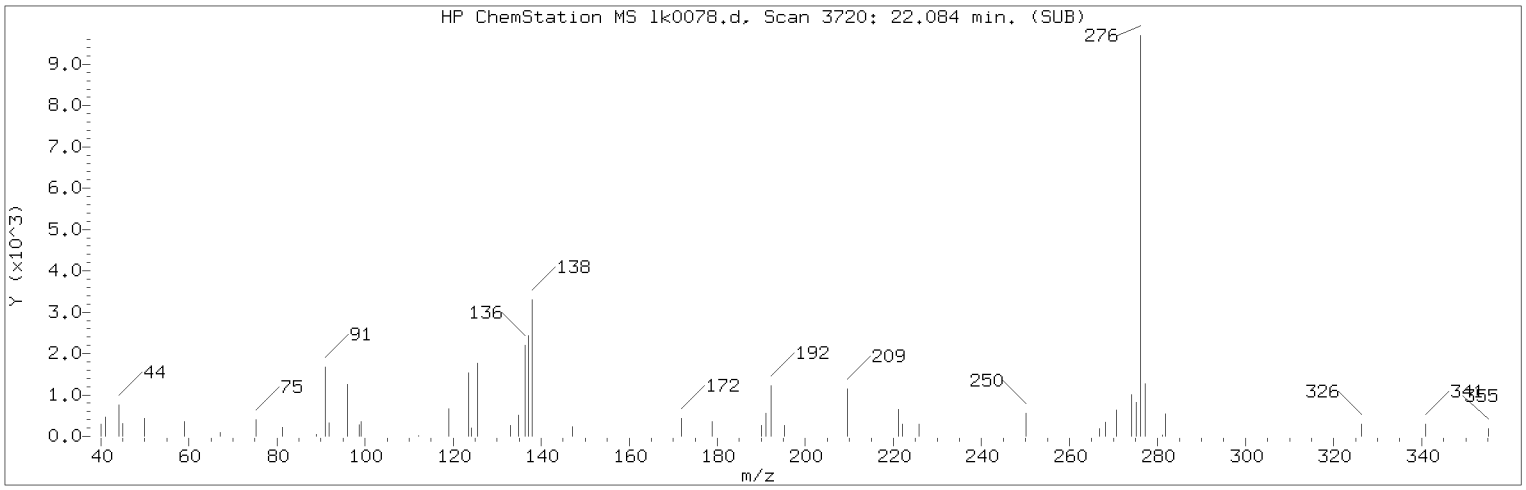
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

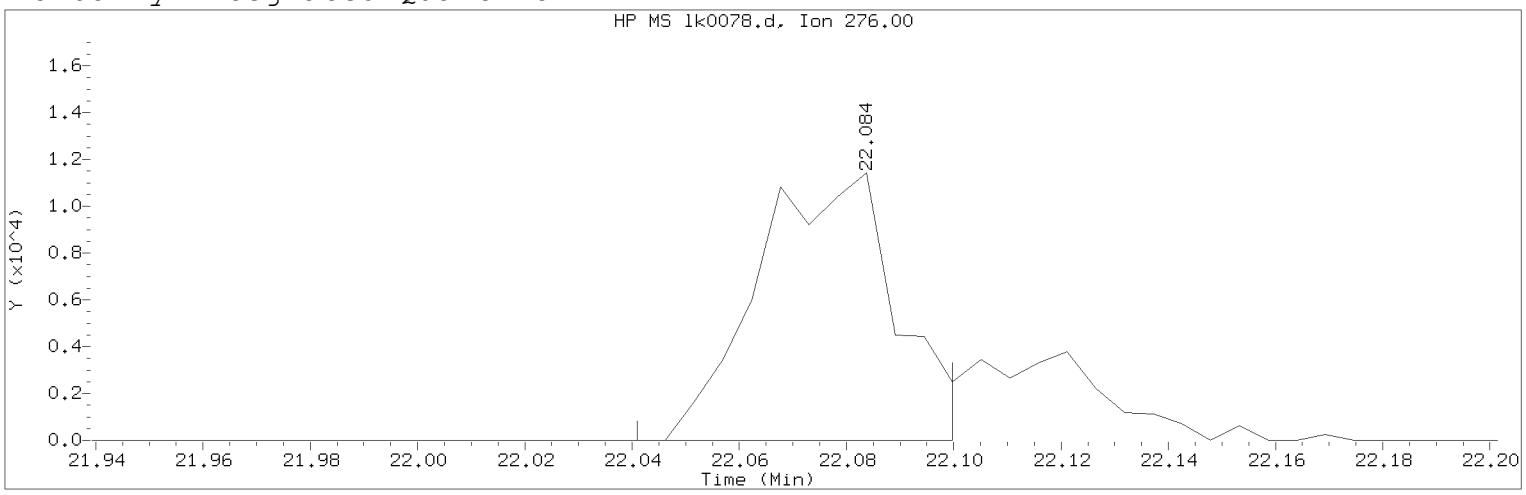
Compound Number	: 216		
Compound Name	: Benzo(a)pyrene		
Scan Number	: 3392		
Retention Time (minutes)	: 20.329		
Quant Ion	: 252.00		
Area	: 26513		
On-column Amount (ng/ul)	: 0.2203		
Integration start scan	: 3384	Integration stop scan:	3416
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: WSAADEH

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

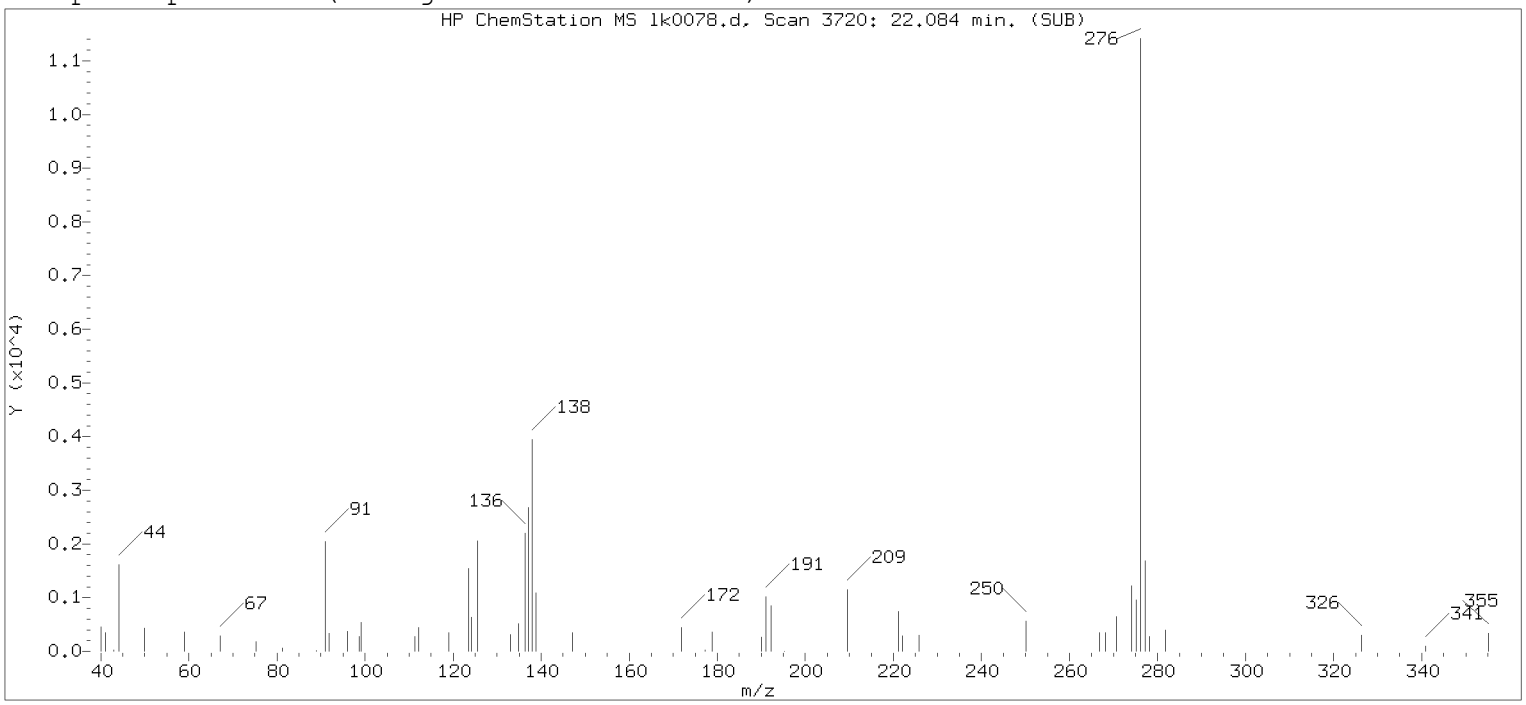
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3720
Retention Time (minutes) : 22.084
Quant Ion : 276.00
Area (flag) : 20657M
On-Column Amount (ng/ul) : 0.2098
Integration start scan : 3711 Integration stop scan: 3722
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

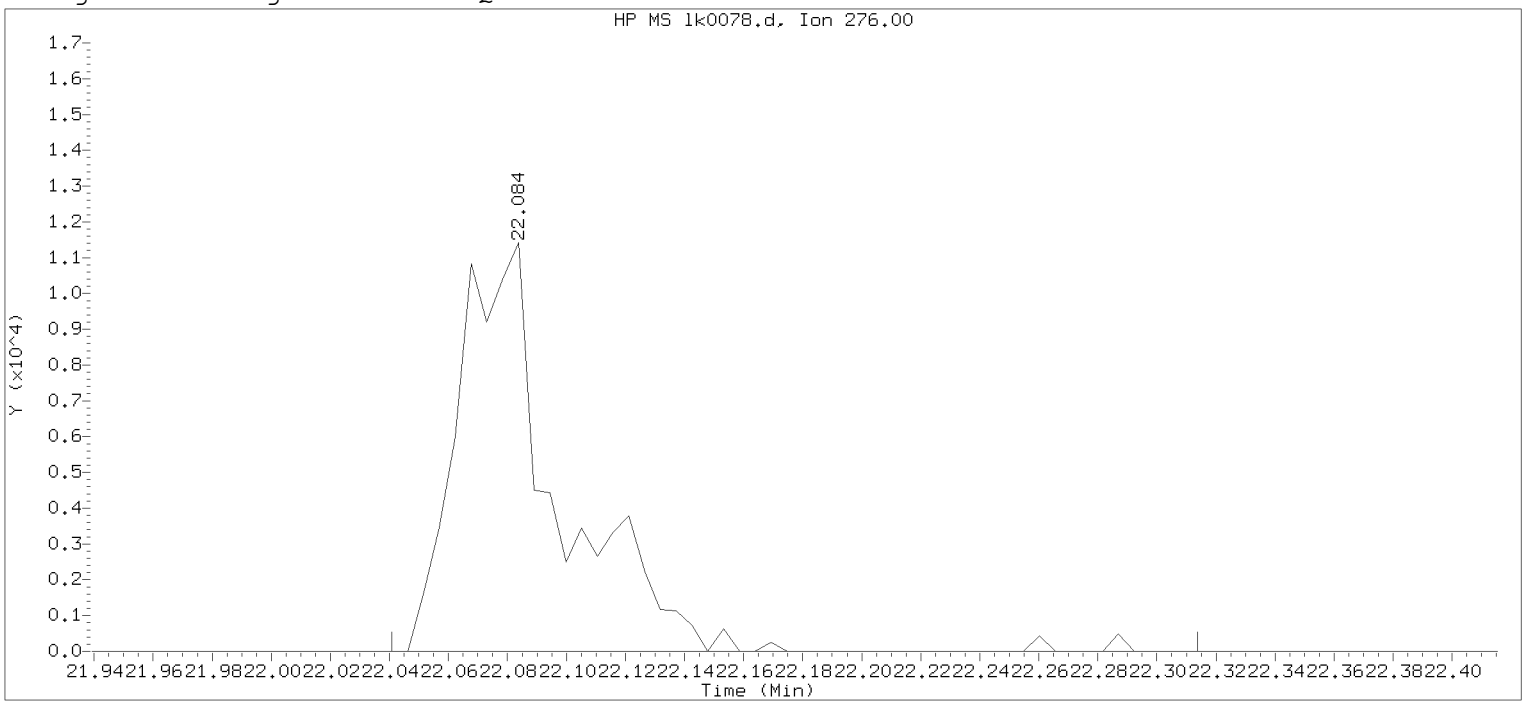
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:15.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



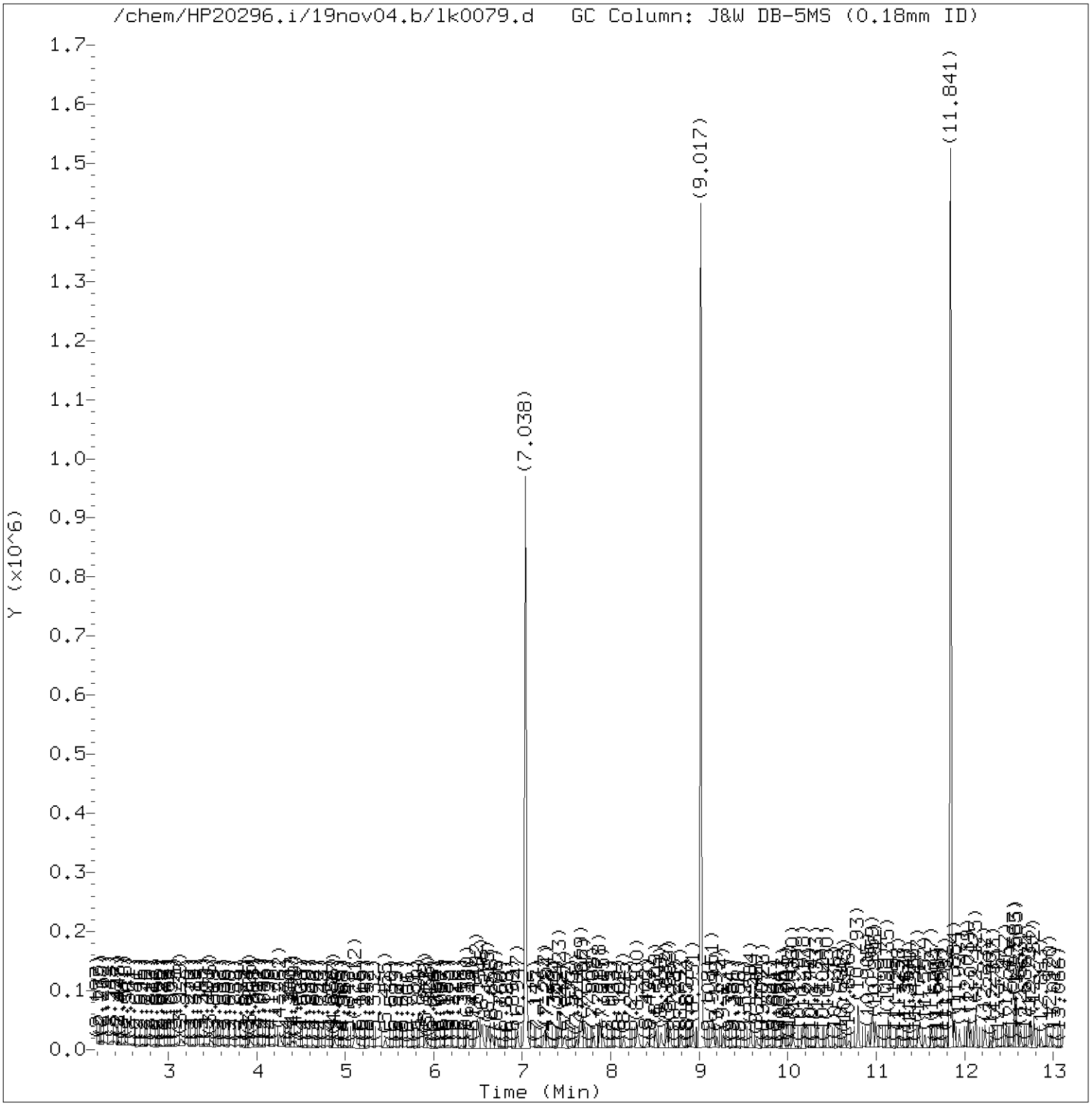
Data File: /chem/HP20296.i/19nov04.b/lk0078.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 17:55 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: all1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:27 Unknown

Sample Name: SSTD0.25 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3720		
Retention Time (minutes)	: 22.084		
Quant Ion	: 276.00		
Area	: 27157		
On-column Amount (ng/ul)	: 0.2305		
Integration start scan	: 3711	Integration stop scan:	3762
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user RAF48 Page 1050 of 1181



Total Ion Chromatogram (TIC)

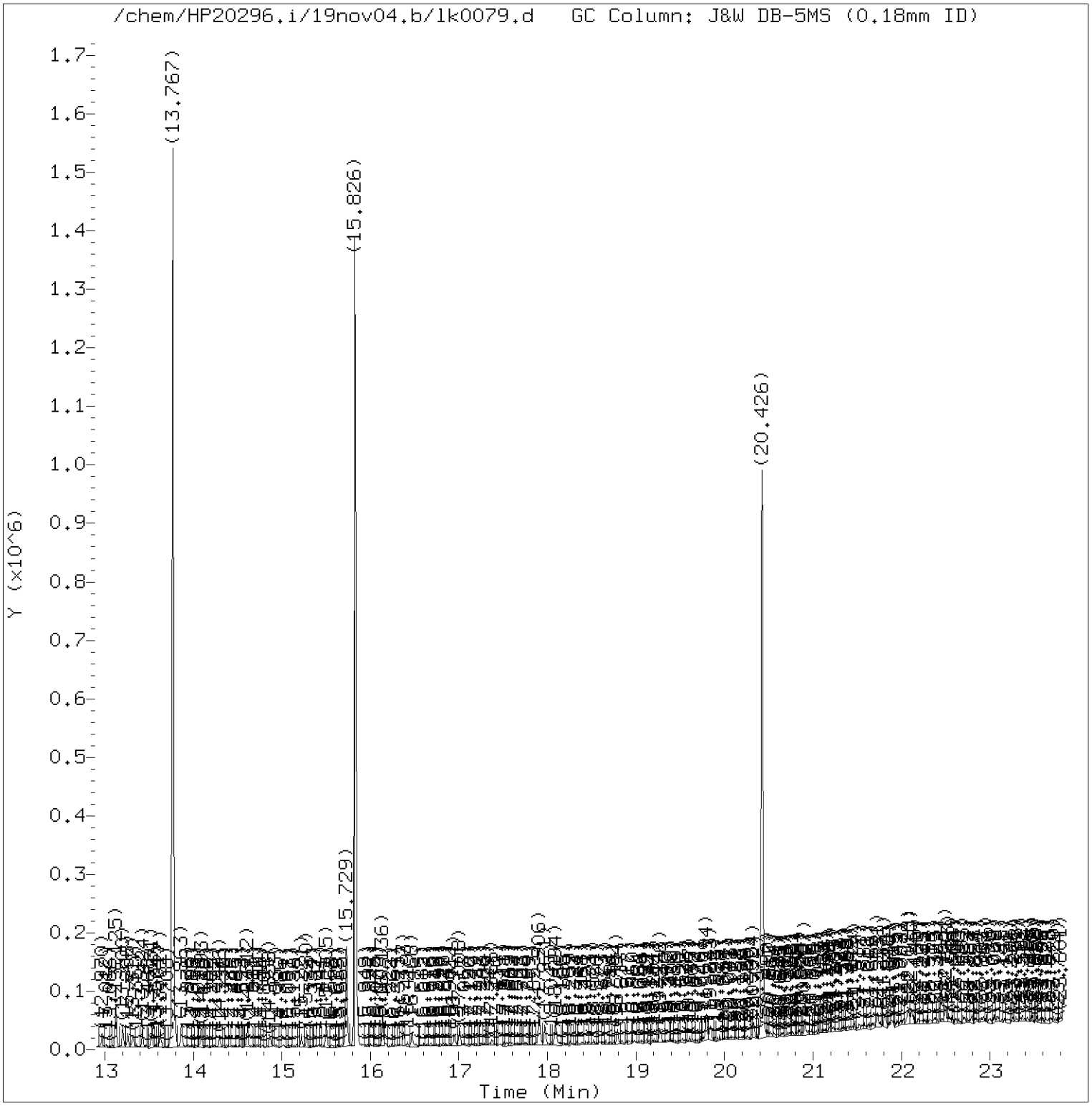
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.518	88	4124M	0.125
5) N-Nitrosodimethylamine	(1)	3.085	74	5341M	0.095
6) Pyridine	(1)	3.150	79	14311M	0.150
8) 2-Picoline	(1)	4.262	93	13030M	0.145
9) N-Nitrosomethylethylamine	(1)	4.439	88	4935M	0.132
10) Methyl methanesulfonate	(1)	4.872	80	5161	0.115
12)$2-Fluorophenol	(1)	5.112	112	14453	0.227
14) N-Nitrosodiethylamine	(1)	5.455	102	3415	0.100
43) Total Cresols	(1)			13976	0.208
16) Ethyl methanesulfonate	(1)	5.904	109	4522	0.129
17) Benzaldehyde	(1)	6.380	77	8845M	0.137
18)$Phenol-d6	(1)	6.492	99	20406	0.223
19) Phenol	(1)	6.508	94	11892M	0.108
20) Aniline	(1)	6.541	93	14320	0.111
21) a-methylstyrene	(1)	6.621	118	3150	0.122
23) bis(2-Chloroethyl)ether	(1)	6.658	93	11202M	0.132
24) 2-Chlorophenol	(1)	6.712	128	5624M	0.099
25) 1,3-Dichlorobenzene	(1)	6.947	146	6967	0.120
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	170521	5.000
27) 1,4-Dichlorobenzene	(1)	7.059	146	6769	0.117
28) Benzyl alcohol	(1)	7.252	108	4694	0.104
29) 1,2-Dichlorobenzene	(1)	7.289	146	5422	0.096
100) Isosafrole	(3)			5014	0.130
31) Indene	(1)	7.423	115	13842	0.135
32) 2-Methylphenol	(1)	7.434	108	6643	0.103
35) bis(2-Chloroisopropyl)ether	(1)	7.477	45	11051	0.116
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.477	45	11051	0.116
36) N-Nitrosopyrrolidine	(1)	7.616	100	4438	0.114
37) Acetophenone	(1)	7.658	105	13120	0.123
39) N-Nitroso-di-n-propylamine	(1)	7.669	70	9613M	0.138
38) 4-Methylphenol	(1)	7.674	108	7333	0.104
40) N-Nitrosomorpholine	(1)	7.680	56	4859M	0.110
41) o-Toluidine	(1)	7.707	106	12896	0.113
44) Hexachloroethane	(1)	7.808	117	3992	0.133
45)$Nitrobenzene-d5	(2)	7.883	82	19593	0.219
46) Nitrobenzene	(2)	7.915	77	11723	0.122
125) 2,4_2,6-Dinitrotoluenes	(3)			2252	0.107
50) N-Nitrosopiperidine	(2)	8.145	114	3501	0.110
52) Isophorone	(2)	8.295	82	20364	0.119
53) 2-Nitrophenol	(2)	8.413	139	1561	0.076

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.509	107	6762	0.094
58) Benzoic acid	(2)	8.568	105	11729	0.385
59) O,O,O-Triethylphosphorothioate	(2)	8.637	198	2535	0.132
57) bis(2-Chloroethoxy)methane	(2)	8.669	93	11408	0.111
151) Diallate trans/cis	(4)			10434	0.138
62) 2,4-Dichlorophenol	(2)	8.798	162	4101	0.108
65) 1,2,4-Trichlorobenzene	(2)	8.931	180	4853	0.123
68)*Naphthalene-d8	(2)	9.017	136	698861	5.000
70) 4-Chloroaniline	(2)	9.151	127	7830	0.117
71) 2,6-Dichlorophenol	(2)	9.161	162	3737	0.105
72) Hexachloropropene	(2)	9.199	213	1600	0.085
74) Hexachlorobutadiene	(2)	9.274	225	2555	0.130
78) Quinoline	(2)	9.584	129	11347	0.115
79) Caprolactam	(2)	9.659	113	1324	0.079
80) N-Nitrosodi-n-butylamine	(2)	9.728	84	7422	0.112
83) 4-Chloro-3-methylphenol	(2)	9.948	107	5738	0.097
85) Safrole	(2)	10.060	162	4203	0.125
88) Hexachlorocyclopentadiene	(3)	10.445	237	1351	0.071
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.450	216	4598	0.141
91) cis-Isosafrole	(3)	10.531	162	960	0.026
93) 2,4,6-Trichlorophenol	(3)	10.643	196	2018	0.096
95) 2,4,5-Trichlorophenol	(3)	10.691	196	1582	0.070
96)$2-Fluorobiphenyl	(3)	10.793	172	21885	0.251
97) trans-Isosafrole	(3)	10.910	162	4054	0.104
98) 1,1'-Biphenyl	(3)	10.953	154	13675	0.128
101) 1-Chloronaphthalene	(3)	10.996	162	10281	0.136
103) Diphenyl ether	(3)	11.130	170	7525	0.143
104) 2-Nitroaniline	(3)	11.140	138	3176	0.116
108) 1,4-Naphthoquinone	(3)	11.258	158	2784	0.079
109) 1,4-Dinitrobenzene	(3)	11.381	168	475M	0.050
110) Dimethylphthalate	(3)	11.477	163	10606	0.118
111) 1,3-Dinitrobenzene	(3)	11.499	168	1219M	0.104
113) 2,6-Dinitrotoluene	(3)	11.552	165	997	0.054
117) 3-Nitroaniline	(3)	11.788	138	1691	0.070
118)*Acenaphthene-d10	(3)	11.841	164	285969	5.000
120) 2,4-Dinitrophenol	(3)	11.937	184	1907	3.945
121) 4-Nitrophenol	(3)	12.039	109	5265	0.268
122) Pentachlorobenzene	(3)	12.066	250	2989	0.112
123) 2,4-Dinitrotoluene	(3)	12.119	165	1255	0.053
124) Dibenzofuran	(3)	12.125	168	14822	0.136

M = Compound was manually integrated.
* = Compound is an internal standard.
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Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
126) 1-Naphthylamine	(3)	12.226	143	11475	0.128
127) 2,3,4,6-Tetrachlorophenol	(3)	12.296	232	1120	0.081
128) 2-Naphthylamine	(3)	12.333	143	9844	0.114
129) Diethylphthalate	(3)	12.467	149	13121	0.135
130) Thionazin	(3)	12.563	107	3270	0.132
133) 5-Nitro-o-toluidine	(3)	12.579	152	2018	0.080
132) 4-Chlorophenyl-phenylether	(3)	12.585	204	4066M	0.118
134) 4-Nitroaniline	(3)	12.585	138	2083	0.086
135) 4,6-Dinitro-2-methylphenol	(4)	12.627	198	1239	0.166
137) NDPA as diphenylamine	(4)	12.729	169	7451	0.099
136) N-Nitrosodiphenylamine	(4)	12.729	169	7451	0.099
139) 1,2-Diphenylhydrazine	(4)	12.782	77	23314	0.124
140)$2,4,6-Tribromophenol	(3)	12.863	332	1417	0.166
142) Tetraethyldithiopyrophosphate	(4)	12.964	97	3805	0.137
145) Diallate (peak 1)	(4)	13.114	86	9004	0.116
147) Phenacetin	(4)	13.125	108	6730	0.092
146) Phorate	(4)	13.125	75	12489	0.107
148) 4-Bromophenyl-phenylether	(4)	13.205	248	2165	0.120
149) Diallate (peak 2)	(4)	13.226	86	1430	0.022
152) Dimethoate	(4)	13.323	87	4168	0.060
153) Atrazine	(4)	13.424	200	2428	0.120
154) Pentachlorophenol	(4)	13.521	266	634	0.059
155) 4-Aminobiphenyl	(4)	13.531	169	6849	0.124
156) Pentachloronitrobenzene	(4)	13.531	237	1057	0.121
157) Pronamide	(4)	13.627	173	4123	0.098
158)*Phenanthrene-d10	(4)	13.767	188	501461	5.000
159) Dinoseb	(4)	13.783	211	356M	2.985
168) Carbazole	(4)	14.093	167	14238	0.116
169) Methyl parathion	(4)	14.296	109	2665	0.061
170) Di-n-butylphthalate	(4)	14.612	149	17713	0.098
172) Parathion	(4)	14.852	109	1832	0.065
173) 4-Nitroquinoline-1-oxide	(4)	14.868	190	121M	2.448
174) Octachlorostyrene	(4)	15.221	308	1058M	0.123
176) Isodrin	(4)	15.280	193	2608	0.173
179) Benzidine	(5)	15.729	184	72909	0.821
180)*Pyrene-d10	(5)	15.826	212	472484	5.000
184)$Terphenyl-d14	(5)	16.136	244	15488	0.212
187) p-Dimethylaminoazobenzene	(5)	16.377	225	1665	0.089
190) Chlorobenzilate	(5)	16.468	139	6441	0.109
192) 3,3'-Dimethylbenzidine	(5)	16.944	212	8741	0.106

M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

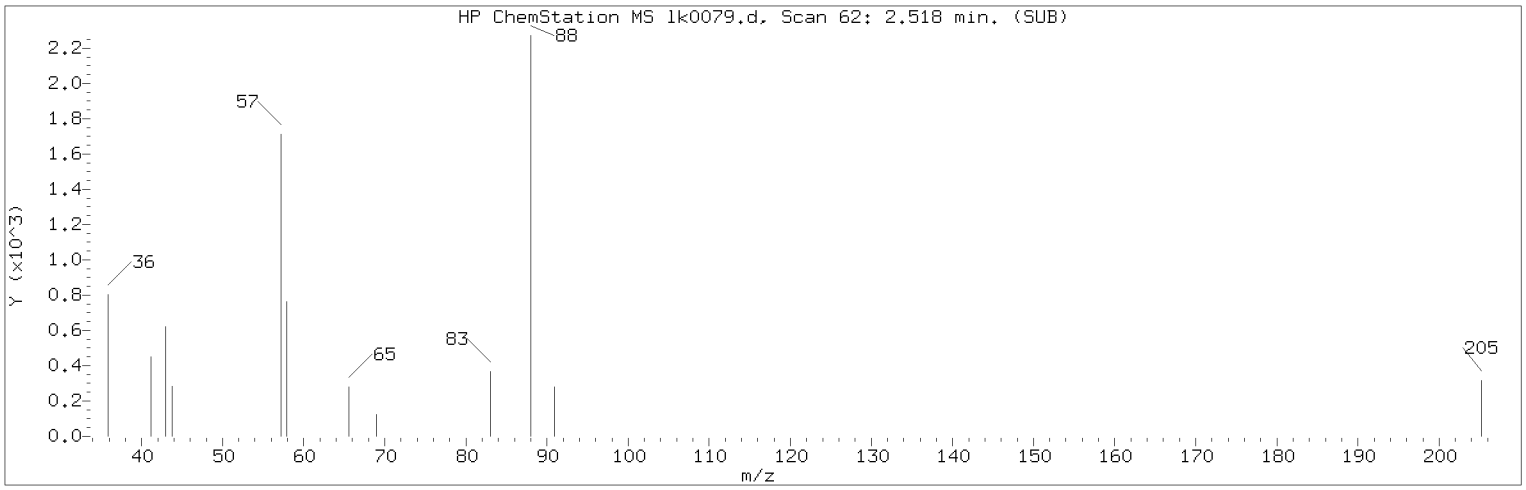
Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
193) Butylbenzylphthalate	(5)	17.013	149	6880	0.086
196) 2-Acetylaminofluorene	(5)	17.372	181	3624	0.066
198) 3,3'-Dichlorobenzidine	(5)	17.885	252	3807	0.088
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.912	231	1724	0.079
204) bis(2-Ethylhexyl)phthalate	(5)	18.083	149	10280	0.087
208) 6-Methylchrysene	(5)	18.778	242	7937	0.102
210) Di-n-octylphthalate	(6)	19.270	149	13567	0.072
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.800	256	3760	0.087
218)*Perylene-d12	(6)	20.426	264	400142	5.000
220) 3-Methylcholanthrene	(6)	20.902	268	3149	0.073
222) Dibenz(a,h)acridine	(6)	21.741	279	6225	0.078
223) Dibenz(a,j)acridine	(6)	21.806	279	8624	0.109

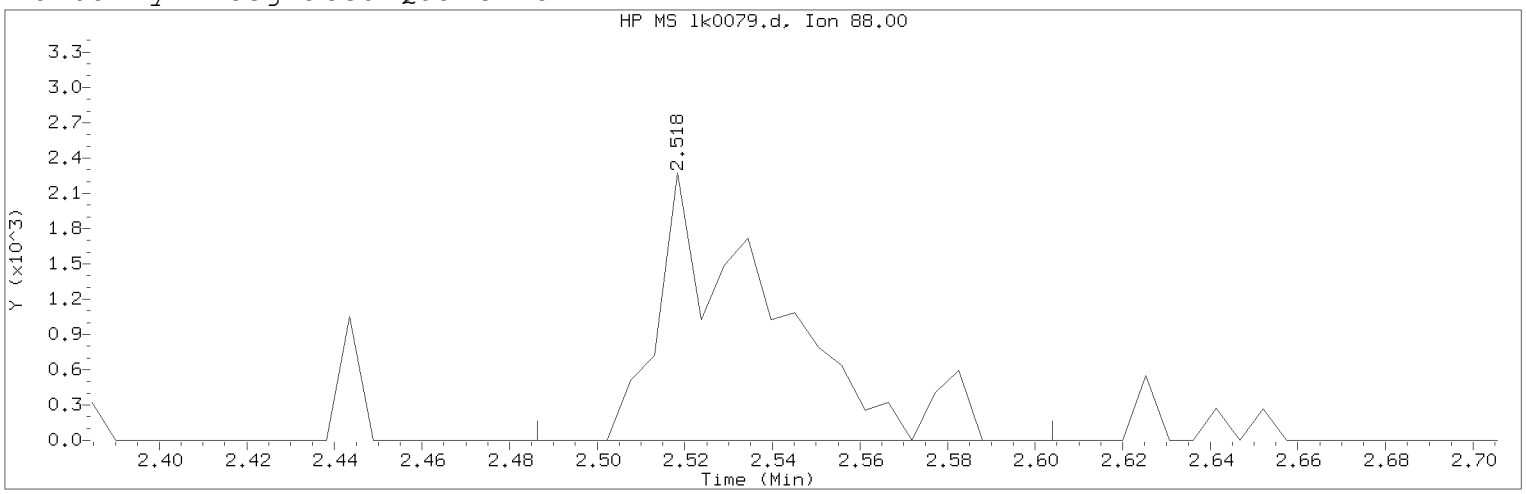
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

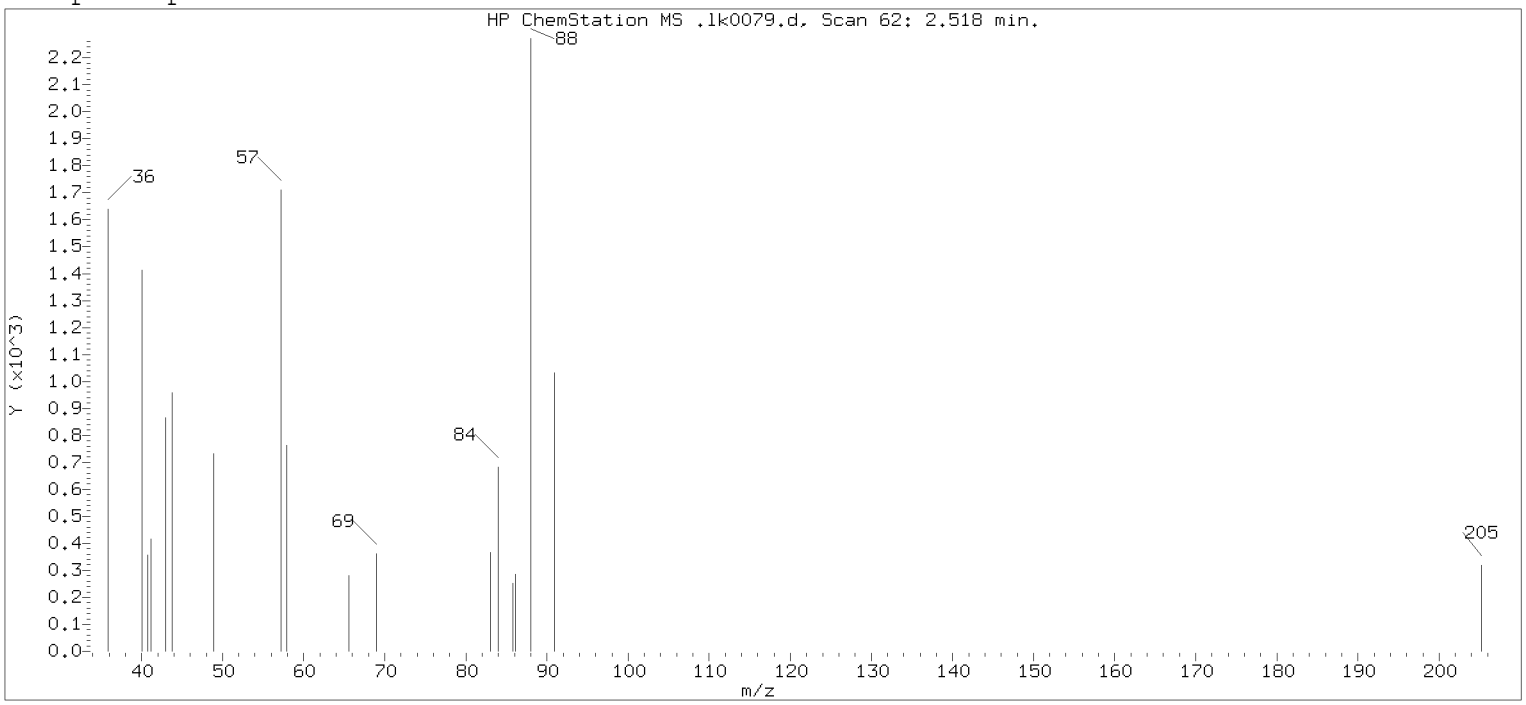
Compound Number : 1
Compound Name : 1,4-Dioxane
Scan Number : 62
Retention Time (minutes) : 2.518
Quant Ion : 88.00
Area (flag) : 4124M
On-Column Amount (ng/ul) : 0.1248
Integration start scan : 55 Integration stop scan: 77
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

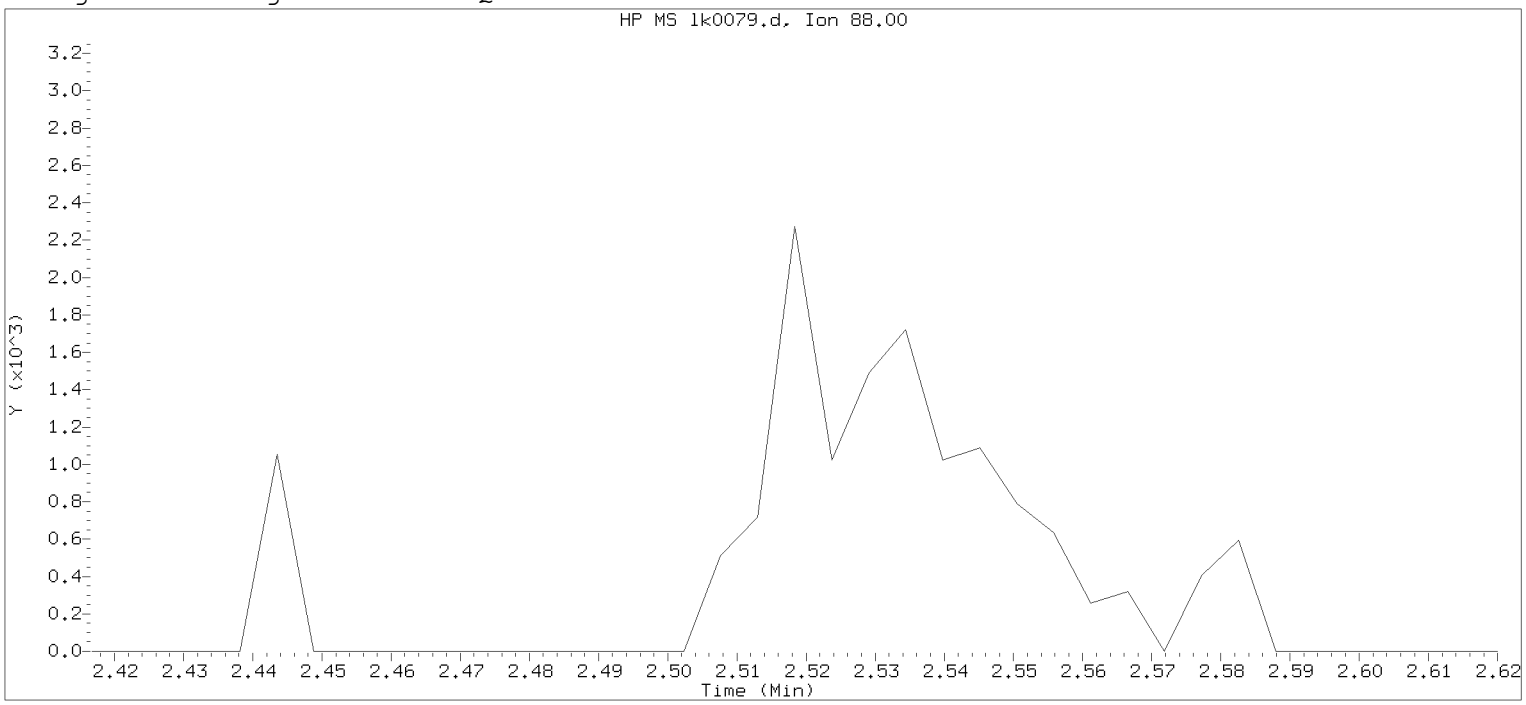
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

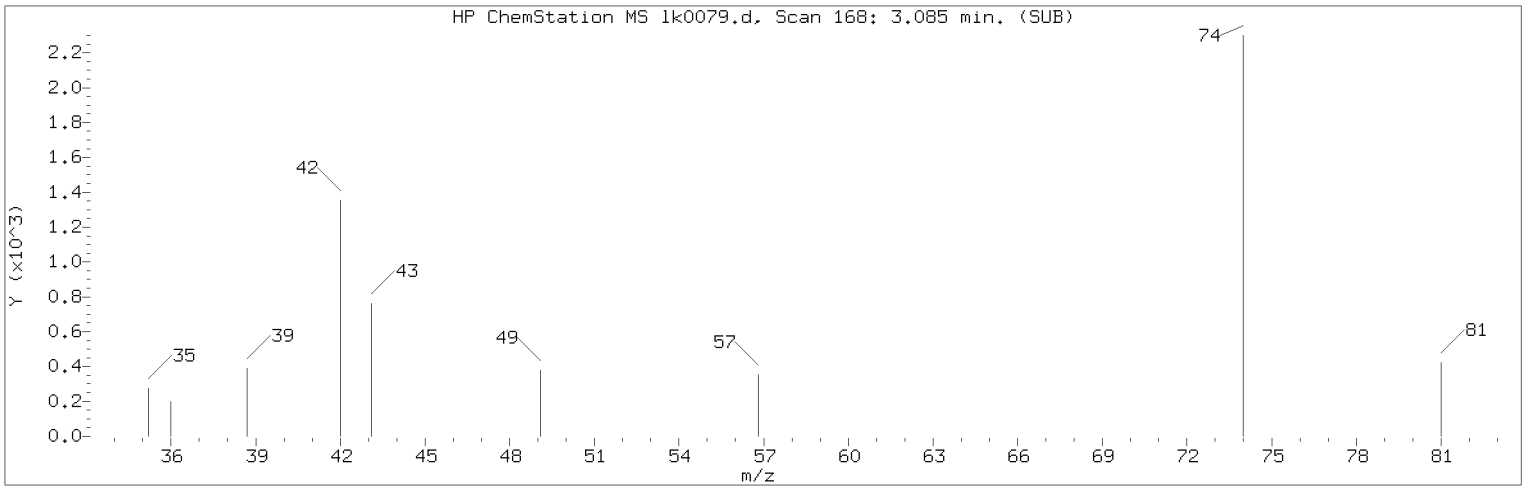
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

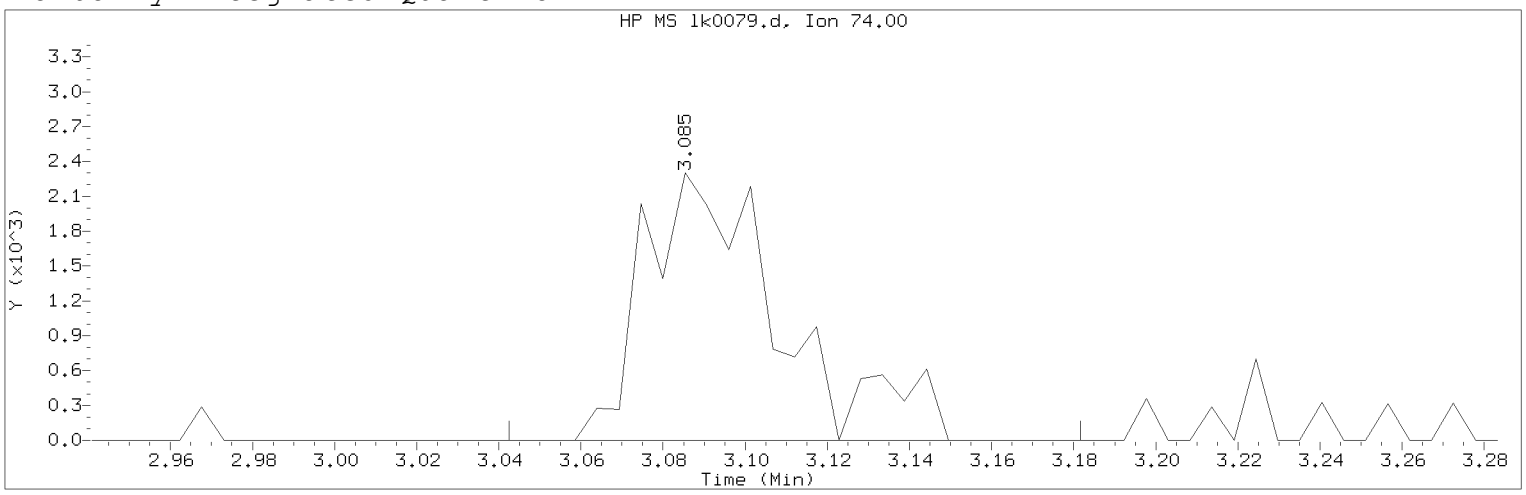
Compound Number : 1
Compound Name : 1,4-Dioxane
Expected RT (minutes) : 2.519
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: WSAADEH

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

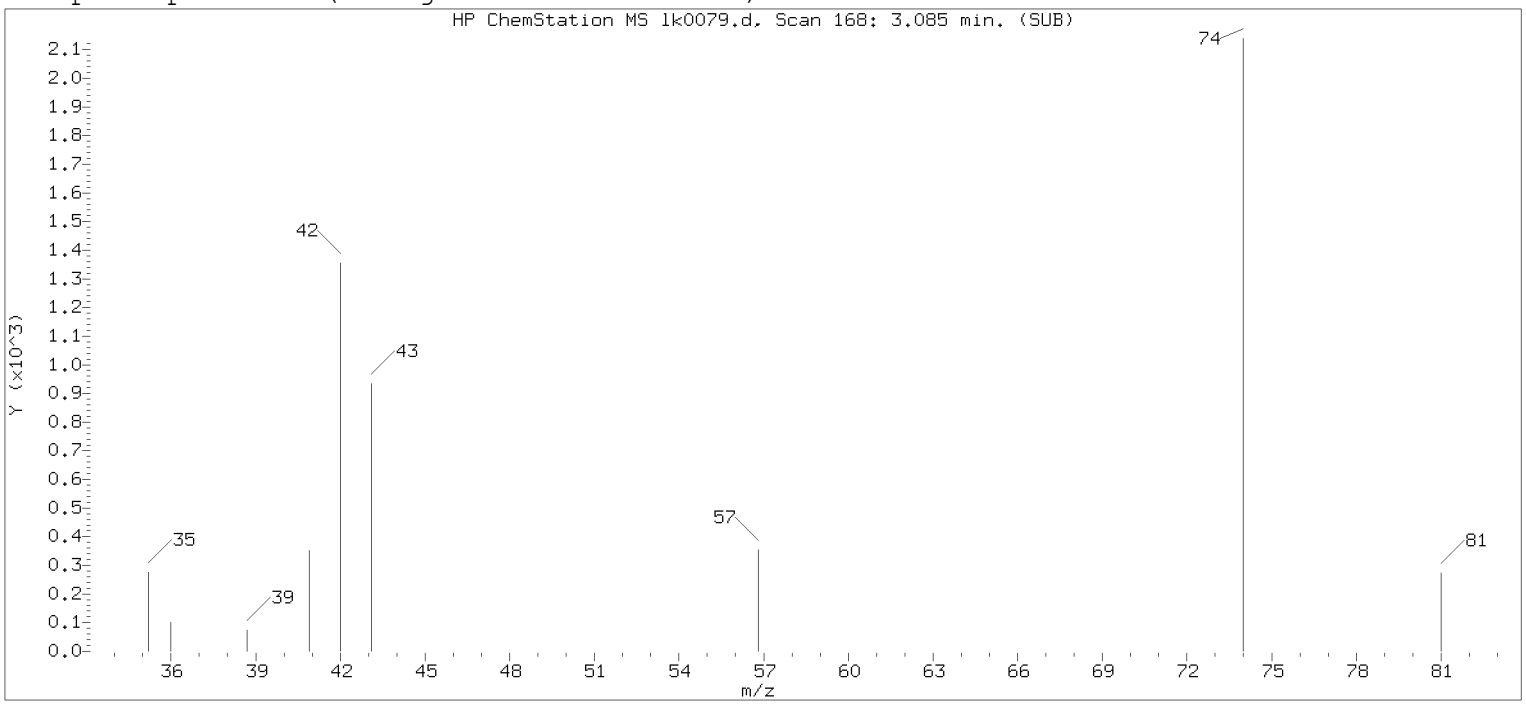
Compound Number : 5
Compound Name : N-Nitrosodimethylamine
Scan Number : 168
Retention Time (minutes) : 3.085
Quant Ion : 74.00
Area (flag) : 5341M
On-Column Amount (ng/ul) : 0.0950
Integration start scan : 159 Integration stop scan: 185
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

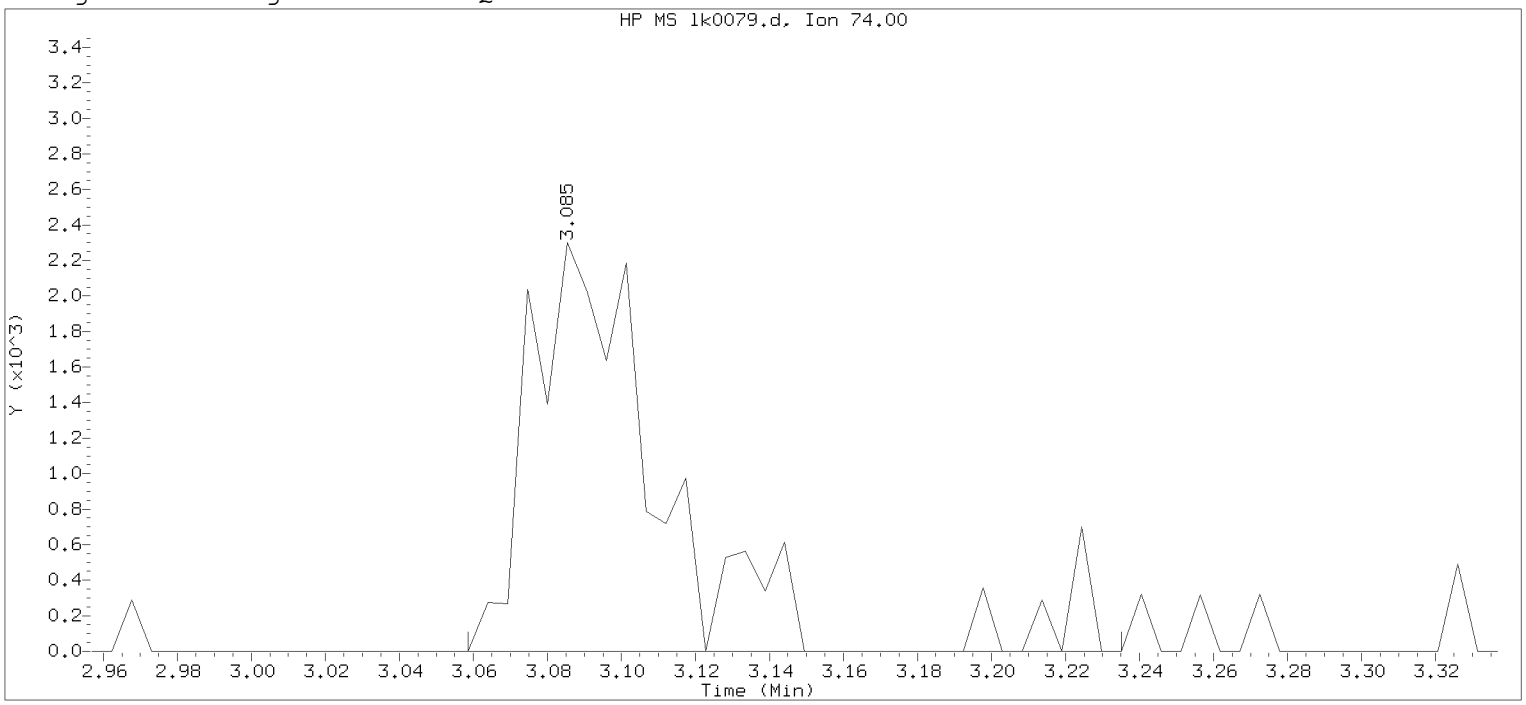
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

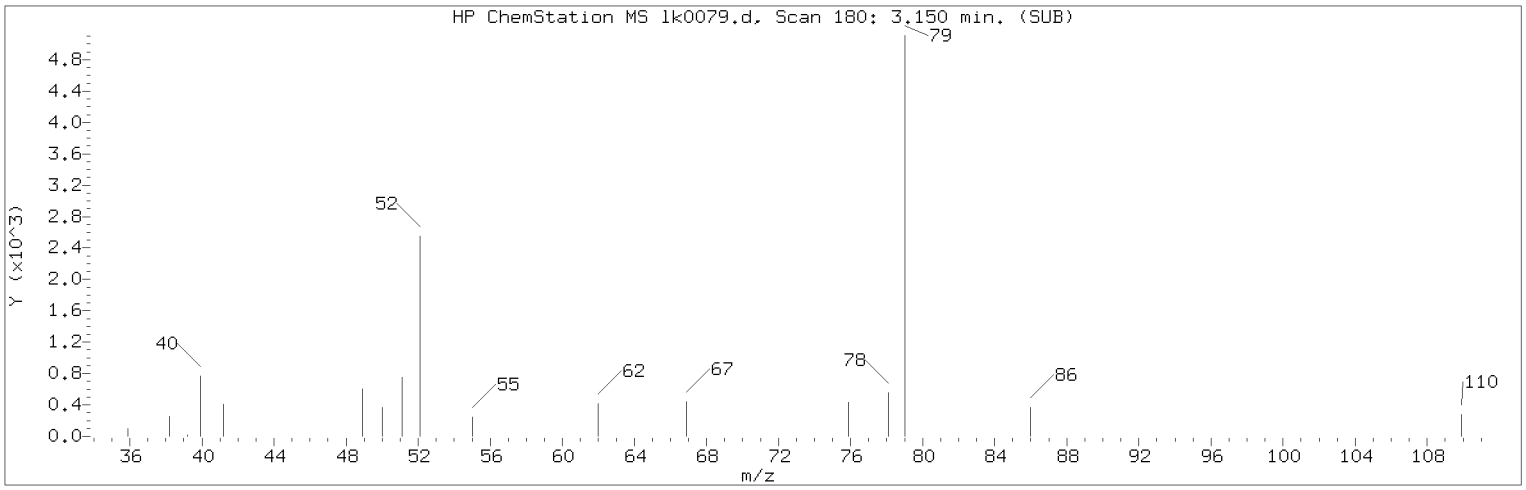
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

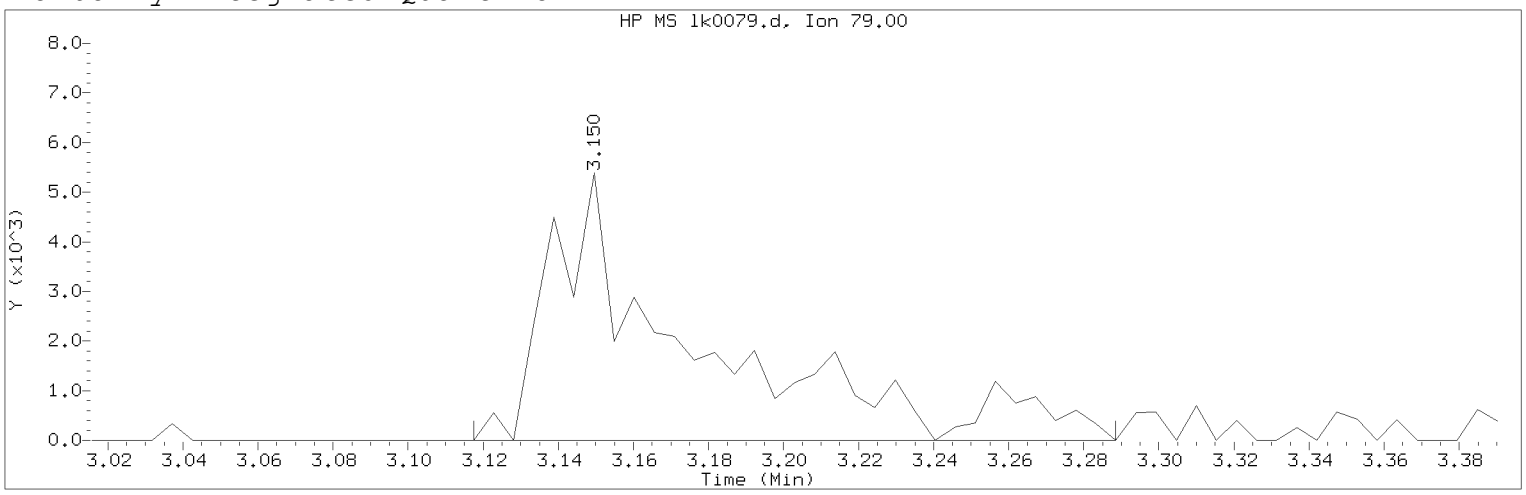
Compound Number	: 5		
Compound Name	: N-Nitrosodimethylamine		
Scan Number	: 168		
Retention Time (minutes)	: 3.085		
Quant Ion	: 74.00		
Area	: 5773		
On-column Amount (ng/ul)	: 0.1499		
Integration start scan	: 162	Integration stop scan:	195
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: F48 Page 1060

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

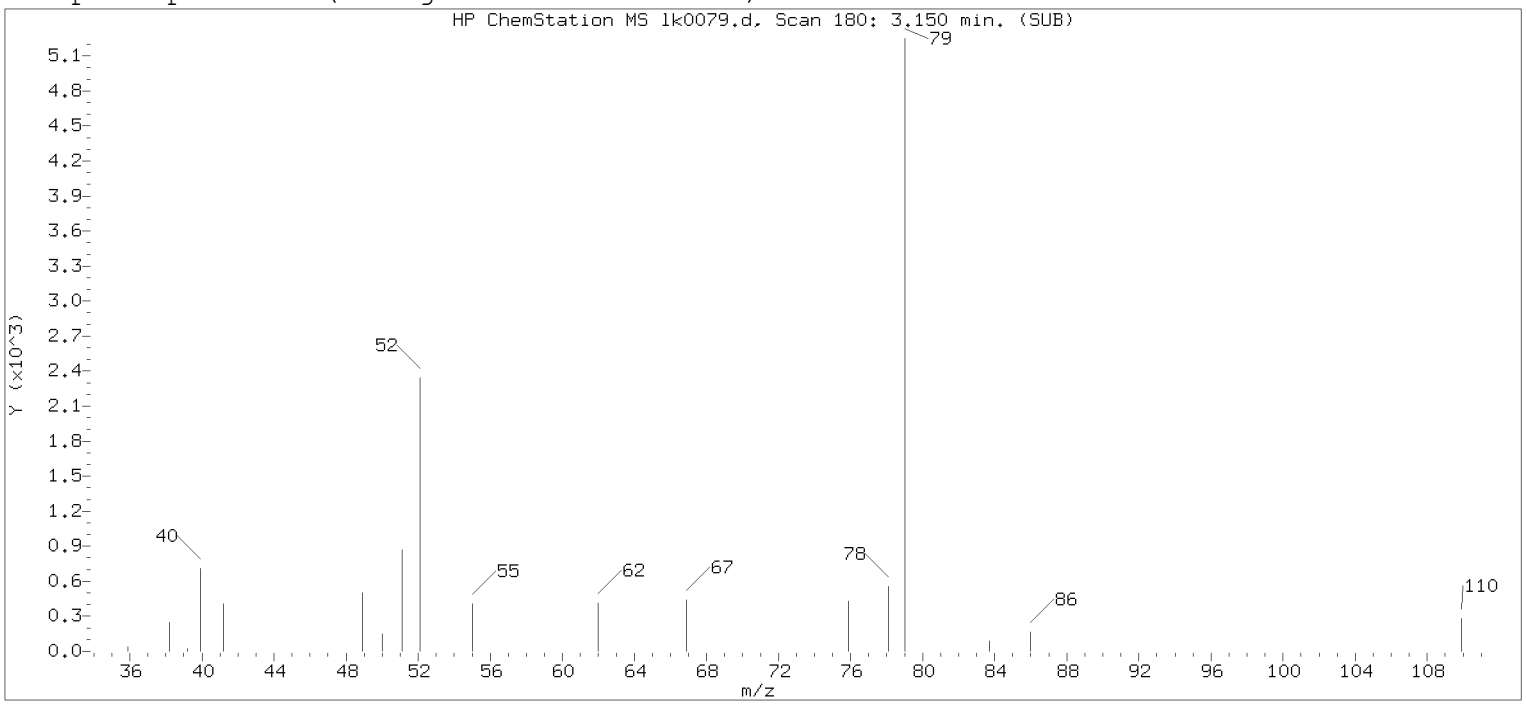
Compound Number : 6
Compound Name : Pyridine
Scan Number : 180
Retention Time (minutes) : 3.150
Quant Ion : 79.00
Area (flag) : 14311M
On-Column Amount (ng/ul) : 0.1497
Integration start scan : 173 Integration stop scan: 205
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

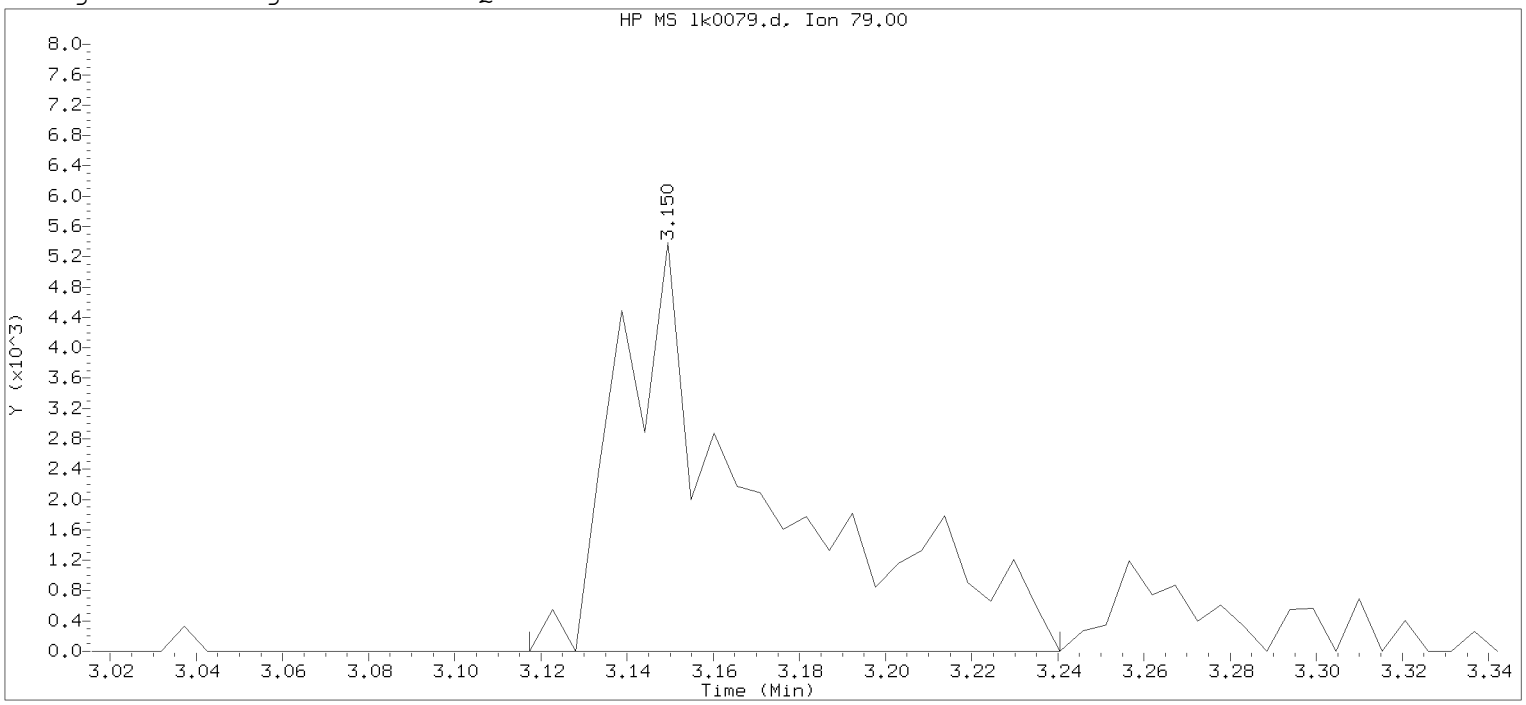
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

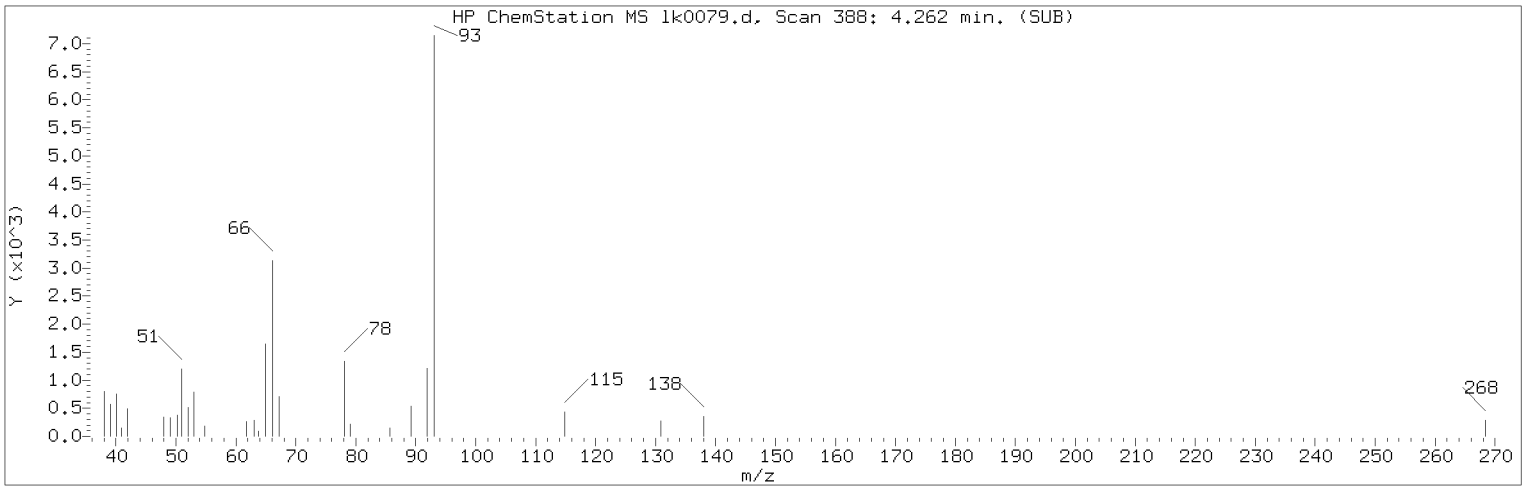
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

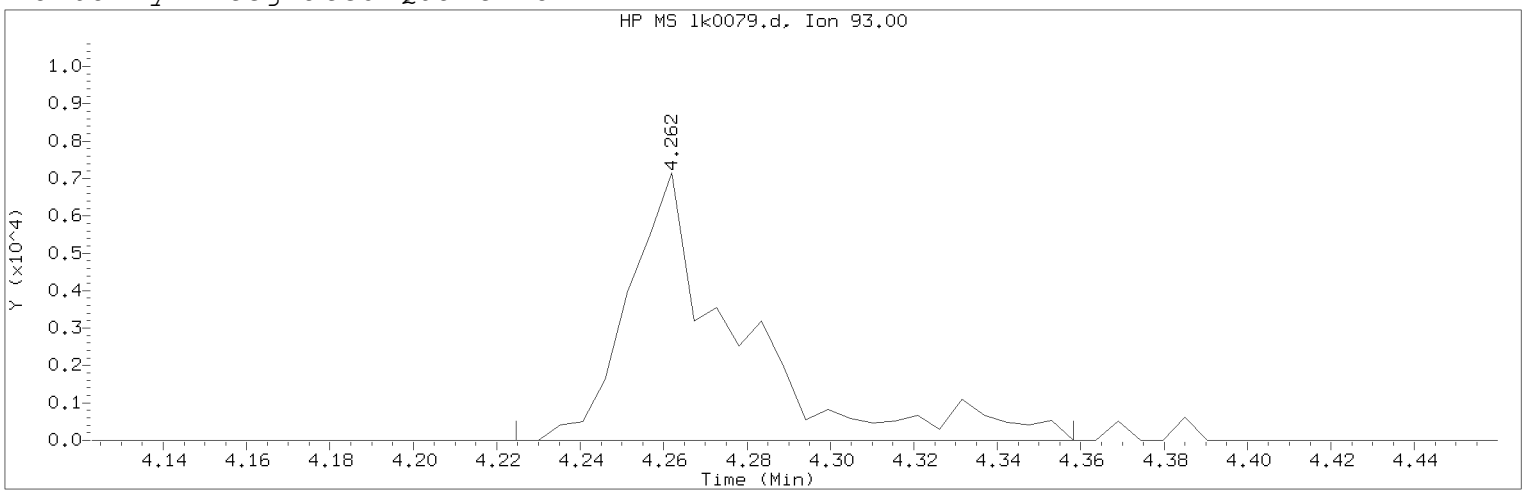
Compound Number	: 6		
Compound Name	: Pyridine		
Scan Number	: 180		
Retention Time (minutes)	: 3.150		
Quant Ion	: 79.00		
Area	: 12783		
On-column Amount (ng/ul)	: 0.2055		
Integration start scan	: 173	Integration stop scan:	196
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1062

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

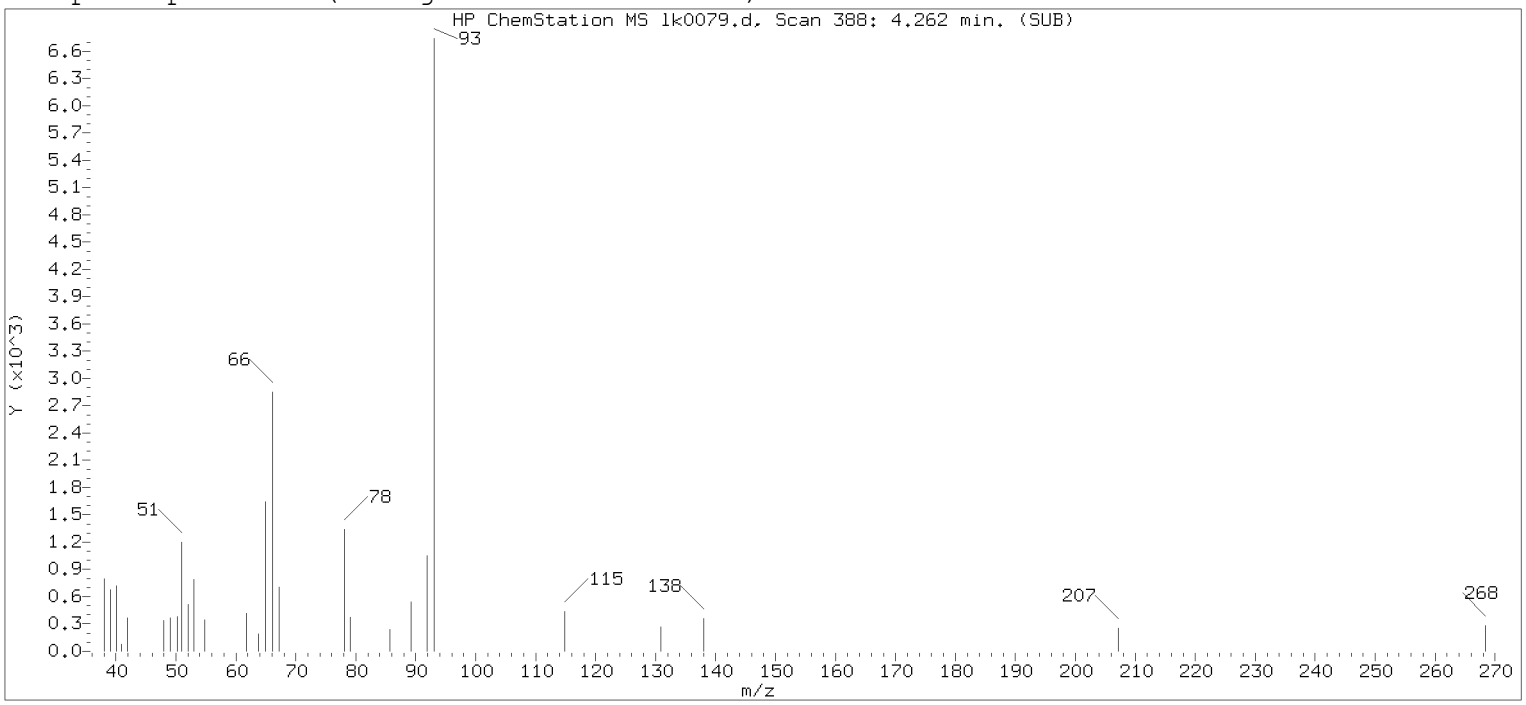
Compound Number : 8
Compound Name : 2-Picoline
Scan Number : 388
Retention Time (minutes) : 4.262
Quant Ion : 93.00
Area (flag) : 13030M
On-Column Amount (ng/ul) : 0.1447
Integration start scan : 380 Integration stop scan: 405
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

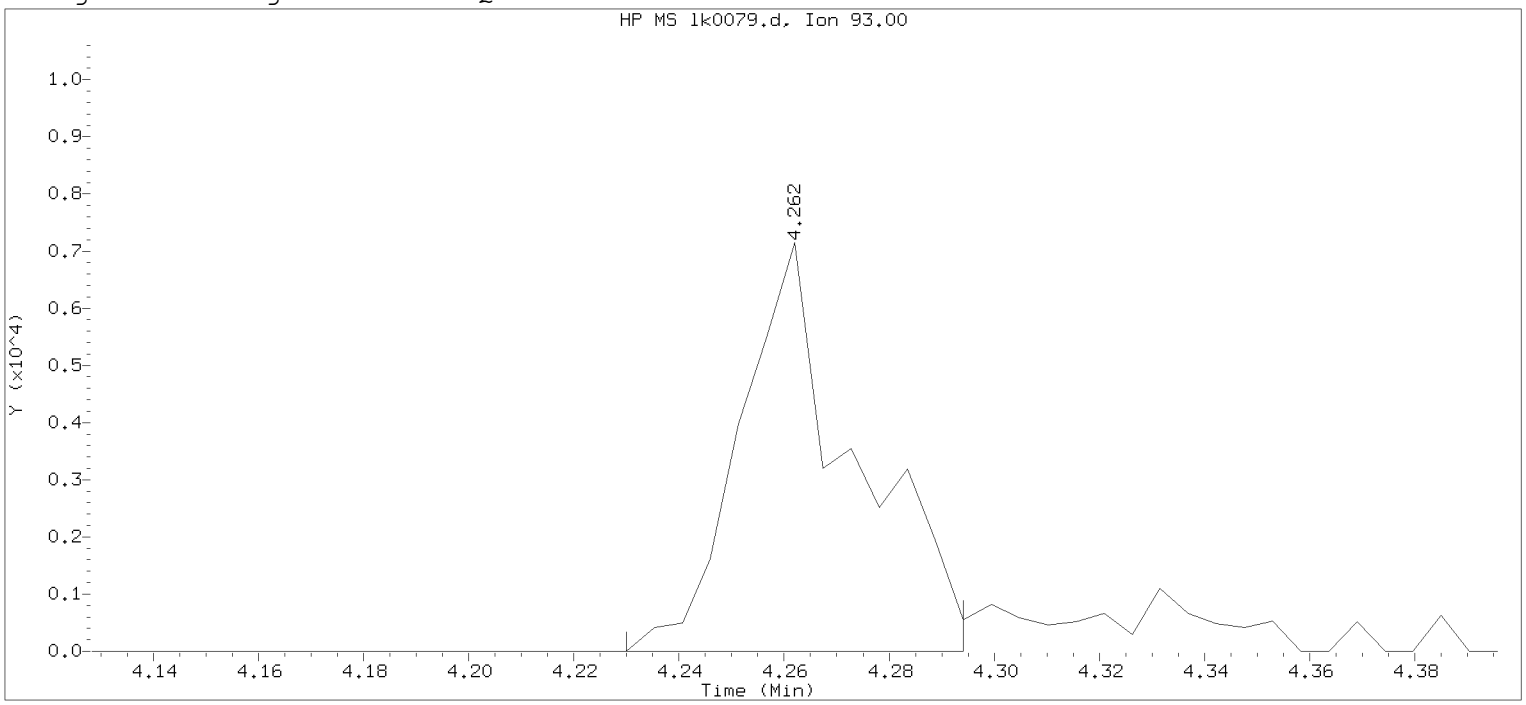
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

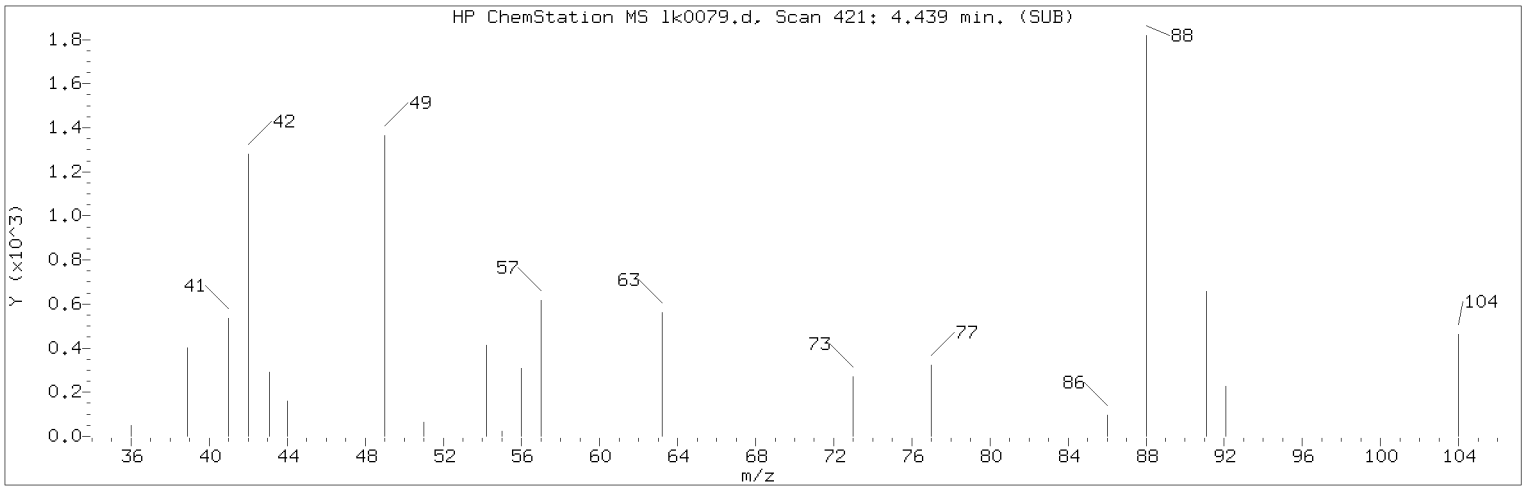
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

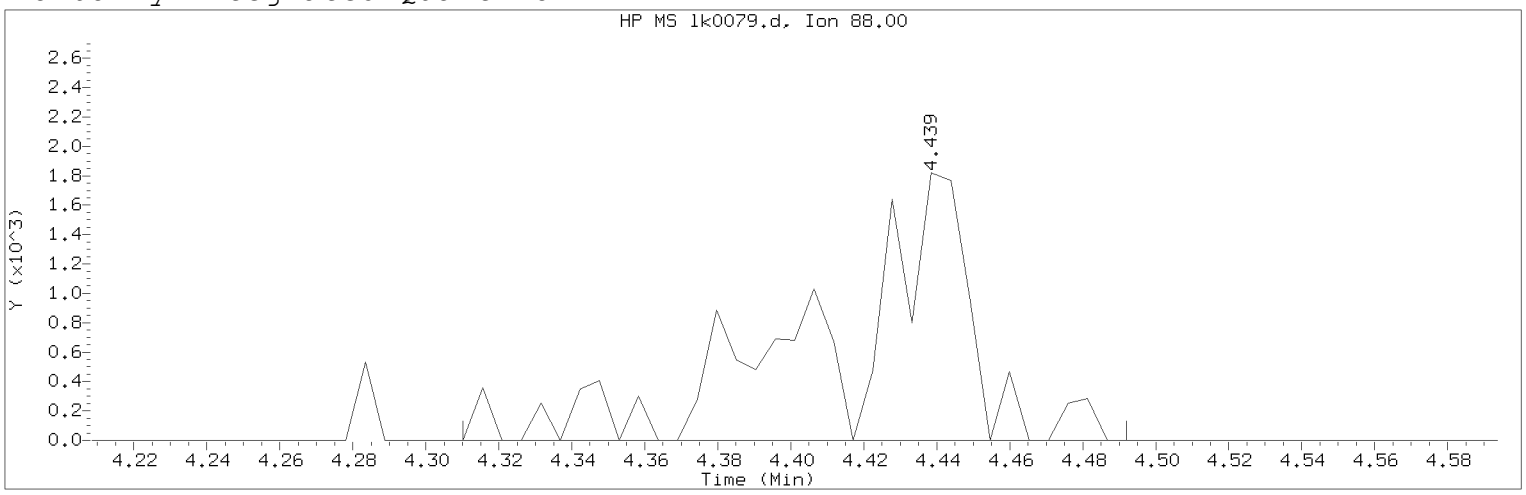
Compound Number	: 8		
Compound Name	: 2-Picoline		
Scan Number	: 388		
Retention Time (minutes)	: 4.262		
Quant Ion	: 93.00		
Area	: 10850		
On-column Amount (ng/ul)	: 0.1618		
Integration start scan	: 381	Integration stop scan:	393
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user - Page 1064

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

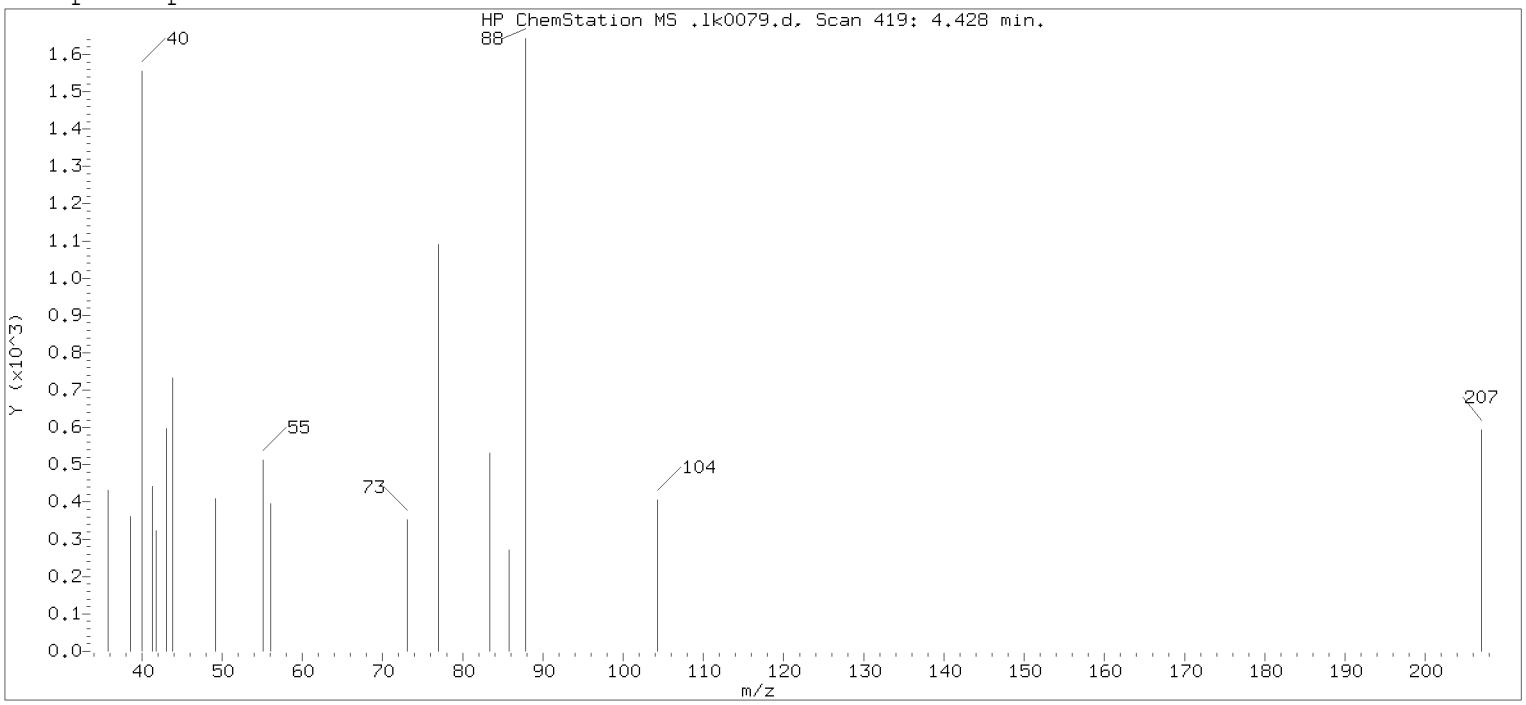
Compound Number	: 9		
Compound Name	: N-Nitrosomethylethylamine		
Scan Number	: 421		
Retention Time (minutes)	: 4.439		
Quant Ion	: 88.00		
Area (flag)	: 4935M		
On-Column Amount (ng/ul)	: 0.1317		
Integration start scan	: 396	Integration stop scan:	430
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: missed peak

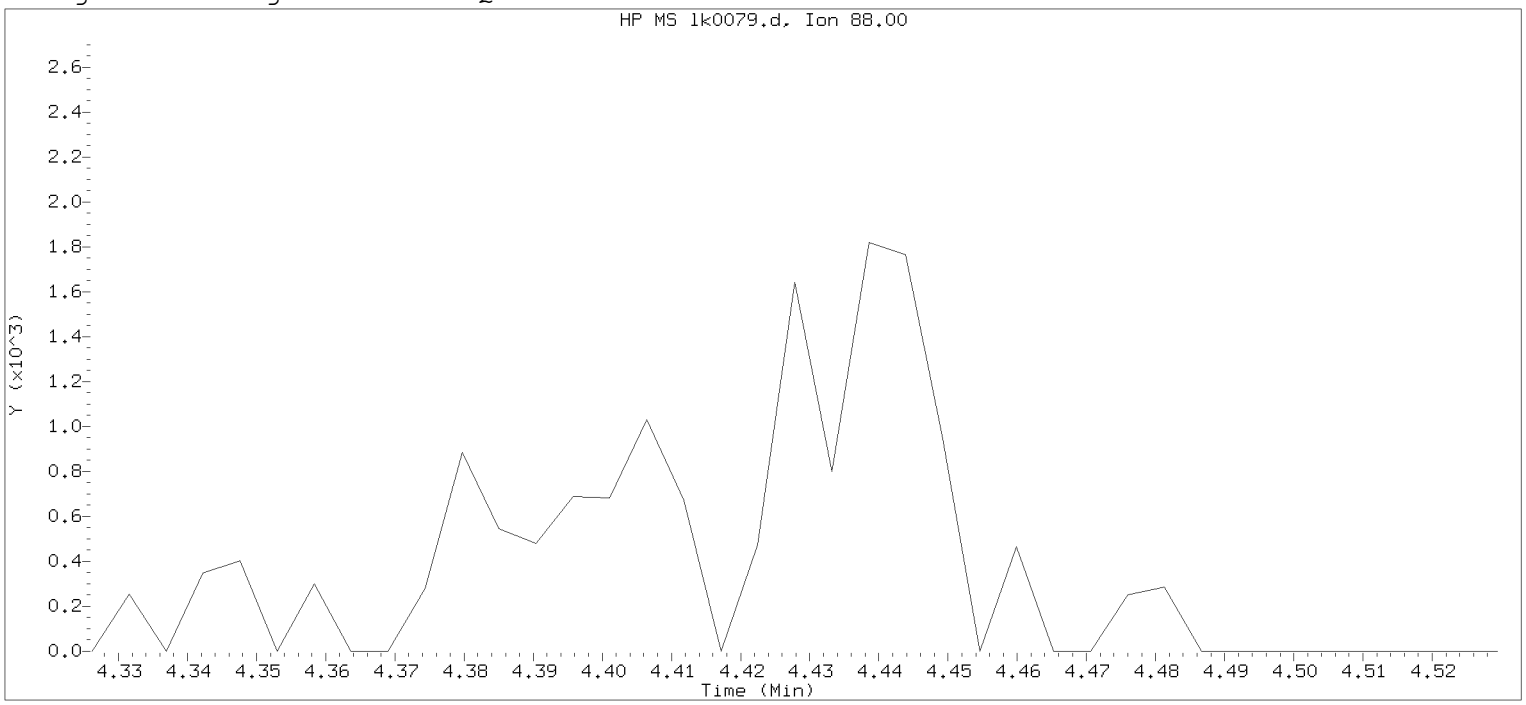
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

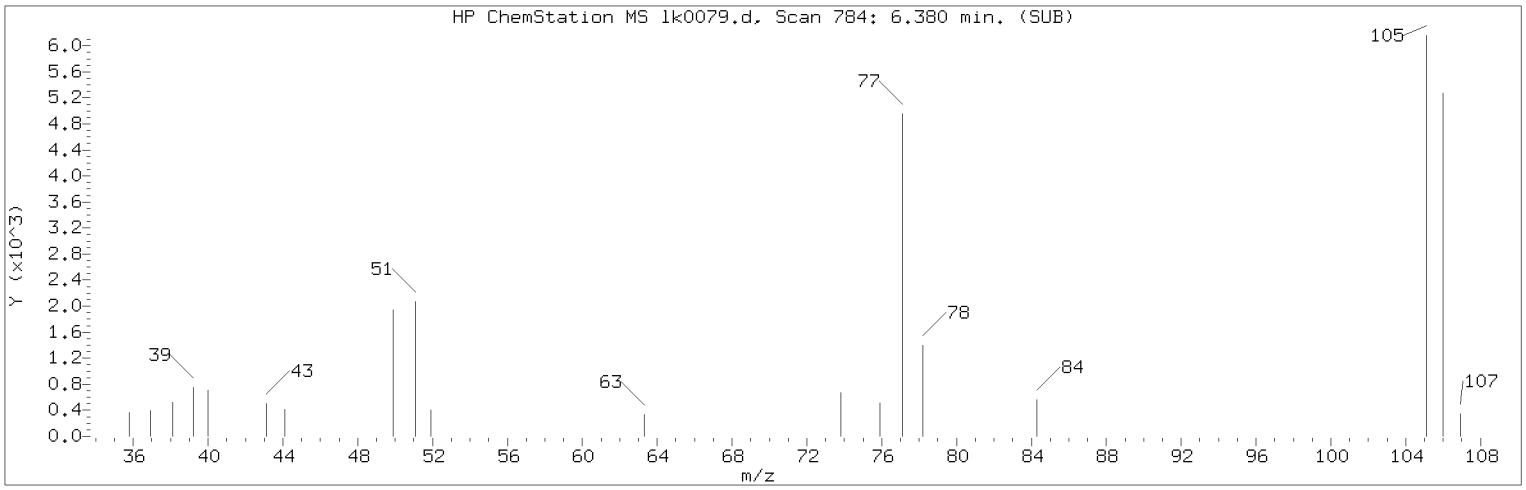
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

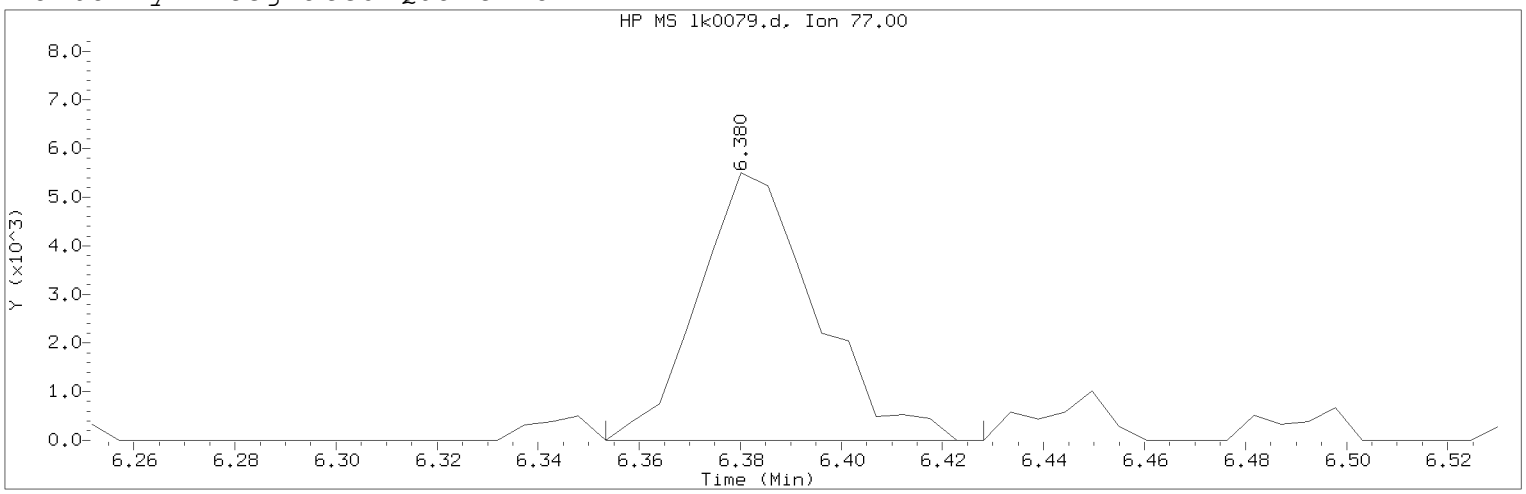
Compound Number : 9
Compound Name : N-Nitrosomethylethylamine
Expected RT (minutes) : 4.428
Quant Ion : 88.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: WSAADEH

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

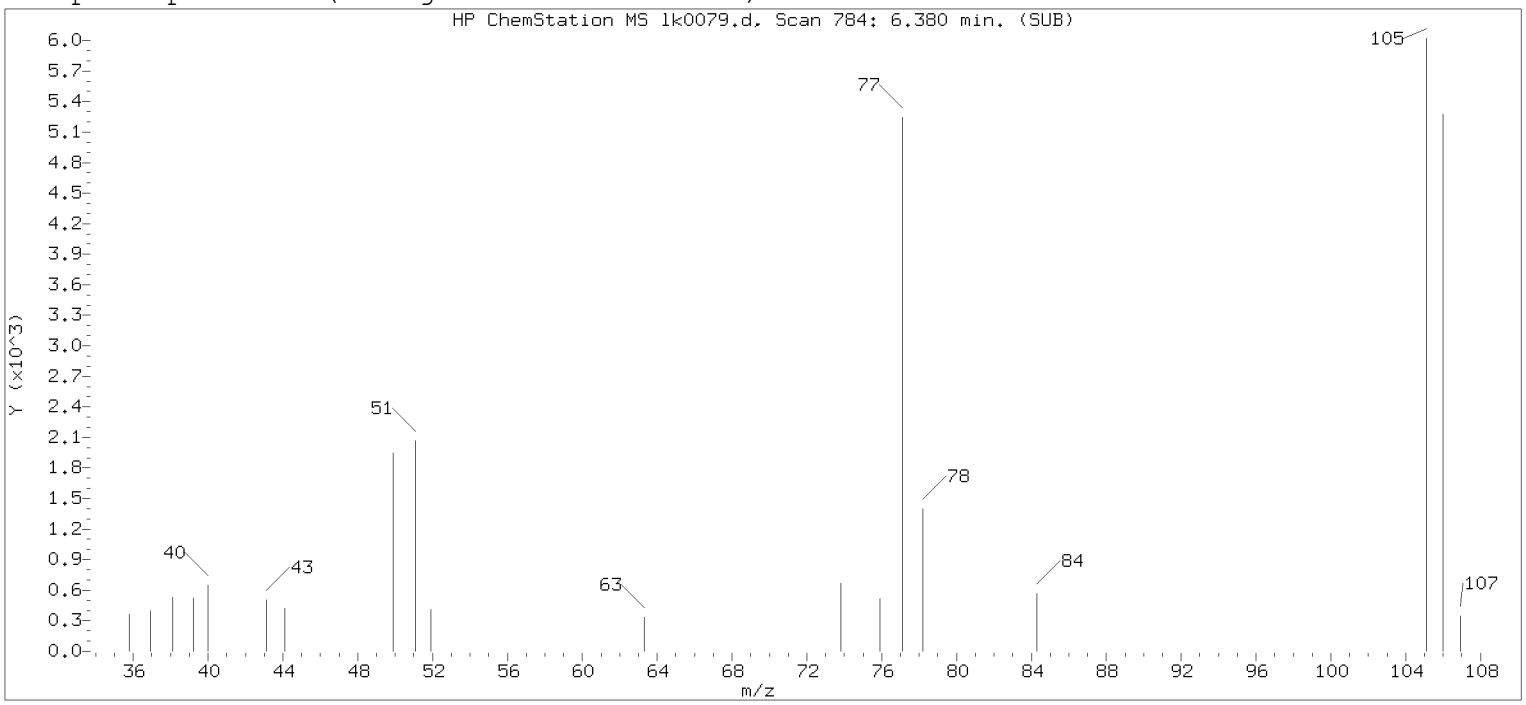
Compound Number : 17
Compound Name : Benzaldehyde
Scan Number : 784
Retention Time (minutes) : 6.380
Quant Ion : 77.00
Area (flag) : 8845M
On-Column Amount (ng/ul) : 0.1369
Integration start scan : 778 Integration stop scan: 792
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

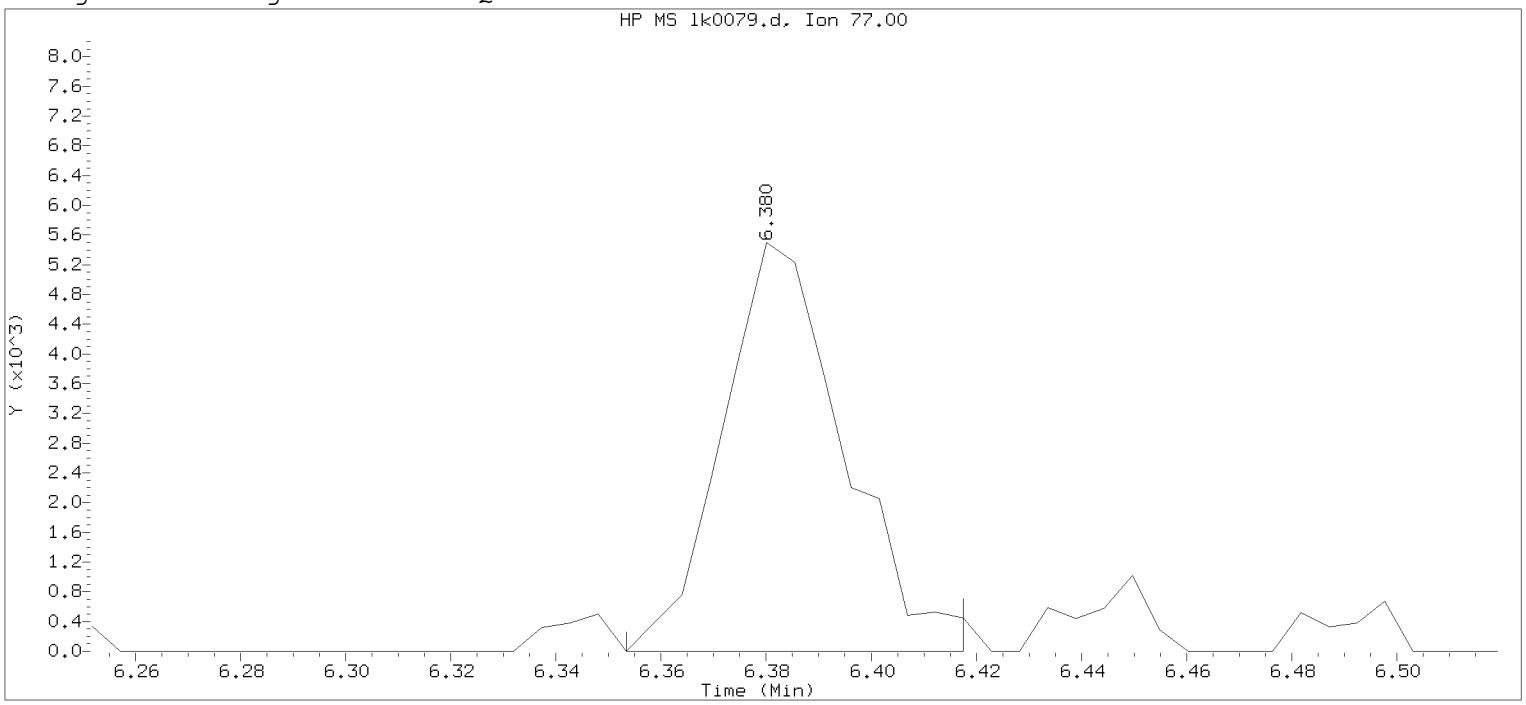
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

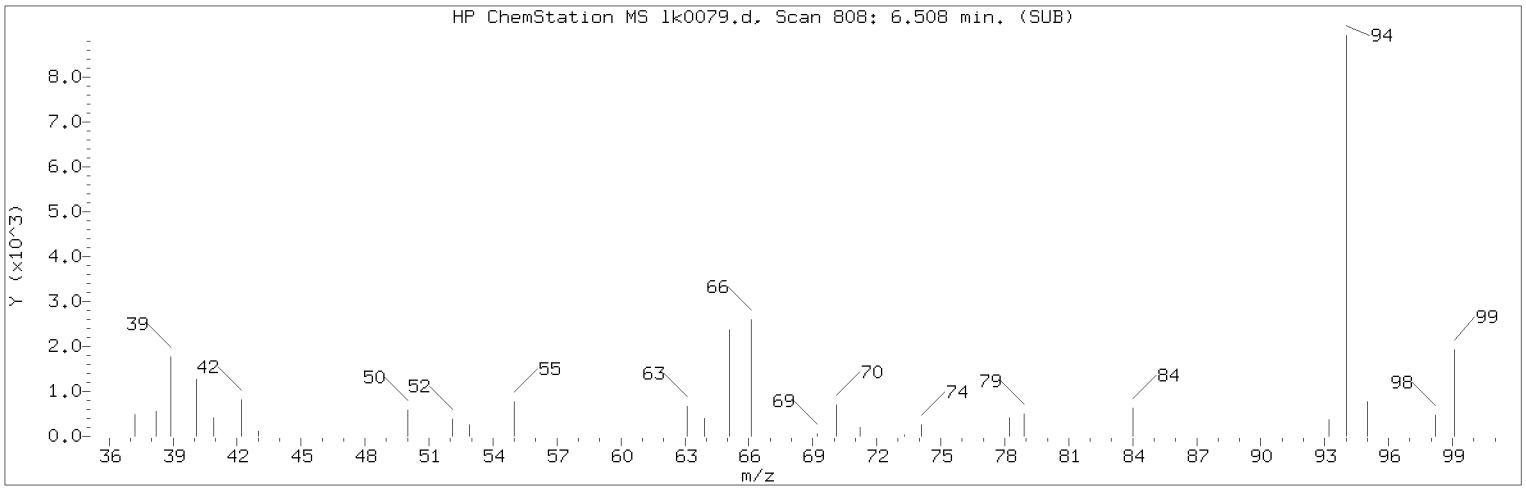
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

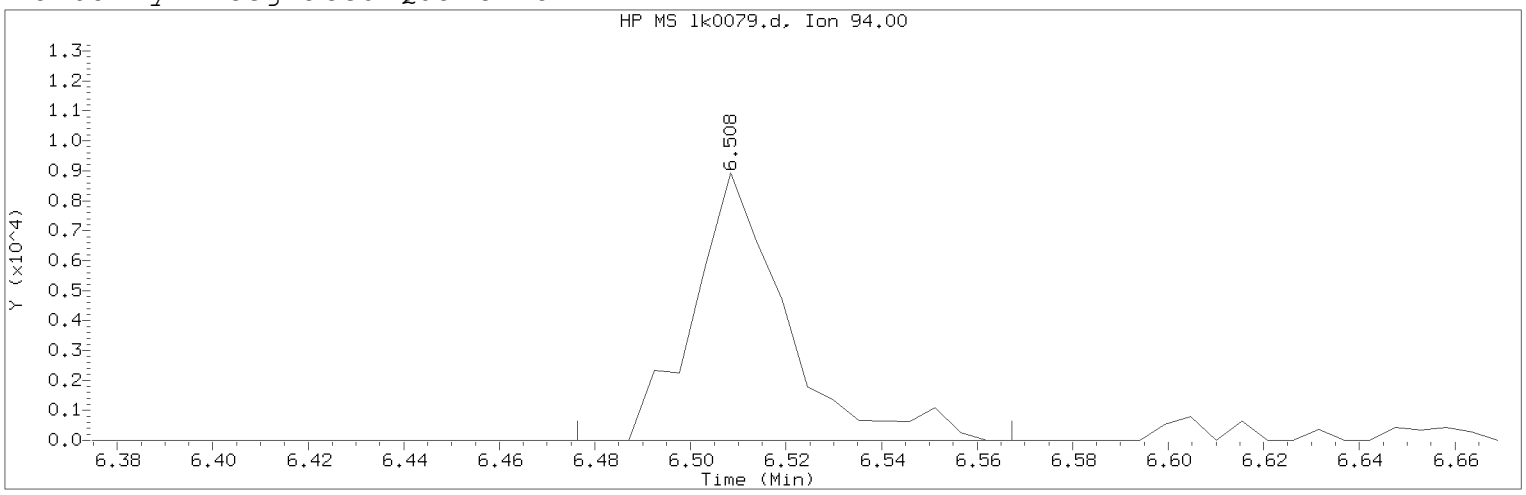
Compound Number	: 17		
Compound Name	: Benzaldehyde		
Scan Number	: 784		
Retention Time (minutes)	: 6.380		
Quant Ion	: 77.00		
Area	: 8773		
On-column Amount (ng/ul)	: 0.1777		
Integration start scan	: 778	Integration stop scan:	790
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user: RAF48 Page 1068

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

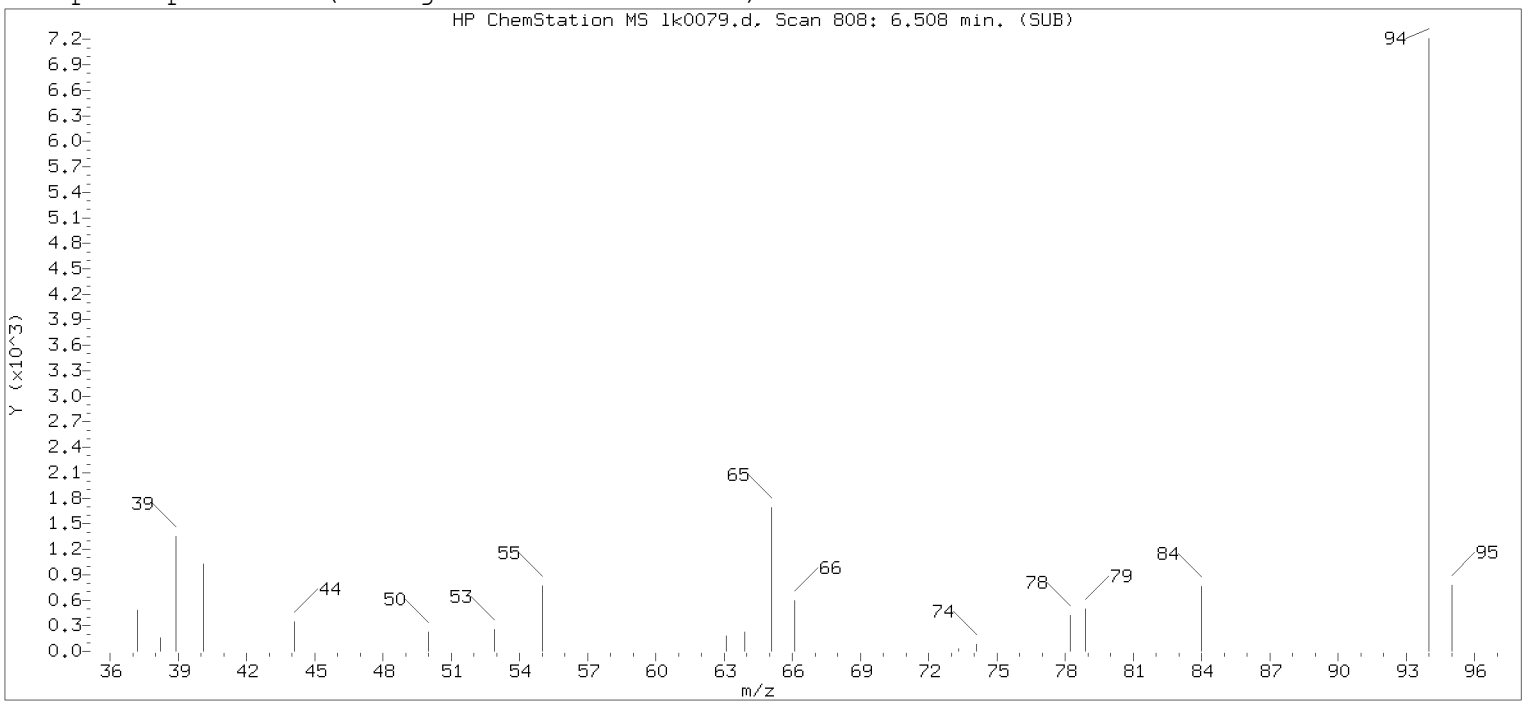
Compound Number : 19
Compound Name : Phenol
Scan Number : 808
Retention Time (minutes) : 6.508
Quant Ion : 94.00
Area (flag) : 11892M
On-Column Amount (ng/ul) : 0.1084
Integration start scan : 801 Integration stop scan: 818
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

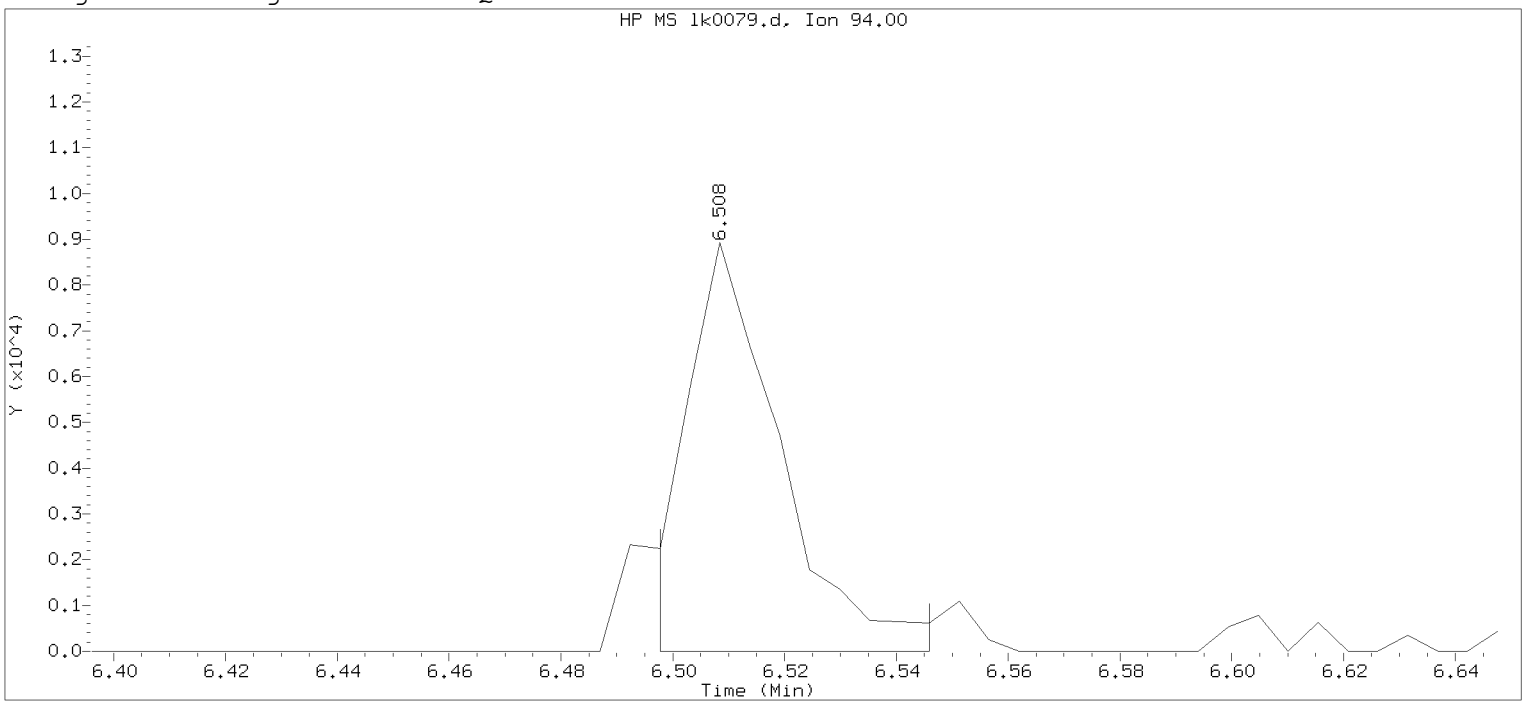
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

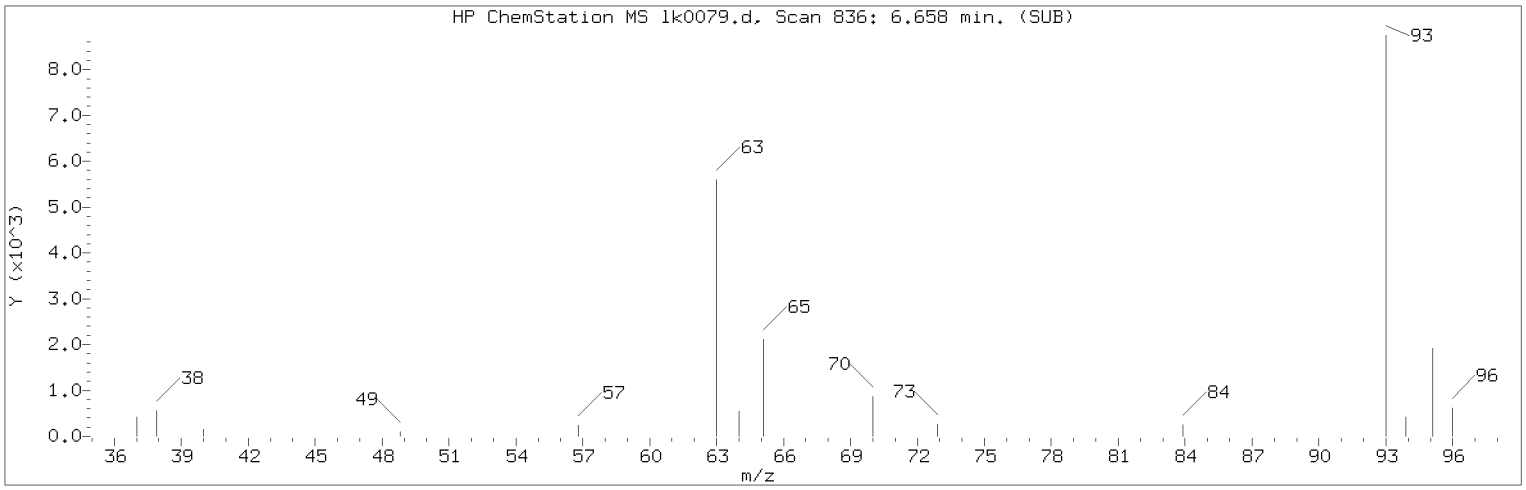
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

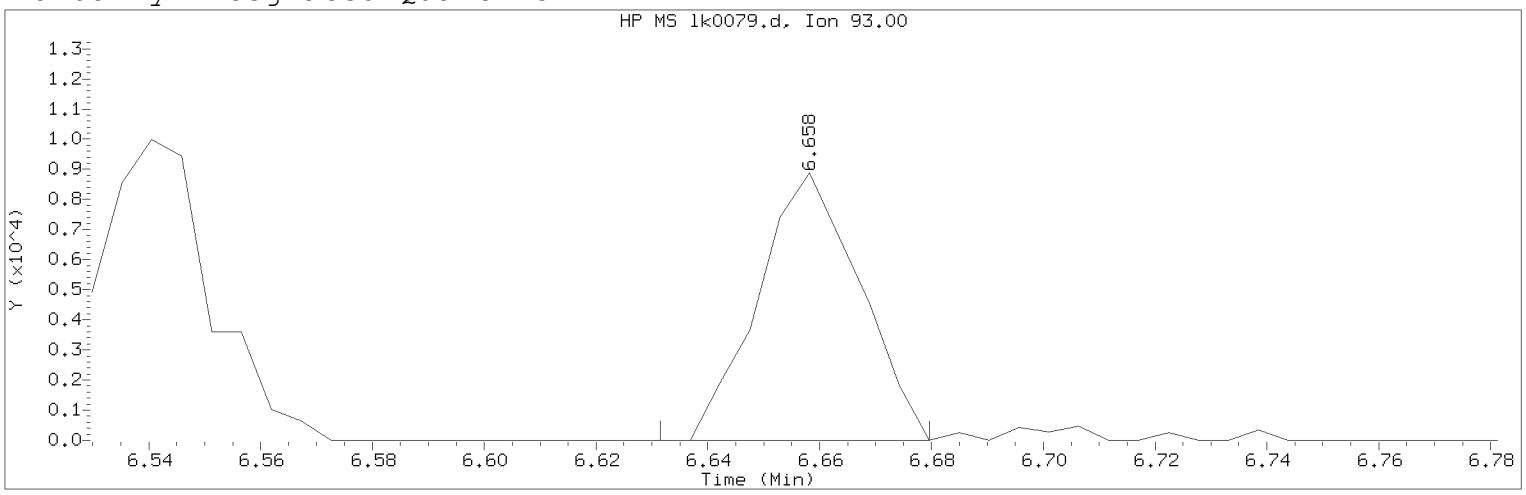
Compound Number	: 19		
Compound Name	: Phenol		
Scan Number	: 808		
Retention Time (minutes)	: 6.508		
Quant Ion	: 94.00		
Area	: 10253		
On-column Amount (ng/ul)	: 0.1204		
Integration start scan	: 805	Integration stop scan:	814
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1070

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

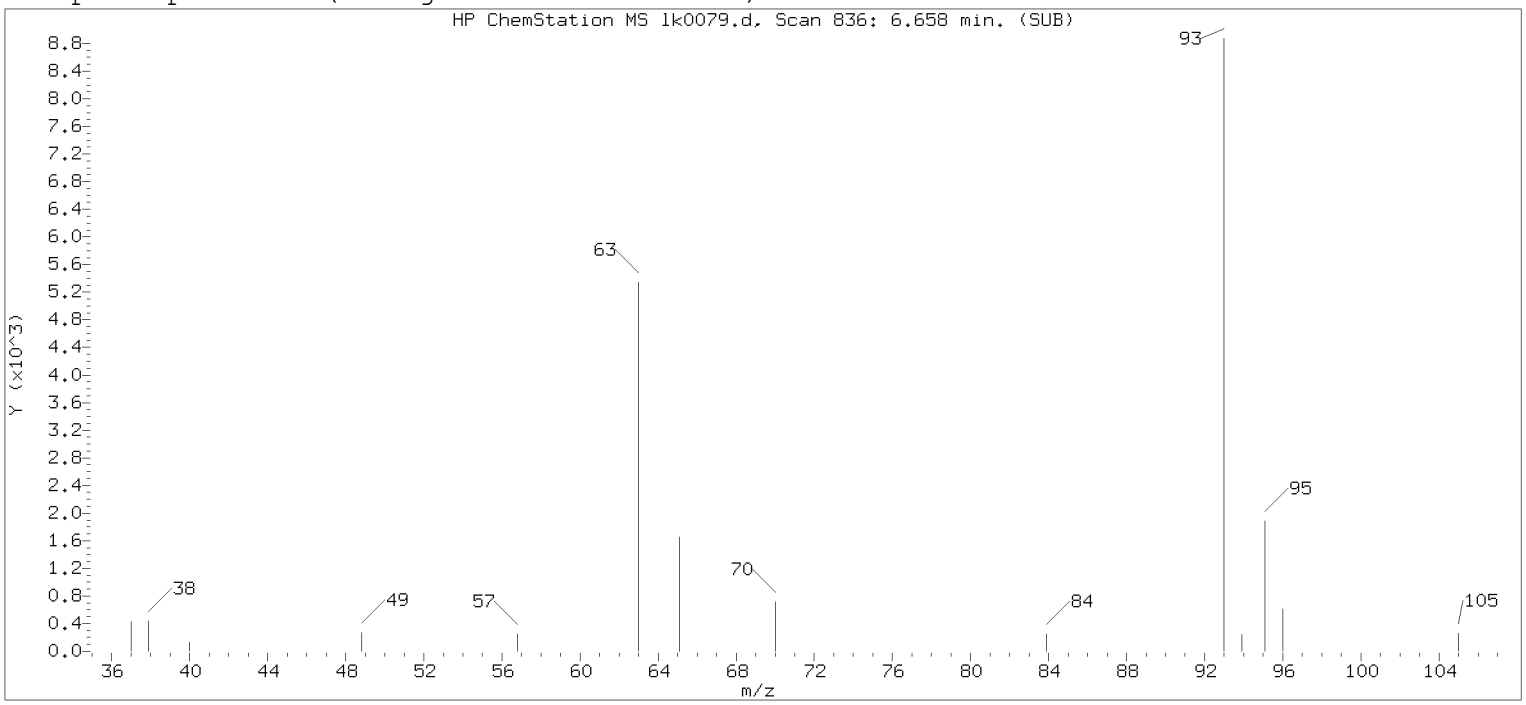
Compound Number : 23
Compound Name : bis(2-Chloroethyl)ether
Scan Number : 836
Retention Time (minutes) : 6.658
Quant Ion : 93.00
Area (flag) : 11202M
On-Column Amount (ng/ul) : 0.1320
Integration start scan : 830 Integration stop scan: 839
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

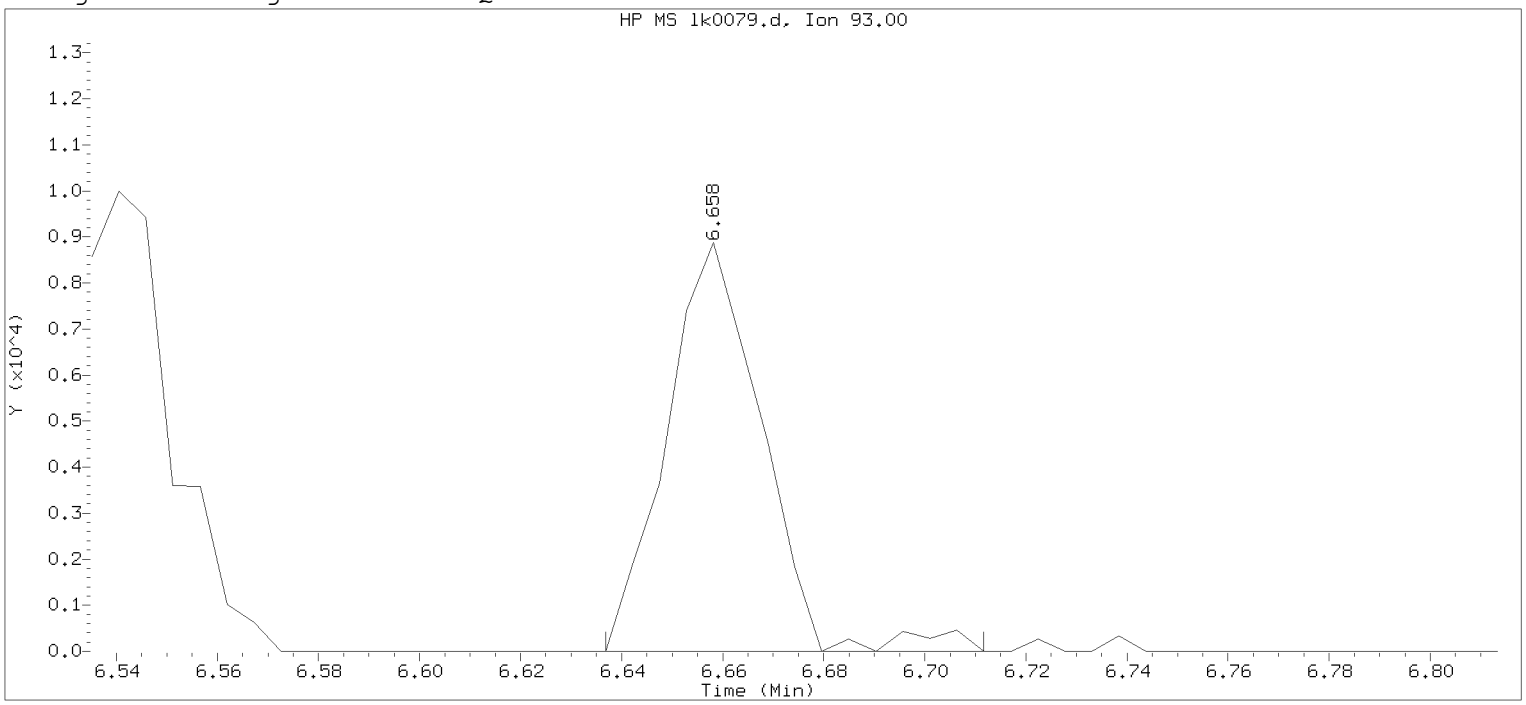
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

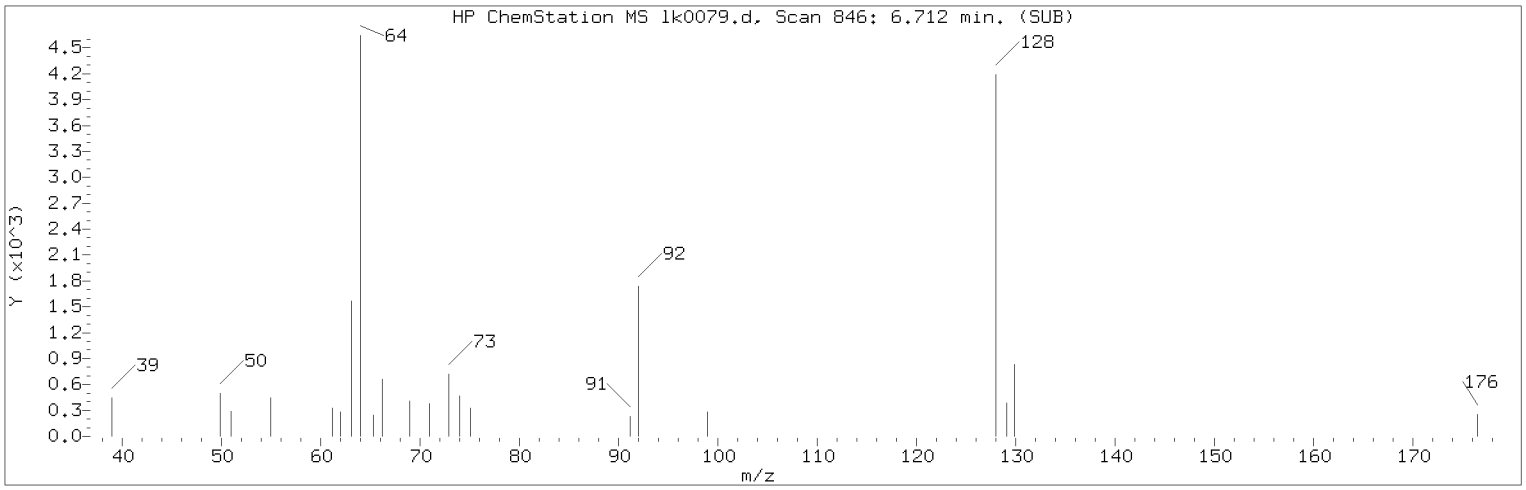
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

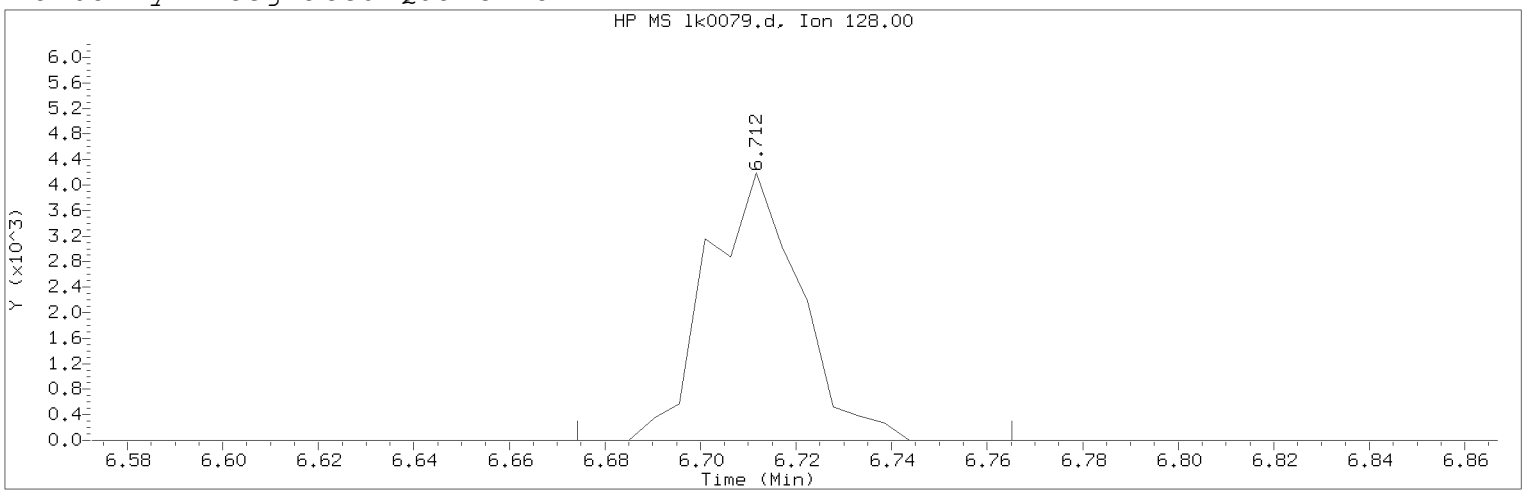
Compound Number	: 23		
Compound Name	: bis(2-Chloroethyl)ether		
Scan Number	: 836		
Retention Time (minutes)	: 6.658		
Quant Ion	: 93.00		
Area	: 11658		
On-column Amount (ng/ul)	: 0.1787		
Integration start scan	: 831	Integration stop scan:	845
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1072

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

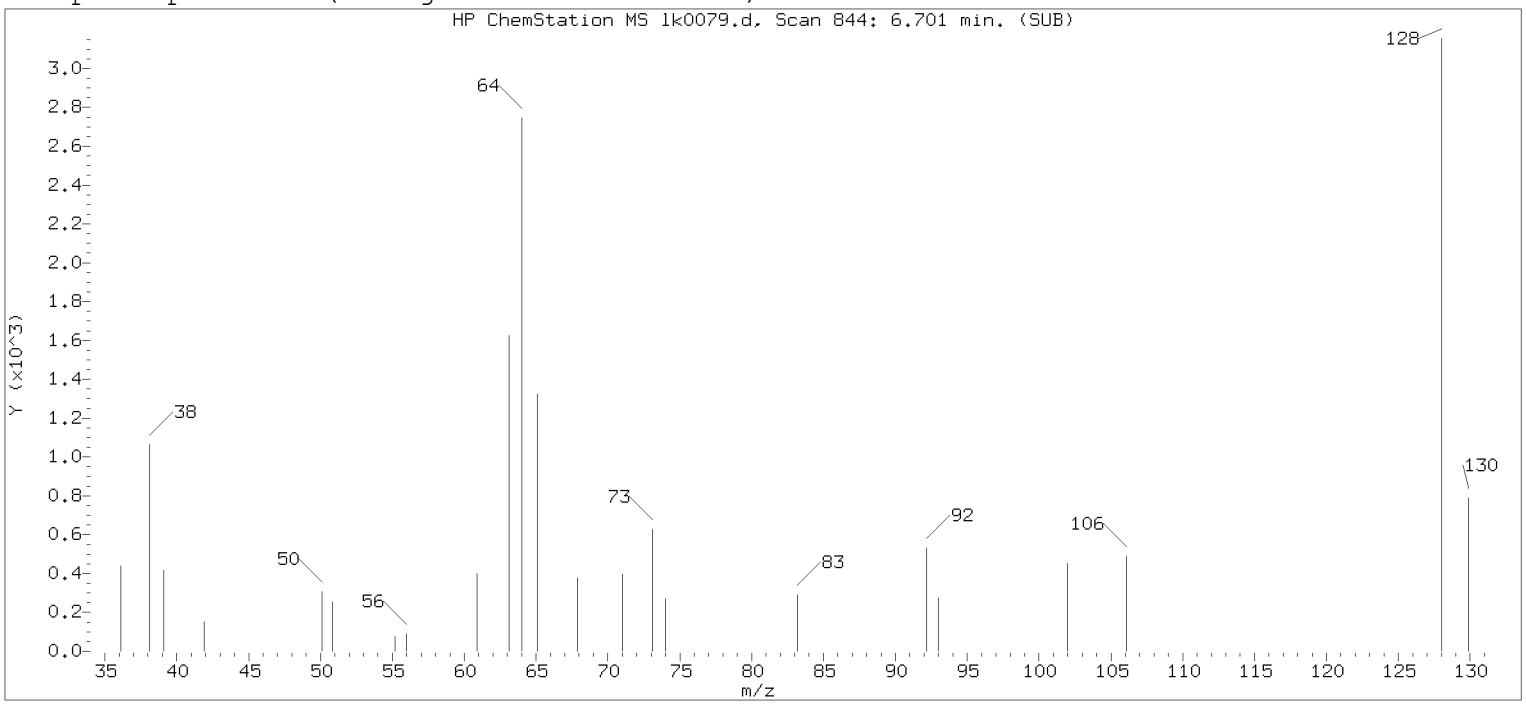
Compound Number : 24
Compound Name : 2-Chlorophenol
Scan Number : 846
Retention Time (minutes) : 6.712
Quant Ion : 128.00
Area (flag) : 5624M
On-Column Amount (ng/ul) : 0.0989
Integration start scan : 838 Integration stop scan: 855
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

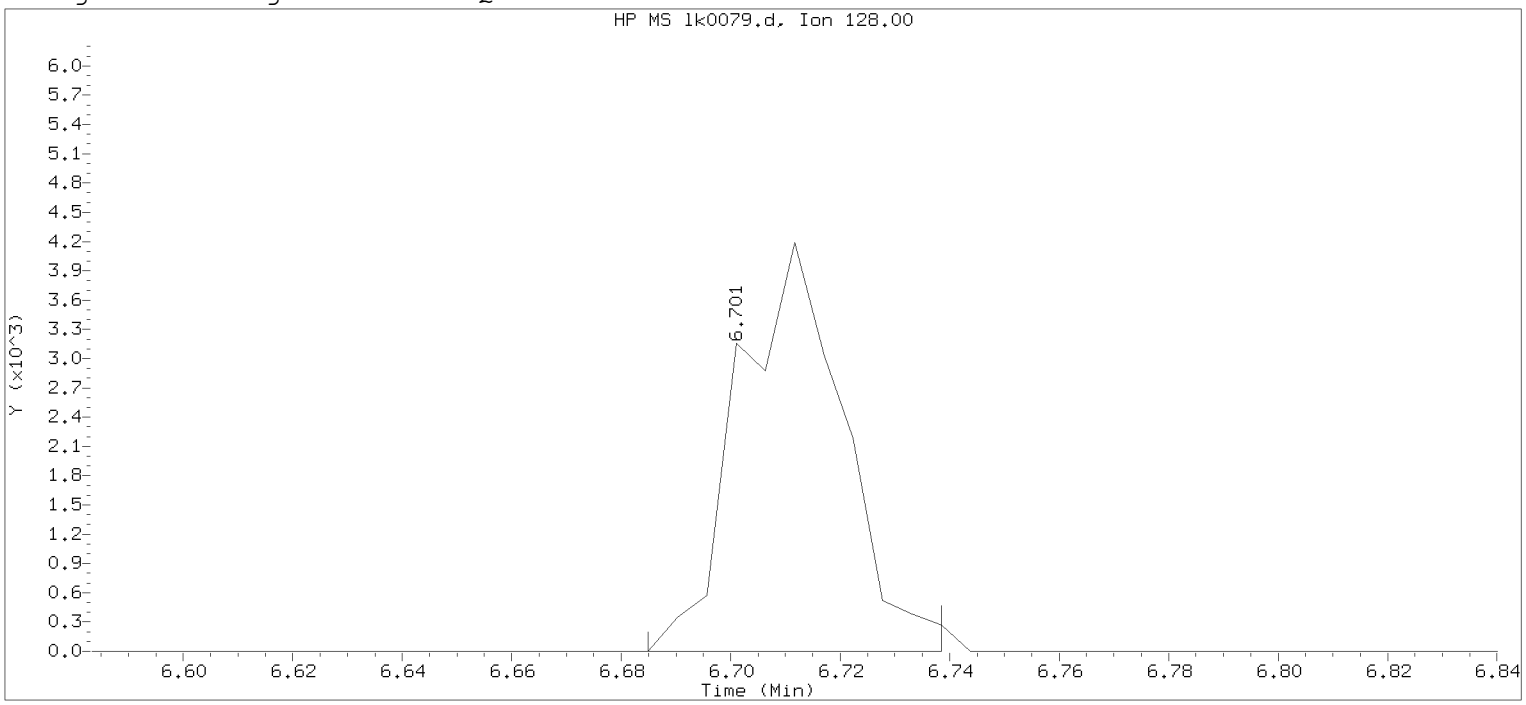
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

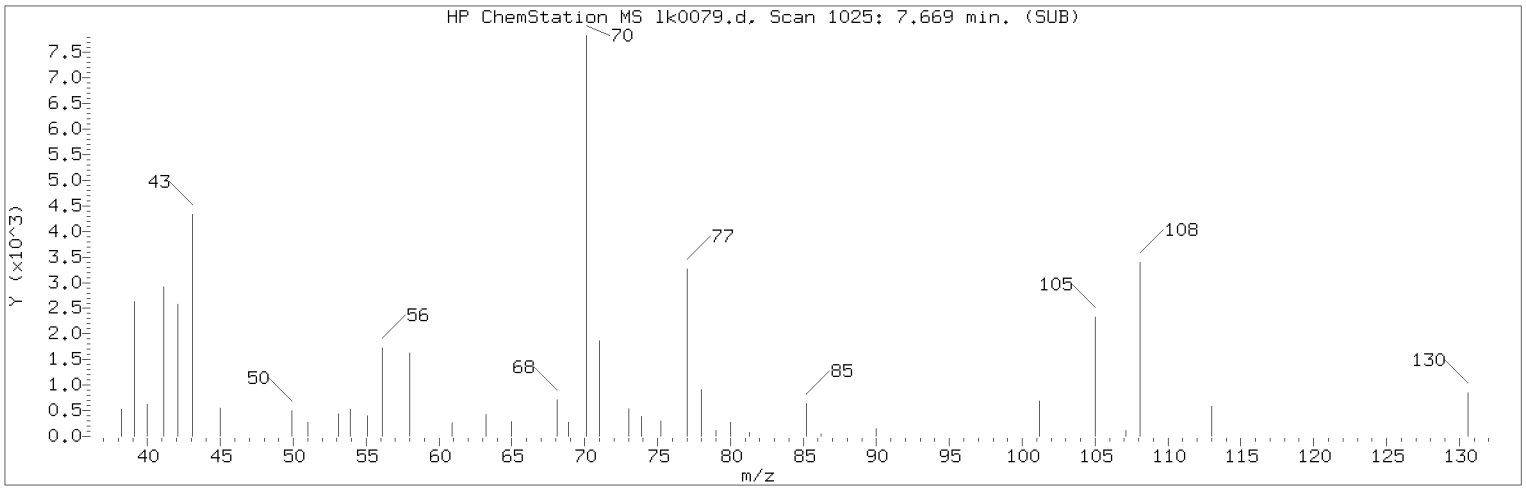
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

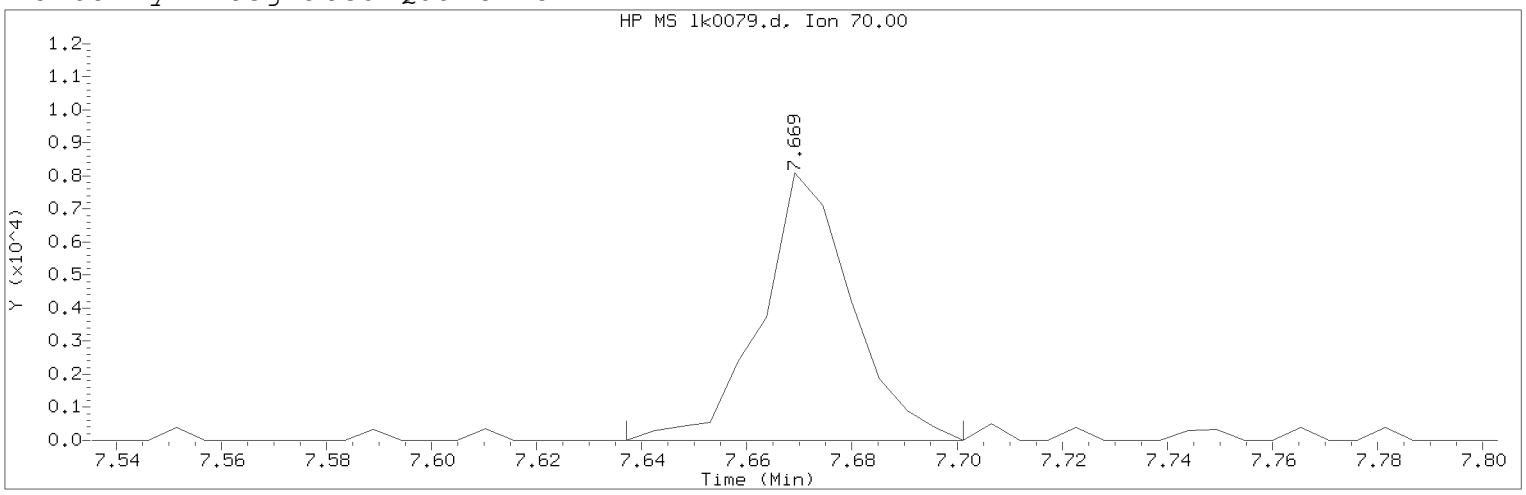
Compound Number	: 24		
Compound Name	: 2-Chlorophenol		
Scan Number	: 844		
Retention Time (minutes)	: 6.701		
Quant Ion	: 128.00		
Area	: 5581		
On-column Amount (ng/ul)	: 0.1081		
Integration start scan	: 840	Integration stop scan:	850
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user: RAF48 Page 1074 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

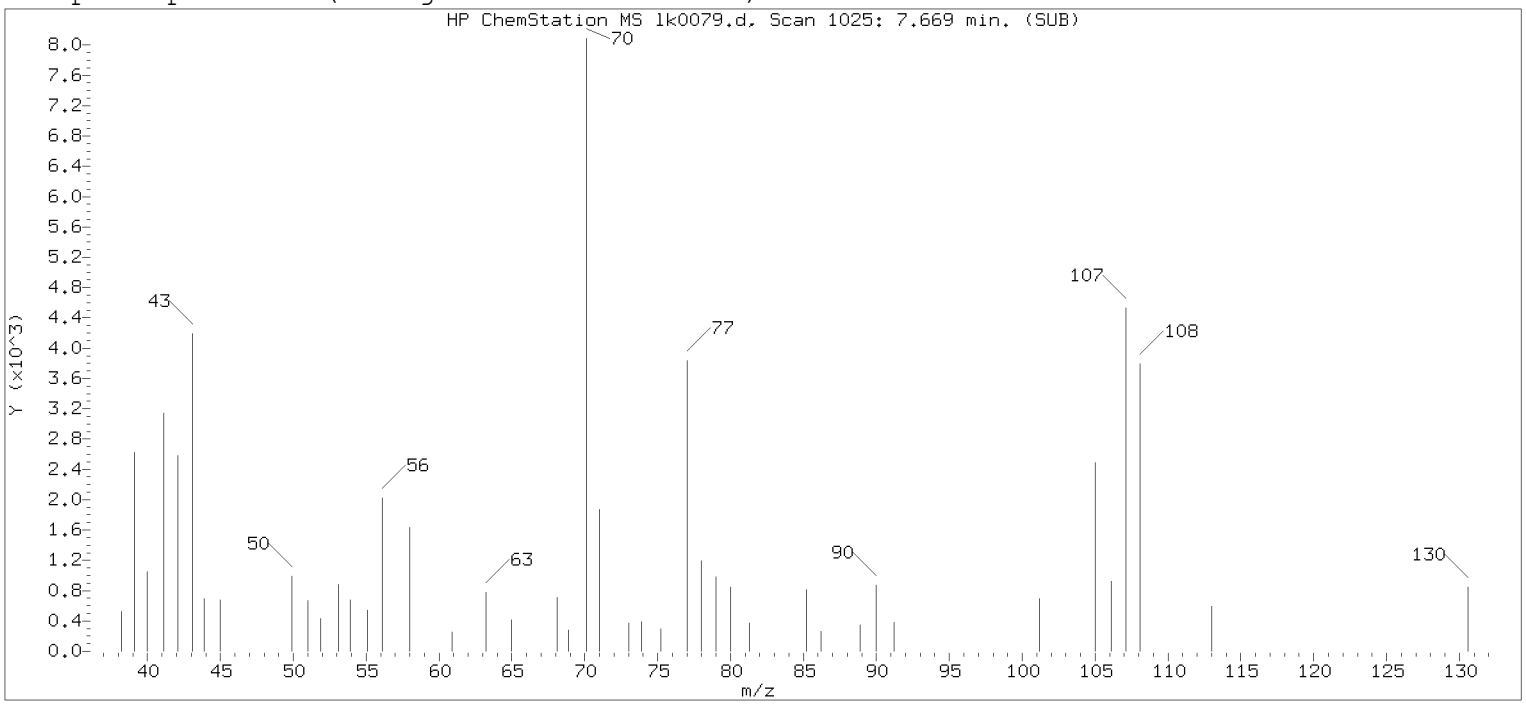
Compound Number : 39
Compound Name : N-Nitroso-di-n-propylamine
Scan Number : 1025
Retention Time (minutes) : 7.669
Quant Ion : 70.00
Area (flag) : 9613M
On-Column Amount (ng/ul) : 0.1376
Integration start scan : 1018 Integration stop scan: 1030
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

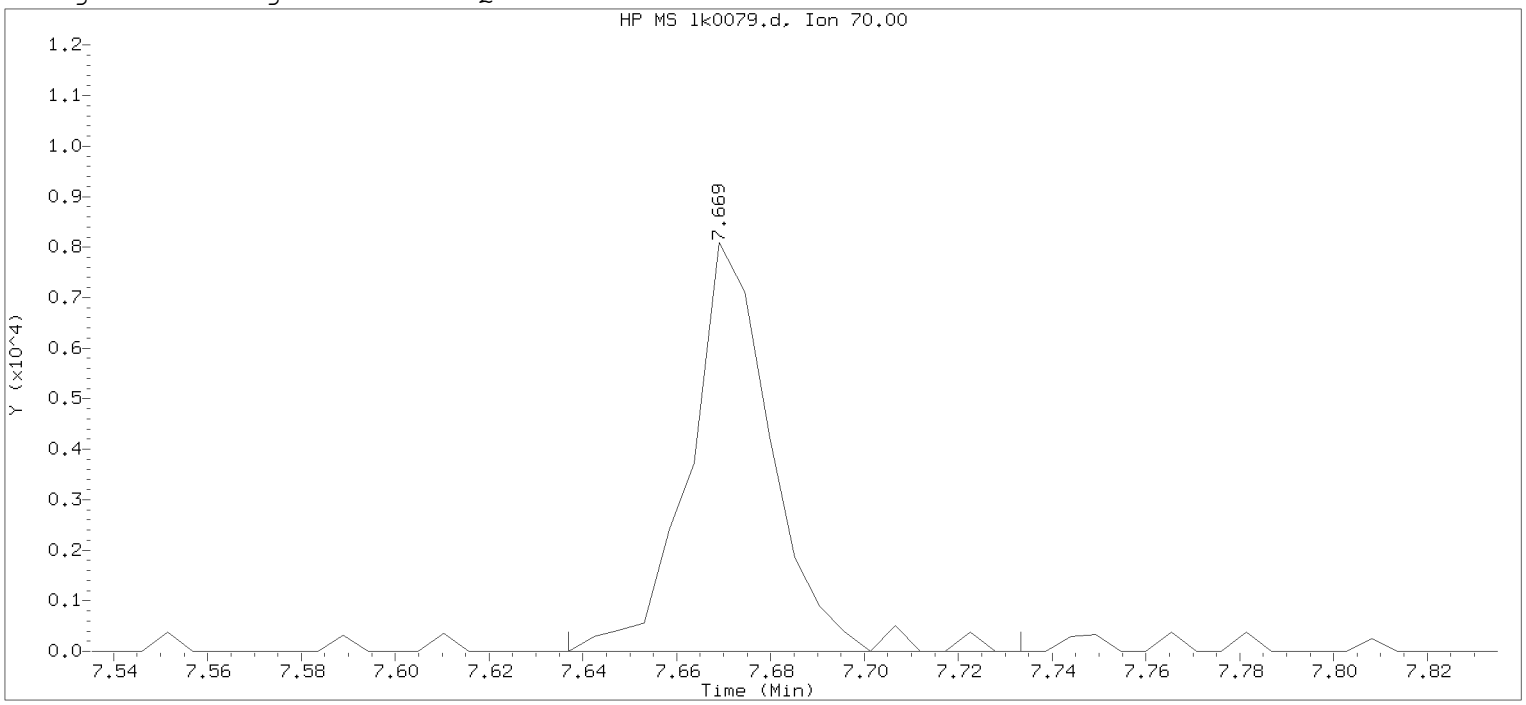
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

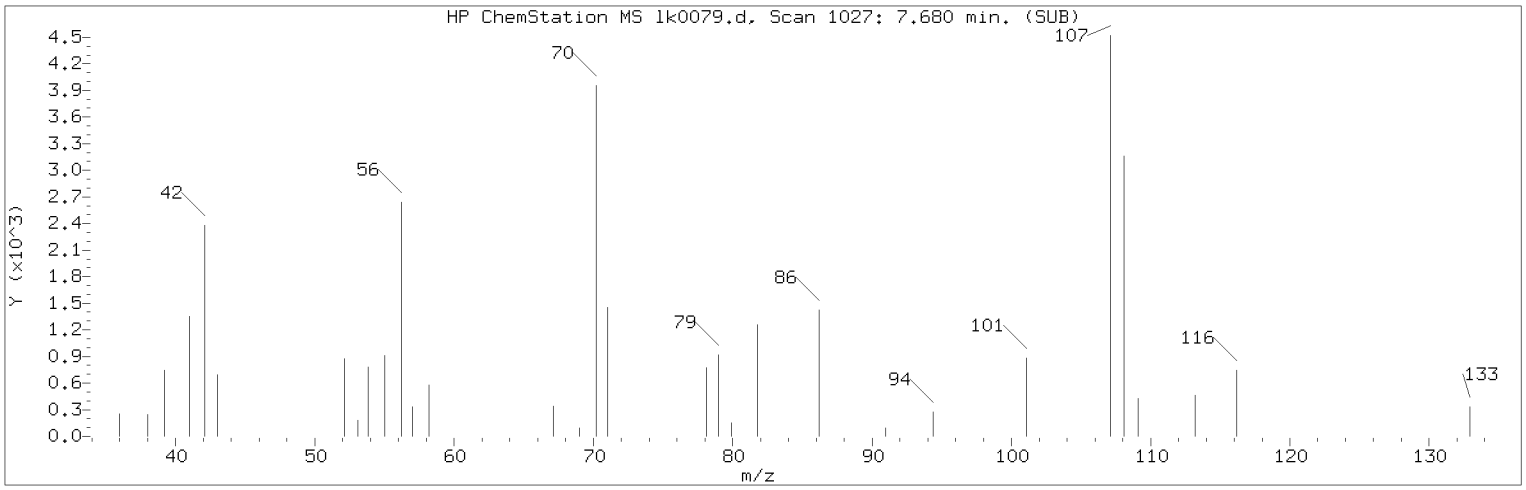
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

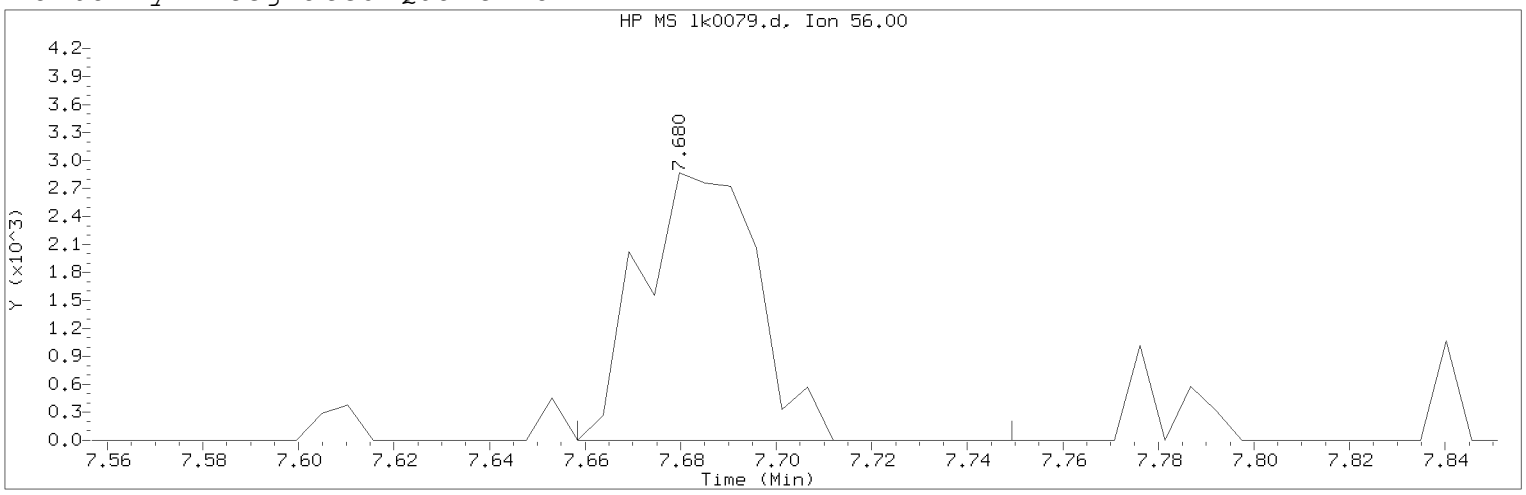
Compound Number	: 39		
Compound Name	: N-Nitroso-di-n-propylamine		
Scan Number	: 1025		
Retention Time (minutes)	: 7.669		
Quant Ion	: 70.00		
Area	: 9901		
On-column Amount (ng/ul)	: 0.2114		
Integration start scan	: 1018	Integration stop scan:	1036
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user F48 Page 1076

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

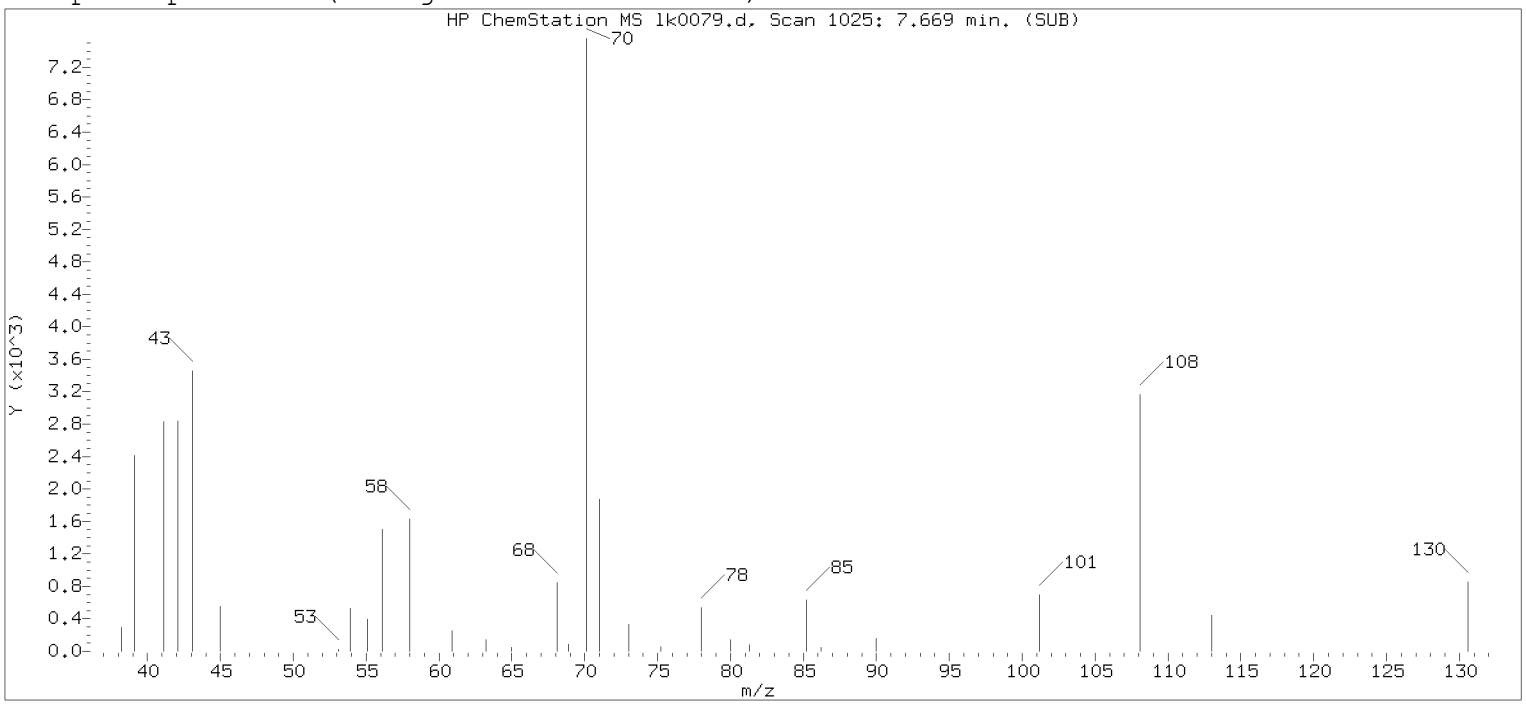
Compound Number : 40
Compound Name : N-Nitrosomorpholine
Scan Number : 1027
Retention Time (minutes) : 7.680
Quant Ion : 56.00
Area (flag) : 4859M
On-Column Amount (ng/ul) : 0.1097
Integration start scan : 1022 Integration stop scan: 1039
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

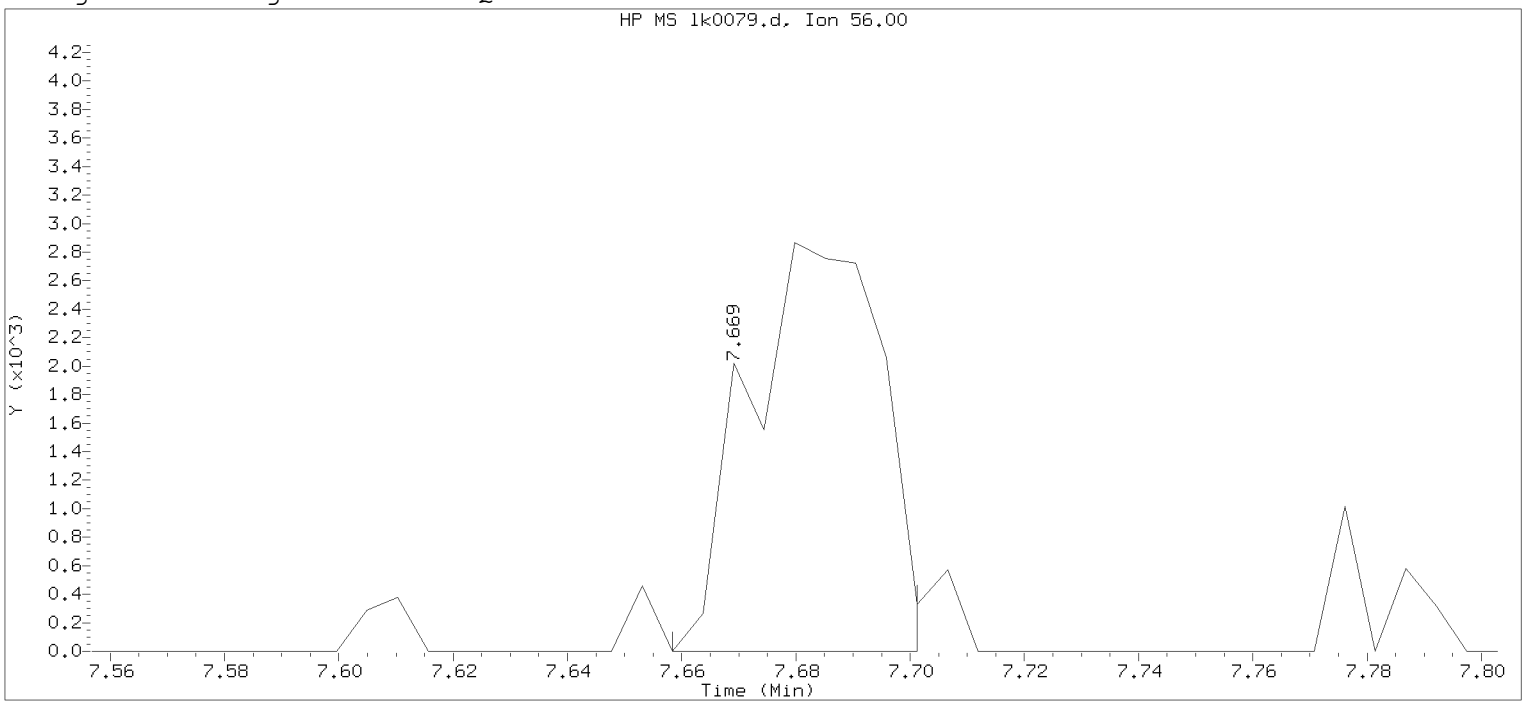
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

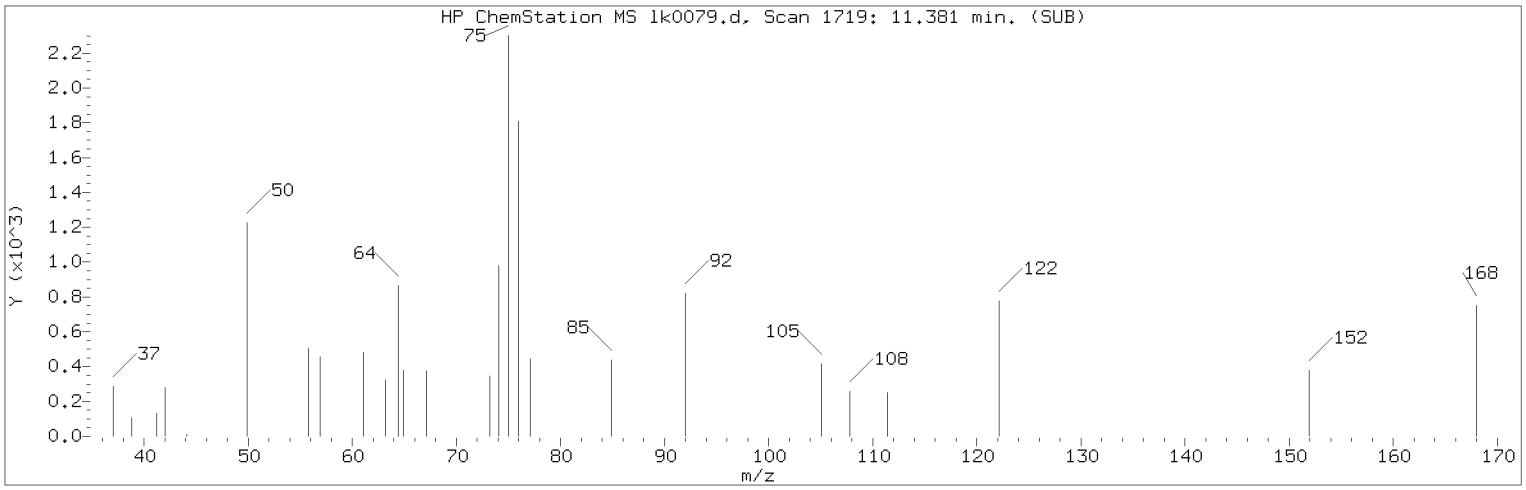
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

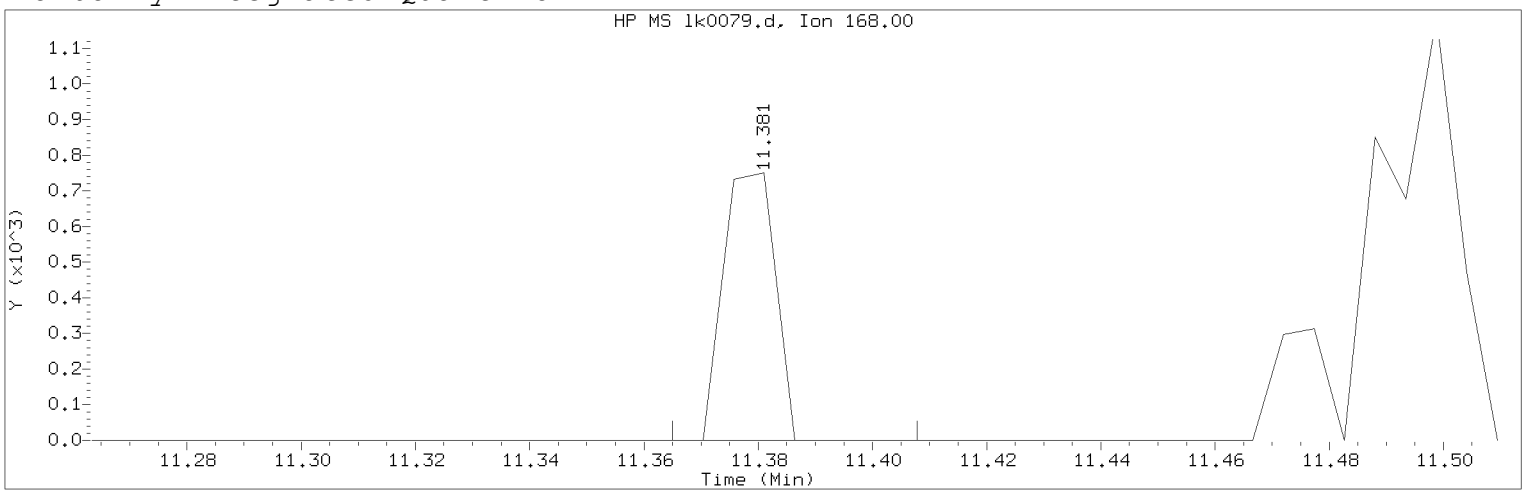
Compound Number	: 40		
Compound Name	: N-Nitrosomorpholine		
Scan Number	: 1025		
Retention Time (minutes)	: 7.669		
Quant Ion	: 56.00		
Area	: 4623		
On-column Amount (ng/ul)	: 0.1367		
Integration start scan	: 1022	Integration stop scan:	1030
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user: FAP Purpose: 1078

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

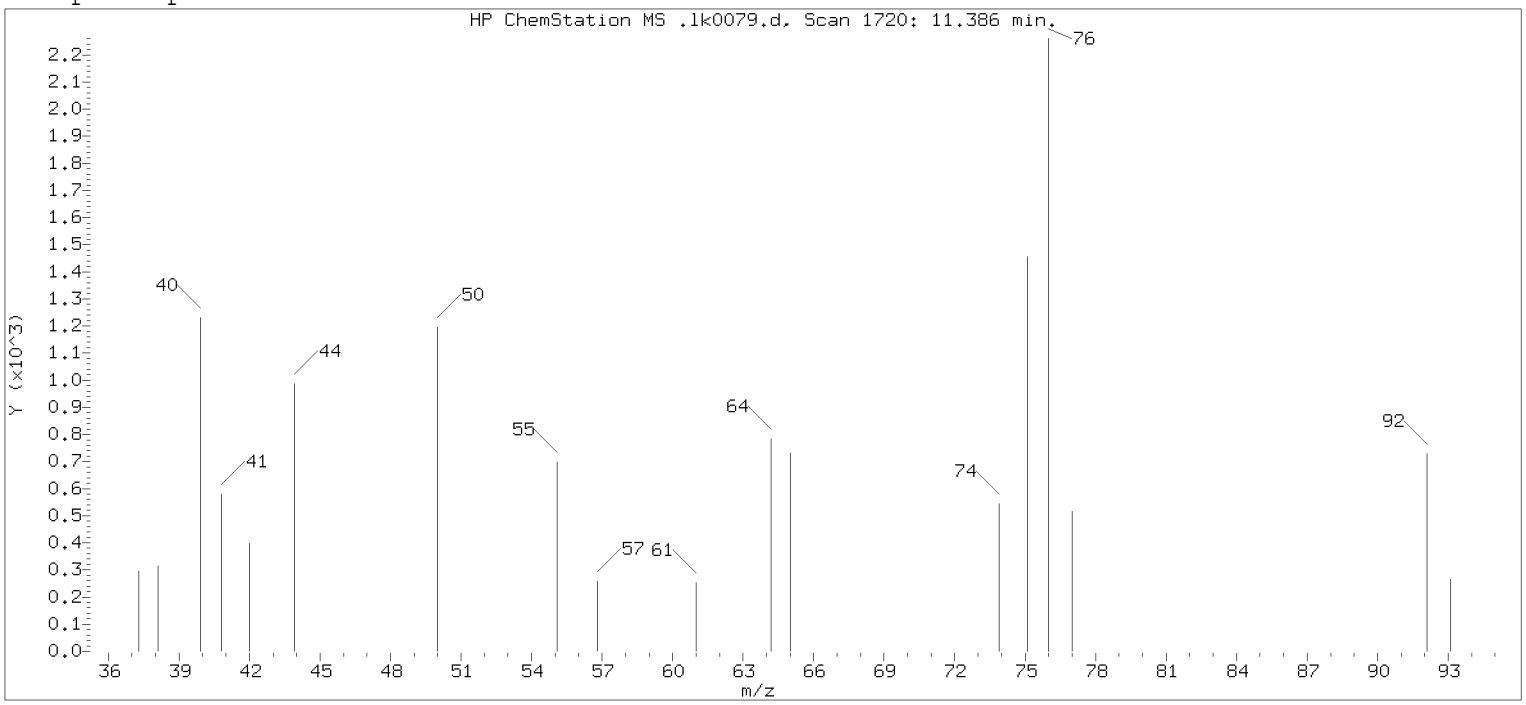
Compound Number : 109
Compound Name : 1,4-Dinitrobenzene
Scan Number : 1719
Retention Time (minutes) : 11.381
Quant Ion : 168.00
Area (flag) : 475M
On-Column Amount (ng/ul) : 0.0497
Integration start scan : 1715 Integration stop scan: 1723
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

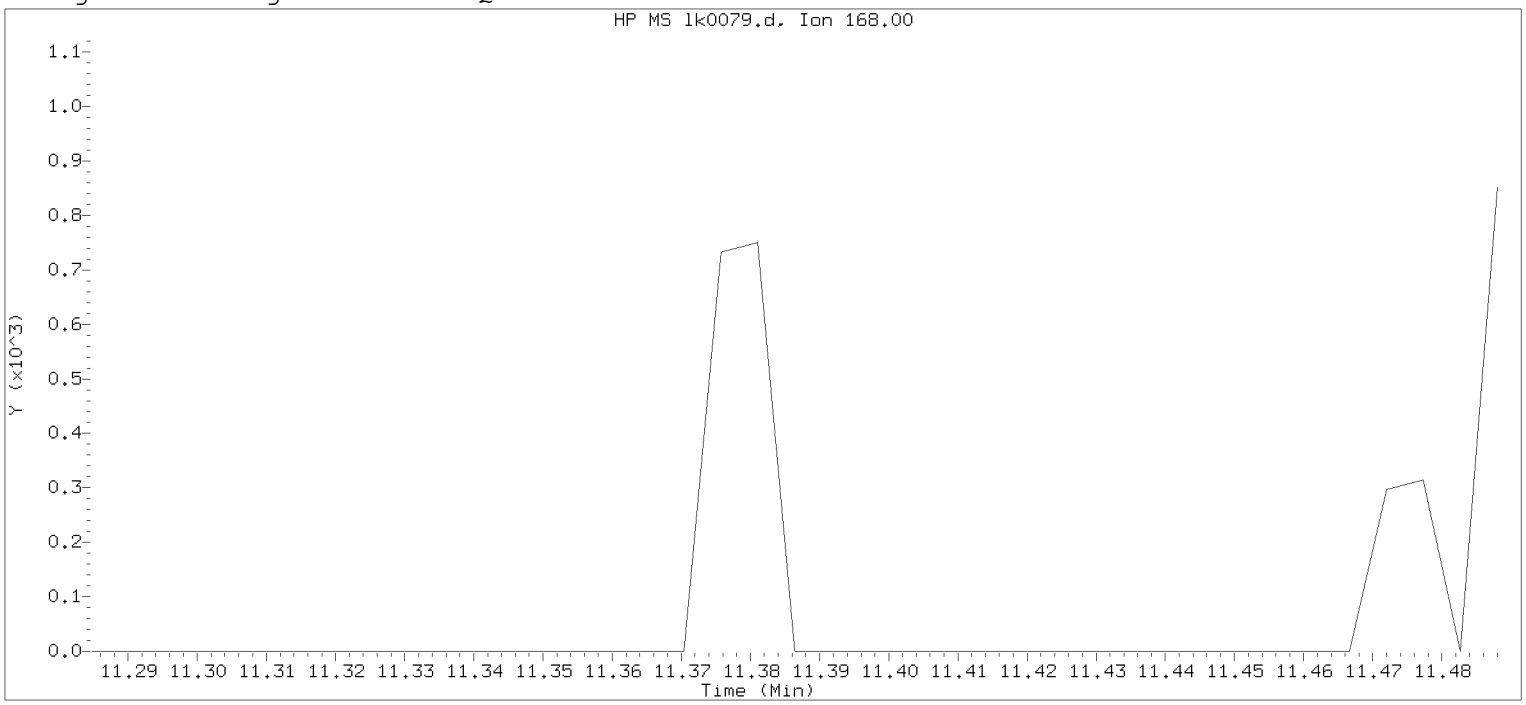
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

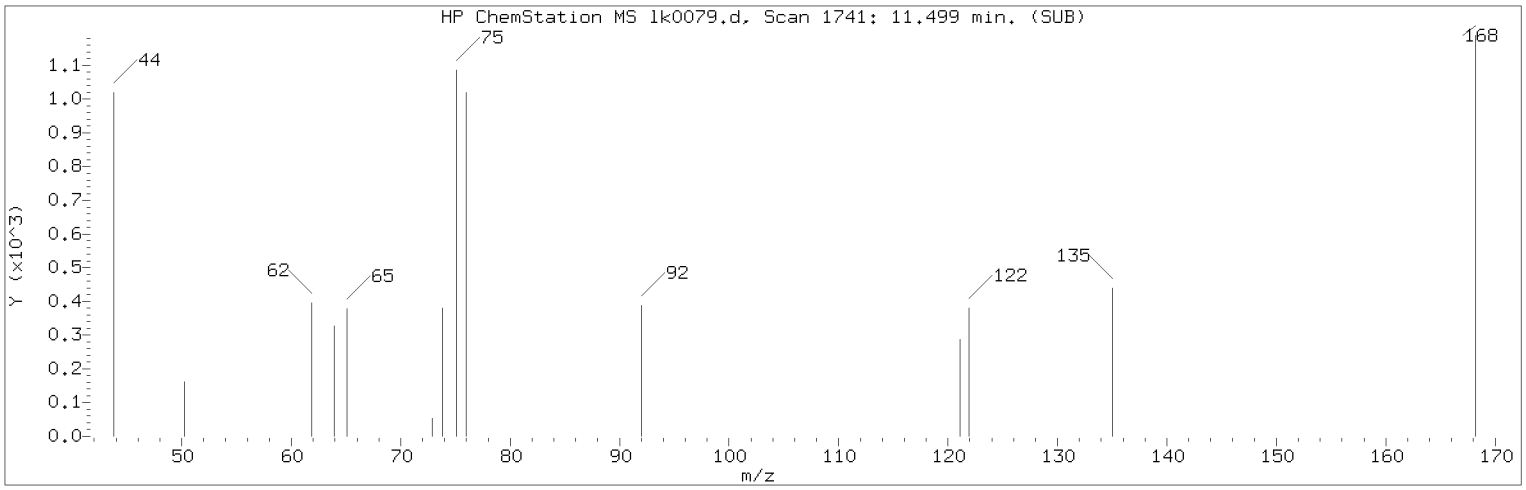
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

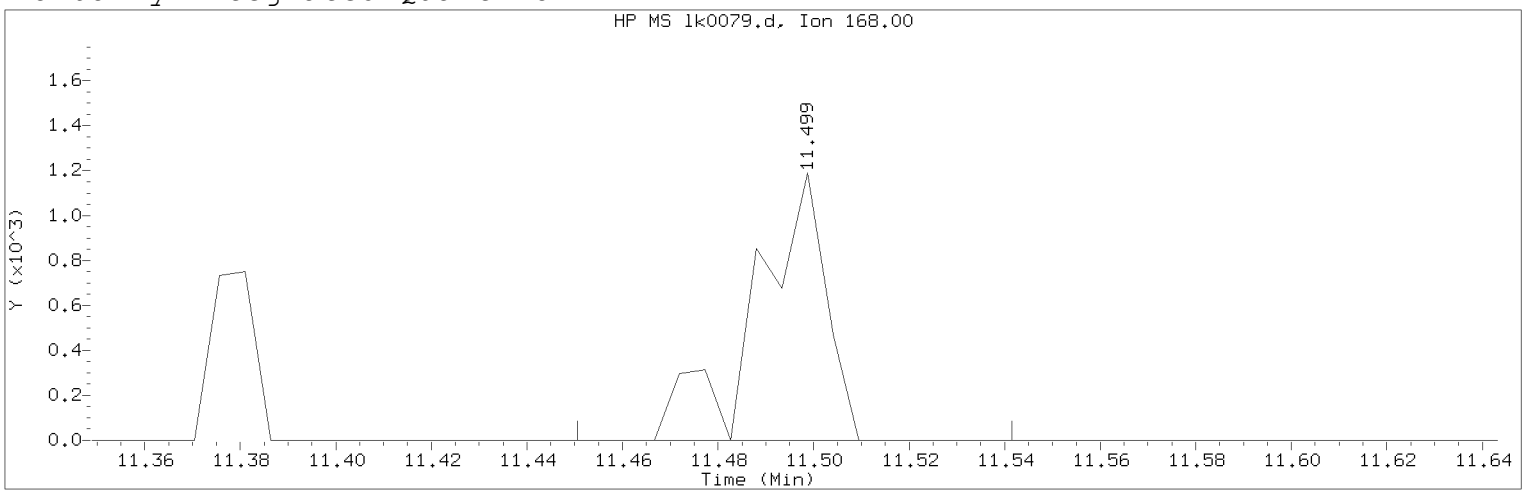
Compound Number : 109
Compound Name : 1,4-Dinitrobenzene
Expected RT (minutes) : 11.387
Quant Ion : 168.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature used. FF48 Page 1080

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

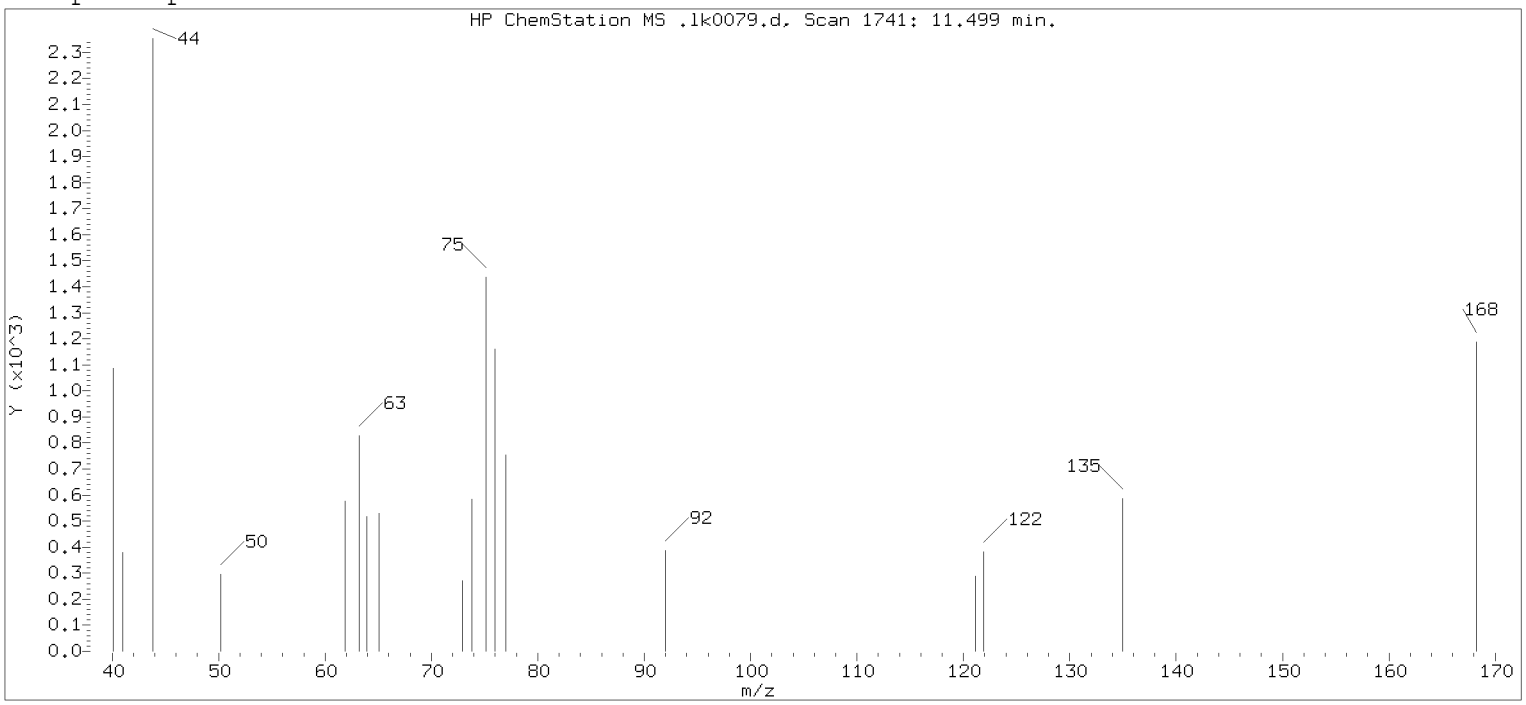
Compound Number : 111
Compound Name : 1,3-Dinitrobenzene
Scan Number : 1741
Retention Time (minutes) : 11.499
Quant Ion : 168.00
Area (flag) : 1219M
On-Column Amount (ng/ul) : 0.1042
Integration start scan : 1731 Integration stop scan: 1748
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

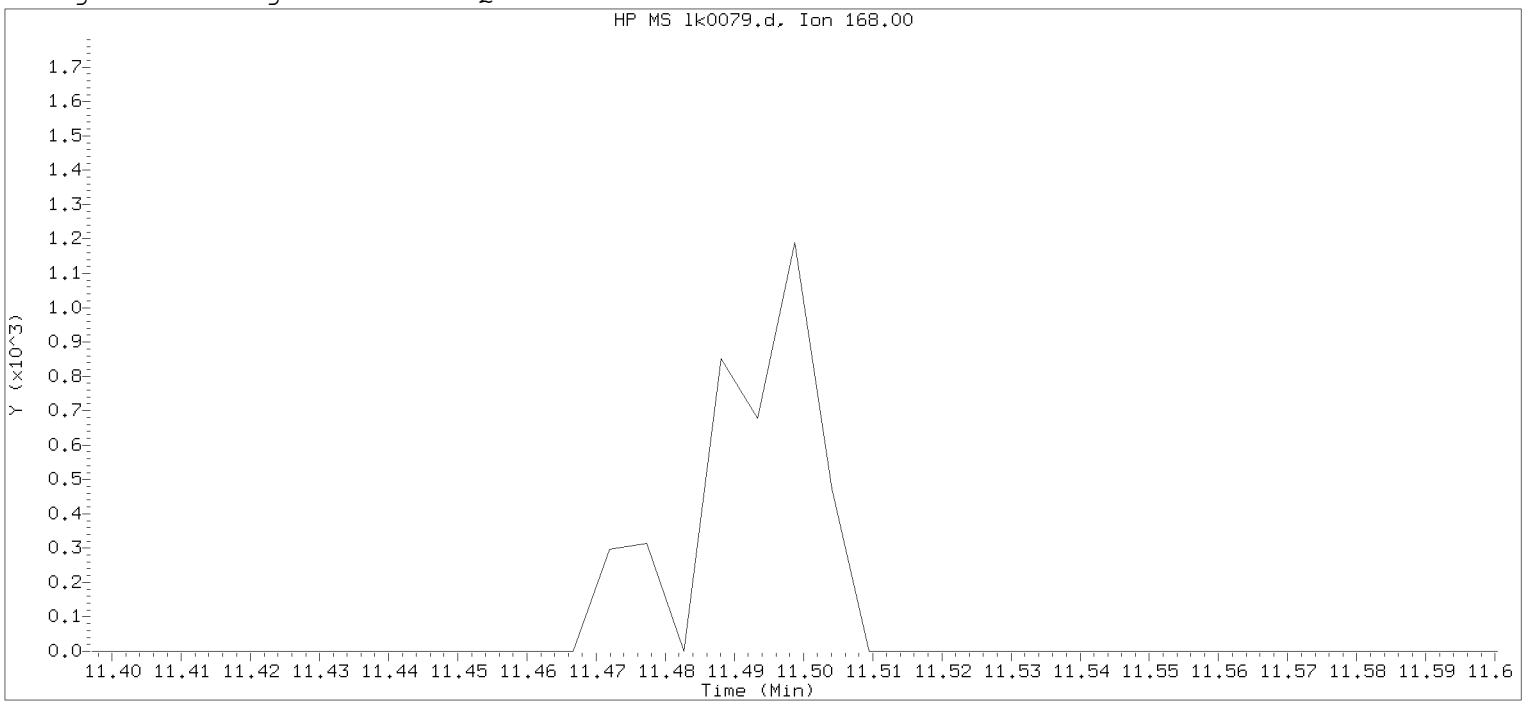
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

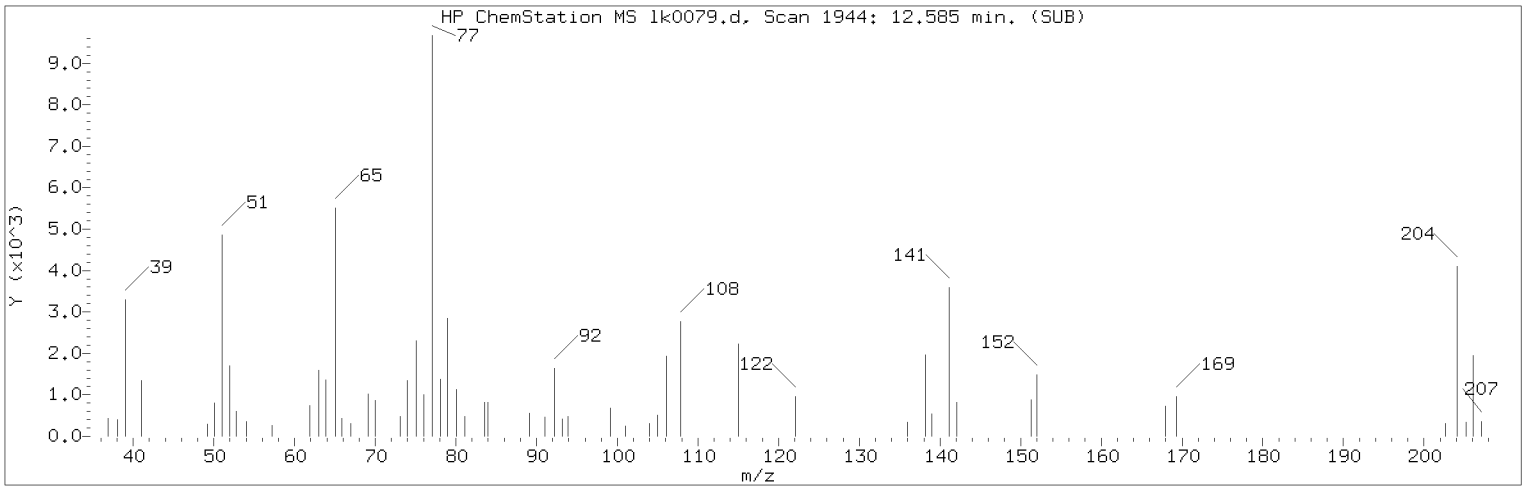
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

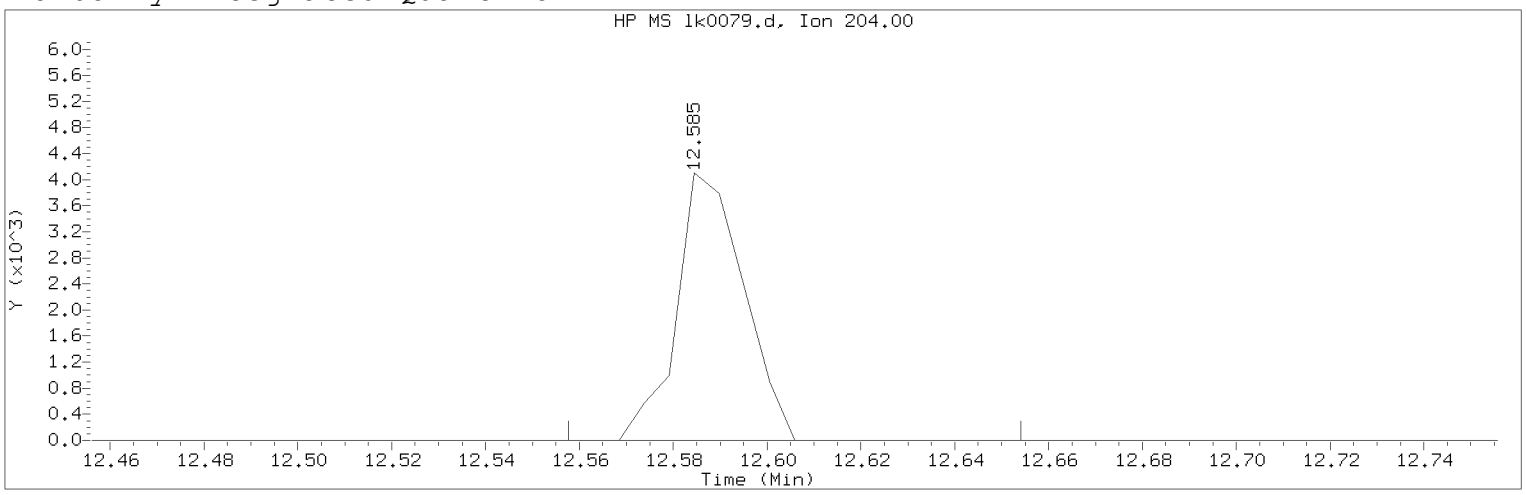
Compound Number : 111
Compound Name : 1,3-Dinitrobenzene
Expected RT (minutes) : 11.499
Quant Ion : 168.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: WSAADEH

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

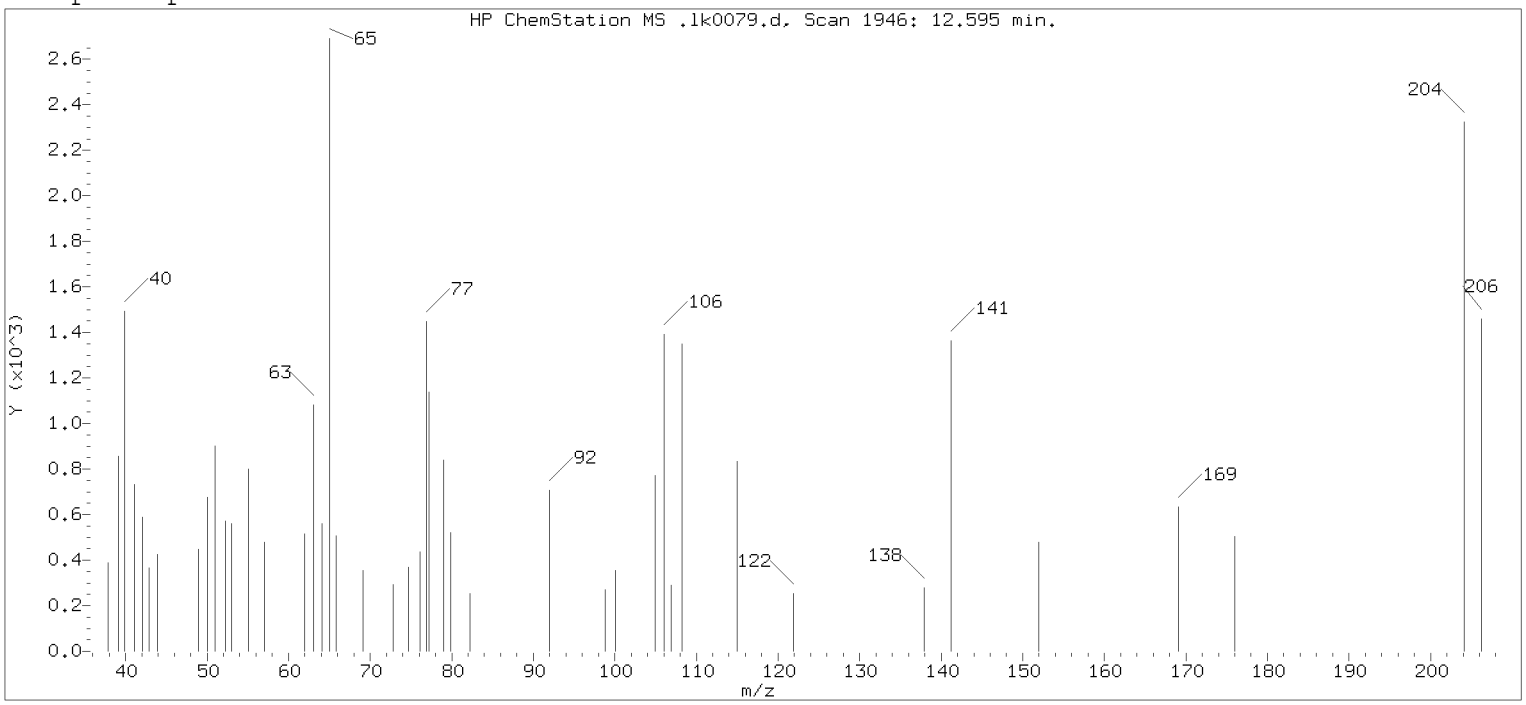
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1944
Retention Time (minutes) : 12.585
Quant Ion : 204.00
Area (flag) : 4066M
On-Column Amount (ng/ul) : 0.1175
Integration start scan : 1938 Integration stop scan: 1956
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

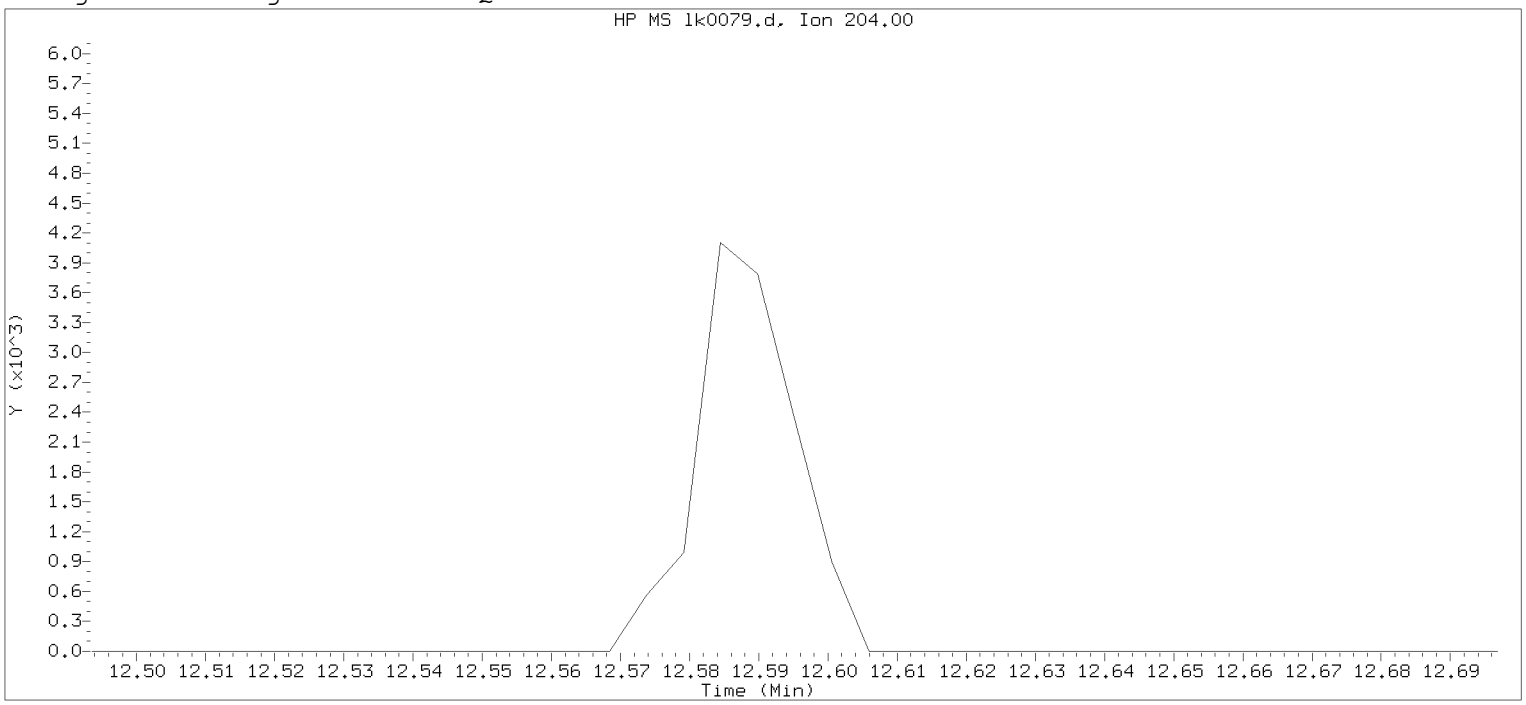
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

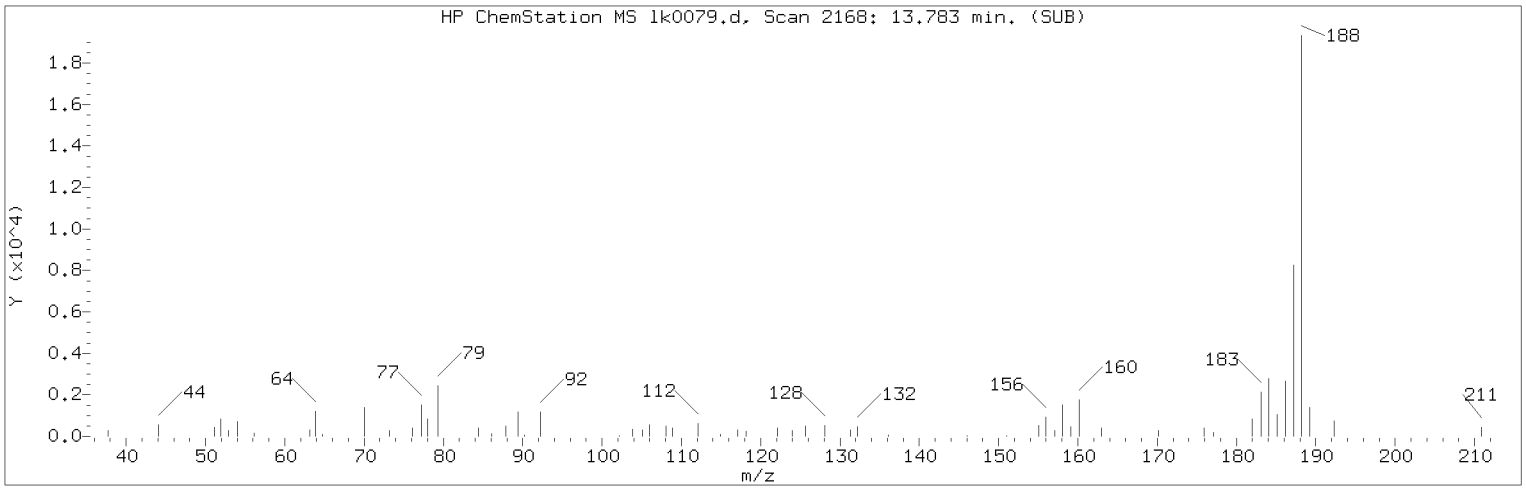
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

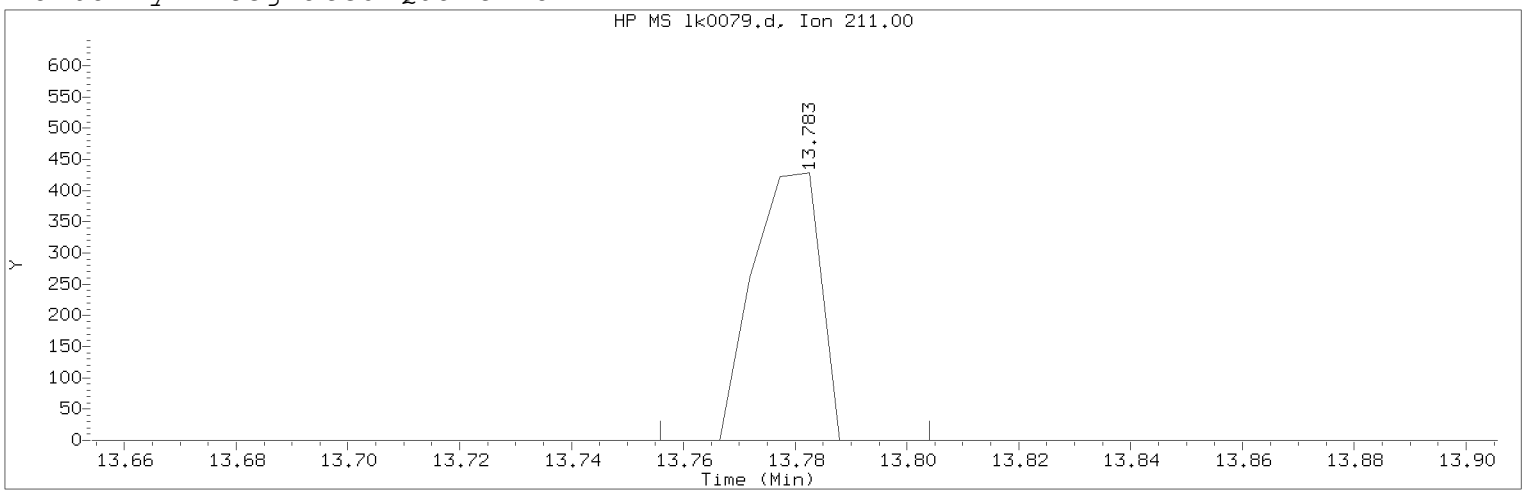
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Expected RT (minutes) : 12.596
Quant Ion : 204.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: WSAADEH

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

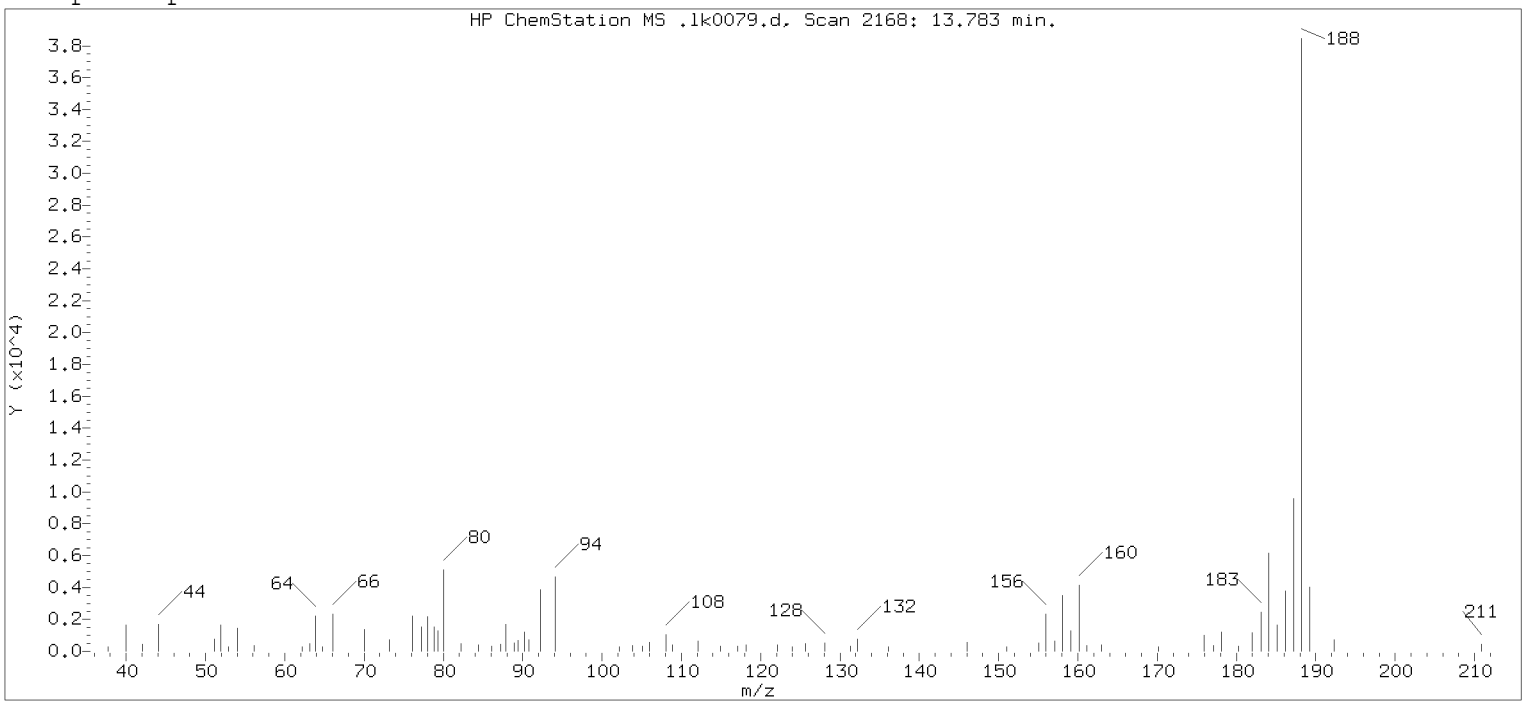
Compound Number : 159
Compound Name : Dinoseb
Scan Number : 2168
Retention Time (minutes) : 13.783
Quant Ion : 211.00
Area (flag) : 356M
On-Column Amount (ng/ul) : 2.9851
Integration start scan : 2162 Integration stop scan: 2171
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

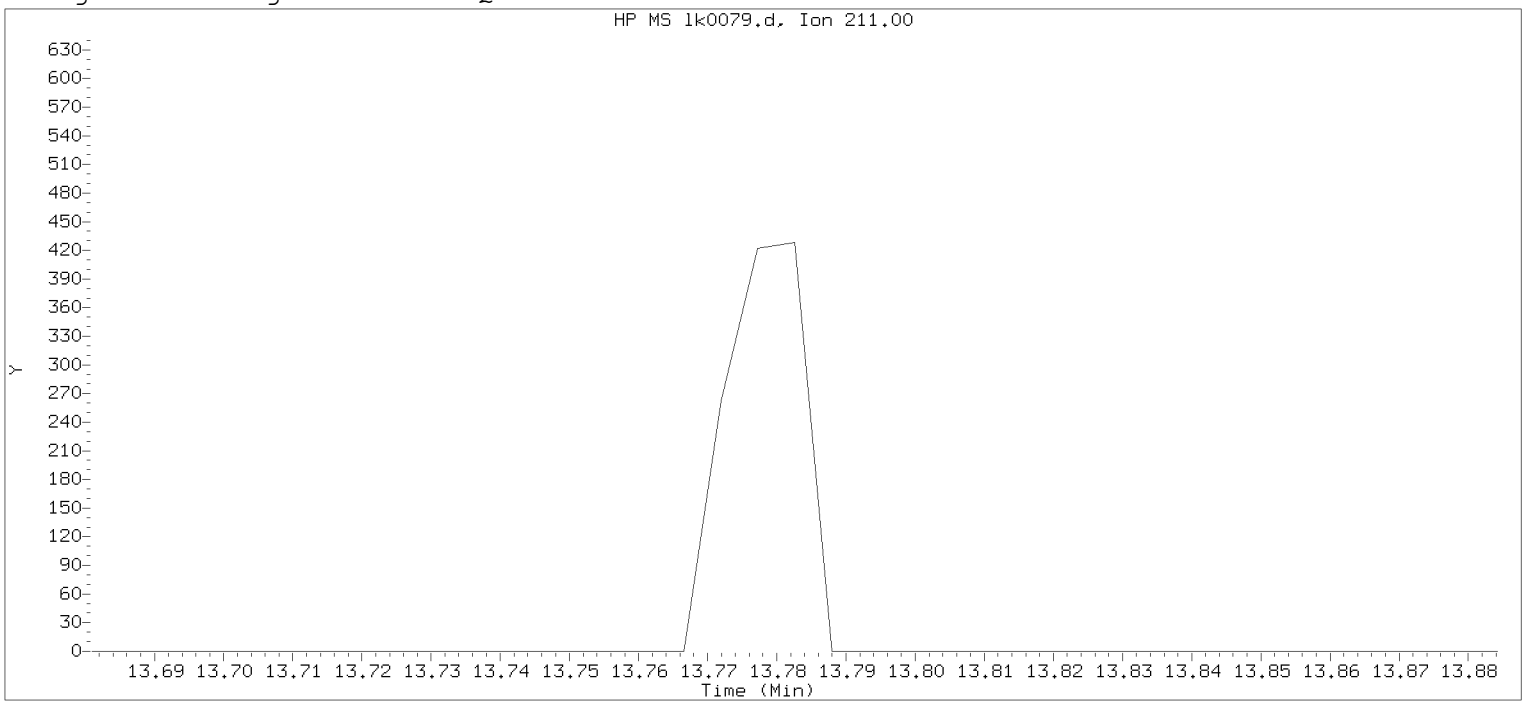
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

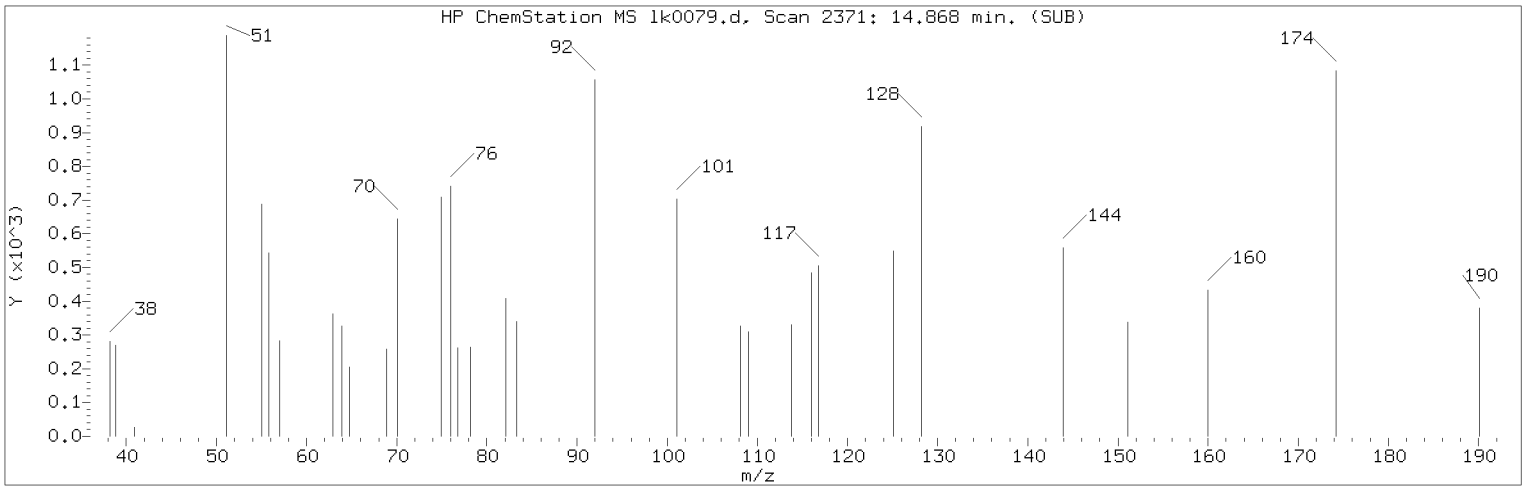
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

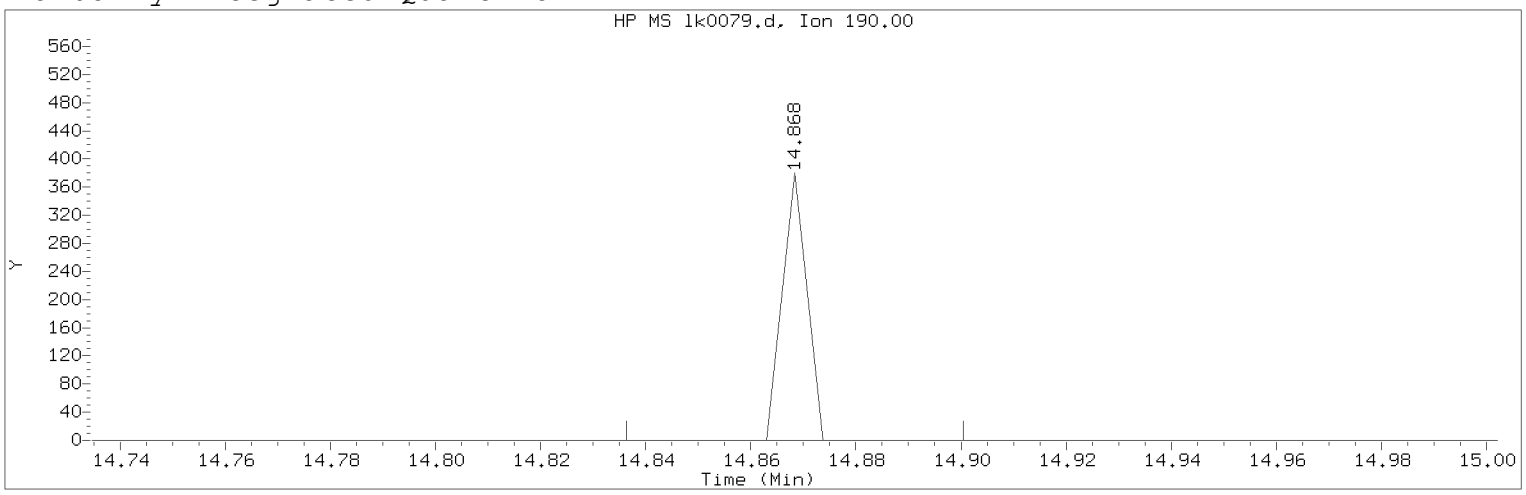
Compound Number : 159
Compound Name : Dinoseb
Expected RT (minutes) : 13.783
Quant Ion : 211.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user RAF48 Page 1086 of 1181

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

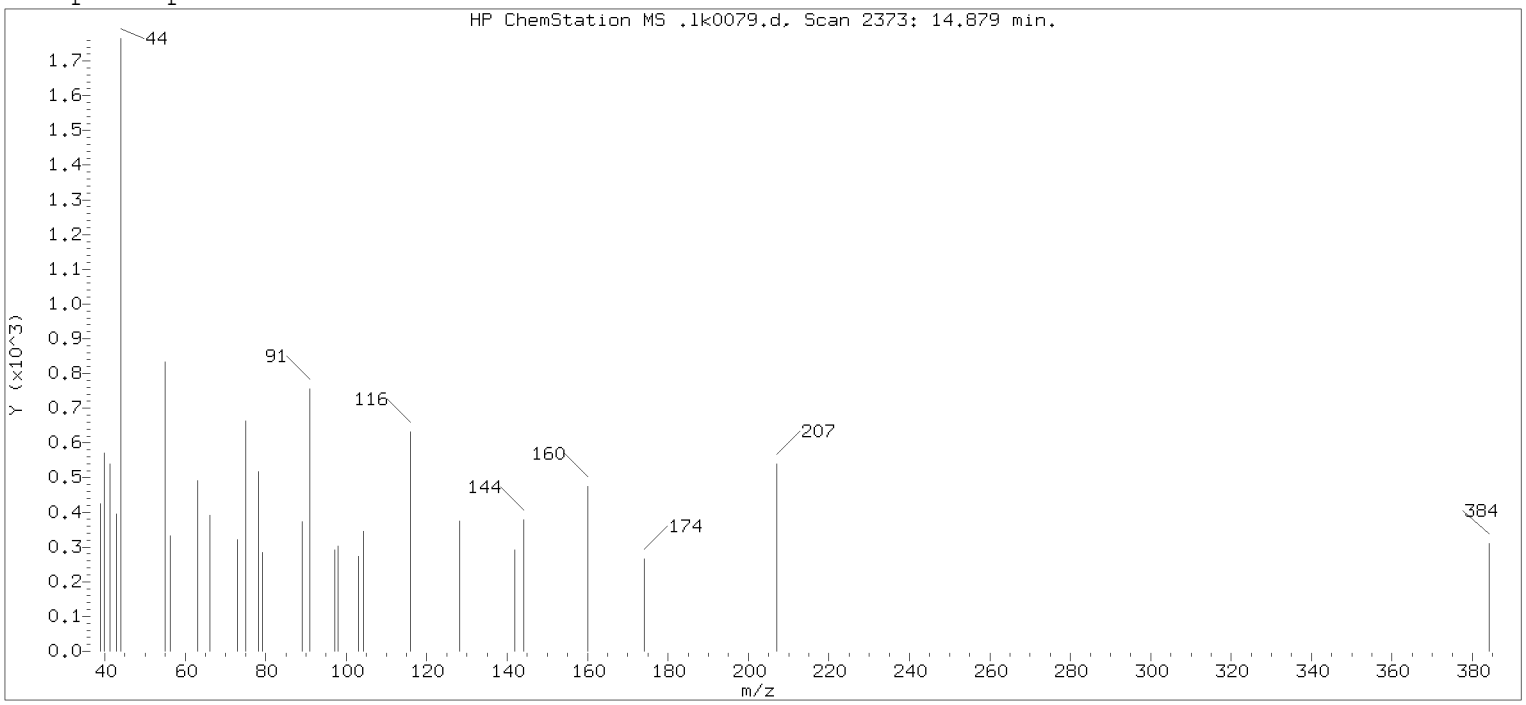
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Scan Number : 2371
Retention Time (minutes) : 14.868
Quant Ion : 190.00
Area (flag) : 121M
On-Column Amount (ng/ul) : 2.4481
Integration start scan : 2364 Integration stop scan: 2376
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

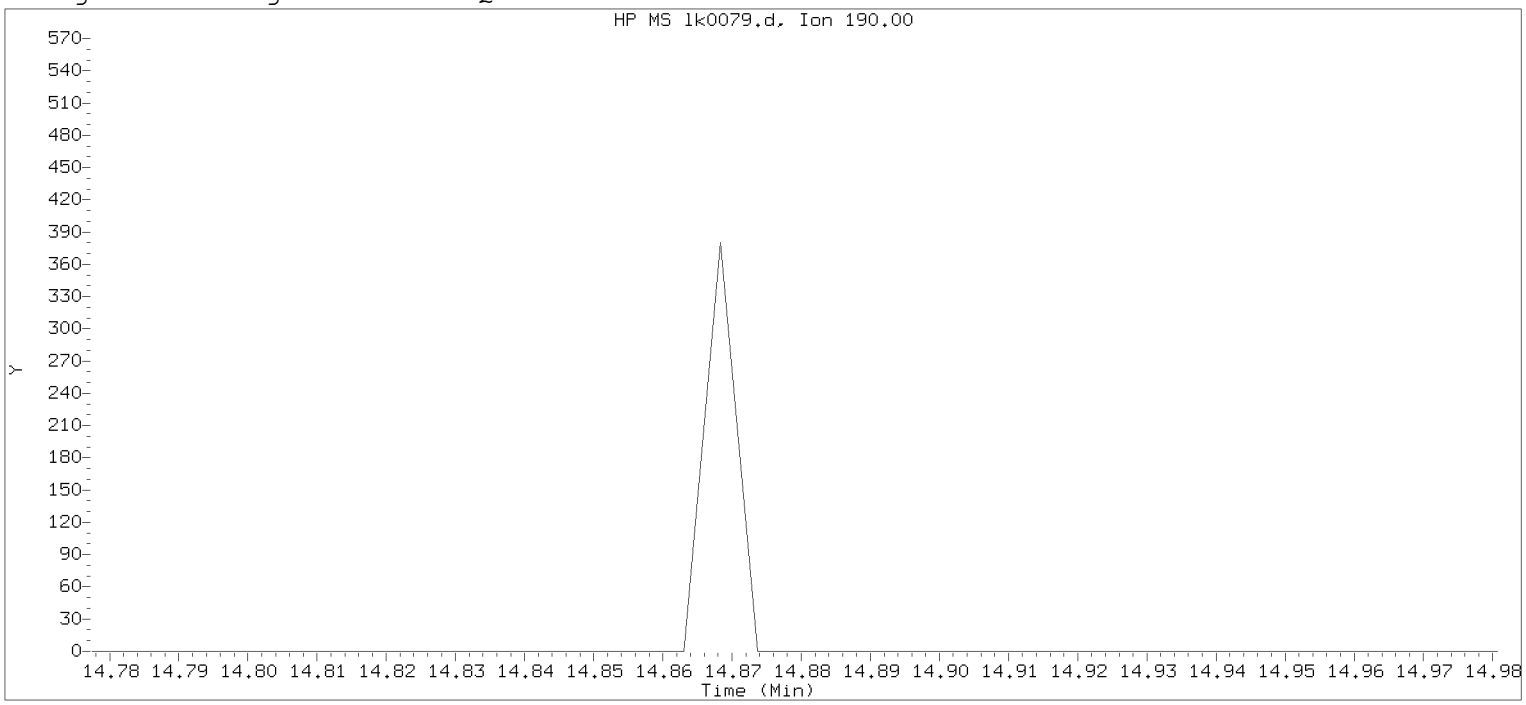
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

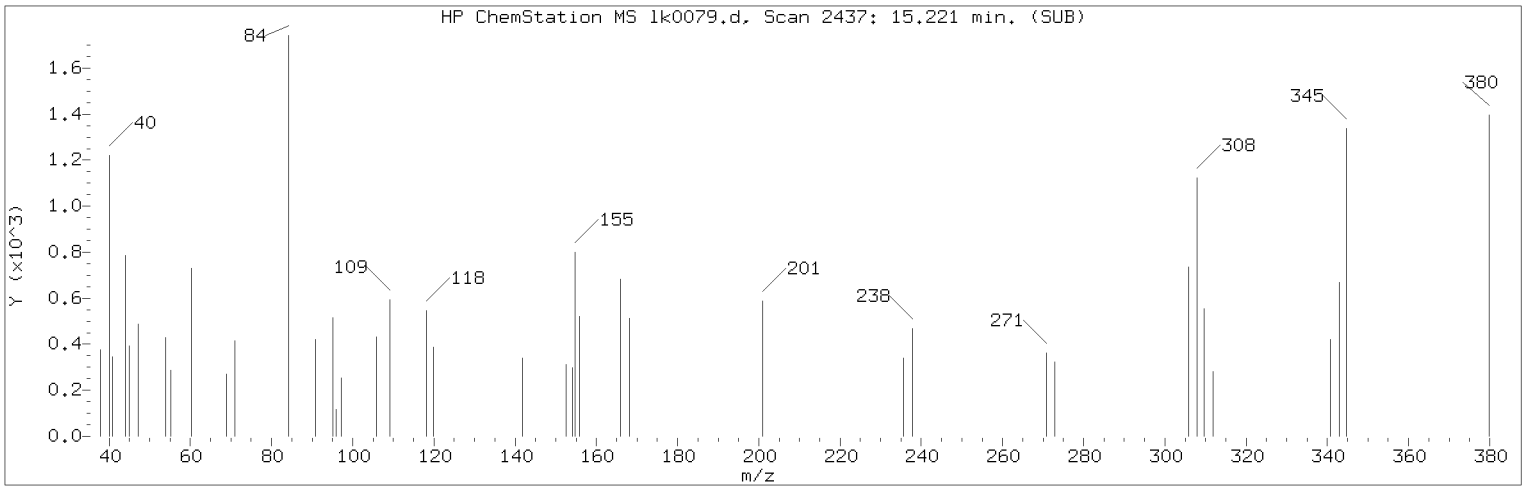
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

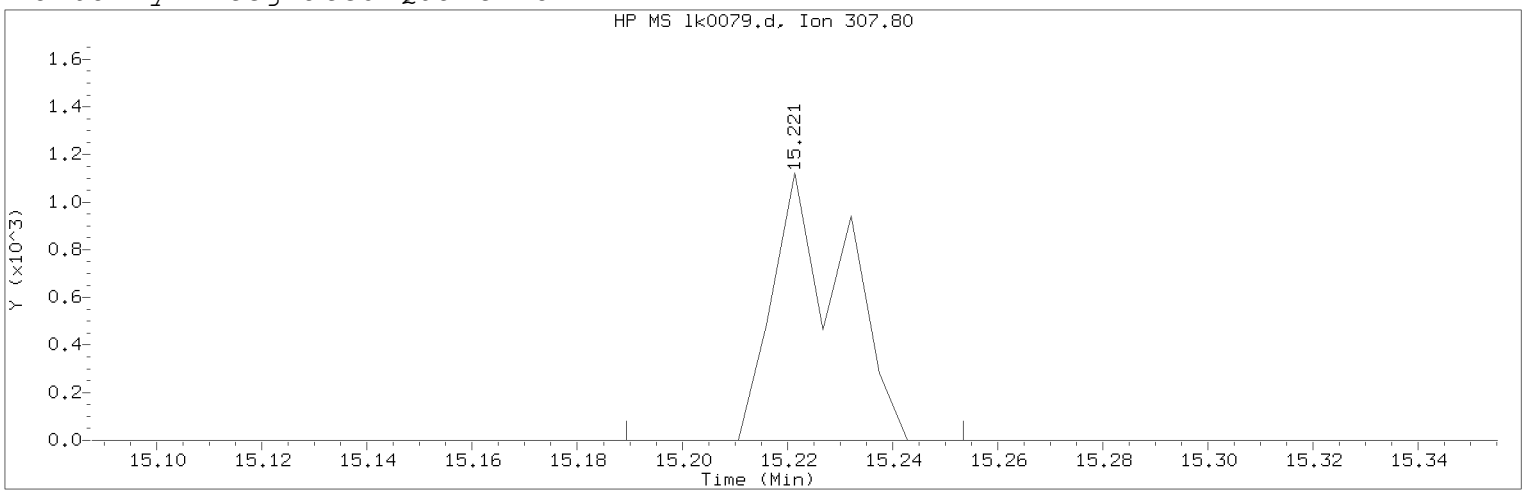
Compound Number : 173
Compound Name : 4-Nitroquinoline-1-oxide
Expected RT (minutes) : 14.879
Quant Ion : 190.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature user F48 Page 1088

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

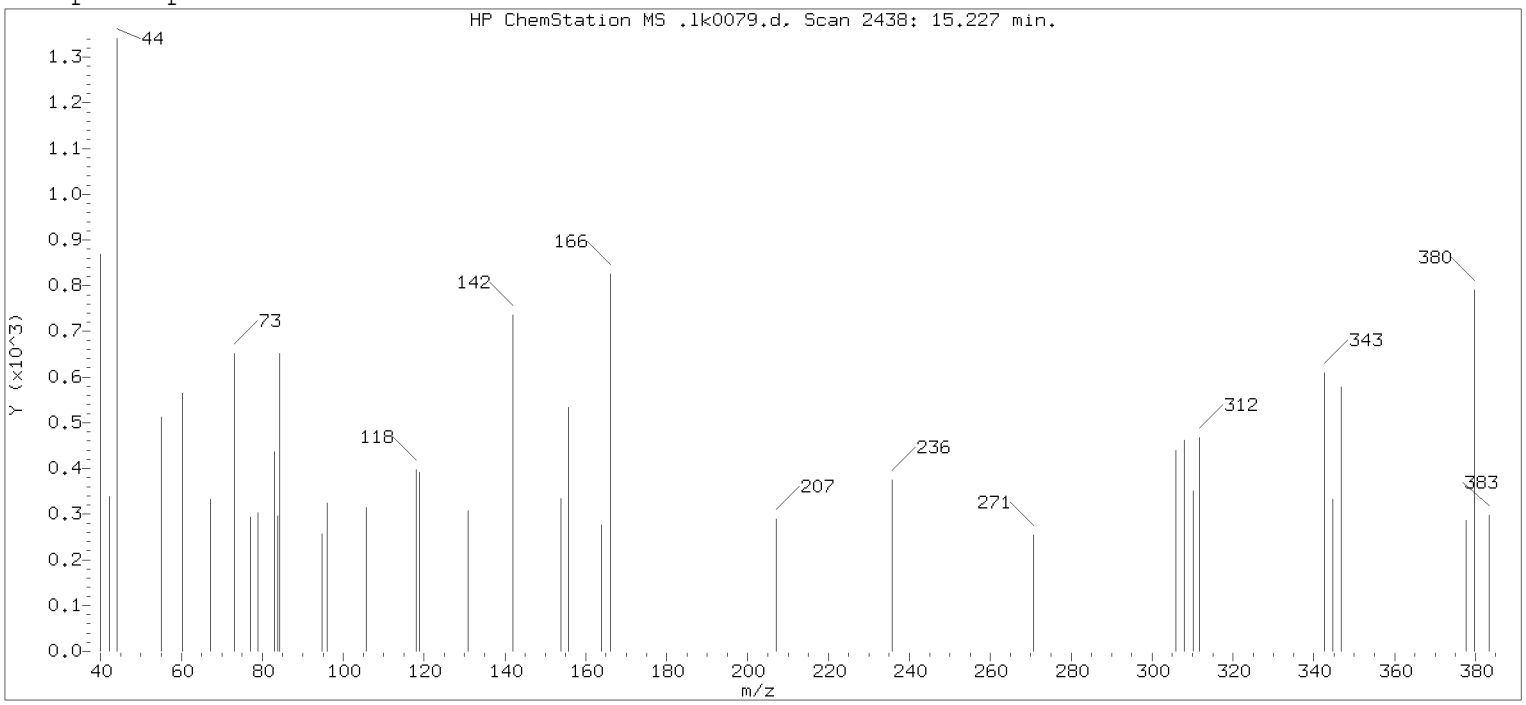
Compound Number : 174
Compound Name : Octachlorostyrene
Scan Number : 2437
Retention Time (minutes) : 15.221
Quant Ion : 308.00
Area (flag) : 1058M
On-Column Amount (ng/ul) : 0.1227
Integration start scan : 2430 Integration stop scan: 2442
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: missed peak

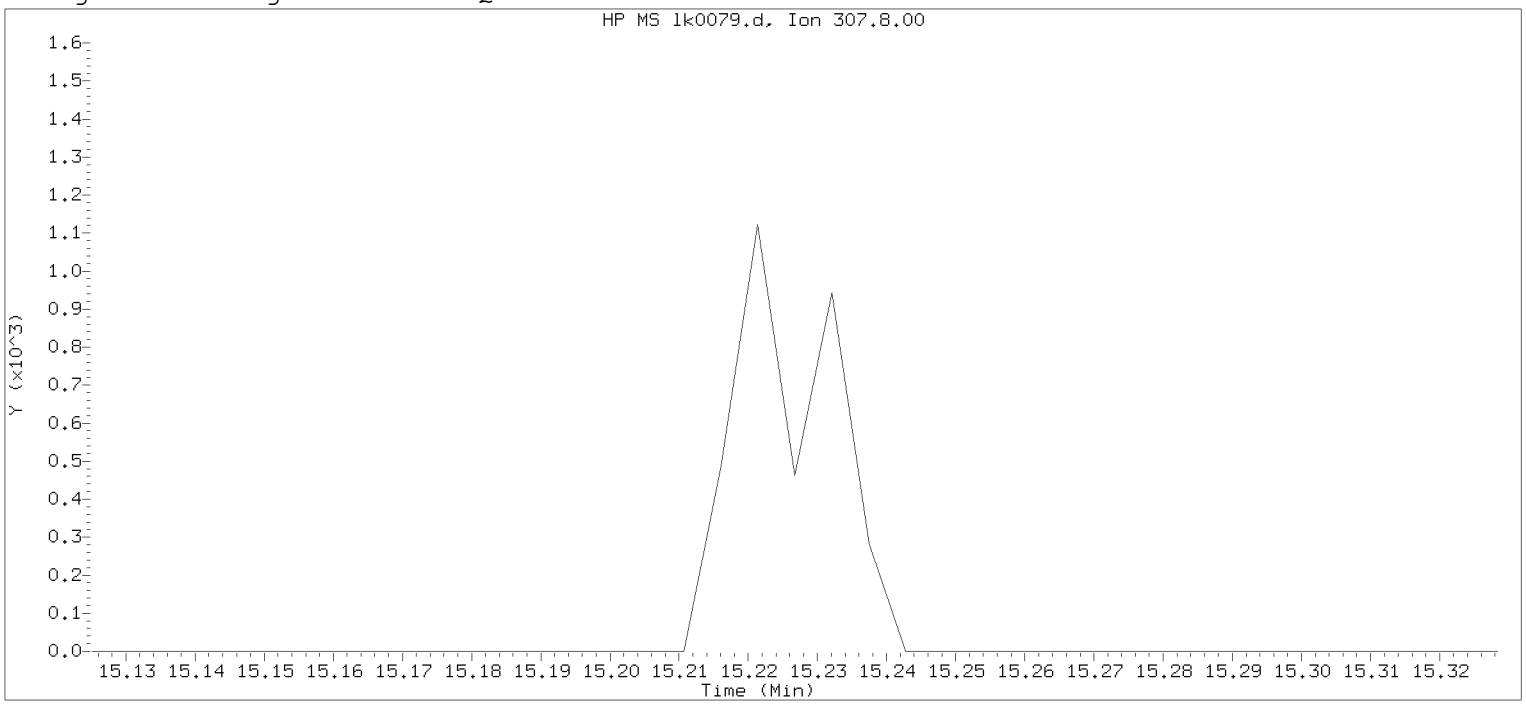
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:57.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum



Original Integration of Quant Ion



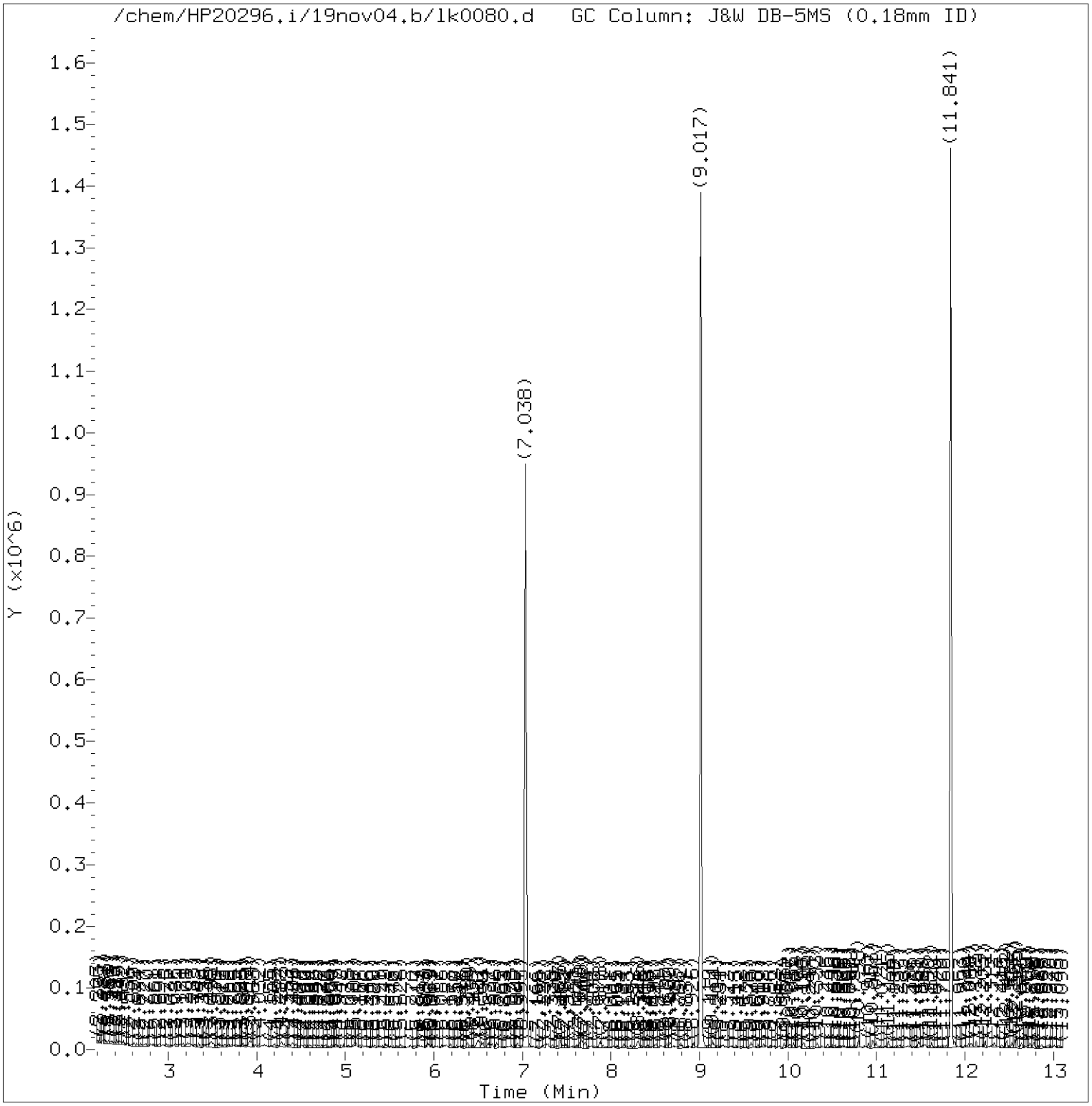
Data File: /chem/HP20296.i/19nov04.b/lk0079.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: mdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 18:57 Unknown

Sample Name: SSTD0.125 Lab Sample ID: RVSTD2709

Compound Number : 174
Compound Name : Octachlorostyrene
Expected RT (minutes) : 15.227
Quant Ion : 308.00

Digitally signed by William H Saadeh on 11/05/2019 at 14:57.
Target 3.5 esignature used. RAF48 Page 1090 of 1181



Total Ion Chromatogram (TIC)

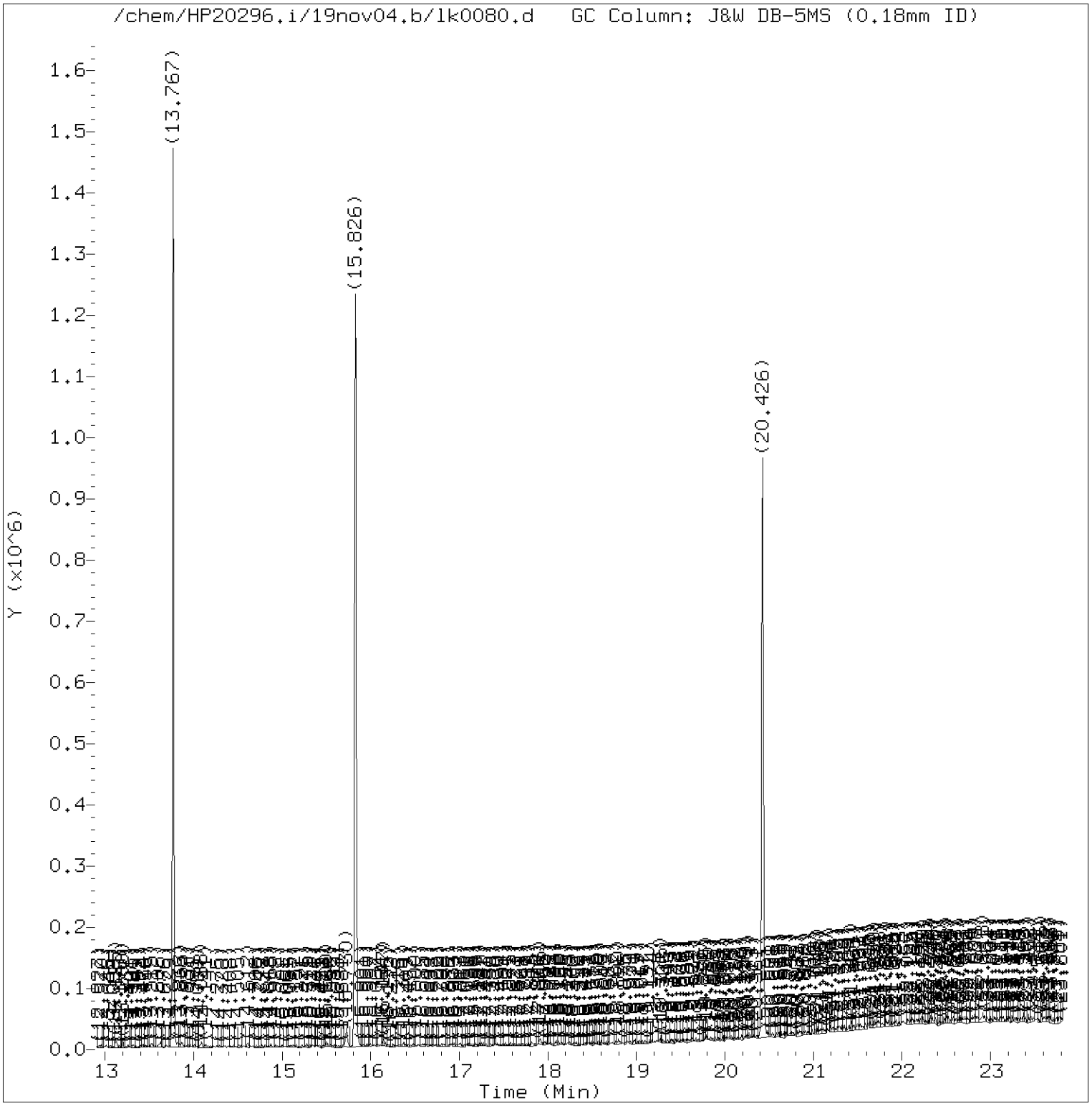
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

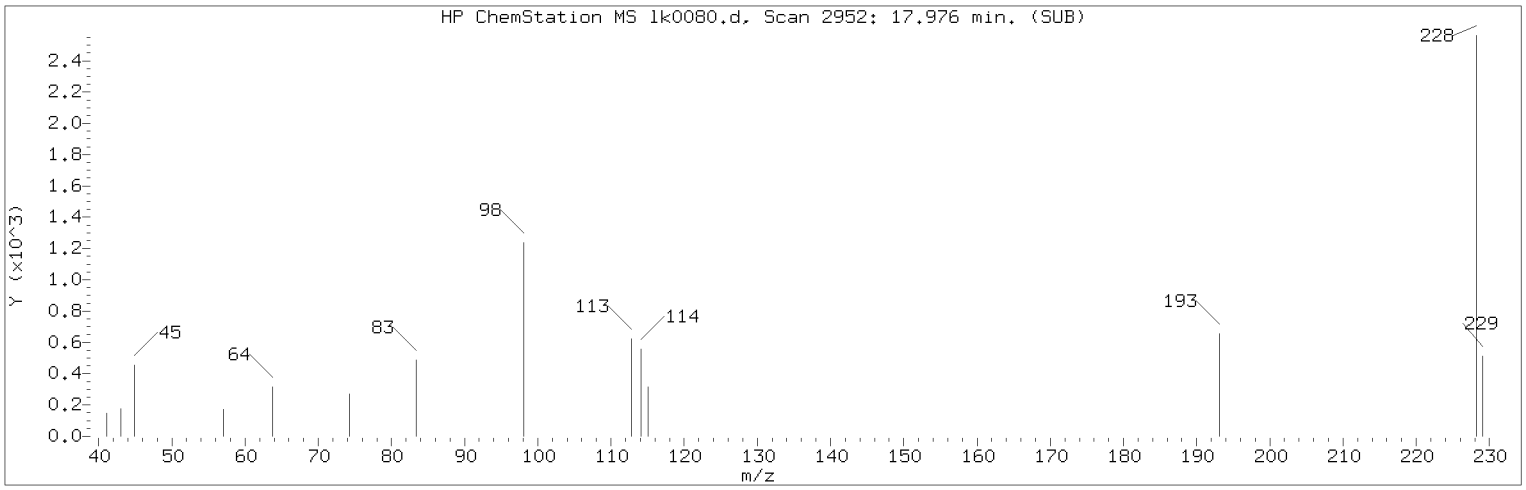
Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	162106	5.000
45)$Nitrobenzene-d5	(2)	7.878	82	4610	0.054
68)*Naphthalene-d8	(2)	9.017	136	663977	5.000
69) Naphthalene	(2)	9.054	128	4634	0.030
86) 2-Methylnaphthalene	(2)	10.172	142	2241	0.025
87) 1-Methylnaphthalene	(2)	10.338	142	1899	0.021
96)$2-Fluorobiphenyl	(3)	10.798	172	3774	0.045
99) 2-Chloronaphthalene	(3)	10.953	162	3088	0.037
114) Acenaphthylene	(3)	11.616	152	3295	0.027
118)*Acenaphthene-d10	(3)	11.841	164	275710	5.000
119) Acenaphthene	(3)	11.884	153	2401	0.028
131) Fluorene	(3)	12.552	166	2100	0.025
150) Hexachlorobenzene	(4)	13.258	284	507	0.024
158)*Phenanthrene-d10	(4)	13.767	188	487628	5.000
160) Phenanthrene	(4)	13.793	178	2636	0.022
162) Anthracene	(4)	13.852	178	3236	0.027
227) Total PAHs	(6)			41295	0.389
178) Fluoranthene	(4)	15.494	202	3261	0.027
180)*Pyrene-d10	(5)	15.826	212	448084	5.000
182) Pyrene	(5)	15.863	202	1674	0.013
184)$Terphenyl-d14	(5)	16.141	244	3228	0.046
200) Benzo(a)anthracene	(5)	17.906	228	2272	0.022
201) Chrysene	(5)	17.976	228	2352M	0.022
211) Benzo(b)fluoranthene	(6)	19.784	252	2216	0.022
213) Benzo(k)fluoranthene	(6)	19.843	252	1646M	0.017
216) Benzo(a)pyrene	(6)	20.324	252	1618M	0.017
218)*Perylene-d12	(6)	20.426	264	389900	5.000
224) Indeno(1,2,3-cd)pyrene	(6)	22.073	276	1465M	0.017
225) Dibenz(a,h)anthracene	(6)	22.121	278	1087	0.012
226) Benzo(g,h,i)perylene	(6)	22.490	276	1262	0.014

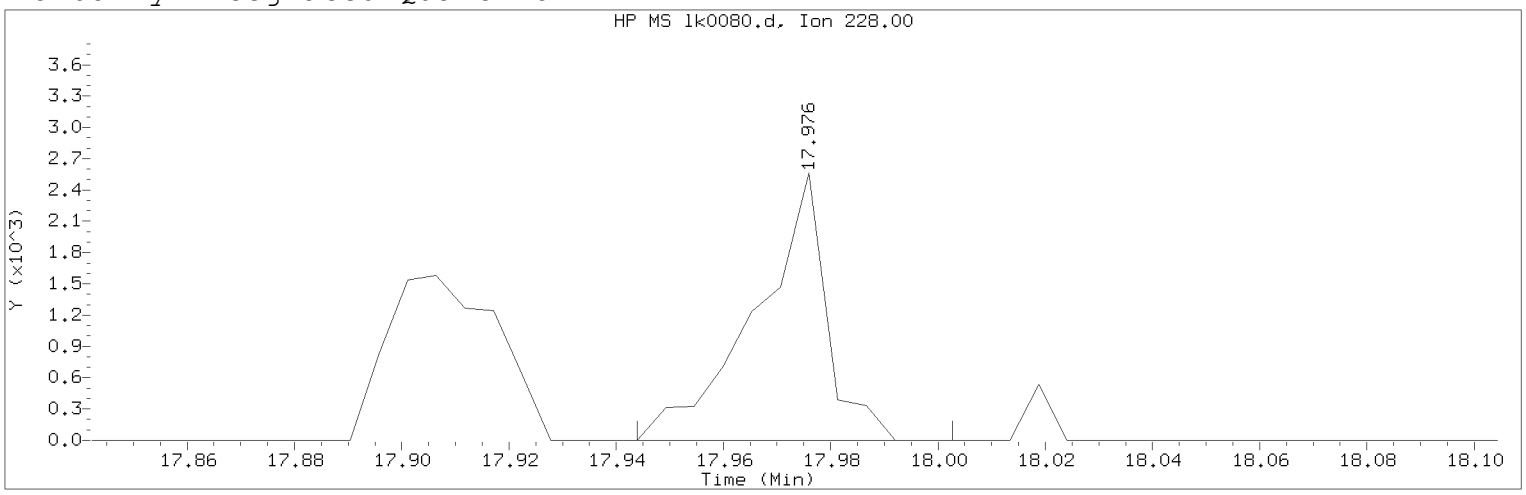
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

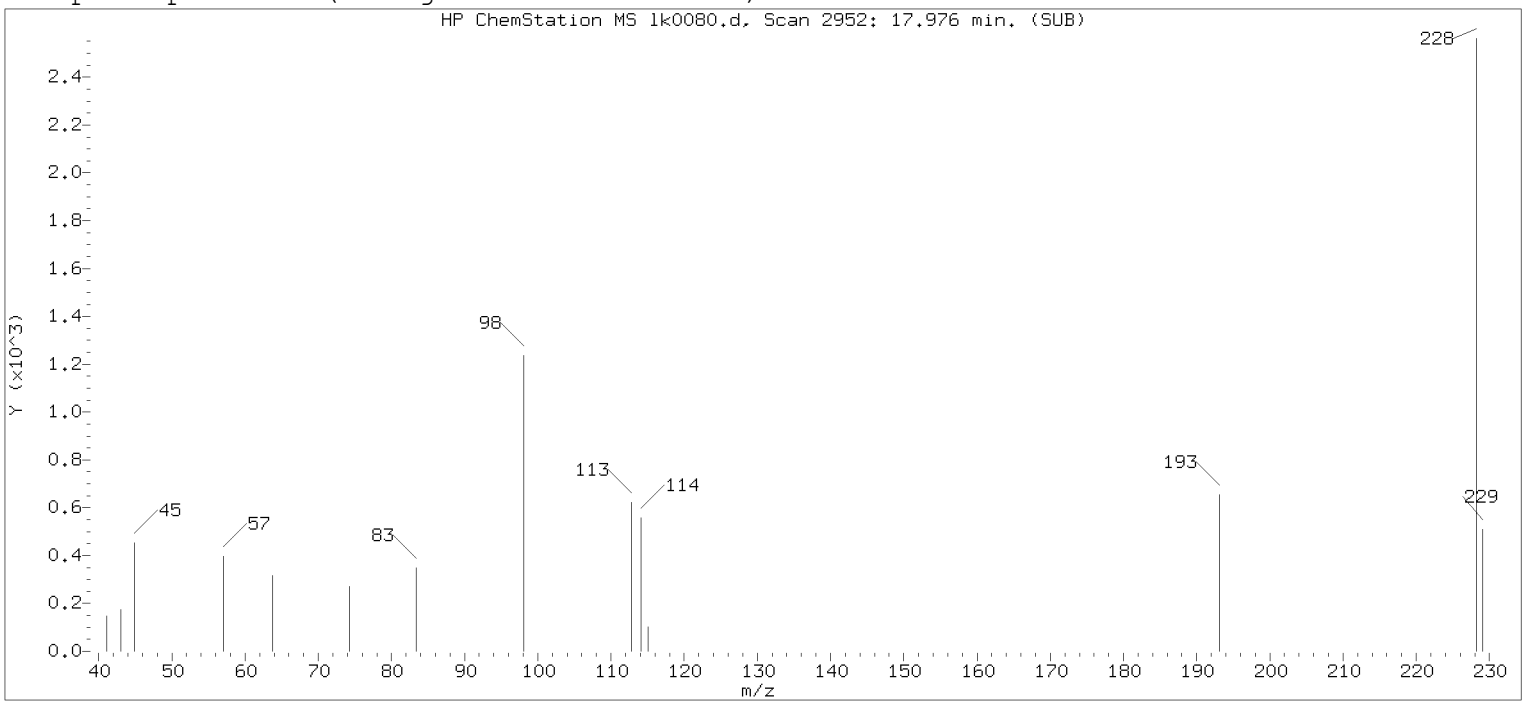
Compound Number : 201
Compound Name : Chrysene
Scan Number : 2952
Retention Time (minutes) : 17.976
Quant Ion : 228.00
Area (flag) : 2352M
On-Column Amount (ng/ul) : 0.0223
Integration start scan : 2945 Integration stop scan: 2956
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

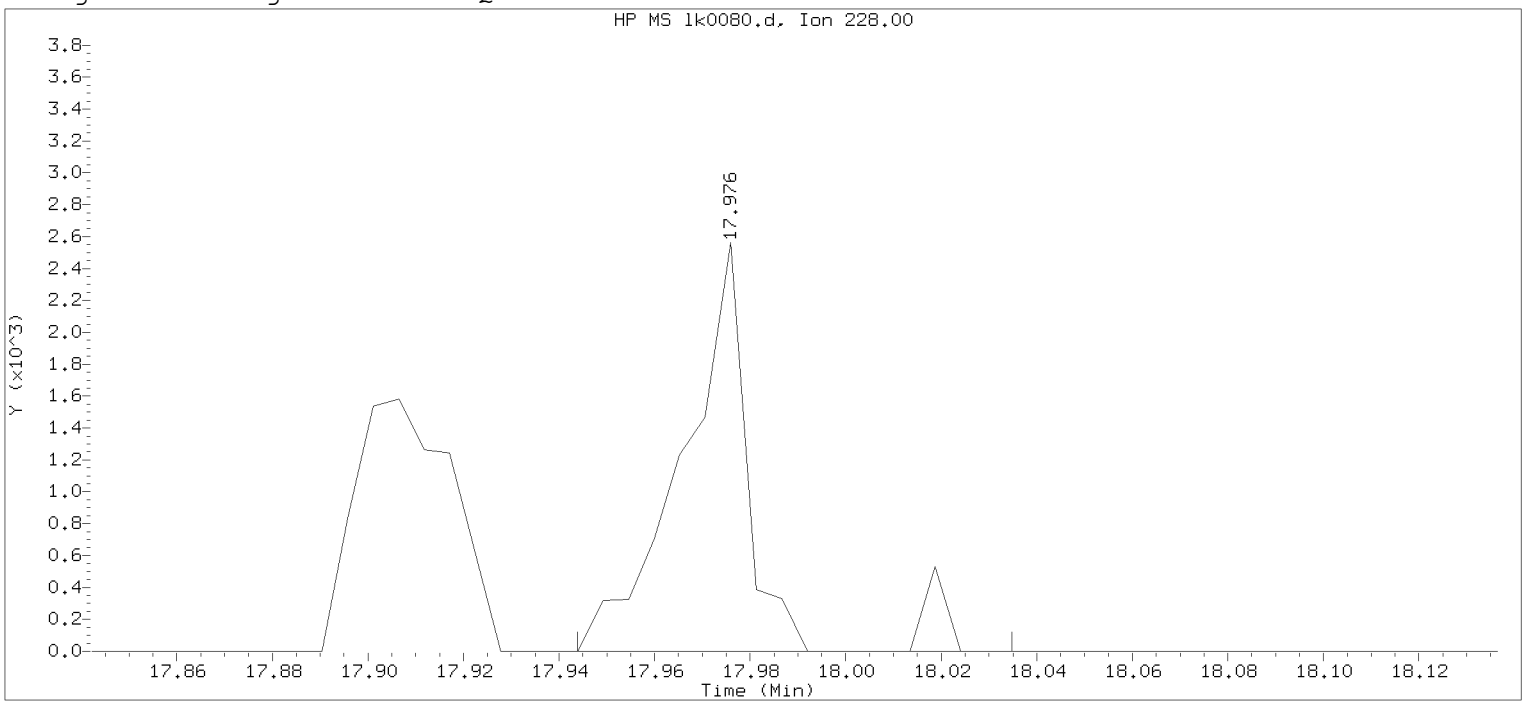
Analyst responsible for change: Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

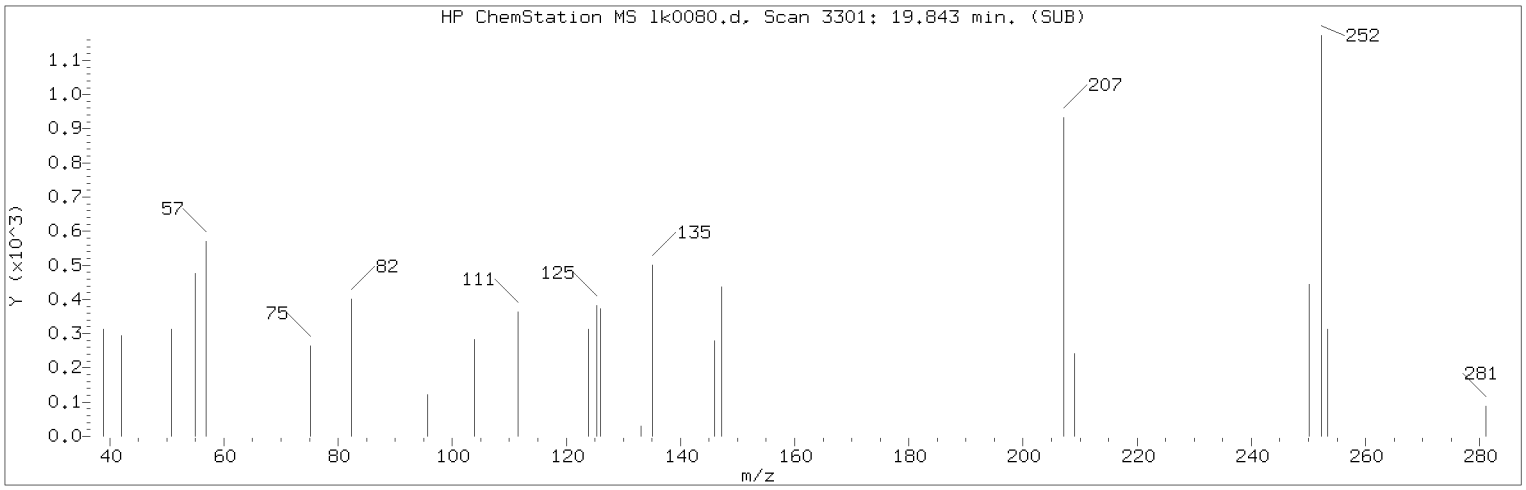
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:26 Unknown

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

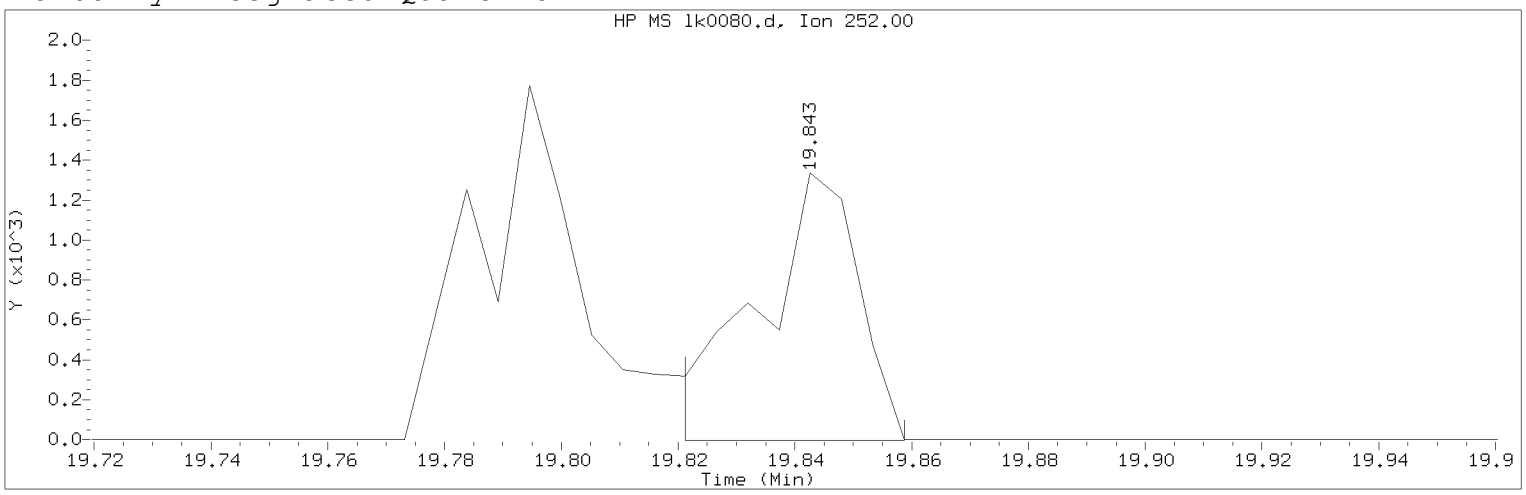
Compound Number	: 201		
Compound Name	: Chrysene		
Scan Number	: 2952		
Retention Time (minutes)	: 17.976		
Quant Ion	: 228.00		
Area	: 2523		
On-column Amount (ng/ul)	: 0.0212		
Integration start scan	: 2945	Integration stop scan:	2962
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Ashley R. Transue on 11/04/2019 at 23:05.
Target 3.5 esignature used. FF48

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

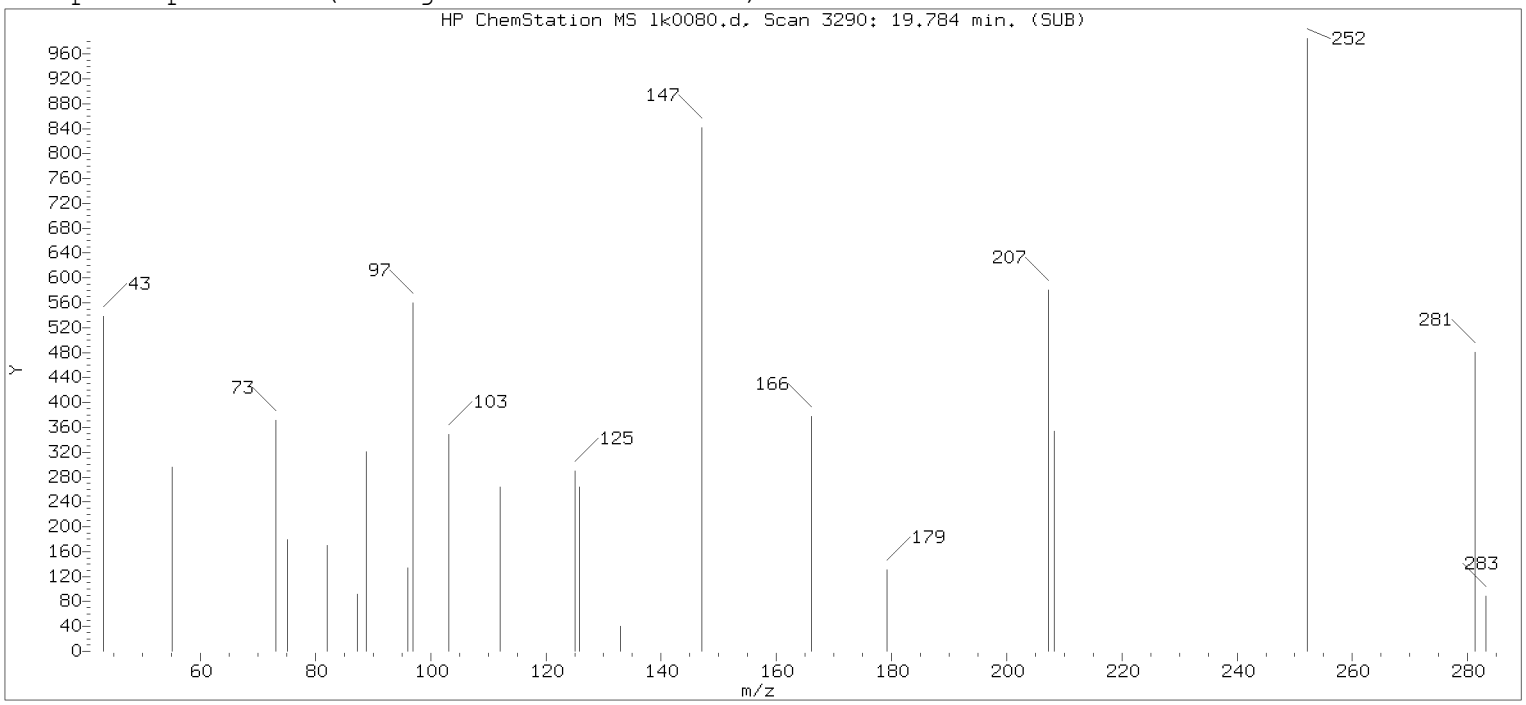
Compound Number : 213
Compound Name : Benzo(k)fluoranthene
Scan Number : 3301
Retention Time (minutes) : 19.843
Quant Ion : 252.00
Area (flag) : 1646M
On-Column Amount (ng/ul) : 0.0165
Integration start scan : 3296 Integration stop scan: 3303
Y at integration start : -3 Y at integration end: -3

Reason for manual integration: improper integration

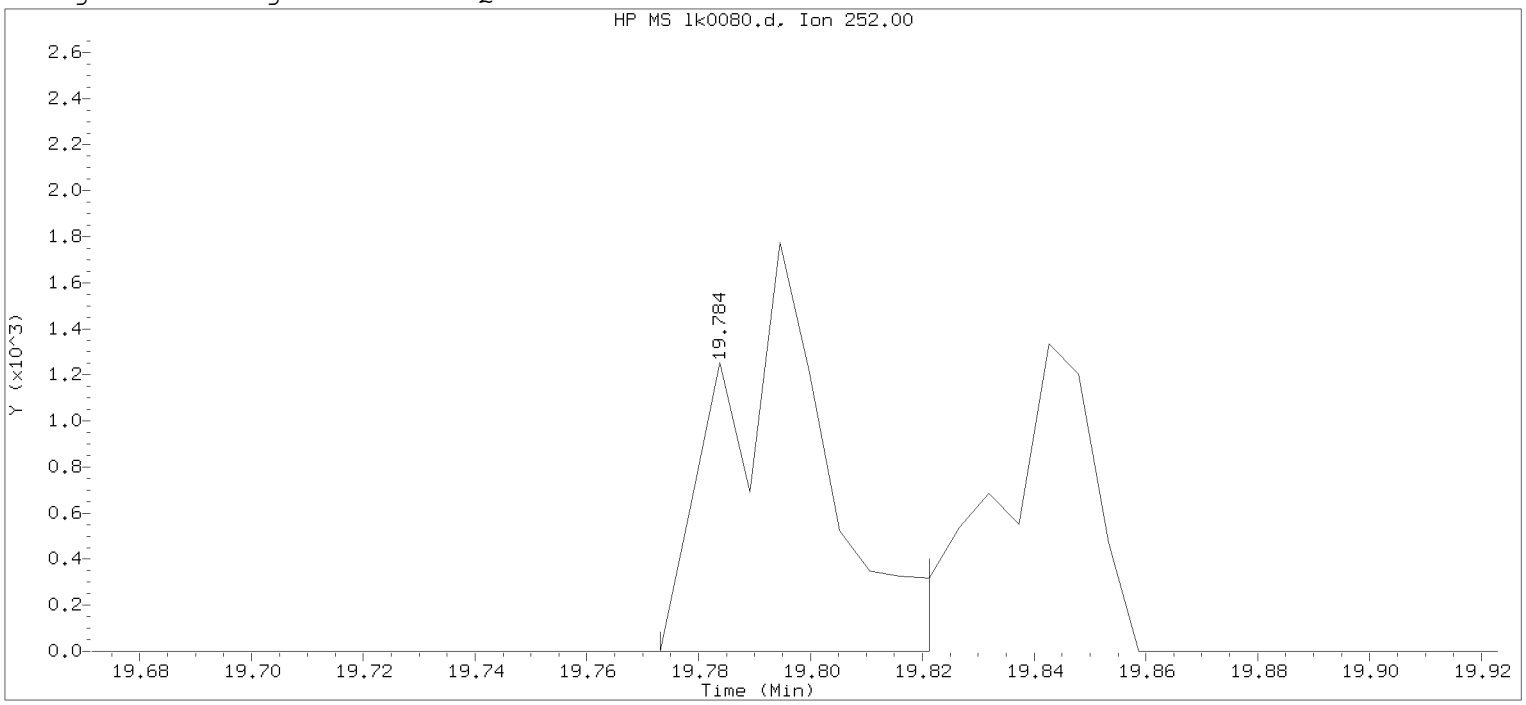
Analyst responsible for change: Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

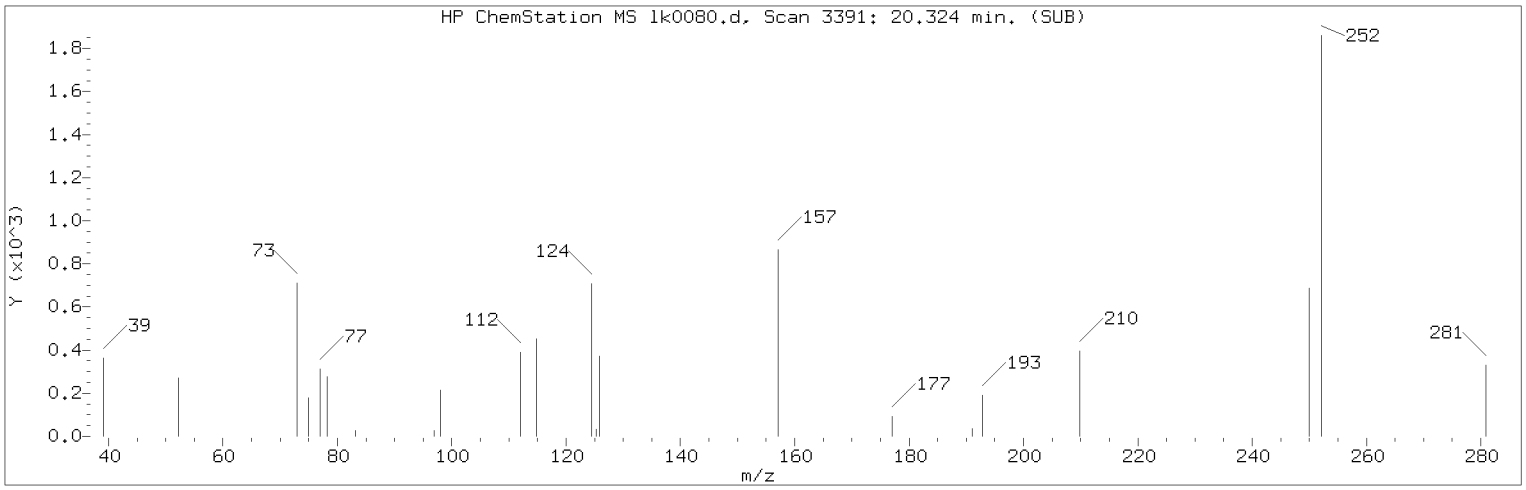
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:26 Unknown

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

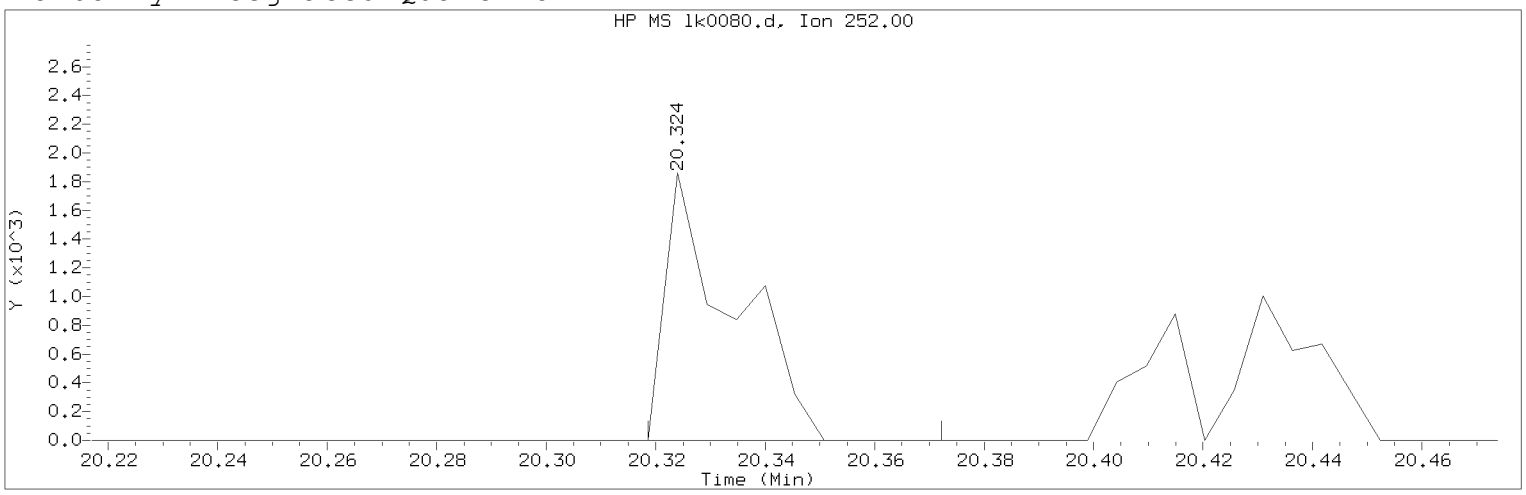
Compound Number	: 213		
Compound Name	: Benzo(k)fluoranthene		
Scan Number	: 3290		
Retention Time (minutes)	: 19.784		
Quant Ion	: 252.00		
Area	: 2216		
On-column Amount (ng/ul)	: 0.0204		
Integration start scan	: 3287	Integration stop scan:	3296
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. RAF48 Page 1097

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

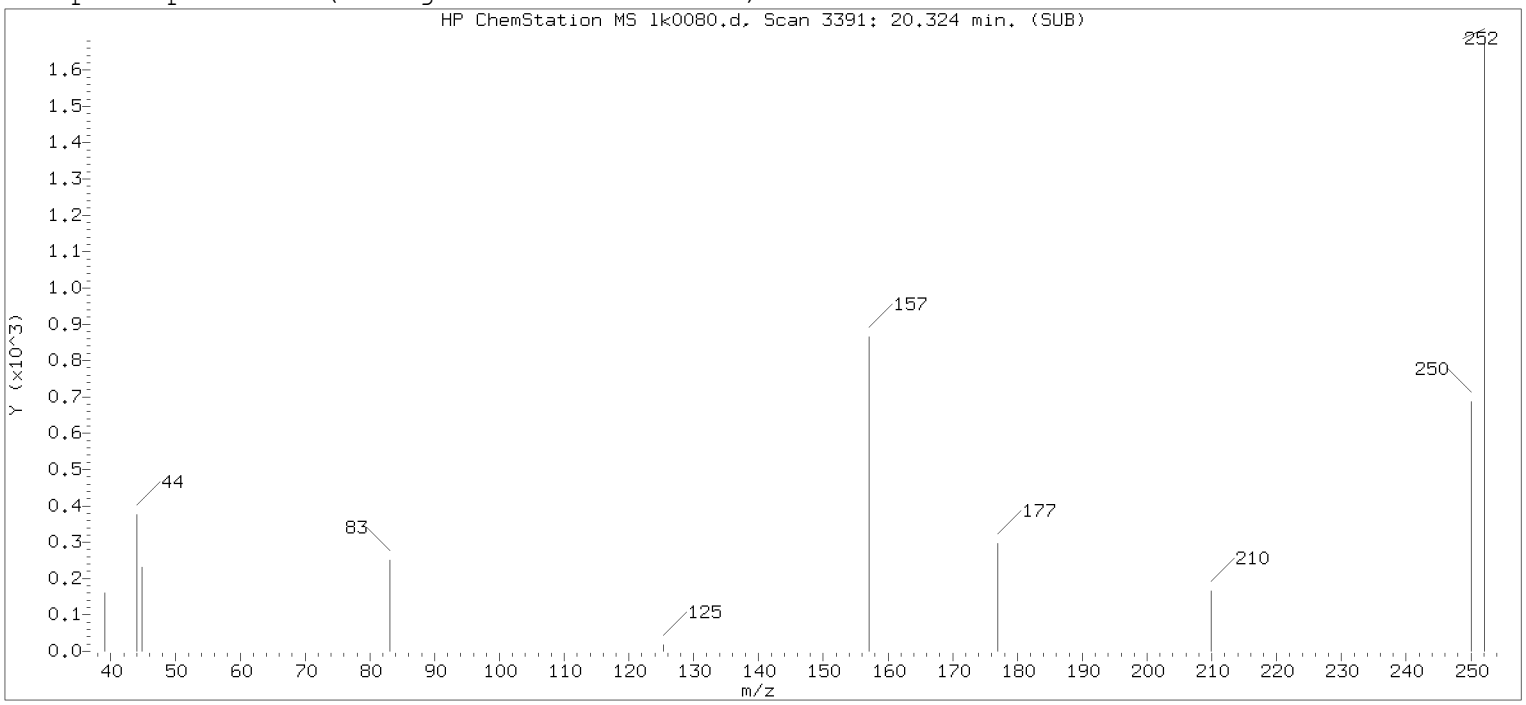
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3391
Retention Time (minutes) : 20.324
Quant Ion : 252.00
Area (flag) : 1618M
On-Column Amount (ng/ul) : 0.0175
Integration start scan : 3389 Integration stop scan: 3399
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

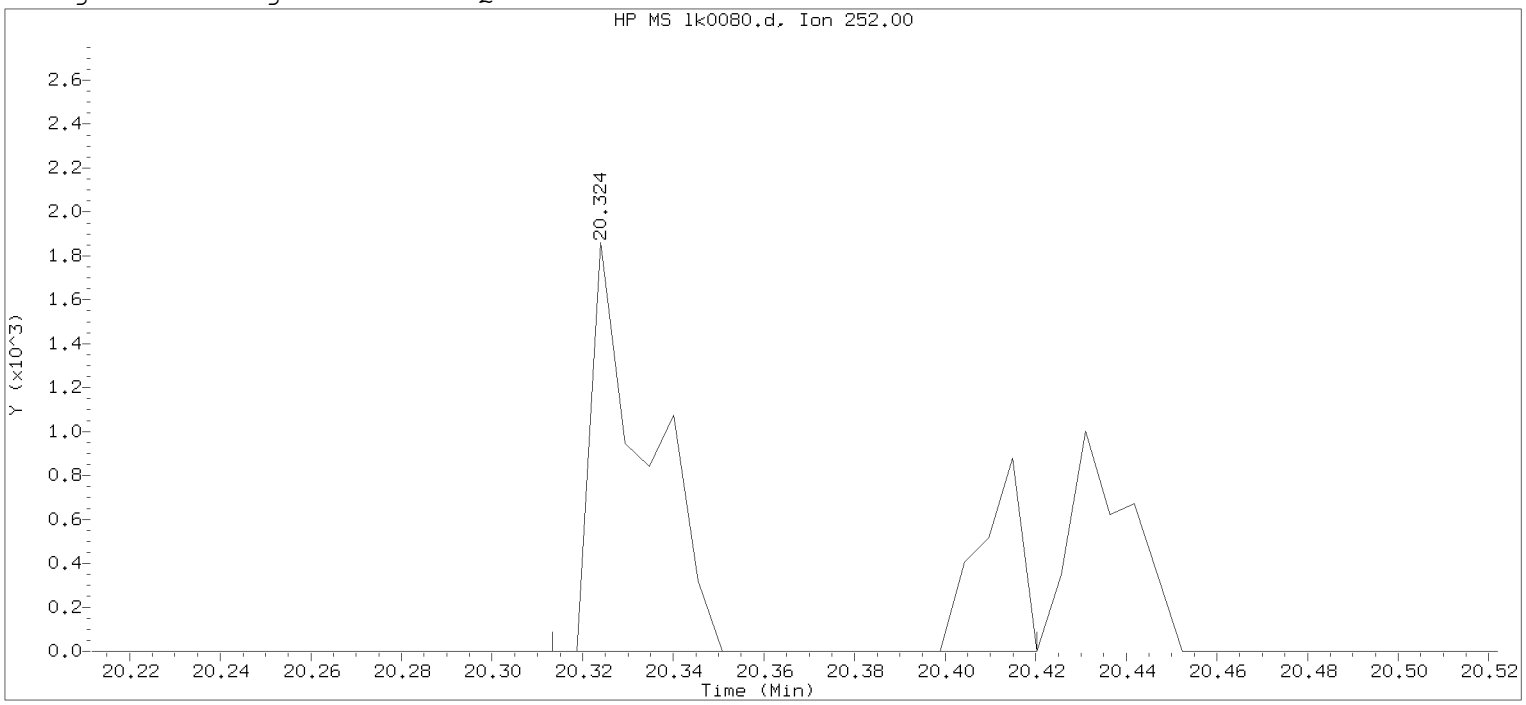
Analyst responsible for change: Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

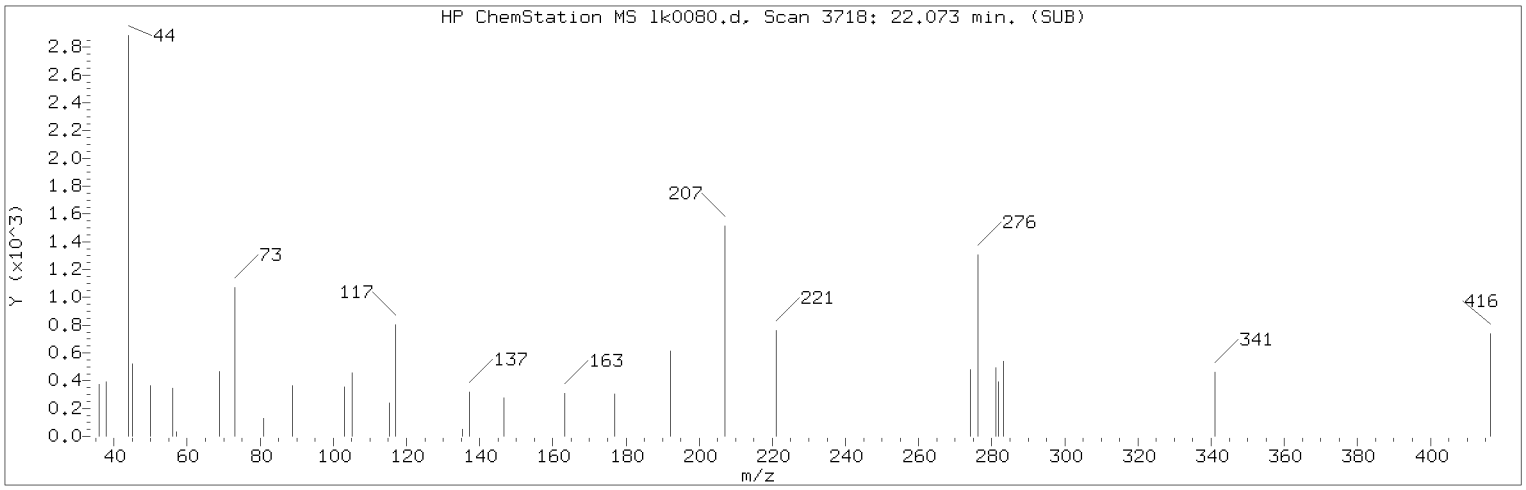
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:26 Unknown

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

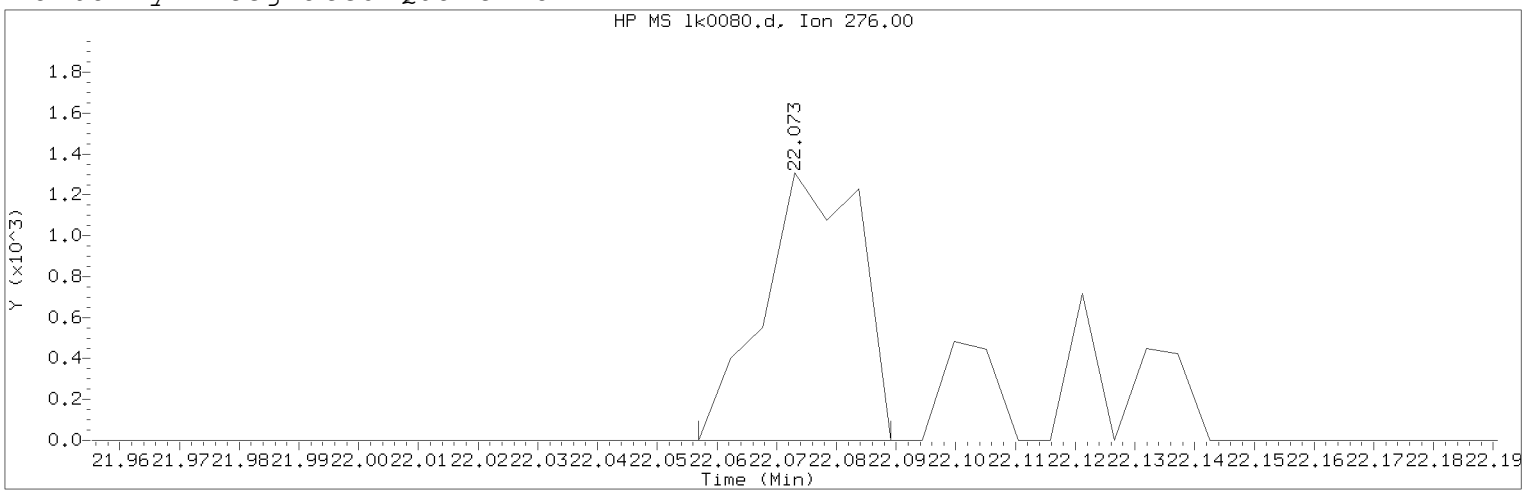
Compound Number : 216
Compound Name : Benzo(a)pyrene
Scan Number : 3391
Retention Time (minutes) : 20.324
Quant Ion : 252.00
Area : 2196
On-column Amount (ng/ul) : 0.0213
Integration start scan : 3388 Integration stop scan: 3408
Y at integration start : 0 Y at integration end: 0

Digitally signed by Ashley R. Transue on 11/04/2019 at 23:05.
Target 3.5 esignature used. FF48

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 23:04 art12405

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

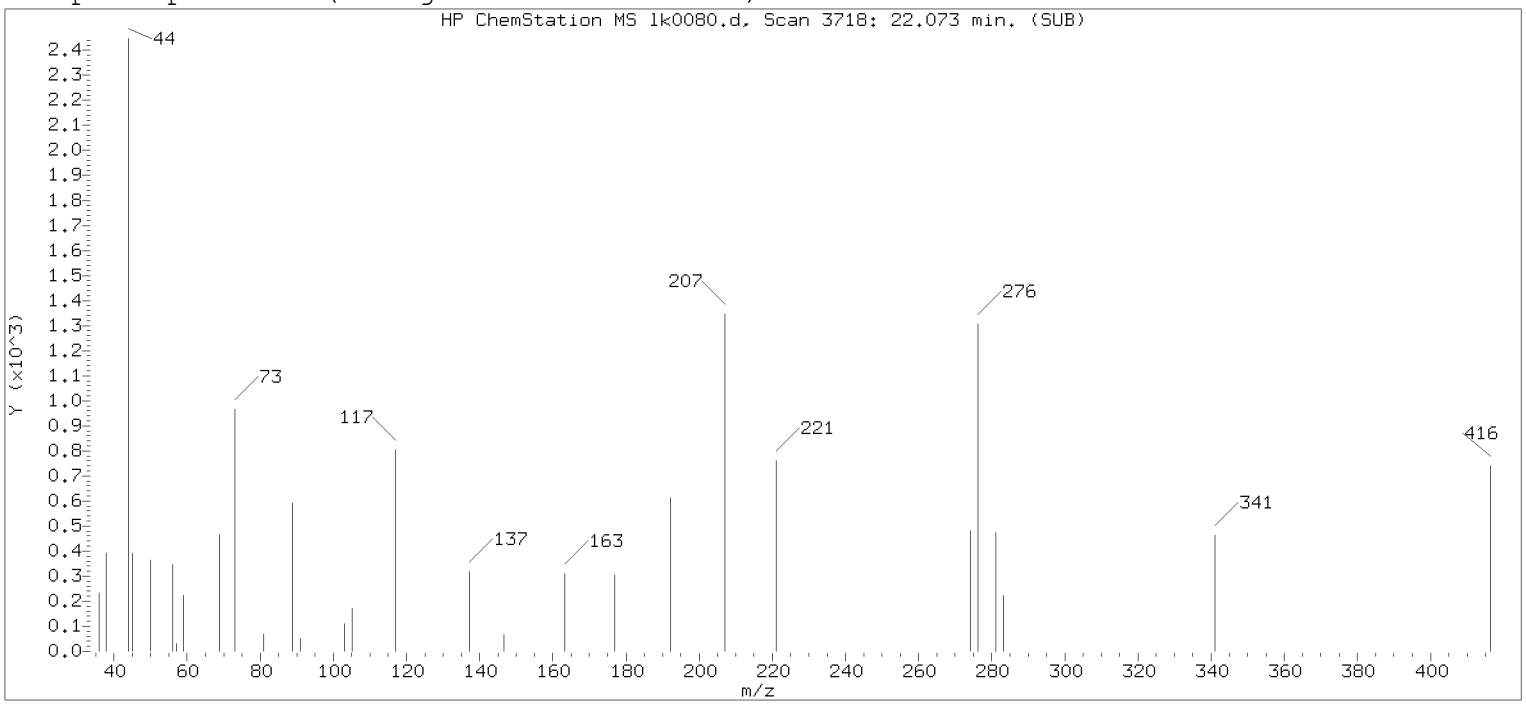
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3718
Retention Time (minutes) : 22.073
Quant Ion : 276.00
Area (flag) : 1465M
On-Column Amount (ng/ul) : 0.0174
Integration start scan : 3714 Integration stop scan: 3720
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

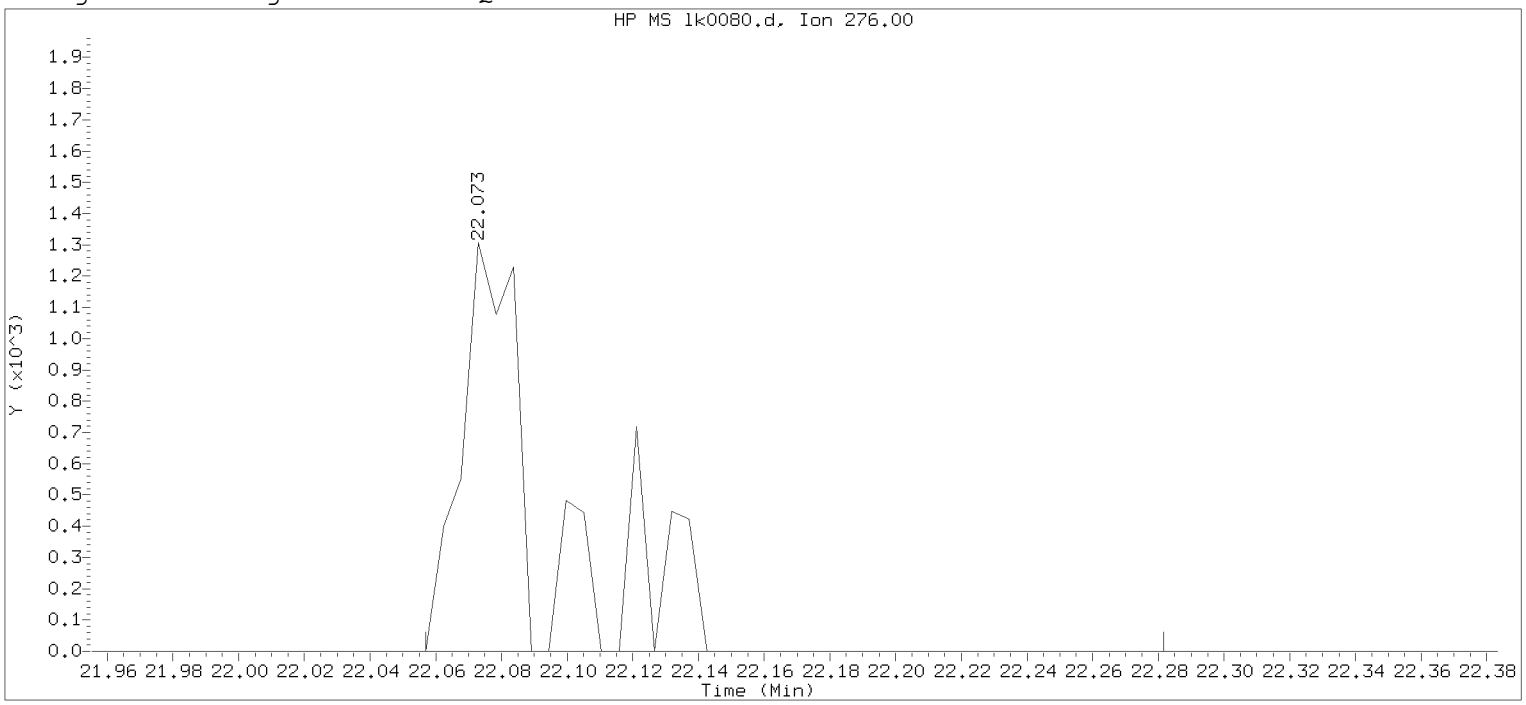
Analyst responsible for change: Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:05.
Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



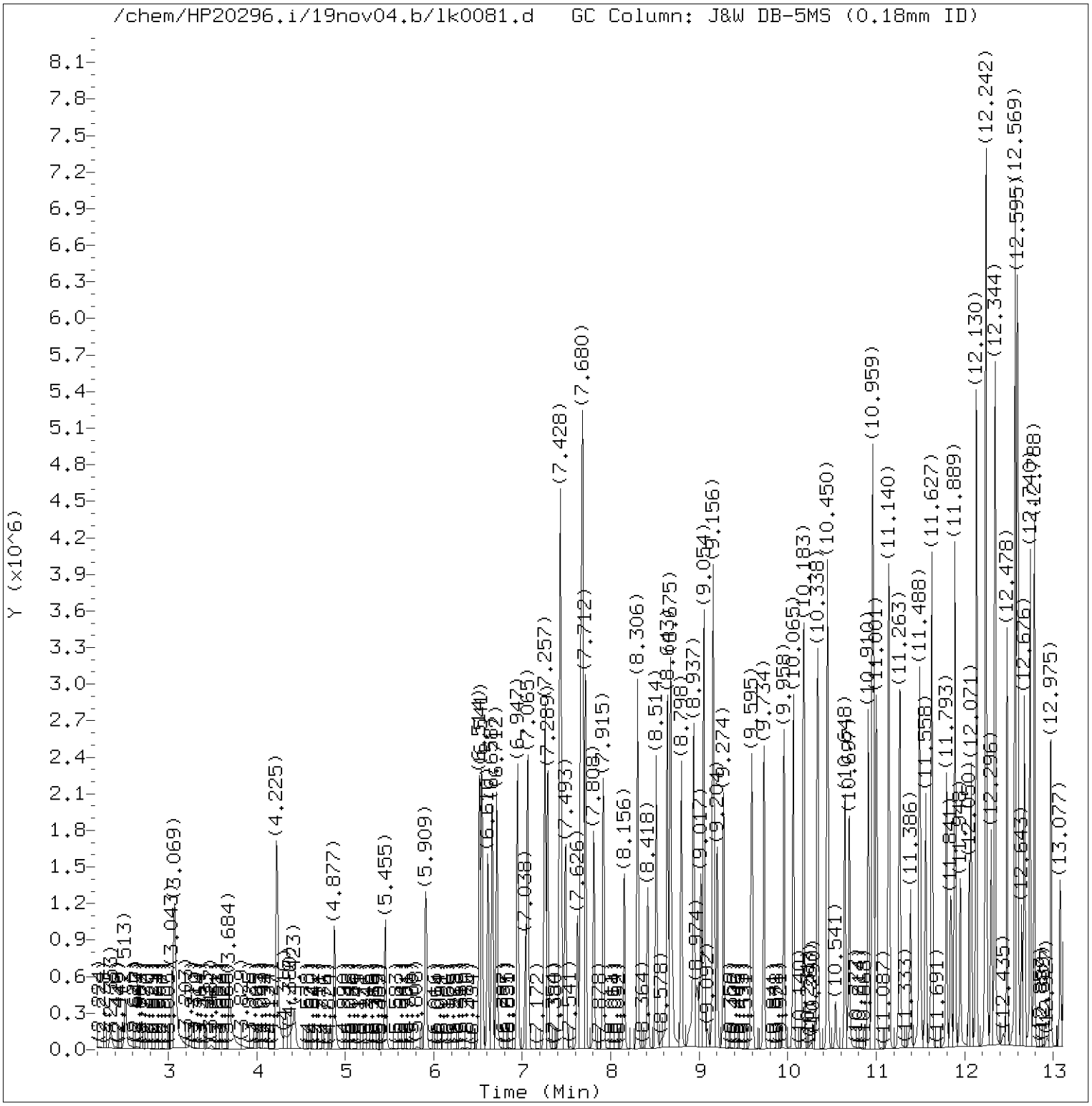
Data File: /chem/HP20296.i/19nov04.b/lk0080.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 18:52 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: pahmdlall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:26 Unknown

Sample Name: SSTD0.025 Lab Sample ID: RVSTD2709

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3718		
Retention Time (minutes)	: 22.073		
Quant Ion	: 276.00		
Area	: 2272		
On-column Amount (ng/ul)	: 0.0225		
Integration start scan	: 3714	Integration stop scan:	3756
Y at integration start	: 0	Y at integration end:	0

Digitally signed by Ashley R. Transue on 11/04/2019 at 23:05.
Target 3.5 esignature used. F48 Page 1101



Total Ion Chromatogram (TIC)

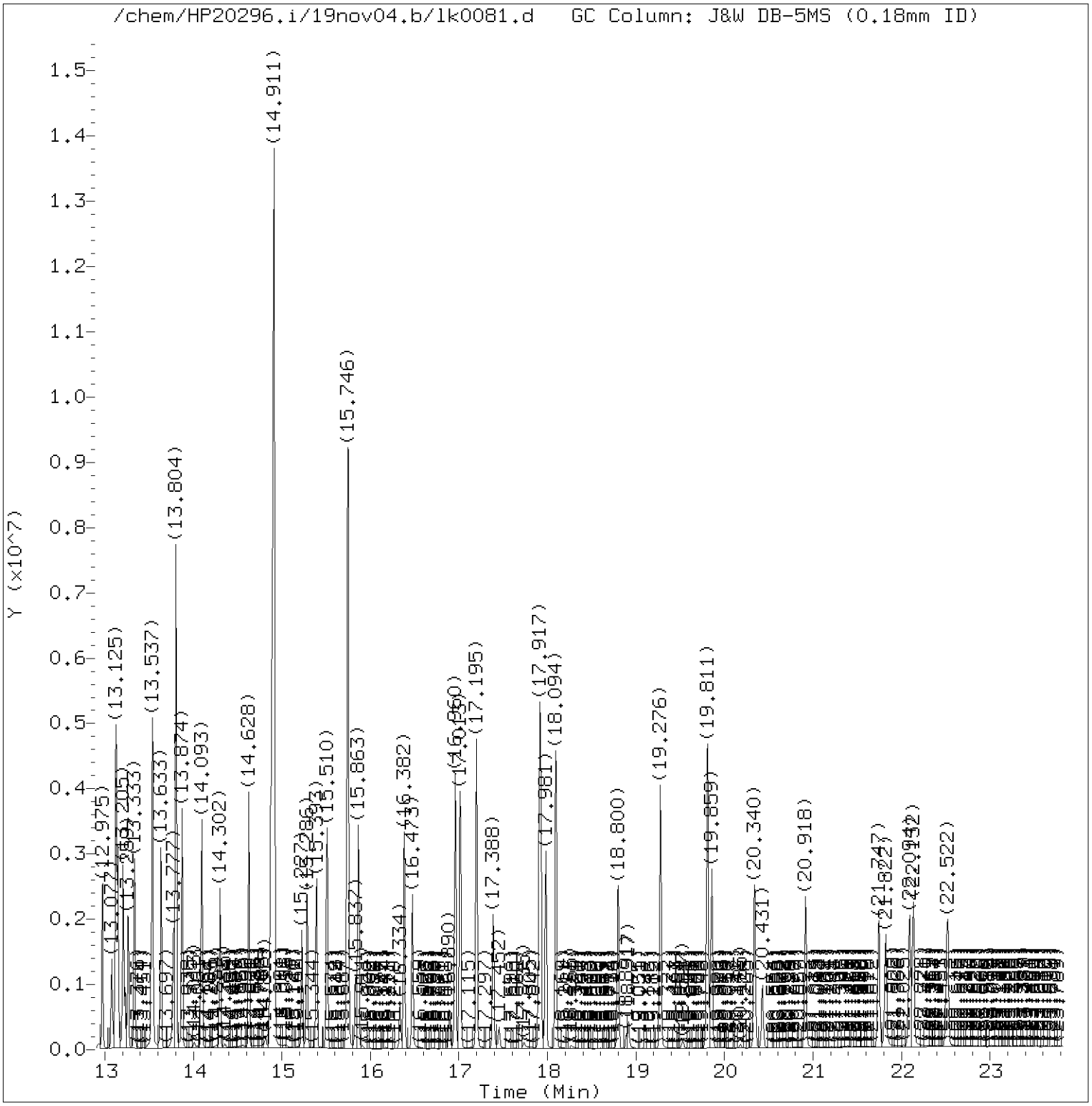
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.513	88	353915	12.279
5) N-Nitrosodimethylamine	(1)	3.048	74	652276	13.299
6) Pyridine	(1)	3.069	79	961697	11.531
8) 2-Picoline	(1)	4.225	93	1016639	12.937
9) N-Nitrosomethylethylamine	(1)	4.423	88	397047	12.149
10) Methyl methanesulfonate	(1)	4.877	80	562455	14.423
14) N-Nitrosodiethylamine	(1)	5.455	102	377750	12.692
43) Total Cresols	(1)	5.660	100	1450415	24.743
16) Ethyl methanesulfonate	(1)	5.909	109	375881	12.311
19) Phenol	(1)	6.514	94	1191076	12.448
20) Aniline	(1)	6.546	93	1255072	11.109
23) bis(2-Chloroethyl)ether	(1)	6.664	93	928276	12.536
24) 2-Chlorophenol	(1)	6.712	128	613038	12.362
25) 1,3-Dichlorobenzene	(1)	6.947	146	637861	12.611
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	148763	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	633165	12.538
28) Benzyl alcohol	(1)	7.257	108	518950	13.195
29) 1,2-Dichlorobenzene	(1)	7.289	146	619608	12.529
100) Isosafrole	(3)	7.383	162	461248	13.311
31) Indene	(1)	7.428	115	1296534	14.545
32) 2-Methylphenol	(1)	7.439	108	712452	12.709
35) bis(2-Chloroisopropyl)ether	(1)	7.493	45	1049943	12.683
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.493	45	1049943	12.683
36) N-Nitrosopyrrolidine	(1)	7.626	100	420575	12.434
37) Acetophenone	(1)	7.664	105	1155651	12.435
38) 4-Methylphenol	(1)	7.680	108	737963	12.034
39) N-Nitroso-di-n-propylamine	(1)	7.685	70	785709	12.895
40) N-Nitrosomorpholine	(1)	7.696	56	486585	12.591
41) o-Toluidine	(1)	7.717	106	1244341	12.463
44) Hexachloroethane	(1)	7.808	117	339031	12.941
46) Nitrobenzene	(2)	7.915	77	1047192	12.270
125) 2,4_2,6-Dinitrotoluenes	(3)	8.050	165	499623	26.289
50) N-Nitrosopiperidine	(2)	8.156	114	351540	12.387
52) Isophorone	(2)	8.306	82	1884264	12.374
53) 2-Nitrophenol	(2)	8.418	139	208065	11.357
59) O,O,O-Triethylphosphorothioate	(2)	8.643	198	205701	12.049
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	1158051	12.658
58) Benzoic acid	(2)	8.701	105	668051M	24.679
151) Diallate trans/cis	(4)	8.775	86	792088	12.181
62) 2,4-Dichlorophenol	(2)	8.798	162	412631	12.277

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	436520	12.457
68)*Naphthalene-d8	(2)	9.017	136	620468	5.000
69) Naphthalene	(2)	9.054	128	1834818	12.642
70) 4-Chloroaniline	(2)	9.156	127	750468	12.577
71) 2,6-Dichlorophenol	(2)	9.167	162	408248	12.913
72) Hexachloropropene	(2)	9.204	213	253934	15.248
74) Hexachlorobutadiene	(2)	9.274	225	213910	12.289
78) Quinoline	(2)	9.595	129	1151244	13.147
80) N-Nitrosodi-n-butylamine	(2)	9.734	84	682151	11.636
83) 4-Chloro-3-methylphenol	(2)	9.958	107	651548	12.390
85) Safrole	(2)	10.065	162	364412	12.161
86) 2-Methylnaphthalene	(2)	10.178	142	1086853	12.771
87) 1-Methylnaphthalene	(2)	10.338	142	990957	11.985
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.456	216	367631	12.515
91) cis-Isosafrole	(3)	10.541	162	52415	1.575
93) 2,4,6-Trichlorophenol	(3)	10.648	196	247331	13.058
95) 2,4,5-Trichlorophenol	(3)	10.697	196	272233	13.330
97) trans-Isosafrole	(3)	10.910	162	408833	11.737
98) 1,1'-Biphenyl	(3)	10.953	154	1227080	12.749
99) 2-Chloronaphthalene	(3)	10.969	162	956043	12.278
101) 1-Chloronaphthalene	(3)	11.001	162	844371	12.454
103) Diphenyl ether	(3)	11.140	170	561120	11.896
104) 2-Nitroaniline	(3)	11.151	138	322083	13.048
108) 1,4-Naphthoquinone	(3)	11.269	158	518865	16.405
109) 1,4-Dinitrobenzene	(3)	11.392	168	111025	12.933
110) Dimethylphthalate	(3)	11.488	163	1033887	12.812
111) 1,3-Dinitrobenzene	(3)	11.499	168	136834	13.028
113) 2,6-Dinitrotoluene	(3)	11.563	165	216991	13.029
114) Acenaphthylene	(3)	11.633	152	1388726	12.004
117) 3-Nitroaniline	(3)	11.793	138	298055	13.720
118)*Acenaphthene-d10	(3)	11.841	164	256762	5.000
119) Acenaphthene	(3)	11.889	153	991606	12.455
120) 2,4-Dinitrophenol	(3)	11.948	184	111705	22.819
121) 4-Nitrophenol	(3)	12.050	109	226655	12.859
122) Pentachlorobenzene	(3)	12.076	250	285557	11.915
124) Dibenzofuran	(3)	12.130	168	1238252	12.696
123) 2,4-Dinitrotoluene	(3)	12.135	165	282632	13.260
126) 1-Naphthylamine	(3)	12.237	143	1795487	22.300
127) 2,3,4,6-Tetrachlorophenol	(3)	12.301	232	166568	13.401
128) 2-Naphthylamine	(3)	12.344	143	1697978	21.890

* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
129) Diethylphthalate	(3)	12.478	149	1079293	12.358
131) Fluorene	(3)	12.569	166	977458	12.302
130) Thionazin	(3)	12.569	107	250759	11.305
132) 4-Chlorophenyl-phenylether	(3)	12.595	204	383830M	12.355
133) 5-Nitro-o-toluidine	(3)	12.595	152	288432	12.748
134) 4-Nitroaniline	(3)	12.606	138	290027	13.324
135) 4,6-Dinitro-2-methylphenol	(4)	12.643	198	81321	12.455
137) NDPA as diphenylamine	(4)	12.740	169	821966	12.469
136) N-Nitrosodiphenylamine	(4)	12.740	169	821966	12.469
139) 1,2-Diphenylhydrazine	(4)	12.788	77	2193844	13.290
142) Tetraethyldithiopyrophosphate	(4)	12.970	97	294325	12.082
144) 1,3,5-Trinitrobenzene	(4)	13.082	213	59705	0.000
145) Diallate (peak 1)	(4)	13.119	86	590606	8.716
146) Phorate	(4)	13.130	75	1287907	12.651
147) Phenacetin	(4)	13.146	108	804848	12.551
148) 4-Bromophenyl-phenylether	(4)	13.205	248	197903	12.538
149) Diallate (peak 2)	(4)	13.226	86	201482	3.465
150) Hexachlorobenzene	(4)	13.264	284	234426	12.534
152) Dimethoate	(4)	13.333	87	760311	12.603
154) Pentachlorophenol	(4)	13.526	266	120335	12.712
155) 4-Aminobiphenyl	(4)	13.537	169	1067964	22.064
156) Pentachloronitrobenzene	(4)	13.537	237	101129	13.242
157) Pronamide	(4)	13.633	173	462979	12.582
158)*Phenanthrene-d10	(4)	13.772	188	438808	5.000
159) Dinoseb	(4)	13.783	211	118518	11.757
160) Phenanthrene	(4)	13.804	178	1362148	12.561
162) Anthracene	(4)	13.874	178	1374348	12.805
168) Carbazole	(4)	14.093	167	1367355	12.716
169) Methyl parathion	(4)	14.302	109	506243	13.329
170) Di-n-butylphthalate	(4)	14.628	149	1994672	12.583
172) Parathion	(4)	14.868	109	313504	12.673
173) 4-Nitroquinoline-1-oxide	(4)	14.917	190	1815917	140.661
227) Total PAHs	(6)	15.000	100	22389635	226.573
176) Isodrin	(4)	15.286	193	160899	12.216
178) Fluoranthene	(4)	15.510	202	1374950	12.601
179) Benzidine	(5)	15.751	184	4325593	54.147
180)*Pyrene-d10	(5)	15.831	212	424987	5.000
182) Pyrene	(5)	15.863	202	1422963	11.903
187) p-Dimethylaminoazobenzene	(5)	16.382	225	259888	15.441
190) Chlorobenzilate	(5)	16.473	139	642436	12.077

M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

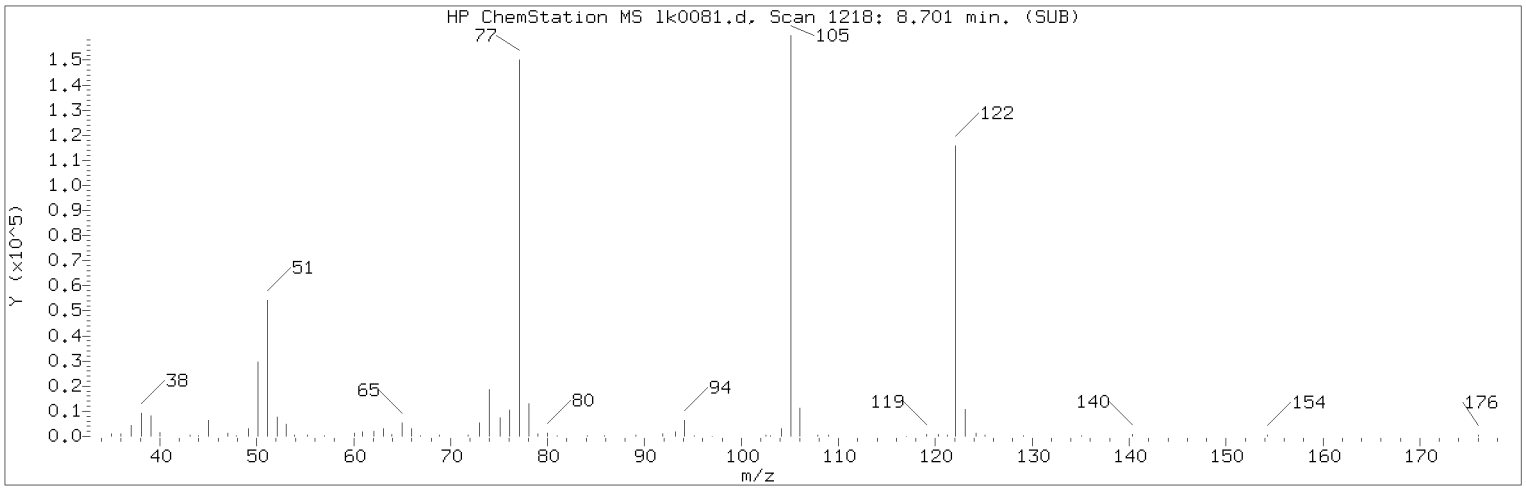
Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
192) 3,3'-Dimethylbenzidine	(5)	16.960	212	1525115	20.533
193) Butylbenzylphthalate	(5)	17.013	149	929027	12.876
196) 2-Acetylaminofluorene	(5)	17.388	181	585229	11.884
198) 3,3'-Dichlorobenzidine	(5)	17.906	252	446685	11.471
200) Benzo(a)anthracene	(5)	17.917	228	1273838	12.972
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.923	231	249235	12.640
201) Chrysene	(5)	17.981	228	1220868	12.200
204) bis(2-Ethylhexyl)phthalate	(5)	18.094	149	1400506	13.129
208) 6-Methylchrysene	(5)	18.800	242	832827	11.875
210) Di-n-octylphthalate	(6)	19.276	149	2361004	12.851
211) Benzo(b)fluoranthene	(6)	19.805	252	1264410	12.800
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.811	256	536686	12.800
213) Benzo(k)fluoranthene	(6)	19.859	252	1246429	12.555
216) Benzo(a)pyrene	(6)	20.340	252	1191578	12.944
218)*Perylene-d12	(6)	20.431	264	387958	5.000
220) 3-Methylcholanthrene	(6)	20.918	268	620584	14.801
222) Dibenz(a,h)acridine	(6)	21.747	279	974257	12.669
223) Dibenz(a,j)acridine	(6)	21.822	279	908967	11.895
224) Indeno(1,2,3-cd)pyrene	(6)	22.094	276	1096439M	13.059
225) Dibenz(a,h)anthracene	(6)	22.132	278	1159431	13.205
226) Benzo(g,h,i)perylene	(6)	22.522	276	1131815	12.810

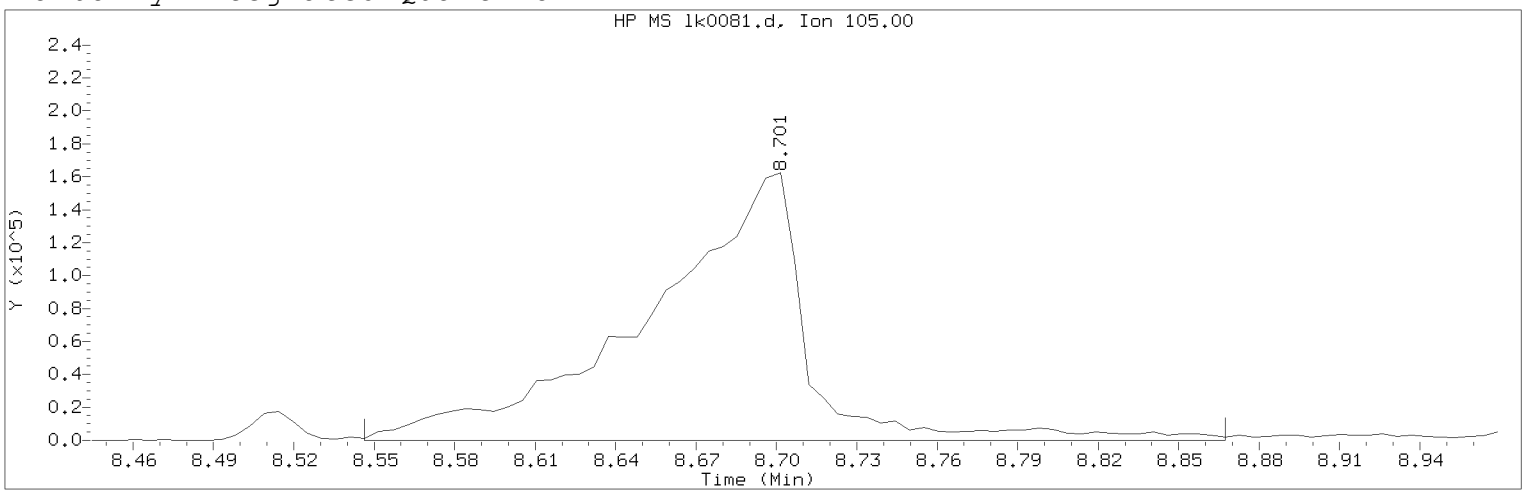
M = Compound was manually integrated.
* = Compound is an internal standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

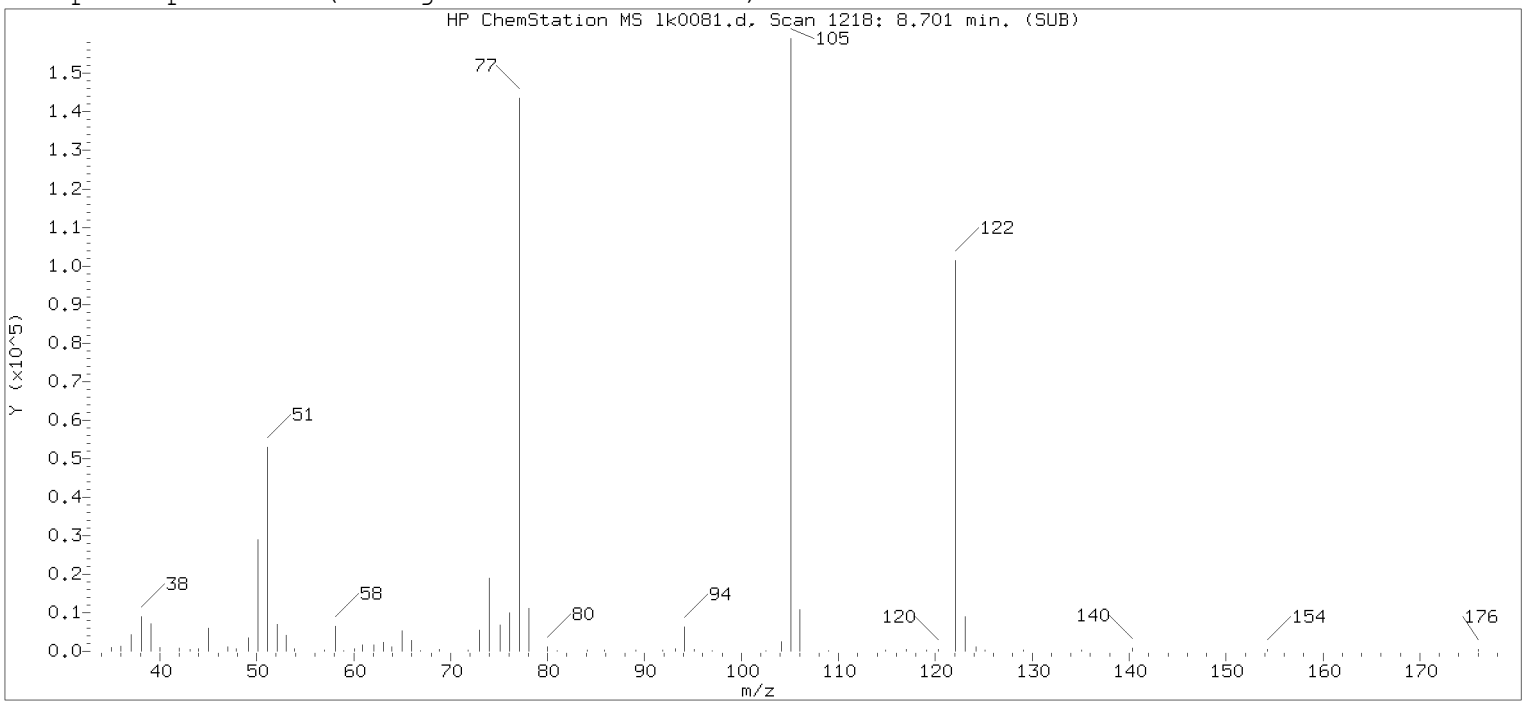
Compound Number : 58
Compound Name : Benzoic acid
Scan Number : 1218
Retention Time (minutes) : 8.701
Quant Ion : 105.00
Area (flag) : 668051M
On-Column Amount (ng/ul) : 24.6786
Integration start scan : 1188 Integration stop scan: 1248
Y at integration start : 150 Y at integration end: 150

Reason for manual integration: improper integration

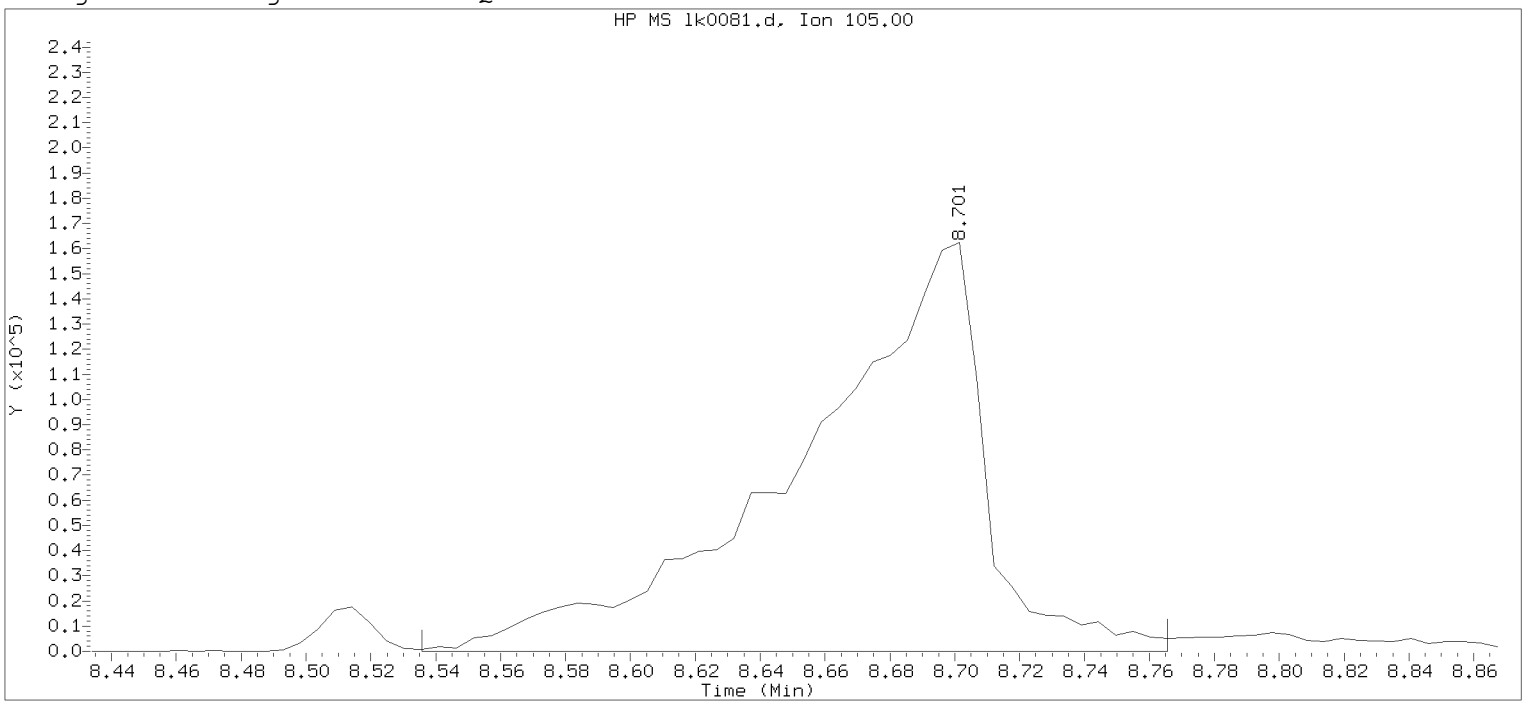
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

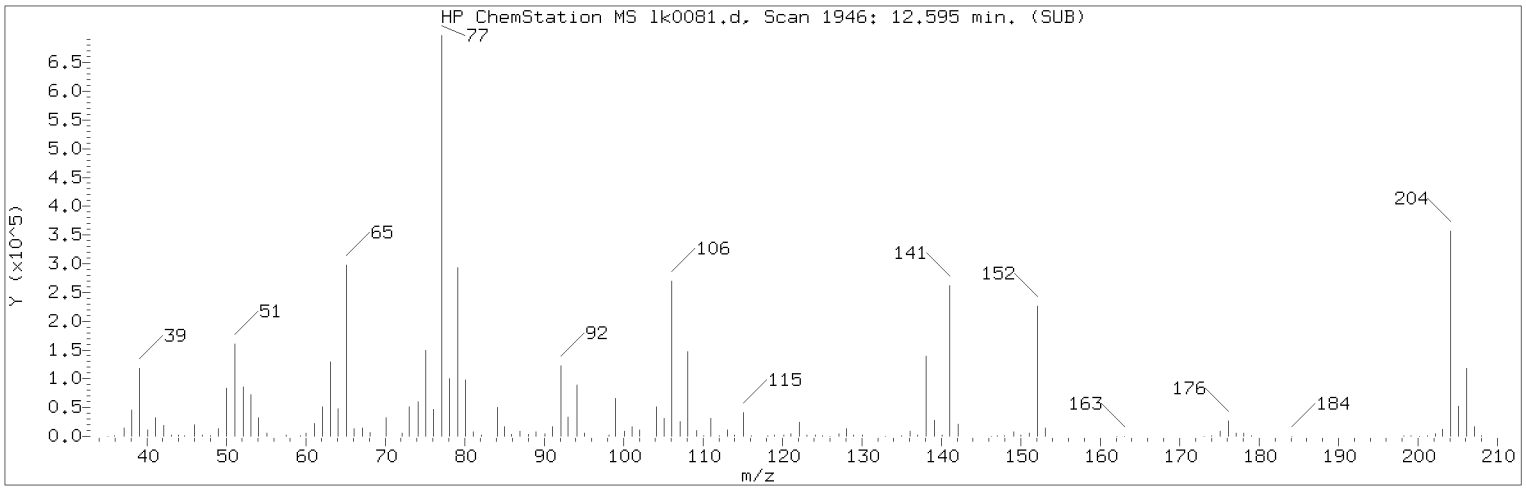
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:54 Unknown

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

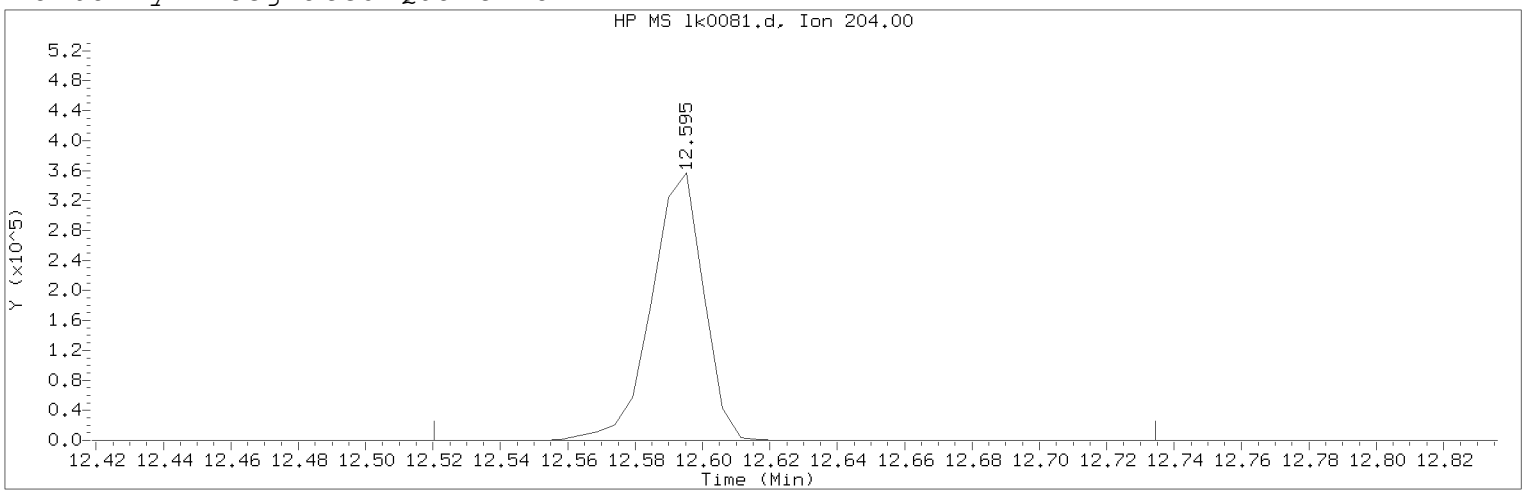
Compound Number	: 58		
Compound Name	: Benzoic acid		
Scan Number	: 1218		
Retention Time (minutes)	: 8.701		
Quant Ion	: 105.00		
Area	: 642164		
On-column Amount (ng/ul)	: 31.7062		
Integration start scan	: 1186	Integration stop scan:	1229
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user RAF48 Page 1109

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

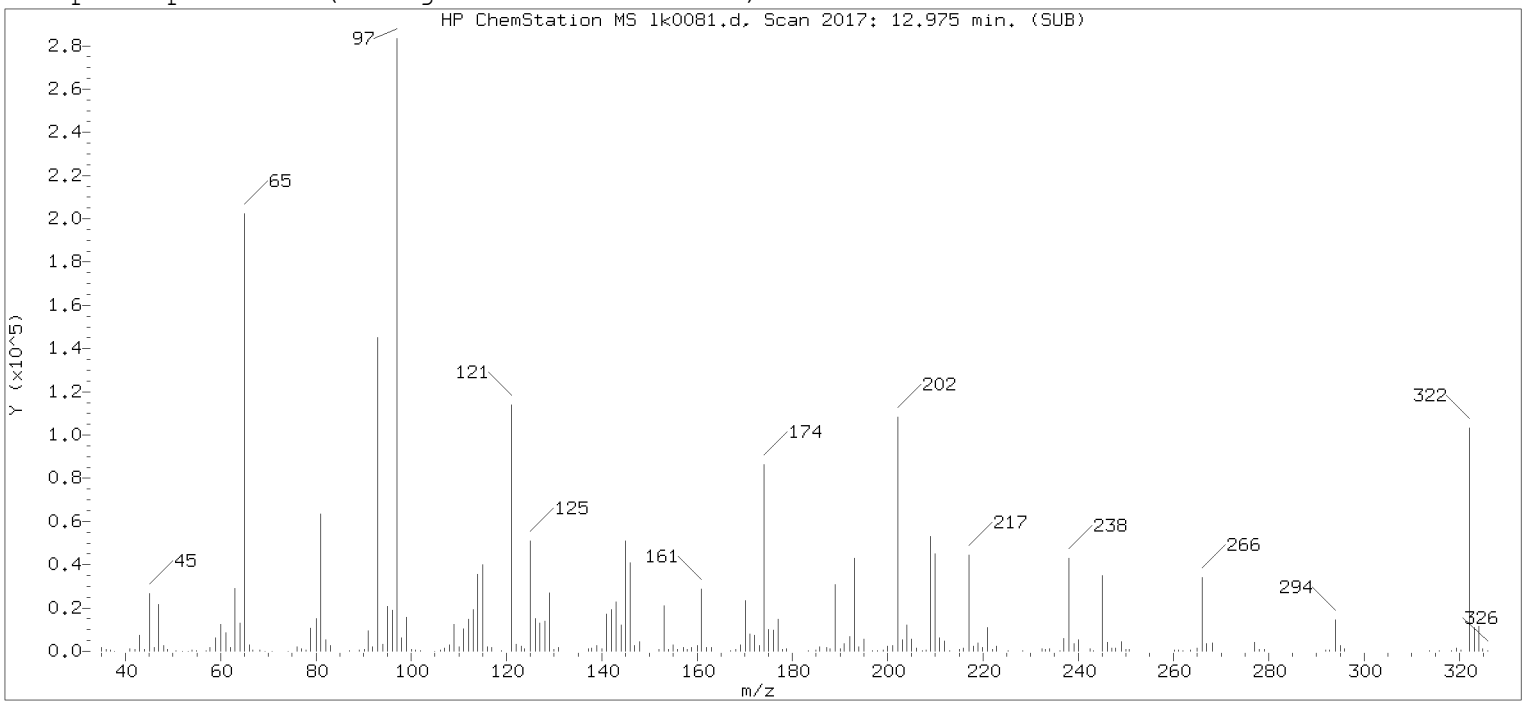
Compound Number : 132
Compound Name : 4-Chlorophenyl-phenylether
Scan Number : 1946
Retention Time (minutes) : 12.595
Quant Ion : 204.00
Area (flag) : 383830M
On-Column Amount (ng/ul) : 12.3554
Integration start scan : 1931 Integration stop scan: 1971
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

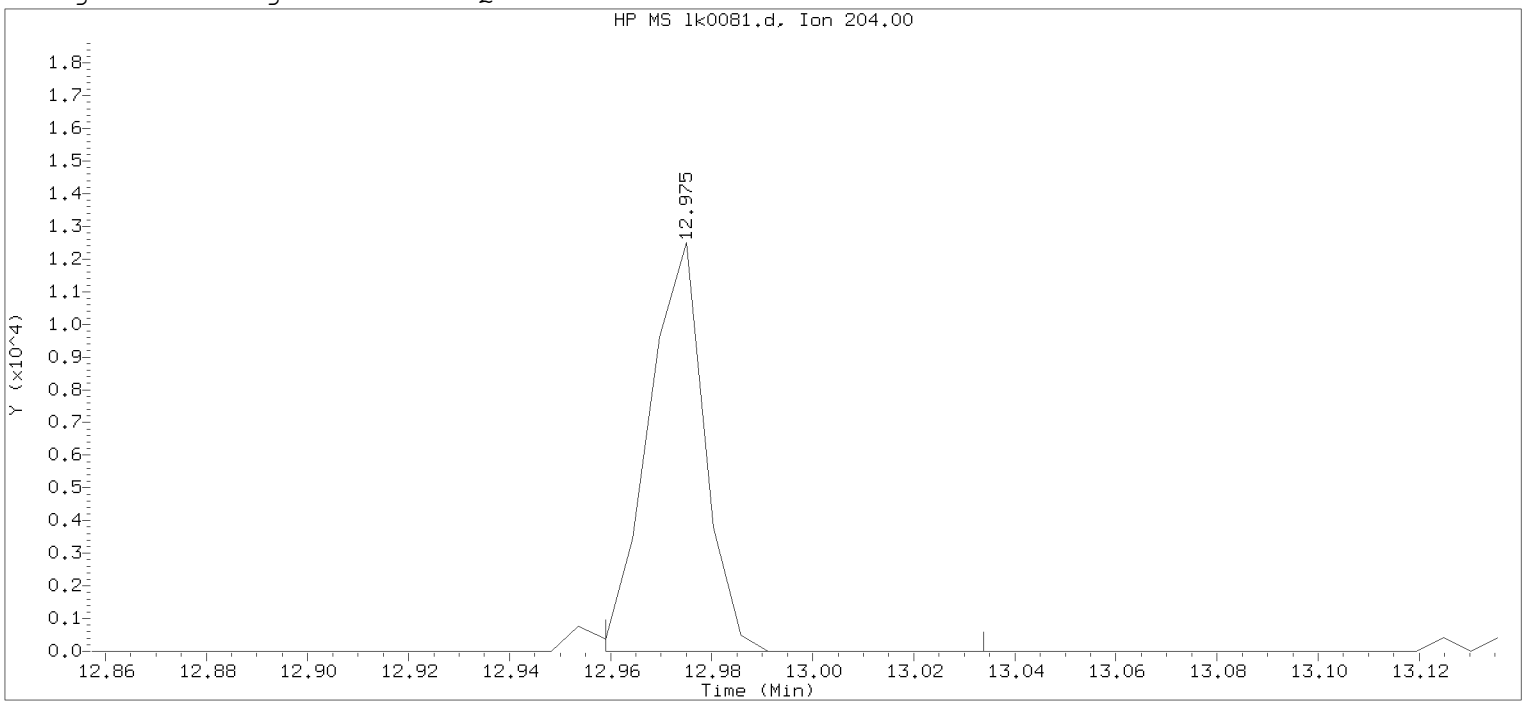
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

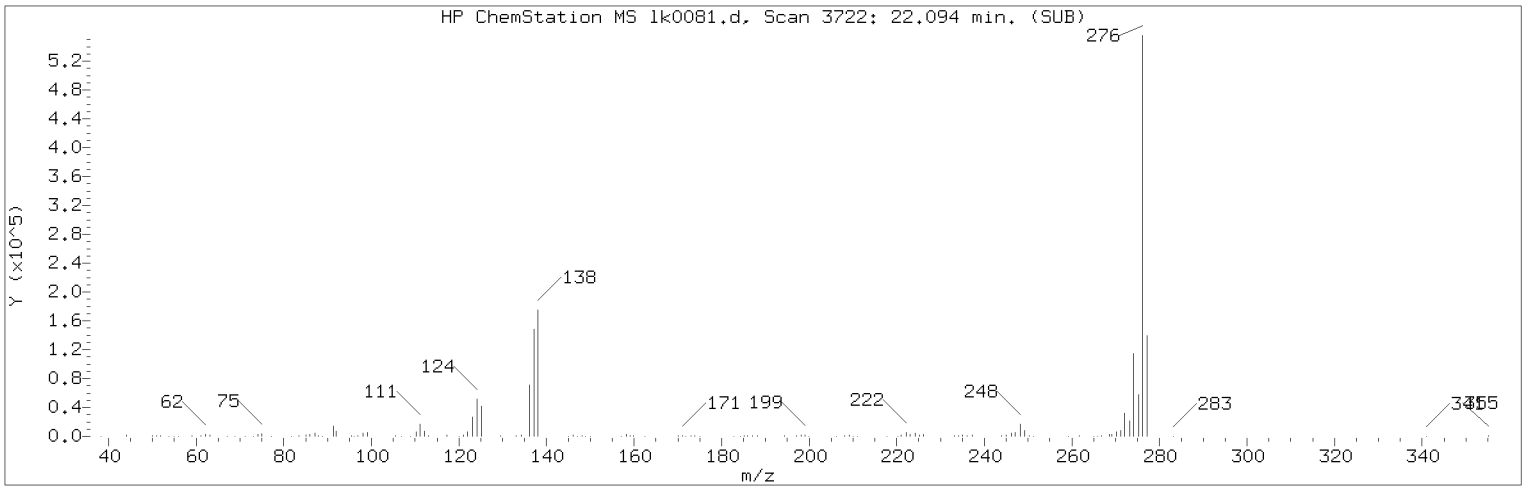
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:54 Unknown

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

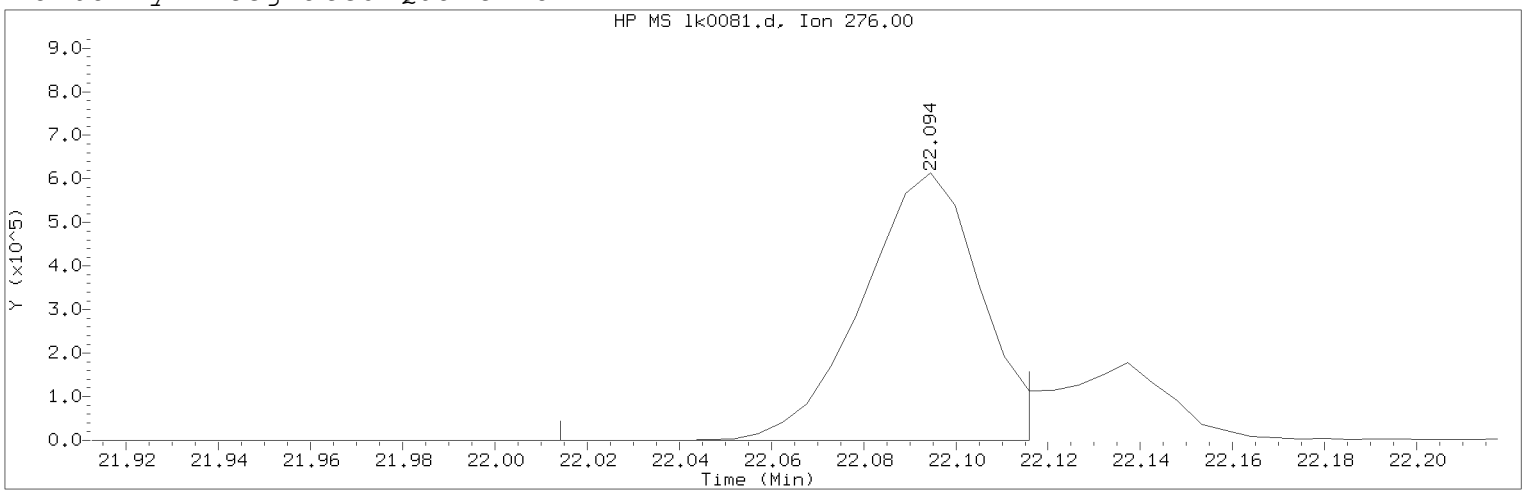
Compound Number	: 132		
Compound Name	: 4-Chlorophenyl-phenylether		
Scan Number	: 2017		
Retention Time (minutes)	: 12.975		
Quant Ion	: 204.00		
Area	: 9641		
On-column Amount (ng/ul)	: 0.2742		
Integration start scan	: 2013	Integration stop scan:	2027
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature used. FF-48 Page 1111

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icv1
Calibration date and time: 05-NOV-2019 14:54
Date, time and analyst ID of latest file update: 05-Nov-2019 14:54 whs02991

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

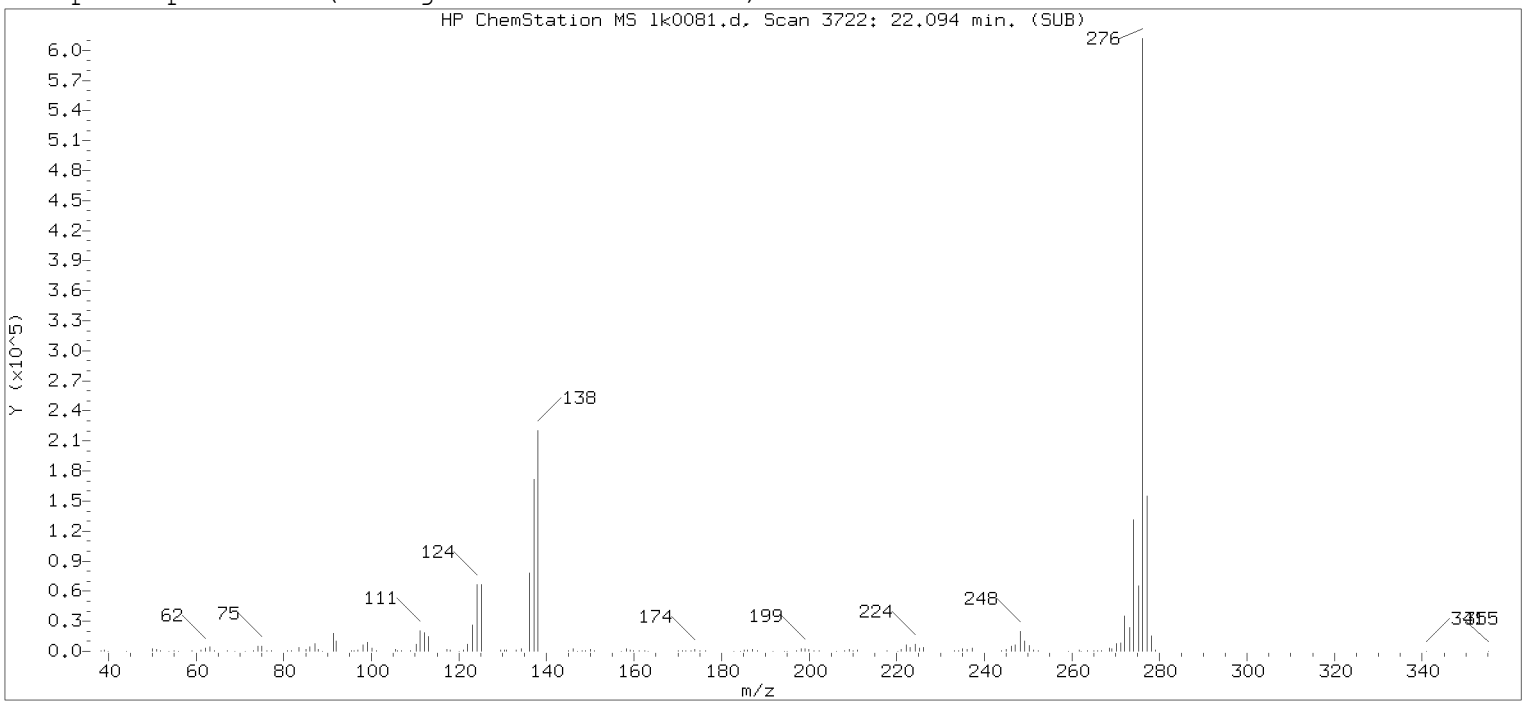
Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3722		
Retention Time (minutes)	: 22.094		
Quant Ion	: 276.00		
Area (flag)	: 1096439M		
On-Column Amount (ng/ul)	: 13.0589		
Integration start scan	: 3706	Integration stop scan:	3725
Y at integration start	: 0	Y at integration end:	0

Reason for manual integration: improper integration

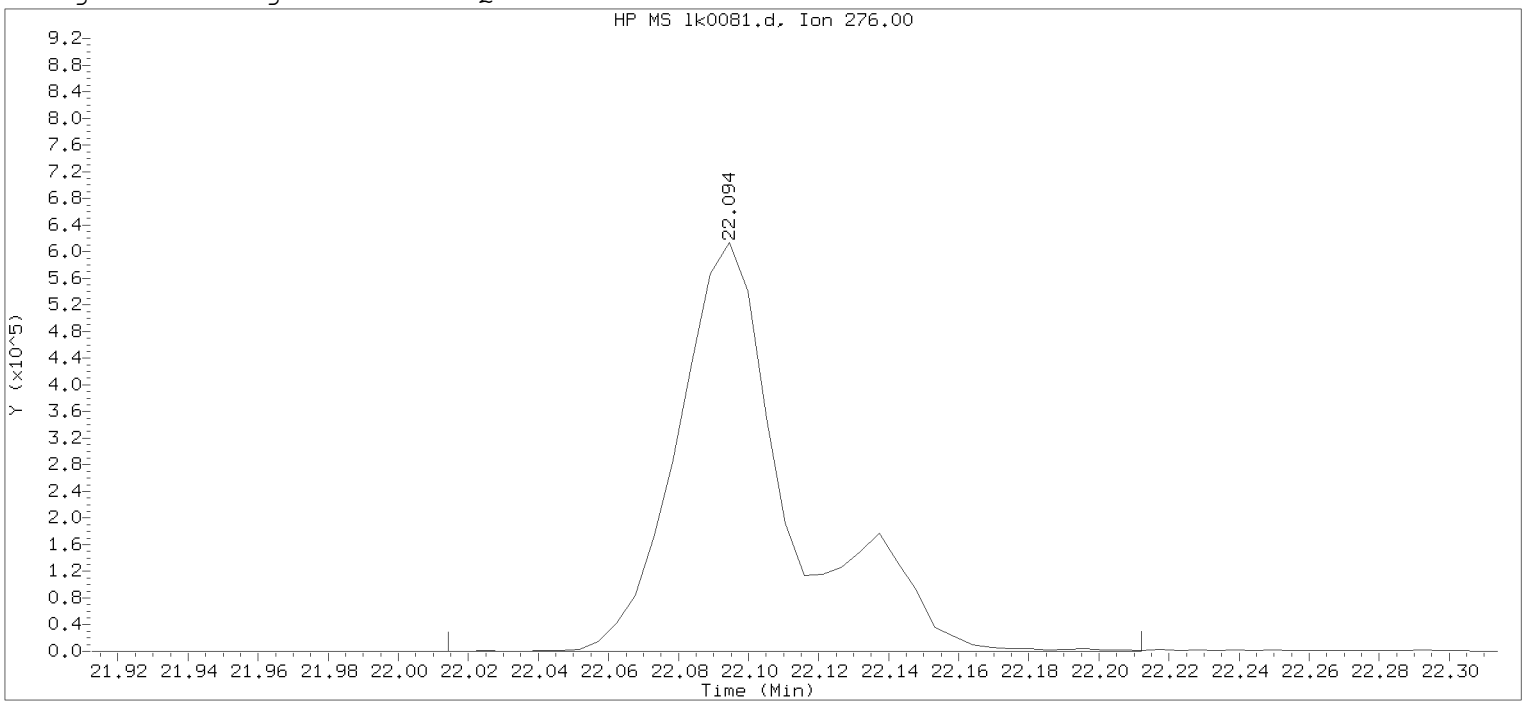
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 14:58.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 15:17.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



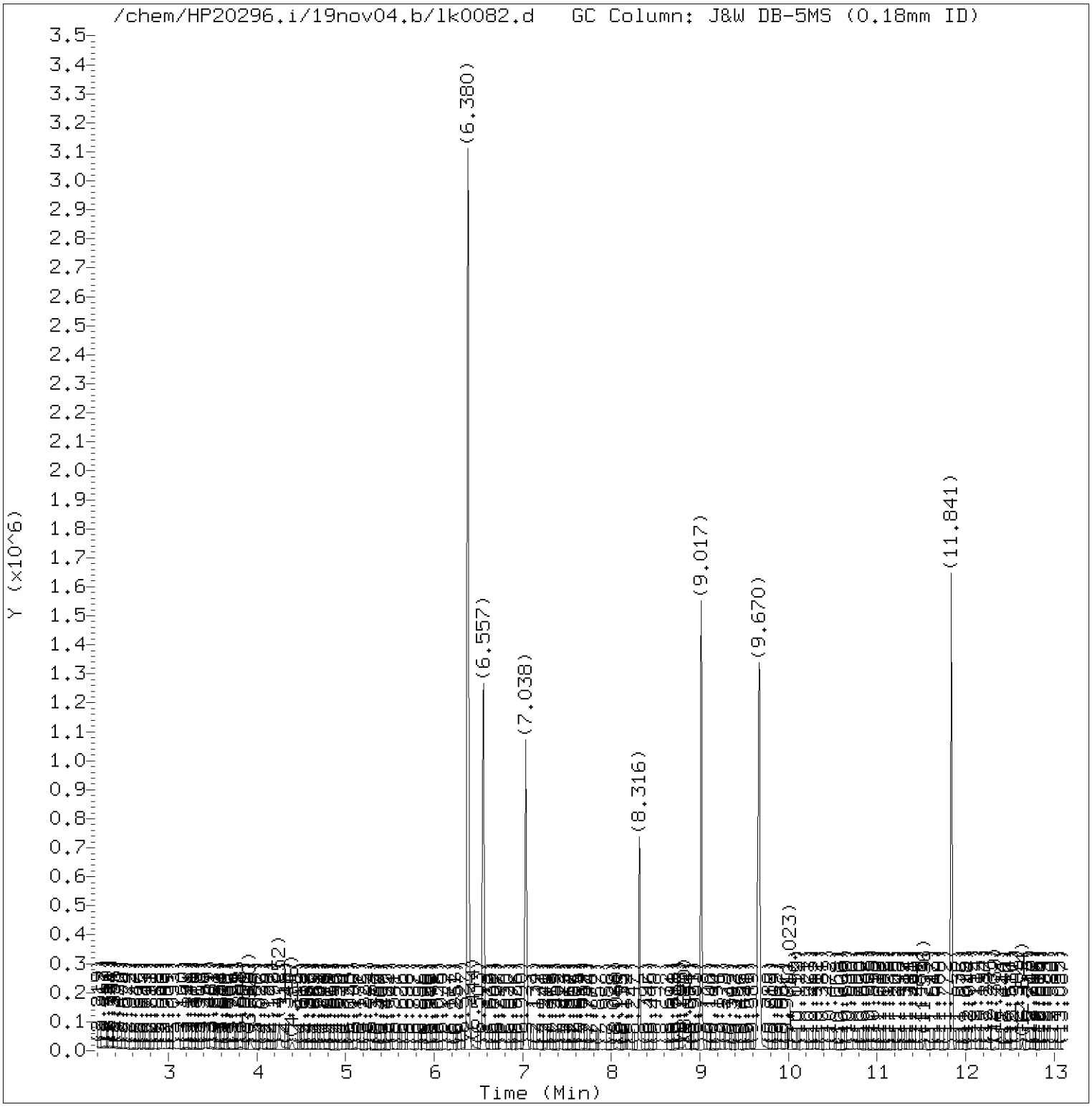
Data File: /chem/HP20296.i/19nov04.b/lk0081.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:21 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: icvall1
Calibration date and time: 04-NOV-2019 18:27
Date, time and analyst ID of latest file update: 04-Nov-2019 19:54 Unknown

Sample Name: SSTD12.5 Lab Sample ID: RVICV3089

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3722		
Retention Time (minutes)	: 22.094		
Quant Ion	: 276.00		
Area	: 1381400		
On-column Amount (ng/ul)	: 13.7484		
Integration start scan	: 3706	Integration stop scan:	3743
Y at integration start	: 0	Y at integration end:	0

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Target 3.5 esignature user RAF48 Page 1113 of 1181



Total Ion Chromatogram (TIC)

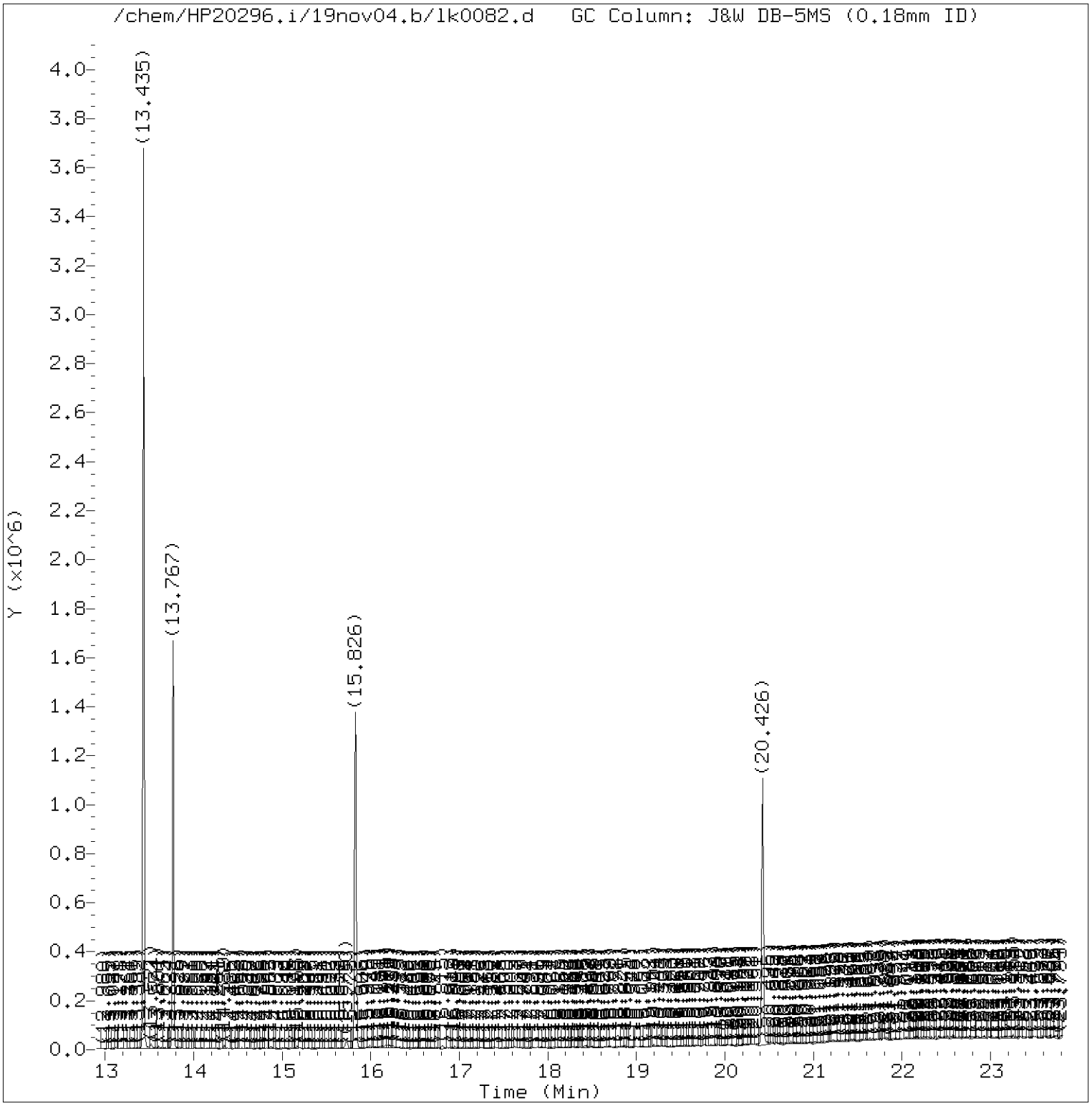
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0082.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:50 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:05 art12405

Sample Name: SSTD12.5 Lab Sample ID: RVBASICV2399

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:08.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0082.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:50 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:05 art12405

Sample Name: SSTD12.5 Lab Sample ID: RVBASICV2399

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:08.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0082.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 19:50 Analyst ID: knb25316

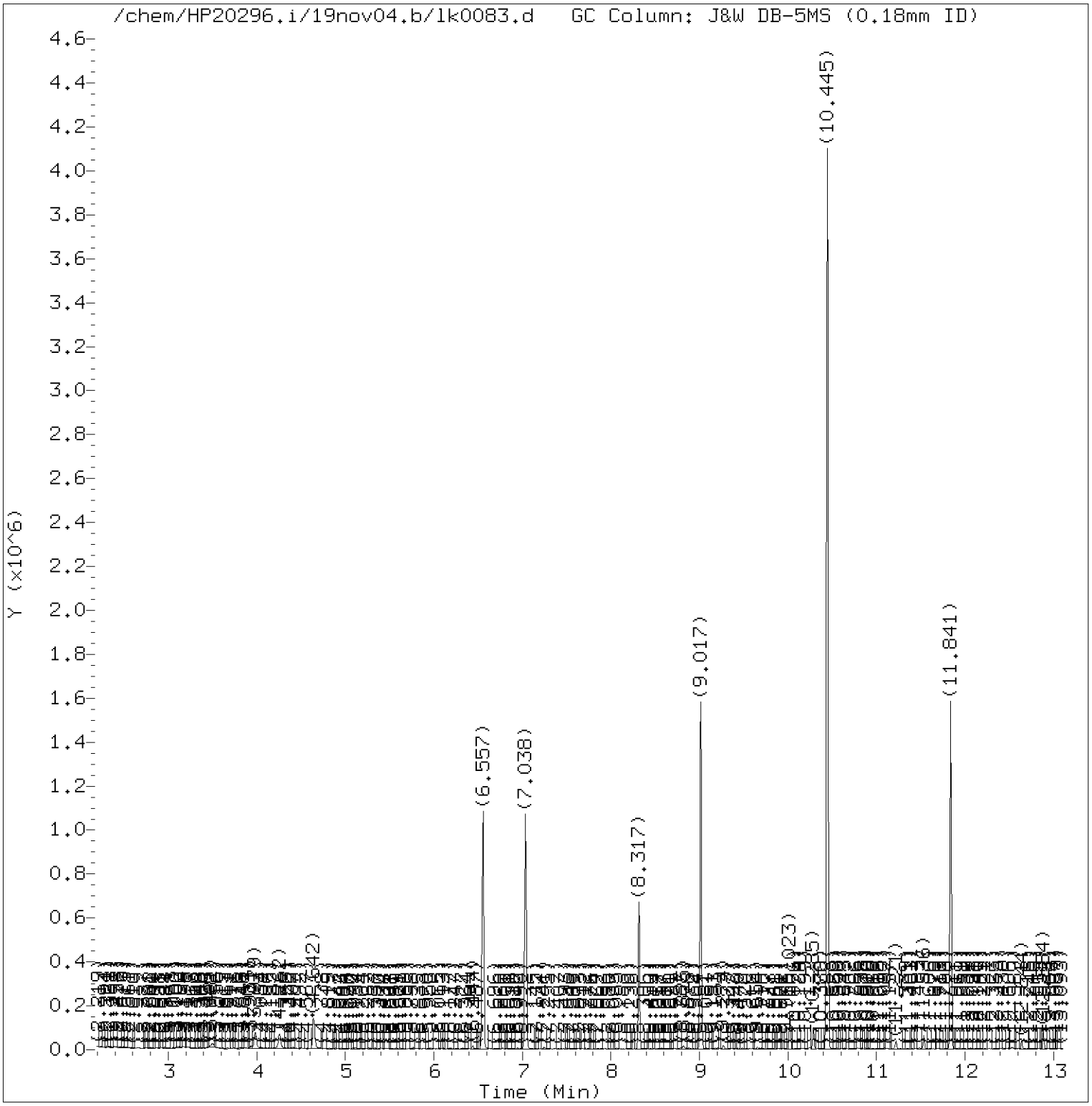
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: basicvall1
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:05 art12405

Sample Name: SSTD12.5 Lab Sample ID: RVBASICV2399

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
17) Benzaldehyde	(1)	6.380	77	1059451	15.464
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	180767	5.000
68)*Naphthalene-d8	(2)	9.017	136	733971	5.000
79) Caprolactam	(2)	9.675	113	221909	12.624
118)*Acenaphthene-d10	(3)	11.841	164	310214	5.000
153) Atrazine	(4)	13.435	200	289091	13.111
158)*Phenanthrene-d10	(4)	13.767	188	548693	5.000
180)*Pyrene-d10	(5)	15.826	212	490724	5.000
218)*Perylene-d12	(6)	20.426	264	448514	5.000

* = Compound is an internal standard.

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:08.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

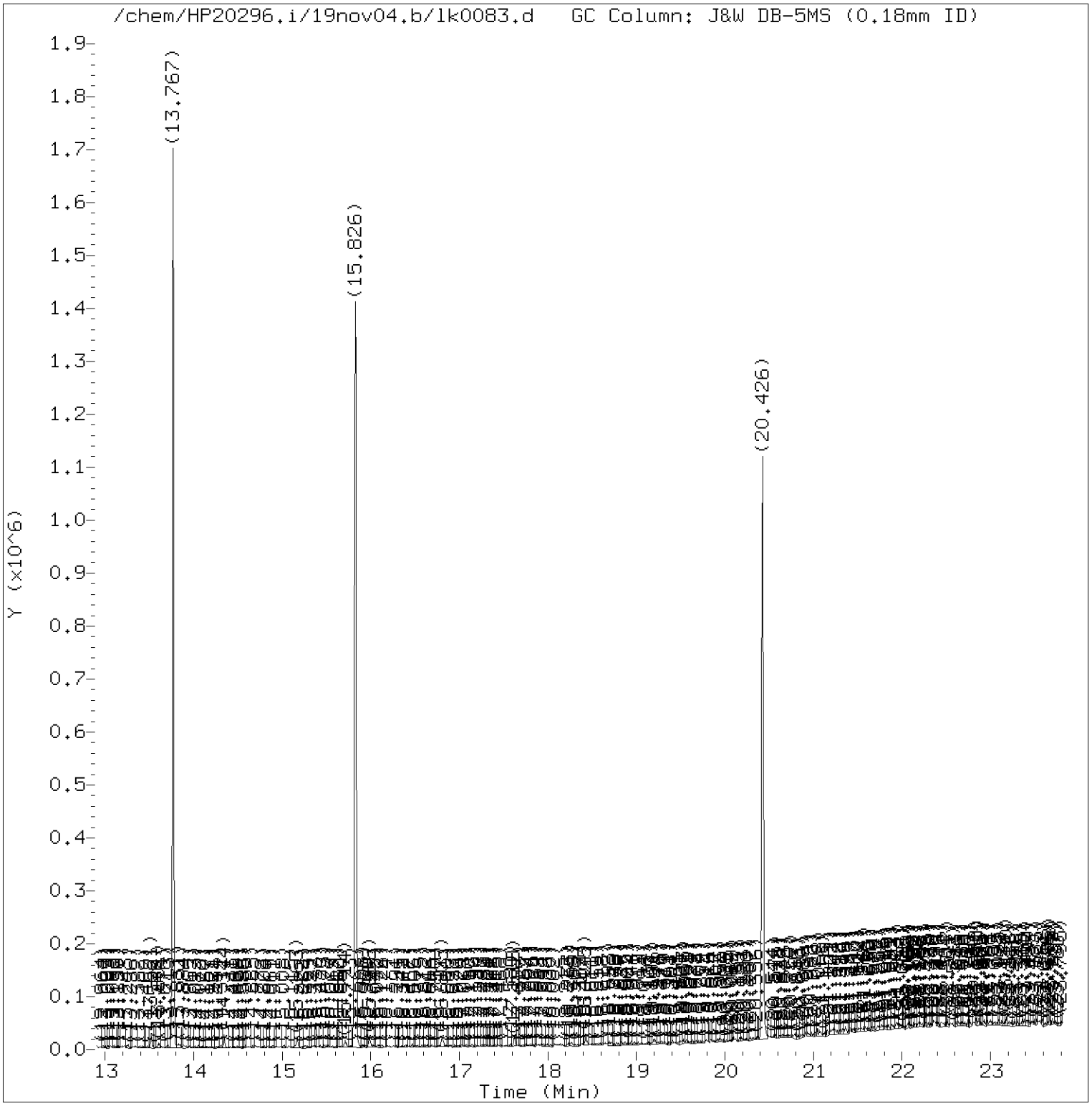
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0083.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:19 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:14 art12405

Sample Name: SSTD25 Lab Sample ID: RVHCCPDICV2959

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:16.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0083.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:19 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:14 art12405

Sample Name: SSTD25 Lab Sample ID: RVHCCPDICV2959

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:16.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0083.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:19 Analyst ID: knb25316

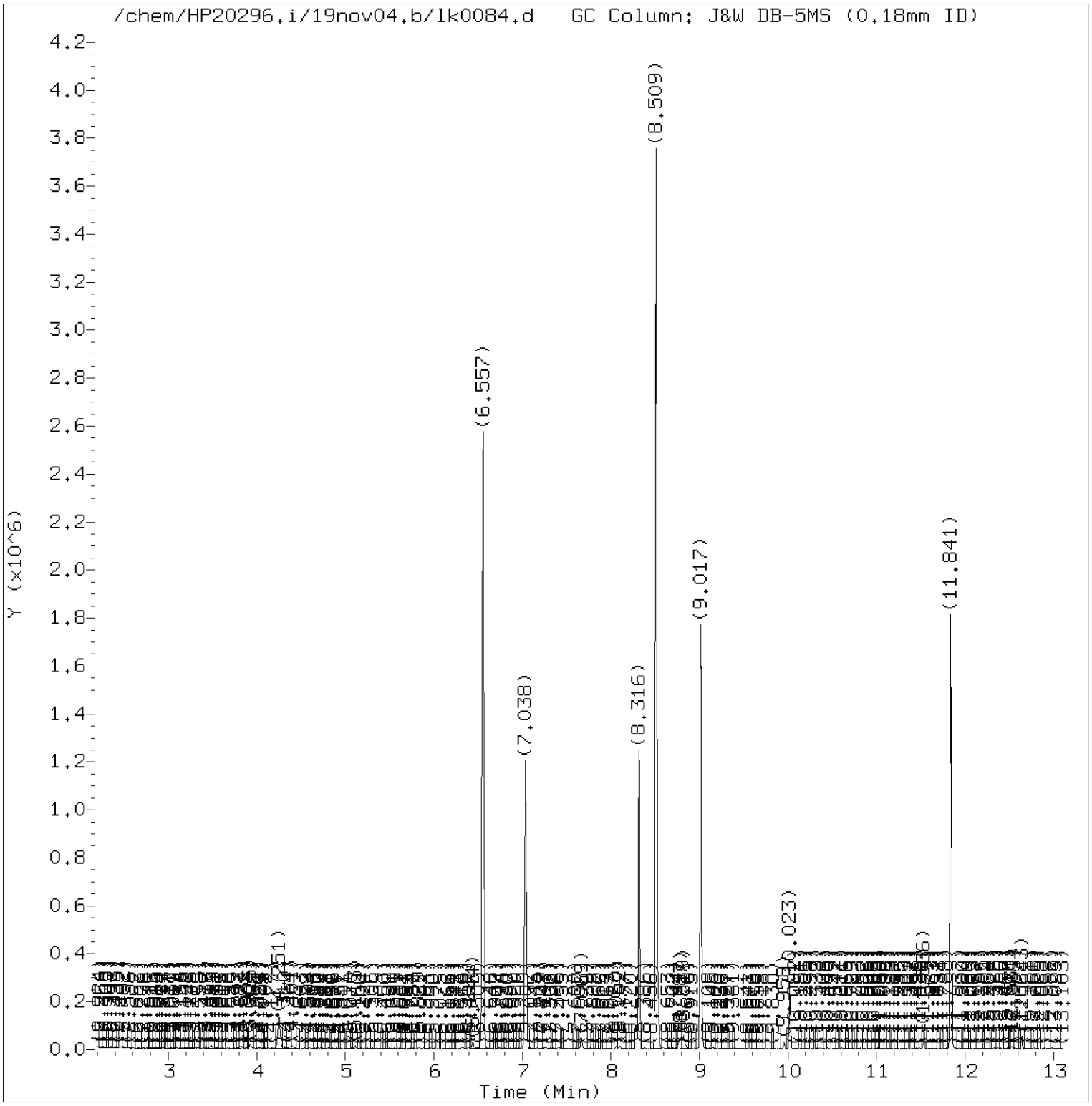
Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: hccpd
Calibration date and time: 04-NOV-2019 22:55
Date, time and analyst ID of latest file update: 04-Nov-2019 23:14 art12405

Sample Name: SSTD25 Lab Sample ID: RVHCCPDICV2959

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	187281	5.000
68)*Naphthalene-d8	(2)	9.017	136	754713	5.000
88) Hexachlorocyclopentadiene	(3)	10.445	237	556104	27.394
118)*Acenaphthene-d10	(3)	11.841	164	305150	5.000
158)*Phenanthrene-d10	(4)	13.767	188	545824	5.000
180)*Pyrene-d10	(5)	15.826	212	508351	5.000
218)*Perylene-d12	(6)	20.426	264	429396	5.000

* = Compound is an internal standard.

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:16.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

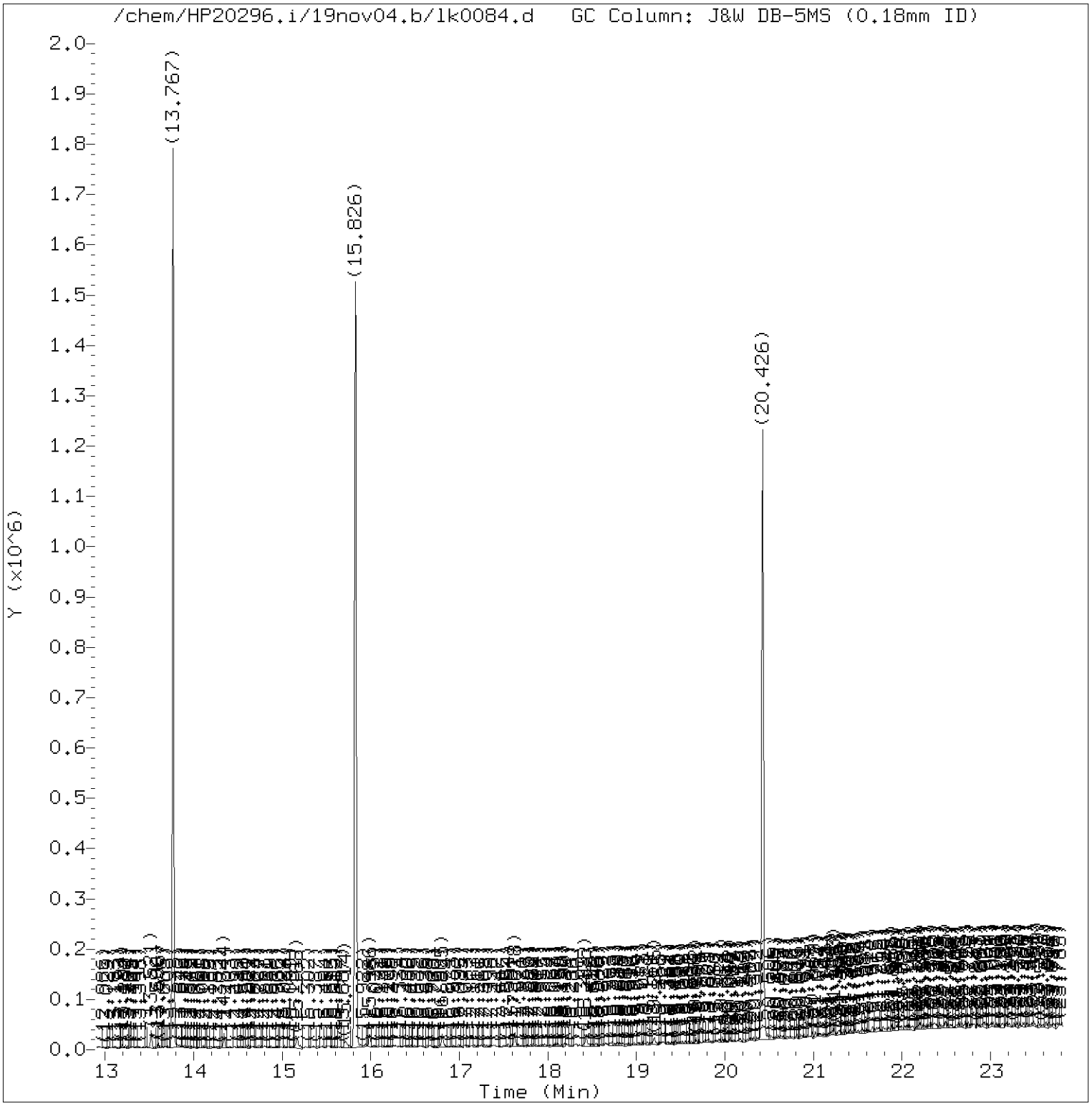
Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0084.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:48 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: dmp
Calibration date and time: 04-NOV-2019 23:20
Date, time and analyst ID of latest file update: 04-Nov-2019 23:20 art12405

Sample Name: SSTD25 Lab Sample ID: RVDMPICV2609

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:20.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0084.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:48 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: dmp
Calibration date and time: 04-NOV-2019 23:20
Date, time and analyst ID of latest file update: 04-Nov-2019 23:20 art12405

Sample Name: SSTD25 Lab Sample ID: RVDMPICV2609

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:20.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov04.b/lk0084.d Instrument ID: HP20296.i
Injection date and time: 04-NOV-2019 20:48 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov04.b/rv8270d.m Sublist used: dmp
Calibration date and time: 04-NOV-2019 23:20
Date, time and analyst ID of latest file update: 04-Nov-2019 23:20 art12405

Sample Name: SSTD25 Lab Sample ID: RVDMPICV2609

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	196338	5.000
55) 2,4-Dimethylphenol	(2)	8.509	107	998545	11.491
68)*Naphthalene-d8	(2)	9.017	136	842097	5.000
118)*Acenaphthene-d10	(3)	11.841	164	338866	5.000
158)*Phenanthrene-d10	(4)	13.767	188	599868	5.000
180)*Pyrene-d10	(5)	15.826	212	563469	5.000
218)*Perylene-d12	(6)	20.426	264	502467	5.000

* = Compound is an internal standard.

Digitally signed by Ashley R. Transue
on 11/04/2019 at 23:20.
Target 3.5 esignature user ID: art12405

Data File: /chem/HP20296.i/19nov05.b/lk0090.d

Page 1

Date : 05-NOV-2019 06:58

Client ID: DFTPP12.5

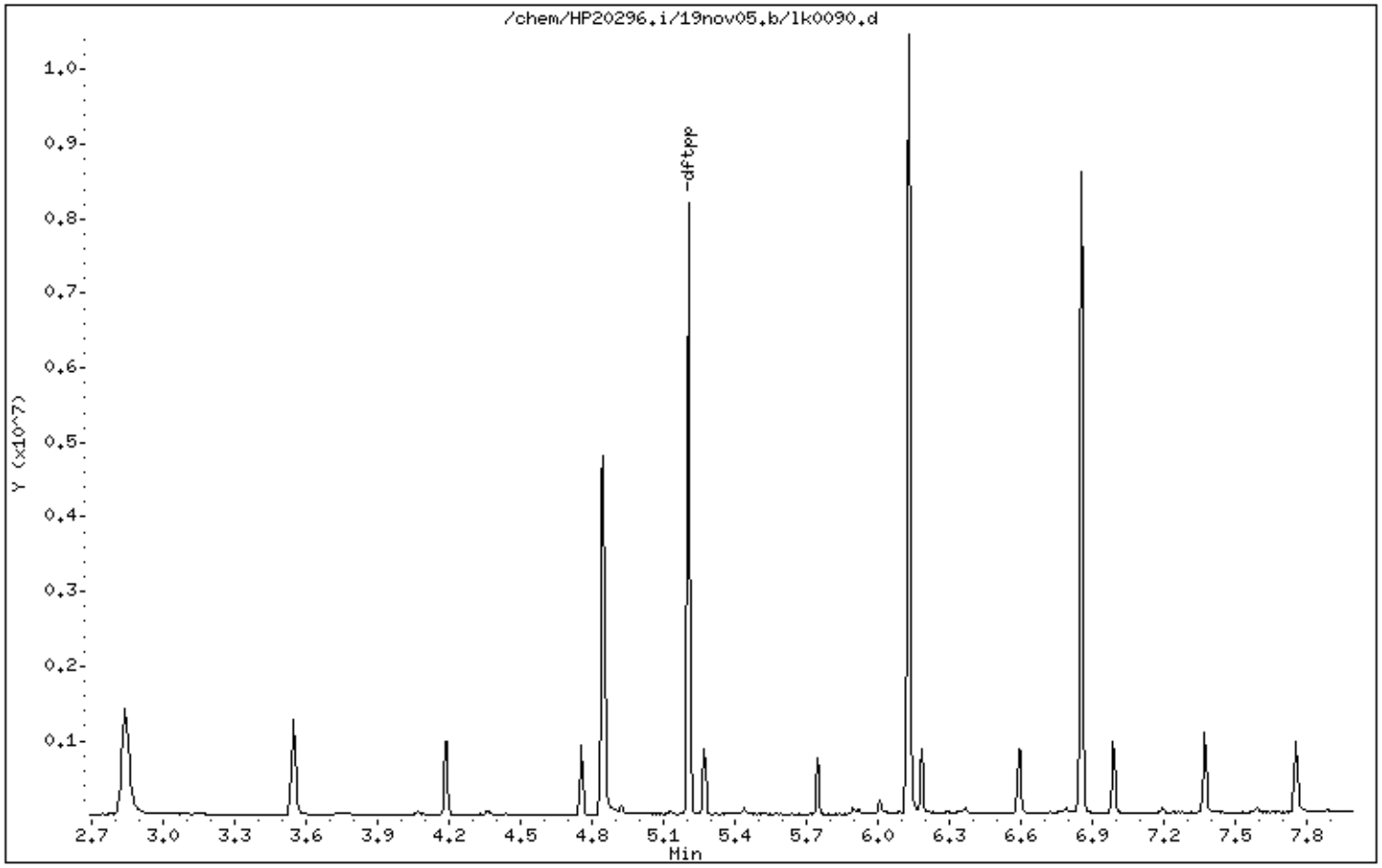
Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: knb25316

Column phase: DB-5MS

Column diameter: 0.18



Data File: /chem/HP20296.i/19nov05.b/lk0090.d

Date : 05-NOV-2019 06:58

Client ID: DFTPP12.5

Instrument: HP20296.i

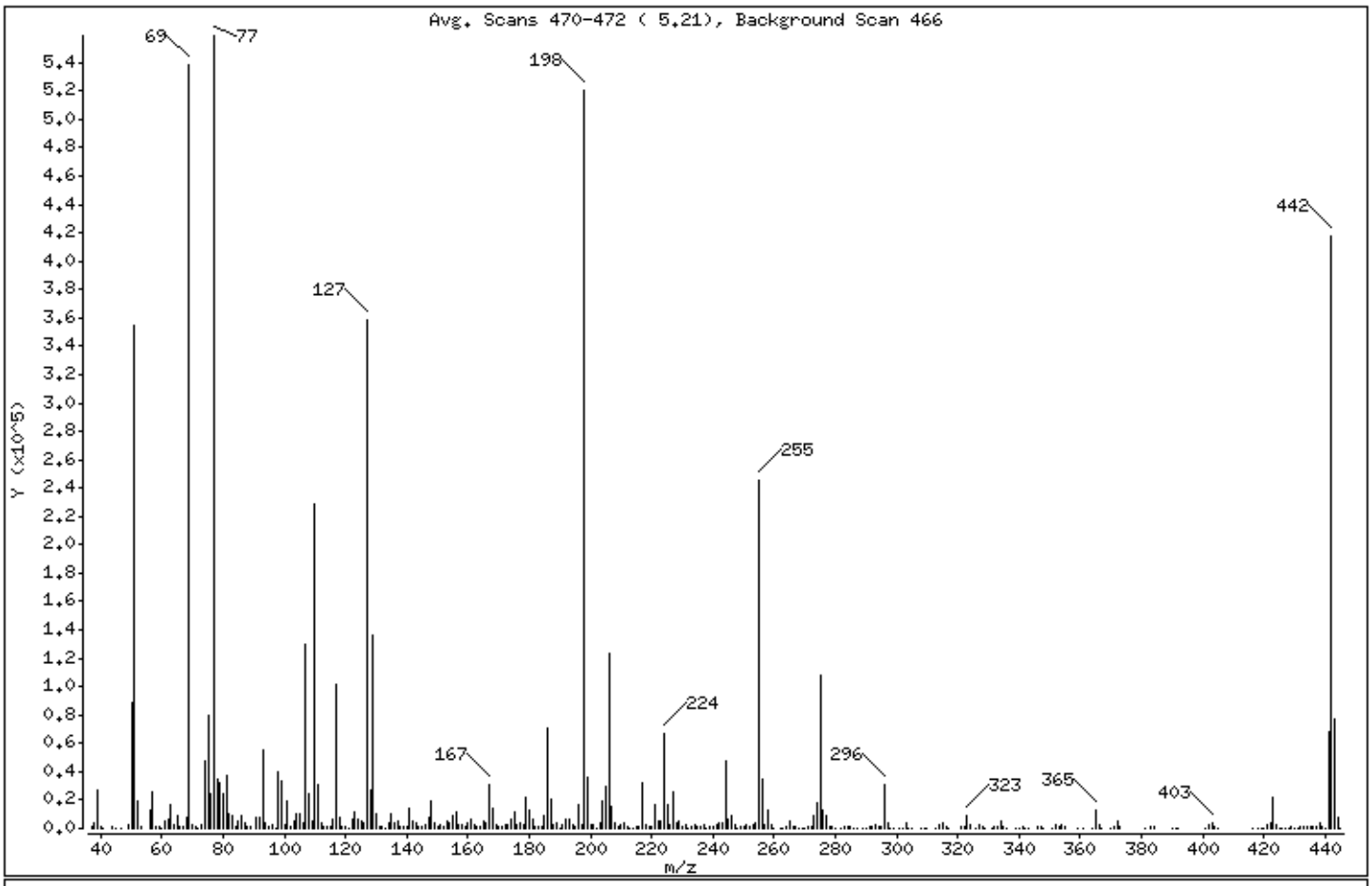
Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: knb25316

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	68.31
68	Less than 2.00% of mass 69	1.47 (1.42)
69	Mass 69 relative abundance	103.46
70	Less than 2.00% of mass 69	0.52 (0.50)
127	10.00 - 80.00% of mass 198	69.01
197	Less than 2.00% of mass 198	0.45
199	5.00 - 9.00% of mass 198	6.85
275	10.00 - 60.00% of mass 198	20.84
365	Greater than 1.00% of mass 198	2.37
441	0.01 - 24.00% of mass 442	13.16 (16.40)
442	50.00 - 99.99% of mass 198	80.23
443	15.00 - 24.00% of mass 442	14.87 (18.54)

Data File: /chem/HP20296.i/19nov05.b/lk0090.d

Date : 05-NOV-2019 06:58

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP; Operator: knb25316

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0090.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 466
Location of Maximum: 77.00
Number of points: 343

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1187	130.00	9672	216.00	1522	308.00	578
38.00	4440	131.00	1674	217.00	32232	309.00	295
39.00	26672	132.00	1060	218.00	2846	310.00	226
40.00	1188	133.00	478	219.00	757	313.00	186
41.00	297	134.00	3593	220.00	739	314.00	2184
44.00	769	135.00	9729	221.00	17192	315.00	3915
45.00	369	136.00	4135	222.00	5267	316.00	1922
47.00	178	137.00	5147	223.00	5052	317.00	164
49.00	2201	138.00	1322	224.00	66352	321.00	1570
50.00	88712	139.00	844	225.00	16856	322.00	886
51.00	355072	140.00	1658	226.00	2125	323.00	9403
52.00	19424	141.00	14758	227.00	26080	324.00	2098
53.00	841	142.00	5025	228.00	4011	326.00	158
56.00	12259	143.00	3504	229.00	4931	327.00	2612
57.00	25328	144.00	1104	230.00	1421	328.00	789
58.00	1232	145.00	712	231.00	2573	329.00	117
59.00	652	146.00	2726	232.00	98	331.00	91
60.00	152	147.00	7764	233.00	762	332.00	936
61.00	5719	148.00	19256	234.00	2123	333.00	987
62.00	5912	149.00	3405	235.00	1574	334.00	5716
63.00	16178	150.00	1127	236.00	1657	335.00	1632
64.00	2418	151.00	2282	237.00	2159	336.00	207
65.00	9315	152.00	1252	238.00	428	339.00	375
66.00	979	153.00	4729	239.00	1060	340.00	368
67.00	694	154.00	3363	240.00	999	341.00	1742
68.00	7629	155.00	8858	241.00	2146	342.00	490
69.00	537792	156.00	11735	242.00	4354	343.00	85
70.00	2711	157.00	2031	243.00	3607	346.00	1778
71.00	736	158.00	2688	244.00	47424	347.00	702
72.00	262	159.00	1529	245.00	6630	348.00	279
73.00	2822	160.00	4284	246.00	8652	351.00	572
74.00	47944	161.00	6983	247.00	2179	352.00	3050
75.00	79096	162.00	2596	248.00	477	353.00	1842
76.00	23992	163.00	735	249.00	1875	354.00	2543
77.00	558912	164.00	982	250.00	699	355.00	1064

Date : 05-NOV-2019 06:58

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: knb25316

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0090.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 466
Location of Maximum: 77.00
Number of points: 343

m/z	Y	m/z	Y	m/z	Y	m/z	Y
78.00	34872	165.00	4940	251.00	2163	359.00	315
79.00	31984	166.00	3808	252.00	1380	361.00	289
80.00	25008	167.00	31040	253.00	2705	364.00	245
81.00	37864	168.00	14435	254.00	3452	365.00	12343
82.00	10232	169.00	2287	255.00	245504	366.00	2558
83.00	9628	170.00	833	256.00	35160	367.00	210
84.00	851	171.00	1517	257.00	3020	370.00	314
85.00	5163	172.00	2386	258.00	13442	371.00	1103
86.00	9221	173.00	2527	259.00	2543	372.00	5779
87.00	4012	174.00	6671	260.00	283	373.00	1449
88.00	1205	175.00	11644	262.00	167	381.00	105
89.00	1015	176.00	2881	263.00	196	383.00	1900
91.00	7193	177.00	3904	264.00	1308	384.00	881
92.00	7883	178.00	2014	265.00	5287	390.00	447
93.00	54856	179.00	21456	266.00	928	391.00	543
94.00	3566	180.00	13041	267.00	730	392.00	88
95.00	1072	181.00	6533	268.00	134	401.00	105
96.00	2460	182.00	1272	269.00	642	402.00	2545
97.00	229	183.00	955	270.00	473	403.00	3728
98.00	40472	184.00	1776	271.00	1141	404.00	1075
99.00	33272	185.00	9447	272.00	651	405.00	241
100.00	2856	186.00	70416	273.00	9233	416.00	110
101.00	19800	187.00	20400	274.00	17624	418.00	274
102.00	727	188.00	2020	275.00	108312	419.00	89
103.00	5623	189.00	4106	276.00	13359	420.00	408
104.00	10254	190.00	492	277.00	8855	421.00	2613
105.00	10174	191.00	2833	278.00	1162	422.00	3532
106.00	3409	192.00	6057	279.00	707	423.00	21792
107.00	129584	193.00	5995	280.00	130	424.00	2723
108.00	23784	194.00	2309	282.00	306	425.00	527
109.00	4768	195.00	1886	283.00	1422	426.00	192
110.00	228480	196.00	16150	284.00	1214	427.00	384
111.00	30872	197.00	2352	285.00	1698	428.00	404
112.00	3448	198.00	519808	286.00	120	429.00	681
113.00	1699	199.00	35624	287.00	126	430.00	534

Date : 05-NOV-2019 06:58

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: knb25316

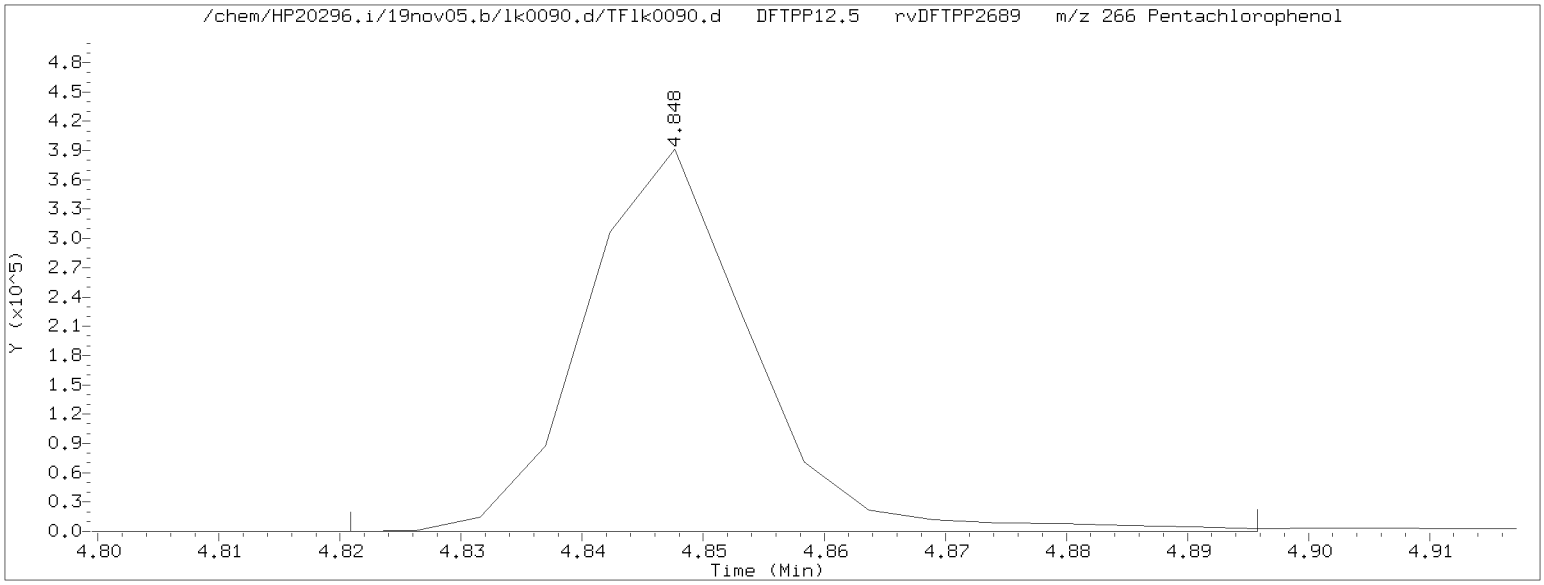
Column phase: DB-5MS Column diameter: 0.18

Data File: lk0090.d
Spectrum: Avg. Scans 470-472 (5.21), Background Scan 466
Location of Maximum: 77.00
Number of points: 343

m/z	Y	m/z	Y	m/z	Y	m/z	Y
114.00	644	200.00	2070	289.00	261	431.00	369
115.00	849	201.00	3060	290.00	513	432.00	1027
116.00	6153	202.00	357	291.00	780	433.00	1305
117.00	102056	203.00	3775	292.00	809	434.00	1301
118.00	8211	204.00	18992	293.00	2125	435.00	790
119.00	1039	205.00	29368	294.00	1056	436.00	1635
120.00	1511	206.00	123304	295.00	1157	437.00	1542
121.00	276	207.00	15067	296.00	31024	438.00	3383
122.00	6307	208.00	3327	297.00	3934	439.00	1577
123.00	12047	209.00	1015	298.00	458	440.00	426
124.00	5834	210.00	2566	299.00	97	441.00	68416
125.00	5063	211.00	4458	301.00	368	442.00	417024
126.00	4213	212.00	1800	302.00	514	443.00	77320
127.00	358720	213.00	194	303.00	4403	444.00	7783
128.00	26768	214.00	415	304.00	642	445.00	301
129.00	135872	215.00	1694	305.00	244		

Assessment of GC Column Performance and Injection Port Inertness for

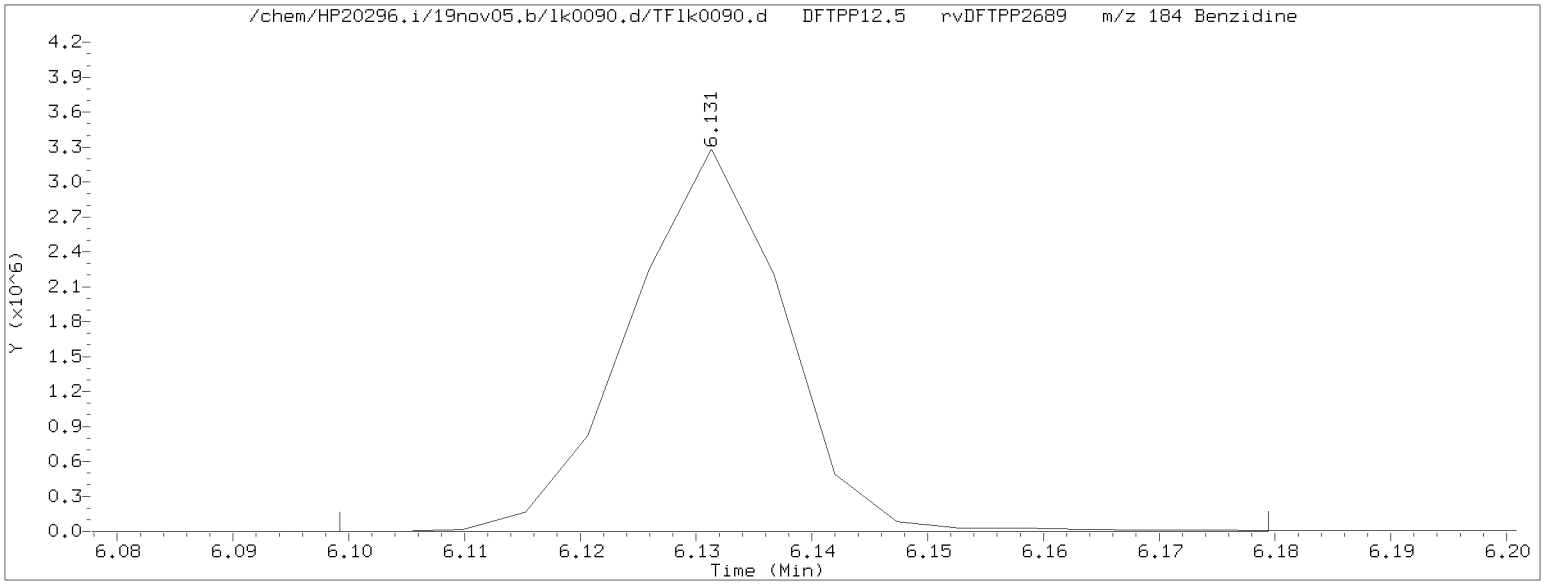
Instrument ID: HP20296.i Injection Date: 05-NOV-2019 06:58 Operator: knb25316



Pentachlorophenol EICP peak height = 391488 EICP peak height at 10% = 39149 Pentachlorophenol EICP area = 372739

Pentachlorophenol EICP peak apex (min.) = 4.848
RT at 10% of front half of EICP (min.) = 4.833 'Front' peak width (min.) = 0.0141666667
RT at 10% of back half of EICP (min.) = 4.862 'Tailing' peak width (min.) = 0.0140500000

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0140500000}{0.0141666667} = 0.992$$



Benzidine EICP peak height = 3282944 EICP peak height at 10% = 328294 Benzidine EICP area = 3026618

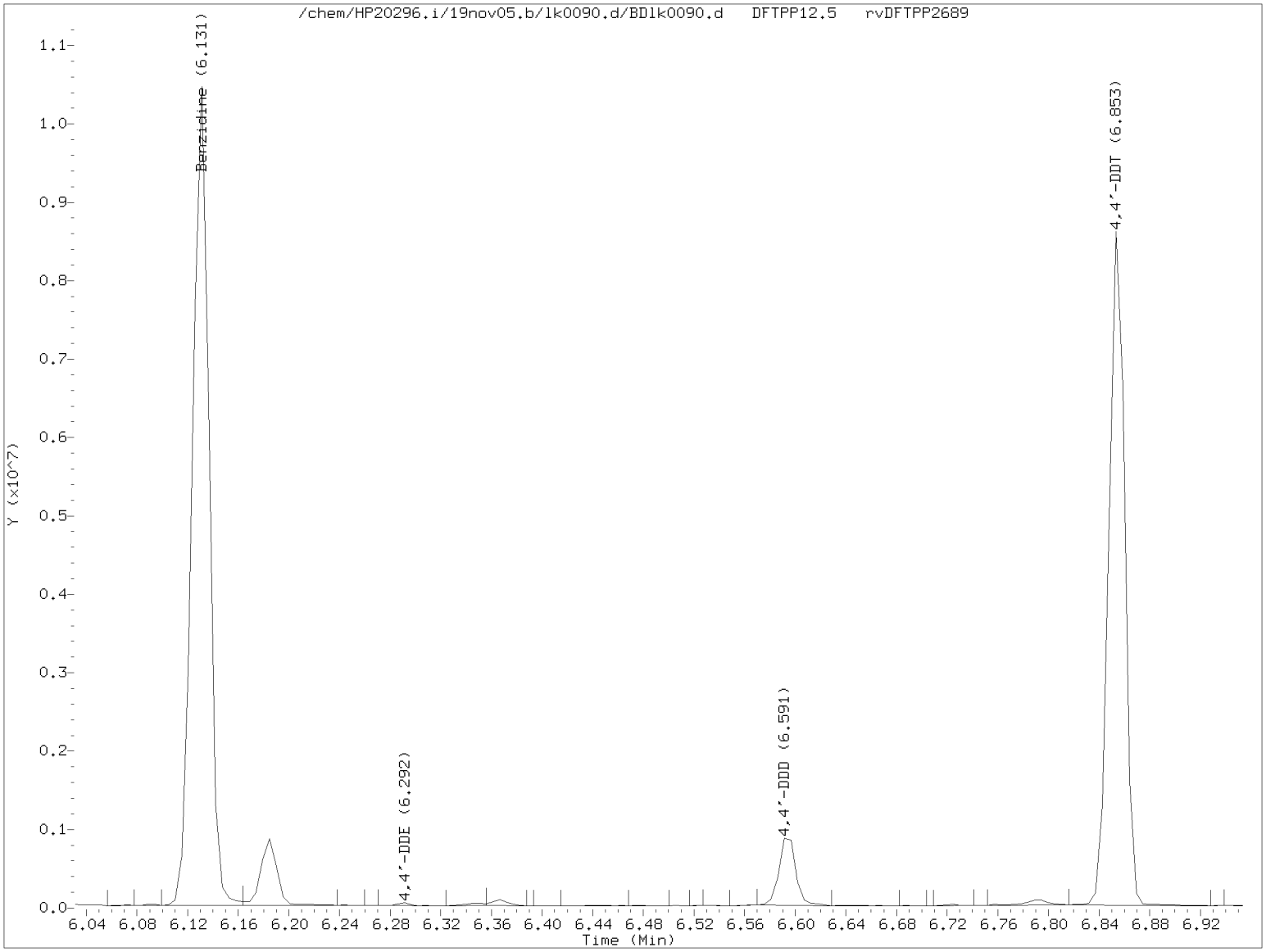
Benzidine EICP peak apex (min.) = 6.131
RT at 10% of front half of EICP (min.) = 6.117 'Front' peak width (min.) = 0.0146833333
RT at 10% of back half of EICP (min.) = 6.144 'Tailing' peak width (min.) = 0.0128000000

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0128000000}{0.0146833333} = 0.872$$

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 16:00. PARALLAX ID: cam01237

Assessment of GC Column Performance and Injection Port Inertness for

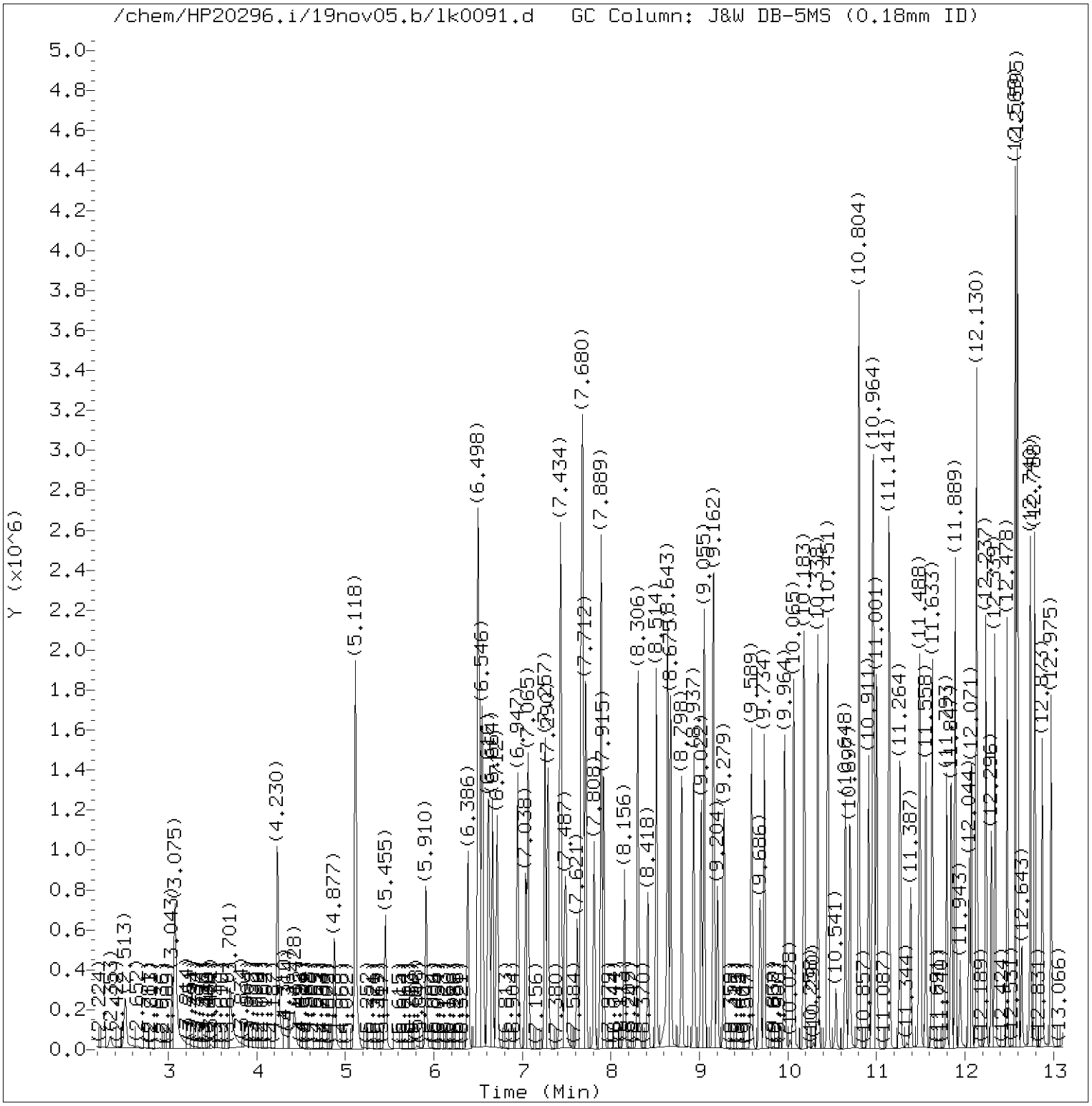
Instrument ID: HP20296.i Injection Date: 05-NOV-2019 06:58 Operator: knb25316



$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{31902 + 822350}{31902 + 822350 + 7509577} \times 100 = 10.2$$

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 16:00. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

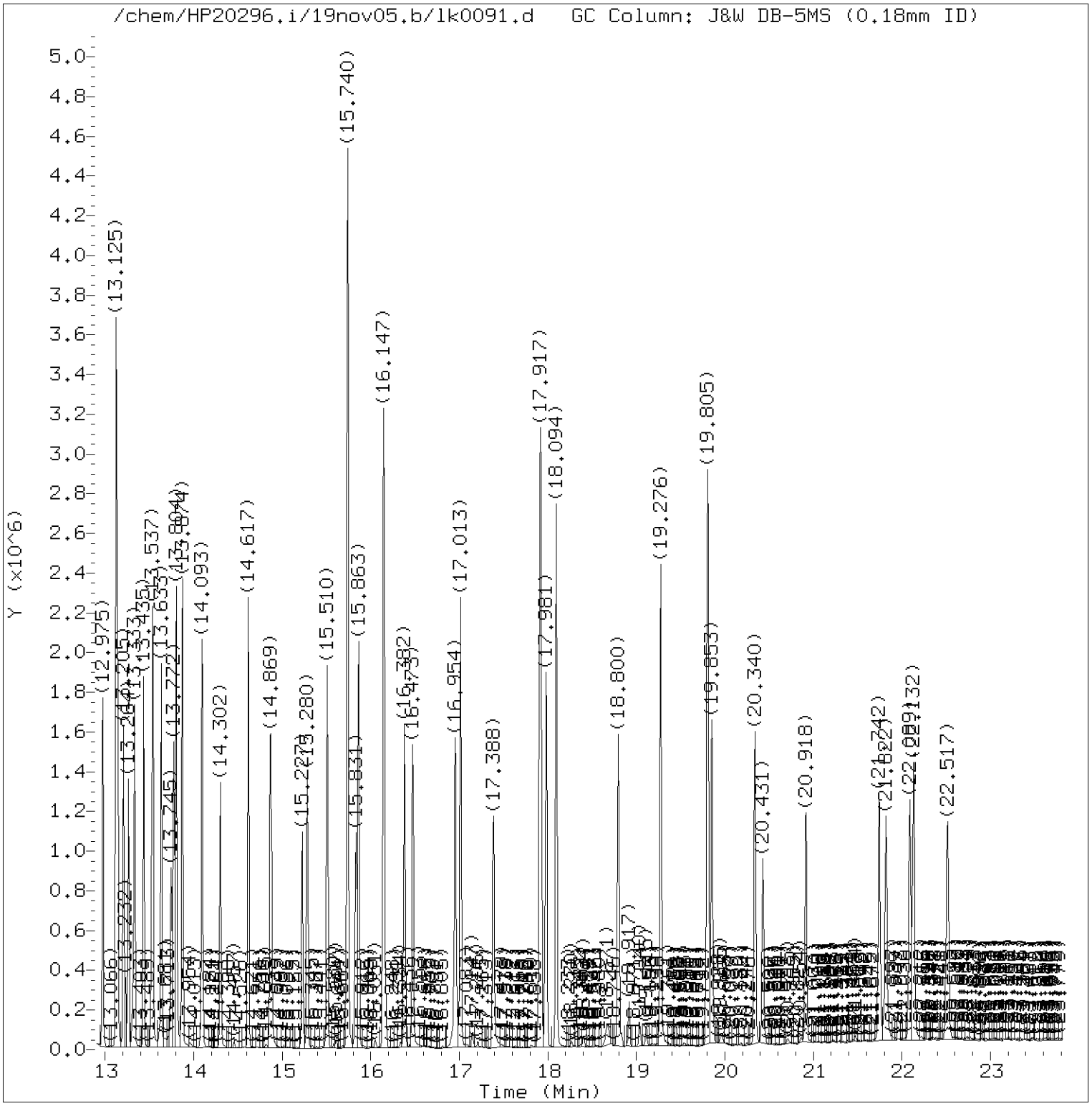
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.513	88	228398	7.810
5) N-Nitrosodimethylamine	(1)	3.043	74	367901	7.394
6) Pyridine	(1)	3.075	79	616348	7.284
8) 2-Picoline	(1)	4.230	93	592658	7.434
9) N-Nitrosomethylethylamine	(1)	4.423	88	248890	7.506
10) Methyl methanesulfonate	(1)	4.883	80	298888	7.554
12)$2-Fluorophenol	(1)	5.118	112	843140	14.976
14) N-Nitrosodiethylamine	(1)	5.455	102	222135	7.356
43) Total Cresols	(1)			853784	14.349
16) Ethyl methanesulfonate	(1)	5.910	109	230006	7.425
17) Benzaldehyde	(1)	6.386	77	346040	6.049
18)$Phenol-d6	(1)	6.498	99	1191179	14.687
19) Phenol	(1)	6.519	94	725262	7.471
20) Aniline	(1)	6.546	93	832209	7.260
21) a-methylstyrene	(1)	6.626	118	170349	7.465
23) bis(2-Chloroethyl)ether	(1)	6.664	93	547719	7.291
24) 2-Chlorophenol	(1)	6.712	128	363957	7.234
25) 1,3-Dichlorobenzene	(1)	6.947	146	371335	7.236
26)*1,4-Dichlorobenzene-d4	(1)	7.038	152	150928	5.000
27) 1,4-Dichlorobenzene	(1)	7.065	146	378130	7.380
28) Benzyl alcohol	(1)	7.257	108	290184	7.273
29) 1,2-Dichlorobenzene	(1)	7.290	146	350759	6.991
100) Isosafrole	(3)			258357	7.520
31) Indene	(1)	7.429	115	656346	7.257
32) 2-Methylphenol	(1)	7.439	108	414706	7.291
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.487	45	605768	7.213
35) bis(2-Chloroisopropyl)ether	(1)	7.487	45	605768	7.213
36) N-Nitrosopyrrolidine	(1)	7.621	100	242811	7.076
37) Acetophenone	(1)	7.664	105	713418	7.567
38) 4-Methylphenol	(1)	7.680	108	439078	7.057
39) N-Nitroso-di-n-propylamine	(1)	7.680	70	458503	7.417
40) N-Nitrosomorpholine	(1)	7.696	56	294140	7.502
41) o-Toluidine	(1)	7.712	106	738626	7.292
44) Hexachloroethane	(1)	7.808	117	193022	7.262
45)$Nitrobenzene-d5	(2)	7.889	82	1182996	15.283
46) Nitrobenzene	(2)	7.921	77	658726	7.926
125) 2,4_2,6-Dinitrotoluenes	(3)			293022	15.545
50) N-Nitrosopiperidine	(2)	8.156	114	211252	7.644
52) Isophorone	(2)	8.306	82	1128478	7.610
53) 2-Nitrophenol	(2)	8.418	139	120266	6.741

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.514	107	458520	7.354
59) O,O,O-Triethylphosphorothioate	(2)	8.643	198	124671	7.499
58) Benzoic acid	(2)	8.653	105	238144	9.034
57) bis(2-Chloroethoxy)methane	(2)	8.675	93	685211	7.691
151) Diallate trans/cis	(4)			516078	7.734
62) 2,4-Dichlorophenol	(2)	8.798	162	244615	7.474
65) 1,2,4-Trichlorobenzene	(2)	8.937	180	263053	7.709
68)*Naphthalene-d8	(2)	9.022	136	604221	5.000
69) Naphthalene	(2)	9.055	128	1081504	7.652
70) 4-Chloroaniline	(2)	9.156	127	450383	7.751
71) 2,6-Dichlorophenol	(2)	9.167	162	241352	7.839
72) Hexachloropropene	(2)	9.204	213	119540	7.371
74) Hexachlorobutadiene	(2)	9.279	225	125316	7.393
78) Quinoline	(2)	9.589	129	619680	7.267
79) Caprolactam	(2)	9.686	113	105438	7.286
80) N-Nitrosodi-n-butylamine	(2)	9.734	84	404070	7.078
83) 4-Chloro-3-methylphenol	(2)	9.964	107	388315	7.583
85) Safrole	(2)	10.065	162	221959	7.606
86) 2-Methylnaphthalene	(2)	10.183	142	640648	7.730
87) 1-Methylnaphthalene	(2)	10.338	142	591408	7.345
88) Hexachlorocyclopentadiene	(3)	10.451	237	128778	7.589
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.456	216	217904	7.467
91) cis-Isosafrole	(3)	10.541	162	40880	1.236
93) 2,4,6-Trichlorophenol	(3)	10.648	196	135530	7.202
95) 2,4,5-Trichlorophenol	(3)	10.702	196	157497	7.763
96)$2-Fluorobiphenyl	(3)	10.804	172	1188820	15.264
97) trans-Isosafrole	(3)	10.916	162	217477	6.284
98) 1,1'-Biphenyl	(3)	10.959	154	728327	7.617
99) 2-Chloronaphthalene	(3)	10.969	162	553968	7.161
101) 1-Chloronaphthalene	(3)	11.001	162	540475	8.024
103) Diphenyl ether	(3)	11.141	170	350058	7.470
104) 2-Nitroaniline	(3)	11.151	138	182877	7.457
108) 1,4-Naphthoquinone	(3)	11.269	158	226807	7.218
109) 1,4-Dinitrobenzene	(3)	11.387	168	61470	7.207
110) Dimethylphthalate	(3)	11.488	163	614511	7.665
111) 1,3-Dinitrobenzene	(3)	11.499	168	79089	7.580
113) 2,6-Dinitrotoluene	(3)	11.558	165	129158	7.806
114) Acenaphthylene	(3)	11.633	152	851261	7.406
117) 3-Nitroaniline	(3)	11.793	138	154192	7.145
118)*Acenaphthene-d10	(3)	11.847	164	255085	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.889	153	601713	7.607
120) 2,4-Dinitrophenol	(3)	11.948	184	33625	9.459
121) 4-Nitrophenol	(3)	12.050	109	116798	6.670
122) Pentachlorobenzene	(3)	12.077	250	176472	7.412
123) 2,4-Dinitrotoluene	(3)	12.130	165	163864	7.738
124) Dibenzofuran	(3)	12.130	168	725729	7.490
126) 1-Naphthylamine	(3)	12.237	143	583844	7.299
127) 2,3,4,6-Tetrachlorophenol	(3)	12.301	232	87822	7.112
128) 2-Naphthylamine	(3)	12.339	143	561396	7.285
129) Diethylphthalate	(3)	12.478	149	652294	7.518
131) Fluorene	(3)	12.569	166	566467	7.176
130) Thionazin	(3)	12.569	107	166510	7.556
133) 5-Nitro-o-toluidine	(3)	12.590	152	173793	7.732
132) 4-Chlorophenyl-phenylether	(3)	12.595	204	240085	7.779
134) 4-Nitroaniline	(3)	12.601	138	164438	7.604
135) 4,6-Dinitro-2-methylphenol	(4)	12.643	198	37824	5.742
137) NDPA as diphenylamine	(4)	12.740	169	490748	7.378
136) N-Nitrosodiphenylamine	(4)	12.740	169	490748	7.378
139) 1,2-Diphenylhydrazine	(4)	12.788	77	1249964	7.505
140)$2,4,6-Tribromophenol	(3)	12.873	332	111559	14.625
142) Tetraethyldithiopyrophosphate	(4)	12.975	97	195588	7.958
145) Diallate (peak 1)	(4)	13.120	86	439395	6.427
146) Phorate	(4)	13.130	75	800901	7.798
147) Phenacetin	(4)	13.141	108	494030	7.636
148) 4-Bromophenyl-phenylether	(4)	13.210	248	118975	7.471
149) Diallate (peak 2)	(4)	13.232	86	76682	1.307
150) Hexachlorobenzene	(4)	13.264	284	137754	7.300
152) Dimethoate	(4)	13.333	87	456743	7.504
153) Atrazine	(4)	13.435	200	135827	7.635
154) Pentachlorophenol	(4)	13.526	266	68042	7.124
155) 4-Aminobiphenyl	(4)	13.537	169	367296	7.521
156) Pentachloronitrobenzene	(4)	13.537	237	60281	7.823
157) Pronamide	(4)	13.633	173	279009	7.515
158)*Phenanthrene-d10	(4)	13.772	188	442737	5.000
159) Dinoseb	(4)	13.783	211	57949	7.224
160) Phenanthrene	(4)	13.804	178	806346	7.370
162) Anthracene	(4)	13.874	178	829229	7.657
168) Carbazole	(4)	14.093	167	795029	7.328
169) Methyl parathion	(4)	14.302	109	275626	7.193
170) Di-n-butylphthalate	(4)	14.617	149	1200676	7.507

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

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on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

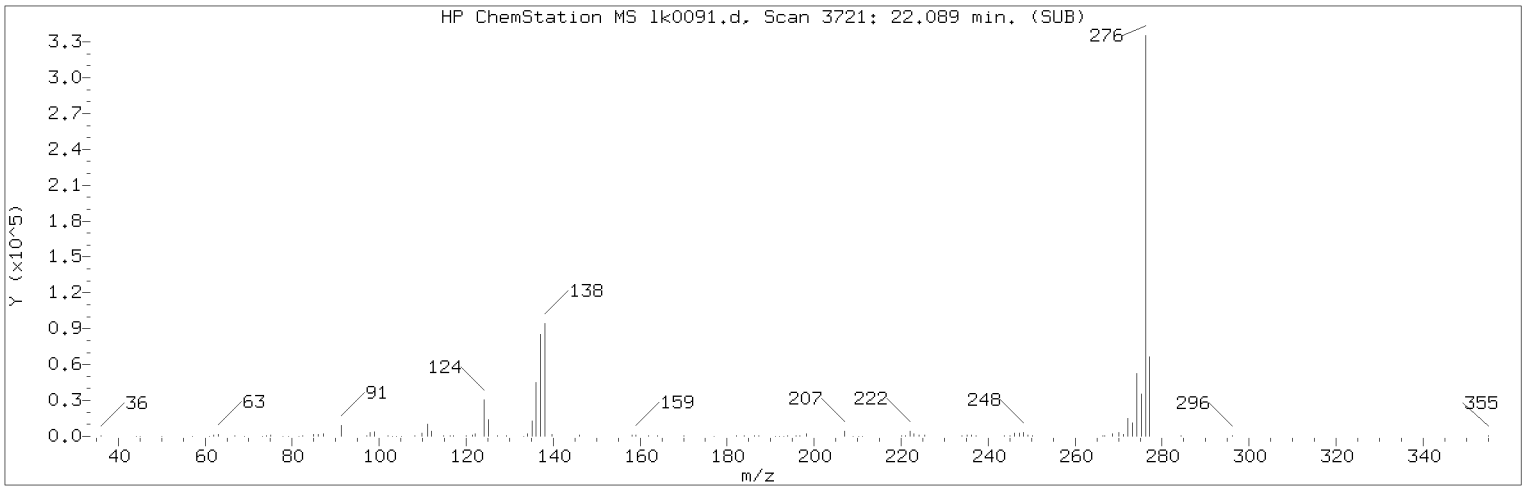
Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.863	109	181815	7.284
173) 4-Nitroquinoline-1-oxide	(4)	14.879	190	60436	6.999
227) Total PAHs	(6)			13465979	137.035
174) Octachlorostyrene	(4)	15.227	308	57819	7.597
176) Isodrin	(4)	15.286	193	95145	7.159
178) Fluoranthene	(4)	15.510	202	826290	7.505
179) Benzidine	(5)	15.740	184	1718380	21.705
180)*Pyrene-d10	(5)	15.831	212	421173	5.000
182) Pyrene	(5)	15.863	202	875377	7.389
184)$Terphenyl-d14	(5)	16.147	244	955459	14.639
187) p-Dimethylaminoazobenzene	(5)	16.382	225	118959	7.132
190) Chlorobenzilate	(5)	16.473	139	387511	7.351
192) 3,3'-Dimethylbenzidine	(5)	16.954	212	514065	6.984
193) Butylbenzylphthalate	(5)	17.013	149	538512	7.531
196) 2-Acetylaminofluorene	(5)	17.388	181	345471	7.079
198) 3,3'-Dichlorobenzidine	(5)	17.901	252	280098	7.258
200) Benzo(a)anthracene	(5)	17.917	228	740427	7.608
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.923	231	148338	7.591
201) Chrysene	(5)	17.981	228	753238	7.595
204) bis(2-Ethylhexyl)phthalate	(5)	18.099	149	792937	7.501
208) 6-Methylchrysene	(5)	18.800	242	510332	7.342
210) Di-n-octylphthalate	(6)	19.276	149	1385081	7.541
211) Benzo(b)fluoranthene	(6)	19.805	252	754487	7.640
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.811	256	317986	7.586
213) Benzo(k)fluoranthene	(6)	19.853	252	753390	7.591
216) Benzo(a)pyrene	(6)	20.340	252	719569	7.819
218)*Perylene-d12	(6)	20.431	264	387856	5.000
220) 3-Methylcholanthrene	(6)	20.918	268	310057	7.397
222) Dibenz(a,h)acridine	(6)	21.747	279	587010	7.636
223) Dibenz(a,j)acridine	(6)	21.822	279	589909	7.722
224) Indeno(1,2,3-cd)pyrene	(6)	22.089	276	685230M	8.163
225) Dibenz(a,h)anthracene	(6)	22.132	278	710407	8.093
226) Benzo(g,h,i)perylene	(6)	22.512	276	678977	7.687

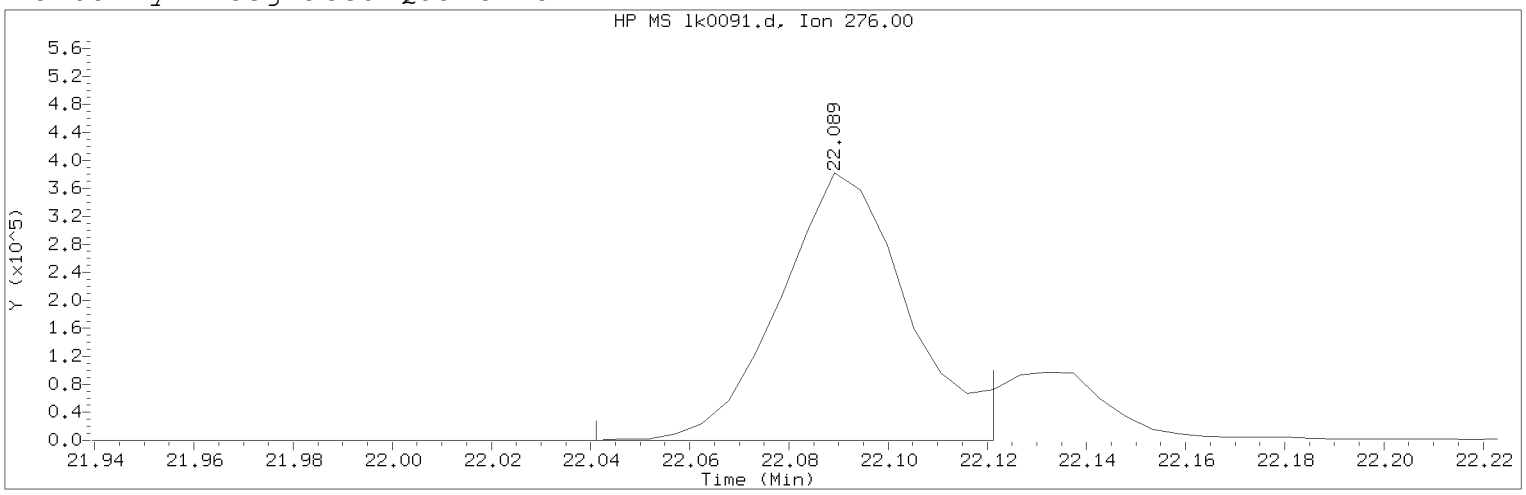
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 15:06
Date, time and analyst ID of latest file update: 05-Nov-2019 15:06 whs02991

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

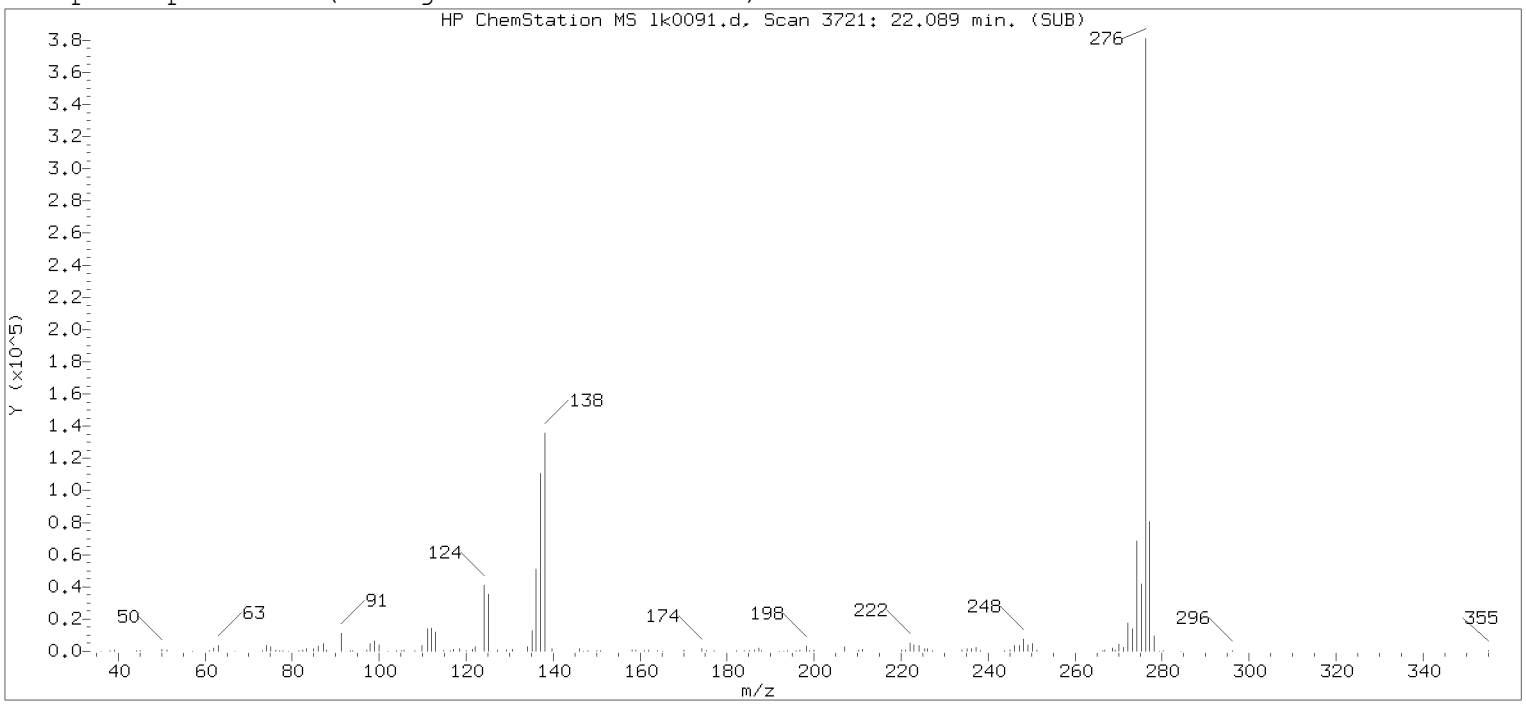
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3721
Retention Time (minutes) : 22.089
Quant Ion : 276.00
Area (flag) : 685230M
On-Column Amount (ng/ul) : 8.1634
Integration start scan : 3711 Integration stop scan: 3726
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

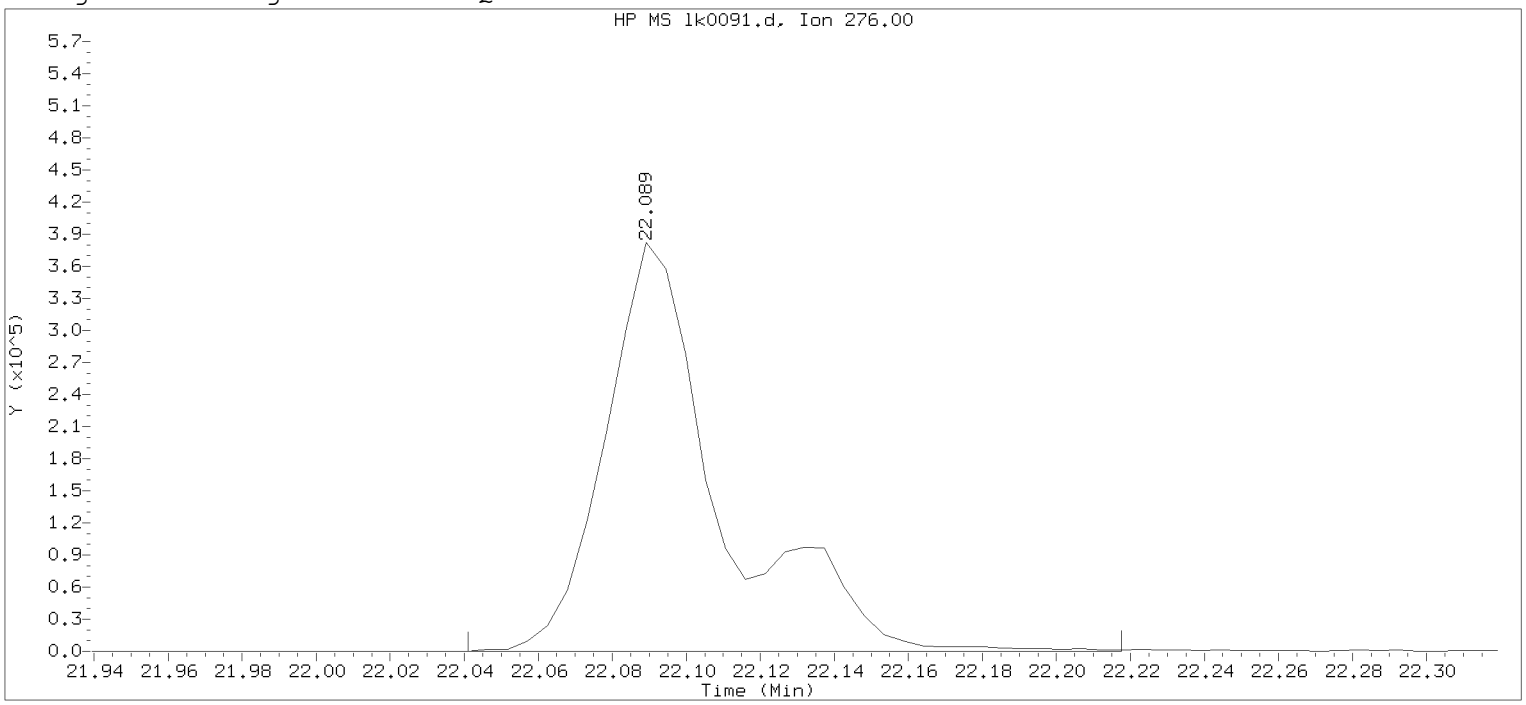
Analyst responsible for change: Digitally signed by William H Saadeh
on 11/05/2019 at 15:07.
Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 16:00.
PARALLAX ID: cam01237

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov05.b/lk0091.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 07:13 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 07:52
Date, time and analyst ID of latest file update: 05-Nov-2019 07:52 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compound Number	: 224		
Compound Name	: Indeno(1,2,3-cd)pyrene		
Scan Number	: 3721		
Retention Time (minutes)	: 22.089		
Quant Ion	: 276.00		
Area	: 825161		
On-column Amount (ng/ul)	: 9.8305		
Integration start scan	: 3711	Integration stop scan:	3744
Y at integration start	: 0	Y at integration end:	0

Digitally signed by William H Saadeh on 11/05/2019 at 15:07.
Target 3.5 esignature used.

Data File: /chem/HP20296.i/19nov05a.b/lk0150.d

Page 1

Date : 05-NOV-2019 18:13

Client ID: DFTPP12.5

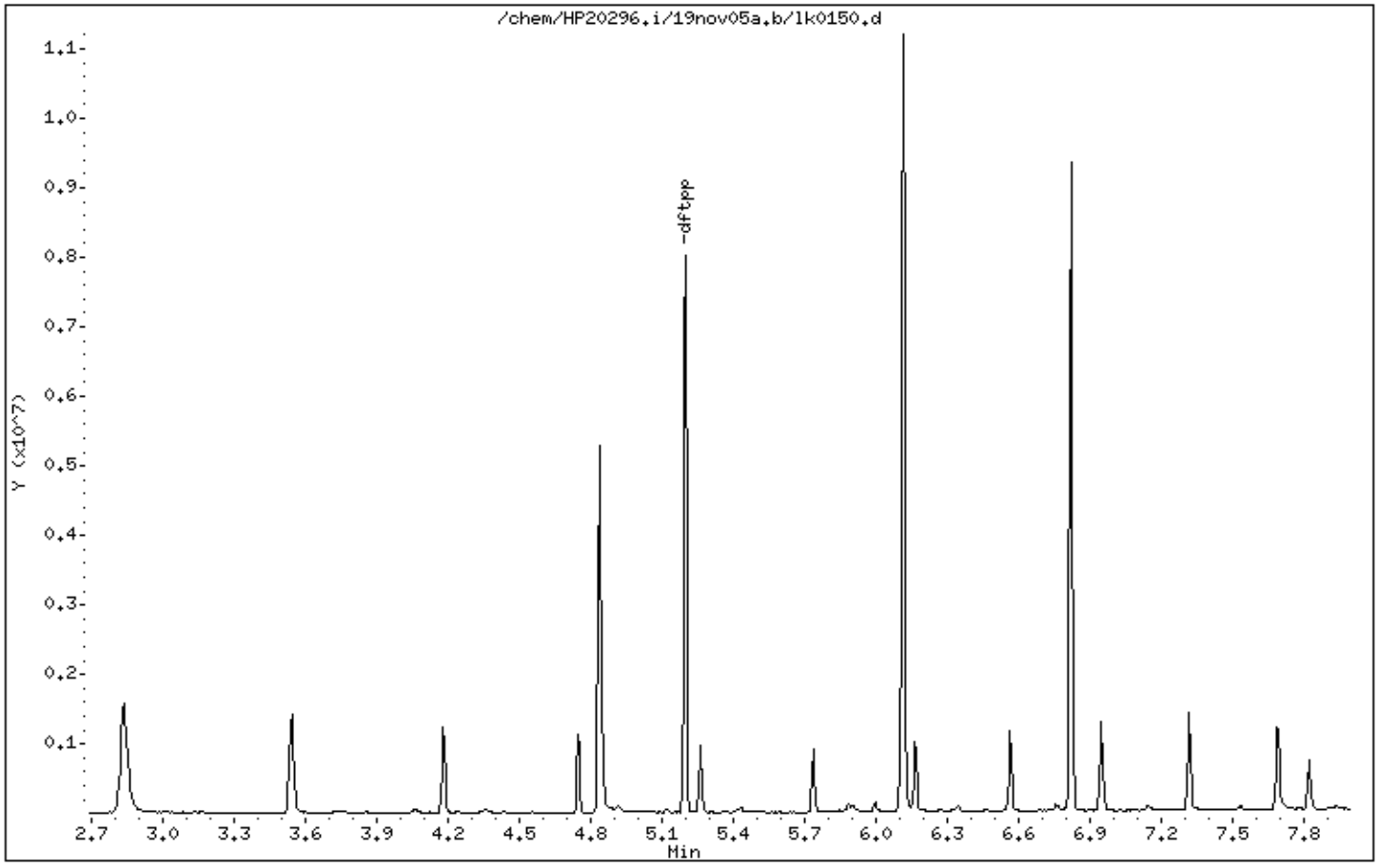
Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: art12405

Column phase: DB-5MS

Column diameter: 0.18



Data File: /chem/HP20296.i/19nov05a.b/lk0150.d

Page 2

Date : 05-NOV-2019 18:13

Client ID: DFTPP12.5

Instrument: HP20296.i

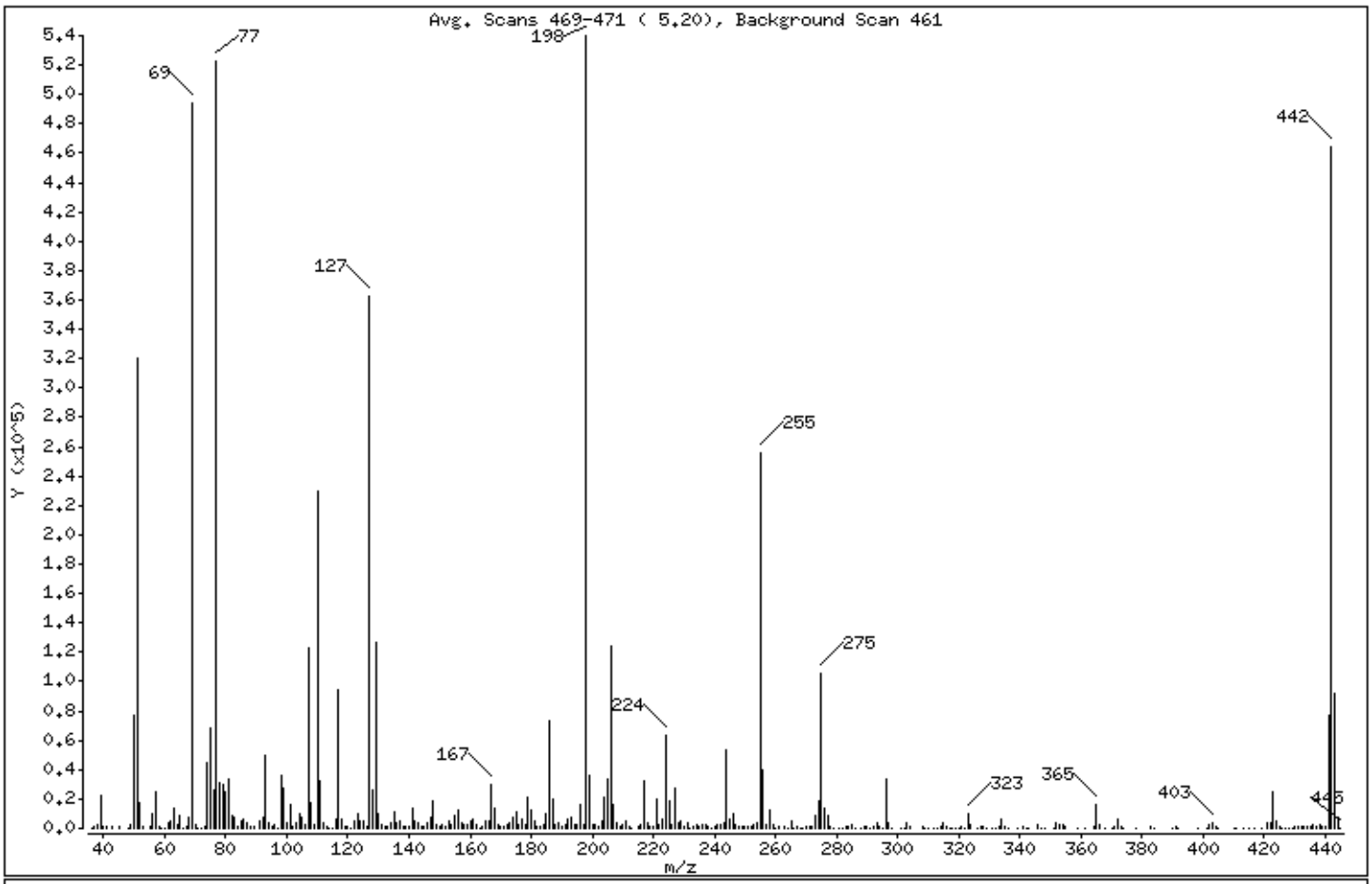
Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: art12405

Column phase: DB-5MS

Column diameter: 0.18

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	59.23
68	Less than 2.00% of mass 69	1.47 (1.60)
69	Mass 69 relative abundance	91.50
70	Less than 2.00% of mass 69	0.47 (0.51)
127	10.00 - 80.00% of mass 198	67.17
197	Less than 2.00% of mass 198	0.53
199	5.00 - 9.00% of mass 198	6.60
275	10.00 - 60.00% of mass 198	19.55
365	Greater than 1.00% of mass 198	3.06
441	0.01 - 24.00% of mass 442	14.37 (16.71)
442	50.00 - 99.99% of mass 198	85.97
443	15.00 - 24.00% of mass 442	17.04 (19.82)

Date : 05-NOV-2019 18:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: art12405

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0150.d
Spectrum: Avg. Scans 469-471 (5.20), Background Scan 461
Location of Maximum: 198.00
Number of points: 349

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	107	130.00	10420	219.00	1472	316.00	1655
37.00	1482	131.00	2755	220.00	840	317.00	326
38.00	2928	132.00	1306	221.00	19280	318.00	99
39.00	22832	133.00	928	222.00	2815	319.00	95
40.00	1298	134.00	3447	223.00	6211	320.00	298
41.00	933	135.00	11152	224.00	63792	321.00	1110
43.00	648	136.00	3799	225.00	18512	322.00	419
45.00	905	137.00	4448	226.00	2672	323.00	9665
48.00	106	138.00	1106	227.00	27208	324.00	2202
49.00	2032	139.00	675	228.00	3267	326.00	424
50.00	77248	140.00	767	229.00	5546	327.00	1647
51.00	319808	141.00	14044	230.00	678	328.00	1006
52.00	17152	142.00	4836	231.00	3270	329.00	110
53.00	776	143.00	3297	232.00	249	331.00	414
55.00	1336	144.00	1057	233.00	1052	332.00	586
56.00	9604	145.00	1014	234.00	1908	333.00	1085
57.00	24472	146.00	3567	235.00	1514	334.00	6357
58.00	1002	147.00	7675	236.00	2469	335.00	1388
59.00	420	148.00	18968	237.00	2329	336.00	356
60.00	379	149.00	2665	238.00	664	339.00	279
61.00	4273	150.00	924	239.00	613	341.00	1062
62.00	4554	151.00	2009	240.00	1265	342.00	256
63.00	14193	152.00	1084	241.00	1972	343.00	247
64.00	2972	153.00	5411	242.00	2928	346.00	2302
65.00	8844	154.00	3033	243.00	3868	347.00	531
66.00	234	155.00	8514	244.00	53032	348.00	87
67.00	1005	156.00	12031	245.00	6691	351.00	400
68.00	7925	157.00	4158	246.00	10039	352.00	4240
69.00	494080	158.00	2890	247.00	2762	353.00	2332
70.00	2533	159.00	2197	248.00	859	354.00	2760
71.00	217	160.00	5210	249.00	1423	355.00	1002
72.00	532	161.00	6549	250.00	1591	359.00	170
73.00	1477	162.00	2032	251.00	1047	361.00	487
74.00	45248	163.00	342	252.00	1361	364.00	808
75.00	68320	164.00	1451	253.00	1937	365.00	16512

Date : 05-NOV-2019 18:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: art12405

Column phase: DB-5MS Column diameter: 0.18

Data File: lk0150.d
Spectrum: Avg. Scans 469-471 (5,20), Background Scan 461
Location of Maximum: 198.00
Number of points: 349

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	26640	165.00	5146	254.00	3235	366.00	2343
77.00	522368	166.00	4350	255.00	255488	368.00	168
78.00	31480	167.00	29840	256.00	39208	370.00	263
79.00	29536	168.00	13972	257.00	2388	371.00	914
80.00	25336	169.00	2133	258.00	12542	372.00	6551
81.00	33112	170.00	1283	259.00	2590	373.00	1732
82.00	8812	171.00	1437	260.00	268	374.00	506
83.00	7137	172.00	2745	261.00	760	378.00	119
84.00	808	173.00	3252	263.00	865	383.00	1426
85.00	5187	174.00	7339	264.00	558	384.00	353
86.00	6167	175.00	11664	265.00	4575	390.00	454
87.00	3369	176.00	2596	266.00	470	391.00	652
88.00	1147	177.00	6351	267.00	839	392.00	274
89.00	846	178.00	2154	268.00	228	398.00	85
91.00	5401	179.00	20992	269.00	168	401.00	281
92.00	7969	180.00	12237	270.00	652	402.00	2308
93.00	50008	181.00	5102	271.00	1176	403.00	4192
94.00	3855	182.00	1431	272.00	1475	404.00	1830
95.00	1365	183.00	699	273.00	8625	405.00	209
96.00	2049	184.00	1974	274.00	18952	410.00	422
97.00	344	185.00	10362	275.00	105560	411.00	122
98.00	36088	186.00	72776	276.00	13502	413.00	99
99.00	27800	187.00	19896	277.00	9263	415.00	156
100.00	3220	188.00	2016	278.00	1252	417.00	532
101.00	15572	189.00	3865	279.00	282	419.00	365
102.00	1384	190.00	934	281.00	321	421.00	4124
103.00	4126	191.00	2101	282.00	245	422.00	3635
104.00	9361	192.00	6584	283.00	1171	423.00	24320
105.00	7749	193.00	7637	284.00	1096	424.00	5531
106.00	2580	194.00	1884	285.00	2024	425.00	822
107.00	122904	195.00	2522	286.00	607	426.00	419
108.00	17192	196.00	16448	288.00	215	427.00	244
109.00	3095	197.00	2883	289.00	778	428.00	370
110.00	229056	198.00	539968	290.00	762	429.00	224
111.00	32648	199.00	35640	291.00	274	430.00	1290

Date : 05-NOV-2019 18:13

Client ID: DFTPP12.5 Instrument: HP20296.i

Sample Info: DFTPP12.5;rvDFTPP2689;1;3;DFTPP;

Operator: art12405

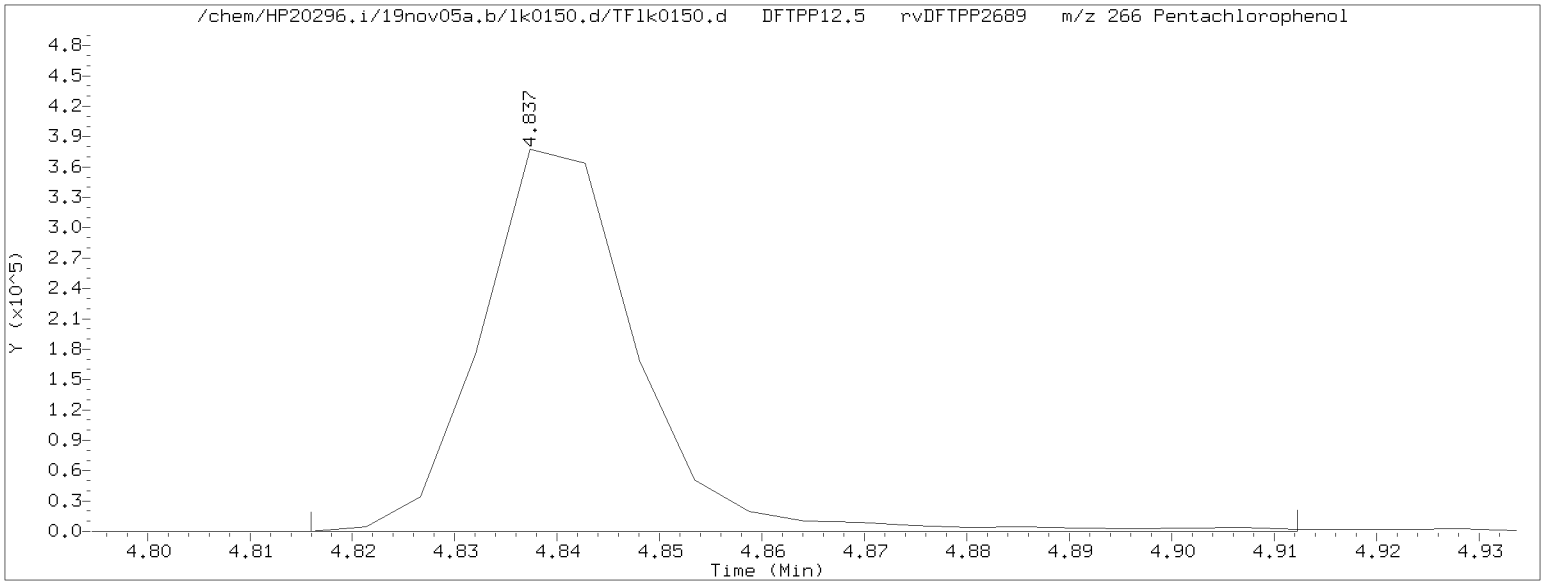
Column phase: DB-5MS Column diameter: 0.18

Data File: lk0150.d
Spectrum: Avg. Scans 469-471 (5.20), Background Scan 461
Location of Maximum: 198.00
Number of points: 349

m/z	Y	m/z	Y	m/z	Y	m/z	Y
112.00	3873	200.00	2868	292.00	782	431.00	874
113.00	1155	201.00	2382	293.00	3113	432.00	991
114.00	569	202.00	697	294.00	1286	433.00	1200
115.00	394	203.00	4371	295.00	542	434.00	635
116.00	6388	204.00	20648	296.00	33080	435.00	1762
117.00	94080	205.00	33480	297.00	3822	436.00	2286
118.00	6604	206.00	124056	298.00	267	437.00	1208
119.00	759	207.00	16106	301.00	410	438.00	2311
120.00	1204	208.00	4326	302.00	594	439.00	996
121.00	499	209.00	896	303.00	3661	440.00	1288
122.00	5436	210.00	2332	304.00	1259	441.00	77576
123.00	9913	211.00	5320	308.00	988	442.00	464256
124.00	5019	212.00	1760	309.00	402	443.00	92016
125.00	4488	213.00	364	310.00	402	444.00	8005
126.00	924	215.00	1482	312.00	360	445.00	335
127.00	362688	216.00	2978	313.00	331		
128.00	26024	217.00	32600	314.00	1159		
129.00	126976	218.00	3983	315.00	3615		

Assessment of GC Column Performance and Injection Port Inertness for

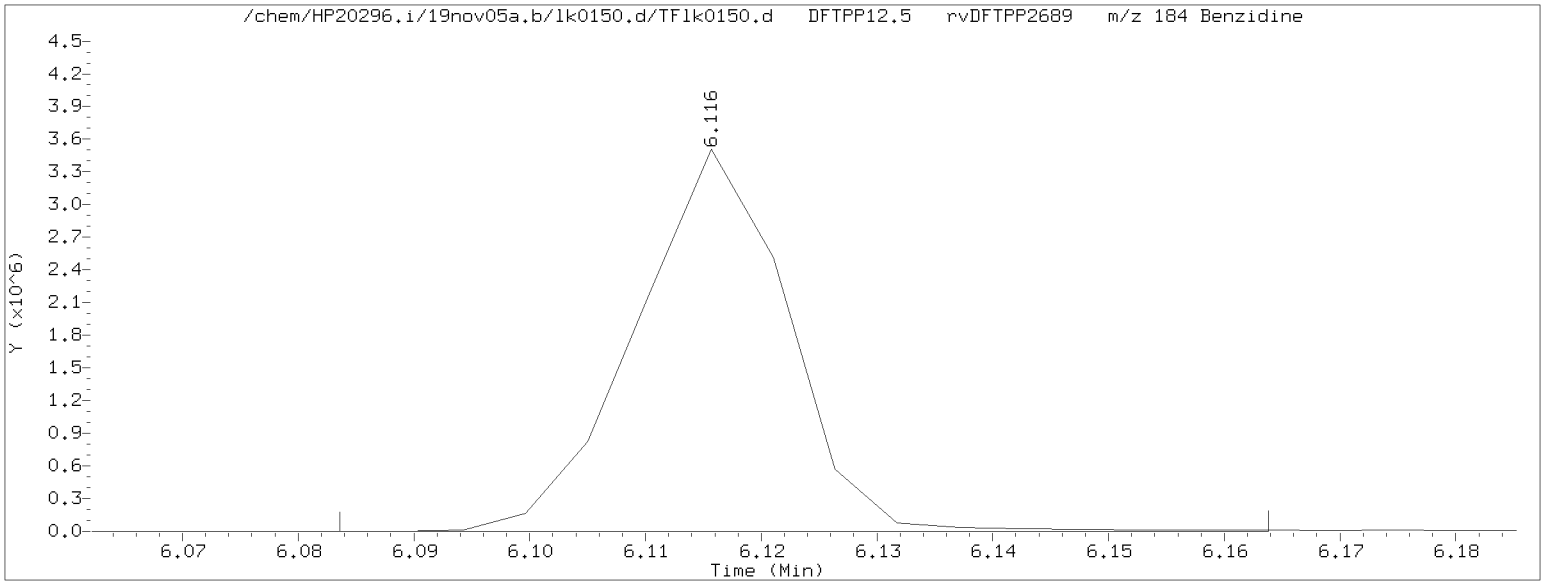
Instrument ID: HP20296.i Injection Date: 05-NOV-2019 18:13 Operator: art12405



Pentachlorophenol EICP peak height = 377664 EICP peak height at 10% = 37766 Pentachlorophenol EICP area = 398044

Pentachlorophenol EICP peak apex (min.) = 4.837
RT at 10% of front half of EICP (min.) = 4.827 'Front' peak width (min.) = 0.0105500000
RT at 10% of back half of EICP (min.) = 4.856 'Tailing' peak width (min.) = 0.0181500000

$$\text{PCP tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0181500000}{0.0105500000} = 1.720$$



Benzidine EICP peak height = 3509248 EICP peak height at 10% = 350925 Benzidine EICP area = 3194395

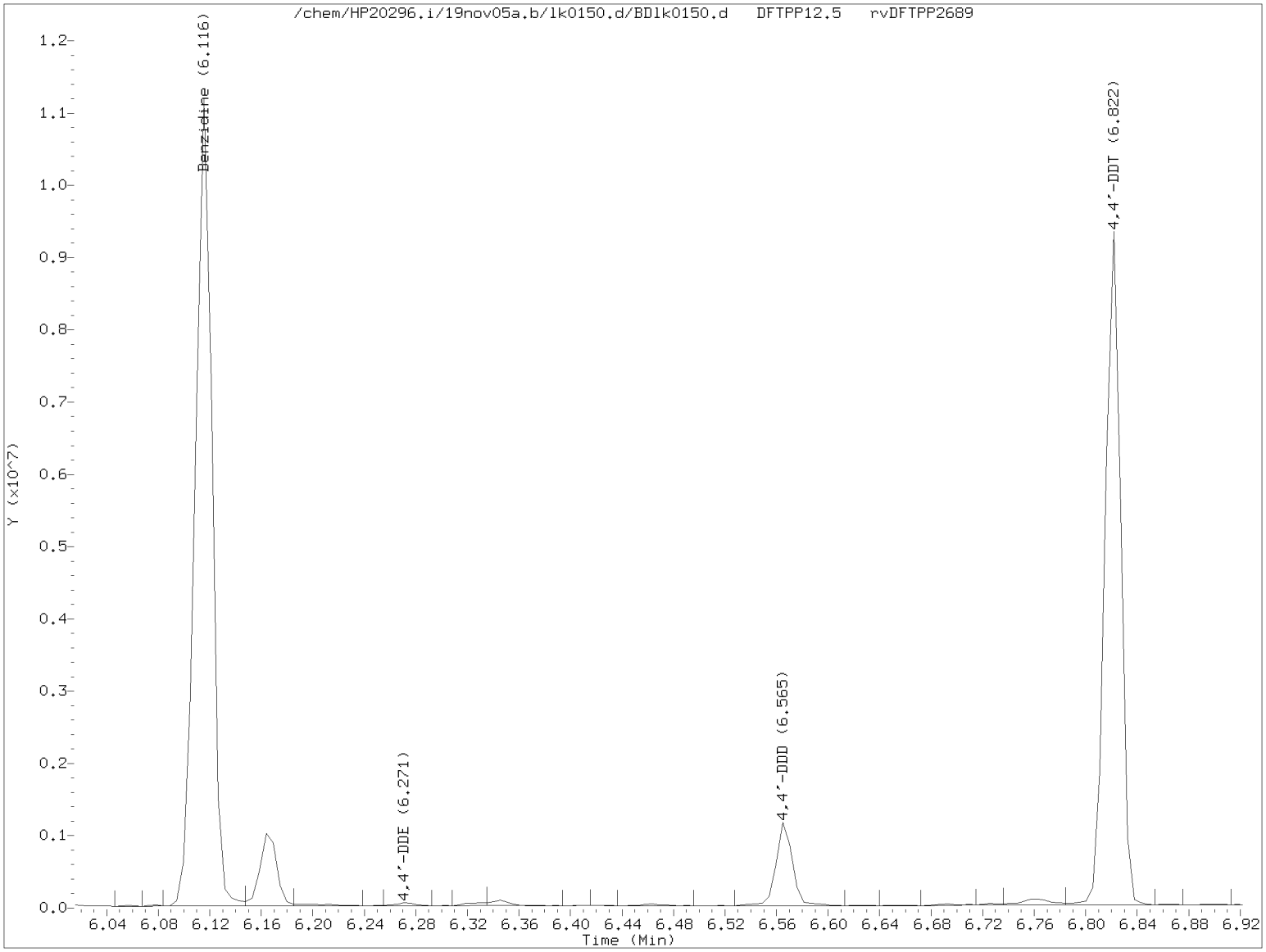
Benzidine EICP peak apex (min.) = 6.116
RT at 10% of front half of EICP (min.) = 6.101 'Front' peak width (min.) = 0.0145000000
RT at 10% of back half of EICP (min.) = 6.129 'Tailing' peak width (min.) = 0.0130333333

$$\text{Benzidine tailing factor} = \frac{\text{'Tailing' peak width (min.)}}{\text{'Front' peak width (min.)}} = \frac{0.0130333333}{0.0145000000} = 0.899$$

Secondary review performed and digitally signed by Matthew E. Barton on 11/06/2019 at 10:23. PARALLAX ID: reb00745

Assessment of GC Column Performance and Injection Port Inertness for

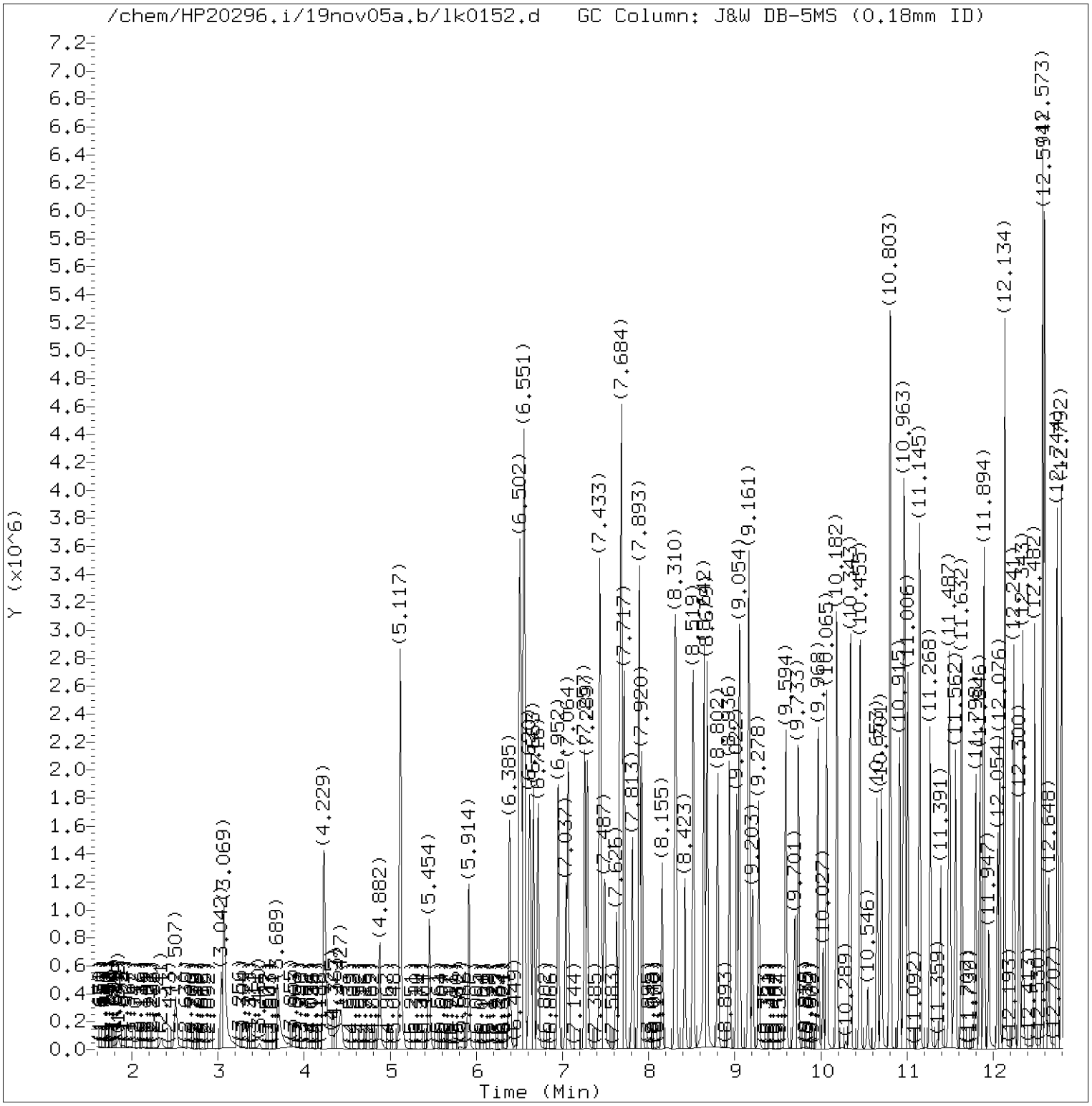
Instrument ID: HP20296.i Injection Date: 05-NOV-2019 18:13 Operator: art12405



$$\% \text{ 4,4'-DDT breakdown} = \frac{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area}}{\text{4,4'-DDE TIC area + 4,4'-DDD TIC area + 4,4'-DDT TIC area}} \times 100$$

$$\% \text{ 4,4'-DDT breakdown} = \frac{38456 + 1035132}{38456 + 1035132 + 7794548} \times 100 = 12.1$$

Secondary review performed and digitally signed by Matthew E. Barton on 11/06/2019 at 10:23. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

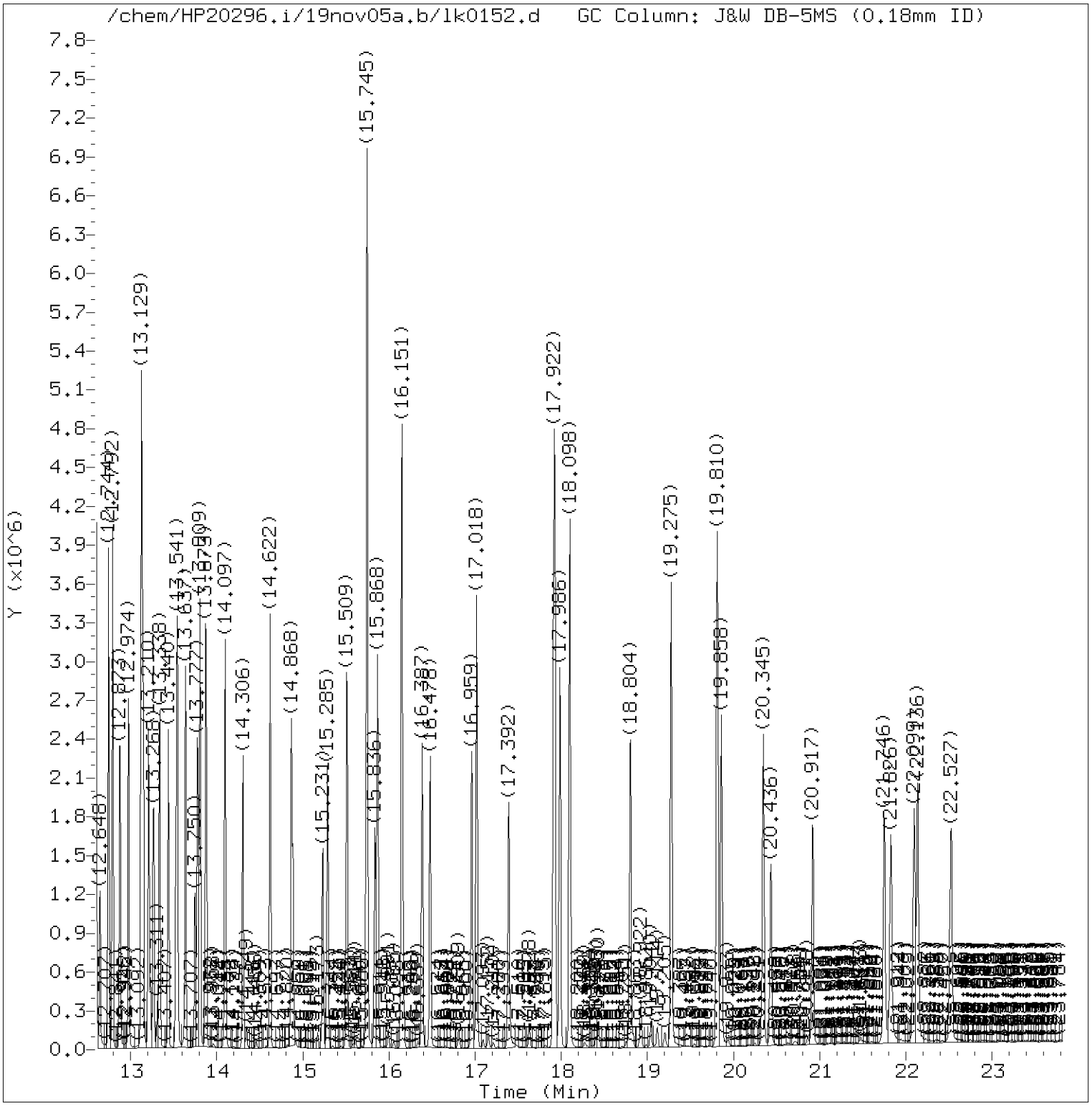
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
1) 1,4-Dioxane	(1)	2.507	88	311605	7.745
5) N-Nitrosodimethylamine	(1)	3.042	74	529253	7.731
6) Pyridine	(1)	3.069	79	885562	7.608
8) 2-Picoline	(1)	4.229	93	829664	7.564
9) N-Nitrosomethylethylamine	(1)	4.427	88	364283	7.986
10) Methyl methanesulfonate	(1)	4.882	80	426724	7.839
12)$2-Fluorophenol	(1)	5.117	112	1169713	15.102
14) N-Nitrosodiethylamine	(1)	5.454	102	315911	7.604
43) Total Cresols	(1)			1235446	15.103
16) Ethyl methanesulfonate	(1)	5.914	109	337559	7.921
17) Benzaldehyde	(1)	6.385	77	570690	7.252
18)$Phenol-d6	(1)	6.502	99	1725120	15.461
19) Phenol	(1)	6.518	94	1020145	7.638
20) Aniline	(1)	6.545	93	1178134	7.471
21) a-methylstyrene	(1)	6.625	118	236581	7.536
23) bis(2-Chloroethyl)ether	(1)	6.663	93	790920	7.652
24) 2-Chlorophenol	(1)	6.716	128	529748	7.653
25) 1,3-Dichlorobenzene	(1)	6.952	146	521456	7.386
26)*1,4-Dichlorobenzene-d4	(1)	7.037	152	207642	5.000
27) 1,4-Dichlorobenzene	(1)	7.069	146	530400	7.525
28) Benzyl alcohol	(1)	7.257	108	406924	7.413
29) 1,2-Dichlorobenzene	(1)	7.289	146	509109	7.375
100) Isosafrole	(3)			388332	7.732
31) Indene	(1)	7.428	115	934529	7.511
32) 2-Methylphenol	(1)	7.444	108	610343	7.800
34) 2,2'-oxybis(1-Chloropropane)	(1)	7.487	45	879596	7.613
35) bis(2-Chloroisopropyl)ether	(1)	7.487	45	879596	7.613
36) N-Nitrosopyrrolidine	(1)	7.626	100	366162	7.756
37) Acetophenone	(1)	7.663	105	938054	7.232
38) 4-Methylphenol	(1)	7.684	108	625103	7.303
39) N-Nitroso-di-n-propylamine	(1)	7.684	70	664411	7.812
40) N-Nitrosomorpholine	(1)	7.695	56	439184	8.142
41) o-Toluidine	(1)	7.717	106	1078315	7.738
44) Hexachloroethane	(1)	7.813	117	286120	7.824
45)$Nitrobenzene-d5	(2)	7.893	82	1738514	15.420
46) Nitrobenzene	(2)	7.920	77	940569	7.770
125) 2,4_2,6-Dinitrotoluenes	(3)			449890	16.319
50) N-Nitrosopiperidine	(2)	8.155	114	310775	7.720
52) Isophorone	(2)	8.305	82	1623651	7.517
53) 2-Nitrophenol	(2)	8.423	139	198189	7.627

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
55) 2,4-Dimethylphenol	(2)	8.519	107	682776	7.518
59) O,O,O-Triethylphosphorothioate	(2)	8.642	198	180236	7.443
58) Benzoic acid	(2)	8.669	105	398435	10.377
57) bis(2-Chloroethoxy)methane	(2)	8.679	93	1018850	7.852
151) Diallate trans/cis	(4)			763092	7.669
62) 2,4-Dichlorophenol	(2)	8.802	162	356006	7.468
65) 1,2,4-Trichlorobenzene	(2)	8.936	180	368133	7.407
68)*Naphthalene-d8	(2)	9.022	136	880048	5.000
69) Naphthalene	(2)	9.059	128	1543777	7.499
70) 4-Chloroaniline	(2)	9.161	127	643601	7.605
71) 2,6-Dichlorophenol	(2)	9.166	162	351836	7.846
72) Hexachloropropene	(2)	9.203	213	172451	7.301
74) Hexachlorobutadiene	(2)	9.278	225	182763	7.403
78) Quinoline	(2)	9.594	129	940389	7.571
79) Caprolactam	(2)	9.701	113	147496	6.998
80) N-Nitrosodi-n-butylamine	(2)	9.733	84	599912	7.215
83) 4-Chloro-3-methylphenol	(2)	9.968	107	576781	7.733
85) Safrole	(2)	10.070	162	330700	7.781
86) 2-Methylnaphthalene	(2)	10.182	142	933925	7.737
87) 1-Methylnaphthalene	(2)	10.343	142	857316	7.311
88) Hexachlorocyclopentadiene	(3)	10.450	237	180880	7.291
89) 1,2,4,5-Tetrachlorobenzene	(3)	10.455	216	313921	7.358
91) cis-Isosafrole	(3)	10.546	162	61008	1.262
93) 2,4,6-Trichlorophenol	(3)	10.653	196	216101	7.856
95) 2,4,5-Trichlorophenol	(3)	10.701	196	242392	8.173
96)$2-Fluorobiphenyl	(3)	10.808	172	1728859	15.185
97) trans-Isosafrole	(3)	10.915	162	327324	6.470
98) 1,1'-Biphenyl	(3)	10.958	154	1004304	7.184
99) 2-Chloronaphthalene	(3)	10.974	162	824146	7.288
101) 1-Chloronaphthalene	(3)	11.006	162	777305	7.894
103) Diphenyl ether	(3)	11.140	170	514041	7.504
104) 2-Nitroaniline	(3)	11.150	138	282342	7.876
108) 1,4-Naphthoquinone	(3)	11.268	158	348814	7.594
109) 1,4-Dinitrobenzene	(3)	11.391	168	106614	8.551
110) Dimethylphthalate	(3)	11.487	163	932608	7.958
111) 1,3-Dinitrobenzene	(3)	11.503	168	128136	8.400
113) 2,6-Dinitrotoluene	(3)	11.562	165	197554	8.168
114) Acenaphthylene	(3)	11.637	152	1296914	7.719
117) 3-Nitroaniline	(3)	11.798	138	243474	7.717
118)*Acenaphthene-d10	(3)	11.846	164	372900	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
119) Acenaphthene	(3)	11.894	153	875452	7.571
120) 2,4-Dinitrophenol	(3)	11.947	184	67660	11.645
121) 4-Nitrophenol	(3)	12.054	109	201869	7.886
122) Pentachlorobenzene	(3)	12.076	250	264394	7.596
124) Dibenzofuran	(3)	12.134	168	1086411	7.670
123) 2,4-Dinitrotoluene	(3)	12.134	165	252336	8.152
126) 1-Naphthylamine	(3)	12.241	143	864373	7.392
127) 2,3,4,6-Tetrachlorophenol	(3)	12.300	232	145863	8.080
128) 2-Naphthylamine	(3)	12.343	143	857596	7.613
129) Diethylphthalate	(3)	12.482	149	987322	7.784
130) Thionazin	(3)	12.573	107	230754	7.163
131) Fluorene	(3)	12.573	166	852544	7.388
132) 4-Chlorophenyl-phenylether	(3)	12.594	204	351987	7.802
133) 5-Nitro-o-toluidine	(3)	12.600	152	265049	8.066
134) 4-Nitroaniline	(3)	12.605	138	258962	8.192
135) 4,6-Dinitro-2-methylphenol	(4)	12.648	198	75255	7.657
137) NDPA as diphenylamine	(4)	12.744	169	741779	7.475
136) N-Nitrosodiphenylamine	(4)	12.744	169	741779	7.475
139) 1,2-Diphenylhydrazine	(4)	12.792	77	1899932	7.646
140)$2,4,6-Tribromophenol	(3)	12.878	332	168091	15.074
142) Tetraethyldithiopyrophosphate	(4)	12.974	97	290270	7.916
145) Diallate (peak 1)	(4)	13.124	86	646685	6.340
146) Phorate	(4)	13.129	75	1199862	7.830
147) Phenacetin	(4)	13.151	108	745403	7.722
148) 4-Bromophenyl-phenylether	(4)	13.210	248	182828	7.694
149) Diallate (peak 2)	(4)	13.231	86	116407	1.330
150) Hexachlorobenzene	(4)	13.268	284	215284	7.647
152) Dimethoate	(4)	13.338	87	688713	7.584
153) Atrazine	(4)	13.440	200	196753	7.412
154) Pentachlorophenol	(4)	13.530	266	115288	8.090
155) 4-Aminobiphenyl	(4)	13.541	169	551031	7.563
156) Pentachloronitrobenzene	(4)	13.541	237	88086	7.662
157) Pronamide	(4)	13.637	173	426384	7.697
158)*Phenanthrene-d10	(4)	13.777	188	660553	5.000
159) Dinoseb	(4)	13.787	211	104830	8.130
160) Phenanthrene	(4)	13.809	178	1203678	7.373
162) Anthracene	(4)	13.878	178	1259289	7.794
168) Carbazole	(4)	14.097	167	1216404	7.514
169) Methyl parathion	(4)	14.306	109	458106	8.013
170) Di-n-butylphthalate	(4)	14.622	149	1825602	7.650

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$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

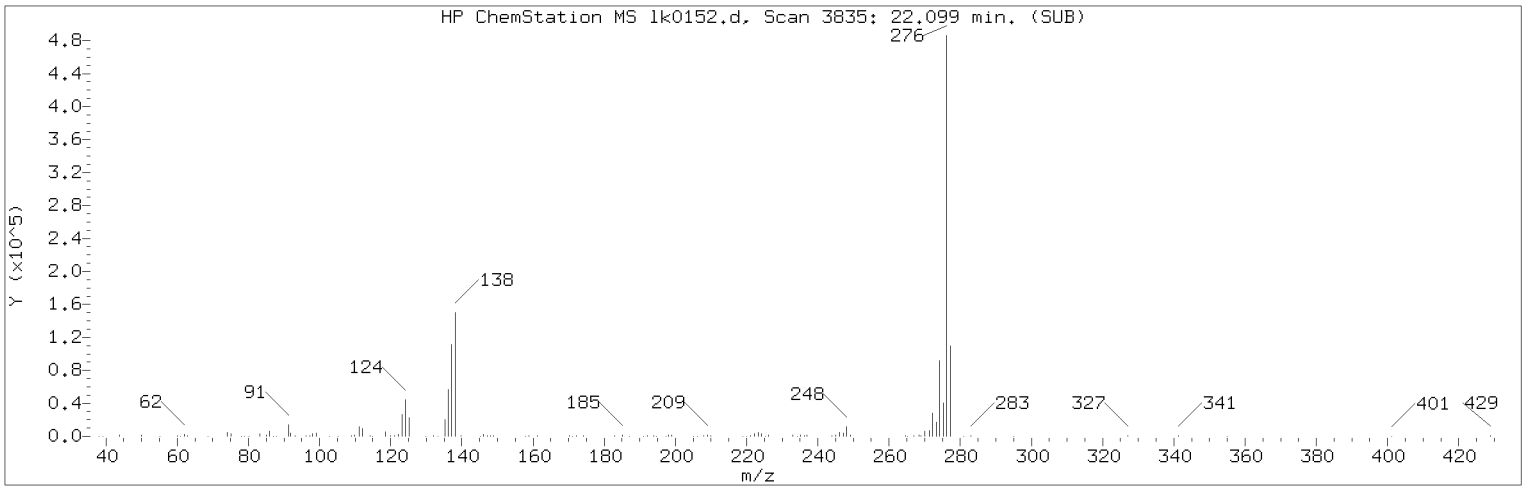
Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
172) Parathion	(4)	14.868	109	296795	7.970
173) 4-Nitroquinoline-1-oxide	(4)	14.889	190	103613	7.679
227) Total PAHs	(6)			20187532	137.267
174) Octachlorostyrene	(4)	15.231	308	83269	7.334
176) Isodrin	(4)	15.285	193	146171	7.372
178) Fluoranthene	(4)	15.515	202	1272099	7.744
179) Benzidine	(5)	15.745	184	2677304	22.428
180)*Pyrene-d10	(5)	15.836	212	635062	5.000
182) Pyrene	(5)	15.868	202	1327443	7.431
184)$Terphenyl-d14	(5)	16.151	244	1454213	14.776
187) p-Dimethylaminoazobenzene	(5)	16.387	225	186053	7.397
190) Chlorobenzilate	(5)	16.478	139	606994	7.636
192) 3,3'-Dimethylbenzidine	(5)	16.959	212	839531	7.564
193) Butylbenzylphthalate	(5)	17.018	149	831485	7.712
196) 2-Acetylaminofluorene	(5)	17.392	181	534709	7.267
198) 3,3'-Dichlorobenzidine	(5)	17.911	252	448497	7.708
200) Benzo(a)anthracene	(5)	17.922	228	1140704	7.773
203) 4,4'-Methylenebis(2-chloroanil	(5)	17.927	231	228357	7.750
201) Chrysene	(5)	17.986	228	1140410	7.626
204) bis(2-Ethylhexyl)phthalate	(5)	18.098	149	1228068	7.704
208) 6-Methylchrysene	(5)	18.804	242	792741	7.564
210) Di-n-octylphthalate	(6)	19.275	149	2163399	7.704
211) Benzo(b)fluoranthene	(6)	19.810	252	1154506	7.646
212) 7,12-Dimethylbenz[a]anthracene	(6)	19.815	256	446094	6.961
213) Benzo(k)fluoranthene	(6)	19.863	252	1131997	7.460
216) Benzo(a)pyrene	(6)	20.345	252	1099035	7.811
218)*Perylene-d12	(6)	20.436	264	593000	5.000
220) 3-Methylcholanthrene	(6)	20.922	268	474220	7.399
222) Dibenz(a,h)acridine	(6)	21.751	279	894053	7.606
223) Dibenz(a,j)acridine	(6)	21.826	279	869641	7.446
224) Indeno(1,2,3-cd)pyrene	(6)	22.099	276	1007786M	7.853
225) Dibenz(a,h)anthracene	(6)	22.136	278	1055069	7.861
226) Benzo(g,h,i)perylene	(6)	22.527	276	1035588	7.668

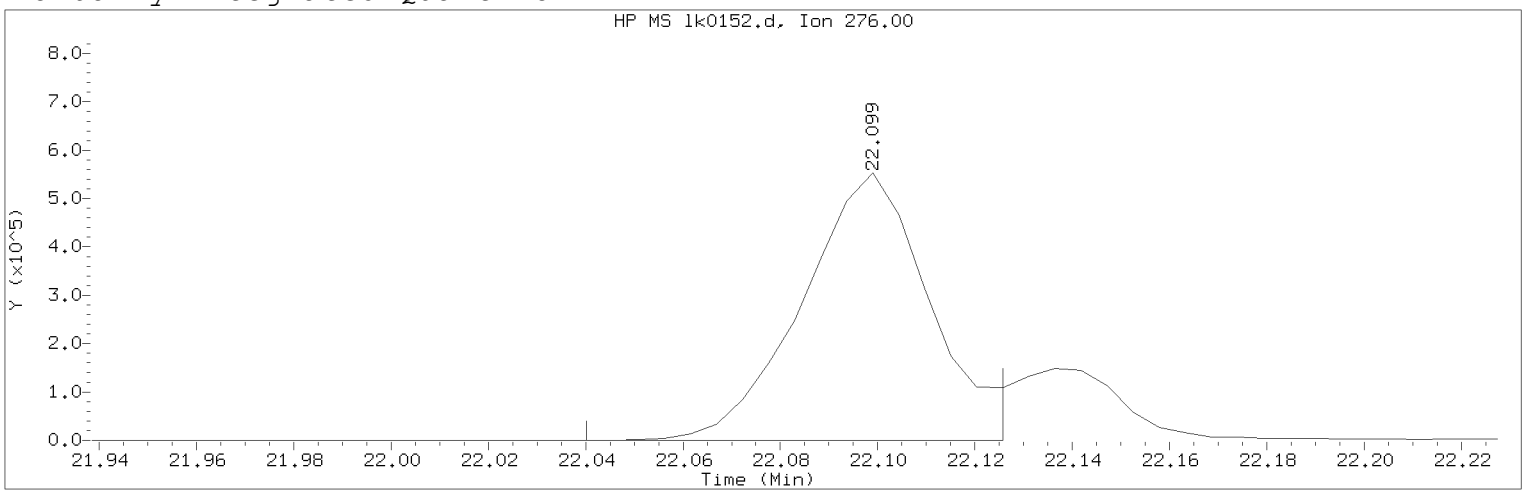
M = Compound was manually integrated.
* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 06-NOV-2019 09:10
Date, time and analyst ID of latest file update: 06-Nov-2019 09:10 knb25316

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

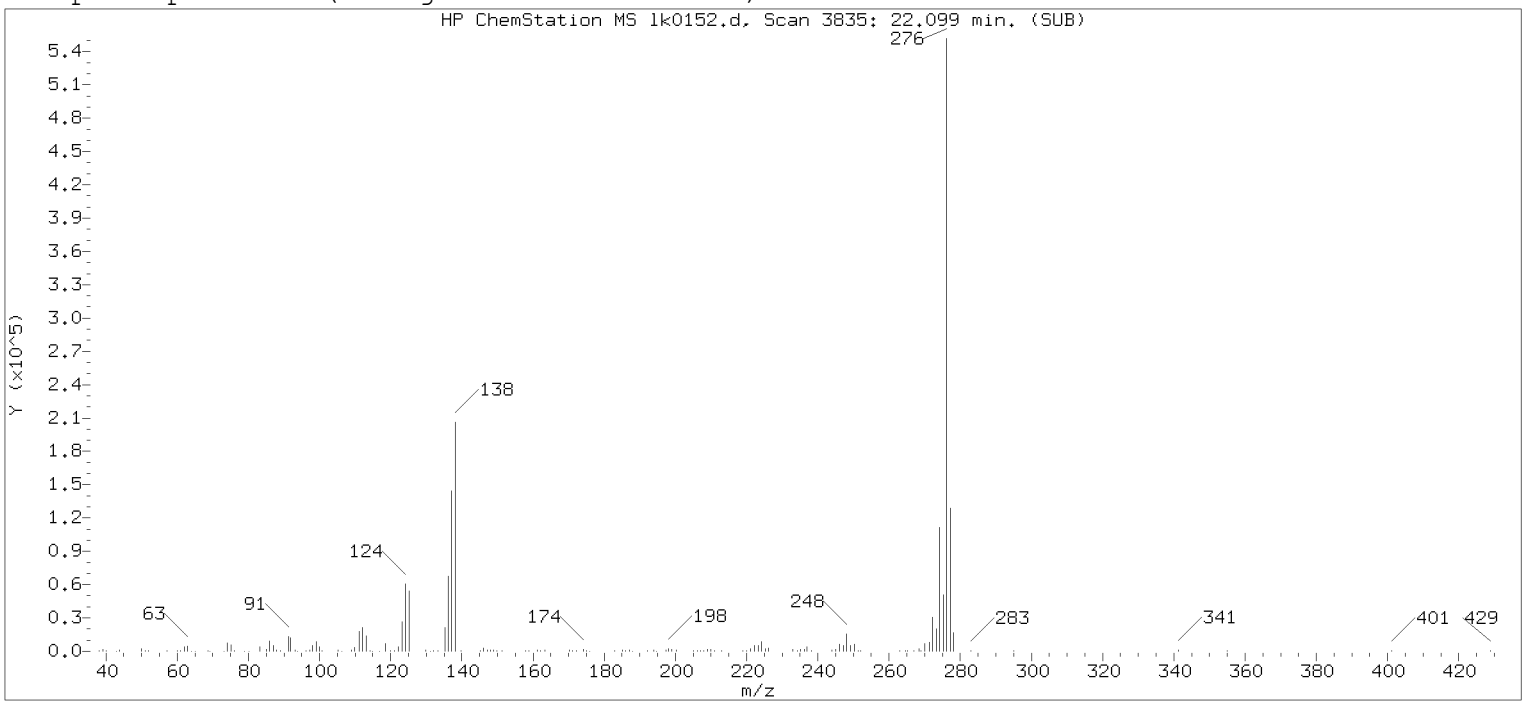
Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3835
Retention Time (minutes) : 22.099
Quant Ion : 276.00
Area (flag) : 1007786M
On-Column Amount (ng/ul) : 7.8527
Integration start scan : 3823 Integration stop scan: 3839
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

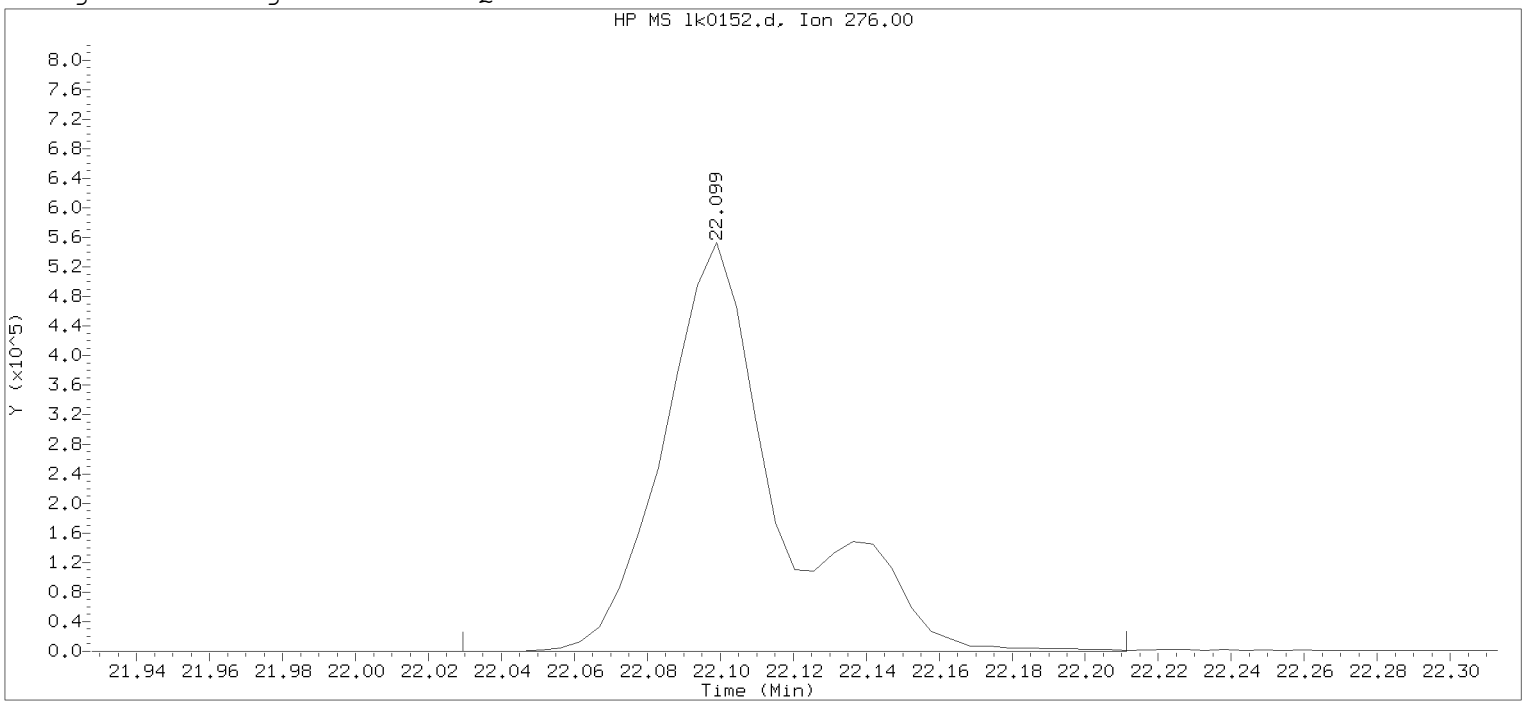
Analyst responsible for change: Digitally signed by Kira N. Beck
on 11/06/2019 at 09:10.
Target 3.5 esignature user ID: knb25316

Secondary review performed and digitally signed by Matthew E. Barton on 11/06/2019 at 10:23.
PARALLAX ID: reb00745

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem/HP20296.i/19nov05a.b/lk0152.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 19:34 Analyst ID: art12405

Method used: /chem/HP20296.i/19nov05a.b/rv8270d.m Sublist used: all1
Calibration date and time: 05-NOV-2019 20:07
Date, time and analyst ID of latest file update: 05-Nov-2019 20:08 Unknown

Sample Name: SSTD7.5 Lab Sample ID: RVSTD3089

Compound Number : 224
Compound Name : Indeno(1,2,3-cd)pyrene
Scan Number : 3835
Retention Time (minutes) : 22.099
Quant Ion : 276.00
Area : 1224584
On-column Amount (ng/ul) : 9.5419
Integration start scan : 3821 Integration stop scan: 3855
Y at integration start : 0 Y at integration end: 0

Digitally signed by Kira N. Beck on 11/06/2019 at 09:10.
Target 3.5 esignature used for this report

Raw QC Data

Semivolatiles by GC/MS

Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP18831.i/19nov04.b/hk0034.d Injection date and time: **04-NOV-2019 13:00**
Data file Sample Info. Line: SBLKWY302;SBLKWY302;1;3;BLANK;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.930	(0.000)	848	152	155681	(-28)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	408267	(-49)	5.00	
118) Acenaphthene-d10	11.645	(0.006)	1657	164	288852	(-28)	5.00	
158) Phenanthrene-d10	13.528	(0.000)	1980	188	535790	(-27)	5.00	
180) Pyrene-d10	15.509	(0.006)	2320	212	373894	(-30)	5.00	
218) Perylene-d12	20.009	(0.006)	3092	264	381397	(-30)	5.00	

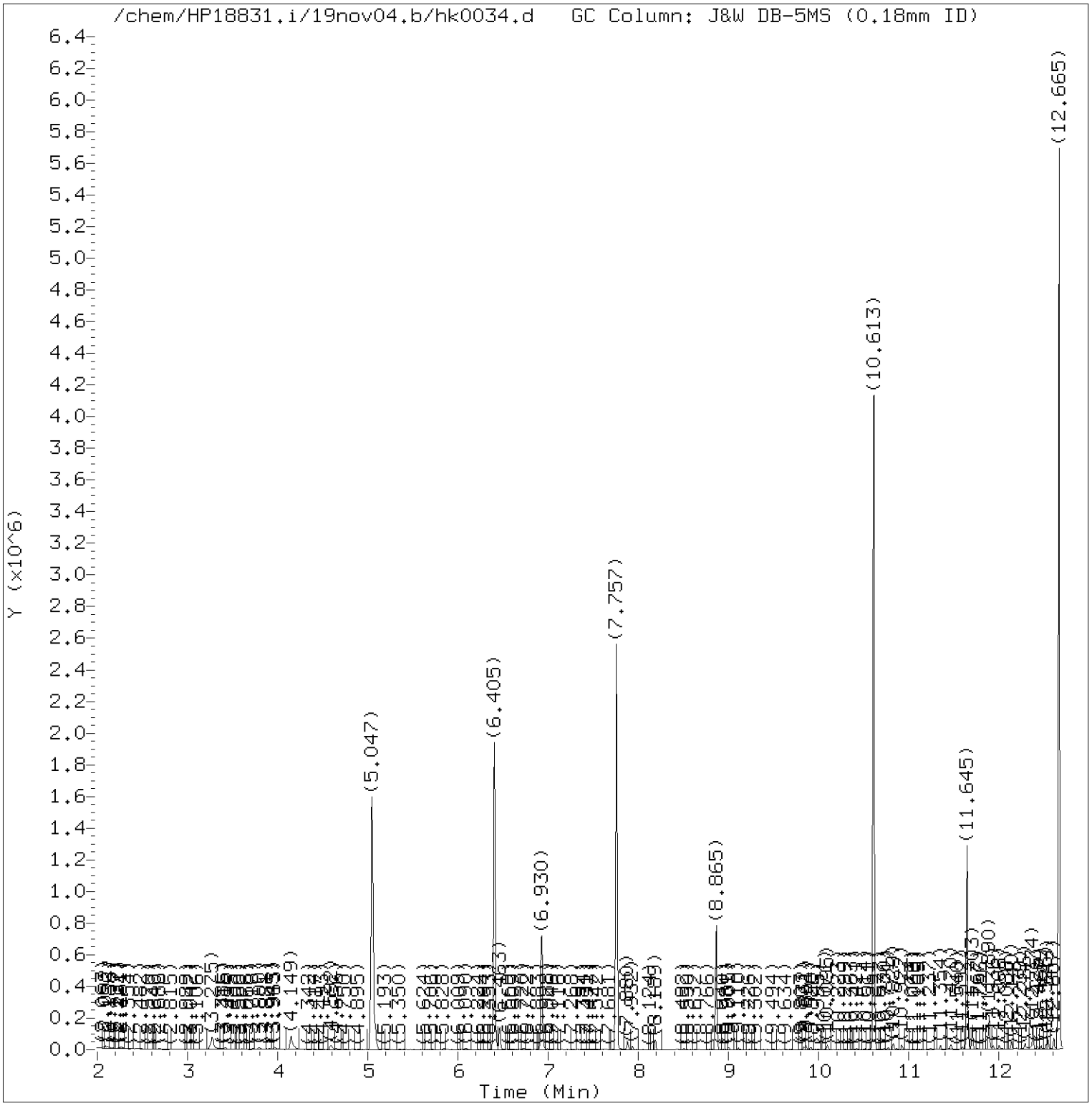
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.
45) Nitrobenzene-d5	(2)	7.757	(0.001)	82	921900	26.825	107%
96) 2-Fluorobiphenyl	(3)	10.613	(0.000)	172	1603636	16.559	66%
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1382224	20.135	81%

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by William H Saadeh on 11/04/2019 at 18:41. Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

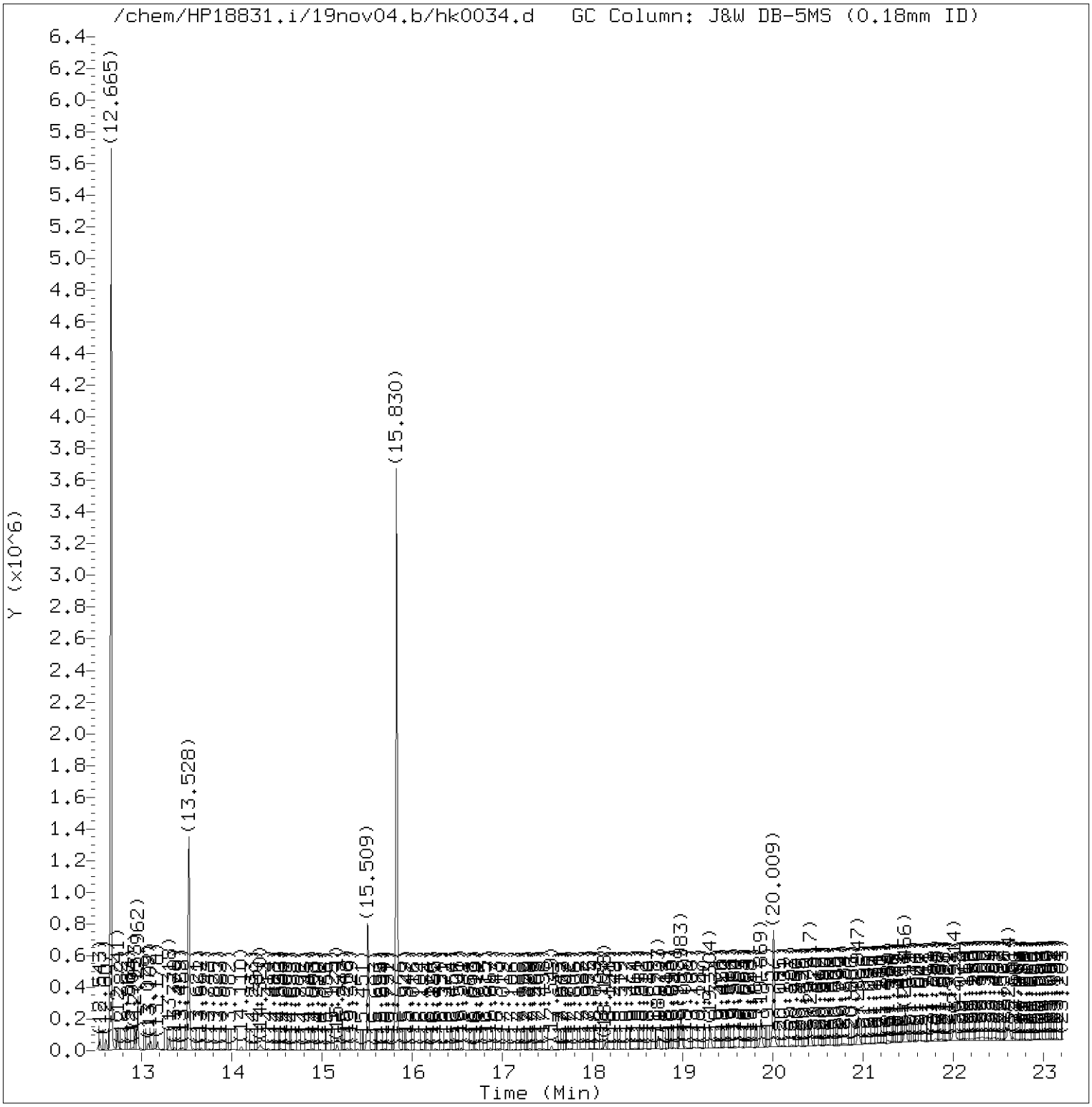
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0034.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:00 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: SBLKWY302 Lab Sample ID: SBLKWY302

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0034.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:00 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: SBLKWY302 Lab Sample ID: SBLKWY302

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0034.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:00 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: SBLKWY302 Lab Sample ID: SBLKWY302

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.930	152	155681	5.000
45)$Nitrobenzene-d5	(2)	7.757	82	921900	26.825
68)*Naphthalene-d8	(2)	8.865	136	408267	5.000
96)$2-Fluorobiphenyl	(3)	10.613	172	1603636	16.559
118)*Acenaphthene-d10	(3)	11.645	164	288852	5.000
158)*Phenanthrene-d10	(4)	13.528	188	535790	5.000
180)*Pyrene-d10	(5)	15.509	212	373894	5.000
184)$Terphenyl-d14	(5)	15.830	244	1382224	20.135
218)*Perylene-d12	(6)	20.009	264	381397	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991

Data file: /chem/HP20296.i/19nov05.b/lk0098.d Injection date and time: **05-NOV-2019 11:24**
Data file Sample Info. Line: SBLKWG303;SBLKWG303;1;3;BLANK;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.043	(-0.005)	908	152	152635	(1)	5.00	
68) Naphthalene-d8	9.017	(0.005)	1277	136	635394	(5)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	267408	(5)	5.00	
158) Phenanthrene-d10	13.767	(0.005)	2165	188	471695	(7)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	434406	(3)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	368596	(-5)	5.00	

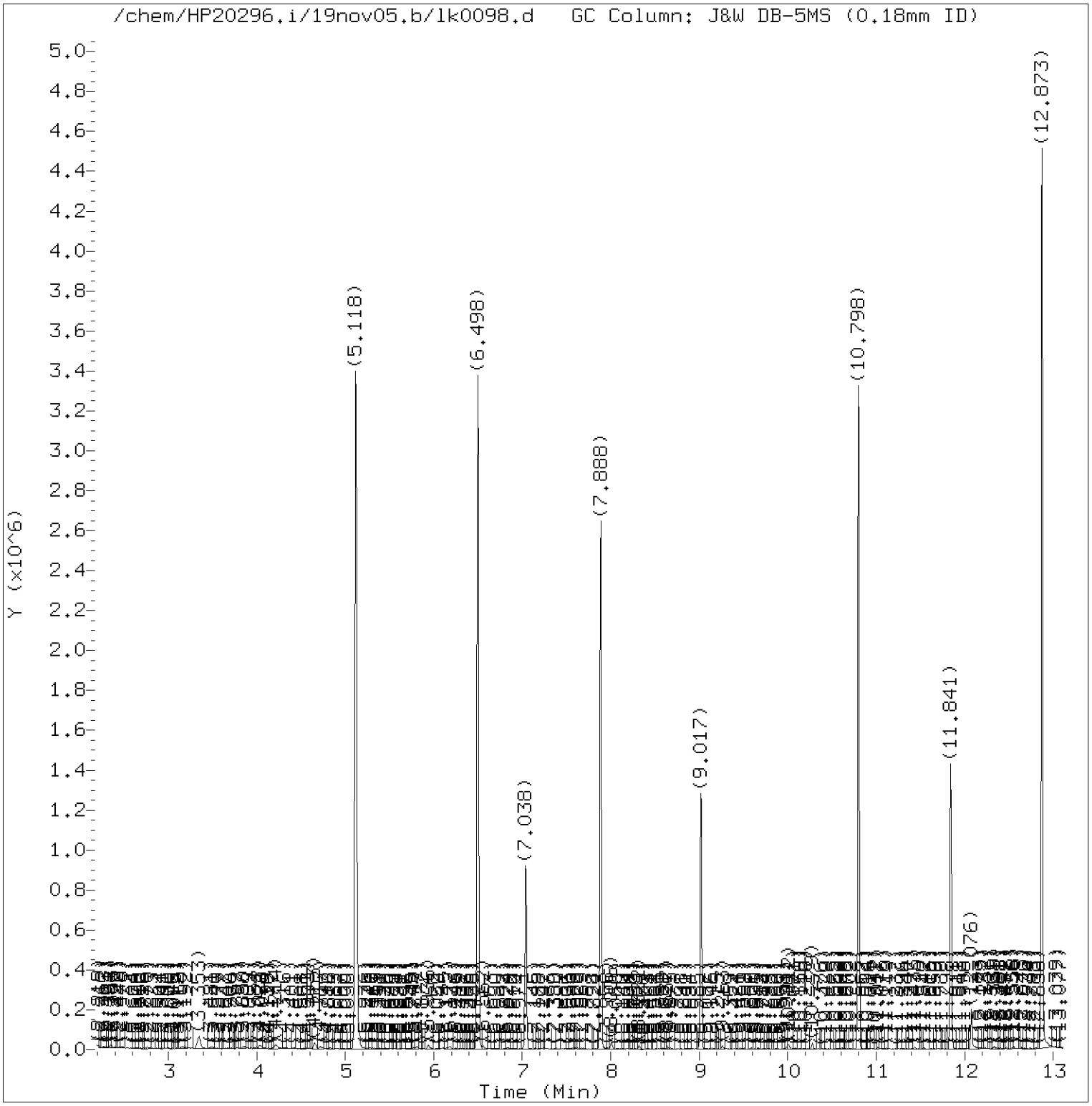
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.
45) Nitrobenzene-d5	(2)	7.888	(-0.001)	82	1286642	15.806	63%
96) 2-Fluorobiphenyl	(3)	10.798	(0.000)	172	1050431	12.866	51%
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1398329	20.772	83%

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)				Not Detected					0.1
123) 2,4-Dinitrotoluene	(3)				Not Detected					0.3
129) Diethylphthalate	(3)				Not Detected					0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

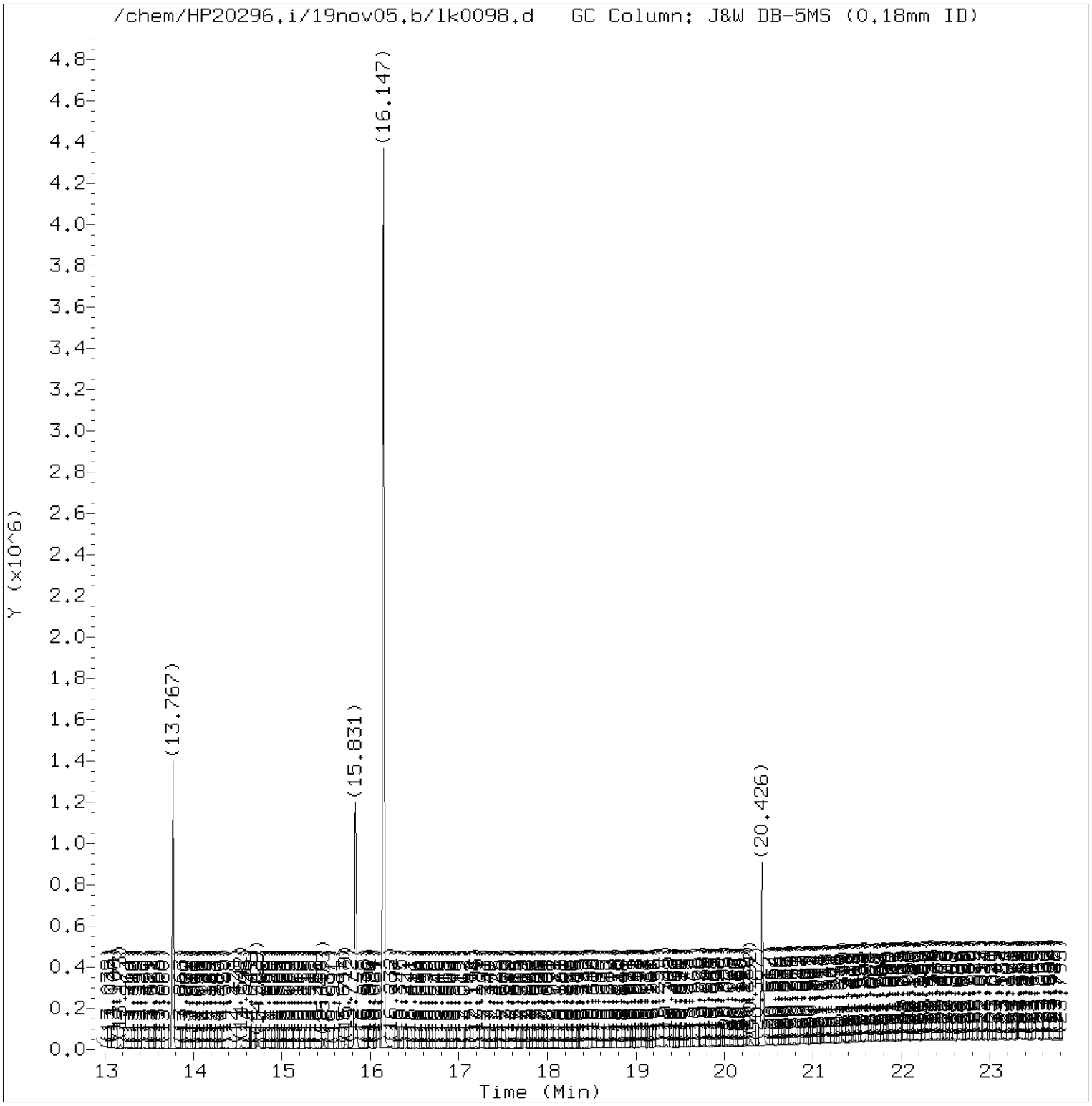
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0098.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: SBLKWG303 Lab Sample ID: SBLKWG303

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0098.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: SBLKWG303 Lab Sample ID: SBLKWG303

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0098.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:24 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: SBLKWG303 Lab Sample ID: SBLKWG303

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.043	152	152635	5.000
45)$Nitrobenzene-d5	(2)	7.888	82	1286642	15.806
68)*Naphthalene-d8	(2)	9.017	136	635394	5.000
96)$2-Fluorobiphenyl	(3)	10.798	172	1050431	12.866
118)*Acenaphthene-d10	(3)	11.841	164	267408	5.000
158)*Phenanthrene-d10	(4)	13.767	188	471695	5.000
180)*Pyrene-d10	(5)	15.831	212	434406	5.000
184)$Terphenyl-d14	(5)	16.147	244	1398329	20.772
218)*Perylene-d12	(6)	20.431	264	368596	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

F4804MS

Lancaster Laboratories, Inc.
Analysis Summary for GC/MS Semivolatiles

1183610

Data file: /chem/HP20296.i/19nov05.b/lk0108.d
Data file Sample Info. Line: F4804MS;1183610;1;3;MS;;RAAPVA;
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Injection date and time: **05-NOV-2019 16:14**
Instrument ID: **HP20296.i** Batch: **19303WAG**

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 249 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.044	(-0.005)	908	152	152800	(1)	5.00	
68) Naphthalene-d8	9.023	(0.000)	1278	136	635308	(5)	5.00	
118) Acenaphthene-d10	11.847	(0.000)	1806	164	261577	(3)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	456527	(3)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	450994	(7)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	411397	(6)	5.00	

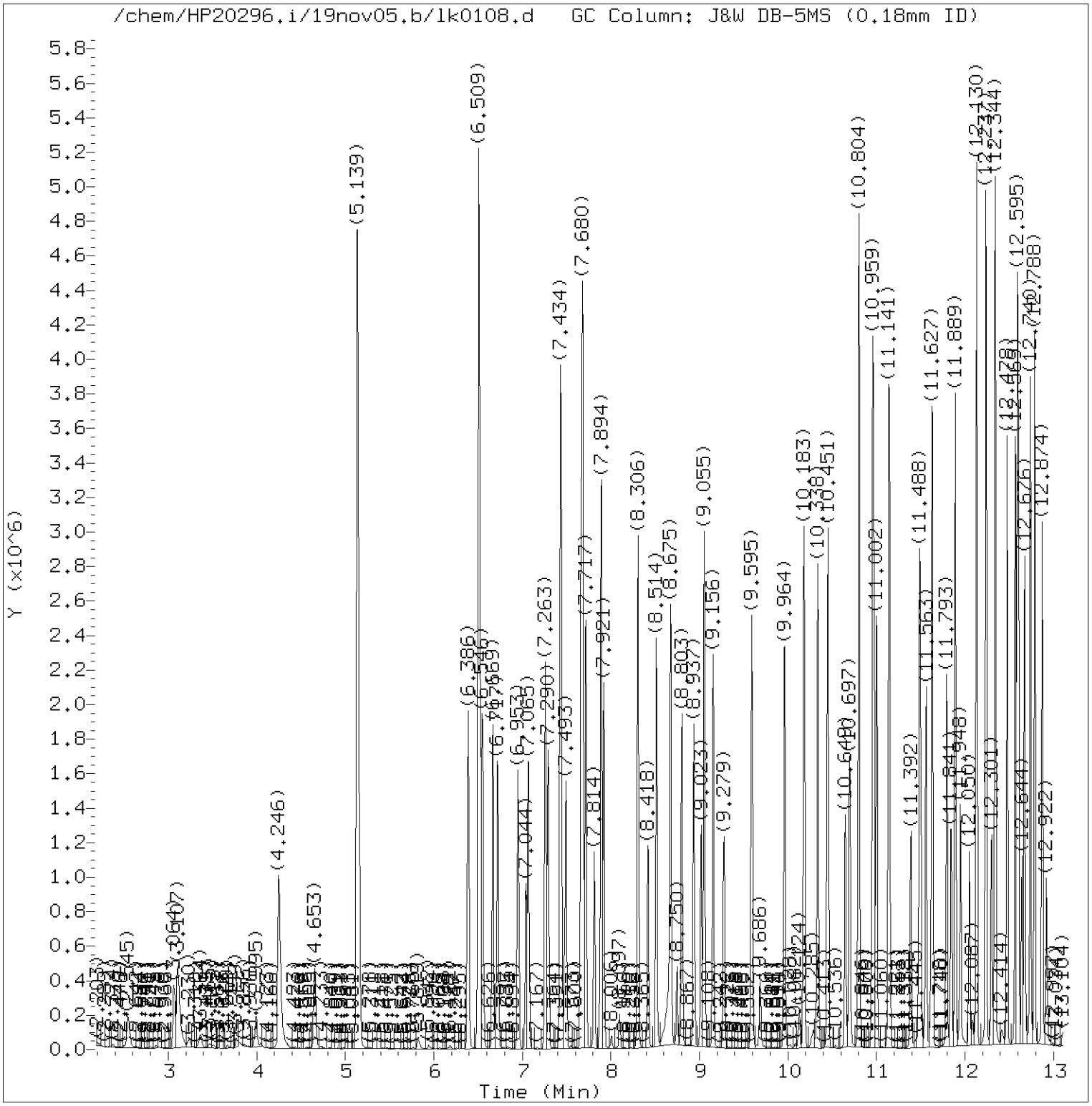
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.894	(-0.001)	82	1697028	20.851	83%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.804	(0.000)	172	1556505	19.489	78%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1588869	22.734	91%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)	11.563	(-0.000)	165	204760	12.069	48.47			0.1
123) 2,4-Dinitrotoluene	(3)	12.135	(-0.000)	165	265973	12.249	49.19			0.3
129) Diethylphthalate	(3)	12.478	(0.000)	149	1102911	12.396	49.78			0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

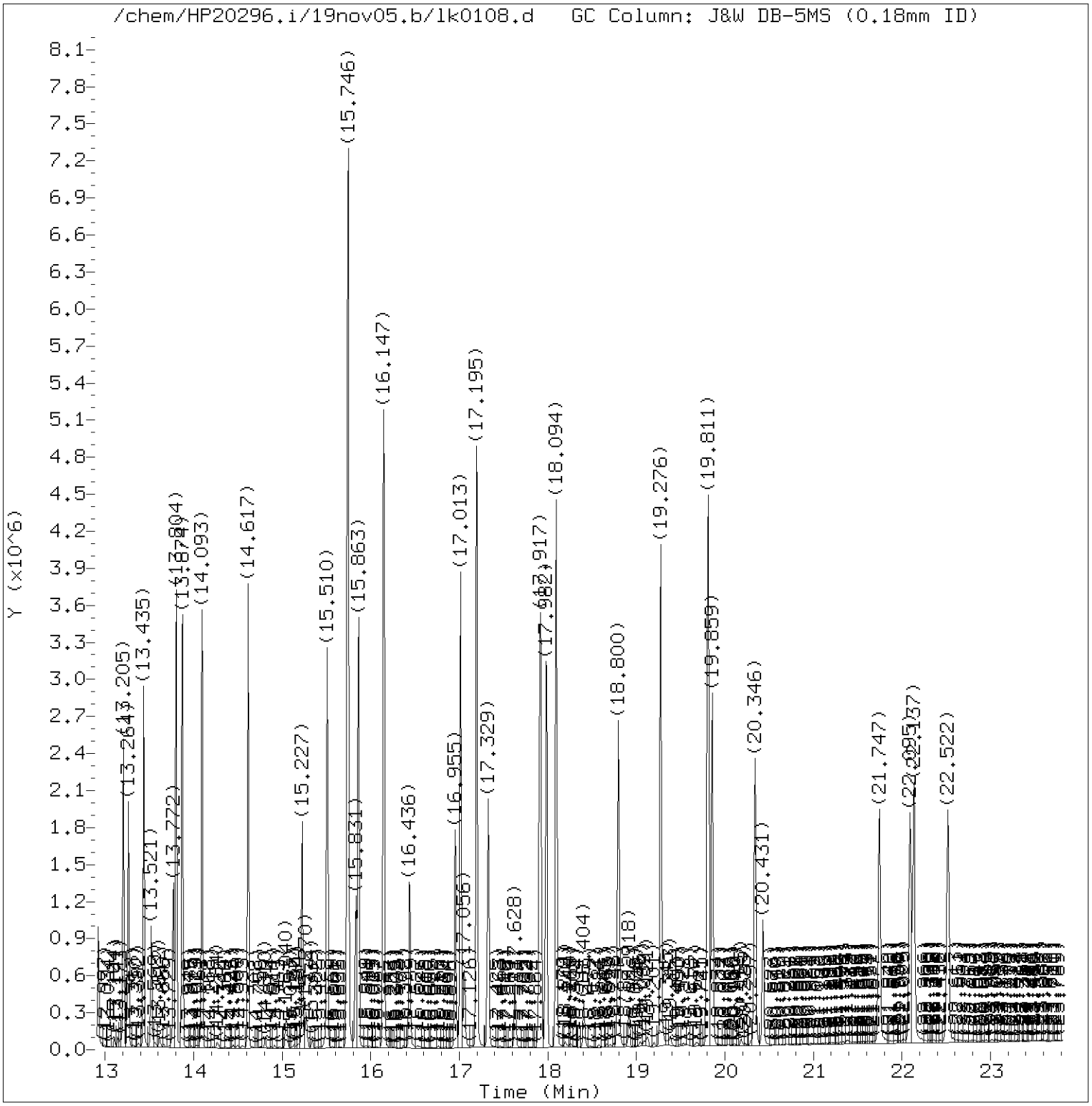
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0108.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:14 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MS Lab Sample ID: 1183610

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0108.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:14 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MS Lab Sample ID: 1183610

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0108.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:14 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MS Lab Sample ID: 1183610

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.044	152	152800	5.000
45)$Nitrobenzene-d5	(2)	7.894	82	1697028	20.851
68)*Naphthalene-d8	(2)	9.023	136	635308	5.000
96)$2-Fluorobiphenyl	(3)	10.804	172	1556505	19.489
113) 2,6-Dinitrotoluene	(3)	11.563	165	204760	12.069
118)*Acenaphthene-d10	(3)	11.847	164	261577	5.000
123) 2,4-Dinitrotoluene	(3)	12.135	165	265973	12.249
129) Diethylphthalate	(3)	12.478	149	1102911	12.396
158)*Phenanthrene-d10	(4)	13.772	188	456527	5.000
180)*Pyrene-d10	(5)	15.831	212	450994	5.000
184)$Terphenyl-d14	(5)	16.147	244	1588869	22.734
218)*Perylene-d12	(6)	20.431	264	411397	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Lancaster Laboratories, Inc.
Analysis Summary for GC/MS Semivolatiles

Data file: /chem/HP20296.i/19nov05.b/lk0109.d
Injection date and time: **05-NOV-2019 16:43**
Data file Sample Info. Line: F4804MSD;1183611;1;3;MSD;;RAAPVA;
Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 249 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.044	(-0.005)	908	152	151132	(0)	5.00	
68) Naphthalene-d8	9.023	(0.000)	1278	136	642684	(6)	5.00	
118) Acenaphthene-d10	11.841	(0.005)	1805	164	266629	(5)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	456545	(3)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	452345	(7)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	406081	(5)	5.00	

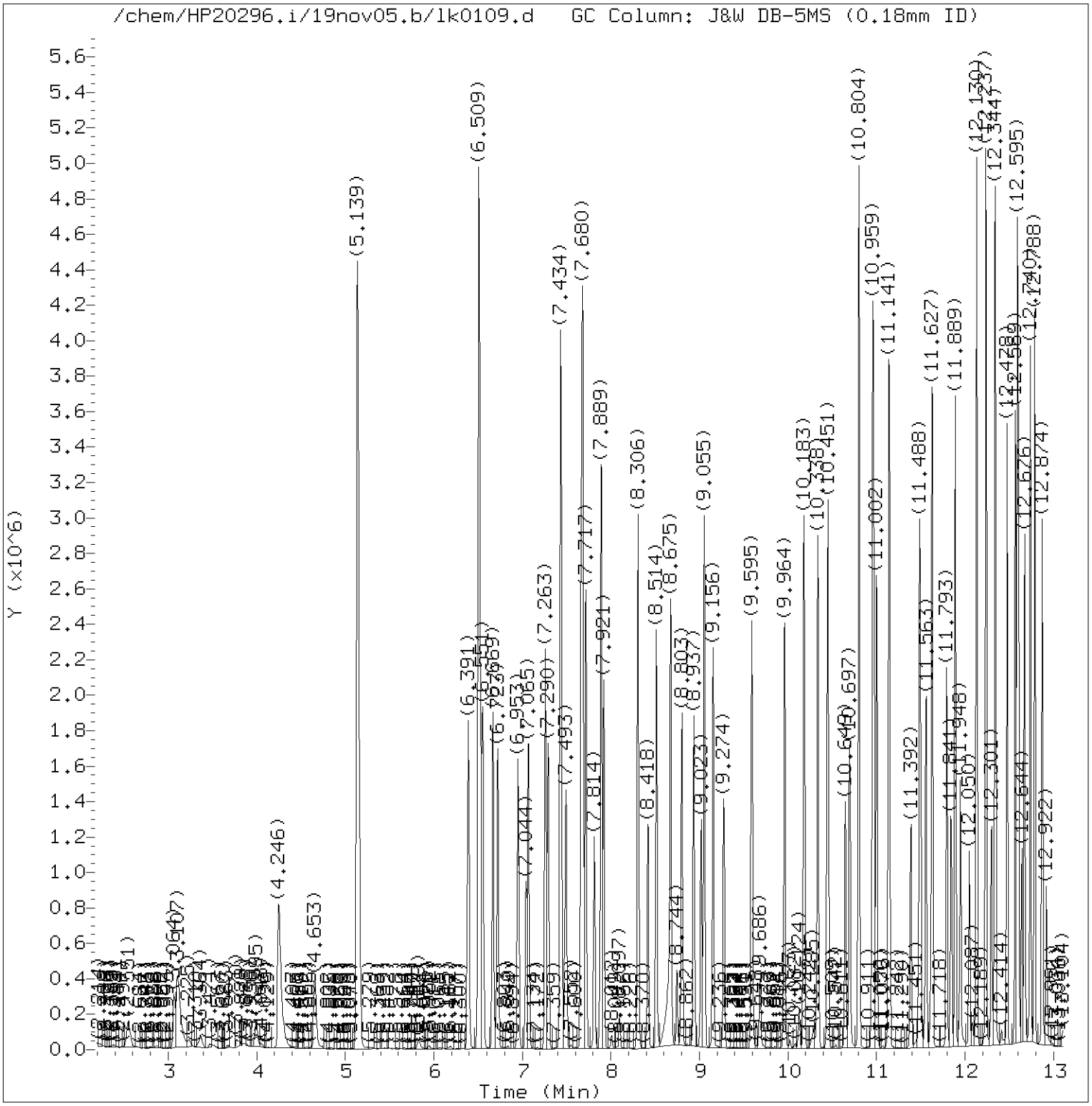
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
45) Nitrobenzene-d5	(2)	7.889	(0.000)	82	1712259	20.797	83%		33 - 113
96) 2-Fluorobiphenyl	(3)	10.804	(0.000)	172	1560776	19.172	77%		44 - 102
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1508475	21.519	86%		39 - 125

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)	11.563	(-0.000)	165	212285	12.275	49.30			0.1
123) 2,4-Dinitrotoluene	(3)	12.135	(-0.000)	165	273123	12.340	49.56			0.3
129) Diethylphthalate	(3)	12.478	(-0.000)	149	1061554	11.705	47.01			0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:13. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

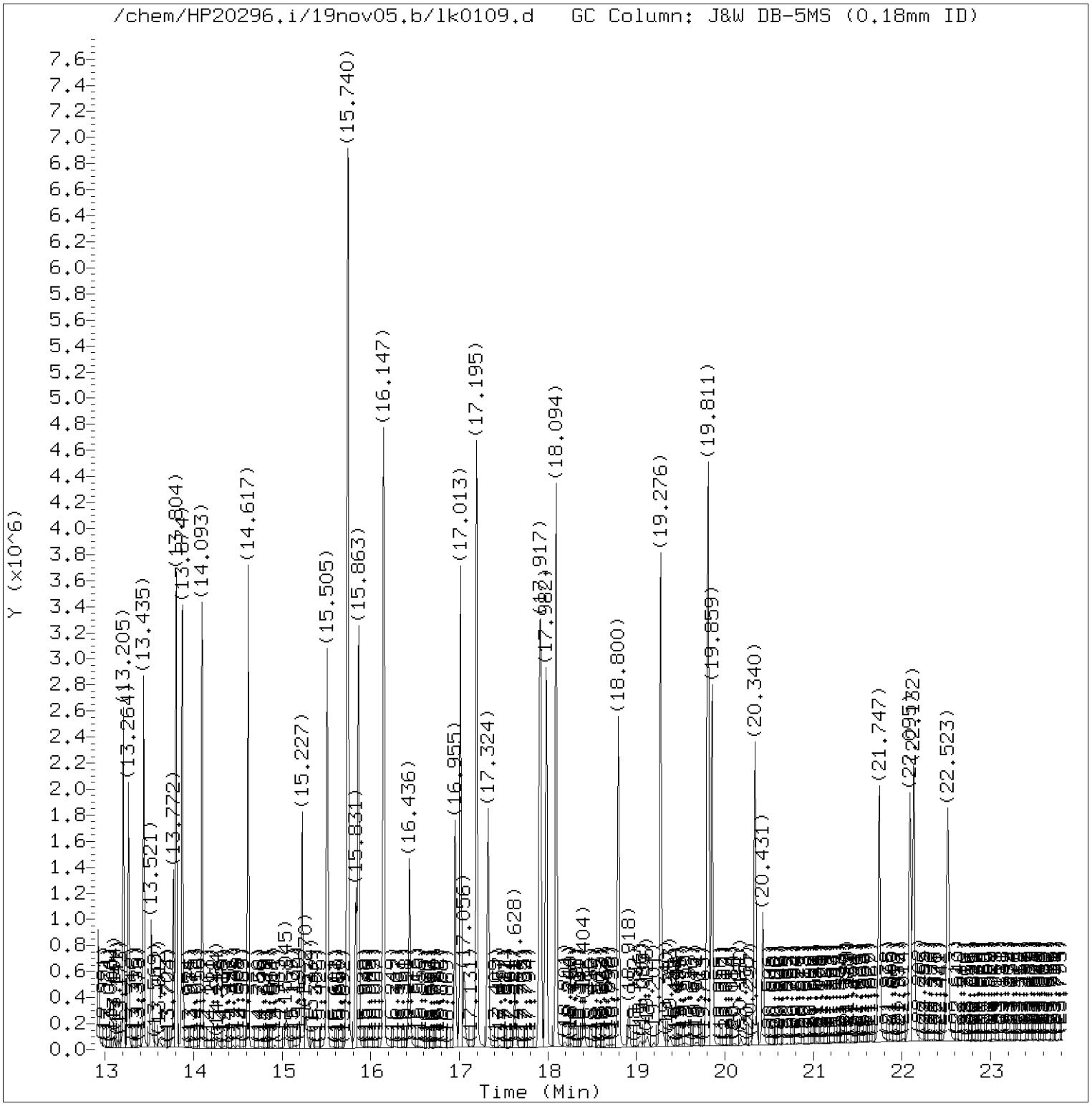
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0109.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:43 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MSD Lab Sample ID: 1183611

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0109.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:43 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MSD Lab Sample ID: 1183611

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:13.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0109.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 16:43 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:11 art12405

Sample Name: F4804MSD Lab Sample ID: 1183611

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.044	152	151132	5.000
45)$Nitrobenzene-d5	(2)	7.889	82	1712259	20.797
68)*Naphthalene-d8	(2)	9.023	136	642684	5.000
96)$2-Fluorobiphenyl	(3)	10.804	172	1560776	19.172
113) 2,6-Dinitrotoluene	(3)	11.563	165	212285	12.275
118)*Acenaphthene-d10	(3)	11.841	164	266629	5.000
123) 2,4-Dinitrotoluene	(3)	12.135	165	273123	12.340
129) Diethylphthalate	(3)	12.478	149	1061554	11.705
158)*Phenanthrene-d10	(4)	13.772	188	456545	5.000
180)*Pyrene-d10	(5)	15.831	212	452345	5.000
184)$Terphenyl-d14	(5)	16.147	244	1508475	21.519
218)*Perylene-d12	(6)	20.431	264	406081	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:13.
Target 3.5 esignature user ID: art12405

Data file: /chem/HP18831.i/19nov04.b/hk0037.d Injection date and time: **04-NOV-2019 13:29**
Data file Sample Info. Line: 302WYLCS;302WYLCS;1;3;LCS;;RAAPVA; Instrument ID: **HP18831.i** Batch: **19302WAY**
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Blank Data file reference: **/chem/HP18831.i/19nov04.b/hk0034.d**

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 04-NOV-2019 18:38
Mid Level Daily Calibration Standard Reference: **/chem/HP18831.i/19nov04.b/hk0031a.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf * (Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 0.5 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	6.929	(0.000)	848	152	133049	(-38)	5.00	
68) Naphthalene-d8	8.865	(0.000)	1180	136	614048	(-24)	5.00	
118) Acenaphthene-d10	11.651	(0.000)	1658	164	291064	(-27)	5.00	
158) Phenanthrene-d10	13.527	(0.000)	1980	188	497321	(-32)	5.00	
180) Pyrene-d10	15.515	(0.000)	2321	212	381491	(-28)	5.00	
218) Perylene-d12	20.015	(0.000)	3093	264	392983	(-28)	5.00	

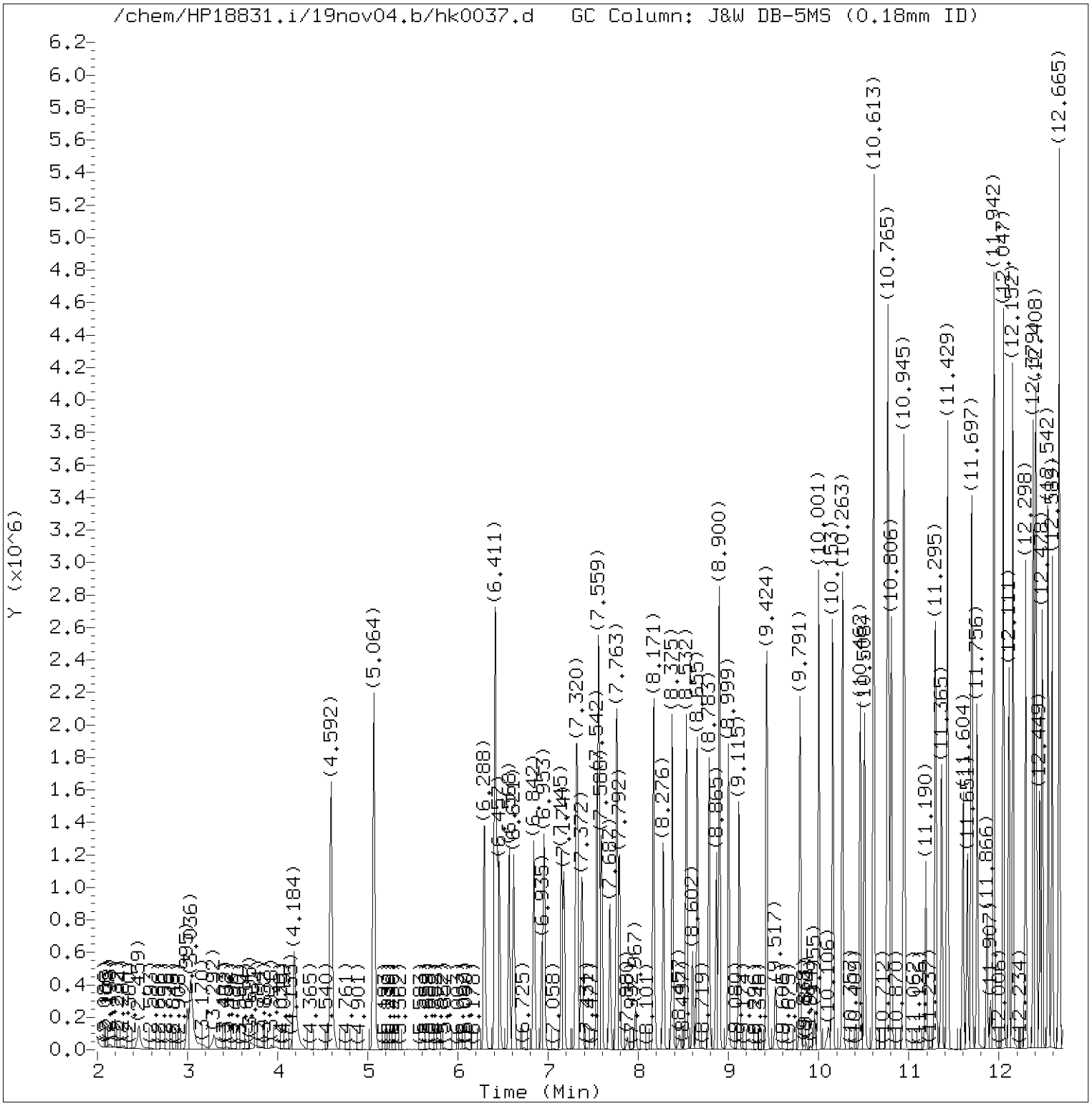
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.
45) Nitrobenzene-d5	(2)	7.763	(0.000)	82	856833	16.577	66%
96) 2-Fluorobiphenyl	(3)	10.613	(0.000)	172	2033695	20.840	83%
184) Terphenyl-d14	(5)	15.830	(0.000)	244	1546013	22.072	88%

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)	11.365	(0.000)	165	246040	11.869	47.47			0.1
123) 2,4-Dinitrotoluene	(3)	11.948	(-0.000)	165	314778	11.267	45.07			0.3
129) Diethylphthalate	(3)	12.298	(-0.000)	149	1048172	10.596	42.38			0.5

Total number of targets = 3

Digitally signed by William H Saadeh on 11/04/2019 at 18:41. Target 3.5 esignature user ID: whs02991

Secondary review performed and digitally signed by Chad A. Moline on 11/05/2019 at 10:47. PARALLAX ID: cam01237



Total Ion Chromatogram (TIC)

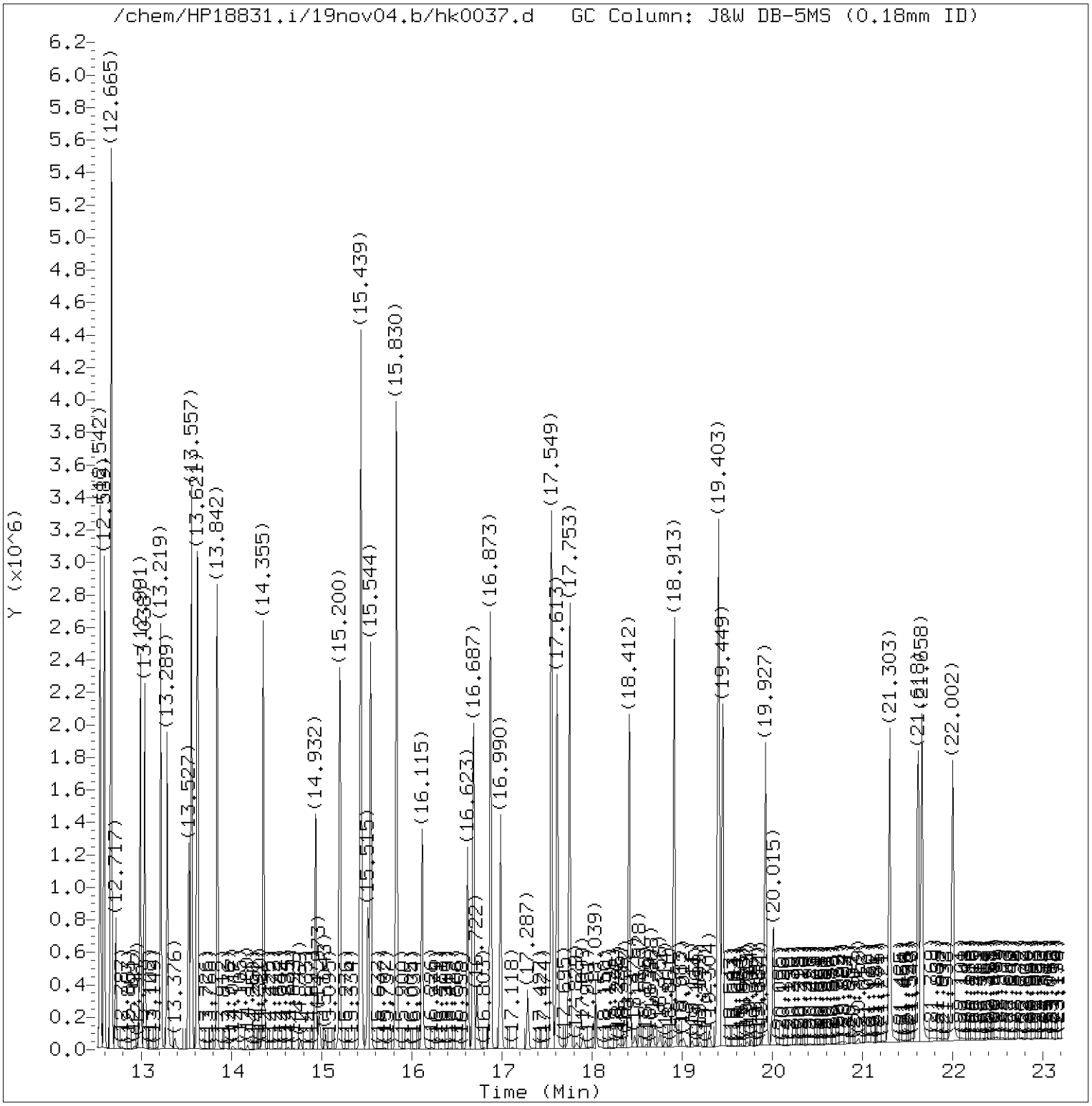
Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0037.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:29 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: 302WYLCS Lab Sample ID: 302WYLCS

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0037.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:29 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: 302WYLCS Lab Sample ID: 302WYLCS

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991

Quant Report

Target Revision 3.5

Data File: /chem/HP18831.i/19nov04.b/hk0037.d Instrument ID: HP18831.i
Injection date and time: 04-NOV-2019 13:29 Analyst ID: whs02991

Method used: /chem/HP18831.i/19nov04.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 04-NOV-2019 18:38
Date, time and analyst ID of latest file update: 04-Nov-2019 18:39 whs02991

Sample Name: 302WYLCS Lab Sample ID: 302WYLCS

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	6.929	152	133049	5.000
45)$Nitrobenzene-d5	(2)	7.763	82	856833	16.577
68)*Naphthalene-d8	(2)	8.865	136	614048	5.000
96)$2-Fluorobiphenyl	(3)	10.613	172	2033695	20.840
113) 2,6-Dinitrotoluene	(3)	11.365	165	246040	11.869
118)*Acenaphthene-d10	(3)	11.651	164	291064	5.000
123) 2,4-Dinitrotoluene	(3)	11.948	165	314778	11.267
129) Diethylphthalate	(3)	12.298	149	1048172	10.596
158)*Phenanthrene-d10	(4)	13.527	188	497321	5.000
180)*Pyrene-d10	(5)	15.515	212	381491	5.000
184)$Terphenyl-d14	(5)	15.830	244	1546013	22.072
218)*Perylene-d12	(6)	20.015	264	392983	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by William H Saadeh
on 11/04/2019 at 18:41.
Target 3.5 esignature user ID: whs02991

Data file: /chem/HP20296.i/19nov05.b/lk0099.d Injection date and time: **05-NOV-2019 11:53**
Data file Sample Info. Line: 303WGLCS;303WGLCS;1;3;LCS;;RAAPVA; Instrument ID: **HP20296.i** Batch: **19303WAG**
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Blank Data file reference: **/chem/HP20296.i/19nov05.b/lk0098.d**

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: **22230M**
Calibration date and time (Last Method Edit): 08-NOV-2019 00:10
Mid Level Daily Calibration Standard Reference: **/chem/HP20296.i/19nov05.b/lk0091.d**

Matrix: WATER Level: Low GPC clean-up: No On-Column Amount units: ng/ul In Sample Concentration units: ug/L

Sample Concentration Formula: On-Column Amount * DF * gpcf*(Uf * Vt/(Vo))

Dilution Factor (DF): 1 Unit Correction Factor (Uf): 1 Final Extract Volume (Vt): 1000 ul
Sample Volume (Vo): 250 ml Volume Injected (Vi): 1 ul

Analysis Comments:

Internal Standards	RT	(+/-RT)	Scan	QIon	Area	(+/- %Change)	Conc. (on-column)	QC Flag
26) 1,4-Dichlorobenzene-d4	7.043	(-0.005)	908	152	152551	(1)	5.00	
68) Naphthalene-d8	9.022	(0.000)	1278	136	638076	(6)	5.00	
118) Acenaphthene-d10	11.847	(0.000)	1806	164	260703	(2)	5.00	
158) Phenanthrene-d10	13.772	(0.000)	2166	188	447387	(1)	5.00	
180) Pyrene-d10	15.831	(0.000)	2551	212	441498	(5)	5.00	
218) Perylene-d12	20.431	(0.000)	3411	264	406229	(5)	5.00	

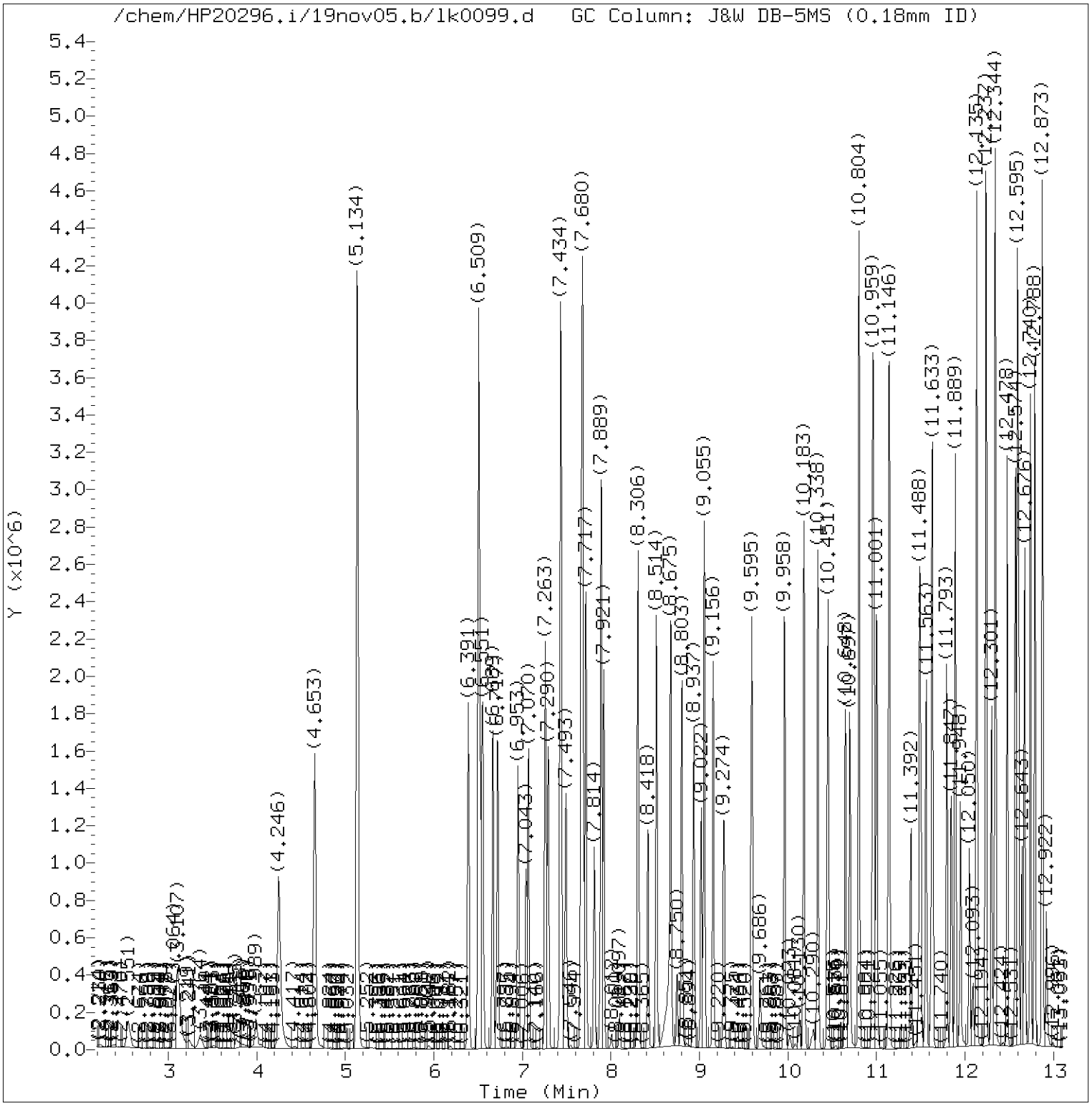
Surrogate Standards	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.
45) Nitrobenzene-d5	(2)	7.894	(-0.001)	82	1535003	18.778	75%
96) 2-Fluorobiphenyl	(3)	10.804	(0.000)	172	1345655	16.905	68%
184) Terphenyl-d14	(5)	16.147	(0.000)	244	1473691	21.539	86%

Target Compounds	I.S. Ref.	RT	(+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (on-column)
113) 2,6-Dinitrotoluene	(3)	11.563	(-0.000)	165	199101	11.774	47.10			0.1
123) 2,4-Dinitrotoluene	(3)	12.135	(-0.000)	165	256083	11.833	47.33			0.3
129) Diethylphthalate	(3)	12.478	(-0.000)	149	967268	10.908	43.63			0.5

Total number of targets = 3

Digitally signed by Ashley R. Transue on 11/08/2019 at 00:12. Target 3.5 esignature user ID: art12405

Secondary review performed and digitally signed by Matthew E. Barton on 11/11/2019 at 07:29. PARALLAX ID: reb00745



Total Ion Chromatogram (TIC)

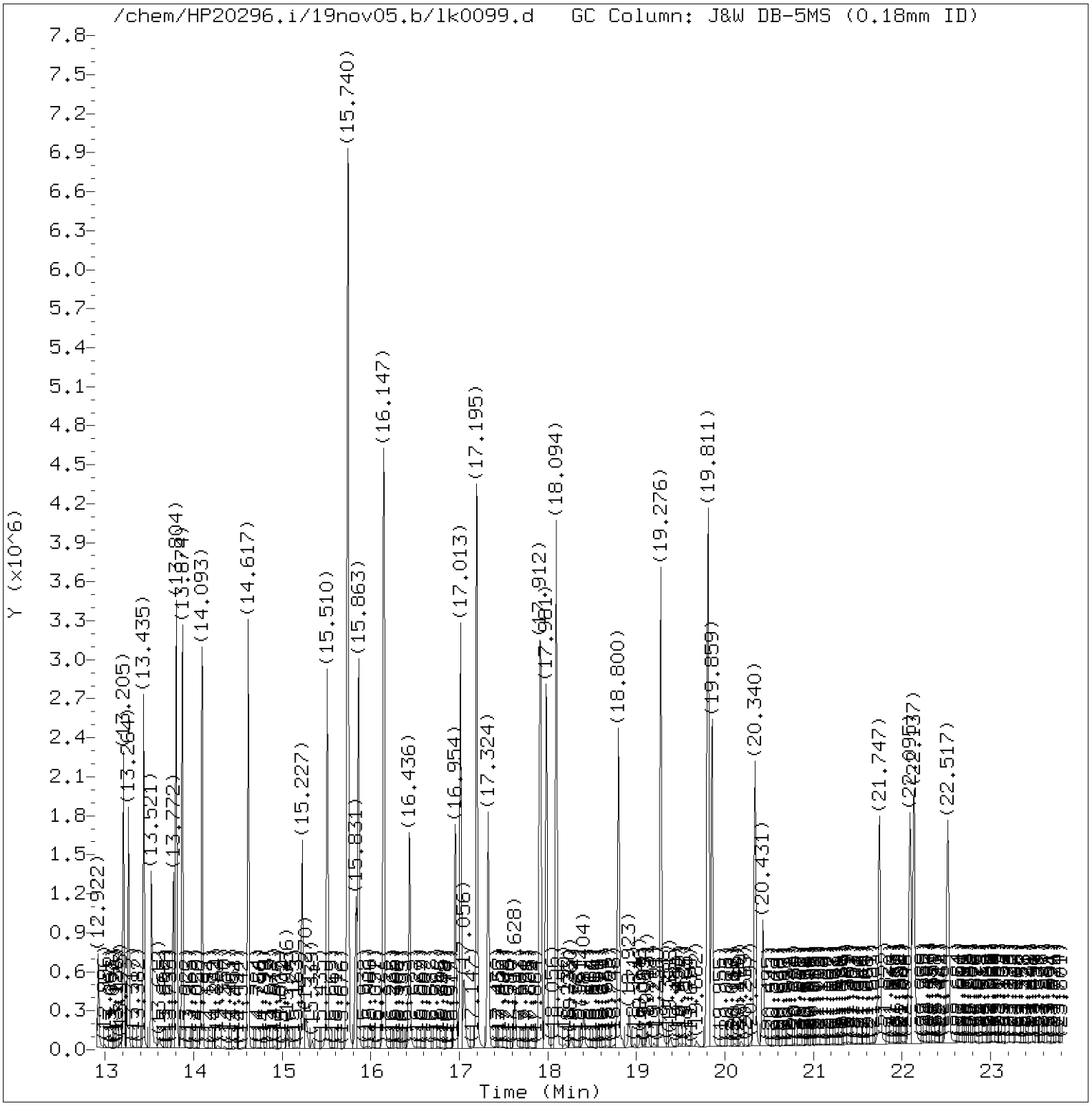
Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0099.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:53 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: 303WGLCS Lab Sample ID: 303WGLCS

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0099.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:53 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: 303WGLCS Lab Sample ID: 303WGLCS

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Quant Report

Target Revision 3.5

Data File: /chem/HP20296.i/19nov05.b/lk0099.d Instrument ID: HP20296.i
Injection date and time: 05-NOV-2019 11:53 Analyst ID: knb25316

Method used: /chem/HP20296.i/19nov05.b/rv8270d.m Sublist used: 22230M
Calibration date and time: 08-NOV-2019 00:10
Date, time and analyst ID of latest file update: 08-Nov-2019 00:10 art12405

Sample Name: 303WGLCS Lab Sample ID: 303WGLCS

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng/ul)
26)*1,4-Dichlorobenzene-d4	(1)	7.043	152	152551	5.000
45)$Nitrobenzene-d5	(2)	7.894	82	1535003	18.778
68)*Naphthalene-d8	(2)	9.022	136	638076	5.000
96)$2-Fluorobiphenyl	(3)	10.804	172	1345655	16.905
113) 2,6-Dinitrotoluene	(3)	11.563	165	199101	11.774
118)*Acenaphthene-d10	(3)	11.847	164	260703	5.000
123) 2,4-Dinitrotoluene	(3)	12.135	165	256083	11.833
129) Diethylphthalate	(3)	12.478	149	967268	10.908
158)*Phenanthrene-d10	(4)	13.772	188	447387	5.000
180)*Pyrene-d10	(5)	15.831	212	441498	5.000
184)$Terphenyl-d14	(5)	16.147	244	1473691	21.539
218)*Perylene-d12	(6)	20.431	264	406229	5.000

* = Compound is an internal standard.
$ = Compound is a surrogate standard.

Digitally signed by Ashley R. Transue
on 11/08/2019 at 00:12.
Target 3.5 esignature user ID: art12405

Extraction/Distillation/Digestion Logs

Semivolatiles by GC/MS

Organic Extraction Batchlog Assigned to: 11067 Osvaldo Sanchez Reviewed by:_____ Start Date:_____ Start time: _____

19302WAY026 (8)

Tech 1: _____ Tech 2: _____

Dept: 26 Prep Analysis: 11010 8270D BNA Extraction SVOAs 8270D/E MINI

QC	Sample Code	Amt ( )	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments
302WYMSD	302WYMSD		SS1929726A		MS1930126C MS1930126D						
302WYMS	302WYMS		SS1929726A		MS1930126C MS1930126D						
BLANKA	SBLKWY302		SS1929726A								
LCSA	302WYLCS		SS1929726A		MS1930126C MS1930126D						
LCSAP1	302WYLCS		SS1929726A		MS1928826D						
LCSDAP1	302WYLCSD		SS1929726A		MS1928826D						

Solvent Used	Lot No.
10N NaOH	
Methylene Chloride	
Sodium Sulfate	
Sulfuric Acid	

(8) Samples copied from 19302WAC026. See attached for extraction info. WJ 2991 11/5/19

Spike Solutions: Witness:_____

MS1928826D APPIX #1 MINI SPIKE
MS1930126C MINI SEP. LCS SPIKE #1
MS1930126D MINI SEP. LCS SPIKE #2
SS1929726A MINI SEP. BNA SURROGATE

Sample #	Sample Code	Amt ( )	SS/IS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments	Analyses	List	Due Date	Prio	H	A	Q
(8) 1 1183614	F4807		SS1929726A							14241	22230	11/04/2019	N	N	N	N
(8) 2 1183616	F4809		SS1929726A							14241	22230	11/04/2019	N	N	N	N
(8) 3 1183617	F4810		SS1929726A							14241	22230	11/04/2019	N	N	N	N
(8) 4 1183618	F4811		SS1929726A							14241	22230	11/04/2019	N	N	N	N
5 302WY	302WYUS		SS1929726A							14241						

RAF48 Page 1179 of 1181

Bench#	Bench#	Bench#		
Rack ID:		Work Station		Micro Temp 100?
Internal Standard		Balance #		

R-VAP ID	C	R-VAP ID	C	R-VAP ID	C		
S-bath ID	C	S-bath ID	C	N-Evap	C	M-vap	C

19302WAY026

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

Organic Extraction Batchlog Assigned to: 11067 Osvaldo Sanchez Reviewed by: [illegible] 11/1/19 Start Date: 10/29/19 Start time: 17:08

19302WAC026

Tech1: OS11067 Tech2: LCD28104

Dept: 26 Prep Analysis: 11010 8270D BNA Extraction SVOAs 8270D/E MINI

QC	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments
1184295MS	98706	747	SS1929726A	1.0 (8)	~~MS1930126C~~	1.0	1	✓	✓	153A	Clear
				(8a)	~~MS1930126D~~	1.0					
1184296MSD	98706	748	SS1929726A	(8)	~~MS1930126C~~	1.0	1	✓	✓	153A	Clear
				(8a)	~~MS1930126D~~	1.0					
BLANKA	SBLKWC302	750	SS1929726A		—	—	1	✓	✓	7	Tap H2O
LCSA	302WCLCS	750	SS1929726A	(8)	~~MS1930126C~~	1.0	1	✓	✓		
				(8a)	~~MS1930126D~~	1.0					
LCSAP1	302WCLCS	750	SS1929726A		MS1928826D	1.0	1	✓	✓		
LCSDAP1	302WCLCSD	750	SS1929726A	↓	MS1928826D	1.0	1	✓	✓		

Solvent Used	Lot No.
10N NaOH	481IE97
Methylene Chloride	196489
Sodium Sulfate	19299A
Sulfuric Acid	191965

(8b) RE not needed, do not run ~~#KBio206~~ 10-30-19

(8a) MS1929726A LCD28104 10/29/19

(8) MS1929426C LCD28104 10/29/19

Spike Solutions: Witness: NA

MS1928826D APPIX #1 MINI SPIKE

(8) ~~MS1930126C~~ MINI SEP. LCS SPIKE #1

(8a) ~~MS1930126D~~ MINI SEP. LCS SPIKE #2

SS1929726A MINI SEP. BNA SURROGATE

	Sample #		Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments	Analyses	List	Due Date	Prio	H	A	Q
(8b)	1 1176332	R	C-P11	746	SS1929726A	1.0	1	✓	✓	153B	tan Cloudy	14241	34792	10/25/2019	N	N	N	N
(8b)	2 1176334	R	C-P12	753	SS1929726A		1	✓	✓	153B	Clear	14241	34792	10/25/2019	N	N	N	N
(8b)	3 1176336	R	C-P13	746	SS1929726A		1	✓	✓	153B	Clear	14241	34792	10/25/2019	N	N	N	N
(8b)	4 1176338	R	C-P14	745	SS1929726A		1	✓	✓	153B	tan tint	14241	34792	10/25/2019	N	N	N	N
(8b)	5 1176340	R	C-P15	747	SS1929726A		1	✓	✓	153B	Bronze tint	14241	34792	10/25/2019	N	N	N	N
(8b)	6 1176342	R	C-P16	749	SS1929726A		1	✓	✓	153B	tan tint	14241	34792	10/25/2019	N	N	N	N
(8b)	7 1176344	R	C-P17	749	SS1929726A		1	✓	✓	153B	tan tint	14241	34792	10/25/2019	N	N	N	N
(8b)	8 1176346	R	C-P18	734	SS1929726A		1	✓	✓	153B	Orange tint	14241	34792	10/25/2019	N	N	N	N
(8b)	9 1176348	R	C-P19	732	SS1929726A		1	✓	✓	153B	Clear	14241	34792	10/25/2019	N	N	N	N
	10 1183008		47R01	739	SS1929726A		1	✓	✓	153A	Clear	14241	22436	11/01/2019	N	N	N	N
	11 1183614		F4807	749	SS1929726A		1	✓	✓	153A	Clear	14241	22230	11/04/2019	N	N	N	N
	12 1183616		F4809	746	SS1929726A		1	✓	✓	153A	Clear	14241	22230	11/04/2019	N	N	N	N
	13 1183617		F4810	746	SS1929726A		1	✓	✓	153A	Clear	14241	22230	11/04/2019	N	N	N	N
	14 1183618		F4811	736	SS1929726A	↓	1	✓	✓	153A	Clear	14241	22230	11/04/2019	N	N	N	N

Bench#	Bench#	Bench#		
Rack ID:		Work Station	tumble	Micro Temp 100?
Internal Standard	RUISTD28459	Balance #	25996	

R-VAP ID 5	90 C	R-VAP ID 3	90 C	R-VAP ID 1	90 C
~~S-bath ID~~	C	~~S-bath ID~~	C	~~N-Evap~~	C

~~M-vap~~ C 19302WAC026

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

Organic Extraction Batchlog Assigned to: 28104 Laura Duquette Reviewed by: KB 11.5.19 Start Date: 10/30/19 Start time: 17:53

19303WAG026

Tech 1: LCD28104 Tech 2: —

Dept: 26 Prep Analysis: 11010 8270D BNA Extraction SVOAs 8270D/E MINI

QC	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	MS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments
1183610MS	F4804	249	SS1929726A	1.0	MS1930126C	1.0	1	✓	✓	153A	tan tint
				(S)	~~MS1930126D~~	1.0					
1183611MSD	F4804	249	SS1929726A	|	MS1930126C	1.0	1	✓	✓	153A	tan tint
				(S)	~~MS1930126D~~	1.0					
BLANKA	SBLKWG303	250	SS1929726A		—	—	1	✓	✓	7	Tap H2O
LCSA	303WGLCS	250	SS1929726A	↓	MS1930126C	1.0	1	✓	✓	L	↓
				(S)	~~MS1930126D~~	1.0					

Solvent Used	Lot No.
10N NaOH	4811E97
Methylene Chloride	196489
Sodium Sulfate	19299A
Sulfuric Acid	191965
—	—

Spike Solutions: Witness: —

MS1930126C MINI SEP. LCS SPIKE #1

(S) ~~MS1930126D~~ MINI SEP. LCS SPIKE #2

SS1929726A MINI SEP. BNA SURROGATE

(S) MS1929726A LCD28104 10/30/19

Sample #	Sample Code	Amt (mL)	SS/IS Sol.	Amt (mL)	FV (mL)	pH <2	pH >11	BC	Comments	Analyses	List	Due Date	Prio	H	A	Q
1 1183606	F4801	248	SS1929726A	1.0	1	✓	✓	153A	clear	14241	22230	11/04/2019	N	N	N	N
2 1183607	F4802	246	SS1929726A	|	1	✓	✓	153A	Clear	14241	22230	11/04/2019	N	N	N	N
3 1183608	F4803	247	SS1929726A	|	1	✓	✓	153A	tan tint	14241	22230	11/04/2019	N	N	N	N
4 1183609BKG	F4804	248	SS1929726A	|	1	✓	✓	153A	tan tint	14241	22230	11/04/2019	N	N	N	N
5 1183612	F4805	246	SS1929726A	|	1	✓	✓	153A	tan tint	14241	22230	11/04/2019	N	N	N	N
6 1183613	F4806	243	SS1929726A	|	1	✓	✓	153A	tan tint	14241	22230	11/04/2019	N	N	N	N
7 1183615	F4808	246	SS1929726A	↓	1	✓	✓	153A	clear	14241	22230	11/04/2019	N	N	N	N

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Bench#	Bench#	Bench#		
Rack ID:		Work Station	tumble	Micro Temp 100? —
Internal Standard	w/SM 2889	Balance #	25996	

R-VAP ID 2	90 C	R-VAP ID 6	90 C	~~R-VAP ID~~	~~C~~
~~S-bath ID~~	~~C~~	~~S-bath ID~~	~~C~~	N-Evap	C

M-vap C

19303WAG026

DF = Dilution Factor FV = Final Volume

Documented temps are NIST corrected.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Certifies that

VA Laboratory ID#: 460182
Eurofins Lancaster Laboratories Environmental, LLC

2425 New Holland Pike
Lancaster, PA 17601

Owner: EUROFINS SCIENTIFIC
Responsible Official: DUANE LUCKENBILL

Having met the requirements of 1 VAC 30-46 and
having been found compliant with the 2009 TNI Standard approved by The NELAC Institute
is hereby approved as an

Accredited Environmental Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: **June 15, 2019**
Expiration Date: **June 14, 2020**
Certificate # 10358

Denise M. Toney

Denise M. Toney, Ph.D., HCLD
DGS Deputy Director for Laboratories

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP) Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

AIR

METHOD	ANALYTE	PRIMARY
EPA 18	TOTAL GASEOUS ORGANIC COMPOUNDS	LA DEQ
EPA TO-14A 2nd Ed.	1,1,1-TRICHLOROETHANE	LA DEQ
EPA TO-14A 2nd Ed.	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	LA DEQ
EPA TO-14A 2nd Ed.	1,1-DICHLOROETHANE	LA DEQ
EPA TO-14A 2nd Ed.	1,2,4-TRICHLOROBENZENE	LA DEQ
EPA TO-14A 2nd Ed.	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	LA DEQ
EPA TO-14A 2nd Ed.	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	LA DEQ
EPA TO-14A 2nd Ed.	1,3,5-TRIMETHYLBENZENE	LA DEQ
EPA TO-14A 2nd Ed.	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	LA DEQ
EPA TO-14A 2nd Ed.	BENZENE	LA DEQ
EPA TO-14A 2nd Ed.	CARBON TETRACHLORIDE	LA DEQ
EPA TO-14A 2nd Ed.	CHLOROETHANE (ETHYL CHLORIDE)	LA DEQ
EPA TO-14A 2nd Ed.	CIS-1,2-DICHLOROETHYLENE	LA DEQ
EPA TO-14A 2nd Ed.	ETHYLBENZENE	LA DEQ
EPA TO-14A 2nd Ed.	M+P-XYLENE	LA DEQ
EPA TO-14A 2nd Ed.	METHYL CHLORIDE (CHLOROMETHANE)	LA DEQ
EPA TO-14A 2nd Ed.	O-XYLENE	LA DEQ
EPA TO-14A 2nd Ed.	TETRACHLOROETHENE (PERCHLOROETHENE)	LA DEQ
EPA TO-14A 2nd Ed.	TRANS-1,2-DICHLOROETHENE	LA DEQ
EPA TO-14A 2nd Ed.	TRICHLOROETHENE (TRICHLOROETHYLENE)	LA DEQ
EPA TO-14A 2nd Ed.	VINYL CHLORIDE (CHLOROETHENE)	LA DEQ
EPA TO-14A 2nd Ed. - EXTENDED	BROMODICHLOROMETHANE	LA DEQ
EPA TO-14A 2nd Ed. - EXTENDED	METHYL TERT-BUTYL ETHER (MTBE)	LA DEQ
EPA TO-15 2nd Ed.	1,1,1-TRICHLOROETHANE	LA DEQ
EPA TO-15 2nd Ed.	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	LA DEQ
EPA TO-15 2nd Ed.	1,1-DICHLOROETHANE	LA DEQ
EPA TO-15 2nd Ed.	1,2,4-TRICHLOROBENZENE	LA DEQ

METHOD	ANALYTE	PRIMARY
EPA 25	TOTAL GASEOUS NONMETHANE ORGANIC COMPOUNDS (TGNMO)	LA DEQ
EPA TO-14A 2nd Ed.	1,1,2,2-TETRACHLOROETHANE	LA DEQ
EPA TO-14A 2nd Ed.	1,1,2-TRICHLOROETHANE	LA DEQ
EPA TO-14A 2nd Ed.	1,1-DICHLOROETHYLENE	LA DEQ
EPA TO-14A 2nd Ed.	1,2,4-TRIMETHYLBENZENE	LA DEQ
EPA TO-14A 2nd Ed.	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	LA DEQ
EPA TO-14A 2nd Ed.	1,2-DICHLOROPROPANE	LA DEQ
EPA TO-14A 2nd Ed.	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	LA DEQ
EPA TO-14A 2nd Ed.	2-BUTANONE (METHYL ETHYL KETONE, MEK)	LA DEQ
EPA TO-14A 2nd Ed.	BROMOFORM	LA DEQ
EPA TO-14A 2nd Ed.	CHLOROBENZENE	LA DEQ
EPA TO-14A 2nd Ed.	CHLOROFORM	LA DEQ
EPA TO-14A 2nd Ed.	CIS-1,3-DICHLOROPROPENE	LA DEQ
EPA TO-14A 2nd Ed.	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	LA DEQ
EPA TO-14A 2nd Ed.	METHYL BROMIDE (BROMOMETHANE)	LA DEQ
EPA TO-14A 2nd Ed.	METHYLENE CHLORIDE (DICHLOROMETHANE)	LA DEQ
EPA TO-14A 2nd Ed.	STYRENE	LA DEQ
EPA TO-14A 2nd Ed.	TOLUENE	LA DEQ
EPA TO-14A 2nd Ed.	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	LA DEQ
EPA TO-14A 2nd Ed.	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	LA DEQ
EPA TO-14A 2nd Ed. - EXTENDED	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	LA DEQ
EPA TO-14A 2nd Ed. - EXTENDED	CARBON DISULFIDE	LA DEQ
EPA TO-14A 2nd Ed. - EXTENDED	XYLENE (TOTAL)	LA DEQ
EPA TO-15 2nd Ed.	1,1,2,2-TETRACHLOROETHANE	LA DEQ
EPA TO-15 2nd Ed.	1,1,2-TRICHLOROETHANE	LA DEQ
EPA TO-15 2nd Ed.	1,1-DICHLOROETHYLENE	LA DEQ
EPA TO-15 2nd Ed.	1,2,4-TRIMETHYLBENZENE	LA DEQ



Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

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AIR

METHOD	ANALYTE	PRIMARY
EPA TO-15 2nd Ed	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	LA DEQ
EPA TO-15 2nd Ed.	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	LA DEQ
EPA TO-15 2nd Ed.	1,3,5-TRIMETHYLBENZENE	LA DEQ
EPA TO-15 2nd Ed.	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	LA DEQ
EPA TO-15 2nd Ed.	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	LA DEQ
EPA TO-15 2nd Ed.	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	LA DEQ
EPA TO-15 2nd Ed.	ACROLEIN (PROPENAL)	LA DEQ
EPA TO-15 2nd Ed.	ALLYL CHLORIDE (3-CHLOROPROPENE)	LA DEQ
EPA TO-15 2nd Ed.	BROMODICHLOROMETHANE	LA DEQ
EPA TO-15 2nd Ed.	CARBON DISULFIDE	LA DEQ
EPA TO-15 2nd Ed.	CHLOROBENZENE	LA DEQ
EPA TO-15 2nd Ed.	CHLOROFORM	LA DEQ
EPA TO-15 2nd Ed.	CIS-1,3-DICHLOROPROPENE	LA DEQ
EPA TO-15 2nd Ed.	ETHYL ACRYLATE	LA DEQ
EPA TO-15 2nd Ed.	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	LA DEQ
EPA TO-15 2nd Ed.	IODOMETHANE (METHYL IODIDE)	LA DEQ
EPA TO-15 2nd Ed.	M+P-XYLENE	LA DEQ
EPA TO-15 2nd Ed.	METHYL CHLORIDE (CHLOROMETHANE)	LA DEQ
EPA TO-15 2nd Ed.	METHYL TERT-BUTYL ETHER (MTBE)	LA DEQ
EPA TO-15 2nd Ed.	O-XYLENE	LA DEQ
EPA TO-15 2nd Ed.	STYRENE	LA DEQ
EPA TO-15 2nd Ed.	TOLUENE	LA DEQ
EPA TO-15 2nd Ed.	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	LA DEQ
EPA TO-15 2nd Ed.	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	LA DEQ
EPA TO-15 2nd Ed.	VINYL CHLORIDE (CHLOROETHENE)	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	2-CHLOROTOLUENE	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	4-ETHYLTOLUENE	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	CHLORODIFLUOROMETHANE (FREON-22)	LA DEQ
EPA TO-15 2nd Ed.	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	LA DEQ
EPA TO-15 2nd Ed.	1,2-DICHLOROPROPANE	LA DEQ
EPA TO-15 2nd Ed.	1,3-BUTADIENE	LA DEQ
EPA TO-15 2nd Ed.	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	LA DEQ
EPA TO-15 2nd Ed.	2-BUTANONE (METHYL ETHYL KETONE, MEK)	LA DEQ
EPA TO-15 2nd Ed	ACETONITRILE	LA DEQ
EPA TO-15 2nd Ed.	ACRYLONITRILE	LA DEQ
EPA TO-15 2nd Ed.	BENZENE	LA DEQ
EPA TO-15 2nd Ed.	BROMOFORM	LA DEQ
EPA TO-15 2nd Ed	CARBON TETRACHLORIDE	LA DEQ
EPA TO-15 2nd Ed.	CHLOROETHANE (ETHYL CHLORIDE)	LA DEQ
EPA TO-15 2nd Ed.	CIS-1,2-DICHLOROETHYLENE	LA DEQ
EPA TO-15 2nd Ed.	CYCLOHEXANE	LA DEQ
EPA TO-15 2nd Ed.	ETHYLBENZENE	LA DEQ
EPA TO-15 2nd Ed	HEXACHLOROETHANE	LA DEQ
EPA TO-15 2nd Ed.	ISOPROPYLBENZENE	LA DEQ
EPA TO-15 2nd Ed	METHYL BROMIDE (BROMOMETHANE)	LA DEQ
EPA TO-15 2nd Ed.	METHYL METHACRYLATE	LA DEQ
EPA TO-15 2nd Ed.	METHYLENE CHLORIDE (DICHLOROMETHANE)	LA DEQ
EPA TO-15 2nd Ed.	PROPYLENE (PROPENE)	LA DEQ
EPA TO-15 2nd Ed.	TETRACHLOROETHENE (PERCHLOROETHENE)	LA DEQ
EPA TO-15 2nd Ed.	TRANS-1,2-DICHLOROETHENE	LA DEQ
EPA TO-15 2nd Ed.	TRICHLOROETHENE (TRICHLOROETHYLENE)	LA DEQ
EPA TO-15 2nd Ed.	VINYL ACETATE	LA DEQ
EPA TO-15 2nd Ed	XYLENE (TOTAL)	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	2-HEXANONE	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	ACETONE	LA DEQ
EPA TO-15 2nd Ed. - EXTENDED	NAPHTHALENE	LA DEQ



Commonwealth of Virginia

Department of General Services
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Lancaster, PA 17601

Virginia Laboratory ID: 460182
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AIR

METHOD	ANALYTE	PRIMARY
EPA TO-15 2nd Ed. - EXTENDED	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	LA DEQ

DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 200.7 REV 4.4	ALUMINUM	PA
EPA 200.7 REV 4.4	CALCIUM	PA
EPA 200.7 REV 4.4	COPPER	PA
EPA 200.7 REV 4.4	MAGNESIUM	PA
EPA 200.7 REV 4.4	NICKEL	PA
EPA 200.7 REV 4.4	SODIUM	PA
EPA 200.8 REV 5.4	ANTIMONY	PA
EPA 200.8 REV 5.4	BERYLLIUM	PA
EPA 200.8 REV 5.4	CHROMIUM	PA
EPA 200.8 REV 5.4	IRON	PA
EPA 200.8 REV 5.4	MANGANESE	PA
EPA 200.8 REV 5.4	SELENIUM	PA
EPA 200.8 REV 5.4	ZINC	PA
EPA 300.0 REV 2.1	CHLORIDE	PA
EPA 300.0 REV 2.1	NITRATE AS N	PA
EPA 300.0 REV 2.1	SULFATE	PA
EPA 353.2 REV 2	NITRATE AS N	PA
EPA 353.2 REV 2	NITRITE AS N	PA
EPA 524.2 REV 4.1	1,1,2-TRICHLOROETHANE	PA
EPA 524.2 REV 4.1	1,2,4-TRICHLOROBENZENE	PA
EPA 524.2 REV 4.1	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 524.2 REV 4.1	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 524.2 REV 4.1	BROMODICHLOROMETHANE	PA
EPA 524.2 REV 4.1	CARBON TETRACHLORIDE	PA
EPA 524.2 REV 4.1	CHLORODIBROMOMETHANE	PA
EPA 524.2 REV 4.1	CIS-1,2-DICHLOROETHYLENE	PA
EPA 524.2 REV 4.1	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 524.2 REV 4.1	TETRACHLOROETHENE (PERCHLOROETHENE)	PA
EPA 524.2 REV 4.1	TOTAL TRIHALOMETHANES (TTHMS)	PA
EPA 524.2 REV 4.1	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA

METHOD	ANALYTE	PRIMARY
EPA 200.7 REV 4.4	BARIUM	PA
EPA 200.7 REV 4.4	CHROMIUM	PA
EPA 200.7 REV 4.4	IRON	PA
EPA 200.7 REV 4.4	MANGANESE	PA
EPA 200.7 REV 4.4	SILVER	PA
EPA 200.7 REV 4.4	ZINC	PA
EPA 200.8 REV 5.4	ARSENIC	PA
EPA 200.8 REV 5.4	CADMIUM	PA
EPA 200.8 REV 5.4	COPPER	PA
EPA 200.8 REV 5.4	LEAD	PA
EPA 200.8 REV 5.4	NICKEL	PA
EPA 200.8 REV 5.4	THALLIUM	PA
EPA 245.1 REV 3	MERCURY	PA
EPA 300.0 REV 2.1	FLUORIDE	PA
EPA 300.0 REV 2.1	NITRITE AS N	PA
EPA 335.4 REV 1.0	CYANIDE	PA
EPA 353.2 REV 2	NITRATE/NITRITE	PA
EPA 524.2 REV 4.1	1,1,1-TRICHLOROETHANE	PA
EPA 524.2 REV 4.1	1,1-DICHLOROETHYLENE	PA
EPA 524.2 REV 4.1	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 524.2 REV 4.1	1,2-DICHLOROPROPANE	PA
EPA 524.2 REV 4.1	BENZENE	PA
EPA 524.2 REV 4.1	BROMOFORM	PA
EPA 524.2 REV 4.1	CHLOROBENZENE	PA
EPA 524.2 REV 4.1	CHLOROFORM	PA
EPA 524.2 REV 4.1	ETHYLBENZENE	PA
EPA 524.2 REV 4.1	STYRENE	PA
EPA 524.2 REV 4.1	TOLUENE	PA
EPA 524.2 REV 4.1	TRANS-1,2-DICHLOROETHENE	PA
EPA 524.2 REV 4.1	VINYL CHLORIDE (CHLOROETHENE)	PA



Commonwealth of Virginia

Department of General Services
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DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 524.2 REV 4.1	XYLENE (TOTAL)	PA
EPA 525.2 REV 2	ATRAZINE	PA
EPA 525.2 REV 2	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 525.2 REV 2	ENDRIN	PA
EPA 525.2 REV 2	HEPTACHLOR	PA
EPA 525.2 REV 2	HEXACHLOROBENZENE	PA
EPA 525.2 REV 2	METHOXYCHLOR	PA
EPA 531.1 REV 3.1	CARBOFURAN (FURADEN)	PA
SM 2120 B-2011	COLOR	PA
SM 2320 B-2011	ALKALINITY AS CACO3	PA
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	PA
SM 4500-H+ B-2011	PH	PA
SM 5310 C-2011	TOTAL ORGANIC CARBON (TOC)	PA

METHOD	ANALYTE	PRIMARY
EPA 525.2 REV 2	ALACHLOR	PA
EPA 525.2 REV 2	BENZO(A)PYRENE	PA
EPA 525.2 REV 2	BIS(2-ETHYLHEXYL)ADIPATE (DI(2-ETHYLHEXYL)ADIPATE)	PA
EPA 525.2 REV 2	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 525.2 REV 2	HEPTACHLOR EPOXIDE	PA
EPA 525.2 REV 2	HEXACHLOROCYCLOPENTADIENE	PA
EPA 525.2 REV 2	SIMAZINE	PA
EPA 531.1 REV 3.1	OXAMYL	PA
SM 2130 B-2011	TURBIDITY	PA
SM 2510 B-2011	CONDUCTIVITY	PA
SM 4500-F⁻ C-2011	FLUORIDE	PA
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	PA
SM 5540 C-2011	SURFACTANTS - MBAS	PA

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 1010	FLASHPOINT	PA
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	PA
EPA 1613 B	1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN (OCDD)	PA
EPA 1613 B	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (1,2,3,4,6,7,8-HPCDD)	PA
EPA 1613 B	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (1,2,3,4,7,8,9-HPCDF)	PA
EPA 1613 B	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (1,2,3,4,7,8-HXCDF)	PA
EPA 1613 B	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (1,2,3,6,7,8-HXCDF)	PA
EPA 1613 B	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (1,2,3,7,8,9-HXCDF)	PA
EPA 1613 B	1,2,3,7,8-PENTACHLORODIBENZOFURAN (1,2,3,7,8-PECDF)	PA
EPA 1613 B	2,3,4,7,8-PENTACHLORODIBENZOFURAN	PA
EPA 1613 B	2,3,7,8-TETRACHLORODIBENZOFURAN (2,3,7,8-TCDF)	PA
EPA 1664 A	TOTAL PETROLEUM HYDROCARBONS (TPH) (AS NONPOLAR MATERIAL, SGT-HEM)	PA

METHOD	ANALYTE	PRIMARY
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	PA
EPA 160.4	RESIDUE-VOLATILE	PA
EPA 1613 B	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN (OCDF)	PA
EPA 1613 B	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (1,2,3,4,6,7,8-HPCDF)	PA
EPA 1613 B	1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,4,7,8-HXCDD)	PA
EPA 1613 B	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN(1,2,3,6,7,8-HXCDD)	PA
EPA 1613 B	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,7,8,9-HXCDD)	PA
EPA 1613 B	1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (1,2,3,7,8-PECDD)	PA
EPA 1613 B	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (2,3,4,6,7,8-HXCDF)	PA
EPA 1613 B	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (2,3,7,8-TCDD)	PA
EPA 1664 A	OIL AND GREASE (AS N-HEXANE EXTRACTABLE MATERIAL (HEM))	PA
EPA 1666 A	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA



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EPA 1666 A	DIISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	PA
EPA 1666 A	ISOBUTYRALDEHYDE	PA
EPA 1666 A	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 1666 A	N-AMYL ACETATE	PA
EPA 1666 A	N-BUTYL-ACETATE	PA
EPA 1666 A	N-HEXANE	PA
EPA 1666 A	TETRAHYDROFURAN (THF)	PA
EPA 1668 A	2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL (BZ-206)	PA
EPA 1668 A	2,2',3,3',4,4',5,6'-OCTACHLOROBIPHENYL (BZ-196)	PA
EPA 1668 A	2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL BZ-195)	PA
EPA 1668 A	2,2',3,3',4,4',6,6'-OCTACHLOROBIPHENYL (BZ-197)	PA
EPA 1668 A	2,2',3,3',4,4'-HEXACHLOROBIPHENYL (BZ-128)	PA
EPA 1668 A	2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL (BZ-201)	PA
EPA 1668 A	2,2',3,3',4,5'-HEXACHLOROBIPHENYL (BZ-130)	PA
EPA 1668 A	2,2',3,3',4,5,5',6,6'-NONACHLOROBIPHENYL (BZ-208)	PA
EPA 1668 A	2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL (BZ-172)	PA
EPA 1668 A	2,2',3,3',4,5,6,6'-OCTACHLOROBIPHENYL (BZ-200)	PA
EPA 1668 A	2,2',3,3',4,5-HEXACHLOROBIPHENYL (BZ-129)	PA
EPA 1668 A	2,2',3,3',4,6,6'-HEPTACHLOROBIPHENYL (BZ-176)	PA
EPA 1668 A	2,2',3,3',4-PENTACHLOROBIPHENYL (BZ-82)	PA
EPA 1668 A	2,2',3,3',5,5',6-HEPTACHLOROBIPHENYL (BZ-178)	PA
EPA 1668 A	2,2',3,3',5,6'-HEXACHLOROBIPHENYL (BZ-135)	PA
EPA 1668 A	2,2',3,3',5,6-HEXACHLOROBIPHENYL (BZ-134)	PA
EPA 1668 A	2,2',3,3',6,6'-HEXACHLOROBIPHENYL (BZ-136)	PA
EPA 1668 A	2,2',3,3'-TETRACHLOROBIPHENYL (BZ-40)	PA
EPA 1668 A	2,2',3,4',5'-PENTACHLOROBIPHENYL (BZ-97)	PA
EPA 1666 A	ETHYL ACETATE	PA
EPA 1666 A	ISOPROPYL ACETATE	PA
EPA 1666 A	METHYL FORMATE	PA
EPA 1666 A	N-AMYL ALCOHOL	PA
EPA 1666 A	N-HEPTANE	PA
EPA 1666 A	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	PA
EPA 1666 A	XYLENE (TOTAL)	PA
EPA 1668 A	2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL (BZ-194)	PA
EPA 1668 A	2,2',3,3',4,4',5,6,6'-NONACHLOROBIPHENYL (BZ-207)	PA
EPA 1668 A	2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL (BZ-170)	PA
EPA 1668 A	2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL (BZ-171)	PA
EPA 1668 A	2,2',3,3',4,5',6'-HEPTACHLOROBIPHENYL (BZ-177)	PA
EPA 1668 A	2,2',3,3',4,5',6-HEPTACHLOROBIPHENYL (BZ-175)	PA
EPA 1668 A	2,2',3,3',4,5,5',6'-OCTACHLOROBIPHENYL (BZ-199)	PA
EPA 1668 A	2,2',3,3',4,5,5',6-OCTACHLOROBIPHENYL (BZ-198)	PA
EPA 1668 A	2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL (BZ-174)	PA
EPA 1668 A	2,2',3,3',4,5,6-HEPTACHLOROBIPHENYL (BZ-173)	PA
EPA 1668 A	2,2',3,3',4,6'-HEXACHLOROBIPHENYL (BZ-132)	PA
EPA 1668 A	2,2',3,3',4,6-HEXACHLOROBIPHENYL (BZ-131)	PA
EPA 1668 A	2,2',3,3',5,5',6,6'-OCTACHLOROBIPHENYL (BZ-202)	PA
EPA 1668 A	2,2',3,3',5,5'-HEXACHLOROBIPHENYL (BZ-133)	PA
EPA 1668 A	2,2',3,3',5,6,6'-HEPTACHLOROBIPHENYL (BZ-179)	PA
EPA 1668 A	2,2',3,3',5-PENTACHLOROBIPHENYL (BZ-83)	PA
EPA 1668 A	2,2',3,3',6-PENTACHLOROBIPHENYL (BZ-84)	PA
EPA 1668 A	2,2',3,4',5',6-HEXACHLOROBIPHENYL (BZ-149)	PA
EPA 1668 A	2,2',3,4',5,5',6-HEPTACHLOROBIPHENYL (BZ-187)	PA



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EPA 1668 A	2,2',3,4',5,5'-HEXACHLOROBIPHENYL (BZ-146)	PA
EPA 1668 A	2,2',3,4',5,6,6'-HEPTACHLOROBIPHENYL (BZ-188)	PA
EPA 1668 A	2,2',3,4',5-PENTACHLOROBIPHENYL (BZ-90)	PA
EPA 1668 A	2,2',3,4',6,6'-HEXACHLOROBIPHENYL (BZ-150)	PA
EPA 1668 A	2,2',3,4'-TETRACHLOROBIPHENYL (BZ-42)	PA
EPA 1668 A	2,2',3,4,4',5'-HEXACHLOROBIPHENYL (BZ-138)	PA
EPA 1668 A	2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL (BZ-180)	PA
EPA 1668 A	2,2',3,4,4',5,6,6'-OCTACHLOROBIPHENYL (BZ-204)	PA
EPA 1668 A	2,2',3,4,4',5-HEXACHLOROBIPHENYL (BZ-137)	PA
EPA 1668 A	2,2',3,4,4',6,6'-HEPTACHLOROBIPHENYL (BZ-184)	PA
EPA 1668 A	2,2',3,4,4'-PENTACHLOROBIPHENYL (BZ-85)	PA
EPA 1668 A	2,2',3,4,5'-PENTACHLOROBIPHENYL (BZ-87)	PA
EPA 1668 A	2,2',3,4,5,5'-HEXACHLOROBIPHENYL (BZ-141)	PA
EPA 1668 A	2,2',3,4,5,6,6'-HEPTACHLOROBIPHENYL (BZ-186)	PA
EPA 1668 A	2,2',3,4,5-PENTACHLOROBIPHENYL (BZ-86)	PA
EPA 1668 A	2,2',3,4,6,6'-HEXACHLOROBIPHENYL (BZ-145)	PA
EPA 1668 A	2,2',3,4-TETRACHLOROBIPHENYL (BZ-41)	PA
EPA 1668 A	2,2',3,5'-TETRACHLOROBIPHENYL (BZ-44)	PA
EPA 1668 A	2,2',3,5,5'-PENTACHLOROBIPHENYL (BZ-92)	PA
EPA 1668 A	2,2',3,5,6,6'-HEXACHLOROBIPHENYL (BZ-152)	PA
EPA 1668 A	2,2',3,5-TETRACHLOROBIPHENYL (BZ-43)	PA
EPA 1668 A	2,2',3,6,6'-PENTACHLOROBIPHENYL (BZ-96)	PA
EPA 1668 A	2,2',3-TRICHLOROBIPHENYL (BZ-16)	PA
EPA 1668 A	2,2',4,4',5,6'-HEXACHLOROBIPHENYL (BZ-154)	PA
EPA 1668 A	2,2',4,4',6,6'-HEXACHLOROBIPHENYL (BZ-155)	PA
EPA 1668 A	2,2',3,4',5,6'-HEXACHLOROBIPHENYL (BZ-148)	PA
EPA 1668 A	2,2',3,4',5,6-HEXACHLOROBIPHENYL (BZ-147)	PA
EPA 1668 A	2,2',3,4',6'-PENTACHLOROBIPHENYL (BZ-98)	PA
EPA 1668 A	2,2',3,4',6-PENTACHLOROBIPHENYL (BZ-91)	PA
EPA 1668 A	2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL (BZ-183)	PA
EPA 1668 A	2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL (BZ-203)	PA
EPA 1668 A	2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL (BZ-182)	PA
EPA 1668 A	2,2',3,4,4',5,6-HEPTACHLOROBIPHENYL (BZ-181)	PA
EPA 1668 A	2,2',3,4,4',6'-HEXACHLOROBIPHENYL (BZ-140)	PA
EPA 1668 A	2,2',3,4,4',6-HEXACHLOROBIPHENYL (BZ-139)	PA
EPA 1668 A	2,2',3,4,5',6-HEXACHLOROBIPHENYL (BZ-144)	PA
EPA 1668 A	2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL (BZ-185)	PA
EPA 1668 A	2,2',3,4,5,6'-HEXACHLOROBIPHENYL (BZ-143)	PA
EPA 1668 A	2,2',3,4,5,6-HEXACHLOROBIPHENYL (BZ-142)	PA
EPA 1668 A	2,2',3,4,6'-PENTACHLOROBIPHENYL (BZ-89)	PA
EPA 1668 A	2,2',3,4,6-PENTACHLOROBIPHENYL (BZ-88)	PA
EPA 1668 A	2,2',3,5',6-PENTACHLOROBIPHENYL (BZ-95)	PA
EPA 1668 A	2,2',3,5,5',6-HEXACHLOROBIPHENYL (BZ-151)	PA
EPA 1668 A	2,2',3,5,6'-PENTACHLOROBIPHENYL (BZ-94)	PA
EPA 1668 A	2,2',3,5,6-PENTACHLOROBIPHENYL (BZ-93)	PA
EPA 1668 A	2,2',3,6'-TETRACHLOROBIPHENYL (BZ-46)	PA
EPA 1668 A	2,2',3,6-TETRACHLOROBIPHENYL (BZ-45)	PA
EPA 1668 A	2,2',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-153)	PA
EPA 1668 A	2,2',4,4',5-PENTACHLOROBIPHENYL (BZ-99)	PA
EPA 1668 A	2,2',4,4',6-PENTACHLOROBIPHENYL (BZ-100)	PA



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METHOD	ANALYTE	PRIMARY
EPA 1668 A	2,2',4,4'-TETRACHLOROBIPHENYL (BZ-47)	PA
EPA 1668 A	2,2',4,5'-TETRACHLOROBIPHENYL (BZ-49)	PA
EPA 1668 A	2,2',4,5,6'-PENTACHLOROBIPHENYL (BZ-102)	PA
EPA 1668 A	2,2',4,6'-TETRACHLOROBIPHENYL (BZ-51)	PA
EPA 1668 A	2,2',4,6-TETRACHLOROBIPHENYL (BZ-50)	PA
EPA 1668 A	2,2',5,5'-TETRACHLOROBIPHENYL (BZ-52)	PA
EPA 1668 A	2,2',5-TRICHLOROBIPHENYL (BZ-18)	PA
EPA 1668 A	2,2',6-TRICHLOROBIPHENYL (BZ-19)	PA
EPA 1668 A	2,3',4',5',6-PENTACHLOROBIPHENYL (BZ-125)	PA
EPA 1668 A	2,3',4',5,5'-PENTACHLOROBIPHENYL (BZ-124)	PA
EPA 1668 A	2,3',4',6-TETRACHLOROBIPHENYL (BZ-71)	PA
EPA 1668 A	2,3',4,4',5',6-HEXACHLOROBIPHENYL (BZ-168)	PA
EPA 1668 A	2,3',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-167)	PA
EPA 1668 A	2,3',4,4',6-PENTACHLOROBIPHENYL (BZ-119)	PA
EPA 1668 A	2,3',4,5',6-PENTACHLOROBIPHENYL (BZ-121)	PA
EPA 1668 A	2,3',4,5,5'-PENTACHLOROBIPHENYL (BZ-120)	PA
EPA 1668 A	2,3',4,6-TETRACHLOROBIPHENYL (BZ-69)	PA
EPA 1668 A	2,3',5',6-TETRACHLOROBIPHENYL (BZ-73)	PA
EPA 1668 A	2,3',5,5'-TETRACHLOROBIPHENYL (BZ-72)	PA
EPA 1668 A	2,3',6-TRICHLOROBIPHENYL (BZ-27)	PA
EPA 1668 A	2,3,3',4',5',6-HEXACHLOROBIPHENYL (BZ-164)	PA
EPA 1668 A	2,3,3',4',5,5',6-HEPTACHLOROBIPHENYL (BZ-193)	PA
EPA 1668 A	2,3,3',4',5,6-HEXACHLOROBIPHENYL (BZ-163)	PA
EPA 1668 A	2,3,3',4',6-PENTACHLOROBIPHENYL (BZ-110)	PA
EPA 1668 A	2,3,3',4,4',5',6-HEPTACHLOROBIPHENYL (BZ-191)	PA
EPA 1668 A	2,2',4,5',6-PENTACHLOROBIPHENYL (BZ-103)	PA
EPA 1668 A	2,2',4,5,5'-PENTACHLOROBIPHENYL (BZ-101)	PA
EPA 1668 A	2,2',4,5-TETRACHLOROBIPHENYL (BZ-48)	PA
EPA 1668 A	2,2',4,6,6'-PENTACHLOROBIPHENYL (BZ-104)	PA
EPA 1668 A	2,2',4-TRICHLOROBIPHENYL (BZ-17)	PA
EPA 1668 A	2,2',5,6'-TETRACHLOROBIPHENYL (BZ-53)	PA
EPA 1668 A	2,2',6,6'-TETRACHLOROBIPHENYL (BZ-54)	PA
EPA 1668 A	2,2'-DICHLOROBIPHENYL (BZ-4)	PA
EPA 1668 A	2,3',4',5'-TETRACHLOROBIPHENYL (BZ-70)	PA
EPA 1668 A	2,3',4',5-TETRACHLOROBIPHENYL (BZ-70)	PA
EPA 1668 A	2,3',4'-TRICHLOROBIPHENYL (BZ-33)	PA
EPA 1668 A	2,3',4,4',5'-PENTACHLOROBIPHENYL (BZ-123)	PA
EPA 1668 A	2,3',4,4',5-PENTACHLOROBIPHENYL (BZ-118)	PA
EPA 1668 A	2,3',4,4'-TETRACHLOROBIPHENYL (BZ-66)	PA
EPA 1668 A	2,3',4,5'-TETRACHLOROBIPHENYL (BZ-68)	PA
EPA 1668 A	2,3',4,5-TETRACHLOROBIPHENYL (BZ-67)	PA
EPA 1668 A	2,3',4-TRICHLOROBIPHENYL (BZ-25)	PA
EPA 1668 A	2,3',5'-TRICHLOROBIPHENYL (BZ-34)	PA
EPA 1668 A	2,3',5-TRICHLOROBIPHENYL (BZ-26)	PA
EPA 1668 A	2,3'-DICHLOROBIPHENYL (BZ-6)	PA
EPA 1668 A	2,3,3',4',5'-PENTACHLOROBIPHENYL (BZ-122)	PA
EPA 1668 A	2,3,3',4',5,5'-HEXACHLOROBIPHENYL (BZ-162)	PA
EPA 1668 A	2,3,3',4',5-PENTACHLOROBIPHENYL (BZ-107)	PA
EPA 1668 A	2,3,3',4'-TETRACHLOROBIPHENYL (BZ-56)	PA
EPA 1668 A	2,3,3',4,4',5'-HEXACHLOROBIPHENYL (BZ-157)	PA



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EPA 1668 A	2,3,3',4,4',5,5',6-OCTACHLOROBIPHENYL (BZ-205)	PA
EPA 1668 A	2,3,3',4,4',5,6-HEPTACHLOROBIPHENYL (BZ-190)	PA
EPA 1668 A	2,3,3',4,4',6-HEXACHLOROBIPHENYL (BZ-158)	PA
EPA 1668 A	2,3,3',4,5',6-HEXACHLOROBIPHENYL (BZ-161)	PA
EPA 1668 A	2,3,3',4,5,5',6-HEPTACHLOROBIPHENYL (BZ-192)	PA
EPA 1668 A	2,3,3',4,5,6-HEXACHLOROBIPHENYL (BZ-160)	PA
EPA 1668 A	2,3,3',4,6-PENTACHLOROBIPHENYL (BZ-109)	PA
EPA 1668 A	2,3,3',5',6-PENTACHLOROBIPHENYL (BZ-113)	PA
EPA 1668 A	2,3,3',5,5',6-HEXACHLOROBIPHENYL (BZ-165)	PA
EPA 1668 A	2,3,3',5,6-PENTACHLOROBIPHENYL (BZ-112)	PA
EPA 1668 A	2,3,3',6-TETRACHLOROBIPHENYL (BZ-59)	PA
EPA 1668 A	2,3,4',5,6-PENTACHLOROBIPHENYL (BZ-117)	PA
EPA 1668 A	2,3,4',6-TETRACHLOROBIPHENYL (BZ-64)	PA
EPA 1668 A	2,3,4,4',5,6-HEXACHLOROBIPHENYL (BZ-166)	PA
EPA 1668 A	2,3,4,4',6-PENTACHLOROBIPHENYL (BZ-115)	PA
EPA 1668 A	2,3,4,5,6-PENTACHLOROBIPHENYL (BZ-116)	PA
EPA 1668 A	2,3,4,6-TETRACHLOROBIPHENYL (BZ-62)	PA
EPA 1668 A	2,3,5,6-TETRACHLOROBIPHENYL (BZ-65)	PA
EPA 1668 A	2,3,6-TRICHLOROBIPHENYL (BZ-24)	PA
EPA 1668 A	2,4',5-TRICHLOROBIPHENYL (BZ-31)	PA
EPA 1668 A	2,4'-DICHLOROBIPHENYL (BZ-8)	PA
EPA 1668 A	2,4,4',6-TETRACHLOROBIPHENYL (BZ-75)	PA
EPA 1668 A	2,4,5-TRICHLOROBIPHENYL (BZ-29)	PA
EPA 1668 A	2,4-DICHLOROBIPHENYL (BZ-7)	PA
EPA 1668 A	2,6-DICHLOROBIPHENYL (BZ-10)	PA
EPA 1668 A	3,3',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-169)	PA
EPA 1668 A	3,3',4,4'-TETRACHLOROBIPHENYL (BZ-77)	PA
EPA 1668 A	2,3,3',4,4',5,5'-HEPTACHLOROBIPHENYL (BZ-189)	PA
EPA 1668 A	2,3,3',4,4',5-HEXACHLOROBIPHENYL (BZ-156)	PA
EPA 1668 A	2,3,3',4,4'-PENTACHLOROBIPHENYL (BZ-105)	PA
EPA 1668 A	2,3,3',4,5'-PENTACHLOROBIPHENYL (BZ-108)	PA
EPA 1668 A	2,3,3',4,5,5'-HEXACHLOROBIPHENYL (BZ-159)	PA
EPA 1668 A	2,3,3',4,5-PENTACHLOROBIPHENYL (BZ-106)	PA
EPA 1668 A	2,3,3',4-TETRACHLOROBIPHENYL (BZ-55)	PA
EPA 1668 A	2,3,3',5'-TETRACHLOROBIPHENYL (BZ-58)	PA
EPA 1668 A	2,3,3',5,5'-PENTACHLOROBIPHENYL (BZ-111)	PA
EPA 1668 A	2,3,3',5-TETRACHLOROBIPHENYL (BZ-57)	PA
EPA 1668 A	2,3,3'-TRICHLOROBIPHENYL (BZ-20)	PA
EPA 1668 A	2,3,4',5-TETRACHLOROBIPHENYL (BZ-63)	PA
EPA 1668 A	2,3,4'-TRICHLOROBIPHENYL (BZ-22)	PA
EPA 1668 A	2,3,4,4',5-PENTACHLOROBIPHENYL (BZ-114)	PA
EPA 1668 A	2,3,4,4'-TETRACHLOROBIPHENYL (BZ-60)	PA
EPA 1668 A	2,3,4,5-TETRACHLOROBIPHENYL (BZ-61)	PA
EPA 1668 A	2,3,4-TRICHLOROBIPHENYL (BZ-21)	PA
EPA 1668 A	2,3,5-TRICHLOROBIPHENYL (BZ-23)	PA
EPA 1668 A	2,3-DICHLOROBIPHENYL (BZ-5)	PA
EPA 1668 A	2,4',6-TRICHLOROBIPHENYL (BZ-32)	PA
EPA 1668 A	2,4,4',5-TETRACHLOROBIPHENYL (BZ-74)	PA
EPA 1668 A	2,4,4'-TRICHLOROBIPHENYL (BZ-28)	PA
EPA 1668 A	2,4,6-TRICHLOROBIPHENYL (BZ-30)	PA
EPA 1668 A	2,5-DICHLOROBIPHENYL (BZ-9)	PA
EPA 1668 A	2-CHLOROBIPHENYL (BZ-1)	PA
EPA 1668 A	3,3',4,4',5-PENTACHLOROBIPHENYL (BZ-126)	PA



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NON-POTABLE WATER

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EPA 1668 A	3,3',4,5'-TETRACHLOROBIPHENYL (BZ-79)	PA
EPA 1668 A	3,3',4,5-TETRACHLOROBIPHENYL (BZ-78)	PA
EPA 1668 A	3,3',5,5'-TETRACHLOROBIPHENYL (BZ-80)	PA
EPA 1668 A	3,3'-DICHLOROBIPHENYL (BZ-11)	PA
EPA 1668 A	3,4'-DICHLOROBIPHENYL (BZ-13)	PA
EPA 1668 A	3,4,4'-TRICHLOROBIPHENYL (BZ-37)	PA
EPA 1668 A	3,4-DICHLOROBIPHENYL (BZ-12)	PA
EPA 1668 A	3-CHLOROBIPHENYL (BZ-2)	PA
EPA 1668 A	4-CHLOROBIPHENYL (BZ-3)	PA
EPA 1671 A	2-METHOXYETHANOL (METHYL CELLOSOLVE)	PA
EPA 1671 A	DIETHYLAMINE	PA
EPA 1671 A	ETHANOL	PA
EPA 1671 A	N-PROPANOL (1-PROPANOL)	PA
EPA 180.1 REV 2	TURBIDITY	PA
EPA 200.7 REV 4.4	ALUMINUM	PA
EPA 200.7 REV 4.4	ARSENIC	PA
EPA 200.7 REV 4.4	BERYLLIUM	PA
EPA 200.7 REV 4.4	CADMIUM	PA
EPA 200.7 REV 4.4	CHROMIUM	PA
EPA 200.7 REV 4.4	COPPER	PA
EPA 200.7 REV 4.4	LEAD	PA
EPA 200.7 REV 4.4	MANGANESE	PA
EPA 200.7 REV 4.4	NICKEL	PA
EPA 200.7 REV 4.4	SELENIUM	PA
EPA 200.7 REV 4.4	SODIUM	PA
EPA 200.7 REV 4.4	TIN	PA
EPA 200.7 REV 4.4	VANADIUM	PA
EPA 200.8 REV 5.4	ALUMINUM	PA
EPA 200.8 REV 5.4	ARSENIC	PA
EPA 200.8 REV 5.4	BERYLLIUM	PA
EPA 200.8 REV 5.4	CHROMIUM	PA
EPA 200.8 REV 5.4	COPPER	PA
EPA 200.8 REV 5.4	MANGANESE	PA

METHOD	ANALYTE	PRIMARY
EPA 1668 A	3,3',4,5,5'-PENTACHLOROBIPHENYL (BZ-127)	PA
EPA 1668 A	3,3',4-TRICHLOROBIPHENYL (BZ-35)	PA
EPA 1668 A	3,3',5-TRICHLOROBIPHENYL (BZ-36)	PA
EPA 1668 A	3,4',5-TRICHLOROBIPHENYL (BZ-39)	PA
EPA 1668 A	3,4,4',5-TETRACHLOROBIPHENYL (BZ-81)	PA
EPA 1668 A	3,4,5-TRICHLOROBIPHENYL (BZ-38)	PA
EPA 1668 A	3,5-DICHLOROBIPHENYL (BZ-14)	PA
EPA 1668 A	4,4'-DICHLOROBIPHENYL (BZ-15)	PA
EPA 1668 A	DECACHLOROBIPHENYL (BZ-209)	PA
EPA 1671 A	ACETONITRILE	PA
EPA 1671 A	DIMETHYL SULFOXIDE	PA
EPA 1671 A	METHANOL	PA
EPA 1671 A	TRIETHYLAMINE	PA
EPA 200.2 REV 2.8	PREP: SAMPLE PREPARATION PROCEDURE FOR SPECTROCHEMICAL DETERMINATION OF TOTAL RECOVERABLE ELEMENTS	PA
EPA 200.7 REV 4.4	ANTIMONY	PA
EPA 200.7 REV 4.4	BARIUM	PA
EPA 200.7 REV 4.4	BORON	PA
EPA 200.7 REV 4.4	CALCIUM	PA
EPA 200.7 REV 4.4	COBALT	PA
EPA 200.7 REV 4.4	IRON	PA
EPA 200.7 REV 4.4	MAGNESIUM	PA
EPA 200.7 REV 4.4	MOLYBDENUM	PA
EPA 200.7 REV 4.4	POTASSIUM	PA
EPA 200.7 REV 4.4	SILVER	PA
EPA 200.7 REV 4.4	THALLIUM	PA
EPA 200.7 REV 4.4	TITANIUM	PA
EPA 200.7 REV 4.4	ZINC	PA
EPA 200.8 REV 5.4	ANTIMONY	PA
EPA 200.8 REV 5.4	BARIUM	PA
EPA 200.8 REV 5.4	CADMIUM	PA
EPA 200.8 REV 5.4	COBALT	PA
EPA 200.8 REV 5.4	LEAD	PA
EPA 200.8 REV 5.4	MOLYBDENUM	PA



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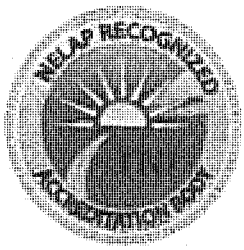
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4	NICKEL	PA
EPA 200.8 REV 5.4	SILVER	PA
EPA 200.8 REV 5.4	VANADIUM	PA
EPA 200.8 REV 5.4 - EXTENDED	CALCIUM	PA
EPA 200.8 REV 5.4 - EXTENDED	MAGNESIUM	PA
EPA 200.8 REV 5.4 - EXTENDED	SODIUM	PA
EPA 200.8 REV 5.4 - EXTENDED	TITANIUM	PA
EPA 300.0 REV 2.1	BROMIDE	PA
EPA 300.0 REV 2.1	FLUORIDE	PA
EPA 300.0 REV 2.1	NITRITE AS N	PA
EPA 3005 A	PREP: ACID DIGESTION OF WATERS FOR TOTAL RECOVERABLE OR DISSOLVED METALS	PA
EPA 3020 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	PA
EPA 351.2 REV 2	KJELDAHL NITROGEN - TOTAL (TKN)	PA
EPA 3511	PREP: ORGANIC EXTRACTION AND SAMPLE PREPARATION	PA
EPA 353.2 REV 2	NITRATE AS N	PA
EPA 353.2 REV 2	NITRITE AS N	PA
EPA 3630 C	PREP: SILICA GEL CLEANUP	PA
EPA 365.3	ORTHOPHOSPHATE AS P	PA
EPA 420.4 REV 1	TOTAL PHENOLICS	PA
EPA 6010 C	ALUMINUM	PA
EPA 6010 C	ARSENIC	PA
EPA 6010 C	BERYLLIUM	PA
EPA 6010 C	CADMIUM	PA
EPA 6010 C	CHROMIUM	PA
EPA 6010 C	COPPER	PA
EPA 6010 C	LEAD	PA
EPA 6010 C	MAGNESIUM	PA
EPA 6010 C	MOLYBDENUM	PA
EPA 6010 C	POTASSIUM	PA
EPA 6010 C	SILVER	PA
EPA 6010 C	STRONTIUM	PA

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4	SELENIUM	PA
EPA 200.8 REV 5.4	THALLIUM	PA
EPA 200.8 REV 5.4	ZINC	PA
EPA 200.8 REV 5.4 - EXTENDED	IRON	PA
EPA 200.8 REV 5.4 - EXTENDED	POTASSIUM	PA
EPA 200.8 REV 5.4 - EXTENDED	TIN	PA
EPA 245.1 REV 3	MERCURY	PA
EPA 300.0 REV 2.1	CHLORIDE	PA
EPA 300.0 REV 2.1	NITRATE AS N	PA
EPA 300.0 REV 2.1	SULFATE	PA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	PA
EPA 335.4 REV 1.0	CYANIDE	PA
EPA 3510 C	PREP: LIQUID-LIQUID EXTRACTION	PA
EPA 3520 C	PREP: CONTINUOUS LIQUID-LIQUID EXTRACTION	PA
EPA 353.2 REV 2	NITRATE/NITRITE	PA
EPA 3620 C	PREP: FLORISIL CLEANUP	PA
EPA 365.1 REV 2	PHOSPHORUS, TOTAL	PA
EPA 410.4 REV 2	CHEMICAL OXYGEN DEMAND (COD)	PA
EPA 5030 C	PREP: PURGE AND TRAP FOR AQUEOUS SAMPLES	PA
EPA 6010 C	ANTIMONY	PA
EPA 6010 C	BARIUM	PA
EPA 6010 C	BORON	PA
EPA 6010 C	CALCIUM	PA
EPA 6010 C	COBALT	PA
EPA 6010 C	IRON	PA
EPA 6010 C	LITHIUM	PA
EPA 6010 C	MANGANESE	PA
EPA 6010 C	NICKEL	PA
EPA 6010 C	SELENIUM	PA
EPA 6010 C	SODIUM	PA
EPA 6010 C	THALLIUM	PA



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METHOD	ANALYTE	PRIMARY
EPA 6010 C	TIN	PA
EPA 6010 C	VANADIUM	PA
EPA 6010 C - EXTENDED	SULFUR	PA
EPA 6010 C - EXTENDED	ZIRCONIUM	PA
EPA 6010 D	ANTIMONY	PA
EPA 6010 D	BARIUM	PA
EPA 6010 D	BORON	PA
EPA 6010 D	CALCIUM	PA
EPA 6010 D	COBALT	PA
EPA 6010 D	IRON	PA
EPA 6010 D	LITHIUM	PA
EPA 6010 D	MANGANESE	PA
EPA 6010 D	NICKEL	PA
EPA 6010 D	SELENIUM	PA
EPA 6010 D	SODIUM	PA
EPA 6010 D	THALLIUM	PA
EPA 6010 D	TITANIUM	PA
EPA 6010 D	ZINC	PA
EPA 6010 D - EXTENDED	THORIUM	PA
EPA 602	BENZENE	PA
EPA 602	TOLUENE	PA
EPA 6020 A	ALUMINUM	PA
EPA 6020 A	ARSENIC	PA
EPA 6020 A	BERYLLIUM	PA
EPA 6020 A	CALCIUM	PA
EPA 6020 A	COBALT	PA
EPA 6020 A	IRON	PA
EPA 6020 A	MAGNESIUM	PA
EPA 6020 A	NICKEL	PA
EPA 6020 A	SELENIUM	PA
EPA 6020 A	SODIUM	PA
EPA 6020 A	VANADIUM	PA
EPA 6020 A - EXTENDED	MOLYBDENUM	PA
EPA 6020 A - EXTENDED	TIN	PA
EPA 6020 A - EXTENDED	URANIUM	PA
EPA 6020 B	ANTIMONY	PA
EPA 6020 B	BARIUM	PA
EPA 6020 B	CADMIUM	PA
EPA 6010 C	TITANIUM	PA
EPA 6010 C	ZINC	PA
EPA 6010 C - EXTENDED	THORIUM	PA
EPA 6010 D	ALUMINUM	PA
EPA 6010 D	ARSENIC	PA
EPA 6010 D	BERYLLIUM	PA
EPA 6010 D	CADMIUM	PA
EPA 6010 D	CHROMIUM	PA
EPA 6010 D	COPPER	PA
EPA 6010 D	LEAD	PA
EPA 6010 D	MAGNESIUM	PA
EPA 6010 D	MOLYBDENUM	PA
EPA 6010 D	POTASSIUM	PA
EPA 6010 D	SILVER	PA
EPA 6010 D	STRONTIUM	PA
EPA 6010 D	TIN	PA
EPA 6010 D	VANADIUM	PA
EPA 6010 D - EXTENDED	SULFUR	PA
EPA 6010 D - EXTENDED	ZIRCONIUM	PA
EPA 602	ETHYLBENZENE	PA
EPA 602	XYLENE (TOTAL)	PA
EPA 6020 A	ANTIMONY	PA
EPA 6020 A	BARIUM	PA
EPA 6020 A	CADMIUM	PA
EPA 6020 A	CHROMIUM	PA
EPA 6020 A	COPPER	PA
EPA 6020 A	LEAD	PA
EPA 6020 A	MANGANESE	PA
EPA 6020 A	POTASSIUM	PA
EPA 6020 A	SILVER	PA
EPA 6020 A	THALLIUM	PA
EPA 6020 A	ZINC	PA
EPA 6020 A - EXTENDED	STRONTIUM	PA
EPA 6020 A - EXTENDED	TITANIUM	PA
EPA 6020 B	ALUMINUM	PA
EPA 6020 B	ARSENIC	PA
EPA 6020 B	BERYLLIUM	PA
EPA 6020 B	CALCIUM	PA



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METHOD	ANALYTE	PRIMARY
EPA 6020 B	CHROMIUM	PA
EPA 6020 B	COPPER	PA
EPA 6020 B	LEAD	PA
EPA 6020 B	MANGANESE	PA
EPA 6020 B	NICKEL	PA
EPA 6020 B	SELENIUM	PA
EPA 6020 B	SODIUM	PA
EPA 6020 B	TIN	PA
EPA 6020 B	ZINC	PA
EPA 6020 B - EXTENDED	TITANIUM	PA
EPA 608.3	4,4'-DDD	PA
EPA 608.3	4,4'-DDT	PA
EPA 608.3	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	PA
EPA 608.3	AROCLOR-1221 (PCB-1221)	PA
EPA 608.3	AROCLOR-1242 (PCB-1242)	PA
EPA 608.3	AROCLOR-1254 (PCB-1254)	PA
EPA 608.3	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	PA
EPA 608.3	DELTA-BHC	PA
EPA 608.3	ENDOSULFAN I	PA
EPA 608.3	ENDOSULFAN SULFATE	PA
EPA 608.3	ENDRIN ALDEHYDE	PA
EPA 608.3	HEPTACHLOR	PA
EPA 608.3	TOXAPHENE (CHLORINATED CAMPHENE)	PA
EPA 622	BOLSTAR (SULPROFOS)	PA
EPA 622	DEMETON-O	PA
EPA 622	DIAZINON	PA
EPA 622	DISULFOTON	PA
EPA 622	FENSULFOTHION	PA
EPA 622	MERPHOS	PA
EPA 622	MEVINPHOS	PA
EPA 622	PHORATE	PA
EPA 624.1	1,1,1-TRICHLOROETHANE	PA
EPA 624.1	1,1,2-TRICHLOROETHANE	PA
EPA 6020 B	COBALT	PA
EPA 6020 B	IRON	PA
EPA 6020 B	MAGNESIUM	PA
EPA 6020 B	MOLYBDENUM	PA
EPA 6020 B	POTASSIUM	PA
EPA 6020 B	SILVER	PA
EPA 6020 B	THALLIUM	PA
EPA 6020 B	VANADIUM	PA
EPA 6020 B - EXTENDED	STRONTIUM	PA
EPA 6020 B - EXTENDED	URANIUM	PA
EPA 608.3	4,4'-DDE	PA
EPA 608.3	ALDRIN	PA
EPA 608.3	AROCLOR-1016 (PCB-1016)	PA
EPA 608.3	AROCLOR-1232 (PCB-1232)	PA
EPA 608.3	AROCLOR-1248 (PCB-1248)	PA
EPA 608.3	AROCLOR-1260 (PCB-1260)	PA
EPA 608.3	CHLORDANE, TOTAL	PA
EPA 608.3	DIELDRIN	PA
EPA 608.3	ENDOSULFAN II	PA
EPA 608.3	ENDRIN	PA
EPA 608.3	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 608.3	HEPTACHLOR EPOXIDE	PA
EPA 622	AZINPHOS-METHYL (GUTHION)	PA
EPA 622	CHLORPYRIFOS	PA
EPA 622	DEMETON-S	PA
EPA 622	DICHLOROVOS (DDVP, DICHLORVOS)	PA
EPA 622	ETHOPROP	PA
EPA 622	FENTHION	PA
EPA 622	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 622	NALED	PA
EPA 622	STIROFOS (TETRACHLORVINPOS, GARDONA) (MIXED ISOMERS)	PA
EPA 624.1	1,1,2,2-TETRACHLOROETHANE	PA



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EPA 624.1	1,1-DICHLOROETHANE	PA
EPA 624.1	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 624.1	1,2-DICHLOROPROPANE	PA
EPA 624.1	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 624.1	2-BUTANONE (METHYL ETHYL KETONE, MEK)	PA
EPA 624.1	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA
EPA 624.1	ACROLEIN (PROPENAL)	PA
EPA 624.1	BENZENE	PA
EPA 624.1	BROMOFORM	PA
EPA 624.1	CHLOROBENZENE	PA
EPA 624.1	CHLOROETHANE (ETHYL CHLORIDE)	PA
EPA 624.1	CIS-1,2-DICHLOROETHYLENE	PA
EPA 624.1	DICHLORODIFLUOROMETHANE (FREON-12)	PA
EPA 624.1	ETHYLBENZENE	PA
EPA 624.1	M+P-XYLENE	PA
EPA 624.1	METHYL CHLORIDE (CHLOROMETHANE)	PA
EPA 624.1	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 624.1	TETRACHLOROETHENE (PERCHLOROETHENE)	PA
EPA 624.1	TRANS-1,2-DICHLOROETHENE	PA
EPA 624.1	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA
EPA 624.1	VINYL CHLORIDE (CHLOROETHENE)	PA
EPA 624.1 EXTENDED	ISOPROPYL ACETATE	PA
EPA 625.1	1,2,4-TRICHLOROBENZENE	PA
EPA 625.1	2,2'-OXYBIS(1-CHLOROPROPANE)	PA
EPA 625.1	2,4,6-TRICHLOROPHENOL	PA
EPA 625.1	2,4-DIMETHYLPHENOL	PA
EPA 625.1	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 625.1	2-CHLORONAPHTHALENE	PA
EPA 625.1	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	PA

METHOD	ANALYTE	PRIMARY
EPA 624.1	1,1-DICHLOROETHYLENE	PA
EPA 624.1	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 624.1	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 624.1	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 624.1	2-CHLOROETHYL VINYL ETHER	PA
EPA 624.1	ACETONE	PA
EPA 624.1	ACRYLONITRILE	PA
EPA 624.1	BROMODICHLOROMETHANE	PA
EPA 624.1	CARBON TETRACHLORIDE	PA
EPA 624.1	CHLORODIBROMOMETHANE	PA
EPA 624.1	CHLOROFORM	PA
EPA 624.1	CIS-1,3-DICHLOROPROPENE	PA
EPA 624.1	ETHYL ACETATE	PA
EPA 624.1	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 624.1	METHYL BROMIDE (BROMOMETHANE)	PA
EPA 624.1	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 624.1	O-XYLENE	PA
EPA 624.1	TOLUENE	PA
EPA 624.1	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	PA
EPA 624.1	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	PA
EPA 624.1	XYLENE (TOTAL)	PA
EPA 624.1 EXTENDED	N-HEXANE	PA
EPA 625.1	1,2-DIPHENYLHYDRAZINE	PA
EPA 625.1	2,3-DICHLOROANILINE	PA
EPA 625.1	2,4-DICHLOROPHENOL	PA
EPA 625.1	2,4-DINITROPHENOL	PA
EPA 625.1	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 625.1	2-CHLOROPHENOL	PA
EPA 625.1	2-METHYLPHENOL (O-CRESOL)	PA



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EPA 625.1	2-NITROPHENOL	PA
EPA 625.1	4-BROMOPHENYL PHENYL ETHER (BDE-3)	PA
EPA 625.1	4-CHLOROPHENYL PHENYLETHER	PA
EPA 625.1	ACENAPHTHENE	PA
EPA 625.1	ACETOPHENONE	PA
EPA 625.1	ANTHRACENE	PA
EPA 625.1	BENZO(A)ANTHRACENE	PA
EPA 625.1	BENZO(B)FLUORANTHENE	PA
EPA 625.1	BENZO(K)FLUORANTHENE	PA
EPA 625.1	BIS(2-CHLOROETHOXY)METHANE	PA
EPA 625.1	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 625.1	CARBAZOLE	PA
EPA 625.1	DI-N-BUTYL PHTHALATE	PA
EPA 625.1	DIBENZO(A,H) ANTHRACENE	PA
EPA 625.1	DIMETHYL PHTHALATE	PA
EPA 625.1	FLUORANTHENE	PA
EPA 625.1	HEXACHLOROBENZENE	PA
EPA 625.1	HEXACHLOROCYCLOPENTADIENE	PA
EPA 625.1	INDENO(1,2,3-CD) PYRENE	PA
EPA 625.1	N-NITROSODI-N-PROPYLAMINE	PA
EPA 625.1	N-NITROSODIPHENYLAMINE	PA
EPA 625.1	NITROBENZENE	PA
EPA 625.1	PHENANTHRENE	PA
EPA 625.1	PYRENE	PA
EPA 625.1 EXTENDED	4-METHYLPHENOL (P-CRESOL)	PA
EPA 625.1 EXTENDED	N-OCTADECANE	PA
EPA 7196 A	CHROMIUM VI	PA
EPA 7470 A	MERCURY	PA
EPA 8011	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	PA
EPA 8015 B	ETHANOL	PA
EPA 8015 B	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8015 B	METHANOL	PA
EPA 8015 C	ETHANOL	PA

METHOD	ANALYTE	PRIMARY
EPA 625.1	3,3'-DICHLOROBENZIDINE	PA
EPA 625.1	4-CHLORO-3-METHYLPHENOL	PA
EPA 625.1	4-NITROPHENOL	PA
EPA 625.1	ACENAPHTHYLENE	PA
EPA 625.1	ANILINE	PA
EPA 625.1	BENZIDINE	PA
EPA 625.1	BENZO(A)PYRENE	PA
EPA 625.1	BENZO(G,H,I)PERYLENE	PA
EPA 625.1	BENZOIC ACID	PA
EPA 625.1	BIS(2-CHLOROETHYL) ETHER	PA
EPA 625.1	BUTYL BENZYL PHTHALATE	PA
EPA 625.1	CHRYSENE	PA
EPA 625.1	DI-N-OCTYL PHTHALATE	PA
EPA 625.1	DIETHYL PHTHALATE	PA
EPA 625.1	DIPHENYL ETHER (DIPHENYL OXIDE)	PA
EPA 625.1	FLUORENE	PA
EPA 625.1	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 625.1	HEXACHLOROETHANE	PA
EPA 625.1	ISOPHORONE	PA
EPA 625.1	N-NITROSODIMETHYLAMINE	PA
EPA 625.1	NAPHTHALENE	PA
EPA 625.1	PENTACHLOROPHENOL	PA
EPA 625.1	PHENOL	PA
EPA 625.1	PYRIDINE	PA
EPA 625.1 EXTENDED	N-DECANE	PA
EPA 6850	PERCHLORATE	PA
EPA 7199	CHROMIUM VI	PA
EPA 8011	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	PA
EPA 8015 B	DIESEL RANGE ORGANICS (DRO)	PA
EPA 8015 B	ETHYLENE GLYCOL	PA
EPA 8015 B	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8015 C	DIESEL RANGE ORGANICS (DRO)	PA
EPA 8015 C	ETHYLENE GLYCOL	PA



Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10358

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2425 New Holland Pike
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Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8015 C	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8015 C	METHANOL	PA
EPA 8015 C - EXTENDED	TRIETHYLENE GLYCOL	PA
EPA 8021 B	ETHYLBENZENE	PA
EPA 8021 B	M+P-XYLENE	PA
EPA 8021 B	O-XYLENE	PA
EPA 8021 B	XYLENE (TOTAL)	PA
EPA 8081 A	4,4'-DDD	PA
EPA 8081 A	4,4'-DDT	PA
EPA 8081 A	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	DELTA-BHC	PA
EPA 8081 A	ENDOSULFAN I	PA
EPA 8081 A	ENDOSULFAN SULFATE	PA
EPA 8081 A	ENDRIN ALDEHYDE	PA
EPA 8081 A	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	HEPTACHLOR	PA
EPA 8081 A	METHOXYCHLOR	PA
EPA 8081 A - EXTENDED	KEPONE	PA
EPA 8081 B	4,4'-DDE	PA
EPA 8081 B	ALDRIN	PA
EPA 8081 B	ALPHA-CHLORDANE (CIS-CHLORDANE)	PA
EPA 8081 B	CHLORDANE, TOTAL	PA
EPA 8081 B	DIELDRIN	PA
EPA 8081 B	ENDOSULFAN II	PA
EPA 8081 B	ENDRIN	PA
EPA 8081 B	ENDRIN KETONE	PA
EPA 8081 B	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	PA
EPA 8015 C	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8015 C - EXTENDED	PROPYLENE GLYCOL	PA
EPA 8021 B	BENZENE	PA
EPA 8021 B	ISOPROPYLBENZENE	PA
EPA 8021 B	NAPHTHALENE	PA
EPA 8021 B	TOLUENE	PA
EPA 8021 B - EXTENDED	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8081 A	4,4'-DDE	PA
EPA 8081 A	ALDRIN	PA
EPA 8081 A	ALPHA-CHLORDANE (CIS-CHLORDANE)	PA
EPA 8081 A	CHLORDANE, TOTAL	PA
EPA 8081 A	DIELDRIN	PA
EPA 8081 A	ENDOSULFAN II	PA
EPA 8081 A	ENDRIN	PA
EPA 8081 A	ENDRIN KETONE	PA
EPA 8081 A	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	PA
EPA 8081 A	HEPTACHLOR EPOXIDE	PA
EPA 8081 A	TOXAPHENE (CHLORINATED CAMPHENE)	PA
EPA 8081 B	4,4'-DDD	PA
EPA 8081 B	4,4'-DDT	PA
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	DELTA-BHC	PA
EPA 8081 B	ENDOSULFAN I	PA
EPA 8081 B	ENDOSULFAN SULFATE	PA
EPA 8081 B	ENDRIN ALDEHYDE	PA
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	HEPTACHLOR	PA

Scope of Accreditation

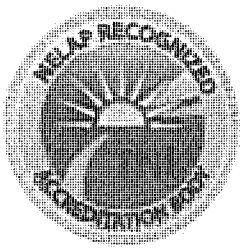
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Lancaster, PA 17601

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8081 B	HEPTACHLOR EPOXIDE	PA
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	PA
EPA 8082 A	AROCLOR-1016 (PCB-1016)	PA
EPA 8082 A	AROCLOR-1232 (PCB-1232)	PA
EPA 8082 A	AROCLOR-1248 (PCB-1248)	PA
EPA 8082 A	AROCLOR-1260 (PCB-1260)	PA
EPA 8082 A - EXTENDED	AROCLOR-1268 (PCB-1268)	PA
EPA 8141 A	BOLSTAR (SULPROFOS)	PA
EPA 8141 A	COUMAPHOS	PA
EPA 8141 A	DEMETON-S	PA
EPA 8141 A	DICHLOROVOS (DDVP, DICHLORVOS)	PA
EPA 8141 A	ETHION	PA
EPA 8141 A	FAMPHUR	PA
EPA 8141 A	FENTHION	PA
EPA 8141 A	MERPHOS	PA
EPA 8141 A	MEVINPHOS	PA
EPA 8141 A	PARATHION (PARATHION - ETHYL)	PA
EPA 8141 A	RONNEL	PA
EPA 8141 A	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	PA
EPA 8141 A	TRICHLORONATE	PA
EPA 8141 B	AZINPHOS-METHYL (GUTHION)	PA
EPA 8141 B	CHLORPYRIFOS	PA
EPA 8141 B	DEMETON-O	PA
EPA 8141 B	DICHLOROVOS (DDVP, DICHLORVOS)	PA
EPA 8141 B	EPN (PHOSPHONOTHIOIC ACID, PHENYL-, O-ETHYL O-(P-NITROPHENYL) ESTER)	PA
EPA 8141 B	ETHOPROP	PA
EPA 8141 B	FENSULFOTHION	PA
EPA 8141 B	MALATHION	PA
EPA 8141 B	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8141 B	NALED	PA
EPA 8141 B	PHORATE	PA
EPA 8141 B	SIMAZINE	PA
EPA 8141 B	TOKUTHION (PROTHIOPHOS)	PA
EPA 8081 B	METHOXYCHLOR	PA
EPA 8081 B - EXTENDED	KEPONE	PA
EPA 8082 A	AROCLOR-1221 (PCB-1221)	PA
EPA 8082 A	AROCLOR-1242 (PCB-1242)	PA
EPA 8082 A	AROCLOR-1254 (PCB-1254)	PA
EPA 8082 A - EXTENDED	AROCLOR-1262 (PCB-1262)	PA
EPA 8141 A	ATRAZINE	PA
EPA 8141 A	CHLORPYRIFOS	PA
EPA 8141 A	DEMETON-O	PA
EPA 8141 A	DIAZINON	PA
EPA 8141 A	DISULFOTON	PA
EPA 8141 A	ETHOPROP	PA
EPA 8141 A	FENSULFOTHION	PA
EPA 8141 A	MALATHION	PA
EPA 8141 A	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8141 A	NALED	PA
EPA 8141 A	PHORATE	PA
EPA 8141 A	SIMAZINE	PA
EPA 8141 A	TOKUTHION (PROTHIOPHOS)	PA
EPA 8141 B	ATRAZINE	PA
EPA 8141 B	BOLSTAR (SULPROFOS)	PA
EPA 8141 B	COUMAPHOS	PA
EPA 8141 B	DEMETON-S	PA
EPA 8141 B	DISULFOTON	PA
EPA 8141 B	ETHION	PA
EPA 8141 B	FAMPHUR	PA
EPA 8141 B	FENTHION	PA
EPA 8141 B	MERPHOS	PA
EPA 8141 B	MEVINPHOS	PA
EPA 8141 B	PARATHION (PARATHION - ETHYL)	PA
EPA 8141 B	RONNEL	PA
EPA 8141 B	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	PA
EPA 8141 B	TRICHLORONATE	PA



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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8151 A	2,4,5-T	PA
EPA 8151 A	2,4-DB	PA
EPA 8151 A	DICAMBA	PA
EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	PA
EPA 8151 A	MCPP	PA
EPA 8151 A	PICLORAM	PA
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	PA
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROPROPENE	PA
EPA 8260 B	1,2,3-TRICHLOROPROPANE	PA
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	PA
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	PA
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	PA
EPA 8260 B	1,3-DICHLOROPROPANE	PA
EPA 8260 B	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8260 B	2,2-DICHLOROPROPANE	PA
EPA 8260 B	2-CHLOROETHYL VINYL ETHER	PA
EPA 8260 B	2-HEXANONE	PA
EPA 8260 B	4-CHLOROTOLUENE	PA
EPA 8260 B	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA
EPA 8260 B	ACETONITRILE	PA
EPA 8260 B	ACRYLONITRILE	PA
EPA 8260 B	BENZENE	PA
EPA 8260 B	BROMOBENZENE	PA
EPA 8260 B	BROMODICHLOROMETHANE	PA
EPA 8260 B	CARBON DISULFIDE	PA
EPA 8260 B	CHLOROBENZENE	PA
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	PA

METHOD	ANALYTE	PRIMARY
EPA 8151 A	2,4-D	PA
EPA 8151 A	DALAPON	PA
EPA 8151 A	DICHLOROPROP (DICHLORPROP)	PA
EPA 8151 A	MCPA	PA
EPA 8151 A	PENTACHLOROPHENOL	PA
EPA 8151 A	SILVEX (2,4,5-TP)	PA
EPA 8260 B	1,1,1-TRICHLOROETHANE	PA
EPA 8260 B	1,1,2-TRICHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROETHYLENE	PA
EPA 8260 B	1,2,3-TRICHLOROBENZENE	PA
EPA 8260 B	1,2,4-TRICHLOROBENZENE	PA
EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	PA
EPA 8260 B	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8260 B	1,2-DICHLOROPROPANE	PA
EPA 8260 B	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8260 B	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8260 B	1-BUTANOL (N-BUTANOL, N-BUTYL ALCOHOL)	PA
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	PA
EPA 8260 B	2-CHLOROTOLUENE	PA
EPA 8260 B	2-NITROPROPANE	PA
EPA 8260 B	4-ISOPROPYLTOLUENE (P-CYMENE, P-ISOPROPYLTOLUENE)	PA
EPA 8260 B	ACETONE	PA
EPA 8260 B	ACROLEIN (PROPENAL)	PA
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	PA
EPA 8260 B	BENZYL CHLORIDE	PA
EPA 8260 B	BROMOCHLOROMETHANE	PA
EPA 8260 B	BROMOFORM	PA
EPA 8260 B	CARBON TETRACHLORIDE	PA
EPA 8260 B	CHLORODIBROMOMETHANE	PA
EPA 8260 B	CHLOROFORM	PA



Commonwealth of Virginia

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Scope of Accreditation

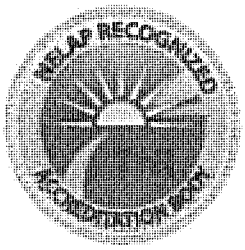
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	PA
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	PA
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	PA
EPA 8260 B	EPICHLOROHYDRIN (1-CHLORO-2,3-EPOXYPROPANE)	PA
EPA 8260 B	ETHYL ACETATE	PA
EPA 8260 B	ETHYLBENZENE	PA
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	PA
EPA 8260 B	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8260 B	M+P-XYLENE	PA
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	PA
EPA 8260 B	METHYL METHACRYLATE	PA
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 8260 B	N-PROPYLAMINE	PA
EPA 8260 B	NAPHTHALENE	PA
EPA 8260 B	PENTACHLOROETHANE	PA
EPA 8260 B	SEC-BUTYLBENZENE	PA
EPA 8260 B	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	PA
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	PA
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	PA
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	PA
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	PA
EPA 8260 B	VINYL CHLORIDE (CHLOROETHENE)	PA
EPA 8260 B - EXTENDED	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	PA
EPA 8260 B - EXTENDED	DHSOPROPYLETHER (DIPE, ISOPROPYL ETHER)	PA
EPA 8260 B - EXTENDED	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8260 B - EXTENDED	METHYLCYCLOHEXANE	PA
EPA 8260 B - EXTENDED	T-AMYL ALCOHOL (TAA)	PA
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	PA
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	PA
EPA 8260 B	DIETHYL ETHER	PA
EPA 8260 B	ETHANOL	PA
EPA 8260 B	ETHYL METHACRYLATE	PA
EPA 8260 B	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	PA
EPA 8260 B	ISOPROPYLBENZENE	PA
EPA 8260 B	METHACRYLONITRILE	PA
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	PA
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8260 B	N-BUTYLBENZENE	PA
EPA 8260 B	N-PROPYLBENZENE	PA
EPA 8260 B	O-XYLENE	PA
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	PA
EPA 8260 B	STYRENE	PA
EPA 8260 B	TERT-BUTYLBENZENE	PA
EPA 8260 B	TOLUENE	PA
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	PA
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA
EPA 8260 B	VINYL ACETATE	PA
EPA 8260 B	XYLENE (TOTAL)	PA
EPA 8260 B - EXTENDED	CYCLOHEXANE	PA
EPA 8260 B - EXTENDED	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	PA
EPA 8260 B - EXTENDED	METHYL ACETATE	PA
EPA 8260 B - EXTENDED	N-HEXANE	PA
EPA 8260 B - EXTENDED	T-AMYLMETHYLETHER (TAME)	PA



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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B - EXTENDED	TETRAHYDROFURAN (THF)	PA
EPA 8260 C	1,1,1-TRICHLOROETHANE	PA
EPA 8260 C	1,1,2-TRICHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROETHYLENE	PA
EPA 8260 C	1,2,3-TRICHLOROBENZENE	PA
EPA 8260 C	1,2,4-TRICHLOROBENZENE	PA
EPA 8260 C	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	PA
EPA 8260 C	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8260 C	1,2-DICHLOROPROPANE	PA
EPA 8260 C	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8260 C	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8260 C	1-BUTANOL (N-BUTANOL, N-BUTYL ALCOHOL)	PA
EPA 8260 C	2-BUTANONE (METHYL ETHYL KETONE, MEK)	PA
EPA 8260 C	2-CHLOROTOLUENE	PA
EPA 8260 C	2-NITROPROPANE	PA
EPA 8260 C	4-ISOPROPYLTOLUENE (P-CYMENE, P-ISOPROPYLTOLUENE)	PA
EPA 8260 C	ACETONE	PA
EPA 8260 C	ACROLEIN (PROPENAL)	PA
EPA 8260 C	ALLYL CHLORIDE (3-CHLOROPROPENE)	PA
EPA 8260 C	BENZYL CHLORIDE	PA
EPA 8260 C	BROMOCHLOROMETHANE	PA
EPA 8260 C	BROMOFORM	PA
EPA 8260 C	CARBON TETRACHLORIDE	PA
EPA 8260 C	CHLORODIBROMOMETHANE	PA
EPA 8260 C	CHLOROFORM	PA
EPA 8260 C	CIS-1,2-DICHLOROETHYLENE	PA
EPA 8260 C	CYCLOHEXANE	PA
EPA 8260 C	DICHLORODIFLUOROMETHANE (FREON-12)	PA
EPA 8260 C	EPICHLOROHYDRIN (1-CHLORO-2,3-EPOXYPROPANE)	PA
EPA 8260 C	ETHYL ACETATE	PA

METHOD	ANALYTE	PRIMARY
EPA 8260 C	1,1,1,2-TETRACHLOROETHANE	PA
EPA 8260 C	1,1,2,2-TETRACHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROPROPENE	PA
EPA 8260 C	1,2,3-TRICHLOROPROPANE	PA
EPA 8260 C	1,2,4-TRIMETHYLBENZENE	PA
EPA 8260 C	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	PA
EPA 8260 C	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 8260 C	1,3,5-TRIMETHYLBENZENE	PA
EPA 8260 C	1,3-DICHLOROPROPANE	PA
EPA 8260 C	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8260 C	2,2-DICHLOROPROPANE	PA
EPA 8260 C	2-CHLOROETHYL VINYL ETHER	PA
EPA 8260 C	2-HEXANONE	PA
EPA 8260 C	4-CHLOROTOLUENE	PA
EPA 8260 C	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA
EPA 8260 C	ACETONITRILE	PA
EPA 8260 C	ACRYLONITRILE	PA
EPA 8260 C	BENZENE	PA
EPA 8260 C	BROMOBENZENE	PA
EPA 8260 C	BROMODICHLOROMETHANE	PA
EPA 8260 C	CARBON DISULFIDE	PA
EPA 8260 C	CHLOROBENZENE	PA
EPA 8260 C	CHLOROETHANE (ETHYL CHLORIDE)	PA
EPA 8260 C	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	PA
EPA 8260 C	CIS-1,3-DICHLOROPROPENE	PA
EPA 8260 C	DIBROMOMETHANE (METHYLENE BROMIDE)	PA
EPA 8260 C	DIETHYL ETHER	PA
EPA 8260 C	ETHANOL	PA
EPA 8260 C	ETHYL METHACRYLATE	PA



Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 C	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	PA
EPA 8260 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8260 C	IODOMETHANE (METHYL IODIDE)	PA
EPA 8260 C	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8260 C	M+P-XYLENE	PA
EPA 8260 C	METHYL BROMIDE (BROMOMETHANE)	PA
EPA 8260 C	METHYL METHACRYLATE	PA
EPA 8260 C	METHYLCYCLOHEXANE	PA
EPA 8260 C	N-BUTYLBENZENE	PA
EPA 8260 C	NAPHTHALENE	PA
EPA 8260 C	PENTACHLOROETHANE	PA
EPA 8260 C	SEC-BUTYLBENZENE	PA
EPA 8260 C	T-AMYLMETHYLETHER (TAME)	PA
EPA 8260 C	TERT-BUTYLBENZENE	PA
EPA 8260 C	TOLUENE	PA
EPA 8260 C	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	PA
EPA 8260 C	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA
EPA 8260 C	VINYL ACETATE	PA
EPA 8260 C	XYLENE (TOTAL)	PA
EPA 8260 C - EXTENDED	1,2,3-TRIMETHYLBENZENE	PA
EPA 8260 C - EXTENDED	1,3-BUTADIENE	PA
EPA 8260 C - EXTENDED	DI-ISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	PA
EPA 8260 C - EXTENDED	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8260 C - EXTENDED	N-BUTYL-ACETATE	PA
EPA 8260 C - EXTENDED	N-HEXANE	PA
EPA 8260 C - EXTENDED	TETRAHYDROFURAN (THF)	PA
EPA 8270 C	1,2,4,5-TETRACHLOROBENZENE	PA
EPA 8270 C	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8260 C	ETHYLBENZENE	PA
EPA 8260 C	HEXACHLOROETHANE	PA
EPA 8260 C	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	PA
EPA 8260 C	ISOPROPYLBENZENE	PA
EPA 8260 C	METHACRYLONITRILE	PA
EPA 8260 C	METHYL CHLORIDE (CHLOROMETHANE)	PA
EPA 8260 C	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8260 C	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 8260 C	N-PROPYLBENZENE	PA
EPA 8260 C	O-XYLENE	PA
EPA 8260 C	PROPIONITRILE (ETHYL CYANIDE)	PA
EPA 8260 C	STYRENE	PA
EPA 8260 C	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	PA
EPA 8260 C	TETRACHLOROETHENE (PERCHLOROETHENE)	PA
EPA 8260 C	TRANS-1,2-DICHLOROETHENE	PA
EPA 8260 C	TRANS-1,4-DICHLORO-2-BUTENE	PA
EPA 8260 C	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	PA
EPA 8260 C	VINYL CHLORIDE (CHLOROETHENE)	PA
EPA 8260 C - EXTENDED	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	PA
EPA 8260 C - EXTENDED	1,3,5-TRICHLOROBENZENE	PA
EPA 8260 C - EXTENDED	CYCLOHEXANONE	PA
EPA 8260 C - EXTENDED	DIMETHYL ETHER	PA
EPA 8260 C - EXTENDED	METHYL ACETATE	PA
EPA 8260 C - EXTENDED	N-HEPTANE	PA
EPA 8260 C - EXTENDED	T-AMYL ALCOHOL (TAA)	PA
EPA 8260 C SIM	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8270 C	1,2,4-TRICHLOROBENZENE	PA
EPA 8270 C	1,2-DIPHENYLHYDRAZINE	PA



Commonwealth of Virginia

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Virginia Laboratory ID: 460182
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 C	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8270 C	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8270 C	1,4-DINITROBENZENE (1,4-DNB)	PA
EPA 8270 C	1,4-PHENYLENEDIAMINE	PA
EPA 8270 C	1-NAPHTHYLAMINE	PA
EPA 8270 C	2,3,4,6-TETRACHLOROPHENOL	PA
EPA 8270 C	2,4,6-TRICHLOROPHENOL	PA
EPA 8270 C	2,4-DIMETHYLPHENOL	PA
EPA 8270 C	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8270 C	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8270 C	2-CHLORONAPHTHALENE	PA
EPA 8270 C	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	PA
EPA 8270 C	2-METHYLPHENOL (O-CRESOL)	PA
EPA 8270 C	2-NITROANILINE	PA
EPA 8270 C	2-PICOLINE (2-METHYLPYRIDINE)	PA
EPA 8270 C	3,3'-DIMETHYLBENZIDINE	PA
EPA 8270 C	3-METHYLPHENOL (M-CRESOL)	PA
EPA 8270 C	4,4'-METHYLENEBIS-2-CHLOROANILINE	PA
EPA 8270 C	4-BROMOPHENYL PHENYL ETHER (BDE-3)	PA
EPA 8270 C	4-CHLOROANILINE	PA
EPA 8270 C	4-DIMETHYL AMINOAZOBENZENE	PA
EPA 8270 C	4-NITROANILINE	PA
EPA 8270 C	4-NITROQUINOLINE-1-OXIDE	PA
EPA 8270 C	7,12-DIMETHYLBENZ(A) ANTHRACENE	PA
EPA 8270 C	ACENAPHTHENE	PA
EPA 8270 C	ACETOPHENONE	PA
EPA 8270 C	ANTHRACENE	PA
EPA 8270 C	BENZIDINE	PA
EPA 8270 C	BENZO(A)PYRENE	PA
EPA 8270 C	BENZO(G,H,I)PERYLENE	PA
EPA 8270 C	BENZOIC ACID	PA
EPA 8270 C	BIS(2-CHLOROETHOXY)METHANE	PA
EPA 8270 C	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 8270 C	CHLOROBENZILATE	PA
EPA 8270 C	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8270 C	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8270 C	1,4-NAPHTHOQUINONE	PA
EPA 8270 C	1-CHLORONAPHTHALENE	PA
EPA 8270 C	2,2'-OXYBIS(1-CHLOROPROPANE)	PA
EPA 8270 C	2,4,5-TRICHLOROPHENOL	PA
EPA 8270 C	2,4-DICHLOROPHENOL	PA
EPA 8270 C	2,4-DINITROPHENOL	PA
EPA 8270 C	2,6-DICHLOROPHENOL	PA
EPA 8270 C	2-ACETYLAMINOFLUORENE	PA
EPA 8270 C	2-CHLOROPHENOL	PA
EPA 8270 C	2-METHYLNAPHTHALENE	PA
EPA 8270 C	2-NAPHTHYLAMINE	PA
EPA 8270 C	2-NITROPHENOL	PA
EPA 8270 C	3,3'-DICHLOROBENZIDINE	PA
EPA 8270 C	3-METHYLCHOLANTHRENE	PA
EPA 8270 C	3-NITROANILINE	PA
EPA 8270 C	4-AMINOBIPHENYL	PA
EPA 8270 C	4-CHLORO-3-METHYLPHENOL	PA
EPA 8270 C	4-CHLOROPHENYL PHENYLETHER	PA
EPA 8270 C	4-METHYLPHENOL (P-CRESOL)	PA
EPA 8270 C	4-NITROPHENOL	PA
EPA 8270 C	5-NITRO-O-TOLUIDINE	PA
EPA 8270 C	A-A-DIMETHYLPHENETHYLAMINE	PA
EPA 8270 C	ACENAPHTHYLENE	PA
EPA 8270 C	ANILINE	PA
EPA 8270 C	ARAMITE	PA
EPA 8270 C	BENZO(A)ANTHRACENE	PA
EPA 8270 C	BENZO(B)FLUORANTHENE	PA
EPA 8270 C	BENZO(K)FLUORANTHENE	PA
EPA 8270 C	BENZYL ALCOHOL	PA
EPA 8270 C	BIS(2-CHLOROETHYL) ETHER	PA
EPA 8270 C	BUTYL BENZYL PHTHALATE	PA
EPA 8270 C	CHRYSENE	PA



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Virginia Laboratory ID: 460182
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 C	DI-N-BUTYL PHTHALATE	PA
EPA 8270 C	DIALLATE	PA
EPA 8270 C	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 C	DIETHYL PHTHALATE	PA
EPA 8270 C	DIMETHYL PHTHALATE	PA
EPA 8270 C	DISULFOTON	PA
EPA 8270 C	FAMPHUR	PA
EPA 8270 C	FLUORENE	PA
EPA 8270 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8270 C	HEXACHLOROETHANE	PA
EPA 8270 C	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 C	ISOPHORONE	PA
EPA 8270 C	KEPONE	PA
EPA 8270 C	METHYL METHANESULFONATE	PA
EPA 8270 C	N-NITROSO-DI-N-BUTYLAMINE	PA
EPA 8270 C	N-NITROSODIETHYLAMINE	PA
EPA 8270 C	N-NITROSODIPHENYLAMINE	PA
EPA 8270 C	N-NITROSOMORPHOLINE	PA
EPA 8270 C	N-NITROSOPYRROLIDINE	PA
EPA 8270 C	NITROBENZENE	PA
EPA 8270 C	O-TOLUIDINE (2-METHYLANILINE)	PA
EPA 8270 C	PENTACHLOROBENZENE	PA
EPA 8270 C	PENTACHLOROPHENOL	PA
EPA 8270 C	PHENANTHRENE	PA
EPA 8270 C	PHORATE	PA
EPA 8270 C	PRONAMIDE (KERB)	PA
EPA 8270 C	PYRIDINE	PA
EPA 8270 C	THIONAZIN (ZINOPHOS)	PA
EPA 8270 C	TRIS-(2,3-DIBROMOPROPYL) PHOSPHATE (TRIS-BP)	PA
EPA 8270 C SIM	ACENAPHTHENE	PA
EPA 8270 C SIM	ANTHRACENE	PA
EPA 8270 C SIM	BENZO(A)PYRENE	PA
EPA 8270 C SIM	BENZO(G,H,I)PERYLENE	PA
EPA 8270 C SIM	CHRYSENE	PA
EPA 8270 C SIM	FLUORANTHENE	PA
EPA 8270 C SIM	INDENO(1,2,3-CD) PYRENE	PA

METHOD	ANALYTE	PRIMARY
EPA 8270 C	DI-N-OCTYL PHTHALATE	PA
EPA 8270 C	DIBENZ(A, J) ACRIDINE	PA
EPA 8270 C	DIBENZOFURAN	PA
EPA 8270 C	DIMETHOATE	PA
EPA 8270 C	DIPHENYLAMINE	PA
EPA 8270 C	ETHYL METHANESULFONATE	PA
EPA 8270 C	FLUORANTHENE	PA
EPA 8270 C	HEXACHLOROBENZENE	PA
EPA 8270 C	HEXACHLOROCYCLOPENTADIENE	PA
EPA 8270 C	HEXACHLOROPROPENE	PA
EPA 8270 C	ISODRIN	PA
EPA 8270 C	ISOSAFROLE	PA
EPA 8270 C	METHAPYRILENE	PA
EPA 8270 C	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8270 C	N-NITROSODI-N-PROPYLAMINE	PA
EPA 8270 C	N-NITROSODIMETHYLAMINE	PA
EPA 8270 C	N-NITROSOMETHYLETHYLAMINE	PA
EPA 8270 C	N-NITROSOPIPERIDINE	PA
EPA 8270 C	NAPHTHALENE	PA
EPA 8270 C	O,O,O-TRIETHYL PHOSPHOROTHIOATE	PA
EPA 8270 C	PARATHION (PARATHION - ETHYL)	PA
EPA 8270 C	PENTACHLORONITROBENZENE	PA
EPA 8270 C	PHENACETIN	PA
EPA 8270 C	PHENOL	PA
EPA 8270 C	PHTHALIC ANHYDRIDE	PA
EPA 8270 C	PYRENE	PA
EPA 8270 C	SAFROLE	PA
EPA 8270 C	THIOPHENOL (BENZENETHIOL)	PA
EPA 8270 C SIM	2-METHYLNAPHTHALENE	PA
EPA 8270 C SIM	ACENAPHTHYLENE	PA
EPA 8270 C SIM	BENZO(A)ANTHRACENE	PA
EPA 8270 C SIM	BENZO(B)FLUORANTHENE	PA
EPA 8270 C SIM	BENZO(K)FLUORANTHENE	PA
EPA 8270 C SIM	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 C SIM	FLUORENE	PA
EPA 8270 C SIM	NAPHTHALENE	PA

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 C SIM	PHENANTHRENE	PA
EPA 8270 C SIM - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8270 D	1,2,4-TRICHLOROBENZENE	PA
EPA 8270 D	1,2-DIPHENYLHYDRAZINE	PA
EPA 8270 D	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8270 D	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8270 D	1,4-NAPHTHOQUINONE	PA
EPA 8270 D	1-CHLORONAPHTHALENE	PA
EPA 8270 D	2,2'-OXYBIS(1-CHLOROPROPANE)	PA
EPA 8270 D	2,4,5-TRICHLOROPHENOL	PA
EPA 8270 D	2,4-DICHLOROPHENOL	PA
EPA 8270 D	2,4-DINITROPHENOL	PA
EPA 8270 D	2,6-DICHLOROPHENOL	PA
EPA 8270 D	2-ACETYLAMINOFLUORENE	PA
EPA 8270 D	2-CHLOROPHENOL	PA
EPA 8270 D	2-METHYLNAPHTHALENE	PA
EPA 8270 D	2-NAPHTHYLAMINE	PA
EPA 8270 D	2-NITROPHENOL	PA
EPA 8270 D	3,3'-DICHLOROBENZIDINE	PA
EPA 8270 D	3-METHYLCHOLANTHRENE	PA
EPA 8270 D	3-NITROANILINE	PA
EPA 8270 D	4-AMINOBIPHENYL	PA
EPA 8270 D	4-CHLORO-3-METHYLPHENOL	PA
EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	PA
EPA 8270 D	4-METHYLPHENOL (P-CRESOL)	PA
EPA 8270 D	4-NITROPHENOL	PA
EPA 8270 D	5-NITRO-O-TOLUIDINE	PA
EPA 8270 D	A-A-DIMETHYLPHENETHYLAMINE	PA
EPA 8270 D	ACENAPHTHYLENE	PA
EPA 8270 D	ANILINE	PA
EPA 8270 D	ARAMITE	PA
EPA 8270 D	BENZO(A)ANTHRACENE	PA
EPA 8270 D	BENZO(B)FLUORANTHENE	PA
EPA 8270 D	BENZO(K)FLUORANTHENE	PA
EPA 8270 C SIM	PYRENE	PA
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	PA
EPA 8270 D	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8270 D	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8270 D	1,4-DINITROBENZENE (1,4-DNB)	PA
EPA 8270 D	1,4-PHENYLENEDIAMINE	PA
EPA 8270 D	1-NAPHTHYLAMINE	PA
EPA 8270 D	2,3,4,6-TETRACHLOROPHENOL	PA
EPA 8270 D	2,4,6-TRICHLOROPHENOL	PA
EPA 8270 D	2,4-DIMETHYLPHENOL	PA
EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8270 D	2-CHLORONAPHTHALENE	PA
EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	PA
EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	PA
EPA 8270 D	2-NITROANILINE	PA
EPA 8270 D	2-PICOLINE (2-METHYLPYRIDINE)	PA
EPA 8270 D	3,3'-DIMETHYLBENZIDINE	PA
EPA 8270 D	3-METHYLPHENOL (M-CRESOL)	PA
EPA 8270 D	4,4'-METHYLENEBIS-2-CHLOROANILINE	PA
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER (BDE-3)	PA
EPA 8270 D	4-CHLOROANILINE	PA
EPA 8270 D	4-DIMETHYL AMINOAZOBENZENE	PA
EPA 8270 D	4-NITROANILINE	PA
EPA 8270 D	4-NITROQUINOLINE-1-OXIDE	PA
EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	PA
EPA 8270 D	ACENAPHTHENE	PA
EPA 8270 D	ACETOPHENONE	PA
EPA 8270 D	ANTHRACENE	PA
EPA 8270 D	BENZIDINE	PA
EPA 8270 D	BENZO(A)PYRENE	PA
EPA 8270 D	BENZO(G,H,I)PERYLENE	PA



Commonwealth of Virginia

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Scope of Accreditation

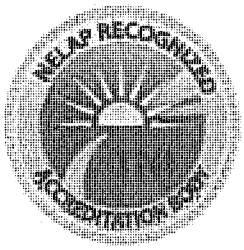
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 D	BENZOIC ACID	PA
EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	PA
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 8270 D	CHLOROBENZILATE	PA
EPA 8270 D	DI-N-BUTYL PHTHALATE	PA
EPA 8270 D	DIALLATE	PA
EPA 8270 D	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 D	DIETHYL PHTHALATE	PA
EPA 8270 D	DIMETHYL PHTHALATE	PA
EPA 8270 D	DIPHENYLAMINE	PA
EPA 8270 D	ETHYL METHANESULFONATE	PA
EPA 8270 D	FLUORANTHENE	PA
EPA 8270 D	HEXACHLOROBENZENE	PA
EPA 8270 D	HEXACHLOROCYCLOPENTADIENE	PA
EPA 8270 D	HEXACHLOROPROPENE	PA
EPA 8270 D	ISODRIN	PA
EPA 8270 D	ISOSAFROLE	PA
EPA 8270 D	METHAPYRILENE	PA
EPA 8270 D	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	PA
EPA 8270 D	N-NITROSODIMETHYLAMINE	PA
EPA 8270 D	N-NITROSOMETHYLETHYLAMINE	PA
EPA 8270 D	N-NITROSOPIPERIDINE	PA
EPA 8270 D	NAPHTHALENE	PA
EPA 8270 D	O,O,O-TRIETHYL PHOSPHOROTHIOATE	PA
EPA 8270 D	PARATHION (PARATHION - ETHYL)	PA
EPA 8270 D	PENTACHLORONITROBENZENE	PA
EPA 8270 D	PHENACETIN	PA
EPA 8270 D	PHENOL	PA
EPA 8270 D	PHTHALIC ANHYDRIDE	PA
EPA 8270 D	PYRENE	PA
EPA 8270 D	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	PA
EPA 8270 D	TRIS-(2,3-DIBROMOPROPYL) PHOSPHATE (TRIS-BP)	PA
EPA 8270 D	BENZYL ALCOHOL	PA
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	PA
EPA 8270 D	BUTYL BENZYL PHTHALATE	PA
EPA 8270 D	CHRYSENE	PA
EPA 8270 D	DI-N-OCTYL PHTHALATE	PA
EPA 8270 D	DIBENZ(A, J) ACRIDINE	PA
EPA 8270 D	DIBENZOFURAN	PA
EPA 8270 D	DIMETHOATE	PA
EPA 8270 D	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	PA
EPA 8270 D	DISULFOTON	PA
EPA 8270 D	FAMPHUR	PA
EPA 8270 D	FLUORENE	PA
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8270 D	HEXACHLOROETHANE	PA
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 D	ISOPHORONE	PA
EPA 8270 D	KEPONE	PA
EPA 8270 D	METHYL METHANESULFONATE	PA
EPA 8270 D	N-NITROSO-DI-N-BUTYLAMINE	PA
EPA 8270 D	N-NITROSODIETHYLAMINE	PA
EPA 8270 D	N-NITROSODIPHENYLAMINE	PA
EPA 8270 D	N-NITROSOMORPHOLINE	PA
EPA 8270 D	N-NITROSOPYRROLIDINE	PA
EPA 8270 D	NITROBENZENE	PA
EPA 8270 D	O-TOLUIDINE (2-METHYLANILINE)	PA
EPA 8270 D	PENTACHLOROBENZENE	PA
EPA 8270 D	PENTACHLOROPHENOL	PA
EPA 8270 D	PHENANTHRENE	PA
EPA 8270 D	PHORATE	PA
EPA 8270 D	PRONAMIDE (KERB)	PA
EPA 8270 D	SAFROLE	PA
EPA 8270 D	THIONAZIN (ZINOPHOS)	PA
EPA 8270 D - EXTENDED	1,1'-BIPHENYL (BZ-0)	PA



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Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8270 D - EXTENDED	1,2,3,4-TETRACHLOROBENZENE	PA
EPA 8270 D - EXTENDED	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8270 D - EXTENDED	3+4-METHYLPHENOL (M+P CRESOL)	PA
EPA 8270 D - EXTENDED	BENZALDEHYDE	PA
EPA 8270 D - EXTENDED	CARBAZOLE	PA
EPA 8270 D - EXTENDED	N,N-DIMETHYLFORMAMIDE	PA
EPA 8270 D SIM	2-METHYLNAPHTHALENE	PA
EPA 8270 D SIM	ACENAPHTHYLENE	PA
EPA 8270 D SIM	BENZO(A)ANTHRACENE	PA
EPA 8270 D SIM	BENZO(B)FLUORANTHENE	PA
EPA 8270 D SIM	BENZO(K)FLUORANTHENE	PA
EPA 8270 D SIM	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 D SIM	FLUORENE	PA
EPA 8270 D SIM	NAPHTHALENE	PA
EPA 8270 D SIM	PYRENE	PA
EPA 8270 D SIM - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8290 A	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN (OCDF)	PA
EPA 8290 A	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (1,2,3,4,6,7,8-HPCDF)	PA
EPA 8290 A	1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,4,7,8-HXCDD)	PA
EPA 8290 A	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN(1,2,3,6,7,8-HXCDD)	PA
EPA 8290 A	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,7,8,9-HXCDD)	PA
EPA 8290 A	1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (1,2,3,7,8-PECDD)	PA
EPA 8290 A	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (2,3,4,6,7,8-HXCDF)	PA
EPA 8290 A	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (2,3,7,8-TCDD)	PA
EPA 8315 A	ACETALDEHYDE	PA
EPA 8315 A	BUTYLALDEHYDE (BUTANAL)	PA
EPA 8315 A	FORMALDEHYDE	PA
EPA 8315 A	ISOVALERALDEHYDE	PA
EPA 8315 A	O-TOLUALDEHYDE (1,2-TOLUALDEHYDE)	PA
EPA 8315 A	PENTANAL (VALERALDEHYDE)	PA

METHOD	ANALYTE	PRIMARY
EPA 8270 D - EXTENDED	1,2,3,5-TETRACHLOROBENZENE	PA
EPA 8270 D - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8270 D - EXTENDED	ATRAZINE	PA
EPA 8270 D - EXTENDED	CAPROLACTAM	PA
EPA 8270 D - EXTENDED	INDENE	PA
EPA 8270 D - EXTENDED	PYRIDINE	PA
EPA 8270 D SIM	ACENAPHTHENE	PA
EPA 8270 D SIM	ANTHRACENE	PA
EPA 8270 D SIM	BENZO(A)PYRENE	PA
EPA 8270 D SIM	BENZO(G,H,I)PERYLENE	PA
EPA 8270 D SIM	CHRYSENE	PA
EPA 8270 D SIM	FLUORANTHENE	PA
EPA 8270 D SIM	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 D SIM	PHENANTHRENE	PA
EPA 8270 D SIM - EXTENDED	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8290 A	1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN (OCDD)	PA
EPA 8290 A	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (1,2,3,4,6,7,8-HPCDD)	PA
EPA 8290 A	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (1,2,3,4,7,8,9-HPCDF)	PA
EPA 8290 A	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (1,2,3,4,7,8-HXCDF)	PA
EPA 8290 A	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (1,2,3,6,7,8-HXCDF)	PA
EPA 8290 A	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (1,2,3,7,8,9-HXCDF)	PA
EPA 8290 A	1,2,3,7,8-PENTACHLORODIBENZOFURAN (1,2,3,7,8-PECDF)	PA
EPA 8290 A	2,3,4,7,8-PENTACHLORODIBENZOFURAN	PA
EPA 8290 A	2,3,7,8-TETRACHLORODIBENZOFURAN (2,3,7,8-TCDF)	PA
EPA 8315 A	BENZALDEHYDE	PA
EPA 8315 A	CROTONALDEHYDE	PA
EPA 8315 A	HEXANALDEHYDE (HEXANAL)	PA
EPA 8315 A	M-TOLUALDEHYDE (1,3-TOLUALDEHYDE)	PA
EPA 8315 A	P-TOLUALDEHYDE (1,4-TOLUALDEHYDE)	PA
EPA 8315 A	PROPIONALDEHYDE (PROPANAL)	PA



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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8330 A	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8330 A	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	PA
EPA 8330 A	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8330 A	2-NITROTOLUENE	PA
EPA 8330 A	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	PA
EPA 8330 A	METHYL-2,4,6-TRINITROPHENYLNITRAMINE (TETRYL)	PA
EPA 8330 A	NITROGLYCERIN	PA
EPA 8330 A	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE)	PA
EPA 8330 B	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8330 B	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8330 B	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	PA
EPA 8330 B	3,5-DINITROANILINE	PA
EPA 8330 B	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	PA
EPA 8330 B	METHYL-2,4,6-TRINITROPHENYLNITRAMINE (TETRYL)	PA
EPA 8330 B	NITROGLYCERIN	PA
EPA 8330 B	PENTAERYTHRITOLTETRANITRATE (PETN)	PA
EPA 9012 B	TOTAL CYANIDE	PA
EPA 9050 A	CONDUCTIVITY	PA
EPA 9056 A	CHLORIDE	PA
EPA 9056 A	NITRATE AS N	PA
EPA 9056 A	SULFATE	PA
EPA 9066	TOTAL PHENOLICS	PA
OIA-1677-09	FREE CYANIDE	PA
RSK-175	ETHENE (ETHYLENE)	PA
SM 2120 B-2011	COLOR	PA
SM 2320 B-2011	ALKALINITY AS CACO3	PA
SM 2510 B-2011	CONDUCTIVITY	PA
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	PA
SM 2540 F-2011	RESIDUE-SETTLEABLE	PA
SM 3500-FE B-2011	IRON	PA
SM 4500-CN^- G-2011	AMENABLE CYANIDE	PA

METHOD	ANALYTE	PRIMARY
EPA 8330 A	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8330 A	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8330 A	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	PA
EPA 8330 A	3-NITROTOLUENE	PA
EPA 8330 A	4-NITROTOLUENE	PA
EPA 8330 A	NITROBENZENE	PA
EPA 8330 A	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7-TETRAZOCINE (HMX)	PA
EPA 8330 B	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8330 B	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	PA
EPA 8330 B	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8330 B	2-NITROTOLUENE	PA
EPA 8330 B	3-NITROTOLUENE	PA
EPA 8330 B	4-NITROTOLUENE	PA
EPA 8330 B	NITROBENZENE	PA
EPA 8330 B	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7-TETRAZOCINE (HMX)	PA
EPA 8330 B	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE)	PA
EPA 9040 C	PH	PA
EPA 9056 A	BROMIDE	PA
EPA 9056 A	FLUORIDE	PA
EPA 9056 A	NITRITE AS N	PA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	PA
OIA-1677-09	AMENABLE CYANIDE	PA
RSK-175	ETHANE	PA
RSK-175	METHANE	PA
SM 2310 B-2011	ACIDITY, AS CACO3	PA
SM 2340 C-2011	TOTAL HARDNESS AS CACO3	PA
SM 2540 B-2011	RESIDUE-TOTAL (TS)	PA
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	PA
SM 3500-CR B-2011	CHROMIUM VI	PA
SM 4500-CL^- C-2011	CHLORIDE	PA
SM 4500-F^- B-2011	FLUORIDE	PA



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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
SM 4500-F⁻ C-2011	FLUORIDE	PA
SM 4500-NH3 C-2011	AMMONIA AS N	PA
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	PA
SM 4500-S2⁻ D-2011	SULFIDE	PA
SM 4500-SIO2 C-2011	SILICA AS SIO2	PA
SM 5210 B-2011	CARBONACEOUS BOD (CBOD)	PA
SM 5540 C-2011	SURFACTANTS - MBAS	PA
SM 4500-NH3 B-2011	AMMONIA AS N	PA
SM 4500-NH3 D-2011	AMMONIA AS N	PA
SM 4500-P F-2011	PHOSPHORUS, TOTAL	PA
SM 4500-S2⁻ F-2011	SULFIDE	PA
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND (BOD)	PA
SM 5310 C-2011	TOTAL ORGANIC CARBON (TOC)	PA

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1010 A	FLASHPOINT	PA
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	PA
EPA 1668 A	2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL (BZ-194)	PA
EPA 1668 A	2,2',3,3',4,4',5,6,6'-NONACHLOROBIPHENYL (BZ-207)	PA
EPA 1668 A	2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL (BZ-170)	PA
EPA 1668 A	2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL (BZ-171)	PA
EPA 1668 A	2,2',3,3',4,5',6'-HEPTACHLOROBIPHENYL (BZ-177)	PA
EPA 1668 A	2,2',3,3',4,5',6-HEPTACHLOROBIPHENYL (BZ-175)	PA
EPA 1668 A	2,2',3,3',4,5,5',6'-OCTACHLOROBIPHENYL (BZ-199)	PA
EPA 1668 A	2,2',3,3',4,5,5',6-OCTACHLOROBIPHENYL (BZ-198)	PA
EPA 1668 A	2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL (BZ-174)	PA
EPA 1668 A	2,2',3,3',4,5,6-HEPTACHLOROBIPHENYL (BZ-173)	PA
EPA 1668 A	2,2',3,3',4,6'-HEXACHLOROBIPHENYL (BZ-132)	PA
EPA 1668 A	2,2',3,3',4,6-HEXACHLOROBIPHENYL (BZ-131)	PA
EPA 1668 A	2,2',3,3',5,5',6,6'-OCTACHLOROBIPHENYL (BZ-202)	PA
EPA 1668 A	2,2',3,3',5,5'-HEXACHLOROBIPHENYL (BZ-133)	PA
EPA 1668 A	2,2',3,3',5,6,6'-HEPTACHLOROBIPHENYL (BZ-179)	PA
EPA 1668 A	2,2',3,3',5-PENTACHLOROBIPHENYL (BZ-83)	PA
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	PA
EPA 1668 A	2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL (BZ-206)	PA
EPA 1668 A	2,2',3,3',4,4',5,6'-OCTACHLOROBIPHENYL (BZ-196)	PA
EPA 1668 A	2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL BZ-195)	PA
EPA 1668 A	2,2',3,3',4,4',6,6'-OCTACHLOROBIPHENYL (BZ-197)	PA
EPA 1668 A	2,2',3,3',4,4'-HEXACHLOROBIPHENYL (BZ-128)	PA
EPA 1668 A	2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL (BZ-201)	PA
EPA 1668 A	2,2',3,3',4,5'-HEXACHLOROBIPHENYL (BZ-130)	PA
EPA 1668 A	2,2',3,3',4,5,5',6,6'-NONACHLOROBIPHENYL (BZ-208)	PA
EPA 1668 A	2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL (BZ-172)	PA
EPA 1668 A	2,2',3,3',4,5,6,6'-OCTACHLOROBIPHENYL (BZ-200)	PA
EPA 1668 A	2,2',3,3',4,5-HEXACHLOROBIPHENYL (BZ-129)	PA
EPA 1668 A	2,2',3,3',4,6,6'-HEPTACHLOROBIPHENYL (BZ-176)	PA
EPA 1668 A	2,2',3,3',4-PENTACHLOROBIPHENYL (BZ-82)	PA
EPA 1668 A	2,2',3,3',5,5',6-HEPTACHLOROBIPHENYL (BZ-178)	PA
EPA 1668 A	2,2',3,3',5,6'-HEXACHLOROBIPHENYL (BZ-135)	PA
EPA 1668 A	2,2',3,3',5,6-HEXACHLOROBIPHENYL (BZ-134)	PA
EPA 1668 A	2,2',3,3',6,6'-HEXACHLOROBIPHENYL (BZ-136)	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1668 A	2,2',3,3',5-PENTACHLOROBIPHENYL (BZ-84)	PA
EPA 1668 A	2,2',3,4',5',6-HEXACHLOROBIPHENYL (BZ-149)	PA
EPA 1668 A	2,2',3,4',5,5',6-HEPTACHLOROBIPHENYL (BZ-187)	PA
EPA 1668 A	2,2',3,4',5,6'-HEXACHLOROBIPHENYL (BZ-148)	PA
EPA 1668 A	2,2',3,4',5,6-HEXACHLOROBIPHENYL (BZ-147)	PA
EPA 1668 A	2,2',3,4',6'-PENTACHLOROBIPHENYL (BZ-98)	PA
EPA 1668 A	2,2',3,4',6-PENTACHLOROBIPHENYL (BZ-91)	PA
EPA 1668 A	2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL (BZ-183)	PA
EPA 1668 A	2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL (BZ-203)	PA
EPA 1668 A	2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL (BZ-182)	PA
EPA 1668 A	2,2',3,4,4',5,6-HEPTACHLOROBIPHENYL (BZ-181)	PA
EPA 1668 A	2,2',3,4,4',6'-HEXACHLOROBIPHENYL (BZ-140)	PA
EPA 1668 A	2,2',3,4,4',6-HEXACHLOROBIPHENYL (BZ-139)	PA
EPA 1668 A	2,2',3,4,5',6-HEXACHLOROBIPHENYL (BZ-144)	PA
EPA 1668 A	2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL (BZ-185)	PA
EPA 1668 A	2,2',3,4,5,6'-HEXACHLOROBIPHENYL (BZ-143)	PA
EPA 1668 A	2,2',3,4,5,6-HEXACHLOROBIPHENYL (BZ-142)	PA
EPA 1668 A	2,2',3,4,6'-PENTACHLOROBIPHENYL (BZ-89)	PA
EPA 1668 A	2,2',3,4,6-PENTACHLOROBIPHENYL (BZ-88)	PA
EPA 1668 A	2,2',3,5',6-PENTACHLOROBIPHENYL (BZ-95)	PA
EPA 1668 A	2,2',3,5,5',6-HEXACHLOROBIPHENYL (BZ-151)	PA
EPA 1668 A	2,2',3,5,6'-PENTACHLOROBIPHENYL (BZ-94)	PA
EPA 1668 A	2,2',3,5,6-PENTACHLOROBIPHENYL (BZ-93)	PA
EPA 1668 A	2,2',3,6'-TETRACHLOROBIPHENYL (BZ-46)	PA
EPA 1668 A	2,2',3,6-TETRACHLOROBIPHENYL (BZ-45)	PA
EPA 1668 A	2,2',3,3'-TETRACHLOROBIPHENYL (BZ-40)	PA
EPA 1668 A	2,2',3,4',5'-PENTACHLOROBIPHENYL (BZ-97)	PA
EPA 1668 A	2,2',3,4',5,5'-HEXACHLOROBIPHENYL (BZ-146)	PA
EPA 1668 A	2,2',3,4',5,6,6'-HEPTACHLOROBIPHENYL (BZ-188)	PA
EPA 1668 A	2,2',3,4',5-PENTACHLOROBIPHENYL (BZ-90)	PA
EPA 1668 A	2,2',3,4',6,6'-HEXACHLOROBIPHENYL (BZ-150)	PA
EPA 1668 A	2,2',3,4'-TETRACHLOROBIPHENYL (BZ-42)	PA
EPA 1668 A	2,2',3,4,4',5'-HEXACHLOROBIPHENYL (BZ-138)	PA
EPA 1668 A	2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL (BZ-180)	PA
EPA 1668 A	2,2',3,4,4',5,6,6'-OCTACHLOROBIPHENYL (BZ-204)	PA
EPA 1668 A	2,2',3,4,4',5-HEXACHLOROBIPHENYL (BZ-137)	PA
EPA 1668 A	2,2',3,4,4',6,6'-HEPTACHLOROBIPHENYL (BZ-184)	PA
EPA 1668 A	2,2',3,4,4'-PENTACHLOROBIPHENYL (BZ-85)	PA
EPA 1668 A	2,2',3,4,5'-PENTACHLOROBIPHENYL (BZ-87)	PA
EPA 1668 A	2,2',3,4,5,5'-HEXACHLOROBIPHENYL (BZ-141)	PA
EPA 1668 A	2,2',3,4,5,6,6'-HEPTACHLOROBIPHENYL (BZ-186)	PA
EPA 1668 A	2,2',3,4,5-PENTACHLOROBIPHENYL (BZ-86)	PA
EPA 1668 A	2,2',3,4,6,5'-HEXACHLOROBIPHENYL (BZ-145)	PA
EPA 1668 A	2,2',3,4-TETRACHLOROBIPHENYL (BZ-41)	PA
EPA 1668 A	2,2',3,5'-TETRACHLOROBIPHENYL (BZ-44)	PA
EPA 1668 A	2,2',3,5,5'-PENTACHLOROBIPHENYL (BZ-92)	PA
EPA 1668 A	2,2',3,5,6,6'-HEXACHLOROBIPHENYL (BZ-152)	PA
EPA 1668 A	2,2',3,5-TETRACHLOROBIPHENYL (BZ-43)	PA
EPA 1668 A	2,2',3,6,6'-PENTACHLOROBIPHENYL (BZ-96)	PA
EPA 1668 A	2,2',3-TRICHLOROBIPHENYL (BZ-16)	PA



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METHOD	ANALYTE	PRIMARY
EPA 1668 A	2,2',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-153)	PA
EPA 1668 A	2,2',4,4',5-PENTACHLOROBIPHENYL (BZ-99)	PA
EPA 1668 A	2,2',4,4',6-PENTACHLOROBIPHENYL (BZ-100)	PA
EPA 1668 A	2,2',4,5',6-PENTACHLOROBIPHENYL (BZ-103)	PA
EPA 1668 A	2,2',4,5,5'-PENTACHLOROBIPHENYL (BZ-101)	PA
EPA 1668 A	2,2',4,5-TETRACHLOROBIPHENYL (BZ-48)	PA
EPA 1668 A	2,2',4,6,6'-PENTACHLOROBIPHENYL (BZ-104)	PA
EPA 1668 A	2,2',4-TRICHLOROBIPHENYL (BZ-17)	PA
EPA 1668 A	2,2',5,6'-TETRACHLOROBIPHENYL (BZ-53)	PA
EPA 1668 A	2,2',6,6'-TETRACHLOROBIPHENYL (BZ-54)	PA
EPA 1668 A	2,2'-DICHLOROBIPHENYL (BZ-4)	PA
EPA 1668 A	2,3',4',5'-TETRACHLOROBIPHENYL (BZ-76)	PA
EPA 1668 A	2,3',4',5-TETRACHLOROBIPHENYL (BZ-70)	PA
EPA 1668 A	2,3',4'-TRICHLOROBIPHENYL (BZ-33)	PA
EPA 1668 A	2,3',4,4',5'-PENTACHLOROBIPHENYL (BZ-123)	PA
EPA 1668 A	2,3',4,4',5-PENTACHLOROBIPHENYL (BZ-118)	PA
EPA 1668 A	2,3',4,4'-TETRACHLOROBIPHENYL (BZ-66)	PA
EPA 1668 A	2,3',4,5'-TETRACHLOROBIPHENYL (BZ-68)	PA
EPA 1668 A	2,3',4,5-TETRACHLOROBIPHENYL (BZ-67)	PA
EPA 1668 A	2,3',4-TRICHLOROBIPHENYL (BZ-25)	PA
EPA 1668 A	2,3',5'-TRICHLOROBIPHENYL (BZ-34)	PA
EPA 1668 A	2,3',5-TRICHLOROBIPHENYL (BZ-26)	PA
EPA 1668 A	2,3'-DICHLOROBIPHENYL (BZ-6)	PA
EPA 1668 A	2,3,3',4',5'-PENTACHLOROBIPHENYL (BZ-122)	PA
EPA 1668 A	2,3,3',4',5,5'-HEXACHLOROBIPHENYL (BZ-162)	PA
EPA 1668 A	2,2',4,4',5,6'-HEXACHLOROBIPHENYL (BZ-154)	PA
EPA 1668 A	2,2',4,4',5,6'-HEXACHLOROBIPHENYL (BZ-155)	PA
EPA 1668 A	2,2',4,4'-TETRACHLOROBIPHENYL (BZ-47)	PA
EPA 1668 A	2,2',4,5'-TETRACHLOROBIPHENYL (BZ-49)	PA
EPA 1668 A	2,2',4,5,6'-PENTACHLOROBIPHENYL (BZ-102)	PA
EPA 1668 A	2,2',4,6'-TETRACHLOROBIPHENYL (BZ-51)	PA
EPA 1668 A	2,2',4,6-TETRACHLOROBIPHENYL (BZ-50)	PA
EPA 1668 A	2,2',5,5'-TETRACHLOROBIPHENYL (BZ-52)	PA
EPA 1668 A	2,2',5-TRICHLOROBIPHENYL (BZ-18)	PA
EPA 1668 A	2,2',6-TRICHLOROBIPHENYL (BZ-19)	PA
EPA 1668 A	2,3',4',5',6-PENTACHLOROBIPHENYL (BZ-125)	PA
EPA 1668 A	2,3',4',5,5'-PENTACHLOROBIPHENYL (BZ-124)	PA
EPA 1668 A	2,3',4',6-TETRACHLOROBIPHENYL (BZ-71)	PA
EPA 1668 A	2,3',4,4',5',6-HEXACHLOROBIPHENYL (BZ-168)	PA
EPA 1668 A	2,3',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-167)	PA
EPA 1668 A	2,3',4,4',6-PENTACHLOROBIPHENYL (BZ-119)	PA
EPA 1668 A	2,3',4,5',6-PENTACHLOROBIPHENYL (BZ-121)	PA
EPA 1668 A	2,3',4,5,5'-PENTACHLOROBIPHENYL (BZ-120)	PA
EPA 1668 A	2,3',4,6-TETRACHLOROBIPHENYL (BZ-69)	PA
EPA 1668 A	2,3',5',6-TETRACHLOROBIPHENYL (BZ-73)	PA
EPA 1668 A	2,3',5,5'-TETRACHLOROBIPHENYL (BZ-72)	PA
EPA 1668 A	2,3',6-TRICHLOROBIPHENYL (BZ-27)	PA
EPA 1668 A	2,3,3',4',5',6-HEXACHLOROBIPHENYL (BZ-164)	PA
EPA 1668 A	2,3,3',4',5,5',6-HEPTACHLOROBIPHENYL (BZ-193)	PA
EPA 1668 A	2,3,3',4',5,6-HEXACHLOROBIPHENYL (BZ-163)	PA

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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1668 A	2,3,3',4',5-PENTACHLOROBIPHENYL (BZ-107)	PA
EPA 1668 A	2,3,3',4'-TETRACHLOROBIPHENYL (BZ-56)	PA
EPA 1668 A	2,3,3',4,4',5'-HEXACHLOROBIPHENYL (BZ-157)	PA
EPA 1668 A	2,3,3',4,4',5,5'-HEPTACHLOROBIPHENYL (BZ-189)	PA
EPA 1668 A	2,3,3',4,4',5-HEXACHLOROBIPHENYL (BZ-156)	PA
EPA 1668 A	2,3,3',4,4'-PENTACHLOROBIPHENYL (BZ-105)	PA
EPA 1668 A	2,3,3',4,5'-PENTACHLOROBIPHENYL (BZ-108)	PA
EPA 1668 A	2,3,3',4,5,5'-HEXACHLOROBIPHENYL (BZ-159)	PA
EPA 1668 A	2,3,3',4,5-PENTACHLOROBIPHENYL (BZ-106)	PA
EPA 1668 A	2,3,3',4-TETRACHLOROBIPHENYL (BZ-55)	PA
EPA 1668 A	2,3,3',5'-TETRACHLOROBIPHENYL (BZ-58)	PA
EPA 1668 A	2,3,3',5,5'-PENTACHLOROBIPHENYL (BZ-111)	PA
EPA 1668 A	2,3,3',5-TETRACHLOROBIPHENYL (BZ-57)	PA
EPA 1668 A	2,3,3'-TRICHLOROBIPHENYL (BZ-20)	PA
EPA 1668 A	2,3,4',5-TETRACHLOROBIPHENYL (BZ-63)	PA
EPA 1668 A	2,3,4'-TRICHLOROBIPHENYL (BZ-22)	PA
EPA 1668 A	2,3,4,4',5-PENTACHLOROBIPHENYL (BZ-114)	PA
EPA 1668 A	2,3,4,4'-TETRACHLOROBIPHENYL (BZ-60)	PA
EPA 1668 A	2,3,4,5-TETRACHLOROBIPHENYL (BZ-61)	PA
EPA 1668 A	2,3,4-TRICHLOROBIPHENYL (BZ-21)	PA
EPA 1668 A	2,3,5-TRICHLOROBIPHENYL (BZ-23)	PA
EPA 1668 A	2,3-DICHLOROBIPHENYL (BZ-5)	PA
EPA 1668 A	2,4',6-TRICHLOROBIPHENYL (BZ-32)	PA
EPA 1668 A	2,4,4',5-TETRACHLOROBIPHENYL (BZ-74)	PA
EPA 1668 A	2,4,4'-TRICHLOROBIPHENYL (BZ-28)	PA
EPA 1668 A	2,4,6-TRICHLOROBIPHENYL (BZ-30)	PA
EPA 1668 A	2,5-DICHLOROBIPHENYL (BZ-9)	PA
EPA 1668 A	2,3,3',4',6-PENTACHLOROBIPHENYL (BZ-110)	PA
EPA 1668 A	2,3,3',4,4',5',6-HEPTACHLOROBIPHENYL (BZ-191)	PA
EPA 1668 A	2,3,3',4,4',5,5',6-OCTACHLOROBIPHENYL (BZ-205)	PA
EPA 1668 A	2,3,3',4,4',5,6-HEPTACHLOROBIPHENYL (BZ-190)	PA
EPA 1668 A	2,3,3',4,4',6-HEXACHLOROBIPHENYL (BZ-158)	PA
EPA 1668 A	2,3,3',4,5',6-HEXACHLOROBIPHENYL (BZ-161)	PA
EPA 1668 A	2,3,3',4,5,5',6-HEPTACHLOROBIPHENYL (BZ-192)	PA
EPA 1668 A	2,3,3',4,5,6-HEXACHLOROBIPHENYL (BZ-160)	PA
EPA 1668 A	2,3,3',4,6-PENTACHLOROBIPHENYL (BZ-109)	PA
EPA 1668 A	2,3,3',5',6-PENTACHLOROBIPHENYL (BZ-113)	PA
EPA 1668 A	2,3,3',5,5',6-HEXACHLOROBIPHENYL (BZ-165)	PA
EPA 1668 A	2,3,3',5,6-PENTACHLOROBIPHENYL (BZ-112)	PA
EPA 1668 A	2,3,3',6-TETRACHLOROBIPHENYL (BZ-59)	PA
EPA 1668 A	2,3,4',5,6-PENTACHLOROBIPHENYL (BZ-117)	PA
EPA 1668 A	2,3,4',6-TETRACHLOROBIPHENYL (BZ-64)	PA
EPA 1668 A	2,3,4,4',5,6-HEXACHLOROBIPHENYL (BZ-166)	PA
EPA 1668 A	2,3,4,4',6-PENTACHLOROBIPHENYL (BZ-115)	PA
EPA 1668 A	2,3,4,5,6-PENTACHLOROBIPHENYL (BZ-116)	PA
EPA 1668 A	2,3,4,6-TETRACHLOROBIPHENYL (BZ-62)	PA
EPA 1668 A	2,3,5,6-TETRACHLOROBIPHENYL (BZ-65)	PA
EPA 1668 A	2,3,6-TRICHLOROBIPHENYL (BZ-24)	PA
EPA 1668 A	2,4',5-TRICHLOROBIPHENYL (BZ-31)	PA
EPA 1668 A	2,4'-DICHLOROBIPHENYL (BZ-8)	PA
EPA 1668 A	2,4,4',6-TETRACHLOROBIPHENYL (BZ-75)	PA
EPA 1668 A	2,4,5-TRICHLOROBIPHENYL (BZ-29)	PA
EPA 1668 A	2,4-DICHLOROBIPHENYL (BZ-7)	PA
EPA 1668 A	2,6-DICHLOROBIPHENYL (BZ-10)	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1668 A	2-CHLOROBIPHENYL (BZ-1)	PA
EPA 1668 A	3,3',4,4',5-PENTACHLOROBIPHENYL (BZ-126)	PA
EPA 1668 A	3,3',4,5'-TETRACHLOROBIPHENYL (BZ-79)	PA
EPA 1668 A	3,3',4,5-TETRACHLOROBIPHENYL (BZ-78)	PA
EPA 1668 A	3,3',5,5'-TETRACHLOROBIPHENYL (BZ-80)	PA
EPA 1668 A	3,3'-DICHLOROBIPHENYL (BZ-11)	PA
EPA 1668 A	3,4'-DICHLOROBIPHENYL (BZ-13)	PA
EPA 1668 A	3,4,4'-TRICHLOROBIPHENYL (BZ-37)	PA
EPA 1668 A	3,4-DICHLOROBIPHENYL (BZ-12)	PA
EPA 1668 A	3-CHLOROBIPHENYL (BZ-2)	PA
EPA 1668 A	4-CHLOROBIPHENYL (BZ-3)	PA
EPA 300.0 REV 2.1	BROMIDE	PA
EPA 300.0 REV 2.1	FLUORIDE	PA
EPA 300.0 REV 2.1	NITRITE AS N	PA
EPA 3050 B	PREP: ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS	PA
EPA 3546	PREP: MICROWAVE EXTRACTION	PA
EPA 3620 C	PREP: FLORISIL CLEANUP	PA
EPA 3640 A	PREP: GEL PERMEATION CLEANUP	PA
EPA 3665 A	SULFURIC ACID/PERMANGANATE CLEAN-UP	PA
EPA 5035 A	PREP: CLOSED-SYSTEM PURGE AND TRAP AND EXTRACTION	PA
EPA 6010 C	ANTIMONY	PA
EPA 6010 C	BARIUM	PA
EPA 6010 C	BORON	PA
EPA 6010 C	CALCIUM	PA
EPA 6010 C	COBALT	PA
EPA 6010 C	IRON	PA
EPA 6010 C	LITHIUM	PA
EPA 6010 C	MANGANESE	PA
EPA 6010 C	NICKEL	PA
EPA 6010 C	SELENIUM	PA
EPA 6010 C	SODIUM	PA
EPA 6010 C	THALLIUM	PA
EPA 6010 C	TITANIUM	PA
EPA 6010 C	ZINC	PA
EPA 1668 A	3,3',4,4',5,5'-HEXACHLOROBIPHENYL (BZ-169)	PA
EPA 1668 A	3,3',4,4'-TETRACHLOROBIPHENYL (BZ-77)	PA
EPA 1668 A	3,3',4,5,5'-PENTACHLOROBIPHENYL (BZ-127)	PA
EPA 1668 A	3,3',4-TRICHLOROBIPHENYL (BZ-35)	PA
EPA 1668 A	3,3',5-TRICHLOROBIPHENYL (BZ-36)	PA
EPA 1668 A	3,4',5-TRICHLOROBIPHENYL (BZ-39)	PA
EPA 1668 A	3,4,4',5-TETRACHLOROBIPHENYL (BZ-81)	PA
EPA 1668 A	3,4,5-TRICHLOROBIPHENYL (BZ-38)	PA
EPA 1668 A	3,5-DICHLOROBIPHENYL (BZ-14)	PA
EPA 1668 A	4,4'-DICHLOROBIPHENYL (BZ-15)	PA
EPA 1668 A	DECACHLOROBIPHENYL (BZ-209)	PA
EPA 300.0 REV 2.1	CHLORIDE	PA
EPA 300.0 REV 2.1	NITRATE AS N	PA
EPA 300.0 REV 2.1	SULFATE	PA
EPA 3540 C	PREP: SOXHLET EXTRACTION	PA
EPA 3550 C	PREP: ULTRASONIC EXTRACTION	PA
EPA 3630 C	PREP: SILICA GEL CLEANUP	PA
EPA 3660 B	PREP: SULFUR CLEANUP	PA
EPA 5030 B	PREP: PURGE AND TRAP FOR AQUEOUS SAMPLES	PA
EPA 6010 C	ALUMINUM	PA
EPA 6010 C	ARSENIC	PA
EPA 6010 C	BERYLLIUM	PA
EPA 6010 C	CADMIUM	PA
EPA 6010 C	CHROMIUM	PA
EPA 6010 C	COPPER	PA
EPA 6010 C	LEAD	PA
EPA 6010 C	MAGNESIUM	PA
EPA 6010 C	MOLYBDENUM	PA
EPA 6010 C	POTASSIUM	PA
EPA 6010 C	SILVER	PA
EPA 6010 C	STRONTIUM	PA
EPA 6010 C	TIN	PA
EPA 6010 C	VANADIUM	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 6010 C - EXTENDED	SULFUR	PA
EPA 6010 C - EXTENDED	ZIRCONIUM	PA
EPA 6010 D	ANTIMONY	PA
EPA 6010 D	BARIUM	PA
EPA 6010 D	BORON	PA
EPA 6010 D	CALCIUM	PA
EPA 6010 D	COBALT	PA
EPA 6010 D	IRON	PA
EPA 6010 D	LITHIUM	PA
EPA 6010 D	MANGANESE	PA
EPA 6010 D	NICKEL	PA
EPA 6010 D	SELENIUM	PA
EPA 6010 D	SILVER	PA
EPA 6010 D	STRONTIUM	PA
EPA 6010 D	TIN	PA
EPA 6010 D	VANADIUM	PA
EPA 6010 D - EXTENDED	SULFUR	PA
EPA 6010 D - EXTENDED	ZIRCONIUM	PA
EPA 6020 - EXTENDED	MOLYBDENUM	PA
EPA 6020 A	ALUMINUM	PA
EPA 6020 A	ARSENIC	PA
EPA 6020 A	BERYLLIUM	PA
EPA 6020 A	CALCIUM	PA
EPA 6020 A	COBALT	PA
EPA 6020 A	IRON	PA
EPA 6020 A	MAGNESIUM	PA
EPA 6020 A	NICKEL	PA
EPA 6020 A	SELENIUM	PA
EPA 6020 A	SODIUM	PA
EPA 6020 A	VANADIUM	PA
EPA 6020 A - EXTENDED	MOLYBDENUM	PA
EPA 6020 A - EXTENDED	TIN	PA
EPA 6020 A - EXTENDED	URANIUM	PA
EPA 6020 B	ANTIMONY	PA
EPA 6020 B	BARIUM	PA
EPA 6020 B	CADMIUM	PA
EPA 6020 B	CHROMIUM	PA
EPA 6020 B	COPPER	PA
EPA 6010 C - EXTENDED	THORIUM	PA
EPA 6010 D	ALUMINUM	PA
EPA 6010 D	ARSENIC	PA
EPA 6010 D	BERYLLIUM	PA
EPA 6010 D	CADMIUM	PA
EPA 6010 D	CHROMIUM	PA
EPA 6010 D	COPPER	PA
EPA 6010 D	LEAD	PA
EPA 6010 D	MAGNESIUM	PA
EPA 6010 D	MOLYBDENUM	PA
EPA 6010 D	POTASSIUM	PA
EPA 6010 D	SILICA AS SIO2	PA
EPA 6010 D	SODIUM	PA
EPA 6010 D	THALLIUM	PA
EPA 6010 D	TITANIUM	PA
EPA 6010 D	ZINC	PA
EPA 6010 D - EXTENDED	THORIUM	PA
EPA 6020	BARIUM	PA
EPA 6020 - EXTENDED	URANIUM	PA
EPA 6020 A	ANTIMONY	PA
EPA 6020 A	BARIUM	PA
EPA 6020 A	CADMIUM	PA
EPA 6020 A	CHROMIUM	PA
EPA 6020 A	COPPER	PA
EPA 6020 A	LEAD	PA
EPA 6020 A	MANGANESE	PA
EPA 6020 A	POTASSIUM	PA
EPA 6020 A	SILVER	PA
EPA 6020 A	THALLIUM	PA
EPA 6020 A	ZINC	PA
EPA 6020 A - EXTENDED	STRONTIUM	PA
EPA 6020 A - EXTENDED	TITANIUM	PA
EPA 6020 B	ALUMINUM	PA
EPA 6020 B	ARSENIC	PA
EPA 6020 B	BERYLLIUM	PA
EPA 6020 B	CALCIUM	PA
EPA 6020 B	COBALT	PA
EPA 6020 B	IRON	PA



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EPA 6020 B	LEAD	PA
EPA 6020 B	MANGANESE	PA
EPA 6020 B	NICKEL	PA
EPA 6020 B	SELENIUM	PA
EPA 6020 B	SODIUM	PA
EPA 6020 B	TIN	PA
EPA 6020 B	ZINC	PA
EPA 6020 B - EXTENDED	TITANIUM	PA
EPA 6850	PERCHLORATE	PA
EPA 7199	CHROMIUM VI	PA
EPA 7471 B	MERCURY	PA
EPA 8015 B	ETHANOL	PA
EPA 8015 B	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8015 B	METHANOL	PA
EPA 8015 C	ETHYLENE GLYCOL	PA
EPA 8015 C	METHANOL	PA
EPA 8021 B	BENZENE	PA
EPA 8021 B	ISOPROPYLBENZENE	PA
EPA 8021 B	NAPHTHALENE	PA
EPA 8021 B	TOLUENE	PA
EPA 8021 B - EXTENDED	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8081 A	4,4'-DDE	PA
EPA 8081 A	ALDRIN	PA
EPA 8081 A	ALPHA-CHLORDANE (CIS-CHLORDANE)	PA
EPA 8081 A	CHLORDANE, TOTAL	PA
EPA 8081 A	DIELDRIN	PA
EPA 8081 A	ENDOSULFAN II	PA
EPA 8081 A	ENDRIN	PA
EPA 8081 A	ENDRIN KETONE	PA
EPA 8081 A	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	PA
EPA 8081 A	HEPTACHLOR EPOXIDE	PA
EPA 6020 B	MAGNESIUM	PA
EPA 6020 B	MOLYBDENUM	PA
EPA 6020 B	POTASSIUM	PA
EPA 6020 B	SILVER	PA
EPA 6020 B	THALLIUM	PA
EPA 6020 B	VANADIUM	PA
EPA 6020 B - EXTENDED	STRONTIUM	PA
EPA 6020 B - EXTENDED	URANIUM	PA
EPA 7196 A	CHROMIUM VI	PA
EPA 7471 A	MERCURY	PA
EPA 8015 B	DIESEL RANGE ORGANICS (DRO)	PA
EPA 8015 B	ETHYLENE GLYCOL	PA
EPA 8015 B	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8015 C	ETHANOL	PA
EPA 8015 C	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8015 C - EXTENDED	TRIETHYLENE GLYCOL	PA
EPA 8021 B	ETHYLBENZENE	PA
EPA 8021 B	M+P-XYLENE	PA
EPA 8021 B	O-XYLENE	PA
EPA 8021 B	XYLENE (TOTAL)	PA
EPA 8081 A	4,4'-DDD	PA
EPA 8081 A	4,4'-DDT	PA
EPA 8081 A	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	DELTA-BHC	PA
EPA 8081 A	ENDOSULFAN I	PA
EPA 8081 A	ENDOSULFAN SULFATE	PA
EPA 8081 A	ENDRIN ALDEHYDE	PA
EPA 8081 A	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 A	HEPTACHLOR	PA
EPA 8081 A	METHOXYCHLOR	PA

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METHOD	ANALYTE	PRIMARY
EPA 8081 A	TOXAPHENE (CHLORINATED CAMPHENE)	PA
EPA 8081 B	4,4'-DDE	PA
EPA 8081 B	ALDRIN	PA
EPA 8081 B	ALPHA-CHLORDANE (CIS-CHLORDANE)	PA
EPA 8081 B	CHLORDANE, TOTAL	PA
EPA 8081 B	DIELDRIN	PA
EPA 8081 B	ENDOSULFAN II	PA
EPA 8081 B	ENDRIN	PA
EPA 8081 B	ENDRIN KETONE	PA
EPA 8081 B	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	PA
EPA 8081 B	HEPTACHLOR EPOXIDE	PA
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	PA
EPA 8081 B - EXTENDED	MIREX	PA
EPA 8082 A	AROCLOR-1221 (PCB-1221)	PA
EPA 8082 A	AROCLOR-1242 (PCB-1242)	PA
EPA 8082 A	AROCLOR-1254 (PCB-1254)	PA
EPA 8082 A - EXTENDED	AROCLOR-1262 (PCB-1262)	PA
EPA 8141 A	ATRAZINE	PA
EPA 8141 A	CHLORPYRIFOS	PA
EPA 8141 A	DEMETON-O	PA
EPA 8141 A	DIAZINON	PA
EPA 8141 A	DISULFOTON	PA
EPA 8141 A	ETHION	PA
EPA 8141 A	FAMPHUR	PA
EPA 8141 A	FENTHION	PA
EPA 8141 A	MERPHOS	PA
EPA 8141 A	MEVINPHOS	PA
EPA 8141 A	PARATHION (PARATHION - ETHYL)	PA
EPA 8141 A	RONNEL	PA
EPA 8141 A	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	PA
EPA 8081 B	4,4'-DDD	PA
EPA 8081 B	4,4'-DDT	PA
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	DELTA-BHC	PA
EPA 8081 B	ENDOSULFAN I	PA
EPA 8081 B	ENDOSULFAN SULFATE	PA
EPA 8081 B	ENDRIN ALDEHYDE	PA
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	PA
EPA 8081 B	HEPTACHLOR	PA
EPA 8081 B	METHOXYCHLOR	PA
EPA 8081 B - EXTENDED	KEPONE	PA
EPA 8082 A	AROCLOR-1016 (PCB-1016)	PA
EPA 8082 A	AROCLOR-1232 (PCB-1232)	PA
EPA 8082 A	AROCLOR-1248 (PCB-1248)	PA
EPA 8082 A	AROCLOR-1260 (PCB-1260)	PA
EPA 8082 A - EXTENDED	AROCLOR-1268 (PCB-1268)	PA
EPA 8141 A	BOLSTAR (SULPROFOS)	PA
EPA 8141 A	COUMAPHOS	PA
EPA 8141 A	DEMETON-S	PA
EPA 8141 A	DICHLOROVOS (DDVP, DICHLORVOS)	PA
EPA 8141 A	EPN (PHOSPHONOTHIOIC ACID, PHENYL-, O-ETHYL O-(P-NITROPHENYL) ESTER)	PA
EPA 8141 A	ETHOPROP	PA
EPA 8141 A	FENSULFOTHION	PA
EPA 8141 A	MALATHION	PA
EPA 8141 A	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8141 A	NALED	PA
EPA 8141 A	PHORATE	PA
EPA 8141 A	SIMAZINE	PA



Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

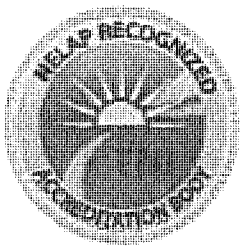
VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8141 A	TOKUTHION (PROTHIOPHOS)	PA
EPA 8141 B	ATRAZINE	PA
EPA 8141 B	COUMAPHOS	PA
EPA 8141 B	DEMETON-S	PA
EPA 8141 B	DICHLOROVOS (DDVP, DICHLORVOS)	PA
EPA 8141 B	EPN (PHOSPHONOTHIOIC ACID, PHENYL-, O-ETHYL O-(P-NITROPHENYL) ESTER)	PA
EPA 8141 B	ETHOPROP	PA
EPA 8141 B	FENSULFOTHION	PA
EPA 8141 B	MALATHION	PA
EPA 8141 B	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8141 B	NALED	PA
EPA 8141 B	PHORATE	PA
EPA 8141 B	SIMAZINE	PA
EPA 8141 B	TOKUTHION (PROTHIOPHOS)	PA
EPA 8151 A	2,4,5-T	PA
EPA 8151 A	2,4-DB	PA
EPA 8151 A	DICAMBA	PA
EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	PA
EPA 8151 A	MCPP	PA
EPA 8151 A	PICLORAM	PA
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	PA
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROPROPENE	PA
EPA 8260 B	1,2,3-TRICHLOROPROPANE	PA
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	PA
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	PA
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	PA
EPA 8260 B	1,3-DICHLOROPROPANE	PA
EPA 8260 B	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8141 A	TRICHLORONATE	PA
EPA 8141 B	BOLSTAR (SULPROFOS)	PA
EPA 8141 B	DEMETON-O	PA
EPA 8141 B	DIAZINON	PA
EPA 8141 B	DISULFOTON	PA
EPA 8141 B	ETHION	PA
EPA 8141 B	FAMPHUR	PA
EPA 8141 B	FENTHION	PA
EPA 8141 B	MERPHOS	PA
EPA 8141 B	MEVINPHOS	PA
EPA 8141 B	PARATHION (PARATHION - ETHYL)	PA
EPA 8141 B	RONNEL	PA
EPA 8141 B	TETRACHLORVINPHOS (STIROPHOS, GARDONA) Z-ISOMER	PA
EPA 8141 B	TRICHLORONATE	PA
EPA 8151 A	2,4-D	PA
EPA 8151 A	DALAPON	PA
EPA 8151 A	DICHLOROPROP (DICHLORPROP)	PA
EPA 8151 A	MCPA	PA
EPA 8151 A	PENTACHLOROPHENOL	PA
EPA 8151 A	SILVEX (2,4,5-TP)	PA
EPA 8260 B	1,1,1-TRICHLOROETHANE	PA
EPA 8260 B	1,1,2-TRICHLOROETHANE	PA
EPA 8260 B	1,1-DICHLOROETHYLENE	PA
EPA 8260 B	1,2,3-TRICHLOROBENZENE	PA
EPA 8260 B	1,2,4-TRICHLOROBENZENE	PA
EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	PA
EPA 8260 B	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8260 B	1,2-DICHLOROPROPANE	PA
EPA 8260 B	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8260 B	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8260 B	1-BUTANOL (N-BUTANOL, N-BUTYL ALCOHOL)	PA



Commonwealth of Virginia

Department of General Services
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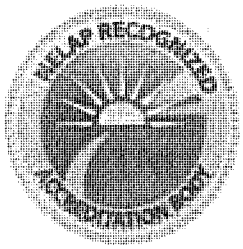
VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 B	2,2-DICHLOROPROPANE	PA
EPA 8260 B	2-CHLOROETHYL VINYL ETHER	PA
EPA 8260 B	2-HEXANONE	PA
EPA 8260 B	4-ISOPROPYLTOLUENE (P-CYMENE, P-ISOPROPYLTOLUENE)	PA
EPA 8260 B	ACETONE	PA
EPA 8260 B	ACROLEIN (PROPENAL)	PA
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	PA
EPA 8260 B	BENZYL CHLORIDE	PA
EPA 8260 B	BROMOCHLOROMETHANE	PA
EPA 8260 B	BROMOFORM	PA
EPA 8260 B	CARBON TETRACHLORIDE	PA
EPA 8260 B	CHLORODIBROMOMETHANE	PA
EPA 8260 B	CHLOROFORM	PA
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	PA
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	PA
EPA 8260 B	EPICHLOROHYDRIN (1-CHLORO-2,3-EPOXYPROPANE)	PA
EPA 8260 B	ETHYL ACETATE	PA
EPA 8260 B	ETHYLBENZENE	PA
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	PA
EPA 8260 B	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8260 B	M+P-XYLENE	PA
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	PA
EPA 8260 B	METHYL METHACRYLATE	PA
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 8260 B	N-PROPYLBENZENE	PA
EPA 8260 B	O-XYLENE	PA
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	PA
EPA 8260 B	STYRENE	PA
EPA 8260 B	TERT-BUTYLBENZENE	PA
EPA 8260 B	TOLUENE	PA
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	PA
EPA 8260 B	2-CHLOROTOLUENE	PA
EPA 8260 B	4-CHLOROTOLUENE	PA
EPA 8260 B	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA
EPA 8260 B	ACETONITRILE	PA
EPA 8260 B	ACRYLONITRILE	PA
EPA 8260 B	BENZENE	PA
EPA 8260 B	BROMOBENZENE	PA
EPA 8260 B	BROMODICHLOROMETHANE	PA
EPA 8260 B	CARBON DISULFIDE	PA
EPA 8260 B	CHLOROBENZENE	PA
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	PA
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	PA
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	PA
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	PA
EPA 8260 B	ETHANOL	PA
EPA 8260 B	ETHYL METHACRYLATE	PA
EPA 8260 B	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	PA
EPA 8260 B	ISOPROPYLBENZENE	PA
EPA 8260 B	METHACRYLONITRILE	PA
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	PA
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8260 B	N-BUTYLBENZENE	PA
EPA 8260 B	NAPHTHALENE	PA
EPA 8260 B	PENTACHLOROETHANE	PA
EPA 8260 B	SEC-BUTYLBENZENE	PA
EPA 8260 B	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	PA
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	PA



Commonwealth of Virginia

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Virginia Laboratory ID: 460182
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Expiration Date: June 14, 2020

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	PA
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	PA
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	PA
EPA 8260 B	VINYL CHLORIDE (CHLOROETHENE)	PA
EPA 8260 B - EXTENDED	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	PA
EPA 8260 B - EXTENDED	CYCLOHEXANONE	PA
EPA 8260 B - EXTENDED	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	PA
EPA 8260 B - EXTENDED	METHYL ACETATE	PA
EPA 8260 B - EXTENDED	T-AMYL ALCOHOL (TAA)	PA
EPA 8260 B - EXTENDED	TETRAHYDROFURAN (THF)	PA
EPA 8260 C	1,1,1-TRICHLOROETHANE	PA
EPA 8260 C	1,1,2-TRICHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROETHYLENE	PA
EPA 8260 C	1,2,3-TRICHLOROBENZENE	PA
EPA 8260 C	1,2,4-TRICHLOROBENZENE	PA
EPA 8260 C	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	PA
EPA 8260 C	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8260 C	1,2-DICHLOROPROPANE	PA
EPA 8260 C	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8260 C	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8260 C	2,2-DICHLOROPROPANE	PA
EPA 8260 C	2-CHLOROETHYL VINYL ETHER	PA
EPA 8260 C	2-HEXANONE	PA
EPA 8260 C	4-ISOPROPYLTOLUENE (P-CYMENE, P-ISOPROPYLTOLUENE)	PA
EPA 8260 C	ACETONE	PA
EPA 8260 C	ACROLEIN (PROPENAL)	PA
EPA 8260 C	ALLYL CHLORIDE (3-CHLOROPROPENE)	PA
EPA 8260 C	BENZYL CHLORIDE	PA
EPA 8260 C	BROMOCHLOROMETHANE	PA
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	PA
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA
EPA 8260 B	VINYL ACETATE	PA
EPA 8260 B	XYLENE (TOTAL)	PA
EPA 8260 B - EXTENDED	CYCLOHEXANE	PA
EPA 8260 B - EXTENDED	DIISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	PA
EPA 8260 B - EXTENDED	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8260 B - EXTENDED	METHYLCYCLOHEXANE	PA
EPA 8260 B - EXTENDED	T-AMYLMETHYLETHER (TAME)	PA
EPA 8260 C	1,1,1,2-TETRACHLOROETHANE	PA
EPA 8260 C	1,1,2,2-TETRACHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROETHANE	PA
EPA 8260 C	1,1-DICHLOROPROPENE	PA
EPA 8260 C	1,2,3-TRICHLOROPROPANE	PA
EPA 8260 C	1,2,4-TRIMETHYLBENZENE	PA
EPA 8260 C	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	PA
EPA 8260 C	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	PA
EPA 8260 C	1,3,5-TRIMETHYLBENZENE	PA
EPA 8260 C	1,3-DICHLOROPROPANE	PA
EPA 8260 C	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8260 C	2-BUTANONE (METHYL ETHYL KETONE, MEK)	PA
EPA 8260 C	2-CHLOROTOLUENE	PA
EPA 8260 C	4-CHLOROTOLUENE	PA
EPA 8260 C	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	PA
EPA 8260 C	ACETONITRILE	PA
EPA 8260 C	ACRYLONITRILE	PA
EPA 8260 C	BENZENE	PA
EPA 8260 C	BROMOBENZENE	PA
EPA 8260 C	BROMODICHLOROMETHANE	PA



Commonwealth of Virginia

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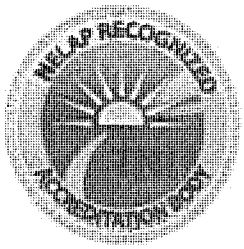
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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 C	BROMOFORM	PA
EPA 8260 C	CARBON TETRACHLORIDE	PA
EPA 8260 C	CHLORODIBROMOMETHANE	PA
EPA 8260 C	CHLOROFORM	PA
EPA 8260 C	CIS-1,2-DICHLOROETHYLENE	PA
EPA 8260 C	CYCLOHEXANE	PA
EPA 8260 C	DICHLORODIFLUOROMETHANE (FREON-12)	PA
EPA 8260 C	ETHANOL	PA
EPA 8260 C	ETHYL METHACRYLATE	PA
EPA 8260 C	ETHYLBENZENE	PA
EPA 8260 C	IODOMETHANE (METHYL IODIDE)	PA
EPA 8260 C	ISOPROPYL ALCOHOL (2-PROPANOL, ISOPROPANOL)	PA
EPA 8260 C	METHACRYLONITRILE	PA
EPA 8260 C	METHYL CHLORIDE (CHLOROMETHANE)	PA
EPA 8260 C	METHYL TERT-BUTYL ETHER (MTBE)	PA
EPA 8260 C	METHYLENE CHLORIDE (DICHLOROMETHANE)	PA
EPA 8260 C	N-PROPYLBENZENE	PA
EPA 8260 C	PENTACHLOROETHANE	PA
EPA 8260 C	SEC-BUTYLBENZENE	PA
EPA 8260 C	T-AMYLMETHYLETHER (TAME)	PA
EPA 8260 C	TERT-BUTYLBENZENE	PA
EPA 8260 C	TOLUENE	PA
EPA 8260 C	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	PA
EPA 8260 C	TRICHLOROETHENE (TRICHLOROETHYLENE)	PA
EPA 8260 C	VINYL ACETATE	PA
EPA 8260 C	XYLENE (TOTAL)	PA
EPA 8260 C - EXTENDED	1,2,3-TRIMETHYLBENZENE	PA
EPA 8260 C	CARBON DISULFIDE	PA
EPA 8260 C	CHLOROBENZENE	PA
EPA 8260 C	CHLOROETHANE (ETHYL CHLORIDE)	PA
EPA 8260 C	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	PA
EPA 8260 C	CIS-1,3-DICHLOROPROPENE	PA
EPA 8260 C	DIBROMOMETHANE (METHYLENE BROMIDE)	PA
EPA 8260 C	EPICHLOROHYDRIN (1-CHLORO-2,3-EPOXYPROPANE)	PA
EPA 8260 C	ETHYL ACETATE	PA
EPA 8260 C	ETHYL-T-BUTYLETHER (2-ETHOXY-2-METHYLPROPANE, ETBE)	PA
EPA 8260 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8260 C	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	PA
EPA 8260 C	ISOPROPYLBENZENE	PA
EPA 8260 C	METHYL BROMIDE (BROMOMETHANE)	PA
EPA 8260 C	METHYL METHACRYLATE	PA
EPA 8260 C	METHYLCYCLOHEXANE	PA
EPA 8260 C	N-BUTYLBENZENE	PA
EPA 8260 C	NAPHTHALENE	PA
EPA 8260 C	PROPIONITRILE (ETHYL CYANIDE)	PA
EPA 8260 C	STYRENE	PA
EPA 8260 C	TERT-BUTYL ALCOHOL (2-METHYL-2-PROPANOL)	PA
EPA 8260 C	TETRACHLOROETHENE (PERCHLOROETHENE)	PA
EPA 8260 C	TRANS-1,2-DICHLOROETHENE	PA
EPA 8260 C	TRANS-1,4-DICHLORO-2-BUTENE	PA
EPA 8260 C	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	PA
EPA 8260 C	VINYL CHLORIDE (CHLOROETHENE)	PA
EPA 8260 C - EXTENDED	1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON 113)	PA
EPA 8260 C - EXTENDED	CYCLOHEXANONE	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8260 C - EXTENDED	DIISOPROPYLETHER (DIPE, ISOPROPYL ETHER)	PA
EPA 8260 C - EXTENDED	METHYL ACETATE	PA
EPA 8260 C - EXTENDED	N-HEXANE	PA
EPA 8260 C - EXTENDED	TETRAHYDROFURAN (THF)	PA
EPA 8270 C	1,2,4,5-TETRACHLOROBENZENE	PA
EPA 8270 C	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8270 C	1,2-DIPHENYLHYDRAZINE	PA
EPA 8270 C	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8270 C	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8270 C	1,4-NAPHTHOQUINONE	PA
EPA 8270 C	1-CHLORONAPHTHALENE	PA
EPA 8270 C	2,2'-OXYBIS(1-CHLOROPROPANE)	PA
EPA 8270 C	2,4,5-TRICHLOROPHENOL	PA
EPA 8270 C	2,4-DICHLOROPHENOL	PA
EPA 8270 C	2,4-DINITROPHENOL	PA
EPA 8270 C	2,6-DICHLOROPHENOL	PA
EPA 8270 C	2-ACETYLAMINOFLUORENE	PA
EPA 8270 C	2-CHLOROPHENOL	PA
EPA 8270 C	2-METHYLNAPHTHALENE	PA
EPA 8270 C	2-NAPHTHYLAMINE	PA
EPA 8270 C	2-NITROPHENOL	PA
EPA 8270 C	3,3'-DICHLOROBENZIDINE	PA
EPA 8270 C	3,3'-DIMETHYLBENZIDINE	PA
EPA 8270 C	3-METHYLPHENOL (M-CRESOL)	PA
EPA 8270 C	4,4'-METHYLENEBIS-2-CHLOROANILINE	PA
EPA 8270 C	4-BROMOPHENYL PHENYL ETHER (BDE-3)	PA
EPA 8270 C	4-CHLOROANILINE	PA
EPA 8270 C	4-DIMETHYL AMINOAZOBENZENE	PA
EPA 8270 C	4-NITROANILINE	PA
EPA 8270 C	4-NITROQUINOLINE-1-OXIDE	PA
EPA 8270 C	7,12-DIMETHYLBENZ(A) ANTHRACENE	PA
EPA 8270 C	ACENAPHTHENE	PA
EPA 8270 C	ACETOPHENONE	PA
EPA 8260 C - EXTENDED	GASOLINE RANGE ORGANICS (GRO)	PA
EPA 8260 C - EXTENDED	N-BUTYL-ACETATE	PA
EPA 8260 C - EXTENDED	T-AMYL ALCOHOL (TAA)	PA
EPA 8260 C SIM	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8270 C	1,2,4-TRICHLOROBENZENE	PA
EPA 8270 C	1,2-DINITROBENZENE (1,2-DNB)	PA
EPA 8270 C	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8270 C	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8270 C	1,4-DINITROBENZENE (1,4-DNB)	PA
EPA 8270 C	1,4-PHENYLENEDIAMINE	PA
EPA 8270 C	1-NAPHTHYLAMINE	PA
EPA 8270 C	2,3,4,6-TETRACHLOROPHENOL	PA
EPA 8270 C	2,4,6-TRICHLOROPHENOL	PA
EPA 8270 C	2,4-DIMETHYLPHENOL	PA
EPA 8270 C	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8270 C	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8270 C	2-CHLORONAPHTHALENE	PA
EPA 8270 C	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	PA
EPA 8270 C	2-METHYLPHENOL (O-CRESOL)	PA
EPA 8270 C	2-NITROANILINE	PA
EPA 8270 C	2-PICOLINE (2-METHYLPYRIDINE)	PA
EPA 8270 C	3,3'-DIMETHOXYBENZIDINE	PA
EPA 8270 C	3-METHYLCHOLANTHRENE	PA
EPA 8270 C	3-NITROANILINE	PA
EPA 8270 C	4-AMINOBIPHENYL	PA
EPA 8270 C	4-CHLORO-3-METHYLPHENOL	PA
EPA 8270 C	4-CHLOROPHENYL PHENYLETHER	PA
EPA 8270 C	4-METHYLPHENOL (P-CRESOL)	PA
EPA 8270 C	4-NITROPHENOL	PA
EPA 8270 C	5-NITRO-O-TOLUIDINE	PA
EPA 8270 C	A-A-DIMETHYLPHENETHYLAMINE	PA
EPA 8270 C	ACENAPHTHYLENE	PA
EPA 8270 C	ANILINE	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 C	ANTHRACENE	PA
EPA 8270 C	BENZIDINE	PA
EPA 8270 C	BENZO(A)PYRENE	PA
EPA 8270 C	BENZO(G,H,I)PERYLENE	PA
EPA 8270 C	BENZOIC ACID	PA
EPA 8270 C	BIS(2-CHLOROETHOXY)METHANE	PA
EPA 8270 C	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 8270 C	CHLOROBENZILATE	PA
EPA 8270 C	DI-N-BUTYL PHTHALATE	PA
EPA 8270 C	DIALLATE	PA
EPA 8270 C	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 C	DIETHYL PHTHALATE	PA
EPA 8270 C	DIMETHYL PHTHALATE	PA
EPA 8270 C	DISULFOTON	PA
EPA 8270 C	FAMPHUR	PA
EPA 8270 C	FLUORENE	PA
EPA 8270 C	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8270 C	HEXACHLOROETHANE	PA
EPA 8270 C	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 C	ISOPHORONE	PA
EPA 8270 C	KEPONE	PA
EPA 8270 C	METHYL METHANESULFONATE	PA
EPA 8270 C	N-NITROSO-DI-N-BUTYLAMINE	PA
EPA 8270 C	N-NITROSODIETHYLAMINE	PA
EPA 8270 C	N-NITROSODIPHENYLAMINE	PA
EPA 8270 C	N-NITROSOMORPHOLINE	PA
EPA 8270 C	N-NITROSOPYRROLIDINE	PA
EPA 8270 C	NITROBENZENE	PA
EPA 8270 C	O-TOLUIDINE (2-METHYLANILINE)	PA
EPA 8270 C	PENTACHLOROBENZENE	PA
EPA 8270 C	PENTACHLOROPHENOL	PA
EPA 8270 C	PHENANTHRENE	PA
EPA 8270 C	PHORATE	PA
EPA 8270 C	PRONAMIDE (KERB)	PA
EPA 8270 C	PYRIDINE	PA
EPA 8270 C	THIONAZIN (ZINOPHOS)	PA
EPA 8270 C	ARAMITE	PA
EPA 8270 C	BENZO(A)ANTHRACENE	PA
EPA 8270 C	BENZO(B)FLUORANTHENE	PA
EPA 8270 C	BENZO(K)FLUORANTHENE	PA
EPA 8270 C	BENZYL ALCOHOL	PA
EPA 8270 C	BIS(2-CHLOROETHYL) ETHER	PA
EPA 8270 C	BUTYL BENZYL PHTHALATE	PA
EPA 8270 C	CHRYSENE	PA
EPA 8270 C	DI-N-OCTYL PHTHALATE	PA
EPA 8270 C	DIBENZ(A, J) ACRIDINE	PA
EPA 8270 C	DIBENZOFURAN	PA
EPA 8270 C	DIMETHOATE	PA
EPA 8270 C	DIPHENYLAMINE	PA
EPA 8270 C	ETHYL METHANESULFONATE	PA
EPA 8270 C	FLUORANTHENE	PA
EPA 8270 C	HEXACHLOROBENZENE	PA
EPA 8270 C	HEXACHLOROCYCLOPENTADIENE	PA
EPA 8270 C	HEXACHLOROPROPENE	PA
EPA 8270 C	ISODRIN	PA
EPA 8270 C	ISOSAFROLE	PA
EPA 8270 C	METHAPYRILENE	PA
EPA 8270 C	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8270 C	N-NITROSODI-N-PROPYLAMINE	PA
EPA 8270 C	N-NITROSODIMETHYLAMINE	PA
EPA 8270 C	N-NITROSOMETHYLETHYLAMINE	PA
EPA 8270 C	N-NITROSOPIPERIDINE	PA
EPA 8270 C	NAPHTHALENE	PA
EPA 8270 C	O,O,O-TRIETHYL PHOSPHOROTHIOATE	PA
EPA 8270 C	PARATHION (PARATHION - ETHYL)	PA
EPA 8270 C	PENTACHLORONITROBENZENE	PA
EPA 8270 C	PHENACETIN	PA
EPA 8270 C	PHENOL	PA
EPA 8270 C	PHTHALIC ANHYDRIDE	PA
EPA 8270 C	PYRENE	PA
EPA 8270 C	SAFROLE	PA



Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10358

Eurofins Lancaster Laboratories Environmental, LLC
2425 New Holland Pike
Lancaster, PA 17601

Virginia Laboratory ID: 460182
Effective Date: June 15, 2019
Expiration Date: June 14, 2020

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 C	TRIS-(2,3-DIBROMOPROPYL) PHOSPHATE (TRIS-BP)	PA
EPA 8270 C SIM	ACENAPHTHENE	PA
EPA 8270 C SIM	ANTHRACENE	PA
EPA 8270 C SIM	BENZO(A)PYRENE	PA
EPA 8270 C SIM	BENZO(G,H,I)PERYLENE	PA
EPA 8270 C SIM	CHRYSENE	PA
EPA 8270 C SIM	FLUORANTHENE	PA
EPA 8270 C SIM	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 C SIM	PHENANTHRENE	PA
EPA 8270 C SIM - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8270 D	1,2,4-TRICHLOROBENZENE	PA
EPA 8270 D	1,2-DINITROBENZENE (1,2-DNB)	PA
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8270 D	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8270 D	1,4-DINITROBENZENE (1,4-DNB)	PA
EPA 8270 D	1,4-PHENYLENEDIAMINE	PA
EPA 8270 D	1-NAPHTHYLAMINE	PA
EPA 8270 D	2,3,4,6-TETRACHLOROPHENOL	PA
EPA 8270 D	2,4,6-TRICHLOROPHENOL	PA
EPA 8270 D	2,4-DIMETHYLPHENOL	PA
EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8270 D	2-CHLORONAPHTHALENE	PA
EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	PA
EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	PA
EPA 8270 D	2-NITROANILINE	PA
EPA 8270 D	2-PICOLINE (2-METHYLPYRIDINE)	PA
EPA 8270 D	3,3'-DIMETHOXYBENZIDINE	PA
EPA 8270 D	3-METHYLCHOLANTHRENE	PA
EPA 8270 D	3-NITROANILINE	PA
EPA 8270 D	4-AMINOBIPHENYL	PA
EPA 8270 D	4-CHLORO-3-METHYLPHENOL	PA
EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	PA
EPA 8270 D	4-METHYLPHENOL (P-CRESOL)	PA
EPA 8270 C SIM	2-METHYLNAPHTHALENE	PA
EPA 8270 C SIM	ACENAPHTHYLENE	PA
EPA 8270 C SIM	BENZO(A)ANTHRACENE	PA
EPA 8270 C SIM	BENZO(B)FLUORANTHENE	PA
EPA 8270 C SIM	BENZO(K)FLUORANTHENE	PA
EPA 8270 C SIM	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 C SIM	FLUORENE	PA
EPA 8270 C SIM	NAPHTHALENE	PA
EPA 8270 C SIM	PYRENE	PA
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	PA
EPA 8270 D	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	PA
EPA 8270 D	1,2-DIPHENYLHYDRAZINE	PA
EPA 8270 D	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	PA
EPA 8270 D	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	PA
EPA 8270 D	1,4-NAPHTHOQUINONE	PA
EPA 8270 D	1-CHLORONAPHTHALENE	PA
EPA 8270 D	2,2'-OXYBIS(1-CHLOROPROPANE)	PA
EPA 8270 D	2,4,5-TRICHLOROPHENOL	PA
EPA 8270 D	2,4-DICHLOROPHENOL	PA
EPA 8270 D	2,4-DINITROPHENOL	PA
EPA 8270 D	2,6-DICHLOROPHENOL	PA
EPA 8270 D	2-ACETYLAMINOFLUORENE	PA
EPA 8270 D	2-CHLOROPHENOL	PA
EPA 8270 D	2-METHYLNAPHTHALENE	PA
EPA 8270 D	2-NAPHTHYLAMINE	PA
EPA 8270 D	2-NITROPHENOL	PA
EPA 8270 D	3,3'-DICHLOROBENZIDINE	PA
EPA 8270 D	3,3'-DIMETHYLBENZIDINE	PA
EPA 8270 D	3-METHYLPHENOL (M-CRESOL)	PA
EPA 8270 D	4,4'-METHYLENEBIS-2-CHLOROANILINE	PA
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER (BDE-3)	PA
EPA 8270 D	4-CHLOROANILINE	PA
EPA 8270 D	4-DIMETHYLAMINOAZOBENZENE	PA
EPA 8270 D	4-NITROANILINE	PA

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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 D	4-NITROPHENOL	PA
EPA 8270 D	5-NITRO-O-TOLUIDINE	PA
EPA 8270 D	A-A-DIMETHYLPHENETHYLAMINE	PA
EPA 8270 D	ACENAPHTHYLENE	PA
EPA 8270 D	ANILINE	PA
EPA 8270 D	ARAMITE	PA
EPA 8270 D	BENZO(A)ANTHRACENE	PA
EPA 8270 D	BENZO(B)FLUORANTHENE	PA
EPA 8270 D	BENZO(K)FLUORANTHENE	PA
EPA 8270 D	BENZYL ALCOHOL	PA
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	PA
EPA 8270 D	BUTYL BENZYL PHTHALATE	PA
EPA 8270 D	CHRYSENE	PA
EPA 8270 D	DI-N-OCTYL PHTHALATE	PA
EPA 8270 D	DIBENZ(A, J) ACRIDINE	PA
EPA 8270 D	DIBENZOFURAN	PA
EPA 8270 D	DIMETHOATE	PA
EPA 8270 D	DIPHENYLAMINE	PA
EPA 8270 D	ETHYL METHANESULFONATE	PA
EPA 8270 D	FLUORANTHENE	PA
EPA 8270 D	HEXACHLOROBENZENE	PA
EPA 8270 D	HEXACHLOROCYCLOPENTADIENE	PA
EPA 8270 D	HEXACHLOROPROPENE	PA
EPA 8270 D	ISODRIN	PA
EPA 8270 D	ISOSAFROLE	PA
EPA 8270 D	METHAPYRILENE	PA
EPA 8270 D	METHYL PARATHION (PARATHION, METHYL)	PA
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	PA
EPA 8270 D	N-NITROSODIMETHYLAMINE	PA
EPA 8270 D	N-NITROSOMETHYLETHYLAMINE	PA
EPA 8270 D	N-NITROSOPIPERIDINE	PA
EPA 8270 D	NAPHTHALENE	PA
EPA 8270 D	O,O,O-TRIETHYL PHOSPHOROTHIOATE	PA
EPA 8270 D	PARATHION (PARATHION - ETHYL)	PA
EPA 8270 D	PENTACHLORONITROBENZENE	PA
EPA 8270 D	4-NITROQUINOLINE-1-OXIDE	PA
EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	PA
EPA 8270 D	ACENAPHTHENE	PA
EPA 8270 D	ACETOPHENONE	PA
EPA 8270 D	ANTHRACENE	PA
EPA 8270 D	BENZIDINE	PA
EPA 8270 D	BENZO(A)PYRENE	PA
EPA 8270 D	BENZO(G,H,I)PERYLENE	PA
EPA 8270 D	BENZOIC ACID	PA
EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	PA
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	PA
EPA 8270 D	CHLOROBENZILATE	PA
EPA 8270 D	DI-N-BUTYL PHTHALATE	PA
EPA 8270 D	DIALLATE	PA
EPA 8270 D	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 D	DIETHYL PHTHALATE	PA
EPA 8270 D	DIMETHYL PHTHALATE	PA
EPA 8270 D	DISULFOTON	PA
EPA 8270 D	FAMPHUR	PA
EPA 8270 D	FLUORENE	PA
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	PA
EPA 8270 D	HEXACHLOROETHANE	PA
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 D	ISOPHORONE	PA
EPA 8270 D	KEPONE	PA
EPA 8270 D	METHYL METHANESULFONATE	PA
EPA 8270 D	N-NITROSO-DI-N-BUTYLAMINE	PA
EPA 8270 D	N-NITROSODIETHYLAMINE	PA
EPA 8270 D	N-NITROSODIPHENYLAMINE	PA
EPA 8270 D	N-NITROSOMORPHOLINE	PA
EPA 8270 D	N-NITROSOPYRROLIDINE	PA
EPA 8270 D	NITROBENZENE	PA
EPA 8270 D	O-TOLUIDINE (2-METHYLANILINE)	PA
EPA 8270 D	PENTACHLOROBENZENE	PA
EPA 8270 D	PENTACHLOROPHENOL	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 D	PHENACETIN	PA
EPA 8270 D	PHENOL	PA
EPA 8270 D	PHTHALIC ANHYDRIDE	PA
EPA 8270 D	PYRENE	PA
EPA 8270 D	SULFOTEPP (TETRAETHYL DITHIOPYROPHOSPHATE)	PA
EPA 8270 D	TRIS-(2,3-DIBROMOPROPYL) PHOSPHATE (TRIS-BP)	PA
EPA 8270 D - EXTENDED	1,2,3,4-TETRACHLOROBENZENE	PA
EPA 8270 D - EXTENDED	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8270 D - EXTENDED	6-METHYLCHRYSENE	PA
EPA 8270 D - EXTENDED	BENZALDEHYDE	PA
EPA 8270 D - EXTENDED	CAPROLACTAM	PA
EPA 8270 D - EXTENDED	DIBENZ(A,H) ACRIDINE	PA
EPA 8270 D - EXTENDED	N,N-DIMETHYLFORMAMIDE	PA
EPA 8270 D - EXTENDED	QUINOLINE	PA
EPA 8270 D SIM	ACENAPHTHENE	PA
EPA 8270 D SIM	ANTHRACENE	PA
EPA 8270 D SIM	BENZO(A)PYRENE	PA
EPA 8270 D SIM	BENZO(G,H,I)PERYLENE	PA
EPA 8270 D SIM	CHRYSENE	PA
EPA 8270 D SIM	FLUORANTHENE	PA
EPA 8270 D SIM	INDENO(1,2,3-CD) PYRENE	PA
EPA 8270 D SIM	PHENANTHRENE	PA
EPA 8270 D SIM - EXTENDED	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	PA
EPA 8290 A	1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN (OCDD)	PA
EPA 8290 A	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (1,2,3,4,6,7,8-HPCDD)	PA
EPA 8290 A	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (1,2,3,4,7,8,9-HPCDF)	PA
EPA 8290 A	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (1,2,3,4,7,8-HXCDF)	PA
EPA 8290 A	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (1,2,3,6,7,8-HXCDF)	PA
EPA 8290 A	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (1,2,3,7,8,9-HXCDF)	PA
EPA 8290 A	1,2,3,7,8-PENTACHLORODIBENZOFURAN (1,2,3,7,8-PECDF)	PA
EPA 8290 A	2,3,4,7,8-PENTACHLORODIBENZOFURAN	PA
EPA 8270 D	PHENANTHRENE	PA
EPA 8270 D	PHORATE	PA
EPA 8270 D	PRONAMIDE (KERB)	PA
EPA 8270 D	SAFROLE	PA
EPA 8270 D	THIONAZIN (ZINOPHOS)	PA
EPA 8270 D - EXTENDED	1,1'-BIPHENYL (BZ-0)	PA
EPA 8270 D - EXTENDED	1,2,3,5-TETRACHLOROBENZENE	PA
EPA 8270 D - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8270 D - EXTENDED	ATRAZINE	PA
EPA 8270 D - EXTENDED	BIS(2-ETHYLHEXYL)ADIPATE (DI(2-ETHYLHEXYL)ADIPATE)	PA
EPA 8270 D - EXTENDED	CARBAZOLE	PA
EPA 8270 D - EXTENDED	INDENE	PA
EPA 8270 D - EXTENDED	PYRIDINE	PA
EPA 8270 D SIM	2-METHYLNAPHTHALENE	PA
EPA 8270 D SIM	ACENAPHTHYLENE	PA
EPA 8270 D SIM	BENZO(A)ANTHRACENE	PA
EPA 8270 D SIM	BENZO(B)FLUORANTHENE	PA
EPA 8270 D SIM	BENZO(K)FLUORANTHENE	PA
EPA 8270 D SIM	DIBENZO(A,H) ANTHRACENE	PA
EPA 8270 D SIM	FLUORENE	PA
EPA 8270 D SIM	NAPHTHALENE	PA
EPA 8270 D SIM	PYRENE	PA
EPA 8270 D SIM - EXTENDED	1-METHYLNAPHTHALENE	PA
EPA 8290 A	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN (OCDF)	PA
EPA 8290 A	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (1,2,3,4,6,7,8-HPCDF)	PA
EPA 8290 A	1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,4,7,8-HXCDD)	PA
EPA 8290 A	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN(1,2,3,6,7,8-HXCDD)	PA
EPA 8290 A	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (1,2,3,7,8,9-HXCDD)	PA
EPA 8290 A	1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (1,2,3,7,8-PECDD)	PA
EPA 8290 A	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (2,3,4,6,7,8-HXCDF)	PA
EPA 8290 A	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (2,3,7,8-TCDD)	PA



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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8290 A	2,3,7,8-TETRACHLORODIBENZOFURAN (2,3,7,8-TCDF)	PA
EPA 8315 A	ACETALDEHYDE	PA
EPA 8315 A	BUTYLALDEHYDE (BUTANAL)	PA
EPA 8315 A	FORMALDEHYDE	PA
EPA 8315 A	ISOVALERALDEHYDE	PA
EPA 8315 A	O-TOLUALDEHYDE (1,2-TOLUALDEHYDE)	PA
EPA 8315 A	PENTANAL (VALERALDEHYDE)	PA
EPA 8330	NITROGLYCERIN	PA
EPA 8330 A	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8330 A	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8330 A	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	PA
EPA 8330 A	3-NITROTOLUENE	PA
EPA 8330 A	4-NITROTOLUENE	PA
EPA 8330 A	NITROBENZENE	PA
EPA 8330 A	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE)	PA
EPA 8330 B	1,3-DINITROBENZENE (1,3-DNB)	PA
EPA 8330 B	2,4-DINITROTOLUENE (2,4-DNT)	PA
EPA 8330 B	2-AMINO-4,6-DINITROTOLUENE (2-AM-DNT)	PA
EPA 8330 B	3,5-DINITROANILINE	PA
EPA 8330 B	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	PA
EPA 8330 B	METHYL-2,4,6-TRINITROPHENYLNITRAMINE (TETRYL)	PA
EPA 8330 B	NITROGLYCERIN	PA
EPA 8330 B	PENTAERYTHRITOLTETRANITRATE (PETN)	PA
EPA 9012 A	CYANIDE	PA
EPA 9045 C	PH	PA
EPA 9050 A	CONDUCTIVITY	PA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	PA
EPA 9071 B	OIL AND GREASE (AS N-HEXANE EXTRACTABLE MATERIAL (HEM))	PA
EPA 9095 B	FREE LIQUID	PA
EPA 8315 A	2,5-DIMETHYLBENZALDEHYDE	PA
EPA 8315 A	BENZALDEHYDE	PA
EPA 8315 A	CROTONALDEHYDE	PA
EPA 8315 A	HEXANALDEHYDE (HEXANAL)	PA
EPA 8315 A	M-TOLUALDEHYDE (1,3-TOLUALDEHYDE)	PA
EPA 8315 A	P-TOLUALDEHYDE (1,4-TOLUALDEHYDE)	PA
EPA 8315 A	PROPIONALDEHYDE (PROPANAL)	PA
EPA 8330 A	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8330 A	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	PA
EPA 8330 A	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8330 A	2-NITROTOLUENE	PA
EPA 8330 A	4-AMINO-2,6-DINITROTOLUENE (4-AM-DNT)	PA
EPA 8330 A	METHYL-2,4,6-TRINITROPHENYLNITRAMINE (TETRYL)	PA
EPA 8330 A	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7-TETRAZOCINE (HMX)	PA
EPA 8330 B	1,3,5-TRINITROBENZENE (1,3,5-TNB)	PA
EPA 8330 B	2,4,6-TRINITROTOLUENE (2,4,6-TNT)	PA
EPA 8330 B	2,6-DINITROTOLUENE (2,6-DNT)	PA
EPA 8330 B	2-NITROTOLUENE	PA
EPA 8330 B	3-NITROTOLUENE	PA
EPA 8330 B	4-NITROTOLUENE	PA
EPA 8330 B	NITROBENZENE	PA
EPA 8330 B	OCTAHYDRO-1,3,5,7-TETRANITRO-1,3,5,7-TETRAZOCINE (HMX)	PA
EPA 8330 B	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,5-TRIAZINE)	PA
EPA 9012 B	TOTAL CYANIDE	PA
EPA 9045 D	PH	PA
EPA 9060	TOTAL ORGANIC CARBON (TOC)	PA
EPA 9066	TOTAL PHENOLICS	PA
EPA 9081	CATION EXCHANGE CAPACITY	PA
SM 2540 G-2011	RESIDUE-TOTAL (TS)	PA

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Effective Date: June 15, 2019
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SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY	METHOD	ANALYTE	PRIMARY
SM 2540 G-2011	RESIDUE-VOLATILE	PA			

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Certifies that

VA Laboratory ID#: 460193
Shealy Environmental Services, Inc.

106 Vantage Point Drive
West Columbia, SC 29172

Owner: DAN WRIGHT
Responsible Official: DANIEL J. WRIGHT

Having met the requirements of 1 VAC 30-46 and
having been found compliant with the 2009 TNI Standard approved by The NELAC Institute
is hereby approved as an

Accredited Environmental Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: **September 15, 2019**
Expiration Date: **September 14, 2020**
Certificate # 10541

Denise M. Toney

Denise M. Toney, Ph.D., HCLD
DGS Deputy Director for Laboratories

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP) Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 10541

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, SC 29172

Virginia Laboratory ID: 460193
Effective Date: September 15, 2019
Expiration Date: September 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 1010	FLASHPOINT	FL
EPA 1631 E	MERCURY	FL
EPA 180.1 REV 2	TURBIDITY	FL
EPA 200.7 REV 4.4	ANTIMONY	FL
EPA 200.7 REV 4.4	BARIUM	FL
EPA 200.7 REV 4.4	BORON	FL
EPA 200.7 REV 4.4	CALCIUM	FL
EPA 200.7 REV 4.4	COBALT	FL
EPA 200.7 REV 4.4	IRON	FL
EPA 200.7 REV 4.4	MAGNESIUM	FL
EPA 200.7 REV 4.4	MOLYBDENUM	FL
EPA 200.7 REV 4.4	POTASSIUM	FL
EPA 200.7 REV 4.4	SILVER	FL
EPA 200.7 REV 4.4	THALLIUM	FL
EPA 200.7 REV 4.4	VANADIUM	FL
EPA 200.8 REV 5.4	ALUMINUM	FL
EPA 200.8 REV 5.4	ARSENIC	FL
EPA 200.8 REV 5.4	BERYLLIUM	FL
EPA 200.8 REV 5.4	CHROMIUM	FL
EPA 200.8 REV 5.4	COPPER	FL
EPA 200.8 REV 5.4	MANGANESE	FL
EPA 200.8 REV 5.4	NICKEL	FL
EPA 200.8 REV 5.4	SILVER	FL
EPA 200.8 REV 5.4	VANADIUM	FL
EPA 245.1 REV 3	MERCURY	FL
EPA 300.0 REV 2.1	CHLORIDE	FL
EPA 300.0 REV 2.1	NITRATE AS N	FL
EPA 300.0 REV 2.1	SULFATE	FL
EPA 350.1 REV 2	AMMONIA AS N	FL
EPA 353.2 REV 2	NITRATE AS N	FL
EPA 353.2 REV 2	NITRITE AS N	FL
EPA 6010 C	ALUMINUM	FL
EPA 6010 C	ARSENIC	FL
EPA 6010 C	BERYLLIUM	FL
EPA 6010 C	CADMIUM	FL
EPA 6010 C	CHROMIUM	FL
EPA 6010 C	COPPER	FL

METHOD	ANALYTE	PRIMARY
EPA 120.1	CONDUCTIVITY	FL
EPA 1664 B	OIL AND GREASE (AS N-HEXANE EXTRACTABLE MATERIAL (HEM))	FL
EPA 200.7 REV 4.4	ALUMINUM	FL
EPA 200.7 REV 4.4	ARSENIC	FL
EPA 200.7 REV 4.4	BERYLLIUM	FL
EPA 200.7 REV 4.4	CADMIUM	FL
EPA 200.7 REV 4.4	CHROMIUM	FL
EPA 200.7 REV 4.4	COPPER	FL
EPA 200.7 REV 4.4	LEAD	FL
EPA 200.7 REV 4.4	MANGANESE	FL
EPA 200.7 REV 4.4	NICKEL	FL
EPA 200.7 REV 4.4	SELENIUM	FL
EPA 200.7 REV 4.4	SODIUM	FL
EPA 200.7 REV 4.4	TIN	FL
EPA 200.7 REV 4.4	ZINC	FL
EPA 200.8 REV 5.4	ANTIMONY	FL
EPA 200.8 REV 5.4	BARIUM	FL
EPA 200.8 REV 5.4	CADMIUM	FL
EPA 200.8 REV 5.4	COBALT	FL
EPA 200.8 REV 5.4	LEAD	FL
EPA 200.8 REV 5.4	MOLYBDENUM	FL
EPA 200.8 REV 5.4	SELENIUM	FL
EPA 200.8 REV 5.4	THALLIUM	FL
EPA 200.8 REV 5.4	ZINC	FL
EPA 300.0 REV 2.1	BROMIDE	FL
EPA 300.0 REV 2.1	FLUORIDE	FL
EPA 300.0 REV 2.1	NITRITE AS N	FL
EPA 335.4 REV 1.0	CYANIDE	FL
EPA 351.2 REV 2	KJELDAHL NITROGEN - TOTAL (TKN)	FL
EPA 353.2 REV 2	NITRATE/NITRITE	FL
EPA 420.4 REV 1	TOTAL PHENOLICS	FL
EPA 6010 C	ANTIMONY	FL
EPA 6010 C	BARIUM	FL
EPA 6010 C	BORON	FL
EPA 6010 C	CALCIUM	FL
EPA 6010 C	COBALT	FL
EPA 6010 C	IRON	FL

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 10541

Shealy Environmental Services, Inc.
106 Vantage Point Drive
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Virginia Laboratory ID: 460193
Effective Date: September 15, 2019
Expiration Date: September 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 6010 C	LEAD	FL
EPA 6010 C	MANGANESE	FL
EPA 6010 C	NICKEL	FL
EPA 6010 C	SELENIUM	FL
EPA 6010 C	SODIUM	FL
EPA 6010 C	TIN	FL
EPA 6010 C	VANADIUM	FL
EPA 6010 D	ALUMINUM	FL
EPA 6010 D	ARSENIC	FL
EPA 6010 D	BERYLLIUM	FL
EPA 6010 D	CADMIUM	FL
EPA 6010 D	CHROMIUM	FL
EPA 6010 D	COPPER	FL
EPA 6010 D	LEAD	FL
EPA 6010 D	MANGANESE	FL
EPA 6010 D	NICKEL	FL
EPA 6010 D	SELENIUM	FL
EPA 6010 D	SODIUM	FL
EPA 6010 D	TIN	FL
EPA 6010 D	VANADIUM	FL
EPA 6020 A	ALUMINUM	FL
EPA 6020 A	ARSENIC	FL
EPA 6020 A	BERYLLIUM	FL
EPA 6020 A	CALCIUM	FL
EPA 6020 A	COBALT	FL
EPA 6020 A	IRON	FL
EPA 6020 A	MAGNESIUM	FL
EPA 6020 A	NICKEL	FL
EPA 6020 A	SELENIUM	FL
EPA 6020 A	SODIUM	FL
EPA 6020 A	VANADIUM	FL
EPA 6020 A - EXTENDED	BORON	FL
EPA 6020 A - EXTENDED	TIN	FL
EPA 6020 B	ALUMINUM	FL
EPA 6020 B	ARSENIC	FL
EPA 6020 B	BERYLLIUM	FL
EPA 6020 B	CALCIUM	FL
EPA 6020 B	COBALT	FL
EPA 6010 C	MAGNESIUM	FL
EPA 6010 C	MOLYBDENUM	FL
EPA 6010 C	POTASSIUM	FL
EPA 6010 C	SILVER	FL
EPA 6010 C	THALLIUM	FL
EPA 6010 C	TITANIUM	FL
EPA 6010 C	ZINC	FL
EPA 6010 D	ANTIMONY	FL
EPA 6010 D	BARIUM	FL
EPA 6010 D	BORON	FL
EPA 6010 D	CALCIUM	FL
EPA 6010 D	COBALT	FL
EPA 6010 D	IRON	FL
EPA 6010 D	MAGNESIUM	FL
EPA 6010 D	MOLYBDENUM	FL
EPA 6010 D	POTASSIUM	FL
EPA 6010 D	SILVER	FL
EPA 6010 D	THALLIUM	FL
EPA 6010 D	TITANIUM	FL
EPA 6010 D	ZINC	FL
EPA 6020 A	ANTIMONY	FL
EPA 6020 A	BARIUM	FL
EPA 6020 A	CADMIUM	FL
EPA 6020 A	CHROMIUM	FL
EPA 6020 A	COPPER	FL
EPA 6020 A	LEAD	FL
EPA 6020 A	MANGANESE	FL
EPA 6020 A	POTASSIUM	FL
EPA 6020 A	SILVER	FL
EPA 6020 A	THALLIUM	FL
EPA 6020 A	ZINC	FL
EPA 6020 A - EXTENDED	MOLYBDENUM	FL
EPA 6020 A - EXTENDED	TITANIUM	FL
EPA 6020 B	ANTIMONY	FL
EPA 6020 B	BARIUM	FL
EPA 6020 B	CADMIUM	FL
EPA 6020 B	CHROMIUM	FL
EPA 6020 B	COPPER	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 6020 B	IRON	FL
EPA 6020 B	MAGNESIUM	FL
EPA 6020 B	NICKEL	FL
EPA 6020 B	SELENIUM	FL
EPA 6020 B	SODIUM	FL
EPA 6020 B	TIN	FL
EPA 6020 B	ZINC	FL
EPA 6020 B - EXTENDED	TITANIUM	FL
EPA 608.3	4,4'-DDE	FL
EPA 608.3	ALDRIN	FL
EPA 608.3	AROCLOR-1016 (PCB-1016)	FL
EPA 608.3	AROCLOR-1232 (PCB-1232)	FL
EPA 608.3	AROCLOR-1248 (PCB-1248)	FL
EPA 608.3	AROCLOR-1260 (PCB-1260)	FL
EPA 608.3	CHLORDANE, TOTAL	FL
EPA 608.3	DIELDRIN	FL
EPA 608.3	ENDOSULFAN II	FL
EPA 608.3	ENDRIN	FL
EPA 608.3	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608.3	HEPTACHLOR EPOXIDE	FL
EPA 624.1	1,1,1-TRICHLOROETHANE	FL
EPA 624.1	1,1,2-TRICHLOROETHANE	FL
EPA 624.1	1,1-DICHLOROETHYLENE	FL
EPA 624.1	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 624.1	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	FL
EPA 624.1	2-CHLOROETHYL VINYL ETHER	FL
EPA 624.1	BROMODICHLOROMETHANE	FL
EPA 624.1	CARBON TETRACHLORIDE	FL
EPA 624.1	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 624.1	CIS-1,3-DICHLOROPROPENE	FL
EPA 624.1	METHYL BROMIDE (BROMOMETHANE)	FL

METHOD	ANALYTE	PRIMARY
EPA 6020 B	LEAD	FL
EPA 6020 B	MANGANESE	FL
EPA 6020 B	POTASSIUM	FL
EPA 6020 B	SILVER	FL
EPA 6020 B	THALLIUM	FL
EPA 6020 B	VANADIUM	FL
EPA 6020 B - EXTENDED	BORON	FL
EPA 608.3	4,4'-DDD	FL
EPA 608.3	4,4'-DDT	FL
EPA 608.3	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608.3	AROCLOR-1221 (PCB-1221)	FL
EPA 608.3	AROCLOR-1242 (PCB-1242)	FL
EPA 608.3	AROCLOR-1254 (PCB-1254)	FL
EPA 608.3	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 608.3	DELTA-BHC	FL
EPA 608.3	ENDOSULFAN I	FL
EPA 608.3	ENDOSULFAN SULFATE	FL
EPA 608.3	ENDRIN ALDEHYDE	FL
EPA 608.3	HEPTACHLOR	FL
EPA 608.3	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 624.1	1,1,2,2-TETRACHLOROETHANE	FL
EPA 624.1	1,1-DICHLOROETHANE	FL
EPA 624.1	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	FL
EPA 624.1	1,2-DICHLOROPROPANE	FL
EPA 624.1	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	FL
EPA 624.1	BENZENE	FL
EPA 624.1	BROMOFORM	FL
EPA 624.1	CHLOROBENZENE	FL
EPA 624.1	CHLOROFORM	FL
EPA 624.1	ETHYLBENZENE	FL
EPA 624.1	METHYL CHLORIDE (CHLOROMETHANE)	FL

Commonwealth of Virginia

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 624.1	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 624.1	TOLUENE	FL
EPA 624.1	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	FL
EPA 624.1	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 624.1	XYLENE (TOTAL)	FL
EPA 625.1	2,4,6-TRICHLOROPHENOL	FL
EPA 625.1	2,4-DIMETHYLPHENOL	FL
EPA 625.1	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 625.1	2-CHLORONAPHTHALENE	FL
EPA 625.1	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 625.1	3,3'-DICHLOROBENZIDINE	FL
EPA 625.1	4-CHLORO-3-METHYLPHENOL	FL
EPA 625.1	4-NITROPHENOL	FL
EPA 625.1	ACENAPHTHYLENE	FL
EPA 625.1	BENZIDINE	FL
EPA 625.1	BENZO(A)PYRENE	FL
EPA 625.1	BENZO(G,H,I)PERYLENE	FL
EPA 625.1	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 625.1	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 625.1	CHRYSENE	FL
EPA 625.1	DI-N-OCTYL PHTHALATE	FL
EPA 625.1	DIETHYL PHTHALATE	FL
EPA 625.1	FLUORANTHENE	FL
EPA 625.1	HEXACHLOROBENZENE	FL
EPA 625.1	HEXACHLOROCYCLOPENTADIENE	FL
EPA 625.1	INDENO(1,2,3-CD) PYRENE	FL
EPA 625.1	N-NITROSODI-N-PROPYLAMINE	FL
EPA 625.1	N-NITROSODIPHENYLAMINE	FL
EPA 625.1	NITROBENZENE	FL
EPA 625.1	PHENANTHRENE	FL
EPA 625.1	PYRENE	FL
EPA 7470 A	MERCURY	FL
EPA 624.1	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 624.1	TRANS-1,2-DICHLOROETHENE	FL
EPA 624.1	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 624.1	VINYL CHLORIDE (CHLOROETHENE)	FL
EPA 625.1	1,2,4-TRICHLOROBENZENE	FL
EPA 625.1	2,4-DICHLOROPHENOL	FL
EPA 625.1	2,4-DINITROPHENOL	FL
EPA 625.1	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 625.1	2-CHLOROPHENOL	FL
EPA 625.1	2-NITROPHENOL	FL
EPA 625.1	4-BROMOPHENYL PHENYL ETHER (BDE-3)	FL
EPA 625.1	4-CHLOROPHENYL PHENYLETHER	FL
EPA 625.1	ACENAPHTHENE	FL
EPA 625.1	ANTHRACENE	FL
EPA 625.1	BENZO(A)ANTHRACENE	FL
EPA 625.1	BENZO(B)FLUORANTHENE	FL
EPA 625.1	BENZO(K)FLUORANTHENE	FL
EPA 625.1	BIS(2-CHLOROETHYL) ETHER	FL
EPA 625.1	BUTYL BENZYL PHTHALATE	FL
EPA 625.1	DI-N-BUTYL PHTHALATE	FL
EPA 625.1	DIBENZO(A,H) ANTHRACENE	FL
EPA 625.1	DIMETHYL PHTHALATE	FL
EPA 625.1	FLUORENE	FL
EPA 625.1	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 625.1	HEXACHLOROETHANE	FL
EPA 625.1	ISOPHORONE	FL
EPA 625.1	N-NITROSODIMETHYLAMINE	FL
EPA 625.1	NAPHTHALENE	FL
EPA 625.1	PENTACHLOROPHENOL	FL
EPA 625.1	PHENOL	FL
EPA 7196 A	CHROMIUM VI	FL
EPA 8011	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL

Commonwealth of Virginia
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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8011	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8015 C	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8081 B	4,4'-DDE	FL
EPA 8081 B	ALDRIN	FL
EPA 8081 B	ALPHA-CHLORDANE (CIS-CHLORDANE)	FL
EPA 8081 B	CHLORDANE, TOTAL	FL
EPA 8081 B	DIELDRIN	FL
EPA 8081 B	ENDOSULFAN II	FL
EPA 8081 B	ENDRIN	FL
EPA 8081 B	ENDRIN KETONE	FL
EPA 8081 B	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	FL
EPA 8081 B	HEPTACHLOR EPOXIDE	FL
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8082 A	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A	AROCLOR-1254 (PCB-1254)	FL
EPA 8151 A	2,4,5-T	FL
EPA 8151 A	2,4-DB	FL
EPA 8151 A	DICHLOROPROP (DICHLORPROP)	FL
EPA 8151 A	PENTACHLOROPHENOL	FL
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	FL
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROPROPENE	FL
EPA 8260 B	1,2,3-TRICHLOROPROPANE	FL
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	FL
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	FL

METHOD	ANALYTE	PRIMARY
EPA 8015 C	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8081 B	4,4'-DDD	FL
EPA 8081 B	4,4'-DDT	FL
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	DELTA-BHC	FL
EPA 8081 B	ENDOSULFAN I	FL
EPA 8081 B	ENDOSULFAN SULFATE	FL
EPA 8081 B	ENDRIN ALDEHYDE	FL
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	HEPTACHLOR	FL
EPA 8081 B	METHOXYCHLOR	FL
EPA 8082 A	AROCLOR-1016 (PCB-1016)	FL
EPA 8082 A	AROCLOR-1232 (PCB-1232)	FL
EPA 8082 A	AROCLOR-1248 (PCB-1248)	FL
EPA 8082 A	AROCLOR-1260 (PCB-1260)	FL
EPA 8151 A	2,4-D	FL
EPA 8151 A	DICAMBA	FL
EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A	SILVEX (2,4,5-TP)	FL
EPA 8260 B	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHYLENE	FL
EPA 8260 B	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8260 B	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	FL
EPA 8260 B	1,2-DICHLOROPROPANE	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	FL
EPA 8260 B	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	FL
EPA 8260 B	2,2-DICHLOROPROPANE	FL
EPA 8260 B	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B	2-HEXANONE	FL
EPA 8260 B	4-METHYL-2-PENTANONE (METHYL ISOBUTYL KETONE, MIBK)	FL
EPA 8260 B	ACETONITRILE	FL
EPA 8260 B	ACRYLONITRILE	FL
EPA 8260 B	BENZENE	FL
EPA 8260 B	BROMOBENZENE	FL
EPA 8260 B	BROMODICHLOROMETHANE	FL
EPA 8260 B	CARBON DISULFIDE	FL
EPA 8260 B	CHLOROBENZENE	FL
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B	ETHYL METHACRYLATE	FL
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B	METHACRYLONITRILE	FL
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B	N-BUTYLBENZENE	FL
EPA 8260 B	NAPHTHALENE	FL
EPA 8260 B	SEC-BUTYLBENZENE	FL
EPA 8260 B	TERT-BUTYLBENZENE	FL
EPA 8260 B	TOLUENE	FL
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	FL
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B	1,3-DICHLOROPROPANE	FL
EPA 8260 B	1,4-DIOXANE (P-DIOXANE /1,4-DIETHYLENEOXIDE)	FL
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL
EPA 8260 B	2-CHLOROTOLUENE	FL
EPA 8260 B	4-CHLOROTOLUENE	FL
EPA 8260 B	ACETONE	FL
EPA 8260 B	ACROLEIN (PROPENAL)	FL
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL
EPA 8260 B	BENZYL CHLORIDE	FL
EPA 8260 B	BROMOCHLOROMETHANE	FL
EPA 8260 B	BROMOFORM	FL
EPA 8260 B	CARBON TETRACHLORIDE	FL
EPA 8260 B	CHLORODIBROMOMETHANE	FL
EPA 8260 B	CHLOROFORM	FL
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B	DIETHYL ETHER	FL
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B	ISOPROPYLBENZENE	FL
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B	METHYL METHACRYLATE	FL
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B	N-PROPYLBENZENE	FL
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B	STYRENE	FL
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL

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NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 8260 B	VINYL ACETATE	FL
EPA 8260 B	XYLENE (TOTAL)	FL
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 D	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	FL
EPA 8270 D	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	FL
EPA 8270 D	1,4-NAPHTHOQUINONE	FL
EPA 8270 D	2,2'-OXYBIS(1-CHLOROPROPANE)	FL
EPA 8270 D	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DICHLOROPHENOL	FL
EPA 8270 D	2,4-DINITROPHENOL	FL
EPA 8270 D	2,6-DICHLOROPHENOL	FL
EPA 8270 D	2-ACETYLAMINOFLUORENE	FL
EPA 8270 D	2-CHLOROPHENOL	FL
EPA 8270 D	2-METHYLNAPHTHALENE	FL
EPA 8270 D	2-NITROANILINE	FL
EPA 8270 D	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 D	3-NITROANILINE	FL
EPA 8270 D	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D	4-NITROPHENOL	FL
EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 D	ACENAPHTHYLENE	FL
EPA 8270 D	ANILINE	FL
EPA 8270 D	BENZIDINE	FL
EPA 8270 D	BENZO(A)PYRENE	FL
EPA 8270 D	BENZO(G,H,I)PERYLENE	FL
EPA 8270 D	BENZOIC ACID	FL
EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 D	CHLOROBENZILATE	FL
EPA 8270 D	DI-N-BUTYL PHTHALATE	FL
EPA 8270 D	DIALLATE	FL
EPA 8270 D	DIBENZOFURAN	FL
EPA 8270 D	DIMETHYL PHTHALATE	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B	VINYL CHLORIDE (CHLOROETHENE)	FL
EPA 8260 C	ETHYLBENZENE	FL
EPA 8270 D	1,2,4-TRICHLOROBENZENE	FL
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 D	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	FL
EPA 8270 D	1,4-PHENYLENEDIAMINE	FL
EPA 8270 D	2,3,4,6-TETRACHLOROPHENOL	FL
EPA 8270 D	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DIMETHYLPHENOL	FL
EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	FL
EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D	2-CHLORONAPHTHALENE	FL
EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D	2-NITROPHENOL	FL
EPA 8270 D	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER (BDE-3)	FL
EPA 8270 D	4-CHLOROANILINE	FL
EPA 8270 D	4-NITROANILINE	FL
EPA 8270 D	5-NITRO-O-TOLUIDINE	FL
EPA 8270 D	ACENAPHTHENE	FL
EPA 8270 D	ACETOPHENONE	FL
EPA 8270 D	ANTHRACENE	FL
EPA 8270 D	BENZO(A)ANTHRACENE	FL
EPA 8270 D	BENZO(B)FLUORANTHENE	FL
EPA 8270 D	BENZO(K)FLUORANTHENE	FL
EPA 8270 D	BENZYL ALCOHOL	FL
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 D	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D	CHRYSENE	FL
EPA 8270 D	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D	DIETHYL PHTHALATE	FL
EPA 8270 D	ETHYL METHANESULFONATE	FL

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METHOD	ANALYTE	PRIMARY
EPA 8270 D	FLUORANTHENE	FL
EPA 8270 D	HEXACHLOROBENZENE	FL
EPA 8270 D	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 D	HEXACHLOROPROPENE	FL
EPA 8270 D	ISODRIN	FL
EPA 8270 D	ISOSAFROLE	FL
EPA 8270 D	METHYL METHANESULFONATE	FL
EPA 8270 D	N-NITROSODIMETHYLAMINE	FL
EPA 8270 D	NAPHTHALENE	FL
EPA 8270 D	PENTACHLOROBENZENE	FL
EPA 8270 D	PENTACHLOROPHENOL	FL
EPA 8270 D	PHENANTHRENE	FL
EPA 8270 D	PRONAMIDE (KERB)	FL
EPA 8270 D	SAFROLE	FL
EPA 8270 D - EXTENDED	CAPROLACTAM	FL
EPA 8270 D - EXTENDED	PYRIDINE	FL
EPA 9040 C	PH	FL
EPA 9056 A	CHLORIDE	FL
EPA 9056 A	NITRATE AS N	FL
EPA 9056 A	SULFATE	FL
SM 2120 B-2011	COLOR	FL
SM 2340 C-2011	TOTAL HARDNESS AS CACO3	FL
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	FL
SM 3500-CR B-2011	CHROMIUM VI	FL
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND (BOD)	FL
SM 5220 D-2011	CHEMICAL OXYGEN DEMAND (COD)	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D	FLUORENE	FL
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D	HEXACHLOROETHANE	FL
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D	ISOPHORONE	FL
EPA 8270 D	KEPONE	FL
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D	NITROBENZENE	FL
EPA 8270 D	PENTACHLORONITROBENZENE	FL
EPA 8270 D	PHENACETIN	FL
EPA 8270 D	PHENOL	FL
EPA 8270 D	PYRENE	FL
EPA 8270 D - EXTENDED	3+4-METHYLPHENOL (M+P CRESOL)	FL
EPA 8270 D - EXTENDED	CARBAZOLE	FL
EPA 9012 B	TOTAL CYANIDE	FL
EPA 9056 A	BROMIDE	FL
EPA 9056 A	FLUORIDE	FL
EPA 9056 A	NITRITE AS N	FL
EPA 9065	TOTAL PHENOLICS	FL
SM 2320 B-2011	ALKALINITY AS CACO3	FL
SM 2540 B-2011	RESIDUE-TOTAL (TS)	FL
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	FL
SM 4500-S2 F-2011	SULFIDE	FL
SM 5210 B-2011	CARBONACEOUS BOD (CBOD)	FL
SM 5310 C-2011	TOTAL ORGANIC CARBON (TOC)	FL

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1010 A	FLASHPOINT	FL
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	FL
EPA 6010 C	ANTIMONY	FL
EPA 6010 C	BARIUM	FL
EPA 6010 C	BORON	FL
EPA 6010 C	CALCIUM	FL
EPA 6010 C	COBALT	FL

METHOD	ANALYTE	PRIMARY
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	FL
EPA 6010 C	ALUMINUM	FL
EPA 6010 C	ARSENIC	FL
EPA 6010 C	BERYLLIUM	FL
EPA 6010 C	CADMIUM	FL
EPA 6010 C	CHROMIUM	FL

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METHOD	ANALYTE	PRIMARY
EPA 6010 C	COPPER	FL
EPA 6010 C	LEAD	FL
EPA 6010 C	MANGANESE	FL
EPA 6010 C	NICKEL	FL
EPA 6010 C	SELENIUM	FL
EPA 6010 C	SODIUM	FL
EPA 6010 C	TIN	FL
EPA 6010 C	VANADIUM	FL
EPA 6010 D	ALUMINUM	FL
EPA 6010 D	ARSENIC	FL
EPA 6010 D	BERYLLIUM	FL
EPA 6010 D	CADMIUM	FL
EPA 6010 D	CHROMIUM	FL
EPA 6010 D	COPPER	FL
EPA 6010 D	LEAD	FL
EPA 6010 D	MANGANESE	FL
EPA 6010 D	NICKEL	FL
EPA 6010 D	SELENIUM	FL
EPA 6010 D	SODIUM	FL
EPA 6010 D	TIN	FL
EPA 6010 D	VANADIUM	FL
EPA 6020 B	ALUMINUM	FL
EPA 6020 B	ARSENIC	FL
EPA 6020 B	BERYLLIUM	FL
EPA 6020 B	CALCIUM	FL
EPA 6020 B	COBALT	FL
EPA 6020 B	IRON	FL
EPA 6020 B	MAGNESIUM	FL
EPA 6020 B	NICKEL	FL
EPA 6020 B	SELENIUM	FL
EPA 6020 B	SODIUM	FL
EPA 6020 B	VANADIUM	FL
EPA 7196 A	CHROMIUM VI	FL
EPA 8015 C	DIESEL RANGE ORGANICS (DRO)	FL
EPA 8081 B	4,4'-DDD	FL
EPA 8081 B	4,4'-DDT	FL
EPA 8081 B	ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	FL
EPA 6010 C	IRON	FL
EPA 6010 C	MAGNESIUM	FL
EPA 6010 C	MOLYBDENUM	FL
EPA 6010 C	POTASSIUM	FL
EPA 6010 C	SILVER	FL
EPA 6010 C	THALLIUM	FL
EPA 6010 C	TITANIUM	FL
EPA 6010 C	ZINC	FL
EPA 6010 D	ANTIMONY	FL
EPA 6010 D	BARIUM	FL
EPA 6010 D	BORON	FL
EPA 6010 D	CALCIUM	FL
EPA 6010 D	COBALT	FL
EPA 6010 D	IRON	FL
EPA 6010 D	MAGNESIUM	FL
EPA 6010 D	MOLYBDENUM	FL
EPA 6010 D	POTASSIUM	FL
EPA 6010 D	SILVER	FL
EPA 6010 D	THALLIUM	FL
EPA 6010 D	TITANIUM	FL
EPA 6010 D	ZINC	FL
EPA 6020 B	ANTIMONY	FL
EPA 6020 B	BARIUM	FL
EPA 6020 B	CADMIUM	FL
EPA 6020 B	CHROMIUM	FL
EPA 6020 B	COPPER	FL
EPA 6020 B	LEAD	FL
EPA 6020 B	MANGANESE	FL
EPA 6020 B	POTASSIUM	FL
EPA 6020 B	SILVER	FL
EPA 6020 B	THALLIUM	FL
EPA 6020 B	ZINC	FL
EPA 7471 B	MERCURY	FL
EPA 8015 C	GASOLINE RANGE ORGANICS (GRO)	FL
EPA 8081 B	4,4'-DDE	FL
EPA 8081 B	ALDRIN	FL
EPA 8081 B	ALPHA-CHLORDANE (CIS-CHLORDANE)	FL

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METHOD	ANALYTE	PRIMARY
EPA 8081 B	BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	DELTA-BHC	FL
EPA 8081 B	ENDOSULFAN I	FL
EPA 8081 B	ENDOSULFAN SULFATE	FL
EPA 8081 B	ENDRIN ALDEHYDE	FL
EPA 8081 B	GAMMA-BHC (LINDANE, GAMMA-HEXACHLOROCYCLOHEXANE)	FL
EPA 8081 B	HEPTACHLOR	FL
EPA 8081 B	METHOXYCHLOR	FL
EPA 8082 A	AROCLOR-1016 (PCB-1016)	FL
EPA 8082 A	AROCLOR-1232 (PCB-1232)	FL
EPA 8082 A	AROCLOR-1248 (PCB-1248)	FL
EPA 8082 A	AROCLOR-1260 (PCB-1260)	FL
EPA 8151 A	2,4-D	FL
EPA 8151 A	PENTACHLOROPHENOL	FL
EPA 8260 B	1,1,1,2-TETRACHLOROETHANE	FL
EPA 8260 B	1,1,2,2-TETRACHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROPROPENE	FL
EPA 8260 B	1,2,3-TRICHLOROPROPANE	FL
EPA 8260 B	1,2,4-TRIMETHYLBENZENE	FL
EPA 8260 B	1,2-DIBROMOETHANE (EDB, ETHYLENE DIBROMIDE)	FL
EPA 8260 B	1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)	FL
EPA 8260 B	1,3,5-TRIMETHYLBENZENE	FL
EPA 8260 B	1,3-DICHLOROPROPANE	FL
EPA 8260 B	2,2-DICHLOROPROPANE	FL
EPA 8260 B	2-CHLOROETHYL VINYL ETHER	FL
EPA 8260 B	2-HEXANONE	FL
EPA 8260 B	ACETONE	FL
EPA 8260 B	ACROLEIN (PROPENAL)	FL
EPA 8260 B	ALLYL CHLORIDE (3-CHLOROPROPENE)	FL

METHOD	ANALYTE	PRIMARY
EPA 8081 B	CHLORDANE, TOTAL	FL
EPA 8081 B	DIELDRIN	FL
EPA 8081 B	ENDOSULFAN II	FL
EPA 8081 B	ENDRIN	FL
EPA 8081 B	ENDRIN KETONE	FL
EPA 8081 B	GAMMA-CHLORDANE (BETA-CHLORDANE, TRANS-CHLORDANE)	FL
EPA 8081 B	HEPTACHLOR EPOXIDE	FL
EPA 8081 B	TOXAPHENE (CHLORINATED CAMPHENE)	FL
EPA 8082 A	AROCLOR-1221 (PCB-1221)	FL
EPA 8082 A	AROCLOR-1242 (PCB-1242)	FL
EPA 8082 A	AROCLOR-1254 (PCB-1254)	FL
EPA 8151 A	2,4,5-T	FL
EPA 8151 A	DINOSEB (2-SEC-BUTYL-4,6-DINITROPHENOL, DNBP)	FL
EPA 8151 A	SILVEX (2,4,5-TP)	FL
EPA 8260 B	1,1,1-TRICHLOROETHANE	FL
EPA 8260 B	1,1,2-TRICHLOROETHANE	FL
EPA 8260 B	1,1-DICHLOROETHYLENE	FL
EPA 8260 B	1,2,3-TRICHLOROBENZENE	FL
EPA 8260 B	1,2,4-TRICHLOROBENZENE	FL
EPA 8260 B	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	FL
EPA 8260 B	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	FL
EPA 8260 B	1,2-DICHLOROPROPANE	FL
EPA 8260 B	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	FL
EPA 8260 B	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	FL
EPA 8260 B	2-BUTANONE (METHYL ETHYL KETONE, MEK)	FL
EPA 8260 B	2-CHLOROTOLUENE	FL
EPA 8260 B	4-CHLOROTOLUENE	FL
EPA 8260 B	ACETONITRILE	FL
EPA 8260 B	ACRYLONITRILE	FL
EPA 8260 B	BENZENE	FL

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EPA 8260 B	BENZYL CHLORIDE	FL
EPA 8260 B	BROMOCHLOROMETHANE	FL
EPA 8260 B	BROMOFORM	FL
EPA 8260 B	CARBON TETRACHLORIDE	FL
EPA 8260 B	CHLOROETHANE (ETHYL CHLORIDE)	FL
EPA 8260 B	CHLOROPRENE (2-CHLORO-1,3-BUTADIENE)	FL
EPA 8260 B	CIS-1,3-DICHLOROPROPENE	FL
EPA 8260 B	DICHLORODIFLUOROMETHANE (FREON-12)	FL
EPA 8260 B	ETHYL METHACRYLATE	FL
EPA 8260 B	IODOMETHANE (METHYL IODIDE)	FL
EPA 8260 B	ISOPROPYLBENZENE	FL
EPA 8260 B	METHYL BROMIDE (BROMOMETHANE)	FL
EPA 8260 B	METHYL METHACRYLATE	FL
EPA 8260 B	METHYLENE CHLORIDE (DICHLOROMETHANE)	FL
EPA 8260 B	N-PROPYLBENZENE	FL
EPA 8260 B	PROPIONITRILE (ETHYL CYANIDE)	FL
EPA 8260 B	STYRENE	FL
EPA 8260 B	TETRACHLOROETHENE (PERCHLOROETHENE)	FL
EPA 8260 B	TRANS-1,2-DICHLOROETHENE	FL
EPA 8260 B	TRANS-1,4-DICHLORO-2-BUTENE	FL
EPA 8260 B	TRICHLOROFLUOROMETHANE (FLUOROTRICHLOROMETHANE, FREON 11)	FL
EPA 8260 B	VINYL CHLORIDE (CHLOROETHENE)	FL
EPA 8270 D	1,2,4,5-TETRACHLOROBENZENE	FL
EPA 8270 D	1,3,5-TRINITROBENZENE (1,3,5-TNB)	FL
EPA 8270 D	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	FL
EPA 8270 D	1,4-PHENYLENEDIAMINE	FL
EPA 8270 D	2,4,5-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DICHLOROPHENOL	FL
EPA 8270 D	2,4-DINITROPHENOL	FL

METHOD	ANALYTE	PRIMARY
EPA 8260 B	BROMOBENZENE	FL
EPA 8260 B	BROMODICHLOROMETHANE	FL
EPA 8260 B	CARBON DISULFIDE	FL
EPA 8260 B	CHLOROBENZENE	FL
EPA 8260 B	CHLOROFORM	FL
EPA 8260 B	CIS-1,2-DICHLOROETHYLENE	FL
EPA 8260 B	DIBROMOMETHANE (METHYLENE BROMIDE)	FL
EPA 8260 B	DIETHYL ETHER	FL
EPA 8260 B	ETHYLBENZENE	FL
EPA 8260 B	ISOBUTYL ALCOHOL (2-METHYL-1-PROPANOL)	FL
EPA 8260 B	METHACRYLONITRILE	FL
EPA 8260 B	METHYL CHLORIDE (CHLOROMETHANE)	FL
EPA 8260 B	METHYL TERT-BUTYL ETHER (MTBE)	FL
EPA 8260 B	N-BUTYLBENZENE	FL
EPA 8260 B	NAPHTHALENE	FL
EPA 8260 B	SEC-BUTYLBENZENE	FL
EPA 8260 B	TERT-BUTYLBENZENE	FL
EPA 8260 B	TOLUENE	FL
EPA 8260 B	TRANS-1,3-DICHLOROPROPENE (TRANS-1,3-DICHLOROPROPYLENE)	FL
EPA 8260 B	TRICHLOROETHENE (TRICHLOROETHYLENE)	FL
EPA 8260 B	VINYL ACETATE	FL
EPA 8260 B	XYLENE (TOTAL)	FL
EPA 8270 D	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	FL
EPA 8270 D	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	FL
EPA 8270 D	1,4-NAPHTHOQUINONE	FL
EPA 8270 D	2,2'-OXYBIS(1-CHLOROPROPANE)	FL
EPA 8270 D	2,4,6-TRICHLOROPHENOL	FL
EPA 8270 D	2,4-DIMETHYLPHENOL	FL
EPA 8270 D	2,4-DINITROTOLUENE (2,4-DNT)	FL

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EPA 8270 D	2,6-DICHLOROPHENOL	FL
EPA 8270 D	2-ACETYLAMINOFLUORENE	FL
EPA 8270 D	2-CHLOROPHENOL	FL
EPA 8270 D	2-METHYLNAPHTHALENE	FL
EPA 8270 D	2-NITROANILINE	FL
EPA 8270 D	3,3'-DICHLOROBENZIDINE	FL
EPA 8270 D	3-NITROANILINE	FL
EPA 8270 D	4-CHLORO-3-METHYLPHENOL	FL
EPA 8270 D	4-CHLOROPHENYL PHENYLETHER	FL
EPA 8270 D	4-NITROPHENOL	FL
EPA 8270 D	7,12-DIMETHYLBENZ(A) ANTHRACENE	FL
EPA 8270 D	ACENAPHTHYLENE	FL
EPA 8270 D	ANTHRACENE	FL
EPA 8270 D	BENZO(A)ANTHRACENE	FL
EPA 8270 D	BENZO(B)FLUORANTHENE	FL
EPA 8270 D	BENZO(K)FLUORANTHENE	FL
EPA 8270 D	BENZYL ALCOHOL	FL
EPA 8270 D	BIS(2-CHLOROETHYL) ETHER	FL
EPA 8270 D	BUTYL BENZYL PHTHALATE	FL
EPA 8270 D	CHRYSENE	FL
EPA 8270 D	DI-N-OCTYL PHTHALATE	FL
EPA 8270 D	DIBENZO(A,H) ANTHRACENE	FL
EPA 8270 D	DIETHYL PHTHALATE	FL
EPA 8270 D	ETHYL METHANESULFONATE	FL
EPA 8270 D	FLUORENE	FL
EPA 8270 D	HEXACHLOROBUTADIENE (1,3-HEXACHLOROBUTADIENE)	FL
EPA 8270 D	HEXACHLOROETHANE	FL
EPA 8270 D	ISODRIN	FL
EPA 8270 D	ISOSAFROLE	FL
EPA 8270 D	N-NITROSODI-N-PROPYLAMINE	FL
EPA 8270 D	N-NITROSOMETHYLETHYLAMINE	FL
EPA 8270 D	NITROBENZENE	FL
EPA 8270 D	PENTACHLORONITROBENZENE	FL
EPA 8270 D	PHENACETIN	FL
EPA 8270 D	PHENOL	FL

METHOD	ANALYTE	PRIMARY
EPA 8270 D	2,6-DINITROTOLUENE (2,6-DNT)	FL
EPA 8270 D	2-CHLORONAPHTHALENE	FL
EPA 8270 D	2-METHYL-4,6-DINITROPHENOL (4,6-DINITRO-2-METHYLPHENOL)	FL
EPA 8270 D	2-METHYLPHENOL (O-CRESOL)	FL
EPA 8270 D	2-NITROPHENOL	FL
EPA 8270 D	3,3'-DIMETHYLBENZIDINE	FL
EPA 8270 D	4-BROMOPHENYL PHENYL ETHER (BDE-3)	FL
EPA 8270 D	4-CHLOROANILINE	FL
EPA 8270 D	4-NITROANILINE	FL
EPA 8270 D	5-NITRO-O-TOLUIDINE	FL
EPA 8270 D	ACENAPHTHENE	FL
EPA 8270 D	ACETOPHENONE	FL
EPA 8270 D	BENZIDINE	FL
EPA 8270 D	BENZO(A)PYRENE	FL
EPA 8270 D	BENZO(G,H,I)PERYLENE	FL
EPA 8270 D	BENZOIC ACID	FL
EPA 8270 D	BIS(2-CHLOROETHOXY)METHANE	FL
EPA 8270 D	BIS(2-ETHYLHEXYL) PHTHALATE (DI(2-ETHYLHEXYL)PHTHALATE), (DEHP)	FL
EPA 8270 D	CHLOROBENZILATE	FL
EPA 8270 D	DI-N-BUTYL PHTHALATE	FL
EPA 8270 D	DIALLATE	FL
EPA 8270 D	DIBENZOFURAN	FL
EPA 8270 D	DIMETHYL PHTHALATE	FL
EPA 8270 D	FLUORANTHENE	FL
EPA 8270 D	HEXACHLOROBENZENE	FL
EPA 8270 D	HEXACHLOROCYCLOPENTADIENE	FL
EPA 8270 D	INDENO(1,2,3-CD) PYRENE	FL
EPA 8270 D	ISOPHORONE	FL
EPA 8270 D	METHYL METHANESULFONATE	FL
EPA 8270 D	N-NITROSODIPHENYLAMINE	FL
EPA 8270 D	NAPHTHALENE	FL
EPA 8270 D	PENTACHLOROBENZENE	FL
EPA 8270 D	PENTACHLOROPHENOL	FL
EPA 8270 D	PHENANTHRENE	FL
EPA 8270 D	PRONAMIDE (KERB)	FL

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 10541

Shealy Environmental Services, Inc.
106 Vantage Point Drive
West Columbia, SC 29172

Virginia Laboratory ID: 460193
Effective Date: September 15, 2019
Expiration Date: September 14, 2020

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 8270 D	PYRENE	FL
EPA 8270 D - EXTENDED	3+4-METHYLPHENOL (M+P CRESOL)	FL
EPA 8270 D - EXTENDED	CARBAZOLE	FL
EPA 9045 C	PH	FL
EPA 9071 B	OIL AND GREASE (AS N-HEXANE EXTRACTABLE MATERIAL (HEM))	FL
EPA 8270 D	SAFROLE	FL
EPA 8270 D - EXTENDED	CAPROLACTAM	FL
EPA 8270 D - EXTENDED	PYRIDINE	FL
EPA 9045 D	PH	FL