
BUILDING 384 SWMU DECOMMISSIONING REPORT

AREA A (OPERABLE UNIT 5)

FORMER IBM EAST FISHKILL FACILITY

TOWN OF EAST FISHKILL, DUTCHESS COUNTY, NEW YORK

NYSDEC SITE NO. 314054, EPA ID NO. NYD000707901

Prepared for:

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May 31, 2019

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P.E. Certification
Building 384 SWMU Decommissioning Report
Town of East Fishkill
Dutchess County, New York

OU#5: Area A
Former IBM East Fishkill Facility
Site # 314054
EPA ID # NYD000707901

May 31, 2019

I certify that I have reviewed the document titled "*Building 384 SWMU Decommissioning Report Area A (Operable Unit 5) Former IBM East Fishkill Facility Town of East Fishkill, Dutchess County, New York NYSDEC Site no. 314054, EPA ID No. NYD000707901*", dated May 31, 2019 and prepared by Groundwater Sciences Corporation (GSC) and Groundwater Sciences, P.C. (GSPC) for IBM Corporation. I certify that I have reviewed all text, tables, figures and appendices and all information is complete and accurate.

I certify that all portions of this report have been prepared in accordance with good engineering practices and all work has been performed under my direct supervision.



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Table of Contents

1	INTRODUCTION	1
2	BACKGROUND	2
2.1	Site Location	2
2.2	B/384 Background	2
2.3	Rationale for SWMU Closure.....	3
3	SUMMARY OF DECONTAMINATION ACTIVITIES	4
3.1	Containment of Residual Materials	4
3.2	Unit Decontamination.....	4
4	FINDINGS	5
4.1	Decontamination Verification Sample Collection.....	5
4.2	Sample Results.....	5
4.3	Laboratory and Field QA/QC Review	6
5	SWMU REMOVAL AND DISPOSAL.....	8

Table of Tables

Table 1	Building 384 Solid Waste Management Units (SWMUs)
Table 2	Building 384 Solid Waste Management Unit (SWMU) Decommissioning Rinse Results

Table of Figures

Figure 1	Site Location Map
Figure 2	Site Subdivision Map and B/384 Location Map
Figure 3	Building 384 Layout

Table of Appendices

Appendix A	Photographs
Appendix B	Analytical Data Report, April 28, 2018 Sampling
Appendix C	Analytical Data Report, May 8, 2018 Sampling

1 INTRODUCTION

On behalf of the IBM Corporation (IBM), Corporate Environmental Affairs (CEA), Groundwater Sciences Corporation, P.C. (GSPC) has prepared this report summarizing decommissioning of Solid Waste Management Units (SWMUs) 214, 241, 3242, and 3198 inside Building 384 (B/384) of the Former IBM East Fishkill Facility (New York State Department of Environmental Conservation (NYSDEC) Site No. 314054, EPA ID No. NYD000707901 in East Fishkill, New York (Site). B/384 houses a groundwater collection sump and associated treatment equipment within Area A (Operable Unit #5 / OU5) of the Site. Treatment and storage tanks along with associated piping were demolished to make room for an upgraded treatment system. This report provides a brief description of decontamination activities performed and verification samples collected during the removal of the former system SWMUs and SWMU components.

2 BACKGROUND

This section provides a description of background information pertinent to the SWMU decommissioning inside B/384.

2.1 Site Location

The Site consists of a semiconductor manufacturing and development facility located in south-central Dutchess County within the Town of East Fishkill, New York. A topographic base map showing the approximate location of the Site relative to regional ground surface topography and drainage features is provided as Figure 1. The Site is bounded on the north by New York State Route 52, on the east by Lime Kiln Road, on the south by Interstate 84 (I-84) and the I-84 interchange at Lime Kiln Road, and on the west by high voltage power lines owned by Consolidated Edison Company of New York and natural gas lines owned by Central Hudson Gas & Electric Corporation. On July 1, 2015 the Site was acquired by GLOBALFOUNDRIES U.S. 2LLC (GF). In 2017, the Site was subdivided into eight lots as shown on Figure 2. On September 1, 2017 National Resources, also doing business as i.Park East Fishkill LLC and i.Park East Fishkill I LLC, purchased Lots 2, 3, 4, 6, 7, and 8. GLOBALFOUNDRIES U.S. 2LLC, i.Park East Fishkill LLC, and i.Park East Fishkill I LLC are listed as facility owners under the current NYSDEC Part 373 permit¹, with IBM maintaining responsibility for Groundwater Corrective Action².

2.2 B/384 Background

The B/384 Groundwater Treatment Facility (GTF) is located south of the linkway connecting Building 310 (B/310) and Building 308 (B/308) on lot 2 of the Site, as shown on Figure 2. B/384 is located in Area A, also known as Operable Unit 5 (OU) as presented in the Appendix II-H of the Part 373 Permit entitled “Final Corrective Measures and Response to Comments on the Statement of Basis”. Shallow groundwater containing volatile organic compounds (VOCs) was pumped from a large diameter sump installed in the mid-1980’s. B/384 was constructed to house the sump,

¹ New York State Department of Environmental Conservation, November 2, 2011, *6NYCRR Part 373 Hazardous Waste Management Permit, IBM Corporation East Fishkill Facility*.

² NYSDEC July 1, 2015, *Facility Permit Transfer IBM Corporation to GLOBALFOUNDRIES U.S. 2LLC, East Fishkill Facility*.

groundwater extraction, and groundwater treatment equipment. A generalized treatment system layout is shown on Figure 3. Table 1 lists the five B/384 tanks that are listed as SWMUs in Table II-1 of the Site Part 373 Permit. Groundwater was extracted from the groundwater collection sump (SWMU 3241), pumped through a solvent separator (SWMU 3242), and then sent to the influent storage tank (SWMU 214). Groundwater was then pumped to the top of a packed air stripping column. After treatment, water was collected within a small tank (SWMU 3198) at the base of the air stripper before being transferred to the effluent storage tank (SWMU 231). The treated groundwater was then transferred via piping to GF's B/312 Industrial Waste Treatment Facility (IWTF).

The four SWMUs listed on Table 1 that were removed as part of the project were constructed primarily from fiberglass. Transfer piping components of these SWMUs were made primarily out of polyvinyl chloride (PVC).

The Statement of Basis lists tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene as chemicals of concern in Area A / OU5. Tetrachloroethene is the most prevalent chemical of concern throughout Area A/ OU5 and in the monthly samples collected from the B/384 Sump. Chromium and total fluoride have also been detected in water samples collected from the sump.

2.3 Rationale for SWMU Closure

A project to renovate B/384 and upgrade treatment equipment began in the first quarter of 2018. As part of the project SWMUs 214, 231, 3242, 3198 and their associated conveyance piping were demolished. Construction of the groundwater collection and treatment system upgrades was completed in February 2019. The groundwater collection and treatment system operations resumed in B/384 on February 25, 2019. The objective of this report is to demonstrate the SWMUs were properly decommissioned as part of the demolition activities.

3 SUMMARY OF DECONTAMINATION ACTIVITIES

The following section describes the steps used to decontaminate SWMUs 214, 231, 3242, 3198 and associated conveyance piping. IBM has decontaminated these SWMUs in accordance with the closure performance standard at 6 NYCRR Part 373-3.7(b) and (e) and general policy guidelines obtained from NYSDEC. The work described was performed by Techtron Environmental Inc. with oversight by PC Construction and Groundwater Sciences Corporation personnel.

3.1 Containment of Residual Materials

The groundwater collection sump was taken offline, and the remaining groundwater was processed by the air stripper. Residual solids present in the solvent separator (SWMU 3242) were containerized in 55-gallon drums for characterization and subsequent off-Site disposal. After the air stripper was removed from service, tower packing materials were containerized in 55-gallon drums for characterization and subsequent off-Site disposal.

3.2 Unit Decontamination

The interior of the solvent separator (SWMU 3242) and the influent storage tank (SWMU 214) were cleaned using a pressure washer prior to the decommissioning of the air stripper. Transfer piping associated with the units was cut and then pressure washed. The B/384 non-potable water supply was utilized to decontaminate the interior of the units. The resulting water was then pumped through the air stripper and discharged to the IWTF.

Following removal of the packing material from the air stripper, the tower, the associated effluent tank (SWMU 3198), and the effluent storage tank (SWMU 231) were pressure washed. Water generated from the cleaning of SWMU 3198 and the associated air stripping tower, SWMU 231, and associated piping was transferred to HDPE storage containers using a suction pump, prior to on-Site treatment. Scale, presumed to consist primarily of calcium carbonate, that was removed via pressure washing was containerized in 55-gallon drums for characterization and subsequent off-Site disposal.

4 FINDINGS

This section presents a description of post-decontamination sampling and discusses the analytical results. Work described in this section was performed by Groundwater Sciences Corporation personnel. Laboratory analyses were performed by Eurofins Lancaster Laboratories of Lancaster, Pennsylvania.

4.1 Decontamination Verification Sample Collection

In order to verify the tanks were successfully decontaminated, rinse water samples were collected from each decommissioned tank and from a section of transfer piping. Photographs taken during the sampling are presented in Appendix A. Laboratory supplied, analyte free deionized water was poured along the wall of each tank and allowed to pool at the bottom of the unit. The minimum amount of water necessary to collect the required sample volume was used for each tank; one gallon each for SWMUs 214, 231, and 3242 and three gallons for SWMU 3198. The deionized water was allowed to remain in each unit for approximately 10 minutes prior to sample collection. A ball valve and sample port were installed at the base of the cone on the solvent separator tank (SWMU 3242) for sample collection. A pipette was used to collect samples from pooled water at the base of the three other SWMUs.

Transfer piping upstream of the air stripping tower was likely exposed to groundwater with the highest levels of VOCs. A section of transfer piping connecting the groundwater sump and SWMU 3242 was selected to demonstrate the effectiveness of the decontamination work. Less than half a gallon of deionized water was used to fill the PVC pipe, which included an elbow section. After approximately 10 minutes, the water was poured directly into the sample containers.

Samples collected from the four SWMUs were analyzed for VOCs, metals, and total fluoride. Quality Assurance / Quality Control (QAQC) samples collected include a duplicate, an equipment rinse blank, a sample of the source water used for decontamination, and a VOC trip blank.

4.2 Sample Results

Sampling results used to verify the effectiveness of the decontamination process are shown on Table 1. The analytical results are compared to the Class GA Groundwater Standards and Guidance

Values listed in NYSDEC's Technical and Operational Guidance Series (TOGS) 1.1.1 – “Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.” Rinse samples from SWMUs 214, 231, 3198 and the transfer piping met the Class GA Groundwater Standard.

PCE was detected at 90 µg/l in the sample and 120 µg/l in a duplicate sample of the solvent separator tank (SWMU 3242), exceeding the 5 µg/l Class GA Groundwater Standard. Chromium was detected at 0.156 mg/l in the primary sample of SWMU 3242, exceeding the Class GA Groundwater Standard of 0.050 mg/l. Based on these results, SWMU 3242 was cleaned and sampled a second time using the methodologies described above. Chromium met the 0.050 mg/l standard in the resample, but PCE was detected at an estimated 52 µg/l. PCE exceeded the calibration range of the first analytical run, and was not rerun within the method defined holding time; therefore the result was considered to be an estimate.

4.3 Laboratory and Field QA/QC Review

Upon receipt, the data reports were reviewed for completeness. The NYSDEC ASP Category B Data Package for the April 27, 2018 sampling event and a NYSDEC ASP Category B Modified Data Package for the May 8, 2018 sampling event are provided in Appendix B and Appendix C. Chain of custody forms are included in the data packages. The laboratory documentation log was reviewed, and all samples were received intact and at the proper temperature. Sample comments did not indicate any laboratory QA/QC issues with the exception of PCE for the second sampling of SWMU 3242 exceeding the calibration range as noted above. All method defined holding times were met. All laboratory QA/QC limits were within range for Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), and surrogate recoveries. Method blanks were free from target analytes.

Data from the trip blank, equipment rinse blank, and the decontamination source water sample were reviewed. VOCs were not detected in the trip blank. The equipment rinse blank taken from the pipette had a low level detection of toluene. The units sampled with the pipettes did not have detections of toluene. The source water for decontamination had VOC detections of bromodichloromethane, bromoform, chlorodibromomethane, and chloroform; these parameters

were not detected in the SWMU samples. The source water also had low level detections of barium and lead, indicating a potential source of these metals found in the SWMU rinsate samples.

Overall, the laboratory and field QA/QC samples do not indicate significant quality or cross-contamination issues that would influence sample results.

5 SWMU REMOVAL AND DISPOSAL

Based on results of the decontamination verification samples, the solvent separator tank (SWMU 3242) was cut into manageable pieces, containerized, and shipped off-Site for disposal as hazardous waste by Clean Harbors Environmental Services, Inc. of Bristol, Connecticut.

SWMUs 214, 231, and 3198 were cut into manageable pieces and containerized for off-Site disposal as nonhazardous waste. Transfer piping, previously cut into manageable pieces to allow for proper decontamination, was also containerized for off-Site disposal as nonhazardous waste.

Table 1
Building 384 Solid Waste Management Units (SWMUs)
Former IBM East Fishkill Facility

Tank Name	SWMU	Total Capacity (Gallons)	Waste Description	Status	RCRA Status
Groundwater Collection Sump	3241	7,174	Contaminated Groundwater, Solvent Waste-Mixed	Active	No Further Action
Solvent Separator	3242	750	Contaminated Groundwater, Solvent Waste-Mixed	Removed	No Further Action
Influent Storage	214	5,900	Contaminated Groundwater	Removed	No Further Action
Air Stripper Effluent	3198	709	Contaminated Groundwater	Removed	No Further Action
Effluent Storage	231	5,900	Treated Groundwater	Removed	No Further Action

Table 2
Former IBM East Fishkill Facility
Building 384 Solid Waste Management Unit (SWMU) Decommissioning Rinse Results
April 27, 2018 and May 8, 2018

Lab ID Sample ID SWMU Date Description	9582699 EFF-231-R-1 231 4/27/2018 Effluent Storage	9582700 INF-214-R-1 214 4/27/2018 Influent Storage	9582701 STR-3198-R-1 3198 4/27/2018 Air Stripper Effluent	9582702 SEP-3242-R-1 3242 4/27/2018 Solvent Separator	9582707 DUP042718 3242 4/27/2018 Solvent Separator (Dup)	9599631 SEP-3242-R-2 3242 5/8/2018 Solvent Separator	9582703 TRP-INF-R-1 Component 4/27/2018 Influent Transfer Piping	9582704 B384-RB-DCW N/A 4/27/2018 Decon Water Source	9582705 B384-RB-PIP N/A 4/27/2018 Rinse Blank, Pipette	9582706 TB20180427 N/A 4/27/2018 Trip Blank	9599630 TB20180508 N/A 5/8/2018 Trip Blank	Method Detection Limit	NYSDEC Class GA Groundwater Standard	Units
Acetone	ND@5.0	4.4 J	4.9 J	ND@5.0	ND@5.0	N/A	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	3.0	50*	ug/l
Benzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	1	ug/l
Bromodichloromethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	12	ND@0.5	ND@0.5	N/A	0.1	50*	ug/l
Bromoform	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	0.2 J	ND@0.5	ND@0.5	N/A	0.1	50*	ug/l
Bromomethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
2-Butanone	ND@5.0	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	1.0	50*	ug/l
Carbon Disulfide	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	N/A	ND@1.0	ND@1.0	ND@1.0	ND@1.0	N/A	0.4	60*	ug/l
Carbon Tetrachloride	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Chlorobenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Chloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Chloroform	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	49	ND@0.5	ND@0.5	N/A	0.1	7	ug/l
Chloromethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.2	5	ug/l
Cyclohexane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	N/A	ug/l
1,2-Dibromo-3-chloropropane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.2	0.04	ug/l
Dibromochloromethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	3.7	ND@0.5	ND@0.5	N/A	0.1	50*	ug/l
1,2-Dibromoethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	N/A	ug/l
1,2-Dichlorobenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	3	ug/l
1,3-Dichlorobenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	3	ug/l
1,4-Dichlorobenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	3	ug/l
Dichlorodifluoromethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,1-Dichloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,2-Dichloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	0.6	ug/l
1,1-Dichloroethene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
cis-1,2-Dichloroethene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	0.1 J	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
trans-1,2-Dichloroethene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,2-Dichloropropane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	1	ug/l
cis-1,3-Dichloropropene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	0.4**	ug/l
trans-1,3-Dichloropropene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	0.4**	ug/l
Ethylbenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Freon 113	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.2	5	ug/l
Freon 123a	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.2	5	ug/l
2-Hexanone	ND@5.0	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	1.0	50*	ug/l
Isopropylbenzene	ND@0.5	ND@0.5	ND@0.5	0.6	0.3 J	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Methyl Acetate	ND@1.0	ND@1.0	ND@1.0	ND@1.0	ND@1.0	N/A	ND@1.0	ND@1.0	ND@1.0	ND@1.0	N/A	0.3	N/A	ug/l
Methyl Tertiary Butyl Ether	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	10*	ug/l
4-Methyl-2-pentanone	ND@5.0	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	ND@5.0	ND@5.0	ND@5.0	ND@5.0	N/A	1.0	N/A	ug/l
Methylcyclohexane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	N/A	ug/l
Methylene Chloride	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.2	5	ug/l
Styrene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,1,2,2-Tetrachloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Tetrachloroethene	0.3 J	3.4	0.5 J	90	120	52 J	1.9	ND@0.5	ND@0.5	ND@0.5	ND@0.5	0.1	5	ug/l
Toluene	ND@0.5	ND@0.5	ND@0.5	0.2 J	0.2 J	N/A	0.3 J	ND@0.5	0.4 J	ND@0.5	N/A	0.1	5	ug/l
1,2,4-Trichlorobenzene	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,1,1-Trichloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
1,1,2-Trichloroethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	1	ug/l
Trichloroethene	ND@0.5	0.2 J	ND@0.5	0.3 J	0.8	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Trichlorofluoromethane	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5	ug/l
Vinyl Chloride	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	2	ug/l
Xylene (Total)	ND@0.5	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	ND@0.5	ND@0.5	ND@0.5	ND@0.5	N/A	0.1	5***	ug/l
Arsenic	ND@0.0040	ND@0.0040	ND@0.0040	0.00086 J	ND@0.0040	N/A	ND@0.0040	ND@0.0040	ND@0.0040	N/A	N/A	0.00072	0.025	mg/l
Barium	0.0031 J	0.0275	0.0061	0.0265	0.0115	N/A	ND@0.0040	0.0170	ND@0.0040	N/A	N/A	0.00072	1.0	mg/l
Cadmium	ND@0.0010	0.00028 J	0.00024 J	0.00045 J	0.00026 J	N/A	ND@0.0010	ND@0.0010	ND@0.0010	N/A	N/A	0.00015	0.005	mg/l
Chromium	0.0087	0.0045	0.0328	0.156	0.0306	0.0069 J	0.0012 J	ND@0.0040	ND@0.0040	N/A	N/A	0.00087	0.050	mg/l
Lead	0.0014 J	0.0067	0.0011 J	0.0034	0.0019 J	N/A	0.00041 J	0.0022	ND@0.0020	N/A	N/A	0.00011	0.025	mg/l
Nickel	ND@0.0040	0.0105	0.0048	0.0271	0.0101	N/A	0.0011 J	ND@0.0040	ND@0.0040	N/A	N/A	0.0010	0.100	mg/l
Selenium	ND@0.0040	ND@0.0040	ND@0.0040	ND@0.0040	ND@0.0040	N/A	ND@0.0040	ND@0.0040	ND@0.0040	N/A	N/A	0.00050	0.010	mg/l
Silver	ND@0.0010	ND@0.0010	ND@0.0010	ND@0.0010	ND@0.0010	N/A	ND@0.0010	ND@0.0010	ND@0.0010	N/A	N/A	0.00015	0.050	mg/l
Mercury	ND@0.00020	ND@0.00020	ND@0.00020	ND@0.00020	ND@0.00020	N/A	ND@0.00020	ND@0.00020	ND@0.00020	N/A	N/A	0.000050	0.0007	mg/l
Fluoride	ND@0.50	ND@0.50	ND@0.50	ND@0.50	ND@0.50	N/A	ND@0.50	ND@0.50	ND@0.50	N/A	N/A	0.25	1.5	mg/l

J - Estimated Value

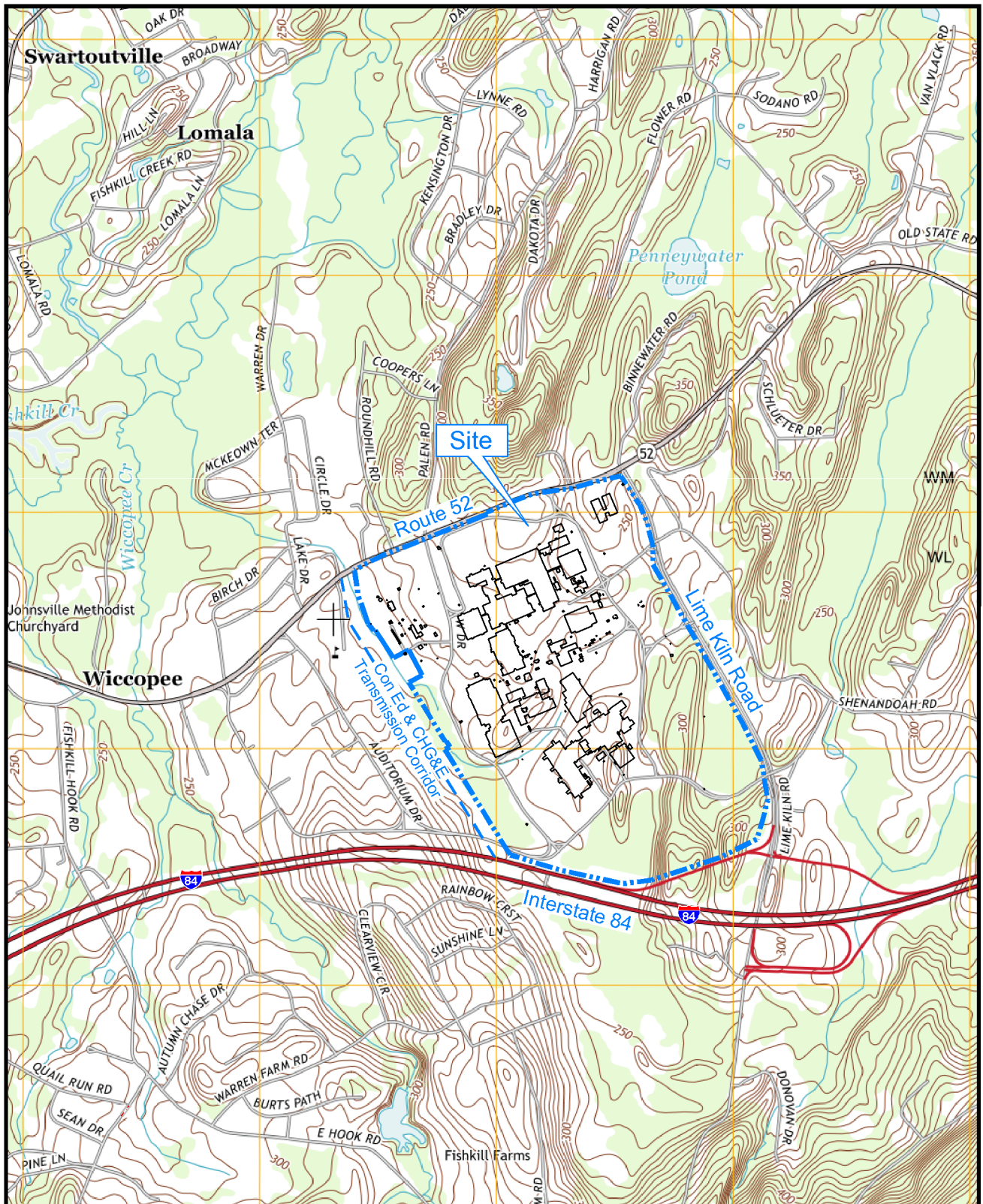
N/A - Not Applicable

* - Guidance Value

** - Applies to the sum of the isomers

*** - Standard applies to the individual isomers

Value Exceeds NYSDEC Class GA Standard



Portion of the Hopewell Junction, NY
 7.5-minute USGS Quadrangle
 (The National Map US Topo, 2013)
 Latitude/Longitude: 41°32'27"N, 73°49'28"W (41.540714, -73.824185)

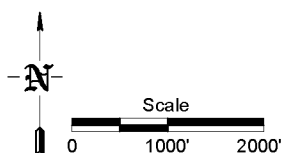


Figure 1
Former IBM East Fishkill Facility
 Site Location Map



GlobalFoundries (~145 acres)		
Lot 1	(45.64 acres)	GlobalFoundries U.S. 2 LLC
Lot 5	(98.94 acres)	GlobalFoundries U.S. 2 LLC

i.Park (~290 acres)		
Lot 2	(48.34 acres)	i.Park East Fishkill I LLC
Lot 3	(23.85 acres)	i.Park East Fishkill I LLC
Lot 4	(13.72 acres)	i.Park East Fishkill LLC
Lot 6	(56.19 acres)	i.Park East Fishkill LLC
Lot 7	(85.05 acres)	i.Park East Fishkill LLC
Lot 8	(59.40 acres)	i.Park East Fishkill LLC
Building 303		
Building 309		

Notes:
Lot 2 Reversionary Clause - Buildings 303 and 309: In the event GlobalFoundries or its successors ceases to exist or operate the chip fab or the need for hazard waste collection is eliminated, then said portion of Lot 2 containing Buildings 303 and 309 shall revert to Lot 2 owner or its successors.
Lot 4 Reversionary Clause - Bulk Storage Tanks: In the event GlobalFoundries or its successors ceases to exist or operate the chip fab or the need for hydrogen gas is eliminated, then said portion of Lot 5 east of East Drive containing hydrogen tanks shall revert to Lot 4 owner or its successors.

LEGEND	
---	- Former IBM East Fishkill Site Property Line
---	- Subdivision (GlobalFoundries U.S. 2 LLC)
---	- Subdivision (i.Park East Fishkill LLC)
---	- Subdivision (i.Park East Fishkill I LLC)
---	- Right-of-Way
---	- Fee Road

Irrevocable Offer of Cession and Dedication of Fee Roads:
South Drive (Deed doc 02 2017 5782)
Fee Road IV and Fee Road VI (Deed doc 02 2017 5783)
Fee Roads I, II, III and V (Deed doc 02 2017 5784)

Figure 2

Former IBM East Fishkill Facility

Site Subdivision Map

DRAWN BY: MHM	DATE: 3/6/19	DRAWING NO.
CHECKED & APPROVED BY: CES		95007-140-A1d

GROUNDWATER SCIENCES CORPORATION

Site Basemap: Chazen Engineering, Land Surveying & Landscape Architecture Co., D.P.C., Poughkeepsie, NY
(XBASE-SVY_51421-00.dwg, 8/10/15); Parcels: XSUBD_51538-00.dwg
Offsite Basemap: "Groundwater Monitoring Basemap", IBM East Fishkill Facility (9718new.dwg, original date 12/21/98).

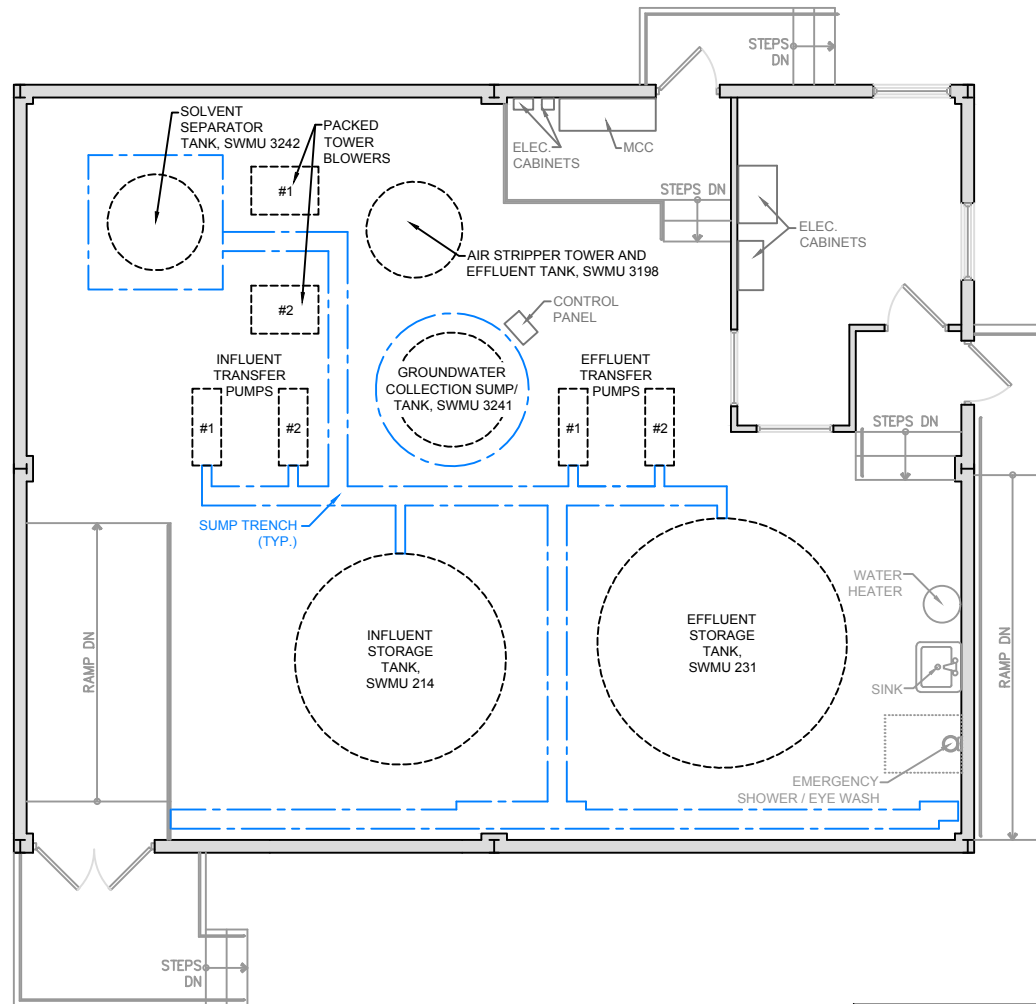


Figure 3

LEGEND

- Sump/Floor Trench
- Electrical Cabinets



Former IBM East Fishkill Facility

Building 384 Pre-Demolition Layout

DRAWN BY: JPB/MHM DATE: 5/29/19

DRAWING NO.

CHECKED & APPROVED BY: NAS/CES

15000-006-E1



GROUNDWATER SCIENCES, P.C.

Appendix A

Photographs



Photograph 1: Component of SWMU 3242, transfer pipe at the time of sampling on April 27, 2018.



Photograph 2: SWMU 3242, solvent separator tank at the time of sampling on April 27, 2018.



Photograph 3: SWMU 214, influent storage tank at the time of sampling on April 27, 2018.



Photograph 4: SWMU 3198 air stripper effluent tank and associated air stripping tower at the time of sampling on April 27, 2018.



Photograph 5: SWMU 3198 air stripper effluent tank interior at the time of sampling on April 27, 2018.



Photograph 6: SWMU 231, effluent storage tank at the time of sampling on April 27, 2018.

Appendix B

Analytical Data Report, April 28, 2018 Sampling

NYSDEC ASP Category B Data Package

Prepared for:

IBM

8976 Wellington Rd
Manassas VA 20109

Project: B384 Demo
Groundwater and Water Samples
Collected on 04/27/18

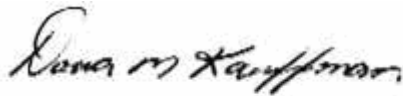
SDG# FKP52

GROUP	SAMPLE NUMBERS
1937338	9582699-9582707

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
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:



Date: 06/11/2018

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Nicole Maljovec at (717) 556-7259.

Table of Contents for SDG# FKP52

1. Sample Reference List	3
2. Preservation Data	4
3. Methodology Summary/Reference	6
4. Analysis Reports / Field Chain of Custody	7
5. Volatiles by GC/MS Data	46
a. Case Narrative/Conformance Summary	47
b. Quality Control and Calibration Summary Forms	52
c. Sample Data	85
d. Standards Data	199
e. Raw QC Data	458
6. Metals in Liquid Data	557
a. Case Narrative/Conformance Summary	558
b. Sample Data	561
c. Quality Control and Calibration Summary Forms	570
d. Raw Data	605
i. ICP-MS Data	606
ii. Mercury Data	646
e. Extraction/Distillation/Digestion Logs	662
7. Instrumental Wet Chemistry Data	684
a. Case Narrative/Conformance Summary	685
b. Quality Control and Calibration Summary Forms	688
c. Raw Data	694

**Sample Reference List for SDG Number FKP52
with a Data Package Type of NYSDEC B**

20686 - IBM
Project: B384 Demo

Lab Sample Number	Client Sample ID	Collection Date	Date Received
9582699	EFF-231-R-1	04/27/2018 12:12	04/28/2018 14:00
9582700	INF-214-R-1	04/27/2018 12:39	04/28/2018 14:00
9582701	STR-3198-R-1	04/27/2018 13:02	04/28/2018 14:00
9582702	SEP-3242-R-1	04/27/2018 13:23	04/28/2018 14:00
9582703	TRP-INF-R-1	04/27/2018 13:50	04/28/2018 14:00
9582704	B384-RB-DCW	04/27/2018 13:55	04/28/2018 14:00
9582705	B384-RB-PIP	04/27/2018 14:05	04/28/2018 14:00
9582706	TB20180427	04/27/2018 00:00	04/28/2018 14:00
9582707	DUP042718	04/27/2018 13:23	04/28/2018 14:00

Sample pH Log

SDG: FKP52

<u>LLI Sample Number</u>	<u>Bottle Code</u>	<u>Actual pH</u>	<u>Exp. pH</u>	<u>pH Check Code</u>	<u>Adj. pH</u>	<u>Adjusted Date</u>	<u>Adjusted Time</u>	<u>Preservative Added</u>	<u>Preservative Lot #</u>	<u>LLI Supplied Bottle?</u>	<u>Sulfide Present?</u>	<u>Corrective Substance</u>	<u>CS Lot #</u>	<u>Cl- Present?</u>	<u>Corrective Substance</u>	<u>CS Lot #</u>	<u>Record Date</u>	<u>Employee</u>
9582699	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:02:08AM	24788
9582699	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582699	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:28:07PM	12665
9582699	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:28:07PM	12665
9582700	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:14:23AM	24788
9582700	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582700	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:27:18PM	12665
9582700	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:27:18PM	12665
9582701	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:00:38AM	24788
9582701	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582701	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:26:37PM	12665
9582701	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:26:37PM	12665
9582702	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:03:53AM	24788
9582702	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582702	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582702	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:29:06PM	12665
9582702	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:29:06PM	12665
9582703	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:17:15AM	24788
9582703	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582703	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:25:43PM	12665
9582703	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:25:43PM	12665
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9582704	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582704	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 11:23:10PM	10203
9582704	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:24:13PM	12665
9582704	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:24:13PM	12665
9582705	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:05:19AM	24788
9582705	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582705	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:29:48PM	12665
9582705	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:29:48PM	12665
9582706	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:04AM	9052
9582707	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/30/2018 2:08:27AM	24788
9582707	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:05AM	9052
9582707	038B	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/1/2018 10:52:05AM	9052
9582707	055A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:24:58PM	12665
9582707	085A	6	5-9	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	4/28/2018 6:24:58PM	12665

<u>LLI Sample</u> <u>Number</u>	<u>Bottle</u> <u>Code</u>	<u>Actual</u> <u>pH</u>	<u>Exp.</u> <u>pH</u>	<u>pH Check</u> <u>Code</u>	<u>Adj.</u> <u>pH</u>	<u>Adjusted</u> <u>Date</u>	<u>Adjusted</u> <u>Time</u>	<u>Preservative</u> <u>Added</u>	<u>Preservative</u> <u>Lot #</u>	<u>LLI</u> <u>Supplied</u> <u>Bottle?</u>	<u>Sulfide</u> <u>Present?</u>	<u>Corrective</u> <u>Substance</u>	<u>CS Lot #</u>	<u>Cl-</u> <u>Present?</u>	<u>Corrective</u> <u>Substance</u>	<u>CS Lot #</u>	<u>Record Date</u>	<u>Employee</u>

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

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com

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

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.

00259 Mercury

The solution resulting from the mercury digestion is analyzed by Cold Vapor AA.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 7470A, September 1994

10639 ICPMS - Water, 3020A - U4

The sample is digested with nitric and hydrochloric acid.

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

05713 WW SW846 Hg Digest

The sample is heated at 95 c with nitric acid, sulfuric acid, potassium persulfate, and potassium permanganate. Excess potassium permanganate is reduced with sodium chloride/hydroxylamine hydrochloride. Mercuric ions are reduced to mercury metal using stannous chloride.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 7470A, September 1994

06025 Arsenic
06026 Barium
06028 Cadmium
06031 Chromium
06035 Lead
06039 Nickel
06041 Selenium
06042 Silver

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.

01504 Fluoride

A small volume of sample is introduced into an ion chromatograph. The anions are then separated and measured by a system consisting of a guard column, separator column, suppressor, and conductivity detector.

Reference: Method 300.0, Revision 2.1 (1993), Methods for Chemical Analysis of Water and Wastes USEPA 600.

Analysis Reports / Field Chain of Custody



REVISED

ANALYSIS REPORT

Prepared by:

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

Prepared for:

IBM
8976 Wellington Rd
Manassas VA 20109

Report Date: May 10, 2018 15:19

Project: B384 Demo

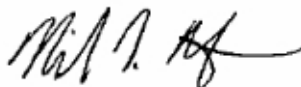
Account #: 20686
Group Number: 1937338
SDG: FKP52
PO Number: 5004981585
State of Sample Origin: NY

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Groundwater Sciences

Attn: Ed Stoner

Respectfully Submitted,



Nicole L. Maljovec
Manager

(717) 556-7259



REVISED

SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection</u> <u>Date/Time</u>	<u>ELLE#</u>
EFF-231-R-1 Grab Groundwater	04/27/2018 12:12	9582699
INF-214-R-1 Grab Groundwater	04/27/2018 12:39	9582700
STR-3198-R-1 Grab Groundwater	04/27/2018 13:02	9582701
SEP-3242-R-1 Grab Groundwater	04/27/2018 13:23	9582702
TRP-INF-R-1 Grab Groundwater	04/27/2018 13:50	9582703
B384-RB-DCW Grab Groundwater	04/27/2018 13:55	9582704
B384-RB-PIP Grab Groundwater	04/27/2018 14:05	9582705
TB20180427 Water	04/27/2018	9582706
DUP042718 Grab Groundwater	04/27/2018 13:23	9582707

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

REVISED

Sample Description: EFF-231-R-1 Grab Groundwater
B384 DemoIBM
ELLE Sample #: GW 9582699
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00

Collection Date/Time: 04/27/2018 12:12

SDG#: FKP52-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: EFF-231-R-1 Grab Groundwater
B384 Demo**IBM**
ELLE Sample #: GW 9582699
ELLE Group #: 1937338
Matrix: Groundwater**Project Name:** B384 Demo**Submittal Date/Time:** 04/28/2018 14:00
Collection Date/Time: 04/27/2018 12:12
SDG#: FKP52-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
		purge				
11996	Tetrachloroethene	127-18-4	0.3 J	0.1	0.5	1
11996	Toluene	108-88-3	N.D.	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0031 J	0.00072	0.0040	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.0087	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0014 J	0.00011	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 01:19	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 01:19	Matthew S Krause	1
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:02	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1

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

REVISED

Sample Description: EFF-231-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582699
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 12:12
SDG#: FKP52-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:02	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:02	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:28	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 12:55	Zachary W Enck	5

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

REVISED

Sample Description: INF-214-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582700
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 12:39
SDG#: FKP52-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	4.4 J	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: INF-214-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582700
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 12:39
SDG#: FKP52-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
		purge				
11996	Tetrachloroethene	127-18-4	3.4	0.1	0.5	1
11996	Toluene	108-88-3	N.D.	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	0.2 J	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0275	0.00072	0.0040	1
06028	Cadmium	7440-43-9	0.00028 J	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.0045	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0067	0.00011	0.0020	1
06039	Nickel	7440-02-0	0.0105	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 01:41	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 01:41	Matthew S Krause	1
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:17	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1

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

REVISED

Sample Description: INF-214-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582700
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 12:39
SDG#: FKP52-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:17	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:17	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 09:54	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 13:42	Zachary W Enck	5

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

REVISED

Sample Description: STR-3198-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582701
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:02
SDG#: FKP52-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	4.9 J	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: STR-3198-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582701
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:02
SDG#: FKP52-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
		purge				
11996	Tetrachloroethene	127-18-4	0.5 J	0.1	0.5	1
11996	Toluene	108-88-3	N.D.	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0061	0.00072	0.0040	1
06028	Cadmium	7440-43-9	0.00024 J	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.0328	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0011 J	0.00011	0.0020	1
06039	Nickel	7440-02-0	0.0048	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 02:04	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 02:04	Matthew S Krause	1
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:19	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1

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

REVISED

Sample Description: STR-3198-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582701
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:02
SDG#: FKP52-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:19	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:19	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:30	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 13:58	Zachary W Enck	5

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

REVISED

Sample Description: SEP-3242-R-1 Grab Groundwater
B384 DemoIBM
ELLE Sample #: GW 9582702
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00

Collection Date/Time: 04/27/2018 13:23

SDG#: FKP52-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260C 25mL purge		ug/l	ug/l	ug/l	
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	0.6	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: SEP-3242-R-1 Grab Groundwater
B384 Demo**IBM**
ELLE Sample #: GW 9582702
ELLE Group #: 1937338
Matrix: Groundwater**Project Name:** B384 Demo**Submittal Date/Time:** 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:23
SDG#: FKP52-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Tetrachloroethene	127-18-4	90	1.0	5.0	10
11996	Toluene	108-88-3	0.2 J	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	0.3 J	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	0.00086 J	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0265	0.00072	0.0040	1
06028	Cadmium	7440-43-9	0.00045 J	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.156	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0034	0.00011	0.0020	1
06039	Nickel	7440-02-0	0.0271	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL	1	G181203AA	05/01/2018 02:26	Matthew S Krause	1
		purge					
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL	1	G181203AA	05/01/2018 02:48	Matthew S Krause	10
		purge					
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 02:26	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	G181203AA	05/01/2018 02:48	Matthew S Krause	10

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

REVISED

Sample Description: SEP-3242-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582702
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submission Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:23
SDG#: FKP52-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:29	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:29	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:29	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:32	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 14:14	Zachary W Enck	5

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

REVISED

Sample Description: TRP-INF-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582703
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:50
SDG#: FKP52-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: TRP-INF-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582703
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:50
SDG#: FKP52-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Tetrachloroethene	127-18-4	1.9	0.1	0.5	1
11996	Toluene	108-88-3	0.3 J	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	N.D.	0.00072	0.0040	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.0012 J	0.00087	0.0040	1
06035	Lead	7439-92-1	0.00041 J	0.00011	0.0020	1
06039	Nickel	7440-02-0	0.0011 J	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 03:11	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 03:11	Matthew S Krause	1
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:32	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1

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

REVISED

Sample Description: TRP-INF-R-1 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582703
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:50
SDG#: FKP52-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:32	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:32	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:38	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 14:30	Zachary W Enck	5

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

REVISED

Sample Description: B384-RB-DCW Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582704
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:55
SDG#: FKP52-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	12	0.1	0.5	1
11996	Bromoform	75-25-2	0.2 J	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	49	1.0	5.0	10
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	3.7	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: B384-RB-DCW Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582704
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:55
SDG#: FKP52-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260C 25mL		ug/l	ug/l	ug/l	
	purge					
11996	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1
11996	Toluene	108-88-3	N.D.	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals						
	SW-846 6020A		mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0170	0.00072	0.0040	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.0010	1
06031	Chromium	7440-47-3	N.D.	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0022	0.00011	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry						
	EPA 300.0		mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL	1	G181203AA	05/01/2018 03:33	Matthew S Krause	1
		purge					
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL	1	G181211AA	05/01/2018 15:11	Jennifer K Howe	10
		purge					
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 03:33	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	G181211AA	05/01/2018 15:11	Jennifer K Howe	10

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

REVISED

Sample Description: B384-RB-DCW Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582704
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submission Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:55
SDG#: FKP52-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:34	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:34	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:34	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:40	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 14:45	Zachary W Enck	5

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

REVISED

Sample Description: B384-RB-PIP Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582705
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 14:05
SDG#: FKP52-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: B384-RB-PIP Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582705
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 14:05
SDG#: FKP52-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
	purge					
11996	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1
11996	Toluene	108-88-3	0.4 J	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	N.D.	0.00072	0.0040	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.0010	1
06031	Chromium	7440-47-3	N.D.	0.00087	0.0040	1
06035	Lead	7439-92-1	N.D.	0.00011	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 03:55	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 03:55	Matthew S Krause	1
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:37	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1

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

REVISED

Sample Description: B384-RB-PIP Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582705
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 14:05
SDG#: FKP52-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:37	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:37	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:43	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 15:01	Zachary W Enck	5

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

REVISED

Sample Description: TB20180427 Water
B384 DemoIBM
ELLE Sample #: GW 9582706
ELLE Group #: 1937338
Matrix: Water

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00

Collection Date/Time: 04/27/2018

SDG#: FKP52-08TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260C 25mL purge		ug/l	ug/l	ug/l	
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	N.D.	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	N.D.	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: TB20180427 Water
B384 Demo

IBM
ELLE Sample #: GW 9582706
ELLE Group #: 1937338
Matrix: Water

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018
SDG#: FKP52-08TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL purge	ug/l	ug/l	ug/l	
11996	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1
11996	Toluene	108-88-3	N.D.	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	N.D.	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 00:35	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 00:35	Matthew S Krause	1

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

REVISED

Sample Description: DUP042718 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582707
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submittal Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:23
SDG#: FKP52-09FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
		purge				
11996	Acetone	67-64-1	N.D.	3.0	5.0	1
11996	Benzene	71-43-2	N.D.	0.1	0.5	1
11996	Bromodichloromethane	75-27-4	N.D.	0.1	0.5	1
11996	Bromoform	75-25-2	N.D.	0.1	0.5	1
11996	Bromomethane	74-83-9	N.D.	0.1	0.5	1
11996	2-Butanone	78-93-3	N.D.	1.0	5.0	1
11996	Carbon Disulfide	75-15-0	N.D.	0.4	1.0	1
11996	Carbon Tetrachloride	56-23-5	N.D.	0.1	0.5	1
11996	Chlorobenzene	108-90-7	N.D.	0.1	0.5	1
11996	Chloroethane	75-00-3	N.D.	0.1	0.5	1
11996	Chloroform	67-66-3	N.D.	0.1	0.5	1
11996	Chloromethane	74-87-3	N.D.	0.2	0.5	1
11996	Cyclohexane	110-82-7	N.D.	0.1	0.5	1
11996	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.2	0.5	1
11996	Dibromochloromethane	124-48-1	N.D.	0.1	0.5	1
11996	1,2-Dibromoethane	106-93-4	N.D.	0.1	0.5	1
11996	1,2-Dichlorobenzene	95-50-1	N.D.	0.1	0.5	1
11996	1,3-Dichlorobenzene	541-73-1	N.D.	0.1	0.5	1
11996	1,4-Dichlorobenzene	106-46-7	N.D.	0.1	0.5	1
11996	Dichlorodifluoromethane	75-71-8	N.D.	0.1	0.5	1
11996	1,1-Dichloroethane	75-34-3	N.D.	0.1	0.5	1
11996	1,2-Dichloroethane	107-06-2	N.D.	0.1	0.5	1
11996	1,1-Dichloroethene	75-35-4	N.D.	0.1	0.5	1
11996	cis-1,2-Dichloroethene	156-59-2	0.1 J	0.1	0.5	1
11996	trans-1,2-Dichloroethene	156-60-5	N.D.	0.1	0.5	1
11996	1,2-Dichloropropane	78-87-5	N.D.	0.1	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.1	0.5	1
11996	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.1	0.5	1
11996	Ethylbenzene	100-41-4	N.D.	0.1	0.5	1
11996	Freon 113	76-13-1	N.D.	0.2	0.5	1
11996	Freon 123a	354-23-4	N.D.	0.2	0.5	1
11996	2-Hexanone	591-78-6	N.D.	1.0	5.0	1
11996	Isopropylbenzene	98-82-8	0.3 J	0.1	0.5	1
11996	Methyl Acetate	79-20-9	N.D.	0.3	1.0	1
11996	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.1	0.5	1
11996	4-Methyl-2-pentanone	108-10-1	N.D.	1.0	5.0	1
11996	Methylcyclohexane	108-87-2	N.D.	0.1	0.5	1
11996	Methylene Chloride	75-09-2	N.D.	0.2	0.5	1
11996	Styrene	100-42-5	N.D.	0.1	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.1	0.5	1

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

Analysis Report

REVISED

Sample Description: DUP042718 Grab Groundwater
B384 Demo**IBM**
ELLE Sample #: GW 9582707
ELLE Group #: 1937338
Matrix: Groundwater**Project Name:** B384 Demo**Submittal Date/Time:** 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:23
SDG#: FKP52-09FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL purge	ug/l	ug/l	ug/l	
11996	Tetrachloroethene	127-18-4	120	2.0	10	20
11996	Toluene	108-88-3	0.2 J	0.1	0.5	1
11996	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.1	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	N.D.	0.1	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	N.D.	0.1	0.5	1
11996	Trichloroethene	79-01-6	0.8	0.1	0.5	1
11996	Trichlorofluoromethane	75-69-4	N.D.	0.1	0.5	1
11996	Vinyl Chloride	75-01-4	N.D.	0.1	0.5	1
11996	Xylene (Total)	1330-20-7	N.D.	0.1	0.5	1
Metals		SW-846 6020A	mg/l	mg/l	mg/l	
06025	Arsenic	7440-38-2	N.D.	0.00072	0.0040	1
06026	Barium	7440-39-3	0.0115	0.00072	0.0040	1
06028	Cadmium	7440-43-9	0.00026 J	0.00015	0.0010	1
06031	Chromium	7440-47-3	0.0306	0.00087	0.0040	1
06035	Lead	7439-92-1	0.0019 J	0.00011	0.0020	1
06039	Nickel	7440-02-0	0.0101	0.0010	0.0040	1
06041	Selenium	7782-49-2	N.D.	0.00050	0.0040	1
06042	Silver	7440-22-4	N.D.	0.00015	0.0010	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
Wet Chemistry		EPA 300.0	mg/l	mg/l	mg/l	
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 04:18	Matthew S Krause	1
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	G181203AA	05/01/2018 04:40	Matthew S Krause	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	G181203AA	05/01/2018 04:18	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	G181203AA	05/01/2018 04:40	Matthew S Krause	20

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

REVISED

Sample Description: DUP042718 Grab Groundwater
B384 Demo

IBM
ELLE Sample #: GW 9582707
ELLE Group #: 1937338
Matrix: Groundwater

Project Name: B384 Demo

Submission Date/Time: 04/28/2018 14:00
Collection Date/Time: 04/27/2018 13:23
SDG#: FKP52-09FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
06026	Barium	SW-846 6020A	1	181201063901D	05/01/2018 08:27	Choon Y Tian	1
06028	Cadmium	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
06031	Chromium	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
06035	Lead	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
06039	Nickel	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
06041	Selenium	SW-846 6020A	1	181201063901B	05/01/2018 08:27	Choon Y Tian	1
06042	Silver	SW-846 6020A	1	181201063901A	05/01/2018 08:27	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	181200571302	05/01/2018 10:45	Damary Valentin	1
10639	ICPMS - Water, 3020A - U4	SW-846 3020A	1	181201063901	04/30/2018 05:04	James L Mertz	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	181200571302	05/01/2018 05:59	James L Mertz	1
01504	Fluoride	EPA 300.0	1	18119249109A	04/29/2018 15:17	Zachary W Enck	5

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

Quality Control Summary

Client Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

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: G181203AA	Sample number(s): 9582699-9582707		
Acetone	N.D.	3.0	5.0
Benzene	N.D.	0.1	0.5
Bromodichloromethane	N.D.	0.1	0.5
Bromoform	N.D.	0.1	0.5
Bromomethane	N.D.	0.1	0.5
2-Butanone	N.D.	1.0	5.0
Carbon Disulfide	N.D.	0.4	1.0
Carbon Tetrachloride	N.D.	0.1	0.5
Chlorobenzene	N.D.	0.1	0.5
Chloroethane	N.D.	0.1	0.5
Chloroform	N.D.	0.1	0.5
Chloromethane	N.D.	0.2	0.5
Cyclohexane	N.D.	0.1	0.5
1,2-Dibromo-3-chloropropane	N.D.	0.2	0.5
Dibromochloromethane	N.D.	0.1	0.5
1,2-Dibromoethane	N.D.	0.1	0.5
1,2-Dichlorobenzene	N.D.	0.1	0.5
1,3-Dichlorobenzene	N.D.	0.1	0.5
1,4-Dichlorobenzene	N.D.	0.1	0.5
Dichlorodifluoromethane	N.D.	0.1	0.5
1,1-Dichloroethane	N.D.	0.1	0.5
1,2-Dichloroethane	N.D.	0.1	0.5
1,1-Dichloroethene	N.D.	0.1	0.5
cis-1,2-Dichloroethene	N.D.	0.1	0.5
trans-1,2-Dichloroethene	N.D.	0.1	0.5
1,2-Dichloropropane	N.D.	0.1	0.5
cis-1,3-Dichloropropene	N.D.	0.1	0.5
trans-1,3-Dichloropropene	N.D.	0.1	0.5
Ethylbenzene	N.D.	0.1	0.5
Freon 113	N.D.	0.2	0.5
Freon 123a	N.D.	0.2	0.5
2-Hexanone	N.D.	1.0	5.0
Isopropylbenzene	N.D.	0.1	0.5
Methyl Acetate	N.D.	0.3	1.0
Methyl Tertiary Butyl Ether	N.D.	0.1	0.5
4-Methyl-2-pentanone	N.D.	1.0	5.0
Methylcyclohexane	N.D.	0.1	0.5
Methylene Chloride	N.D.	0.2	0.5
Styrene	N.D.	0.1	0.5

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
1,1,2,2-Tetrachloroethane	N.D.	0.1	0.5
Tetrachloroethene	N.D.	0.1	0.5
Toluene	N.D.	0.1	0.5
1,2,4-Trichlorobenzene	N.D.	0.1	0.5
1,1,1-Trichloroethane	N.D.	0.1	0.5
1,1,2-Trichloroethane	N.D.	0.1	0.5
Trichloroethene	N.D.	0.1	0.5
Trichlorofluoromethane	N.D.	0.1	0.5
Vinyl Chloride	N.D.	0.1	0.5
Xylene (Total)	N.D.	0.1	0.5
Batch number: G181211AA	Sample number(s): 9582704		
Chloroform	N.D.	0.1	0.5
	mg/l	mg/l	mg/l
Batch number: 181200571302	Sample number(s): 9582699-9582705,9582707		
Mercury	N.D.	0.000050	0.00020
Batch number: 181201063901A	Sample number(s): 9582699-9582705,9582707		
Arsenic	N.D.	0.00072	0.0040
Cadmium	N.D.	0.00015	0.0010
Chromium	N.D.	0.00087	0.0040
Lead	N.D.	0.00011	0.0020
Nickel	N.D.	0.0010	0.0040
Silver	N.D.	0.00015	0.0010
Batch number: 181201063901B	Sample number(s): 9582699-9582705,9582707		
Selenium	N.D.	0.00050	0.0040
Batch number: 181201063901D	Sample number(s): 9582699-9582705,9582707		
Barium	N.D.	0.00072	0.0040
Batch number: 18119249109A	Sample number(s): 9582699-9582705,9582707		
Fluoride	N.D.	0.050	0.10

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: G181203AA	Sample number(s): 9582699-9582707								
Acetone	37.5	38.18	37.5	35	102	93	68-141	9	30
Benzene	5.00	4.75	5.00	4.71	95	94	80-120	1	30
Bromodichloromethane	5.00	4.71	5.00	4.65	94	93	80-125	1	30
Bromoform	5.00	4.71	5.00	4.77	94	95	57-141	1	30

*- Outside of specification

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REVISED

Quality Control Summary

Client Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

LCS/LCSD (continued)

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
Bromomethane	5.00	5.01	5.00	4.78	100	96	62-125	5	30
2-Butanone	37.5	40.62	37.5	37.4	108	100	59-141	8	30
Carbon Disulfide	5.00	4.30	5.00	4.21	86	84	72-129	2	30
Carbon Tetrachloride	5.00	4.88	5.00	4.85	98	97	71-139	1	30
Chlorobenzene	5.00	4.75	5.00	4.75	95	95	80-120	0	30
Chloroethane	5.00	4.70	5.00	4.55	94	91	63-120	3	30
Chloroform	5.00	4.72	5.00	4.69	94	94	80-120	1	30
Chloromethane	5.00	4.31	5.00	4.14	86	83	47-120	4	30
Cyclohexane	5.00	4.53	5.00	4.51	91	90	69-120	0	30
1,2-Dibromo-3-chloropropane	5.00	6.45	5.00	5.90	129	118	48-149	9	30
Dibromochloromethane	5.00	4.79	5.00	4.83	96	97	73-135	1	30
1,2-Dibromoethane	5.00	4.82	5.00	4.86	96	97	80-120	1	30
1,2-Dichlorobenzene	5.00	4.74	5.00	4.72	95	94	80-120	1	30
1,3-Dichlorobenzene	5.00	4.74	5.00	4.66	95	93	80-120	2	30
1,4-Dichlorobenzene	5.00	4.79	5.00	4.73	96	95	80-120	1	30
Dichlorodifluoromethane	5.00	4.08	5.00	3.92	82	78	23-128	4	30
1,1-Dichloroethane	5.00	4.58	5.00	4.56	92	91	80-120	1	30
1,2-Dichloroethane	5.00	4.35	5.00	4.35	87	87	68-137	0	30
1,1-Dichloroethene	5.00	5.07	5.00	5.01	101	100	80-124	1	30
cis-1,2-Dichloroethene	5.00	4.99	5.00	5.02	100	100	80-120	1	30
trans-1,2-Dichloroethene	5.00	4.99	5.00	4.91	100	98	80-120	2	30
1,2-Dichloropropane	5.00	4.71	5.00	4.69	94	94	80-120	0	30
cis-1,3-Dichloropropene	5.00	4.74	5.00	4.70	95	94	74-122	1	30
trans-1,3-Dichloropropene	5.00	4.57	5.00	4.60	91	92	71-131	1	30
Ethylbenzene	5.00	4.69	5.00	4.65	94	93	80-120	1	30
Freon 113	5.00	4.74	5.00	4.72	95	94	80-128	0	30
Freon 123a	5.00	4.83	5.00	4.69	97	94	80-123	3	30
2-Hexanone	25	28.13	25	25.82	113	103	61-143	9	30
Isopropylbenzene	5.00	4.78	5.00	4.76	96	95	80-120	0	30
Methyl Acetate	5.00	5.59	5.00	5.01	112	100	59-143	11	30
Methyl Tertiary Butyl Ether	5.00	4.62	5.00	4.61	92	92	75-122	0	30
4-Methyl-2-pentanone	25	27.13	25	25.18	109	101	67-140	7	30
Methylcyclohexane	5.00	4.67	5.00	4.61	93	92	80-120	1	30
Methylene Chloride	5.00	4.28	5.00	4.25	86	85	80-120	1	30
Styrene	5.00	4.89	5.00	4.85	98	97	80-120	1	30
1,1,2,2-Tetrachloroethane	5.00	4.65	5.00	4.63	93	93	75-123	1	30
Tetrachloroethene	5.00	4.91	5.00	4.87	98	97	80-120	1	30
Toluene	5.00	4.76	5.00	4.70	95	94	80-120	1	30
1,2,4-Trichlorobenzene	5.00	4.66	5.00	4.58	93	92	74-120	2	30
1,1,1-Trichloroethane	5.00	4.79	5.00	4.73	96	95	78-126	1	30
1,1,2-Trichloroethane	5.00	4.90	5.00	4.83	98	97	80-120	1	30
Trichloroethene	5.00	4.80	5.00	4.80	96	96	80-120	0	30
Trichlorofluoromethane	5.00	4.78	5.00	4.64	96	93	52-143	3	30
Vinyl Chloride	5.00	4.72	5.00	4.47	94	89	56-120	5	30

*- Outside of specification

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REVISED

Quality Control SummaryClient Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

LCS/LCSD (continued)

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
Xylene (Total)	15	14.36	15	14.31	96	95	80-120	0	30
Batch number: G181211AA	Sample number(s): 9582704								
Chloroform	5.00	4.62	5.00	4.50	92	90	80-120	3	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 181200571302	Sample number(s): 9582699-9582705,9582707								
Mercury	0.00100	0.000868			87		80-114		
Batch number: 181201063901A	Sample number(s): 9582699-9582705,9582707								
Arsenic	0.0100	0.0104			104		80-120		
Cadmium	0.00500	0.00523			105		84-120		
Chromium	0.0500	0.0548			110		90-112		
Lead	0.0150	0.0156			104		90-110		
Nickel	0.0500	0.0529			106		90-114		
Silver	0.0500	0.0530			106		88-113		
Batch number: 181201063901B	Sample number(s): 9582699-9582705,9582707								
Selenium	0.0100	0.0103			103		90-113		
Batch number: 181201063901D	Sample number(s): 9582699-9582705,9582707								
Barium	0.0500	0.0543			109		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 18119249109A	Sample number(s): 9582699-9582705,9582707								
Fluoride	0.750	0.770			103		90-110		

MS/MSD

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

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 181200571302	Sample number(s): 9582699-9582705,9582707 UNSPK: 9582700									
Mercury	N.D.	0.00100	0.000881	0.00100	0.000887	88	89	80-120	1	20
Batch number: 181201063901A	Sample number(s): 9582699-9582705,9582707 UNSPK: 9582699									
Arsenic	N.D.	0.0100	0.0104	0.0100	0.00969	104	97	75-125	7	20
Cadmium	N.D.	0.00500	0.00529	0.00500	0.00507	106	101	75-125	4	20
Chromium	0.00868	0.0500	0.0624	0.0500	0.0612	107	105	75-125	2	20
Lead	0.00140	0.0150	0.0173	0.0150	0.0169	106	103	75-125	2	20
Nickel	N.D.	0.0500	0.0536	0.0500	0.0517	107	103	75-125	4	20

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Quality Control Summary

Client Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

MS/MSD (continued)

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

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Silver	N.D.	0.0500	0.0523	0.0500	0.0502	105	100	75-125	4	20
Batch number: 181201063901B	Sample number(s): 9582699-9582705,9582707 UNSPK: 9582699									
Selenium	N.D.	0.0100	0.0106	0.0100	0.0104	106	104	75-125	2	20
Batch number: 181201063901D	Sample number(s): 9582699-9582705,9582707 UNSPK: 9582699									
Barium	0.00311	0.0500	0.0557	0.0500	0.0561	105	106	75-125	1	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 18119249109A	Sample number(s): 9582699-9582705,9582707 UNSPK: P582438									
Fluoride	N.D.	2.50	2.68			107		90-110		

Laboratory Duplicate

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

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 181200571302	Sample number(s): 9582699-9582705,9582707 BKG: 9582700			
Mercury	N.D.	N.D.	0 (1)	20
Batch number: 181201063901A	Sample number(s): 9582699-9582705,9582707 BKG: 9582699			
Arsenic	N.D.	N.D.	0 (1)	20
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	0.00868	0.0104	18 (1)	20
Lead	0.00140	0.00143	2 (1)	20
Nickel	N.D.	0.00109	200* (1)	20
Silver	N.D.	N.D.	0 (1)	20
Batch number: 181201063901B	Sample number(s): 9582699-9582705,9582707 BKG: 9582699			
Selenium	N.D.	N.D.	0 (1)	20
Batch number: 181201063901D	Sample number(s): 9582699-9582705,9582707 BKG: 9582699			
Barium	0.00311	0.00422	30* (1)	20
	mg/l	mg/l		
Batch number: 18119249109A	Sample number(s): 9582699-9582705,9582707 BKG: P582438			
Fluoride	N.D.	N.D.	0 (1)	15

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: IBM
Reported: 05/10/2018 15:19

Group Number: 1937338

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: VOCs- 25ml Water by 8260C

Batch number: G181203AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9582699	99	101	98	95
9582700	99	101	97	95
9582701	100	99	98	94
9582702	99	100	98	96
9582703	99	99	97	94
9582704	99	99	98	94
9582705	100	97	97	94
9582706	100	101	98	95
9582707	100	98	97	94
Blank	99	100	98	95
LCS	100	100	97	95
LCSD	101	99	98	96
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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

**Lancaster Laboratories
Environmental**

Acct. # 20686

For Eurofins Lancaster Laboratories Environmental use only
Group # 1937336 Sample # 4552
Instructions on reverse side correspond with circled numbers.

Group # 1437338

Sample # 4550

only 9582699-75

COC # 019513

Client Information				Matrix				Analyses Requested												For Lab Use Only					
Client		Acct #		Project Name/#		SSOW #		IBM PM		Project State		P.O. #		Sampler		For Compliance:		Check One:		OU:		Preservation Code		SCR#	
IBM East Fishkill		20686		B384 Demo		15000.15		Dean Chartrand		NY		5004799639		ES		☐ Yes ☒ No		☐ Routine Lab GW ☐ Routine GTF O&M ☐ Non-Routine Investigation ☒ Non-Routine Upgrades/Installs		(Endicott Non-Routine only)		H N		Preservation Codes	
Sample Identification		Collected		Grab		Composite		Soil		Water		Oil		Total # of Containers		TCL VOCs 8260C		RCRA Metals + Ni		Total Fluoride		Remarks			
		Date Time																							
EFF-231-R-1		4/27/18 1212		X				GW				5		3		1		1							
INF-214-R-1		4/27/18 1239		X				GW				5		3		1		1							
STR-3198-R-1		4/27/18 1302		X				GW				5		3		1		1							
SEP-3242-R-1		4/27/18 1323		X				GW				5		3		1		1							
TRP-INF-R-1		4/27/18 1350		X				GW				5		3		1		1							
B384-RB-DGW		4/27/18 1355		X				GW				5		3		1		1							
B384-RB-PDP		4/27/18 1405		X				GW				5		3		1		1							
TB20180427		4/27/18		X				GW				2		2											
DUP042718		4/27/18 1323		X				GW				5		3		1		1							
Turnaround Time Requested (TAT) (please circle)		Standard		Rush		Relinquished by		Date		Time		Received by		Date		Time									
(Rush TAT is subject to Lancaster Laboratories approval and surcharges.)		Date results are needed:		E-mail:		Relinquished by		Date		Time		Received by		Date		Time									
Data Package Options (please circle if required)		Type I (Validation/NJ Reg)		TX TRRP-13		NY ASP A		Type III (Reduced NJ)		MA MCP		NY ASP B		Type VI (Raw Data Only)		CT RCP									
SDG Complete?		Yes		No		Site-specific QC (MS/MSD/Dup)?		Yes		No		Temperature upon receipt		1.1		°C									

Sample Administration
Receipt Documentation Log

Doc Log ID: 215021



Group Number(s):

1937338

Client: IBM

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>04/28/2018 14:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>NY</u>		

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	VOA Vial Headspace $\geq$ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCI
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Zane Hollinger (10251) at 15:07 on 04/28/2018

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	DT42-01	1.1	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

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

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

Case Narrative/Conformance Summary

CLIENT: IBM

SDG: FKP52

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
9582699	EFF-231-R-1	X		1	
9582700	INF-214-R-1	X		1	
9582701	STR-3198-R-1	X		1	
9582702	SEP-3242-R-1	X		1; 10	
9582703	TRP-INF-R-1	X		1	
9582704	B384-RB-DCW	X		1; 10	
9582705	B384-RB-PIP	X		1	
9582706	TB20180427	X		1	Trip Blank
9582707	DUP042718	X		1; 20	Field Duplicate Sample

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

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Case Narrative/Conformance Summary

CLIENT: IBM

SDG: FKP52

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

 Lancaster Laboratories Environmental	Document Title: GC/MS Volatiles Calculations		
	Eurofins Document Reference: 1-P-QM-FOR-9035336	Revision: 1	Historical Reference: N/A
	Effective date: Dec 3, 2015		Status: Effective

1. Relative Response Factor (RRF)

$$RRF = \frac{AX}{Ais} \times \frac{Cis}{Cx}$$

Where:

Ax = Area of the characteristic ion for the compound to be measured

Ais = Area of the characteristic ion for the specific internal standard to be measured

Cis = Concentration of the internal standard

Cx = Concentration of the compound to be measured

2. % Relative Standard Deviation (%RSD)

$$\%RSD = \frac{\text{standard deviation}}{\text{Mean}} \times 100$$

3. % Difference

$$\%D = \frac{RRFc - RRFi}{RRFi} \times 100$$

Where:

RRFc = Relative response factor from the continuing calibration standard

RRFi = Mean relative response factor from the initial calibration

 Lancaster Laboratories Environmental	Document Title: GC/MS Volatiles Calculations		
	Eurofins Document Reference: 1-P-QM-FOR-9035336	Revision: 1	Historical Reference: N/A
	Effective date: Dec 3, 2015		Status: Effective

4. Concentration

$$\text{Concentration } (\mu\text{g} / \text{L}) = \frac{(Ax)(Is)(Df)}{(Ais)(RRF)}$$

Where:

Ax, Ais, and RRF are as given in 1. above

Is = Amount of internal standard added in parts per billion (µg/L)

Df = Dilution factor

5. % Recovery (% Rec)

$$\%Rec = \frac{SSR - SR}{SA} \times 100$$

Where:

SSR = Spiked sample result

SR = Sample result

SA = Spike added

6. Relative Percent Difference (RPD)

$$RPD = \frac{(MSR - MSRD)}{(1/2)(MSR + MSRD)} \times 100$$

Where:

MSR = Matrix spike recovery

MSRD = Matrix spike recovery duplicate

Quality Control and Calibration Summary Forms

Volatiles by GC/MS

Quality Control Reference List GC/MS Volatiles

CLIENT: IBM
SDG: FKP52

Fraction: Volatiles by GC/MS

Analysis	Batch Number	Sample Number	Analysis Date
VOCs- 25ml Water by 8260C	G181203AA	VBLKG13	04/30/2018 21:59:00
		LCSG13	04/30/2018 21:14:00
		LCDG13	04/30/2018 21:36:00
		9582699	05/01/2018 01:19:00
		9582700	05/01/2018 01:41:00
		9582701	05/01/2018 02:04:00
		9582702	05/01/2018 02:26:00
		9582702	05/01/2018 02:48:00
		9582703	05/01/2018 03:11:00
		9582704	05/01/2018 03:33:00
		9582705	05/01/2018 03:55:00
		9582706	05/01/2018 00:35:00
		9582707	05/01/2018 04:18:00
		9582707	05/01/2018 04:40:00
VOCs- 25ml Water by 8260C	G181211AA	VBLKG14	05/01/2018 09:40:00
		LCSG14	05/01/2018 08:11:00
		LCDG14	05/01/2018 08:33:00
		9582704	05/01/2018 15:11:00

Fraction: Volatiles by GC/MS

G181203AA / VBLKG13 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Dichlorodifluoromethane	04/30/18	N.D.	ug/l	0.1	0.5
Chloromethane	04/30/18	N.D.	ug/l	0.2	0.5
Vinyl Chloride	04/30/18	N.D.	ug/l	0.1	0.5
Bromomethane	04/30/18	N.D.	ug/l	0.1	0.5
Chloroethane	04/30/18	N.D.	ug/l	0.1	0.5
Trichlorofluoromethane	04/30/18	N.D.	ug/l	0.1	0.5
Freon 123a	04/30/18	N.D.	ug/l	0.2	0.5
1,1-Dichloroethene	04/30/18	N.D.	ug/l	0.1	0.5
Freon 113	04/30/18	N.D.	ug/l	0.2	0.5
Acetone	04/30/18	N.D.	ug/l	3.0	5.0
Carbon Disulfide	04/30/18	N.D.	ug/l	0.4	1.0
Methyl Acetate	04/30/18	N.D.	ug/l	0.3	1.0
Methylene Chloride	04/30/18	N.D.	ug/l	0.2	0.5
trans-1,2-Dichloroethene	04/30/18	N.D.	ug/l	0.1	0.5
Methyl Tertiary Butyl Ether	04/30/18	N.D.	ug/l	0.1	0.5
1,1-Dichloroethane	04/30/18	N.D.	ug/l	0.1	0.5
2-Butanone	04/30/18	N.D.	ug/l	1.0	5.0
cis-1,2-Dichloroethene	04/30/18	N.D.	ug/l	0.1	0.5
Chloroform	04/30/18	N.D.	ug/l	0.1	0.5
1,1,1-Trichloroethane	04/30/18	N.D.	ug/l	0.1	0.5
Cyclohexane	04/30/18	N.D.	ug/l	0.1	0.5
Carbon Tetrachloride	04/30/18	N.D.	ug/l	0.1	0.5
Benzene	04/30/18	N.D.	ug/l	0.1	0.5
1,2-Dichloroethane	04/30/18	N.D.	ug/l	0.1	0.5
Trichloroethene	04/30/18	N.D.	ug/l	0.1	0.5
Methylcyclohexane	04/30/18	N.D.	ug/l	0.1	0.5
1,2-Dichloropropane	04/30/18	N.D.	ug/l	0.1	0.5
Bromodichloromethane	04/30/18	N.D.	ug/l	0.1	0.5
cis-1,3-Dichloropropene	04/30/18	N.D.	ug/l	0.1	0.5
4-Methyl-2-pentanone	04/30/18	N.D.	ug/l	1.0	5.0
Toluene	04/30/18	N.D.	ug/l	0.1	0.5
trans-1,3-Dichloropropene	04/30/18	N.D.	ug/l	0.1	0.5
1,1,2-Trichloroethane	04/30/18	N.D.	ug/l	0.1	0.5
Tetrachloroethene	04/30/18	N.D.	ug/l	0.1	0.5
2-Hexanone	04/30/18	N.D.	ug/l	1.0	5.0
Dibromochloromethane	04/30/18	N.D.	ug/l	0.1	0.5
1,2-Dibromoethane	04/30/18	N.D.	ug/l	0.1	0.5
Chlorobenzene	04/30/18	N.D.	ug/l	0.1	0.5
Ethylbenzene	04/30/18	N.D.	ug/l	0.1	0.5
Xylene (Total)	04/30/18	N.D.	ug/l	0.1	0.5
Styrene	04/30/18	N.D.	ug/l	0.1	0.5
Bromoform	04/30/18	N.D.	ug/l	0.1	0.5
Isopropylbenzene	04/30/18	N.D.	ug/l	0.1	0.5
1,1,2,2-Tetrachloroethane	04/30/18	N.D.	ug/l	0.1	0.5
1,3-Dichlorobenzene	04/30/18	N.D.	ug/l	0.1	0.5

Fraction: Volatiles by GC/MS

G181203AA / VBLKG13					
Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
1,4-Dichlorobenzene	04/30/18	N.D.	ug/l	0.1	0.5
1,2-Dichlorobenzene	04/30/18	N.D.	ug/l	0.1	0.5
1,2-Dibromo-3-chloropropane	04/30/18	N.D.	ug/l	0.2	0.5
1,2,4-Trichlorobenzene	04/30/18	N.D.	ug/l	0.1	0.5

G181211AA / VBLKG14					
Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Chloroform	05/01/18	N.D.	ug/l	0.1	0.5

Fraction: Volatiles by GC/MS

G181203AA	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
	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
Sample								
VBLKG13	100	80 - 120	95	80 - 120	99	80 - 120	98	80 - 120
LCSG13	100	80 - 120	95	80 - 120	100	80 - 120	97	80 - 120
LCDG13	99	80 - 120	96	80 - 120	101	80 - 120	98	80 - 120
9582699	101	80 - 120	95	80 - 120	99	80 - 120	98	80 - 120
9582700	101	80 - 120	95	80 - 120	99	80 - 120	97	80 - 120
9582701	99	80 - 120	94	80 - 120	100	80 - 120	98	80 - 120
9582702	100	80 - 120	96	80 - 120	99	80 - 120	98	80 - 120
9582703	99	80 - 120	94	80 - 120	99	80 - 120	97	80 - 120
9582704	99	80 - 120	94	80 - 120	99	80 - 120	98	80 - 120
9582705	97	80 - 120	94	80 - 120	100	80 - 120	97	80 - 120
9582706	101	80 - 120	95	80 - 120	100	80 - 120	98	80 - 120
9582707	98	80 - 120	94	80 - 120	100	80 - 120	97	80 - 120

G181211AA	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
	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits	% Recovery	Limits
Sample								
VBLKG14	100	80 - 120	94	80 - 120	99	80 - 120	98	80 - 120
LCSG14	100	80 - 120	96	80 - 120	100	80 - 120	98	80 - 120
LCDG14	99	80 - 120	95	80 - 120	99	80 - 120	97	80 - 120

SDG: FKP52
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSG13 LCSD: LCDG13 Analyte	Batch: G181203AA (Sample number(s): 9582699-9582707)							
	Spike Added ug/l	LCS Conc ug/l	LCSD Conc ug/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Dichlorodifluoromethane	5.00	4.08	3.92	82	78	23-128	4	30
Chloromethane	5.00	4.31	4.14	86	83	47-120	4	30
Vinyl Chloride	5.00	4.72	4.47	94	89	56-120	5	30
Bromomethane	5.00	5.01	4.78	100	96	62-125	5	30
Chloroethane	5.00	4.70	4.55	94	91	63-120	3	30
Trichlorofluoromethane	5.00	4.78	4.64	96	93	52-143	3	30
Freon 123a	5.00	4.83	4.69	97	94	80-123	3	30
1,1-Dichloroethene	5.00	5.07	5.01	101	100	80-124	1	30
Freon 113	5.00	4.74	4.72	95	94	80-128	0	30
Acetone	37.5	38.18	35	102	93	68-141	9	30
Carbon Disulfide	5.00	4.30	4.21	86	84	72-129	2	30
Methyl Acetate	5.00	5.59	5.01	112	100	59-143	11	30
Methylene Chloride	5.00	4.28	4.25	86	85	80-120	1	30
trans-1,2-Dichloroethene	5.00	4.99	4.91	100	98	80-120	2	30
Methyl Tertiary Butyl Ether	5.00	4.62	4.61	92	92	75-122	0	30
1,1-Dichloroethane	5.00	4.58	4.56	92	91	80-120	1	30
2-Butanone	37.5	40.62	37.4	108	100	59-141	8	30
cis-1,2-Dichloroethene	5.00	4.99	5.02	100	100	80-120	1	30
Chloroform	5.00	4.72	4.69	94	94	80-120	1	30
1,1,1-Trichloroethane	5.00	4.79	4.73	96	95	78-126	1	30
Cyclohexane	5.00	4.53	4.51	91	90	69-120	0	30
Carbon Tetrachloride	5.00	4.88	4.85	98	97	71-139	1	30
Benzene	5.00	4.75	4.71	95	94	80-120	1	30
1,2-Dichloroethane	5.00	4.35	4.35	87	87	68-137	0	30
Trichloroethene	5.00	4.80	4.80	96	96	80-120	0	30
Methylcyclohexane	5.00	4.67	4.61	93	92	80-120	1	30
1,2-Dichloropropane	5.00	4.71	4.69	94	94	80-120	0	30
Bromodichloromethane	5.00	4.71	4.65	94	93	80-125	1	30
cis-1,3-Dichloropropene	5.00	4.74	4.70	95	94	74-122	1	30
4-Methyl-2-pentanone	25	27.13	25.18	109	101	67-140	7	30
Toluene	5.00	4.76	4.70	95	94	80-120	1	30
trans-1,3-Dichloropropene	5.00	4.57	4.60	91	92	71-131	1	30
1,1,2-Trichloroethane	5.00	4.90	4.83	98	97	80-120	1	30
Tetrachloroethene	5.00	4.91	4.87	98	97	80-120	1	30
2-Hexanone	25	28.13	25.82	113	103	61-143	9	30
Dibromochloromethane	5.00	4.79	4.83	96	97	73-135	1	30
1,2-Dibromoethane	5.00	4.82	4.86	96	97	80-120	1	30
Chlorobenzene	5.00	4.75	4.75	95	95	80-120	0	30
Ethylbenzene	5.00	4.69	4.65	94	93	80-120	1	30
Xylene (Total)	15	14.36	14.31	96	95	80-120	0	30
Styrene	5.00	4.89	4.85	98	97	80-120	1	30
Bromoform	5.00	4.71	4.77	94	95	57-141	1	30

SDG: FKP52
Matrix: LIQUID

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSG13 LCSD: LCDG13 Analyte	Batch: G181203AA (Sample number(s): 9582699-9582707)							
	Spike Added ug/l	LCS Conc ug/l	LCSD Conc ug/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Isopropylbenzene	5.00	4.78	4.76	96	95	80-120	0	30
1,1,2,2-Tetrachloroethane	5.00	4.65	4.63	93	93	75-123	1	30
1,3-Dichlorobenzene	5.00	4.74	4.66	95	93	80-120	2	30
1,4-Dichlorobenzene	5.00	4.79	4.73	96	95	80-120	1	30
1,2-Dichlorobenzene	5.00	4.74	4.72	95	94	80-120	1	30
1,2-Dibromo-3-chloropropane	5.00	6.45	5.90	129	118	48-149	9	30
1,2,4-Trichlorobenzene	5.00	4.66	4.58	93	92	74-120	2	30

LCS: LCSG14 LCSD: LCDG14 Analyte	Batch: G181211AA (Sample number(s): 9582704)							
	Spike Added ug/l	LCS Conc ug/l	LCSD Conc ug/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Chloroform	5.00	4.62	4.50	92	90	80-120	3	30

Fraction: Volatiles by GC/MS

11996: VOCs- 25ml Water by 8260C Analyte Name	Default MDL	Default LOQ	Units
Dichlorodifluoromethane	0.1	0.5	ug/l
Chloromethane	0.2	0.5	ug/l
Vinyl Chloride	0.1	0.5	ug/l
Bromomethane	0.1	0.5	ug/l
Chloroethane	0.1	0.5	ug/l
Trichlorofluoromethane	0.1	0.5	ug/l
Freon 123a	0.2	0.5	ug/l
1,1-Dichloroethene	0.1	0.5	ug/l
Freon 113	0.2	0.5	ug/l
Acetone	3.0	5.0	ug/l
Carbon Disulfide	0.4	1.0	ug/l
Methyl Acetate	0.3	1.0	ug/l
Methylene Chloride	0.2	0.5	ug/l
trans-1,2-Dichloroethene	0.1	0.5	ug/l
Methyl Tertiary Butyl Ether	0.1	0.5	ug/l
1,1-Dichloroethane	0.1	0.5	ug/l
2-Butanone	1.0	5.0	ug/l
cis-1,2-Dichloroethene	0.1	0.5	ug/l
Chloroform	0.1	0.5	ug/l
1,1,1-Trichloroethane	0.1	0.5	ug/l
Cyclohexane	0.1	0.5	ug/l
Carbon Tetrachloride	0.1	0.5	ug/l
Benzene	0.1	0.5	ug/l
1,2-Dichloroethane	0.1	0.5	ug/l
Trichloroethene	0.1	0.5	ug/l
Methylcyclohexane	0.1	0.5	ug/l
1,2-Dichloropropane	0.1	0.5	ug/l
Bromodichloromethane	0.1	0.5	ug/l
cis-1,3-Dichloropropene	0.1	0.5	ug/l
4-Methyl-2-pentanone	1.0	5.0	ug/l
Toluene	0.1	0.5	ug/l
trans-1,3-Dichloropropene	0.1	0.5	ug/l
1,1,2-Trichloroethane	0.1	0.5	ug/l
Tetrachloroethene	0.1	0.5	ug/l
2-Hexanone	1.0	5.0	ug/l
Dibromochloromethane	0.1	0.5	ug/l
1,2-Dibromoethane	0.1	0.5	ug/l
Chlorobenzene	0.1	0.5	ug/l
Ethylbenzene	0.1	0.5	ug/l
Xylene (Total)	0.1	0.5	ug/l
Styrene	0.1	0.5	ug/l
Bromoform	0.1	0.5	ug/l
Isopropylbenzene	0.1	0.5	ug/l
1,1,2,2-Tetrachloroethane	0.1	0.5	ug/l
1,3-Dichlorobenzene	0.1	0.5	ug/l
1,4-Dichlorobenzene	0.1	0.5	ug/l
1,2-Dichlorobenzene	0.1	0.5	ug/l

Fraction: Volatiles by GC/MS

11996: VOCs- 25ml Water by 8260C Analyte Name	Default MDL	Default LOQ	Units
1,2-Dibromo-3-chloropropane	0.2	0.5	ug/l
1,2,4-Trichlorobenzene	0.1	0.5	ug/l

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Lab File ID: ga19t01.d BFB Injection Date: 04/19/18
 Instrument ID: HP16334 BFB Injection Time: 11:47
 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	21.74
75	30.0 - 60.0% of mass 95	52.48
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.98
173	Less than 2.0% of mass 174	0.41 (0.47)1
174	Greater than 50.0% of mass 95	86.84
175	5.0 - 9.0% of mass 174	6.17 (7.11)1
176	Greater than 95.0%, but less than 101.0% of mass 174	83.87 (96.58)1
177	5.0 - 9.0% of mass 176	5.61 (6.69)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	ga19i01.d	04/19/18	12:22
02	VSTD10	ga19i02.d	04/19/18	12:44
03	VSTD5	ga19i03.d	04/19/18	13:06
04	VSTD2	ga19i04.d	04/19/18	13:28
05	VSTD1	ga19i05.d	04/19/18	13:51
06	VSTD.5	ga19i06.d	04/19/18	14:14
07	VSTD.2	ga19i07.d	04/19/18	14:37
08	MDL0.1 - MDL0.1	ga19m01.d	04/19/18	14:59
09	LCSG01	ga19v01.d	04/19/18	15:21
10	VSTD25	ga19i11.d	04/19/18	16:06
11	VSTD10	ga19i12.d	04/19/18	16:28
12	VSTD5	ga19i13.d	04/19/18	16:51
13	VSTD2	ga19i14.d	04/19/18	17:13
14	VSTD1	ga19i15.d	04/19/18	17:35
15	VSTD.5	ga19i16.d	04/19/18	17:57
16	VSTD.2	ga19i17.d	04/19/18	18:19
17	MDL0.1 - MDL0.1	ga19m11.d	04/19/18	18:42

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_FKP52_

Lab File ID: ga30t10.d BFB Injection Date: 04/30/18

Instrument ID: HP16334 BFB Injection Time: 20:32

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	19.97
75	30.0 - 60.0% of mass 95	50.34
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.72
173	Less than 2.0% of mass 174	0.78 (0.85)1
174	Greater than 50.0% of mass 95	91.53
175	5.0 - 9.0% of mass 174	7.19 (7.86)1
176	Greater than 95.0%, but less than 101.0% of mass 174	88.89 (97.11)1
177	5.0 - 9.0% of mass 176	6.01 (6.76)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	VSTD50	ga30c10.d	04/30/18	20:51
02	LCSG13	ga30s71.d	04/30/18	21:14
03	LCDG13	ga30s72.d	04/30/18	21:36
04	VBLKG13	ga30b10.d	04/30/18	21:59
05	9569707	ga30s73.d	04/30/18	22:21
06	9569708	ga30s74.d	04/30/18	22:44
07	9570920	ga30s75.d	04/30/18	23:06
08	9575109	ga30s76.d	04/30/18	23:28
09	9578076	ga30s77.d	04/30/18	23:50
10	9581041	ga30s78.d	05/01/18	00:12
11	9582706	ga30s79.d	05/01/18	00:35
12	9569706	ga30s80.d	05/01/18	00:57
13	9582699	ga30s81.d	05/01/18	01:19
14	9582700	ga30s82.d	05/01/18	01:41
15	9582701	ga30s83.d	05/01/18	02:04
16	9582702	ga30s84.d	05/01/18	02:26
17	9582702DL	ga30s85.d	05/01/18	02:48
18	9582703	ga30s86.d	05/01/18	03:11
19	9582704	ga30s87.d	05/01/18	03:33
20	9582705	ga30s88.d	05/01/18	03:55
21	9582707	ga30s89.d	05/01/18	04:18
22	9582707DL	ga30s90.d	05/01/18	04:40

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_FKP52_

Lab File ID: gy0101.d BFB Injection Date: 05/01/18

Instrument ID: HP16334 BFB Injection Time: 06:52

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	20.61
75	30.0 - 60.0% of mass 95	52.55
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.84
173	Less than 2.0% of mass 174	0.26 (0.29)1
174	Greater than 50.0% of mass 95	89.18
175	5.0 - 9.0% of mass 174	6.67 (7.48)1
176	Greater than 95.0%, but less than 101.0% of mass 174	85.13 (95.46)1
177	5.0 - 9.0% of mass 176	5.57 (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	VSTD12.5	gy01c01.d	05/01/18	07:26
02	VSTD12.5	gy01c02.d	05/01/18	07:48
03	LCSG14	gy01l01.d	05/01/18	08:11
04	LCDG14	gy01l02.d	05/01/18	08:33
05	LCSG15	gy01l03.d	05/01/18	08:55
06	LCDG15	gy01l04.d	05/01/18	09:17
07	VBLKG14	gy01b01.d	05/01/18	09:40
08	9573678	gy01s02.d	05/01/18	10:22
09	9573660	gy01s03.d	05/01/18	10:44
10	9573681	gy01s04.d	05/01/18	11:06
11	9573661	gy01s05.d	05/01/18	11:29
12	9569515	gy01s06.d	05/01/18	11:51
13	9569534DL	gy01s07.d	05/01/18	12:13
14	9571206DL	gy01s08.d	05/01/18	12:35
15	9573662	gy01s09.d	05/01/18	12:58
16	9573679	gy01s11.d	05/01/18	13:42
17	9573679DL	gy01s12.d	05/01/18	14:04
18	9573680	gy01s13.d	05/01/18	14:27
19	9573680DL	gy01s14.d	05/01/18	14:49
20	9582704DL	gy01s15.d	05/01/18	15:11

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): 04/19/18 04/19/18

Heated Purge: (Y/N) Y Calibration Times: 12:22 14:37

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID:	RRF0.2= ga19i07.d	RRF0.5= ga19i06.d	RRF 1 = ga19i05.d	RRF 2 = ga19i04.d	RRF 5 = ga19i03.d	RRF 10= ga19i02.d	RRF 25= ga19i01.d				
COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD	
Dichlorodifluoromethane	#0.3259	0.3854	0.3898	0.3804	0.3879	0.3993	0.3570	0.3751	7	AVG	#
Chloromethane	#0.3706	0.4078	0.3901	0.3675	0.3856	0.3786	0.3435	0.3777	5	AVG	#
Vinyl Chloride	#0.3110	0.3477	0.3248	0.3178	0.3313	0.3328	0.3034	0.3241	5	AVG	#
1,3-Butadiene	0.8398	0.8208	0.7810	0.7306	0.6168	0.5643	0.4739	0.6896	20	AVG	
Bromomethane	#0.2093	0.2369	0.2156	0.2132	0.2198	0.2180	0.2042	0.2167	5	AVG	#
Chloroethane	#0.1757	0.2128	0.1834	0.1806	0.1841	0.1839	0.1719	0.1846	7	AVG	#
Dichlorofluoromethane	0.4531	0.4963	0.4510	0.4354	0.4376	0.4357	0.4081	0.4453	6	AVG	
Trichlorofluoromethane	#0.3863	0.4252	0.4305	0.4262	0.4393	0.4402	0.4113	0.4227	4	AVG	#
Ethyl ether	0.2060	0.2080	0.2130	0.2163	0.2188	0.2140	0.1989	0.2107	3	AVG	
Freon 123a	0.2927	0.3179	0.3040	0.2967	0.3009	0.2997	0.2832	0.2993	4	AVG	
Acrolein	1.6692	1.7493	1.6625	1.8028	1.8107	1.7780	1.6192	1.7274	4	AVG	
1,1-Dichloroethene	#0.1979	0.2141	0.2056	0.2177	0.2065	0.2060	0.2010	0.2070	3	AVG	#
Freon 113	#0.2119	0.2311	0.2371	0.2342	0.2402	0.2442	0.2347	0.2333	4	AVG	#
Acetone	#3.0926	2.9920	2.7444	2.8562	2.7807	2.6267	2.4447	2.7910	8	AVG	#
Methyl Iodide	0.3796	0.4232	0.3957	0.3947	0.4118	0.4110	0.3976	0.4020	4	AVG	
Carbon Disulfide	#0.9273	0.8809	0.7997	0.7799	0.7901	0.7965	0.7738	0.8212	7	AVG	#
Allyl Chloride	0.5013	0.4823	0.4724	0.4791	0.4794	0.4769	0.4699	0.4802	2	AVG	
Methyl Acetate	#8.8525	7.5493	7.4423	7.8394	7.8655	7.7279	7.7931	7.8671	6	AVG	#
Methylene Chloride	#0.3700	0.3039	0.2794	0.2588	0.2528	0.2518	0.2425	0.2799	16	AVG	#
t-Butyl Alcohol	1.0510	0.9829	0.9825	0.9540	0.9737	0.8894	0.7895	0.9461	9	AVG	
Acrylonitrile	2.7779	3.0392	2.9966	3.2860	3.3056	3.2410	3.0893	3.1051	6	AVG	
trans-1,2-Dichloroethene	#0.2385	0.2601	0.2372	0.2341	0.2390	0.2415	0.2332	0.2405	4	AVG	#
Methyl Tertiary Butyl Ether	#0.7178	0.7066	0.7068	0.7215	0.7368	0.7374	0.7189	0.7208	2	AVG	#
n-Hexane	0.3797	0.3928	0.4123	0.4132	0.4133	0.4216	0.4106	0.4062	4	AVG	
1,1-Dichloroethane	#0.4680	0.5180	0.4865	0.4928	0.4936	0.4959	0.4796	0.4906	3	AVG	#
di-Isopropyl Ether	0.9920	1.0205	0.9901	1.0008	1.0165	1.0168	0.9959	1.0047	1	AVG	
2-Chloro-1,3-Butadiene	0.4386	0.4726	0.4403	0.4429	0.4494	0.4569	0.4433	0.4491	3	AVG	
Ethyl t-butyl ether	0.8578	0.8811	0.8707	0.8764	0.9051	0.9033	0.8800	0.8820	2	AVG	
cis-1,2-Dichloroethene	#0.2463	0.2840	0.2687	0.2680	0.2756	0.2763	0.2696	0.2698	4	AVG	#
2,2-Dichloropropane	0.3625	0.4156	0.4003	0.3987	0.4132	0.4176	0.4089	0.4024	5	AVG	
2-Butanone	#4.5167	4.7814	4.6804	5.0621	5.0230	4.9159	4.6358	4.8022	4	AVG	#
Propionitrile	1.1059	1.1890	1.1774	1.2130	1.1933	1.2403	1.1927	1.1874	3	AVG	
Methacrylonitrile	3.4434	3.7390	3.5778	3.9524	3.9806	3.9371	3.7105	3.7630	5	AVG	
Bromochloromethane	0.1154	0.1189	0.1232	0.1261	0.1289	0.1284	0.1262	0.1239	4	AVG	
Tetrahydrofuran	1.1135	1.1172	1.0704	1.1943	1.1862	1.1912	1.1291	1.1431	4	AVG	
Chloroform	#0.4596	0.4868	0.4577	0.4628	0.4749	0.4742	0.4676	0.4691	2	AVG	#
1,1,1-Trichloroethane	#0.3691	0.4061	0.3928	0.3969	0.4010	0.4059	0.4017	0.3962	3	AVG	#
Cyclohexane	#0.4528	0.4623	0.4785	0.4774	0.4861	0.4917	0.4779	0.4752	3	AVG	#
Cyclohexane(2)	#0.3452	0.4203	0.3723	0.3692	0.3676	0.3798	0.3650	0.3742	6	AVG	#
Cyclohexane(3)	#0.1329	0.1350	0.1391	0.1387	0.1411	0.1428	0.1388	0.1383	2	AVG	#
1,1-Dichloropropene	0.3477	0.3835	0.3722	0.3676	0.3726	0.3758	0.3666	0.3694	3	AVG	
Carbon Tetrachloride	0.2856	0.3073	0.3203	0.3239	0.3322	0.3439	0.3396	0.3218	6	AVG	#
Isobutyl Alcohol	0.4383	0.3671	0.3791	0.3616	0.3720	0.3696	0.3446	0.3760	8	AVG	
Benzene	#0.9803	1.0835	1.0118	1.0044	1.0195	1.0264	1.0133	1.0199	3	AVG	#
1,2-Dichloroethane	#0.3980	0.3788	0.3532	0.3519	0.3503	0.3479	0.3471	0.3610	5	AVG	#
t-Amyl methyl ether	0.7185	0.7316	0.7491	0.7401	0.7622	0.7711	0.7673	0.7485	3	AVG	
n-Heptane	0.4698	0.4740	0.5052	0.4906	0.4888	0.4961	0.4964	0.4887	3	AVG	
n-Butanol	0.2656	0.2781	0.2921	0.3142	0.3183	0.3157	0.2993	0.2976	7	AVG	
Trichloroethene	#0.2585	0.2752	0.2675	0.2690	0.2702	0.2739	0.2705	0.2693	2	AVG	#
Methylcyclohexane	#0.4074	0.4373	0.4679	0.4675	0.4737	0.4773	0.4698	0.4573	6	AVG	#
1,2-Dichloropropane	#0.2726	0.2891	0.2796	0.2750	0.2896	0.2891	0.2866	0.2831	3	AVG	#
Methyl Methacrylate	5.9467	6.8698	6.9455	7.6033	7.7977	7.6277	7.3776	7.1669	9	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): 04/19/18 04/19/18

Heated Purge: (Y/N) Y Calibration Times: 12:22 14:37

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID: RRF0.2= ga19i07.d RRF0.5= ga19i06.d RRF 1 = ga19i05.d RRF 2 = ga19i04.d RRF 5 = ga19i03.d RRF 10= ga19i02.d RRF 25= ga19i01.d											
COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD	
Dibromomethane	0.1372	0.1320	0.1312	0.1339	0.1358	0.1372	0.1384	0.1351	2	AVG	
1,4-Dioxane	0.0344	0.0418	0.0586	0.0594	0.0574	0.0576	0.0538	0.0519	19	AVG	
Bromodichloromethane	#0.2903	0.3248	0.3228	0.3266	0.3424	0.3538	0.3594	0.3314	7	AVG	#
2-Nitropropane	1.9672	2.1856	2.2404	2.5585	2.7039	2.7869	2.7421	2.4549	13	AVG	
cis-1,3-Dichloropropene	#0.3548	0.3851	0.3900	0.4090	0.4325	0.4422	0.4532	0.4096	9	AVG	#
4-Methyl-2-Pentanone	#10.762	11.580	11.552	12.492	12.461	12.322	11.413	11.797	5	AVG	#
Toluene	#0.8251	0.8989	0.8343	0.8330	0.8466	0.8591	0.8505	0.8496	3	AVG	#
trans-1,3-Dichloropropene	#0.3986	0.4352	0.4385	0.4549	0.4859	0.5025	0.5101	0.4608	9	AVG	#
Ethyl Methacrylate	0.3761	0.3999	0.4022	0.4141	0.4304	0.4431	0.4424	0.4155	6	AVG	
1,1,2-Trichloroethane	#0.2516	0.2606	0.2533	0.2556	0.2564	0.2583	0.2580	0.2562	1	AVG	#
Tetrachloroethene	#0.3785	0.4175	0.3887	0.3903	0.3905	0.3983	0.3944	0.3940	3	AVG	#
1,3-Dichloropropane	0.4783	0.4643	0.4576	0.4651	0.4666	0.4709	0.4647	0.4668	1	AVG	
2-Hexanone	#7.3596	8.0145	8.2036	8.8413	8.9232	8.6905	8.0102	8.2918	7	AVG	#
Dibromochloromethane	#0.2270	0.2519	0.2687	0.2805	0.3022	0.3182	0.3280	0.2823	13	AVG	#
1,2-Dibromoethane	#0.2438	0.2344	0.2371	0.2433	0.2493	0.2525	0.2530	0.2448	3	AVG	#
Chlorobenzene	#0.9363	1.0110	0.9820	0.9643	0.9684	0.9819	0.9683	0.9732	2	AVG	#
1,1,1,2-Tetrachloroethane	0.2819	0.3055	0.3139	0.3243	0.3389	0.3516	0.3586	0.3249	8	AVG	
Ethylbenzene	#1.6135	1.7797	1.6975	1.6669	1.6839	1.7070	1.6693	1.6882	3	AVG	#
m+p-Xylene	#0.6120	0.6486	0.6372	0.6400	0.6461	0.6604	0.6551	0.6428	2	AVG	#
o-Xylene	#0.5999	0.6564	0.6296	0.6282	0.6537	0.6662	0.6765	0.6443	4	AVG	#
Styrene	#0.9311	1.0323	1.0479	1.0500	1.0854	1.1192	1.1374	1.0576	6	AVG	#
Bromoform	#0.1209	0.1397	0.1483	0.1566	0.1768	0.1902	0.2047	0.1625	18	AVG	#
Isopropylbenzene	#1.5169	1.7537	1.6768	1.6656	1.6998	1.7256	1.7103	1.6784	5	AVG	#
1,1,2,2-Tetrachloroethane	#0.5664	0.5567	0.5904	0.5790	0.6022	0.6104	0.6089	0.5877	4	AVG	#
Bromobenzene	0.7392	0.7694	0.7764	0.7478	0.7770	0.7932	0.7997	0.7718	3	AVG	
1,2,3-Trichloropropane	0.1606	0.1609	0.1672	0.1632	0.1660	0.1688	0.1633	0.1643	2	AVG	
n-Propylbenzene	3.4254	3.7711	3.6587	3.5339	3.6344	3.6506	3.4840	3.5940	3	AVG	
2-Chlorotoluene	0.7136	0.7328	0.7264	0.6888	0.7233	0.7232	0.7123	0.7172	2	AVG	
1,3,5-Trimethylbenzene	2.4140	2.6174	2.6023	2.5172	2.6053	2.6603	2.5971	2.5734	3	AVG	
4-Chlorotoluene	0.7159	0.7522	0.7520	0.7431	0.7575	0.7613	0.7521	0.7477	2	AVG	
tert-Butylbenzene	0.4805	0.5800	0.5373	0.5283	0.5343	0.5473	0.5524	0.5372	6	AVG	
Pentachloroethane	0.3251	0.3651	0.3805	0.4112	0.4549	0.4750	0.5077	0.4171	16	AVG	
1,2,4-Trimethylbenzene	2.4471	2.5690	2.6518	2.6057	2.6909	2.7186	2.6895	2.6246	4	AVG	
sec-Butylbenzene	2.9712	3.3207	3.3232	3.2134	3.3592	3.3897	3.3033	3.2687	4	AVG	
1,3-Dichlorobenzene	#1.4423	1.5023	1.5557	1.4958	1.5561	1.5852	1.5995	1.5338	4	AVG	#
p-Isopropyltoluene	2.6293	2.8485	2.8826	2.7928	2.8965	2.9740	2.9481	2.8531	4	AVG	
1,4-Dichlorobenzene	#1.5214	1.5575	1.5678	1.5253	1.5761	1.5896	1.6063	1.5634	2	AVG	#
1,2,3-Trimethylbenzene	1.1477	1.1751	1.1728	1.1483	1.1924	1.2033	1.2212	1.1801	2	AVG	
Benzyl Chloride		0.1592	0.1818	0.2064	0.2260	0.2471	0.2605	0.2135	18	AVG	
n-Butylbenzene	1.4296	1.5446	1.5873	1.4956	1.5497	1.5756	1.5630	1.5351	4	AVG	
1,2-Dichlorobenzene	#1.3802	1.4253	1.4498	1.4110	1.4656	1.5003	1.4987	1.4473	3	AVG	#
1,2-Dibromo-3-chloropropane	#1.4739	1.5366	1.6541	1.7877	1.8841	2.0057	2.0577	1.7714	13	AVG	#
1,3,5-Trichlorobenzene	1.1970	1.2626	1.3112	1.2520	1.2924	1.3224	1.3416	1.2828	4	AVG	
1,2,4-Trichlorobenzene	#1.1159	1.1528	1.2143	1.1614	1.2060	1.2348	1.2450	1.1900	4	AVG	#
Hexachlorobutadiene	0.5887	0.6422	0.6523	0.6077	0.6235	0.6380	0.6381	0.6272	4	AVG	
Naphthalene	1.8702	1.8787	2.0217	1.9833	2.0350	2.0796	2.0560	1.9892	4	AVG	
1,2,3-Trichlorobenzene	0.9453	0.9623	1.0642	1.0094	1.0289	1.0526	1.0597	1.0175	5	AVG	
Dibromofluoromethane	0.2504	0.2499	0.2519	0.2518	0.2530	0.2529	0.2504	0.2515	1	AVG	
Dibromofluoromethane(2)	0.2587	0.2576	0.2588	0.2582	0.2601	0.2604	0.2564	0.2586	1	AVG	
1,2-Dichloroethane-d4	0.0533	0.0528	0.0543	0.0538	0.0537	0.0528	0.0524	0.0533	1	AVG	
1,2-Dichloroethane-d4(2)	0.3082	0.3073	0.3076	0.3018	0.2997	0.2998	0.2962	0.3029	2	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): 04/19/18 04/19/18

Heated Purge: (Y/N) Y Calibration Times: 12:22 14:37

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

LAB FILE ID:		RRF0.2= ga19i07.d		RRF0.5= ga19i06.d		RRF 1 = ga19i05.d					
RRF 2 = ga19i04.d		RRF 5 = ga19i03.d		RRF 10= ga19i02.d		RRF 25= ga19i01.d					
COMPOUND	RRF0.2	RRF0.5	RRF 1	RRF 2	RRF 5	RRF 10	RRF 25	RRF	% RSD	CAL. METHOD	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
1,2-Dichloroethane-d4(3)	0.0334	0.0334	0.0338	0.0338	0.0327	0.0317	0.0337	0.0332	2	AVG	
Toluene-d8	1.3463	1.3514	1.3329	1.3478	1.3322	1.3425	1.3347	1.3411	1	AVG	
Toluene-d8(2)	0.8516	0.8548	0.8521	0.8555	0.8460	0.8567	0.8568	0.8534	0	AVG	
4-Bromofluorobenzene	0.5126	0.5172	0.5157	0.5099	0.5108	0.5142	0.5129	0.5133	1	AVG	
4-Bromofluorobenzene(2)	0.4359	0.4386	0.4383	0.4408	0.4359	0.4415	0.4398	0.4387	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/HP16334.i/18apr19i.b/ga19i01.d	VSTD025
/chem2/HP16334.i/18apr19i.b/ga19i02.d	VSTD010
/chem2/HP16334.i/18apr19i.b/ga19i03.d	VSTD005
/chem2/HP16334.i/18apr19i.b/ga19i04.d	VSTD002
/chem2/HP16334.i/18apr19i.b/ga19i05.d	VSTD001
/chem2/HP16334.i/18apr19i.b/ga19i06.d	VSTD0.5
/chem2/HP16334.i/18apr19i.b/ga19i07.d	VSTD0.2

Area Summary

File ID:

=====

Internal Standard Name	ga19i01.d	ga19i02.d	ga19i03.d	ga19i04.d	ga19i05.d	ga19i06.d	ga19i07.d	Avg. Area	%RSD	In Spec
t-Butyl Alcohol-d10	221249	219199	212064	210083	224043	211767	225587	217713	3	Yes
Fluorobenzene	2071999	2172211	2151089	2150008	2094201	2057002	2046775	2106184	2	Yes
Chlorobenzene-d5	1603608	1651185	1639809	1622110	1587578	1537140	1539514	1597278	3	Yes
1,4-Dichlorobenzene-d4	918007	931947	919901	922950	894690	865930	862291	902245	3	Yes

%RSD of internal standard area is flagged out of spec if greater than 30.

RT Summary

File ID:

=====

Internal Standard Name	ga19i01.d	ga19i02.d	ga19i03.d	ga19i04.d	ga19i05.d	ga19i06.d	ga19i07.d	Avg. RT
t-Butyl Alcohol-d10	3.946	3.952	3.971	3.946	3.958	3.952	3.946	3.953
Fluorobenzene	7.482	7.482	7.488	7.482	7.482	7.482	7.476	7.482
Chlorobenzene-d5	11.018	11.018	11.018	11.018	11.018	11.018	11.018	11.018
1,4-Dichlorobenzene-d4	12.914	12.914	12.914	12.914	12.914	12.914	12.914	12.914

* indicates the retention time is greater than 30 seconds from the average RT.

Report generated on 04/19/2018 at 20:12.

INITIAL CALIBRATION VERIFICATION

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Instrument ID: HP16334 ICV Date: 04/19/18 Time: 15:21
 Lab File ID: ga19v01.d Init. Calib. Date(s): 04/19/18 04/19/18
 Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT
# Dichlorodifluoromethane	0.3751	0.3146	4.19	5	-16 #
# Chloromethane	0.3777	0.3276	4.34	5	-13 #
# Vinyl Chloride	0.3241	0.3007	4.64	5	-7 #
# 1,3-Butadiene	0.6896	0.4860	3.52	5	-30 #
# Bromomethane	0.2167	0.2083	4.81	5	-4 #
# Chloroethane	0.1846	0.1724	4.67	5	-7 #
# Dichlorofluoromethane	0.4453	0.4365	4.90	5	-2 #
# Trichlorofluoromethane	0.4227	0.4201	4.97	5	-1 #
# Ethyl ether	0.2107	0.2231	5.29	5	6
# Freon 123a	0.2993	0.3088	5.16	5	3
# Acrolein	1.7274	1.7358	37.68	37.5	0
# 1,1-Dichloroethene	0.2070	0.2140	5.17	5	3 #
# Freon 113	0.2333	0.2303	4.94	5	-1 #
# Acetone	2.7910	2.6931	36.18	37.5	-4 #
# Methyl Iodide	0.4020	0.3810	4.74	5	-5
# Carbon Disulfide	0.8212	0.7399	4.51	5	-10 #
# Allyl Chloride	0.4802	0.4881	5.08	5	2
# Methyl Acetate	7.8671	7.4233	4.72	5	-6 #
# Methylene Chloride	0.2799	0.2513	4.49	5	-10 #
# t-Butyl Alcohol	0.9461	0.9308	49.19	50	-2
# Acrylonitrile	3.1051	3.2821	26.43	25	6
# trans-1,2-Dichloroethene	0.2405	0.2472	5.14	5	3 #
# Methyl Tertiary Butyl Ether	0.7208	0.7137	4.95	5	-1 #
# n-Hexane	0.4062	0.4025	4.95	5	-1
# 1,1-Dichloroethane	0.4906	0.4975	5.07	5	1 #
# di-Isopropyl Ether	1.0047	1.0411	5.18	5	4
# 2-Chloro-1,3-Butadiene	0.4491	0.4538	5.05	5	1
# Ethyl t-butyl ether	0.8820	0.8897	5.04	5	1
# cis-1,2-Dichloroethene	0.2698	0.2840	5.26	5	5 #
# 2,2-Dichloropropane	0.4024	0.4115	5.11	5	2
# 2-Butanone	4.8022	4.9760	38.86	37.5	4 #
# Propionitrile	1.1874	1.1967	37.79	37.5	1
# Methacrylonitrile	3.7630	3.9286	39.15	37.5	4
# Bromochloromethane	0.1239	0.1247	5.03	5	1
# Tetrahydrofuran	1.1431	1.1603	25.38	25	2
# Chloroform	0.4691	0.4740	5.05	5	1 #

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: 04/19/18 Time: 15:21
 Lab File ID: ga19v01.d Init. Calib. Date(s): 04/19/18 04/19/18
 Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT
# 1,1,1-Trichloroethane	0.3962	0.4011	5.06	5	1 #
# Cyclohexane	0.4752	0.4878	5.13	5	3 #
# 1,1-Dichloropropene	0.3694	0.3669	4.97	5	-1 #
# Carbon Tetrachloride	0.3218	0.3282	5.10	5	2 #
# Isobutyl Alcohol	0.3760	0.3671	122.05	125	-2 #
# Benzene	1.0199	1.0319	5.06	5	1 #
# 1,2-Dichloroethane	0.3610	0.3482	4.82	5	-4 #
# t-Amyl methyl ether	0.7485	0.7636	5.10	5	2 #
# n-Heptane	0.4887	0.4950	5.06	5	1 #
# n-Butanol	0.2976	0.3068	257.68	250	3 #
# Trichloroethene	0.2693	0.2712	5.04	5	1 #
# Methylcyclohexane	0.4573	0.4711	5.15	5	3 #
# 1,2-Dichloropropane	0.2831	0.2944	5.20	5	4 #
# Methyl Methacrylate	7.1669	7.5741	5.28	5	6 #
# Dibromomethane	0.1351	0.1373	5.08	5	2 #
# 1,4-Dioxane	0.0519	0.0632	152.35	125	22 #
# Bromodichloromethane	0.3314	0.3378	5.10	5	2 #
# 2-Nitropropane	2.4549	2.2953	4.67	5	-7 #
# cis-1,3-Dichloropropene	0.4096	0.4170	5.09	5	2 #
# 4-Methyl-2-Pentanone	11.7970	12.3982	26.27	25	5 #
# Toluene	0.8496	0.8611	5.07	5	1 #
# trans-1,3-Dichloropropene	0.4608	0.4713	5.11	5	2 #
# Ethyl Methacrylate	0.4155	0.4272	5.14	5	3 #
# 1,1,2-Trichloroethane	0.2562	0.2637	5.15	5	3 #
# Tetrachloroethene	0.3940	0.3989	5.06	5	1 #
# 1,3-Dichloropropane	0.4668	0.4722	5.06	5	1 #
# 2-Hexanone	8.2918	8.9620	27.02	25	8 #
# Dibromochloromethane	0.2823	0.2901	5.14	5	3 #
# 1,2-Dibromoethane	0.2448	0.2534	5.18	5	4 #
# Chlorobenzene	0.9732	0.9776	5.02	5	0 #
# 1,1,1,2-Tetrachloroethane	0.3249	0.3344	5.15	5	3 #
# Ethylbenzene	1.6882	1.7165	5.08	5	2 #
# m+p-Xylene	0.6428	0.6617	10.29	10	3 #
# o-Xylene	0.6443	0.6551	5.08	5	2 #
# Styrene	1.0576	1.1044	5.22	5	4 #
# Bromoform	0.1625	0.1627	5.01	5	0 #

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: 04/19/18 Time: 15:21
 Lab File ID: ga19v01.d Init. Calib. Date(s): 04/19/18 04/19/18
 Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF	ACTUAL CONC.	TRUE CONC.	% DRIFT
# Isopropylbenzene	1.6784	1.7320	5.16	5	3 #
# 1,1,2,2-Tetrachloroethane	0.5877	0.5868	4.99	5	0 #
Bromobenzene	0.7718	0.7612	4.93	5	-1
1,2,3-Trichloropropane	0.1643	0.1698	5.17	5	3
n-Propylbenzene	3.5940	3.6355	5.06	5	1
2-Chlorotoluene	0.7172	0.7072	4.93	5	-1
1,3,5-Trimethylbenzene	2.5734	2.5826	5.02	5	0
4-Chlorotoluene	0.7477	0.7485	5.01	5	0
tert-Butylbenzene	0.5372	0.5376	5.00	5	0
Pentachloroethane	0.4171	0.4298	5.15	5	3
1,2,4-Trimethylbenzene	2.6246	2.6637	5.07	5	1
sec-Butylbenzene	3.2687	3.3588	5.14	5	3
# 1,3-Dichlorobenzene	1.5338	1.5175	4.95	5	-1 #
p-Isopropyltoluene	2.8531	2.9287	5.13	5	3
# 1,4-Dichlorobenzene	1.5634	1.5616	4.99	5	0 #
1,2,3-Trimethylbenzene	1.1801	1.2116	5.13	5	3
Benzyl Chloride	0.2135	0.2187	5.12	5	2
n-Butylbenzene	1.5351	1.5299	4.98	5	0
# 1,2-Dichlorobenzene	1.4473	1.4475	5.00	5	0 #
# 1,2-Dibromo-3-chloropropane	1.7714	1.9198	5.42	5	8 #
1,3,5-Trichlorobenzene	1.2828	1.2607	4.91	5	-2
# 1,2,4-Trichlorobenzene	1.1900	1.1608	4.88	5	-2 #
Hexachlorobutadiene	0.6272	0.6187	4.93	5	-1
Naphthalene	1.9892	1.9533	4.91	5	-2
1,2,3-Trichlorobenzene	1.0175	1.0075	4.95	5	-1

Average %Drift 3

Compounds with required minimum RRF.
 Maximum % Drift = 30 %

Lancaster Laboratories

Continuing Calibration Internal Standard Check

Initial Calibration Standards:

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/chem2/HP16334.i/18apr19i.b/ga19i07.d
/chem2/HP16334.i/18apr19i.b/ga19i06.d
/chem2/HP16334.i/18apr19i.b/ga19i05.d
/chem2/HP16334.i/18apr19i.b/ga19i04.d
/chem2/HP16334.i/18apr19i.b/ga19i03.d
/chem2/HP16334.i/18apr19i.b/ga19i02.d
/chem2/HP16334.i/18apr19i.b/ga19i01.d

```

File /chem2/HP16334.i/18apr19i.b/ga19i02.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP16334.i/18apr30b.b/ga30c10.d

RT Summary

File ID:

=====

Internal Standard Name	ga30c10.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	3.946	3.952	Yes
Fluorobenzene	7.476	7.482	Yes
Chlorobenzene-d5	11.012	11.018	Yes
1,4-Dichlorobenzene-d4	12.896	12.914	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

File ID:

=====

Internal Standard Name	ga30c10.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	190756	219199	109600	438398	Yes
Fluorobenzene	2207952	2172211	1086106	4344422	Yes
Chlorobenzene-d5	1775076	1651185	825592	3302370	Yes
1,4-Dichlorobenzene-d4	1027718	931947	465974	1863894	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments:

report generated on 04/30/2018 at 21:17

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 04/30/18 Time: 20:51

Lab File ID: ga30c10.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT
# Dichlorodifluoromethane	0.3751	0.3333	8.89	10	-11 #
# Chloromethane	0.3777	0.3375	8.94	10	-11 #
# Vinyl Chloride	0.3241	0.3125	9.64	10	-4 #
1,3-Butadiene	0.6896	0.5264	7.63	10	-24 <-
# Bromomethane	0.2167	0.2118	9.78	10	-2 #
# Chloroethane	0.1846	0.1753	9.50	10	-5 #
Dichlorofluoromethane	0.4453	0.4377	9.83	10	-2
# Trichlorofluoromethane	0.4227	0.3989	9.44	10	-6 #
Ethyl ether	0.2107	0.1848	8.77	10	-12
Freon 123a	0.2993	0.2640	8.82	10	-12
Acrolein	1.7274	1.8856	545.79	500	9
# 1,1-Dichloroethene	0.2070	0.1904	9.20	10	-8 #
# Freon 113	0.2333	0.2199	9.42	10	-6 #
# Acetone	2.7910	2.7061	96.96	100	-3 #
Methyl Iodide	0.4020	0.3885	9.67	10	-3
# Carbon Disulfide	0.8212	0.7114	8.66	10	-13 #
Allyl Chloride	0.4802	0.4021	8.37	10	-16
# Methyl Acetate	7.8671	7.6499	9.72	10	-3 #
# Methylene Chloride	0.2799	0.2256	8.06	10	-19 #
t-Butyl Alcohol	0.9461	0.9493	200.67	200	0
Acrylonitrile	3.1051	3.2579	52.46	50	5
# trans-1,2-Dichloroethene	0.2405	0.2264	9.41	10	-6 #
# Methyl Tertiary Butyl Ether	0.7208	0.6560	9.10	10	-9 #
n-Hexane	0.4062	0.3527	8.68	10	-13
# 1,1-Dichloroethane	0.4906	0.4346	8.86	10	-11 #
di-Isopropyl Ether	1.0047	0.8650	8.61	10	-14
2-Chloro-1,3-Butadiene	0.4491	0.4042	9.00	10	-10
Ethyl t-butyl ether	0.8820	0.7839	8.89	10	-11
# cis-1,2-Dichloroethene	0.2698	0.2604	9.65	10	-3 #
2,2-Dichloropropane	0.4024	0.3707	9.21	10	-8
# 2-Butanone	4.8022	4.9416	102.90	100	3 #
Propionitrile	1.1874	1.2926	217.73	200	9
Methacrylonitrile	3.7630	4.3070	114.46	100	14
Bromochloromethane	0.1239	0.1273	10.27	10	3
Tetrahydrofuran	1.1431	1.2741	111.46	100	11
# Chloroform	0.4691	0.4417	9.42	10	-6 #

Compounds with required minimum RRF.

All compounds must meet a maximum % Drift of 20.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 04/30/18 Time: 20:51

Lab File ID: ga30c10.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT
# 1,1,1-Trichloroethane	0.3962	0.3752	9.47	10	-5 #
# Cyclohexane	0.4752	0.4266	8.98	10	-10 #
# Cyclohexane(2)	0.3742	0.3428	9.16	10	-8 #
# Cyclohexane(3)	0.1383	0.1259	9.10	10	-9 #
1,1-Dichloropropene	0.3694	0.3463	9.37	10	-6
# Carbon Tetrachloride	0.3218	0.3131	9.73	10	-3 #
Isobutyl Alcohol	0.3760	0.3880	515.92	500	3
# Benzene	1.0199	0.9707	9.52	10	-5 #
# 1,2-Dichloroethane	0.3610	0.3168	8.77	10	-12 #
t-Amyl methyl ether	0.7485	0.6999	9.35	10	-7
n-Heptane	0.4887	0.4212	8.62	10	-14
n-Butanol	0.2976	0.3448	1158.42	1000	16
# Trichloroethene	0.2693	0.2628	9.76	10	-2 #
# Methylcyclohexane	0.4573	0.4421	9.67	10	-3 #
# 1,2-Dichloropropane	0.2831	0.2662	9.40	10	-6 #
Methyl Methacrylate	7.1669	8.2499	11.51	10	15
Dibromomethane	0.1351	0.1313	9.72	10	-3
1,4-Dioxane	0.0519	0.0748	720.92	500	44 <-
# Bromodichloromethane	0.3314	0.3244	9.79	10	-2 #
2-Nitropropane	2.4549	2.6102	106.33	100	6
# cis-1,3-Dichloropropene	0.4096	0.4083	9.97	10	0 #
# 4-Methyl-2-Pentanone	11.7970	12.5577	106.45	100	6 #
# Toluene	0.8496	0.8015	9.43	10	-6 #
# trans-1,3-Dichloropropene	0.4608	0.4359	9.46	10	-5 #
Ethyl Methacrylate	0.4155	0.3864	9.30	10	-7
# 1,1,2-Trichloroethane	0.2562	0.2412	9.41	10	-6 #
# Tetrachloroethene	0.3940	0.3834	9.73	10	-3 #
1,3-Dichloropropane	0.4668	0.4238	9.08	10	-9
# 2-Hexanone	8.2918	8.9842	108.35	100	8 #
# Dibromochloromethane	0.2823	0.2807	9.94	10	-1 #
# 1,2-Dibromoethane	0.2448	0.2392	9.77	10	-2 #
# Chlorobenzene	0.9732	0.9336	9.59	10	-4 #
1,1,1,2-Tetrachloroethane	0.3249	0.3224	9.92	10	-1
# Ethylbenzene	1.6882	1.5925	9.43	10	-6 #
# m+p-Xylene	0.6428	0.6277	19.53	20	-2 #
# o-Xylene	0.6443	0.6336	9.83	10	-2 #

Compounds with required minimum RRF.

All compounds must meet a maximum % Drift of 20.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 04/30/18 Time: 20:51

Lab File ID: ga30c10.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====					
# Styrene	1.0576	1.0637	10.06	10	1 #
# Bromoform	0.1625	0.1677	10.32	10	3 #
# Isopropylbenzene	1.6784	1.6304	9.71	10	-3 #
# 1,1,2,2-Tetrachloroethane	0.5877	0.5686	9.67	10	-3 #
Bromobenzene	0.7718	0.7538	9.77	10	-2
1,2,3-Trichloropropane	0.1643	0.1546	9.41	10	-6
n-Propylbenzene	3.5940	3.3606	9.35	10	-6
2-Chlorotoluene	0.7172	0.6795	9.47	10	-5
1,3,5-Trimethylbenzene	2.5734	2.4462	9.51	10	-5
4-Chlorotoluene	0.7477	0.7263	9.71	10	-3
tert-Butylbenzene	0.5372	0.5833	10.86	10	9
Pentachloroethane	0.4171	0.4384	10.51	10	5
1,2,4-Trimethylbenzene	2.6246	2.5140	9.58	10	-4
sec-Butylbenzene	3.2687	3.1567	9.66	10	-3
# 1,3-Dichlorobenzene	1.5338	1.5159	9.88	10	-1 #
p-Isopropyltoluene	2.8531	2.7700	9.71	10	-3
# 1,4-Dichlorobenzene	1.5634	1.5298	9.79	10	-2 #
1,2,3-Trimethylbenzene	1.1801	1.1308	9.58	10	-4
Benzyl Chloride	0.2135	0.2180	10.21	10	2
n-Butylbenzene	1.5351	1.4568	9.49	10	-5
# 1,2-Dichlorobenzene	1.4473	1.4248	9.84	10	-2 #
# 1,2-Dibromo-3-chloropropane	1.7714	2.3448	13.24	10	32 #<-
1,3,5-Trichlorobenzene	1.2828	1.2592	9.82	10	-2
# 1,2,4-Trichlorobenzene	1.1900	1.1518	9.68	10	-3 #
Hexachlorobutadiene	0.6272	0.5929	9.45	10	-5
Naphthalene	1.9892	1.9156	9.63	10	-4
1,2,3-Trichlorobenzene	1.0175	0.9896	9.73	10	-3
=====					
Dibromofluoromethane	0.2515	0.0252	10.03	10	0
Dibromofluoromethane(2)	0.2586	0.0257	9.94	10	-1
1,2-Dichloroethane-d4	0.0533	0.0053	10.01	10	0
1,2-Dichloroethane-d4(2)	0.3029	0.0281	9.28	10	-7
1,2-Dichloroethane-d4(3)	0.0332	0.0034	10.16	10	2
Toluene-d8	1.3411	0.1297	9.67	10	-3
Toluene-d8(2)	0.8534	0.0829	9.71	10	-3
4-Bromofluorobenzene	0.5133	0.0494	9.61	10	-4

Compounds with required minimum RRF.

All compounds must meet a maximum % Drift of 20.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 04/30/18 Time: 20:51

Lab File ID: ga30c10.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF50	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====	=====	=====	=====	=====	=====
4-Bromofluorobenzene(2)	0.4387	0.0451	10.29	10	3

Average %Drift 6

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/HP16334.i/18apr19i.b/ga19i07.d
/chem2/HP16334.i/18apr19i.b/ga19i06.d
/chem2/HP16334.i/18apr19i.b/ga19i05.d
/chem2/HP16334.i/18apr19i.b/ga19i04.d
/chem2/HP16334.i/18apr19i.b/ga19i03.d
/chem2/HP16334.i/18apr19i.b/ga19i02.d
/chem2/HP16334.i/18apr19i.b/ga19i01.d

File /chem2/HP16334.i/18apr19i.b/ga19i02.d is Mid Level Calibration Standard used for comparison.

Current Continuing Calibration Standard:

/chem2/HP16334.i/18may01a.b/gy01c01.d

RT Summary

File ID:

=====

Internal Standard Name	gy01c01.d	ICAL RT	In Spec
t-Butyl Alcohol-d10	3.958	3.952	Yes
Fluorobenzene	7.488	7.482	Yes
Chlorobenzene-d5	11.012	11.018	Yes
1,4-Dichlorobenzene-d4	12.902	12.914	Yes

A "No" indicates the retention time is greater than 10 seconds from the referenced ICAL standard.

Area Summary

File ID:

=====

Internal Standard Name	gy01c01.d	ICAL Area	Low Limit	High Limit	In Spec
t-Butyl Alcohol-d10	193330	219199	109600	438398	Yes
Fluorobenzene	2246771	2172211	1086106	4344422	Yes
Chlorobenzene-d5	1813084	1651185	825592	3302370	Yes
1,4-Dichlorobenzene-d4	1043460	931947	465974	1863894	Yes

A "No" indicates the internal standard area is outside acceptable QC limits.

Comments:

report generated on 05/01/2018 at 08:03

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 05/01/18 Time: 07:26

Lab File ID: gy01c01.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF 12.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====	=====	=====	=====	=====	=====
# Dichlorodifluoromethane	0.3751	0.3345	11.15	12.5	-11 #
# Chloromethane	0.3777	0.3346	11.08	12.5	-11 #
# Vinyl Chloride	0.3241	0.3023	11.66	12.5	-7 #
1,3-Butadiene	0.6896	0.5173	9.38	12.5	-25 <-
# Bromomethane	0.2167	0.2058	11.87	12.5	-5 #
# Chloroethane	0.1846	0.1712	11.59	12.5	-7 #
Dichlorofluoromethane	0.4453	0.4261	11.96	12.5	-4
# Trichlorofluoromethane	0.4227	0.4055	11.99	12.5	-4 #
Ethyl ether	0.2107	0.1839	10.91	12.5	-13
Freon 123a	0.2993	0.2608	10.89	12.5	-13
Acrolein	1.7274	1.8816	680.80	625	9
# 1,1-Dichloroethene	0.2070	0.1887	11.40	12.5	-9 #
# Freon 113	0.2333	0.2233	11.96	12.5	-4 #
# Acetone	2.7910	2.6190	117.30	125	-6 #
Methyl Iodide	0.4020	0.3883	12.08	12.5	-3
# Carbon Disulfide	0.8212	0.7030	10.70	12.5	-14 #
Allyl Chloride	0.4802	0.3997	10.40	12.5	-17
# Methyl Acetate	7.8671	8.7891	13.96	12.5	12 #
# Methylene Chloride	0.2799	0.2234	9.98	12.5	-20 #
t-Butyl Alcohol	0.9461	0.9026	238.49	250	-5
Acrylonitrile	3.1051	3.2436	65.29	62.5	4
# trans-1,2-Dichloroethene	0.2405	0.2227	11.57	12.5	-7 #
# Methyl Tertiary Butyl Ether	0.7208	0.6518	11.30	12.5	-10 #
n-Hexane	0.4062	0.3609	11.11	12.5	-11
# 1,1-Dichloroethane	0.4906	0.4311	10.98	12.5	-12 #
di-Isopropyl Ether	1.0047	0.8586	10.68	12.5	-15
2-Chloro-1,3-Butadiene	0.4491	0.3956	11.01	12.5	-12
Ethyl t-butyl ether	0.8820	0.7766	11.01	12.5	-12
# cis-1,2-Dichloroethene	0.2698	0.2585	11.98	12.5	-4 #
2,2-Dichloropropane	0.4024	0.3695	11.48	12.5	-8
# 2-Butanone	4.8022	4.9630	129.18	125	3 #
Propionitrile	1.1874	1.2848	270.52	250	8
Methacrylonitrile	3.7630	4.3415	144.22	125	15
Bromochloromethane	0.1239	0.1264	12.75	12.5	2
Tetrahydrofuran	1.1431	1.2839	140.40	125	12
# Chloroform	0.4691	0.4367	11.64	12.5	-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: 05/01/18 Time: 07:26
 Lab File ID: gy01c01.d Init. Calib. Date(s): 04/19/18 04/19/18
 Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF 12.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====					
# 1,1,1-Trichloroethane	0.3962	0.3711	11.71	12.5	-6 #
# Cyclohexane	0.4752	0.4318	11.36	12.5	-9 #
# Cyclohexane(2)	0.3742	0.3465	11.57	12.5	-7 #
# Cyclohexane(3)	0.1383	0.1273	11.50	12.5	-8 #
1,1-Dichloropropene	0.3694	0.3405	11.52	12.5	-8
# Carbon Tetrachloride	0.3218	0.3132	12.16	12.5	-3 #
Isobutyl Alcohol	0.3760	0.3758	624.60	625	0
# Benzene	1.0199	0.9578	11.74	12.5	-6 #
# 1,2-Dichloroethane	0.3610	0.3097	10.72	12.5	-14 #
t-Amyl methyl ether	0.7485	0.6979	11.65	12.5	-7
n-Heptane	0.4887	0.4271	10.92	12.5	-13
n-Butanol	0.2976	0.3280	1377.74	1250	10
# Trichloroethene	0.2693	0.2605	12.09	12.5	-3 #
# Methylcyclohexane	0.4573	0.4537	12.40	12.5	-1 #
# 1,2-Dichloropropane	0.2831	0.2630	11.61	12.5	-7 #
Methyl Methacrylate	7.1669	8.3798	14.62	12.5	17
Dibromomethane	0.1351	0.1309	12.11	12.5	-3
1,4-Dioxane	0.0519	0.0660	794.88	625	27 <-
# Bromodichloromethane	0.3314	0.3249	12.25	12.5	-2 #
2-Nitropropane	2.4549	2.6349	134.16	125	7
# cis-1,3-Dichloropropene	0.4096	0.4070	12.42	12.5	-1 #
# 4-Methyl-2-Pentanone	11.7970	12.5328	132.79	125	6 #
# Toluene	0.8496	0.7879	11.59	12.5	-7 #
# trans-1,3-Dichloropropene	0.4608	0.4335	11.76	12.5	-6 #
Ethyl Methacrylate	0.4155	0.3877	11.67	12.5	-7
# 1,1,2-Trichloroethane	0.2562	0.2390	11.66	12.5	-7 #
# Tetrachloroethene	0.3940	0.3825	12.13	12.5	-3 #
1,3-Dichloropropane	0.4668	0.4201	11.25	12.5	-10
# 2-Hexanone	8.2918	8.9425	134.81	125	8 #
# Dibromochloromethane	0.2823	0.2861	12.67	12.5	1 #
# 1,2-Dibromoethane	0.2448	0.2371	12.11	12.5	-3 #
# Chlorobenzene	0.9732	0.9206	11.82	12.5	-5 #
1,1,1,2-Tetrachloroethane	0.3249	0.3231	12.43	12.5	-1
# Ethylbenzene	1.6882	1.5696	11.62	12.5	-7 #
# m+p-Xylene	0.6428	0.6202	24.12	25	-4 #
# o-Xylene	0.6443	0.6258	12.14	12.5	-3 #

Compounds with required minimum RRF.
 All compounds must meet a maximum % Drift of 20.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories

Contract: _____

Lab Code: LANCAS

Case No.: _____

SAS No.: _____

SDG No.: _____

Instrument ID: HP16334

Calibration Date: 05/01/18

Time: 07:26

Lab File ID: gy01c01.d

Init. Calib. Date(s): 04/19/18

04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF 12.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====					
# Styrene	1.0576	1.0485	12.39	12.5	-1 #
# Bromoform	0.1625	0.1714	13.19	12.5	6 #
# Isopropylbenzene	1.6784	1.6038	11.94	12.5	-4 #
# 1,1,2,2-Tetrachloroethane	0.5877	0.5558	11.82	12.5	-5 #
Bromobenzene	0.7718	0.7476	12.11	12.5	-3
1,2,3-Trichloropropane	0.1643	0.1556	11.84	12.5	-5
n-Propylbenzene	3.5940	3.2971	11.47	12.5	-8
2-Chlorotoluene	0.7172	0.6737	11.74	12.5	-6
1,3,5-Trimethylbenzene	2.5734	2.4170	11.74	12.5	-6
4-Chlorotoluene	0.7477	0.7148	11.95	12.5	-4
tert-Butylbenzene	0.5372	0.5214	12.13	12.5	-3
Pentachloroethane	0.4171	0.4447	13.33	12.5	7
1,2,4-Trimethylbenzene	2.6246	2.4964	11.89	12.5	-5
sec-Butylbenzene	3.2687	3.1193	11.93	12.5	-5
# 1,3-Dichlorobenzene	1.5338	1.5016	12.24	12.5	-2 #
p-Isopropyltoluene	2.8531	2.7608	12.10	12.5	-3
# 1,4-Dichlorobenzene	1.5634	1.5115	12.09	12.5	-3 #
1,2,3-Trimethylbenzene	1.1801	1.1241	11.91	12.5	-5
Benzyl Chloride	0.2135	0.2287	13.39	12.5	7
n-Butylbenzene	1.5351	1.4378	11.71	12.5	-6
# 1,2-Dichlorobenzene	1.4473	1.4102	12.18	12.5	-3 #
# 1,2-Dibromo-3-chloropropane	1.7714	2.3387	16.50	12.5	32 #<-
1,3,5-Trichlorobenzene	1.2828	1.2587	12.27	12.5	-2
# 1,2,4-Trichlorobenzene	1.1900	1.1567	12.15	12.5	-3 #
Hexachlorobutadiene	0.6272	0.5958	11.87	12.5	-5
Naphthalene	1.9892	1.9251	12.10	12.5	-3
1,2,3-Trichlorobenzene	1.0175	0.9826	12.07	12.5	-3
=====					
Dibromofluoromethane	0.2515	0.2509	9.98	10	0
Dibromofluoromethane (2)	0.2586	0.2578	9.97	10	0
1,2-Dichloroethane-d4	0.0533	0.0519	9.74	10	-3
1,2-Dichloroethane-d4 (2)	0.3029	0.2779	9.17	10	-8
1,2-Dichloroethane-d4 (3)	0.0332	0.0338	10.18	10	2
Toluene-d8	1.3411	1.2878	9.60	10	-4
Toluene-d8 (2)	0.8534	0.8283	9.71	10	-3
4-Bromofluorobenzene	0.5133	0.4866	9.48	10	-5

Compounds with required minimum RRF.

All compounds must meet a maximum % Drift of 20.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: HP16334 Calibration Date: 05/01/18 Time: 07:26

Lab File ID: gy01c01.d Init. Calib. Date(s): 04/19/18 04/19/18

Matrix: (soil/water) WATER Level: (low/med) LOW GC Column: Rxi-624Sil .25

COMPOUND	RRF	RRF 12.5	ACTUAL CONC.	TRUE CONC.	% DRIFT
=====	=====	=====	=====	=====	=====
4-Bromofluorobenzene (2)	0.4387	0.4484	10.22	10	2

Average %Drift 7

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.: _____ SDG No.: _FKP52_
 Lab File ID (Standard): ga30c10.d Date Analyzed: 04/30/18
 Instrument ID: HP16334 Time Analyzed: 20:51
 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	190756	3.946	2207952	7.476	1775076	11.012	1027718	12.896
UPPER LIMIT	381512	4.446	4415904	7.976	3550152	11.512	2055436	13.396
LOWER LIMIT	95378	3.446	1103976	6.976	887538	10.512	513859	12.396
=====	=====	=====	=====	=====	=====	=====	=====	=====
LAB SAMPLE								
ID								
=====	=====	=====	=====	=====	=====	=====	=====	=====
01 LCSG13	189029	3.946	2281762	7.482	1796115	11.012	1045412	12.896
02 LCDG13	207470	3.958	2337478	7.488	1822703	11.012	1068932	12.902
03 VBLKG13	207966	3.952	2240053	7.482	1733471	11.012	972590	12.902
04 9569707	188810	3.952	2158138	7.482	1689212	11.012	952746	12.902
05 9569708	189010	3.958	2113281	7.488	1651476	11.012	931235	12.902
06 9570920	185407	3.958	2072875	7.488	1636300	11.012	921046	12.902
07 9575109	176325	3.964	2034892	7.488	1596253	11.012	902750	12.902
08 9578076	188466	3.964	2019460	7.488	1582545	11.012	896903	12.902
09 9581041	170303	3.958	2022365	7.488	1608974	11.012	910405	12.902
10 9582706	191376	3.964	2027320	7.482	1599558	11.012	906184	12.902
11 9569706	177488	3.958	1999873	7.482	1569440	11.012	893161	12.902
12 9582699	162336	3.958	2001392	7.488	1576397	11.012	893094	12.902
13 9582700	161645	3.958	2019162	7.488	1589538	11.012	902624	12.902
14 9582701	163623	3.958	2011809	7.488	1591769	11.012	901381	12.902
15 9582702	166328	3.958	1992131	7.488	1574369	11.012	887577	12.902
16 9582702DL	161397	3.940	1982561	7.482	1557311	11.012	883764	12.902
17 9582703	156473	3.934	1958904	7.482	1554882	11.012	876522	12.902
18 9582704	163211	3.952	1986915	7.482	1573173	11.012	890225	12.902
19 9582705	162161	3.958	1947746	7.488	1538777	11.012	870028	12.902
20 9582707	158223	3.958	1939460	7.488	1526558	11.012	874426	12.902
21 9582707DL	159263	3.952	1975274	7.488	1551956	11.012	880597	12.902

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.: _____ SDG No.: _FKP52_
 Lab File ID (Standard): gy01c01.d Date Analyzed: 05/01/18
 Instrument ID: HP16334 Time Analyzed: 07:26
 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		193330	3.958	2246771	7.488	1813084	11.012	1043460	12.902
UPPER LIMIT		386660	4.458	4493542	7.988	3626168	11.512	2086920	13.402
LOWER LIMIT		96665	3.458	1123386	6.988	906542	10.512	521730	12.402
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
LAB SAMPLE									
ID									
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
01	LCSG14	198567	3.958	2304606	7.488	1802336	11.012	1049035	12.902
02	LCDG14	206790	3.952	2404603	7.482	1877047	11.012	1082512	12.902
03	LCSG15	214236	3.964	2368029	7.488	1849518	11.012	1037977	12.902
04	LCDG15	198359	3.952	2367103	7.488	1867831	11.012	1050303	12.902
05	VBLKG14	202840	3.964	2279396	7.488	1779376	11.012	1002062	12.902
06	9573678	216186	3.958	2149814	7.476	1675574	11.006	952544	12.896
07	9573660	188394	3.958	2143797	7.482	1670800	11.012	947224	12.896
08	9573681	188831	3.964	2103413	7.488	1638915	11.012	927968	12.902
09	9573661	175726	3.958	2120088	7.482	1665371	11.012	940967	12.902
10	9569515	177359	3.964	2081307	7.488	1635370	11.012	926230	12.902
11	9569534DL	174211	3.970	2045673	7.488	1596440	11.012	908833	12.902
12	9571206DL	164559	3.964	2057613	7.488	1615972	11.018	913741	12.902
13	9573662	167050	3.958	2064091	7.488	1623957	11.012	916067	12.902
14	9573679	175665	3.964	2041642	7.488	1609922	11.012	917081	12.902
15	9573679DL	191692	3.958	2014997	7.488	1582476	11.012	891264	12.902
16	9573680	162103	3.958	2010558	7.488	1594773	11.012	900235	12.902
17	9573680DL	172628	3.970	2024103	7.488	1596426	11.012	905862	12.902
18	9582704DL	171365	3.964	1982692	7.488	1549193	11.012	874155	12.902

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.

Sample Data

Volatiles by GC/MS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EF231

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582699
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s81.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EF231

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582699

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s81.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.5	U
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	0.3	J
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

EF231

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582699

Data file: /chem2/HP16334.i/18apr30b.b/ga30s81.d

Injection date and time: 01-MAY-2018 01:19

Data file Sample Info. Line: EF231;9582699;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	162336 (-15)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	2001392 (-9)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1576397 (-11)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	893094 (-13)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.598(-0.001)	113	499691	9.929	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.001)	102	107737	10.102	101%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2063227	9.759	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	769823	9.513	95%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5

EF231

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582699

Data file: /chem2/HP16334.i/18apr30b.b/ga30s81.d

Injection date and time: 01-MAY-2018 01:19

Data file Sample Info. Line: EF231;9582699;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

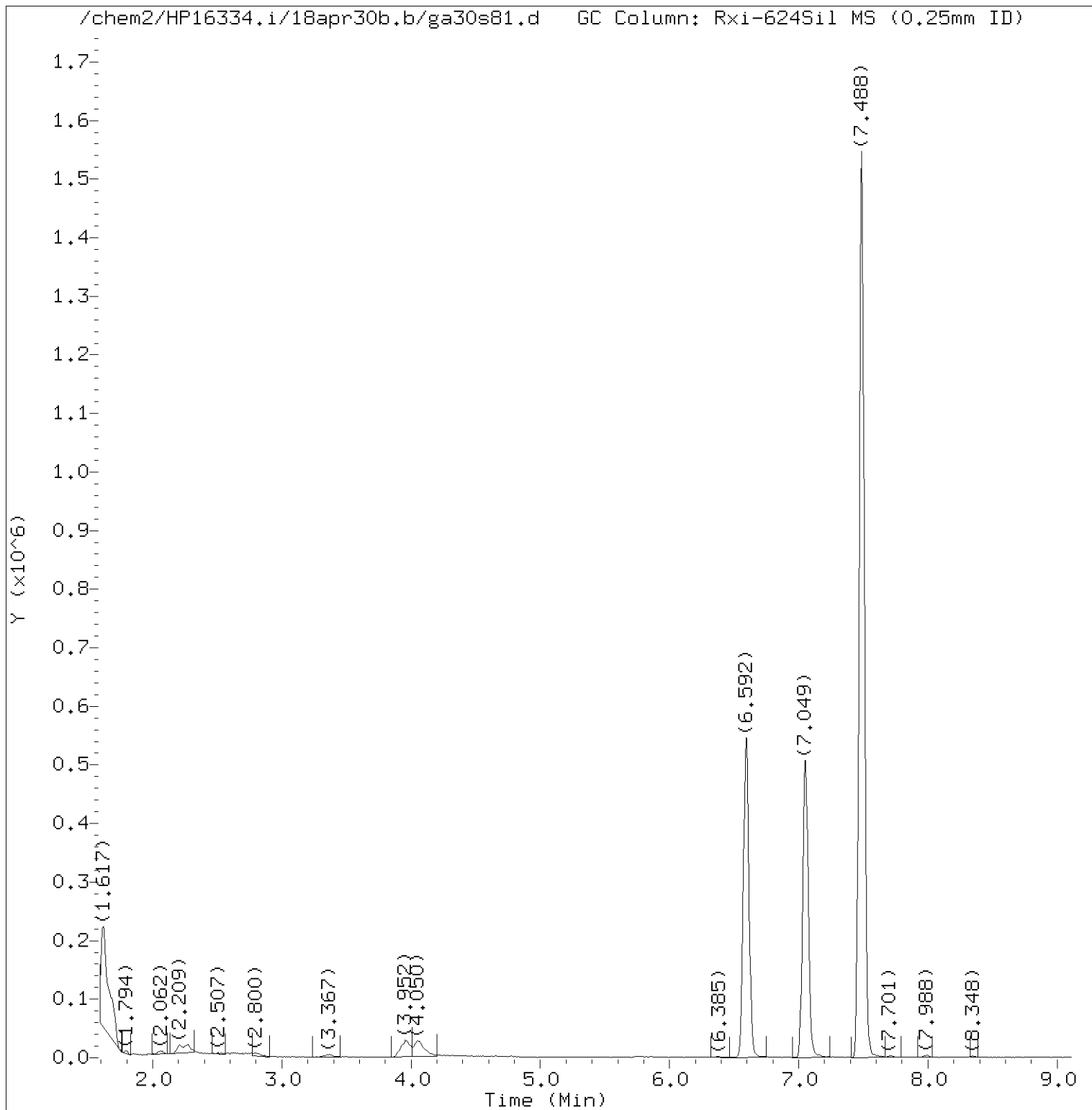
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	20883	0.336	0.34		J	0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s81.d
Injection date and time: 01-MAY-2018 01:19

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: EF231

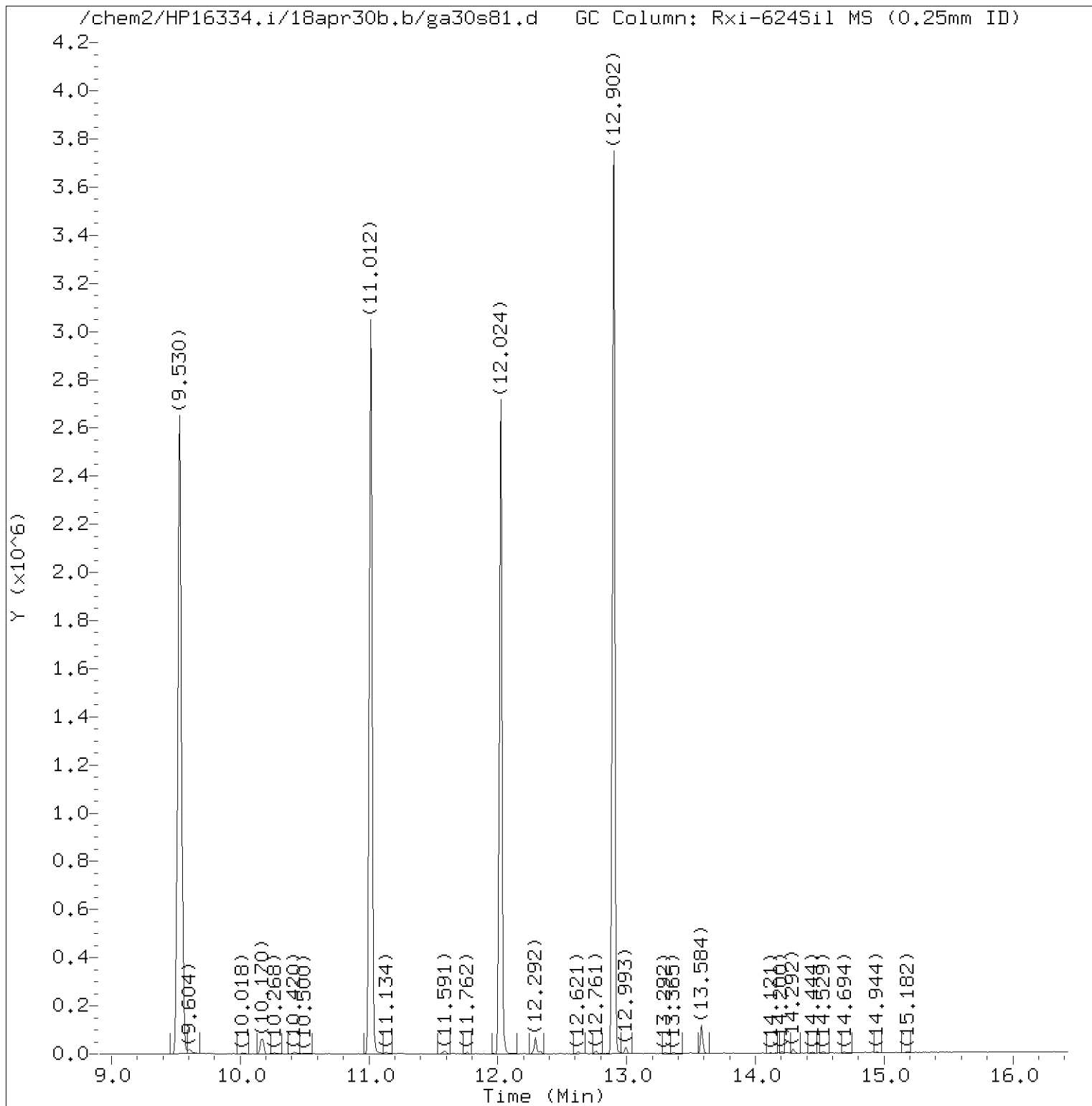
Lab Sample ID: 9582699

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

FKP52 Page 90 of 730

page 1 of 2



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s81.d
Injection date and time: 01-MAY-2018 01:19

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: EF231

Lab Sample ID: 9582699

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 91 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s81.d
Injection date and time: 01-MAY-2018 01:19

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: EF231

Lab Sample ID: 9582699

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.958	65	162336	50.000
50)\$Dibromofluoromethane	(2)	6.598	113	499691	9.929
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	107737	10.102
63)*Fluorobenzene	(2)	7.488	96	2001392	10.000
82)\$Toluene-d8	(3)	9.530	98	2063227	9.759
89) Tetrachloroethene	(3)	10.170	166	20883	0.336
97)*Chlorobenzene-d5	(3)	11.012	117	1576397	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	769823	9.513
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	893094	10.000

* = Compound is an internal standard.

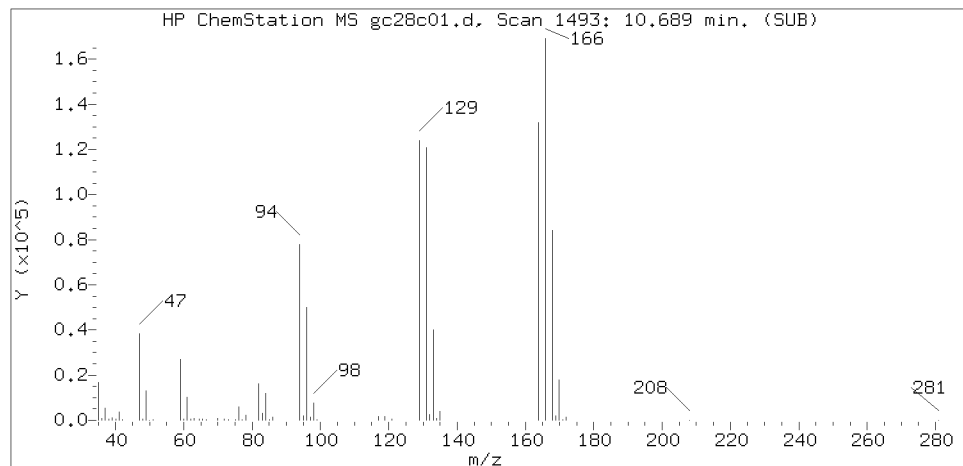
\$ = Compound is a surrogate standard.

page 1 of 1

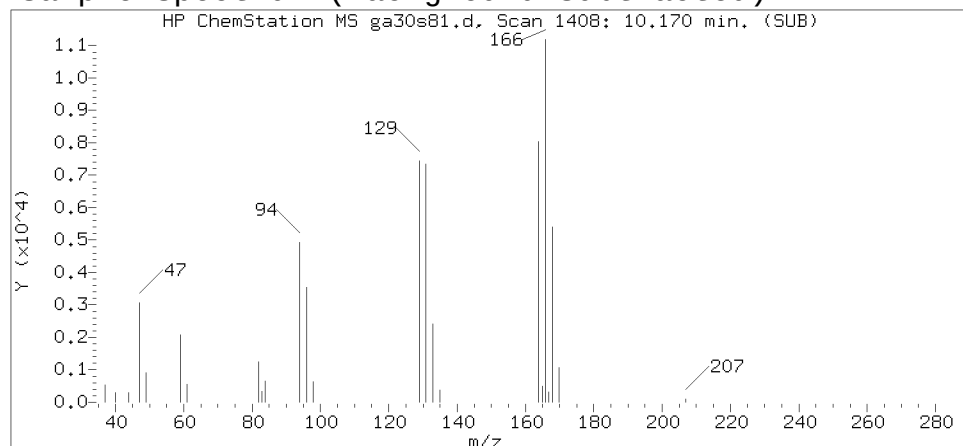
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

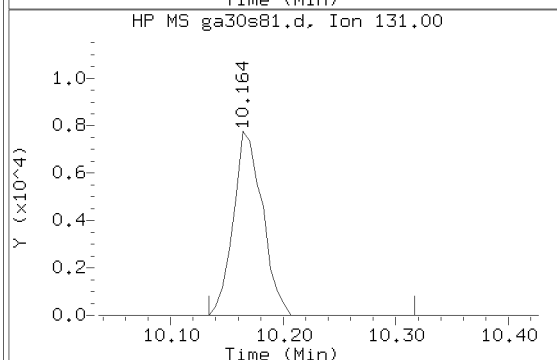
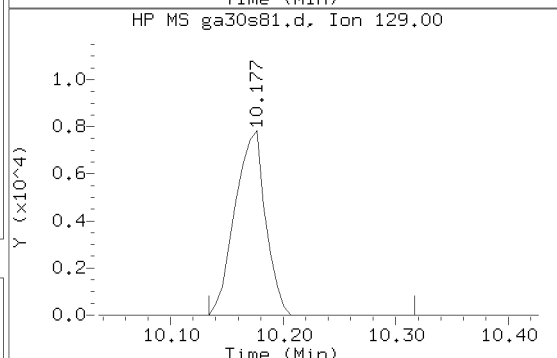
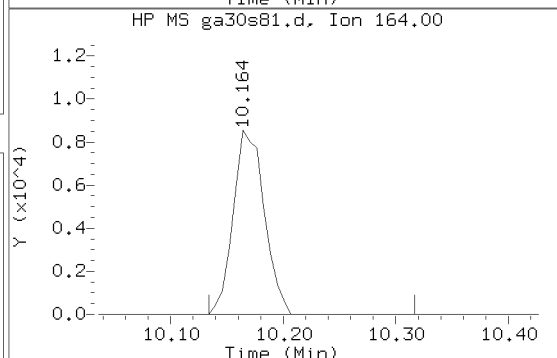
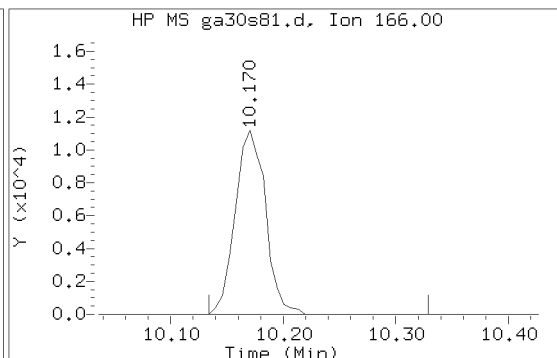
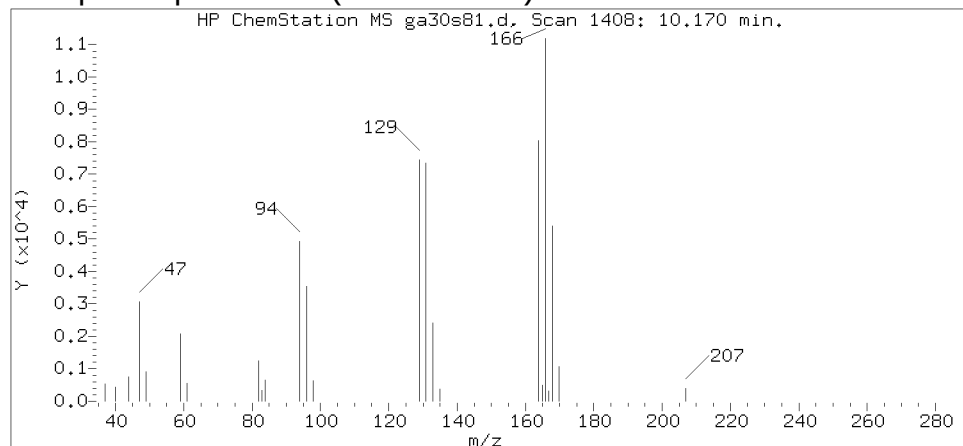
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s81.d
Injection date and time: 01-MAY-2018 01:19

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: EF231

Lab Sample ID: 9582699

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.170
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 20883
On-Column Amount (ng) : 0.3362

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

IN214

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582700

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s82.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	4.4	J
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.2	J
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

IN214

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582700
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s82.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.5	U
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	3.4	
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

IN214

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582700

Data file: /chem2/HP16334.i/18apr30b.b/ga30s82.d

Injection date and time: 01-MAY-2018 01:41

Data file Sample Info. Line: IN214;9582700;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	161645 (-15)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	2019162 (-9)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1589538 (-10)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	902624 (-12)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	503586	9.918	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.001)	102	108424	10.077	101%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2076851	9.742	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	774178	9.488	95%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)	3.355(-0.000)	43	39626	4.392	4.39		J	3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)	7.970(0.000)	95	9495	0.175	0.17		J	0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5

IN214

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582700

Data file: /chem2/HP16334.i/18apr30b.b/ga30s82.d

Injection date and time: 01-MAY-2018 01:41

Data file Sample Info. Line: IN214;9582700;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

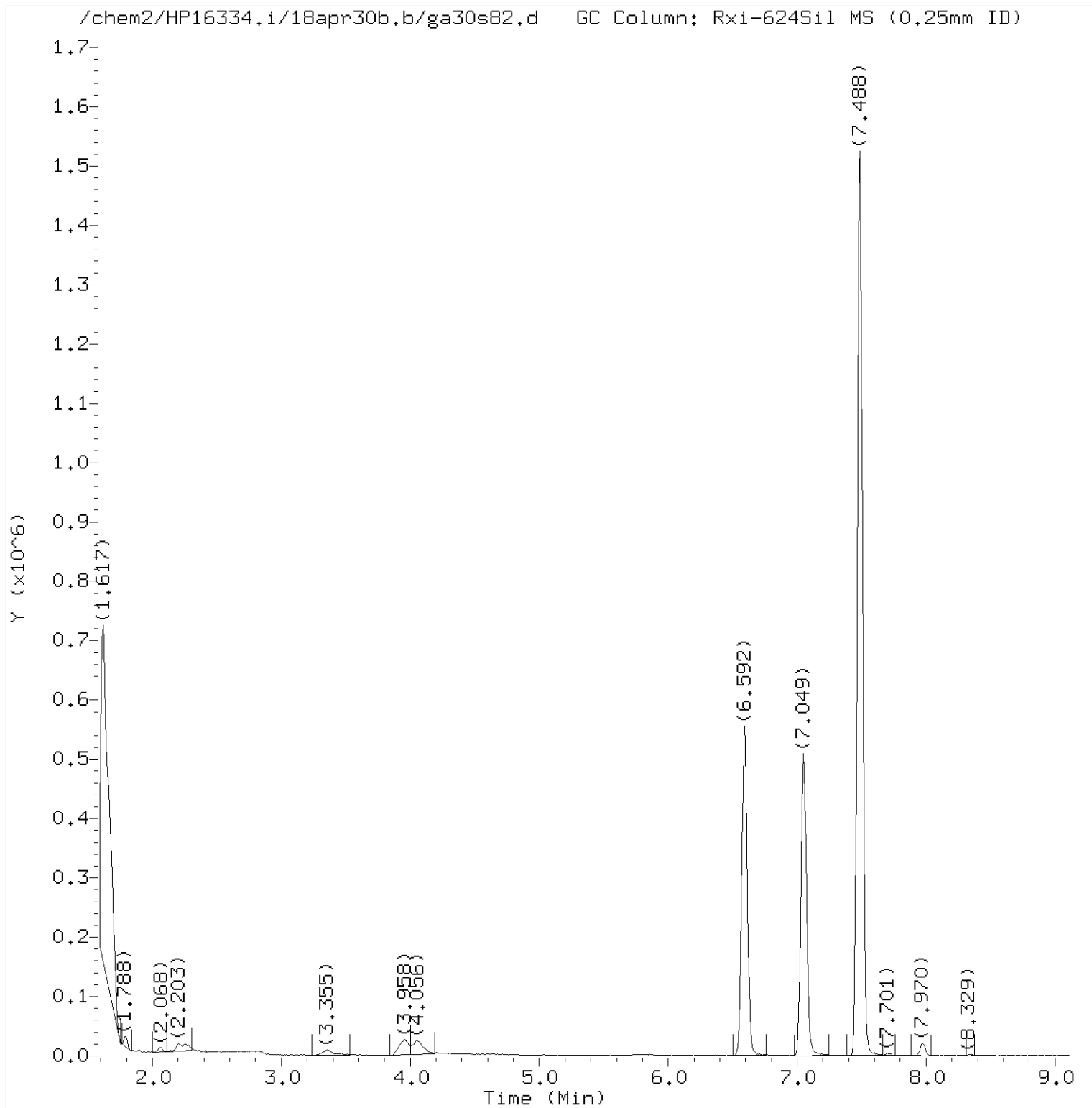
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	215513	3.441	3.44			0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

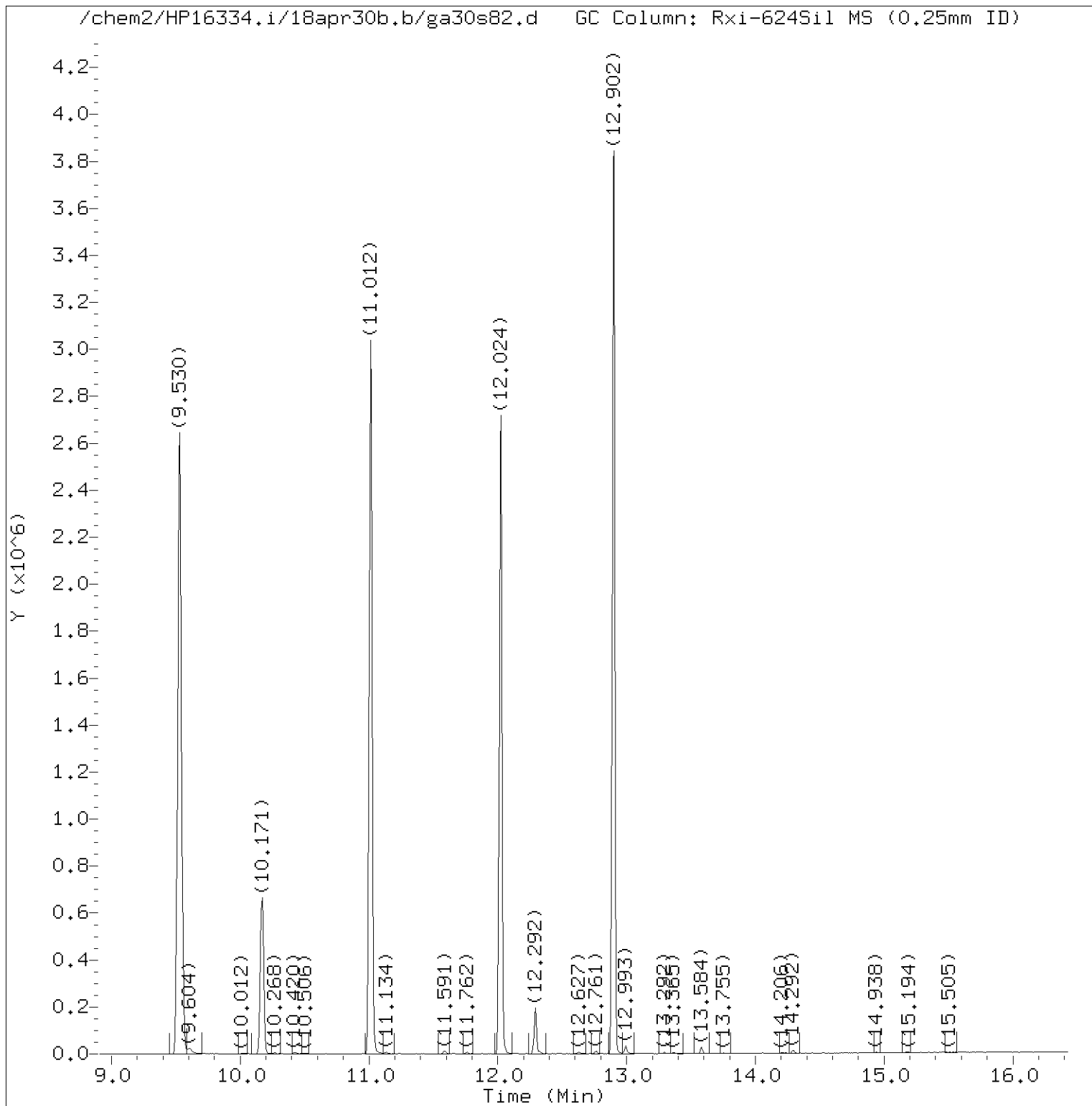
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: IN214

Lab Sample ID: 9582700

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: IN214

Lab Sample ID: 9582700

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: IN214

Lab Sample ID: 9582700

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
14) Acetone	(1)	3.355	43	39626	4.392
26)*t-Butyl Alcohol-d10	(1)	3.958	65	161645	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	503586	9.918
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	108424	10.077
63)*Fluorobenzene	(2)	7.488	96	2019162	10.000
67) Trichloroethene	(2)	7.970	95	9495	0.175
82)\$Toluene-d8	(3)	9.530	98	2076851	9.742
89) Tetrachloroethene	(3)	10.171	166	215513	3.441
97)*Chlorobenzene-d5	(3)	11.012	117	1589538	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	774178	9.488
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	902624	10.000

* = Compound is an internal standard.

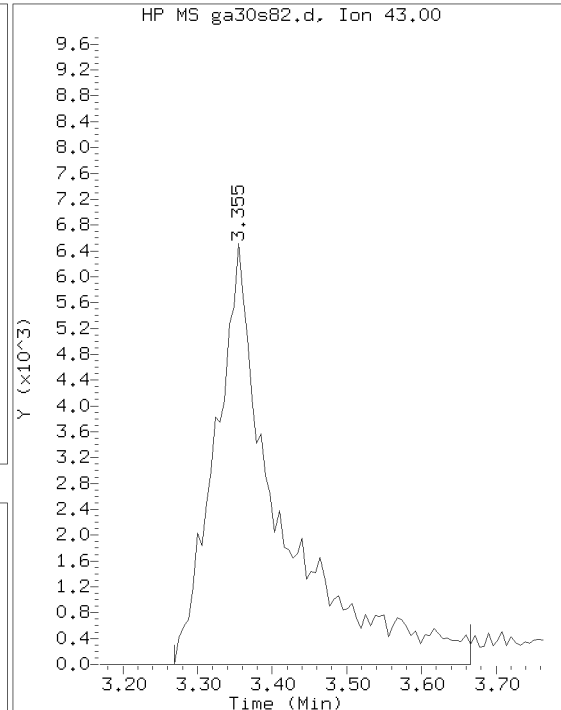
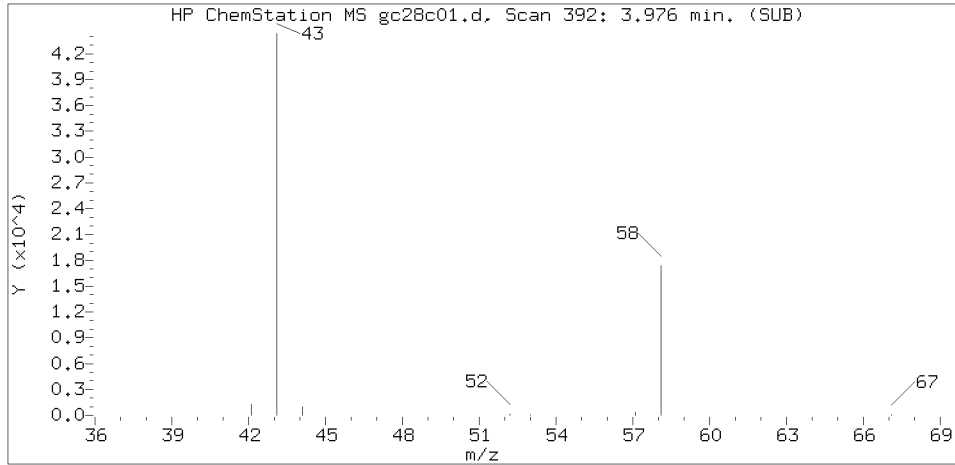
\$ = Compound is a surrogate standard.

page 1 of 1

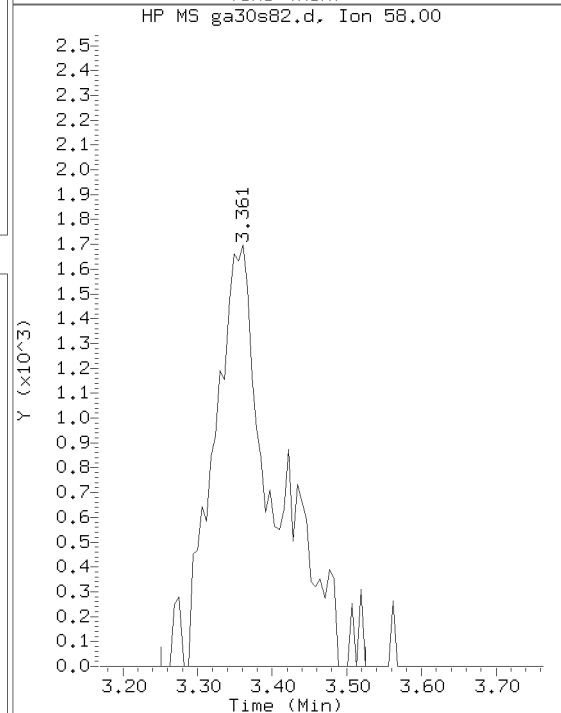
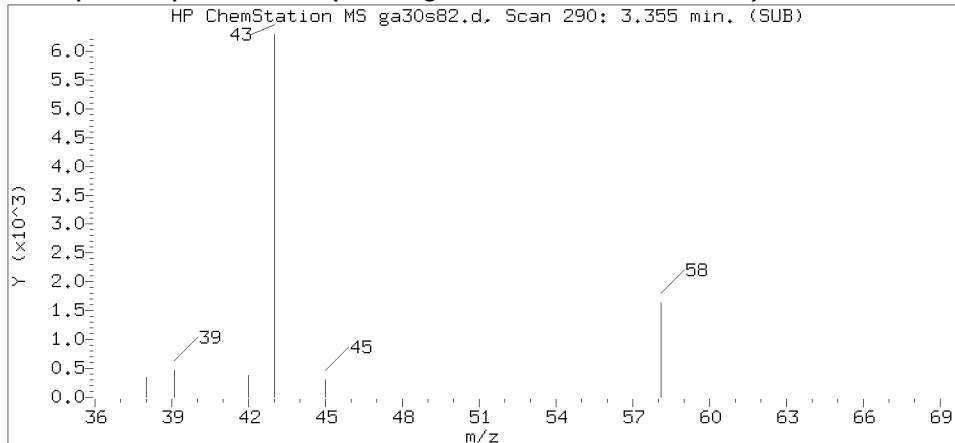
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on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

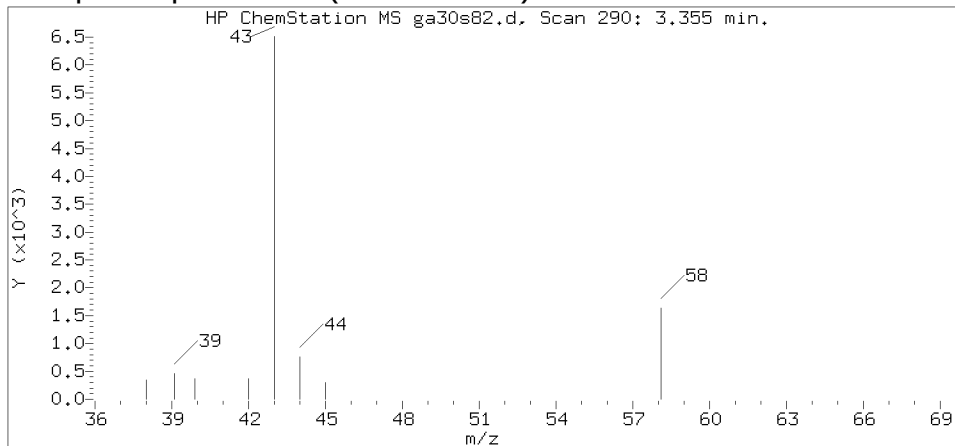
Reference Standard Spectrum for Acetone



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

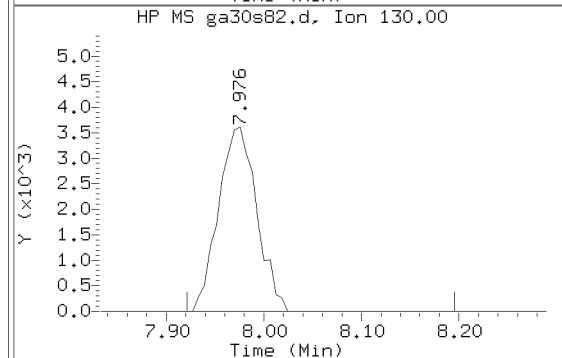
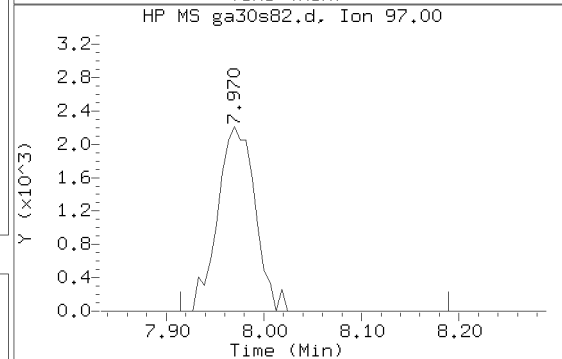
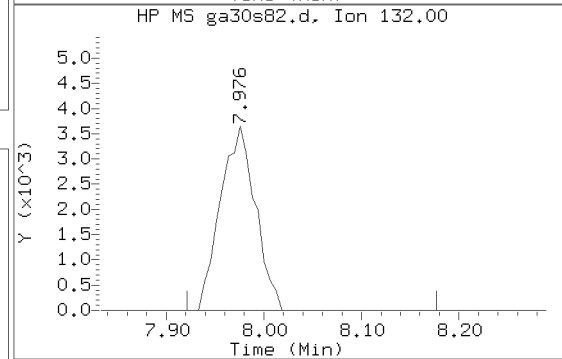
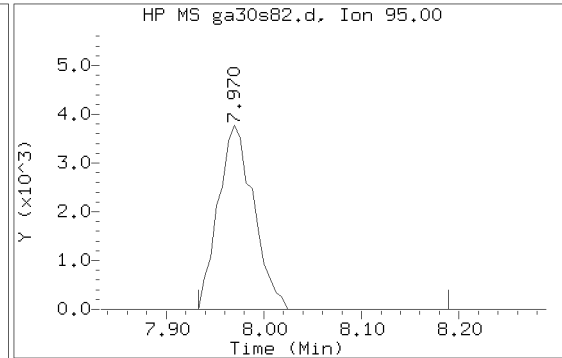
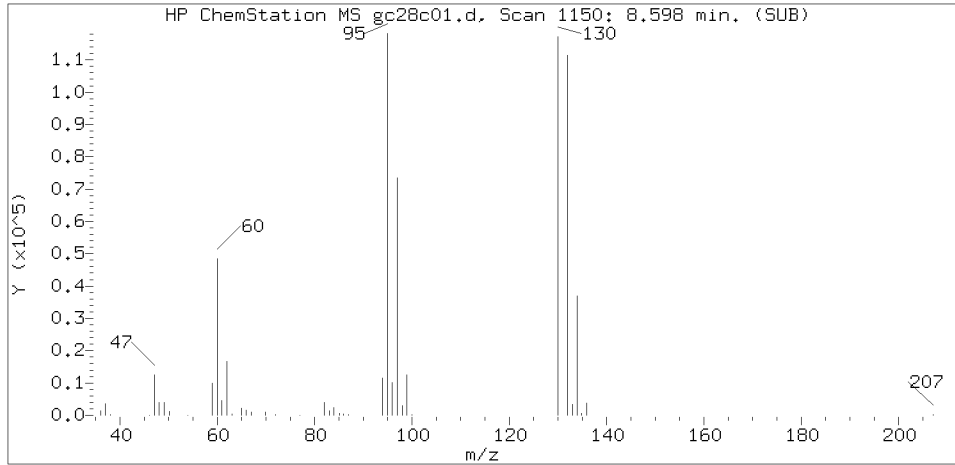
Sample Name: IN214

Lab Sample ID: 9582700

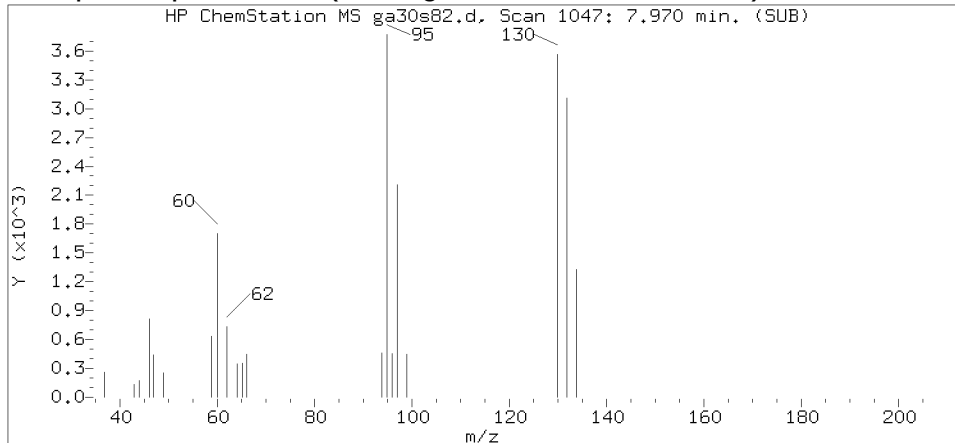
Compound Number : 14
Compound Name : Acetone
Scan Number : 290
Retention Time (minutes): 3.355
Relative Retention Time : -0.00047
Quant Ion : 43.00
Area (flag) : 39626
On-Column Amount (ng) : 4.3916

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user: jkh09052

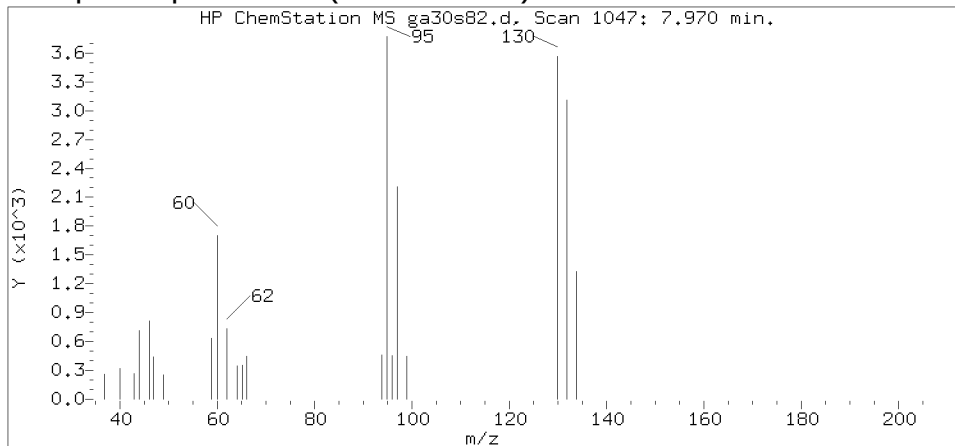
Reference Standard Spectrum for Trichloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

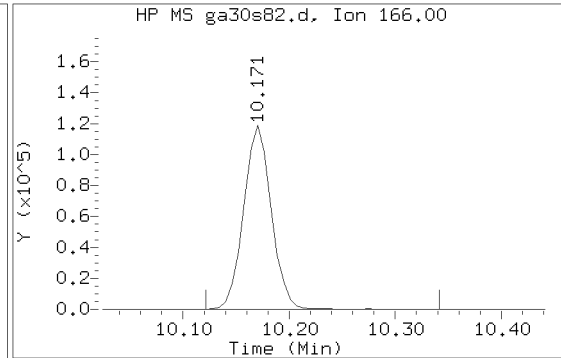
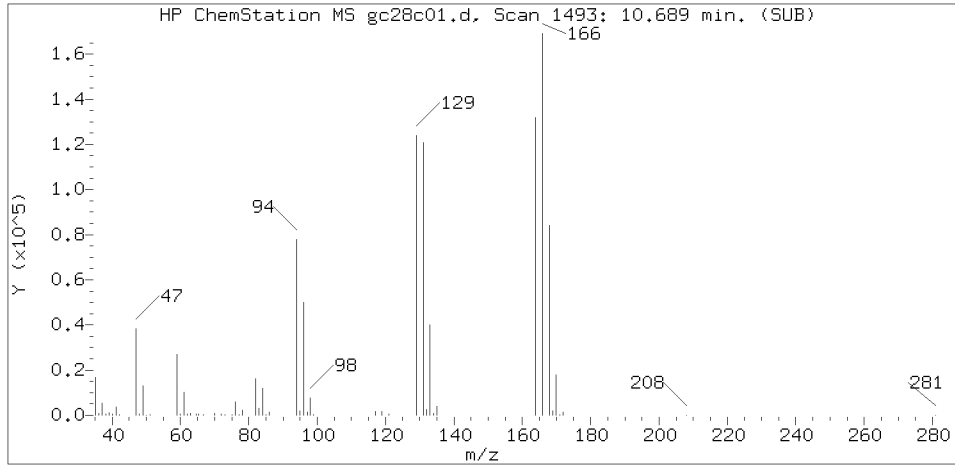
Sample Name: IN214

Lab Sample ID: 9582700

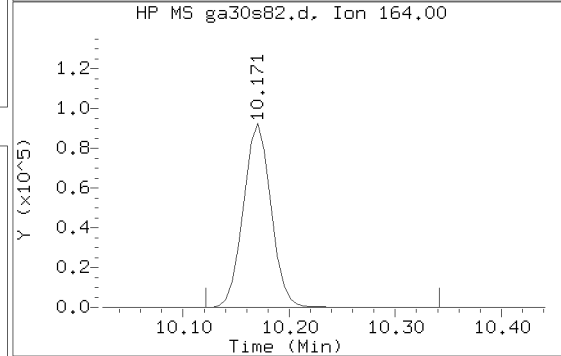
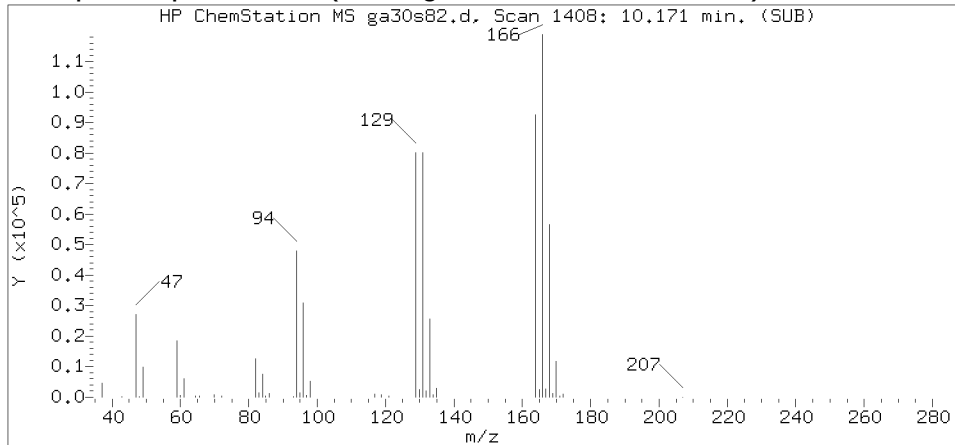
Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1047
Retention Time (minutes): 7.970
Relative Retention Time : 0.00010
Quant Ion : 95.00
Area (flag) : 9495
On-Column Amount (ng) : 0.1746

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Target 3.5 esignature user ID: jkh09052

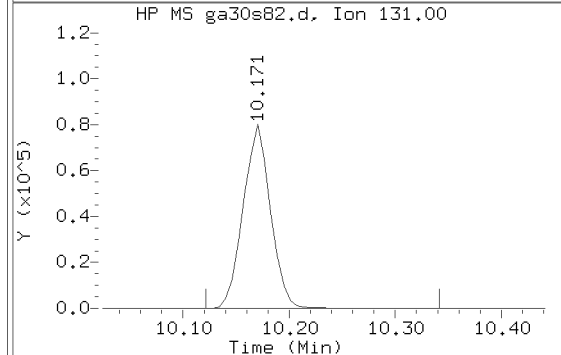
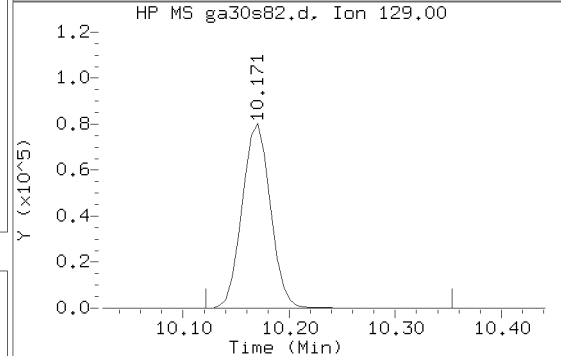
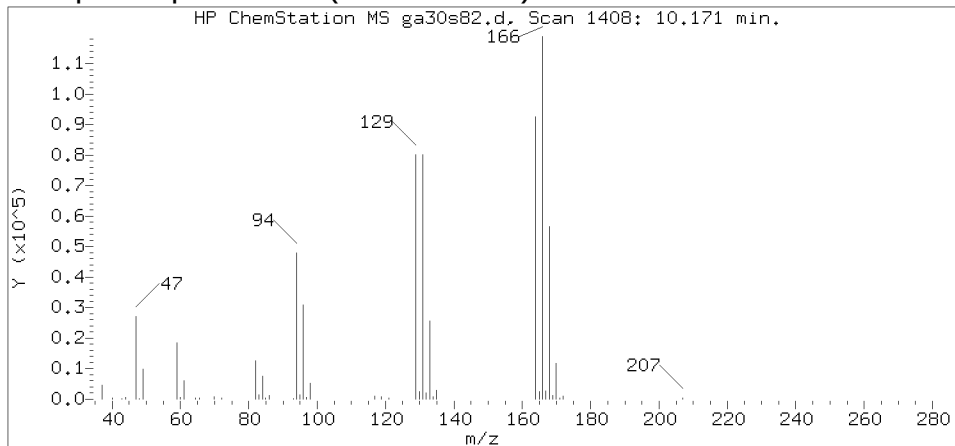
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s82.d
Injection date and time: 01-MAY-2018 01:41

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: IN214

Lab Sample ID: 9582700

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.171
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 215513
On-Column Amount (ng) : 3.4409

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Target 3.5 esignature user: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3198

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582701

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s83.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	4.9	J
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3198

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582701
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s83.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.5	U
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	0.5	J
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

S3198

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582701

Data file: /chem2/HP16334.i/18apr30b.b/ga30s83.d

Injection date and time: 01-MAY-2018 02:04

Data file Sample Info. Line: S3198;9582701;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	163623 (-14)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	2011809 (-9)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1591769 (-10)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	901381 (-12)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	506090	10.004	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	106493	9.933	99%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2083445	9.760	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	769748	9.421	94%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)	3.349(0.001)	43	44668	4.891	4.89		J	3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5

S3198

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582701

Data file: /chem2/HP16334.i/18apr30b.b/ga30s83.d

Injection date and time: 01-MAY-2018 02:04

Data file Sample Info. Line: S3198;9582701;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

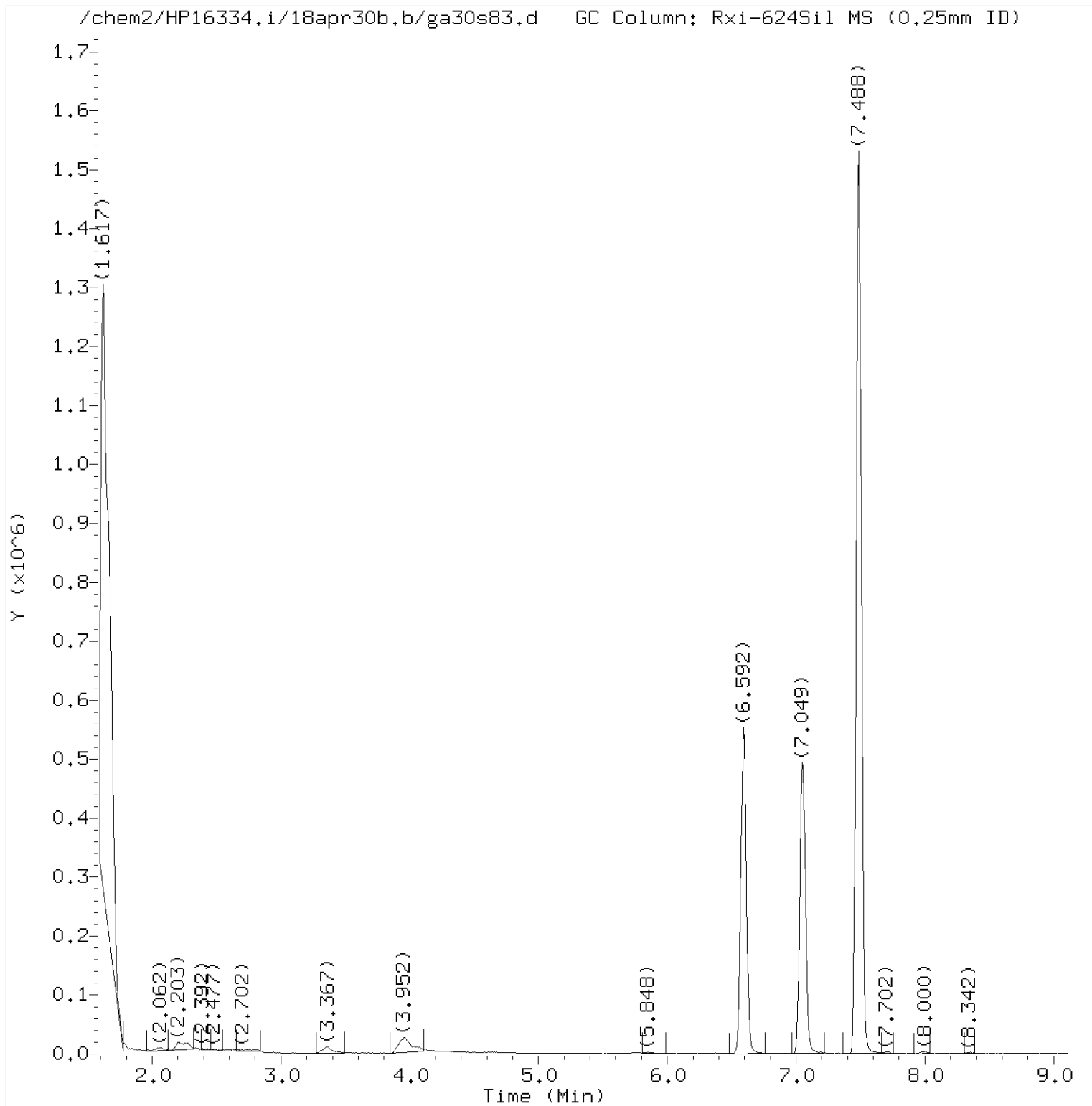
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	30234	0.482	0.48		J	0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

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Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s83.d
Injection date and time: 01-MAY-2018 02:04

Instrument ID: HP16334.i
Analyst ID: MSK07970

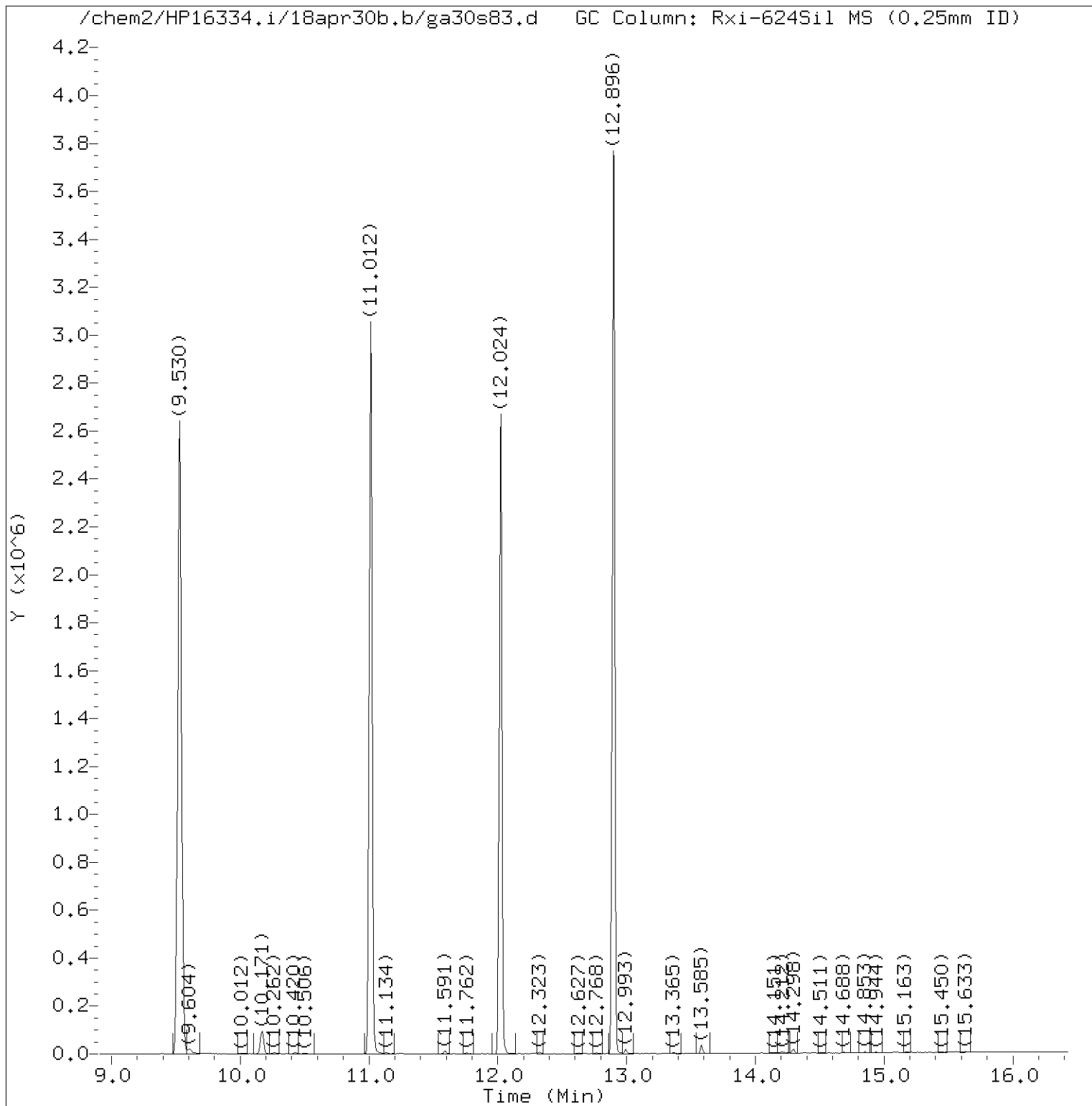
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3198

Lab Sample ID: 9582701

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 108 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s83.d
Injection date and time: 01-MAY-2018 02:04

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3198

Lab Sample ID: 9582701

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 109 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s83.d
Injection date and time: 01-MAY-2018 02:04

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3198

Lab Sample ID: 9582701

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
14) Acetone	(1)	3.349	43	44668	4.891
26)*t-Butyl Alcohol-d10	(1)	3.958	65	163623	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	506090	10.004
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	106493	9.933
63)*Fluorobenzene	(2)	7.488	96	2011809	10.000
82)\$Toluene-d8	(3)	9.530	98	2083445	9.760
89) Tetrachloroethene	(3)	10.171	166	30234	0.482
97)*Chlorobenzene-d5	(3)	11.012	117	1591769	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	769748	9.421
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	901381	10.000

* = Compound is an internal standard.

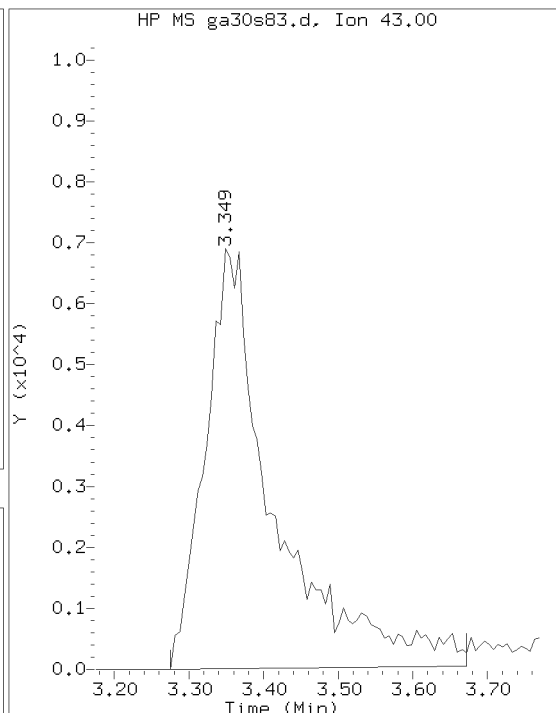
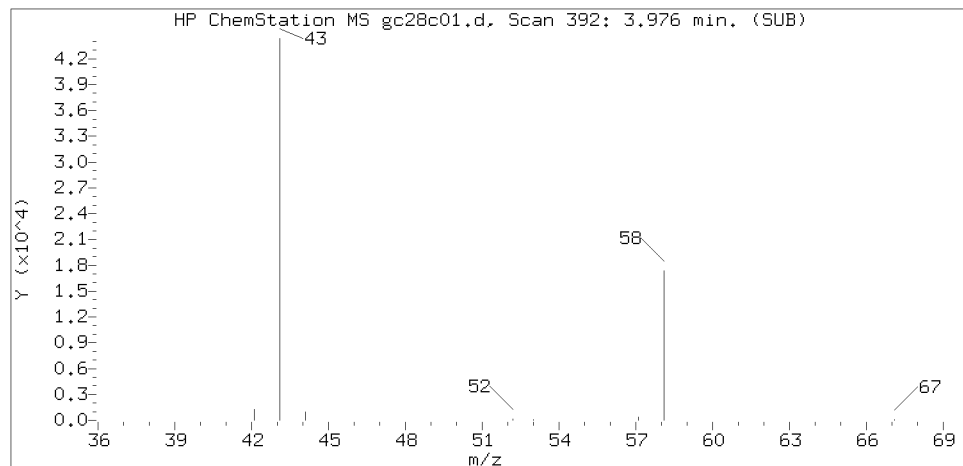
\$ = Compound is a surrogate standard.

page 1 of 1

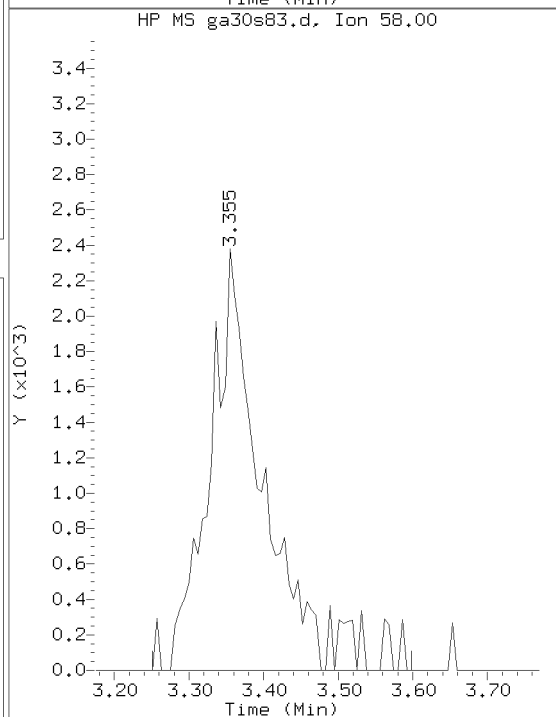
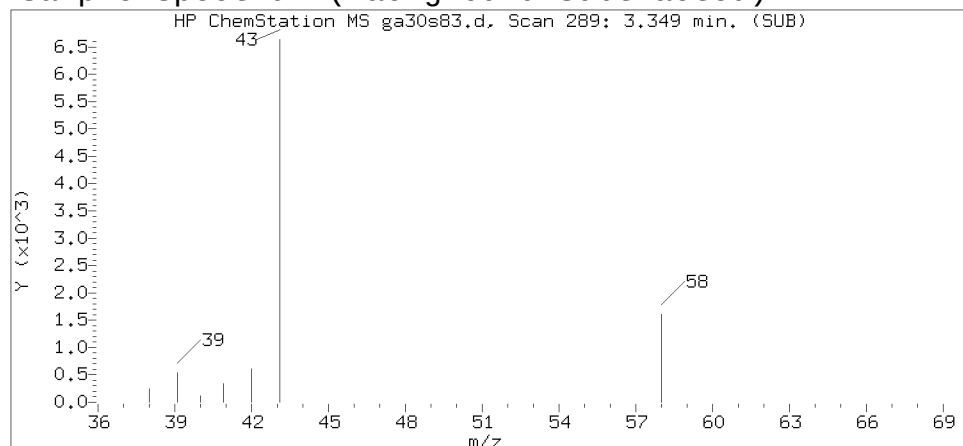
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

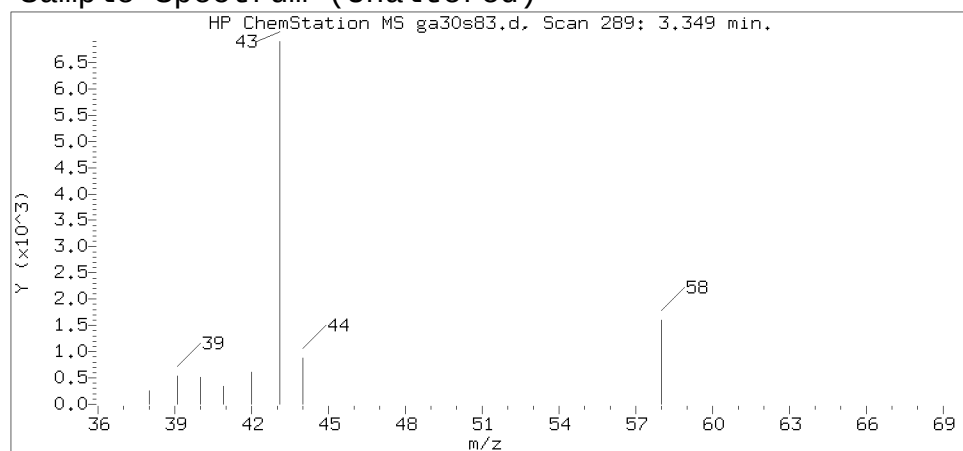
Reference Standard Spectrum for Acetone



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s83.d
Injection date and time: 01-MAY-2018 02:04

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

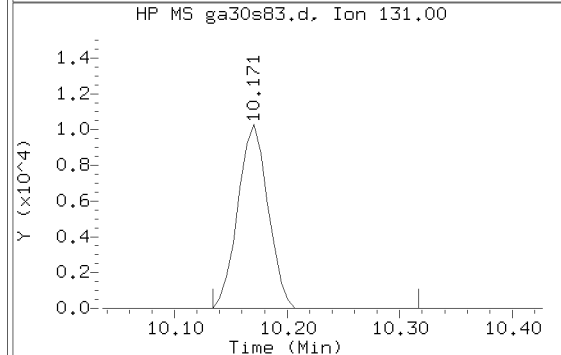
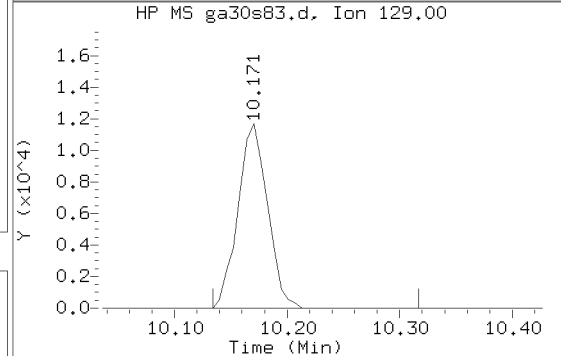
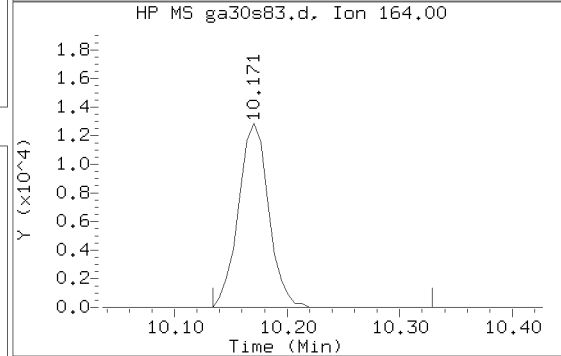
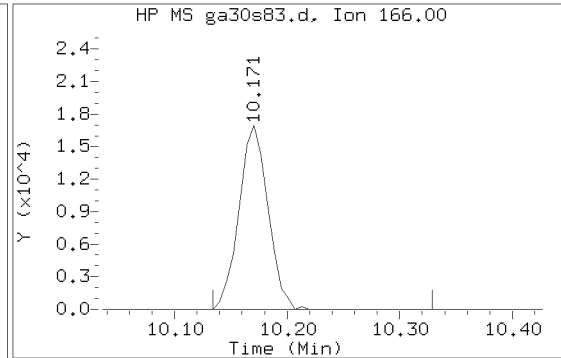
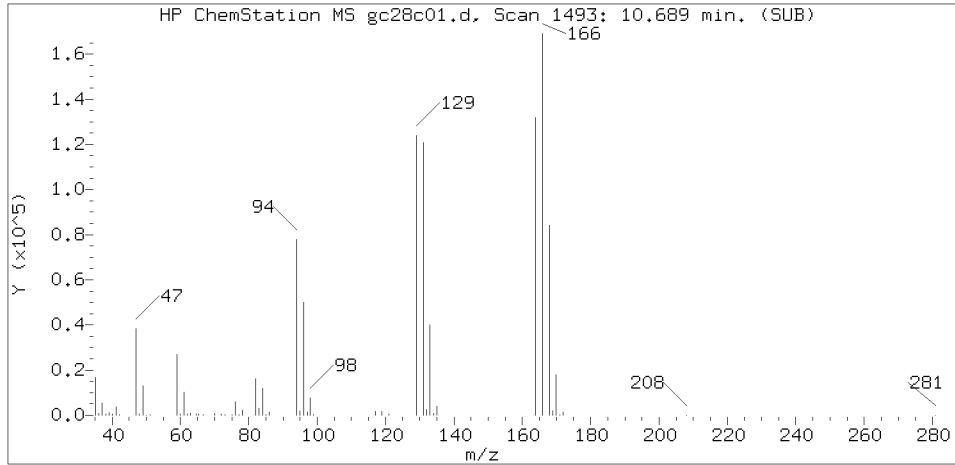
Sample Name: S3198

Lab Sample ID: 9582701

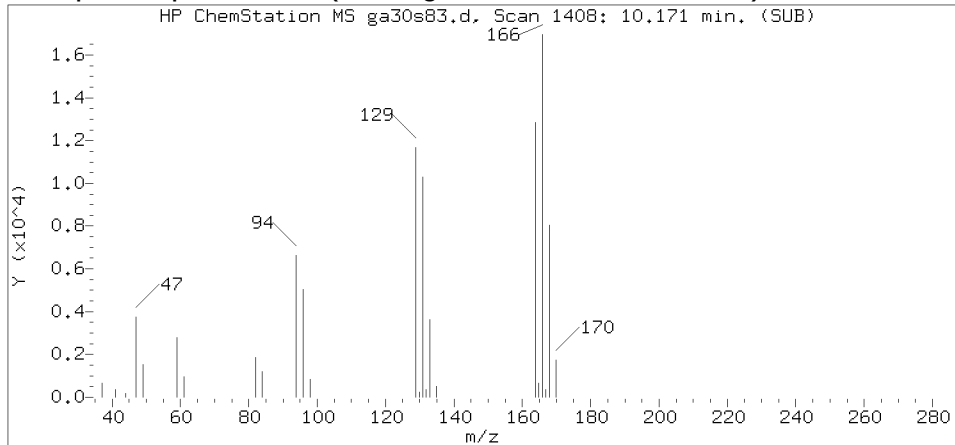
Compound Number : 14
Compound Name : Acetone
Scan Number : 289
Retention Time (minutes): 3.349
Relative Retention Time : 0.00107
Quant Ion : 43.00
Area (flag) : 44668
On-Column Amount (ng) : 4.8905

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user: jkh09052

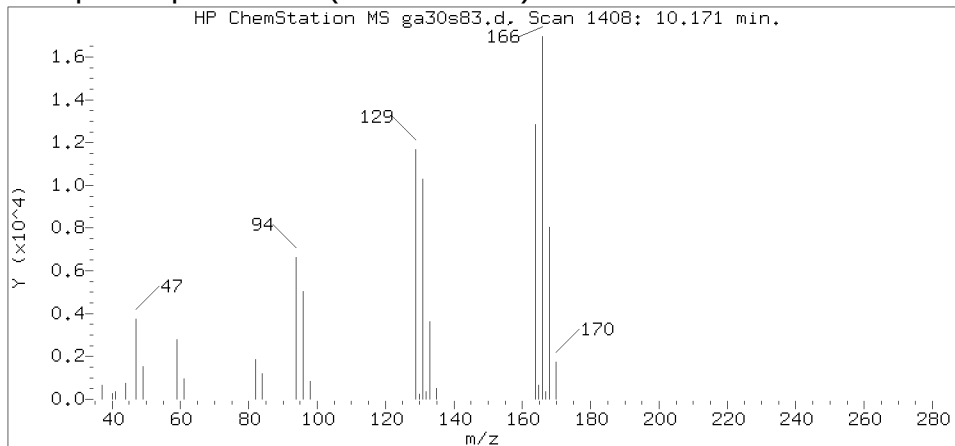
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s83.d
Injection date and time: 01-MAY-2018 02:04

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3198

Lab Sample ID: 9582701

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.171
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 30234
On-Column Amount (ng) : 0.4820

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3242

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582702

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s84.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.3	J
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3242

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582702

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s84.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.2	J
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	60	E
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.6	
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

S3242

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582702

Data file: /chem2/HP16334.i/18apr30b.b/ga30s84.d

Injection date and time: 01-MAY-2018 02:26

Data file Sample Info. Line: S3242;9582702;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	166328 (-13)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	1992131 (-10)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1574369 (-11)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	887577 (-14)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	495304	9.887	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	106250	10.009	100%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2063438	9.773	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	772862	9.563	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					0.1	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)	7.976(-0.000)	95	13733	0.256	0.26		J	0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)	9.610(-0.001)	92	28161	0.211	0.21		J	0.1	0.5

S3242

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582702

Data file: /chem2/HP16334.i/18apr30b.b/ga30s84.d

Injection date and time: 01-MAY-2018 02:26

Data file Sample Info. Line: S3242;9582702;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

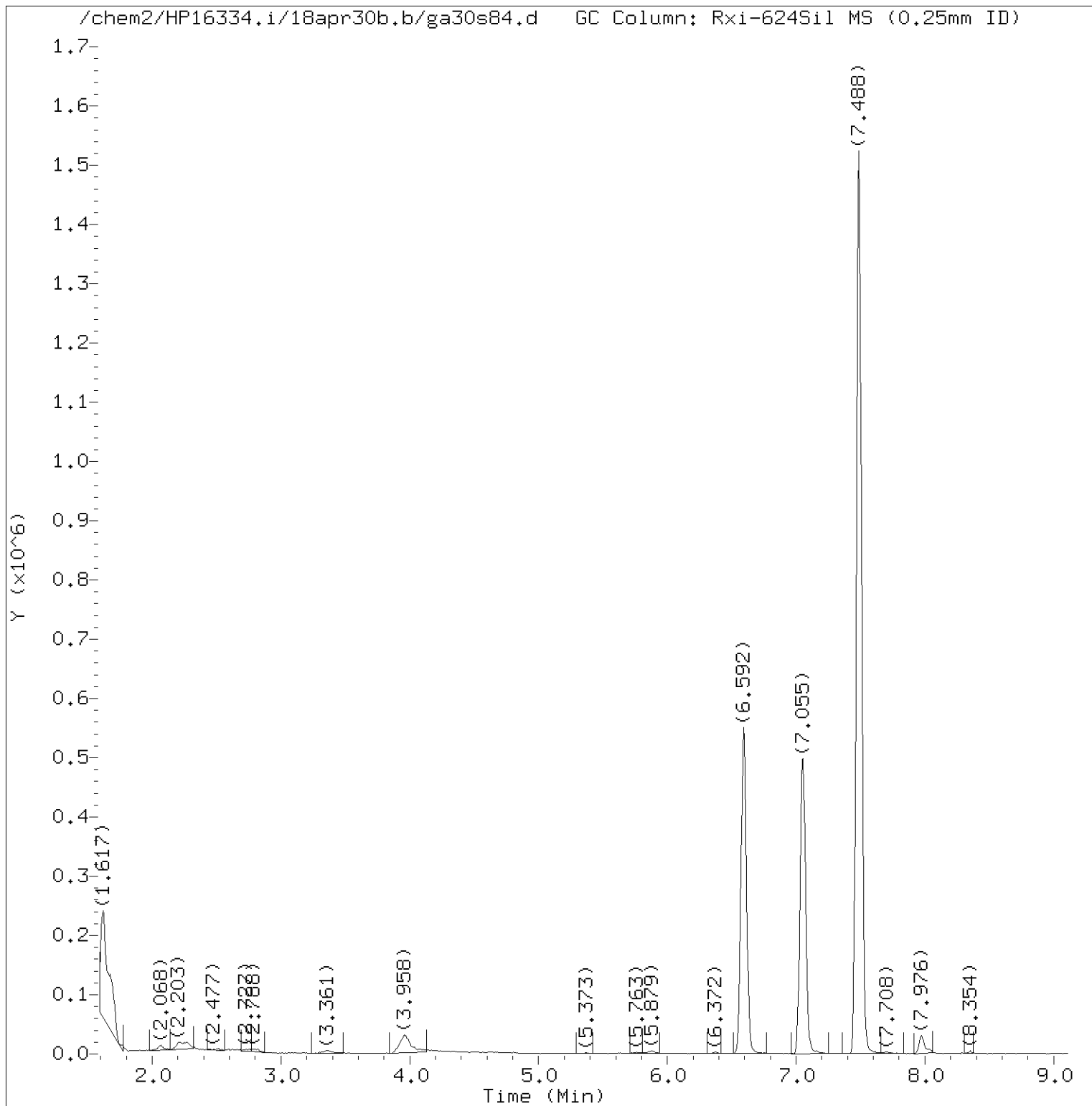
Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	3734775	60.204	60.20		E	0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)	11.877(-0.000)	105	149869	0.567	0.57			0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

E = Compound concentration above calibration range.

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Roy R. Mellott on 05/04/2018 at 16:37. PARALLAX ID: rrm00219



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

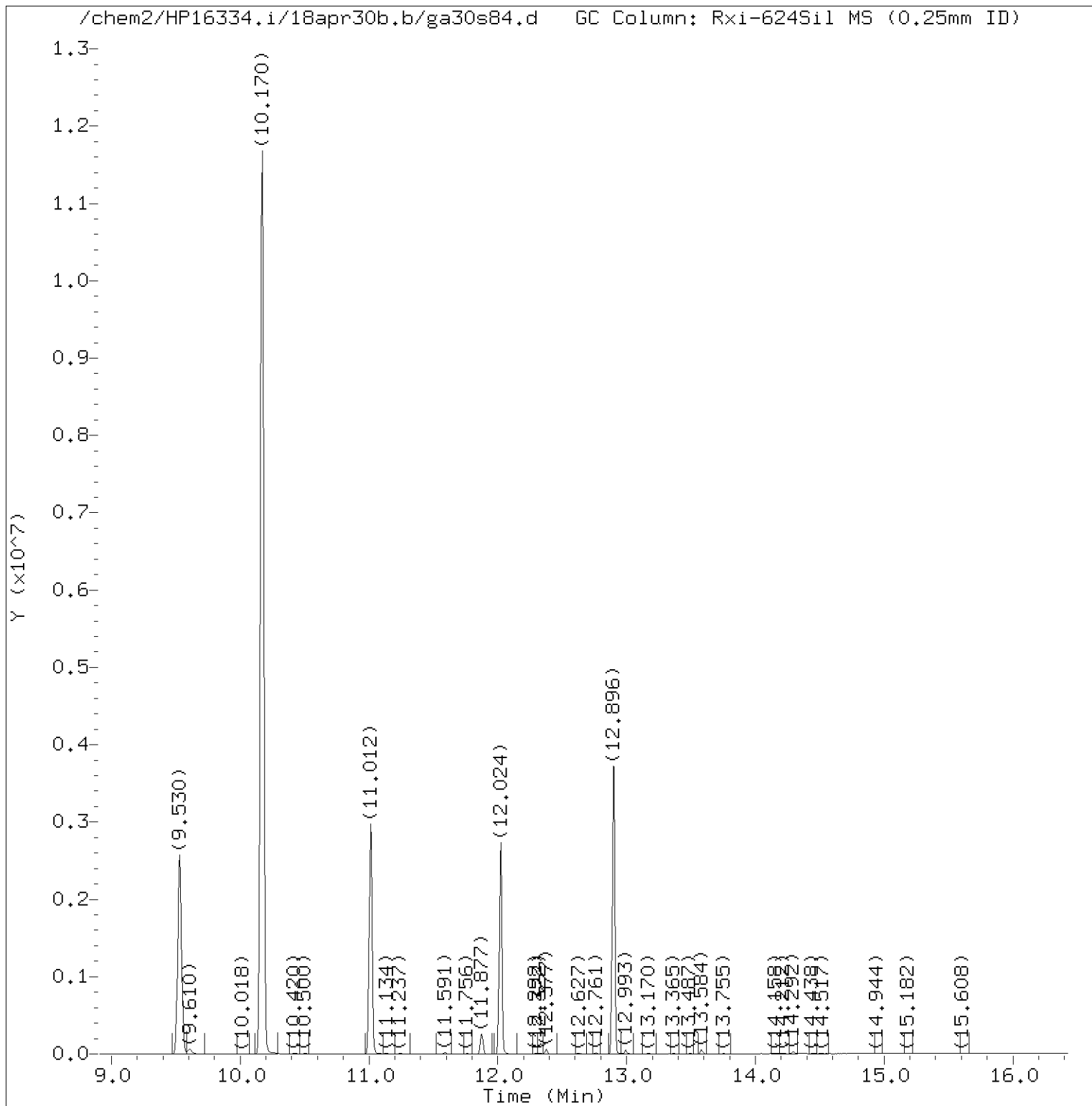
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242

Lab Sample ID: 9582702

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 117 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242

Lab Sample ID: 9582702

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on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52-Page 118 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242

Lab Sample ID: 9582702

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.958	65	166328	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	495304	9.887
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	106250	10.009
63)*Fluorobenzene	(2)	7.488	96	1992131	10.000
67) Trichloroethene	(2)	7.976	95	13733	0.256
82)\$Toluene-d8	(3)	9.530	98	2063438	9.773
83) Toluene	(3)	9.610	92	28161	0.211
89) Tetrachloroethene	(3)	10.170	166	3734775	60.204
97)*Chlorobenzene-d5	(3)	11.012	117	1574369	10.000
108) Isopropylbenzene	(3)	11.877	105	149869	0.567
111)\$4-Bromofluorobenzene	(3)	12.024	95	772862	9.563
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	887577	10.000

* = Compound is an internal standard.

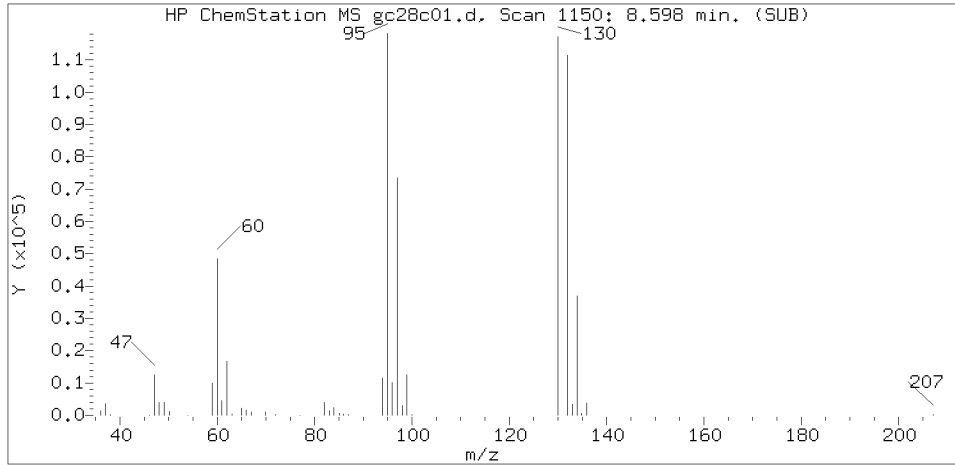
\$ = Compound is a surrogate standard.

page 1 of 1

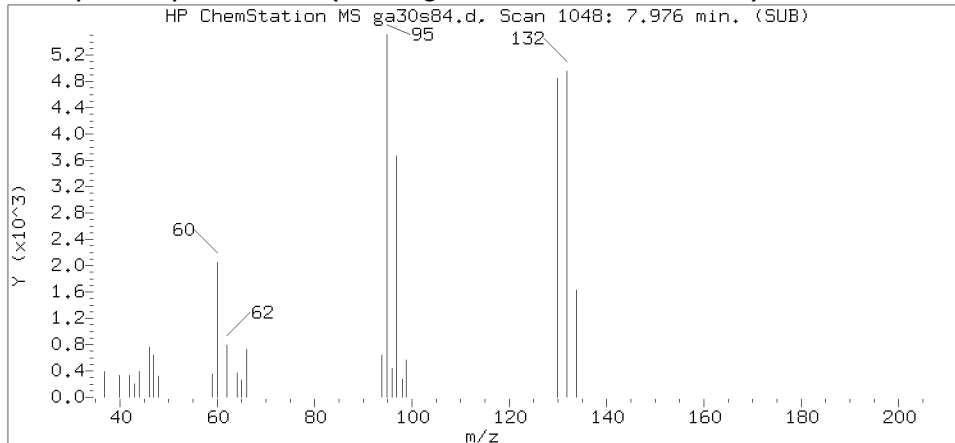
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

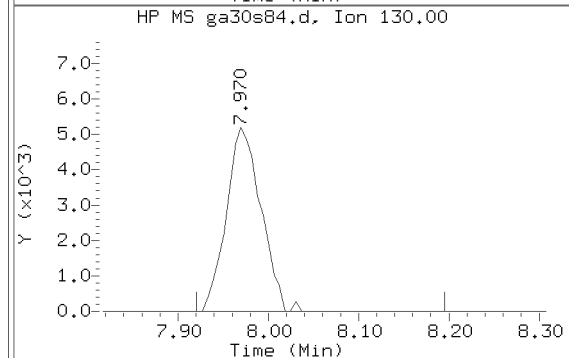
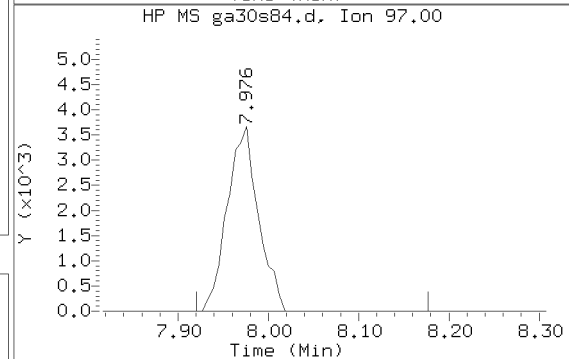
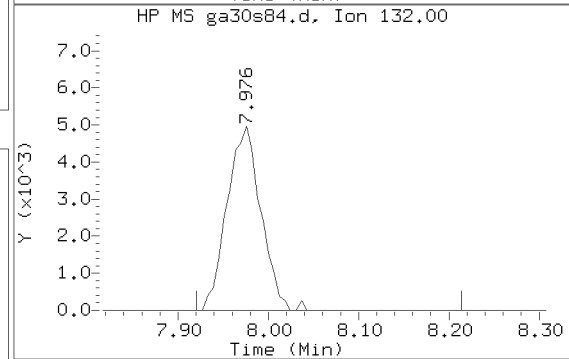
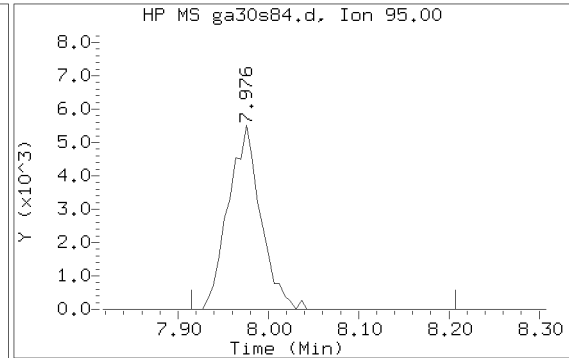
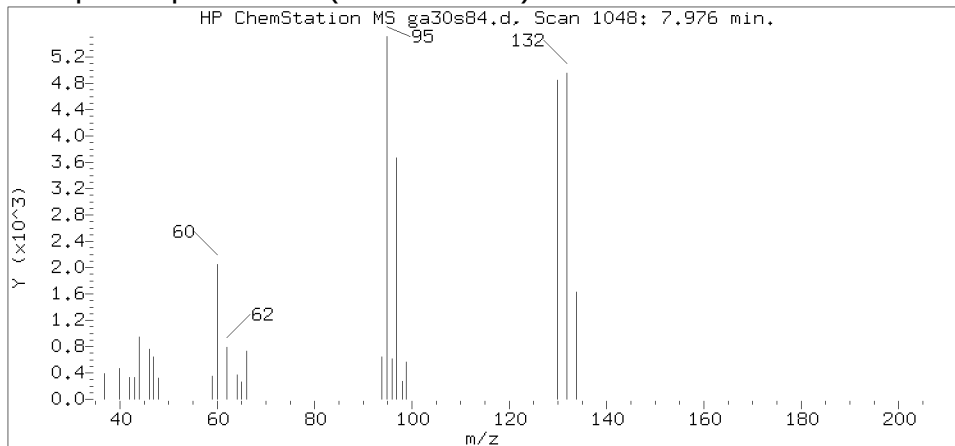
Reference Standard Spectrum for Trichloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

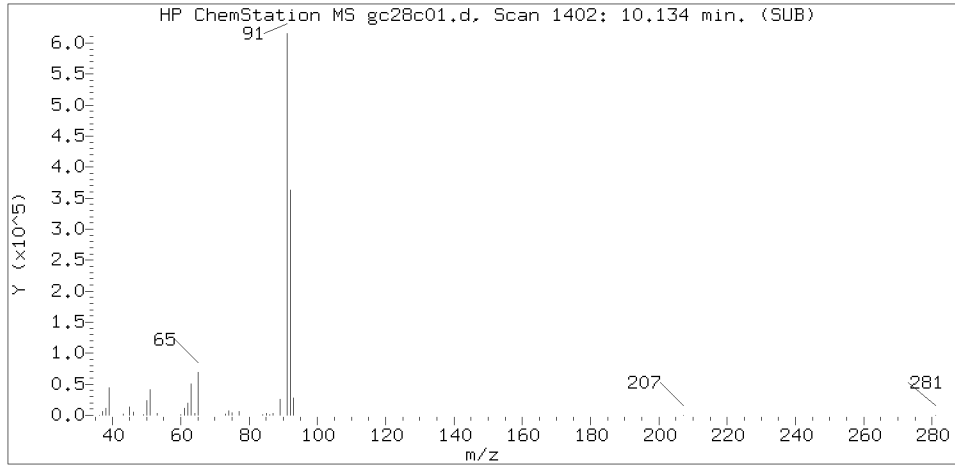
Sample Name: S3242

Lab Sample ID: 9582702

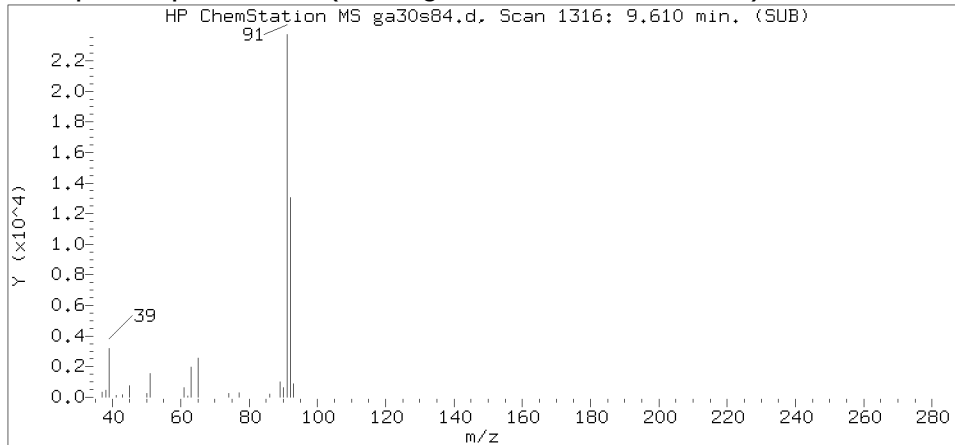
Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1048
Retention Time (minutes): 7.976
Relative Retention Time : -0.00071
Quant Ion : 95.00
Area (flag) : 13733
On-Column Amount (ng) : 0.2560

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user ID: jkh09052

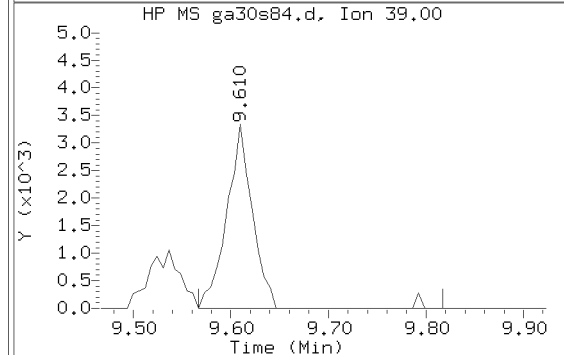
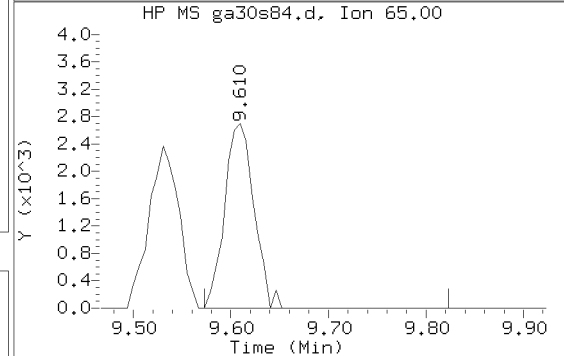
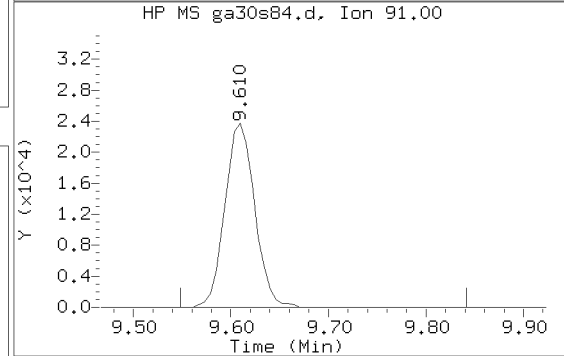
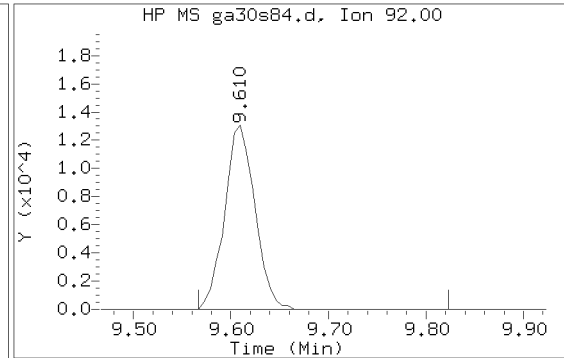
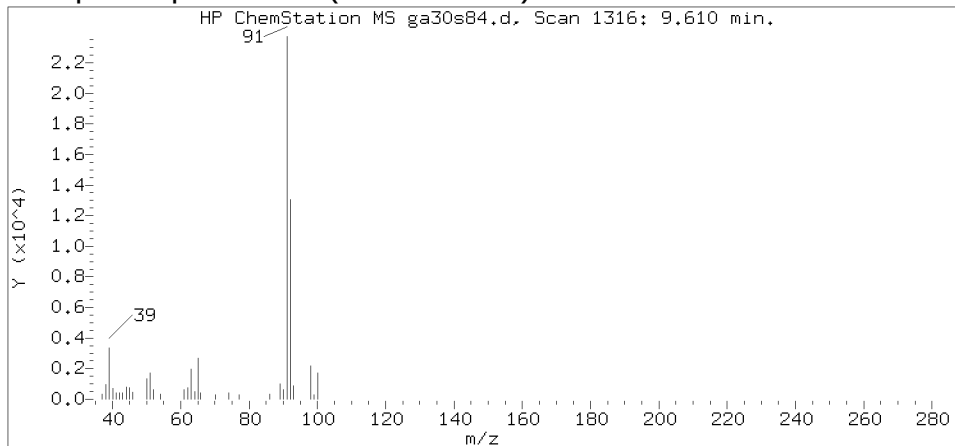
Reference Standard Spectrum for Toluene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

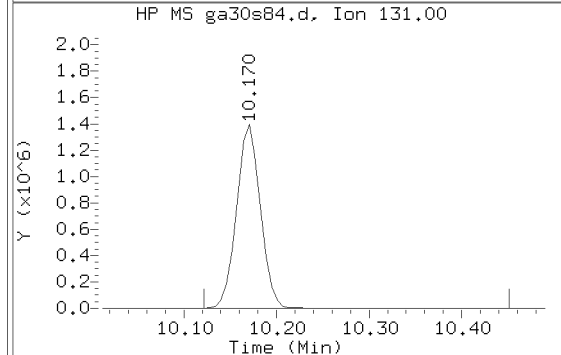
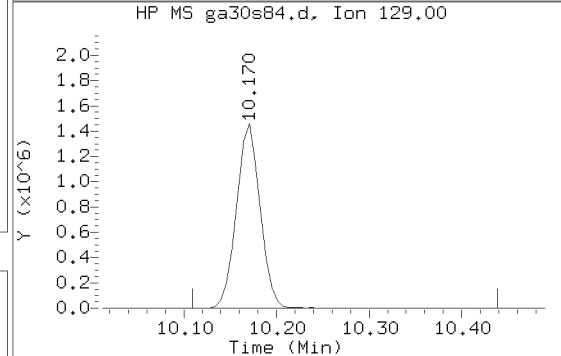
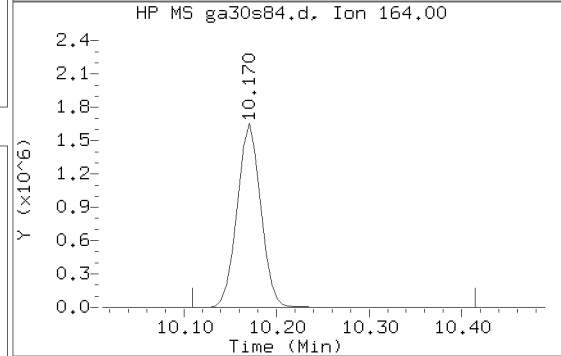
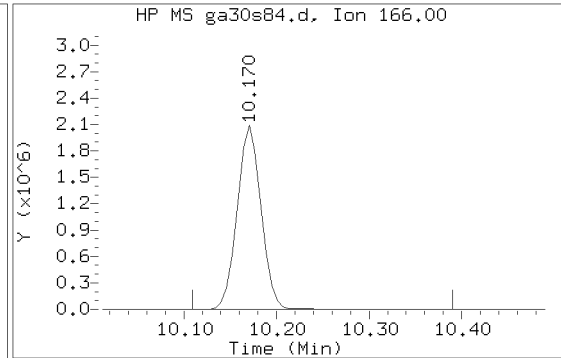
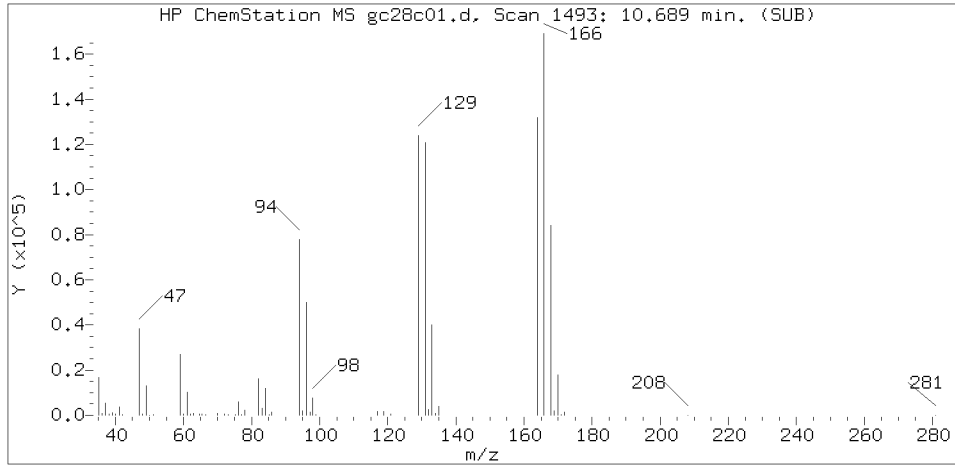
Sample Name: S3242

Lab Sample ID: 9582702

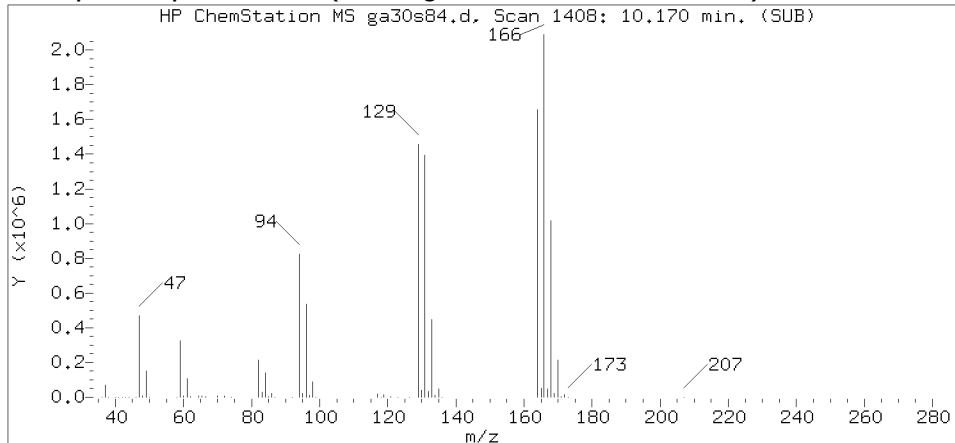
Compound Number : 83
Compound Name : Toluene
Scan Number : 1316
Retention Time (minutes): 9.610
Relative Retention Time : -0.00111
Quant Ion : 92.00
Area (flag) : 28161
On-Column Amount (ng) : 0.2105

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user: jkh09052

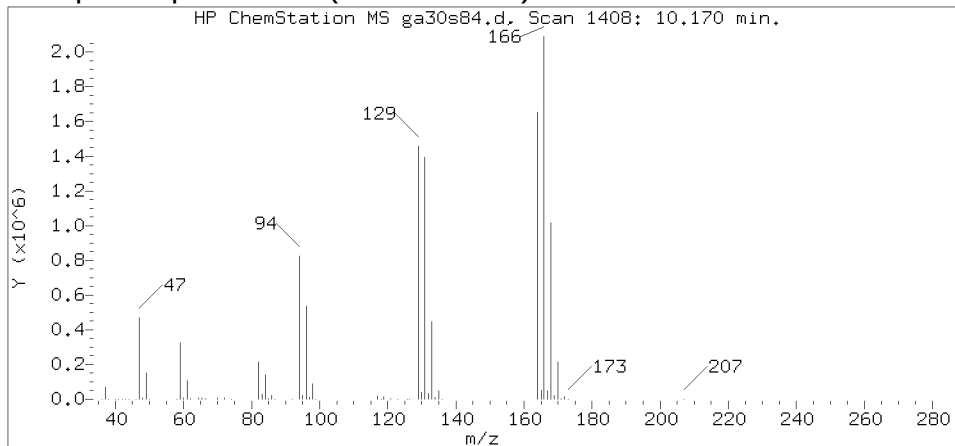
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

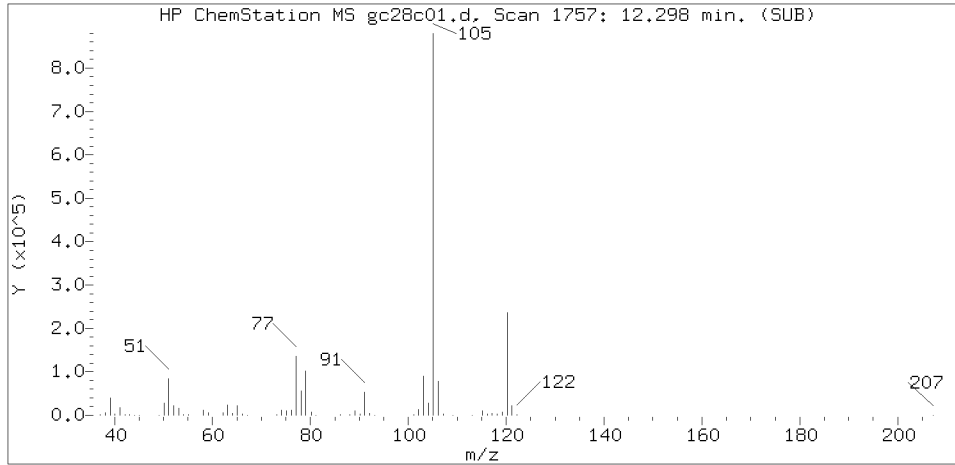
Sample Name: S3242

Lab Sample ID: 9582702

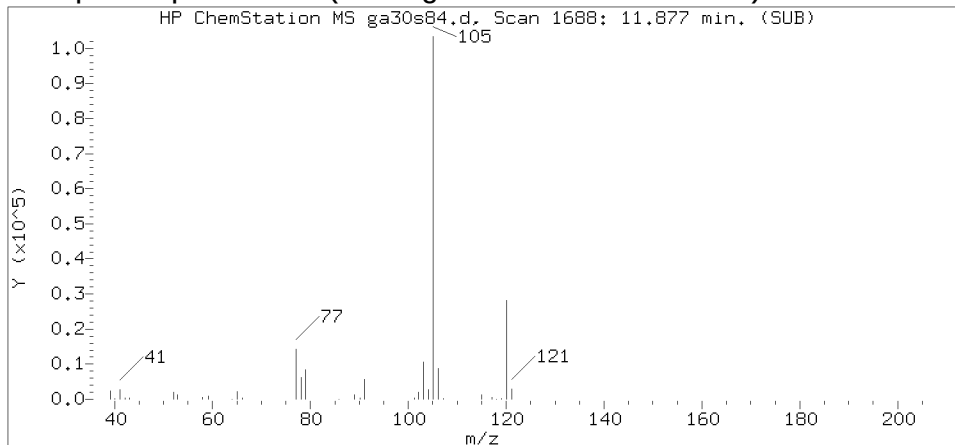
Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.170
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 3734775
On-Column Amount (ng) : 60.2042

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user: jkh09052

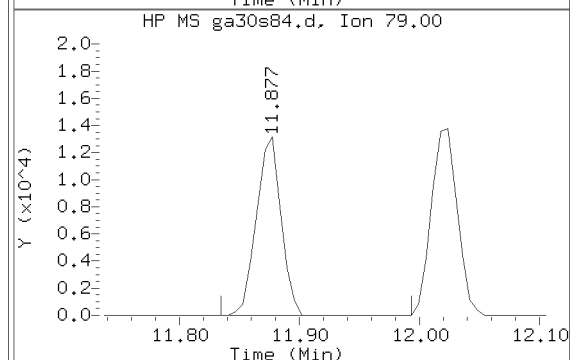
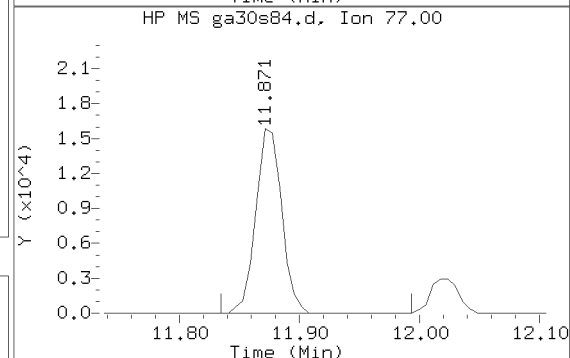
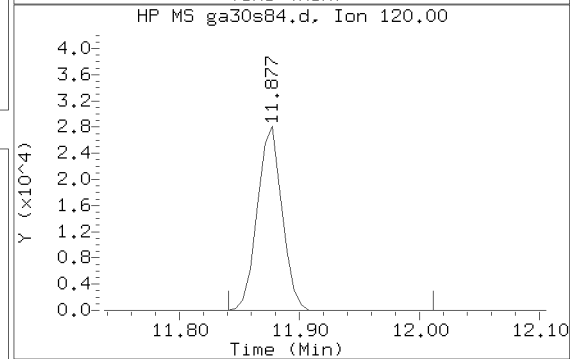
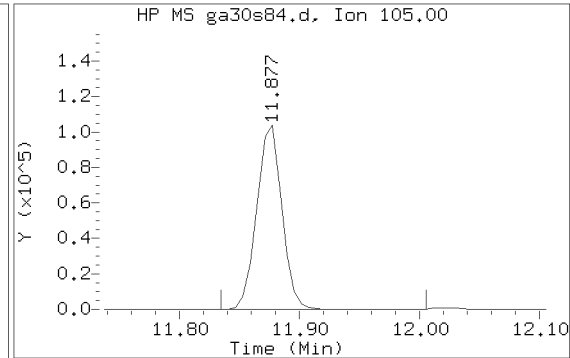
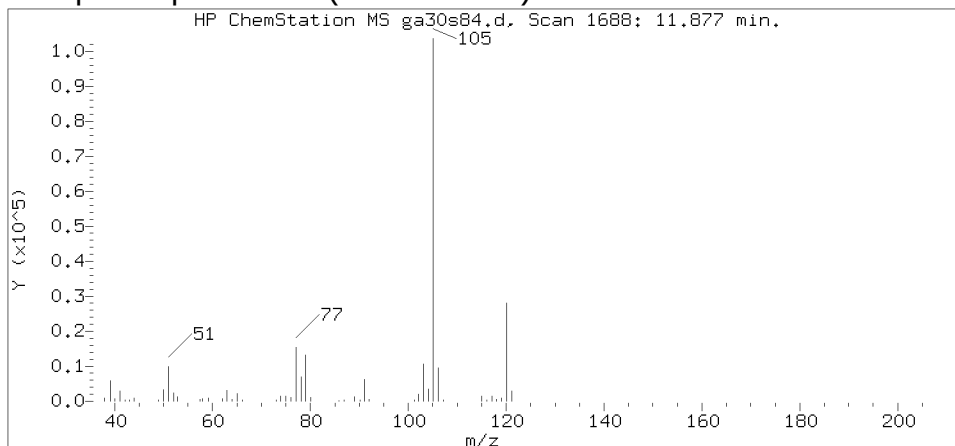
Reference Standard Spectrum for Isopropylbenzene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s84.d
Injection date and time: 01-MAY-2018 02:26

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242

Lab Sample ID: 9582702

Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1688
Retention Time (minutes): 11.877
Relative Retention Time : -0.00055
Quant Ion : 105.00
Area (flag) : 149869
On-Column Amount (ng) : 0.5672

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31.
Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3242DL

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582702
 Sample wt/vol: 2.50 (g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s85.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
354-23-4	Freon 123a	5.0	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	Freon 113	5.0	U
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	5.0	U
1634-04-4	Methyl Tertiary Butyl Ether	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
78-93-3	2-Butanone	50	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

S3242DL

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582702

Sample wt/vol: 2.50 (g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s85.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	5.0	U
10061-02-6-----	trans-1,3-Dichloropropene	5.0	U
79-00-5-----	1,1,2-Trichloroethane	5.0	U
127-18-4-----	Tetrachloroethene	90	D
591-78-6-----	2-Hexanone	50	U
124-48-1-----	Dibromochloromethane	5.0	U
106-93-4-----	1,2-Dibromoethane	5.0	U
108-90-7-----	Chlorobenzene	5.0	U
100-41-4-----	Ethylbenzene	5.0	U
1330-20-7-----	Xylene (Total)	5.0	U
100-42-5-----	Styrene	5.0	U
75-25-2-----	Bromoform	5.0	U
98-82-8-----	Isopropylbenzene	5.0	U
79-34-5-----	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1-----	1,3-Dichlorobenzene	5.0	U
106-46-7-----	1,4-Dichlorobenzene	5.0	U
95-50-1-----	1,2-Dichlorobenzene	5.0	U
96-12-8-----	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1-----	1,2,4-Trichlorobenzene	5.0	U

S3242DL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582702DL

Data file: /chem2/HP16334.i/18apr30b.b/ga30s85.d

Injection date and time: 01-MAY-2018 02:48

Data file Sample Info. Line: S3242DL;9582702DL;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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: 10.00

Volume Purged (Vt): 25 ml

Sample Volume (Vo): 2.5 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.940(0.006)	386	65	161397 (-15)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	1982561 (-10)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1557311 (-12)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	883764 (-14)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(-0.001)	113	497758	9.984	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	103158	9.764	98%		80 - 120
82) Toluene-d8	(3)	9.524(-0.001)	98	2048361	9.808	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	754608	9.440	94%		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					1	5
2) Chloromethane	(2)			Not Detected					2	5
5) Vinyl Chloride	(2)			Not Detected					1	5
7) Bromomethane	(2)			Not Detected					1	5
8) Chloroethane	(2)			Not Detected					1	5
10) Trichlorofluoromethane	(2)			Not Detected					1	5
12) Freon 123a	(2)			Not Detected					2	5
15) 1,1-Dichloroethene	(2)			Not Detected					1	5
16) Freon 113	(2)			Not Detected					2	5
14) Acetone	(1)			Not Detected					30	50
18) Carbon Disulfide	(2)			Not Detected					4	10
21) Methyl Acetate	(1)			Not Detected					3	10
23) Methylene Chloride	(2)			Not Detected					2	5
31) trans-1,2-Dichloroethene	(2)			Not Detected					1	5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					1	5
33) 1,1-Dichloroethane	(2)			Not Detected					1	5
39) cis-1,2-Dichloroethene	(2)			Not Detected					1	5
38) 2-Butanone	(1)			Not Detected					10	50
49) Chloroform	(2)			Not Detected					1	5
51) 1,1,1-Trichloroethane	(2)			Not Detected					1	5
52) Cyclohexane	(2)			Not Detected					1	5
54) Carbon Tetrachloride	(2)			Not Detected					1	5
58) Benzene	(2)			Not Detected					1	5
59) 1,2-Dichloroethane	(2)			Not Detected					1	5
67) Trichloroethene	(2)			Not Detected					1	5
69) Methylcyclohexane	(2)			Not Detected					1	5
70) 1,2-Dichloropropane	(2)			Not Detected					1	5
74) Bromodichloromethane	(2)			Not Detected					1	5
80) cis-1,3-Dichloropropene	(2)			Not Detected					1	5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					10	50
83) Toluene	(3)			Not Detected					1	5

S3242DL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582702DL

Data file: /chem2/HP16334.i/18apr30b.b/ga30s85.d

Injection date and time: 01-MAY-2018 02:48

Data file Sample Info. Line: S3242DL;9582702DL;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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: 10.00

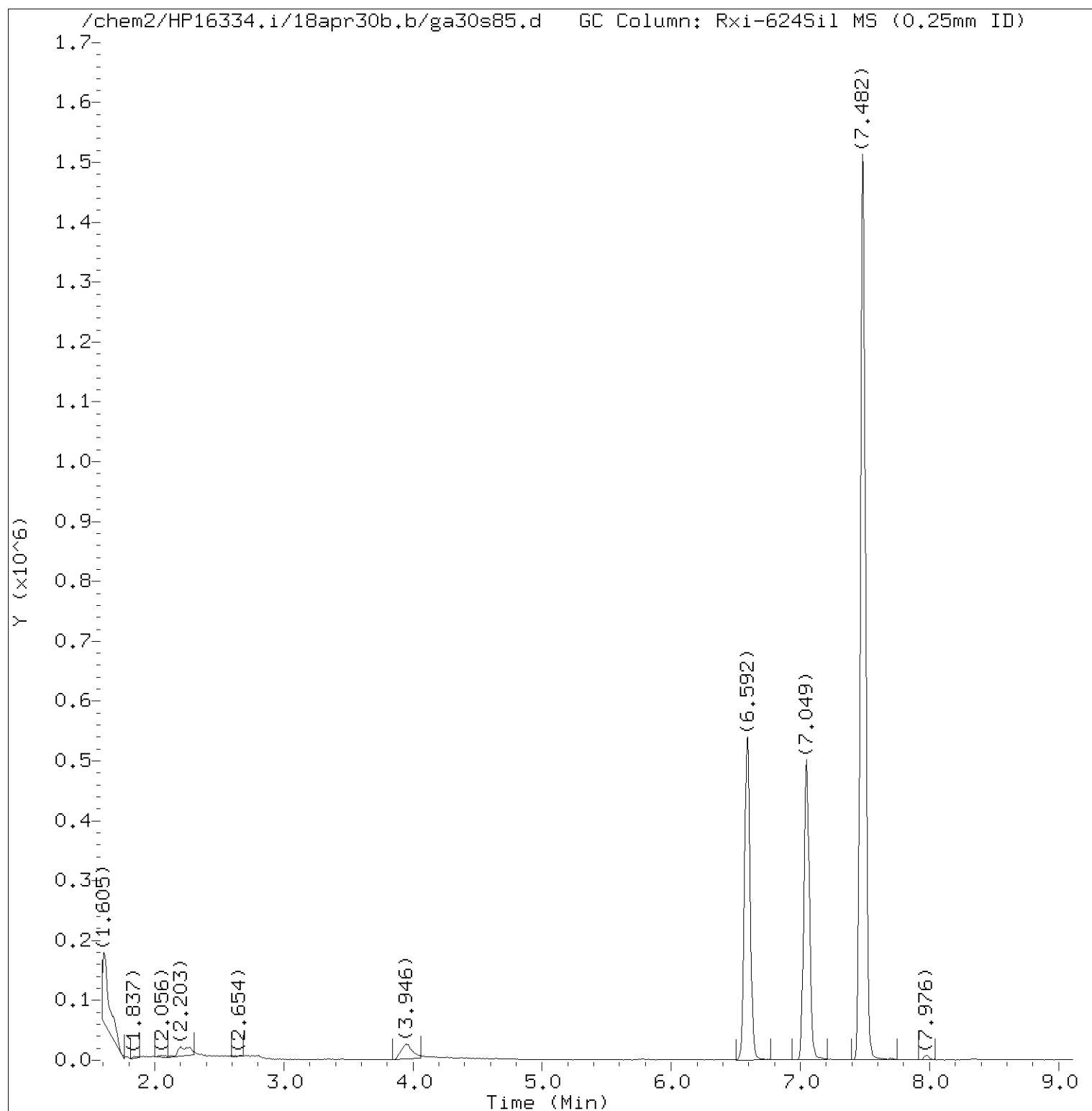
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 2.5 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					1	5
88) 1,1,2-Trichloroethane	(3)			Not Detected					1	5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	554974	9.044	90.44			1	5
91) 2-Hexanone	(1)			Not Detected					10	50
93) Dibromochloromethane	(3)			Not Detected					1	5
95) 1,2-Dibromoethane	(3)			Not Detected					1	5
98) Chlorobenzene	(3)			Not Detected					1	5
100) Ethylbenzene	(3)			Not Detected					1	5
101) m+p-Xylene	(3)			Not Detected					1	5
104) o-Xylene	(3)			Not Detected					1	5
105) Xylene (Total)	(3)			Not Detected					1	5
106) Styrene	(3)			Not Detected					1	5
107) Bromoform	(3)			Not Detected					1	5
108) Isopropylbenzene	(3)			Not Detected					1	5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					1	5
131) 1,3-Dichlorobenzene	(4)			Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)			Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)			Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					2	5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					1	5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s85.d
Injection date and time: 01-MAY-2018 02:48

Instrument ID: HP16334.i
Analyst ID: MSK07970

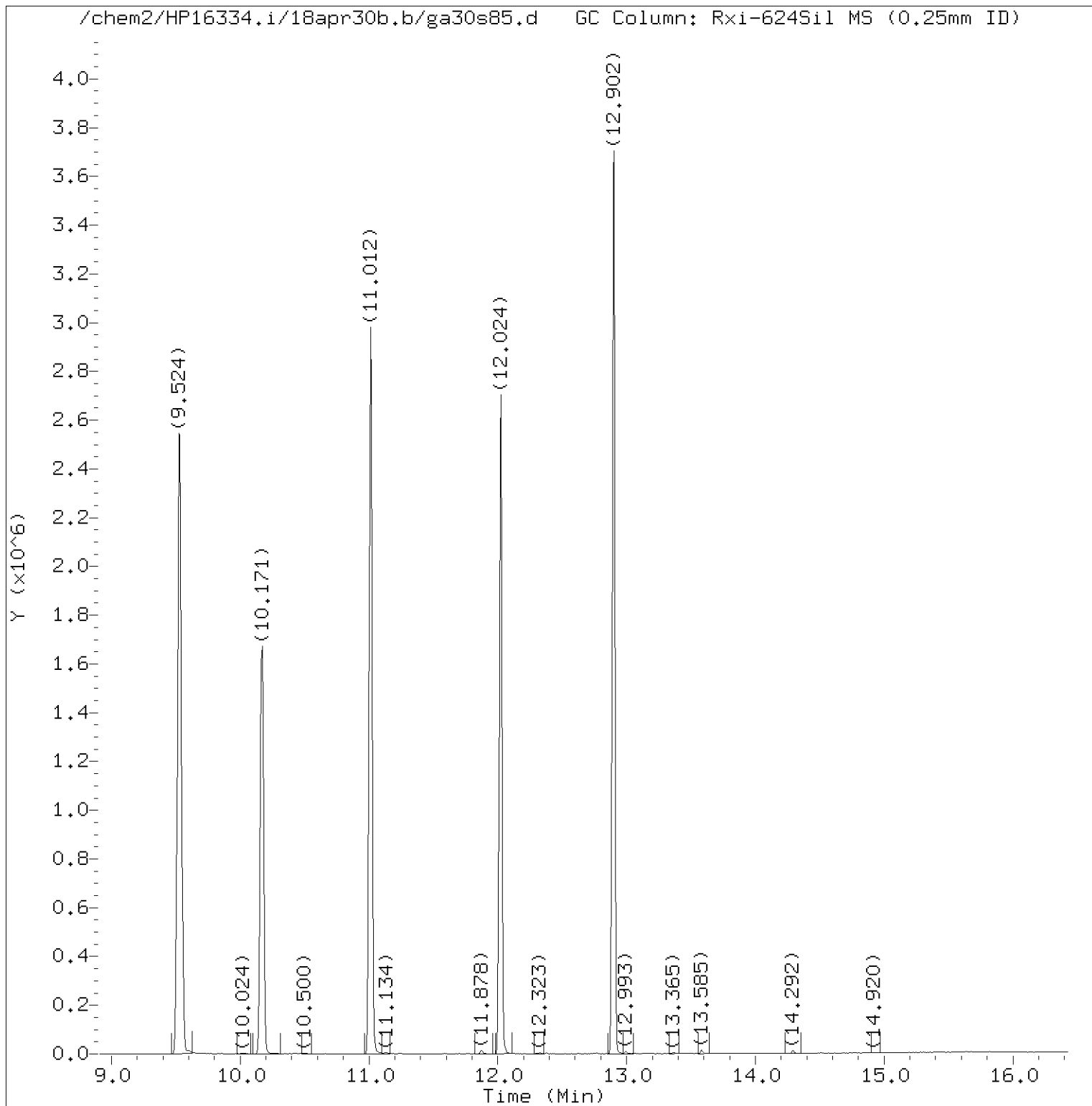
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242DL

Lab Sample ID: 9582702DL

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 128 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s85.d
Injection date and time: 01-MAY-2018 02:48

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242DL

Lab Sample ID: 9582702DL

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 129 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s85.d
Injection date and time: 01-MAY-2018 02:48

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242DL

Lab Sample ID: 9582702DL

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.940	65	161397	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	497758	9.984
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	103158	9.764
63)*Fluorobenzene	(2)	7.482	96	1982561	10.000
82)\$Toluene-d8	(3)	9.524	98	2048361	9.808
89) Tetrachloroethene	(3)	10.171	166	554974	9.044
97)*Chlorobenzene-d5	(3)	11.012	117	1557311	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	754608	9.440
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	883764	10.000

* = Compound is an internal standard.

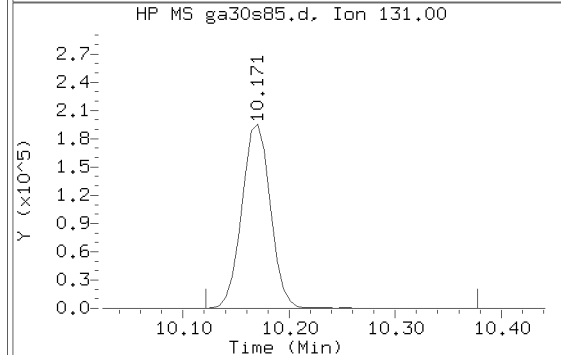
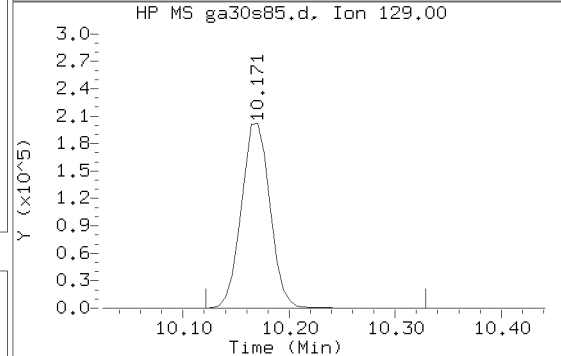
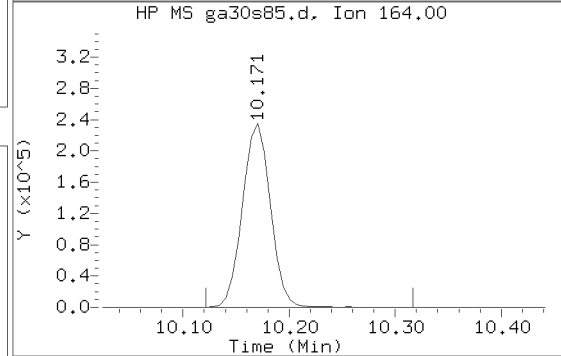
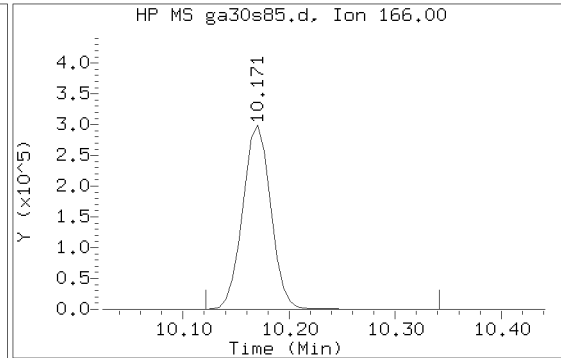
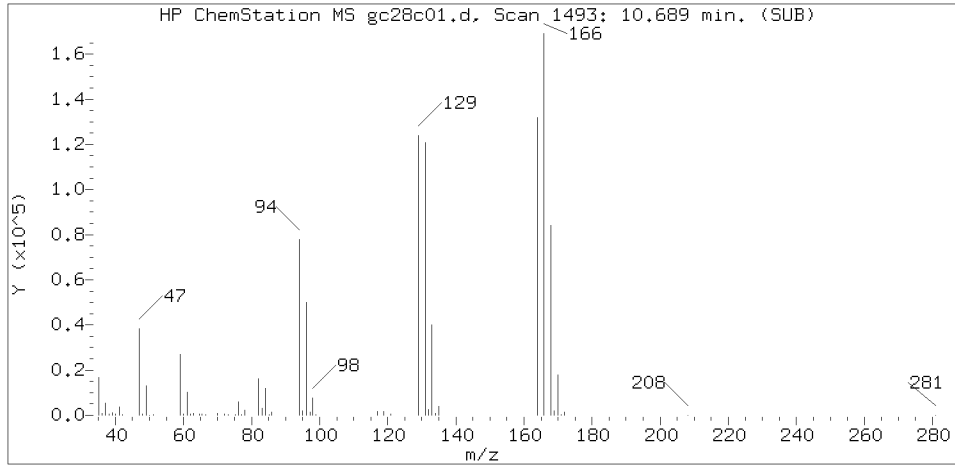
\$ = Compound is a surrogate standard.

page 1 of 1

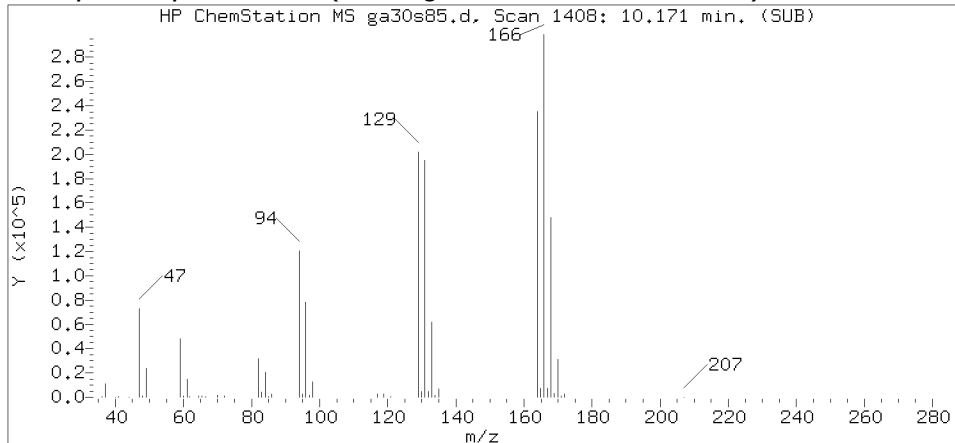
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

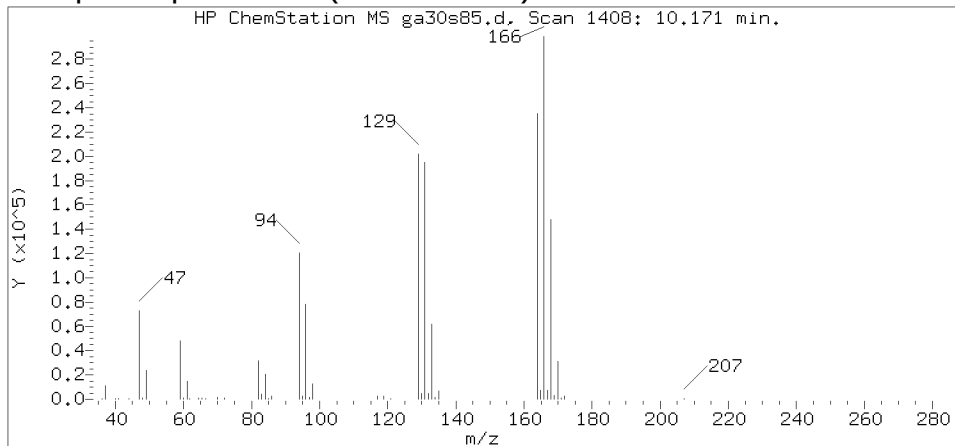
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s85.d
Injection date and time: 01-MAY-2018 02:48

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: S3242DL

Lab Sample ID: 9582702DL

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.171
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 554974
On-Column Amount (ng) : 9.0441

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Lancaster Laboratories

Contract: _____

TRPIN

Lab Code: LANCAS

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 9582703

Sample wt/vol: 25.00(g/mL) mL

Lab File ID: HP16334.i/18apr30b.b/ga30s86.d

Level: (low/med) LOW

Date Received: 04/28/18

Moisture: not dec. _____

Date Analyzed: 05/01/18

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRPIN

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582703

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s86.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.3	J
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	1.9	
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

TRPIN

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582703

Data file: /chem2/HP16334.i/18apr30b.b/ga30s86.d

Injection date and time: 01-MAY-2018 03:11

Data file Sample Info. Line: TRPIN;9582703;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.934(0.012)	385	65	156473 (-18)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	1958904 (-11)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1554882 (-12)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	876522 (-15)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(-0.001)	113	487735	9.901	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	102912	9.859	99%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2026803	9.720	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	752389	9.427	94%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)	9.610(-0.001)	92	42856	0.324	0.32		J	0.1	0.5

TRPIN

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582703

Data file: /chem2/HP16334.i/18apr30b.b/ga30s86.d

Injection date and time: 01-MAY-2018 03:11

Data file Sample Info. Line: TRPIN;9582703;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

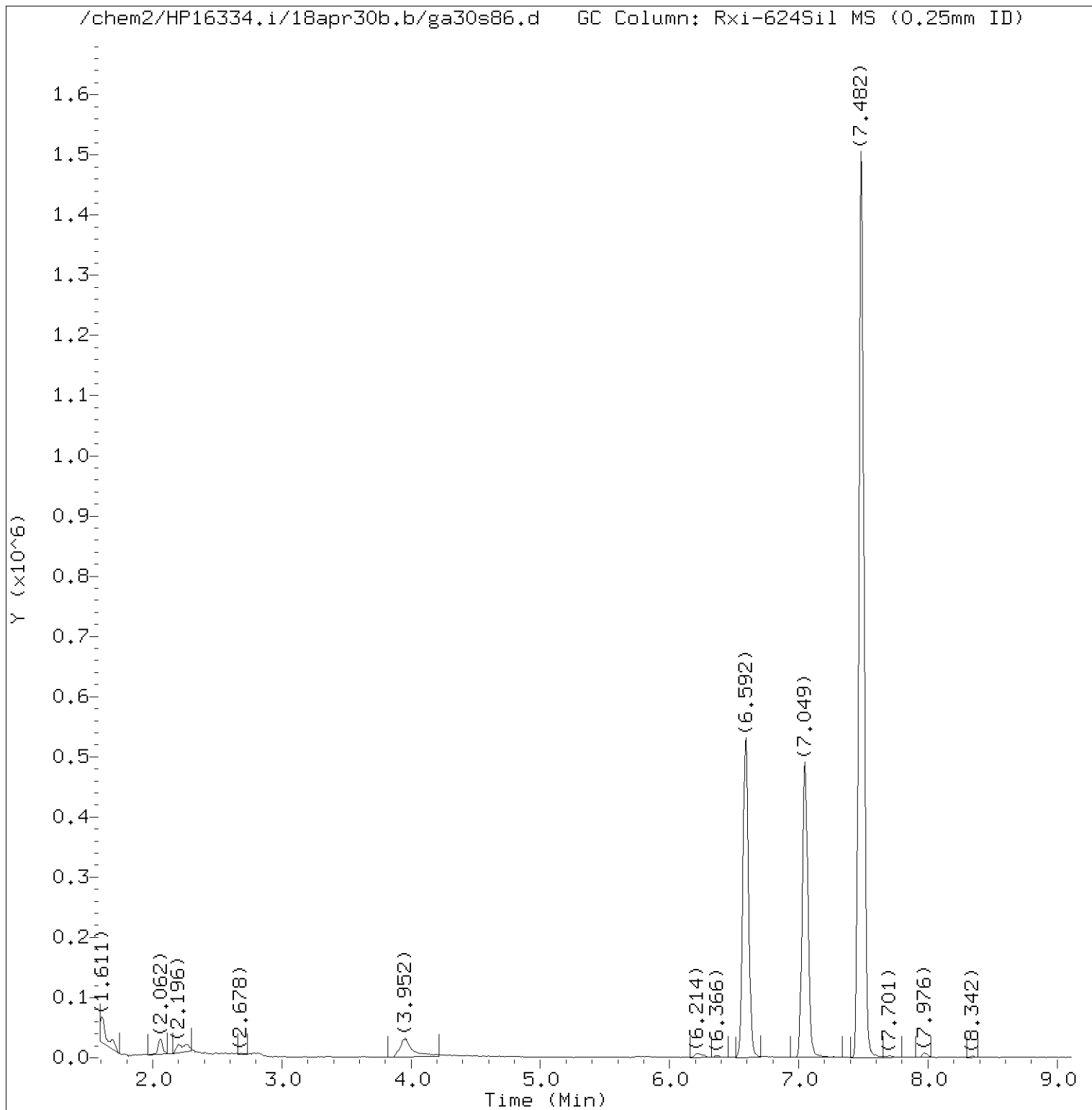
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	116606	1.903	1.90			0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s86.d
Injection date and time: 01-MAY-2018 03:11

Instrument ID: HP16334.i
Analyst ID: MSK07970

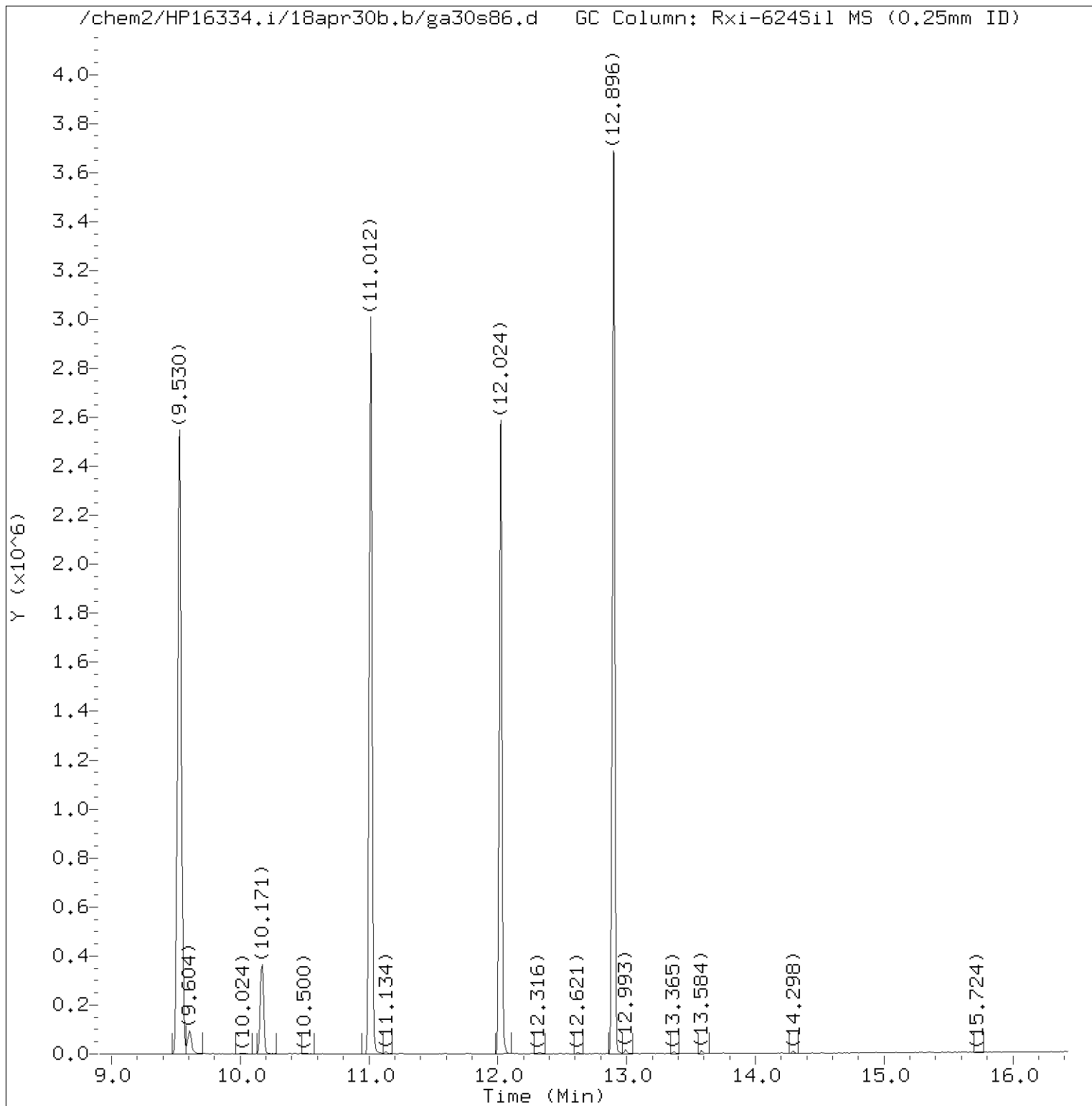
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: TRPIN

Lab Sample ID: 9582703

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 136 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s86.d
Injection date and time: 01-MAY-2018 03:11

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: TRPIN

Lab Sample ID: 9582703

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 137 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s86.d
Injection date and time: 01-MAY-2018 03:11

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: TRPIN

Lab Sample ID: 9582703

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.934	65	156473	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	487735	9.901
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	102912	9.859
63)*Fluorobenzene	(2)	7.482	96	1958904	10.000
82)\$Toluene-d8	(3)	9.530	98	2026803	9.720
83) Toluene	(3)	9.610	92	42856	0.324
89) Tetrachloroethene	(3)	10.171	166	116606	1.903
97)*Chlorobenzene-d5	(3)	11.012	117	1554882	10.000
111)\$4-Bromofluorobenzene	(3)	12.018	95	752389	9.427
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	876522	10.000

* = Compound is an internal standard.

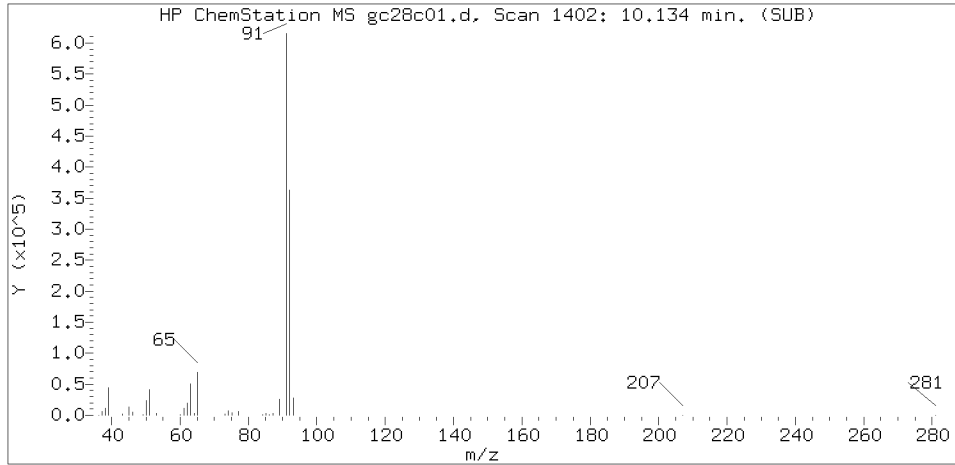
\$ = Compound is a surrogate standard.

page 1 of 1

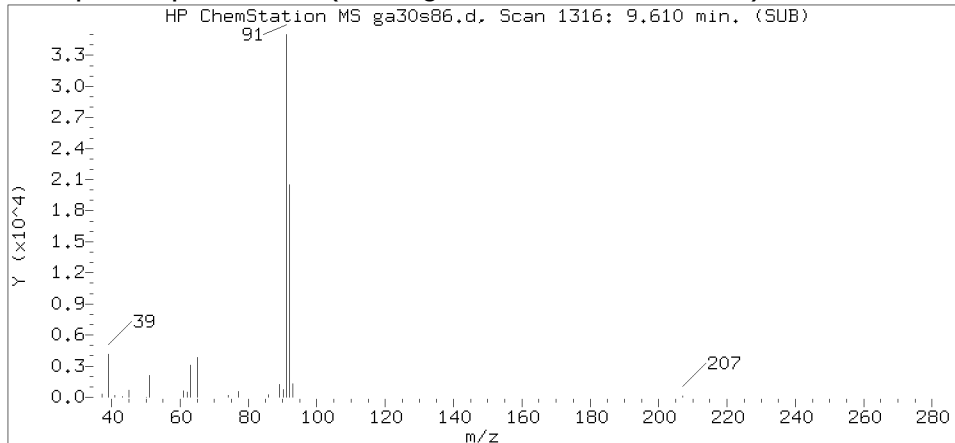
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

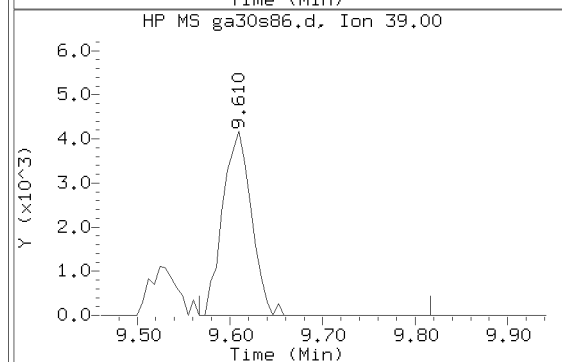
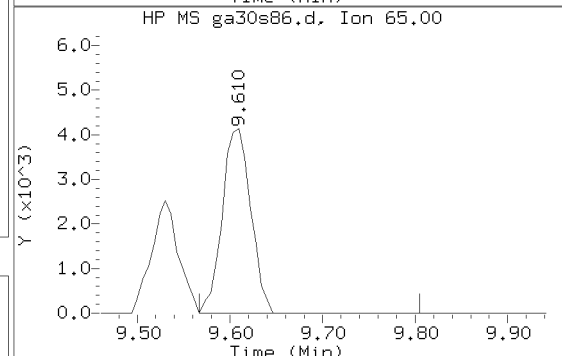
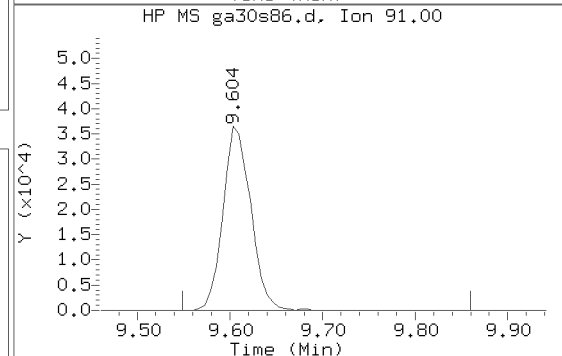
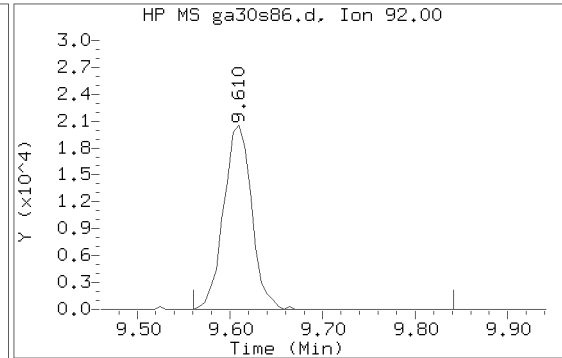
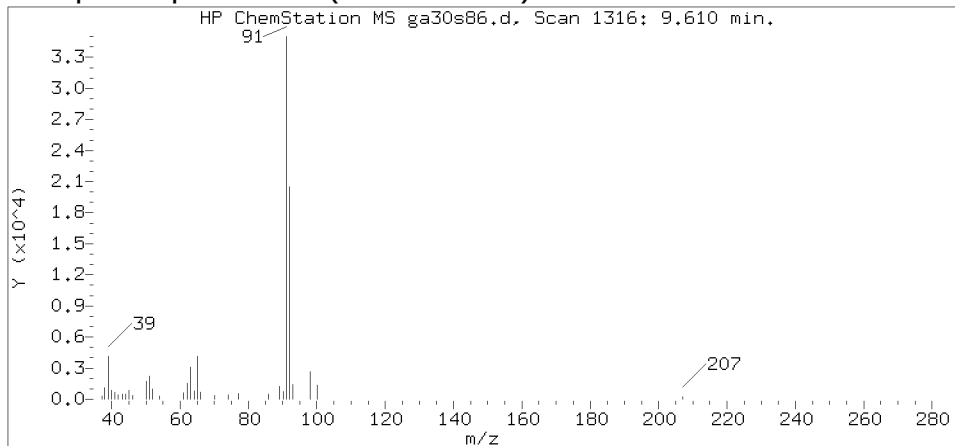
Reference Standard Spectrum for Toluene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s86.d
Injection date and time: 01-MAY-2018 03:11

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

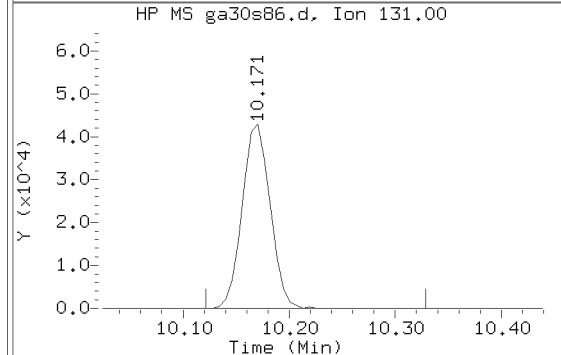
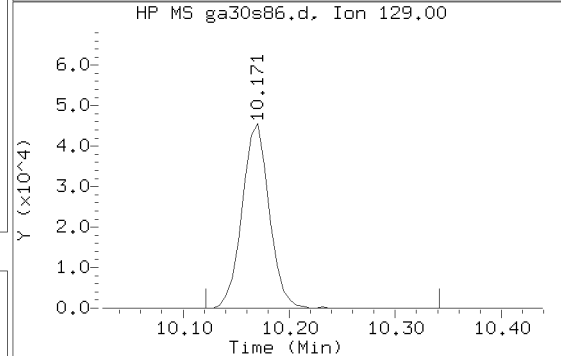
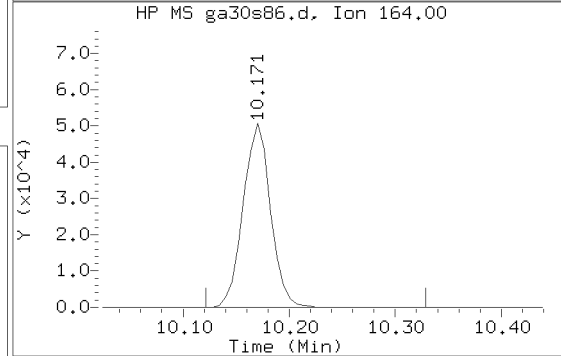
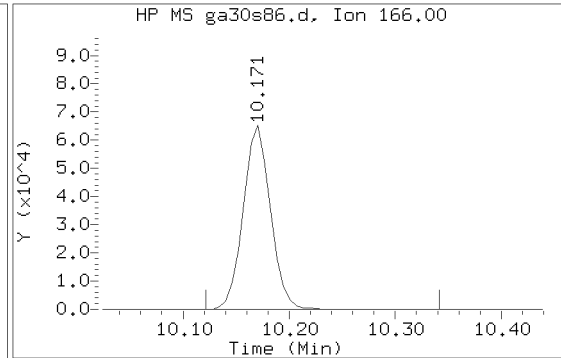
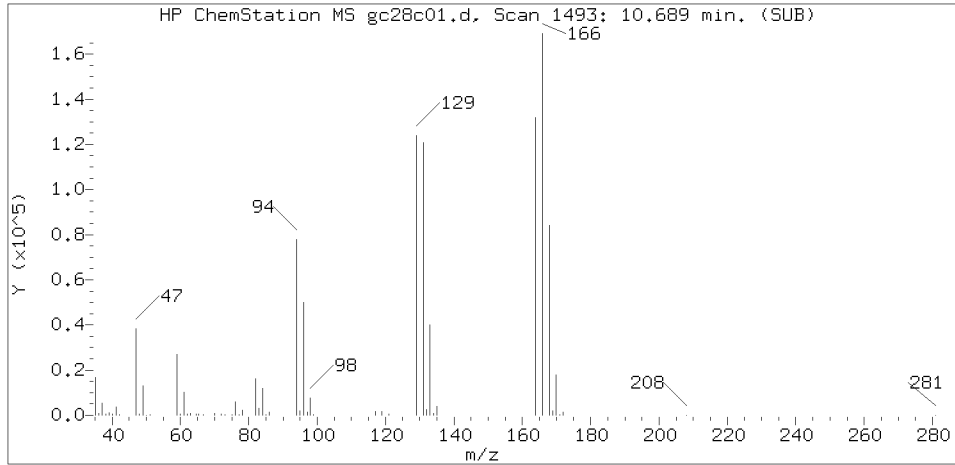
Sample Name: TRPIN

Lab Sample ID: 9582703

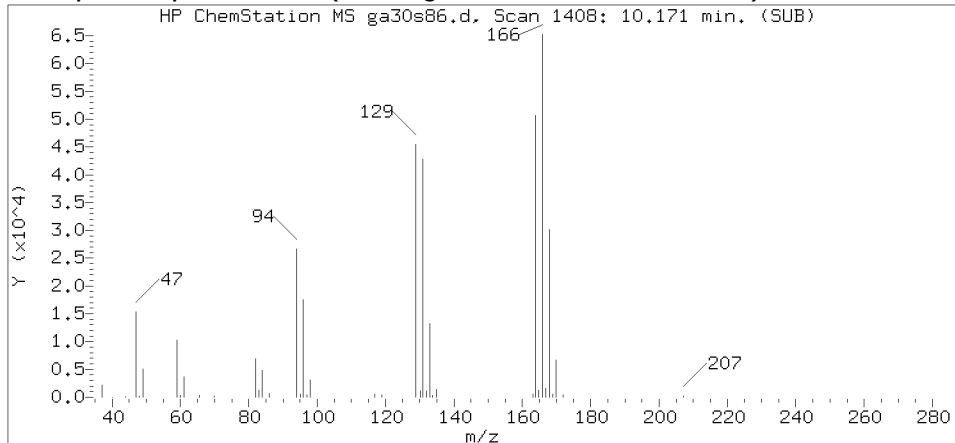
Compound Number : 83
Compound Name : Toluene
Scan Number : 1316
Retention Time (minutes): 9.610
Relative Retention Time : -0.00111
Quant Ion : 92.00
Area (flag) : 42856
On-Column Amount (ng) : 0.3244

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user: jkh09052

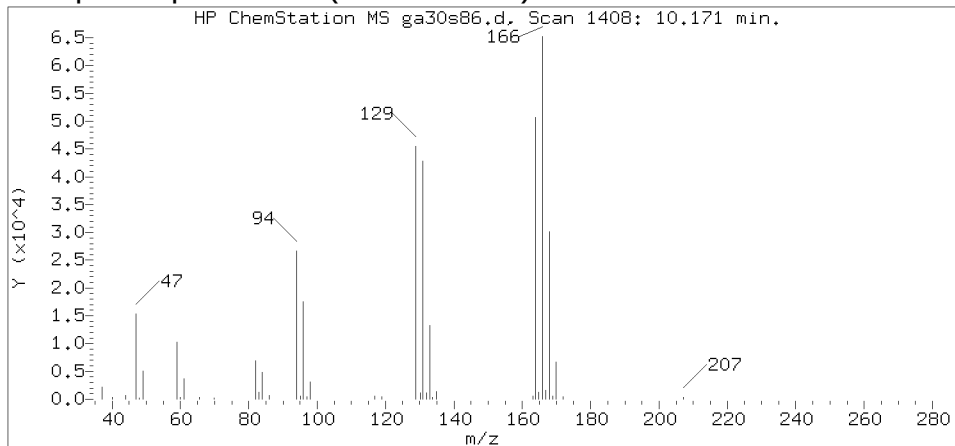
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s86.d
Injection date and time: 01-MAY-2018 03:11

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: TRPIN

Lab Sample ID: 9582703

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.171
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 116606
On-Column Amount (ng) : 1.9032

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384D

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582704
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s87.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	53	E
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	12	
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384D

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582704
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s87.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.5	U
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	0.5	U
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	3.7	
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.2	J
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

B384D

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582704

Data file: /chem2/HP16334.i/18apr30b.b/ga30s87.d

Injection date and time: 01-MAY-2018 03:33

Data file Sample Info. Line: B384D;9582704;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.952(-0.006)	388	65	163211 (-14)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	1986915 (-10)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1573173 (-11)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	890225 (-13)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(-0.001)	113	496445	9.936	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	105232	9.939	99%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2065318	9.789	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	761673	9.432	94%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)	6.366(-0.000)	83	4933061	52.927	52.93		E	0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)	8.652(0.000)	83	779839	11.842	11.84			0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5

E = Compound concentration above calibration range.

B384D

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582704

Data file: /chem2/HP16334.i/18apr30b.b/ga30s87.d

Injection date and time: 01-MAY-2018 03:33

Data file Sample Info. Line: B384D;9582704;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

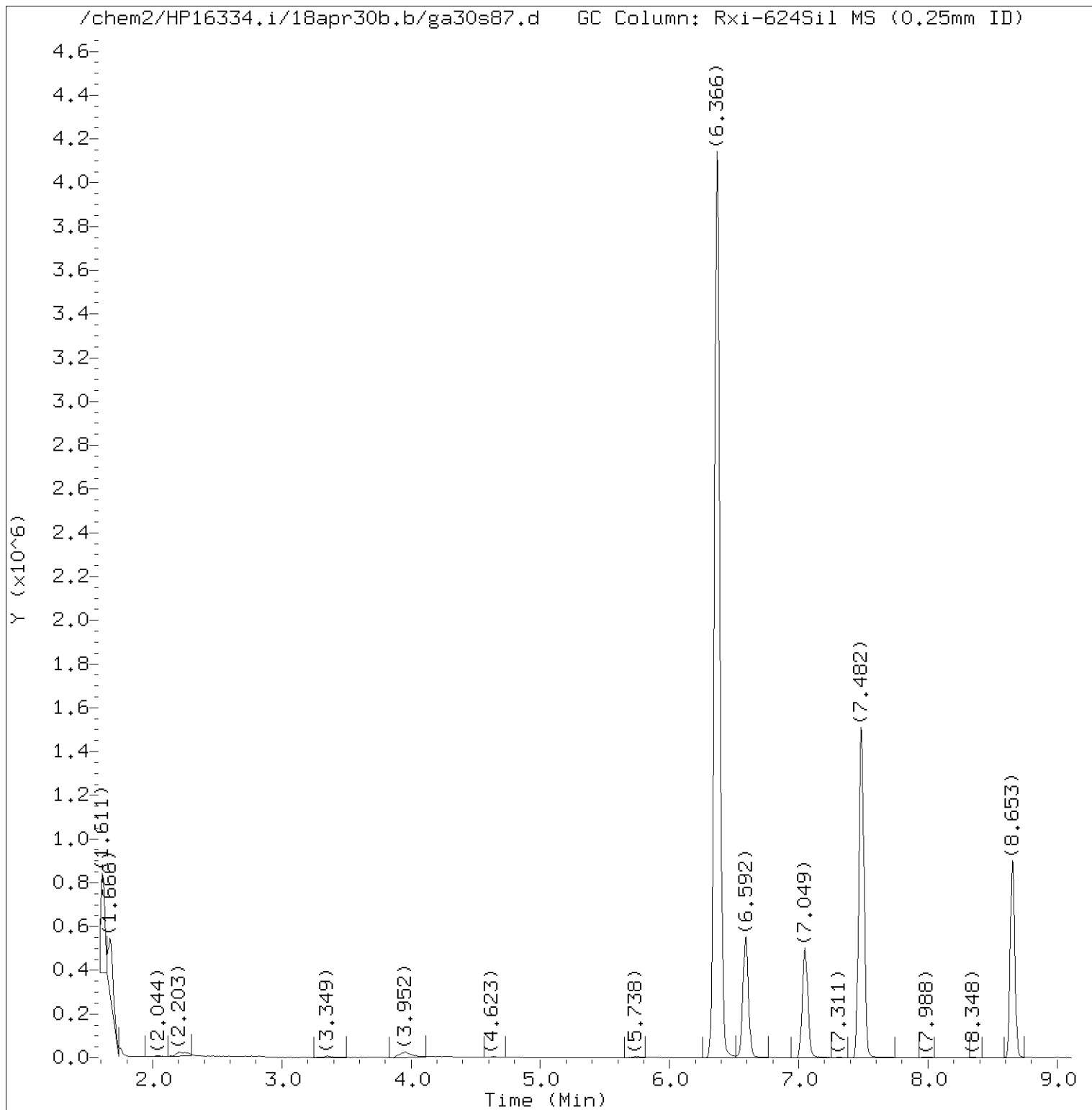
Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)			Not Detected					0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)	10.469(-0.000)	129	166453	3.747	3.75			0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)	11.749(0.000)	173	4663A	0.182	0.18		J	0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

A = User selected an alternate peak.

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Roy R. Mellott on 05/04/2018 at 16:37. PARALLAX ID: rrm00219



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

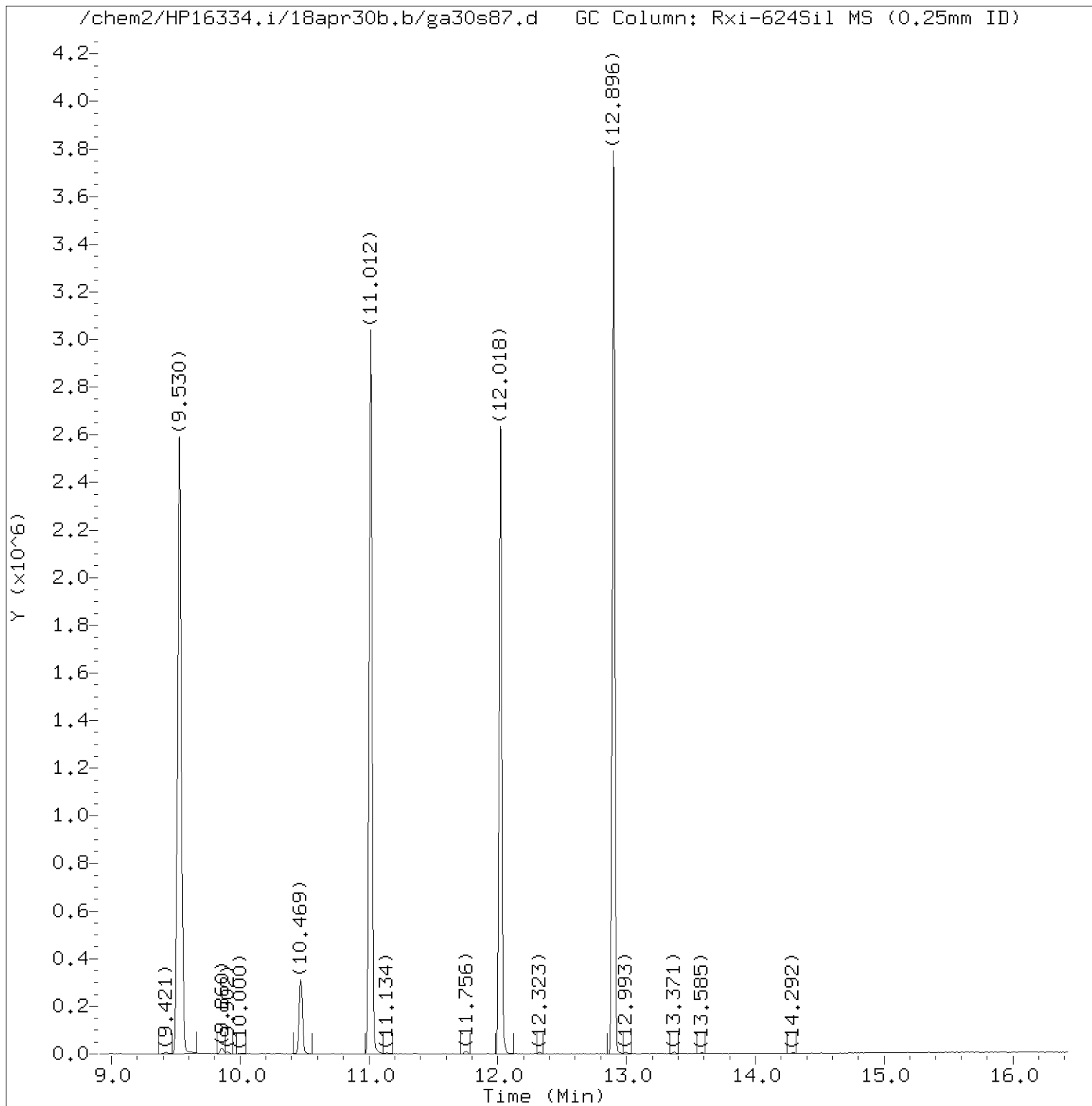
Sample Name: B384D

Lab Sample ID: 9582704

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 145 of 730

page 1 of 2



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384D

Lab Sample ID: 9582704

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 146 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384D

Lab Sample ID: 9582704

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.952	65	163211	50.000
49) Chloroform	(2)	6.366	83	4933061	52.927
50)\$Dibromofluoromethane	(2)	6.592	113	496445	9.936
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	105232	9.939
63)*Fluorobenzene	(2)	7.482	96	1986915	10.000
74) Bromodichloromethane	(2)	8.653	83	779839	11.842
82)\$Toluene-d8	(3)	9.530	98	2065318	9.789
93) Dibromochloromethane	(3)	10.469	129	166453	3.747
97)*Chlorobenzene-d5	(3)	11.012	117	1573173	10.000
107) Bromoform	(3)	11.749	173	4663A	0.182
111)\$4-Bromofluorobenzene	(3)	12.018	95	761673	9.432
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	890225	10.000

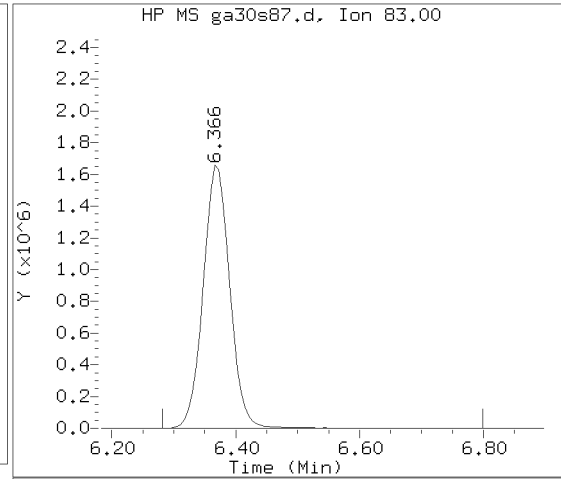
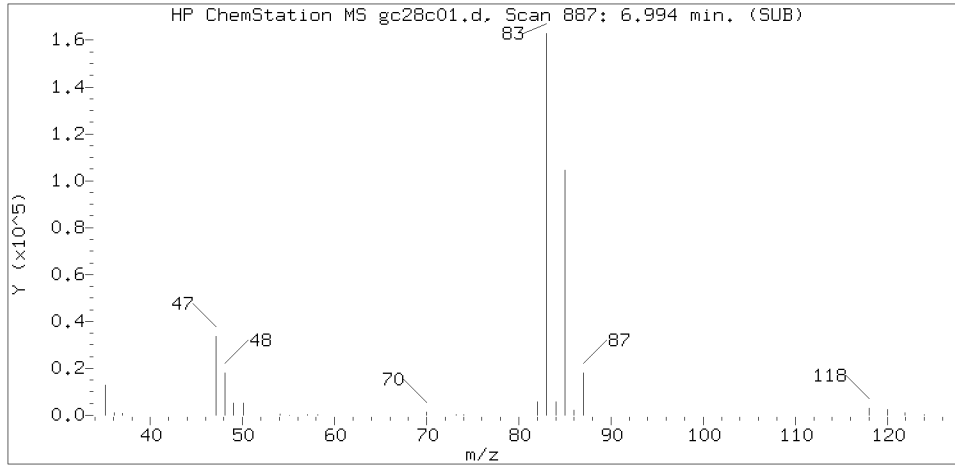
A = User selected an alternate hit.
* = Compound is an internal standard.
\$ = Compound is a surrogate standard.

page 1 of 1

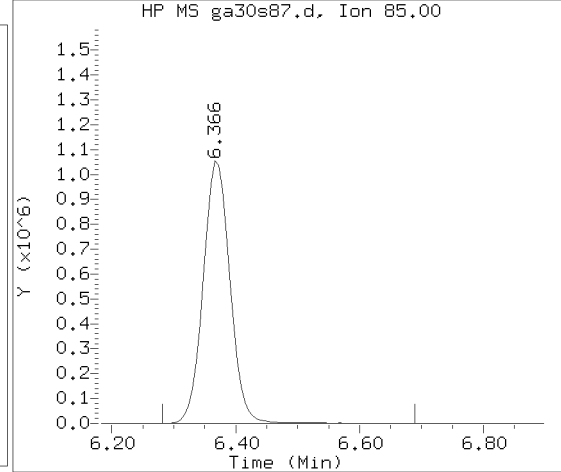
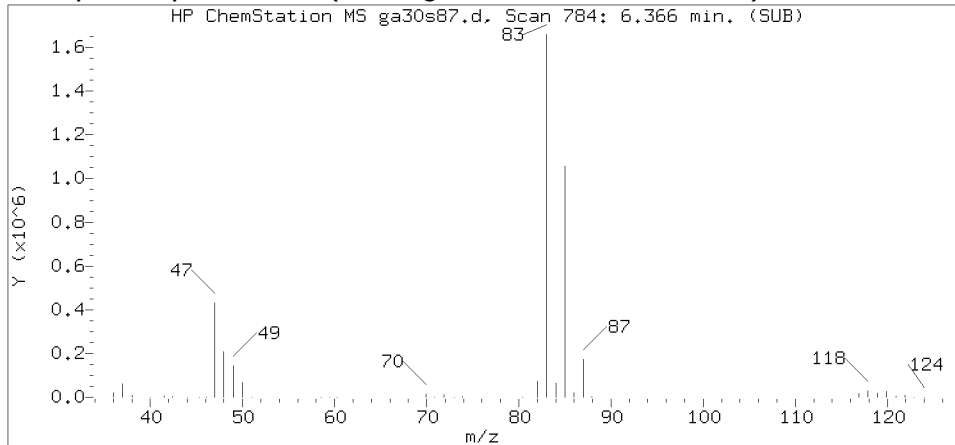
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

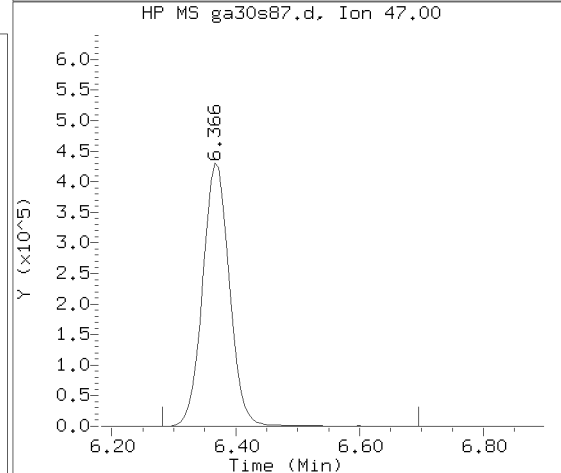
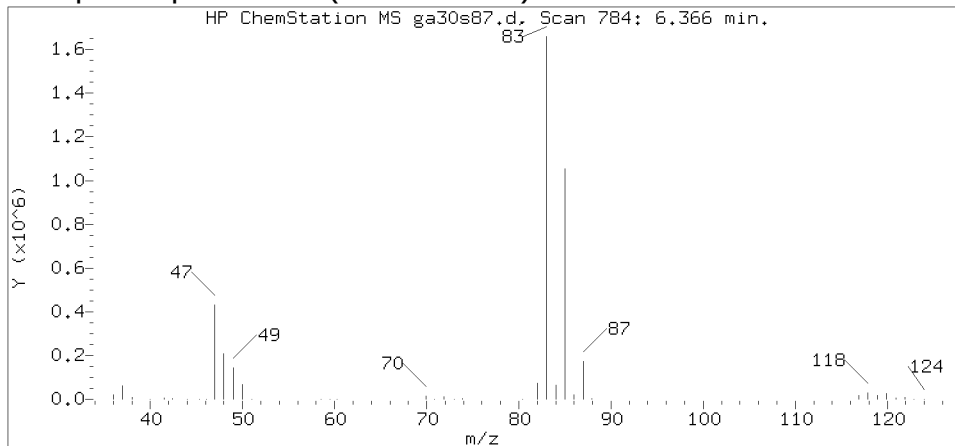
Reference Standard Spectrum for Chloroform



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

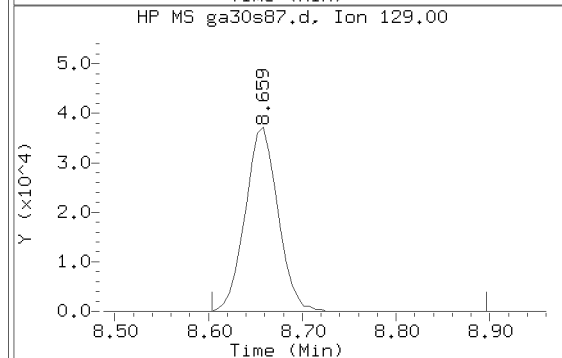
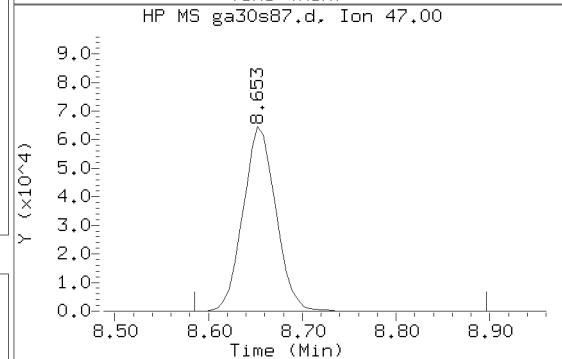
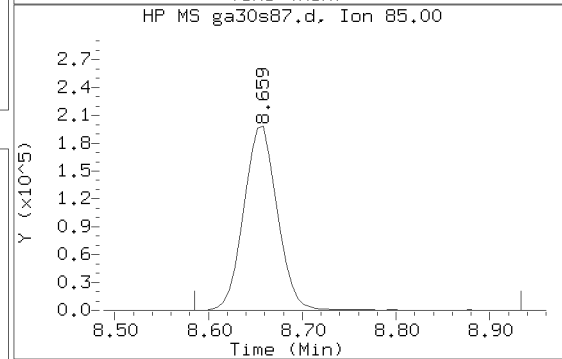
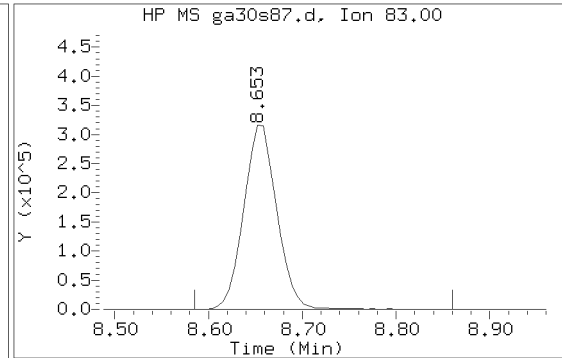
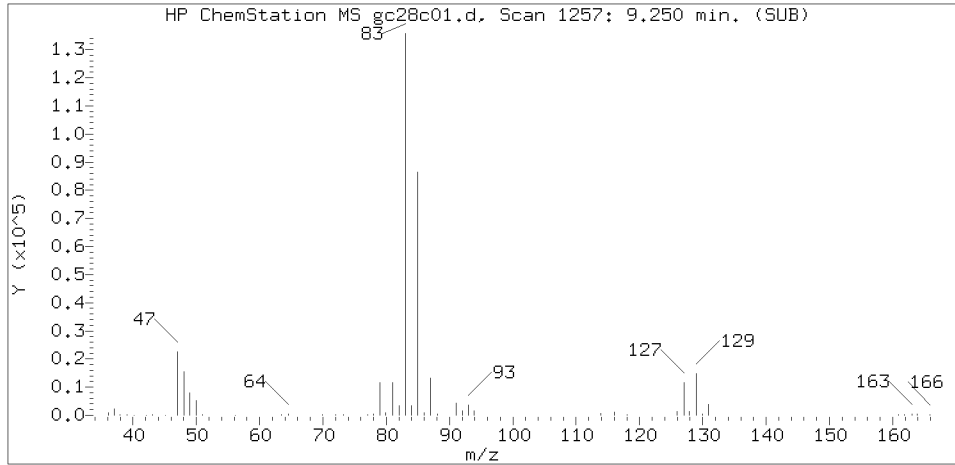
Sample Name: B384D

Lab Sample ID: 9582704

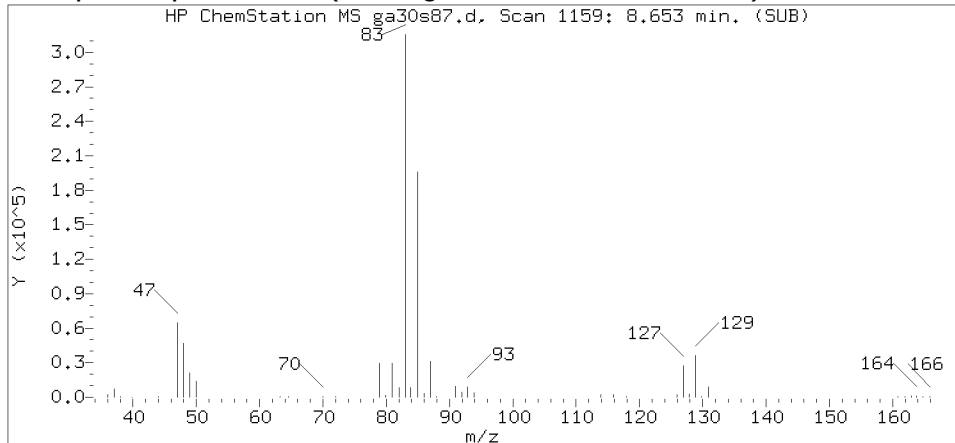
Compound Number : 49
Compound Name : Chloroform
Scan Number : 784
Retention Time (minutes): 6.366
Relative Retention Time : -0.00012
Quant Ion : 83.00
Area (flag) : 4933061
On-Column Amount (ng) : 52.9272

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user: jkh09052

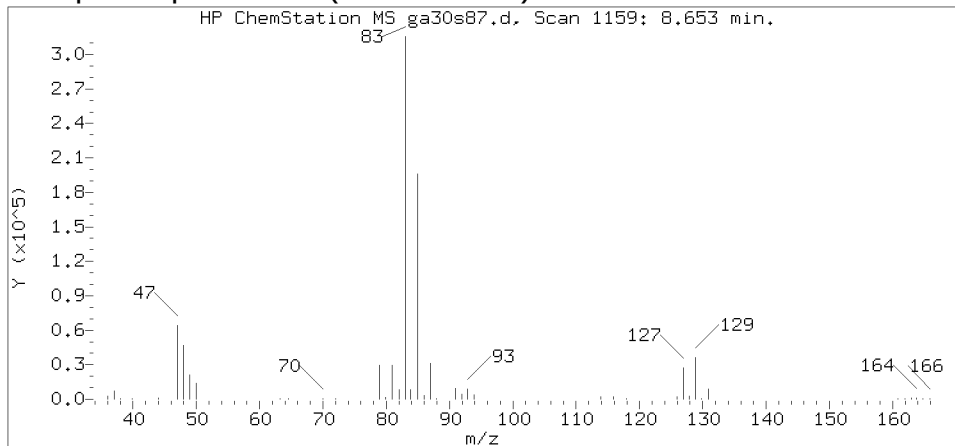
Reference Standard Spectrum for Bromodichloromethane



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

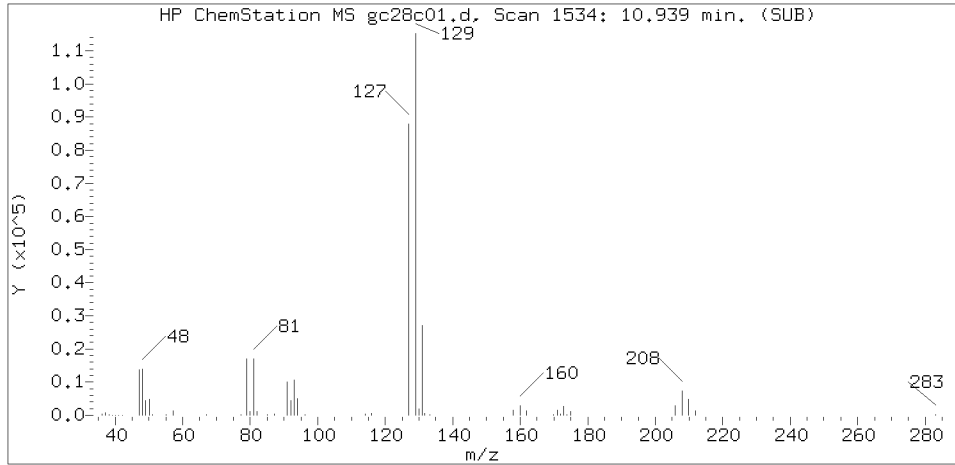
Sample Name: B384D

Lab Sample ID: 9582704

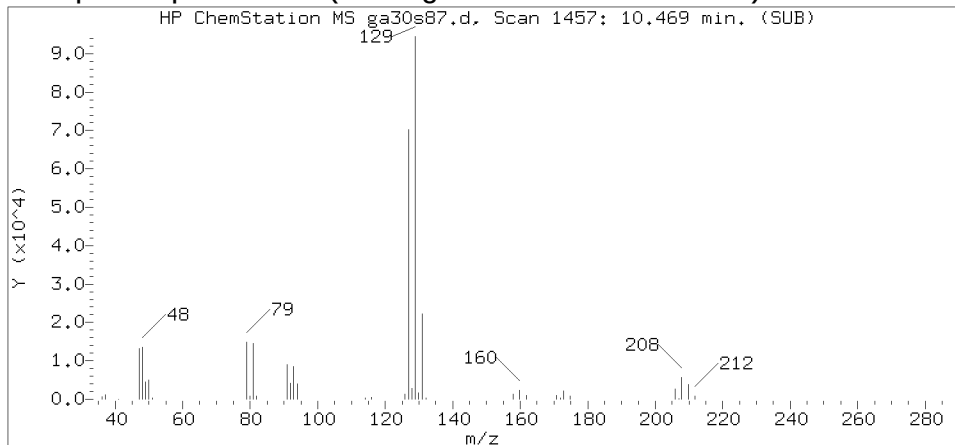
Compound Number : 74
Compound Name : Bromodichloromethane
Scan Number : 1159
Retention Time (minutes): 8.653
Relative Retention Time : 0.00013
Quant Ion : 83.00
Area (flag) : 779839
On-Column Amount (ng) : 11.8417

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user FKP52jkh09052

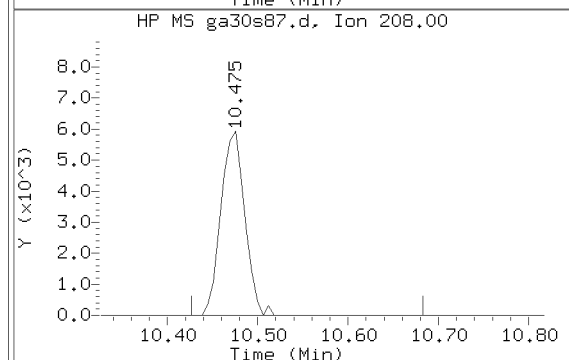
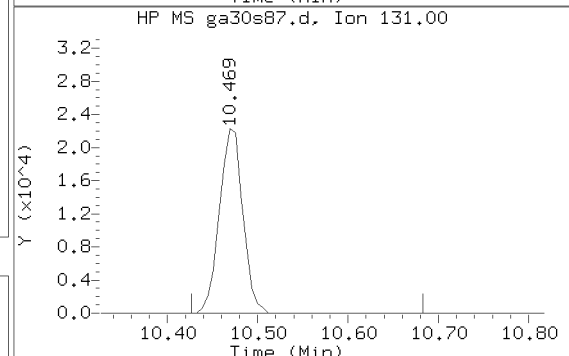
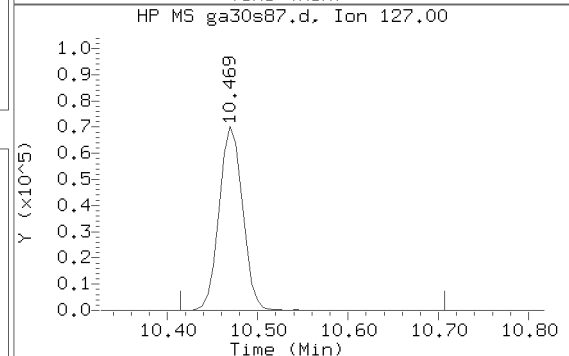
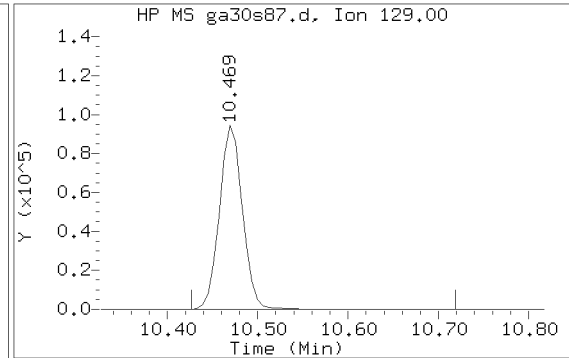
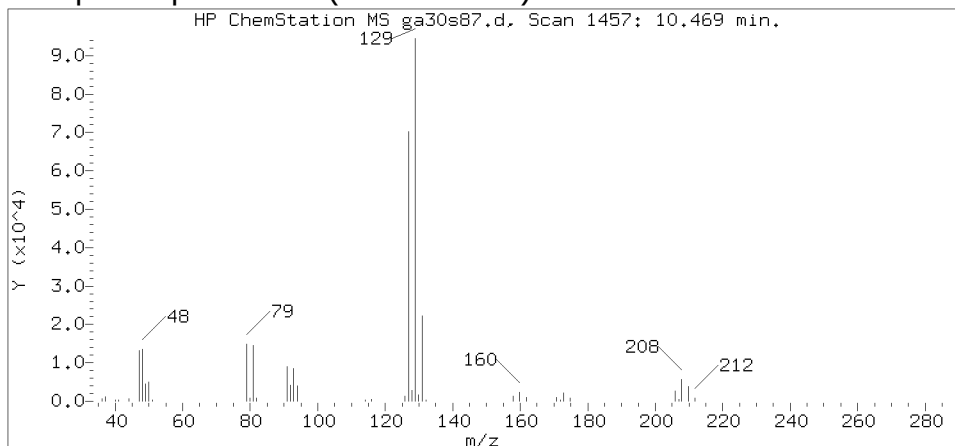
Reference Standard Spectrum for Dibromochloromethane



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

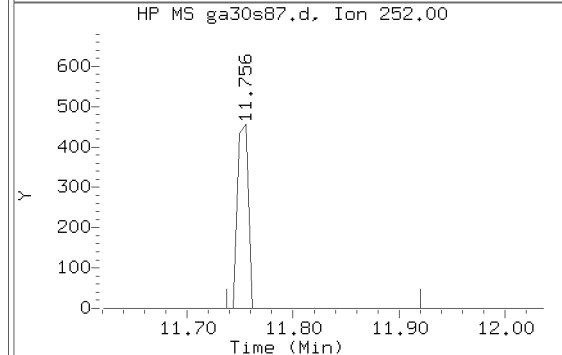
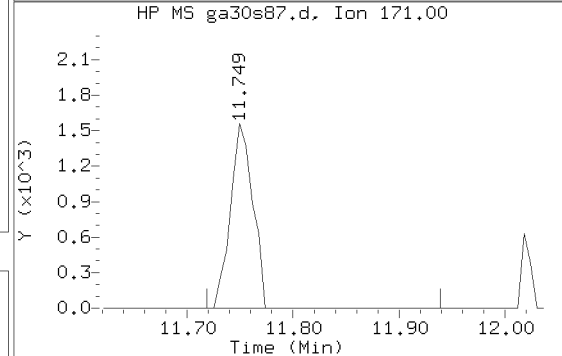
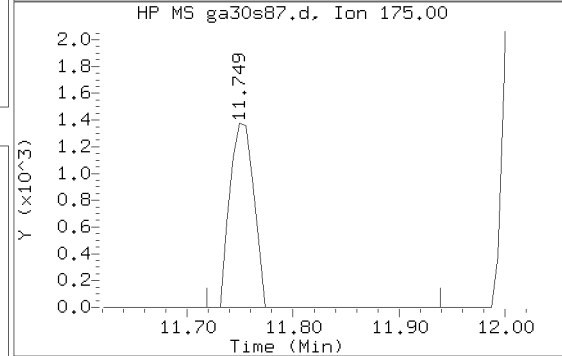
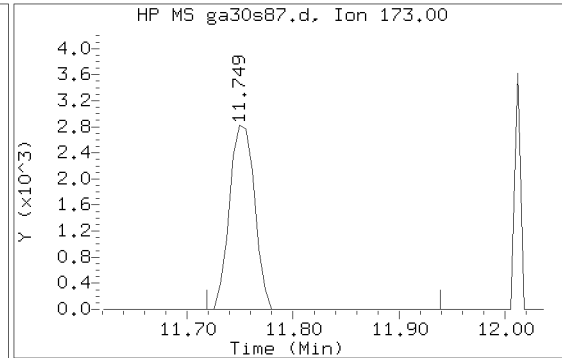
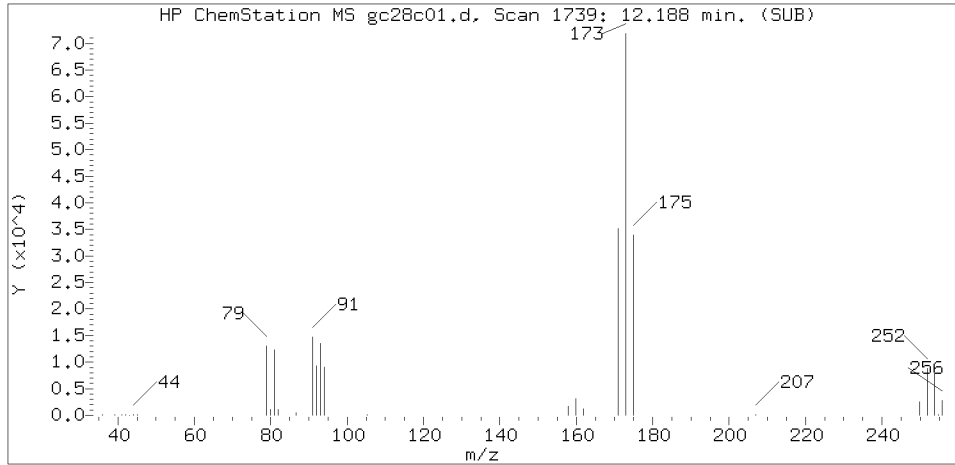
Sample Name: B384D

Lab Sample ID: 9582704

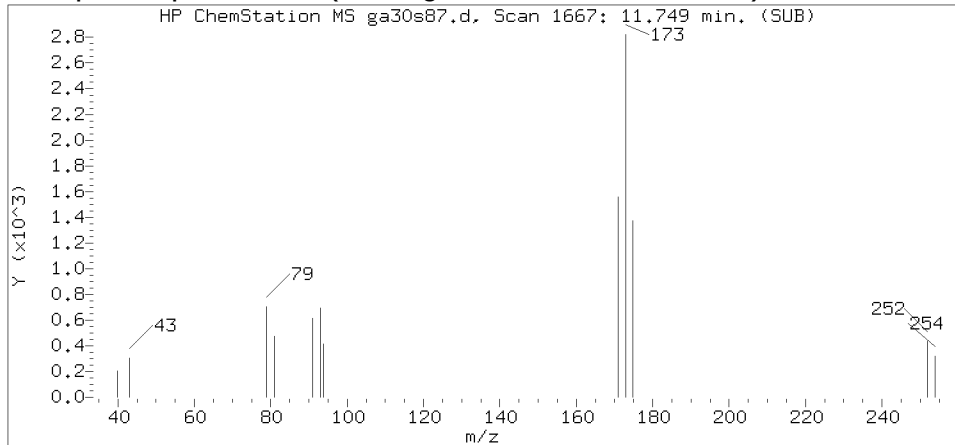
Compound Number : 93
Compound Name : Dibromochloromethane
Scan Number : 1457
Retention Time (minutes): 10.469
Relative Retention Time : -0.00055
Quant Ion : 129.00
Area (flag) : 166453
On-Column Amount (ng) : 3.7475

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

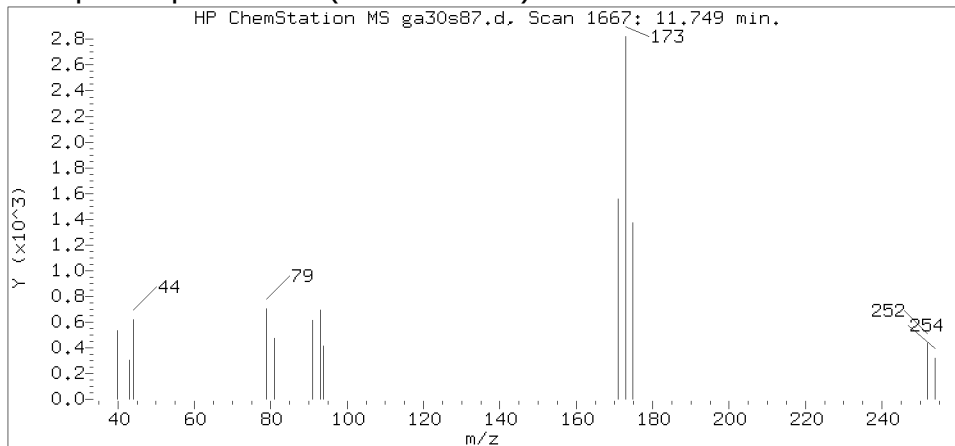
Reference Standard Spectrum for Bromoform



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d
Injection date and time: 01-MAY-2018 03:33

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

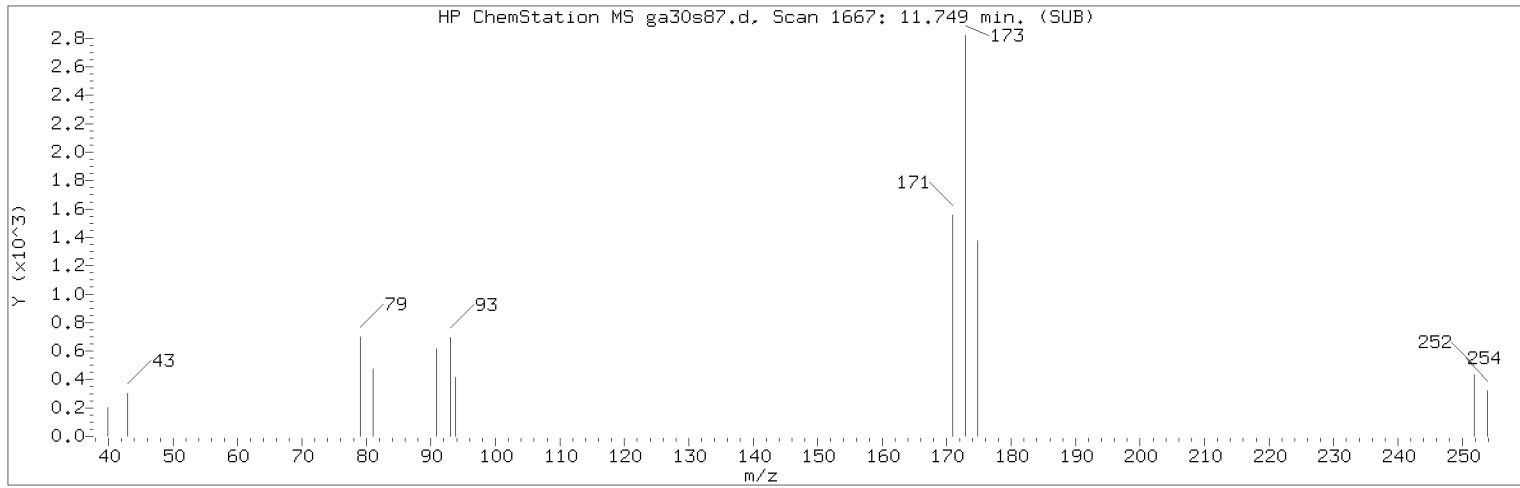
Sample Name: B384D

Lab Sample ID: 9582704

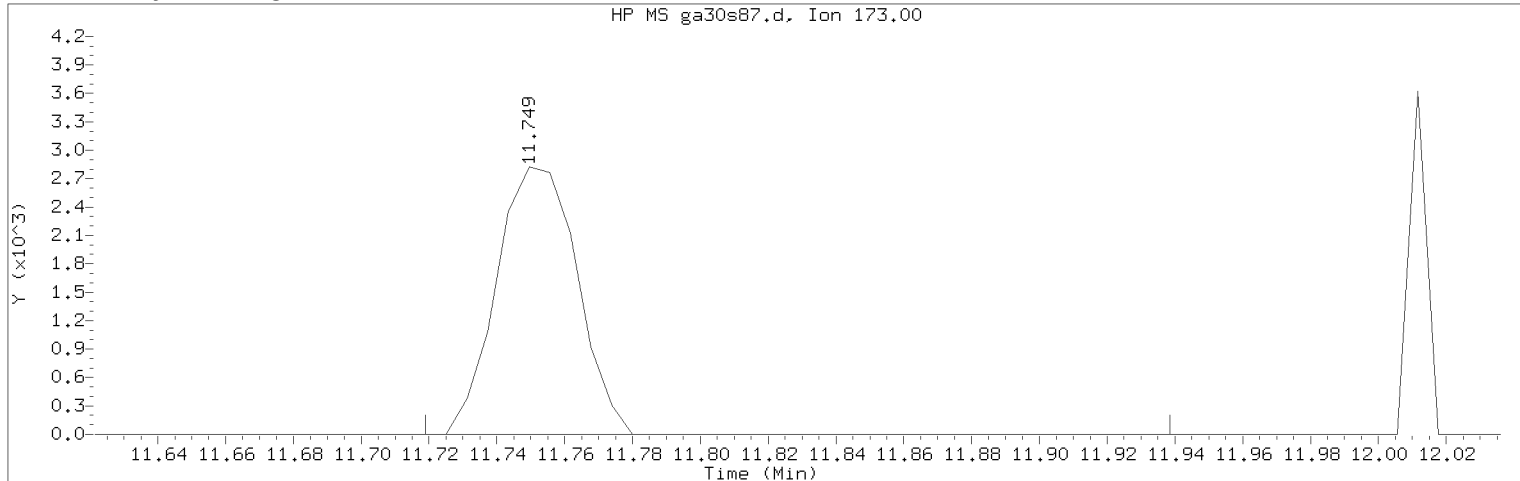
Compound Number : 107
Compound Name : Bromoform
Scan Number : 1667
Retention Time (minutes): 11.749
Relative Retention Time : 0.00000
Quant Ion : 173.00
Area (flag) : 4663A
On-Column Amount (ng) : 0.1824

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 03:33

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 27272

Calibration date and time: 04-MAY-2018 10:28

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384D

Lab Sample ID: 9582704

Compound Number : 107
Compound Name : Bromoform
Scan Number : 1667
Retention Time (minutes): 11.749
Quant Ion : 173.00
Area (flag) : 4663A
On-Column Amount (ng) : 0.1824
Integration start scan : 1661
Y at integration start : 0

Integration stop scan: 1697
Y at integration end: 0

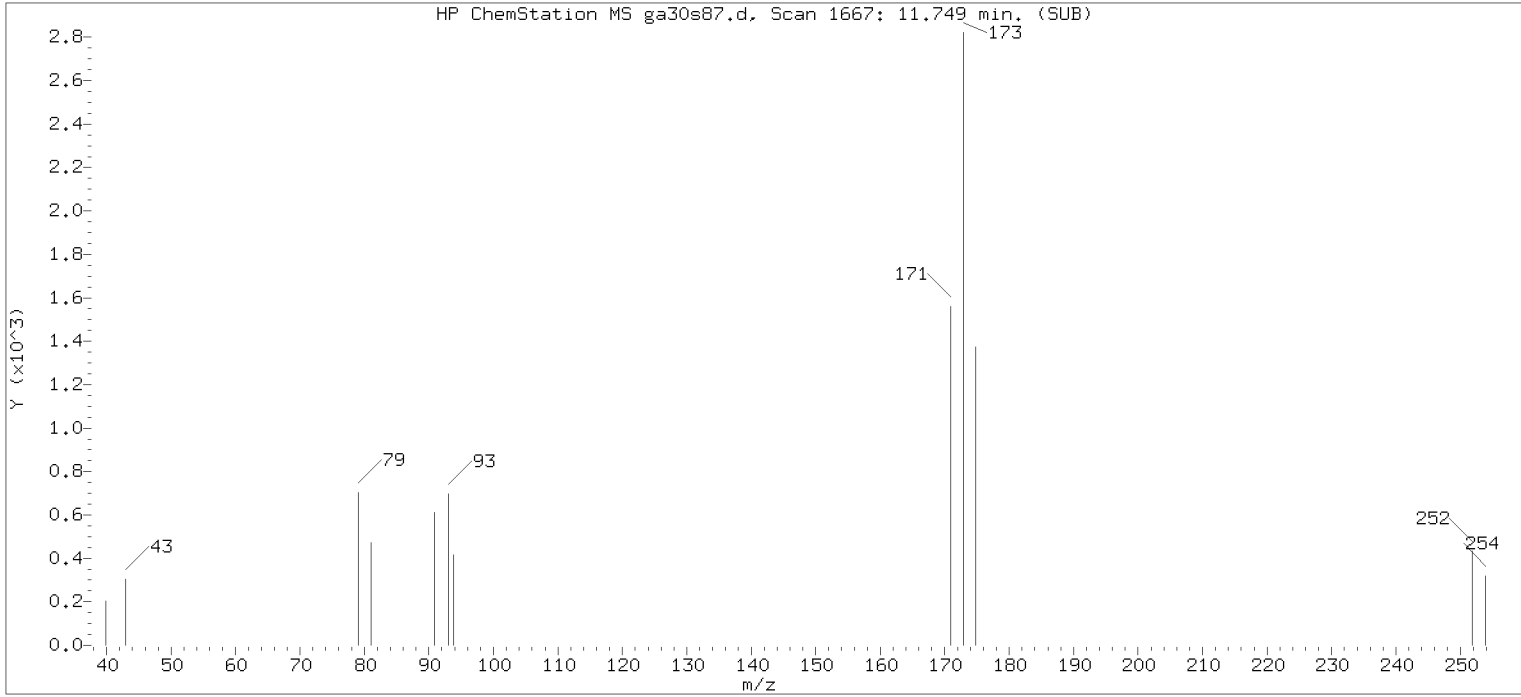
Reason for manual integration: improper integration

Analyst responsible for change:

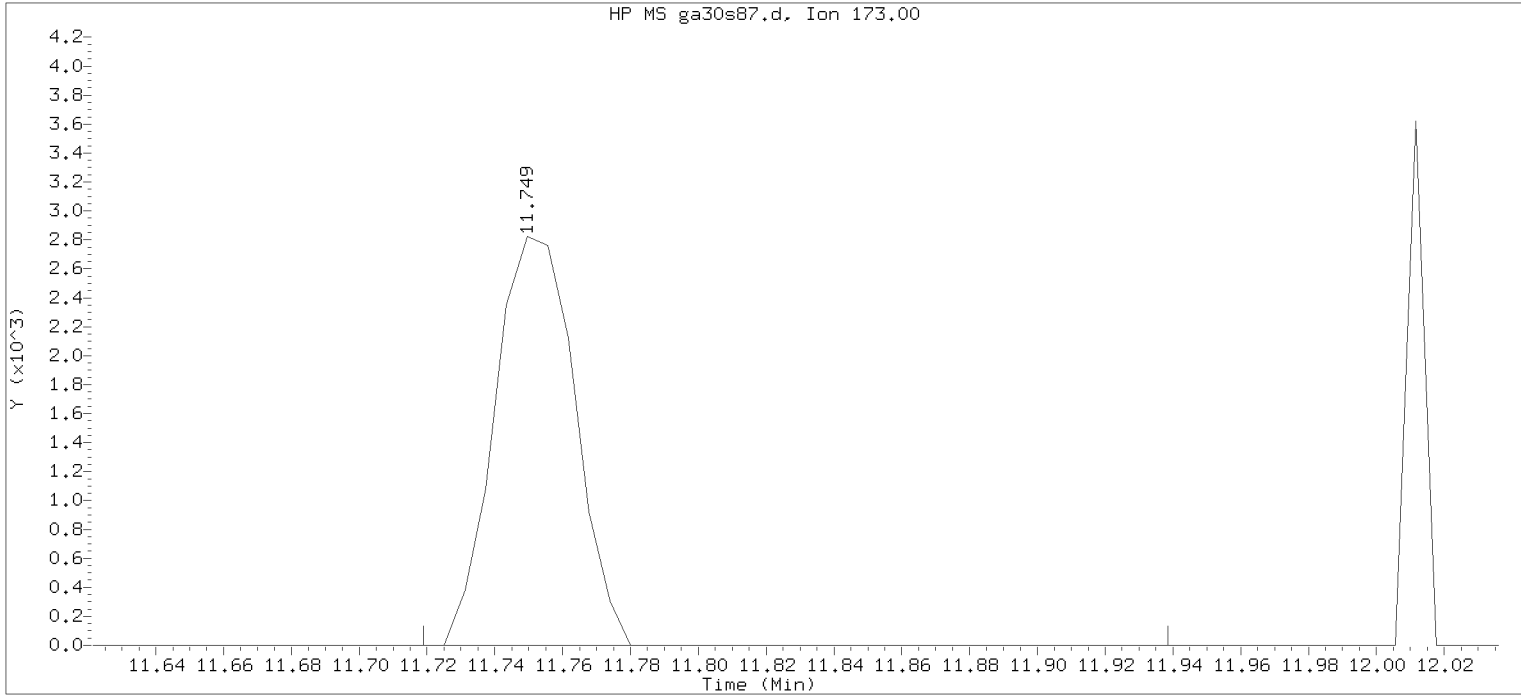
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Roy R. Mellott on 05/04/2018 at 16:37.
PARALLAX ID: rrm00219

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s87.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 03:33

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 13821

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 01-May-2018 03:50 Automation

Sample Name: B384D

Lab Sample ID: 9582704

Compound Number : 107
 Compound Name : Bromoform
 Scan Number : 1667
 Retention Time (minutes): 11.749
 Quant Ion : 173.00
 Area : 4663
 On-column Amount (ng) : 0.1824
 Integration start scan : 1661
 Y at integration start : 0

Integration stop scan: 1697
 Y at integration end: 0

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 Target 3.5 esignature userF1D52jR1g0052 of 730

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384DDL

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582704
 Sample wt/vol: 2.50 (g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01s15.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
354-23-4	Freon 123a	5.0	U
67-64-1	Acetone	50	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	Freon 113	5.0	U
75-15-0	Carbon Disulfide	10	U
79-20-9	Methyl Acetate	10	U
75-09-2	Methylene Chloride	5.0	U
1634-04-4	Methyl Tertiary Butyl Ether	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
78-93-3	2-Butanone	50	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	49	D
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
108-87-2	Methylcyclohexane	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	11	D
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-Pentanone	50	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384DDL

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582704
 Sample wt/vol: 2.50 (g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01s15.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	5.0	U
10061-02-6-----	trans-1,3-Dichloropropene	5.0	U
79-00-5-----	1,1,2-Trichloroethane	5.0	U
127-18-4-----	Tetrachloroethene	5.0	U
591-78-6-----	2-Hexanone	50	U
124-48-1-----	Dibromochloromethane	3.2	J D
106-93-4-----	1,2-Dibromoethane	5.0	U
108-90-7-----	Chlorobenzene	5.0	U
100-41-4-----	Ethylbenzene	5.0	U
1330-20-7-----	Xylene (Total)	5.0	U
100-42-5-----	Styrene	5.0	U
75-25-2-----	Bromoform	5.0	U
98-82-8-----	Isopropylbenzene	5.0	U
79-34-5-----	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1-----	1,3-Dichlorobenzene	5.0	U
106-46-7-----	1,4-Dichlorobenzene	5.0	U
95-50-1-----	1,2-Dichlorobenzene	5.0	U
96-12-8-----	1,2-Dibromo-3-chloropropane	5.0	U
120-82-1-----	1,2,4-Trichlorobenzene	5.0	U

B384DDL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582704DL

Data file: /chem2/HP16334.i/18may01a.b/gy01s15.d

Injection date and time: 01-MAY-2018 15:11

Data file Sample Info. Line: B384DDL;9582704DL;1;0;;FKP52;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 01-MAY-2018 11:02

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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: 10.00

Volume Purged (Vt): 25 ml

Sample Volume (Vo): 2.5 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.964(-0.006)	390	65	171365 (-11)	50.00	
63) Fluorobenzene	7.488(0.000)	968	96	1982692 (-12)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1549193 (-15)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(0.000)	1856	152	874155 (-16)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.598(-0.001)	113	500487	10.038	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	105211	9.958	100%		80 - 120
82) Toluene-d8	(3)	9.530(0.000)	98	2037134	9.805	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	747024	9.394	94%		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					1	5
2) Chloromethane	(2)			Not Detected					2	5
5) Vinyl Chloride	(2)			Not Detected					1	5
7) Bromomethane	(2)			Not Detected					1	5
8) Chloroethane	(2)			Not Detected					1	5
10) Trichlorofluoromethane	(2)			Not Detected					1	5
12) Freon 123a	(2)			Not Detected					2	5
15) 1,1-Dichloroethene	(2)			Not Detected					1	5
16) Freon 113	(2)			Not Detected					2	5
14) Acetone	(1)			Not Detected					30	50
18) Carbon Disulfide	(2)			Not Detected					4	10
21) Methyl Acetate	(1)			Not Detected					3	10
23) Methylene Chloride	(2)			Not Detected					2	5
31) trans-1,2-Dichloroethene	(2)			Not Detected					1	5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					1	5
33) 1,1-Dichloroethane	(2)			Not Detected					1	5
39) cis-1,2-Dichloroethene	(2)			Not Detected					1	5
38) 2-Butanone	(1)			Not Detected					10	50
49) Chloroform	(2)	6.372(-0.000)	83	453872	4.880	48.80			1	5
51) 1,1,1-Trichloroethane	(2)			Not Detected					1	5
52) Cyclohexane	(2)			Not Detected					1	5
54) Carbon Tetrachloride	(2)			Not Detected					1	5
58) Benzene	(2)			Not Detected					1	5
59) 1,2-Dichloroethane	(2)			Not Detected					1	5
67) Trichloroethene	(2)			Not Detected					1	5
69) Methylcyclohexane	(2)			Not Detected					1	5
70) 1,2-Dichloropropane	(2)			Not Detected					1	5
74) Bromodichloromethane	(2)	8.665(-0.000)	83	69280	1.054	10.54			1	5
80) cis-1,3-Dichloropropene	(2)			Not Detected					1	5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					10	50
83) Toluene	(3)			Not Detected					1	5

B384DDL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582704DL

Data file: /chem2/HP16334.i/18may01a.b/gy01s15.d

Injection date and time: 01-MAY-2018 15:11

Data file Sample Info. Line: B384DDL;9582704DL;1;0;;FKP52;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 01-MAY-2018 11:02

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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: 10.00

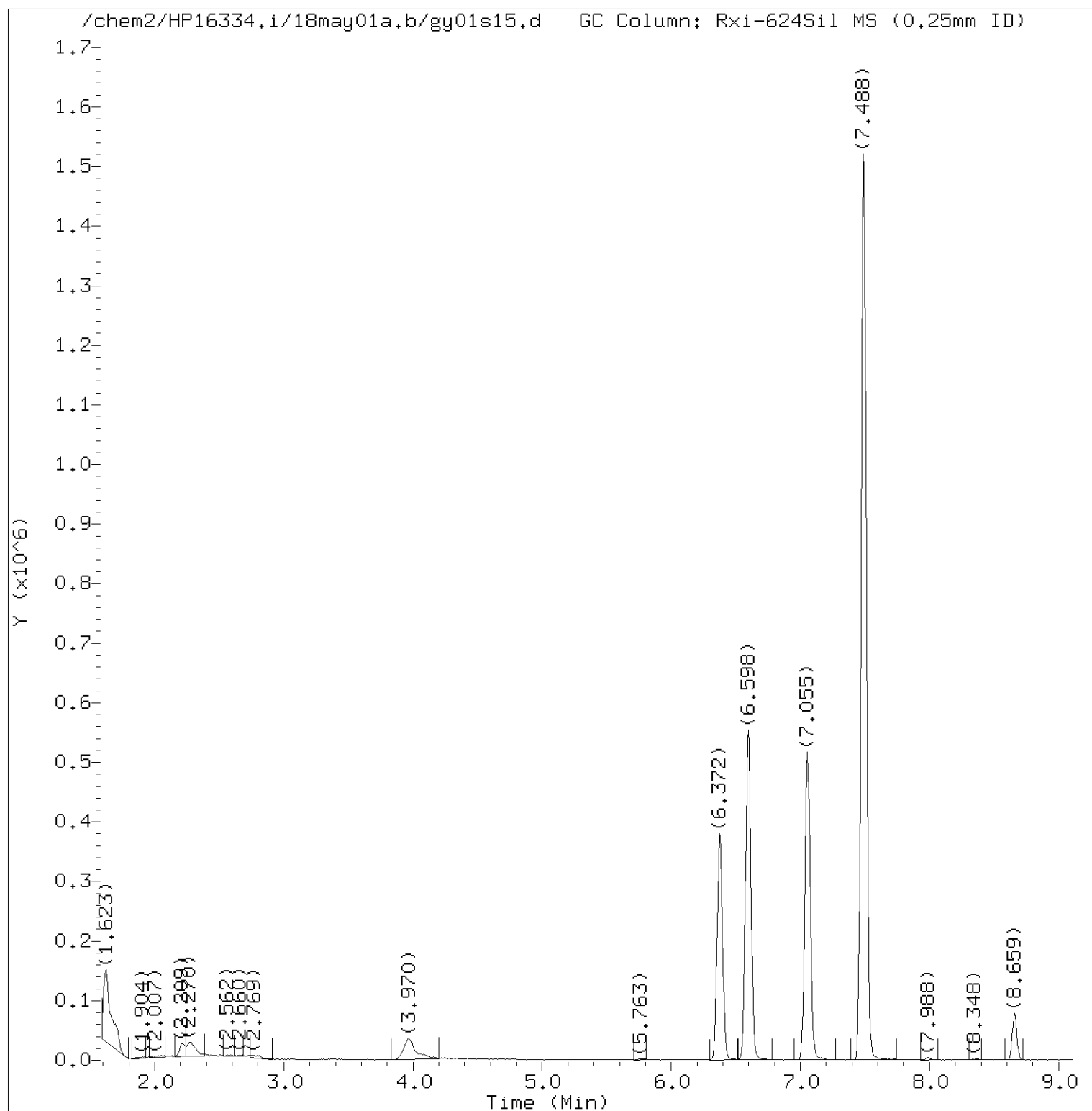
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 2.5 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					1	5
88) 1,1,2-Trichloroethane	(3)			Not Detected					1	5
89) Tetrachloroethene	(3)			Not Detected					1	5
91) 2-Hexanone	(1)			Not Detected					10	50
93) Dibromochloromethane	(3)	10.469 (-0.000)	129	14056	0.321	3.21		J	1	5
95) 1,2-Dibromoethane	(3)			Not Detected					1	5
98) Chlorobenzene	(3)			Not Detected					1	5
100) Ethylbenzene	(3)			Not Detected					1	5
101) m+p-Xylene	(3)			Not Detected					1	5
104) o-Xylene	(3)			Not Detected					1	5
105) Xylene (Total)	(3)			Not Detected					1	5
106) Styrene	(3)			Not Detected					1	5
107) Bromoform	(3)			Not Detected					1	5
108) Isopropylbenzene	(3)			Not Detected					1	5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					1	5
131) 1,3-Dichlorobenzene	(4)			Not Detected					1	5
134) 1,4-Dichlorobenzene	(4)			Not Detected					1	5
139) 1,2-Dichlorobenzene	(4)			Not Detected					1	5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					2	5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					1	5

Total number of targets = 51

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Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

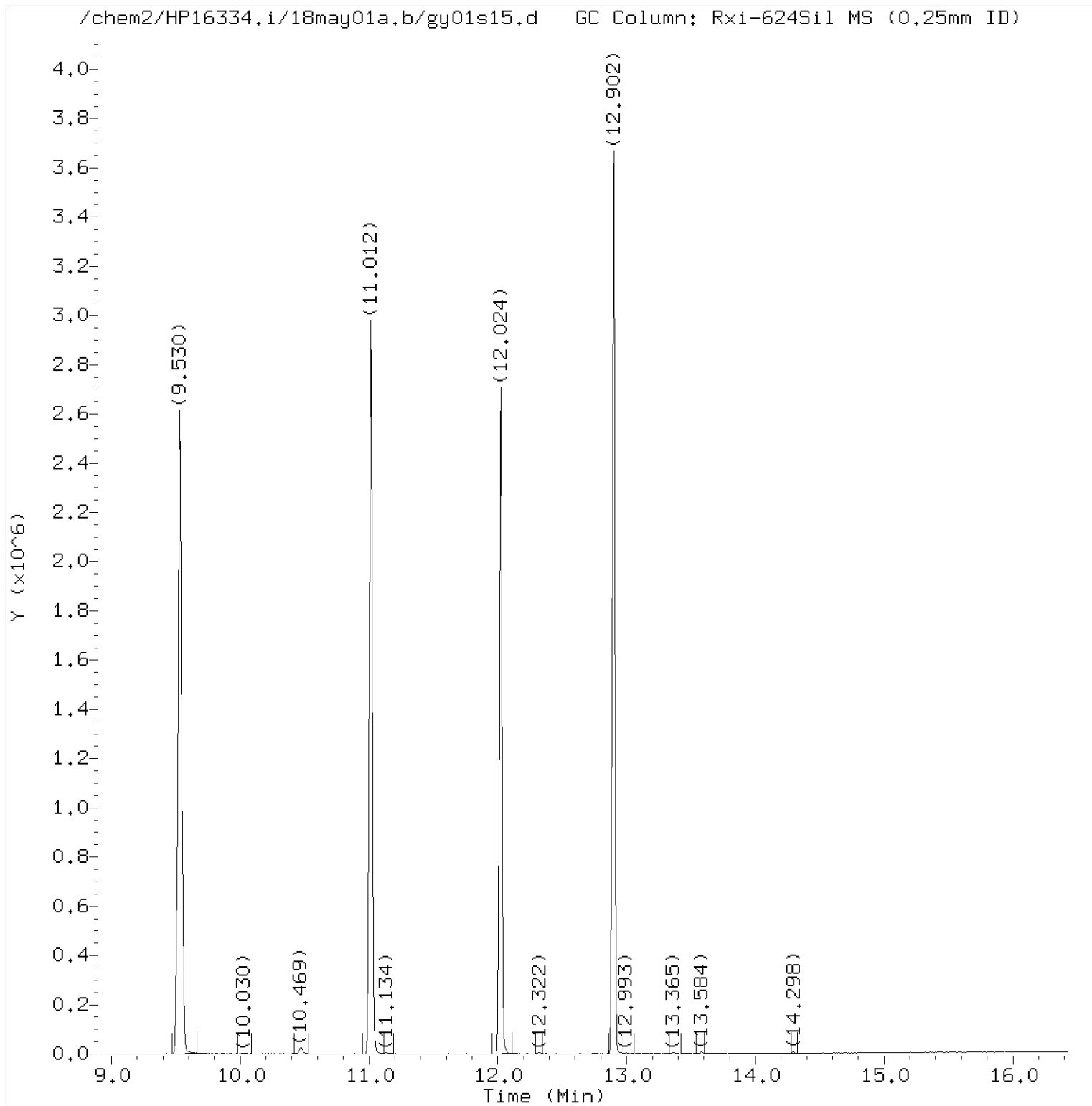
Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Sample Name: B384DDL

Lab Sample ID: 9582704DL

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on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 158 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Sample Name: B384DDL

Lab Sample ID: 9582704DL

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52- Page 159 of 730

page 2 of 2

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Sample Name: B384DDL

Lab Sample ID: 9582704DL

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.964	65	171365	50.000
49) Chloroform	(2)	6.372	83	453872	4.880
50)\$Dibromofluoromethane	(2)	6.598	113	500487	10.038
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	105211	9.958
63)*Fluorobenzene	(2)	7.488	96	1982692	10.000
74) Bromodichloromethane	(2)	8.665	83	69280	1.054
82)\$Toluene-d8	(3)	9.530	98	2037134	9.805
93) Dibromochloromethane	(3)	10.469	129	14056	0.321
97)*Chlorobenzene-d5	(3)	11.012	117	1549193	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	747024	9.394
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	874155	10.000

* = Compound is an internal standard.

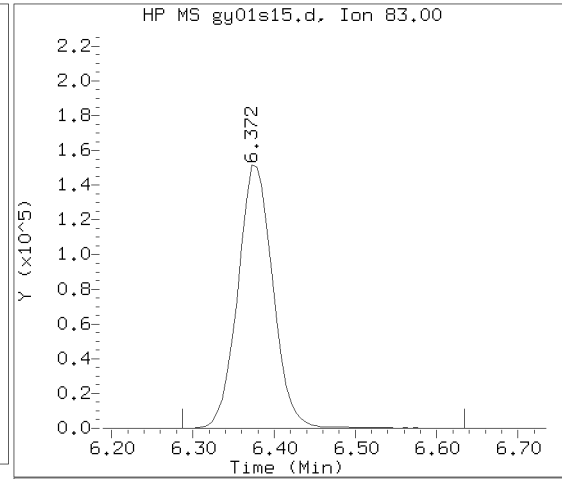
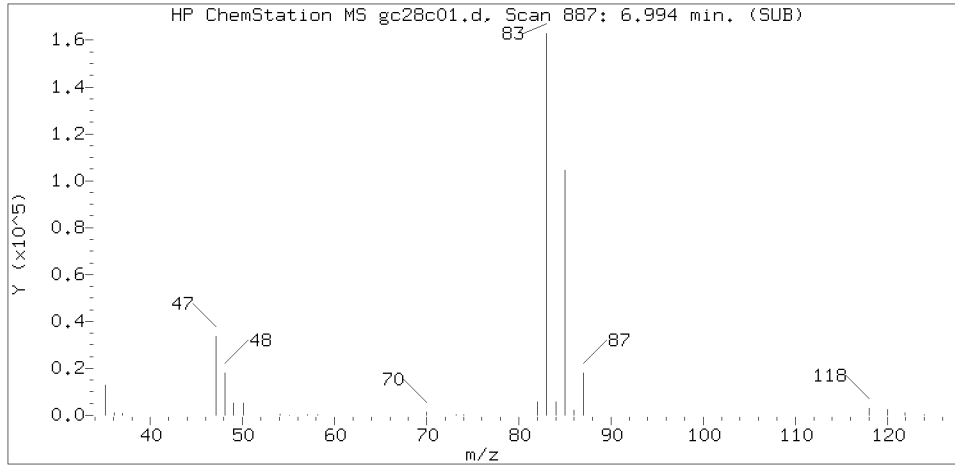
\$ = Compound is a surrogate standard.

page 1 of 1

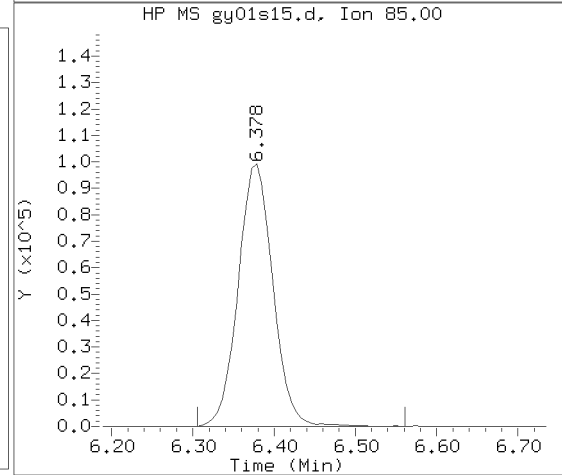
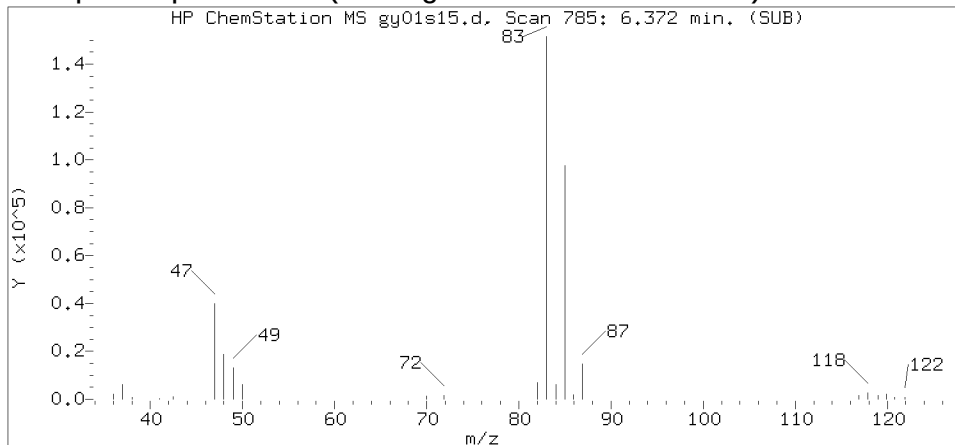
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

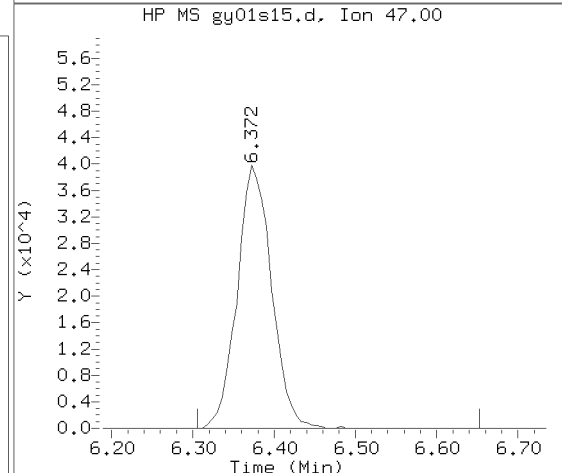
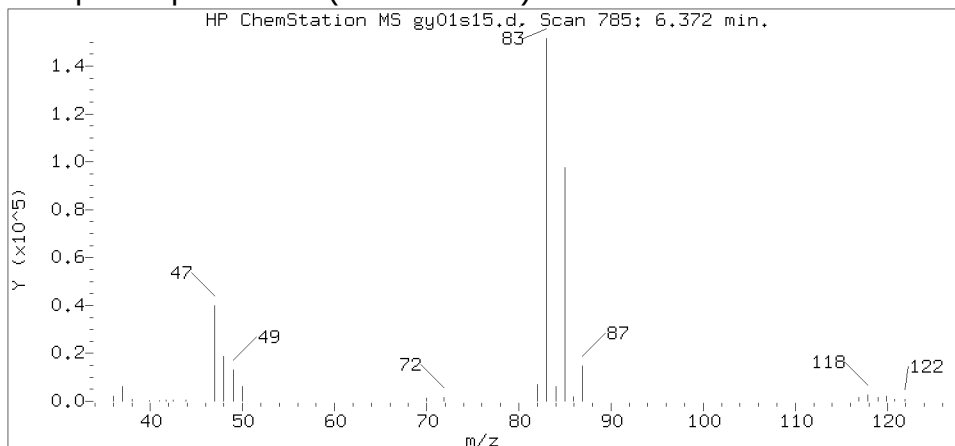
Reference Standard Spectrum for Chloroform



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

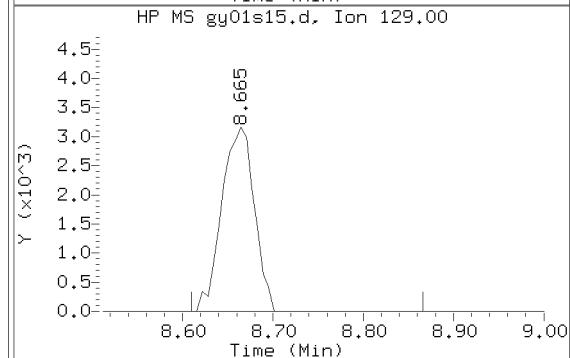
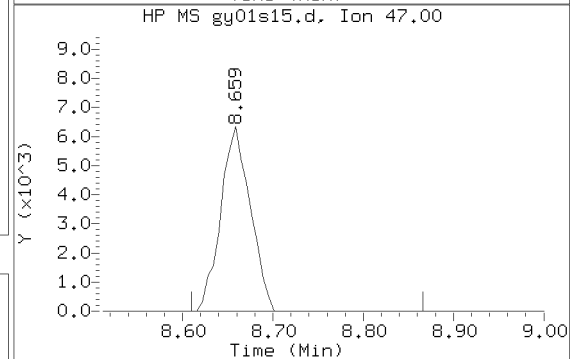
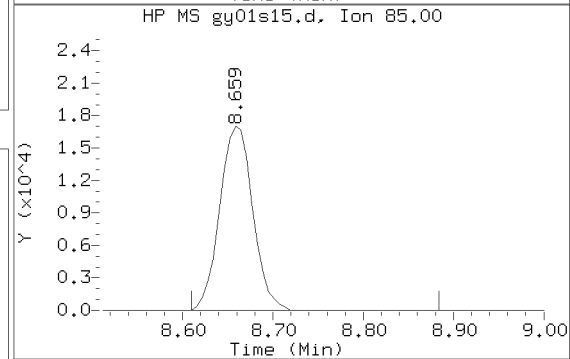
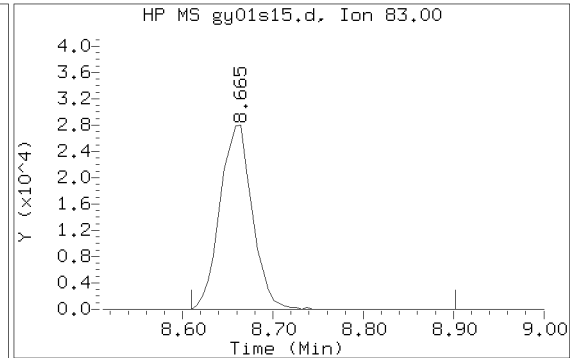
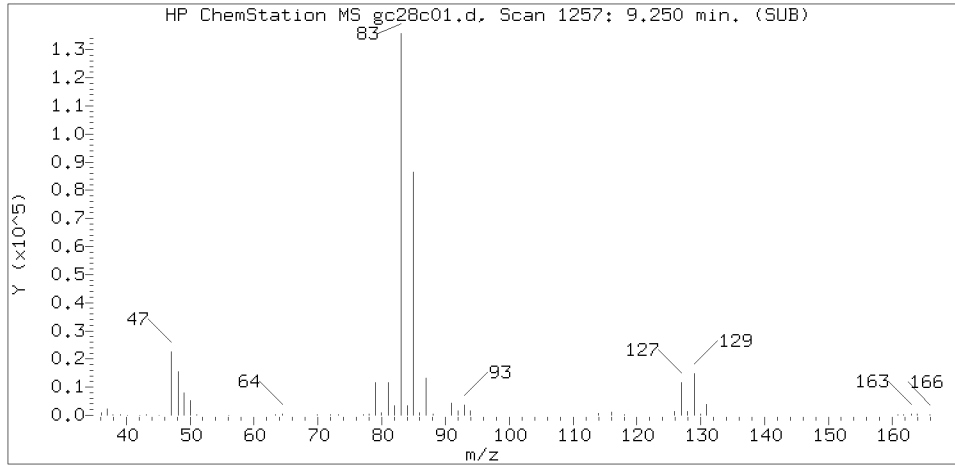
Sample Name: B384DDL

Lab Sample ID: 9582704DL

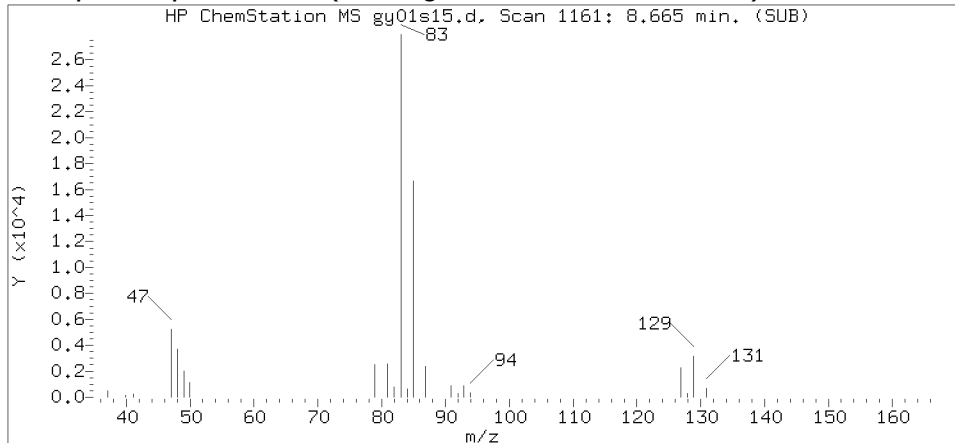
Compound Number : 49
Compound Name : Chloroform
Scan Number : 785
Retention Time (minutes): 6.372
Relative Retention Time : -0.00000
Quant Ion : 83.00
Area (flag) : 453872
On-Column Amount (ng) : 4.8800

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Target 3.5 esignature user JKH09052

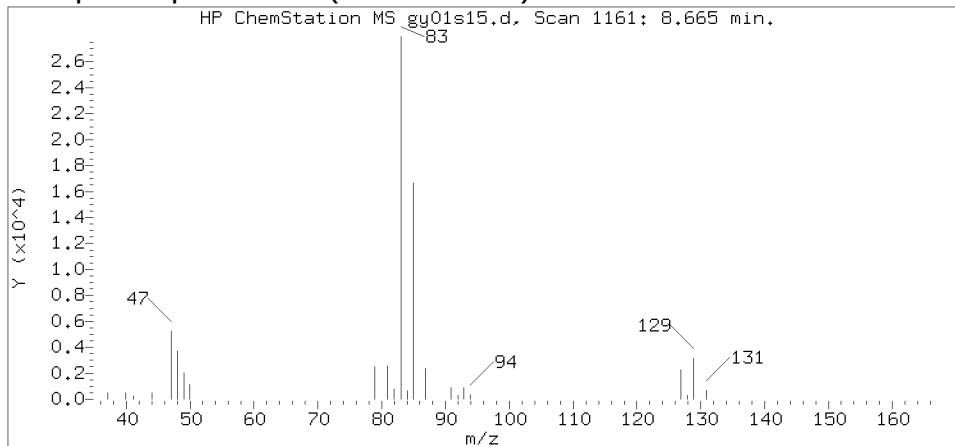
Reference Standard Spectrum for Bromodichloromethane



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

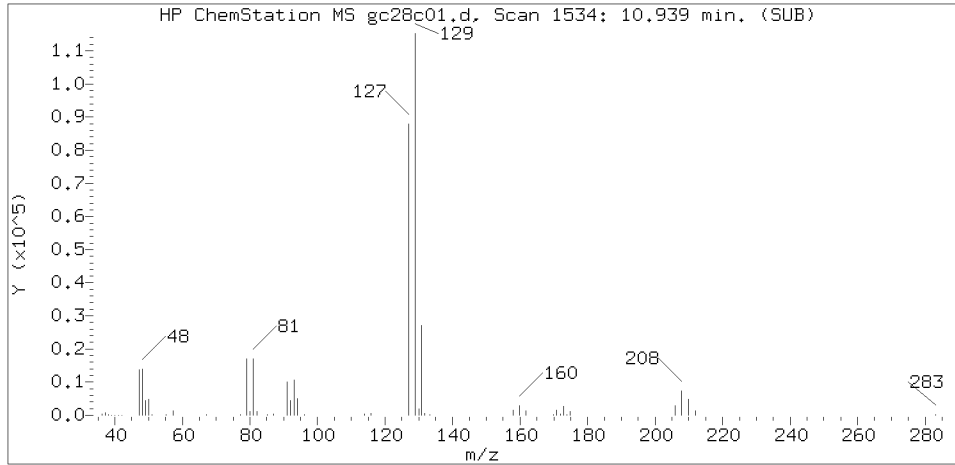
Sample Name: B384DDL

Lab Sample ID: 9582704DL

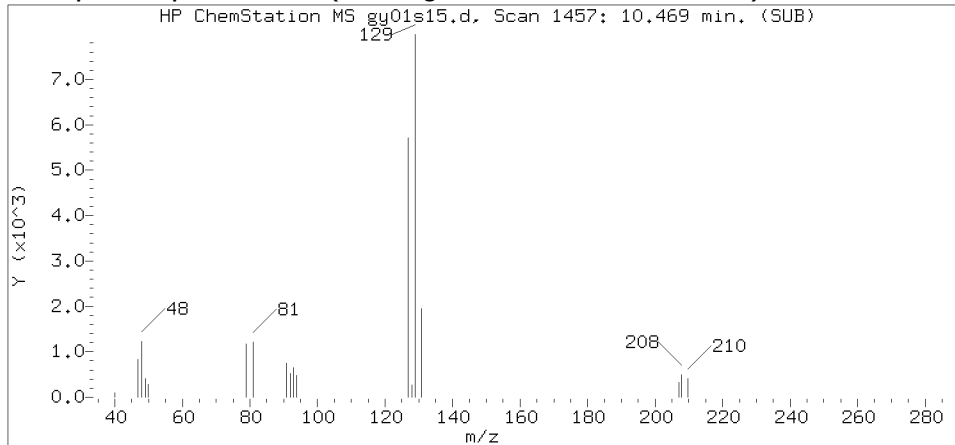
Compound Number : 74
Compound Name : Bromodichloromethane
Scan Number : 1161
Retention Time (minutes): 8.665
Relative Retention Time : -0.00081
Quant Ion : 83.00
Area (flag) : 69280
On-Column Amount (ng) : 1.0542

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Target 3.5 esignature user ID: jkh09052

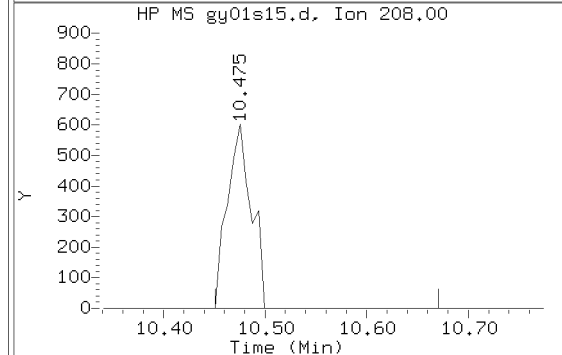
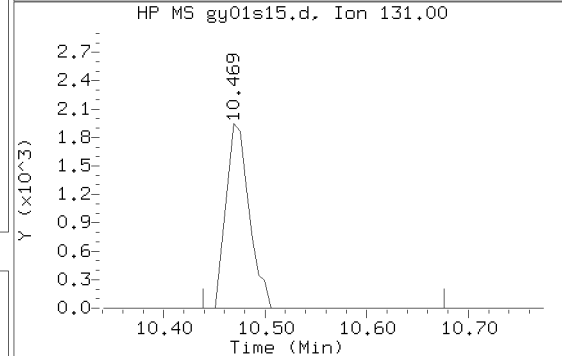
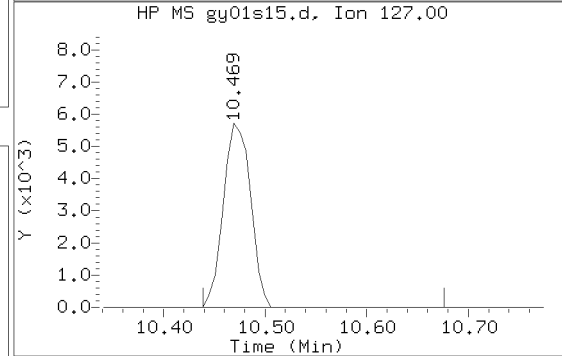
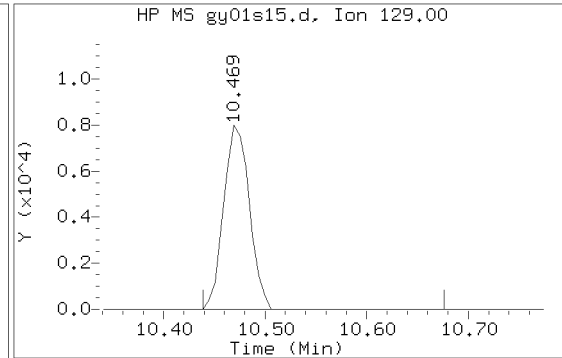
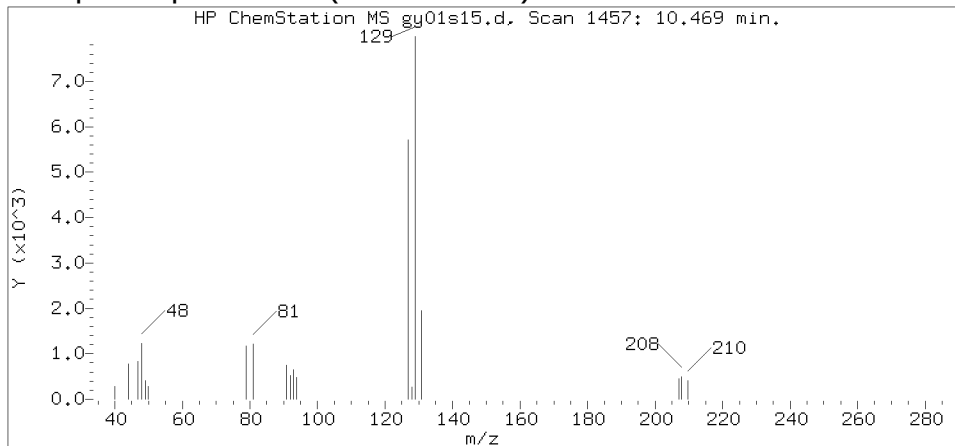
Reference Standard Spectrum for Dibromochloromethane



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18may01a.b/gy01s15.d
Injection date and time: 01-MAY-2018 15:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 27272
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 04-May-2018 10:32 jkh09052

Sample Name: B384DDL

Lab Sample ID: 9582704DL

Compound Number : 93
Compound Name : Dibromochloromethane
Scan Number : 1457
Retention Time (minutes): 10.469
Relative Retention Time : -0.00000
Quant Ion : 129.00
Area (flag) : 14056
On-Column Amount (ng) : 0.3213

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user JKH09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384P

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582705
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s88.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384P

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582705

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s88.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.4	J
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	0.5	U
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

B384P

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582705

Data file: /chem2/HP16334.i/18apr30b.b/ga30s88.d

Injection date and time: 01-MAY-2018 03:55

Data file Sample Info. Line: B384P;9582705;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	162161 (-15)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	1947746 (-12)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1538777 (-13)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	870028 (-15)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	488442	9.973	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	100891	9.720	97%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2004663	9.714	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	745294	9.435	94%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)	9.610(-0.001)	92	49020	0.375	0.37		J	0.1	0.5

B384P

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582705

Data file: /chem2/HP16334.i/18apr30b.b/ga30s88.d

Injection date and time: 01-MAY-2018 03:55

Data file Sample Info. Line: B384P;9582705;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

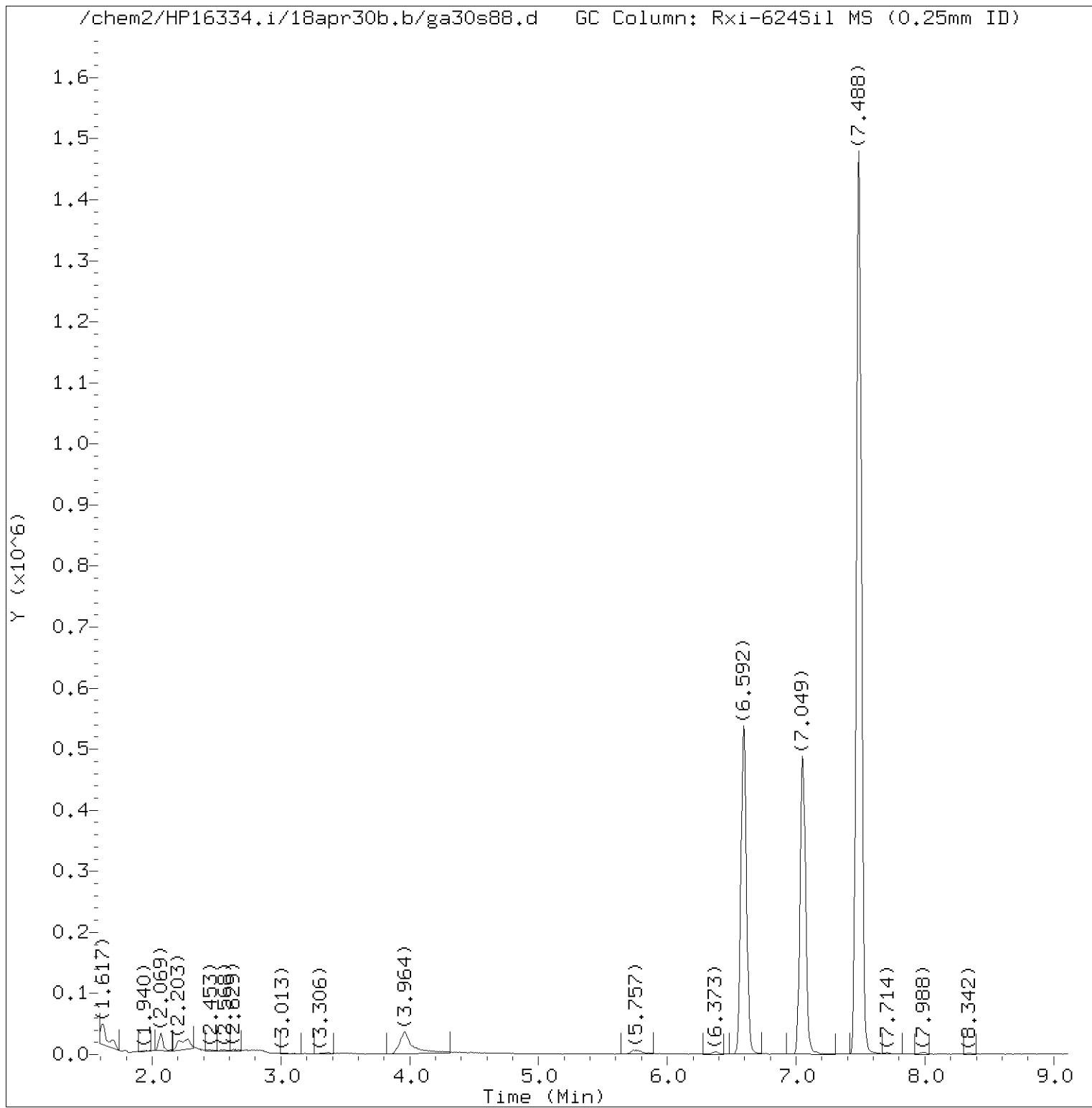
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ (in sample)
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)			Not Detected					0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s88.d
Injection date and time: 01-MAY-2018 03:55

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

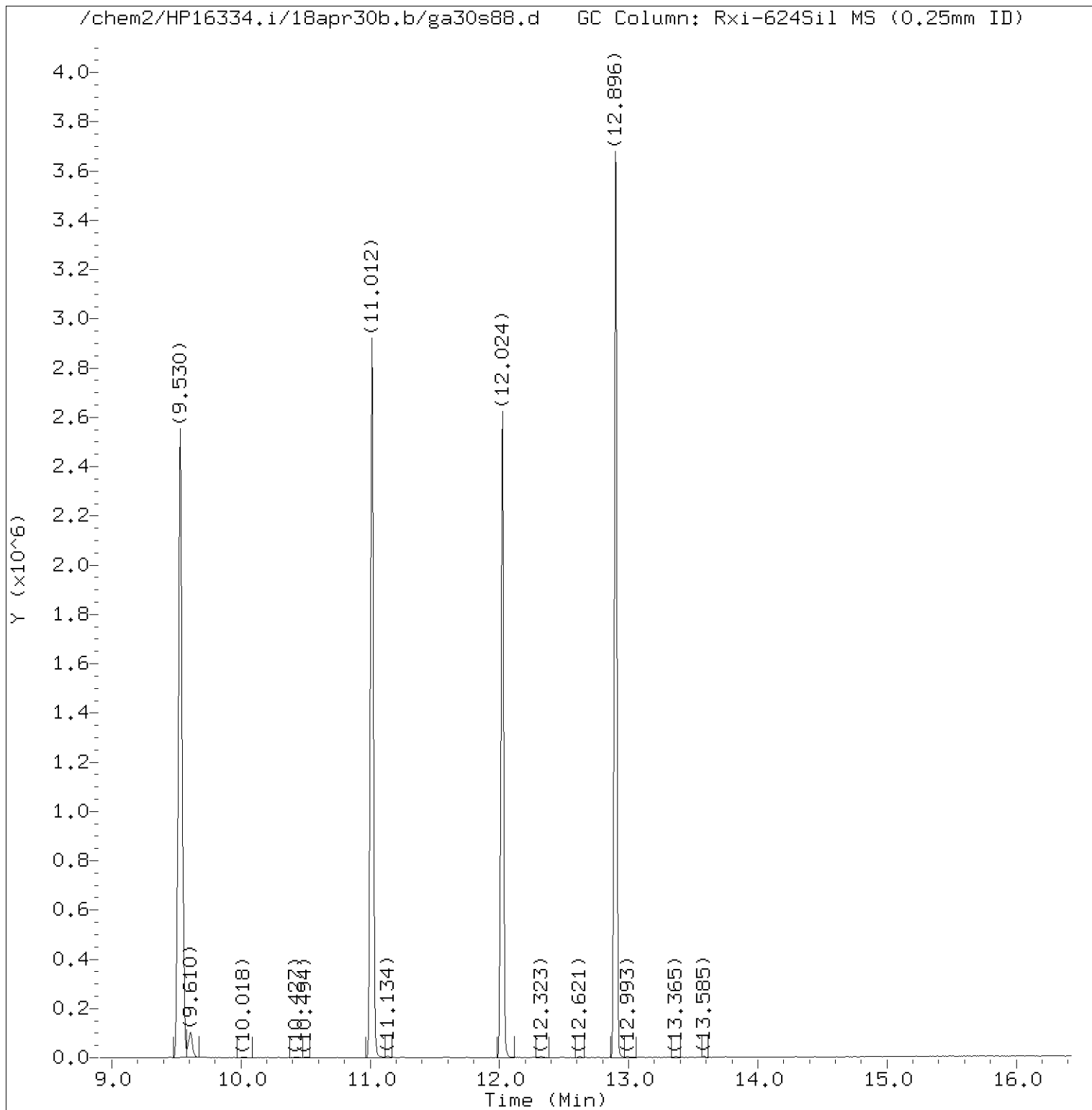
Sample Name: B384P

Lab Sample ID: 9582705

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 168 of 730

page 1 of 2



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s88.d
Injection date and time: 01-MAY-2018 03:55

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m
Calibration date and time: 04-MAY-2018 10:28

Sublist used: 27272

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384P

Lab Sample ID: 9582705

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 169 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s88.d
Injection date and time: 01-MAY-2018 03:55

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384P

Lab Sample ID: 9582705

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.958	65	162161	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	488442	9.973
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	100891	9.720
63)*Fluorobenzene	(2)	7.488	96	1947746	10.000
82)\$Toluene-d8	(3)	9.530	98	2004663	9.714
83) Toluene	(3)	9.610	92	49020	0.375
97)*Chlorobenzene-d5	(3)	11.012	117	1538777	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	745294	9.435
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	870028	10.000

* = Compound is an internal standard.

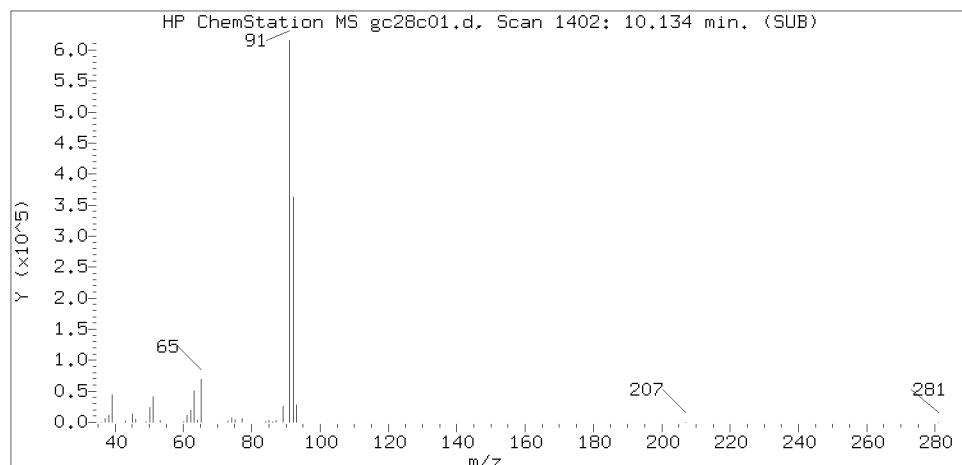
\$ = Compound is a surrogate standard.

page 1 of 1

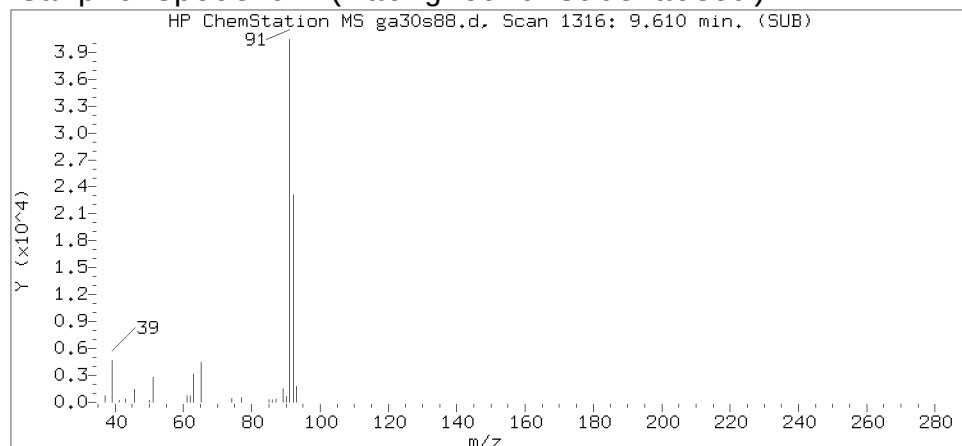
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

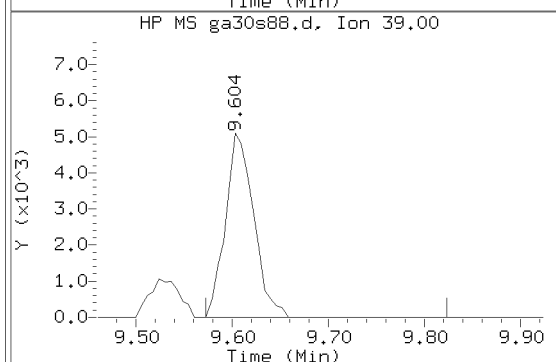
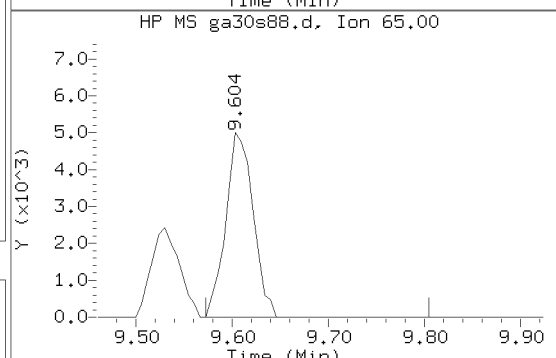
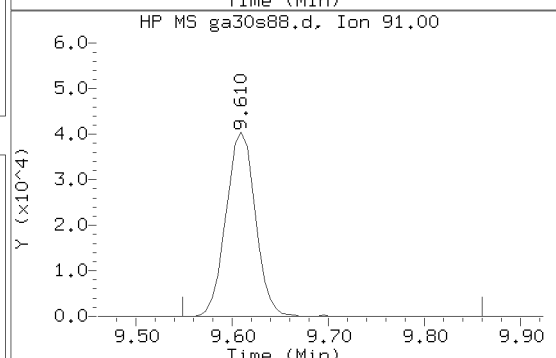
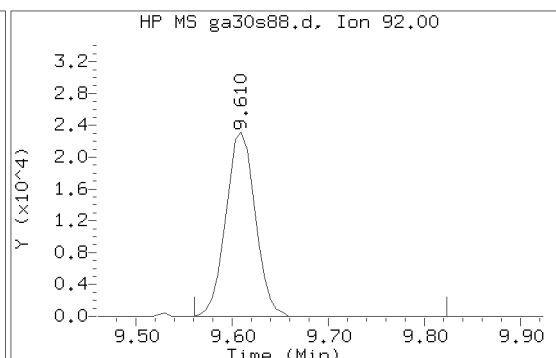
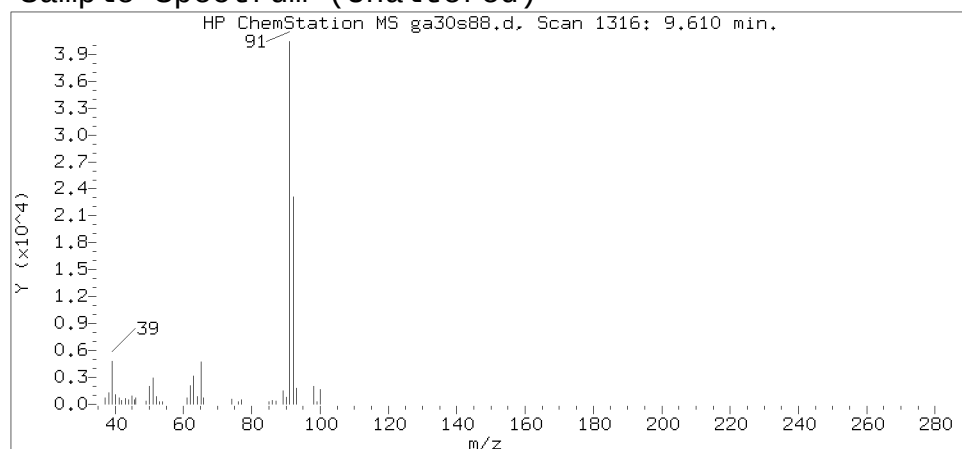
Reference Standard Spectrum for Toluene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s88.d
Injection date and time: 01-MAY-2018 03:55

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384P

Lab Sample ID: 9582705

Compound Number : 83
Compound Name : Toluene
Scan Number : 1316
Retention Time (minutes): 9.610
Relative Retention Time : -0.00111
Quant Ion : 92.00
Area (flag) : 49020
On-Column Amount (ng) : 0.3749

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384T

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582706
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s79.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.5	U
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.5	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384T

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582706

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s79.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.5	U
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	0.5	U
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

B384T

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582706

Data file: /chem2/HP16334.i/18apr30b.b/ga30s79.d

Injection date and time: 01-MAY-2018 00:35

Data file Sample Info. Line: B384T;9582706;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.964(-0.018)	390	65	191376 (0)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	2027320 (-8)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1599558 (-10)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	906184 (-12)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.586(0.000)	113	508021	9.965	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	108652	10.057	101%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2098896	9.784	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	777948	9.475	95%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5

B384T

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582706

Data file: /chem2/HP16334.i/18apr30b.b/ga30s79.d

Injection date and time: 01-MAY-2018 00:35

Data file Sample Info. Line: B384T;9582706;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Bottle Code: 038A Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

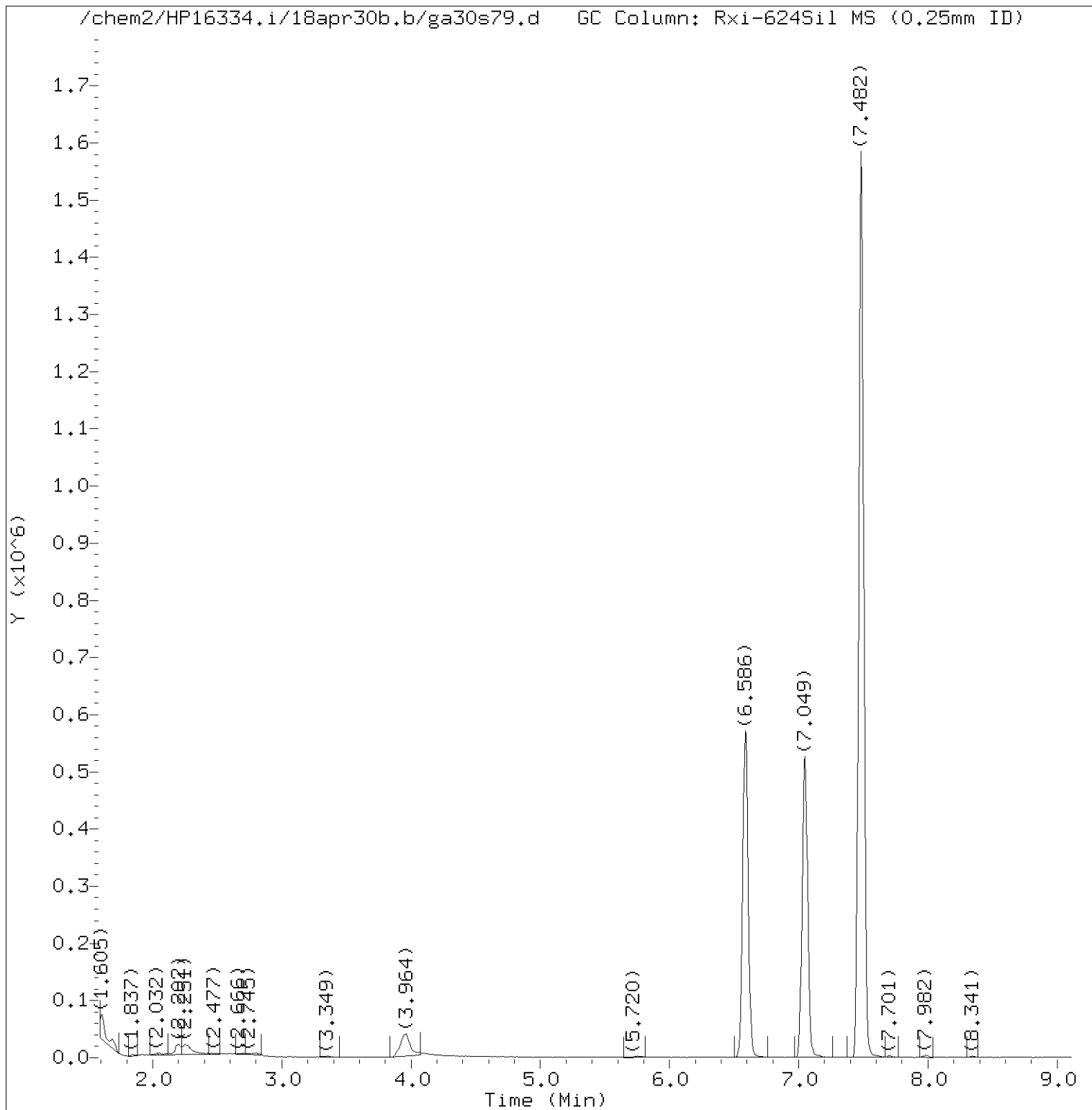
Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: 1.00

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)			Not Detected					0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:31. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s79.d
Injection date and time: 01-MAY-2018 00:35

Instrument ID: HP16334.i
Analyst ID: MSK07970

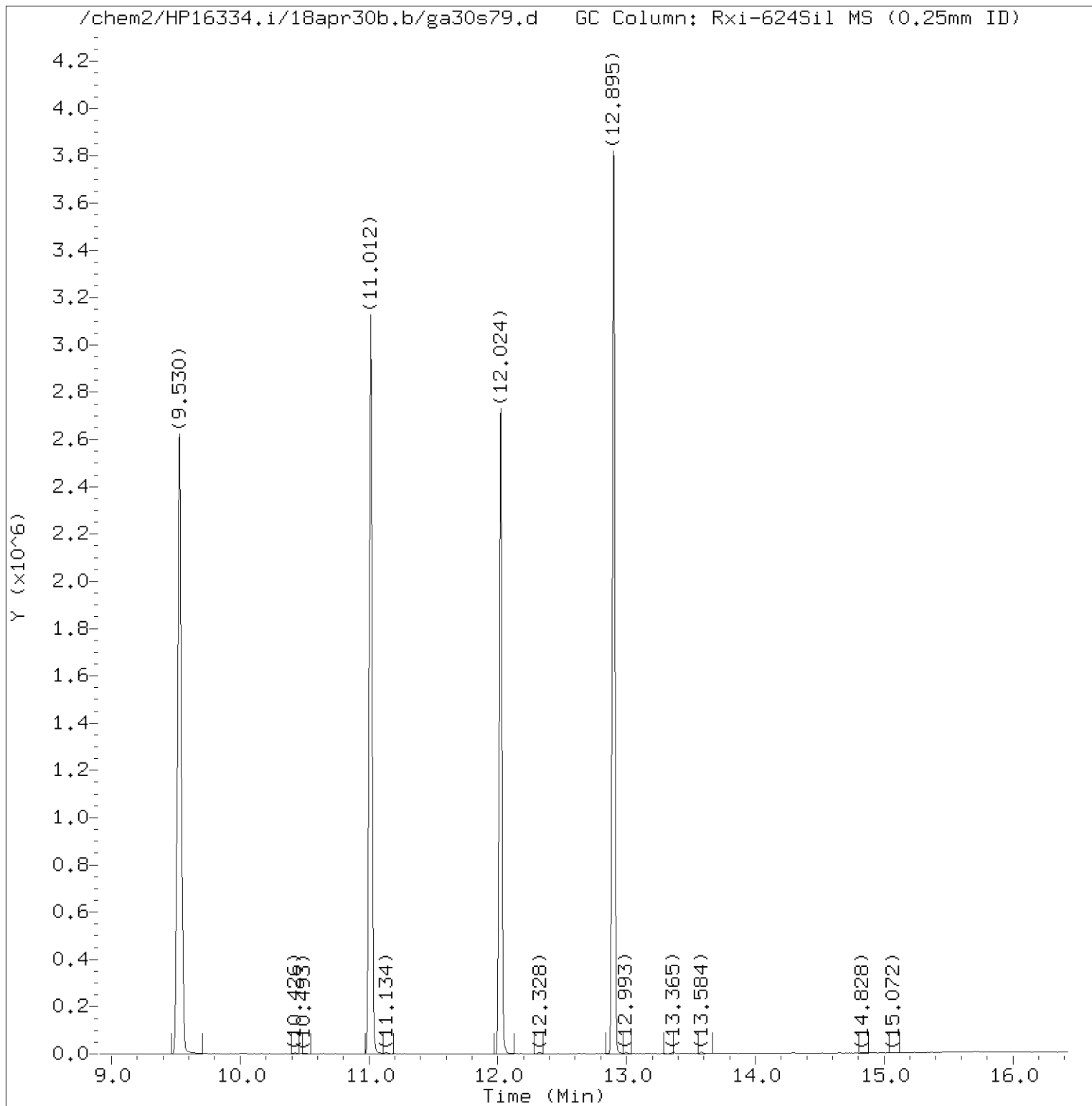
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384T

Lab Sample ID: 9582706

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 176 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s79.d
Injection date and time: 01-MAY-2018 00:35

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384T

Lab Sample ID: 9582706

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 177 of 730

page 2 of 2

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s79.d
Injection date and time: 01-MAY-2018 00:35

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: B384T

Lab Sample ID: 9582706

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.964	65	191376	50.000
50)\$Dibromofluoromethane	(2)	6.586	113	508021	9.965
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	108652	10.057
63)*Fluorobenzene	(2)	7.482	96	2027320	10.000
82)\$Toluene-d8	(3)	9.530	98	2098896	9.784
97)*Chlorobenzene-d5	(3)	11.012	117	1599558	10.000
111)\$4-Bromofluorobenzene	(3)	12.018	95	777948	9.475
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	906184	10.000

* = Compound is an internal standard.
\$ = Compound is a surrogate standard.

page 1 of 1

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:31.

Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

384FD

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582707
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s89.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.5	U
74-87-3	Chloromethane	0.5	U
75-01-4	Vinyl Chloride	0.5	U
74-83-9	Bromomethane	0.5	U
75-00-3	Chloroethane	0.5	U
75-69-4	Trichlorofluoromethane	0.5	U
354-23-4	Freon 123a	0.5	U
67-64-1	Acetone	5.0	U
75-35-4	1,1-Dichloroethene	0.5	U
76-13-1	Freon 113	0.5	U
75-15-0	Carbon Disulfide	1.0	U
79-20-9	Methyl Acetate	1.0	U
75-09-2	Methylene Chloride	0.5	U
1634-04-4	Methyl Tertiary Butyl Ether	0.5	U
156-60-5	trans-1,2-Dichloroethene	0.5	U
75-34-3	1,1-Dichloroethane	0.5	U
78-93-3	2-Butanone	5.0	U
156-59-2	cis-1,2-Dichloroethene	0.1	J
67-66-3	Chloroform	0.5	U
71-55-6	1,1,1-Trichloroethane	0.5	U
110-82-7	Cyclohexane	0.5	U
56-23-5	Carbon Tetrachloride	0.5	U
71-43-2	Benzene	0.5	U
107-06-2	1,2-Dichloroethane	0.5	U
79-01-6	Trichloroethene	0.8	U
108-87-2	Methylcyclohexane	0.5	U
78-87-5	1,2-Dichloropropane	0.5	U
75-27-4	Bromodichloromethane	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.5	U
108-10-1	4-Methyl-2-Pentanone	5.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

384FD

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582707

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s89.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	0.2	J
10061-02-6-----	trans-1,3-Dichloropropene	0.5	U
79-00-5-----	1,1,2-Trichloroethane	0.5	U
127-18-4-----	Tetrachloroethene	180	E
591-78-6-----	2-Hexanone	5.0	U
124-48-1-----	Dibromochloromethane	0.5	U
106-93-4-----	1,2-Dibromoethane	0.5	U
108-90-7-----	Chlorobenzene	0.5	U
100-41-4-----	Ethylbenzene	0.5	U
1330-20-7-----	Xylene (Total)	0.5	U
100-42-5-----	Styrene	0.5	U
75-25-2-----	Bromoform	0.5	U
98-82-8-----	Isopropylbenzene	0.3	J
79-34-5-----	1,1,2,2-Tetrachloroethane	0.5	U
541-73-1-----	1,3-Dichlorobenzene	0.5	U
106-46-7-----	1,4-Dichlorobenzene	0.5	U
95-50-1-----	1,2-Dichlorobenzene	0.5	U
96-12-8-----	1,2-Dibromo-3-chloropropane	0.5	U
120-82-1-----	1,2,4-Trichlorobenzene	0.5	U

384FD

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582707

Data file: /chem2/HP16334.i/18apr30b.b/ga30s89.d

Injection date and time: 01-MAY-2018 04:18

Data file Sample Info. Line: 384FD;9582707;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	158223 (-17)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	1939460 (-12)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1526558 (-14)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	874426 (-15)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	489661	10.040	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.001)	102	101309	9.802	98%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	1992127	9.731	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	740101	9.445	94%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)	5.878(-0.000)	96	7496	0.143	0.14		J	0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
67) Trichloroethene	(2)	7.976(-0.000)	95	43155	0.826	0.83			0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)	9.610(-0.001)	92	26799	0.207	0.21		J	0.1	0.5

384FD

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582707

Data file: /chem2/HP16334.i/18apr30b.b/ga30s89.d

Injection date and time: 01-MAY-2018 04:18

Data file Sample Info. Line: 384FD;9582707;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

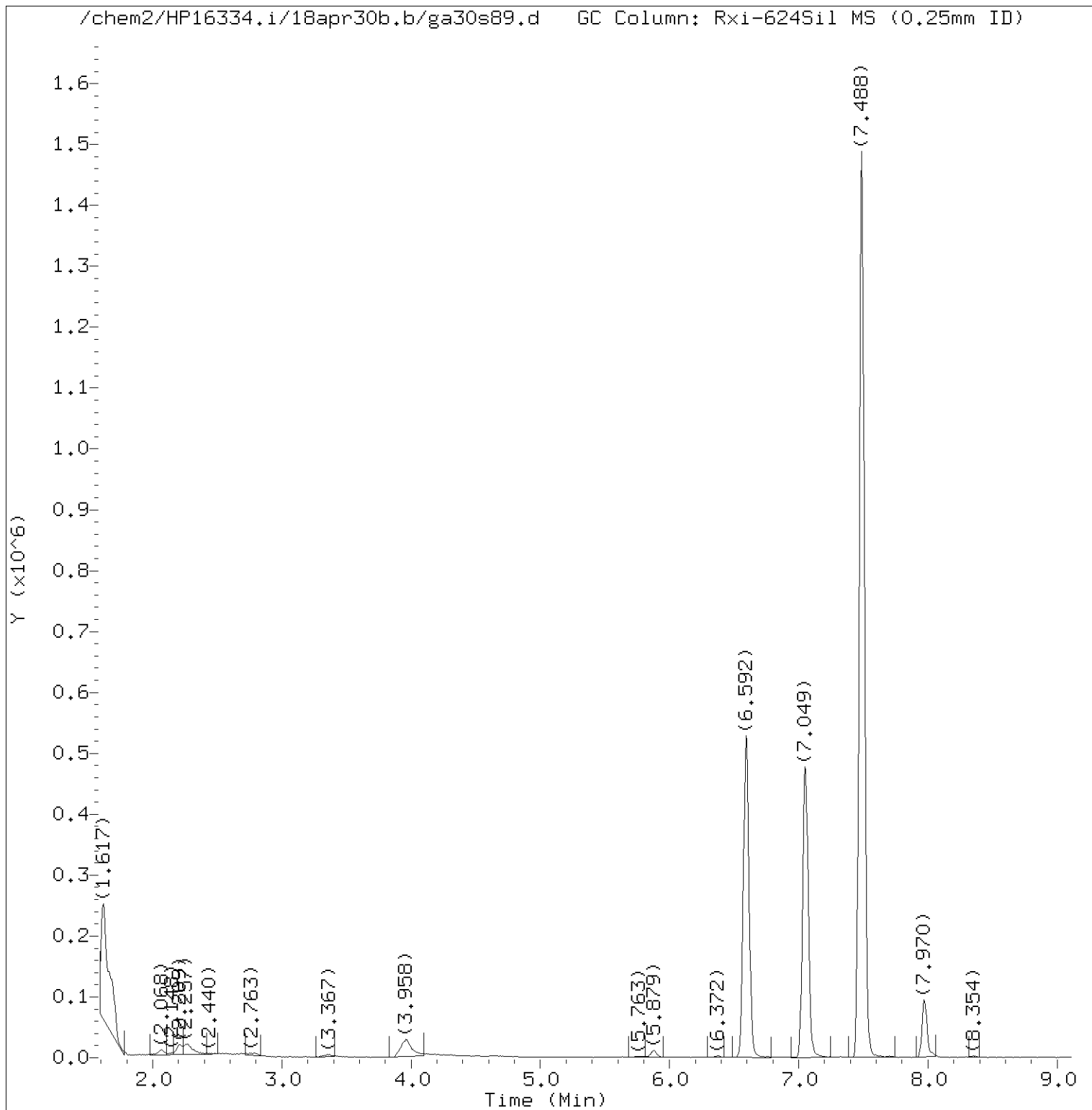
Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	10749350	178.706	178.71		E	0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)	11.877(-0.000)	105	70675	0.276	0.28		J	0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5

E = Compound concentration above calibration range.

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Roy R. Mellott on 05/04/2018 at 16:37. PARALLAX ID: rrm00219



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

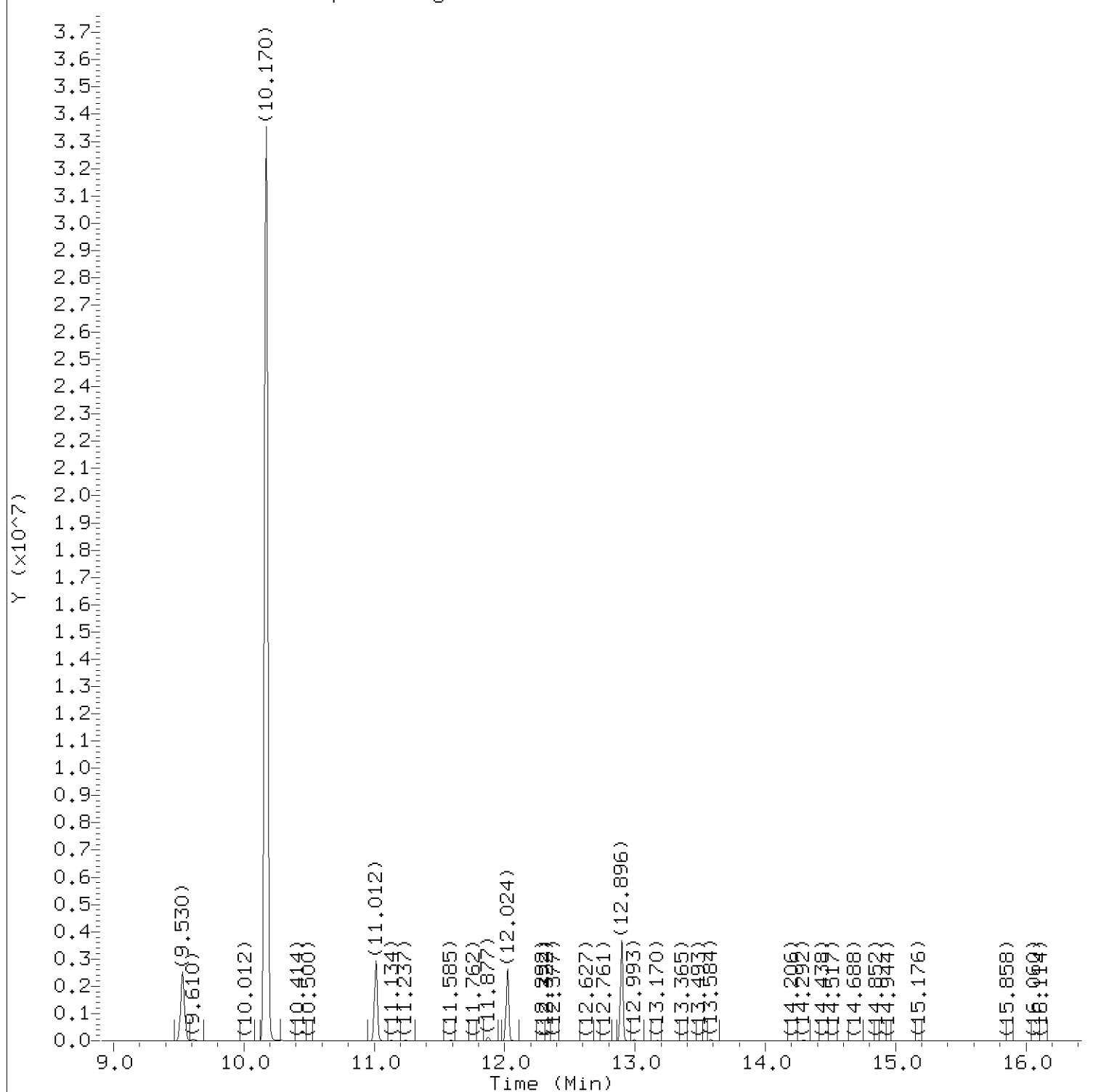
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FD

Lab Sample ID: 9582707

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 183 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FD

Lab Sample ID: 9582707

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52-Page 184 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FD

Lab Sample ID: 9582707

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26) *t-Butyl Alcohol-d10	(1)	3.958	65	158223	50.000
39) cis-1,2-Dichloroethene	(2)	5.879	96	7496	0.143
50) \$Dibromofluoromethane	(2)	6.592	113	489661	10.040
57) \$1,2-Dichloroethane-d4	(2)	7.049	102	101309	9.802
63) *Fluorobenzene	(2)	7.488	96	1939460	10.000
67) Trichloroethene	(2)	7.976	95	43155	0.826
82) \$Toluene-d8	(3)	9.530	98	1992127	9.731
83) Toluene	(3)	9.610	92	26799	0.207
89) Tetrachloroethene	(3)	10.170	166	10749350	178.706
97) *Chlorobenzene-d5	(3)	11.012	117	1526558	10.000
108) Isopropylbenzene	(3)	11.877	105	70675	0.276
111) \$4-Bromofluorobenzene	(3)	12.024	95	740101	9.445
133) *1,4-Dichlorobenzene-d4	(4)	12.902	152	874426	10.000

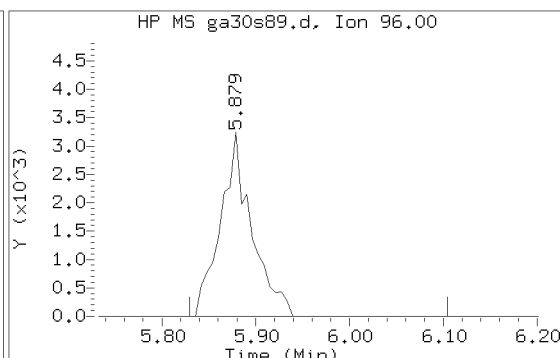
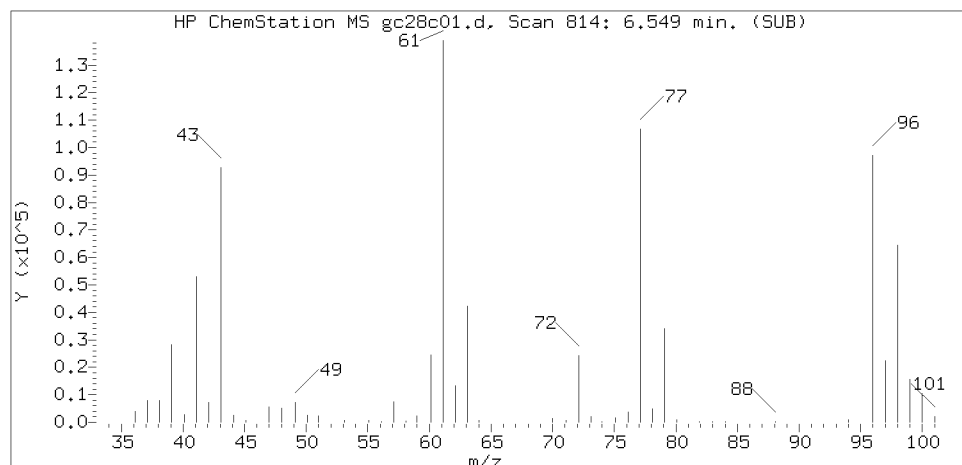
* = Compound is an internal standard.
\$ = Compound is a surrogate standard.

page 1 of 1

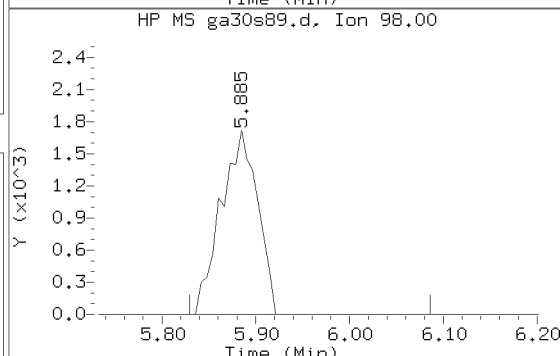
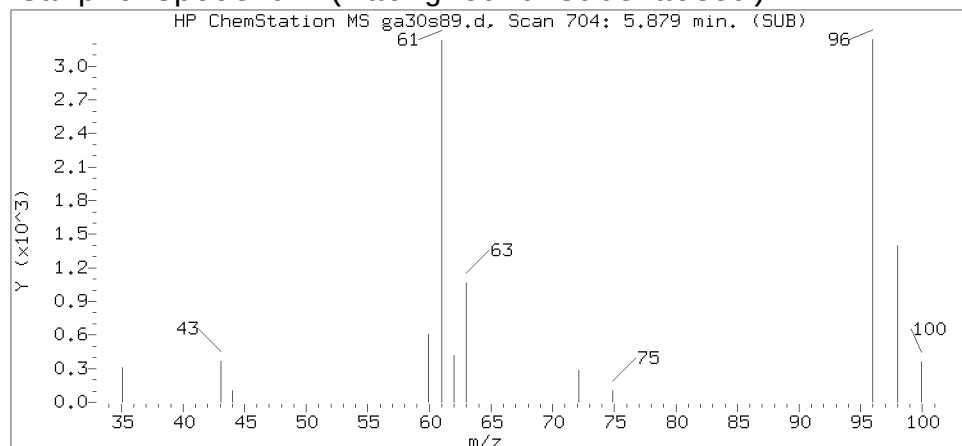
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

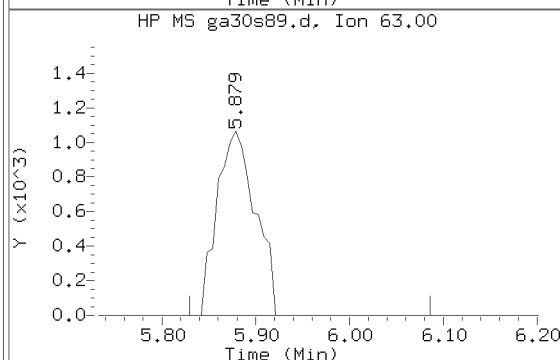
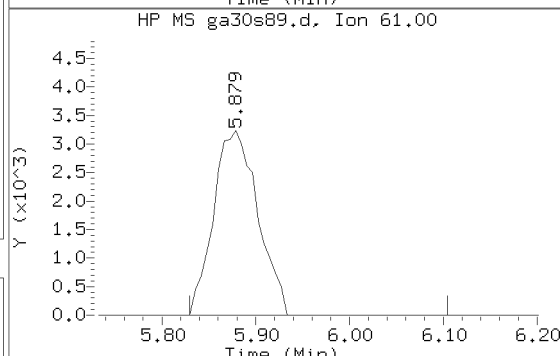
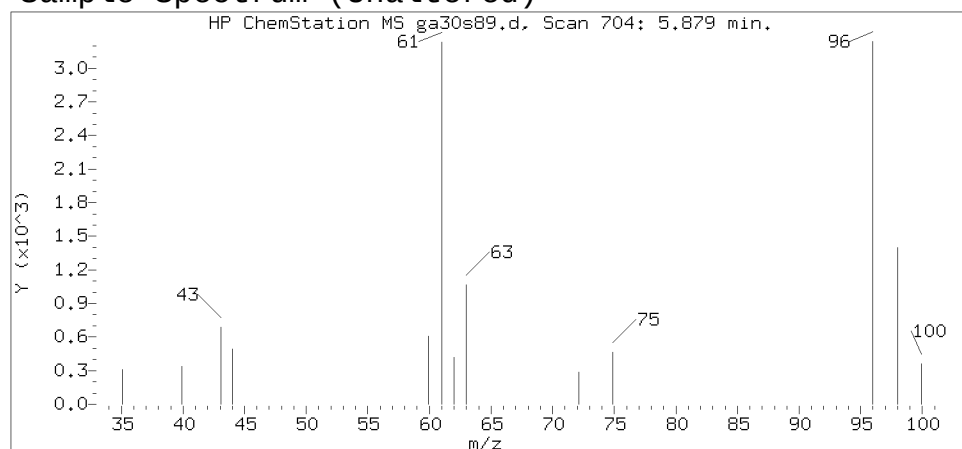
Reference Standard Spectrum for cis-1,2-Dichloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

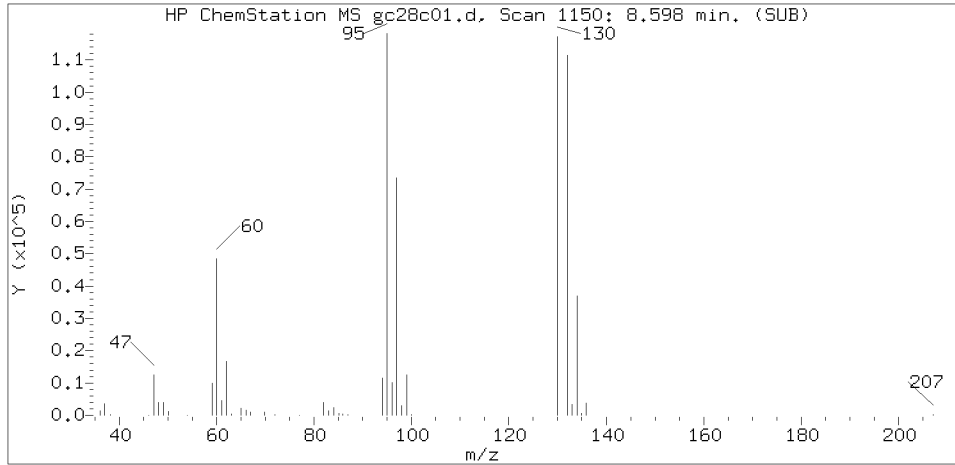
Sample Name: 384FD

Lab Sample ID: 9582707

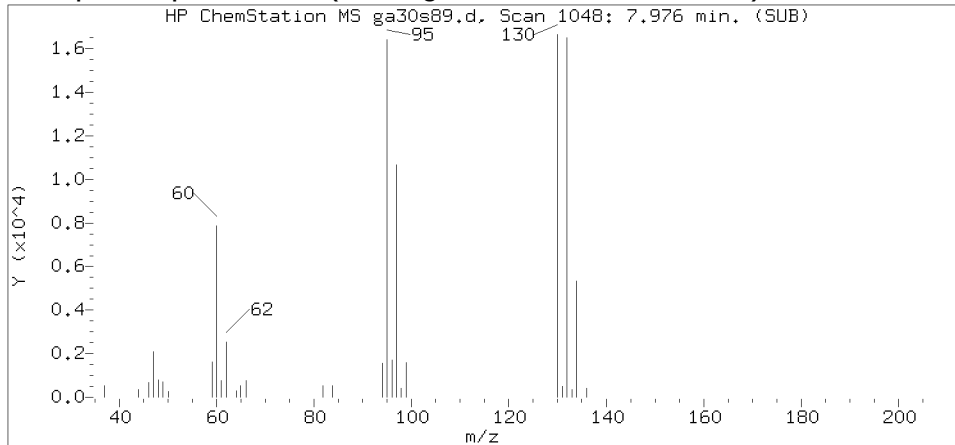
Compound Number : 39
Compound Name : cis-1,2-Dichloroethene
Scan Number : 704
Retention Time (minutes): 5.879
Relative Retention Time : -0.00035
Quant Ion : 96.00
Area (flag) : 7496
On-Column Amount (ng) : 0.1433

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

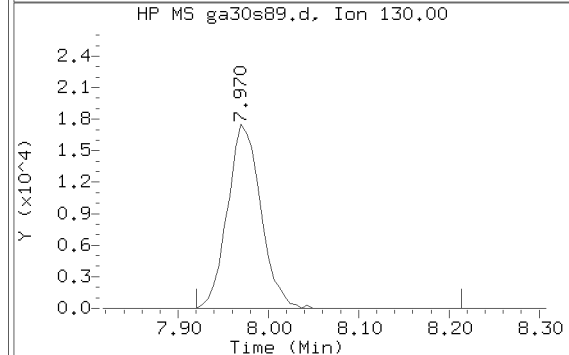
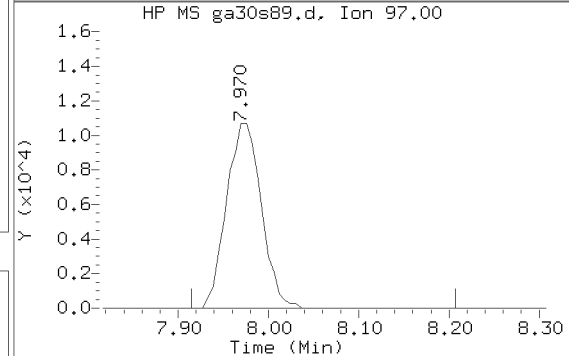
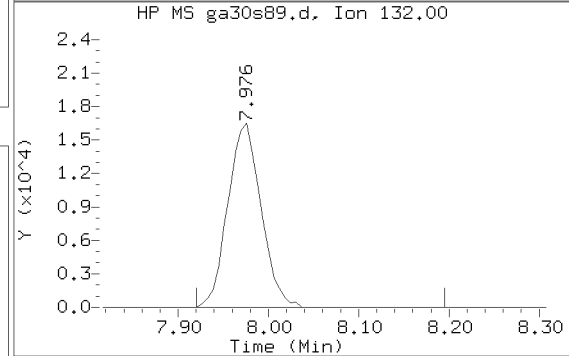
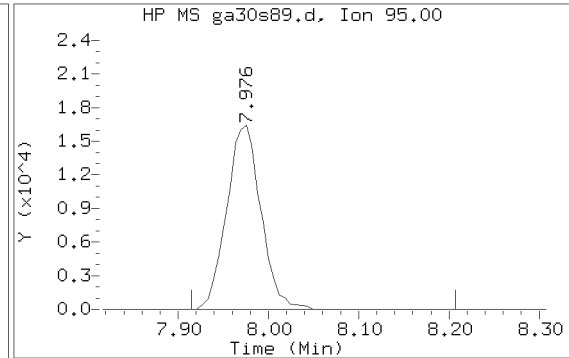
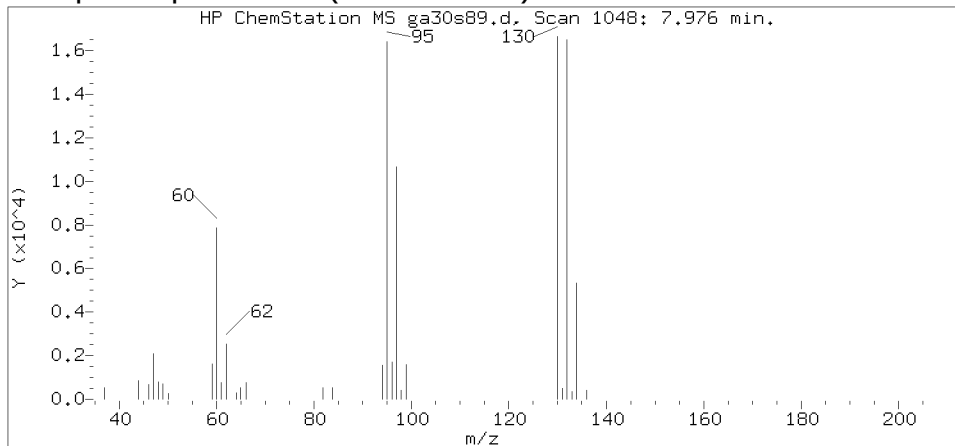
Reference Standard Spectrum for Trichloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

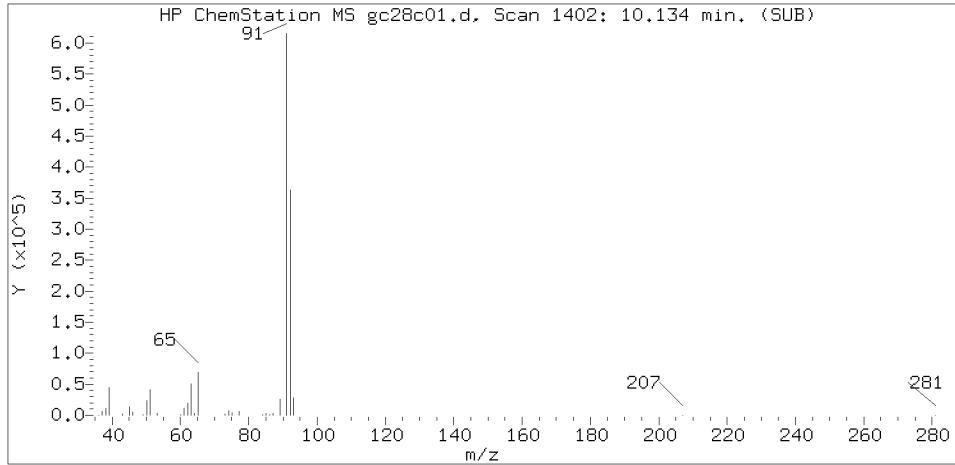
Sample Name: 384FD

Lab Sample ID: 9582707

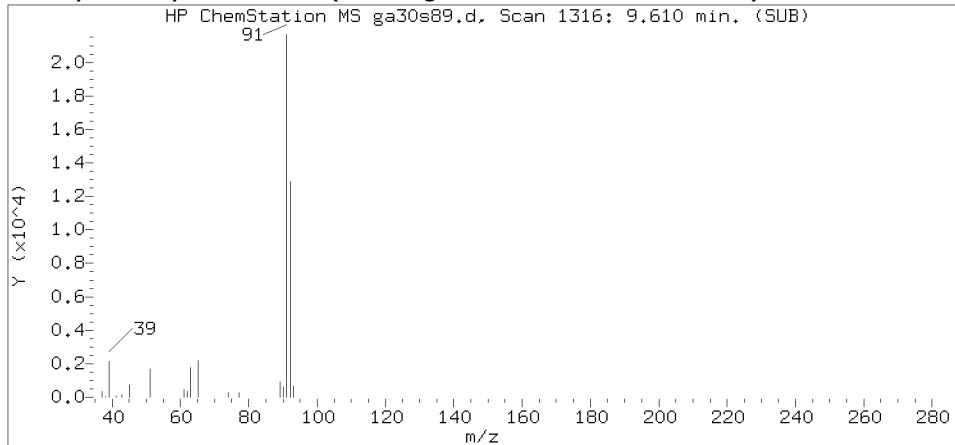
Compound Number : 67
Compound Name : Trichloroethene
Scan Number : 1048
Retention Time (minutes): 7.976
Relative Retention Time : -0.00071
Quant Ion : 95.00
Area (flag) : 43155
On-Column Amount (ng) : 0.8263

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

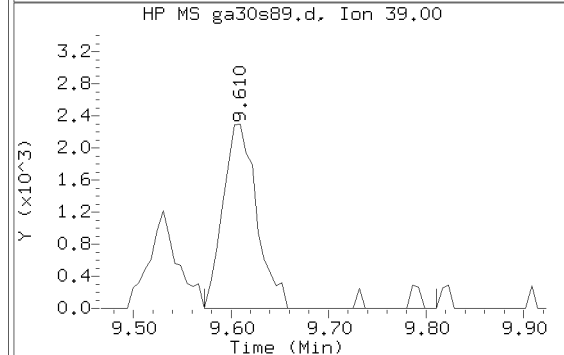
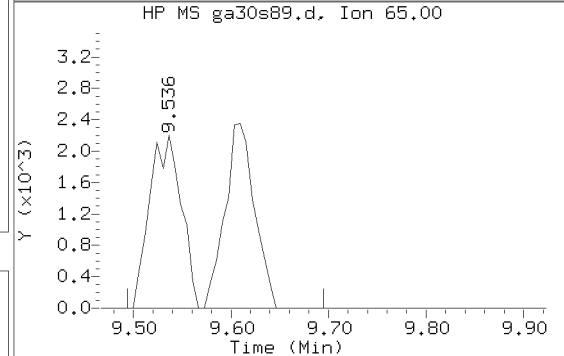
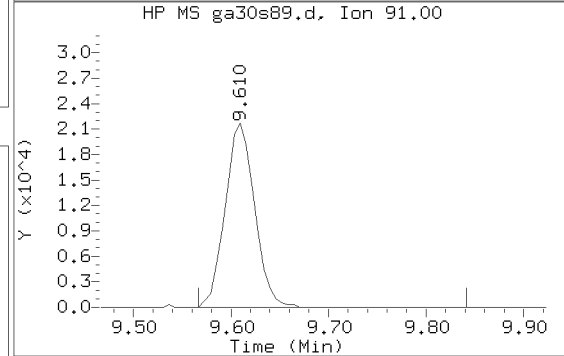
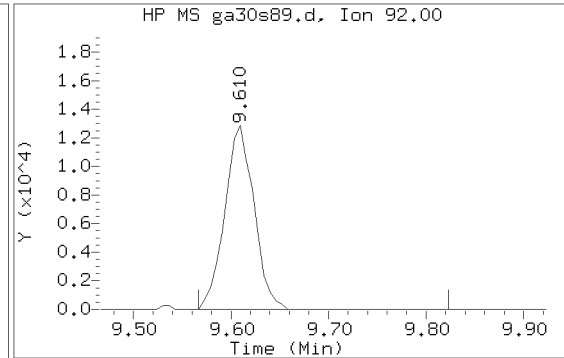
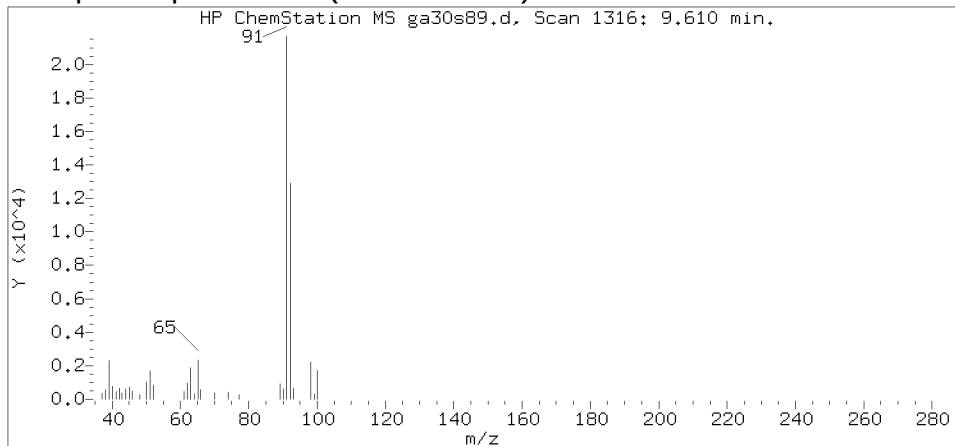
Reference Standard Spectrum for Toluene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

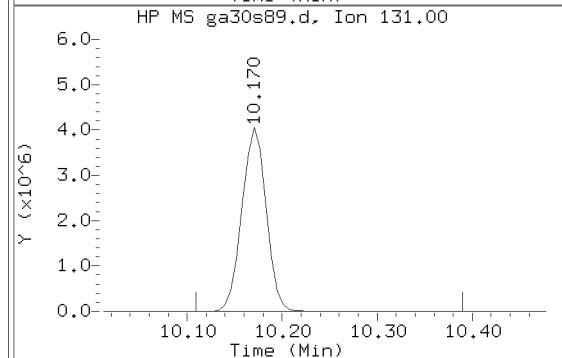
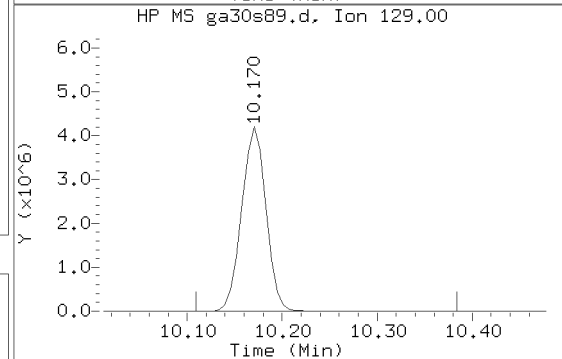
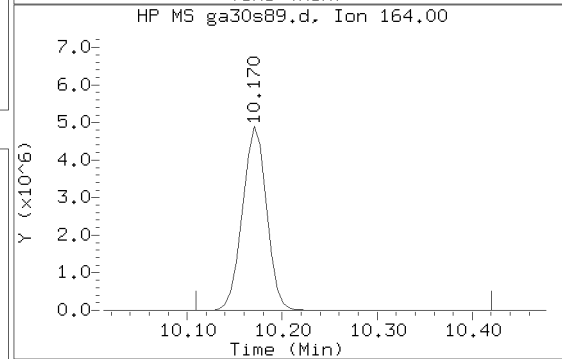
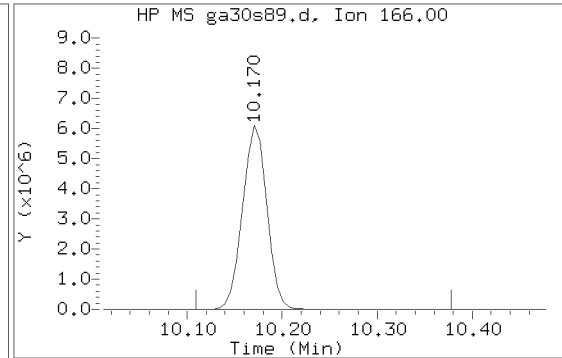
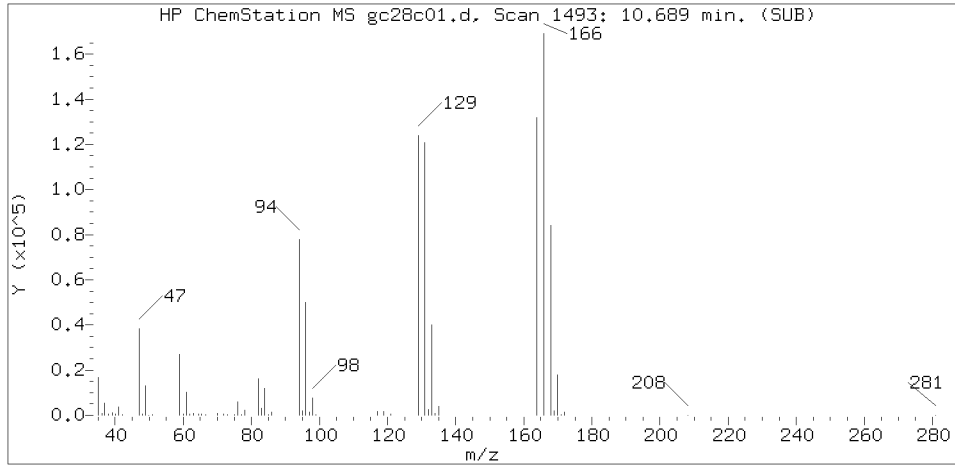
Sample Name: 384FD

Lab Sample ID: 9582707

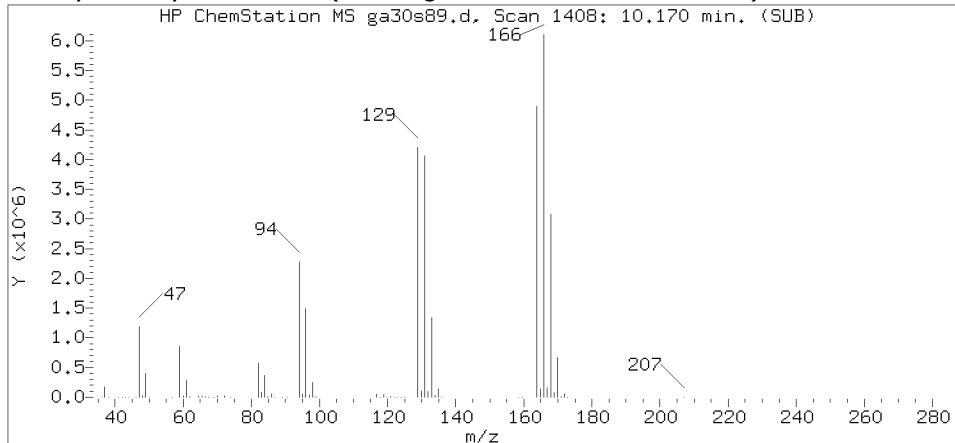
Compound Number : 83
Compound Name : Toluene
Scan Number : 1316
Retention Time (minutes): 9.610
Relative Retention Time : -0.00111
Quant Ion : 92.00
Area (flag) : 26799
On-Column Amount (ng) : 0.2066

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

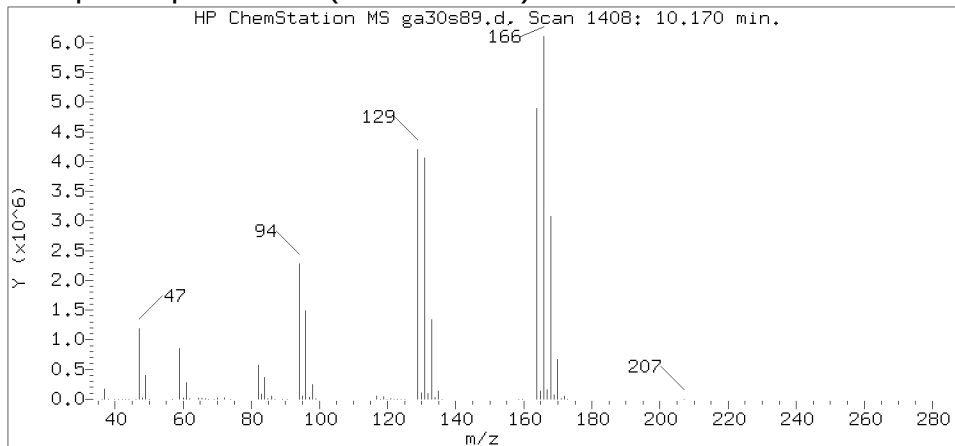
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

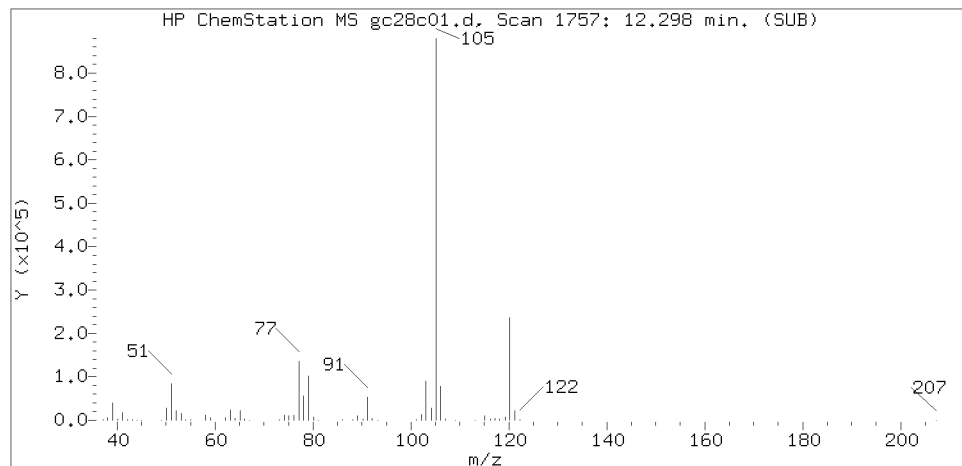
Sample Name: 384FD

Lab Sample ID: 9582707

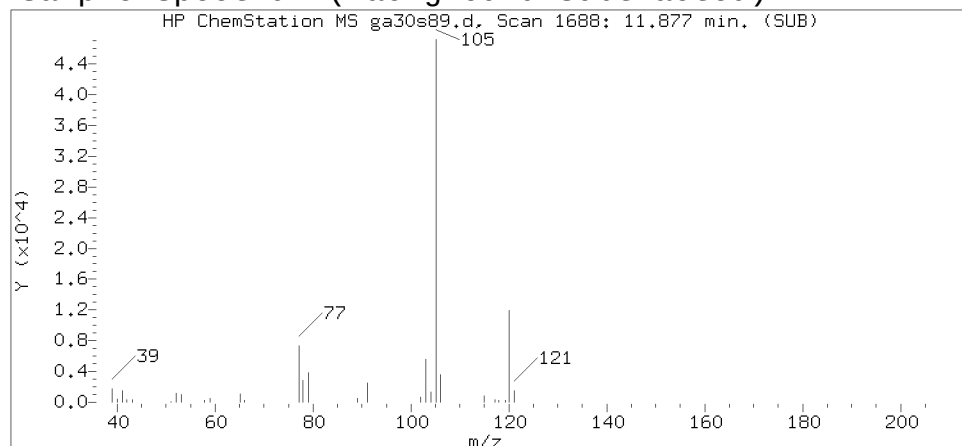
Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.170
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 10749350
On-Column Amount (ng) : 178.7056

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

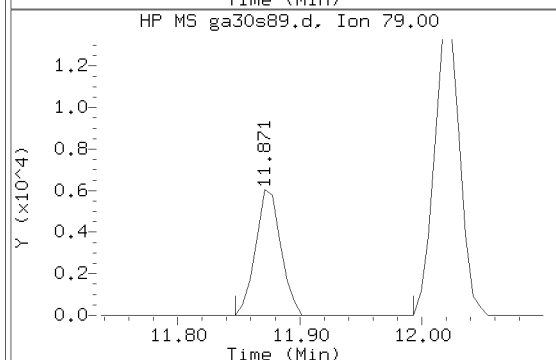
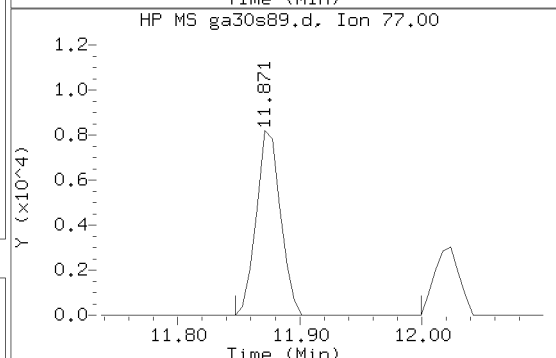
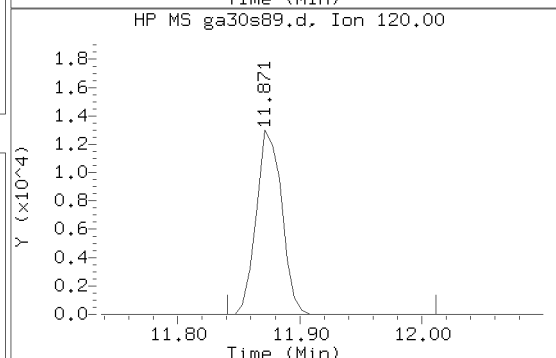
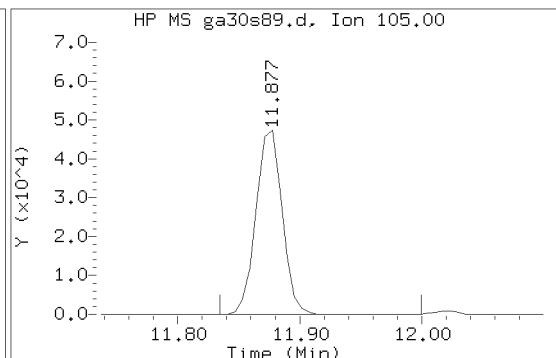
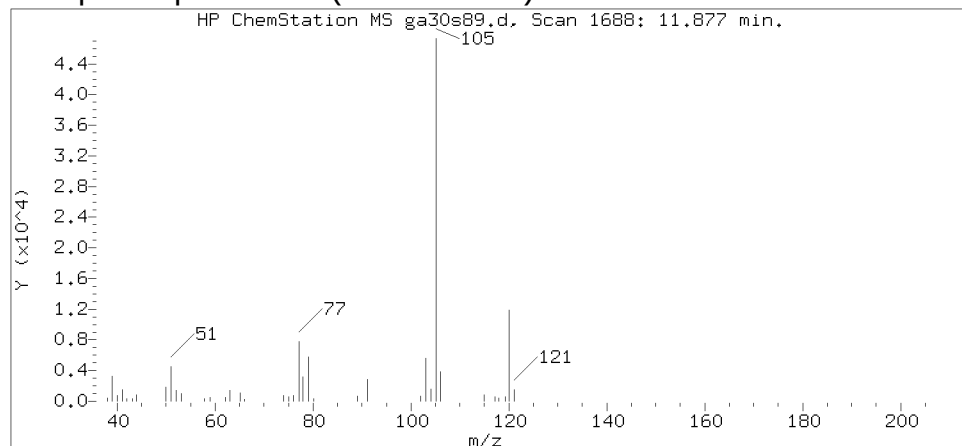
Reference Standard Spectrum for Isopropylbenzene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s89.d
Injection date and time: 01-MAY-2018 04:18

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FD

Lab Sample ID: 9582707

Compound Number : 108
Compound Name : Isopropylbenzene
Scan Number : 1688
Retention Time (minutes): 11.877
Relative Retention Time : -0.00055
Quant Ion : 105.00
Area (flag) : 70675
On-Column Amount (ng) : 0.2758

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

384FDDL

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 9582707
 Sample wt/vol: 1.25 (g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s90.d
 Level: (low/med) LOW Date Received: 04/28/18
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 20.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
354-23-4	Freon 123a	10	U
67-64-1	Acetone	100	U
75-35-4	1,1-Dichloroethene	10	U
76-13-1	Freon 113	10	U
75-15-0	Carbon Disulfide	20	U
79-20-9	Methyl Acetate	20	U
75-09-2	Methylene Chloride	10	U
1634-04-4	Methyl Tertiary Butyl Ether	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	100	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
110-82-7	Cyclohexane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	10	U
107-06-2	1,2-Dichloroethane	10	U
79-01-6	Trichloroethene	10	U
108-87-2	Methylcyclohexane	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-Pentanone	100	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

384FDDL

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9582707

Sample wt/vol: 1.25 (g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s90.d

Level: (low/med) LOW Date Received: 04/28/18

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 20.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-88-3-----	Toluene	10	U
10061-02-6-----	trans-1,3-Dichloropropene	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
127-18-4-----	Tetrachloroethene	120	D
591-78-6-----	2-Hexanone	100	U
124-48-1-----	Dibromochloromethane	10	U
106-93-4-----	1,2-Dibromoethane	10	U
108-90-7-----	Chlorobenzene	10	U
100-41-4-----	Ethylbenzene	10	U
1330-20-7-----	Xylene (Total)	10	U
100-42-5-----	Styrene	10	U
75-25-2-----	Bromoform	10	U
98-82-8-----	Isopropylbenzene	10	U
79-34-5-----	1,1,2,2-Tetrachloroethane	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
96-12-8-----	1,2-Dibromo-3-chloropropane	10	U
120-82-1-----	1,2,4-Trichlorobenzene	10	U

384FDDL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582707DL

Data file: /chem2/HP16334.i/18apr30b.b/ga30s90.d

Injection date and time: 01-MAY-2018 04:40

Data file Sample Info. Line: 384FDDL;9582707DL;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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: 20.00

Volume Purged (Vt): 25 ml

Sample Volume (Vo): 1.25 ml

Analysis Comments:

Internal Standards	RT (+/-RT)	Scan	QIon	Area(+/- %Change)	Conc. (on-column)	QC Flag
26) t-Butyl Alcohol-d10	3.952(-0.006)	388	65	159263 (-17)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	1975274 (-11)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1551956 (-13)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	880597 (-14)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	493323	9.932	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.001)	102	103443	9.827	98%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2032919	9.767	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	749905	9.413	94%		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					2	10
2) Chloromethane	(2)			Not Detected					4	10
5) Vinyl Chloride	(2)			Not Detected					2	10
7) Bromomethane	(2)			Not Detected					2	10
8) Chloroethane	(2)			Not Detected					2	10
10) Trichlorofluoromethane	(2)			Not Detected					2	10
12) Freon 123a	(2)			Not Detected					4	10
15) 1,1-Dichloroethene	(2)			Not Detected					2	10
16) Freon 113	(2)			Not Detected					4	10
14) Acetone	(1)			Not Detected					60	100
18) Carbon Disulfide	(2)			Not Detected					8	20
21) Methyl Acetate	(1)			Not Detected					6	20
23) Methylene Chloride	(2)			Not Detected					4	10
31) trans-1,2-Dichloroethene	(2)			Not Detected					2	10
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					2	10
33) 1,1-Dichloroethane	(2)			Not Detected					2	10
39) cis-1,2-Dichloroethene	(2)			Not Detected					2	10
38) 2-Butanone	(1)			Not Detected					20	100
49) Chloroform	(2)			Not Detected					2	10
51) 1,1,1-Trichloroethane	(2)			Not Detected					2	10
52) Cyclohexane	(2)			Not Detected					2	10
54) Carbon Tetrachloride	(2)			Not Detected					2	10
58) Benzene	(2)			Not Detected					2	10
59) 1,2-Dichloroethane	(2)			Not Detected					2	10
67) Trichloroethene	(2)			Not Detected					2	10
69) Methylcyclohexane	(2)			Not Detected					2	10
70) 1,2-Dichloropropane	(2)			Not Detected					2	10
74) Bromodichloromethane	(2)			Not Detected					2	10
80) cis-1,3-Dichloropropene	(2)			Not Detected					2	10
81) 4-Methyl-2-Pentanone	(1)			Not Detected					20	100
83) Toluene	(3)			Not Detected					2	10

384FDDL

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

9582707DL

Data file: /chem2/HP16334.i/18apr30b.b/ga30s90.d

Injection date and time: 01-MAY-2018 04:40

Data file Sample Info. Line: 384FDDL;9582707DL;1;0;;FKP52;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272

Calibration date and time (Last Method Edit): 04-MAY-2018 10:28

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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: 20.00

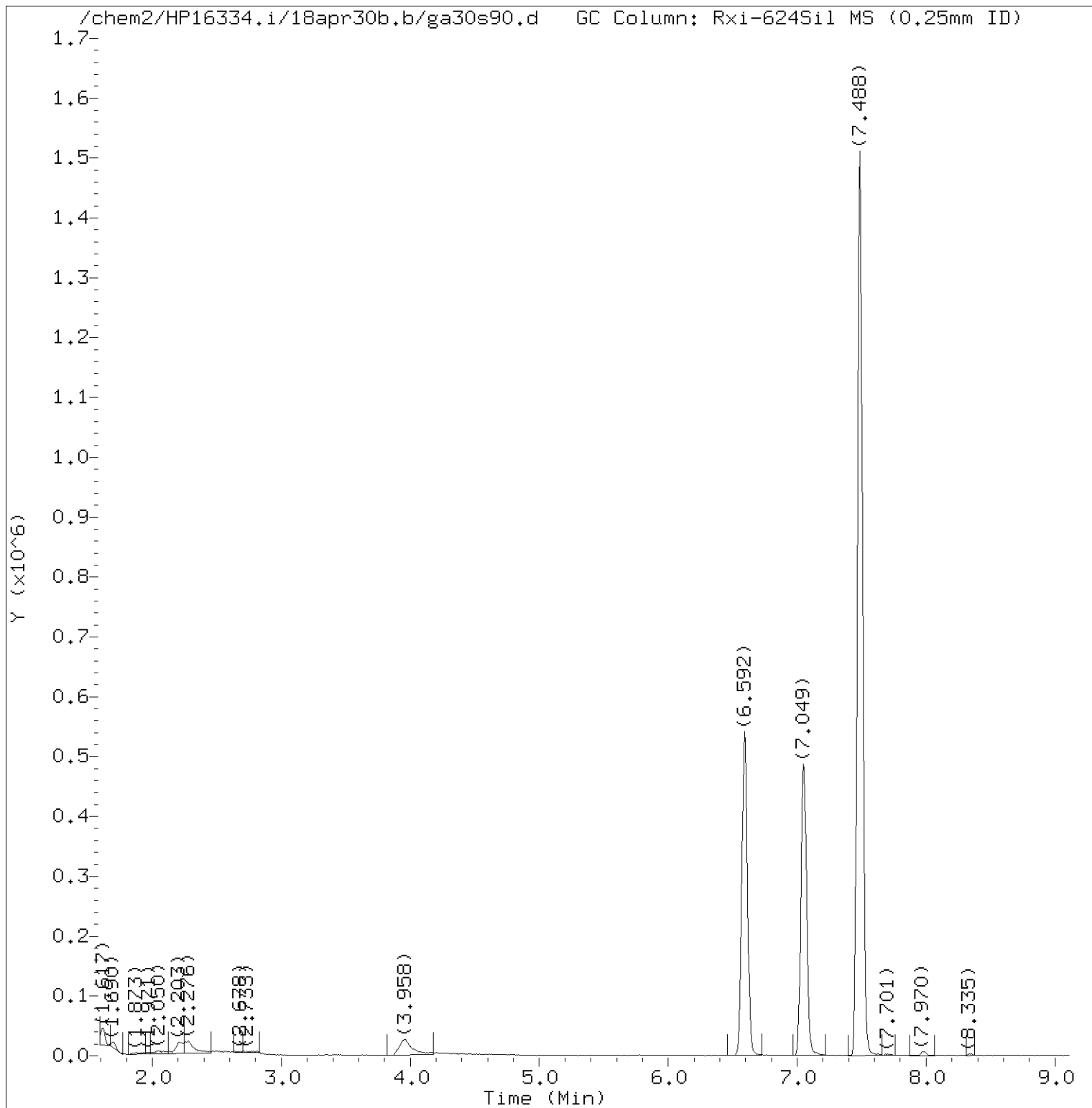
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 1.25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ (in sample)
84) trans-1,3-Dichloropropene	(3)			Not Detected					2	10
88) 1,1,2-Trichloroethane	(3)			Not Detected					2	10
89) Tetrachloroethene	(3)	10.170(-0.000)	166	364714	5.964	119.28			2	10
91) 2-Hexanone	(1)			Not Detected					20	100
93) Dibromochloromethane	(3)			Not Detected					2	10
95) 1,2-Dibromoethane	(3)			Not Detected					2	10
98) Chlorobenzene	(3)			Not Detected					2	10
100) Ethylbenzene	(3)			Not Detected					2	10
101) m+p-Xylene	(3)			Not Detected					2	10
104) o-Xylene	(3)			Not Detected					2	10
105) Xylene (Total)	(3)			Not Detected					2	10
106) Styrene	(3)			Not Detected					2	10
107) Bromoform	(3)			Not Detected					2	10
108) Isopropylbenzene	(3)			Not Detected					2	10
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					2	10
131) 1,3-Dichlorobenzene	(4)			Not Detected					2	10
134) 1,4-Dichlorobenzene	(4)			Not Detected					2	10
139) 1,2-Dichlorobenzene	(4)			Not Detected					2	10
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					4	10
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					2	10

Total number of targets = 51

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s90.d
Injection date and time: 01-MAY-2018 04:40

Instrument ID: HP16334.i
Analyst ID: MSK07970

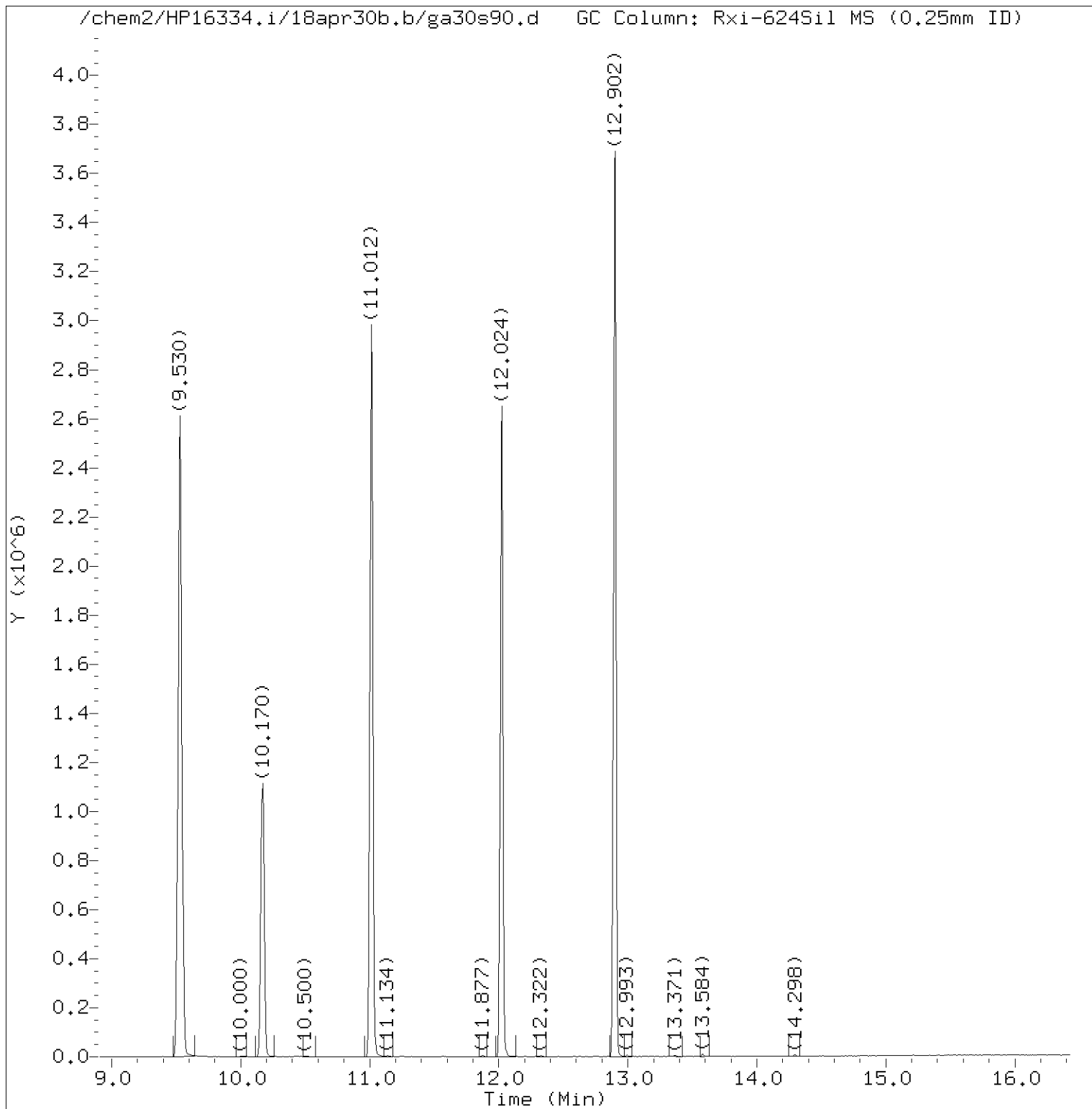
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FDDL

Lab Sample ID: 9582707DL

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 195 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s90.d
Injection date and time: 01-MAY-2018 04:40

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FDDL

Lab Sample ID: 9582707DL

Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 196 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s90.d
Injection date and time: 01-MAY-2018 04:40

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FDDL

Lab Sample ID: 9582707DL

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.952	65	159263	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	493323	9.932
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	103443	9.827
63)*Fluorobenzene	(2)	7.488	96	1975274	10.000
82)\$Toluene-d8	(3)	9.530	98	2032919	9.767
89) Tetrachloroethene	(3)	10.170	166	364714	5.964
97)*Chlorobenzene-d5	(3)	11.012	117	1551956	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	749905	9.413
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	880597	10.000

* = Compound is an internal standard.

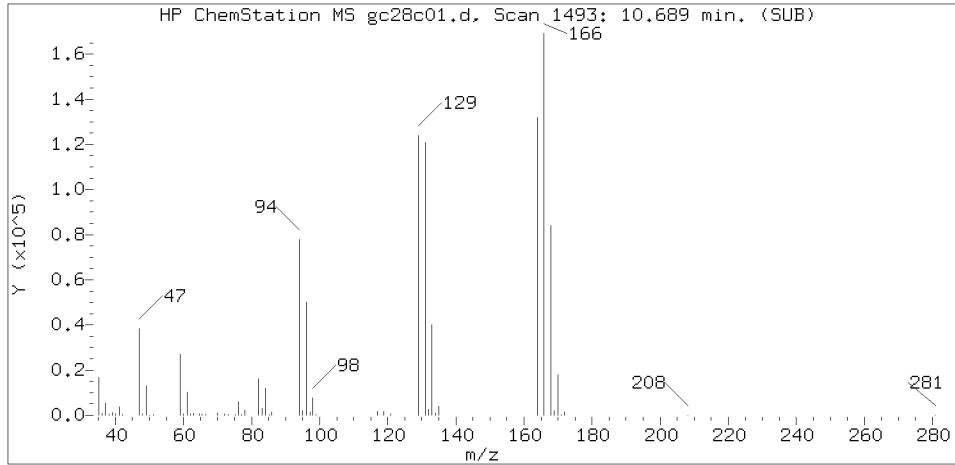
\$ = Compound is a surrogate standard.

page 1 of 1

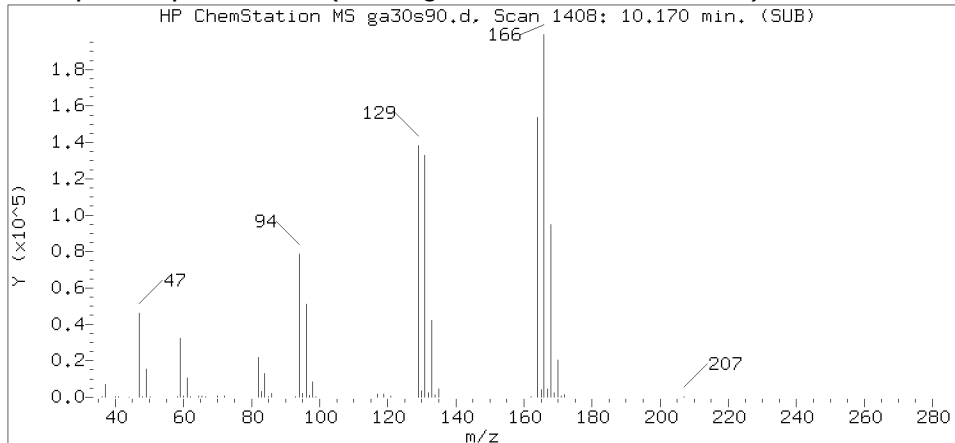
Digitally signed by Jennifer K. Howe
on 05/04/2018 at 10:32.

Target 3.5 esignature user ID: jkh09052

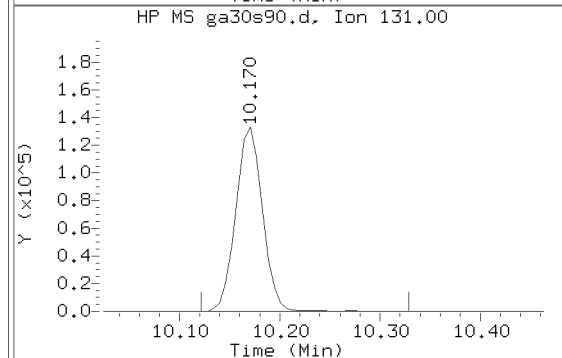
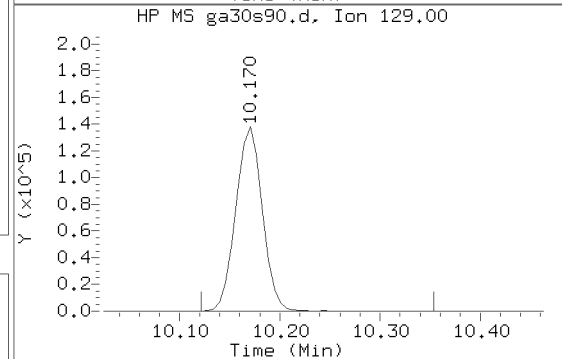
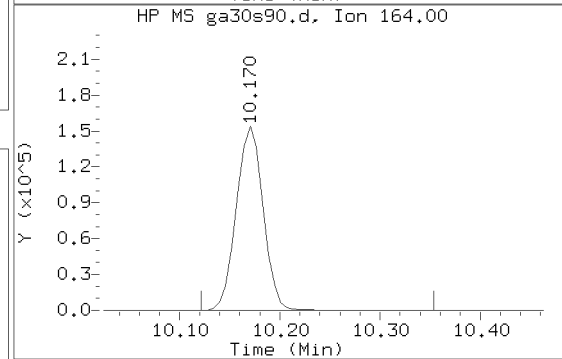
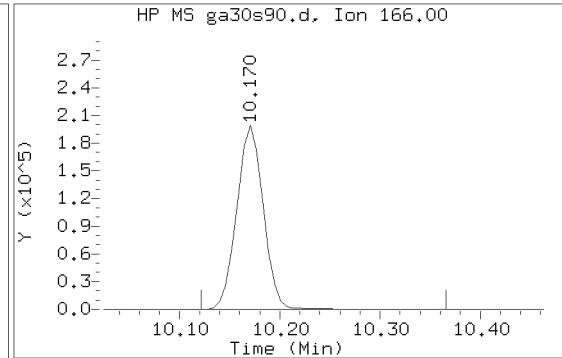
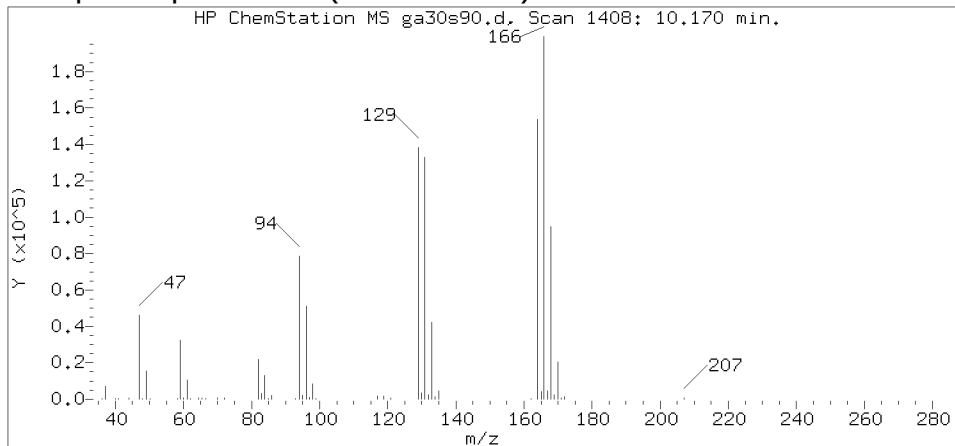
Reference Standard Spectrum for Tetrachloroethene



Sample Spectrum (Background Subtracted)



Sample Spectrum (Unaltered)



Data File: /chem2/HP16334.i/18apr30b.b/ga30s90.d
Injection date and time: 01-MAY-2018 04:40

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 27272
Calibration date and time: 04-MAY-2018 10:28
Date, time and analyst ID of latest file update: 04-May-2018 10:30 jkh09052

Sample Name: 384FDDL

Lab Sample ID: 9582707DL

Compound Number : 89
Compound Name : Tetrachloroethene
Scan Number : 1408
Retention Time (minutes): 10.170
Relative Retention Time : -0.00055
Quant Ion : 166.00
Area (flag) : 364714
On-Column Amount (ng) : 5.9641

Digitally signed by Jennifer K. Howe on 05/04/2018 at 10:32.
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\18APR19I\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	GA19T01.D	BFB FEB13-18	04/19/2018	11:47		
JKH09052	GA19X00.D	BLK	04/19/2018	11:59		
JKH09052	GA19I01.D	VSTD025	04/19/2018	12:22		
JKH09052	GA19I02.D	VSTD010	04/19/2018	12:44		
JKH09052	GA19I03.D	VSTD005	04/19/2018	13:06		
JKH09052	GA19I04.D	VSTD002	04/19/2018	13:28		
JKH09052	GA19I05.D	VSTD001	04/19/2018	13:51		
JKH09052	GA19I06.D	VSTD0.5	04/19/2018	14:14		
JKH09052	GA19I07.D	VSTD0.2	04/19/2018	14:37		
JKH09052	GA19M01.D	MDL0.1	04/19/2018	14:59		
JKH09052	GA19V01.D	LCSEG01	04/19/2018	15:21		
JKH09052	GA19X01.D	BLK	04/19/2018	15:44		
JKH09052	GA19I11.D	VSTD025	04/19/2018	16:06		
JKH09052	GA19I12.D	VSTD010	04/19/2018	16:28		
JKH09052	GA19I13.D	VSTD005	04/19/2018	16:51		
JKH09052	GA19I14.D	VSTD002	04/19/2018	17:13		
JKH09052	GA19I15.D	VSTD001	04/19/2018	17:35		
JKH09052	GA19I16.D	VSTD0.5	04/19/2018	17:57		
JKH09052	GA19I17.D	VSTD0.2	04/19/2018	18:19		
JKH09052	GA19M11.D	MDL0.1	04/19/2018	18:42		
JKH09052	GA19V11.D	LCSSMG	04/19/2018	19:04		

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP16334 **HP #29**

Data Directory Path is - d:\data\18apr30B\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
MSK07970	GA30T10.D	50NGBFB	04/30/2018	20:32	G181203AA	
MSK07970	GA30C10.D	VSTD050	04/30/2018	20:51	G181203AA	
MSK07970	GA30S71.D	LCSG13	04/30/2018	21:14	G181203AA	
MSK07970	GA30S72.D	LCDG13	04/30/2018	21:36	G181203AA	
MSK07970	GA30B10.D	VLKG13	04/30/2018	21:59	G181203AA	
MSK07970	GA30S73.D	9569707	04/30/2018	22:21	G181203AA	
MSK07970	GA30S74.D	9569708	04/30/2018	22:44	G181203AA	
MSK07970	GA30S75.D	9570920	04/30/2018	23:06	G181203AA	
MSK07970	GA30S76.D	9575109	04/30/2018	23:28	G181203AA	
MSK07970	GA30S77.D	9578076	04/30/2018	23:50	G181203AA	
MSK07970	GA30S78.D	9581041	05/01/2018	00:12	G181203AA	
MSK07970	GA30S79.D	9582706	05/01/2018	00:35	G181203AA	
MSK07970	GA30S80.D	9569706	05/01/2018	00:57	G181203AA	
MSK07970	GA30S81.D	9582699	05/01/2018	01:19	G181203AA	
MSK07970	GA30S82.D	9582700	05/01/2018	01:41	G181203AA	
MSK07970	GA30S83.D	9582701	05/01/2018	02:04	G181203AA	
MSK07970	GA30S84.D	9582702	05/01/2018	02:26	G181203AA	
MSK07970	GA30S85.D	9582702DL	05/01/2018	02:48	G181203AA	10
MSK07970	GA30S86.D	9582703	05/01/2018	03:11	G181203AA	
MSK07970	GA30S87.D	9582704	05/01/2018	03:33	G181203AA	
MSK07970	GA30S88.D	9582705	05/01/2018	03:55	G181203AA	
MSK07970	GA30S89.D	9582707	05/01/2018	04:18	G181203AA	
MSK07970	GA30S90.D	9582707DL	05/01/2018	04:40	G181203AA	20
MSK07970	GA30X20.D	VLKG13	05/01/2018	05:02	G181203AA	
MSK07970	GA30X21.D	VLKG13	05/01/2018	05:24	G181203AA	
MSK07970	GA30B90.D	TB18114	05/01/2018	05:47	G181203AA	
MSK07970	GA30B91.D	TB18115	05/01/2018	06:09	G181203AA	

Lancaster Laboratories
Volatiles
Runlog for Agilent GC/MS System HP16334 **HP #29**

Data Directory Path is - D:\DATA\18MAY01A\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
JKH09052	GY0101.D	BFB FEB13-18	05/01/2018	06:52		
JKH09052	GY01X00.D	VBLKG14	05/01/2018	07:04	G181211AA	
JKH09052	GY01C01.D	VSTD12.5	05/01/2018	07:26	G181211AA	
JKH09052	GY01C02.D	VSTD12.5	05/01/2018	07:48	G181211AA	
JKH09052	GY01L01.D	LCSG14	05/01/2018	08:11	G181211AA	
JKH09052	GY01L02.D	LCDG14	05/01/2018	08:33	G181211AA	
JKH09052	GY01L03.D	LCSG15	05/01/2018	08:55	G181211AA	
JKH09052	GY01L04.D	LCDG15	05/01/2018	09:17	G181211AA	
JKH09052	GY01B01.D	VBLKG14	05/01/2018	09:40	G181211AA	
JKH09052	GY01S02.D	9573678	05/01/2018	10:22	G181211AA	
JKH09052	GY01S03.D	9573660	05/01/2018	10:44	G181211AA	
JKH09052	GY01S04.D	9573681	05/01/2018	11:06	G181211AA	
JKH09052	GY01S05.D	9573661	05/01/2018	11:29	G181211AA	
JKH09052	GY01S06.D	9569515	05/01/2018	11:51	G181211AA	
JKH09052	GY01S08.D	9571206DL	05/01/2018	12:35	G181211AA	10
JKH09052	GY01S09.D	9573662	05/01/2018	12:58	G181211AA	
JKH09052	GY01S10.D	9573662DL	05/01/2018	13:20	G181211AA	20
JKH09052	GY01S11.D	9573679	05/01/2018	13:42	G181211AA	2
JKH09052	GY01S12.D	9573679DL	05/01/2018	14:04	G181211AA	20
JKH09052	GY01S13.D	9573680	05/01/2018	14:27	G181211AA	2
JKH09052	GY01S14.D	9573680DL	05/01/2018	14:49	G181211AA	20
JKH09052	GY01S15.D	9582704DL	05/01/2018	15:11	G181211AA	10

Date : 19-APR-2018 11:47

Client ID: 50ngBFB

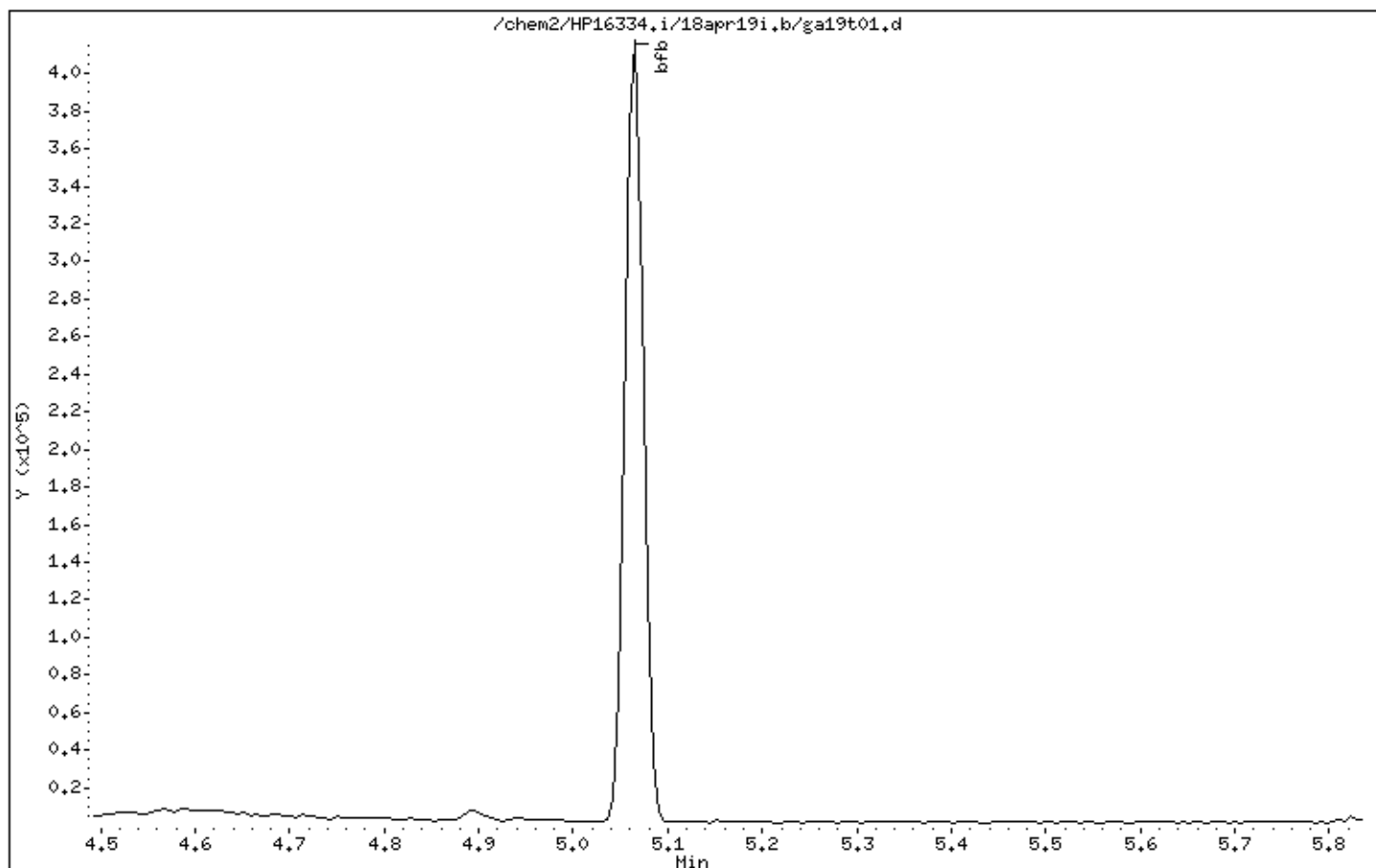
Instrument: HP16334.i

Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

Operator: jkh09052

Column phase: Rxi-624Sil MS

Column diameter: 0,25



Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

Date : 19-APR-2018 11:47

Client ID: 50ngBFB

Instrument: HP16334.i

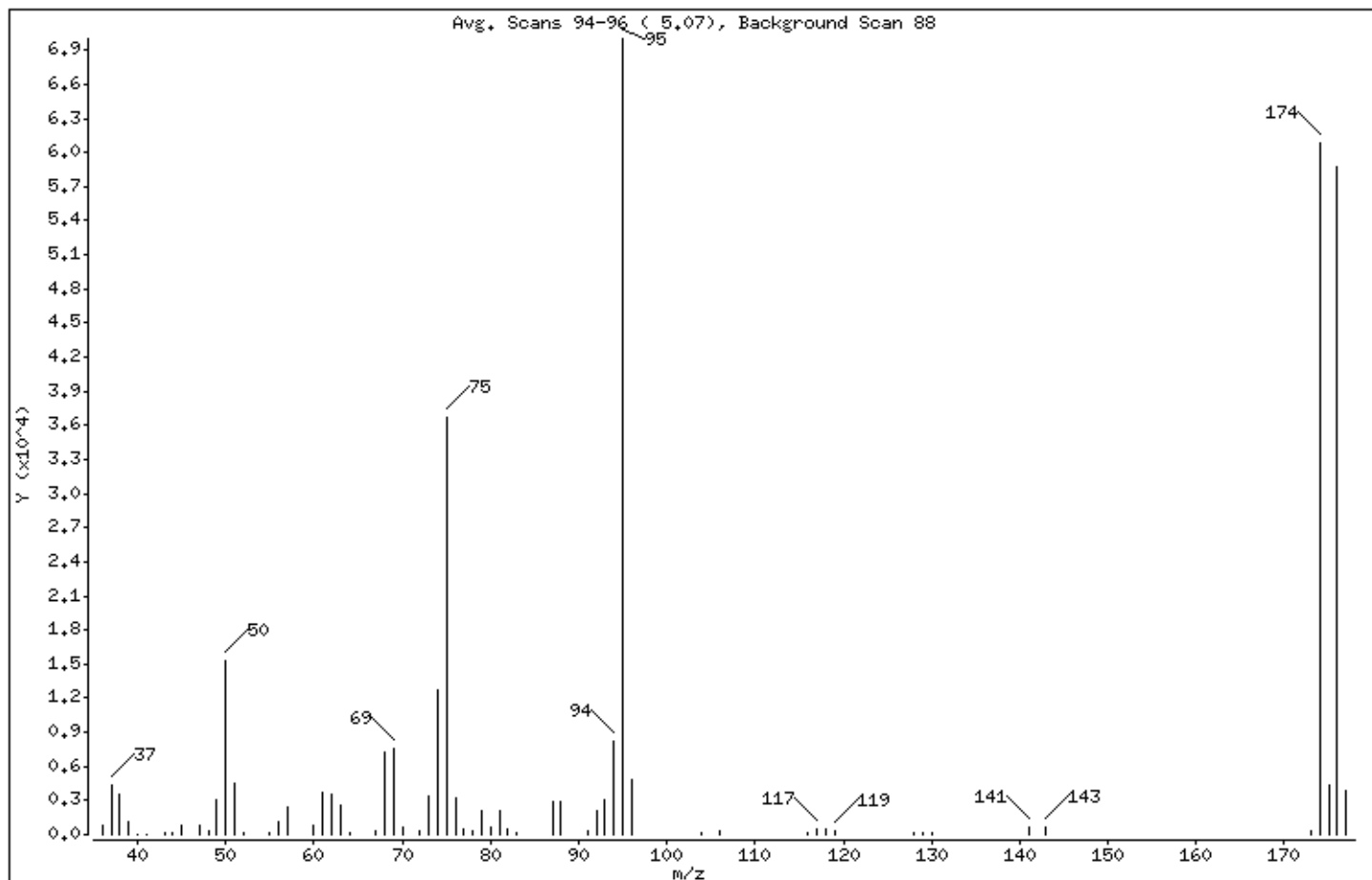
Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

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	21.74
75	30.00 - 60.00% of mass 95	52.48
96	5.00 - 9.00% of mass 95	6.98
173	Less than 2.00% of mass 174	0.41 (0.47)
174	50.00 - 100.00% of mass 95	86.84
175	5.00 - 9.00% of mass 174	6.17 (7.11)
176	95.00 - 101.00% of mass 174	83.87 (96.58)
177	5.00 - 9.00% of mass 176	5.61 (6.69)

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

Date : 19-APR-2018 11:47

Client ID: 50ngBFB

Instrument: HP16334.i

Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

Operator: jkh09052

Column phase: Rxi-624Sil MS

Column diameter: 0,25

Data File: ga19t01.d

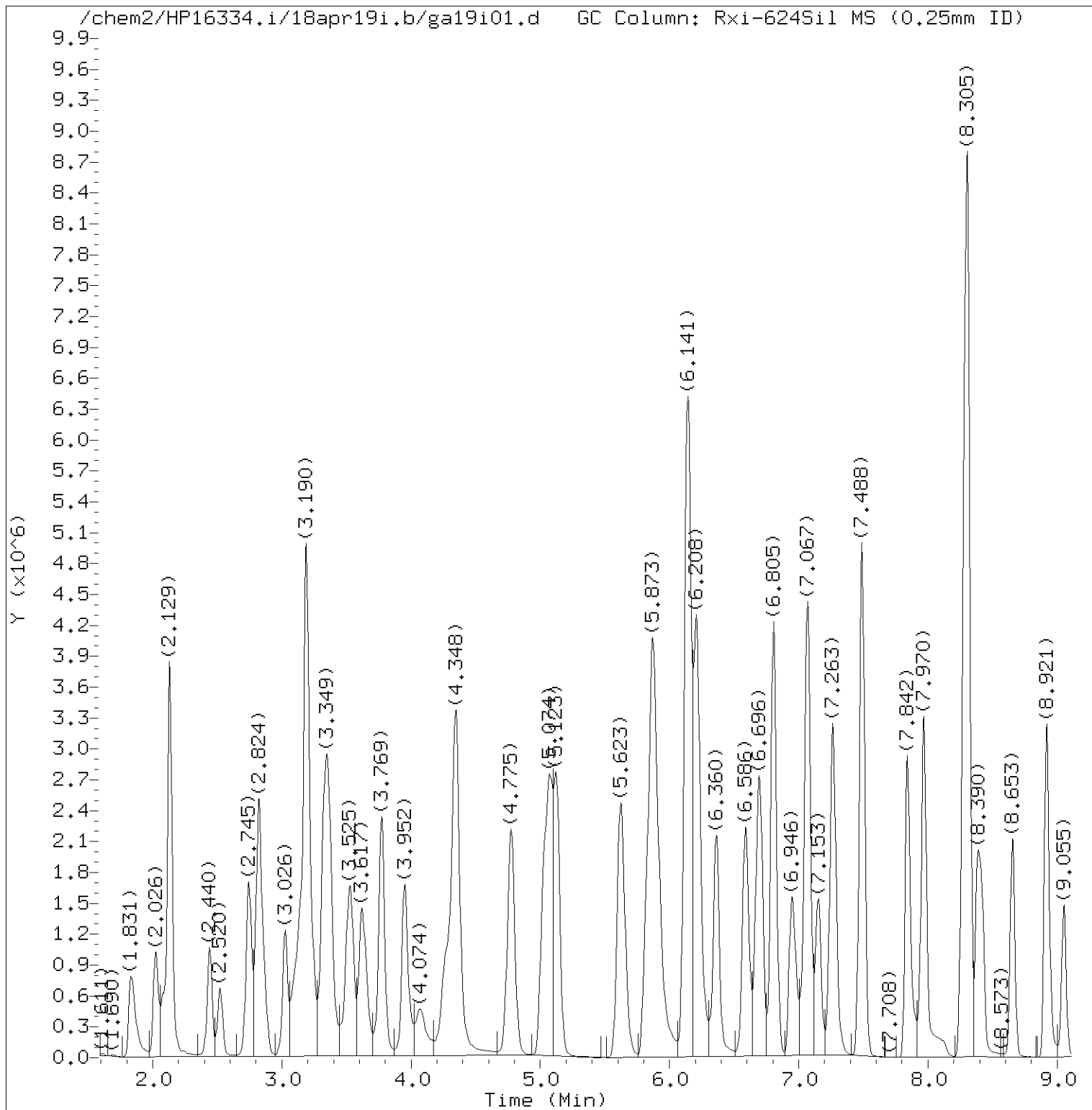
Spectrum: Avg. Scans 94-96 (5,07), Background Scan 88

Location of Maximum: 95,00

Number of points: 63

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36,00	751	56,00	1165	77,00	444	106,00	374
37,00	4308	57,00	2369	78,00	334	116,00	213
38,00	3590	60,00	775	79,00	2080	117,00	485
39,00	1106	61,00	3780	80,00	659	118,00	412
40,00	80	62,00	3534	81,00	2037	119,00	302
41,00	61	63,00	2497	82,00	443	128,00	188
43,00	192	64,00	213	83,00	84	129,00	98
44,00	212	67,00	293	87,00	2948	130,00	193
45,00	740	68,00	7241	88,00	2832	141,00	703
47,00	799	69,00	7585	91,00	301	143,00	702
48,00	402	70,00	657	92,00	2163	173,00	286
49,00	3128	72,00	358	93,00	3063	174,00	60792
50,00	15218	73,00	3407	94,00	8246	175,00	4322
51,00	4581	74,00	12760	95,00	70008	176,00	58712
52,00	202	75,00	36736	96,00	4885	177,00	3929
55,00	209	76,00	3174	104,00	221		

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d
Injection date and time: 19-APR-2018 12:22

Instrument ID: HP16334.i
Analyst ID: JKH09052

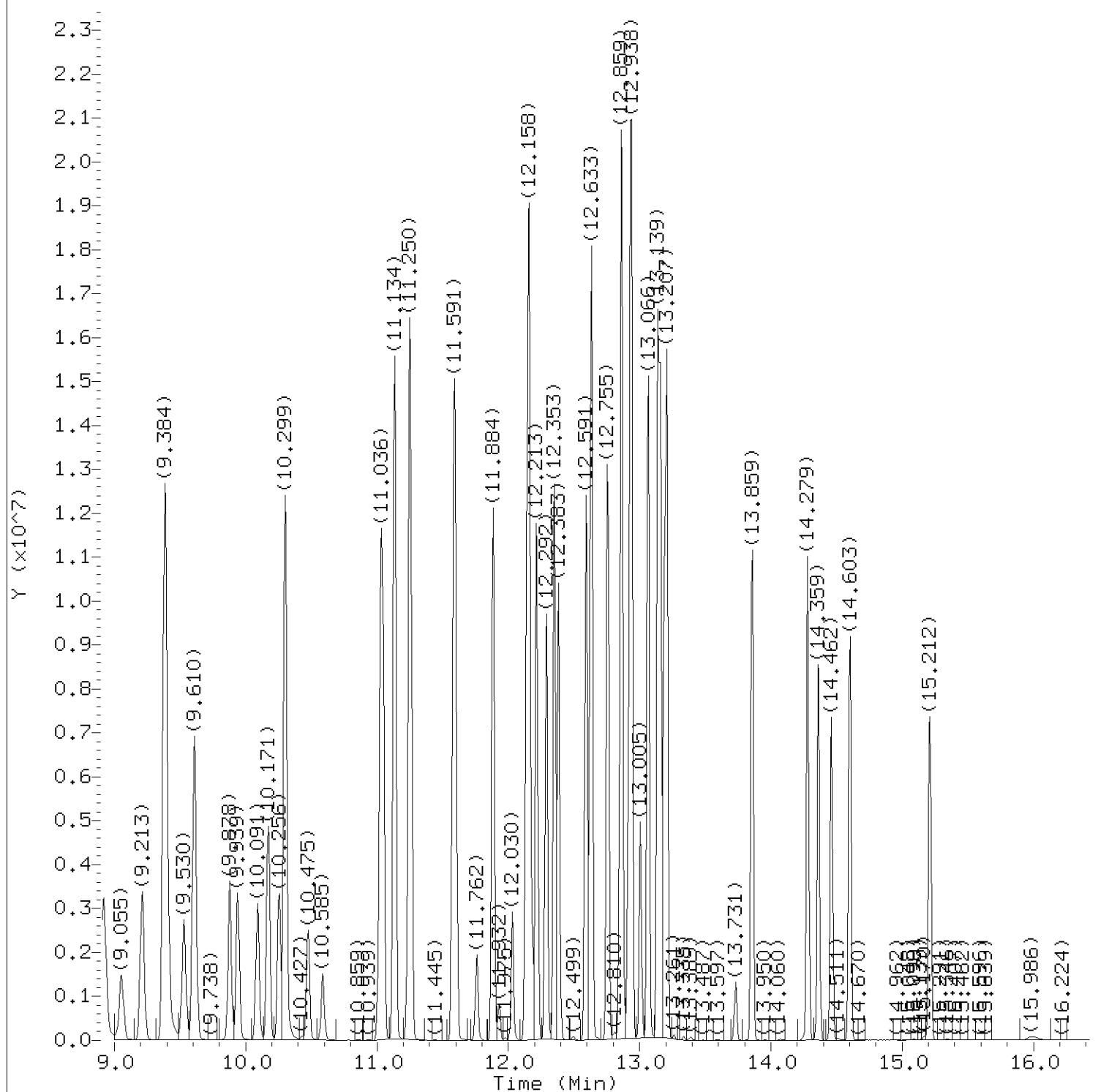
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970
FKP52 Page 206 of 730



Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d
 Injection date and time: 19-APR-2018 12:22

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.831	85	1849343	25.000
2) Chloromethane	(2)	2.020	50	1779238	25.000
5) Vinyl Chloride	(2)	2.129	62	1571531	25.000
6) 1,3-Butadiene	(2)	2.129	39	2454788M	25.000
7) Bromomethane	(2)	2.440	94	1057629	25.000
8) Chloroethane	(2)	2.520	64	890278	25.000
9) Dichlorofluoromethane	(2)	2.745	67	2113977	25.000
10) Trichlorofluoromethane	(2)	2.806	101	2130327M	25.000
11) Ethyl ether	(2)	3.026	59	1030308	25.000
12) Freon 123a	(2)	3.129	67	1466723	25.000
13) Acrolein	(1)	3.190	56	8956232	1250.000
15) 1,1-Dichloroethene	(2)	3.324	96	1041365	25.000
14) Acetone	(1)	3.343	43	2704389	250.000
16) Freon 113	(2)	3.367	101	1215525	25.000
17) Methyl Iodide	(2)	3.513	142	2059437	25.000
18) Carbon Disulfide	(2)	3.617	76	4008052	25.000
21) Methyl Acetate	(1)	3.739	43	862108M	25.000
22) Allyl Chloride	(2)	3.769	41	2434316	25.000
26)*t-Butyl Alcohol-d10	(1)	3.946	65	221249M	50.000
23) Methylene Chloride	(2)	3.952	84	1256340	25.000
28) t-Butyl Alcohol	(1)	4.074	59	1746673	500.000
29) Acrylonitrile	(1)	4.263	53	1708754	125.000
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	3723874	25.000
31) trans-1,2-Dichloroethene	(2)	4.348	96	1207771	25.000
32) n-Hexane	(2)	4.775	57	2126850M	25.000
33) 1,1-Dichloroethane	(2)	5.019	63	2484566	25.000
34) di-Isopropyl Ether	(2)	5.074	45	5158603	25.000
35) 2-Chloro-1,3-Butadiene	(2)	5.129	53	2296104	25.000
37) Ethyl t-butyl ether	(2)	5.623	59	4558525	25.000
38) 2-Butanone	(1)	5.824	43	5128350	250.000
39) cis-1,2-Dichloroethene	(2)	5.866	96	1396461	25.000
41) 2,2-Dichloropropane	(2)	5.885	77	2117990	25.000
42) Propionitrile	(1)	5.915	54	2638767	500.000
40) 1,2-Dichloroethene (Total)	(2)		96	2604232	50.000
45) Methacrylonitrile	(1)	6.141	67	4104743	250.000
47) Bromochloromethane	(2)	6.208	128	653776	25.000
48) Tetrahydrofuran	(1)	6.214	71	1249027	250.000
49) Chloroform	(2)	6.366	83	2422084	25.000

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

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Target 3.5 esignature user ID: msk07970

FKP52 Page 208 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d
 Injection date and time: 19-APR-2018 12:22

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.586	113	518734	10.000
50) \$Dibromofluoromethane	(2)	6.586	111	531326	10.000
51) 1,1,1-Trichloroethane	(2)	6.592	97	2081038	25.000
52) Cyclohexane	(2)	6.696	56	2475766	25.000
52) Cyclohexane	(2)	6.696	84	1890685	25.000
52) Cyclohexane	(2)	6.696	69	718781	25.000
54) Carbon Tetrachloride	(2)	6.805	117	1759100	25.000
55) 1,1-Dichloropropene	(2)	6.805	75	1898815	25.000
56) Isobutyl Alcohol	(1)	6.946	41	1906137	1250.000
57) \$1,2-Dichloroethane-d4	(2)	7.043	102	108673M	10.000
57) \$1,2-Dichloroethane-d4	(2)	7.049	65	613726	10.000
57) \$1,2-Dichloroethane-d4	(2)	7.043	104	69894	10.000
58) Benzene	(2)	7.074	78	5249138	25.000
59) 1,2-Dichloroethane	(2)	7.153	62	1798082	25.000
60) t-Amyl methyl ether	(2)	7.263	73	3974673	25.000
63) *Fluorobenzene	(2)	7.482	96	2071999	10.000
62) n-Heptane	(2)	7.494	43	2571265	25.000
65) n-Butanol	(1)	7.842	56	3311509	2500.000
67) Trichloroethene	(2)	7.970	95	1400954	25.000
69) Methylcyclohexane	(2)	8.281	83	2433720	25.000
70) 1,2-Dichloropropane	(2)	8.305	63	1484759	25.000
71) Methyl Methacrylate	(1)	8.384	69	816138	25.000
72) 1,4-Dioxane	(1)	8.390	88	297580M	1250.000
73) Dibromomethane	(2)	8.415	93	716941	25.000
74) Bromodichloromethane	(2)	8.653	83	1861915	25.000
76) 2-Nitropropane	(1)	8.921	41	3033389	250.000
80) cis-1,3-Dichloropropene	(2)	9.213	75	2347744	25.000
81) 4-Methyl-2-Pentanone	(1)	9.384	43	12625487M	250.000
82) \$Toluene-d8	(3)	9.530	98	2140263	10.000
82) \$Toluene-d8	(3)	9.530	100	1374009	10.000
83) Toluene	(3)	9.610	92	3409708	25.000
84) trans-1,3-Dichloropropene	(3)	9.878	75	2045084	25.000
86) Ethyl Methacrylate	(3)	9.939	69	1773774	25.000
88) 1,1,2-Trichloroethane	(3)	10.091	97	1034177	25.000
85) 1,3-Dichloropropene (total)	(3)		75	4392828	50.000
89) Tetrachloroethene	(3)	10.171	166	1581183	25.000
90) 1,3-Dichloropropane	(3)	10.256	76	1863067	25.000
91) 2-Hexanone	(1)	10.299	43	8861239M	250.000

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d
Injection date and time: 19-APR-2018 12:22

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	1314760	25.000
95) 1,2-Dibromoethane	(3)	10.585	107	1014098	25.000
97)*Chlorobenzene-d5	(3)	11.018	117	1603608	10.000
98) Chlorobenzene	(3)	11.048	112	3881846	25.000
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	1437610	25.000
100) Ethylbenzene	(3)	11.134	91	6692153	25.000
101) m+p-Xylene	(3)	11.250	106	5252980	50.000
104) o-Xylene	(3)	11.585	106	2712075	25.000
106) Styrene	(3)	11.597	104	4560006	25.000
105) Xylene (Total)	(3)		106	7965055	75.000
107) Bromoform	(3)	11.762	173	820701	25.000
108) Isopropylbenzene	(3)	11.884	105	6856780	25.000
111)\$4-Bromofluorobenzene	(3)	12.030	95	822456	10.000
111)\$4-Bromofluorobenzene	(3)	12.030	174	705228	10.000
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	1397464M	25.000
114) Bromobenzene	(4)	12.146	156	1835312	25.000
116) 1,2,3-Trichloropropane	(4)	12.176	110	374830	25.000
117) n-Propylbenzene	(4)	12.213	91	7995929	25.000
119) 2-Chlorotoluene	(4)	12.292	126	1634842	25.000
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	5960494	25.000
122) 4-Chlorotoluene	(4)	12.383	126	1726077	25.000
125) tert-Butylbenzene	(4)	12.591	134	1267746	25.000
126) Pentachloroethane	(4)	12.627	167	1165194	25.000
127) 1,2,4-Trimethylbenzene	(4)	12.633	105	6172405	25.000
128) sec-Butylbenzene	(4)	12.755	105	7581053	25.000
131) 1,3-Dichlorobenzene	(4)	12.859	146	3670990	25.000
132) p-Isopropyltoluene	(4)	12.865	119	6765848	25.000
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	918007	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	3686389	25.000
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	2802631	25.000
136) Benzyl Chloride	(4)	13.005	126	597818	25.000
138) n-Butylbenzene	(4)	13.158	92	3587064	25.000
139) 1,2-Dichlorobenzene	(4)	13.188	146	3439540	25.000
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	227631	25.000
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	3078991	25.000
145) 1,2,4-Trichlorobenzene	(4)	14.279	180	2857378	25.000
146) Hexachlorobutadiene	(4)	14.365	225	1464541	25.000
147) Naphthalene	(4)	14.462	128	4718543	25.000

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

FKP52 Page 210 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d
Injection date and time: 19-APR-2018 12:22

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

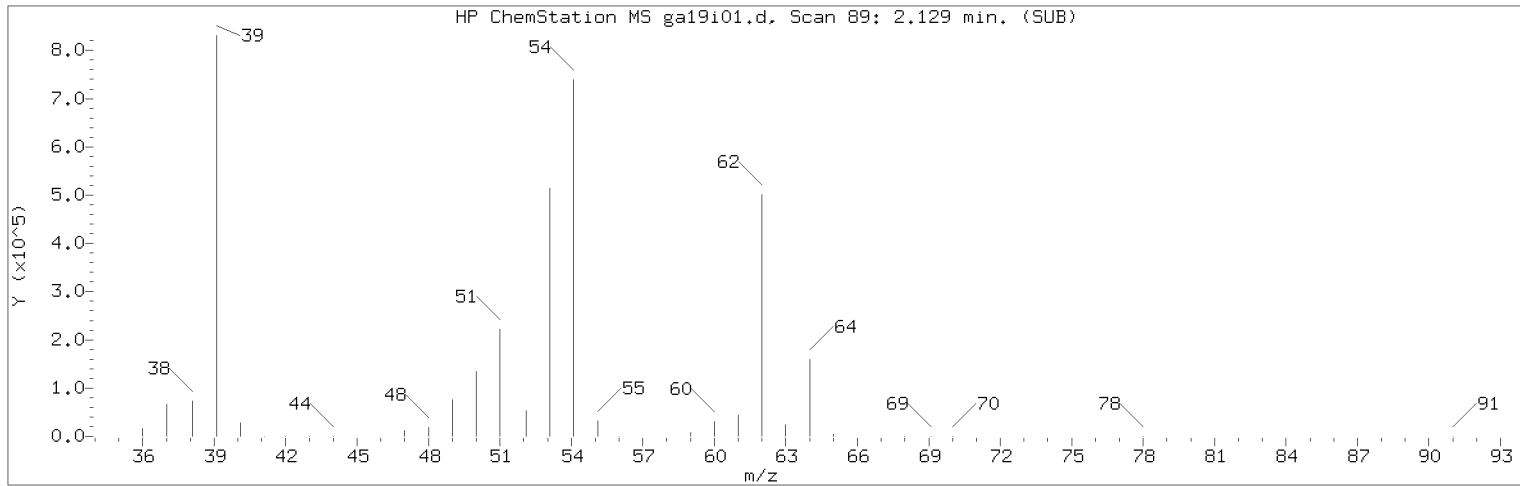
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	2432098	25.000

page 4 of 4

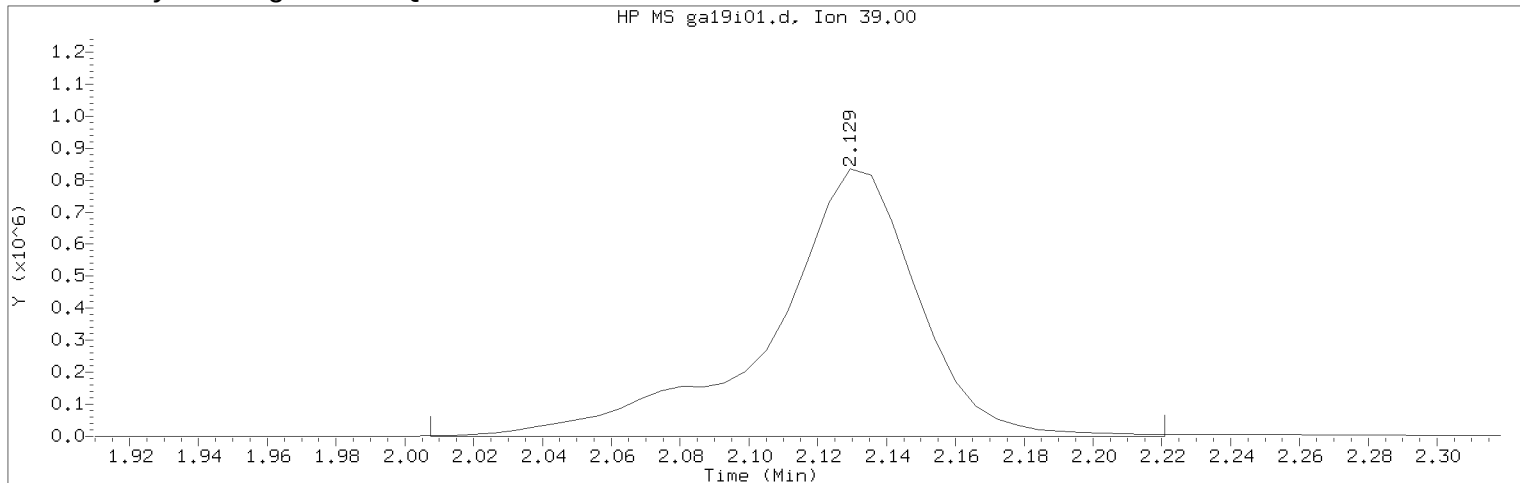
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 89	
Retention Time (minutes)	: 2.129	
Quant Ion	: 39.00	
Area (flag)	: 2454788M	
On-Column Amount (ng)	: 25.0000	
Integration start scan	: 68	Integration stop scan: 103
Y at integration start	: 353	Y at integration end: 353

Reason for manual integration: improper integration

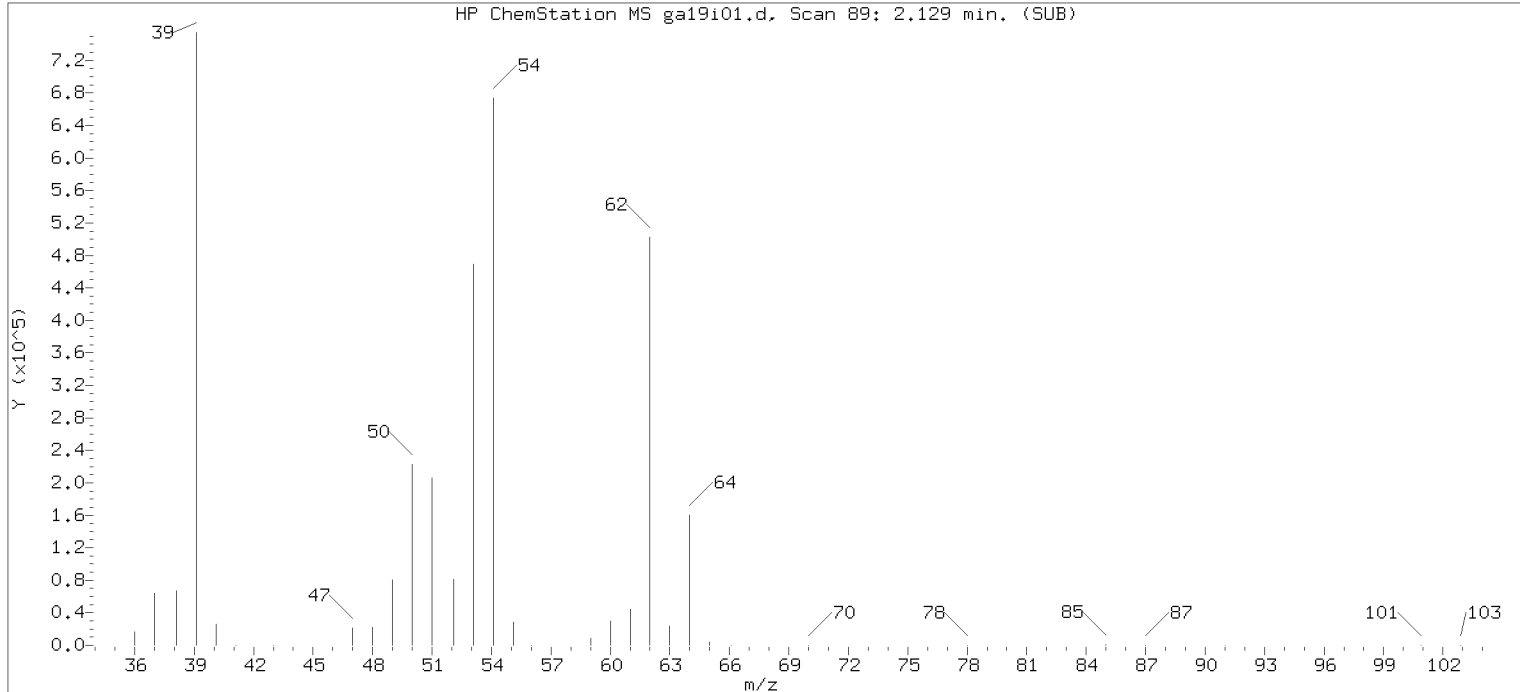
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

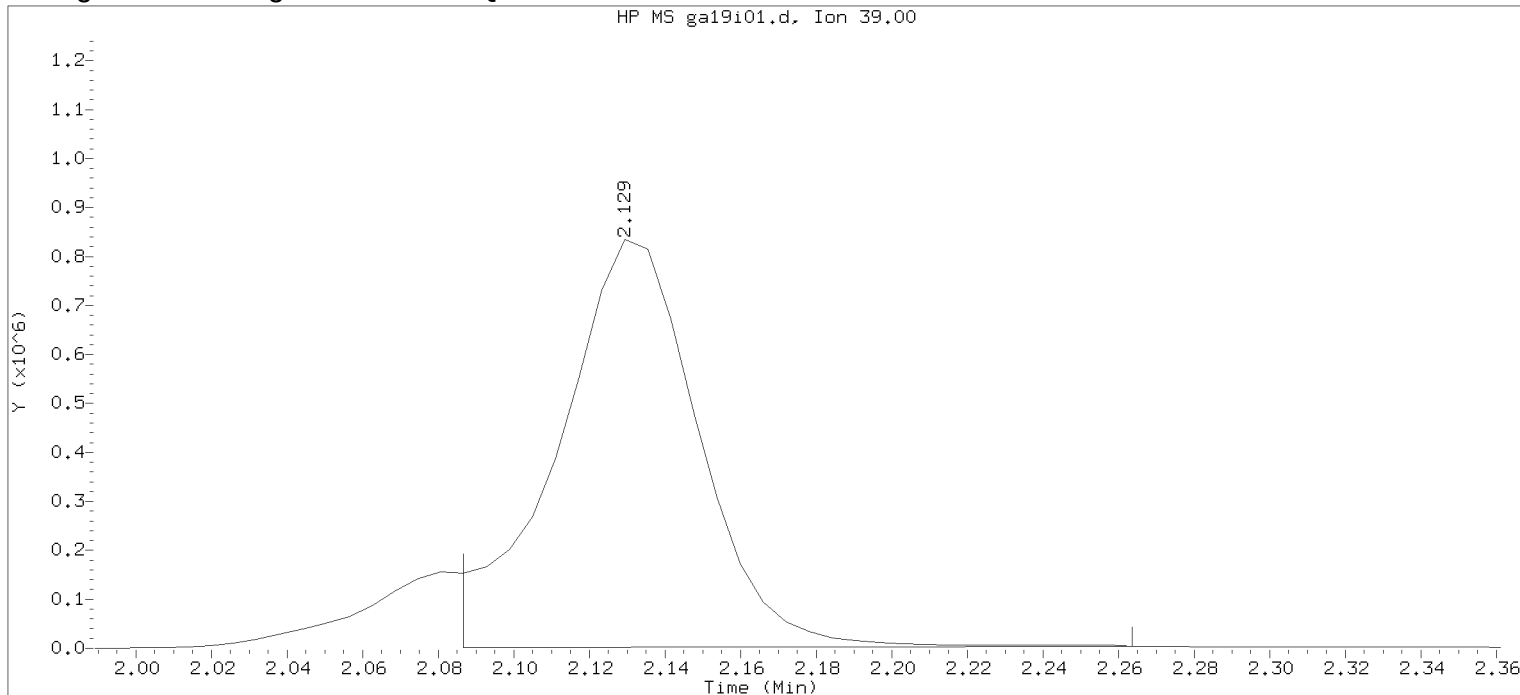
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d Instrument ID: HP16334.i
Injection date and time: 19-APR-2018 12:22 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 19-APR-2018 12:38
Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

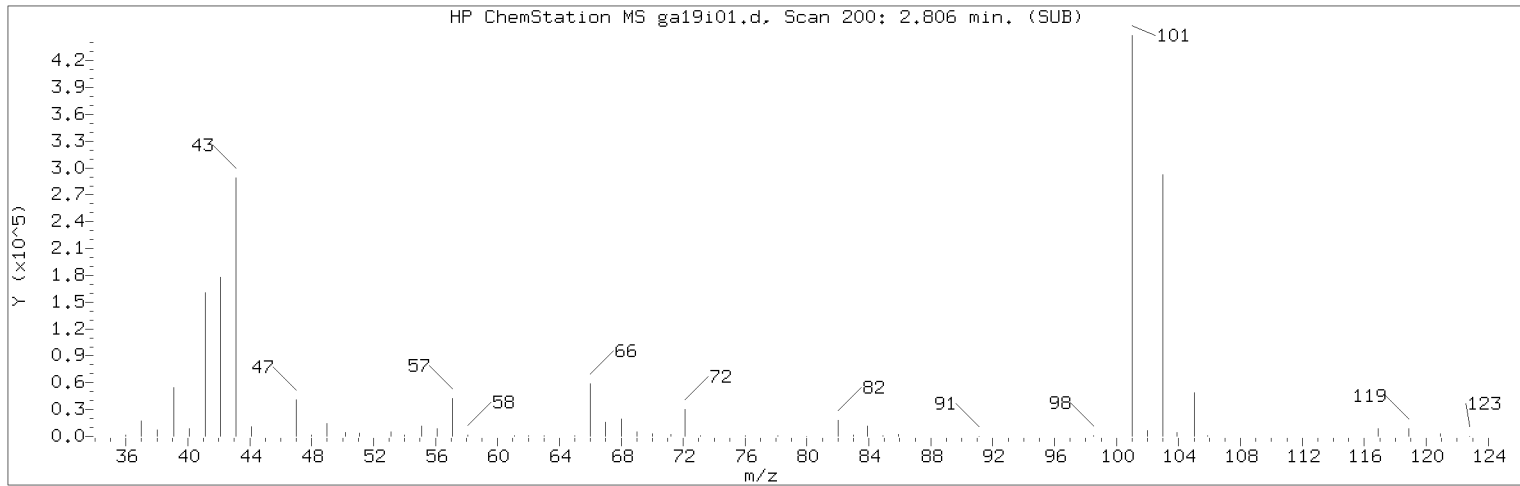
Sample Name: VSTD025

Lab Sample ID: VSTD025

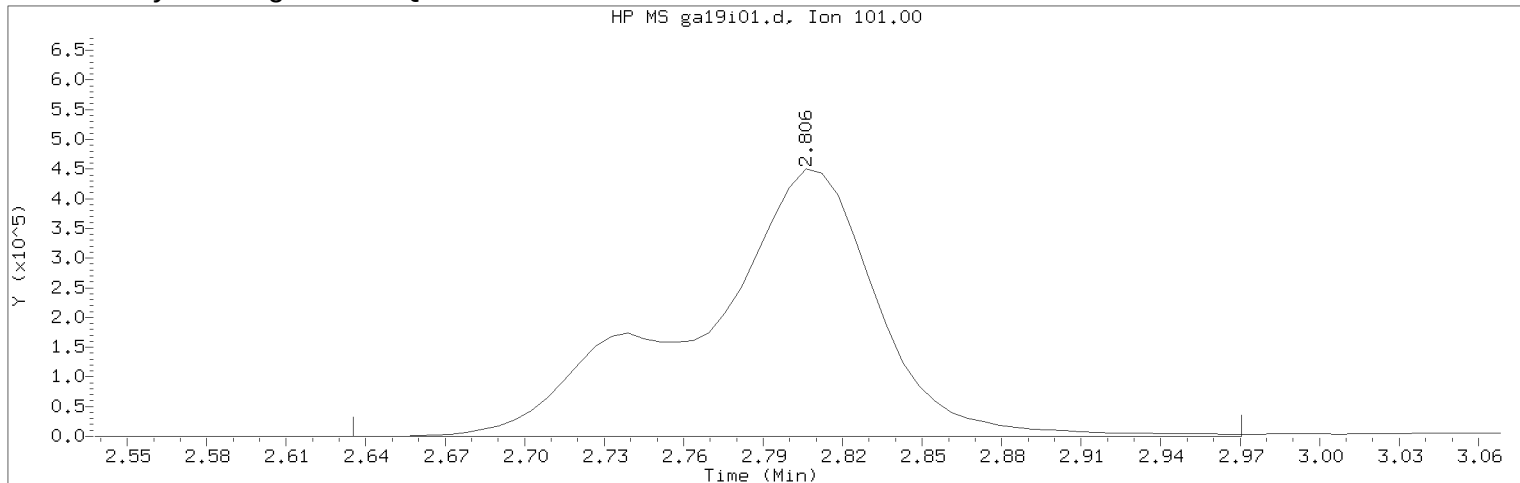
Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 89	
Retention Time (minutes)	: 2.129	
Quant Ion	: 39.00	
Area	: 2150740	
On-column Amount (ng)	: 25.0000	
Integration start scan	: 81	Integration stop scan: 110
Y at integration start	: 1801	Y at integration end: 4204

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Target 3.5 esignature user F1D52mB497210 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 200	
Retention Time (minutes)	: 2.806	
Quant Ion	: 101.00	
Area (flag)	: 2130327M	
On-Column Amount (ng)	: 25.0000	
Integration start scan	: 171	Integration stop scan: 226
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

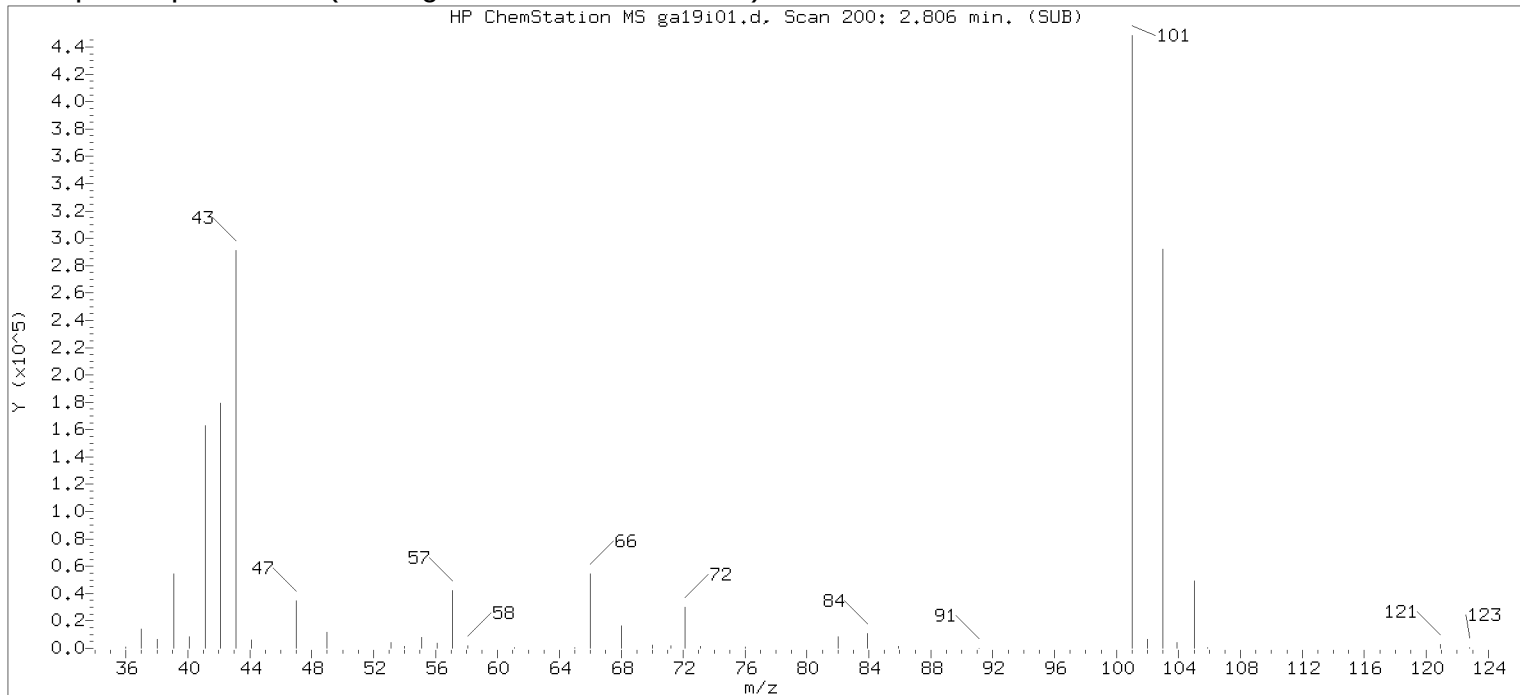
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

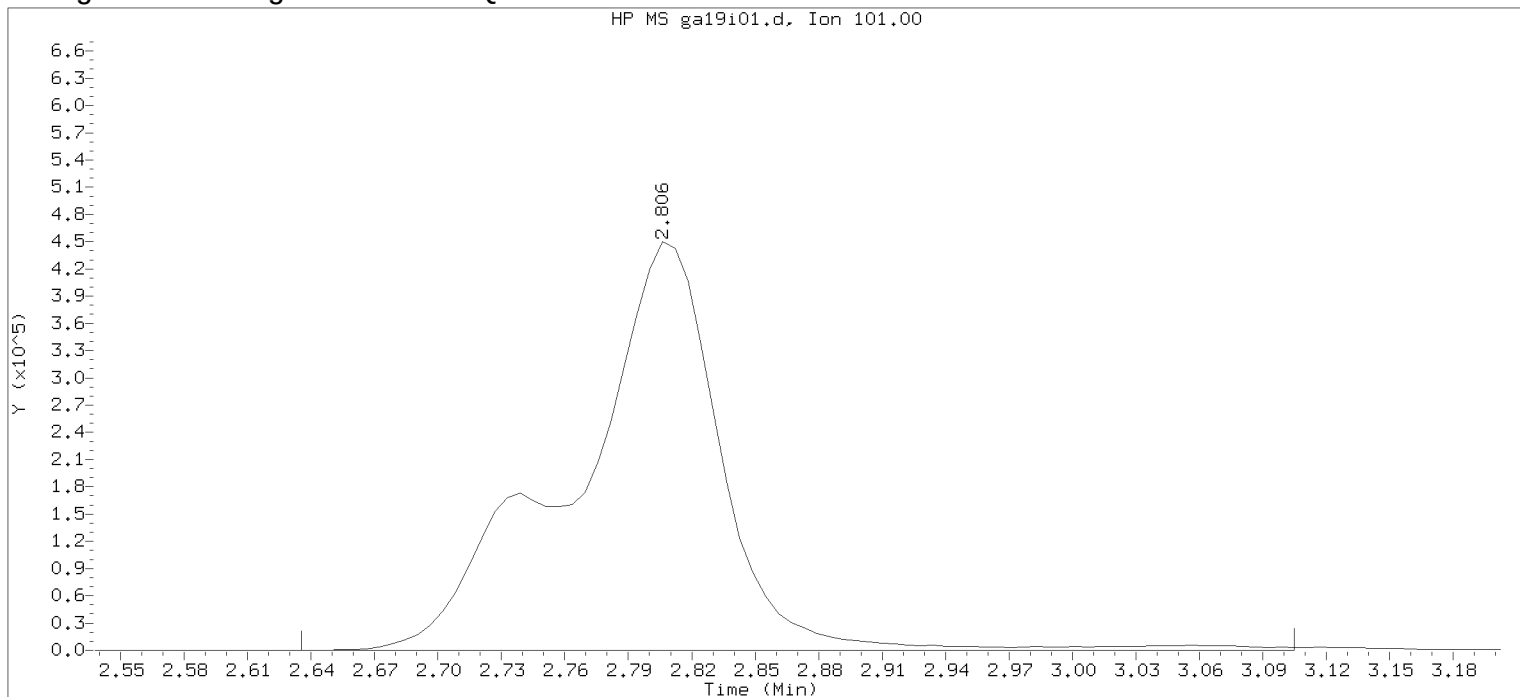
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 200

Retention Time (minutes): 2.806

Quant Ion : 101.00

Area : 2163836

On-column Amount (ng) : 25.0000

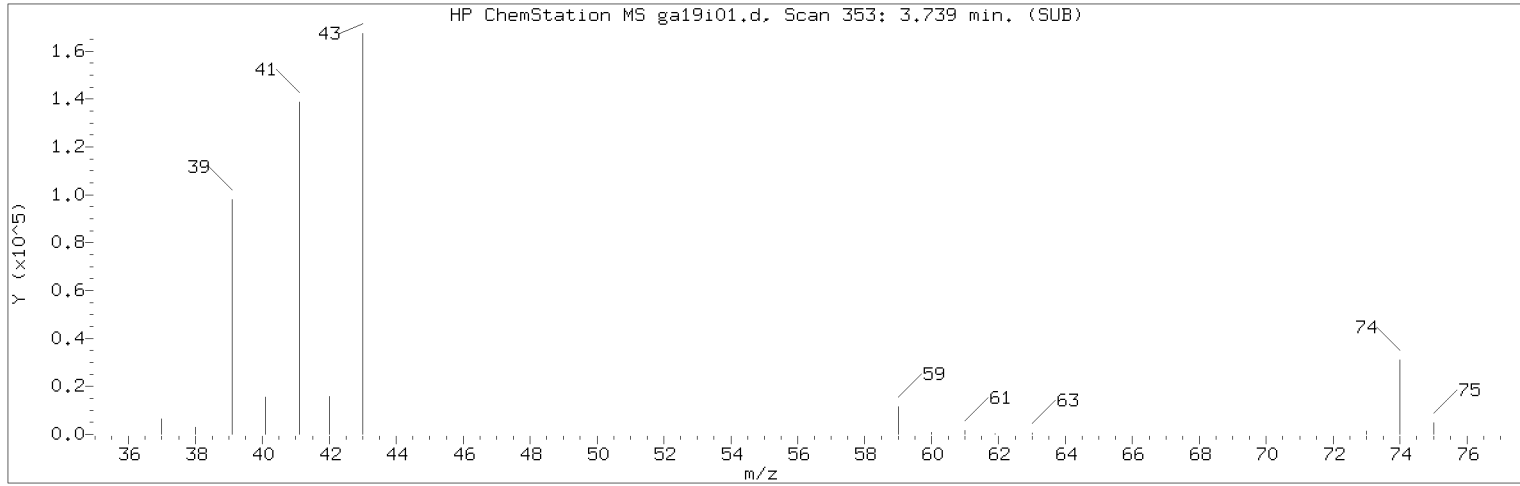
Integration start scan : 171 Integration stop scan: 248

Y at integration start : 0 Y at integration end: 0

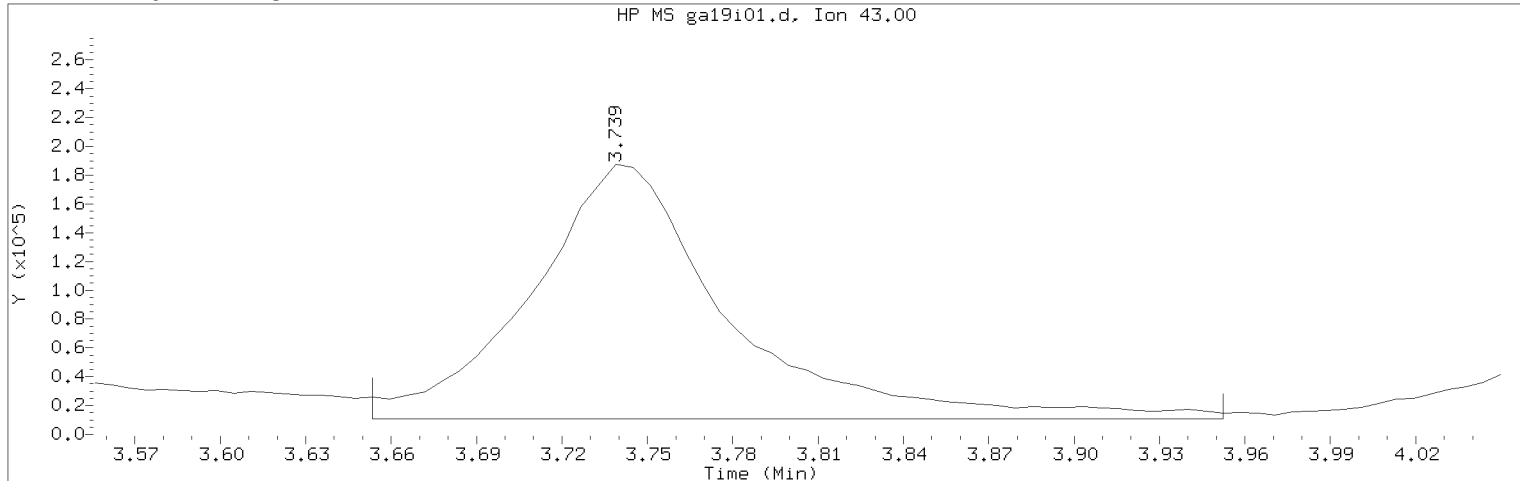
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB107210 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 353	
Retention Time (minutes)	: 3.739	
Quant Ion	: 43.00	
Area (flag)	: 862108M	
On-Column Amount (ng)	: 25.0000	
Integration start scan	: 338	Integration stop scan: 387
Y at integration start	: 10565	Y at integration end: 10565

Reason for manual integration: improper integration

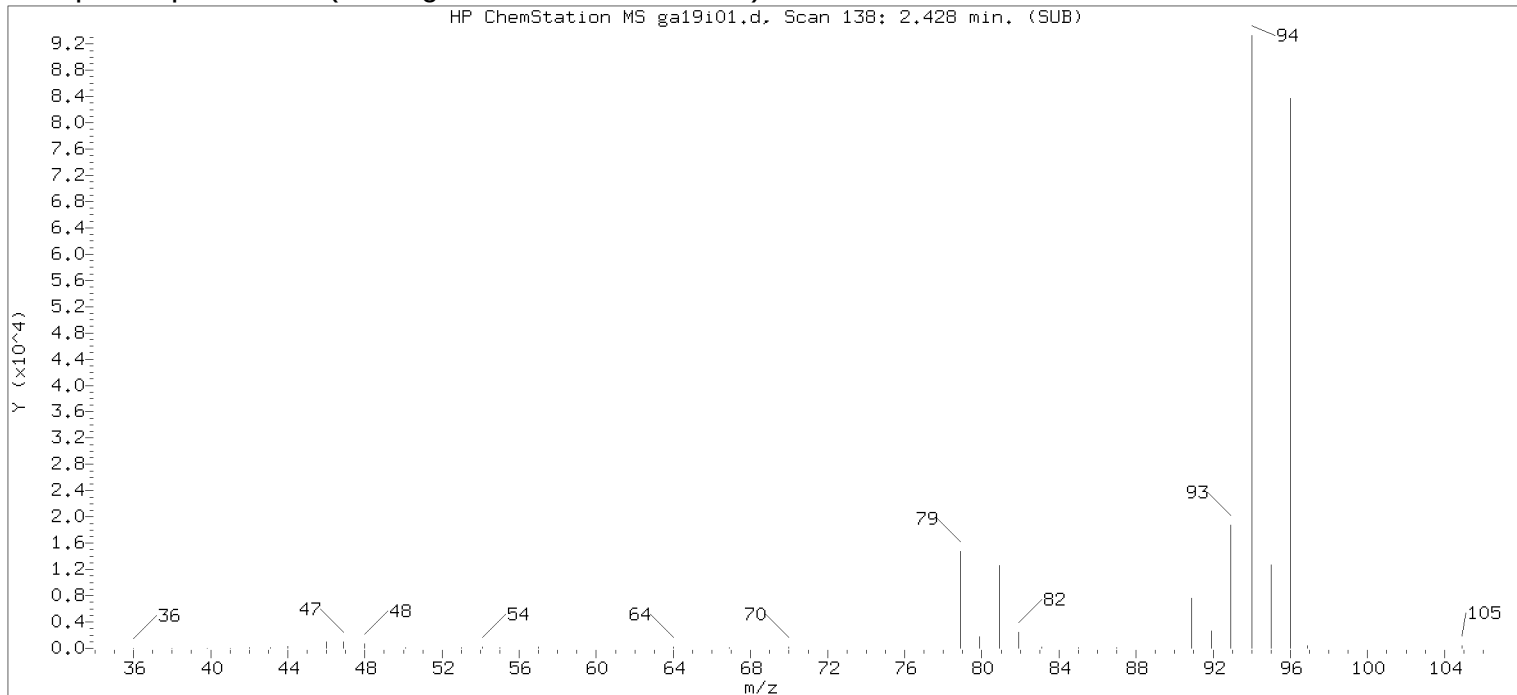
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

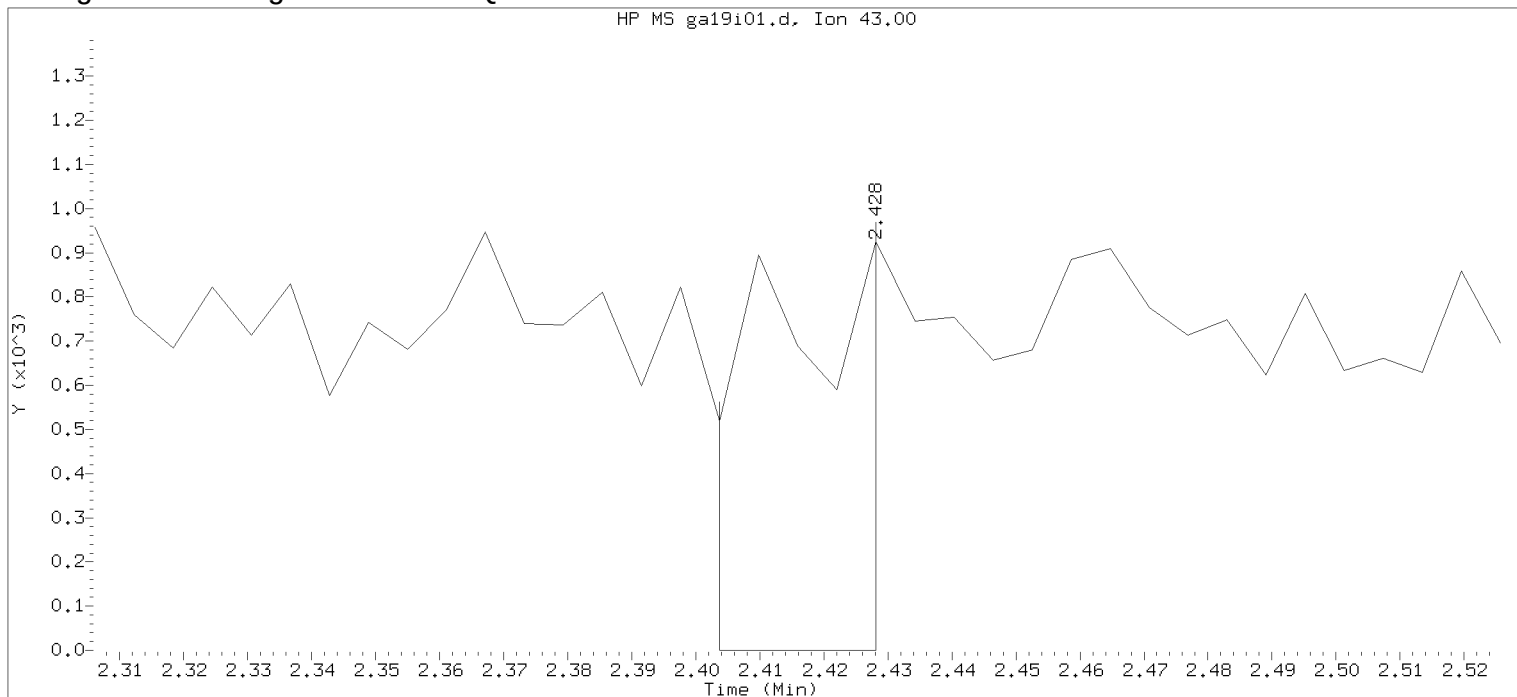
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 138

Retention Time (minutes): 2.428

Quant Ion : 43.00

Area : 1058

On-column Amount (ng) : 25.0000

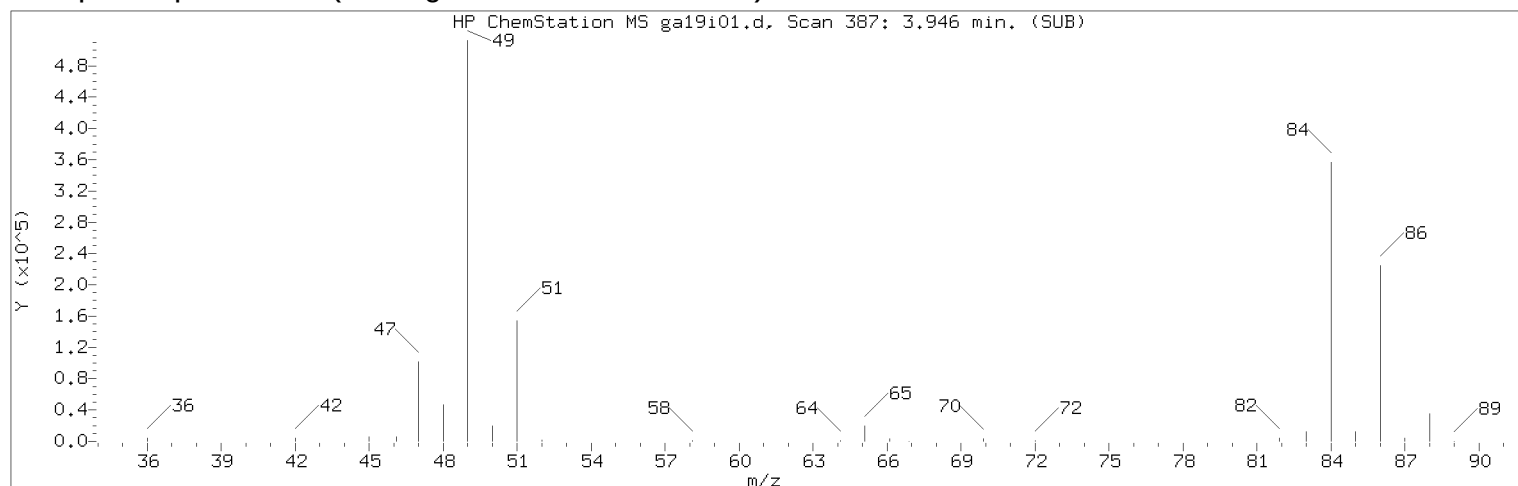
Integration start scan : 133 Integration stop scan: 137

Y at integration start : 0 Y at integration end: 0

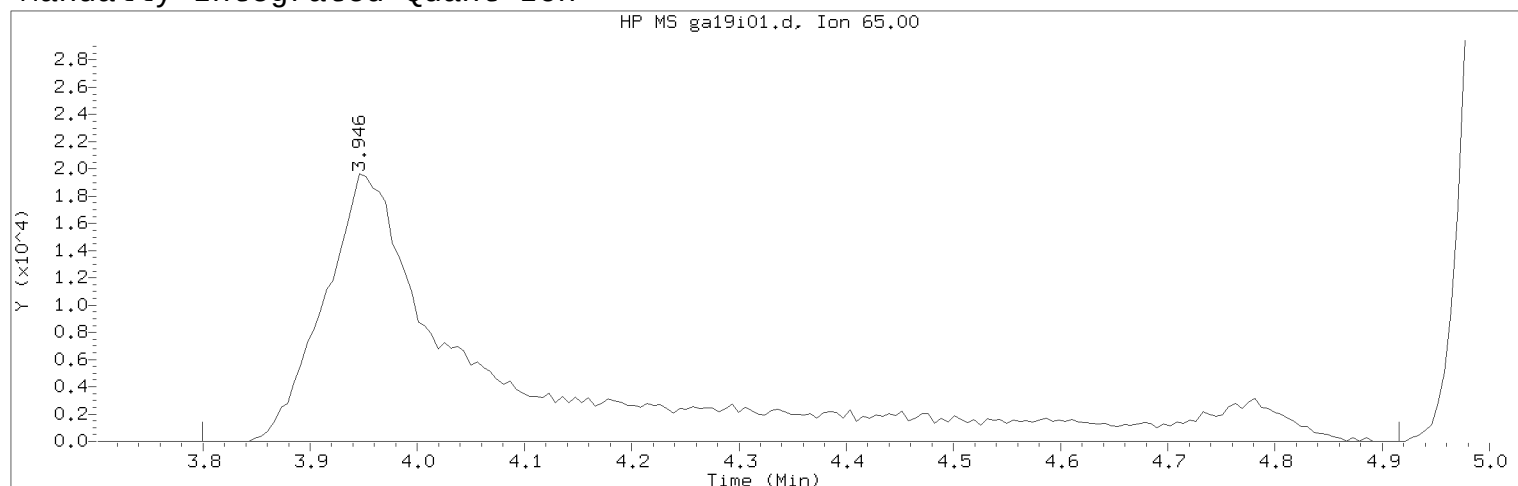
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB107210 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number	: 26	
Compound Name	: t-Butyl Alcohol-d10	
Scan Number	: 387	
Retention Time (minutes)	: 3.946	
Quant Ion	: 65.00	
Area (flag)	: 221249M	
On-Column Amount (ng)	: 50.0000	
Integration start scan	: 362	Integration stop scan: 545
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

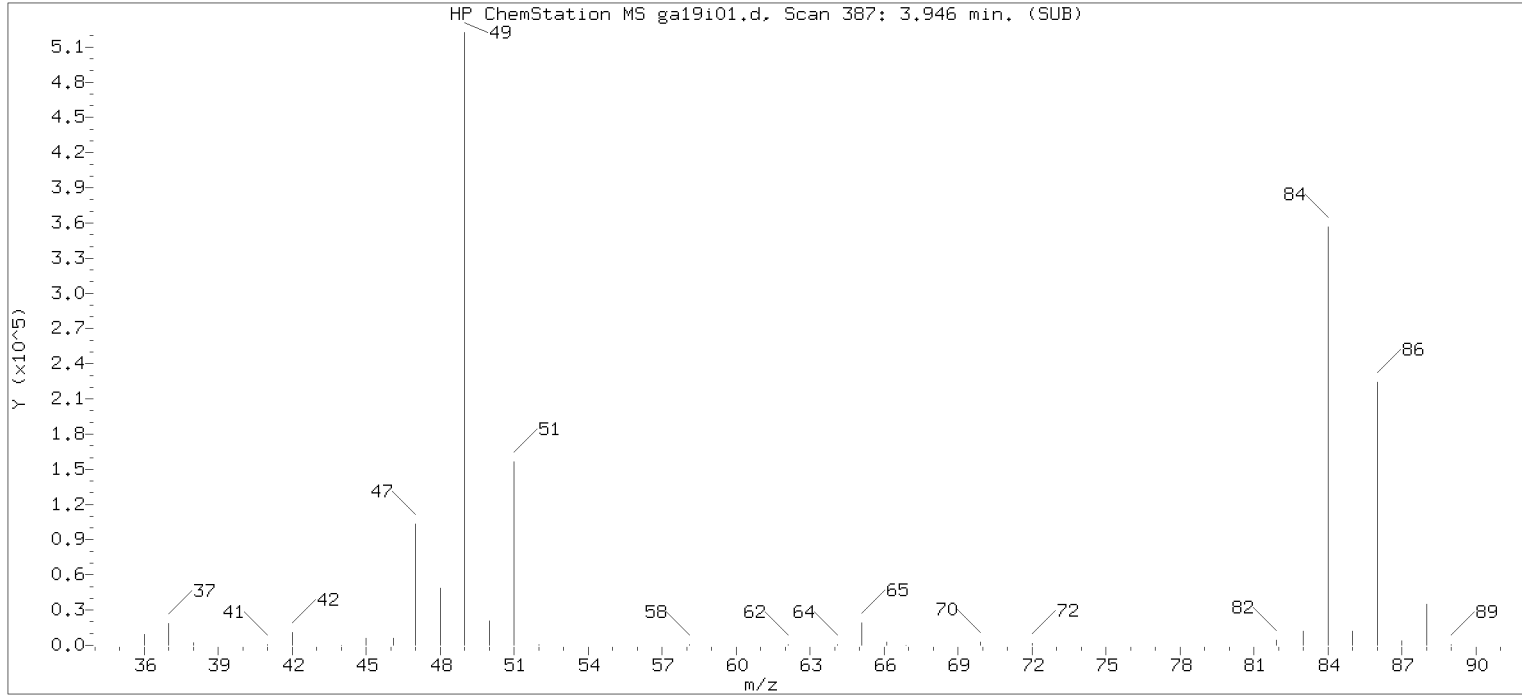
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

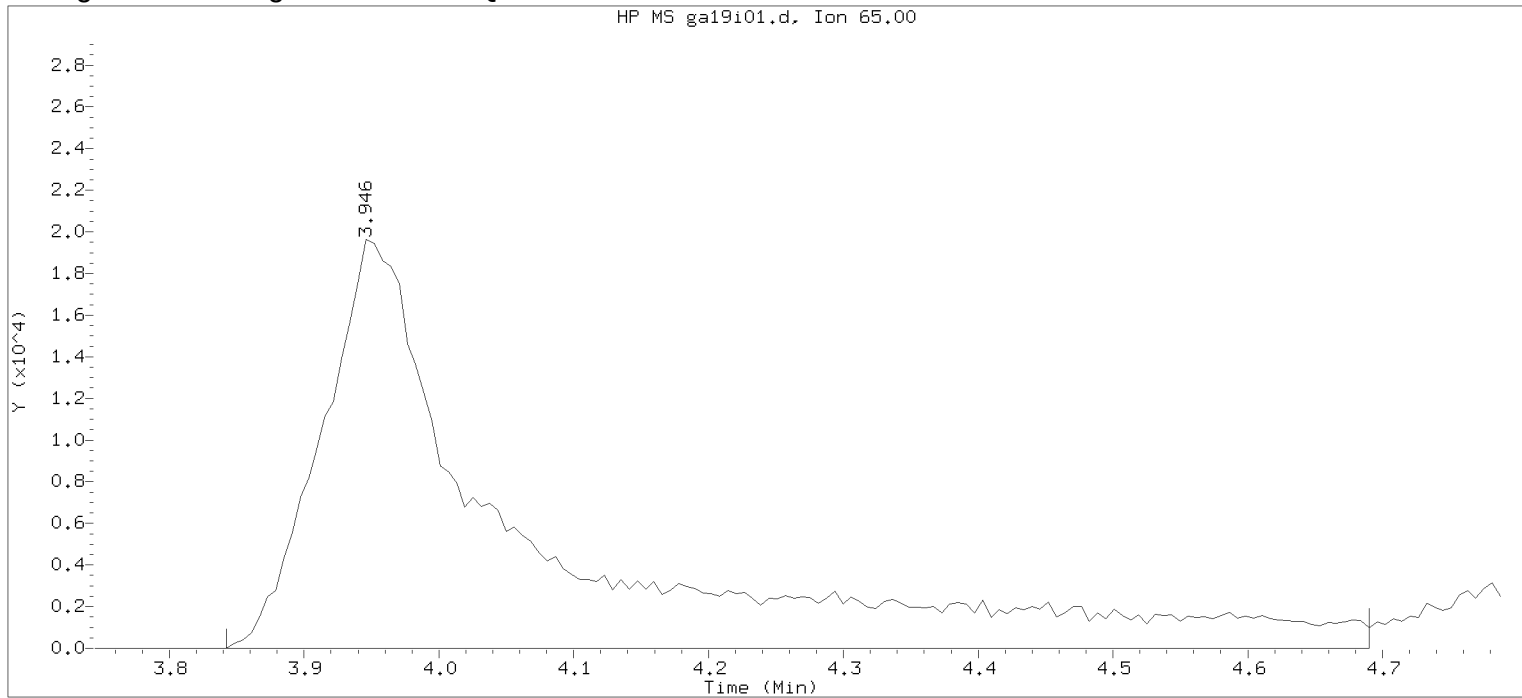
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 387

Retention Time (minutes): 3.946

Quant Ion : 65.00

Area : 203887

On-column Amount (ng) : 50.0000

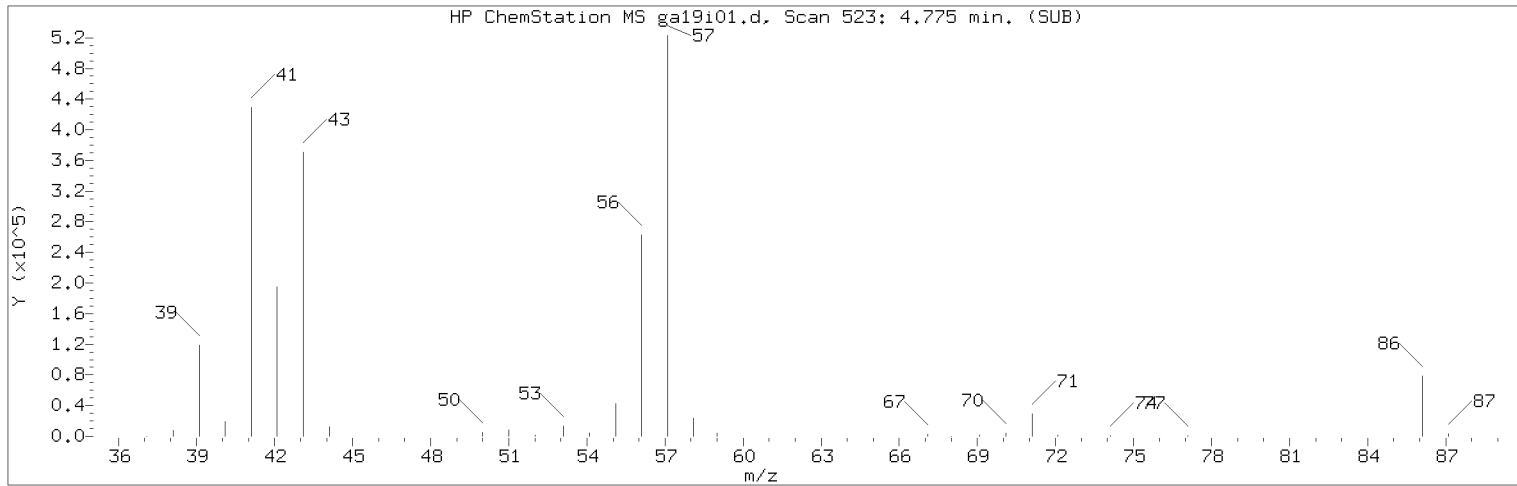
Integration start scan : 369 Integration stop scan: 508

Y at integration start : 0 Y at integration end: 0

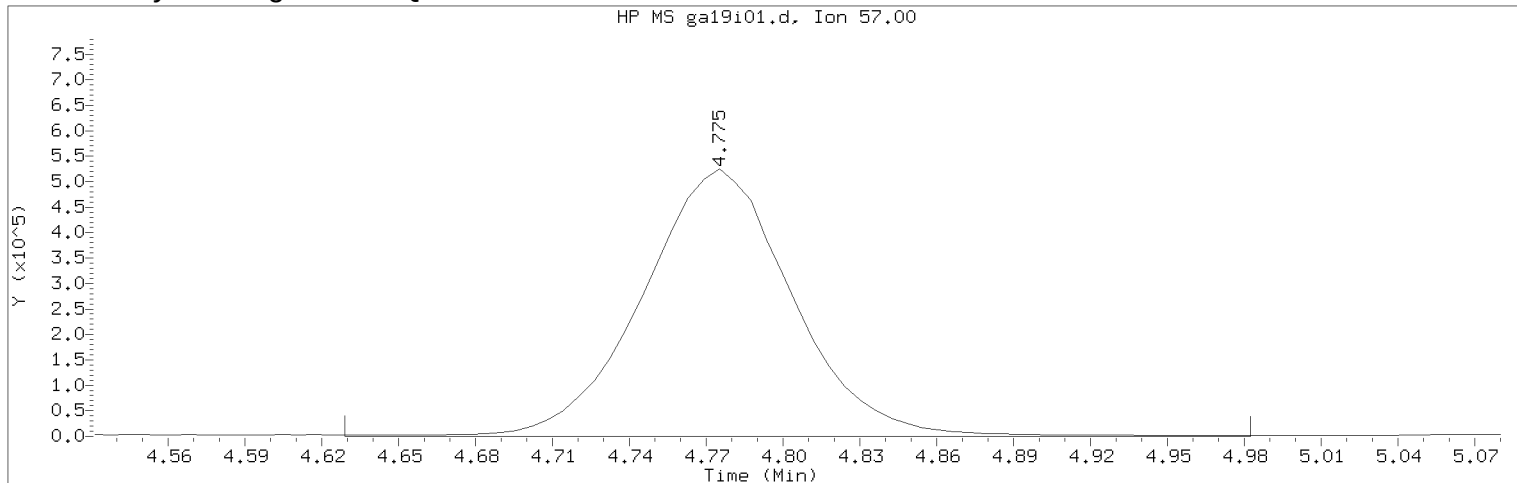
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB407210 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

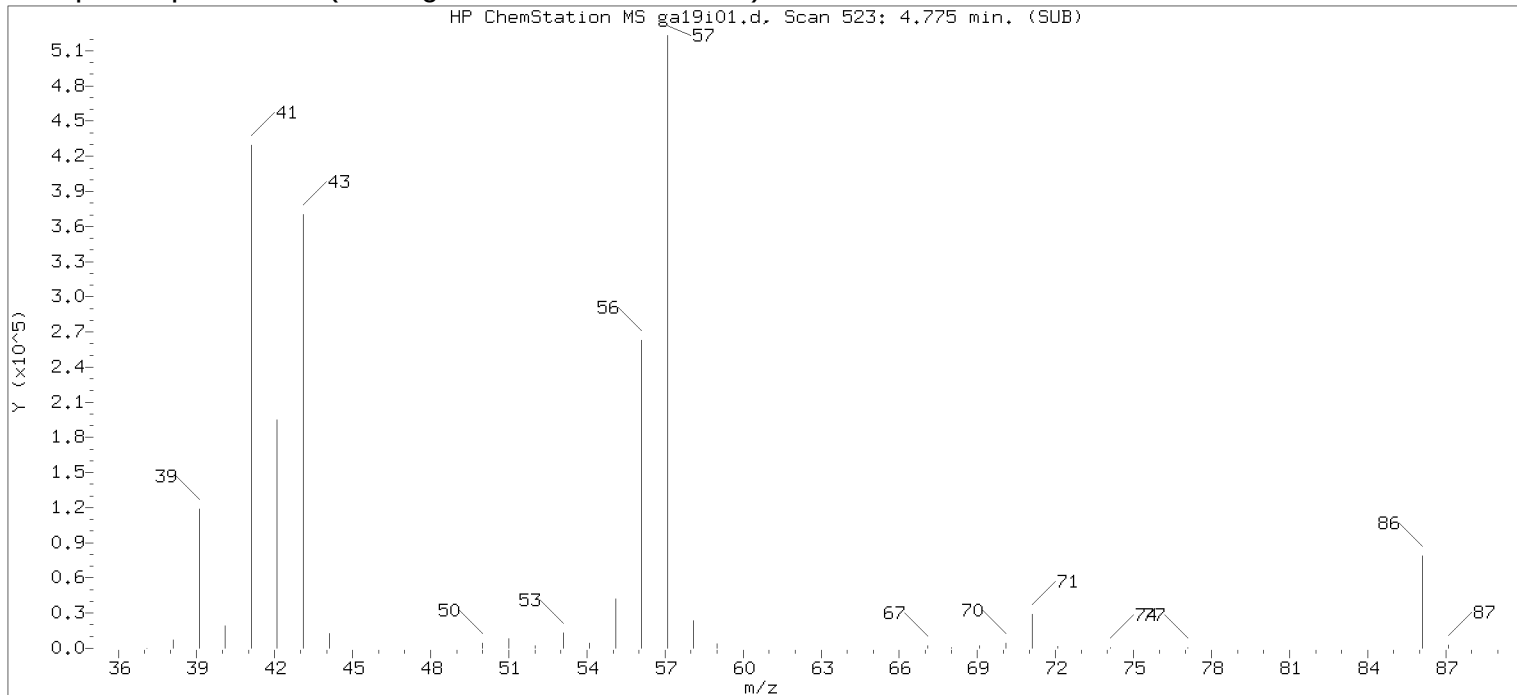
Compound Number	: 32	
Compound Name	: n-Hexane	
Scan Number	: 523	
Retention Time (minutes)	: 4.775	
Quant Ion	: 57.00	
Area (flag)	: 2126850M	
On-Column Amount (ng)	: 25.0000	
Integration start scan	: 498	Integration stop scan: 556
Y at integration start	: 450	Y at integration end: 450

Reason for manual integration: improper integration

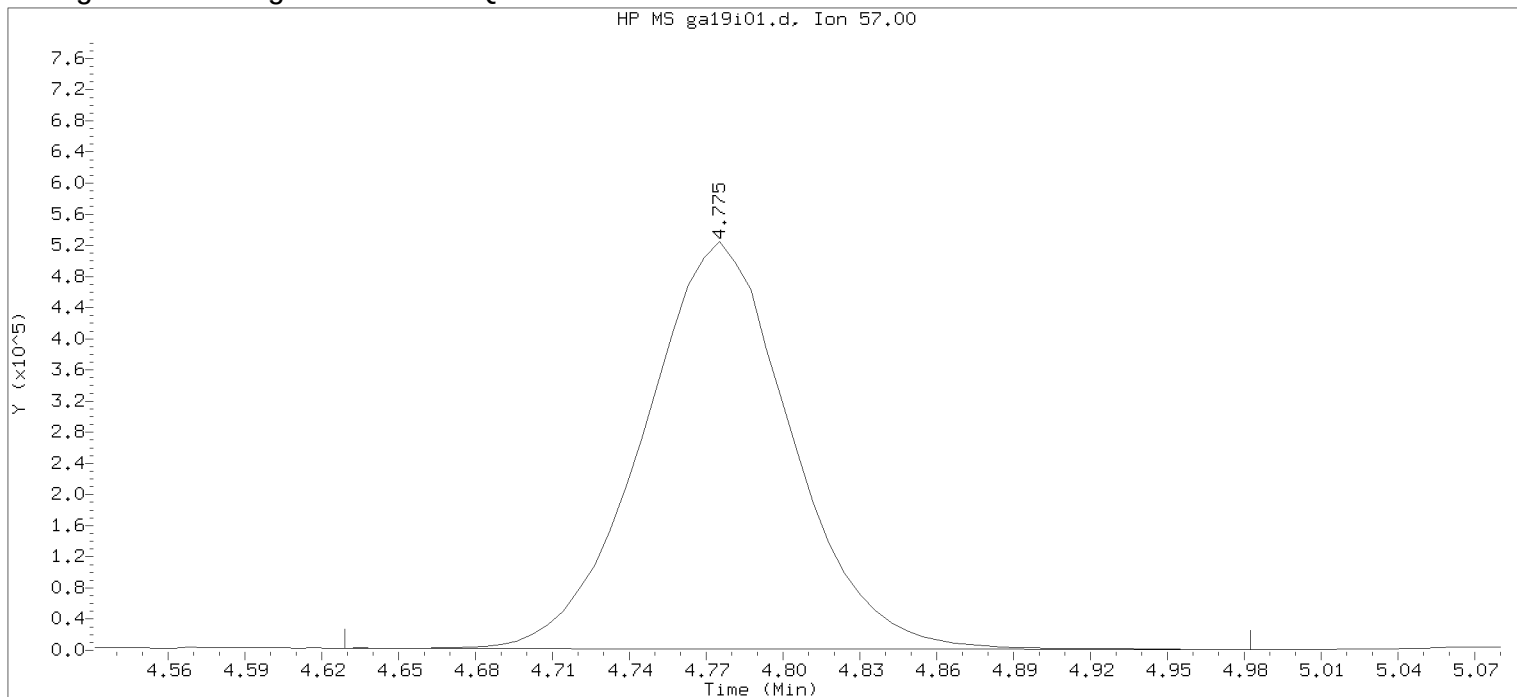
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

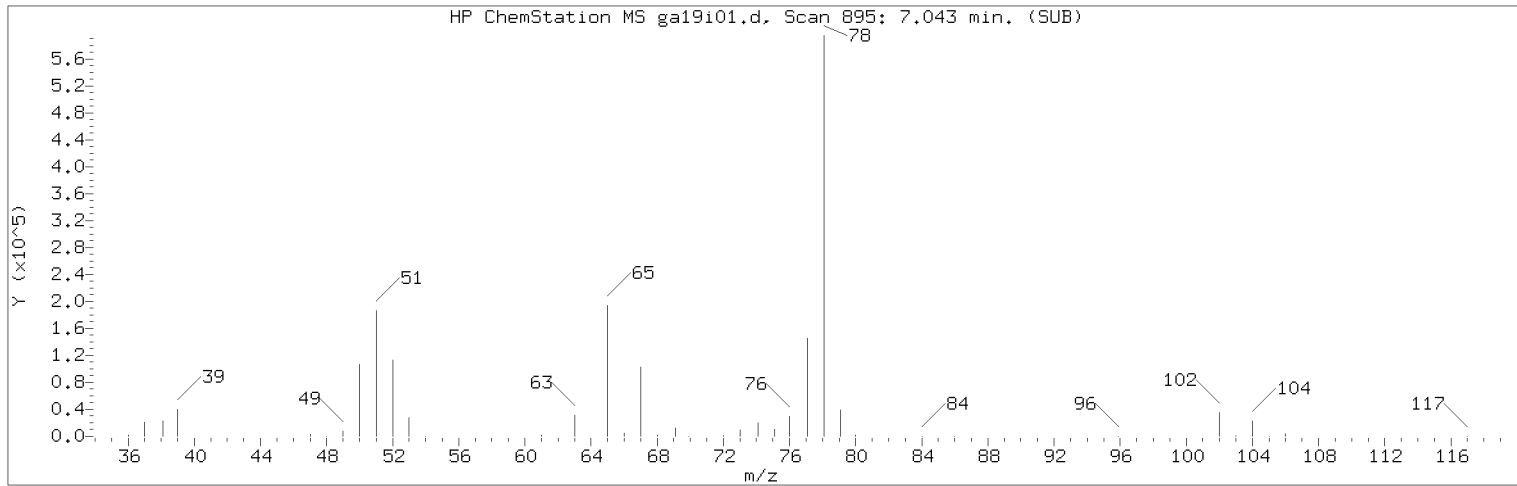
Lab Sample ID: VSTD025

Compound Number : 32
 Compound Name : n-Hexane
 Scan Number : 523
 Retention Time (minutes): 4.775
 Quant Ion : 57.00
 Area : 2101631
 On-column Amount (ng) : 25.0000
 Integration start scan : 498
 Y at integration start : 2508

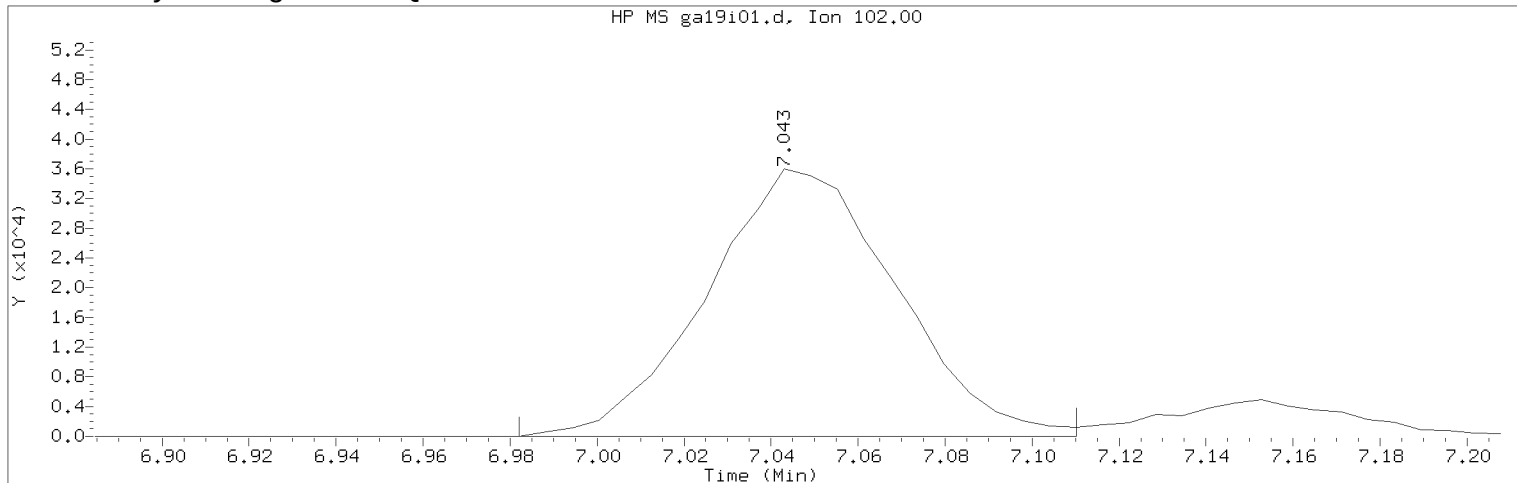
Integration stop scan: 556
 Y at integration end: 726

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.
 Target 3.5 esignature user F1D52mB407220 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 57

Compound Name : 1,2-Dichloroethane-d4

Scan Number : 895

Retention Time (minutes): 7.043

Quant Ion : 102.00

Area (flag) : 108673M

On-Column Amount (ng) : 10.0000

Integration start scan : 884

Integration stop scan: 905

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

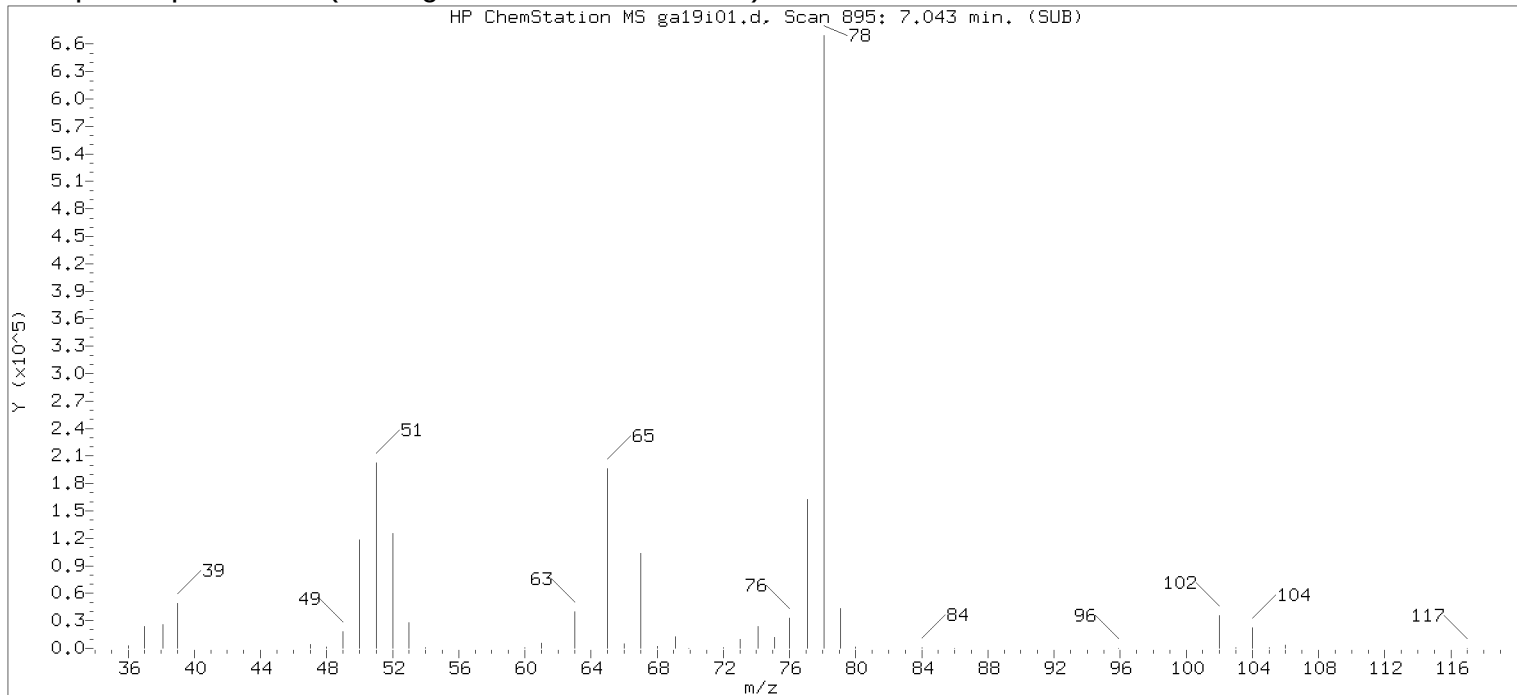
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

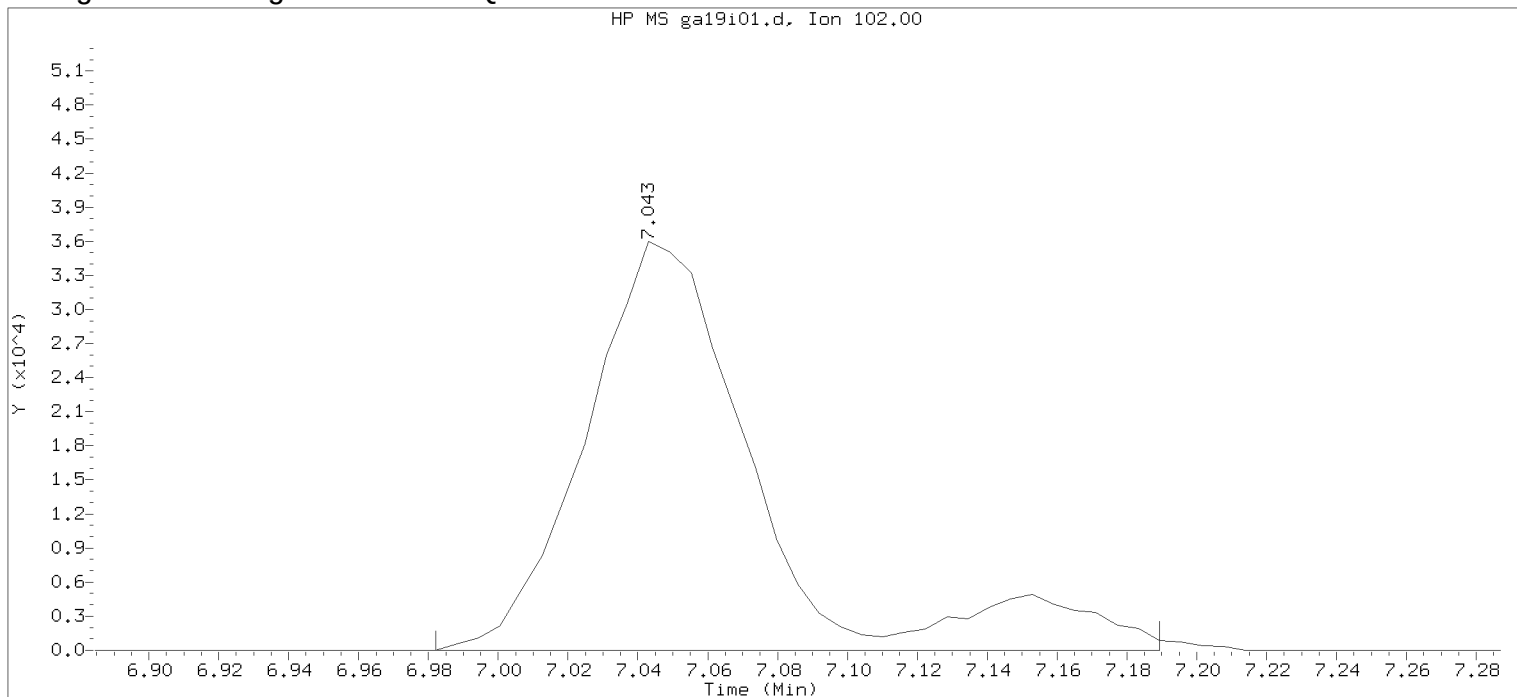
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 57

Compound Name : 1,2-Dichloroethane-d4

Scan Number : 895

Retention Time (minutes): 7.043

Quant Ion : 102.00

Area : 122473

On-column Amount (ng) : 10.0000

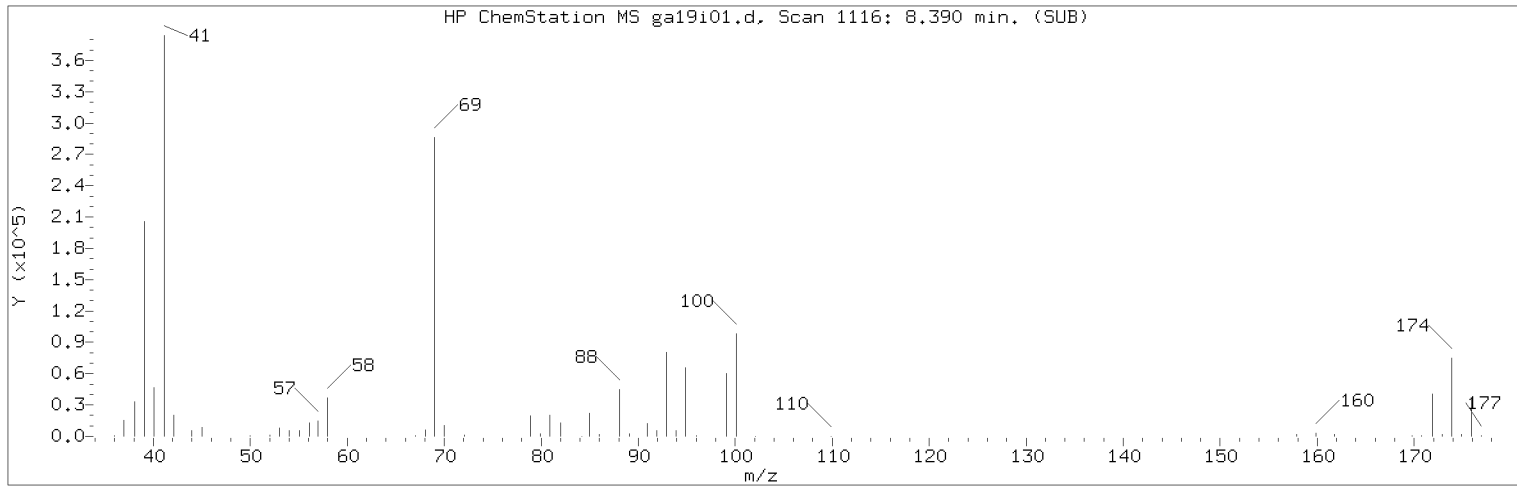
Integration start scan : 884 Integration stop scan: 918

Y at integration start : 0 Y at integration end: 0

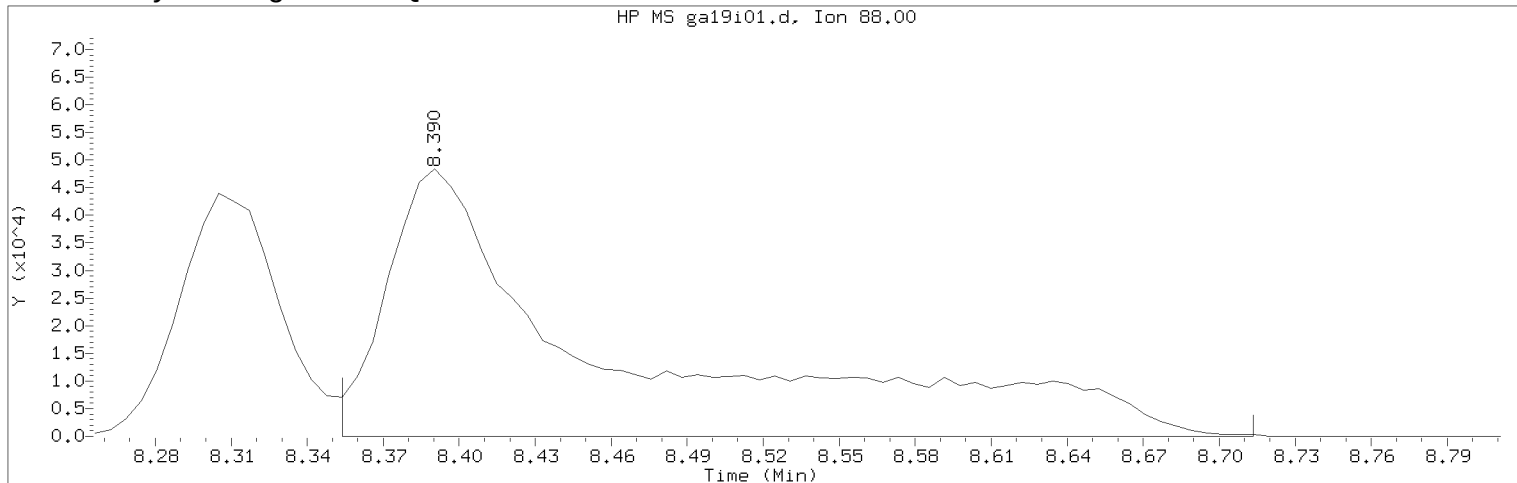
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB107220 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

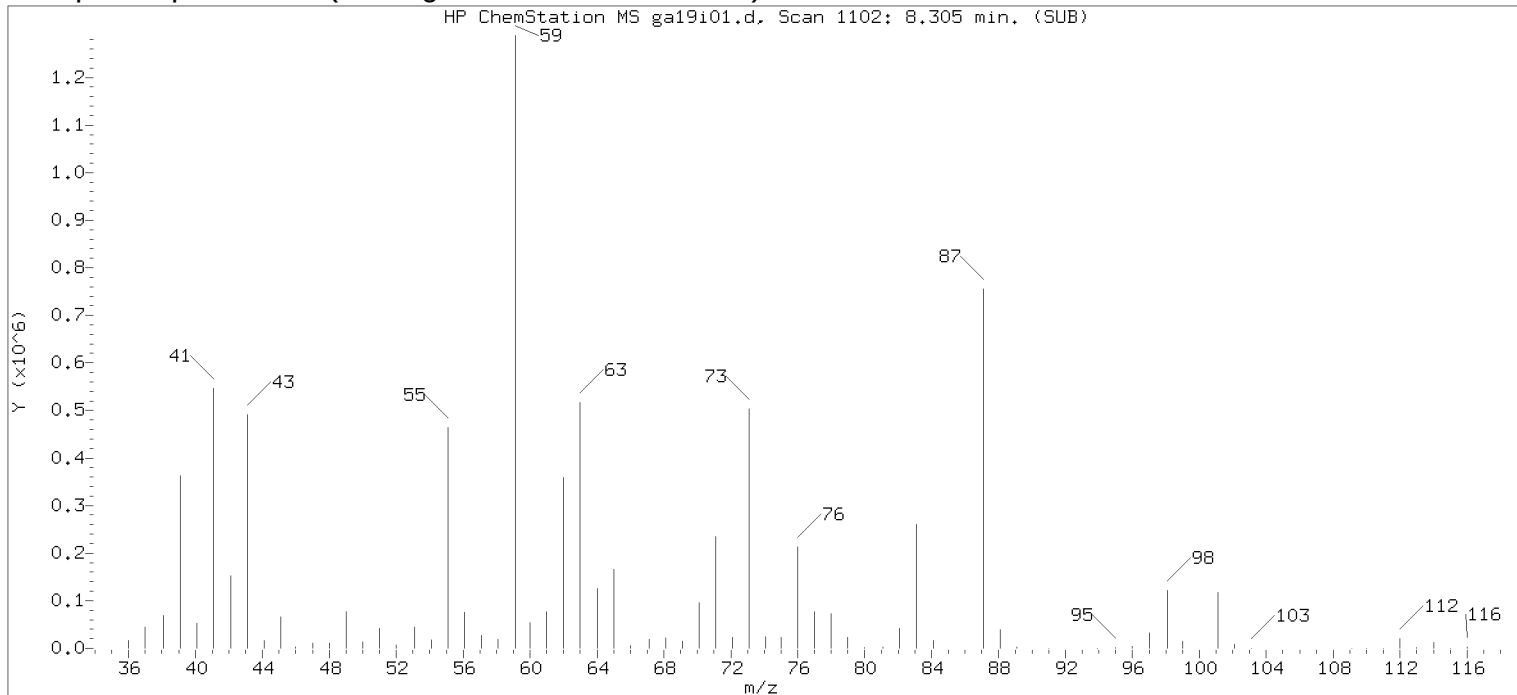
Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1116
Retention Time (minutes): 8.390
Quant Ion : 88.00
Area (flag) : 297580M
On-Column Amount (ng) : 1250.0000
Integration start scan : 1109 Integration stop scan: 1168
Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

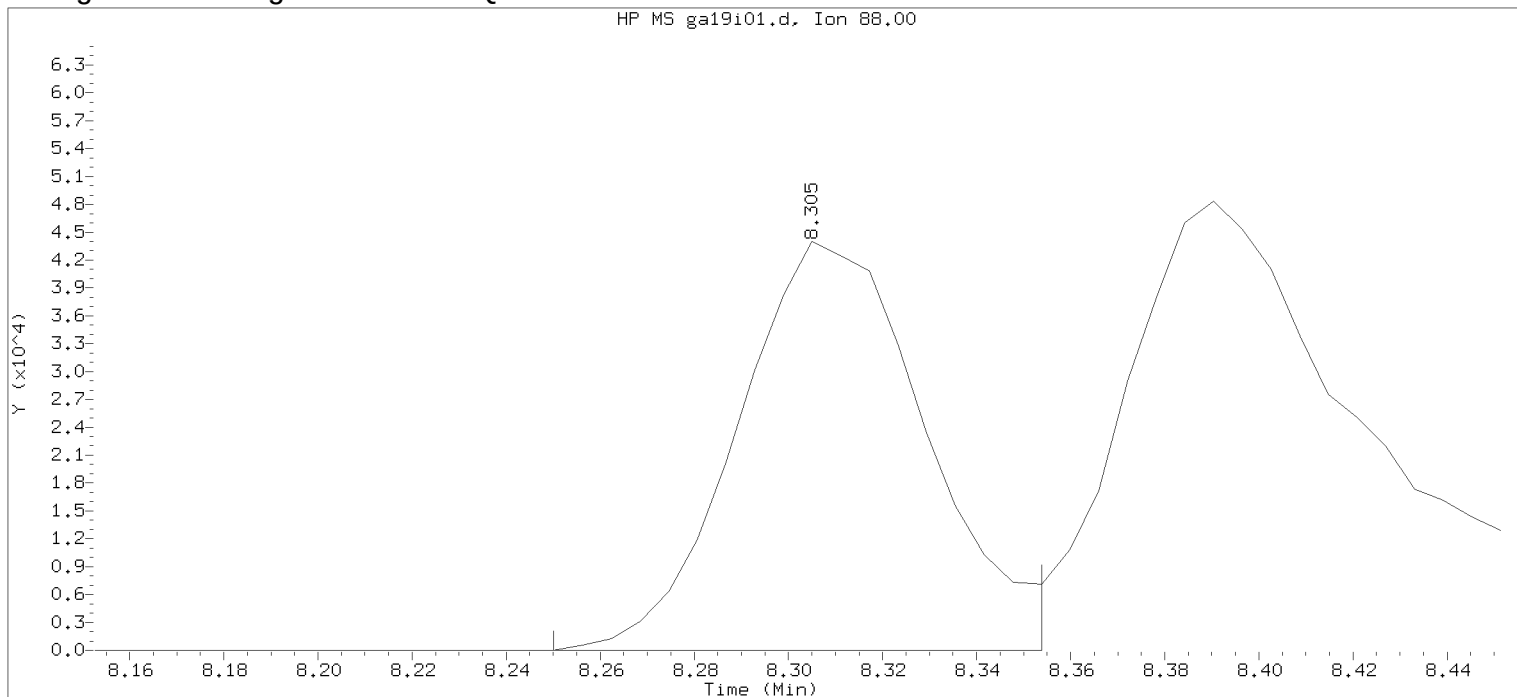
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

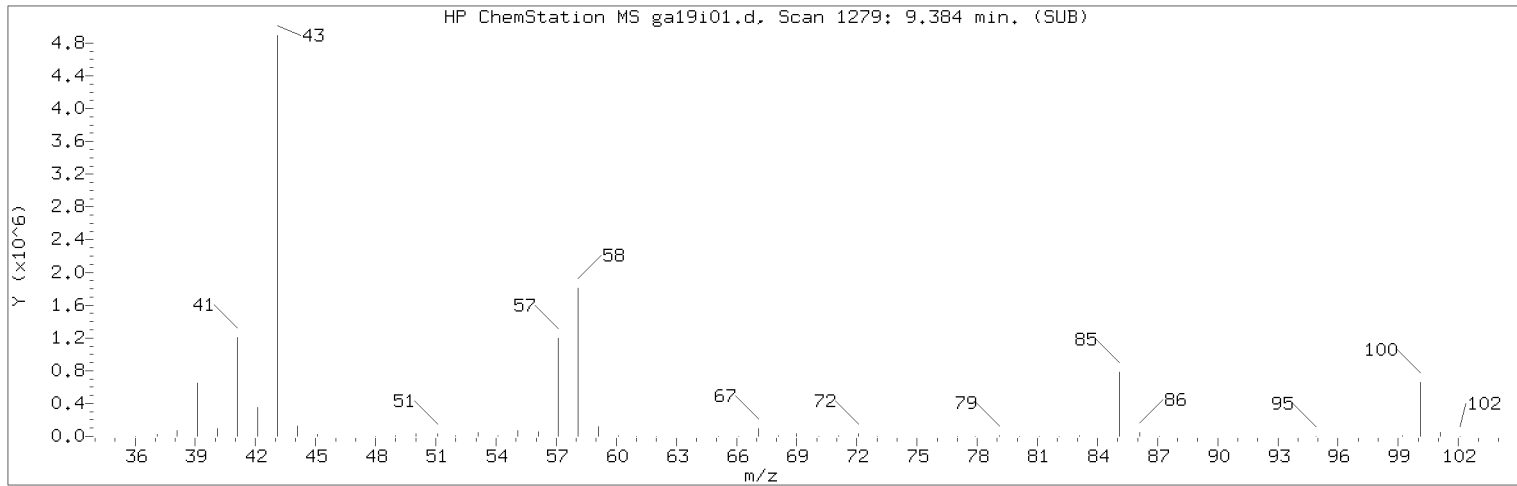
Lab Sample ID: VSTD025

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1102
 Retention Time (minutes): 8.305
 Quant Ion : 88.00
 Area : 121426
 On-column Amount (ng) : 1250.0000
 Integration start scan : 1092
 Y at integration start : 0

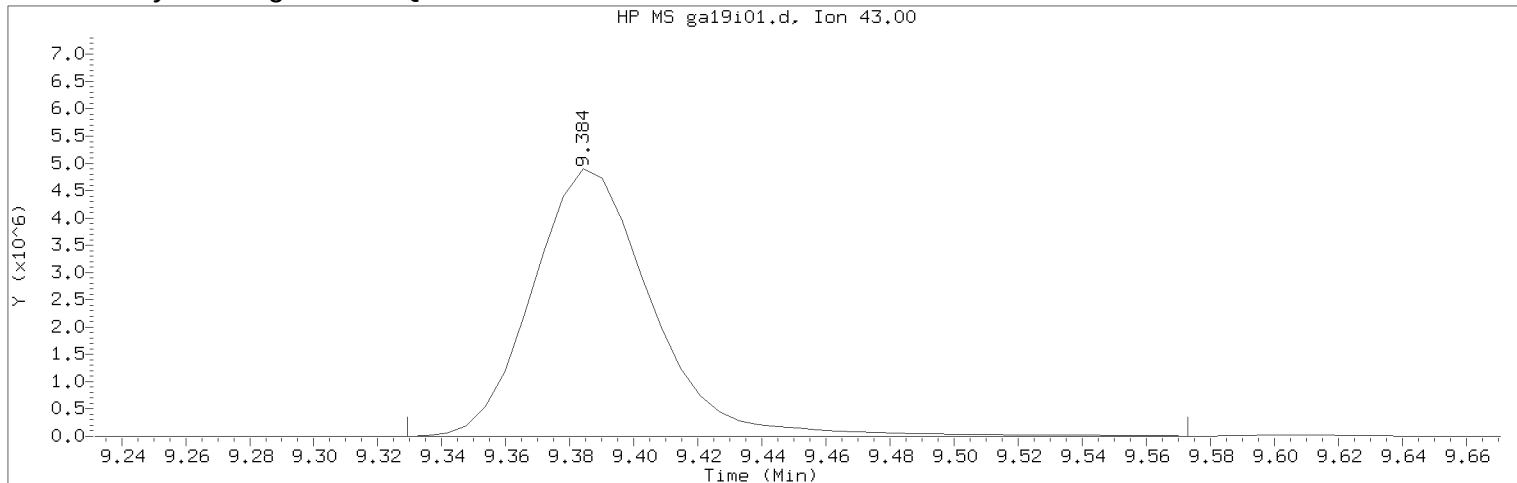
Integration stop scan: 1109
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.
 Target 3.5 esignature user F1D52mB407226 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 12625487M

On-Column Amount (ng) : 250.0000

Integration start scan : 1269 Integration stop scan: 1309

Y at integration start : 632 Y at integration end: 632

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

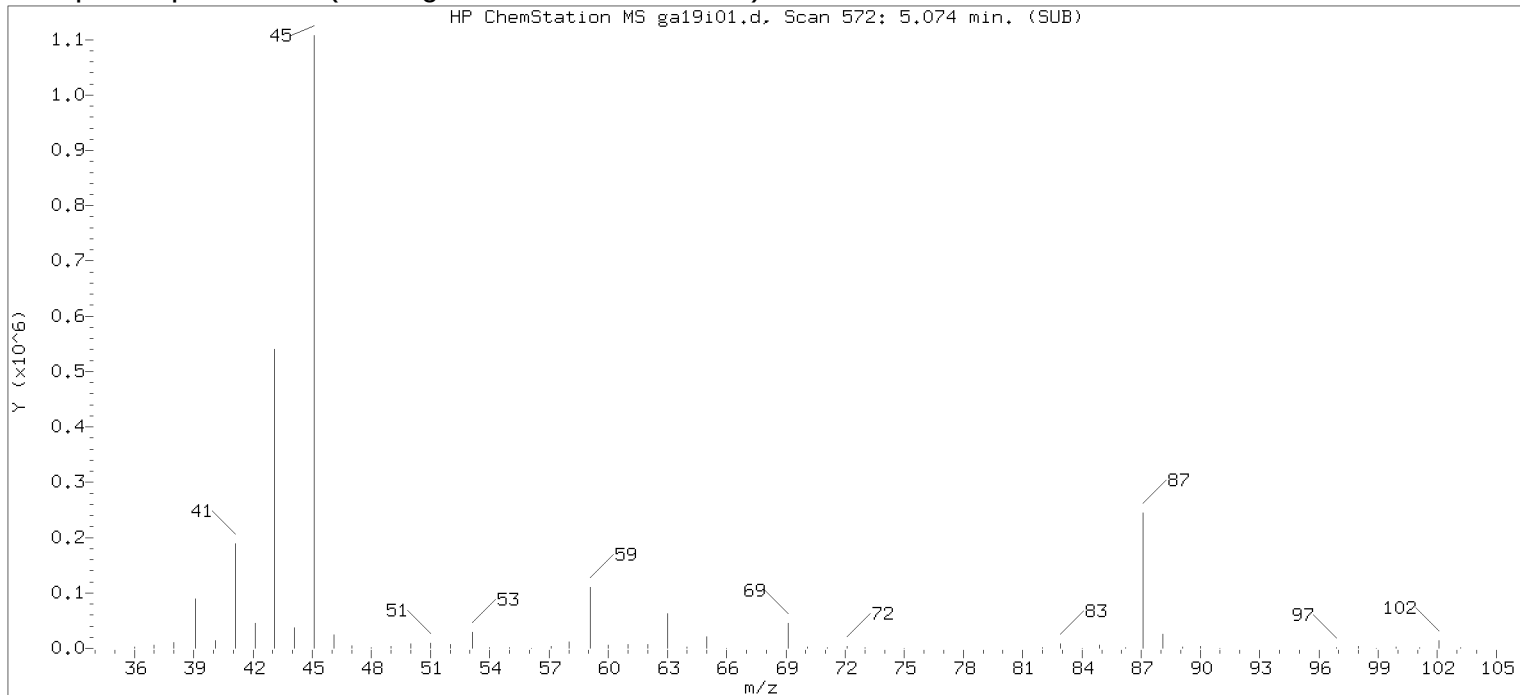
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

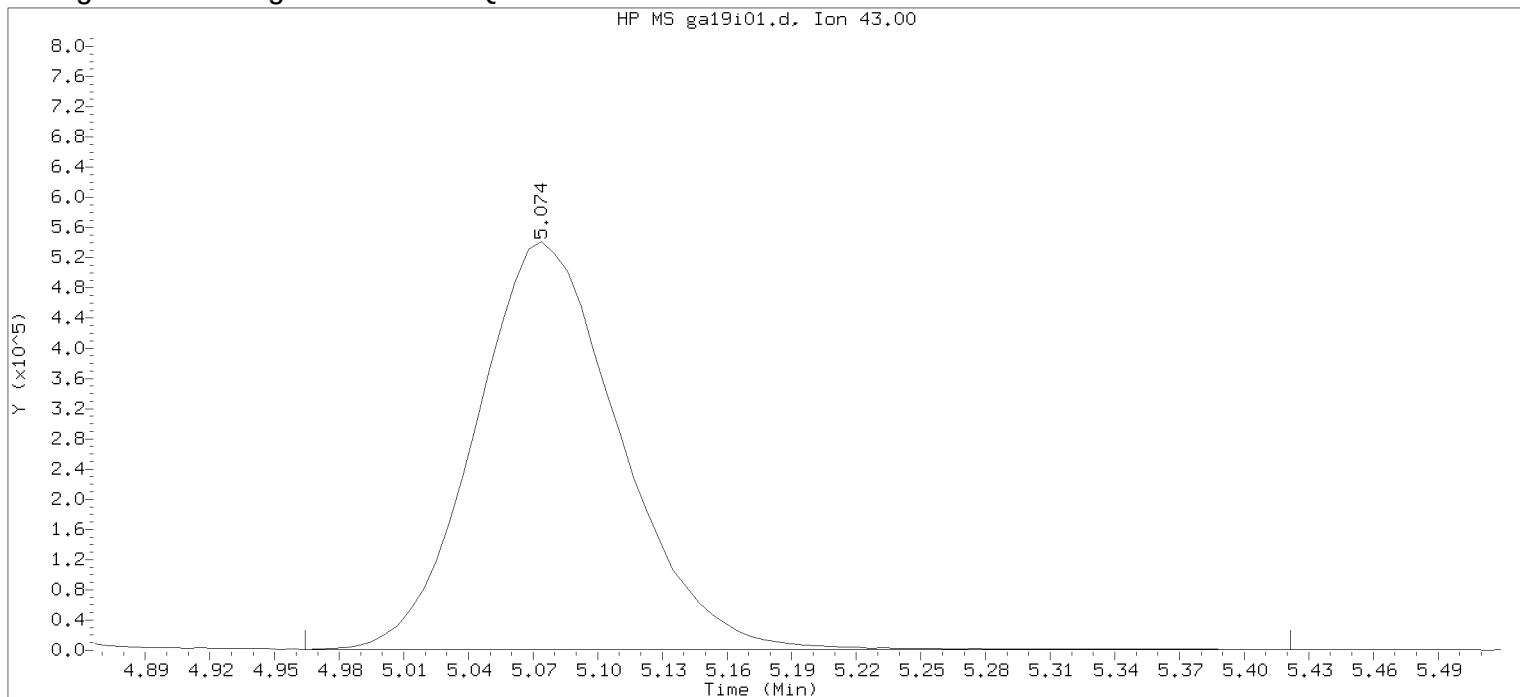
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 572

Retention Time (minutes): 5.074

Quant Ion : 43.00

Area : 2516114

On-column Amount (ng) : 250.0000

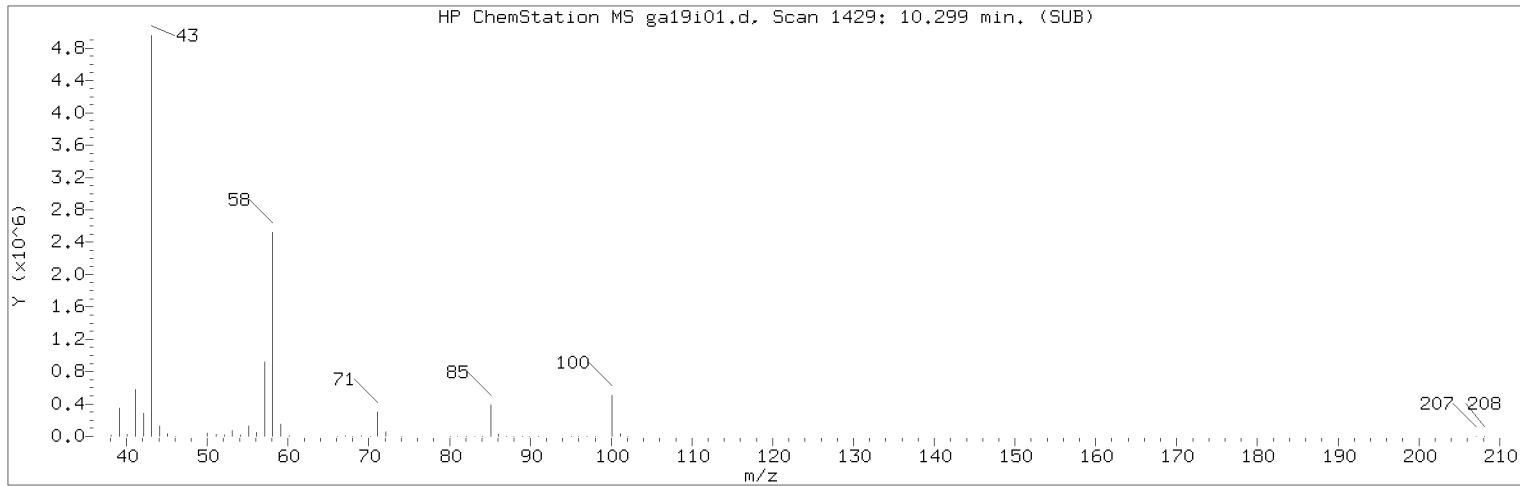
Integration start scan : 553 Integration stop scan: 628

Y at integration start : 1185 Y at integration end: 789

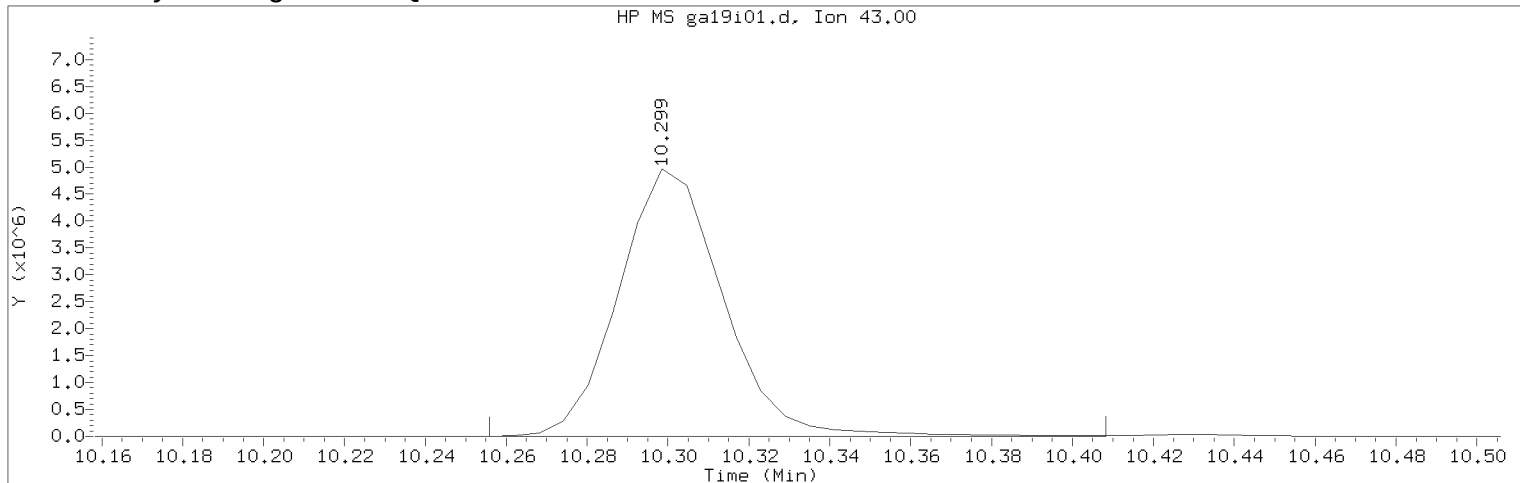
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB107220 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 1429

Retention Time (minutes): 10.299

Quant Ion : 43.00

Area (flag) : 8861239M

On-Column Amount (ng) : 250.0000

Integration start scan : 1421

Integration stop scan: 1446

Y at integration start : 389

Y at integration end: 389

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

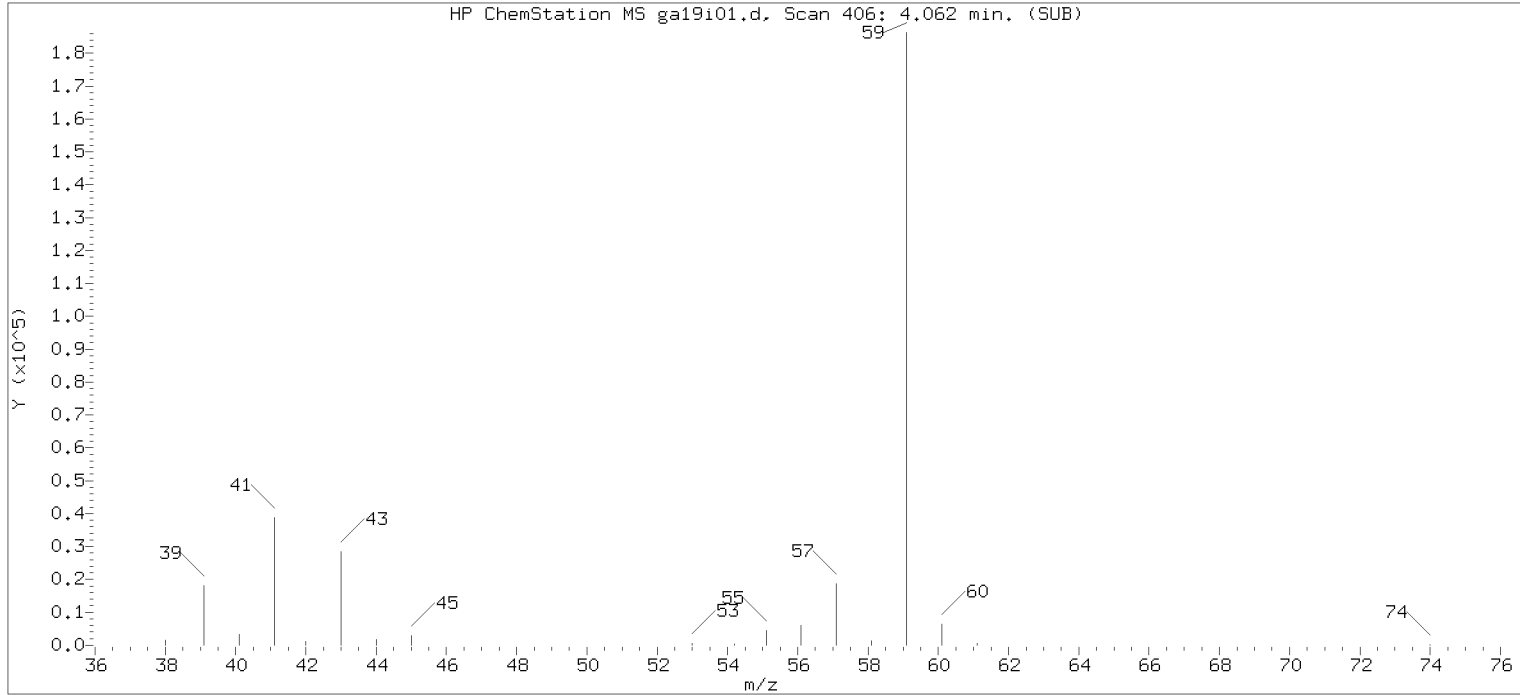
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

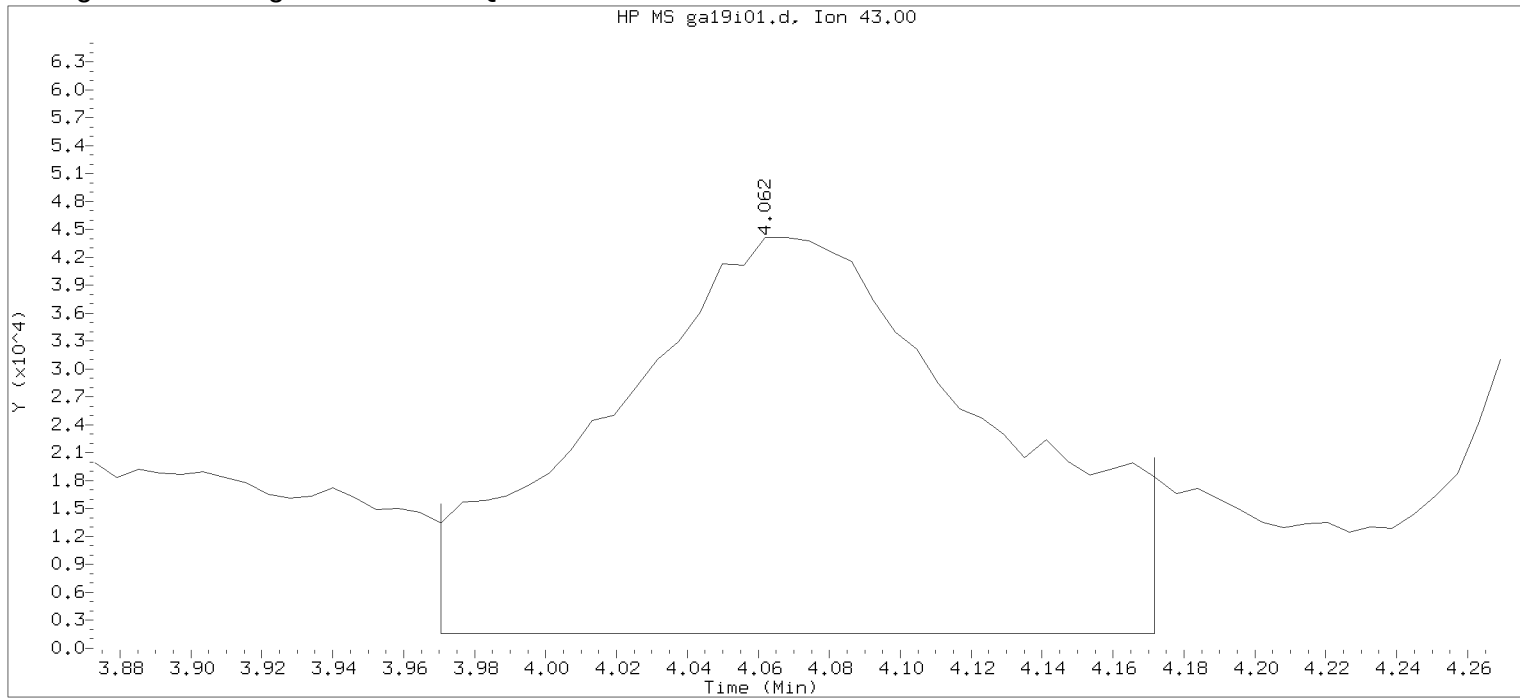
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 406

Retention Time (minutes): 4.062

Quant Ion : 43.00

Area : 319163

On-column Amount (ng) : 250.0000

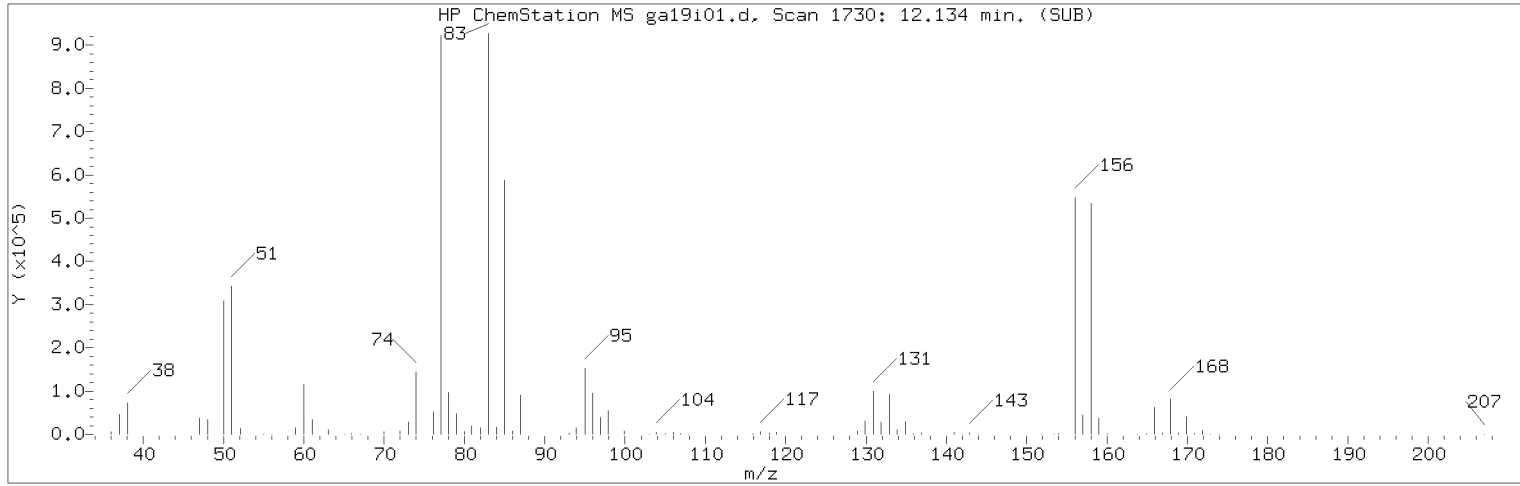
Integration start scan : 390 Integration stop scan: 423

Y at integration start : 1558 Y at integration end: 1558

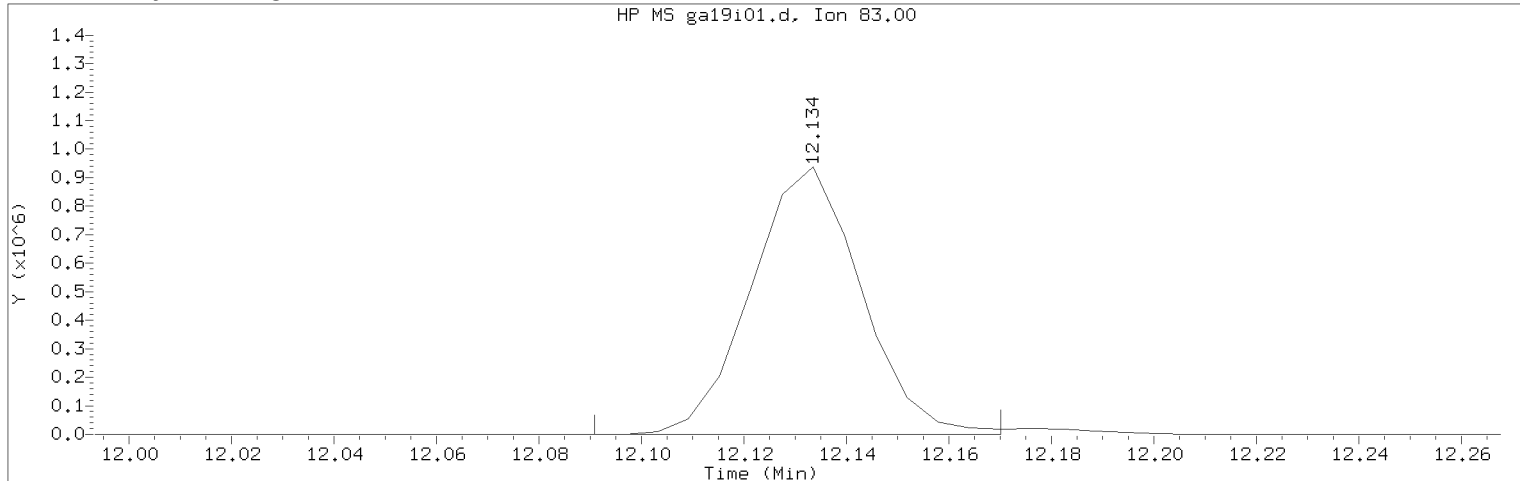
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userFID52mBkg729 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1730	
Retention Time (minutes)	: 12.134	
Quant Ion	: 83.00	
Area (flag)	: 1397464M	
On-Column Amount (ng)	: 25.0000	
Integration start scan	: 1722	Integration stop scan: 1735
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

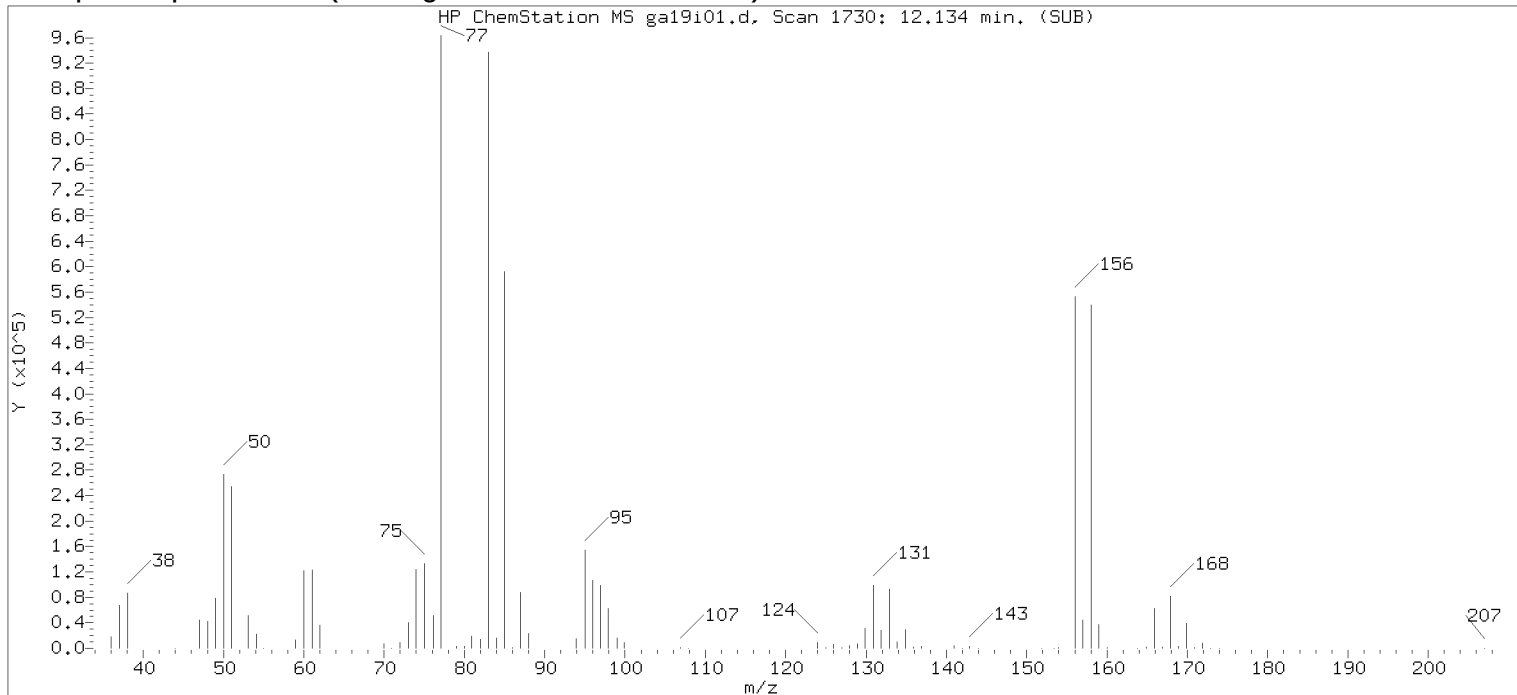
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

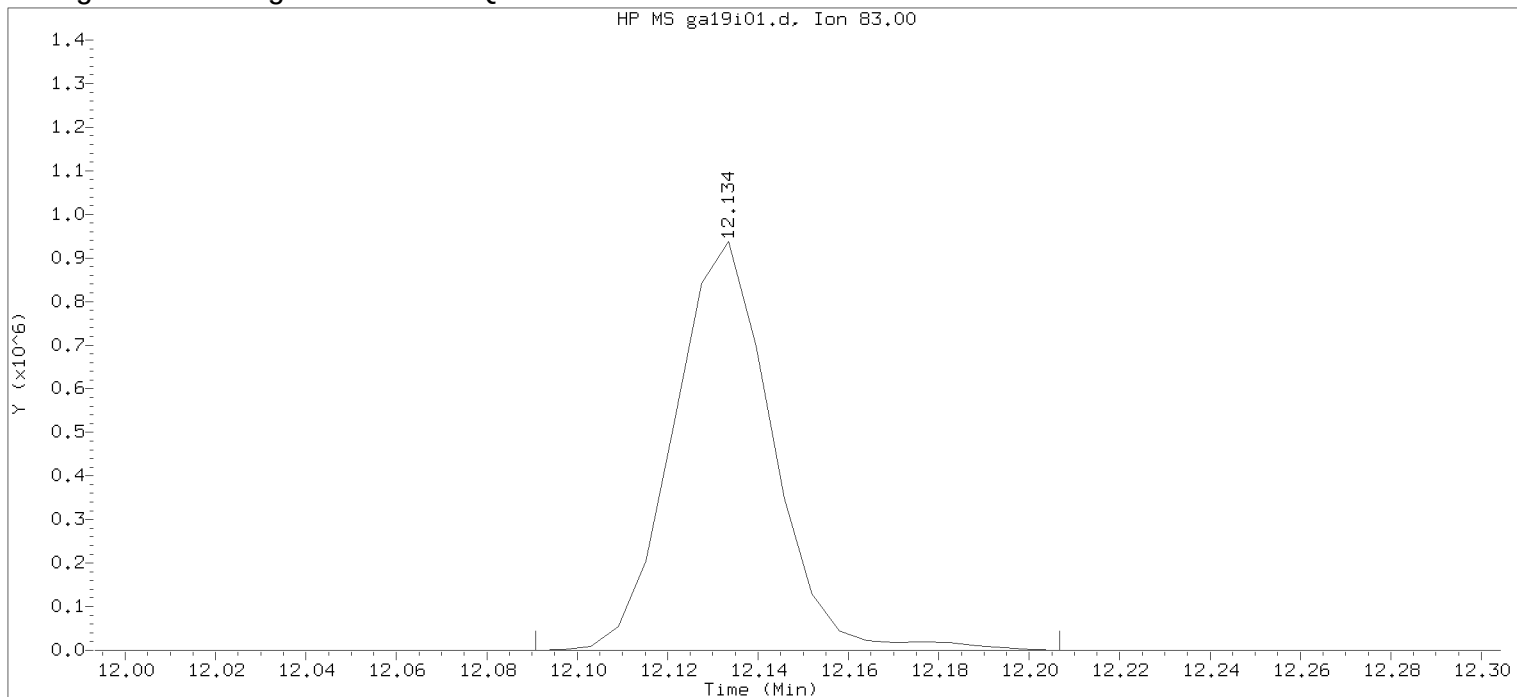
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:22

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 12:38

Date, time and analyst ID of latest file update: 19-Apr-2018 12:38 Automation

Sample Name: VSTD025

Lab Sample ID: VSTD025

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1730

Retention Time (minutes): 12.134

Quant Ion : 83.00

Area : 1418149

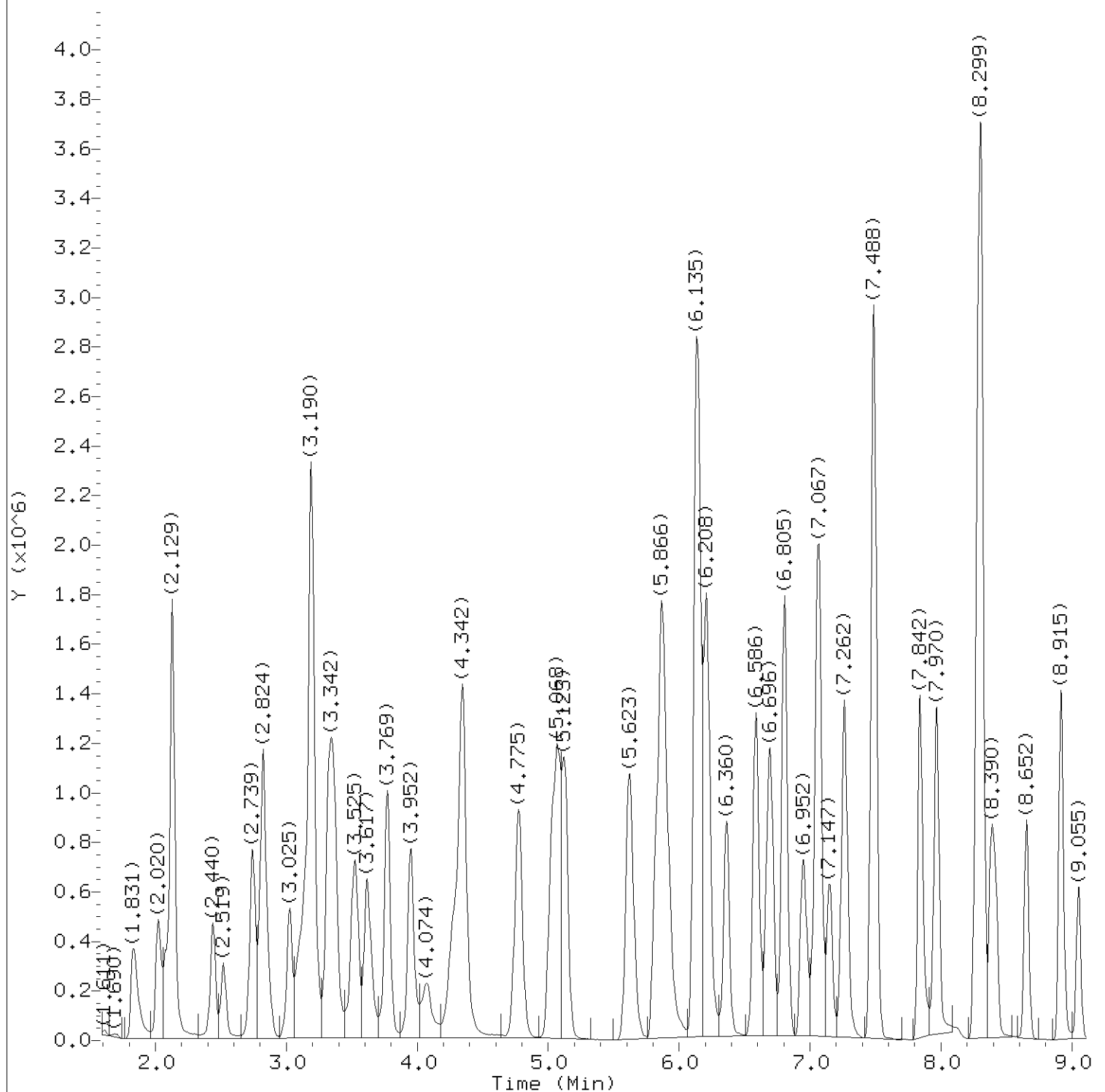
On-column Amount (ng) : 25.0000

Integration start scan : 1722 Integration stop scan: 1741

Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1P52mB497230 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d
Injection date and time: 19-APR-2018 12:44

Instrument ID: HP16334.i
Analyst ID: JKH09052

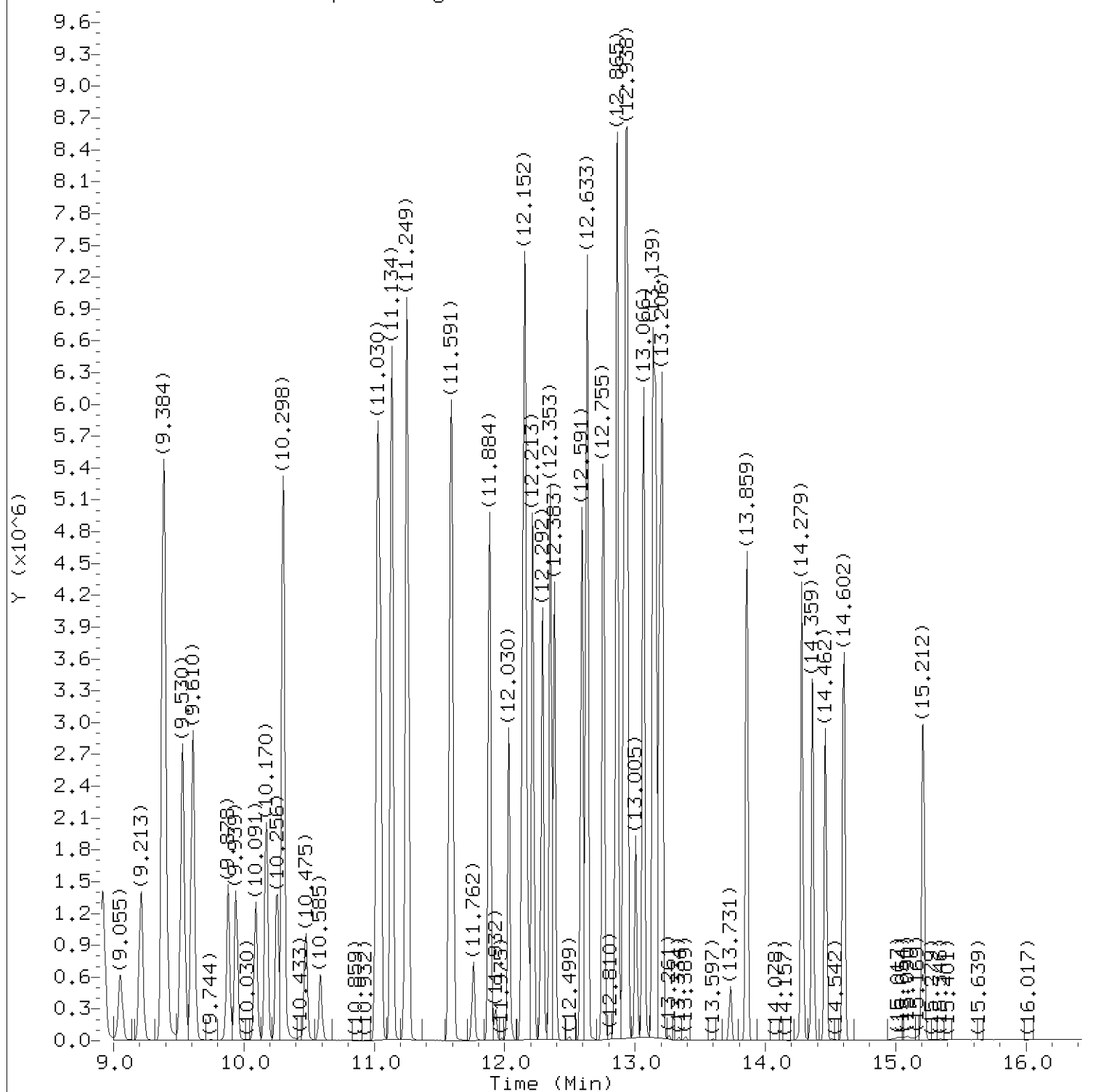
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d
Injection date and time: 19-APR-2018 12:44

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970
FKP52 Page 233 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d
 Injection date and time: 19-APR-2018 12:44

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.831	85	867459	10.560
2) Chloromethane	(2)	2.020	50	822489	10.487
5) Vinyl Chloride	(2)	2.129	62	722889	10.462
6) 1,3-Butadiene	(2)	2.129	39	1225843	10.871
7) Bromomethane	(2)	2.440	94	473509	10.327
8) Chloroethane	(2)	2.519	64	399550	10.339
9) Dichlorofluoromethane	(2)	2.745	67	946328	10.326
10) Trichlorofluoromethane	(2)	2.806	101	956285M	10.340
11) Ethyl ether	(2)	3.025	59	464763	10.365
12) Freon 123a	(2)	3.117	67	650928	10.283
13) Acrolein	(1)	3.190	56	3897371	523.371
15) 1,1-Dichloroethene	(2)	3.318	96	447547	10.123
14) Acetone	(1)	3.349	43	1151552	103.590
16) Freon 113	(2)	3.361	101	530460	10.199
17) Methyl Iodide	(2)	3.513	142	892813	10.166
18) Carbon Disulfide	(2)	3.617	76	1730265	10.145
21) Methyl Acetate	(1)	3.745	43	338790M	9.958
22) Allyl Chloride	(2)	3.769	41	1035977	10.074
23) Methylene Chloride	(2)	3.946	84	546940	10.187
26)*t-Butyl Alcohol-d10	(1)	3.952	65	219199	50.000
28) t-Butyl Alcohol	(1)	4.080	59	779790	211.902
29) Acrylonitrile	(1)	4.269	53	710419	51.198
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	1601834	10.127
31) trans-1,2-Dichloroethene	(2)	4.348	96	524574	10.176
32) n-Hexane	(2)	4.775	57	915834	10.132
33) 1,1-Dichloroethane	(2)	5.025	63	1077126	10.166
34) di-Isopropyl Ether	(2)	5.074	45	2208765	10.104
35) 2-Chloro-1,3-Butadiene	(2)	5.129	53	992527	10.152
37) Ethyl t-butyl ether	(2)	5.623	59	1962075	10.130
38) 2-Butanone	(1)	5.824	43	2155118	102.932
39) cis-1,2-Dichloroethene	(2)	5.866	96	600189	10.123
41) 2,2-Dichloropropane	(2)	5.885	77	907034	10.105
42) Propionitrile	(1)	5.921	54	1087481	203.915
40) 1,2-Dichloroethene (Total)	(2)		96	1124763	20.299
45) Methacrylonitrile	(1)	6.135	67	1726030	102.963
47) Bromochloromethane	(2)	6.208	128	278937	10.086
48) Tetrahydrofuran	(1)	6.214	71	522212	102.677
49) Chloroform	(2)	6.360	83	1029991	10.070

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

Digitally signed by Matthew S. Krause
 on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

FKP52 Page 234 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d
 Injection date and time: 19-APR-2018 12:44

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50)\$Dibromofluoromethane	(2)	6.586	113	549270	10.050
50)\$Dibromofluoromethane	(2)	6.586	111	565657	10.077
51) 1,1,1-Trichloroethane	(2)	6.592	97	881601	10.051
52) Cyclohexane	(2)	6.689	56	1068011	10.142
52) Cyclohexane	(2)	6.696	84	825057	10.199
52) Cyclohexane	(2)	6.696	69	310148	10.143
54) Carbon Tetrachloride	(2)	6.805	117	747093	10.063
55) 1,1-Dichloropropene	(2)	6.805	75	816391	10.125
56) Isobutyl Alcohol	(1)	6.952	41	810131	517.483
57)\$1,2-Dichloroethane-d4	(2)	7.043	102	114605	10.030
57)\$1,2-Dichloroethane-d4	(2)	7.043	65	651324	10.061
57)\$1,2-Dichloroethane-d4	(2)	7.037	104	68857	9.689
58) Benzene	(2)	7.067	78	2229473	10.064
59) 1,2-Dichloroethane	(2)	7.153	62	755804	10.012
60) t-Amyl methyl ether	(2)	7.262	73	1674991	10.025
63)*Fluorobenzene	(2)	7.482	96	2172211	10.000
62) n-Heptane	(2)	7.494	43	1077641	9.997
65) n-Butanol	(1)	7.842	56	1383869	1026.533
67) Trichloroethene	(2)	7.970	95	594884	10.063
69) Methylcyclohexane	(2)	8.281	83	1036688	10.078
70) 1,2-Dichloropropane	(2)	8.305	63	628043	10.043
71) Methyl Methacrylate	(1)	8.384	69	334395	10.167
72) 1,4-Dioxane	(1)	8.390	88	126261M	517.060
73) Dibromomethane	(2)	8.415	93	298000	9.956
74) Bromodichloromethane	(2)	8.652	83	768427	9.920
76) 2-Nitropropane	(1)	8.915	41	1221787	100.812
80) cis-1,3-Dichloropropene	(2)	9.213	75	960653	9.877
81) 4-Methyl-2-Pentanone	(1)	9.384	43	5401892M	103.830
82)\$Toluene-d8	(3)	9.530	98	2216725	10.029
82)\$Toluene-d8	(3)	9.530	100	1414585	9.999
83) Toluene	(3)	9.610	92	1418514	10.050
84) trans-1,3-Dichloropropene	(3)	9.878	75	829727	9.925
86) Ethyl Methacrylate	(3)	9.939	69	731679	10.008
88) 1,1,2-Trichloroethane	(3)	10.091	97	426440	10.006
85) 1,3-Dichloropropene (total)	(3)		75	1790380	19.802
89) Tetrachloroethene	(3)	10.170	166	657662	10.049
90) 1,3-Dichloropropane	(3)	10.256	76	777575	10.066
91) 2-Hexanone	(1)	10.298	43	3809911M	104.074

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d
 Injection date and time: 19-APR-2018 12:44

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	525341	9.848
95) 1,2-Dibromoethane	(3)	10.585	107	416983	9.992
97)*Chlorobenzene-d5	(3)	11.018	117	1651185	10.000
98) Chlorobenzene	(3)	11.048	112	1621339	10.070
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	580478	9.901
100) Ethylbenzene	(3)	11.134	91	2818638	10.112
101) m+p-Xylene	(3)	11.249	106	2180827	20.080
104) o-Xylene	(3)	11.585	106	1100027	9.923
106) Styrene	(3)	11.597	104	1847971	9.919
105) Xylene (Total)	(3)		106	3280854	30.003
107) Bromoform	(3)	11.762	173	314090	9.633
108) Isopropylbenzene	(3)	11.884	105	2849333	10.045
111)\$4-Bromofluorobenzene	(3)	12.030	95	848986	10.013
111)\$4-Bromofluorobenzene	(3)	12.030	174	729017	10.020
113) 1,1,2,2-Tetrachloroethane	(4)	12.133	83	568890M	10.012
114) Bromobenzene	(4)	12.146	156	739206	9.959
116) 1,2,3-Trichloropropane	(4)	12.176	110	157314	10.165
117) n-Propylbenzene	(4)	12.213	91	3402211	10.234
119) 2-Chlorotoluene	(4)	12.292	126	673978	10.076
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	2479223	10.120
122) 4-Chlorotoluene	(4)	12.383	126	709530	10.061
125) tert-Butylbenzene	(4)	12.591	134	510020	9.953
126) Pentachloroethane	(4)	12.627	167	442688	9.667
127) 1,2,4-Trimethylbenzene	(4)	12.633	105	2533554	10.054
128) sec-Butylbenzene	(4)	12.755	105	3158992	10.129
131) 1,3-Dichlorobenzene	(4)	12.859	146	1477303	9.955
132) p-Isopropyltoluene	(4)	12.865	119	2771578	10.044
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	931947	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	1481422	9.948
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	1121441	9.926
136) Benzyl Chloride	(4)	13.005	126	230287	9.736
138) n-Butylbenzene	(4)	13.158	92	1468416	10.040
139) 1,2-Dichlorobenzene	(4)	13.188	146	1398212	10.005
143) 1,2-Dibromo-3-chloropropane	(1)	13.737	155	87929	9.872
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	1232435	9.928
145) 1,2,4-Trichlorobenzene	(4)	14.279	180	1150774	9.959
146) Hexachlorobutadiene	(4)	14.365	225	594628	9.999
147) Naphthalene	(4)	14.462	128	1938040	10.057

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

FKP52 Page 236 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

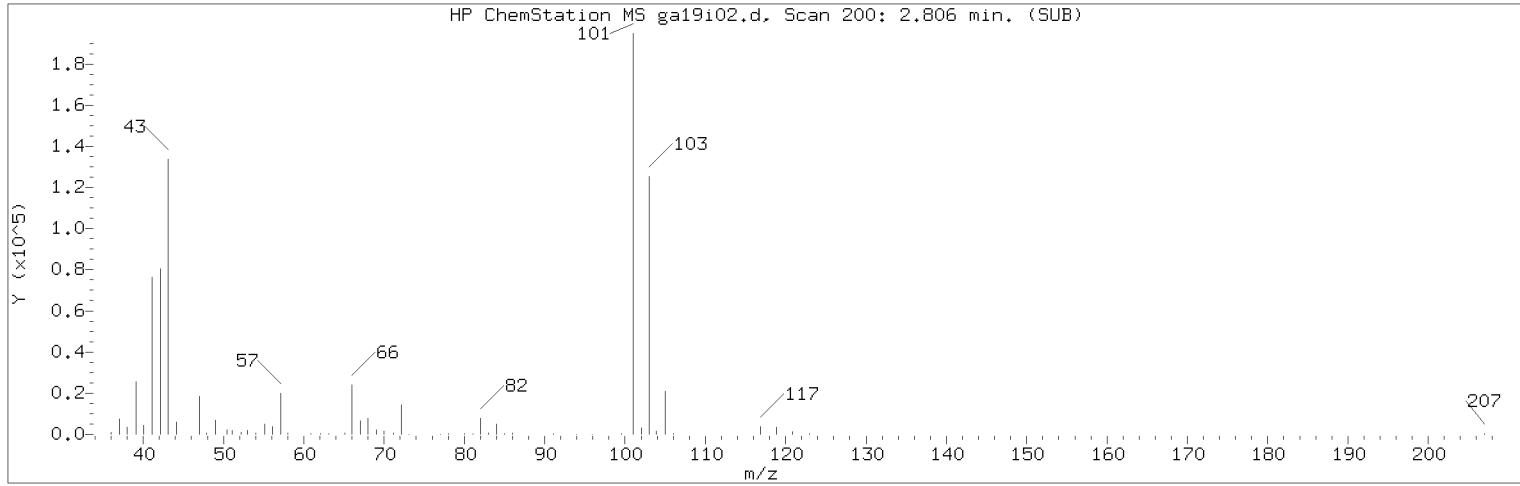
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) 1,2,3-Trichlorobenzene	(4)	14.602	180	981001	9.966

page 4 of 4

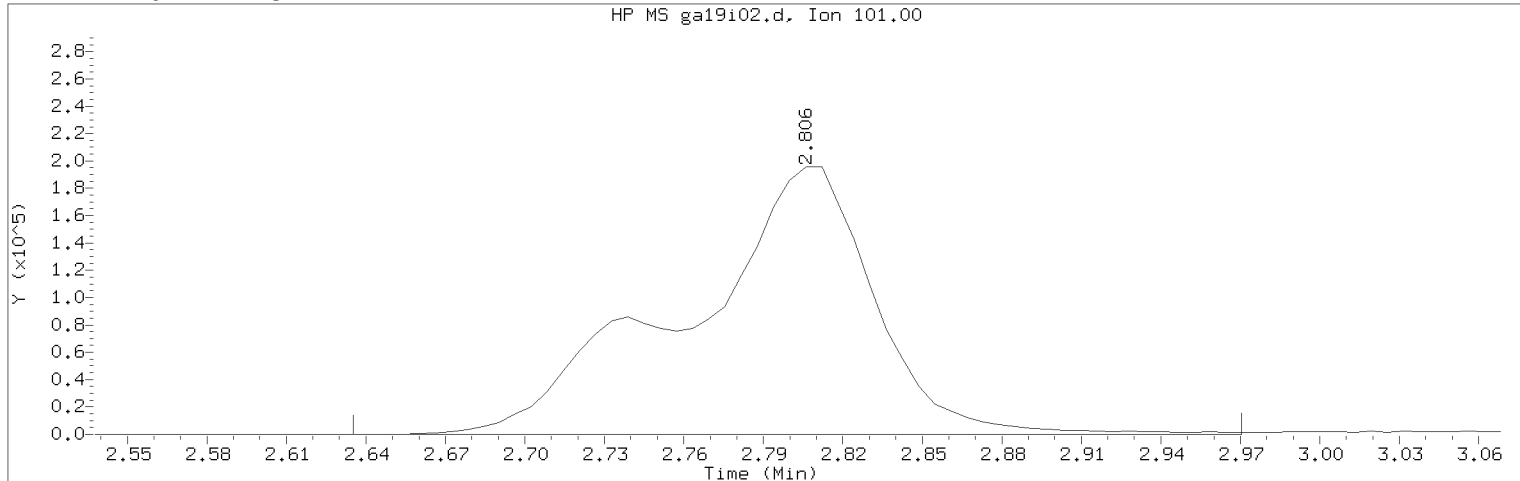
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 200	
Retention Time (minutes)	: 2.806	
Quant Ion	: 101.00	
Area (flag)	: 956285M	
On-Column Amount (ng)	: 10.3403	
Integration start scan	: 171	Integration stop scan: 226
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

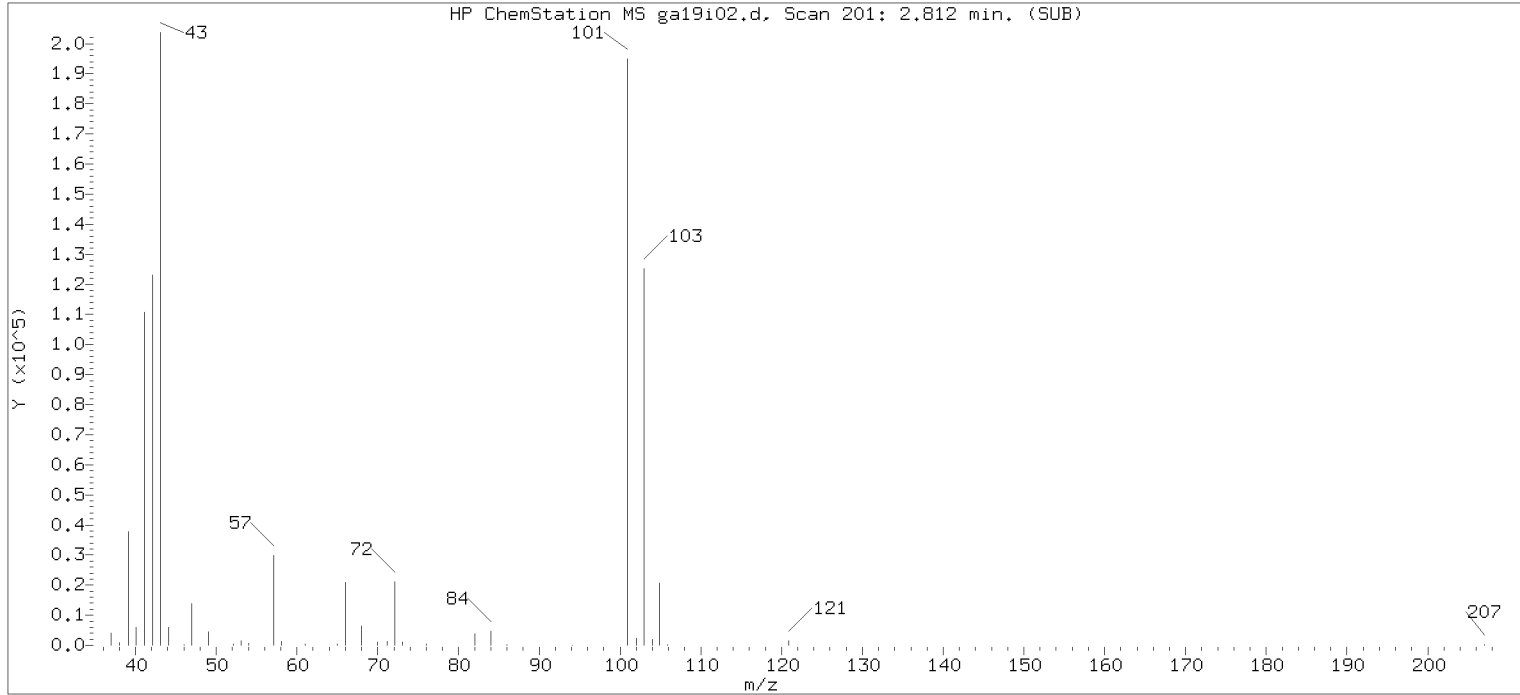
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

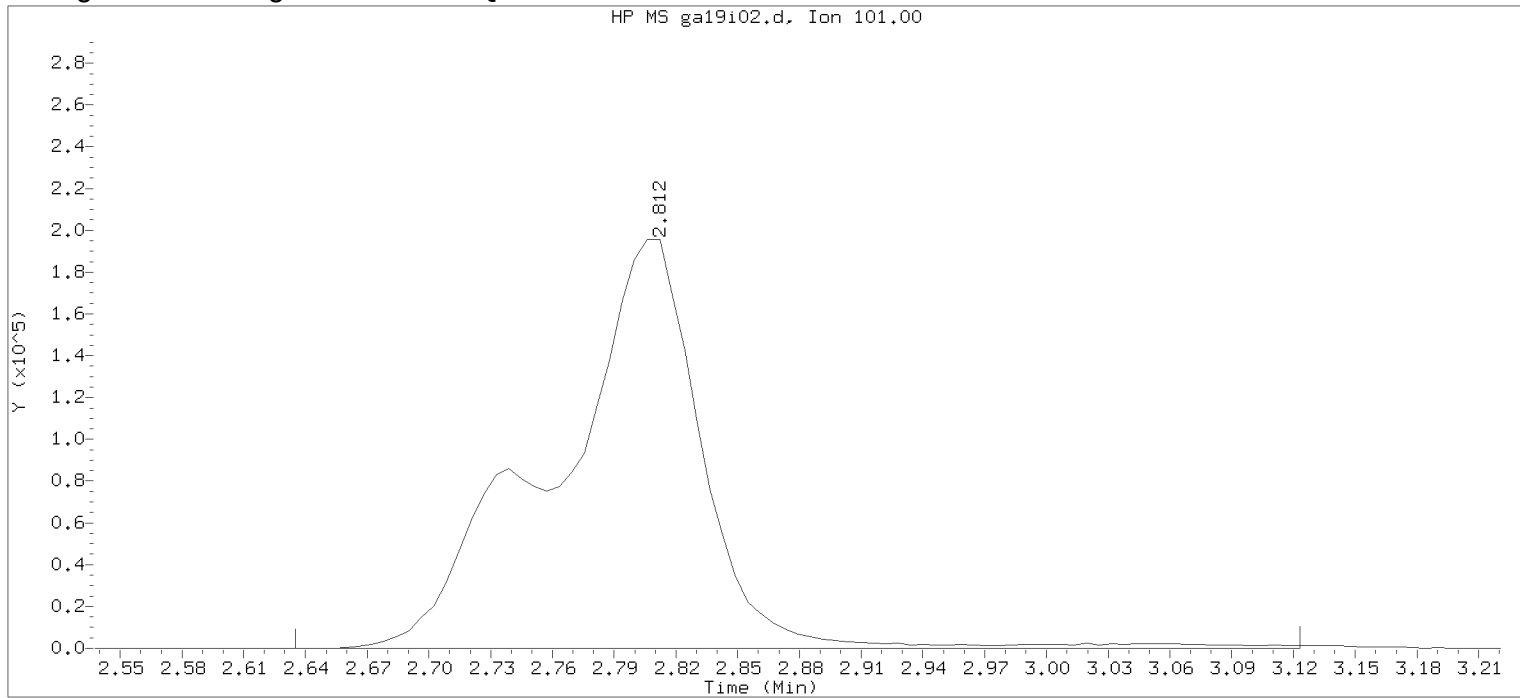
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area : 971712

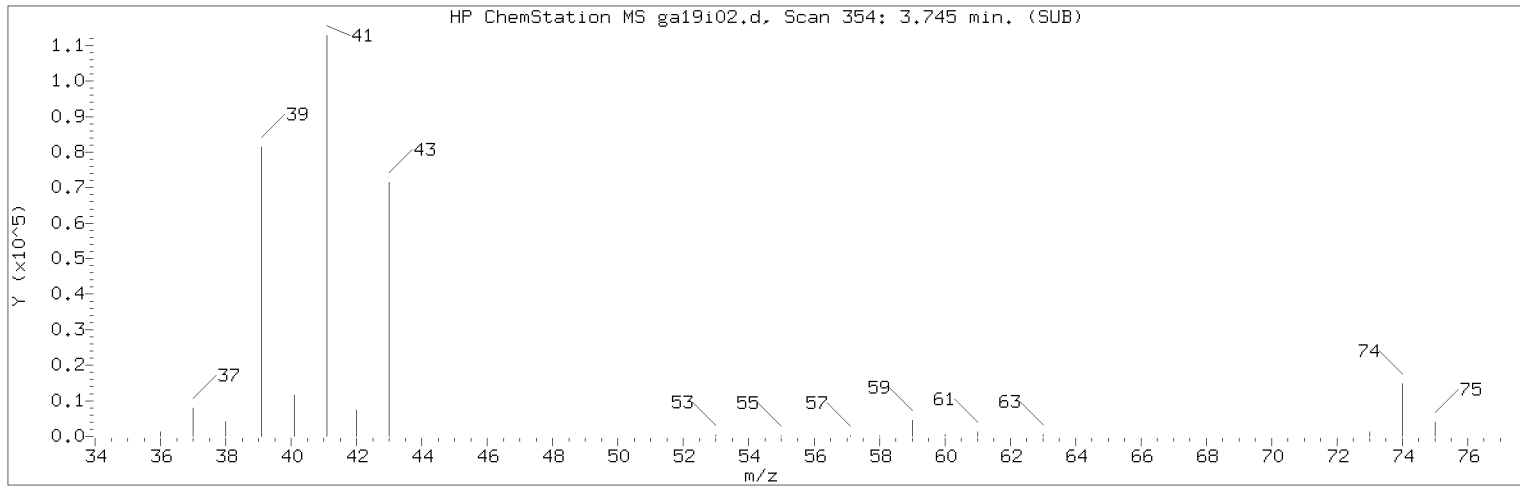
On-column Amount (ng) : 10.3423

Integration start scan : 171 Integration stop scan: 251

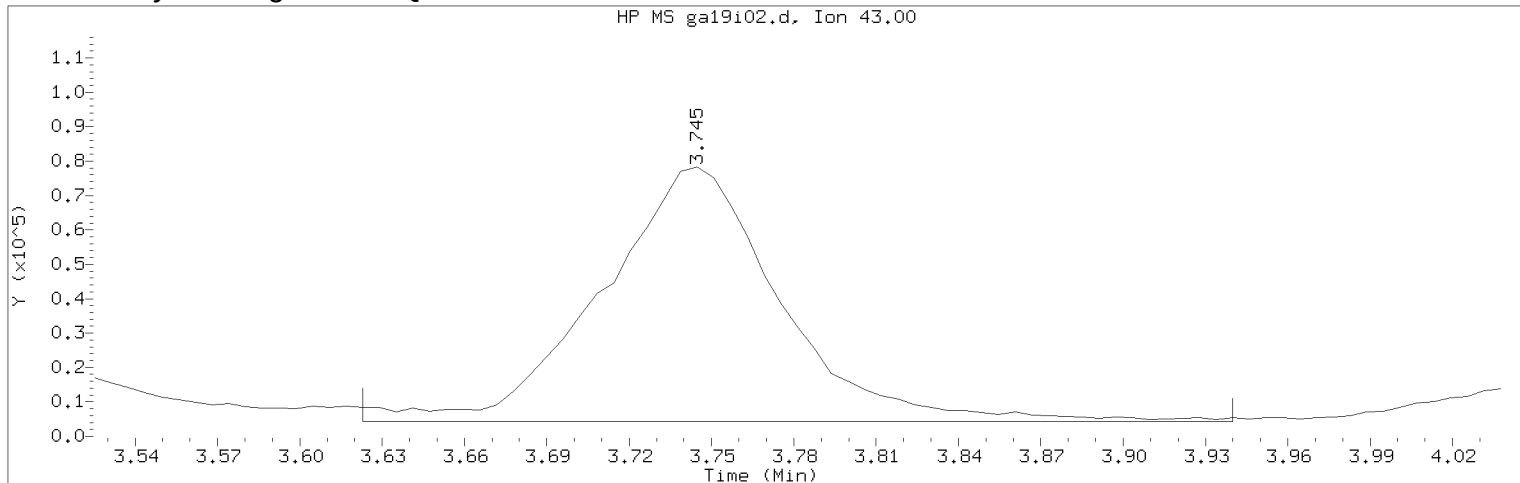
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature user F1D52mB407270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 354

Retention Time (minutes): 3.745

Quant Ion : 43.00

Area (flag) : 338790M

On-Column Amount (ng) : 9.9580

Integration start scan : 333

Integration stop scan: 385

Y at integration start : 4238

Y at integration end: 4238

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

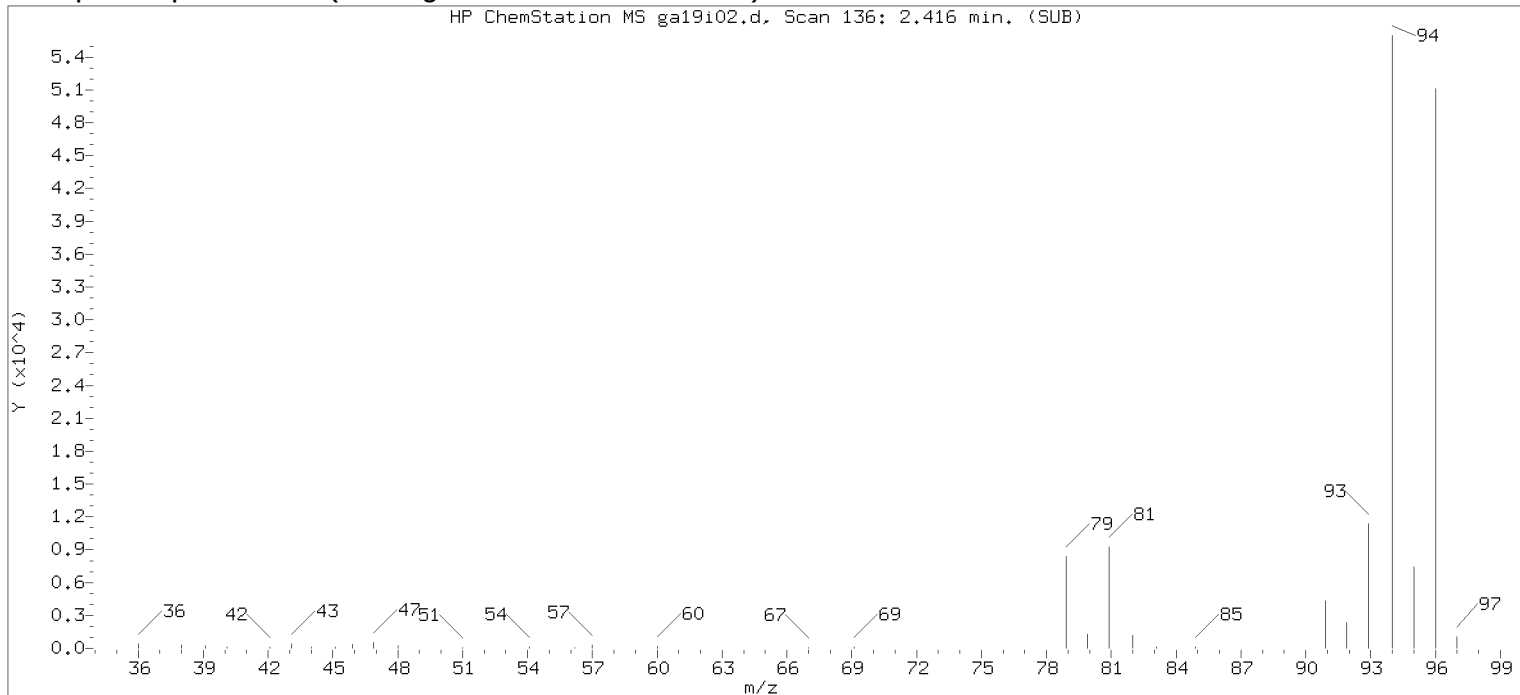
on 04/19/2018 at 20:47.

Target 3.5 esignature user ID: msk07970

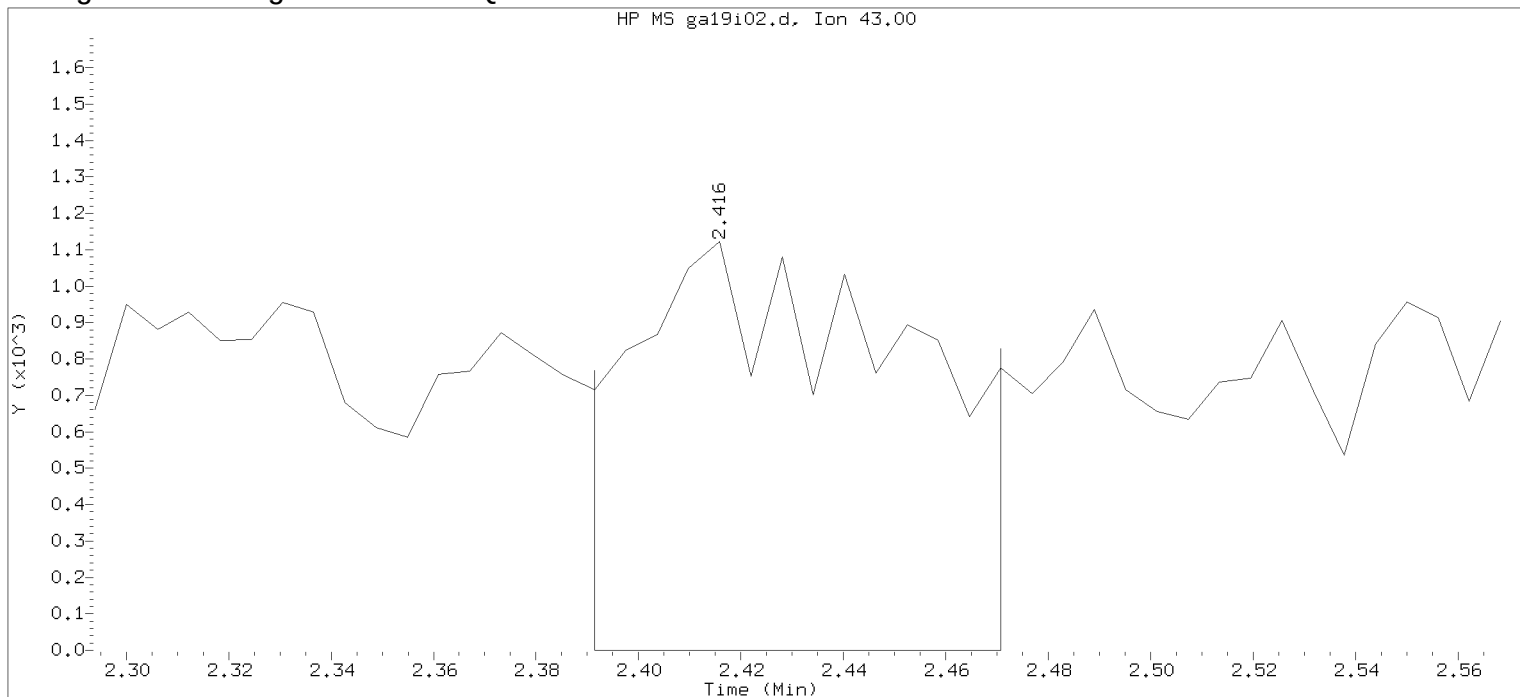
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

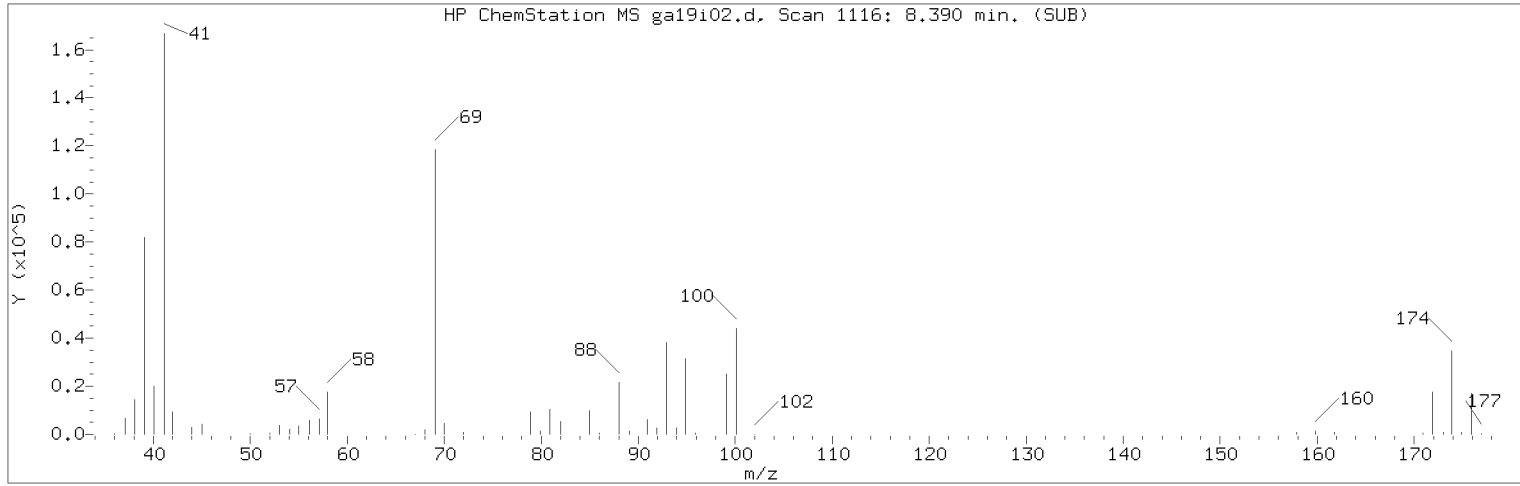
Lab Sample ID: VSTD010

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 136
 Retention Time (minutes): 2.416
 Quant Ion : 43.00
 Area : 4142
 On-column Amount (ng) : 18.0207
 Integration start scan : 131
 Y at integration start : 0

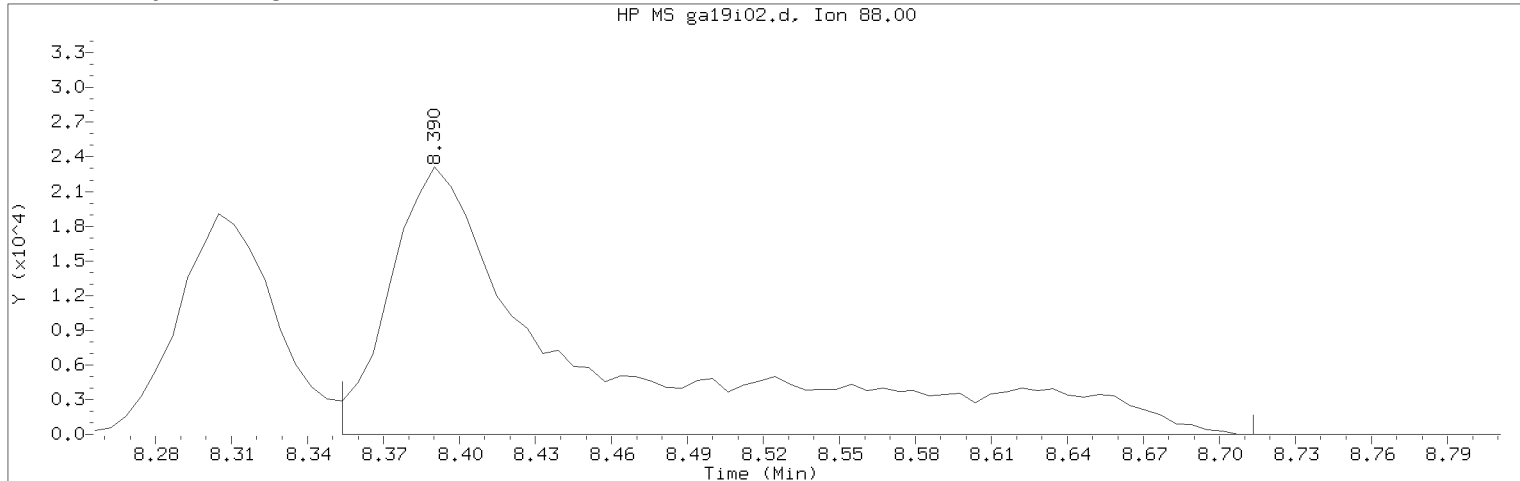
Integration stop scan: 144
 Y at integration end: 0

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 Target 3.5 esignature user F1D52mB107270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1116	
Retention Time (minutes)	: 8.390	
Quant Ion	: 88.00	
Area (flag)	: 126261M	
On-Column Amount (ng)	: 517.0603	
Integration start scan	: 1109	Integration stop scan: 1168
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

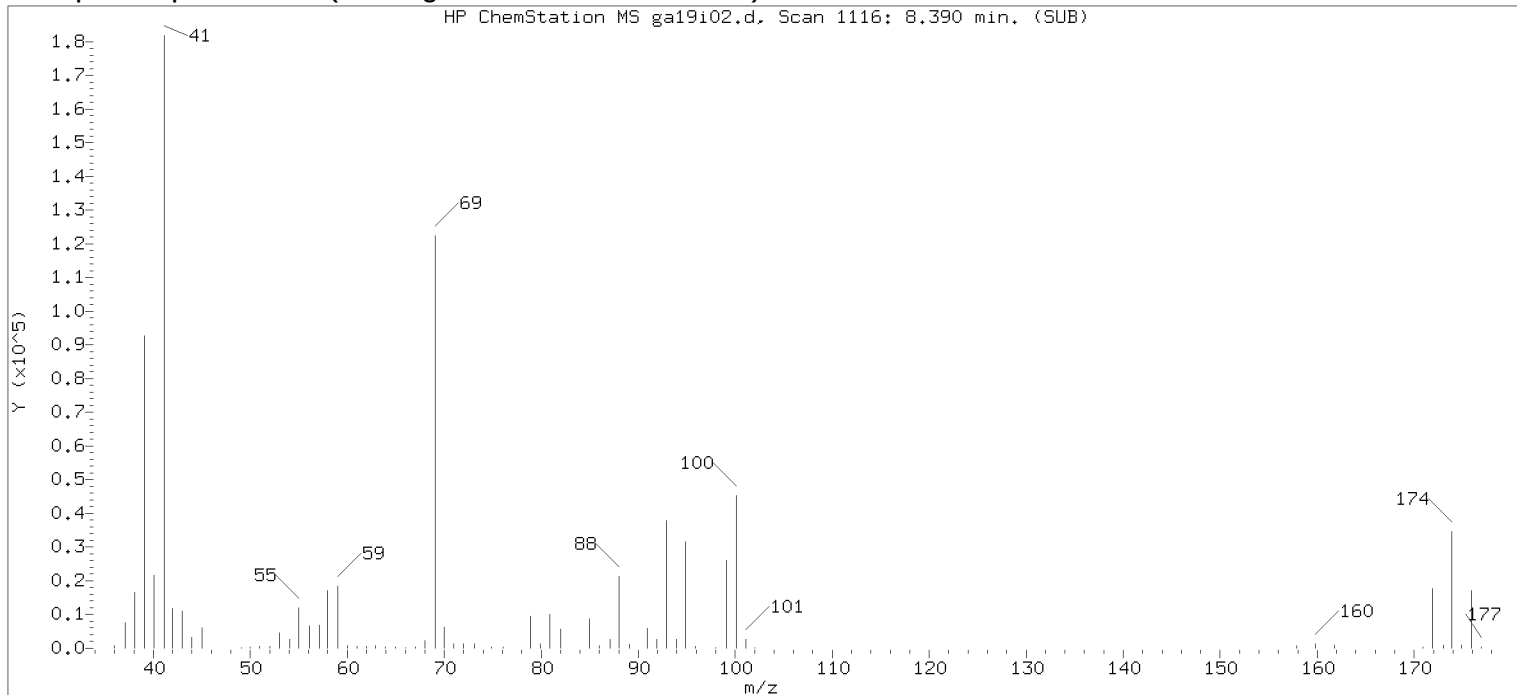
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

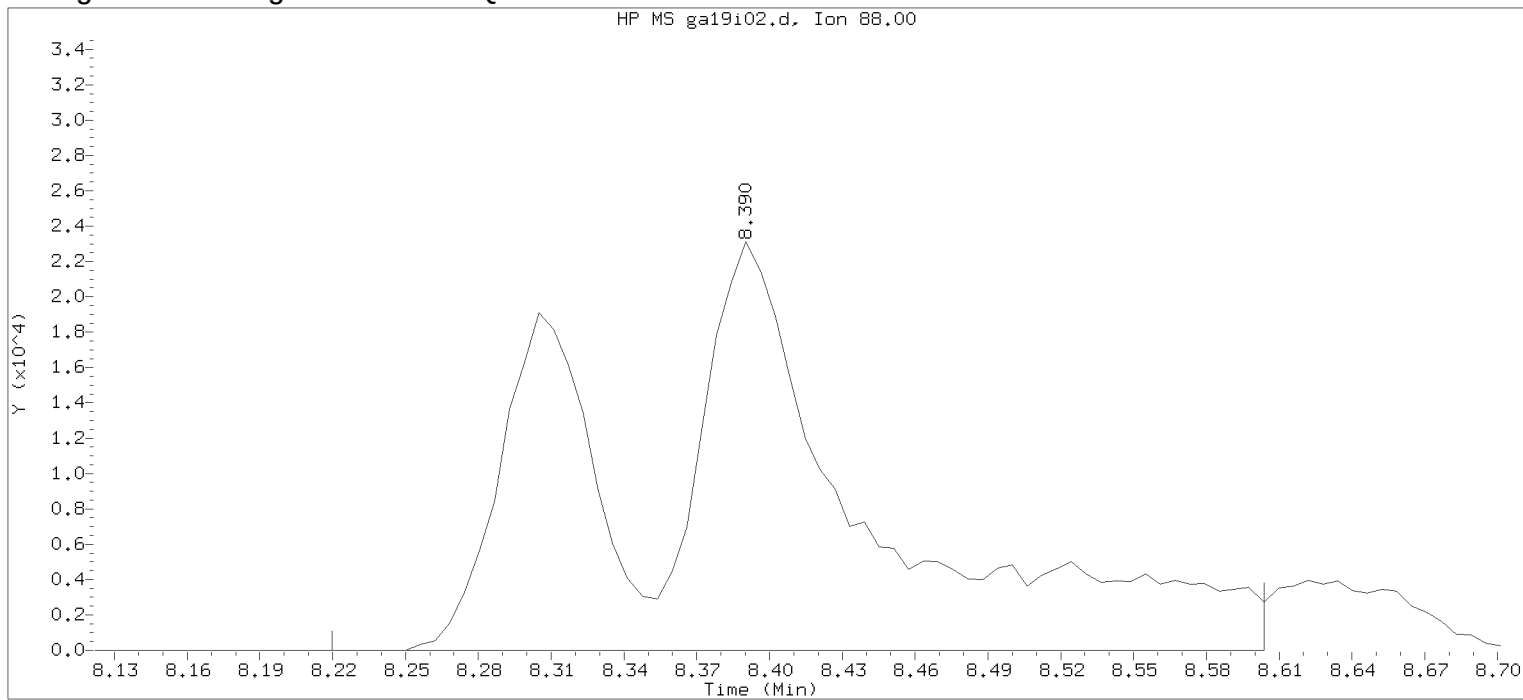
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

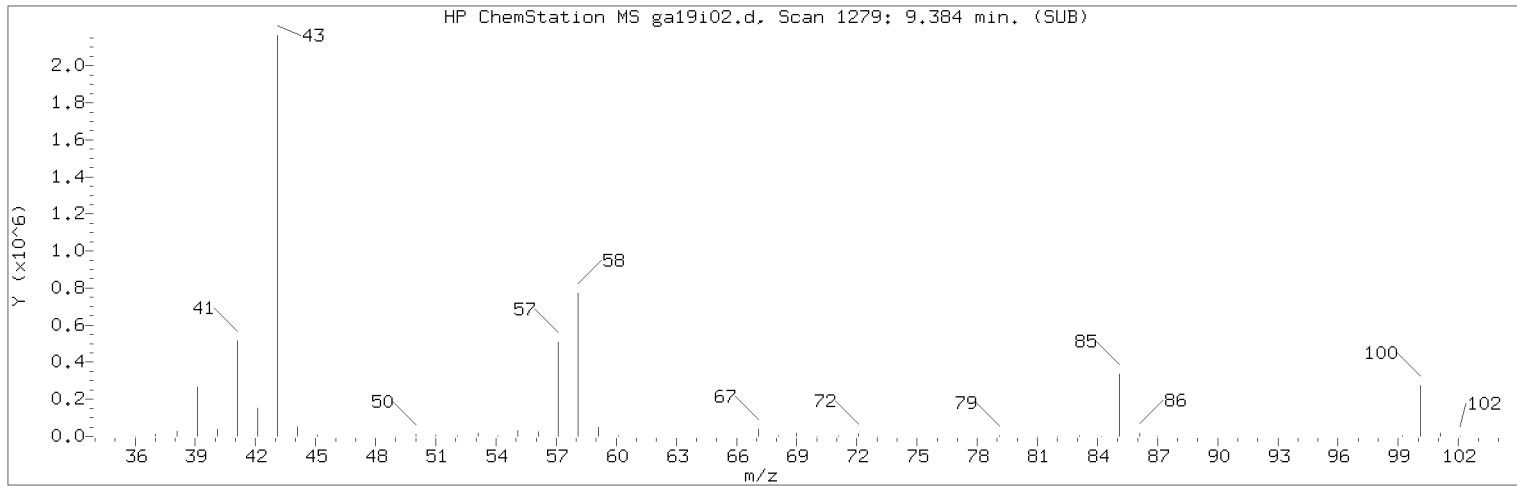
Lab Sample ID: VSTD010

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1116
 Retention Time (minutes): 8.390
 Quant Ion : 88.00
 Area : 161580
 On-column Amount (ng) : 755.7593
 Integration start scan : 1087
 Y at integration start : 0

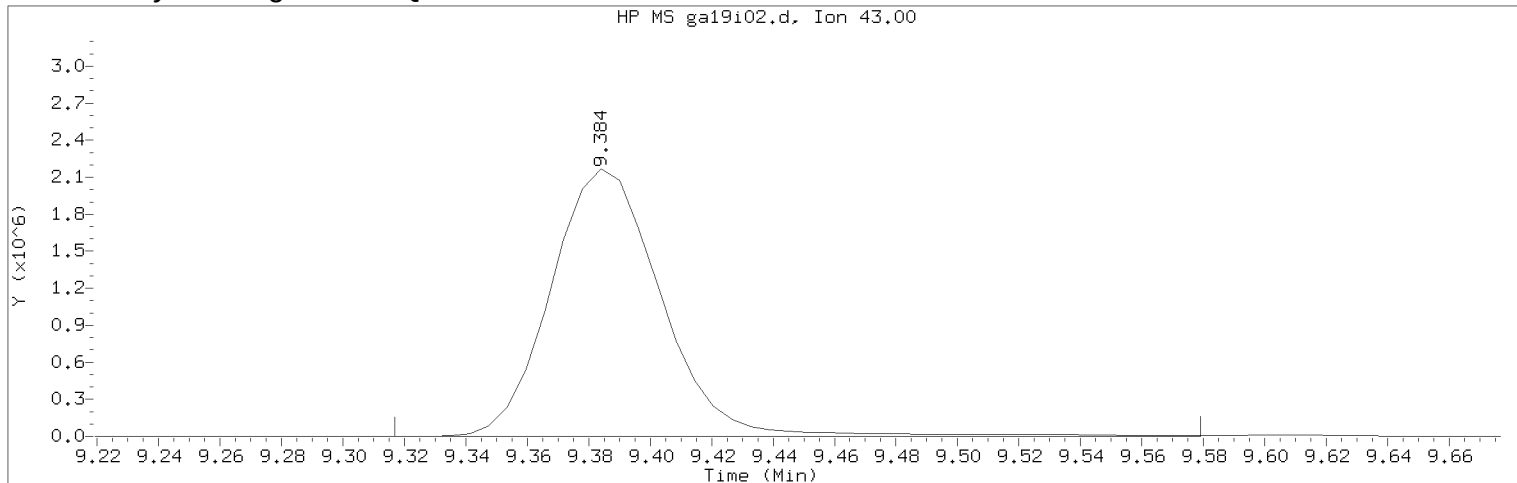
Integration stop scan: 1150
 Y at integration end: 0

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 Target 3.5 esignature user F1D52mB407270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number : 81
Compound Name : 4-Methyl-2-Pentanone
Scan Number : 1279
Retention Time (minutes): 9.384
Quant Ion : 43.00
Area (flag) : 5401892M
On-Column Amount (ng) : 103.8297
Integration start scan : 1267 Integration stop scan: 1310
Y at integration start : 285 Y at integration end: 285

Reason for manual integration: improper integration

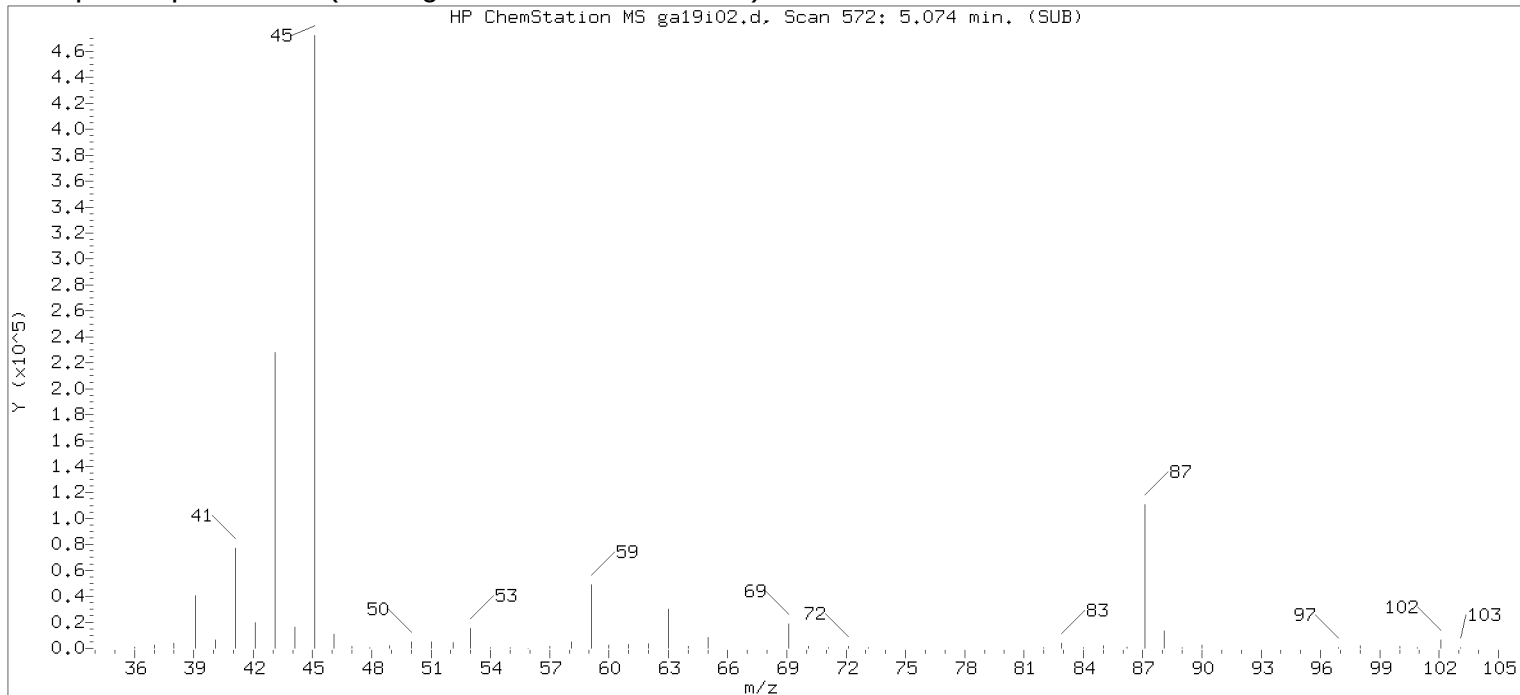
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

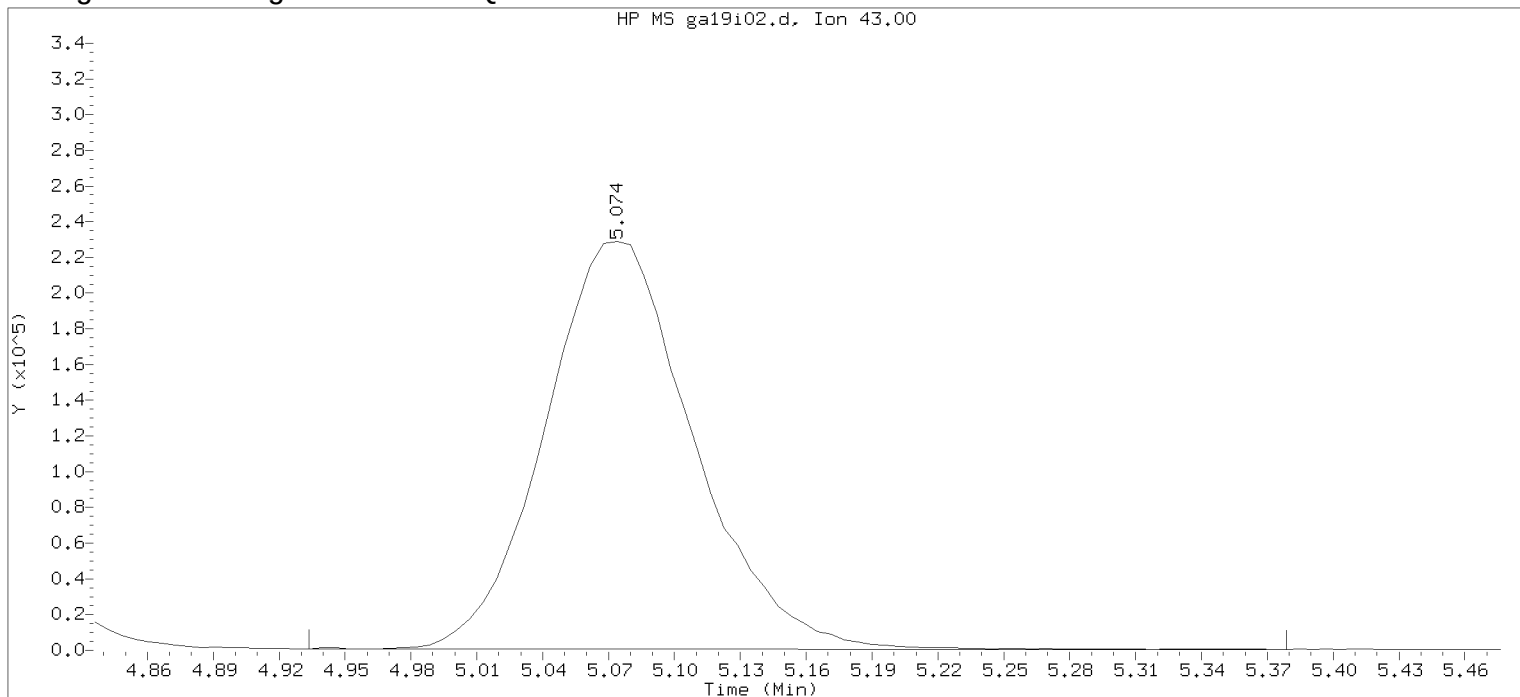
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 572

Retention Time (minutes): 5.074

Quant Ion : 43.00

Area : 1073258

On-column Amount (ng) : 99.5928

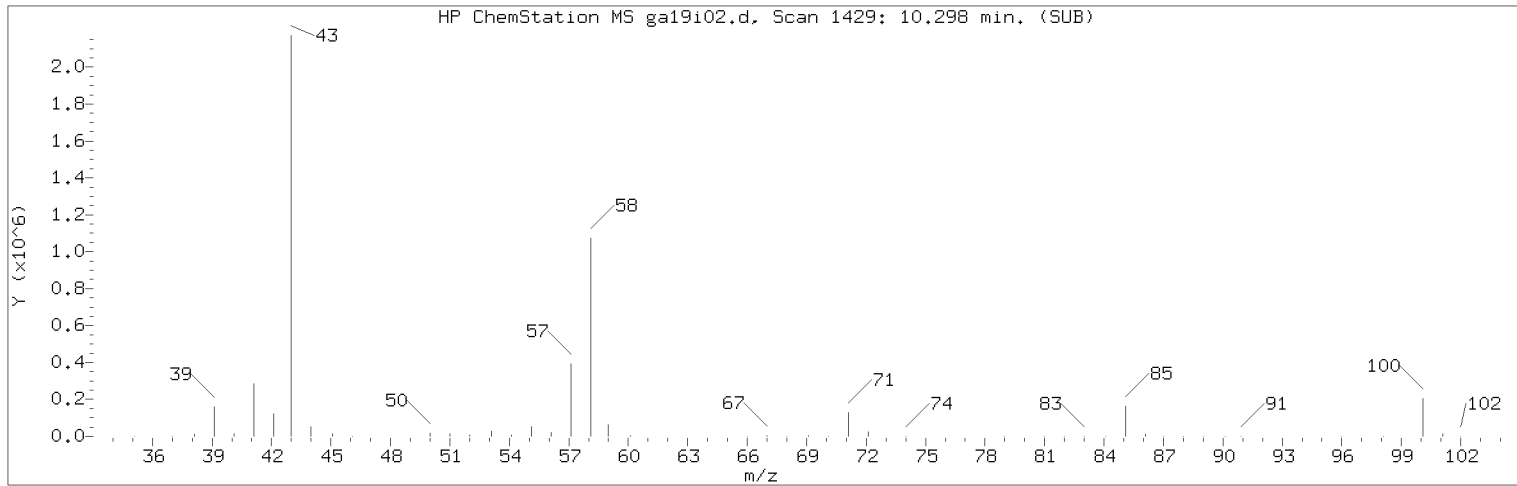
Integration start scan : 548 Integration stop scan: 621

Y at integration start : 754 Y at integration end: 391

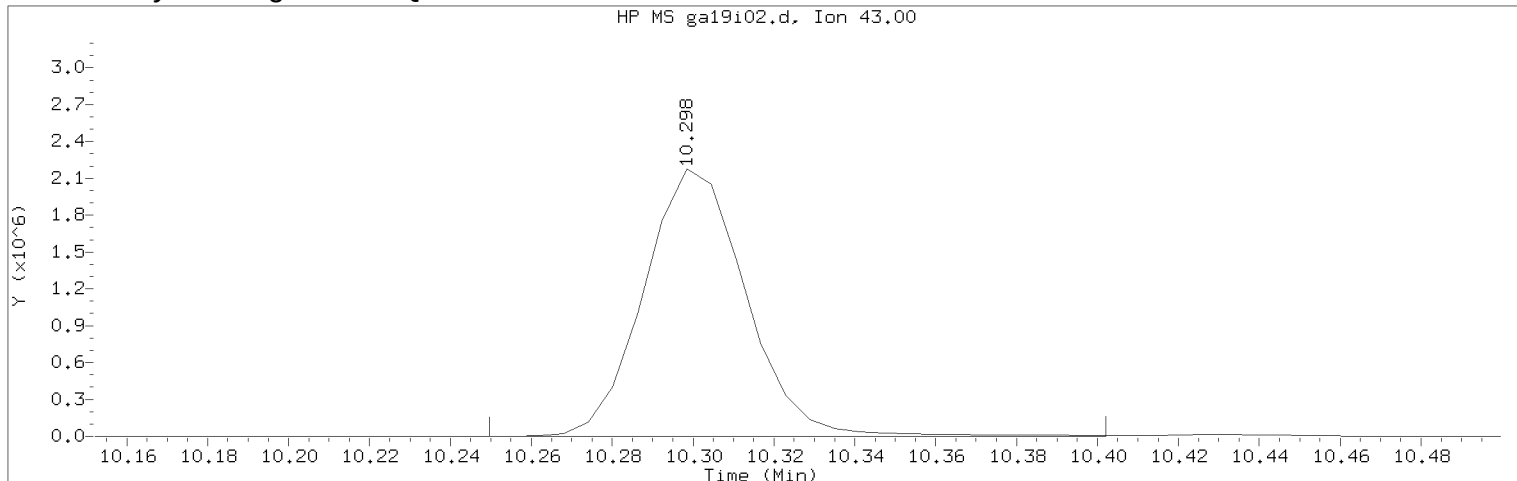
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:47.

Target 3.5 esignature userF1D52mB107270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1429	
Retention Time (minutes)	: 10.298	
Quant Ion	: 43.00	
Area (flag)	: 3809911M	
On-Column Amount (ng)	: 104.0737	
Integration start scan	: 1420	Integration stop scan: 1445
Y at integration start	: 111	Y at integration end: 111

Reason for manual integration: improper integration

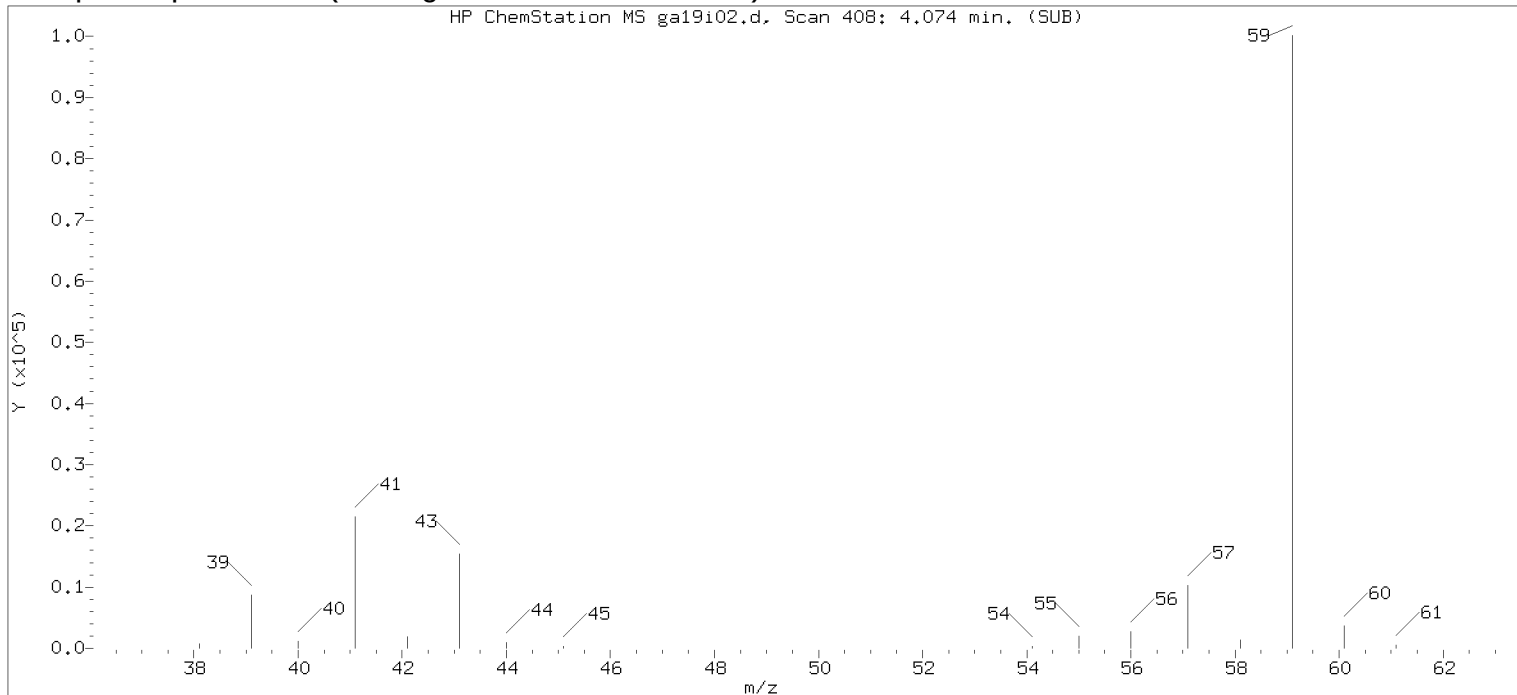
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

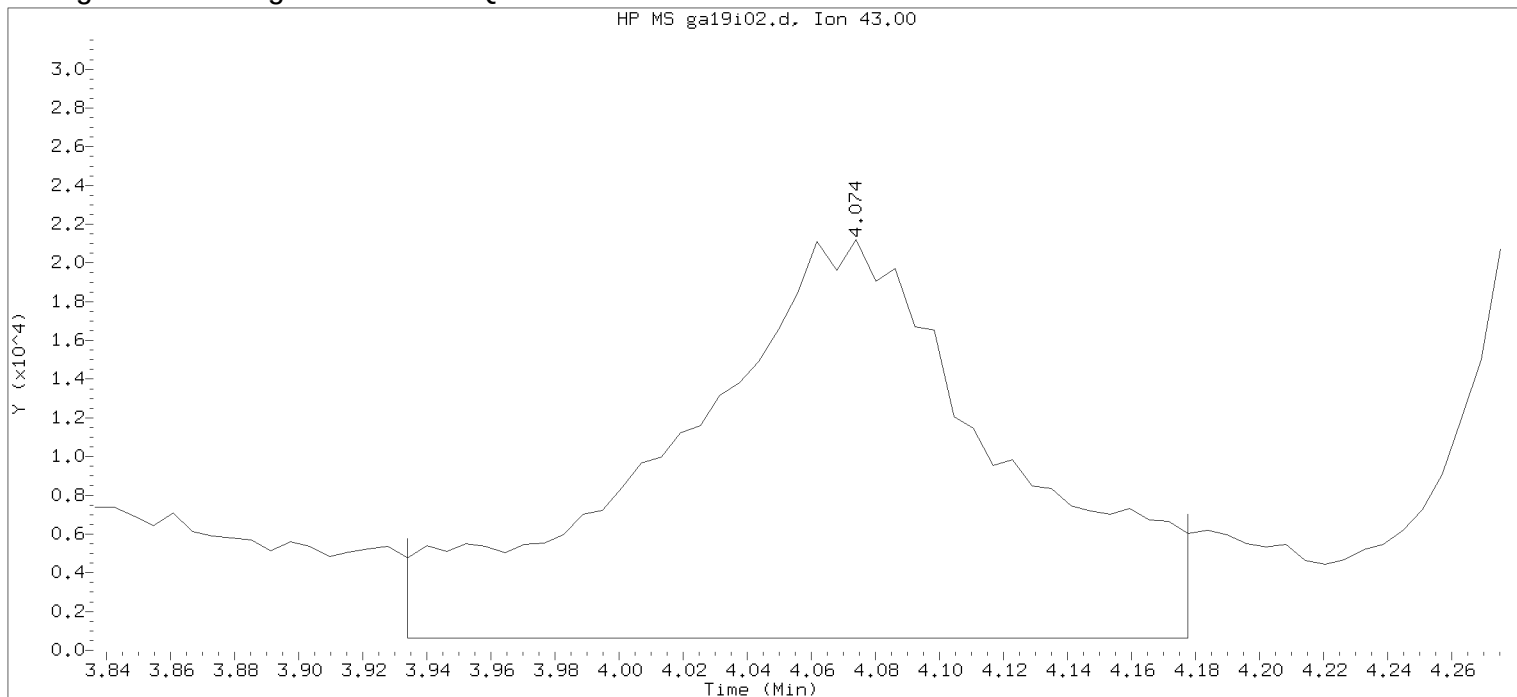
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

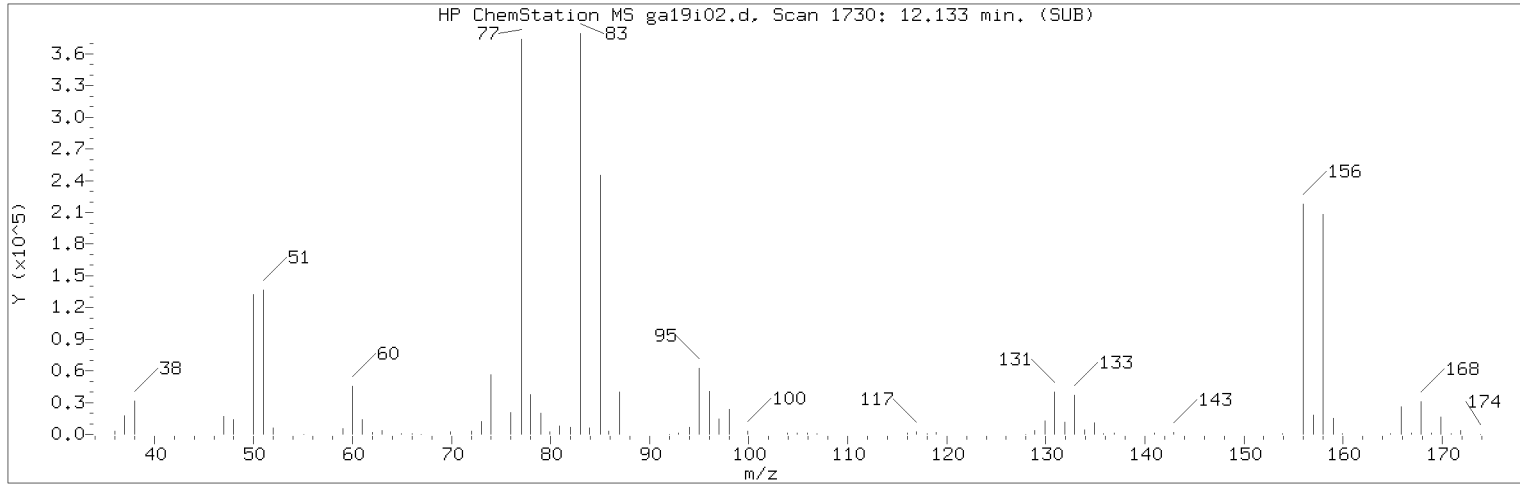
Lab Sample ID: VSTD010

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 408
 Retention Time (minutes): 4.074
 Quant Ion : 43.00
 Area : 146968
 On-column Amount (ng) : 103.4182
 Integration start scan : 384
 Y at integration start : 626

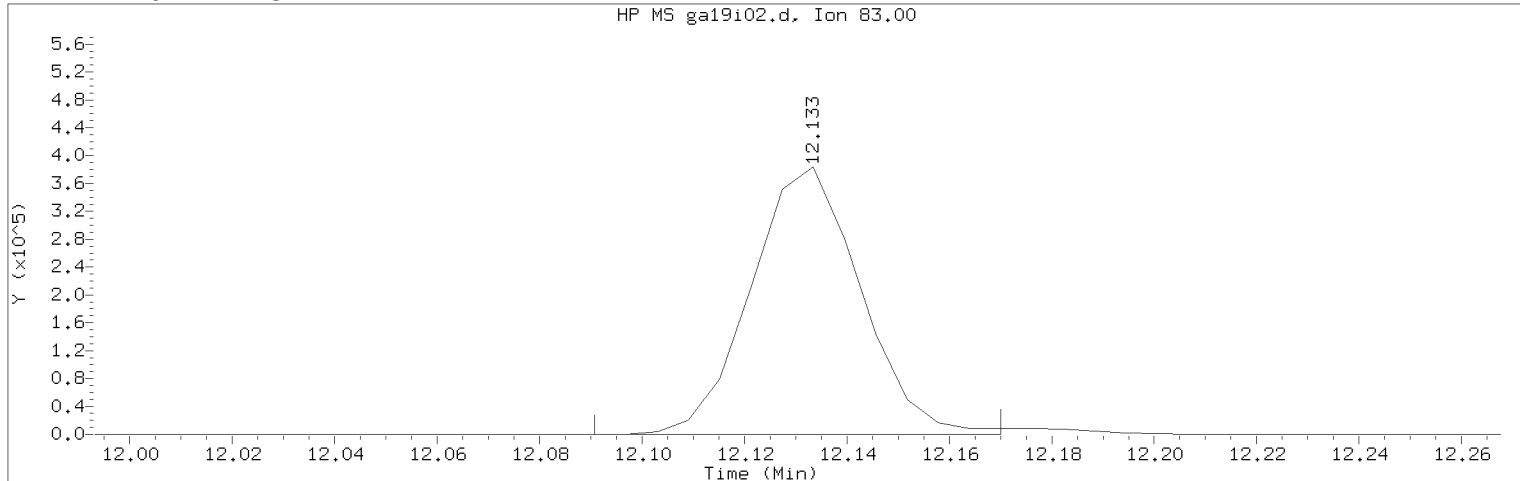
Integration stop scan: 424
 Y at integration end: 626

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 Target 3.5 esignature userF1D52mB497270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1730	
Retention Time (minutes)	: 12.133	
Quant Ion	: 83.00	
Area (flag)	: 568890M	
On-Column Amount (ng)	: 10.0125	
Integration start scan	: 1722	Integration stop scan: 1735
Y at integration start	: 0	Y at integration end: 65

Reason for manual integration: improper integration

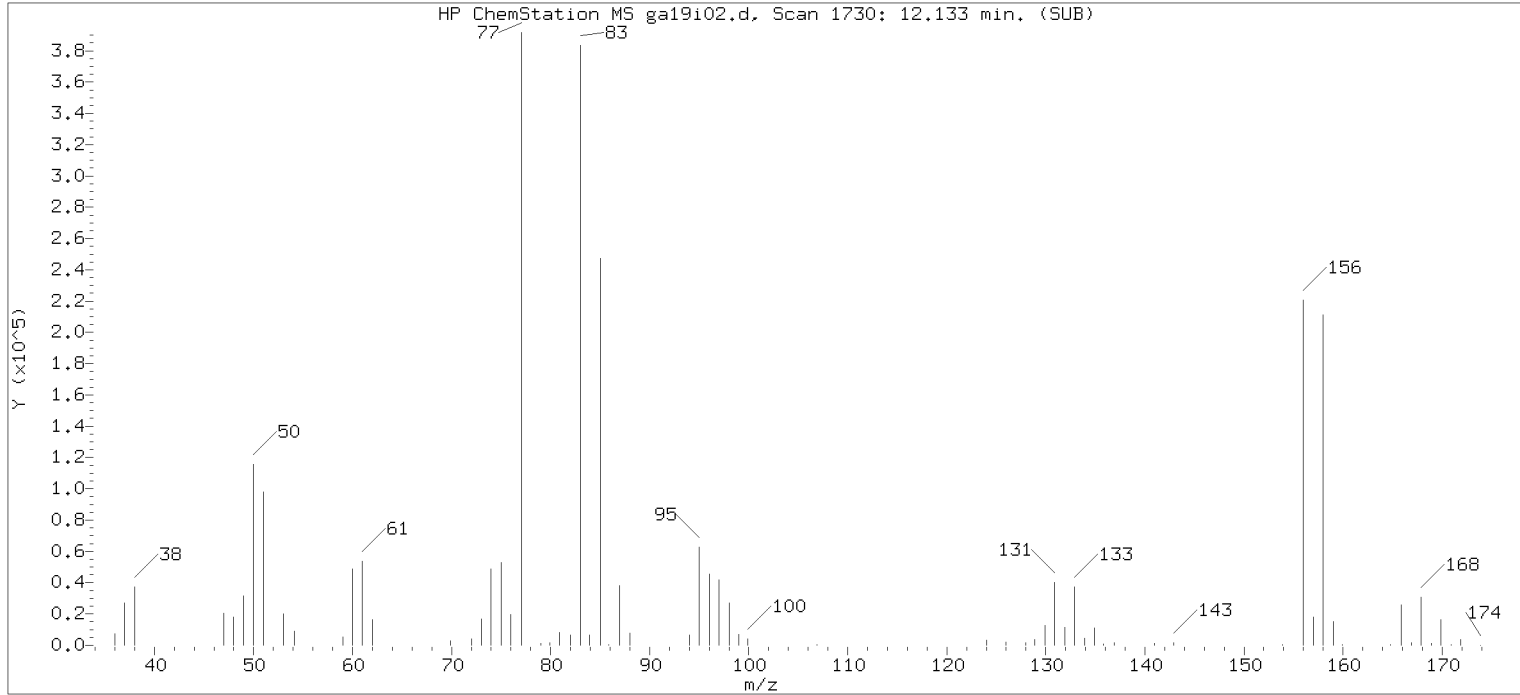
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:47.
Target 3.5 esignature user ID: msk07970

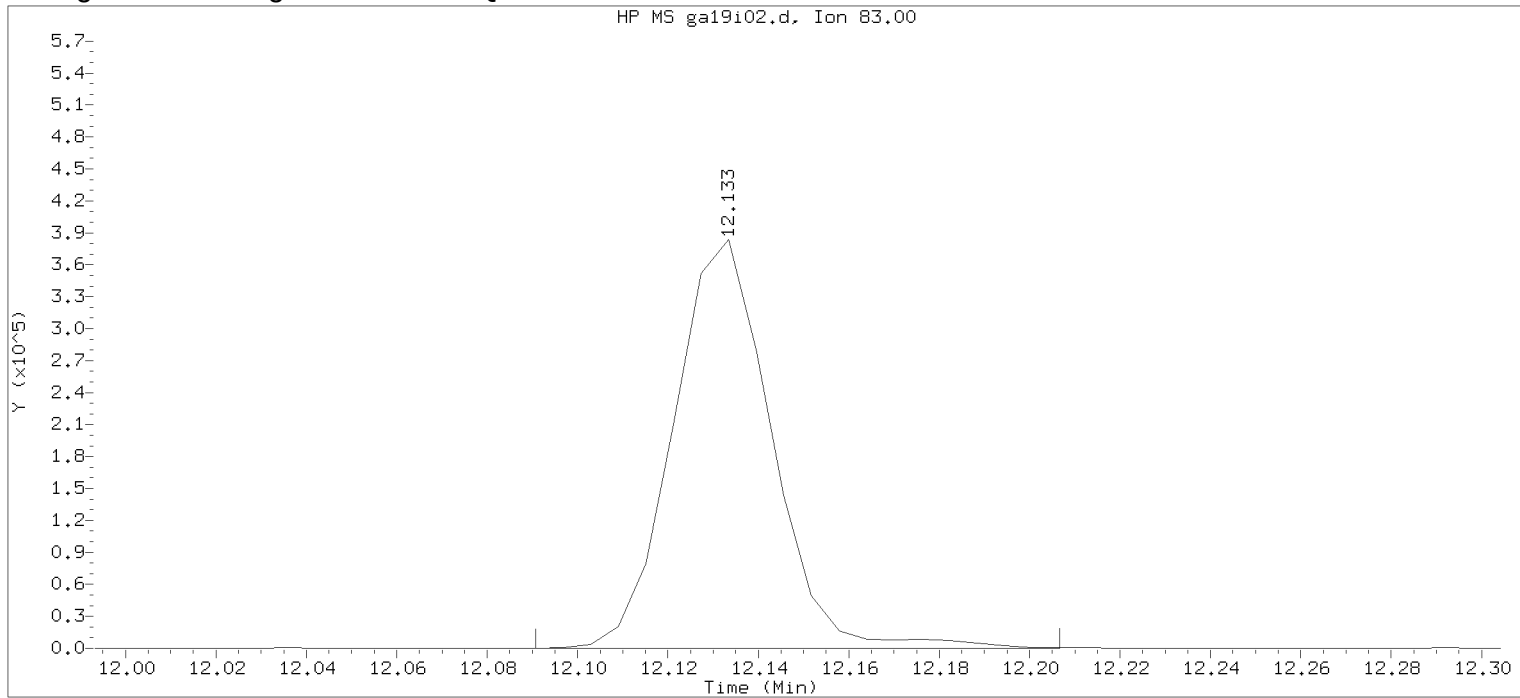
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i02.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 12:44

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:00

Date, time and analyst ID of latest file update: 19-Apr-2018 13:00 Automation

Sample Name: VSTD010

Lab Sample ID: VSTD010

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1730

Retention Time (minutes): 12.133

Quant Ion : 83.00

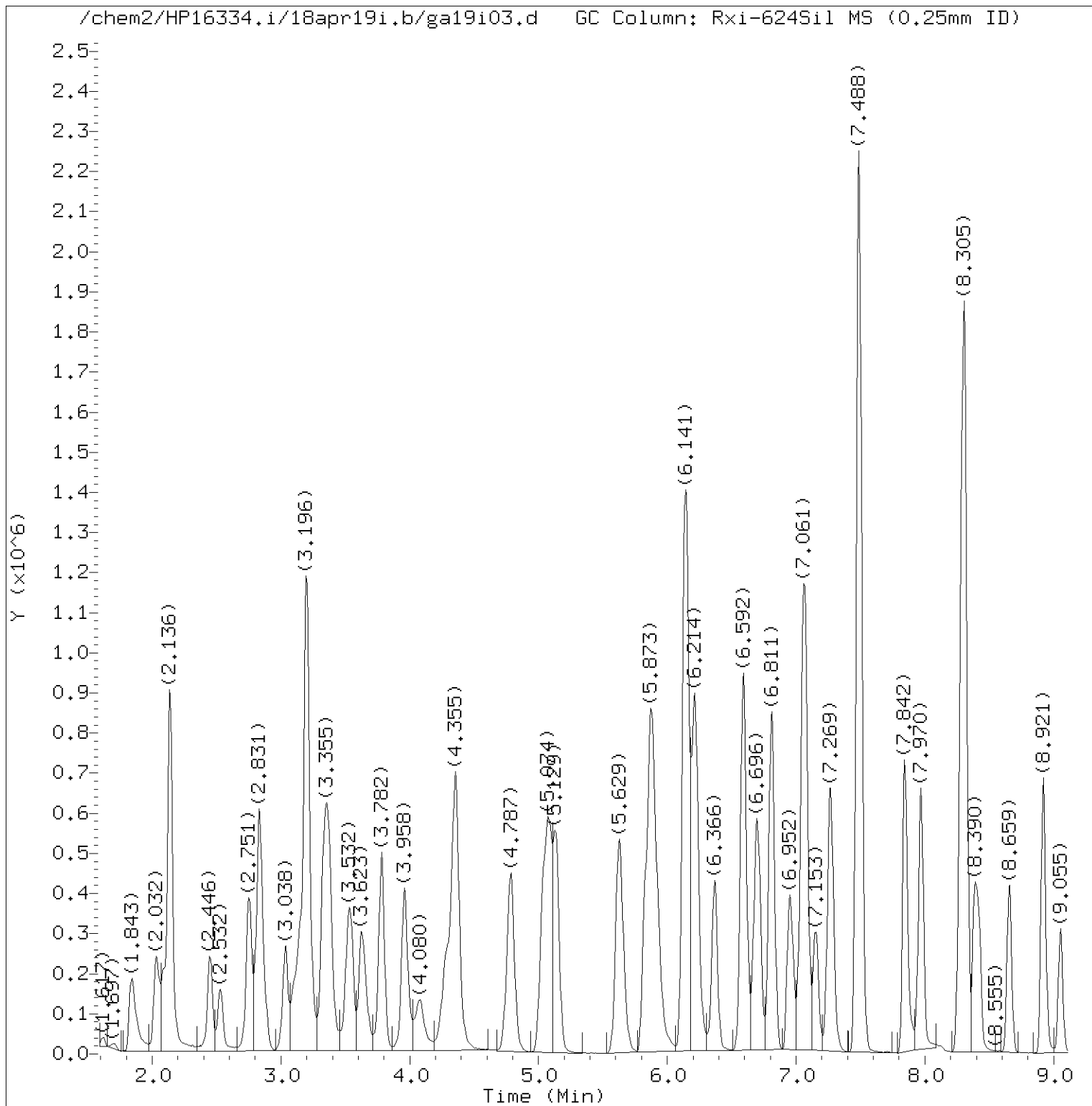
Area : 577289

On-column Amount (ng) : 10.0123

Integration start scan : 1722 Integration stop scan: 1741

Y at integration start : 0 Y at integration end: 96

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Target 3.5 esignature userF1D52mB107270 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
Analyst ID: JKH09052

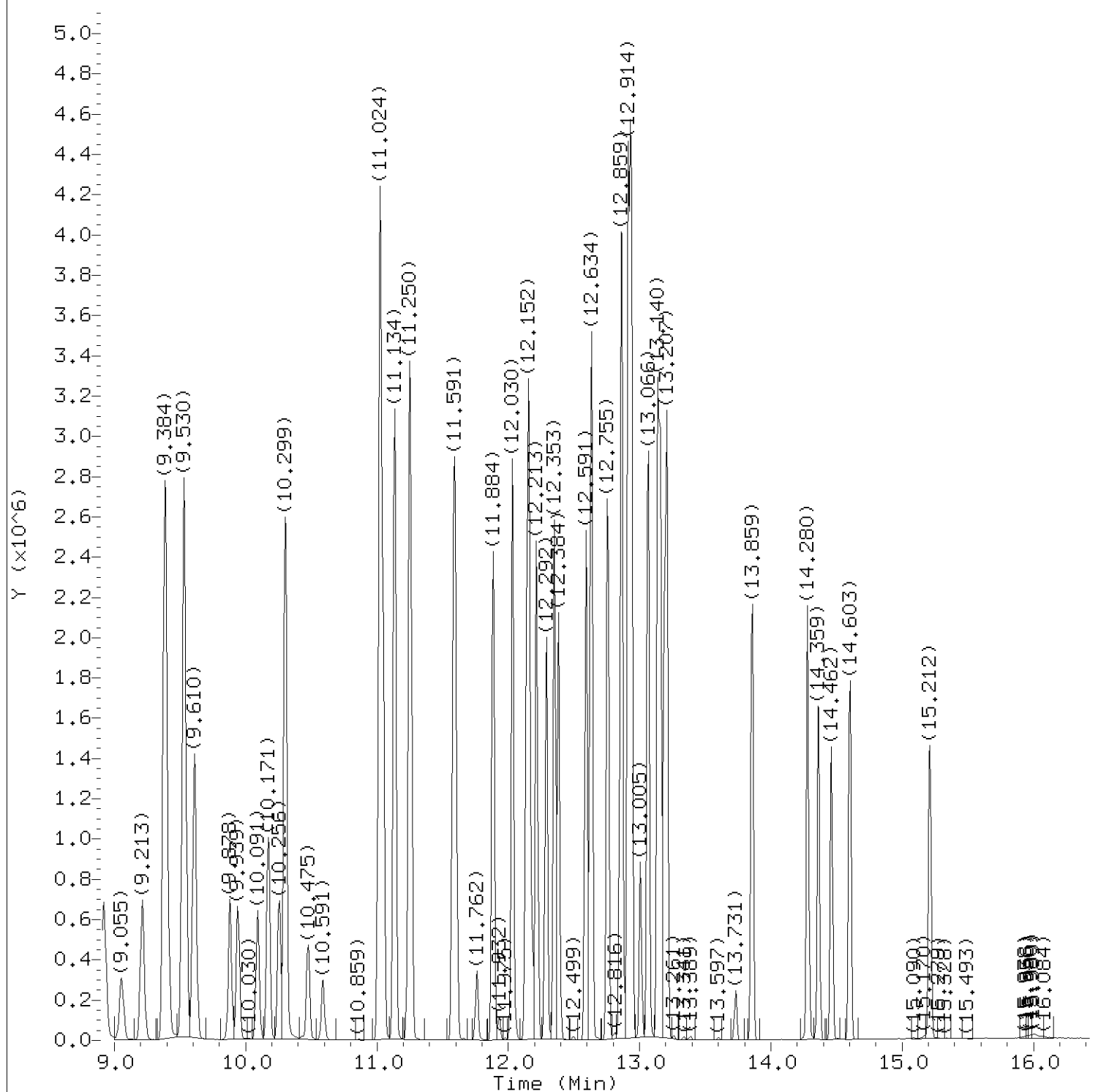
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 250 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
 Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.843	85	417203	5.085
2) Chloromethane	(2)	2.032	50	414757	5.222
5) Vinyl Chloride	(2)	2.136	62	356378	5.137
6) 1,3-Butadiene	(2)	2.136	39	663351M	5.590
7) Bromomethane	(2)	2.446	94	236409	5.136
8) Chloroethane	(2)	2.532	64	198000	5.115
9) Dichlorofluoromethane	(2)	2.751	67	470661	5.123
10) Trichlorofluoromethane	(2)	2.812	101	472523M	5.105
11) Ethyl ether	(2)	3.038	59	235320	5.196
12) Freon 123a	(2)	3.129	67	323672	5.108
13) Acrolein	(1)	3.196	56	1919900	260.760
15) 1,1-Dichloroethene	(2)	3.330	96	222059	5.048
14) Acetone	(1)	3.355	43	589695	53.121
16) Freon 113	(2)	3.379	101	258318	5.010
17) Methyl Iodide	(2)	3.519	142	442960	5.062
18) Carbon Disulfide	(2)	3.629	76	849766	5.021
21) Methyl Acetate	(1)	3.751	43	166799M	5.045
22) Allyl Chloride	(2)	3.782	41	515573	5.042
23) Methylene Chloride	(2)	3.958	84	271850	5.075
26)*t-Butyl Alcohol-d10	(1)	3.971	65	212064M	50.000
28) t-Butyl Alcohol	(1)	4.080	59	412964	110.124
29) Acrylonitrile	(1)	4.275	53	350503	25.729
30) Methyl Tertiary Butyl Ether	(2)	4.336	73	792450	5.039
31) trans-1,2-Dichloroethene	(2)	4.361	96	257096	5.024
32) n-Hexane	(2)	4.787	57	444493	4.977
33) 1,1-Dichloroethane	(2)	5.031	63	530841	5.039
34) di-Isopropyl Ether	(2)	5.080	45	1093343	5.034
35) 2-Chloro-1,3-Butadiene	(2)	5.141	53	483399	4.995
37) Ethyl t-butyl ether	(2)	5.629	59	973433	5.050
38) 2-Butanone	(1)	5.830	43	1065205	51.696
39) cis-1,2-Dichloroethene	(2)	5.873	96	296441	5.033
41) 2,2-Dichloropropane	(2)	5.891	77	444467	5.000
42) Propionitrile	(1)	5.928	54	506118	98.722
40) 1,2-Dichloroethene (Total)	(2)		96	553537	10.057
45) Methacrylonitrile	(1)	6.147	67	844141	51.348
47) Bromochloromethane	(2)	6.214	128	138690	5.043
48) Tetrahydrofuran	(1)	6.214	71	251549	50.743
49) Chloroform	(2)	6.366	83	510783	5.028

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

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Target 3.5 esignature user ID: msk07970

FKP52 Page 252 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
 Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
51) 1,1,1-Trichloroethane	(2)	6.592	97	431292	4.977
50)\$Dibromofluoromethane	(2)	6.592	113	544328	10.038
50)\$Dibromofluoromethane	(2)	6.586	111	559453	10.043
52) Cyclohexane	(2)	6.696	56	522771	5.009
52) Cyclohexane	(2)	6.696	84	395325	4.956
52) Cyclohexane	(2)	6.702	69	151811	5.009
54) Carbon Tetrachloride	(2)	6.811	117	357329	4.906
55) 1,1-Dichloropropene	(2)	6.811	75	400762	5.013
56) Isobutyl Alcohol	(1)	6.952	41	394402	256.843
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	115430	10.133
57)\$1,2-Dichloroethane-d4	(2)	7.049	65	644780	10.038
57)\$1,2-Dichloroethane-d4	(2)	7.043	104	70285	9.992
58) Benzene	(2)	7.074	78	1096523	4.999
59) 1,2-Dichloroethane	(2)	7.153	62	376712	5.026
60) t-Amyl methyl ether	(2)	7.269	73	819812	4.970
63)*Fluorobenzene	(2)	7.488	96	2151089	10.000
62) n-Heptane	(2)	7.500	43	525768	4.950
65) n-Butanol	(1)	7.842	56	675021M	511.576
67) Trichloroethene	(2)	7.970	95	290624	4.976
69) Methylcyclohexane	(2)	8.281	83	509485	5.001
70) 1,2-Dichloropropane	(2)	8.305	63	311487	5.020
71) Methyl Methacrylate	(1)	8.384	69	165361	5.129
72) 1,4-Dioxane	(1)	8.390	88	60823M	254.925
73) Dibromomethane	(2)	8.421	93	146012	4.950
74) Bromodichloromethane	(2)	8.659	83	368289	4.866
76) 2-Nitropropane	(1)	8.921	41	573397	49.264
80) cis-1,3-Dichloropropene	(2)	9.213	75	465166	4.885
81) 4-Methyl-2-Pentanone	(1)	9.384	43	2642519M	51.640
82)\$Toluene-d8	(3)	9.530	98	2184587	9.968
82)\$Toluene-d8	(3)	9.530	100	1387314	9.916
83) Toluene	(3)	9.610	92	694171	4.968
84) trans-1,3-Dichloropropene	(3)	9.878	75	398431	4.864
86) Ethyl Methacrylate	(3)	9.939	69	352849	4.906
88) 1,1,2-Trichloroethane	(3)	10.091	97	210222	4.978
85) 1,3-Dichloropropene (total)	(3)		75	863597	9.749
89) Tetrachloroethene	(3)	10.171	166	320176	4.951
90) 1,3-Dichloropropane	(3)	10.256	76	382596	4.992
91) 2-Hexanone	(1)	10.299	43	1892288M	52.236

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 253 of 730

page 2 of 4

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	247750	4.780
95) 1,2-Dibromoethane	(3)	10.591	107	204398	4.954
97)*Chlorobenzene-d5	(3)	11.018	117	1639809	10.000
98) Chlorobenzene	(3)	11.048	112	794031	4.977
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	277874	4.846
100) Ethylbenzene	(3)	11.134	91	1380634	4.992
101) m+p-Xylene	(3)	11.250	106	1059519	9.881
104) o-Xylene	(3)	11.579	106	535967	4.912
106) Styrene	(3)	11.597	104	889883	4.871
105) Xylene (Total)	(3)		106	1595486	14.793
107) Bromoform	(3)	11.762	173	144994	4.639
108) Isopropylbenzene	(3)	11.884	105	1393669	4.965
111)\$4-Bromofluorobenzene	(3)	12.030	95	837615	9.965
111)\$4-Bromofluorobenzene	(3)	12.030	174	714713	9.927
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	276992M	4.959
114) Bromobenzene	(4)	12.146	156	357365	4.918
116) 1,2,3-Trichloropropane	(4)	12.182	110	76345	4.998
117) n-Propylbenzene	(4)	12.213	91	1671661	5.062
119) 2-Chlorotoluene	(4)	12.292	126	332689	5.026
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	1198308	4.970
122) 4-Chlorotoluene	(4)	12.384	126	348401	5.003
125) tert-Butylbenzene	(4)	12.591	134	245761	4.905
126) Pentachloroethane	(4)	12.627	167	209242	4.747
127) 1,2,4-Trimethylbenzene	(4)	12.634	105	1237700	4.984
128) sec-Butylbenzene	(4)	12.755	105	1545057	5.013
131) 1,3-Dichlorobenzene	(4)	12.859	146	715707	4.923
132) p-Isopropyltoluene	(4)	12.865	119	1332255	4.927
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	919901	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	724924	4.954
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	548457	4.945
136) Benzyl Chloride	(4)	13.005	126	103940	4.621
138) n-Butylbenzene	(4)	13.158	92	712786	4.958
139) 1,2-Dichlorobenzene	(4)	13.188	146	674105	4.924
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	39955	4.752
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	594445	4.900
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	554681	4.908
146) Hexachlorobutadiene	(4)	14.365	225	286762	4.923
147) Naphthalene	(4)	14.462	128	936001	4.947

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 254 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d
Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

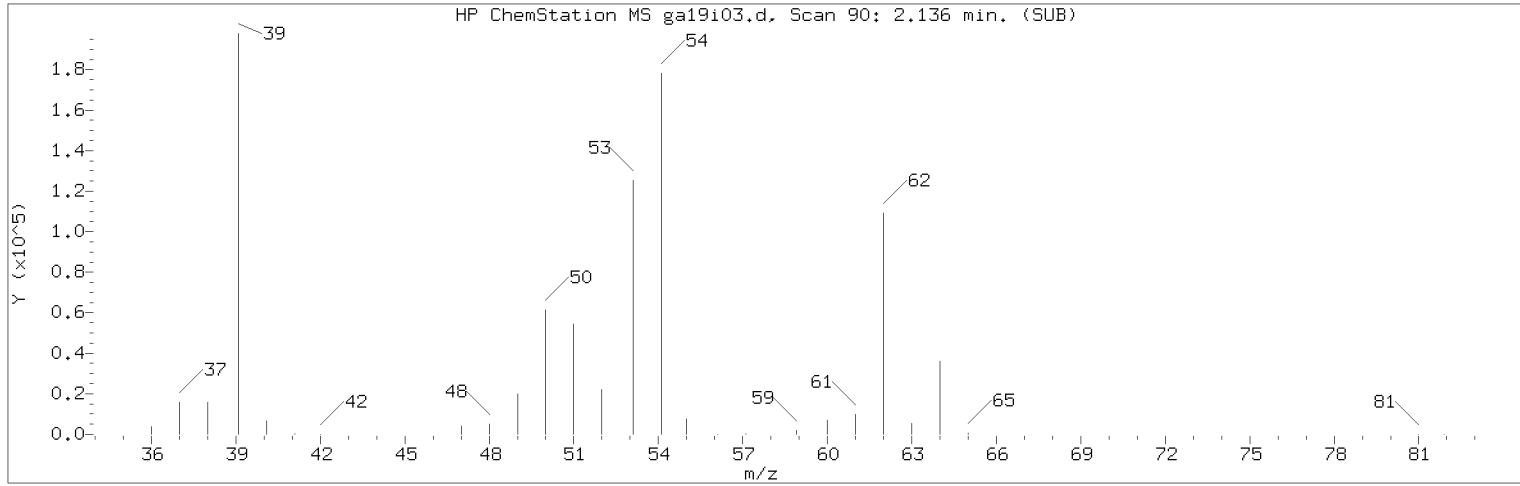
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	473255	4.913

page 4 of 4

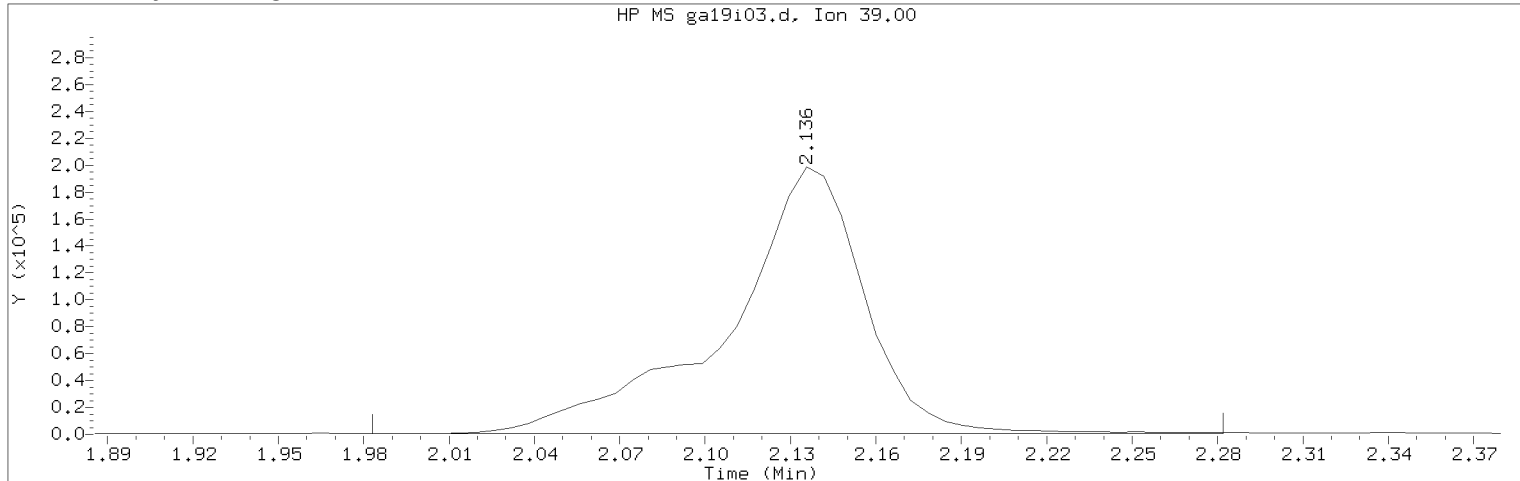
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 90	
Retention Time (minutes)	: 2.136	
Quant Ion	: 39.00	
Area (flag)	: 663351M	
On-Column Amount (ng)	: 5.5900	
Integration start scan	: 64	Integration stop scan: 113
Y at integration start	: 316	Y at integration end: 316

Reason for manual integration: improper integration

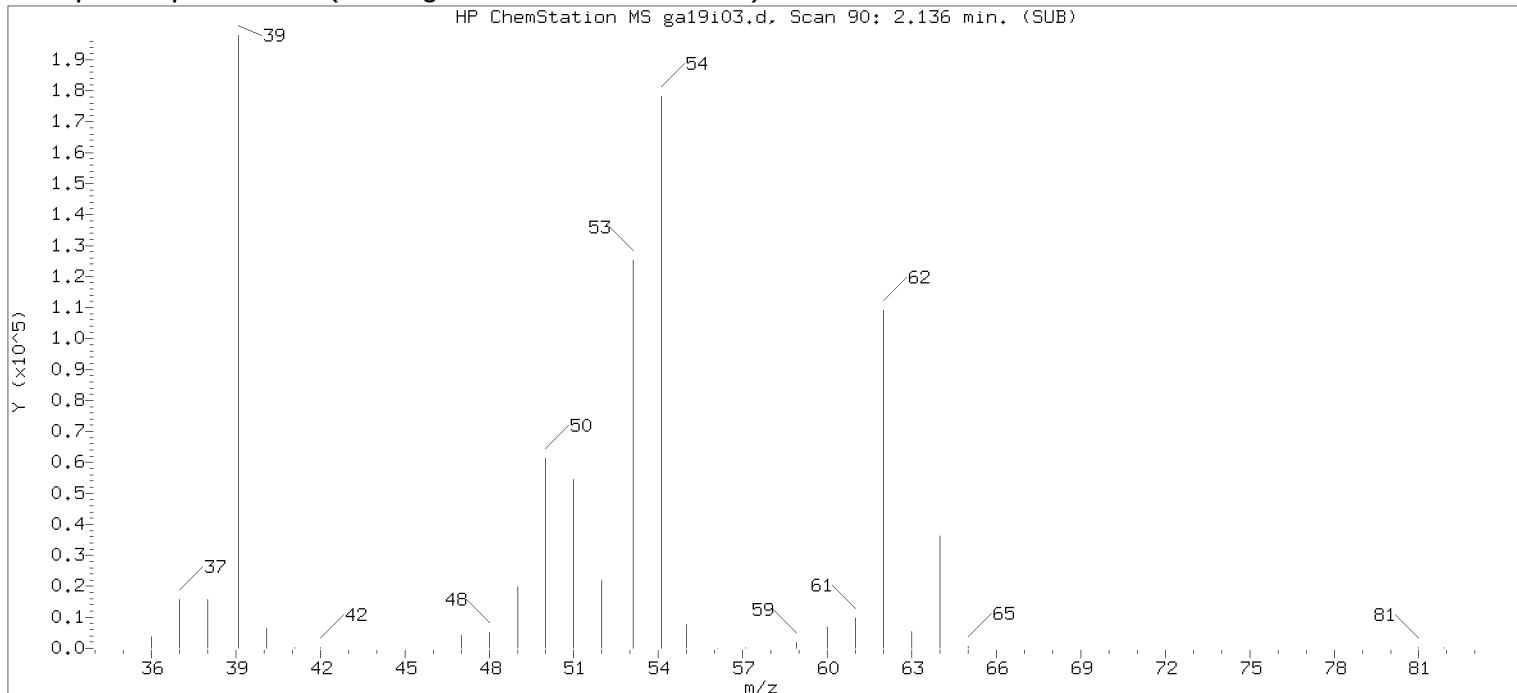
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

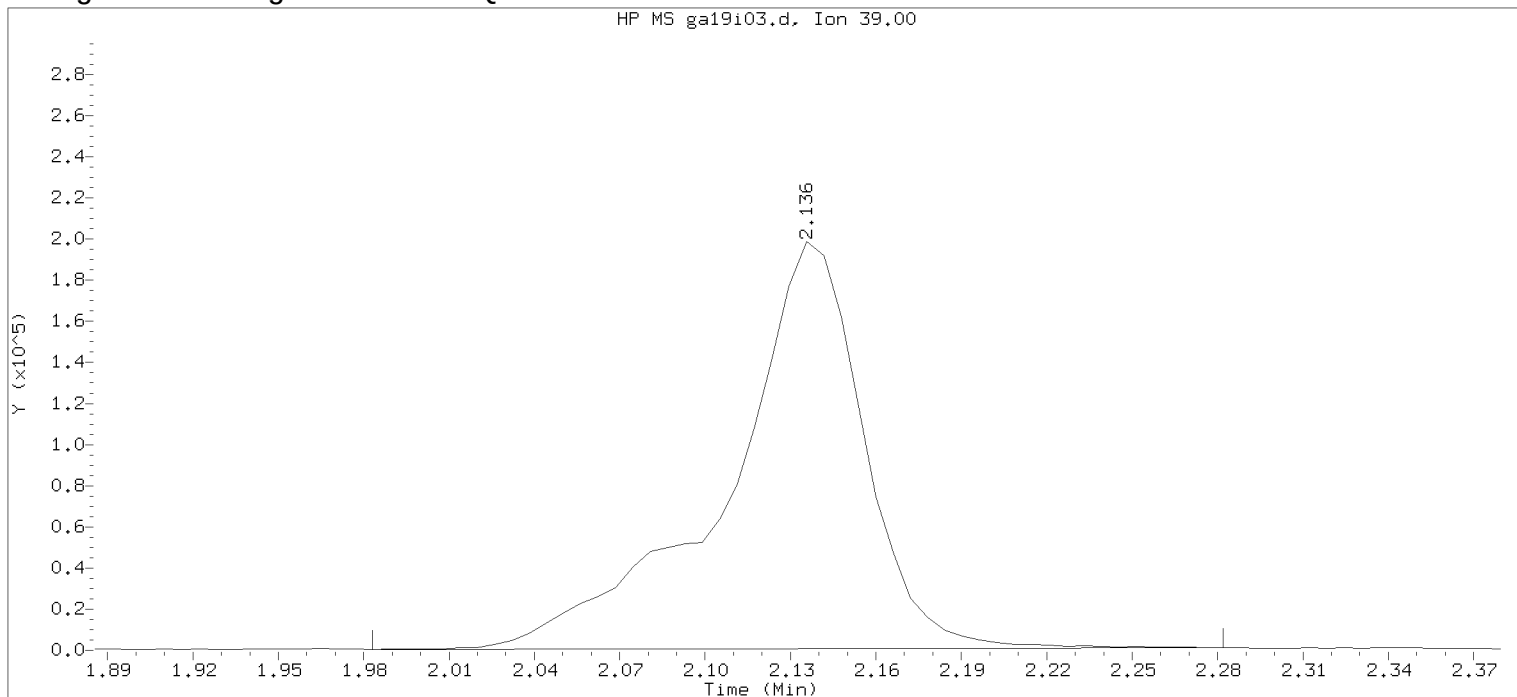
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 90

Retention Time (minutes): 2.136

Quant Ion : 39.00

Area : 654429

On-column Amount (ng) : 5.7475

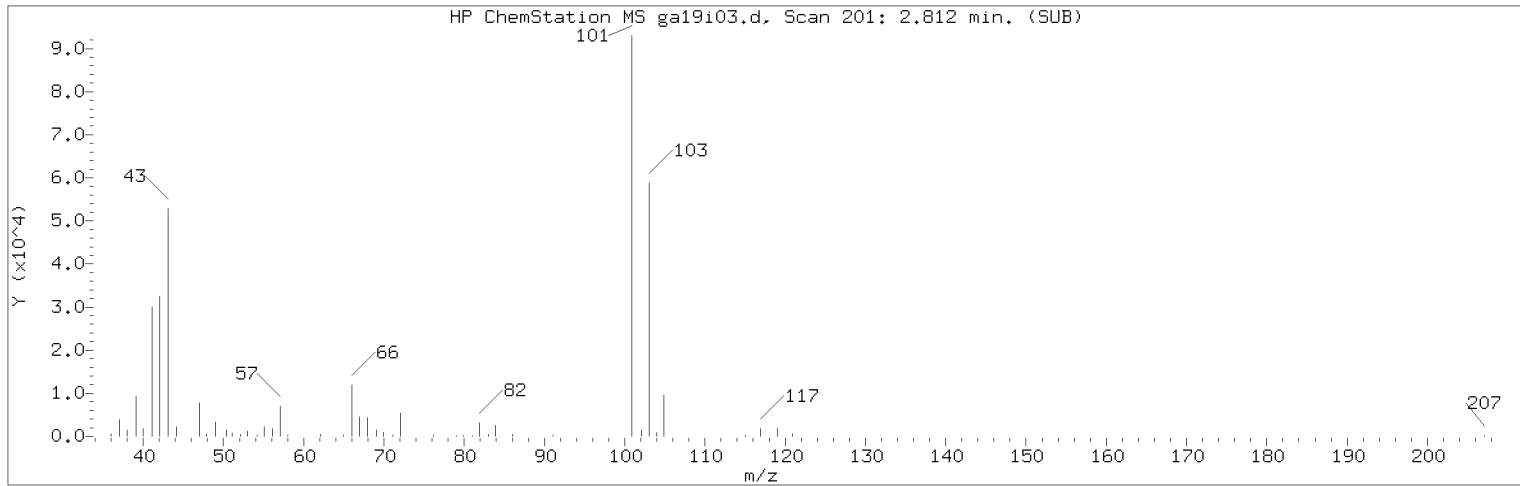
Integration start scan : 64 Integration stop scan: 113

Y at integration start : 412 Y at integration end: 1196

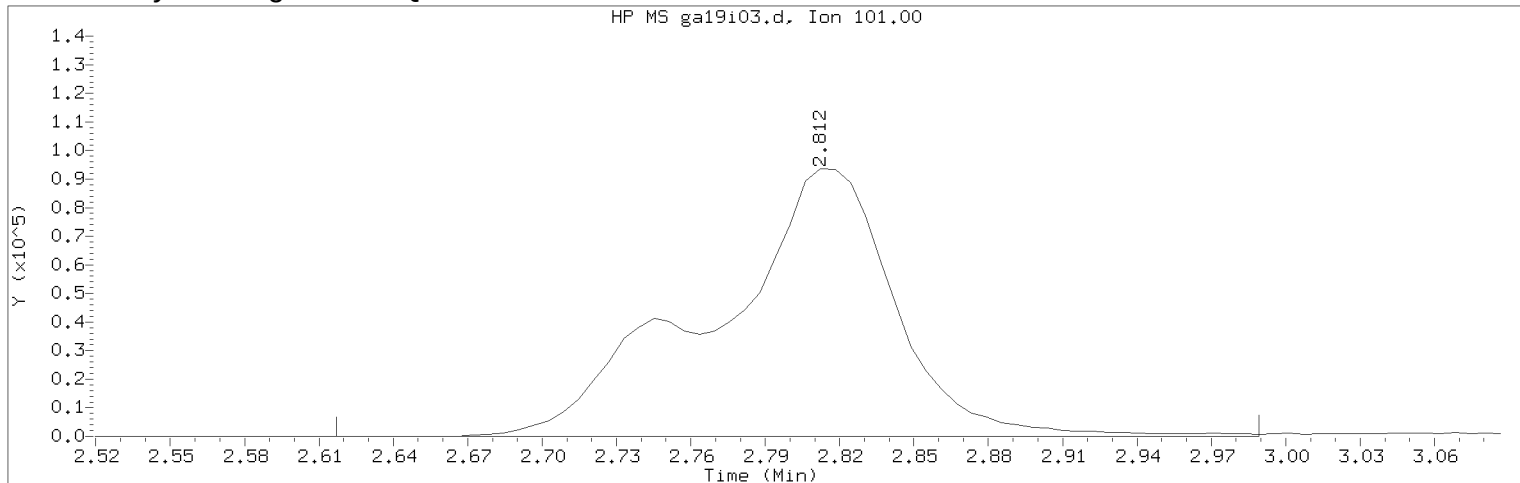
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB497230 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area (flag) : 472523M

On-Column Amount (ng) : 5.1052

Integration start scan : 168

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 Matthew S. Krause

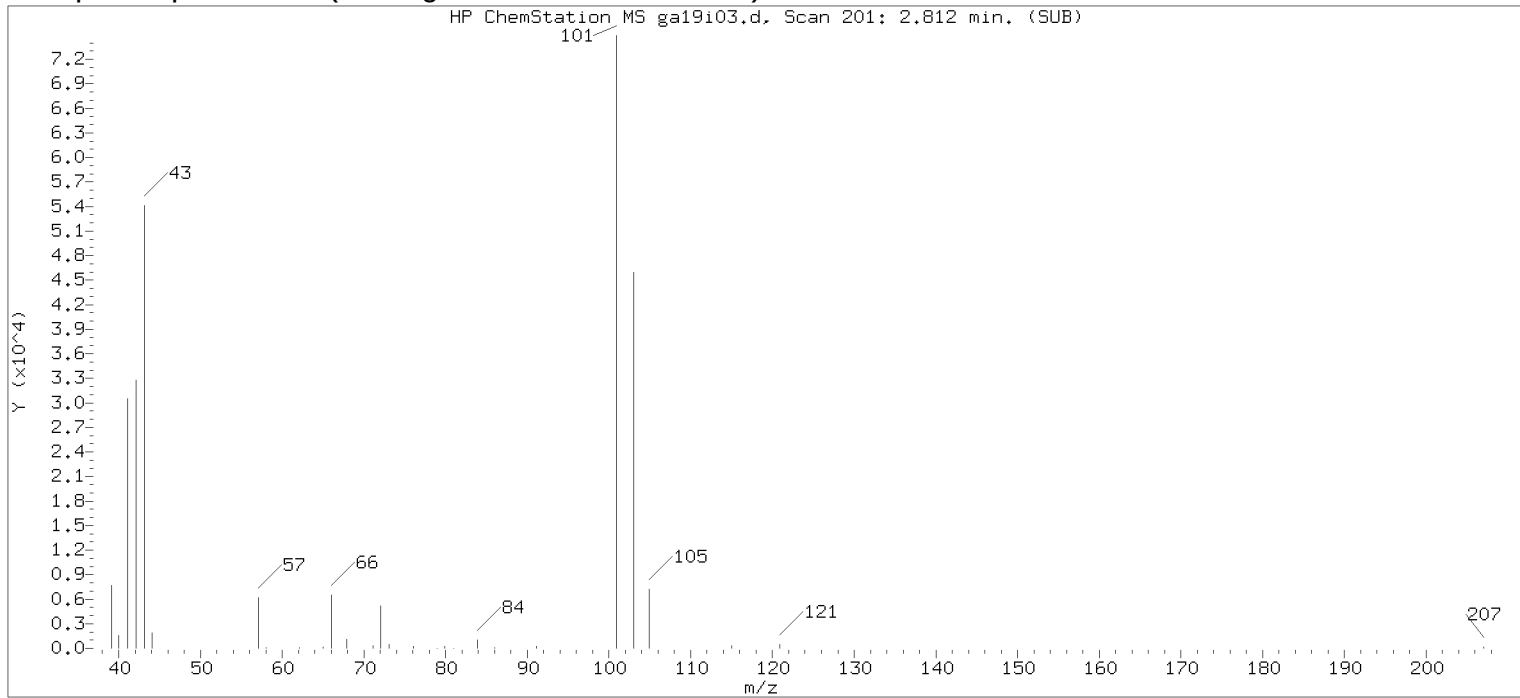
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

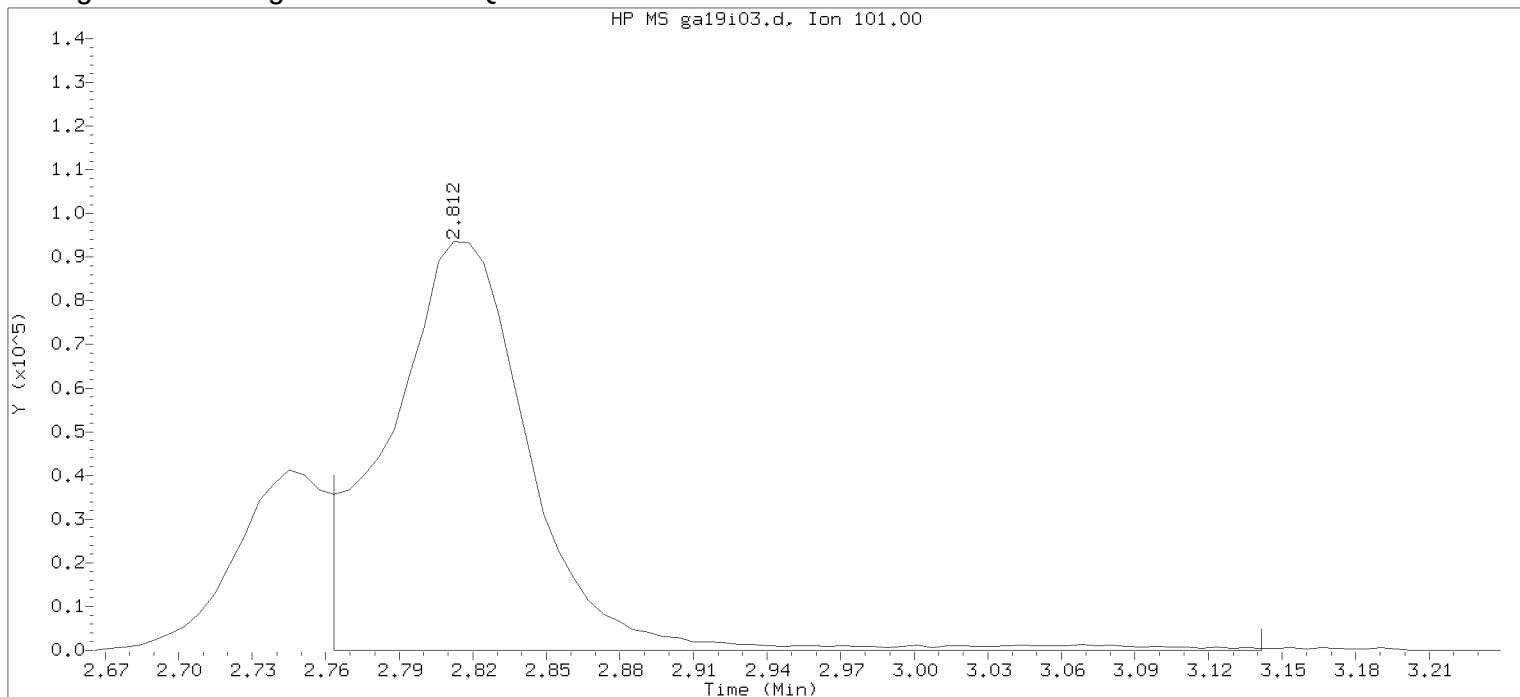
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area : 374647

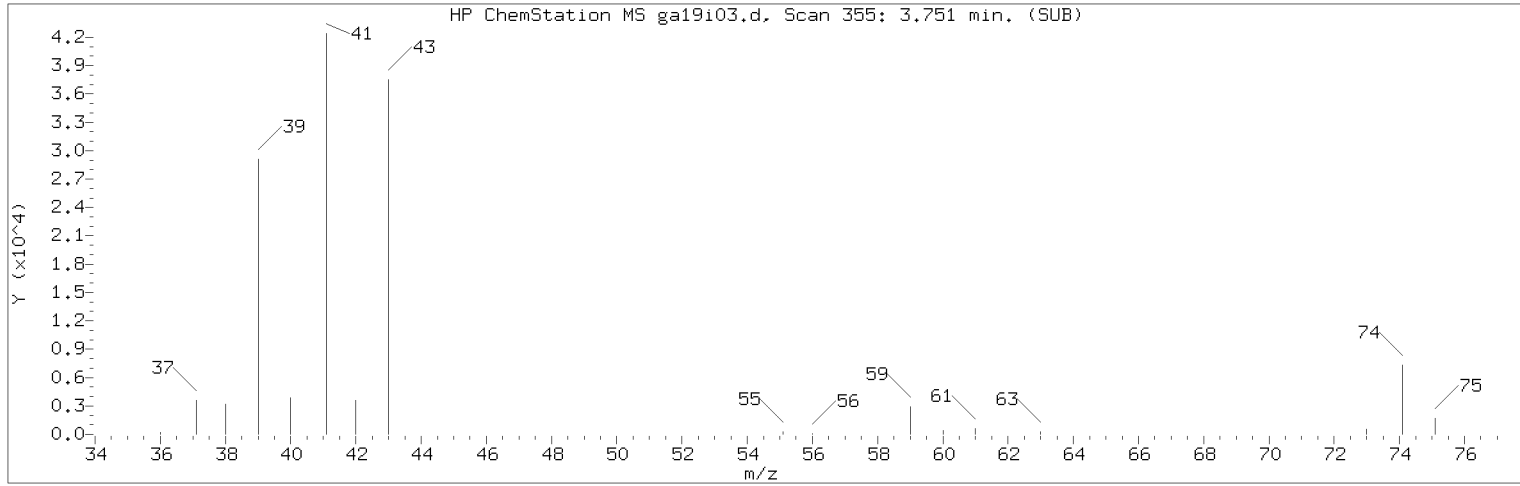
On-column Amount (ng) : 4.3061

Integration start scan : 192 Integration stop scan: 254

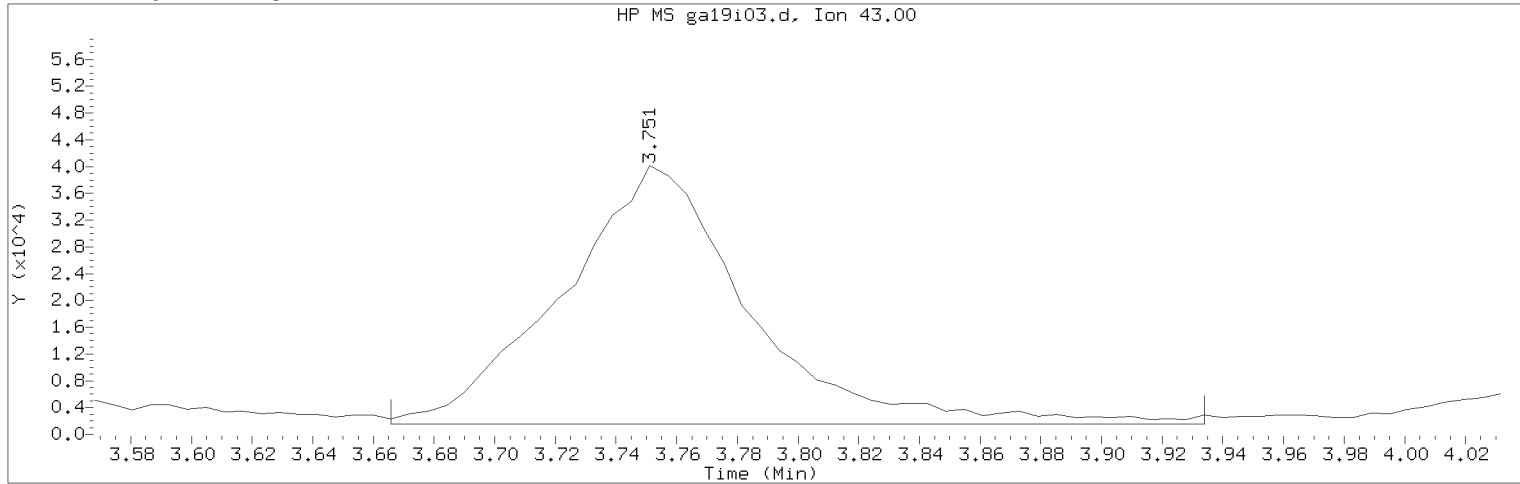
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB407230 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

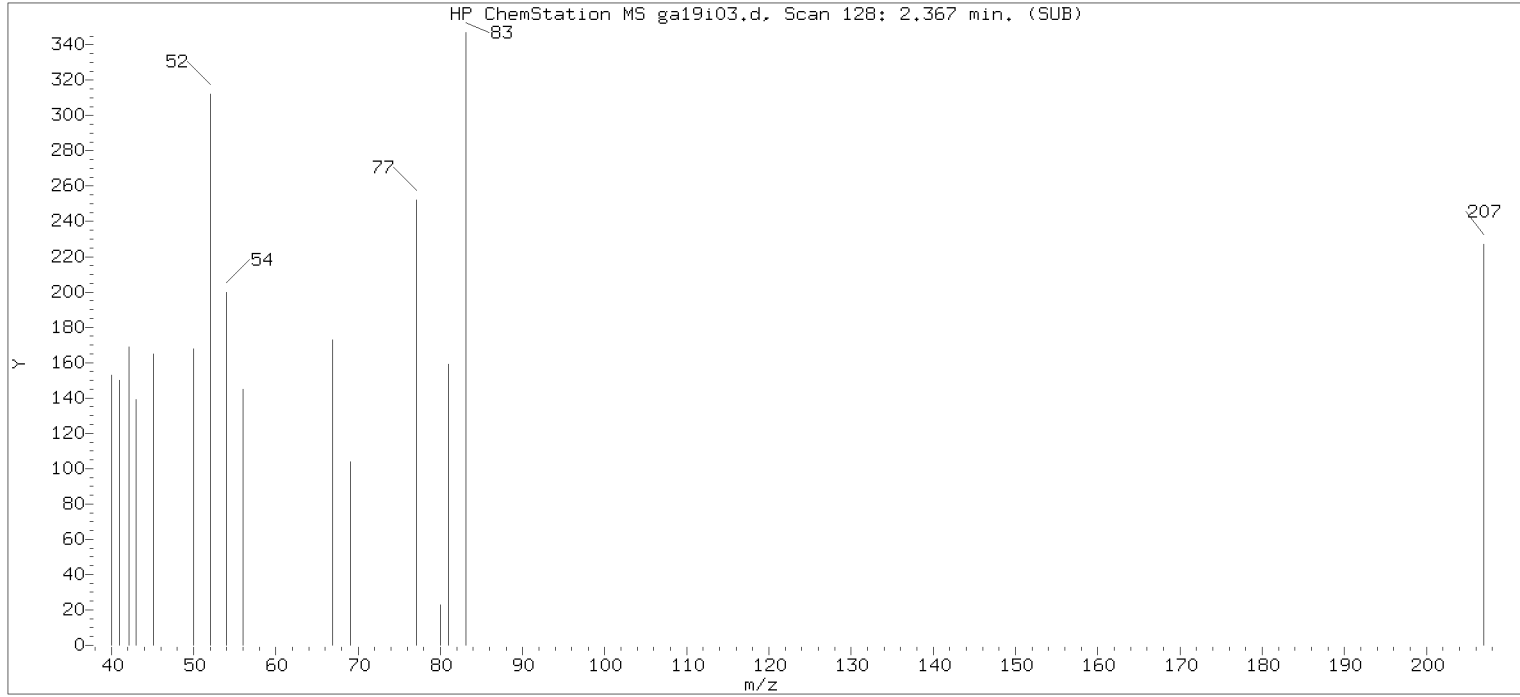
Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 355	
Retention Time (minutes)	: 3.751	
Quant Ion	: 43.00	
Area (flag)	: 166799M	
On-Column Amount (ng)	: 5.0449	
Integration start scan	: 340	Integration stop scan: 384
Y at integration start	: 1496	Y at integration end: 1496

Reason for manual integration: improper integration

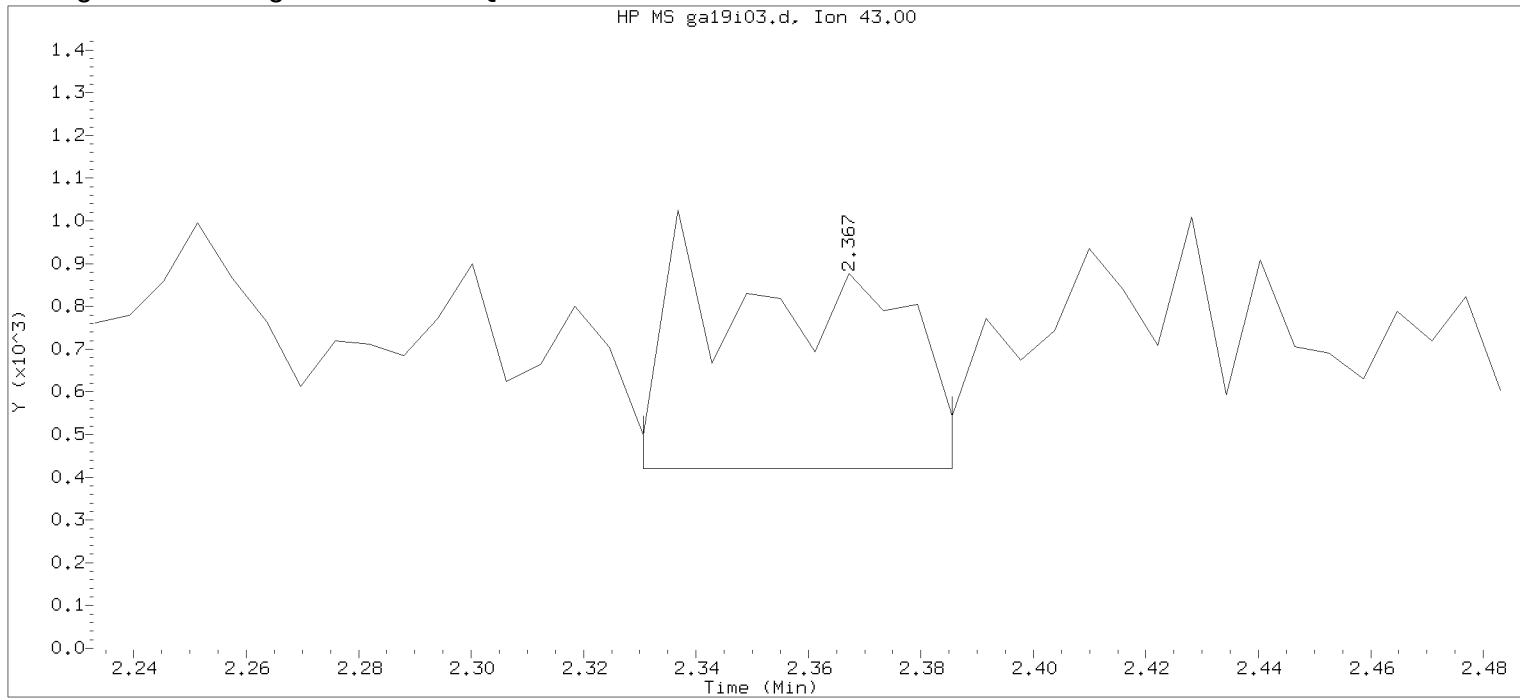
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 128

Retention Time (minutes): 2.367

Quant Ion : 43.00

Area : 1188

On-column Amount (ng) : 5.7616

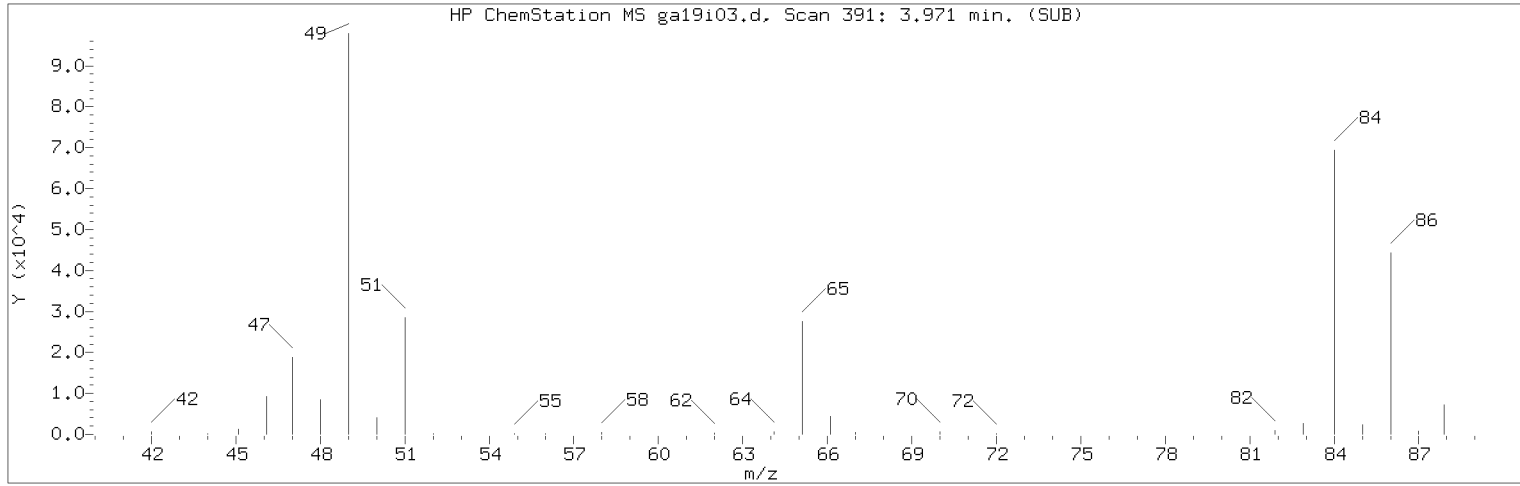
Integration start scan : 121 Integration stop scan: 130

Y at integration start : 420 Y at integration end: 420

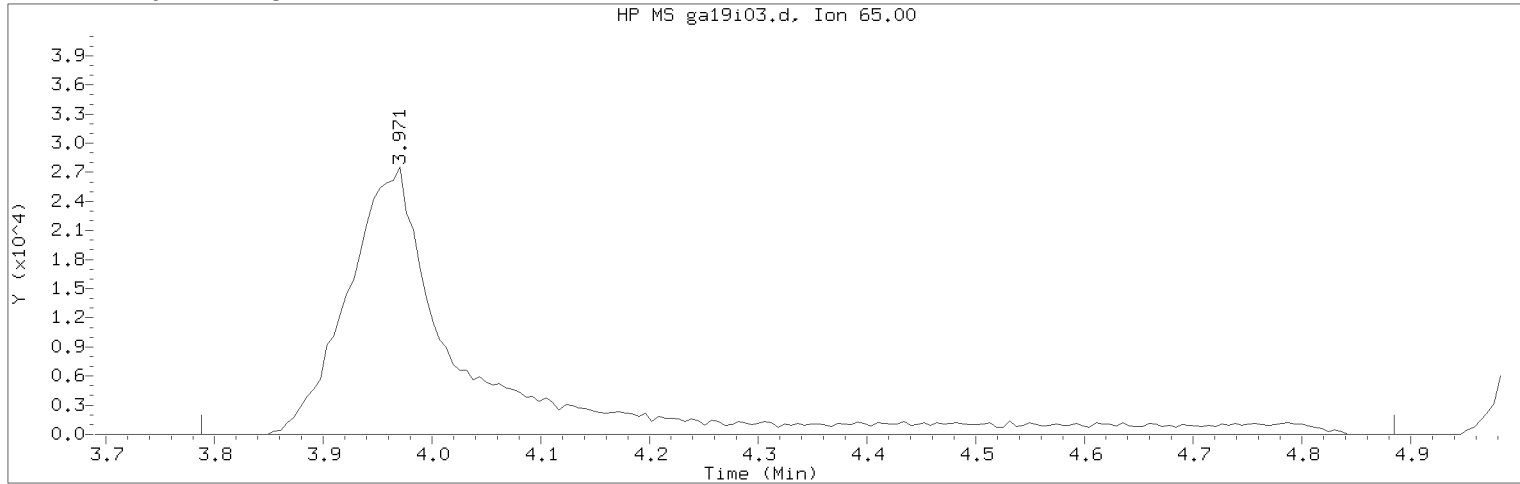
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB497260 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number	: 26	
Compound Name	: t-Butyl Alcohol-d10	
Scan Number	: 391	
Retention Time (minutes)	: 3.971	
Quant Ion	: 65.00	
Area (flag)	: 212064M	
On-Column Amount (ng)	: 50.0000	
Integration start scan	: 360	Integration stop scan: 540
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

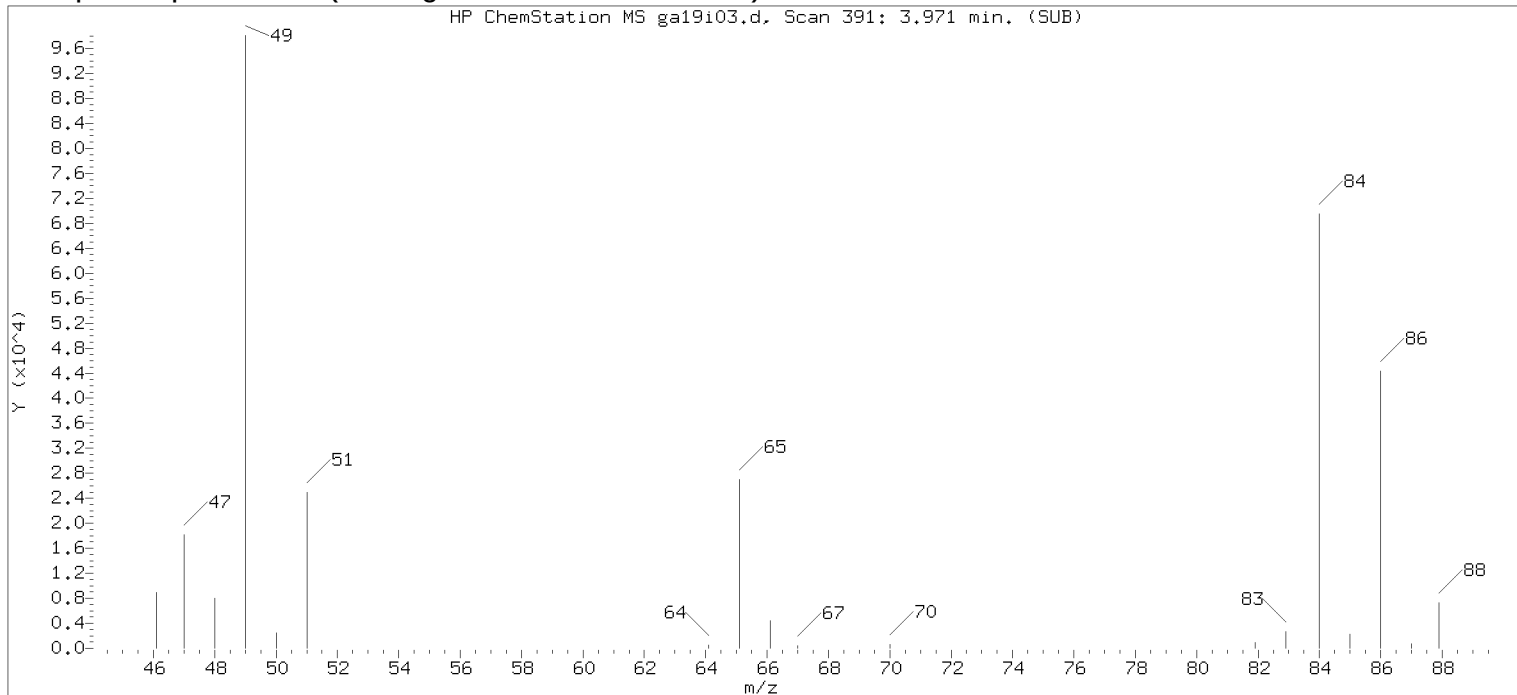
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

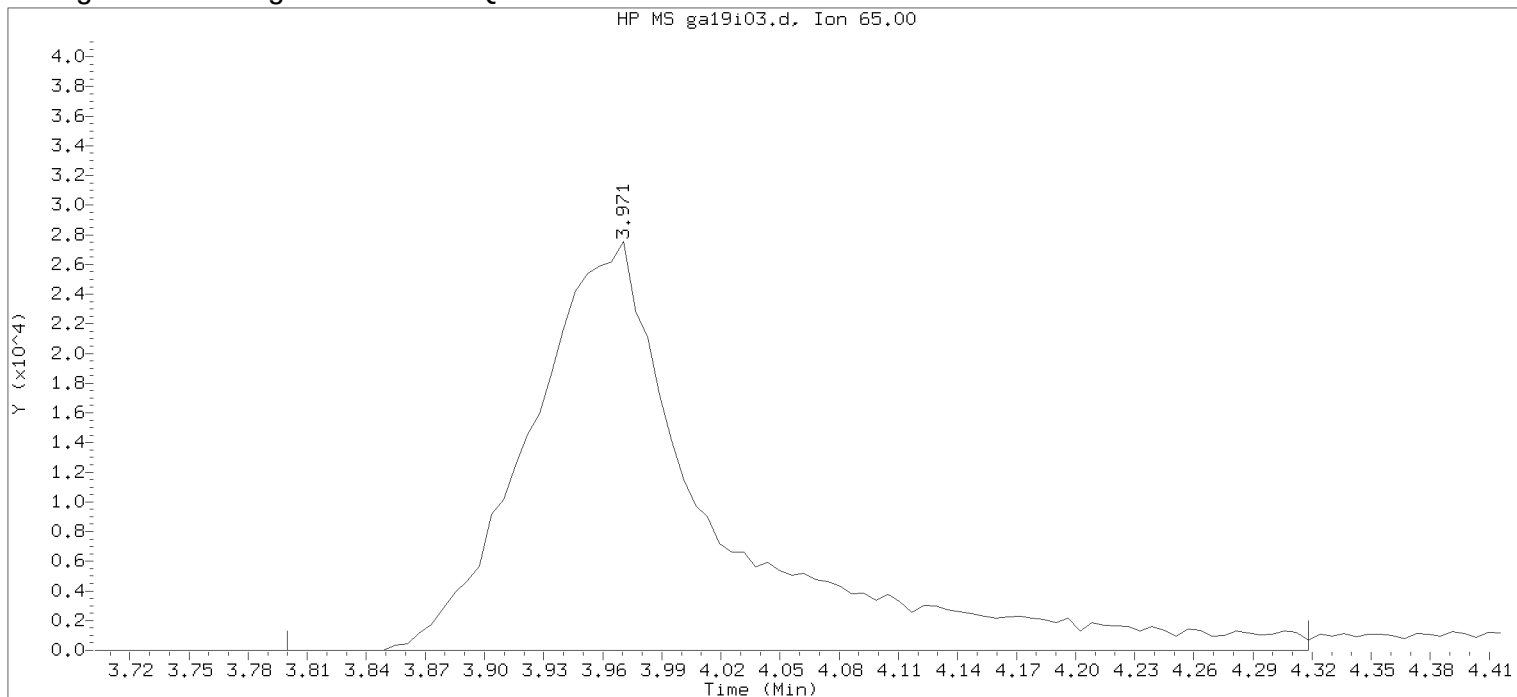
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 391

Retention Time (minutes): 3.971

Quant Ion : 65.00

Area : 181668

On-column Amount (ng) : 50.0000

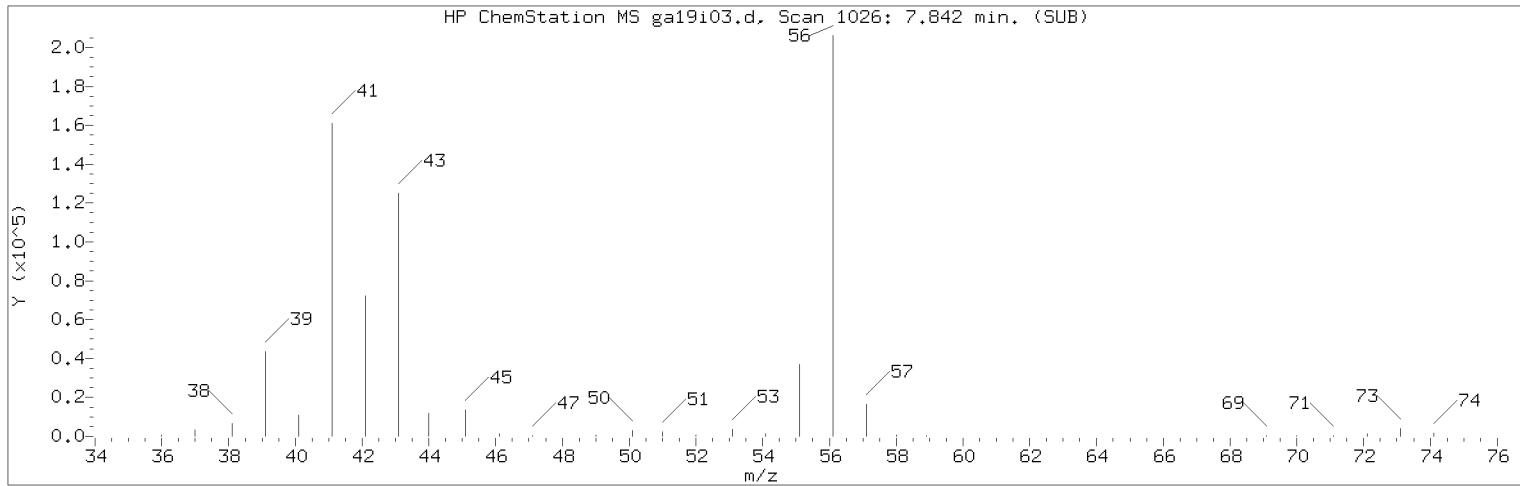
Integration start scan : 362 Integration stop scan: 447

Y at integration start : 0 Y at integration end: 0

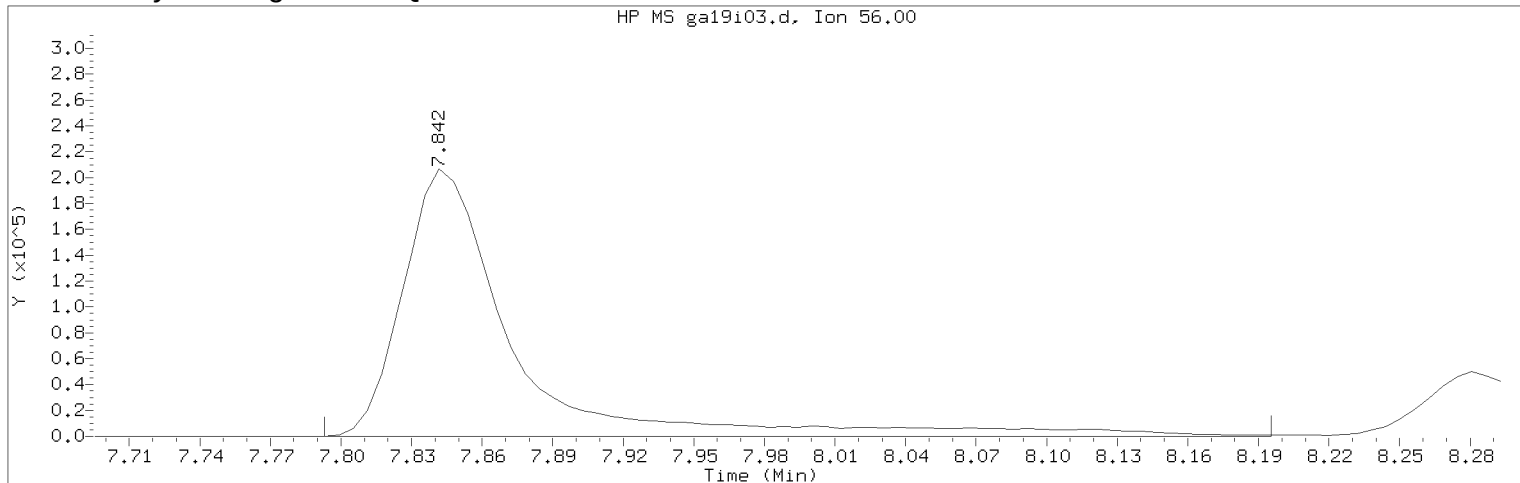
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107260 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 65

Compound Name : n-Butanol

Scan Number : 1026

Retention Time (minutes): 7.842

Quant Ion : 56.00

Area (flag) : 675021M

On-Column Amount (ng) : 511.5760

Integration start scan : 1017

Integration stop scan: 1083

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

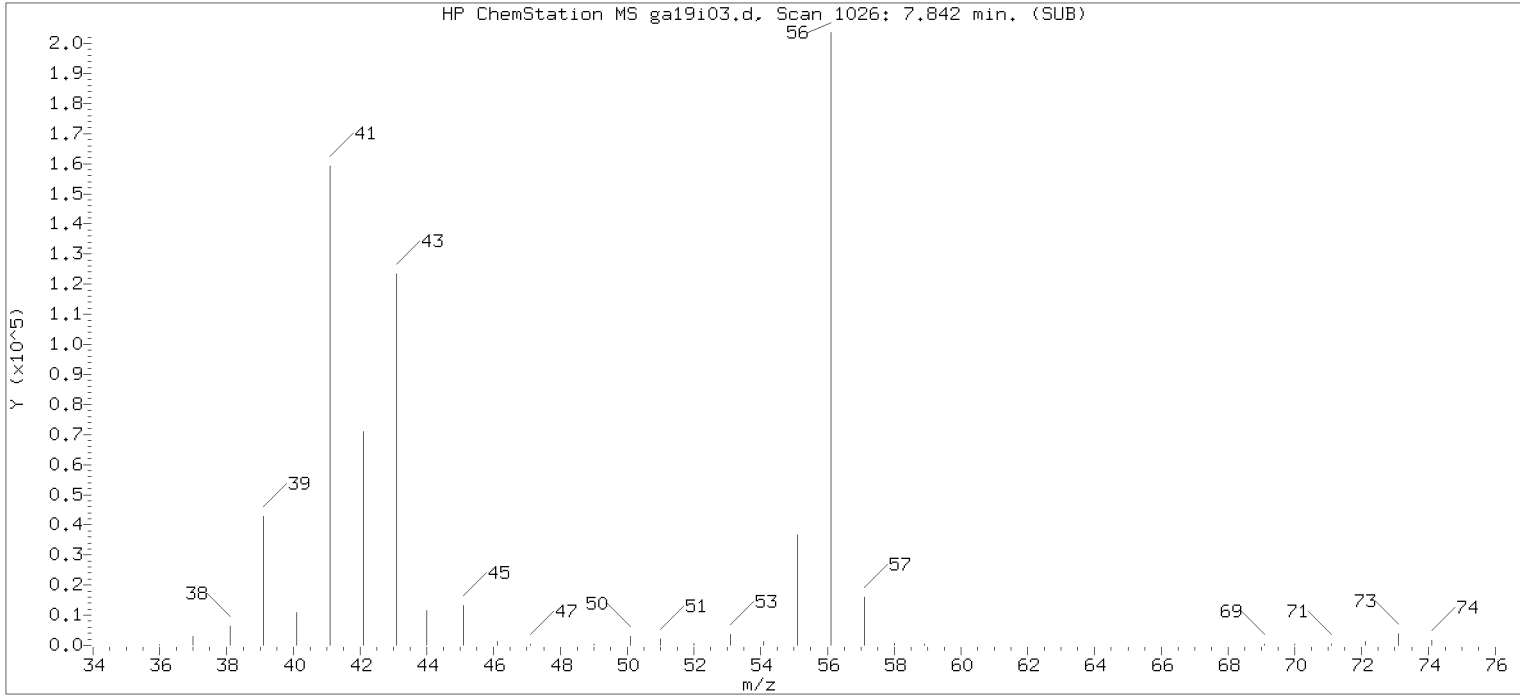
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

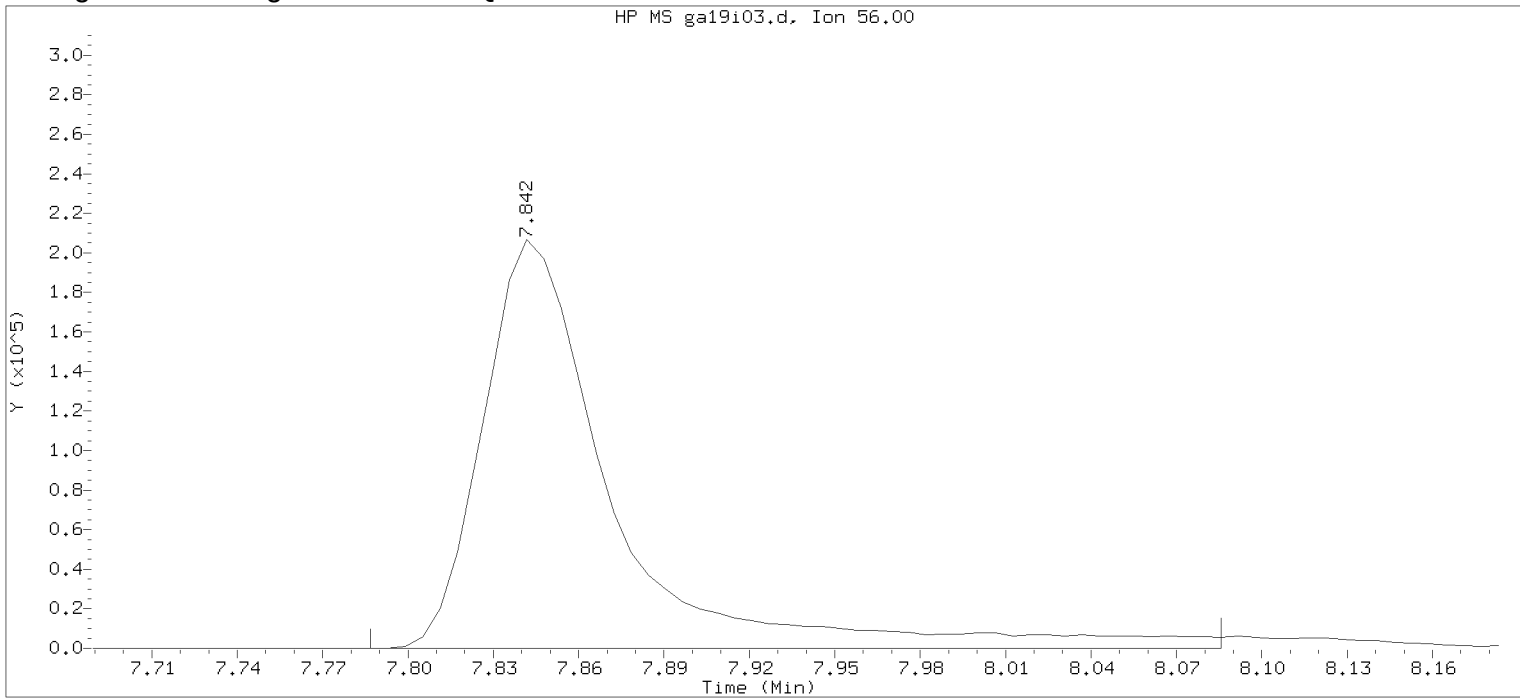
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Injection date and time: 19-APR-2018 13:06

Instrument ID: HP16334.i

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 65

Compound Name : n-Butanol

Scan Number : 1026

Retention Time (minutes): 7.842

Quant Ion : 56.00

Area : 652479

On-column Amount (ng) : 538.9205

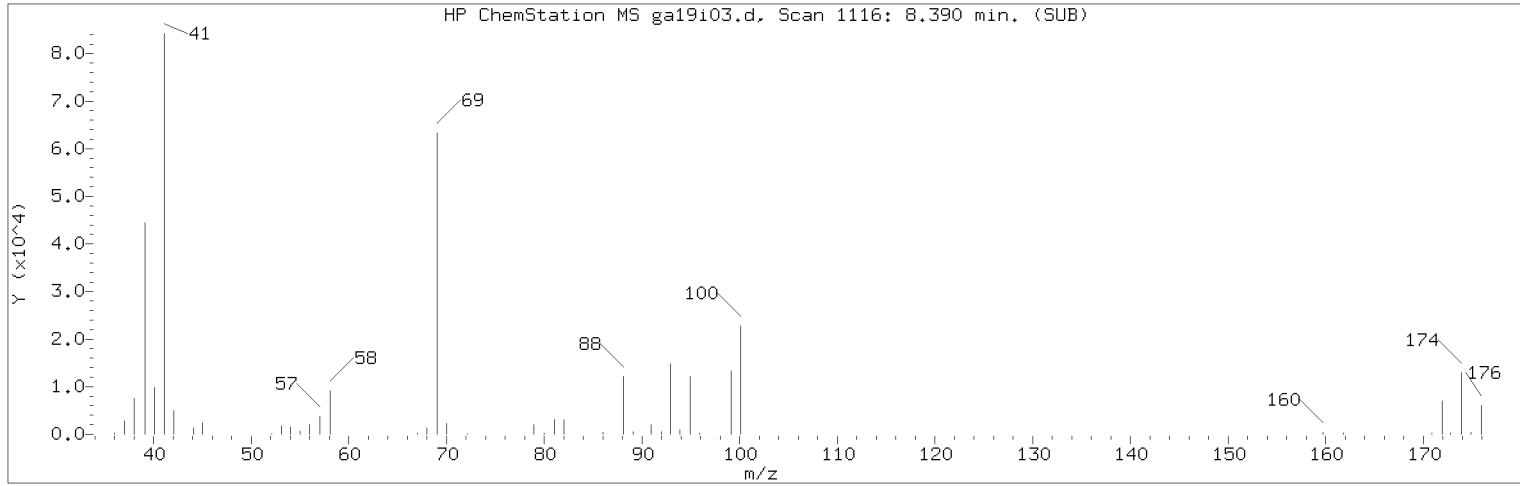
Integration start scan : 1016 Integration stop scan: 1065

Y at integration start : 0 Y at integration end: 0

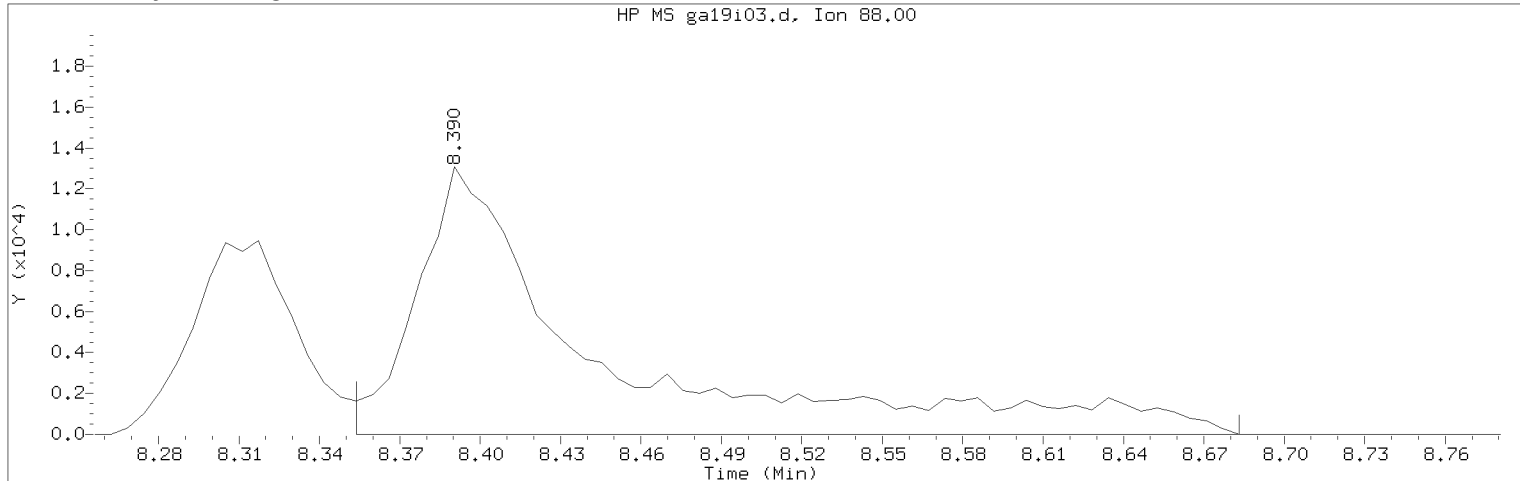
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107260 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

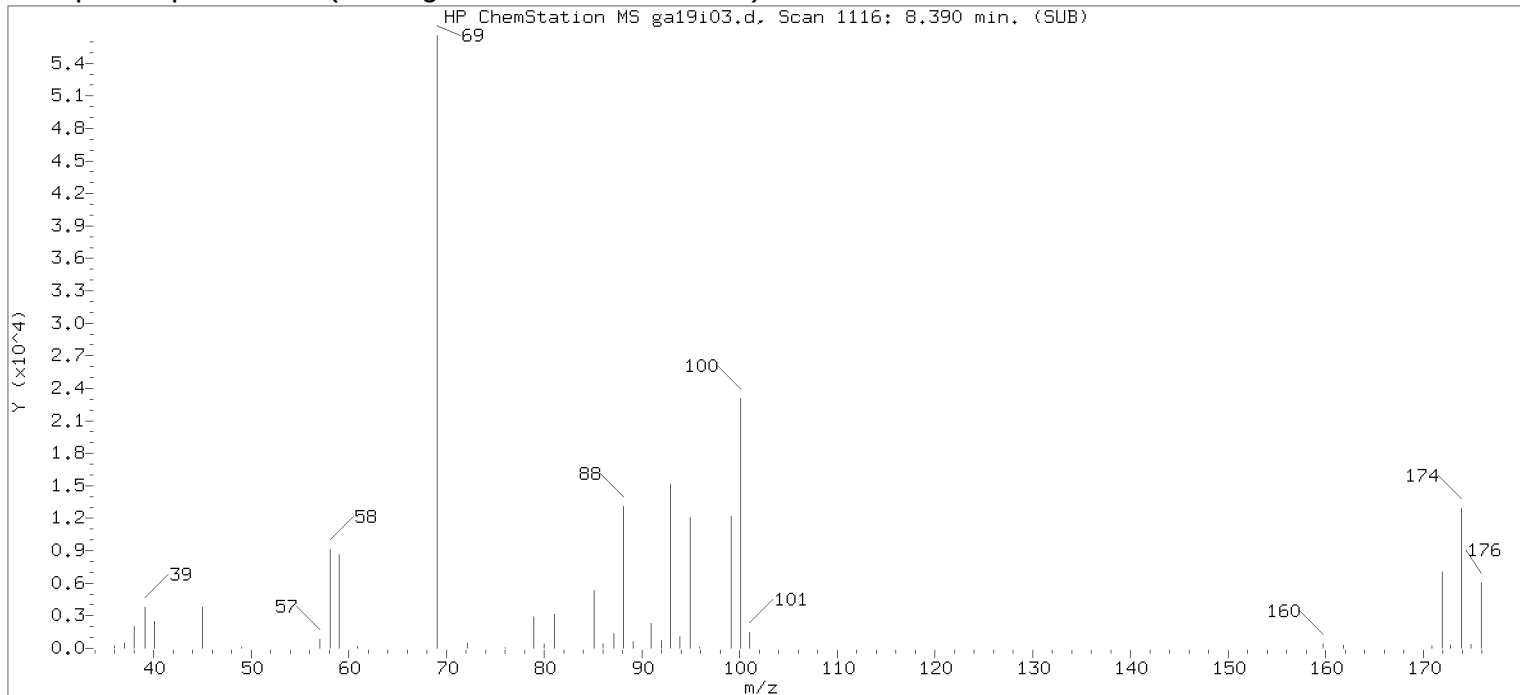
Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1116	
Retention Time (minutes)	: 8.390	
Quant Ion	: 88.00	
Area (flag)	: 60823M	
On-Column Amount (ng)	: 254.9250	
Integration start scan	: 1109	Integration stop scan: 1163
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

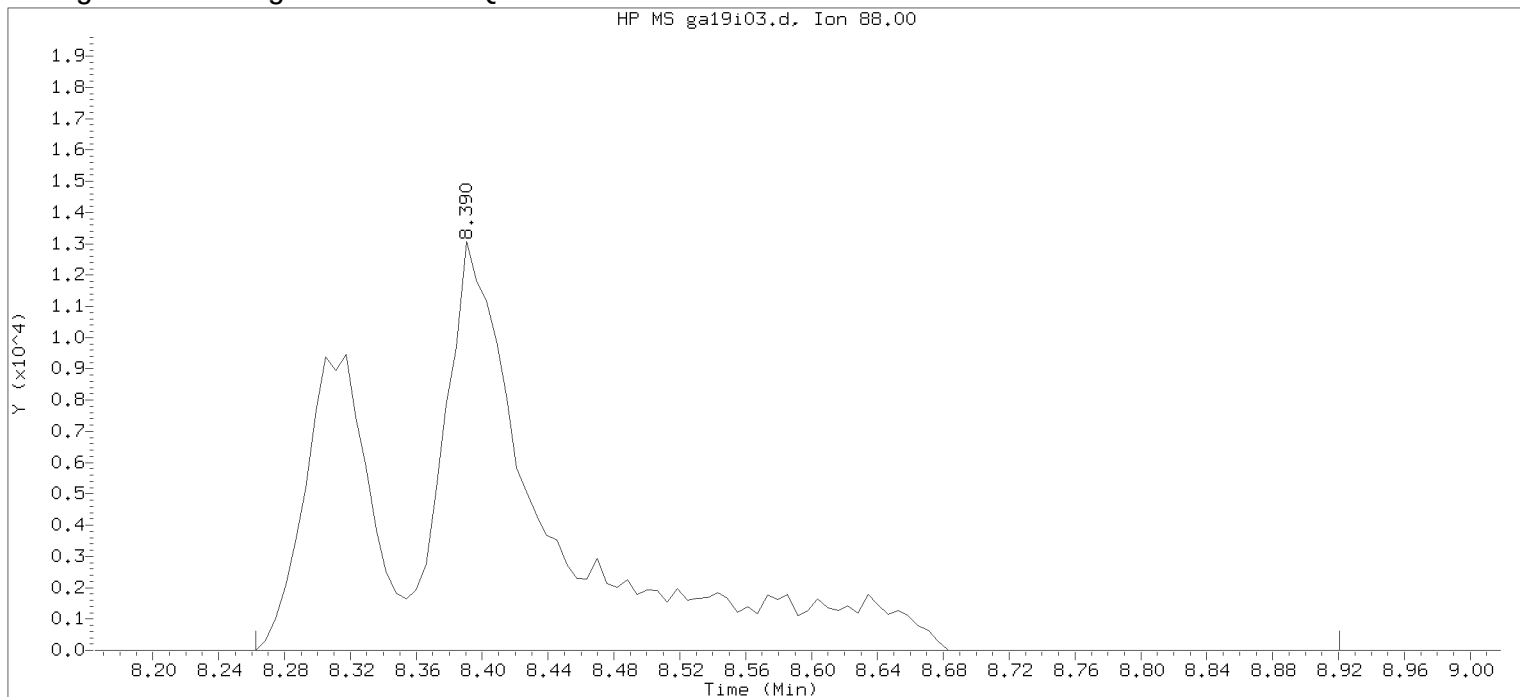
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

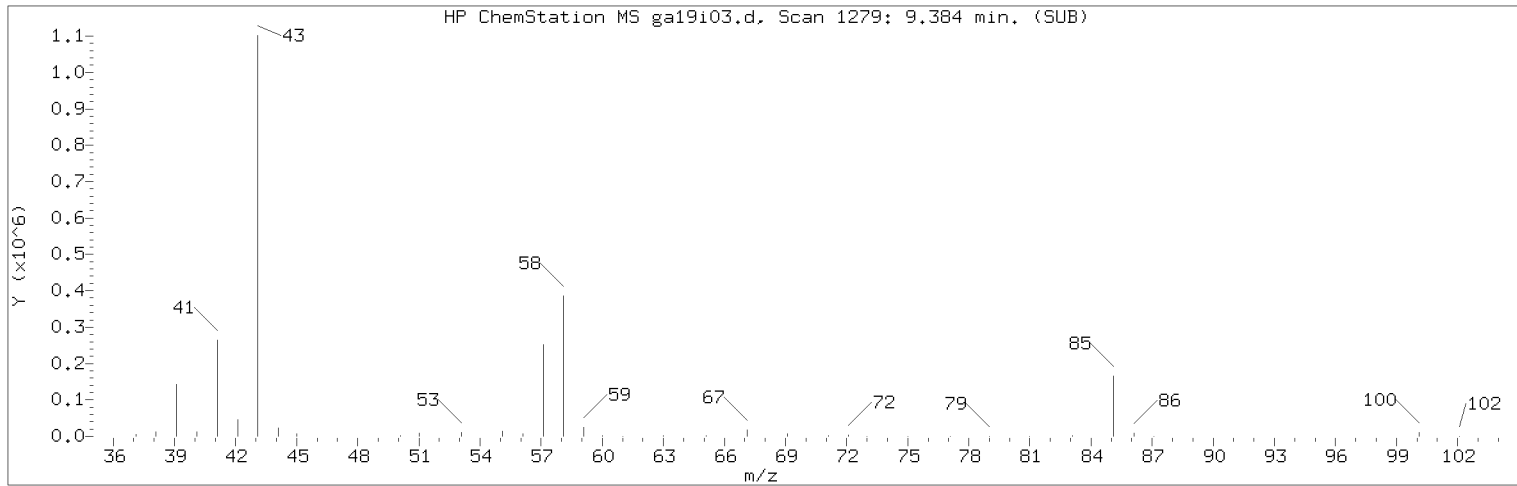
Lab Sample ID: VSTD005

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1116
 Retention Time (minutes): 8.390
 Quant Ion : 88.00
 Area : 86101
 On-column Amount (ng) : 369.6454
 Integration start scan : 1094
 Y at integration start : 0

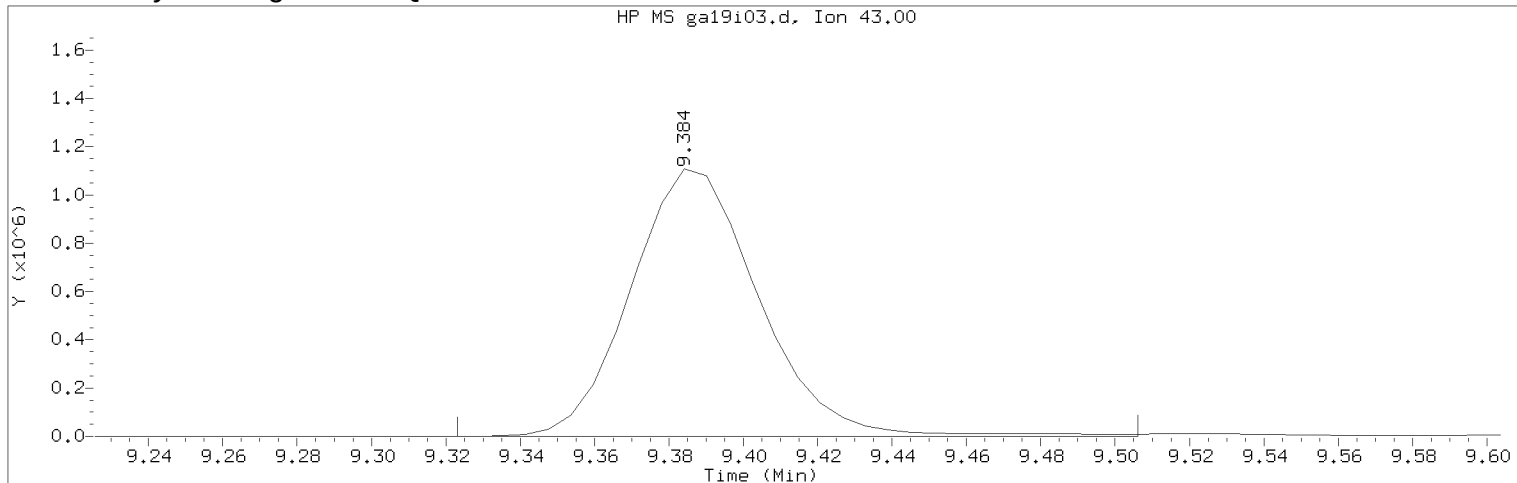
Integration stop scan: 1202
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature userF1D52mB407260 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 2642519M

On-Column Amount (ng) : 51.6398

Integration start scan : 1268 Integration stop scan: 1298

Y at integration start : 236 Y at integration end: 236

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

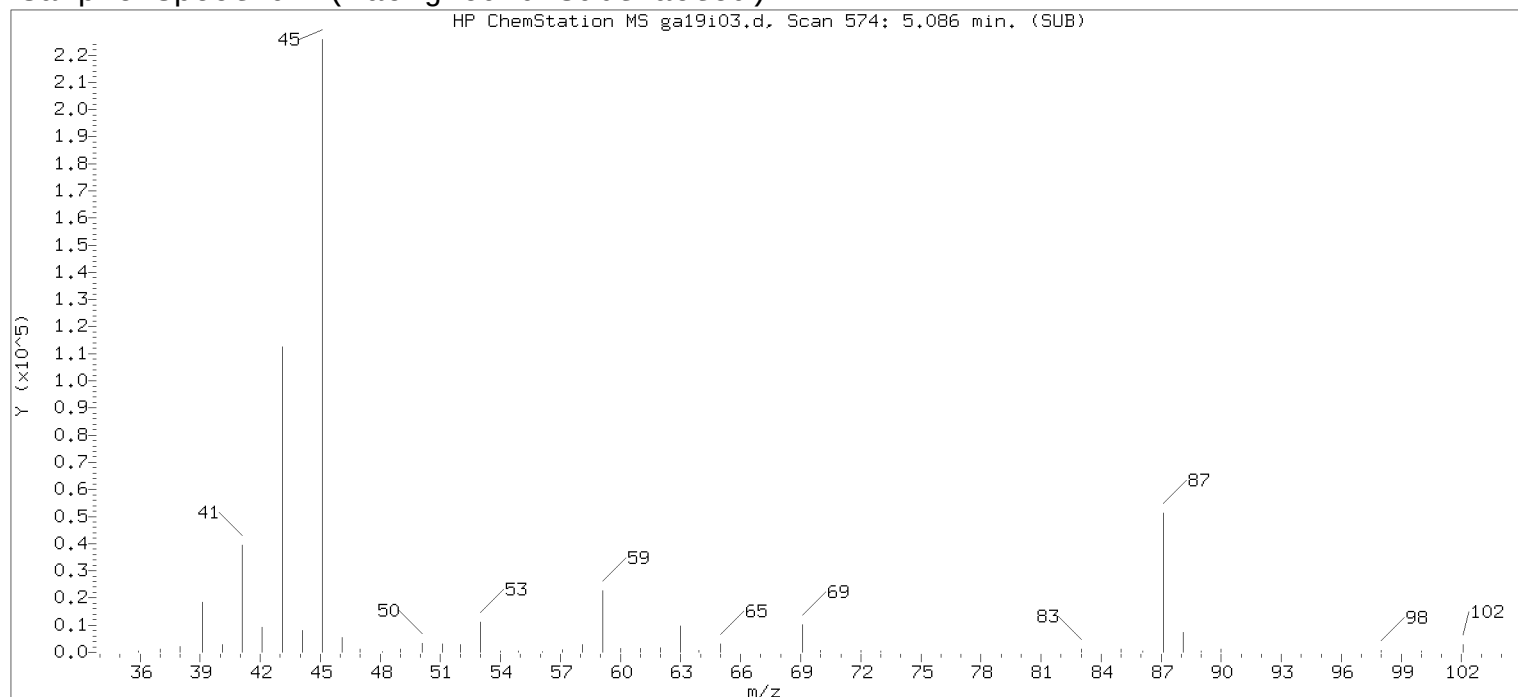
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

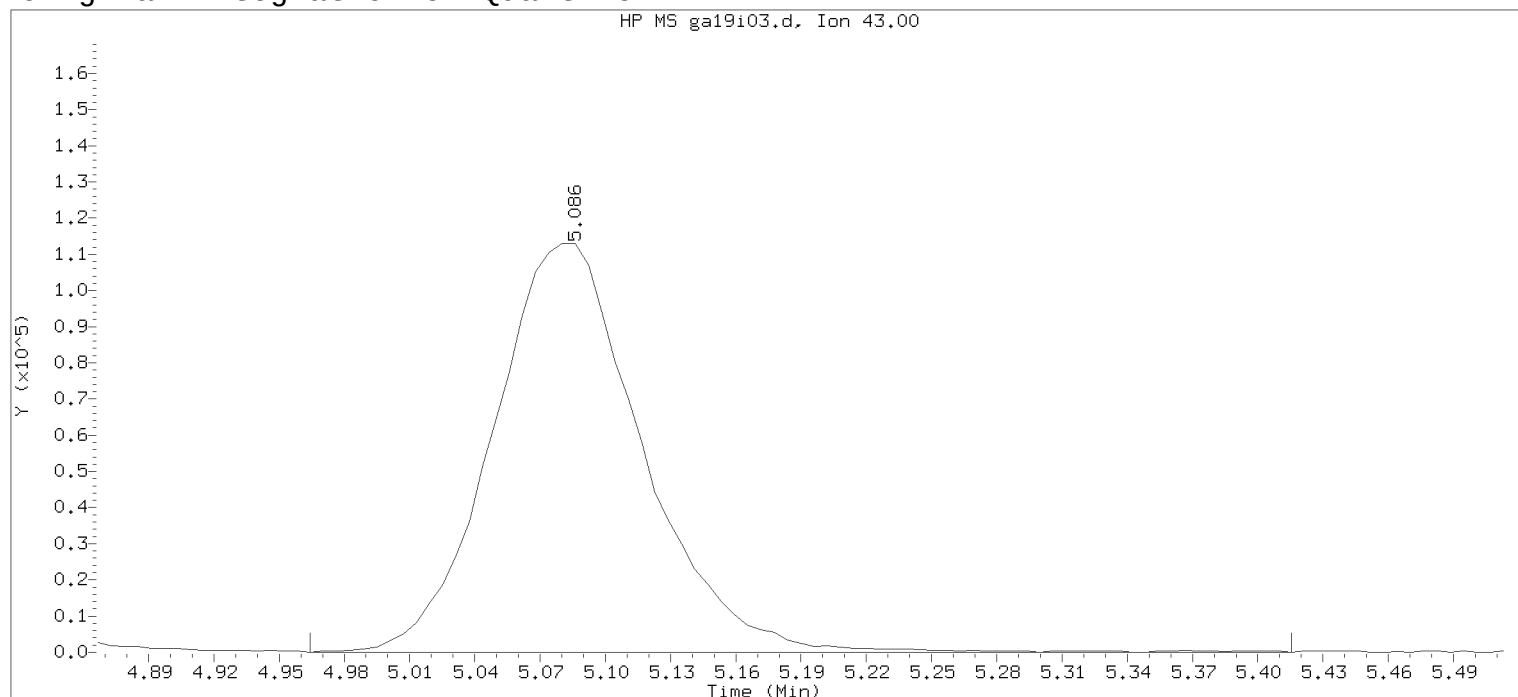
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 574

Retention Time (minutes): 5.086

Quant Ion : 43.00

Area : 538888

On-column Amount (ng) : 56.4469

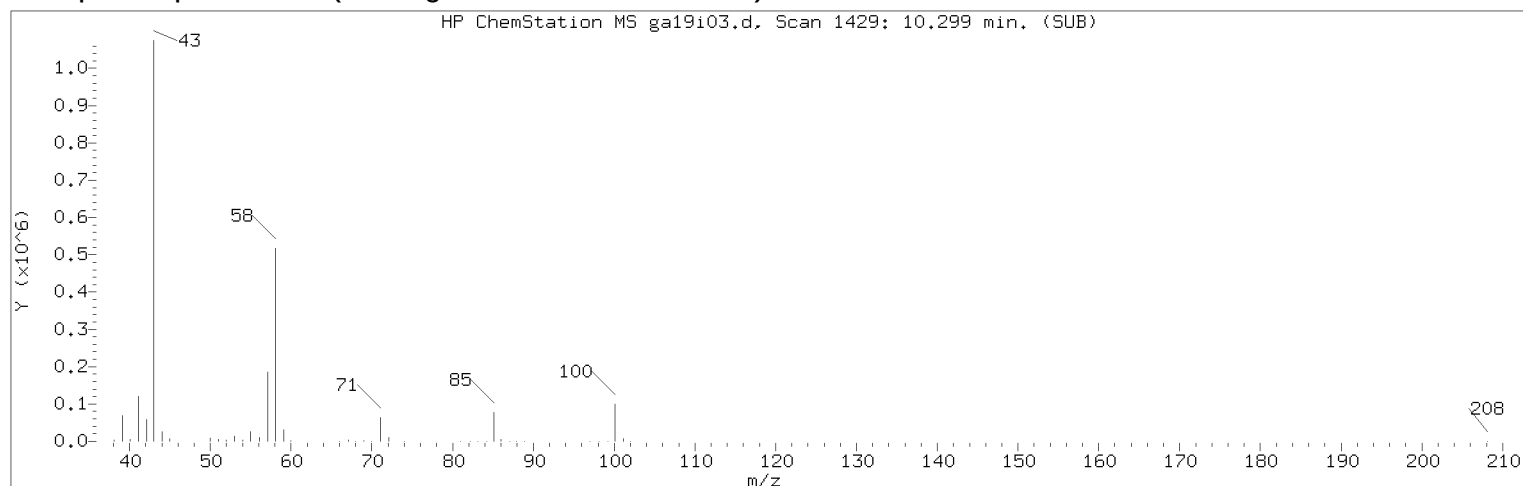
Integration start scan : 553 Integration stop scan: 627

Y at integration start : 0 Y at integration end: 0

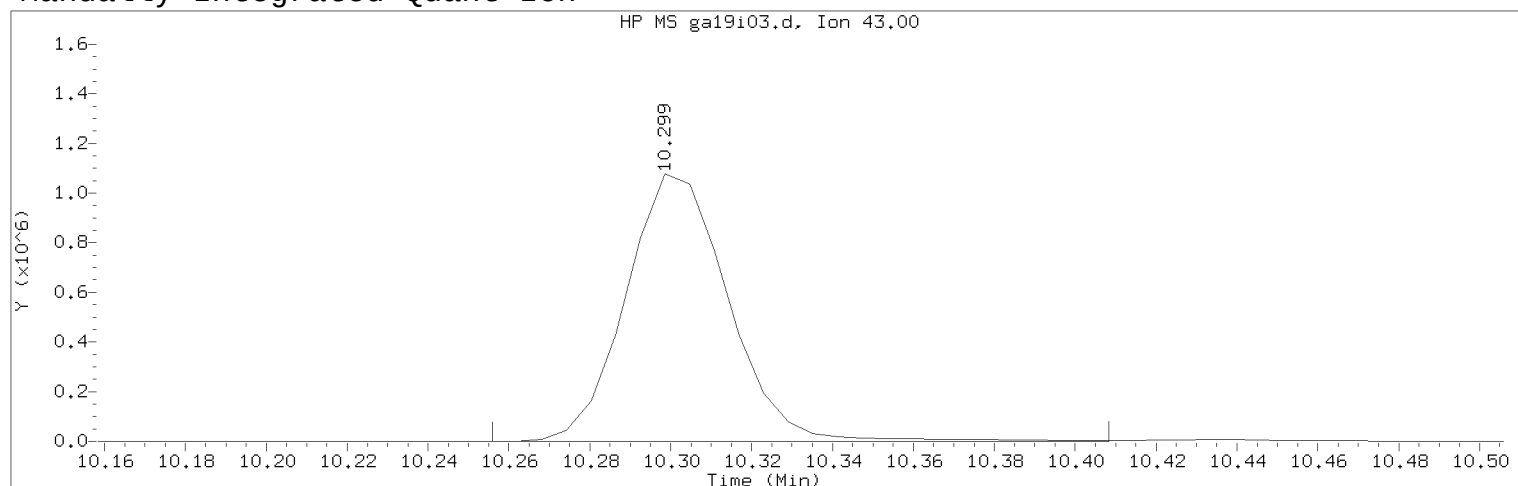
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107260 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1429	
Retention Time (minutes)	: 10.299	
Quant Ion	: 43.00	
Area (flag)	: 1892288M	
On-Column Amount (ng)	: 52.2355	
Integration start scan	: 1421	Integration stop scan: 1446
Y at integration start	: 25	Y at integration end: 25

Reason for manual integration: improper integration

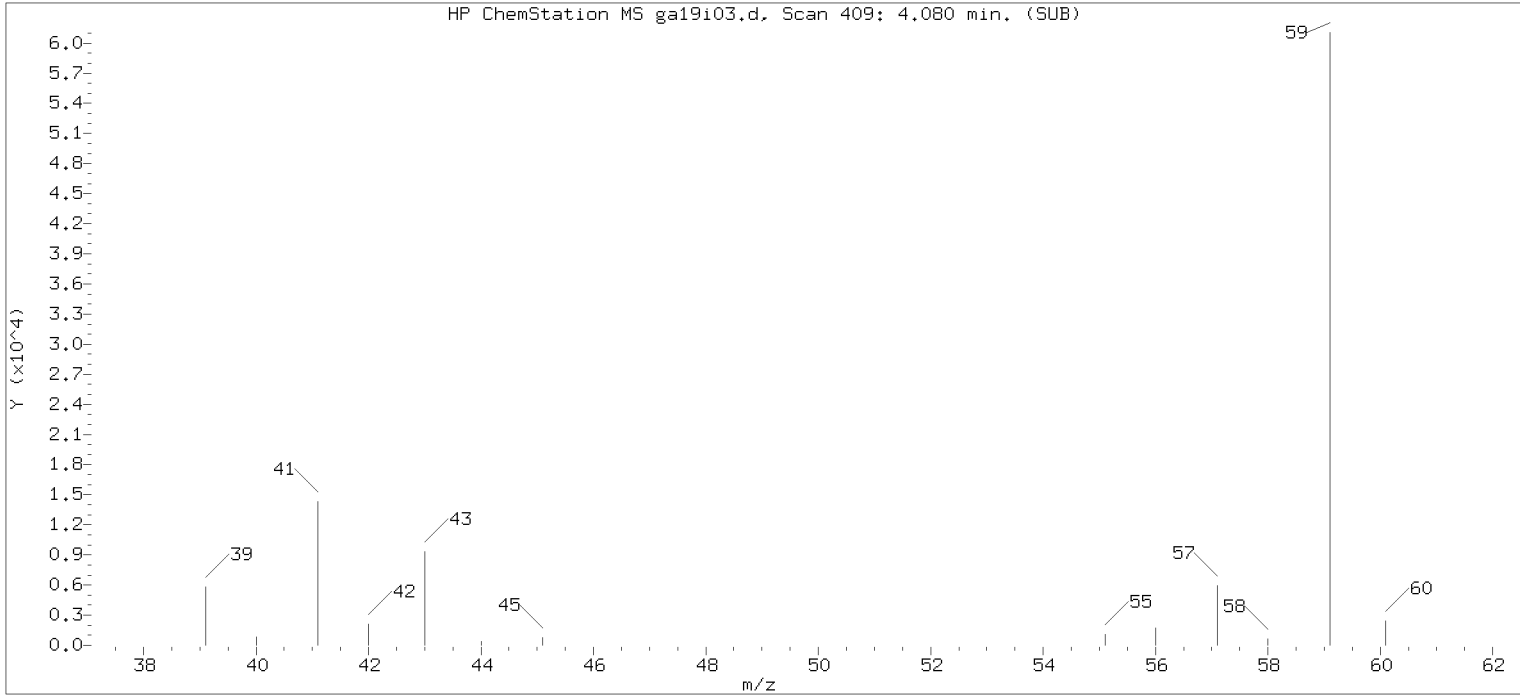
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

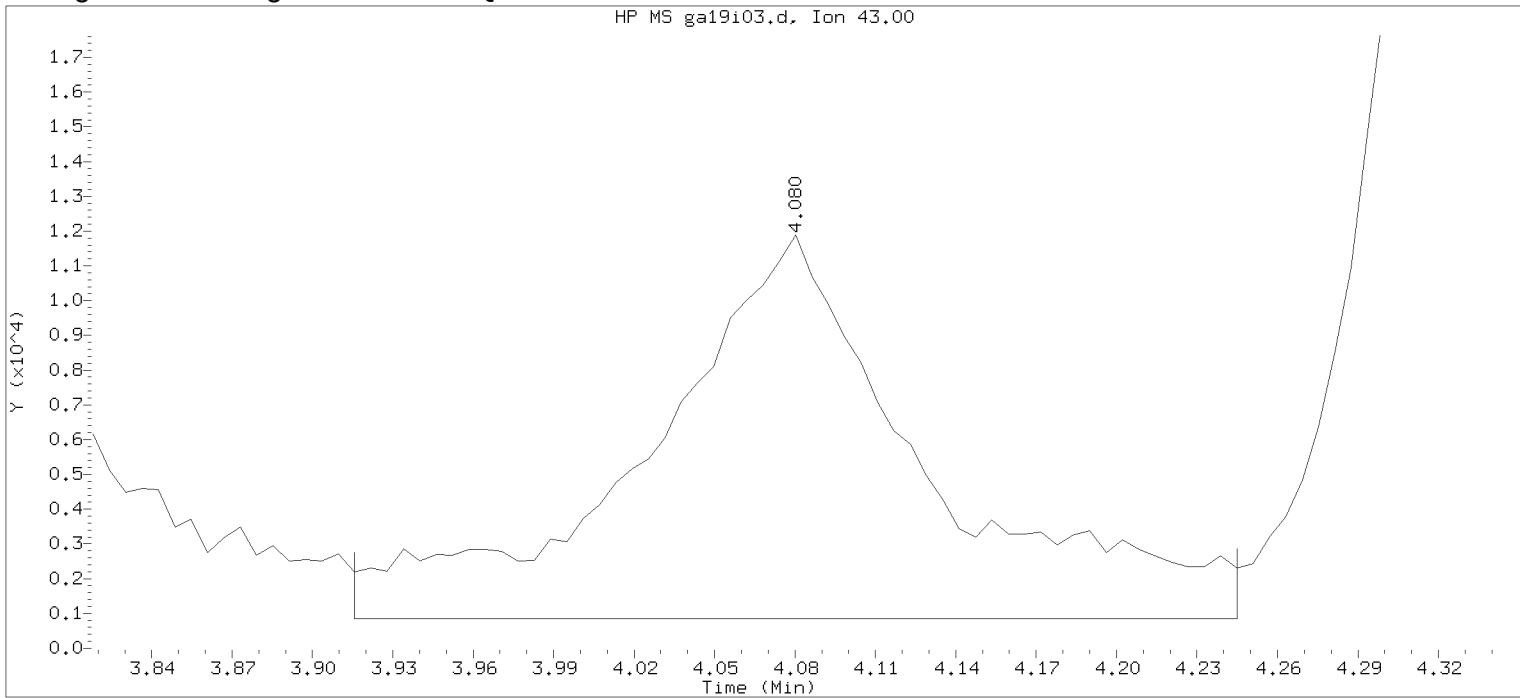
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

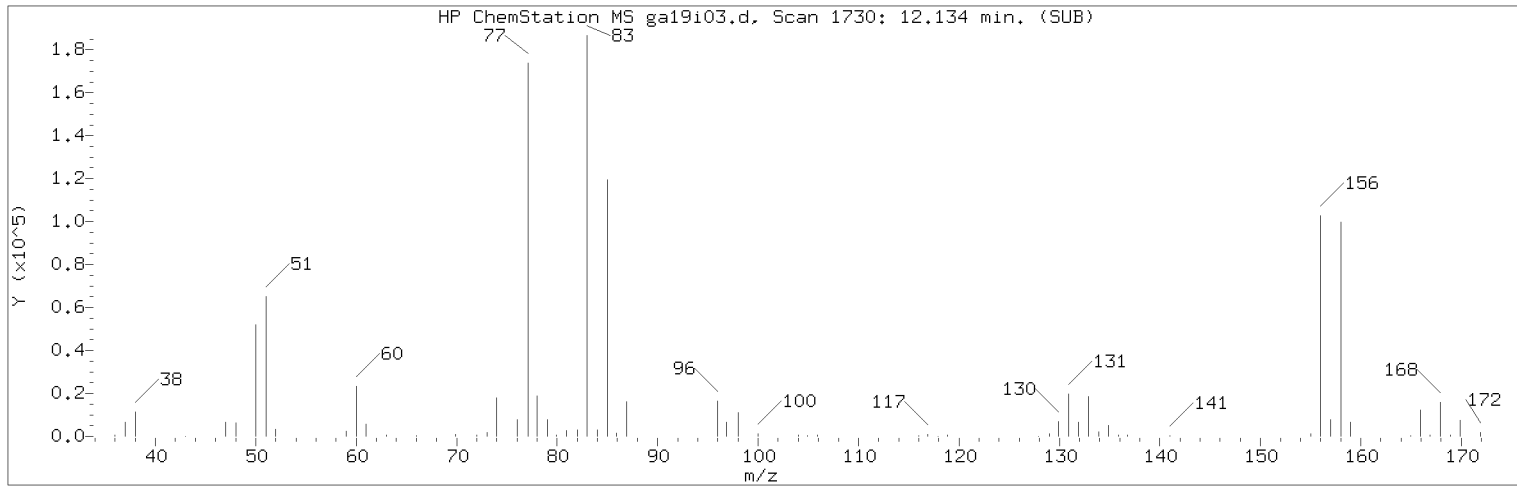
Lab Sample ID: VSTD005

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 409
Retention Time (minutes): 4.080
Quant Ion : 43.00
Area : 78238
On-column Amount (ng) : 59.8710
Integration start scan : 381
Y at integration start : 845

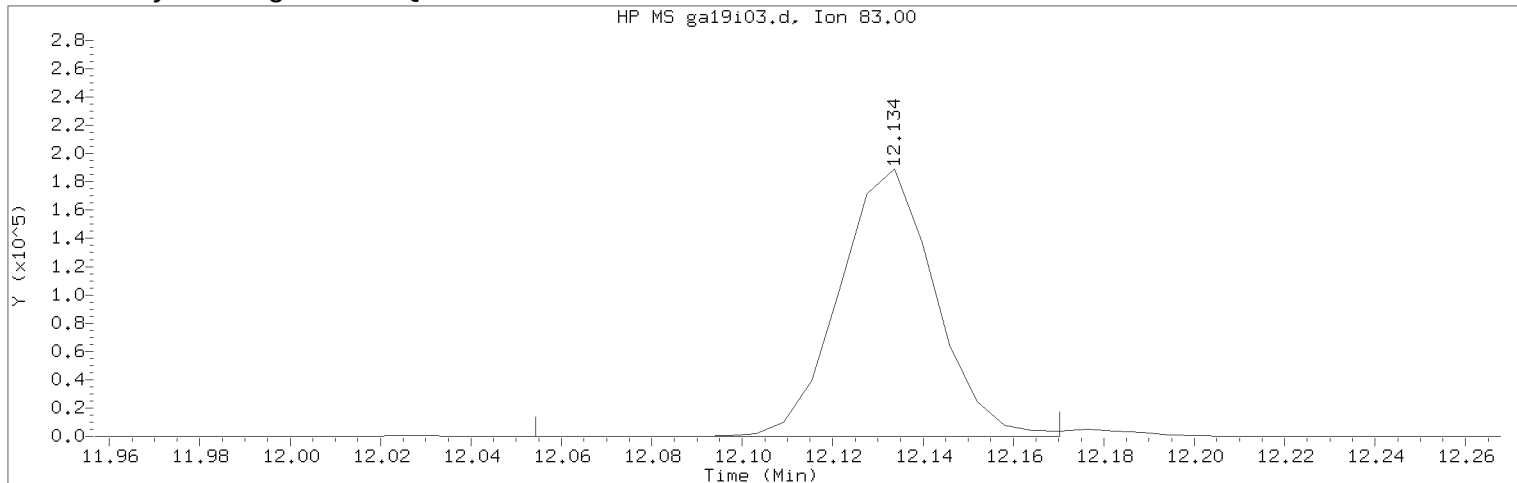
Integration stop scan: 435
Y at integration end: 845

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB407270 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1730	
Retention Time (minutes)	: 12.134	
Quant Ion	: 83.00	
Area (flag)	: 276992M	
On-Column Amount (ng)	: 4.9591	
Integration start scan	: 1716	Integration stop scan: 1735
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

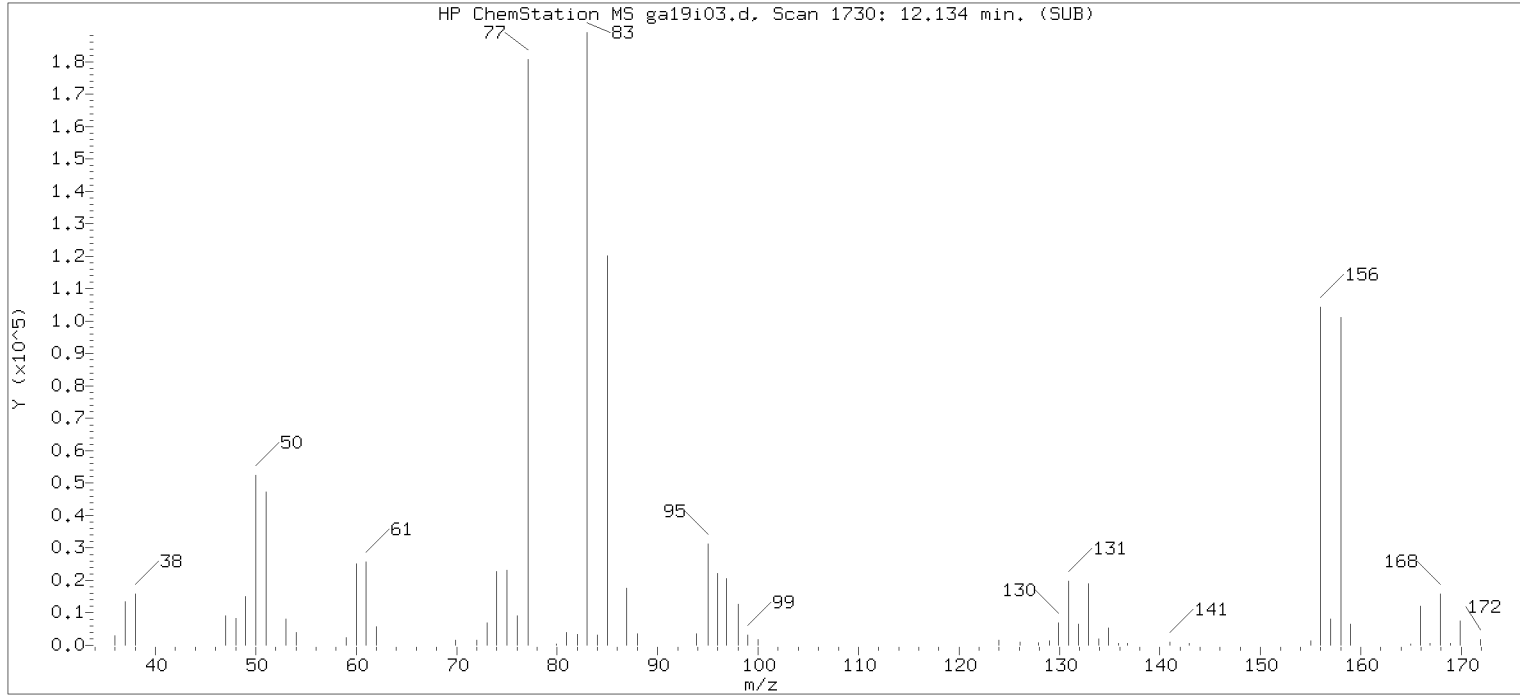
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

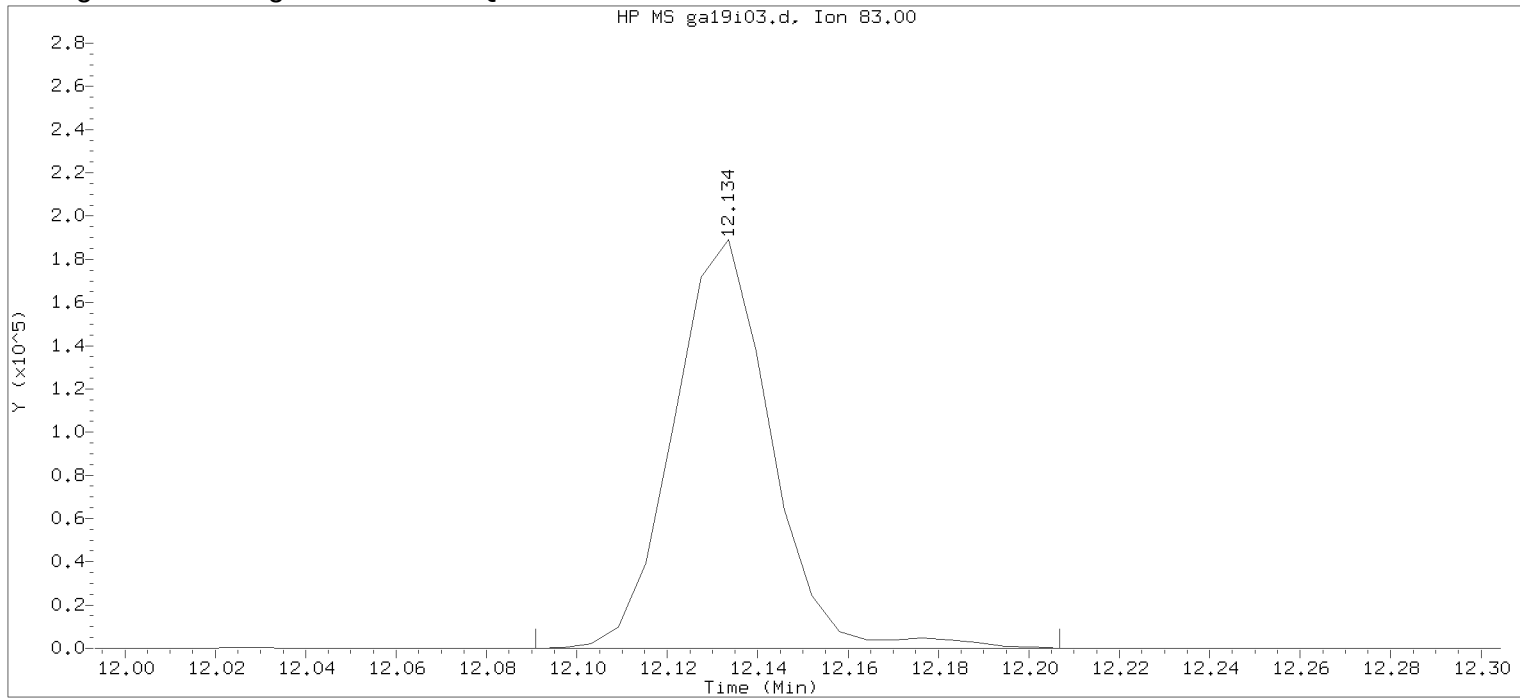
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i03.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:06

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:22

Date, time and analyst ID of latest file update: 19-Apr-2018 13:23 Automation

Sample Name: VSTD005

Lab Sample ID: VSTD005

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1730

Retention Time (minutes): 12.134

Quant Ion : 83.00

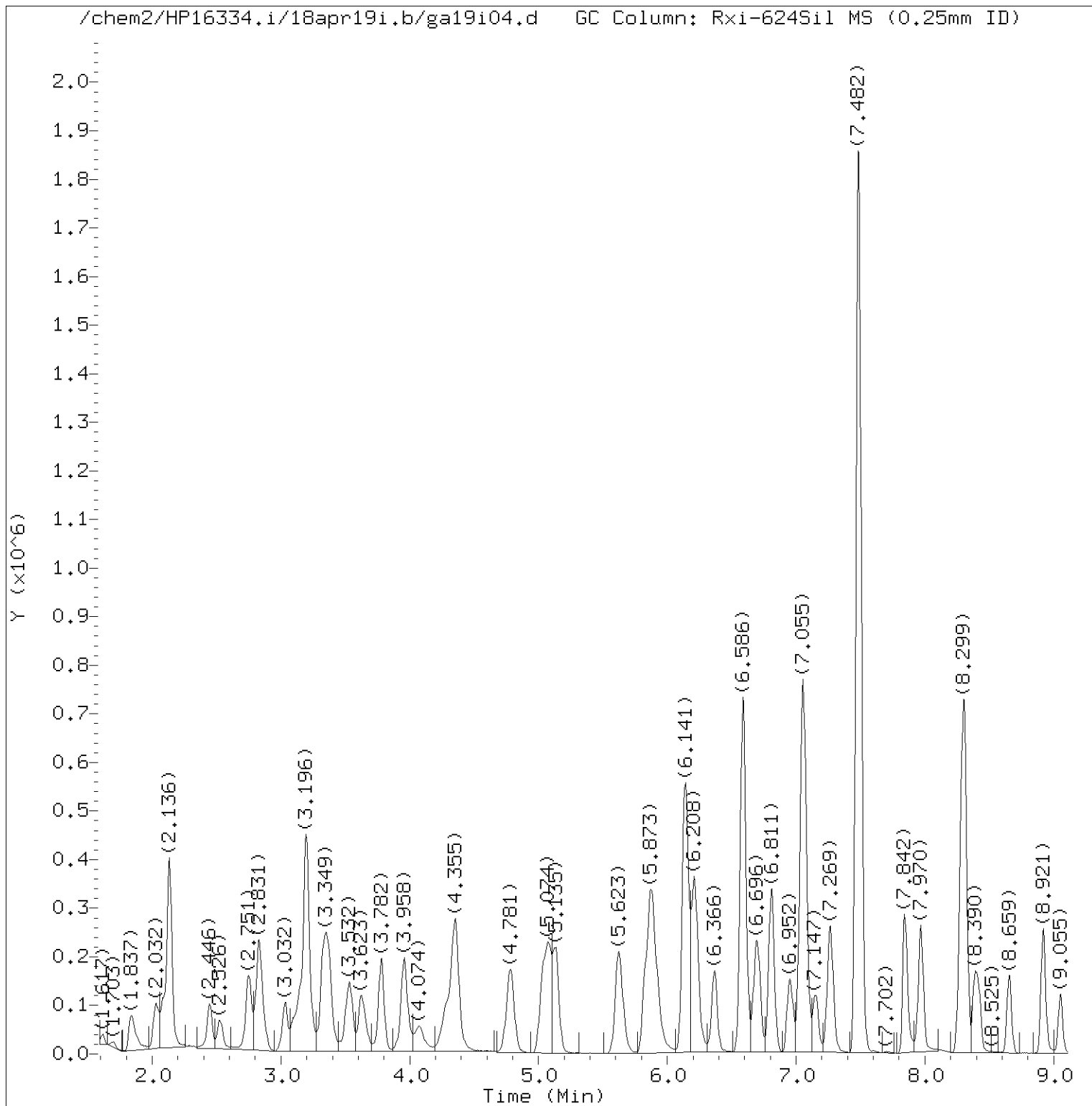
Area : 281626

On-column Amount (ng) : 4.9655

Integration start scan : 1722 Integration stop scan: 1741

Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB407270 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
Analyst ID: JKH09052

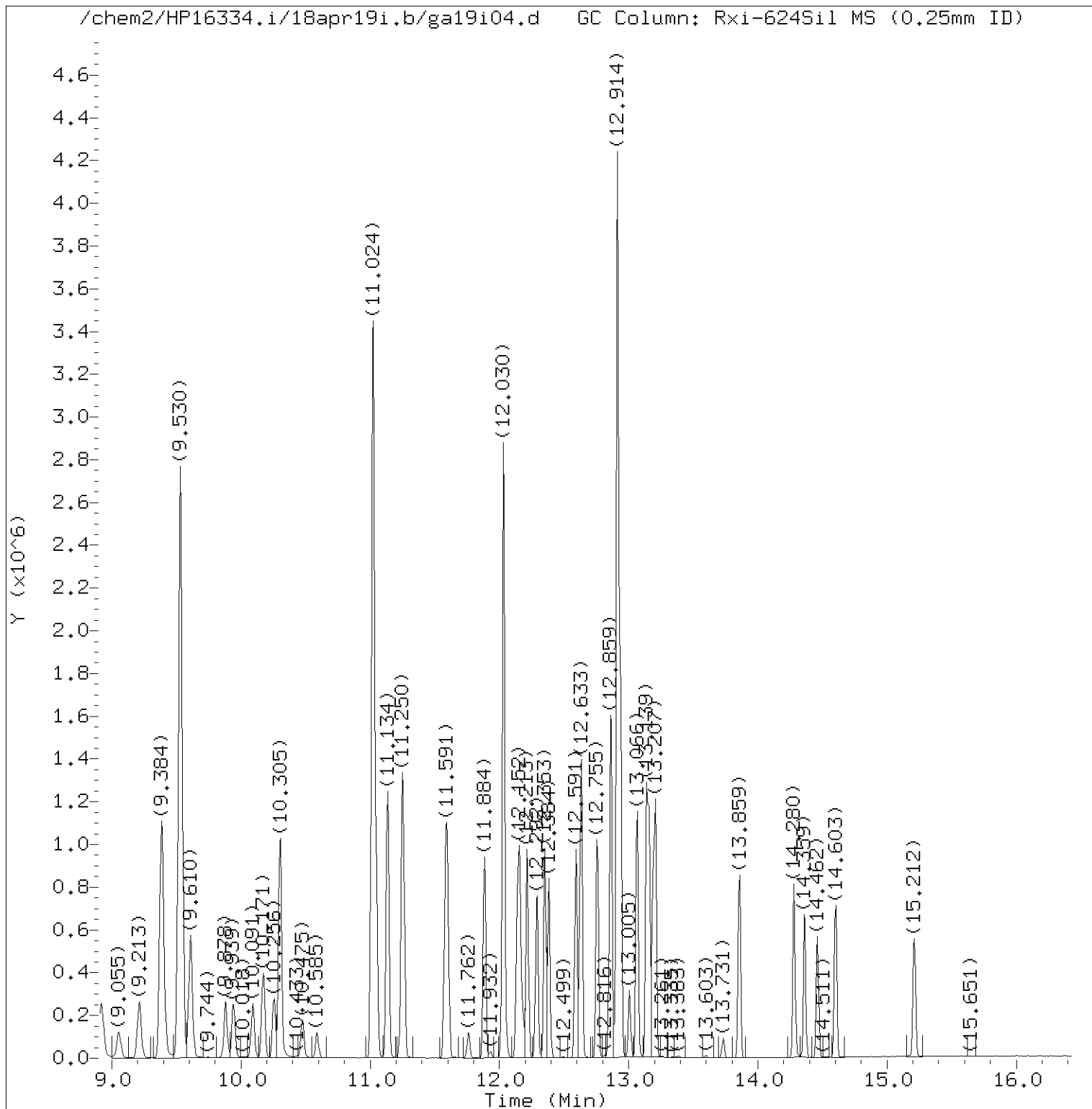
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 274 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 275 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.837	85	163581	1.996
2) Chloromethane	(2)	2.026	50	158007	1.993
5) Vinyl Chloride	(2)	2.136	62	136636	1.978
6) 1,3-Butadiene	(2)	2.136	39	314176M	2.450
7) Bromomethane	(2)	2.446	94	91666	1.994
8) Chloroethane	(2)	2.520	64	77640	2.005
9) Dichlorofluoromethane	(2)	2.751	67	187240	2.029
10) Trichlorofluoromethane	(2)	2.806	101	183283	1.986
11) Ethyl ether	(2)	3.038	59	93001	2.041
12) Freon 123a	(2)	3.123	67	127584	2.011
13) Acrolein	(1)	3.196	56	757463	102.859
15) 1,1-Dichloroethene	(2)	3.330	96	93613	2.095
14) Acetone	(1)	3.355	43	240015	21.338
16) Freon 113	(2)	3.373	101	100723	1.966
17) Methyl Iodide	(2)	3.519	142	169723	1.955
18) Carbon Disulfide	(2)	3.629	76	335356	1.987
21) Methyl Acetate	(1)	3.757	43	65877M	2.008
22) Allyl Chloride	(2)	3.782	41	206011	2.012
26)*t-Butyl Alcohol-d10	(1)	3.946	65	210083	50.000
23) Methylene Chloride	(2)	3.958	84	111270	2.058
28) t-Butyl Alcohol	(1)	4.074	59	160328	42.322
29) Acrylonitrile	(1)	4.269	53	138067	10.172
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	310233	1.980
31) trans-1,2-Dichloroethene	(2)	4.361	96	100679	1.976
32) n-Hexane	(2)	4.781	57	177664	1.993
33) 1,1-Dichloroethane	(2)	5.025	63	211913	2.010
34) di-Isopropyl Ether	(2)	5.080	45	430353	1.987
35) 2-Chloro-1,3-Butadiene	(2)	5.135	53	190468	1.977
37) Ethyl t-butyl ether	(2)	5.623	59	376848	1.967
38) 2-Butanone	(1)	5.830	43	425386	20.623
39) cis-1,2-Dichloroethene	(2)	5.873	96	115223	1.968
41) 2,2-Dichloropropane	(2)	5.891	77	171455	1.947
42) Propionitrile	(1)	5.928	54	203865	40.105
40) 1,2-Dichloroethene (Total)	(2)		96	215902	3.944
45) Methacrylonitrile	(1)	6.141	67	332133	20.294
48) Tetrahydrofuran	(1)	6.208	71	100358	20.325
47) Bromochloromethane	(2)	6.214	128	54202	1.979
49) Chloroform	(2)	6.366	83	199020	1.970

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
 Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.586	113	541432	9.992
50) \$Dibromofluoromethane	(2)	6.586	111	555118	9.977
51) 1,1,1-Trichloroethane	(2)	6.592	97	170685	1.978
52) Cyclohexane	(2)	6.702	56	205295	1.976
52) Cyclohexane	(2)	6.702	84	158744	1.993
52) Cyclohexane	(2)	6.702	69	59651	1.977
54) Carbon Tetrachloride	(2)	6.805	117	139299	1.934
55) 1,1-Dichloropropene	(2)	6.811	75	158079	1.984
56) Isobutyl Alcohol	(1)	6.952	41	151913	99.896
57) \$1,2-Dichloroethane-d4	(2)	7.049	102	115674	10.119
57) \$1,2-Dichloroethane-d4	(2)	7.049	65	648945	10.081
57) \$1,2-Dichloroethane-d4	(2)	7.049	104	72636	10.246
58) Benzene	(2)	7.074	78	431902	1.977
59) 1,2-Dichloroethane	(2)	7.147	62	151301	2.015
60) t-Amyl methyl ether	(2)	7.263	73	318225	1.947
63) *Fluorobenzene	(2)	7.482	96	2150008	10.000
62) n-Heptane	(2)	7.500	43	210974	1.990
65) n-Butanol	(1)	7.842	56	264019M	201.480
67) Trichloroethene	(2)	7.964	95	115687	1.986
69) Methylcyclohexane	(2)	8.281	83	201047	1.981
70) 1,2-Dichloropropane	(2)	8.305	63	118258	1.929
71) Methyl Methacrylate	(1)	8.384	69	63893	2.000
72) 1,4-Dioxane	(1)	8.397	88	24973M	104.182
73) Dibromomethane	(2)	8.415	93	57589	1.965
74) Bromodichloromethane	(2)	8.653	83	140423	1.890
76) 2-Nitropropane	(1)	8.921	41	215000	18.967
80) cis-1,3-Dichloropropene	(2)	9.213	75	175884	1.884
81) 4-Methyl-2-Pentanone	(1)	9.384	43	1049709M	20.525
82) \$Toluene-d8	(3)	9.530	98	2186204	10.063
82) \$Toluene-d8	(3)	9.530	100	1387666	10.020
83) Toluene	(3)	9.610	92	270241	1.966
84) trans-1,3-Dichloropropene	(3)	9.878	75	147580	1.863
86) Ethyl Methacrylate	(3)	9.939	69	134335	1.915
88) 1,1,2-Trichloroethane	(3)	10.091	97	82933	1.989
85) 1,3-Dichloropropene (total)	(3)		75	323464	3.747
89) Tetrachloroethene	(3)	10.177	166	126614	1.984
90) 1,3-Dichloropropane	(3)	10.256	76	150897	1.993
91) 2-Hexanone	(1)	10.305	43	742959M	20.522

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 277 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
 Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	91000	1.826
95) 1,2-Dibromoethane	(3)	10.591	107	78947	1.950
97)*Chlorobenzene-d5	(3)	11.018	117	1622110	10.000
98) Chlorobenzene	(3)	11.048	112	312851	1.987
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	105207	1.889
100) Ethylbenzene	(3)	11.134	91	540774	1.982
101) m+p-Xylene	(3)	11.250	106	415246	3.936
104) o-Xylene	(3)	11.585	106	203789	1.915
106) Styrene	(3)	11.597	104	340627	1.913
105) Xylene (Total)	(3)		106	619035	5.851
107) Bromoform	(3)	11.762	173	50807	1.720
108) Isopropylbenzene	(3)	11.884	105	540353	1.959
111)\$4-Bromofluorobenzene	(3)	12.030	95	827180	9.961
111)\$4-Bromofluorobenzene	(3)	12.030	174	715029	10.030
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	106873	1.929
114) Bromobenzene	(4)	12.146	156	138032	1.919
116) 1,2,3-Trichloropropane	(4)	12.182	110	30126	1.974
117) n-Propylbenzene	(4)	12.213	91	652319	1.977
119) 2-Chlorotoluene	(4)	12.292	126	127143	1.935
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	464651	1.940
122) 4-Chlorotoluene	(4)	12.384	126	137165	1.972
125) tert-Butylbenzene	(4)	12.591	134	97524	1.955
126) Pentachloroethane	(4)	12.627	167	75904	1.779
127) 1,2,4-Trimethylbenzene	(4)	12.633	105	480980	1.947
128) sec-Butylbenzene	(4)	12.755	105	593165	1.938
131) 1,3-Dichlorobenzene	(4)	12.859	146	276108	1.919
132) p-Isopropyltoluene	(4)	12.865	119	515525	1.924
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	922950	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	281559	1.938
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	211959	1.928
136) Benzyl Chloride	(4)	13.005	126	38098	1.757
138) n-Butylbenzene	(4)	13.158	92	276070	1.935
139) 1,2-Dichlorobenzene	(4)	13.188	146	260453	1.921
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	15023	1.849
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	231114	1.923
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	214386	1.917
146) Hexachlorobutadiene	(4)	14.365	225	112176	1.939
147) Naphthalene	(4)	14.462	128	366089	1.946

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

page 3 of 4

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Target 3.5 esignature user ID: msk07970

FKP52 Page 278 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d
Injection date and time: 19-APR-2018 13:28

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

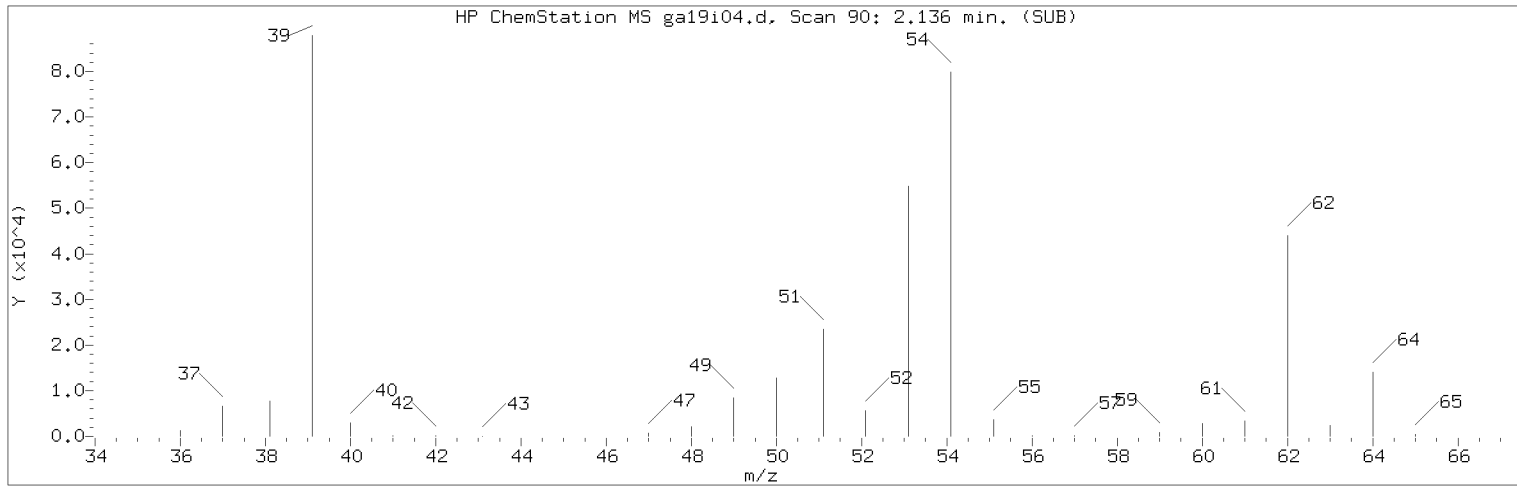
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	186318	1.945

page 4 of 4

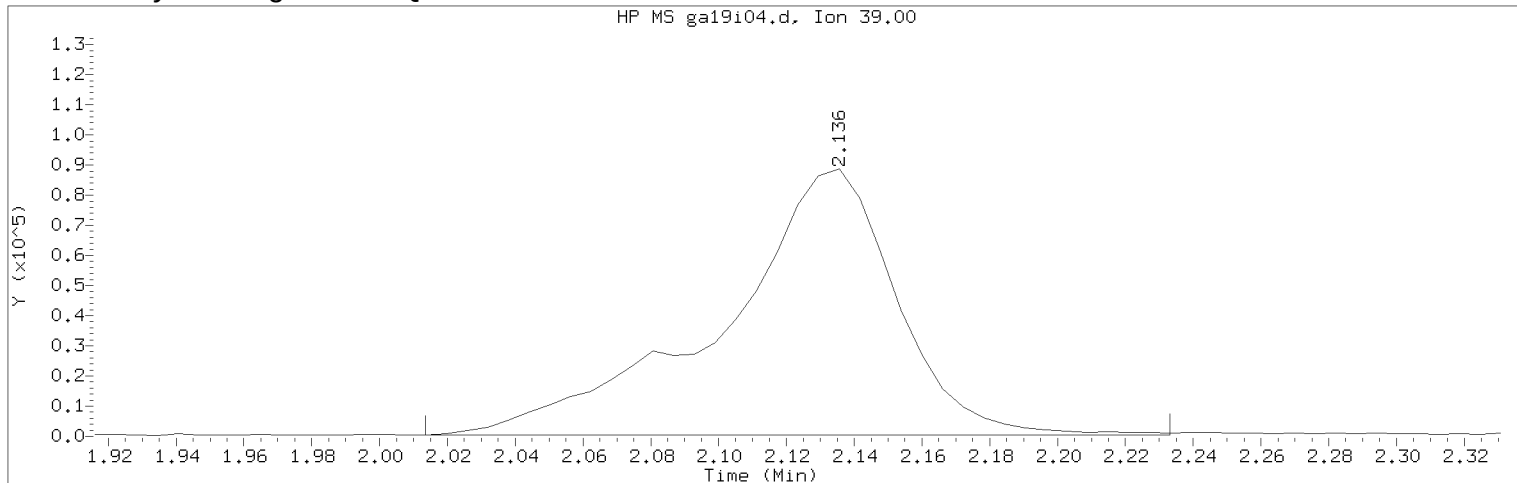
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

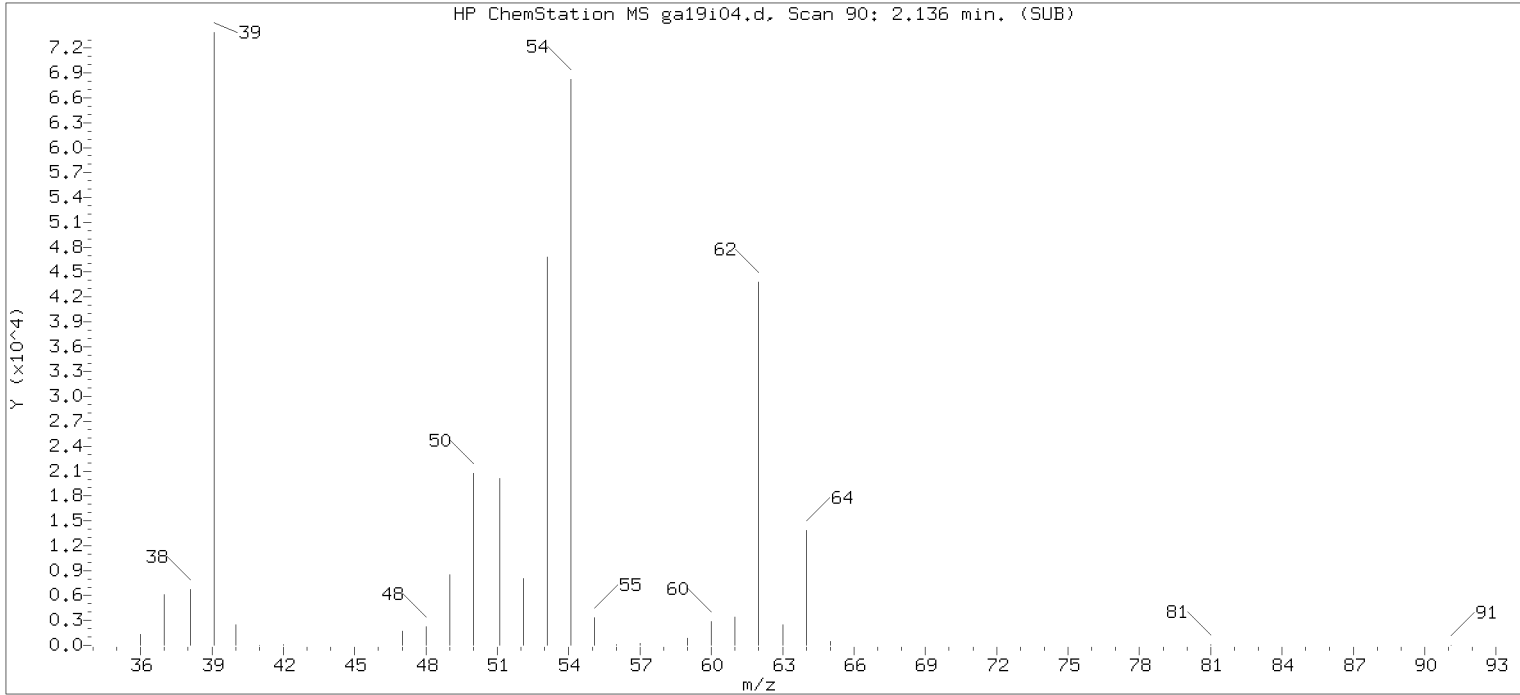
Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 90	
Retention Time (minutes)	: 2.136	
Quant Ion	: 39.00	
Area (flag)	: 314176M	
On-Column Amount (ng)	: 2.4501	
Integration start scan	: 69	Integration stop scan: 105
Y at integration start	: 354	Y at integration end: 354

Reason for manual integration: improper integration

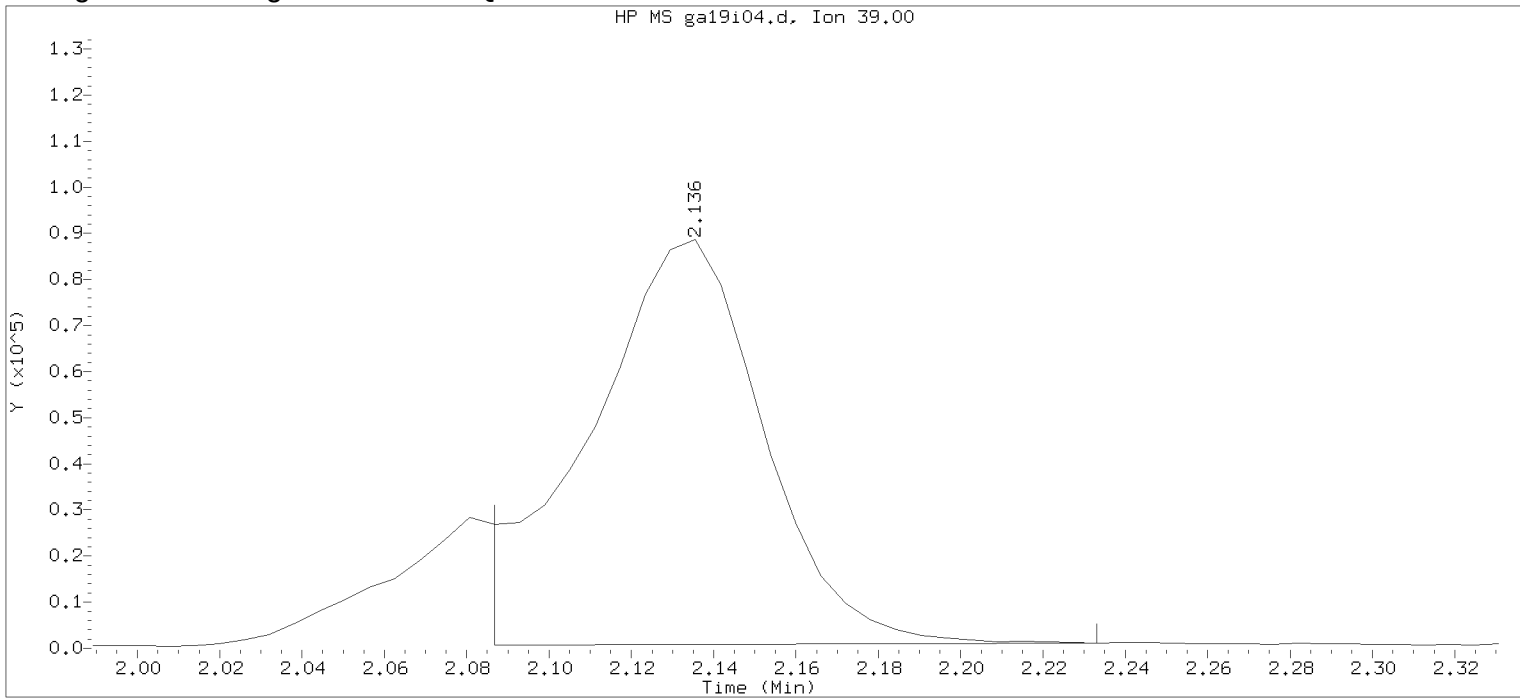
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:45

Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 90

Retention Time (minutes): 2.136

Quant Ion : 39.00

Area : 258868

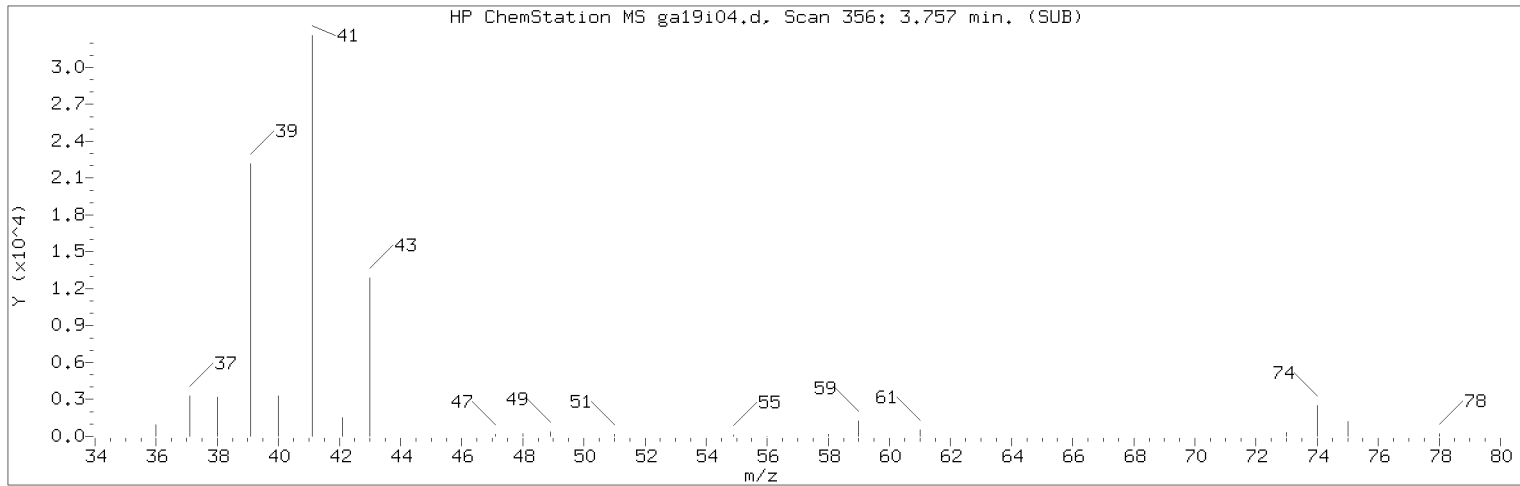
On-column Amount (ng) : 2.1991

Integration start scan : 81 Integration stop scan: 105

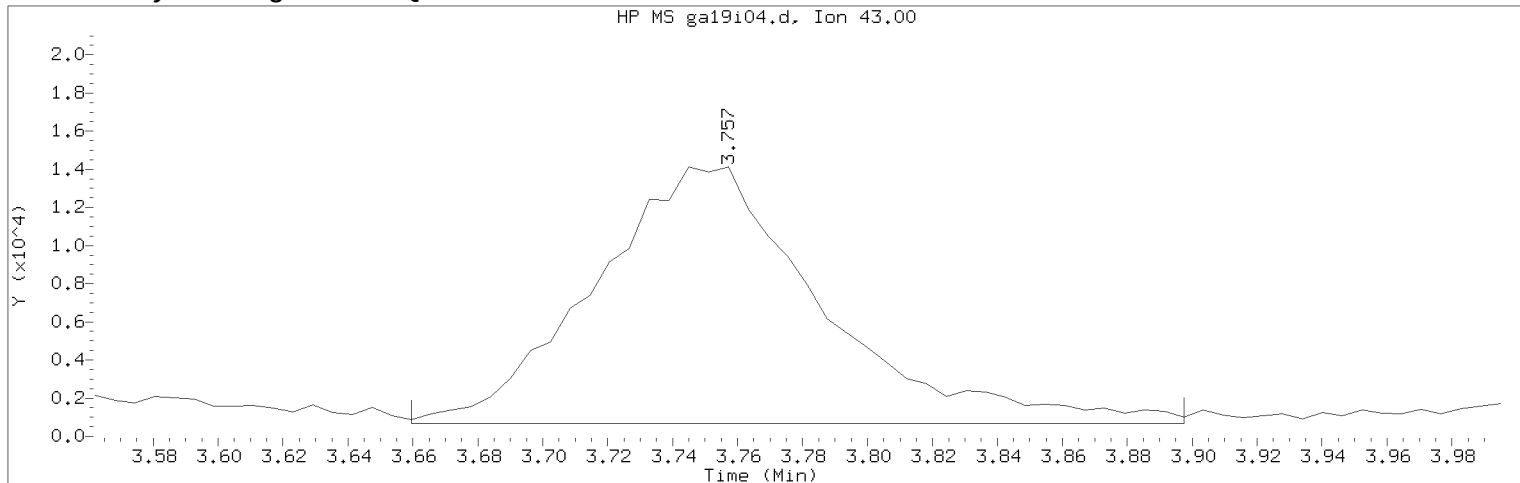
Y at integration start : 656 Y at integration end: 1116

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Target 3.5 esignature userF1D52mB497280 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 356	
Retention Time (minutes)	: 3.757	
Quant Ion	: 43.00	
Area (flag)	: 65877M	
On-Column Amount (ng)	: 2.0084	
Integration start scan	: 339	Integration stop scan: 378
Y at integration start	: 667	Y at integration end: 667

Reason for manual integration: improper integration

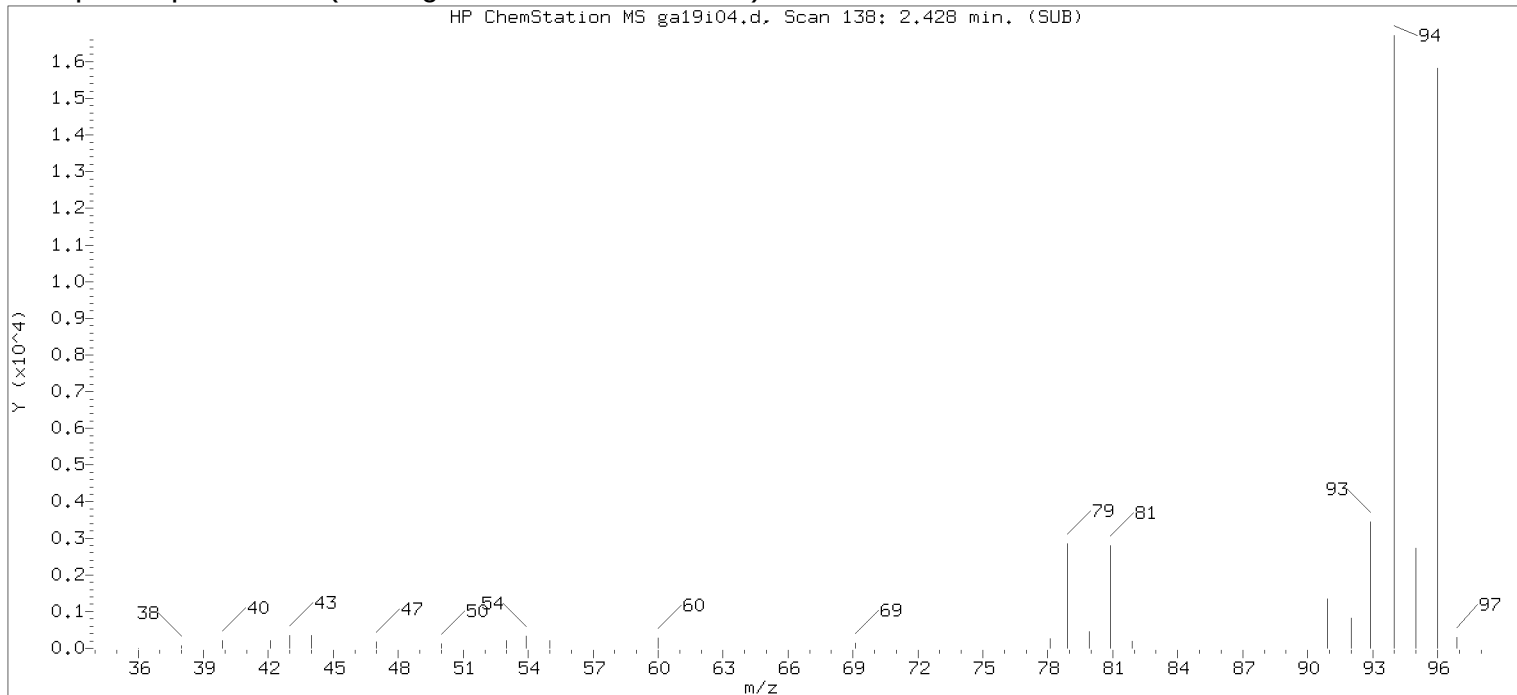
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

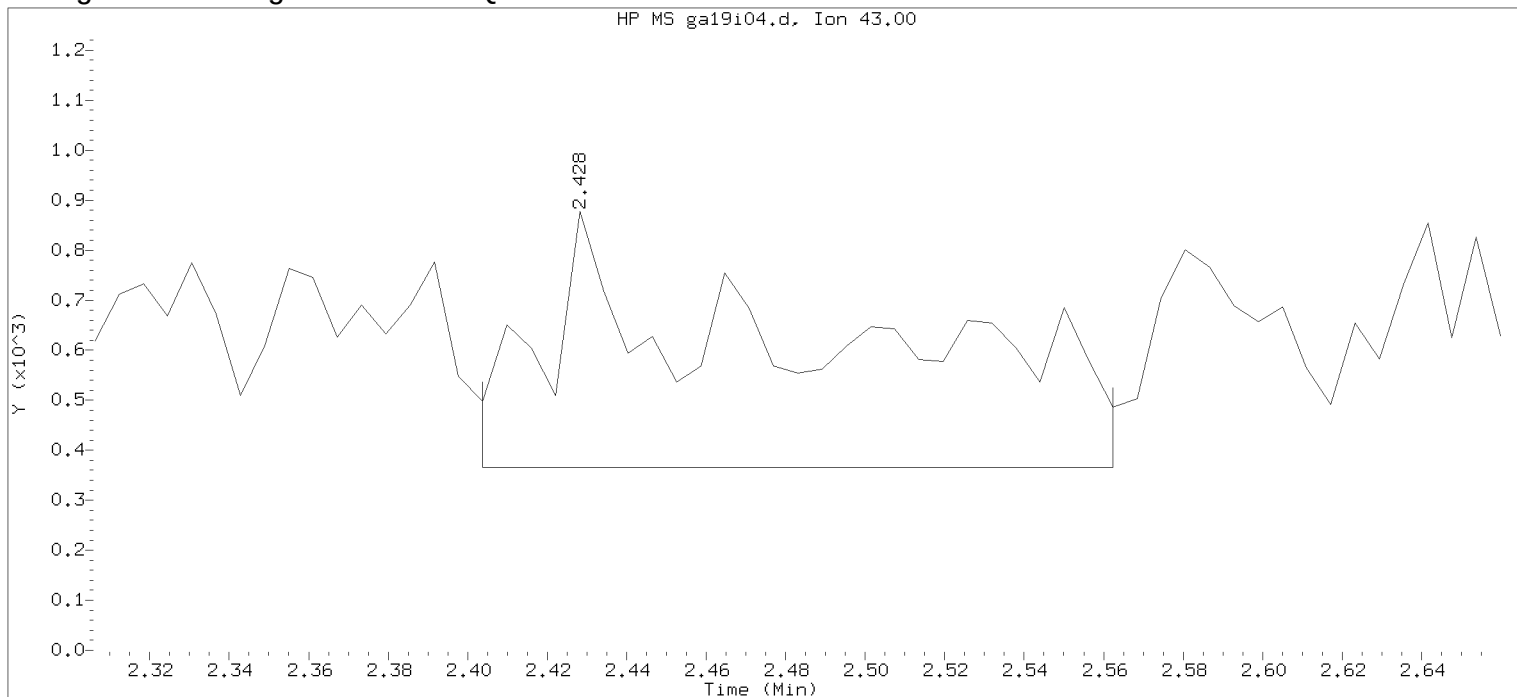
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:45

Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

Sample Name: VSTD002

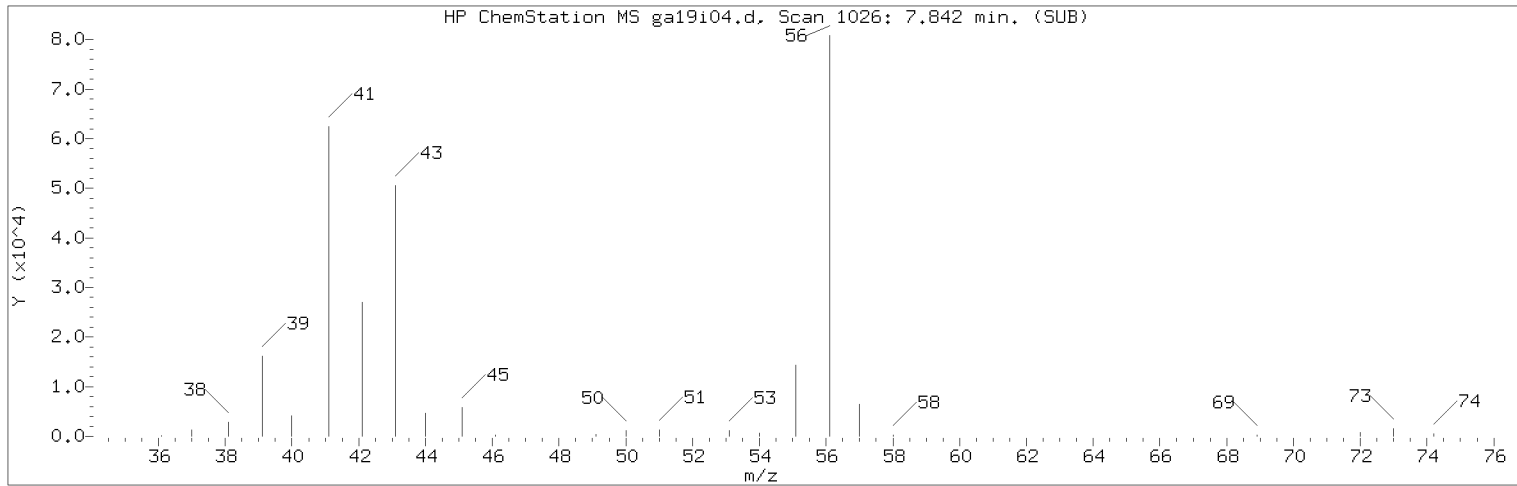
Lab Sample ID: VSTD002

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 138
 Retention Time (minutes): 2.428
 Quant Ion : 43.00
 Area : 2402
 On-column Amount (ng) : 5.0141
 Integration start scan : 133
 Y at integration start : 366

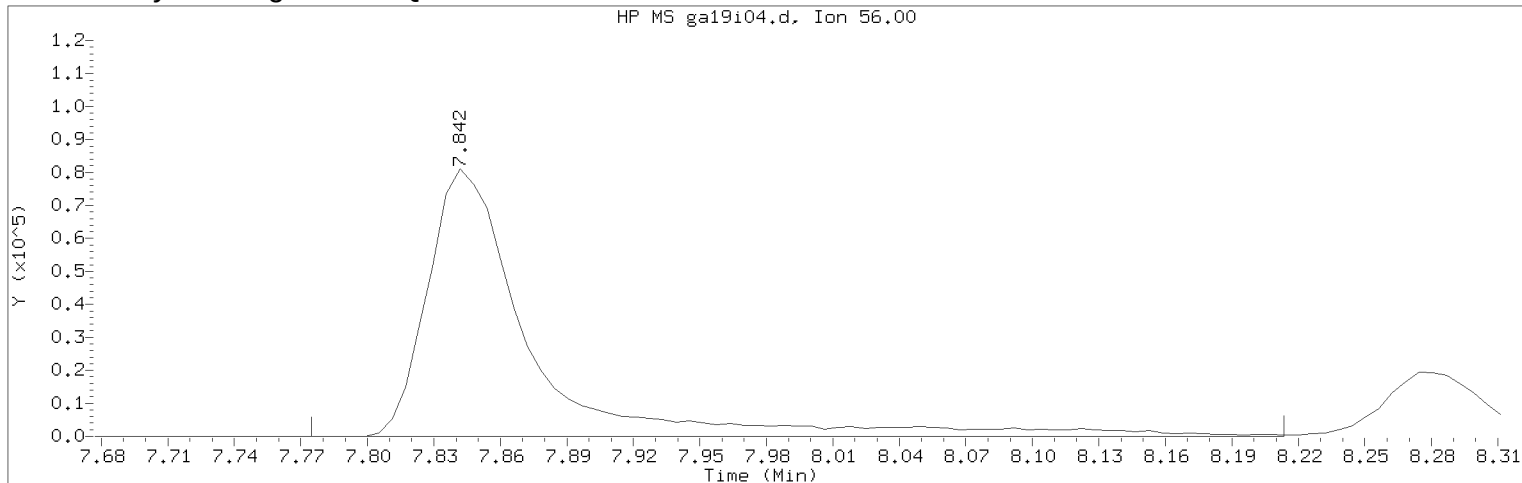
Integration stop scan: 159
 Y at integration end: 366

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB497280 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number : 65

Compound Name : n-Butanol

Scan Number : 1026

Retention Time (minutes): 7.842

Quant Ion : 56.00

Area (flag) : 264019M

On-Column Amount (ng) : 201.4799

Integration start scan : 1014

Integration stop scan: 1086

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

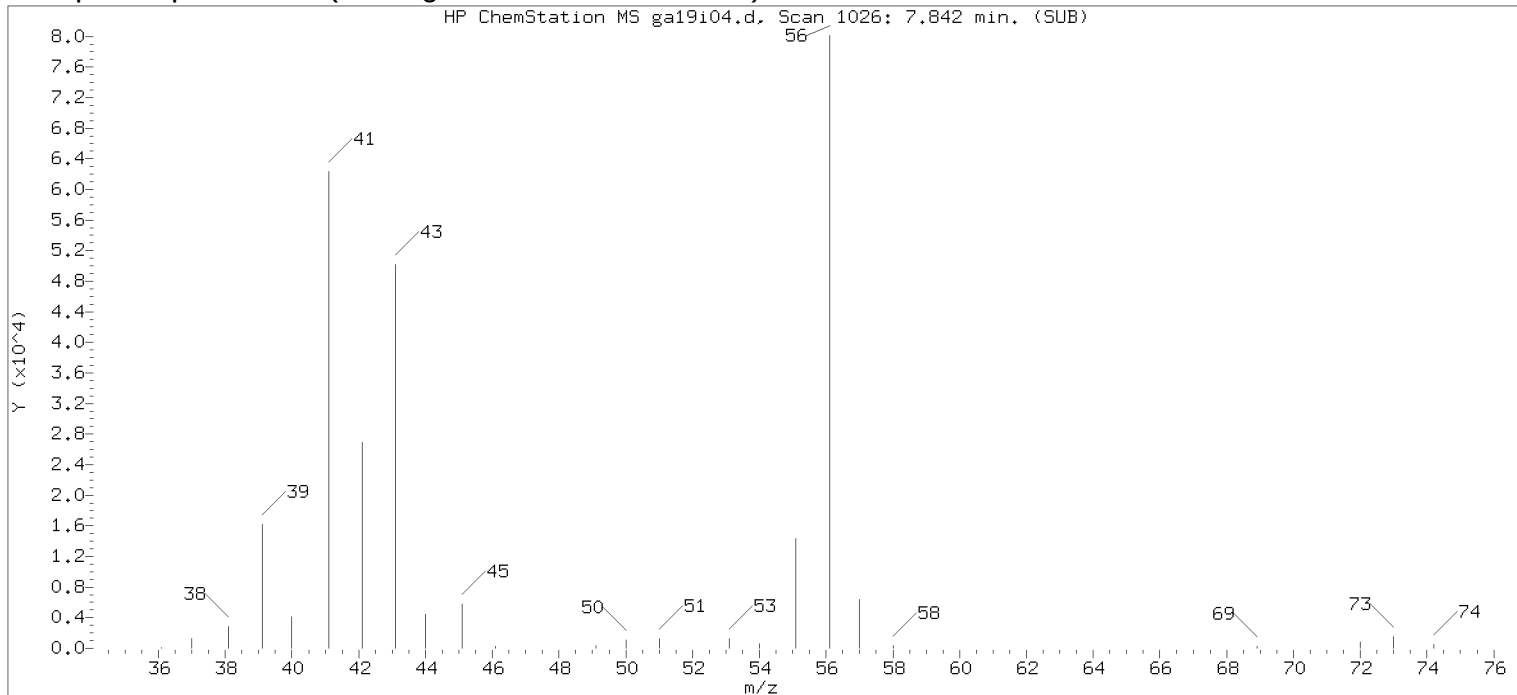
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

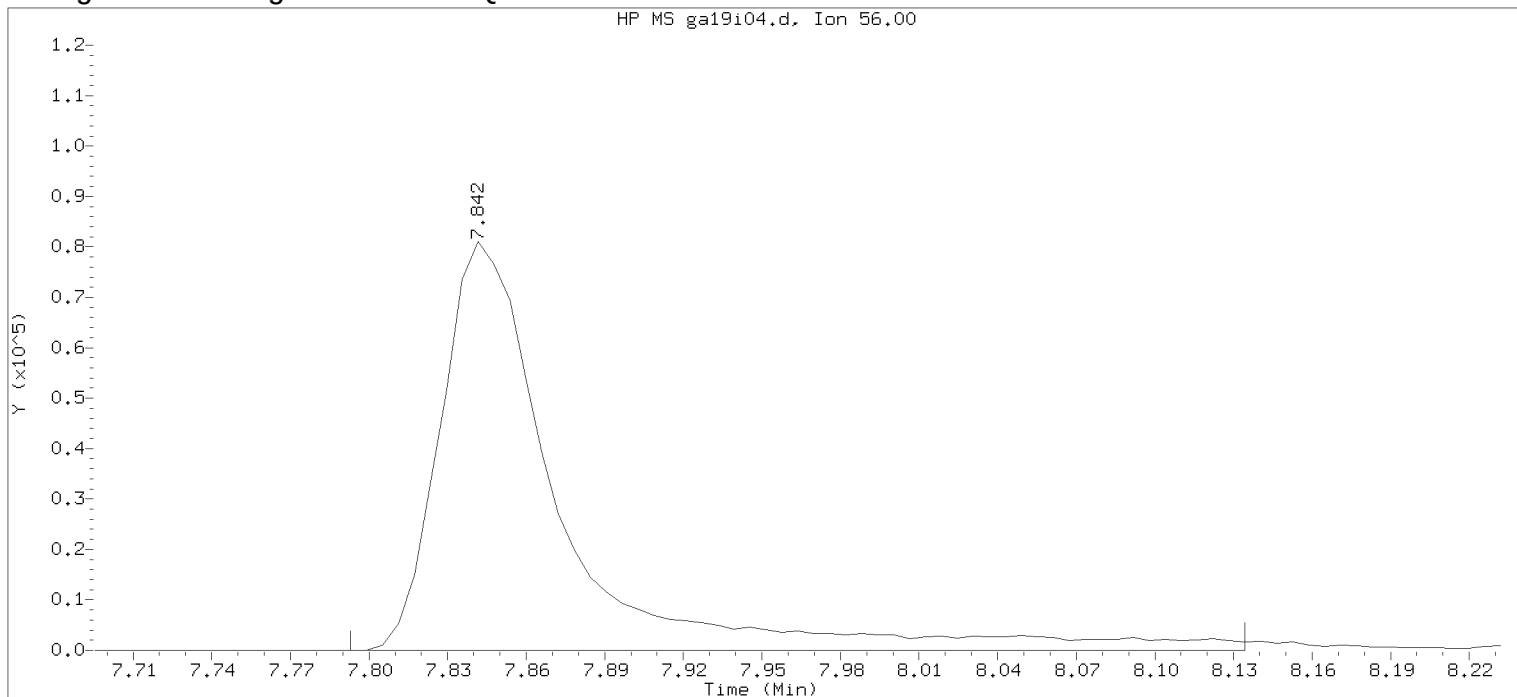
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:45

Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

Sample Name: VSTD002

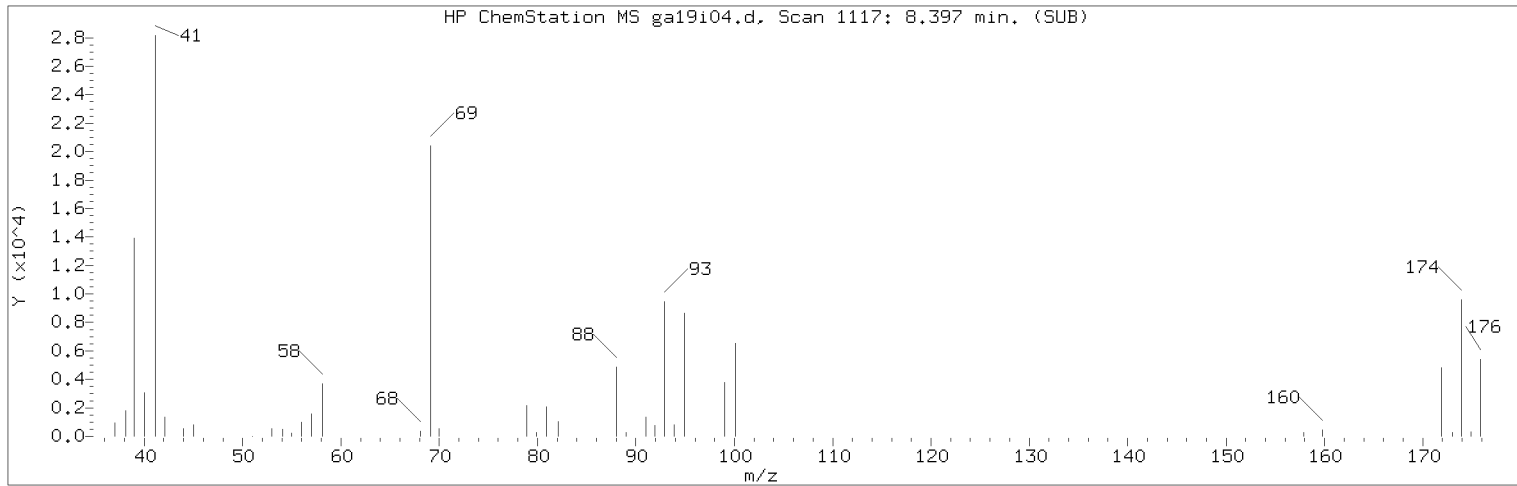
Lab Sample ID: VSTD002

Compound Number : 65
 Compound Name : n-Butanol
 Scan Number : 1026
 Retention Time (minutes): 7.842
 Quant Ion : 56.00
 Area : 259385
 On-column Amount (ng) : 188.7406
 Integration start scan : 1017
 Y at integration start : 0

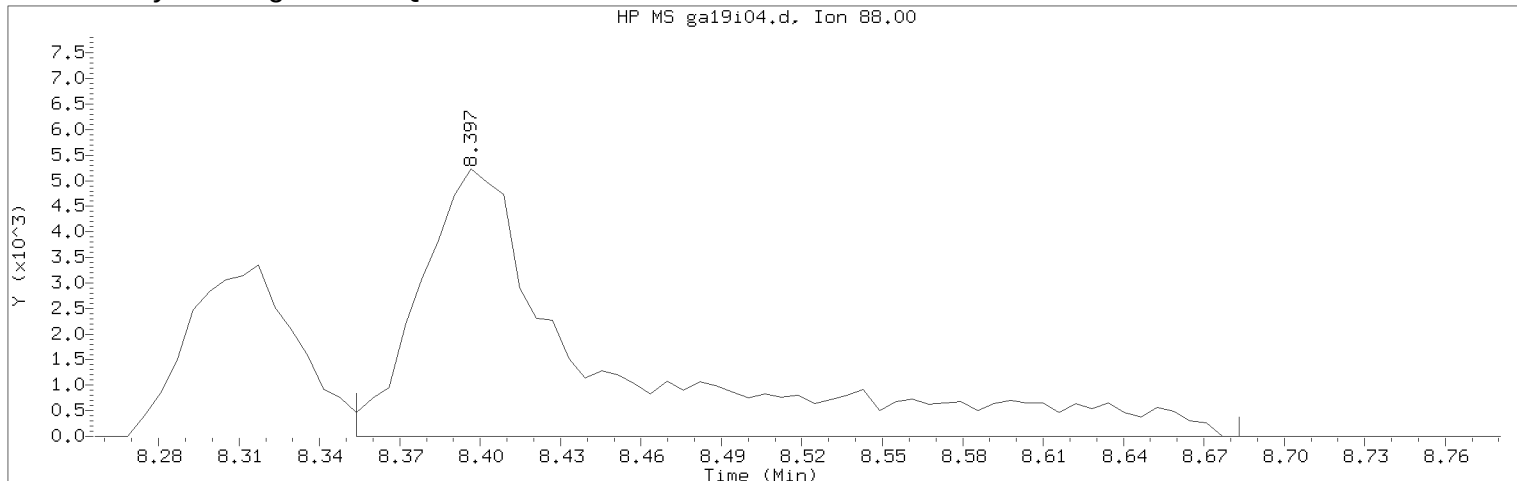
Integration stop scan: 1073
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB107280 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number : 72

Compound Name : 1,4-Dioxane

Scan Number : 1117

Retention Time (minutes): 8.397

Quant Ion : 88.00

Area (flag) : 24973M

On-Column Amount (ng) : 104.1824

Integration start scan : 1109

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 Matthew S. Krause

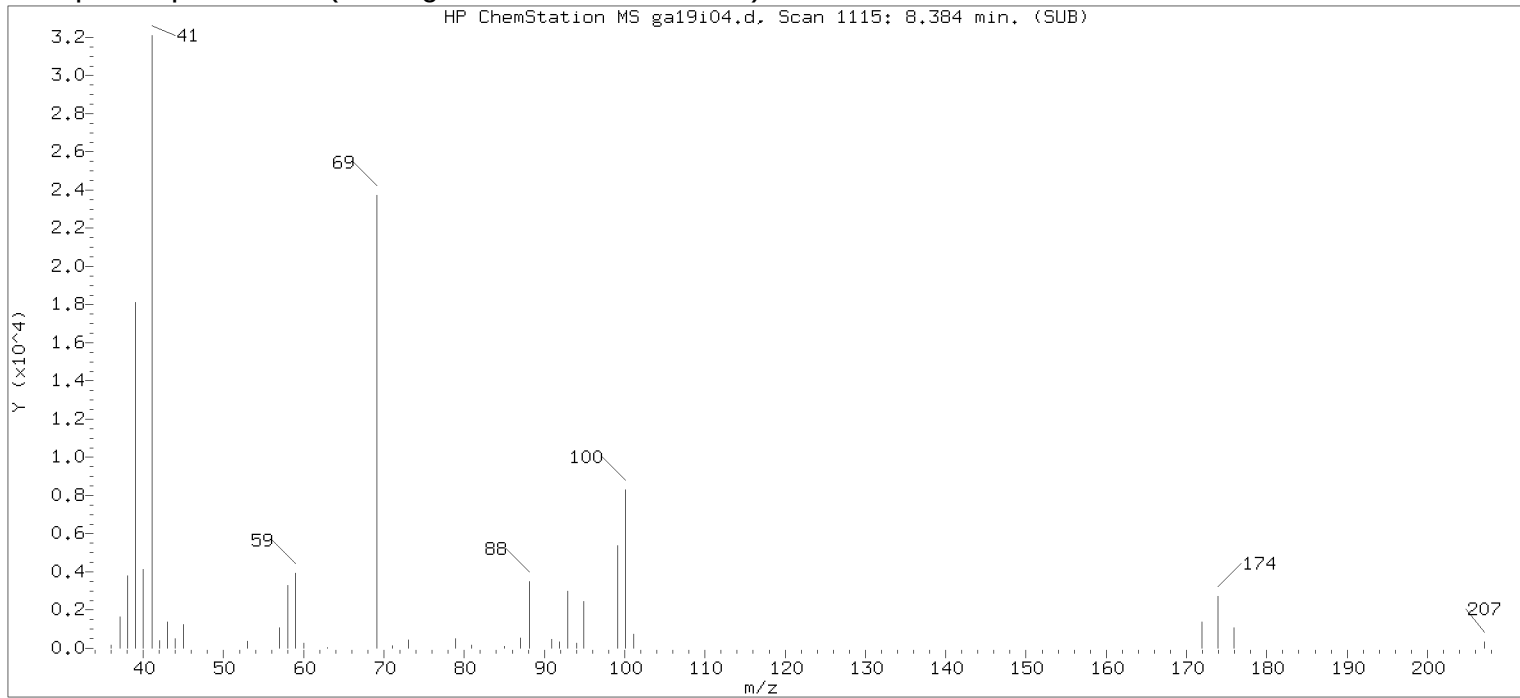
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

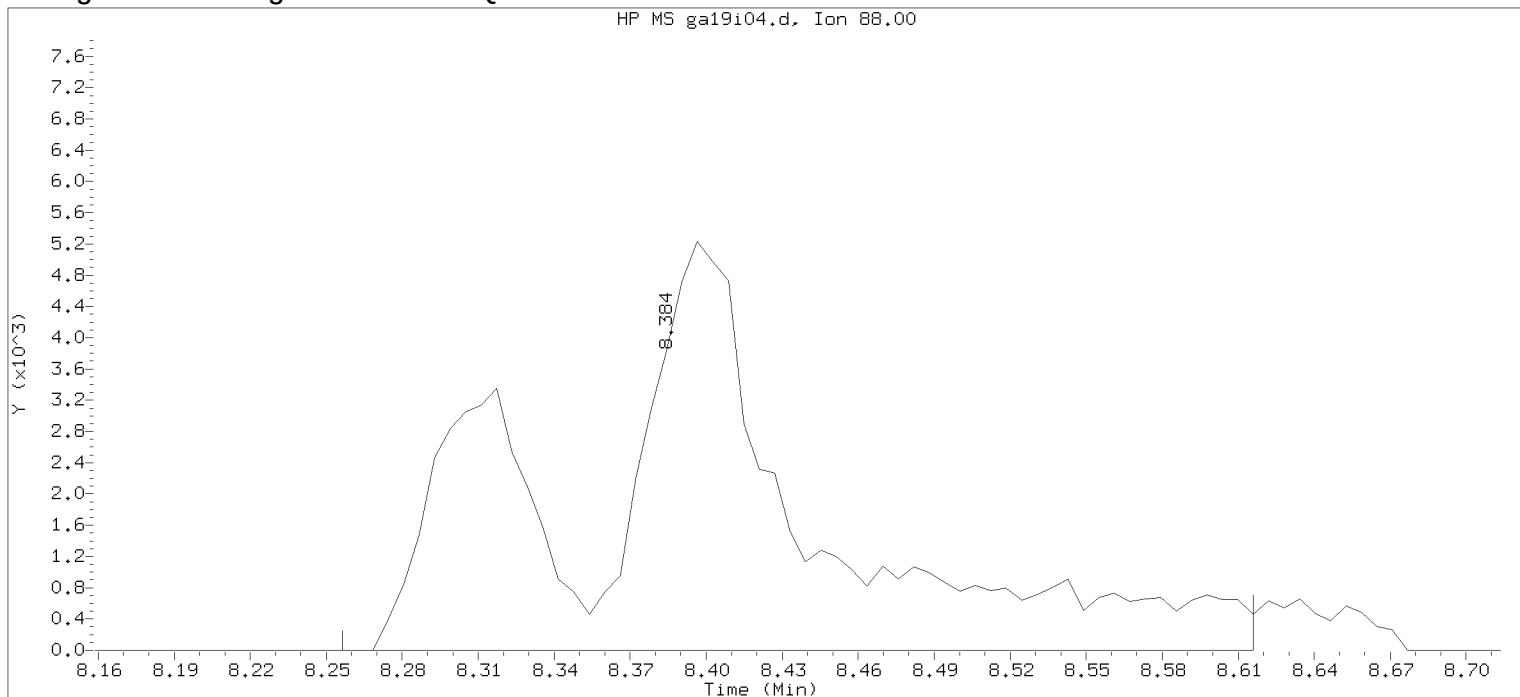
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:45

Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

Sample Name: VSTD002

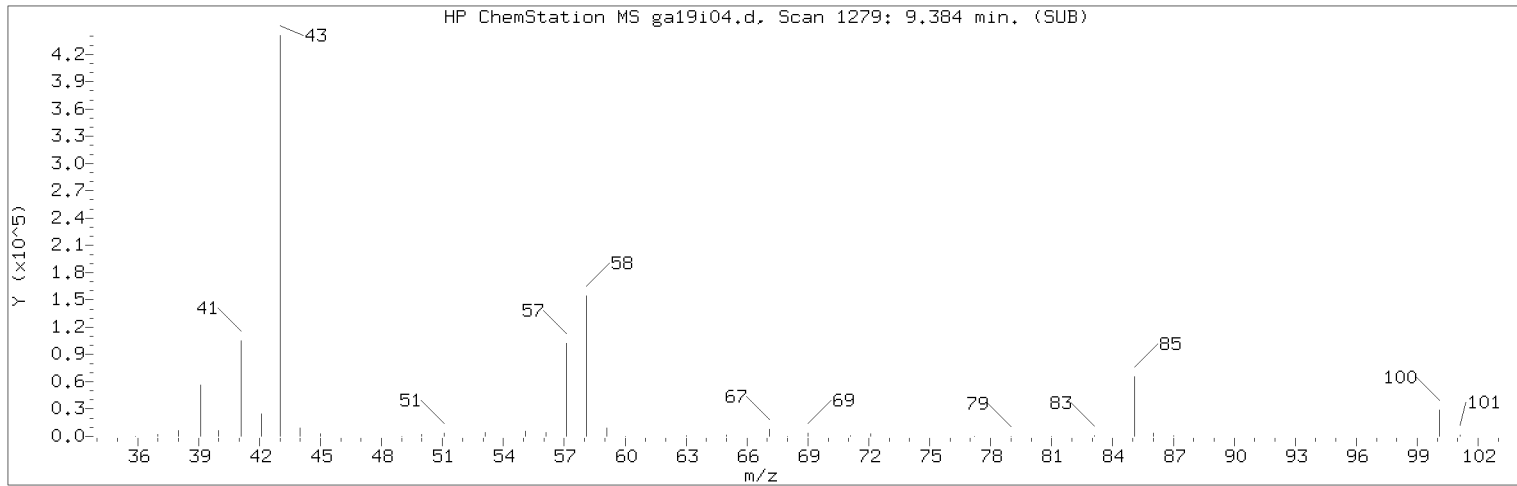
Lab Sample ID: VSTD002

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1115
 Retention Time (minutes): 8.384
 Quant Ion : 88.00
 Area : 32625
 On-column Amount (ng) : 115.0465
 Integration start scan : 1093
 Y at integration start : 0

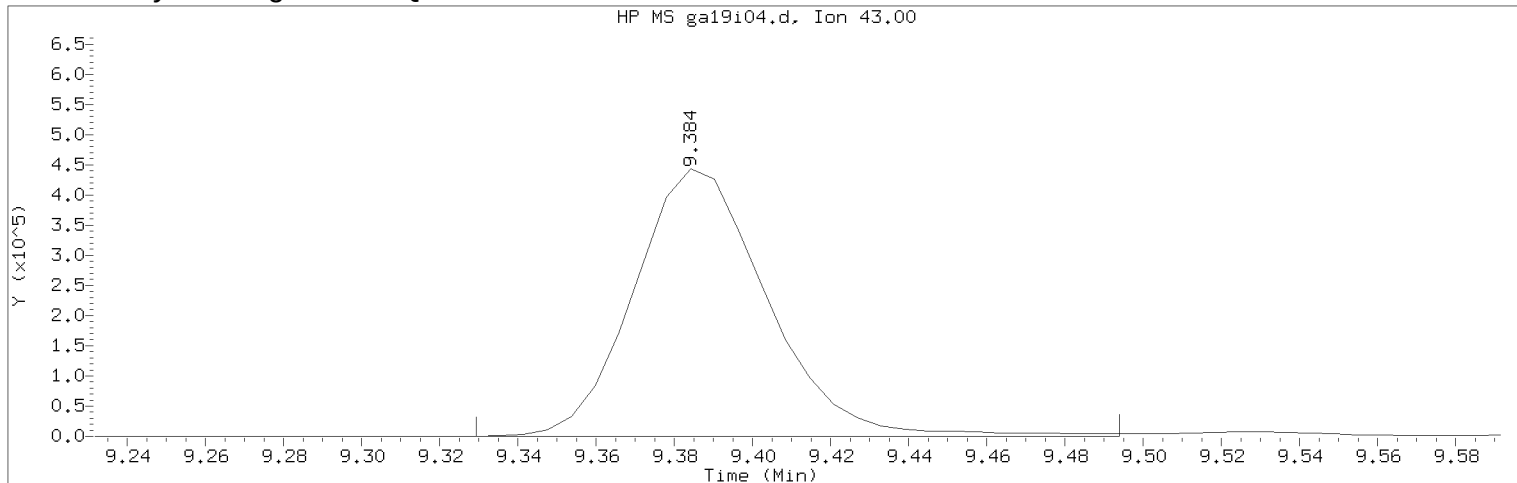
Integration stop scan: 1152
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature userFID52mBkg7280 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 1049709M

On-Column Amount (ng) : 20.5254

Integration start scan : 1269 Integration stop scan: 1296

Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

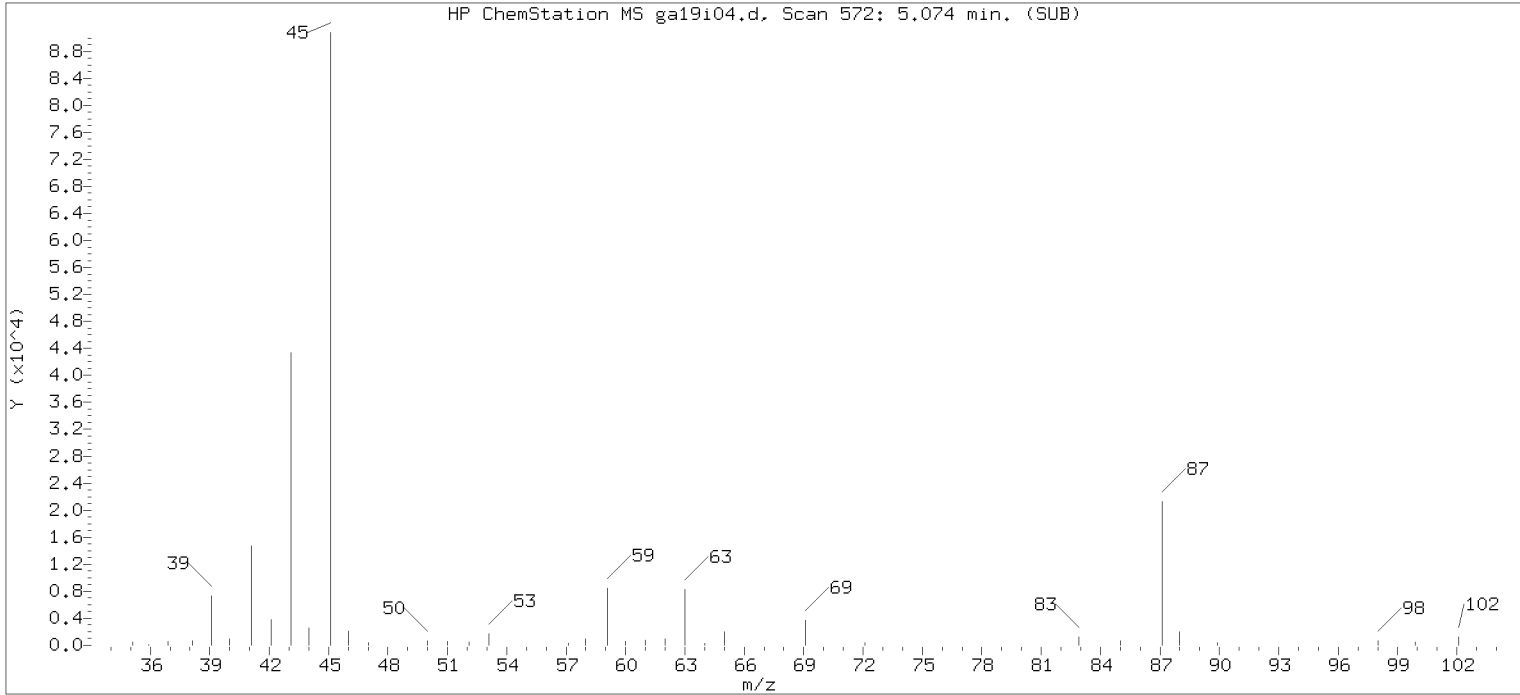
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

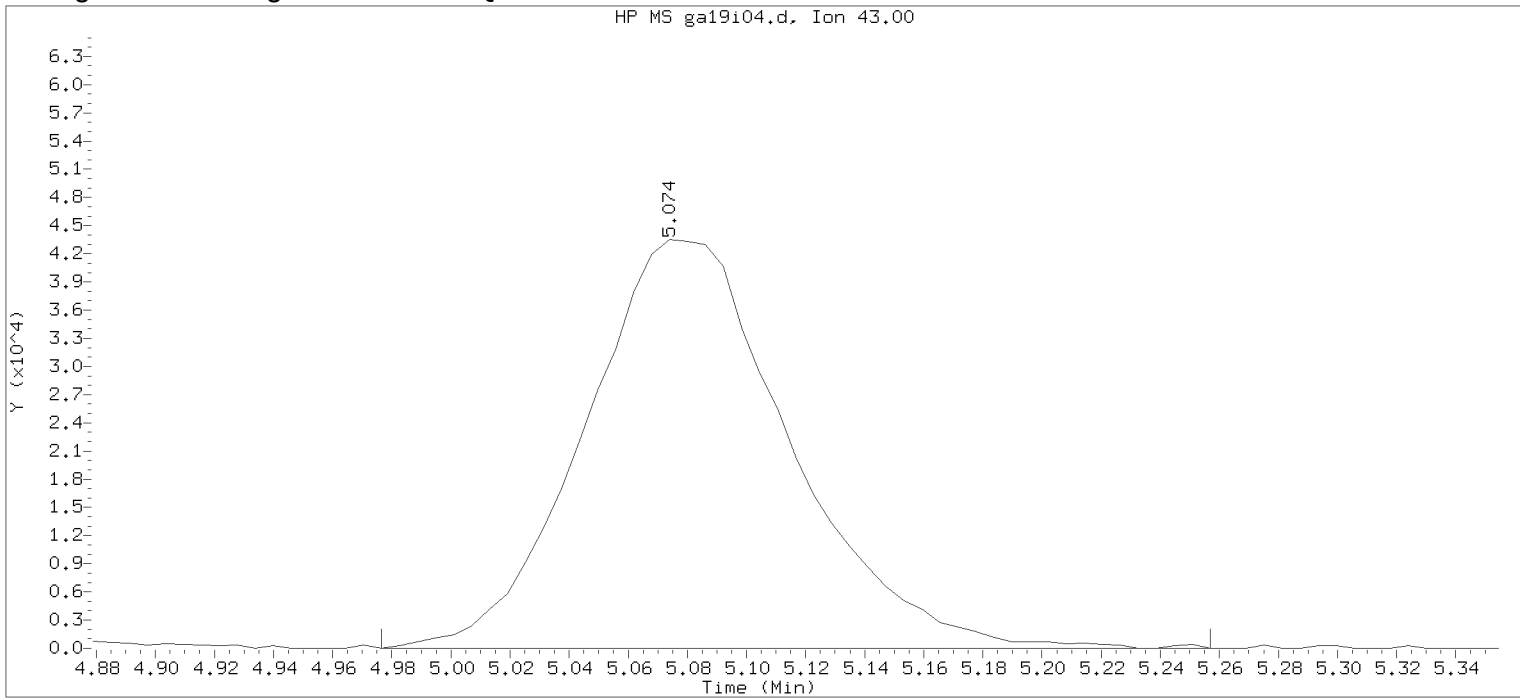
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d Instrument ID: HP16334.i
Injection date and time: 19-APR-2018 13:28 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 19-APR-2018 13:45
Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

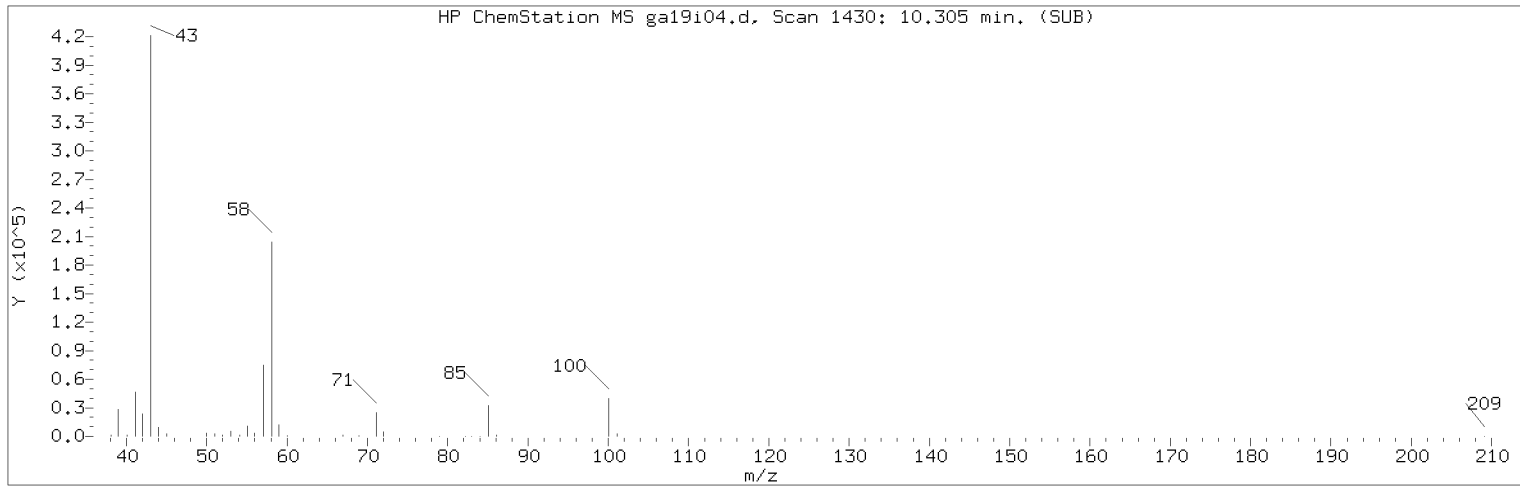
Sample Name: VSTD002

Lab Sample ID: VSTD002

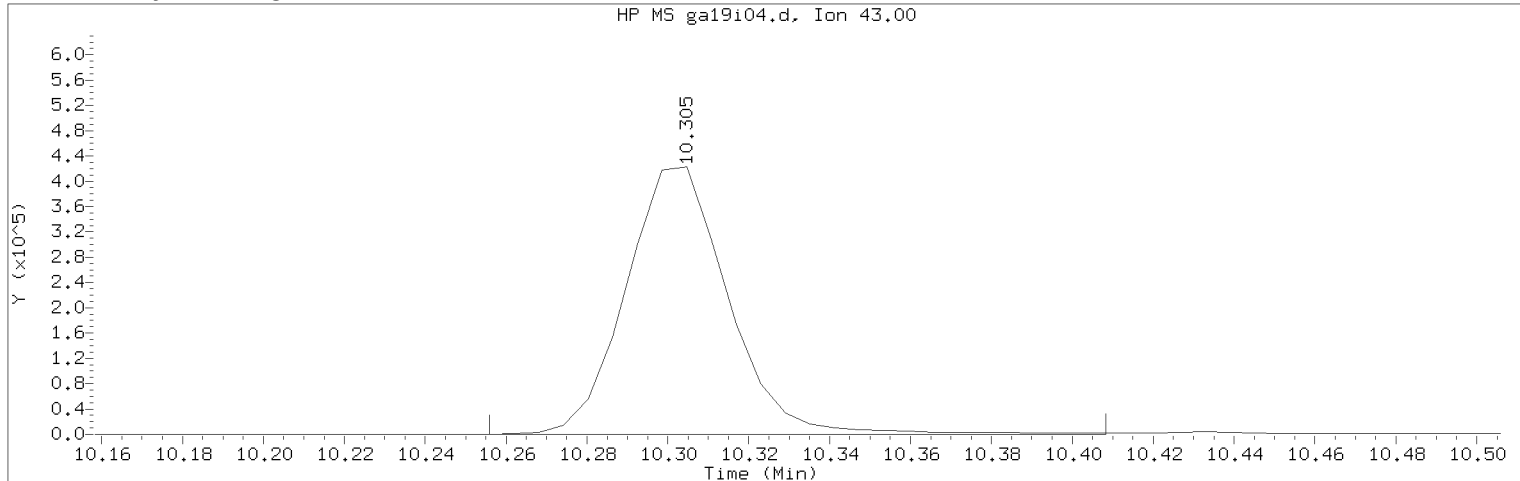
Compound Number	: 81	
Compound Name	: 4-Methyl-2-Pentanone	
Scan Number	: 572	
Retention Time (minutes)	: 5.074	
Quant Ion	: 43.00	
Area	: 209575	
On-column Amount (ng)	: 19.2276	
Integration start scan	: 555	Integration stop scan: 601
Y at integration start	: 0	Y at integration end: 0

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Target 3.5 esignature userF1D52mB107280 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:46 msk07970

Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1430	
Retention Time (minutes)	: 10.305	
Quant Ion	: 43.00	
Area (flag)	: 742959M	
On-Column Amount (ng)	: 20.5222	
Integration start scan	: 1421	Integration stop scan: 1446
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

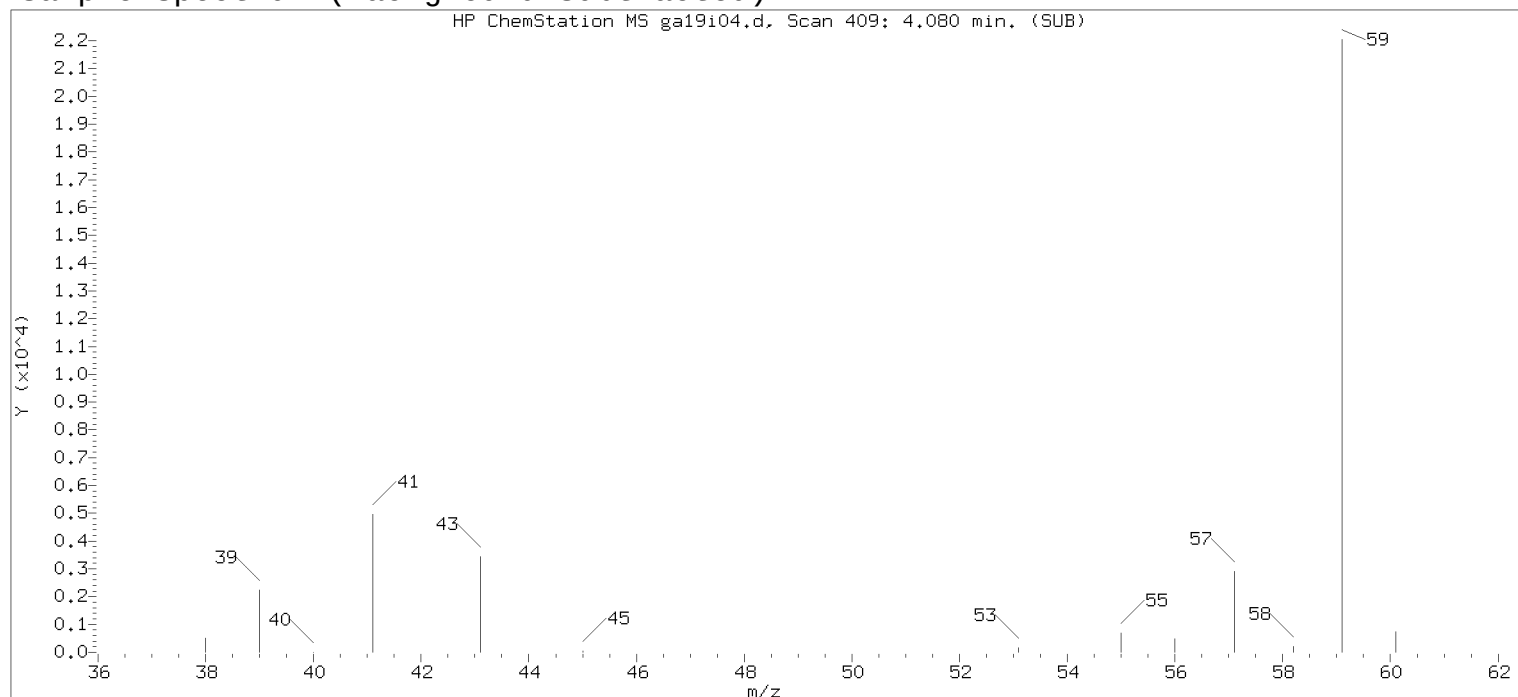
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

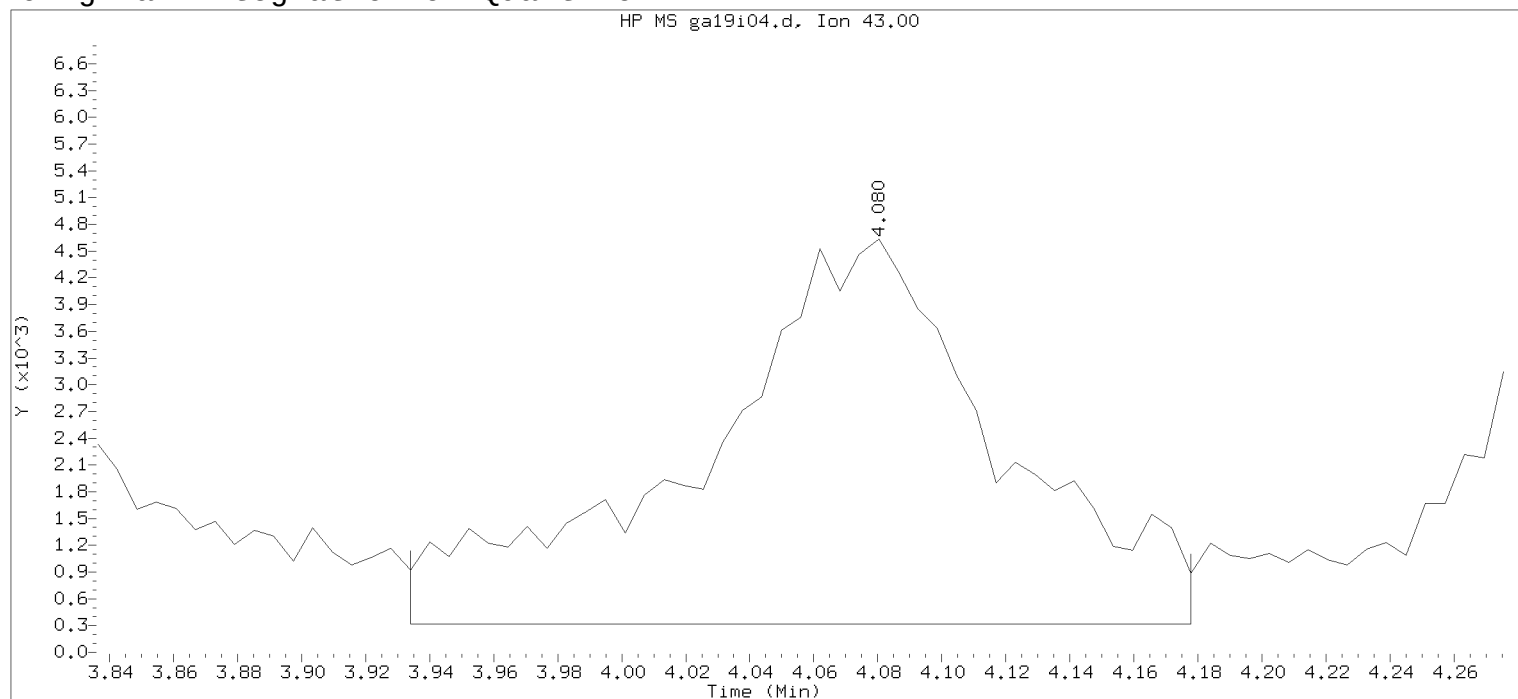
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i04.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:28

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 13:45

Date, time and analyst ID of latest file update: 19-Apr-2018 13:45 Automation

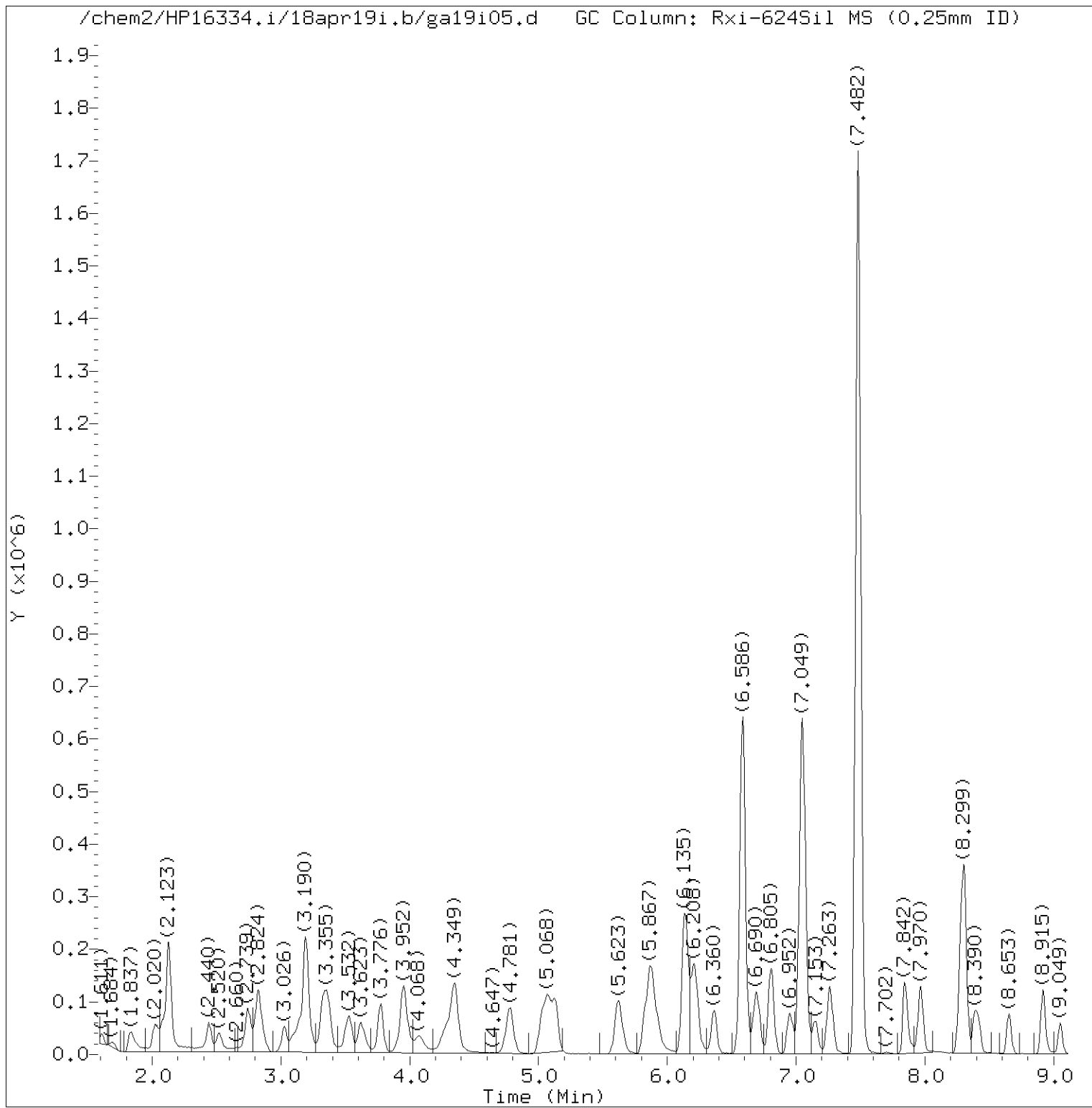
Sample Name: VSTD002

Lab Sample ID: VSTD002

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 409
 Retention Time (minutes): 4.080
 Quant Ion : 43.00
 Area : 28425
 On-column Amount (ng) : 19.0941
 Integration start scan : 384
 Y at integration start : 314

Integration stop scan: 424
 Y at integration end: 314

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 Target 3.5 esignature user F1D52mB407200 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43

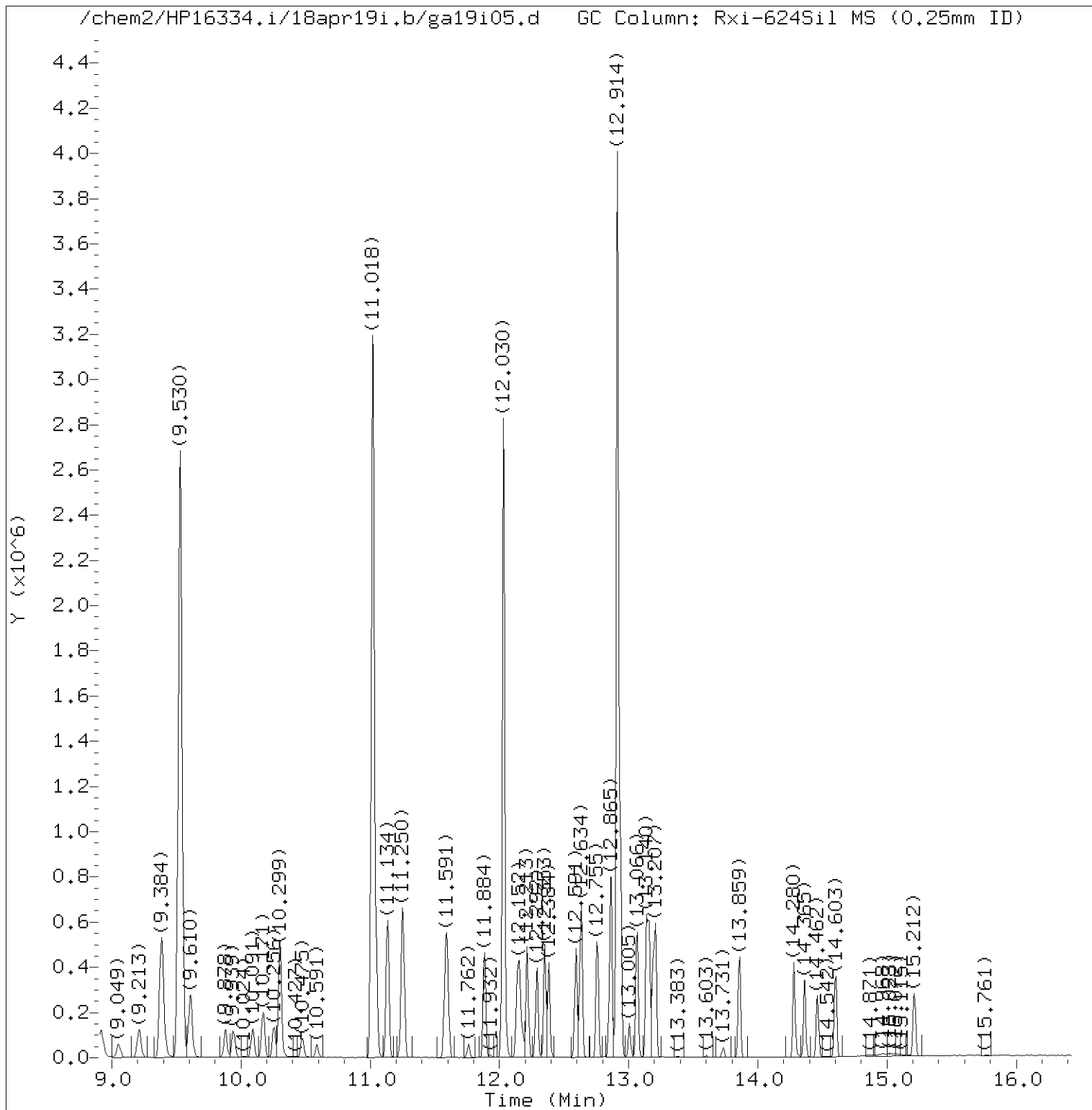
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 292 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 293 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
 Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.831	85	81639	1.018
2) Chloromethane	(2)	2.020	50	81693	1.046
6) 1,3-Butadiene	(2)	2.123	39	163567	1.233
5) Vinyl Chloride	(2)	2.130	62	68017	1.009
7) Bromomethane	(2)	2.440	94	45160	1.007
8) Chloroethane	(2)	2.526	64	38411	1.015
9) Dichlorofluoromethane	(2)	2.745	67	94444	1.040
10) Trichlorofluoromethane	(2)	2.800	101	90163M	1.002
11) Ethyl ether	(2)	3.026	59	44610	1.004
12) Freon 123a	(2)	3.117	67	63658	1.024
13) Acrolein	(1)	3.190	56	372481	47.922
15) 1,1-Dichloroethene	(2)	3.324	96	43056	0.991
14) Acetone	(1)	3.355	43	122973	10.200
16) Freon 113	(2)	3.367	101	49646	0.996
17) Methyl Iodide	(2)	3.513	142	82869	0.984
18) Carbon Disulfide	(2)	3.623	76	167464	1.015
21) Methyl Acetate	(1)	3.745	43	33348M	0.962
22) Allyl Chloride	(2)	3.776	41	98938	0.993
23) Methylene Chloride	(2)	3.952	84	58512	1.087
26)*t-Butyl Alcohol-d10	(1)	3.958	65	224043	50.000
28) t-Butyl Alcohol	(1)	4.074	59	88053	21.411
29) Acrylonitrile	(1)	4.269	53	67137	4.706
30) Methyl Tertiary Butyl Ether	(2)	4.318	73	148018	0.976
31) trans-1,2-Dichloroethene	(2)	4.361	96	49678	1.001
32) n-Hexane	(2)	4.781	57	86347	0.995
33) 1,1-Dichloroethane	(2)	5.019	63	101885	0.994
34) di-Isopropyl Ether	(2)	5.068	45	207356	0.986
35) 2-Chloro-1,3-Butadiene	(2)	5.129	53	92202	0.986
37) Ethyl t-butyl ether	(2)	5.623	59	182342	0.982
38) 2-Butanone	(1)	5.830	43	209722	9.624
39) cis-1,2-Dichloroethene	(2)	5.873	96	56271	0.989
41) 2,2-Dichloropropane	(2)	5.885	77	83841	0.982
42) Propionitrile	(1)	5.921	54	105513	19.569
40) 1,2-Dichloroethene (Total)	(2)		96	105949	1.990
45) Methacrylonitrile	(1)	6.135	67	160314	9.337
47) Bromochloromethane	(2)	6.208	128	25804	0.974
48) Tetrahydrofuran	(1)	6.220	71	47962	9.274
49) Chloroform	(2)	6.366	83	95852	0.979

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 294 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
 Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.586	113	527476	9.995
50) \$Dibromofluoromethane	(2)	6.586	111	541929	10.000
51) 1,1,1-Trichloroethane	(2)	6.592	97	82262	0.983
52) Cyclohexane	(2)	6.696	56	100218	0.992
52) Cyclohexane	(2)	6.690	84	77976	1.004
52) Cyclohexane	(2)	6.696	69	29126	0.993
54) Carbon Tetrachloride	(2)	6.799	117	67080	0.965
55) 1,1-Dichloropropene	(2)	6.805	75	77941	1.003
56) Isobutyl Alcohol	(1)	6.952	41	84927	51.876
57) \$1,2-Dichloroethane-d4	(2)	7.043	102	113675	10.167
57) \$1,2-Dichloroethane-d4	(2)	7.043	65	644122	10.217
57) \$1,2-Dichloroethane-d4	(2)	7.043	104	70681	10.188
58) Benzene	(2)	7.068	78	211887	0.997
59) 1,2-Dichloroethane	(2)	7.153	62	73971	1.009
60) t-Amyl methyl ether	(2)	7.263	73	156867	0.988
63) *Fluorobenzene	(2)	7.482	96	2094201	10.000
62) n-Heptane	(2)	7.494	43	105802	1.020
65) n-Butanol	(1)	7.842	56	130877	94.857
67) Trichloroethene	(2)	7.964	95	56030	0.990
69) Methylcyclohexane	(2)	8.275	83	97994	0.993
70) 1,2-Dichloropropane	(2)	8.305	63	58561	0.985
72) 1,4-Dioxane	(1)	8.384	88	13136M	51.103
71) Methyl Methacrylate	(1)	8.384	69	31122	0.930
73) Dibromomethane	(2)	8.421	93	27471	0.970
74) Bromodichloromethane	(2)	8.653	83	67601	0.947
76) 2-Nitropropane	(1)	8.921	41	100389	8.596
80) cis-1,3-Dichloropropene	(2)	9.213	75	81667	0.917
81) 4-Methyl-2-Pentanone	(1)	9.384	43	517626M	9.588
82) \$Toluene-d8	(3)	9.530	98	2116094	9.962
82) \$Toluene-d8	(3)	9.530	100	1352785	9.985
83) Toluene	(3)	9.610	92	132451	0.988
84) trans-1,3-Dichloropropene	(3)	9.884	75	69609	0.917
86) Ethyl Methacrylate	(3)	9.939	69	63854	0.943
88) 1,1,2-Trichloroethane	(3)	10.091	97	40207	0.988
85) 1,3-Dichloropropene (total)	(3)		75	151276	1.833
89) Tetrachloroethene	(3)	10.171	166	61708	0.990
90) 1,3-Dichloropropane	(3)	10.256	76	72648	0.984
91) 2-Hexanone	(1)	10.299	43	367593M	9.613

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 295 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
 Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	42666	0.897
95) 1,2-Dibromoethane	(3)	10.591	107	37637	0.960
97)*Chlorobenzene-d5	(3)	11.018	117	1587578	10.000
98) Chlorobenzene	(3)	11.049	112	155907	1.009
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	49828	0.930
100) Ethylbenzene	(3)	11.134	91	269486	1.007
101) m+p-Xylene	(3)	11.250	106	202327	1.967
104) o-Xylene	(3)	11.585	106	99953	0.967
106) Styrene	(3)	11.597	104	166356	0.963
105) Xylene (Total)	(3)		106	302280	2.935
107) Bromoform	(3)	11.762	173	23550	0.846
108) Isopropylbenzene	(3)	11.884	105	266204	0.989
111)\$4-Bromofluorobenzene	(3)	12.030	95	818746	10.059
111)\$4-Bromofluorobenzene	(3)	12.030	174	695895	9.979
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	52821M	0.987
114) Bromobenzene	(4)	12.146	156	69466	0.997
116) 1,2,3-Trichloropropane	(4)	12.176	110	14961	1.009
117) n-Propylbenzene	(4)	12.213	91	327336	1.018
119) 2-Chlorotoluene	(4)	12.292	126	64989	1.016
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	232829	1.002
122) 4-Chlorotoluene	(4)	12.384	126	67282	0.998
125) tert-Butylbenzene	(4)	12.591	134	48072M	0.995
126) Pentachloroethane	(4)	12.627	167	34040	0.853
127) 1,2,4-Trimethylbenzene	(4)	12.634	105	237250	0.993
128) sec-Butylbenzene	(4)	12.755	105	297322	1.002
131) 1,3-Dichlorobenzene	(4)	12.859	146	139183	0.998
132) p-Isopropyltoluene	(4)	12.865	119	257905	0.994
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	894690	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	140270	0.997
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	104926	0.988
136) Benzyl Chloride	(4)	13.005	126	16267	0.810
138) n-Butylbenzene	(4)	13.158	92	142011	1.021
139) 1,2-Dichlorobenzene	(4)	13.188	146	129708	0.990
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	7412	0.881
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	117315	1.006
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	108644	1.002
146) Hexachlorobutadiene	(4)	14.365	225	58364	1.032
147) Naphthalene	(4)	14.462	128	180882	0.993

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 296 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d
Injection date and time: 19-APR-2018 13:51

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

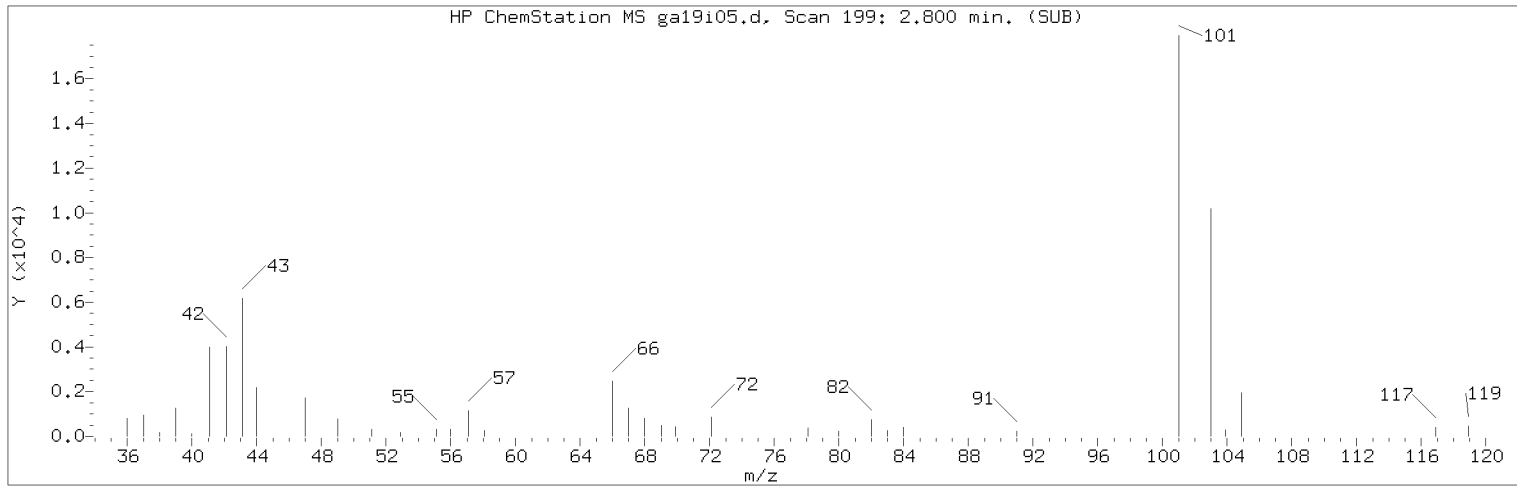
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	95212	1.020

page 4 of 4

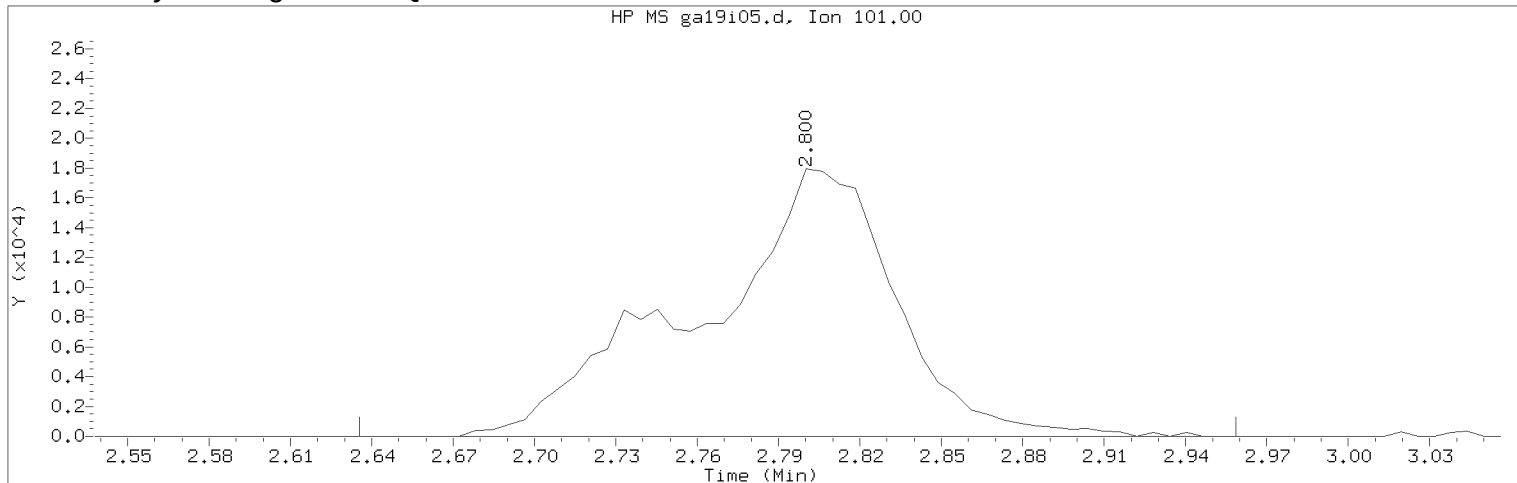
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 199	
Retention Time (minutes)	: 2.800	
Quant Ion	: 101.00	
Area (flag)	: 90163M	
On-Column Amount (ng)	: 1.0024	
Integration start scan	: 171	Integration stop scan: 224
Y at integration start	: 0	Y at integration end: 0

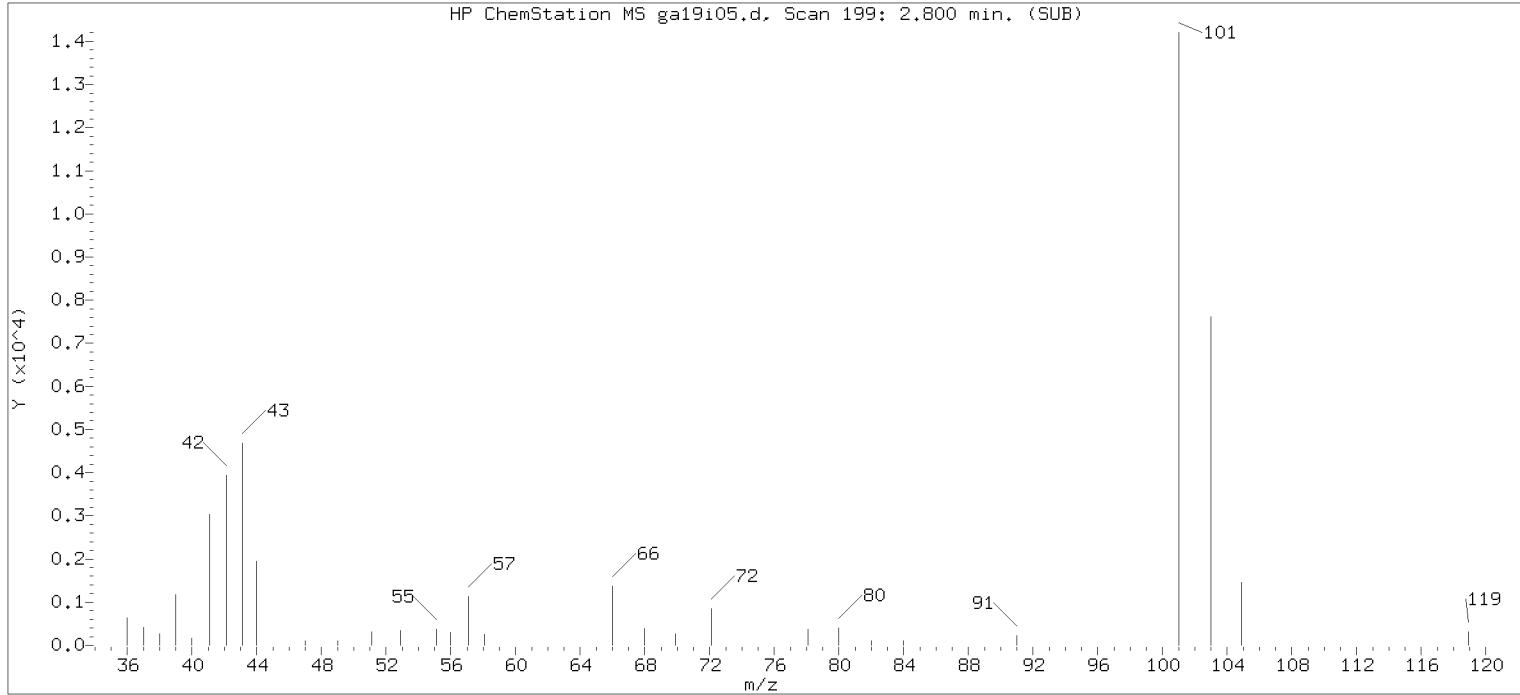
Reason for manual integration: improper integration

Analyst responsible for change:

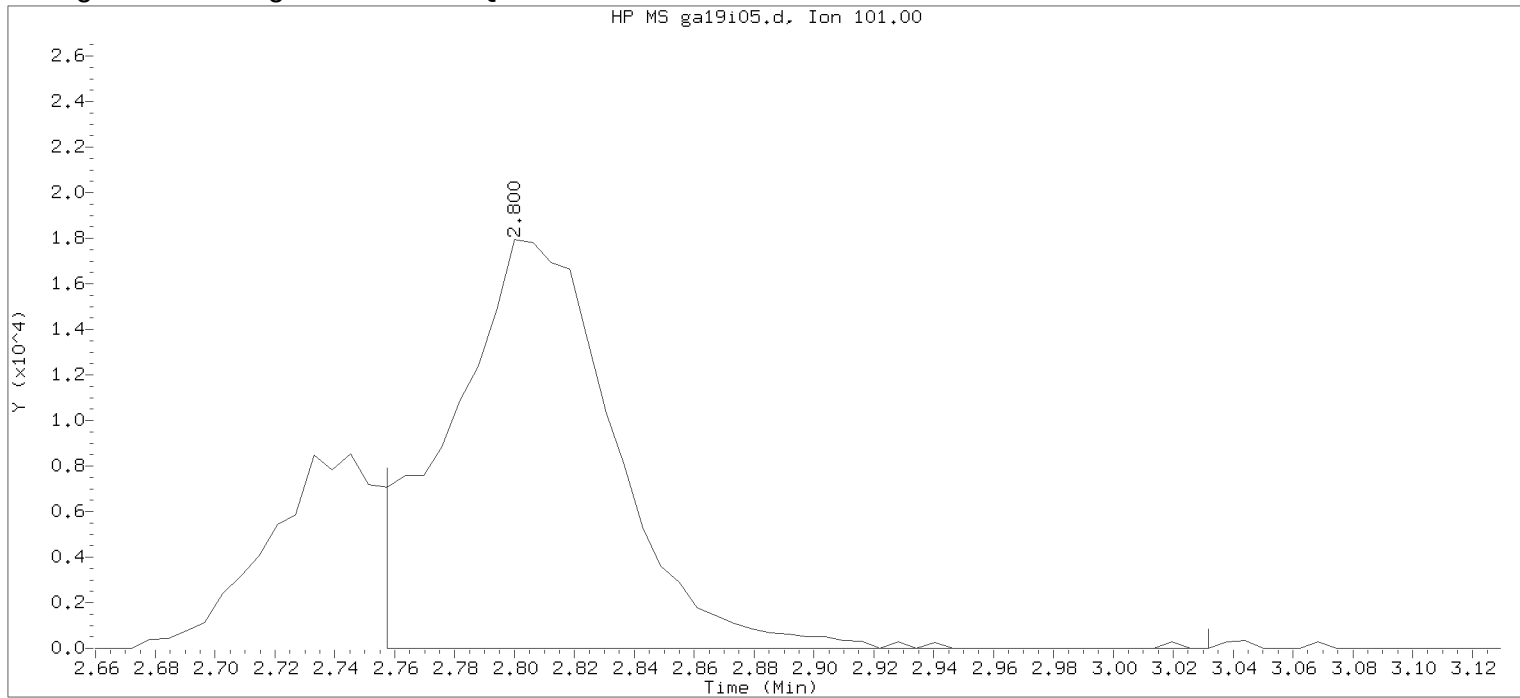
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 199

Retention Time (minutes): 2.800

Quant Ion : 101.00

Area : 68618

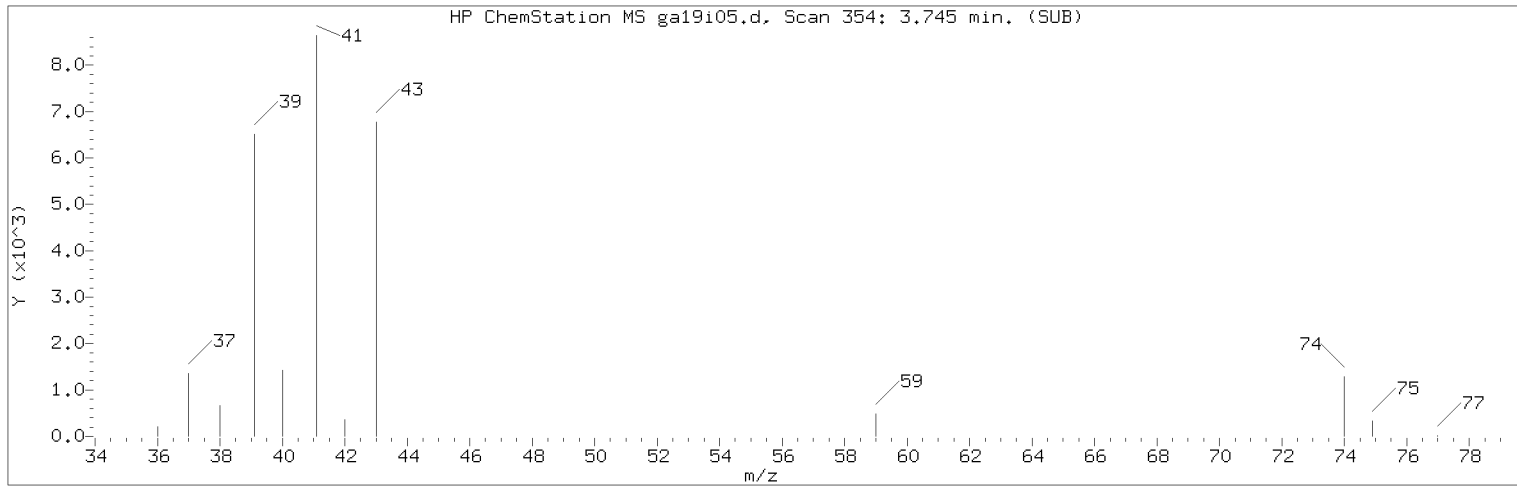
On-column Amount (ng) : 0.8328

Integration start scan : 191 Integration stop scan: 236

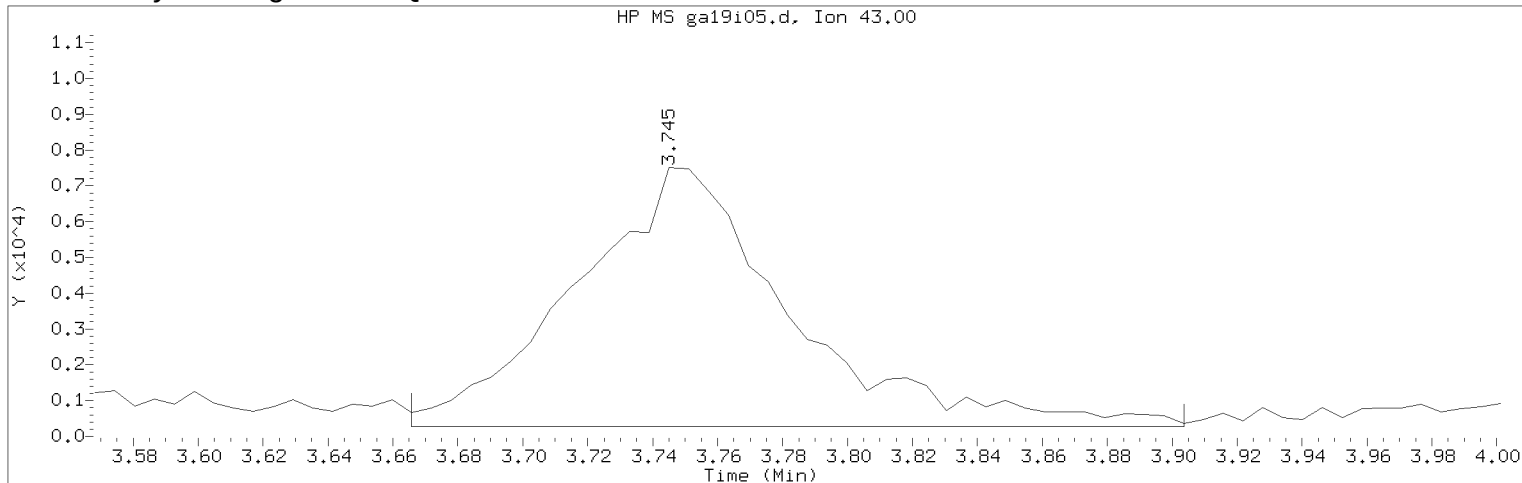
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature user F1D52mB407200 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 354

Retention Time (minutes): 3.745

Quant Ion : 43.00

Area (flag) : 33348M

On-Column Amount (ng) : 0.9623

Integration start scan : 340

Integration stop scan: 379

Y at integration start : 272

Y at integration end: 272

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

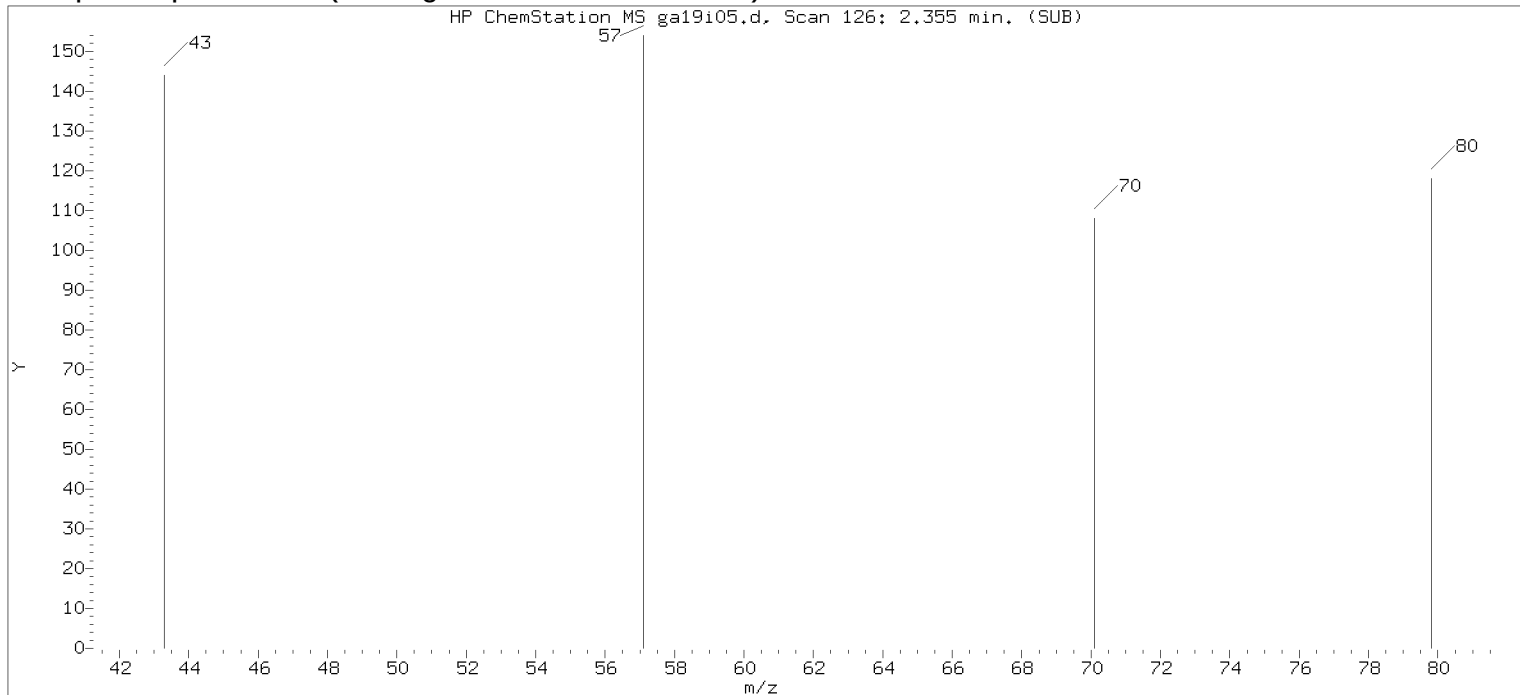
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

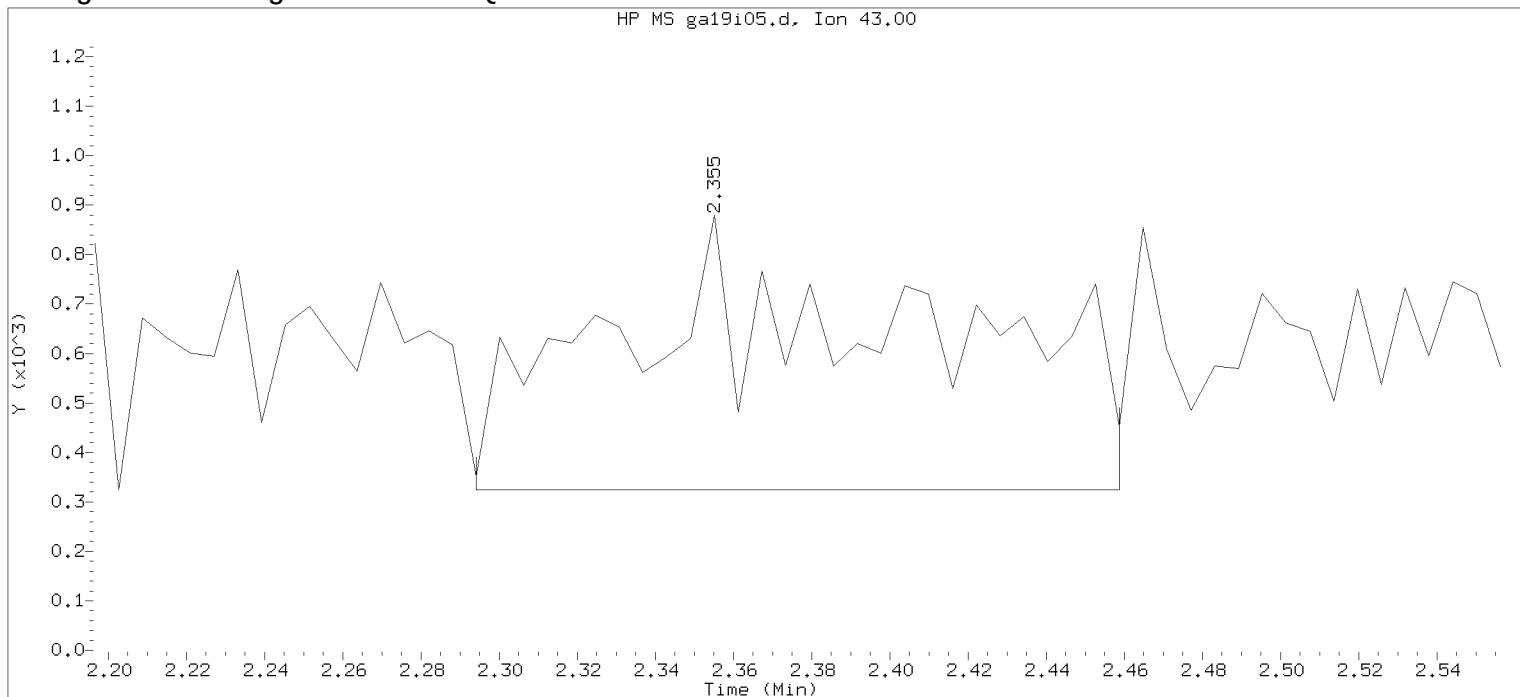
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

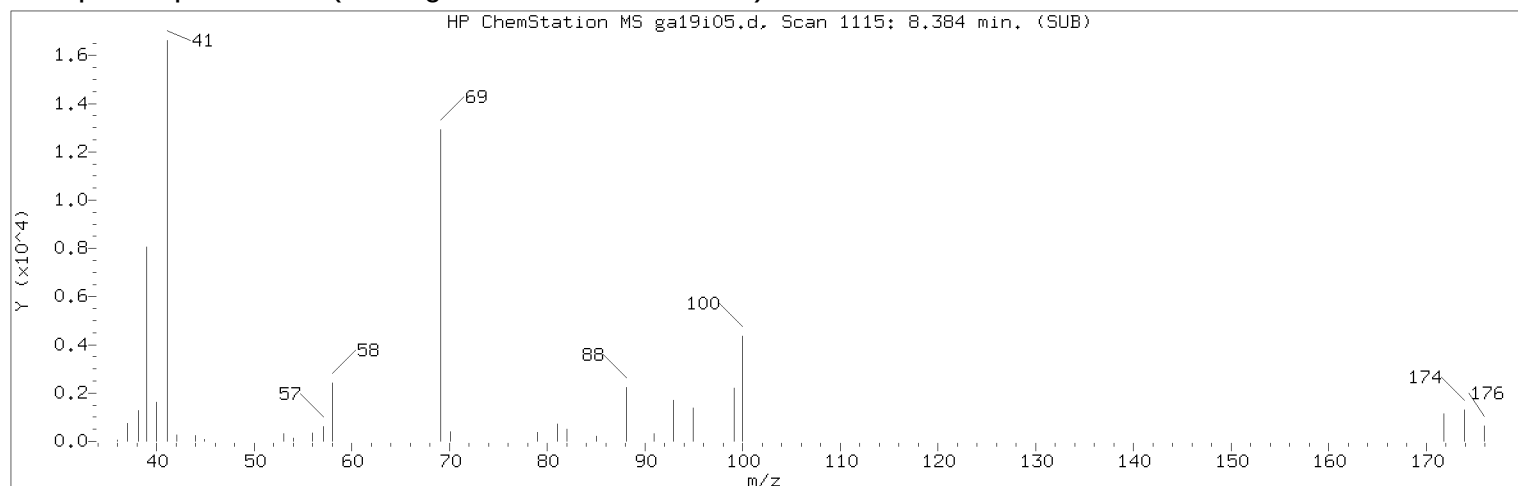
Lab Sample ID: VSTD001

Compound Number : 21
Compound Name : Methyl Acetate
Scan Number : 126
Retention Time (minutes): 2.355
Quant Ion : 43.00
Area : 3067
On-column Amount (ng) : 3.0010
Integration start scan : 115
Y at integration start : 324

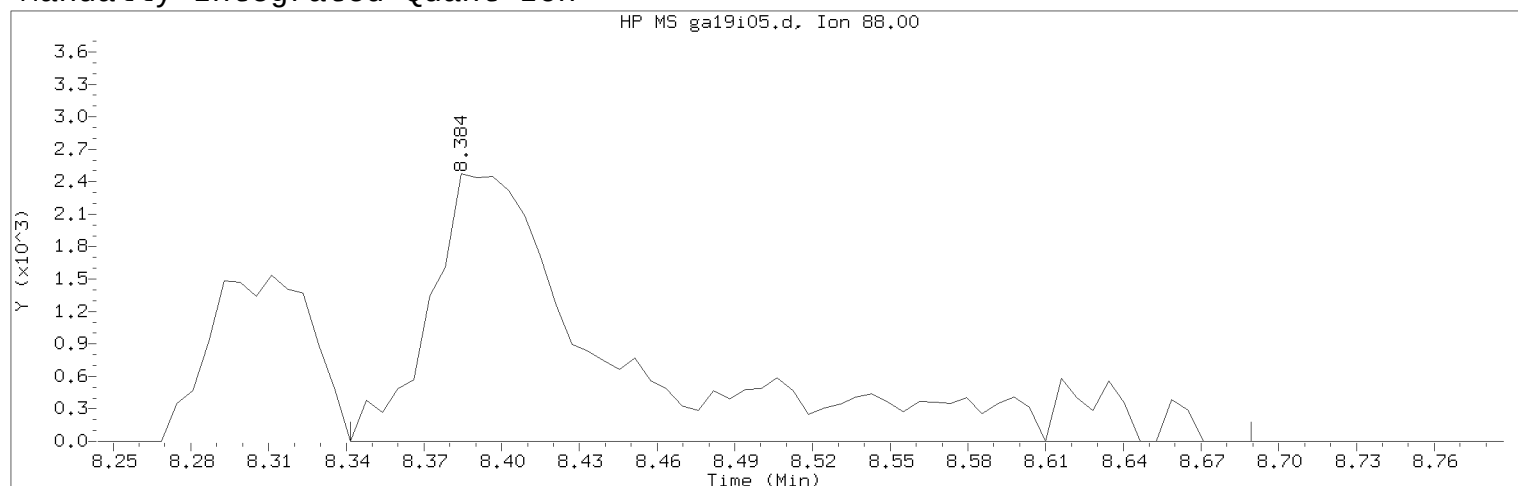
Integration stop scan: 142
Y at integration end: 324

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB497300 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 72

Compound Name : 1,4-Dioxane

Scan Number : 1115

Retention Time (minutes): 8.384

Quant Ion : 88.00

Area (flag) : 13136M

On-Column Amount (ng) : 51.1028

Integration start scan : 1107 Integration stop scan: 1164

Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

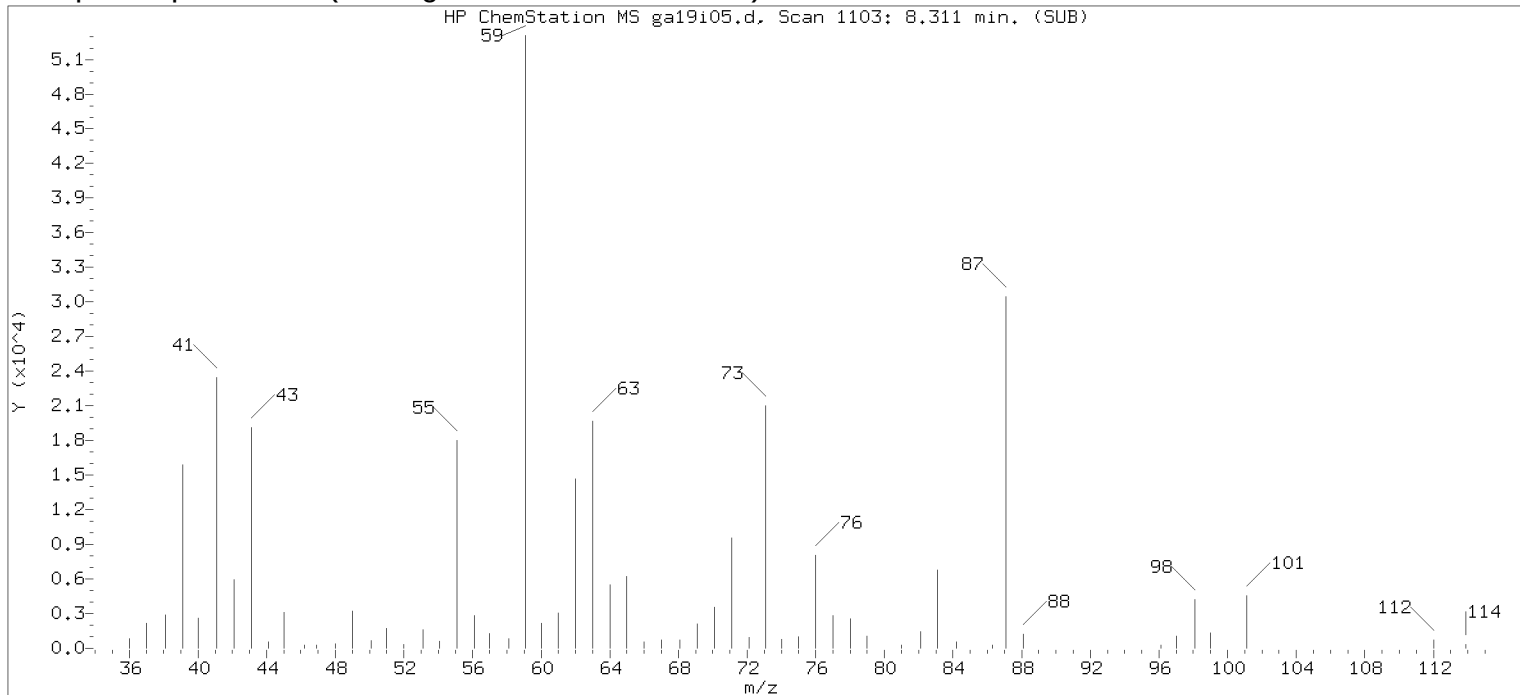
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

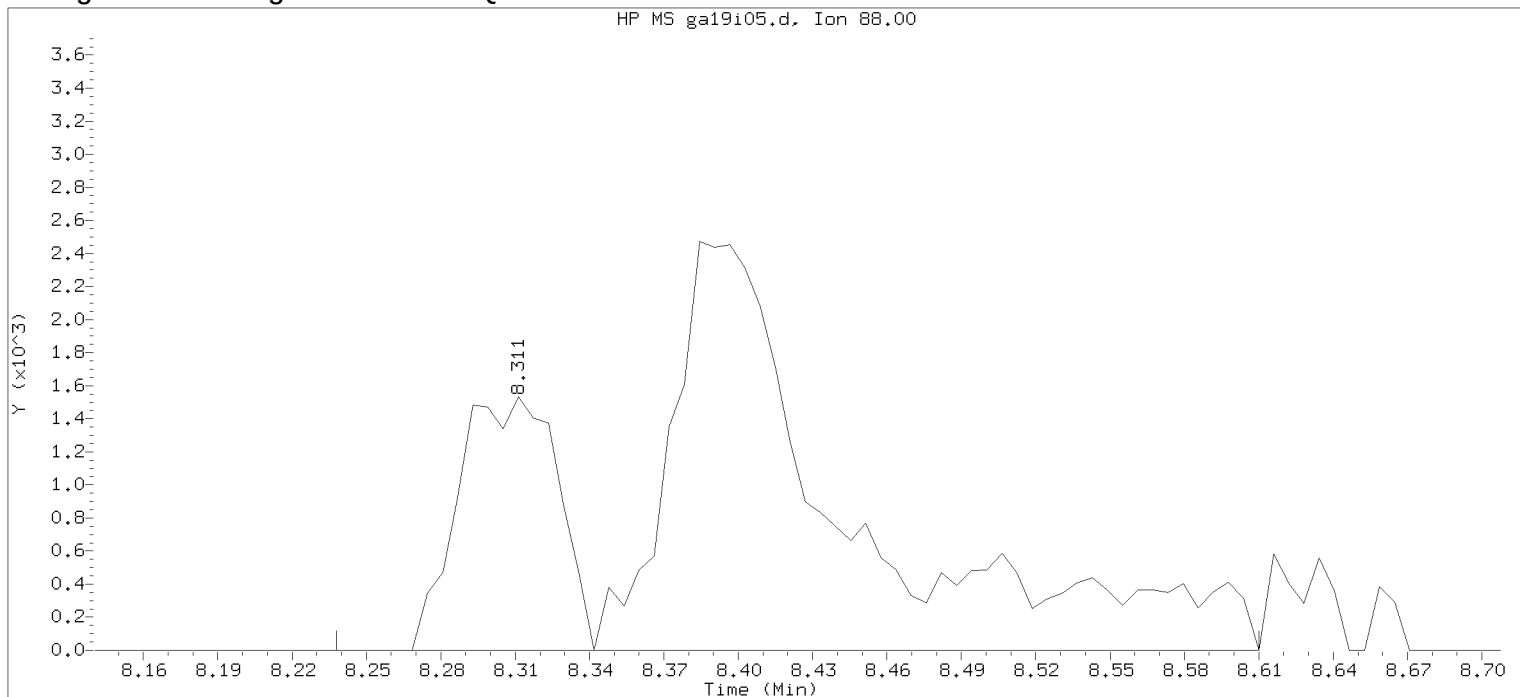
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

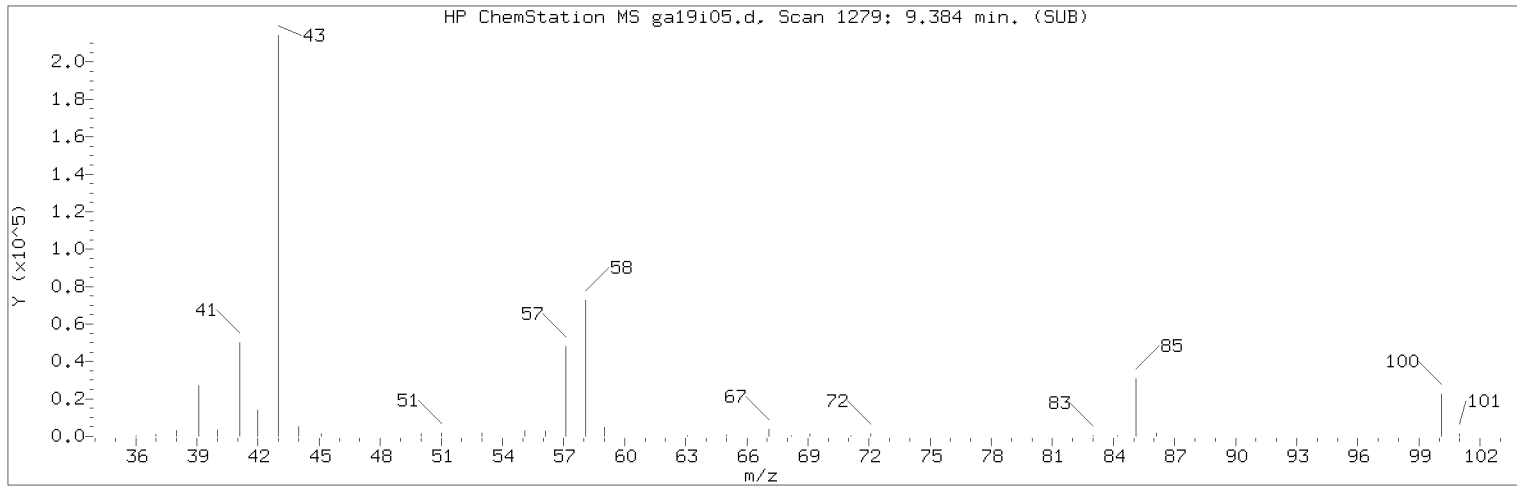
Lab Sample ID: VSTD001

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1103
 Retention Time (minutes): 8.311
 Quant Ion : 88.00
 Area : 16368
 On-column Amount (ng) : 53.2454
 Integration start scan : 1090
 Y at integration start : 0

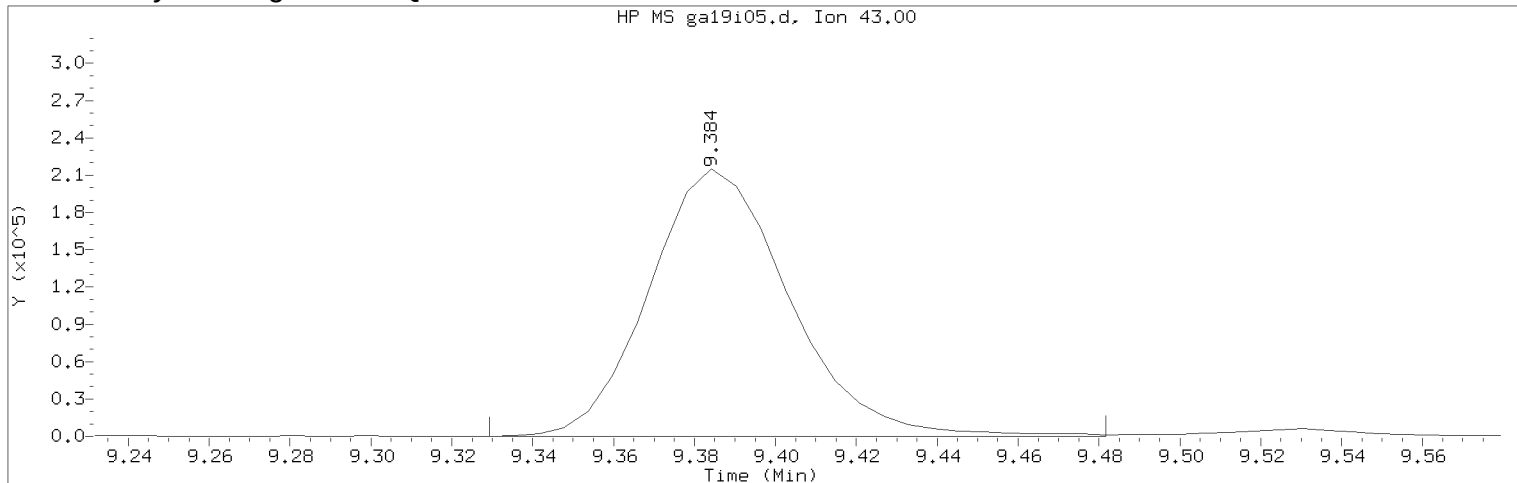
Integration stop scan: 1151
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB407300 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 517626M

On-Column Amount (ng) : 9.5884

Integration start scan : 1269

Integration stop scan: 1294

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

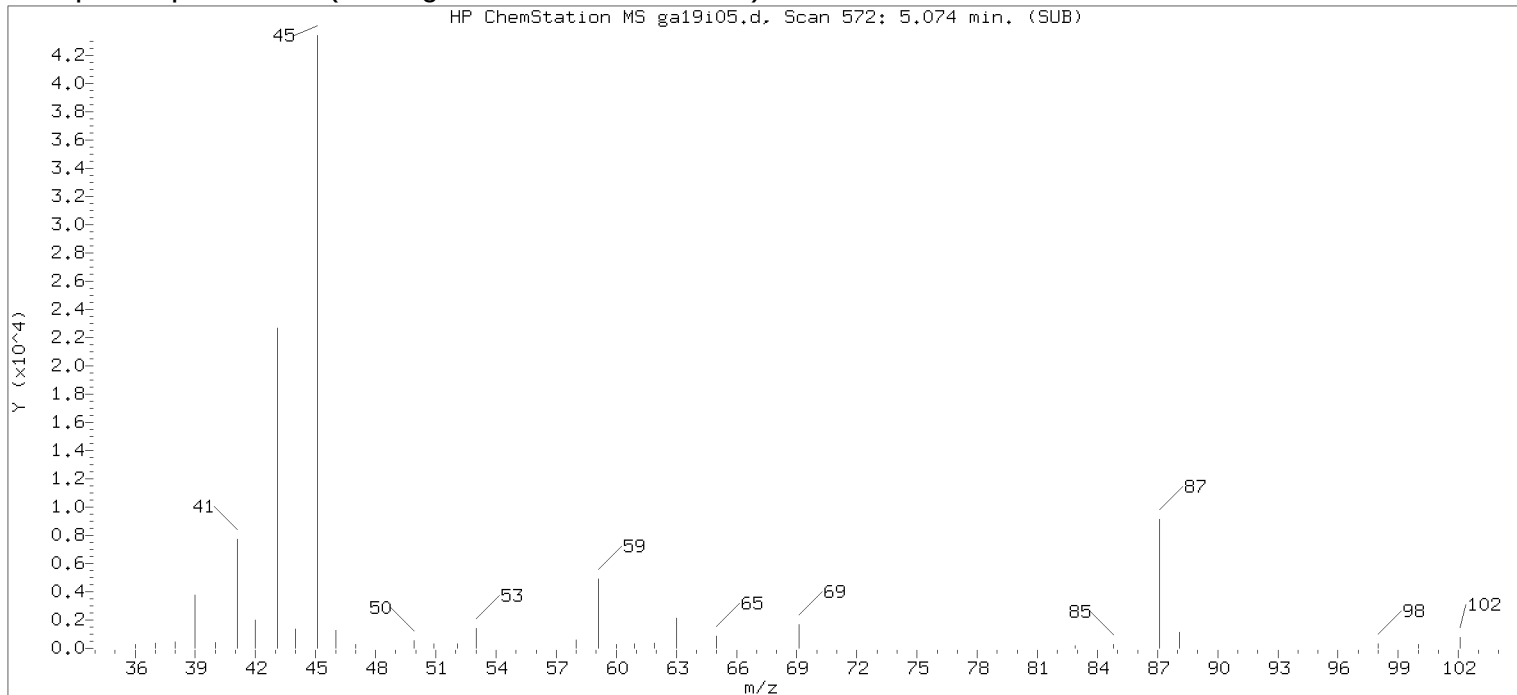
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

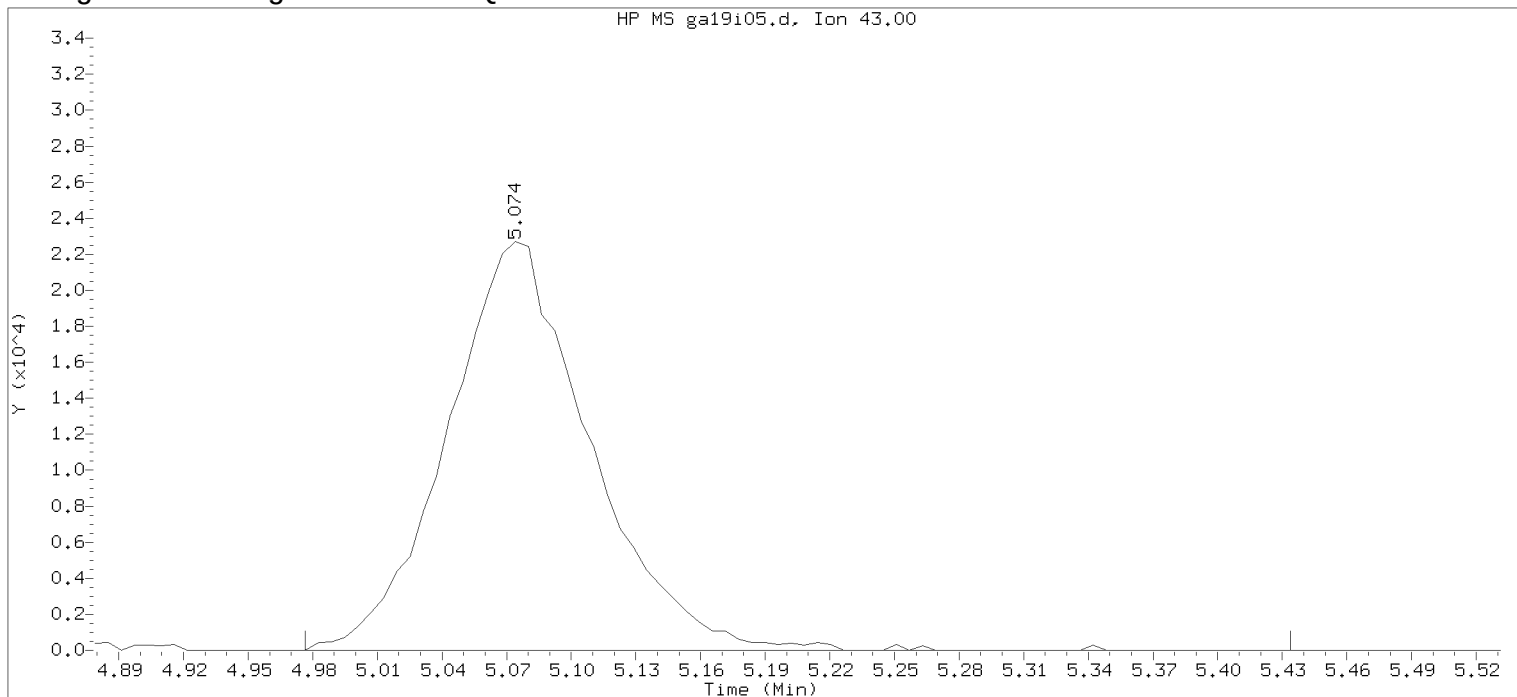
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 572

Retention Time (minutes): 5.074

Quant Ion : 43.00

Area : 104459

On-column Amount (ng) : 9.1724

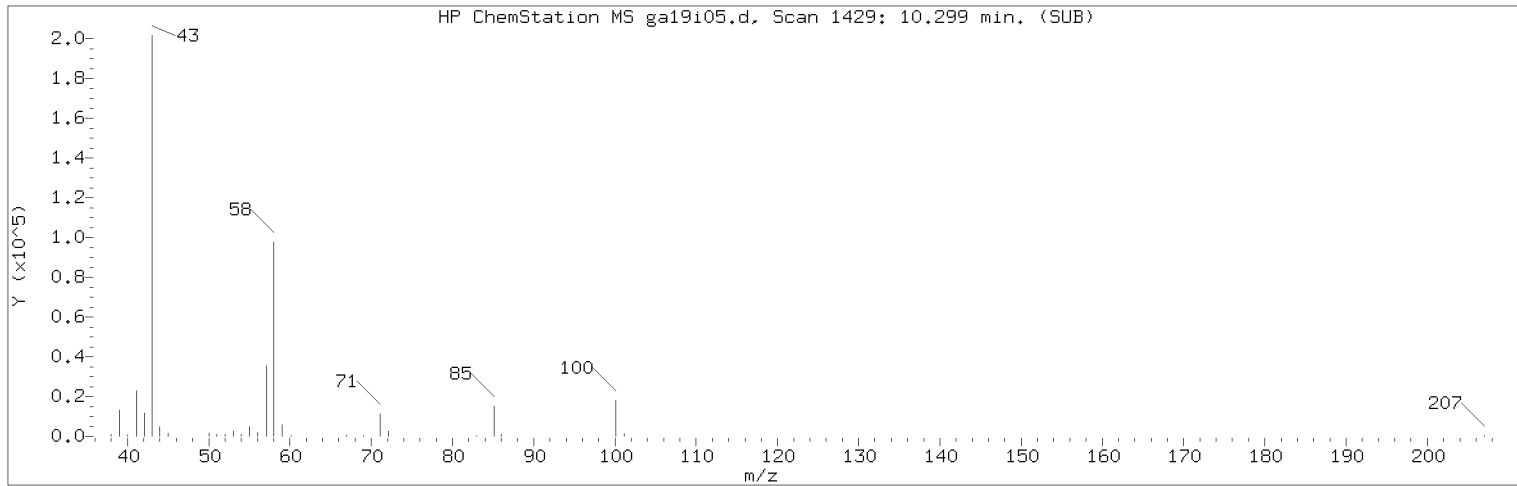
Integration start scan : 555 Integration stop scan: 630

Y at integration start : 0 Y at integration end: 0

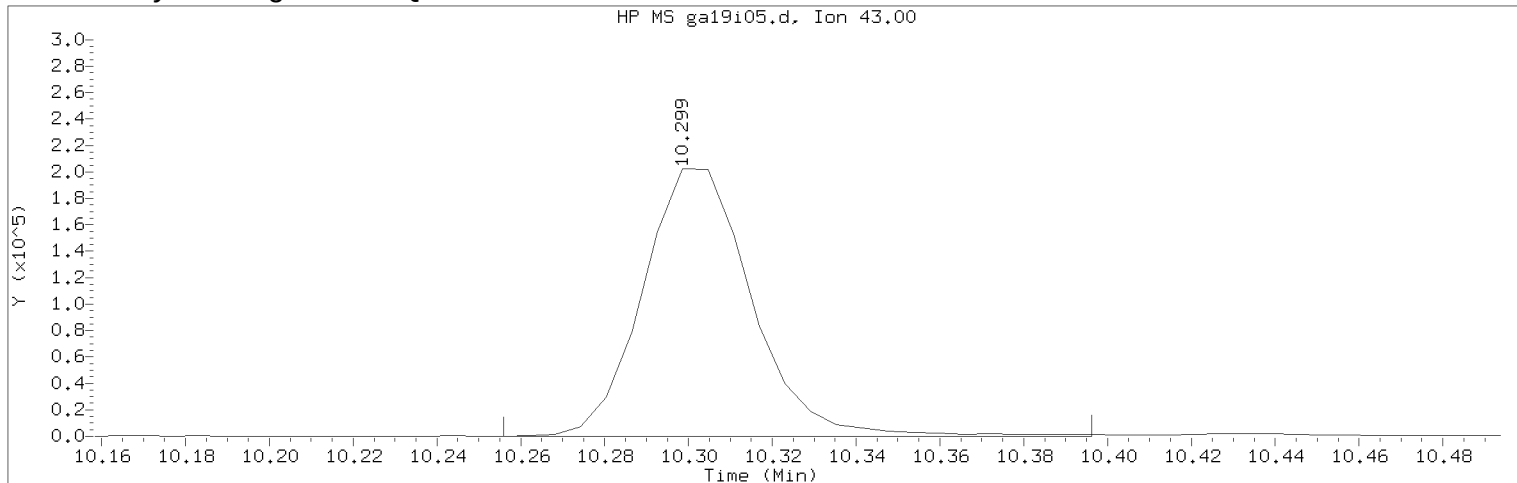
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107306 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1429	
Retention Time (minutes)	: 10.299	
Quant Ion	: 43.00	
Area (flag)	: 367593M	
On-Column Amount (ng)	: 9.6131	
Integration start scan	: 1421	Integration stop scan: 1444
Y at integration start	: 0	Y at integration end: 0

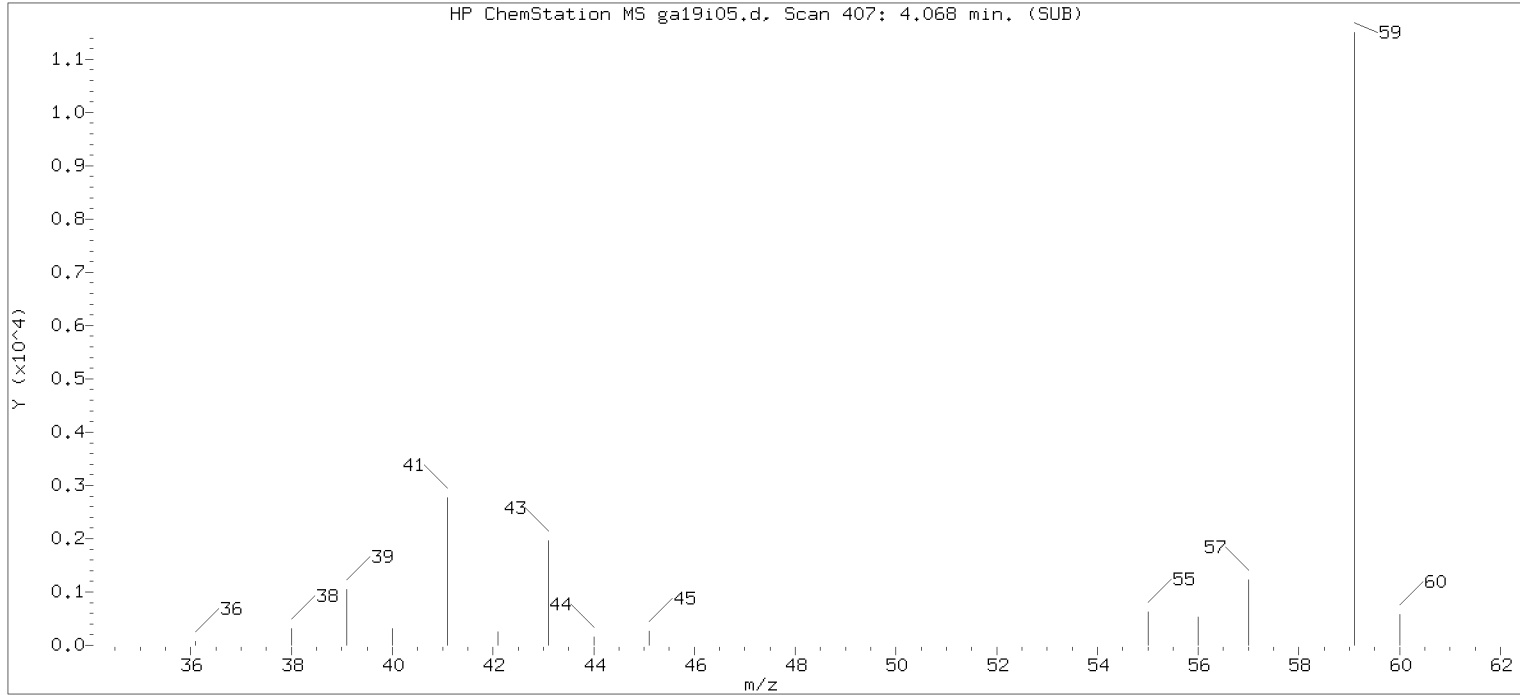
Reason for manual integration: improper integration

Analyst responsible for change:

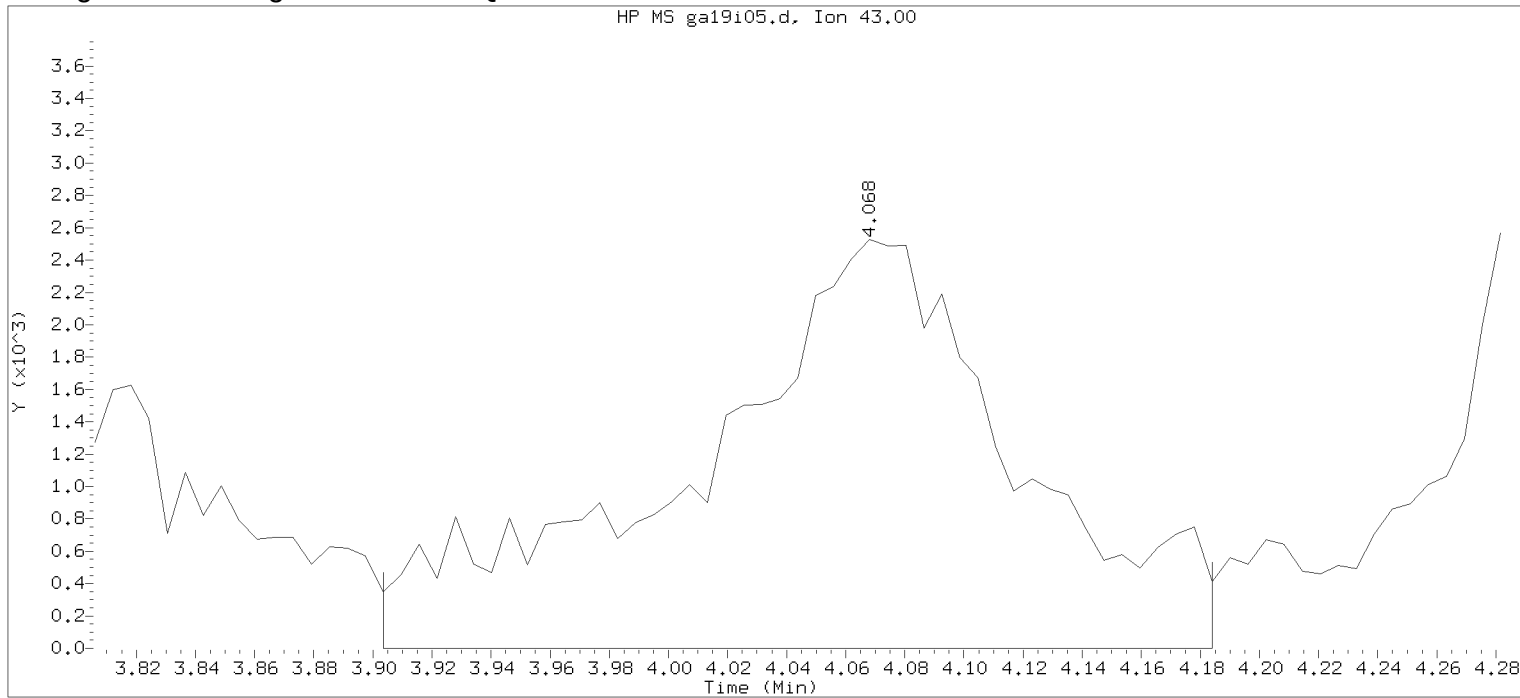
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

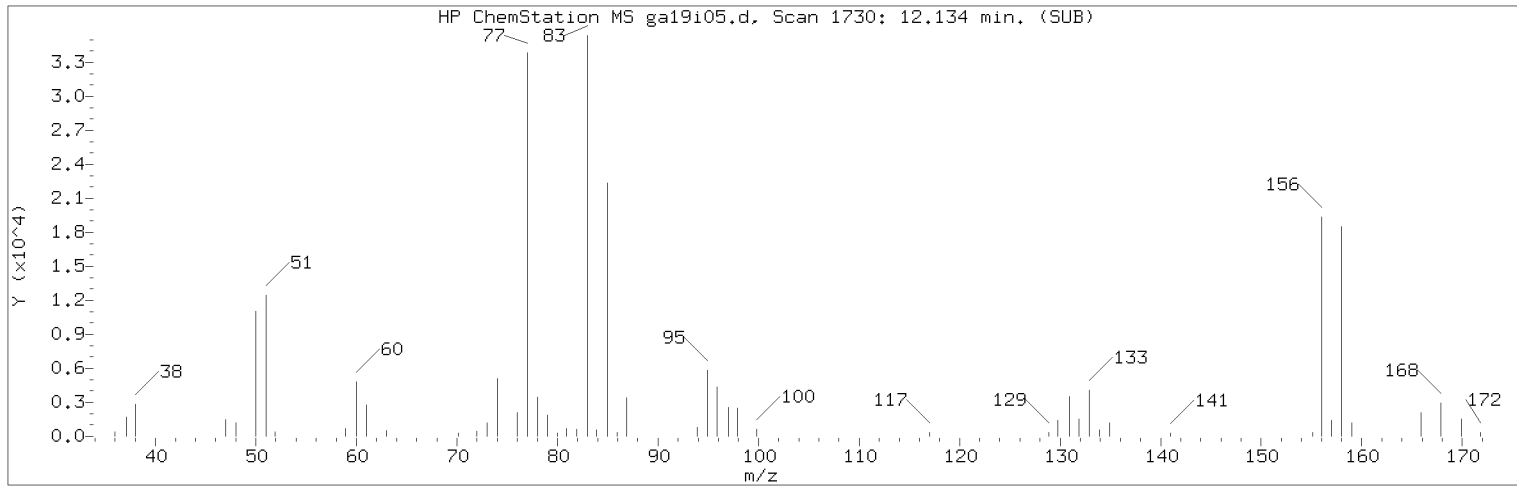
Lab Sample ID: VSTD001

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 407
 Retention Time (minutes): 4.068
 Quant Ion : 43.00
 Area : 19259
 On-column Amount (ng) : 11.6349
 Integration start scan : 379
 Y at integration start : 0

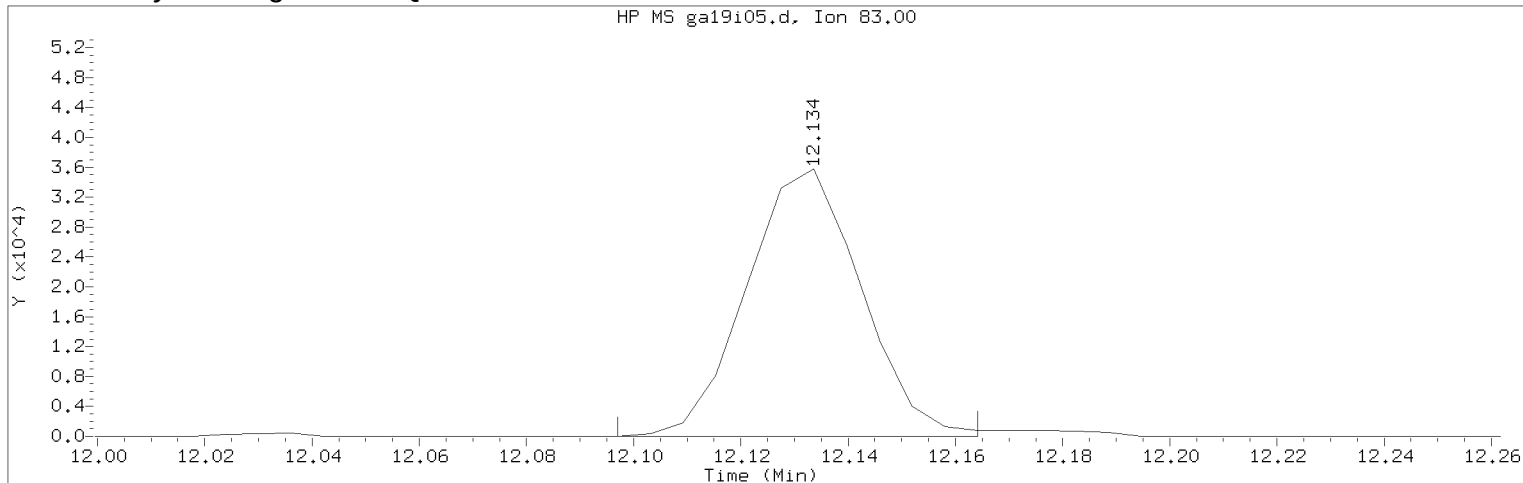
Integration stop scan: 425
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB497300 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1730	
Retention Time (minutes)	: 12.134	
Quant Ion	: 83.00	
Area (flag)	: 52821M	
On-Column Amount (ng)	: 0.9870	
Integration start scan	: 1723	Integration stop scan: 1734
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

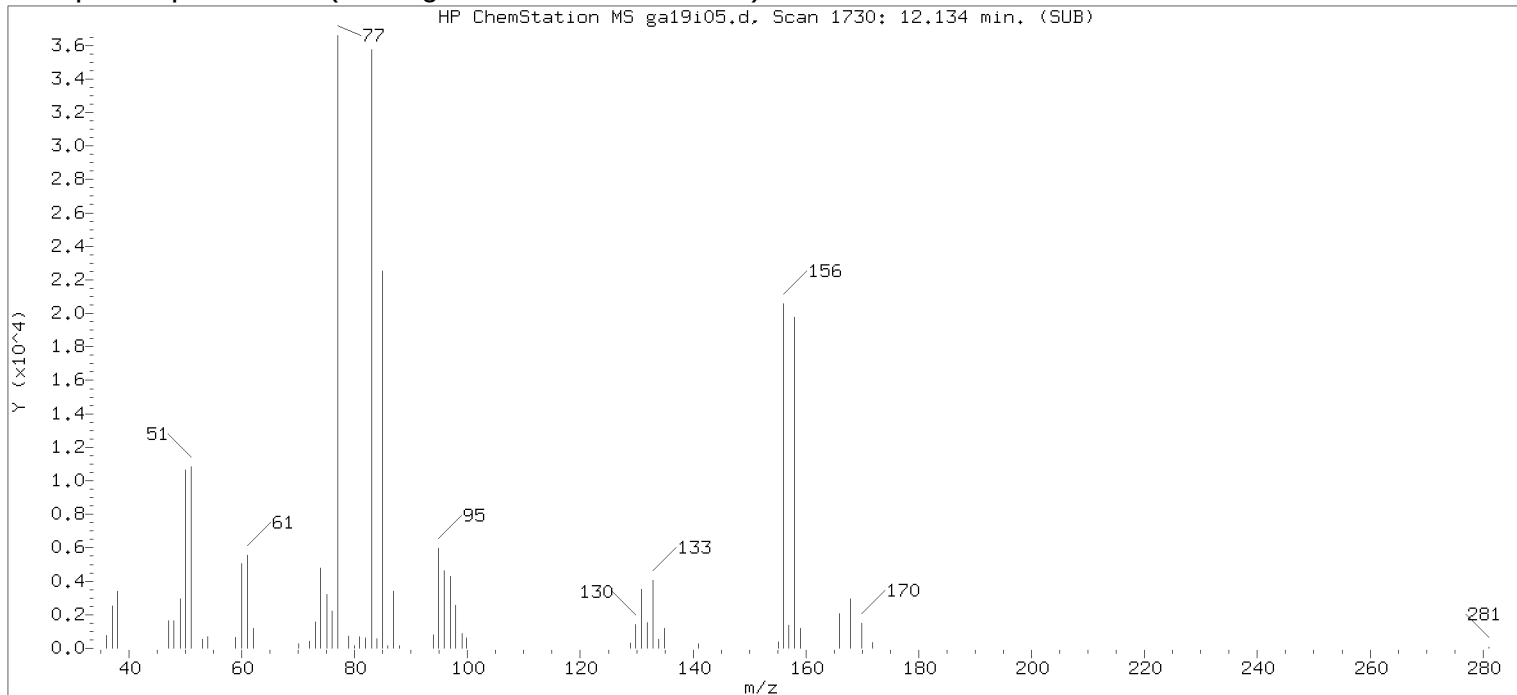
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

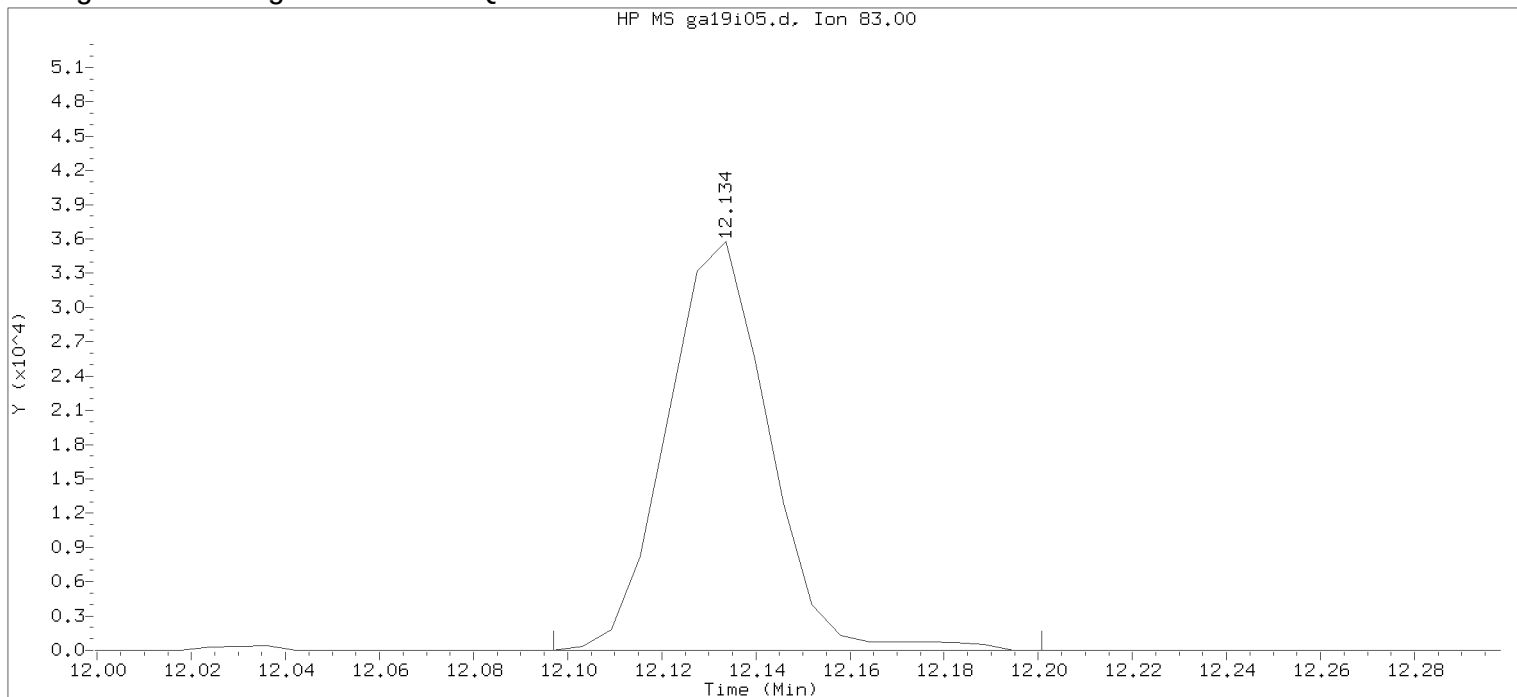
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1730

Retention Time (minutes): 12.134

Quant Ion : 83.00

Area : 53790

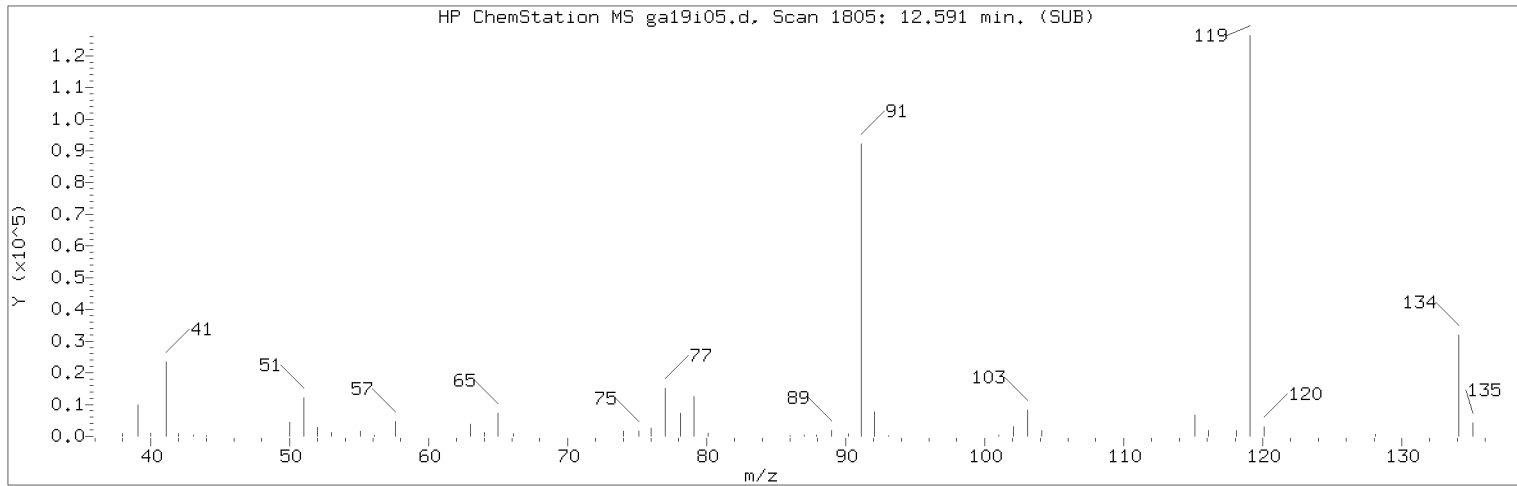
On-column Amount (ng) : 0.9922

Integration start scan : 1723 Integration stop scan: 1740

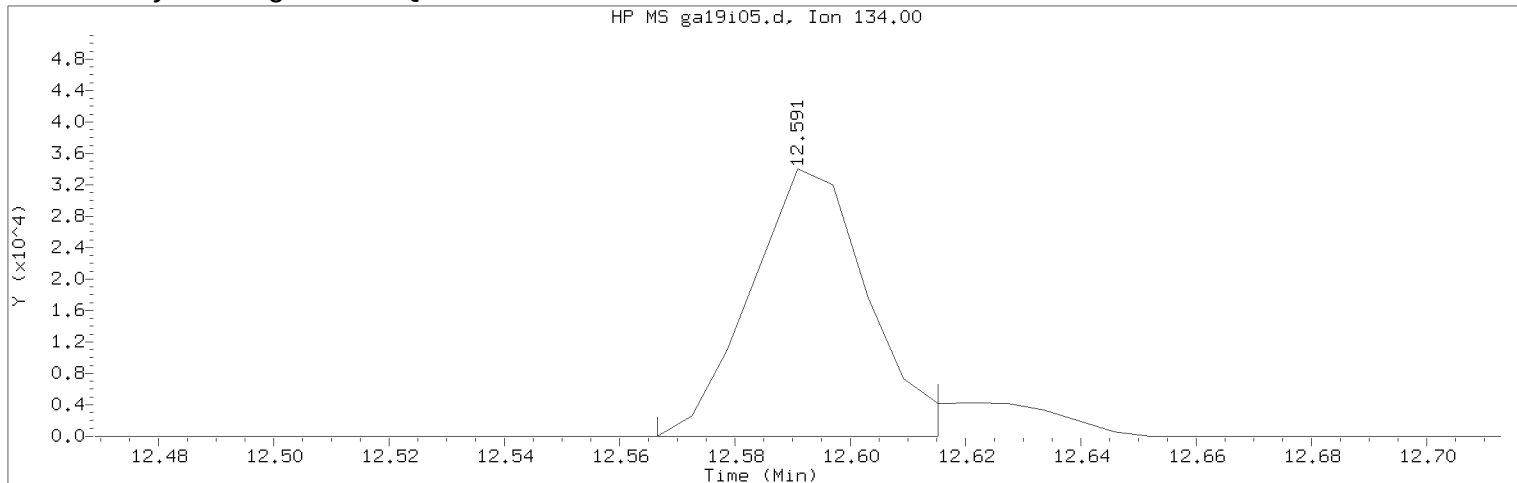
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB497309 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD001

Lab Sample ID: VSTD001

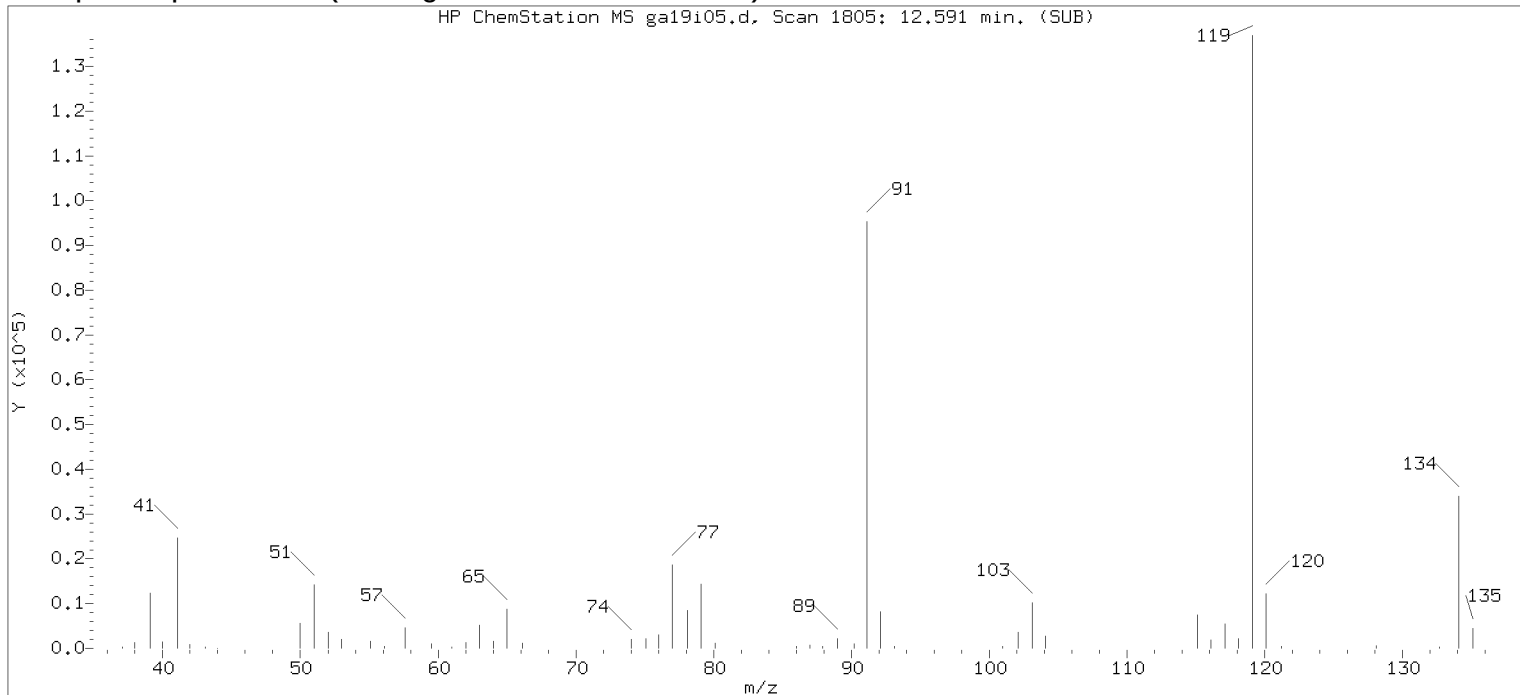
Compound Number	: 125	
Compound Name	: tert-Butylbenzene	
Scan Number	: 1805	
Retention Time (minutes)	: 12.591	
Quant Ion	: 134.00	
Area (flag)	: 48072M	
On-Column Amount (ng)	: 0.9952	
Integration start scan	: 1800	Integration stop scan: 1808
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

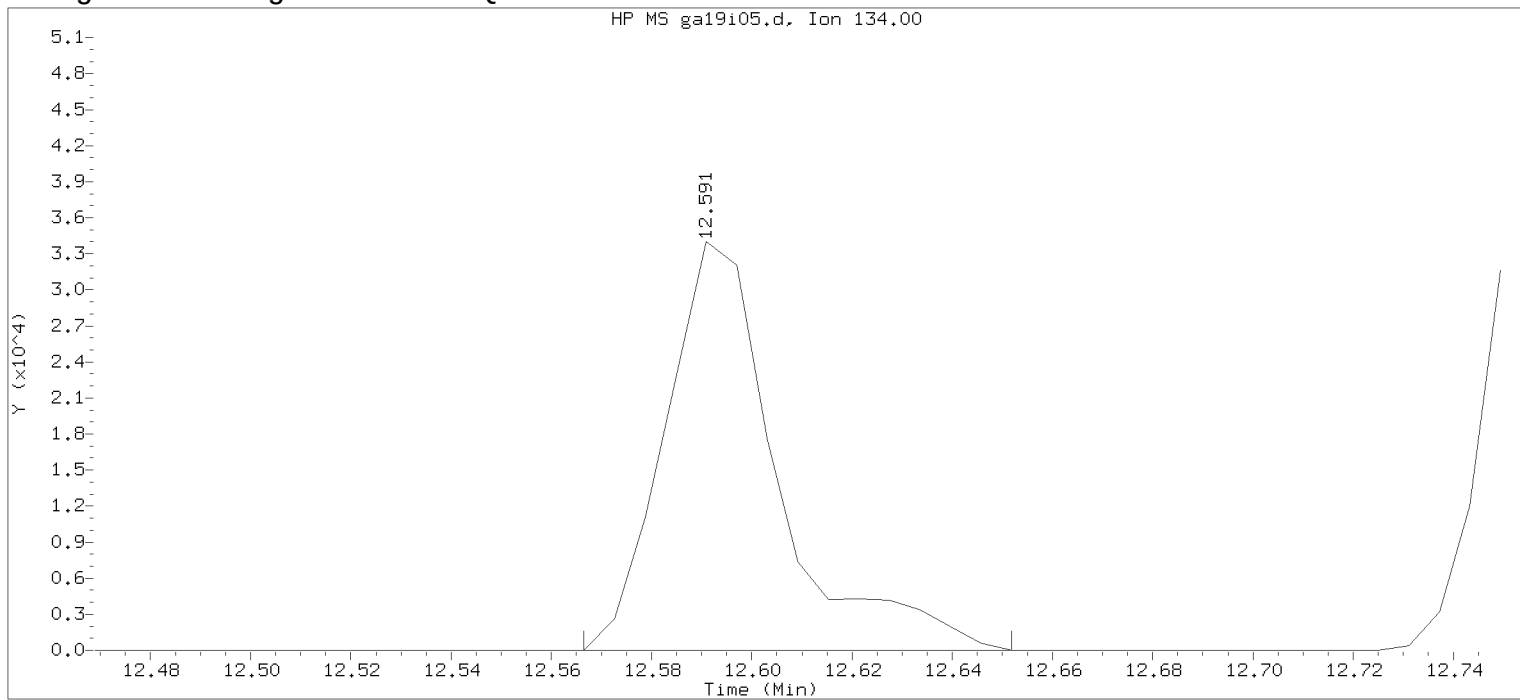
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i05.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 13:51

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:07

Date, time and analyst ID of latest file update: 19-Apr-2018 14:07 Automation

Sample Name: VSTD001

Lab Sample ID: VSTD001

Compound Number : 125

Compound Name : tert-Butylbenzene

Scan Number : 1805

Retention Time (minutes): 12.591

Quant Ion : 134.00

Area : 53318

On-column Amount (ng) : 1.0803

Integration start scan : 1800

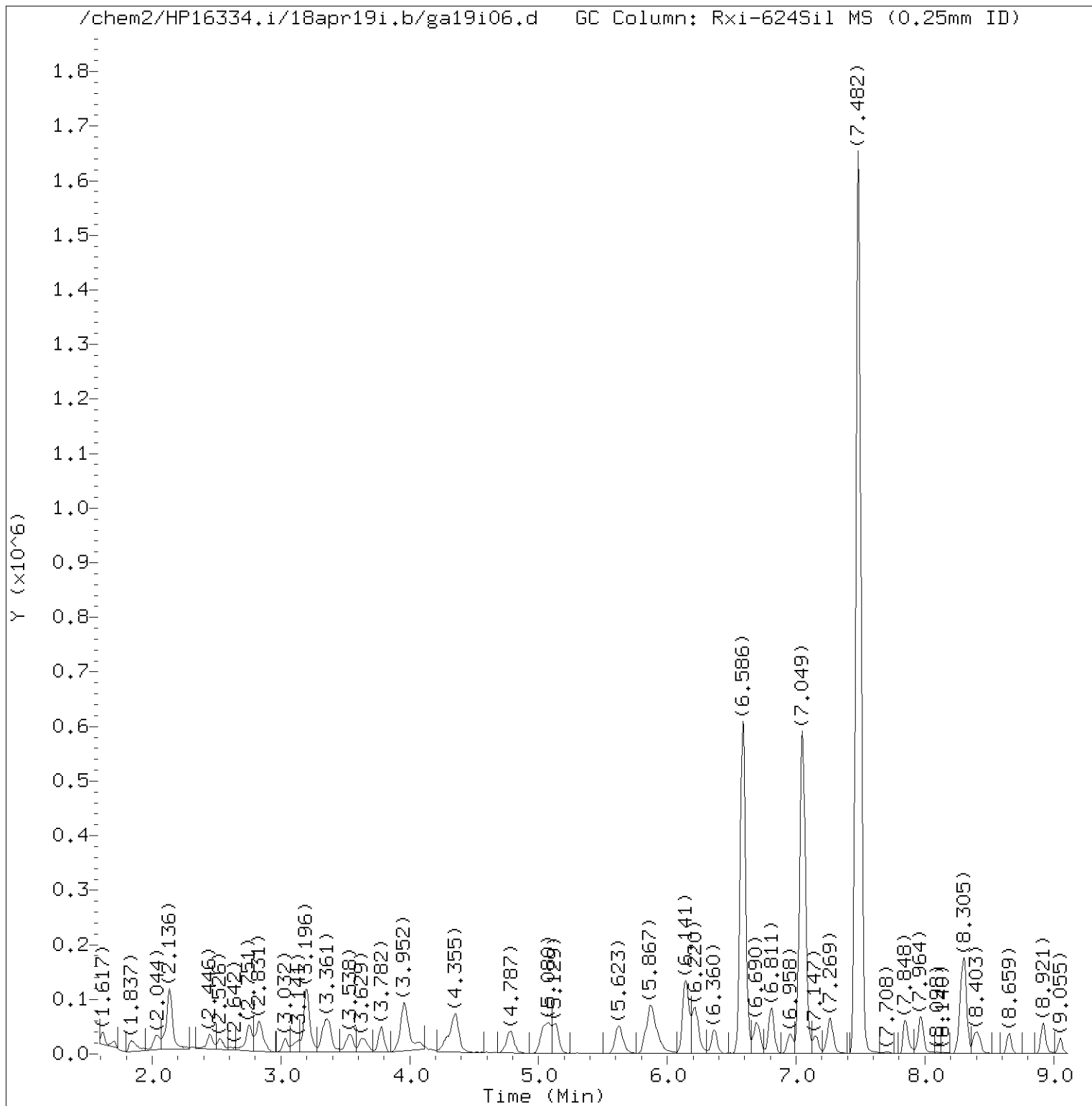
Integration stop scan: 1814

Y at integration start : 0

Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB407310 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d
Injection date and time: 19-APR-2018 14:14

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43

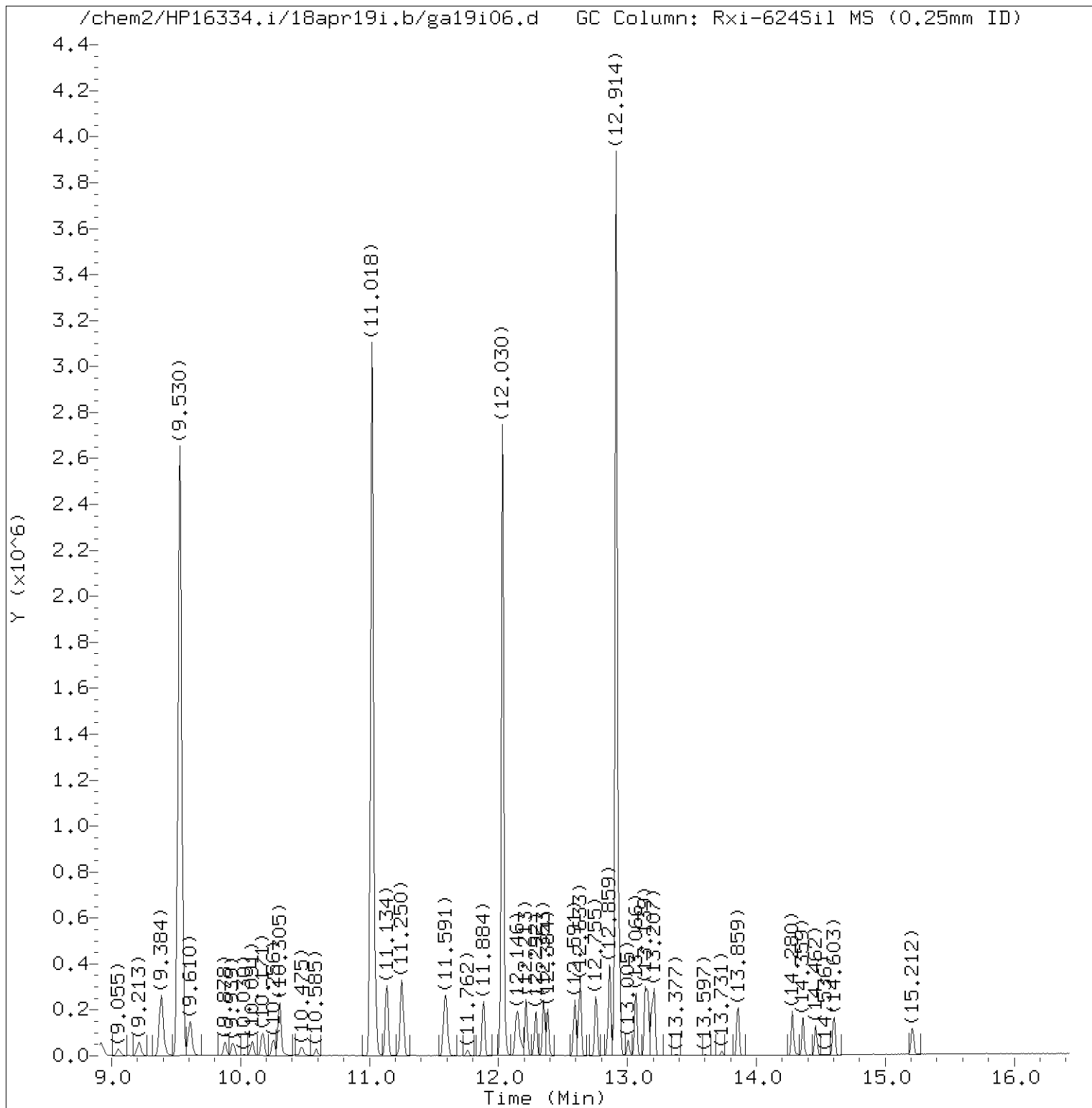
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 312 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d
Injection date and time: 19-APR-2018 14:14

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 313 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d
 Injection date and time: 19-APR-2018 14:14

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.837	85	39636	0.503
2) Chloromethane	(2)	2.026	50	41943	0.538
5) Vinyl Chloride	(2)	2.136	62	35766	0.533
6) 1,3-Butadiene	(2)	2.136	39	84424M	0.618
7) Bromomethane	(2)	2.453	94	24361	0.543
8) Chloroethane	(2)	2.526	64	21885	0.572
9) Dichlorofluoromethane	(2)	2.751	67	51040	0.559
10) Trichlorofluoromethane	(2)	2.818	101	43732M	0.496
11) Ethyl ether	(2)	3.032	59	21390	0.492
12) Freon 123a	(2)	3.117	67	32697	0.529
13) Acrolein	(1)	3.202	56	185224	25.176
15) 1,1-Dichloroethene	(2)	3.330	96	22025	0.514
14) Acetone	(1)	3.355	43	63361M	5.458
16) Freon 113	(2)	3.367	101	23768	0.488
17) Methyl Iodide	(2)	3.526	142	43528	0.522
18) Carbon Disulfide	(2)	3.629	76	90603	0.548
21) Methyl Acetate	(1)	3.751	43	15987M	0.490
22) Allyl Chloride	(2)	3.782	41	49609	0.506
23) Methylene Chloride	(2)	3.952	84	31255	0.574
26)*t-Butyl Alcohol-d10	(1)	3.952	65	211767M	50.000
28) t-Butyl Alcohol	(1)	4.080	59	41631	10.585
29) Acrylonitrile	(1)	4.288	53	32180	2.405
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	72677	0.490
31) trans-1,2-Dichloroethene	(2)	4.361	96	26754	0.540
32) n-Hexane	(2)	4.787	57	40399	0.478
33) 1,1-Dichloroethane	(2)	5.025	63	53279	0.524
34) di-Isopropyl Ether	(2)	5.086	45	104957	0.507
35) 2-Chloro-1,3-Butadiene	(2)	5.141	53	48609	0.524
37) Ethyl t-butyl ether	(2)	5.623	59	90626	0.497
38) 2-Butanone	(1)	5.830	43	101255	4.930
39) cis-1,2-Dichloroethene	(2)	5.873	96	29213	0.519
41) 2,2-Dichloropropane	(2)	5.897	77	42746	0.508
42) Propionitrile	(1)	5.934	54	50359	9.901
40) 1,2-Dichloroethene (Total)	(2)		96	55967	1.059
45) Methacrylonitrile	(1)	6.141	67	79180	4.899
47) Bromochloromethane	(2)	6.214	128	12233	0.475
48) Tetrahydrofuran	(1)	6.220	71	23658	4.866
49) Chloroform	(2)	6.360	83	50070	0.517

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 314 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d
 Injection date and time: 19-APR-2018 14:14

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.586	113	514049	9.931
50) \$Dibromofluoromethane	(2)	6.586	111	529798	9.961
51) 1,1,1-Trichloroethane	(2)	6.598	97	41766	0.507
52) Cyclohexane	(2)	6.696	56	47547	0.483
52) Cyclohexane	(2)	6.696	84	43225	0.554
52) Cyclohexane	(2)	6.683	69	13885	0.485
54) Carbon Tetrachloride	(2)	6.805	117	31603	0.469
55) 1,1-Dichloropropene	(2)	6.805	75	39443	0.514
56) Isobutyl Alcohol	(1)	6.964	41	38865	25.097
57) \$1,2-Dichloroethane-d4	(2)	7.049	102	108596	9.907
57) \$1,2-Dichloroethane-d4	(2)	7.049	65	632092	10.172
57) \$1,2-Dichloroethane-d4	(2)	7.049	104	68656	10.062
58) Benzene	(2)	7.067	78	111440	0.528
59) 1,2-Dichloroethane	(2)	7.153	62	38964	0.534
60) t-Amyl methyl ether	(2)	7.269	73	75245	0.485
63) *Fluorobenzene	(2)	7.482	96	2057002	10.000
62) n-Heptane	(2)	7.494	43	48752	0.482
65) n-Butanol	(1)	7.848	56	58896M	45.901
67) Trichloroethene	(2)	7.970	95	28309	0.508
69) Methylcyclohexane	(2)	8.281	83	44976	0.470
70) 1,2-Dichloropropane	(2)	8.305	63	29730	0.507
71) Methyl Methacrylate	(1)	8.390	69	14548	0.466
72) 1,4-Dioxane	(1)	8.397	88	4429M	19.091
73) Dibromomethane	(2)	8.415	93	13576	0.490
74) Bromodichloromethane	(2)	8.659	83	33410	0.480
76) 2-Nitropropane	(1)	8.921	41	46284	4.309
80) cis-1,3-Dichloropropene	(2)	9.213	75	39612	0.460
81) 4-Methyl-2-Pentanone	(1)	9.384	43	245229M	4.837
82) \$Toluene-d8	(3)	9.530	98	2077352	10.084
82) \$Toluene-d8	(3)	9.530	100	1313986	10.014
83) Toluene	(3)	9.610	92	69089	0.526
84) trans-1,3-Dichloropropene	(3)	9.878	75	33451	0.462
86) Ethyl Methacrylate	(3)	9.939	69	30738	0.474
88) 1,1,2-Trichloroethane	(3)	10.091	97	20029	0.507
85) 1,3-Dichloropropene (total)	(3)		75	73063	0.922
89) Tetrachloroethene	(3)	10.171	166	32089	0.526
90) 1,3-Dichloropropane	(3)	10.256	76	35685	0.499
91) 2-Hexanone	(1)	10.305	43	169720M	4.744

M = Compound was manually integrated.

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Target 3.5 esignature user ID: msk07970

FKP52 Page 315 of 730

page 2 of 4

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d
 Injection date and time: 19-APR-2018 14:14

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	19360	0.432
95) 1,2-Dibromoethane	(3)	10.591	107	18014	0.478
97)*Chlorobenzene-d5	(3)	11.018	117	1537140	10.000
98) Chlorobenzene	(3)	11.048	112	77699	0.516
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	23480	0.460
100) Ethylbenzene	(3)	11.134	91	136782	0.523
101) m+p-Xylene	(3)	11.250	106	99702	1.001
104) o-Xylene	(3)	11.579	106	50450	0.504
106) Styrene	(3)	11.597	104	79339	0.478
105) Xylene (Total)	(3)		106	150152	1.505
107) Bromoform	(3)	11.762	173	10734	0.412
108) Isopropylbenzene	(3)	11.884	105	134786	0.514
111)\$4-Bromofluorobenzene	(3)	12.030	95	795004	10.073
111)\$4-Bromofluorobenzene	(3)	12.030	174	674228	9.988
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	24104	0.471
114) Bromobenzene	(4)	12.146	156	33311	0.495
116) 1,2,3-Trichloropropane	(4)	12.176	110	6968	0.488
117) n-Propylbenzene	(4)	12.213	91	163274	0.521
119) 2-Chlorotoluene	(4)	12.292	126	31729	0.510
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	113325	0.503
122) 4-Chlorotoluene	(4)	12.384	126	32566	0.499
125) tert-Butylbenzene	(4)	12.591	134	25111M	0.531
126) Pentachloroethane	(4)	12.627	167	15809	0.422
127) 1,2,4-Trimethylbenzene	(4)	12.633	105	111227	0.484
128) sec-Butylbenzene	(4)	12.755	105	143774	0.500
131) 1,3-Dichlorobenzene	(4)	12.859	146	65044	0.485
132) p-Isopropyltoluene	(4)	12.865	119	123331	0.493
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	865930	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	67434	0.496
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	50876	0.496
136) Benzyl Chloride	(4)	13.005	126	6891	0.373
138) n-Butylbenzene	(4)	13.158	92	66877	0.497
139) 1,2-Dichlorobenzene	(4)	13.188	146	61712	0.489
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	3254	0.422
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	54666	0.487
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	49913	0.479
146) Hexachlorobutadiene	(4)	14.365	225	27804	0.507
147) Naphthalene	(4)	14.462	128	81341	0.468

M = Compound was manually integrated.

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\$ = Compound is a surrogate standard.

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Target 3.5 esignature user ID: msk07970

FKP52 Page 316 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

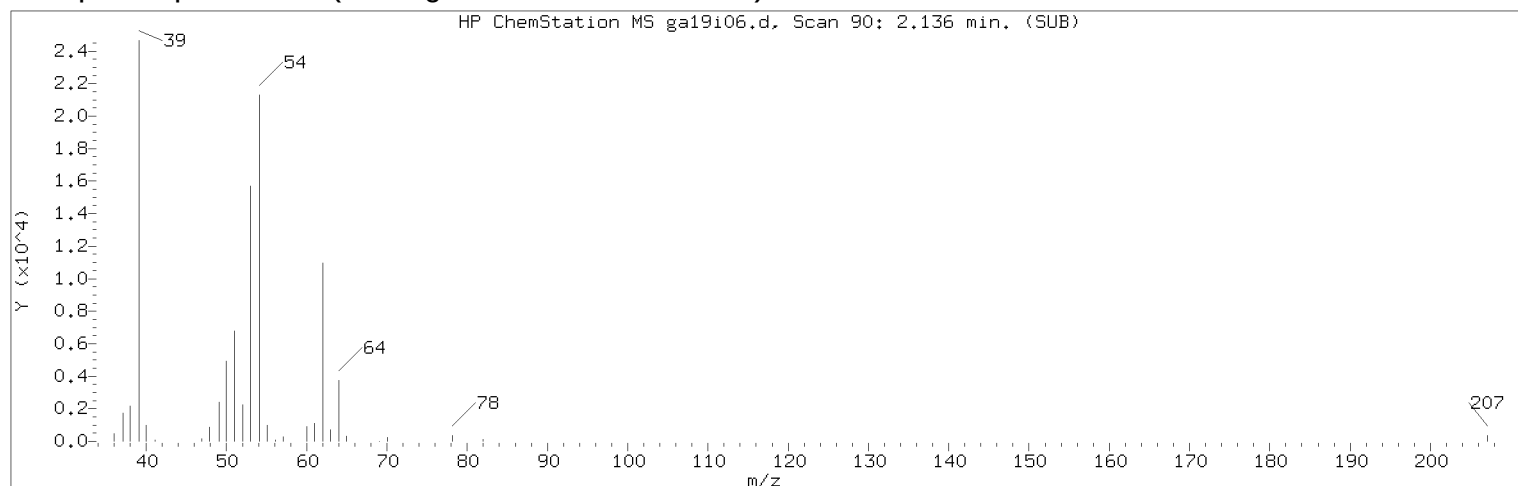
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	41666	0.467

page 4 of 4

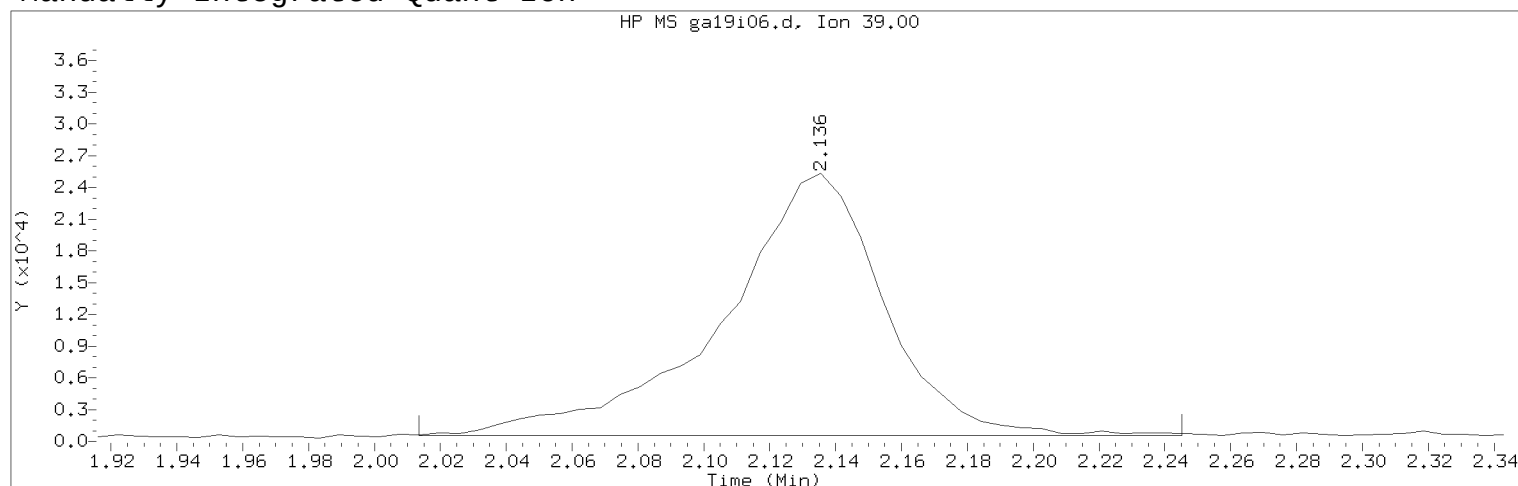
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 90	
Retention Time (minutes)	: 2.136	
Quant Ion	: 39.00	
Area (flag)	: 84424M	
On-Column Amount (ng)	: 0.6176	
Integration start scan	: 69	Integration stop scan: 107
Y at integration start	: 555	Y at integration end: 555

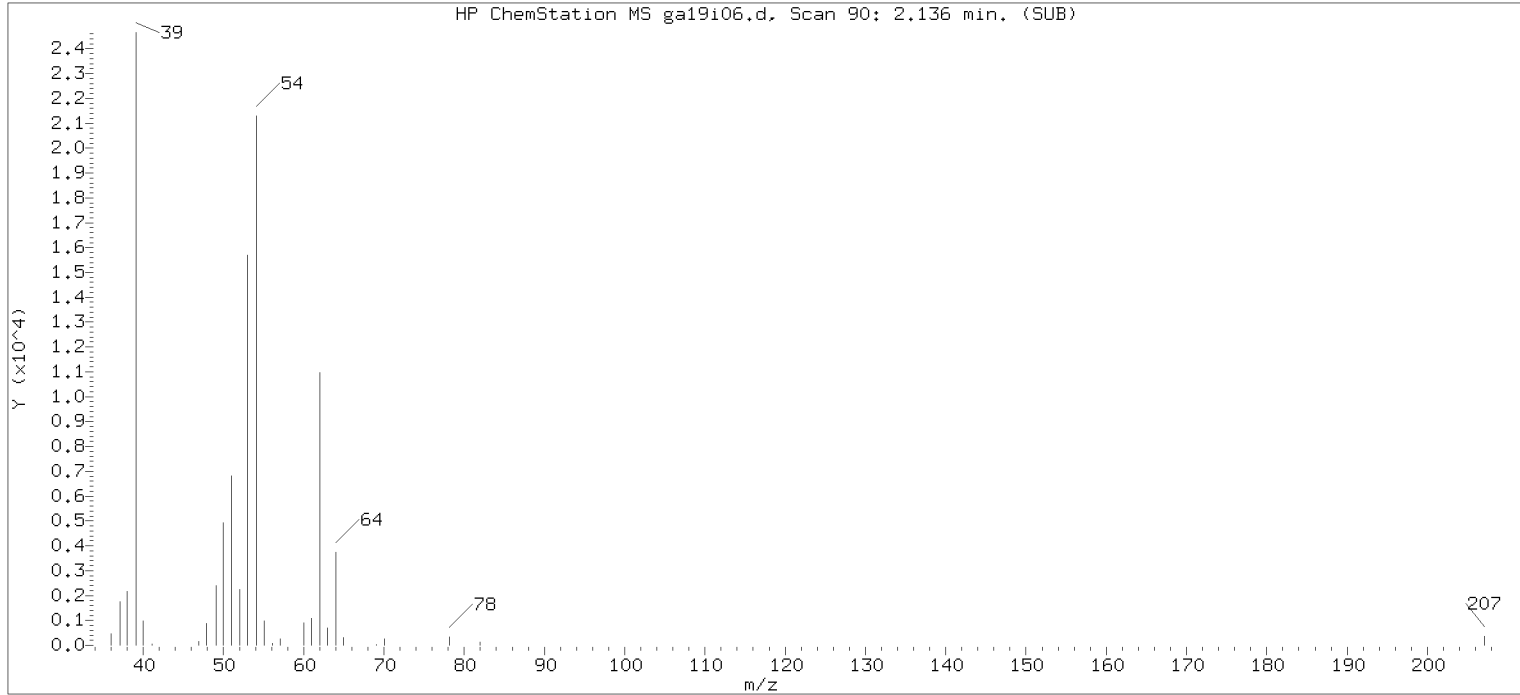
Reason for manual integration: improper integration

Analyst responsible for change:

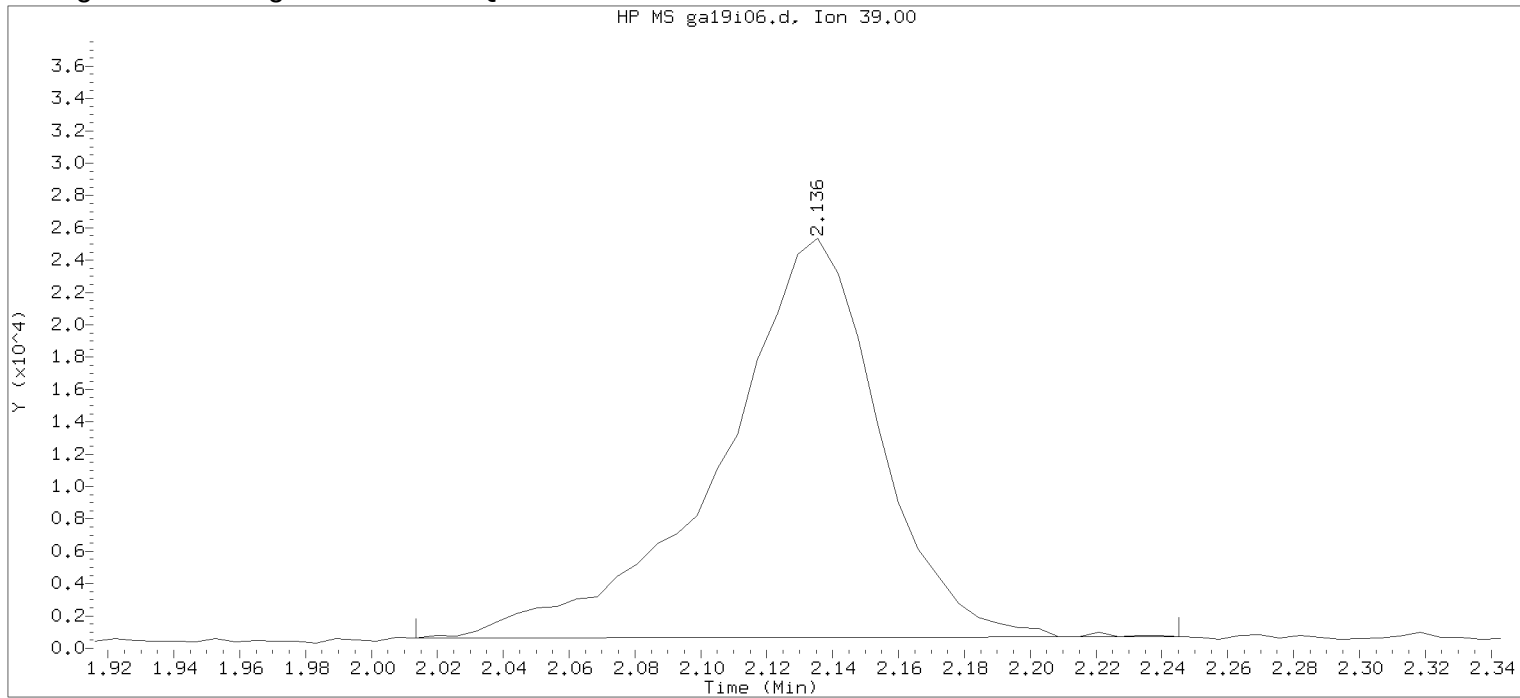
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 90

Retention Time (minutes): 2.136

Quant Ion : 39.00

Area : 82704

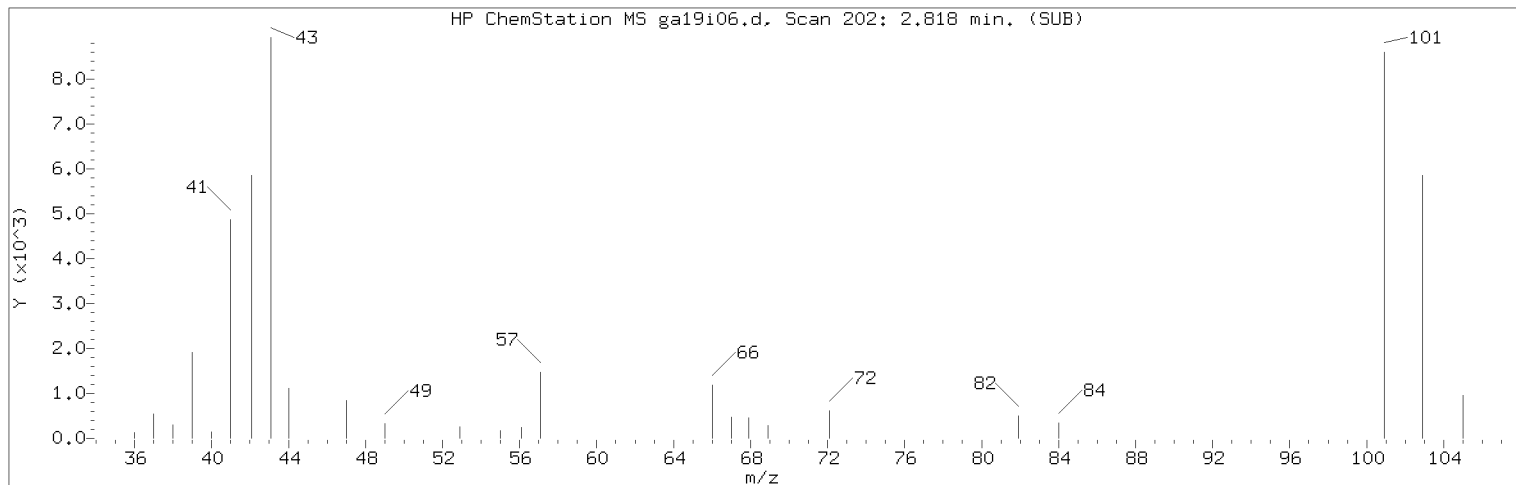
On-column Amount (ng) : 0.6390

Integration start scan : 69 Integration stop scan: 107

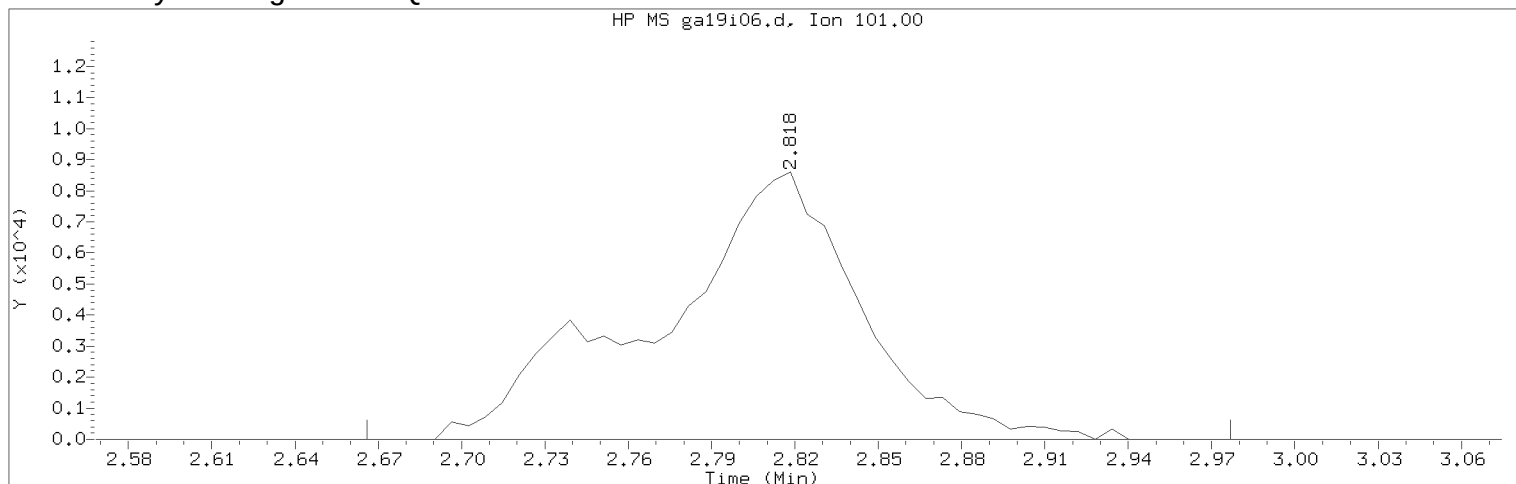
Y at integration start : 626 Y at integration end: 725

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Target 3.5 esignature userF1D52mB497319 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 202	
Retention Time (minutes)	: 2.818	
Quant Ion	: 101.00	
Area (flag)	: 43732M	
On-Column Amount (ng)	: 0.4958	
Integration start scan	: 176	Integration stop scan: 227
Y at integration start	: 0	Y at integration end: 0

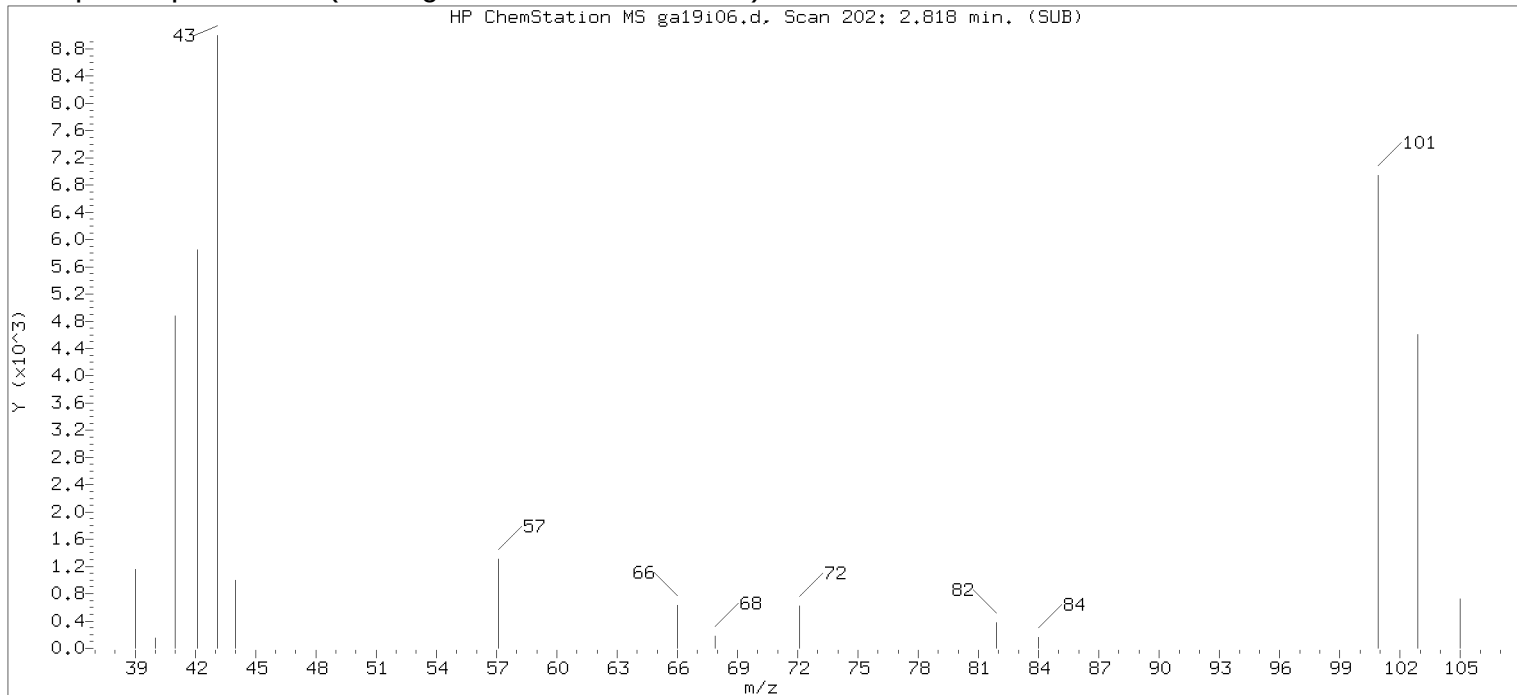
Reason for manual integration: improper integration

Analyst responsible for change:

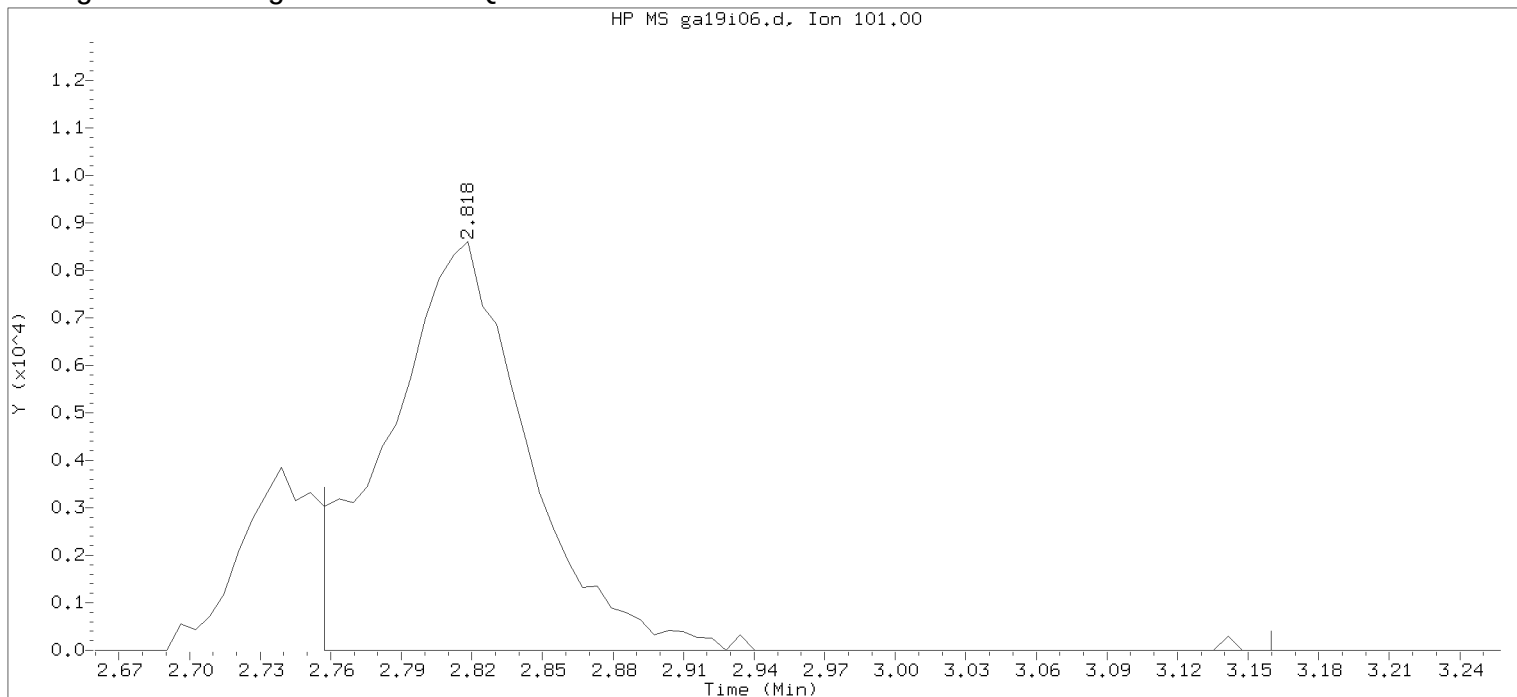
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 202

Retention Time (minutes): 2.818

Quant Ion : 101.00

Area : 35474

On-column Amount (ng) : 0.4475

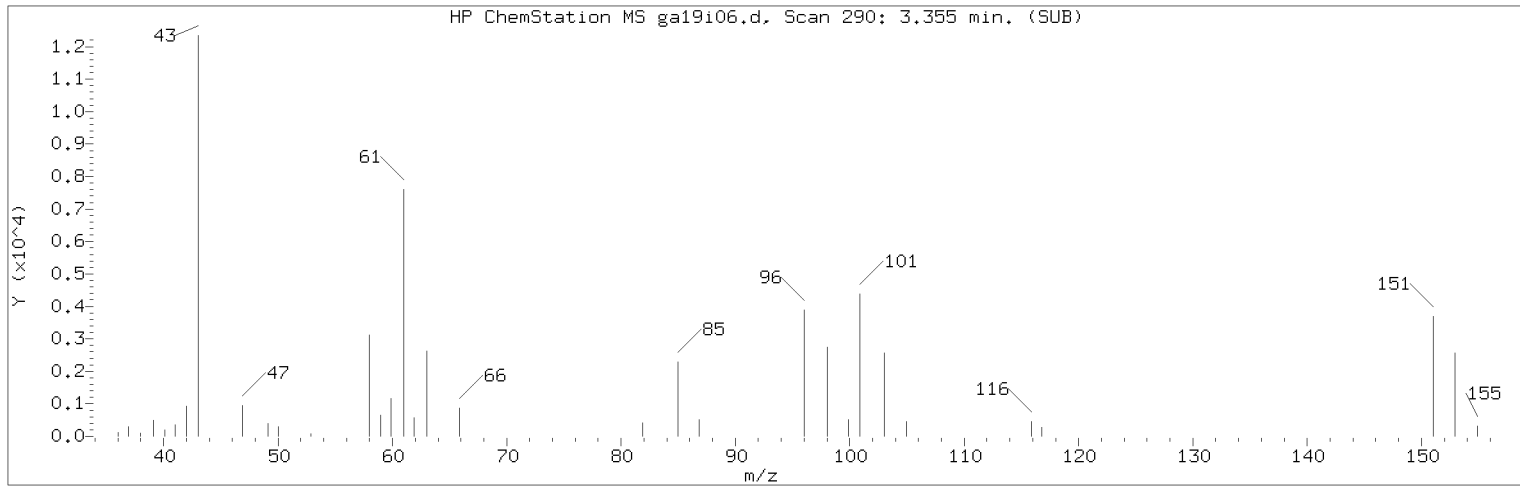
Integration start scan : 191 Integration stop scan: 257

Y at integration start : 0 Y at integration end: 0

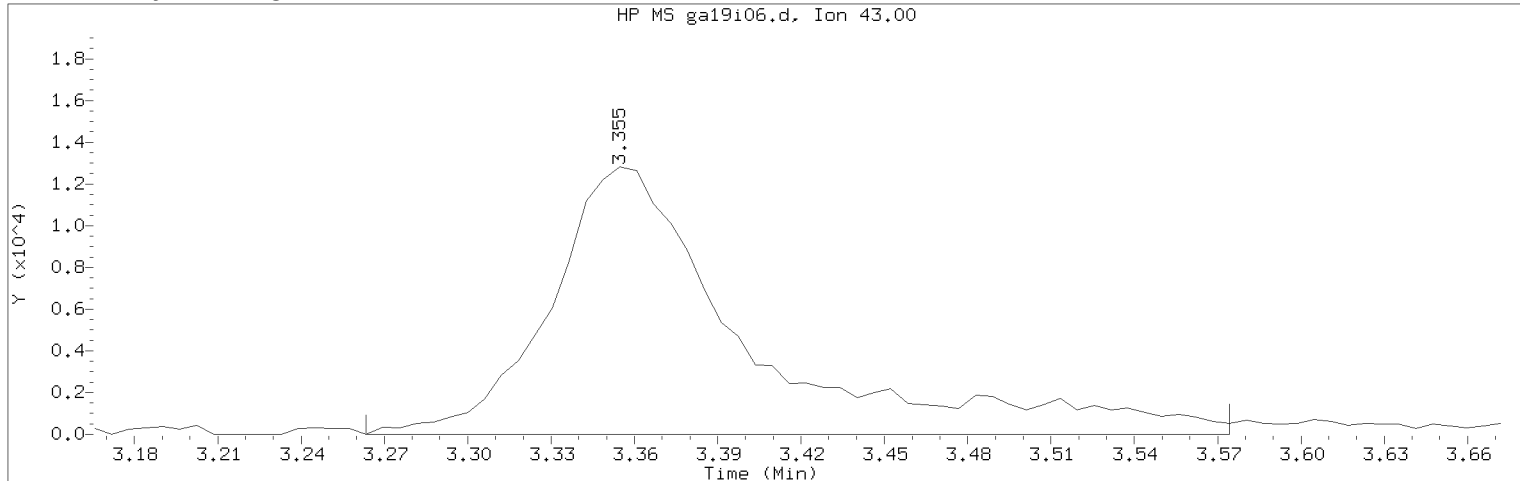
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107320 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 14
Compound Name : Acetone
Scan Number : 290
Retention Time (minutes): 3.355
Quant Ion : 43.00
Area (flag) : 63361M
On-Column Amount (ng) : 5.4583
Integration start scan : 274
Y at integration start : 0

Integration stop scan: 325
Y at integration end: 0

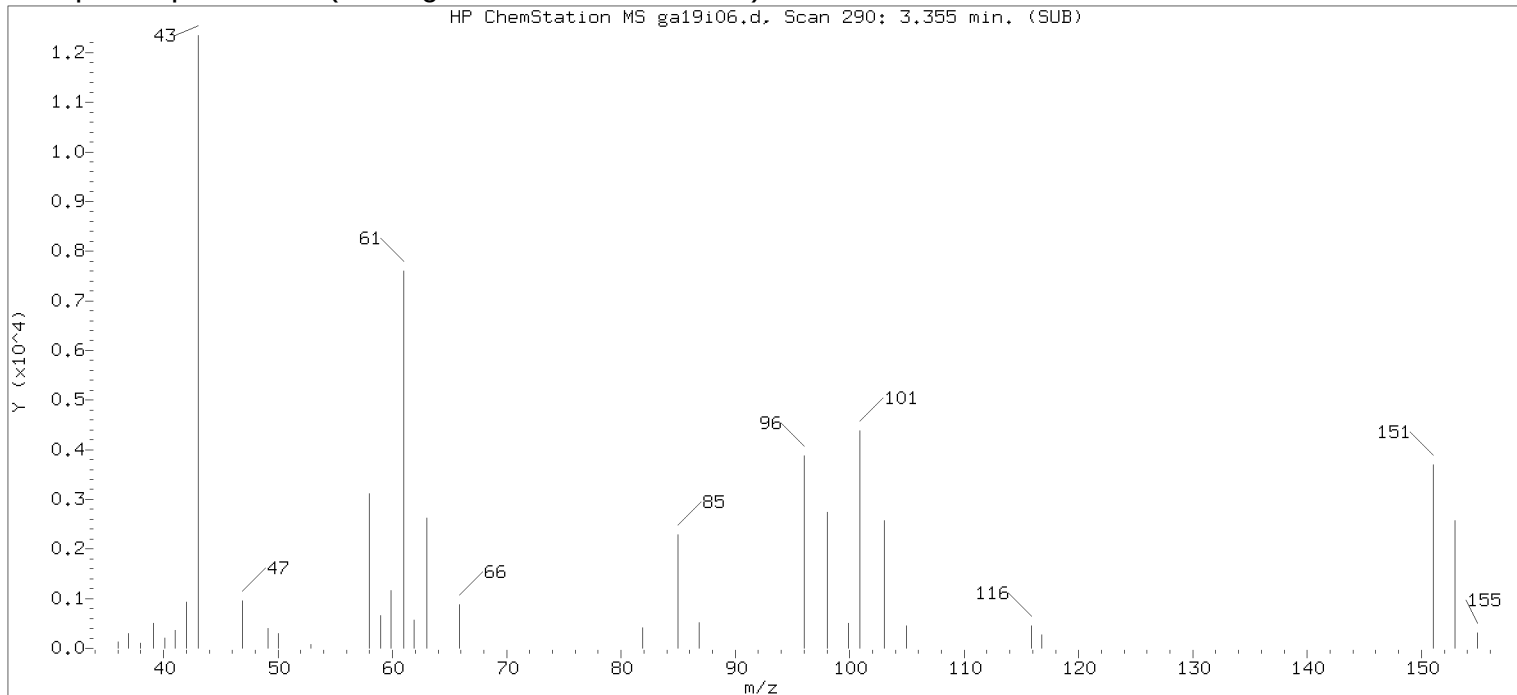
Reason for manual integration: improper integration

Analyst responsible for change:

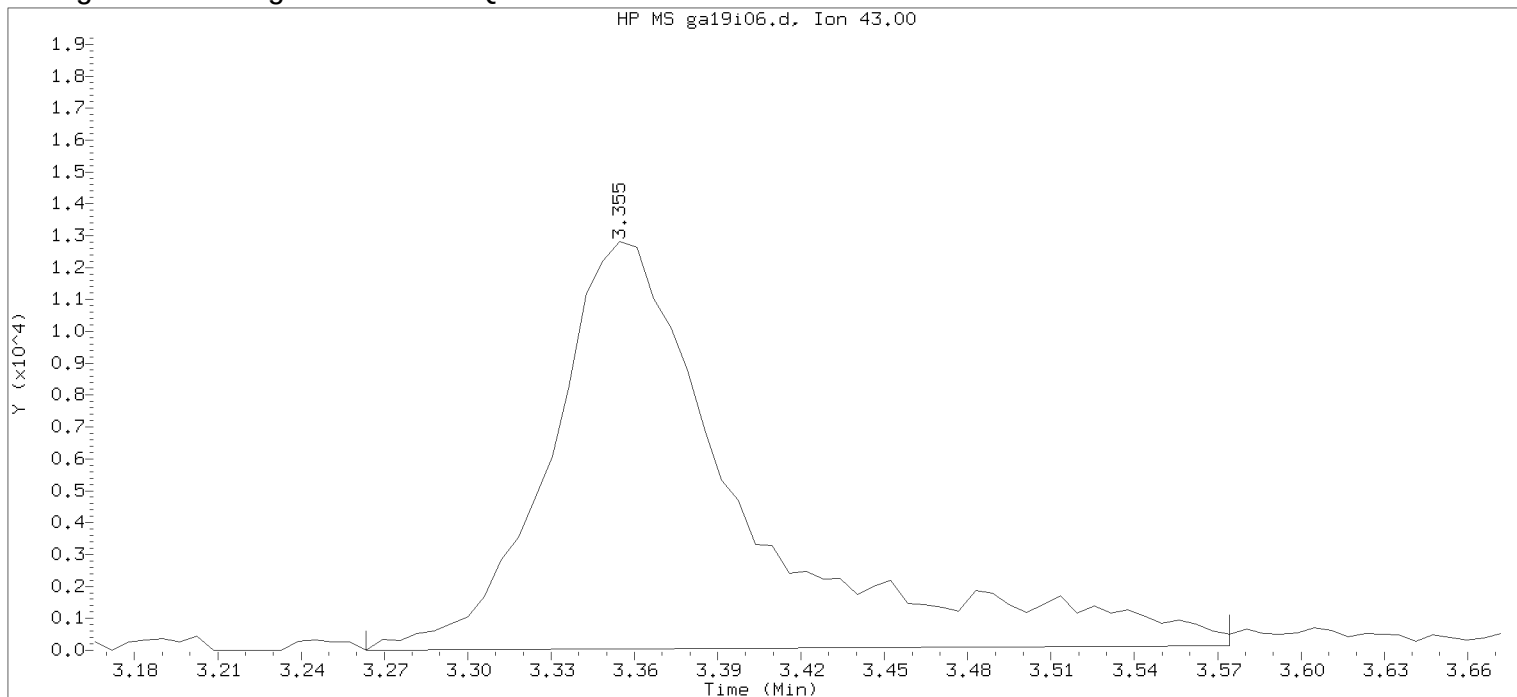
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

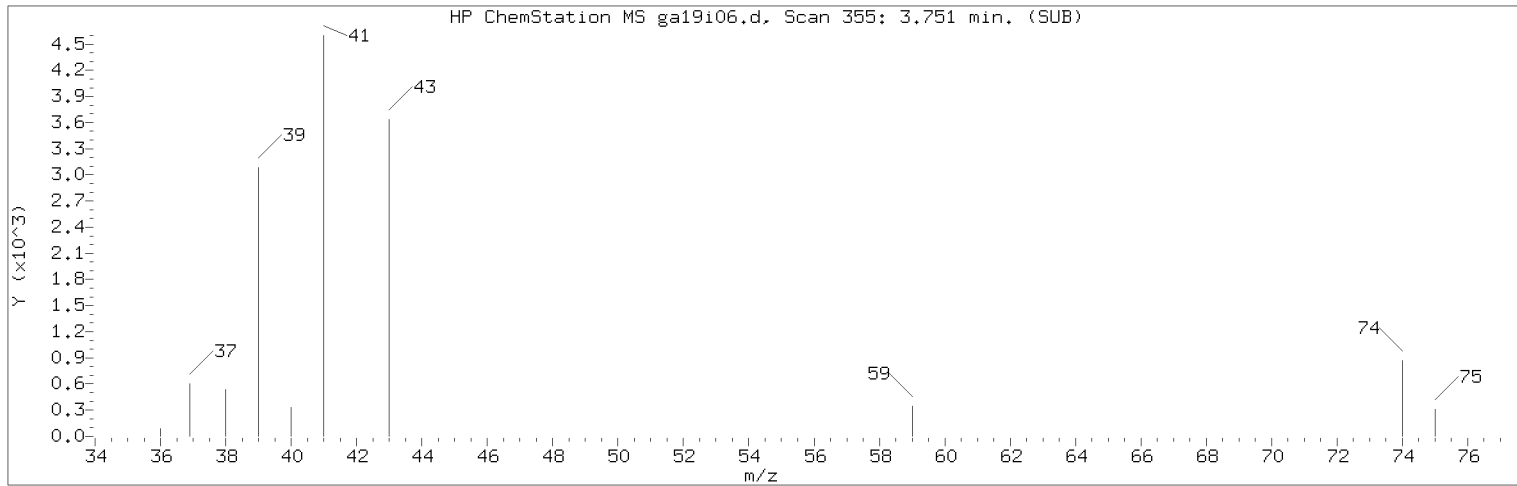
Lab Sample ID: VSTD0.5

Compound Number : 14
 Compound Name : Acetone
 Scan Number : 290
 Retention Time (minutes): 3.355
 Quant Ion : 43.00
 Area : 61896
 On-column Amount (ng) : 5.5051
 Integration start scan : 274
 Y at integration start : 0

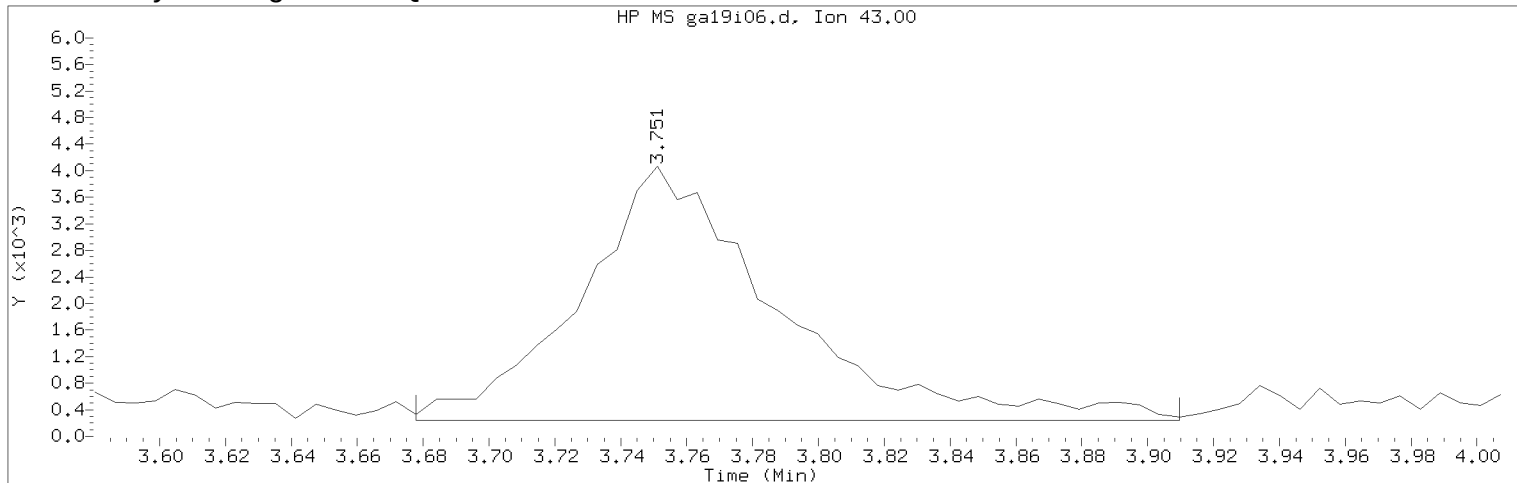
Integration stop scan: 325
 Y at integration end: 147

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB407320 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

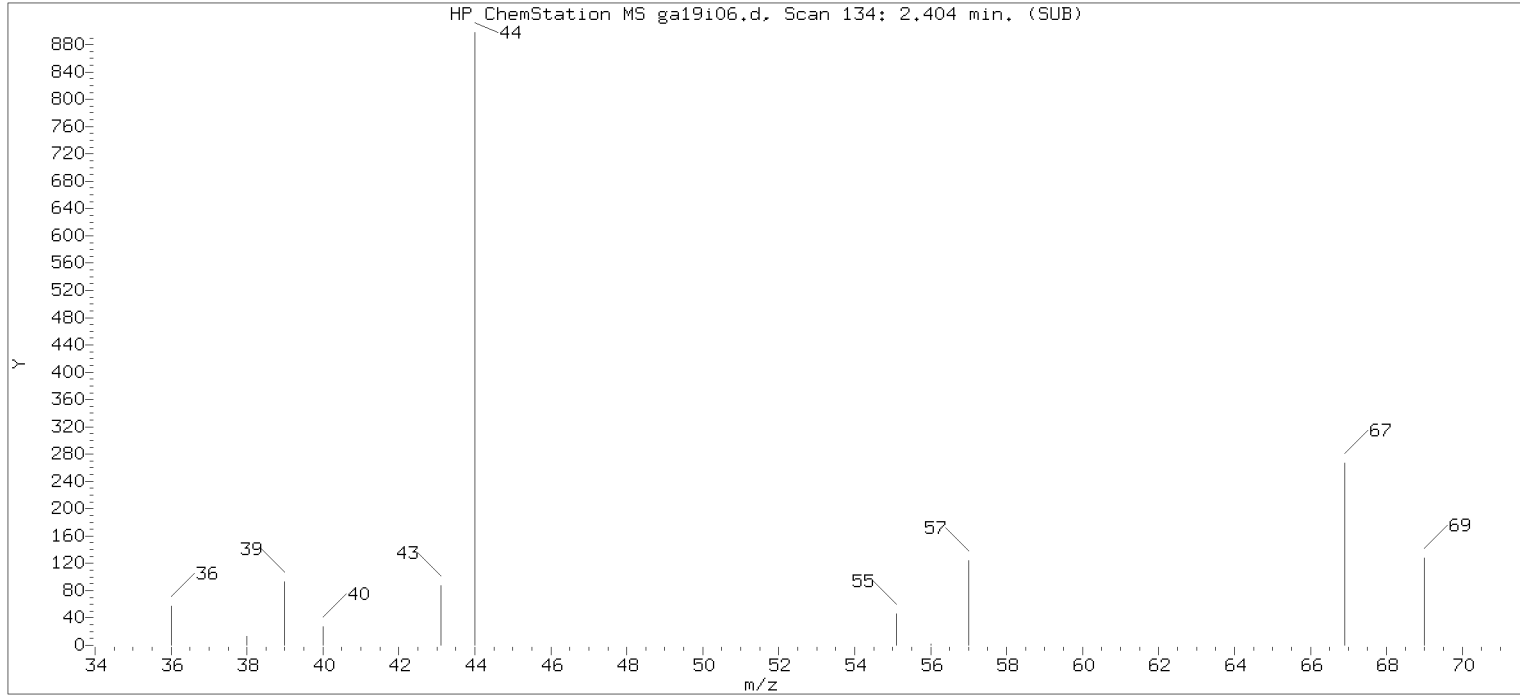
Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 355	
Retention Time (minutes)	: 3.751	
Quant Ion	: 43.00	
Area (flag)	: 15987M	
On-Column Amount (ng)	: 0.4900	
Integration start scan	: 342	Integration stop scan: 380
Y at integration start	: 239	Y at integration end: 239

Reason for manual integration: improper integration

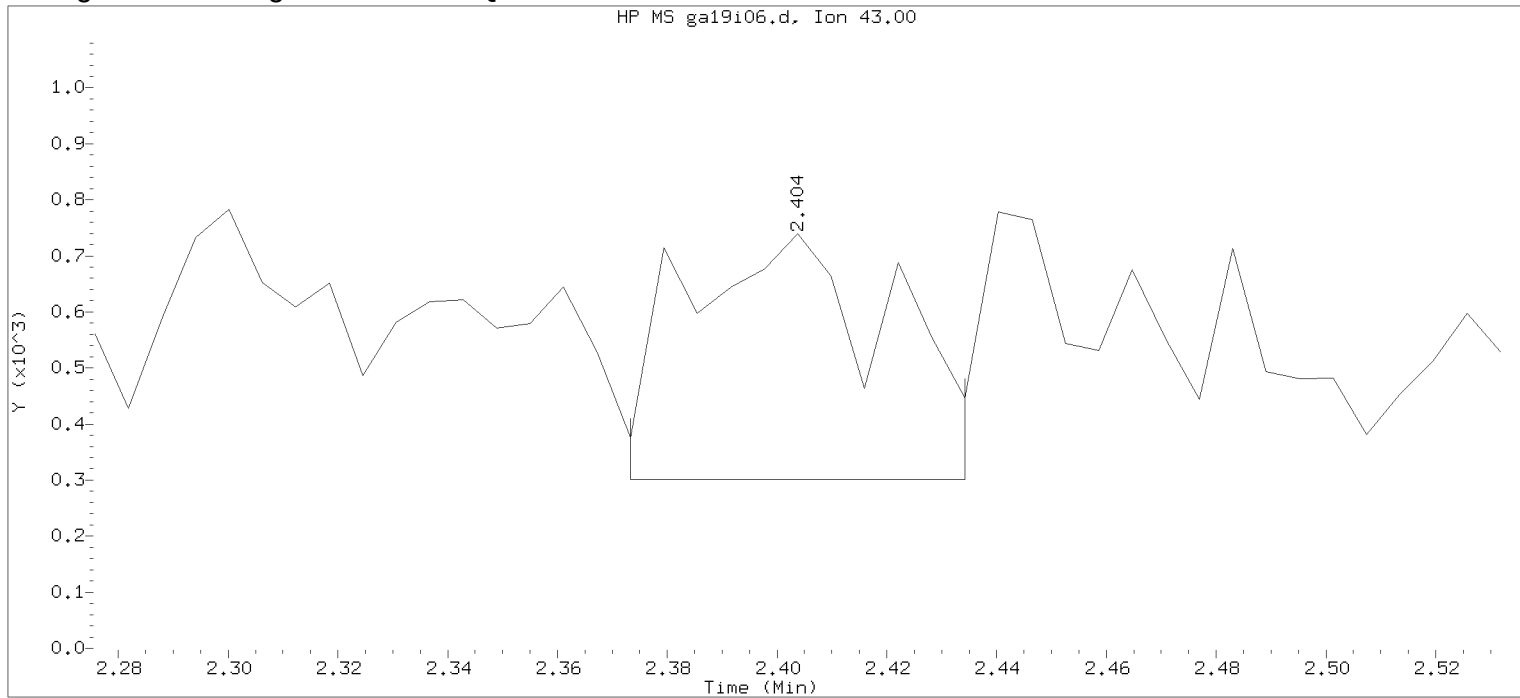
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 134

Retention Time (minutes): 2.404

Quant Ion : 43.00

Area : 1149

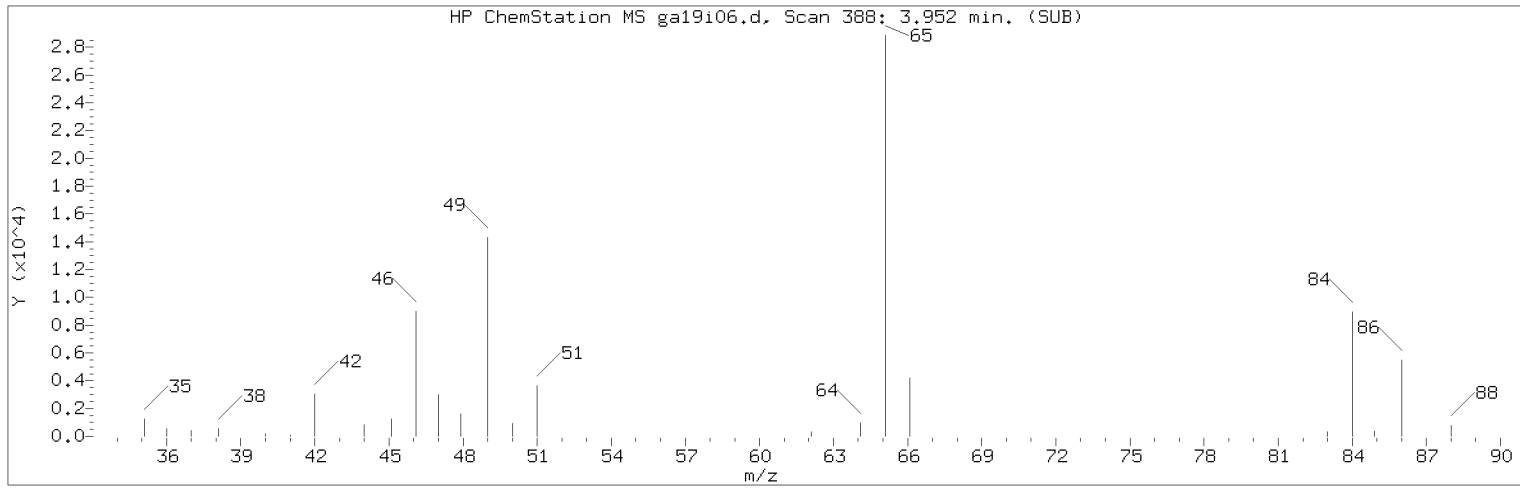
On-column Amount (ng) : 1.0225

Integration start scan : 128 Integration stop scan: 138

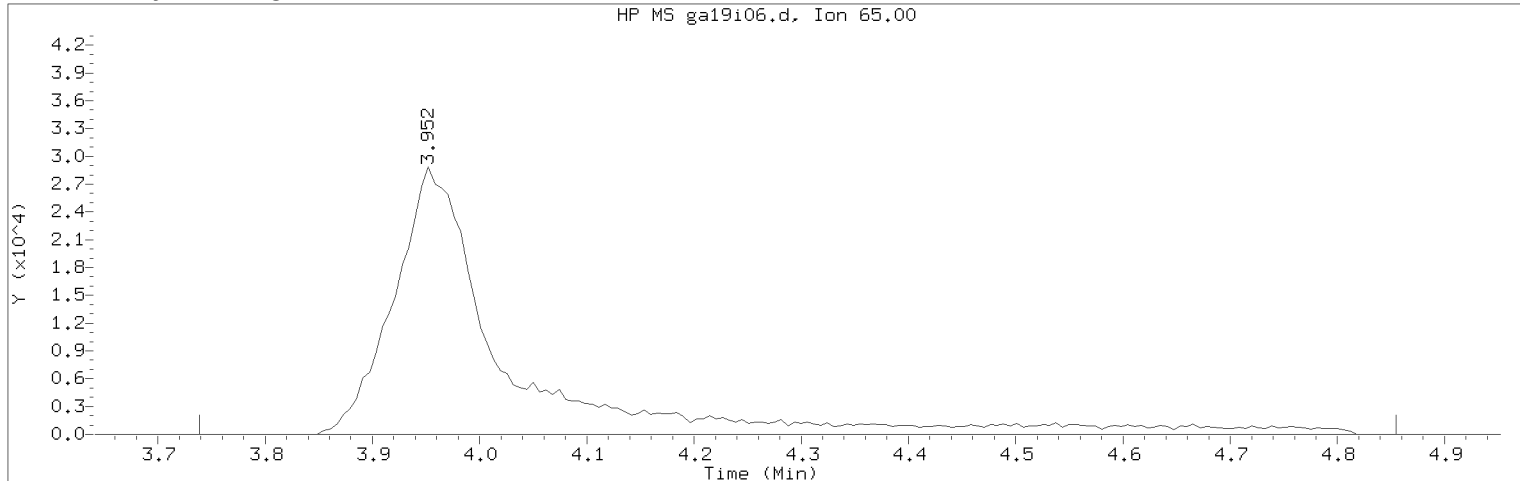
Y at integration start : 301 Y at integration end: 301

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB407320 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 388

Retention Time (minutes): 3.952

Quant Ion : 65.00

Area (flag) : 211767M

On-Column Amount (ng) : 50.0000

Integration start scan : 352

Integration stop scan: 535

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

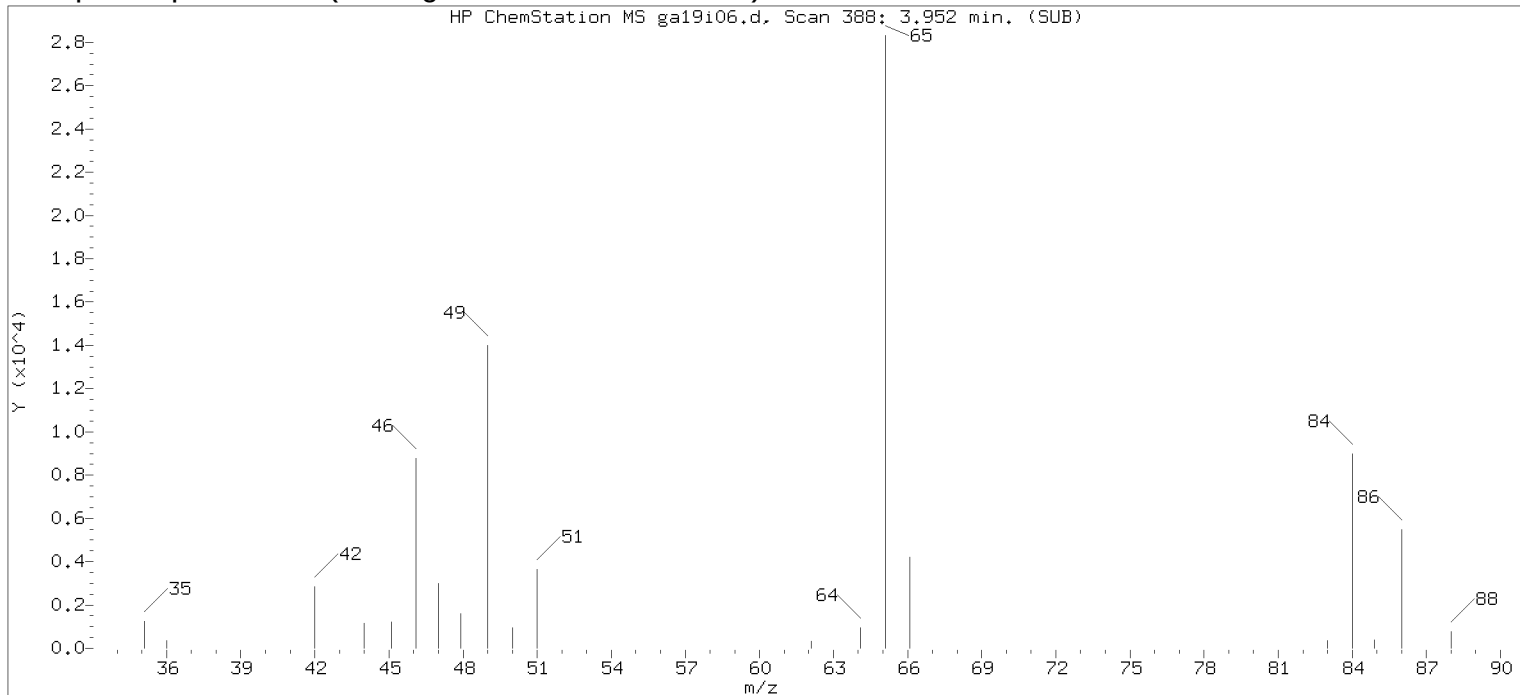
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

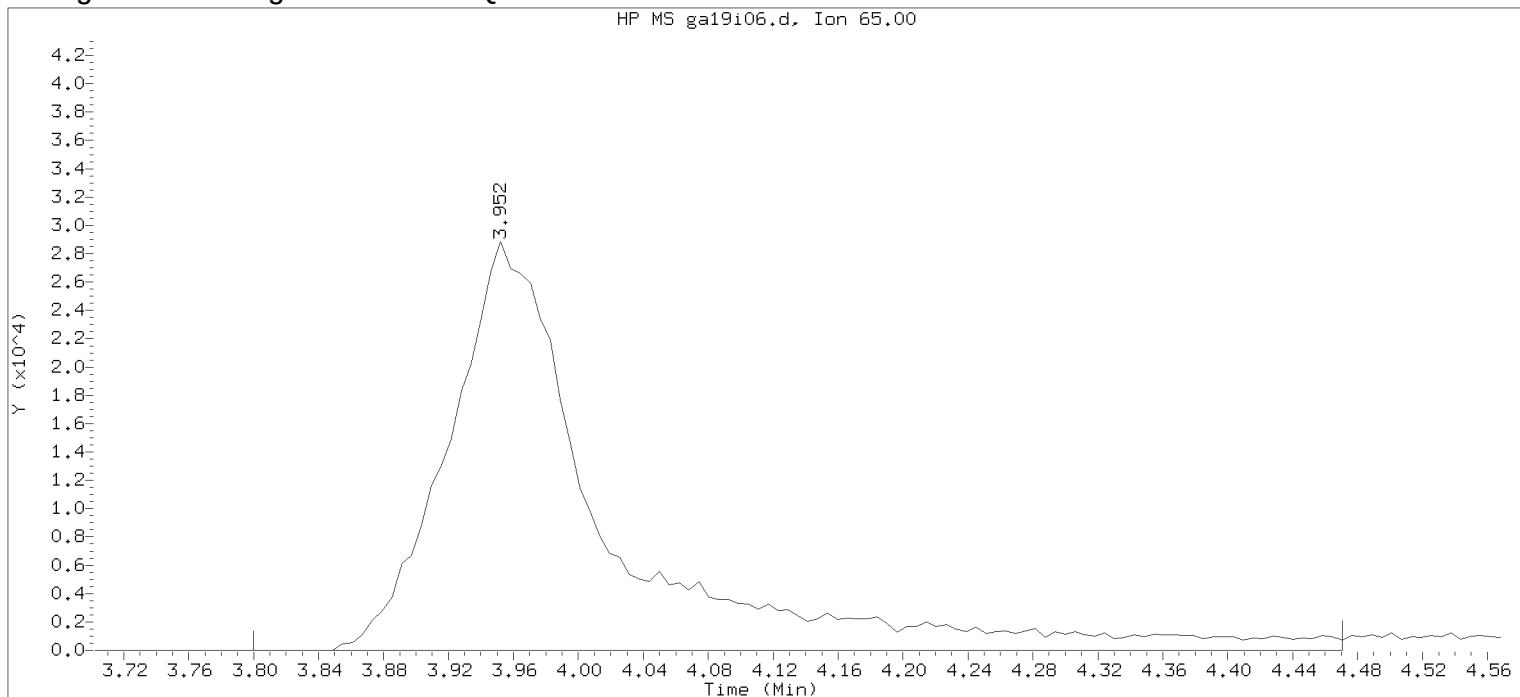
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 388

Retention Time (minutes): 3.952

Quant Ion : 65.00

Area : 194962

On-column Amount (ng) : 50.0000

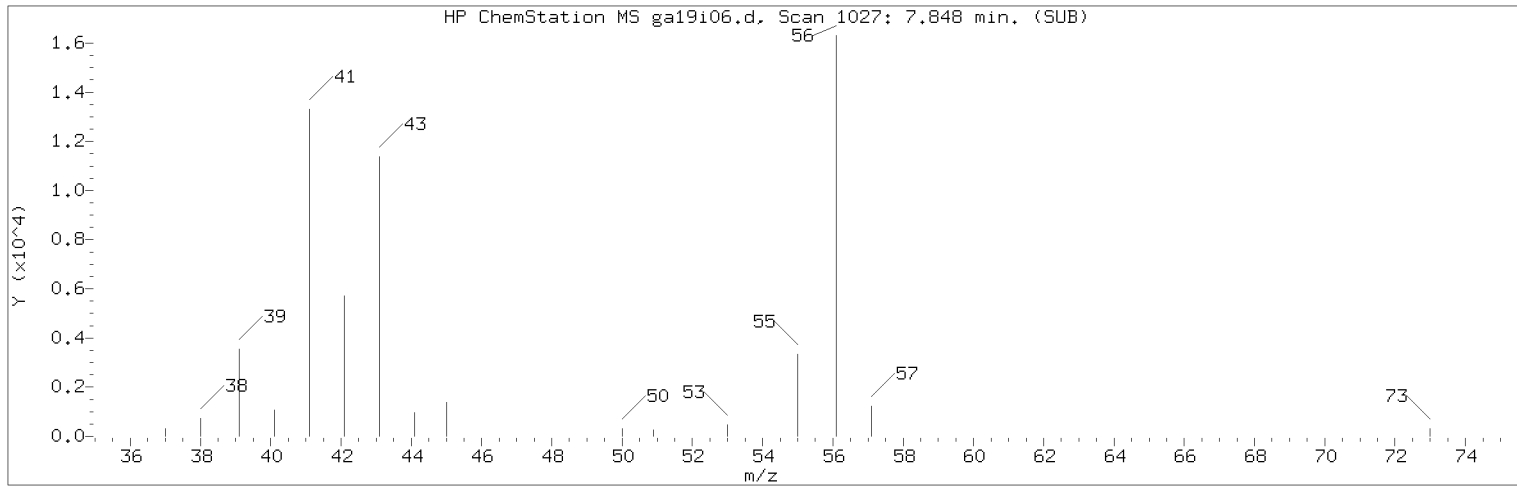
Integration start scan : 362 Integration stop scan: 472

Y at integration start : 0 Y at integration end: 0

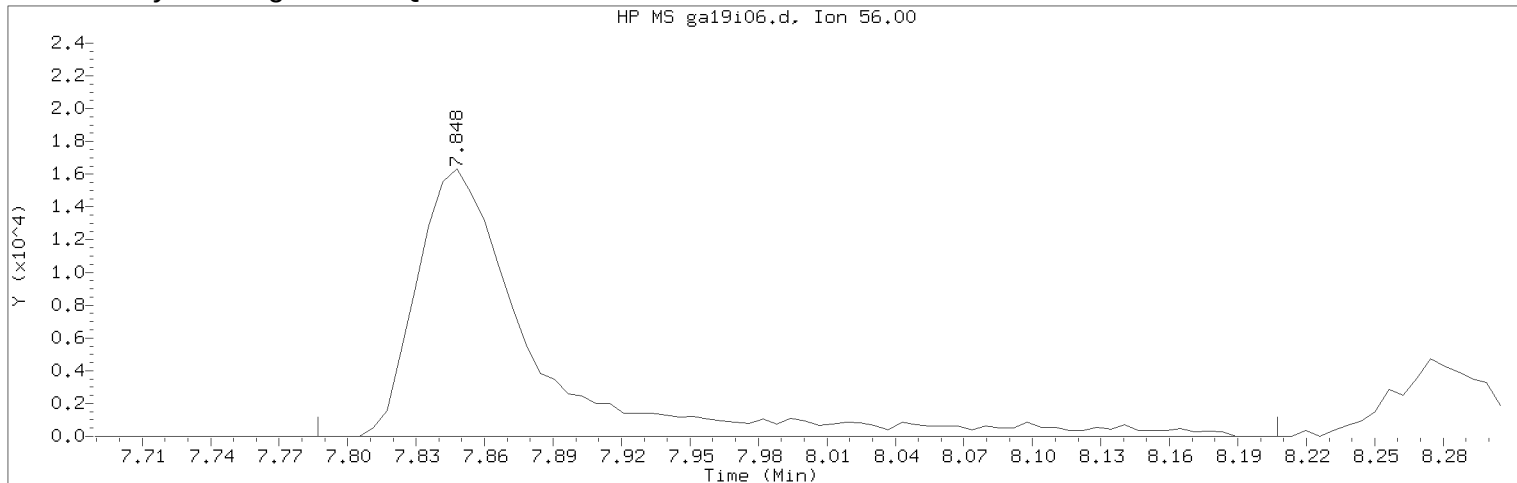
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107320 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 65

Compound Name : n-Butanol

Scan Number : 1027

Retention Time (minutes): 7.848

Quant Ion : 56.00

Area (flag) : 58896M

On-Column Amount (ng) : 45.9014

Integration start scan : 1016

Integration stop scan: 1085

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

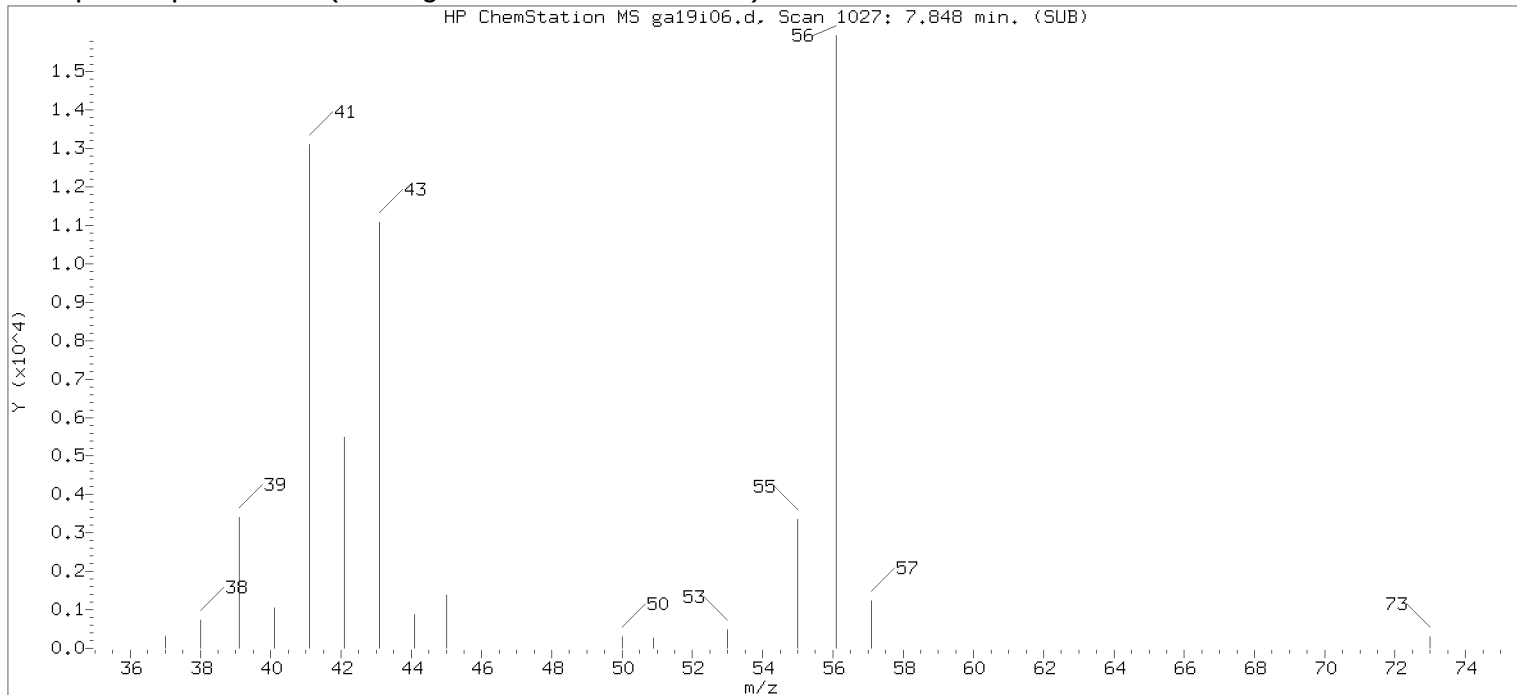
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

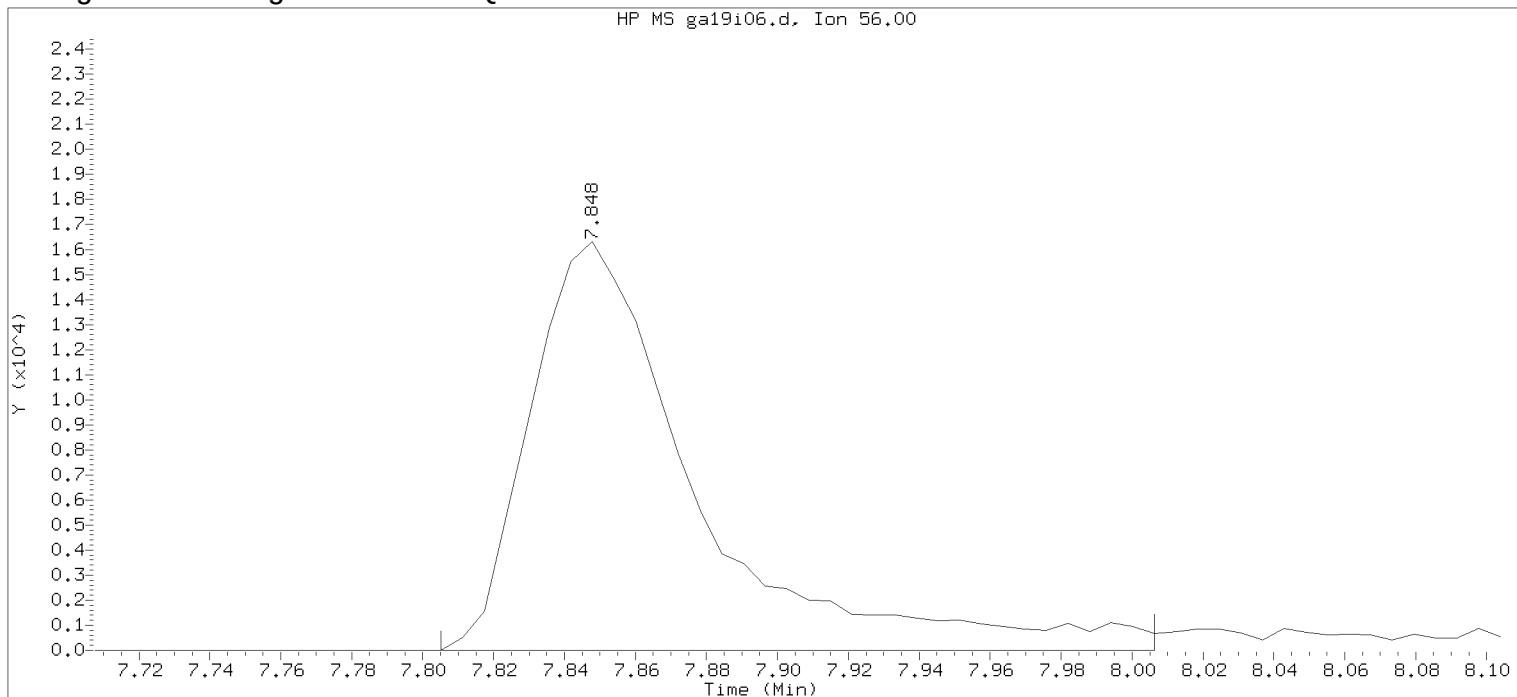
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

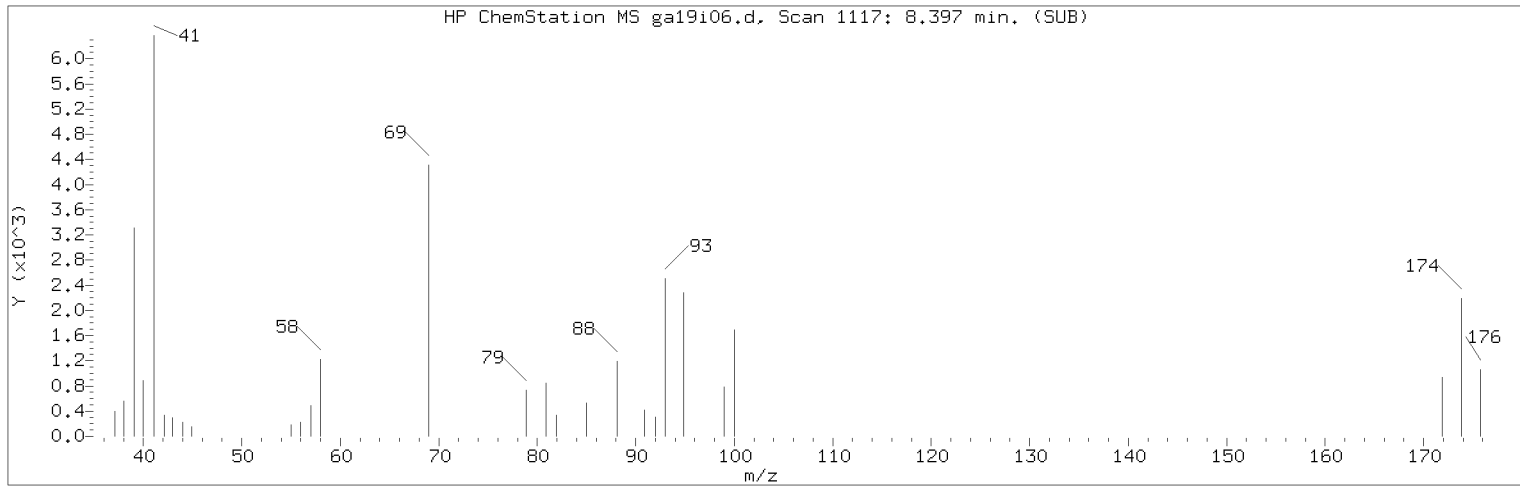
Lab Sample ID: VSTD0.5

Compound Number : 65
 Compound Name : n-Butanol
 Scan Number : 1027
 Retention Time (minutes): 7.848
 Quant Ion : 56.00
 Area : 53011
 On-column Amount (ng) : 43.5670
 Integration start scan : 1019
 Y at integration start : 0

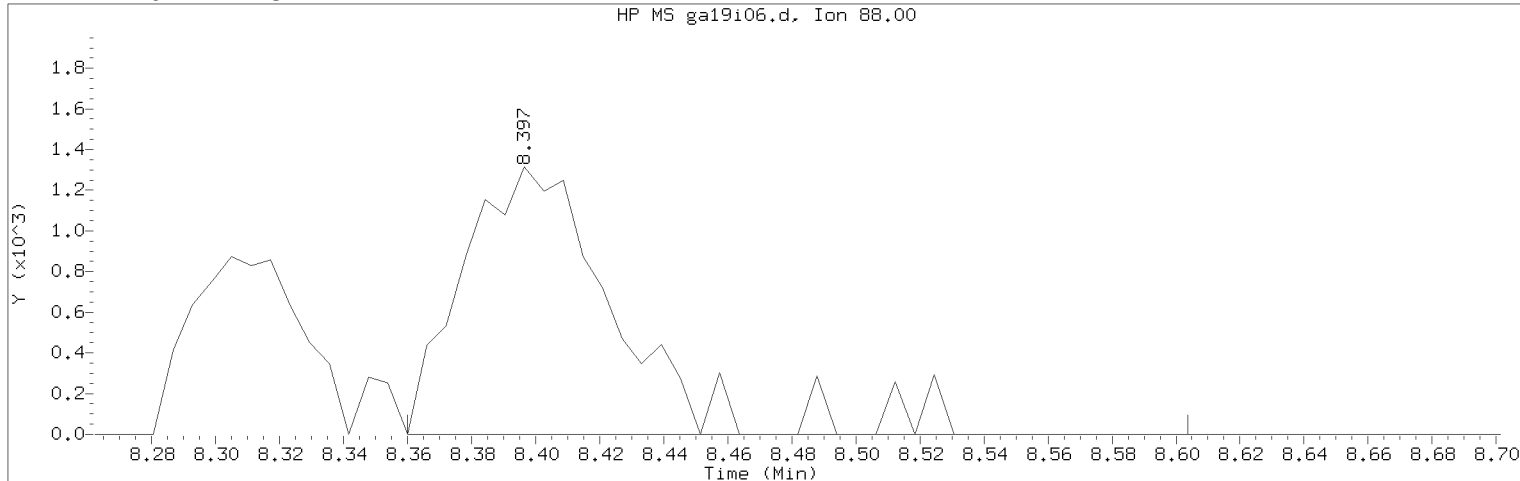
Integration stop scan: 1052
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user F1D52mB407329 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

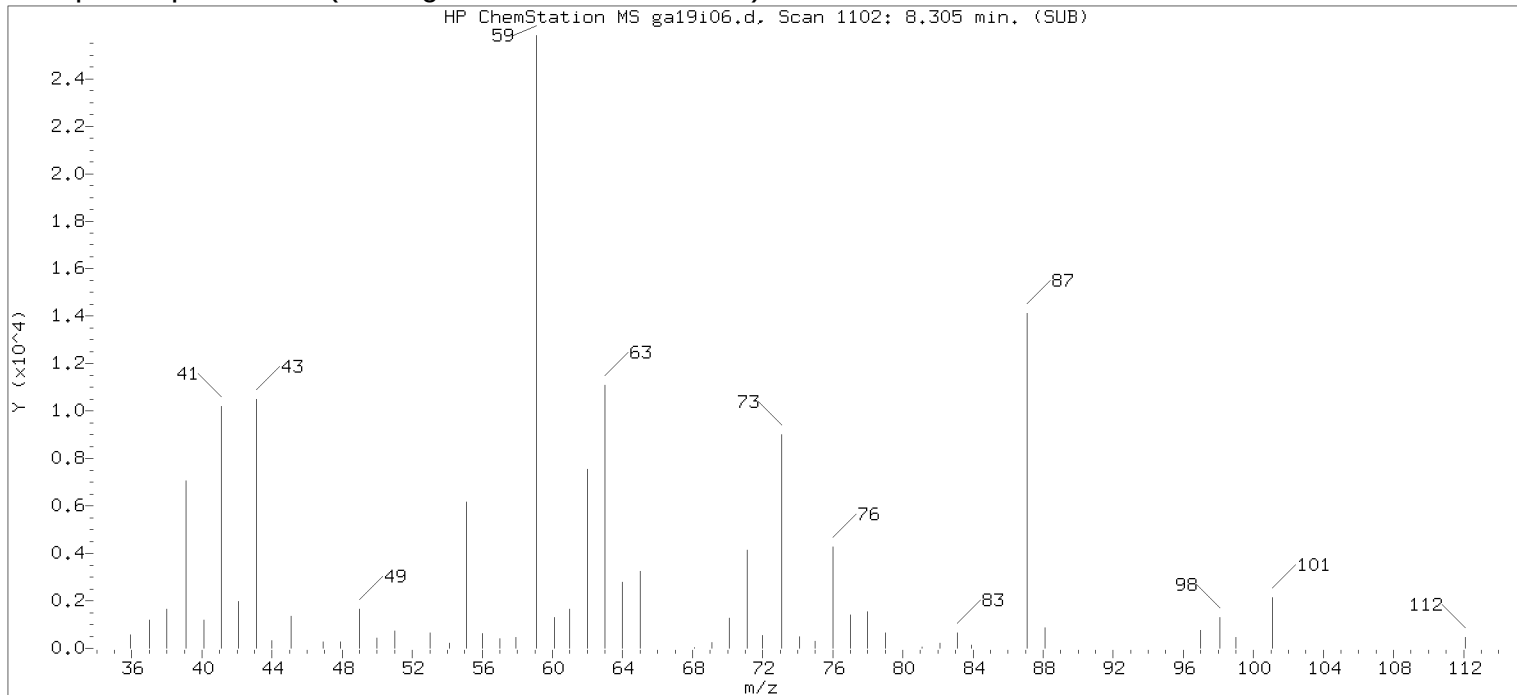
Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1117	
Retention Time (minutes)	: 8.397	
Quant Ion	: 88.00	
Area (flag)	: 4429M	
On-Column Amount (ng)	: 19.0907	
Integration start scan	: 1110	Integration stop scan: 1150
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

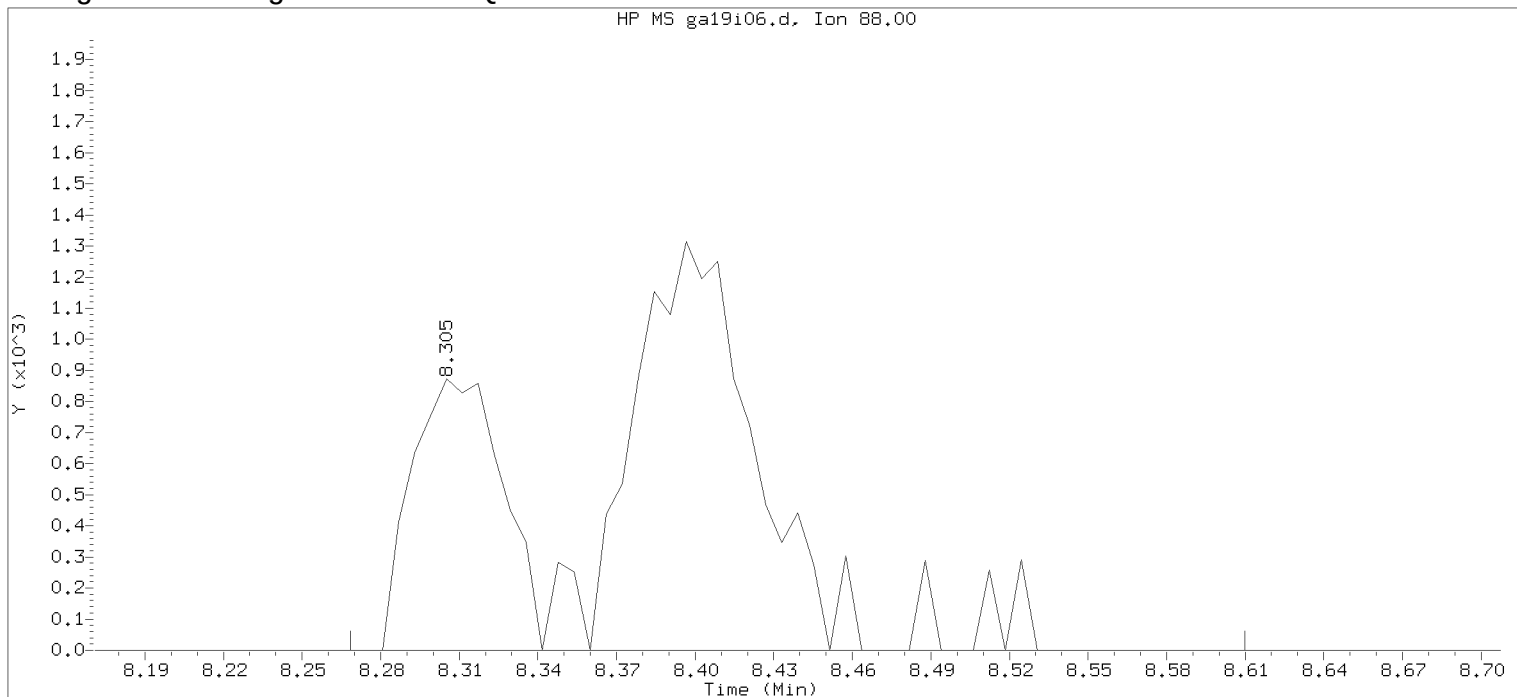
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

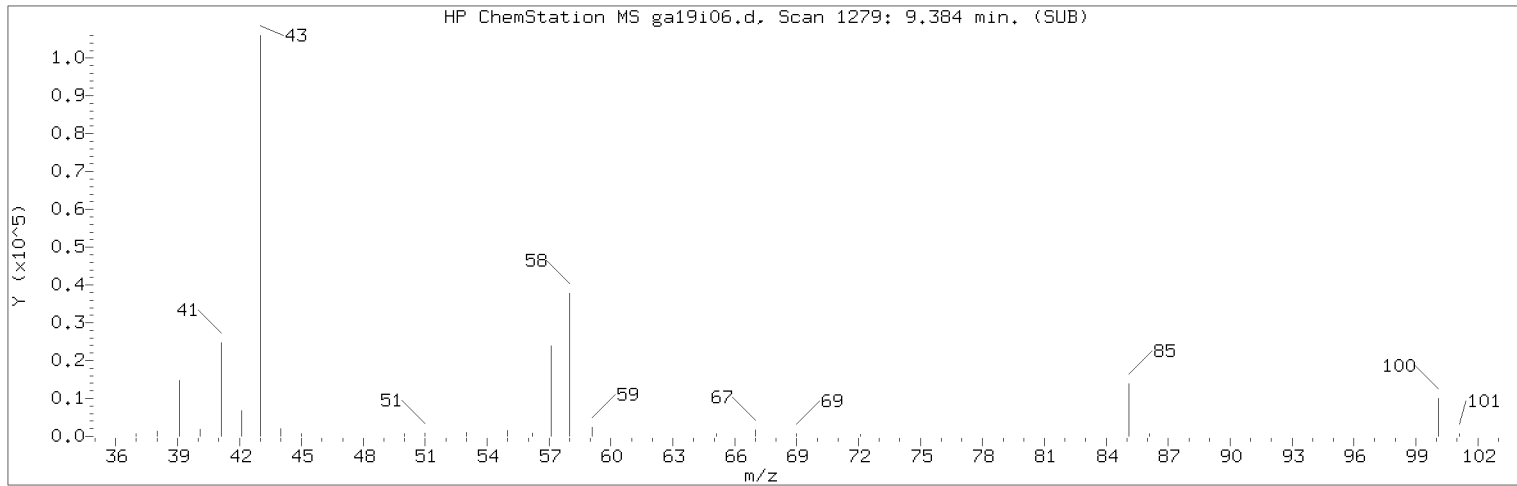
Lab Sample ID: VSTD0.5

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1102
 Retention Time (minutes): 8.305
 Quant Ion : 88.00
 Area : 6743
 On-column Amount (ng) : 25.2068
 Integration start scan : 1095
 Y at integration start : 0

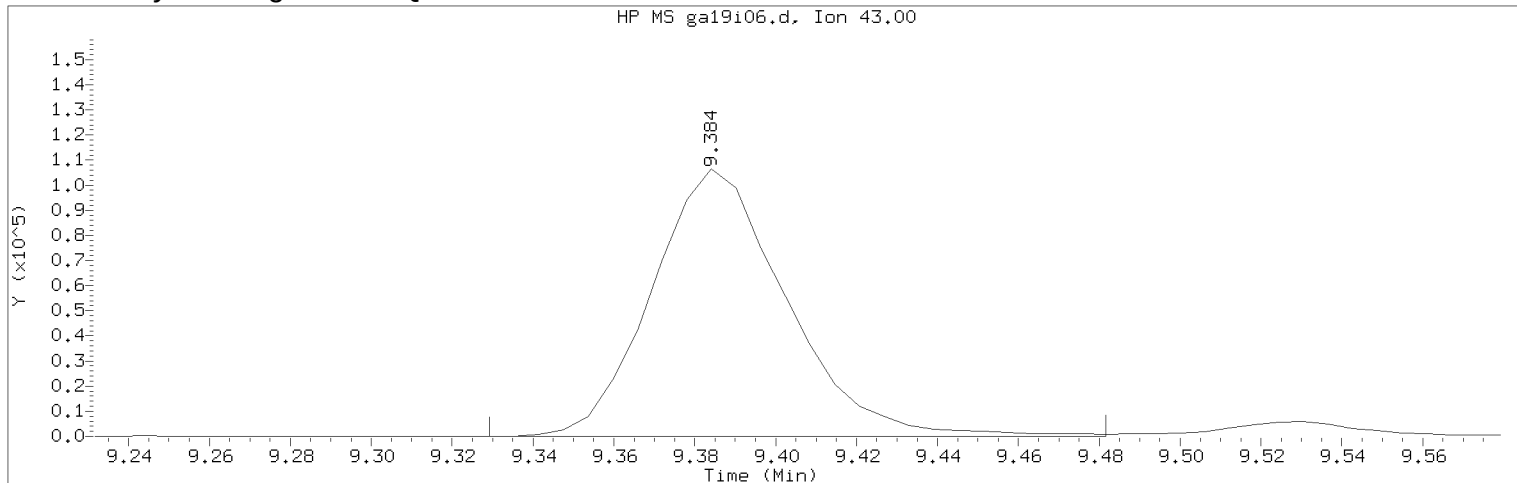
Integration stop scan: 1151
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature userF1D52mB107370 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 245229M

On-Column Amount (ng) : 4.8372

Integration start scan : 1269

Integration stop scan: 1294

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

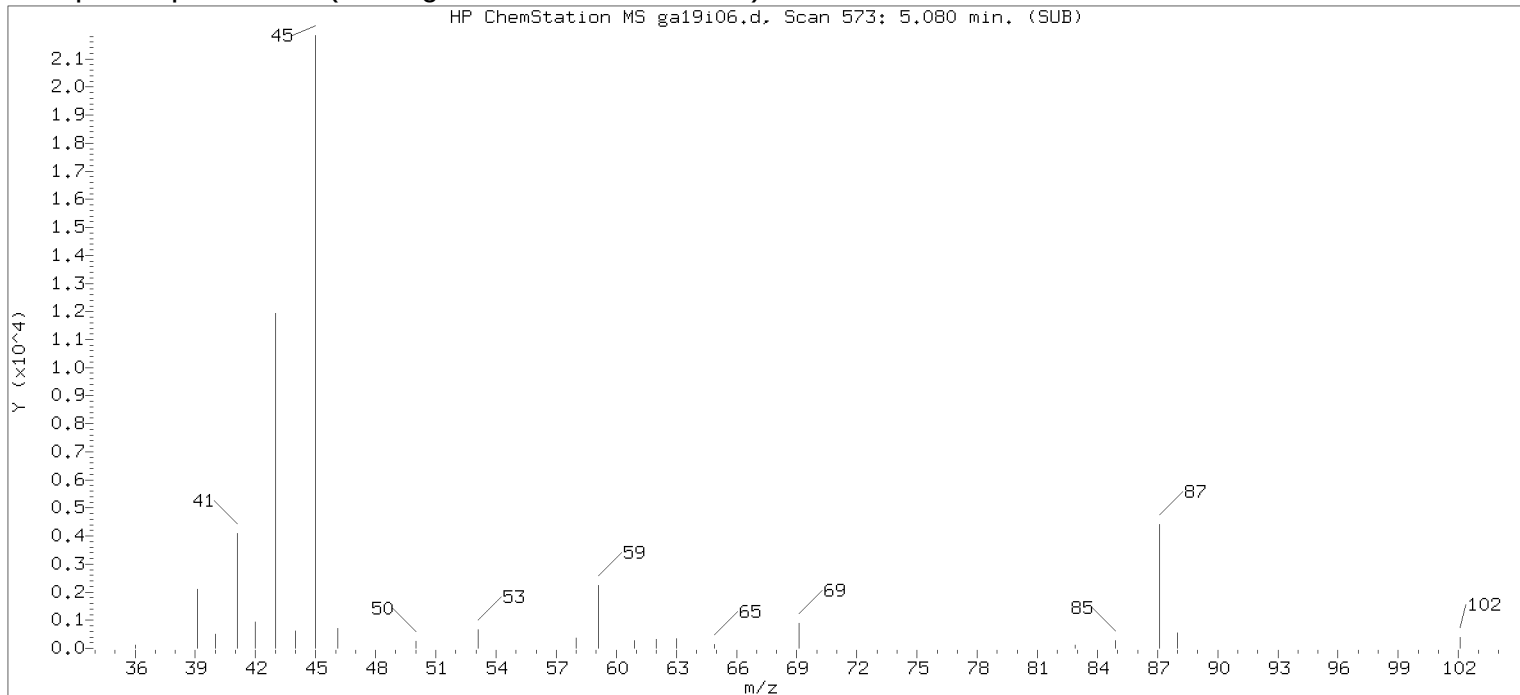
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

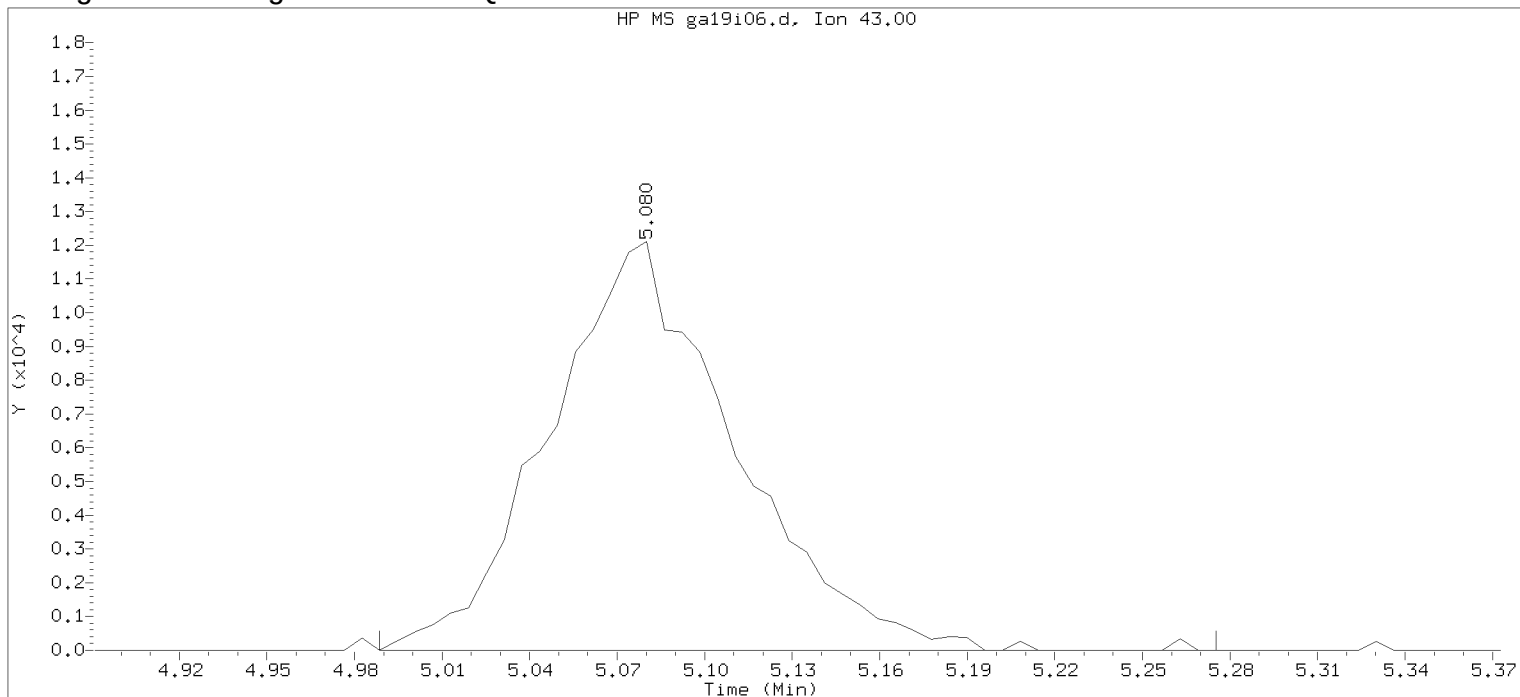
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 573

Retention Time (minutes): 5.080

Quant Ion : 43.00

Area : 53419

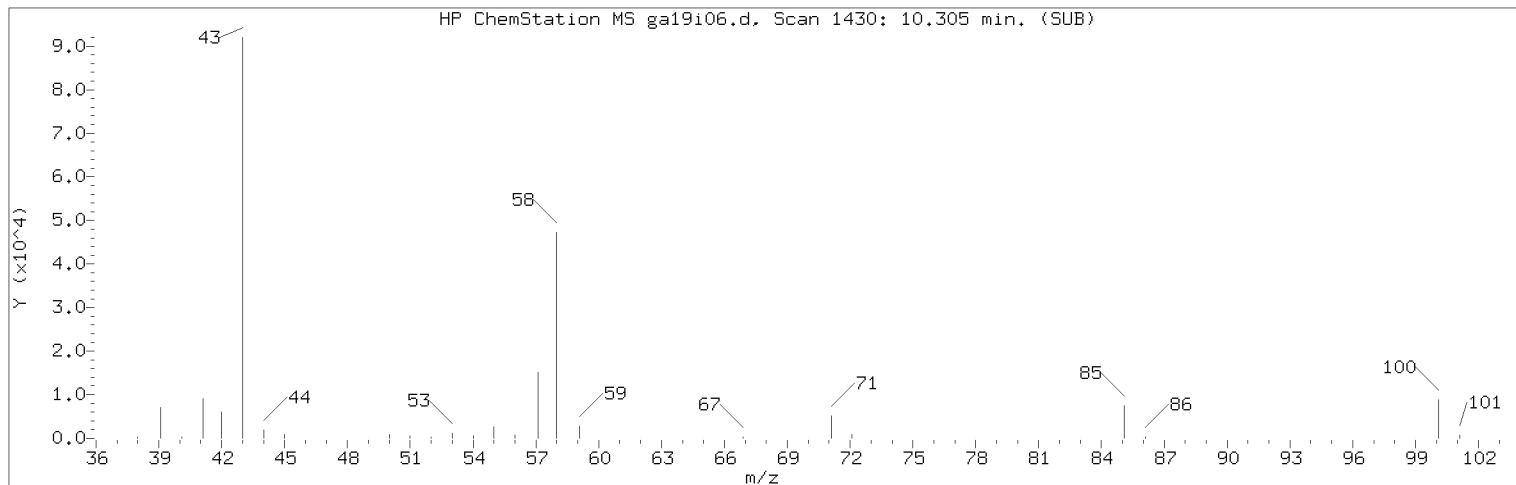
On-column Amount (ng) : 5.3211

Integration start scan : 557 Integration stop scan: 604

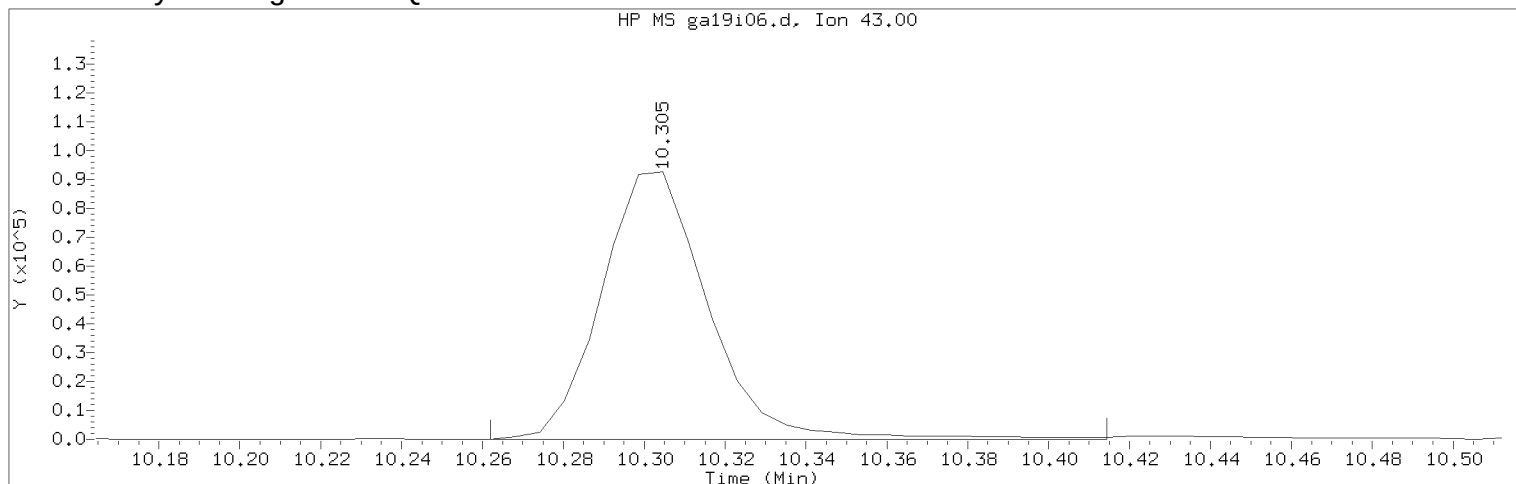
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature user F1D52mB407330 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 1430

Retention Time (minutes): 10.305

Quant Ion : 43.00

Area (flag) : 169720M

On-Column Amount (ng) : 4.7439

Integration start scan : 1422

Integration stop scan: 1447

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

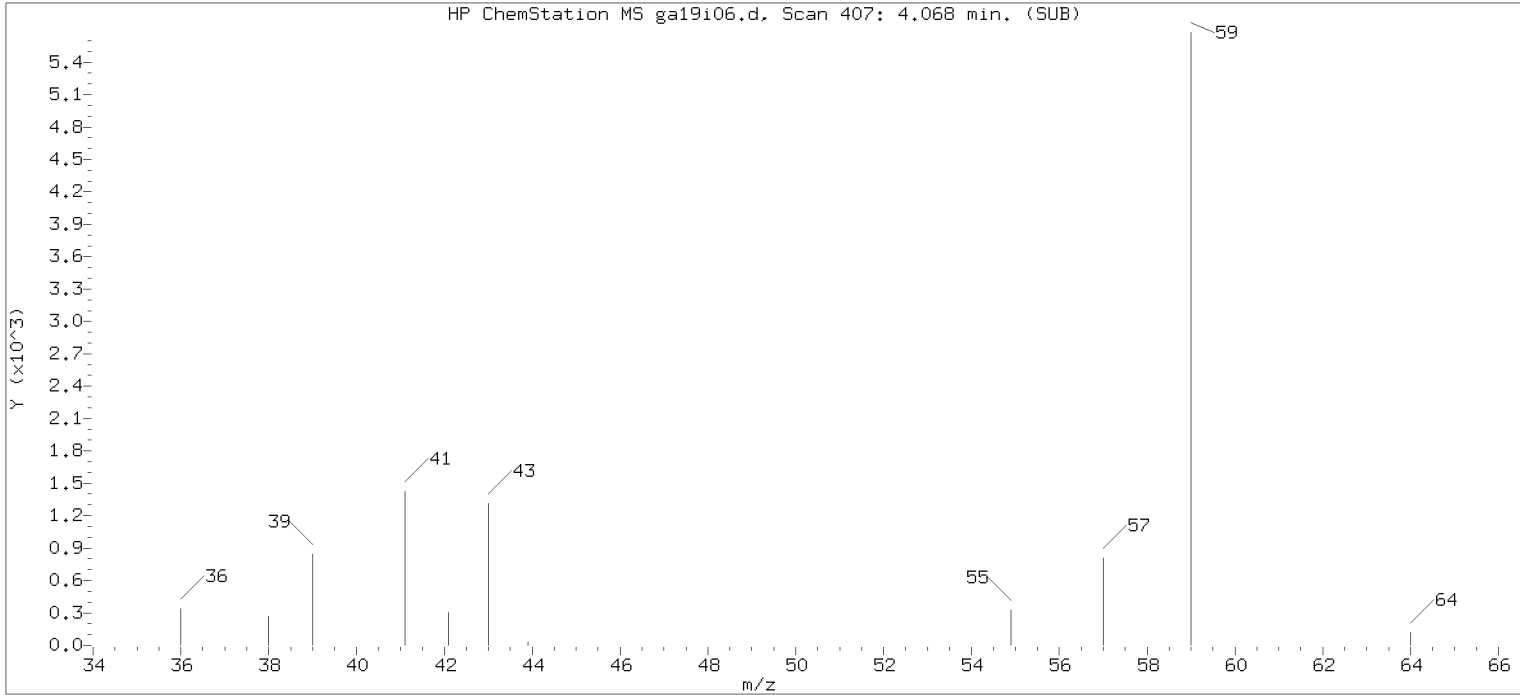
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

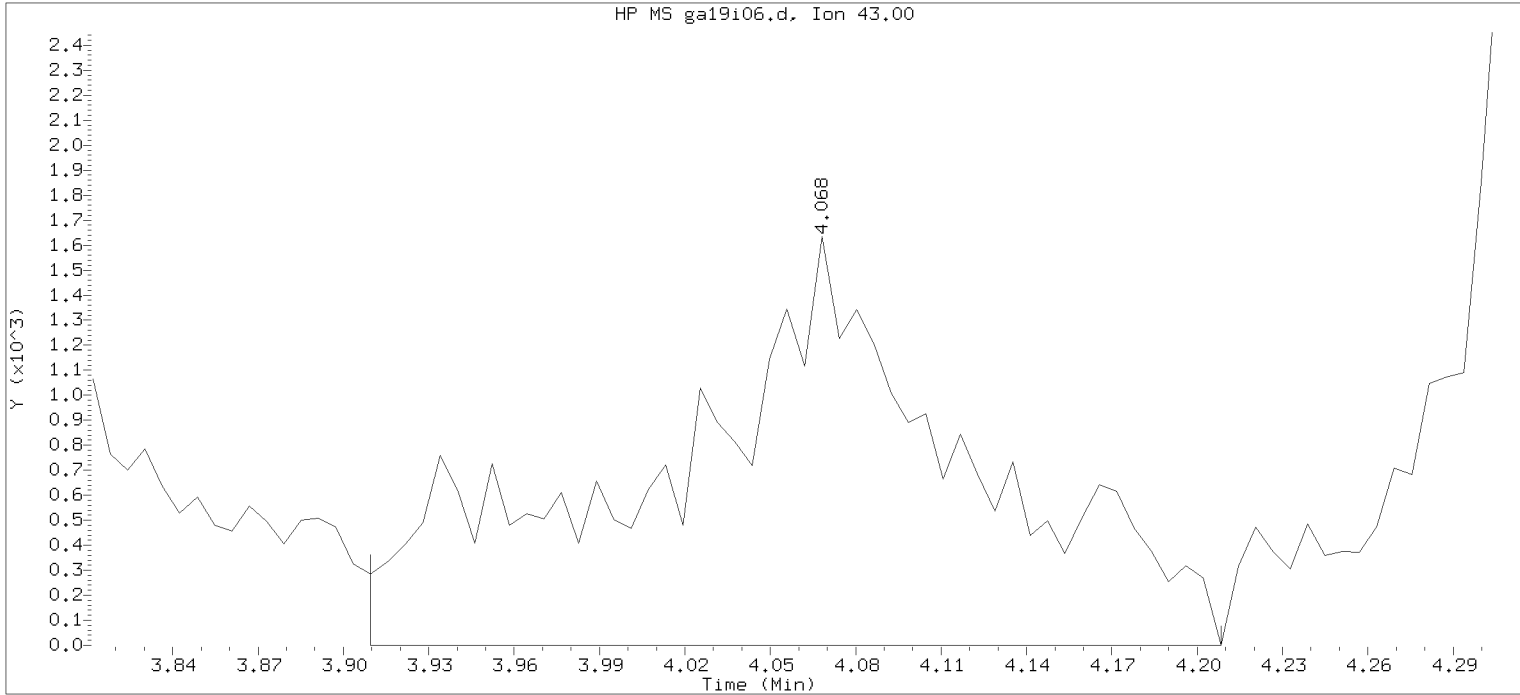
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

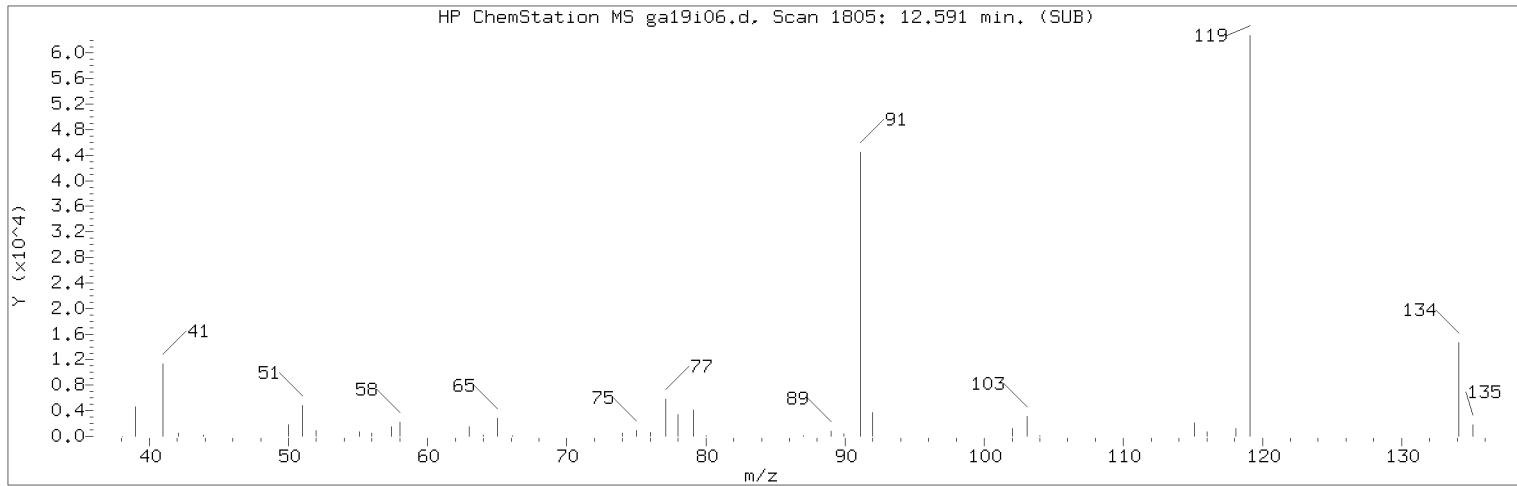
Lab Sample ID: VSTD0.5

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 407
Retention Time (minutes): 4.068
Quant Ion : 43.00
Area : 12213
On-column Amount (ng) : 7.5978
Integration start scan : 380
Y at integration start : 0

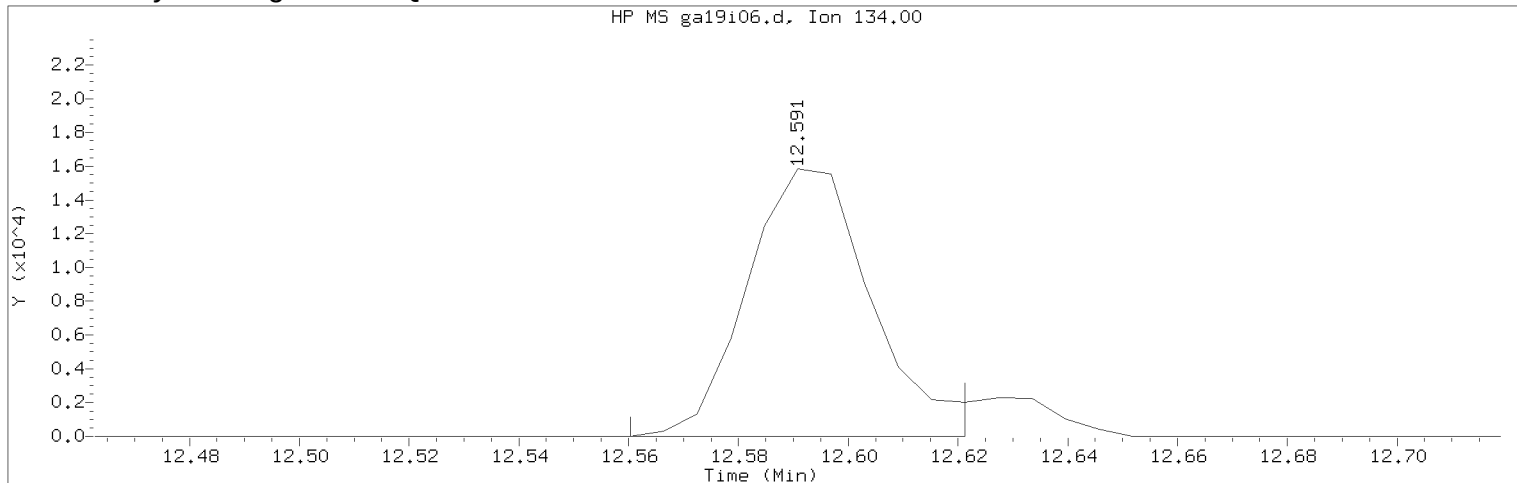
Integration stop scan: 429
Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB497379 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number	: 125	
Compound Name	: tert-Butylbenzene	
Scan Number	: 1805	
Retention Time (minutes)	: 12.591	
Quant Ion	: 134.00	
Area (flag)	: 25111M	
On-Column Amount (ng)	: 0.5305	
Integration start scan	: 1799	Integration stop scan: 1809
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

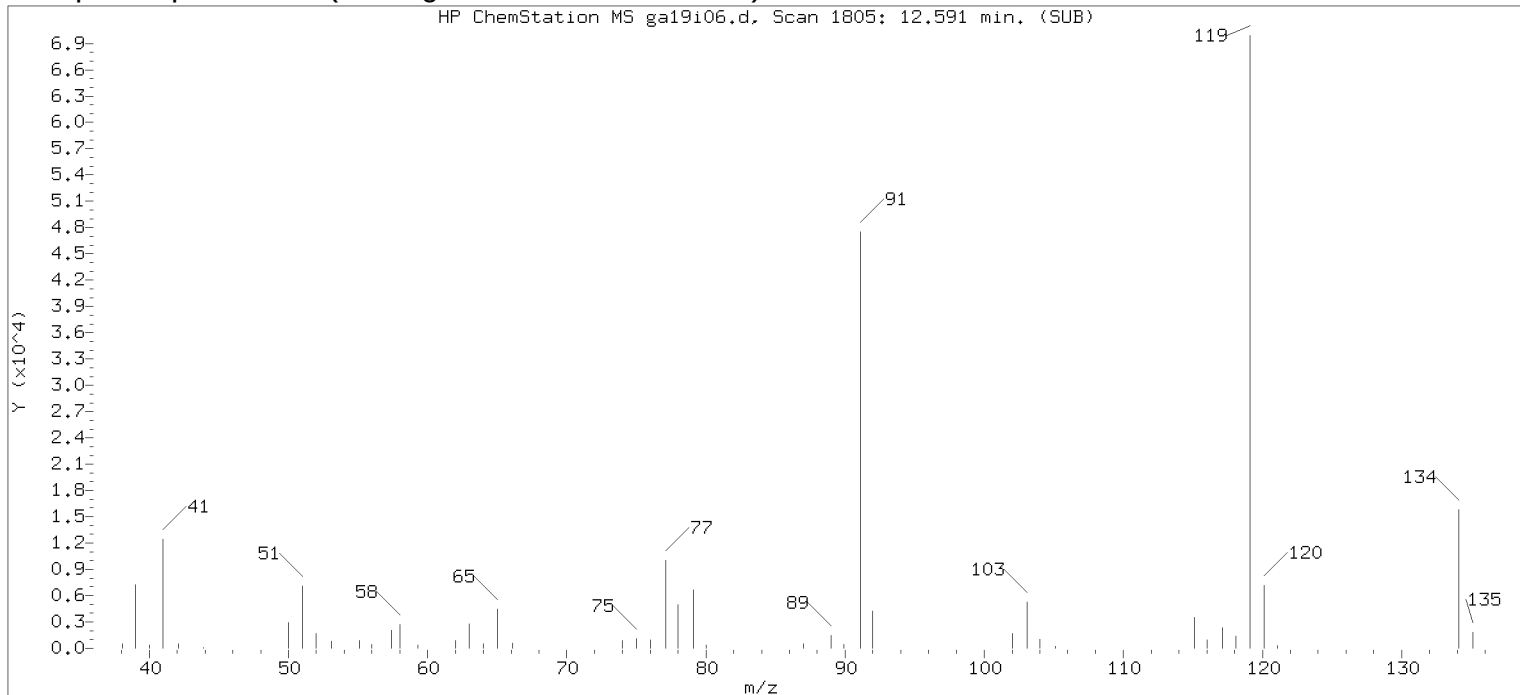
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

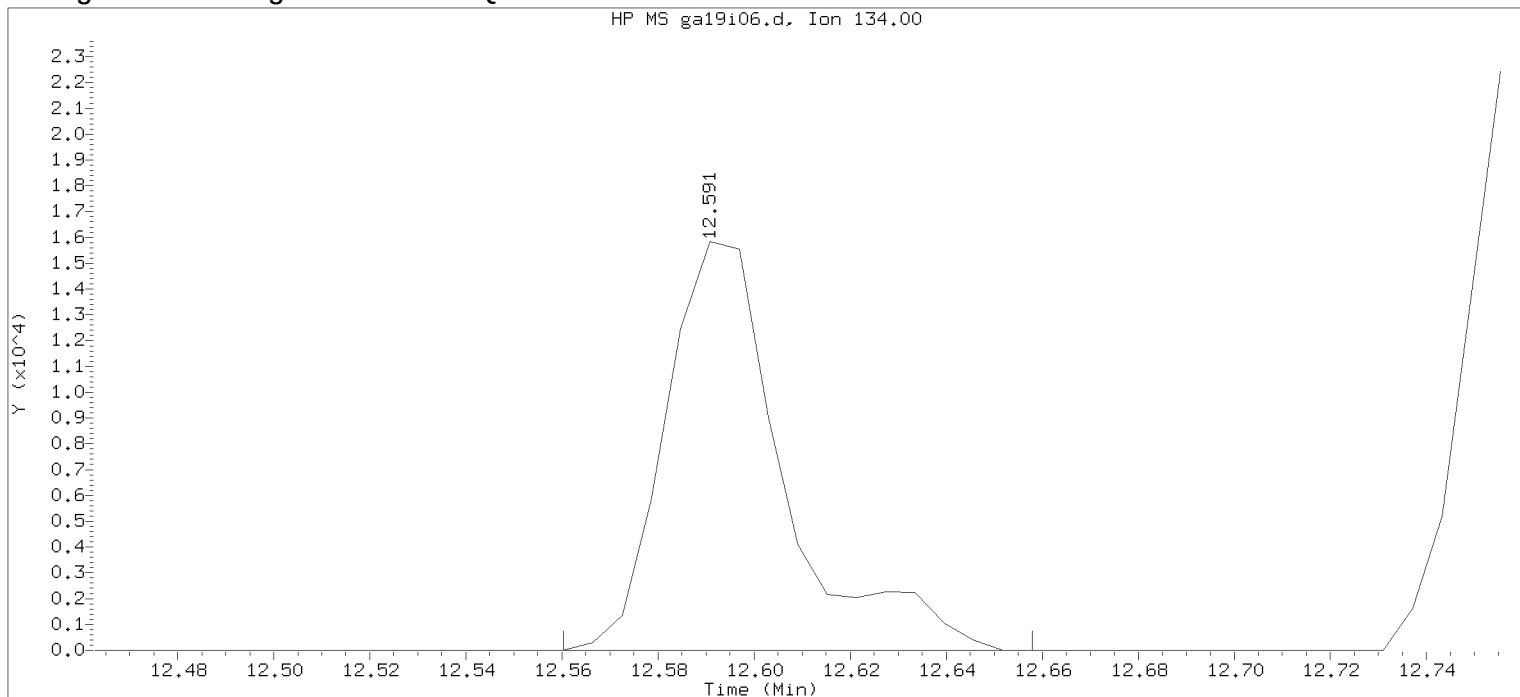
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i06.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:14

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:31

Date, time and analyst ID of latest file update: 19-Apr-2018 14:31 Automation

Sample Name: VSTD0.5

Lab Sample ID: VSTD0.5

Compound Number : 125

Compound Name : tert-Butylbenzene

Scan Number : 1805

Retention Time (minutes): 12.591

Quant Ion : 134.00

Area : 27286

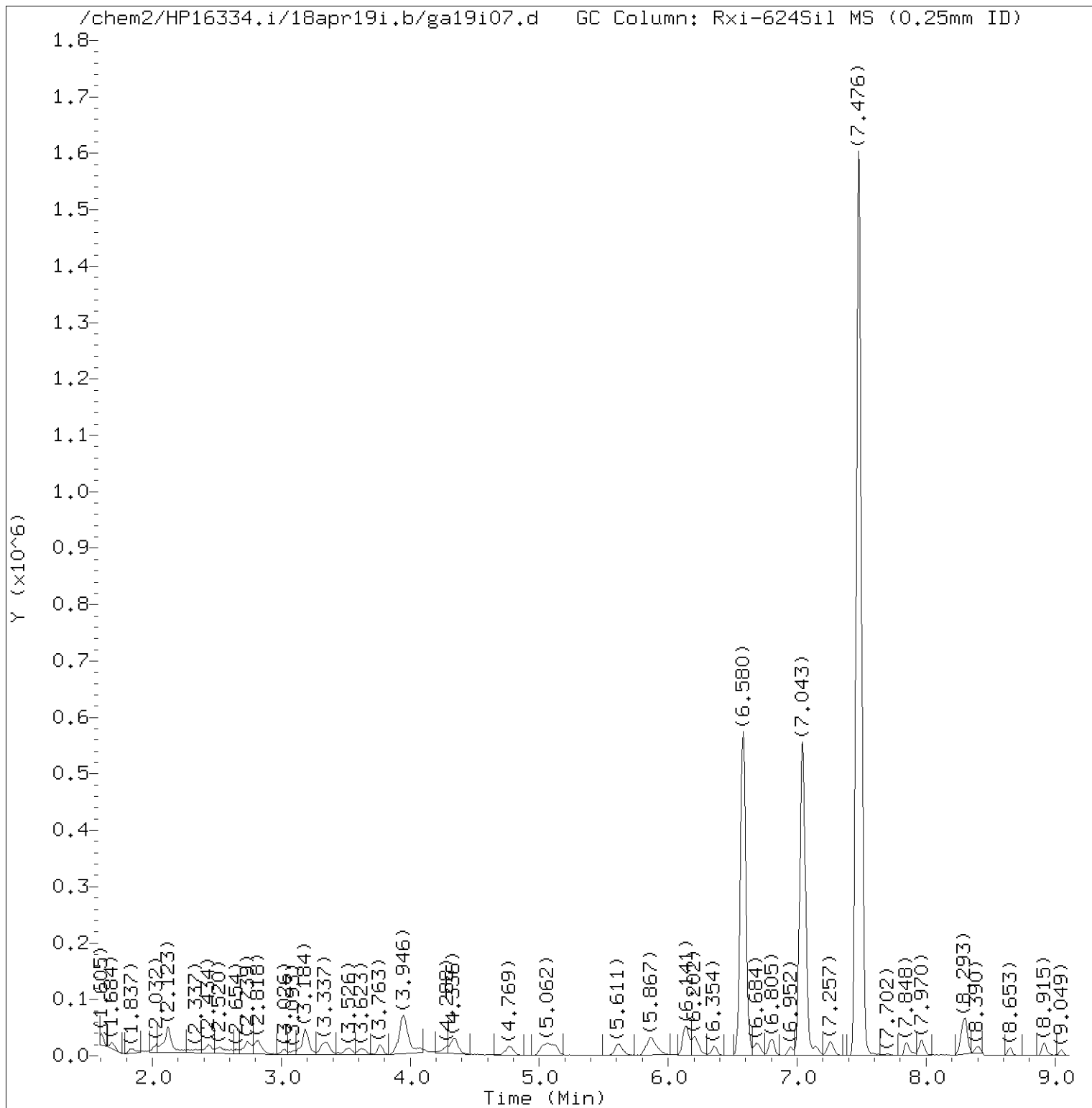
On-column Amount (ng) : 0.5580

Integration start scan : 1799 Integration stop scan: 1815

Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userFID52mBkg730 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d
Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i
Analyst ID: JKH09052

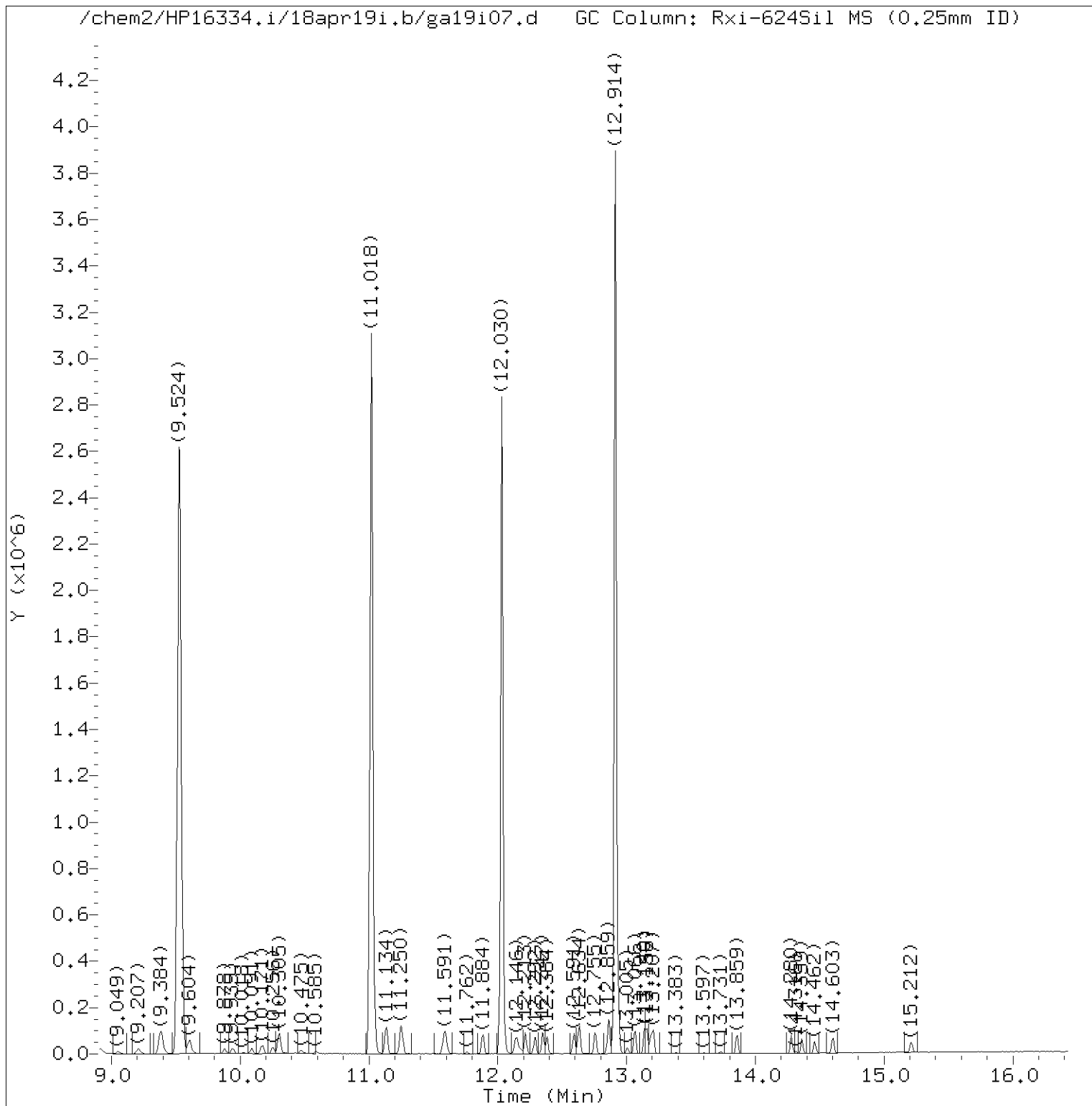
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970
FKP52 Page 338 of 730



Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d
 Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.825	85	13339	0.174
2) Chloromethane	(2)	2.020	50	15171	0.196
6) 1,3-Butadiene	(2)	2.117	39	34377M	0.244
5) Vinyl Chloride	(2)	2.123	62	12731	0.192
7) Bromomethane	(2)	2.434	94	8569	0.193
8) Chloroethane	(2)	2.514	64	7192	0.190
9) Dichlorofluoromethane	(2)	2.739	67	18549	0.204
10) Trichlorofluoromethane	(2)	2.806	101	15812	0.183
11) Ethyl ether	(2)	3.026	59	8434	0.196
12) Freon 123a	(2)	3.111	67	11981M	0.196
13) Acrolein	(1)	3.184	56	75312	9.663
15) 1,1-Dichloroethene	(2)	3.318	96	8100	0.191
14) Acetone	(1)	3.337	43	27906M	2.216
16) Freon 113	(2)	3.355	101	8676	0.182
17) Methyl Iodide	(2)	3.501	142	15541	0.189
18) Carbon Disulfide	(2)	3.635	76	37961	0.226
21) Methyl Acetate	(1)	3.751	43	7988M	0.225
22) Allyl Chloride	(2)	3.763	41	20522	0.209
23) Methylene Chloride	(2)	3.940	84	15145	0.264
26)*t-Butyl Alcohol-d10	(1)	3.946	65	225587	50.000
28) t-Butyl Alcohol	(1)	4.074	59	18967	4.443
29) Acrylonitrile	(1)	4.275	53	12533	0.895
30) Methyl Tertiary Butyl Ether	(2)	4.318	73	29384	0.199
31) trans-1,2-Dichloroethene	(2)	4.349	96	9764	0.198
32) n-Hexane	(2)	4.763	57	15545	0.187
33) 1,1-Dichloroethane	(2)	5.019	63	19158	0.191
34) di-Isopropyl Ether	(2)	5.062	45	40610	0.197
35) 2-Chloro-1,3-Butadiene	(2)	5.123	53	17955	0.195
37) Ethyl t-butyl ether	(2)	5.611	59	35115	0.195
38) 2-Butanone	(1)	5.830	43	40756	1.881
39) cis-1,2-Dichloroethene	(2)	5.860	96	10082	0.183
41) 2,2-Dichloropropane	(2)	5.879	77	14839	0.180
42) Propionitrile	(1)	5.928	54	19959	3.726
40) 1,2-Dichloroethene (Total)	(2)		96	19846	0.381
45) Methacrylonitrile	(1)	6.135	67	31071	1.830
48) Tetrahydrofuran	(1)	6.202	71	10048	1.948
47) Bromochloromethane	(2)	6.208	128	4723	0.186
49) Chloroform	(2)	6.366	83	18815	0.196

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 4

Digitally signed by Matthew S. Krause
 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 340 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d
 Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.580	113	512455	9.957
50) \$Dibromofluoromethane	(2)	6.580	111	529522	10.005
51) 1,1,1-Trichloroethane	(2)	6.592	97	15110	0.186
52) Cyclohexane	(2)	6.684	56	18535	0.191
52) Cyclohexane	(2)	6.696	84	14129	0.184
52) Cyclohexane	(2)	6.684	69	5440	0.192
54) Carbon Tetrachloride	(2)	6.805	117	11692	0.177
55) 1,1-Dichloropropene	(2)	6.805	75	14233	0.188
56) Isobutyl Alcohol	(1)	6.958	41	19777M	11.657
57) \$1,2-Dichloroethane-d4	(2)	7.043	102	109052	9.998
57) \$1,2-Dichloroethane-d4	(2)	7.043	65	630819	10.173
57) \$1,2-Dichloroethane-d4	(2)	7.037	104	68346	10.057
58) Benzene	(2)	7.061	78	40129	0.192
59) 1,2-Dichloroethane	(2)	7.147	62	16292	0.220
60) t-Amyl methyl ether	(2)	7.257	73	29412	0.192
63) *Fluorobenzene	(2)	7.476	96	2046775	10.000
62) n-Heptane	(2)	7.482	43	19233	0.192
65) n-Butanol	(1)	7.848	56	23969M	17.850
67) Trichloroethene	(2)	7.964	95	10583	0.192
69) Methylcyclohexane	(2)	8.275	83	16676	0.178
70) 1,2-Dichloropropane	(2)	8.305	63	11158	0.193
71) Methyl Methacrylate	(1)	8.378	69	5366	0.166
72) 1,4-Dioxane	(1)	8.390	88	1552M	6.632
73) Dibromomethane	(2)	8.415	93	5617	0.203
74) Bromodichloromethane	(2)	8.653	83	11883	0.175
76) 2-Nitropropane	(1)	8.915	41	17751	1.603
80) cis-1,3-Dichloropropene	(2)	9.207	75	14522	0.173
81) 4-Methyl-2-Pentanone	(1)	9.384	43	97110M	1.824
82) \$Toluene-d8	(3)	9.524	98	2072635	10.039
82) \$Toluene-d8	(3)	9.524	100	1310996	9.979
83) Toluene	(3)	9.610	92	25404	0.194
84) trans-1,3-Dichloropropene	(3)	9.878	75	12272	0.173
86) Ethyl Methacrylate	(3)	9.939	69	11580	0.181
88) 1,1,2-Trichloroethane	(3)	10.091	97	7746	0.196
85) 1,3-Dichloropropene (total)	(3)		75	26794	0.346
89) Tetrachloroethene	(3)	10.171	166	11655	0.192
90) 1,3-Dichloropropane	(3)	10.256	76	14727	0.205
91) 2-Hexanone	(1)	10.305	43	66409M	1.775

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

FKP52 Page 341 of 730

page 2 of 4

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d
 Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:43
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.475	129	6989	0.161
95) 1,2-Dibromoethane	(3)	10.585	107	7508	0.199
97)*Chlorobenzene-d5	(3)	11.018	117	1539514	10.000
98) Chlorobenzene	(3)	11.042	112	28828	0.192
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	8679	0.173
100) Ethylbenzene	(3)	11.134	91	49680	0.191
101) m+p-Xylene	(3)	11.250	106	37686	0.381
104) o-Xylene	(3)	11.579	106	18471	0.186
106) Styrene	(3)	11.597	104	28668	0.176
107) Bromoform	(3)	11.756	173	3722	0.149
105) Xylene (Total)	(3)		106	56157	0.567
108) Isopropylbenzene	(3)	11.884	105	46705	0.181
111)\$4-Bromofluorobenzene	(3)	12.030	95	789121	9.985
111)\$4-Bromofluorobenzene	(3)	12.030	174	671071	9.936
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	9768	0.193
114) Bromobenzene	(4)	12.146	156	12748	0.192
116) 1,2,3-Trichloropropane	(4)	12.182	110	2769	0.195
117) n-Propylbenzene	(4)	12.213	91	59074	0.191
119) 2-Chlorotoluene	(4)	12.286	126	12307	0.199
121) 1,3,5-Trimethylbenzene	(4)	12.347	105	41631	0.188
122) 4-Chlorotoluene	(4)	12.384	126	12346	0.191
125) tert-Butylbenzene	(4)	12.591	134	8287	0.179
126) Pentachloroethane	(4)	12.627	167	5606	0.156
127) 1,2,4-Trimethylbenzene	(4)	12.634	105	42203	0.186
128) sec-Butylbenzene	(4)	12.755	105	51241M	0.182
131) 1,3-Dichlorobenzene	(4)	12.859	146	24873	0.188
132) p-Isopropyltoluene	(4)	12.865	119	45344	0.184
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	862291	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	26238	0.195
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	19793	0.195
136) Benzyl Chloride	(4)	13.005	126	2469	0.134
138) n-Butylbenzene	(4)	13.158	92	24655	0.186
139) 1,2-Dichlorobenzene	(4)	13.188	146	23802	0.191
143) 1,2-Dibromo-3-chloropropane	(1)	13.737	155	1330	0.166
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	20644	0.187
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	19244	0.188
146) Hexachlorobutadiene	(4)	14.359	225	10152	0.188
147) Naphthalene	(4)	14.462	128	32253	0.188

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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Target 3.5 esignature user ID: msk07970

FKP52 Page 342 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d
Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:43
Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

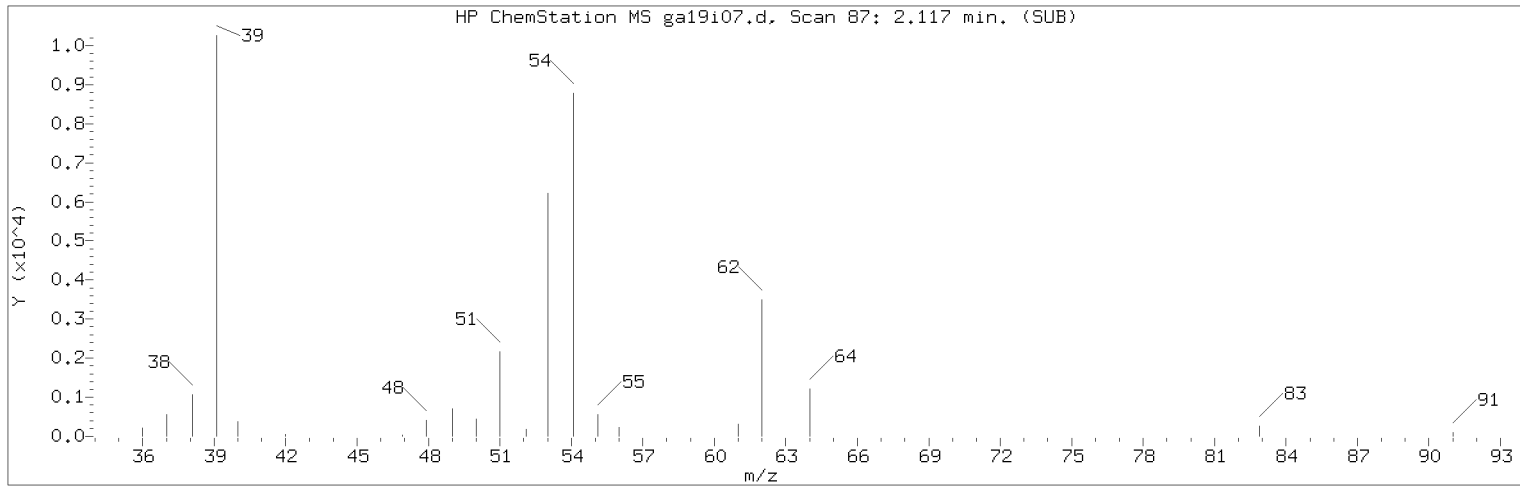
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	16303	0.186

page 4 of 4

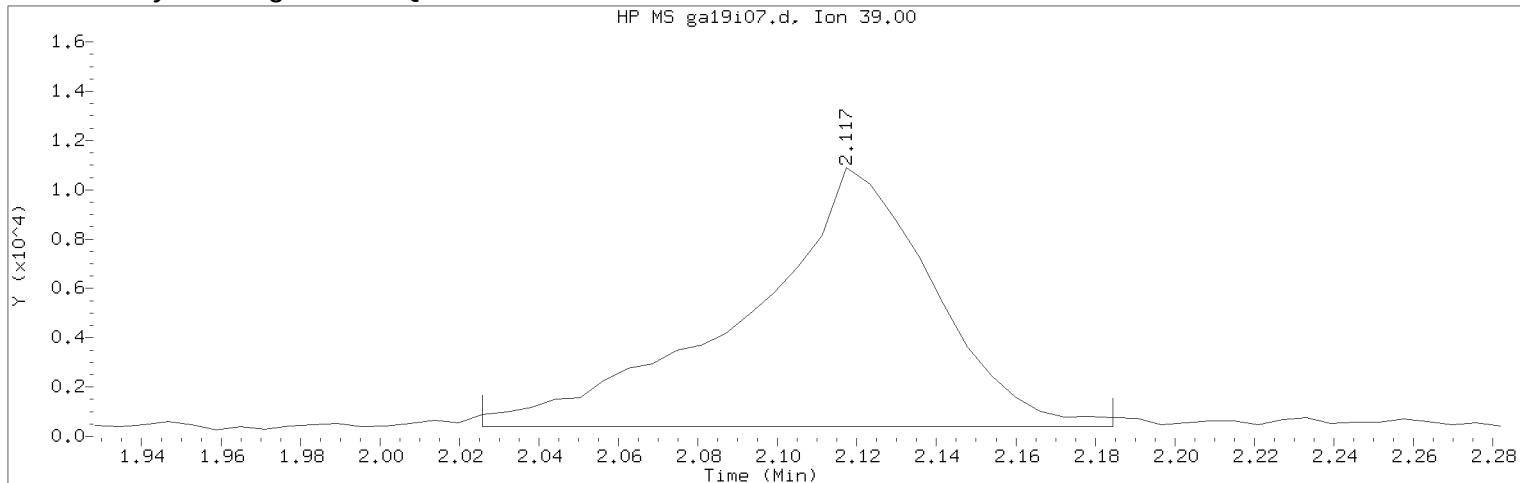
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 87	
Retention Time (minutes)	: 2.117	
Quant Ion	: 39.00	
Area (flag)	: 34377M	
On-Column Amount (ng)	: 0.2436	
Integration start scan	: 71	Integration stop scan: 97
Y at integration start	: 402	Y at integration end: 402

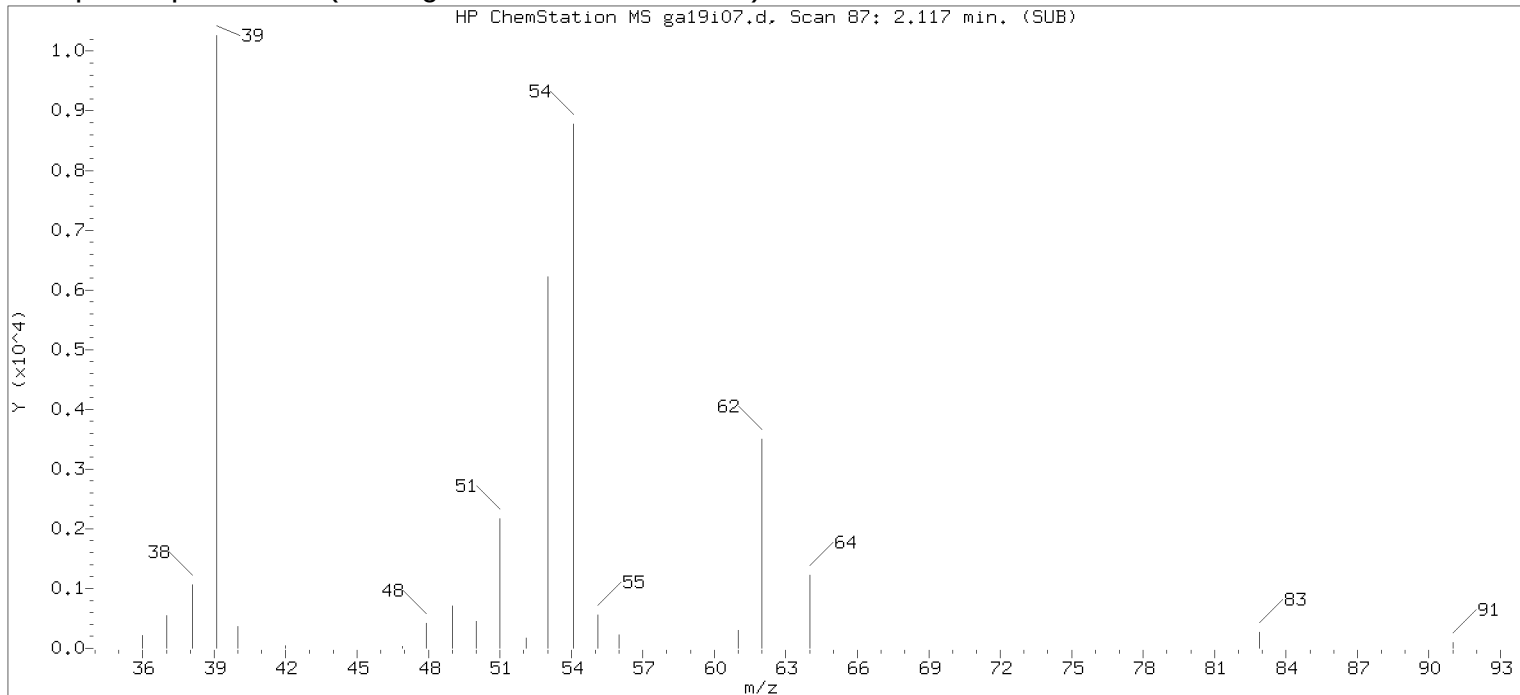
Reason for manual integration: improper integration

Analyst responsible for change:

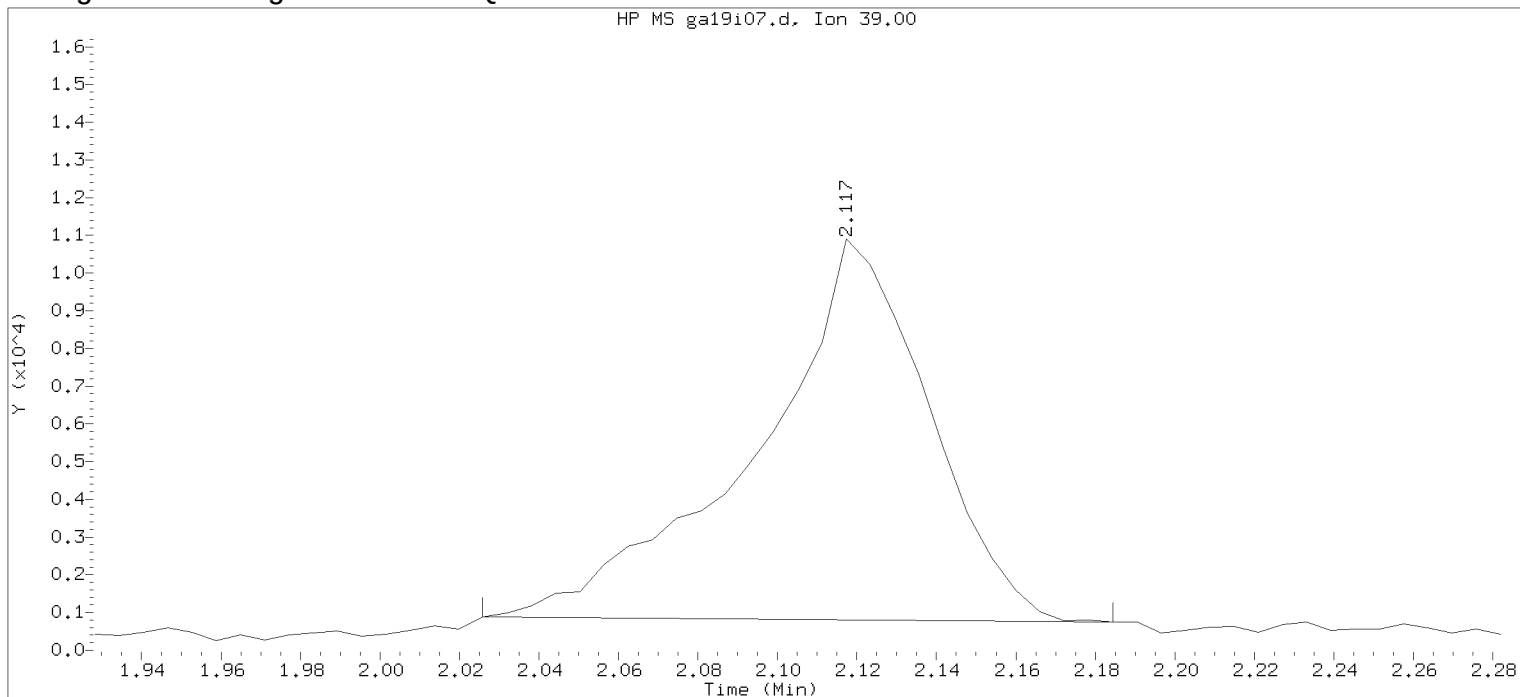
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 87

Retention Time (minutes): 2.117

Quant Ion : 39.00

Area : 30332

On-column Amount (ng) : 0.2297

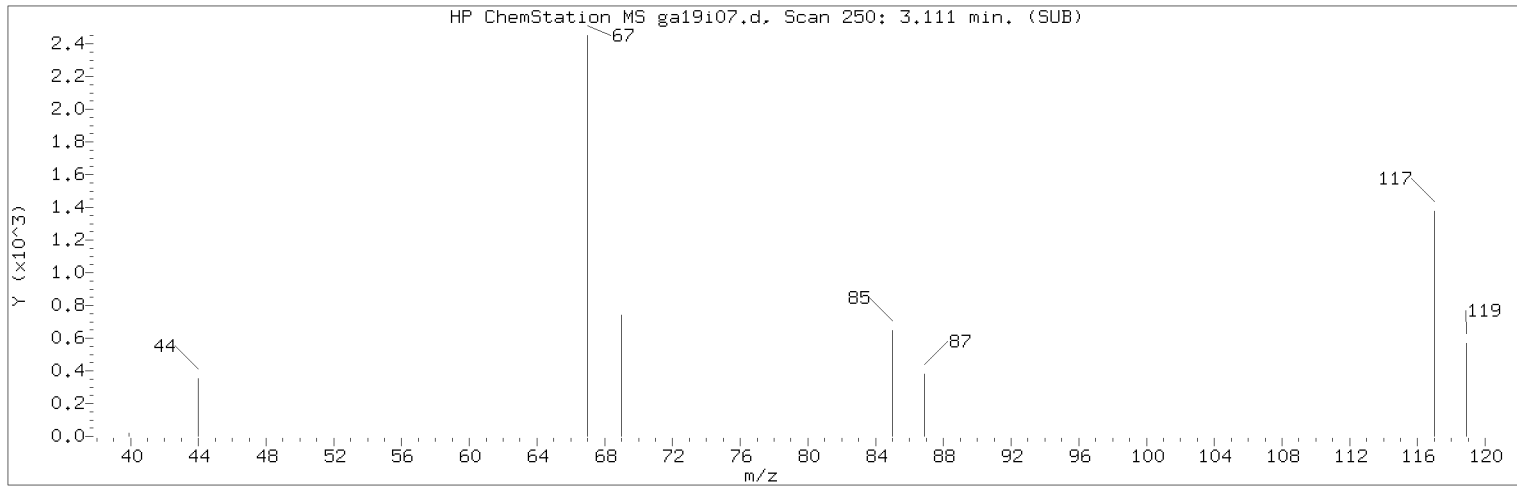
Integration start scan : 71 Integration stop scan: 97

Y at integration start : 879 Y at integration end: 744

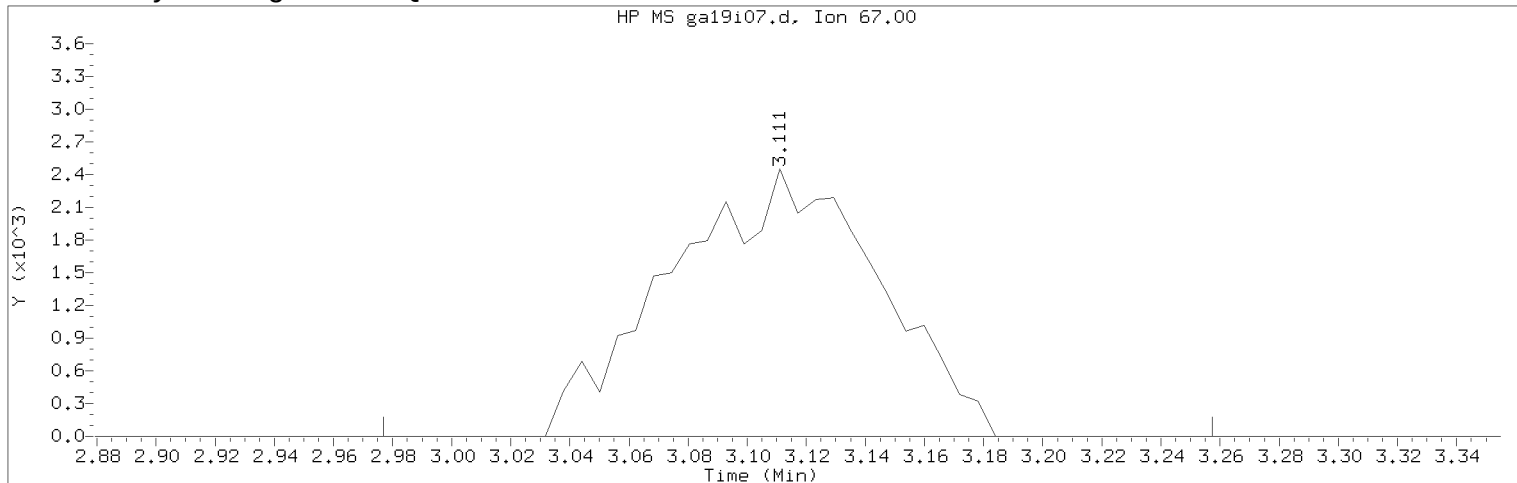
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB107346 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 12
Compound Name : Freon 123a
Scan Number : 250
Retention Time (minutes): 3.111
Quant Ion : 67.00
Area (flag) : 11981M
On-Column Amount (ng) : 0.1956
Integration start scan : 227
Y at integration start : 0

Integration stop scan: 273
Y at integration end: 0

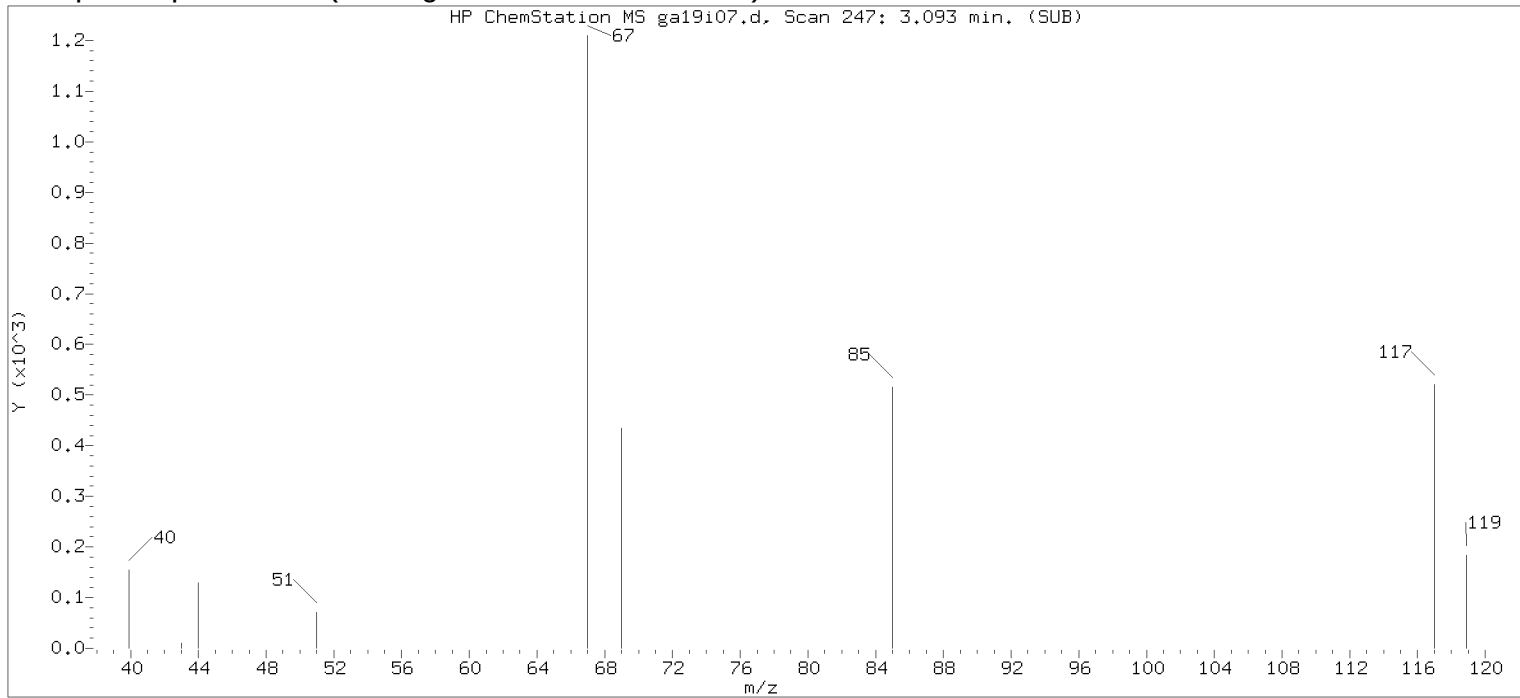
Reason for manual integration: improper integration

Analyst responsible for change:

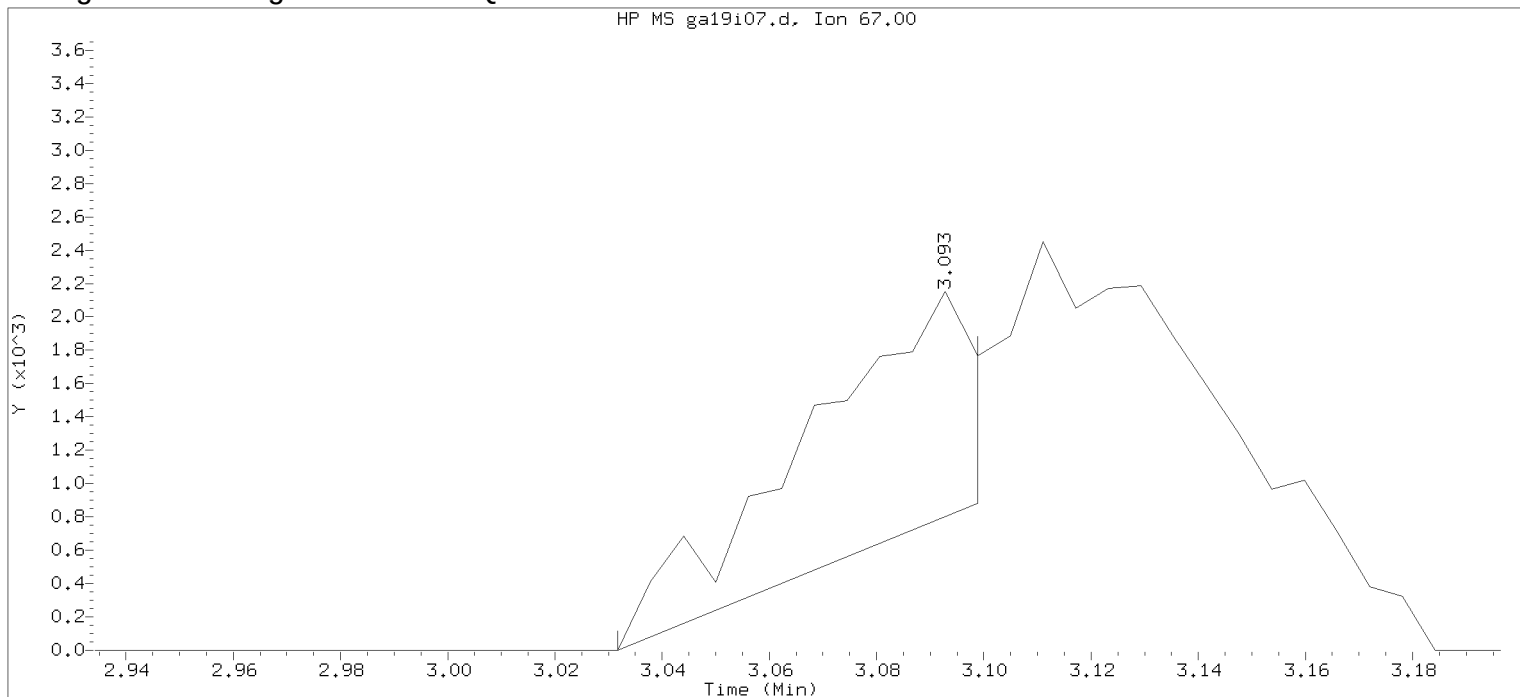
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

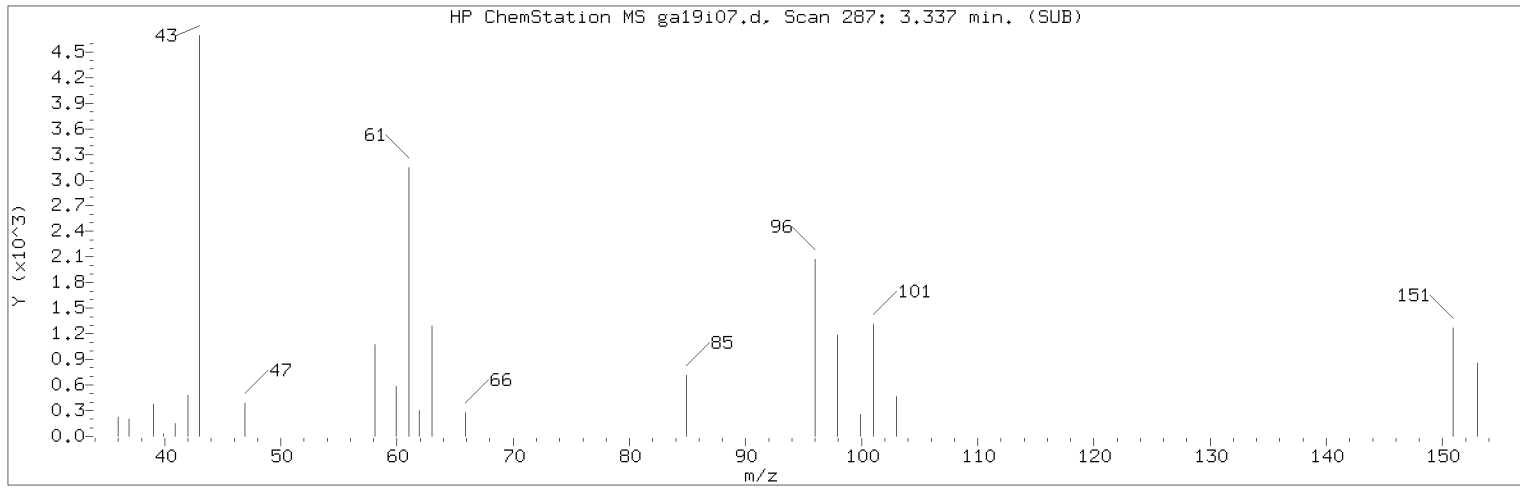
Lab Sample ID: VSTD0.2

Compound Number : 12
 Compound Name : Freon 123a
 Scan Number : 247
 Retention Time (minutes): 3.093
 Quant Ion : 67.00
 Area : 2963
 On-column Amount (ng) : 0.0541
 Integration start scan : 236
 Y at integration start : 0

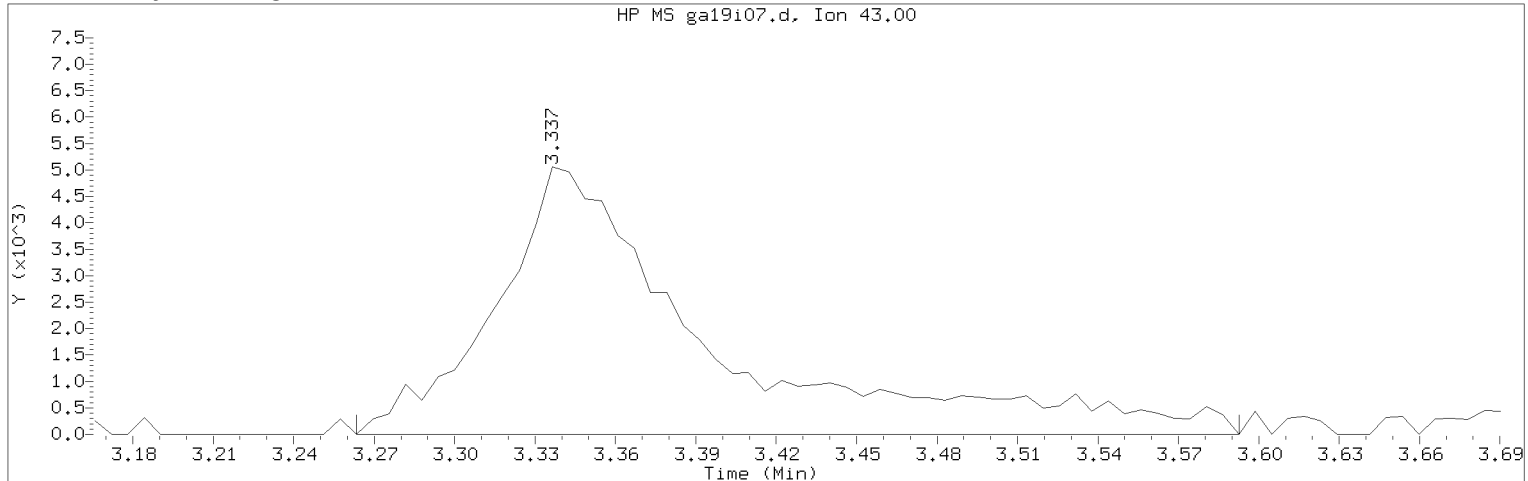
Integration stop scan: 247
 Y at integration end: 883

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 Target 3.5 esignature user F1D52mB407340 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 14
Compound Name : Acetone
Scan Number : 287
Retention Time (minutes): 3.337
Quant Ion : 43.00
Area (flag) : 27906M
On-Column Amount (ng) : 2.2161
Integration start scan : 274
Y at integration start : 0

Integration stop scan: 328
Y at integration end: 0

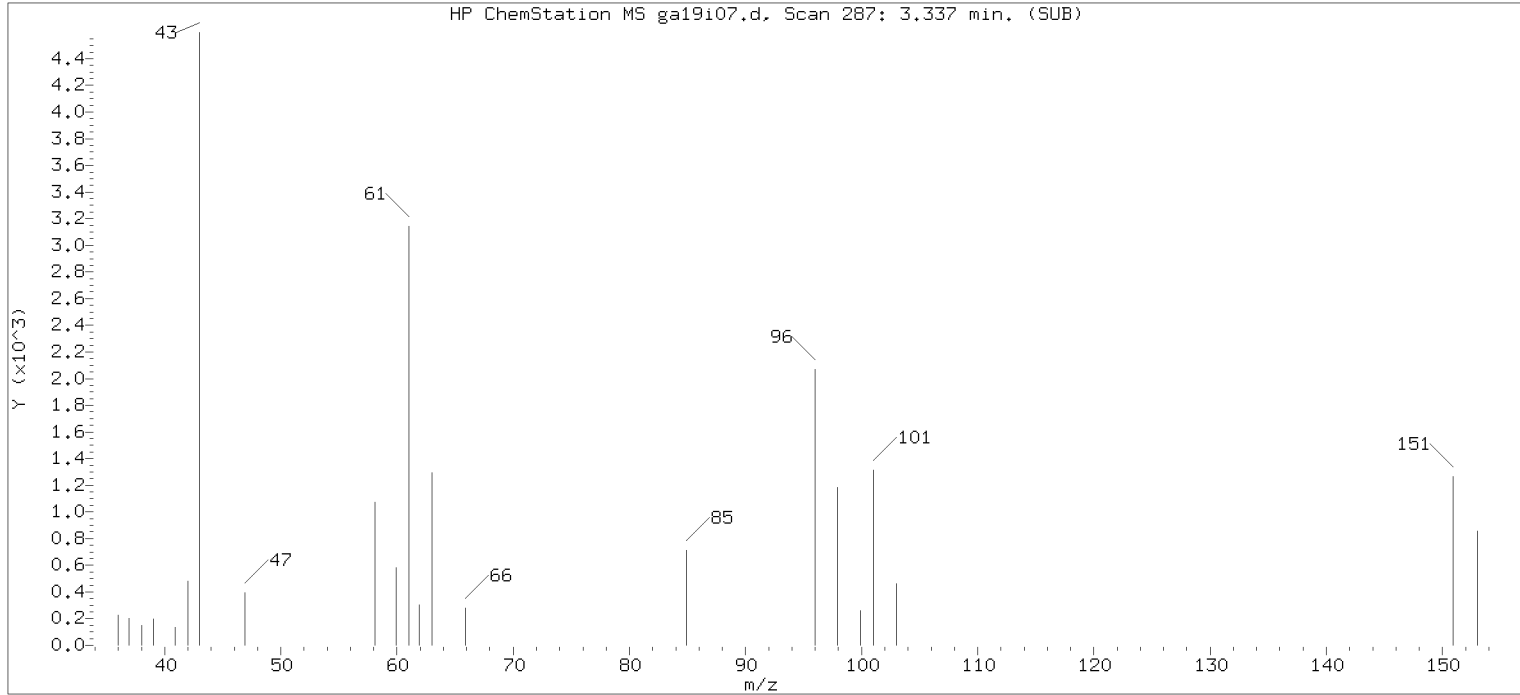
Reason for manual integration: improper integration

Analyst responsible for change:

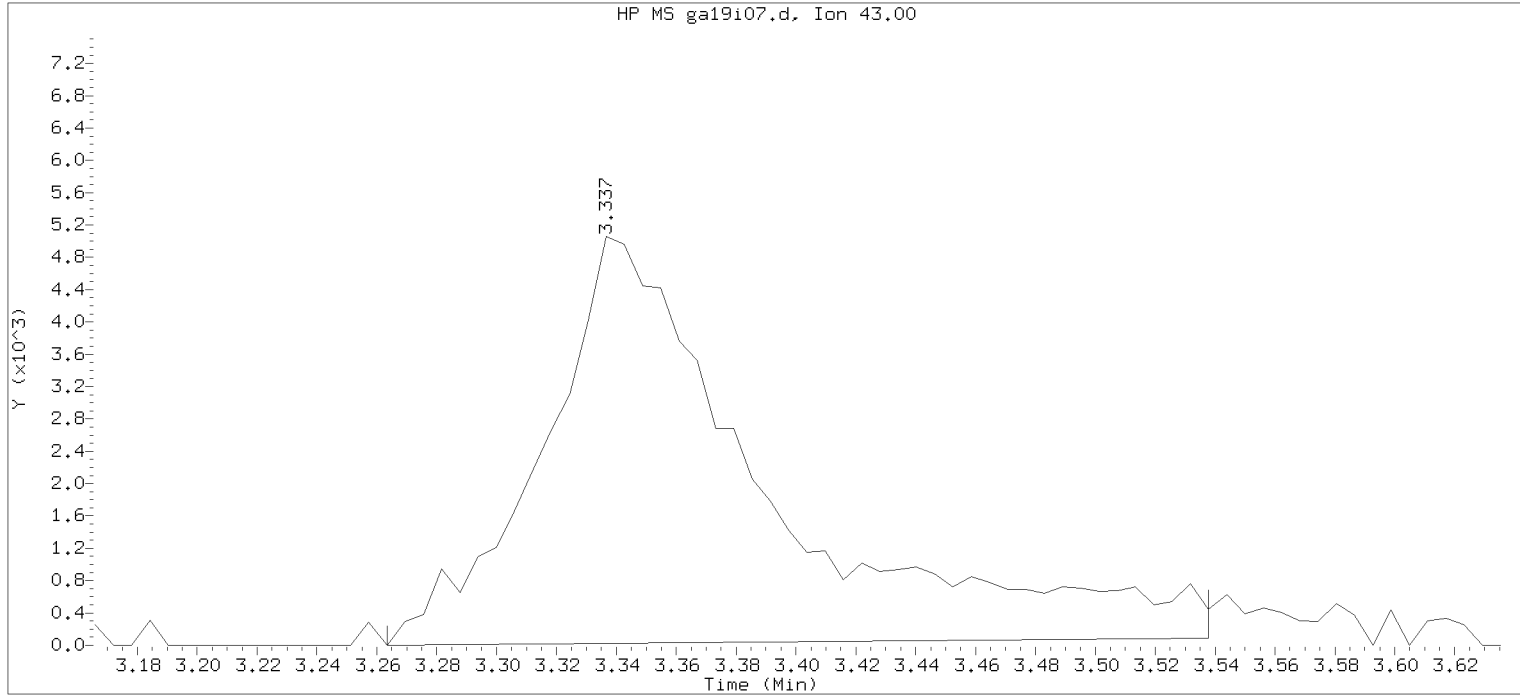
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

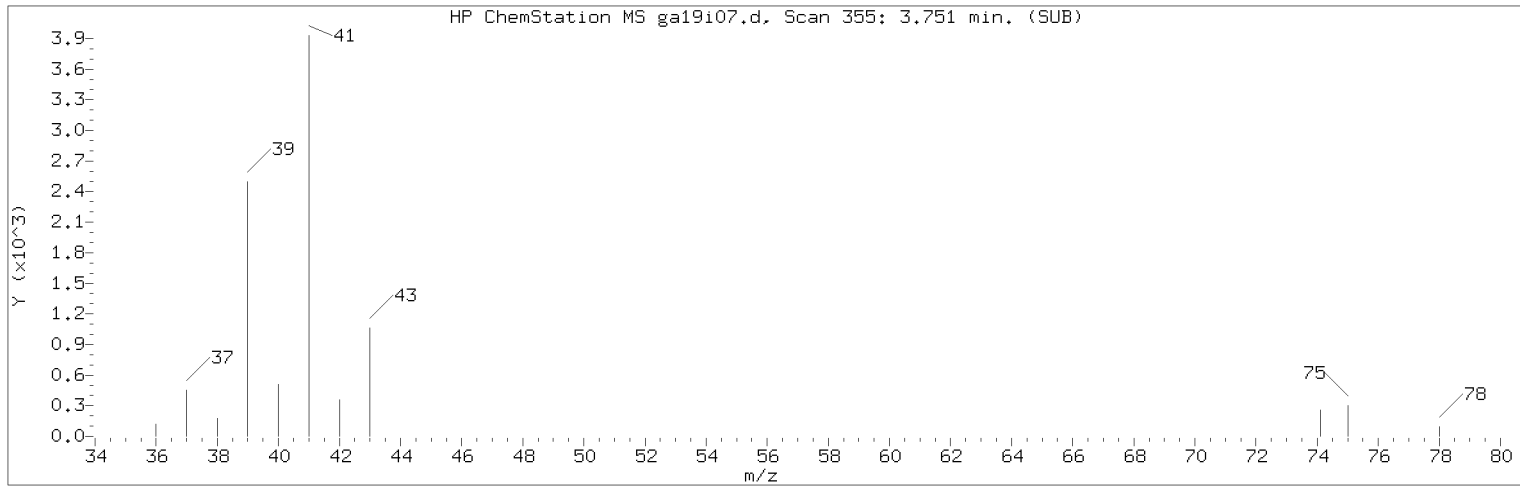
Lab Sample ID: VSTD0.2

Compound Number : 14
 Compound Name : Acetone
 Scan Number : 287
 Retention Time (minutes): 3.337
 Quant Ion : 43.00
 Area : 25842
 On-column Amount (ng) : 1.9865
 Integration start scan : 274
 Y at integration start : 0

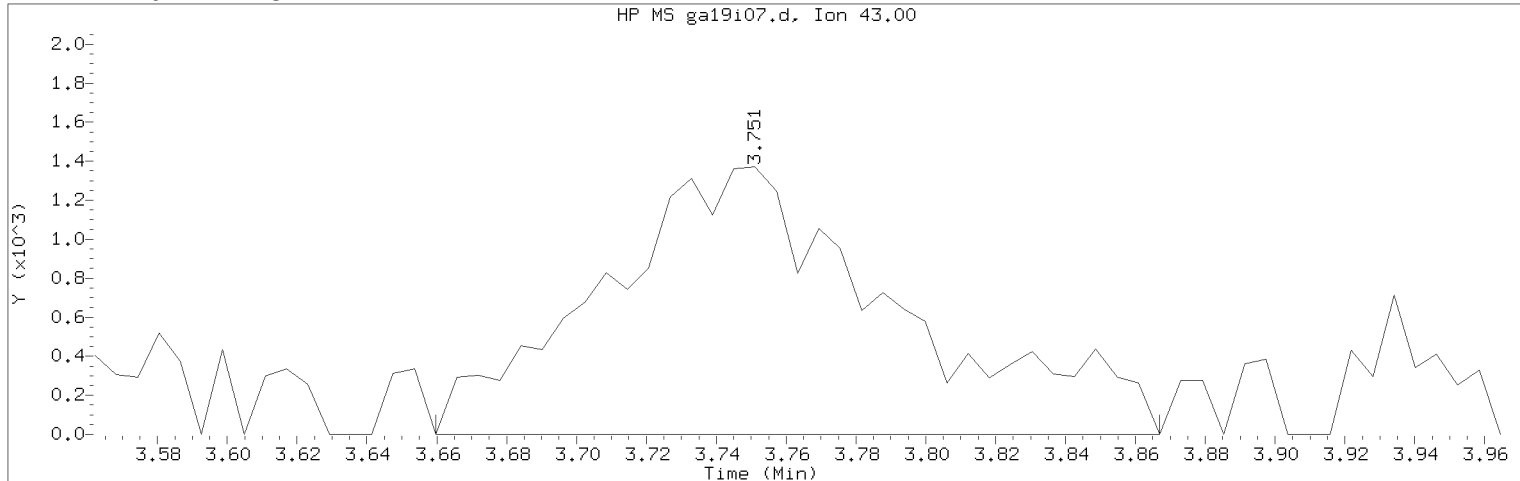
Integration stop scan: 319
 Y at integration end: 91

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 Target 3.5 esignature userF1D52mB107349 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 355	
Retention Time (minutes)	: 3.751	
Quant Ion	: 43.00	
Area (flag)	: 7988M	
On-Column Amount (ng)	: 0.2250	
Integration start scan	: 339	Integration stop scan: 373
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

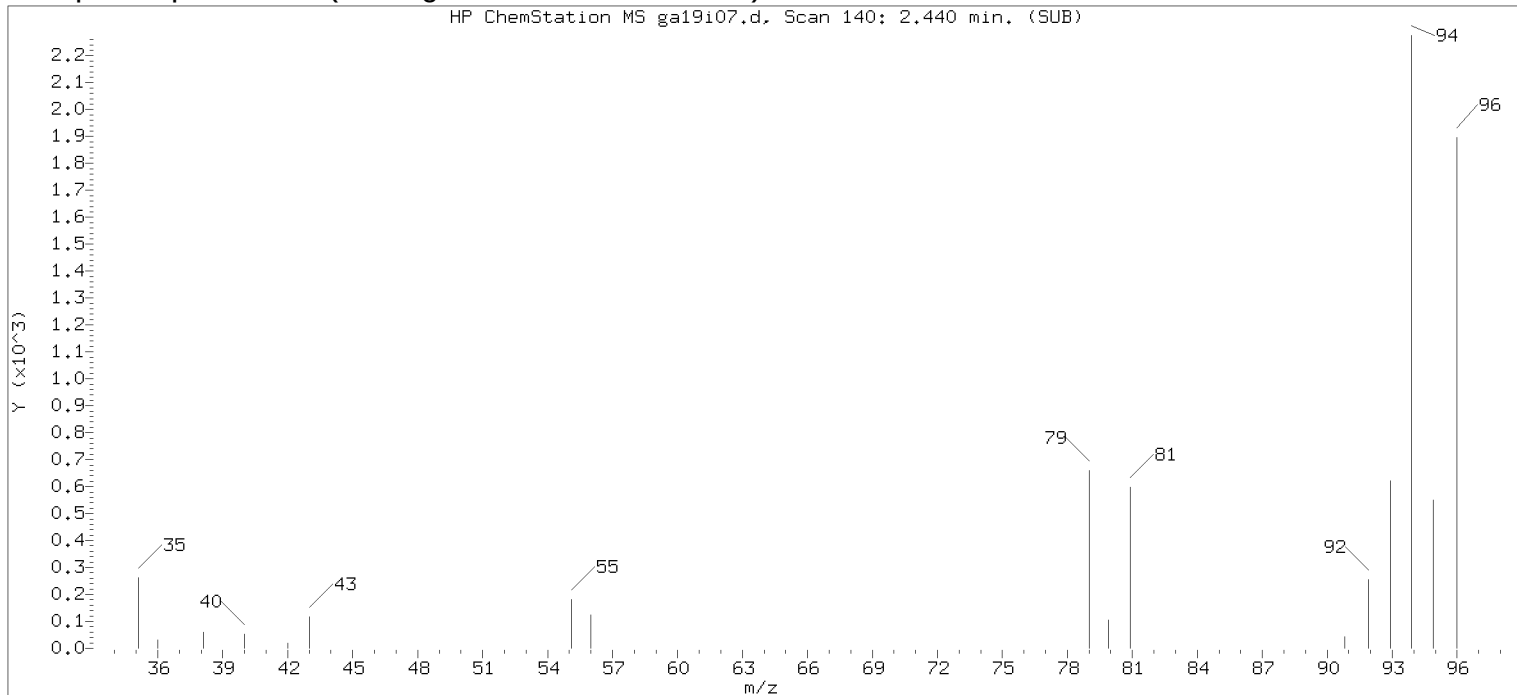
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

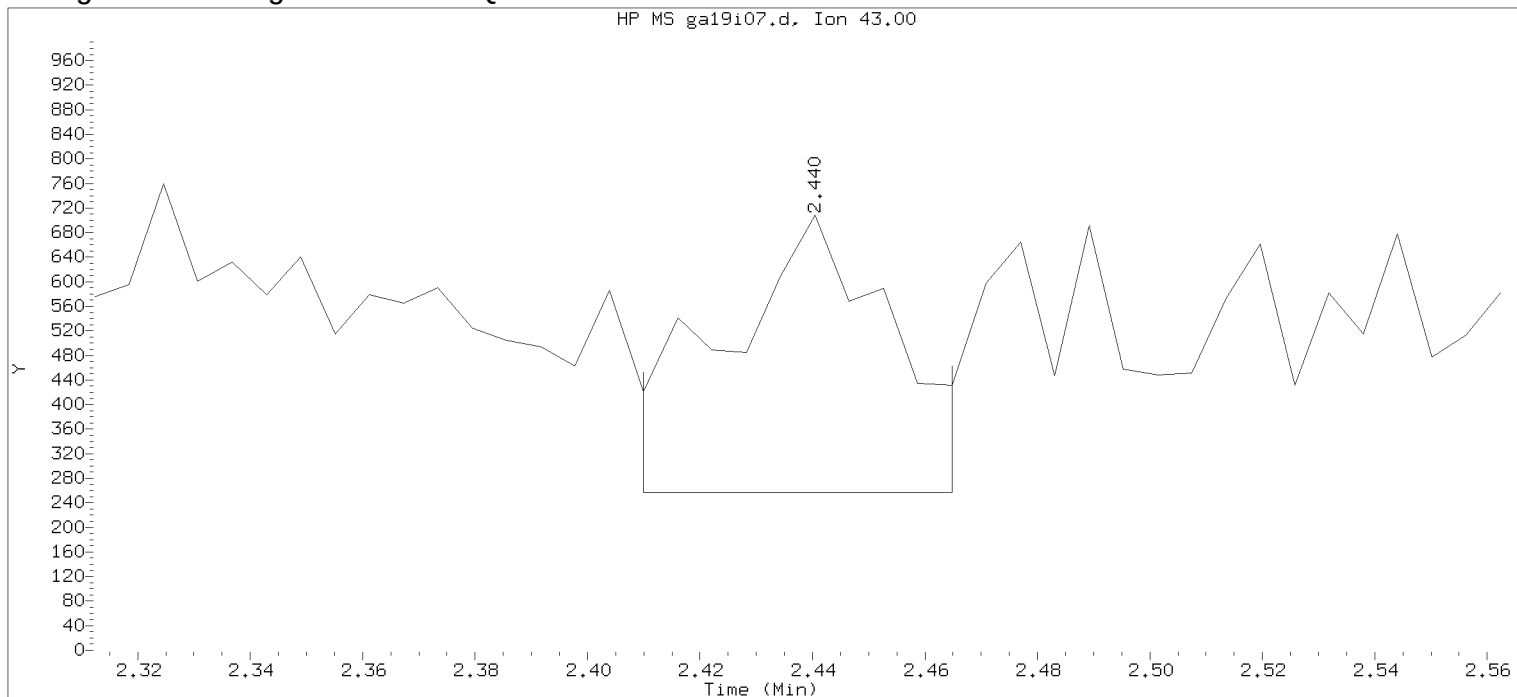
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Injection date and time: 19-APR-2018 14:37

Instrument ID: HP16334.i

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

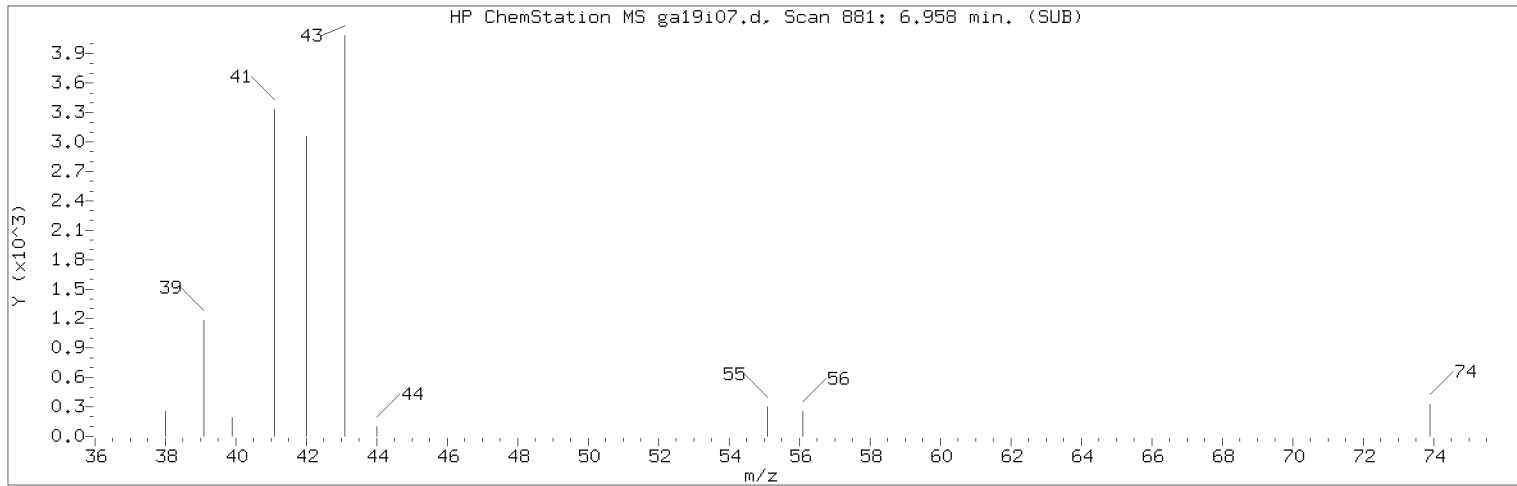
Lab Sample ID: VSTD0.2

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 140
 Retention Time (minutes): 2.440
 Quant Ion : 43.00
 Area : 928
 On-column Amount (ng) : 0.5220
 Integration start scan : 134
 Y at integration start : 257

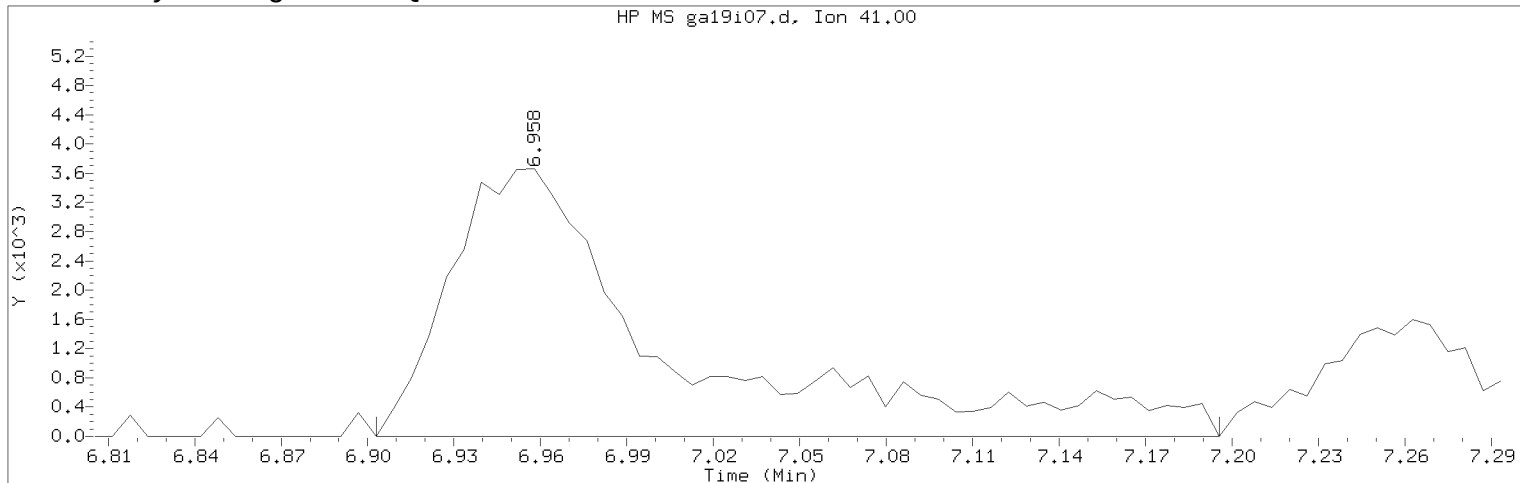
Integration stop scan: 143
 Y at integration end: 257

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature user FKP52mB497330 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 56
Compound Name : Isobutyl Alcohol
Scan Number : 881
Retention Time (minutes): 6.958
Quant Ion : 41.00
Area (flag) : 19777M
On-Column Amount (ng) : 11.6573
Integration start scan : 871 Integration stop scan: 919
Y at integration start : 0 Y at integration end: 0

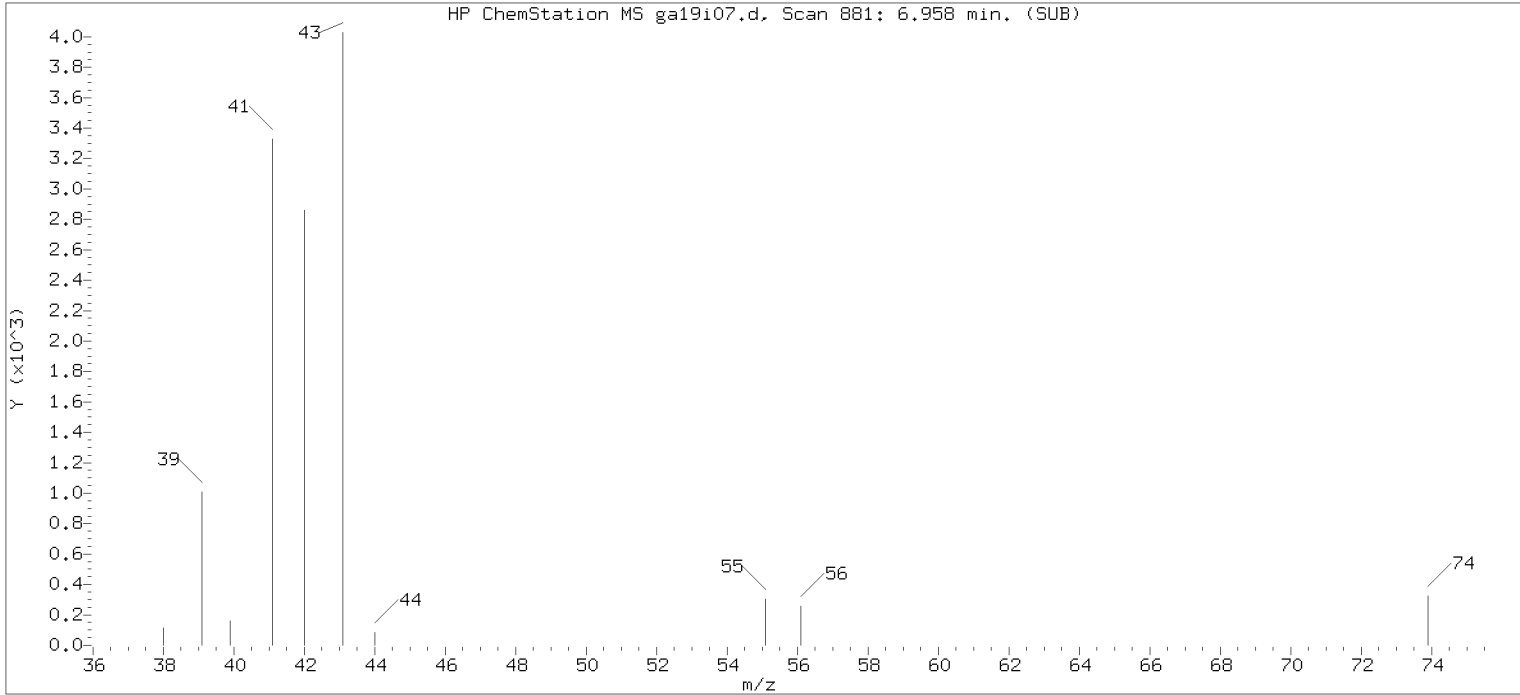
Reason for manual integration: improper integration

Analyst responsible for change:

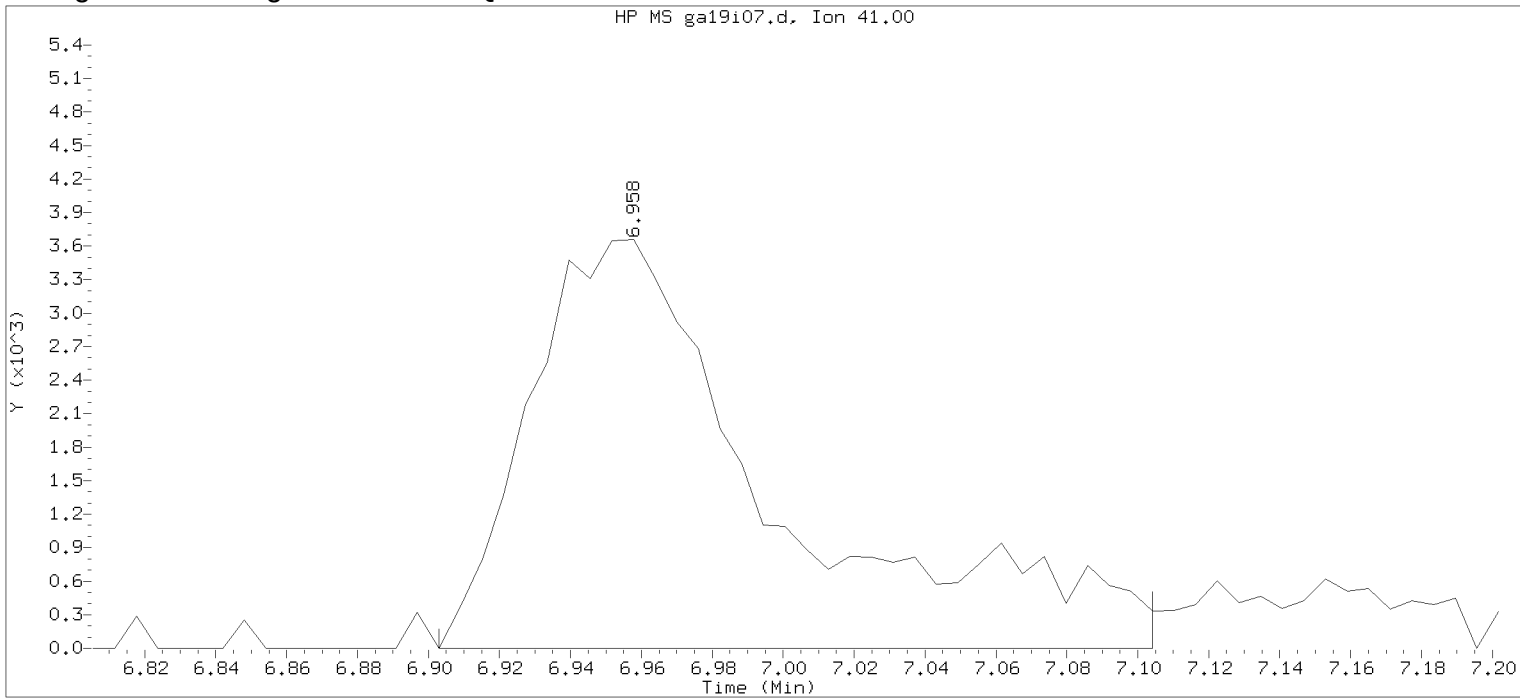
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 56

Compound Name : Isobutyl Alcohol

Scan Number : 881

Retention Time (minutes): 6.958

Quant Ion : 41.00

Area : 17422

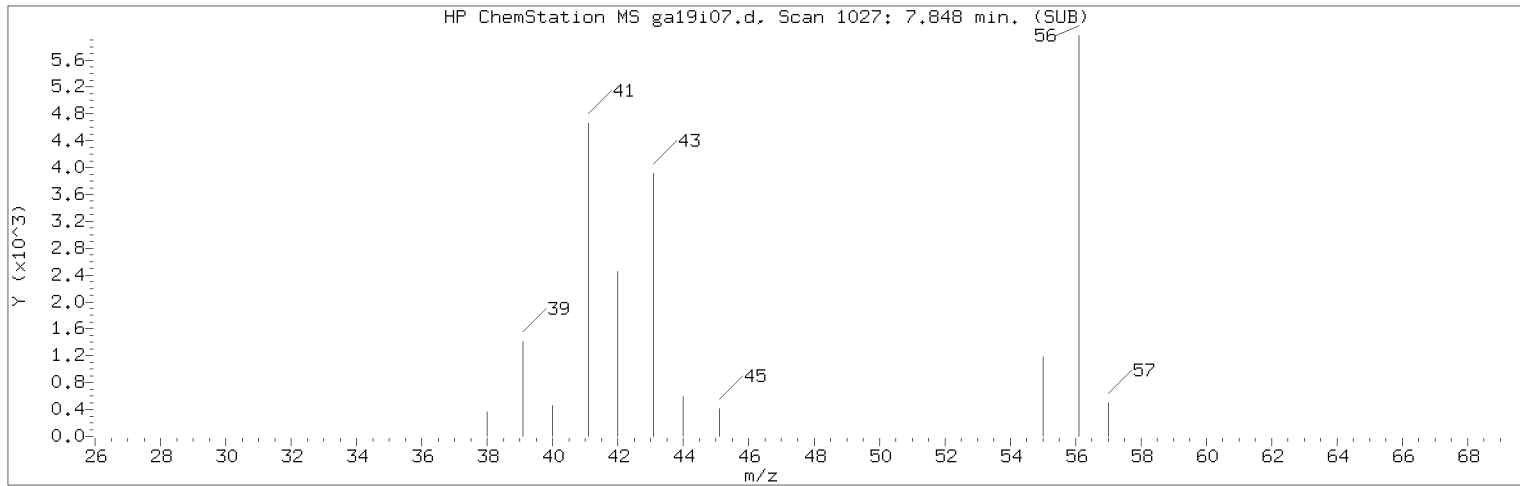
On-column Amount (ng) : 9.9997

Integration start scan : 871 Integration stop scan: 904

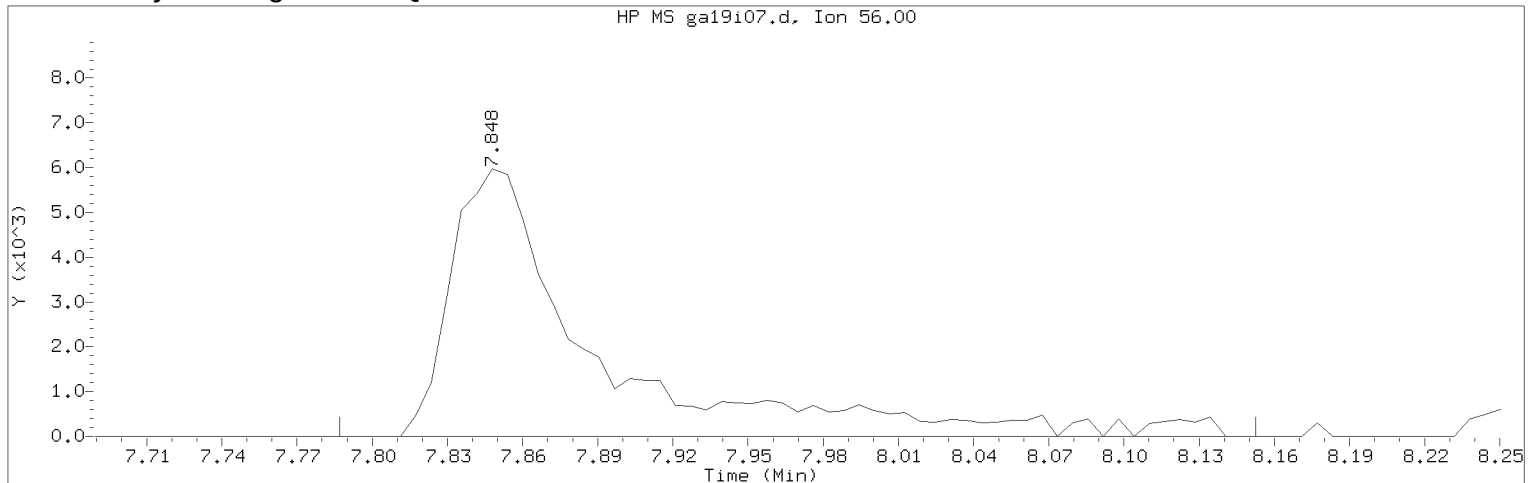
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB107330 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

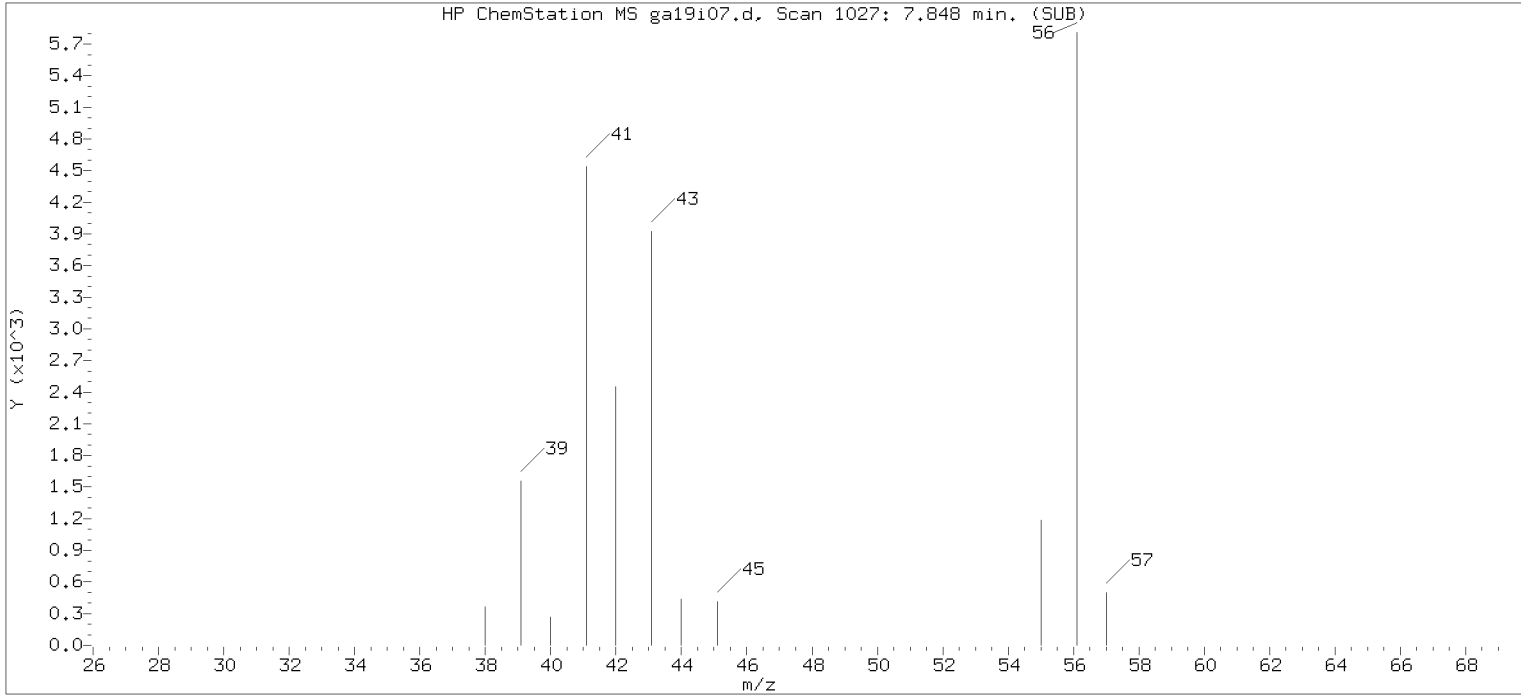
Compound Number	: 65	
Compound Name	: n-Butanol	
Scan Number	: 1027	
Retention Time (minutes)	: 7.848	
Quant Ion	: 56.00	
Area (flag)	: 23969M	
On-Column Amount (ng)	: 17.8503	
Integration start scan	: 1016	Integration stop scan: 1076
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

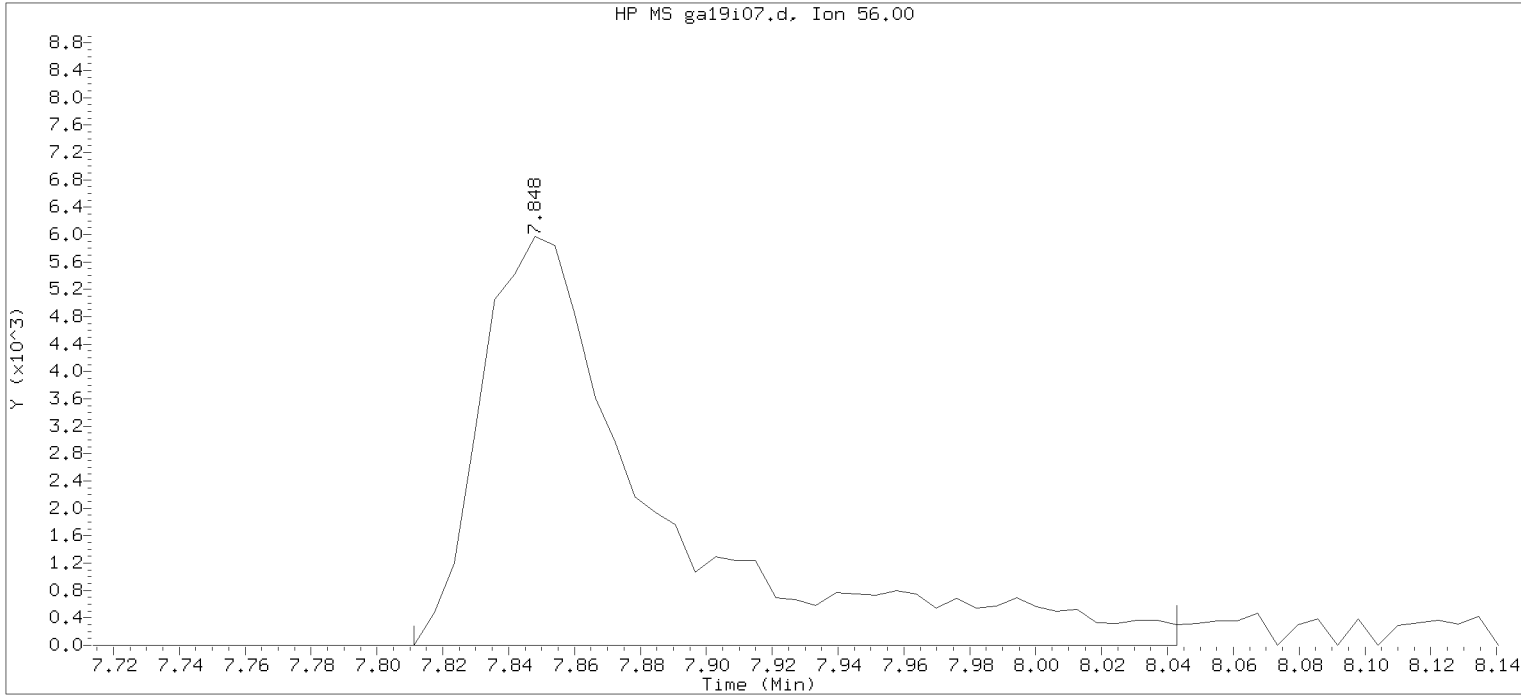
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

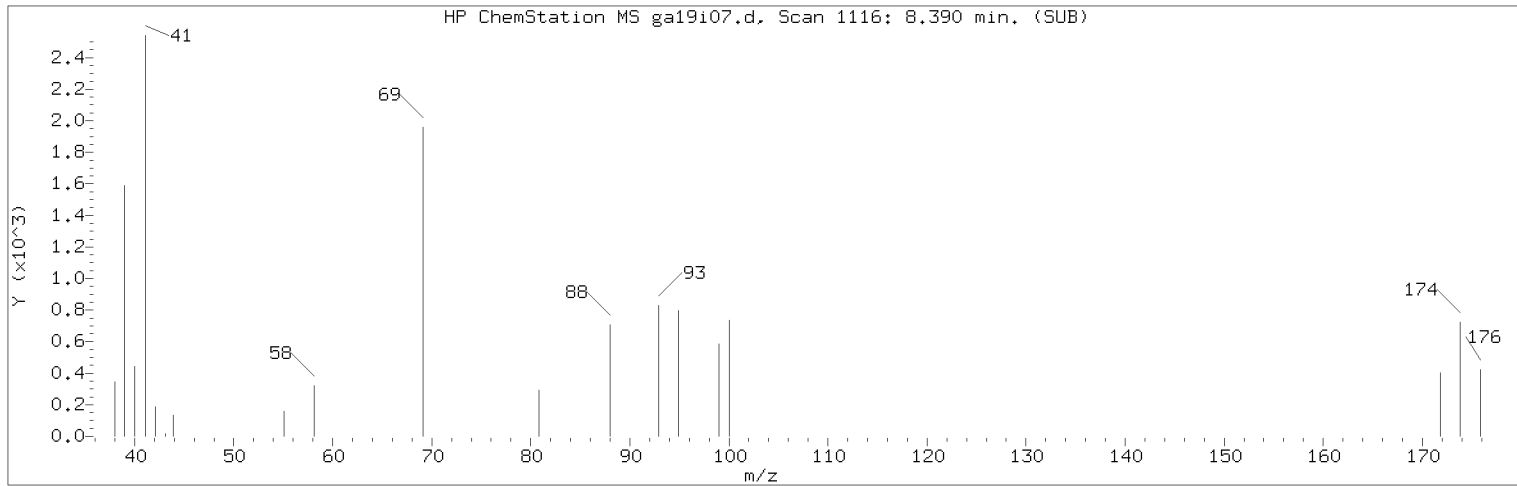
Lab Sample ID: VSTD0.2

Compound Number : 65
Compound Name : n-Butanol
Scan Number : 1027
Retention Time (minutes): 7.848
Quant Ion : 56.00
Area : 22339
On-column Amount (ng) : 16.3498
Integration start scan : 1020
Y at integration start : 0

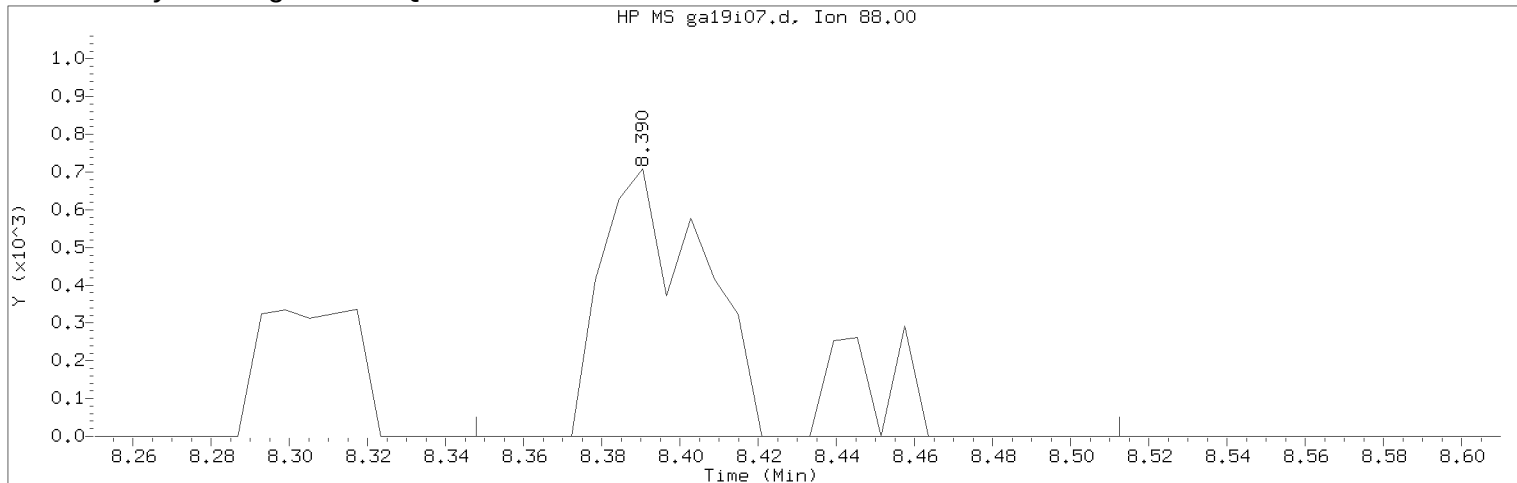
Integration stop scan: 1058
Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature user F1D52mB407330 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 72

Compound Name : 1,4-Dioxane

Scan Number : 1116

Retention Time (minutes): 8.390

Quant Ion : 88.00

Area (flag) : 1552M

On-Column Amount (ng) : 6.6324

Integration start scan : 1108

Integration stop scan: 1135

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

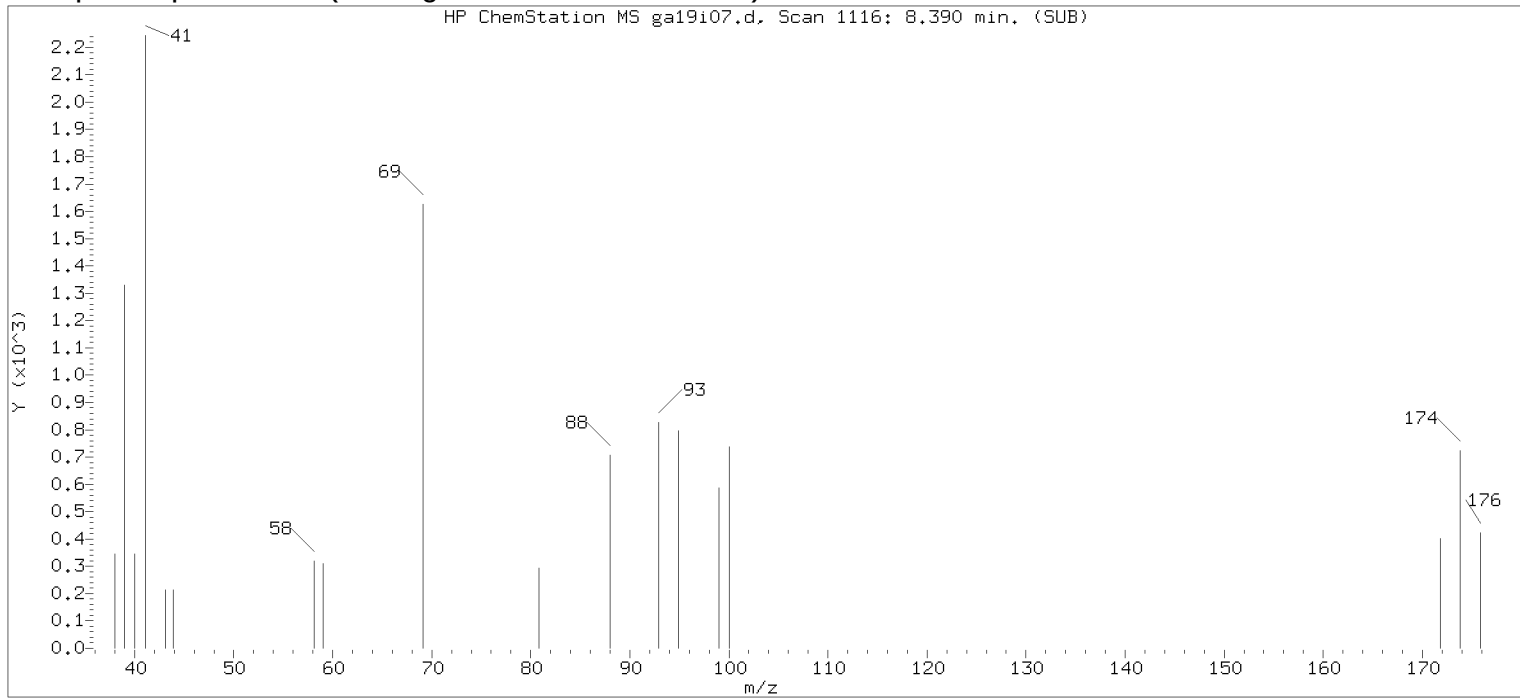
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

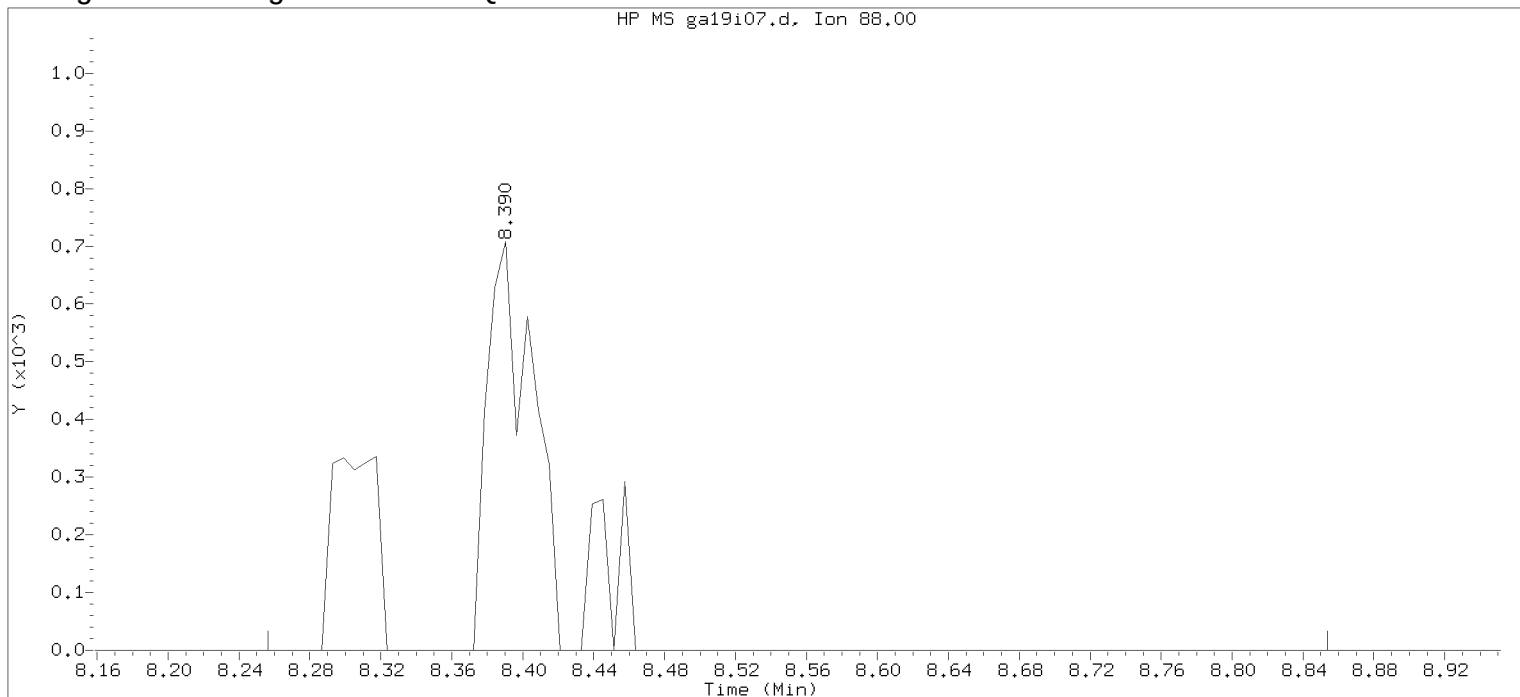
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

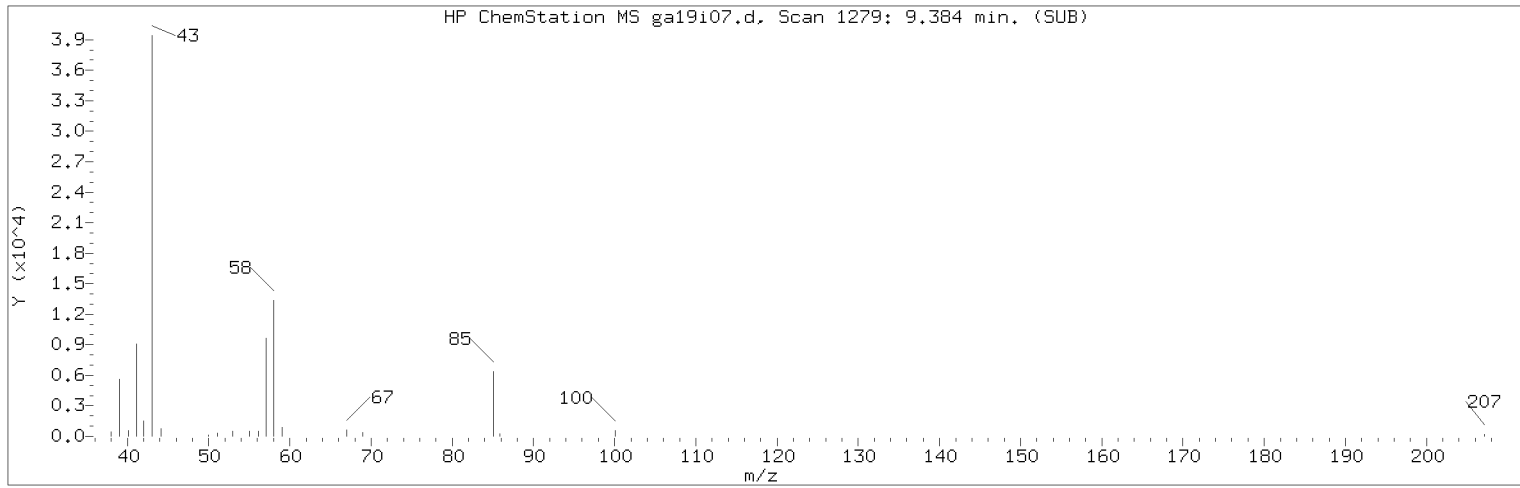
Lab Sample ID: VSTD0.2

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1116
 Retention Time (minutes): 8.390
 Quant Ion : 88.00
 Area : 2149
 On-column Amount (ng) : 6.9438
 Integration start scan : 1093
 Y at integration start : 0

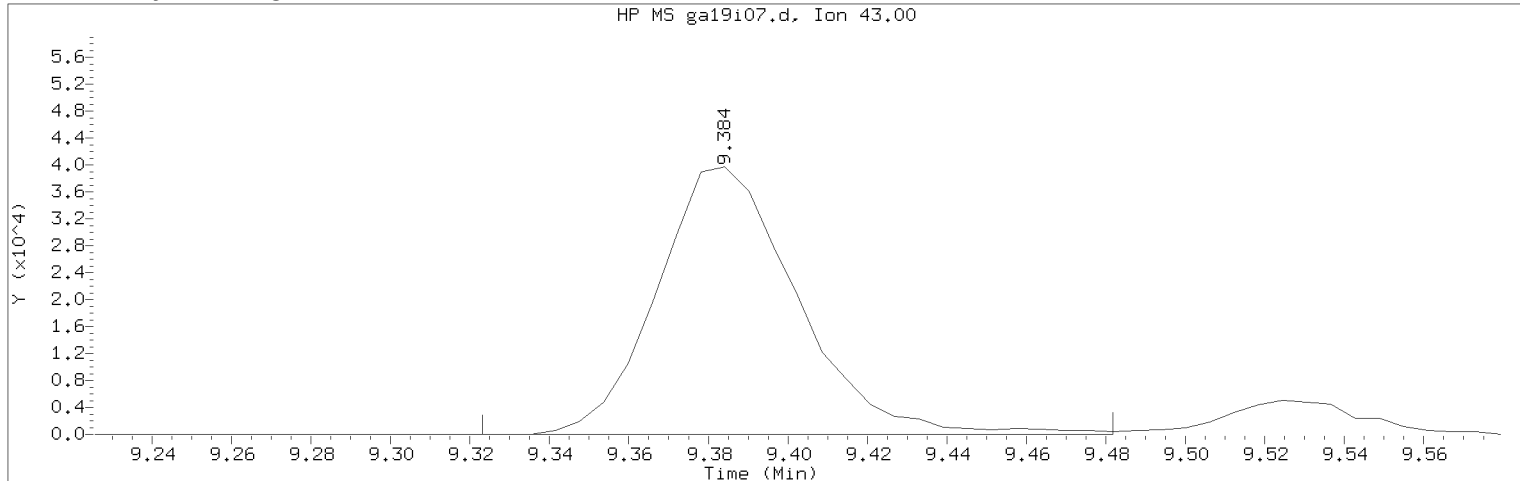
Integration stop scan: 1191
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature userF1D52mB107330 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 97110M

On-Column Amount (ng) : 1.8245

Integration start scan : 1268

Integration stop scan: 1294

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

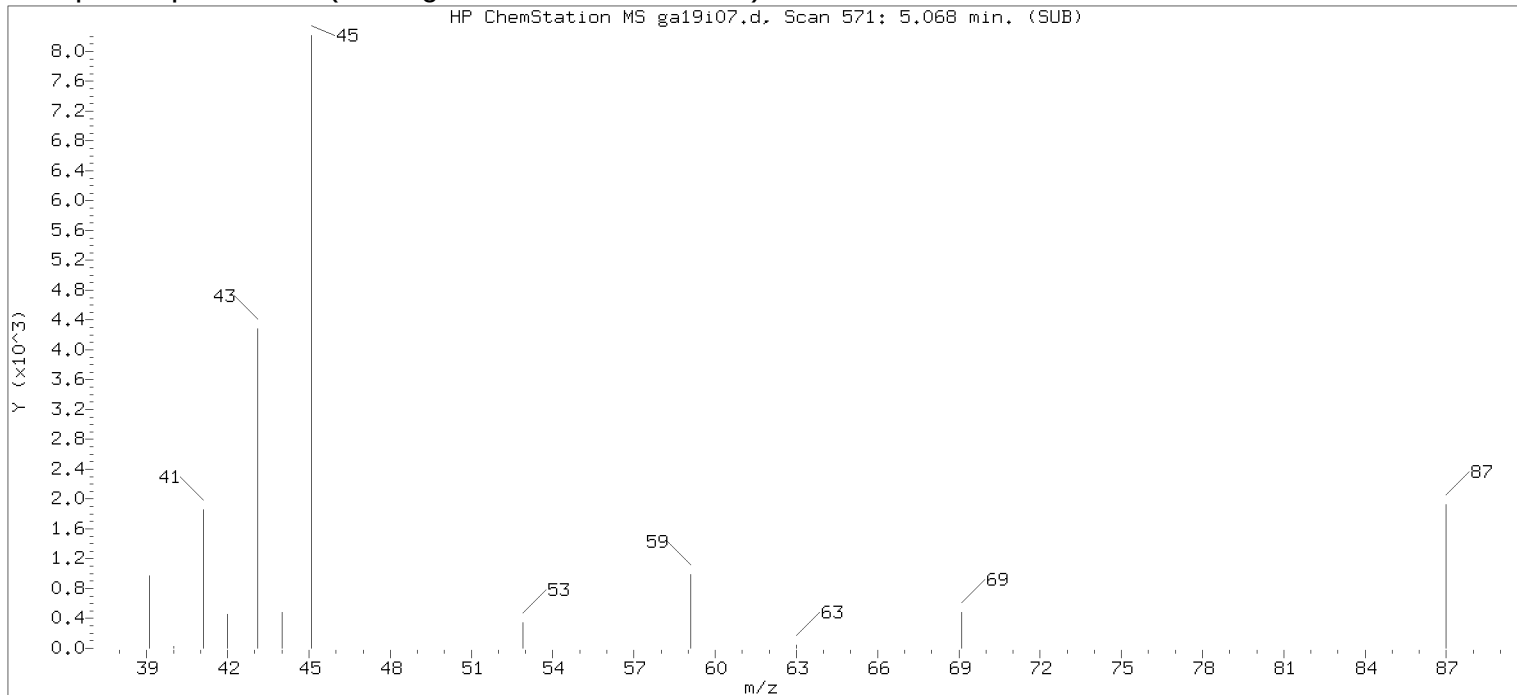
on 04/19/2018 at 20:48.

Target 3.5 esignature user ID: msk07970

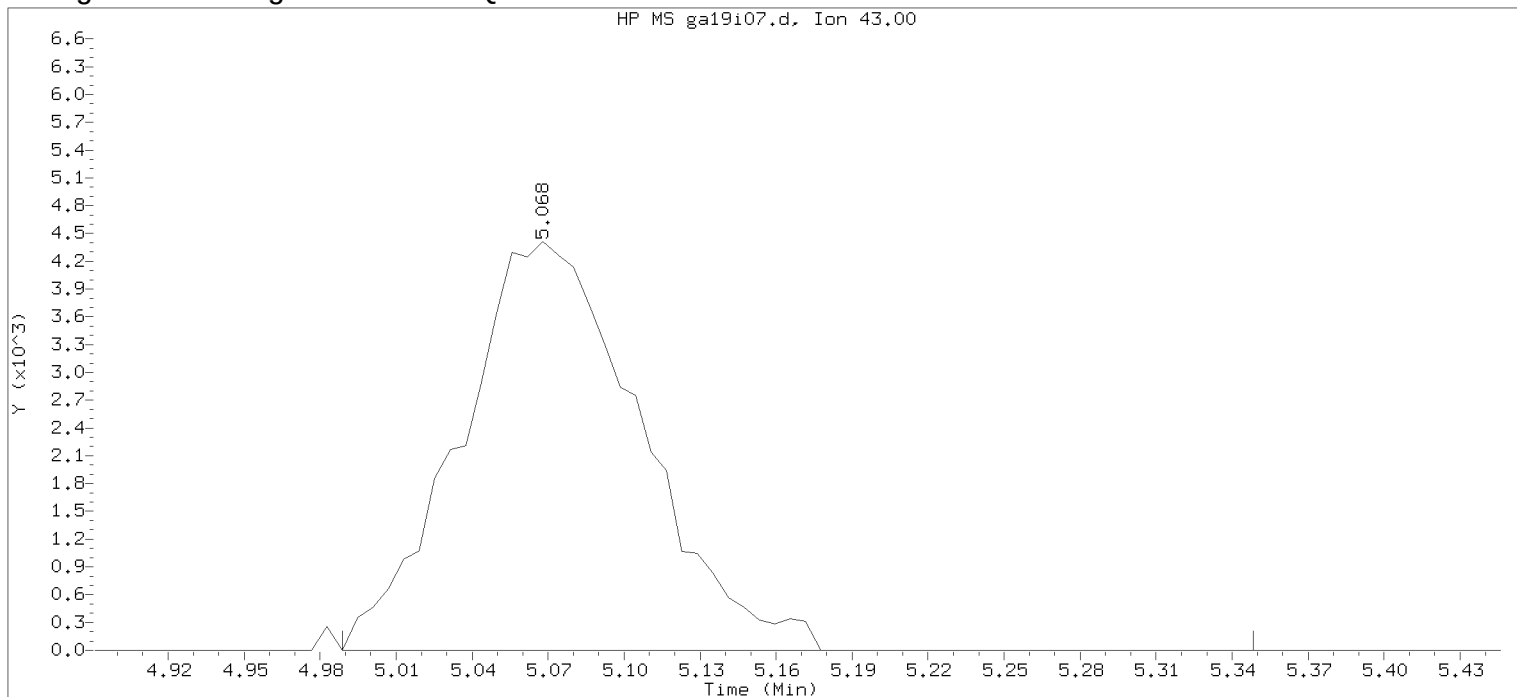
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 571

Retention Time (minutes): 5.068

Quant Ion : 43.00

Area : 21799

On-column Amount (ng) : 1.8933

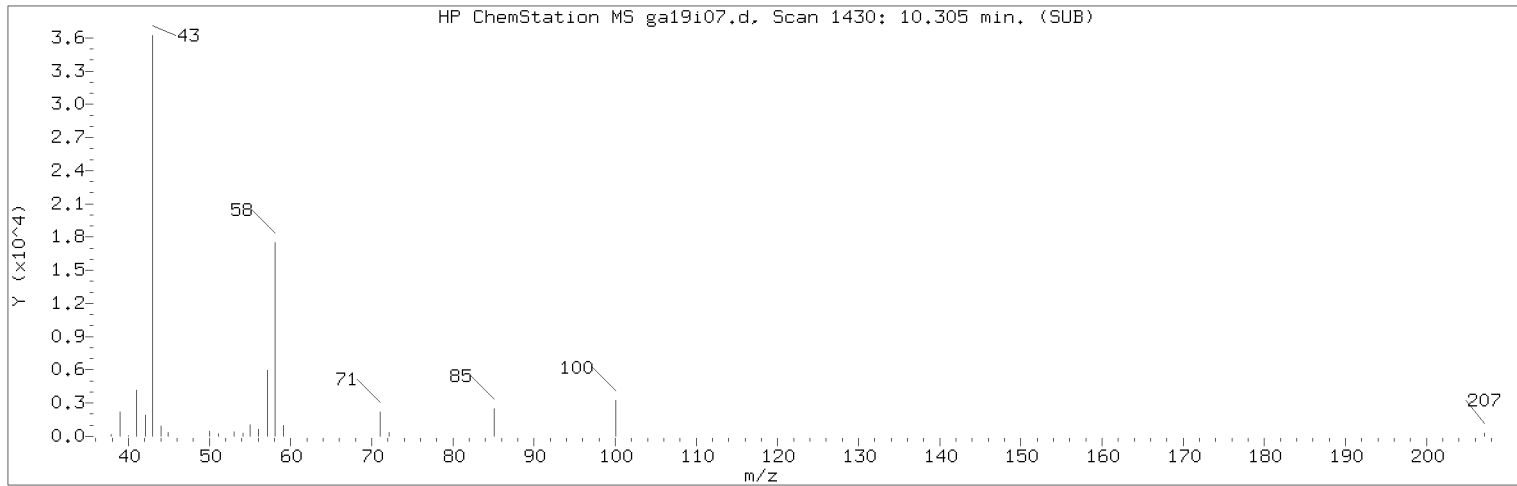
Integration start scan : 557 Integration stop scan: 616

Y at integration start : 0 Y at integration end: 0

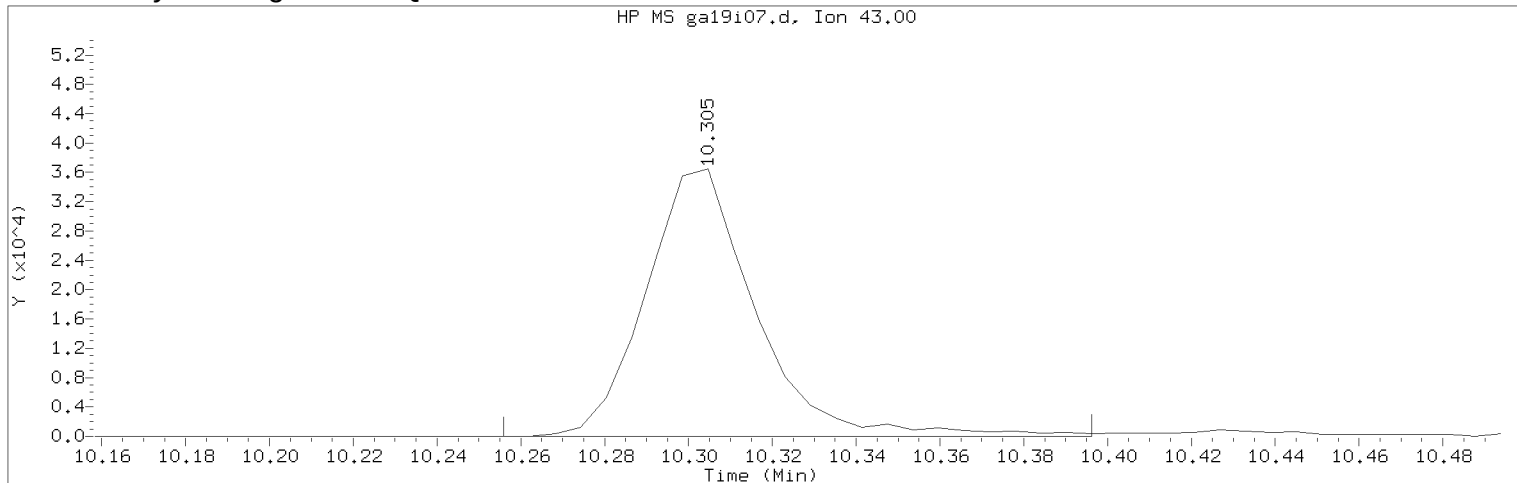
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.

Target 3.5 esignature userF1D52mB497370 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 1430
Retention Time (minutes): 10.305
Quant Ion : 43.00
Area (flag) : 66409M
On-Column Amount (ng) : 1.7751
Integration start scan : 1421
Y at integration start : 0

Integration stop scan: 1444
Y at integration end: 0

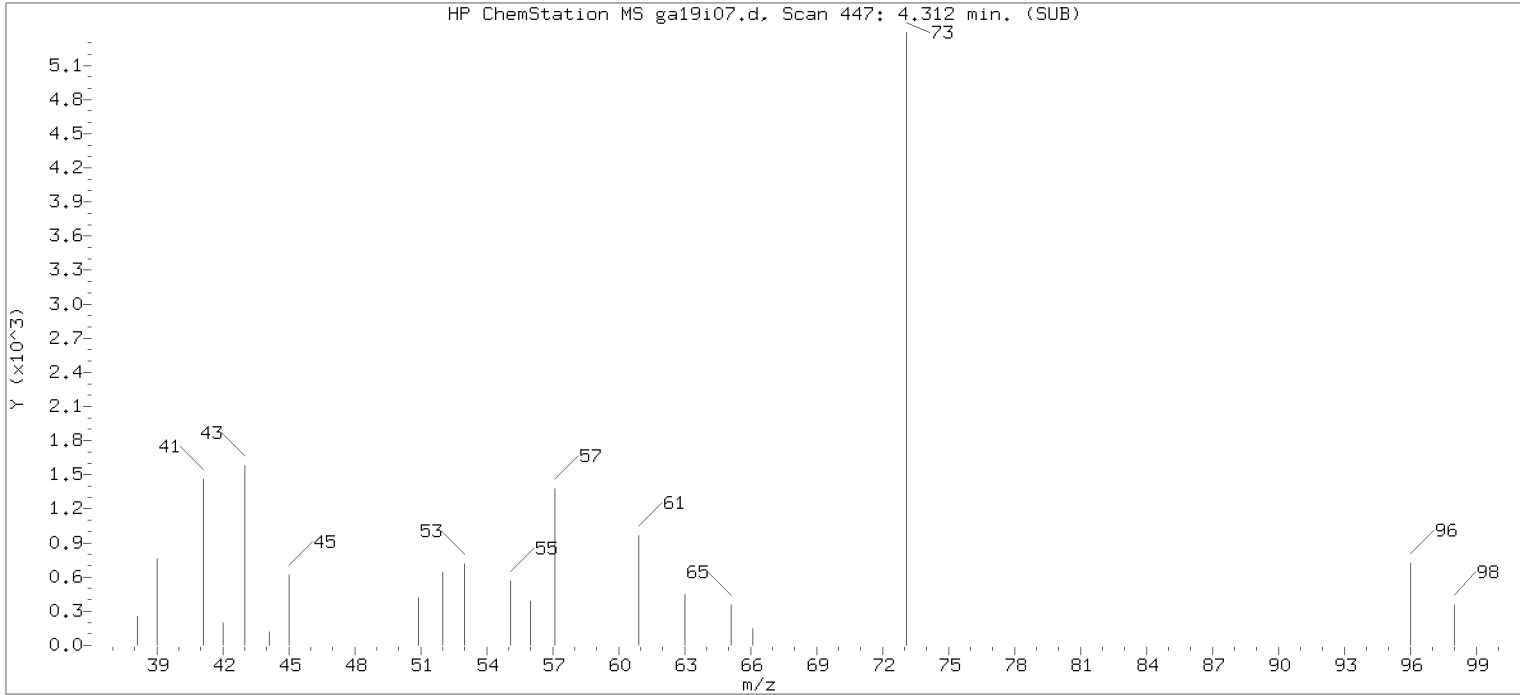
Reason for manual integration: improper integration

Analyst responsible for change:

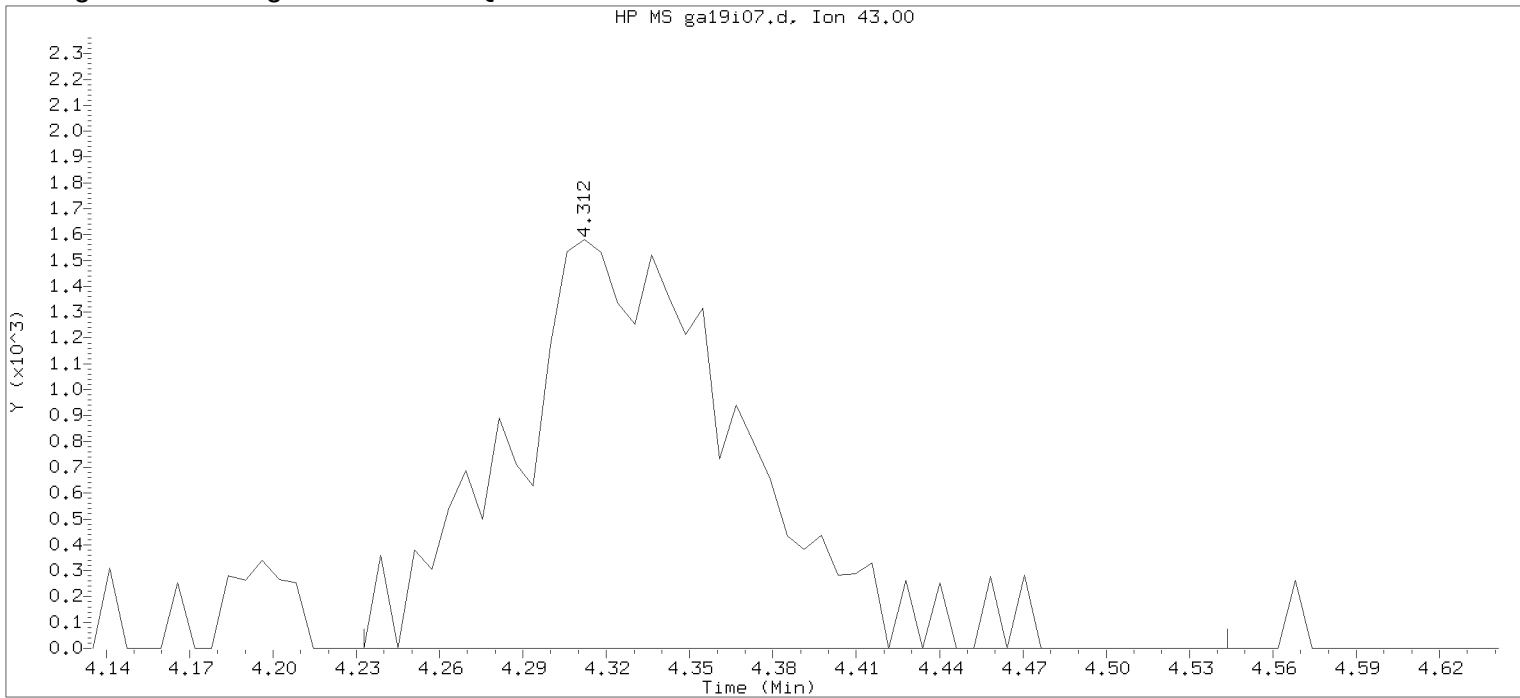
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

Sample Name: VSTD0.2

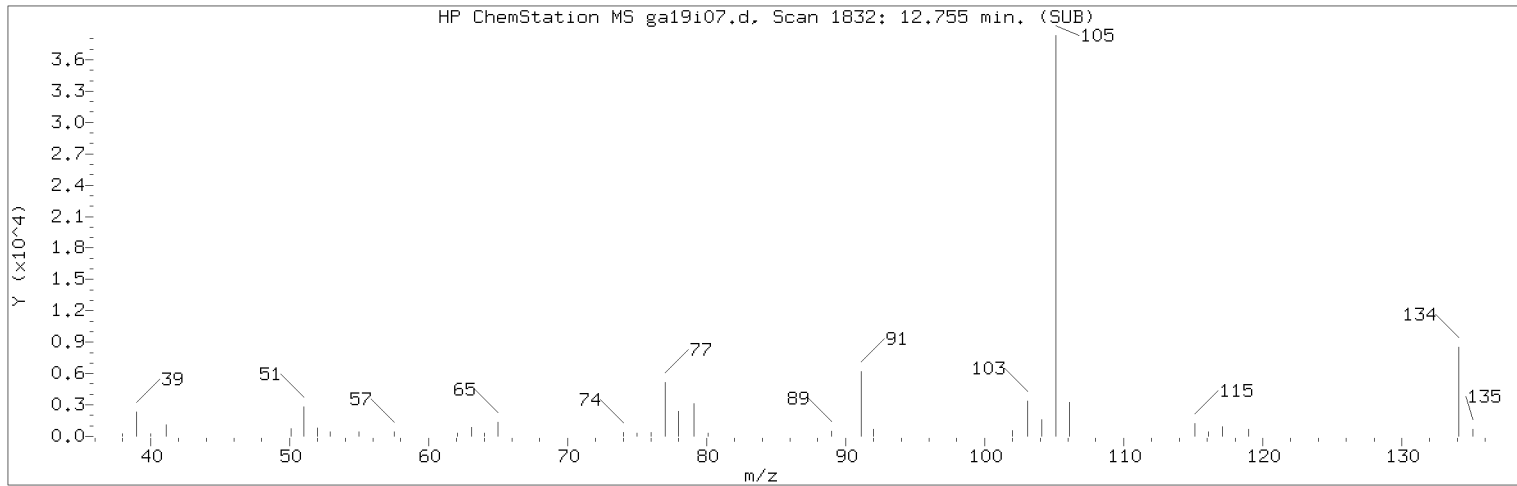
Lab Sample ID: VSTD0.2

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 447
Retention Time (minutes): 4.312
Quant Ion : 43.00
Area : 9206
On-column Amount (ng) : 4.0884
Integration start scan : 433
Y at integration start : 0

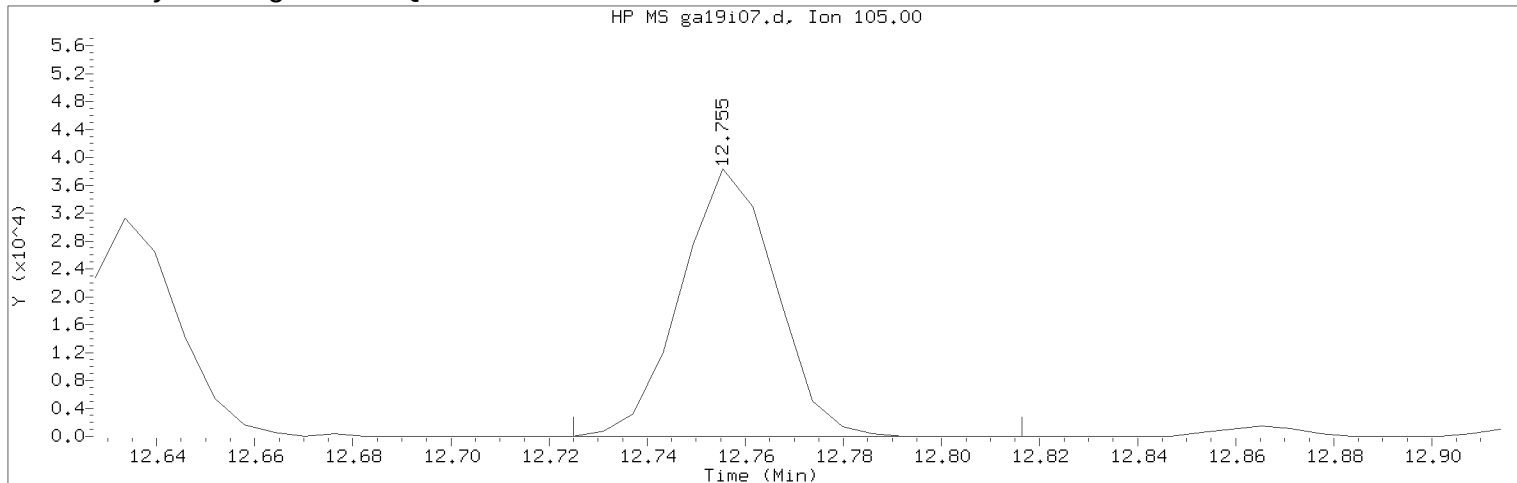
Integration stop scan: 484
Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
Target 3.5 esignature userF1D52mB107360 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:43

Date, time and analyst ID of latest file update: 19-Apr-2018 20:43 msk07970

Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number	: 128	
Compound Name	: sec-Butylbenzene	
Scan Number	: 1832	
Retention Time (minutes)	: 12.755	
Quant Ion	: 105.00	
Area (flag)	: 51241M	
On-Column Amount (ng)	: 0.1818	
Integration start scan	: 1826	Integration stop scan: 1841
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

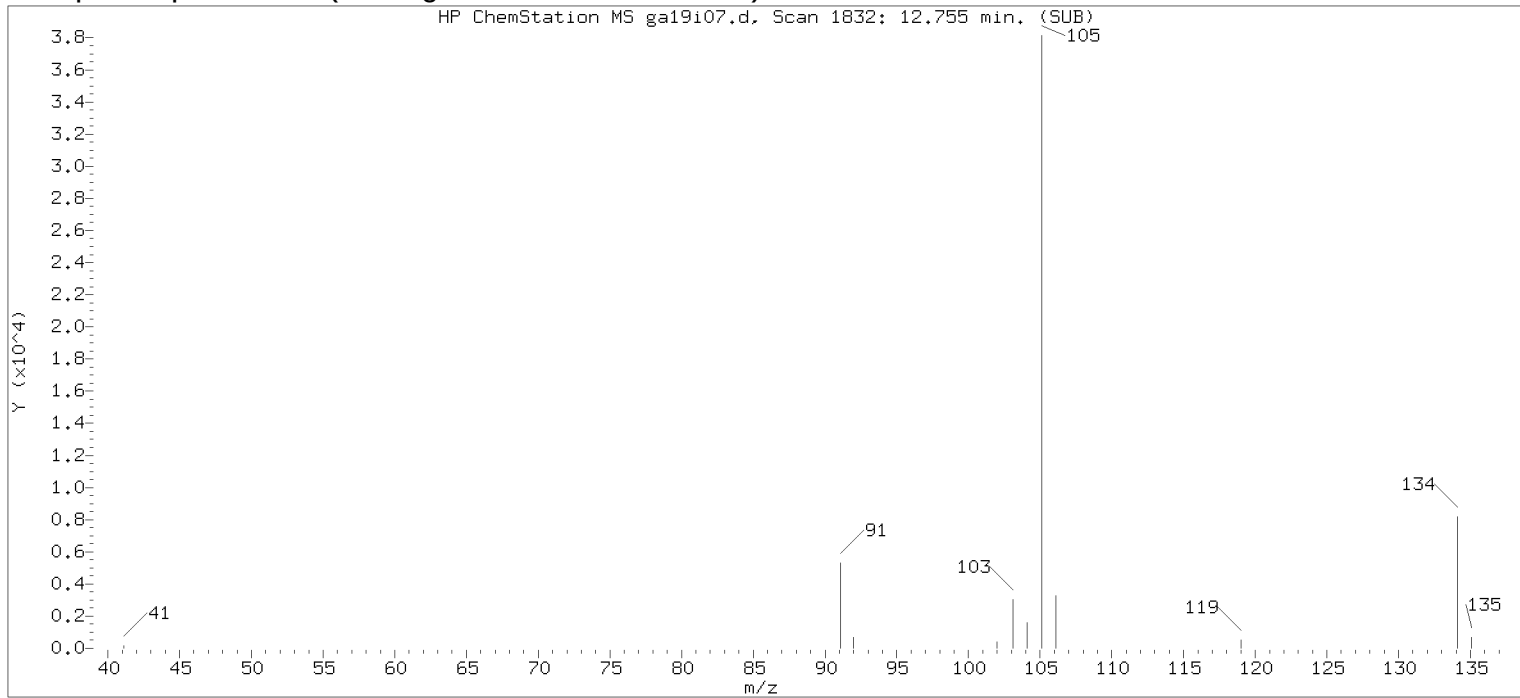
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:48.
Target 3.5 esignature user ID: msk07970

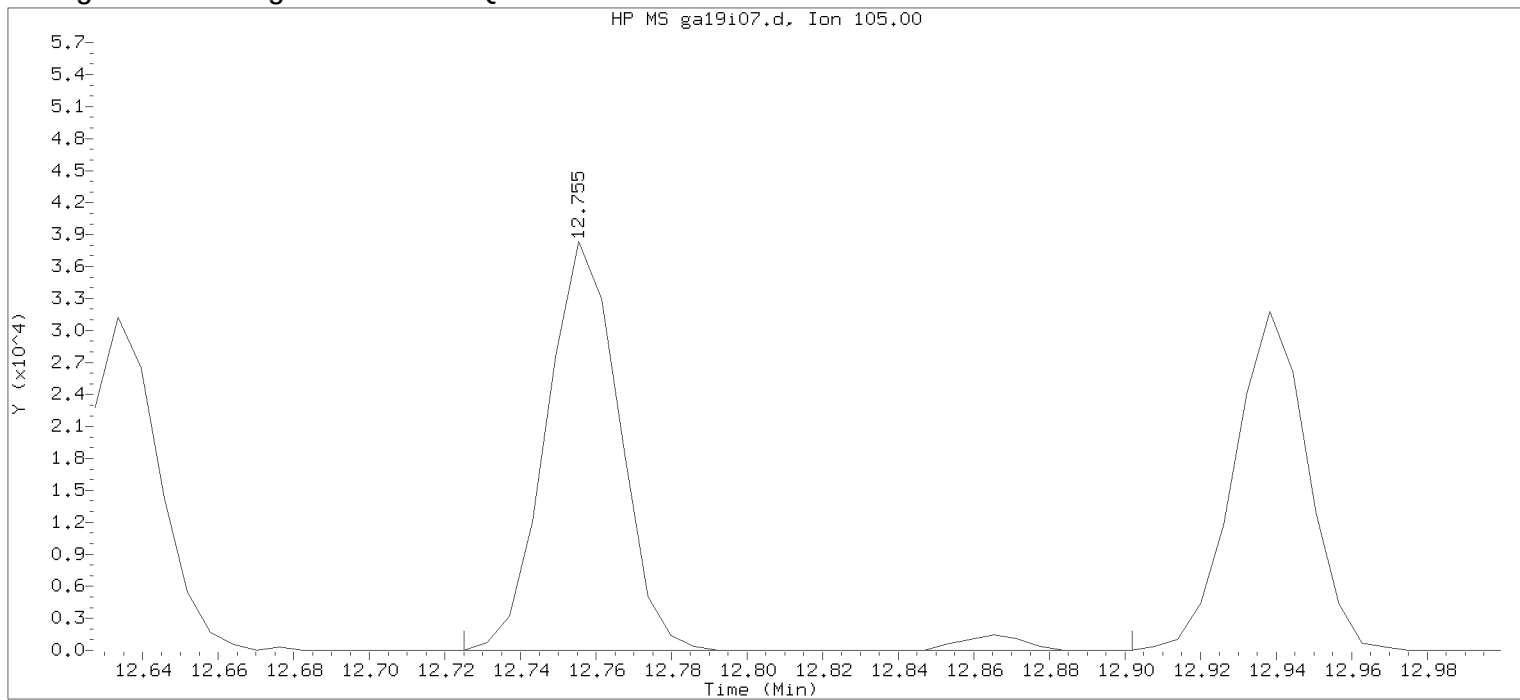
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:05.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19i07.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:37

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 14:53 Automation

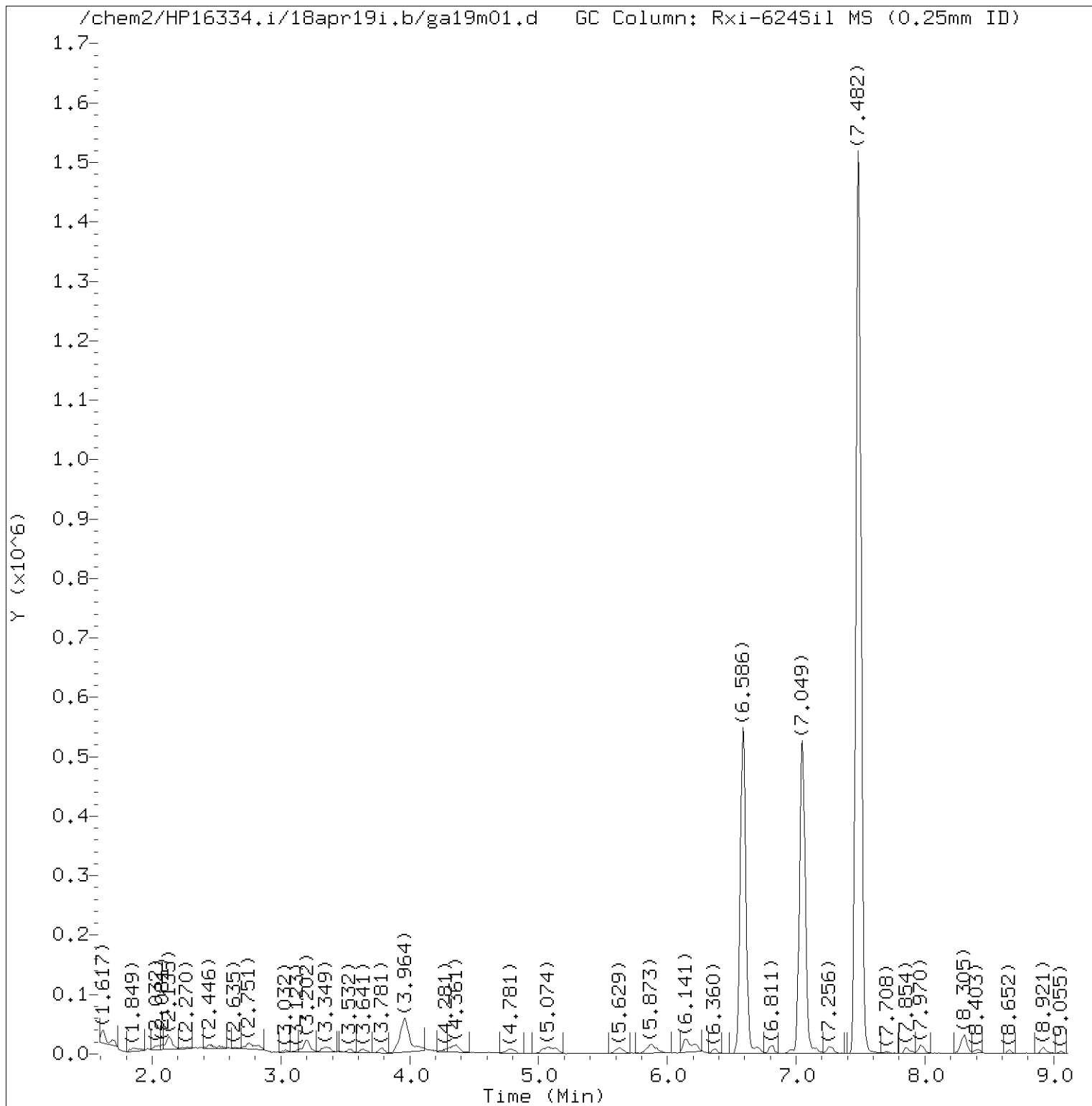
Sample Name: VSTD0.2

Lab Sample ID: VSTD0.2

Compound Number : 128
 Compound Name : sec-Butylbenzene
 Scan Number : 1832
 Retention Time (minutes): 12.755
 Quant Ion : 105.00
 Area : 52877
 On-column Amount (ng) : 0.1868
 Integration start scan : 1826
 Y at integration start : 0

Integration stop scan: 1855
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:48.
 Target 3.5 esignature userF1D52mB407360 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d
Injection date and time: 19-APR-2018 14:59

Instrument ID: HP16334.i
Analyst ID: JKH09052

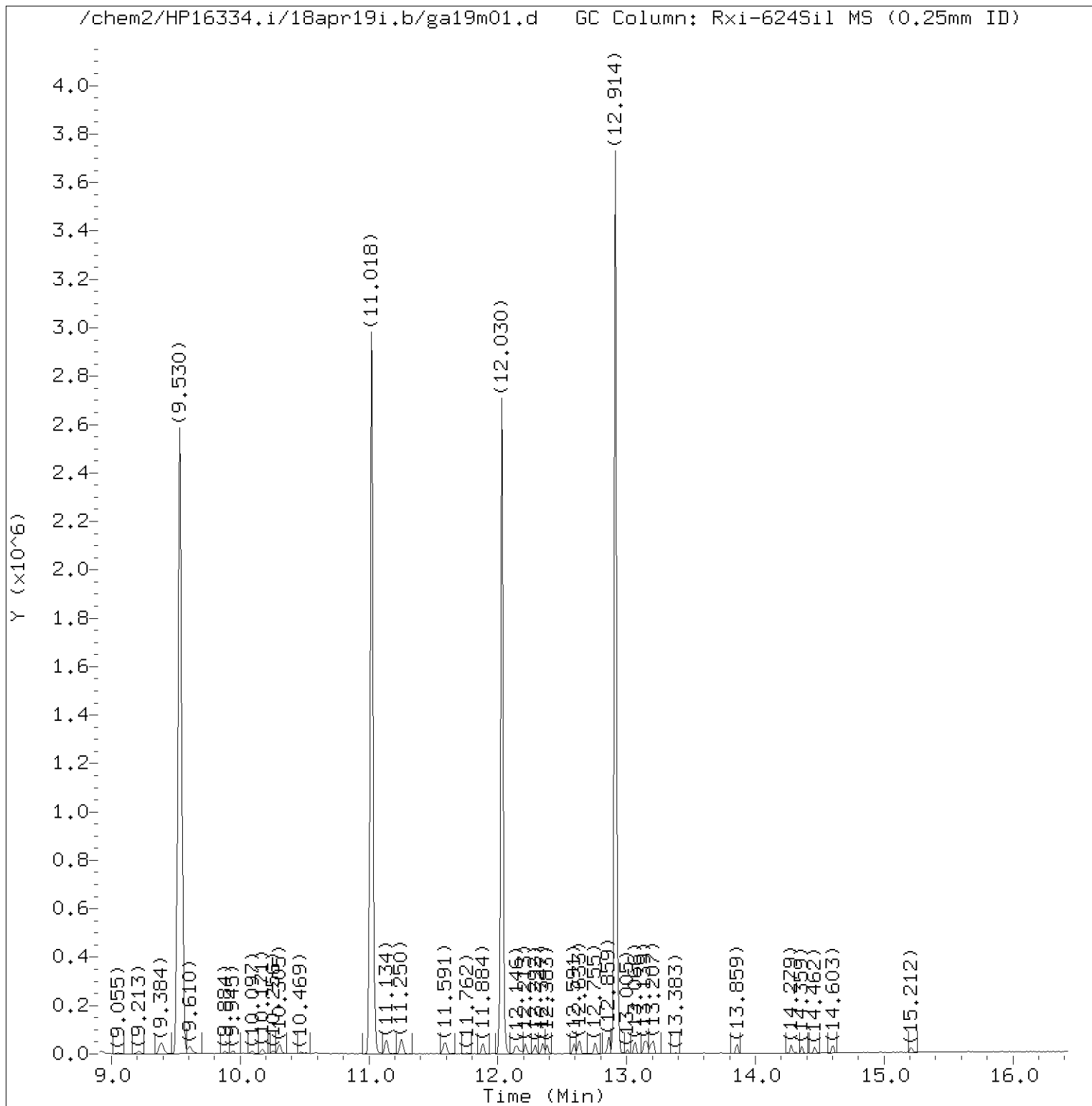
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:15
Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970
FKP52 Page 364 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d
Injection date and time: 19-APR-2018 14:59

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970
FKP52 Page 365 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d
 Injection date and time: 19-APR-2018 14:59

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:15
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.837	85	7416	0.100
2) Chloromethane	(2)	2.026	50	8287	0.111
5) Vinyl Chloride	(2)	2.129	62	6888	0.108
6) 1,3-Butadiene	(2)	2.129	39	18830M	0.138
7) Bromomethane	(2)	2.446	94	4920	0.115
8) Chloroethane	(2)	2.538	64	4044	0.111
9) Dichlorofluoromethane	(2)	2.751	67	10114	0.115
10) Trichlorofluoromethane	(2)	2.812	101	8791	0.105
11) Ethyl ether	(2)	3.032	59	4344	0.104
12) Freon 123a	(2)	3.129	67	5914M	0.100
13) Acrolein	(1)	3.202	56	38043	5.258
15) 1,1-Dichloroethene	(2)	3.343	96	3645	0.089
14) Acetone	(1)	3.367	43	16446	1.407
16) Freon 113	(2)	3.379	101	3750	0.081
17) Methyl Iodide	(2)	3.519	142	7300	0.092
18) Carbon Disulfide	(2)	3.623	76	19961M	0.123
21) Methyl Acetate	(1)	3.775	43	3487M	0.106
22) Allyl Chloride	(2)	3.788	41	10989	0.116
23) Methylene Chloride	(2)	3.952	84	9932	0.180
26)*t-Butyl Alcohol-d10	(1)	3.964	65	209443M	50.000
28) t-Butyl Alcohol	(1)	4.092	59	8796	2.219
29) Acrylonitrile	(1)	4.281	53	5679	0.437
30) Methyl Tertiary Butyl Ether	(2)	4.336	73	13847	0.097
31) trans-1,2-Dichloroethene	(2)	4.361	96	4371	0.092
32) n-Hexane	(2)	4.787	57	6480	0.081
33) 1,1-Dichloroethane	(2)	5.037	63	9045	0.093
34) di-Isopropyl Ether	(2)	5.086	45	20117	0.101
35) 2-Chloro-1,3-Butadiene	(2)	5.135	53	7750	0.087
37) Ethyl t-butyl ether	(2)	5.629	59	17412	0.100
38) 2-Butanone	(1)	5.830	43	20716	1.030
39) cis-1,2-Dichloroethene	(2)	5.879	96	5084	0.095
41) 2,2-Dichloropropane	(2)	5.891	77	7693	0.097
42) Propionitrile	(1)	5.934	54	8036M	1.616
40) 1,2-Dichloroethene (Total)	(2)		96	9455	0.187
45) Methacrylonitrile	(1)	6.147	67	14677	0.931
47) Bromochloromethane	(2)	6.220	128	1945	0.079
48) Tetrahydrofuran	(1)	6.226	71	4545	0.949
49) Chloroform	(2)	6.372	83	9149	0.099

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 3

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 on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

FKP52 Page 366 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d
 Injection date and time: 19-APR-2018 14:59

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:15
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.592	113	493821	9.939
51) 1,1,1-Trichloroethane	(2)	6.604	97	6844	0.087
52) Cyclohexane	(2)	6.696	56	8341	0.089
55) 1,1-Dichloropropene	(2)	6.805	75	6574	0.090
54) Carbon Tetrachloride	(2)	6.811	117	5382	0.085
56) Isobutyl Alcohol	(1)	6.970	41	9833	6.243
57) \$1,2-Dichloroethane-d4	(2)	7.043	102	103972	9.874
58) Benzene	(2)	7.074	78	20423	0.101
59) 1,2-Dichloroethane	(2)	7.153	62	9219	0.129
60) t-Amyl methyl ether	(2)	7.256	73	13873	0.094
63) *Fluorobenzene	(2)	7.482	96	1975906	10.000
62) n-Heptane	(2)	7.494	43	8736	0.090
65) n-Butanol	(1)	7.860	56	9524	7.639
67) Trichloroethene	(2)	7.970	95	4947	0.093
69) Methylcyclohexane	(2)	8.275	83	6138	0.068
70) 1,2-Dichloropropane	(2)	8.305	63	5507	0.098
71) Methyl Methacrylate	(1)	8.384	69	2369	0.079
73) Dibromomethane	(2)	8.427	93	2443	0.092
74) Bromodichloromethane	(2)	8.659	83	5967	0.091
76) 2-Nitropropane	(1)	8.915	41	8568	0.833
80) cis-1,3-Dichloropropene	(2)	9.213	75	7309	0.090
81) 4-Methyl-2-Pentanone	(1)	9.384	43	46864M	0.948
82) \$Toluene-d8	(3)	9.530	98	2004422	10.082
83) Toluene	(3)	9.604	92	12237	0.097
84) trans-1,3-Dichloropropene	(3)	9.884	75	5993	0.088
86) Ethyl Methacrylate	(3)	9.945	69	5894	0.096
88) 1,1,2-Trichloroethane	(3)	10.091	97	4048	0.107
85) 1,3-Dichloropropene (total)	(3)		75	13302	0.178
89) Tetrachloroethene	(3)	10.171	166	5107	0.087
90) 1,3-Dichloropropane	(3)	10.256	76	6722	0.097
91) 2-Hexanone	(1)	10.305	43	31709M	0.913
93) Dibromochloromethane	(3)	10.475	129	3385	0.081
95) 1,2-Dibromoethane	(3)	10.591	107	3431	0.095
97) *Chlorobenzene-d5	(3)	11.018	117	1482426	10.000
98) Chlorobenzene	(3)	11.048	112	14281	0.099
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	4297	0.089
100) Ethylbenzene	(3)	11.134	91	23968	0.096
101) m+p-Xylene	(3)	11.256	106	18922	0.199

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

FKP52 Page 367 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d
 Injection date and time: 19-APR-2018 14:59

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:15
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
104) o-Xylene	(3)	11.585	106	9038	0.095
106) Styrene	(3)	11.603	104	13763	0.088
105) Xylene (Total)	(3)		106	27960	0.293
107) Bromoform	(3)	11.762	173	1592	0.066
108) Isopropylbenzene	(3)	11.884	105	23383	0.094
111)\$4-Bromofluorobenzene	(3)	12.030	95	761924	10.013
113) 1,1,2,2-Tetrachloroethane	(4)	12.127	83	4765	0.098
114) Bromobenzene	(4)	12.146	156	6107	0.095
116) 1,2,3-Trichloropropane	(4)	12.182	110	1071	0.079
117) n-Propylbenzene	(4)	12.213	91	27732	0.093
119) 2-Chlorotoluene	(4)	12.292	126	5453	0.092
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	19480	0.091
122) 4-Chlorotoluene	(4)	12.383	126	5787	0.093
125) tert-Butylbenzene	(4)	12.591	134	4029M	0.090
126) Pentachloroethane	(4)	12.627	167	2375	0.069
127) 1,2,4-Trimethylbenzene	(4)	12.640	105	19966	0.092
128) sec-Butylbenzene	(4)	12.755	105	23947M	0.088
131) 1,3-Dichlorobenzene	(4)	12.859	146	12904	0.101
132) p-Isopropyltoluene	(4)	12.865	119	20975	0.089
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	830067	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	12797	0.099
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	10395	0.106
136) Benzyl Chloride	(4)	12.999	126	1071	0.060
138) n-Butylbenzene	(4)	13.158	92	11824M	0.093
139) 1,2-Dichlorobenzene	(4)	13.188	146	12080	0.101
143) 1,2-Dibromo-3-chloropropane	(1)	13.737	155	347	0.047
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	10028	0.094
145) 1,2,4-Trichlorobenzene	(4)	14.279	180	9590	0.097
146) Hexachlorobutadiene	(4)	14.359	225	4720	0.091
147) Naphthalene	(4)	14.462	128	15274	0.093
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	7776	0.092

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

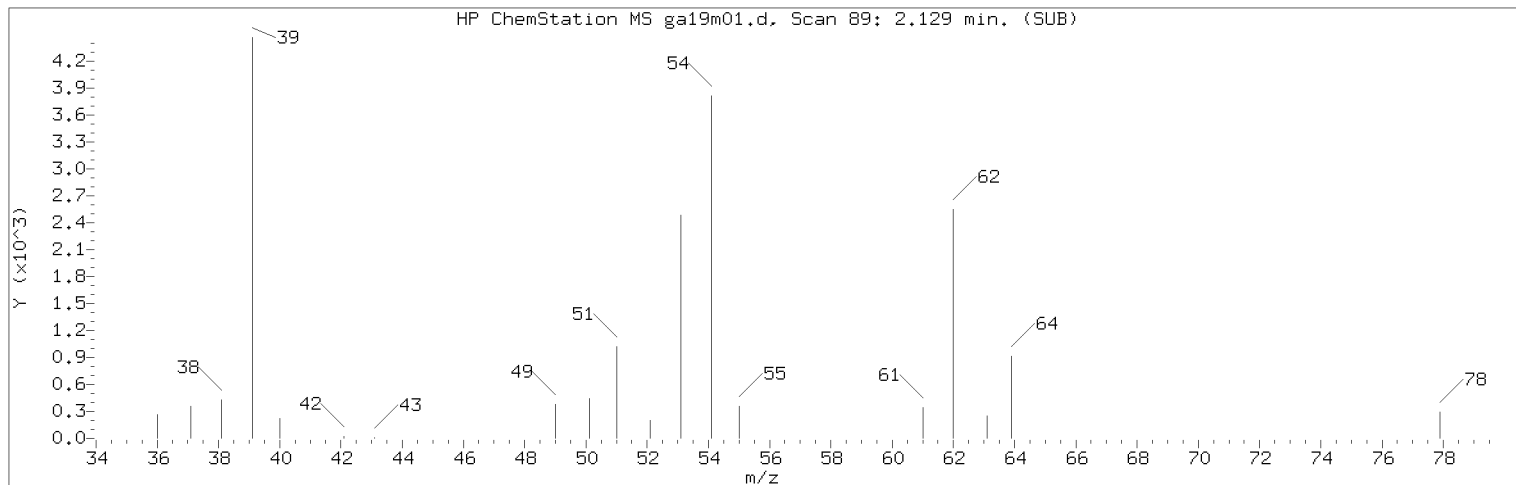
page 3 of 3

Digitally signed by Matthew S. Krause
 on 04/19/2018 at 20:50.

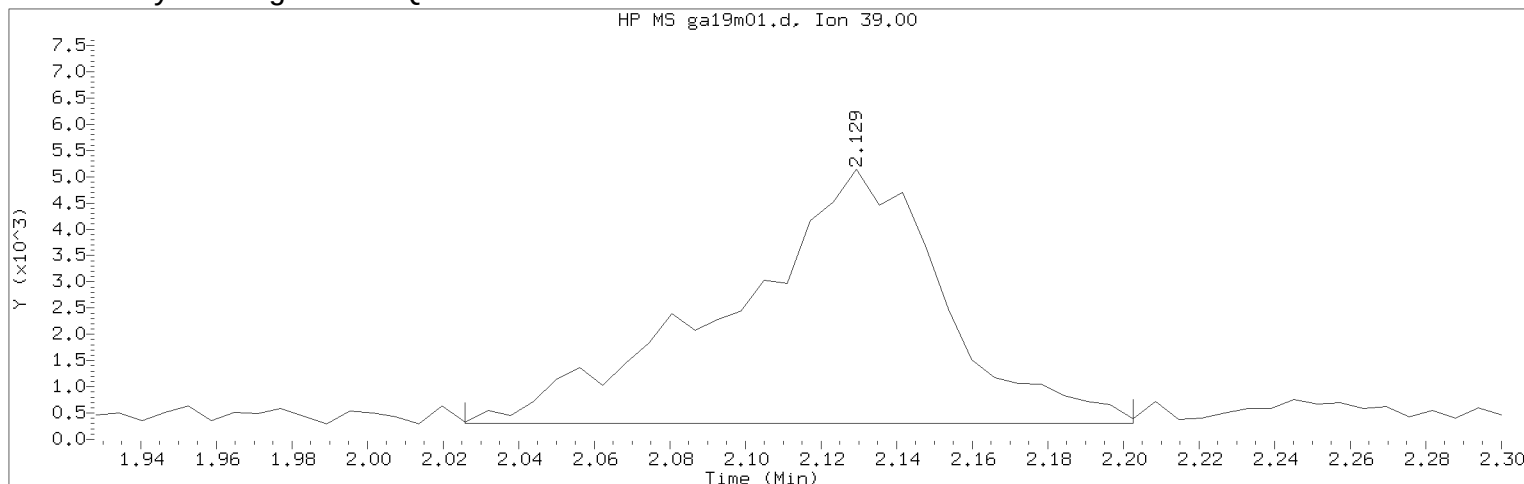
Target 3.5 esignature user ID: msk07970

FKP52 Page 368 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 89

Retention Time (minutes): 2.129

Quant Ion : 39.00

Area (flag) : 18830M

On-Column Amount (ng) : 0.1382

Integration start scan : 71

Integration stop scan: 100

Y at integration start : 304

Y at integration end: 304

Reason for manual integration: improper integration

Analyst responsible for change:

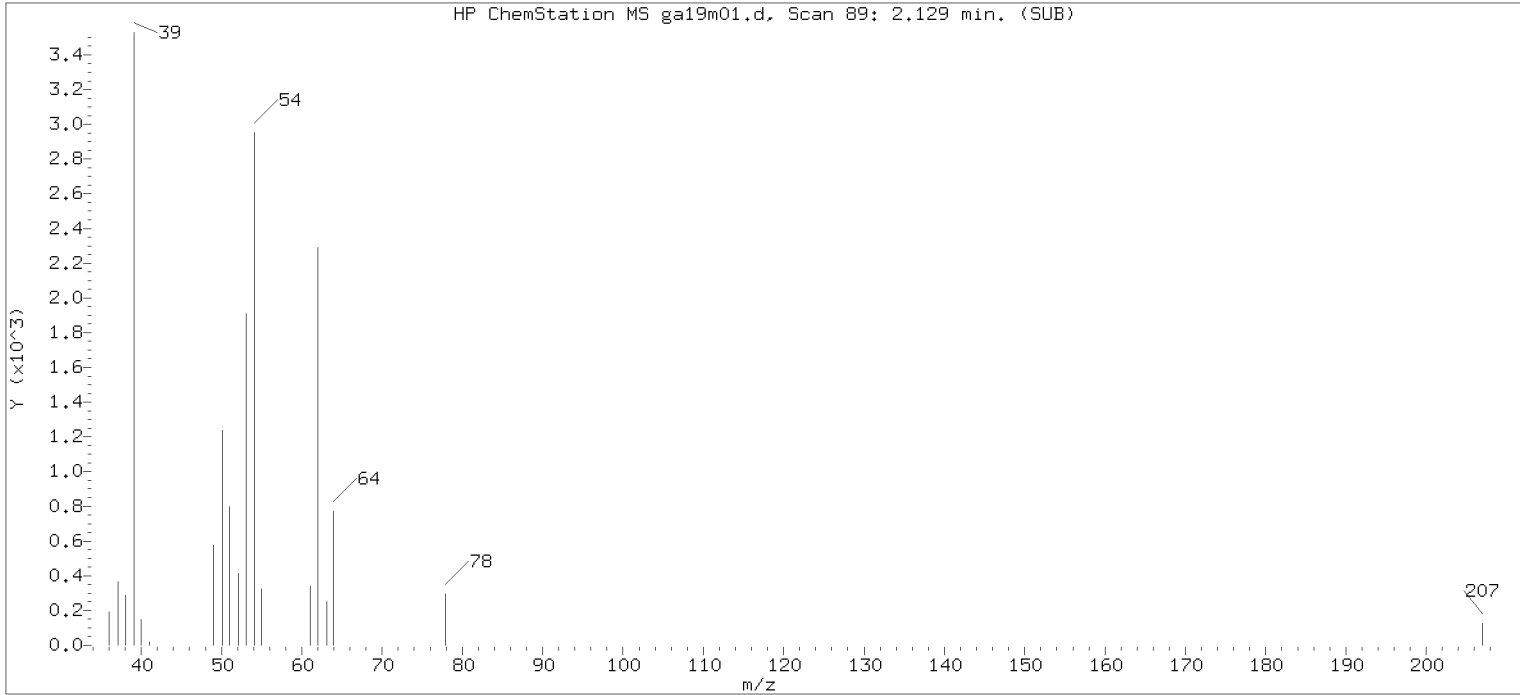
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

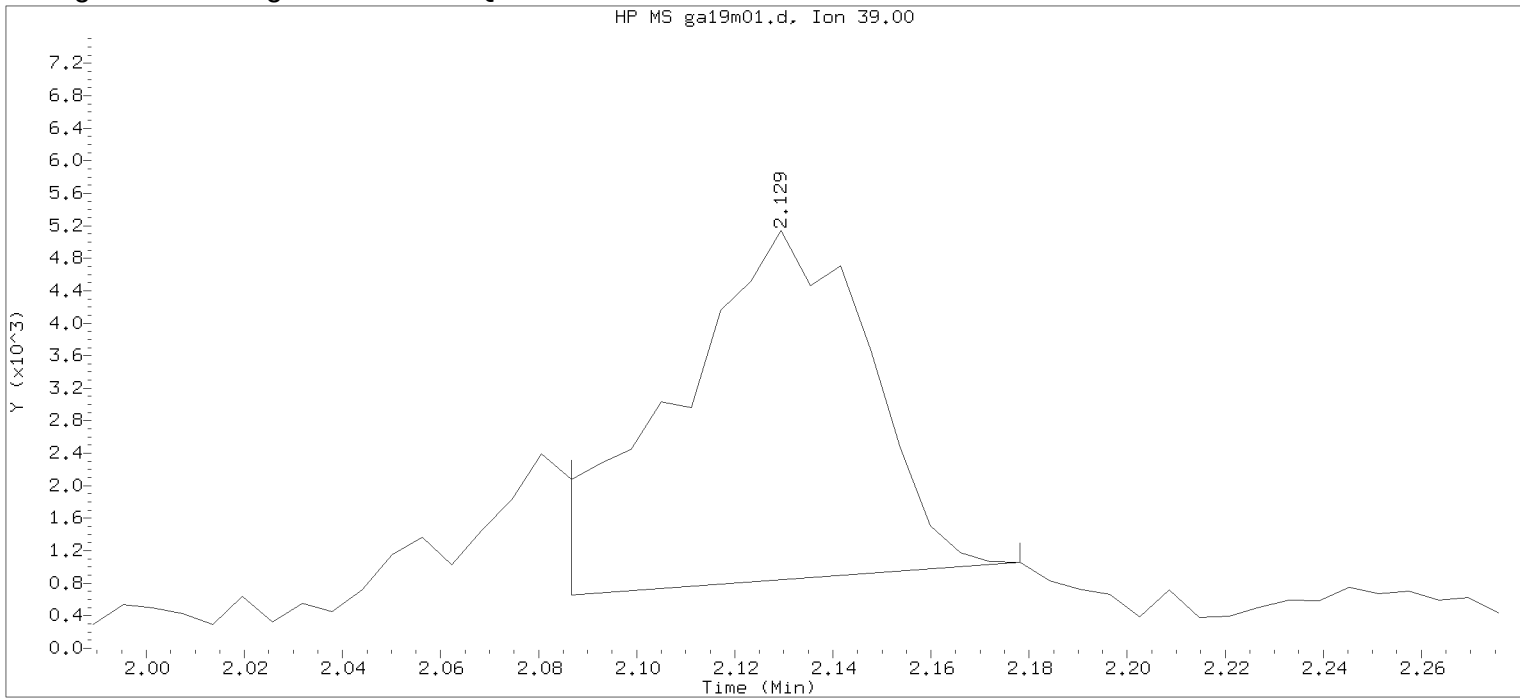
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 89

Retention Time (minutes): 2.129

Quant Ion : 39.00

Area : 11823

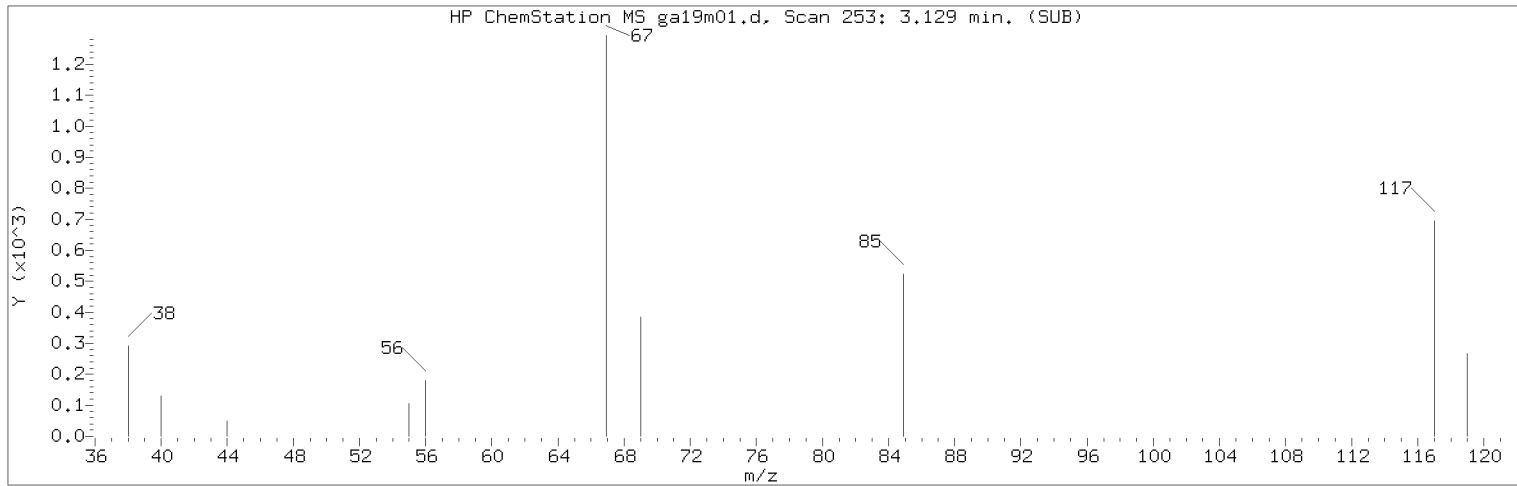
On-column Amount (ng) : 0.0927

Integration start scan : 81 Integration stop scan: 96

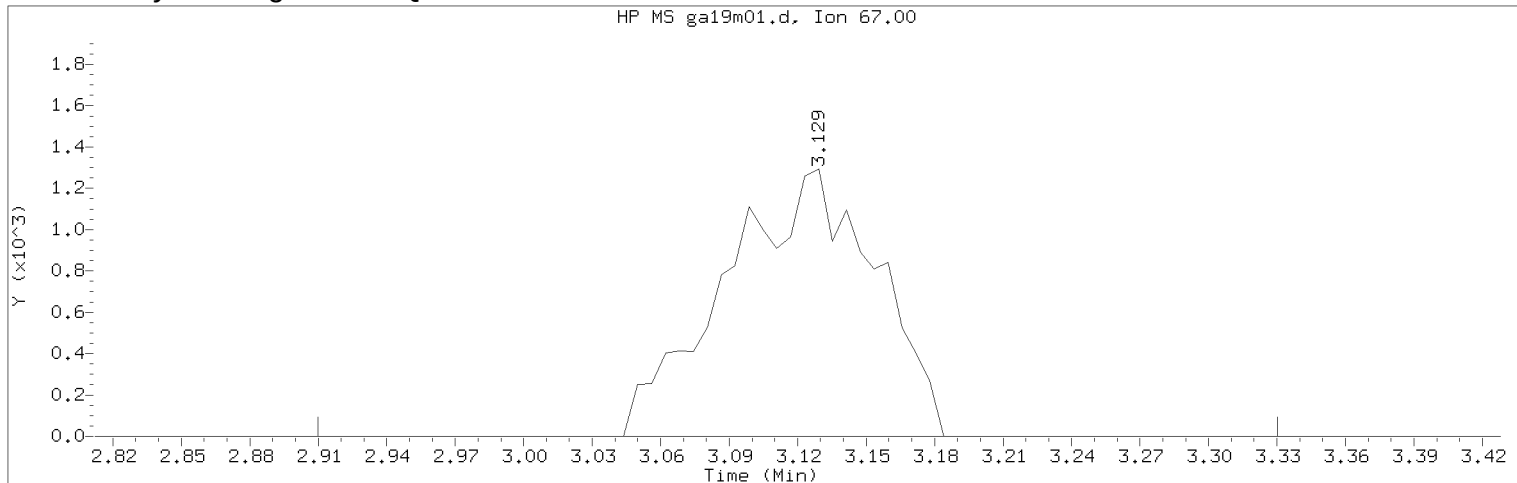
Y at integration start : 659 Y at integration end: 1055

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature userFID52mBkg770 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 12
Compound Name : Freon 123a
Scan Number : 253
Retention Time (minutes): 3.129
Quant Ion : 67.00
Area (flag) : 5914M
On-Column Amount (ng) : 0.1000
Integration start scan : 216
Y at integration start : 0

Integration stop scan: 285
Y at integration end: 0

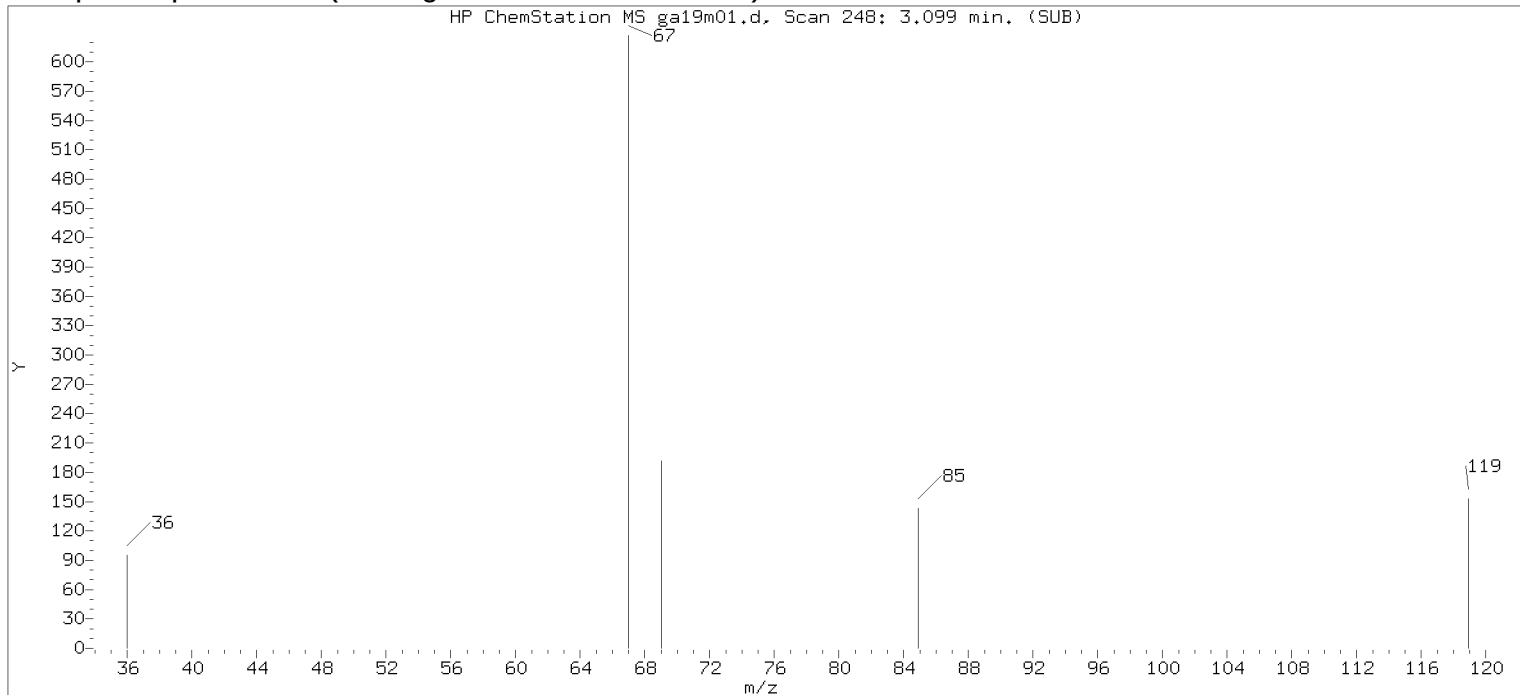
Reason for manual integration: improper integration

Analyst responsible for change:

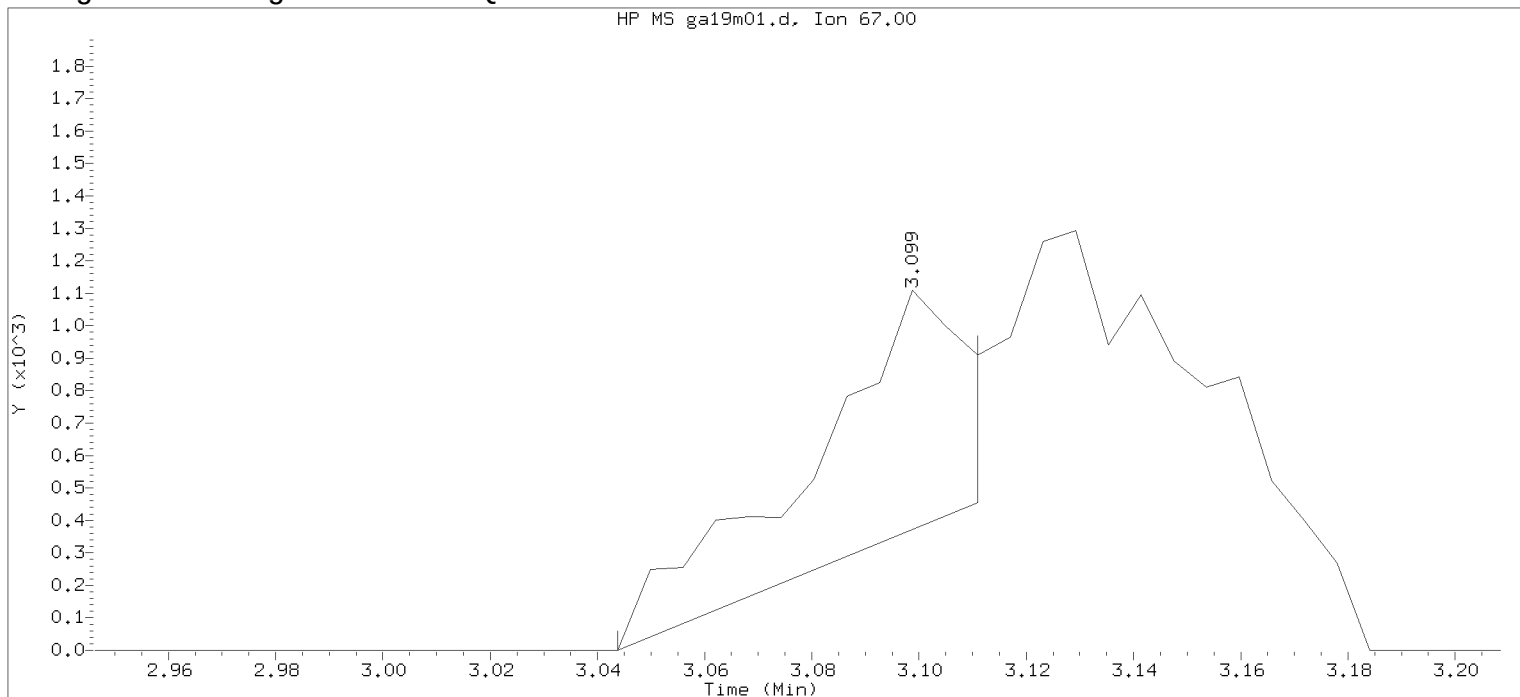
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

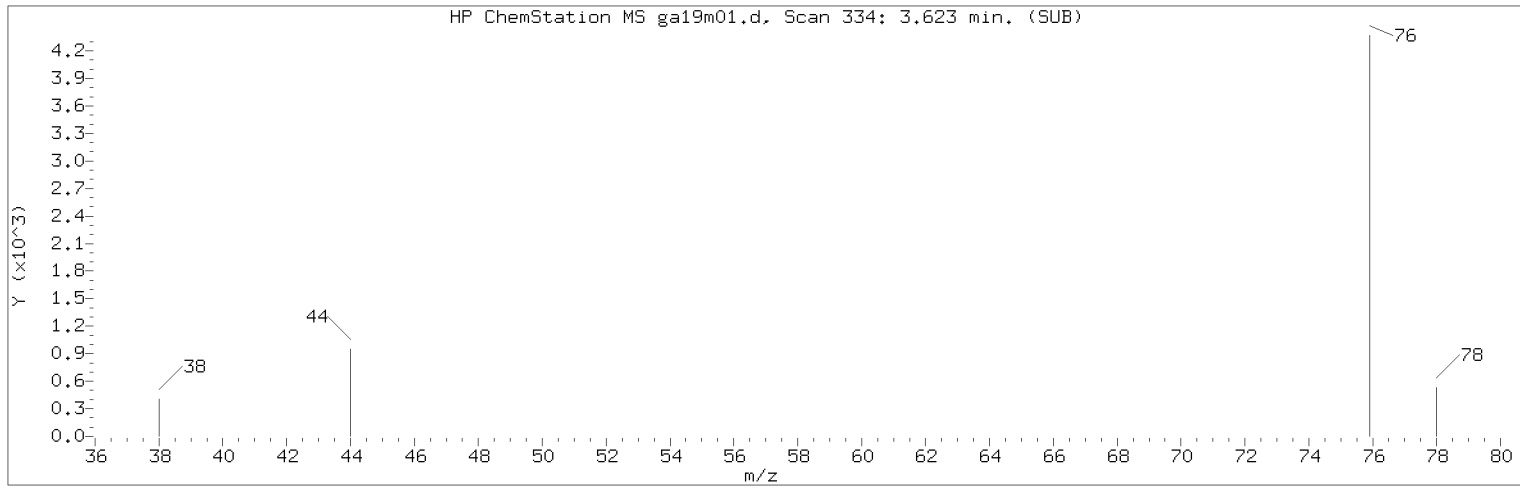
Lab Sample ID: MDL0.1

Compound Number : 12
 Compound Name : Freon 123a
 Scan Number : 248
 Retention Time (minutes): 3.099
 Quant Ion : 67.00
 Area : 1437
 On-column Amount (ng) : 0.0272
 Integration start scan : 238
 Y at integration start : 0

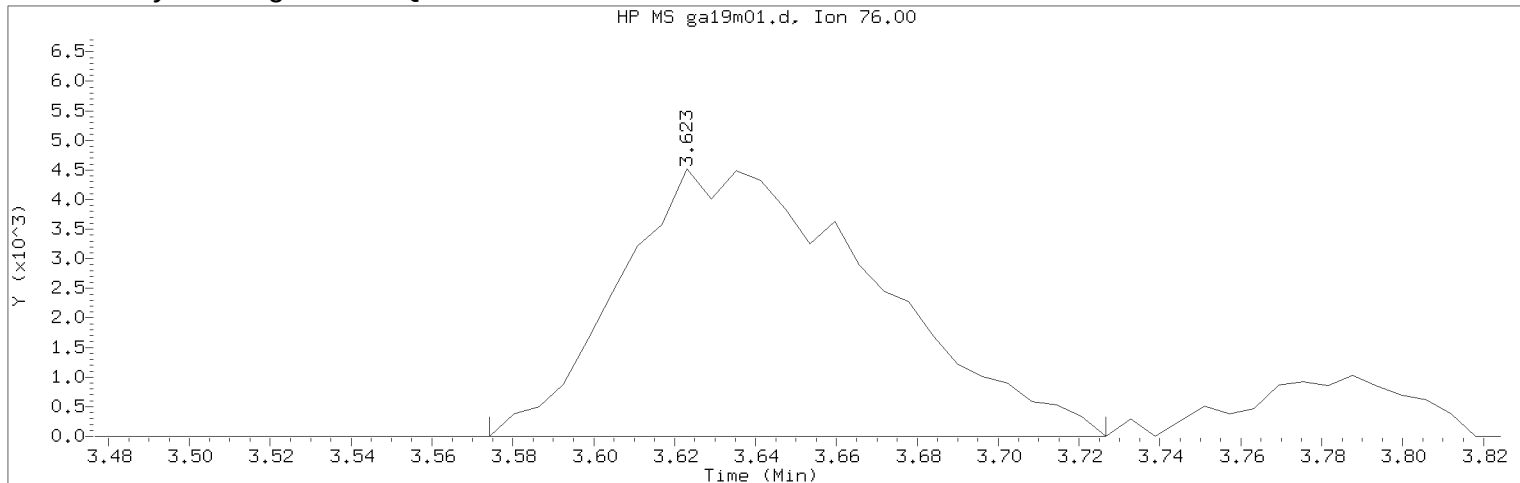
Integration stop scan: 249
 Y at integration end: 454

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 Target 3.5 esignature user FID52mBkg730 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

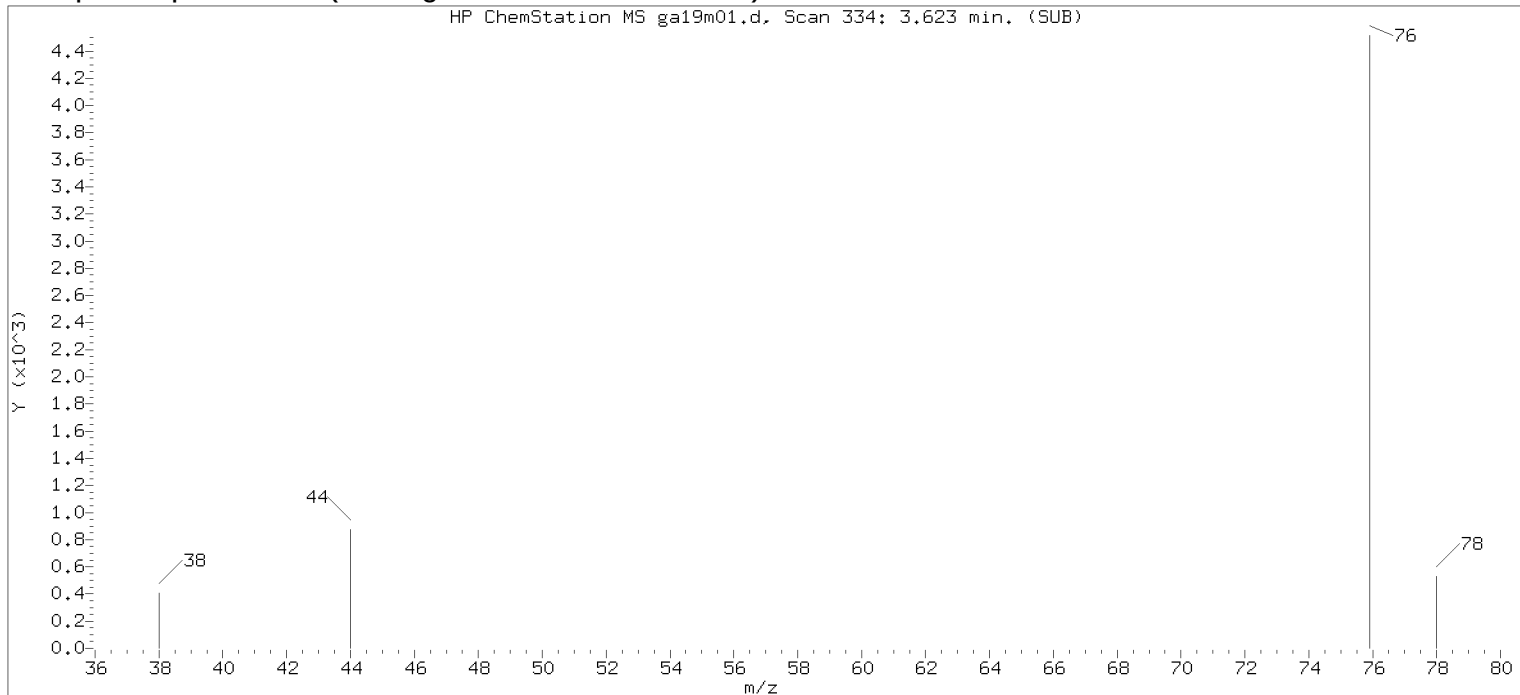
Compound Number	: 18	
Compound Name	: Carbon Disulfide	
Scan Number	: 334	
Retention Time (minutes)	: 3.623	
Quant Ion	: 76.00	
Area (flag)	: 19961M	
On-Column Amount (ng)	: 0.1230	
Integration start scan	: 325	Integration stop scan: 350
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

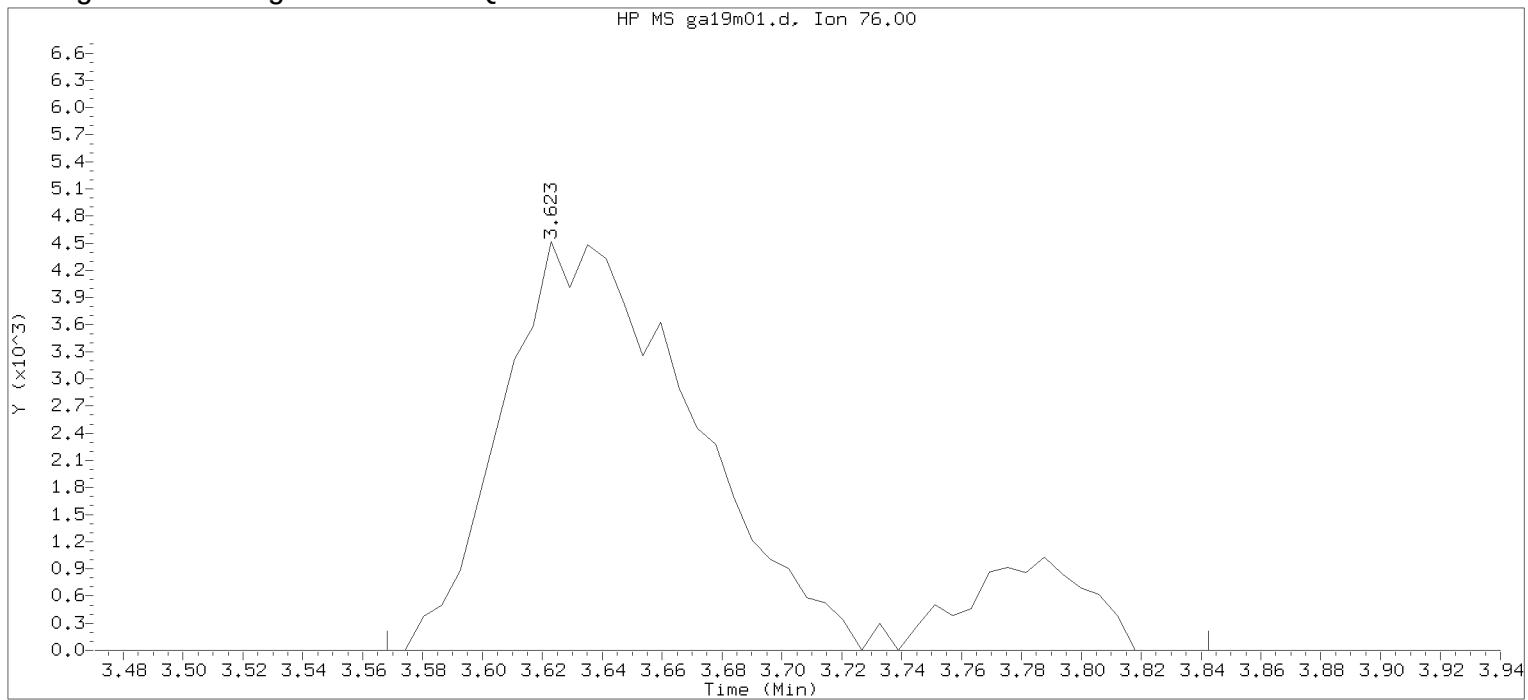
Analyst responsible for change: Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 18

Compound Name : Carbon Disulfide

Scan Number : 334

Retention Time (minutes): 3.623

Quant Ion : 76.00

Area : 22924

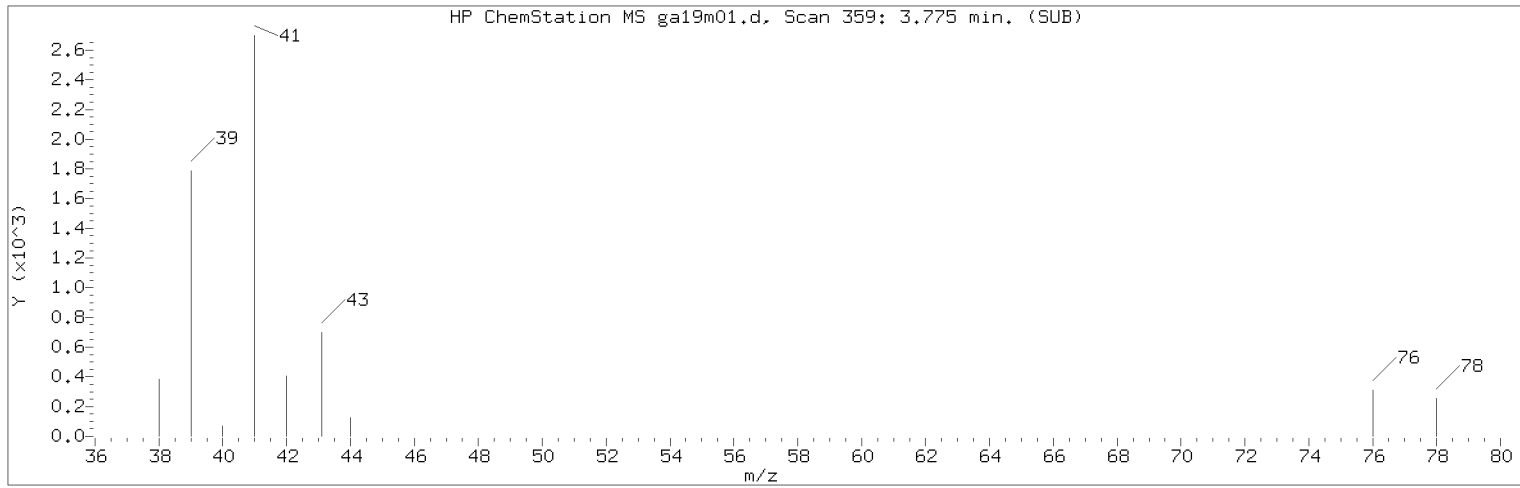
On-column Amount (ng) : 0.1413

Integration start scan : 324 Integration stop scan: 369

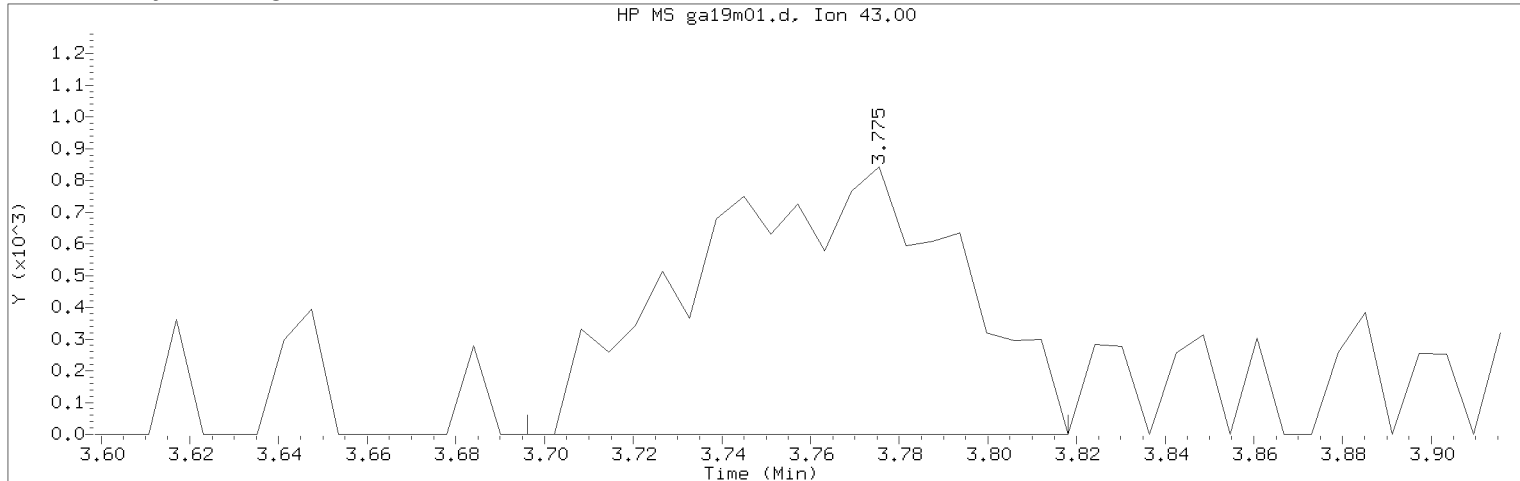
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature userF1D52mB107370 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 359

Retention Time (minutes): 3.775

Quant Ion : 43.00

Area (flag) : 3487M

On-Column Amount (ng) : 0.1058

Integration start scan : 345

Integration stop scan: 365

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

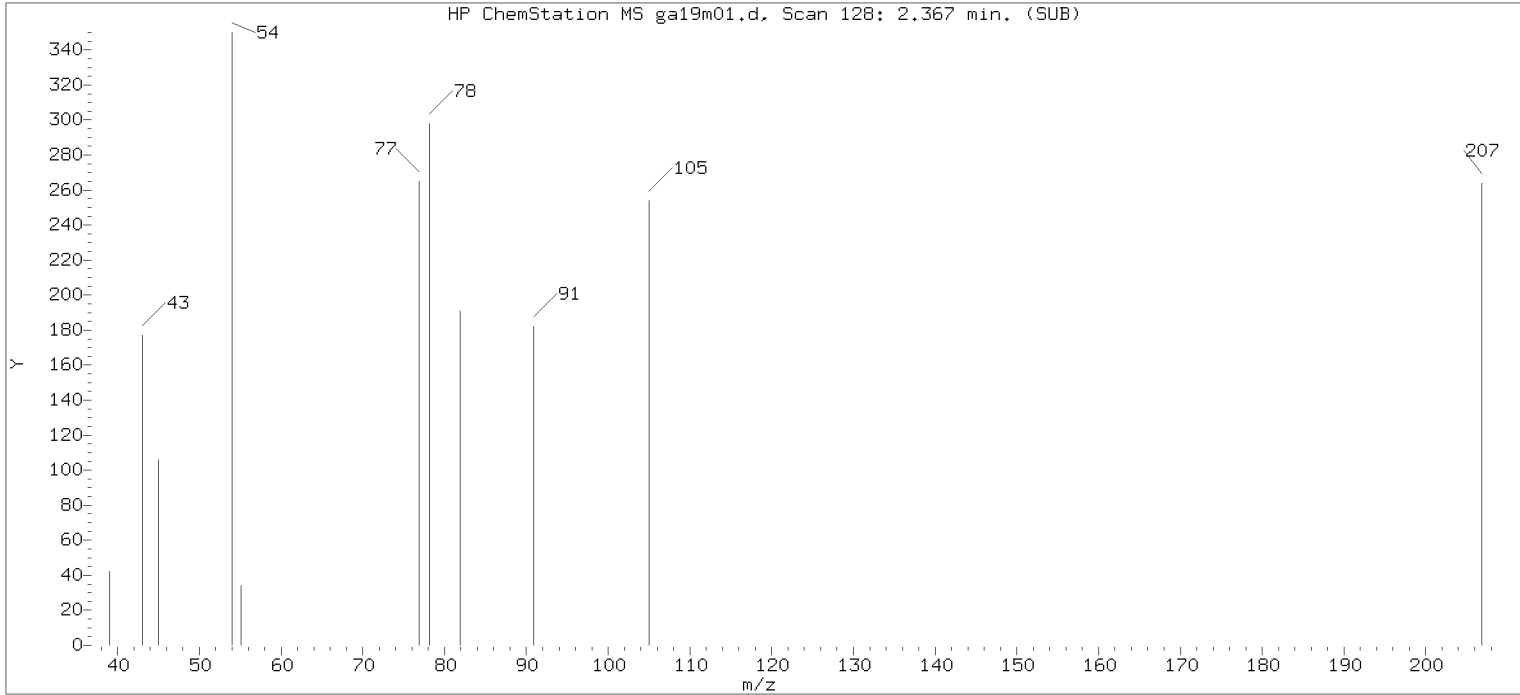
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

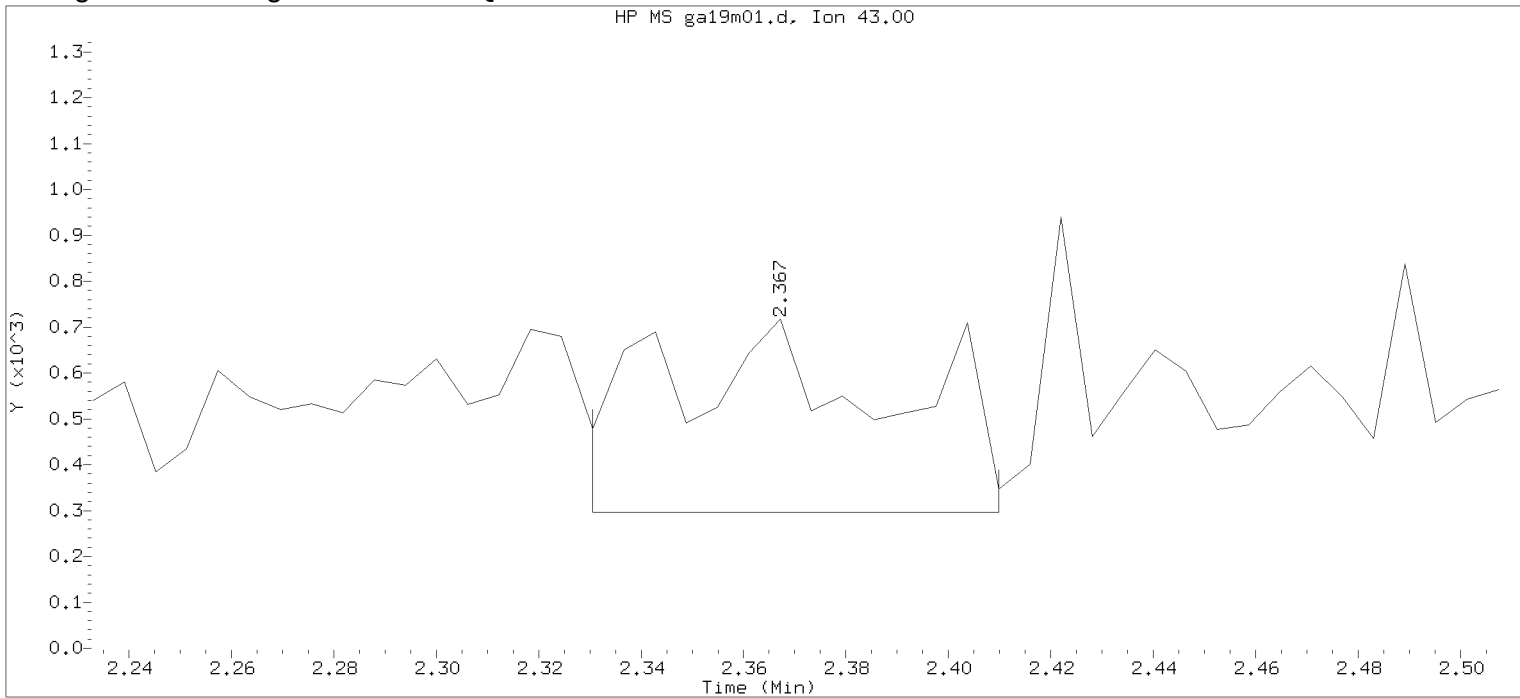
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 128

Retention Time (minutes): 2.367

Quant Ion : 43.00

Area : 1312

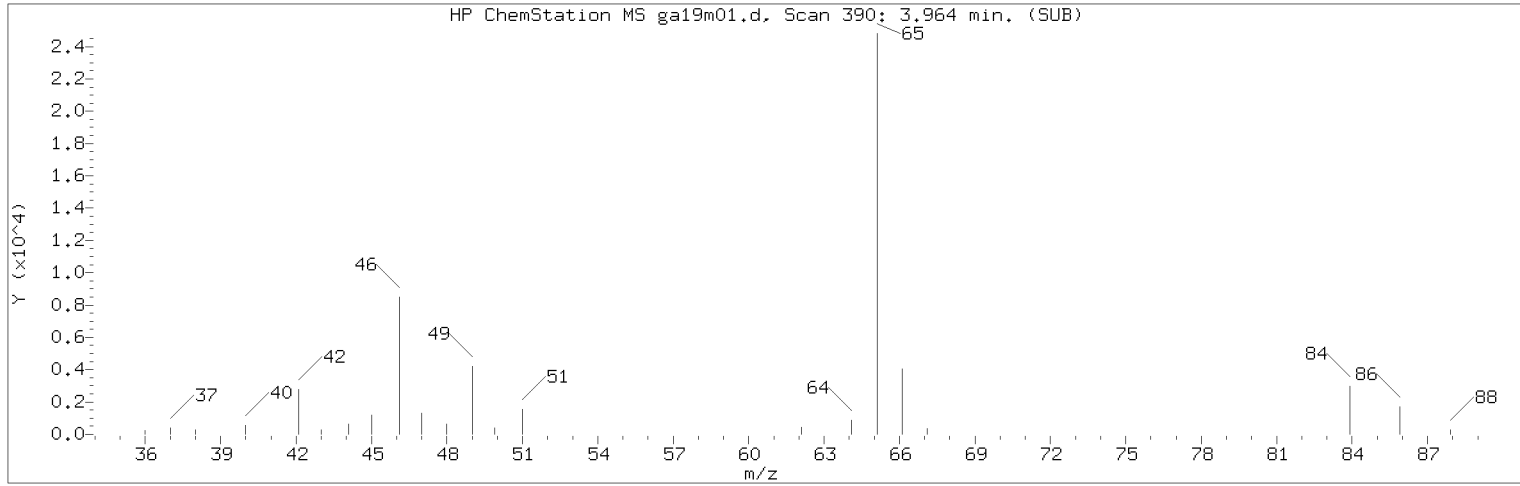
On-column Amount (ng) : 0.8499

Integration start scan : 121 Integration stop scan: 134

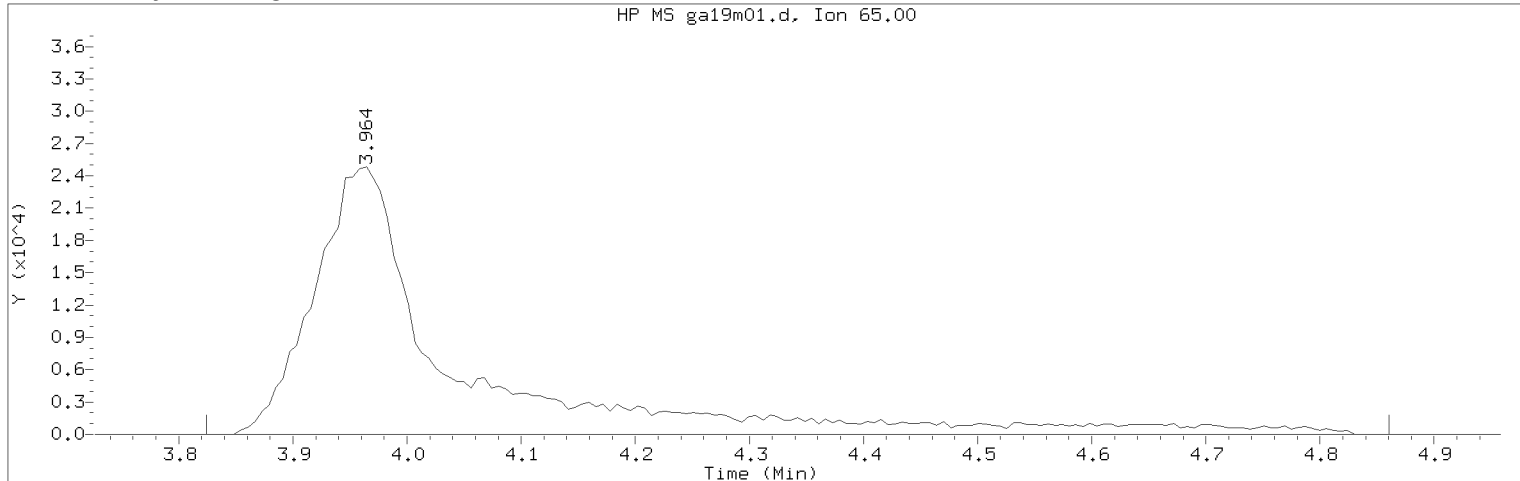
Y at integration start : 297 Y at integration end: 297

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature userF1D52mB497370 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number	: 26	
Compound Name	: t-Butyl Alcohol-d10	
Scan Number	: 390	
Retention Time (minutes)	: 3.964	
Quant Ion	: 65.00	
Area (flag)	: 209443M	
On-Column Amount (ng)	: 50.0000	
Integration start scan	: 366	Integration stop scan: 536
Y at integration start	: 0	Y at integration end: 0

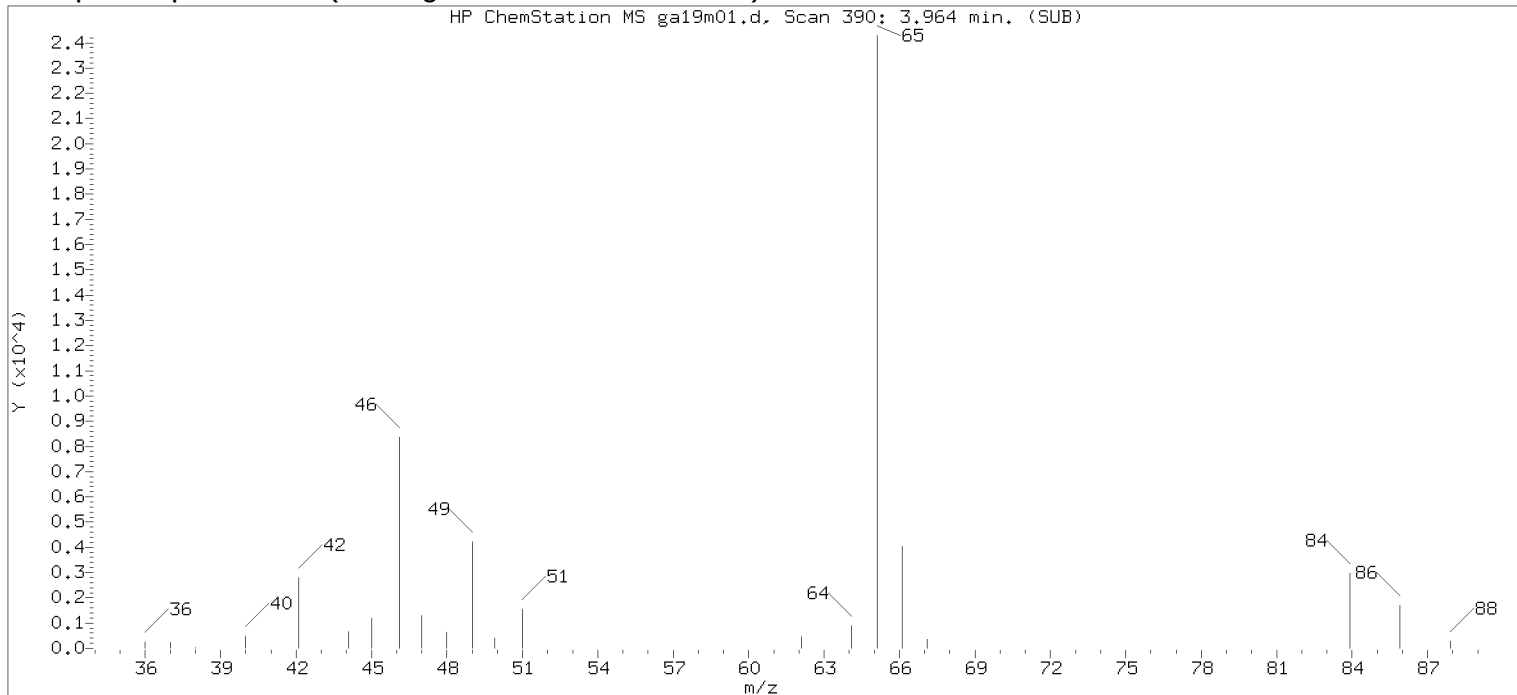
Reason for manual integration: improper integration

Analyst responsible for change:

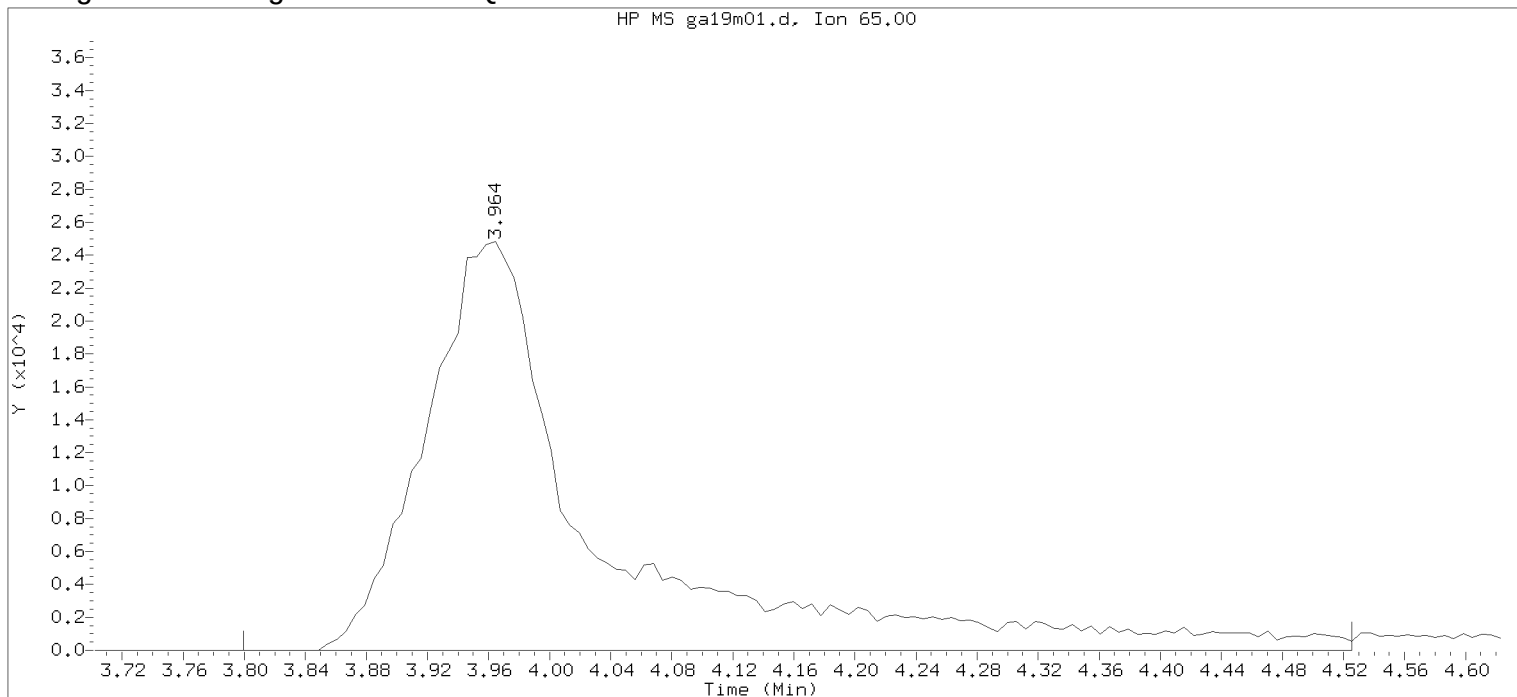
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 390

Retention Time (minutes): 3.964

Quant Ion : 65.00

Area : 195900

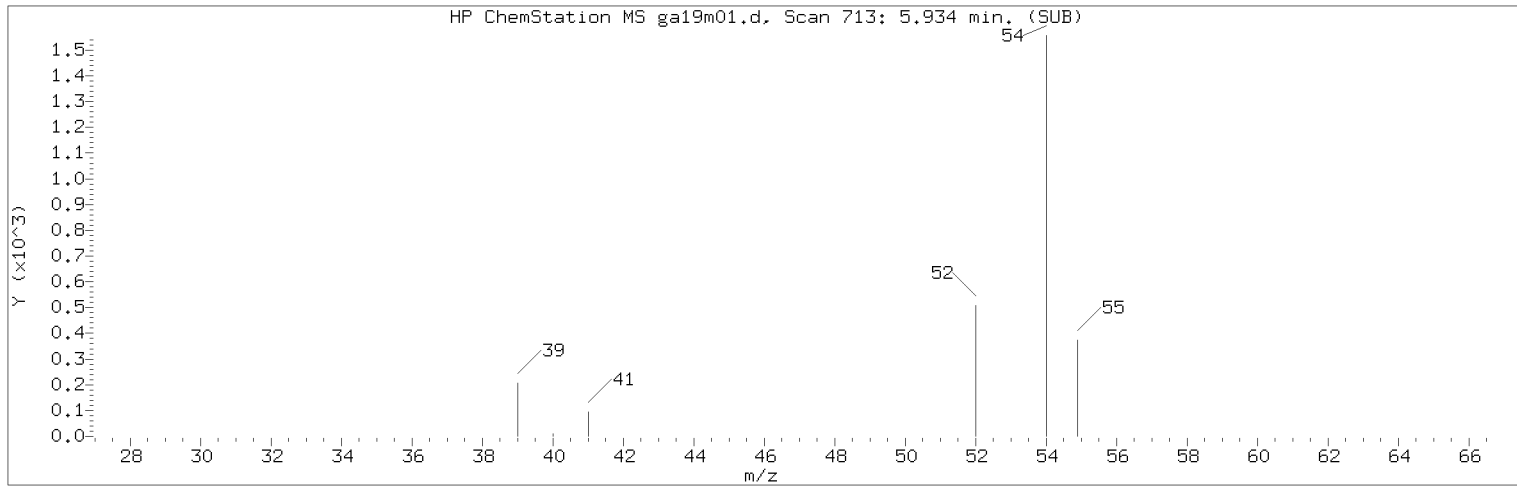
On-column Amount (ng) : 50.0000

Integration start scan : 362 Integration stop scan: 481

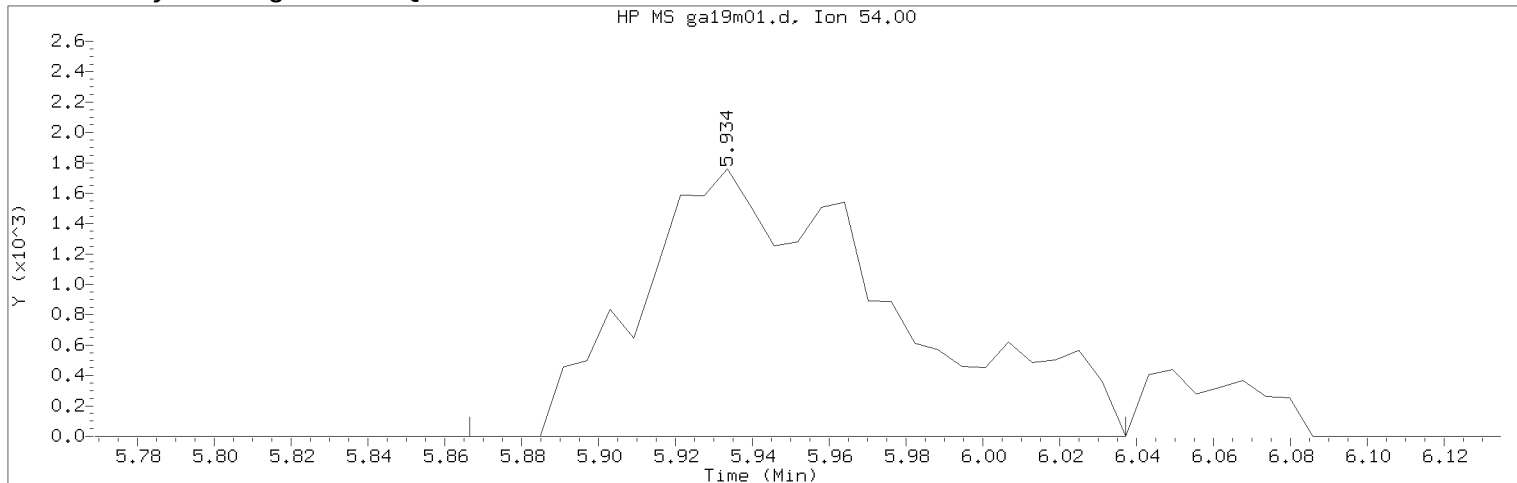
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature userF1D52mB407378 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 42

Compound Name : Propionitrile

Scan Number : 713

Retention Time (minutes): 5.934

Quant Ion : 54.00

Area (flag) : 8036M

On-Column Amount (ng) : 1.6157

Integration start scan : 701

Integration stop scan: 729

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

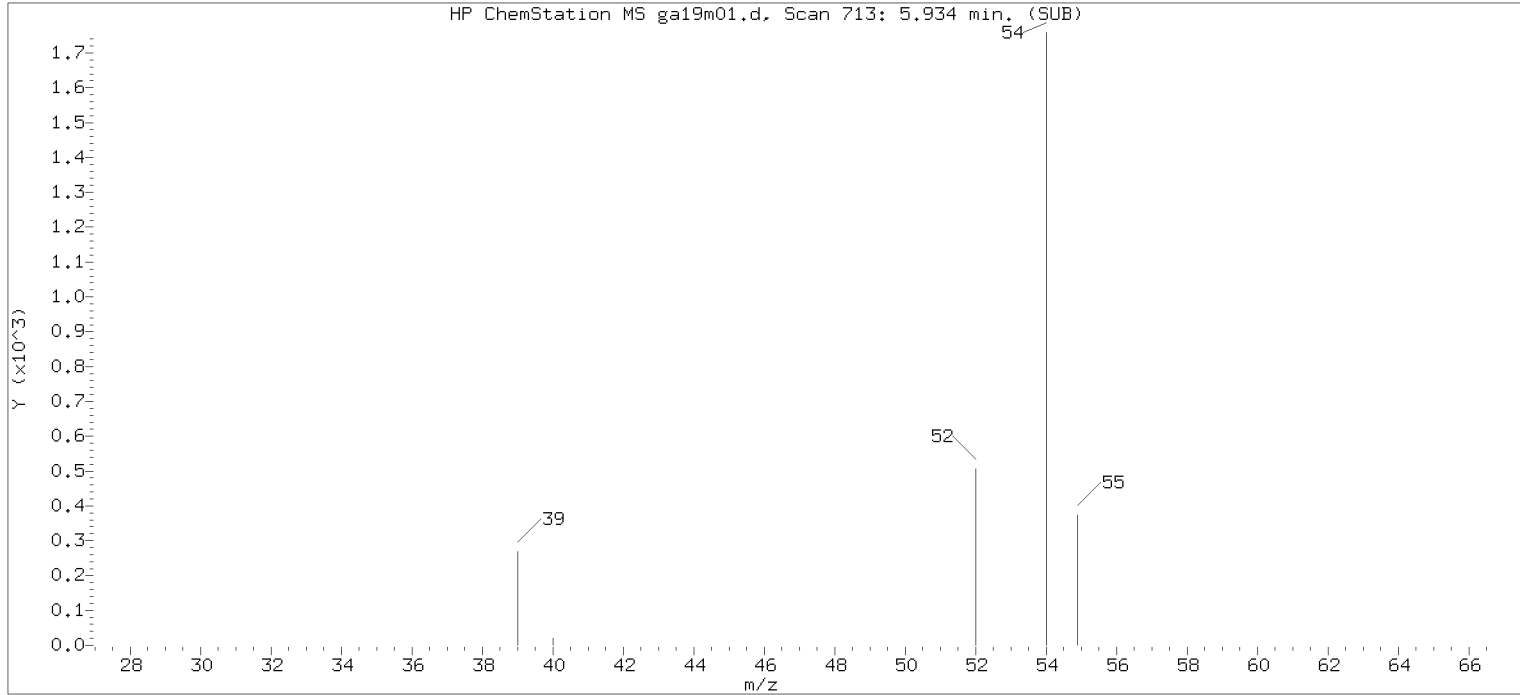
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

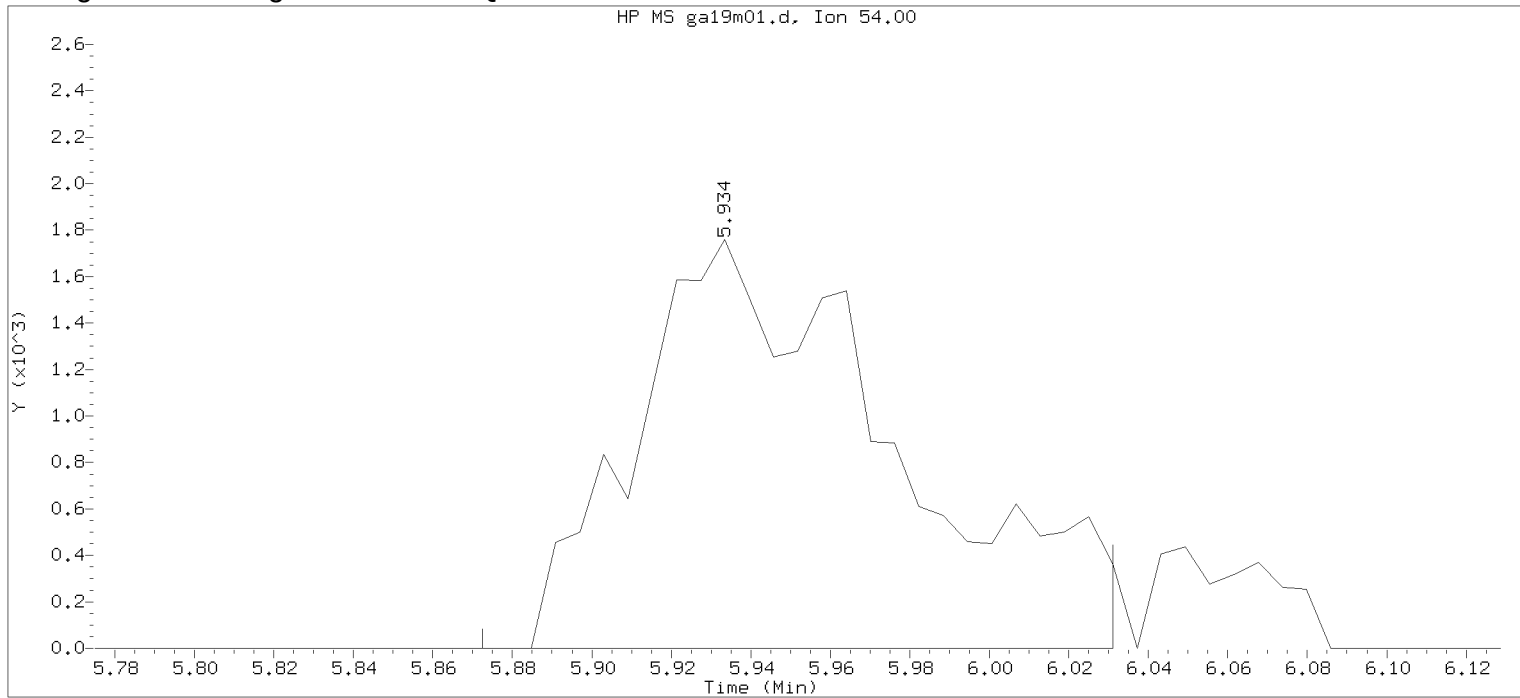
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 42

Compound Name : Propionitrile

Scan Number : 713

Retention Time (minutes): 5.934

Quant Ion : 54.00

Area : 7970

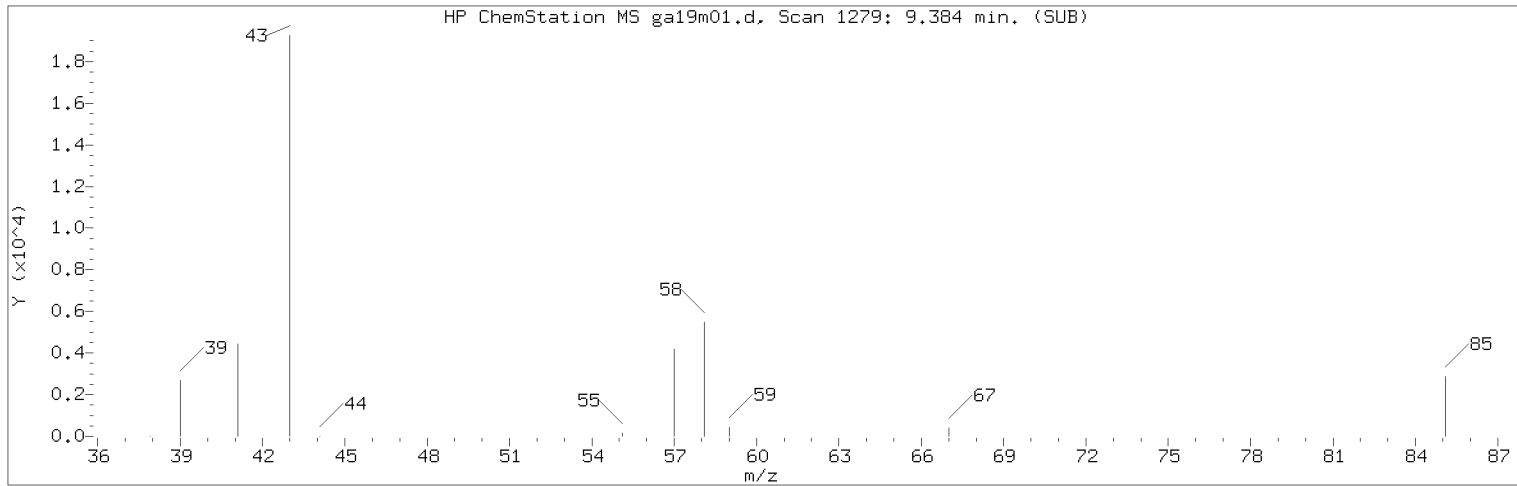
On-column Amount (ng) : 1.6340

Integration start scan : 702 Integration stop scan: 728

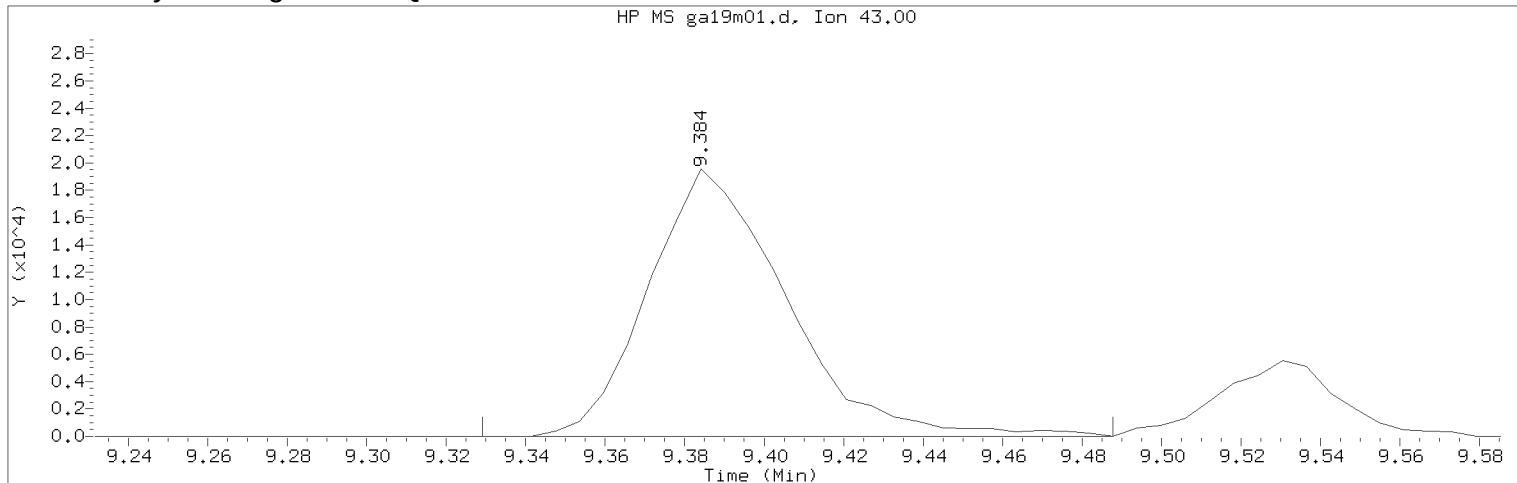
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature user FID52mBkg7380 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 46864M

On-Column Amount (ng) : 0.9483

Integration start scan : 1269

Integration stop scan: 1295

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

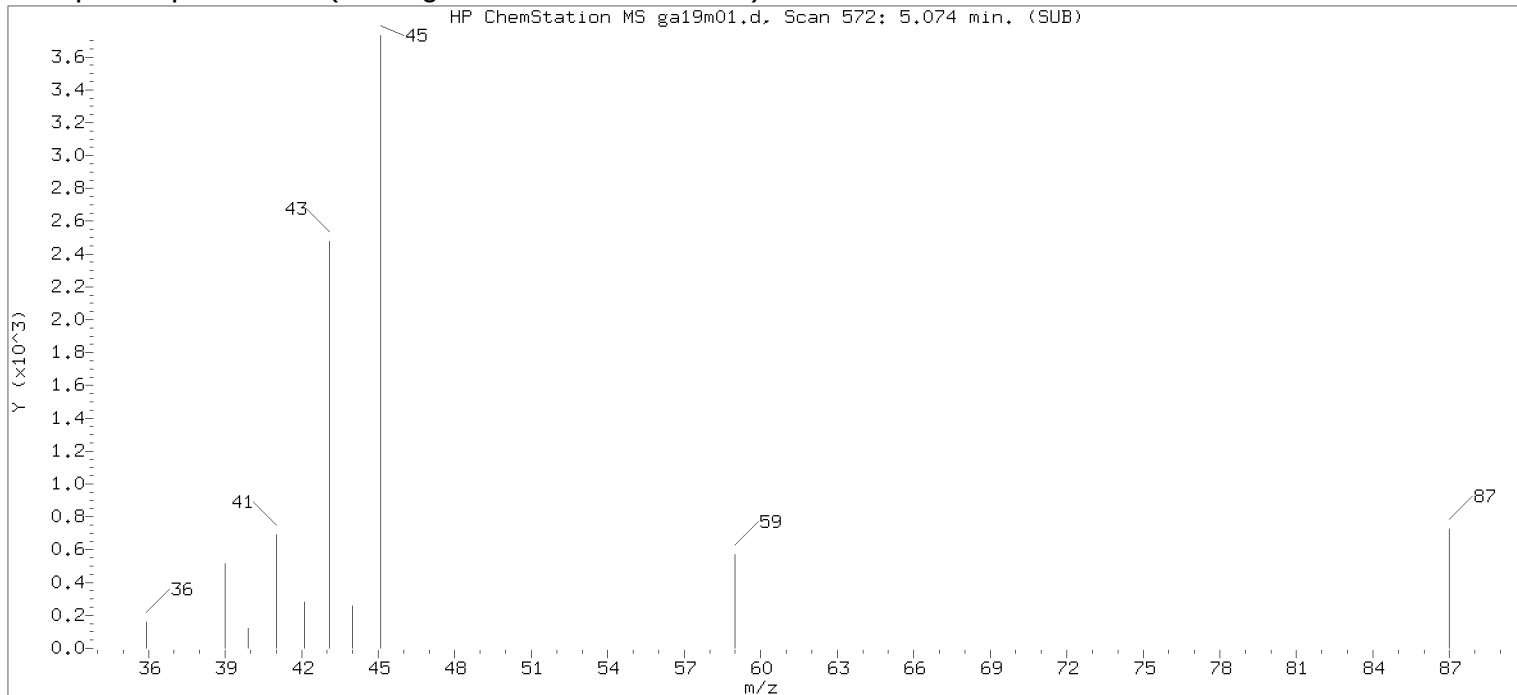
on 04/19/2018 at 20:50.

Target 3.5 esignature user ID: msk07970

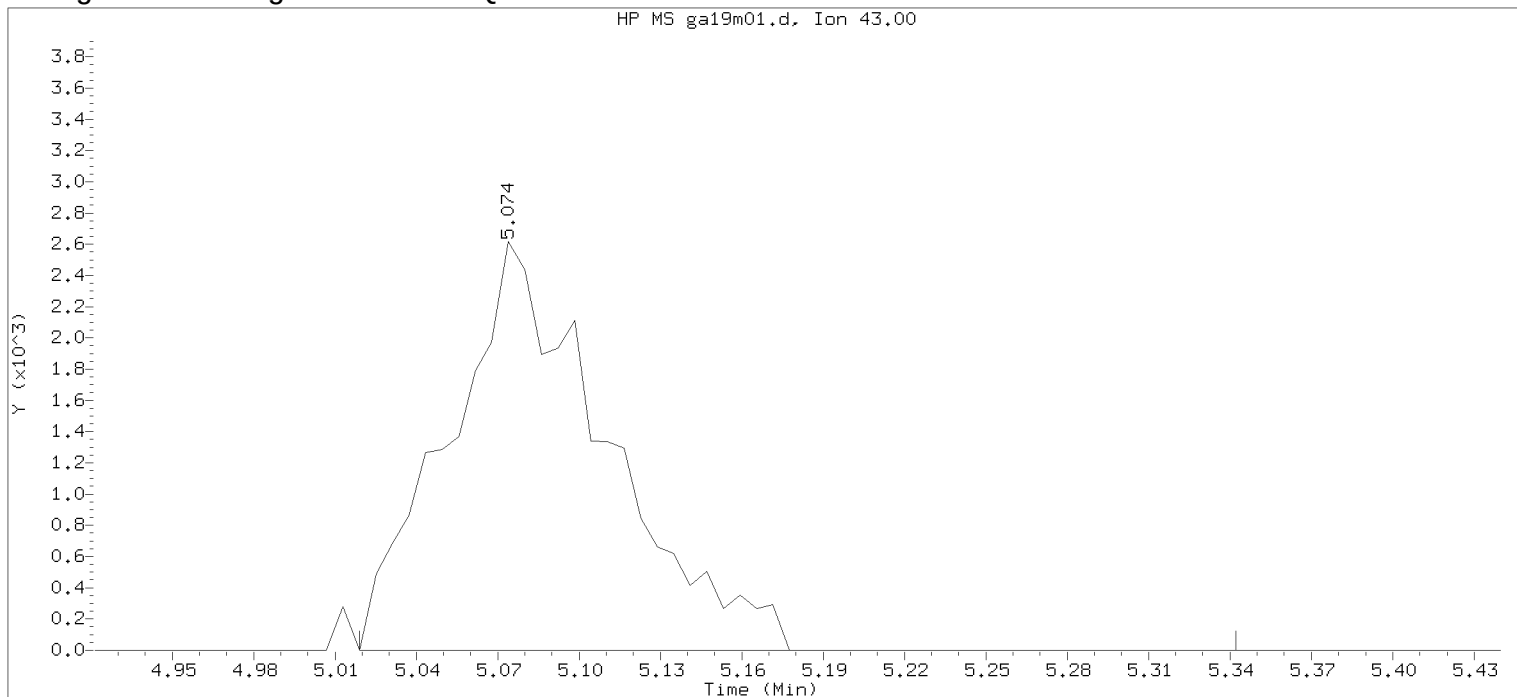
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 572

Retention Time (minutes): 5.074

Quant Ion : 43.00

Area : 10578

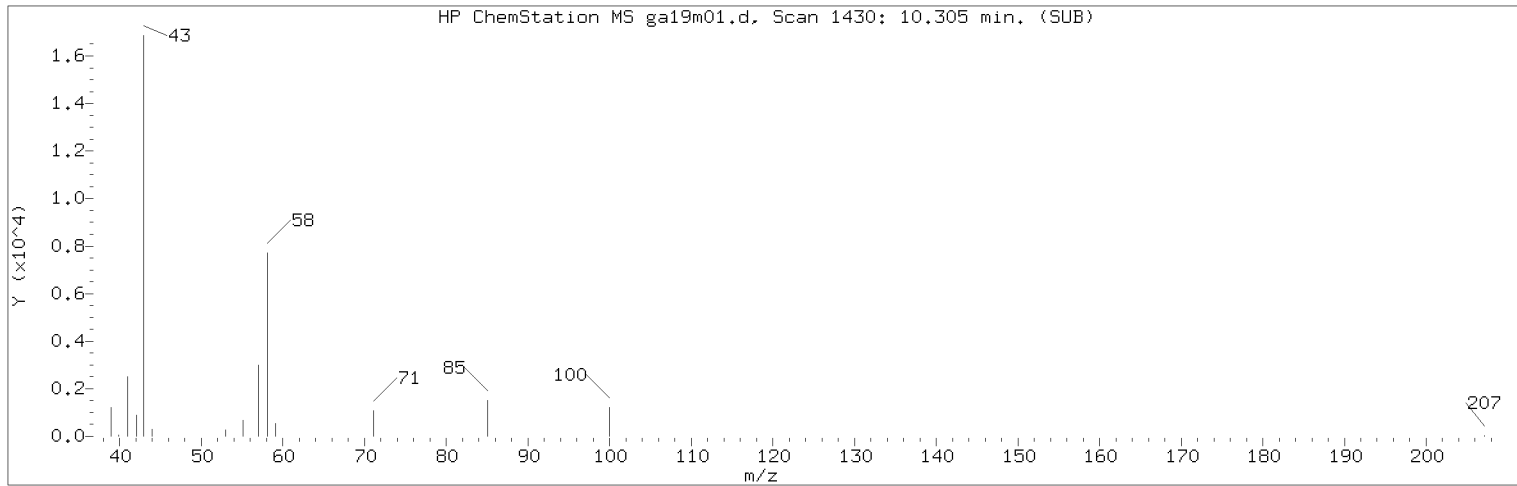
On-column Amount (ng) : 1.0580

Integration start scan : 562 Integration stop scan: 615

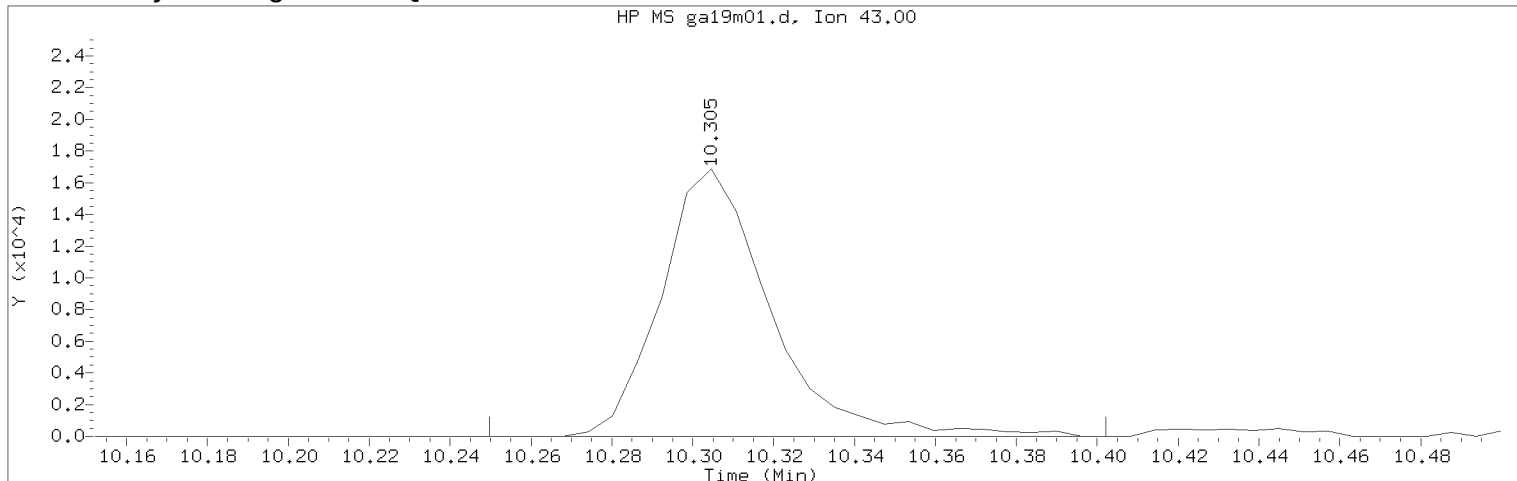
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:50.
Target 3.5 esignature userF1D52mB497382 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 1430
 Retention Time (minutes): 10.305
 Quant Ion : 43.00
 Area (flag) : 31709M
 On-Column Amount (ng) : 0.9129
 Integration start scan : 1420
 Y at integration start : 0

Integration stop scan: 1445
 Y at integration end: 0

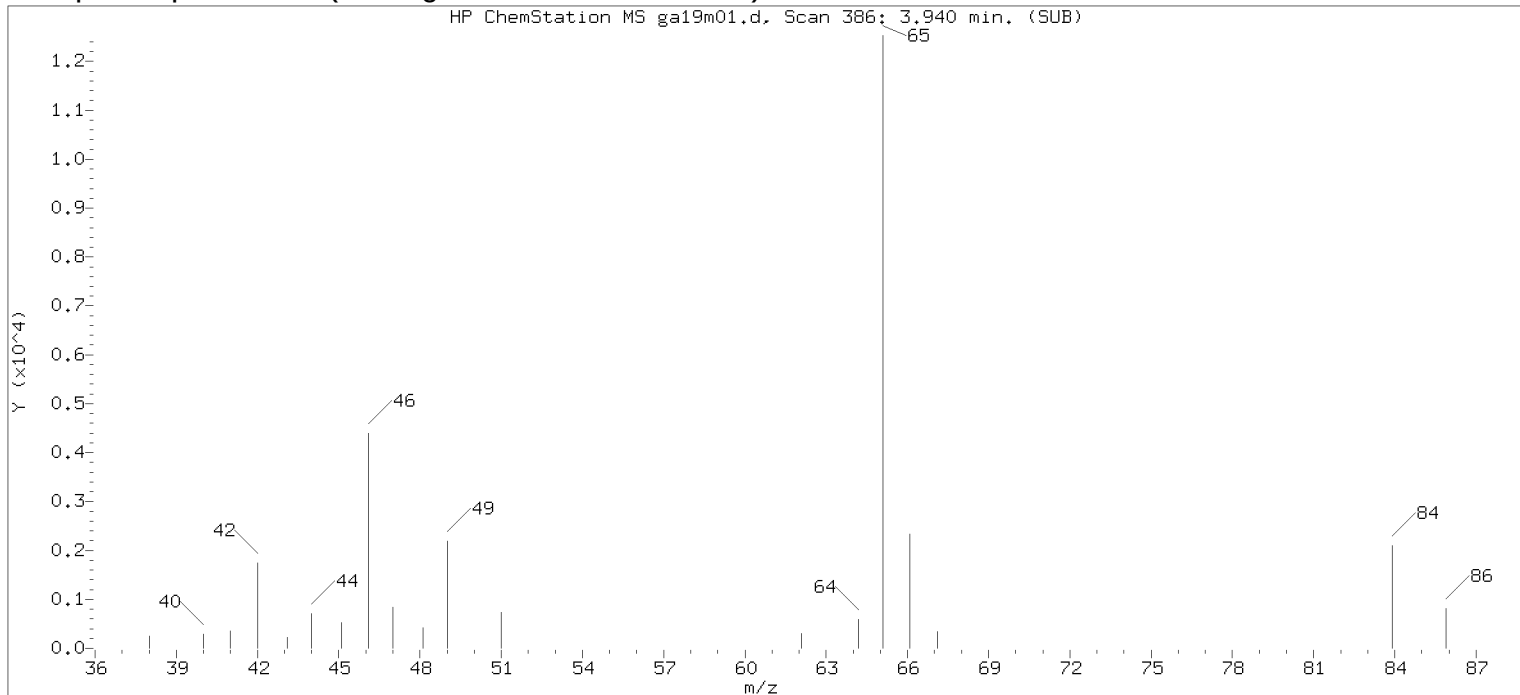
Reason for manual integration: improper integration

Analyst responsible for change:

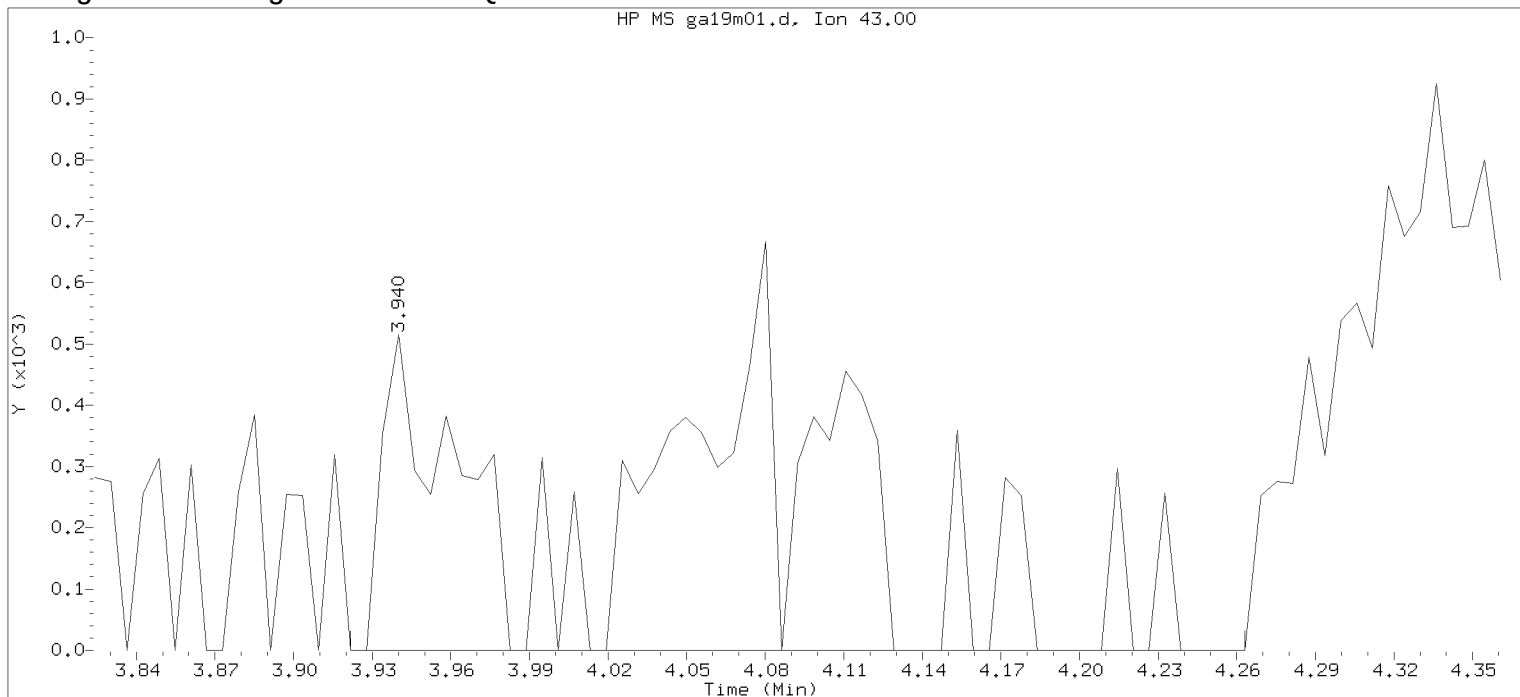
Digitally signed by Matthew S. Krause
 on 04/19/2018 at 20:50.
 Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
 PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

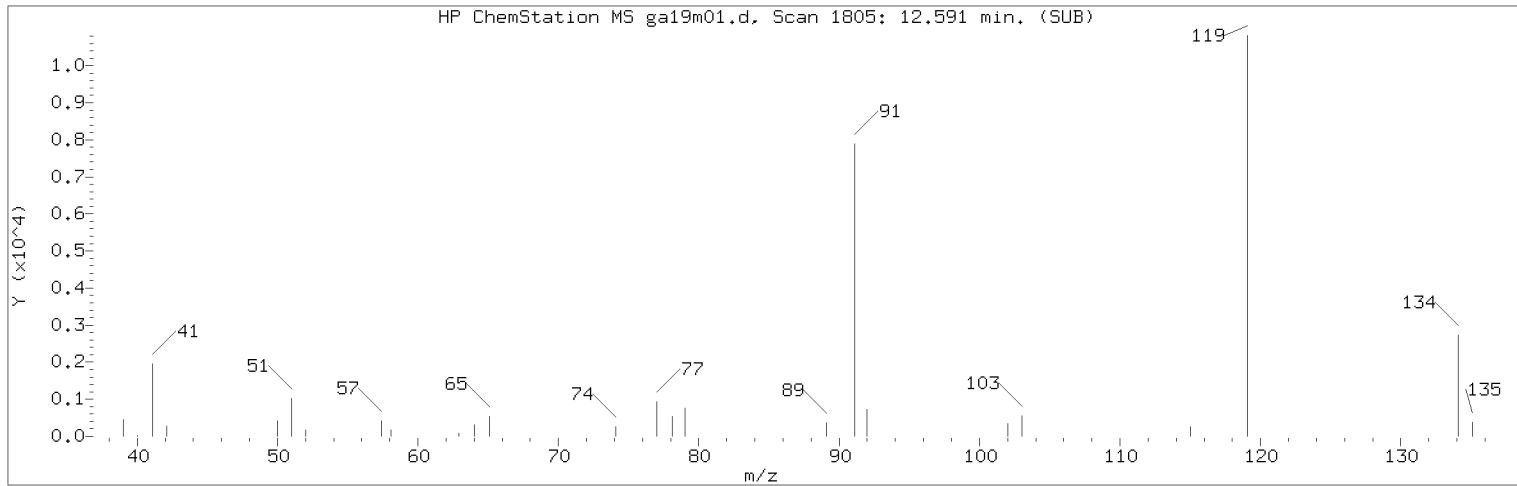
Lab Sample ID: MDL0.1

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 386
 Retention Time (minutes): 3.940
 Quant Ion : 43.00
 Area : 3897
 On-column Amount (ng) : 1.9932
 Integration start scan : 382
 Y at integration start : 0

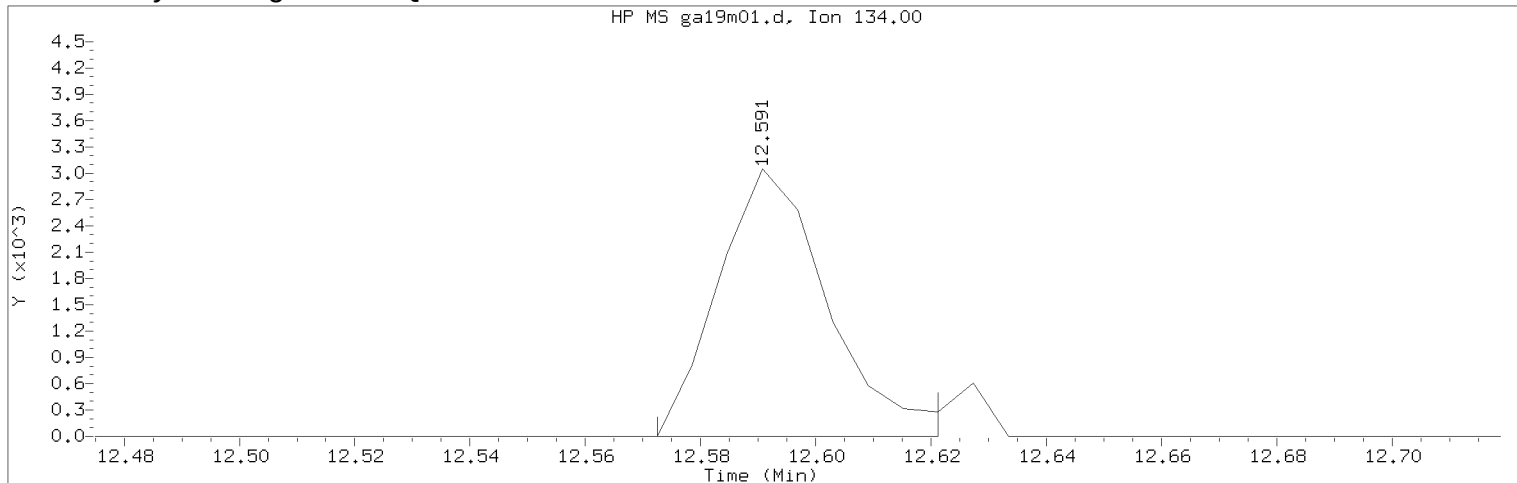
Integration stop scan: 438
 Y at integration end: 0

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 Target 3.5 esignature user FID52mBkg7380 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number	: 125	
Compound Name	: tert-Butylbenzene	
Scan Number	: 1805	
Retention Time (minutes)	: 12.591	
Quant Ion	: 134.00	
Area (flag)	: 4029M	
On-Column Amount (ng)	: 0.0904	
Integration start scan	: 1801	Integration stop scan: 1809
Y at integration start	: 0	Y at integration end: 0

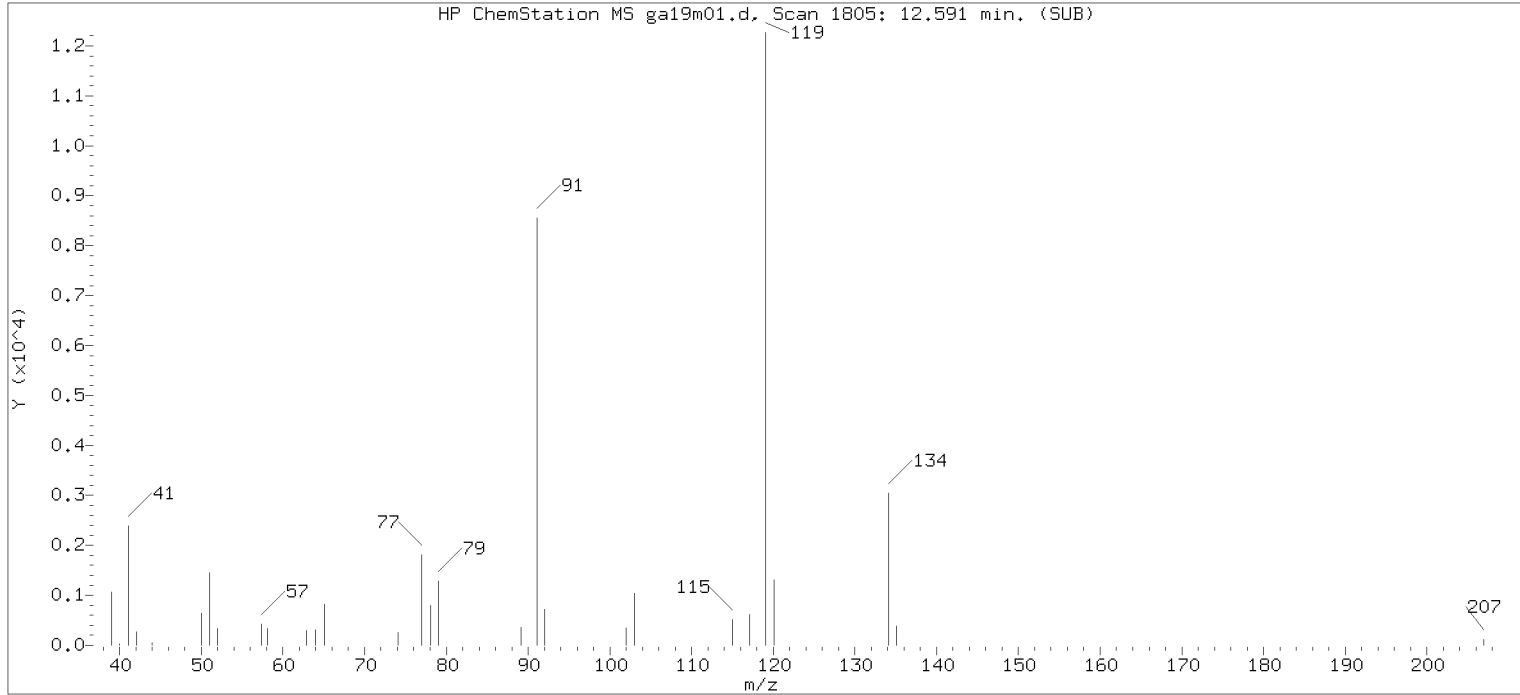
Reason for manual integration: improper integration

Analyst responsible for change:

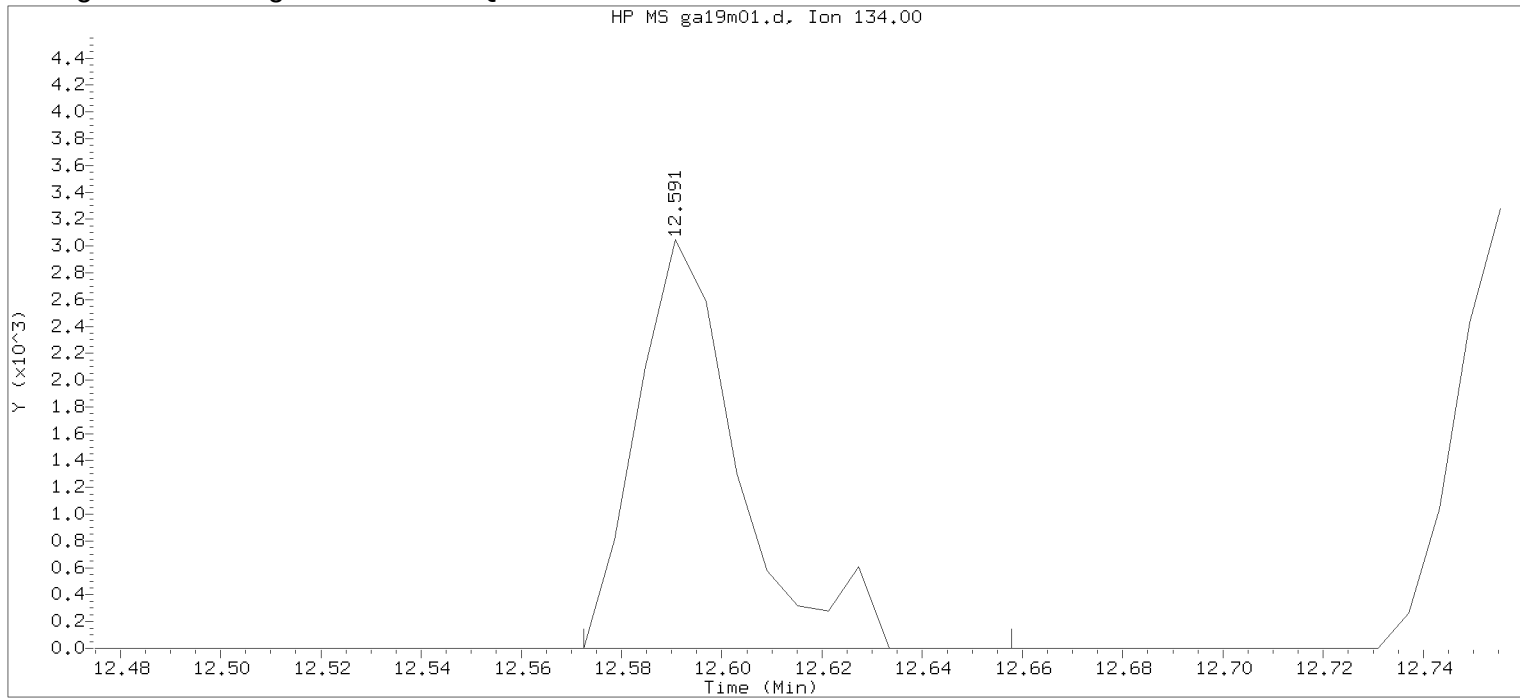
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number : 125

Compound Name : tert-Butylbenzene

Scan Number : 1805

Retention Time (minutes): 12.591

Quant Ion : 134.00

Area : 4252

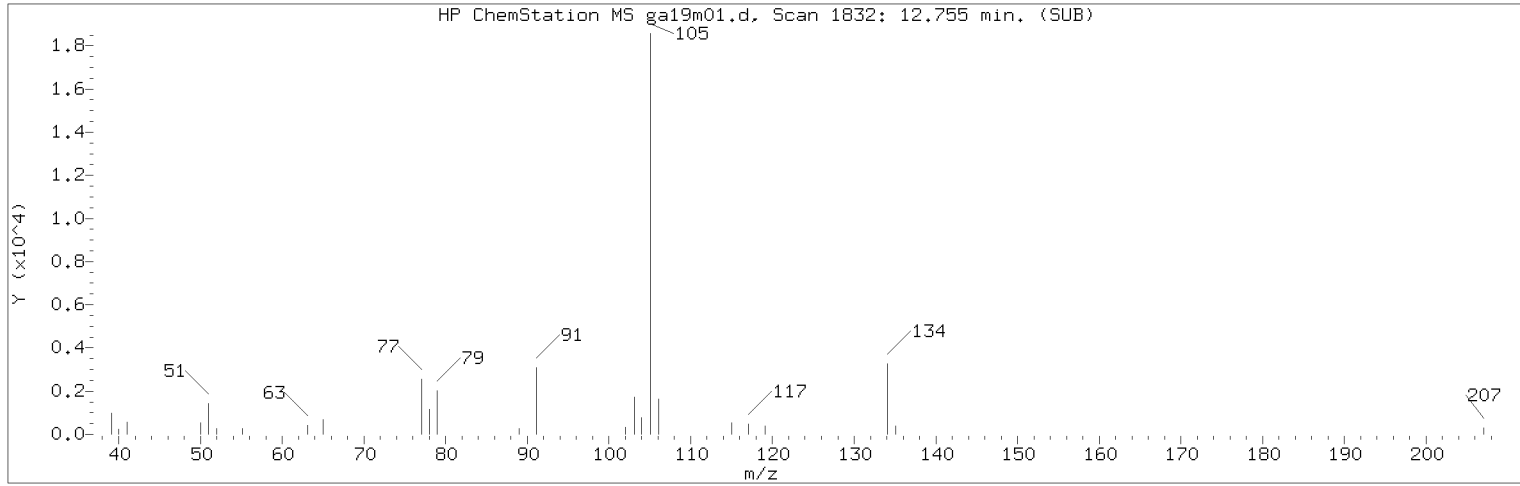
On-column Amount (ng) : 0.0927

Integration start scan : 1801 Integration stop scan: 1815

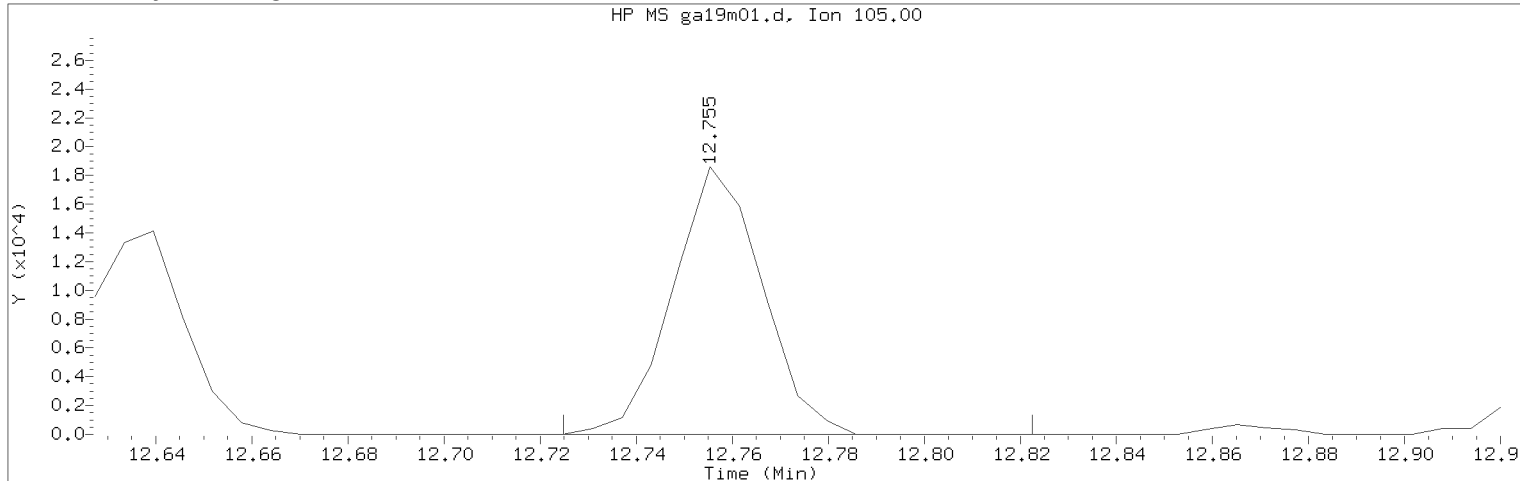
Y at integration start : 0 Y at integration end: 0

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Target 3.5 esignature userF1D52mB497380 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number	: 128	
Compound Name	: sec-Butylbenzene	
Scan Number	: 1832	
Retention Time (minutes)	: 12.755	
Quant Ion	: 105.00	
Area (flag)	: 23947M	
On-Column Amount (ng)	: 0.0883	
Integration start scan	: 1826	Integration stop scan: 1842
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

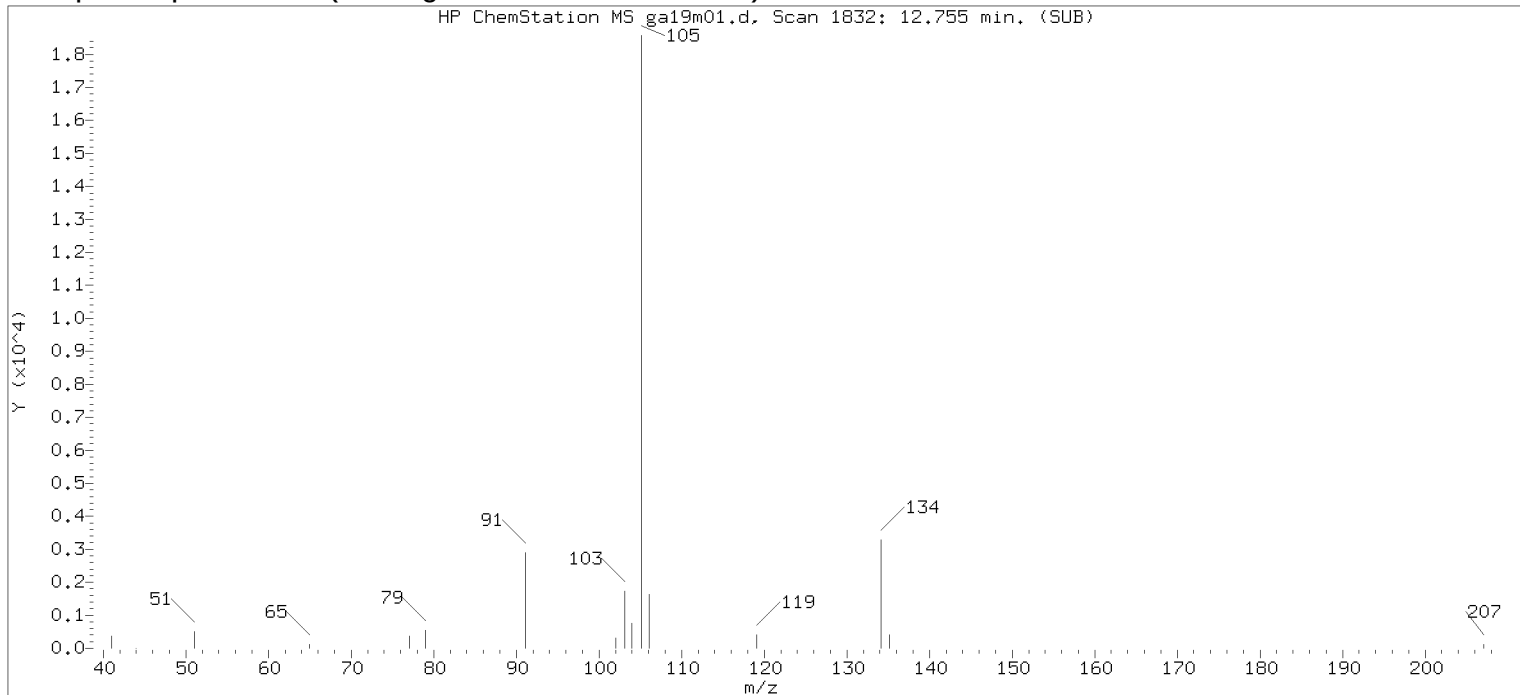
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

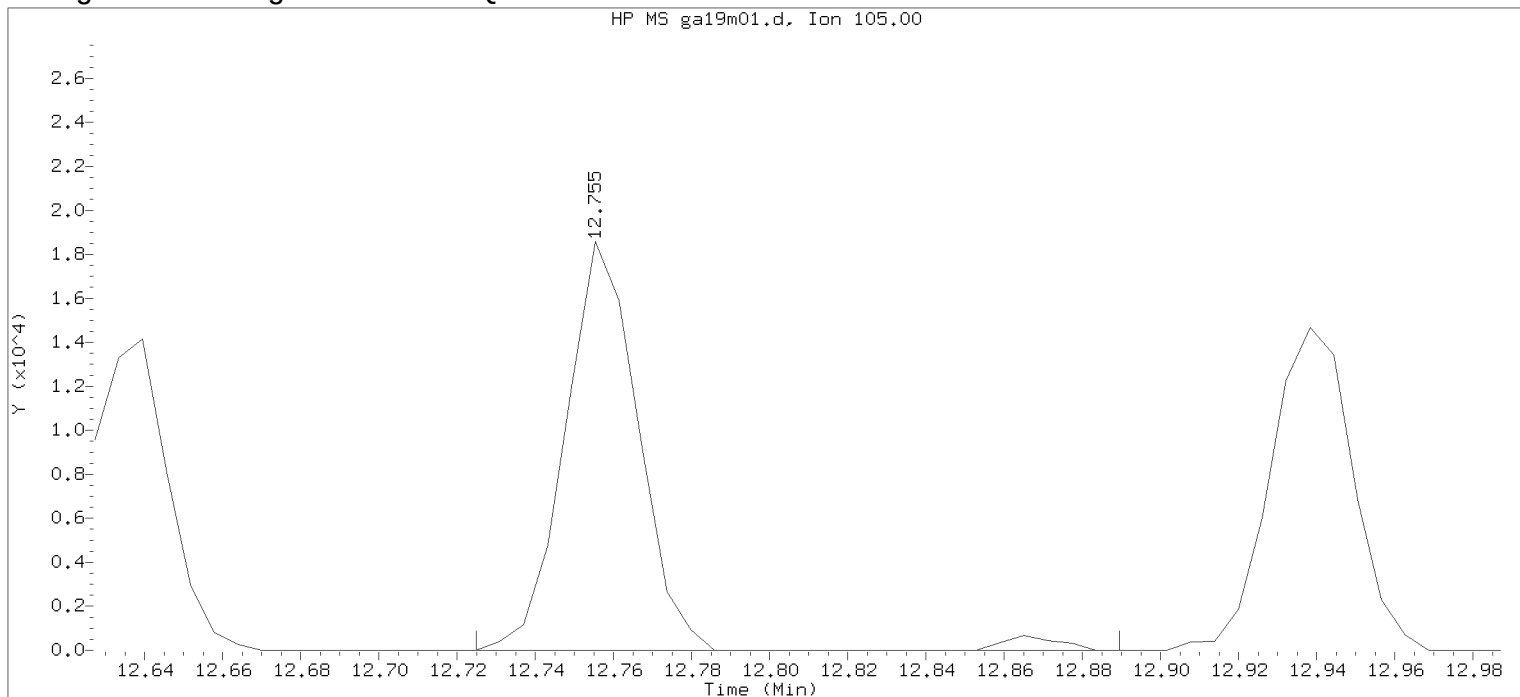
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

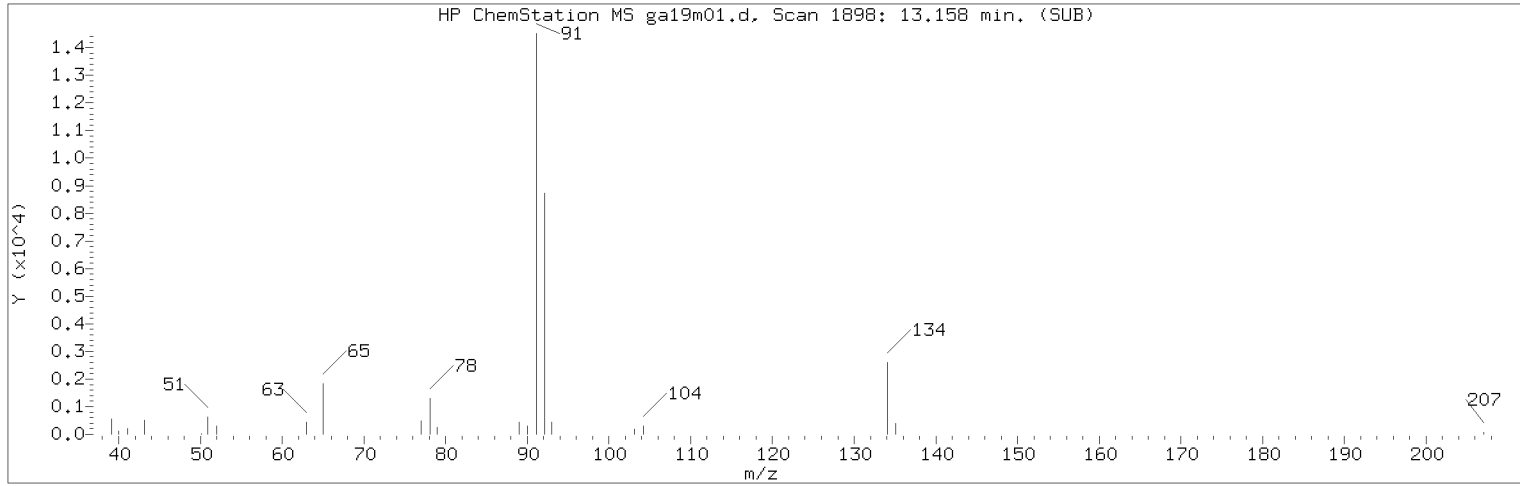
Lab Sample ID: MDL0.1

Compound Number : 128
 Compound Name : sec-Butylbenzene
 Scan Number : 1832
 Retention Time (minutes): 12.755
 Quant Ion : 105.00
 Area : 24596
 On-column Amount (ng) : 0.0903
 Integration start scan : 1826
 Y at integration start : 0

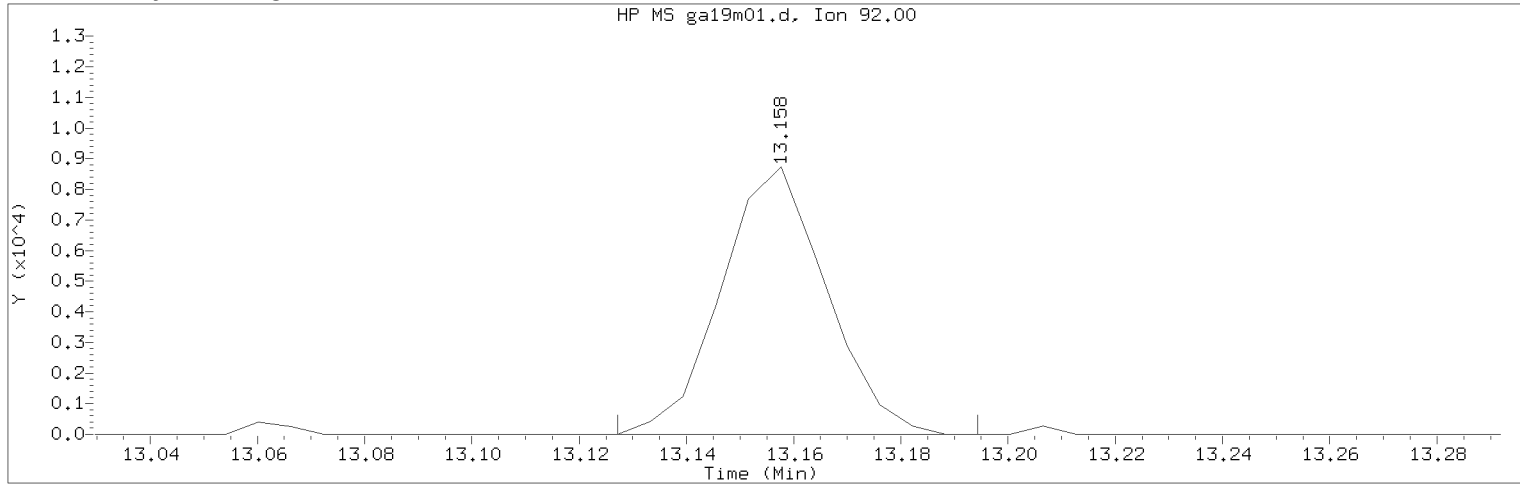
Integration stop scan: 1853
 Y at integration end: 0

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 Target 3.5 esignature userF1D52mB407380 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: MDL0.1

Lab Sample ID: MDL0.1

Compound Number	: 138	
Compound Name	: n-Butylbenzene	
Scan Number	: 1898	
Retention Time (minutes)	: 13.158	
Quant Ion	: 92.00	
Area (flag)	: 11824M	
On-Column Amount (ng)	: 0.0928	
Integration start scan	: 1892	Integration stop scan: 1903
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

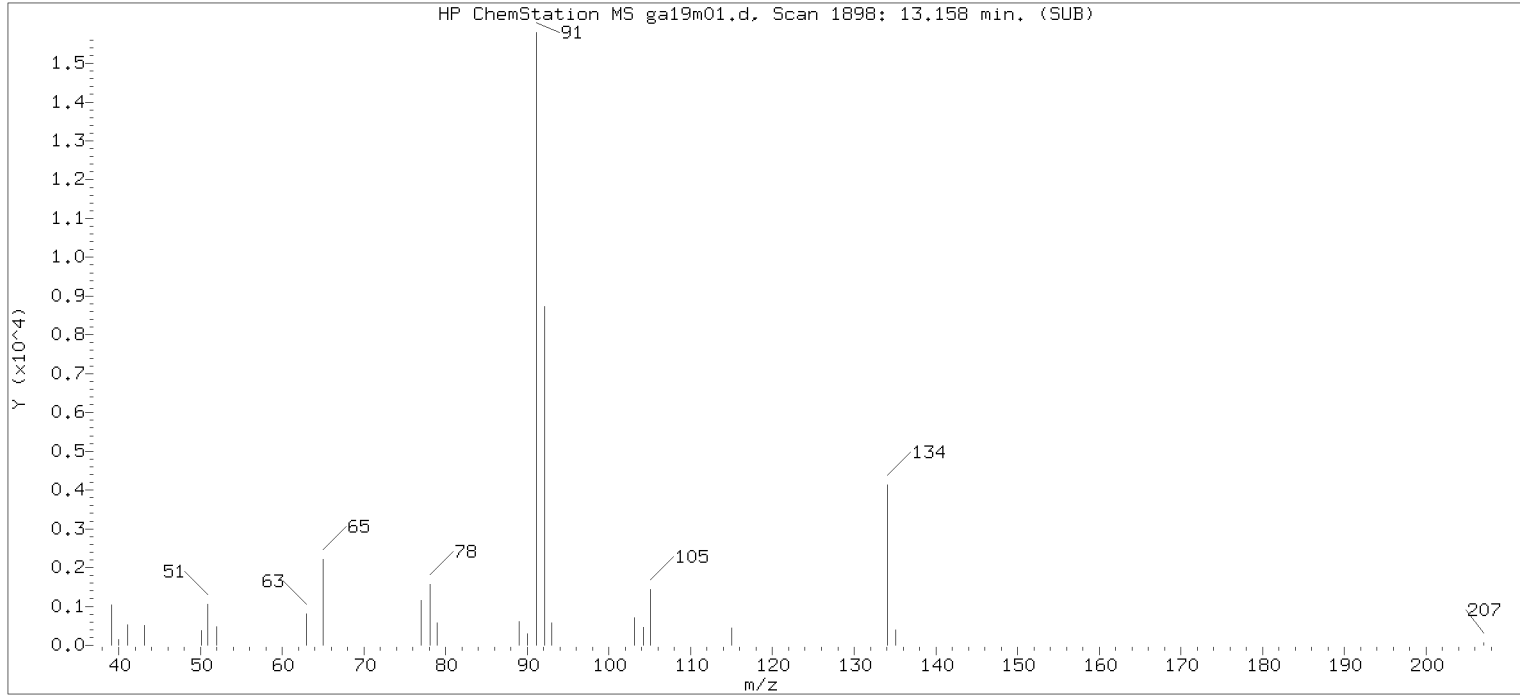
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:50.
Target 3.5 esignature user ID: msk07970

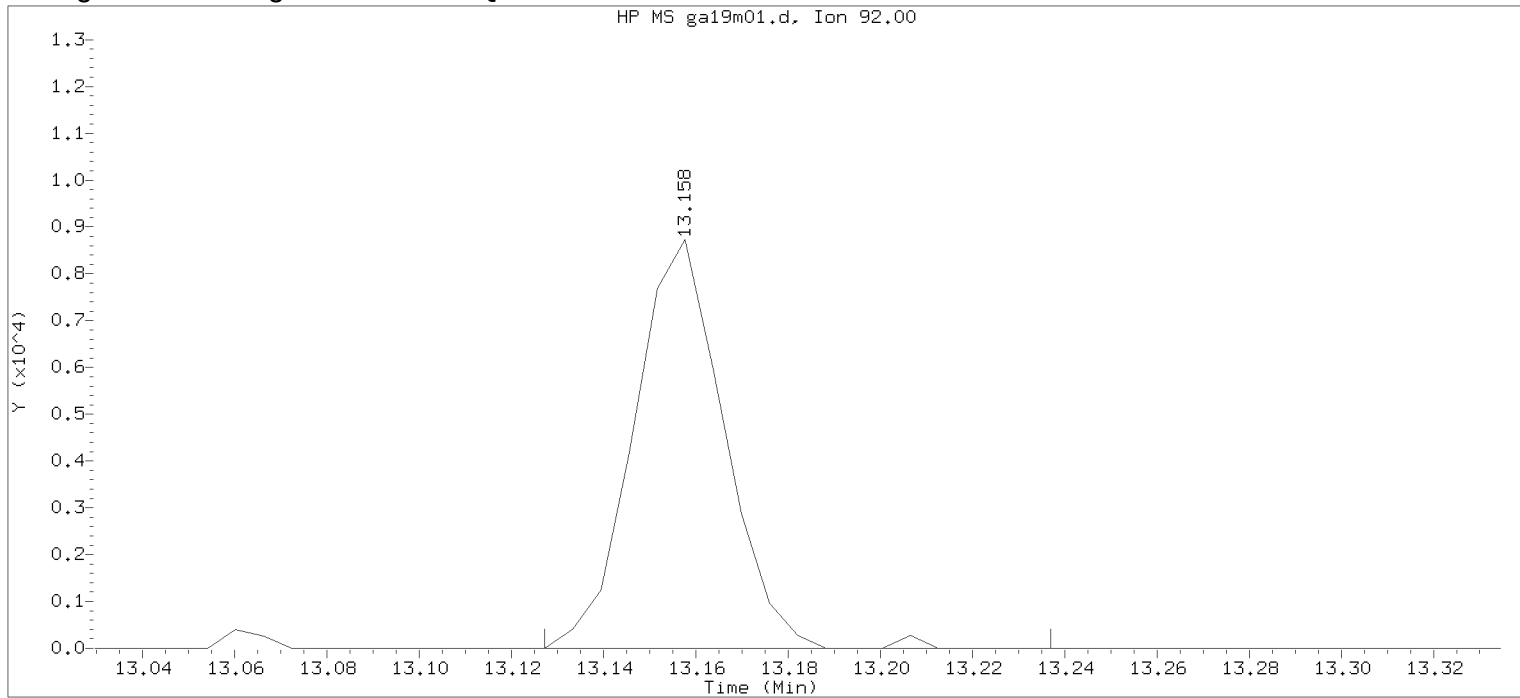
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19m01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 14:59

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:15 Automation

Sample Name: MDL0.1

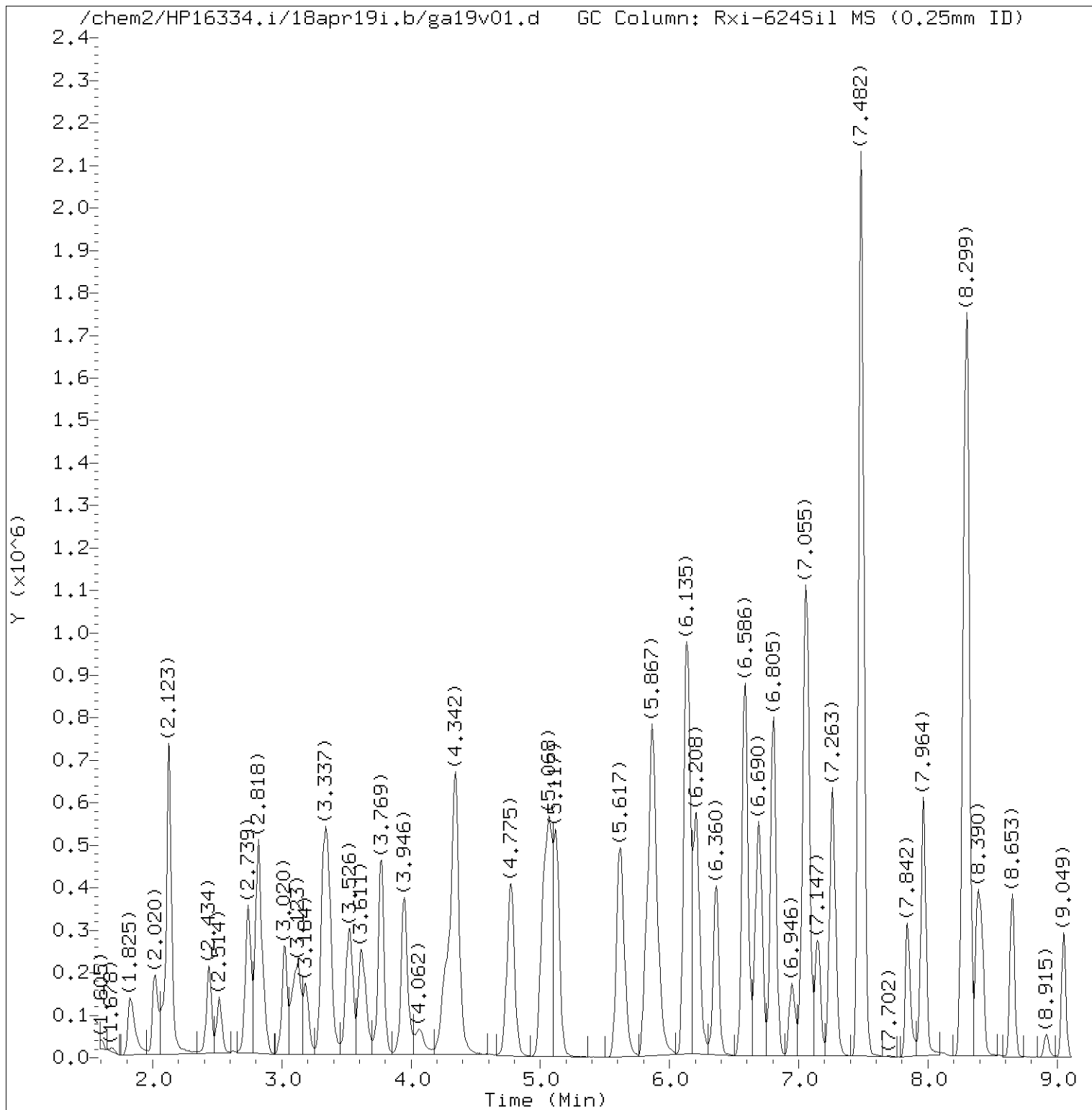
Lab Sample ID: MDL0.1

Compound Number : 138
 Compound Name : n-Butylbenzene
 Scan Number : 1898
 Retention Time (minutes): 13.158

Quant Ion : 92.00
 Area : 11923
 On-column Amount (ng) : 0.0936

Integration start scan : 1892 Integration stop scan: 1910
 Y at integration start : 0 Y at integration end: 0

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 Target 3.5 esignature user F1D52mB407300 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d
Injection date and time: 19-APR-2018 15:21

Instrument ID: HP16334.i
Analyst ID: JKH09052

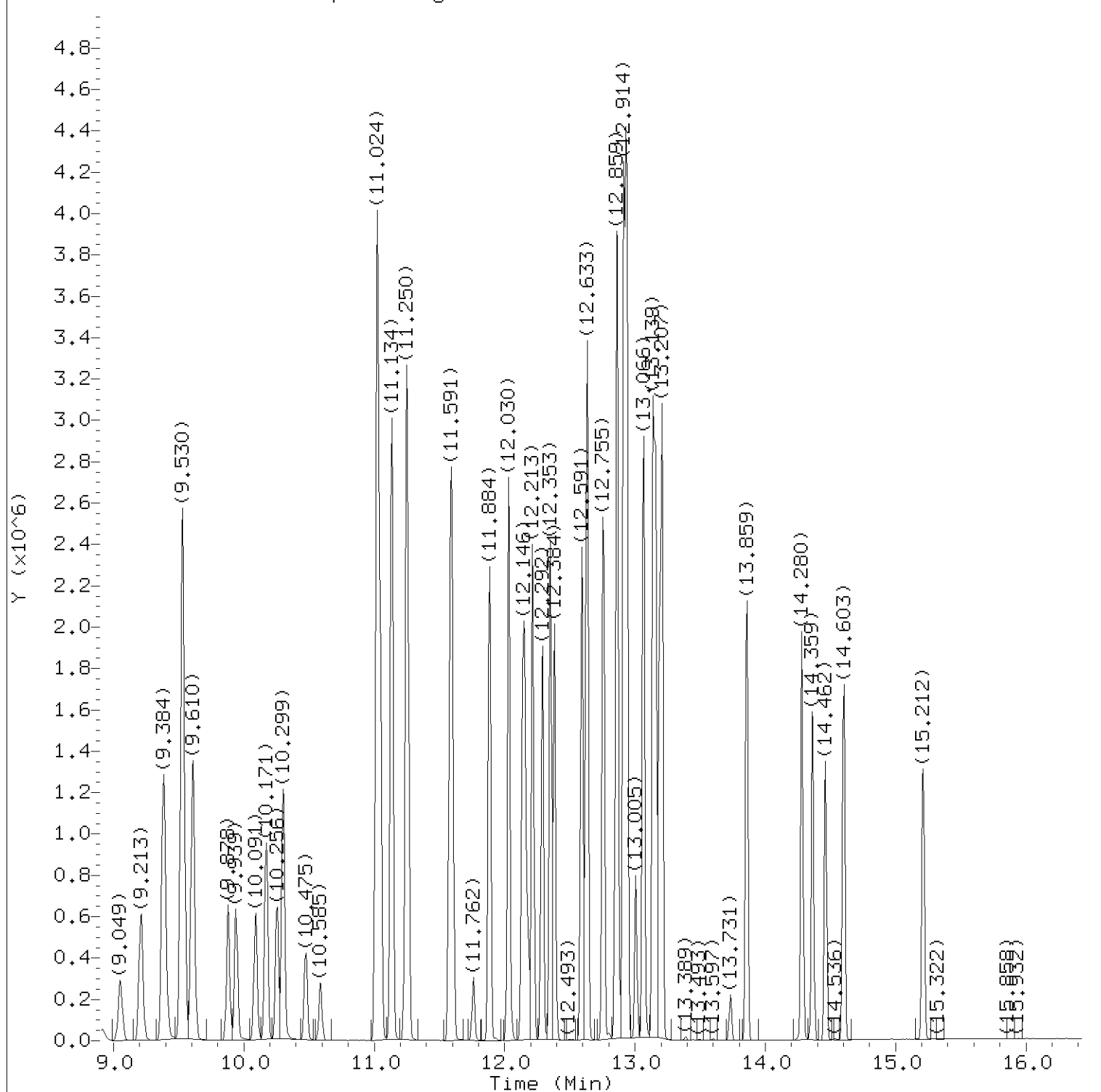
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:15
Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970
FKP52 Page 391 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d
Injection date and time: 19-APR-2018 15:21

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:15
Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970
FKP52 Page 392 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d
 Injection date and time: 19-APR-2018 15:21

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:15
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.825	85	315819	4.194
2) Chloromethane	(2)	2.020	50	328840	4.337
5) Vinyl Chloride	(2)	2.123	62	301861	4.639
6) 1,3-Butadiene	(2)	2.123	39	487833M	3.523
7) Bromomethane	(2)	2.434	94	209114	4.806
8) Chloroethane	(2)	2.514	64	173069	4.669
9) Dichlorofluoromethane	(2)	2.739	67	438126	4.901
10) Trichlorofluoromethane	(2)	2.800	101	421677M	4.969
11) Ethyl ether	(2)	3.020	59	223931	5.294
12) Freon 123a	(2)	3.117	67	310010	5.159
13) Acrolein	(1)	3.184	56	258970	37.682
15) 1,1-Dichloroethene	(2)	3.318	96	214820	5.170
14) Acetone	(1)	3.337	43	401794	36.183
16) Freon 113	(2)	3.361	101	231202	4.935
17) Methyl Iodide	(2)	3.507	142	382467	4.739
18) Carbon Disulfide	(2)	3.611	76	742740	4.505
21) Methyl Acetate	(1)	3.739	43	147671M	4.718
22) Allyl Chloride	(2)	3.769	41	489975	5.082
23) Methylene Chloride	(2)	3.946	84	252305	4.490
26)*t-Butyl Alcohol-d10	(1)	3.946	65	198928	50.000
28) t-Butyl Alcohol	(1)	4.062	59	185169M	49.192
29) Acrylonitrile	(1)	4.263	53	326449	26.425
30) Methyl Tertiary Butyl Ether	(2)	4.324	73	716465	4.951
31) trans-1,2-Dichloroethene	(2)	4.349	96	248133	5.138
32) n-Hexane	(2)	4.769	57	404087	4.955
33) 1,1-Dichloroethane	(2)	5.019	63	499389	5.070
34) di-Isopropyl Ether	(2)	5.068	45	1045066	5.181
35) 2-Chloro-1,3-Butadiene	(2)	5.123	53	455521	5.052
37) Ethyl t-butyl ether	(2)	5.617	59	893072	5.043
38) 2-Butanone	(1)	5.818	43	742404	38.857
39) cis-1,2-Dichloroethene	(2)	5.867	96	285053	5.263
41) 2,2-Dichloropropane	(2)	5.885	77	413044	5.113
42) Propionitrile	(1)	5.921	54	178540	37.794
40) 1,2-Dichloroethene (Total)	(2)		96	533186	10.401
45) Methacrylonitrile	(1)	6.135	67	586127	39.150
47) Bromochloromethane	(2)	6.208	128	125163	5.033
48) Tetrahydrofuran	(1)	6.208	71	115408	25.376
49) Chloroform	(2)	6.360	83	475791	5.052

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 3

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 on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

FKP52 Page 393 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d
 Injection date and time: 19-APR-2018 15:21

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 19-APR-2018 20:15
 Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
51) 1,1,1-Trichloroethane	(2)	6.586	97	402687	5.062
50)\$Dibromofluoromethane	(2)	6.586	113	505912	10.021
52) Cyclohexane	(2)	6.690	56	489634	5.132
54) Carbon Tetrachloride	(2)	6.805	117	329477	5.099
55) 1,1-Dichloropropene	(2)	6.805	75	368339	4.966
56) Isobutyl Alcohol	(1)	6.946	41	182591	122.049
57)\$1,2-Dichloroethane-d4	(2)	7.043	102	109267	10.213
58) Benzene	(2)	7.068	78	1035864	5.059
59) 1,2-Dichloroethane	(2)	7.147	62	349539	4.822
60) t-Amyl methyl ether	(2)	7.263	73	766564	5.101
63)*Fluorobenzene	(2)	7.482	96	2007665	10.000
62) n-Heptane	(2)	7.494	43	496857	5.064
65) n-Butanol	(1)	7.842	56	305112	257.675
67) Trichloroethene	(2)	7.964	95	272217	5.035
69) Methylcyclohexane	(2)	8.281	83	472864	5.151
70) 1,2-Dichloropropane	(2)	8.305	63	295484	5.199
71) Methyl Methacrylate	(1)	8.384	69	150670	5.284
72) 1,4-Dioxane	(1)	8.390	88	31438M	152.352
73) Dibromomethane	(2)	8.415	93	137829	5.082
74) Bromodichloromethane	(2)	8.653	83	339135	5.096
76) 2-Nitropropane	(1)	8.915	41	45660	4.675
80) cis-1,3-Dichloropropene	(2)	9.213	75	418567	5.091
81) 4-Methyl-2-Pentanone	(1)	9.384	43	1233176M	26.273
82)\$Toluene-d8	(3)	9.530	98	2042820	9.972
83) Toluene	(3)	9.610	92	657668	5.068
84) trans-1,3-Dichloropropene	(3)	9.878	75	359969	5.114
86) Ethyl Methacrylate	(3)	9.939	69	326245	5.141
88) 1,1,2-Trichloroethane	(3)	10.091	97	201433	5.146
85) 1,3-Dichloropropene (total)	(3)		75	778536	10.205
89) Tetrachloroethene	(3)	10.171	166	304626	5.061
90) 1,3-Dichloropropane	(3)	10.256	76	360612	5.058
91) 2-Hexanone	(1)	10.299	43	891400M	27.021
93) Dibromochloromethane	(3)	10.475	129	221535	5.137
95) 1,2-Dibromoethane	(3)	10.585	107	193498	5.175
97)*Chlorobenzene-d5	(3)	11.018	117	1527466	10.000
98) Chlorobenzene	(3)	11.048	112	746626	5.023
99) 1,1,1,2-Tetrachloroethane	(3)	11.134	131	255407	5.146
100) Ethylbenzene	(3)	11.134	91	1310945	5.084

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Digitally signed by Matthew S. Krause
 on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

FKP52 Page 394 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d
Injection date and time: 19-APR-2018 15:21

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 19-APR-2018 20:15
Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
101) m+p-Xylene	(3)	11.250	106	1010773	10.295
104) o-Xylene	(3)	11.579	106	500317	5.083
106) Styrene	(3)	11.597	104	843447	5.221
105) Xylene (Total)	(3)		106	1511090	15.378
107) Bromoform	(3)	11.762	173	124257	5.007
108) Isopropylbenzene	(3)	11.884	105	1322801	5.160
111)\$4-Bromofluorobenzene	(3)	12.030	95	786691	10.033
113) 1,1,2,2-Tetrachloroethane	(4)	12.134	83	258665M	4.992
114) Bromobenzene	(4)	12.146	156	335518	4.931
116) 1,2,3-Trichloropropane	(4)	12.176	110	74833	5.167
117) n-Propylbenzene	(4)	12.213	91	1602450	5.058
119) 2-Chlorotoluene	(4)	12.292	126	311704	4.930
121) 1,3,5-Trimethylbenzene	(4)	12.353	105	1138343	5.018
122) 4-Chlorotoluene	(4)	12.384	126	329945	5.006
125) tert-Butylbenzene	(4)	12.591	134	236981	5.004
126) Pentachloroethane	(4)	12.627	167	189457	5.153
127) 1,2,4-Trimethylbenzene	(4)	12.633	105	1174122	5.074
128) sec-Butylbenzene	(4)	12.755	105	1480479	5.138
131) 1,3-Dichlorobenzene	(4)	12.859	146	668881	4.947
132) p-Isopropyltoluene	(4)	12.865	119	1290934	5.133
133)*1,4-Dichlorobenzene-d4	(4)	12.914	152	881563	10.000
134) 1,4-Dichlorobenzene	(4)	12.932	146	688345	4.994
135) 1,2,3-Trimethylbenzene	(4)	12.938	120	534045	5.133
136) Benzyl Chloride	(4)	13.005	126	96420	5.123
138) n-Butylbenzene	(4)	13.158	92	674364	4.983
139) 1,2-Dichlorobenzene	(4)	13.188	146	638029	5.001
143) 1,2-Dibromo-3-chloropropane	(1)	13.731	155	38191	5.419
144) 1,3,5-Trichlorobenzene	(4)	13.859	180	555700	4.914
145) 1,2,4-Trichlorobenzene	(4)	14.280	180	511638	4.877
146) Hexachlorobutadiene	(4)	14.365	225	272696	4.932
147) Naphthalene	(4)	14.462	128	860975	4.910
148) 1,2,3-Trichlorobenzene	(4)	14.603	180	444089	4.951

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

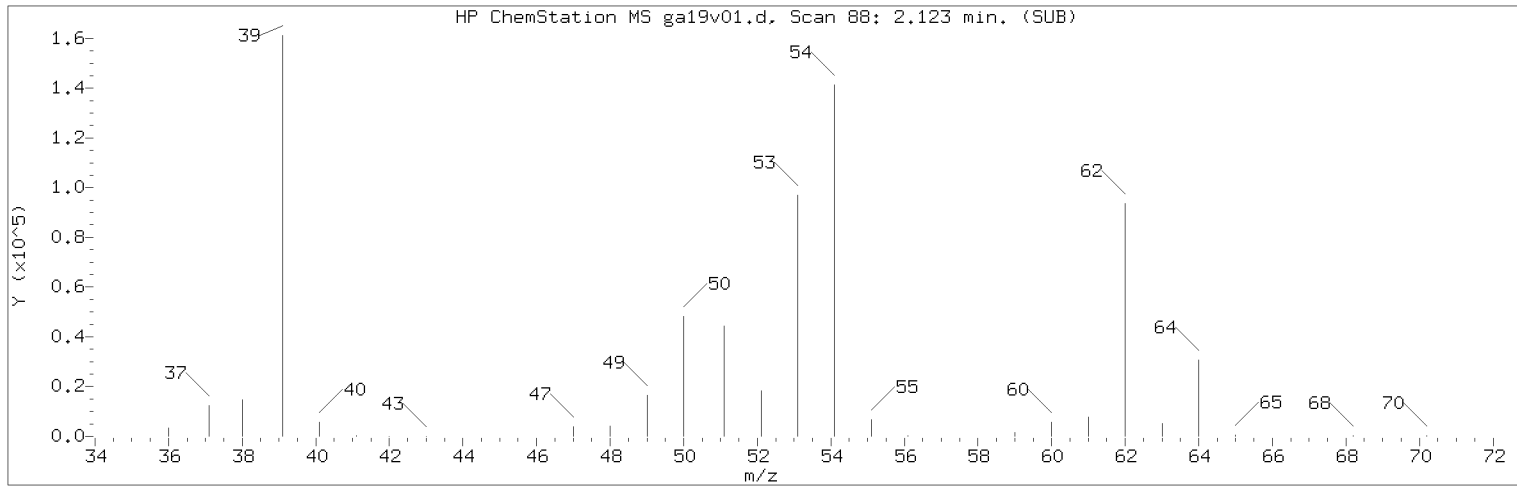
page 3 of 3

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.

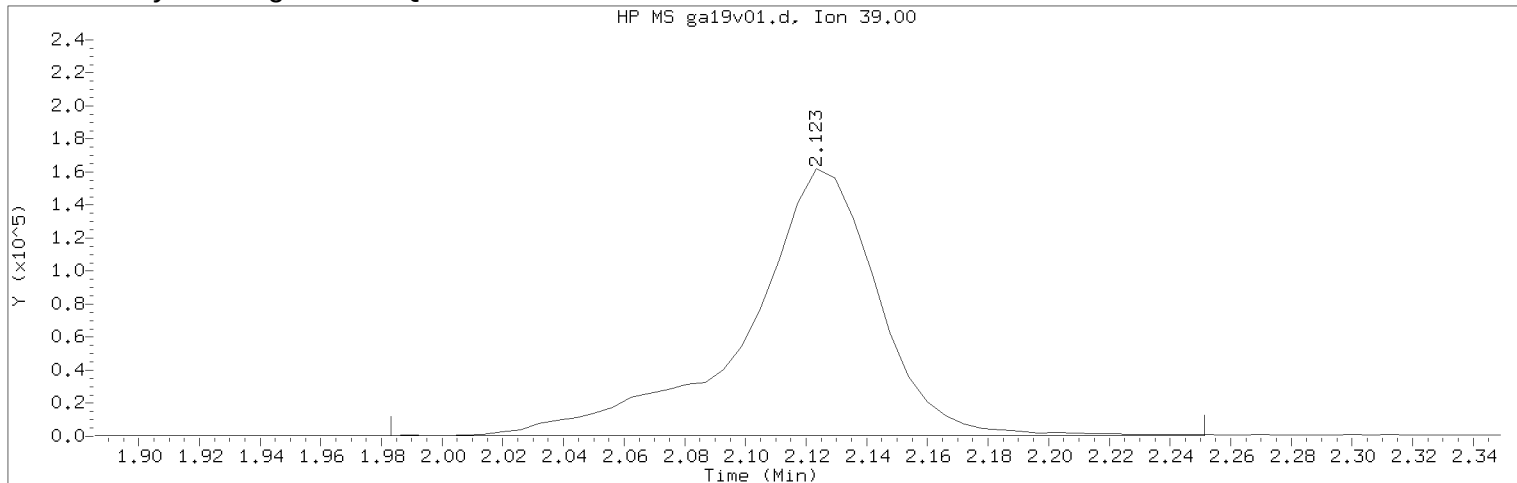
Target 3.5 esignature user ID: msk07970

FKP52 Page 395 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 88	
Retention Time (minutes)	: 2.123	
Quant Ion	: 39.00	
Area (flag)	: 487833M	
On-Column Amount (ng)	: 3.5235	
Integration start scan	: 64	Integration stop scan: 108
Y at integration start	: 333	Y at integration end: 333

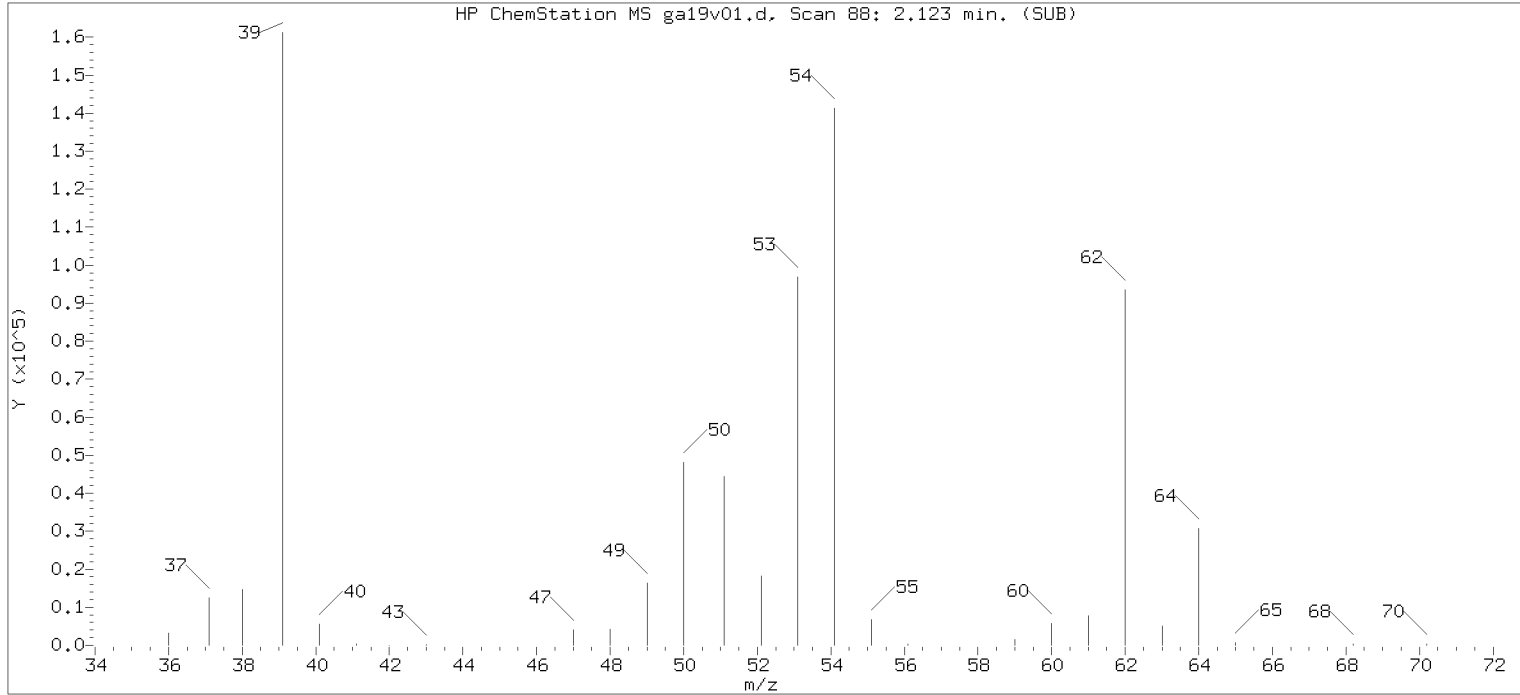
Reason for manual integration: improper integration

Analyst responsible for change:

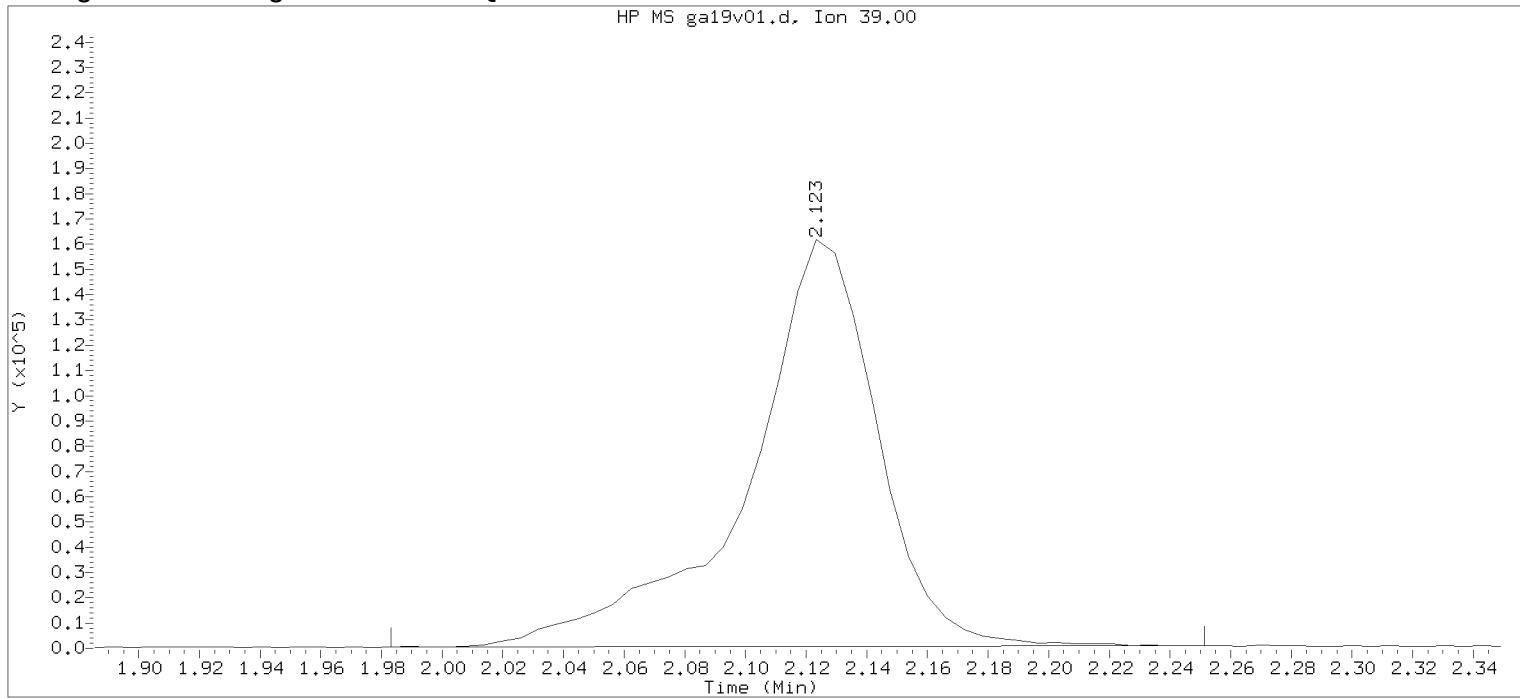
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 88

Retention Time (minutes): 2.123

Quant Ion : 39.00

Area : 481237

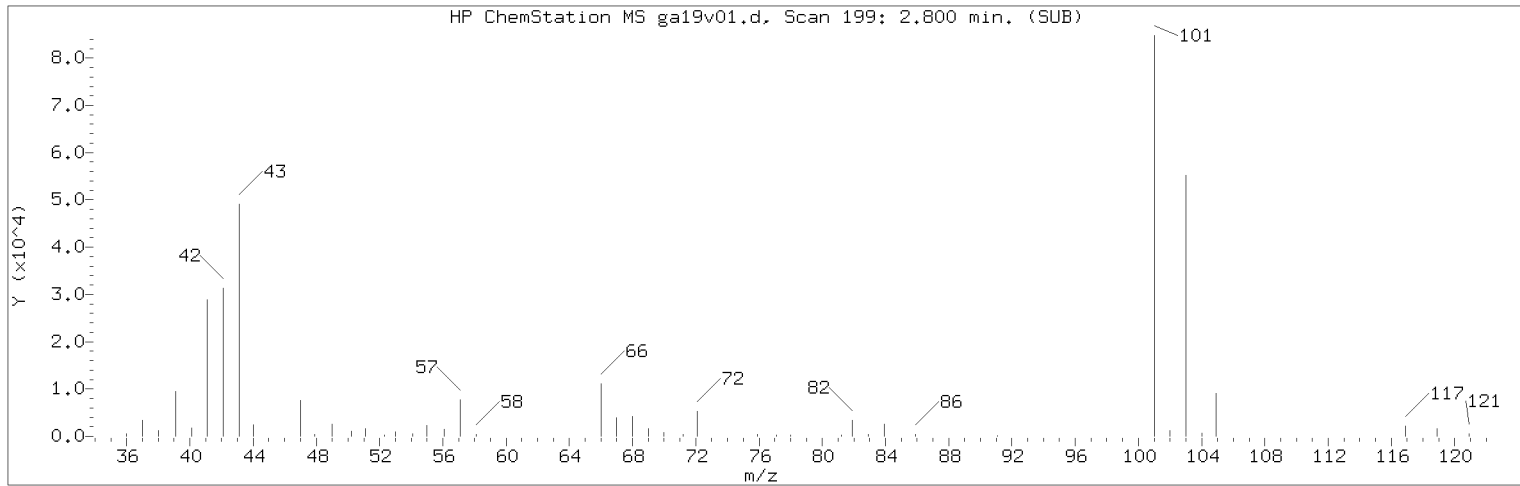
On-column Amount (ng) : 3.7153

Integration start scan : 64 Integration stop scan: 108

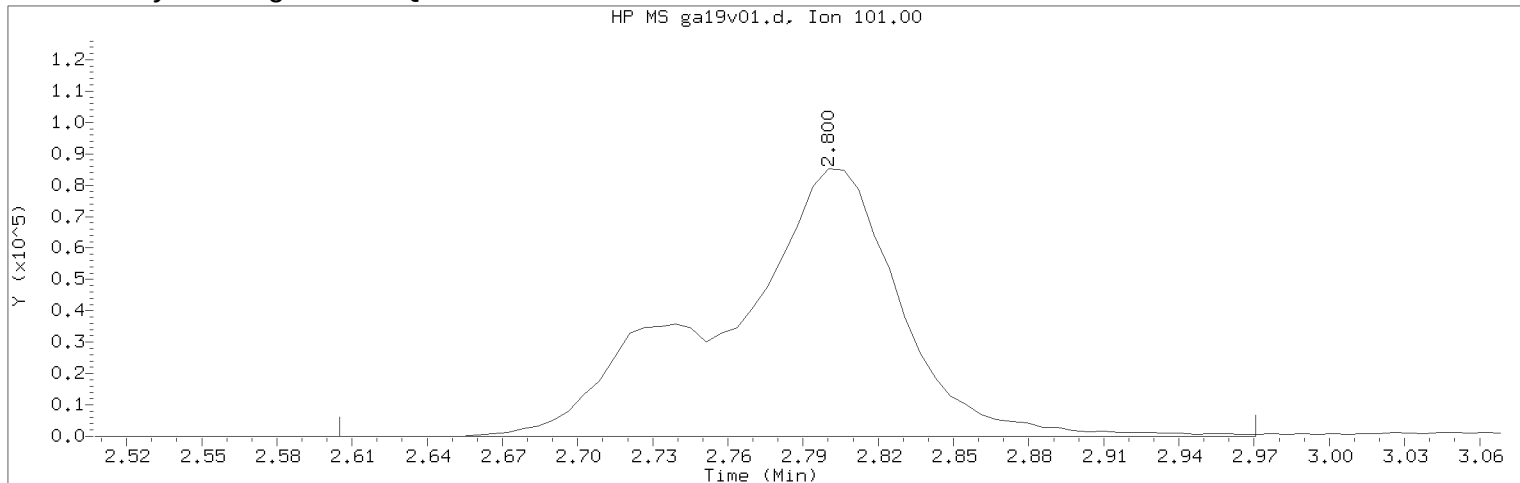
Y at integration start : 419 Y at integration end: 1048

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature userF1D52mB407300 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 199	
Retention Time (minutes)	: 2.800	
Quant Ion	: 101.00	
Area (flag)	: 421677M	
On-Column Amount (ng)	: 4.9686	
Integration start scan	: 166	Integration stop scan: 226
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

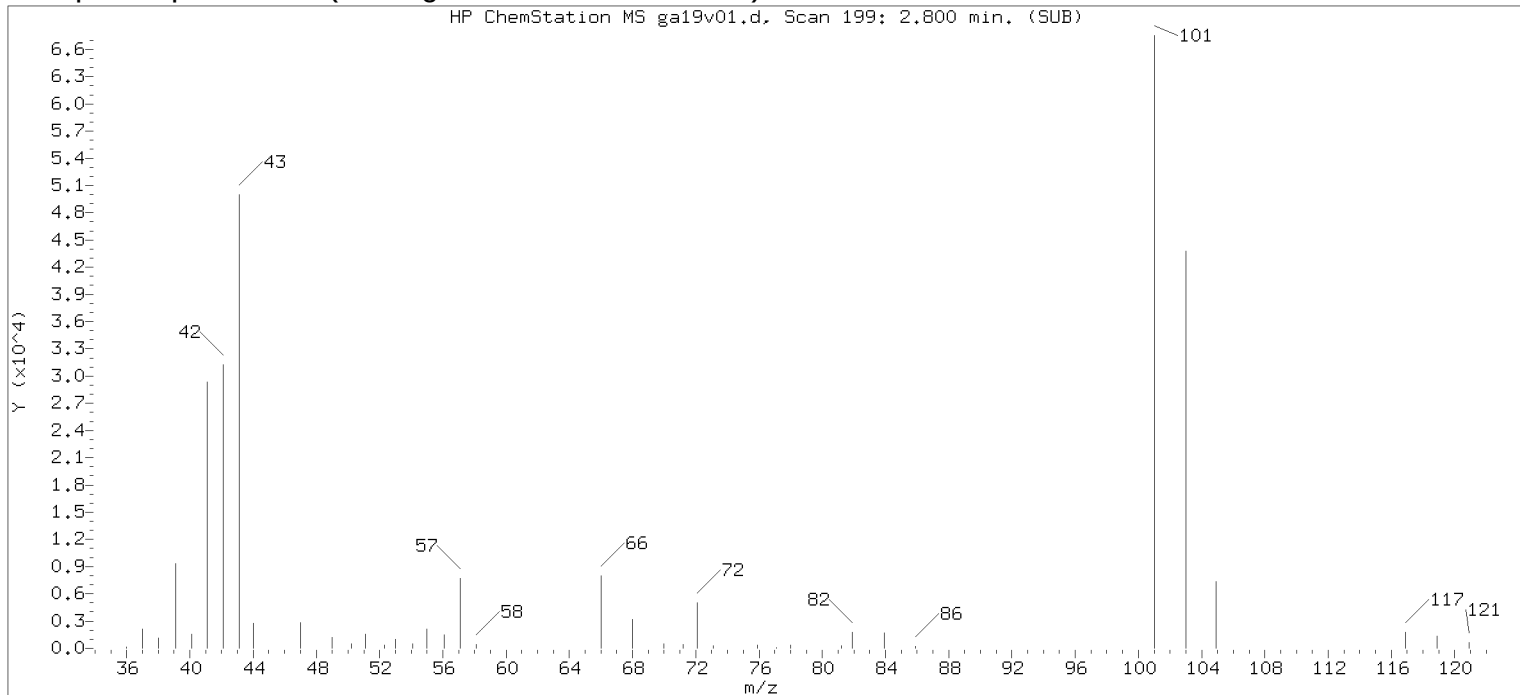
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

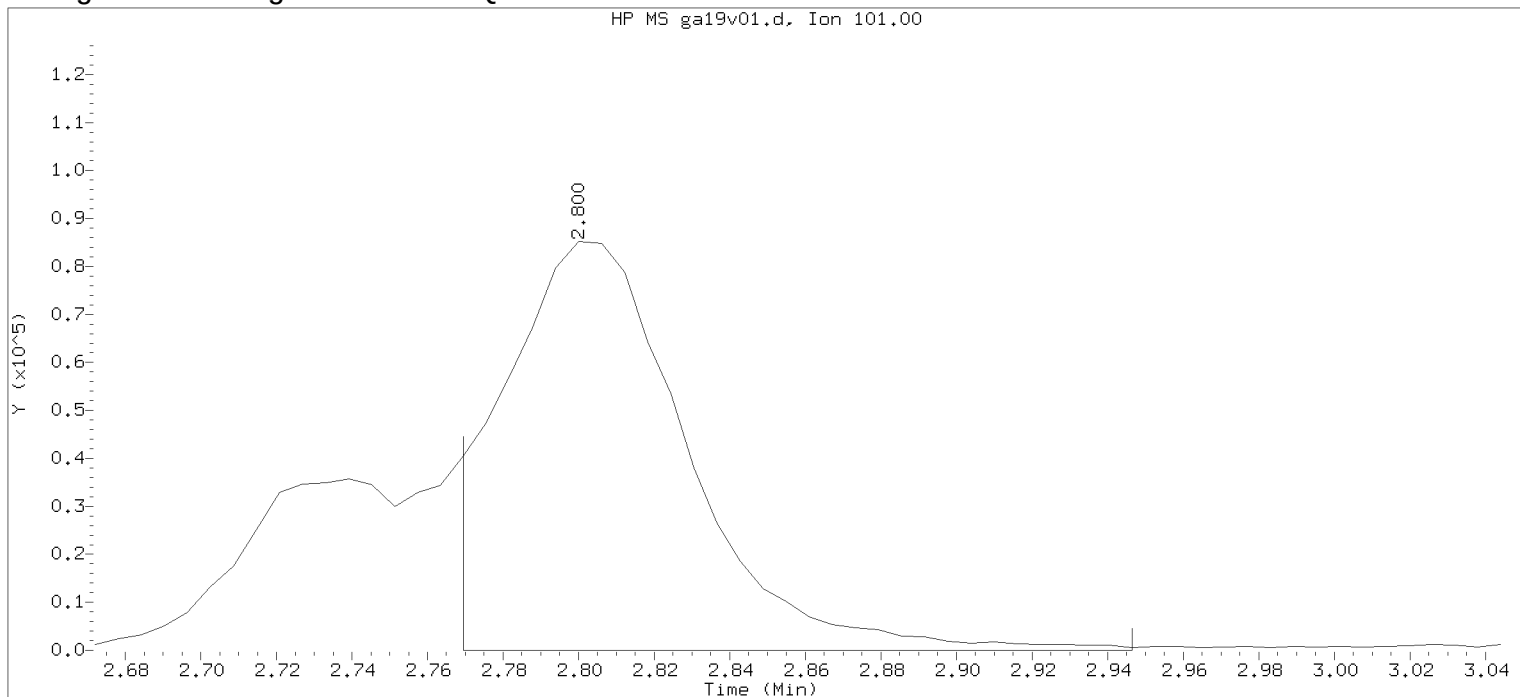
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 199

Retention Time (minutes): 2.800

Quant Ion : 101.00

Area : 286183

On-column Amount (ng) : 3.6977

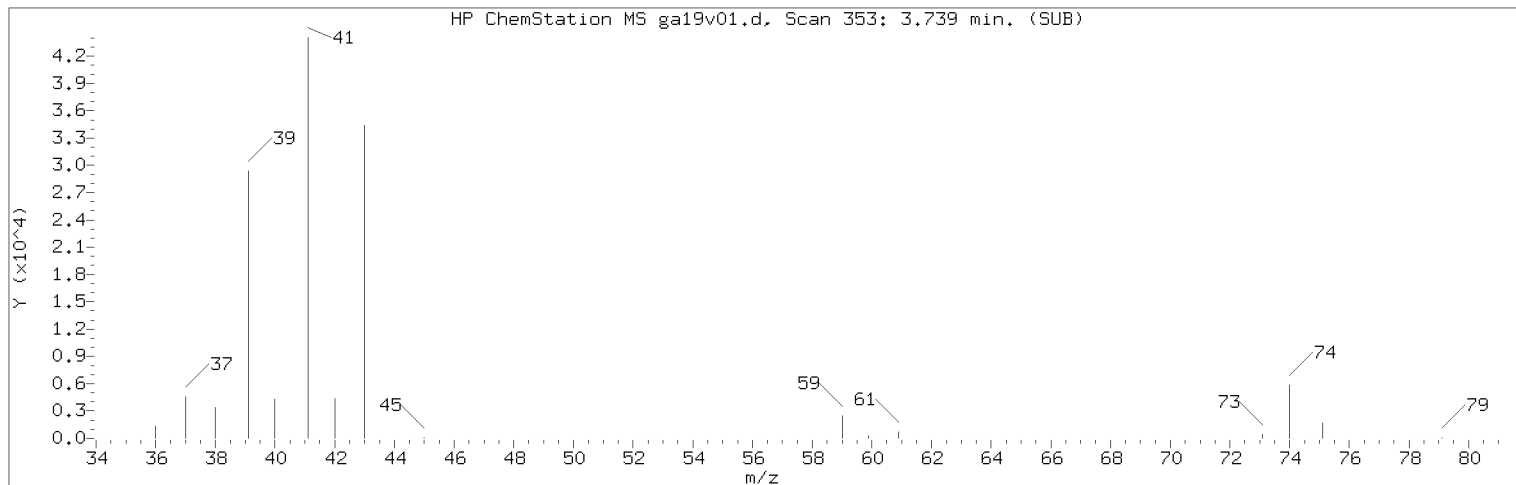
Integration start scan : 193 Integration stop scan: 222

Y at integration start : 0 Y at integration end: 0

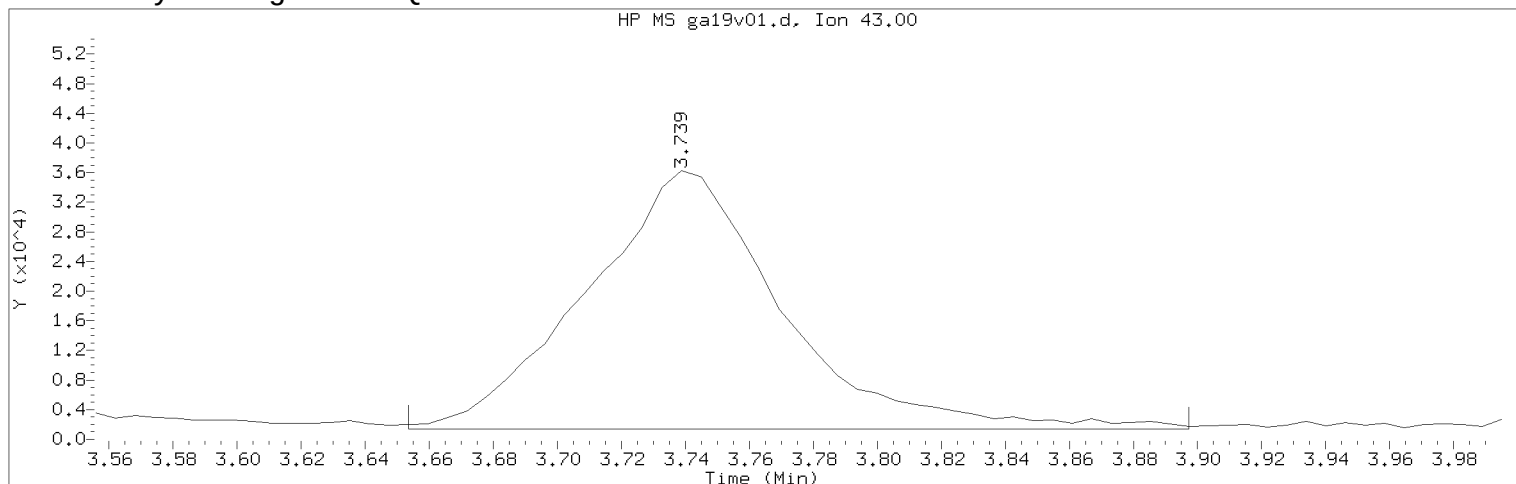
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.

Target 3.5 esignature userF1D52mB107300 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 21

Compound Name : Methyl Acetate

Scan Number : 353

Retention Time (minutes): 3.739

Quant Ion : 43.00

Area (flag) : 147671M

On-Column Amount (ng) : 4.7179

Integration start scan : 338

Integration stop scan: 378

Y at integration start : 1411

Y at integration end: 1411

Reason for manual integration: improper integration

Analyst responsible for change:

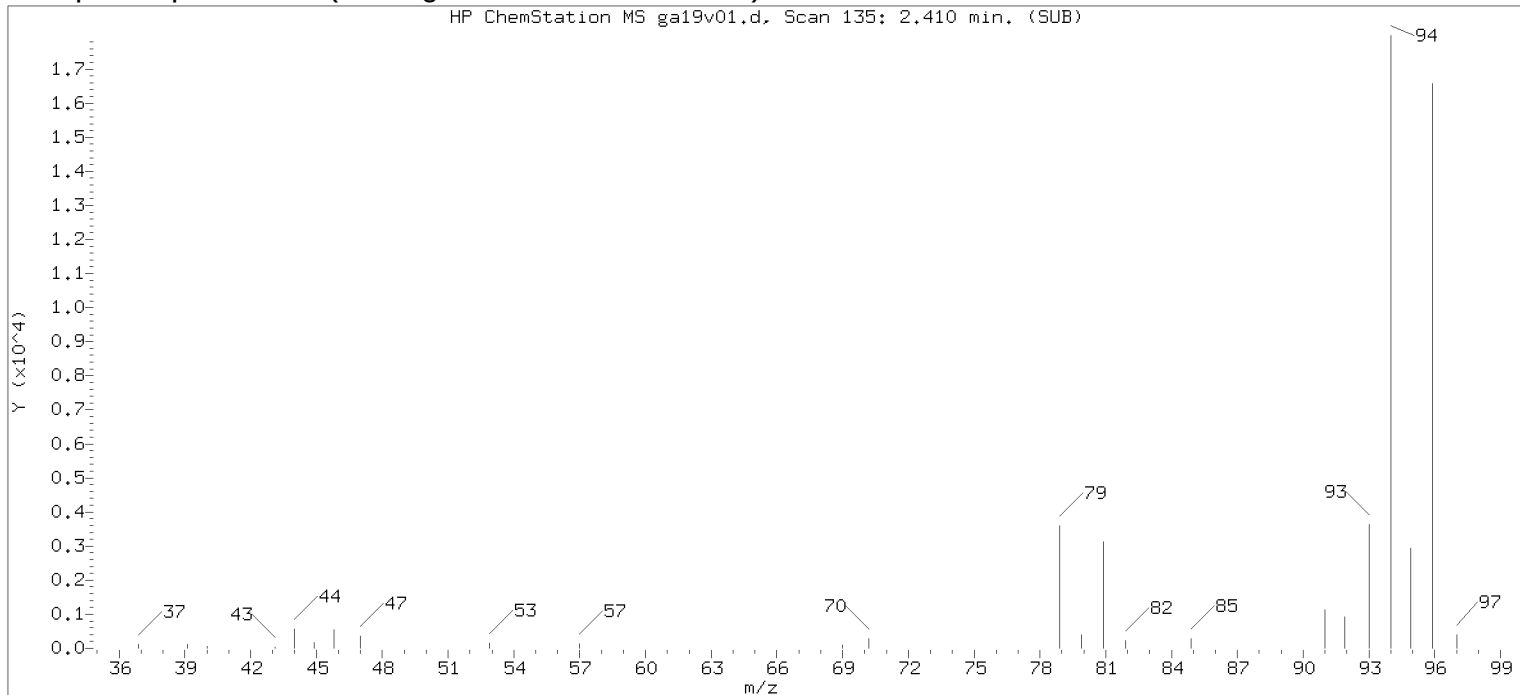
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

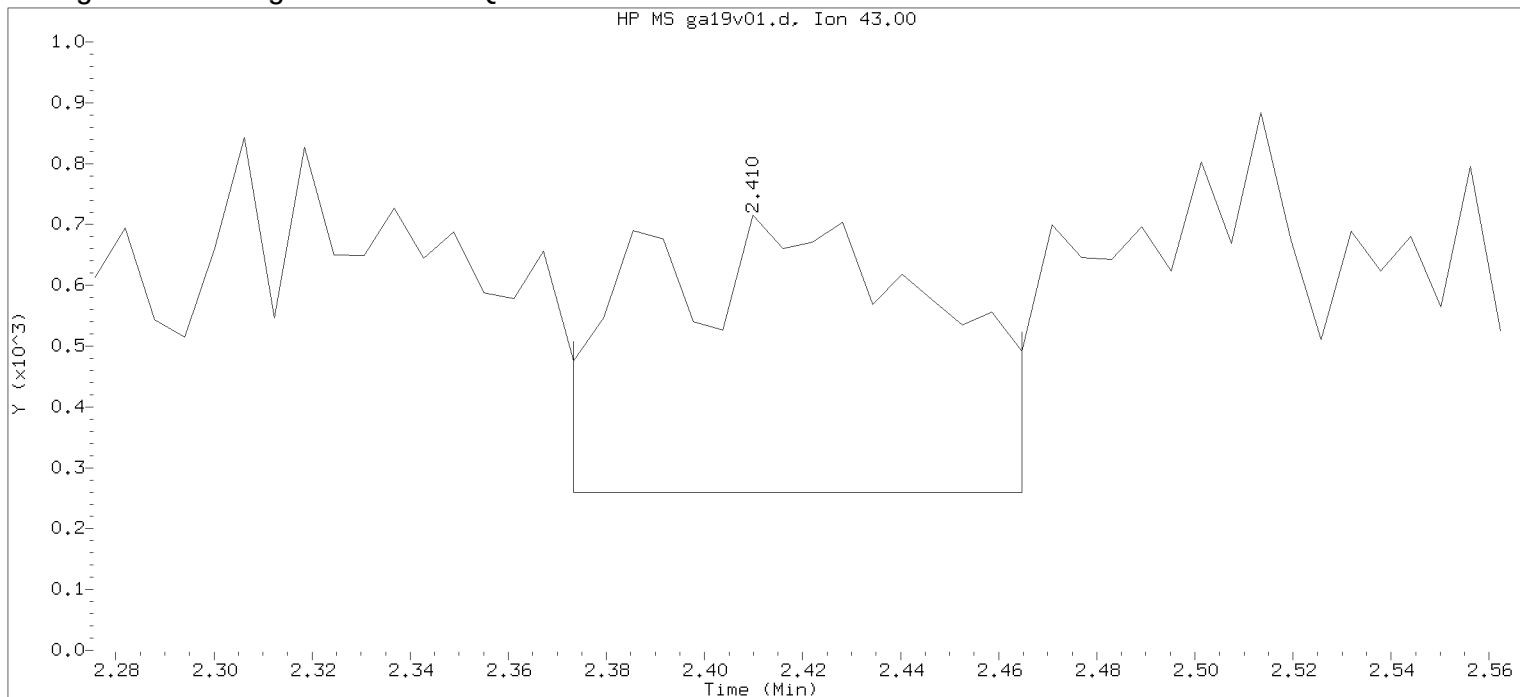
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

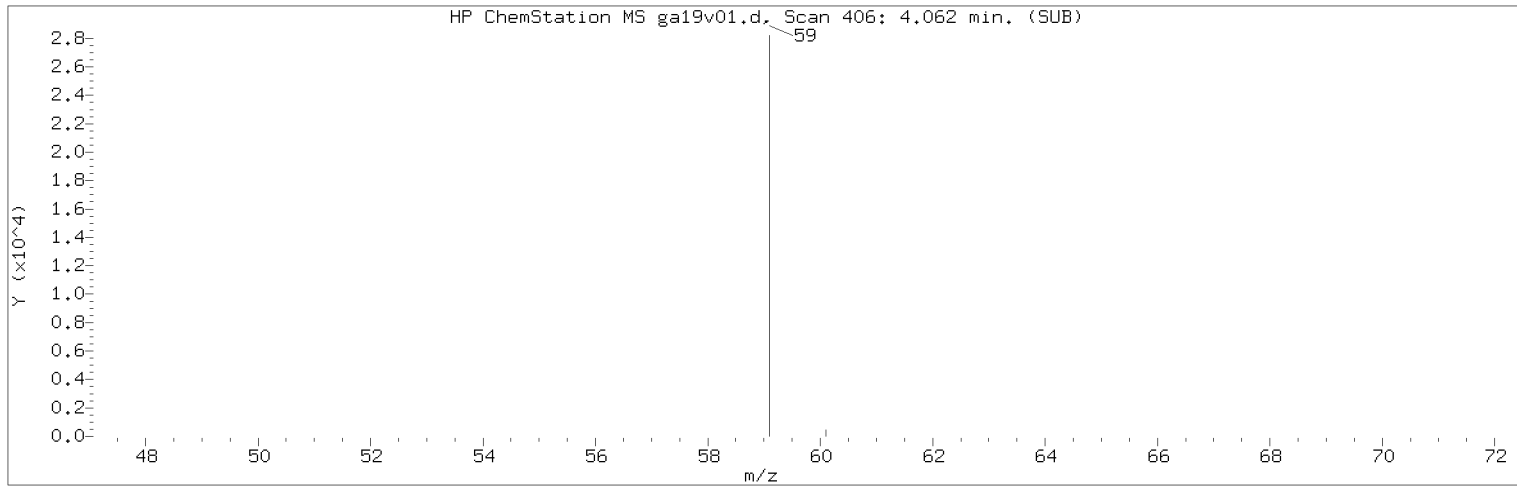
Lab Sample ID: LCSG01

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 135
 Retention Time (minutes): 2.410
 Quant Ion : 43.00
 Area : 1889
 On-column Amount (ng) : 1.2055
 Integration start scan : 128
 Y at integration start : 260

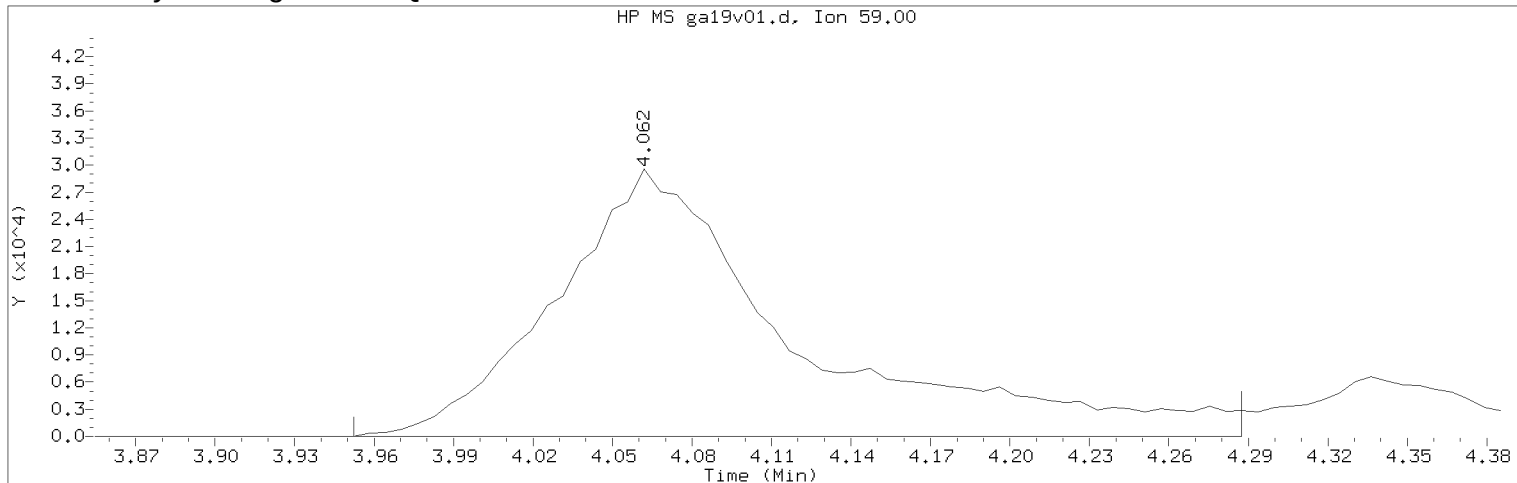
Integration stop scan: 143
 Y at integration end: 260

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 Target 3.5 esignature userFID52mBkg7400 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 28

Compound Name : t-Butyl Alcohol

Scan Number : 406

Retention Time (minutes): 4.062

Quant Ion : 59.00

Area (flag) : 185169M

On-Column Amount (ng) : 49.1915

Integration start scan : 387

Integration stop scan: 442

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

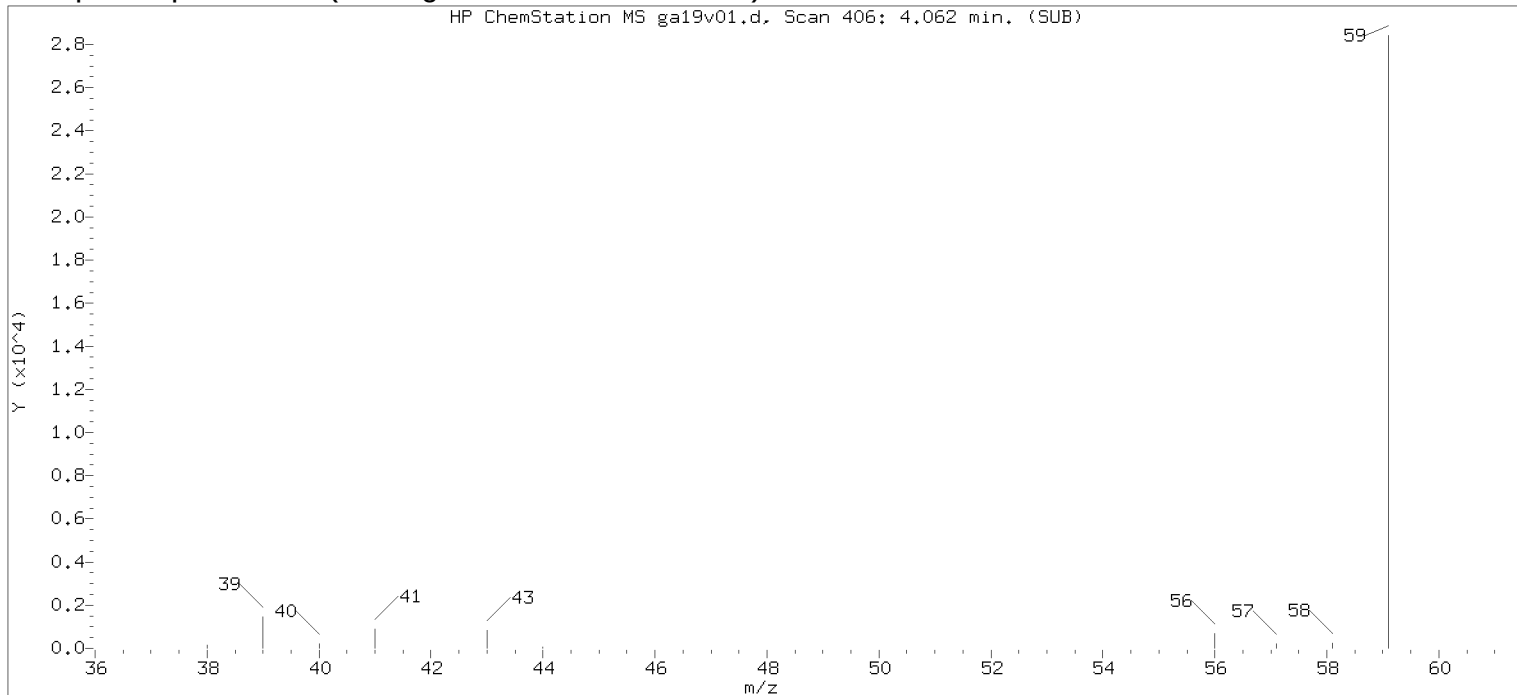
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

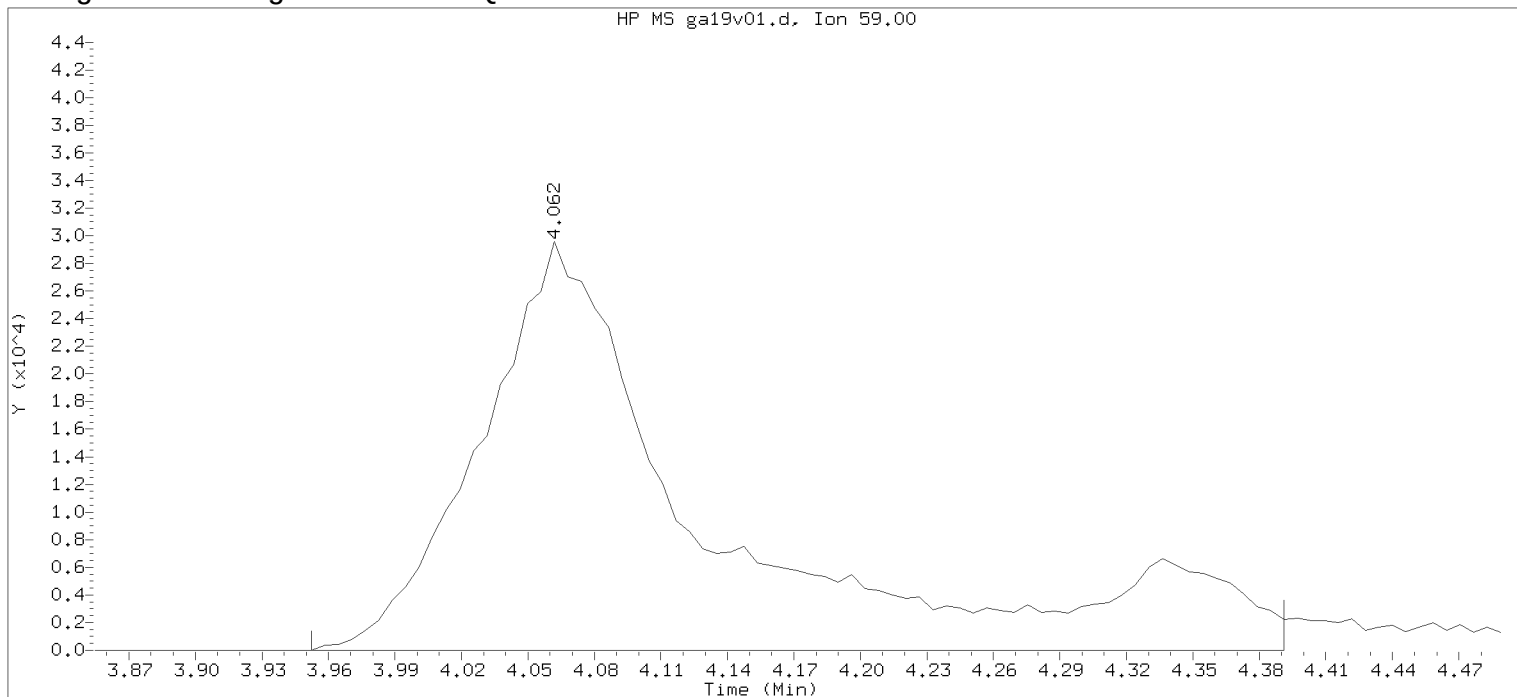
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 28

Compound Name : t-Butyl Alcohol

Scan Number : 406

Retention Time (minutes): 4.062

Quant Ion : 59.00

Area : 211798

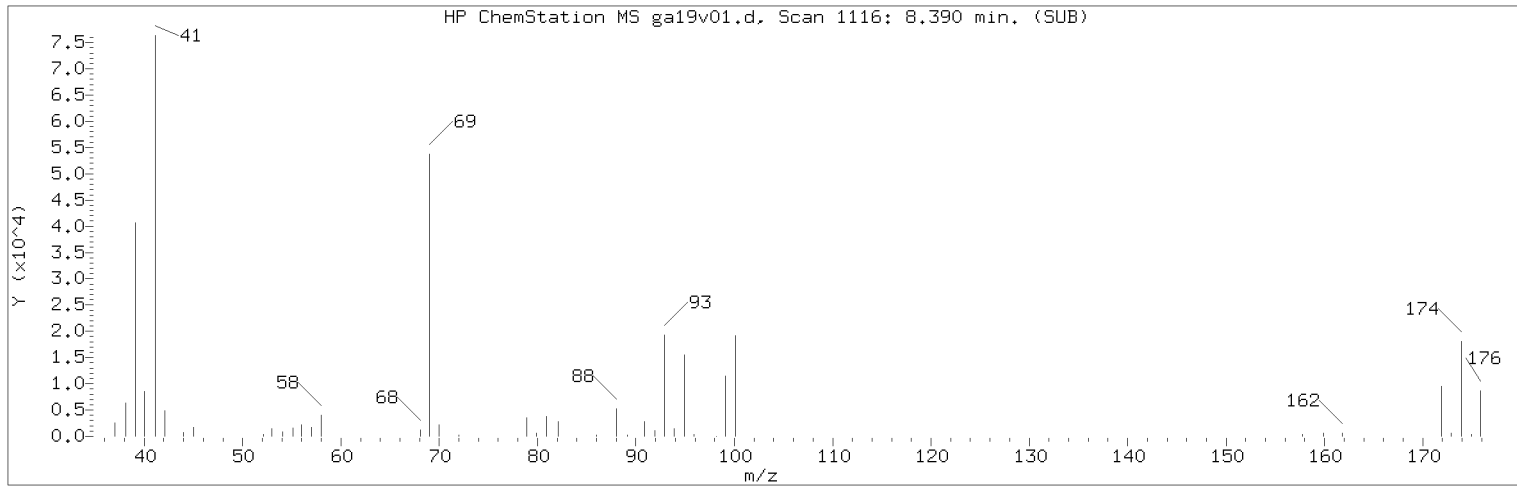
On-column Amount (ng) : 53.7119

Integration start scan : 387 Integration stop scan: 459

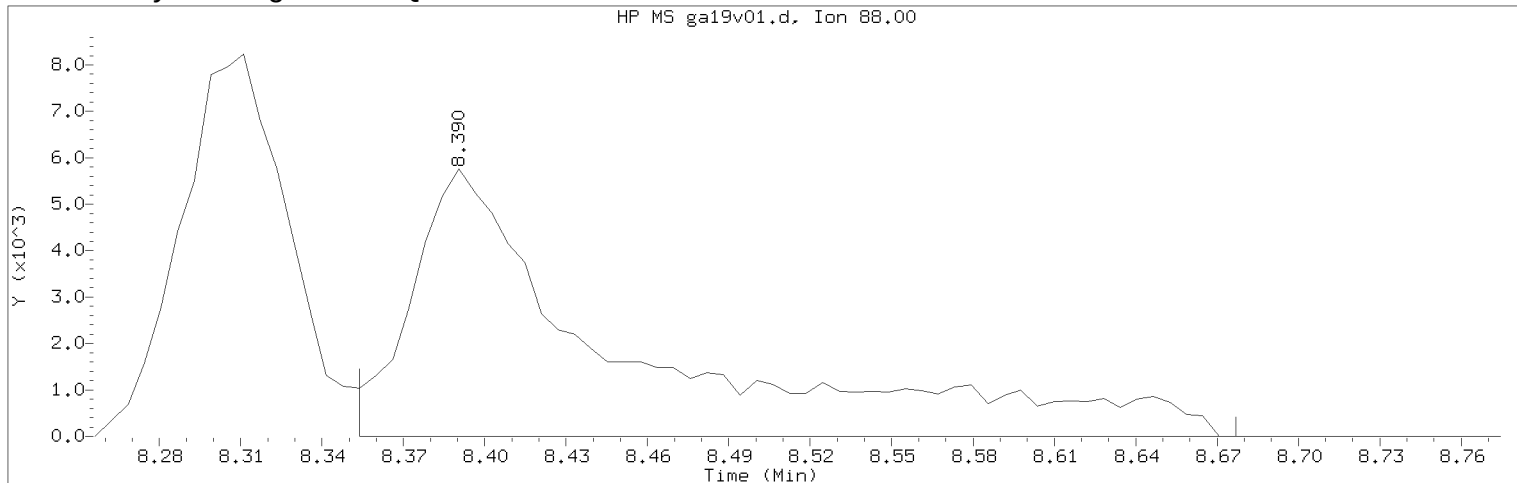
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature user F1D52mB407400 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1116	
Retention Time (minutes)	: 8.390	
Quant Ion	: 88.00	
Area (flag)	: 31438M	
On-Column Amount (ng)	: 152.3523	
Integration start scan	: 1109	Integration stop scan: 1162
Y at integration start	: 0	Y at integration end: 0

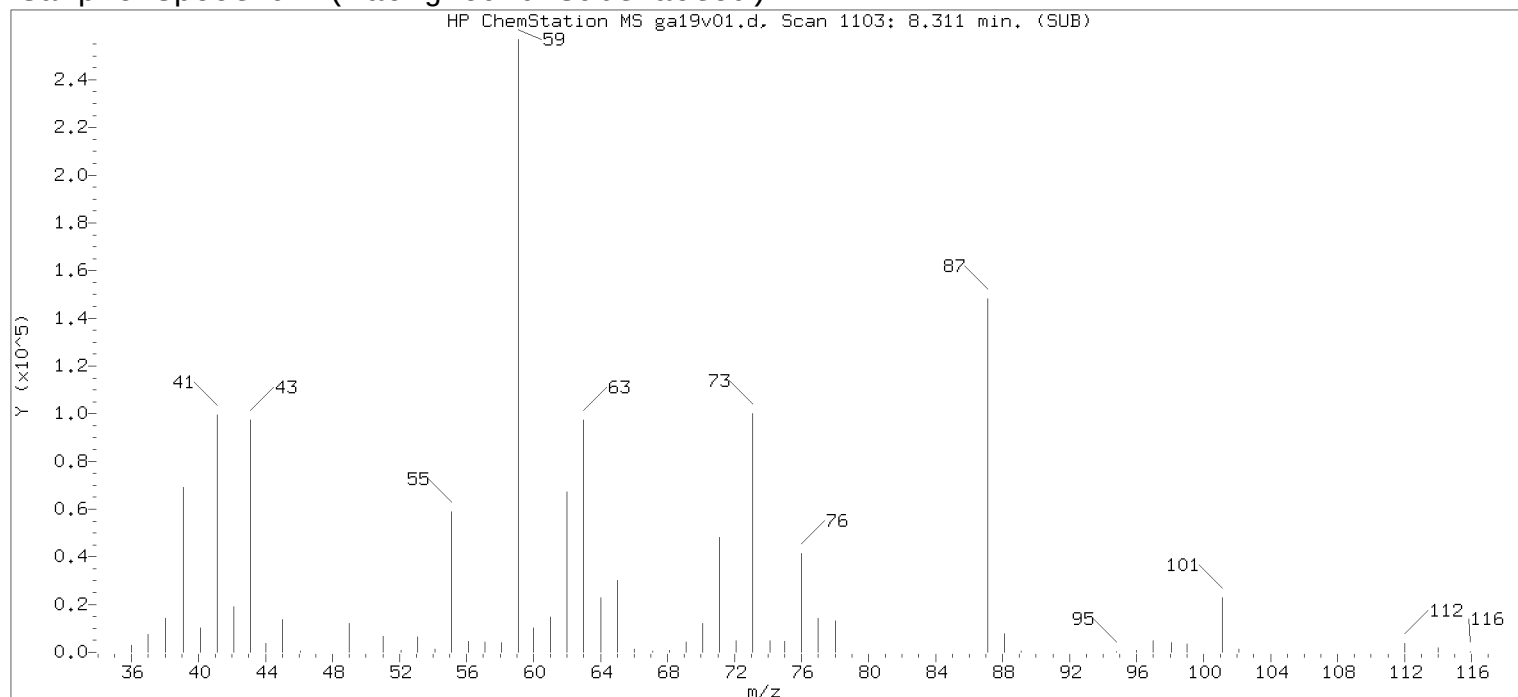
Reason for manual integration: improper integration

Analyst responsible for change:

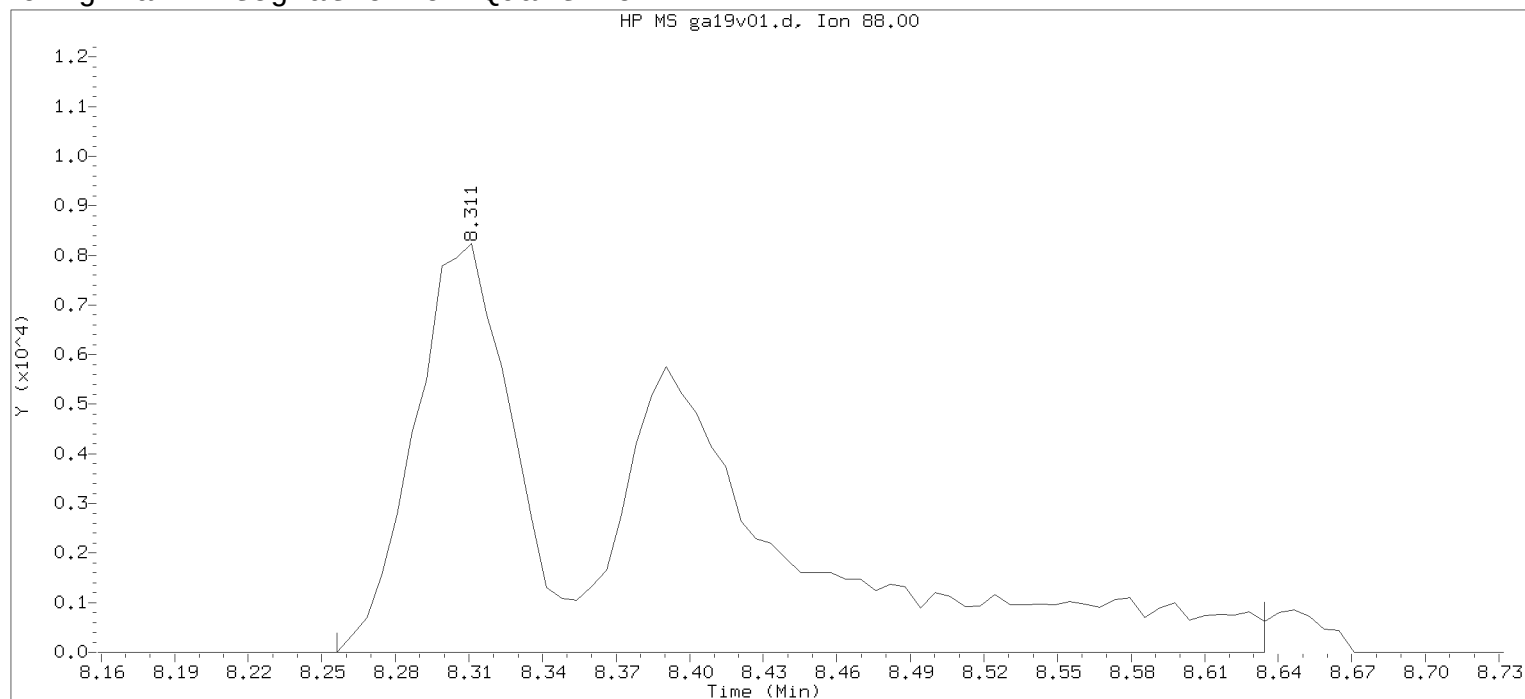
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

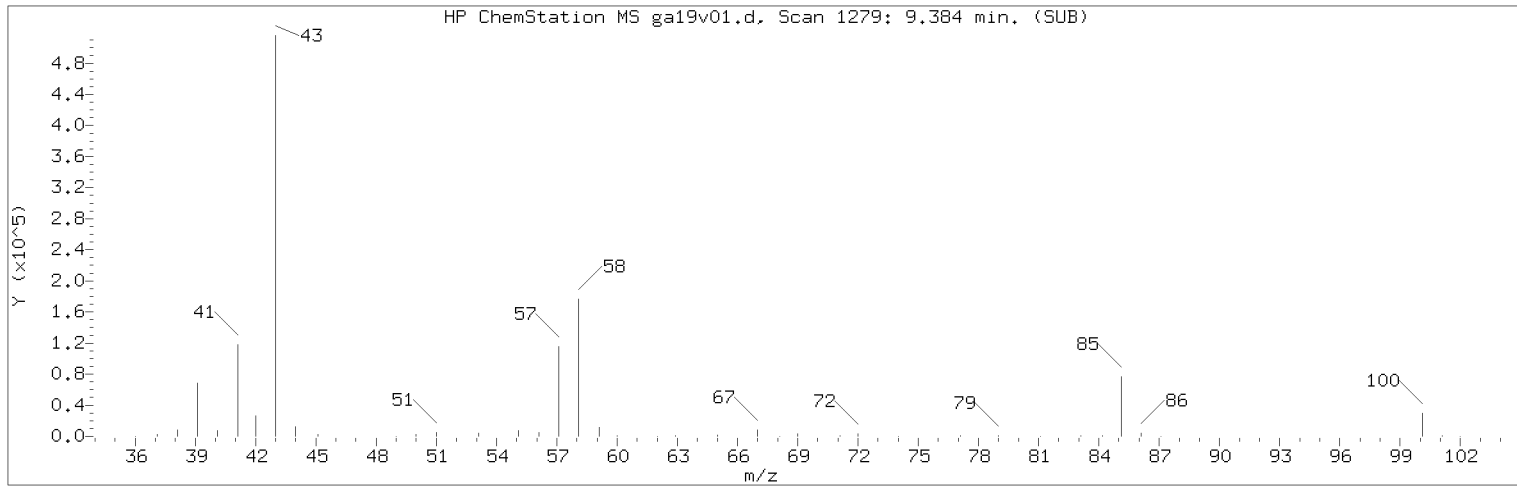
Lab Sample ID: LCSG01

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1103
 Retention Time (minutes): 8.311
 Quant Ion : 88.00
 Area : 52493
 On-column Amount (ng) : 192.3167
 Integration start scan : 1093
 Y at integration start : 0

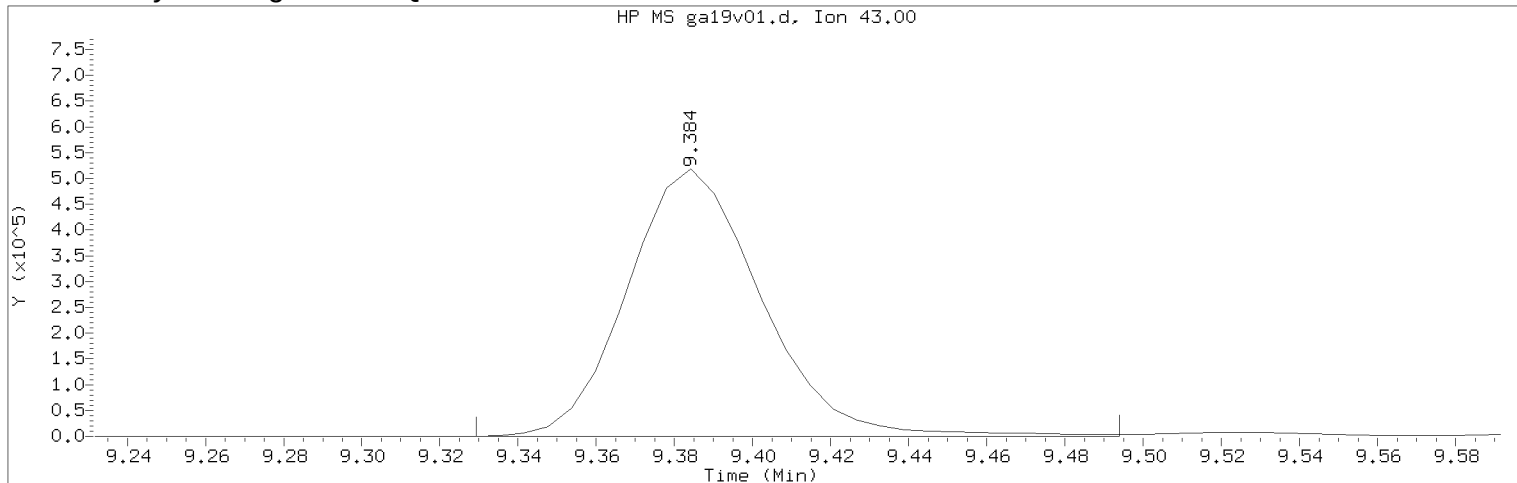
Integration stop scan: 1155
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
 Target 3.5 esignature user F1D52mB107406 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 1233176M

On-Column Amount (ng) : 26.2733

Integration start scan : 1269 Integration stop scan: 1296

Y at integration start : 0 Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

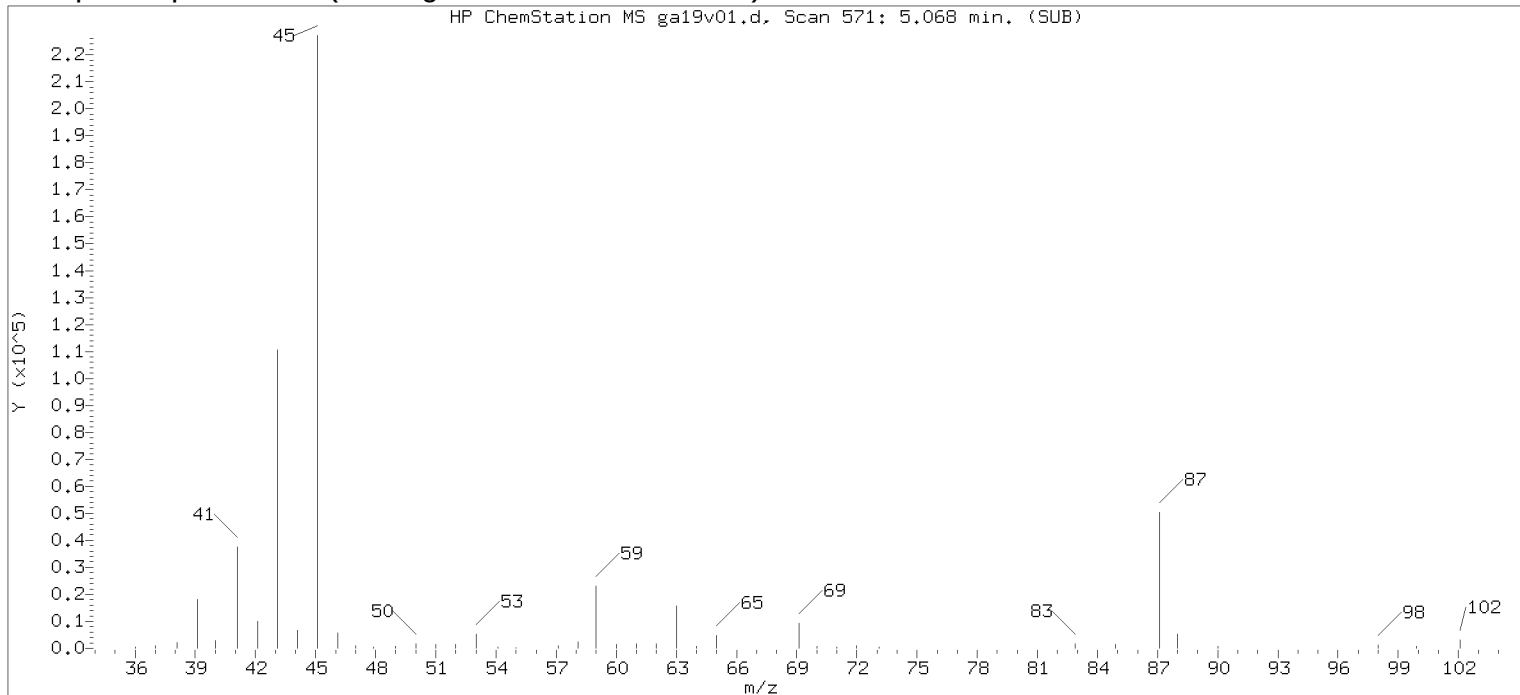
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

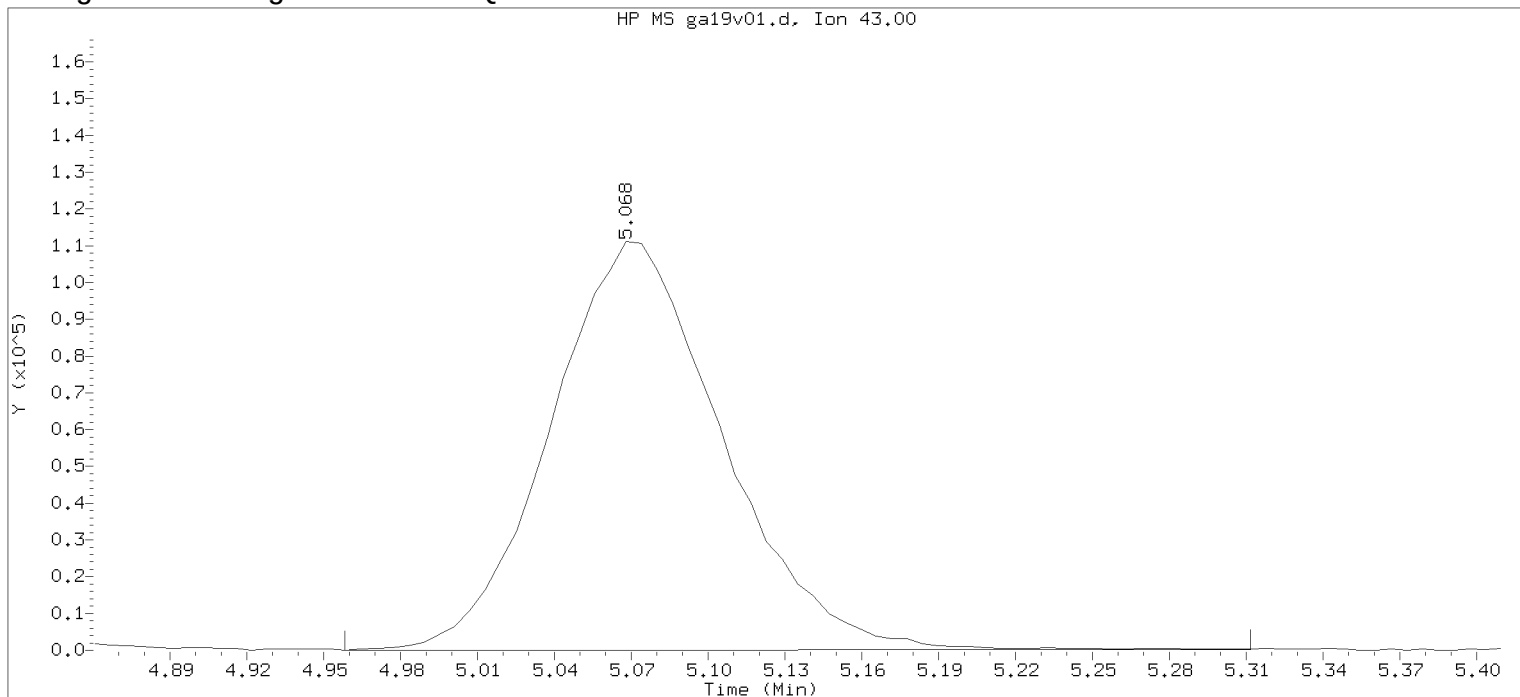
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 571

Retention Time (minutes): 5.068

Quant Ion : 43.00

Area : 518037

On-column Amount (ng) : 51.0227

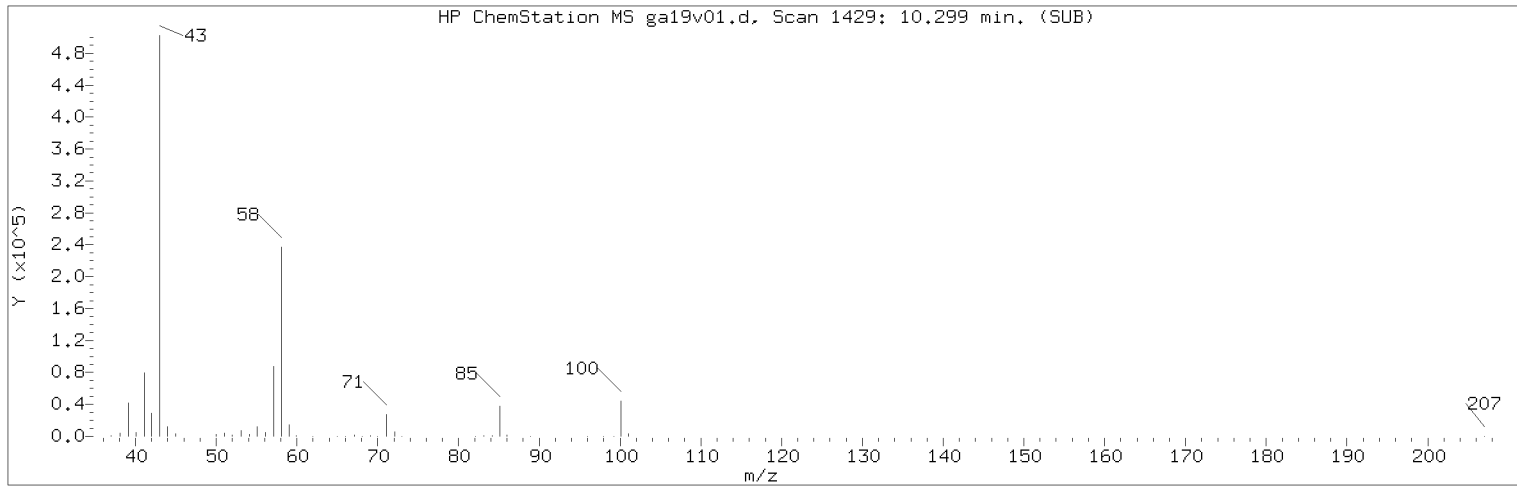
Integration start scan : 552 Integration stop scan: 610

Y at integration start : 0 Y at integration end: 133

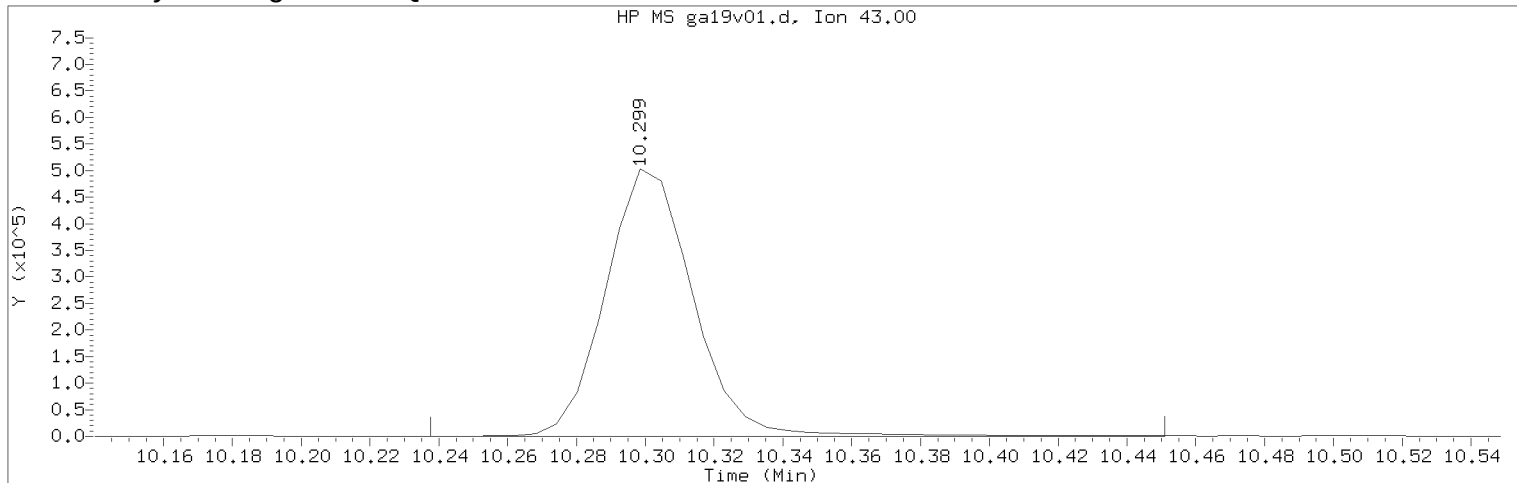
Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.

Target 3.5 esignature userFID52mBkg7400 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 1429

Retention Time (minutes): 10.299

Quant Ion : 43.00

Area (flag) : 891400M

On-Column Amount (ng) : 27.0207

Integration start scan : 1418

Integration stop scan: 1453

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

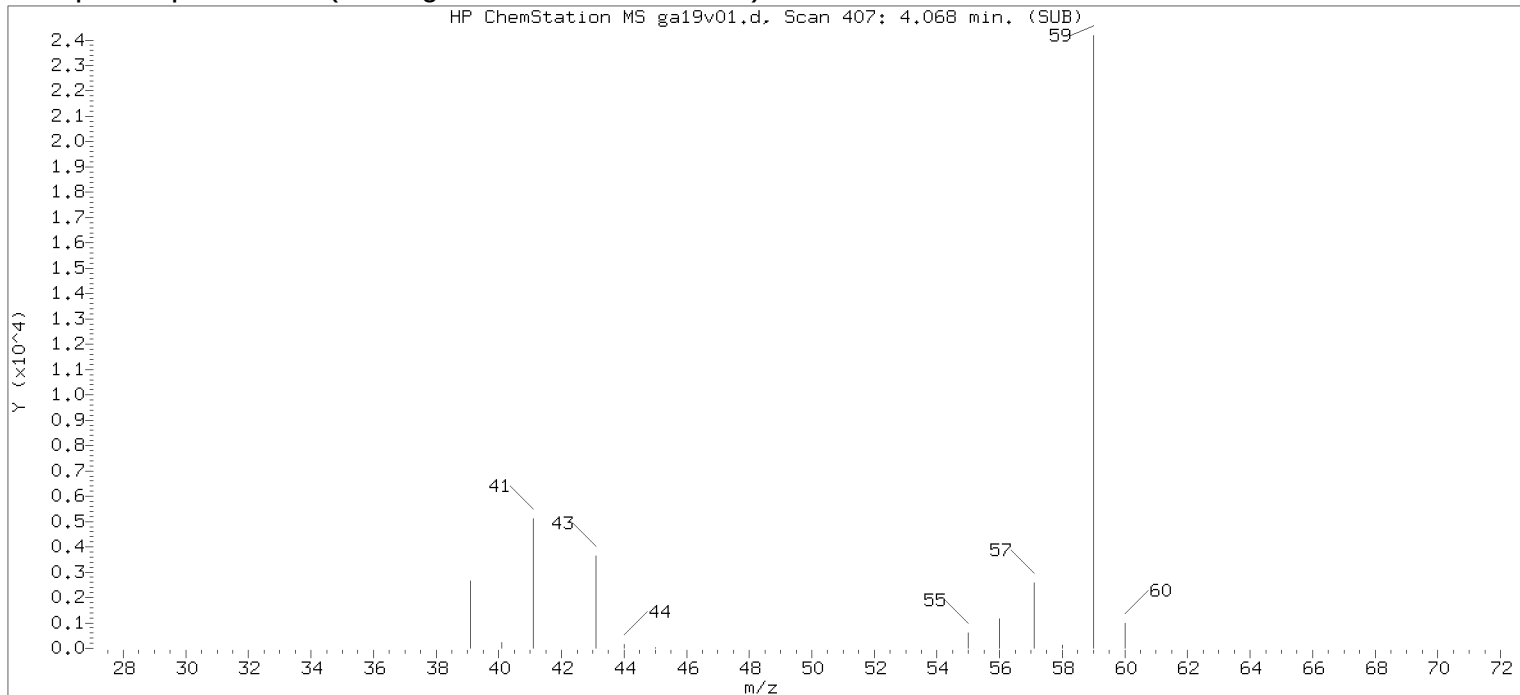
on 04/19/2018 at 20:51.

Target 3.5 esignature user ID: msk07970

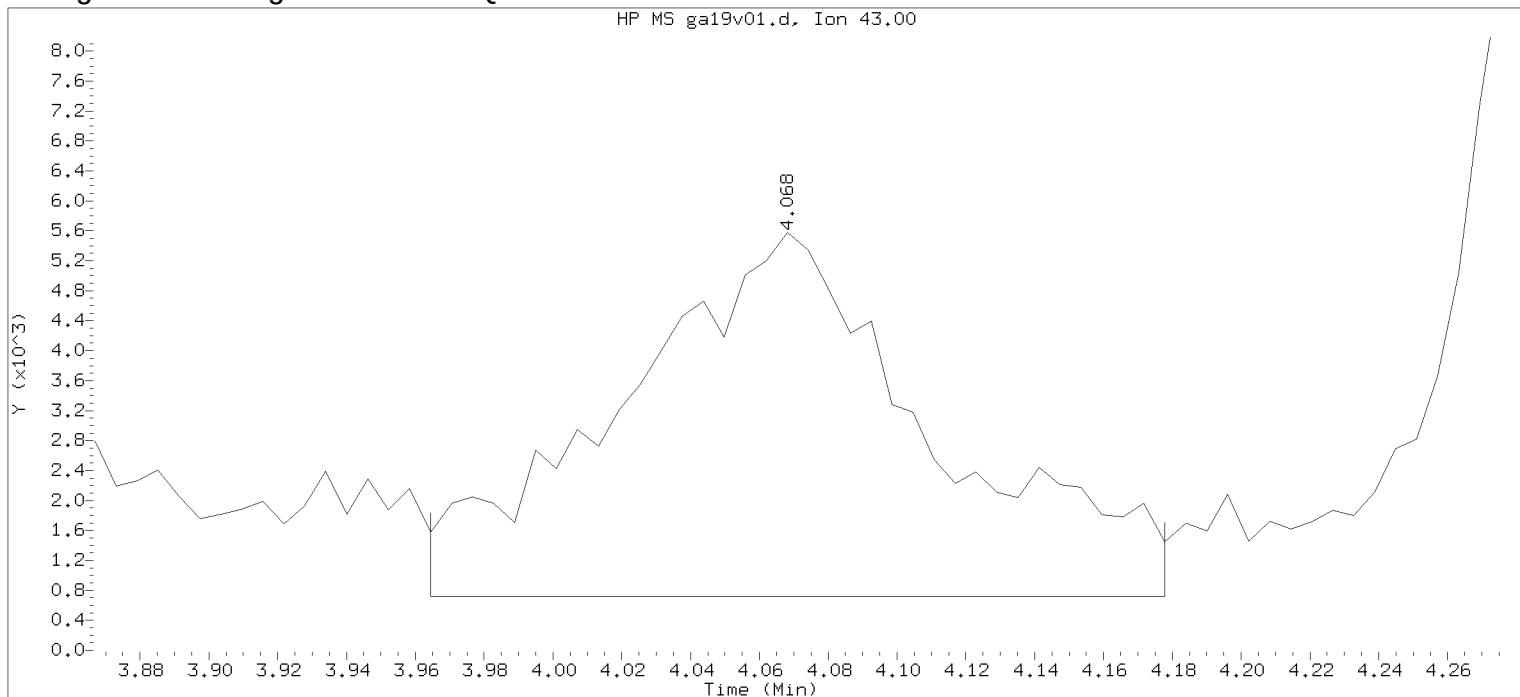
Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d Instrument ID: HP16334.i
Injection date and time: 19-APR-2018 15:21 Analyst ID: JKH09052

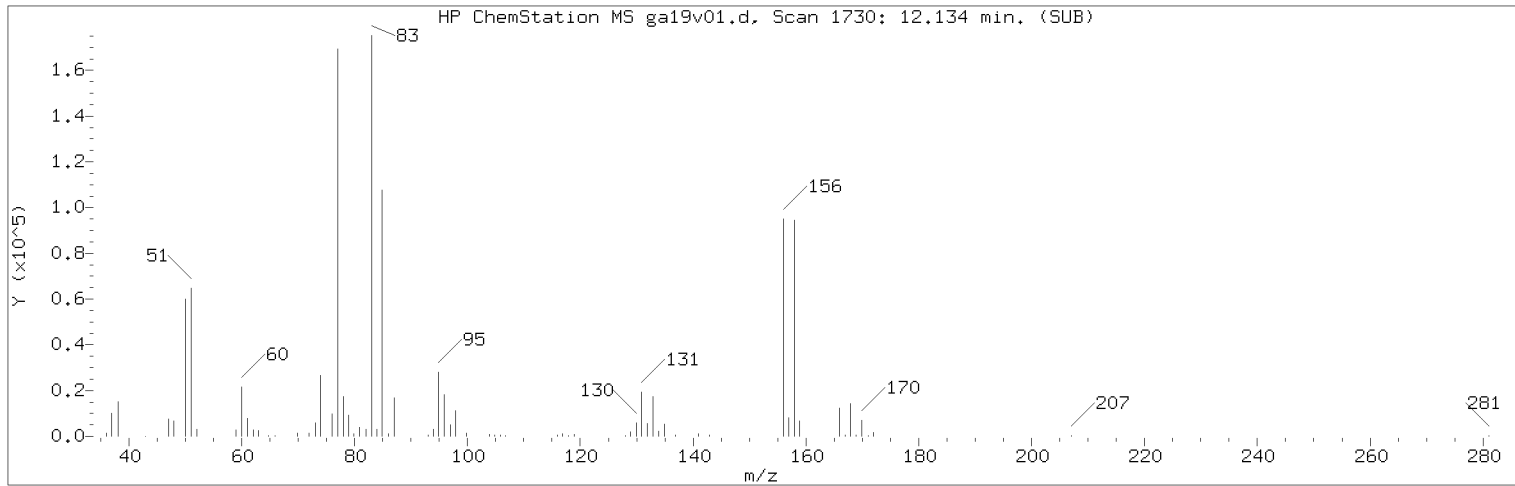
Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m Sublist used: 8260W25
Calibration date and time: 19-APR-2018 14:53
Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01 Lab Sample ID: LCSG01

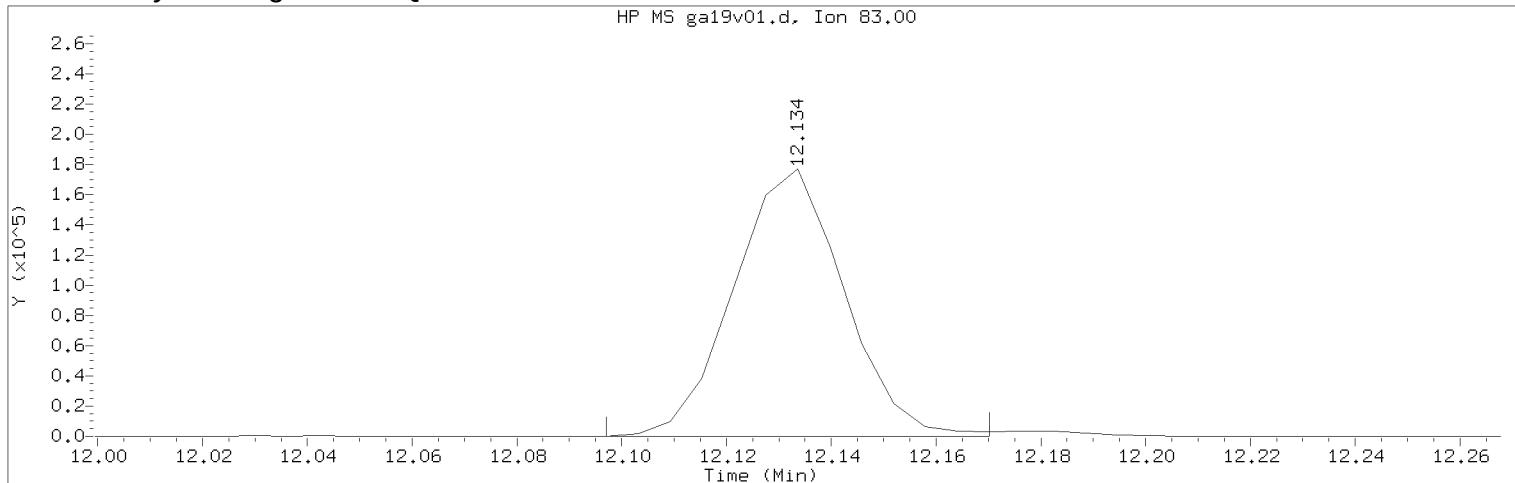
Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 407	
Retention Time (minutes)	: 4.068	
Quant Ion	: 43.00	
Area	: 30590	
On-column Amount (ng)	: 15.4051	
Integration start scan	: 389	Integration stop scan: 424
Y at integration start	: 719	Y at integration end: 719

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.
Target 3.5 esignature userF1D52mB107409 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 19-APR-2018 20:15

Date, time and analyst ID of latest file update: 19-Apr-2018 20:26 msk07970

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1730	
Retention Time (minutes)	: 12.134	
Quant Ion	: 83.00	
Area (flag)	: 258665M	
On-Column Amount (ng)	: 4.9925	
Integration start scan	: 1723	Integration stop scan: 1735
Y at integration start	: 0	Y at integration end: 0

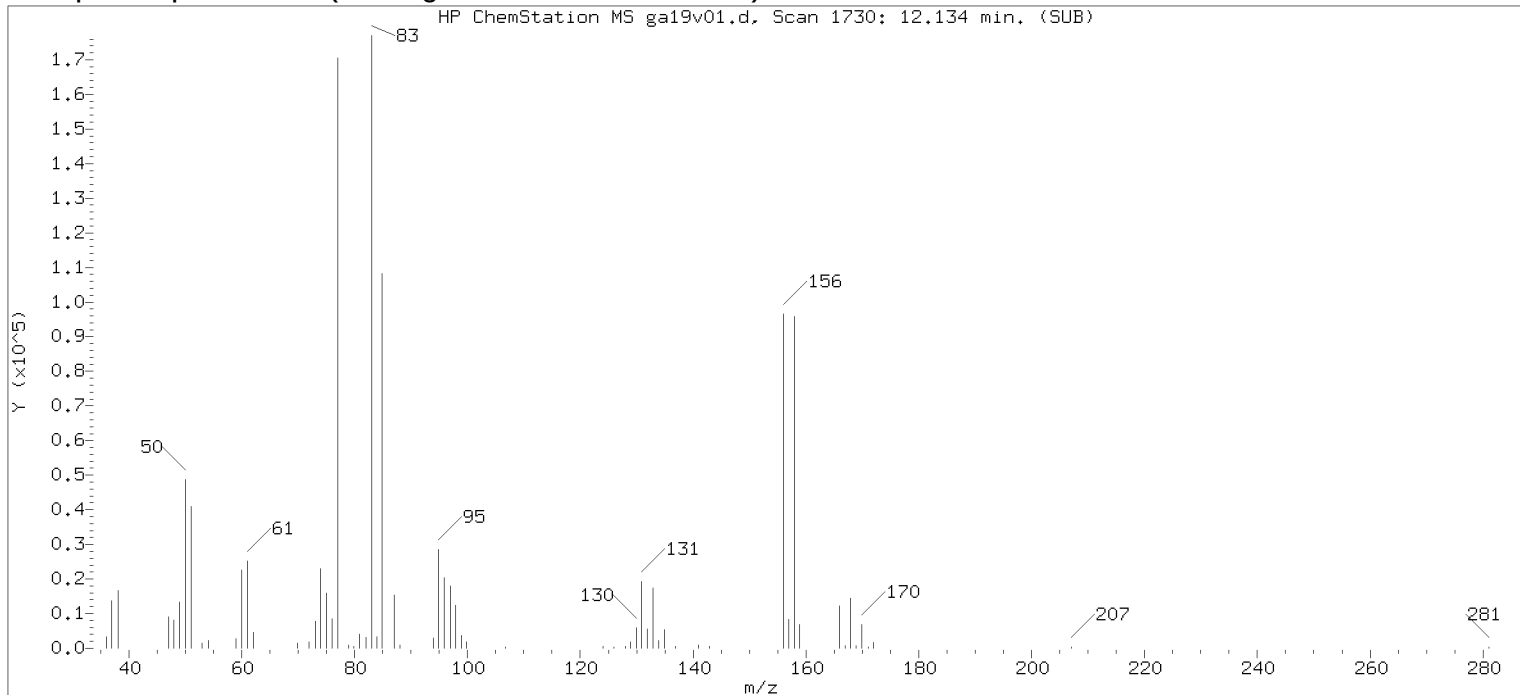
Reason for manual integration: improper integration

Analyst responsible for change:

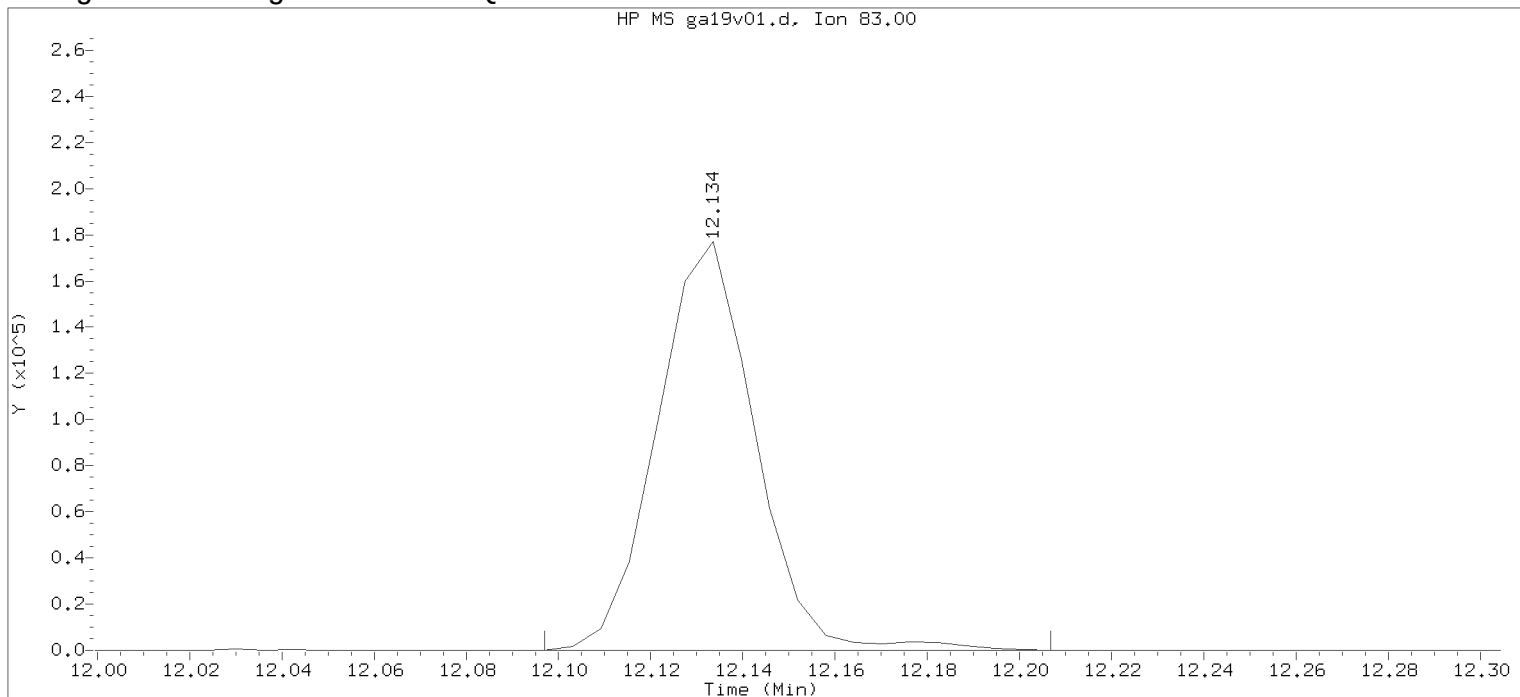
Digitally signed by Matthew S. Krause
on 04/19/2018 at 20:51.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Paul R. Cormier on 04/20/2018 at 13:19.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr19i.b/ga19v01.d

Instrument ID: HP16334.i

Injection date and time: 19-APR-2018 15:21

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18apr19i.b/m8260c25.m

Sublist used: 8260W25

Calibration date and time: 19-APR-2018 14:53

Date, time and analyst ID of latest file update: 19-Apr-2018 15:38 Automation

Sample Name: LCSG01

Lab Sample ID: LCSG01

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1730

Retention Time (minutes): 12.134

Quant Ion : 83.00

Area : 262370

On-column Amount (ng) : 5.0165

Integration start scan : 1723 Integration stop scan: 1741

Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/19/2018 at 20:51.

Target 3.5 esignature userF1P52mB497410 of 730

Page 1

Client ID: BFB/feb13-18

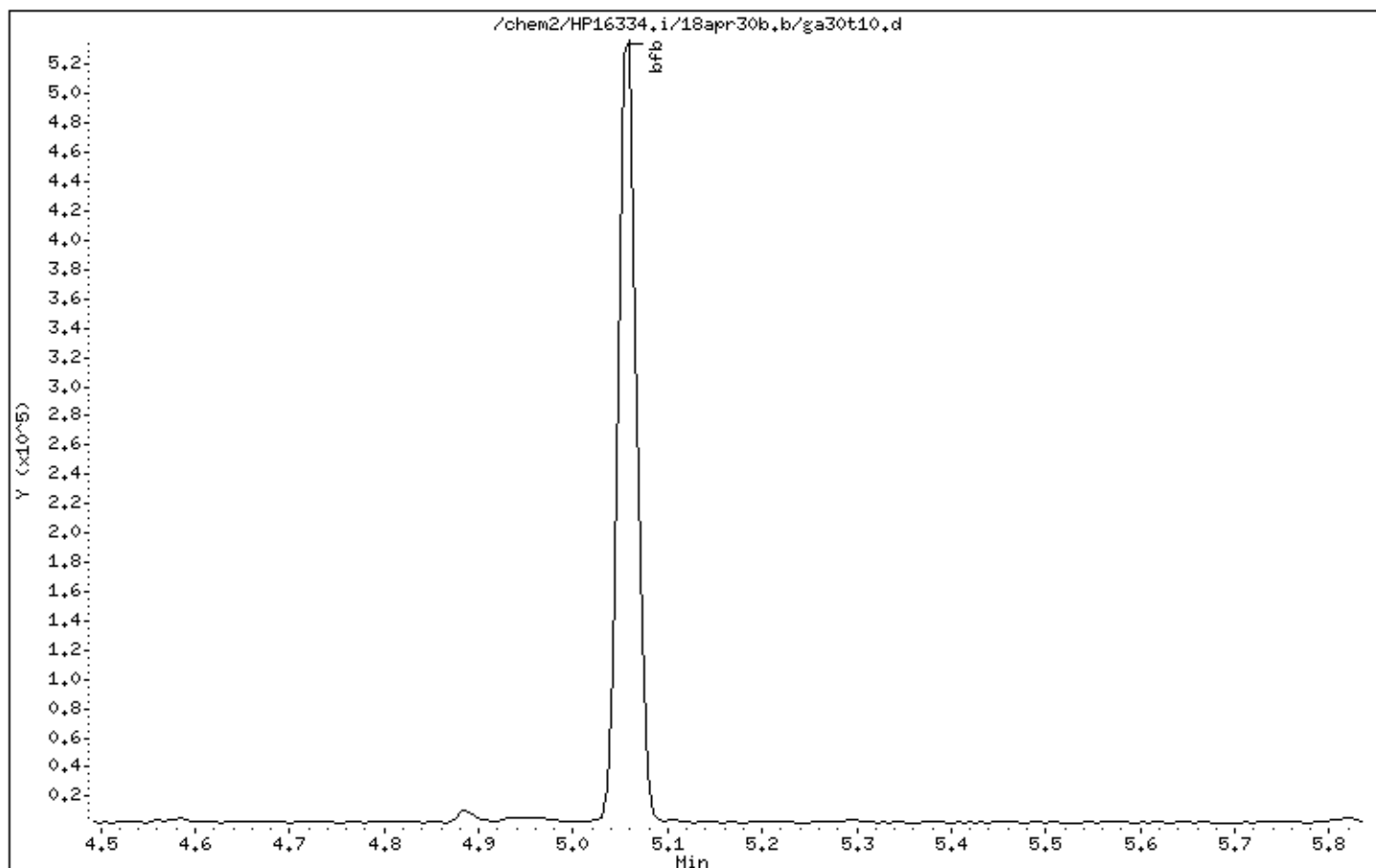
Instrument: HP16334.i

Sample Info: BFB/feb13-18;50NGBFB;1;3; ; ; ; ;

Operator: MSK07970

Column phase: Rxi-624Sil MS

Column diameter: 0.25



Date : 30-APR-2018 20:32

Client ID: BFB/feb13-18

Instrument: HP16334.i

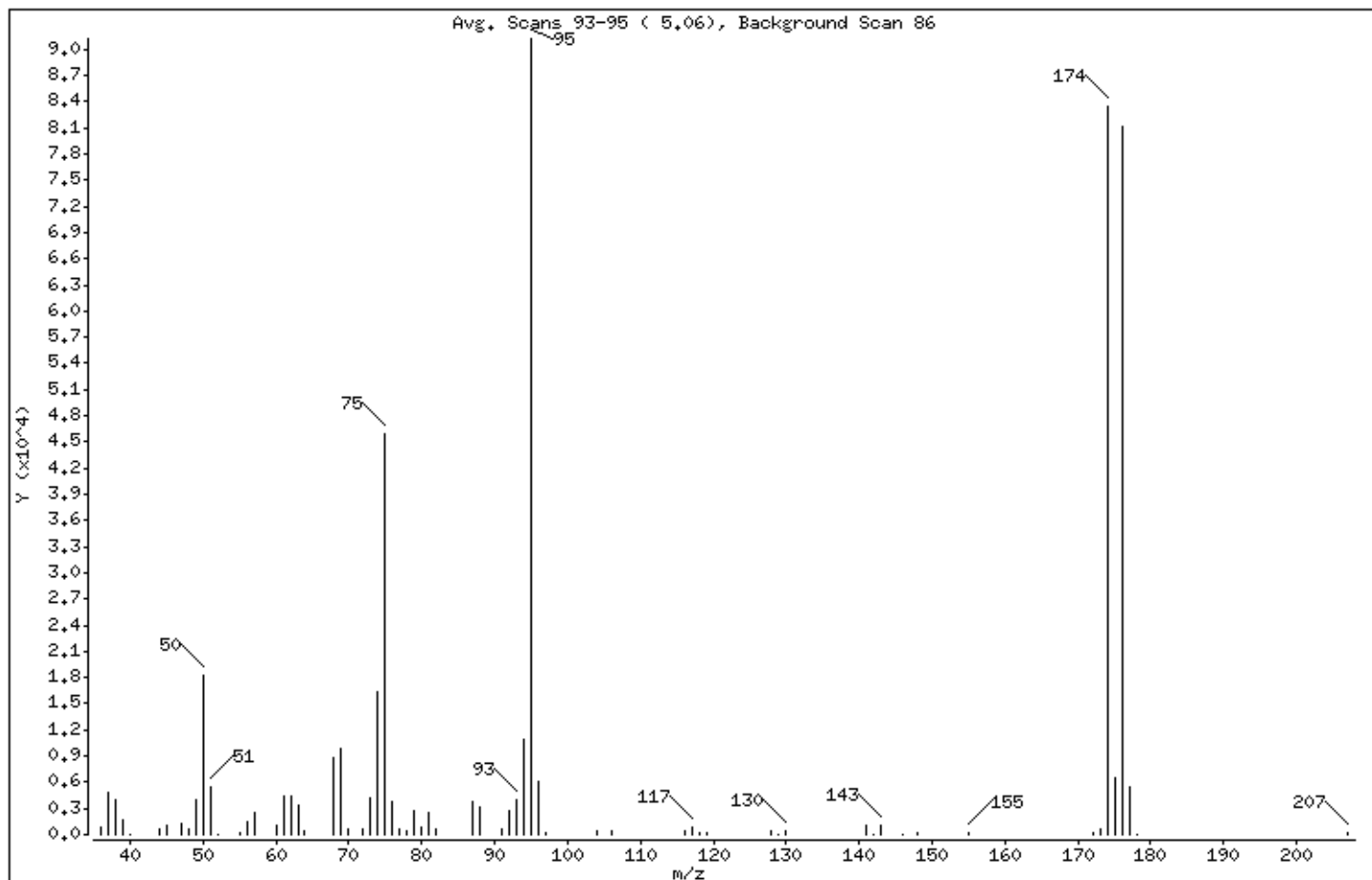
Sample Info: BFB/feb13-18;50NGBFB;1;3;++++

Operator: MSK07970

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	19.97
75	30.00 - 60.00% of mass 95	50.34
96	5.00 - 9.00% of mass 95	6.72
173	Less than 2.00% of mass 174	0.78 (0.85)
174	50.00 - 100.00% of mass 95	91.53
175	5.00 - 9.00% of mass 174	7.19 (7.86)
176	95.00 - 101.00% of mass 174	88.89 (97.11)
177	5.00 - 9.00% of mass 176	6.01 (6.76)

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:21.
Target 3.5 esignature user ID: msk07970

Date : 30-APR-2018 20:32

Client ID: BFB/feb13-18

Instrument: HP16334.i

Sample Info: BFB/feb13-18;50NGBFB;1;3;++++;

Operator: MSK07970

Column phase: Rxi-624Sil MS

Column diameter: 0,25

Data File: ga30t10.d

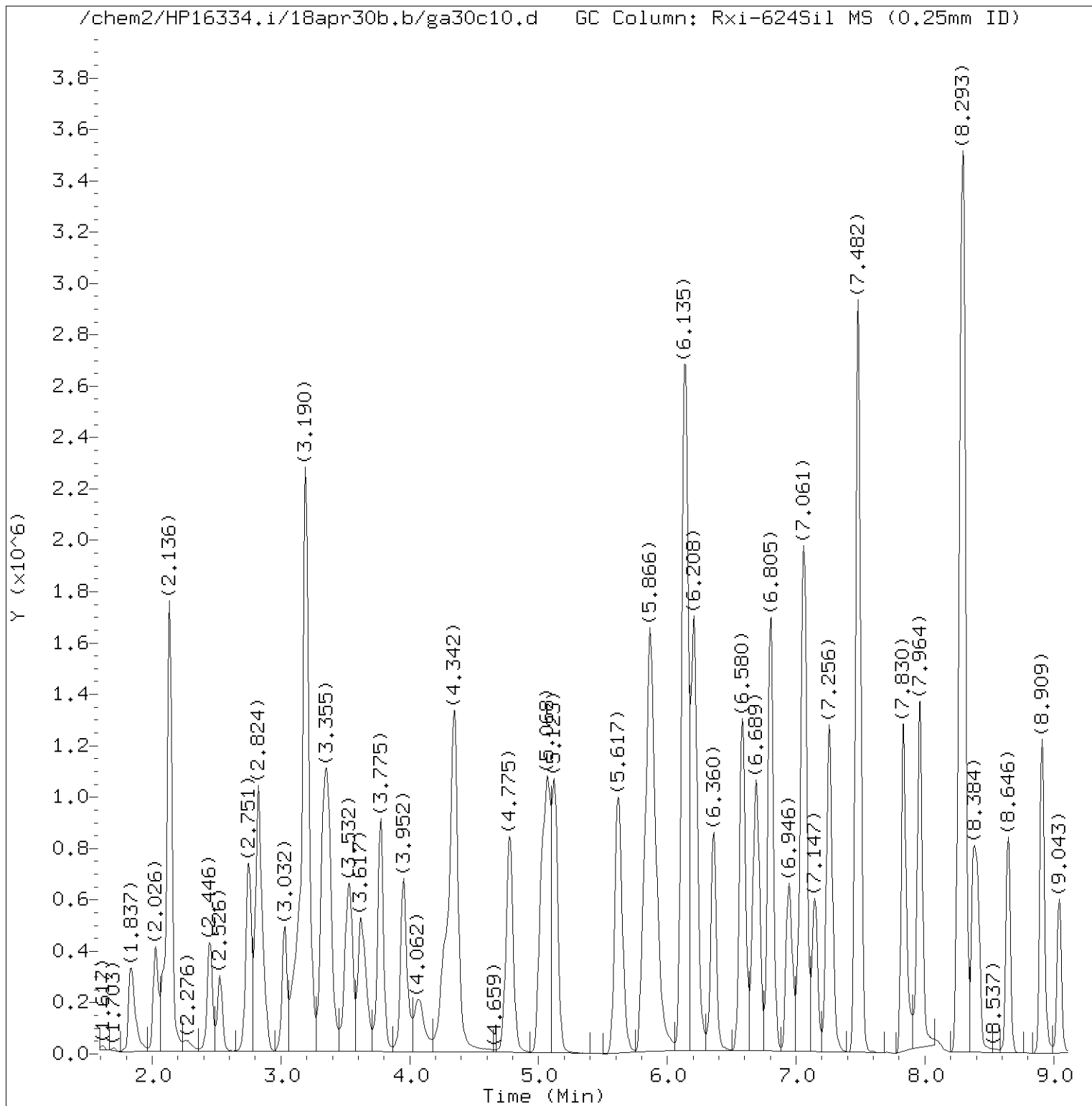
Spectrum: Avg. Scans 93-95 (5,06), Background Scan 86

Location of Maximum: 95,00

Number of points: 67

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36,00	819	61,00	4350	82,00	562	129,00	104
37,00	4829	62,00	4305	87,00	3696	130,00	383
38,00	3962	63,00	3429	88,00	3056	141,00	966
39,00	1671	64,00	339	91,00	534	142,00	88
40,00	55	68,00	8851	92,00	2636	143,00	981
44,00	527	69,00	9814	93,00	4035	146,00	104
45,00	958	70,00	700	94,00	10936	148,00	142
47,00	1210	72,00	632	95,00	91216	155,00	220
48,00	532	73,00	4118	96,00	6133	172,00	117
49,00	4067	74,00	16424	97,00	107	173,00	709
50,00	18216	75,00	45920	104,00	450	174,00	83488
51,00	5407	76,00	3845	106,00	410	175,00	6563
52,00	92	77,00	525	116,00	423	176,00	81080
55,00	110	78,00	496	117,00	798	177,00	5483
56,00	1518	79,00	2662	118,00	258	178,00	85
57,00	2481	80,00	847	119,00	279	207,00	158
60,00	954	81,00	2539	128,00	320		

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:21.
Target 3.5 esignature user ID: msk07970



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
Analyst ID: MSK07970

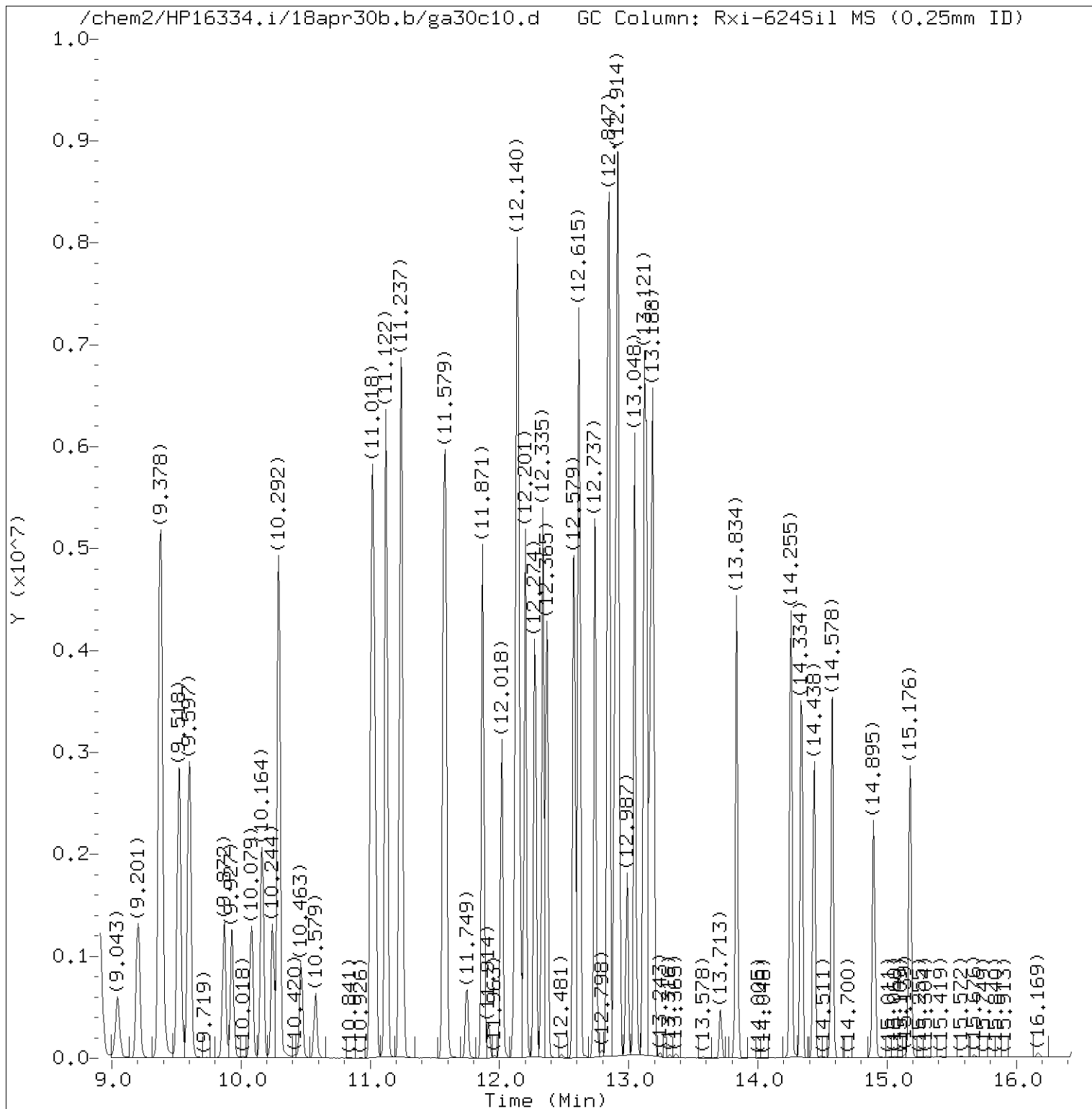
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970
FKP52 Page 415 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
 Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.837	85	735919	8.886
2) Chloromethane	(2)	2.026	50	745085	8.935
5) Vinyl Chloride	(2)	2.129	62	689963	9.641
6) 1,3-Butadiene	(2)	2.136	39	1162230	7.633
7) Bromomethane	(2)	2.446	94	467726	9.775
8) Chloroethane	(2)	2.526	64	387124	9.497
9) Dichlorofluoromethane	(2)	2.751	67	966372	9.829
10) Trichlorofluoromethane	(2)	2.812	101	880858M	9.438
11) Ethyl ether	(2)	3.026	59	408011	8.770
12) Freon 123a	(2)	3.129	67	582994	8.822
13) Acrolein	(1)	3.190	56	3596912	545.795
15) 1,1-Dichloroethene	(2)	3.330	96	420498	9.201
14) Acetone	(1)	3.343	43	1032407M	96.956
16) Freon 113	(2)	3.367	101	485458	9.423
17) Methyl Iodide	(2)	3.513	142	857776	9.665
18) Carbon Disulfide	(2)	3.623	76	1570707	8.663
21) Methyl Acetate	(1)	3.745	43	291852M	9.724
22) Allyl Chloride	(2)	3.775	41	887910	8.374
26)*t-Butyl Alcohol-d10	(1)	3.946	65	190756	50.000
23) Methylene Chloride	(2)	3.952	84	498186	8.062
28) t-Butyl Alcohol	(1)	4.080	59	724342	200.671
29) Acrylonitrile	(1)	4.263	53	621455	52.460
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	1448517	9.101
31) trans-1,2-Dichloroethene	(2)	4.355	96	499957	9.414
32) n-Hexane	(2)	4.775	57	778676	8.682
33) 1,1-Dichloroethane	(2)	5.019	63	959493	8.857
34) di-Isopropyl Ether	(2)	5.068	45	1909972	8.610
35) 2-Chloro-1,3-Butadiene	(2)	5.129	53	892393	8.998
37) Ethyl t-butyl ether	(2)	5.617	59	1730850	8.887
38) 2-Butanone	(1)	5.824	43	1885262	102.902
39) cis-1,2-Dichloroethene	(2)	5.866	96	574936	9.652
41) 2,2-Dichloropropane	(2)	5.885	77	818414	9.211
42) Propionitrile	(1)	5.921	54	986321	217.732
40) 1,2-Dichloroethene (Total)	(2)		96	1074893	19.066
45) Methacrylonitrile	(1)	6.141	67	1643158	114.457
47) Bromochloromethane	(2)	6.202	128	280964	10.272
48) Tetrahydrofuran	(1)	6.208	71	486084	111.459
49) Chloroform	(2)	6.360	83	975224	9.416

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
 Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.580	113	556626	10.025
50) \$Dibromofluoromethane	(2)	6.580	111	567757	9.944
51) 1,1,1-Trichloroethane	(2)	6.586	97	828528	9.471
52) Cyclohexane	(2)	6.689	56	941828	8.976
52) Cyclohexane	(2)	6.696	84	756862	9.161
52) Cyclohexane	(2)	6.689	69	278068	9.104
55) 1,1-Dichloropropene	(2)	6.799	75	764630	9.374
54) Carbon Tetrachloride	(2)	6.805	117	691287	9.728
56) Isobutyl Alcohol	(1)	6.946	41	740125	515.915
57) \$1,2-Dichloroethane-d4	(2)	7.043	102	117806	10.012
57) \$1,2-Dichloroethane-d4	(2)	7.043	65	620835	9.281
57) \$1,2-Dichloroethane-d4	(2)	7.037	104	74467	10.158
58) Benzene	(2)	7.067	78	2143363	9.518
59) 1,2-Dichloroethane	(2)	7.147	62	699370	8.773
60) t-Amyl methyl ether	(2)	7.256	73	1545296	9.350
63) *Fluorobenzene	(2)	7.476	96	2207952	10.000
62) n-Heptane	(2)	7.488	43	929989	8.618
65) n-Butanol	(1)	7.836	56	1315332	1158.422
67) Trichloroethene	(2)	7.958	95	580215	9.759
69) Methylcyclohexane	(2)	8.275	83	976143	9.668
70) 1,2-Dichloropropane	(2)	8.299	63	587695	9.402
71) Methyl Methacrylate	(1)	8.378	69	314744	11.511
72) 1,4-Dioxane	(1)	8.384	88	142650M	720.917
73) Dibromomethane	(2)	8.409	93	289949	9.721
74) Bromodichloromethane	(2)	8.646	83	716198	9.787
76) 2-Nitropropane	(1)	8.909	41	995832M	106.325
80) cis-1,3-Dichloropropene	(2)	9.201	75	901592	9.970
81) 4-Methyl-2-Pentanone	(1)	9.378	43	4790911M	106.445
82) \$Toluene-d8	(3)	9.518	98	2302675	9.673
82) \$Toluene-d8	(3)	9.518	100	1471339	9.713
83) Toluene	(3)	9.597	92	1422780	9.434
84) trans-1,3-Dichloropropene	(3)	9.872	75	773790	9.460
86) Ethyl Methacrylate	(3)	9.927	69	685940	9.301
88) 1,1,2-Trichloroethane	(3)	10.079	97	428078	9.411
89) Tetrachloroethene	(3)	10.164	166	680545	9.730
85) 1,3-Dichloropropene (total)	(3)		75	1675382	19.430
90) 1,3-Dichloropropane	(3)	10.244	76	752264	9.079
91) 2-Hexanone	(1)	10.292	43	3427590M	108.350

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.463	129	498295	9.942
95) 1,2-Dibromoethane	(3)	10.579	107	424524	9.771
97)*Chlorobenzene-d5	(3)	11.012	117	1775076	10.000
98) Chlorobenzene	(3)	11.036	112	1657223	9.593
99) 1,1,1,2-Tetrachloroethane	(3)	11.122	131	572370	9.923
100) Ethylbenzene	(3)	11.122	91	2826830	9.433
101) m+p-Xylene	(3)	11.237	106	2228605	19.532
104) o-Xylene	(3)	11.567	106	1124737	9.834
106) Styrene	(3)	11.585	104	1888174	10.058
107) Bromoform	(3)	11.749	173	297683	10.322
105) Xylene (Total)	(3)		106	3353342	29.366
108) Isopropylbenzene	(3)	11.871	105	2894145	9.714
111)\$4-Bromofluorobenzene	(3)	12.018	95	876049	9.614
111)\$4-Bromofluorobenzene	(3)	12.018	174	800985	10.286
113) 1,1,2,2-Tetrachloroethane	(4)	12.115	83	584356	9.675
114) Bromobenzene	(4)	12.134	156	774645	9.766
116) 1,2,3-Trichloropropane	(4)	12.164	110	158918	9.412
117) n-Propylbenzene	(4)	12.201	91	3453739	9.351
119) 2-Chlorotoluene	(4)	12.274	126	698294	9.474
121) 1,3,5-Trimethylbenzene	(4)	12.335	105	2514010	9.506
122) 4-Chlorotoluene	(4)	12.365	126	746406	9.713
125) tert-Butylbenzene	(4)	12.579	134	599421	10.858
126) Pentachloroethane	(4)	12.609	167	450562	10.512
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	2583708	9.579
128) sec-Butylbenzene	(4)	12.737	105	3244154	9.657
131) 1,3-Dichlorobenzene	(4)	12.841	146	1557931	9.883
132) p-Isopropyltoluene	(4)	12.847	119	2846767	9.709
133)*1,4-Dichlorobenzene-d4	(4)	12.896	152	1027718	10.000
134) 1,4-Dichlorobenzene	(4)	12.914	146	1572240	9.785
135) 1,2,3-Trimethylbenzene	(4)	12.920	120	1162094	9.582
136) Benzyl Chloride	(4)	12.987	126	223995	10.209
138) n-Butylbenzene	(4)	13.139	92	1497186	9.490
139) 1,2-Dichlorobenzene	(4)	13.170	146	1464300	9.845
143) 1,2-Dibromo-3-chloropropane	(1)	13.713	155	89456	13.237
144) 1,3,5-Trichlorobenzene	(4)	13.834	180	1294141	9.817
145) 1,2,4-Trichlorobenzene	(4)	14.255	180	1183687	9.678
146) Hexachlorobutadiene	(4)	14.340	225	609321	9.453
147) Naphthalene	(4)	14.438	128	1968736	9.630

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

page 3 of 4

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

FKP52 Page 419 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d
Injection date and time: 30-APR-2018 20:51

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

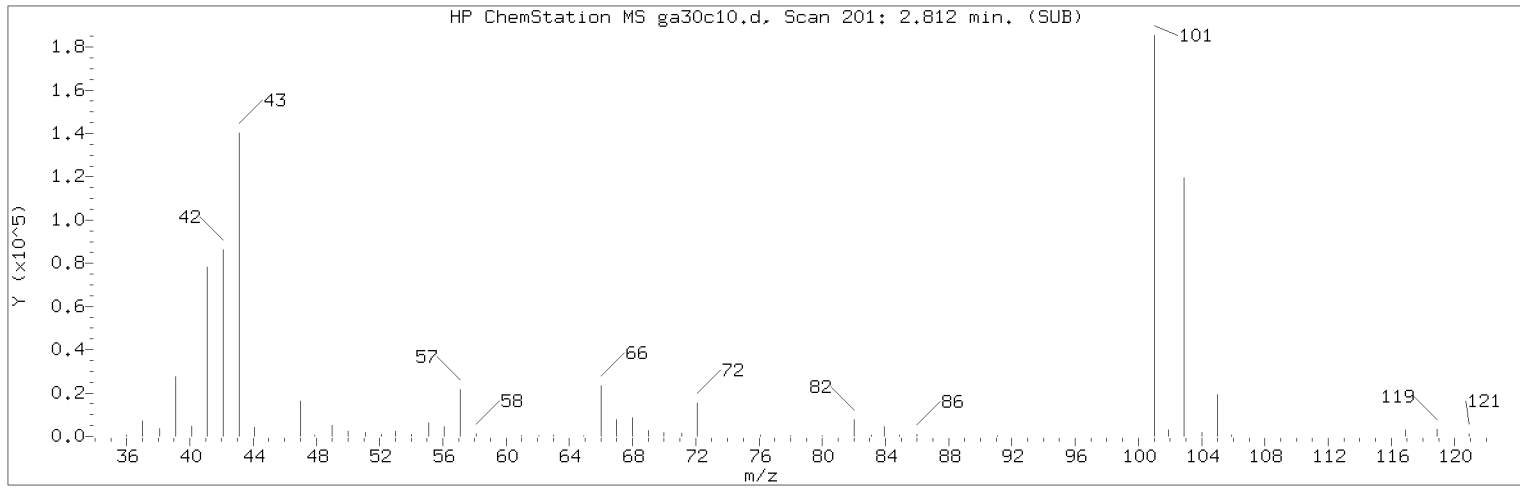
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	1017031	9.726

page 4 of 4

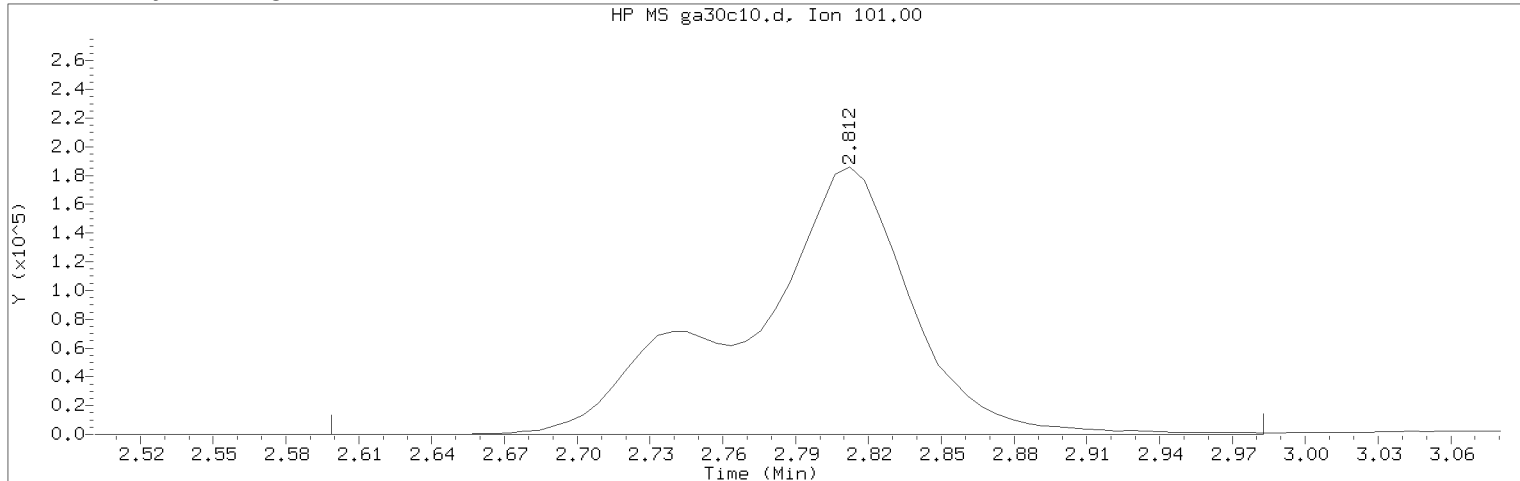
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 201	
Retention Time (minutes)	: 2.812	
Quant Ion	: 101.00	
Area (flag)	: 880858M	
On-Column Amount (ng)	: 9.4375	
Integration start scan	: 165	Integration stop scan: 228
Y at integration start	: 0	Y at integration end: 0

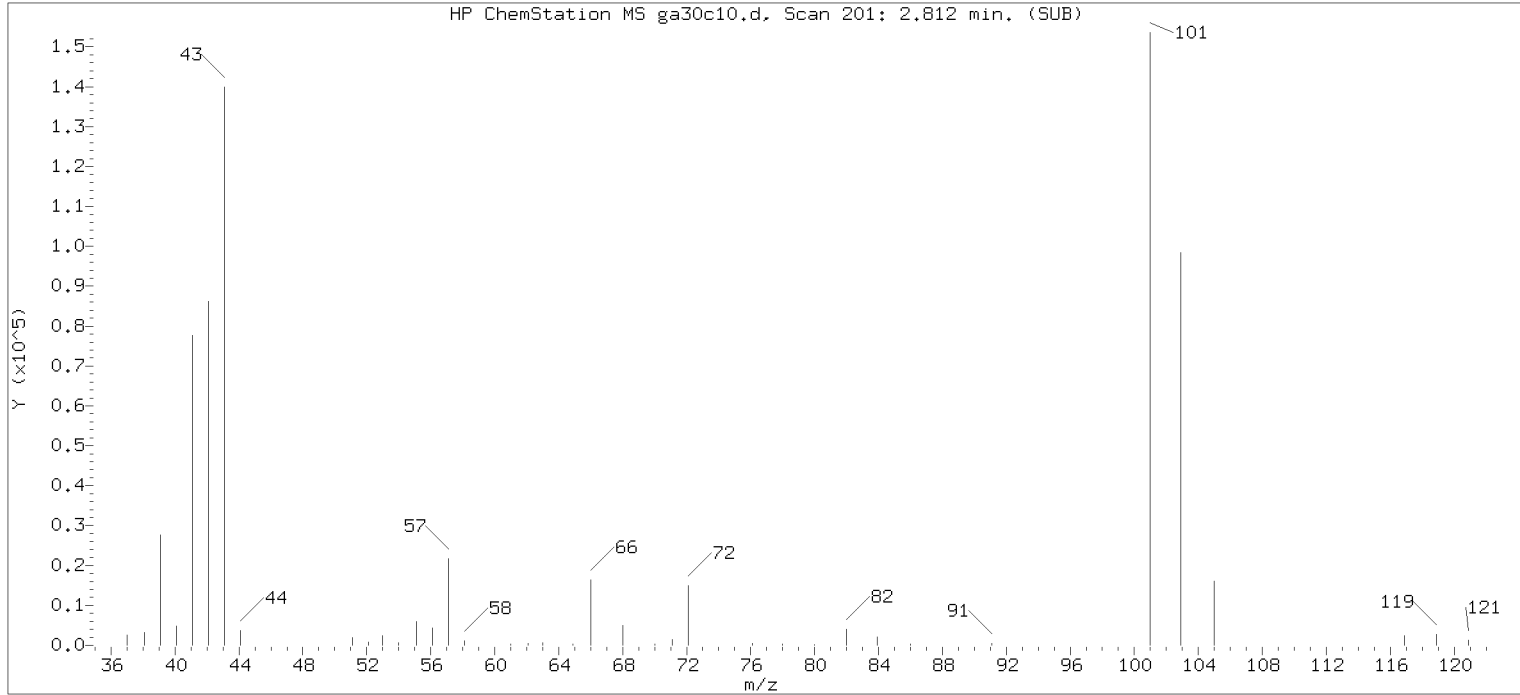
Reason for manual integration: improper integration

Analyst responsible for change:

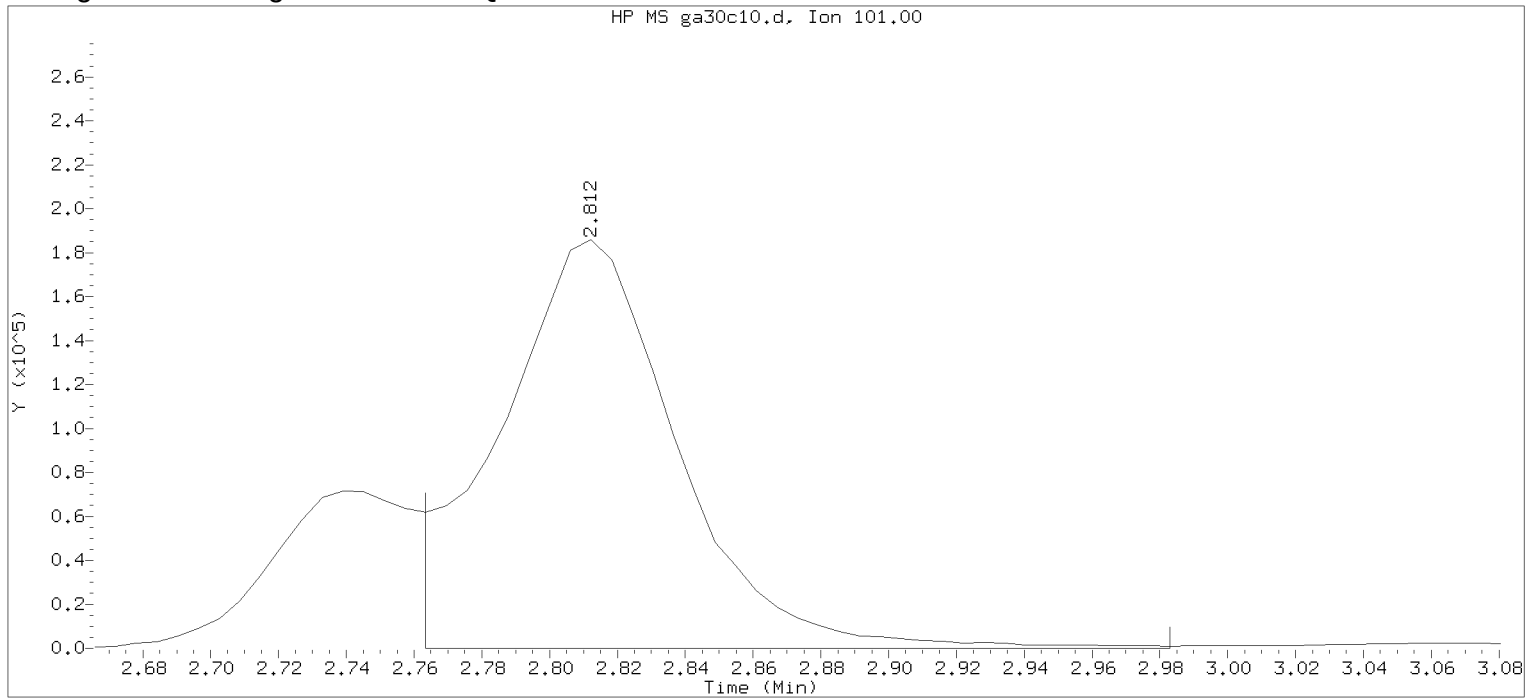
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area : 673181

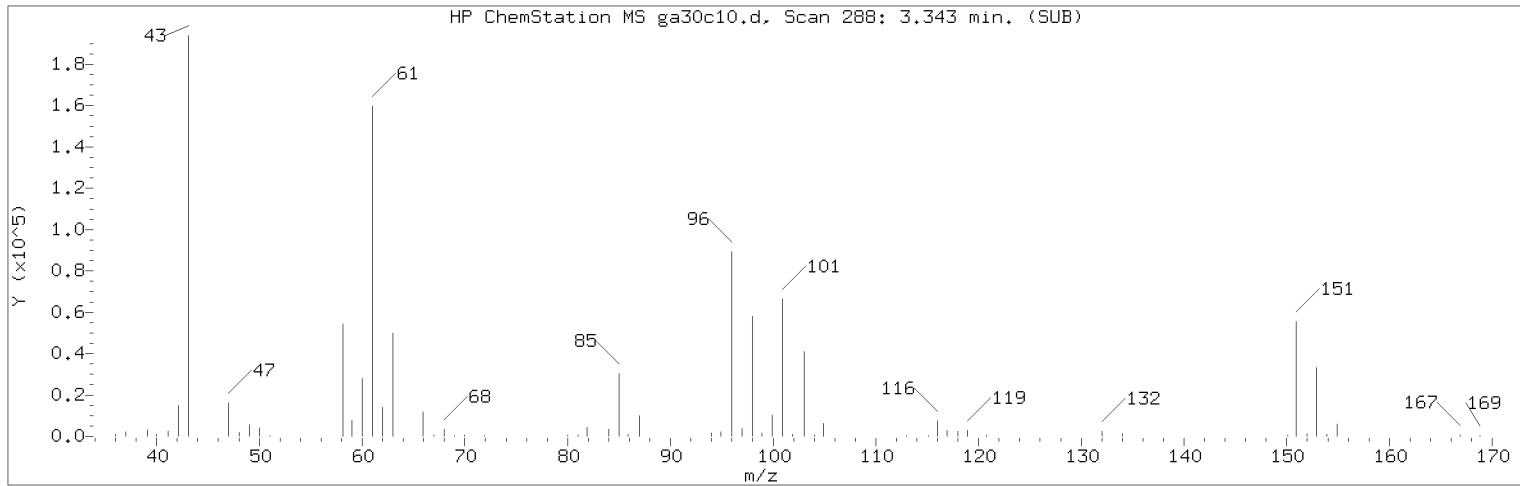
On-column Amount (ng) : 7.2125

Integration start scan : 192 Integration stop scan: 228

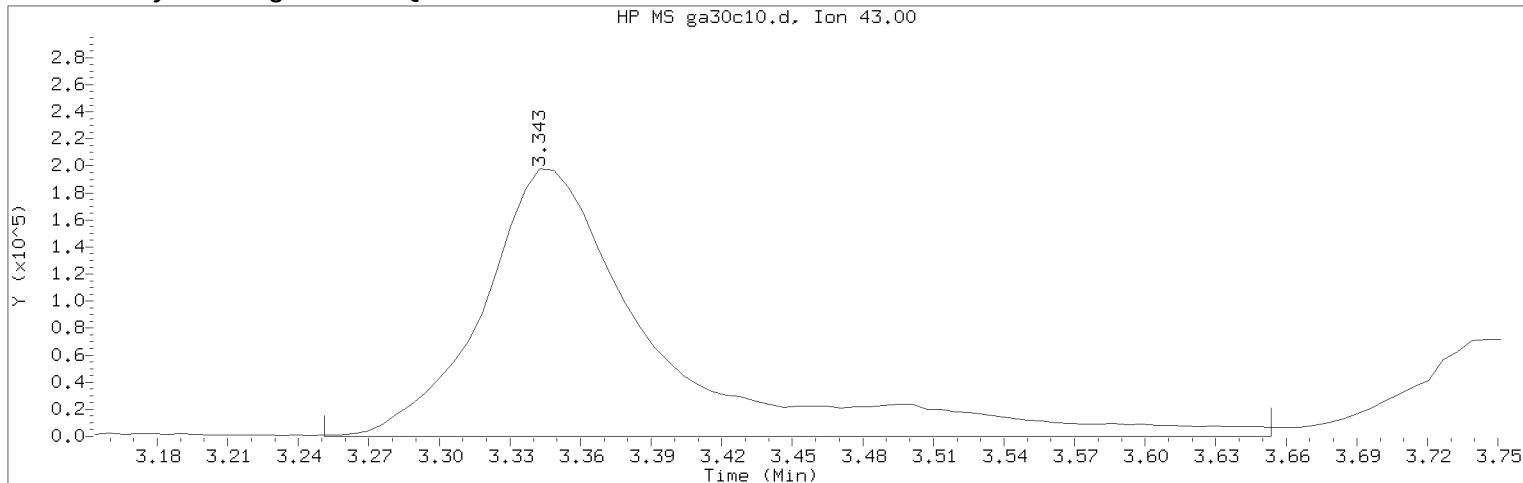
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
Target 3.5 esignature user FID52mBkg7420 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 14
Compound Name : Acetone
Scan Number : 288
Retention Time (minutes): 3.343
Quant Ion : 43.00
Area (flag) : 1032407M
On-Column Amount (ng) : 96.9562
Integration start scan : 272
Y at integration start : 139

Integration stop scan: 338
Y at integration end: 139

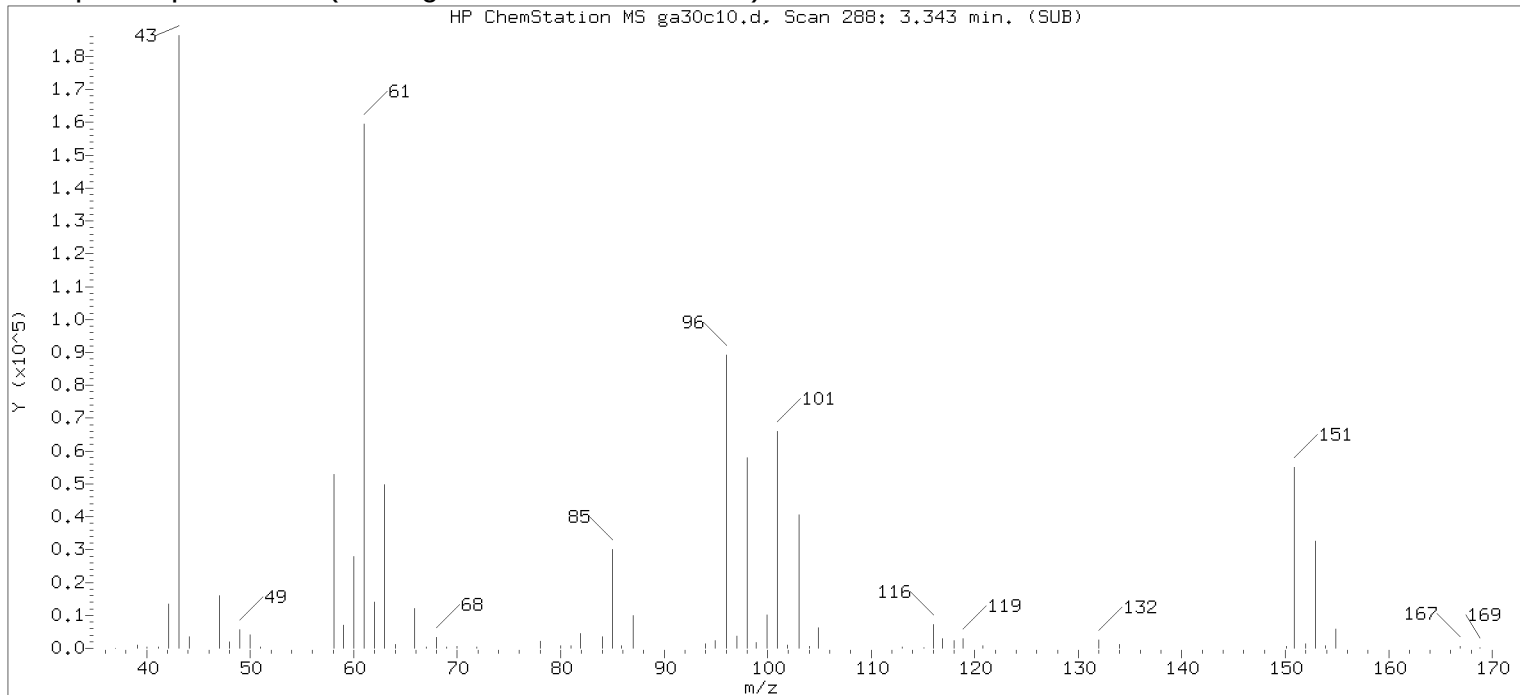
Reason for manual integration: improper integration

Analyst responsible for change:

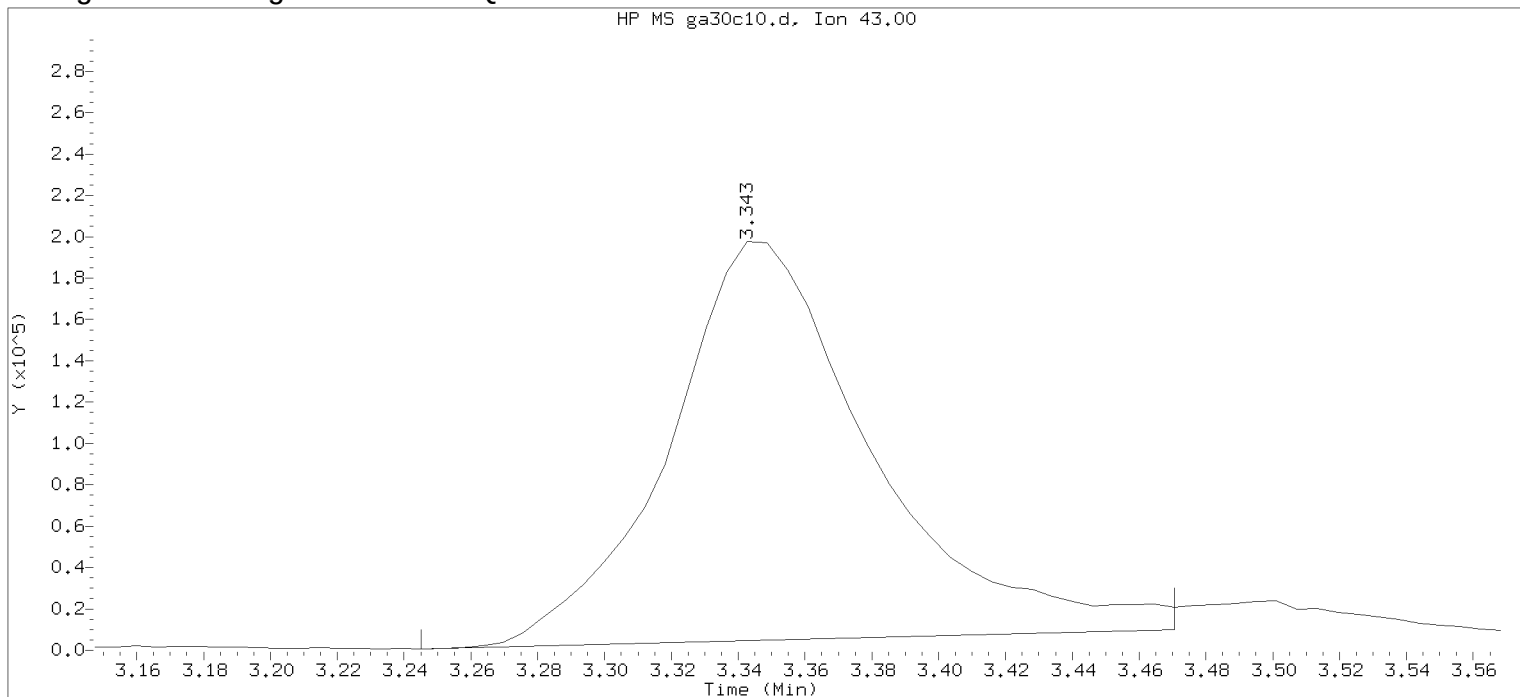
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

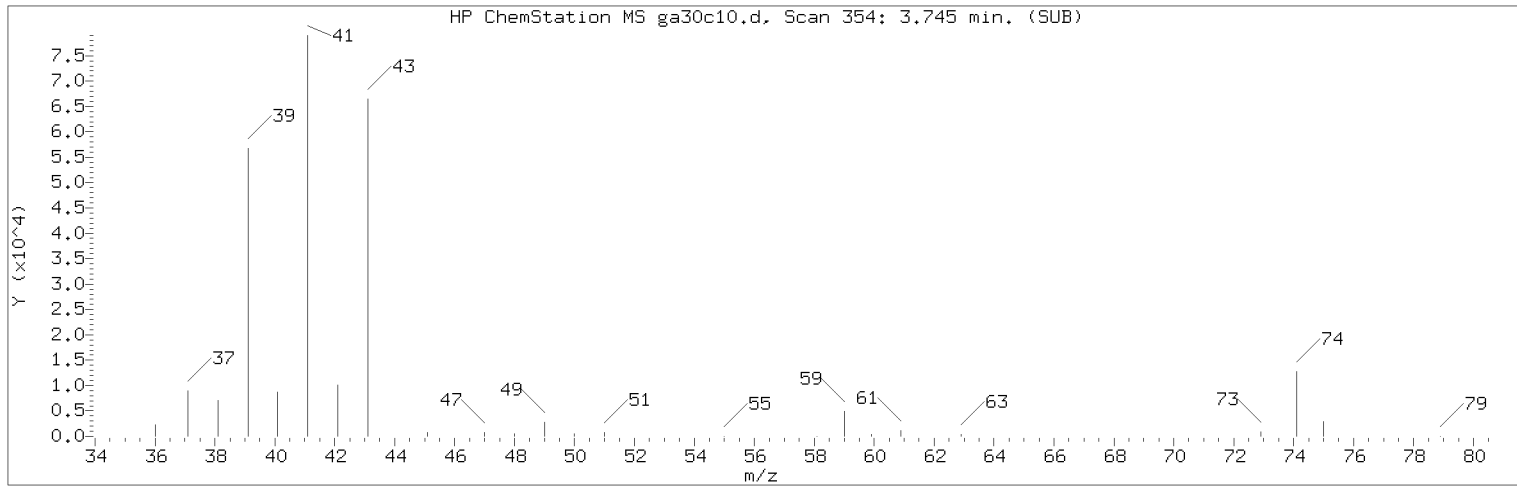
Lab Sample ID: VSTD050

Compound Number : 14
Compound Name : Acetone
Scan Number : 288
Retention Time (minutes): 3.343
Quant Ion : 43.00
Area : 819875
On-column Amount (ng) : 76.9967
Integration start scan : 271
Y at integration start : 605

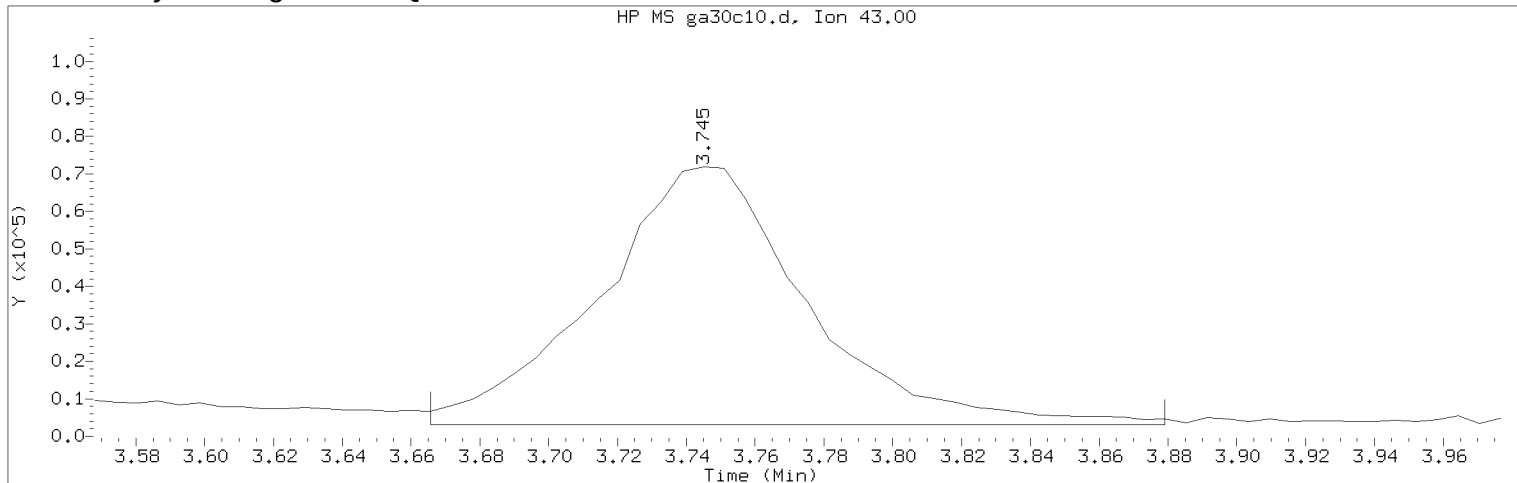
Integration stop scan: 308
Y at integration end: 9815

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
Target 3.5 esignature userF1D52mB107420 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 354	
Retention Time (minutes)	: 3.745	
Quant Ion	: 43.00	
Area (flag)	: 291852M	
On-Column Amount (ng)	: 9.7238	
Integration start scan	: 340	Integration stop scan: 375
Y at integration start	: 3054	Y at integration end: 3054

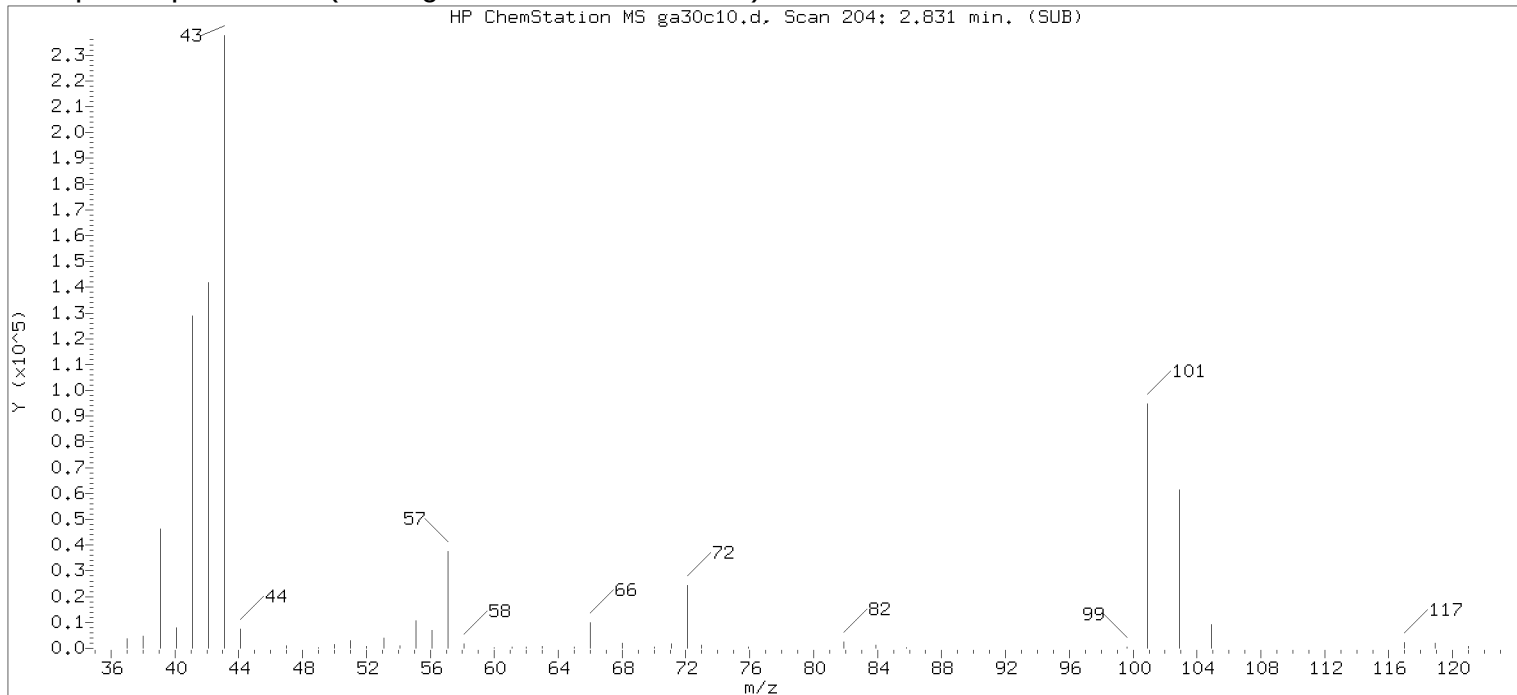
Reason for manual integration: improper integration

Analyst responsible for change:

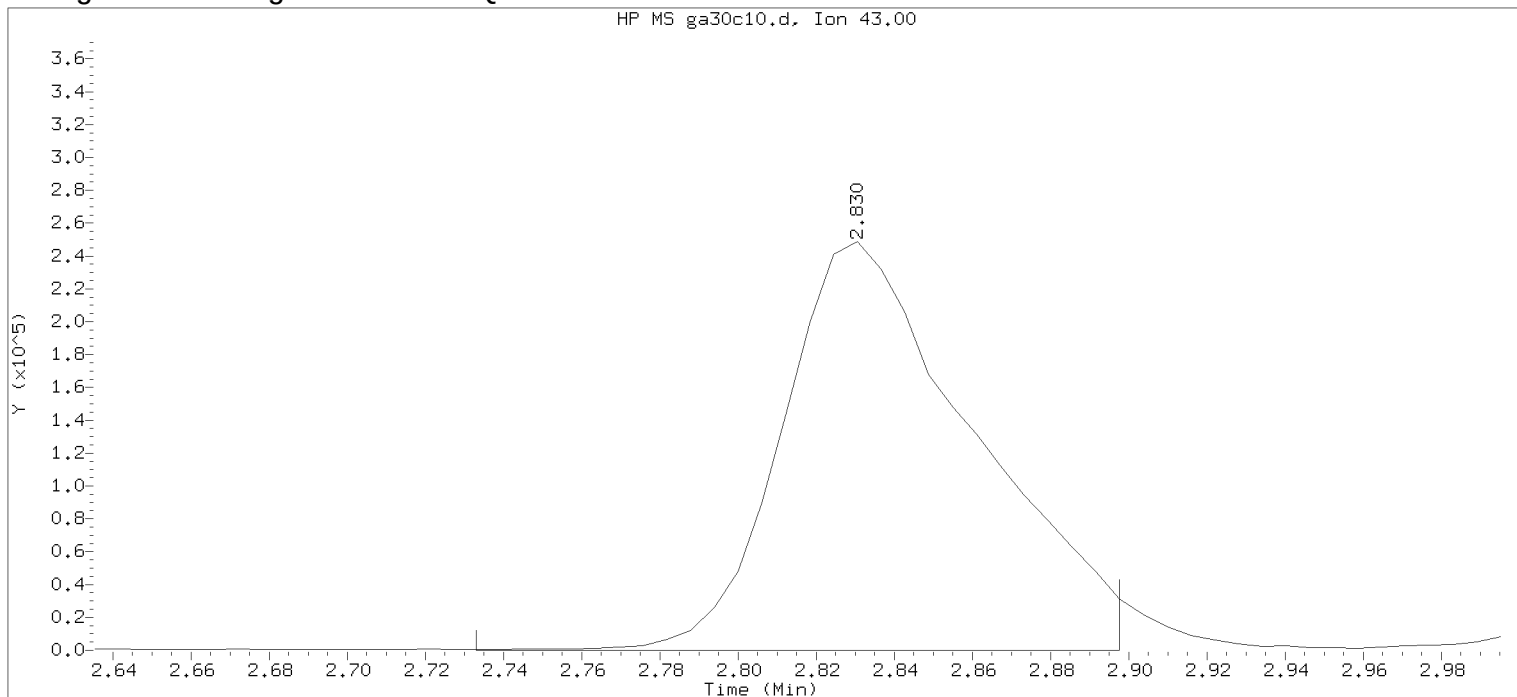
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

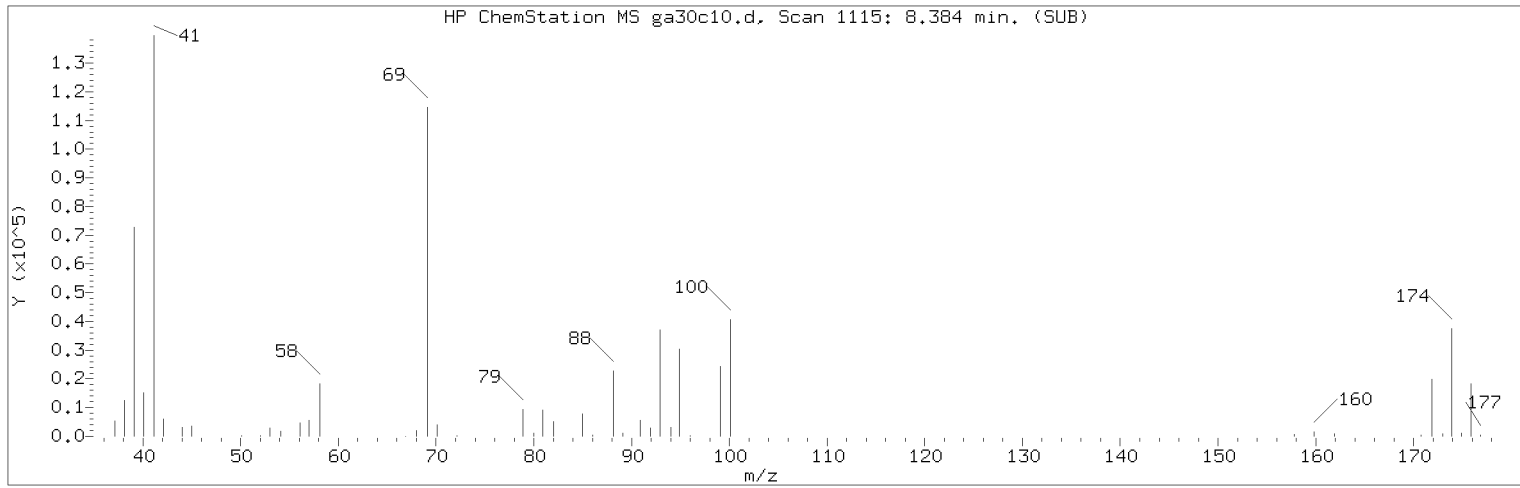
Lab Sample ID: VSTD050

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 204
 Retention Time (minutes): 2.830
 Quant Ion : 43.00
 Area : 849841
 On-column Amount (ng) : 28.3147
 Integration start scan : 187
 Y at integration start : 0

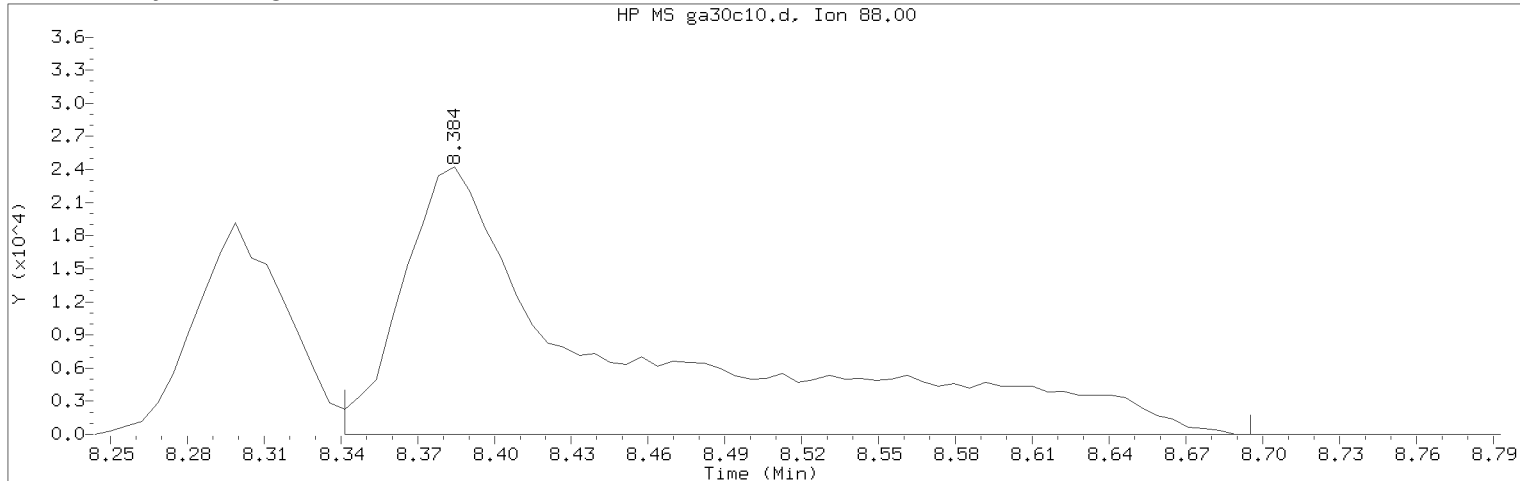
Integration stop scan: 214
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
 Target 3.5 esignature user F1D52mB107420 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1115	
Retention Time (minutes)	: 8.384	
Quant Ion	: 88.00	
Area (flag)	: 142650M	
On-Column Amount (ng)	: 720.9167	
Integration start scan	: 1107	Integration stop scan: 1165
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

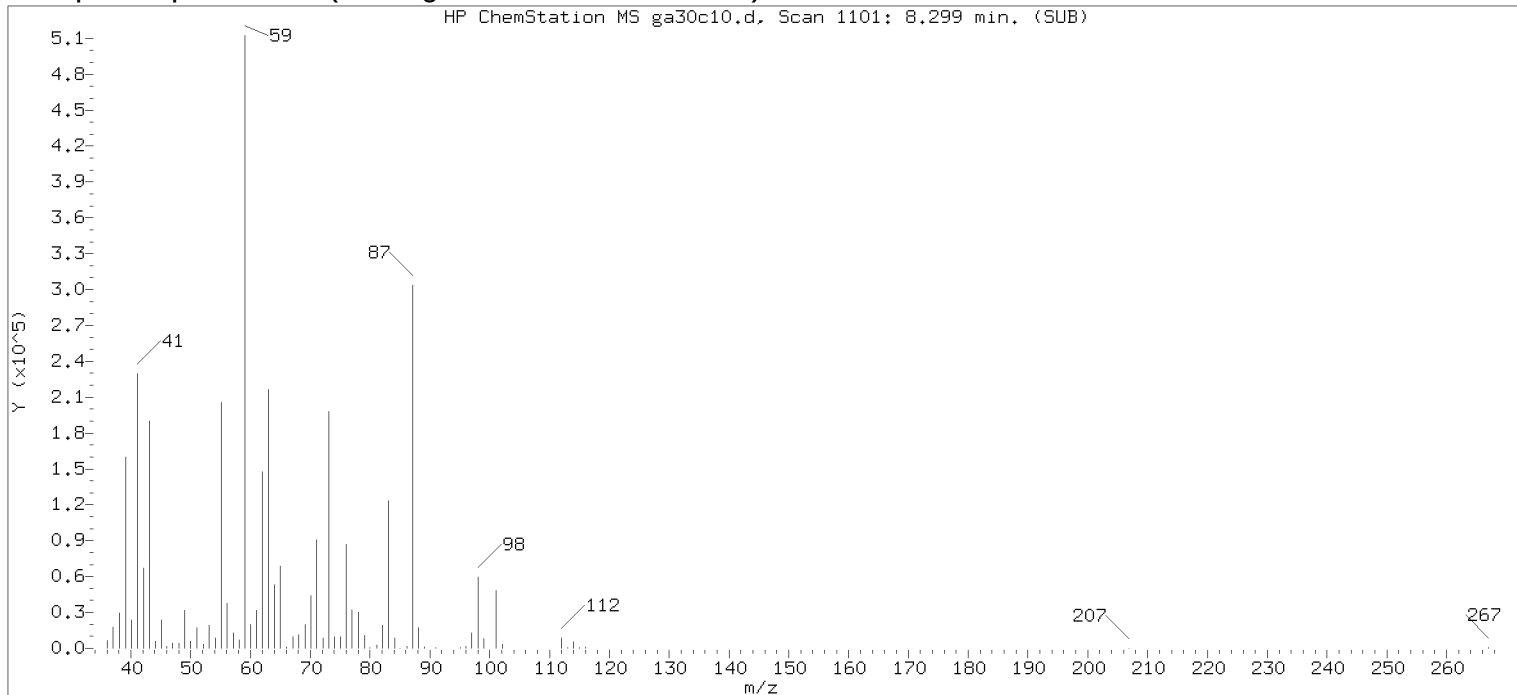
Analyst responsible for change:

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

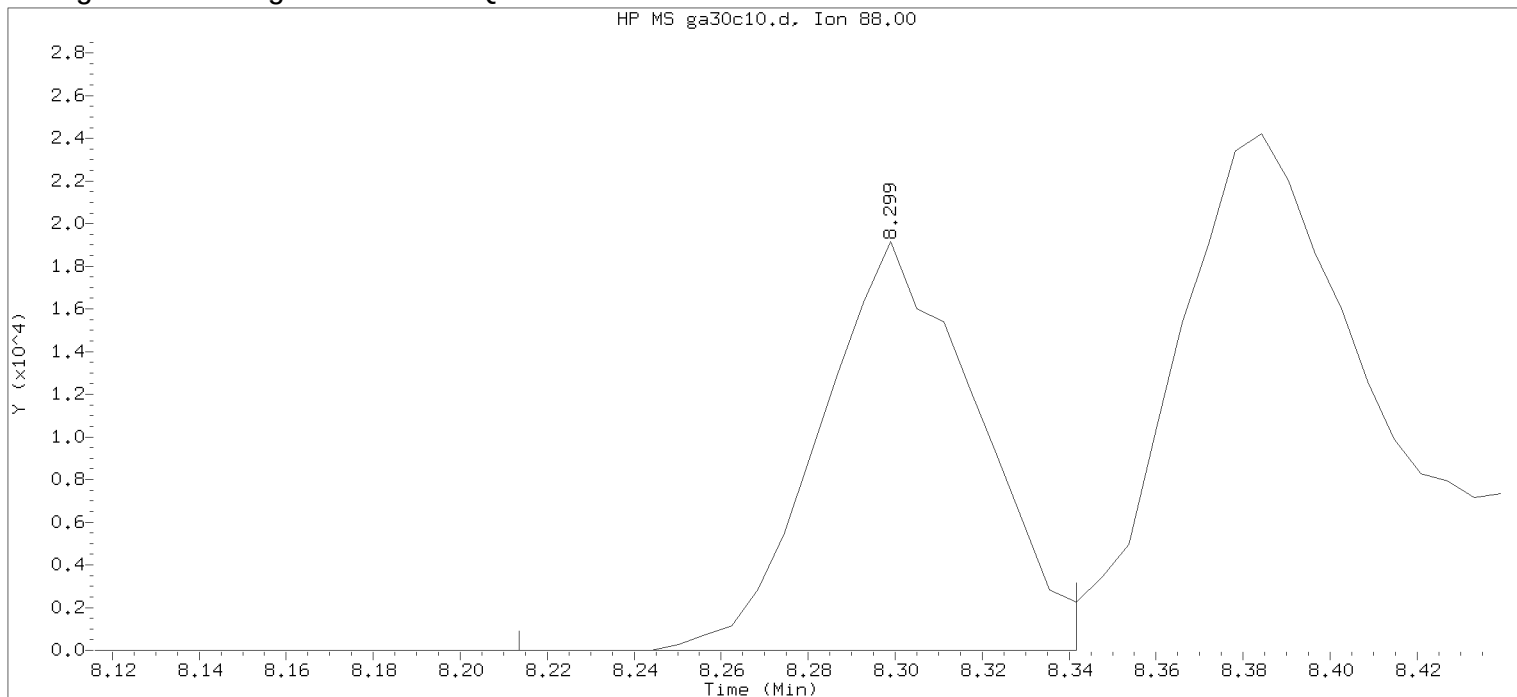
Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.

PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

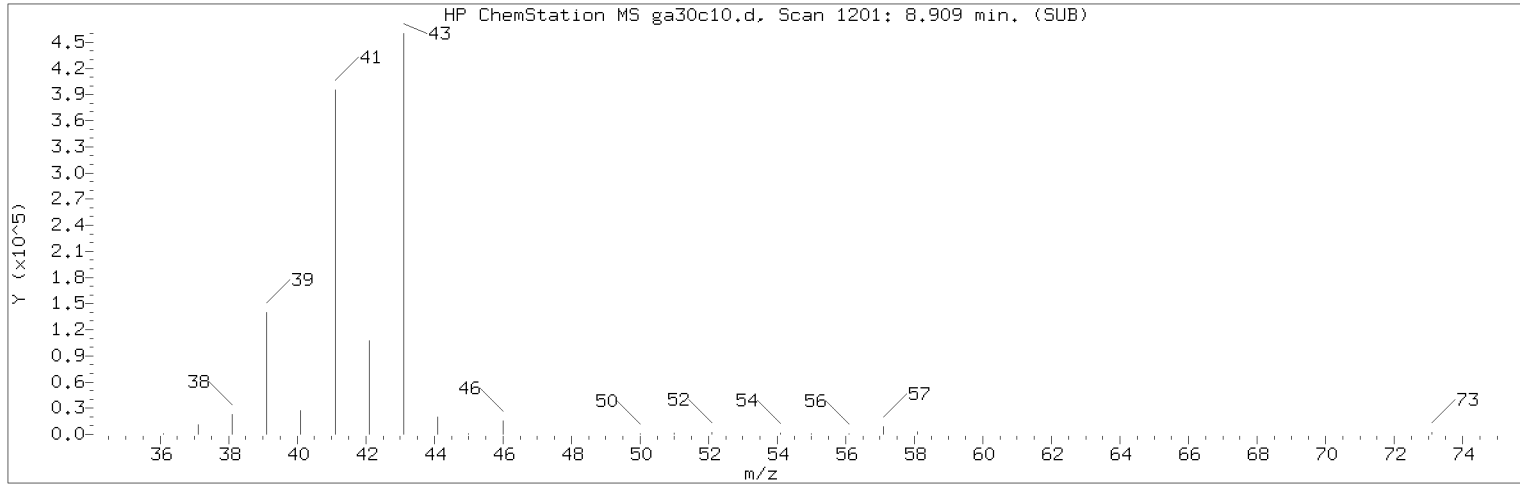
Lab Sample ID: VSTD050

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1101
 Retention Time (minutes): 8.299
 Quant Ion : 88.00
 Area : 47901
 On-column Amount (ng) : 242.0792
 Integration start scan : 1086
 Y at integration start : 0

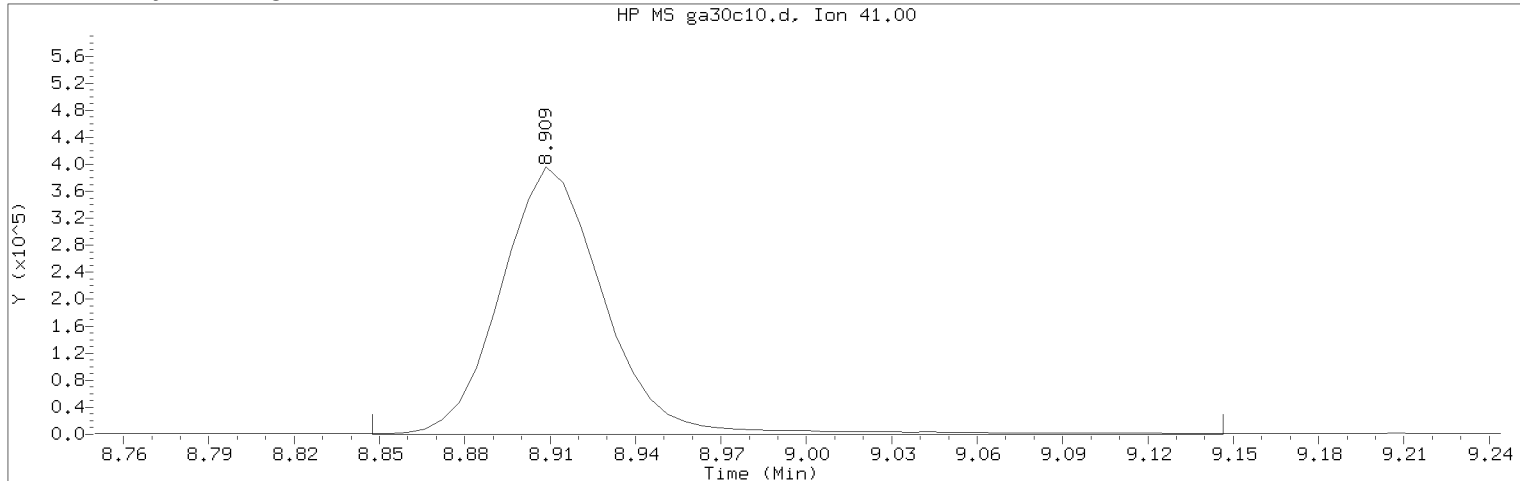
Integration stop scan: 1107
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
 Target 3.5 esignature user F1D52mB107428 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number	: 76	
Compound Name	: 2-Nitropropane	
Scan Number	: 1201	
Retention Time (minutes)	: 8.909	
Quant Ion	: 41.00	
Area (flag)	: 995832M	
On-Column Amount (ng)	: 106.3253	
Integration start scan	: 1190	Integration stop scan: 1239
Y at integration start	: 312	Y at integration end: 312

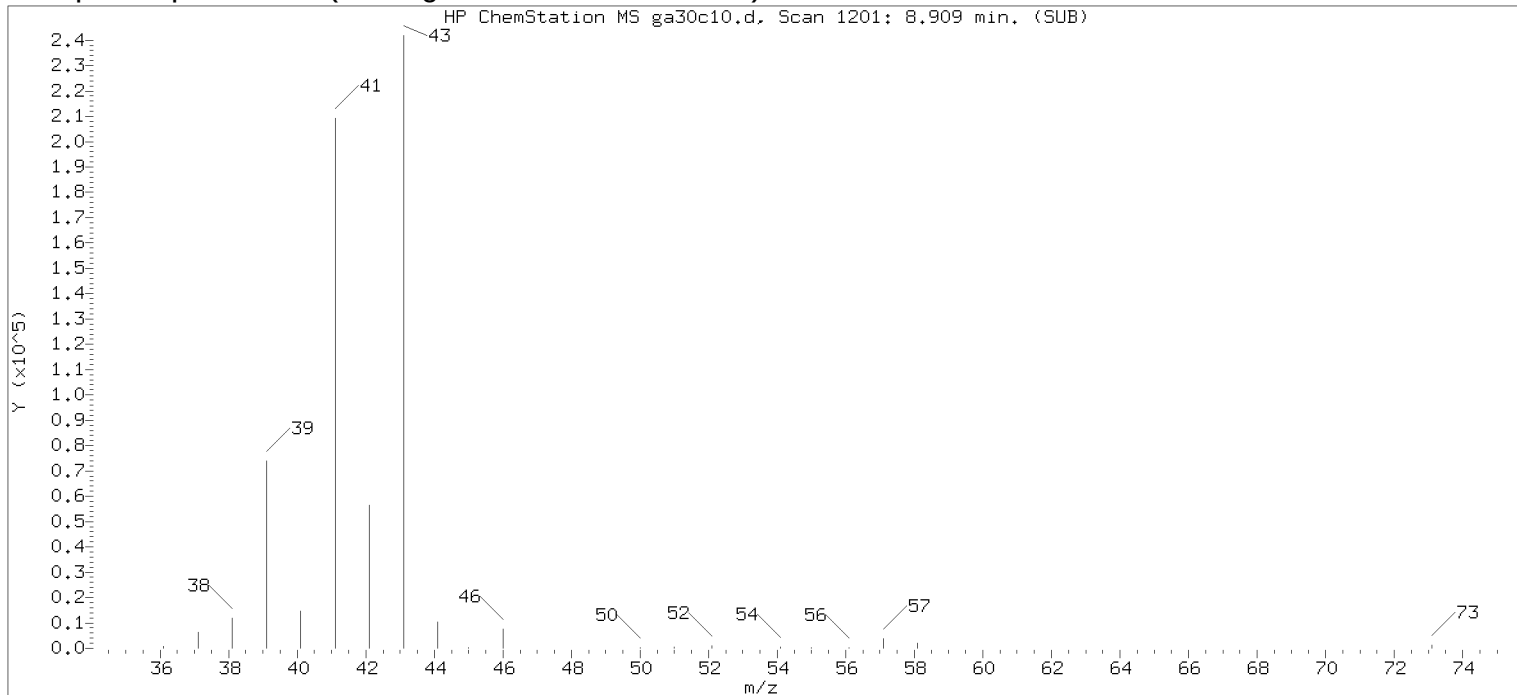
Reason for manual integration: improper integration

Analyst responsible for change:

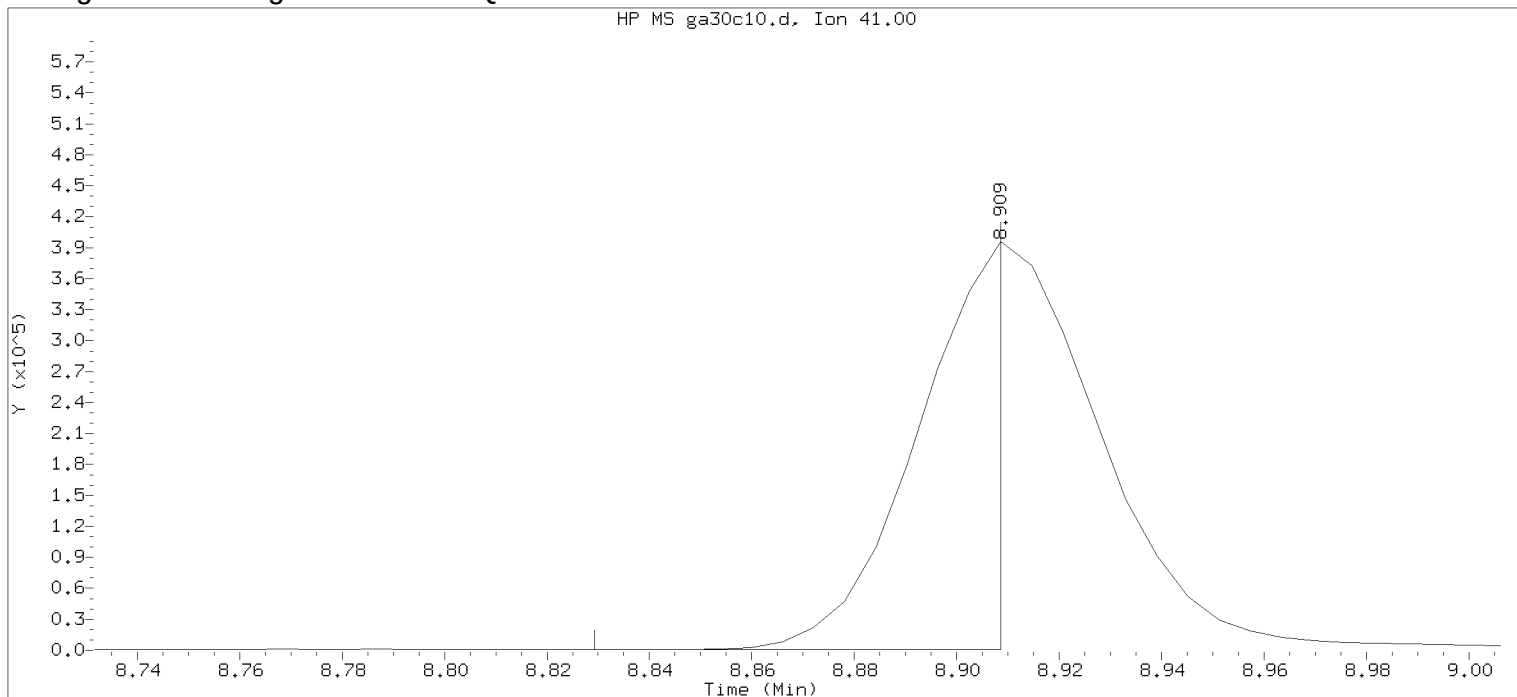
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 76

Compound Name : 2-Nitropropane

Scan Number : 1201

Retention Time (minutes): 8.909

Quant Ion : 41.00

Area : 430026

On-column Amount (ng) : 45.9140

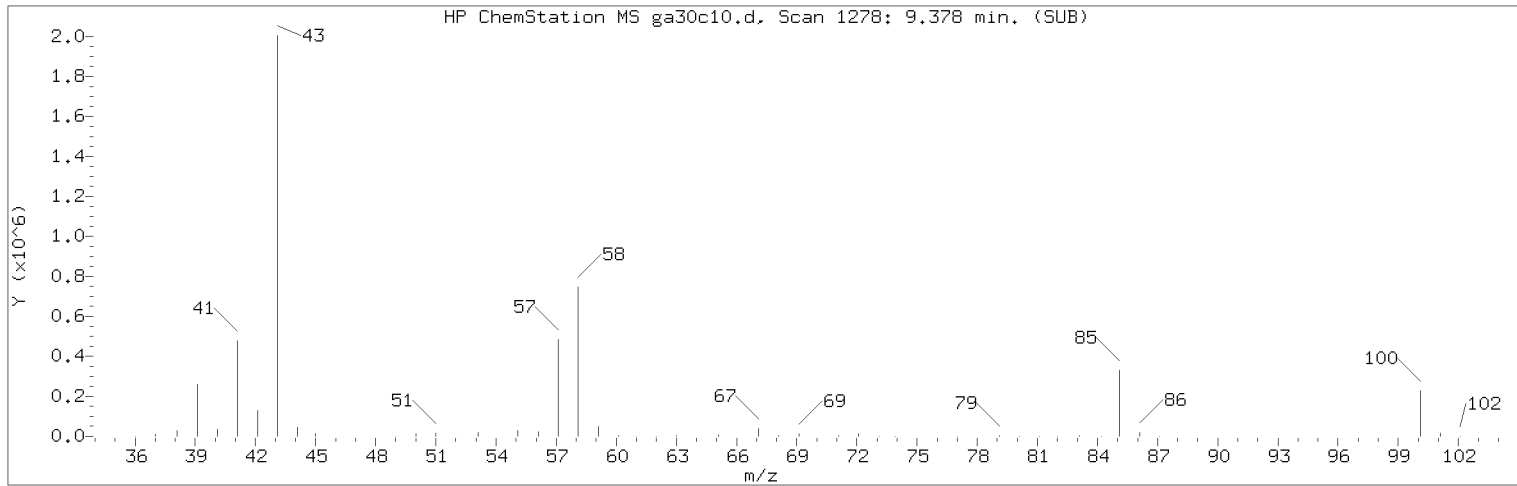
Integration start scan : 1187 Integration stop scan: 1200

Y at integration start : 509 Y at integration end: 509

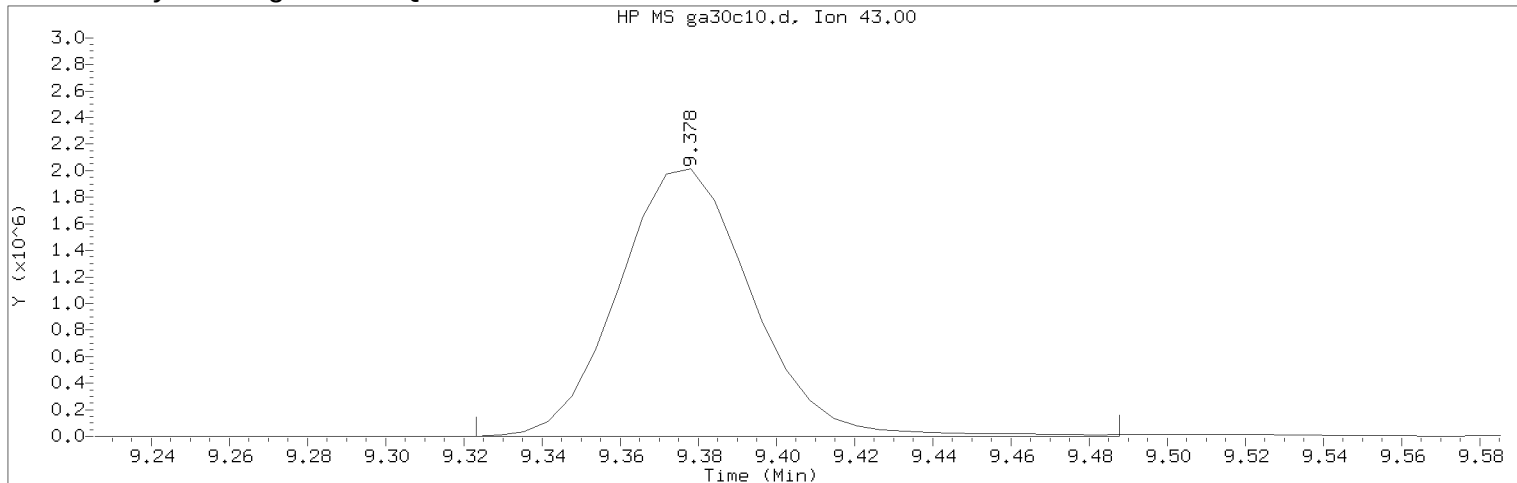
Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.

Target 3.5 esignature userFID52mBkg7470 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1278

Retention Time (minutes): 9.378

Quant Ion : 43.00

Area (flag) : 4790911M

On-Column Amount (ng) : 106.4452

Integration start scan : 1268

Integration stop scan: 1295

Y at integration start : 103

Y at integration end: 103

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

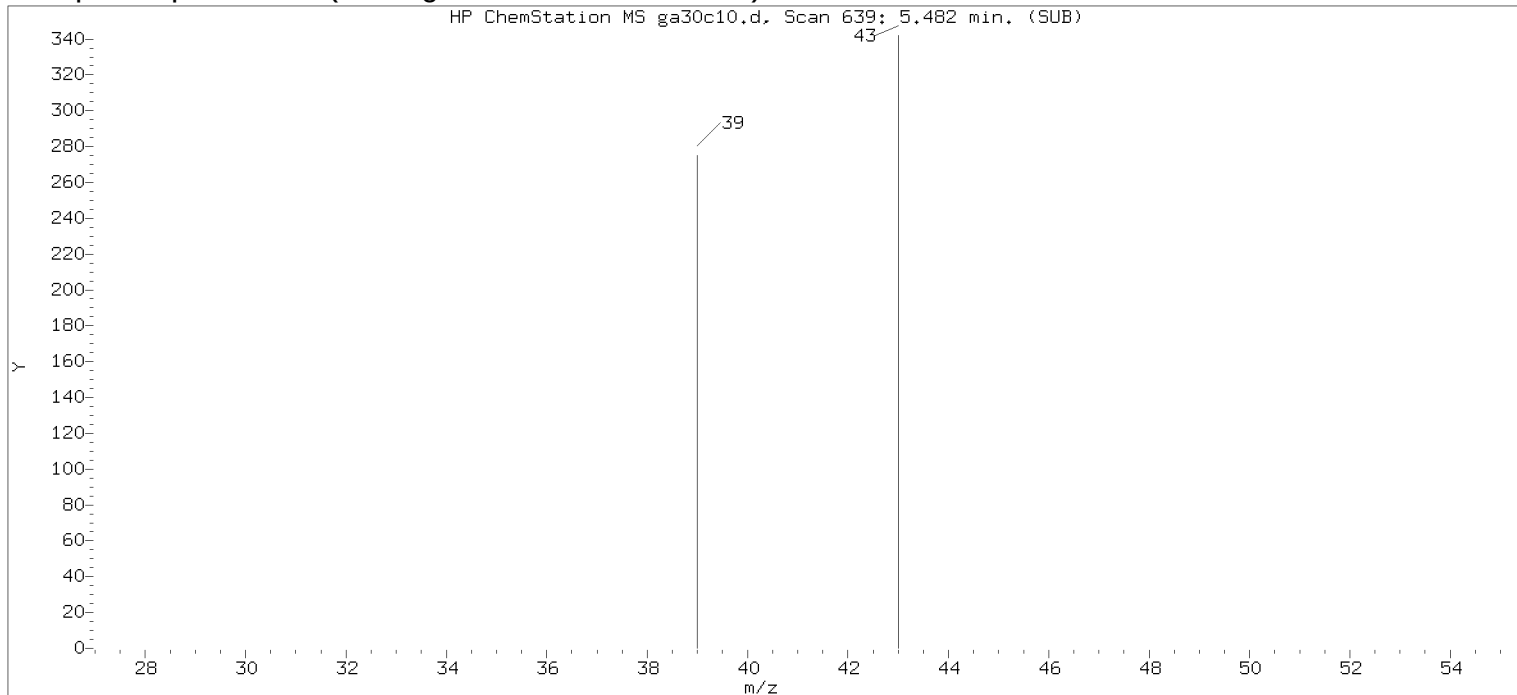
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

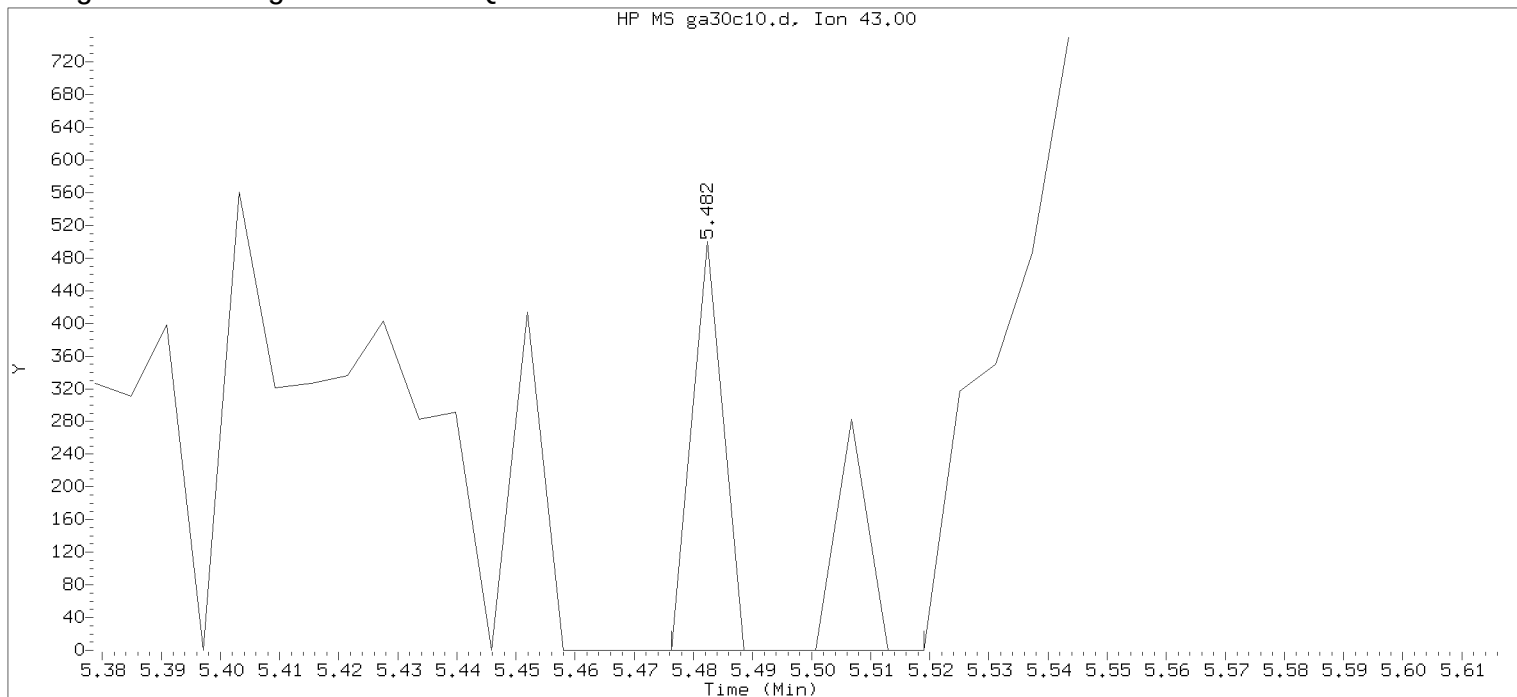
Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.

PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 639

Retention Time (minutes): 5.482

Quant Ion : 43.00

Area : 286

On-column Amount (ng) : 0.0064

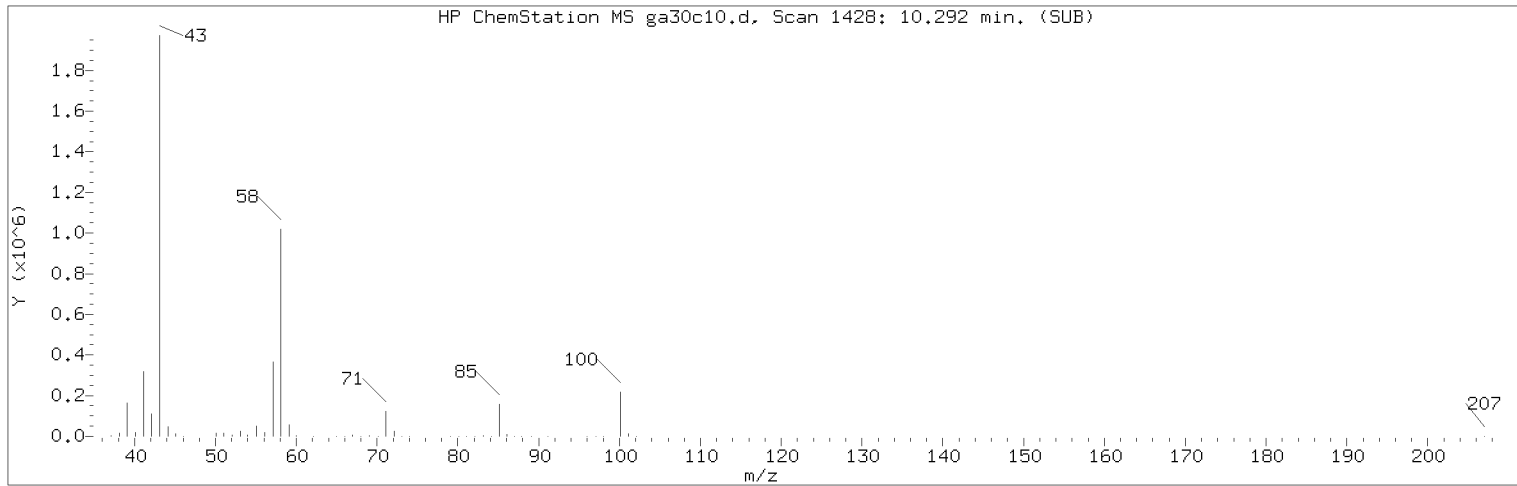
Integration start scan : 637 Integration stop scan: 644

Y at integration start : 0 Y at integration end: 0

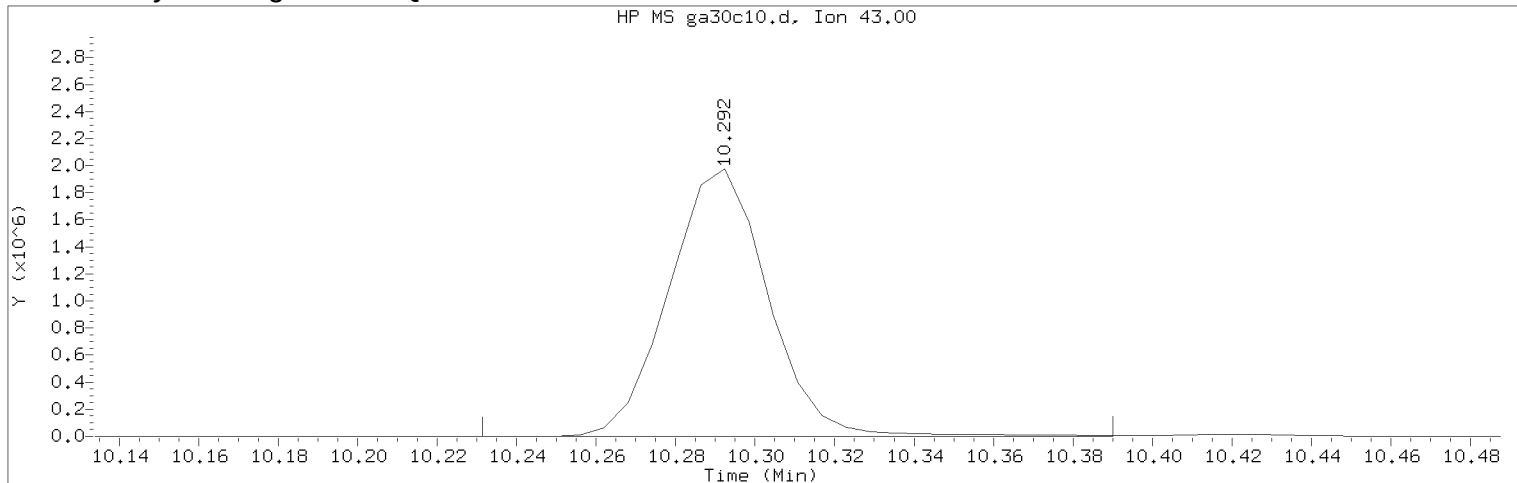
Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.

Target 3.5 esignature userFID52m Page 470 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:17 msk07970

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1428	
Retention Time (minutes)	: 10.292	
Quant Ion	: 43.00	
Area (flag)	: 3427590M	
On-Column Amount (ng)	: 108.3503	
Integration start scan	: 1417	Integration stop scan: 1443
Y at integration start	: 54	Y at integration end: 54

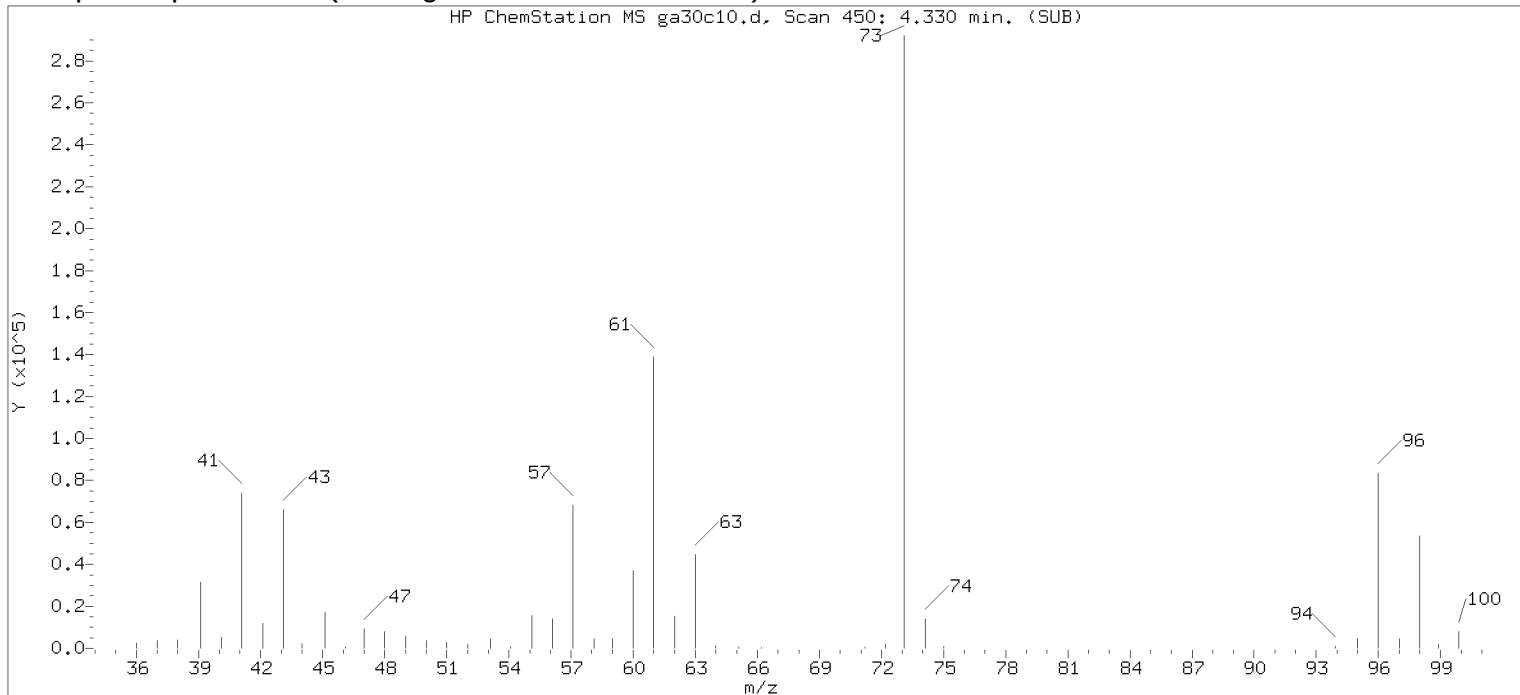
Reason for manual integration: improper integration

Analyst responsible for change:

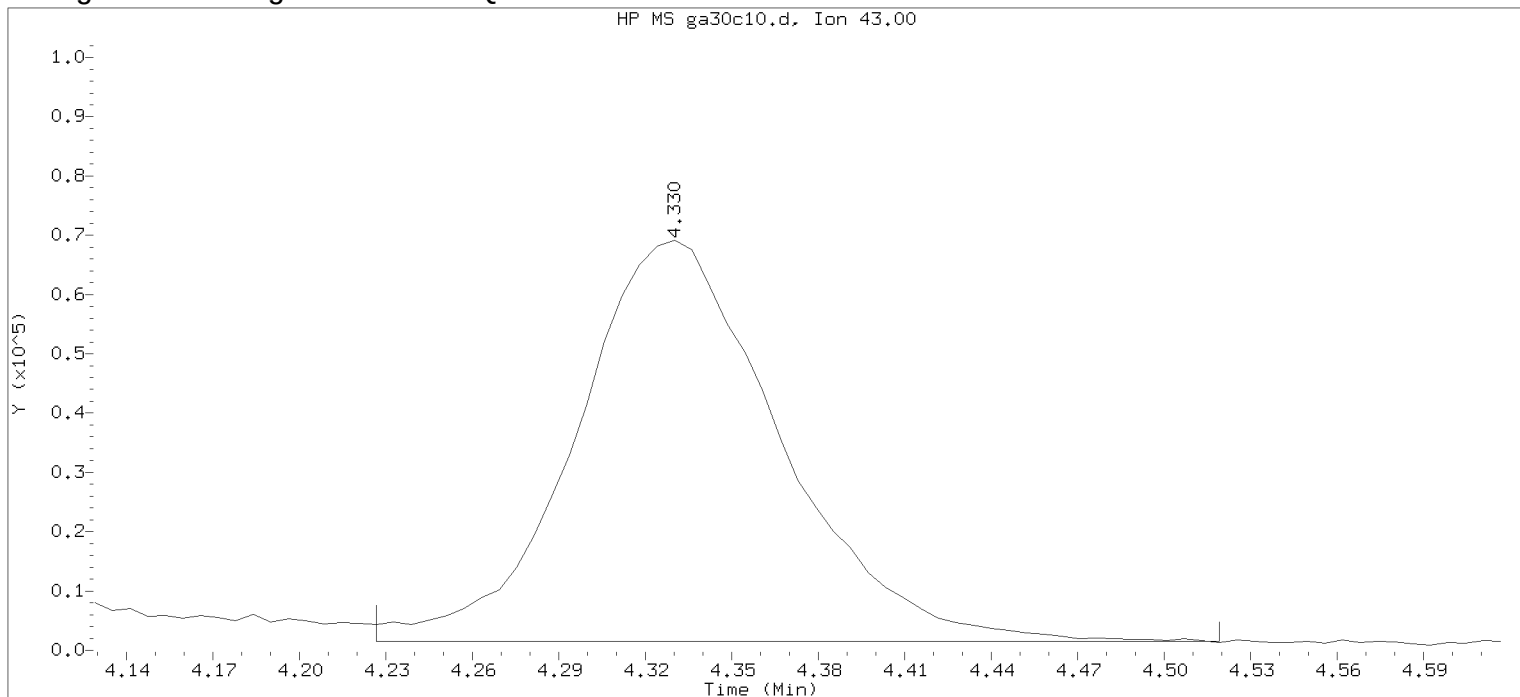
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 20:51

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:08 Automation

Sample Name: VSTD050

Lab Sample ID: VSTD050

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 450
 Retention Time (minutes): 4.330
 Quant Ion : 43.00
 Area : 334315
 On-column Amount (ng) : 10.5681
 Integration start scan : 432
 Y at integration start : 1478

Integration stop scan: 480
 Y at integration end: 1478

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
 Target 3.5 esignature user F1D52mB407470 of 730

Data File: /chem2/HP16334.i/18may01a,b/gy0101.d

Page 1

Date : 01-MAY-2018 06:52

Client ID: 50ngBFB

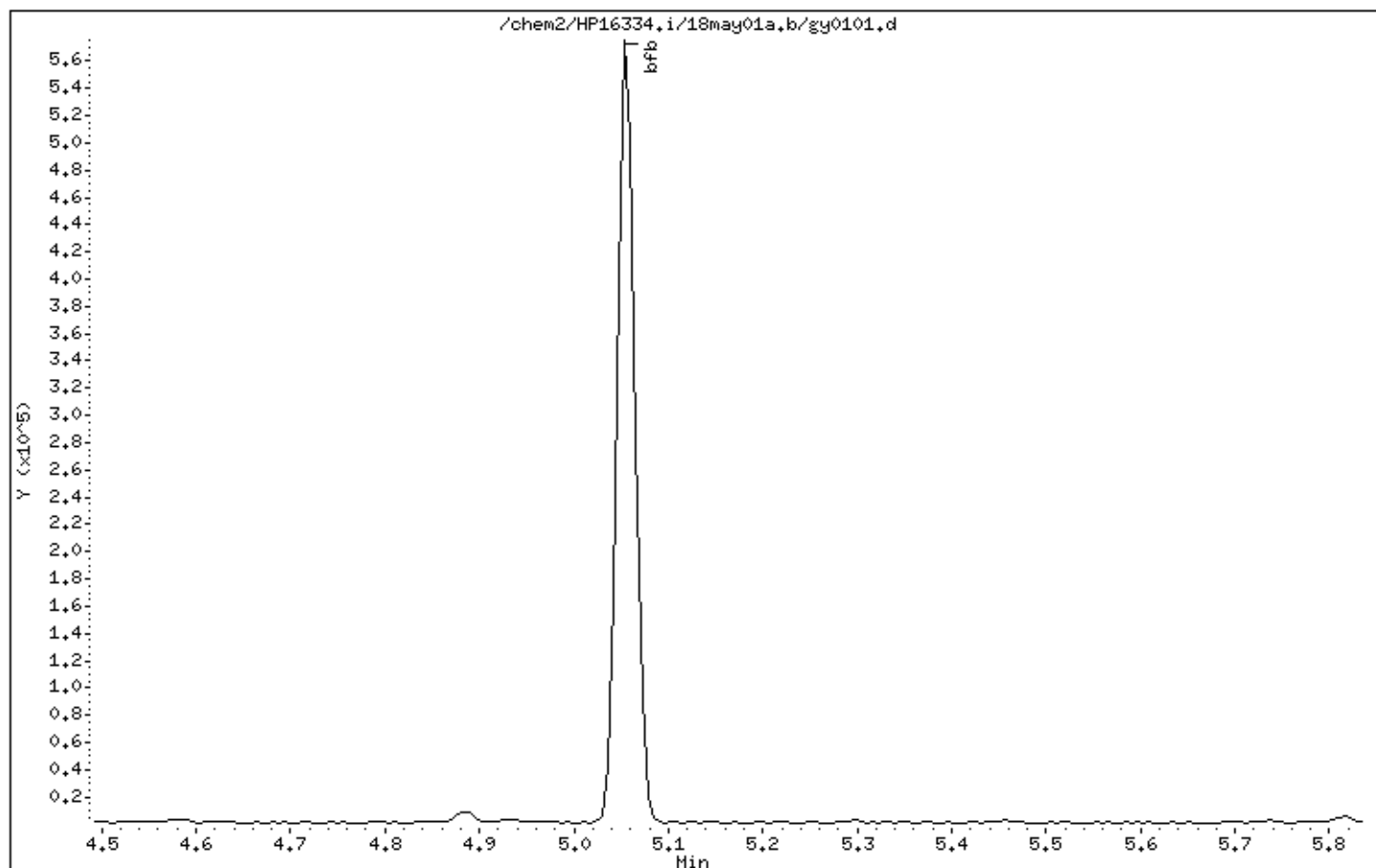
Instrument: HP16334.i

Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0,25



Digitally signed by Jennifer K. Howe on 05/01/2018 at 06:53.
Target 3.5 esignature user ID: jkh09052

Date : 01-MAY-2018 06:52

Client ID: 50ngBFB

Instrument: HP16334.i

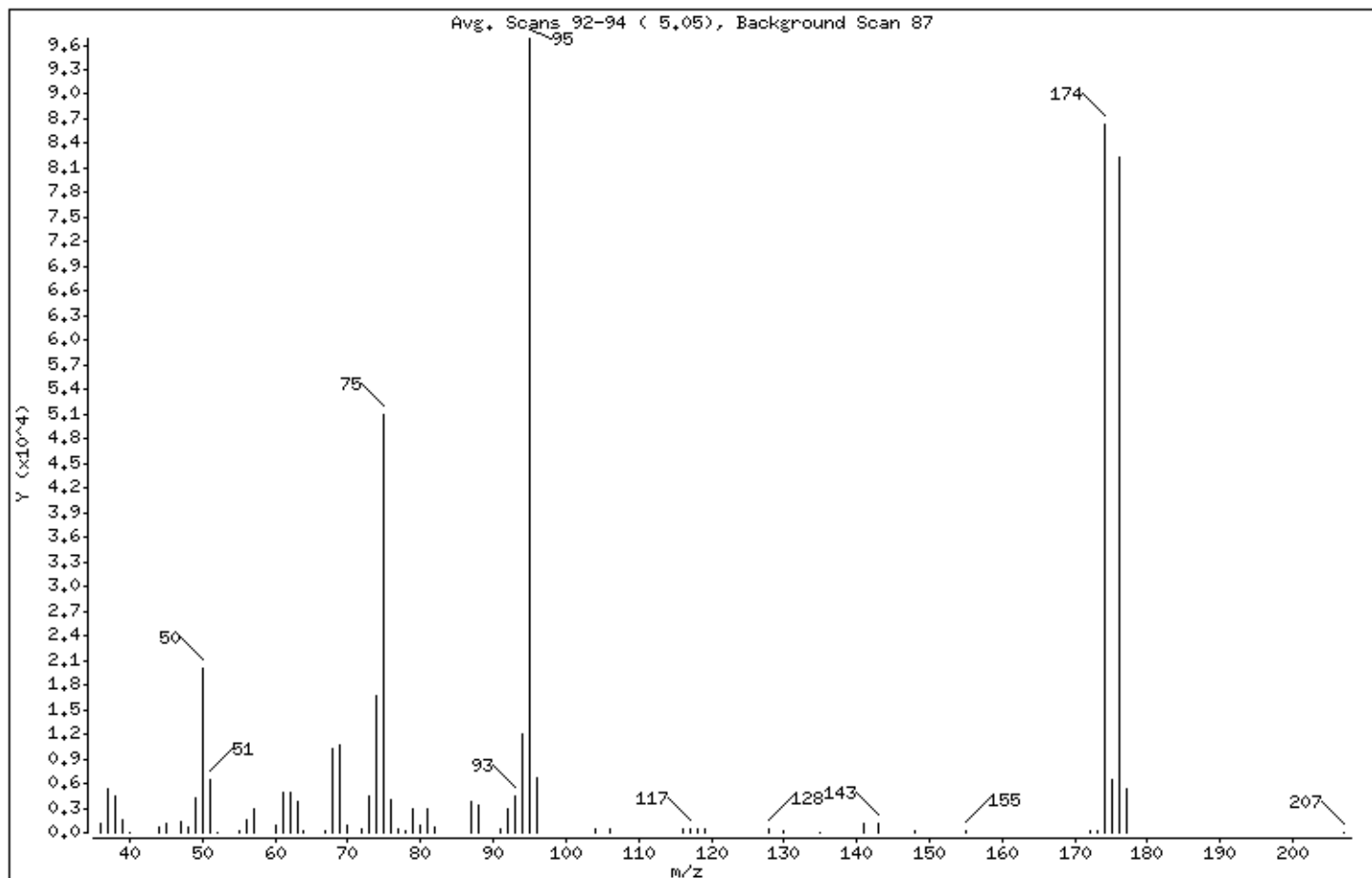
Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

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	20.61
75	30.00 - 60.00% of mass 95	52.55
96	5.00 - 9.00% of mass 95	6.84
173	Less than 2.00% of mass 174	0.26 (0.29)
174	50.00 - 100.00% of mass 95	89.18
175	5.00 - 9.00% of mass 174	6.67 (7.48)
176	95.00 - 101.00% of mass 174	85.13 (95.46)
177	5.00 - 9.00% of mass 176	5.57 (6.54)

Digitally signed by Jennifer K. Howe on 05/01/2018 at 06:53.
Target 3.5 esignature user ID: jkh09052

Date : 01-MAY-2018 06:52

Client ID: 50ngBFB

Instrument: HP16334.i

Sample Info: 50ngBFB;BFB FEB13-18;1;3;;

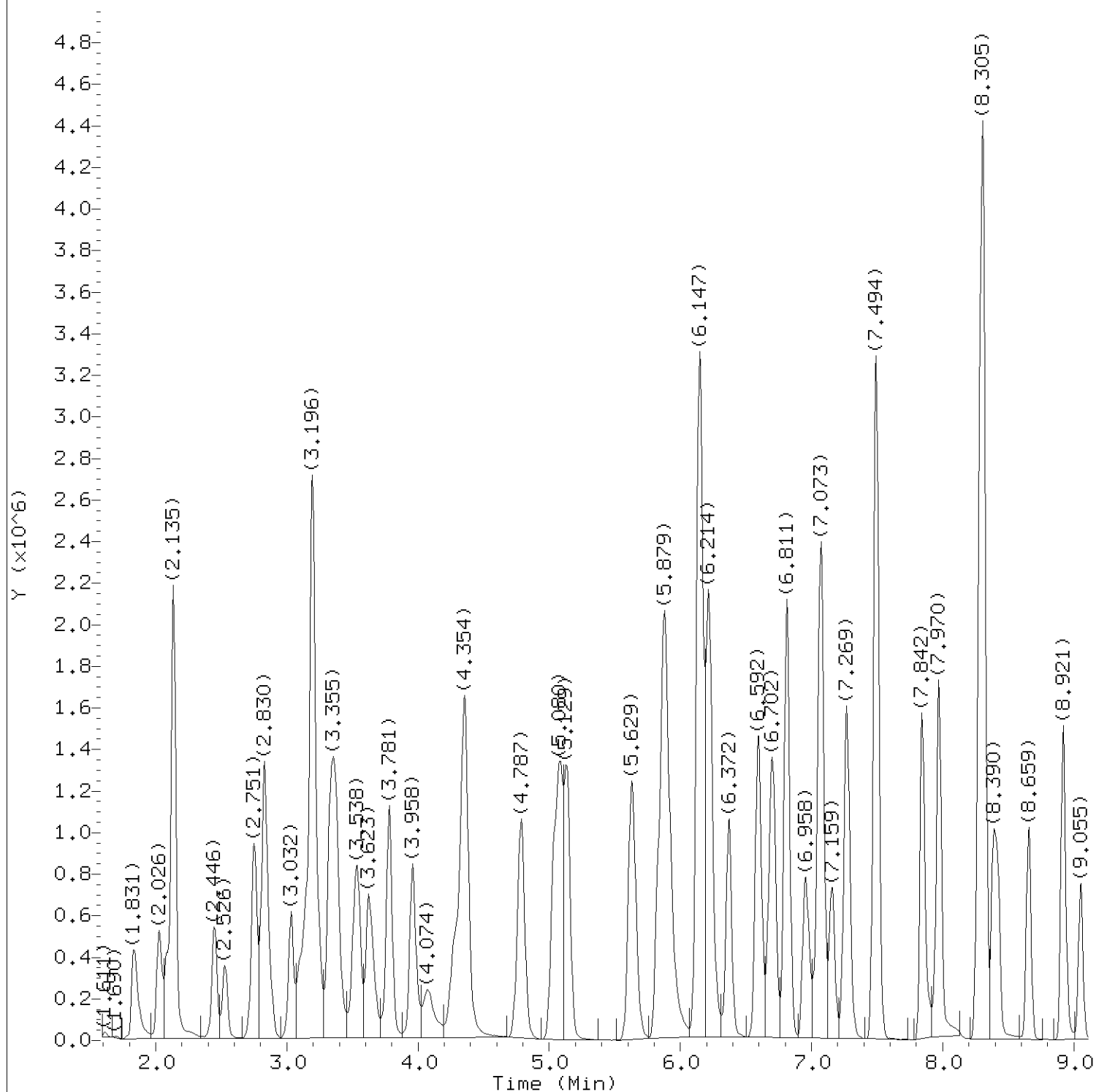
Operator: JKH09052

Column phase: Rxi-624Sil MS

Column diameter: 0,25

Data File: gy0101.d							
Spectrum: Avg. Scans 92-94 (5,05), Background Scan 87							
Location of Maximum: 95,00							
Number of points: 64							
m/z	Y	m/z	Y	m/z	Y	m/z	Y
36,00	1043	61,00	4930	81,00	2925	130,00	215
37,00	5326	62,00	4999	82,00	698	135,00	103
38,00	4466	63,00	3813	87,00	3854	141,00	1038
39,00	1614	64,00	184	88,00	3375	143,00	1170
40,00	29	67,00	311	91,00	474	148,00	271
44,00	596	68,00	10290	92,00	2795	155,00	117
45,00	1046	69,00	10621	93,00	4462	172,00	115
47,00	1313	70,00	786	94,00	12003	173,00	250
48,00	713	72,00	500	95,00	96784	174,00	86320
49,00	4207	73,00	4377	96,00	6616	175,00	6457
50,00	19952	74,00	16608	104,00	409	176,00	82392
51,00	6548	75,00	50856	106,00	350	177,00	5388
52,00	91	76,00	4102	116,00	356	207,00	88
55,00	329	77,00	423	117,00	548		
56,00	1630	78,00	329	118,00	426		
57,00	2915	79,00	2859	119,00	533		
60,00	992	80,00	844	128,00	438		

Digitally signed by Jennifer K. Howe on 05/01/2018 at 06:53.
Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
Analyst ID: JKH09052

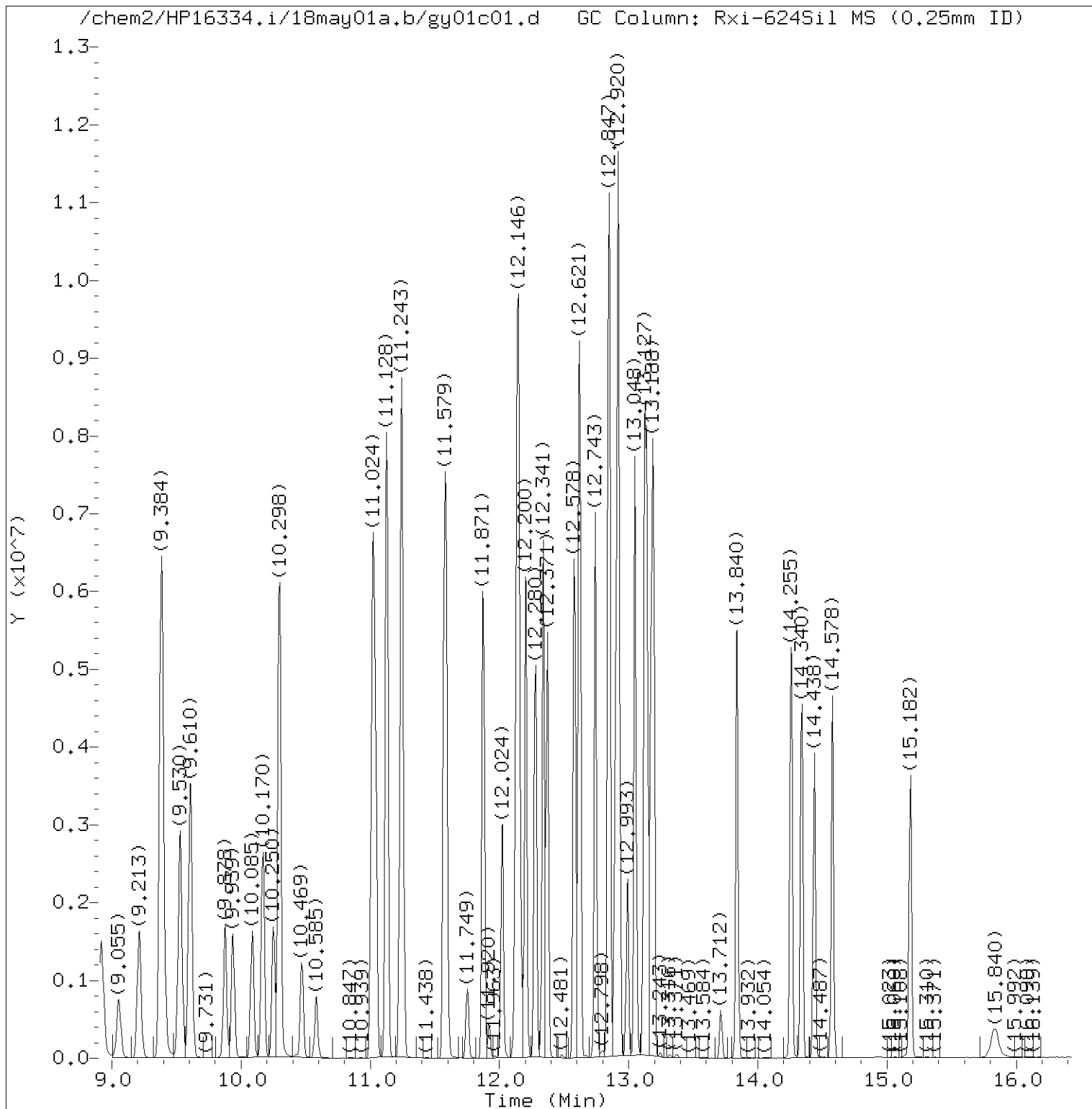
Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 07:43
Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 07:43
Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 439 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 07:43
Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.831	85	939510	11.148
2) Chloromethane	(2)	2.026	50	939772	11.075
5) Vinyl Chloride	(2)	2.135	62	849033	11.659
6) 1,3-Butadiene	(2)	2.135	39	1452934	9.377
7) Bromomethane	(2)	2.446	94	578041	11.872
8) Chloroethane	(2)	2.526	64	480853	11.592
9) Dichlorofluoromethane	(2)	2.751	67	1196642	11.960
10) Trichlorofluoromethane	(2)	2.818	101	1138923M	11.992
11) Ethyl ether	(2)	3.032	59	516417	10.908
12) Freon 123a	(2)	3.141	67	732582	10.895
13) Acrolein	(1)	3.196	56	4547148	680.797
15) 1,1-Dichloroethene	(2)	3.330	96	529961	11.396
14) Acetone	(1)	3.349	43	1265849	117.297
16) Freon 113	(2)	3.373	101	627143	11.962
17) Methyl Iodide	(2)	3.519	142	1090591	12.076
18) Carbon Disulfide	(2)	3.623	76	1974340	10.701
21) Methyl Acetate	(1)	3.751	43	424797M	13.965
22) Allyl Chloride	(2)	3.781	41	1122456	10.404
23) Methylene Chloride	(2)	3.958	84	627399	9.978
26)*t-Butyl Alcohol-d10	(1)	3.958	65	193330M	50.000
28) t-Butyl Alcohol	(1)	4.074	59	872479	238.492
29) Acrylonitrile	(1)	4.269	53	783865	65.289
30) Methyl Tertiary Butyl Ether	(2)	4.342	73	1830549	11.303
31) trans-1,2-Dichloroethene	(2)	4.361	96	625425	11.573
32) n-Hexane	(2)	4.787	57	1013573	11.106
33) 1,1-Dichloroethane	(2)	5.031	63	1210712	10.983
34) di-Isopropyl Ether	(2)	5.086	45	2411481	10.683
35) 2-Chloro-1,3-Butadiene	(2)	5.141	53	1111071	11.010
37) Ethyl t-butyl ether	(2)	5.629	59	2181156	11.006
38) 2-Butanone	(1)	5.830	43	2398721	129.185
39) cis-1,2-Dichloroethene	(2)	5.879	96	726072	11.979
41) 2,2-Dichloropropane	(2)	5.897	77	1037814	11.479
42) Propionitrile	(1)	5.927	54	1241965	270.516
40) 1,2-Dichloroethene (Total)	(2)		96	1351497	23.552
45) Methacrylonitrile	(1)	6.147	67	2098360	144.218
47) Bromochloromethane	(2)	6.220	128	354977	12.754
48) Tetrahydrofuran	(1)	6.220	71	620551	140.397
49) Chloroform	(2)	6.372	83	1226437	11.637

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
 Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 07:43
 Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50)\$Dibromofluoromethane	(2)	6.592	113	563666	9.977
50)\$Dibromofluoromethane	(2)	6.592	111	579206	9.969
51) 1,1,1-Trichloroethane	(2)	6.598	97	1042154	11.707
52) Cyclohexane	(2)	6.702	56	1212771	11.358
52) Cyclohexane	(2)	6.695	84	972999	11.573
52) Cyclohexane	(2)	6.708	69	357439	11.500
54) Carbon Tetrachloride	(2)	6.811	117	879635	12.165
55) 1,1-Dichloropropene	(2)	6.811	75	956277	11.521
56) Isobutyl Alcohol	(1)	6.958	41	908137	624.602
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	116605	9.739
57)\$1,2-Dichloroethane-d4	(2)	7.049	65	624409	9.173
57)\$1,2-Dichloroethane-d4	(2)	7.055	104	75963	10.183
58) Benzene	(2)	7.073	78	2689899	11.739
59) 1,2-Dichloroethane	(2)	7.159	62	869825	10.723
60) t-Amyl methyl ether	(2)	7.269	73	1959912	11.654
63)*Fluorobenzene	(2)	7.488	96	2246771	10.000
62) n-Heptane	(2)	7.494	43	1199591	10.925
65) n-Butanol	(1)	7.842	56	1585465	1377.739
67) Trichloroethene	(2)	7.970	95	731719	12.095
69) Methylcyclohexane	(2)	8.281	83	1274077	12.401
70) 1,2-Dichloropropane	(2)	8.311	63	738567	11.612
71) Methyl Methacrylate	(1)	8.384	69	405015	14.615
72) 1,4-Dioxane	(1)	8.396	88	159409M	794.884
73) Dibromomethane	(2)	8.421	93	367674	12.113
74) Bromodichloromethane	(2)	8.659	83	912356	12.252
76) 2-Nitropropane	(1)	8.921	41	1273532	134.165
80) cis-1,3-Dichloropropene	(2)	9.213	75	1142945	12.421
81) 4-Methyl-2-Pentanone	(1)	9.384	43	6057412M	132.793
82)\$Toluene-d8	(3)	9.530	98	2334872	9.602
82)\$Toluene-d8	(3)	9.530	100	1501746	9.706
83) Toluene	(3)	9.610	92	1785773	11.592
84) trans-1,3-Dichloropropene	(3)	9.878	75	982537	11.760
86) Ethyl Methacrylate	(3)	9.939	69	878696	11.665
88) 1,1,2-Trichloroethane	(3)	10.085	97	541675	11.659
85) 1,3-Dichloropropene (total)	(3)		75	2125482	24.181
89) Tetrachloroethene	(3)	10.170	166	866797	12.133
90) 1,3-Dichloropropane	(3)	10.250	76	952038	11.249
91) 2-Hexanone	(1)	10.298	43	4322113M	134.808

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
 Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 07:43
 Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
93) Dibromochloromethane	(3)	10.469	129	648381	12.666
95) 1,2-Dibromoethane	(3)	10.585	107	537461	12.110
97)*Chlorobenzene-d5	(3)	11.012	117	1813084	10.000
98) Chlorobenzene	(3)	11.042	112	2086351	11.824
99) 1,1,1,2-Tetrachloroethane	(3)	11.128	131	732270	12.429
100) Ethylbenzene	(3)	11.128	91	3557175	11.621
101) m+p-Xylene	(3)	11.243	106	2811312	24.123
104) o-Xylene	(3)	11.573	106	1418200	12.139
106) Styrene	(3)	11.591	104	2376381	12.393
107) Bromoform	(3)	11.749	173	388527	13.190
105) Xylene (Total)	(3)		106	4229512	36.262
108) Isopropylbenzene	(3)	11.871	105	3634861	11.945
111)\$4-Bromofluorobenzene	(3)	12.018	95	882331	9.480
111)\$4-Bromofluorobenzene	(3)	12.024	174	813035	10.222
113) 1,1,2,2-Tetrachloroethane	(4)	12.121	83	724988M	11.822
114) Bromobenzene	(4)	12.133	156	975151	12.109
116) 1,2,3-Trichloropropane	(4)	12.164	110	202918	11.837
117) n-Propylbenzene	(4)	12.200	91	4300436	11.467
119) 2-Chlorotoluene	(4)	12.280	126	878786	11.742
121) 1,3,5-Trimethylbenzene	(4)	12.341	105	3152502	11.740
122) 4-Chlorotoluene	(4)	12.371	126	932372	11.950
125) tert-Butylbenzene	(4)	12.578	134	680066	12.133
126) Pentachloroethane	(4)	12.615	167	579996	13.327
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	3256082	11.889
128) sec-Butylbenzene	(4)	12.743	105	4068596	11.929
131) 1,3-Dichlorobenzene	(4)	12.841	146	1958623	12.238
132) p-Isopropyltoluene	(4)	12.853	119	3600917	12.095
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	1043460	10.000
134) 1,4-Dichlorobenzene	(4)	12.920	146	1971551	12.085
135) 1,2,3-Trimethylbenzene	(4)	12.926	120	1466245	11.907
136) Benzyl Chloride	(4)	12.993	126	298315	13.391
138) n-Butylbenzene	(4)	13.139	92	1875324	11.708
139) 1,2-Dichlorobenzene	(4)	13.170	146	1839347	12.180
143) 1,2-Dibromo-3-chloropropane	(1)	13.712	155	113036	16.503
144) 1,3,5-Trichlorobenzene	(4)	13.840	180	1641781	12.266
145) 1,2,4-Trichlorobenzene	(4)	14.261	180	1508754	12.150
146) Hexachlorobutadiene	(4)	14.340	225	777137	11.874
147) Naphthalene	(4)	14.438	128	2510951	12.097

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052

FKP52 Page 442 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

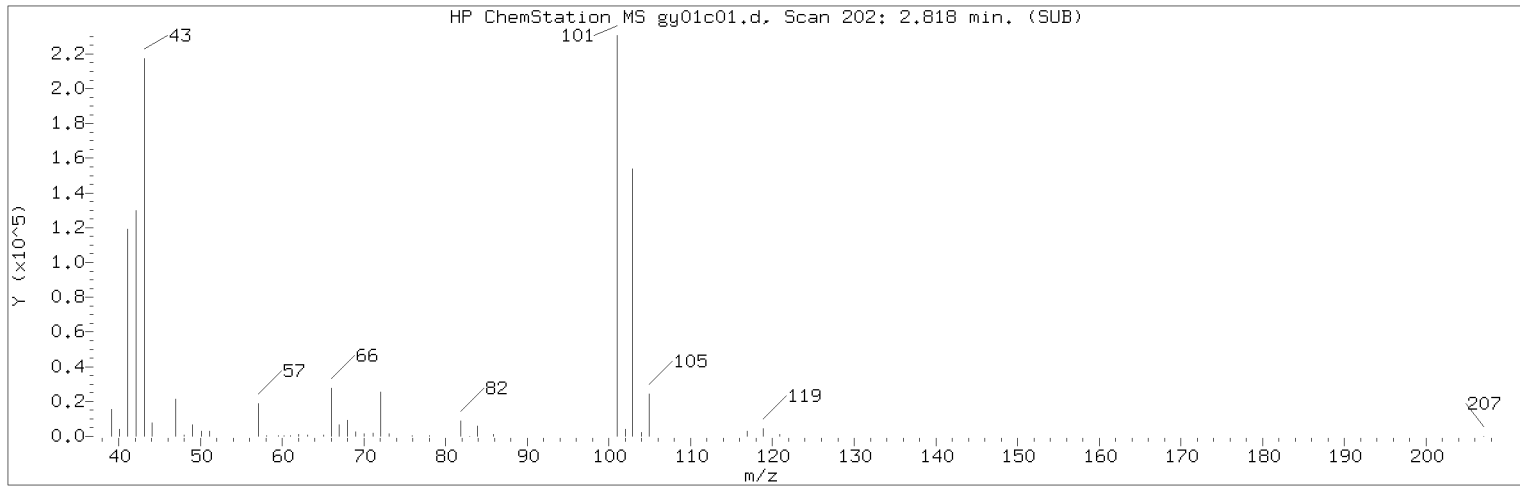
Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	1281681	12.072

page 4 of 4

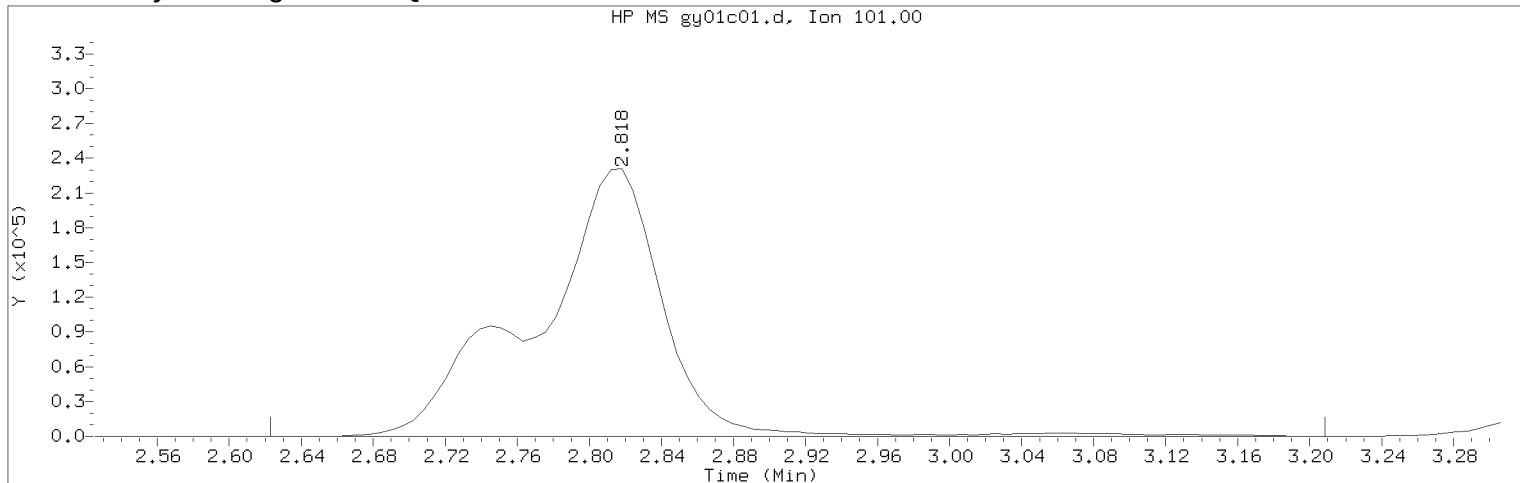
Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 10
Compound Name : Trichlorofluoromethane
Scan Number : 202
Retention Time (minutes): 2.818
Quant Ion : 101.00
Area (flag) : 1138923M
On-Column Amount (ng) : 11.9916
Integration start scan : 169 Integration stop scan: 265
Y at integration start : 0 Y at integration end: 257

Reason for manual integration: improper integration

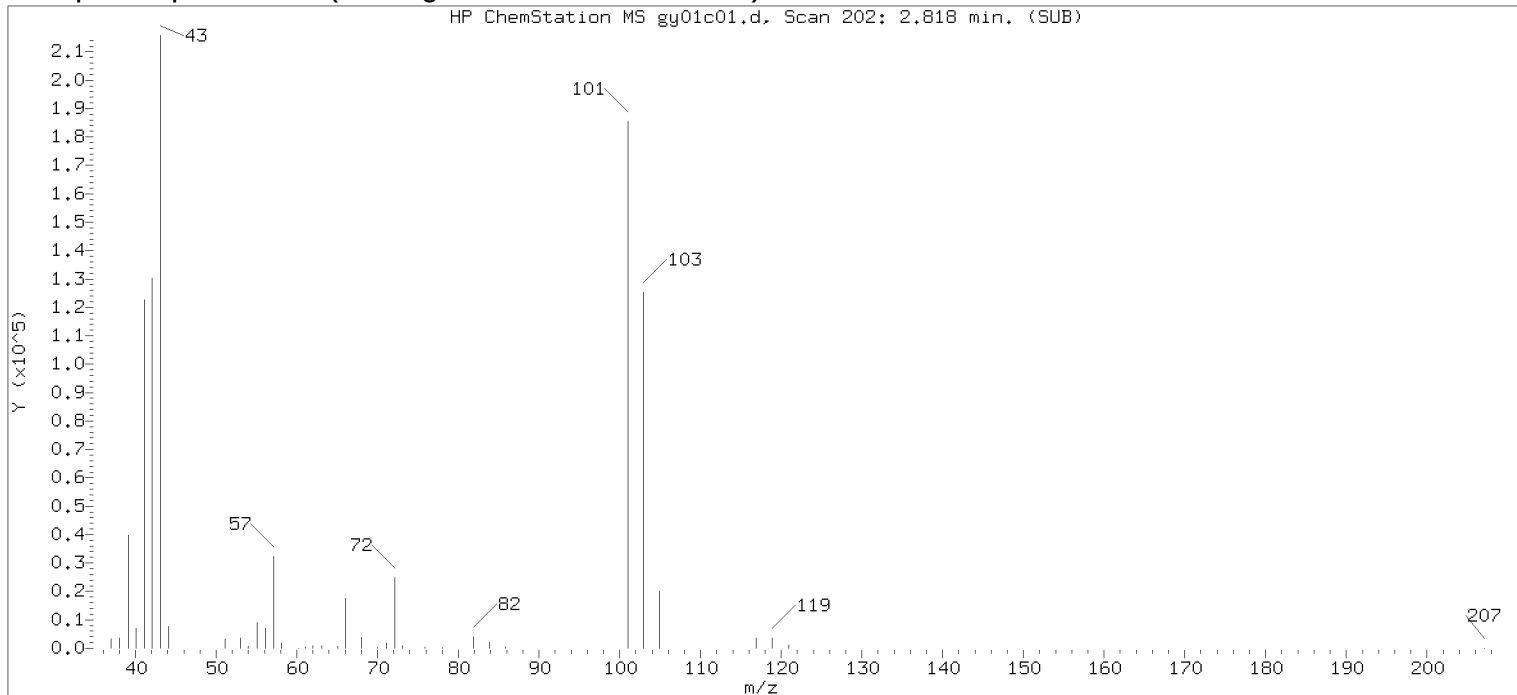
Analyst responsible for change:

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.
Target 3.5 esignature user ID: jkh09052

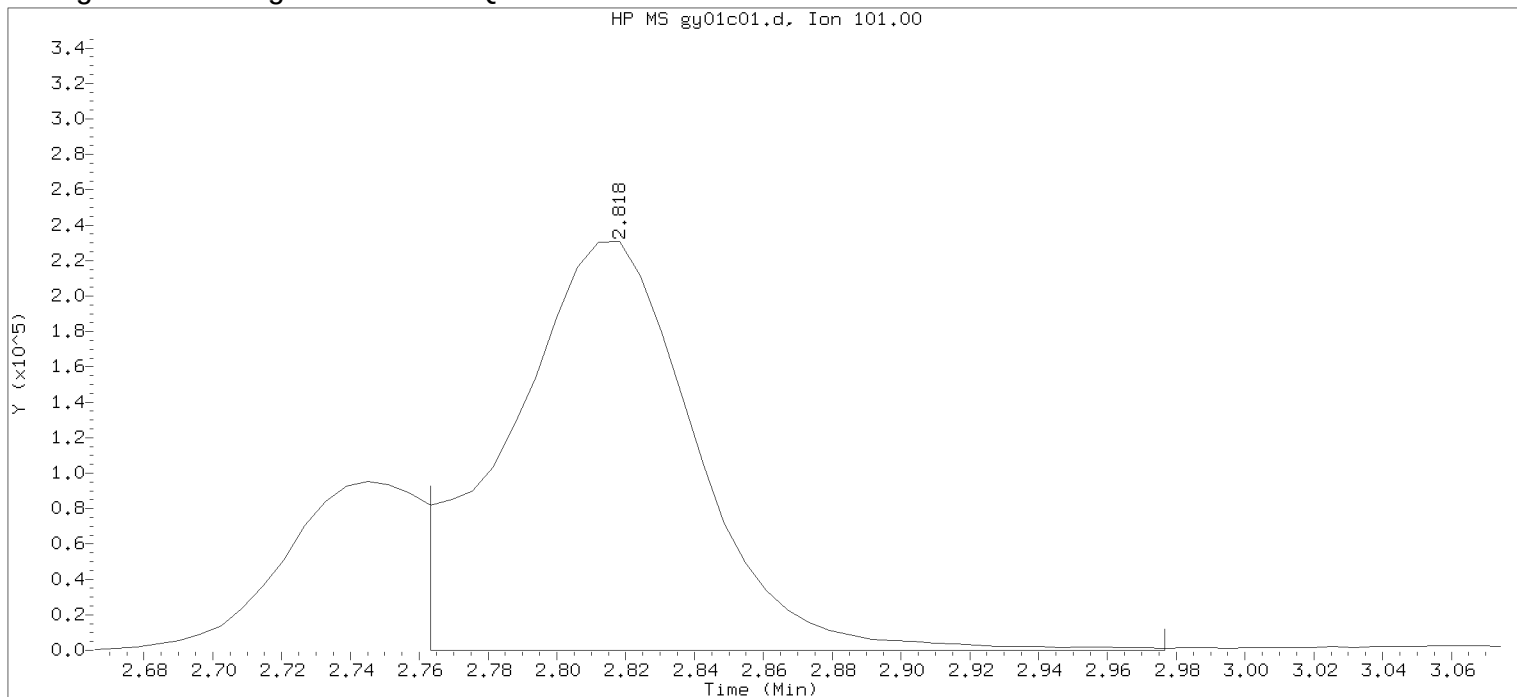
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 202

Retention Time (minutes): 2.818

Quant Ion : 101.00

Area : 863517

On-column Amount (ng) : 9.0919

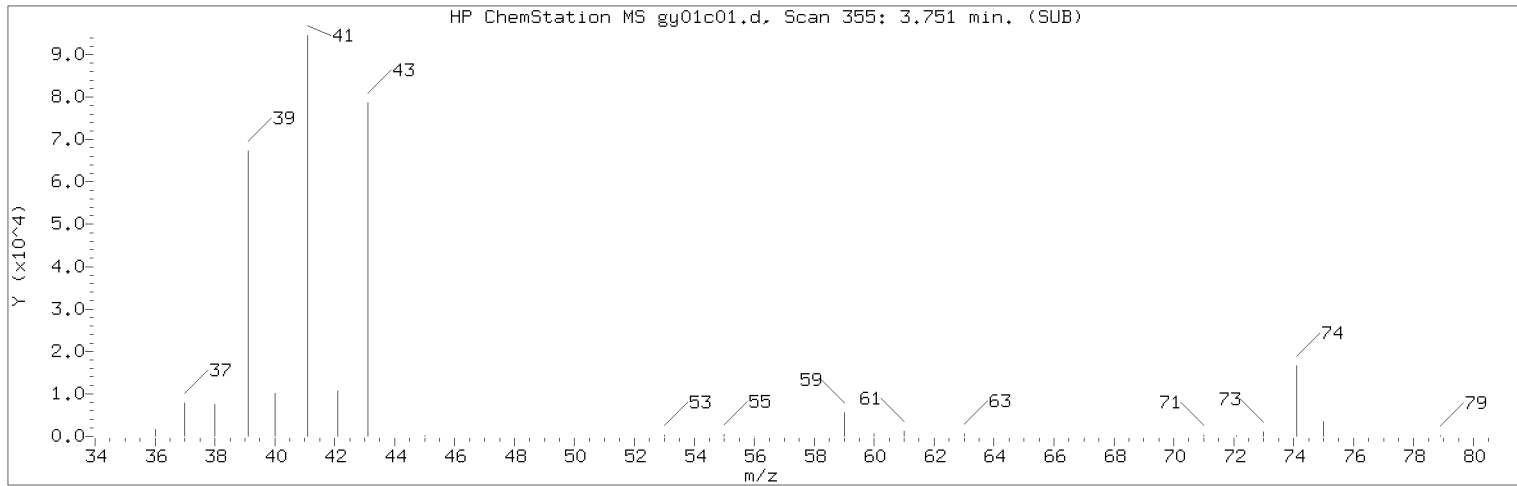
Integration start scan : 192 Integration stop scan: 227

Y at integration start : 0 Y at integration end: 0

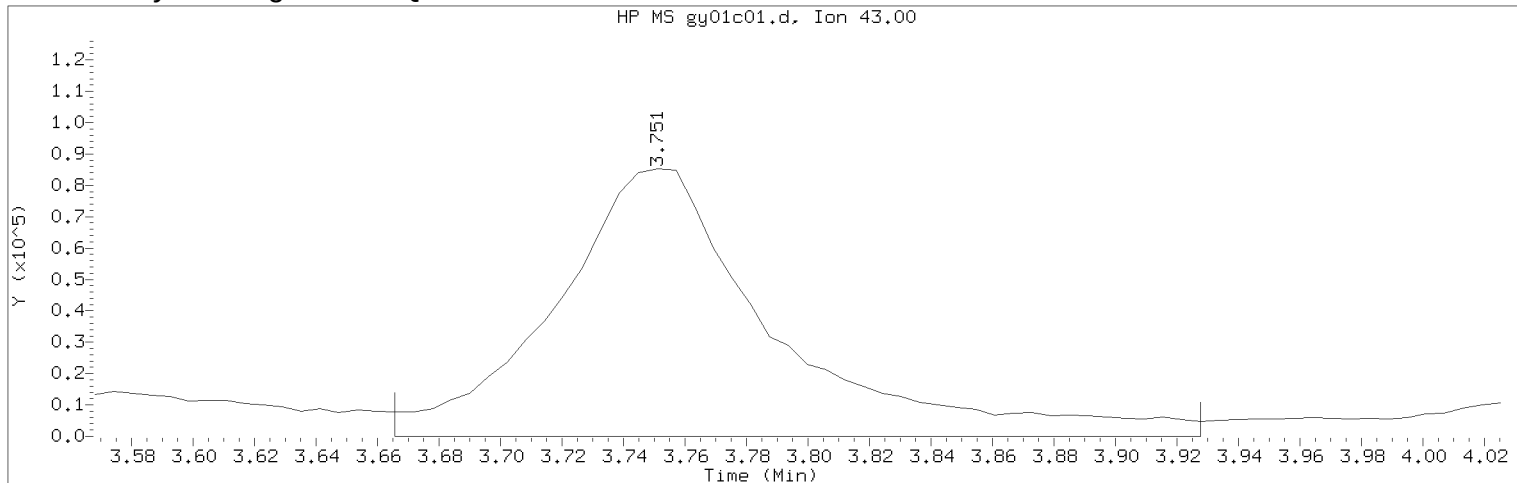
Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.

Target 3.5 esignature userF1P52jR1g0042 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

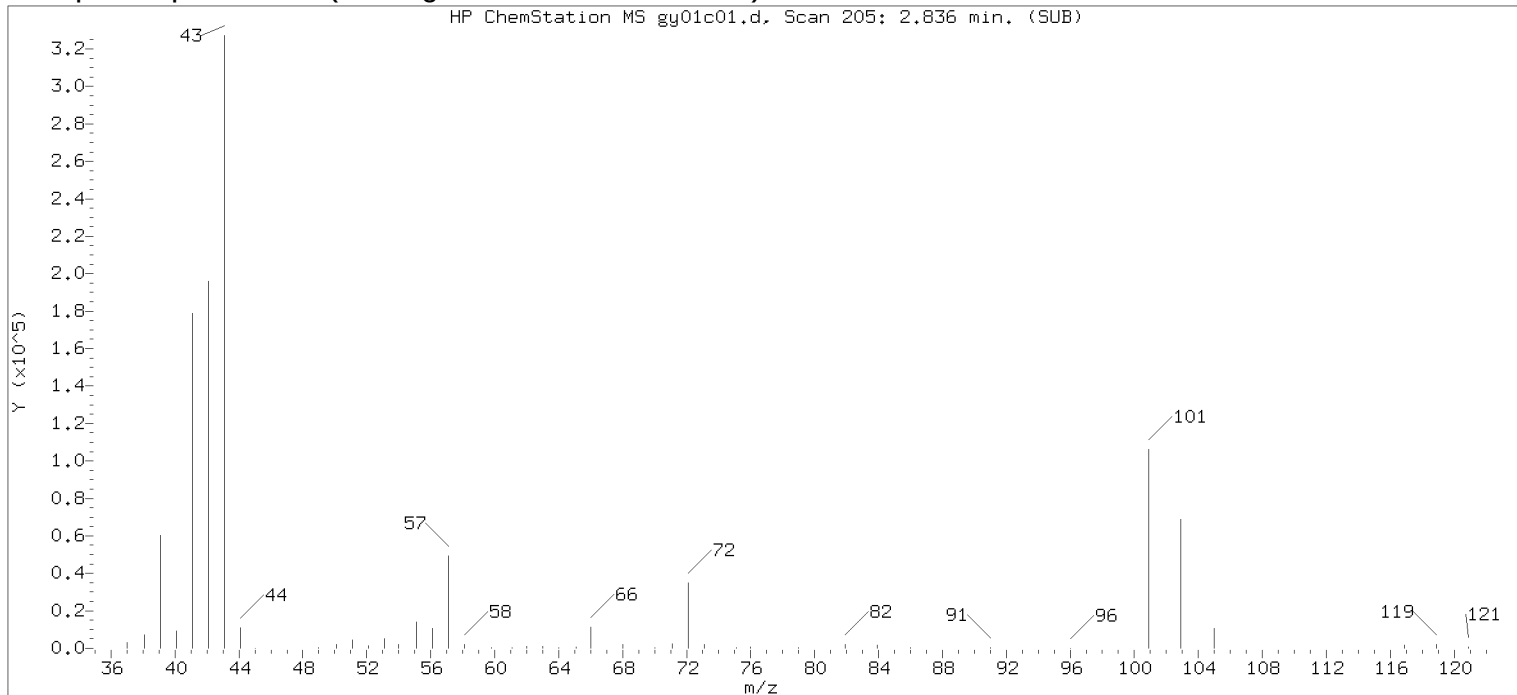
Compound Number	: 21	
Compound Name	: Methyl Acetate	
Scan Number	: 355	
Retention Time (minutes)	: 3.751	
Quant Ion	: 43.00	
Area (flag)	: 424797M	
On-Column Amount (ng)	: 13.9648	
Integration start scan	: 340	Integration stop scan: 383
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

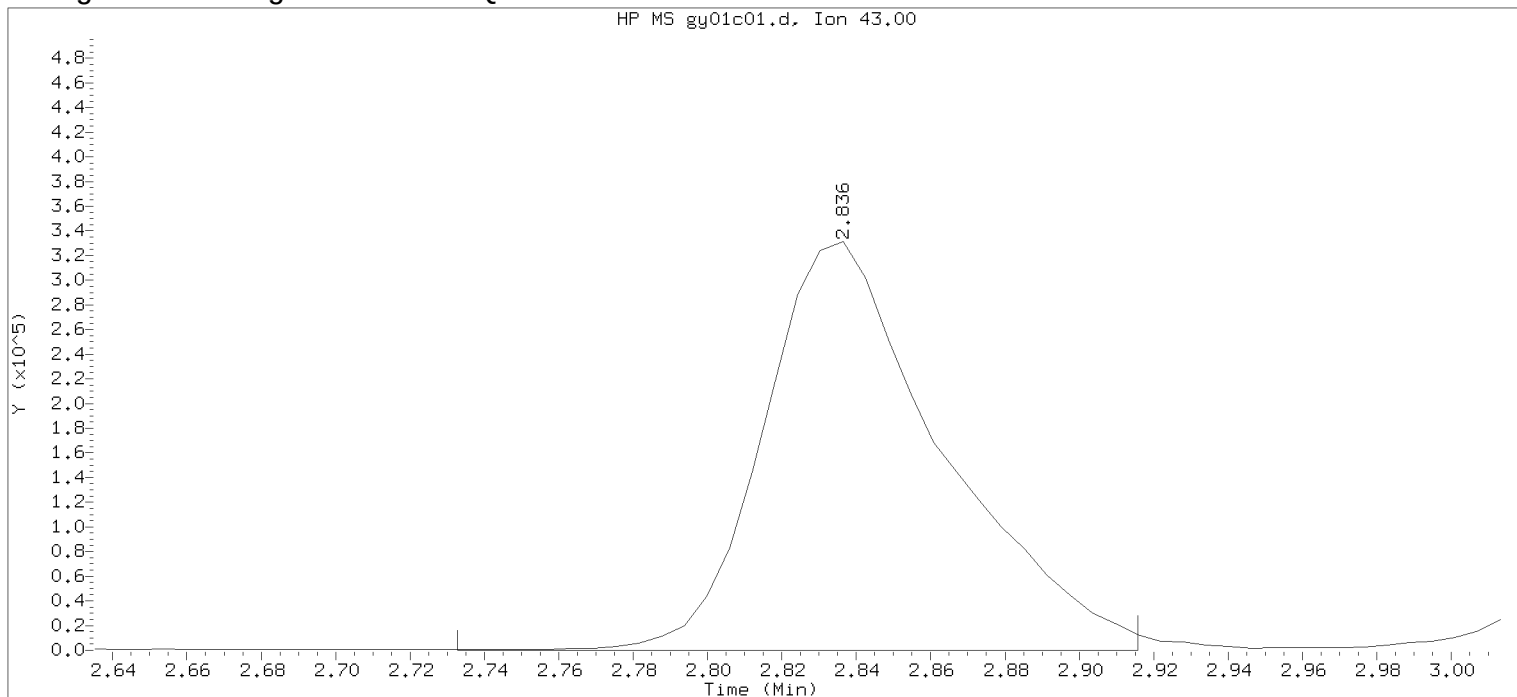
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

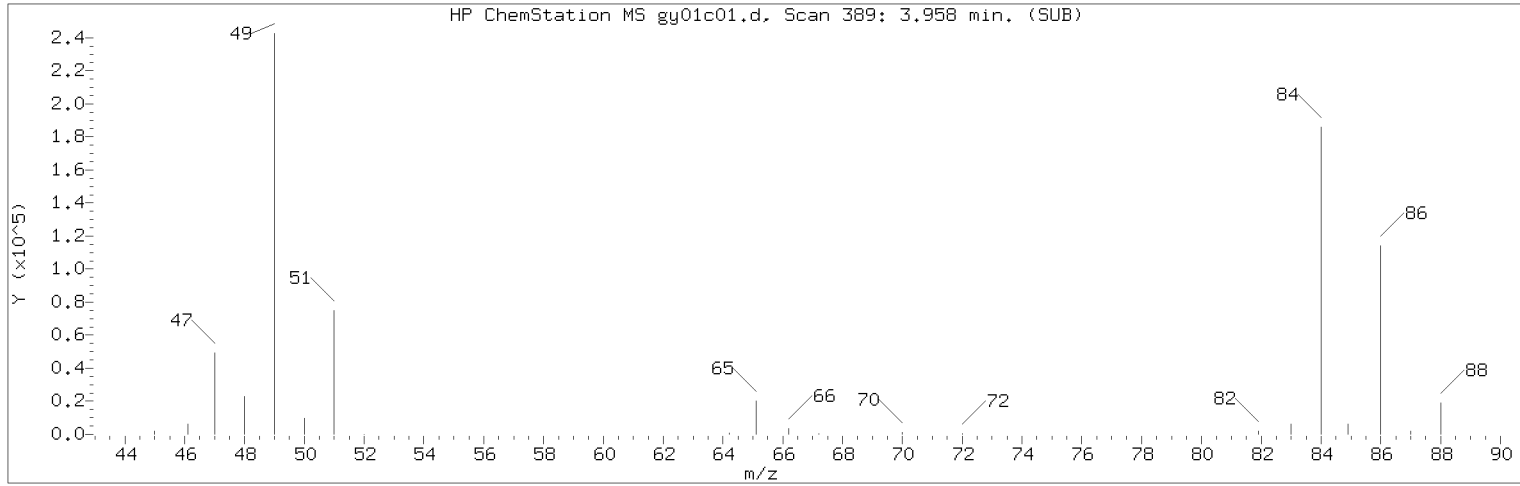
Lab Sample ID: VSTD12.5

Compound Number : 21
 Compound Name : Methyl Acetate
 Scan Number : 205
 Retention Time (minutes): 2.836
 Quant Ion : 43.00
 Area : 1104963
 On-column Amount (ng) : 36.7800
 Integration start scan : 187
 Y at integration start : 0

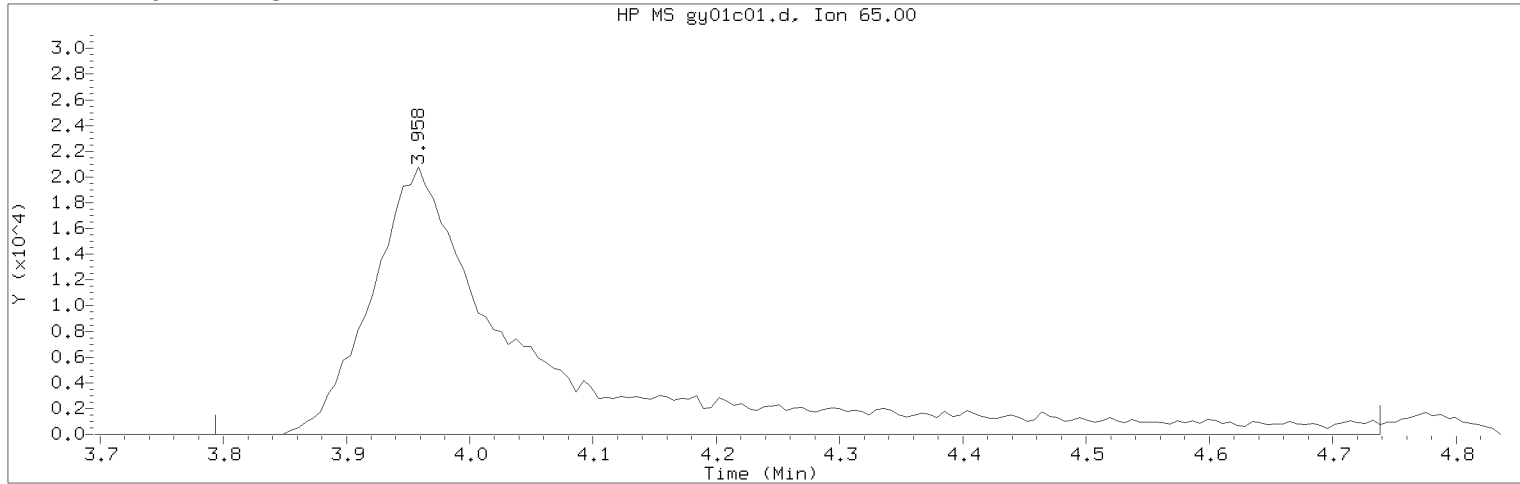
Integration stop scan: 217
 Y at integration end: 0

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 Target 3.5 esignature user FKP52j Page 442 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d
Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 07:43
Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

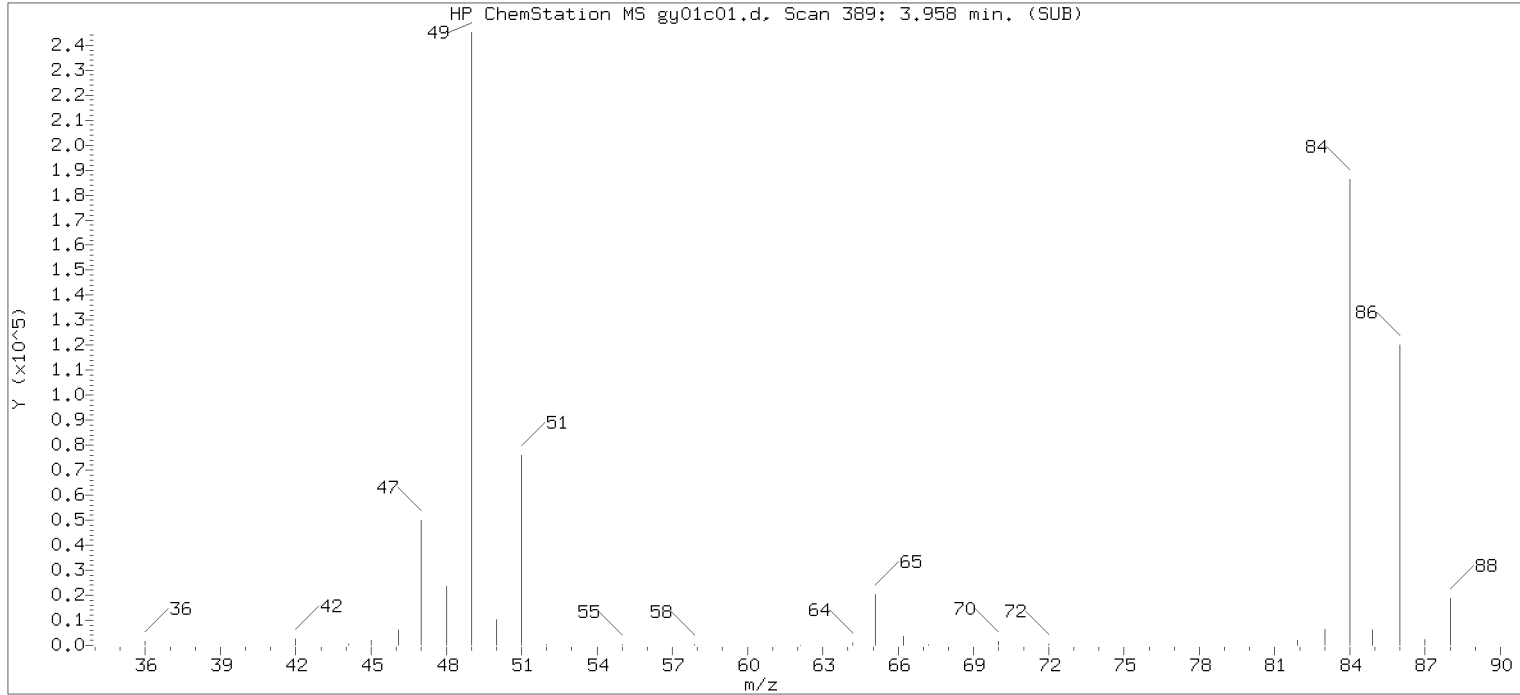
Compound Number	: 26	
Compound Name	: t-Butyl Alcohol-d10	
Scan Number	: 389	
Retention Time (minutes)	: 3.958	
Quant Ion	: 65.00	
Area (flag)	: 193330M	
On-Column Amount (ng)	: 50.0000	
Integration start scan	: 361	Integration stop scan: 516
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

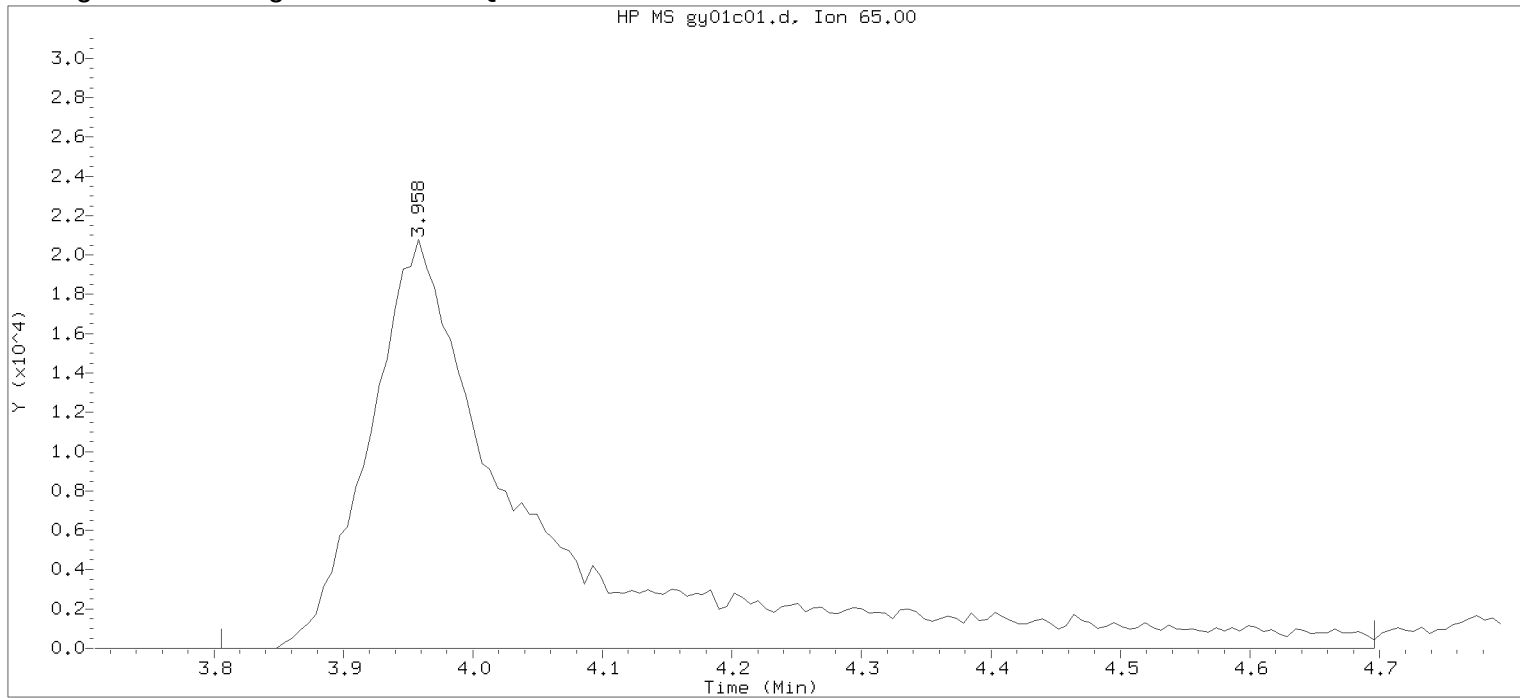
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 26

Compound Name : t-Butyl Alcohol-d10

Scan Number : 389

Retention Time (minutes): 3.958

Quant Ion : 65.00

Area : 190936

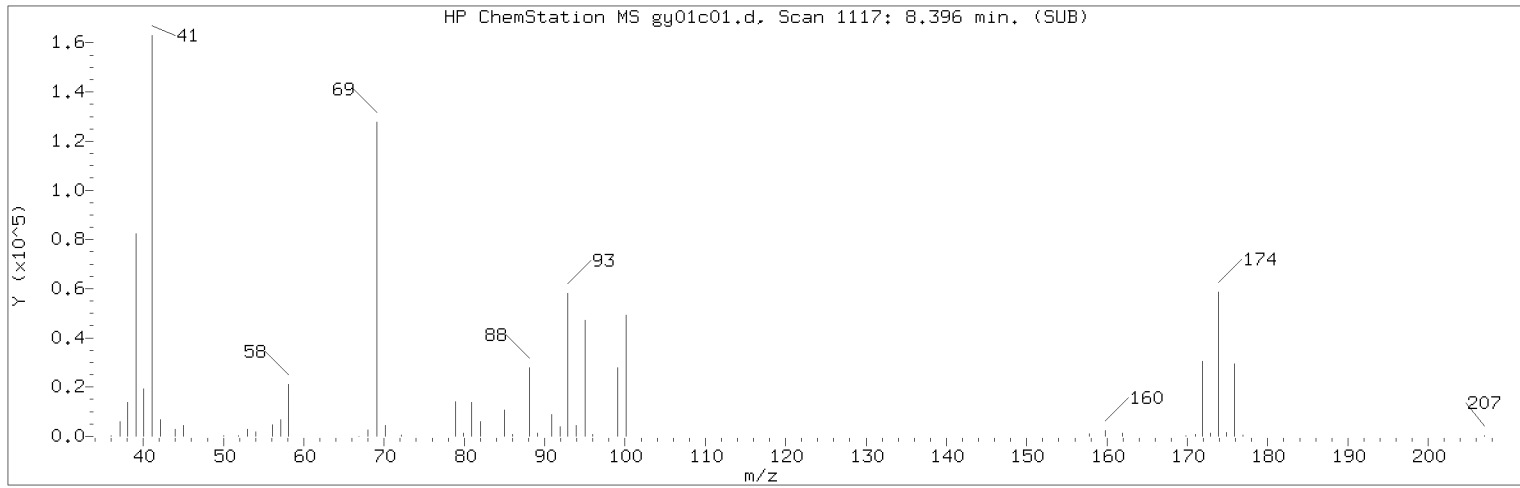
On-column Amount (ng) : 50.0000

Integration start scan : 363 Integration stop scan: 509

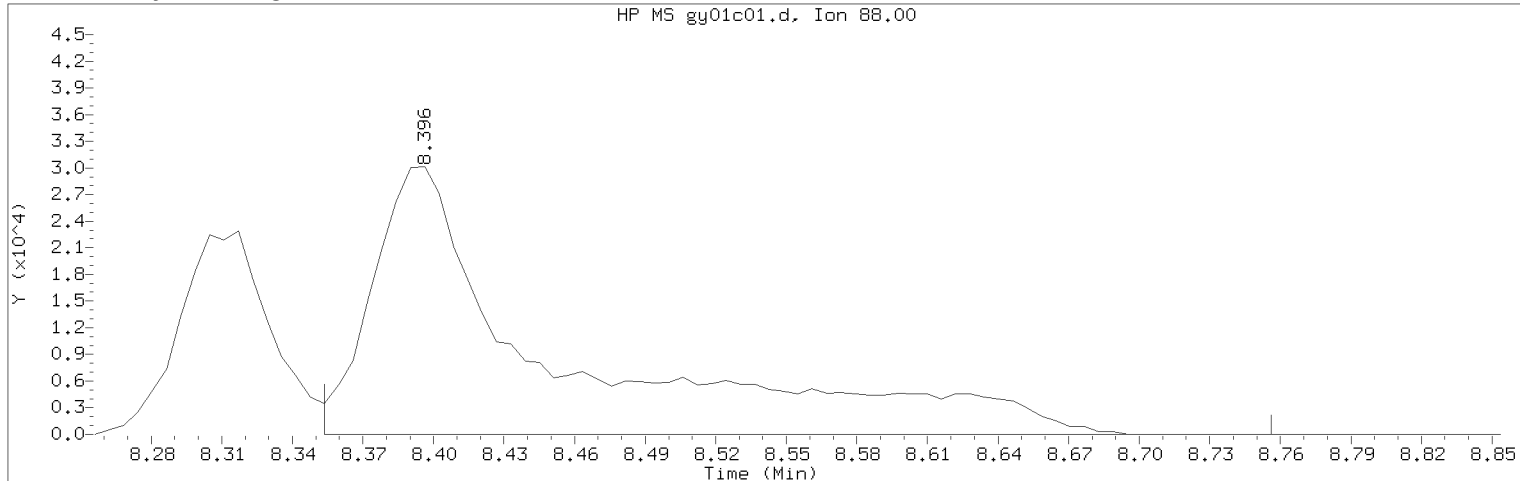
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.
Target 3.5 esignature user FKP52j Page 449 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1117	
Retention Time (minutes)	: 8.396	
Quant Ion	: 88.00	
Area (flag)	: 159409M	
On-Column Amount (ng)	: 794.8836	
Integration start scan	: 1109	Integration stop scan: 1175
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

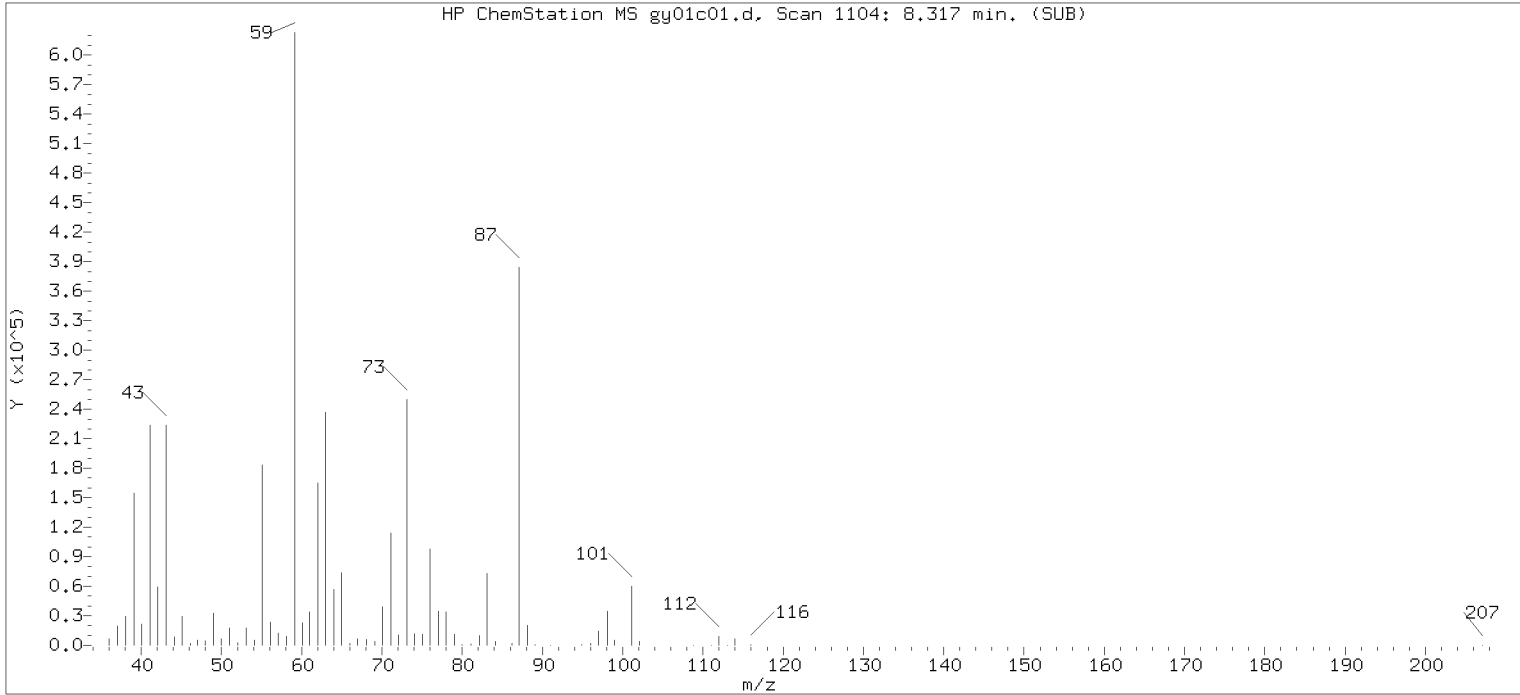
Analyst responsible for change:

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.
Target 3.5 esignature user ID: jkh09052

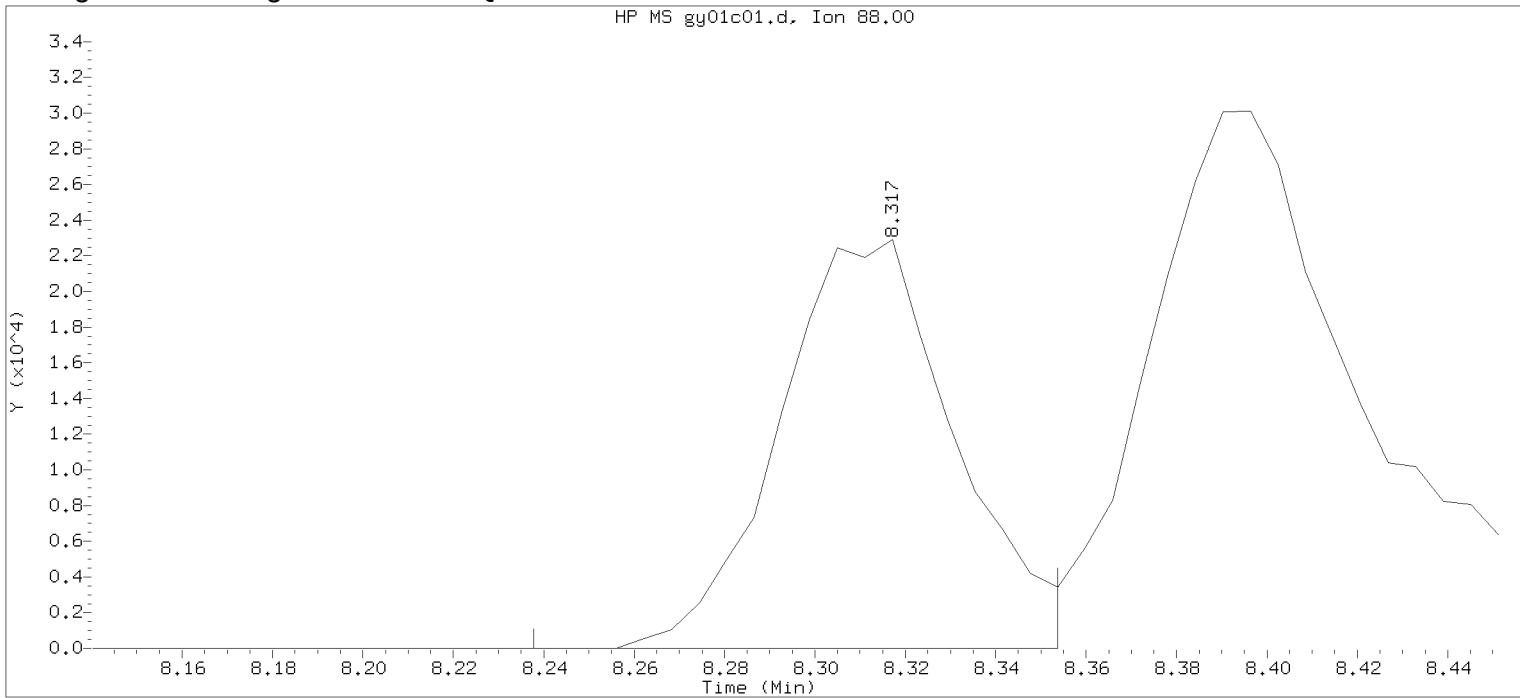
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 72

Compound Name : 1,4-Dioxane

Scan Number : 1104

Retention Time (minutes): 8.317

Quant Ion : 88.00

Area : 61170

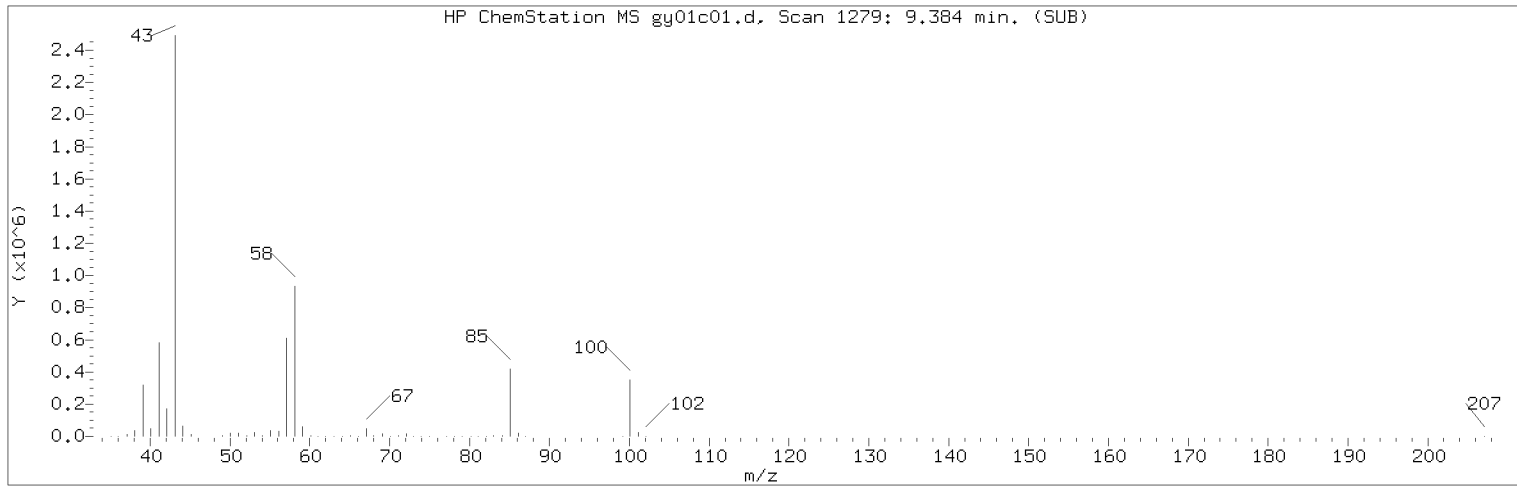
On-column Amount (ng) : 308.8456

Integration start scan : 1090 Integration stop scan: 1109

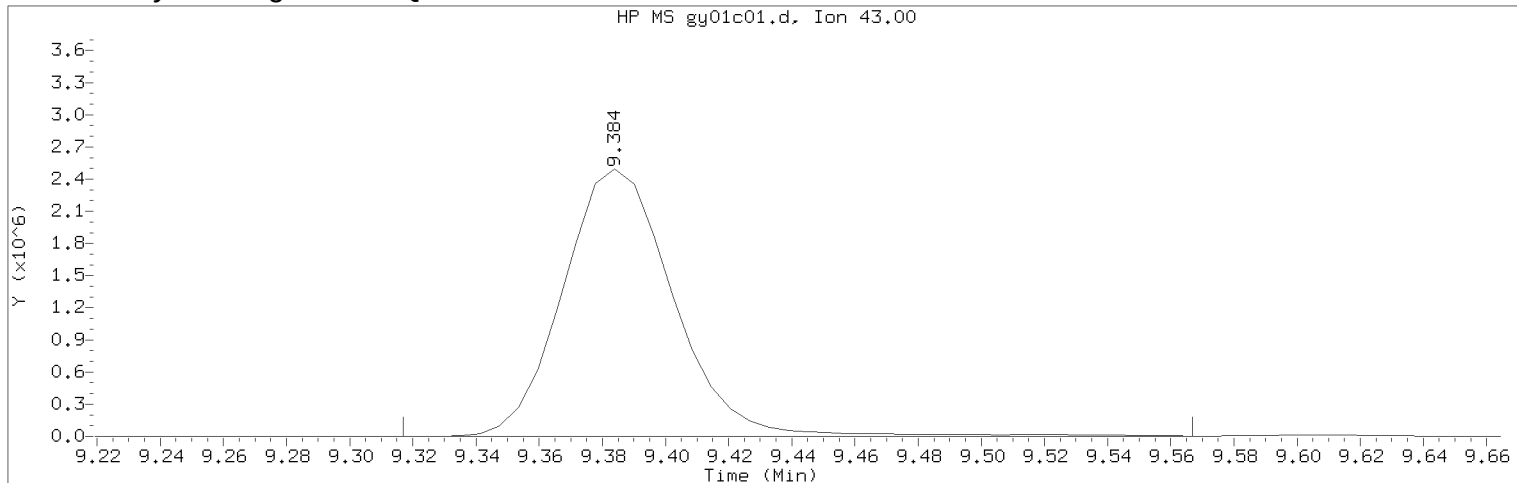
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.
Target 3.5 esignature userF1D52jR1g00452 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 6057412M

On-Column Amount (ng) : 132.7926

Integration start scan : 1267 Integration stop scan: 1308

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

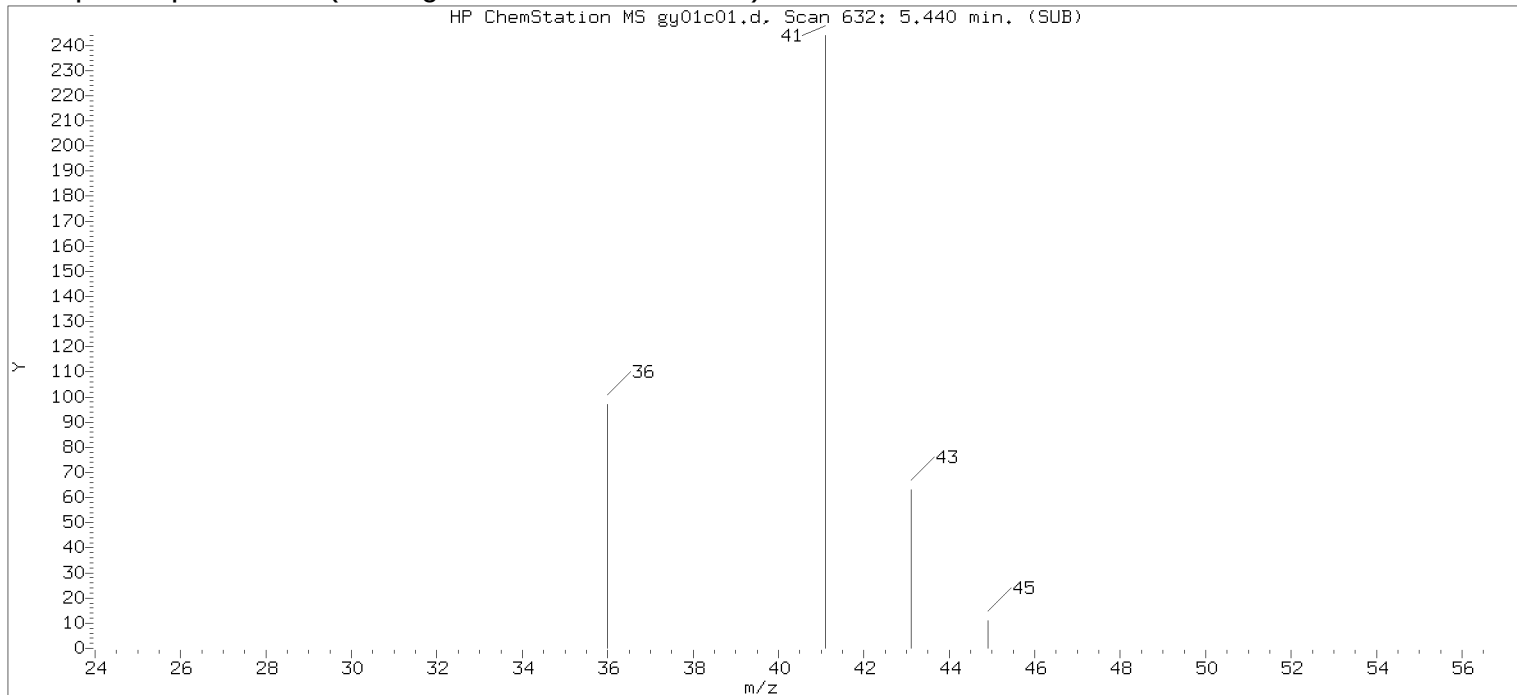
on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052

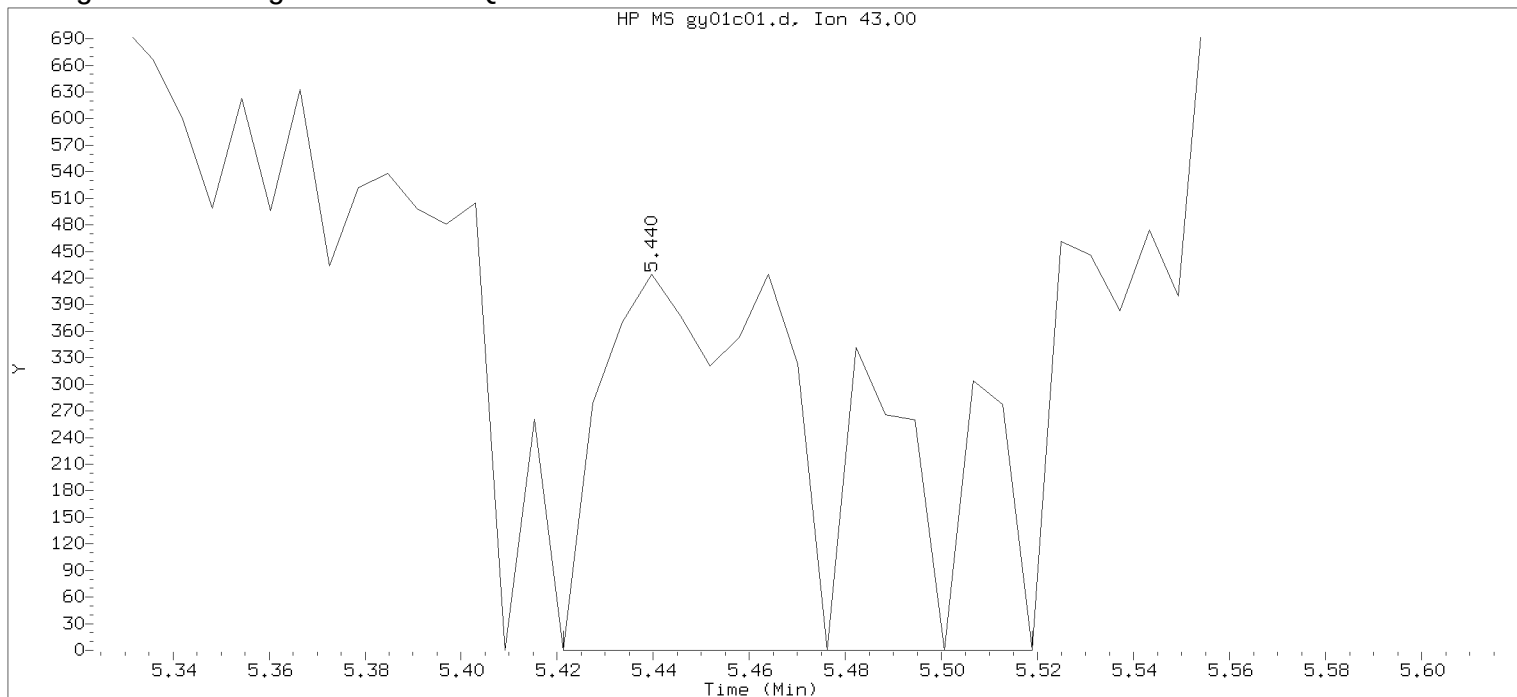
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 632

Retention Time (minutes): 5.440

Quant Ion : 43.00

Area : 1580

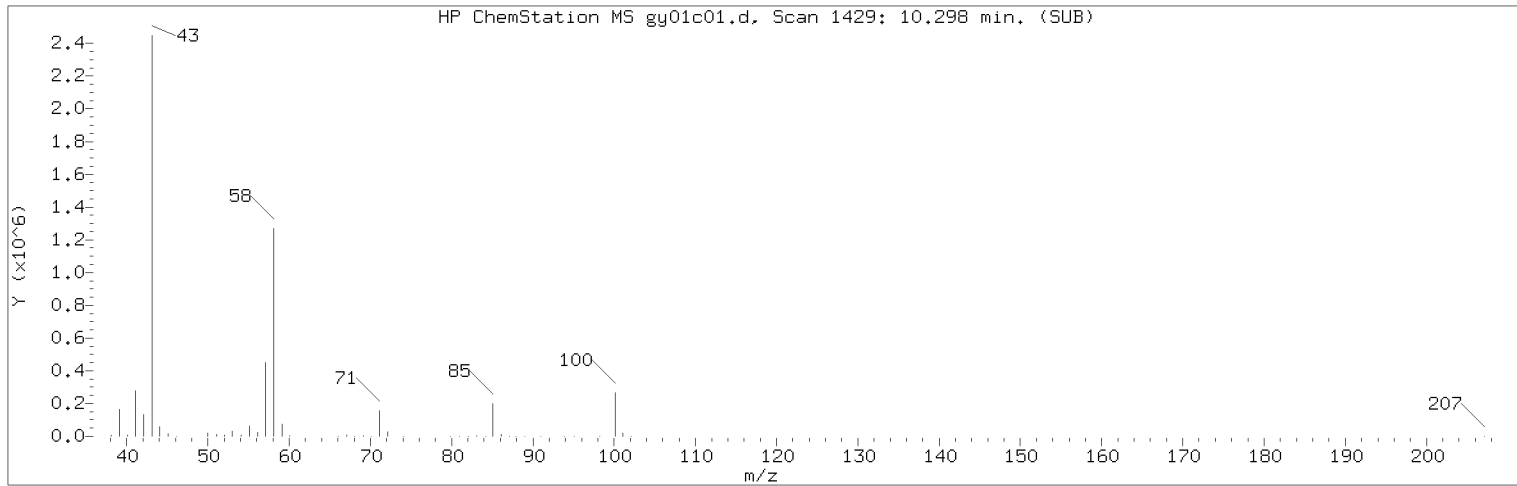
On-column Amount (ng) : 0.0351

Integration start scan : 628 Integration stop scan: 644

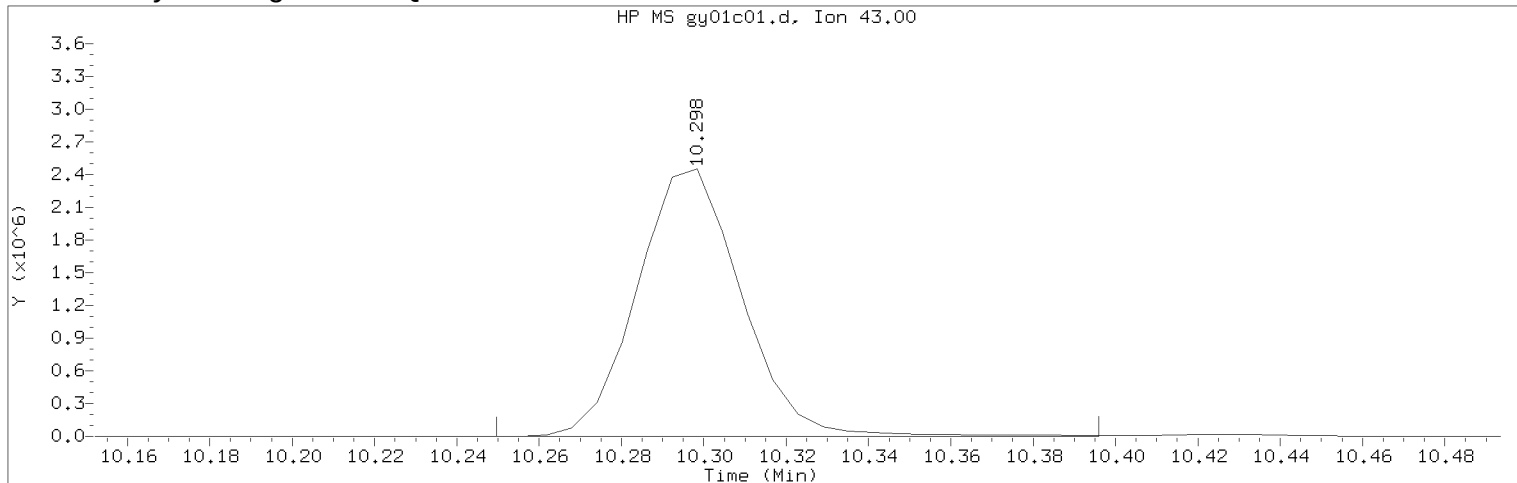
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.
Target 3.5 esignature userF1P52jR1g0052 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 1429

Retention Time (minutes): 10.298

Quant Ion : 43.00

Area (flag) : 4322113M

On-Column Amount (ng) : 134.8082

Integration start scan : 1420

Integration stop scan: 1444

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

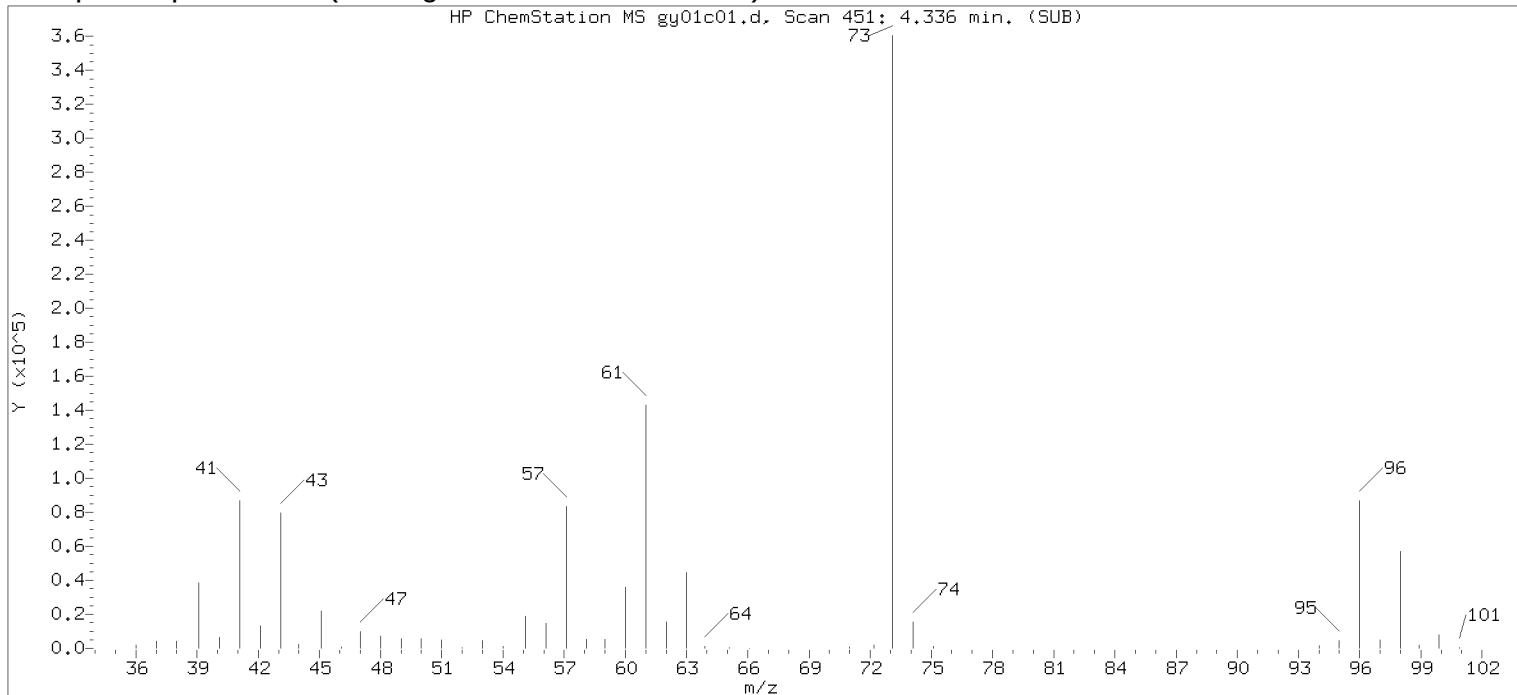
on 05/01/2018 at 08:14.

Target 3.5 esignature user ID: jkh09052

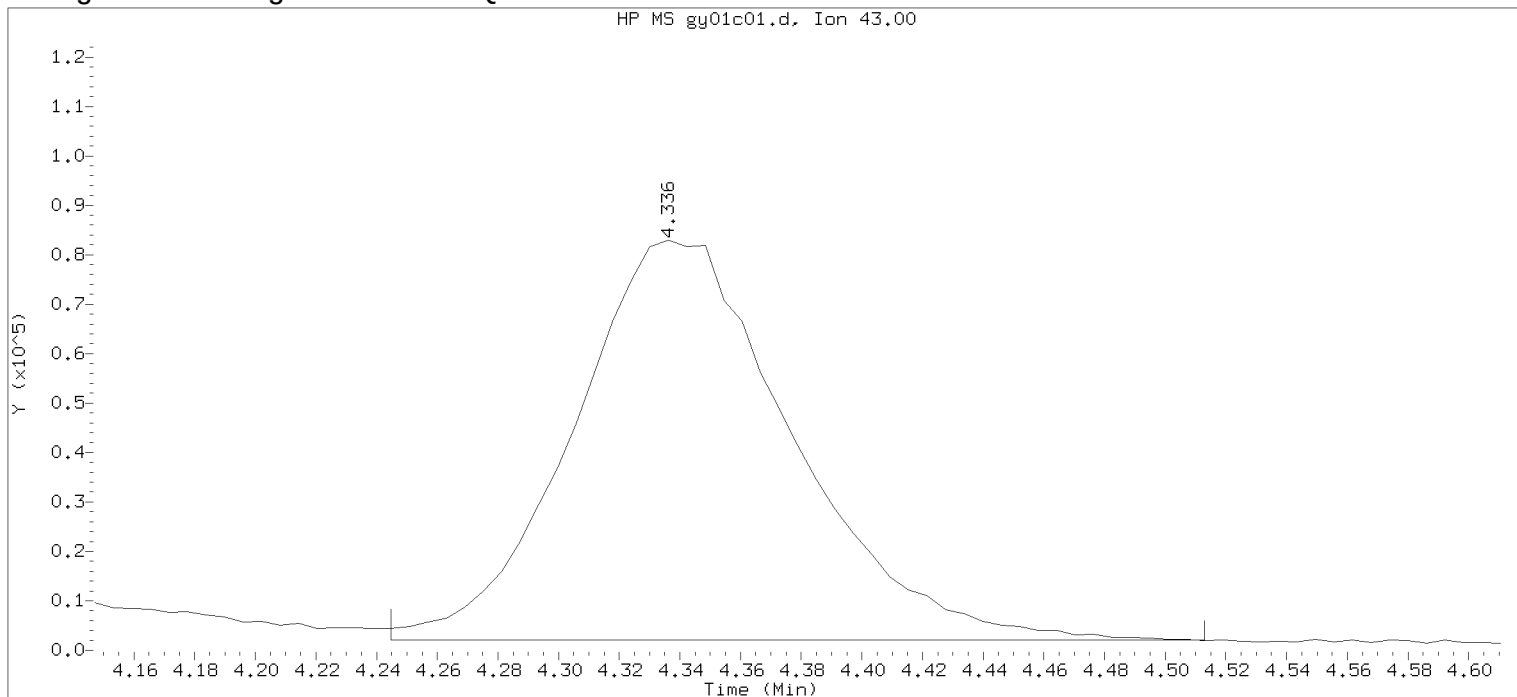
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Injection date and time: 01-MAY-2018 07:26

Instrument ID: HP16334.i

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

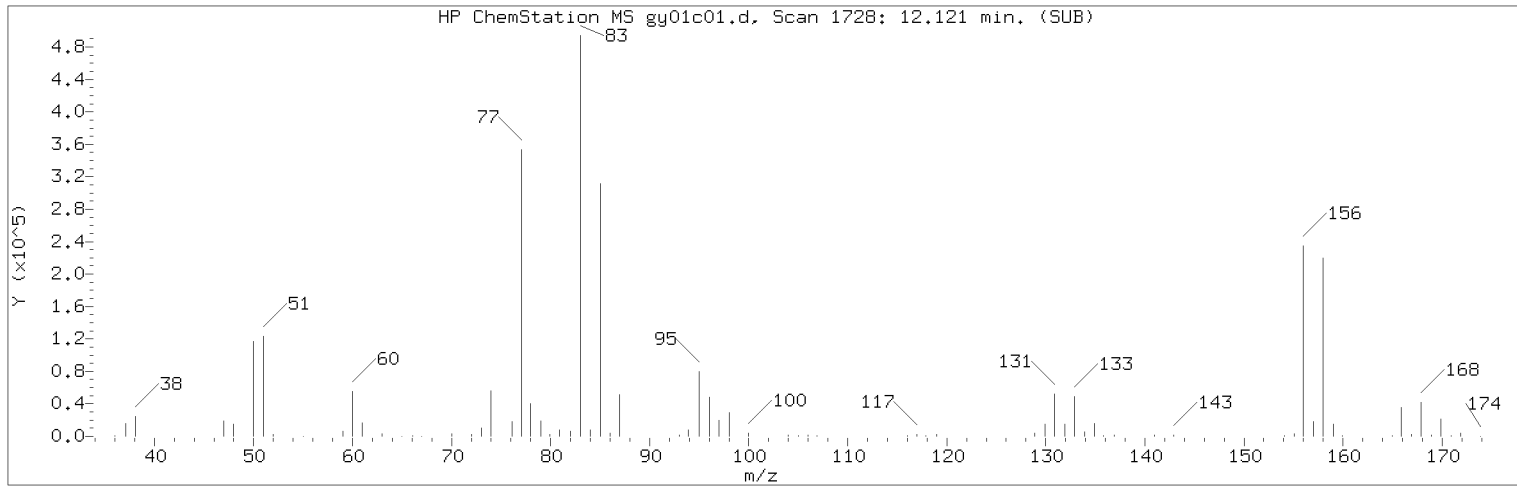
Lab Sample ID: VSTD12.5

Compound Number : 91
 Compound Name : 2-Hexanone
 Scan Number : 451
 Retention Time (minutes): 4.336
 Quant Ion : 43.00
 Area : 406261
 On-column Amount (ng) : 12.8303
 Integration start scan : 435
 Y at integration start : 2087

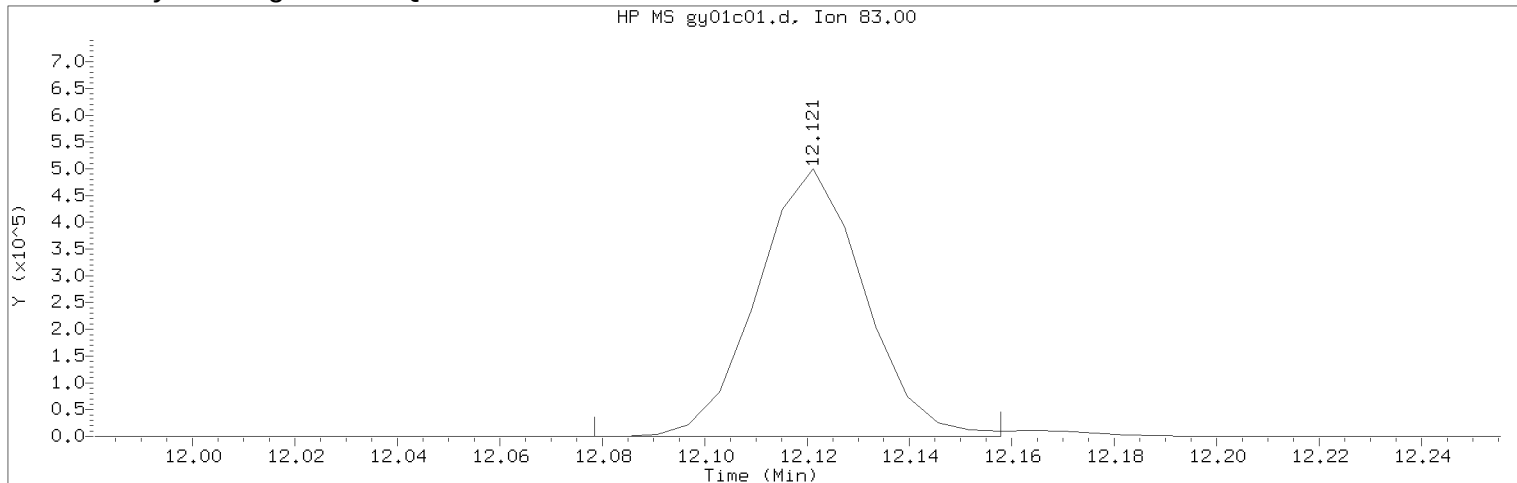
Integration stop scan: 479
 Y at integration end: 2087

Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.
 Target 3.5 esignature userF1D52jR1g00458 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 08:14 jkh09052

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1728	
Retention Time (minutes)	: 12.121	
Quant Ion	: 83.00	
Area (flag)	: 724988M	
On-Column Amount (ng)	: 11.8218	
Integration start scan	: 1720	Integration stop scan: 1733
Y at integration start	: 0	Y at integration end: 63

Reason for manual integration: improper integration

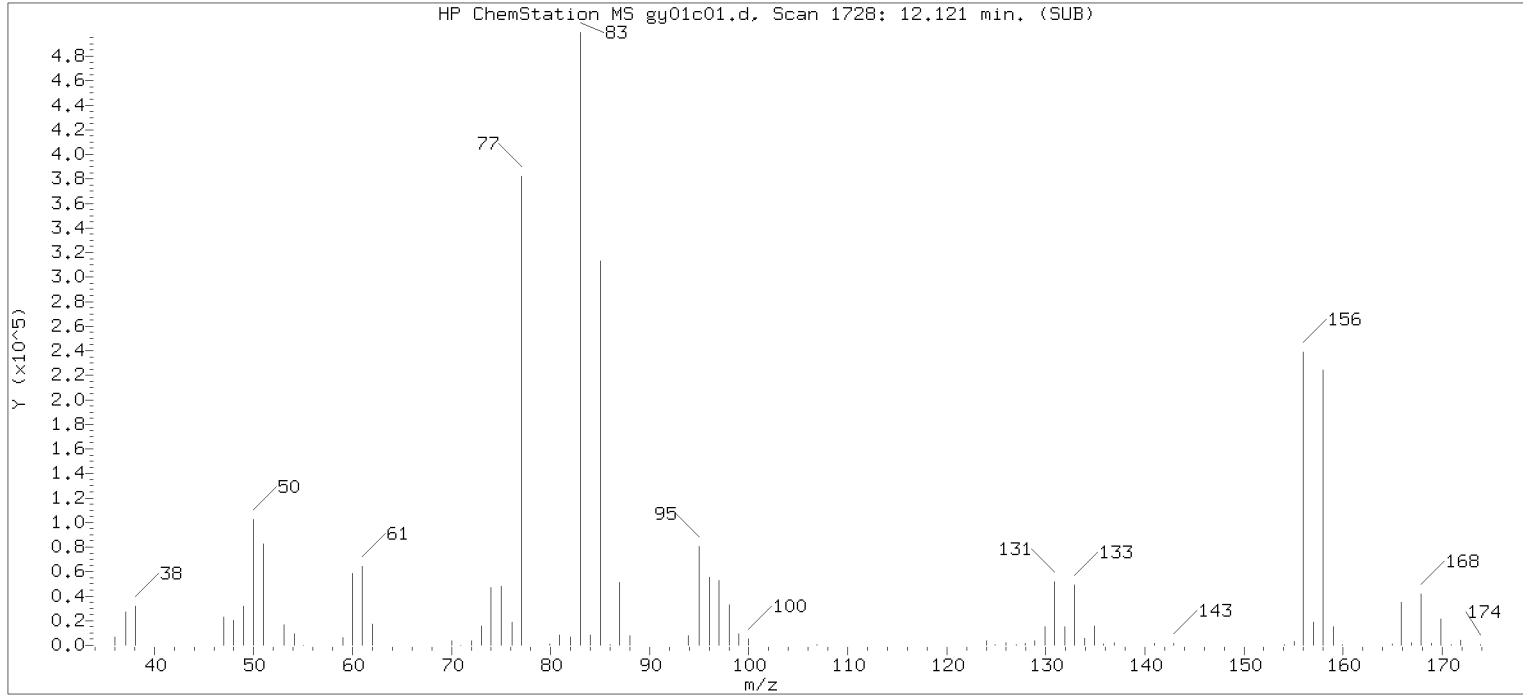
Analyst responsible for change:

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 08:14.
Target 3.5 esignature user ID: jkh09052

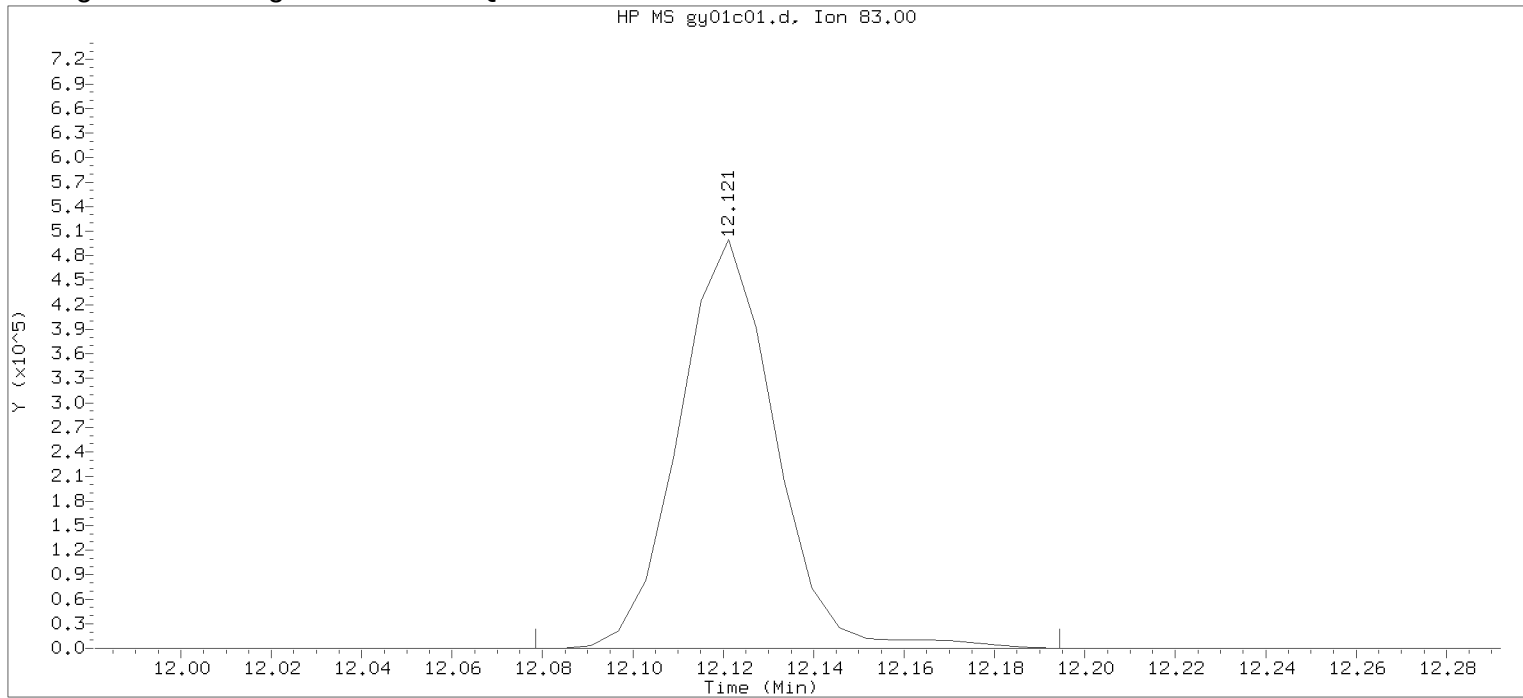
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:45.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01c01.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 07:26

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 07:43

Date, time and analyst ID of latest file update: 01-May-2018 07:43 Automation

Sample Name: VSTD12.5

Lab Sample ID: VSTD12.5

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1728

Retention Time (minutes): 12.121

Quant Ion : 83.00

Area : 735942

On-column Amount (ng) : 12.0004

Integration start scan : 1720 Integration stop scan: 1739

Y at integration start : 0 Y at integration end: 93

Digitally signed by Jennifer K. Howe on 05/01/2018 at 08:14.
Target 3.5 esignature userF1D52jR1g00452 of 730

Raw QC Data

Volatiles by GC/MS

VBLKG13

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG13

Data file: /chem2/HP16334.i/18apr30b.b/ga30b10.d
Data file Sample Info. Line: VBLKG13;VBLKG13;1;3;;;;;
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Injection date and time: **30-APR-2018 21:59**
Instrument ID: **HP16334.i** Batch: **G181203AA**

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: **8260W25-1**
Calibration date and time (Last Method Edit): 30-APR-2018 21:08
Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.952(-0.006)	388	65	207966 (9)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	2240053 (1)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1733471 (-2)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	972590 (-5)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.586(0.000)	113	558712	9.919	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	119727	10.030	100%		80 - 120
82) Toluene-d8	(3)	9.524(-0.001)	98	2276131	9.791	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	843567	9.480	95%		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	0.5
2) Chloromethane	(2)			Not Detected					0.2	0.5
5) Vinyl Chloride	(2)			Not Detected					0.1	0.5
6) 1,3-Butadiene	(2)			Not Detected					0.1	0.5
7) Bromomethane	(2)			Not Detected					0.1	0.5
8) Chloroethane	(2)			Not Detected					0.1	0.5
9) Dichlorofluoromethane	(2)			Not Detected					0.2	0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1	0.5
11) Ethyl ether	(2)			Not Detected					0.1	0.5
12) Freon 123a	(2)			Not Detected					0.2	0.5
13) Acrolein	(1)			Not Detected					5	25
15) 1,1-Dichloroethene	(2)			Not Detected					0.1	0.5
16) Freon 113	(2)			Not Detected					0.2	0.5
14) Acetone	(1)			Not Detected					3	5
17) Methyl Iodide	(2)			Not Detected					0.1	0.5
18) Carbon Disulfide	(2)			Not Detected					0.4	1
22) Allyl Chloride	(2)			Not Detected					0.1	0.5
21) Methyl Acetate	(1)			Not Detected					0.3	1
23) Methylene Chloride	(2)			Not Detected					0.2	0.5
28) t-Butyl Alcohol	(1)			Not Detected					4	10
29) Acrylonitrile	(1)			Not Detected					1	5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1	0.5
32) n-Hexane	(2)			Not Detected					0.1	0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1	0.5
34) di-Isopropyl Ether	(2)			Not Detected					0.1	0.5
35) 2-Chloro-1,3-Butadiene	(2)			Not Detected					0.1	0.5
37) Ethyl t-butyl ether	(2)			Not Detected					0.1	0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1	0.5
40) 1,2-Dichloroethene (Total)	(2)			Not Detected					0.1	0.5
41) 2,2-Dichloropropane	(2)			Not Detected					0.1	0.5

VBLKG13

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG13

Data file: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Injection date and time: 30-APR-2018 21:59

Data file Sample Info. Line: VBLKG13;VBLKG13;1;3;;;;;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit (in sample)	LOQ
38) 2-Butanone	(1)			Not Detected					1	5
42) Propionitrile	(1)			Not Detected					2	10
45) Methacrylonitrile	(1)			Not Detected					1	5
47) Bromochloromethane	(2)			Not Detected					0.1	0.5
48) Tetrahydrofuran	(1)			Not Detected					2	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
55) 1,1-Dichloropropene	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
56) Isobutyl Alcohol	(1)			Not Detected					10	25
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
60) t-Amyl methyl ether	(2)			Not Detected					0.1	0.5
62) n-Heptane	(2)			Not Detected					0.2	0.5
65) n-Butanol	(1)			Not Detected					20	50
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
71) Methyl Methacrylate	(1)			Not Detected					0.1	0.5
73) Dibromomethane	(2)			Not Detected					0.1	0.5
72) 1,4-Dioxane	(1)			Not Detected					20	100
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
76) 2-Nitropropane	(1)			Not Detected					1	5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
85) 1,3-Dichloropropene (total)	(3)			Not Detected					0.1	0.5
86) Ethyl Methacrylate	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)			Not Detected					0.1	0.5
90) 1,3-Dichloropropane	(3)			Not Detected					0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
114) Bromobenzene	(4)			Not Detected					0.1	0.5
116) 1,2,3-Trichloropropane	(4)			Not Detected					0.3	1
117) n-Propylbenzene	(4)			Not Detected					0.1	0.5
119) 2-Chlorotoluene	(4)			Not Detected					0.1	0.5
121) 1,3,5-Trimethylbenzene	(4)			Not Detected					0.1	0.5
122) 4-Chlorotoluene	(4)			Not Detected					0.1	0.5
125) tert-Butylbenzene	(4)			Not Detected					0.1	0.5
126) Pentachloroethane	(4)			Not Detected					0.2	0.5

VBLKG13

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG13

Data file: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Injection date and time: 30-APR-2018 21:59

Data file Sample Info. Line: VBLKG13;VBLKG13;1;3;;;;;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

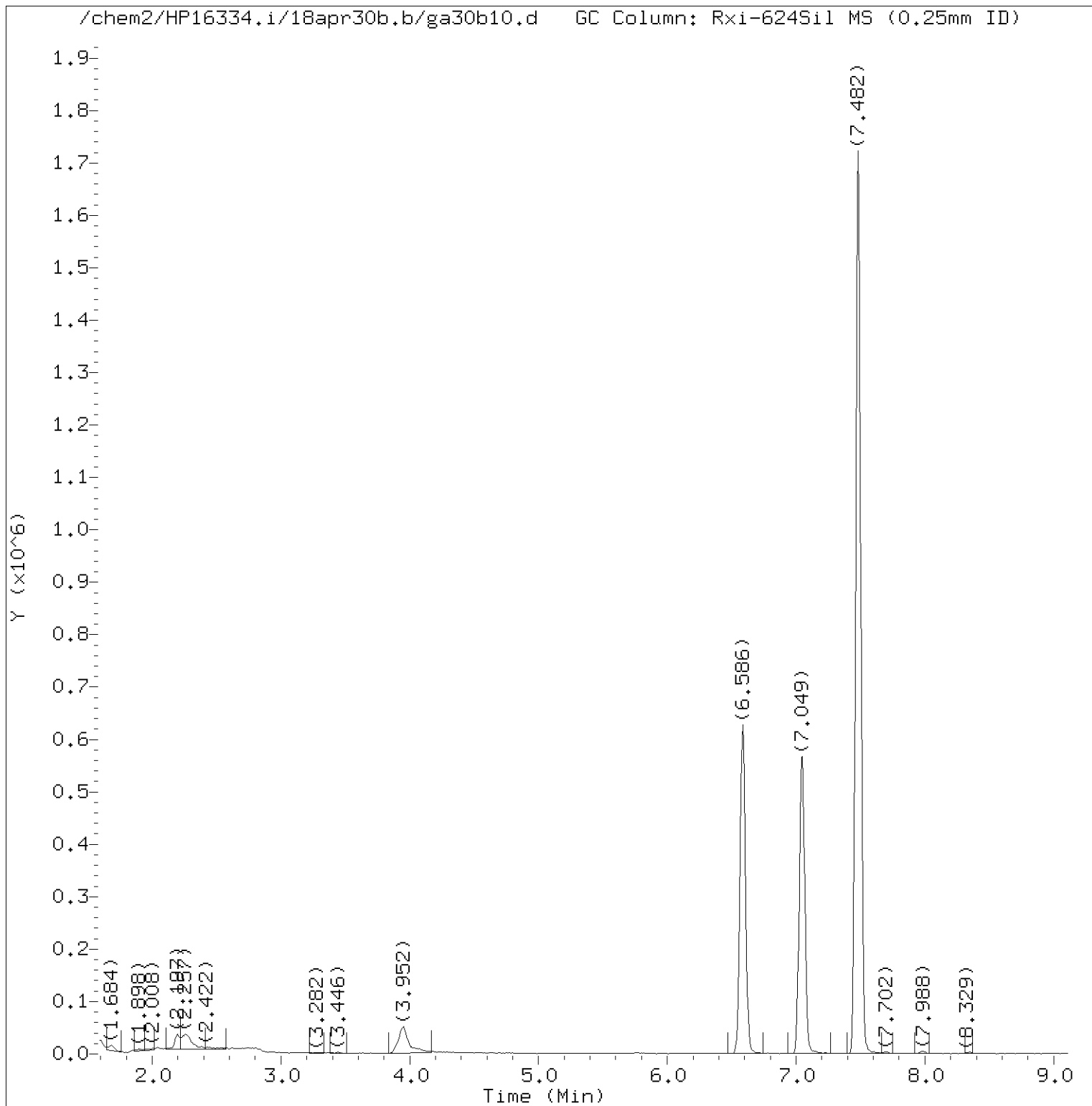
Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
127) 1,2,4-Trimethylbenzene	(4)			Not Detected					0.1	0.5
128) sec-Butylbenzene	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
132) p-Isopropyltoluene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)			Not Detected					0.1	0.5
136) Benzyl Chloride	(4)			Not Detected					0.1	0.5
138) n-Butylbenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)			Not Detected					0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5
146) Hexachlorobutadiene	(4)			Not Detected					0.1	0.5
147) Naphthalene	(4)			Not Detected					0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 100

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20. Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03. PARALLAX ID: jeb12641



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30b10.d
Injection date and time: 30-APR-2018 21:59

Instrument ID: HP16334.i
Analyst ID: MSK07970

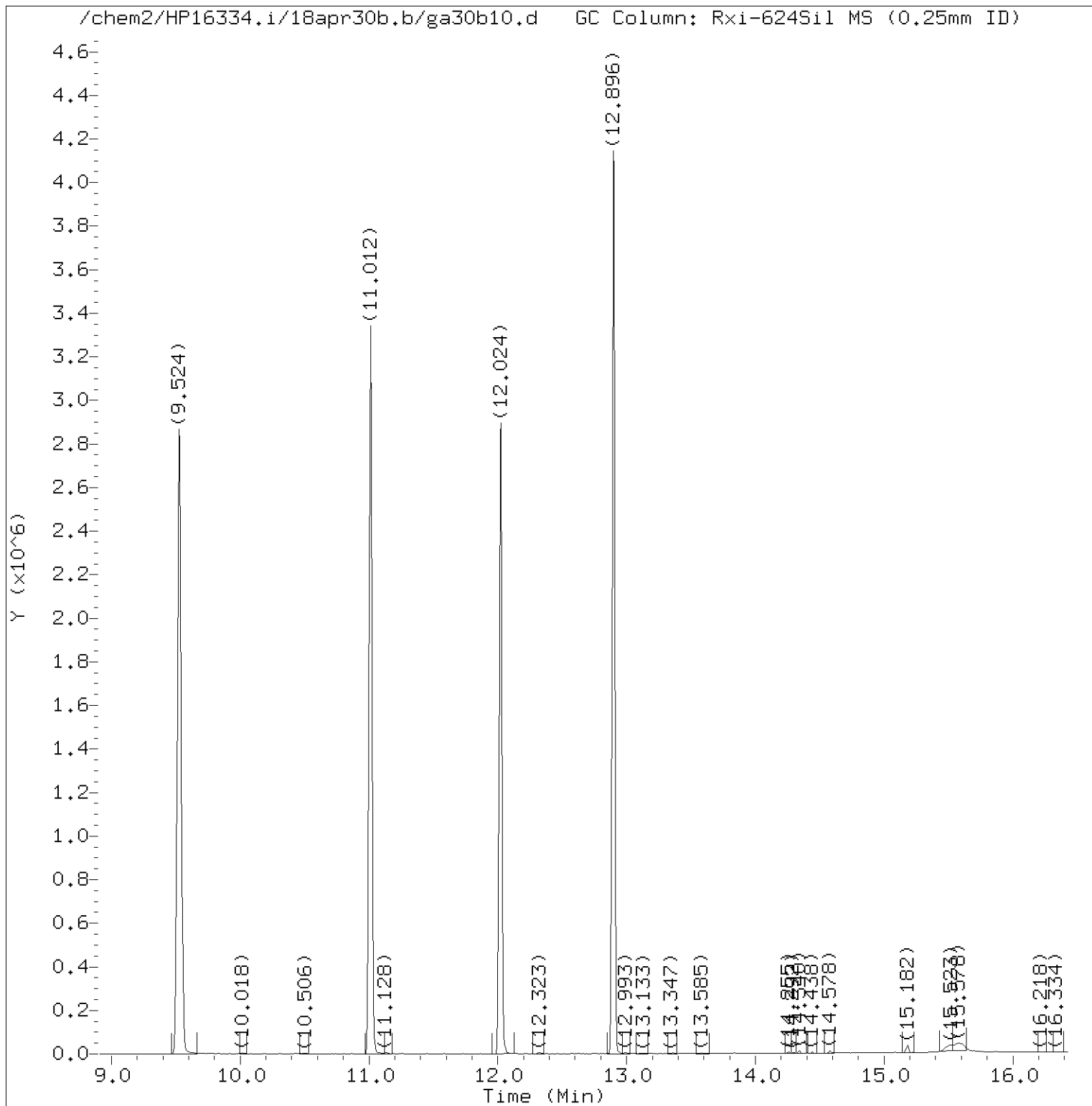
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: VBLKG13

Lab Sample ID: VBLKG13

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970
FKP52 Page 462 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30b10.d
Injection date and time: 30-APR-2018 21:59

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: VBLKG13

Lab Sample ID: VBLKG13

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970
FKP52 Page 463 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30b10.d
Injection date and time: 30-APR-2018 21:59

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: VBLKG13

Lab Sample ID: VBLKG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.952	65	207966	50.000
50)\$Dibromofluoromethane	(2)	6.586	113	558712	9.919
57)\$1,2-Dichloroethane-d4	(2)	7.049	102	119727	10.030
63)*Fluorobenzene	(2)	7.482	96	2240053	10.000
82)\$Toluene-d8	(3)	9.524	98	2276131	9.791
97)*Chlorobenzene-d5	(3)	11.012	117	1733471	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	843567	9.480
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	972590	10.000

* = Compound is an internal standard.
\$ = Compound is a surrogate standard.

page 1 of 1

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

VBLKG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG14

Data file: /chem2/HP16334.i/18may01a.b/gy01b01.d
Data file Sample Info. Line: VBLKG14;VBLKG14;1;3;;;;;
Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Injection date and time: 01-MAY-2018 09:40
Instrument ID: HP16334.i Batch: G181211AA

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121
Calibration date and time (Last Method Edit): 01-MAY-2018 11:02
Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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	3.964(-0.006)	390	65	202840 (5)	50.00	
63) Fluorobenzene	7.488(0.000)	968	96	2279396 (1)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1779376 (-2)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(0.000)	1856	152	1002062 (-4)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	567001	9.892	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	121432	9.997	100%		80 - 120
82) Toluene-d8	(3)	9.530(0.000)	98	2328880	9.759	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	862763	9.446	94%		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					0.1 0.5
2) Chloromethane	(2)			Not Detected					0.2 0.5
5) Vinyl Chloride	(2)			Not Detected					0.1 0.5
6) 1,3-Butadiene	(2)			Not Detected					0.1 0.5
7) Bromomethane	(2)			Not Detected					0.1 0.5
8) Chloroethane	(2)			Not Detected					0.1 0.5
9) Dichlorofluoromethane	(2)			Not Detected					0.2 0.5
10) Trichlorofluoromethane	(2)			Not Detected					0.1 0.5
11) Ethyl ether	(2)			Not Detected					0.1 0.5
12) Freon 123a	(2)			Not Detected					0.2 0.5
13) Acrolein	(1)			Not Detected					5 25
15) 1,1-Dichloroethene	(2)			Not Detected					0.1 0.5
16) Freon 113	(2)			Not Detected					0.2 0.5
14) Acetone	(1)			Not Detected					3 5
17) Methyl Iodide	(2)			Not Detected					0.1 0.5
18) Carbon Disulfide	(2)			Not Detected					0.4 1
25) Acetonitrile	(1)			Not Detected					7 20
22) Allyl Chloride	(2)			Not Detected					0.1 0.5
21) Methyl Acetate	(1)			Not Detected					0.3 1
23) Methylene Chloride	(2)			Not Detected					0.2 0.5
28) t-Butyl Alcohol	(1)			Not Detected					4 10
29) Acrylonitrile	(1)			Not Detected					1 5
31) trans-1,2-Dichloroethene	(2)			Not Detected					0.1 0.5
30) Methyl Tertiary Butyl Ether	(2)			Not Detected					0.1 0.5
32) n-Hexane	(2)			Not Detected					0.1 0.5
33) 1,1-Dichloroethane	(2)			Not Detected					0.1 0.5
36) Vinyl Acetate	(2)			Not Detected					0.2 0.5
34) di-Isopropyl Ether	(2)			Not Detected					0.1 0.5
35) 2-Chloro-1,3-Butadiene	(2)			Not Detected					0.1 0.5
37) Ethyl t-butyl ether	(2)			Not Detected					0.1 0.5
39) cis-1,2-Dichloroethene	(2)			Not Detected					0.1 0.5

VBLKG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG14

Data file: /chem2/HP16334.i/18may01a.b/gy01b01.d

Injection date and time: 01-MAY-2018 09:40

Data file Sample Info. Line: VBLKG14;VBLKG14;1;3;;;;;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121

Calibration date and time (Last Method Edit): 01-MAY-2018 11:02

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
40) 1,2-Dichloroethene (Total)	(2)			Not Detected					0.1	0.5
41) 2,2-Dichloropropane	(2)			Not Detected					0.1	0.5
38) 2-Butanone	(1)			Not Detected					1	5
42) Propionitrile	(1)			Not Detected					2	10
45) Methacrylonitrile	(1)			Not Detected					1	5
47) Bromochloromethane	(2)			Not Detected					0.1	0.5
48) Tetrahydrofuran	(1)			Not Detected					2	5
49) Chloroform	(2)			Not Detected					0.1	0.5
51) 1,1,1-Trichloroethane	(2)			Not Detected					0.1	0.5
52) Cyclohexane	(2)			Not Detected					0.1	0.5
55) 1,1-Dichloropropene	(2)			Not Detected					0.1	0.5
54) Carbon Tetrachloride	(2)			Not Detected					0.1	0.5
56) Isobutyl Alcohol	(1)			Not Detected					10	25
58) Benzene	(2)			Not Detected					0.1	0.5
59) 1,2-Dichloroethane	(2)			Not Detected					0.1	0.5
60) t-Amyl methyl ether	(2)			Not Detected					0.1	0.5
62) n-Heptane	(2)			Not Detected					0.2	0.5
65) n-Butanol	(1)			Not Detected					20	50
67) Trichloroethene	(2)			Not Detected					0.1	0.5
69) Methylcyclohexane	(2)			Not Detected					0.1	0.5
70) 1,2-Dichloropropane	(2)			Not Detected					0.1	0.5
71) Methyl Methacrylate	(1)			Not Detected					0.1	0.5
73) Dibromomethane	(2)			Not Detected					0.1	0.5
72) 1,4-Dioxane	(1)			Not Detected					20	100
74) Bromodichloromethane	(2)			Not Detected					0.1	0.5
76) 2-Nitropropane	(1)			Not Detected					1	5
78) 2-Chloroethyl vinyl ether	(2)			Not Detected					0.1	0.5
80) cis-1,3-Dichloropropene	(2)			Not Detected					0.1	0.5
81) 4-Methyl-2-Pentanone	(1)			Not Detected					1	5
83) Toluene	(3)			Not Detected					0.1	0.5
84) trans-1,3-Dichloropropene	(3)			Not Detected					0.1	0.5
85) 1,3-Dichloropropene (total)	(3)			Not Detected					0.1	0.5
86) Ethyl Methacrylate	(3)			Not Detected					0.1	0.5
88) 1,1,2-Trichloroethane	(3)			Not Detected					0.1	0.5
89) Tetrachloroethene	(3)			Not Detected					0.1	0.5
90) 1,3-Dichloropropane	(3)			Not Detected					0.1	0.5
91) 2-Hexanone	(1)			Not Detected					1	5
93) Dibromochloromethane	(3)			Not Detected					0.1	0.5
95) 1,2-Dibromoethane	(3)			Not Detected					0.1	0.5
98) Chlorobenzene	(3)			Not Detected					0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)			Not Detected					0.1	0.5
100) Ethylbenzene	(3)			Not Detected					0.1	0.5
101) m+p-Xylene	(3)			Not Detected					0.1	0.5
104) o-Xylene	(3)			Not Detected					0.1	0.5
105) Xylene (Total)	(3)			Not Detected					0.1	0.5
106) Styrene	(3)			Not Detected					0.1	0.5
107) Bromoform	(3)			Not Detected					0.1	0.5
108) Isopropylbenzene	(3)			Not Detected					0.1	0.5
112) Cyclohexanone	(1)			Not Detected					5	25
113) 1,1,2,2-Tetrachloroethane	(4)			Not Detected					0.1	0.5
114) Bromobenzene	(4)			Not Detected					0.1	0.5
116) 1,2,3-Trichloropropane	(4)			Not Detected					0.3	1
117) n-Propylbenzene	(4)			Not Detected					0.1	0.5
119) 2-Chlorotoluene	(4)			Not Detected					0.1	0.5

VBLKG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

VBLKG14

Data file: /chem2/HP16334.i/18may01a.b/gy01b01.d

Injection date and time: 01-MAY-2018 09:40

Data file Sample Info. Line: VBLKG14;VBLKG14;1;3;;;;;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121

Calibration date and time (Last Method Edit): 01-MAY-2018 11:02

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.d

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

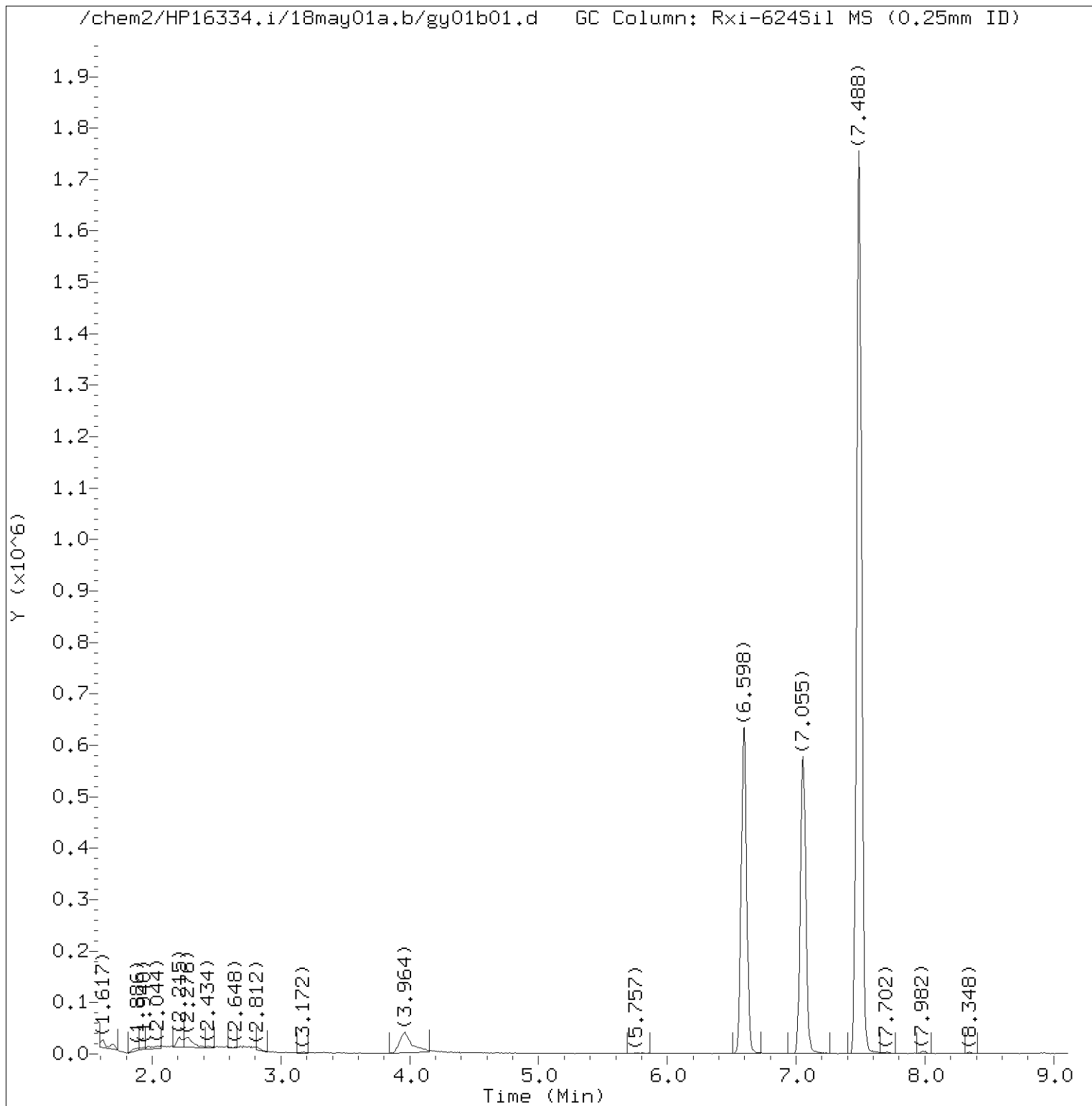
Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: 1.00

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting Limit LOQ (in sample)	
121) 1,3,5-Trimethylbenzene	(4)			Not Detected					0.1	0.5
122) 4-Chlorotoluene	(4)			Not Detected					0.1	0.5
125) tert-Butylbenzene	(4)			Not Detected					0.1	0.5
126) Pentachloroethane	(4)			Not Detected					0.2	0.5
127) 1,2,4-Trimethylbenzene	(4)			Not Detected					0.1	0.5
128) sec-Butylbenzene	(4)			Not Detected					0.1	0.5
131) 1,3-Dichlorobenzene	(4)			Not Detected					0.1	0.5
132) p-Isopropyltoluene	(4)			Not Detected					0.1	0.5
134) 1,4-Dichlorobenzene	(4)			Not Detected					0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)			Not Detected					0.1	0.5
136) Benzyl Chloride	(4)			Not Detected					0.1	0.5
138) n-Butylbenzene	(4)			Not Detected					0.1	0.5
139) 1,2-Dichlorobenzene	(4)			Not Detected					0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)			Not Detected					0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)			Not Detected					0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)			Not Detected					0.1	0.5
146) Hexachlorobutadiene	(4)			Not Detected					0.1	0.5
147) Naphthalene	(4)			Not Detected					0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)			Not Detected					0.1	0.5

Total number of targets = 104

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:04. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01b01.d
Injection date and time: 01-MAY-2018 09:40

Instrument ID: HP16334.i
Analyst ID: JKH09052

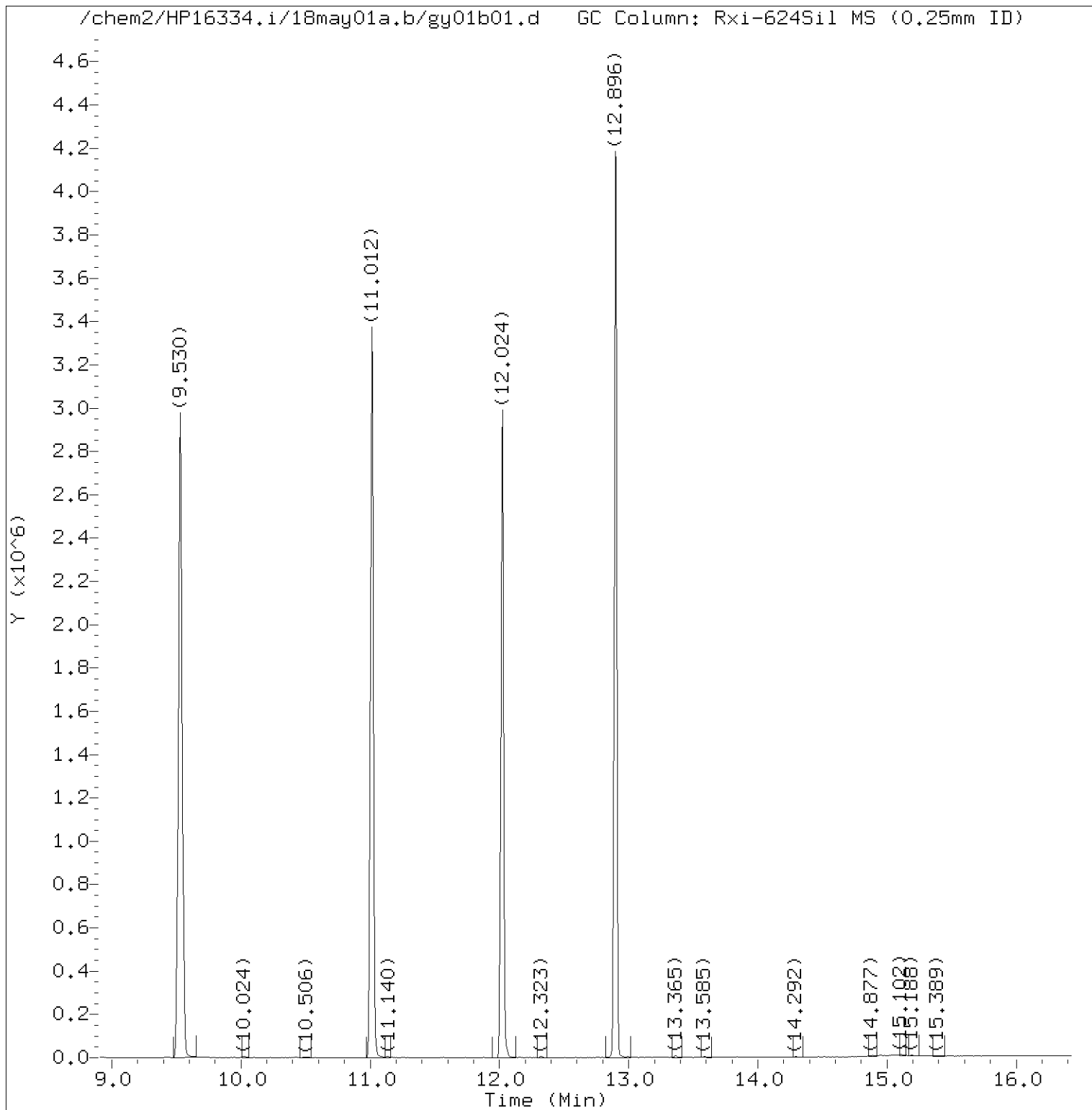
Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Sample Name: VBLKG14

Lab Sample ID: VBLKG14

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:04.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 468 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01b01.d
Injection date and time: 01-MAY-2018 09:40

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Sample Name: VBLKG14

Lab Sample ID: VBLKG14

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:04.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 469 of 730

page 2 of 2

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01b01.d
Injection date and time: 01-MAY-2018 09:40

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: G18121
Calibration date and time: 01-MAY-2018 11:02
Date, time and analyst ID of latest file update: 01-May-2018 11:03 jkh09052

Sample Name: VBLKG14

Lab Sample ID: VBLKG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
26)*t-Butyl Alcohol-d10	(1)	3.964	65	202840	50.000
50)\$Dibromofluoromethane	(2)	6.592	113	567001	9.892
57)\$1,2-Dichloroethane-d4	(2)	7.055	102	121432	9.997
63)*Fluorobenzene	(2)	7.488	96	2279396	10.000
82)\$Toluene-d8	(3)	9.530	98	2328880	9.759
97)*Chlorobenzene-d5	(3)	11.012	117	1779376	10.000
111)\$4-Bromofluorobenzene	(3)	12.024	95	862763	9.446
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	1002062	10.000

* = Compound is an internal standard.
\$ = Compound is a surrogate standard.

page 1 of 1

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:04.

Target 3.5 esignature user ID: jkh09052

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG13

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSG13

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s71.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 04/30/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	4.3	
75-01-4	Vinyl Chloride	4.7	
106-99-0	1,3-Butadiene	2.9	
74-83-9	Bromomethane	5.0	
75-00-3	Chloroethane	4.7	
75-43-4	Dichlorofluoromethane	5.0	
75-69-4	Trichlorofluoromethane	4.8	
60-29-7	Ethyl ether	3.9	
354-23-4	Freon 123a	4.8	
107-02-8	Acrolein	43	
67-64-1	Acetone	38	
75-35-4	1,1-Dichloroethene	5.1	
76-13-1	Freon 113	4.7	
74-88-4	Methyl Iodide	4.8	
75-15-0	Carbon Disulfide	4.3	
79-20-9	Methyl Acetate	5.6	
107-05-1	Allyl Chloride	4.2	
75-09-2	Methylene Chloride	4.3	
75-65-0	t-Butyl Alcohol	53	
107-13-1	Acrylonitrile	29	
1634-04-4	Methyl Tertiary Butyl Ether	4.6	
156-60-5	trans-1,2-Dichloroethene	5.0	
110-54-3	n-Hexane	4.4	
75-34-3	1,1-Dichloroethane	4.6	
108-20-3	di-Isopropyl Ether	4.5	
126-99-8	2-Chloro-1,3-Butadiene	4.4	
637-92-3	Ethyl t-butyl ether	4.5	
78-93-3	2-Butanone	41	
156-59-2	cis-1,2-Dichloroethene	5.0	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG13

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: LCSG13
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s71.d
 Level: (low/med) LOW Date Received: _____
 Moisture: not dec. _____ Date Analyzed: 04/30/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
540-59-0-----	1,2-Dichloroethene (Total)	10.0	J
594-20-7-----	2,2-Dichloropropane	4.7	
107-12-0-----	Propionitrile	40	
126-98-7-----	Methacrylonitrile	44	
74-97-5-----	Bromochloromethane	5.0	
109-99-9-----	Tetrahydrofuran	30	
67-66-3-----	Chloroform	4.7	
71-55-6-----	1,1,1-Trichloroethane	4.8	
110-82-7-----	Cyclohexane	4.5	
56-23-5-----	Carbon Tetrachloride	4.9	
563-58-6-----	1,1-Dichloropropene	4.6	
78-83-1-----	Isobutyl Alcohol	120	
71-43-2-----	Benzene	4.7	
107-06-2-----	1,2-Dichloroethane	4.4	
994-05-8-----	t-Amyl methyl ether	4.7	
142-82-5-----	n-Heptane	4.3	
71-36-3-----	n-Butanol	270	
79-01-6-----	Trichloroethene	4.8	
108-87-2-----	Methylcyclohexane	4.7	
78-87-5-----	1,2-Dichloropropane	4.7	
80-62-6-----	Methyl Methacrylate	5.9	
123-91-1-----	1,4-Dioxane	170	
74-95-3-----	Dibromomethane	4.8	
75-27-4-----	Bromodichloromethane	4.7	
79-46-9-----	2-Nitropropane	4.9	
10061-01-5-----	cis-1,3-Dichloropropene	4.7	
108-10-1-----	4-Methyl-2-Pentanone	27	
108-88-3-----	Toluene	4.8	
10061-02-6-----	trans-1,3-Dichloropropene	4.6	
542-75-6-----	1,3-Dichloropropene (total)	9.3	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG13

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSG13

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s71.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 04/30/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
97-63-2	Ethyl Methacrylate		4.5	
79-00-5	1,1,2-Trichloroethane		4.9	
127-18-4	Tetrachloroethene		4.9	
142-28-9	1,3-Dichloropropane		4.6	
591-78-6	2-Hexanone		28	
124-48-1	Dibromochloromethane		4.8	
106-93-4	1,2-Dibromoethane		4.8	
108-90-7	Chlorobenzene		4.7	
630-20-6	1,1,1,2-Tetrachloroethane		4.8	
100-41-4	Ethylbenzene		4.7	
179601-23-1	m+p-Xylene		9.7	
95-47-6	o-Xylene		4.7	
1330-20-7	Xylene (Total)		14	
100-42-5	Styrene		4.9	
75-25-2	Bromoform		4.7	
98-82-8	Isopropylbenzene		4.8	
79-34-5	1,1,2,2-Tetrachloroethane		4.7	
108-86-1	Bromobenzene		4.7	
96-18-4	1,2,3-Trichloropropane		4.8	
103-65-1	n-Propylbenzene		4.6	
95-49-8	2-Chlorotoluene		4.7	
108-67-8	1,3,5-Trimethylbenzene		4.6	
106-43-4	4-Chlorotoluene		4.7	
98-06-6	tert-Butylbenzene		5.3	
76-01-7	Pentachloroethane		4.9	
95-63-6	1,2,4-Trimethylbenzene		4.6	
135-98-8	sec-Butylbenzene		4.7	
541-73-1	1,3-Dichlorobenzene		4.7	
99-87-6	p-Isopropyltoluene		4.8	
106-46-7	1,4-Dichlorobenzene		4.8	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG13

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSG13

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s71.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 04/30/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
526-73-8-----	1,2,3-Trimethylbenzene		4.8	
100-44-7-----	Benzyl Chloride		4.7	
104-51-8-----	n-Butylbenzene		4.6	
95-50-1-----	1,2-Dichlorobenzene		4.7	
96-12-8-----	1,2-Dibromo-3-chloropropane		6.4	
108-70-3-----	1,3,5-Trichlorobenzene		4.7	
120-82-1-----	1,2,4-Trichlorobenzene		4.7	
87-68-3-----	Hexachlorobutadiene		4.7	
91-20-3-----	Naphthalene		4.6	
87-61-6-----	1,2,3-Trichlorobenzene		4.8	

Data file: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Injection date and time: 30-APR-2018 21:14

Data file Sample Info. Line: LCSG13;LCSG13;1;3;LCS;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.946(0.000)	387	65	189029 (-1)	50.00	
63) Fluorobenzene	7.482(-0.006)	967	96	2281762 (3)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1796115 (1)	10.00	
133) 1,4-Dichlorobenzene-d4	12.896(0.000)	1855	152	1045412 (2)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.586(0.000)	113	576120	10.041	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.043(0.001)	102	121714	10.010	100%		80 - 120
82) Toluene-d8	(3)	9.524(-0.001)	98	2331012	9.677	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	879442	9.538	95%		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)	1.824(0.001)	85	349359	4.082	4.08			0.1	0.5
2) Chloromethane	(2)	2.013(0.001)	50	371530	4.311	4.31			0.2	0.5
5) Vinyl Chloride	(2)	2.123(0.001)	62	349204	4.722	4.72			0.1	0.5
6) 1,3-Butadiene	(2)	2.129(0.001)	39	457451	2.907	2.91			0.1	0.5
7) Bromomethane	(2)	2.440(0.001)	94	247864	5.013	5.01			0.1	0.5
8) Chloroethane	(2)	2.519(0.001)	64	197995	4.700	4.70			0.1	0.5
9) Dichlorofluoromethane	(2)	2.739(0.001)	67	503048	4.951	4.95			0.2	0.5
10) Trichlorofluoromethane	(2)	2.806(0.001)	101	461159M	4.781	4.78			0.1	0.5
11) Ethyl ether	(2)	3.025(0.000)	59	187332	3.896	3.90			0.1	0.5
12) Freon 123a	(2)	3.123(0.001)	67	329637	4.827	4.83			0.2	0.5
13) Acrolein	(1)	3.184(0.001)	56	279757	42.838	42.84			5	25
15) 1,1-Dichloroethene	(2)	3.318(0.001)	96	239468	5.071	5.07			0.1	0.5
16) Freon 113	(2)	3.367(0.000)	101	252318	4.739	4.74			0.2	0.5
14) Acetone	(1)	3.336(0.001)	43	402848	38.178	38.18			3	5
17) Methyl Iodide	(2)	3.507(0.001)	142	443474	4.835	4.84			0.1	0.5
18) Carbon Disulfide	(2)	3.611(0.002)	76	805649	4.300	4.30			0.4	1
22) Allyl Chloride	(2)	3.769(0.001)	41	463825	4.233	4.23			0.1	0.5
21) Methyl Acetate	(1)	3.739(0.001)	43	166142	5.586	5.59			0.3	1
23) Methylene Chloride	(2)	3.952(0.000)	84	273595	4.284	4.28			0.2	0.5
28) t-Butyl Alcohol	(1)	4.068(0.003)	59	188594	52.725	52.73			4	10
29) Acrylonitrile	(1)	4.263(-0.000)	53	336464	28.662	28.66			1	5
31) trans-1,2-Dichloroethene	(2)	4.348(0.001)	96	273636	4.986	4.99			0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)	4.324(0.001)	73	760629	4.625	4.62			0.1	0.5
32) n-Hexane	(2)	4.775(0.000)	57	409969	4.423	4.42			0.1	0.5
33) 1,1-Dichloroethane	(2)	5.019(0.000)	63	513079	4.583	4.58			0.1	0.5
34) di-Isopropyl Ether	(2)	5.074(-0.000)	45	1022809	4.462	4.46			0.1	0.5
35) 2-Chloro-1,3-Butadiene	(2)	5.129(0.000)	53	451014	4.401	4.40			0.1	0.5
37) Ethyl t-butyl ether	(2)	5.616(0.000)	59	907014	4.507	4.51			0.1	0.5
39) cis-1,2-Dichloroethene	(2)	5.866(0.000)	96	307077	4.988	4.99			0.1	0.5
40) 1,2-Dichloroethene (Total)	(2)		96	580713	9.974	9.97			0.1	0.5
41) 2,2-Dichloropropane	(2)	5.885(0.000)	77	427601	4.657	4.66			0.1	0.5

M = Compound was manually integrated.

Data file: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Injection date and time: 30-APR-2018 21:14

Data file Sample Info. Line: LCSG13;LCSG13;1;3;LCS;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ (in sample)
38) 2-Butanone	(1)	5.824(-0.000)	43	737394	40.616	40.62			1	5
42) Propionitrile	(1)	5.915(0.001)	54	180738	40.263	40.26			2	10
45) Methacrylonitrile	(1)	6.135(0.001)	67	630897	44.348	44.35			1	5
47) Bromochloromethane	(2)	6.208(-0.000)	128	141999	5.024	5.02			0.1	0.5
48) Tetrahydrofuran	(1)	6.208(-0.000)	71	127605	29.527	29.53			2	5
49) Chloroform	(2)	6.360(0.000)	83	505565	4.723	4.72			0.1	0.5
51) 1,1,1-Trichloroethane	(2)	6.586(0.000)	97	433254	4.792	4.79			0.1	0.5
52) Cyclohexane	(2)	6.696(-0.000)	56	490762	4.526	4.53			0.1	0.5
55) 1,1-Dichloropropene	(2)	6.805(-0.000)	75	387486	4.597	4.60			0.1	0.5
54) Carbon Tetrachloride	(2)	6.805(0.000)	117	358105	4.876	4.88			0.1	0.5
56) Isobutyl Alcohol	(1)	6.945(-0.000)	41	176243	123.975	123.98			10	25
58) Benzene	(2)	7.067(0.000)	78	1104794	4.747	4.75			0.1	0.5
59) 1,2-Dichloroethane	(2)	7.147(0.000)	62	358691	4.354	4.35			0.1	0.5
60) t-Amyl methyl ether	(2)	7.262(-0.000)	73	807967	4.730	4.73			0.1	0.5
62) n-Heptane	(2)	7.494(-0.000)	43	478400	4.290	4.29			0.2	0.5
65) n-Butanol	(1)	7.836(-0.000)	56	305664	271.660	271.66			20	50
67) Trichloroethene	(2)	7.964(0.000)	95	294950	4.801	4.80			0.1	0.5
69) Methylcyclohexane	(2)	8.274(0.000)	83	487467	4.672	4.67			0.1	0.5
70) 1,2-Dichloropropane	(2)	8.305(0.000)	63	304026	4.707	4.71			0.1	0.5
71) Methyl Methacrylate	(1)	8.384(-0.001)	69	160242	5.914	5.91			0.1	0.5
73) Dibromomethane	(2)	8.415(0.000)	93	148785	4.827	4.83			0.1	0.5
72) 1,4-Dioxane	(1)	8.384(-0.000)	88	32403M	165.252	165.25			20	100
74) Bromodichloromethane	(2)	8.652(0.000)	83	356365	4.712	4.71			0.1	0.5
76) 2-Nitropropane	(1)	8.908(-0.000)	41	45323	4.883	4.88			1	5
80) cis-1,3-Dichloropropene	(2)	9.207(0.000)	75	442714	4.737	4.74		J	0.1	0.5
81) 4-Methyl-2-Pentanone	(1)	9.378(-0.000)	43	1209922	27.128	27.13			1	5
83) Toluene	(3)	9.603(-0.000)	92	726207	4.759	4.76			0.1	0.5
84) trans-1,3-Dichloropropene	(3)	9.872(-0.000)	75	377968	4.567	4.57			0.1	0.5
85) 1,3-Dichloropropene (total)	(3)		75	820682	9.304	9.30			0.1	0.5
86) Ethyl Methacrylate	(3)	9.933(-0.000)	69	338775	4.540	4.54			0.1	0.5
88) 1,1,2-Trichloroethane	(3)	10.085(-0.000)	97	225313	4.896	4.90			0.1	0.5
89) Tetrachloroethene	(3)	10.164(0.000)	166	347652	4.912	4.91			0.1	0.5
90) 1,3-Dichloropropane	(3)	10.250(-0.000)	76	383209	4.571	4.57			0.1	0.5
91) 2-Hexanone	(1)	10.292(-0.000)	43	881851	28.131	28.13			1	5
93) Dibromochloromethane	(3)	10.469(-0.000)	129	242892	4.790	4.79			0.1	0.5
95) 1,2-Dibromoethane	(3)	10.579(0.000)	107	211973	4.821	4.82			0.1	0.5
98) Chlorobenzene	(3)	11.036(-0.000)	112	829532	4.746	4.75			0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)	11.121(-0.000)	131	280687	4.809	4.81			0.1	0.5
100) Ethylbenzene	(3)	11.128(-0.000)	91	1420943	4.686	4.69			0.1	0.5
101) m+p-Xylene	(3)	11.243(-0.000)	106	1115879	9.665	9.67			0.1	0.5
104) o-Xylene	(3)	11.573(-0.000)	106	543162	4.693	4.69			0.1	0.5
105) Xylene (Total)	(3)		106	1659041	14.359	14.36			0.1	0.5
106) Styrene	(3)	11.591(-0.000)	104	928567	4.888	4.89			0.1	0.5
107) Bromoform	(3)	11.749(-0.000)	173	137528	4.713	4.71			0.1	0.5
108) Isopropylbenzene	(3)	11.871(-0.000)	105	1441006	4.780	4.78			0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)	12.121(-0.000)	83	285889	4.653	4.65			0.1	0.5
114) Bromobenzene	(4)	12.133(0.000)	156	378362	4.689	4.69			0.1	0.5
116) 1,2,3-Trichloropropane	(4)	12.164(0.000)	110	82240	4.788	4.79			0.3	1
117) n-Propylbenzene	(4)	12.200(0.000)	91	1744423	4.643	4.64			0.1	0.5
119) 2-Chlorotoluene	(4)	12.280(-0.000)	126	353689	4.717	4.72			0.1	0.5
121) 1,3,5-Trimethylbenzene	(4)	12.341(-0.000)	105	1238777	4.605	4.60			0.1	0.5
122) 4-Chlorotoluene	(4)	12.371(-0.000)	126	367468	4.701	4.70			0.1	0.5
125) tert-Butylbenzene	(4)	12.578(0.000)	134	296589	5.282	5.28			0.1	0.5
126) Pentachloroethane	(4)	12.615(-0.000)	167	215056	4.932	4.93			0.2	0.5

M = Compound was manually integrated.

Data file: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Injection date and time: 30-APR-2018 21:14

Data file Sample Info. Line: LCSG13;LCSG13;1;3;LCS;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

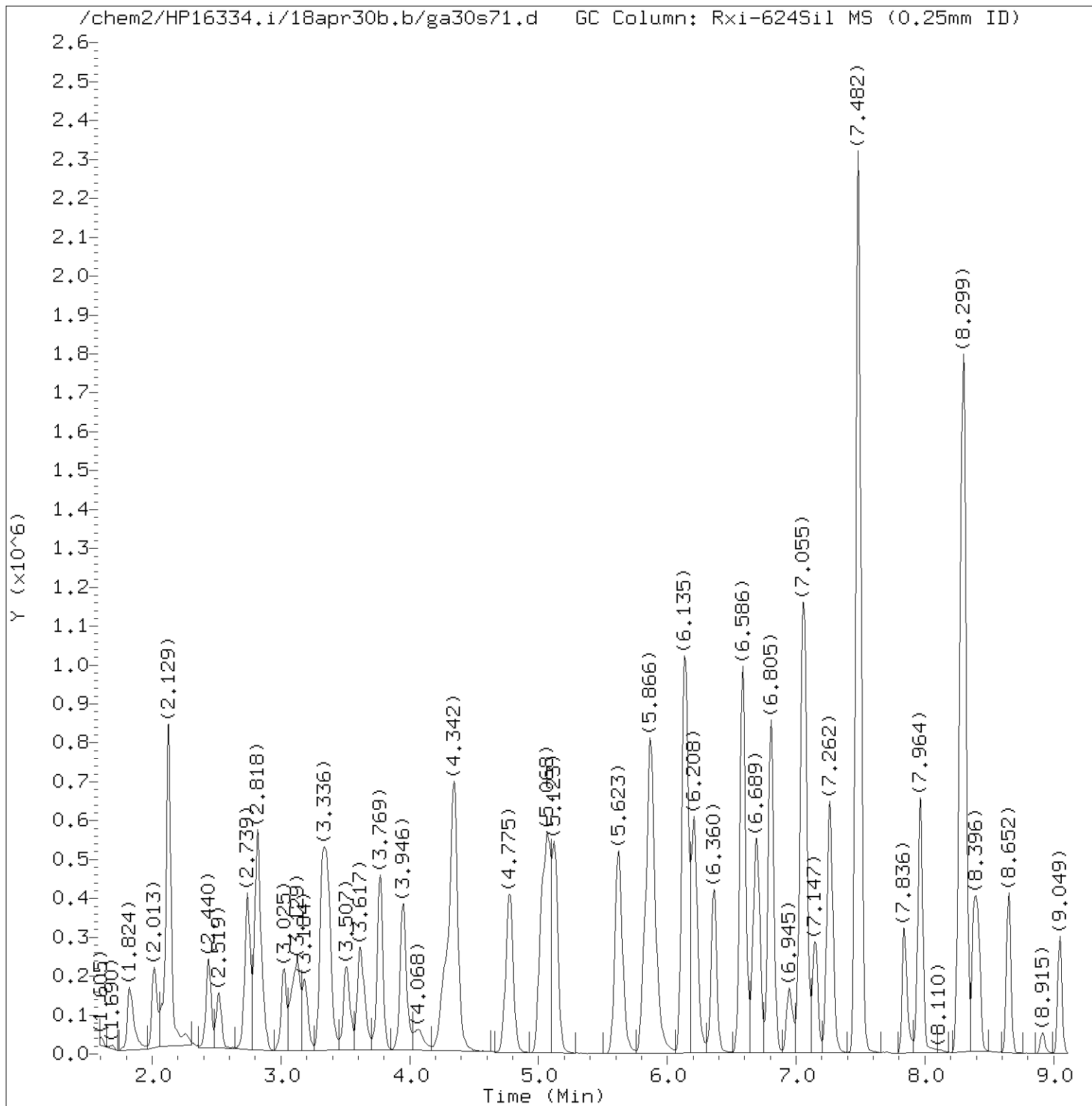
Volume Purged (Vt): 25 ml

Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
127) 1,2,4-Trimethylbenzene	(4)	12.621(0.000)	105	1272815	4.639	4.64			0.1	0.5
128) sec-Butylbenzene	(4)	12.743(-0.000)	105	1609730	4.711	4.71			0.1	0.5
131) 1,3-Dichlorobenzene	(4)	12.841(0.000)	146	760263	4.741	4.74			0.1	0.5
132) p-Isopropyltoluene	(4)	12.853(-0.000)	119	1417337	4.752	4.75			0.1	0.5
134) 1,4-Dichlorobenzene	(4)	12.914(0.000)	146	782483	4.788	4.79			0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)	12.926(-0.000)	120	587916	4.765	4.77			0.1	0.5
136) Benzyl Chloride	(4)	12.993(-0.000)	126	105292	4.718	4.72			0.1	0.5
138) n-Butylbenzene	(4)	13.139(0.000)	92	736285	4.588	4.59			0.1	0.5
139) 1,2-Dichlorobenzene	(4)	13.170(0.000)	146	717803	4.744	4.74			0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)	13.712(-0.000)	155	43162	6.445	6.45			0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)	13.840(-0.000)	180	630118	4.699	4.70			0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)	14.261(-0.000)	180	579837	4.661	4.66			0.1	0.5
146) Hexachlorobutadiene	(4)	14.340(0.000)	225	308922	4.711	4.71			0.1	0.5
147) Naphthalene	(4)	14.438(-0.000)	128	966587	4.648	4.65			0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)	14.578(-0.000)	180	508206	4.778	4.78			0.1	0.5

Total number of targets = 100

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Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d
Injection date and time: 30-APR-2018 21:14

Instrument ID: HP16334.i
Analyst ID: MSK07970

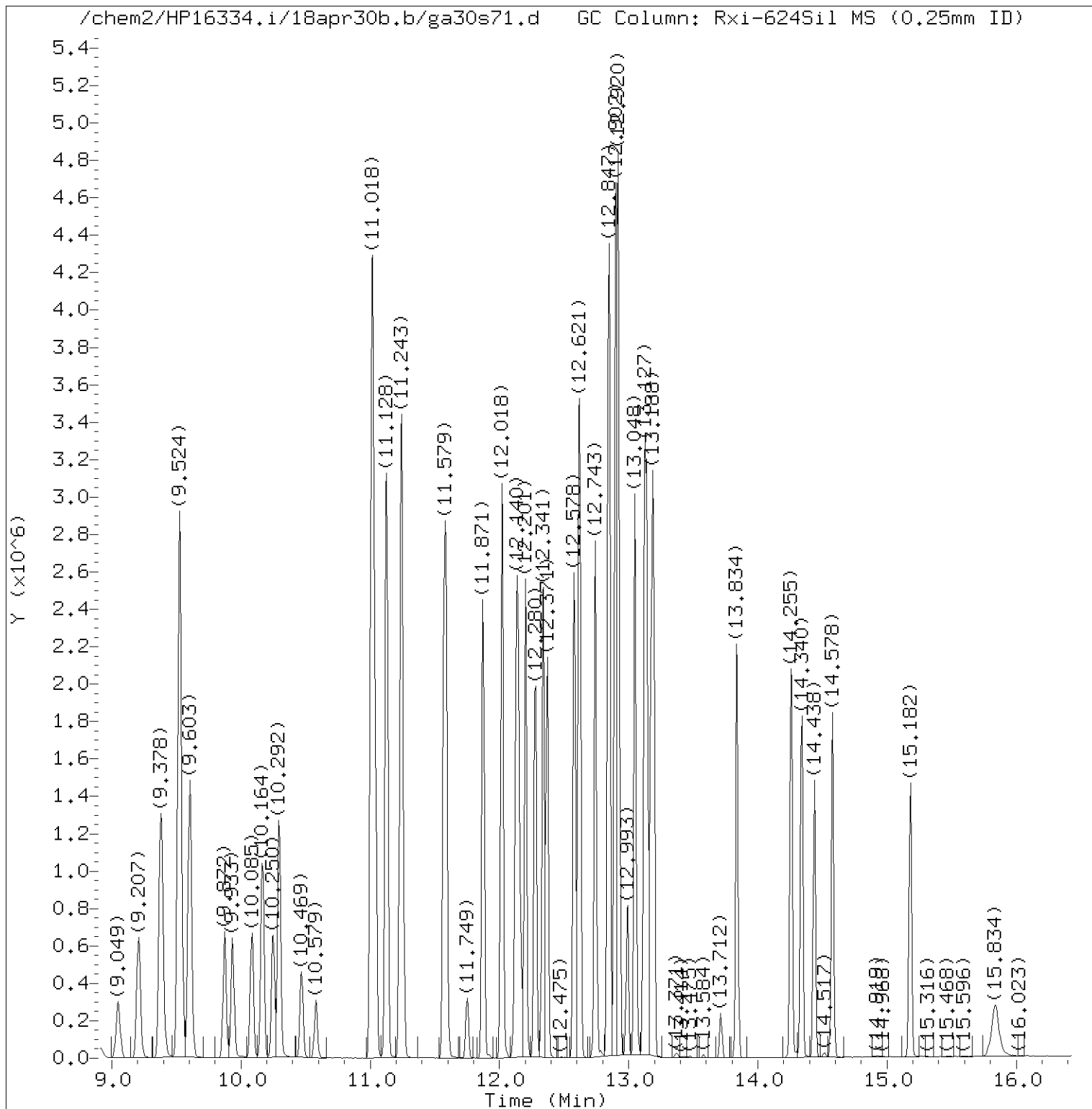
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970
FKP52 Page 478 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d
Injection date and time: 30-APR-2018 21:14

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970
FKP52 Page 479 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d
 Injection date and time: 30-APR-2018 21:14

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.824	85	349359	4.082
2) Chloromethane	(2)	2.013	50	371530	4.311
5) Vinyl Chloride	(2)	2.123	62	349204	4.722
6) 1,3-Butadiene	(2)	2.129	39	457451	2.907
7) Bromomethane	(2)	2.440	94	247864	5.013
8) Chloroethane	(2)	2.519	64	197995	4.700
9) Dichlorofluoromethane	(2)	2.739	67	503048	4.951
10) Trichlorofluoromethane	(2)	2.806	101	461159M	4.781
11) Ethyl ether	(2)	3.025	59	187332	3.896
12) Freon 123a	(2)	3.123	67	329637	4.827
13) Acrolein	(1)	3.184	56	279757	42.838
15) 1,1-Dichloroethene	(2)	3.318	96	239468	5.071
14) Acetone	(1)	3.336	43	402848	38.178
16) Freon 113	(2)	3.367	101	252318	4.739
17) Methyl Iodide	(2)	3.507	142	443474	4.835
18) Carbon Disulfide	(2)	3.611	76	805649	4.300
21) Methyl Acetate	(1)	3.739	43	166142	5.586
22) Allyl Chloride	(2)	3.769	41	463825	4.233
26)*t-Butyl Alcohol-d10	(1)	3.946	65	189029	50.000
23) Methylene Chloride	(2)	3.952	84	273595	4.284
28) t-Butyl Alcohol	(1)	4.068	59	188594	52.725
29) Acrylonitrile	(1)	4.263	53	336464	28.662
30) Methyl Tertiary Butyl Ether	(2)	4.324	73	760629	4.625
31) trans-1,2-Dichloroethene	(2)	4.348	96	273636	4.986
32) n-Hexane	(2)	4.775	57	409969	4.423
33) 1,1-Dichloroethane	(2)	5.019	63	513079	4.583
34) di-Isopropyl Ether	(2)	5.074	45	1022809	4.462
35) 2-Chloro-1,3-Butadiene	(2)	5.129	53	451014	4.401
37) Ethyl t-butyl ether	(2)	5.616	59	907014	4.507
38) 2-Butanone	(1)	5.824	43	737394	40.616
39) cis-1,2-Dichloroethene	(2)	5.866	96	307077	4.988
41) 2,2-Dichloropropane	(2)	5.885	77	427601	4.657
42) Propionitrile	(1)	5.915	54	180738	40.263
40) 1,2-Dichloroethene (Total)	(2)		96	580713	9.974
45) Methacrylonitrile	(1)	6.135	67	630897	44.348
47) Bromochloromethane	(2)	6.208	128	141999	5.024
48) Tetrahydrofuran	(1)	6.208	71	127605	29.527
49) Chloroform	(2)	6.360	83	505565	4.723

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 3

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 on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

FKP52 Page 480 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d
 Injection date and time: 30-APR-2018 21:14

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
51) 1,1,1-Trichloroethane	(2)	6.586	97	433254	4.792
50)\$Dibromofluoromethane	(2)	6.586	113	576120	10.041
52) Cyclohexane	(2)	6.696	56	490762	4.526
54) Carbon Tetrachloride	(2)	6.805	117	358105	4.876
55) 1,1-Dichloropropene	(2)	6.805	75	387486	4.597
56) Isobutyl Alcohol	(1)	6.945	41	176243	123.975
57)\$1,2-Dichloroethane-d4	(2)	7.043	102	121714	10.010
58) Benzene	(2)	7.067	78	1104794	4.747
59) 1,2-Dichloroethane	(2)	7.147	62	358691	4.354
60) t-Amyl methyl ether	(2)	7.262	73	807967	4.730
63)*Fluorobenzene	(2)	7.482	96	2281762	10.000
62) n-Heptane	(2)	7.494	43	478400	4.290
65) n-Butanol	(1)	7.836	56	305664	271.660
67) Trichloroethene	(2)	7.964	95	294950	4.801
69) Methylcyclohexane	(2)	8.274	83	487467	4.672
70) 1,2-Dichloropropane	(2)	8.305	63	304026	4.707
72) 1,4-Dioxane	(1)	8.384	88	32403M	165.252
71) Methyl Methacrylate	(1)	8.384	69	160242	5.914
73) Dibromomethane	(2)	8.415	93	148785	4.827
74) Bromodichloromethane	(2)	8.652	83	356365	4.712
76) 2-Nitropropane	(1)	8.908	41	45323	4.883
80) cis-1,3-Dichloropropene	(2)	9.207	75	442714	4.737
81) 4-Methyl-2-Pentanone	(1)	9.378	43	1209922	27.128
82)\$Toluene-d8	(3)	9.524	98	2331012	9.677
83) Toluene	(3)	9.603	92	726207	4.759
84) trans-1,3-Dichloropropene	(3)	9.872	75	377968	4.567
86) Ethyl Methacrylate	(3)	9.933	69	338775	4.540
88) 1,1,2-Trichloroethane	(3)	10.085	97	225313	4.896
89) Tetrachloroethene	(3)	10.164	166	347652	4.912
85) 1,3-Dichloropropene (total)	(3)		75	820682	9.304
90) 1,3-Dichloropropane	(3)	10.250	76	383209	4.571
91) 2-Hexanone	(1)	10.292	43	881851	28.131
93) Dibromochloromethane	(3)	10.469	129	242892	4.790
95) 1,2-Dibromoethane	(3)	10.579	107	211973	4.821
97)*Chlorobenzene-d5	(3)	11.012	117	1796115	10.000
98) Chlorobenzene	(3)	11.036	112	829532	4.746
99) 1,1,1,2-Tetrachloroethane	(3)	11.121	131	280687	4.809
100) Ethylbenzene	(3)	11.128	91	1420943	4.686

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/30/2018 at 22:20.

Target 3.5 esignature user ID: msk07970

FKP52 Page 481 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d
 Injection date and time: 30-APR-2018 21:14

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
101) m+p-Xylene	(3)	11.243	106	1115879	9.665
104) o-Xylene	(3)	11.573	106	543162	4.693
106) Styrene	(3)	11.591	104	928567	4.888
107) Bromoform	(3)	11.749	173	137528	4.713
105) Xylene (Total)	(3)		106	1659041	14.359
108) Isopropylbenzene	(3)	11.871	105	1441006	4.780
111)\$4-Bromofluorobenzene	(3)	12.018	95	879442	9.538
113) 1,1,2,2-Tetrachloroethane	(4)	12.121	83	285889	4.653
114) Bromobenzene	(4)	12.133	156	378362	4.689
116) 1,2,3-Trichloropropane	(4)	12.164	110	82240	4.788
117) n-Propylbenzene	(4)	12.201	91	1744423	4.643
119) 2-Chlorotoluene	(4)	12.280	126	353689	4.717
121) 1,3,5-Trimethylbenzene	(4)	12.341	105	1238777	4.605
122) 4-Chlorotoluene	(4)	12.371	126	367468	4.701
125) tert-Butylbenzene	(4)	12.578	134	296589	5.282
126) Pentachloroethane	(4)	12.615	167	215056	4.932
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	1272815	4.639
128) sec-Butylbenzene	(4)	12.743	105	1609730	4.711
131) 1,3-Dichlorobenzene	(4)	12.841	146	760263	4.741
132) p-Isopropyltoluene	(4)	12.853	119	1417337	4.752
133)*1,4-Dichlorobenzene-d4	(4)	12.896	152	1045412	10.000
134) 1,4-Dichlorobenzene	(4)	12.914	146	782483	4.788
135) 1,2,3-Trimethylbenzene	(4)	12.926	120	587916	4.765
136) Benzyl Chloride	(4)	12.993	126	105292	4.718
138) n-Butylbenzene	(4)	13.139	92	736285	4.588
139) 1,2-Dichlorobenzene	(4)	13.170	146	717803	4.744
143) 1,2-Dibromo-3-chloropropane	(1)	13.712	155	43162	6.445
144) 1,3,5-Trichlorobenzene	(4)	13.840	180	630118	4.699
145) 1,2,4-Trichlorobenzene	(4)	14.261	180	579837	4.661
146) Hexachlorobutadiene	(4)	14.340	225	308922	4.711
147) Naphthalene	(4)	14.438	128	966587	4.648
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	508206	4.778

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

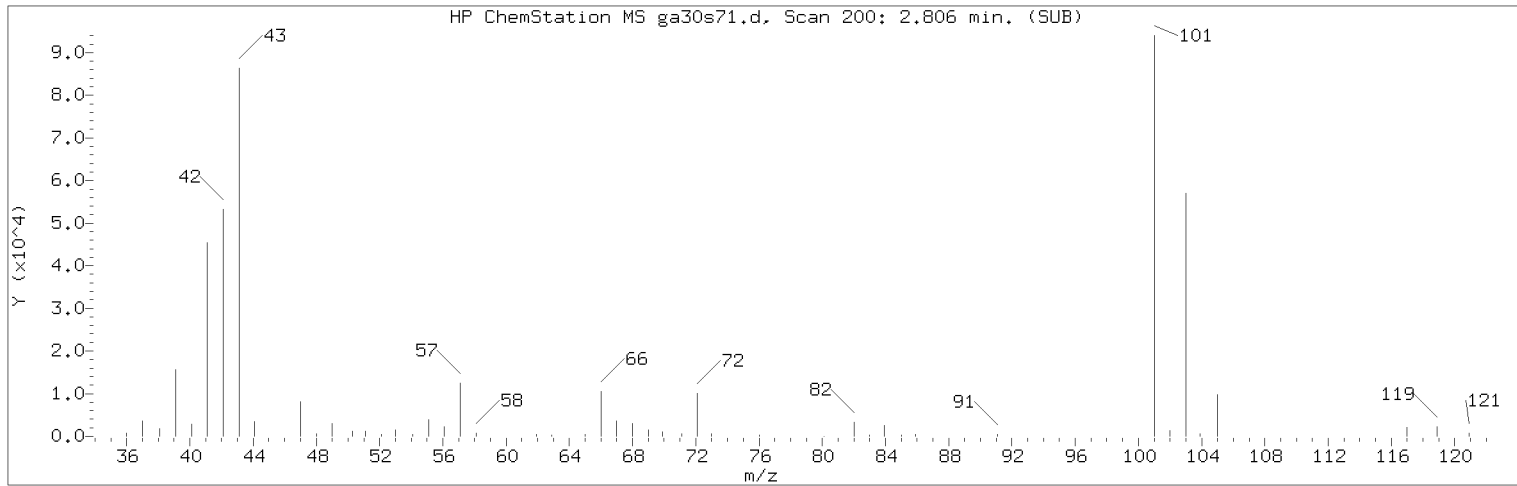
page 3 of 3

Digitally signed by Matthew S. Krause
 on 04/30/2018 at 22:20.

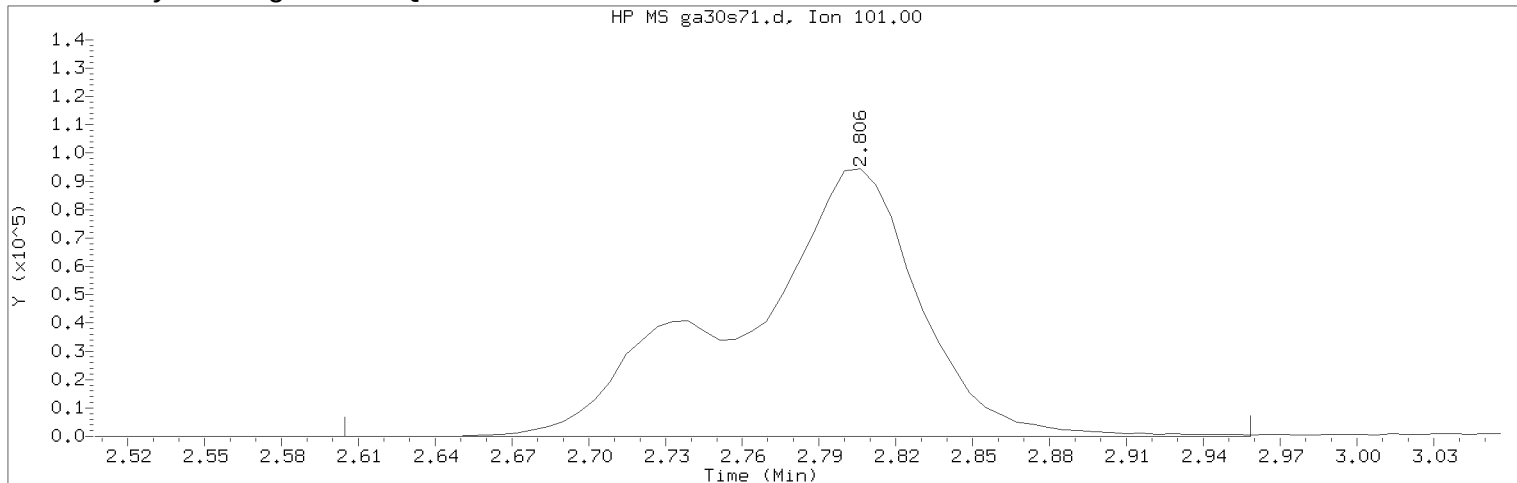
Target 3.5 esignature user ID: msk07970

FKP52 Page 482 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:14

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compound Number	: 10	
Compound Name	: Trichlorofluoromethane	
Scan Number	: 200	
Retention Time (minutes)	: 2.806	
Quant Ion	: 101.00	
Area (flag)	: 461159M	
On-Column Amount (ng)	: 4.7810	
Integration start scan	: 166	Integration stop scan: 224
Y at integration start	: 0	Y at integration end: 0

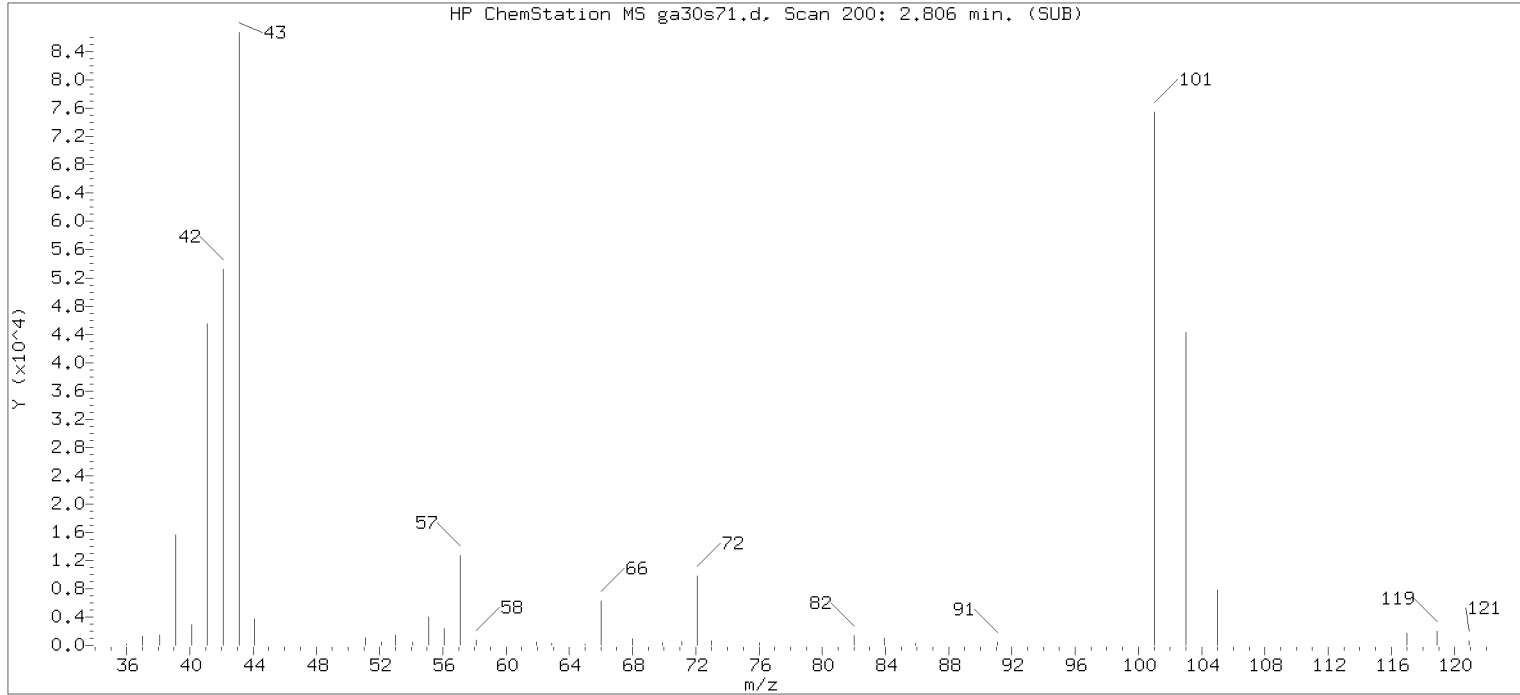
Reason for manual integration: improper integration

Analyst responsible for change:

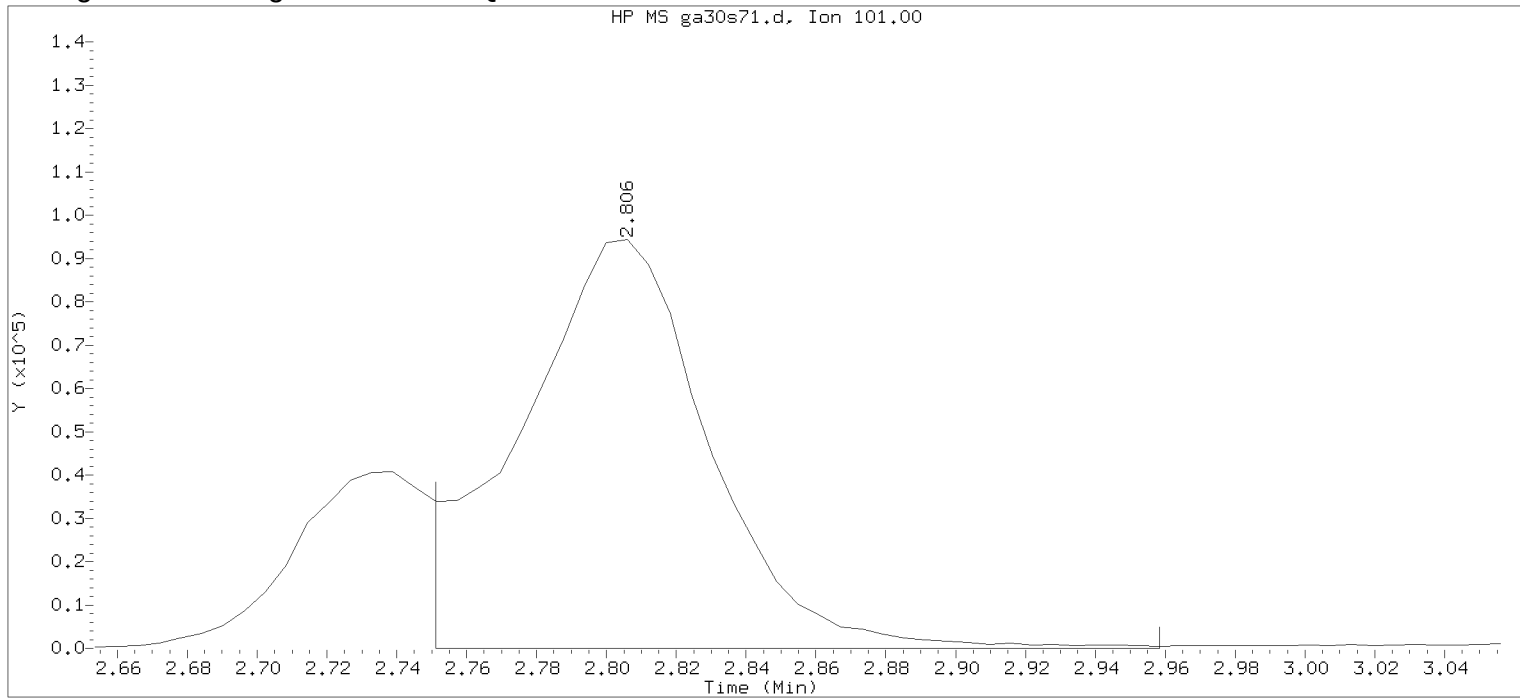
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:14

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:30 Automation

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 200

Retention Time (minutes): 2.806

Quant Ion : 101.00

Area : 354500

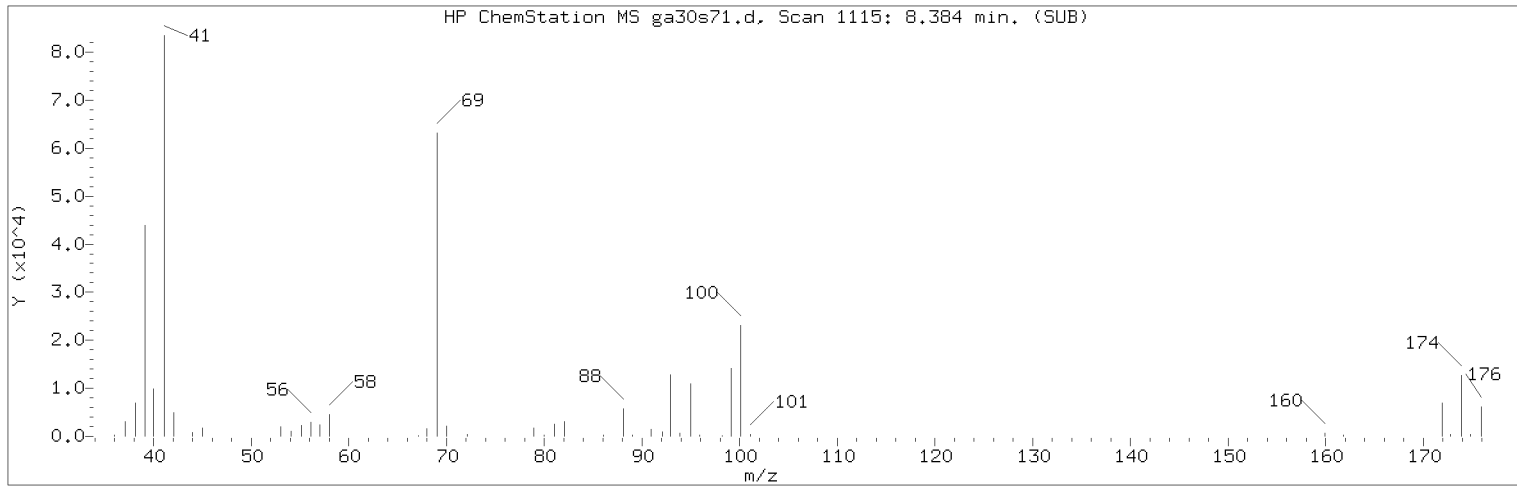
On-column Amount (ng) : 3.6753

Integration start scan : 190 Integration stop scan: 224

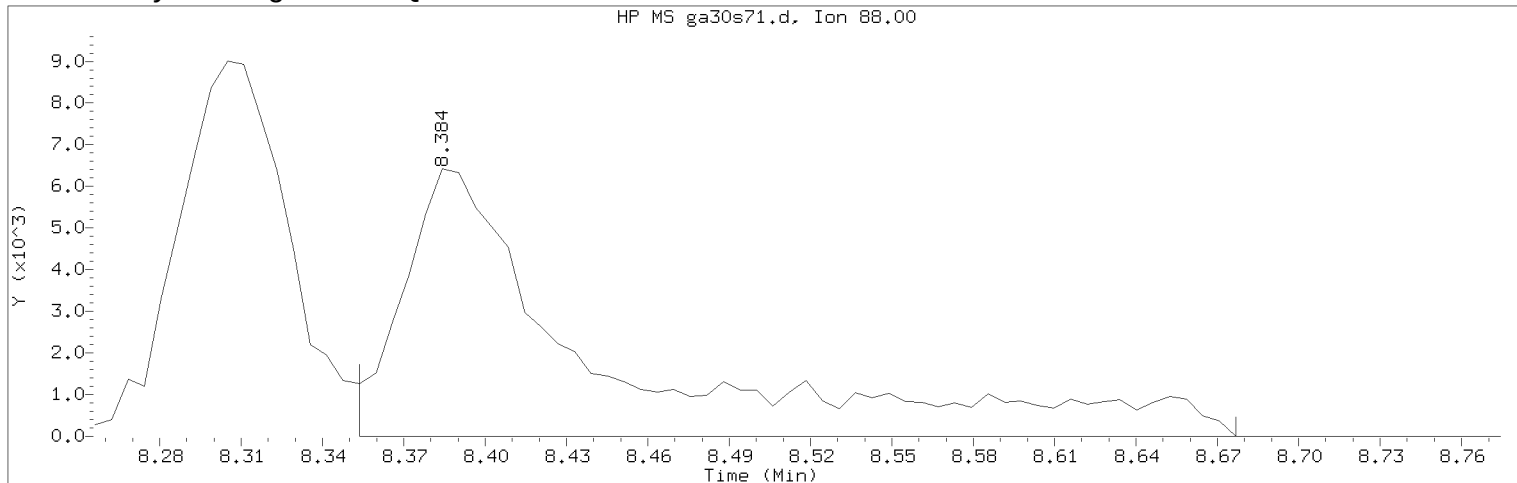
Y at integration start : 0 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
Target 3.5 esignature userFID52mBkg7480 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:14

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1115	
Retention Time (minutes)	: 8.384	
Quant Ion	: 88.00	
Area (flag)	: 32403M	
On-Column Amount (ng)	: 165.2520	
Integration start scan	: 1109	Integration stop scan: 1162
Y at integration start	: 0	Y at integration end: 0

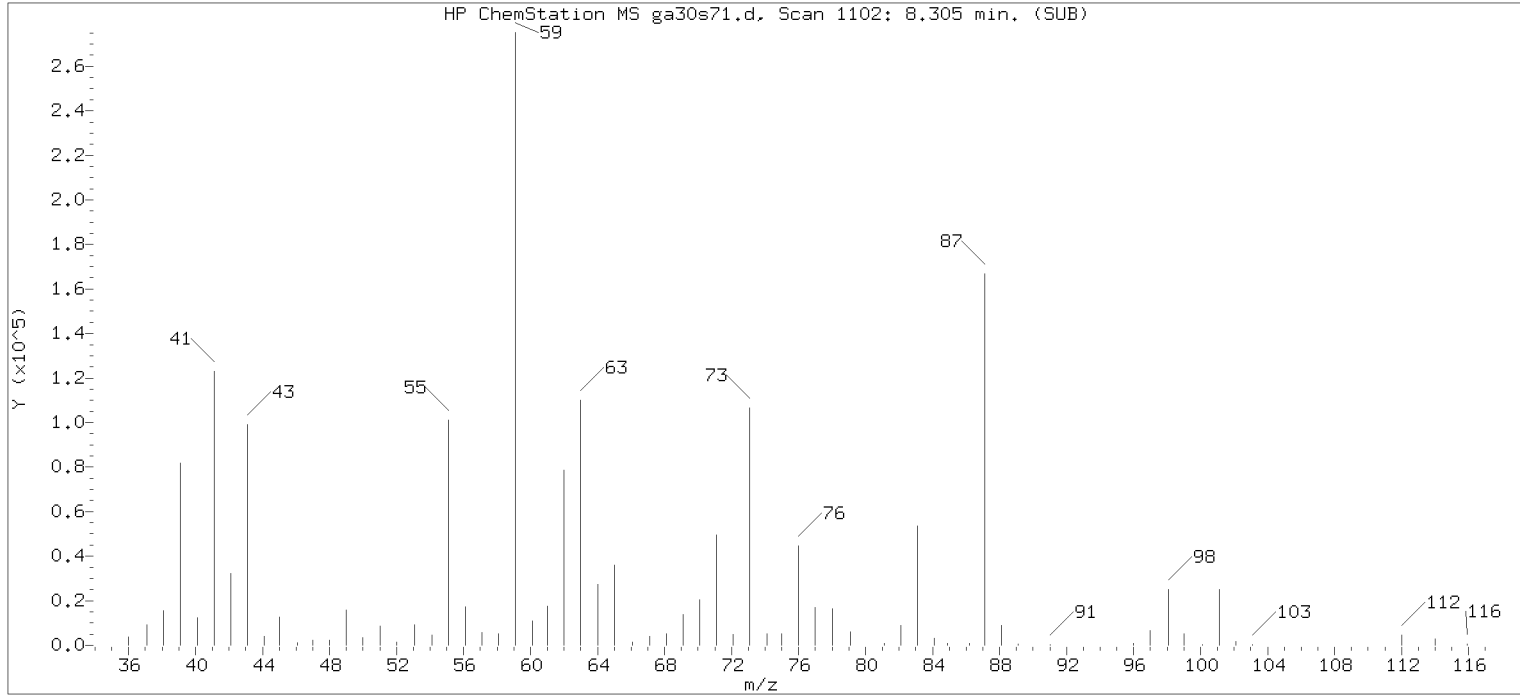
Reason for manual integration: improper integration

Analyst responsible for change:

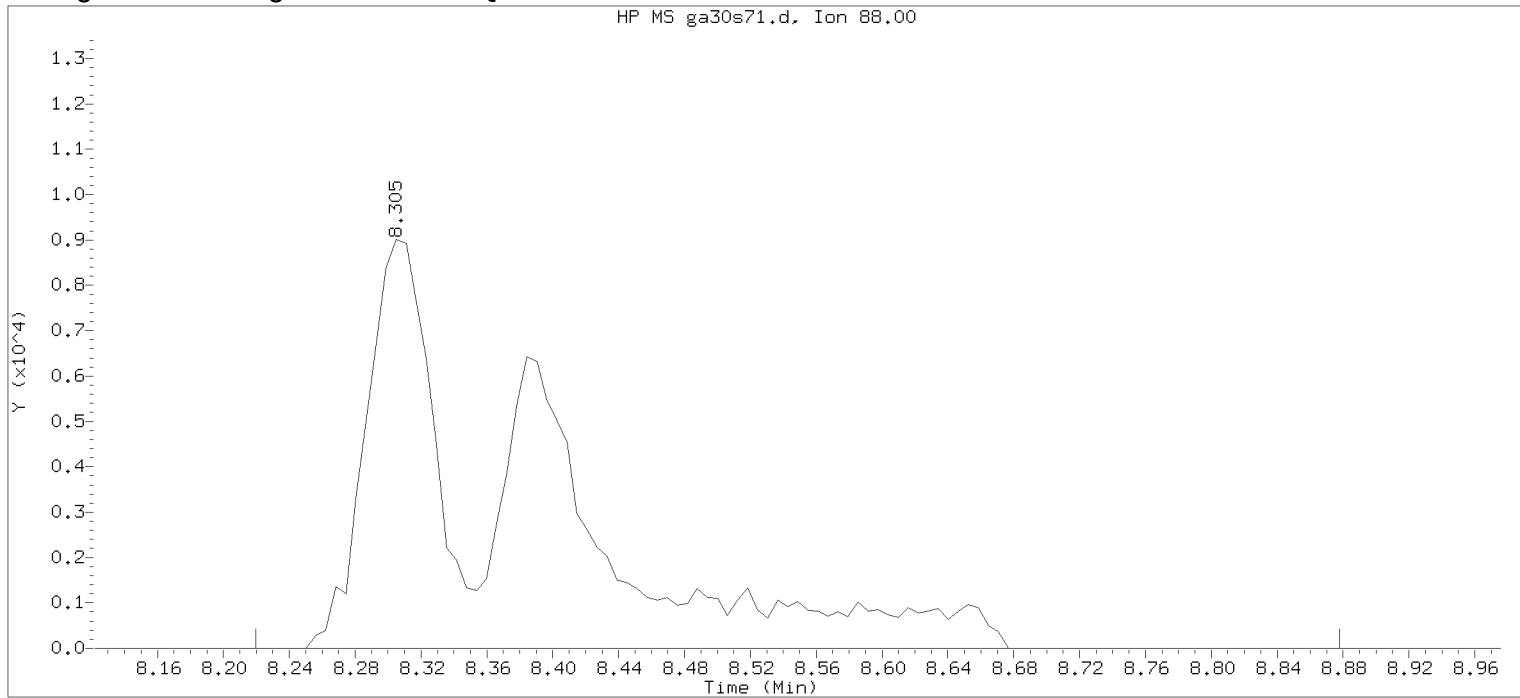
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:20.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s71.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:14

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:30 Automation

Sample Name: LCSG13

Lab Sample ID: LCSG13

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1102
 Retention Time (minutes): 8.305
 Quant Ion : 88.00
 Area : 57487
 On-column Amount (ng) : 293.1780
 Integration start scan : 1087
 Y at integration start : 0

Integration stop scan: 1195
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:20.
 Target 3.5 esignature userFID52mB107470 of 730

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG13

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG13

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s72.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 04/30/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.9	
74-87-3	Chloromethane	4.1	
75-01-4	Vinyl Chloride	4.5	
106-99-0	1,3-Butadiene	3.2	
74-83-9	Bromomethane	4.8	
75-00-3	Chloroethane	4.6	
75-43-4	Dichlorofluoromethane	4.8	
75-69-4	Trichlorofluoromethane	4.6	
60-29-7	Ethyl ether	3.8	
354-23-4	Freon 123a	4.7	
107-02-8	Acrolein	40	
67-64-1	Acetone	35	
75-35-4	1,1-Dichloroethene	5.0	
76-13-1	Freon 113	4.7	
74-88-4	Methyl Iodide	4.8	
75-15-0	Carbon Disulfide	4.2	
79-20-9	Methyl Acetate	5.0	
107-05-1	Allyl Chloride	4.2	
75-09-2	Methylene Chloride	4.2	
75-65-0	t-Butyl Alcohol	48	
107-13-1	Acrylonitrile	26	
1634-04-4	Methyl Tertiary Butyl Ether	4.6	
156-60-5	trans-1,2-Dichloroethene	4.9	
110-54-3	n-Hexane	4.3	
75-34-3	1,1-Dichloroethane	4.6	
108-20-3	di-Isopropyl Ether	4.5	
126-99-8	2-Chloro-1,3-Butadiene	4.4	
637-92-3	Ethyl t-butyl ether	4.5	
78-93-3	2-Butanone	37	
156-59-2	cis-1,2-Dichloroethene	5.0	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG13

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: LCDG13
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s72.d
 Level: (low/med) LOW Date Received: _____
 Moisture: not dec. _____ Date Analyzed: 04/30/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
540-59-0-----	1,2-Dichloroethene (Total)	9.9	J
594-20-7-----	2,2-Dichloropropane	4.6	
107-12-0-----	Propionitrile	38	
126-98-7-----	Methacrylonitrile	41	
74-97-5-----	Bromochloromethane	4.9	
109-99-9-----	Tetrahydrofuran	28	
67-66-3-----	Chloroform	4.7	
71-55-6-----	1,1,1-Trichloroethane	4.7	
110-82-7-----	Cyclohexane	4.5	
56-23-5-----	Carbon Tetrachloride	4.8	
563-58-6-----	1,1-Dichloropropene	4.6	
78-83-1-----	Isobutyl Alcohol	120	
71-43-2-----	Benzene	4.7	
107-06-2-----	1,2-Dichloroethane	4.3	
994-05-8-----	t-Amyl methyl ether	4.7	
142-82-5-----	n-Heptane	4.2	
71-36-3-----	n-Butanol	240	
79-01-6-----	Trichloroethene	4.8	
108-87-2-----	Methylcyclohexane	4.6	
78-87-5-----	1,2-Dichloropropane	4.7	
80-62-6-----	Methyl Methacrylate	5.5	
123-91-1-----	1,4-Dioxane	160	
74-95-3-----	Dibromomethane	4.8	
75-27-4-----	Bromodichloromethane	4.7	
79-46-9-----	2-Nitropropane	4.5	
10061-01-5-----	cis-1,3-Dichloropropene	4.7	
108-10-1-----	4-Methyl-2-Pentanone	25	
108-88-3-----	Toluene	4.7	
10061-02-6-----	trans-1,3-Dichloropropene	4.6	
542-75-6-----	1,3-Dichloropropene (total)	9.3	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG13

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: LCDG13
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s72.d
 Level: (low/med) LOW Date Received: _____
 Moisture: not dec. _____ Date Analyzed: 04/30/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
97-63-2	Ethyl Methacrylate	4.5	
79-00-5	1,1,2-Trichloroethane	4.8	
127-18-4	Tetrachloroethene	4.9	
142-28-9	1,3-Dichloropropane	4.6	
591-78-6	2-Hexanone	26	
124-48-1	Dibromochloromethane	4.8	
106-93-4	1,2-Dibromoethane	4.9	
108-90-7	Chlorobenzene	4.8	
630-20-6	1,1,1,2-Tetrachloroethane	4.8	
100-41-4	Ethylbenzene	4.6	
179601-23-1	m+p-Xylene	9.6	
95-47-6	o-Xylene	4.7	
1330-20-7	Xylene (Total)	14	
100-42-5	Styrene	4.8	
75-25-2	Bromoform	4.8	
98-82-8	Isopropylbenzene	4.8	
79-34-5	1,1,2,2-Tetrachloroethane	4.6	
108-86-1	Bromobenzene	4.7	
96-18-4	1,2,3-Trichloropropane	4.8	
103-65-1	n-Propylbenzene	4.5	
95-49-8	2-Chlorotoluene	4.6	
108-67-8	1,3,5-Trimethylbenzene	4.5	
106-43-4	4-Chlorotoluene	4.6	
98-06-6	tert-Butylbenzene	4.6	
76-01-7	Pentachloroethane	5.0	
95-63-6	1,2,4-Trimethylbenzene	4.6	
135-98-8	sec-Butylbenzene	4.7	
541-73-1	1,3-Dichlorobenzene	4.7	
99-87-6	p-Isopropyltoluene	4.7	
106-46-7	1,4-Dichlorobenzene	4.7	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG13

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG13

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18apr30b.b/ga30s72.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 04/30/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
526-73-8-----	1,2,3-Trimethylbenzene		4.8	
100-44-7-----	Benzyl Chloride		4.7	
104-51-8-----	n-Butylbenzene		4.5	
95-50-1-----	1,2-Dichlorobenzene		4.7	
96-12-8-----	1,2-Dibromo-3-chloropropane		5.9	
108-70-3-----	1,3,5-Trichlorobenzene		4.6	
120-82-1-----	1,2,4-Trichlorobenzene		4.6	
87-68-3-----	Hexachlorobutadiene		4.6	
91-20-3-----	Naphthalene		4.6	
87-61-6-----	1,2,3-Trichlorobenzene		4.7	

Data file: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Injection date and time: 30-APR-2018 21:36

Data file Sample Info. Line: LCDG13;LCDG13;1;3;LCSD;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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	3.958(-0.012)	389	65	207470 (9)	50.00	
63) Fluorobenzene	7.488(-0.012)	968	96	2337478 (6)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1822703 (3)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(-0.006)	1856	152	1068932 (4)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	591933	10.070	101%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.055(0.000)	102	123636	9.926	99%		80 - 120
82) Toluene-d8	(3)	9.530(-0.001)	98	2401010	9.822	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	901012	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)	1.831(0.001)	85	343794	3.921	3.92			0.1	0.5
2) Chloromethane	(2)	2.020(0.001)	50	365165	4.136	4.14			0.2	0.5
5) Vinyl Chloride	(2)	2.129(0.000)	62	338801	4.472	4.47			0.1	0.5
6) 1,3-Butadiene	(2)	2.135(0.000)	39	509677	3.162	3.16			0.1	0.5
7) Bromomethane	(2)	2.452(-0.000)	94	242160	4.781	4.78			0.1	0.5
8) Chloroethane	(2)	2.532(-0.000)	64	196443	4.552	4.55			0.1	0.5
9) Dichlorofluoromethane	(2)	2.751(0.000)	67	503612	4.838	4.84			0.2	0.5
10) Trichlorofluoromethane	(2)	2.812(0.000)	101	458261M	4.638	4.64			0.1	0.5
11) Ethyl ether	(2)	3.032(-0.000)	59	188993	3.837	3.84			0.1	0.5
12) Freon 123a	(2)	3.129(0.000)	67	328327	4.693	4.69			0.2	0.5
13) Acrolein	(1)	3.196(0.000)	56	285018	39.764	39.76			5	25
15) 1,1-Dichloroethene	(2)	3.330(0.000)	96	242337	5.009	5.01			0.1	0.5
16) Freon 113	(2)	3.373(-0.000)	101	257387	4.719	4.72			0.2	0.5
14) Acetone	(1)	3.349(0.001)	43	405299	34.996	35.00			3	5
17) Methyl Iodide	(2)	3.519(-0.000)	142	448408	4.772	4.77			0.1	0.5
18) Carbon Disulfide	(2)	3.629(-0.000)	76	808527	4.212	4.21			0.4	1
22) Allyl Chloride	(2)	3.781(0.000)	41	469594	4.184	4.18			0.1	0.5
21) Methyl Acetate	(1)	3.751(0.001)	43	163630	5.013	5.01			0.3	1
23) Methylene Chloride	(2)	3.958(0.000)	84	278001	4.250	4.25			0.2	0.5
28) t-Butyl Alcohol	(1)	4.080(0.003)	59	189406	48.245	48.25			4	10
29) Acrylonitrile	(1)	4.269(0.001)	53	336048	26.082	26.08			1	5
31) trans-1,2-Dichloroethene	(2)	4.361(0.000)	96	275875	4.907	4.91			0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)	4.336(0.000)	73	777549	4.615	4.61			0.1	0.5
32) n-Hexane	(2)	4.781(0.000)	57	411381	4.333	4.33			0.1	0.5
33) 1,1-Dichloroethane	(2)	5.031(-0.000)	63	522611	4.557	4.56			0.1	0.5
34) di-Isopropyl Ether	(2)	5.080(-0.000)	45	1045844	4.453	4.45			0.1	0.5
35) 2-Chloro-1,3-Butadiene	(2)	5.141(-0.000)	53	462177	4.402	4.40			0.1	0.5
37) Ethyl t-butyl ether	(2)	5.629(-0.000)	59	934645	4.533	4.53			0.1	0.5
39) cis-1,2-Dichloroethene	(2)	5.872(0.000)	96	316737	5.023	5.02			0.1	0.5
40) 1,2-Dichloroethene (Total)	(2)		96	592612	9.929	9.93			0.1	0.5
41) 2,2-Dichloropropane	(2)	5.891(0.000)	77	433346	4.607	4.61			0.1	0.5

M = Compound was manually integrated.

LCDG13

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

LCDG13

Data file: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Injection date and time: 30-APR-2018 21:36

Data file Sample Info. Line: LCDG13;LCDG13;1;3;LCSD;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ (in sample)
38) 2-Butanone	(1)	5.836(0.001)	43	745304	37.403	37.40			1	5
42) Propionitrile	(1)	5.927(0.003)	54	186342	37.821	37.82			2	10
45) Methacrylonitrile	(1)	6.147(0.003)	67	632902	40.534	40.53			1	5
47) Bromochloromethane	(2)	6.214(-0.000)	128	142546	4.923	4.92			0.1	0.5
48) Tetrahydrofuran	(1)	6.220(0.001)	71	130593	27.532	27.53			2	5
49) Chloroform	(2)	6.366(0.000)	83	513908	4.687	4.69			0.1	0.5
51) 1,1,1-Trichloroethane	(2)	6.598(-0.000)	97	438006	4.729	4.73			0.1	0.5
52) Cyclohexane	(2)	6.702(-0.000)	56	501367	4.513	4.51			0.1	0.5
55) 1,1-Dichloropropene	(2)	6.811(-0.000)	75	398415	4.614	4.61			0.1	0.5
54) Carbon Tetrachloride	(2)	6.805(0.001)	117	364494	4.845	4.85			0.1	0.5
56) Isobutyl Alcohol	(1)	6.958(0.002)	41	185575	118.937	118.94			10	25
58) Benzene	(2)	7.073(0.000)	78	1123275	4.712	4.71			0.1	0.5
59) 1,2-Dichloroethane	(2)	7.153(0.000)	62	366927	4.348	4.35			0.1	0.5
60) t-Amyl methyl ether	(2)	7.268(-0.000)	73	821230	4.694	4.69			0.1	0.5
62) n-Heptane	(2)	7.494(0.000)	43	480754	4.208	4.21			0.2	0.5
65) n-Butanol	(1)	7.842(0.004)	56	301515	244.154	244.15			20	50
67) Trichloroethene	(2)	7.970(0.000)	95	302000	4.798	4.80			0.1	0.5
69) Methylcyclohexane	(2)	8.280(0.000)	83	493095	4.613	4.61			0.1	0.5
70) 1,2-Dichloropropane	(2)	8.305(0.000)	63	310460	4.692	4.69			0.1	0.5
71) Methyl Methacrylate	(1)	8.384(0.004)	69	162204	5.454	5.45			0.1	0.5
73) Dibromomethane	(2)	8.421(0.000)	93	150727	4.773	4.77			0.1	0.5
72) 1,4-Dioxane	(1)	8.396(0.003)	88	34036M	158.151	158.15			20	100
74) Bromodichloromethane	(2)	8.652(0.001)	83	360551	4.654	4.65			0.1	0.5
76) 2-Nitropropane	(1)	8.914(0.005)	41	46174	4.533	4.53			1	5
80) cis-1,3-Dichloropropene	(2)	9.213(0.000)	75	449475	4.695	4.70		J	0.1	0.5
81) 4-Methyl-2-Pentanone	(1)	9.384(0.005)	43	1232850	25.185	25.18			1	5
83) Toluene	(3)	9.610(-0.001)	92	728246	4.702	4.70			0.1	0.5
84) trans-1,3-Dichloropropene	(3)	9.878(-0.000)	75	386167	4.598	4.60			0.1	0.5
85) 1,3-Dichloropropene (total)	(3)		75	835642	9.293	9.29			0.1	0.5
86) Ethyl Methacrylate	(3)	9.939(-0.001)	69	340273	4.493	4.49			0.1	0.5
88) 1,1,2-Trichloroethane	(3)	10.085(-0.000)	97	225656	4.831	4.83			0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	349462	4.866	4.87			0.1	0.5
90) 1,3-Dichloropropane	(3)	10.250(-0.000)	76	390664	4.592	4.59			0.1	0.5
91) 2-Hexanone	(1)	10.298(0.006)	43	888496	25.824	25.82			1	5
93) Dibromochloromethane	(3)	10.469(-0.000)	129	248487	4.828	4.83			0.1	0.5
95) 1,2-Dibromoethane	(3)	10.585(-0.000)	107	216875	4.861	4.86			0.1	0.5
98) Chlorobenzene	(3)	11.042(-0.000)	112	843228	4.754	4.75			0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)	11.128(-0.000)	131	283351	4.784	4.78			0.1	0.5
100) Ethylbenzene	(3)	11.128(-0.000)	91	1430208	4.648	4.65			0.1	0.5
101) m-p-Xylene	(3)	11.243(-0.000)	106	1123781	9.592	9.59			0.1	0.5
104) o-Xylene	(3)	11.573(-0.000)	106	554450	4.721	4.72			0.1	0.5
105) Xylene (Total)	(3)		106	1678231	14.313	14.31			0.1	0.5
106) Styrene	(3)	11.591(-0.000)	104	934483	4.848	4.85			0.1	0.5
107) Bromoform	(3)	11.749(-0.000)	173	141147	4.766	4.77			0.1	0.5
108) Isopropylbenzene	(3)	11.877(-0.000)	105	1455574	4.758	4.76			0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)	12.121(-0.000)	83	290690	4.627	4.63			0.1	0.5
114) Bromobenzene	(4)	12.133(0.000)	156	387315	4.695	4.69			0.1	0.5
116) 1,2,3-Trichloropropane	(4)	12.170(-0.000)	110	84750	4.826	4.83			0.3	1
117) n-Propylbenzene	(4)	12.200(0.000)	91	1737853	4.524	4.52			0.1	0.5
119) 2-Chlorotoluene	(4)	12.280(-0.000)	126	356276	4.647	4.65			0.1	0.5
121) 1,3,5-Trimethylbenzene	(4)	12.341(-0.000)	105	1250882	4.547	4.55			0.1	0.5
122) 4-Chlorotoluene	(4)	12.371(-0.000)	126	369331	4.621	4.62			0.1	0.5
125) tert-Butylbenzene	(4)	12.578(0.000)	134	266437	4.640	4.64			0.1	0.5
126) Pentachloroethane	(4)	12.615(-0.000)	167	220728	4.951	4.95			0.2	0.5

M = Compound was manually integrated.

LCDG13

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

LCDG13

Data file: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Injection date and time: 30-APR-2018 21:36

Data file Sample Info. Line: LCDG13;LCDG13;1;3;LCSD;;;ga30b10;

Instrument ID: HP16334.i Batch: G181203AA

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Blank Data file reference: /chem2/HP16334.i/18apr30b.b/ga30b10.d

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 30-APR-2018 21:08

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18apr30b.b/ga30c10.d

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

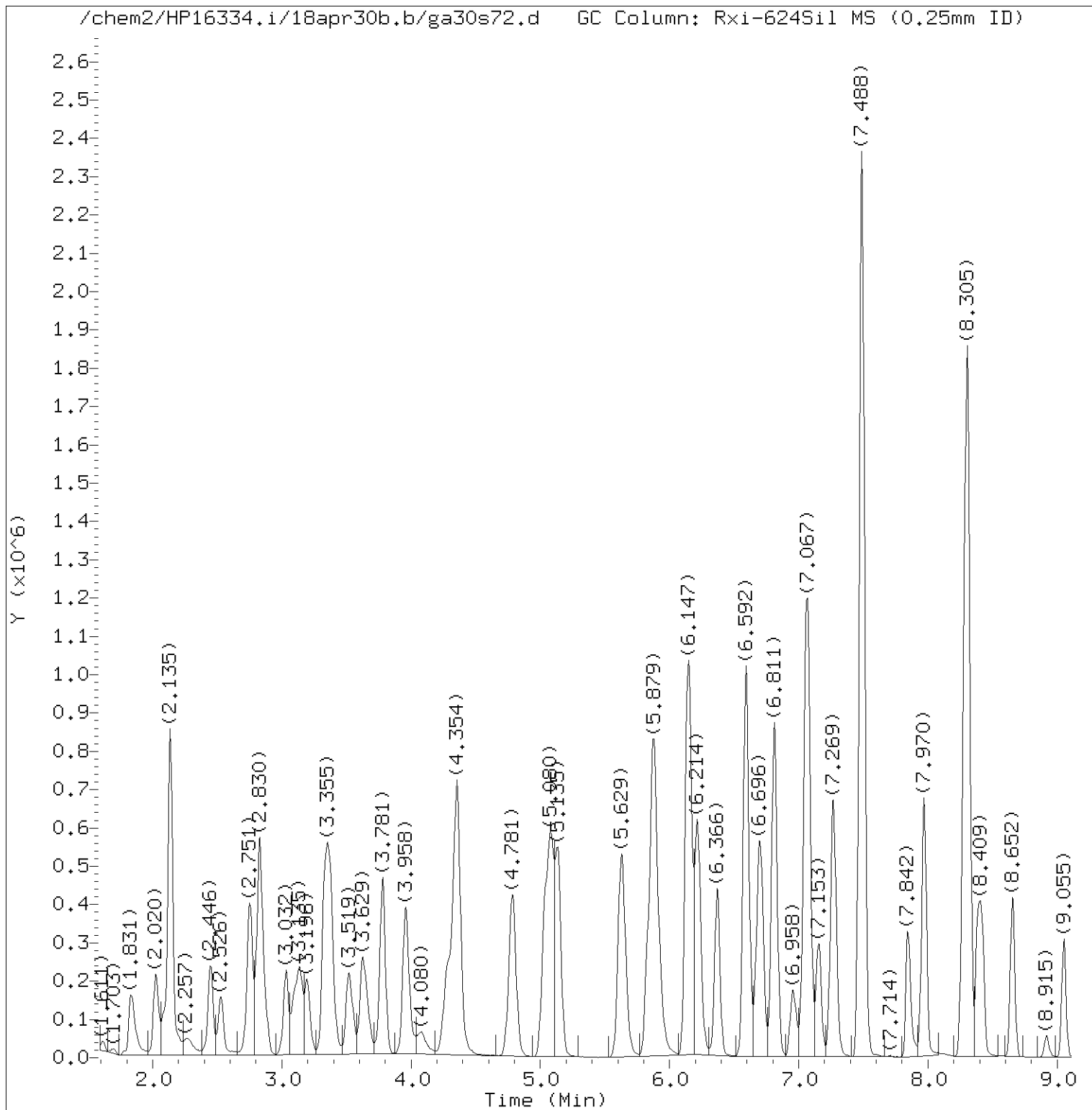
Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: 1.00

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
127) 1,2,4-Trimethylbenzene	(4)	12.621(0.000)	105	1289209	4.595	4.60			0.1	0.5
128) sec-Butylbenzene	(4)	12.743(-0.000)	105	1632336	4.672	4.67			0.1	0.5
131) 1,3-Dichlorobenzene	(4)	12.841(0.000)	146	763270	4.655	4.66			0.1	0.5
132) p-Isopropyltoluene	(4)	12.853(-0.000)	119	1421651	4.661	4.66			0.1	0.5
134) 1,4-Dichlorobenzene	(4)	12.920(0.000)	146	790270	4.729	4.73			0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)	12.926(0.000)	120	600077	4.757	4.76			0.1	0.5
136) Benzyl Chloride	(4)	12.993(0.000)	126	107161	4.696	4.70			0.1	0.5
138) n-Butylbenzene	(4)	13.139(0.000)	92	732149	4.462	4.46			0.1	0.5
139) 1,2-Dichlorobenzene	(4)	13.170(0.000)	146	729579	4.716	4.72			0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)	13.712(0.010)	155	43392	5.903	5.90			0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)	13.840(0.000)	180	637353	4.648	4.65			0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)	14.261(0.000)	180	582899	4.582	4.58			0.1	0.5
146) Hexachlorobutadiene	(4)	14.340(0.000)	225	306877	4.577	4.58			0.1	0.5
147) Naphthalene	(4)	14.438(0.000)	128	982193	4.619	4.62			0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)	14.578(0.000)	180	513159	4.718	4.72			0.1	0.5

Total number of targets = 100

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:21. Target 3.5 esignature user ID: msk07970



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d
Injection date and time: 30-APR-2018 21:36

Instrument ID: HP16334.i
Analyst ID: MSK07970

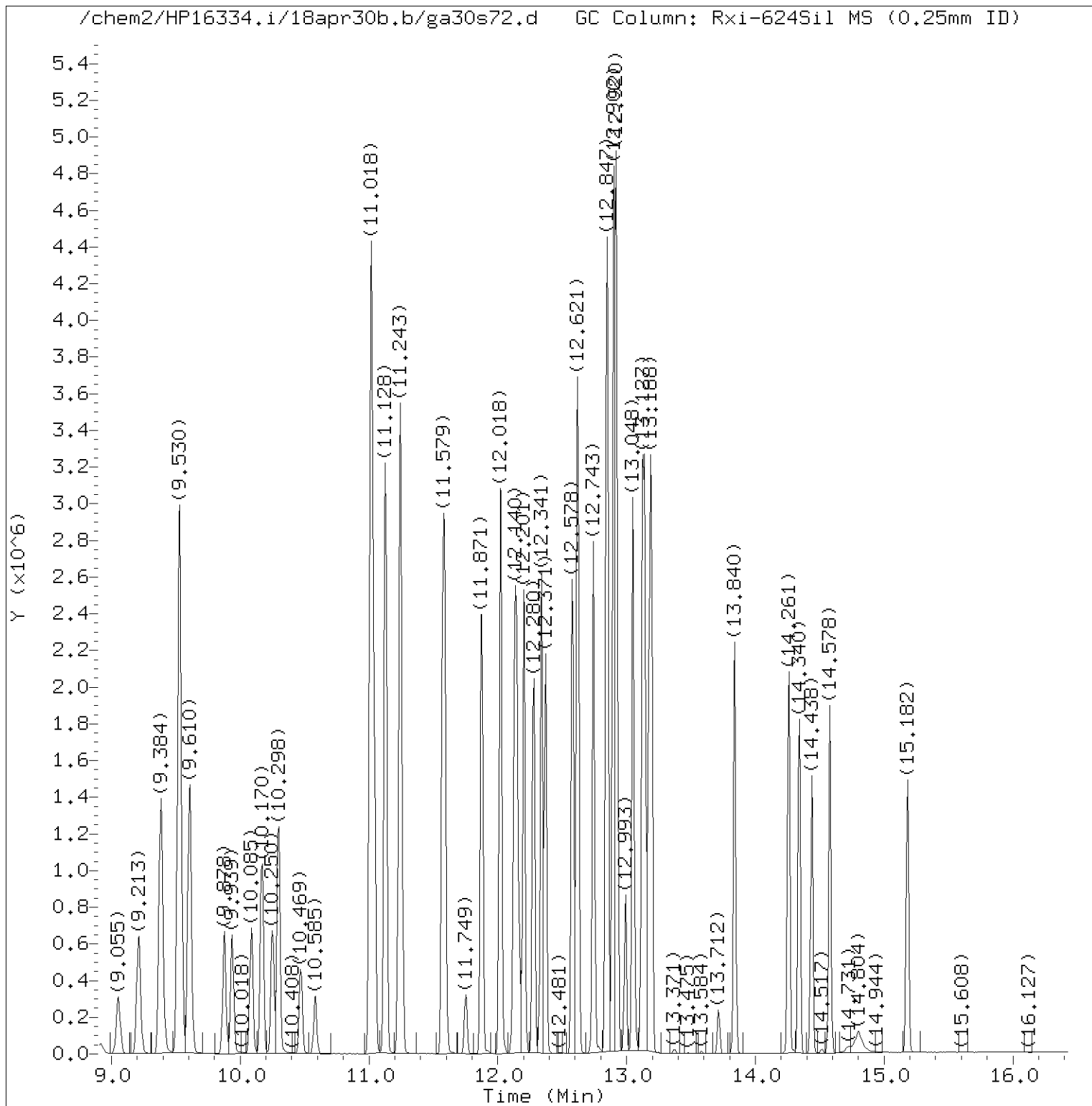
Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

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on 04/30/2018 at 22:21.

Target 3.5 esignature user ID: msk07970
FKP52 Page 494 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d
Injection date and time: 30-APR-2018 21:36

Instrument ID: HP16334.i
Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 30-APR-2018 21:08
Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:21.

Target 3.5 esignature user ID: msk07970
FKP52 Page 495 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d
 Injection date and time: 30-APR-2018 21:36

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.831	85	343794	3.921
2) Chloromethane	(2)	2.020	50	365165	4.136
5) Vinyl Chloride	(2)	2.129	62	338801	4.472
6) 1,3-Butadiene	(2)	2.135	39	509677	3.162
7) Bromomethane	(2)	2.452	94	242160	4.781
8) Chloroethane	(2)	2.532	64	196443	4.552
9) Dichlorofluoromethane	(2)	2.751	67	503612	4.838
10) Trichlorofluoromethane	(2)	2.812	101	458261M	4.638
11) Ethyl ether	(2)	3.032	59	188993	3.837
12) Freon 123a	(2)	3.129	67	328327	4.693
13) Acrolein	(1)	3.196	56	285018	39.764
15) 1,1-Dichloroethene	(2)	3.330	96	242337	5.009
14) Acetone	(1)	3.349	43	405299	34.996
16) Freon 113	(2)	3.373	101	257387	4.719
17) Methyl Iodide	(2)	3.519	142	448408	4.772
18) Carbon Disulfide	(2)	3.629	76	808527	4.212
21) Methyl Acetate	(1)	3.751	43	163630	5.013
22) Allyl Chloride	(2)	3.781	41	469594	4.184
23) Methylene Chloride	(2)	3.958	84	278001	4.250
26)*t-Butyl Alcohol-d10	(1)	3.958	65	207470	50.000
28) t-Butyl Alcohol	(1)	4.080	59	189406	48.245
29) Acrylonitrile	(1)	4.269	53	336048	26.082
30) Methyl Tertiary Butyl Ether	(2)	4.336	73	777549	4.615
31) trans-1,2-Dichloroethene	(2)	4.361	96	275875	4.907
32) n-Hexane	(2)	4.781	57	411381	4.333
33) 1,1-Dichloroethane	(2)	5.031	63	522611	4.557
34) di-Isopropyl Ether	(2)	5.080	45	1045844	4.453
35) 2-Chloro-1,3-Butadiene	(2)	5.141	53	462177	4.402
37) Ethyl t-butyl ether	(2)	5.629	59	934645	4.533
38) 2-Butanone	(1)	5.836	43	745304	37.403
39) cis-1,2-Dichloroethene	(2)	5.872	96	316737	5.023
41) 2,2-Dichloropropane	(2)	5.891	77	433346	4.607
42) Propionitrile	(1)	5.927	54	186342	37.821
40) 1,2-Dichloroethene (Total)	(2)		96	592612	9.929
45) Methacrylonitrile	(1)	6.147	67	632902	40.534
47) Bromochloromethane	(2)	6.214	128	142546	4.923
48) Tetrahydrofuran	(1)	6.220	71	130593	27.532
49) Chloroform	(2)	6.366	83	513908	4.687

M = Compound was manually integrated.

* = Compound is an internal standard.

page 1 of 3

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 on 04/30/2018 at 22:21.

Target 3.5 esignature user ID: msk07970

FKP52 Page 496 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d
 Injection date and time: 30-APR-2018 21:36

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.592	113	591933	10.070
51) 1,1,1-Trichloroethane	(2)	6.598	97	438006	4.729
52) Cyclohexane	(2)	6.702	56	501367	4.513
54) Carbon Tetrachloride	(2)	6.805	117	364494	4.845
55) 1,1-Dichloropropene	(2)	6.811	75	398415	4.614
56) Isobutyl Alcohol	(1)	6.958	41	185575	118.937
57) \$1,2-Dichloroethane-d4	(2)	7.055	102	123636	9.926
58) Benzene	(2)	7.073	78	1123275	4.712
59) 1,2-Dichloroethane	(2)	7.153	62	366927	4.348
60) t-Amyl methyl ether	(2)	7.269	73	821230	4.694
63) *Fluorobenzene	(2)	7.488	96	2337478	10.000
62) n-Heptane	(2)	7.494	43	480754	4.208
65) n-Butanol	(1)	7.842	56	301515	244.154
67) Trichloroethene	(2)	7.970	95	302000	4.798
69) Methylcyclohexane	(2)	8.281	83	493095	4.613
70) 1,2-Dichloropropane	(2)	8.305	63	310460	4.692
71) Methyl Methacrylate	(1)	8.384	69	162204	5.454
72) 1,4-Dioxane	(1)	8.396	88	34036M	158.151
73) Dibromomethane	(2)	8.421	93	150727	4.773
74) Bromodichloromethane	(2)	8.652	83	360551	4.654
76) 2-Nitropropane	(1)	8.915	41	46174	4.533
80) cis-1,3-Dichloropropene	(2)	9.213	75	449475	4.695
81) 4-Methyl-2-Pentanone	(1)	9.384	43	1232850	25.185
82) \$Toluene-d8	(3)	9.530	98	2401010	9.822
83) Toluene	(3)	9.610	92	728246	4.702
84) trans-1,3-Dichloropropene	(3)	9.878	75	386167	4.598
86) Ethyl Methacrylate	(3)	9.939	69	340273	4.493
88) 1,1,2-Trichloroethane	(3)	10.085	97	225656	4.831
85) 1,3-Dichloropropene (total)	(3)		75	835642	9.293
89) Tetrachloroethene	(3)	10.170	166	349462	4.866
90) 1,3-Dichloropropane	(3)	10.250	76	390664	4.592
91) 2-Hexanone	(1)	10.298	43	888496	25.824
93) Dibromochloromethane	(3)	10.469	129	248487	4.828
95) 1,2-Dibromoethane	(3)	10.585	107	216875	4.861
97) *Chlorobenzene-d5	(3)	11.012	117	1822703	10.000
98) Chlorobenzene	(3)	11.042	112	843228	4.754
99) 1,1,1,2-Tetrachloroethane	(3)	11.128	131	283351	4.784
100) Ethylbenzene	(3)	11.128	91	1430208	4.648

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

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 on 04/30/2018 at 22:21.

Target 3.5 esignature user ID: msk07970

FKP52 Page 497 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d
 Injection date and time: 30-APR-2018 21:36

Instrument ID: HP16334.i
 Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 30-APR-2018 21:08
 Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
101) m+p-Xylene	(3)	11.243	106	1123781	9.592
104) o-Xylene	(3)	11.573	106	554450	4.721
106) Styrene	(3)	11.591	104	934483	4.848
107) Bromoform	(3)	11.749	173	141147	4.766
105) Xylene (Total)	(3)		106	1678231	14.313
108) Isopropylbenzene	(3)	11.877	105	1455574	4.758
111)\$4-Bromofluorobenzene	(3)	12.018	95	901012	9.630
113) 1,1,2,2-Tetrachloroethane	(4)	12.121	83	290690	4.627
114) Bromobenzene	(4)	12.133	156	387315	4.695
116) 1,2,3-Trichloropropane	(4)	12.170	110	84750	4.826
117) n-Propylbenzene	(4)	12.201	91	1737853	4.524
119) 2-Chlorotoluene	(4)	12.280	126	356276	4.647
121) 1,3,5-Trimethylbenzene	(4)	12.341	105	1250882	4.547
122) 4-Chlorotoluene	(4)	12.371	126	369331	4.621
125) tert-Butylbenzene	(4)	12.578	134	266437	4.640
126) Pentachloroethane	(4)	12.615	167	220728	4.951
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	1289209	4.595
128) sec-Butylbenzene	(4)	12.743	105	1632336	4.672
131) 1,3-Dichlorobenzene	(4)	12.841	146	763270	4.655
132) p-Isopropyltoluene	(4)	12.853	119	1421651	4.661
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	1068932	10.000
134) 1,4-Dichlorobenzene	(4)	12.920	146	790270	4.729
135) 1,2,3-Trimethylbenzene	(4)	12.926	120	600077	4.757
136) Benzyl Chloride	(4)	12.993	126	107161	4.696
138) n-Butylbenzene	(4)	13.139	92	732149	4.462
139) 1,2-Dichlorobenzene	(4)	13.170	146	729579	4.716
143) 1,2-Dibromo-3-chloropropane	(1)	13.712	155	43392	5.903
144) 1,3,5-Trichlorobenzene	(4)	13.840	180	637353	4.648
145) 1,2,4-Trichlorobenzene	(4)	14.261	180	582899	4.582
146) Hexachlorobutadiene	(4)	14.340	225	306877	4.577
147) Naphthalene	(4)	14.438	128	982193	4.619
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	513159	4.718

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

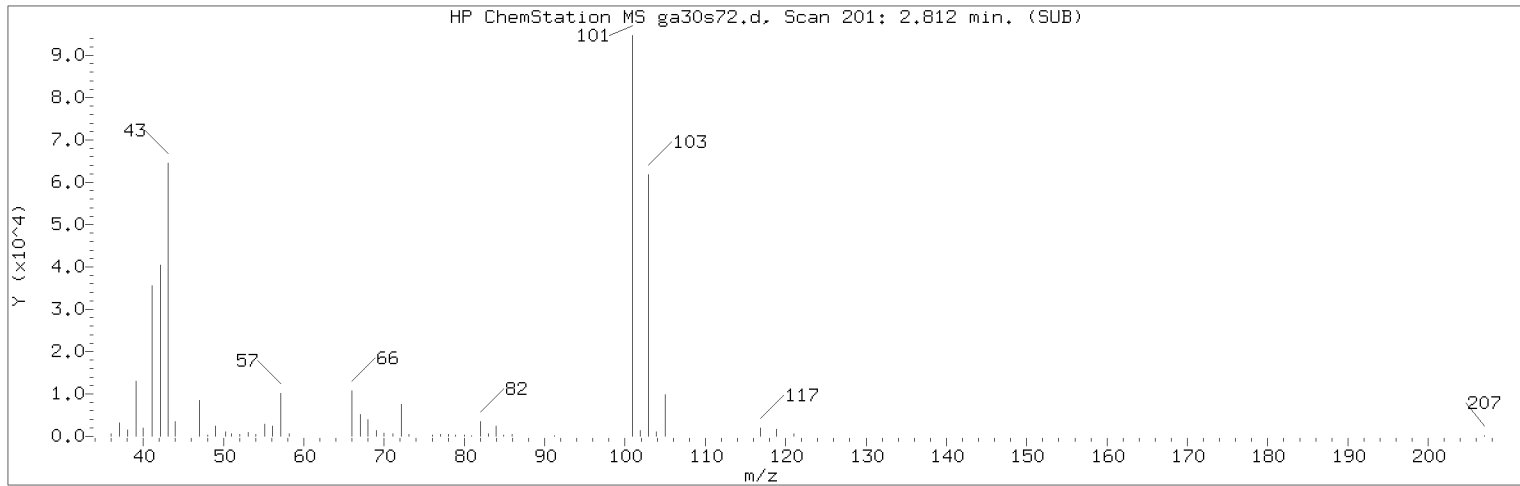
page 3 of 3

Digitally signed by Matthew S. Krause
 on 04/30/2018 at 22:21.

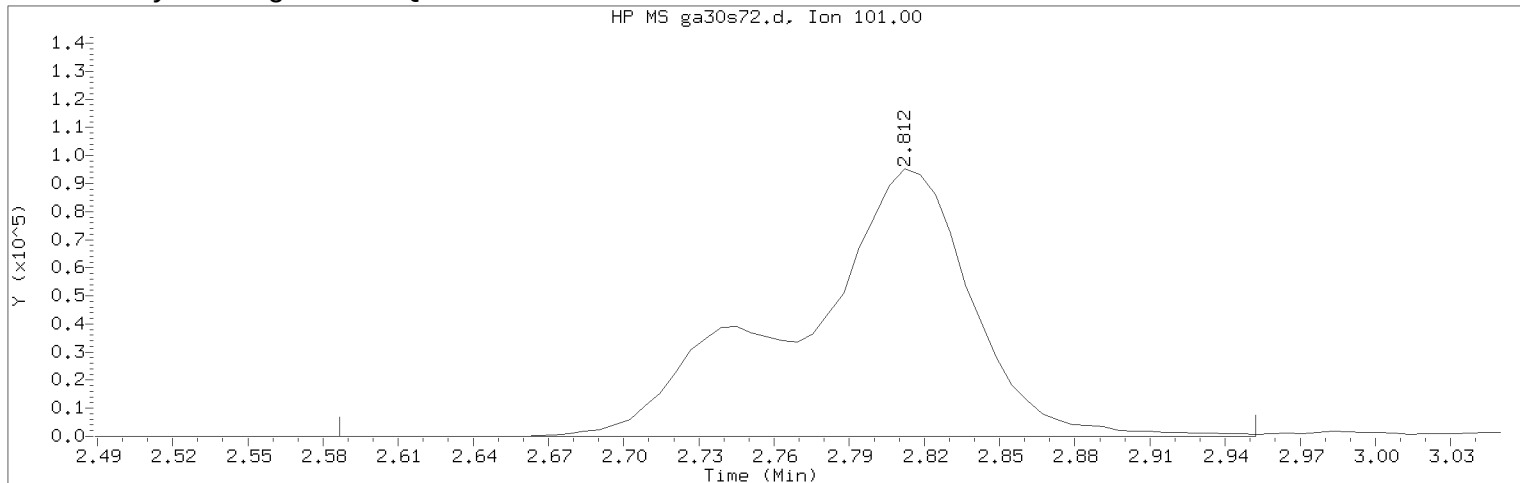
Target 3.5 esignature user ID: msk07970

FKP52 Page 498 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:36

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area (flag) : 458261M

On-Column Amount (ng) : 4.6378

Integration start scan : 163

Integration stop scan: 223

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

Digitally signed by Matthew S. Krause

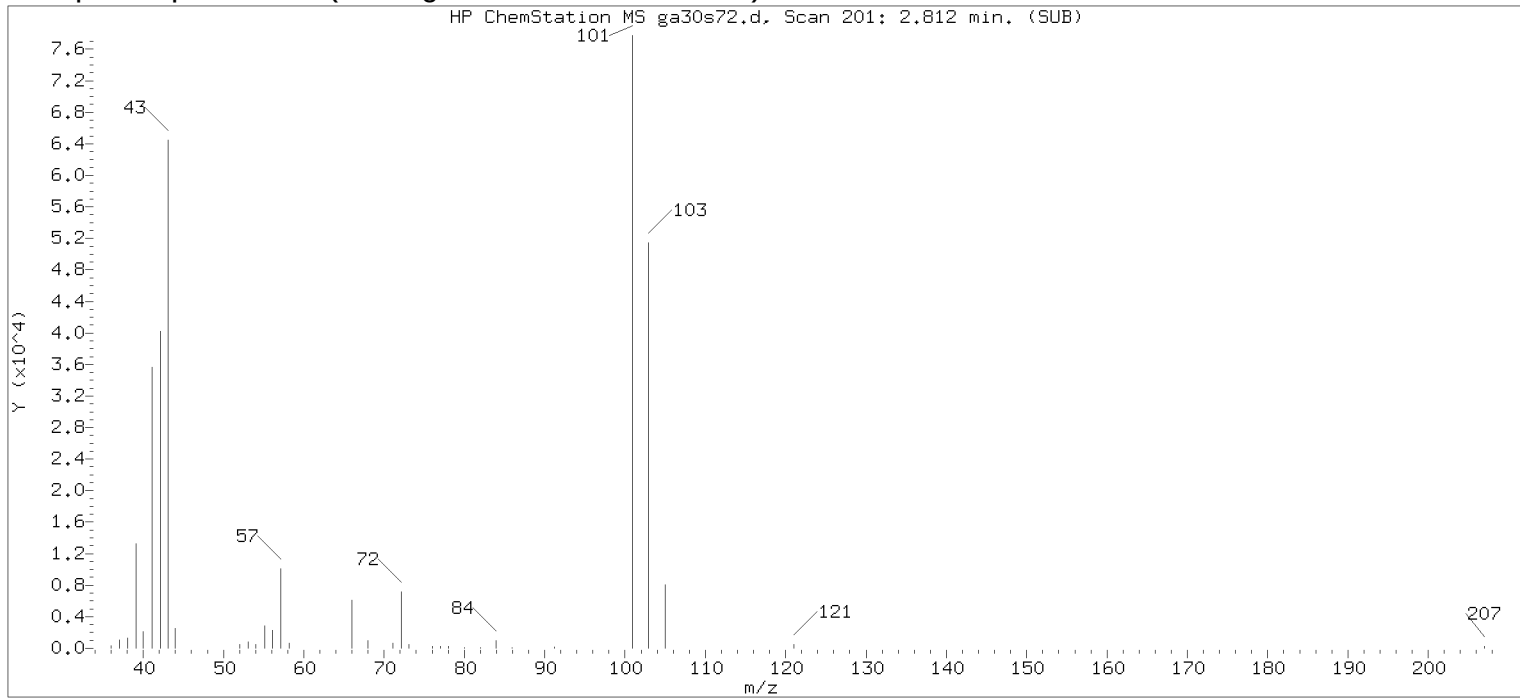
on 04/30/2018 at 22:21.

Target 3.5 esignature user ID: msk07970

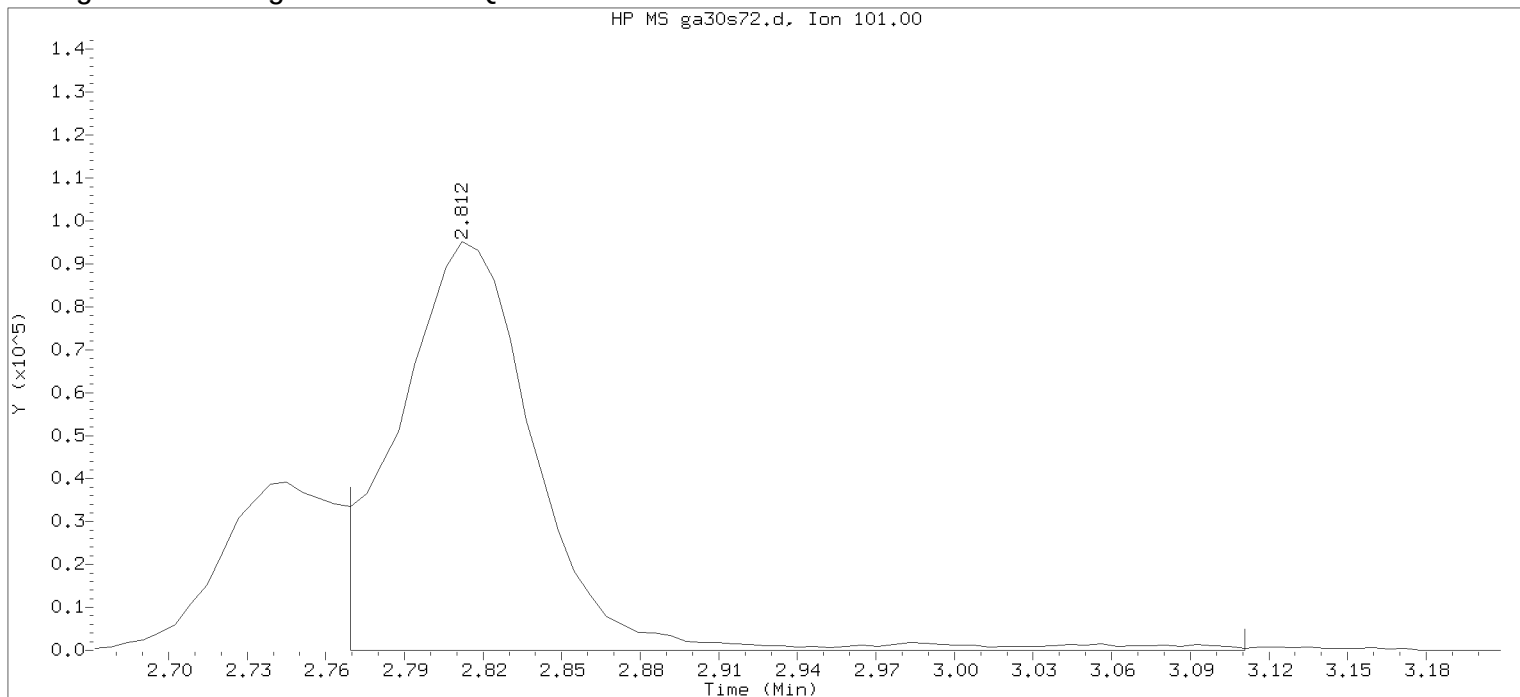
Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.

PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:36

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:53 Automation

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 201

Retention Time (minutes): 2.812

Quant Ion : 101.00

Area : 347500

On-column Amount (ng) : 3.5168

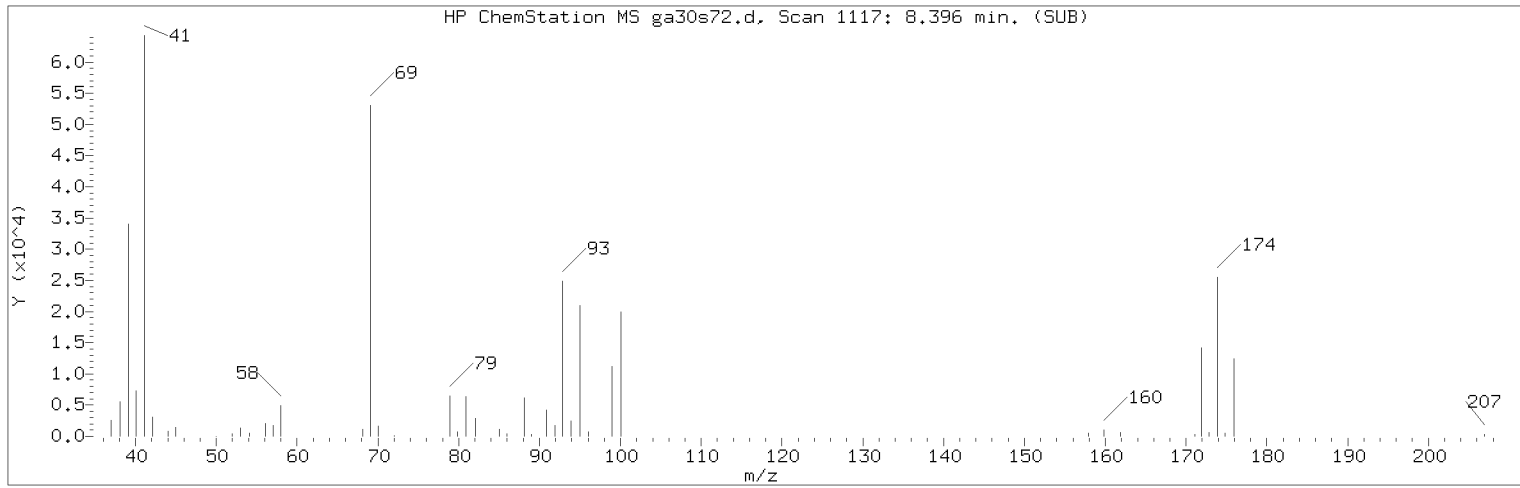
Integration start scan : 193 Integration stop scan: 249

Y at integration start : 0 Y at integration end: 0

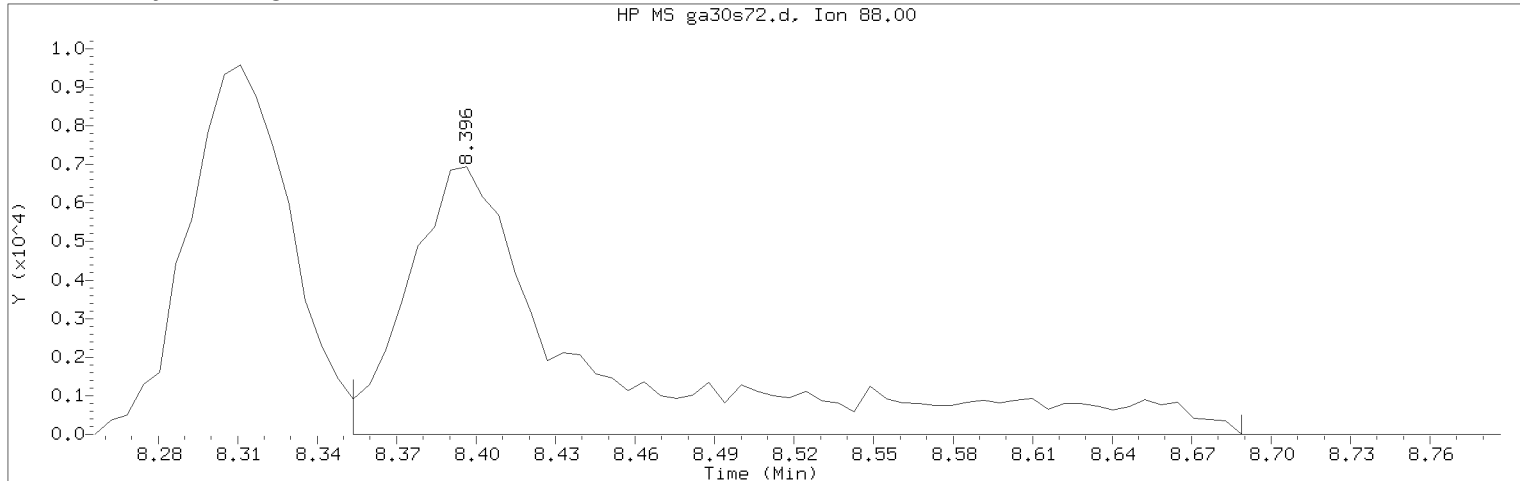
Digitally signed by Matthew S. Krause on 04/30/2018 at 22:21.

Target 3.5 esignature userFID52mBkg7500 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:36

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 22:19 msk07970

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compound Number : 72
Compound Name : 1,4-Dioxane
Scan Number : 1117
Retention Time (minutes): 8.396
Quant Ion : 88.00
Area (flag) : 34036M
On-Column Amount (ng) : 158.1514
Integration start scan : 1109 Integration stop scan: 1164
Y at integration start : 0 Y at integration end: 0

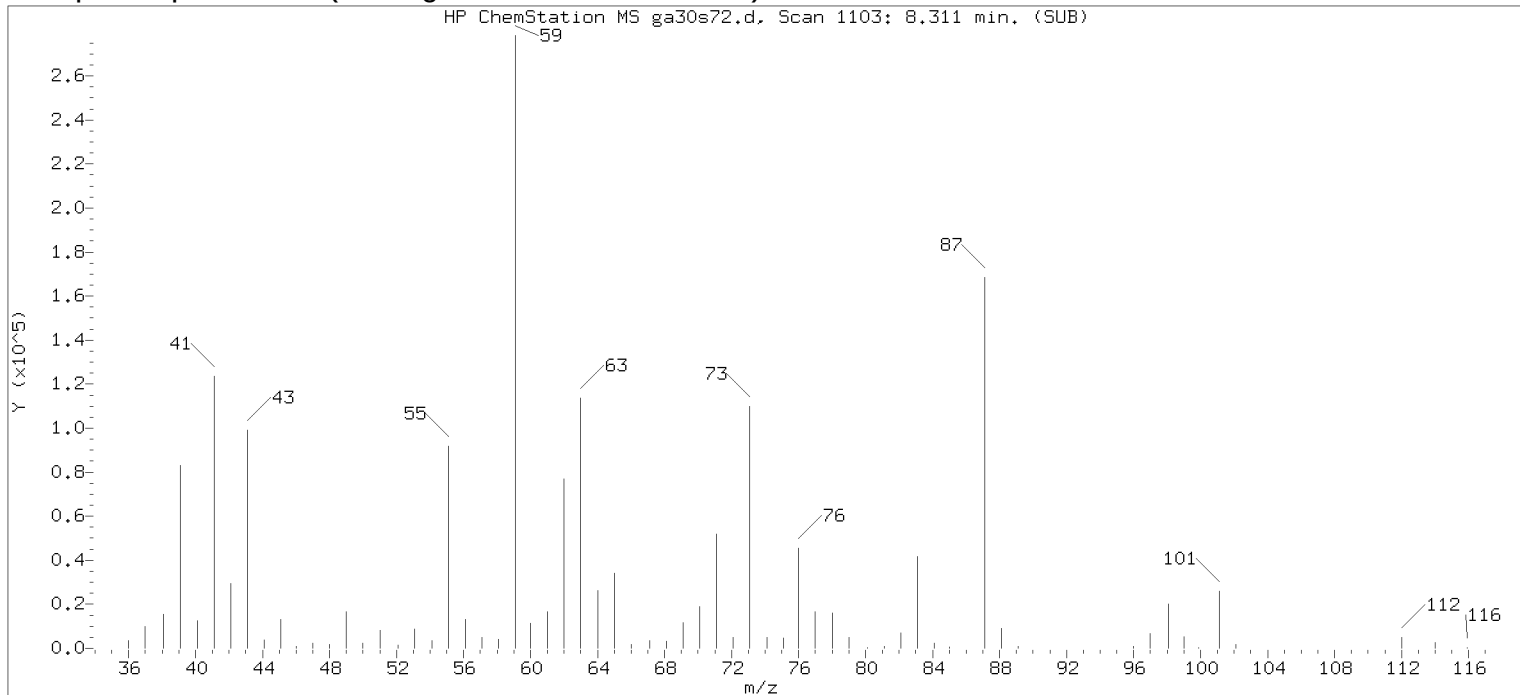
Reason for manual integration: improper integration

Analyst responsible for change:

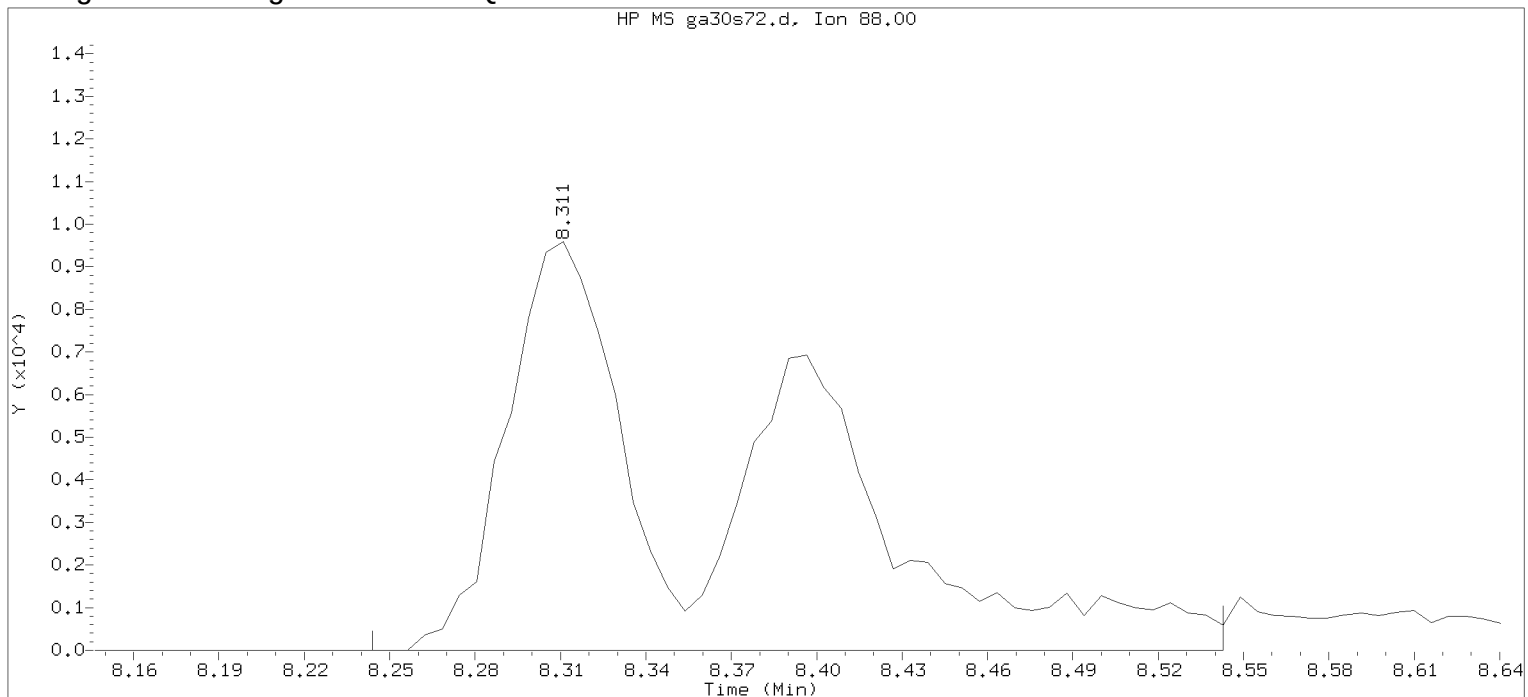
Digitally signed by Matthew S. Krause
on 04/30/2018 at 22:21.
Target 3.5 esignature user ID: msk07970

Secondary review performed and digitally signed by Joshua E. Berrios on 05/01/2018 at 19:03.
PARALLAX ID: jeb12641

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18apr30b.b/ga30s72.d

Instrument ID: HP16334.i

Injection date and time: 30-APR-2018 21:36

Analyst ID: MSK07970

Method used: /chem2/HP16334.i/18apr30b.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 30-APR-2018 21:08

Date, time and analyst ID of latest file update: 30-Apr-2018 21:53 Automation

Sample Name: LCDG13

Lab Sample ID: LCDG13

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1103
 Retention Time (minutes): 8.311
 Quant Ion : 88.00
 Area : 53113
 On-column Amount (ng) : 246.7958
 Integration start scan : 1091
 Y at integration start : 0

Integration stop scan: 1140
 Y at integration end: 0

Digitally signed by Matthew S. Krause on 04/30/2018 at 22:21.
 Target 3.5 esignature user F1D52mB107502 of 730

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Lancaster Laboratories

Contract: _____

LCSG14

Lab Code: LANCAS

Case No.: _____

SAS No.: _____

SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: LCSG14

Sample wt/vol: 25.00(g/mL) mL

Lab File ID: HP16334.i/18may01a.b/gy01l01.d

Level: (low/med) LOW

Date Received:

Moisture: not dec. _____

Date Analyzed: 05/01/18

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.8	
74-87-3	Chloromethane	4.1	
75-01-4	Vinyl Chloride	4.5	
106-99-0	1,3-Butadiene	3.1	
74-83-9	Bromomethane	4.8	
75-00-3	Chloroethane	4.6	
75-43-4	Dichlorofluoromethane	4.9	
75-69-4	Trichlorofluoromethane	4.8	
60-29-7	Ethyl ether	3.4	
354-23-4	Freon 123a	4.7	
107-02-8	Acrolein	39	
67-64-1	Acetone	34	
75-35-4	1,1-Dichloroethene	5.0	
76-13-1	Freon 113	4.8	
74-88-4	Methyl Iodide	4.7	
75-15-0	Carbon Disulfide	4.2	
79-20-9	Methyl Acetate	5.4	
107-05-1	Allyl Chloride	4.2	
75-09-2	Methylene Chloride	4.1	
75-65-0	t-Butyl Alcohol	44	
107-13-1	Acrylonitrile	26	
1634-04-4	Methyl Tertiary Butyl Ether	4.5	
156-60-5	trans-1,2-Dichloroethene	4.8	
110-54-3	n-Hexane	4.5	
75-34-3	1,1-Dichloroethane	4.7	
108-20-3	di-Isopropyl Ether	4.4	
126-99-8	2-Chloro-1,3-Butadiene	4.3	
637-92-3	Ethyl t-butyl ether	4.4	
78-93-3	2-Butanone	38	
156-59-2	cis-1,2-Dichloroethene	4.9	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG14

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: LCSG14
 Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l01.d
 Level: (low/med) LOW Date Received: _____
 Moisture: not dec. _____ Date Analyzed: 05/01/18
 Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
540-59-0-----	1,2-Dichloroethene (Total)	9.7	
594-20-7-----	2,2-Dichloropropane	4.6	
107-12-0-----	Propionitrile	39	
126-98-7-----	Methacrylonitrile	41	
74-97-5-----	Bromochloromethane	5.0	
109-99-9-----	Tetrahydrofuran	28	
67-66-3-----	Chloroform	4.6	
71-55-6-----	1,1,1-Trichloroethane	4.8	
110-82-7-----	Cyclohexane	4.5	
56-23-5-----	Carbon Tetrachloride	4.8	
563-58-6-----	1,1-Dichloropropene	4.5	
78-83-1-----	Isobutyl Alcohol	110	
71-43-2-----	Benzene	4.7	
107-06-2-----	1,2-Dichloroethane	4.2	
994-05-8-----	t-Amyl methyl ether	4.6	
142-82-5-----	n-Heptane	4.4	
71-36-3-----	n-Butanol	240	
79-01-6-----	Trichloroethene	4.6	
108-87-2-----	Methylcyclohexane	4.8	
78-87-5-----	1,2-Dichloropropane	4.6	
80-62-6-----	Methyl Methacrylate	5.4	
123-91-1-----	1,4-Dioxane	150	
74-95-3-----	Dibromomethane	4.7	
75-27-4-----	Bromodichloromethane	4.7	
79-46-9-----	2-Nitropropane	5.1	
10061-01-5-----	cis-1,3-Dichloropropene	4.7	
108-10-1-----	4-Methyl-2-Pentanone	25	
108-88-3-----	Toluene	4.6	
10061-02-6-----	trans-1,3-Dichloropropene	4.6	
542-75-6-----	1,3-Dichloropropene (total)	9.2	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
97-63-2	Ethyl Methacrylate		4.4	
79-00-5	1,1,2-Trichloroethane		4.7	
127-18-4	Tetrachloroethene		4.8	
142-28-9	1,3-Dichloropropane		4.5	
591-78-6	2-Hexanone		26	
124-48-1	Dibromochloromethane		4.9	
106-93-4	1,2-Dibromoethane		4.8	
108-90-7	Chlorobenzene		4.7	
630-20-6	1,1,1,2-Tetrachloroethane		4.8	
100-41-4	Ethylbenzene		4.6	
179601-23-1	m+p-Xylene		9.6	
95-47-6	o-Xylene		4.6	
1330-20-7	Xylene (Total)		14	
100-42-5	Styrene		4.8	
75-25-2	Bromoform		4.7	
98-82-8	Isopropylbenzene		4.7	
79-34-5	1,1,2,2-Tetrachloroethane		4.5	
108-86-1	Bromobenzene		4.6	
96-18-4	1,2,3-Trichloropropane		4.7	
103-65-1	n-Propylbenzene		4.5	
95-49-8	2-Chlorotoluene		4.6	
108-67-8	1,3,5-Trimethylbenzene		4.5	
106-43-4	4-Chlorotoluene		4.6	
98-06-6	tert-Butylbenzene		4.6	
76-01-7	Pentachloroethane		5.1	
95-63-6	1,2,4-Trimethylbenzene		4.6	
135-98-8	sec-Butylbenzene		4.7	
541-73-1	1,3-Dichlorobenzene		4.6	
99-87-6	p-Isopropyltoluene		4.7	
106-46-7	1,4-Dichlorobenzene		4.7	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q

526-73-8-----	1,2,3-Trimethylbenzene	4.8	
100-44-7-----	Benzyl Chloride	4.8	
104-51-8-----	n-Butylbenzene	4.5	
95-50-1-----	1,2-Dichlorobenzene	4.7	
96-12-8-----	1,2-Dibromo-3-chloropropane	6.2	
108-70-3-----	1,3,5-Trichlorobenzene	4.6	
120-82-1-----	1,2,4-Trichlorobenzene	4.6	
87-68-3-----	Hexachlorobutadiene	4.6	
91-20-3-----	Naphthalene	4.6	
87-61-6-----	1,2,3-Trichlorobenzene	4.7	

Data file: /chem2/HP16334.i/18may01a.b/gy01l01.d

Injection date and time: 01-MAY-2018 08:11

Data file Sample Info. Line: LCSG14;LCSG14;1;3;LCS;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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	3.958(0.000)	389	65	198567 (3)	50.00	
63) Fluorobenzene	7.488(0.000)	968	96	2304606 (3)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1802336 (-1)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(0.000)	1856	152	1049035 (1)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.592(0.000)	113	582213	10.046	100%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.001)	102	122823M	10.001	100%		80 - 120
82) Toluene-d8	(3)	9.530(0.000)	98	2363184	9.777	98%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.024(-0.001)	95	890322	9.623	96%		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)	1.837(-0.000)	85	331946	3.840	3.84			0.1	0.5
2) Chloromethane	(2)	2.026(-0.000)	50	360949	4.147	4.15			0.2	0.5
5) Vinyl Chloride	(2)	2.135(-0.000)	62	338105	4.526	4.53			0.1	0.5
6) 1,3-Butadiene	(2)	2.142(-0.000)	39	498248M	3.135	3.14			0.1	0.5
7) Bromomethane	(2)	2.446(-0.000)	94	240838	4.822	4.82			0.1	0.5
8) Chloroethane	(2)	2.526(-0.000)	64	194400	4.569	4.57			0.1	0.5
9) Dichlorofluoromethane	(2)	2.757(-0.000)	67	500621	4.878	4.88			0.2	0.5
10) Trichlorofluoromethane	(2)	2.818(-0.000)	101	463574M	4.758	4.76			0.1	0.5
11) Ethyl ether	(2)	3.038(-0.000)	59	164707	3.392	3.39			0.1	0.5
12) Freon 123a	(2)	3.141(-0.000)	67	322697	4.679	4.68			0.2	0.5
13) Acrolein	(1)	3.196(-0.000)	56	269748	39.321	39.32			5	25
15) 1,1-Dichloroethene	(2)	3.330(-0.000)	96	236585	4.960	4.96			0.1	0.5
16) Freon 113	(2)	3.379(-0.000)	101	256739	4.774	4.77			0.2	0.5
14) Acetone	(1)	3.355(-0.001)	43	378956	34.189	34.19			3	5
17) Methyl Iodide	(2)	3.519(-0.000)	142	434549	4.691	4.69			0.1	0.5
18) Carbon Disulfide	(2)	3.629(-0.000)	76	796258	4.207	4.21			0.4	1
22) Allyl Chloride	(2)	3.781(-0.000)	41	463267	4.186	4.19			0.1	0.5
21) Methyl Acetate	(1)	3.757(-0.001)	43	167789	5.370	5.37			0.3	1
23) Methylene Chloride	(2)	3.964(-0.000)	84	266854	4.137	4.14			0.2	0.5
28) t-Butyl Alcohol	(1)	4.074(0.000)	59	165680	44.094	44.09			4	10
29) Acrylonitrile	(1)	4.275(-0.001)	53	324540	26.318	26.32			1	5
31) trans-1,2-Dichloroethene	(2)	4.367(-0.000)	96	268039	4.835	4.84			0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)	4.336(0.000)	73	746699	4.495	4.49			0.1	0.5
32) n-Hexane	(2)	4.787(-0.000)	57	420154	4.488	4.49			0.1	0.5
33) 1,1-Dichloroethane	(2)	5.037(-0.000)	63	529042	4.679	4.68			0.1	0.5
34) di-Isopropyl Ether	(2)	5.086(-0.000)	45	1016239	4.389	4.39			0.1	0.5
35) 2-Chloro-1,3-Butadiene	(2)	5.147(-0.000)	53	449197	4.340	4.34			0.1	0.5
37) Ethyl t-butyl ether	(2)	5.635(-0.000)	59	900575	4.430	4.43			0.1	0.5
39) cis-1,2-Dichloroethene	(2)	5.879(-0.000)	96	305140	4.908	4.91			0.1	0.5
40) 1,2-Dichloroethene (Total)	(2)		96	573179	9.743	9.74			0.1	0.5

M = Compound was manually integrated.

Data file: /chem2/HP16334.i/18may01a.b/gy01l01.d

Injection date and time: 01-MAY-2018 08:11

Data file Sample Info. Line: LCSG14;LCSG14;1;3;LCS;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ (in sample)
41) 2,2-Dichloropropane	(2)	5.903(-0.000)	77	426046	4.594	4.59			0.1	0.5
38) 2-Butanone	(1)	5.830(0.000)	43	716088	37.548	37.55			1	5
42) Propionitrile	(1)	5.933(-0.001)	54	184716	39.172	39.17			2	10
45) Methacrylonitrile	(1)	6.147(0.000)	67	614954	41.151	41.15			1	5
47) Bromochloromethane	(2)	6.214(0.000)	128	142382	4.987	4.99			0.1	0.5
48) Tetrahydrofuran	(1)	6.220(0.000)	71	125333	27.608	27.61			2	5
49) Chloroform	(2)	6.372(-0.000)	83	499210	4.618	4.62			0.1	0.5
51) 1,1,1-Trichloroethane	(2)	6.598(-0.000)	97	442441	4.845	4.85			0.1	0.5
52) Cyclohexane	(2)	6.702(-0.000)	56	497845	4.545	4.55			0.1	0.5
55) 1,1-Dichloropropene	(2)	6.817(-0.000)	75	386587	4.541	4.54			0.1	0.5
54) Carbon Tetrachloride	(2)	6.817(-0.000)	117	359709	4.850	4.85			0.1	0.5
56) Isobutyl Alcohol	(1)	6.958(0.000)	41	170569	114.221	114.22			10	25
58) Benzene	(2)	7.080(-0.000)	78	1093717	4.653	4.65			0.1	0.5
59) 1,2-Dichloroethane	(2)	7.159(-0.000)	62	350413	4.212	4.21			0.1	0.5
60) t-Amyl methyl ether	(2)	7.275(-0.000)	73	792651	4.595	4.59			0.1	0.5
62) n-Heptane	(2)	7.500(-0.000)	43	490676	4.357	4.36			0.2	0.5
65) n-Butanol	(1)	7.848(-0.001)	56	287485	243.230	243.23			20	50
67) Trichloroethene	(2)	7.970(-0.000)	95	288546M	4.650	4.65			0.1	0.5
69) Methylcyclohexane	(2)	8.287(-0.000)	83	507315	4.814	4.81			0.1	0.5
70) 1,2-Dichloropropane	(2)	8.311(-0.000)	63	296899	4.551	4.55			0.1	0.5
71) Methyl Methacrylate	(1)	8.390(-0.001)	69	154448	5.426	5.43			0.1	0.5
73) Dibromomethane	(2)	8.415(0.000)	93	146516	4.706	4.71			0.1	0.5
72) 1,4-Dioxane	(1)	8.402(-0.001)	88	31910M	154.921	154.92			20	100
74) Bromodichloromethane	(2)	8.658(0.000)	83	356168	4.663	4.66			0.1	0.5
76) 2-Nitropropane	(1)	8.921(0.000)	41	49640	5.092	5.09			1	5
80) cis-1,3-Dichloropropene	(2)	9.213(-0.000)	75	439208	4.653	4.65			0.1	0.5
81) 4-Methyl-2-Pentanone	(1)	9.384(0.000)	43	1193741	25.479	25.48			1	5
83) Toluene	(3)	9.610(-0.000)	92	702847	4.590	4.59			0.1	0.5
84) trans-1,3-Dichloropropene	(3)	9.878(-0.000)	75	378844	4.561	4.56			0.1	0.5
85) 1,3-Dichloropropene (total)	(3)		75	818052	9.215	9.21			0.1	0.5
86) Ethyl Methacrylate	(3)	9.939(-0.000)	69	330378	4.412	4.41			0.1	0.5
88) 1,1,2-Trichloroethane	(3)	10.085(-0.000)	97	218761	4.737	4.74			0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	343056	4.831	4.83			0.1	0.5
90) 1,3-Dichloropropane	(3)	10.250(-0.000)	76	375504	4.463	4.46			0.1	0.5
91) 2-Hexanone	(1)	10.298(0.000)	43	851265M	25.851	25.85			1	5
93) Dibromochloromethane	(3)	10.469(-0.000)	129	246810	4.850	4.85			0.1	0.5
95) 1,2-Dibromoethane	(3)	10.585(-0.000)	107	210262	4.766	4.77			0.1	0.5
98) Chlorobenzene	(3)	11.042(0.000)	112	828587	4.724	4.72			0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)	11.128(0.000)	131	280717	4.793	4.79			0.1	0.5
100) Ethylbenzene	(3)	11.128(0.000)	91	1398864	4.597	4.60			0.1	0.5
101) m+p-Xylene	(3)	11.243(0.000)	106	1110352	9.584	9.58			0.1	0.5
104) o-Xylene	(3)	11.573(0.000)	106	538858	4.640	4.64			0.1	0.5
105) Xylene (Total)	(3)		106	1649210	14.224	14.22			0.1	0.5
106) Styrene	(3)	11.591(-0.000)	104	911973	4.784	4.78			0.1	0.5
107) Bromoform	(3)	11.756(-0.000)	173	138933	4.745	4.74			0.1	0.5
108) Isopropylbenzene	(3)	11.877(-0.000)	105	1432873	4.737	4.74			0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)	12.121(-0.000)	83	277365M	4.499	4.50			0.1	0.5
114) Bromobenzene	(4)	12.133(0.000)	156	370717	4.579	4.58			0.1	0.5
116) 1,2,3-Trichloropropane	(4)	12.170(-0.000)	110	81052M	4.703	4.70			0.3	1
117) n-Propylbenzene	(4)	12.207(-0.000)	91	1714666	4.548	4.55			0.1	0.5
119) 2-Chlorotoluene	(4)	12.280(0.000)	126	344490	4.579	4.58			0.1	0.5
121) 1,3,5-Trimethylbenzene	(4)	12.341(-0.000)	105	1221602	4.525	4.53			0.1	0.5
122) 4-Chlorotoluene	(4)	12.371(-0.000)	126	363025	4.628	4.63			0.1	0.5
125) tert-Butylbenzene	(4)	12.578(0.000)	134	260547	4.624	4.62			0.1	0.5

M = Compound was manually integrated.

Data file: /chem2/HP16334.i/18may01a.b/gy01l01.d

Injection date and time: 01-MAY-2018 08:11

Data file Sample Info. Line: LCSG14;LCSG14;1;3;LCS;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.d

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

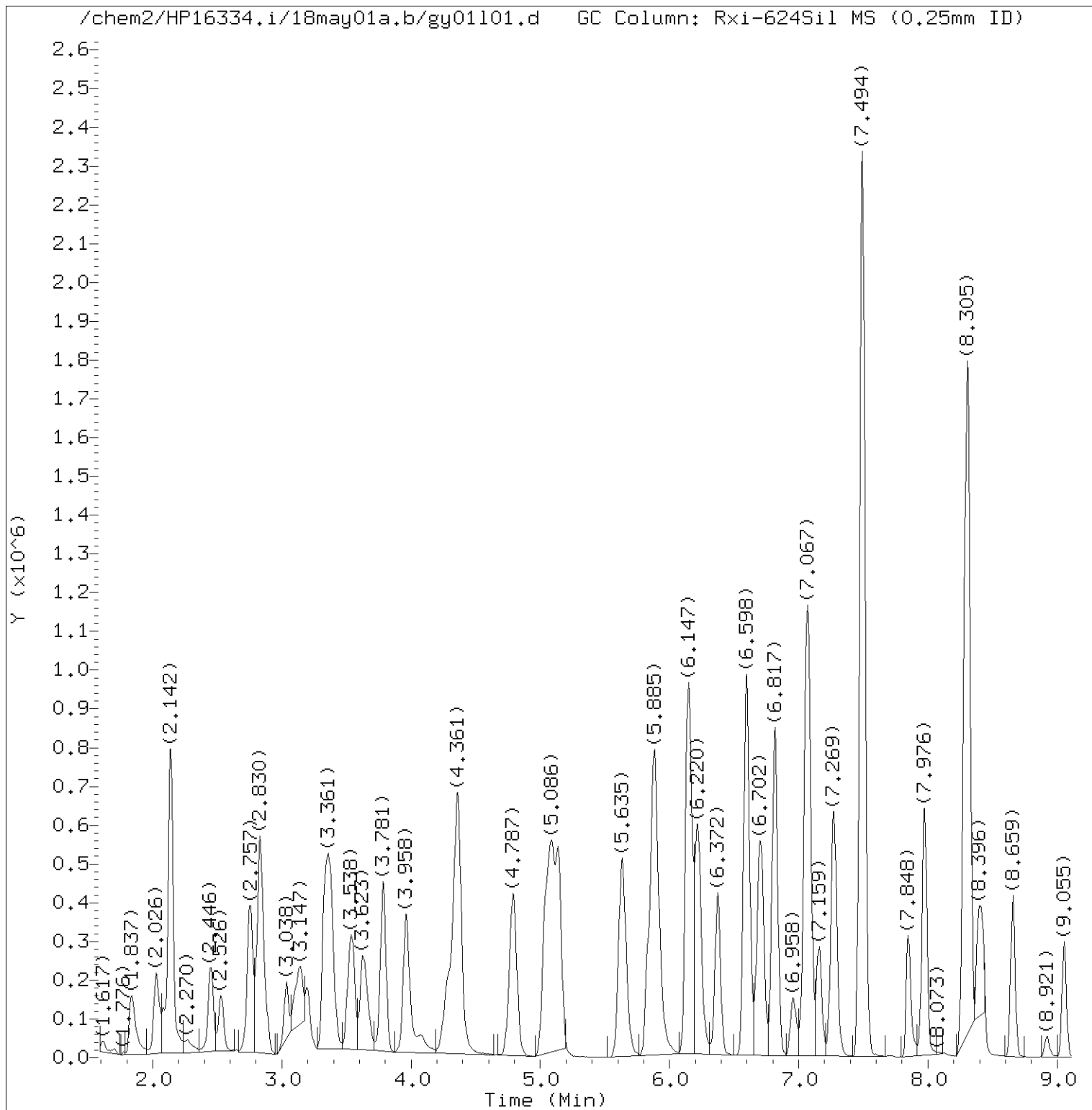
Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: 1.00

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
126) Pentachloroethane	(4)	12.615(0.000)	167	223840	5.116	5.12			0.2	0.5
127) 1,2,4-Trimethylbenzene	(4)	12.621(-0.000)	105	1264645	4.593	4.59			0.1	0.5
128) sec-Butylbenzene	(4)	12.743(-0.000)	105	1604811	4.680	4.68			0.1	0.5
131) 1,3-Dichlorobenzene	(4)	12.841(0.000)	146	745007	4.630	4.63			0.1	0.5
132) p-Isopropyltoluene	(4)	12.853(-0.000)	119	1405919	4.697	4.70			0.1	0.5
134) 1,4-Dichlorobenzene	(4)	12.920(0.000)	146	772199	4.708	4.71			0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)	12.926(0.000)	120	588735	4.756	4.76			0.1	0.5
136) Benzyl Chloride	(4)	12.993(0.000)	126	107169	4.785	4.79			0.1	0.5
138) n-Butylbenzene	(4)	13.139(0.000)	92	724283	4.498	4.50			0.1	0.5
139) 1,2-Dichlorobenzene	(4)	13.170(0.000)	146	712421	4.692	4.69			0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)	13.718(-0.001)	155	43528	6.187	6.19			0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)	13.840(0.000)	180	616160	4.579	4.58			0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)	14.261(0.000)	180	575918	4.613	4.61			0.1	0.5
146) Hexachlorobutadiene	(4)	14.340(0.000)	225	305315	4.640	4.64			0.1	0.5
147) Naphthalene	(4)	14.438(0.000)	128	954282	4.573	4.57			0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)	14.578(0.000)	180	497656	4.662	4.66			0.1	0.5

Total number of targets = 100

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01101.d
Injection date and time: 01-MAY-2018 08:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

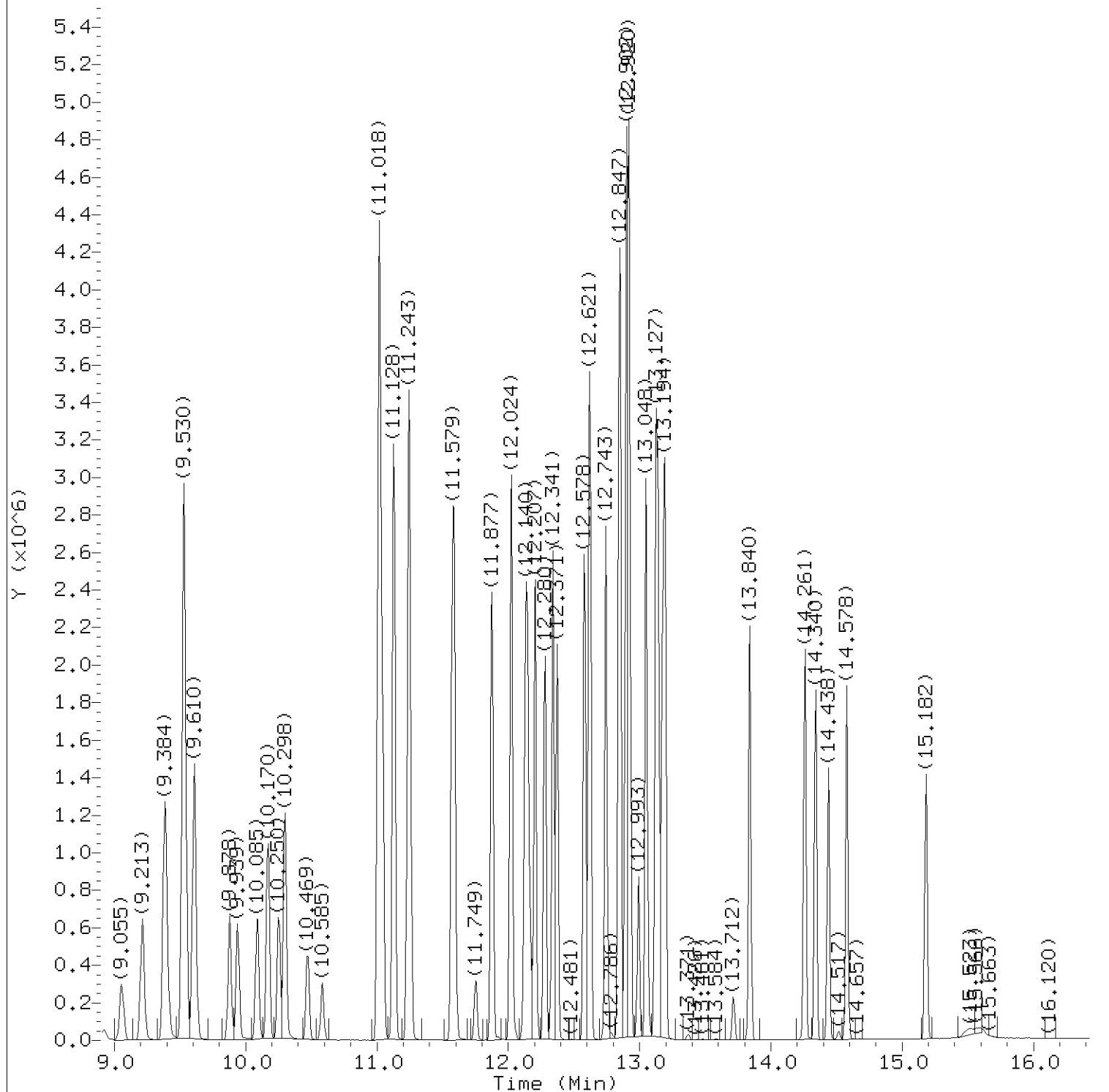
Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 09:16
Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

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on 05/02/2018 at 08:28.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 510 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01101.d
Injection date and time: 01-MAY-2018 08:11

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 09:16
Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 511 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l01.d
 Injection date and time: 01-MAY-2018 08:11

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.837	85	331946	3.840
2) Chloromethane	(2)	2.026	50	360949	4.147
5) Vinyl Chloride	(2)	2.135	62	338105	4.526
6) 1,3-Butadiene	(2)	2.142	39	498248M	3.135
7) Bromomethane	(2)	2.446	94	240838	4.822
8) Chloroethane	(2)	2.526	64	194400	4.569
9) Dichlorofluoromethane	(2)	2.757	67	500621	4.878
10) Trichlorofluoromethane	(2)	2.818	101	463574M	4.758
11) Ethyl ether	(2)	3.038	59	164707	3.392
12) Freon 123a	(2)	3.141	67	322697	4.679
13) Acrolein	(1)	3.196	56	269748	39.321
15) 1,1-Dichloroethene	(2)	3.330	96	236585	4.960
14) Acetone	(1)	3.355	43	378956	34.189
16) Freon 113	(2)	3.379	101	256739	4.774
17) Methyl Iodide	(2)	3.519	142	434549	4.691
18) Carbon Disulfide	(2)	3.629	76	796258	4.207
21) Methyl Acetate	(1)	3.757	43	167789	5.370
22) Allyl Chloride	(2)	3.781	41	463267	4.186
26)*t-Butyl Alcohol-d10	(1)	3.958	65	198567	50.000
23) Methylene Chloride	(2)	3.964	84	266854	4.137
28) t-Butyl Alcohol	(1)	4.074	59	165680	44.094
29) Acrylonitrile	(1)	4.275	53	324540	26.318
30) Methyl Tertiary Butyl Ether	(2)	4.336	73	746699	4.495
31) trans-1,2-Dichloroethene	(2)	4.367	96	268039	4.835
32) n-Hexane	(2)	4.787	57	420154	4.488
33) 1,1-Dichloroethane	(2)	5.037	63	529042	4.679
34) di-Isopropyl Ether	(2)	5.086	45	1016239	4.389
35) 2-Chloro-1,3-Butadiene	(2)	5.147	53	449197	4.340
37) Ethyl t-butyl ether	(2)	5.635	59	900575	4.430
38) 2-Butanone	(1)	5.830	43	716088	37.548
39) cis-1,2-Dichloroethene	(2)	5.879	96	305140	4.908
41) 2,2-Dichloropropane	(2)	5.903	77	426046	4.594
42) Propionitrile	(1)	5.933	54	184716	39.172
40) 1,2-Dichloroethene (Total)	(2)		96	573179	9.743
45) Methacrylonitrile	(1)	6.147	67	614954	41.151
47) Bromochloromethane	(2)	6.214	128	142382	4.987
48) Tetrahydrofuran	(1)	6.220	71	125333	27.608
49) Chloroform	(2)	6.372	83	499210	4.618

M = Compound was manually integrated.

* = Compound is an internal standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l01.d
 Injection date and time: 01-MAY-2018 08:11

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.592	113	582213	10.046
51) 1,1,1-Trichloroethane	(2)	6.598	97	442441	4.845
52) Cyclohexane	(2)	6.702	56	497845	4.545
54) Carbon Tetrachloride	(2)	6.817	117	359709	4.850
55) 1,1-Dichloropropene	(2)	6.817	75	386587	4.541
56) Isobutyl Alcohol	(1)	6.958	41	170569	114.221
57) \$1,2-Dichloroethane-d4	(2)	7.049	102	122823M	10.001
58) Benzene	(2)	7.080	78	1093717	4.653
59) 1,2-Dichloroethane	(2)	7.159	62	350413	4.212
60) t-Amyl methyl ether	(2)	7.275	73	792651	4.595
63) *Fluorobenzene	(2)	7.488	96	2304606	10.000
62) n-Heptane	(2)	7.500	43	490676	4.357
65) n-Butanol	(1)	7.848	56	287485	243.230
67) Trichloroethene	(2)	7.970	95	288546M	4.650
69) Methylcyclohexane	(2)	8.287	83	507315	4.814
70) 1,2-Dichloropropane	(2)	8.311	63	296899	4.551
71) Methyl Methacrylate	(1)	8.390	69	154448	5.426
72) 1,4-Dioxane	(1)	8.402	88	31910M	154.921
73) Dibromomethane	(2)	8.415	93	146516	4.706
74) Bromodichloromethane	(2)	8.659	83	356168	4.663
76) 2-Nitropropane	(1)	8.921	41	49640	5.092
80) cis-1,3-Dichloropropene	(2)	9.213	75	439208	4.653
81) 4-Methyl-2-Pentanone	(1)	9.384	43	1193741	25.479
82) \$Toluene-d8	(3)	9.530	98	2363184	9.777
83) Toluene	(3)	9.610	92	702847	4.590
84) trans-1,3-Dichloropropene	(3)	9.878	75	378844	4.561
86) Ethyl Methacrylate	(3)	9.939	69	330378	4.412
88) 1,1,2-Trichloroethane	(3)	10.085	97	218761	4.737
85) 1,3-Dichloropropene (total)	(3)		75	818052	9.215
89) Tetrachloroethene	(3)	10.170	166	343056	4.831
90) 1,3-Dichloropropane	(3)	10.250	76	375504	4.463
91) 2-Hexanone	(1)	10.298	43	851265M	25.851
93) Dibromochloromethane	(3)	10.469	129	246810	4.850
95) 1,2-Dibromoethane	(3)	10.585	107	210262	4.766
97) *Chlorobenzene-d5	(3)	11.012	117	1802336	10.000
98) Chlorobenzene	(3)	11.042	112	828587	4.724
99) 1,1,1,2-Tetrachloroethane	(3)	11.128	131	280717	4.793
100) Ethylbenzene	(3)	11.128	91	1398864	4.597

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l01.d
 Injection date and time: 01-MAY-2018 08:11

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
101) m+p-Xylene	(3)	11.243	106	1110352	9.584
104) o-Xylene	(3)	11.573	106	538858	4.640
106) Styrene	(3)	11.591	104	911973	4.784
107) Bromoform	(3)	11.755	173	138933	4.745
105) Xylene (Total)	(3)		106	1649210	14.224
108) Isopropylbenzene	(3)	11.877	105	1432873	4.737
111)\$4-Bromofluorobenzene	(3)	12.024	95	890322	9.623
113) 1,1,2,2-Tetrachloroethane	(4)	12.121	83	277365M	4.499
114) Bromobenzene	(4)	12.133	156	370717	4.579
116) 1,2,3-Trichloropropane	(4)	12.170	110	81052M	4.703
117) n-Propylbenzene	(4)	12.207	91	1714666	4.548
119) 2-Chlorotoluene	(4)	12.280	126	344490	4.579
121) 1,3,5-Trimethylbenzene	(4)	12.341	105	1221602	4.525
122) 4-Chlorotoluene	(4)	12.371	126	363025	4.628
125) tert-Butylbenzene	(4)	12.578	134	260547	4.624
126) Pentachloroethane	(4)	12.615	167	223840	5.116
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	1264645	4.593
128) sec-Butylbenzene	(4)	12.743	105	1604811	4.680
131) 1,3-Dichlorobenzene	(4)	12.841	146	745007	4.630
132) p-Isopropyltoluene	(4)	12.853	119	1405919	4.697
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	1049035	10.000
134) 1,4-Dichlorobenzene	(4)	12.920	146	772199	4.708
135) 1,2,3-Trimethylbenzene	(4)	12.926	120	588735	4.756
136) Benzyl Chloride	(4)	12.993	126	107169	4.785
138) n-Butylbenzene	(4)	13.139	92	724283	4.498
139) 1,2-Dichlorobenzene	(4)	13.170	146	712421	4.692
143) 1,2-Dibromo-3-chloropropane	(1)	13.719	155	43528	6.187
144) 1,3,5-Trichlorobenzene	(4)	13.840	180	616160	4.579
145) 1,2,4-Trichlorobenzene	(4)	14.261	180	575918	4.613
146) Hexachlorobutadiene	(4)	14.340	225	305315	4.640
147) Naphthalene	(4)	14.438	128	954282	4.573
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	497656	4.662

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

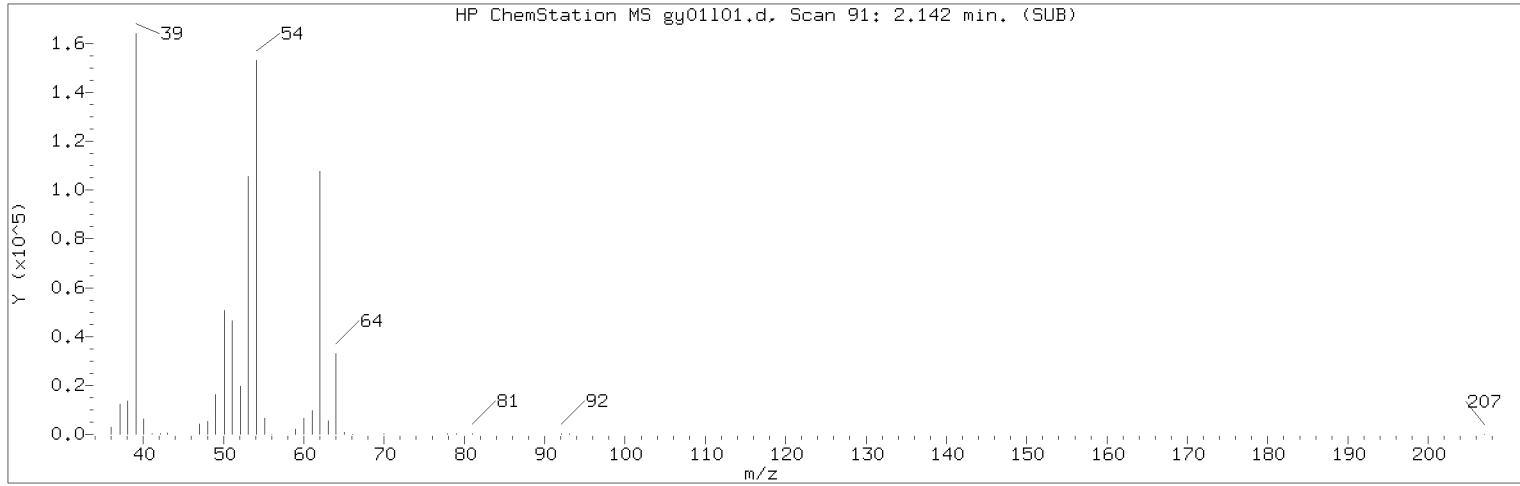
page 3 of 3

Digitally signed by Jennifer K. Howe
 on 05/02/2018 at 08:28.

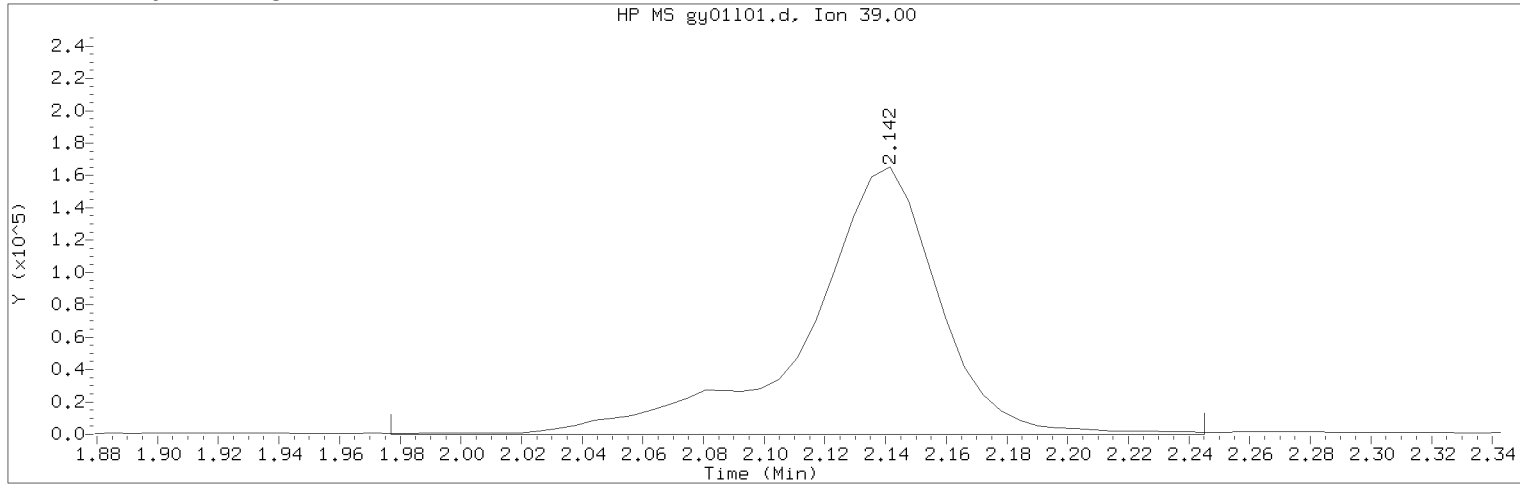
Target 3.5 esignature user ID: jkh09052

FKP52 Page 514 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number	: 6	
Compound Name	: 1,3-Butadiene	
Scan Number	: 91	
Retention Time (minutes)	: 2.142	
Quant Ion	: 39.00	
Area (flag)	: 498248M	
On-Column Amount (ng)	: 3.1350	
Integration start scan	: 63	Integration stop scan: 107
Y at integration start	: 0	Y at integration end: 0

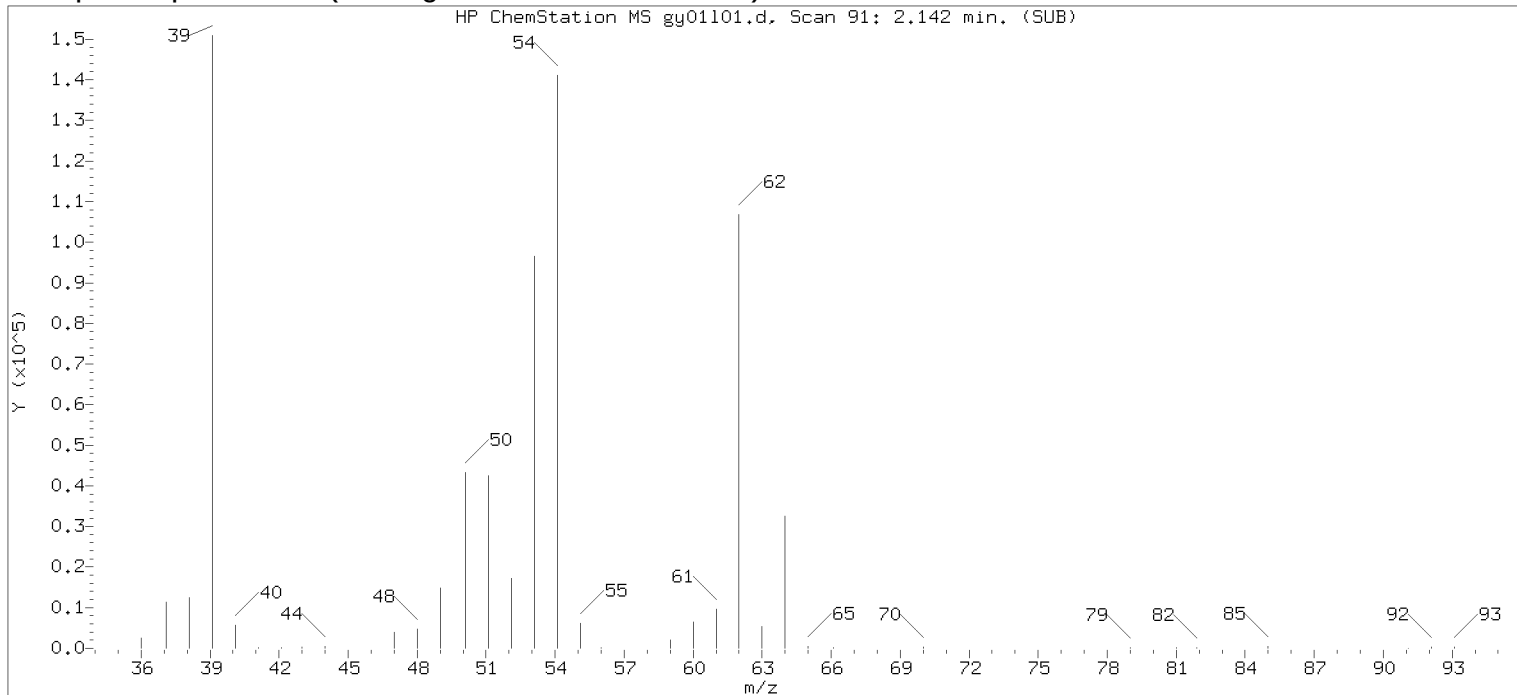
Reason for manual integration: improper integration

Analyst responsible for change:

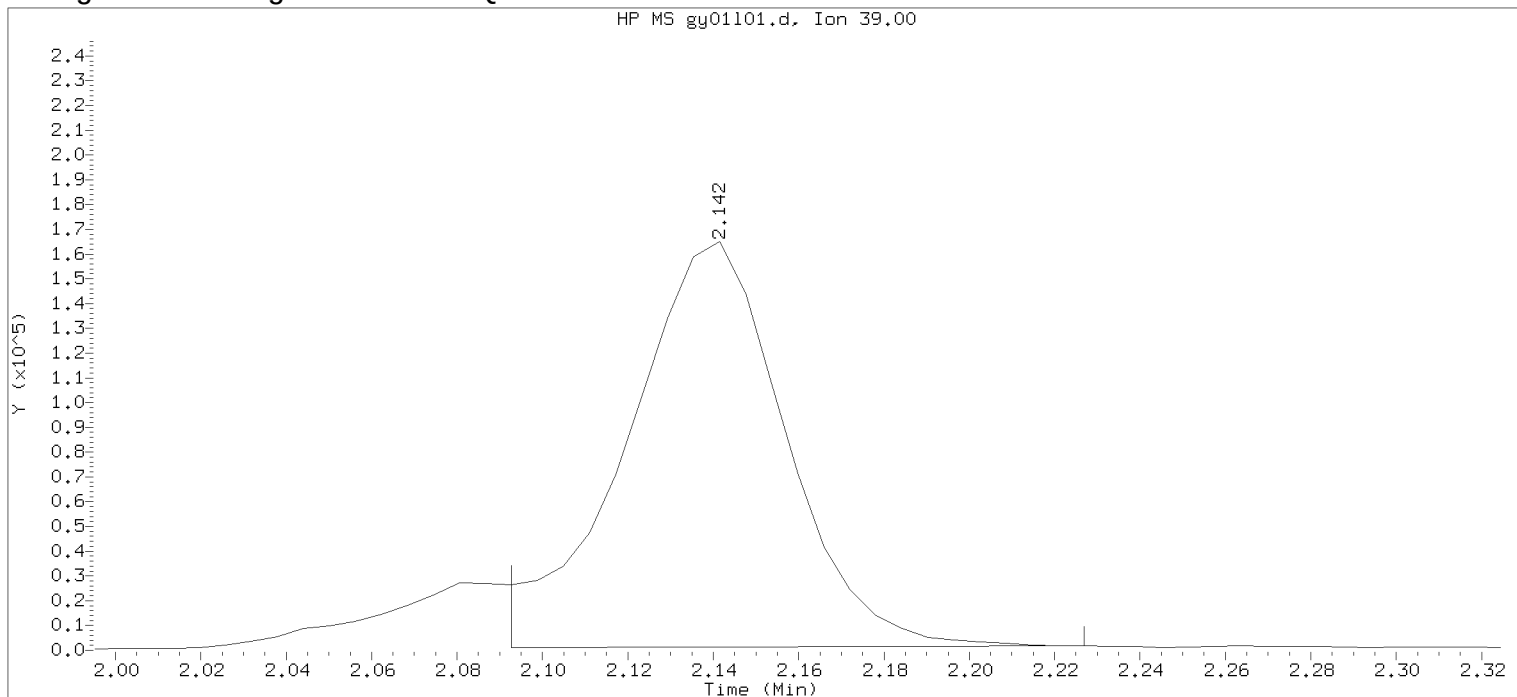
Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 6

Compound Name : 1,3-Butadiene

Scan Number : 91

Retention Time (minutes): 2.142

Quant Ion : 39.00

Area : 422076

On-column Amount (ng) : 2.6558

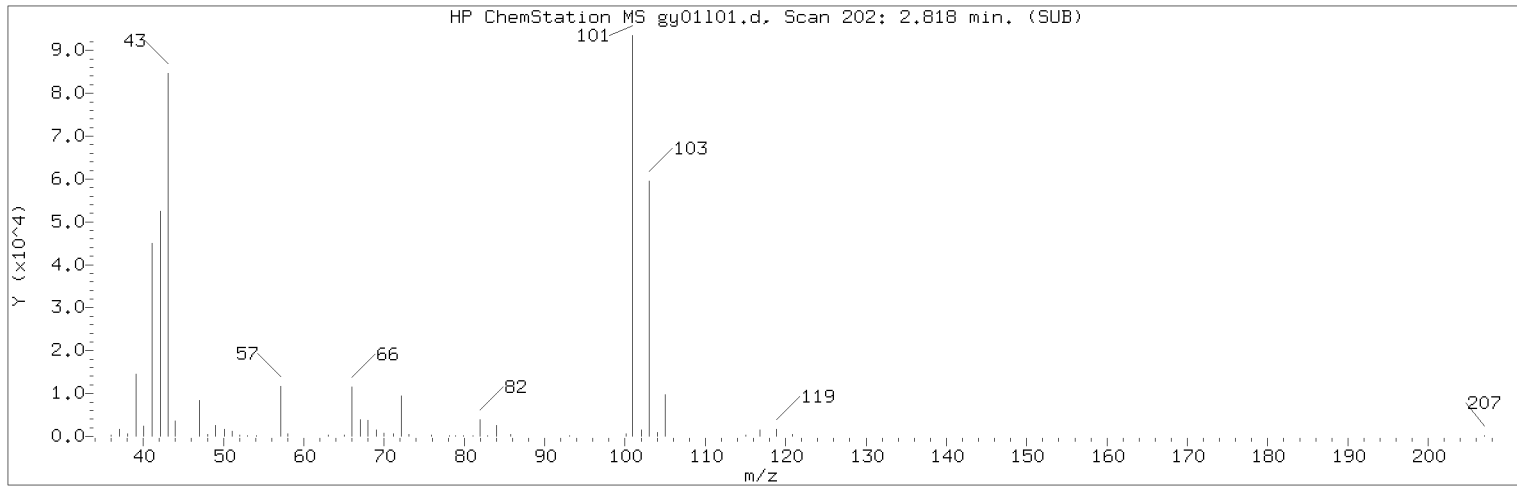
Integration start scan : 82 Integration stop scan: 104

Y at integration start : 1154 Y at integration end: 1909

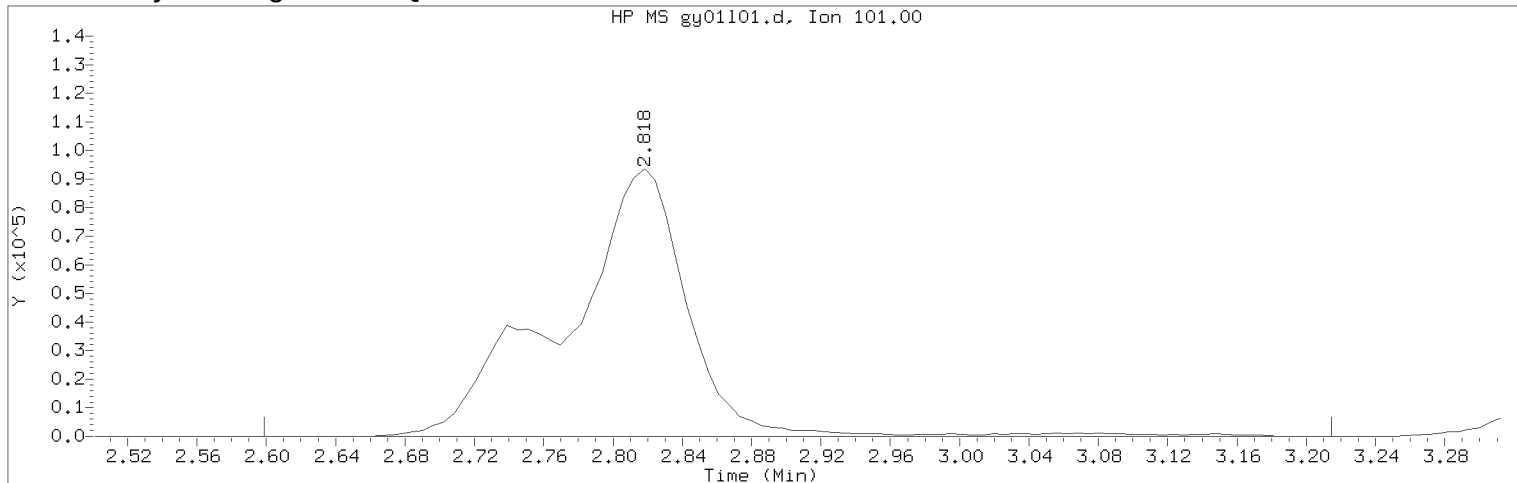
Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.

Target 3.5 esignature userF1P52jR400512 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 202

Retention Time (minutes): 2.818

Quant Ion : 101.00

Area (flag) : 463574M

On-Column Amount (ng) : 4.7584

Integration start scan : 165

Integration stop scan: 266

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

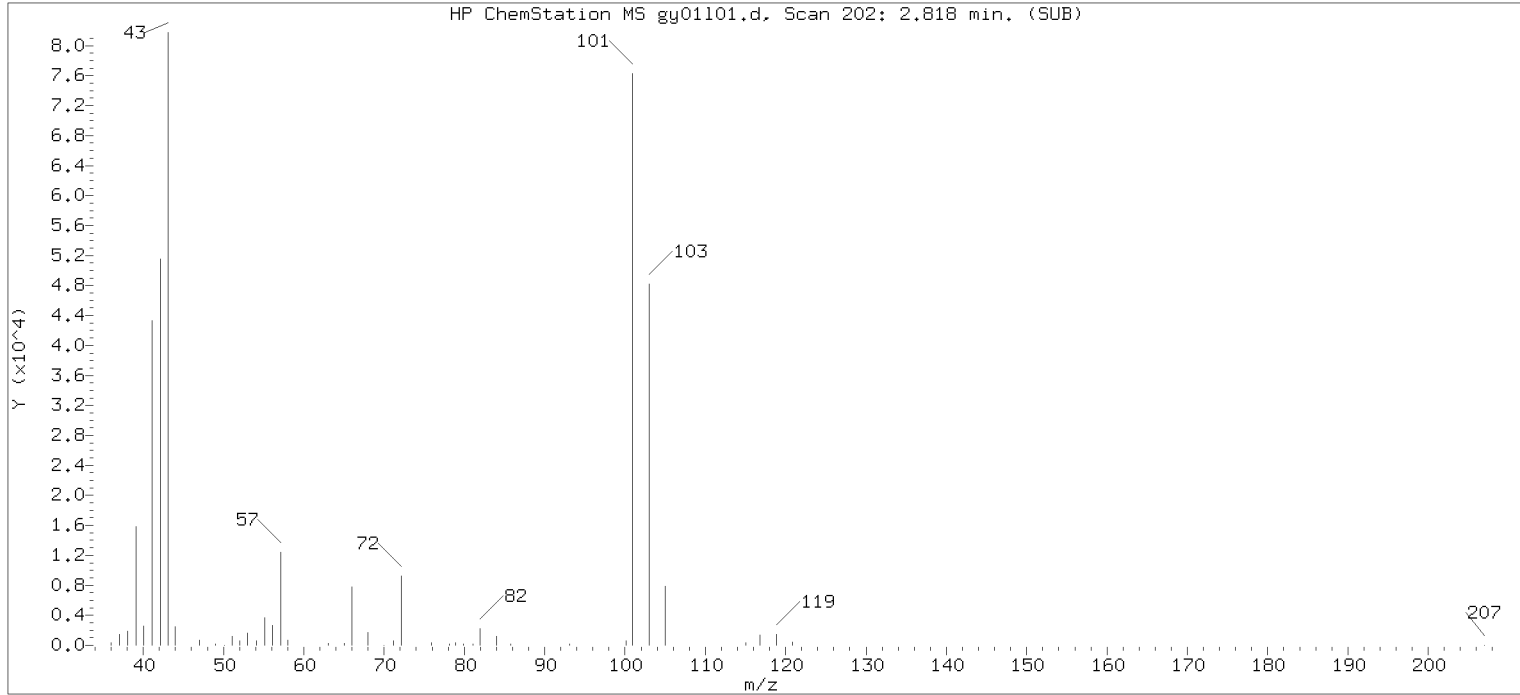
Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.

Target 3.5 esignature user ID: jkh09052

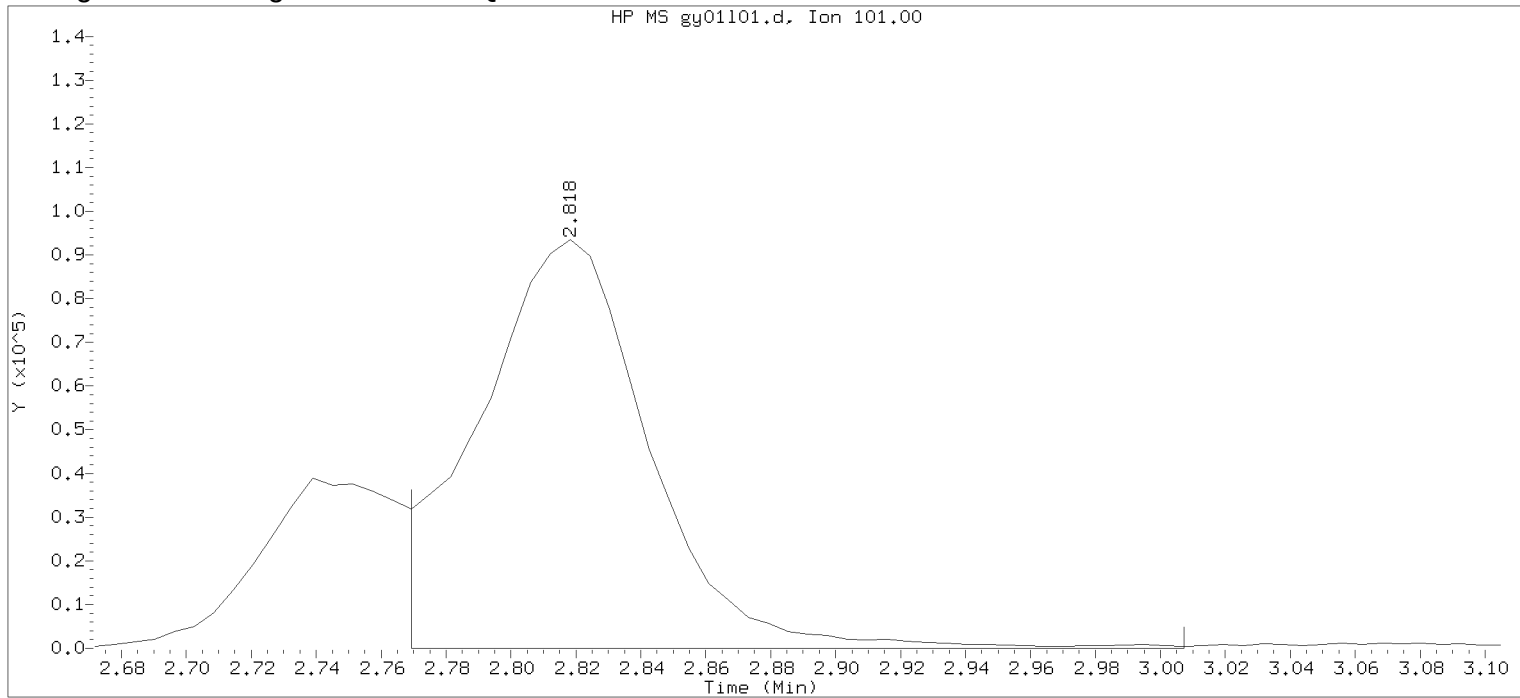
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 10

Compound Name : Trichlorofluoromethane

Scan Number : 202

Retention Time (minutes): 2.818

Quant Ion : 101.00

Area : 341235

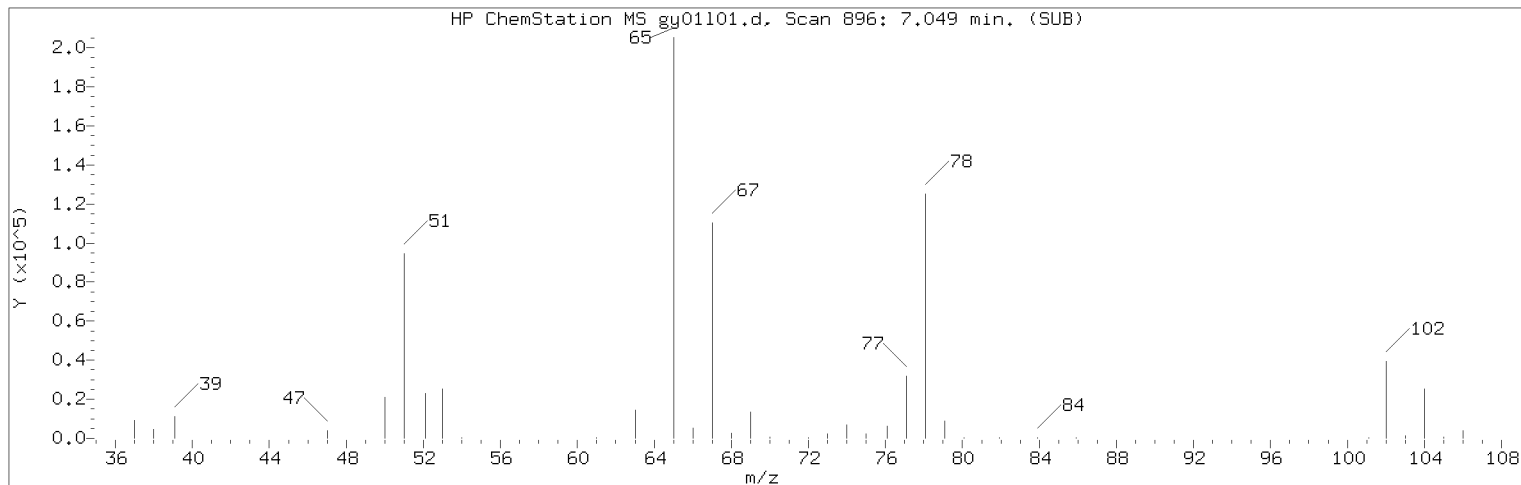
On-column Amount (ng) : 3.5027

Integration start scan : 193 Integration stop scan: 232

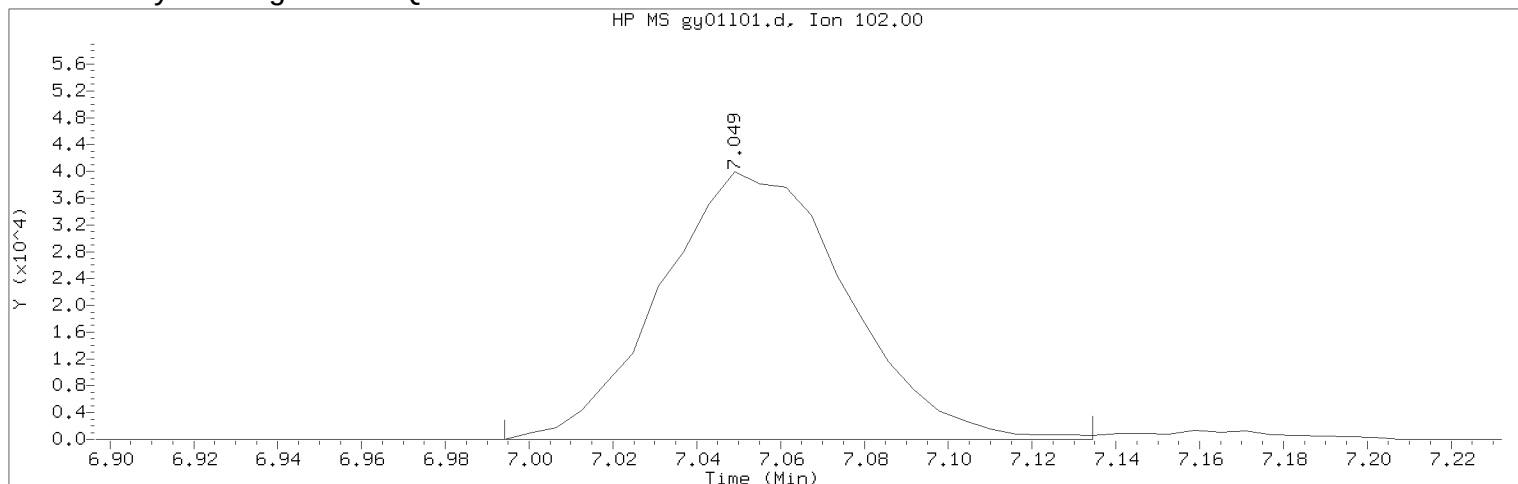
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature user FKP52j Page 518 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 57

Compound Name : 1,2-Dichloroethane-d4

Scan Number : 896

Retention Time (minutes): 7.049

Quant Ion : 102.00

Area (flag) : 122823M

On-Column Amount (ng) : 10.0010

Integration start scan : 886

Integration stop scan: 909

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

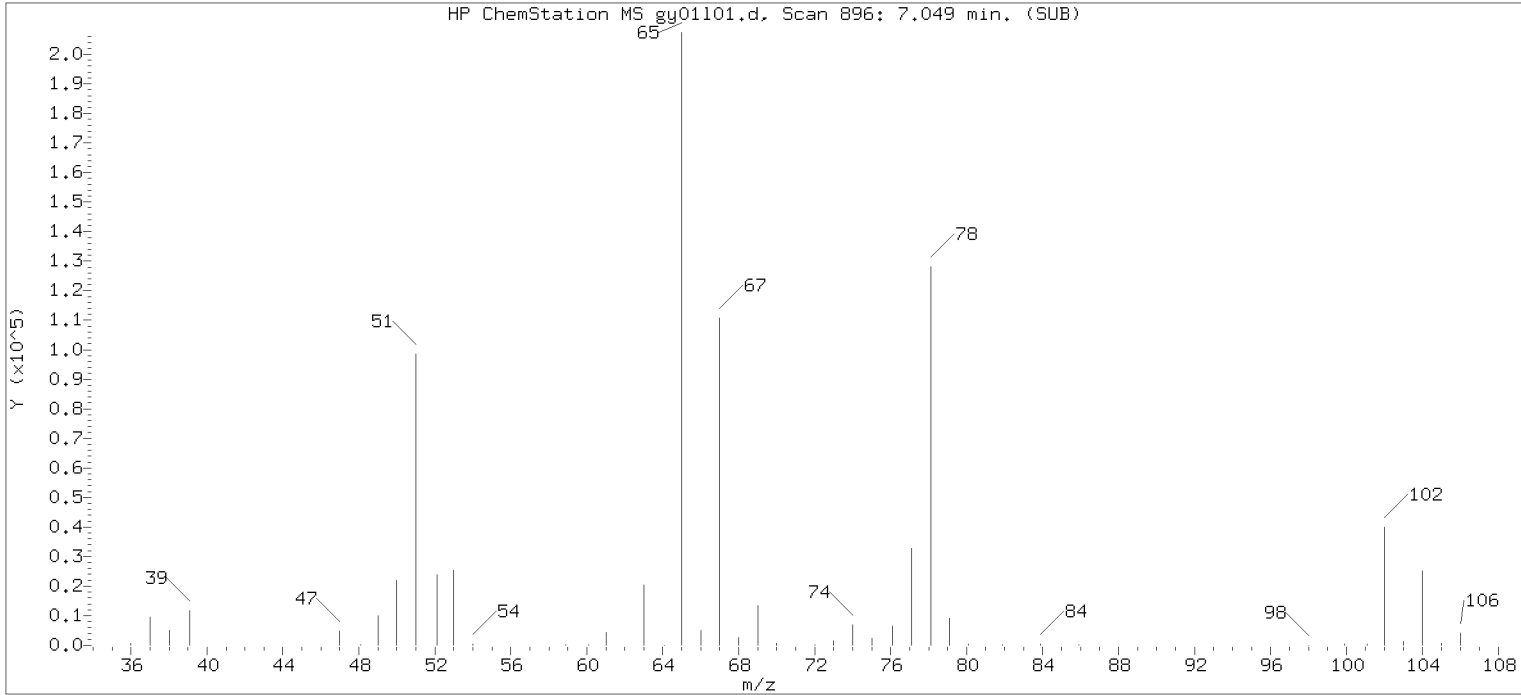
Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.

Target 3.5 esignature user ID: jkh09052

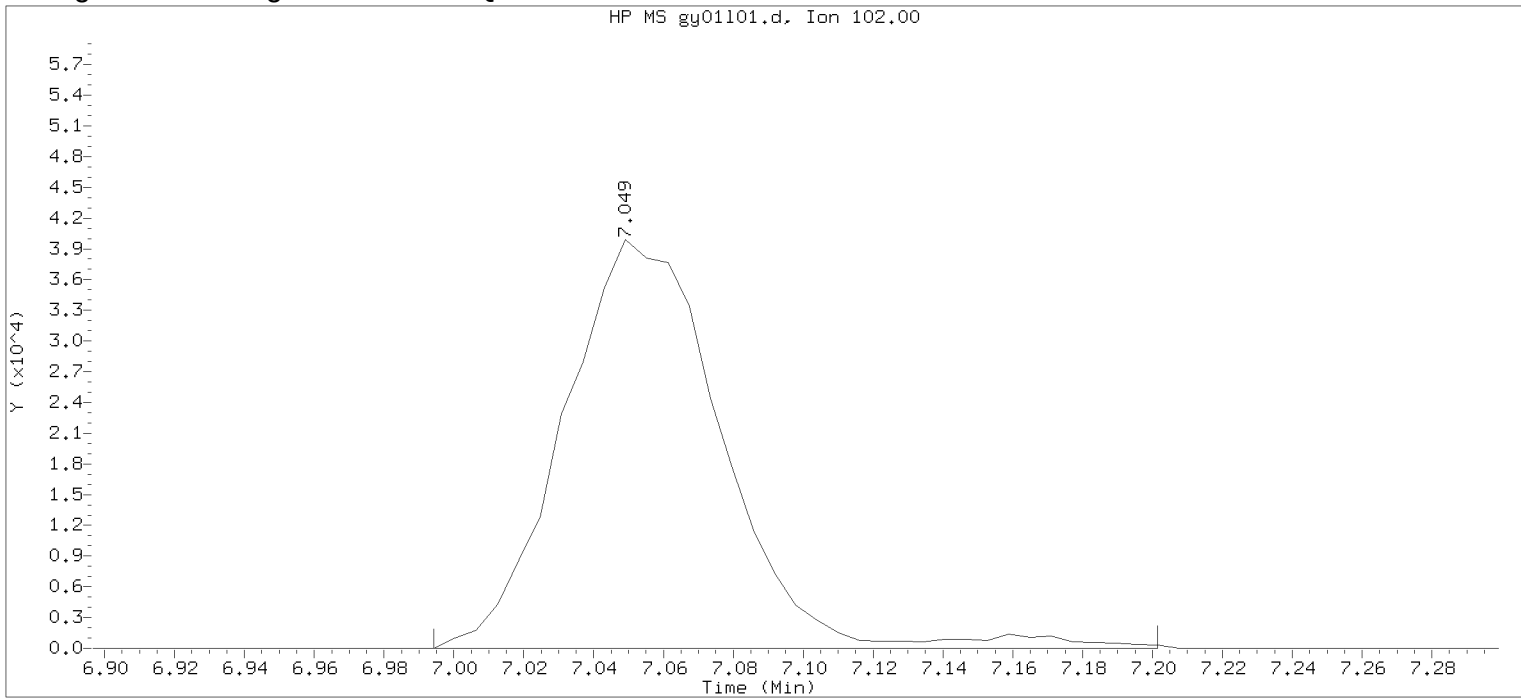
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 57

Compound Name : 1,2-Dichloroethane-d4

Scan Number : 896

Retention Time (minutes): 7.049

Quant Ion : 102.00

Area : 125904

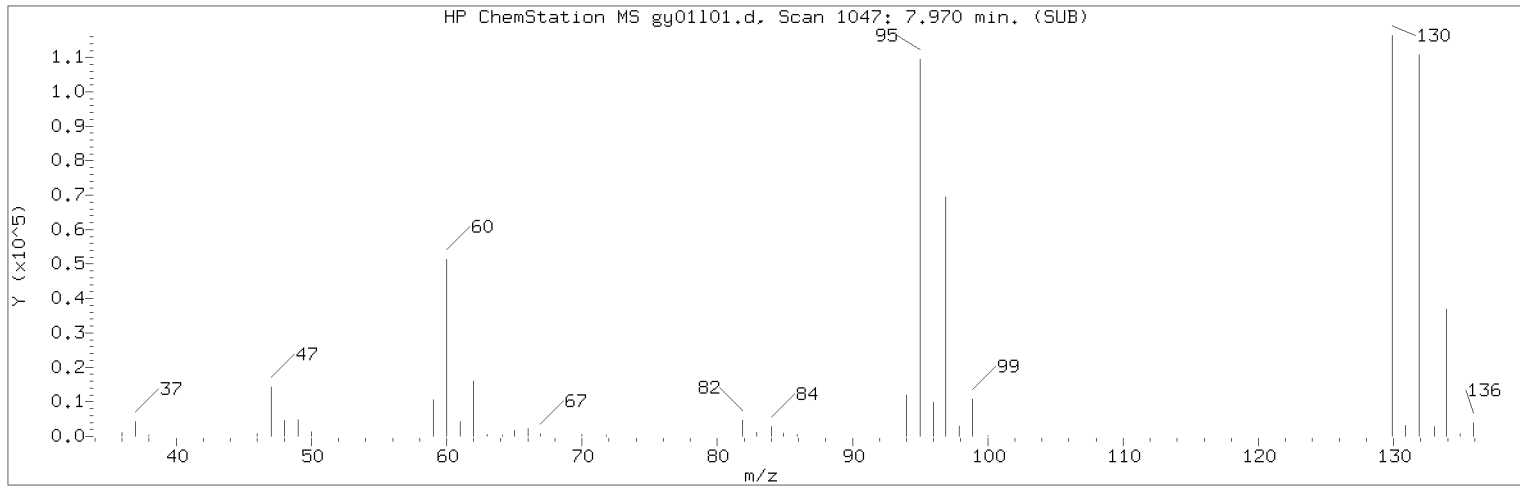
On-column Amount (ng) : 10.2519

Integration start scan : 886 Integration stop scan: 920

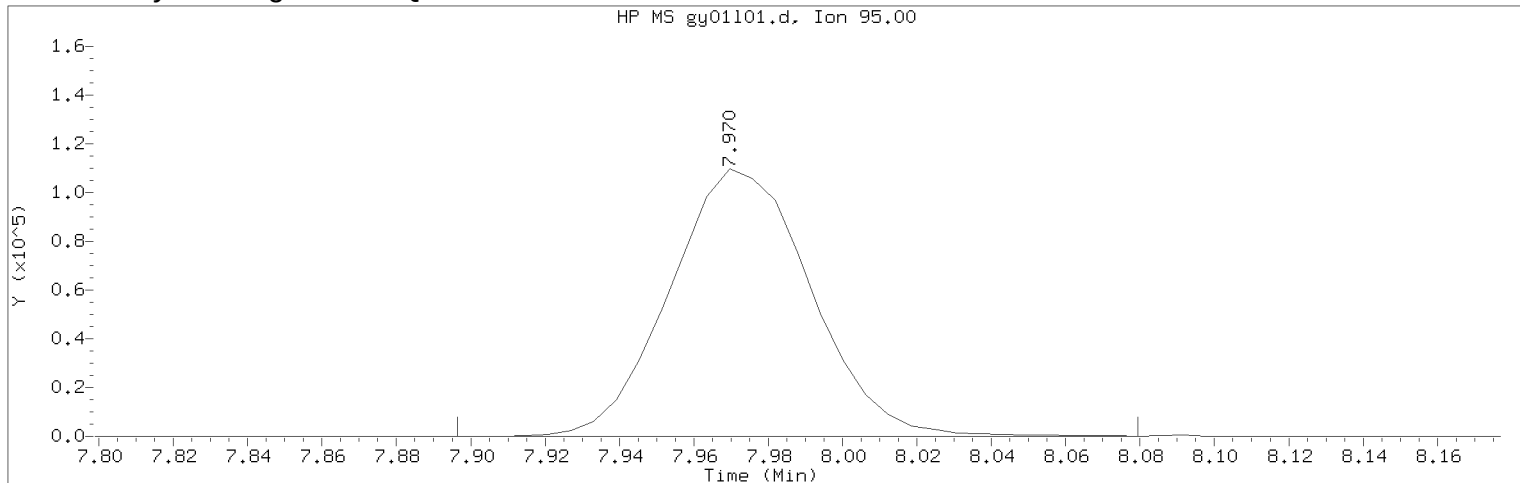
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature userF1D52jR4g00520 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number	: 67	
Compound Name	: Trichloroethene	
Scan Number	: 1047	
Retention Time (minutes)	: 7.970	
Quant Ion	: 95.00	
Area (flag)	: 288546M	
On-Column Amount (ng)	: 4.6498	
Integration start scan	: 1034	Integration stop scan: 1064
Y at integration start	: 0	Y at integration end: 0

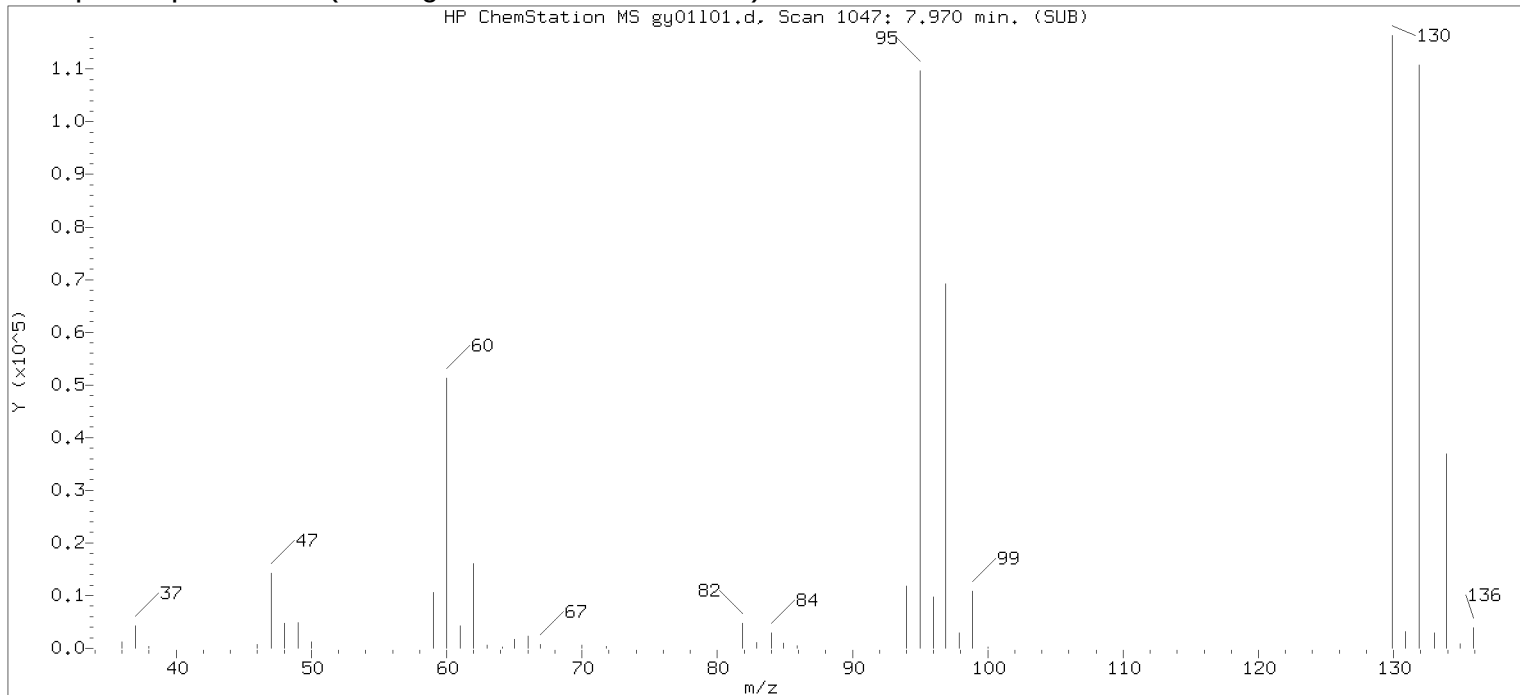
Reason for manual integration: improper integration

Analyst responsible for change:

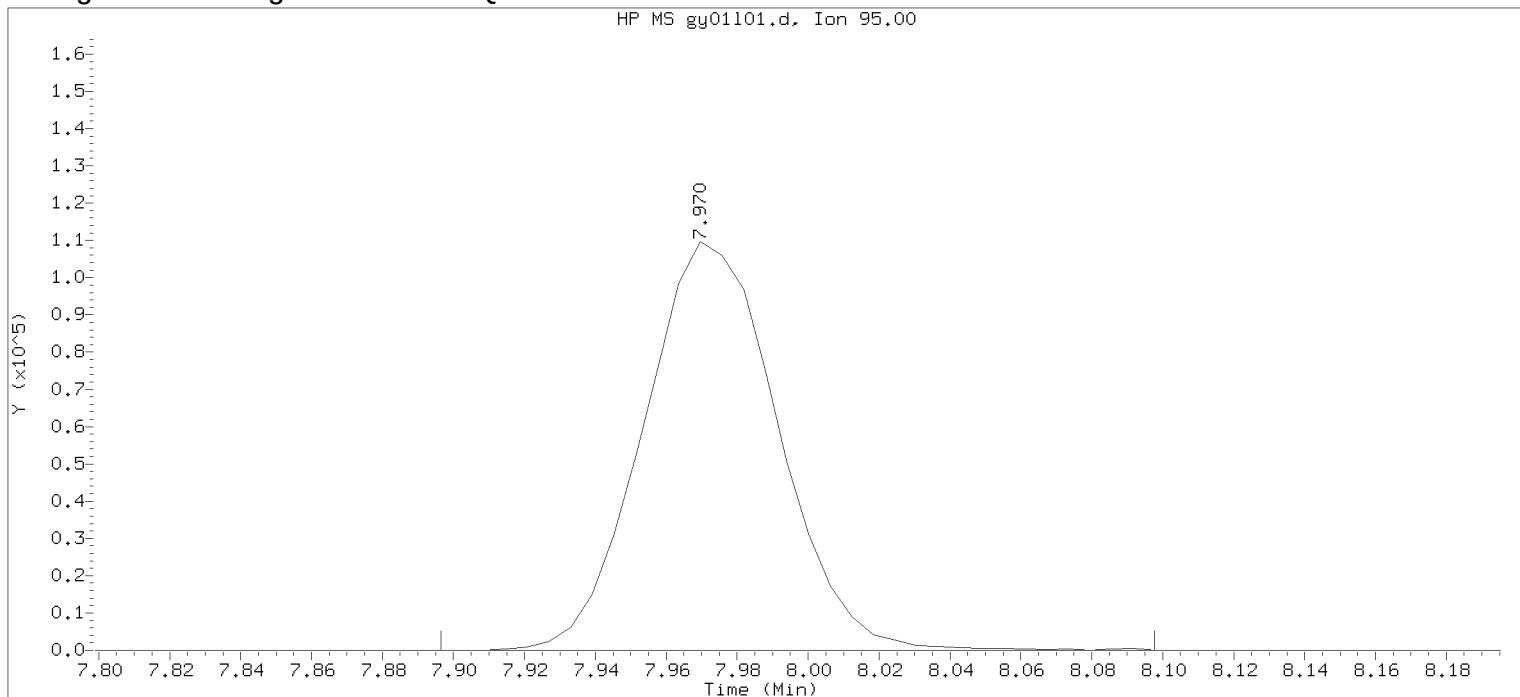
Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d Instrument ID: HP16334.i
Injection date and time: 01-MAY-2018 08:11 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 08:05
Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

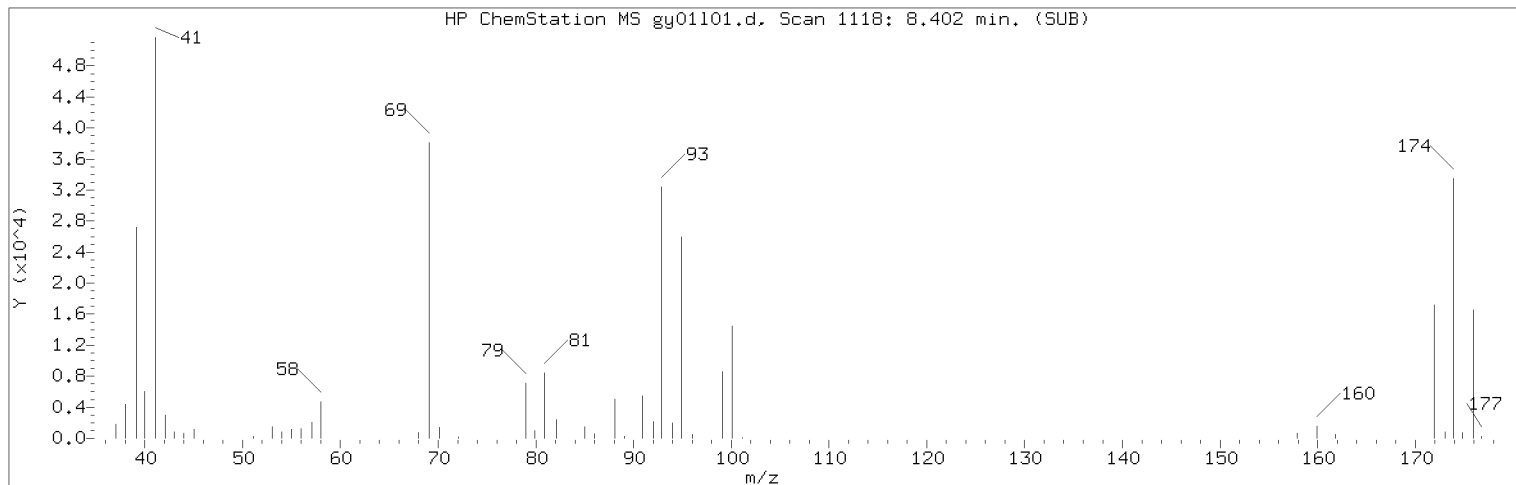
Sample Name: LCSG14

Lab Sample ID: LCSG14

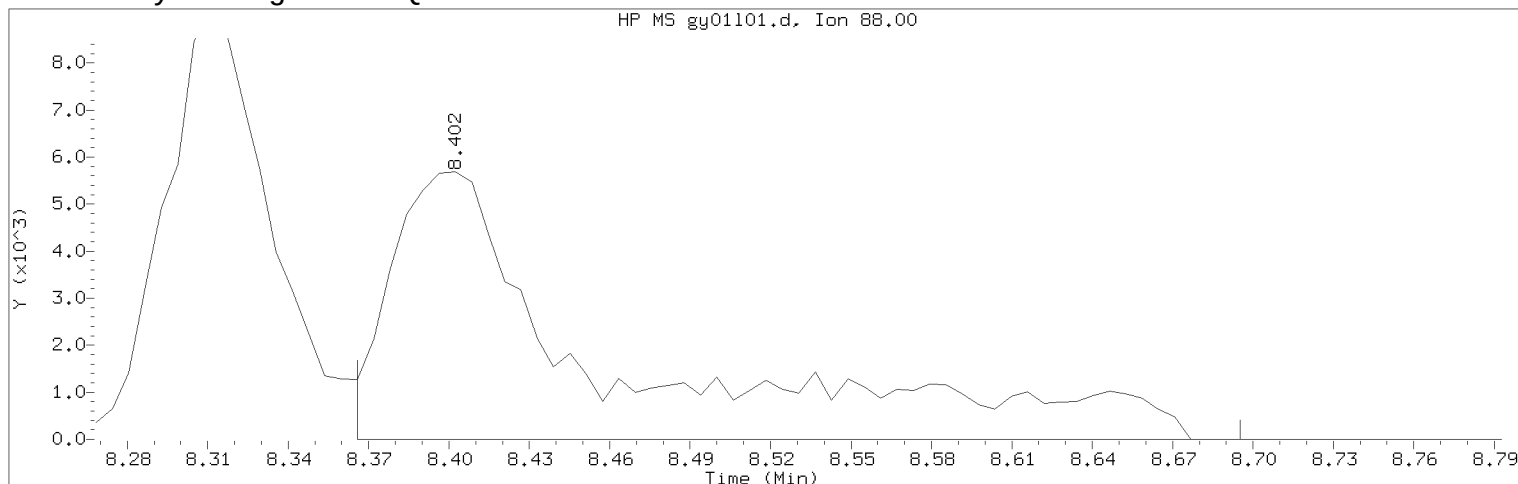
Compound Number	: 67	
Compound Name	: Trichloroethene	
Scan Number	: 1047	
Retention Time (minutes)	: 7.970	
Quant Ion	: 95.00	
Area	: 288827	
On-column Amount (ng)	: 4.6543	
Integration start scan	: 1034	Integration stop scan: 1067
Y at integration start	: 0	Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature user F1D52jR49052 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

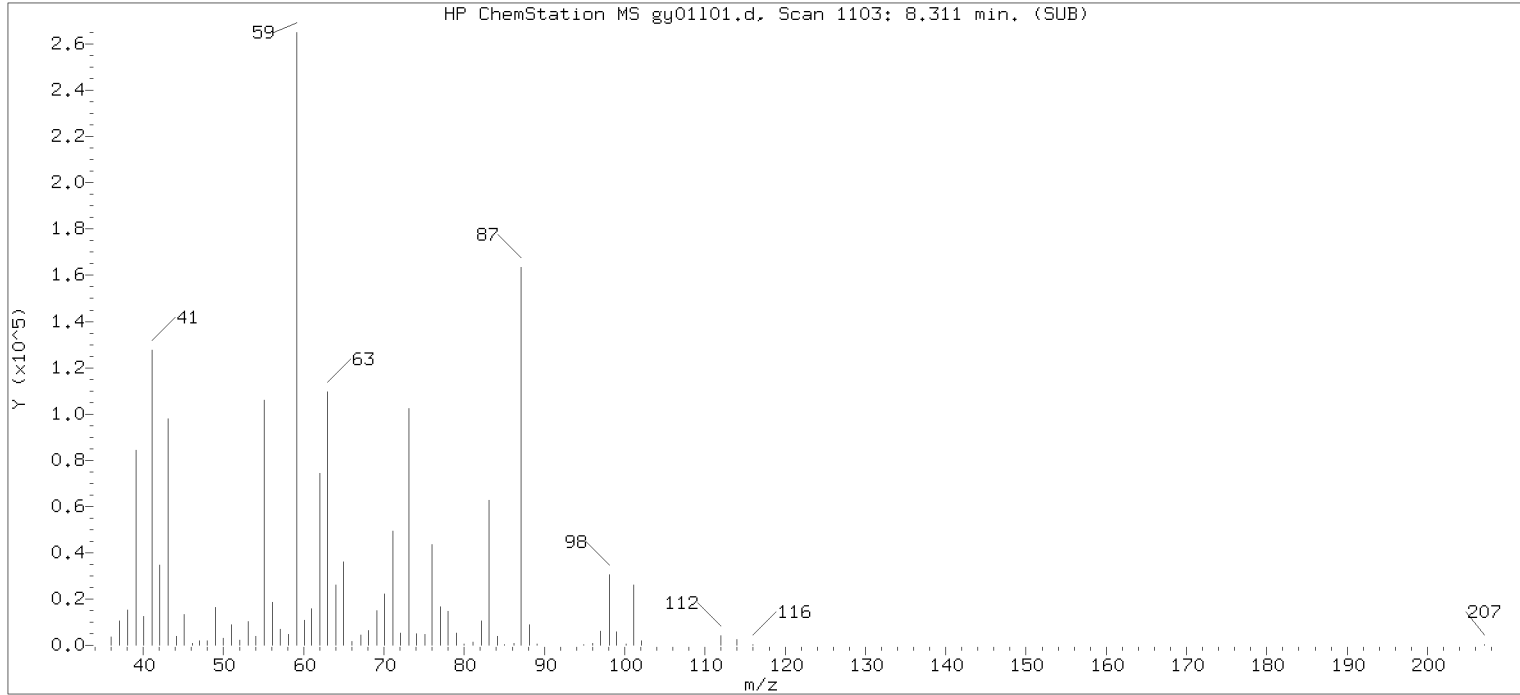
Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1118	
Retention Time (minutes)	: 8.402	
Quant Ion	: 88.00	
Area (flag)	: 31910M	
On-Column Amount (ng)	: 154.9208	
Integration start scan	: 1111	Integration stop scan: 1165
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

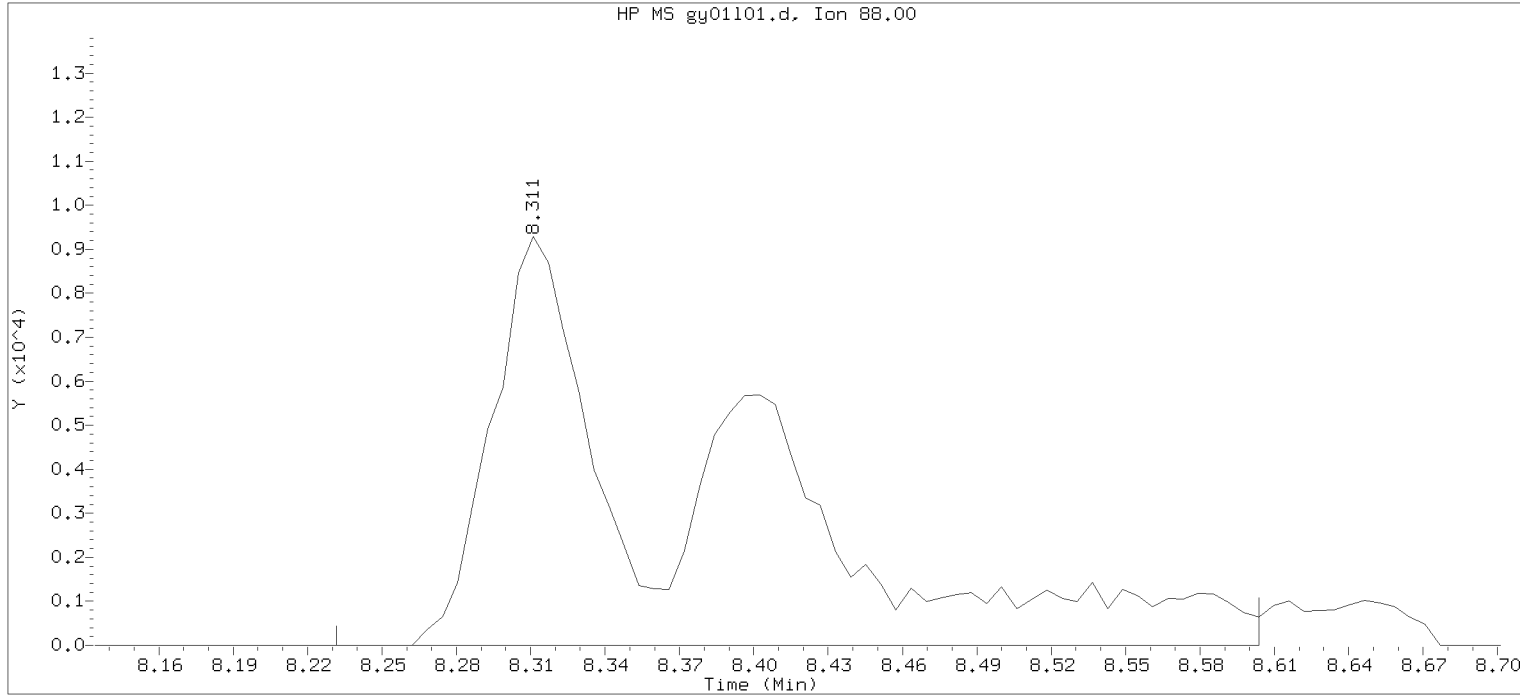
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

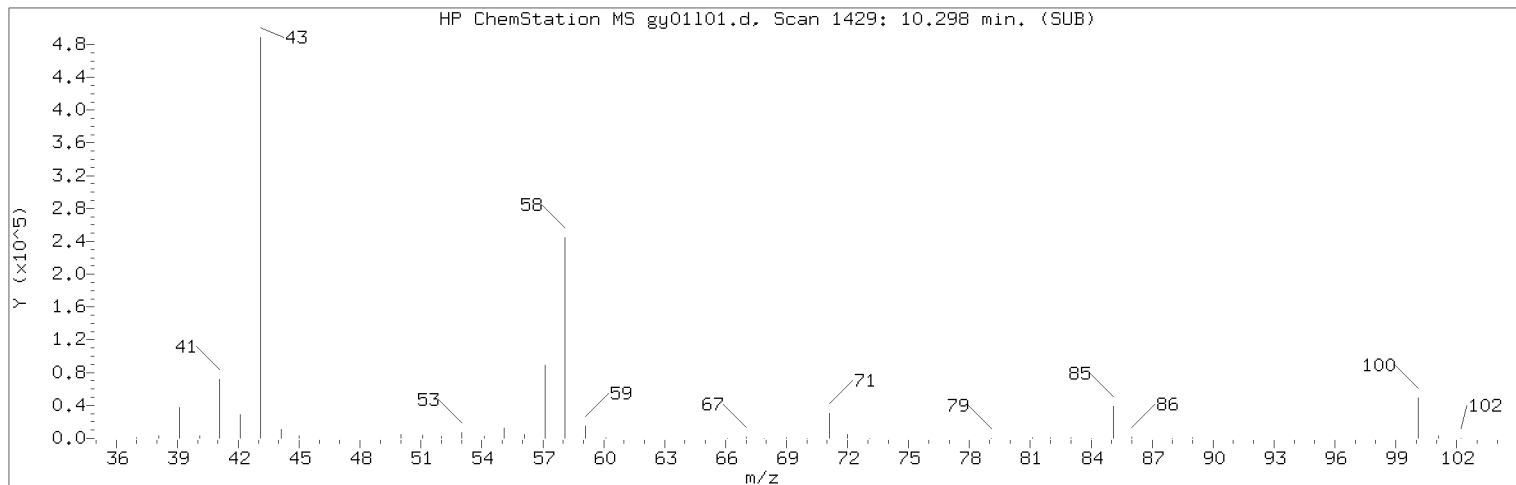
Lab Sample ID: LCSG14

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1103
 Retention Time (minutes): 8.311
 Quant Ion : 88.00
 Area : 53265
 On-column Amount (ng) : 258.6007
 Integration start scan : 1089
 Y at integration start : 0

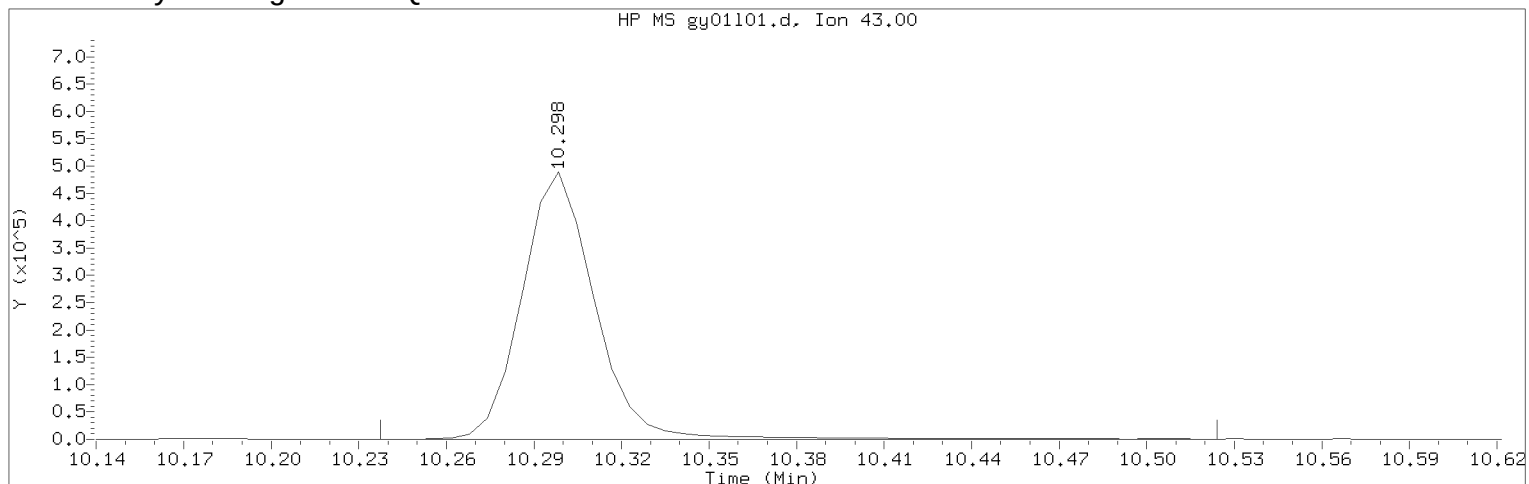
Integration stop scan: 1150
 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
 Target 3.5 esignature userF1D52jR4g00522 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

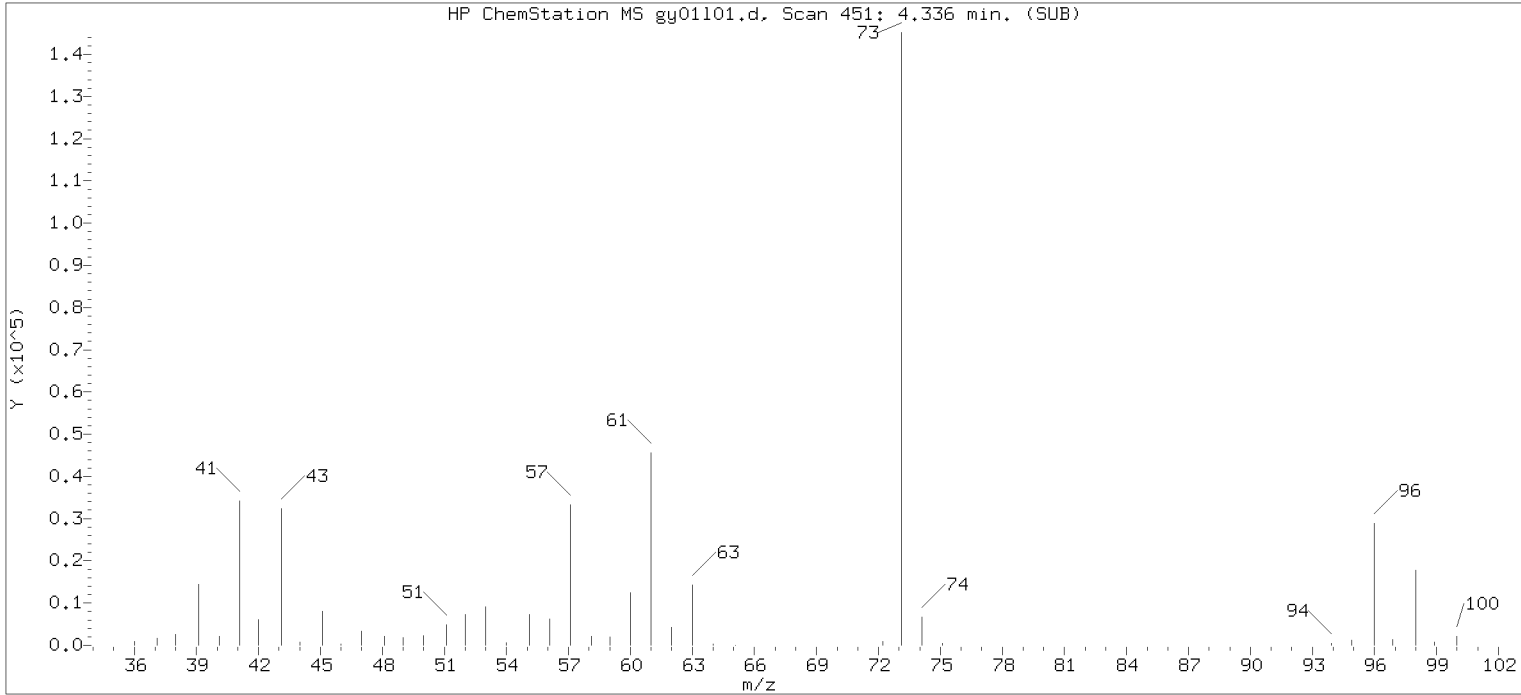
Compound Number	: 91	
Compound Name	: 2-Hexanone	
Scan Number	: 1429	
Retention Time (minutes)	: 10.298	
Quant Ion	: 43.00	
Area (flag)	: 851265M	
On-Column Amount (ng)	: 25.8510	
Integration start scan	: 1418	Integration stop scan: 1465
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

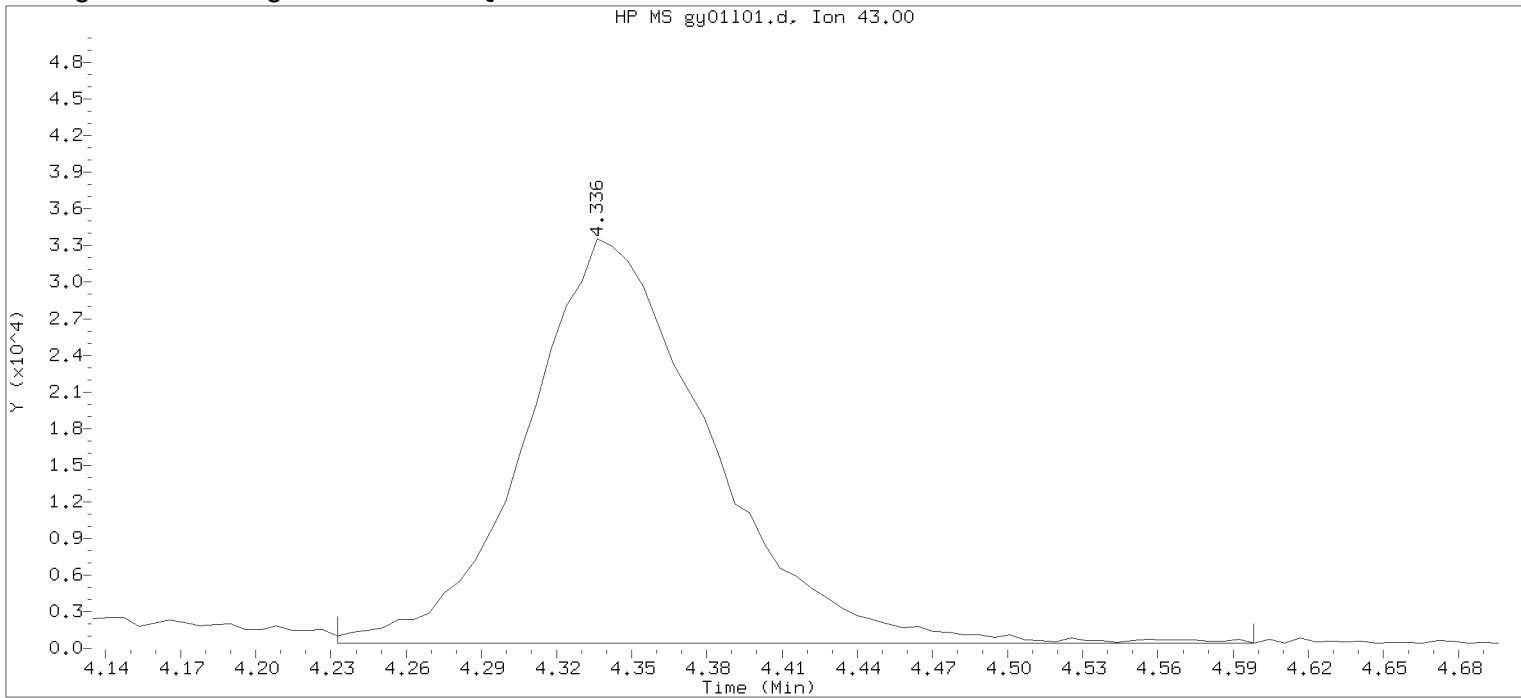
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

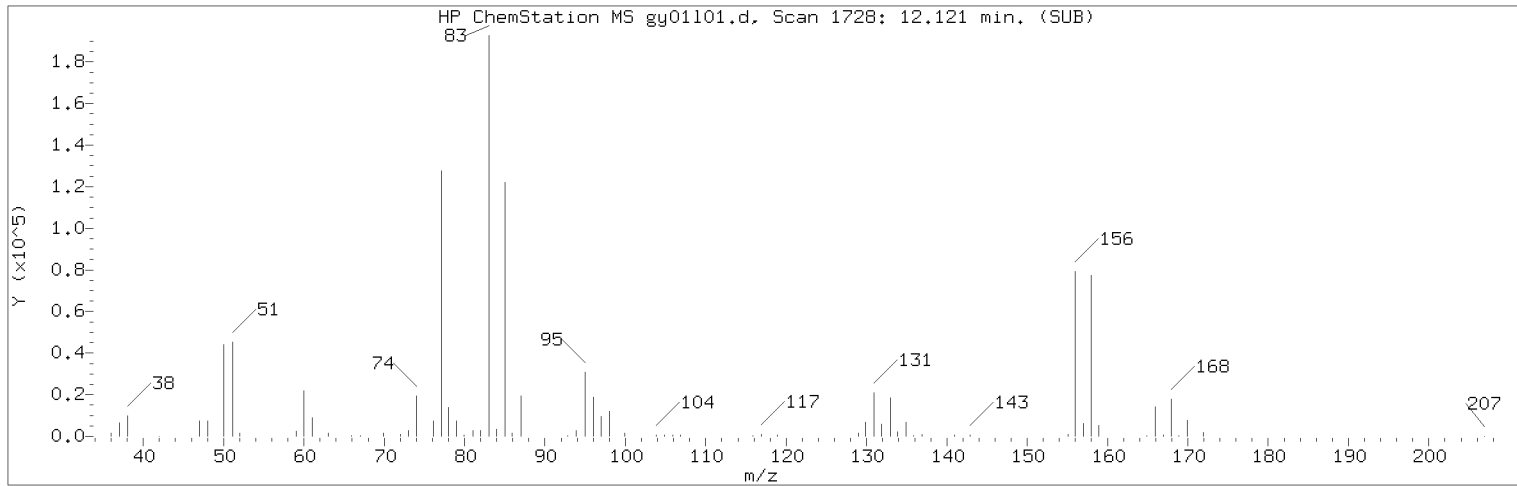
Lab Sample ID: LCSG14

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 451
Retention Time (minutes): 4.336
Quant Ion : 43.00
Area : 169182
On-column Amount (ng) : 5.1377
Integration start scan : 433
Y at integration start : 406

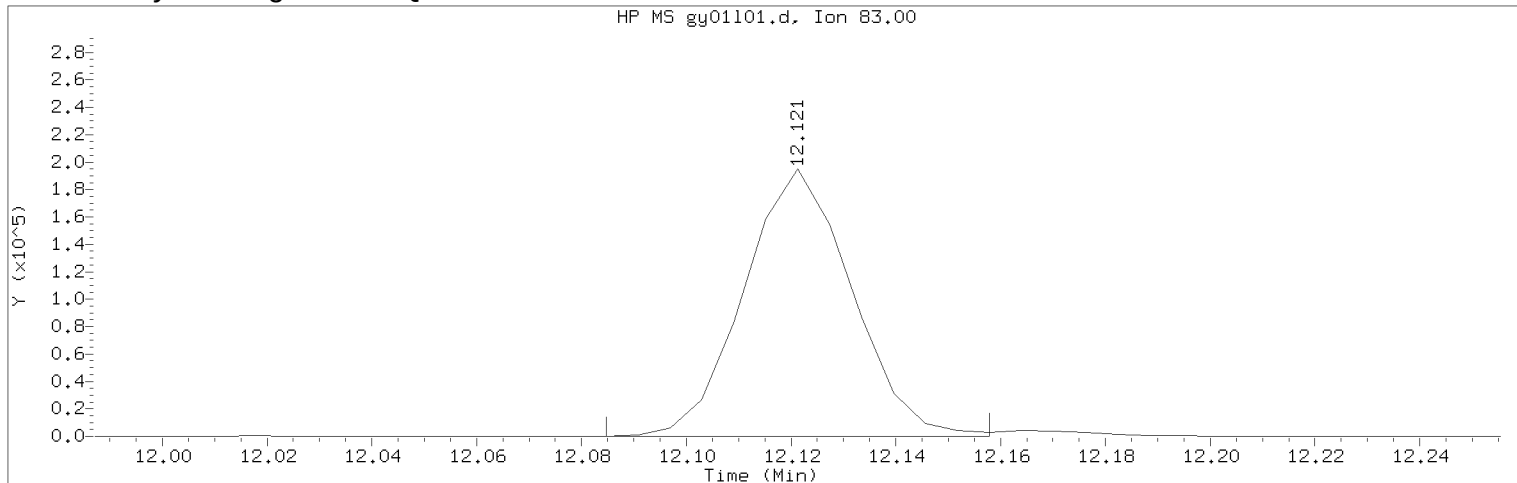
Integration stop scan: 493
Y at integration end: 406

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature user FKP52j Page 522 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1728	
Retention Time (minutes)	: 12.121	
Quant Ion	: 83.00	
Area (flag)	: 277365M	
On-Column Amount (ng)	: 4.4987	
Integration start scan	: 1721	Integration stop scan: 1733
Y at integration start	: 0	Y at integration end: 57

Reason for manual integration: improper integration

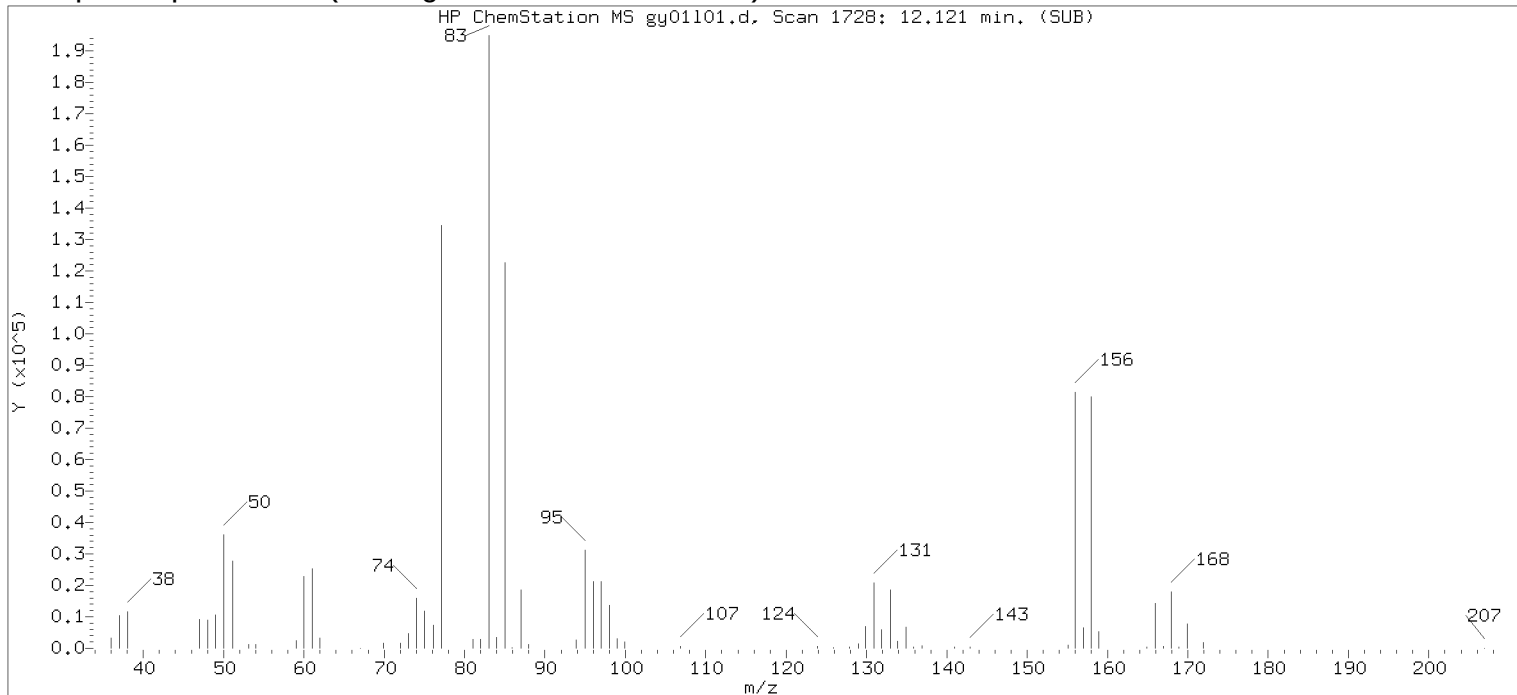
Analyst responsible for change:

Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

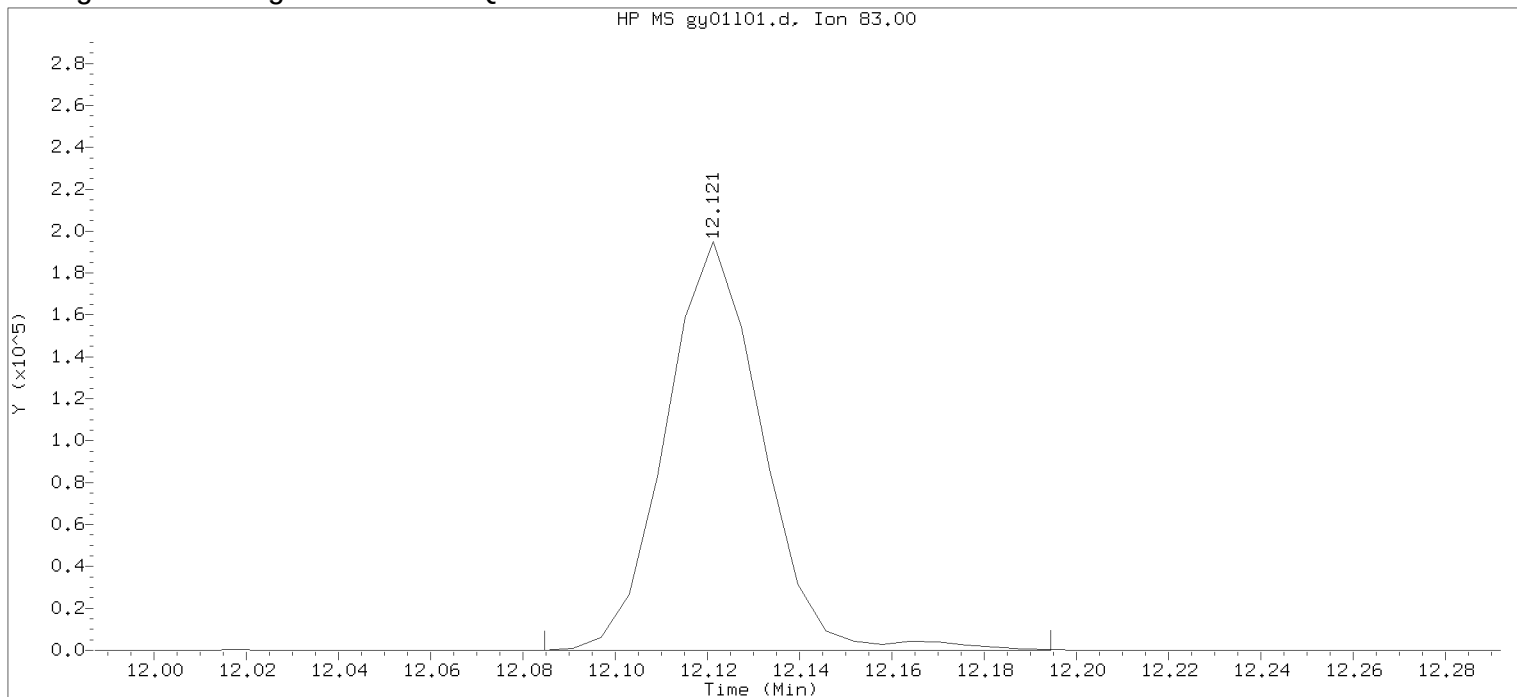
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1728

Retention Time (minutes): 12.121

Quant Ion : 83.00

Area : 281960

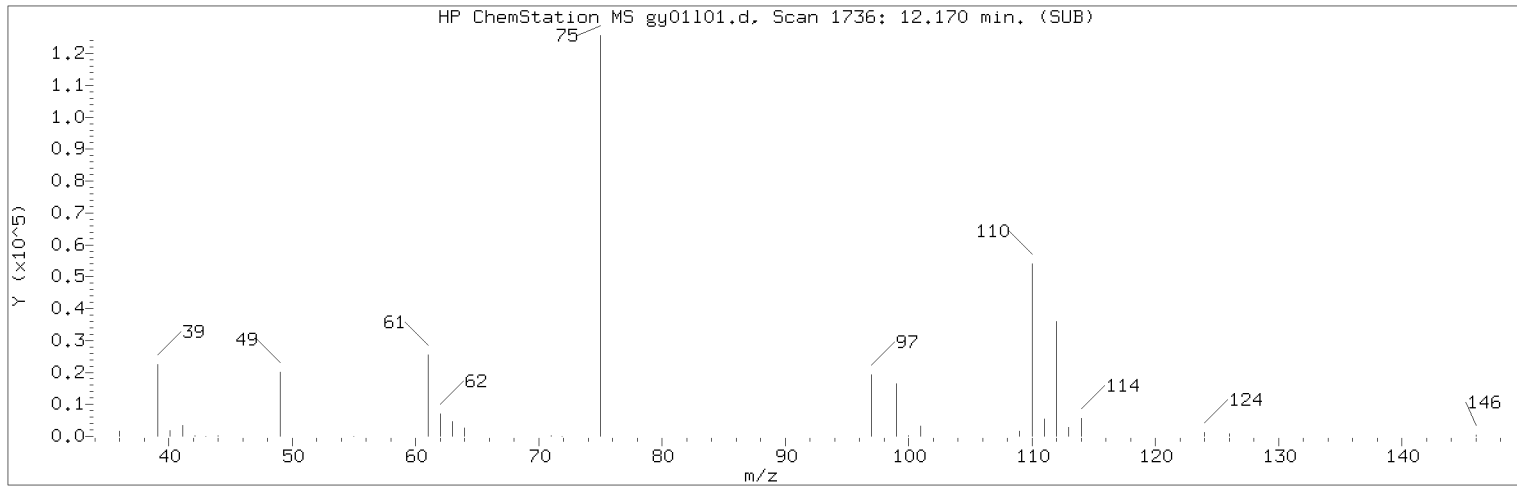
On-column Amount (ng) : 4.5733

Integration start scan : 1721 Integration stop scan: 1739

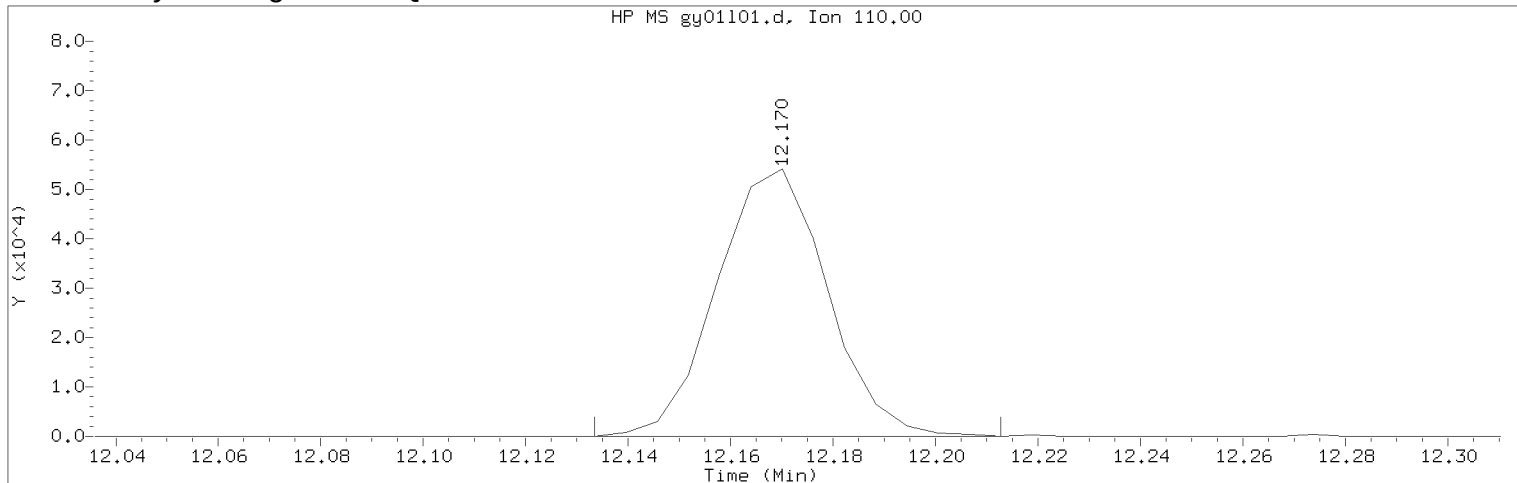
Y at integration start : 0 Y at integration end: 87

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature userF1D52jPhg0052 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCSG14

Lab Sample ID: LCSG14

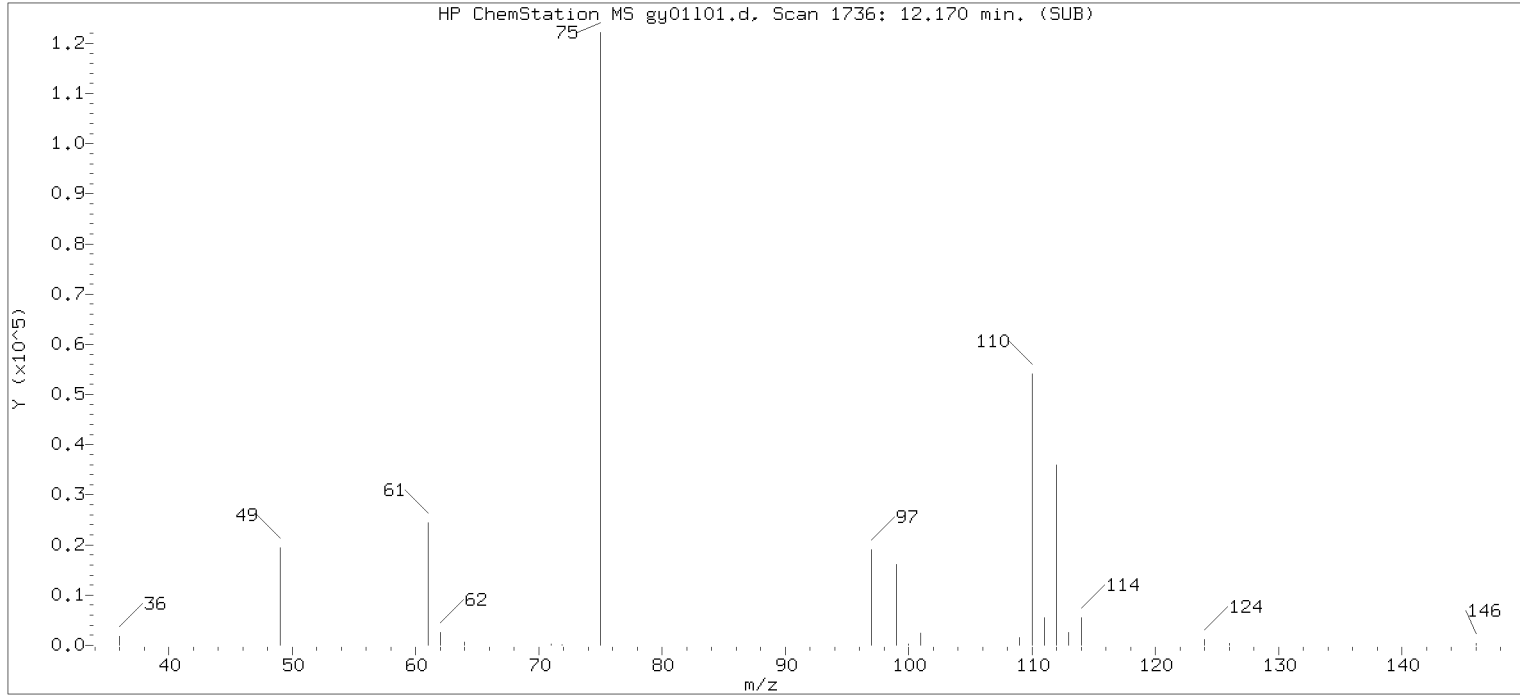
Compound Number	: 116	
Compound Name	: 1,2,3-Trichloropropane	
Scan Number	: 1736	
Retention Time (minutes)	: 12.170	
Quant Ion	: 110.00	
Area (flag)	: 81052M	
On-Column Amount (ng)	: 4.7029	
Integration start scan	: 1729	Integration stop scan: 1742
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

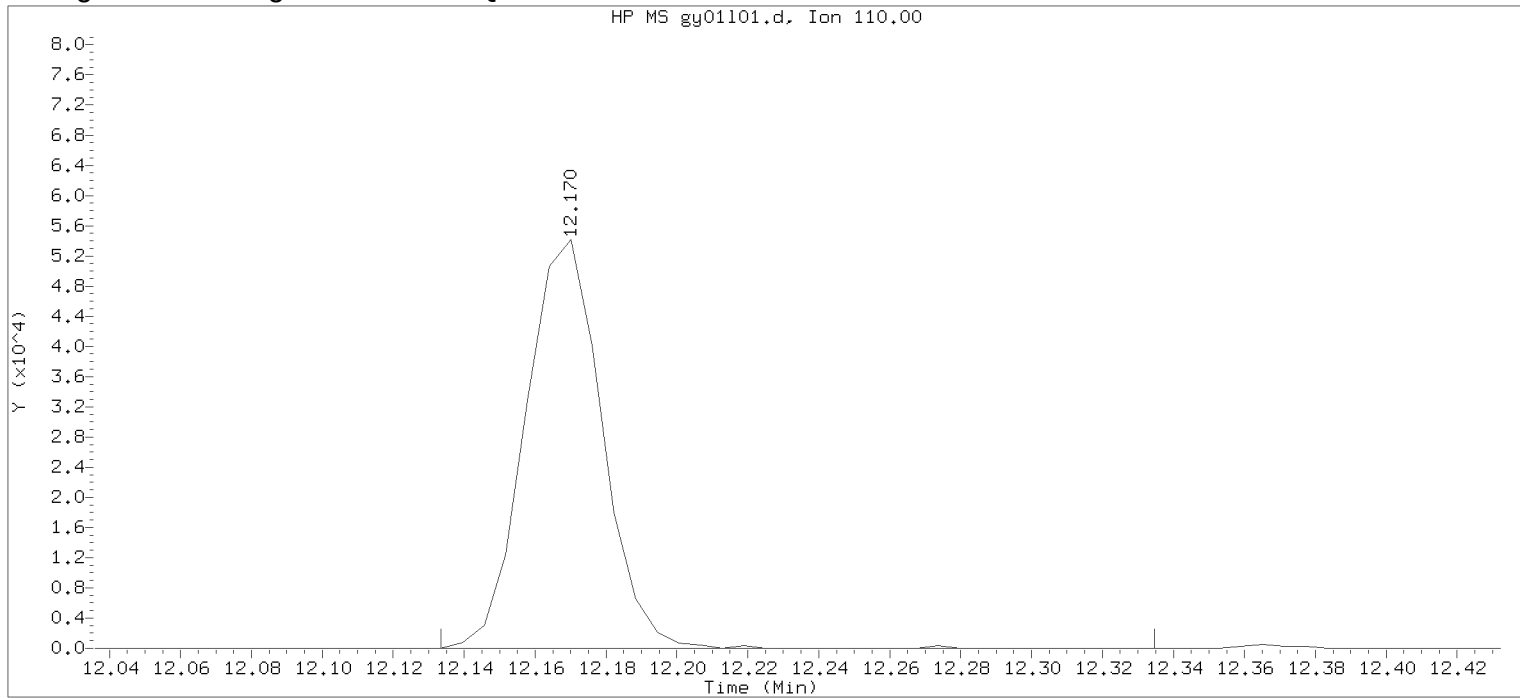
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/02/2018 at 08:28.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 08:30.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01101.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:11

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:28 Automation

Sample Name: LCSG14

Lab Sample ID: LCSG14

Compound Number : 116

Compound Name : 1,2,3-Trichloropropane

Scan Number : 1736

Retention Time (minutes): 12.170

Quant Ion : 110.00

Area : 81299

On-column Amount (ng) : 4.7172

Integration start scan : 1729 Integration stop scan: 1762

Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/02/2018 at 08:28.
Target 3.5 esignature userF1P52jR1g00530 of 730

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l02.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.7	
74-87-3	Chloromethane	4.1	
75-01-4	Vinyl Chloride	4.4	
106-99-0	1,3-Butadiene	3.1	
74-83-9	Bromomethane	4.7	
75-00-3	Chloroethane	4.4	
75-43-4	Dichlorofluoromethane	4.7	
75-69-4	Trichlorofluoromethane	4.6	
60-29-7	Ethyl ether	3.3	
354-23-4	Freon 123a	4.5	
107-02-8	Acrolein	38	
67-64-1	Acetone	33	
75-35-4	1,1-Dichloroethene	4.9	
76-13-1	Freon 113	4.6	
74-88-4	Methyl Iodide	4.5	
75-15-0	Carbon Disulfide	4.1	
79-20-9	Methyl Acetate	5.4	
107-05-1	Allyl Chloride	4.1	
75-09-2	Methylene Chloride	4.1	
75-65-0	t-Butyl Alcohol	44	
107-13-1	Acrylonitrile	26	
1634-04-4	Methyl Tertiary Butyl Ether	4.4	
156-60-5	trans-1,2-Dichloroethene	4.8	
110-54-3	n-Hexane	4.4	
75-34-3	1,1-Dichloroethane	4.5	
108-20-3	di-Isopropyl Ether	4.3	
126-99-8	2-Chloro-1,3-Butadiene	4.2	
637-92-3	Ethyl t-butyl ether	4.3	
78-93-3	2-Butanone	36	
156-59-2	cis-1,2-Dichloroethene	4.8	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l02.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
540-59-0-----	1,2-Dichloroethene (Total)	9.5		
594-20-7-----	2,2-Dichloropropane	4.5		
107-12-0-----	Propionitrile	39		
126-98-7-----	Methacrylonitrile	40		
74-97-5-----	Bromochloromethane	4.8		
109-99-9-----	Tetrahydrofuran	27		
67-66-3-----	Chloroform	4.5		
71-55-6-----	1,1,1-Trichloroethane	4.7		
110-82-7-----	Cyclohexane	4.4		
56-23-5-----	Carbon Tetrachloride	4.7		
563-58-6-----	1,1-Dichloropropene	4.4		
78-83-1-----	Isobutyl Alcohol	110		
71-43-2-----	Benzene	4.6		
107-06-2-----	1,2-Dichloroethane	4.1		
994-05-8-----	t-Amyl methyl ether	4.5		
142-82-5-----	n-Heptane	4.3		
71-36-3-----	n-Butanol	240		
79-01-6-----	Trichloroethene	4.6		
108-87-2-----	Methylcyclohexane	4.6		
78-87-5-----	1,2-Dichloropropane	4.5		
80-62-6-----	Methyl Methacrylate	5.4		
123-91-1-----	1,4-Dioxane	150		
74-95-3-----	Dibromomethane	4.5		
75-27-4-----	Bromodichloromethane	4.5		
79-46-9-----	2-Nitropropane	4.5		
10061-01-5-----	cis-1,3-Dichloropropene	4.5		
108-10-1-----	4-Methyl-2-Pentanone	25		
108-88-3-----	Toluene	4.5		
10061-02-6-----	trans-1,3-Dichloropropene	4.4		
542-75-6-----	1,3-Dichloropropene (total)	8.9		

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l02.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
97-63-2	Ethyl Methacrylate		4.3	
79-00-5	1,1,2-Trichloroethane		4.7	
127-18-4	Tetrachloroethene		4.7	
142-28-9	1,3-Dichloropropane		4.3	
591-78-6	2-Hexanone		25	
124-48-1	Dibromochloromethane		4.7	
106-93-4	1,2-Dibromoethane		4.7	
108-90-7	Chlorobenzene		4.6	
630-20-6	1,1,1,2-Tetrachloroethane		4.7	
100-41-4	Ethylbenzene		4.5	
179601-23-1	m+p-Xylene		9.3	
95-47-6	o-Xylene		4.6	
1330-20-7	Xylene (Total)		14	
100-42-5	Styrene		4.7	
75-25-2	Bromoform		4.6	
98-82-8	Isopropylbenzene		4.6	
79-34-5	1,1,2,2-Tetrachloroethane		4.5	
108-86-1	Bromobenzene		4.6	
96-18-4	1,2,3-Trichloropropane		4.7	
103-65-1	n-Propylbenzene		4.5	
95-49-8	2-Chlorotoluene		4.5	
108-67-8	1,3,5-Trimethylbenzene		4.5	
106-43-4	4-Chlorotoluene		4.6	
98-06-6	tert-Butylbenzene		4.6	
76-01-7	Pentachloroethane		4.9	
95-63-6	1,2,4-Trimethylbenzene		4.5	
135-98-8	sec-Butylbenzene		4.6	
541-73-1	1,3-Dichlorobenzene		4.6	
99-87-6	p-Isopropyltoluene		4.6	
106-46-7	1,4-Dichlorobenzene		4.6	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCDG14

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCDG14

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP16334.i/18may01a.b/gy01l02.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/01/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q

526-73-8-----	1,2,3-Trimethylbenzene	4.7	
100-44-7-----	Benzyl Chloride	4.7	
104-51-8-----	n-Butylbenzene	4.4	
95-50-1-----	1,2-Dichlorobenzene	4.6	
96-12-8-----	1,2-Dibromo-3-chloropropane	5.9	
108-70-3-----	1,3,5-Trichlorobenzene	4.5	
120-82-1-----	1,2,4-Trichlorobenzene	4.5	
87-68-3-----	Hexachlorobutadiene	4.6	
91-20-3-----	Naphthalene	4.5	
87-61-6-----	1,2,3-Trichlorobenzene	4.5	

LCDG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

LCDG14

Data file: /chem2/HP16334.i/18may01a.b/gy01l02.d

Injection date and time: 01-MAY-2018 08:33

Data file Sample Info. Line: LCDG14;LCDG14;1;3;LCSD;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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	3.952(0.006)	388	65	206790 (7)	50.00	
63) Fluorobenzene	7.482(0.006)	967	96	2404603 (7)	10.00	
97) Chlorobenzene-d5	11.012(0.000)	1546	117	1877047 (4)	10.00	
133) 1,4-Dichlorobenzene-d4	12.902(0.000)	1856	152	1082512 (4)	10.00	

Surrogate Standards	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	%Rec.	QC flags	QC Limits
50) Dibromofluoromethane	(2)	6.586(0.000)	113	596083	9.858	99%		80 - 120
57) 1,2-Dichloroethane-d4	(2)	7.049(0.000)	102	126829	9.898	99%		80 - 120
82) Toluene-d8	(3)	9.530(0.000)	98	2451551	9.739	97%		80 - 120
111) 4-Bromofluorobenzene	(3)	12.018(0.000)	95	918620	9.534	95%		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)	1.824(0.000)	85	337921	3.746	3.75			0.1	0.5
2) Chloromethane	(2)	2.014(0.001)	50	370866	4.084	4.08			0.2	0.5
5) Vinyl Chloride	(2)	2.123(0.001)	62	342579	4.396	4.40			0.1	0.5
6) 1,3-Butadiene	(2)	2.129(0.000)	39	509211	3.071	3.07			0.1	0.5
7) Bromomethane	(2)	2.440(0.000)	94	242546	4.654	4.65			0.1	0.5
8) Chloroethane	(2)	2.520(0.000)	64	194023	4.370	4.37			0.1	0.5
9) Dichlorofluoromethane	(2)	2.739(0.001)	67	506032	4.726	4.73			0.2	0.5
10) Trichlorofluoromethane	(2)	2.806(0.001)	101	466222	4.587	4.59			0.1	0.5
11) Ethyl ether	(2)	3.019(0.001)	59	165948	3.275	3.28			0.1	0.5
12) Freon 123a	(2)	3.117(0.002)	67	321667	4.470	4.47			0.2	0.5
13) Acrolein	(1)	3.184(0.001)	56	271090	37.946	37.95			5	25
15) 1,1-Dichloroethene	(2)	3.324(0.000)	96	243456	4.892	4.89			0.1	0.5
16) Freon 113	(2)	3.367(0.000)	101	256348	4.569	4.57			0.2	0.5
14) Acetone	(1)	3.336(0.001)	43	383214	33.198	33.20			3	5
17) Methyl Iodide	(2)	3.513(0.000)	142	439580	4.548	4.55			0.1	0.5
18) Carbon Disulfide	(2)	3.617(0.000)	76	802923	4.066	4.07			0.4	1
22) Allyl Chloride	(2)	3.775(0.000)	41	470044	4.071	4.07			0.1	0.5
21) Methyl Acetate	(1)	3.739(0.001)	43	176282	5.418	5.42			0.3	1
23) Methylene Chloride	(2)	3.946(0.001)	84	274293	4.076	4.08			0.2	0.5
28) t-Butyl Alcohol	(1)	4.062(0.001)	59	172420	44.063	44.06			4	10
29) Acrylonitrile	(1)	4.263(-0.000)	53	332133	25.863	25.86			1	5
31) trans-1,2-Dichloroethene	(2)	4.354(0.000)	96	276513	4.781	4.78			0.1	0.5
30) Methyl Tertiary Butyl Ether	(2)	4.330(0.001)	73	761410	4.393	4.39			0.1	0.5
32) n-Hexane	(2)	4.781(0.000)	57	425050	4.352	4.35			0.1	0.5
33) 1,1-Dichloroethane	(2)	5.019(0.001)	63	536338	4.546	4.55			0.1	0.5
34) di-Isopropyl Ether	(2)	5.080(0.000)	45	1031955	4.272	4.27			0.1	0.5
35) 2-Chloro-1,3-Butadiene	(2)	5.135(0.000)	53	456155	4.224	4.22			0.1	0.5
37) Ethyl t-butyl ether	(2)	5.629(-0.000)	59	916221	4.320	4.32			0.1	0.5
39) cis-1,2-Dichloroethene	(2)	5.866(0.000)	96	309166	4.766	4.77			0.1	0.5
40) 1,2-Dichloroethene (Total)	(2)		96	585679	9.547	9.55			0.1	0.5
41) 2,2-Dichloropropane	(2)	5.891(0.000)	77	431209	4.456	4.46			0.1	0.5

LCDG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

LCDG14

Data file: /chem2/HP16334.i/18may01a.b/gy01l02.d

Injection date and time: 01-MAY-2018 08:33

Data file Sample Info. Line: LCDG14;LCDG14;1;3;LCSD;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.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

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
38) 2-Butanone	(1)	5.830(-0.002)	43	712611	35.880	35.88			1	5
42) Propionitrile	(1)	5.921(-0.000)	54	192662	39.233	39.23			2	10
45) Methacrylonitrile	(1)	6.141(-0.000)	67	625241	40.175	40.18			1	5
47) Bromochloromethane	(2)	6.214(0.000)	128	141897	4.764	4.76			0.1	0.5
48) Tetrahydrofuran	(1)	6.208(0.000)	71	127509	26.971	26.97			2	5
49) Chloroform	(2)	6.366(0.000)	83	507566	4.500	4.50			0.1	0.5
51) 1,1,1-Trichloroethane	(2)	6.598(-0.000)	97	452334	4.748	4.75			0.1	0.5
52) Cyclohexane	(2)	6.702(-0.000)	56	500999	4.384	4.38			0.1	0.5
55) 1,1-Dichloropropene	(2)	6.805(0.000)	75	392468	4.418	4.42			0.1	0.5
54) Carbon Tetrachloride	(2)	6.805(0.000)	117	364681	4.712	4.71			0.1	0.5
56) Isobutyl Alcohol	(1)	6.952(-0.001)	41	178751	114.940	114.94			10	25
58) Benzene	(2)	7.074(-0.000)	78	1119249	4.564	4.56			0.1	0.5
59) 1,2-Dichloroethane	(2)	7.153(0.000)	62	356608	4.108	4.11			0.1	0.5
60) t-Amyl methyl ether	(2)	7.269(-0.000)	73	811917	4.511	4.51			0.1	0.5
62) n-Heptane	(2)	7.494(-0.000)	43	500447	4.259	4.26			0.2	0.5
65) n-Butanol	(1)	7.842(-0.003)	56	291078	236.477	236.48			20	50
67) Trichloroethene	(2)	7.970(-0.000)	95	300165	4.636	4.64			0.1	0.5
69) Methylcyclohexane	(2)	8.281(-0.000)	83	510739	4.645	4.64			0.1	0.5
70) 1,2-Dichloropropane	(2)	8.305(-0.000)	63	305612	4.489	4.49			0.1	0.5
71) Methyl Methacrylate	(1)	8.384(-0.003)	69	159138	5.369	5.37			0.1	0.5
73) Dibromomethane	(2)	8.421(-0.000)	93	147778	4.549	4.55			0.1	0.5
72) 1,4-Dioxane	(1)	8.390(-0.001)	88	33089M	154.257	154.26			20	100
74) Bromodichloromethane	(2)	8.652(-0.000)	83	358830	4.502	4.50			0.1	0.5
76) 2-Nitropropane	(1)	8.915(-0.001)	41	45800M	4.511	4.51			1	5
80) cis-1,3-Dichloropropene	(2)	9.213(-0.001)	75	445396	4.523	4.52		J	0.1	0.5
81) 4-Methyl-2-Pentanone	(1)	9.384(-0.003)	43	1208850M	24.776	24.78			1	5
83) Toluene	(3)	9.610(-0.000)	92	724920	4.545	4.55			0.1	0.5
84) trans-1,3-Dichloropropene	(3)	9.878(-0.000)	75	382536	4.422	4.42			0.1	0.5
85) 1,3-Dichloropropene (total)	(3)		75	827932	8.945	8.95			0.1	0.5
86) Ethyl Methacrylate	(3)	9.939(-0.000)	69	337937M	4.333	4.33			0.1	0.5
88) 1,1,2-Trichloroethane	(3)	10.085(-0.000)	97	226444	4.708	4.71			0.1	0.5
89) Tetrachloroethene	(3)	10.170(-0.000)	166	347167	4.694	4.69			0.1	0.5
90) 1,3-Dichloropropane	(3)	10.250(-0.000)	76	381112	4.350	4.35			0.1	0.5
91) 2-Hexanone	(1)	10.298(-0.003)	43	870356M	25.380	25.38			1	5
93) Dibromochloromethane	(3)	10.469(-0.000)	129	251224	4.740	4.74			0.1	0.5
95) 1,2-Dibromoethane	(3)	10.585(-0.000)	107	214484	4.668	4.67			0.1	0.5
98) Chlorobenzene	(3)	11.042(0.000)	112	835916	4.576	4.58			0.1	0.5
99) 1,1,1,2-Tetrachloroethane	(3)	11.128(0.000)	131	286530	4.698	4.70			0.1	0.5
100) Ethylbenzene	(3)	11.128(0.000)	91	1428946	4.509	4.51			0.1	0.5
101) m+p-Xylene	(3)	11.243(0.000)	106	1117279	9.260	9.26			0.1	0.5
104) o-Xylene	(3)	11.573(0.000)	106	550679	4.553	4.55			0.1	0.5
105) Xylene (Total)	(3)		106	1667958	13.813	13.81			0.1	0.5
106) Styrene	(3)	11.591(0.000)	104	934359	4.707	4.71			0.1	0.5
107) Bromoform	(3)	11.749(0.000)	173	139261	4.567	4.57			0.1	0.5
108) Isopropylbenzene	(3)	11.877(-0.000)	105	1452310	4.610	4.61			0.1	0.5
113) 1,1,2,2-Tetrachloroethane	(4)	12.121(-0.000)	83	283363M	4.454	4.45			0.1	0.5
114) Bromobenzene	(4)	12.134(-0.000)	156	386212	4.623	4.62			0.1	0.5
116) 1,2,3-Trichloropropane	(4)	12.170(-0.000)	110	82841M	4.658	4.66			0.3	1
117) n-Propylbenzene	(4)	12.200(-0.000)	91	1741730	4.477	4.48			0.1	0.5
119) 2-Chlorotoluene	(4)	12.280(0.000)	126	351793	4.531	4.53			0.1	0.5
121) 1,3,5-Trimethylbenzene	(4)	12.341(-0.000)	105	1247164	4.477	4.48			0.1	0.5
122) 4-Chlorotoluene	(4)	12.371(-0.000)	126	368860	4.557	4.56			0.1	0.5
125) tert-Butylbenzene	(4)	12.578(-0.000)	134	264637	4.551	4.55			0.1	0.5
126) Pentachloroethane	(4)	12.615(0.000)	167	222985	4.939	4.94			0.2	0.5

M = Compound was manually integrated.

LCDG14

Lancaster Laboratories
Analysis Summary for GC/MS Volatiles

LCDG14

Data file: /chem2/HP16334.i/18may01a.b/gy01l02.d

Injection date and time: 01-MAY-2018 08:33

Data file Sample Info. Line: LCDG14;LCDG14;1;3;LCSD;;;gy01b01;

Instrument ID: HP16334.i Batch: G181211AA

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Blank Data file reference: /chem2/HP16334.i/18may01a.b/gy01b01.d

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1

Calibration date and time (Last Method Edit): 01-MAY-2018 09:16

Mid Level Daily Calibration Standard Reference: /chem2/HP16334.i/18may01a.b/gy01c01.d

Bottle Code: Matrix: WATER Level: Low

On-Column Amount units: ng In Sample Concentration units: ug/L

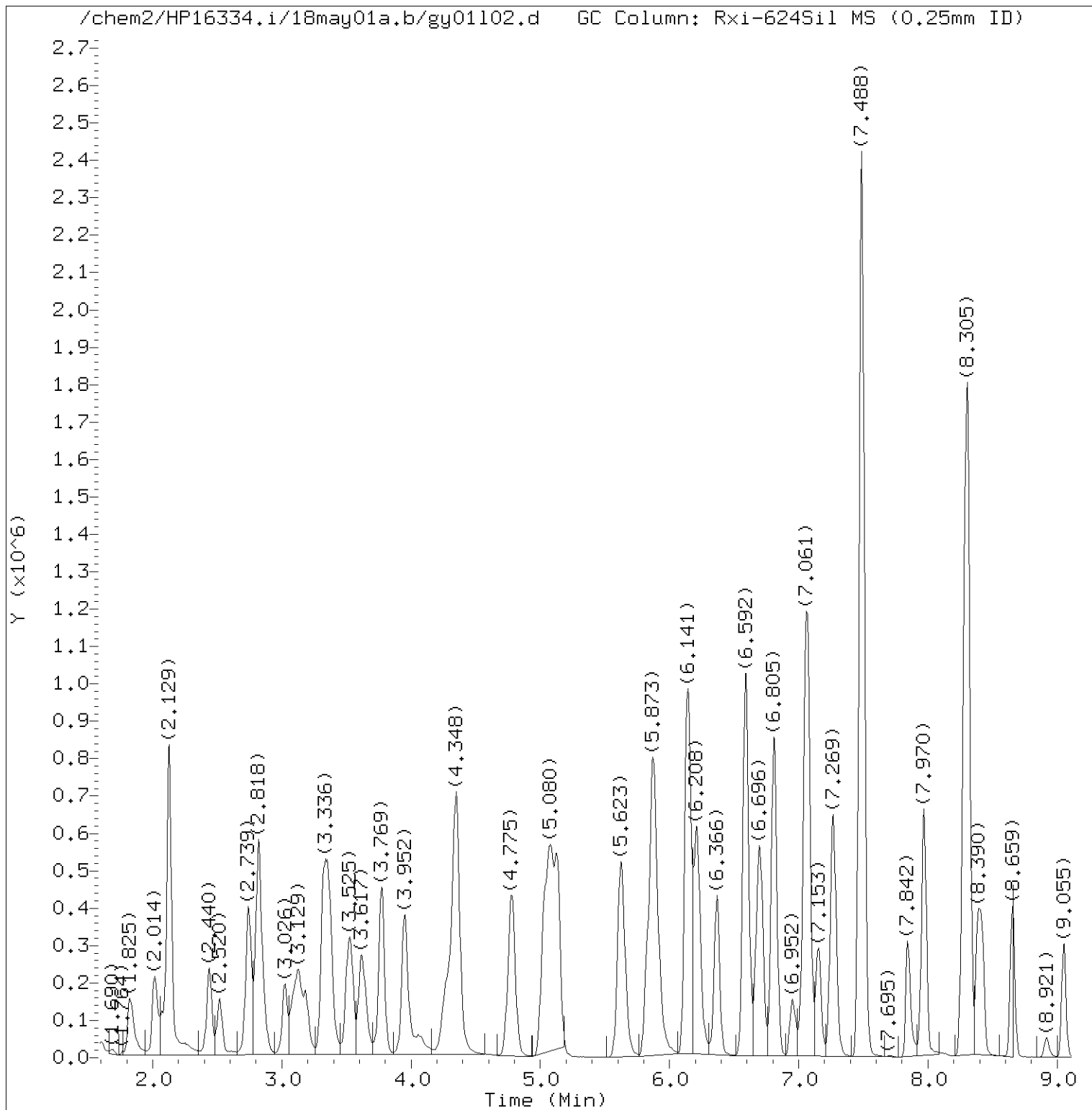
Sample Concentration Formula: On-Column Amount * (Vt/Vo) VOA Prep Factor: 1.00

Volume Purged (Vt): 25 ml Sample Volume (Vo): 25 ml

Target Compounds	I.S. Ref.	RT (+/-RRT)	QIon	Area	Conc. (on-column)	Conc. (in sample)	Blank Conc.	Qual.	Reporting	
									Limit (in sample)	LOQ
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
127) 1,2,4-Trimethylbenzene	(4)	12.621(-0.000)	105	1286983	4.530	4.53			0.1	0.5
128) sec-Butylbenzene	(4)	12.743(-0.000)	105	1625211	4.593	4.59			0.1	0.5
131) 1,3-Dichlorobenzene	(4)	12.841(0.000)	146	761651	4.587	4.59			0.1	0.5
132) p-Isopropyltoluene	(4)	12.853(-0.000)	119	1419210	4.595	4.60			0.1	0.5
134) 1,4-Dichlorobenzene	(4)	12.920(0.000)	146	778318	4.599	4.60			0.1	0.5
135) 1,2,3-Trimethylbenzene	(4)	12.926(0.000)	120	595020	4.658	4.66			0.1	0.5
136) Benzyl Chloride	(4)	12.993(0.000)	126	109052	4.719	4.72			0.1	0.5
138) n-Butylbenzene	(4)	13.139(0.000)	92	734599	4.421	4.42			0.1	0.5
139) 1,2-Dichlorobenzene	(4)	13.176(-0.000)	146	718704	4.587	4.59			0.1	0.5
143) 1,2-Dibromo-3-chloropropane	(1)	13.718(-0.006)	155	43367	5.919	5.92			0.2	0.5
144) 1,3,5-Trichlorobenzene	(4)	13.840(0.000)	180	628642	4.527	4.53			0.1	0.5
145) 1,2,4-Trichlorobenzene	(4)	14.261(0.000)	180	578820	4.493	4.49			0.1	0.5
146) Hexachlorobutadiene	(4)	14.340(0.000)	225	310428	4.572	4.57			0.1	0.5
147) Naphthalene	(4)	14.438(0.000)	128	966360	4.488	4.49			0.1	0.5
148) 1,2,3-Trichlorobenzene	(4)	14.578(0.000)	180	500789	4.547	4.55			0.1	0.5

Total number of targets = 100

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45. Target 3.5 esignature user ID: jkh09052



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01102.d
Injection date and time: 01-MAY-2018 08:33

Instrument ID: HP16334.i
Analyst ID: JKH09052

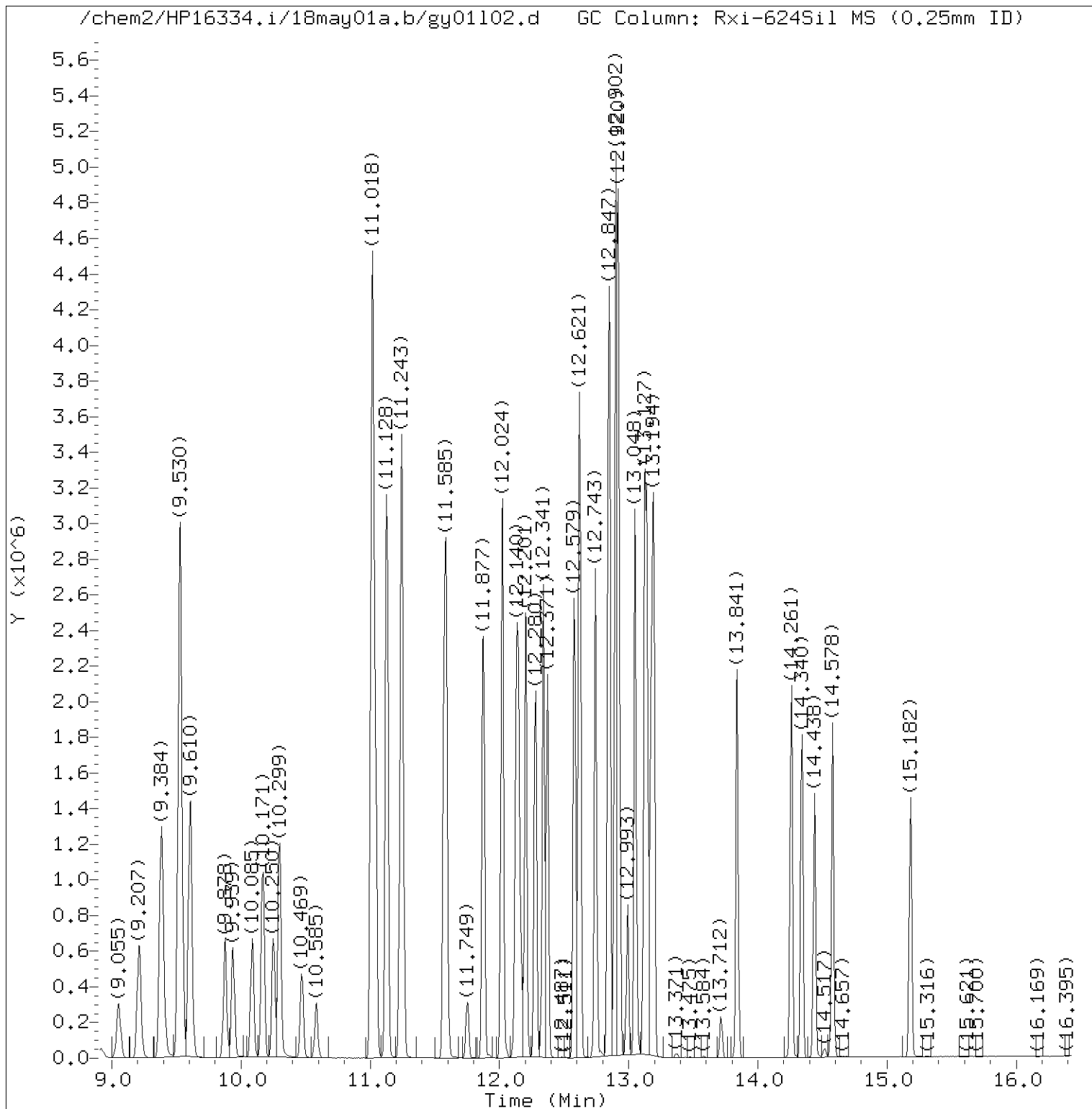
Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 09:16
Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 538 of 730



Total Ion Chromatogram (TIC)

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01102.d
Injection date and time: 01-MAY-2018 08:33

Instrument ID: HP16334.i
Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
Calibration date and time: 01-MAY-2018 09:16
Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052
FKP52 Page 539 of 730

page 2 of 2

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l02.d
 Injection date and time: 01-MAY-2018 08:33

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
1) Dichlorodifluoromethane	(2)	1.825	85	337921	3.746
2) Chloromethane	(2)	2.014	50	370866	4.084
5) Vinyl Chloride	(2)	2.123	62	342579	4.396
6) 1,3-Butadiene	(2)	2.129	39	509211	3.071
7) Bromomethane	(2)	2.440	94	242546	4.654
8) Chloroethane	(2)	2.520	64	194023	4.370
9) Dichlorofluoromethane	(2)	2.739	67	506032	4.726
10) Trichlorofluoromethane	(2)	2.806	101	466222	4.587
11) Ethyl ether	(2)	3.019	59	165948	3.275
12) Freon 123a	(2)	3.117	67	321667	4.470
13) Acrolein	(1)	3.184	56	271090	37.946
15) 1,1-Dichloroethene	(2)	3.324	96	243456	4.892
14) Acetone	(1)	3.336	43	383214	33.198
16) Freon 113	(2)	3.367	101	256348	4.569
17) Methyl Iodide	(2)	3.513	142	439580	4.548
18) Carbon Disulfide	(2)	3.617	76	802923	4.066
21) Methyl Acetate	(1)	3.739	43	176282	5.418
22) Allyl Chloride	(2)	3.775	41	470044	4.071
23) Methylene Chloride	(2)	3.946	84	274293	4.076
26)*t-Butyl Alcohol-d10	(1)	3.952	65	206790	50.000
28) t-Butyl Alcohol	(1)	4.062	59	172420	44.063
29) Acrylonitrile	(1)	4.263	53	332133	25.863
30) Methyl Tertiary Butyl Ether	(2)	4.330	73	761410	4.393
31) trans-1,2-Dichloroethene	(2)	4.355	96	276513	4.781
32) n-Hexane	(2)	4.781	57	425050	4.352
33) 1,1-Dichloroethane	(2)	5.019	63	536338	4.546
34) di-Isopropyl Ether	(2)	5.080	45	1031955	4.272
35) 2-Chloro-1,3-Butadiene	(2)	5.135	53	456155	4.224
37) Ethyl t-butyl ether	(2)	5.629	59	916221	4.320
38) 2-Butanone	(1)	5.830	43	712611	35.880
39) cis-1,2-Dichloroethene	(2)	5.866	96	309166	4.766
41) 2,2-Dichloropropane	(2)	5.891	77	431209	4.456
42) Propionitrile	(1)	5.921	54	192662	39.233
40) 1,2-Dichloroethene (Total)	(2)		96	585679	9.547
45) Methacrylonitrile	(1)	6.141	67	625241	40.175
48) Tetrahydrofuran	(1)	6.208	71	127509	26.971
47) Bromochloromethane	(2)	6.214	128	141897	4.764
49) Chloroform	(2)	6.366	83	507566	4.500

* = Compound is an internal standard.

page 1 of 3

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 on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052

FKP52 Page 540 of 730

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l02.d
 Injection date and time: 01-MAY-2018 08:33

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
50) \$Dibromofluoromethane	(2)	6.586	113	596083	9.858
51) 1,1,1-Trichloroethane	(2)	6.598	97	452334	4.748
52) Cyclohexane	(2)	6.702	56	500999	4.384
54) Carbon Tetrachloride	(2)	6.805	117	364681	4.712
55) 1,1-Dichloropropene	(2)	6.805	75	392468	4.418
56) Isobutyl Alcohol	(1)	6.952	41	178751	114.940
57) \$1,2-Dichloroethane-d4	(2)	7.049	102	126829	9.898
58) Benzene	(2)	7.074	78	1119249	4.564
59) 1,2-Dichloroethane	(2)	7.153	62	356608	4.108
60) t-Amyl methyl ether	(2)	7.269	73	811917	4.511
63) *Fluorobenzene	(2)	7.482	96	2404603	10.000
62) n-Heptane	(2)	7.494	43	500447	4.259
65) n-Butanol	(1)	7.842	56	291078	236.477
67) Trichloroethene	(2)	7.970	95	300165	4.636
69) Methylcyclohexane	(2)	8.281	83	510739	4.645
70) 1,2-Dichloropropane	(2)	8.305	63	305612	4.489
71) Methyl Methacrylate	(1)	8.384	69	159138	5.369
72) 1,4-Dioxane	(1)	8.390	88	33089M	154.257
73) Dibromomethane	(2)	8.421	93	147778	4.549
74) Bromodichloromethane	(2)	8.652	83	358830	4.502
76) 2-Nitropropane	(1)	8.915	41	45800M	4.511
80) cis-1,3-Dichloropropene	(2)	9.213	75	445396	4.523
81) 4-Methyl-2-Pentanone	(1)	9.384	43	1208850M	24.776
82) \$Toluene-d8	(3)	9.530	98	2451551	9.739
83) Toluene	(3)	9.610	92	724920	4.545
84) trans-1,3-Dichloropropene	(3)	9.878	75	382536	4.422
86) Ethyl Methacrylate	(3)	9.939	69	337937M	4.333
88) 1,1,2-Trichloroethane	(3)	10.085	97	226444	4.708
85) 1,3-Dichloropropene (total)	(3)		75	827932	8.945
89) Tetrachloroethene	(3)	10.171	166	347167	4.694
90) 1,3-Dichloropropane	(3)	10.250	76	381112	4.350
91) 2-Hexanone	(1)	10.299	43	870356M	25.380
93) Dibromochloromethane	(3)	10.469	129	251224	4.740
95) 1,2-Dibromoethane	(3)	10.585	107	214484	4.668
97) *Chlorobenzene-d5	(3)	11.012	117	1877047	10.000
98) Chlorobenzene	(3)	11.042	112	835916	4.576
99) 1,1,1,2-Tetrachloroethane	(3)	11.128	131	286530	4.698
100) Ethylbenzene	(3)	11.128	91	1428946	4.509

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

Quant Report

Target Revision 3.5

Data File: /chem2/HP16334.i/18may01a.b/gy01l02.d
 Injection date and time: 01-MAY-2018 08:33

Instrument ID: HP16334.i
 Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m Sublist used: 8260W25-1
 Calibration date and time: 01-MAY-2018 09:16
 Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compounds	I.S. Ref.	RT	QIon	Area	On-Column Amount (ng)
=====	=====	=====	=====	=====	=====
101) m+p-Xylene	(3)	11.243	106	1117279	9.260
104) o-Xylene	(3)	11.573	106	550679	4.553
106) Styrene	(3)	11.591	104	934359	4.707
107) Bromoform	(3)	11.749	173	139261	4.567
105) Xylene (Total)	(3)		106	1667958	13.813
108) Isopropylbenzene	(3)	11.877	105	1452310	4.610
111)\$4-Bromofluorobenzene	(3)	12.018	95	918620	9.534
113) 1,1,2,2-Tetrachloroethane	(4)	12.121	83	283363M	4.454
114) Bromobenzene	(4)	12.134	156	386212	4.623
116) 1,2,3-Trichloropropane	(4)	12.170	110	82841M	4.658
117) n-Propylbenzene	(4)	12.201	91	1741730	4.477
119) 2-Chlorotoluene	(4)	12.280	126	351793	4.531
121) 1,3,5-Trimethylbenzene	(4)	12.341	105	1247164	4.477
122) 4-Chlorotoluene	(4)	12.371	126	368860	4.557
125) tert-Butylbenzene	(4)	12.579	134	264637	4.551
126) Pentachloroethane	(4)	12.615	167	222985	4.939
127) 1,2,4-Trimethylbenzene	(4)	12.621	105	1286983	4.530
128) sec-Butylbenzene	(4)	12.743	105	1625211	4.593
131) 1,3-Dichlorobenzene	(4)	12.841	146	761651	4.587
132) p-Isopropyltoluene	(4)	12.853	119	1419210	4.595
133)*1,4-Dichlorobenzene-d4	(4)	12.902	152	1082512	10.000
134) 1,4-Dichlorobenzene	(4)	12.920	146	778318	4.599
135) 1,2,3-Trimethylbenzene	(4)	12.926	120	595020	4.658
136) Benzyl Chloride	(4)	12.993	126	109052	4.719
138) n-Butylbenzene	(4)	13.139	92	734599	4.421
139) 1,2-Dichlorobenzene	(4)	13.176	146	718704	4.587
143) 1,2-Dibromo-3-chloropropane	(1)	13.719	155	43367	5.919
144) 1,3,5-Trichlorobenzene	(4)	13.841	180	628642	4.527
145) 1,2,4-Trichlorobenzene	(4)	14.261	180	578820	4.493
146) Hexachlorobutadiene	(4)	14.340	225	310428	4.572
147) Naphthalene	(4)	14.438	128	966360	4.488
148) 1,2,3-Trichlorobenzene	(4)	14.578	180	500789	4.547

M = Compound was manually integrated.

* = Compound is an internal standard.

\$ = Compound is a surrogate standard.

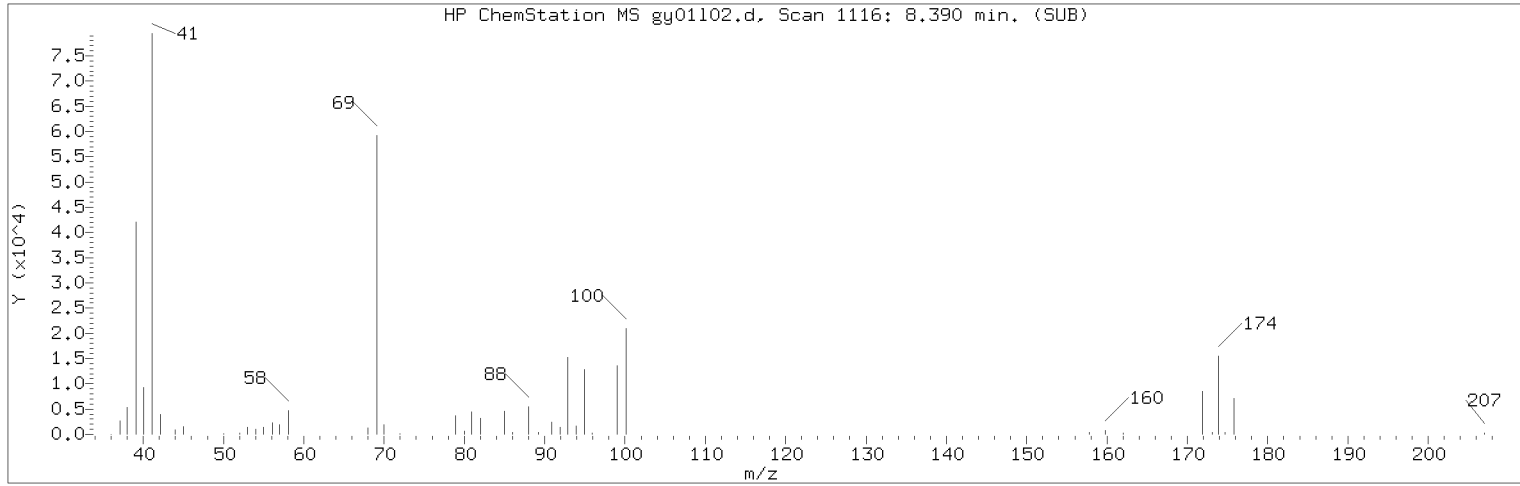
page 3 of 3

Digitally signed by Jennifer K. Howe
 on 05/01/2018 at 11:45.

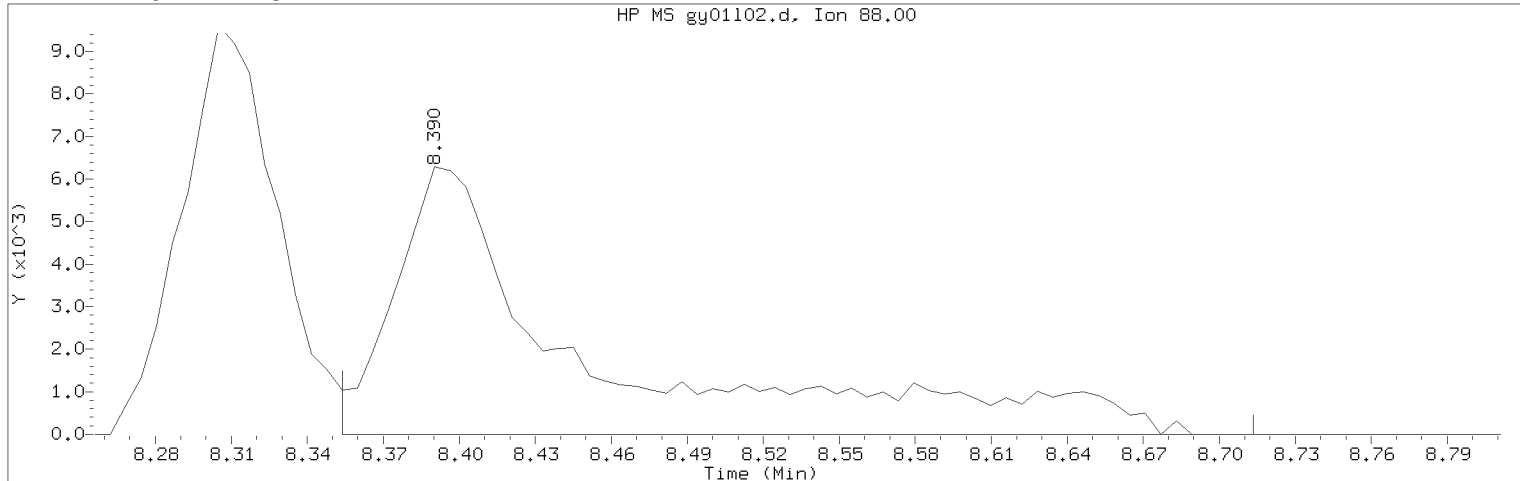
Target 3.5 esignature user ID: jkh09052

FKP52 Page 542 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number	: 72	
Compound Name	: 1,4-Dioxane	
Scan Number	: 1116	
Retention Time (minutes)	: 8.390	
Quant Ion	: 88.00	
Area (flag)	: 33089M	
On-Column Amount (ng)	: 154.2567	
Integration start scan	: 1109	Integration stop scan: 1168
Y at integration start	: 0	Y at integration end: 0

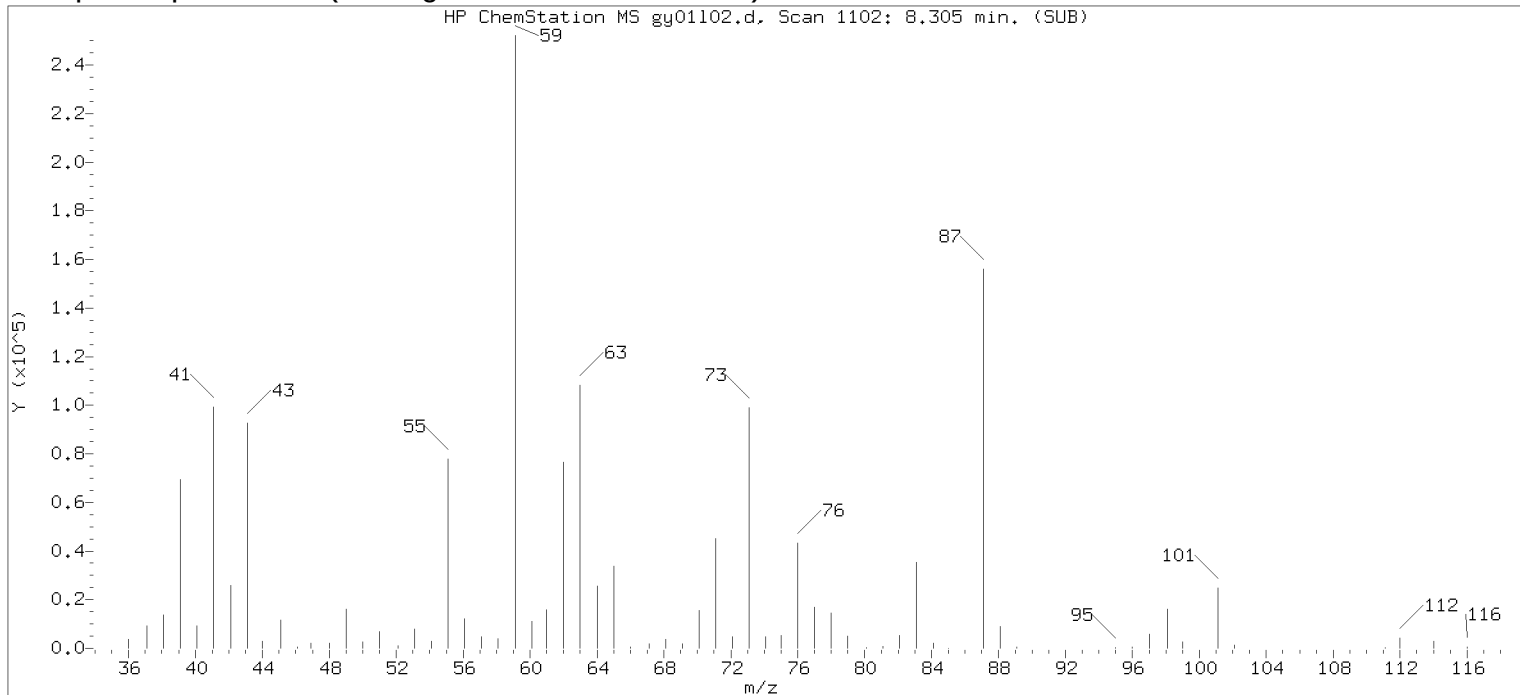
Reason for manual integration: improper integration

Analyst responsible for change:

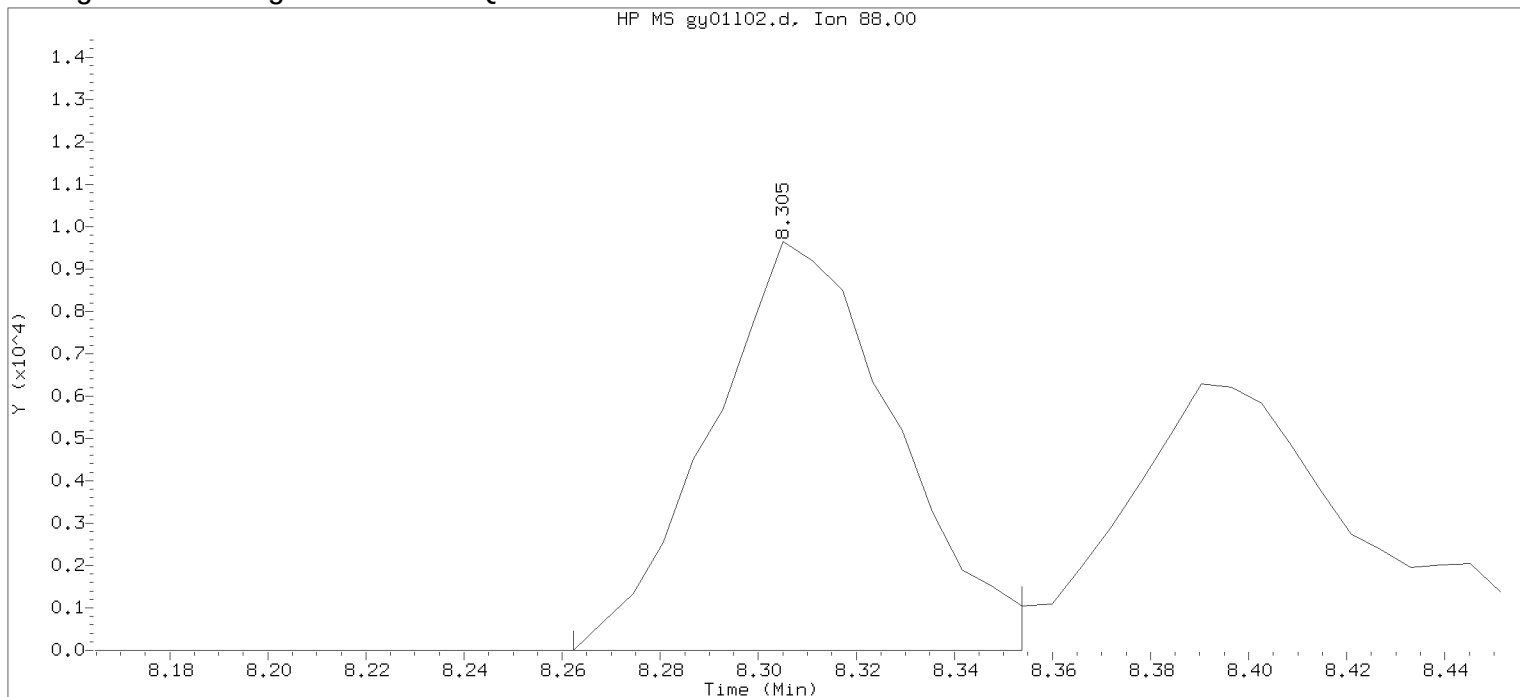
Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

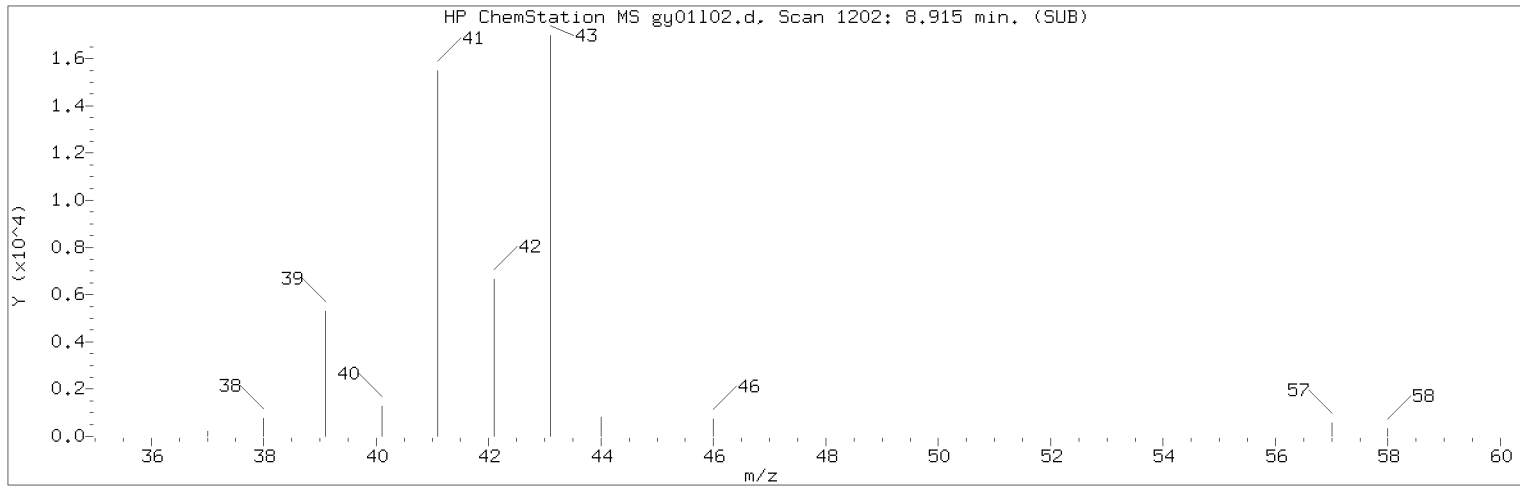
Lab Sample ID: LCDG14

Compound Number : 72
 Compound Name : 1,4-Dioxane
 Scan Number : 1102
 Retention Time (minutes): 8.305
 Quant Ion : 88.00
 Area : 25065
 On-column Amount (ng) : 116.8509
 Integration start scan : 1094
 Y at integration start : 0

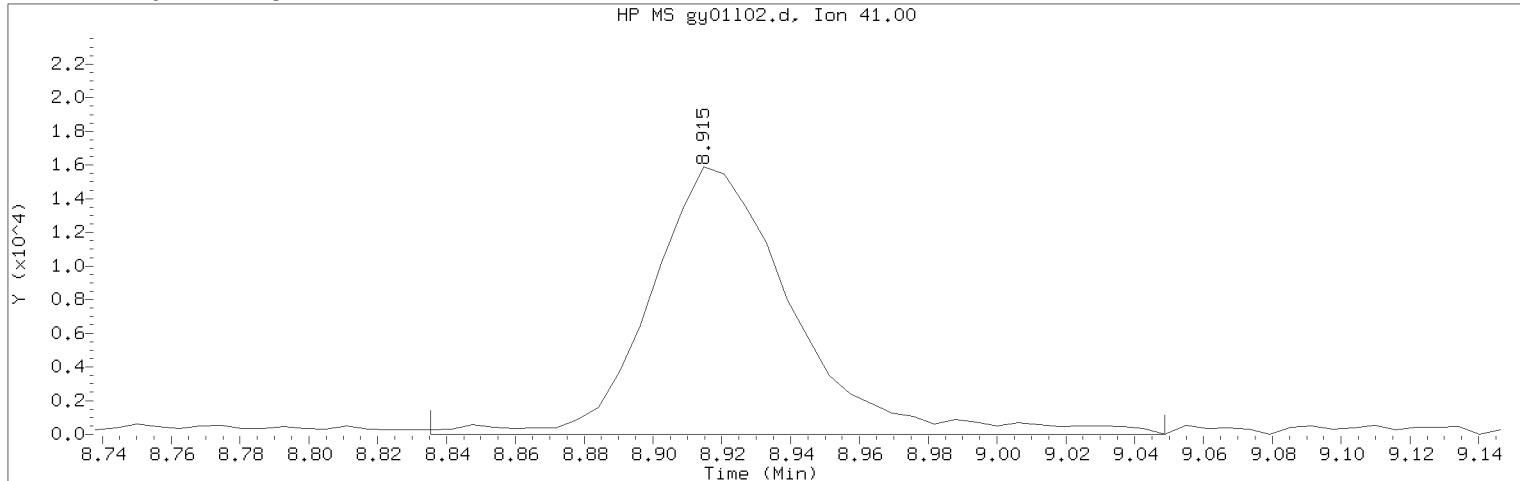
Integration stop scan: 1109
 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.
 Target 3.5 esignature userFP52jPhg0542 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 76

Compound Name : 2-Nitropropane

Scan Number : 1202

Retention Time (minutes): 8.915

Quant Ion : 41.00

Area (flag) : 45800M

On-Column Amount (ng) : 4.5109

Integration start scan : 1188

Integration stop scan: 1223

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

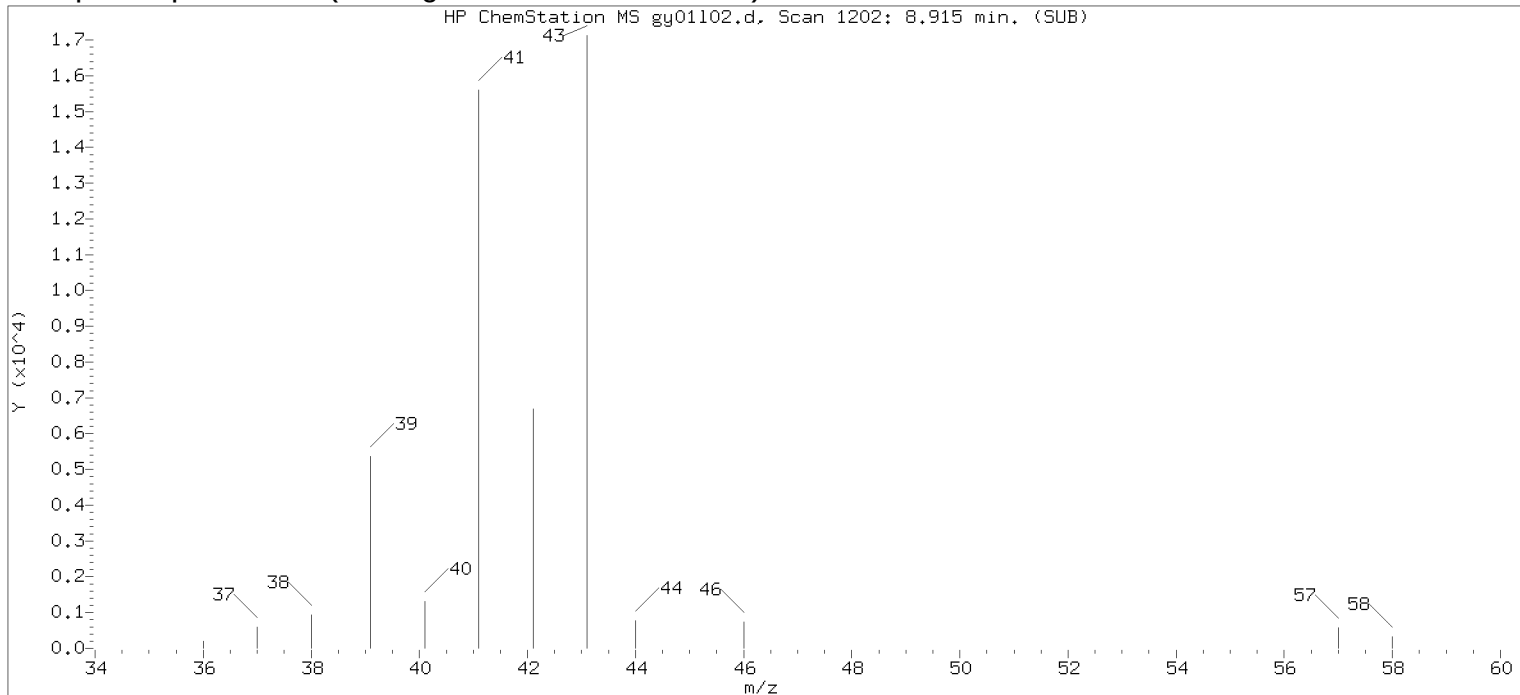
on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052

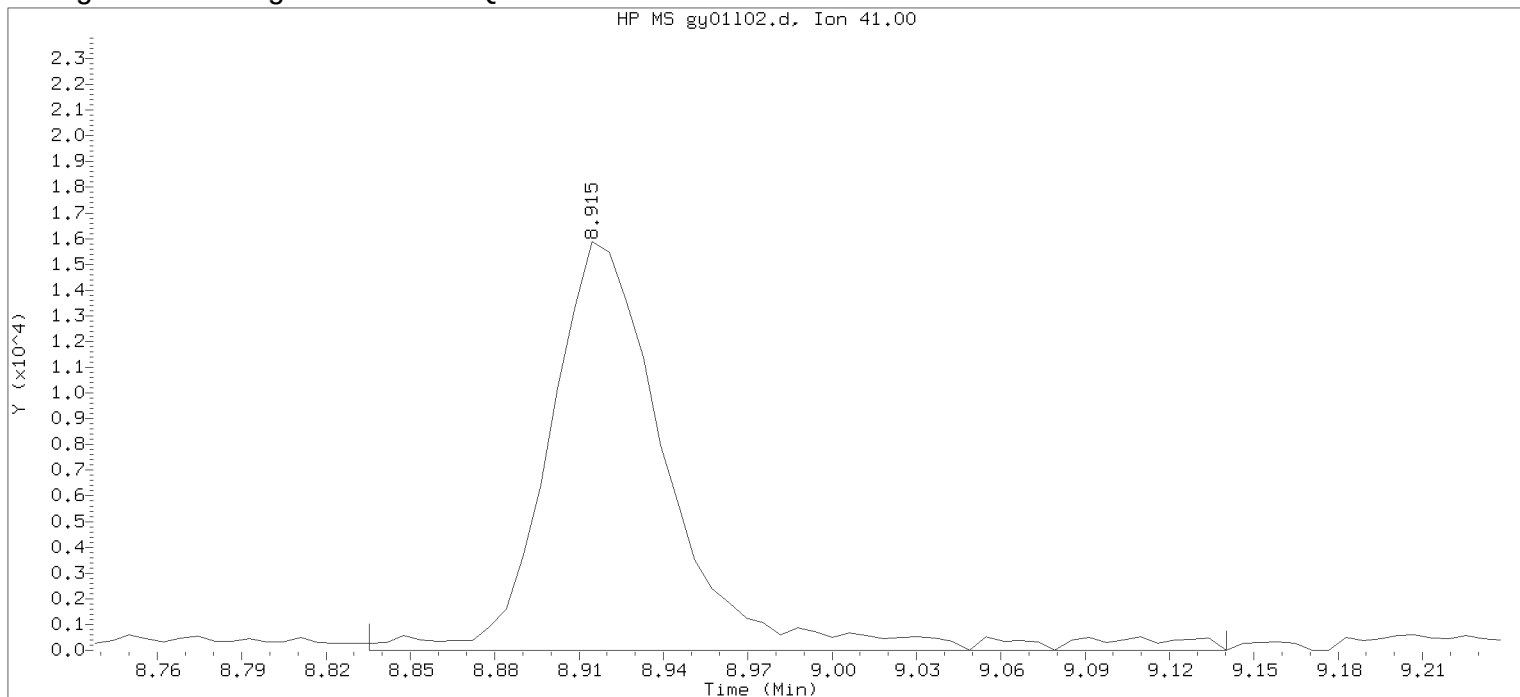
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 76

Compound Name : 2-Nitropropane

Scan Number : 1202

Retention Time (minutes): 8.915

Quant Ion : 41.00

Area : 47680

On-column Amount (ng) : 4.6961

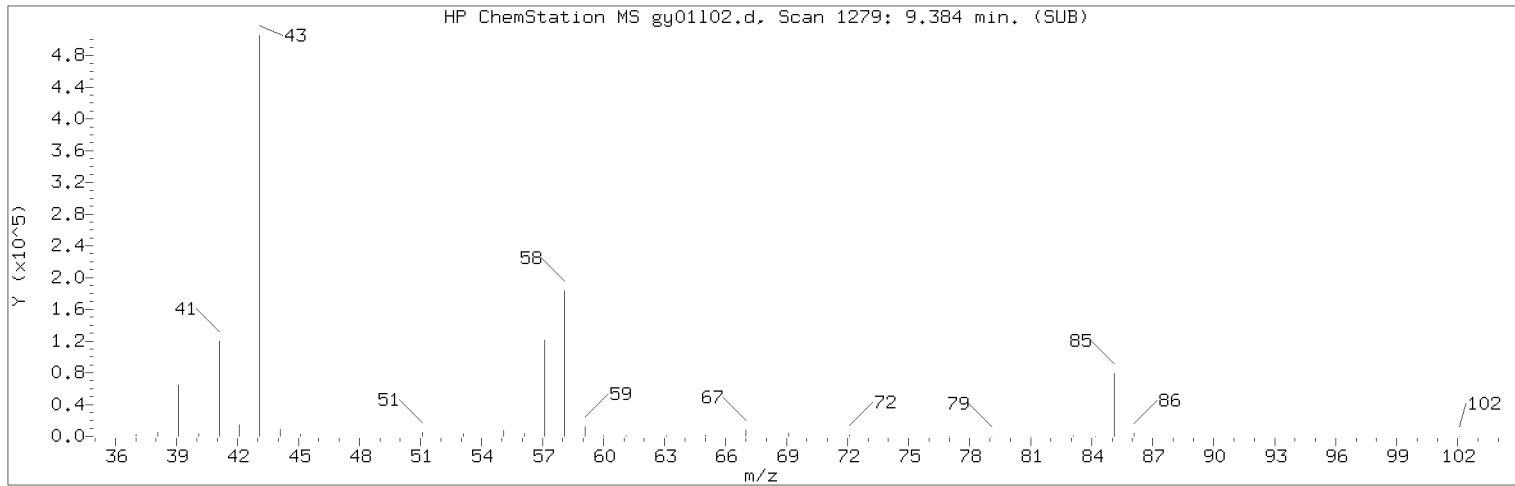
Integration start scan : 1188 Integration stop scan: 1238

Y at integration start : 0 Y at integration end: 0

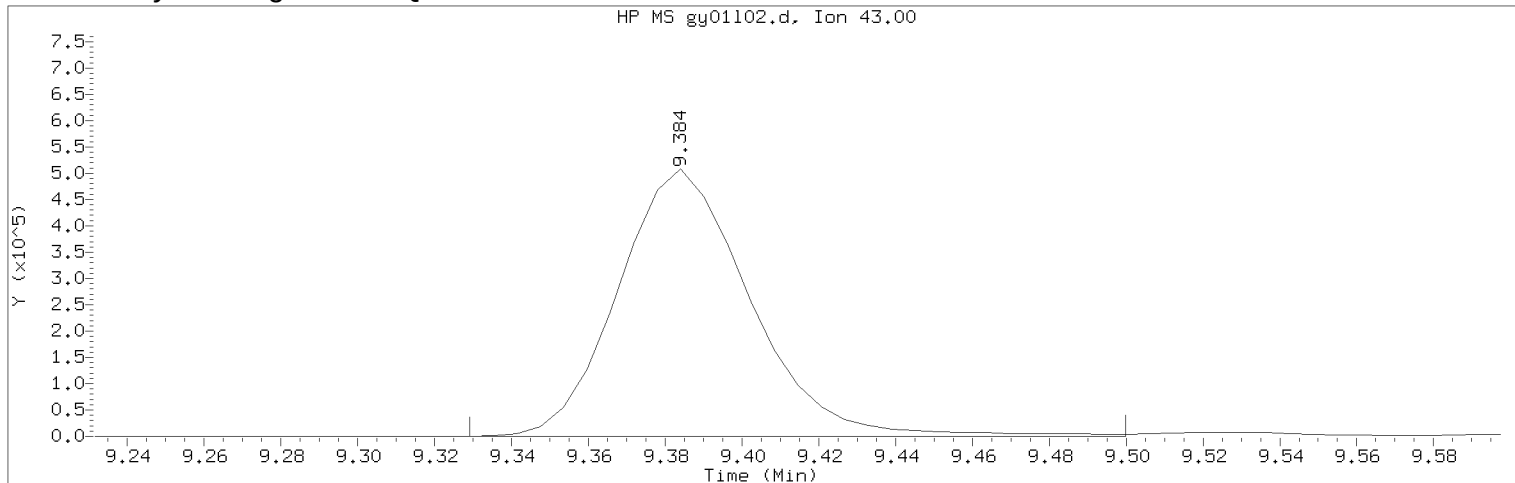
Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.

Target 3.5 esignature userFP52jRhg0542 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area (flag) : 1208850M

On-Column Amount (ng) : 24.7759

Integration start scan : 1269

Integration stop scan: 1297

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

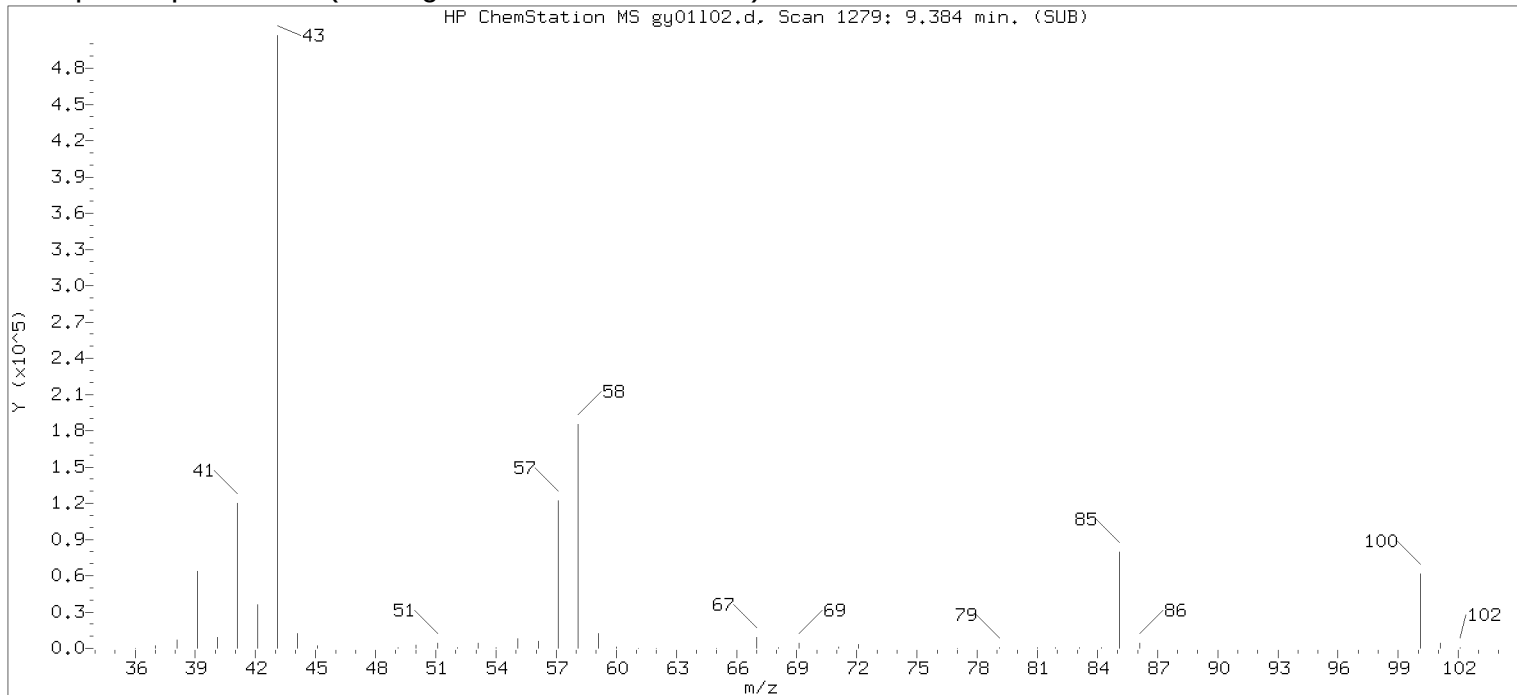
Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052

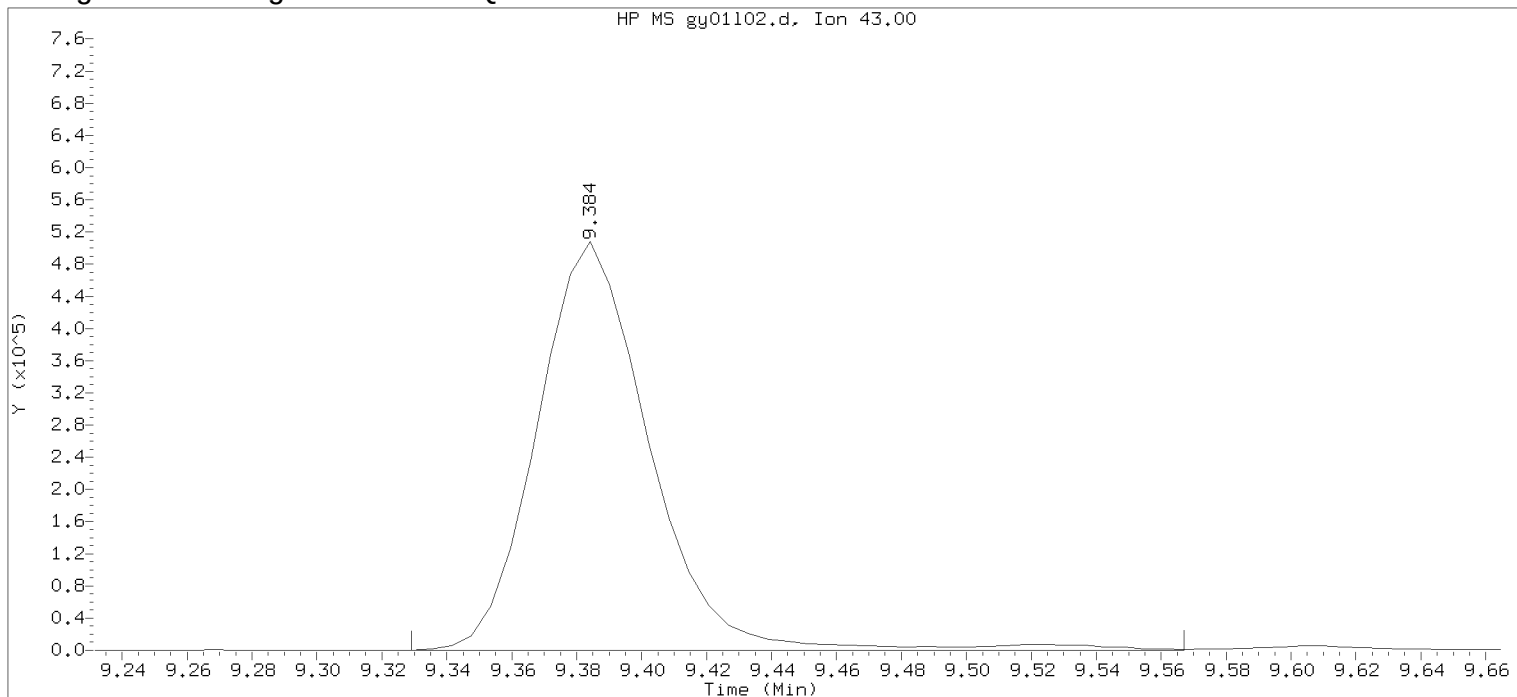
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 81

Compound Name : 4-Methyl-2-Pentanone

Scan Number : 1279

Retention Time (minutes): 9.384

Quant Ion : 43.00

Area : 1227314

On-column Amount (ng) : 25.1542

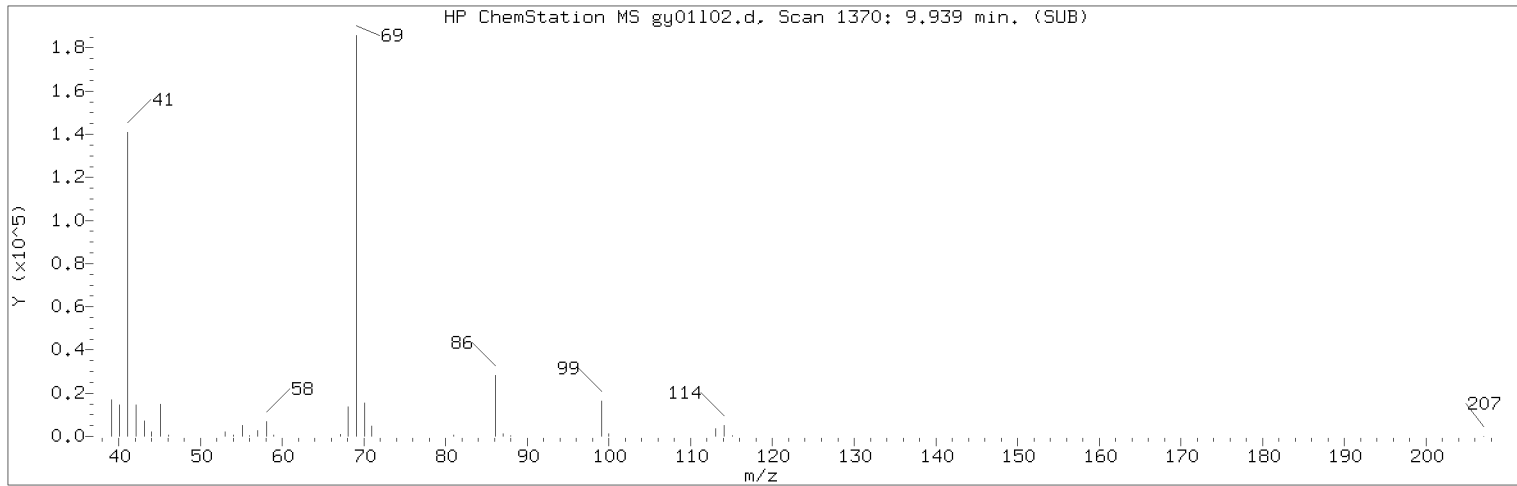
Integration start scan : 1269 Integration stop scan: 1308

Y at integration start : 0 Y at integration end: 0

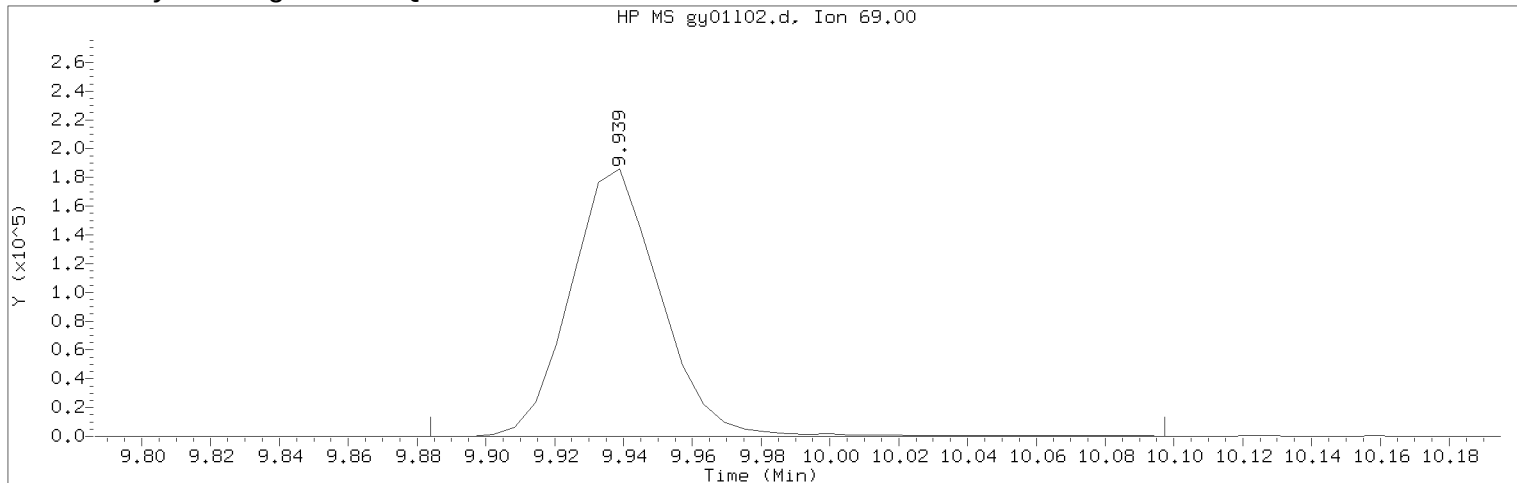
Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.

Target 3.5 esignature userFKP52jRhg0542 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number	: 86	
Compound Name	: Ethyl Methacrylate	
Scan Number	: 1370	
Retention Time (minutes)	: 9.939	
Quant Ion	: 69.00	
Area (flag)	: 337937M	
On-Column Amount (ng)	: 4.3334	
Integration start scan	: 1360	Integration stop scan: 1395
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

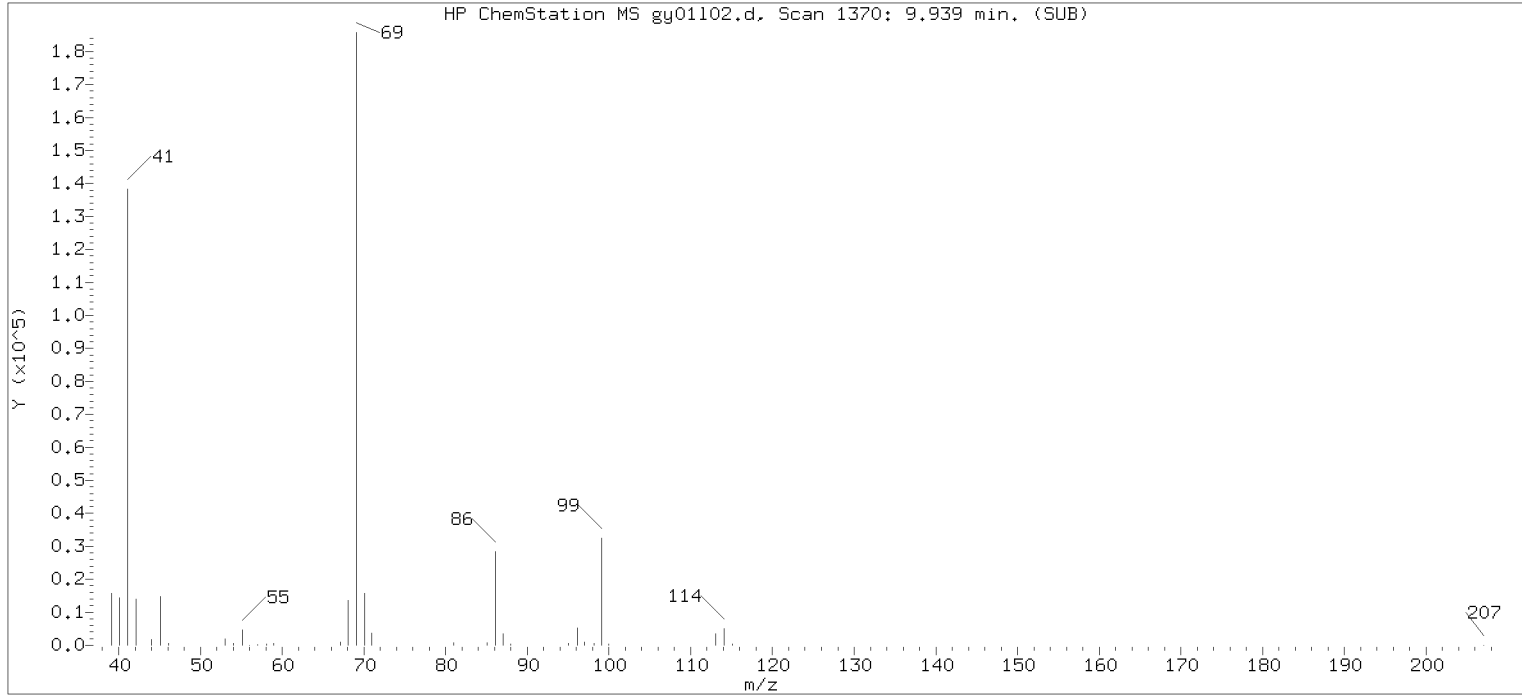
Analyst responsible for change:

Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.
Target 3.5 esignature user ID: jkh09052

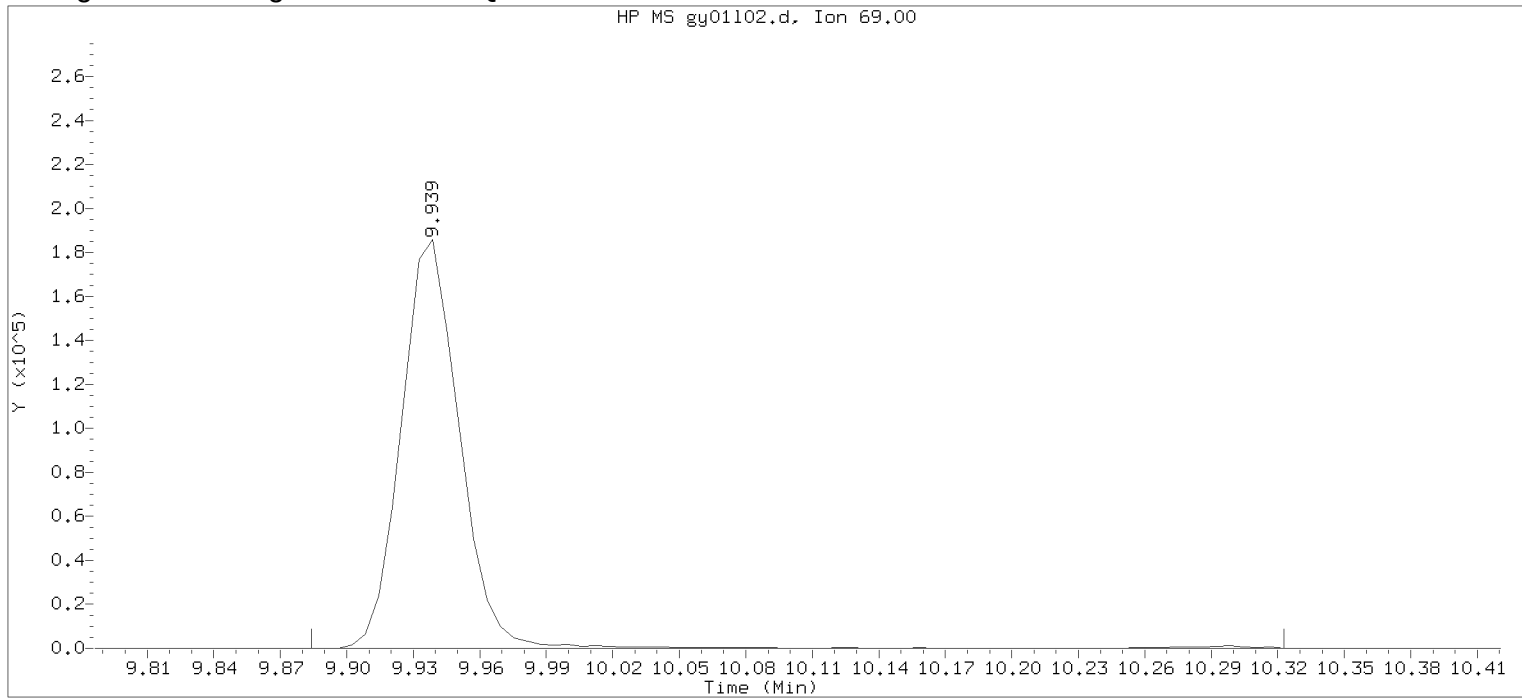
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 86

Compound Name : Ethyl Methacrylate

Scan Number : 1370

Retention Time (minutes): 9.939

Quant Ion : 69.00

Area : 340578

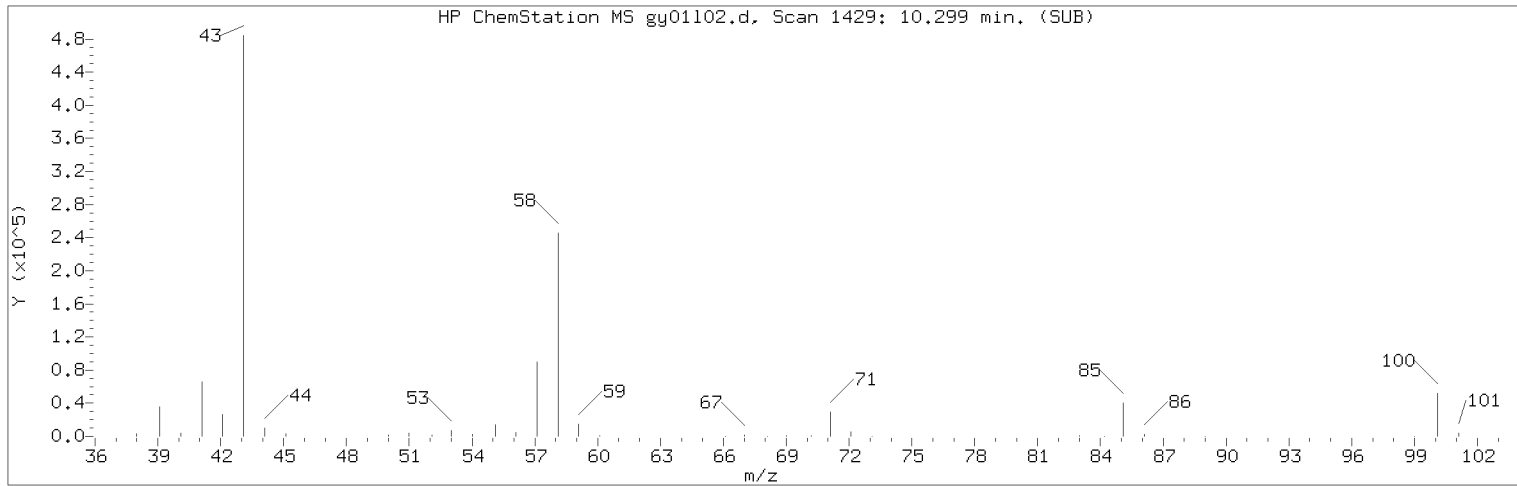
On-column Amount (ng) : 4.3673

Integration start scan : 1360 Integration stop scan: 1432

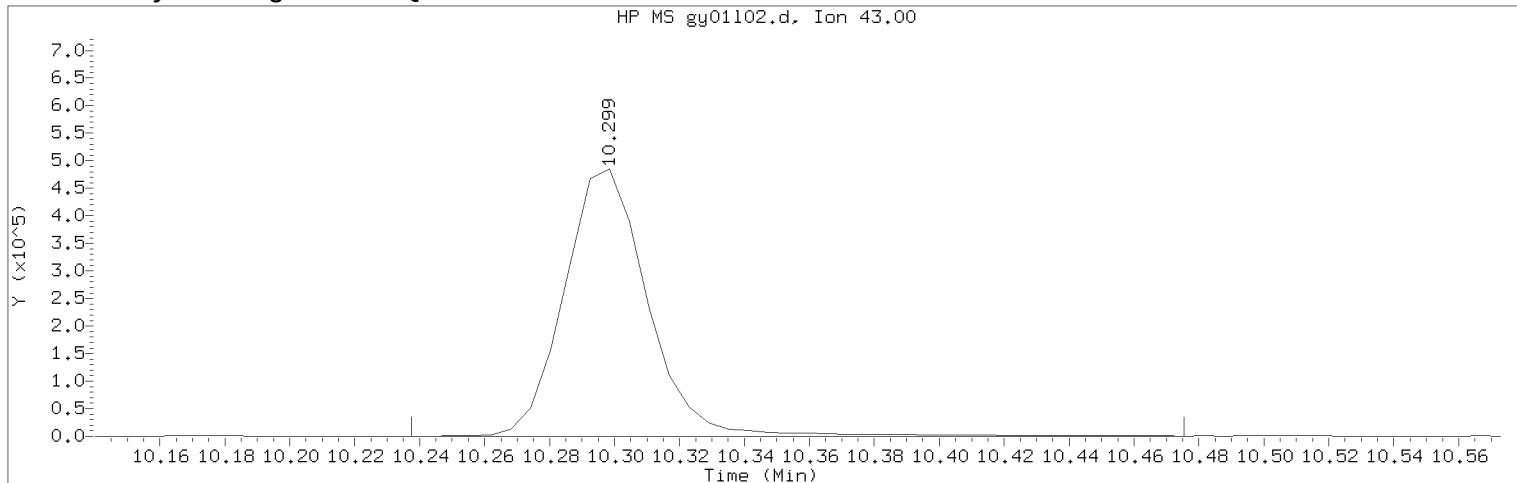
Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.
Target 3.5 esignature userF1D52jR4g0050 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 91

Compound Name : 2-Hexanone

Scan Number : 1429

Retention Time (minutes): 10.299

Quant Ion : 43.00

Area (flag) : 870356M

On-Column Amount (ng) : 25.3797

Integration start scan : 1418

Integration stop scan: 1457

Y at integration start : 0

Y at integration end: 0

Reason for manual integration: improper integration

Analyst responsible for change:

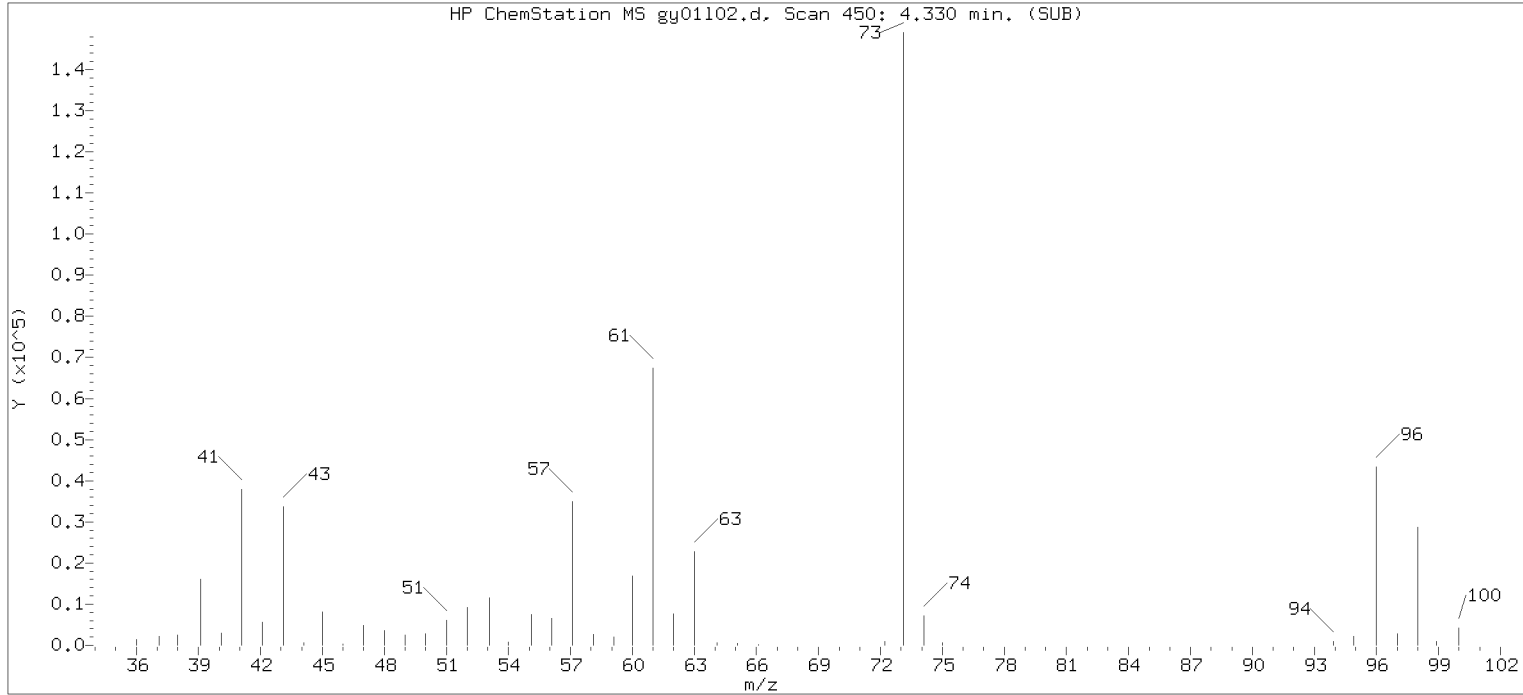
Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.

Target 3.5 esignature user ID: jkh09052

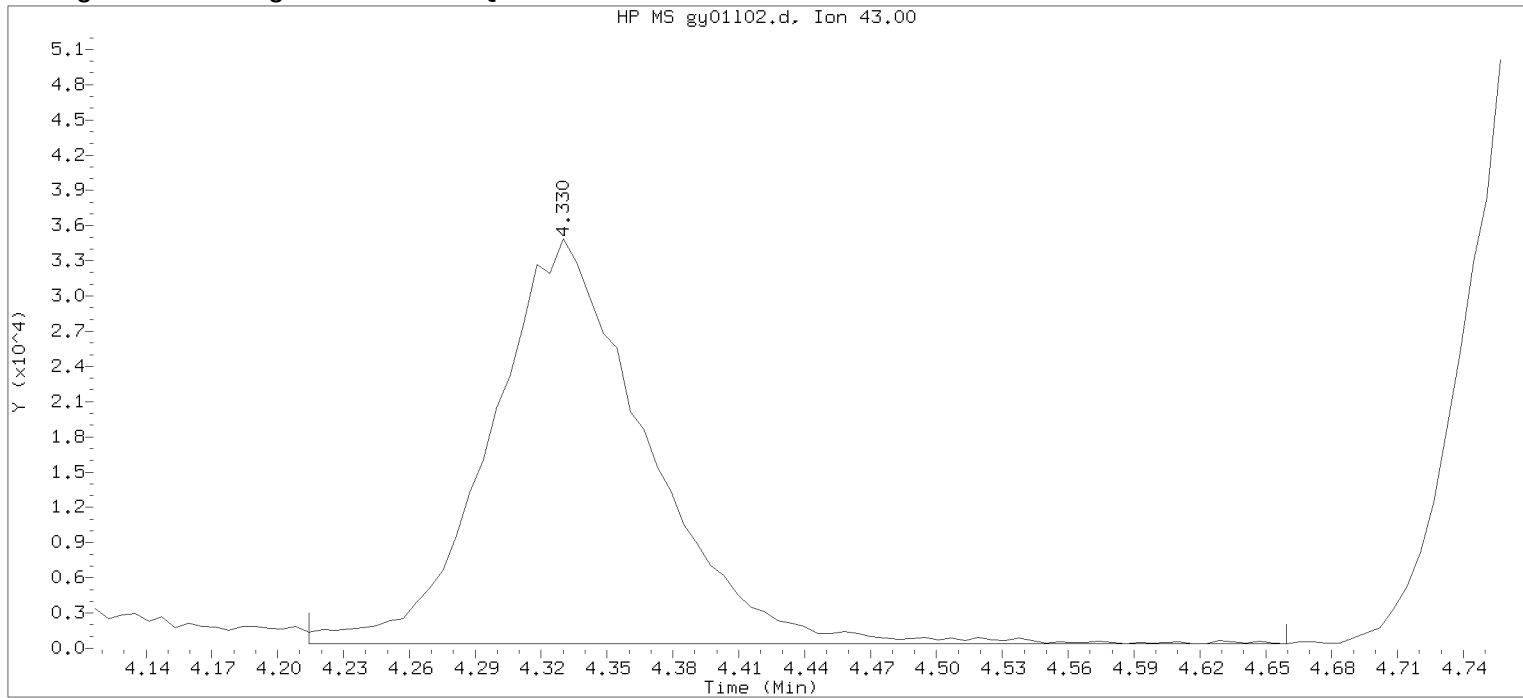
Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.

PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

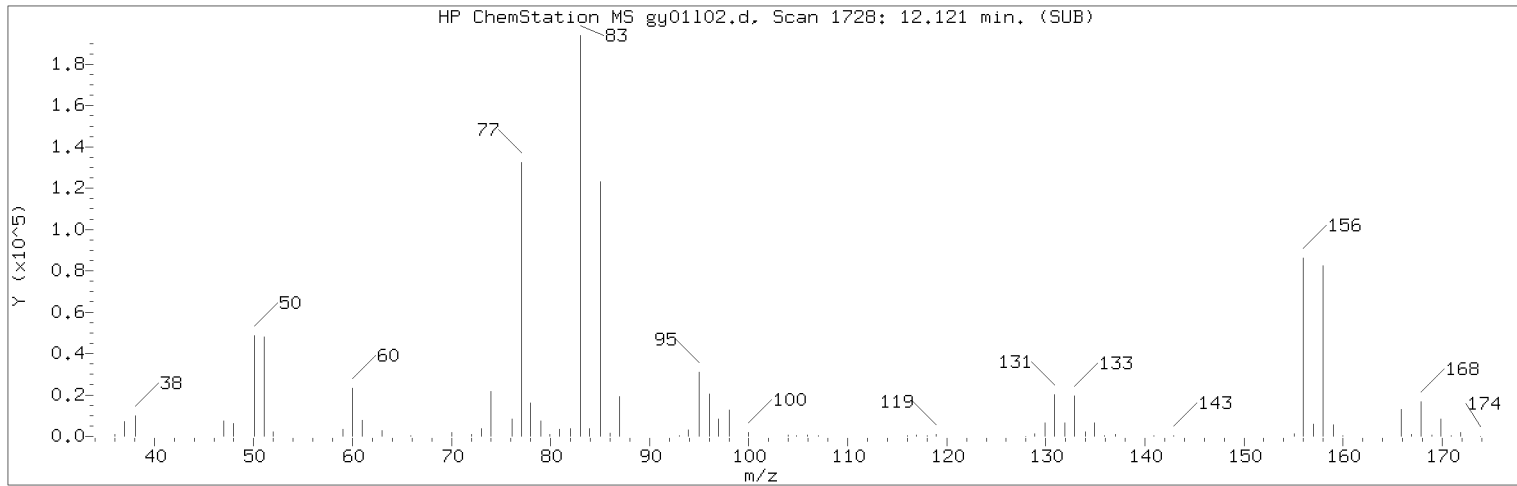
Lab Sample ID: LCDG14

Compound Number : 91
Compound Name : 2-Hexanone
Scan Number : 450
Retention Time (minutes): 4.330
Quant Ion : 43.00
Area : 172179
On-column Amount (ng) : 5.0207
Integration start scan : 430
Y at integration start : 360

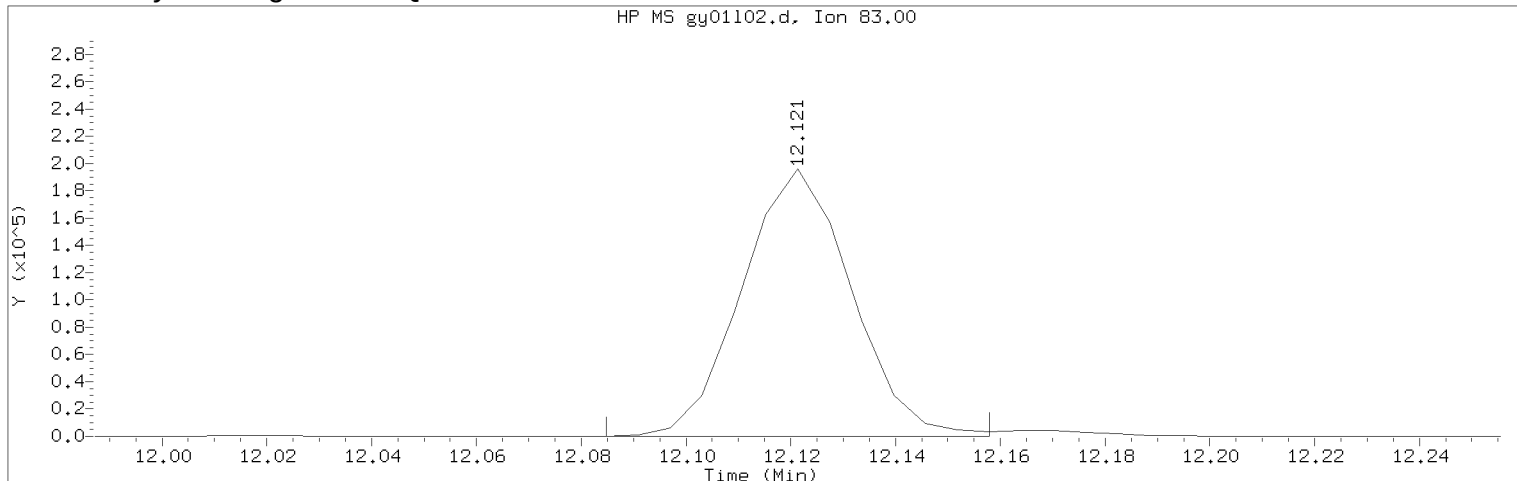
Integration stop scan: 503
Y at integration end: 360

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.
Target 3.5 esignature userF1D52jRhg0052 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

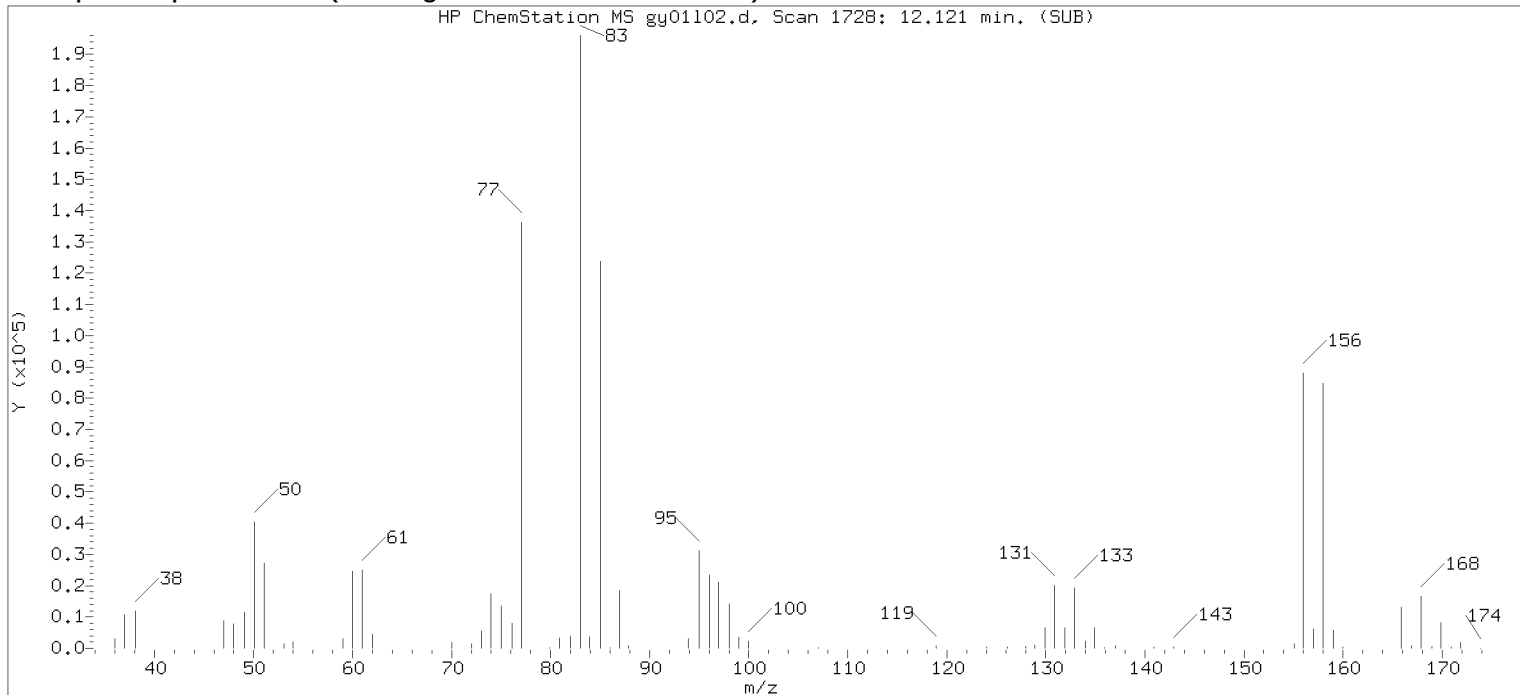
Compound Number	: 113	
Compound Name	: 1,1,2,2-Tetrachloroethane	
Scan Number	: 1728	
Retention Time (minutes)	: 12.121	
Quant Ion	: 83.00	
Area (flag)	: 283363M	
On-Column Amount (ng)	: 4.4539	
Integration start scan	: 1721	Integration stop scan: 1733
Y at integration start	: 0	Y at integration end: 64

Reason for manual integration: improper integration

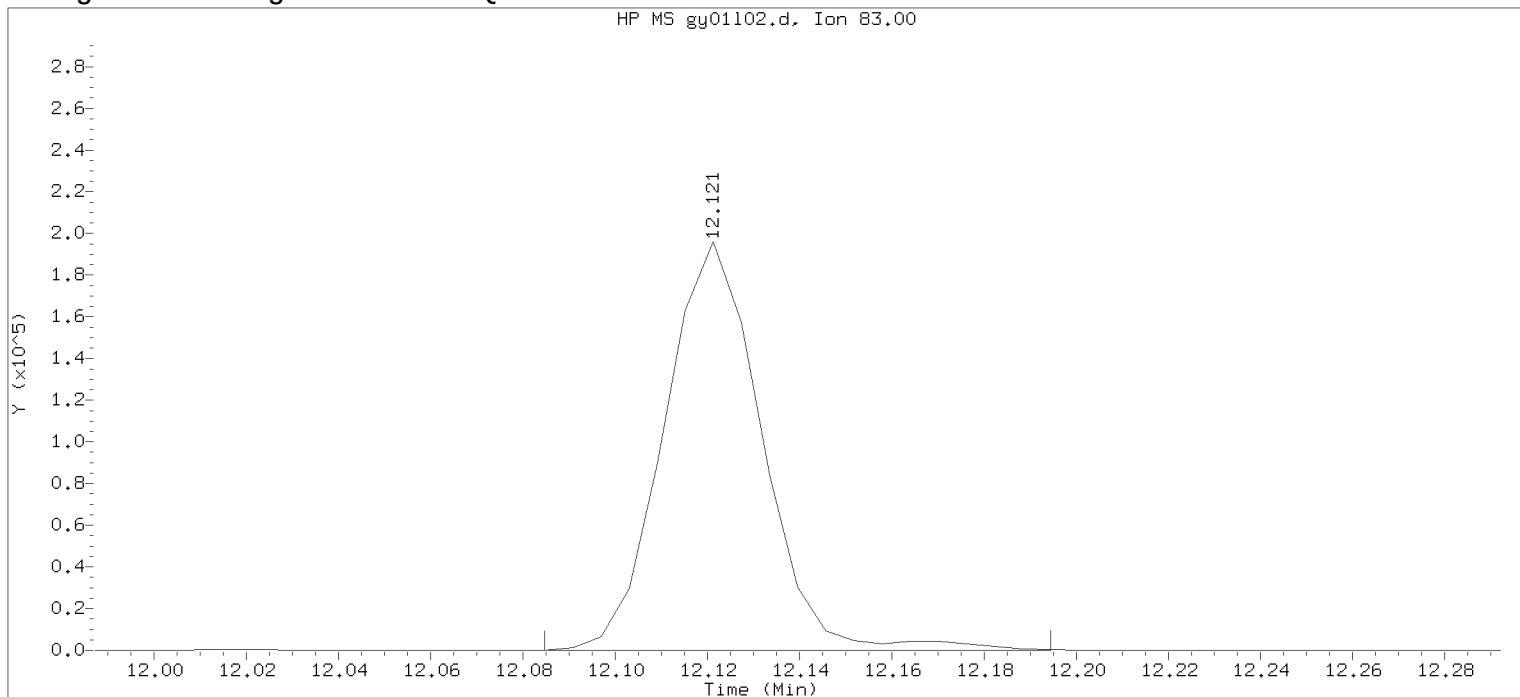
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 113

Compound Name : 1,1,2,2-Tetrachloroethane

Scan Number : 1728

Retention Time (minutes): 12.121

Quant Ion : 83.00

Area : 288362

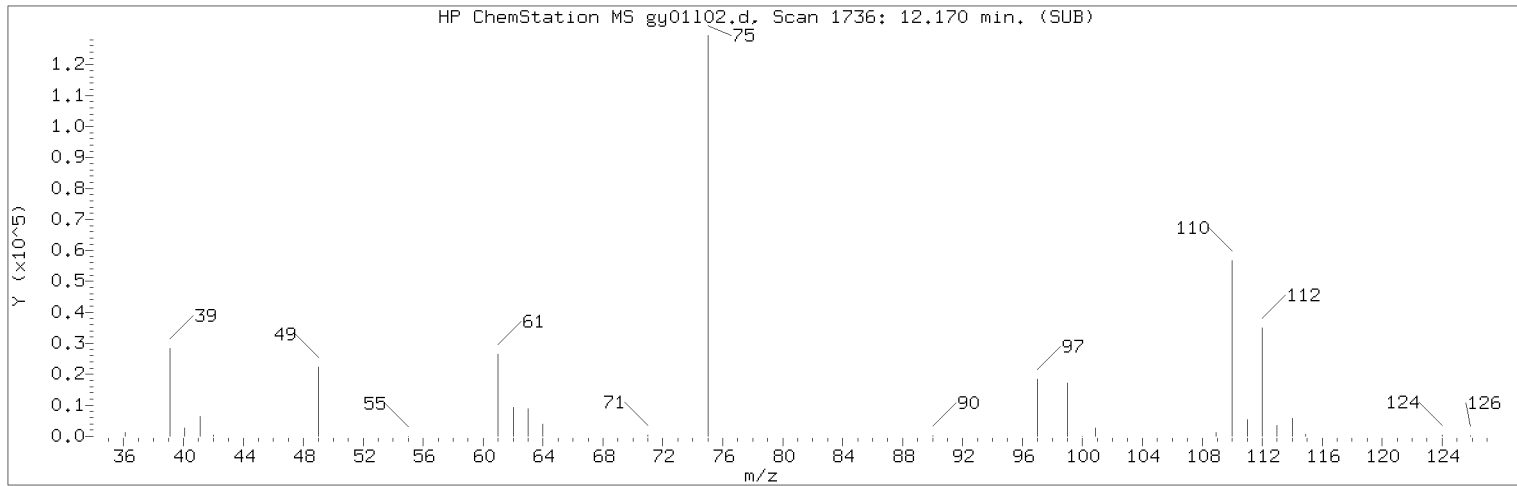
On-column Amount (ng) : 4.5325

Integration start scan : 1721 Integration stop scan: 1739

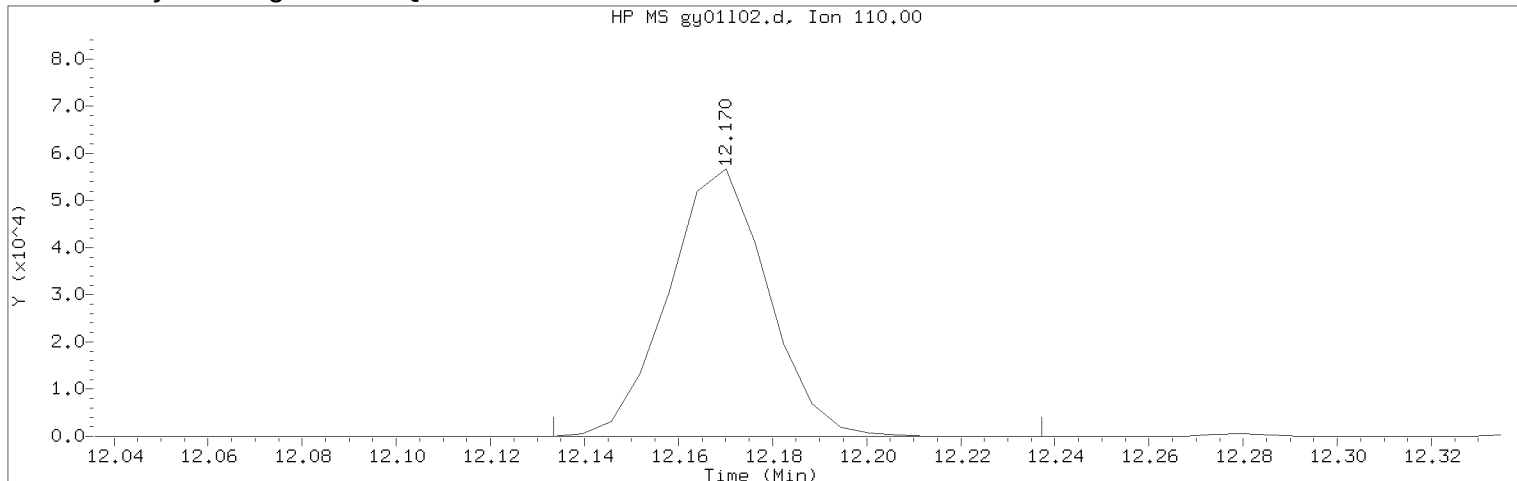
Y at integration start : 0 Y at integration end: 97

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.
Target 3.5 esignature userF1D52jR1g0052 of 730

Sample Spectrum (Background Subtracted)



Manually Integrated Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 09:16

Date, time and analyst ID of latest file update: 01-May-2018 09:58 jkh09052

Sample Name: LCDG14

Lab Sample ID: LCDG14

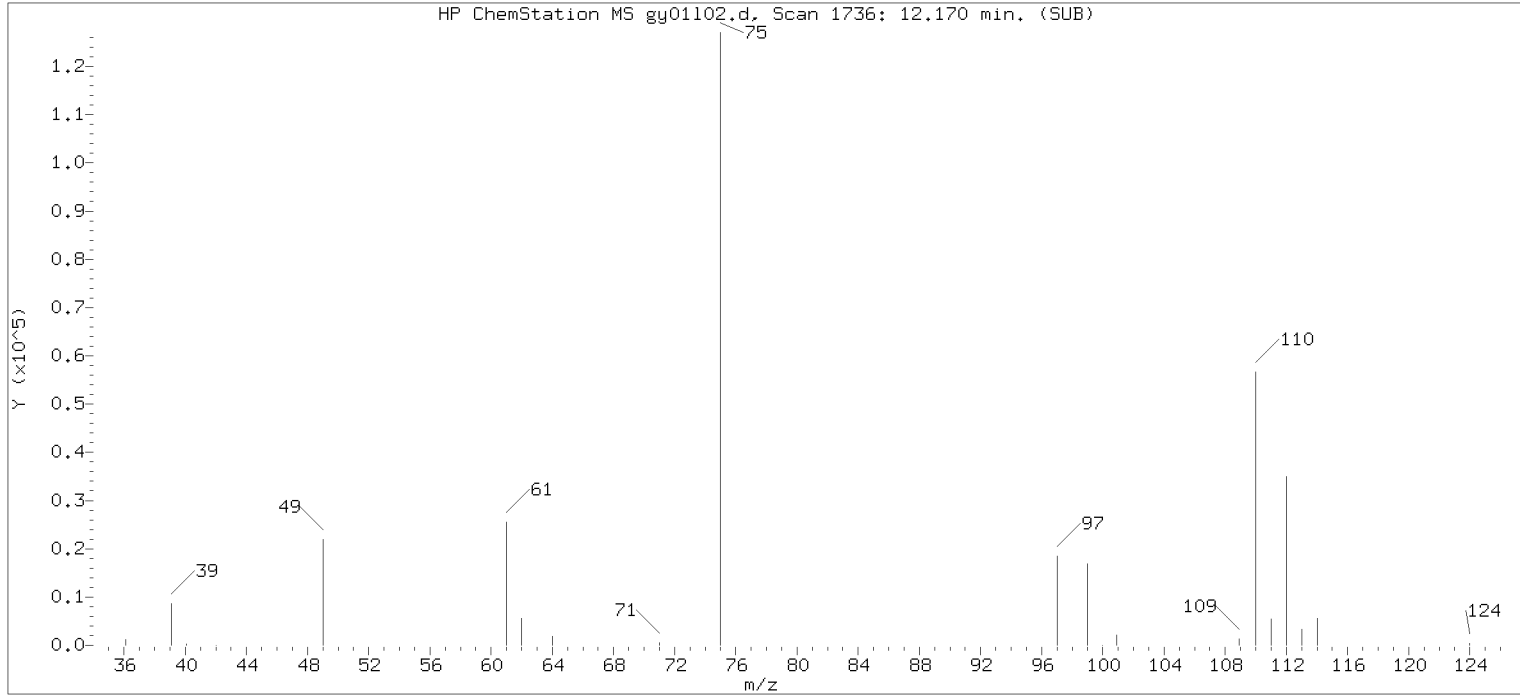
Compound Number	: 116	
Compound Name	: 1,2,3-Trichloropropane	
Scan Number	: 1736	
Retention Time (minutes)	: 12.170	
Quant Ion	: 110.00	
Area (flag)	: 82841M	
On-Column Amount (ng)	: 4.6580	
Integration start scan	: 1729	Integration stop scan: 1746
Y at integration start	: 0	Y at integration end: 0

Reason for manual integration: improper integration

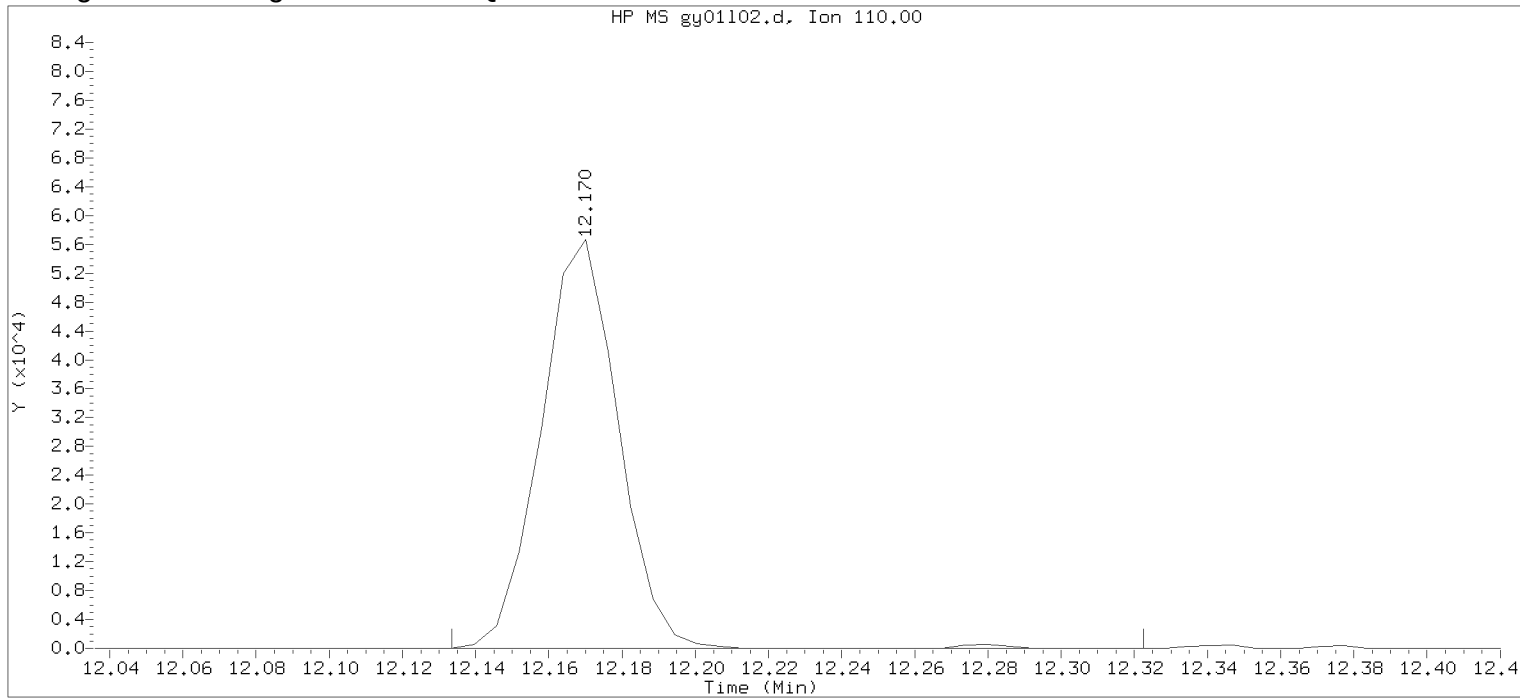
Analyst responsible for change: Digitally signed by Jennifer K. Howe
on 05/01/2018 at 11:45.
Target 3.5 esignature user ID: jkh09052

Secondary review performed and digitally signed by Paul R. Cormier on 05/02/2018 at 07:53.
PARALLAX ID: prc00685

Sample Spectrum (Background Subtracted)



Original Integration of Quant Ion



Data File: /chem2/HP16334.i/18may01a.b/gy01102.d

Instrument ID: HP16334.i

Injection date and time: 01-MAY-2018 08:33

Analyst ID: JKH09052

Method used: /chem2/HP16334.i/18may01a.b/m8260c25.m

Sublist used: 8260W25-1

Calibration date and time: 01-MAY-2018 08:05

Date, time and analyst ID of latest file update: 01-May-2018 08:49 Automation

Sample Name: LCDG14

Lab Sample ID: LCDG14

Compound Number : 116

Compound Name : 1,2,3-Trichloropropane

Scan Number : 1736

Retention Time (minutes): 12.170

Quant Ion : 110.00

Area : 83304

On-column Amount (ng) : 4.6841

Integration start scan : 1729 Integration stop scan: 1760

Y at integration start : 0 Y at integration end: 0

Digitally signed by Jennifer K. Howe on 05/01/2018 at 11:45.
Target 3.5 esignature userF1D52jR1g0052 of 730

Metals in Liquid Data

Case Narrative/Conformance Summary

Metals in Liquid

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP52

ICP Metals

Fraction: Metals in Liquid

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
9582699	EFF-231-R-1	X		1	
9582700	INF-214-R-1	X		1	
9582701	STR-3198-R-1	X		1	
9582702	SEP-3242-R-1	X		1	
9582703	TRP-INF-R-1	X		1	
9582704	B384-RB-DCW	X		1	
9582705	B384-RB-PIP	X		1	
9582707	DUP042718	X		1	Field Duplicate Sample

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:

Sample Duplicate

Batch#: 181201063901D (Sample number(s): 9582699-9582705, 9582707, UNSPK: 9582699, BKG: 9582699)

The duplicate RPD for the following analyte(s) is outside the acceptance window: Barium

Batch#: 181201063901A (Sample number(s): 9582699-9582705, 9582707, UNSPK: 9582699, BKG: 9582699)

The duplicate RPD for the following analyte(s) is outside the acceptance window: Nickel

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP52

ICP Metals

Fraction: Metals in Liquid

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

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.

The final concentration (ug/l) is obtained using the following calculation:

$$\text{Instrument reading (ug/l)} \times \frac{\text{final volume}}{\text{initial volume}} \times \text{dilution factor}$$

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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582699, 9582699BKG

% Solids: 0.0

Concentration Units: UG/L

Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	3.1	B		MS
7440-43-9	Cadmium	0.15	U		MS
7440-47-3	Chromium	8.7			MS
7439-92-1	Lead	1.4	B		MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	1.0	U		MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582700, 9582700BKG

% Solids: 0.0

Concentration Units: UG/L

Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	27.5			MS
7440-43-9	Cadmium	0.28	B		MS
7440-47-3	Chromium	4.5			MS
7439-92-1	Lead	6.7			MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	10.5			MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582701

% Solids: 0.0

Concentration Units: UG/L

Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	6.1			MS
7440-43-9	Cadmium	0.24	B		MS
7440-47-3	Chromium	32.8			MS
7439-92-1	Lead	1.1	B		MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	4.8			MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582702
Concentration Units: UG/L

% Solids: 0.0
Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.86	B		MS
7440-39-3	Barium	26.5			MS
7440-43-9	Cadmium	0.45	B		MS
7440-47-3	Chromium	156			MS
7439-92-1	Lead	3.4			MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	27.1			MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582703
Concentration Units: UG/L

% Solids: 0.0
Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	0.72	U		MS
7440-43-9	Cadmium	0.15	U		MS
7440-47-3	Chromium	1.2	B		MS
7439-92-1	Lead	0.41	B		MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	1.1	B		MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582704

% Solids: 0.0

Concentration Units: UG/L

Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	17.0			MS
7440-43-9	Cadmium	0.15	U		MS
7440-47-3	Chromium	0.87	U		MS
7439-92-1	Lead	2.2			MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	1.0	U		MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582705
Concentration Units: UG/L

% Solids: 0.0
Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	0.72	U		MS
7440-43-9	Cadmium	0.15	U		MS
7440-47-3	Chromium	0.87	U		MS
7439-92-1	Lead	0.11	U		MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	1.0	U		MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9582707
Concentration Units: UG/L

% Solids: 0.0
Date Received: 04/28/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	0.72	U		MS
7440-39-3	Barium	11.5			MS
7440-43-9	Cadmium	0.26	B		MS
7440-47-3	Chromium	30.6			MS
7439-92-1	Lead	1.9	B		MS
7439-97-6	Mercury	0.050	U		CV
7440-02-0	Nickel	10.1			MS
7782-49-2	Selenium	0.50	U		MS
7440-22-4	Silver	0.15	U		MS

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ

Quality Control and Calibration Summary Forms

Metals in Liquid

QUALITY CONTROL REFERENCE LIST

SDG No.: FKP52

Matrix: WATER

<u>Analyte</u>	<u>Batch Number</u>	<u>Lab Sample ID</u>
Arsenic	181201063901	9582699BKG
Barium		9582699MS
Cadmium		9582699MSD
Chromium		9582699DUP
Lead		9582700
Nickel		9582701
Selenium		9582702
Silver		9582703
		9582704
		9582705
		9582707
		P12063AB
		P12063AQ

LEGEND:

BKG = Background

DUP = Duplicate

MS = Matrix Spike

MSD = Matrix Spike Duplicate

B = Blank

Q = Laboratory Control Sample

Y = Laboratory Control Sample Duplicate

SDG No.: FKP52

Matrix: WATER

<u>Analyte</u>	<u>Batch Number</u>	<u>Lab Sample ID</u>
Mercury	181200571302	9582699
		9582700BKG
		9582700MS
		9582700MSD
		9582700DUP
		9582701
		9582702
		9582703
		9582704
		9582705
		9582707
		P12071BB
		P12071BQ

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
Run Name: 1812102E05
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Arsenic	75	500.0	533.61	106.7	250.0	259.99	104.0	250.0	252.83	101.1
Barium	137	500.0	523.03	104.6	250.0	265.52	106.2	250.0	257.58	103.0
Cadmium	111	50.0	52.03	104.1	25.0	25.63	102.5	25.0	25.06	100.2
Chromium	52	500.0	525.00	105.0	250.0	270.97	108.4	250.0	261.72	104.7
Lead	208	50.0	51.31	102.6	25.0	25.61	102.4	25.0	26.05	104.2
Nickel	60	500.0	516.01	103.2	250.0	264.84	105.9	250.0	248.61	99.4
Selenium	78	50.0	51.58	103.2	25.0	26.16	104.6	25.0	26.17	104.7
Silver	107	50.0	52.89	105.8	25.0	26.61	106.4	25.0	25.13	100.5

(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

Method: MS
Run Name: 1812102E05
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Arsenic	75				250.0	251.22	100.5			
Barium	137				250.0	252.40	101.0			
Cadmium	111				25.0	24.97	99.9			
Chromium	52				250.0	267.56	107.0			
Lead	208				25.0	25.65	102.6			
Nickel	60				250.0	246.32	98.5			
Selenium	78				25.0	26.23	104.9			
Silver	107				25.0	24.70	98.8			

(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

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Mercury		2.5	2.46	98.4	1.0	0.99	99.0	1.0	0.97	97.0

(1) Control Limits: 90 - 110

(2) Control Limits: 80 - 120

* 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

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Mercury					1.0	0.99	99.0	1.0	0.99	99.0

(1) Control Limits: 90 - 110

(2) Control Limits: 80 - 120

* 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

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Mercury					1.0	0.98	98.0	1.0	0.99	99.0

(1) Control Limits: 90 - 110

(2) Control Limits: 80 - 120

* 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

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018
Concentration Units: UG/L

Analyte	Mass	Initial Calibration			Continuing Calibration					
		True	Found	%R(1)	True	Found	%R(2)	True	Found	%R(2)
Mercury					1.0	0.98	98.0	1.0	0.97	97.0

(1) Control Limits: 90 - 110

(2) Control Limits: 80 - 120

* 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

Method: MS

Run Name: 1812102E05

Calibration Date(s): 05/01/2018

Concentration Units: UG/L

Analyte	Mass	Initial			Final	
		True	Found	%R	Found	%R
Arsenic	75	4.0	4.11	102.8	4.25	106.3
Barium	137	4.0	4.21	105.3	3.91	97.8
Cadmium	111	1.0	1.16	116.0	1.04	104.0
Chromium	52	4.0	4.70	117.5	4.31	107.8
Lead	208	2.0	2.10	105.0	2.04	102.0
Nickel	60	4.0	4.17	104.3	4.09	102.3
Selenium	78	4.0	4.13	103.3	4.03	100.8
Silver	107	1.0	0.94	94.0	1.13	113.0

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

Method: CV

Run Name: 1812102M07

Calibration Date(s): 05/01/2018

Concentration Units: UG/L

Analyte	Mass	Initial			Final	
		True	Found	%R	Found	%R
Mercury		0.2	0.19	95.0	0.18	90.0

Control limits: 50% - 150%

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

Method: MS

Run Name: 1812102E05

Calibration Date(s): 05/01/2018

Preparation Blank Matrix: WATER

Analyte	Mass	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)		
			C	1	C	2	C	3	C	Mass		C Batch Number
Arsenic	75	0.63	U	0.63	U	0.63	U	0.63	U	75	0.720	U181201063901A
Barium	137	0.60	U	0.60	U	0.60	U	0.60	U	137	0.720	U181201063901A
Cadmium	111	0.13	U	0.13	U	0.13	U	0.13	U	111	0.150	U181201063901A
Chromium	52	0.50	U	0.50	U	0.50	U	0.50	U	52	0.870	U181201063901A
Lead	208	0.092	U	0.092	U	0.092	U	0.092	U	208	0.110	U181201063901A
Nickel	60	0.44	U	0.44	U	0.44	U	0.44	U	60	1.000	U181201063901A
Selenium	78	0.50	U	0.50	U	0.50	U	0.50	U	78	0.500	U181201063901A
Silver	107	0.11	U	0.11	U	0.11	U	0.11	U	107	0.150	U181201063901A

METHODS:

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

CONCENTRATION QUALIFIERS:

U= Below IDL/MDL
B= Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: FKP52

Method: CV

Run Name: 1812102M07

Calibration Date(s): 05/01/2018

Preparation Blank Matrix: WATER

Analyte	Mass	Initial Calibration Blank (ug/L)	Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)				
			C	1	C	2	C	3	C	Mass		C	Batch Number
Mercury		0.050	U	0.050	U	0.050	U	0.050	U		0.050	U	181200571302

METHODS:

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

CONCENTRATION QUALIFIERS:

U= Below IDL/MDL
B= Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: FKP52

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018

Analyte	Mass	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L)			C	Preparation Blank (UG/L)			C	Batch Number
				1	C	2	C	3	C	Mass		
Mercury				0.050	U	0.050	U	0.050	U			

METHODS:

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

CONCENTRATION QUALIFIERS:

U= Below IDL/MDL
B= Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: FKP52

Method: CV
Run Name: 1812102M07
Calibration Date(s): 05/01/2018

Analyte	Mass	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)			
			C	1	C	2	C	3	C	Mass		C	Batch Number
Mercury				0.050	U	0.050	U						

METHODS:

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

CONCENTRATION QUALIFIERS:

U= Below IDL/MDL
B= Below LOQ

Instrument ID: 19204
Run Name: 1812102E05
Concentration Units: ug/L

Analyte	Mass	True		Found			
		Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R
Aluminum	27	100000	100000	104010	104.0	101151.2	101.2
Arsenic	75	0	100	0		112.9	112.9
Barium	137	0	0	1		1.1	
Cadmium	111	0	100	0		102.8	102.8
Calcium	44	300000	300000	287952	96.0	281038.6	93.7
Carbon	13	20000	20000	NA		NA	
Chloride	37	100000	100000	NA		NA	
Chromium	52	0	200	1		215.7	107.9
Iron	57	250000	250000	257583	103.0	247893.3	99.2
Lead	208	0	0	0		0.2	
Magnesium	24	100000	100000	104353	104.4	100266.8	100.3
Molybdenum	98	2000	2000	2096	104.8	2137.7	106.9
Nickel	60	0	200	1		209.5	104.8
Phosphorus	31	10000	10000	NA		NA	
Potassium	39	100000	100000	108660	108.7	106059.4	106.1
Selenium	78	0	100	0		101.0	101.0
Silver	107	0	50	0		54.1	108.2
Sodium	23	250000	250000	258215	103.3	248994.7	99.6
Sulfur	34	10000	10000	NA		NA	
Titanium	47	2000	2000	2195	109.8	2098.9	104.9

Control Limits: All Metals 80%-120%

Instrument ID: 19204
Run Name: 1812102E05
Concentration Units: ug/L

Analyte	Mass	True		Found			
		Sol. A	Sol. AB	Sol. A	%R	Sol. AB	%R
Aluminum	27	100000	100000	99723	99.7	98454.1	98.5
Arsenic	75	0	100	0		111.3	111.3
Barium	137	0	0	1		1.5	
Cadmium	111	0	100	0		100.7	100.7
Calcium	44	300000	300000	283454	94.5	279121.4	93.0
Carbon	13	20000	20000	NA		NA	
Chloride	37	100000	100000	NA		NA	
Chromium	52	0	200	1		210.2	105.1
Iron	57	250000	250000	252997	101.2	247584.8	99.0
Lead	208	0	0	0		0.1	
Magnesium	24	100000	100000	100449	100.4	99479.2	99.5
Molybdenum	98	2000	2000	2022	101.1	2115.0	105.8
Nickel	60	0	200	1		208.0	104.0
Phosphorus	31	10000	10000	NA		NA	
Potassium	39	100000	100000	106710	106.7	103585.3	103.6
Selenium	78	0	100	0		100.7	100.7
Silver	107	0	50	0		52.6	105.2
Sodium	23	250000	250000	246403	98.6	242783.1	97.1
Sulfur	34	10000	10000	NA		NA	
Titanium	47	2000	2000	2009	100.5	2076.6	103.8

Control Limits: All Metals 80%-120%

QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9582699BKG Matrix Spike Lab Sample ID: 9582699MS Matrix Spike Duplicate Lab Sample ID: 9582699MSD
Batch Number(s): 181201063901

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Q	Control Limit		M
		Result	C	Result	C	Result	C				%R	Q	%R	Q			%R	RPD	
Arsenic	75	0.7230	U	10.4470		9.6920		10.0000	10.0000	UG/L	104		97		7		75 - 125	20	MS
Barium	137	3.1080	B	55.7400		56.1380		50.0000	50.0000	UG/L	105		106		1		75 - 125	20	MS
Cadmium	111	0.1520	U	5.2910		5.0680		5.0000	5.0000	UG/L	106		101		4		75 - 125	20	MS
Chromium	52	8.6820		62.3600		61.2440		50.0000	50.0000	UG/L	107		105		2		75 - 125	20	MS
Lead	208	1.4030	B	17.2710		16.8510		15.0000	15.0000	UG/L	106		103		2		75 - 125	20	MS
Nickel	60	0.9960	U	53.5960		51.6830		50.0000	50.0000	UG/L	107		103		4		75 - 125	20	MS
Selenium	78	0.5000	U	10.6170		10.4210		10.0000	10.0000	UG/L	106		104		2		75 - 125	20	MS
Silver	107	0.1460	U	52.2690		50.2030		50.0000	50.0000	UG/L	105		100		4		75 - 125	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:		CONCENTRATION QUALIFIERS:	
P = ICP Atomic Emission Spectrometer	CV = Cold Vapor	U = Below MDL, B = Below LOQ	
MS = ICP Mass Spectrometry	AF = Cold Vapor Atomic Fluorescence	FLAGS:	
		N = Matrix Spike OOS, * = Duplicate OOS	

QUALITY ASSURANCE SUMMARY

FORM 5A (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9582700BKG Matrix Spike Lab Sample ID: 9582700MS Matrix Spike Duplicate Lab Sample ID: 9582700MSD
Batch Number(s): 181200571302

Analyte	Mass	BKG Sample		MS Sample		MSD Sample		MS Spike Added	MSD Spike Added	Units	MS		MSD		RPD	Q	Control Limit		
		Result	C	Result	C	Result	C				%R	Q	%R	Q			%R	RPD	M
Mercury		0.0500	U	0.8807		0.8872		1.0000	1.0000	UG/L	88		89		1		80 - 120	20	CV

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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 6

DUPLICATES

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9582699BKG

Duplicate Lab Sample ID: 9582699DUP

Batch Number(s): 181201063901

Concentration Units: UG/L

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	75		0.7230	U	0.7230	U			MS
Barium	137	4.0	3.1080	B	4.2240		30		MS
Cadmium	111		0.1520	U	0.1520	U			MS
Chromium	52	4.0	8.6820		10.3830		18		MS
Lead	208		1.4030	B	1.4320	B	2		MS
Nickel	60		0.9960	U	1.0850	B	200		MS
Selenium	78		0.5000	U	0.5000	U			MS
Silver	107		0.1460	U	0.1460	U			MS

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% 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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 6

DUPLICATES

SDG No.: FKP52

Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9582700BKG

Duplicate Lab Sample ID: 9582700DUP

Batch Number(s): 181200571302

Concentration Units: UG/L

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury			0.0500	U	0.0500	U			CV

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% 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

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Arsenic	75	181201063901	UG/L	10.000	10.364		80 - 120	104	MS	Yes
Barium	137	181201063901	UG/L	50.000	54.272		80 - 120	109	MS	Yes
Cadmium	111	181201063901	UG/L	5.000	5.230		84 - 120	105	MS	Yes
Chromium	52	181201063901	UG/L	50.000	54.847		90 - 112	110	MS	Yes
Lead	208	181201063901	UG/L	15.000	15.635		90 - 110	104	MS	Yes
Mercury		181200571302	UG/L	1.000	0.868		80 - 114	87	CV	Yes
Nickel	60	181201063901	UG/L	50.000	52.879		90 - 114	106	MS	Yes
Selenium	78	181201063901	UG/L	10.000	10.333		90 - 113	103	MS	Yes
Silver	107	181201063901	UG/L	50.000	52.990		88 - 113	106	MS	Yes

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

QUALITY ASSURANCE SUMMARY

FORM 9

SERIAL DILUTIONS

SDG No.: FKP52

Matrix: WATER

Level (low/med): LOW

Background Lab Sample ID: 9582699BKG

Serial Dilution Lab Sample ID: 9582699L

Batch Number(s): 181201063901

Concentration Units: UG/L

Analyte	Mass	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Diff.	Q	M
Arsenic	75	0.7230	U	3.6150	U			MS
Barium	137	3.1080	B	3.6150	U	100		MS
Cadmium	111	0.1520	U	0.7600	U			MS
Chromium	52	8.6820		9.2450	B	6		MS
Lead	208	1.4030	B	1.3350	B	5		MS
Nickel	60	0.9960	U	4.9800	U			MS
Selenium	78	0.5000	U	2.5000	U			MS
Silver	107	0.1460	U	0.7300	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

Method: MS
Instrument ID: 19204
Date: 04/2018

Analyte	MASS (amu)	Background	IDL (UG/L)
Arsenic	75		0.63
Barium	137		0.60
Cadmium	111		0.13
Chromium	52		0.50
Lead	208		0.092
Nickel	60		0.44
Selenium	78		0.50
Silver	107		0.11

Comments:

METHODS:

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

Method: CV
Instrument ID: 17384
Date: 04/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Mercury	254.00		0.050

Comments:

METHODS:

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



Method: MS
Date: 06/2017

Analyte	Mass	Background	LOQ (UG/L)	MDL (UG/L)
Arsenic	75		4.0	0.72
Barium	137		4.0	0.72
Cadmium	111		1.0	0.15
Chromium	52		4.0	0.87
Lead	208		2.0	0.11
Nickel	60		4.0	1.0
Selenium	78		4.0	0.50
Silver	107		1.0	0.15

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: CV
Date: 06/2017

Analyte	Wavelength (nm)	Background	LOQ (UG/L)	MDL (UG/L)
Mercury	254.00		0.20	0.050

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: 181201063901

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
9582700	04/30/2018	50.00	50
9582701	04/30/2018	50.00	50
9582702	04/30/2018	50.00	50
9582703	04/30/2018	50.00	50
9582704	04/30/2018	50.00	50
9582705	04/30/2018	50.00	50
9582707	04/30/2018	50.00	50
9582699BKG	04/30/2018	50.00	50
9582699DUP	04/30/2018	50.00	50
9582699MSD	04/30/2018	50.00	50
9582699MS	04/30/2018	50.00	50
P12063AB	04/30/2018	50.00	50
P12063AQ	04/30/2018	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: CV
Batch Number: 181200571302

Lab Sample ID	Date	Initial Volume(ml)	Final Volume(ml)
9582699	05/01/2018	40.00	40
9582701	05/01/2018	40.00	40
9582702	05/01/2018	40.00	40
9582703	05/01/2018	40.00	40
9582704	05/01/2018	40.00	40
9582705	05/01/2018	40.00	40
9582707	05/01/2018	40.00	40
9582700BKG	05/01/2018	40.00	40
9582700DUP	05/01/2018	40.00	40
9582700MSD	05/01/2018	40.00	40
9582700MS	05/01/2018	40.00	40
P12071BB	05/01/2018	40.00	40
P12071BQ	05/01/2018	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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: FKP52

Method: MS
Instrument ID: 19204
Run Name: 1812102E05

Run Start Date: 05/01/2018
Run End Date: 05/01/2018

Lab Sample ID	D/F	Time	Analytes																											
			A S	B A	C D	C R	P B	H G	N I	S E	A G																			
S0	1.00	07:28	X	X	X	X	X		X	X	X																			
S	1.00	07:31	X	X	X	X	X		X	X	X																			
CCS	1.00	07:33	X	X	X	X	X		X	X	X																			
CCS	1.00	07:35	X	X	X	X	X		X	X	X																			
ICV	1.00	07:38	X	X	X	X	X		X	X	X																			
ICB	1.00	07:40	X	X	X	X	X		X	X	X																			
LLC	1.00	07:43	X	X	X	X	X		X	X	X																			
ICSA	1.00	07:45	X	X	X	X	X		X	X	X																			
ICSAB	1.00	07:47	X	X	X	X	X		X	X	X																			
ZZZZZZ	1.00	07:50																												
CCV	1.00	07:52	X	X	X	X	X		X	X	X																			
CCB	1.00	07:55	X	X	X	X	X		X	X	X																			
P12063AB	1.00	07:57	X	X	X	X	X		X	X	X																			
P12063AQ	1.00	08:00	X	X	X	X	X		X	X	X																			
9582699BKG	1.00	08:02	X	X	X	X	X		X	X	X																			
9582699A	1.00	08:05																												
9582699DUP	1.00	08:07	X	X	X	X	X		X	X	X																			
9582699MS	1.00	08:10	X	X	X	X	X		X	X	X																			
9582699MSD	1.00	08:12	X	X	X	X	X		X	X	X																			
9582699L	5.00	08:14	X	X	X	X	X		X	X	X																			
9582700	1.00	08:17	X	X	X	X	X		X	X	X																			
9582701	1.00	08:19	X	X	X	X	X		X	X	X																			
CCV	1.00	08:22	X	X	X	X	X		X	X	X																			
CCB	1.00	08:24	X	X	X	X	X		X	X	X																			
9582707	1.00	08:27	X	X	X	X	X		X	X	X																			
9582702	1.00	08:29	X	X	X	X	X		X	X	X																			
9582703	1.00	08:32	X	X	X	X	X		X	X	X																			
9582704	1.00	08:34	X	X	X	X	X		X	X	X																			
9582705	1.00	08:37	X	X	X	X	X		X	X	X																			
9582705	20.00	08:39																												
LLC	1.00	08:42	X	X	X	X	X		X	X	X																			
ICSA	1.00	08:44	X	X	X	X	X		X	X	X																			
ICSAB	1.00	08:46	X	X	X	X	X		X	X	X																			
ZZZZZZ	1.00	08:49																												
CCV	1.00	08:51	X	X	X	X	X		X	X	X																			
CCB	1.00	08:54	X	X	X	X	X		X	X	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

Method: CV
Instrument ID: 17384
Run Name: 1812102M07

Run Start Date: 05/01/2018
Run End Date: 05/01/2018

Lab Sample ID	D/F	Time	Analytes																											
			A S	B A	C D	C R	P B	H G	N I	S E	A G																			
S0	1.00	06:08						X																						
S0.2	1.00	06:10						X																						
S0.5	1.00	06:12						X																						
S1.0	1.00	06:14						X																						
S2.5	1.00	06:16						X																						
S5.0	1.00	06:18						X																						
ICV	1.00	06:20						X																						
ICB	1.00	06:22						X																						
CRA	1.00	06:24						X																						
CCV	1.00	06:26						X																						
CCB	1.00	06:28						X																						
CCV	1.00	09:46						X																						
CCB	1.00	09:48						X																						
P12071BB	1.00	09:50						X																						
P12071BQ	1.00	09:52						X																						
9582700BKG	1.00	09:54						X																						
9582700DUP	1.00	09:56						X																						
9582700MS	1.00	09:58						X																						
9582700MSD	1.00	10:00						X																						
ZZZZZZ	1.00	10:02																												
ZZZZZZ	1.00	10:04																												
ZZZZZZ	1.00	10:06																												
ZZZZZZ	1.00	10:08																												
CCV	1.00	10:10						X																						
CCB	1.00	10:12						X																						
ZZZZZZ	1.00	10:14																												
ZZZZZZ	1.00	10:16																												
ZZZZZZ	1.00	10:18																												
ZZZZZZ	1.00	10:20																												
ZZZZZZ	1.00	10:22																												
ZZZZZZ	1.00	10:24																												
ZZZZZZ	1.00	10:26																												
9582699	1.00	10:28						X																						
9582701	1.00	10:30						X																						
9582702	1.00	10:32						X																						
CCV	1.00	10:34						X																						
CCB	1.00	10:36						X																						
9582703	1.00	10:38						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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 14
ANALYSIS RUN LOG
SDG No.: FKP52

Method: CV
Instrument ID: 17384
Run Name: 1812102M07

Run Start Date: 05/01/2018
Run End Date: 05/01/2018

Lab Sample ID	D/F	Time	Analytes																															
			A S	B A	C D	C R	P B	H G	N I	S E	A G																							
9582704	1.00	10:40						X																										
9582705	1.00	10:43						X																										
9582707	1.00	10:45						X																										
ZZZZZZ	1.00	10:47																																
ZZZZZZ	1.00	10:49																																
ZZZZZZ	1.00	10:51																																
ZZZZZZ	1.00	10:53																																
ZZZZZZ	1.00	10:55																																
ZZZZZZ	1.00	10:57																																
CCV	1.00	10:59						X																										
CCB	1.00	11:01						X																										
ZZZZZZ	1.00	11:03																																
ZZZZZZ	1.00	11:05																																
ZZZZZZ	1.00	11:07																																
ZZZZZZ	1.00	11:09																																
ZZZZZZ	1.00	11:11																																
ZZZZZZ	1.00	11:13																																
ZZZZZZ	1.00	11:15																																
ZZZZZZ	1.00	11:17																																
ZZZZZZ	1.00	11:19																																
ZZZZZZ	1.00	11:21																																
CCV	1.00	11:23						X																										
CCB	1.00	11:25						X																										
ZZZZZZ	1.00	11:27																																
ZZZZZZ	1.00	11:29																																
ZZZZZZ	1.00	11:31																																
ZZZZZZ	1.00	11:34																																
ZZZZZZ	1.00	11:36																																
ZZZZZZ	1.00	11:38																																
ZZZZZZ	1.00	11:40																																
ZZZZZZ	1.00	11:42																																
ZZZZZZ	1.00	11:44																																
ZZZZZZ	1.00	11:46																																
CCV	1.00	11:48						X																										
CCB	1.00	11:50						X																										
ZZZZZZ	5.00	11:52																																
ZZZZZZ	1.00	11:54																																
ZZZZZZ	1.00	11:56																																

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



Method: CV
Instrument ID: 17384
Run Name: 1812102M07

Run Start Date: 05/01/2018
Run End Date: 05/01/2018

Lab Sample ID	D/F	Time	Analytes																											
			A S	B A	C D	C R	P B	H G	N I	S E	A G																			
ZZZZZZ	1.00	11:58																												
ZZZZZZ	1.00	12:00																												
ZZZZZZ	1.00	12:02																												
ZZZZZZ	1.00	12:04																												
CRA	1.00	12:06						X																						
CCV	1.00	12:08						X																						
CCB	1.00	12:10						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

Instrument ID: 19204

Start Date: 05/01/2018

Run Name: 1812102E05

End Date: 05/01/2018

Standard	Elements Applies to	Standard	Elements Applies to
BI-2-209	PB	IN-1-115	SE
IN-2-115	AG, AS, BA, CD, NI	SC-2-45	CR

Lab Sample ID	Time	Internal Standards %RI For:											
		Element SC-2-45	Q	Element IN-1-115	Q	Element IN-2-115	Q	Element BI-2-209	Q	Element	Q	Element	Q
S0	07:28	100		100		100		100					
S	07:31	100		100		98		100					
CCS	07:33	100		99		98		101					
CCS	07:35	102		99		100		101					
ICV	07:38	99		101		100		103					
ICB	07:40	97		99		100		100					
LLC	07:43	100		102		102		103					
ICSA	07:45	94		94		94		93					
ICSAB	07:47	96		96		91		94					
ZZZZZZ	07:50												
CCV	07:52	98		102		99		103					
CCB	07:55	98		99		102		101					
P12063AB	07:57	96		100		99		105					
P12063AQ	08:00	96		100		98		103					
9582699BKG	08:02	100		99		103		103					
9582699A	08:05	100		97		100		101					
9582699DUP	08:07	95		100		98		101					
9582699MS	08:10	99		99		100		102					
9582699MSD	08:12	100		99		104		103					
9582699L	08:14	99		99		102		101					
9582700	08:17	98		100		104		103					
9582701	08:19	103		101		106		104					
CCV	08:22	98		98		102		101					
CCB	08:24	98		99		101		101					
9582707	08:27	98		101		103		105					
9582702	08:29	98		99		101		103					
9582703	08:32	98		99		102		106					
9582704	08:34	101		101		108		106					
9582705	08:37	99		99		104		103					
9582705	08:39												
LLC	08:42	100		101		103		104					
ICSA	08:44	95		92		98		95					

LEGEND:

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

FLAG:

R = Internal Standard Relative Intensity OOS

INTERNAL STANDARD ELEMENTS:

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

Instrument ID: 19204

Start Date: 05/01/2018

Run Name: 1812102E05

End Date: 05/01/2018

Standard	Elements Applies to	Standard	Elements Applies to
BI-2-209	PB	IN-1-115	SE
IN-2-115	AG, AS, BA, CD, NI	SC-2-45	CR

Lab Sample ID	Time	Internal Standards %RI For:											
		Element SC-2-45	Q	Element IN-1-115	Q	Element IN-2-115	Q	Element BI-2-209	Q	Element	Q	Element	Q
ICSAB	08:46	96		95		93		93					
ZZZZZZ	08:49												
CCV	08:51	98		101		104		105					
CCB	08:54	95		99		101		101					

LEGEND:

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

FLAG:

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INTERNAL STANDARD ELEMENTS:

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

Raw Data

Metals in Liquid

ICP-MS Data

Metals in Liquid



Date File Name: 18E01B00.E05

Method Reference Name(s):

Run Name: 1812102E05

Analyst: 1242

Reviewed By: Choon Y Tian
Reviewed Date 05/01/2018 09:47

Verified By: Deborah A Krady
Verified Date 05/01/2018 11:25

Instrument Parameters:

Rinse Time (sec): 25.00

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

Run Name: 1812102E05
 Tube Number: 1
 Sample Number: S0

Date/Time: 05/01/2018 7:28:37

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
NA	23	0.00000	13392.00000	0.000	-7.82549	-1.24476	9.07025
MG	24	0.00000	23.33000	0.000	-0.12936	-0.77416	0.90352
AL	27	0.00000	63.33000	0.000	2.96608	-0.36818	-2.59790
K	39	0.00000	8168.81000	0.000	69.76763	-14.70224	-55.06540
CA	44	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
SC-1	45	430743.77000	0.00000	0.000	432206.28000	422947.30000	437077.73000
SC-2	45	16564.91000	0.00000	0.000	16878.65000	16598.20000	16217.88000
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	63.33000	0.000	-0.05081	0.03414	0.01668
MN	55	0.00000	13.33000	0.000	0.03461	-0.07363	0.03902
FE	57	0.00000	56.67000	0.000	0.25794	0.37083	-0.62878
CO	59	0.00000	30.00000	0.000	0.00011	-0.02257	0.02246
NI	60	0.00000	23.33000	0.000	-0.08909	0.02452	0.06457
CU	63	0.00000	110.01000	0.000	0.02776	-0.06864	0.04087
ZN	66	0.00000	10.00000	0.000	0.00020	-0.12192	0.12172
GE-1	72	578413.16000	0.00000	0.000	573824.72000	578385.15000	583029.60000
GE-2	72	47872.34000	0.00000	0.000	48767.84000	46521.98000	48327.19000
AS	75	0.00000	1.33000	0.000	0.01414	0.01344	-0.02758
SE	78	0.00000	0.67000	0.000	-0.00642	-0.00642	0.01284
SR	88	0.00000	6.67000	0.000	0.07291	-0.03646	-0.03646
MO	98	0.00000	23.33000	0.000	-0.02390	-0.00638	0.03029
AG	107	0.00000	26.67000	0.000	-0.00591	-0.01504	0.02095
CD	111	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
IN-1	115	344244.20000	0.00000	0.000	334855.49000	348398.21000	349478.91000
IN-2	115	20281.69000	0.00000	0.000	20151.59000	20492.27000	20201.20000
SN	120	0.00000	46.67000	0.000	-0.08162	0.03949	0.04213
SB	121	0.00000	10.00000	0.000	-0.03799	0.07597	-0.03799
BA	137	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
TB-2	159	100655.26000	0.00000	0.000	102063.54000	97948.31000	101953.92000
TL	203	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
PB	208	0.00000	100.00000	0.000	0.01627	0.00094	-0.01721
BI-2	209	78895.68000	0.00000	0.000	78503.64000	76072.16000	82111.23000
U	238	0.00000	26.67000	0.000	-0.00178	0.00120	0.00058

Run Name: 1812102E05
 Tube Number: 2
 Sample Number: S1

Date/Time: 05/01/2018 7:31:02

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-2	45	16551.41000	0.00000	0.000	17258.73000	16808.28000	15587.22000
AL	27	10000.00000	85149.79000	5.900	9371.16150	10086.72791	10542.11059
CA	44	10000.00000	10163.21000	6.500	9253.48188	10333.76109	10412.75702
CR	52	1000.00000	476445.92000	5.800	957.00262	977.01513	1065.98224
FE	57	10000.00000	87934.28000	5.900	9502.18374	9838.91935	10658.89690
K	39	10000.00000	177007.35000	4.500	9557.83026	9975.67651	10466.49323
MG	24	10000.00000	303571.07000	5.800	9486.46740	9885.91993	10627.61267
MN	55	1000.00000	180845.84000	5.600	953.19339	985.33625	1061.47036
NA	23	10000.00000	661404.22000	4.500	9617.86010	9893.32323	10488.81667
TI	47	1000.00000	8438.95000	2.300	987.06503	986.69190	1026.24307
V	51	1000.00000	361053.56000	5.000	949.32620	1000.39049	1050.28330
IN-1	115	343293.10000	0.00000	0.000	340809.73000	339730.05000	349339.52000
IN-2	115	19867.65000	0.00000	0.000	19315.64000	20825.03000	19462.29000
AG	107	100.00000	109596.95000	4.000	102.06604	95.40987	102.52409
AS	75	1000.00000	47212.17000	3.900	1025.70725	954.84381	1019.44893
BA	137	1000.00000	91200.03000	4.200	1012.24300	953.58440	1034.17260
CD	111	100.00000	12045.59000	1.300	100.96402	98.51063	100.52534
CO	59	1000.00000	875815.51000	4.400	1022.21539	949.78200	1028.00260
CU	63	1000.00000	725738.71000	3.000	1010.65792	965.80050	1023.54158
MO	98	100.00000	54389.30000	3.000	103.25988	97.46033	99.27980
NI	60	1000.00000	255912.56000	1.900	1015.50760	978.47371	1006.01869
SB	121	100.00000	25496.42000	5.600	105.30572	94.22830	100.46598
SE	78	100.00000	10204.03000	0.100	100.13722	99.98646	99.87632
SN	120	100.00000	31756.81000	4.400	101.93756	94.96091	103.10153
SR	88	100.00000	18026.64000	1.700	101.17179	98.02099	100.80723
ZN	66	1000.00000	80659.34000	3.800	1020.87864	956.14522	1022.97614
BI-2	209	79260.91000	0.00000	0.000	80082.80000	78623.91000	79076.03000
PB	208	100.00000	308321.37000	0.500	99.45283	100.00936	100.53781
TL	203	100.00000	94873.96000	2.600	97.11968	101.97770	100.90262
U	238	100.00000	372189.71000	0.500	99.56305	99.83399	100.60297
SC-1	45	428879.39000	0.00000	0.000	422027.61000	424812.53000	439798.04000
GE-1	72	567069.42000	0.00000	0.000	565090.97000	561298.55000	574818.74000
GE-2	72	47758.54000	0.00000	0.000	48075.78000	47845.68000	47354.16000
TB-2	159	99405.17000	0.00000	0.000	98230.95000	98744.77000	101239.80000

Run Name: 1812102E05
 Tube Number: 3
 Sample Number: CCS

Date/Time: 05/01/2018 7:33:27

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-2	45	16498.17000	0.00000	0.000	16738.41000	15697.46000	17058.65000
AL	27	2.57300	83.34000	261.700	5.37383	7.45563	-5.11023
CA	44	6.47500	6.67000	173.200	19.42604	0.00000	0.00000
CR	52	0.26500	190.01000	46.500	0.40563	0.17628	0.21258
FE	57	2.31400	76.67000	121.000	-0.80898	3.15543	4.59582
K	39	-53.50400	7215.03000	0.000	-9.25879	-52.77079	-98.48386
MG	24	-0.01500	23.33000	0.000	0.20115	-0.42750	0.18284
MN	55	0.01900	16.67000	174.900	-0.01906	0.04276	0.03347
NA	23	-5.10600	12985.04000	0.000	-14.24479	13.93590	-15.00789
TI	47	2.32700	20.00000	100.600	4.68340	0.00000	2.29774
V	51	0.12700	46.67000	73.400	0.13670	0.02915	0.21462
IN-1	115	342113.54000	0.00000	0.000	340374.05000	341953.87000	344012.69000
IN-2	115	19967.40000	0.00000	0.000	19560.00000	20481.48000	19860.73000
AG	107	0.01000	36.67000	205.000	0.03168	0.00265	-0.00564
AS	75	0.56500	28.00000	45.900	0.57417	0.30081	0.81905
BA	137	0.07200	6.67000	86.700	0.11125	0.10625	0.00000
CD	111	0.04400	5.33000	57.200	0.01686	0.04830	0.06641
CO	59	0.03400	60.00000	119.000	-0.01046	0.04382	0.06905
CU	63	0.13600	206.68000	77.500	0.25689	0.07835	0.07167
MO	98	0.22700	146.67000	60.300	0.18204	0.11845	0.38092
NI	60	0.04200	33.33000	304.600	0.18862	-0.05120	-0.01094
SB	121	1.66700	436.69000	19.000	1.63350	1.36828	2.00016
SE	78	0.11200	12.00000	42.500	0.09905	0.16409	0.07182
SN	120	0.77500	293.35000	21.700	0.88009	0.86455	0.58098
SR	88	0.01900	10.00000	505.000	-0.03646	-0.03646	0.13000
ZN	66	0.04100	13.33000	345.600	-0.12192	0.11838	0.12589
BI-2	209	79606.52000	0.00000	0.000	79157.98000	79187.90000	80473.68000
PB	208	0.00800	126.67000	191.300	0.00287	0.02559	-0.00411
TL	203	0.07700	73.33000	62.800	0.10552	0.02110	0.10380
U	238	0.01600	86.67000	59.000	0.00625	0.02507	0.01662
SC-1	45	420203.21000	0.00000	0.000	419179.88000	419680.97000	421748.78000
GE-1	72	559635.17000	0.00000	0.000	559363.82000	557034.72000	562506.98000
GE-2	72	48437.02000	0.00000	0.000	48387.15000	48065.77000	48858.14000
TB-2	159	100473.90000	0.00000	0.000	100704.80000	100161.99000	100554.90000

Run Name: 1812102E05
 Tube Number: 4
 Sample Number: CCS

Date/Time: 05/01/2018 7:35:52

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-2	45	16965.21000	0.00000	0.000	16158.00000	17188.63000	17549.00000
AL	27	0.75400	70.00000	603.800	5.83220	-0.60926	-2.96113
CA	44	6.30600	6.67000	173.200	0.00000	18.91722	0.00000
CR	52	0.19100	160.01000	77.000	0.10309	0.10911	0.36099
FE	57	3.13300	86.67000	101.800	0.55593	6.69947	2.14479
K	39	-35.22900	7721.95000	0.000	2.87005	-23.91427	-84.64214
MG	24	0.07700	26.67000	200.100	-0.10060	0.17560	0.15610
MN	55	0.03600	20.00000	164.900	0.09598	0.03266	-0.02158
NA	23	-20.90900	12301.27000	0.000	-3.39661	-22.83616	-36.49495
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.10800	40.00000	65.700	0.14161	0.02662	0.15647
IN-1	115	341455.50000	0.00000	0.000	340133.89000	335734.36000	348498.24000
IN-2	115	20195.16000	0.00000	0.000	20402.20000	20232.57000	19950.72000
AG	107	-0.00900	16.67000	0.000	-0.02388	-0.02388	0.02151
AS	75	0.11100	6.67000	86.300	0.05483	0.22174	0.05670
BA	137	0.14300	13.33000	113.700	0.31998	0.00000	0.10907
CD	111	0.01100	1.33000	173.200	0.00000	0.00000	0.03306
CO	59	0.03700	63.33000	96.000	0.02191	0.07837	0.01181
CU	63	0.05900	153.34000	151.800	0.05241	-0.02704	0.15295
MO	98	0.01200	30.00000	514.000	-0.02413	0.08432	-0.02372
NI	60	0.07700	43.33000	150.800	0.17716	-0.05073	0.10539
SB	121	0.28300	83.34000	47.400	0.26724	0.42372	0.15710
SE	78	0.01600	2.22000	106.600	0.03315	0.01362	0.00005
SN	120	0.19800	110.00000	42.500	0.10164	0.25838	0.23266
SR	88	-0.01800	3.33000	0.000	-0.03646	0.01801	-0.03646
ZN	66	0.65000	63.33000	12.100	0.60179	0.60785	0.74151
BI-2	209	79728.84000	0.00000	0.000	80723.48000	79145.79000	79317.25000
PB	208	0.00600	120.00000	196.200	0.01492	0.00937	-0.00693
TL	203	0.01800	16.67000	35.400	0.01035	0.02111	0.02106
U	238	0.00200	33.33000	93.900	0.00071	0.00356	0.00085
SC-1	45	424514.06000	0.00000	0.000	426910.58000	415470.35000	431161.24000
GE-1	72	577003.13000	0.00000	0.000	576592.06000	565861.75000	588555.58000
GE-2	72	48386.99000	0.00000	0.000	48747.85000	47935.84000	48477.29000
TB-2	159	101607.50000	0.00000	0.000	102104.77000	101347.65000	101370.09000

Run Name: 1812102E05
 Tube Number: 5
 Sample Number: ICV

Date/Time: 05/01/2018 7:38:16

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-2	45	16481.42000	0.00000	0.000	17058.63000	15997.76000	16387.86000
AL	27	5135.20100	43605.90000	5.800	4793.22224	5275.84503	5336.53506
CA	44	4902.97100	4960.89000	9.000	4480.16821	5356.80303	4871.94170
CR	52	524.99800	249428.00000	3.300	505.65448	539.66858	529.67158
FE	57	5155.20100	45244.52000	2.400	5023.22088	5168.37588	5274.00564
K	39	5180.93500	95348.25000	2.200	5091.11090	5143.35454	5308.34000
MG	24	5224.81800	158166.68000	3.200	5032.56589	5321.51313	5320.37535
MN	55	521.53600	94038.90000	3.500	504.63126	540.51268	519.46376
NA	23	4934.09900	331938.23000	4.000	4734.32174	5125.54332	4942.43322
TI	47	506.07100	4253.99000	2.700	498.69041	521.95627	497.56538
V	51	519.74700	187057.27000	3.000	502.78114	533.85995	522.59842
IN-1	115	346099.98000	0.00000	0.000	341454.04000	343774.12000	353071.78000
IN-2	115	20203.01000	0.00000	0.000	20677.48000	19773.25000	20158.31000
AG	107	52.88600	59005.05000	1.500	52.31805	53.79123	52.54770
AS	75	533.61400	25633.07000	3.600	513.62031	552.43806	534.78401
BA	137	523.02900	48537.76000	3.600	513.05738	544.58532	511.44371
CD	111	52.02900	6370.55000	5.000	49.35067	54.54384	52.19265
CO	59	510.69700	455225.44000	2.500	499.80271	524.74866	507.53832
CU	63	515.28900	380514.43000	2.400	501.18951	522.64446	522.03210
MO	98	51.73600	28641.16000	1.500	51.06175	51.58585	52.55971
NI	60	516.01300	134339.07000	1.600	511.28228	525.70692	511.04917
SB	121	54.99500	14283.14000	4.900	53.55515	53.32578	58.10426
SE	78	51.58400	5305.91000	2.900	51.27146	53.20965	50.27047
SN	120	49.80000	16118.20000	3.000	48.78661	51.53149	49.08310
SR	88	48.92200	8969.39000	6.600	45.43704	49.52394	51.80469
ZN	66	524.57800	43062.84000	2.300	510.70941	532.06836	530.95663
BI-2	209	80868.79000	0.00000	0.000	79227.19000	80171.70000	83207.47000
PB	208	51.30600	161387.17000	2.600	52.75534	50.99065	50.17120
TL	203	51.86700	50195.99000	2.200	52.69343	52.31225	50.59529
U	238	50.09400	190170.75000	2.300	51.26055	50.11301	48.90910
SC-1	45	430763.30000	0.00000	0.000	429633.94000	428888.70000	433767.26000
GE-1	72	578730.61000	0.00000	0.000	570697.41000	576352.76000	589141.67000
GE-2	72	48707.87000	0.00000	0.000	48016.19000	47985.49000	50121.92000
TB-2	159	102067.54000	0.00000	0.000	102447.53000	101319.41000	102435.67000

Run Name: 1812102E05
 Tube Number: 6
 Sample Number: ICB

Date/Time: 05/01/2018 7:40:41

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-2	45	16054.39000	0.00000	0.000	16668.22000	16478.05000	15016.90000
AL	27	1.83600	76.67000	74.900	3.09794	2.03951	0.37087
CA	44	17.72400	16.67000	128.100	0.00000	9.86649	43.30602
CR	52	0.44000	266.68000	17.700	0.47031	0.49833	0.35193
FE	57	0.59200	60.00000	686.300	-3.04059	4.98295	-0.16534
K	39	-13.97300	7692.01000	0.000	8.01696	-3.56995	-46.36589
MG	24	0.47600	36.67000	51.100	0.20525	0.54679	0.67532
MN	55	0.02100	16.67000	557.200	-0.07363	0.14812	-0.01280
NA	23	-1.58100	12841.52000	0.000	-15.73199	-9.35265	20.34273
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.14100	50.00000	84.500	0.05491	0.27776	0.09143
IN-1	115	341127.10000	0.00000	0.000	340607.31000	345512.68000	337261.32000
IN-2	115	20287.40000	0.00000	0.000	20461.08000	19979.93000	20421.18000
AG	107	-0.01800	6.67000	0.000	-0.00618	-0.02388	-0.02388
AS	75	0.16600	9.33000	58.100	0.21895	0.22489	0.05476
BA	137	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CD	111	0.02700	3.33000	35.100	0.03223	0.03301	0.01615
CO	59	0.04500	70.00000	89.100	0.02175	0.09113	0.02185
CU	63	0.12600	203.34000	37.500	0.10532	0.17990	0.09242
MO	98	0.09000	73.33000	49.900	0.04722	0.08592	0.13681
NI	60	0.01300	26.67000	164.200	0.02469	-0.01141	0.02491
SB	121	0.25500	76.67000	33.400	0.30440	0.15681	0.30507
SE	78	0.03500	4.22000	45.800	0.01996	0.05201	0.03349
SN	120	0.23800	123.34000	44.200	0.16210	0.35742	0.19334
SR	88	-0.01800	3.33000	0.000	-0.03646	0.01870	-0.03646
ZN	66	0.07900	16.67000	442.100	0.47943	-0.12192	-0.12192
BI-2	209	78938.59000	0.00000	0.000	79990.84000	77749.62000	79075.32000
PB	208	0.00700	123.34000	369.800	0.01857	-0.02294	0.02567
TL	203	0.06400	60.00000	73.000	0.08354	0.09669	0.01056
U	238	0.00100	30.00000	13.000	0.00079	0.00102	0.00088
SC-1	45	423354.74000	0.00000	0.000	425305.89000	423536.63000	421221.71000
GE-1	72	568649.22000	0.00000	0.000	569622.22000	569885.50000	566439.95000
GE-2	72	47942.27000	0.00000	0.000	48427.00000	47213.49000	48186.31000
TB-2	159	98652.17000	0.00000	0.000	100059.38000	96871.75000	99025.37000

Run Name: 1812102E05
 Tube Number: 7
 Sample Number: LLC

Date/Time: 05/01/2018 7:43:05

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-2	45	16628.17000	0.00000	0.000	17649.20000	16267.81000	15967.50000
AL	27	202.93300	1800.16000	7.100	196.14616	219.39547	193.25881
CA	44	309.90400	316.68000	11.300	294.79536	349.81007	285.10521
CR	52	4.69900	2320.24000	6.200	4.83804	4.89777	4.36253
FE	57	203.55200	1850.17000	12.600	178.89645	201.56299	230.19764
K	39	409.89400	15146.86000	2.100	401.95463	419.18526	408.54156
MG	24	220.11000	6741.46000	4.000	212.63535	218.04017	229.65481
MN	55	4.07800	753.38000	9.200	3.65327	4.36288	4.21748
NA	23	400.69600	39502.94000	8.000	363.49667	419.89584	418.69585
TI	47	28.77300	243.34000	17.000	26.65138	25.30034	34.36782
V	51	1.17100	426.69000	7.400	1.27064	1.12533	1.11783
IN-1	115	350502.29000	0.00000	0.000	342864.25000	352741.84000	355900.77000
IN-2	115	20665.82000	0.00000	0.000	20460.98000	20726.61000	20809.88000
AG	107	0.93700	1096.75000	19.200	0.89680	0.78014	1.13380
AS	75	4.10600	203.33000	13.400	3.75266	3.82590	4.73970
BA	137	4.21400	400.02000	10.700	4.67986	3.77986	4.18302
CD	111	1.16400	146.00000	6.000	1.09590	1.16141	1.23599
CO	59	1.00500	946.73000	18.500	1.21783	0.87378	0.92459
CU	63	4.01900	3147.07000	7.300	4.31768	4.00959	3.72994
MO	98	0.81100	483.36000	31.800	0.60056	0.73328	1.09875
NI	60	4.16500	1133.42000	10.100	3.89341	3.95469	4.64721
SB	121	2.25700	610.04000	21.800	1.71211	2.66620	2.39351
SE	78	4.12700	430.01000	10.900	4.64496	3.91696	3.81909
SN	120	4.22900	1443.46000	11.700	4.38302	4.62695	3.67555
SR	88	2.17200	413.36000	30.700	2.92598	1.93088	1.65823
ZN	66	29.96400	2526.96000	8.900	29.70839	27.42641	32.75706
BI-2	209	81049.50000	0.00000	0.000	80644.57000	82704.52000	79799.41000
PB	208	2.10100	6724.19000	8.700	2.30794	2.03196	1.96209
TL	203	0.96600	936.73000	16.100	1.13944	0.83834	0.92120
U	238	1.01300	3880.67000	6.900	1.04668	0.93286	1.06051
SC-1	45	432815.24000	0.00000	0.000	430850.11000	433853.24000	433742.38000
GE-1	72	576062.39000	0.00000	0.000	569991.01000	578918.86000	579277.30000
GE-2	72	49309.50000	0.00000	0.000	48477.59000	48647.37000	50803.55000
TB-2	159	102241.24000	0.00000	0.000	101711.83000	101279.11000	103732.79000

Run Name: 1812102E05
 Tube Number: 8
 Sample Number: ICSA

Date/Time: 05/01/2018 7:45:29

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-2	45	15493.81000	0.00000	0.000	14866.58000	15517.13000	16097.73000
AL	27	104010.32500	829093.92000	4.500	108573.17200	104235.94773	99221.85642
CA	44	287952.07000	274234.01000	2.600	293979.15928	290489.35270	279387.69749
CR	52	1.46700	713.38000	20.700	1.47643	1.76653	1.15946
FE	57	257583.49100	2121184.86000	3.900	268094.85035	256801.33544	247854.28641
K	39	108660.31900	1726689.40000	2.600	111714.51297	108190.16173	106076.28341
MG	24	104353.33400	2968579.85000	3.400	107466.11062	105142.40793	100451.48311
MN	55	3.84300	660.04000	28.100	5.08834	3.22335	3.21793
NA	23	258214.69600	15684801.44000	3.700	267999.00580	257977.61453	248667.46671
TI	47	2194.96100	17355.64000	3.200	2143.24973	2275.87255	2165.76010
V	51	0.03900	13.33000	39.500	0.03078	0.02949	0.05686
IN-1	115	325013.10000	0.00000	0.000	326133.75000	321071.86000	327833.69000
IN-2	115	18973.28000	0.00000	0.000	18489.79000	19750.74000	18679.32000
AG	107	0.45700	503.36000	10.900	0.51492	0.42550	0.43188
AS	75	0.44500	21.33000	5.700	0.47259	0.44066	0.42251
BA	137	1.37400	120.01000	28.100	1.64780	1.54260	0.93198
CD	111	0.09300	10.67000	39.400	0.12484	0.10017	0.05296
CO	59	1.01700	880.06000	22.900	1.22867	1.05631	0.76701
CU	63	0.97800	780.05000	13.200	1.12382	0.87634	0.93512
MO	98	2095.98700	1087988.68000	3.700	2146.70465	2005.80467	2135.45281
NI	60	1.06800	283.35000	8.500	1.04413	1.16827	0.99108
SB	121	1.24600	313.35000	8.700	1.26716	1.34148	1.12886
SE	78	0.06500	6.89000	23.100	0.06920	0.07741	0.04828
SN	120	0.17500	96.67000	60.500	0.26243	0.20482	0.05727
SR	88	10.17500	1760.17000	11.600	10.81177	10.90060	8.81366
ZN	66	2.04400	166.68000	37.200	1.47533	1.74714	2.90829
BI-2	209	73215.38000	0.00000	0.000	73832.52000	71892.03000	73921.58000
PB	208	0.23600	766.71000	13.400	0.23881	0.20322	0.26632
TL	203	0.16700	146.68000	29.600	0.21497	0.11620	0.16951
U	238	0.04700	186.67000	36.400	0.05626	0.05797	0.02737
SC-1	45	408804.64000	0.00000	0.000	413651.44000	405187.30000	407575.19000
GE-1	72	538549.13000	0.00000	0.000	543312.06000	527021.55000	545313.78000
GE-2	72	45900.12000	0.00000	0.000	46241.01000	44175.43000	47283.91000
TB-2	159	98126.41000	0.00000	0.000	97305.11000	98200.37000	98873.75000

Run Name: 1812102E05
 Tube Number: 9
 Sample Number: ICSAB

Date/Time: 05/01/2018 7:47:52

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-2	45	15907.53000	0.00000	0.000	15387.05000	16448.01000	15887.53000
AL	27	101151.15500	828245.64000	3.200	103932.59518	97668.54203	101852.32667
CA	44	281038.62400	274764.09000	3.500	290806.60198	271020.96111	281288.30988
CR	52	215.73500	98990.70000	2.000	219.38418	210.81730	217.00492
FE	57	247893.30500	2096688.35000	3.000	255973.65879	241046.32886	246659.92673
K	39	106059.43100	1730604.14000	3.000	108751.48618	102514.67674	106912.13157
MG	24	100266.79900	2929822.67000	1.900	102271.22793	98379.41432	100149.75393
MN	55	209.16400	36424.45000	1.400	211.97005	206.19738	209.32548
NA	23	248994.71800	15533305.19000	3.400	255396.20169	239455.10606	252132.84711
TI	47	2098.92400	17028.54000	2.300	2133.19473	2044.49313	2119.08337
V	51	218.85000	76020.71000	3.000	225.32576	212.13242	219.09200
IN-1	115	328848.24000	0.00000	0.000	330444.15000	328237.79000	327862.77000
IN-2	115	18512.70000	0.00000	0.000	18439.95000	18619.91000	18478.23000
AG	107	54.11800	55339.35000	0.800	53.64230	54.38276	54.32774
AS	75	112.91000	4973.40000	2.300	115.75053	110.79246	112.18837
BA	137	1.09900	93.34000	61.100	1.29811	0.35061	1.64883
CD	111	102.83900	11546.57000	2.400	101.62494	101.24523	105.64648
CO	59	212.39900	173572.86000	2.000	207.59648	214.48531	215.11396
CU	63	212.69900	144041.00000	2.000	208.29352	216.68925	213.11459
MO	98	2137.74700	1083705.32000	1.100	2113.49192	2141.24842	2158.50157
NI	60	209.45600	49987.28000	1.700	212.01516	205.45059	210.90290
SB	121	1.54600	376.69000	25.700	1.86171	1.67613	1.09948
SE	78	100.95400	9868.07000	1.600	101.47888	99.10488	102.27770
SN	120	0.09300	70.00000	158.600	0.19563	-0.07651	0.16106
SR	88	10.12700	1706.83000	9.500	10.66199	9.01939	10.69940
ZN	66	105.13600	7918.73000	1.300	103.99903	106.69287	104.71503
BI-2	209	74507.55000	0.00000	0.000	73468.77000	74404.17000	75649.72000
PB	208	0.19400	656.71000	16.100	0.22266	0.16069	0.19830
TL	203	0.15700	140.01000	19.300	0.14781	0.19086	0.13250
U	238	0.05000	200.01000	30.500	0.04788	0.03574	0.06600
SC-1	45	421319.69000	0.00000	0.000	422724.29000	416060.97000	425173.82000
GE-1	72	547809.64000	0.00000	0.000	538706.48000	554020.81000	550701.63000
GE-2	72	46478.54000	0.00000	0.000	45599.29000	46261.31000	47575.02000
TB-2	159	97976.33000	0.00000	0.000	97968.59000	98593.96000	97366.45000

Run Name: 1812102E05
 Tube Number: 10
 Sample Number: RINSE

Date/Time: 05/01/2018 7:50:21

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-2	45	16354.64000	0.00000	0.000	16377.98000	16267.94000	16418.00000
AL	27	13.60200	176.68000	33.900	11.58192	18.87107	10.35312
CA	44	29.79500	30.00000	115.400	69.48743	9.99392	9.90258
CR	52	0.34100	223.35000	43.800	0.48102	0.35727	0.18383
FE	57	48.37900	476.69000	12.500	47.51659	54.81485	42.80584
K	39	-16.56600	7775.28000	0.000	56.14367	-47.95502	-57.88557
MG	24	13.09200	416.69000	6.200	13.51356	13.61021	12.15295
MN	55	0.05700	23.33000	56.600	0.09370	0.03868	0.03765
NA	23	41.97100	15920.76000	9.800	46.23788	41.67000	38.00587
TI	47	2.40100	20.00000	86.600	3.58985	3.61413	0.00000
V	51	0.05600	20.00000	50.400	0.02794	0.08439	0.05575
IN-1	115	345389.27000	0.00000	0.000	346445.70000	345125.42000	344596.68000
IN-2	115	20305.34000	0.00000	0.000	20702.70000	20372.18000	19841.13000
AG	107	-0.00900	16.67000	0.000	-0.02388	-0.00610	0.00350
AS	75	0.11000	6.67000	130.000	0.25669	-0.02758	0.09954
BA	137	0.03500	3.33000	173.200	0.10511	0.00000	0.00000
CD	111	0.01100	1.33000	173.200	0.00000	0.00000	0.03324
CO	59	0.00400	33.33000	360.500	0.01015	-0.01138	0.01206
CU	63	0.08100	170.01000	150.800	0.11557	-0.05473	0.18220
MO	98	3.25800	1830.18000	18.500	2.88652	2.93401	3.95251
NI	60	0.10200	50.00000	129.300	0.02336	0.25374	0.02825
SB	121	0.03800	20.00000	196.400	0.11241	-0.03799	0.04048
SE	78	0.07200	8.00000	27.400	0.07127	0.05207	0.09122
SN	120	-0.01000	43.33000	0.000	-0.05305	0.04057	-0.01757
SR	88	-0.03600	0.00000	0.000	-0.03646	-0.03646	-0.03646
ZN	66	0.65000	63.33000	49.700	0.35355	0.60285	0.99434
BI-2	209	78191.85000	0.00000	0.000	78945.22000	77880.95000	77749.37000
PB	208	0.00200	106.67000	340.100	0.00622	0.00676	-0.00641
TL	203	0.01100	10.00000	0.800	0.01058	0.01073	0.01074
U	238	-0.00400	10.00000	0.000	-0.00720	-0.00720	0.00102
SC-1	45	429485.23000	0.00000	0.000	431772.88000	425931.09000	430751.71000
GE-1	72	577042.09000	0.00000	0.000	579352.10000	571207.53000	580566.63000
GE-2	72	47357.24000	0.00000	0.000	47443.83000	45890.18000	48737.70000
TB-2	159	99199.13000	0.00000	0.000	101358.90000	98662.57000	97575.91000

Run Name: 1812102E05
 Tube Number: 11
 Sample Number: **CCV**

Date/Time: 05/01/2018 7:52:53

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-2	45	16167.90000	0.00000	0.000	15647.51000	16558.19000	16298.01000
AL	27	2625.77700	21920.37000	2.500	2658.21425	2550.35885	2668.75890
CA	44	2641.80400	2623.64000	9.000	2795.28202	2366.59084	2763.53818
CR	52	270.97100	126305.78000	4.500	282.83770	258.61197	271.46188
FE	57	2629.00200	22655.05000	3.400	2723.29685	2543.60929	2620.10062
K	39	2572.78000	50427.28000	4.300	2690.57809	2470.44390	2557.31778
MG	24	2631.76000	78179.24000	2.500	2707.12357	2592.51549	2595.64235
MN	55	269.52600	47714.31000	0.500	270.23299	270.35916	267.98682
NA	23	2614.66300	178776.71000	2.100	2672.62641	2563.56318	2607.80038
TI	47	244.79800	2013.53000	19.300	295.61615	236.74117	202.03605
V	51	268.72000	94902.23000	1.800	274.28502	265.17876	266.69652
IN-1	115	350427.06000	0.00000	0.000	352079.81000	351503.06000	347698.31000
IN-2	115	20177.37000	0.00000	0.000	20799.87000	19345.65000	20386.59000
AG	107	26.61100	29663.24000	1.800	26.65586	27.06652	26.11058
AS	75	259.98800	12473.07000	2.900	258.06759	268.33568	253.56019
BA	137	265.52300	24602.06000	3.700	263.74699	276.13421	256.68865
CD	111	25.62800	3140.31000	5.300	26.98580	24.25773	25.63997
CO	59	257.87700	229508.54000	2.900	251.32287	265.96923	256.34017
CU	63	258.74800	190834.20000	2.400	253.65716	265.58657	257.00120
MO	98	25.06800	13852.69000	6.500	23.33711	26.58691	25.28131
NI	60	264.84000	68822.61000	3.800	254.91435	275.09044	264.51604
SB	121	25.63500	6651.59000	6.400	26.46438	26.68533	23.75465
SE	78	26.16300	2725.99000	2.600	26.56133	26.54108	25.38641
SN	120	25.39300	8225.60000	4.700	24.08146	26.42013	25.67804
SR	88	26.25800	4814.19000	0.300	26.24702	26.34216	26.18491
ZN	66	260.59900	21336.95000	7.800	247.06673	283.86042	250.86959
BI-2	209	81213.47000	0.00000	0.000	81236.56000	81488.97000	80914.88000
PB	208	25.60800	80980.48000	0.400	25.55805	25.72200	25.54470
TL	203	26.07100	25347.47000	2.800	26.76682	25.32874	26.11843
U	238	25.44300	97051.74000	0.300	25.35440	25.52526	25.44971
SC-1	45	431374.41000	0.00000	0.000	429099.72000	433645.19000	431378.31000
GE-1	72	581792.23000	0.00000	0.000	577282.69000	587773.27000	580320.73000
GE-2	72	48617.82000	0.00000	0.000	49138.69000	49370.01000	47344.76000
TB-2	159	102559.32000	0.00000	0.000	101841.74000	102384.99000	103451.23000

Run Name: 1812102E05
 Tube Number: 12
 Sample Number: CCB

Date/Time: 05/01/2018 7:55:17

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-2	45	16257.91000	0.00000	0.000	15136.98000	16988.58000	16648.16000
AL	27	-2.18500	43.33000	0.000	-2.25596	-6.24369	1.94319
CA	44	10.35000	10.00000	104.000	21.48124	9.56999	0.00000
CR	52	0.30300	203.34000	50.600	0.34808	0.13237	0.42938
FE	57	2.02800	73.33000	73.300	1.02671	1.32107	3.73741
K	39	-13.90300	7728.58000	0.000	63.37623	-53.10367	-51.98266
MG	24	3.59300	130.01000	20.600	3.89966	2.74963	4.12914
MN	55	0.07200	26.67000	192.600	-0.07363	0.08768	0.20073
NA	23	3.09900	13341.89000	336.100	4.04875	-7.76003	13.00800
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.05600	20.00000	84.400	0.03023	0.02694	0.10996
IN-1	115	339318.33000	0.00000	0.000	340753.95000	337836.02000	339365.02000
IN-2	115	20665.27000	0.00000	0.000	20071.06000	20832.12000	21092.62000
AG	107	-0.01200	13.33000	0.000	-0.00583	-0.00649	-0.02388
AS	75	0.17400	10.00000	81.600	0.05619	0.13385	0.33115
BA	137	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CD	111	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CO	59	0.07700	100.01000	51.800	0.10186	0.09691	0.03083
CU	63	0.03300	136.67000	171.200	0.06936	0.06140	-0.03201
MO	98	0.22300	150.01000	34.700	0.21273	0.15081	0.30427
NI	60	0.02200	30.00000	434.200	-0.05042	-0.01459	0.13166
SB	121	0.43700	126.68000	30.200	0.34988	0.37307	0.58942
SE	78	0.04900	5.56000	44.100	0.03308	0.07325	0.03988
SN	120	0.21000	116.67000	22.100	0.23043	0.15666	0.24198
SR	88	-0.03600	0.00000	0.000	-0.03646	-0.03646	-0.03646
ZN	66	0.07400	16.67000	243.500	-0.12192	0.23247	0.11142
BI-2	209	79447.98000	0.00000	0.000	79568.22000	79005.73000	79769.99000
PB	208	0.00600	120.00000	91.600	0.00268	0.00294	0.01227
TL	203	0.03100	30.00000	66.400	0.03149	0.01057	0.05236
U	238	0.00300	36.67000	212.400	0.00886	-0.00181	0.00081
SC-1	45	419933.71000	0.00000	0.000	418091.75000	422606.60000	419102.77000
GE-1	72	563622.43000	0.00000	0.000	565843.62000	562372.69000	562650.97000
GE-2	72	46953.22000	0.00000	0.000	48948.46000	45639.74000	46271.47000
TB-2	159	101543.52000	0.00000	0.000	101390.25000	102987.64000	100252.66000

Run Name: 1812102E05
 Tube Number: 13
 Sample Number: **PBW**

Date/Time: 05/01/2018 7:57:43
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	15974.26000	0.00000	0.000	15767.37000	16377.93000	15777.47000
AL	27	2.30900	80.00000	96.900	0.00164	4.46805	2.45806
CA	44	78.78000	76.67000	67.700	123.74473	19.85361	92.74141
CR	52	0.21400	160.01000	51.400	0.32885	0.20578	0.10876
FE	57	-0.17100	53.33000	0.000	-0.46321	1.60983	-1.65832
K	39	-9.79800	7705.28000	0.000	35.37496	-4.23775	-60.53228
MG	24	1.74300	73.33000	81.200	3.02220	0.22261	1.98506
MN	55	0.27200	60.00000	77.500	0.44780	0.03792	0.33167
NA	23	20.02700	14179.23000	23.700	14.73941	23.95075	21.39166
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.06700	23.33000	89.900	0.00000	0.08383	0.11602
IN-1	115	343309.29000	0.00000	0.000	345123.55000	339122.65000	345681.67000
IN-2	115	20175.54000	0.00000	0.000	20262.78000	20131.86000	20131.98000
AG	107	0.00000	26.67000	26314.100	-0.00600	-0.01488	0.02110
AS	75	0.12500	7.33000	38.700	0.09689	0.09770	0.18122
BA	137	0.07200	6.67000	173.200	0.21479	0.00000	0.00000
CD	111	0.02700	3.33000	34.500	0.03255	0.01638	0.03276
CO	59	0.01500	43.33000	239.700	0.05583	-0.01111	0.00014
CU	63	0.16800	233.34000	34.100	0.12131	0.23178	0.15024
MO	98	0.14500	103.34000	61.800	0.08414	0.10310	0.24824
NI	60	0.18000	70.00000	42.200	0.25562	0.18074	0.10364
SB	121	0.09100	33.33000	49.000	0.11568	0.03935	0.11667
SE	78	0.02600	3.33000	75.800	0.00655	0.04646	0.02599
SN	120	0.14600	93.34000	31.800	0.19601	0.13602	0.10494
SR	88	0.05500	16.67000	208.600	0.01793	0.18250	-0.03646
ZN	66	1.83000	160.01000	7.000	1.69991	1.83400	1.95622
BI-2	209	82578.02000	0.00000	0.000	82535.59000	82432.91000	82765.57000
PB	208	0.00000	106.67000	4897.200	0.02010	-0.00479	-0.01422
TL	203	0.01300	13.33000	114.700	0.00000	0.03040	0.01009
U	238	-0.00400	13.33000	0.000	-0.00204	-0.00462	-0.00463
SC-1	45	421262.78000	0.00000	0.000	419365.42000	419540.23000	424882.69000
GE-1	72	559310.85000	0.00000	0.000	555538.86000	559233.51000	563160.19000
GE-2	72	47578.15000	0.00000	0.000	46511.36000	48467.35000	47755.75000
TB-2	159	101312.61000	0.00000	0.000	102335.30000	102314.85000	99287.67000

Run Name: 1812102E05
 Tube Number: 14
 Sample Number: LCSW

Date/Time: 05/01/2018 8:00:09
 Batch: 181201063901A
 Class: *****

Initial Vol: 1.00

Final Vol: 1.00

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	15924.16000	0.00000	0.000	16047.54000	16127.61000	15597.32000
AL	27	2197.15500	18072.83000	4.200	2194.51490	2106.46623	2290.48255
CA	44	4315.08600	4224.01000	11.400	4701.67850	3760.70327	4482.87573
CR	52	54.84700	25235.06000	5.700	51.95493	54.40922	58.17736
FE	57	1094.52000	9326.10000	2.100	1069.09386	1101.06300	1113.40410
K	39	10982.74000	186521.34000	1.000	10967.47146	10884.07462	11096.67423
MG	24	2183.81800	63910.97000	2.500	2134.44940	2172.94512	2244.05855
MN	55	52.83800	9219.36000	4.000	51.11702	52.22310	55.17356
NA	23	10640.36400	677093.58000	2.700	10636.02788	10358.09004	10926.97432
TI	47	255.83600	2076.87000	7.600	249.16200	240.63016	277.71727
V	51	55.18200	19197.62000	1.700	55.29901	54.20169	56.04399
IN-1	115	344950.44000	0.00000	0.000	344456.45000	346104.10000	344290.78000
IN-2	115	19889.35000	0.00000	0.000	20521.47000	19809.09000	19337.48000
AG	107	52.99000	58161.87000	4.600	50.37710	53.36371	55.23024
AS	75	10.36400	490.01000	17.500	8.73988	10.03134	12.32008
BA	137	54.27200	4957.58000	5.400	53.77204	51.64003	57.40265
CD	111	5.23000	630.02000	7.500	4.78865	5.36038	5.54226
CO	59	262.25800	230134.06000	2.500	254.64094	266.24158	265.89149
CU	63	53.47000	38976.65000	1.900	52.67560	54.59011	53.14550
MO	98	52.75800	28734.36000	3.800	50.45156	53.56030	54.26209
NI	60	52.87900	13575.62000	0.700	52.60855	53.32743	52.70224
SB	121	6.20900	1593.48000	8.400	5.61422	6.40695	6.60451
SE	78	10.33300	1060.04000	7.200	9.59208	10.33058	11.07562
SN	120	51.76600	16488.49000	4.200	50.65401	50.36236	54.28236
SR	88	40.89700	7388.49000	2.900	40.57074	42.19819	39.92134
ZN	66	525.46000	42474.92000	1.200	525.52518	518.90758	531.94816
BI-2	209	81022.33000	0.00000	0.000	82856.06000	80442.71000	79768.21000
PB	208	15.63500	49348.58000	3.800	15.09744	16.26198	15.54440
TL	203	2.08000	2016.88000	7.000	1.96606	2.24314	2.03172
U	238	-0.00300	16.67000	0.000	0.00051	-0.00455	-0.00453
SC-1	45	424732.13000	0.00000	0.000	424694.52000	425325.11000	424176.75000
GE-1	72	568163.94000	0.00000	0.000	567680.58000	578287.34000	558523.90000
GE-2	72	48660.76000	0.00000	0.000	48326.76000	49810.38000	47845.15000
TB-2	159	102694.37000	0.00000	0.000	103411.15000	102003.72000	102668.23000

Run Name: 1812102E05
 Tube Number: 15
 Sample Number: **9582699**

Date/Time: 05/01/2018 8:02:53
 Batch: 181201063901A
 Class: U*****

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16598.25000	0.00000	0.000	16278.14000	16598.02000	16918.60000
AL	27	78.96000	736.71000	17.000	91.61563	80.34856	64.91523
CA	44	6556.46100	6691.47000	2.800	6763.10424	6476.01228	6430.26544
CR	52	8.68200	4220.65000	4.900	8.28214	9.12293	8.64011
FE	57	151.02400	1390.12000	4.900	157.55081	143.06555	152.45444
K	39	173.46400	11103.94000	27.600	228.50126	149.89763	141.99442
MG	24	450.89000	13775.55000	0.600	453.37947	451.51676	447.77504
MN	55	83.19900	15126.96000	1.700	84.53734	83.40187	81.65805
NA	23	1726.53500	125793.90000	1.000	1742.35971	1707.61446	1729.63067
TI	47	1.97600	16.67000	92.600	3.61187	0.00000	2.31676
V	51	0.32200	116.67000	5.400	0.33740	0.30329	0.32460
IN-1	115	341322.29000	0.00000	0.000	336929.30000	342930.58000	344107.00000
IN-2	115	20859.05000	0.00000	0.000	20339.94000	20265.80000	21971.40000
AG	107	0.04500	80.00000	65.000	0.01174	0.05655	0.06680
AS	75	0.13600	8.00000	133.700	0.34442	0.01390	0.04895
BA	137	3.10800	296.68000	29.700	4.17267	2.57717	2.57519
CD	111	0.07400	9.33000	16.500	0.08106	0.08136	0.06003
CO	59	0.34600	346.68000	25.300	0.40085	0.39126	0.24483
CU	63	8.70400	6731.49000	9.800	8.73040	9.54614	7.83432
MO	98	0.60000	366.69000	1.900	0.58643	0.60675	0.60625
NI	60	0.74400	223.34000	28.000	0.59768	0.98311	0.65264
SB	121	0.15900	53.33000	53.200	0.07682	0.15406	0.24544
SE	78	0.09900	10.67000	40.900	0.12010	0.12436	0.05225
SN	120	0.44700	196.68000	76.200	0.81006	0.13417	0.39744
SR	88	10.90700	2073.54000	14.600	9.12056	12.19984	11.40028
ZN	66	16.40700	1396.78000	10.300	16.81766	17.85106	14.55158
BI-2	209	81008.77000	0.00000	0.000	81921.05000	79054.31000	82050.96000
PB	208	1.40300	4527.11000	6.500	1.37355	1.33020	1.50610
TL	203	0.02500	23.33000	138.800	0.00000	0.06340	0.01018
U	238	0.03100	146.67000	62.400	0.04999	0.03321	0.01097
SC-1	45	420181.30000	0.00000	0.000	423447.38000	420154.25000	416942.26000
GE-1	72	558643.60000	0.00000	0.000	552775.30000	560085.03000	563070.46000
GE-2	72	47885.57000	0.00000	0.000	48757.96000	47384.07000	47514.67000
TB-2	159	101544.02000	0.00000	0.000	103039.86000	100475.51000	101116.70000

Run Name: 1812102E05
 Tube Number: 16
 Sample Number: **9582699**

Date/Time: 05/01/2018 8:05:21
 Batch: 181201063901A
 Class: UP*****

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16638.32000	0.00000	0.000	17759.49000	16608.31000	15547.16000
AL	27	294.07800	2570.30000	11.800	260.48520	291.91850	329.82916
CA	44	6755.59900	6884.94000	9.700	6217.30939	6560.26833	7489.22075
CR	52	12.28400	5934.61000	9.100	11.17383	12.27106	13.40757
FE	57	363.19700	3260.45000	9.100	324.88017	381.80393	382.90810
K	39	552.02900	17552.33000	6.800	531.04769	529.89369	595.14635
MG	24	646.78800	19721.09000	9.200	596.14201	631.60359	712.61884
MN	55	83.61600	15186.88000	8.300	76.86099	83.23921	90.74922
NA	23	2063.27100	147704.47000	6.200	1935.70713	2063.87979	2190.22519
TI	47	28.33000	240.01000	11.900	28.69293	24.78163	31.51532
V	51	1.26100	456.69000	19.100	1.26273	1.01959	1.50128
IN-1	115	333709.95000	0.00000	0.000	345702.81000	320961.03000	334466.00000
IN-2	115	20335.11000	0.00000	0.000	19759.37000	20916.73000	20329.23000
AG	107	1.04900	1206.77000	8.100	0.96617	1.13656	1.04536
AS	75	4.08800	198.00000	32.800	5.63138	3.22816	3.40496
BA	137	6.66200	623.37000	6.900	6.16770	7.07486	6.74411
CD	111	1.04400	128.67000	5.200	1.10144	0.99320	1.03812
CO	59	1.31500	1210.10000	18.400	1.19346	1.15805	1.59377
CU	63	13.08600	9826.39000	6.500	13.65954	12.11015	13.48796
MO	98	1.54100	880.06000	15.900	1.52906	1.30245	1.79047
NI	60	4.26500	1143.41000	14.300	3.56347	4.58580	4.64456
SB	121	2.52300	670.05000	9.800	2.24702	2.60441	2.71906
SE	78	3.97500	395.12000	6.600	4.21748	4.01194	3.69538
SN	120	4.41500	1480.13000	4.700	4.63876	4.22449	4.38160
SR	88	13.55500	2510.29000	5.000	12.84797	14.19019	13.62554
ZN	66	46.19500	3827.25000	8.500	48.58137	48.35813	41.64601
BI-2	209	79940.98000	0.00000	0.000	80494.93000	79880.02000	79447.98000
PB	208	3.32300	10431.85000	1.500	3.36364	3.33823	3.26593
TL	203	0.98200	940.07000	8.400	0.99627	1.05624	0.89374
U	238	10.17000	38194.48000	3.600	9.93445	9.97905	10.59513
SC-1	45	412432.01000	0.00000	0.000	434482.85000	396645.50000	406167.69000
GE-1	72	552722.52000	0.00000	0.000	567190.69000	544700.23000	546276.63000
GE-2	72	47434.37000	0.00000	0.000	49359.38000	45759.90000	47183.84000
TB-2	159	101150.77000	0.00000	0.000	100494.81000	101026.35000	101931.14000

Run Name: 1812102E05
 Tube Number: 17
 Sample Number: 9582699

Date/Time: 05/01/2018 8:07:47
 Batch: 181201063901A
 Class: D*****

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	15777.38000	0.00000	0.000	15637.24000	15987.44000	15707.46000
AL	27	105.83900	920.06000	7.300	113.05706	106.77676	97.68467
CA	44	6267.15700	6081.26000	2.400	6437.06931	6204.53370	6159.86941
CR	52	10.38300	4787.52000	7.300	10.20190	11.21210	9.73623
FE	57	194.92000	1690.15000	9.100	209.95363	199.33220	175.47430
K	39	217.97500	11277.23000	14.900	240.69596	180.75933	232.47030
MG	24	467.57400	13572.21000	6.400	488.36954	433.02691	481.32469
MN	55	88.53700	15303.69000	4.200	85.49021	87.44717	92.67471
NA	23	1782.75600	123042.37000	1.900	1820.59576	1755.01667	1772.65568
TI	47	3.33300	26.67000	94.200	3.75990	0.00000	6.23849
V	51	0.47400	163.34000	20.000	0.40976	0.42941	0.58274
IN-1	115	342604.41000	0.00000	0.000	338738.77000	343334.29000	345740.17000
IN-2	115	19820.21000	0.00000	0.000	19690.43000	20381.31000	19388.90000
AG	107	0.01300	40.00000	7.300	0.01291	0.01167	0.01348
AS	75	0.16800	9.33000	98.300	0.01512	0.34367	0.14586
BA	137	4.22400	383.36000	28.500	3.53671	3.52359	5.61203
CD	111	0.07800	9.33000	54.800	0.11723	0.03236	0.08504
CO	59	0.41500	393.35000	31.100	0.51876	0.45555	0.27023
CU	63	9.08900	6691.50000	4.800	8.62028	9.16888	9.47645
MO	98	0.52900	310.02000	17.600	0.42167	0.58515	0.57958
NI	60	1.08500	300.01000	10.500	1.21153	1.05318	0.99158
SB	121	0.08000	30.00000	50.900	0.12014	0.03840	0.08245
SE	78	0.12400	13.33000	31.000	0.09956	0.10461	0.16874
SN	120	0.35200	156.68000	38.500	0.23767	0.31685	0.50179
SR	88	11.84000	2133.56000	13.400	10.54222	11.37331	13.60580
ZN	66	19.43700	1573.47000	7.000	19.62627	17.99080	20.69491
BI-2	209	80000.55000	0.00000	0.000	79549.10000	79768.86000	80683.69000
PB	208	1.43200	4557.11000	1.800	1.45751	1.43406	1.40468
TL	203	0.00300	3.33000	173.200	0.00000	0.01047	0.00000
U	238	0.03000	140.01000	34.700	0.03028	0.01950	0.04031
SC-1	45	418936.72000	0.00000	0.000	415759.29000	426868.00000	414182.88000
GE-1	72	558926.70000	0.00000	0.000	552513.62000	564708.86000	559557.61000
GE-2	72	48256.42000	0.00000	0.000	48597.66000	47675.04000	48496.56000
TB-2	159	101084.83000	0.00000	0.000	99599.97000	100393.70000	103260.81000

Run Name: 1812102E05
 Tube Number: 18
 Sample Number: **9582699**

Date/Time: 05/01/2018 8:10:10
 Batch: 181201063901A
 Class: R*****

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16374.63000	0.00000	0.000	16357.83000	16237.88000	16528.17000
AL	27	2167.87000	18349.74000	4.300	2099.29100	2129.20490	2275.11525
CA	44	11156.59700	11237.23000	4.500	10578.59848	11388.06053	11503.13313
CR	52	62.36000	29511.61000	1.100	61.62395	62.93507	62.52117
FE	57	1246.26600	10913.78000	2.900	1205.04847	1262.64797	1271.10032
K	39	10707.04600	187218.06000	1.900	10509.91306	10697.95970	10913.26598
MG	24	2552.59200	76837.11000	0.800	2550.45222	2532.61961	2574.70381
MN	55	138.52200	24841.23000	1.300	139.53179	139.66000	136.37521
NA	23	12082.56600	789046.45000	0.700	12182.09956	12042.68848	12022.90852
TI	47	239.01700	1996.86000	8.100	261.21253	229.33932	226.49828
V	51	54.37900	19457.82000	1.000	54.72703	53.77615	54.63336
IN-1	115	341805.64000	0.00000	0.000	340005.92000	339391.66000	346019.33000
IN-2	115	20267.79000	0.00000	0.000	20049.49000	20879.46000	19874.43000
AG	107	52.26900	58486.11000	3.100	53.44000	50.42642	52.94151
AS	75	10.44700	505.34000	12.900	11.71385	10.60286	9.02532
BA	137	55.74000	5187.66000	5.300	58.62119	52.74597	55.85147
CD	111	5.29100	650.68000	6.100	4.91774	5.46462	5.49208
CO	59	252.76300	226041.10000	2.300	256.95269	246.22334	255.11395
CU	63	62.35300	46300.58000	1.400	61.52370	62.22553	63.30930
MO	98	51.60100	28651.14000	3.200	50.60097	50.68986	53.51335
NI	60	53.59600	14022.67000	0.800	53.84909	53.82492	53.11305
SB	121	6.11800	1600.14000	9.300	6.29085	5.47999	6.58167
SE	78	10.61700	1079.15000	1.400	10.70072	10.70028	10.44979
SN	120	50.95300	16551.89000	2.100	51.81799	51.25329	49.78681
SR	88	52.72200	9703.09000	4.700	50.05097	53.12956	54.98572
ZN	66	522.03100	42986.00000	2.500	526.45694	507.41975	532.21653
BI-2	209	80352.63000	0.00000	0.000	79900.27000	80122.17000	81035.44000
PB	208	17.27100	54071.27000	1.500	17.38456	16.96985	17.45813
TL	203	2.12800	2046.89000	7.100	1.96559	2.26257	2.15458
U	238	0.01800	96.67000	30.200	0.01412	0.02470	0.01645
SC-1	45	432120.11000	0.00000	0.000	430197.73000	430033.55000	436129.06000
GE-1	72	568576.22000	0.00000	0.000	565228.82000	563046.09000	577453.74000
GE-2	72	48206.22000	0.00000	0.000	46612.34000	48466.80000	49539.53000
TB-2	159	100326.49000	0.00000	0.000	99839.53000	100725.54000	100414.40000

Run Name: 1812102E05
 Tube Number: 19
 Sample Number: **9582699**

Date/Time: 05/01/2018 8:12:34
 Batch: 181201063901A
 Class: M*****

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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16614.87000	0.00000	0.000	17238.74000	16448.03000	16157.84000
AL	27	2136.19500	18333.15000	4.300	2095.37518	2072.37630	2240.83420
CA	44	10797.89300	11030.40000	1.900	10604.17553	10767.79740	11021.70690
CR	52	61.24400	29408.28000	2.100	61.40926	59.91299	62.41013
FE	57	1194.14000	10603.56000	4.000	1138.77483	1222.43062	1221.21458
K	39	10567.97100	187433.18000	4.000	10119.31634	10639.69667	10944.89872
MG	24	2506.41700	76491.70000	3.500	2413.70086	2519.51638	2586.03246
MN	55	145.01900	26380.25000	4.500	140.72992	152.50293	141.82560
NA	23	11748.18400	778034.44000	4.700	11144.16845	11861.25230	12239.12995
TI	47	260.74700	2210.25000	4.100	255.82249	272.89036	253.52814
V	51	51.20200	18570.20000	4.500	48.58166	52.05838	52.96549
IN-1	115	342064.40000	0.00000	0.000	337611.42000	342614.83000	345966.95000
IN-2	115	20994.12000	0.00000	0.000	21171.32000	20449.40000	21361.63000
AG	107	50.20300	58192.39000	3.400	48.69293	52.06614	49.84996
AS	75	9.69200	485.34000	2.600	9.90036	9.75749	9.41834
BA	137	56.13800	5417.73000	3.700	58.39376	54.38763	55.63149
CD	111	5.06800	644.68000	10.100	5.37371	5.35379	4.47674
CO	59	246.02500	227942.18000	1.500	242.88007	250.06509	245.13131
CU	63	59.18100	45509.01000	2.900	58.23020	61.16415	58.14723
MO	98	48.95000	28143.77000	5.100	47.00193	51.79279	48.05554
NI	60	51.68300	14005.97000	1.500	52.49530	51.65471	50.89913
SB	121	6.18500	1676.81000	6.500	6.24970	6.54777	5.75631
SE	78	10.42100	1060.25000	1.200	10.35801	10.34413	10.56156
SN	120	49.26400	16565.35000	4.900	49.89449	51.29266	46.60349
SR	88	50.83700	9689.72000	4.700	48.07339	52.19858	52.23924
ZN	66	509.90300	43494.01000	2.600	503.80089	525.21018	500.69939
BI-2	209	81129.58000	0.00000	0.000	80141.84000	81156.24000	82090.66000
PB	208	16.85100	53260.86000	1.500	17.13638	16.74370	16.67215
TL	203	1.98800	1930.20000	7.700	2.08475	2.06903	1.81139
U	238	0.02700	130.01000	53.800	0.01140	0.04004	0.02912
SC-1	45	427768.33000	0.00000	0.000	430603.55000	419521.79000	433179.64000
GE-1	72	567885.17000	0.00000	0.000	561062.10000	562321.63000	580271.79000
GE-2	72	48032.34000	0.00000	0.000	46622.01000	47985.35000	49489.67000
TB-2	159	103475.66000	0.00000	0.000	104257.08000	103301.28000	102868.61000

Run Name: 1812102E05
 Tube Number: 20
 Sample Number: 9582699

Date/Time: 05/01/2018 8:14:59
 Batch: 181201063901A
 Class: UL*****

Initial Vol: 50.00

Final Vol: 50.00

DF: 5.00

Protocol: SW846-U4

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-2	45	16381.30000	0.00000	0.000	16548.14000	15897.59000	16698.17000
AL	27	11.18700	156.68000	21.700	13.73341	10.93383	8.89275
CA	44	1182.76900	1193.43000	9.500	1159.40318	1084.11634	1304.78848
CR	52	1.84900	936.73000	15.900	1.54337	1.87375	2.13058
FE	57	25.29100	276.68000	7.400	26.51733	23.13496	26.22023
K	39	6.02400	8165.44000	365.100	29.90326	1.56835	-13.40075
MG	24	81.02100	2456.93000	12.800	75.52445	93.02626	74.51304
MN	55	15.20400	2733.68000	13.300	13.72893	17.51235	14.37093
NA	23	322.55300	33951.87000	5.100	318.02004	340.76141	308.87642
TI	47	1.18400	10.00000	173.200	3.55294	0.00000	0.00000
V	51	0.07600	26.67000	80.500	0.05531	0.14393	0.02741
IN-1	115	339813.96000	0.00000	0.000	340885.19000	341029.18000	337527.50000
IN-2	115	20728.04000	0.00000	0.000	20562.23000	20680.62000	20941.27000
AG	107	0.00800	36.67000	126.200	0.02016	0.00239	0.00207
AS	75	-0.00100	1.33000	0.000	0.01330	-0.02758	0.01256
BA	137	0.35100	33.33000	46.600	0.52915	0.31567	0.20783
CD	111	0.01100	1.33000	86.600	0.01604	0.01595	0.00000
CO	59	0.11200	133.34000	20.400	0.13168	0.08691	0.11787
CU	63	1.75500	1443.45000	9.700	1.56772	1.79602	1.90251
MO	98	0.22200	150.01000	23.000	0.22440	0.16990	0.27190
NI	60	0.09800	50.00000	113.400	0.09961	-0.01404	0.20736
SB	121	0.17400	56.67000	80.200	0.11344	0.07493	0.33372
SE	78	0.05700	6.44000	48.300	0.06593	0.02643	0.08000
SN	120	0.52000	220.01000	39.500	0.28236	0.64303	0.63323
SR	88	1.75600	336.69000	18.600	2.00025	1.88197	1.38442
ZN	66	3.79300	330.02000	12.600	3.46868	3.56700	4.34379
BI-2	209	79435.49000	0.00000	0.000	77811.01000	78353.75000	82141.70000
PB	208	0.26700	926.72000	11.300	0.26128	0.23955	0.29899
TL	203	0.01400	13.33000	40.000	0.01073	0.01066	0.02034
U	238	0.00200	33.33000	176.500	0.00375	-0.00177	0.00317
SC-1	45	425018.61000	0.00000	0.000	431941.09000	419376.24000	423738.51000
GE-1	72	569105.49000	0.00000	0.000	576009.84000	568182.34000	563124.29000
GE-2	72	48510.36000	0.00000	0.000	48266.27000	48075.69000	49189.11000
TB-2	159	101033.71000	0.00000	0.000	100413.67000	101479.82000	101207.64000

Run Name: 1812102E05
 Tube Number: 21
 Sample Number: **9582700**

Date/Time: 05/01/2018 8:17:24
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16154.52000	0.00000	0.000	16277.92000	15937.43000	16248.22000
AL	27	222.36300	1910.22000	14.700	231.18442	249.70002	186.20511
CA	44	55853.40700	55482.73000	3.500	54246.32315	58055.53695	55258.36174
CR	52	4.53400	2173.58000	14.000	3.82941	4.71931	5.05326
FE	57	475.33300	4140.64000	2.000	484.38716	475.99766	465.61447
K	39	272.77300	12458.11000	20.300	334.99369	254.12545	229.19909
MG	24	893.25100	26529.98000	5.100	864.36623	945.75099	869.63598
MN	55	879.16200	155478.76000	1.300	887.91270	883.69391	865.88029
NA	23	1340.55600	97979.47000	1.000	1329.83105	1355.56112	1336.27442
TI	47	0.40200	3.33000	173.200	0.00000	0.00000	1.20617
V	51	0.50800	180.01000	52.400	0.47797	0.25843	0.78867
IN-1	115	342786.74000	0.00000	0.000	345841.95000	341825.48000	340692.78000
IN-2	115	21016.25000	0.00000	0.000	21170.33000	20888.41000	20990.01000
AG	107	0.00800	36.67000	169.500	0.01890	0.01080	-0.00662
AS	75	0.14600	8.67000	42.500	0.13127	0.21391	0.09258
BA	137	27.54300	2660.33000	3.400	27.96230	26.46419	28.20241
CD	111	0.28200	36.00000	32.800	0.37383	0.28416	0.18852
CO	59	1.34700	1280.10000	10.000	1.19730	1.38748	1.45617
CU	63	173.10200	133084.73000	1.300	170.51327	173.91172	174.88045
MO	98	1.52200	900.06000	9.100	1.42439	1.46164	1.68055
NI	60	10.46400	2857.02000	7.900	9.51571	10.87152	11.00335
SB	121	0.12200	43.33000	34.800	0.14586	0.14834	0.07327
SE	78	0.05700	6.44000	17.100	0.06489	0.04604	0.05945
SN	120	1.29600	483.36000	7.200	1.30474	1.38417	1.19793
SR	88	29.91500	5711.15000	6.400	29.48416	31.99348	28.26700
ZN	66	109.64000	9372.78000	3.600	107.66416	114.18942	107.06636
BI-2	209	81296.77000	0.00000	0.000	80090.79000	82513.49000	81286.03000
PB	208	6.67700	21213.12000	0.700	6.63144	6.72883	6.66954
TL	203	0.05200	50.00000	61.000	0.08344	0.05062	0.02055
U	238	0.07600	316.69000	33.900	0.10183	0.07540	0.05044
SC-1	45	430160.53000	0.00000	0.000	434065.46000	428433.00000	427983.12000
GE-1	72	574863.57000	0.00000	0.000	576857.06000	574790.11000	572943.55000
GE-2	72	50174.62000	0.00000	0.000	50331.34000	49730.46000	50462.07000
TB-2	159	103103.49000	0.00000	0.000	103422.39000	101551.20000	104336.87000

Run Name: 1812102E05
 Tube Number: 22
 Sample Number: 9582701

Date/Time: 05/01/2018 8:19:57
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16995.18000	0.00000	0.000	17248.80000	17098.63000	16638.11000
AL	27	276.48000	2487.05000	11.300	272.95910	309.45080	247.02895
CA	44	49898.40400	52159.11000	0.300	49746.11982	49925.98791	50023.10395
CR	52	32.82900	16157.73000	1.000	32.85100	33.14036	32.49681
FE	57	485.71700	4444.05000	11.200	454.58055	454.23018	548.34038
K	39	310.91700	13765.77000	1.700	314.01195	304.94861	313.78897
MG	24	958.56600	29968.84000	3.500	950.28776	995.60061	929.80875
MN	55	70.93000	13201.93000	5.500	66.52377	72.18849	74.07842
NA	23	22134.09600	1488203.68000	3.500	21363.68509	22143.80606	22894.79832
TI	47	2.31400	20.00000	86.600	3.40861	0.00000	3.53372
V	51	0.53800	200.01000	25.700	0.47760	0.69591	0.44012
IN-1	115	346692.92000	0.00000	0.000	348943.83000	345486.31000	345648.63000
IN-2	115	21598.36000	0.00000	0.000	21441.30000	21311.75000	22042.04000
AG	107	0.03200	66.67000	106.500	0.05215	0.05261	-0.00745
AS	75	0.46700	25.33000	22.400	0.56058	0.48526	0.35384
BA	137	6.11400	606.71000	19.500	4.87186	7.25015	6.22005
CD	111	0.23500	30.67000	31.500	0.27683	0.27851	0.14960
CO	59	0.51600	523.37000	21.900	0.39968	0.62559	0.52150
CU	63	16.28900	12978.40000	0.600	16.31712	16.17329	16.37776
MO	98	1.79200	1086.75000	22.500	1.38880	1.79168	2.19485
NI	60	4.81200	1363.45000	14.700	4.14570	5.55528	4.73447
SB	121	0.52700	156.68000	14.700	0.61552	0.47339	0.49176
SE	78	0.16400	17.55000	10.400	0.14785	0.18182	0.16227
SN	120	0.47300	213.34000	27.700	0.38163	0.41419	0.62282
SR	88	33.21900	6521.49000	4.700	32.91568	31.82286	34.91897
ZN	66	80.48800	7071.70000	6.000	77.71114	86.04025	77.71254
BI-2	209	82252.42000	0.00000	0.000	81619.54000	82553.99000	82583.74000
PB	208	1.09200	3596.97000	5.200	1.15501	1.07615	1.04460
TL	203	0.02000	20.00000	86.600	0.00000	0.03035	0.03034
U	238	0.14600	593.37000	23.800	0.14676	0.18113	0.11143
SC-1	45	433818.25000	0.00000	0.000	436684.06000	430792.57000	433978.12000
GE-1	72	577306.70000	0.00000	0.000	582746.87000	576459.01000	572714.21000
GE-2	72	50201.81000	0.00000	0.000	49900.85000	51154.61000	49549.98000
TB-2	159	103874.28000	0.00000	0.000	101982.18000	104357.82000	105282.85000

Run Name: 1812102E05
 Tube Number: 23
 Sample Number: **CCV**

Date/Time: 05/01/2018 8:22:20

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-2	45	16314.57000	0.00000	0.000	16758.24000	15647.33000	16538.14000
AL	27	2487.64500	20959.37000	3.400	2395.78641	2505.44796	2561.70103
CA	44	2464.75000	2476.93000	7.400	2668.22092	2317.26663	2408.76288
CR	52	261.71700	123083.77000	4.100	254.02116	273.82998	257.30016
FE	57	2666.79300	23172.40000	5.800	2516.52200	2826.75876	2657.09800
K	39	2581.39400	51015.16000	5.200	2541.75630	2731.95606	2470.46831
MG	24	2564.88900	76856.72000	3.700	2470.22943	2657.88134	2566.55756
MN	55	264.58000	47219.59000	4.400	252.48146	275.44795	265.80992
NA	23	2510.87400	173735.48000	2.500	2447.39926	2572.91635	2512.30630
TI	47	243.58500	2026.87000	8.200	223.38991	244.26360	263.09999
V	51	260.17500	92657.48000	4.200	250.39593	272.05356	258.07531
IN-1	115	338877.95000	0.00000	0.000	338812.73000	337248.91000	340572.20000
IN-2	115	20669.22000	0.00000	0.000	20272.04000	20899.21000	20836.41000
AG	107	25.12600	28691.10000	3.000	26.00708	24.67946	24.69272
AS	75	252.82800	12430.39000	1.700	257.77407	249.87611	250.83247
BA	137	257.57900	24455.18000	4.300	269.53394	255.40212	247.80241
CD	111	25.06400	3141.64000	1.500	25.37819	24.63231	25.18141
CO	59	245.01600	223505.06000	1.400	248.62452	241.70665	244.71556
CU	63	247.14600	186797.34000	2.300	252.00303	240.82595	248.60971
MO	98	24.37100	13809.37000	5.200	25.80290	23.96058	23.34886
NI	60	248.61400	66252.34000	1.700	244.76095	247.77477	253.30542
SB	121	25.56500	6798.25000	1.900	25.69448	25.96529	25.03489
SE	78	26.16900	2636.42000	0.900	26.42970	26.07342	26.00338
SN	120	24.96500	8292.37000	6.000	25.11382	23.39700	26.38307
SR	88	24.65900	4630.81000	7.300	25.40873	25.96390	22.60332
ZN	66	243.76000	20482.47000	1.200	245.96443	244.71499	240.59991
BI-2	209	79943.32000	0.00000	0.000	80020.40000	80170.32000	79639.23000
PB	208	26.05400	81097.50000	0.600	26.12430	25.86605	26.17102
TL	203	25.82600	24716.53000	1.900	26.21176	25.28605	25.98033
U	238	25.94700	97423.40000	0.700	26.16282	25.78997	25.88692
SC-1	45	420251.24000	0.00000	0.000	422739.17000	419889.49000	418125.07000
GE-1	72	566853.64000	0.00000	0.000	568796.94000	567891.44000	563872.53000
GE-2	72	47303.79000	0.00000	0.000	47755.28000	46381.59000	47774.50000
TB-2	159	101714.54000	0.00000	0.000	100906.52000	101832.79000	102404.30000

Run Name: 1812102E05
 Tube Number: 24
 Sample Number: CCB

Date/Time: 05/01/2018 8:24:43

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-2	45	16314.56000	0.00000	0.000	16097.72000	16418.04000	16427.91000
AL	27	5.30400	106.67000	67.700	4.67440	9.17052	2.06828
CA	44	13.33300	13.33000	44.600	20.19920	9.90255	9.89660
CR	52	0.39900	250.01000	33.400	0.53479	0.26831	0.39471
FE	57	-0.26600	53.33000	0.000	1.74966	-0.69942	-1.84699
K	39	-2.54300	7985.41000	0.000	32.66017	-2.41625	-37.87308
MG	24	-0.21800	16.67000	0.000	-0.09808	-0.77416	0.21958
MN	55	-0.07400	0.00000	0.000	-0.07363	-0.07363	-0.07363
NA	23	-11.83400	12441.34000	0.000	-15.47987	-9.25275	-10.76982
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.05600	20.00000	131.600	0.02843	0.00000	0.13929
IN-1	115	340324.71000	0.00000	0.000	343393.31000	342580.84000	334999.98000
IN-2	115	20408.14000	0.00000	0.000	20071.27000	20701.88000	20451.28000
AG	107	-0.00300	23.33000	0.000	-0.00583	0.01986	-0.02388
AS	75	0.20500	11.33000	99.500	0.18185	0.41914	0.01353
BA	137	0.03600	3.33000	173.200	0.10842	0.00000	0.00000
CD	111	0.01600	2.00000	173.200	0.00000	0.04779	0.00000
CO	59	0.01500	43.33000	91.300	0.02282	-0.00079	0.02177
CU	63	0.06100	156.67000	132.200	-0.02607	0.07593	0.13219
MO	98	0.10100	80.00000	59.400	0.06714	0.16968	0.06512
NI	60	-0.03800	13.33000	0.000	-0.08909	-0.08909	0.06269
SB	121	0.41900	120.01000	16.500	0.34983	0.48846	0.41879
SE	78	0.03300	4.00000	33.200	0.03934	0.03945	0.02040
SN	120	0.23500	123.34000	20.500	0.23043	0.18877	0.28467
SR	88	-0.00100	6.67000	0.000	-0.03646	0.07001	-0.03646
ZN	66	0.16200	23.33000	175.700	0.49111	-0.00305	-0.00159
BI-2	209	79977.74000	0.00000	0.000	79870.91000	79468.57000	80593.75000
PB	208	-0.00500	86.67000	0.000	-0.00711	-0.01345	0.00543
TL	203	0.03100	30.00000	87.600	0.02092	0.01051	0.06220
U	238	0.00300	40.00000	203.800	0.00613	0.00888	-0.00456
SC-1	45	418054.39000	0.00000	0.000	414690.15000	424934.52000	414538.51000
GE-1	72	559390.74000	0.00000	0.000	561123.59000	561178.16000	555870.46000
GE-2	72	48212.85000	0.00000	0.000	48246.48000	48216.12000	48175.95000
TB-2	159	100232.54000	0.00000	0.000	99590.28000	100021.11000	101086.24000

Run Name: 1812102E05
 Tube Number: 25
 Sample Number: **9582707**

Date/Time: 05/01/2018 8:27:29
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16287.90000	0.00000	0.000	16307.97000	16077.62000	16478.11000
AL	27	319.84000	2747.07000	12.100	291.49349	304.21075	363.81673
CA	44	4717.91200	4727.47000	7.500	5115.18498	4439.97524	4598.57714
CR	52	30.55600	14412.90000	3.000	29.85904	31.60559	30.20244
FE	57	611.44600	5354.34000	5.200	648.34768	595.74337	590.24574
K	39	405.54700	14766.57000	3.500	414.57800	412.79882	389.26294
MG	24	1398.18800	41875.32000	1.900	1428.74724	1376.64651	1389.17104
MN	55	295.36500	52672.11000	1.000	294.00443	298.89571	293.19636
NA	23	13311.24300	863230.82000	1.700	13286.49030	13546.58480	13100.65472
TI	47	6.85800	56.67000	74.000	8.41348	10.97075	1.18935
V	51	1.11500	396.69000	13.900	1.29093	1.05325	0.99987
IN-1	115	348106.98000	0.00000	0.000	347171.04000	350702.32000	346447.58000
IN-2	115	20958.12000	0.00000	0.000	21360.64000	20812.10000	20701.61000
AG	107	0.05400	90.00000	71.500	0.02699	0.03704	0.09862
AS	75	0.22600	12.67000	50.500	0.28729	0.29559	0.09425
BA	137	11.45100	1103.43000	18.200	11.71652	13.38491	9.25083
CD	111	0.25700	32.67000	16.900	0.21612	0.25351	0.30265
CO	59	1.31300	1246.77000	13.600	1.50459	1.15316	1.27989
CU	63	32.67600	25145.10000	0.600	32.47098	32.75117	32.80732
MO	98	4.11100	2383.58000	3.900	4.21553	3.92407	4.19229
NI	60	10.09400	2750.32000	1.000	10.15675	9.97940	10.14556
SB	121	0.91300	256.68000	27.500	1.20108	0.74748	0.78927
SE	78	0.12000	13.11000	32.600	0.15513	0.12789	0.07778
SN	120	0.61600	253.35000	43.600	0.32503	0.66812	0.85385
SR	88	23.10100	4404.09000	8.400	24.98936	23.21247	21.10021
ZN	66	96.40700	8222.23000	1.400	97.94640	95.44251	95.83334
BI-2	209	83173.61000	0.00000	0.000	81729.63000	84604.74000	83186.46000
PB	208	1.87900	6184.05000	3.000	1.88034	1.93388	1.82211
TL	203	0.02700	26.67000	76.600	0.02044	0.04936	0.01004
U	238	0.04800	216.68000	31.200	0.06576	0.03811	0.04144
SC-1	45	425872.61000	0.00000	0.000	419341.44000	425978.04000	432298.35000
GE-1	72	576029.90000	0.00000	0.000	570856.67000	582240.34000	574992.69000
GE-2	72	49309.68000	0.00000	0.000	49930.78000	49450.10000	48548.15000
TB-2	159	104789.50000	0.00000	0.000	104195.81000	105604.26000	104568.43000

Run Name: 1812102E05
 Tube Number: 26
 Sample Number: **9582702**

Date/Time: 05/01/2018 8:29:54
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16211.16000	0.00000	0.000	16407.98000	15937.53000	16287.98000
AL	27	1335.62300	11214.45000	10.200	1230.73518	1286.78859	1489.34470
CA	44	8787.77800	8762.36000	0.800	8721.90927	8775.34362	8866.07994
CR	52	156.37500	73158.96000	1.800	153.64237	159.33681	156.14480
FE	57	2455.48200	21226.73000	3.900	2347.90316	2534.26217	2484.27986
K	39	612.96200	18126.54000	11.100	617.48714	678.82968	542.56876
MG	24	1984.44300	59125.54000	2.800	1960.45963	2047.44477	1945.42510
MN	55	738.87500	131115.63000	1.600	725.91845	747.92312	742.78313
NA	23	11837.31200	765430.06000	2.100	11584.58948	12091.94867	11835.39874
TI	47	24.67400	203.35000	38.900	20.30648	35.66583	18.04963
V	51	2.70300	956.73000	17.300	2.17567	2.87165	3.06279
IN-1	115	341094.11000	0.00000	0.000	342915.70000	346876.19000	333490.43000
IN-2	115	20516.65000	0.00000	0.000	19609.31000	20449.28000	21491.35000
AG	107	0.11300	156.67000	49.200	0.05925	0.10899	0.16996
AS	75	0.86200	43.33000	32.500	1.08715	0.54800	0.95041
BA	137	26.52400	2493.62000	12.900	30.41033	23.94595	25.21496
CD	111	0.45000	56.00000	25.000	0.38677	0.58052	0.38359
CO	59	3.15700	2887.01000	2.500	3.23676	3.15789	3.07692
CU	63	56.59200	42501.17000	4.000	58.44689	57.23369	54.09426
MO	98	14.67600	8252.26000	8.800	15.01005	15.76749	13.24977
NI	60	27.07100	7168.41000	5.800	28.72735	26.86030	25.62569
SB	121	2.32900	623.37000	3.400	2.34390	2.39832	2.24397
SE	78	0.18600	19.55000	24.200	0.20286	0.21987	0.13482
SN	120	0.88100	336.69000	13.700	0.74986	0.98857	0.90455
SR	88	34.46500	6414.77000	5.100	36.50022	33.48996	33.40355
ZN	66	204.63300	17058.74000	2.300	208.93178	205.40262	199.56414
BI-2	209	81354.18000	0.00000	0.000	80242.52000	83186.34000	80633.68000
PB	208	3.40200	10865.24000	4.900	3.26208	3.35885	3.58427
TL	203	0.05100	50.00000	69.000	0.01041	0.07029	0.07251
U	238	0.09400	386.69000	13.100	0.10693	0.08241	0.09317
SC-1	45	424071.66000	0.00000	0.000	427611.67000	424950.70000	419652.61000
GE-1	72	565008.68000	0.00000	0.000	562879.84000	570196.75000	561949.44000
GE-2	72	48991.74000	0.00000	0.000	49379.00000	48908.08000	48688.13000
TB-2	159	101104.37000	0.00000	0.000	100846.00000	100846.07000	101621.03000

Run Name: 1812102E05
 Tube Number: 27
 Sample Number: 9582703

Date/Time: 05/01/2018 8:32:20
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16234.55000	0.00000	0.000	16378.08000	16357.95000	15967.62000
AL	27	15.72800	193.35000	23.700	12.76726	19.91349	14.50246
CA	44	174.01400	173.34000	30.200	119.12058	178.91069	224.01174
CR	52	1.18600	616.70000	17.200	1.01031	1.13892	1.40888
FE	57	31.03000	323.35000	25.000	37.18781	22.30310	33.60045
K	39	72.64300	9206.03000	96.600	149.41031	56.80358	11.71581
MG	24	35.55100	1083.41000	3.200	34.44755	35.48889	36.71614
MN	55	21.79800	3887.25000	3.200	22.57527	21.26252	21.55507
NA	23	263.84700	29931.71000	2.400	270.59100	262.89781	258.05351
TI	47	0.39900	3.33000	173.200	1.19661	0.00000	0.00000
V	51	0.11300	40.00000	1.400	0.11177	0.11191	0.11464
IN-1	115	340820.74000	0.00000	0.000	340166.25000	336889.15000	345406.81000
IN-2	115	20695.65000	0.00000	0.000	21412.80000	20502.45000	20171.71000
AG	107	-0.00400	23.33000	0.000	0.01841	-0.02388	-0.00592
AS	75	0.05200	4.00000	127.700	0.12947	0.01342	0.01410
BA	137	0.14200	13.33000	114.000	0.00000	0.31841	0.10788
CD	111	0.03300	4.00000	100.500	0.00000	0.03217	0.06539
CO	59	0.02100	50.00000	141.600	0.00870	-0.00047	0.05624
CU	63	1.30600	1100.08000	12.400	1.21843	1.49264	1.20761
MO	98	0.21800	146.67000	35.600	0.12853	0.26080	0.26577
NI	60	1.13900	326.68000	20.900	1.03443	0.97073	1.41132
SB	121	0.05000	23.33000	45.300	0.03472	0.07591	0.03919
SE	78	0.03300	4.00000	53.900	0.01999	0.05350	0.02602
SN	120	0.06800	70.00000	134.300	0.06084	0.16152	-0.01964
SR	88	0.60700	120.01000	43.200	0.37526	0.55484	0.89232
ZN	66	4.36800	376.69000	15.100	3.90068	4.07929	5.12426
BI-2	209	83385.01000	0.00000	0.000	82984.71000	82916.32000	84254.00000
PB	208	0.41400	1450.09000	7.900	0.44438	0.37964	0.41887
TL	203	0.01000	10.00000	173.200	0.00000	0.00000	0.02974
U	238	-0.00400	13.33000	0.000	-0.00720	0.00050	-0.00467
SC-1	45	421679.97000	0.00000	0.000	420936.95000	415327.45000	428775.50000
GE-1	72	555930.89000	0.00000	0.000	561732.92000	546565.77000	559493.98000
GE-2	72	49165.61000	0.00000	0.000	50151.68000	49509.94000	47835.22000
TB-2	159	103682.12000	0.00000	0.000	103169.38000	104848.58000	103028.40000

Run Name: 1812102E05
 Tube Number: 28
 Sample Number: 9582704

Date/Time: 05/01/2018 8:34:45
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16751.79000	0.00000	0.000	16448.08000	16598.29000	17208.99000
AL	27	14.71700	190.01000	38.800	16.22269	19.51819	8.40953
CA	44	24374.83700	25108.09000	2.600	25095.19342	24034.38588	23994.93178
CR	52	0.39800	256.68000	15.500	0.33082	0.45196	0.41105
FE	57	14.37800	186.68000	63.300	6.14759	12.82811	24.15906
K	39	1115.82400	27348.03000	3.600	1076.48436	1156.88586	1114.10108
MG	24	4501.86700	138611.81000	0.800	4467.51437	4539.07542	4499.01198
MN	55	1.77300	340.02000	31.800	1.70374	1.24731	2.36832
NA	23	25586.94300	1694629.61000	1.200	25315.75894	25513.15069	25931.91981
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.22600	83.34000	46.700	0.11129	0.24814	0.31915
IN-1	115	348817.29000	0.00000	0.000	352786.33000	345945.96000	347719.58000
IN-2	115	21904.29000	0.00000	0.000	21063.29000	22515.17000	22134.40000
AG	107	-0.00800	20.00000	0.000	-0.02388	0.00830	-0.00752
AS	75	0.20200	12.00000	36.500	0.21191	0.27114	0.12435
BA	137	17.01100	1713.50000	5.300	16.22144	16.81875	17.99319
CD	111	0.02100	2.67000	173.200	0.06262	0.00000	0.00000
CO	59	0.00400	36.67000	491.700	-0.00135	-0.01350	0.02780
CU	63	176.28600	141210.05000	3.800	177.85934	168.92630	182.07276
MO	98	0.25900	180.01000	32.300	0.33943	0.26617	0.17248
NI	60	0.31200	113.34000	35.700	0.27933	0.22111	0.43683
SB	121	-0.00200	10.00000	0.000	0.03593	-0.03799	-0.00282
SE	78	0.05600	6.45000	35.800	0.03812	0.05193	0.07747
SN	120	0.05700	70.00000	94.400	0.09397	-0.00476	0.08244
SR	88	116.11900	23079.34000	5.700	116.39702	109.33128	122.62863
ZN	66	9.73500	876.73000	9.900	9.80936	8.73186	10.66324
BI-2	209	83243.59000	0.00000	0.000	79850.36000	84211.26000	85669.16000
PB	208	2.16800	7127.58000	3.500	2.13152	2.11716	2.25472
TL	203	0.00300	3.33000	173.200	0.00000	0.00992	0.00000
U	238	0.00000	30.00000	1707.300	0.00080	-0.00720	0.00771
SC-1	45	426162.23000	0.00000	0.000	429434.56000	423636.13000	425416.01000
GE-1	72	573634.89000	0.00000	0.000	575226.75000	579448.35000	566229.56000
GE-2	72	49750.66000	0.00000	0.000	47735.00000	49329.51000	52187.48000
TB-2	159	104790.41000	0.00000	0.000	101621.58000	105504.31000	107245.33000

Run Name: 1812102E05
 Tube Number: 29
 Sample Number: 9582705

Date/Time: 05/01/2018 8:37:10
 Batch: 181201063901A
 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.

Element	MASS	CONC. MEAN (ppb)	CPS MEAN	%RSD	INTEGRATIONS		
					#1	#2	#3
SC-2	45	16344.69000	0.00000	0.000	16338.06000	16167.86000	16528.14000
AL	27	-2.22900	43.33000	0.000	0.93192	-2.58309	-5.03716
CA	44	23.25100	23.33000	65.500	39.80412	20.11157	9.83659
CR	52	0.36100	233.34000	42.500	0.27027	0.27452	0.53836
FE	57	0.48200	60.00000	633.600	3.93141	-0.61085	-1.87474
K	39	2.96800	8092.11000	1125.700	-1.27769	38.30351	-28.12049
MG	24	0.78300	46.67000	107.700	1.55732	0.90871	-0.11569
MN	55	0.05700	23.33000	205.400	-0.07363	0.15237	0.09218
NA	23	4.03500	13475.35000	404.300	19.67005	5.31683	-12.88217
TI	47	0.80800	6.67000	173.200	0.00000	2.42434	0.00000
V	51	0.14900	53.33000	11.800	0.14005	0.16983	0.13844
IN-1	115	342438.26000	0.00000	0.000	339525.86000	341071.52000	346717.41000
IN-2	115	21089.87000	0.00000	0.000	20992.91000	21953.86000	20322.84000
AG	107	-0.00400	23.33000	0.000	-0.02388	-0.00738	0.02068
AS	75	0.02700	2.67000	176.200	0.05251	-0.02758	0.05516
BA	137	0.16500	16.67000	173.200	0.00000	0.49561	0.00000
CD	111	0.02100	2.67000	86.600	0.03142	0.00000	0.03245
CO	59	-0.02300	10.00000	0.000	-0.01204	-0.03362	-0.02247
CU	63	0.13200	216.68000	30.800	0.08585	0.16281	0.14743
MO	98	0.00300	26.67000	975.300	-0.02463	0.04115	-0.00609
NI	60	0.10900	53.33000	85.100	0.05877	0.05230	0.21638
SB	121	-0.00100	10.00000	0.000	0.07325	-0.03799	-0.03799
SE	78	0.02000	2.67000	98.200	0.02004	0.00019	0.03890
SN	120	0.13200	93.34000	48.300	0.12455	0.19834	0.07181
SR	88	0.03300	13.33000	245.500	0.12102	0.01374	-0.03646
ZN	66	0.89200	86.67000	28.600	1.16766	0.66273	0.84679
BI-2	209	81447.94000	0.00000	0.000	81076.41000	80663.30000	82604.12000
PB	208	-0.01200	66.67000	0.000	-0.01701	-0.01693	-0.00174
TL	203	0.01000	10.00000	99.800	0.02061	0.01036	0.00000
U	238	-0.00500	6.67000	0.000	-0.00195	-0.00720	-0.00720
SC-1	45	426404.00000	0.00000	0.000	433466.28000	425255.42000	420490.31000
GE-1	72	566162.22000	0.00000	0.000	569546.05000	559327.34000	569613.27000
GE-2	72	48279.82000	0.00000	0.000	48085.99000	48637.44000	48116.02000
TB-2	159	103110.12000	0.00000	0.000	102910.16000	102847.15000	103573.05000

Run Name: 1812102E05
 Tube Number: 30
 Sample Number: 9582705

Date/Time: 05/01/2018 8:39:34
 Batch: 181201063901A
 Class: *****

Initial Vol: 50.00

Final Vol: 50.00

DF: 20.00

Protocol: SW846-U4

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-2	45	17302.19000	0.00000	0.000	17038.56000	17579.16000	17288.84000
AL	27	1.17100	76.67000	374.900	-2.82855	5.86690	0.47446
CA	44	3.13500	3.33000	173.200	0.00000	0.00000	9.40378
CR	52	0.28100	206.68000	23.900	0.29441	0.34042	0.20798
FE	57	1.54900	73.33000	148.600	3.50459	2.13009	-0.98773
K	39	-12.30100	8302.26000	0.000	-8.95759	8.25003	-36.19438
MG	24	-0.45500	10.00000	0.000	0.18396	-0.77416	-0.77416
MN	55	-0.00400	13.33000	0.000	-0.07363	0.08226	-0.02080
NA	23	-26.09000	12224.57000	0.000	-23.61695	-26.91394	-27.73775
TI	47	0.37800	3.33000	173.200	0.00000	0.00000	1.13357
V	51	0.02600	10.00000	99.400	0.00000	0.05207	0.02647
IN-1	115	335685.60000	0.00000	0.000	332235.61000	334049.34000	340771.84000
IN-2	115	20813.06000	0.00000	0.000	20993.02000	21073.51000	20372.64000
AG	107	-0.02100	3.33000	0.000	-0.02388	-0.01529	-0.02388
AS	75	0.02700	2.67000	176.700	-0.02758	0.05221	0.05495
BA	137	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CD	111	0.04200	5.33000	42.100	0.03142	0.06259	0.03237
CO	59	-0.01900	13.33000	0.000	-0.02283	-0.00137	-0.03362
CU	63	-0.00400	110.00000	0.000	-0.07055	0.00705	0.05271
MO	98	-0.02500	10.00000	0.000	-0.00723	-0.02470	-0.04203
NI	60	0.01100	26.67000	789.100	0.05877	-0.08909	0.06328
SB	121	0.01100	13.33000	498.700	-0.00091	0.07283	-0.03799
SE	78	-0.00200	0.44000	0.000	0.00705	-0.00642	-0.00642
SN	120	0.06500	70.00000	274.900	-0.02450	0.27202	-0.05158
SR	88	-0.03600	0.00000	0.000	-0.03646	-0.03646	-0.03646
ZN	66	0.39500	43.33000	99.600	0.11253	0.22841	0.84442
BI-2	209	81069.64000	0.00000	0.000	81579.45000	81126.45000	80503.02000
PB	208	-0.01300	63.33000	0.000	-0.01080	-0.00751	-0.02009
TL	203	0.00300	3.33000	173.200	0.00000	0.00000	0.01038
U	238	-0.00300	16.67000	0.000	-0.00198	-0.00458	-0.00191
SC-1	45	418581.58000	0.00000	0.000	418785.35000	419208.35000	417751.05000
GE-1	72	561105.10000	0.00000	0.000	559576.05000	564277.53000	559461.71000
GE-2	72	47086.47000	0.00000	0.000	47073.07000	47634.37000	46551.98000
TB-2	159	102247.50000	0.00000	0.000	102315.23000	101328.97000	103098.31000

Run Name: 1812102E05
 Tube Number: 31
 Sample Number: LLC

Date/Time: 05/01/2018 8:42:07

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-2	45	16551.46000	0.00000	0.000	16387.97000	16357.85000	16908.56000
AL	27	213.34200	1883.51000	8.700	211.81136	195.59463	232.62072
CA	44	400.47000	406.69000	20.600	466.30381	427.40645	307.69856
CR	52	4.30700	2120.20000	7.800	4.58572	3.93725	4.39949
FE	57	194.46200	1766.83000	15.200	227.56963	185.47969	170.33772
K	39	449.92700	15750.67000	10.800	504.02793	435.78941	409.96253
MG	24	198.53900	6057.90000	6.100	208.46481	202.19343	184.95883
MN	55	4.14700	763.38000	17.500	4.88784	4.11503	3.43833
NA	23	376.71300	37836.18000	1.600	383.49514	372.85063	373.79254
TI	47	26.37000	223.34000	30.000	17.93950	27.55725	33.61412
V	51	1.03300	373.35000	24.900	0.80987	1.31500	0.97439
IN-1	115	346128.70000	0.00000	0.000	343154.11000	347480.37000	347751.62000
IN-2	115	20990.86000	0.00000	0.000	21317.83000	20618.71000	21036.04000
AG	107	1.12500	1330.11000	13.200	0.97026	1.26755	1.13857
AS	75	4.24700	213.33000	7.300	4.19229	4.58002	3.96905
BA	137	3.90700	376.69000	9.200	3.98137	4.22180	3.51737
CD	111	1.03800	132.00000	8.100	0.94358	1.10351	1.06595
CO	59	1.03600	990.07000	11.000	0.94430	1.16428	1.00047
CU	63	3.75700	2997.03000	8.300	3.54769	3.60664	4.11749
MO	98	0.93900	563.37000	24.900	0.72893	0.89676	1.19065
NI	60	4.09200	1130.09000	8.400	3.69697	4.31461	4.26421
SB	121	2.19100	600.04000	20.900	2.11649	2.68035	1.77524
SE	78	4.02900	415.12000	1.400	4.09198	4.00222	3.99261
SN	120	3.84100	1336.77000	6.800	3.73134	3.65023	4.14022
SR	88	1.74900	340.02000	23.700	2.03140	1.94117	1.27325
ZN	66	30.69300	2626.96000	5.300	29.08668	32.34544	30.64801
BI-2	209	82241.89000	0.00000	0.000	82965.11000	82533.07000	81227.50000
PB	208	2.04100	6630.87000	1.300	2.05028	2.01133	2.06000
TL	203	0.97500	960.07000	5.800	0.99682	0.91094	1.01814
U	238	1.01600	3950.67000	3.700	1.00693	0.98385	1.05747
SC-1	45	426449.68000	0.00000	0.000	432793.78000	426025.62000	420529.64000
GE-1	72	569694.03000	0.00000	0.000	570993.78000	572259.37000	565828.94000
GE-2	72	49440.21000	0.00000	0.000	49219.63000	48808.18000	50292.82000
TB-2	159	103478.40000	0.00000	0.000	103290.18000	104466.73000	102678.29000

Run Name: 1812102E05
 Tube Number: 32
 Sample Number: ICSA

Date/Time: 05/01/2018 8:44:33

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-2	45	15730.74000	0.00000	0.000	15477.16000	15146.86000	16568.21000
AL	27	99723.08600	806844.26000	4.900	99781.01055	104571.43110	94816.81685
CA	44	283454.12100	273851.43000	4.900	284049.93020	297038.91425	269273.51908
CR	52	1.40000	693.38000	11.900	1.41294	1.56115	1.22740
FE	57	252997.22000	2113737.47000	5.600	258383.66192	263733.11260	236874.88471
K	39	106710.18000	1720650.13000	4.600	106239.62798	111830.46708	102060.44484
MG	24	100449.30200	2900356.31000	3.800	102501.37793	102814.01868	96032.51040
MN	55	2.98800	526.70000	17.400	3.58606	2.64053	2.73851
NA	23	246403.34300	15189708.11000	4.700	248228.31899	256938.41027	234043.29832
TI	47	2009.37700	16084.37000	9.800	1966.16421	2225.29787	1836.66941
V	51	0.05900	20.00000	103.100	0.00000	0.12085	0.05524
IN-1	115	317452.20000	0.00000	0.000	308488.12000	321852.01000	322016.48000
IN-2	115	19861.52000	0.00000	0.000	19781.60000	20852.60000	18950.35000
AG	107	0.43100	493.37000	32.500	0.43395	0.28883	0.56875
AS	75	0.26600	14.00000	36.900	0.18492	0.37560	0.23861
BA	137	0.90600	83.33000	25.500	0.88005	1.14792	0.68899
CD	111	0.11700	14.00000	46.100	0.06668	0.11070	0.17401
CO	59	0.90900	820.05000	31.100	0.72240	0.77050	1.23386
CU	63	0.90600	763.39000	18.200	0.75026	0.88779	1.07845
MO	98	2022.35800	1098190.03000	5.000	2001.30615	1933.41215	2132.35564
NI	60	0.87900	246.68000	17.700	0.77398	0.80408	1.05753
SB	121	1.03400	273.35000	4.300	0.98515	1.04462	1.07114
SE	78	0.04700	5.11000	45.700	0.02270	0.05630	0.06327
SN	120	0.04700	60.00000	87.000	0.04607	0.00632	0.08742
SR	88	11.16300	2016.87000	2.800	11.32920	10.79830	11.36242
ZN	66	1.74900	150.01000	23.800	1.61983	1.41236	2.21566
BI-2	209	75131.11000	0.00000	0.000	76142.77000	74012.47000	75238.08000
PB	208	0.20300	690.04000	23.800	0.25759	0.18603	0.16538
TL	203	0.13700	123.34000	25.800	0.12068	0.11287	0.17764
U	238	0.05500	220.01000	8.700	0.05993	0.05035	0.05507
SC-1	45	400862.75000	0.00000	0.000	394527.06000	402142.81000	405918.39000
GE-1	72	529825.51000	0.00000	0.000	520768.39000	538274.84000	530433.31000
GE-2	72	46147.67000	0.00000	0.000	46181.03000	46592.55000	45669.42000
TB-2	159	98522.61000	0.00000	0.000	98511.65000	98976.13000	98080.05000

Run Name: 1812102E05
 Tube Number: 33
 Sample Number: ICSAB

Date/Time: 05/01/2018 8:46:56

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-2	45	15944.34000	0.00000	0.000	16087.55000	15326.97000	16418.49000
AL	27	98454.06800	807849.52000	4.100	96167.32980	103090.02916	96104.84421
CA	44	279121.44000	273520.11000	3.500	274138.05176	290256.60045	272969.66798
CR	52	210.21100	96648.22000	3.700	204.83908	219.01805	206.77577
FE	57	247584.75500	2097900.49000	5.000	242611.61825	261608.16240	238534.48363
K	39	103585.29700	1694335.44000	3.600	100257.54470	107561.41341	102936.93343
MG	24	99479.17000	2912618.08000	3.400	97376.34316	103364.11961	97697.04759
MN	55	211.36100	36848.49000	6.400	205.58357	226.89740	201.60281
NA	23	242783.13000	15180909.36000	3.400	237655.41348	252174.22848	238519.74720
TI	47	2076.64300	16875.17000	5.300	2008.61952	2202.99935	2018.31076
V	51	208.52600	72596.35000	3.200	206.62808	215.95261	202.99720
IN-1	115	326806.22000	0.00000	0.000	326690.75000	330756.24000	322971.67000
IN-2	115	18926.90000	0.00000	0.000	19270.52000	18749.75000	18760.42000
AG	107	52.59300	54958.23000	4.400	49.99990	54.38367	53.39437
AS	75	111.30000	5011.40000	2.100	108.66542	113.11988	112.11398
BA	137	1.46600	126.67000	59.900	0.45169	1.97313	1.97201
CD	111	100.67400	11553.23000	3.100	97.26170	103.35981	101.40164
CO	59	203.58700	170057.87000	1.700	199.47748	205.60140	205.68353
CU	63	206.98100	143278.82000	1.500	203.76196	207.37840	209.80371
MO	98	2115.04800	1096012.12000	1.500	2080.37400	2121.53259	2143.23593
NI	60	208.04700	50749.12000	3.100	200.97443	213.86329	209.30310
SB	121	1.11700	280.01000	29.100	0.76992	1.41513	1.16531
SE	78	100.66500	9778.46000	0.800	99.78709	100.74513	101.46428
SN	120	0.16400	93.34000	92.100	0.24598	0.25680	-0.01031
SR	88	10.24100	1766.84000	10.800	11.34471	10.25000	9.12790
ZN	66	102.60600	7898.70000	3.500	99.25327	102.14648	106.41925
BI-2	209	73623.62000	0.00000	0.000	73931.45000	72947.30000	73992.10000
PB	208	0.14200	500.02000	32.900	0.09583	0.18923	0.14091
TL	203	0.15500	136.68000	11.800	0.15819	0.17177	0.13548
U	238	0.05100	200.01000	31.800	0.03313	0.05411	0.06476
SC-1	45	411902.75000	0.00000	0.000	411437.65000	412731.48000	411539.13000
GE-1	72	543945.17000	0.00000	0.000	540686.98000	552830.77000	538317.77000
GE-2	72	47531.22000	0.00000	0.000	46952.91000	46872.87000	48767.89000
TB-2	159	98863.99000	0.00000	0.000	99065.17000	97817.85000	99708.95000

Run Name: 1812102E05
 Tube Number: 34
 Sample Number: RINSE

Date/Time: 05/01/2018 8:49:27

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-2	45	16254.49000	0.00000	0.000	16608.10000	16387.89000	15767.47000
AL	27	15.77300	193.35000	23.200	12.48813	15.12467	19.70573
CA	44	69.22500	70.00000	85.100	137.05903	39.68309	30.93341
CR	52	0.31300	210.01000	44.300	0.47251	0.24789	0.21889
FE	57	40.35300	406.69000	36.500	47.90204	49.77895	23.37889
K	39	13.91700	8242.22000	297.200	61.66159	-8.70537	-11.20564
MG	24	12.31300	393.35000	38.200	16.92011	12.50875	7.50911
MN	55	-0.03700	6.67000	0.000	-0.01863	-0.01789	-0.07363
NA	23	41.64500	15803.96000	6.900	44.73725	39.07469	41.12344
TI	47	1.60500	13.33000	42.500	1.18004	2.39179	1.24295
V	51	0.04700	16.67000	32.700	0.05511	0.05585	0.02902
IN-1	115	341928.09000	0.00000	0.000	343910.10000	340000.42000	341873.75000
IN-2	115	20805.22000	0.00000	0.000	21273.05000	20691.61000	20451.00000
AG	107	0.00000	26.67000	0.000	-0.01537	0.00238	0.01154
AS	75	0.12000	7.33000	50.800	0.13050	0.17558	0.05464
BA	137	0.03500	3.33000	173.200	0.00000	0.10517	0.00000
CD	111	0.01600	2.00000	100.400	0.00000	0.01594	0.03225
CO	59	-0.01200	20.00000	0.000	0.00898	-0.02267	-0.02254
CU	63	0.13900	220.01000	148.200	0.17278	0.32727	-0.08185
MO	98	3.65500	2100.21000	23.100	2.84230	3.59418	4.52992
NI	60	0.11100	53.33000	141.400	-0.01613	0.28595	0.06269
SB	121	-0.02600	3.33000	0.000	-0.00139	-0.03799	-0.03799
SE	78	0.09900	10.67000	24.600	0.07840	0.12549	0.09199
SN	120	0.01800	53.33000	601.000	-0.08490	0.00748	0.13166
SR	88	-0.03600	0.00000	0.000	-0.03646	-0.03646	-0.03646
ZN	66	0.50700	53.33000	32.900	0.68784	0.47273	0.35940
BI-2	209	82188.02000	0.00000	0.000	82181.81000	81829.22000	82553.04000
PB	208	-0.01500	56.67000	0.000	-0.01096	-0.01401	-0.02041
TL	203	0.01700	16.67000	173.200	0.05082	0.00000	0.00000
U	238	-0.00500	6.67000	0.000	-0.00461	-0.00460	-0.00720
SC-1	45	413167.19000	0.00000	0.000	416900.07000	409729.76000	412871.75000
GE-1	72	560046.37000	0.00000	0.000	562959.02000	555401.83000	561778.27000
GE-2	72	48166.20000	0.00000	0.000	48246.67000	47373.73000	48878.19000
TB-2	159	100870.07000	0.00000	0.000	98815.57000	101307.98000	102486.66000

Run Name: 1812102E05
 Tube Number: 35
 Sample Number: **CCV**

Date/Time: 05/01/2018 8:51:50

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-2	45	16287.85000	0.00000	0.000	16347.76000	15787.43000	16728.37000
AL	27	2535.50200	21313.04000	4.900	2548.81573	2651.85976	2405.83071
CA	44	2611.38400	2613.64000	5.600	2516.40529	2780.81654	2536.93108
CR	52	267.55500	125698.26000	2.900	273.49594	270.24918	258.92009
FE	57	2613.17300	22688.23000	2.900	2597.14142	2695.48598	2546.89051
K	39	2598.96600	51252.43000	2.500	2605.67739	2659.32221	2531.89910
MG	24	2571.31900	76977.51000	0.800	2556.05016	2593.44657	2564.45995
MN	55	268.10300	47797.94000	2.100	264.81978	274.50802	264.98045
NA	23	2518.39000	173944.02000	2.500	2524.60953	2578.76793	2451.79282
TI	47	250.50700	2080.22000	4.400	245.78506	263.20063	242.53598
V	51	268.70000	95568.68000	3.400	267.96655	278.29634	259.83651
IN-1	115	346747.46000	0.00000	0.000	342684.10000	348200.52000	349357.75000
IN-2	115	21041.43000	0.00000	0.000	20004.65000	21773.24000	21346.40000
AG	107	24.69900	28687.83000	4.500	25.68426	23.50415	24.90982
AS	75	251.22100	12566.48000	3.000	259.62166	248.88681	245.15363
BA	137	252.40400	24371.81000	4.900	266.60281	244.94868	245.66070
CD	111	24.97300	3182.99000	4.500	26.12950	23.87084	24.91980
CO	59	246.01600	228150.10000	5.200	260.55567	237.22883	240.26254
CU	63	247.70400	190352.05000	5.500	263.06714	242.75119	237.29323
MO	98	25.07000	14453.18000	4.200	25.94729	23.92022	25.34118
NI	60	246.31500	66744.69000	3.600	256.64061	241.65329	240.65029
SB	121	25.91700	7008.39000	3.800	26.97276	25.02924	25.74913
SE	78	26.22700	2703.55000	1.200	26.30787	26.49015	25.88224
SN	120	24.31800	8225.61000	4.100	24.01146	23.51612	25.42629
SR	88	25.41900	4860.88000	3.800	25.08780	24.66676	26.50353
ZN	66	249.87300	21370.12000	1.700	253.31762	251.17869	245.12136
BI-2	209	82499.96000	0.00000	0.000	82161.77000	83348.19000	81989.93000
PB	208	25.64700	82383.34000	1.300	25.51159	25.40982	26.02041
TL	203	25.99900	25677.88000	3.300	26.94381	25.75755	25.29614
U	238	25.50000	98806.11000	1.000	25.77764	25.30605	25.41655
SC-1	45	420903.17000	0.00000	0.000	412613.31000	430083.86000	420012.34000
GE-1	72	562199.93000	0.00000	0.000	558184.60000	566356.91000	562058.27000
GE-2	72	48119.38000	0.00000	0.000	48988.45000	47534.72000	47834.98000
TB-2	159	102597.57000	0.00000	0.000	103584.20000	104378.23000	99830.27000

Run Name: 1812102E05
 Tube Number: 36
 Sample Number: CCB

Date/Time: 05/01/2018 8:54:15

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-2	45	15774.08000	0.00000	0.000	15487.10000	15877.52000	15957.62000
AL	27	-2.88000	36.67000	0.000	-3.62559	-2.49525	-2.51980
CA	44	20.42800	20.00000	86.600	0.00000	30.71900	30.56481
CR	52	0.18200	143.34000	73.100	0.15809	0.32564	0.06257
FE	57	-0.05400	53.33000	0.000	2.07191	-4.05591	1.82142
K	39	24.45800	8155.43000	163.600	48.52218	46.57851	-21.72641
MG	24	0.36900	33.33000	232.500	-0.42279	1.28222	0.24887
MN	55	0.09900	30.00000	99.400	-0.01465	0.15651	0.15535
NA	23	-2.71100	12591.44000	0.000	-1.52952	-4.31446	-2.28834
TI	47	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
V	51	0.07700	26.67000	56.600	0.02955	0.11529	0.08604
IN-1	115	341453.02000	0.00000	0.000	341776.26000	343798.15000	338784.66000
IN-2	115	20568.30000	0.00000	0.000	20481.72000	19870.71000	21352.48000
AG	107	-0.00600	20.00000	0.000	-0.00620	0.01258	-0.02388
AS	75	0.25900	14.00000	18.000	0.30080	0.26859	0.20866
BA	137	0.00000	0.00000	0.000	0.00000	0.00000	0.00000
CD	111	0.00600	0.67000	173.200	0.00000	0.01659	0.00000
CO	59	0.00300	33.33000	548.800	-0.01150	0.00059	0.01943
CU	63	0.06500	160.00000	92.500	0.13178	0.04401	0.01782
MO	98	0.23600	156.68000	11.400	0.22545	0.21529	0.26585
NI	60	-0.02900	16.67000	0.000	-0.08909	-0.08909	0.09263
SB	121	0.37800	110.01000	34.700	0.22805	0.47131	0.43596
SE	78	0.00900	1.56000	113.400	0.00667	0.00014	0.02010
SN	120	0.33500	156.68000	31.700	0.25348	0.45465	0.29590
SR	88	-0.00100	6.67000	0.000	0.07115	-0.03646	-0.03646
ZN	66	0.00100	10.00000	17832.000	-0.00177	0.12577	-0.12192
BI-2	209	79716.15000	0.00000	0.000	77919.85000	79518.26000	81710.33000
PB	208	-0.00400	90.00000	0.000	0.00014	-0.02316	0.01119
TL	203	0.05900	56.67000	34.300	0.04288	0.05252	0.08178
U	238	0.00400	43.34000	256.600	-0.00447	0.01691	0.00062
SC-1	45	408094.68000	0.00000	0.000	413369.64000	407500.23000	403414.17000
GE-1	72	553597.82000	0.00000	0.000	555757.06000	552847.02000	552189.37000
GE-2	72	46685.87000	0.00000	0.000	47183.55000	45590.07000	47284.00000
TB-2	159	101473.60000	0.00000	0.000	99638.90000	102938.85000	101843.06000

Tune Report

Batch Folder D:\Agilent\ICPMH\1\DATA\~EPATUNE.b
 Report Comment ICP-MS #19204 (E05) Daily Tune Check
 Instrument Name G3281A JP12071581

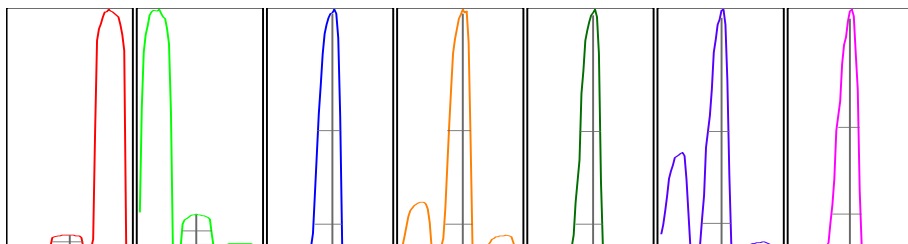
[No Gas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
6		9565	9564.68			NaN	-	
24		20158	20157.96			NaN	-	
103		51203	51203.06			NaN	-	
115		51991	51991.40			NaN	-	
140		54387	54386.75			NaN	-	
208		25530	25529.86			NaN	-	
238		54833	54832.90			NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
6	2.48	5.00				
24	2.68	5.00				
103	1.90	5.00				
115	2.00	5.00				
140	2.23	5.00				
208	1.33	5.00				
238	2.49	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
6	9146	9705	9638	9619	9715
24	19210	20305	20558	20427	20290
103	49483	51411	51670	51636	51815
115	50157	52228	52497	52398	52676
140	52353	54217	55179	54860	55325
208	24964	25467	25702	25737	25778
238	52478	54921	55227	55862	55676

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
6	1335.45	6.00	5.9 - 6.1		0.74	0.792	0.900	
24	2960.02	23.90	23.9 - 24.1		0.71	0.782	0.900	
103	9556.27	103.05	102.9 - 103.1		0.57	0.680	0.900	
115	9983.25	115.05	114.9 - 115.1		0.55	0.666	0.900	
140	10869.03	140.05	139.9 - 140.1		0.51	0.667	0.900	
208	5177.50	208.00	207.9 - 208.1		0.50	0.693	0.900	
238	10818.41	237.95	237.9 - 238.1		0.51	0.696	0.900	

X = 10 Integration Time [sec] 0.1 Acquisition Time [sec] 260.8 Y Axis Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.25 L/min	S/C Temp	20 °C
RF Matching	0.80 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.80 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Tune Report

Extract 1	0.0 V	Omega Lens	6.1 V	Deflect	16.8 V
Extract 2	-160.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Mass	Peak	Axis	Axis	Axis	Axis
	Height	(Actual)	(Required)	(Flag)	
Omega Bias	-75 V	Cell Exit	-50 V		
 ## Cell Parameters ##					
OctP Bias	-6.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	200 V	H2 Flow	0.0 mL/min		
Use Gas	false	3rd Gas Flow	0 %		

Mercury Data

Metals in Liquid



Mercury Run Data Report

Analyst Employee ID:

354

Data File Name: 1812104.M07

Run Name: 1812102M07

Instrument No.: 17384

Element: Hg

Reviewed By
Damary Valentin

Reviewed Date
05/01/2018 1:20PM

Method Reference Name(s):
SW-846 7470A

Verified By:
Parker D Lindstrom

Verified Date
05/02/2018 12:37AM

LANCASTER LABORATORIES

Page 2 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

1

Burn Date/Time: 05/01/2018 06:08

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S0		1	1	1.00
AVG (ppb)		Intensity		
0.0000		266.0		

2

Burn Date/Time: 05/01/2018 06:10

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S0.2		1	1	1.00
AVG (ppb)		Intensity		
0.0000		1768.0		

3

Burn Date/Time: 05/01/2018 06:12

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S0.5		1	1	1.00
AVG (ppb)		Intensity		
0.0000		3906.0		

4

Burn Date/Time: 05/01/2018 06:14

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S1.0		1	1	1.00
AVG (ppb)		Intensity		
0.0000		7549.0		

5

Burn Date/Time: 05/01/2018 06:16

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S2.5		1	1	1.00
AVG (ppb)		Intensity		
0.0000		17832.0		

6

Burn Date/Time: 05/01/2018 06:18

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
S5.0		1	1	1.00
AVG (ppb)		Intensity		
0.0000		36521.0		

CorrelationCoefficient = 1.00000
Slope = 7216.0687200000
Y-Intercept = 242.3613000000

LANCASTER LABORATORIES

Page 3 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

7

Burn Date/Time: 05/01/2018 06:20

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
ICV		1	1	1.00
AVG (ppb)		Intensity		
2.4566		17971.0		

8

Burn Date/Time: 05/01/2018 06:22

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
ICB		1	1	1.00
AVG (ppb)		Intensity		
-0.0240		66.0		

9

Burn Date/Time: 05/01/2018 06:24

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CRA		1	1	1.00
AVG (ppb)		Intensity		
0.1946		1644.0		

10

Burn Date/Time: 05/01/2018 06:26

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 1		1	1	1.00
AVG (ppb)		Intensity		
0.9915		7396.0		

11

Burn Date/Time: 05/01/2018 06:28

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCB 1		1	1	1.00
AVG (ppb)		Intensity		
-0.0188		104.0		

12

Burn Date/Time: 05/01/2018 09:46

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 2		1	1	1.00
AVG (ppb)		Intensity		
0.9707		7246.0		

LANCASTER LABORATORIES

Page 4 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

13

Burn Date/Time: 05/01/2018 09:48

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCB 2		1	1	1.00
AVG (ppb)		Intensity		
-0.0165		120.0		

14

Burn Date/Time: 05/01/2018 09:50

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
PBW	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0286	33.0			

15

Burn Date/Time: 05/01/2018 09:52

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
LCSW	*****	1	1	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.8676	6502.0			

16

Burn Date/Time: 05/01/2018 09:54

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582700	U*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0016	228.0			

17

Burn Date/Time: 05/01/2018 09:56

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582700	D*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.0055	279.0			

18

Burn Date/Time: 05/01/2018 09:58

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582700	R*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.8807	6596.0			

LANCASTER LABORATORIES

Page 5 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

19

Burn Date/Time: 05/01/2018 10:00

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582700	M*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	0.8872	6643.0			

20

Burn Date/Time: 05/01/2018 10:02

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578742	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0383	-37.0			

21

Burn Date/Time: 05/01/2018 10:04

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578743	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0327	3.0			

22

Burn Date/Time: 05/01/2018 10:06

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578744	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0332	0.0			

23

Burn Date/Time: 05/01/2018 10:08

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578745	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0326	4.0			

24

Burn Date/Time: 05/01/2018 10:10

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 3		1	1	1.00
	AVG (ppb)	Intensity		
	0.9875	7367.0		

LANCASTER LABORATORIES

Page 6 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

25

Burn Date/Time: 05/01/2018 10:12

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCB 3		1	1	1.00
AVG (ppb)		Intensity		
-0.0174		114.0		

26

Burn Date/Time: 05/01/2018 10:14

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578746	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0336	-3.0			

27

Burn Date/Time: 05/01/2018 10:16

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578765	*****	1	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0235	70.0			

28

Burn Date/Time: 05/01/2018 10:18

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9581513	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0311	15.0			

29

Burn Date/Time: 05/01/2018 10:20

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582061	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.0160	355.0			

30

Burn Date/Time: 05/01/2018 10:22

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582062	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0250	59.0			

LANCASTER LABORATORIES

Page 7 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

31		Burn Date/Time: 05/01/2018 10:24			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582063	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0255	55.0			

32		Burn Date/Time: 05/01/2018 10:26			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582065	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0318	10.0			

33		Burn Date/Time: 05/01/2018 10:28			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582699	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0239	67.0			

34		Burn Date/Time: 05/01/2018 10:30			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582701	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0279	38.0			

35		Burn Date/Time: 05/01/2018 10:32			
<u>Sample Number</u>	<u>Class</u>	<u>Initial Vol / Wt</u>	<u>Final Vol</u>	<u>DF</u>	<u>Batch Number</u>
9582702	*****	40	40	1.00	181200571302
<u>V</u>	<u>AVG (ppb)</u>	<u>Intensity</u>	<u>Re-read</u> <u>Re-digest</u>		
	0.0271	435.0			

36		Burn Date/Time: 05/01/2018 10:34		
Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 4		1	1	1.00
AVG (ppb)		Intensity		
0.9922		7401.0		

LANCASTER LABORATORIES

Page 8 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

37		Burn Date/Time: 05/01/2018 10:36			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	
CCB 4		1	1	1.00	
	AVG (ppb)	Intensity			
	-0.0136	141.0			

38		Burn Date/Time: 05/01/2018 10:38			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582703	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0341	-7.0			

39		Burn Date/Time: 05/01/2018 10:40			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582704	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0327	3.0			

40		Burn Date/Time: 05/01/2018 10:43			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582705	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0316	11.0			

41		Burn Date/Time: 05/01/2018 10:45			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582707	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	0.0088	303.0			

42		Burn Date/Time: 05/01/2018 10:47			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578741	*****	40	40	1.00	181200571302
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0304	20.0			

LANCASTER LABORATORIES

Page 9 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

43

Burn Date/Time: 05/01/2018 10:49

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
PBW	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0289	31.0			

44

Burn Date/Time: 05/01/2018 10:51

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
LCSW	*****	1	1	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.8408	6308.0			

45

Burn Date/Time: 05/01/2018 10:53

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579649	U*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0347	-11.0			

46

Burn Date/Time: 05/01/2018 10:55

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579649	D*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	-0.0314	13.0			

47

Burn Date/Time: 05/01/2018 10:57

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579649	R*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read	Re-digest	
	0.8304	6233.0			

48

Burn Date/Time: 05/01/2018 10:59

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
CCV 5		1	1	1.00	
	AVG (ppb)	Intensity			
	0.9783	7301.0			

LANCASTER LABORATORIES

Page 10 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

49

Burn Date/Time: 05/01/2018 11:01

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCB 5		1	1	1.00
AVG (ppb)		Intensity		
-0.0175		113.0		

50

Burn Date/Time: 05/01/2018 11:03

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579649	M*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity		Re-read	Re-digest
	0.8319	6244.0			

51

Burn Date/Time: 05/01/2018 11:05

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9576017	*****	1	40	1.00	181200571307
V	AVG (ppb)	Intensity		Re-read	Re-digest
	8.7602	63471.0			

52

Burn Date/Time: 05/01/2018 11:07

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578366	*****	1	40	1.00	181200571307
V	AVG (ppb)	Intensity		Re-read	Re-digest
	-0.0738	-293.0			

53

Burn Date/Time: 05/01/2018 11:09

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578808	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity		Re-read	Re-digest
	-0.0276	40.0			

54

Burn Date/Time: 05/01/2018 11:11

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578809	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity		Re-read	Re-digest
	-0.0280	37.0			

LANCASTER LABORATORIES

Page 11 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

55

Burn Date/Time: 05/01/2018 11:13

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578810	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0293	28.0			

56

Burn Date/Time: 05/01/2018 11:15

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578811	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0243	64.0			

57

Burn Date/Time: 05/01/2018 11:17

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578817	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0225	77.0			

58

Burn Date/Time: 05/01/2018 11:19

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9578818	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0253	57.0			

59

Burn Date/Time: 05/01/2018 11:21

Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579646	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0222	79.0			

60

Burn Date/Time: 05/01/2018 11:23

Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 6		1	1	1.00
	AVG (ppb)	Intensity		
	0.9851	7350.0		

LANCASTER LABORATORIES

Page 12 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

61		Burn Date/Time: 05/01/2018 11:25			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	
CCB 6		1	1	1.00	
	AVG (ppb)	Intensity			
	-0.0163	122.0			

62		Burn Date/Time: 05/01/2018 11:27			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579647	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0194	99.0			

63		Burn Date/Time: 05/01/2018 11:29			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579648	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0257	54.0			

64		Burn Date/Time: 05/01/2018 11:31			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9579650	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0305	19.0			

65		Burn Date/Time: 05/01/2018 11:34			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9580840	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0298	24.0			

66		Burn Date/Time: 05/01/2018 11:36			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9580841	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0278	39.0			

LANCASTER LABORATORIES

Page 13 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

67		Burn Date/Time: 05/01/2018 11:38			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9580842	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0293	28.0			

68		Burn Date/Time: 05/01/2018 11:40			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9580843	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0291	29.0			

69		Burn Date/Time: 05/01/2018 11:42			
<u>Sample Number</u>	<u>Class</u>	<u>Initial Vol / Wt</u>	<u>Final Vol</u>	<u>DF</u>	<u>Batch Number</u>
9582720	*****	40	40	1.00	181200571307
<u>V</u>	<u>AVG (ppb)</u>	<u>Intensity</u>	<u>Re-read</u> <u>Re-digest</u>		
	-0.0296	26.0			

70		Burn Date/Time: 05/01/2018 11:44			
<u>Sample Number</u>	<u>Class</u>	<u>Initial Vol / Wt</u>	<u>Final Vol</u>	<u>DF</u>	<u>Batch Number</u>
9582721	*****	40	40	1.00	181200571307
<u>V</u>	<u>AVG (ppb)</u>	<u>Intensity</u>	<u>Re-read</u> <u>Re-digest</u>		
	-0.0296	26.0			

71		Burn Date/Time: 05/01/2018 11:46			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9582746	*****	40	40	1.00	181200571307
V	AVG (ppb)	Intensity	Re-read Re-digest		
	-0.0289	31.0			

72		Burn Date/Time: 05/01/2018 11:48		
Sample Number	Class	Initial Vol / Wt	Final Vol	DF
CCV 7		1	1	1.00
AVG (ppb)		Intensity		
0.9840		7342.0		

LANCASTER LABORATORIES

Page 14 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

73		Burn Date/Time: 05/01/2018 11:50			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	
CCB 7		1	1	1.00	
	AVG (ppb)	Intensity			
	-0.0160	124.0			

74		Burn Date/Time: 05/01/2018 11:52			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9576017	*****	1	40	5.00	181200571307
V	AVG (ppb)	Intensity			Re-read Re-digest
	1.9183	14086.0			

75		Burn Date/Time: 05/01/2018 11:54			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
PBW	*****	40	40	1.00	181170571305
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0332	0.0			

76		Burn Date/Time: 05/01/2018 11:56			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
LCSW	*****	1	1	1.00	181170571305
V	AVG (ppb)	Intensity			Re-read Re-digest
	0.8541	6404.0			

77		Burn Date/Time: 05/01/2018 11:58			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9575974	U*****	40	40	1.00	181170571305
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0217	83.0			

78		Burn Date/Time: 05/01/2018 12:00			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9575974	D*****	40	40	1.00	181170571305
V	AVG (ppb)	Intensity			Re-read Re-digest
	-0.0242	65.0			

LANCASTER LABORATORIES

Page 15 of 15

Run Name: 1812102M07

Instrument ID: 17384

Analyst ID: 354.00

CV Element: Hg

79		Burn Date/Time: 05/01/2018 12:02			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9575974	R*****	4	40	1.00	181170571305
V	AVG (ppb)	Intensity	Re-read Re-digest		
	1.4267	10537.0			

80		Burn Date/Time: 05/01/2018 12:04			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	Batch Number
9575974	M*****	4	40	1.00	181170571305
V	AVG (ppb)	Intensity			Re-read Re-digest
	1.3901	10273.0			

81		Burn Date/Time: 05/01/2018 12:06			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	
CRA		1	1	1.00	
AVG (ppb)		Intensity			
0.1798		1537.0			

82		Burn Date/Time: 05/01/2018 12:08			
Sample Number		Class	Initial Vol / Wt	Final Vol	DF
CCV 8			1	1	1.00
AVG (ppb)		Intensity			
0.9663		7214.0			

83		Burn Date/Time: 05/01/2018 12:10			
Sample Number	Class	Initial Vol / Wt	Final Vol	DF	
CCB 8		1	1	1.00	
AVG (ppb)		Intensity			
-0.0181		109.0			

Extraction/Distillation/Digestion Logs

Metals in Liquid

Start Time: 4/30/18 5:04 End Time: 4/30/18 9:11 Hot Block: 15

Pipette ID: JU06758

Reflux Cap Lot#: 17122728054NM

<u>Spike/Reagent</u>	<u>Lot#</u>	<u>Volume Added(mL)</u>
HNO3	191695	3.00
ICP/MS Spike	1804017#5	0.50
LCS	18047017#5	0.50

Method Ref:

SampleID	Date Due	ST	P	H	Balance	PH<2	BC	Vessel	Location	Comments
								Lot#	ID	
1) PBW	.				10685			1712272		
2) LCSW	.				10685			1712272		
3) 9582699U	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET6/D10	
4) 9582699D	05/02/18 14:00	GW	S2		10685	Y	008A	1712272	A139 044/A01	
5) 9582699R	05/02/18 14:00	GW	S2		10685	Y	008A	1712272	A139 044/A01	
6) 9582699M	05/02/18 14:00	GW	S2		10685	Y	008A	1712272	A139 044/A01	
7) 9582700	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET05/B1	
8) 9582701	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET6/C10	
9) 9582702	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET6/E10	
10) 9582703	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET05/D1	
11) 9582704	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET6/B10	
12) 9582705	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET6/F10	
13) 9582707FD	05/02/18 14:00	GW	S2		10685	Y	802A	1712272	WMET05/A1	



Batch# 18 120 1063 901

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

	<u>Operation</u>	<u>Instrument</u>	<u>Operation Date</u>	<u>ANALYST</u>
1)	Batch Creation		4/30/18 4:42	1184
2)	Sample Vol		4/30/18 5:04	1184
3)	Final Vol	10685	4/30/18 5:04	1184
4)	Trial		4/30/18 5:04	1184
5)	Upload Prep	US19PCC06694	4/30/18 9:12	1184

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

Analysis: 0639 ICP/MS SW846 Water

Batch# 18 120 1063 901

<u>Sample ID</u>	<u>Due Date</u>	<u>P</u>	<u>EPA#</u>	<u>SDG#</u>	<u>Initial Volume</u>	<u>Final Volume</u>	<u>Trial</u>
PBW					50.0000	50.0000	1
LCSW					1.0000	1.0000	1
9582699U	05/02/18	S2	EF231	FKP52-01	50.0000	50.0000	1
9582699D	05/02/18	S2	EF231	FKP52-01	50.0000	50.0000	1
9582699R	05/02/18	S2	EF231	FKP52-01	50.0000	50.0000	1
9582699M	05/02/18	S2	EF231	FKP52-01	50.0000	50.0000	1
9582700	05/02/18	S2	IN214	FKP52-02	50.0000	50.0000	1
9582701	05/02/18	S2	S3198	FKP52-03	50.0000	50.0000	1
9582702	05/02/18	S2	S3242	FKP52-04	50.0000	50.0000	1
9582703	05/02/18	S2	TRPIN	FKP52-05	50.0000	50.0000	1
9582704	05/02/18	S2	B384D	FKP52-06	50.0000	50.0000	1
9582705	05/02/18	S2	B384P	FKP52-07	50.0000	50.0000	1
9582707FD	05/02/18	S2	384FD	FKP52-09FD*	50.0000	50.0000	1

Start Time: 5/1/18 5:59

End Time: 5/1/18 7:59

Hot Block: 10

Pipette ID: W/1000

<u>Spike/Reagent</u>	<u>Lot#</u>	<u>Volume Added(mL)</u>
5%K2S2O8	P18110B	3.20
5%KMnO4	P18109C	6.00
H2SO4	174051	2.00
HNO3	191695	1.00
LCS 40ppb Hg	P18115I	1.00
NaCl/NH2OH.HCl	P18115A	2.40
Spike 40ppb Hg	P18115I	1.00

Method Ref:

SampleID		Date Due	ST	P	H	Balance	PH<2	BC	Vessel Lot#	Location ID	Comments
1)	PBW	.							1712272		
2)	LCSW	.							1712272		
3)	9578742	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/B2	Do not use as QC
4)	9578743	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/F4	Do not use as QC
5)	9578744	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/F2	Do not use as QC
6)	9578745	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/A1	Do not use as QC
7)	9578746	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/E4	Do not use as QC
8)	9578765	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET19F1/A01	1/40 bad matrix
9)	9581513	05/09/18 10:00	GW	N8			Y	801A	1712272	WMET19/F2	Do not use as QC
10)	9582061	05/04/18 18:00	WW	S5			Y	801A	1712272	WMET48/E1	
11)	9582062	05/04/18 18:00	WW	S5			Y	801A	1712272	WMET48/D1	
12)	9582063	05/04/18 18:00	WW	S5			Y	801A	1712272	WMET48/F1	
13)	9582065	05/04/18 18:00	WW	S5			Y	801A	1712272	WMET19/E3	
14)	9582699	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/B9	
15)	9582700U	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/F9	
16)	9582700D	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/F9	
17)	9582700R	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/F9	
18)	9582700M	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/F9	
19)	9582701	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/A9	
20)	9582702	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/C9	
21)	9582703	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/A10	
22)	9582704	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/A8	
23)	9582705	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/D9	



SampleID		Date Due	ST	P	H	Balance	PH<2	BC	Vessel Lot#	Location ID	Comments
24)	9582707FD	05/02/18 14:00	GW	S2			Y	801A	1712272	WMET19/E9	
25)	9578741	05/08/18 09:55	WW	N8			Y	801A	1712272	WMET20/A2	



Batch# 18 120 0571 302

LLENS Batch Chronology and Change Log - Hg SW846 Digest Water

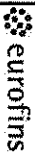
	<u>Operation</u>	<u>Instrument</u>	<u>Operation Date</u>	<u>ANALYST</u>
1)	Batch Creation		4/30/18 0:00	1184
2)	Sample Vol		5/1/18 7:00	1184
3)	Final Vol	CLEAR	5/1/18 7:00	1184
4)	Trial		5/1/18 7:00	1184
5)	Upload Prep	US19PCC06695	5/1/18 8:00	1184
6)	Sample Vol		5/1/18 9:10	1184
7)	Final Vol	CLEAR	5/1/18 9:10	1184
8)	Trial		5/1/18 9:10	1184
9)	Upload Prep	US19PCC06695	5/1/18 9:10	1184

<u>Sample ID</u>	<u>Analysis</u>	<u>D</u>	<u>Operation</u>	<u>Measurement</u>	<u>Original Entry</u>				<u>Data Changed</u>	
					<u>Date/Time</u>	<u>Data</u>	<u>Units</u>	<u>Analyst</u>	<u>Date/Time</u>	<u>Analyst Reason</u>
9578765	05713	1	Sample Vol	Initial Volume	5/1/18 7:00	40	(mL)	1184	5/1/18 7:00	1184 bad matrix

Analysis: 5713 Hg SW846 Digest Water

Batch# 18 120 0571 302

Sample ID	Due Date	P	EPA#	SDG#	Initial Volume	Dilution	Final Volume	Trial
PBW					40.0000		40.0000	1
LCSW					1.0000		1.0000	1
9578742	05/08/18	N8	BW-07		40.0000		40.0000	1
9578743	05/08/18	N8	BW-08		40.0000		40.0000	1
9578744	05/08/18	N8	BWFD1		40.0000		40.0000	1
9578745	05/08/18	N8	BWFB1		40.0000		40.0000	1
9578746	05/08/18	N8	BWEB1		40.0000		40.0000	1
9578765	05/08/18	N8			1.0000		40.0000	1
9581513	05/09/18	N8	57M01	SMC57-01	40.0000		40.0000	1
9582061	05/04/18	S5	L-600		40.0000		40.0000	1
9582062	05/04/18	S5	L-MET		40.0000		40.0000	1
9582063	05/04/18	S5	L-820		40.0000		40.0000	1
9582065	05/04/18	S5	L-900		40.0000		40.0000	1
9582699	05/02/18	S2	EF231	FKP52-01	40.0000		40.0000	1
9582700U	05/02/18	S2	IN214	FKP52-02	40.0000		40.0000	1
9582700D	05/02/18	S2	IN214	FKP52-02	40.0000		40.0000	1
9582700R	05/02/18	S2	IN214	FKP52-02	40.0000		40.0000	1
9582700M	05/02/18	S2	IN214	FKP52-02	40.0000		40.0000	1
9582701	05/02/18	S2	S3198	FKP52-03	40.0000		40.0000	1
9582702	05/02/18	S2	S3242	FKP52-04	40.0000		40.0000	1
9582703	05/02/18	S2	TRPIN	FKP52-05	40.0000		40.0000	1
9582704	05/02/18	S2	B384D	FKP52-06	40.0000		40.0000	1
9582705	05/02/18	S2	B384P	FKP52-07	40.0000		40.0000	1
9582707FD	05/02/18	S2	384FD	FKP52-09FD*	40.0000		40.0000	1
9578741	05/08/18	N8	BW-06		40.0000		40.0000	1



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3

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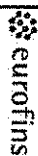
Standard/Reagent Prepared		Standards/Reagents Used				HNO ₃ Used			
Name	Lot #	Identification	M•	Expire Date (MM/YY)	Lot #	Init. Wt/Vol (Write g or mL)	Vol (mL)	M•	Lot #
Hg-5301 1CV	H18109F	Hg-10mg/L Cont	15	4-26-18	H18-109C	0.25ml	15	✓	PH695
Hg-5301 1CV	↓ ②	—	—	—	—	—	—	—	—
Hg-5301 1CV	H18-110A	Hg-10mg/L Cont	15	7-03-18	H18-002C	1.0ml	15	✓	PH695
Hg-5301 1CV	↓ B	10mg/L Cont	15	4-27-18	H18-110A	↓	15	✓	PH695
Hg-5301 1CV	↓ C	10mg/L Cont	116	11-08-18	MAH61333A	↓	15	✓	PH695
Hg-5301 1CV	↓ D	↓ 10mg/L Cont	15	4-27-18	H18-110C	↓	15	✓	PH695
Hg-5301 1CV	↓ E	↓	—	—	↓	0.25ml	1	✓	PH695
Hg-5301 1CV	↓ F	Hg-10mg/L Cont	—	—	H18-110A	0.20	1	✓	PH695
Hg-5301 1CV	↓ G	Hg-10mg/L Cont	—	—	H18-110D	0.20	1	✓	PH695
Hg-5301 1CV	↓ H	Hg-10mg/L Cont	—	—	H18-110B	0.20	1	✓	PH695
Hg-5301 1CV	↓ I	↓	—	—	↓	0.50	1	✓	PH695
Hg-5301 1CV	↓ J	Hg-10mg/L Cont	—	—	H18-110A	0.20	1	✓	PH695
Hg-5301 1CV	↓ K	↓	—	—	↓	0.25	1	✓	PH695
Hg-5301 1CV	↓ L	↓	—	—	↓	0.50	1	✓	PH695
Hg-5301 1CV	↓ M	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ N	Hg-10mg/L Cont	15	4-27-18	H18-110C	0.25ml	1	✓	PH695
Hg-5301 1CV	↓ O	Hg-10mg/L Cont	—	—	H18-110A	0.20	1	✓	PH695
Hg-5301 1CV	↓ P	Hg-10mg/L Cont	—	—	H18-110D	0.20	1	✓	PH695
Hg-5301 1CV	↓ Q	Hg-10mg/L Cont	—	—	H18-110A	0.25	1	✓	PH695
Hg-5301 1CV	↓ R	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ S	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ T	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ U	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ V	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ W	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ X	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ Y	—	—	—	—	—	—	—	—
Hg-5301 1CV	↓ Z	—	—	—	—	—	—	—	—

Key - Manufacturer (M•)

1 - Aldrich Chemical
2 - Conostan Specialty Products
3 - EM Science
4 - Fisher Scientific

5 - High-Purity Standards
6 - J.T. Baker
7 - Johnson Matthey
8 - Leeman Labs

9 - Mallinckrodt
10 - Plasma Pure
11 - Solutions Plus
12 - SPEX Industries
13 - VWR Scientific
14 - EMD
15 - Prepared in house
16 - Inorganic Ventures
XX - Other (footnote Manuf.)



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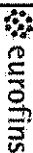
Revision:
3

Historical Reference:
1-P-QM-F-OR-9009818; Form 1105

Effective date : 02 Feb 2017

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HCl Used				Other Used			Final Vol (mL)	Final Conc (mg/L**)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M#	Lot #	Vol (mL*)	M#	Lot #							
45	6	1807104	5mL Hg ²⁺ /100g Zn 15mL KNO ₃	H18-10910 H18-0723		100	2.5mg/L 1.3	01/354	4-19-18	4-26-18	RT	
			10mL 10.15% HNO ₃	H18-0154		10	1.0	01/354	4-20-18	4-27-18	RT	
							0.1					
							1.0					
							0.1					
							2.5mg/L					
							1.0					
							0.2					
							0.2					
							0.5					
							1.0					
							2.5					
							5.0					
							6.0					
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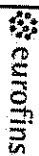
Standard/Reagent Prepared		Standards/Reagents Used				HNO ₃ Used		
Name	Lot #	Identification	M•	Expire Date (MM/YY)	Lot #	Init. Wt/Vol (Write g or mL)	Vol (mL)	M• Lot #
Hg 0.1mg/L Trace Cal	H18-113B	Hg 0.1mg/L Cal	15	4-30-18	H18-113A	1.0ml		
10mg/L Trace Cal	C	10mg/L Cal	16	11-08-18	MATH615332			
0.1mg/L Trace Cal	D	0.1mg/L Cal	15	4-30-18	H18-113C			
Hg 4700	EX					0.25ml		
0.1mg/L Trace Cal	F	Hg 0.1mg/L Cal			H18-113A	0.10		
0.1mg/L Trace Cal	G	Hg 0.1mg/L Cal			H18-113D	0.20		
0.1mg/L Trace Cal	H	Hg 0.1mg/L Cal			H18-113B	0.20		
0.1mg/L Trace Cal	I	Hg 0.1mg/L Cal				0.50		
0.1mg/L Trace Cal	J	Hg 0.1mg/L Cal			H18-113A	0.10		
0.1mg/L Trace Cal	K					0.25		
0.1mg/L Trace Cal	L					0.50		
0.1mg/L Trace Cal	M							
Standard Chloride	N	3mg/L	4	3-9-19	H75498 #8	300.00g		
	O				#8x9	200.07g		
	P				#9	200.05g		
Hg 0.1mg/L Trace Cal	H18-114A	Hg 0.1mg/L Cal	15	7-02-18	H18-002C	1.0ml		
0.1mg/L Trace Cal	B	10mg/L Cal	15	5-01-18	H18-114A			
10mg/L Trace Cal	C	10mg/L Cal	16	11-08-18	MATH615332			
0.1mg/L Trace Cal	D	0.1mg/L Cal	15	5-01-18	H18-114C			
Hg 5300	EX	Hg				0.25ml		

1 - Aldrich Chemical
2 - Constan Specialty Products
3 - EM Science
4 - Fisher Scientific

5 - High-Purity Standards
6 - J. T. Baker
7 - Johnson Matthey
8 - Leeman Labs

9 - Mallinckrodt
10 - Plasma Pure
11 - Solutions Plus
12 - SPEX Industries

13 - VWR Scientific
14 - EMD
15 - Prepared in house
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XX - Other (Footnote Manuf.)



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HCl Used				Other Used				Final Vol (mL)	Final Conc (mg/L**)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M•	Lot #	Vol (mL*)	M•	Lot #								
1			TS solution/HNO ₃	H18-N15				10	0.1	01354	4-23-18	4-30-18	E1
2									1.0				
3									0.1				
4									0.1				
5		1816744						100	2.5ug/L				
6									1.0				
7									0.2				
8									0.2				
9									0.5				
10									1.0				
11									2.5				
12									5.0				
13		200	1816744						0.04				
14								2000	10.6			10-23-18	
15													
16													
17			TS solution/HNO ₃	H18-0154				10	1.0	01354	4-24-18	5-01-18	E1
18									0.1				
19									1.0				
20									0.1				
									2.5ug/L				

Footnotes

Key (••) - Other Used

A = CaCl₂ (0.053%)

B = CsCl (10%)

C = KCl

D = La₂O₃ (10%)

E = Al (NO₃)₃ (40%)

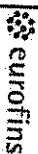
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified

** units are mg/L unless otherwise specified

Standard/Reagent Prepared			Standards/Reagents Used				HNO ₃ Used		
Name	Lot #	Identification	M.	Expire Date (MM/YY)	Lot #	Init. Wt/Vol (Write g or mL)	Vol (mL)	M.	Lot #
Hg-5-Food - 001	H18-114F	Hg-1.0mg/L Cal	15	5-01-18	H18-114#	0.20mL	1	16	1911095
CEA	6	Hg-0.1mg/L Cont			H18-114D	0.20			
SEA Cal	H	Hg-0.1mg/L Cal			H18-114B	0.20			
	1					0.50			
	1	Hg-1.0mg/L Cal			H18-114A	0.20			
	5					0.25			
	L					0.50			
	M								
	N	Hg-1.0mg/L Cont	15	5-01-18	H18-114C	0.20mL			
CEA	0	Hg-0.1mg/L Cal			H18-114A	0.20			
CEA	P	Hg-0.1mg/L Cont			H18-114D	0.20			
Blank - Waters	H18-115A						25	16	1911095
Blank - Soils	H18-115B								
Stannous Chloride	H18-115C	SnCl ₂	4	4-16-19	175398#9210	200.05g			
	D	4.25-18.035x			#10	200.01g			
Hg-1.0mg/L Cal	H18-116A	Hg-1.0mg/L Cal	15	7-02-18	H18-602C	1.0mL			
6.1mg/L Lab Cal	B	1.0mg/L Cal	15	5-03-18	H18-116A1				
1.0mg/L Lab Cal	C	10mg/L Cont	16	11-08-18	181615732D				
1.0mg/L Lab Cal	D	1.0mg/L Cont	5	5-03-18	H18-116C				



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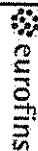
HCl Used		Other Used		Final Vol (mL)	Final Conc (mg/L **)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M• Lot #	Vol (mL*)	M• Lot #						
20	174051	3.3ml H ₂ O ₂ 10ml KMnO ₄	H18-0340 H18-0326	300	1.0mg/L	01/35/17	4-24-18	5-01-18	RT
19				100	6.2				
18				200	0.2				
17				200	1.0				
16				100	2.5				
15				200	5.0				
14				200	1.0				
13	174051	80ml H ₂ O ₂ 150ml KMnO ₄	H18-0340 H18-0326	1000	0.2	01/35/17	4-25-18	9-13-18	RT
12				100	0.0				
11				200	1.0				
10				200	2.5				
9				200	5.0				
8				200	1.0				
7				200	2.5				
6				200	5.0				
5				200	1.0				
4				200	2.5				
3				200	5.0				
2				200	1.0				
1				200	2.5				
20				200	5.0				
19				200	1.0				
18				200	2.5				
17				200	5.0				
16				200	1.0				
15				200	2.5				
14				200	5.0				
13				200	1.0				
12				200	2.5				
11				200	5.0				
10				200	1.0				
9				200	2.5				
8				200	5.0				
7				200	1.0				
6				200	2.5				
5				200	5.0				
4				200	1.0				
3				200	2.5				
2				200	5.0				
1				200	1.0				

Key (••) - Other Used
A = CaCl₂ (0.053%)
B = CsCl (10%)
C = KCl

D = La₂O₃ (10%)
E = Al (NO₃)₃ (40%)
F = Element Specific

RT = Room Temperature Storage

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** units are mg/L unless otherwise specified



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HCl Used				Other Used				Final Vol (mL)	Final Conc (mg/L**)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M•	Lot #	Vol (mL*)	M•	Lot #								
1			5mL Hg-200g/L 5mL Hg-200g/L		H18-1168 H18-0128	100	2.5mg/L 2.5mg/L	1	2.5mg/L	4-26-18	5-08-18	RT	
2							1.0						
3							1.0						
4							1.0						
5							0.2						
6							0.2						
7							0.5						
8							1.0						
9							2.5						
10							5.0						
11							0.0						
12							2.5						
13	4.5	18107104				60	1.3					4-26-18	
14	2mL Hg-200g/L 4	1741051	2.2mL Hg-200g/L 1mL Hg-200g/L		H18-0128 H18-0128	100	2.5mg/L					5-02-18	
15						200	1.0						
16						100	0.2						
17							0.2						
18							0.5						
19						200	1.0						
20						100	2.5						

Footnotes

Key (••) - Other Used

Footnotes

Key (••) - Other Used

A = CaCl₂ (0.053%)

B = CsCl (10%)

C = KCl

D = La₂O₃ (10%)

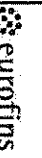
E = Al (NO₃)₃ (40%)

F = Element Specific

RT = Room Temperature Storage

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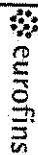
Standard/Reagent Prepared		Standards/Reagents Used				HNO ₃ Used		
Name	Lot #	Identification	M•	Expire Date (MM/YY)	Lot #	Init. Wt/Vol (Write g or mL)	Vol (mL)	M• Lot #
Hg5300 Std Cal	H181174	Hg10mg/L Cal	15	5-03-18	H18-1174	0.500ml	1	1911695
↓	↓	↓	↓	↓	↓	↓	↓	↓
10N	AA	Hg10mg/L Cont	15	5-03-18	H18-1174C	0.25ml	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.2N	BB	Hg10mg/L Cal	↓	↓	H18-1174D	0.20 ↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.01N	CC	Hg10mg/L Cont	↓	↓	H18-1174E	0.20 ↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
Hg10mg/L Inter Cal	H181174	Hg10mg/L Cal	15	7-02-18	H18-0020C	1.0ml	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.1mg/L Inter Cal	B	10mg/L Cal	15	5-04-18	H18-1174A	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
1.0mg/L Inter Cal	C	10mg/L Cont	16	11-08-18	MAH516555B2	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.1mg/L Inter Cal	D	1.0mg/L Cont	15	5-04-18	H18-1174C	↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
Hg5300 10N	E	↓	↓	↓	↓	0.25ml	1	1911695
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.2N	F	Hg10mg/L Cal	↓	↓	H18-1174A	0.20 ↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.01N	G	Hg10mg/L Cont	↓	↓	H18-1174D	0.20 ↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
Std Cal	H	Hg10mg/L Cal	↓	↓	H18-1174B	0.20 ↓	↓	↓
↓	↓	↓	↓	↓	↓	0.50	↓	↓
↓	↓	↓	↓	↓	↓	0.20	↓	↓
↓	↓	↓	↓	↓	↓	0.25	↓	↓
↓	↓	↓	↓	↓	↓	0.50 ↓	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
10N	M	Hg10mg/L Cont	15	5-04-18	H18-1174C	0.25ml	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓
0.2N	N	Hg10mg/L Cal	↓	↓	H18-1174A	0.20ml	↓	↓
↓	↓	↓	↓	↓	↓	↓	↓	↓

Key - Manufacturer (M•)

1 - Aldrich Chemical
2 - Conostan Specialty Products
3 - EM Science
4 - Fisher Scientific

5 - High-Purity Standards
6 - J. T. Baker
7 - Johnson Matthey
8 - Leeman Labs

9 - Mallinckrodt
10 - Plasma Pure
11 - Solutions Plus
12 - SPEX Industries
13 - VWR Scientific
14 - EMD
15 - Prepared in house
16 - Inorganic Ventures
XX - Other (footnote Manuf.)



Lancaster Laboratories
Environmental

Document Title:

Standard/Reagent Preparation Logbook

Eurofins Document Reference :
T-MET-FRM9079

Effective date : 02 Feb 2017

Revision: 3

Historical Reference:
1-P-QM-FOR-9009818; Form 1105

Effective

HCl Used				Other Used				Final Vol (mL)	Final Conc (mg/L**)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M•	Lot #	Vol (mL*)	M•	Lot #								
20	✓	✓	✓	✓	✓	✓	✓	200	1.0	✓	✓	✓	✓
19	✓	✓	✓	✓	✓	✓	✓	200	2.5	✓	✓	✓	✓
18	✓	✓	✓	✓	✓	✓	✓	200	5.0	✓	✓	✓	✓
17	✓	✓	✓	✓	✓	✓	✓	200	1.0	✓	✓	✓	✓
16	✓	✓	✓	✓	✓	✓	✓	200	0.5	✓	✓	✓	✓
15	✓	✓	✓	✓	✓	✓	✓	200	0.2	✓	✓	✓	✓
14	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
13	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
12	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
11	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
10	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
9	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
5	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
1	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
20	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
19	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
18	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
17	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
16	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
15	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
14	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
13	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
12	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
11	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
10	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
9	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
6	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
5	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓
1	✓	✓	✓	✓	✓	✓	✓	200	0.1	✓	✓	✓	✓

Footnotes

Key (••) - Other Used

A = CaCl₂ (0.053%)

B = CsCl (10%)

C = KCl

D = La₂O₃ (10%)

E = Al (NO₃)₃ (40%)

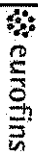
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified

** units are mg/L unless otherwise specified

FKP52 Page 680 of 730



Lancaster Laboratories
Environmental

Document Title:
Standard/Reagent Preparation Logbook

Eurofins Document Reference :
T-MET-FRM9079

Revision:
3

Effective date : 02 Feb 2017

Historical Reference:
1-P-QM-FOR-9009818; Form 1105

Effective

HCl Used			Other Used			Final Vol (mL)	Final Conc (mg/L**)	Init/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M•	Lot #	Vol (mL*)	M•	Lot #						
2ml H ₂ SO ₄	4	174051	3.2ml K ₂ Cr ₂ O ₇		H18-03240	100	0.2mg/L	01/35/17	4-21-18	5-04-18	RT
			10ml HNO ₃		H18-03240	10	1.0	01/35/17	4-20-18	5-05-18	RT
			10ml H ₂ O		H18-0154		0.1				
							1.0				
							0.1				
2ml H ₂ SO ₄	4	174051	3.2ml K ₂ Cr ₂ O ₇		H18-03240	100	2.5mg/L				
			10ml HNO ₃		H18-1024	100	1.0				
							0.2				
							0.2				
							0.5				
						200	1.0				
						100	2.5				
							0.0				
							2.5				
						200	1.0				
						100	6.2				
						10	1.0	01/35/17	5-01-18	5-08-18	RT
							0.1				
							1.0				

Footnotes

Key (••) - Other Used

A = CaCl₂ (0.053%)

B = CsCl (10%)

C = KCl

D = La₂O₃ (10%)

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F = Element Specific

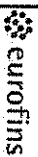
RT = Room Temperature Storage

* units are mL unless otherwise specified

** units are mg/L unless otherwise specified

Effective

13 - VWR Scientific
14 - EMD
15 - Prepared in house
16 - Inorganic Ventures
XX - Other (footnote Manuf.)



Lancaster Laboratories
Environmental

Document Title:
Standard/Reagent Preparation Logbook

Eurofins Document Reference :
T-MET-FRM9079

Revision:
3

Effective date : 02 Feb 2017

Historical Reference:
1-P-QM-F-OR-9009818; Form 1105

Effective

HCl Used		Other Used		Final Vol (mL)	Final Conc (mg/L **)	Int/ Emp #	Prep Date (MM/DD/YY)	Expire Date (MM/DD/YY)	Storage
Vol (mL)	M•	Vol (mL*)	M•						
20									
19									
18									
17									
16									
15									
14									
13									
12									
11									
10									
9									
8									
7									
6									
5									
4									
3									
2	20ml H ₂ O	4	174.051	10	0.1	201354	5-01-18	5-08-18	RT
1									

Footnotes

Key (**) - Other Used
A = CaCl₂ (0.053%)
B = CsCl (10%)
C = KCl
D = La₂O₃ (10%)
E = Al (NO₃)₃ (40%)
F = Element Specific

RT = Room Temperature Storage

* units are mL unless otherwise specified
** units are mg/L unless otherwise specified

Instrumental Wet Chemistry Data

Case Narrative/Conformance Summary

Instrumental Wet Chemistry

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP52

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
9582699	EFF-231-R-1	X		5	
9582700	INF-214-R-1	X		5	
9582701	STR-3198-R-1	X		5	
9582702	SEP-3242-R-1	X		5	
9582703	TRP-INF-R-1	X		5	
9582704	B384-RB-DCW	X		5	
9582705	B384-RB-PIP	X		5	
9582707	DUP042718	X		5	Field Duplicate Sample

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

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP52

Instrumental Water Quality

Fraction: Instrumental Wet Chemistry

IC (Fluoride) = raw result X dilution factor

Due to the limitations of the data package software, form I's are not available for the Instrumental Analysis data. Please refer to the analysis reports for this information.

Abbreviation Key

U = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
R = Matrix Spike (MS)	MDL = Method Detection Limit
M = Matrix Spike Duplicate (MSD)	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	NA = Not Applicable
HS = High Spike	ME = Method
LS = Low Spike	CO = Colorimetric
SS = Soluble Spike	G = Gravimetric
IS = Insoluble Spike	IR = Infrared Spectrophotometry
ISD = Insoluble Spike Duplicate	MTR = Meter
PDS = Post Digestion Spike	OD = Oven Dried
* = Out of Specification	TI = Titration
V = Visual	TOC = Total Organic Carbon
AK = Alpkem	IC = Ion Chromatography
TC = Total Carbon	RA = Rapid Analyzer

Quality Control and Calibration Summary Forms

Instrumental Wet Chemistry

Quality Control Reference List Instrumental Water Quality

CLIENT: IBM
SDG: FKP52

Fraction: Instrumental Wet Chemistry

Analysis	Batch Number	Sample Number	Analysis Date
Fluoride	18119249109A	P11949IB	04/29/2018 10:30:00
		P11949IQ	04/29/2018 10:14:00
		9582699	04/29/2018 12:55:00
		9582700	04/29/2018 13:42:00
		9582701	04/29/2018 13:58:00
		9582702	04/29/2018 14:14:00
		9582703	04/29/2018 14:30:00
		9582704	04/29/2018 14:45:00
		9582705	04/29/2018 15:01:00
		9582707	04/29/2018 15:17:00

Fraction: Instrumental Wet Chemistry

18119249109A / P11949IB Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Fluoride	IC	04/29/18	N.D.	mg/l	0.050	0.10

Instrumental Water Quality
Fraction: Instrumental Wet Chemistry

LCS: P11949IQ	Batch: 18119249109A (Sample number(s): 9582699-9582705, 9582707)								
Parameter	ME	Spike Added mg/l	LCS Conc mg/l	LCSD Conc mg/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Fluoride	IC	0.750	0.770	NA	103	NA	90-110	NA	NA

Instrument ID: 17694
Calibration Date: 04/24/2018

Analysis	AUTO CAL1	AUTO CAL2	AUTO CAL3	AUTO CAL4	AUTO CAL5	R ²	CC
Fluoride	0.102491	0.398036	0.999949	2.071251	3.233751	0.9995	0.9998

Acceptance Range:

ICV/CCV: 90%-110%

ICB/CCB: < MDL

Concentration units: mg/L

Batch Numbers: 18119249109A

Run Start Dates: 04/29/2018

Run Names: 1811901D09

Sample	Fluoride		
	True	Result	%Rec
ICV	0.75	0.7646	102
ICB	0	ND	NA
CCV2	0.75	0.7702	103
CCB	0	ND	NA
CCV2	0.75	0.7957	106
CCB	0	ND	NA
CCV2	0.75	0.7778	104
CCB	0	ND	NA

Fraction: Instrumental Wet Chemistry

01504: Fluoride Analyte Name	Default MDL	Default LOQ	Units
Fluoride	0.050	0.10	mg/l

Raw Data

Instrumental Wet Chemistry

Inorganic Anions by Ion Chromatography

System Name ICS-1100

Analyst CW 2987

Instrument ID 17694

Run Start Date 4-24-18

IDAT Run Number 1811401D09

Run Name 181149C

1CAL

ICV/CCV/LCSW (mg/L)

Prep Book/Page: 268320/10

Anion	T.V.	LCSW /ICV/CCV2	DOD LCSW
Fluoride	.75	.6713 - 0.828	0.66-0.84
Chloride	3.0	2.685 - 3.312	2.61-3.33
Nitrite-N	.75	.6713 - 0.828	.6525-.8325
Bromide	7.5	6.71 - 8.28	6.825-8.25
Nitrate-N	.75	.6713 - 0.828	0.66-0.8325
O-Phos as P	7.5	6.71 - 8.28	6.0-8.7
Sulfate	7.5	6.71 - 8.28	6.525-8.4

CCB/PBW (mg/L)

F, NO ₂	NO ₃	Cl	P	Br	SO ₄
< 0.05	< 0.05	< 0.2	< 0.2	< 0.2	< 0.3

LCSS (mg/kg)

Prep Book/Page: _____

Anion	T.V.	Acceptance Range
Fluoride	10	8.95 - 11.0
Chloride	20	17.9 - 22.08
Nitrite-N	10	8.95 - 11.0
Bromide	50	44.75 - 55.2
Nitrate-N	10	8.95 - 11.0
O-Phos as P	50	44.75 - 55.2
Sulfate	50	44.75 - 55.2

CCB/PBS (mg/kg)

F, NO ₂ , NO ₃	Cl	Br	P, SO ₄
< 0.5	< 5.0	< 2.5	< 5.0

Calibration Information – (mg/L)

Standard	F, NO ₂ , NO ₃	Cl	Br,P	SO ₄
Cal 1	0.1	0.4	0.5	1.0
Cal 2	0.4	0.8	2.0	2.0
Cal 3	1.0	2.0	5.0	5.0
Cal 4	2.0	4.0	10.0	10.0
Cal 5	3.0	6.0	15.0	15.0

Check Standards True Values (mg/L)

	F, NO ₂ , NO ₃	Cl	Br, P, SO ₄
Low	0.75	1.5	3.75
High	2.25	4.5	11.25

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

Sequence Overview: 181149C

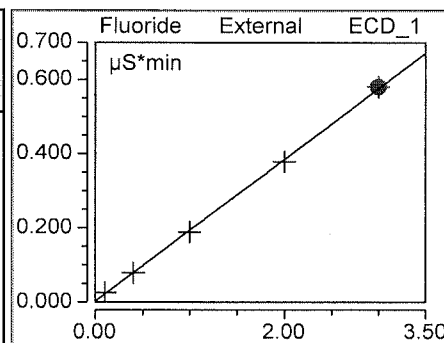
No.	Injection Name	Batch Number	Position	Type	Level	Inject Time	Volume µL	Instrumentation Method	Processing Method	Weight	Dilution	Status
1	TEST		7	Check Standard		04/24/2018 14:28:23	25.00	AnionsAS	Anions	1.00	1	Finished
2	TEST		7	Check Standard		04/24/2018 14:44:08	25.00	AnionsAS	Anions	1.00	1	Finished
3	CAL 0		1	Calibration Standard	01	04/24/2018 14:59:52	25.00	AnionsAS	Anions	1.00	1	Finished
4	CAL 1		2	Calibration Standard	02	04/24/2018 15:15:36	25.00	AnionsAS	Anions	1.00	1	Finished
5	CAL 2		3	Calibration Standard	03	04/24/2018 15:31:20	25.00	AnionsAS	Anions	1.00	1	Finished
6	CAL 3		4	Calibration Standard	04	04/24/2018 15:47:05	25.00	AnionsAS	Anions	1.00	1	Finished
7	CAL 4		5	Calibration Standard	05	04/24/2018 16:02:49	25.00	AnionsAS	Anions	1.00	1	Finished
8	CAL 5		6	Calibration Standard	06	04/24/2018 16:18:32	25.00	AnionsAS	Anions	1.00	1	Finished
9	ICV		7	Check Standard		04/24/2018 16:34:17	25.00	AnionsAS	Anions	1.00	1	Finished
10	ICB		8	Check Standard		04/24/2018 16:50:02	25.00	AnionsAS	Anions	1.00	1	Finished
11	QRS		2	Check Standard		04/24/2018 17:05:46	25.00	AnionsAS	Anions	1.00	1	Finished
12	CRDL		2	Check Standard		04/24/2018 17:21:29	25.00	AnionsAS	Anions	1.00	1	Finished

Calibration Batch Report

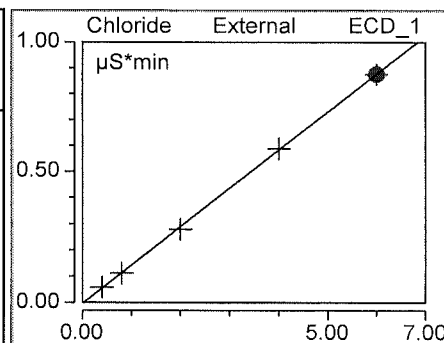
Sequence:	181149C	Injection Volume:	25.00
Instrument Method:	AnionsAS	Channel:	ECD_1
Instrument Number:	17694	Run Time (min):	13
Inj. Date / Time:	24-Apr-2018 / 16:18	Column Type-Serial #:	AG14-180118258, AS14-170731036

Calibration Summary							
Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	R-Squared %
Fluoride	Area	Lin, WithOffset	5.000	0.002	0.191	0.000	99.9515283
Chloride	Area	Lin, WithOffset	5.000	-0.005	0.147	0.000	99.9702220
Nitrite	Area	Lin, WithOffset	5.000	-0.007	0.315	0.000	99.9693801
Bromide	Area	Lin, WithOffset	5.000	-0.009	0.062	0.000	99.9725917
Nitrate	Area	Lin, WithOffset	5.000	-0.006	0.341	0.000	99.9802072
Phosphate	Area	Lin, WithOffset	4.000	-0.104	0.120	0.000	99.7724156
Sulfate	Area	Lin, WithOffset	5.000	-0.009	0.103	0.000	99.9615178
AVERAGE:				-0.0198	0.1827	0.0000	99.9397

Injection Name	Ret. Time min	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount	Fluoride External ECD_1 $\mu\text{S} \cdot \text{min}$
	ECD 1	ECD 1	ECD 1	ECD 1	
CAL 0	Fluoride n.a.	Fluoride n.a.	Fluoride n.a.	Fluoride n.a.	
CAL 1	2.977	0.0253	0.102	0.124	
CAL 2	2.973	0.0788	0.398	0.403	
CAL 3	2.973	0.1885	1.000	0.977	
CAL 4	2.977	0.3783	2.071	1.969	
CAL 5	2.977	0.5806	3.234	3.027	
Average	2.975				
Rel. Std. Dev.	0.061 %				



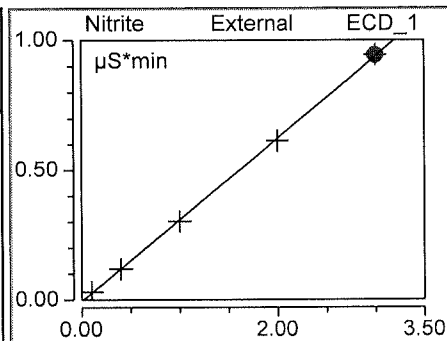
Injection Name	Ret. Time min	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount	Chloride External ECD_1 $\mu\text{S} \cdot \text{min}$
	ECD 1	ECD 1	ECD 1	ECD 1	
CAL 0	Chloride n.a.	Chloride n.a.	Chloride n.a.	Chloride n.a.	
CAL 1	4.157	0.0586	0.303	0.435	
CAL 2	4.160	0.1119	0.596	0.798	
CAL 3	4.163	0.2789	1.497	1.936	
CAL 4	4.170	0.5870	3.189	4.035	
CAL 5	4.173	0.8748	4.771	5.996	
Average	4.165				
Rel. Std. Dev.	0.166 %				



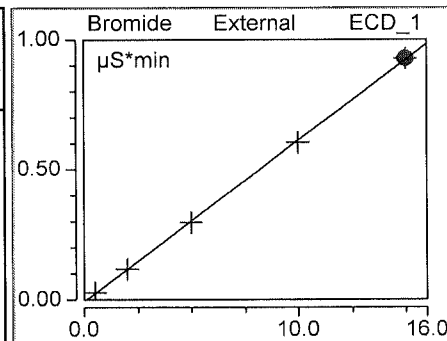
Clinton M. Wilson
Chemlet

Nicola M. Vardy
Senior Chemist/Analyst

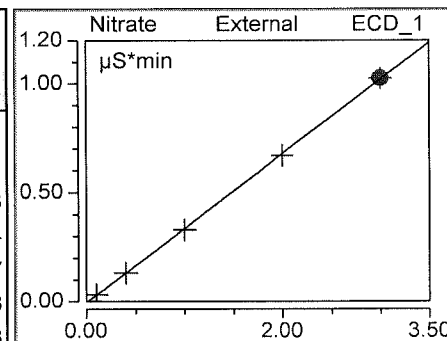
Injection Name	Ret.Time min ECD 1	Area $\mu\text{S} \cdot \text{min}$ ECD 1	Height μS ECD 1	Amount ECD 1
CAL 0	Nitrite n.a.	Nitrite n.a.	Nitrite n.a.	Nitrite n.a.
CAL 1	4.953	0.0305	0.129	0.120
CAL 2	4.953	0.1185	0.509	0.400
CAL 3	4.953	0.3022	1.281	0.984
CAL 4	4.960	0.6141	2.629	1.975
CAL 5	4.960	0.9433	4.038	3.021
Average	4.956			
Rel. Std. Dev.	0.074 %			



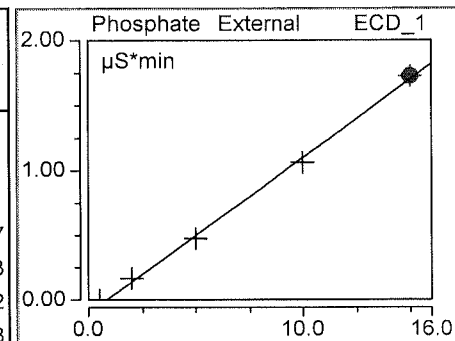
Injection Name	Ret.Time min ECD 1	Area $\mu\text{S} \cdot \text{min}$ ECD 1	Height μS ECD 1	Amount ECD 1
CAL 0	Bromide n.a.	Bromide n.a.	Bromide n.a.	Bromide n.a.
CAL 1	6.317	0.0271	0.093	0.576
CAL 2	6.317	0.1171	0.402	2.029
CAL 3	6.310	0.2954	1.021	4.910
CAL 4	6.313	0.6031	2.106	9.882
CAL 5	6.303	0.9262	3.243	15.102
Average	6.312			
Rel. Std. Dev.	0.088 %			



Injection Name	Ret.Time min ECD 1	Area $\mu\text{S} \cdot \text{min}$ ECD 1	Height μS ECD 1	Amount ECD 1
CAL 0	Nitrate n.a.	Nitrate n.a.	Nitrate n.a.	Nitrate n.a.
CAL 1	7.347	0.0320	0.090	0.113
CAL 2	7.333	0.1315	0.378	0.404
CAL 3	7.313	0.3302	0.948	0.987
CAL 4	7.313	0.6684	1.936	1.978
CAL 5	7.290	1.0229	2.962	3.018
Average	7.319			
Rel. Std. Dev.	0.296 %			



Injection Name	Ret.Time min ECD 1	Area $\mu\text{S} \cdot \text{min}$ ECD 1	Height μS ECD 1	Amount ECD 1
CAL 0	Phosphate n.a.	Phosphate n.a.	Phosphate n.a.	Phosphate n.a.
CAL 1	n.a.	n.a.	n.a.	n.a.
CAL 2	8.783	0.1664	0.347	2.247
CAL 3	8.767	0.4758	1.022	4.823
CAL 4	8.753	1.0633	2.340	9.712
CAL 5	8.737	1.7249	3.833	15.218
Average	8.760			
Rel. Std. Dev.	0.226 %			



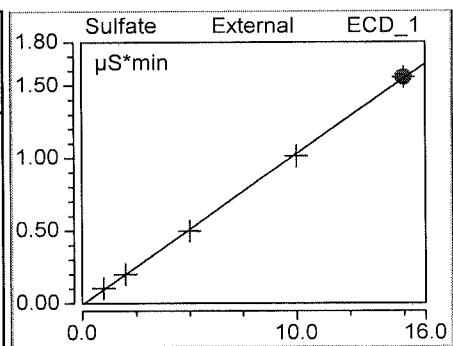

 Clinton M. Wilson
 Chemist

APR 25 2018


 Nicholas M. Voss
 Senior Analyst/Quality Control

APR 26 2018

Injection Name	Ret. Time min ECD_1	Area $\mu\text{S} \cdot \text{min}$ ECD_1	Height μS ECD_1	Amount ECD_1
CAL 0	Sulfate n.a.	Sulfate n.a.	Sulfate n.a.	Sulfate n.a.
CAL 1	10.543	0.1037	0.200	1.093
CAL 2	10.540	0.2008	0.390	2.033
CAL 3	10.537	0.4967	0.974	4.896
CAL 4	10.537	1.0101	1.988	9.863
CAL 5	10.530	1.5531	3.048	15.116
Average		10.537		
Rel. Std. Dev.		0.047 %		



Clinton M. Wilson
Clinton M. Wilson
Chemist

APR 25 2018

Nicole K. Feery
Nicole K. Feery
Senior Chemist/Group Leader

APR 26 2018

Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	Corr.Coeff. %
1	Fluoride	Lin, WithOffset	Area	5	2.3238	0.99952	0.0016	0.1913	99.97576
2	Chloride	Lin, WithOffset	Area	5	1.7927	0.99970	-0.0052	0.1468	99.98511
3	Nitrite	Lin, WithOffset	Area	5	1.8927	0.99969	-0.0073	0.3146	99.98469
4	Bromide	Lin, WithOffset	Area	5	1.7969	0.99973	-0.0085	0.0619	99.98629
5	Nitrate	Lin, WithOffset	Area	5	1.5165	0.99980	-0.0064	0.3411	99.99010
6	Phosphate	Lin, WithOffset	Area	4	4.6837	0.99772	-0.1036	0.1201	99.88614
7	Sulfate	Lin, WithOffset	Area	5	2.0383	0.99962	-0.0093	0.1034	99.98076
Maximum					4.6837	0.99980			
Minimum					1.5165	0.99772			


Clinton M. Wilson
Chemist

APR 25 2008


Clinton M. Wilson
Chemist

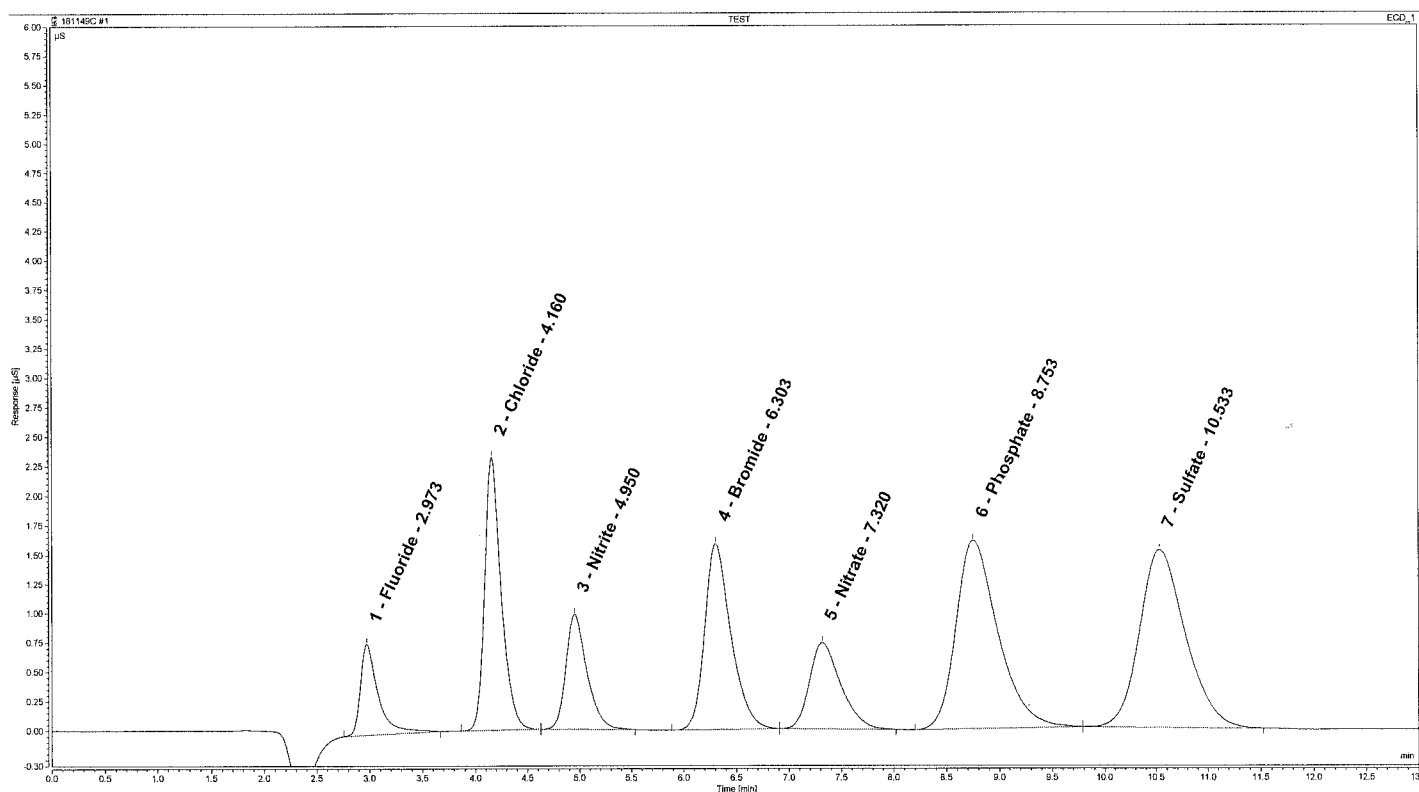
APR 26 2008

Peak Integration Report: Anions by IC

Sample Name:	TEST	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 14:28	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	001
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.97	Fluoride	BMB	0.150	0.775	0.7735
2	4.16	Chloride	BMB	0.428	2.320	2.9547
3	4.95	Nitrite	BMB	0.230	0.981	0.7558
4	6.30	Bromide	BMB	0.456	1.584	7.4996
5	7.32	Nitrate	BMB	0.254	0.738	0.7629
6	8.75	Phosphate	BMB	0.735	1.602	6.9796
7	10.53	Sulfate	BMB	0.770	1.510	7.5409
TOTAL:				3.02	9.51	27.27



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Nirvan M. Vora
Nirvan M. Vora
Senior Chemist/Supervisor

Date:

APR 25 2018

Date:

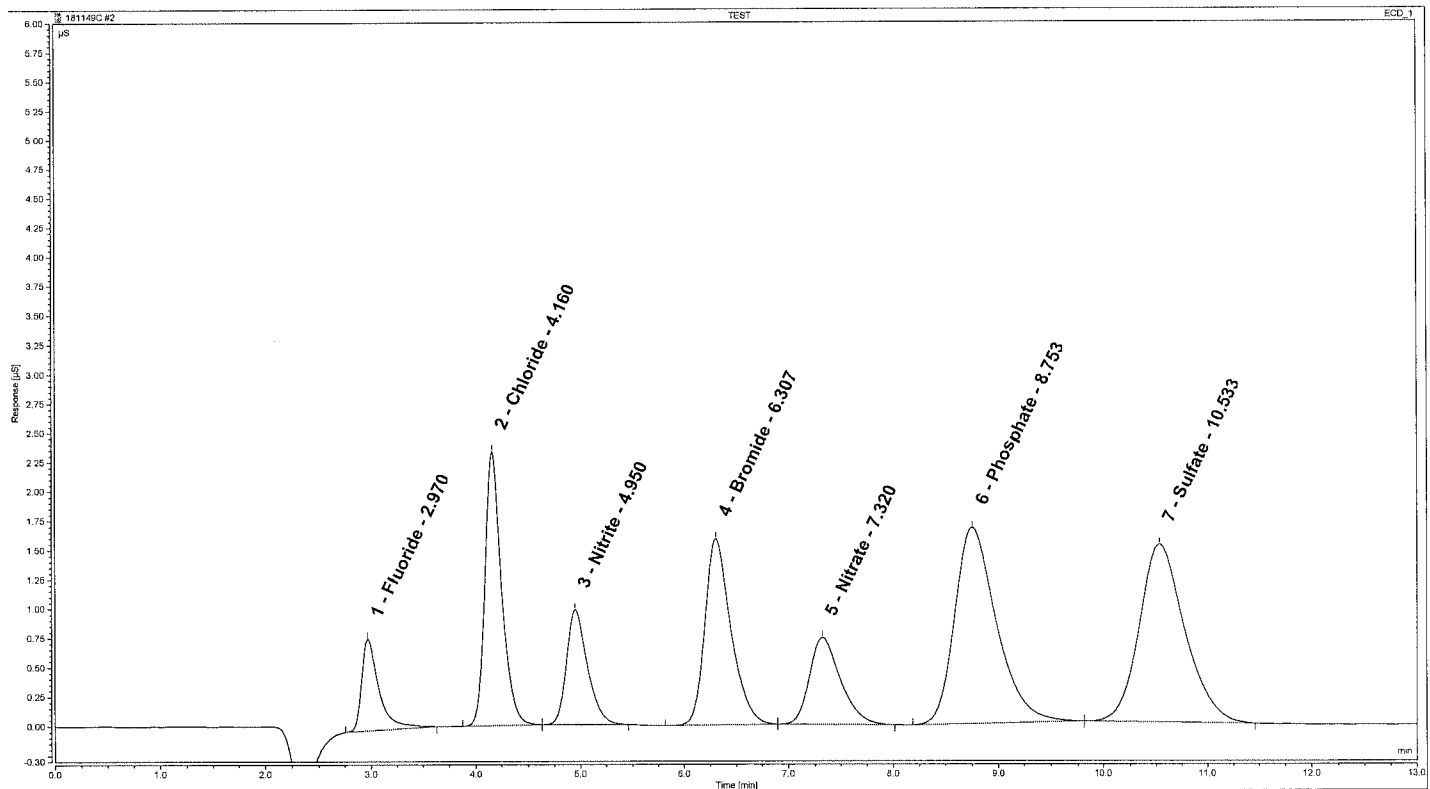
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	TEST	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 14:44	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	002
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.97	Fluoride	BMB	0.148	0.781	0.7643
2	4.16	Chloride	BMB	0.433	2.338	2.9848
3	4.95	Nitrite	BMB	0.229	0.981	0.7495
4	6.31	Bromide	BMB	0.458	1.592	7.5389
5	7.32	Nitrate	BMB	0.255	0.741	0.7651
6	8.75	Phosphate	BMB	0.765	1.677	7.2301
7	10.53	Sulfate	BMB	0.775	1.524	7.5865
TOTAL:				3.06	9.63	27.62



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Date:

APR 25 2018

Verifier:

Niraj W. Teedy
Niraj W. Teedy
Quality Control Group Leader

Date:

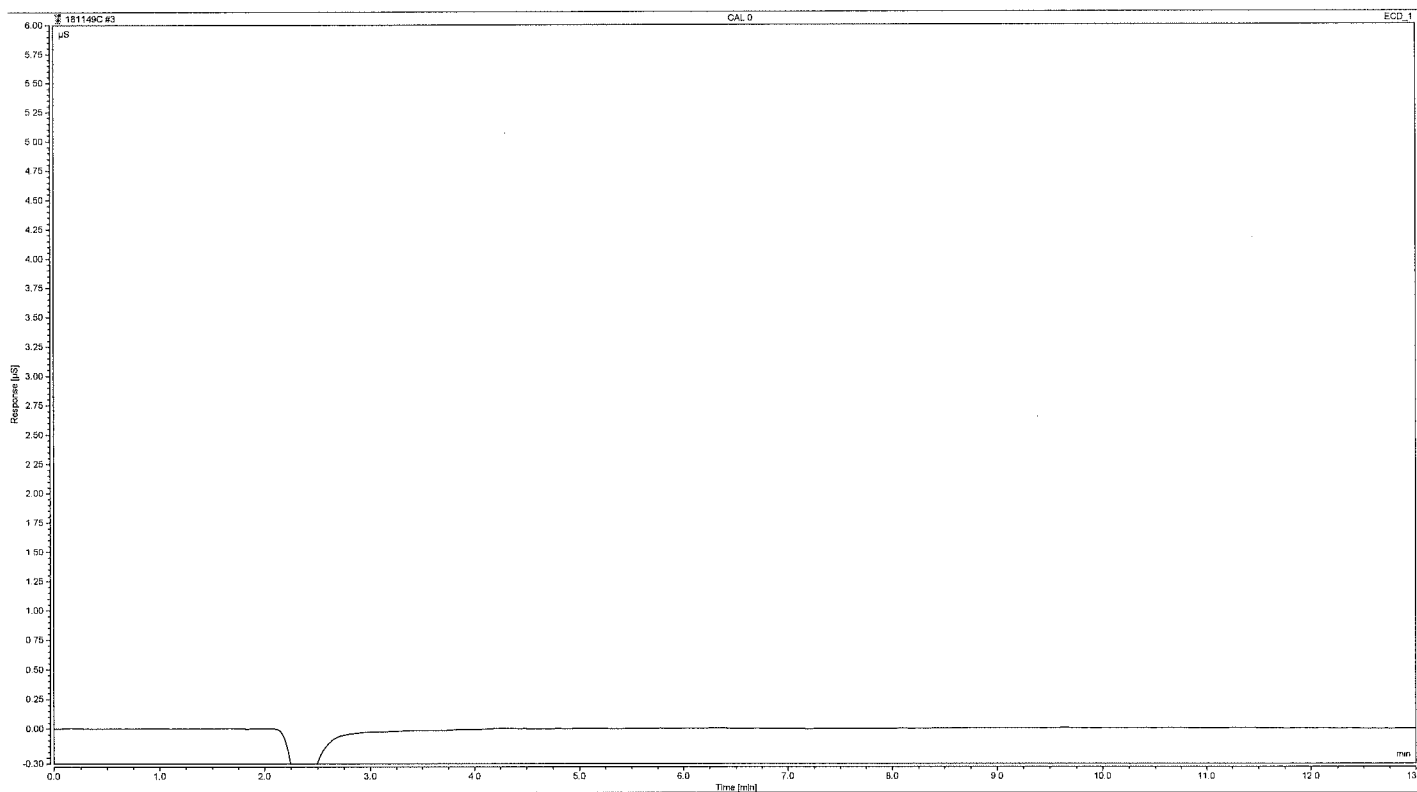
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CAL 0	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 14:59	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	003
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Date:

APR 25 2018

Verifier:

Nicola M. Vary
Nicola M. Vary
Senior Chemist/Analyst

Date:

APR 26 2018

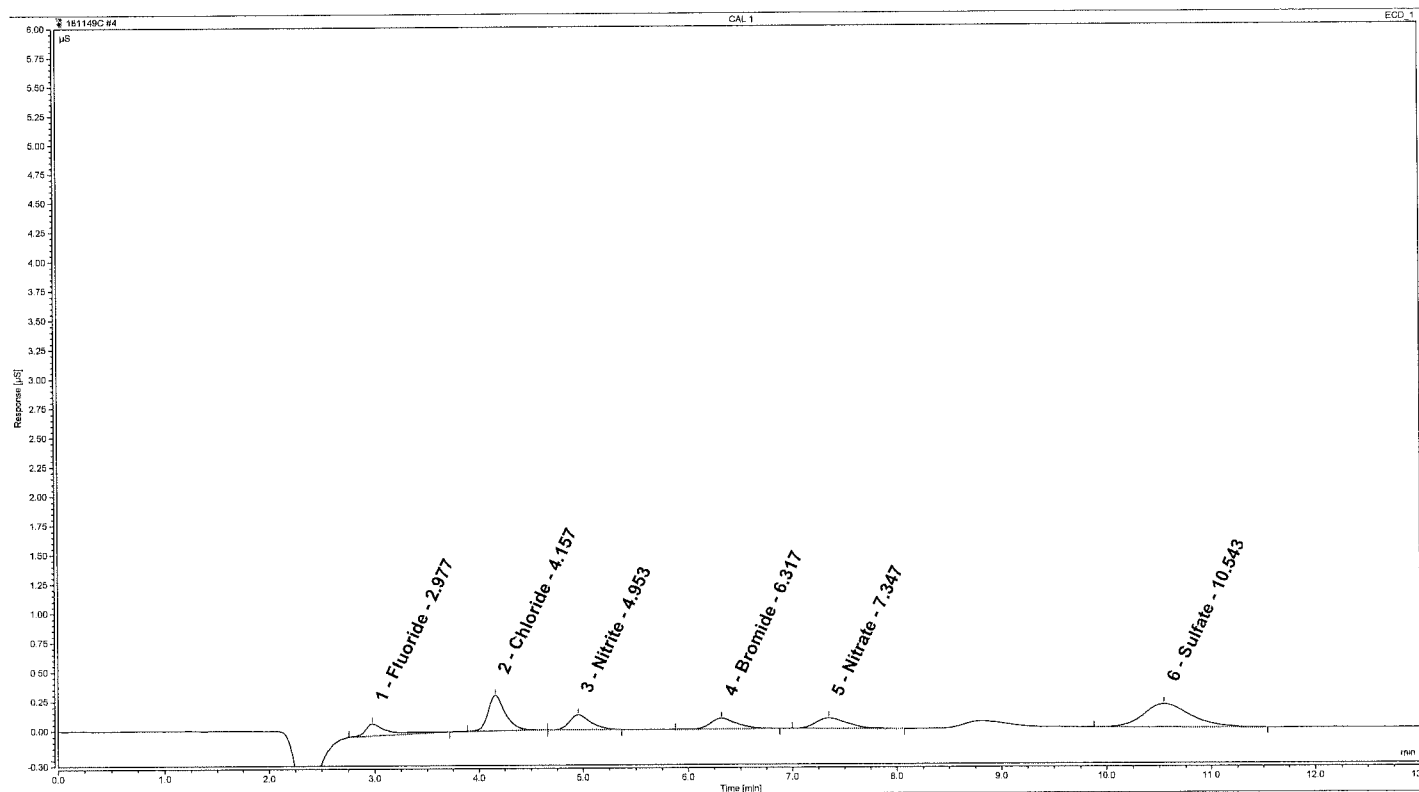
Peak Integration Report: Anions by IC

Sample Name:	CAL 1	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 15:15	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	004
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.025	0.102	0.1237
2	4.16	Chloride	BMB	0.059	0.303	0.4348
3	4.95	Nitrite	BMB	0.030	0.129	0.1201
4	6.32	Bromide	BMB	0.027	0.093	0.5764
5	7.35	Nitrate	BMB	0.032	0.090	0.1125
6	10.54	Sulfate	BMB	0.104	0.200	1.0932
TOTAL:				0.28	0.92	2.46

TS SW



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Nicole M. Veery
Nicole M. Veery
Senior Chemist/Group Leader

Date:

APR 25 2018

Date:

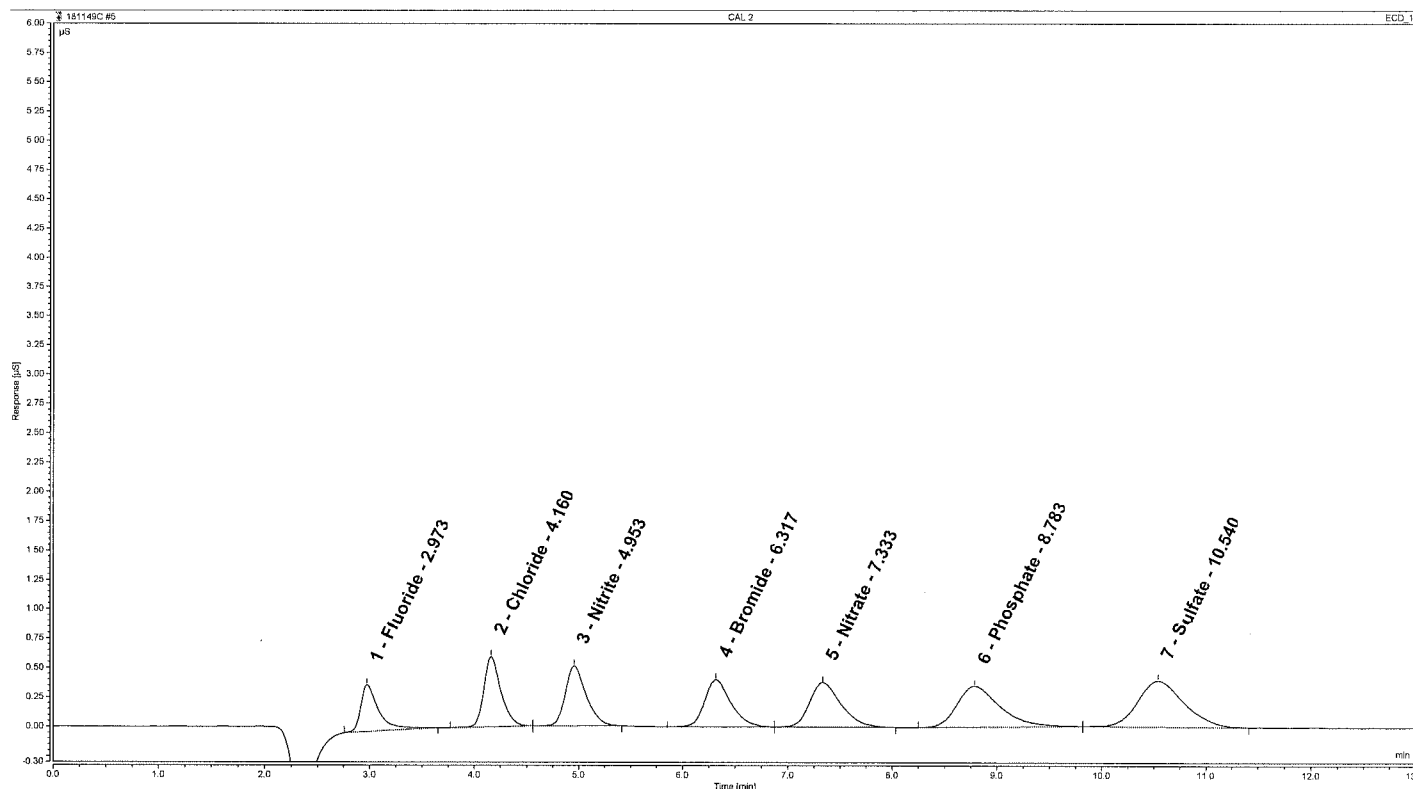
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CAL 2	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 15:31	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	005
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.97	Fluoride	BMB	0.079	0.398	0.4032
2	4.16	Chloride	BMB	0.112	0.596	0.7982
3	4.95	Nitrite	BMB	0.118	0.509	0.3998
4	6.32	Bromide	BMB	0.117	0.402	2.0293
5	7.33	Nitrate	BMB	0.132	0.378	0.4045
6	8.78	Phosphate	BMB	0.166	0.347	2.2474
7	10.54	Sulfate	BMB	0.201	0.390	2.0326
TOTAL:				0.92	3.02	8.31



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Heidi V. G.
Heidi V. G.
Senior Analyst/Group Leader

Date:

APR 25 2018

Date:

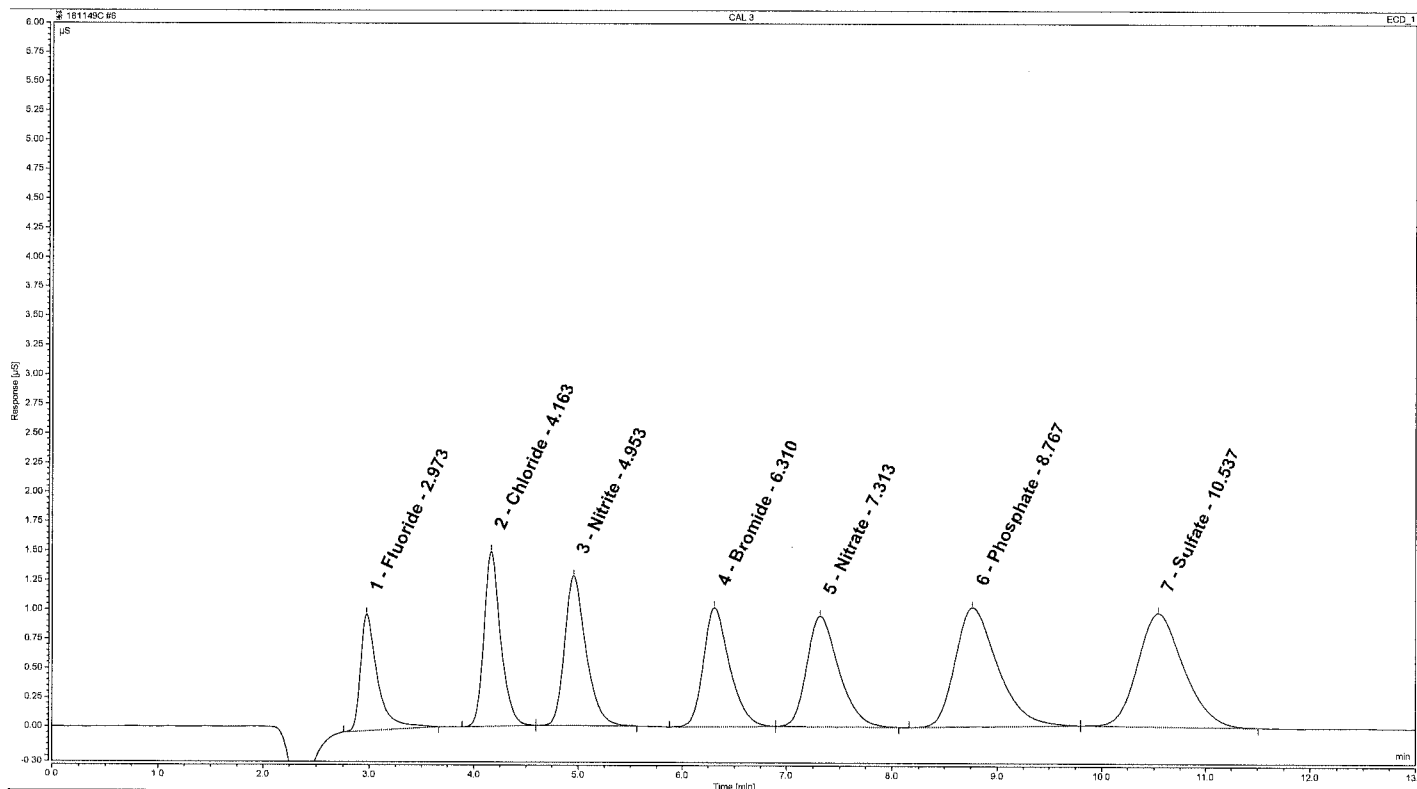
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CAL 3	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 15:47	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	006
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.97	Fluoride	BMB	0.188	1.000	0.9768
2	4.16	Chloride	BMB	0.279	1.497	1.9361
3	4.95	Nitrite	BMB	0.302	1.281	0.9836
4	6.31	Bromide	BMB	0.295	1.021	4.9103
5	7.31	Nitrate	BMB	0.330	0.948	0.9868
6	8.77	Phosphate	BMB	0.476	1.022	4.8225
7	10.54	Sulfate	BMB	0.497	0.974	4.8957
TOTAL:				2.37	7.74	19.51



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Nicole M. Veery
Nicole M. Veery
Senior Chemist/Group Leader

Date:

APR 25 2018

Date:

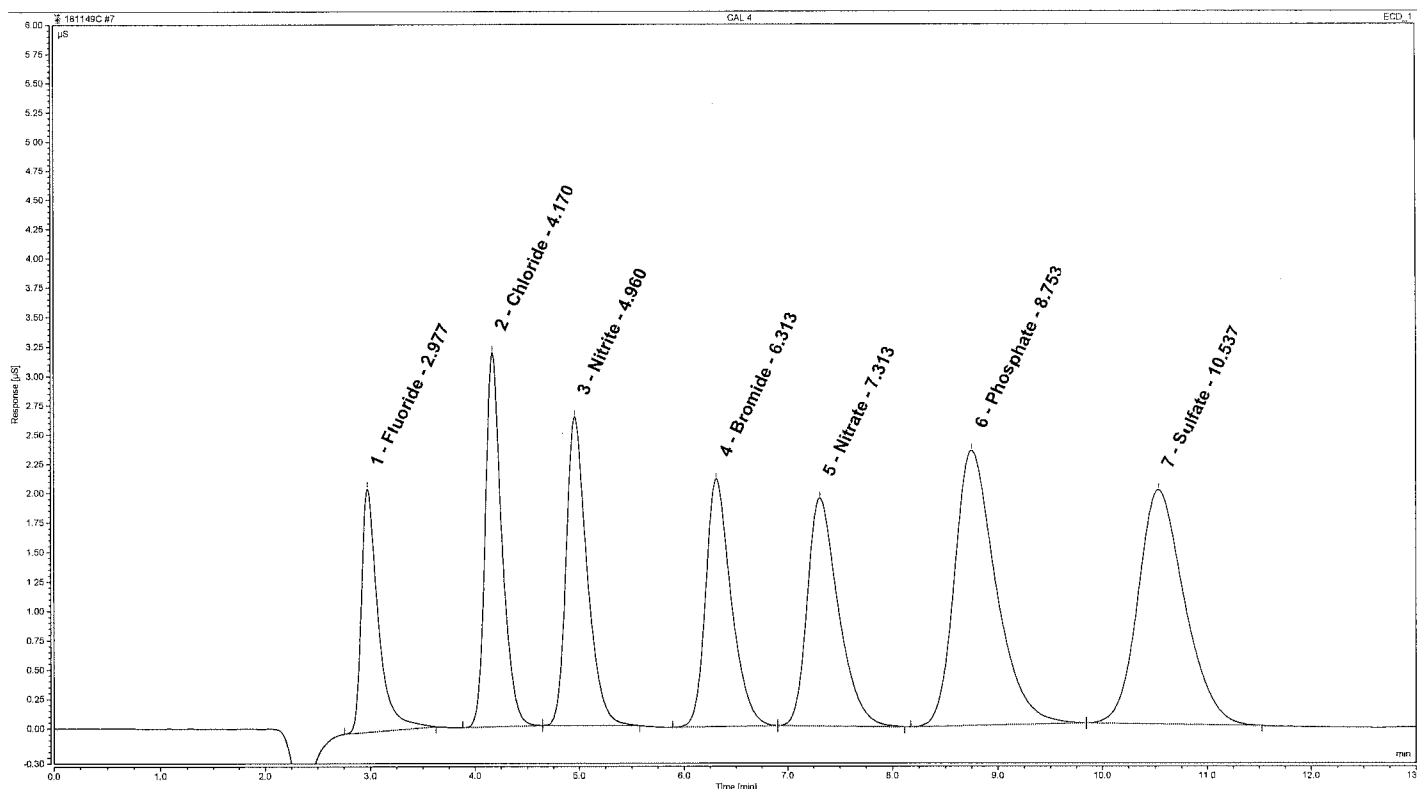
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CAL 4	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 16:02	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	007
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.378	2.071	1.9693
2	4.17	Chloride	BMB	0.587	3.189	4.0351
3	4.96	Nitrite	BMB	0.614	2.629	1.9750
4	6.31	Bromide	BMB	0.603	2.106	9.8817
5	7.31	Nitrate	BMB	0.668	1.936	1.9784
6	8.75	Phosphate	BMB	1.063	2.340	9.7117
7	10.54	Sulfate	BMB	1.010	1.988	9.8628
TOTAL:				4.92	16.26	39.41



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Wanda M. Seely
Wanda M. Seely
Senior Chemist/Group Leader

Date:

APR 25 2018

Date:

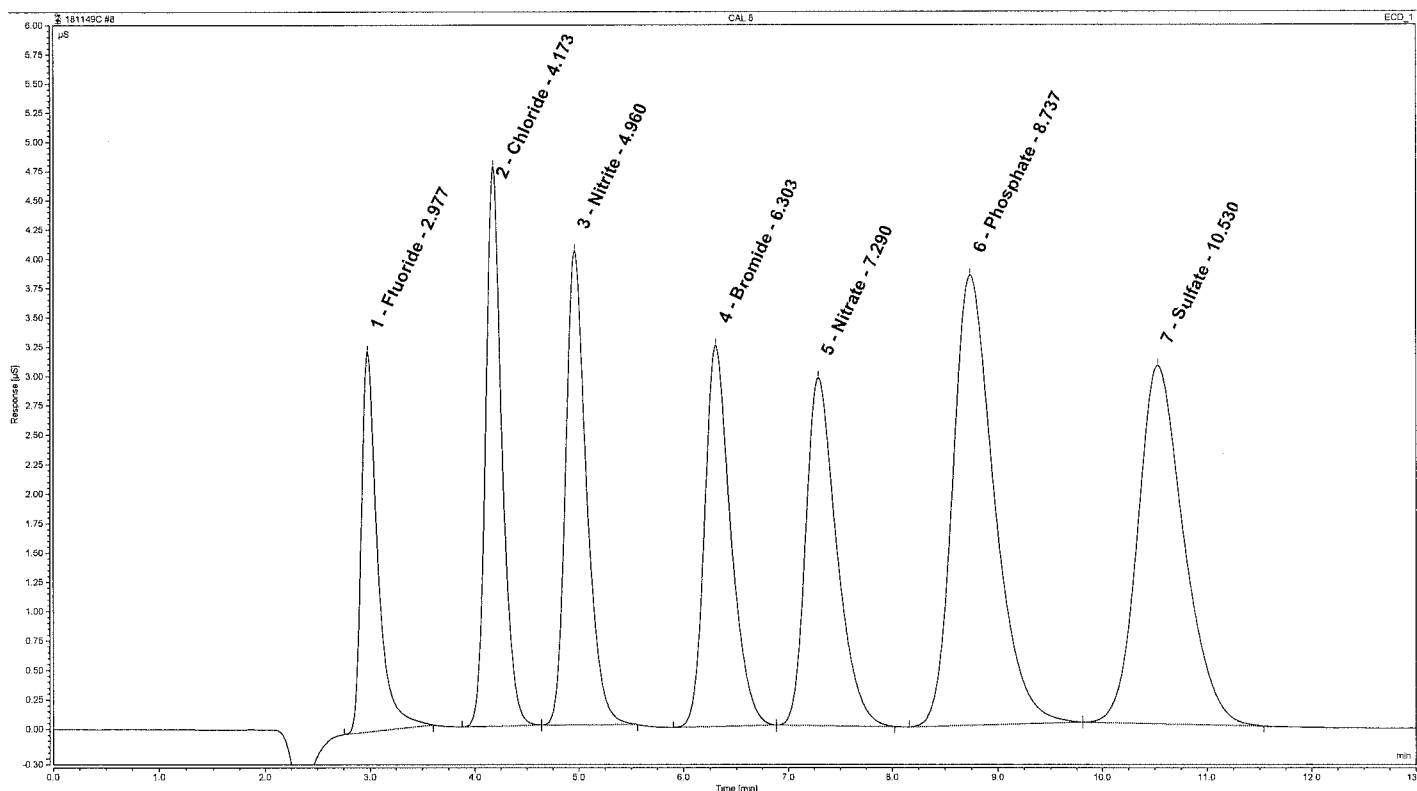
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CAL 5	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 16:18	Dilution Factor:	1
Injection Type:	Calibration Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	008
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.581	3.234	3.0270
2	4.17	Chloride	BMB	0.875	4.771	5.9958
3	4.96	Nitrite	BMB	0.943	4.038	3.0214
4	6.30	Bromide	BMB	0.926	3.243	15.1023
5	7.29	Nitrate	BMB	1.023	2.962	3.0178
6	8.74	Phosphate	BMB	1.725	3.833	15.2184
7	10.53	Sulfate	BMB	1.553	3.048	15.1157
TOTAL:				7.63	25.13	60.50



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Michelle M. Vandy
Michelle M. Vandy
Senior Compliance Manager

Date:

APR 25 2018

Date:

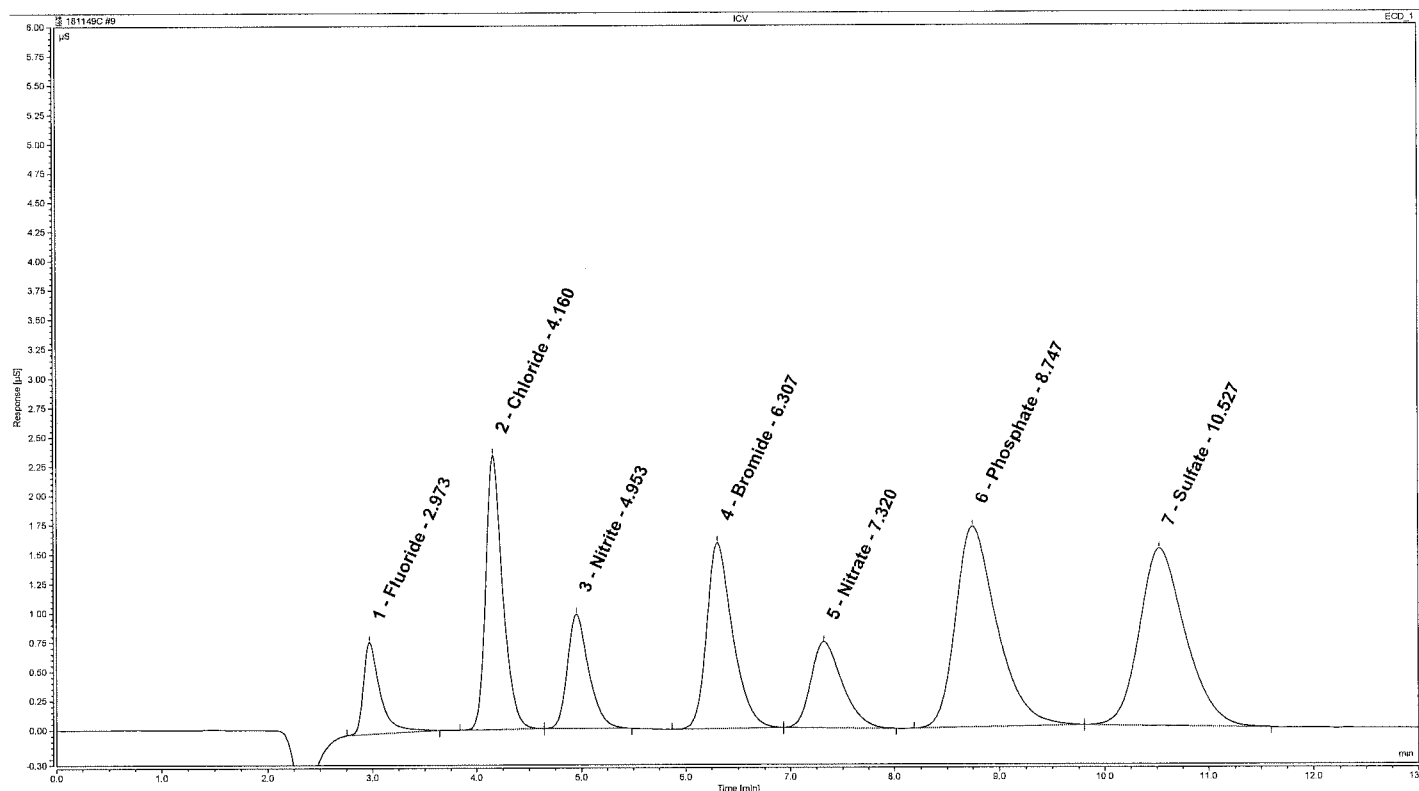
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	ICV	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 16:34	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	009
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area μS*min	Height μS	Amount
1	2.97	Fluoride	BMB	0.148	0.787	0.7646
2	4.16	Chloride	BMB	0.436	2.341	3.0034
3	4.95	Nitrite	BMB	0.230	0.981	0.7541
4	6.31	Bromide	BMB	0.459	1.590	7.5541
5	7.32	Nitrate	BMB	0.255	0.739	0.7661
6	8.75	Phosphate	BMB	0.785	1.715	7.3986
7	10.53	Sulfate	BMB	0.777	1.519	7.6038
TOTAL:				3.09	9.67	27.84



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Nicole M. Leary
Nicole M. Leary
Nucleo Chemistry Group Leader

Date:

APR 25 2018

Date:

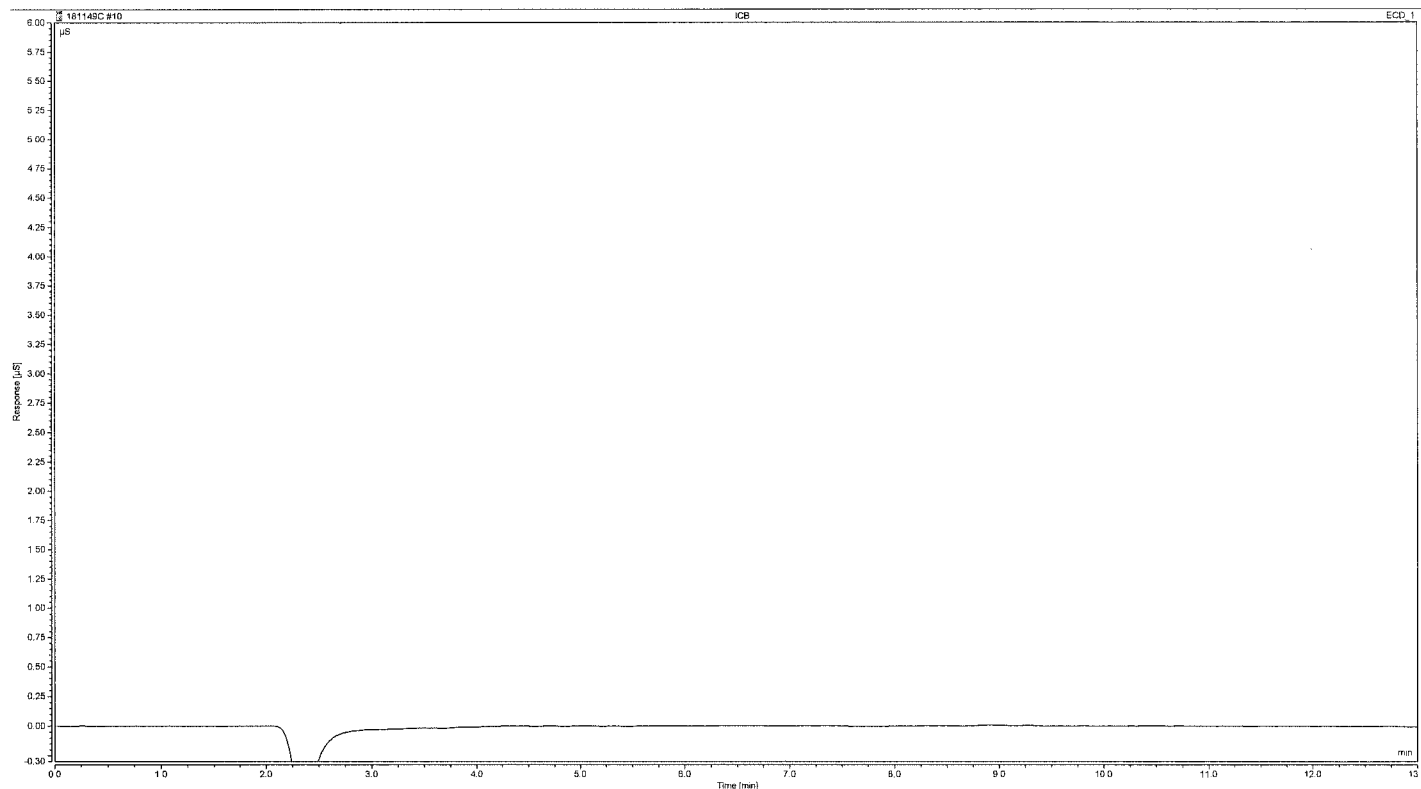
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	ICB	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 16:50	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	010
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

Nicole M. Vedy
Nicole M. Vedy
Senior Chemist/Group Leader

Date:

APR 25 2018

Date:

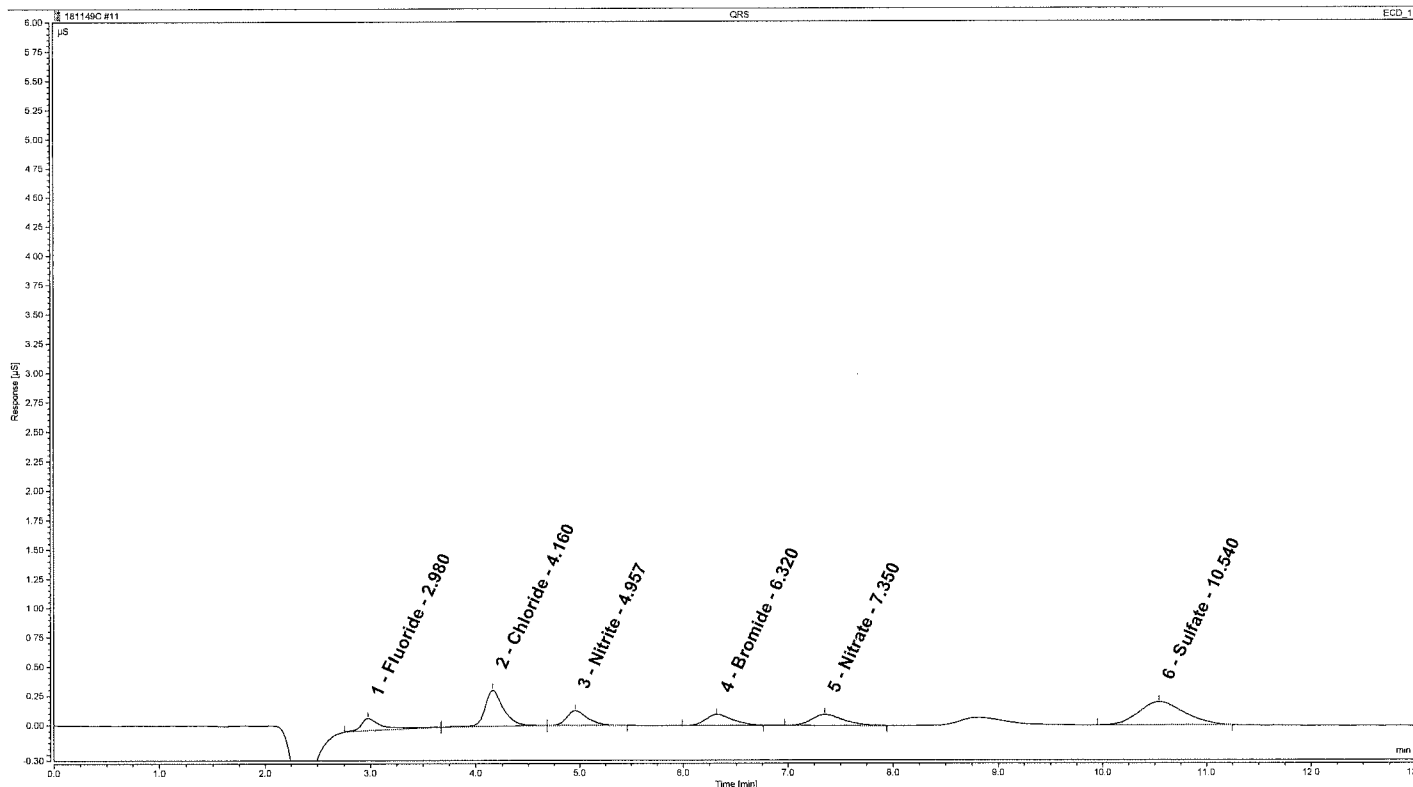
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	QRS	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 17:05	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	011
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.025	0.105	0.1205
2	4.16	Chloride	BMB	0.063	0.308	0.4620
3	4.96	Nitrite	BMB	0.029	0.126	0.1162
4	6.32	Bromide	BMB	0.027	0.094	0.5719
5	7.35	Nitrate	BMB	0.033	0.095	0.1167
6	10.54	Sulfate	BMB	0.100	0.198	1.0605
TOTAL:				0.28	0.93	2.45



Analyst:

[Signature]
Clinton M. Wilson
Chemist

APR 25 2018

Verifier:

[Signature]
Nicola M. Vandy
Senior Chemist/Quality Leader

Date:

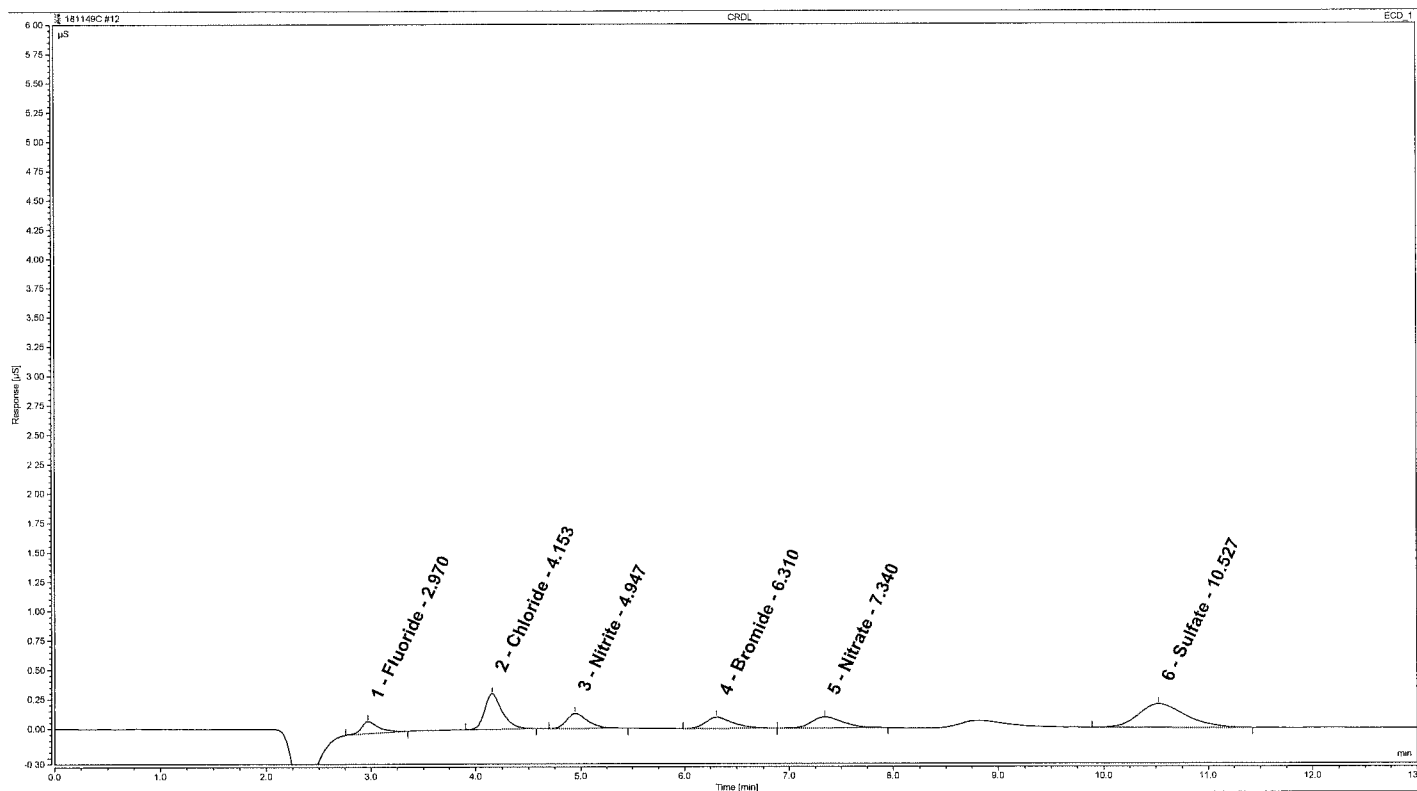
APR 26 2018

Peak Integration Report: Anions by IC

Sample Name:	CRDL	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/24/2018 / 17:21	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	012
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181149C
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.97	Fluoride	BMB	0.020	0.104	0.0966
2	4.15	Chloride	BMB	0.058	0.302	0.4284
3	4.95	Nitrite	BMB	0.030	0.129	0.1184
4	6.31	Bromide	BMB	0.030	0.097	0.6162
5	7.34	Nitrate	BMB	0.033	0.094	0.1156
6	10.53	Sulfate	BMB	0.105	0.202	1.1014
TOTAL:				0.27	0.93	2.48



Analyst:

Clinton M. Wilson
Clinton M. Wilson
Chemist

Verifier:

John A. Voss
John A. Voss
Senior Chemist/Group Leader

Date:

APR 25 2018

Date:

APR 26 2018

Inorganic Anions by Ion Chromatography

System Name ICS-1100 Analyst ZWE2U932
Instrument ID 17694 Run Start Date 4/29/2018
IDAT Run Number 1811901D09 Run Name 181199

ICV/CCV/LCSW (mg/L) HA312014

Prep Book/Page: 21081 268320 / 15

Anion	T.V.	LCSW /ICV/CCV2	DOD LCSW
Fluoride	.75	.6713 - 0.828	0.66-0.84
Chloride	3.0	2.685 - 3.312	2.61-3.33
Nitrite-N	.75	.6713 - 0.828	.6525-.8325
Bromide	7.5	6.71 - 8.28	6.825-8.25
Nitrate-N	.75	.6713 - 0.828	0.66-0.8325
O-Phos as P	7.5	6.71 - 8.28	6.0-8.7
Sulfate	7.5	6.71 - 8.28	6.525-8.4

CCB/PBW (mg/L)

F, NO ₂	NO ₃	Cl	P	Br	SO ₄
< 0.05	< 0.05	< 0.2	< 0.2	< 0.2	< 0.3

LCSS (mg/kg)

Prep Book/Page:

Anion	T.V.	Acceptance Range
Fluoride	10	8.95 - 11.0
Chloride	20	17.9 - 22.08
Nitrite-N	10	8.95 - 11.0
Bromide	50	44.75 - 55.2
Nitrate-N	10	8.95 - 11.0
O-Phos as P	50	44.75 - 55.2
Sulfate	50	44.75 - 55.2

CCB/PBS (mg/kg)

F, NO ₂ , NO ₃	Cl	Br	P, SO ₄
< 0.5	< 5.0	< 2.5	< 5.0

Calibration Information – (mg/L)

Standard	F, NO ₂ , NO ₃	Cl	Br,P	SO ₄
Cal 1	0.1	0.4	0.5	1.0
Cal 2	0.4	0.8	2.0	2.0
Cal 3	1.0	2.0	5.0	5.0
Cal 4	2.0	4.0	10.0	10.0
Cal 5	3.0	6.0	15.0	15.0

Check Standards True Values (mg/L)

	F, NO ₂ , NO ₃	Cl	Br, P, SO ₄
Low	0.75	1.5	3.75
High	2.25	4.5	11.25

The dilution for solids is entered into the software by multiplying by 50 in order to calculate the result to mg/kg.

Sequence Overview: 181199

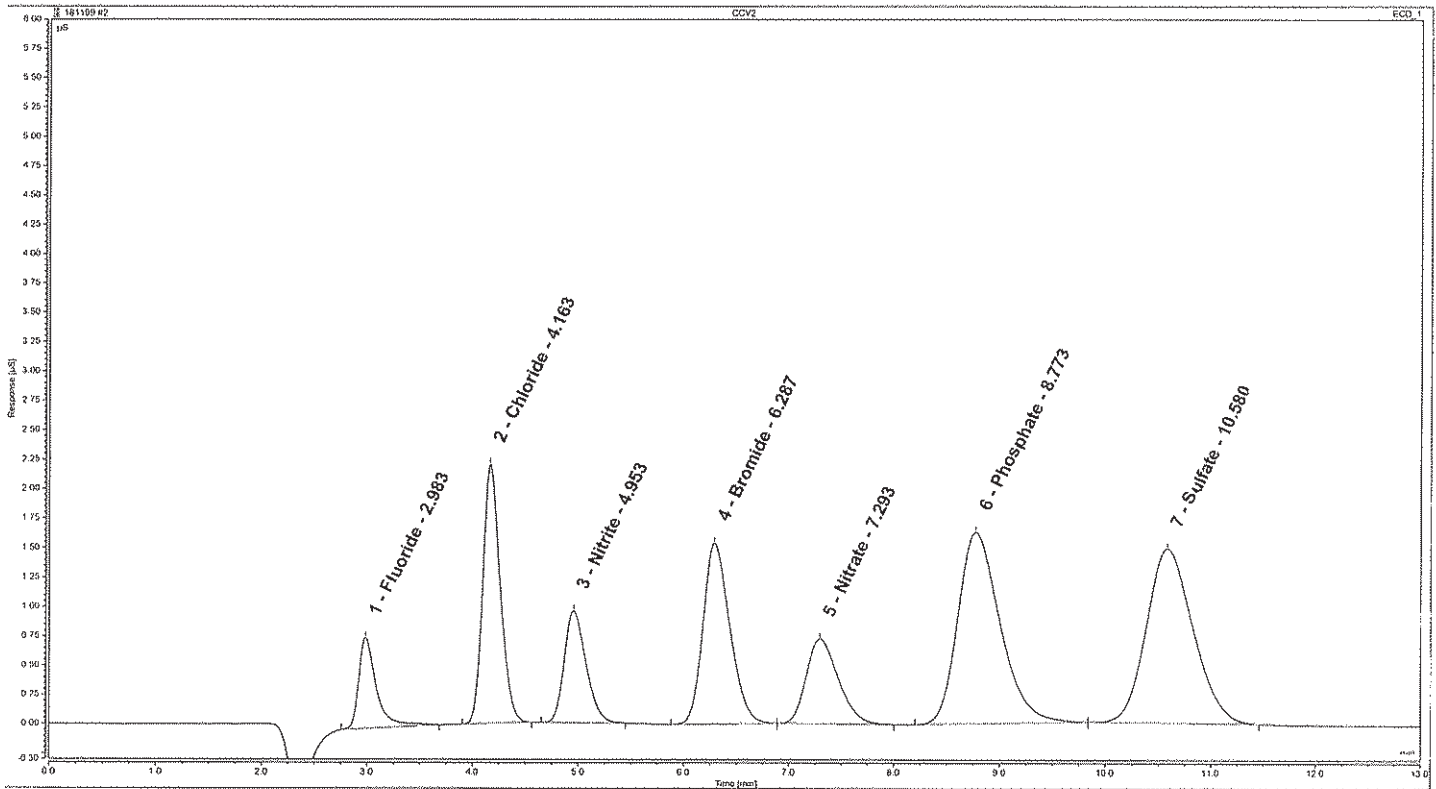
No.	Injection Name	Batch Number	Position	Type	Level	Inject Time	Volume μL	Instrumentation Method	Processing Method	Weight	Dilution	Status
1	TEST		91	Check Standard		04/29/2018 09:27:27	25.00	AnionsAS	Anions	1.00	1	Finished
2	CCV2		91	Check Standard		04/29/2018 09:43:11	25.00	AnionsAS	Anions	1.00	1	Finished
3	CCB		92	Check Standard		04/29/2018 09:58:54	25.00	AnionsAS	Anions	1.00	1	Finished
4	LCSW	18119249109A-24932	93	Unknown		04/29/2018 10:14:38	25.00	AnionsAS	Anions	1.00	1	Finished
5	PBW	18119249109A-24932	94	Unknown		04/29/2018 10:30:23	25.00	AnionsAS	Anions	1.00	1	Finished
6	9582451	18119249109A-24932	13	Unknown		04/29/2018 11:05:25	25.00	AnionsAS	Anions	1.00	5	Finished
7	9582438-U	18119249109A-24932	1	Unknown		04/29/2018 11:21:10	25.00	AnionsAS	Anions	1.00	5	Finished
8	9582438-D	18119249109A-24932	1	Unknown		04/29/2018 11:36:55	25.00	AnionsAS	Anions	1.00	5	Finished
9	9582438-R	18119249109A-24932	2	Unknown		04/29/2018 11:52:40	25.00	AnionsAS	Anions	1.00	5	Finished
10	9582438-U	18119249109A-24932	3	Unknown		04/29/2018 12:08:25	25.00	AnionsAS	Anions	1.00	10	Finished
11	9582438-D	18119249109A-24932	3	Unknown		04/29/2018 12:24:08	25.00	AnionsAS	Anions	1.00	10	Finished
12	9582438-R	18119249109A-24932	4	Unknown		04/29/2018 12:39:53	25.00	AnionsAS	Anions	1.00	10	Finished
13	9582699	18119249109A-24932	5	Unknown		04/29/2018 12:55:37	25.00	AnionsAS	Anions	1.00	5	Finished
14	CCV2		91	Check Standard		04/29/2018 13:11:22	25.00	AnionsAS	Anions	1.00	1	Finished
15	CCB		92	Check Standard		04/29/2018 13:27:06	25.00	AnionsAS	Anions	1.00	1	Finished
16	9582700	18119249109A-24932	6	Unknown		04/29/2018 13:42:50	25.00	AnionsAS	Anions	1.00	5	Finished
17	9582701	18119249109A-24932	7	Unknown		04/29/2018 13:58:35	25.00	AnionsAS	Anions	1.00	5	Finished
18	9582702	18119249109A-24932	8	Unknown		04/29/2018 14:14:19	25.00	AnionsAS	Anions	1.00	5	Finished
19	9582703	18119249109A-24932	9	Unknown		04/29/2018 14:30:02	25.00	AnionsAS	Anions	1.00	5	Finished
20	9582704	18119249109A-24932	10	Unknown		04/29/2018 14:45:46	25.00	AnionsAS	Anions	1.00	5	Finished
21	9582705	18119249109A-24932	11	Unknown		04/29/2018 15:01:30	25.00	AnionsAS	Anions	1.00	5	Finished
22	9582707	18119249109A-24932	12	Unknown		04/29/2018 15:17:13	25.00	AnionsAS	Anions	1.00	5	Finished
23	CCV2		91	Check Standard		04/29/2018 15:32:57	25.00	AnionsAS	Anions	1.00	1	Finished
24	CCB		92	Check Standard		04/29/2018 15:48:42	25.00	AnionsAS	Anions	1.00	1	Finished

Peak Integration Report: Anions by IC

Sample Name:	CCV2	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 09:43	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	002
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.149	0.774	0.7702
2	4.16	Chloride	BMB	0.421	2.205	2.9049
3	4.95	Nitrite	BMB	0.228	0.952	0.7485
4	6.29	Bromide	BMB	0.456	1.539	7.4996
5	7.29	Nitrate	BMB	0.255	0.723	0.7674
6	8.77	Phosphate	BMB	0.751	1.623	7.1160
7	10.58	Sulfate	BMB	0.762	1.478	7.4626
TOTAL:				3.02	9.29	27.27



Analyst:

Holly A. Burnell
Holly A. Burnell
Associate Chemist

APR 30 2018

Date:

Verifier:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

Date:

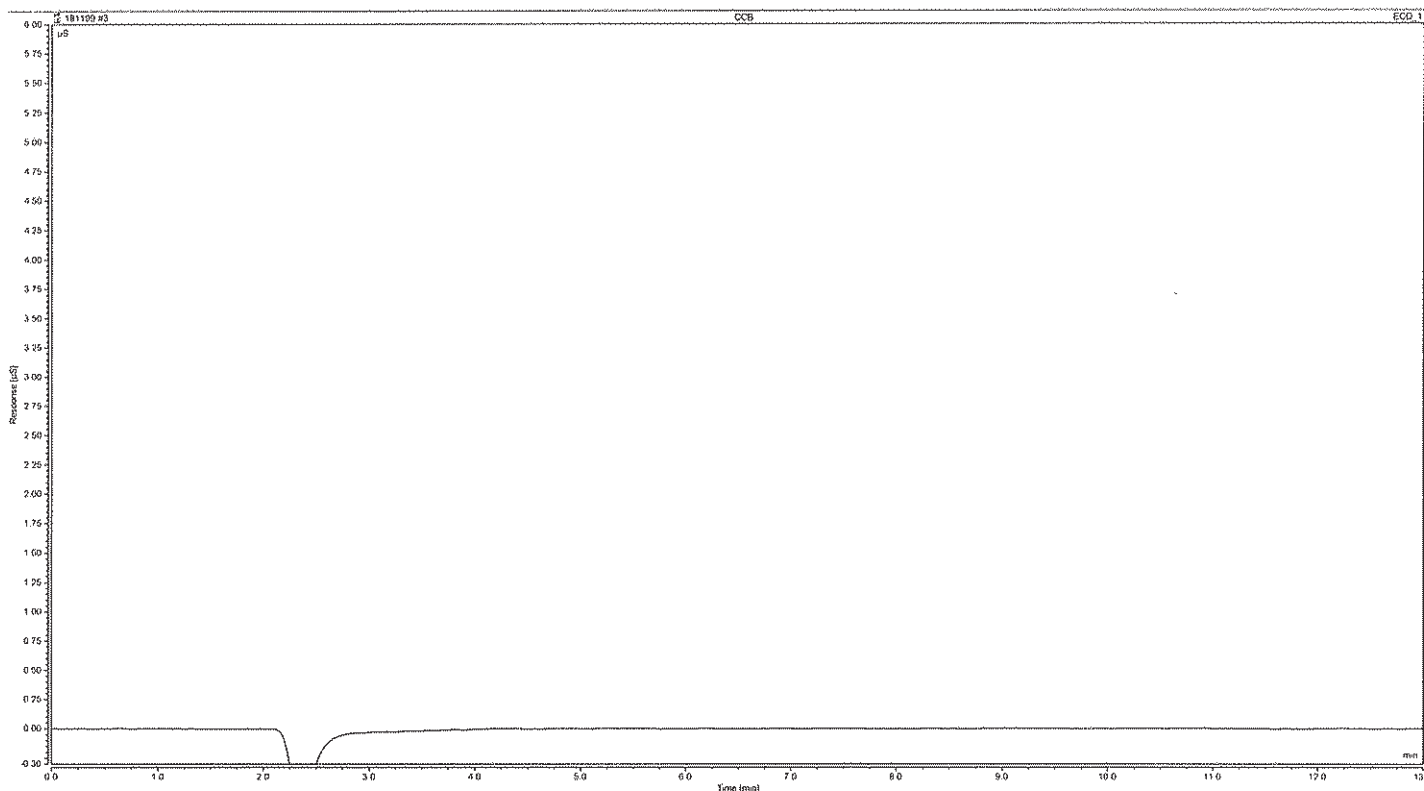
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	CCB	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 09:58	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	003
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Verifier:

Date:

Helle A. Burton
Helle A. Burton
Associate Chemist

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

APR 30 2018

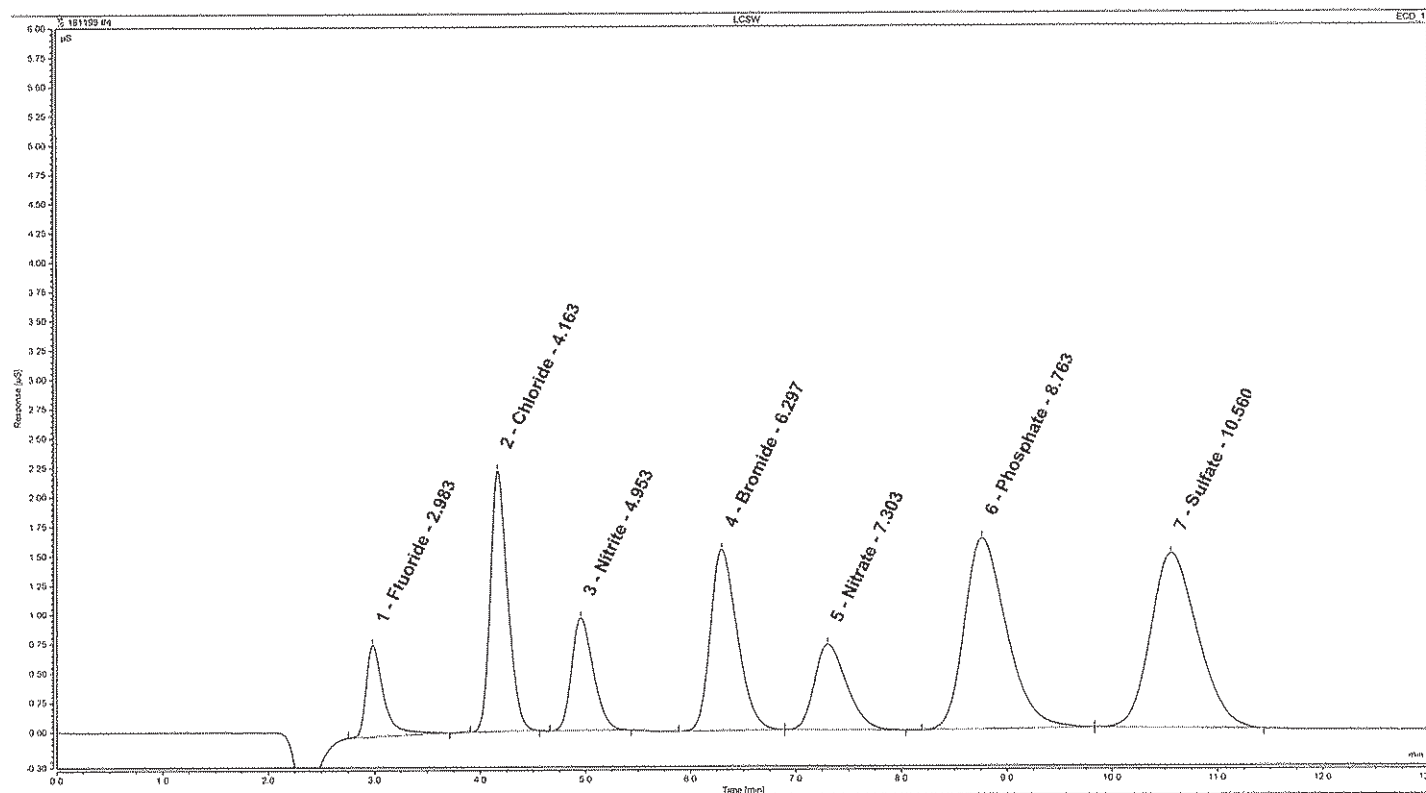
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	LCSW	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 10:14	Dilution Factor:	1
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	004
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.149	0.776	0.7701
2	4.16	Chloride	BMB	0.423	2.218	2.9166
3	4.95	Nitrite	BMB	0.228	0.956	0.7475
4	6.30	Bromide	BMB	0.454	1.540	7.4721
5	7.30	Nitrate	BMB	0.254	0.724	0.7631
6	8.76	Phosphate	BMB	0.749	1.622	7.0976
7	10.56	Sulfate	BMB	0.765	1.482	7.4894
TOTAL:				3.02	9.32	27.26



Analyst:

Halle A. Hurrell
Halle A. Hurrell
Analyst Chem

Verifier:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

Date:

APR 30 2018

Date:

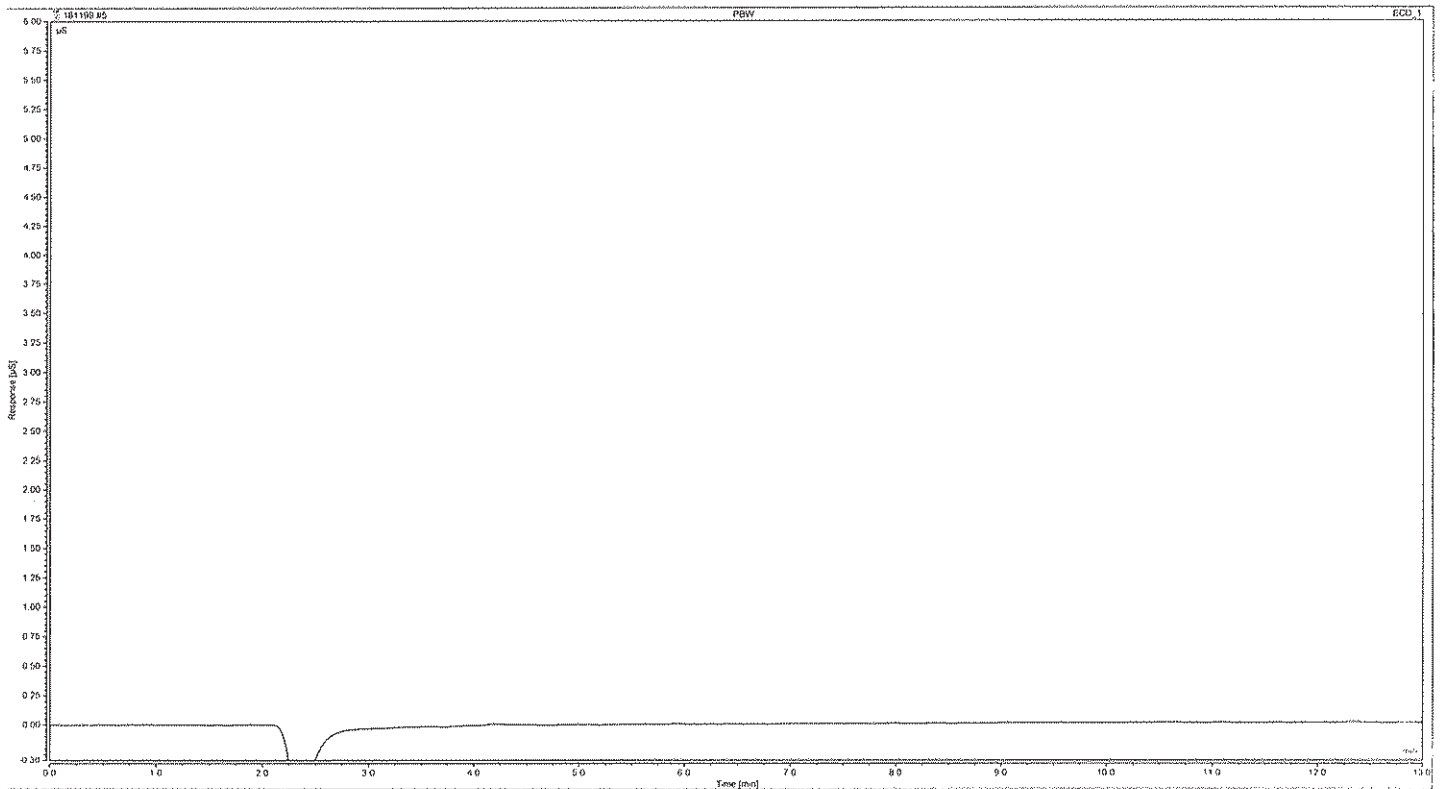
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	PBW	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 10:30	Dilution Factor:	1
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	005
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Verifier:

Date:

Halle A. Buntich
Halle A. Buntich
Associate Chemist

Date:

APR 30 2018

Erik J. Frederiksen
Erik J. Frederiksen
Manager

MAY 03 2018

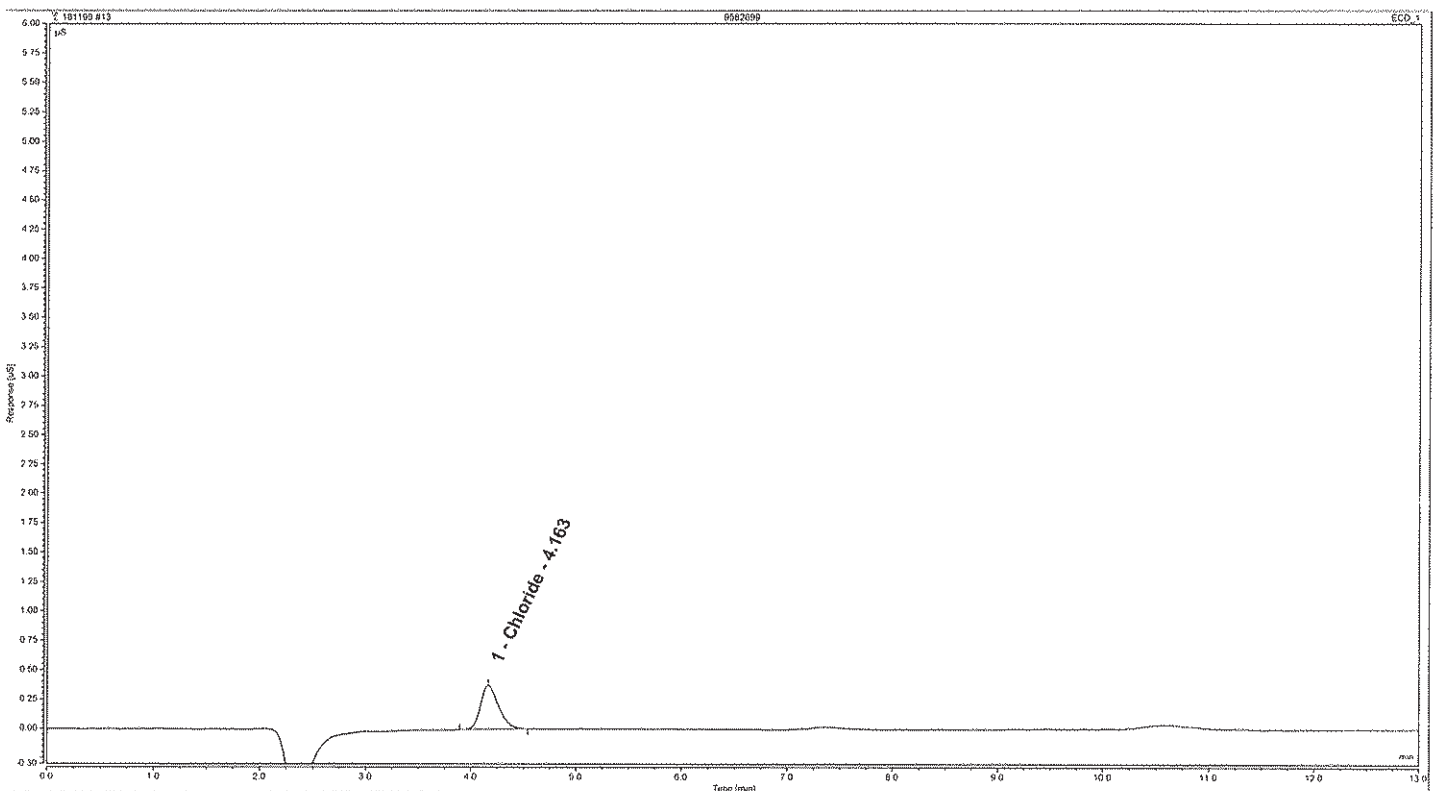
Peak Integration Report: Anions by IC

Sample Name:	9582699	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 12:55	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	013
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S}\cdot\text{min}$	Height μS	Amount
1	4.16	Chloride	BMB	0.074	0.379	2.7020
		TOTAL:		0.07	0.38	2.70

So F
⑥ HANSEN
4/30/18



Analyst:

Verifier:

Date:

Date:

Halle A. Gurnett
Associate Chemist

Erik J. Frederiksen
Manager

MAY 03 2018

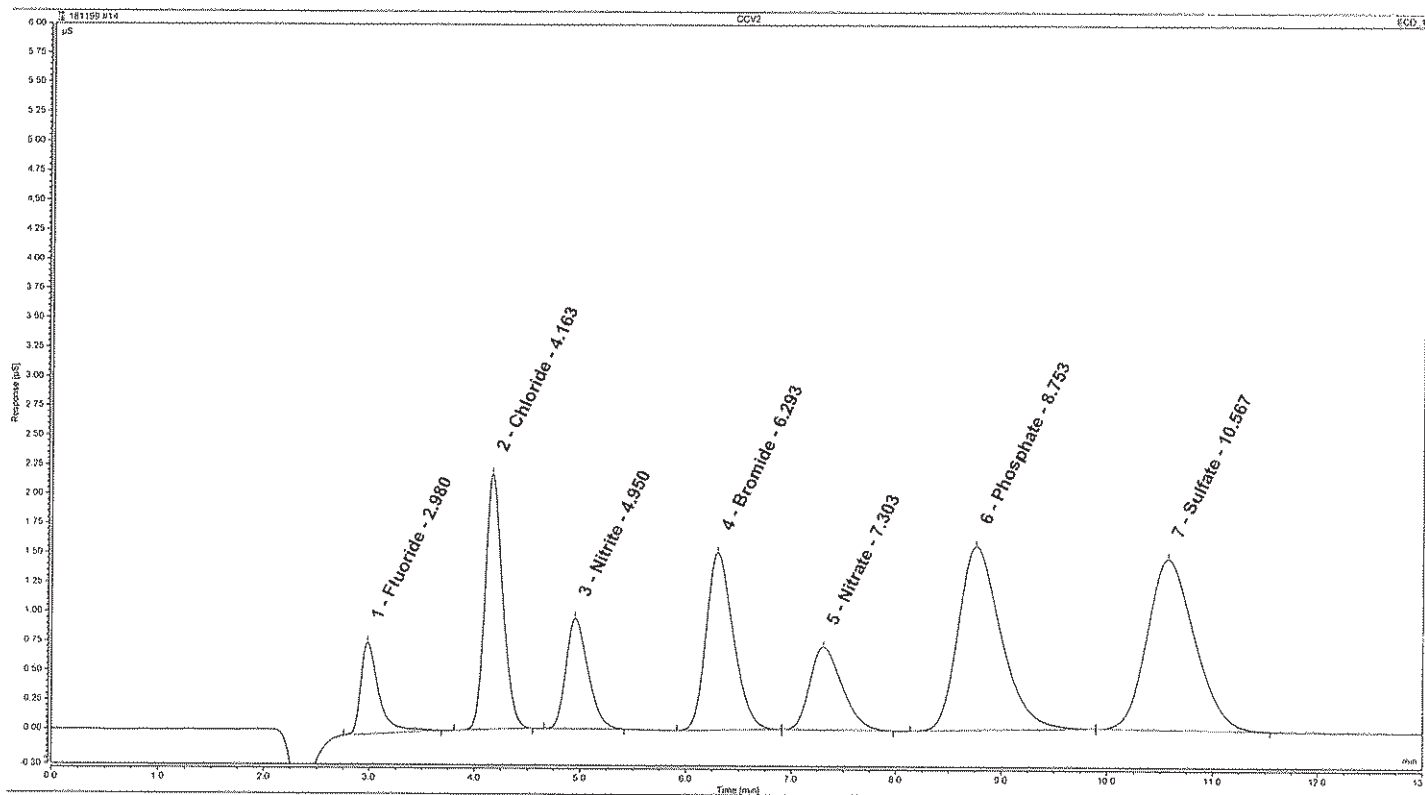
APR 30 2018

Peak Integration Report: Anions by IC

Sample Name:	CCV2	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 13:11	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	014
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.154	0.786	0.7957
2	4.16	Chloride	BMB	0.421	2.176	2.9025
3	4.95	Nitrite	BMB	0.227	0.943	0.7461
4	6.29	Bromide	BMB	0.454	1.514	7.4697
5	7.30	Nitrate	BMB	0.254	0.711	0.7623
6	8.75	Phosphate	BMB	0.739	1.568	7.0155
7	10.57	Sulfate	BMB	0.761	1.458	7.4549
TOTAL:				3.01	9.16	27.15



Analyst:

Halle A. Burnett
Halle A. Burnett
Associate Chemist

Verifier:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

Date:

APR 30 2018

Date:

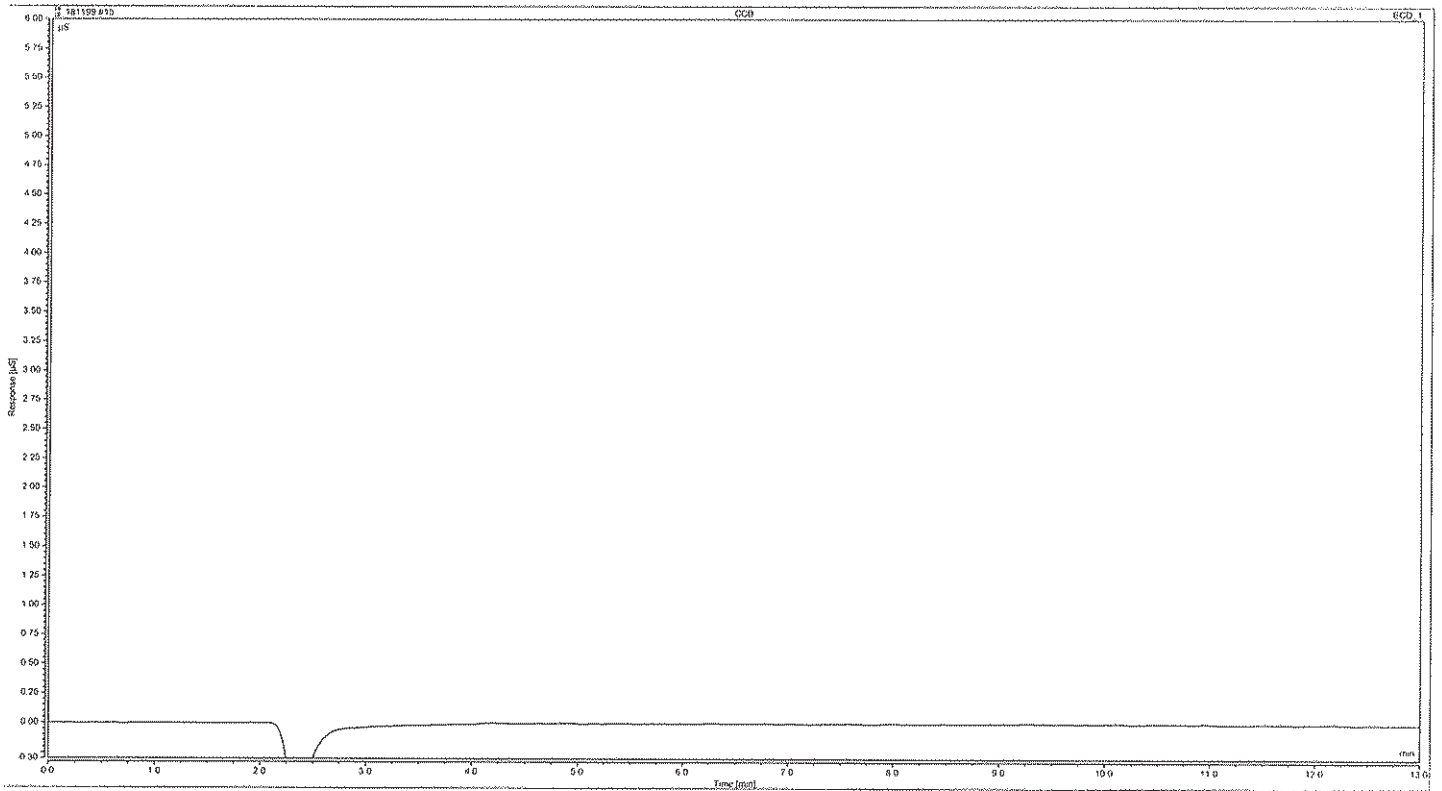
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	CCB	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 13:27	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	015
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Verifier:

Date:

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

MAY 03 2018

Halle A. Burnett
Halle A. Burnett
Associate Analyst

APR 30 2018

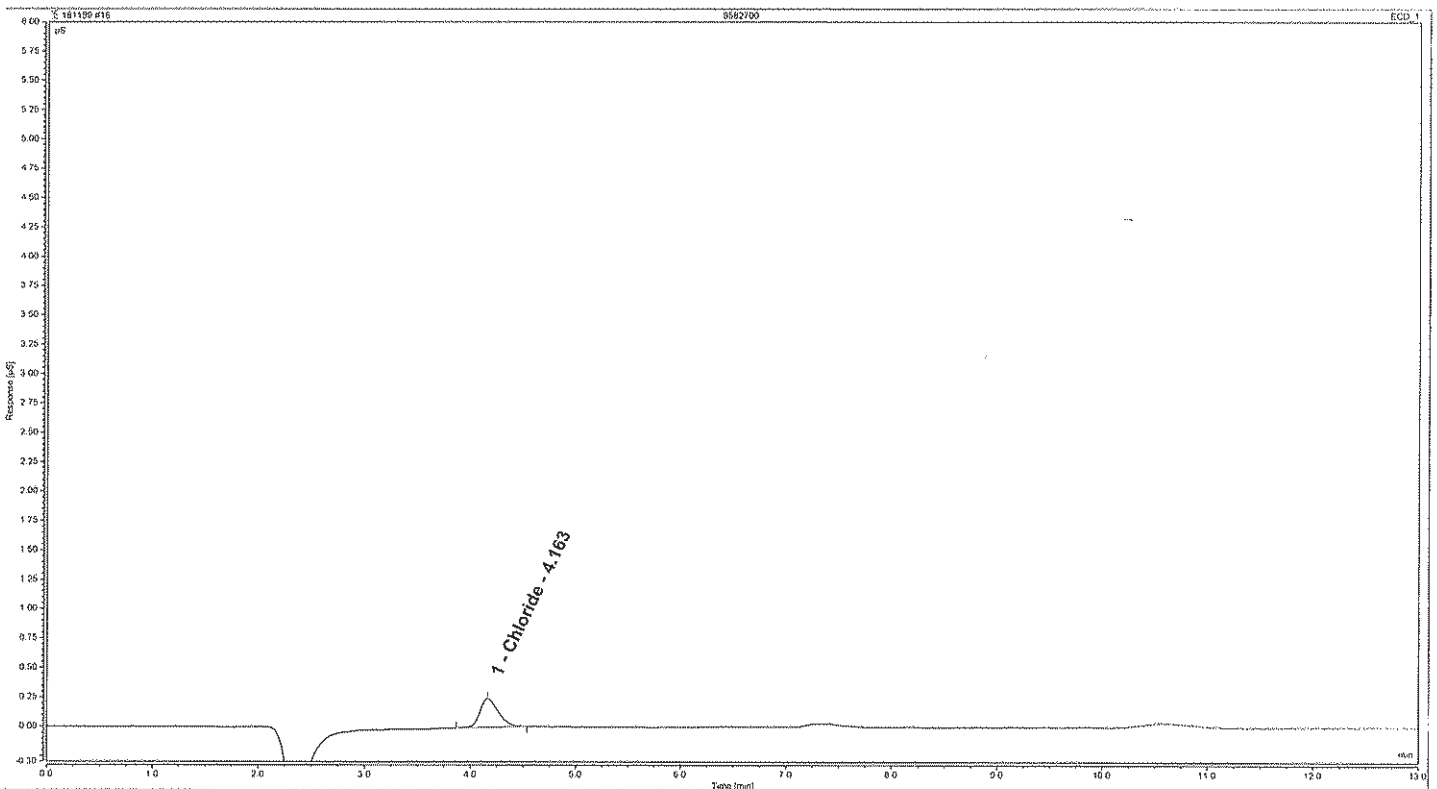
Peak Integration Report: Anions by IC

Sample Name:	9582700	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 13:42	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	016
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.16	Chloride	BMB	0.049	0.247	1.8512
TOTAL:				0.05	0.25	1.85

F



Analyst:

Verifier:

Date:

Halla A. Bumpelt
Halla A. Bumpelt
Associate Chemist

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

APR 30 2018

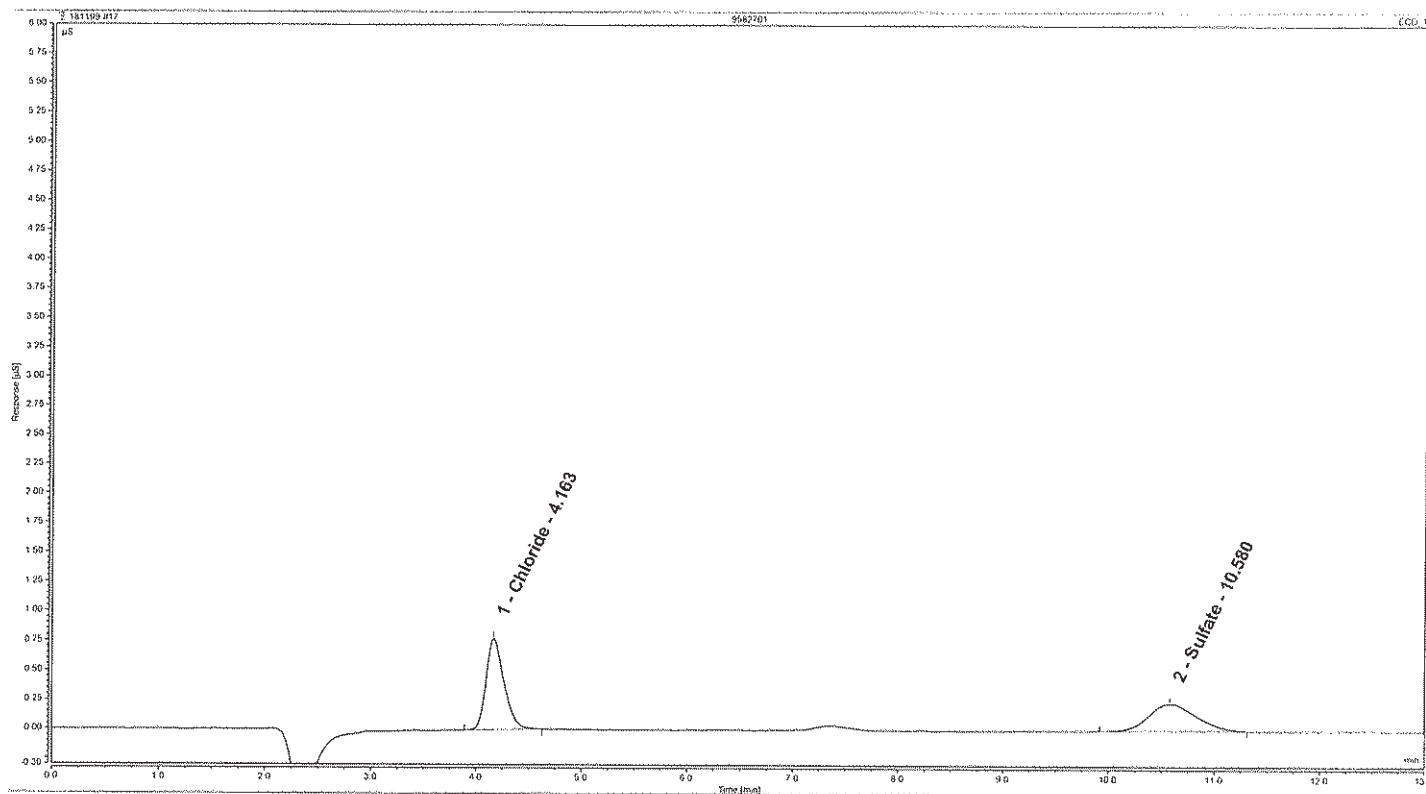
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	9582701	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 13:58	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	017
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.16	Chloride	BMB	0.153	0.775	5.3801
2	10.58	Sulfate	BMB	0.123	0.234	6.3953
TOTAL:				0.28	1.01	11.78



Analyst:

[Signature]
Erik J. Frederiksen
Manager

Verifier:

Date:

APR 30 2018

Date:

[Signature]
Erik J. Frederiksen
Manager

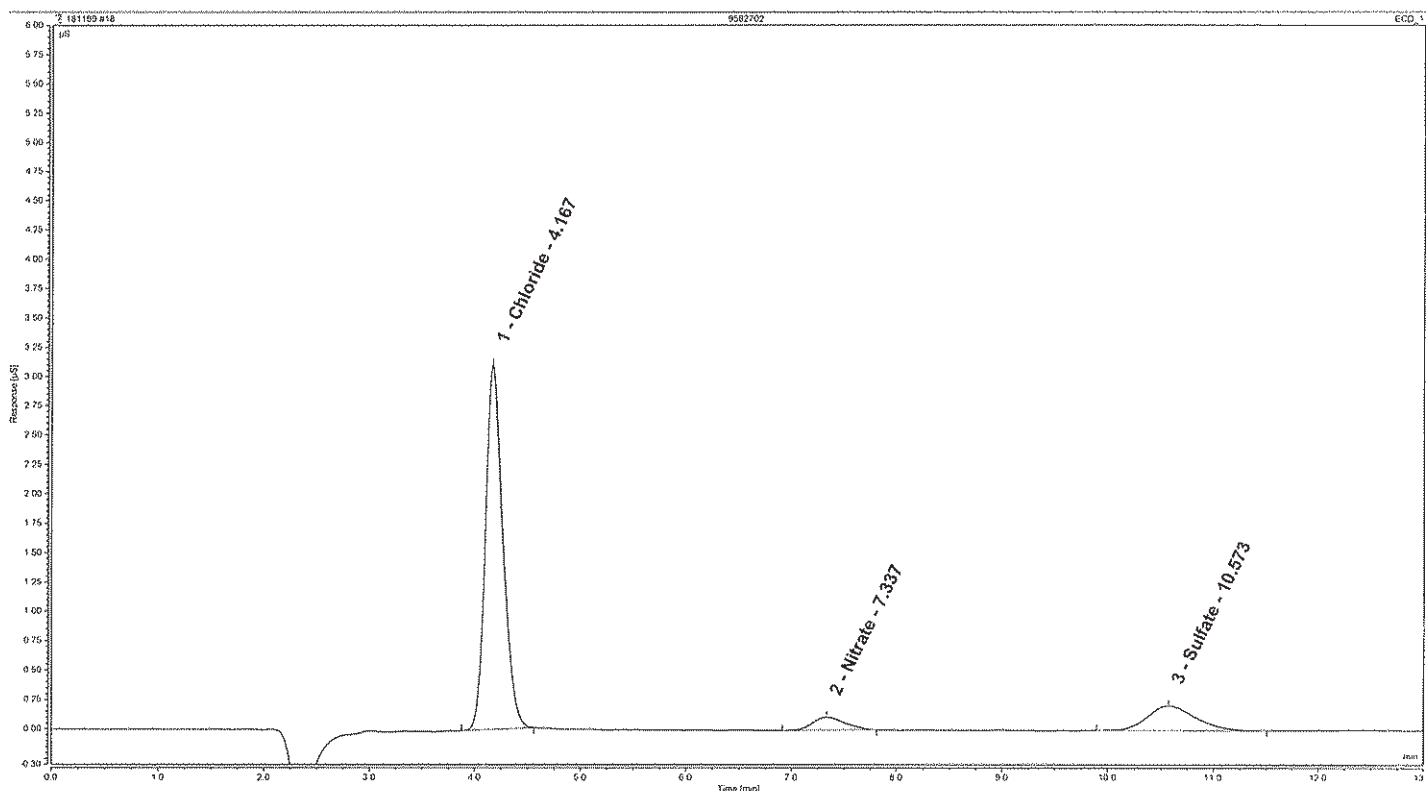
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	9582702	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 14:14	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	018
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.17	Chloride	BMB	0.597	3.104	20.5121
2	7.34	Nitrate	BMB	0.040	0.113	0.6775
3	10.57	Sulfate	BMB	0.113	0.212	5.9113
TOTAL:				0.75	3.43	27.10



Analyst:

Halle A. Burnett
Halle A. Burnett
Associate Chemist

Verifier:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

Date:

APR 30 2018

Date:

MAY 03 2018

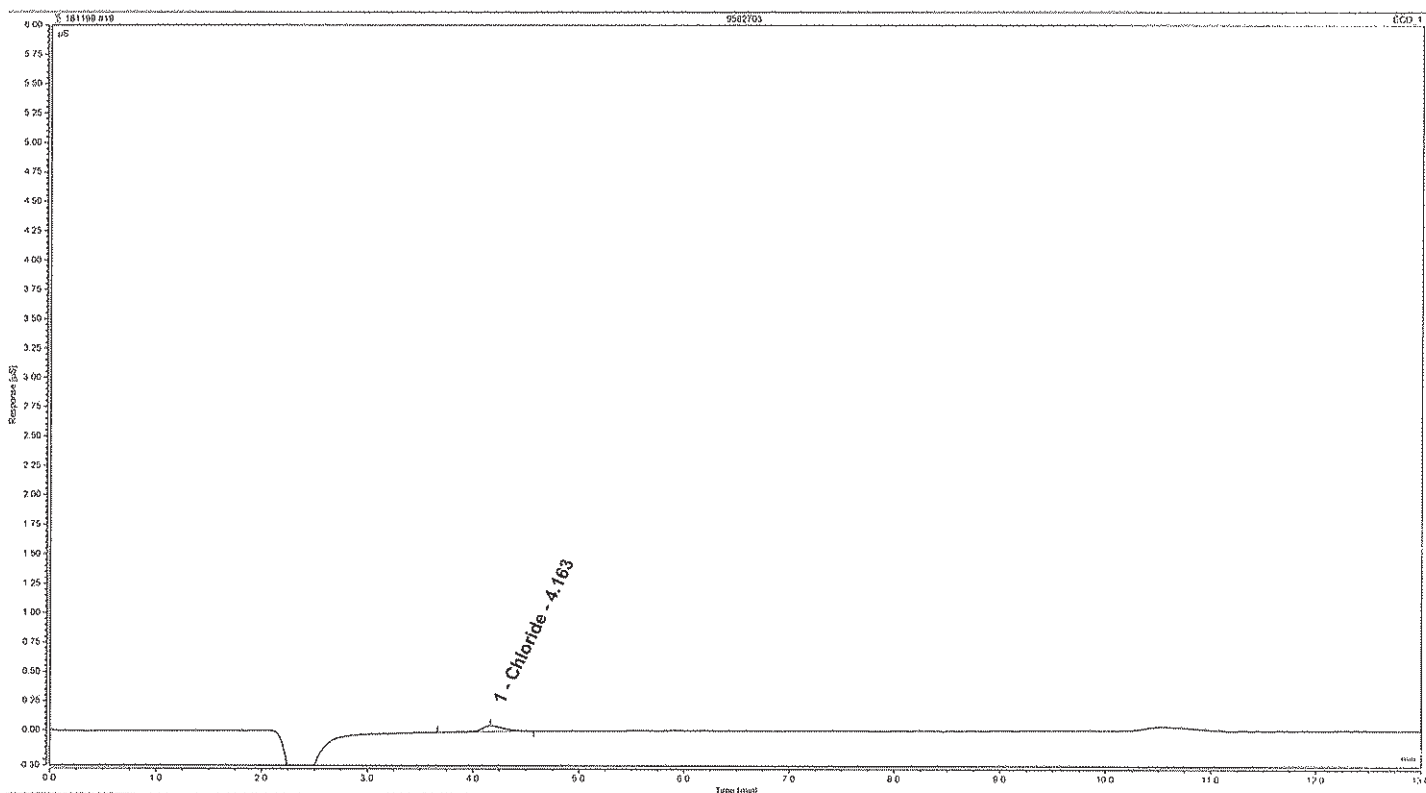
Peak Integration Report: Anions by IC

Sample Name:	9582703	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 14:30	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	019
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

F

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.16	Chloride	BMB	0.013	0.052	0.6188
		TOTAL:		0.01	0.05	0.62



Analyst:

Verifier:

Date:

Holly A. Bennett
Holly A. Bennett
Associate Chemist

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

APR 30 2018

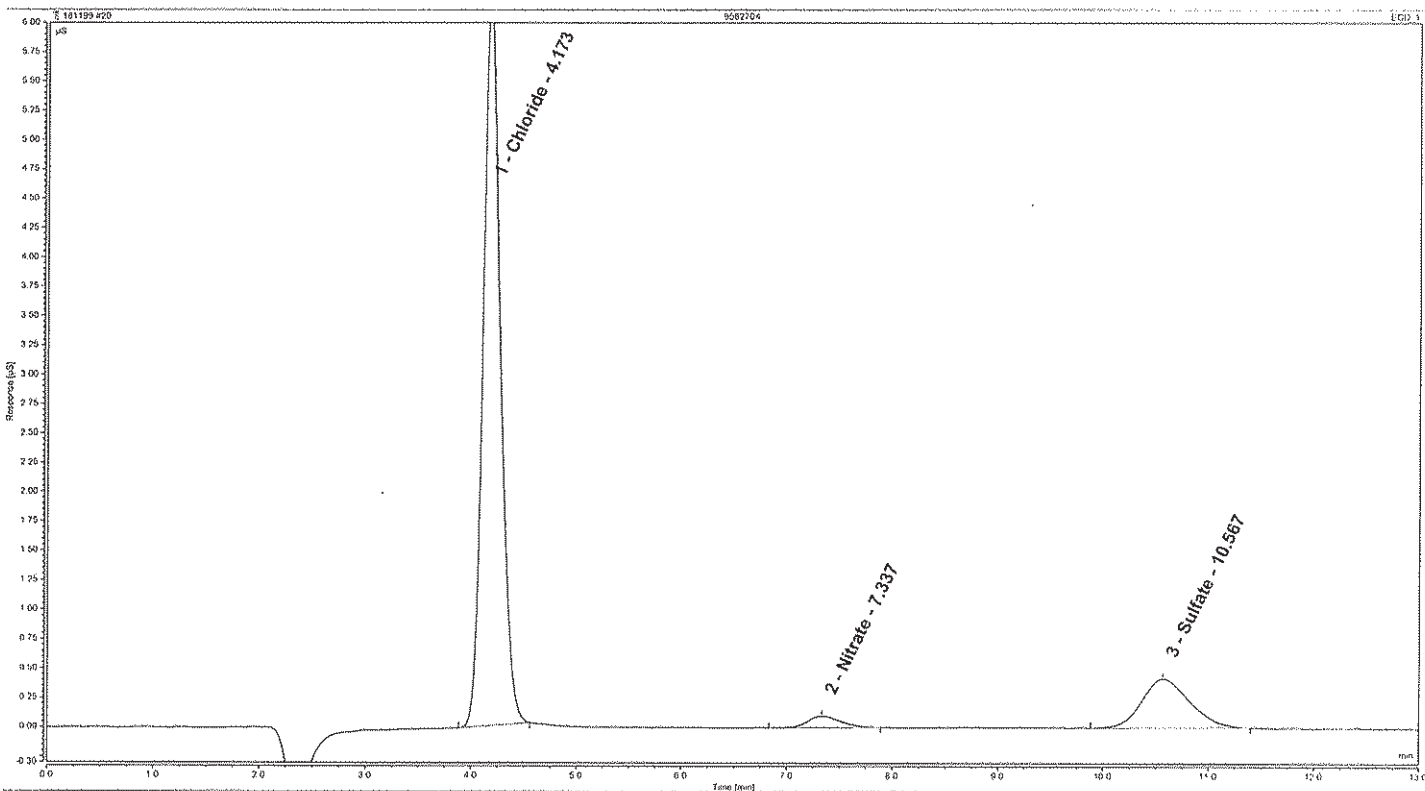
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	9582704	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 14:45	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	020
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.17	Chloride	BMB	1.178	6.233	40.3138
2	7.34	Nitrate	BMB	0.035	0.099	0.6105
3	10.57	Sulfate	BMB	0.222	0.420	11.1680
TOTAL:				1.43	6.75	52.09



Analyst:

Verifier:

Date:

Helle A. Gurnea
Associate Chemist

Date:

Erik J. Frederiksen
Manager

APR 30 2018

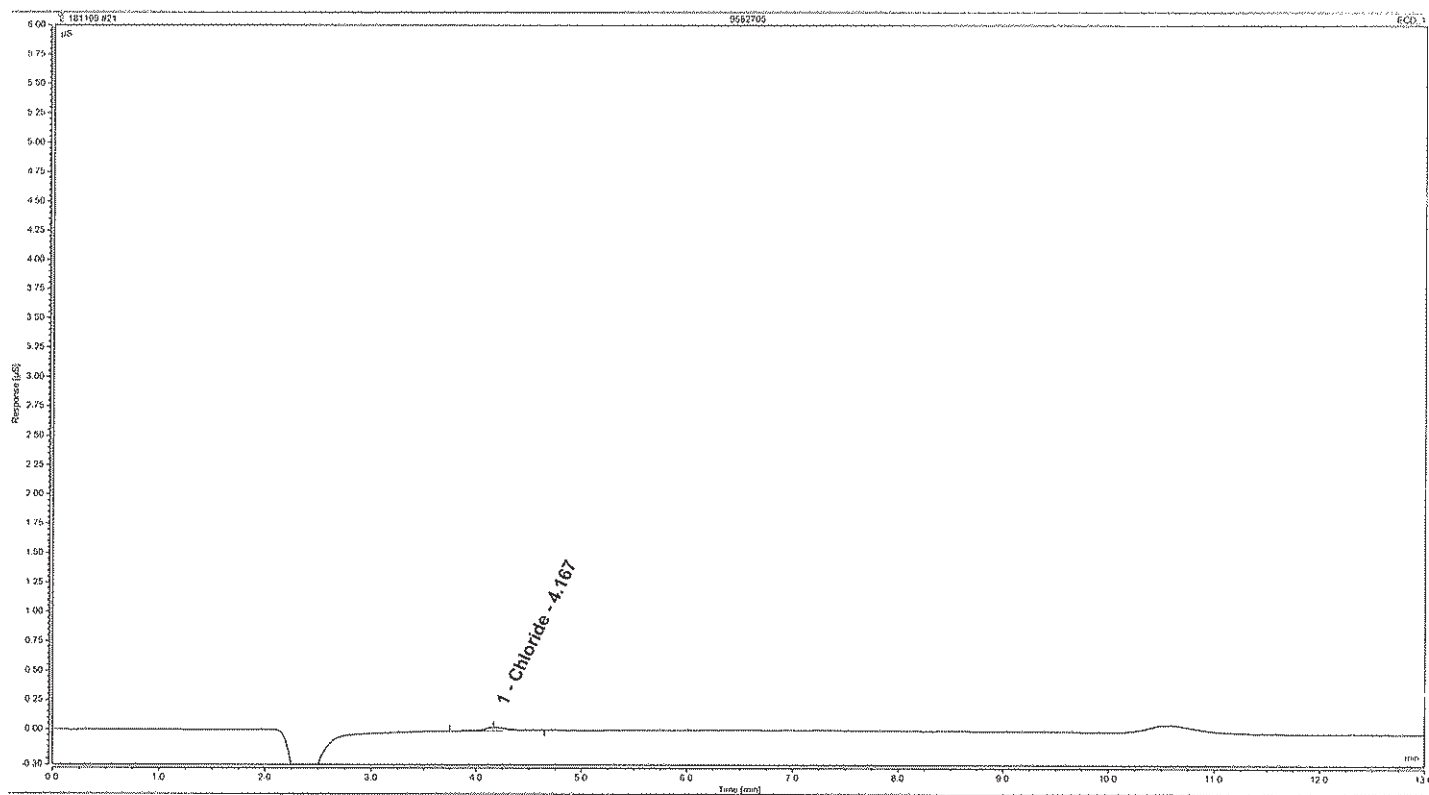
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	9582705	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 15:01	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	021
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.17	Chloride	BMB	0.008	0.028	0.4412
		TOTAL:		0.01	0.03	0.44



Analyst:

Hallie A. Burnett
Hallie A. Burnett
Associate Chemist

Verifier:

Date:

APR 30 2018

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

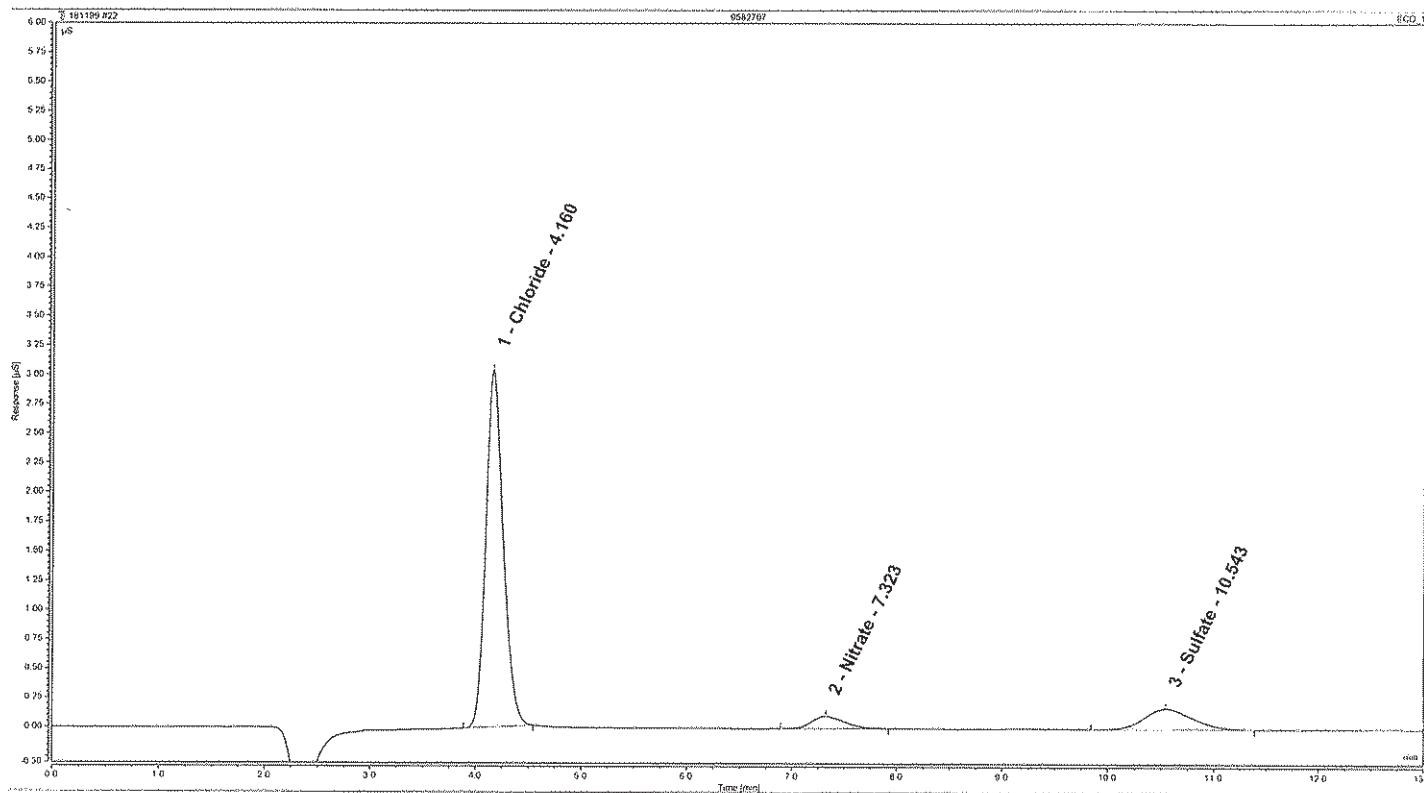
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	9582707	Inj. Vol.:	25.00
Batch Number-Analyst:	18119249109A-24932	Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 15:17	Dilution Factor:	5
Injection Type:	Unknown	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	022
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	4.16	Chloride	BMB	0.585	3.041	20.1050
2	7.32	Nitrate	BMB	0.038	0.105	0.6548
3	10.54	Sulfate	BMB	0.095	0.180	5.0458
TOTAL:				0.72	3.33	25.81



Analyst:

Verifier:

Date:

Hallie A. Burnist
Hallie A. Burnist
Associate Chemist

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

APR 30 2018

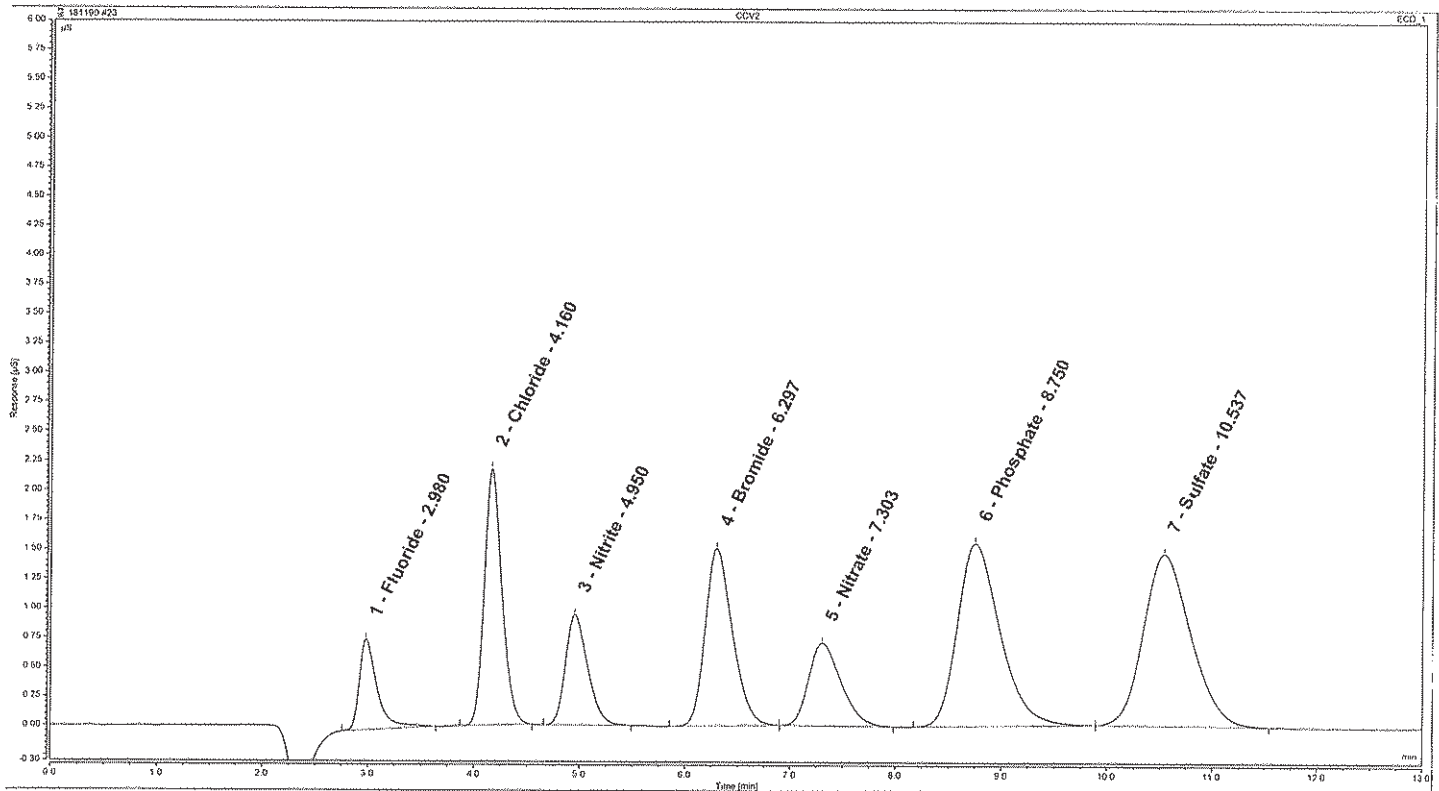
MAY 03 2018

Peak Integration Report: Anions by IC

Sample Name:	CCV2	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 15:32	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	023
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount
1	2.98	Fluoride	BMB	0.150	0.776	0.7778
2	4.16	Chloride	BMB	0.422	2.180	2.9085
3	4.95	Nitrite	BMB	0.229	0.944	0.7509
4	6.30	Bromide	BMB	0.454	1.512	7.4726
5	7.30	Nitrate	BMB	0.253	0.709	0.7600
6	8.75	Phosphate	BMB	0.727	1.555	6.9168
7	10.54	Sulfate	BMB	0.768	1.464	7.5178
TOTAL:				3.00	9.14	27.10



Analyst:

Verifier:

Date:

J. J. Burnett
J. J. Burnett
Analyst Chem

Date:

Erik J. Frederiksen
Erik J. Frederiksen
Manager

MAY 03 2018

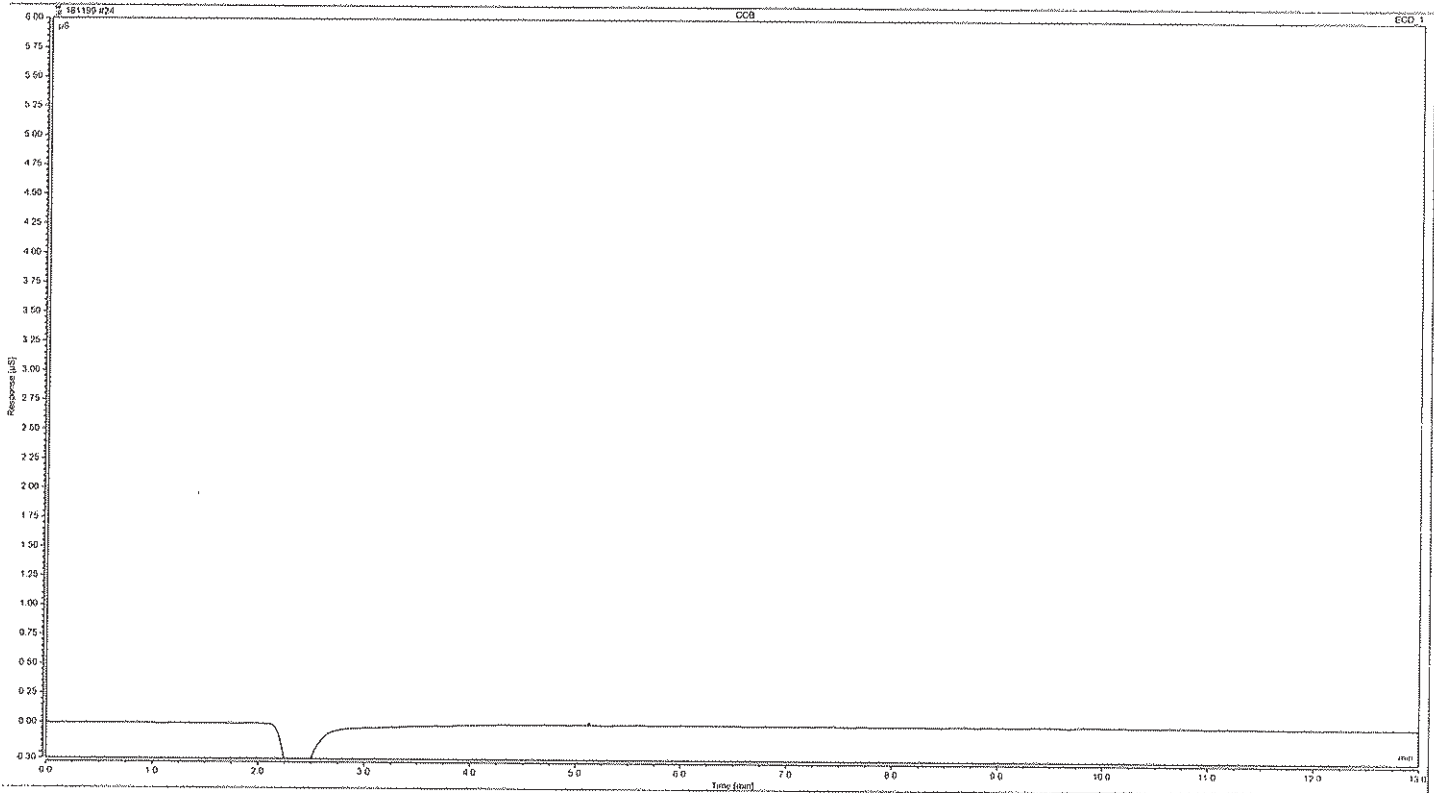
APR 30 2018

Peak Integration Report: Anions by IC

Sample Name:	CCB	Inj. Vol.:	25.00
Batch Number-Analyst:		Run Time:	13.00
Inj. Date / Time:	04/29/2018 / 15:48	Dilution Factor:	1
Injection Type:	Check Standard	Sample Weight:	1.00
Program:	AnionsAS	Injection Number:	024
Instrument Number:	17694	Calibration Date:	4/24/2018
Channel:	ECD_1	Sequence File Name:	181199
Column Type-Serial #:	AG14-180118258, AS14-170731036		

Peak Properties: All Components

No.	Time min	Peak Name	Peak Type	Area $\mu\text{S} \cdot \text{min}$	Height μS	Amount n.a.
TOTAL:				0.00	0.00	0.00



Analyst:

Verifier:

Date:

Date:

[Signature]
Arthur A. Burnett
Associate Chemist

[Signature]
Erik J. Frederiksen
Manager

MAY 03 2018

APR 30 2018

Appendix C

Analytical Data Report, May 8, 2018 Sampling

NYSDEC ASP Category B Modified Data Package

Prepared for:

IBM

8976 Wellington Rd
Manassas VA 20109

Project: B384
Groundwater and Water Samples
Collected on 05/08/18

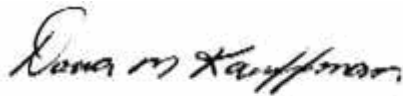
SDG# FKP59

GROUP	SAMPLE NUMBERS
1941178	9599630-9599631

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-13-10
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:



Date: 06/06/2018

Dana M. Kauffman
Manager

Any questions or concerns you might have regarding this data package should be directed to your client representative, Nicole Maljovec at (717) 556-7259.

Table of Contents for SDG# FKP59

1. Sample Reference List	3
2. Preservation Data	4
3. Methodology Summary/Reference	5
4. Analysis Reports / Field Chain of Custody	6
5. Volatiles by GC/MS Data	17
a. Case Narrative/Conformance Summary	18
b. QC Summary	20
c. Sample Data	28
6. Metals in Liquid Data	35
a. Case Narrative/Conformance Summary	36
b. Sample Data	39
c. QC Summary	41

**Sample Reference List for SDG Number FKP59
with a Data Package Type of NYSDECBMOD****20686 - IBM**
Project: B384

Lab Sample Number	Client Sample ID	Collection Date	Date Received
9599630	TB20180508	05/08/2018 00:00	05/09/2018 10:00
9599631	SEP-3242-R-2	05/08/2018 12:04	05/09/2018 10:00

Sample pH Log

SDG: FKP59

<u>LLI Sample Number</u>	<u>Bottle Code</u>	<u>Actual pH</u>	<u>Exp. pH</u>	<u>pH Check Code</u>	<u>Adj. pH</u>	<u>Adjusted Date</u>	<u>Adjusted Time</u>	<u>Preservative Added</u>	<u>Preservative Lot #</u>	<u>LLI Supplied Bottle?</u>	<u>Sulfide Present?</u>	<u>Corrective Substance</u>	<u>CS Lot #</u>	<u>Cl- Present?</u>	<u>Corrective Substance</u>	<u>CS Lot #</u>	<u>Record Date</u>	<u>Employee</u>
9599630	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/11/2018 12:10:03PM	9052
9599631	008A	<2	<2	PK	NA	NA	NA	NA	NA	Y	NA	NA	NA	NA	NA	NA	5/9/2018 3:13:06PM	12644
9599631	038A	<2	<2	NA	NA	NA	NA	NA	NA	Y	NA	NA	NA	N	NA	NA	5/11/2018 12:10:03PM	9052

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

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 · 717-656-2300 Fax: 717-656-2681 · www.lancasterlabs.com**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

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.

10635 ICP-WW, 3005A (tot rec) - U4

The sample is digested with nitric acid and hydrochloric acid.

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 3005A, July 1992

07051 Chromium

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

Reference: Test Methods for Evaluating Solid Wastes, SW-846 Method 6010C, February 2007.

Analysis Reports / Field Chain of Custody



REVISED

ANALYSIS REPORT

Prepared by:

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

Prepared for:

IBM
8976 Wellington Rd
Manassas VA 20109

Report Date: May 22, 2018 13:28

Project: B384

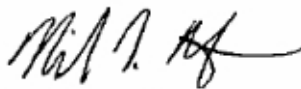
Account #: 20686
Group Number: 1941178
SDG: FKP59
PO Number: 5004981585
State of Sample Origin: NY

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Groundwater Sciences

Attn: Ed Stoner

Respectfully Submitted,



Nicole L. Maljovec
Manager

(717) 556-7259



REVISED

SAMPLE INFORMATION

Client Sample Description

TB20180508 Water
SEP-3242-R-2 Grab Groundwater

Sample Collection

Date/Time

05/08/2018
05/08/2018 12:04

ELLE#

9599630
9599631

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

REVISED

Sample Description: TB20180508 Water
B384

IBM
ELLE Sample #: WW 9599630
ELLE Group #: 1941178
Matrix: Water

Project Name: B384

Submittal Date/Time: 05/09/2018 10:00
Collection Date/Time: 05/08/2018
SDG#: FKP59-01TB

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	Tetrachloroethene	127-18-4	N.D.	0.1	0.5	1

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL purge	1	H181301AA	05/10/2018 15:33	Jennifer K Howe	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H181301AA	05/10/2018 15:33	Jennifer K Howe	1

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

REVISED

Sample Description: SEP-3242-R-2 Grab Groundwater
B384

IBM
ELLE Sample #: WW 9599631
ELLE Group #: 1941178
Matrix: Groundwater

Project Name: B384

Submittal Date/Time: 05/09/2018 10:00
Collection Date/Time: 05/08/2018 12:04
SDG#: FKP59-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260C 25mL	ug/l	ug/l	ug/l	
purge						
11996	Tetrachloroethene	127-18-4	52 E	0.1	0.5	1
The concentration reported for Tetrachloroethene is estimated since it exceeds the calibration range of the instrument.						
Metals		SW-846 6010C	mg/l	mg/l	mg/l	
07051	Chromium	7440-47-3	0.0069 J	0.0033	0.0300	1

Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	VOCs- 25ml Water by 8260C	SW-846 8260C 25mL	1	H181301AA	05/10/2018 15:55	Jennifer K Howe	1
		purge					
01163	GC/MS VOA Water Prep	SW-846 5030C	1	H181301AA	05/10/2018 15:55	Jennifer K Howe	1
07051	Chromium	SW-846 6010C	1	181291063504	05/10/2018 11:52	Eric L Eby	1
10635	ICP-WW, 3005A (tot rec) - U4	SW-846 3005A	1	181291063504	05/09/2018 22:14	Annamaria Kuhns	1

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

REVISED

Quality Control Summary

Client Name: IBM
Reported: 05/22/2018 13:28

Group Number: 1941178

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 ug/l	MDL** ug/l	LOQ ug/l
Batch number: H181301AA Tetrachloroethene	Sample number(s): 9599630-9599631 N.D.	0.1	0.5
	mg/l	mg/l	mg/l
Batch number: 181291063504 Chromium	Sample number(s): 9599631 N.D.	0.0033	0.0300

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: H181301AA Tetrachloroethene	Sample number(s): 9599630-9599631 5.00	4.86			97		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 181291063504 Chromium	Sample number(s): 9599631 0.200	0.203			101		87-110		

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: H181301AA Tetrachloroethene	Sample number(s): 9599630-9599631 UNSPK: P588709 N.D.	5.00	5.50	5.00	5.20	110	104	80-120	6	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 181291063504 Chromium	Sample number(s): 9599631 UNSPK: 9599631 0.00691	0.200	0.210	0.200	0.209	101	101	75-125	0	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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

REVISED

Quality Control Summary

Client Name: IBM
Reported: 05/22/2018 13:28

Group Number: 1941178

Laboratory Duplicate

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

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 181291063504 Chromium	Sample number(s): 9599631 BKG: 9599631 0.00691	0.00632	9 (1)	20

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: VOCs- 25ml Water by 8260C

Batch number: H181301AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9599630	101	106	96	98
9599631	99	101	96	98
Blank	101	103	97	100
LCS	101	103	96	99
MS	101	101	96	100
MSD	102	105	96	100
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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



**Lancaster Laboratories
Environmental**

For Eurofins Lancaster Laboratories Environmental use only
Acct. # 20686 Group # 1941178 Sample # _____
Instructions on reverse side correspond with circled numbers.

9599630-3

COC # 018487

[illegible]

Sample Administration Receipt Documentation Log

Doc Log ID: 215904



Group Number(s): 1941178

Client: IBM East Fishkill

B384

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>05/09/2018 10:00</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>NY</u>		

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	VOA Vial Headspace $\geq$ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCI
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Nicole Reiff (25684) at 10:54 on 05/09/2018

Samples Chilled Details: B384

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

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT146	1.1	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

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

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

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 $\geq$ 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.
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

Case Narrative/Conformance Summary

CLIENT: IBM

SDG: FKP59

GC/MS Volatiles

Fraction: Volatiles by GC/MS

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
9599630	TB20180508	X		1	Trip Blank
9599631	SEP-3242-R-2	X		1	

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

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, laboratory spike data (LCS) are provided.

SAMPLE ANALYSIS:

(Sample number(s): 9599631: Analysis: 11996)

The concentration reported for Tetrachloroethene is estimated since it exceeds the calibration range of the instrument.

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

QC Summary

Volatiles by GC/MS

Quality Control Reference List
GC/MS Volatiles**CLIENT: IBM**
SDG: FKP59**Fraction: Volatiles by GC/MS**

Analysis	Batch Number	Sample Number	Analysis Date
VOCs- 25ml Water by 8260C	H181301AA	VBLKH98	05/10/2018 09:08:00
		LCSH98	05/10/2018 08:25:00
		9599630	05/10/2018 15:33:00
		9599631	05/10/2018 15:55:00

Fraction: Volatiles by GC/MS

H181301AA / VBLKH98 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
Tetrachloroethene	05/10/18	N.D.	ug/l	0.1	0.5

Fraction: Volatiles by GC/MS

H181301AA	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
VBLKH98	103	80 - 120	100	80 - 120	101	80 - 120	97	80 - 120
LCSH98	103	80 - 120	99	80 - 120	101	80 - 120	96	80 - 120
9599630	106	80 - 120	98	80 - 120	101	80 - 120	96	80 - 120
9599631	101	80 - 120	98	80 - 120	99	80 - 120	96	80 - 120

GC/MS Volatiles

Fraction: Volatiles by GC/MS

LCS: LCSH98	Batch: H181301AA (Sample number(s): 9599630-9599631)							
Analyte	Spike Added ug/l	LCS Conc ug/l	LCSD Conc ug/l	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
Tetrachloroethene	5.00	4.86	NA	97	NA	80-120	NA	NA

Fraction: Volatiles by GC/MS

11996: VOCs- 25ml Water by 8260C Analyte Name	Default MDL	Default LOQ	Units
Tetrachloroethene	0.1	0.5	ug/l

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Lancaster Laboratories Contract: _____
 Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _FKP59_
 Lab File ID (Standard): hy10c01.d Date Analyzed: 05/10/18
 Instrument ID: HP19094 Time Analyzed: 08:04
 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		75474	4.446	1808734	7.970	1461138	11.390	812725	13.261
UPPER LIMIT		150948	4.946	3617468	8.470	2922276	11.890	1625450	13.761
LOWER LIMIT		37737	3.946	904367	7.470	730569	10.890	406362	12.761
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
LAB SAMPLE									
ID									
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
01 LC9H98		78280	4.446	1853523	7.970	1453383	11.390	805153	13.261
02 VBLKH98		88495	4.440	1788498	7.970	1392577	11.390	752796	13.261
03 9588704		67190	4.446	1760517	7.970	1372354	11.390	742344	13.261
04 9588715		91729	4.434	1807987	7.964	1409806	11.390	763032	13.261
05 9588705		78981	4.428	1808362	7.970	1422758	11.390	777780	13.261
06 9588706		78902	4.452	1807216	7.970	1411209	11.390	773407	13.261
07 9588707		68396	4.501	1796700	7.970	1396703	11.390	760080	13.261
08 9588708		72247	4.440	1768259	7.970	1378212	11.390	749149	13.261
09 9588709		80370	4.440	1783484	7.970	1401544	11.390	764332	13.261
10 9588710MS		82251	4.483	1784555	7.970	1411992	11.390	792494	13.261
11 9588711MSD		70118	4.434	1835828	7.970	1452596	11.390	806435	13.261
12 9588713		85234	4.446	1821292	7.970	1423257	11.390	776639	13.261
13 9588714		81395	4.488	1815635	7.970	1421390	11.390	776884	13.261
14 9588748		80448	4.428	1791117	7.970	1394726	11.390	759531	13.261
15 9588749		75067	4.452	1774518	7.970	1393209	11.390	754623	13.261
16 9588751		86168	4.482	1852746	7.970	1453555	11.390	792472	13.261
17 9588753		79120	4.434	1802879	7.970	1412025	11.390	765945	13.261
18 9588700		84365	4.452	1773609	7.970	1393671	11.390	745992	13.261
19 9588700DL		80315	4.458	1729905	7.970	1365071	11.390	740454	13.261
20 9599630		79462	4.440	1728272	7.970	1350462	11.390	728110	13.261
21 9599631		38222	4.562	1713257	7.964	1343523	11.390	728751	13.261
22 9588701		63791	4.501	1714898	7.970	1340706	11.390	725804	13.261

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.:_____ SDG No.:_FKP59_

Lab File ID (Standard): hy10c01.d Date Analyzed: 05/10/18

Instrument ID: HP19094 Time Analyzed: 08:04

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		75474	4.446	1808734	7.970	1461138	11.390	812725	13.261
UPPER LIMIT		150948	4.946	3617468	8.470	2922276	11.890	1625450	13.761
LOWER LIMIT		37737	3.946	904367	7.470	730569	10.890	406362	12.761
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
LAB SAMPLE									
ID									
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
23	9588701DL	61396	4.452	1720731	7.964	1349274	11.390	731088	13.261
24	9588702	67740	4.507	1737835	7.970	1363023	11.390	738554	13.261
25	9588702DL	77721	4.434	1750359	7.970	1358531	11.390	742638	13.261
26	9588750	80063	4.434	1749089	7.970	1382314	11.390	752417	13.261
27	9588750DL	81103	4.446	1765006	7.970	1385848	11.390	744627	13.261
28	9588752	82050	4.452	1724620	7.970	1362383	11.390	732520	13.261
29	9588752DL	86350	4.446	1745419	7.970	1371562	11.390	744399	13.261

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.

Sample Data

Volatiles by GC/MS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B384-

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9599630

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10s27.d

Level: (low/med) LOW Date Received: 05/09/18

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6-----	Trichloroethene	0.5		U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B3842

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 9599631

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10s28.d

Level: (low/med) LOW Date Received: 05/09/18

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6-----	Trichloroethene	0.2	J	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSH98

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSH98

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.7	
74-87-3	Chloromethane	4.1	
75-01-4	Vinyl Chloride	4.2	
106-99-0	1,3-Butadiene	5.9	
74-83-9	Bromomethane	4.5	
75-00-3	Chloroethane	4.3	
75-43-4	Dichlorofluoromethane	5.3	
75-69-4	Trichlorofluoromethane	4.7	
60-29-7	Ethyl ether	4.9	
354-23-4	Freon 123a	5.1	
107-02-8	Acrolein	36	
67-64-1	Acetone	39	
75-35-4	1,1-Dichloroethene	5.4	
76-13-1	Freon 113	4.8	
74-88-4	Methyl Iodide	4.9	
75-15-0	Carbon Disulfide	4.5	
79-20-9	Methyl Acetate	6.0	
107-05-1	Allyl Chloride	4.6	
75-09-2	Methylene Chloride	5.2	
75-65-0	t-Butyl Alcohol	47	
107-13-1	Acrylonitrile	28	
1634-04-4	Methyl Tertiary Butyl Ether	4.7	
156-60-5	trans-1,2-Dichloroethene	5.3	
110-54-3	n-Hexane	4.7	
75-34-3	1,1-Dichloroethane	5.0	
108-20-3	di-Isopropyl Ether	5.0	
126-99-8	2-Chloro-1,3-Butadiene	4.8	
637-92-3	Ethyl t-butyl ether	4.7	
78-93-3	2-Butanone	38	
156-59-2	cis-1,2-Dichloroethene	5.2	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSH98

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSH98

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
540-59-0-----	1,2-Dichloroethene (Total)		10	
594-20-7-----	2,2-Dichloropropane		4.9	
107-12-0-----	Propionitrile		39	
126-98-7-----	Methacrylonitrile		39	
74-97-5-----	Bromochloromethane		5.2	
109-99-9-----	Tetrahydrofuran		28	
67-66-3-----	Chloroform		5.0	
71-55-6-----	1,1,1-Trichloroethane		5.0	
110-82-7-----	Cyclohexane		4.8	
56-23-5-----	Carbon Tetrachloride		4.9	
563-58-6-----	1,1-Dichloropropene		4.9	
78-83-1-----	Isobutyl Alcohol		120	
71-43-2-----	Benzene		5.0	
107-06-2-----	1,2-Dichloroethane		4.8	
994-05-8-----	t-Amyl methyl ether		4.9	
142-82-5-----	n-Heptane		4.9	
71-36-3-----	n-Butanol		240	
79-01-6-----	Trichloroethene		5.0	
108-87-2-----	Methylcyclohexane		4.7	
78-87-5-----	1,2-Dichloropropane		5.0	
80-62-6-----	Methyl Methacrylate		4.7	
74-95-3-----	Dibromomethane		5.1	
75-27-4-----	Bromodichloromethane		4.8	
79-46-9-----	2-Nitropropane		4.4	
10061-01-5-----	cis-1,3-Dichloropropene		4.7	
108-10-1-----	4-Methyl-2-Pentanone		24	
108-88-3-----	Toluene		4.7	
10061-02-6-----	trans-1,3-Dichloropropene		4.4	
542-75-6-----	1,3-Dichloropropene (total)		9.1	
97-63-2-----	Ethyl Methacrylate		4.5	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSH98

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSH98

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-00-5	1,1,2-Trichloroethane		4.9	
127-18-4	Tetrachloroethene		4.9	
142-28-9	1,3-Dichloropropane		4.8	
591-78-6	2-Hexanone		24	
124-48-1	Dibromochloromethane		4.5	
106-93-4	1,2-Dibromoethane		4.7	
108-90-7	Chlorobenzene		4.7	
630-20-6	1,1,1,2-Tetrachloroethane		4.7	
100-41-4	Ethylbenzene		4.7	
179601-23-1	m+p-Xylene		9.7	
95-47-6	o-Xylene		4.7	
1330-20-7	Xylene (Total)		14	
100-42-5	Styrene		4.8	
75-25-2	Bromoform		4.4	
98-82-8	Isopropylbenzene		4.8	
79-34-5	1,1,2,2-Tetrachloroethane		4.6	
108-86-1	Bromobenzene		4.7	
110-57-6	trans-1,4-Dichloro-2-butene		22	
96-18-4	1,2,3-Trichloropropane		4.9	
103-65-1	n-Propylbenzene		4.7	
95-49-8	2-Chlorotoluene		4.6	
108-67-8	1,3,5-Trimethylbenzene		4.6	
106-43-4	4-Chlorotoluene		4.7	
98-06-6	tert-Butylbenzene		4.7	
76-01-7	Pentachloroethane		4.7	
95-63-6	1,2,4-Trimethylbenzene		4.6	
135-98-8	sec-Butylbenzene		4.7	
541-73-1	1,3-Dichlorobenzene		4.6	
99-87-6	p-Isopropyltoluene		4.8	
106-46-7	1,4-Dichlorobenzene		4.8	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LCSH98

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: LANCAS Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: LCSH98

Sample wt/vol: 25.00(g/mL) mL Lab File ID: HP19094.i/18may10a.b/hy10l01.d

Level: (low/med) LOW Date Received: _____

Moisture: not dec. _____ Date Analyzed: 05/10/18

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q

526-73-8-----	1,2,3-Trimethylbenzene	4.7	
100-44-7-----	Benzyl Chloride	4.6	
104-51-8-----	n-Butylbenzene	4.9	
95-50-1-----	1,2-Dichlorobenzene	4.7	
96-12-8-----	1,2-Dibromo-3-chloropropane	5.0	
108-70-3-----	1,3,5-Trichlorobenzene	4.9	
120-82-1-----	1,2,4-Trichlorobenzene	5.0	
87-68-3-----	Hexachlorobutadiene	5.3	
91-20-3-----	Naphthalene	4.7	
87-61-6-----	1,2,3-Trichlorobenzene	5.0	

Metals in Liquid Data

Case Narrative/Conformance Summary

Metals in Liquid

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP59

ICP Metals

Fraction: Metals in Liquid

Sample #	Client ID	Matrix		DF	Comments
		Liquid	Solid		
9599631	SEP-3242-R-2	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.

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.

The final concentration (ug/l) is obtained using the following calculation:

Instrument reading (ug/l) $\times$ $\frac{\text{final volume}}{\text{initial volume}}$ $\times$ dilution factor

Case Narrative/Conformance Summary

CLIENT: IBM
SDG: FKP59

ICP Metals

Fraction: Metals in Liquid

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



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 1

INORGANIC ANALYSIS DATA SHEET

SDG No.: FKP59

Matrix: WATER Level (low/med): LOW

Lab Sample ID: 9599631BKG

% Solids: 0.0

Concentration Units: UG/L

Date Received: 05/09/2018

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	6.9	B		P

Comments:

METHODS:

P = ICP Atomic Emission Spectrometer
MS = ICP Mass Spectrometry
CV = Cold Vapor
AF = Cold Vapor Atomic Fluorescence
NR = Not Required

CONCENTRATION QUALIFIERS:

U = Below MDL,
B = Below LOQ

QC Summary

Metals in Liquid

SDG No.: FKP59

Matrix: WATER

<u>Analyte</u>	<u>Batch Number</u>	<u>Lab Sample ID</u>
Chromium	181291063504	9599631BKG 9599631MS 9599631MSD 9599631DUP P12963DB P12963DQ

LEGEND:

BKG = Background

DUP = Duplicate

MS = Matrix Spike

MSD = Matrix Spike Duplicate

B = Blank

Q = Laboratory Control Sample

Y = Laboratory Control Sample Duplicate



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY
FORM 3
BLANKS
SDG No.: FKP59

Method: P

Run Name: 1813006T75

Calibration Date(s): 05/10/2018

Preparation Blank Matrix: WATER

Analyte	Mass	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank (UG/L)	
			C	1	C	2	C	3	C	Mass	Batch Number
Chromium		1.3	B	1.2	U	1.2	U	1.2	B	3.300	U181291063504

METHODS:

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

CONCENTRATION QUALIFIERS:

U= Below IDL/MDL
B= Below LOQ



Lancaster Laboratories
Environmental

QUALITY ASSURANCE SUMMARY

FORM 6

DUPLICATES

SDG No.: FKP59

Matrix: WATER Level (low/med): LOW

Background Lab Sample ID: 9599631BKG

Duplicate Lab Sample ID: 9599631DUP

Batch Number(s): 181291063504

Concentration Units: UG/L

Analyte	Mass	Control Limit	Samples (S)	C	Duplicate (D)	C	RPD	Q	M
Chromium			6.9100	B	6.3200	B	9		P

NOTE: An asterisk (*) in column "Q" indicates poor duplicate precision (RPD > 20% 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

QUALITY ASSURANCE SUMMARY
FORM 7
LABORATORY CONTROL SAMPLE
SDG No.: FKP59
Matrix: WATER

Analyte	Mass	Batch Number	Units	True	Found	C	Control Limits (%)	%R	M	In Spec
Chromium		181291063504	UG/L	200.000	202.530		87 - 110	101	P	Yes

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

Method: P
Instrument ID: 23290
Date: 04/2018

Analyte	Wavelength (nm)	Background	IDL (UG/L)
Chromium	267.72		1.2

Comments:

METHODS:

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



Method: P
Date: 06/2017

Analyte	Wavelength (nm)	Background	LOQ (UG/L)	MDL (UG/L)
Chromium	267.72		30.0	3.3

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

Appendix B

Analytical Data Report, April 28, 2018 Sampling

Appendix C

Analytical Data Report, May 8, 2018 Sampling
