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2020 PERIODIC REVIEW REPORT
FORMER SIGNORE, INC.
ELLICOTTVILLE, NEW YORK
BROWNFIELD CLEANUP PROGRAM
Site Number C905034

April 10, 2020
File No. 21.0056367.83



PREPARED FOR:
Iskalo Ellicottville Holdings, LLC
Williamsville, New York

GZA GeoEnvironmental of New York
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VIA EMAIL

April 10, 2020
File No. 21.0056367.83

Megan Kuczka – Environmental Program Specialist I
New York State Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203

Re: 2020 Periodic Review Report
Former Signore, Inc.
Ellicottville, New York
Brownfield Cleanup Program Site (Number C905034)

Dear Mr. Szymanski:

GZA GeoEnvironmental of New York (GZA) is pleased to submit this Periodic Review Report (PRR) on behalf of Iskalo Ellicottville Holdings, LLC (Iskalo). Iskalo is the owner and operator of the Former Signore, Inc. Brownfield Cleanup Program (BCP) Site (No. 905034; Site) located at 55-57 Jefferson Street in Ellicottville, New York. The Certificate of Completion (COC) for this Site was issued by the New York State Department of Environmental Conservation (NYSDEC) on December 11, 2015. GZA prepared this PRR in general conformance with the guidelines provided to Iskalo by the NYSDEC in their reminder notice letter dated January 27, 2020.

If you have any questions or need additional information, please call Jim Richert at (716) 844-7048.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Jim Richert

James J. Richert, P.G.
Senior Project Manager

Bart A. Klettke

Bart A. Klettke, P.E.
Principal

cc: Jaspal Walia (NYSDEC- Region 9)
David Chiazza (Iskalo Ellicottville Holdings, LLC)

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1.0 EXECUTIVE SUMMARY

1.1 BACKGROUND

The Former Signore, Inc. Site (Site) is in the Village of Ellicottville, Cattaraugus County, New York (**Figure 1**). The 8.43-acre BCP Site is part of the larger approximate 55-acre former Signore property addressed at 55-57 Jefferson Street. The 55-acre former Signore property is currently listed as a Class 4 site on the NYSDEC's Registry of Inactive Hazardous Waste sites (Site No. 905023), and involves groundwater contaminated with chlorinated volatile organic compounds (cVOCs).

The 8.43-acre BCP Site is currently occupied by a concrete slab (associated with a former 168,000 square foot main building that was demolished in July and August 2012) and three smaller ancillary buildings. Additional Site features include a paved parking area along the eastern and southern side of the concrete slab, and gravel and short vegetative ground cover surrounding the concrete slab on its northern, southern, and western sides. The Site is bounded as follows:

- To the north by residences and the rest of the former Signore property;
- to the south by residences, the rest of the former Signore property, and wooded vacant land;
- to the east by Jefferson Street, residences, and a cemetery; and
- to the west by the rest of the former Signore property.

Environmental investigations identified localized petroleum-impacted soil and groundwater in historical underground storage tank (UST) areas. Groundwater sampling confirmed the presence of cVOCs at concentrations above NYSDEC Class GA groundwater criteria. Two interim remedial measures (IRMs) were completed in 2011 and 2013 to remove several USTs, septic tanks and associated impacted soils.

The remedial action objectives (RAOs) for groundwater targeted compliance with the NYSDEC Class GA criteria, and reducing the potential exposure from inhalation of organic vapors, ingestion, and dermal contact with contaminated groundwater.

In July 2015, GZA implemented an organic carbon electron donor substrate (OCEDS) injection program to enhance and accelerate natural attenuation of cVOCs in the groundwater. **Figure 4** illustrates the locations of the ODEDS injection points.

A Certificate of Completion (COC) of the BCP remedy was issued by NYSDEC to Iskalo on December 11, 2015.

Institutional Controls Include:

- Property use may include restricted residential, restricted commercial, and/or restricted industrial uses;
- Groundwater may not be used without prior treatment and approval of the regulator;
- All future activities that will disturb remaining subsurface contaminated material must be conducted as defined in the SMP (in the Excavation Work Plan);
- Access to the Site must be provided to representatives of the State of New York;

Engineering Controls Include:

- Evaluation of vapor intrusion on new buildings and/or installation and operation of vapor mitigation systems;

In a letter from the Department dated August 15, 2018, Iskalo received acceptance of the 2018 PRR and of the recommendation to decrease the semi-annual and groundwater remedy sampling and analysis frequency to annual. In the 2019 PRR, GZA, based in the decreasing trend of groundwater contaminant concentrations, recommended ceasing post-injection monitoring and reducing the ROD-required groundwater sampling frequency to biennial. The Department has not yet responded to the recommended changes in groundwater monitoring. On April 30, 2019, the Department accepted the 2019 PRR.

1.2 EFFECTIVENESS OF THE REMEDIAL PROGRAM

Contaminant sources have been removed from the Site. Natural attenuation of cVOCs in the groundwater continues to reduce their concentrations as indicated by data collected during groundwater monitoring program. Potential impacts of vapor intrusion will be evaluated for any new on-site buildings and vapor mitigation implemented as necessary. Therefore, the Site remedy continues to be effective at meeting the Site's RAOs.

1.3 COMPLIANCE

As part of the June 2018 annual groundwater monitoring event, wells were assessed for siltation and some found in need of redevelopment. On September 20, 2018 select wells were redeveloped. One well (EW-1.25) was filled with tightly-packed sediment to a depth above that of the screened interval and could not be redeveloped with the assistance of a drilling subcontractor. This well is replaced on May 20, 2019 (with well EW-1.25R) which was developed and sampled as part of the June 2019 annual sampling event.

On October 27, 2019, GZA observed the Site as in compliance with the SMP. The Institutional Controls and Engineering Controls (IC/ECs) remain in place and there are no active remedial systems requiring operation, maintenance, or monitoring.

Sampling for Emerging Contaminants

In a letter dated April 19, 2018, the Department required that Iskalo sample a select number of Site wells for PFAS and 1,4-dioxane. On June 27, 2018, GZA, on behalf of Iskalo, submitted a workplan for sampling of four representative Site wells for PFAS and 1,4-dioxane. NYSDEC approved the PFAS sampling work plan on June 27, 2018, and GZA sampled the selected four wells for PFAS on June 11, 2019. Analytical results of the PFAS sampling results were forwarded to NYSDEC on September 20, 2019 with a recommendation of no further action relative to PFAS and 1,4-Dioxane. **Appendix A** contains emerging contaminant-related documents including:

- the April 19, 2018 letter from NYSDEC requesting sampling of emerging contaminants,
- the June 27, 2018 emerging contaminants sampling Work Plan,
- NYSDEC's June 27, 2018 written approval of the emerging contaminants Work Plan, and
- The April 7, 2020 GZA Emerging Contaminant Sampling and Analysis Report

1.4 RECOMMENDATIONS

GZA and Iskalo recommend no changes to the frequency of Site Inspections or PRR submittals at this time. Implementation of the SMP, including the Excavation Work Plan, evaluation for soil vapor intrusion during site development, and annual or, if approved by NYSDEC, biennial groundwater monitoring will proceed in conformance with the Environmental Easement.

GZA awaits NYSDEC response to recommended reduction in the groundwater monitoring, as follows:

- GZA, in the June 2019 Post-Injection Monitoring Report recommended "..**cessation of the post-injection groundwater monitoring, and a reduction of annual ROD-required sampling** (submitted under separate cover) **from annual to biennial**"; and
- GZA, in the June 2019 Annual ROD Groundwater Monitoring Report recommended "…. Groundwater monitoring has been conducted semi-annually then annually for over 20 years. The body of data collected since remedial injections indicate that reductive dechlorination is continuing to reduce the CVOC concentrations as intended, and that a slow and steady overall trend of CVOC reduction has been established. None of the 12 wells monitored have CVOCs at concentrations greater than the Class GA groundwater standards. GZA recommends biennial monitoring…".

2.0 SITE OVERVIEW

2.1 SITE LOCATION AND FEATURES

The Former Signore, Inc. Site is in the Village of Ellicottville, Cattaraugus County, New York (**Figure 1**). The 8.43-acre BCP Site is part of the larger approximate 55-acre former Signore property addressed at 55-57 Jefferson Street. The 55-acre former Signore property is currently listed as a Class 4 site on the NYSDEC's Registry of Inactive Hazardous Waste sites (Site No. 905023), and includes groundwater contaminated with chlorinated volatile organic compounds (cVOCs).

The BCP Site is currently occupied by of the concrete slab foundation associated with the former main building, as well as three smaller ancillary buildings. Areas not occupied by the concrete slab include a paved parking area along the eastern and southern side of the slab, and gravel and short vegetative ground cover surrounding the slab on its northern, southern, and western sides.

The Site is bounded as follows:

- To the north by residences and the rest of the former Signore property;
- to the south by residences, the rest of the former Signore property, and wooded vacant land;
- to the east by Jefferson Street, residences, and a cemetery; and
- to the west by the rest of the former Signore property.

2.2 INVESTIGATION AND REMEDIAL HISTORY

The Site formerly included localized petroleum-impacted soil and groundwater in historical UST areas, which were remediated during two IRMs in 2011 and 2013. Several USTs and septic tanks and associated impacted soils were removed during these IRMs. Groundwater sampling events conducted prior to and following the

IRMs indicated the presence of cVOCs at concentrations above groundwater criteria. GZA determined that the cVOC-impacted groundwater at the Site would require remediation to reduce contaminant concentrations prior to the anticipated redevelopment.

The Remedial Action Objectives (RAOs) for the Site included:

Groundwater:

- Prevent ingestion of groundwater with contaminant levels exceeding NYSDEC Class GA drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.
- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil:

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor:

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site.

In July 2015, GZA implemented an OCEDS injection program to enhance and accelerate natural attenuation of cVOCs.

Remediation of the Site under the BCP followed Track 2 of the program to achieve restricted residential cleanup status. Soils with constituents exceeding the NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential Use (RRSCOs) were remediated during the IRM activities conducted in 2011 and 2013. Additional remedial actions pertaining to subsurface soils were not required as part of the final remedy. Based on the results of the groundwater sampling conducted following the full-scale OCEDS injection program, the OCEDS injections were successful in reducing total cVOC concentrations, and continued reductions in concentrations by enhanced natural attenuation are anticipated.

3.0 EVALUATION OF REMEDY PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

GZA performed an annual Site Inspection on October 27, 2019, during the reporting period. A log of photographs taken during the inspection is provided in **Appendix B**, a Site inspection form was completed (**Appendix C**), and a map showing the locations and orientation of the Site photographs is provided as **Figure 2**. No evidence of Site activity or excavations were observed during the inspection. The Site groundwater monitoring wells remain

present for continued monitoring use and the Site remains vacant and undeveloped (excepting the remaining concrete slab and three ancillary buildings).

Appendix D provides copies of the June 2019 post-injection and site-wide groundwater monitoring reports (provided to NYSDEC on September 20, 2019). Data collected under the post-injection groundwater monitoring program confirm that natural attenuation of cVOCs in the groundwater continues.

The Site remedy continues to be effective at meeting the Site RAOs for protection of potential current and future Site users.

4.0 INSTITUTIONAL CONTROL/ENGINEERING CONTROL (IC/EC) PLAN COMPLIANCE REPORT

4.1 IC/EC REQUIREMENTS AND COMPLIANCE

IC/ECs for the Site were determined by NYSDEC and specified in the Decision Document (DD) issued by NYSDEC on July 24, 2015. The IC/ECs were carried forward in the Environmental Easement (EE), issued by NYSDEC on July 28, 2015, and later again included in the Site Management Plan (SMP) (prepared by GZA and approved by NYSDEC on October 6, 2015). Complete lists of the Site IC and ECs are provided in Sections 3.2 and 3.3 of the SMP. Summary lists of the ICs and ECs for the Site are provided as follow:

Summary of Site Institutional Controls:

- Property use may include restricted residential, restricted commercial, and/or restricted industrial uses;
- Groundwater may not be used without prior treatment and approval of the regulator;
- Access to the Site must be provided to representatives of the State of New York;
- Groundwater monitoring must be performed and reported as defined in the SMP;
- All future activities that will disturb remaining subsurface contaminated material must be conducted as defined in the SMP; and
- The potential for vapor intrusion must be evaluated for any buildings developed on the Site and any potential impacts identified must be monitored or mitigated.

Summary of Site Engineering Controls:

- Vapor intrusion will be evaluated on new buildings and mitigation systems. Sub-slab depressurization system(s), if installed, will be operated and monitored with NYSDEC and NYSDOH concurrence.
- Groundwater monitoring to assess natural attenuation will continue, as determined by NYSDEC in consultation with NYSDOH, until residual groundwater concentrations are found consistently below ambient water quality standards or have become asymptotic at an acceptable level over an extended period.

During the reporting period of March 12, 2019 to March 12, 2020, the following activities took place at the Site:

- Decommissioning and replacement of monitoring well EW-1.25 with EW-1.25R;
- The annual groundwater monitoring;
- The annual post-remedial-injection groundwater monitoring;
- NYSDEC-requested sampling of four wells for emerging contaminants.

Based on observations made during the Site inspection and discussions with Iskalo, the Site owner is complying with the IC/ECs. The Site remains undeveloped and inactive. The Site groundwater monitoring wells remain in place and functional. No occupied building structures are present on-Site and Site groundwater is not being used.

4.2 IC/EC CERTIFICATION

The Site-specific IC/EC Certification Form, for reporting period of March 12, 2019 to March 12, 2020, was provided to Iskalo as an attachment to the January 27, 2020 Reminder Notice letter sent by NYSDEC. This form has been completed by Iskalo as Site owner. The completed IC/EC Certification Form for this reporting period is provided in **Appendix E** of this PRR.

5.0 PRR CONCLUSIONS AND RECOMMENDATIONS

5.1 PRR CONCLUSIONS

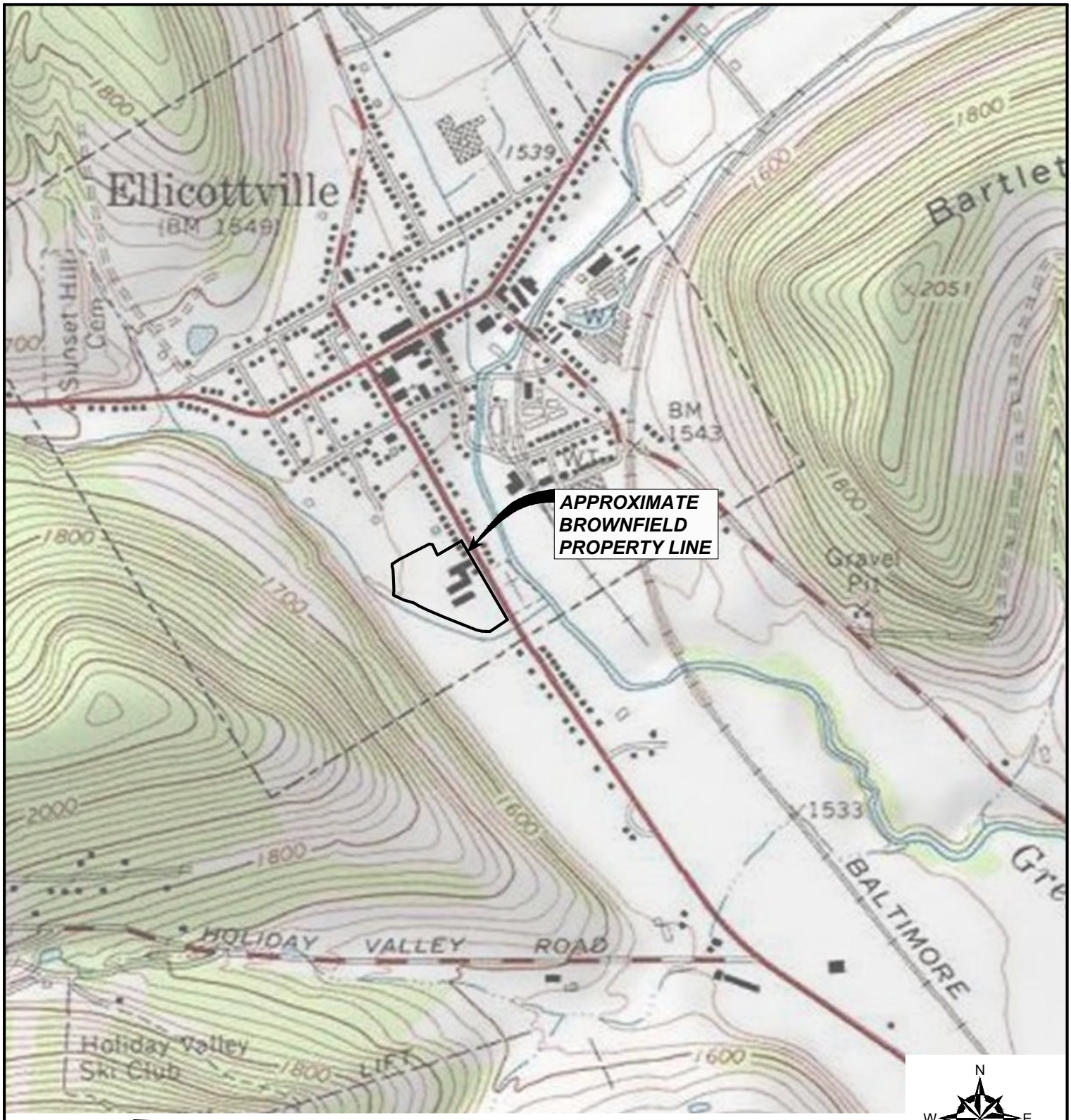
GZA observed the BCP Site to be in compliance with provisions of the SMP. The IC/ECs remain in place and, with the exception of the replacement of monitoring well EW-1.25, are unchanged since the ending of the prior reporting period. There are no active remedial systems requiring operation, maintenance, or monitoring.

5.2 PRR RECOMMENDATIONS

Iskalo and GZA await NYSDEC approval of the recommended reduction to the extent and frequency of groundwater monitoring as detailed in our annual 2018 groundwater monitoring reports.

Iskalo and GZA recommend no other actions, changes to the SMP, or frequency of PRR submittals at this time. Implementation of the SMP, including the Excavation Work Plan and evaluation for soil vapor intrusion, will proceed as the Site is redeveloped in compliance with the Environmental Easement.

FIGURES



NOTE:
BASE MAP ADAPTED FROM USA TOPO MAPS USING ArcGIS AUTOCAD PLUGIN

NO.	ISSUE/DESCRIPTION	BY	DATE

© 2020 – GZA GeoEnvironmental of N.Y. GZA–K:\PROJECTS\56300s\56367.83 2020 Signor Ellicottville PRR\Figure 1 – Locus Plan.dwg [Figure 1] April 06, 2020 – 9:50am Daniel.Wulf

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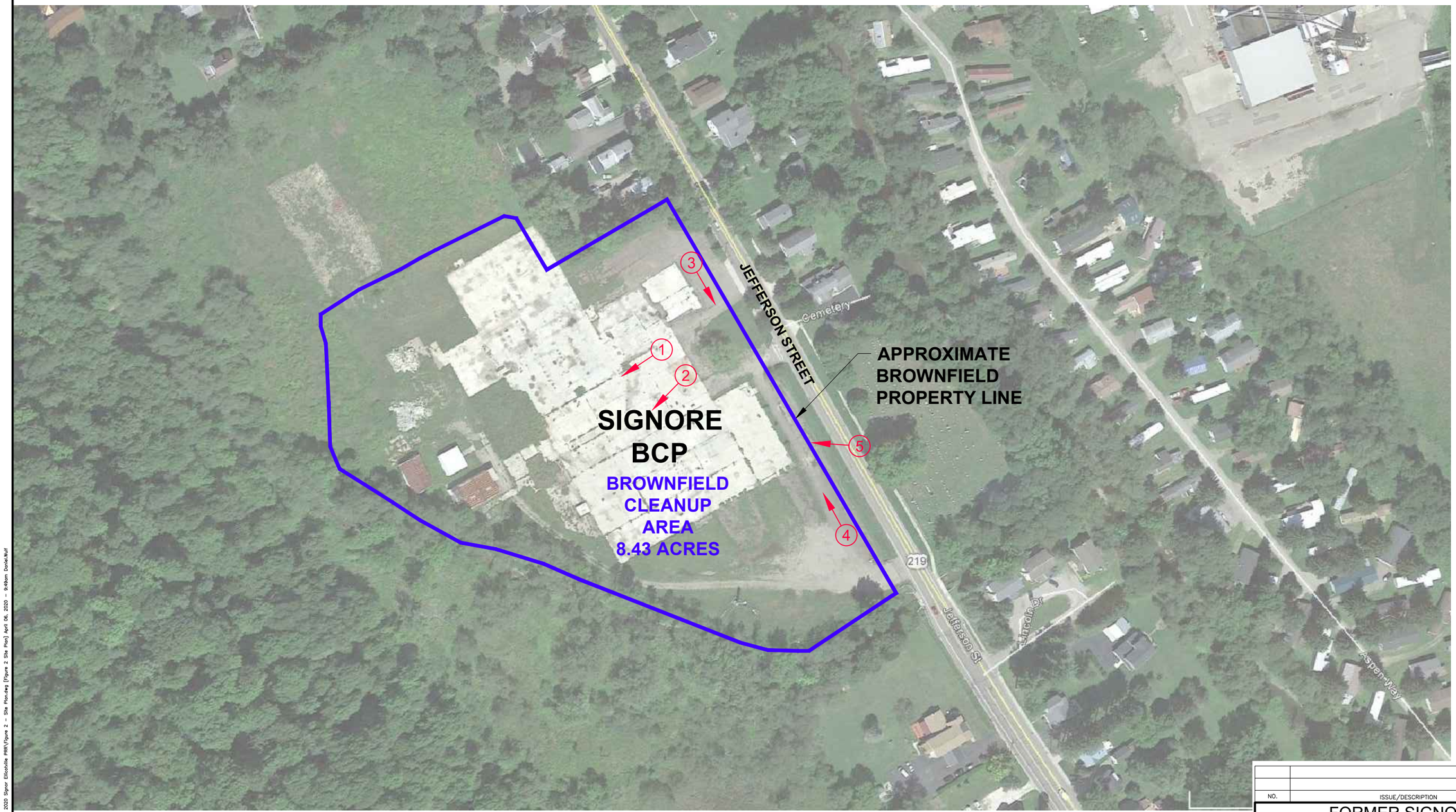
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PREPARED FOR:
ISKALO ELLICOTTVILLE HOLDINGS, LLC

FORMER SIGNORE, INC.
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK
BROWNFIELD CLEANUP PROGRAM
SITE NO. C905034
PERIODIC REVIEW REPORT
LOCUS PLAN

FIGURE
1

PROJ MGR:	JJR	REVIEWED BY:	JJR	CHECKED BY:	BAK	DATE	PROJECT NO.	REVISION NO.
DESIGNED BY:	JJR	DRAWN BY:	DEW	SCALE:	AS SHOWN	APRIL 2020	21.0056367.83	



NOTES:

1. BASE MAP ADAPTED FROM A 2016 AERIAL PHOTO DOWNLOADED FROM GOOGLE EARTH PRO AND FIELD OBSERVATIONS.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

(1) → APPROXIMATE LOCATION AND ORIENTATION OF INSPECTION PHOTOGRAPHS COLLECTED ON 10-27-2019 (SEE APPENDIX A)

0 75 150 300

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SITE NO. C905034

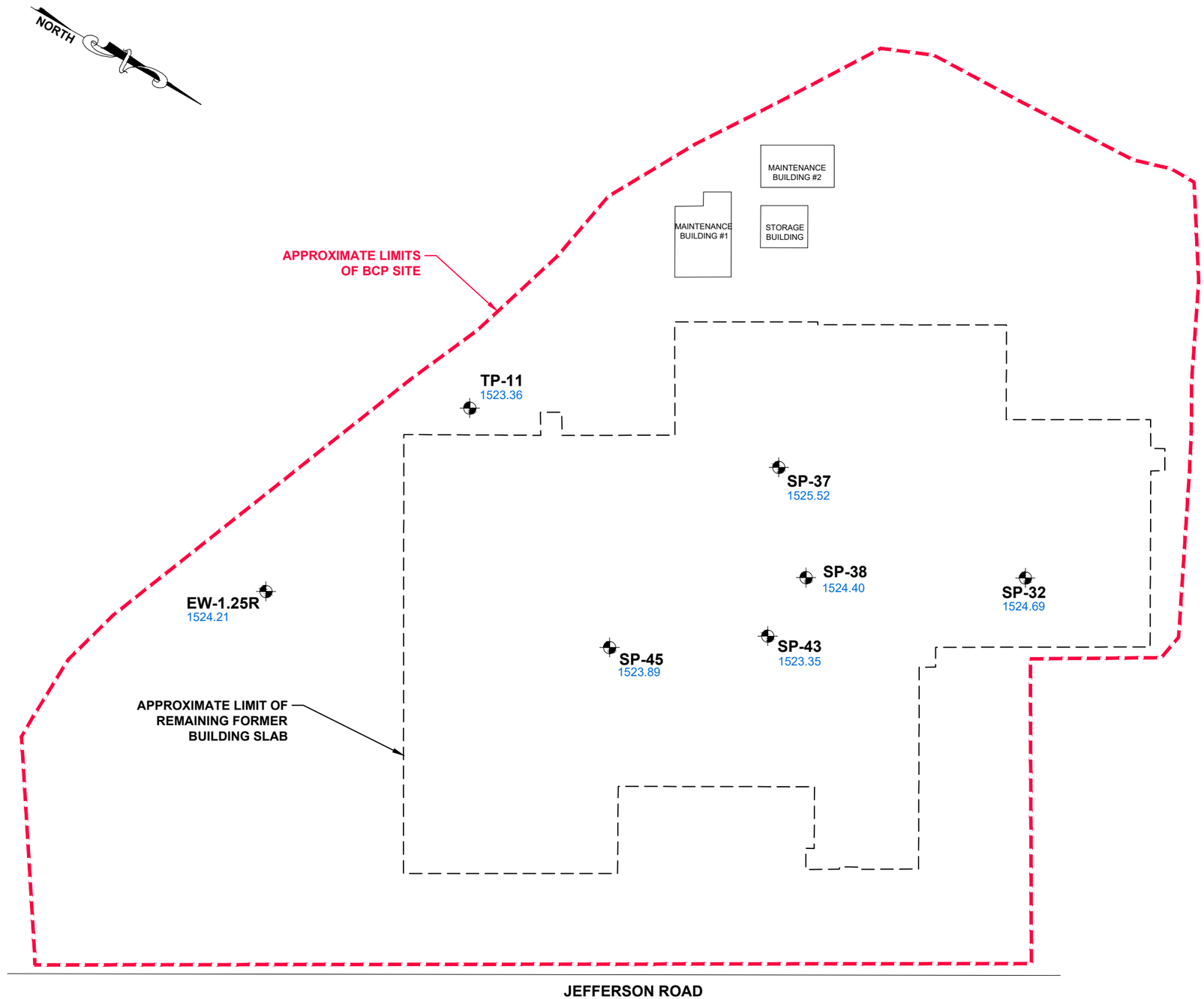
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PHOTOGRAPH ORIENTATION MAP

PREPARED BY:
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BUFFALO, NEW YORK 14202
(716) 685-2300

PREPARED FOR:
ISKALO ELLICOTTVILLE HOLDINGS, LLC

PROJ MGR: JJR	REVIEWED BY: JJR	CHECKED BY: BAK	FIGURE 2
DESIGNED BY: JJR	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE APRIL 2020	PROJECT NO. 21.0056367.83	REVISION NO.	

©2020 - GZA GeoEnvironmental of N.Y. G:\ZA-NY\PROJECTS\56300s\56367.83 2020 Signor Ellicottville PRR\Figure 2 - Site Plan.dwg [Figure 2 Site Plan] April 06, 2020 - 9:49am Donat.Wulf



LEGEND:

SP-37 1525.52 — APPROXIMATE LOCATION AND DESIGNATION OF 1" MICROWELL.GROUNDWATER ELEVATION MEASURED ON JUNE 11 & 14, 2019.

NOTES:

1. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 40 80 160

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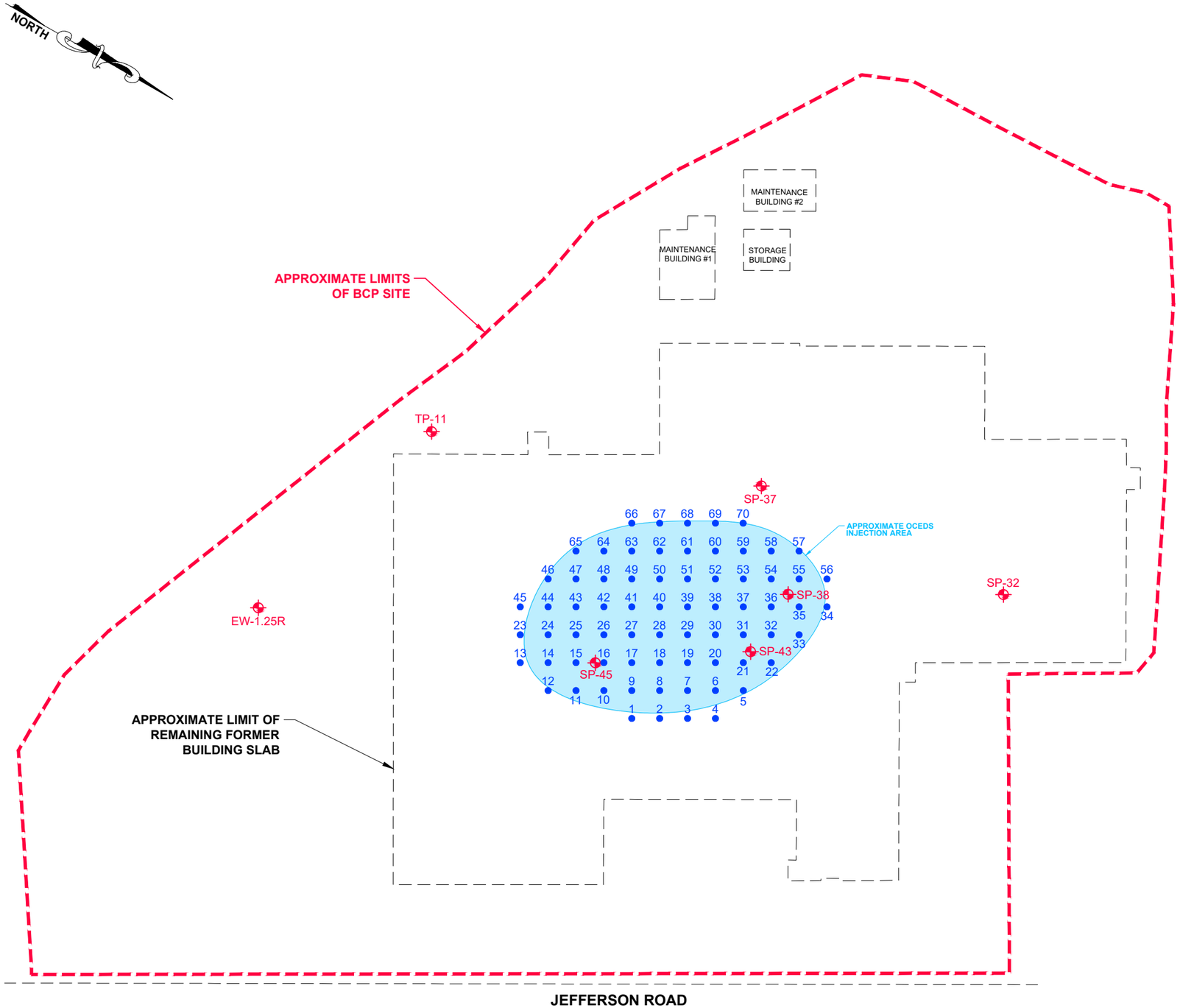
FORMER SIGNORE FACILITY
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BROWNFIELD CLEANUP PROGRAM SITE NO. C905034

JUNE 2019 POST-INJECTION GROUNDWATER MONITORING REPORT, MICROWELL GROUNDWATER ELEVATION CONTOUR PLAN

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		ISKALO ELLICOTTVILLE HOLDINGS, LLC	
PROJ MGR: TB	REVIEWED BY: JJR	CHECKED BY: BAK	FIGURE 3
DESIGNED BY: TB	DRAWN BY: DEW	SCALE: AS SHOWN	
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GZA-K:\PROJECTS\56300s\56367.83 2020 Signor Ellicotville PRR\Figure 3 - Contour Plan.dwg [Figure 3] April 06, 2020 - 9:52am Daniel.Wulf



LEGEND:

1 ● ORGANIC CARBON ELECTRON DONOR SUBSTRATE (OCEDS) INJECTION POINT

SP-37 APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELLS ASSOCIATED WITH OCEDS INJECTIONS

NOTES:

1. BASE MAP ADAPTED FROM A 2006 AERIAL PHOTOGRAPH DOWNLOADED FROM www.cattco.org/real_property/parcel_ news.asp AND FIELD OBSERVATIONS.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 40 80 160

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55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK
BROWNFIELD CLEANUP PROGRAM SITE NO. C905034

JUNE 2019 POST-INJECTION GROUNDWATER MONITORING REPORT, LOCATION OF ORGANIC CARBON ELECTRON DONOR SUBSTRATE INJECTIONS

PREPARED BY:	PREPARED FOR:		
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com	ISKALO ELLICOTTVILLE HOLDINGS, LLC		
PROJ MGR: TB	REVIEWED BY: JJR	CHECKED BY: BAK	FIGURE 4
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GZA-K:\PROJECTS\56300s\56367.83 2020 Signor Ellicotville PRR\Figure 4 - Injections.dwg [Figure 4] April 06, 2020 - 9:53am Daniel.Wulf

APPENDIX A

EMERGING CONTAMINANT-RELATED DOCUMENTS

APPENDIX A1

April 19, 2018 NYSDEC letter to Iskalo
Requesting Groundwater Sampling for Emerging Contaminants

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7220 | F: (716) 851-7226
www.dec.ny.gov

April 19, 2018

Mr. David Chiazza
Iskalo Ellicottville Holding, LLC
5166 Main Street
Williamsville, NY 14221

Dear Mr. Chiazza:

Request for Sampling of Emerging Contaminants
Site Name: Signore Inc.,
Ellicottville, Cattaraugus County
Site ID: **905023**

The New York State Department of Environmental Conservation (DEC) is undertaking a Statewide evaluation of remediation sites to better understand the risk posed to New Yorkers by 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at the levels that are now thought to represent a health concern. This initiative is being undertaken as a result of these "emerging contaminants" having been found in a number of drinking water supplies in New York. Accordingly, the DEC is requiring that you test site groundwater for these chemicals. To accommodate this requirement, a select number of existing monitoring wells, representative of the potential of the above-referenced site to be a source of these emerging contaminants, must be sampled. DEC recommends that at least one of these wells should be up gradient of the site.

The attached guidance provides information on the analytical methods and reporting requirements. A second guidance document describes special precautions that need to be considered when sampling for PFAS.

Please prepare a draft letter work plan that identifies the wells proposed for sampling, brief description of the sampling methods, and anticipated sampling date within the next 60 days. If you wish to discuss the scope of the requested water testing, please contact me at 716-851-7220 or Jaspal.walia@dec.ny.gov.

Sincerely,

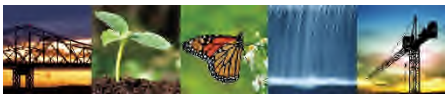
Jaspal S. Walia, P.E.
Project Manager

JSW/tm

ec: C. Staniszewski, NYSDEC
J. Richert, GZA Geo Environmental of New York

Appendix A2

June 27, 2018 GZA Work Plan for Sampling of Emerging Contaminants



Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

GZA GeoEnvironmental of NY
300 Pearl Street
Suite 700
Buffalo, NY 14202
T: 716-685-2300
F: 716-248-1472
www.gza.com

VIA EMAIL

June 27, 2018
File No. 21.0056867.00

Mr. Jaspal S. Walia, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203
jaspal.walia@dec.ny.gov

Re: Work Plan
Sampling and Analysis of Emerging Contaminants
Former Signore, Inc., Superfund Site (Site Number 905023)
55-57 Jefferson Street
Ellicottville, NY 14731

Dear Jaspal:

On behalf of our client, Iskalo Ellicottville Holding, LLC (Iskalo), GZA GeoEnvironmental of New York (GZA) provides this work plan to NYSDEC for groundwater sampling and analysis of emerging contaminants at the above referenced property (Site). This work plan was developed in response to the April 19, 2018 letter[1] to Iskalo from NYSDEC. That letter requested sampling for emerging contaminants in Site groundwater, including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane.

BACKGROUND

The Signore Inc. property is currently listed as site number 905023, a Class 4 site on the NYSDEC Inactive Hazardous Waste Site (IHWS) listing. As you know, NYSDEC is undertaking a Statewide evaluation of remediation sites to better understand the risk posed by PFAS and 1,4-dioxane. PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at levels that are now thought to represent a health concern. This initiative is being undertaken as a result of the emerging contaminants having been found in a number of drinking water supplies in New York.

This scope of work pertains to the NYSDEC requested sampling of four groundwater monitoring wells located at the Signore Superfund Site.

[1] Request for Sampling of Emerging Contaminants, Site Name: Signore, Inc., Ellicottville, Cattaraugus County, Site ID: 905023 from NYSDEC to Iskalo Ellicottville Holding, LLC

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SCOPE OF WORK

Task 1: Project Preparation

GZA will prepare an updated Site-specific Health and Safety Plan (HASP) for protection of GZA field personnel, addressing potential risks of exposure and safety issues associated with the sampling tasks. GZA will coordinate with an analytical laboratory, ALS Global (ALS, Kelso, Washington), prior to the commencement of field activities.

Task 2: Well Sampling

GZA will sample four existing wells on the Superfund Site: MW-4S (upgradient groundwater flow direction), MW-5S, EW-1.25, and EW-4.5 (**Figure 1**).

Due to the potential presence of PFAS in common consumer products and in equipment typically used to collect groundwater samples, and the low detection limits associated with laboratory PFAS analysis, special handling and care must be taken when collecting samples.

Personal Protective Equipment

Disposable nitrile gloves must be worn at all times. Further, a new pair of nitrile gloves will be donned prior to the following activities at each sample location during:

1. Decontamination of re-usable sampling equipment. The water level is the anticipated piece of re-usable equipment requiring decontamination, as remaining equipment contacting purged and sampled groundwater is dedicated and disposable (HDPE and silicone tubing).
2. Contact with sample bottles or water containers.
3. Insertion of anything into the well (e.g., tubing, water level).
4. Insertion of silicon tubing into the peristaltic pump.
5. Sample collection, at completion of monitoring well purging.
6. Handling of quality assurance/quality control samples including field blanks and equipment blanks.

New gloves will also be worn after the handling of any non-dedicated sampling equipment, contact with non-decontaminated surfaces, or when judged necessary by field personnel.

Equipment Cleaning and Decontamination

Prior to GZA's arrival on-Site, a water level indicator, water quality meter, and flow-through cell will be cleaned by rinsing with potable water, washing with a solution of laboratory detergent (granular Alconox®) and potable water, and rinsing with potable water and then verified PFAS-free water provided by ALS. The water level indicator will be cleaned between sampling locations at the Site using the granular Alconox® solution. Liquinox® has potentially been shown to contain low levels of 1,4-dioxane and will not be used. GZA contacted an Alconox chemist via telephone, who confirmed granular Alconox does not contain PFAS or 1,4-dioxane. The water level will be cleaned by removing gross contamination (if encountered) from the probe. The water level will then be cleaned using the granular Alconox and potable water solution. The equipment will then be rinsed with potable water, and then rinsed again with PFAS-free water provided by ALS. The water level will then be left to air dry between sampling locations. Decontamination water will be placed on the ground with the purged groundwater generated during the sampling event.

New disposable HDPE tubing (for placement down into the well and connection to the water quality meter) and silicone tubing (for the pump head) will be used for sampling at each location. Therefore, there will be no need to clean the sample tubing. Generated dedicated sampling materials will be disposed of as solid waste.

A variable-speed peristaltic pump will be used to purge groundwater from the monitoring wells. Groundwater will remain within the HDPE and silicone tubing and will not come in contact with the pump, so the pump will not need to be decontaminated between monitoring locations. New flexible silicone tubing within the pump will be used at each well sampling location.

Equipment Calibration

A water quality meter and organic vapor meter (OVM) will be used for the groundwater sampling and each will require calibration. Equipment will be calibrated in accordance with the manufacturers' requirements.

Monitoring & Purging Methodologies

Prior to accessing the monitoring wells, field staff will make observations about the general exterior conditions of the monitoring wells (i.e., condition of the surface seal, damage to the protective casing, etc.). These observations will be noted on plain paper (not typical waterproof field books, which may contain PFAS) to record notes and data at each monitoring well sampling location.

The OVM, equipped with photoionization detector (PID) and a 10.6 eV ultraviolet lamp, will be used to screen the top of the well riser immediately upon removal of the monitoring well riser cap. OVM readings will be recorded on the field sampling log.

Prior to the start of the monitoring and purge event, a static water level will be measured from the top of the monitoring well riser and recorded on the monitoring well sampling log. New HDPE polyethylene tubing will be lowered into the monitoring well and positioned at the approximate vertical center of the well screen intake zone. Information about the well screen intake depth and depth of well will be taken from the existing monitoring well logs.

The peristaltic pump will be started and operated at a flow rate that minimizes draw-down of the water column within the well. The first set of water quality readings will be collected when the flow-through cell is completely full and water begins to flow out. Readings will be recorded every five minutes once a constant head has been established and will continue until water quality readings stabilize for three successive readings. These three successive readings should be within ± 0.1 for pH, ±3% for conductivity, ± 10 mV for oxidation reduction potential (ORP) and ± 10% for turbidity and dissolved oxygen (DO). Once a constant head is established, pumping flow rates should not be altered. Sampling flow rates will be kept consistent with purging/monitoring flow rates. Altering the flow rates may adversely change the chemistry within the well (i.e., stagnant water within the well may mix with formation water coming into the well and not be representative).

Once the water quality readings have stabilized after a constant head has been established, groundwater analytical samples will be collected. The HDPE tubing from the peristaltic pump to the water quality meter will be disconnected from the input to the water quality meter and used to fill the appropriate groundwater sample jars, provided by the laboratory. Groundwater to be collected for analysis will not enter the flow-through cell, to minimize the chance of cross contamination.

After the appropriate sample containers have been filled, the pump will be shut off. The tubing removed from the monitoring well and pump head and will be disposed of as solid waste. The flow-through cell and water quality meter will be rinsed with potable water to remove sediment that may have accumulated.

Water generated during the purging/monitoring and equipment decontamination will be placed on the ground in the vicinity of the monitoring well from which it was generated.

Sample Collection Method/Sequence

1. Samples for laboratory analyses will be collected before the flow-through cell. This will be done by disconnecting the HDPE tubing from the flow through cell so that the samples are collected directly from the pump tubing.
2. Using new nitrile gloves, the sample for PFAS will be collected *first*, prior to collecting samples for other parameters (1,4-dioxane) into other containers. This avoids contact with any other type of sample container, bottles or package materials that may have PFAS-related content.
3. The sample bottle cap will not be placed on any surface when collecting the sample. All contact with the inside of the sample bottle or its cap will be avoided.
4. Once the sample is collected, capped and labeled, the sample will be placed in an individual re-sealable plastic bag and then into loose ice within the cooler.

Groundwater Analytical Testing

GZA will collect a groundwater sample from four existing wells (MW-4S, MW-5S, EW-1.25, and EW-4.5) for chemical analysis of the 21 PFAS compounds and 1,4-dioxane, along with the appropriate quality control samples (trip blank, sampler blank, equipment blank, field duplicate sample, and matrix spike/matrix spike duplicate (MS/MSD) samples) for a total of nine groundwater samples to be submitted for analysis via modified EPA Method 537 (PFAS) and seven by EPA Method 8270-SIMS (1,4-dioxane). The method detection limit (MDL) for 1,4-dioxane will not exceed 0.28 µg/L (ppb). GZA stresses the critical importance of appropriate collection and analysis of Quality Assurance/Quality Control (QA/QC) samples and field equipment blanks, due to the inherent low-level PFAS MDLs (parts per trillion, ppt) and potentially negative consequences of false positive detections.

GZA assumes a ten to 15 business-day turn-around time for analytical test results. The analytical data package to be provided by the laboratory will be an Analytical Services Protocol (ASP) Category B package. NYSDEC requires third-party data validation for this sampling and analysis event. The sub-contracted data validator will prepare a Data Usability Summary Report (DUSR) as detailed in Section 2 of Appendix 2B of NYSDEC DER-10, (Technical Guidance for Site Investigation and Remediation).

Currently, the Environmental Laboratory Approval Program (ELAP) does not offer method certification for PFAS compounds in groundwater. As requested by NYSDEC, collected samples will be analyzed for the following PFAS by modified EPA Method 537 (certified drinking water method). The laboratory report must show the reporting detection limits (RDLs) for each compound and the lab must report the results to the RDL. RDLs for PFAS analysis will not exceed 2 ng/L (ppt). Only the RDLs will be reported; MDLs will not be included in the report.

Full PFAS Target Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated telomer sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the six original UCMR3 chemicals.

Some analytical laboratories report slightly different forms of sulfonic acids, such as PFOS (i.e., perfluorooctanesulfonic acid vs. perfluorooctane sulfonate), which vary slightly from one another in molecular weight, resulting in slight differences in reported concentrations. **Confirm with the analytical laboratory that the form of sulfonic acids being analyzed and reported correspond to the appropriate CAS Number.** If the lab analyzes for one form and reports the other form, the lab must show the conversion calculations in the report.

Quality Assurance Quality Control (QA/QC)

Many clothing items and types of field equipment may contain PFAS, which increases the potential for inadvertent contamination of the samples.

To evaluate the potential impact that these and other laboratory-provided materials may have on PFAS sampling, the following QA/QC samples shall be collected:

- Trip Blanks
  - Separate trip blanks for PFAS and 1,4-dioxane samples will be prepared by the laboratory prior to the sampling event.

- One PFAS/1,4-dioxane trip blank (respectively) per chain-of-custody, per cooler is acceptable.

- Field Duplicates
  - Duplicate samples shall be collected by filling a separate container for each analysis immediately following the collection of the primary sample (e.g., PFAS sample, PFAS duplicate sample; 1,4-dioxane sample, 1,4-dioxane duplicate sample).
  - Duplicate samples shall be collected at a frequency of one duplicate sample per twenty field samples (1:20) with a minimum of one duplicate.

- Equipment Blanks - for non-dedicated equipment used to collect samples (water level)
  - Separate equipment blanks for PFAS and 1,4-dioxane will be field prepared using PFAS-free laboratory grade deionized (DI) water provided by the laboratory.
  - Equipment blanks will consist of a sample of PFAS-free laboratory grade DI water poured over the sample collection equipment (water level) to evaluate the equipment decontamination procedures and the potential for cross-contamination between sample locations.
  - One equipment blank per type of non-dedicated equipment shall be collected per sampling event (e.g., water level meter).

- Field Blanks
  - A field blank will be collected from the PFAS-free water provided by the laboratory by pouring an aliquot of the water into the appropriate PFAS sample container immediately following the collection of the first PFAS sample by each sampler.
  - At a minimum, field blanks must be collected by each person collecting PFAS samples.

Equipment and Materials

The following table provides a summary of items that are likely to contain PFAS (i.e., prohibited items) and that are not to be used by the sampling team, along with acceptable alternatives. This list may change as new information becomes available or as determined appropriate by NYSDEC.

Category	**Prohibited Items**	**Allowable Items**
Sample Storage and Preservation	LDPE or glass bottles, PTFE-or Teflon-lined caps, chemical ice packs [2]	Laboratory-provided sample container -*preferred*; or, HDPE or polypropylene bottles with an unlined plastic screw cap, as specified by the laboratory doing the analysis, loose ice
Decontamination	Decon 90	Granular Alconox®[1], potable water followed by laboratory "PFAS-free" deionized water rinse.
Field Equipment Including: • Pumps • Tubing • Bailers	Teflon and other fluoropolymer containing materials (e.g., Teflon tubing, bailers, tape, Teflon-containing plumbing paste, or other Teflon materials)	High-density polyethylene (HDPE) – *preferred,* low density polyethylene (LDPE) or silicone tubing HDPE/LDPE or stainless-steel bailers Peristaltic pumps Stainless steel submersible pumps (e.g., ProActive stainless-steel pumps with PVC (polyvinyl chloride) leads and Geotech Stainless Steel Geosub pumps)

Category	Prohibited Items	Allowable Items
	The Grundfos Redi-Flow Submersible Pump is a submersible pump which, as of this revision, has a Teflon impeller and is not recommended for collecting PFAS samples.	Equipment with Viton components needs to be evaluated on a case by case basis. Viton contains PTFE but may be acceptable if used in gaskets or O-rings that are sealed away and will not come into contact with sample or sampling equipment.)
Field Documentation	Waterproof/treated paper or field books, plastic clipboards, non-Sharpie markers, Post-It® and other adhesive paper products	Plain Paper, metal clipboard, Sharpies[3], pens
Clothing/ laundering	Clothing or boots made of or with Gore-Tex™ or other synthetic water proof/ resistant and/or stain resistant materials, coated Tyvek® material that may contain PFAS; fabric softener	Synthetic or cotton material, previously laundered clothing (preferably previously washed greater than six times) without the use of fabric softeners. Polyurethane and wax coated materials. Boots made with polyurethane and PVC, well-worn or untreated leather boots Tyvek material that is PFAS free (e.g., uncoated)
Personal Care Products (for day of sample collection)	Cosmetics, moisturizers, hand cream and other related products	**Sunscreens:** Alba Organics Natural Yes to Cucumbers Aubrey Organics Jason Natural Sun Block Kiss My Face Baby-safe sunscreens ('free' or 'natural) **Insect Repellents**: Jason Natural Quit Bugging Me Repel Lemon Eucalyptus Herbal Armor California Baby Natural Bug Spray BabyGanics **Sunscreen and Insect Repellents:** Avon Skin So Soft Bug Guard-SPF 30
Food and Beverage	Pre-packaged food, fast food wrappers or containers	Bottled water or hydration drinks (i.e., Gatorade® and Powerade®)
Shelter	The use of a canopy/gazebo/tent, which can be erected over the sample location to provide shelter, may be considered. Note that the canopy is likely to have a treated surface and must be handled with care. Gloves must be worn when setting up and moving the tent and then changed immediately afterwards. Further contact with the tent must be avoided until all PFAS samples have been collected and properly stored.	

Notes:

1. While Liquinox soap is acceptable for use for PFAS decontamination, it may contain 1,4-dioxane, which is a site contaminant of interest. An equipment blank (water level) will be analyzed for 1,4-dioxane.
2. Samples requiring cooling must be placed in loose ice within a cooler; the use of bagged ice, block ice and ice packs is not acceptable.
3. Sharpies may be used if necessary on the labels; however, only ball point pens with black ink shall be used to record field data (e.g., calibration logs, worksheets, log books). Sharpies can bleed through pages and smudge, making the documentation hard to read.

Task 3: EQuIS Electronic Data Deliverable Submittal

NYSDEC has implemented an Environmental Information Management System (EIMS) that uses the database software application EQuIS™ (EQuIS) from EarthSoft® Inc. NYSDEC's Division of Environmental Remediation (DER) and the Division Materials Management (DMM) (formerly Solid and Hazardous Materials) require certain types of data to be submitted electronically, the Signore Site is one of those projects. DER and DMM have adopted a standardized electronic data deliverable (EDD) format that is required for data submitted. Data must be formatted to meet the guidelines specified by NYSDEC.

Data providers are responsible for submitting a complete data package. The laboratory will provide their data to GZA, who must verify the supporting tables (such as sample location coordinates) are complete.

The data will be imported into the EQuIS Data Processor (EDP) to check that the EDD as well as the NYSDEC DER Format file are properly formatted. The EDP performs a series of formatting checks on the EDD and identifies errors in the data file prior to submission. Errors must be addressed prior to submittal to NYSDEC.

Once the EDD has cleared the EDP checker, it will be submitted to NYSDEC. If the submission package is less than 25 MB in size, the compressed file is to be submitted to NYENVDATA@gw.dec.state.ny.us with a copy to the NYSDEC project manager (Mr. Jaspal Walia, P.E.). If the file is larger than 25 MB it will be submitted via CD-ROM to the NYSDEC project manager.

Task 4: Monitoring Well Data Analysis/Report Preparation

GZA will prepare a report containing our observations and conclusions and will provide an electronic copy of the report. A *DRAFT* copy of the report will be provided to NYSDEC for review and comment. The report will present the analytical data generated and provide an opinion regarding the resultant concentrations at the Superfund Site. Our letter report will include a presentation of the tabulated data and a figure representing groundwater elevations at the time of sampling.

SCHEDULE

GZA can begin work immediately upon approval of this work plan. We anticipate that the groundwater sampling will be conducted in July 2018. The comprehensive report can be issued within approximately four to six weeks from completion of sampling.

We trust this work plan meets NYSDEC's requirements. Please do not hesitate to contact Thomas Bohlen at (716) 844-7050 should you have any questions or require additional information.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

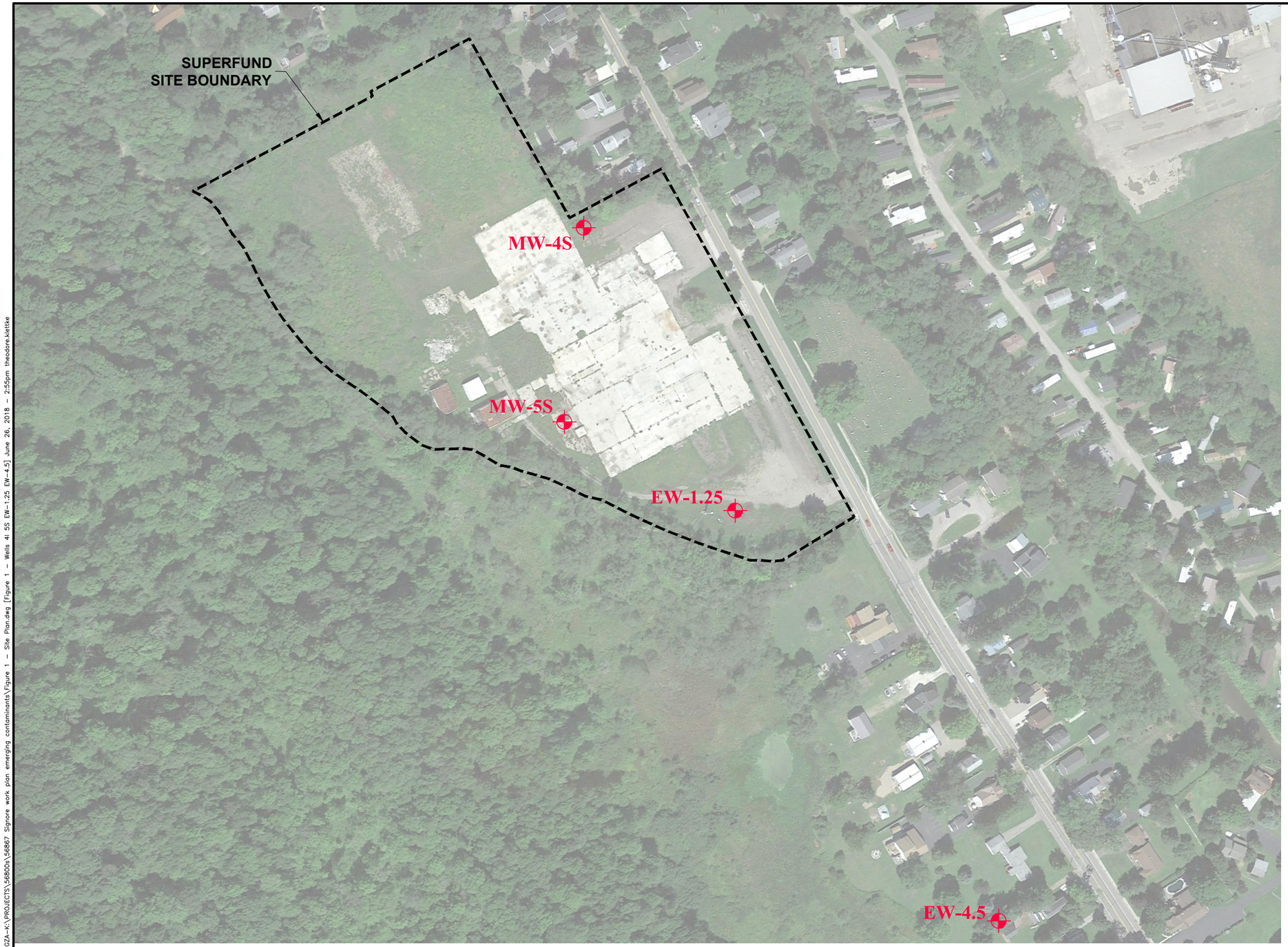
Thomas Bohlen, P.G.
Project Manager

Karen Kinsella, Ph. D.
Senior Technical Specialist

Bart A. Klettke, P.E.
Principal

Attachments: Figure 1

cc: Mr. David Chiazza, Iskalo Ellicottville Holding, LLC



N
W E
S

NOTES:

1. BASE MAP ADAPTED FROM A 2018 AERIAL IMAGE DOWLOADED FROM GOOGLE EARTH PRO AND FIELD OBSERVATIONS.

2. BLACK DASHED LINE SIGNIFIES THE LIMITS OF THE SUPERFUND SITE AS PROVIDED BY THE NYSDEC.

3. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

MW-4S — APPROXIMATE LOCATION AND DESIGNATION OF AN EXISTING SITE MONITORING WELL PROPOSED FOR EMERGING CONTAMINANT SAMPLING

0 200 400

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

FORMER SIGNORE FACILITY
SITE 905023
55 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

GROUNDWATER WELL SAMPLING WORK PLAN, EMERGING CONTAMINANTS

SITE PLAN

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
300 PEARL STREET, SUITE 700
BUFFALO, NEW YORK 14202
(716) 685-2300

PREPARED FOR: NYSDEC

PROJ MGR: TB	REVIEWED BY: BAK	CHECKED BY: BAK	FIGURE 1
DESIGNED BY: TB	DRAWN BY: MDK	SCALE: AS SHOWN	
DATE JUNE 2018	PROJECT NO. 21.0056867.00	REVISION NO.	

©2018 – GZA GeoEnvironmental of N.Y.
GZA–K:\PROJECTS\56800s\56867 Signore work plan emerging contaminants\Figure 1 – Site Plan.dwg [Figure 1 – Wells 4I 5S EW–1.25 EW–4.5] June 26, 2018 – 2:55pm theodore.kiettke

Appendix A3

June 27, 2018 NYSDEC Email of Approval of GZA's Work Plan for Sampling of Emerging Contaminants

James Richert

From: Thomas Bohlen
Sent: Wednesday, February 20, 2019 1:27 PM
To: 'Walia, Jaspal (DEC)'
Cc: Staniszewski, Chad (DEC) (chad.staniszewski@dec.ny.gov); 'Chiazza, David'
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

Hi Jaspal,

If you remember from our fall activities, the most critical well at the site (EW-1.25) requires decommissioning and replacement (well screen failed and has been clogged/is not interacting with the groundwater formation). I conferred with yourself, and then Chad. The emerging contaminants testing (for which I am under contract to conduct for Iskalo) has been postponed to the spring, following new replacement well installation and development. I will forward that correspondence.

I hope else all is well, please see Chad or me with additional concerns.

Tom

Thomas Bohlen, P.G.
Project Manager
GZA | 300 Pearl Street, Suite 700 | Buffalo, New York 14202
o: 716.844.7050 | c: 716.570.5983 | thomas.bohlen@gza.com | www.gza.com | LinkedIn

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From: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Sent: Wednesday, February 20, 2019 1:03 PM
To: Thomas Bohlen <Thomas.Bohlen@gza.com>
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

Hi Tom,

Could you please give me an update for EC sampling at the Signore site.

Thanks,

Jaspal

From: Thomas Bohlen <Thomas.Bohlen@gza.com>
Sent: Wednesday, June 27, 2018 11:45 AM
To: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Cc: Chiazza, David <dchiazza@Iskalo.com>; Bart Klettke <bart.klettke@gza.com>; Karen Kinsella <Karen.Kinsella@gza.com>
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Good morning Jaspal,

As requested, please see the attached finalized work plan. Please reach out to me with issues or concerns.

Tom

Thomas Bohlen, P.G.
Project Manager

GZA | 300 Pearl Street, Suite 700 | Buffalo, NY 14202
o: 716-844-7050 | c: 716-570-5983 | thomas.bohlen@gza.com | www.gza.com

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From: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Sent: Wednesday, June 27, 2018 11:02 AM
To: Thomas Bohlen <Thomas.Bohlen@gza.com>
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

Hi Tom,

The proposed monitoring wells for sampling for the emerging contaminants are acceptable. Please finalize this work plan and submit it for our approval.

Thanks,

Jaspal

From: Thomas Bohlen [mailto:Thomas.Bohlen@gza.com]
Sent: Tuesday, June 26, 2018 3:09 PM
To: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Cc: Staniszewski, Chad (DEC) <chad.staniszewski@dec.ny.gov>; Chiazza, David <dchiazza@Iskalo.com>; Bart Klettke <bart.klettke@gza.com>
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hi Jaspal and Chad,

Thank you for taking my calls yesterday and for providing additional clarification regarding the draft work plan.

As I discussed with Chad, please see the attached revised work plan proposing to sample wells MW-4S, MW-5S, EW-1.25, and EW-4.5.

Please contact me with additional questions, thanks!

Tom

Thomas Bohlen, P.G.
Project Manager

GZA | 300 Pearl Street, Suite 700 | Buffalo, NY 14202
o: 716-844-7050 | c: 716-570-5983 | thomas.bohlen@gza.com | www.gza.com

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From: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Sent: Monday, June 18, 2018 3:30 PM
To: Thomas Bohlen <Thomas.Bohlen@gza.com>
Cc: Staniszewski, Chad (DEC) <chad.staniszewski@dec.ny.gov>; Chiazza, David <dchiazza@Iskalo.com>; Bart Klettke <bart.klettke@gza.com>
Subject: RE: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

Hi Tom,

Based upon the previous groundwater data, the Department requests that the following wells should be sampled for emerging contaminants:

EW-1.25, EW-1.5, EW-4.5, MW-4S, and MW-5S.

Please revise the Work Plan and resubmit it for our further review.

Thanks,

Jaspal

From: Thomas Bohlen [mailto:Thomas.Bohlen@gza.com]
Sent: Wednesday, June 13, 2018 4:57 PM
To: Walia, Jaspal (DEC) <jaspal.walia@dec.ny.gov>
Cc: Staniszewski, Chad (DEC) <chad.staniszewski@dec.ny.gov>; Chiazza, David <dchiazza@Iskalo.com>; Bart Klettke <bart.klettke@gza.com>
Subject: Draft Work Plan - Sampling and Analysis of Emerging Contaminants - Signore Superfund Site

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hello Jaspal,

As requested and on behalf of our client Iskalo Ellicottville Holding, LLC, please see the attached draft work plan for sampling and analysis of emerging contaminants at the Signore Superfund Site.

Please don't hesitate to contact me with questions or concerns.

Tom

Thomas Bohlen, P.G.
Project Manager

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o: 716-844-7050 | c: 716-570-5983 | thomas.bohlen@gza.com | www.gza.com

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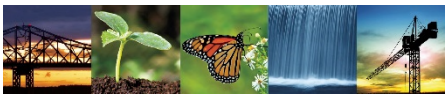
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Appendix A4

April 7, 2020
GZA Emerging Contaminant Sampling and Analysis Report



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Buffalo, NY 14202
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F: 716.248.1472
www.gza.com

VIA EMAIL

April 7, 2020
File No. 21.0056867.00

Ms. Megan Kuczka
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203
megan.kuczka@dec.ny.gov

Re: Sampling and Analysis of Emerging Contaminants
Former Signore, Inc., Superfund Site (Site Number 905023)
55-57 Jefferson Street
Ellicottville, NY 14731

Ms. Kuczka:

On behalf of our client, Iskalo Ellicottville Holding, LLC (Iskalo), GZA GeoEnvironmental of New York (GZA) provides this report to NYSDEC for groundwater sampling and analysis of emerging contaminants at the above referenced property (Site). This work was conducted in response to the April 19, 2018 letter[1] to Iskalo from NYSDEC. That letter requested sampling for emerging contaminants in Site groundwater, including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane.

GZA reported the results of this work to NYSDEC upon completion in summer 2019 via email; however, this letter is provided in accordance with your recent request to provide further observations and conclusions from that effort.

BACKGROUND

The Signore Inc. property is currently listed as site number 905023, a Class 4 site on the NYSDEC Inactive Hazardous Waste Site (IHWS) listing. As you know, NYSDEC is undertaking a statewide evaluation of remediation sites to better understand the risk posed by PFAS and 1,4-dioxane. PFAS have historically not been evaluated at remediation sites, and 1,4-dioxane has not been evaluated at levels that are now thought to represent a health concern. This initiative was undertaken as a result of the emerging contaminants having been found in numerous drinking water supplies in New York.

This report pertains to the NYSDEC requested sampling of four groundwater monitoring wells located at the Signore Superfund Site. The sampling and analysis were conducted in accordance with the NYSDEC approved Work Plan dated June 27, 2018.

[1] Request for Sampling of Emerging Contaminants, Site Name: Signore, Inc., Ellicottville, Cattaraugus County, Site ID: 905023 from NYSDEC to Iskalo Ellicottville Holding, LLC

Well Sampling and Analytical Testing

GZA sampled four existing wells on the Superfund Site as designated by NYSDEC: MW-4S (upgradient groundwater flow direction), MW-5S, EW-1.25R, and EW-4.5 from June 11 through 14, 2019 (**Attachment 1: Site Plan**).

Groundwater Analytical Testing and Results

As per the Work Plan, GZA collected groundwater samples from the four wells for chemical analysis of the 21 PFAS compounds and 1,4-dioxane, along with the appropriate quality control samples (trip blank, field blank, equipment blank (rinsate), field duplicate sample, and matrix spike/matrix spike duplicate (MS/MSD) samples) for a total of nine groundwater samples submitted for analysis via modified EPA Method 537 (PFAS) and seven by EPA Method 8270-SIMS (1,4-dioxane). Laboratory data reports are included as **Attachment 2** and Data Usability Summary Reports (DUSRs) are included as **Attachment 3**. Results were below method detection limits for the samples submitted for 1,4-dioxane analysis. A summary of PFAS detections is presented below.

MW-4S-2019

- Perfluorooctanesulfonic acid at 2.40 parts per trillion (ng/L)

MW-5S-2019

- Perfluorooctanesulfonic acid at 4.29 ng/L

EW-1.25R-2019

- Perfluorobutanoic acid at 5.71 ng/L (J)
- Perfluoropentanoic acid at 1.69 ng/L (J)
- Perfluorohexanoic acid at 1.22 ng/L (J)
- Perfluorooctanoic acid at 1.69 ng/L (J)
  Note: J Qualifier indicates estimated concentration between the laboratory Reporting Limit and the Method Detection Limit

EW-4.5-2019
No detections reported in this sample.

PFAS-DUPLICATE
No detections reported in this sample.

PFAS-FIELD BLANK
No detections reported in this sample.

PFAS-RINSATE
No detections reported in this sample.

PFAS-TRIP BLANK
No detections reported in this sample.

These concentrations are below NYSDEC criteria[2] which indicates, "PFAS should be further assessed and considered as a potential contaminant of concern in groundwater or surface water if PFOA or PFOS is detected in any water sample at or above 10 ng/L (ppt). In addition, further assessment of water may be warranted if either of the following screening levels are met:

a. any other individual PFAS (not PFOA or PFOS) is detected in water at or above 100 ng/L; or
b. total concentration of PFAS (including PFOA and PFOS) is detected in water at or above 500 ng/L".

CONCLUSION AND RECOMMENDATIONS

Based upon the work conducted and comparison of the concentrations of the detected compounds to NYSDEC guidance, it is GZA's opinion that no further action is required requiring emerging contaminant sampling and analysis at the Site.

We trust this letter report meets NYSDEC's requirements. Please do not hesitate to contact Thomas Bohlen at (716) 844-7050 or via email at thomas.bohlen@gza.com should you have any questions or require additional information.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Thomas Bohlen, P.G.
Project Manager

Bart A. Klettke, P.E.
Principal

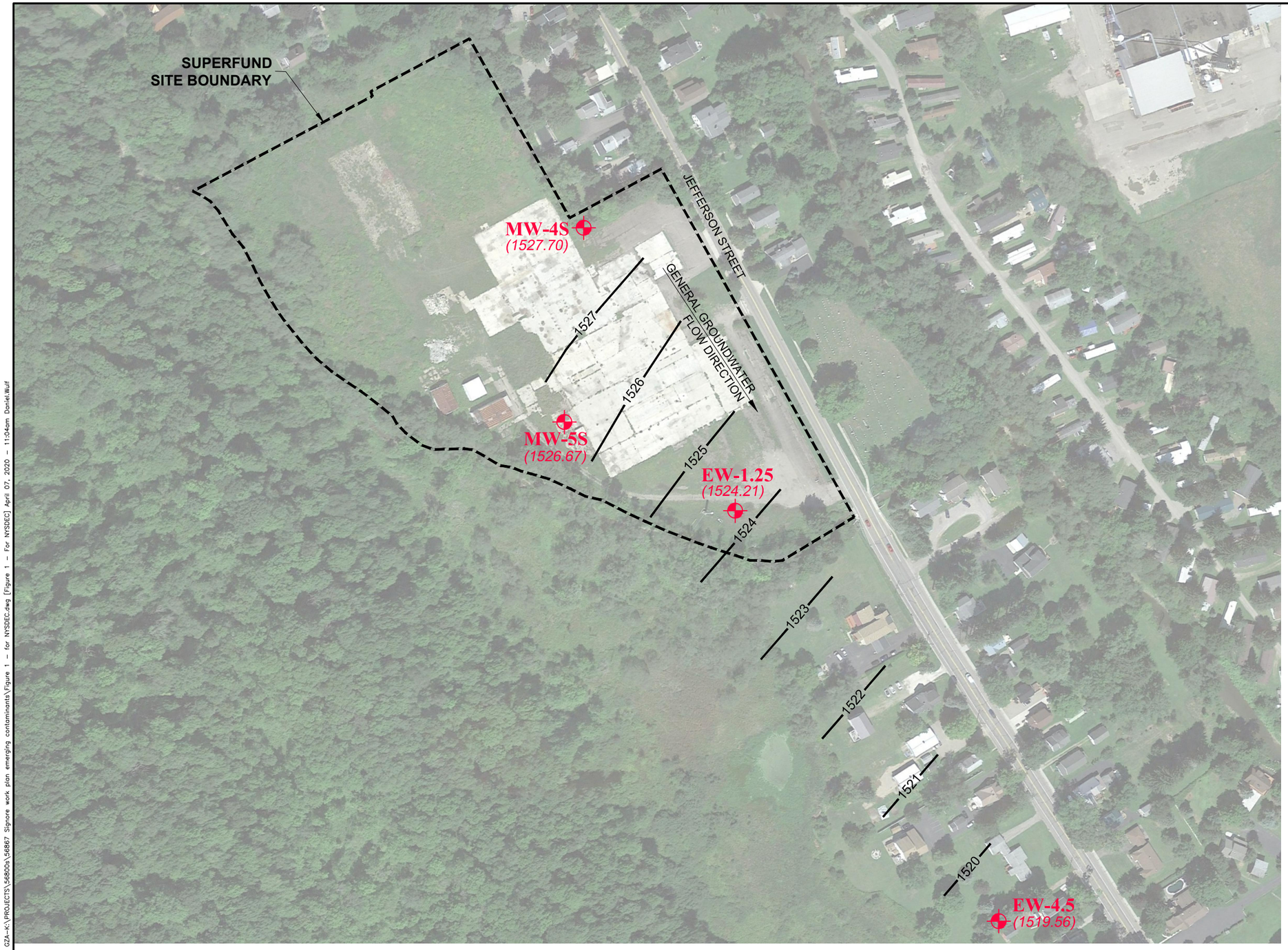
Attachments: Attachment 1: Figure 1 - Site Plan
Attachment 2: Laboratory Data Reports
Attachment 3: Data Usability Summary Reports

cc: Mr. David Chiazza, Iskalo Ellicottville Holding, LLC

[2] Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Remedial Programs dated January 2020.

ATTACHMENT 1

Site Plan



N
W E
S

NOTES:

1. BASE MAP ADAPTED FROM A 2018 AERIAL IMAGE DOWLOADED FROM GOOGLE EARTH PRO AND FIELD OBSERVATIONS.

2. BLACK DASHED LINE SIGNIFIES THE LIMITS OF THE SUPERFUND SITE AS PROVIDED BY THE NYSDEC.

3. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

4. WELLS ARE SCREENED AT VARYING DEPTHS OF FORMATION.

LEGEND:

MW-4S (1527.70) — APPROXIMATE LOCATION AND DESIGNATION OF SITE MONITORING WELL SAMPLED FOR EMERGING CONTAMINANTS ON JUNE 11-14, 2019 (GROUNDWATER ELEVATIONS MEASURED ON JUNE 11, 2019 SHOWN)

1521 — APPROXIMATE LOCATION AND ELEVATION OF GROUNDWATER CONTOURS BASED ON INTERPOLATING BETWEEN MEASUREMENTS TAKEN IN WIDELY SPACED MONITORING WELLS

0 100 200 400
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

FORMER SIGNORE FACILITY
SITE 905023
55 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

GROUNDWATER WELL SAMPLING, EMERGING CONTAMINANTS
SITE PLAN

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PREPARED BY:
GZA GeoEnvironmental of N.Y.
Engineers and Scientists
300 PEARL STREET, SUITE 700
BUFFALO, NEW YORK 14202
(716) 685-2300

PREPARED FOR: NYSDEC

PROJ MGR: TB	REVIEWED BY: BAK	CHECKED BY: BAK	FIGURE 1
DESIGNED BY: TB	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE APRIL 2020	PROJECT NO. 21.0056867.00	REVISION NO.	

©2020— GZA GeoEnvironmental of N.Y. G:\ZA-K\PROJECTS\56800s\56867 Signore work plan emerging contaminants\Figure 1 – for NYSDEC.dwg [Figure 1 – For NYSDEC] April 07, 2020 – 11:04am Daniel.Wulf

ATTACHMENT 2

Laboratory Data Reports

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



Technical Report for

GZA Geo Environmental

Former Signore Inc; Ellicottville, NY

SGS Job Number: FA65213

Sampling Dates: 06/11/19 - 06/14/19

Report to:

GZA GeoEnvironmental, Inc.
300 Pearl St Suite 700
Buffalo, NY 14202
thomas.bohlen@gza.com

ATTN: Thomas Bohlen

Total number of pages in report: **536**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Caitlin Brice, M.S.
General Manager

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

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SGS North America Inc.

Sample Summary

GZA Geo Environmental

Job No: FA65213

Former Signore Inc; Ellicottville, NY

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA65213-1	06/11/19	12:20	TB	06/15/19	AQ	Ground Water	EW-4.5-2019
FA65213-2	06/11/19	15:30	TB	06/15/19	AQ	Ground Water	EW-4S-2019
FA65213-3	06/11/19	14:30	TB	06/15/19	AQ	Ground Water	EW-5S-2019
FA65213-3D	06/11/19	14:30	TB	06/15/19	AQ	Water Dup/MSD	EW-5S-2019
FA65213-3S	06/11/19	14:30	TB	06/15/19	AQ	Water Matrix Spike	EW-5S-2019
FA65213-4	06/14/19	09:30	TB	06/15/19	AQ	Ground Water	EW-1.25R-2019
FA65213-5	06/11/19	00:00	TB	06/15/19	AQ	Ground Water	PFAS-DUPLICATE
FA65213-6	06/11/19	14:07	TB	06/15/19	AQ	Field Blank Water	PFAS-FIELD BLANK
FA65213-7	06/11/19	12:00	TB	06/15/19	AQ	Equipment Blank	PFAS-RINSATE
FA65213-8	06/11/19	10:15	TB	06/15/19	AQ	Trip Blank Water	PFAS-TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GZA Geo Environmental **Job No:** FA65213

Site: Former Signore Inc; Ellicottville, NY **Report Date** 6/27/2019 5:18:13

6 Sample(s), 1 Trip Blank(s) and 1 Field Blank(s) were collected between 06/11/2019 and 06/14/2019 and were received at SGS North America Inc - Orlando on 06/15/2019 properly preserved, at 1.3 Deg. C and intact. These Samples received an SGS Orlando job number of FA65213. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: AQ **Batch ID:** OP75580

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA65213-3MS, FA65213-3MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Blank Spike Recovery(s) for Perfluorodecanesulfonic acid are outside control limits.

Matrix Spike Recovery(s) for Perfluorodecanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Perfluorodecanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

FA65213-1 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-2 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-3 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-6 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-7 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-8 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

Matrix: AQ **Batch ID:** OP75639

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC90114-2MS were used as the QC samples indicated.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Ariel Hartney, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA65213
Account: GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY
Collected: 06/11/19 thru 06/14/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA65213-1	**EW-4.5-2019**					
No hits reported in this sample.						
FA65213-2	**EW-4S-2019**					
Perfluorooctanesulfonic acid		2.40	2.0	1.5	ng/l	EPA 537M BY ID
FA65213-3	**EW-5S-2019**					
Perfluorooctanesulfonic acid		4.29	2.0	1.5	ng/l	EPA 537M BY ID
FA65213-4	**EW-1.25R-2019**					
Perfluorobutanoic acid		5.71 J	8.0	2.0	ng/l	EPA 537M BY ID
Perfluoropentanoic acid		1.69 J	4.0	1.5	ng/l	EPA 537M BY ID
Perfluorohexanoic acid		1.22 J	4.0	1.0	ng/l	EPA 537M BY ID
Perfluorooctanoic acid		1.69 J	2.0	1.0	ng/l	EPA 537M BY ID
FA65213-5	**PFAS-DUPLICATE**					
No hits reported in this sample.						
FA65213-6	**PFAS-FIELD BLANK**					
No hits reported in this sample.						
FA65213-7	**PFAS-RINSATE**					
No hits reported in this sample.						
FA65213-8	**PFAS-TRIP BLANK**					
No hits reported in this sample.						

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-4.5-2019		
Lab Sample ID:	FA65213-1	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31231.D	1	06/23/19 22:54	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-4.5-2019		
Lab Sample ID:	FA65213-1	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	106%		30-140%
	13C5-PFPeA	111%		40-140%
	13C5-PFHxA	114%		50-150%
	13C4-PFHpA	120%		50-150%
	13C8-PFOA	129%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	105%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	75%		50-150%
	13C2-PFTeDA	65%		40-150%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	104%		30-140%
	d3-MeFOSAA	85%		50-150%
	13C2-6:2FTS	144%		50-150%
	13C2-8:2FTS	106%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-4S-2019		
Lab Sample ID:	FA65213-2	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31232.D	1	06/23/19 23:09	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.40	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-4S-2019		
Lab Sample ID:	FA65213-2	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		30-140%
	13C5-PFPeA	98%		40-140%
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	109%		50-150%
	13C8-PFOA	119%		50-150%
	13C9-PFNA	125%		50-150%
	13C6-PFDA	112%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	66%		40-150%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	91%		30-140%
	d3-MeFOSAA	90%		50-150%
	13C2-6:2FTS	135%		50-150%
	13C2-8:2FTS	119%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-5S-2019		
Lab Sample ID:	FA65213-3	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31233.D	1	06/23/19 23:24	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	4.29	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-5S-2019		
Lab Sample ID:	FA65213-3	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		30-140%
	13C5-PFPeA	102%		40-140%
	13C5-PFHxA	104%		50-150%
	13C4-PFHpA	112%		50-150%
	13C8-PFOA	121%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	111%		50-150%
	13C7-PFUnDA	82%		50-150%
	13C2-PFDoDA	73%		50-150%
	13C2-PFTeDA	56%		40-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	100%		30-140%
	d3-MeFOSAA	86%		50-150%
	13C2-6:2FTS	136%		50-150%
	13C2-8:2FTS	120%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-1.25R-2019		
Lab Sample ID:	FA65213-4	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31503.D	1	06/27/19 04:51	NG	06/26/19 07:30	OP75639	S2Q501
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	5.71	8.0	2.0	ng/l	J
2706-90-3	Perfluoropentanoic acid	1.69	4.0	1.5	ng/l	J
307-24-4	Perfluorohexanoic acid	1.22	4.0	1.0	ng/l	J
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	1.69	2.0	1.0	ng/l	J
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-1.25R-2019		
Lab Sample ID:	FA65213-4	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		30-140%
	13C5-PFPeA	96%		40-140%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	124%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	115%		50-150%
	13C7-PFUnDA	102%		50-150%
	13C2-PFDoDA	97%		50-150%
	13C2-PFTeDA	58%		40-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	80%		30-140%
	d3-MeFOSAA	106%		50-150%
	13C2-6:2FTS	144%		50-150%
	13C2-8:2FTS	122%		50-150%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-DUPLICATE		
Lab Sample ID:	FA65213-5	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31504.D	1	06/27/19 05:06	NG	06/26/19 07:30	OP75639	S2Q501
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: PFAS-DUPLICATE
Lab Sample ID: FA65213-5
Matrix: AQ - Ground Water
Method: EPA 537M BY ID EPA 537 MOD
Project: Former Signore Inc; Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/15/19
Percent Solids: n/a

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	105%		30-140%
	13C5-PFPeA	111%		40-140%
	13C5-PFHxA	114%		50-150%
	13C4-PFHpA	121%		50-150%
	13C8-PFOA	129%		50-150%
	13C9-PFNA	126%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	98%		50-150%
	13C2-PFDoDA	97%		50-150%
	13C2-PFTeDA	67%		40-150%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	97%		30-140%
	d3-MeFOSAA	103%		50-150%
	13C2-6:2FTS	146%		50-150%
	13C2-8:2FTS	110%		50-150%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-FIELD BLANK		
Lab Sample ID:	FA65213-6	**Date Sampled:**	06/11/19
Matrix:	AQ - Field Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31240.D	1	06/24/19 01:08	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-FIELD BLANK		
Lab Sample ID:	FA65213-6	**Date Sampled:**	06/11/19
Matrix:	AQ - Field Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	104%		30-140%
	13C5-PFPeA	107%		40-140%
	13C5-PFHxA	106%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	121%		50-150%
	13C9-PFNA	124%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	86%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	73%		40-150%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	94%		30-140%
	d3-MeFOSAA	89%		50-150%
	13C2-6:2FTS	135%		50-150%
	13C2-8:2FTS	101%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: PFAS-RINSATE
Lab Sample ID: FA65213-7
Matrix: AQ - Equipment Blank
Method: EPA 537M BY ID EPA 537 MOD
Project: Former Signore Inc; Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/15/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31241.D	1	06/24/19 01:22	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-RINSATE		
Lab Sample ID:	FA65213-7	**Date Sampled:**	06/11/19
Matrix:	AQ - Equipment Blank	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		30-140%
	13C5-PFPeA	100%		40-140%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	110%		50-150%
	13C8-PFOA	118%		50-150%
	13C9-PFNA	127%		50-150%
	13C6-PFDA	114%		50-150%
	13C7-PFUnDA	88%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	65%		40-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	104%		30-140%
	d3-MeFOSAA	92%		50-150%
	13C2-6:2FTS	133%		50-150%
	13C2-8:2FTS	118%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-TRIP BLANK		
Lab Sample ID:	FA65213-8	**Date Sampled:**	06/11/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31242.D	1	06/24/19 01:37	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-TRIP BLANK		
Lab Sample ID:	FA65213-8	**Date Sampled:**	06/11/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		30-140%
	13C5-PFPeA	102%		40-140%
	13C5-PFHxA	104%		50-150%
	13C4-PFHpA	111%		50-150%
	13C8-PFOA	119%		50-150%
	13C9-PFNA	124%		50-150%
	13C6-PFDA	112%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	88%		50-150%
	13C2-PFTeDA	70%		40-150%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	98%		30-140%
	d3-MeFOSAA	97%		50-150%
	13C2-6:2FTS	133%		50-150%
	13C2-8:2FTS	118%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : FA65213 PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: GSA
Address: 300 Pearl St. Suite 700
City: Buffalo State: NY Zip: 14202
Project Contact: Thomas Bohlen Email: thomas.bohlen@gza.com
Phone #: 716-844-7050
Sampler(s) Name(s) (Printed) Sampler 1: T. Bohlen Sampler 2:

Project Information

Project Name: Signore
Street
City Ellicottville State NY
Project #
Fax #
Client Purchase Order #

Analytical Information

PFAS - see WO

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	HONe	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS
1	EW-4.5-2019	6/11/19	1320	TB	GW											X
2	MW-4S-2019		1530													X
3	MW-5S-2019MS/MSD		1430													X
4	EW-1.25R-2019	6/14/19	930													X
5	PFAS-Duplicate	-	-	TB	GW											X
6	PFAS Field Blank	6/11/19	1407													X
7	PFAS ~~Water~~ Rinsate	6/11/19	1200													X
8	PFAS Trip Blank	6/14/19	1015													X

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date: SAD
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

☐ COMMERCIAL "A" (RESULTS ONLY)
☒ COMMERCIAL "B" (RESULTS PLUS QC)
☐ REDT1 (EPA LEVEL 3)
☐ FULLT1 (EPA LEVEL 4)
☒ EDD's - NYSDEC

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Thomas Bohlen/GZA	6/14/19 1545	FED EX	3 FY		4 6/15/19 900
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.3

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (1) Rev 031318

FA65213: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA65213 **Client:** GZA **Project:** SIGMORE

Date / Time Received: 6/15/2019 9:00:00 AM **Delivery Method:** FX **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (0.9);

Cooler Temps (Corrected) °C: Cooler 1: (1.3);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH Date: 6/15/2019 9:00:00 AM Reviewer: _____ Date: _____

FA65213: Chain of Custody
Page 2 of 2

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-MB	2Q31219.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0015	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0015	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0015	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.020	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.020	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	96%	30-140%
	13C5-PFPeA	101%	40-140%
	13C5-PFHxA	102%	50-150%
	13C4-PFHpA	108%	50-150%
	13C8-PFOA	116%	50-150%
	13C9-PFNA	113%	50-150%
	13C6-PFDA	85%	50-150%
	13C7-PFUnDA	72%	50-150%
	13C2-PFDoDA	81%	50-150%
	13C2-PFTeDA	63%	40-150%
	13C3-PFBS	88%	50-150%

Method Blank Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-MB	2Q31219.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	ID Standard Recoveries		Limits
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	56%	50-150%
	13C8-FOSA	83%	30-140%
	d3-MeFOSAA	73%	50-150%
	13C2-4:2FTS	108%	50-150%
	13C2-6:2FTS	127%	50-150%
	13C2-8:2FTS	83%	50-150%

Method Blank Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-MB	2Q31480.D	1	06/26/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0015	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0015	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0015	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.020	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.020	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	30-140%
	13C5-PFPeA	110%	40-140%
	13C5-PFHxA	114%	50-150%
	13C4-PFHpA	120%	50-150%
	13C8-PFOA	125%	50-150%
	13C9-PFNA	129%	50-150%
	13C6-PFDA	122%	50-150%
	13C7-PFUnDA	106%	50-150%
	13C2-PFDoDA	97%	50-150%
	13C2-PFTeDA	65%	40-150%
	13C3-PFBS	96%	50-150%

Method Blank Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-MB	2Q31480.D	1	06/26/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	ID Standard Recoveries		Limits
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	91%	50-150%
	13C8-FOSA	63%	30-140%
	d3-MeFOSAA	112%	50-150%
	13C2-4:2FTS	121%	50-150%
	13C2-6:2FTS	137%	50-150%
	13C2-8:2FTS	124%	50-150%

Instrument Blank

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q499-IBLK	2Q31181.D	1	06/23/19	NG	n/a	n/a	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0015	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0015	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0015	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.020	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.020	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	88%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	104%	50-150%
	13C8-PFOA	103%	50-150%
	13C9-PFNA	103%	50-150%
	13C6-PFDA	106%	50-150%
	13C7-PFUnDA	105%	50-150%
	13C2-PFDoDA	101%	50-150%
	13C2-PFTeDA	84%	50-150%
	13C3-PFBS	88%	50-150%

Instrument Blank

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q499-IBLK	2Q31181.D	1	06/23/19	NG	n/a	n/a	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	ID Standard Recoveries		Limits
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	91%	50-150%
	13C8-FOSA	95%	50-150%
	d3-MeFOSAA	102%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	109%	50-150%
	13C2-8:2FTS	109%	50-150%
	13C3-HFPO-DA	88%	50-150%

Instrument Blank

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q501-IBLK	2Q31355.D	1	06/25/19	NG	n/a	n/a	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA65213-4, FA65213-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0015	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0015	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0015	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.020	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.020	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	93%	50-150%
	13C5-PFPeA	102%	50-150%
	13C5-PFHxA	106%	50-150%
	13C4-PFHpA	110%	50-150%
	13C8-PFOA	115%	50-150%
	13C9-PFNA	119%	50-150%
	13C6-PFDA	123%	50-150%
	13C7-PFUnDA	125%	50-150%
	13C2-PFDoDA	127%	50-150%
	13C2-PFTeDA	93%	50-150%
	13C3-PFBS	86%	50-150%

Instrument Blank

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q501-IBLK	2Q31355.D	1	06/25/19	NG	n/a	n/a	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.1 B-15

FA65213-4, FA65213-5

CAS No.	ID Standard Recoveries		Limits
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	93%	50-150%
	13C8-FOSA	105%	50-150%
	d3-MeFOSAA	124%	50-150%
	13C2-4:2FTS	107%	50-150%
	13C2-6:2FTS	123%	50-150%
	13C2-8:2FTS	126%	50-150%
	13C3-HFPO-DA	82%	50-150%

Blank Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-BS	2Q31218.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0775	97	70-130
2706-90-3	Perfluoropentanoic acid	0.08	0.0759	95	70-130
307-24-4	Perfluorohexanoic acid	0.08	0.0799	100	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0758	95	71-130
335-67-1	Perfluorooctanoic acid	0.08	0.0768	96	74-130
375-95-1	Perfluorononanoic acid	0.08	0.0791	99	76-130
335-76-2	Perfluorodecanoic acid	0.08	0.0791	99	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0780	98	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0785	98	70-130
72629-94-8	Perfluorotridecanoic acid	0.08	0.0906	113	70-139
376-06-7	Perfluorotetradecanoic acid	0.08	0.0755	94	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0786	98	73-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0790	99	74-130
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0794	99	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0727	91	70-130
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0529	66*	70-130
754-91-6	PFOSA	0.08	0.0805	101	70-131
2355-31-9	MeFOSAA	0.08	0.0779	97	70-130
2991-50-6	EtFOSAA	0.08	0.0716	90	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0737	92	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0821	103	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	102%	30-140%
	13C5-PFPeA	108%	40-140%
	13C5-PFHxA	109%	50-150%
	13C4-PFHpA	113%	50-150%
	13C8-PFOA	117%	50-150%
	13C9-PFNA	125%	50-150%
	13C6-PFDA	101%	50-150%
	13C7-PFUnDA	81%	50-150%
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	68%	40-150%
	13C3-PFBS	94%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-BS	2Q31218.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	ID Standard Recoveries	BSP	Limits
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	71%	50-150%
	13C8-FOSA	95%	30-140%
	d3-MeFOSAA	83%	50-150%
	13C2-4:2FTS	120%	50-150%
	13C2-6:2FTS	135%	50-150%
	13C2-8:2FTS	110%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-BS	2Q31479.D	1	06/26/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0822	103	70-130
2706-90-3	Perfluoropentanoic acid	0.08	0.0774	97	70-130
307-24-4	Perfluorohexanoic acid	0.08	0.0815	102	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0777	97	71-130
335-67-1	Perfluorooctanoic acid	0.08	0.0788	99	74-130
375-95-1	Perfluorononanoic acid	0.08	0.0808	101	76-130
335-76-2	Perfluorodecanoic acid	0.08	0.0796	100	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0792	99	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0797	100	70-130
72629-94-8	Perfluorotridecanoic acid	0.08	0.101	126	70-139
376-06-7	Perfluorotetradecanoic acid	0.08	0.0763	95	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0789	99	73-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0799	100	74-130
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0868	109	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0753	94	70-130
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0682	85	70-130
754-91-6	PFOSA	0.08	0.0812	102	70-131
2355-31-9	MeFOSAA	0.08	0.0807	101	70-130
2991-50-6	EtFOSAA	0.08	0.0764	96	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0769	96	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0832	104	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	105%	30-140%
	13C5-PFPeA	113%	40-140%
	13C5-PFHxA	117%	50-150%
	13C4-PFHpA	122%	50-150%
	13C8-PFOA	127%	50-150%
	13C9-PFNA	134%	50-150%
	13C6-PFDA	131%	50-150%
	13C7-PFUnDA	126%	50-150%
	13C2-PFDoDA	121%	50-150%
	13C2-PFTeDA	82%	40-150%
	13C3-PFBS	98%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-BS	2Q31479.D	1	06/26/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	ID Standard Recoveries	BSP	Limits
	13C3-PFHxS	100%	50-150%
	13C8-PFOS	100%	50-150%
	13C8-FOSA	73%	30-140%
	d3-MeFOSAA	123%	50-150%
	13C2-4:2FTS	130%	50-150%
	13C2-6:2FTS	144%	50-150%
	13C2-8:2FTS	145%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-MS	2Q31507.D	1	06/27/19	NG	06/26/19	OP75639	S2Q501
JC90114-2	2Q31506.D	1	06/27/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	Compound	JC90114-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	ND		0.08	0.0732	92	70-130
2706-90-3	Perfluoropentanoic acid	ND		0.08	0.0750	94	70-130
307-24-4	Perfluorohexanoic acid	0.00140	J	0.08	0.0752	92	70-130
375-85-9	Perfluoroheptanoic acid	0.00272	J	0.08	0.0738	89	71-130
335-67-1	Perfluorooctanoic acid	0.00619		0.08	0.0786	91	74-130
375-95-1	Perfluorononanoic acid	0.0262		0.08	0.0967	88	76-130
335-76-2	Perfluorodecanoic acid	ND		0.08	0.0739	92	70-130
2058-94-8	Perfluoroundecanoic acid	ND		0.08	0.0723	90	70-130
307-55-1	Perfluorododecanoic acid	ND		0.08	0.0723	90	70-130
72629-94-8	Perfluorotridecanoic acid	ND		0.08	0.0929	116	70-139
376-06-7	Perfluorotetradecanoic acid	ND		0.08	0.0727	91	70-130
375-73-5	Perfluorobutanesulfonic acid	ND		0.08	0.0739	92	73-130
355-46-4	Perfluorohexanesulfonic acid	0.00193	J	0.08	0.0752	92	74-130
375-92-8	Perfluoroheptanesulfonic acid	ND		0.08	0.0783	98	74-130
1763-23-1	Perfluorooctanesulfonic acid	0.00262	J	0.08	0.0710	85	70-130
335-77-3	Perfluorodecanesulfonic acid	ND		0.08	0.0601	75	70-130
754-91-6	PFOSA	ND		0.08	0.0741	93	70-131
2355-31-9	MeFOSAA	ND		0.08	0.0736	92	70-130
2991-50-6	EtFOSAA	ND		0.08	0.0693	87	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	ND		0.08	0.0704	88	70-133
39108-34-4	8:2 Fluorotelomer sulfonate	ND		0.08	0.0766	96	70-130

CAS No.	ID Standard Recoveries	MS	JC90114-2	Limits
	13C4-PFBA	112%		30-140%
	13C5-PFPeA	119%		40-140%
	13C5-PFHxA	122%	106%	50-150%
	13C4-PFHpA	129%	113%	50-150%
	13C8-PFOA	136%	120%	50-150%
	13C9-PFNA	141%	124%	50-150%
	13C6-PFDA	135%	119%	50-150%
	13C7-PFUnDA	126%	106%	50-150%
	13C2-PFDoDA	121%	104%	50-150%
	13C2-PFTeDA	85%	72%	40-150%
	13C3-PFBS	105%	91%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75639-MS	2Q31507.D	1	06/27/19	NG	06/26/19	OP75639	S2Q501
JC90114-2	2Q31506.D	1	06/27/19	NG	06/26/19	OP75639	S2Q501

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-4, FA65213-5

CAS No.	ID Standard Recoveries	MS	JC90114-2	Limits
	13C3-PFHxS	106%	91%	50-150%
	13C8-PFOS	103%	86%	50-150%
	13C8-FOSA	58%		30-140%
	d3-MeFOSAA	124%	106%	50-150%
	13C2-4:2FTS	145%		50-150%
	13C2-6:2FTS	165%* [a]		50-150%
	13C2-8:2FTS	160%* [a]		50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-MS	2Q31234.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499
OP75580-MSD	2Q31235.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499
FA65213-3	2Q31233.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	Compound	FA65213-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND		0.08	0.0777	97	0.08	0.0761	95	2	70-130/30
2706-90-3	Perfluoropentanoic acid	ND		0.08	0.0772	97	0.08	0.0763	95	1	70-130/30
307-24-4	Perfluorohexanoic acid	ND		0.08	0.0788	99	0.08	0.0768	96	3	70-130/30
375-85-9	Perfluoroheptanoic acid	ND		0.08	0.0767	96	0.08	0.0746	93	3	71-130/30
335-67-1	Perfluorooctanoic acid	ND		0.08	0.0771	96	0.08	0.0751	94	3	74-130/30
375-95-1	Perfluorononanoic acid	ND		0.08	0.0793	99	0.08	0.0770	96	3	76-130/30
335-76-2	Perfluorodecanoic acid	ND		0.08	0.0754	94	0.08	0.0762	95	1	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND		0.08	0.0767	96	0.08	0.0752	94	2	70-130/30
307-55-1	Perfluorododecanoic acid	ND		0.08	0.0785	98	0.08	0.0768	96	2	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND		0.08	0.0874	109	0.08	0.0854	107	2	70-139/30
376-06-7	Perfluorotetradecanoic acid	ND		0.08	0.0755	94	0.08	0.0740	93	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND		0.08	0.0789	99	0.08	0.0777	97	2	73-130/30
355-46-4	Perfluorohexanesulfonic acid	ND		0.08	0.0798	100	0.08	0.0774	97	3	74-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND		0.08	0.0830	104	0.08	0.0789	99	5	74-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.00429		0.08	0.0726	85	0.08	0.0738	87	2	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND		0.08	0.0427	53*	0.08	0.0496	62*	15	70-130/30
754-91-6	PFOSA	ND		0.08	0.0801	100	0.08	0.0779	97	3	70-131/30
2355-31-9	MeFOSAA	ND		0.08	0.0773	97	0.08	0.0744	93	4	70-130/30
2991-50-6	EtFOSAA	ND		0.08	0.0675	84	0.08	0.0682	85	1	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND		0.08	0.0738	92	0.08	0.0724	91	2	70-133/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND		0.08	0.0792	99	0.08	0.0786	98	1	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA65213-3	Limits
	13C4-PFBA	96%	100%	98%	30-140%
	13C5-PFPeA	100%	104%	102%	40-140%
	13C5-PFHxA	101%	105%	104%	50-150%
	13C4-PFHpA	109%	112%	112%	50-150%
	13C8-PFOA	116%	120%	121%	50-150%
	13C9-PFNA	127%	132%	128%	50-150%
	13C6-PFDA	117%	114%	111%	50-150%
	13C7-PFUnDA	92%	91%	82%	50-150%
	13C2-PFDoDA	77%	86%	73%	50-150%
	13C2-PFTeDA	60%	70%	56%	40-150%
	13C3-PFBS	91%	94%	91%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP75580-MS	2Q31234.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499
OP75580-MSD	2Q31235.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499
FA65213-3	2Q31233.D	1	06/23/19	NG	06/21/19	OP75580	S2Q499

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA65213-1, FA65213-2, FA65213-3, FA65213-6, FA65213-7, FA65213-8

CAS No.	ID Standard Recoveries	MS	MSD	FA65213-3	Limits
	13C3-PFHxS	91%	94%	94%	50-150%
	13C8-PFOS	86%	78%	77%	50-150%
	13C8-FOSA	90%	95%	100%	30-140%
	d3-MeFOSAA	93%	92%	86%	50-150%
	13C2-4:2FTS	116%	121%		50-150%
	13C2-6:2FTS	136%	141%	136%	50-150%
	13C2-8:2FTS	134%	131%	120%	50-150%

* = Outside of Control Limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Method: EPA 537M BY ID **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA65213-1	2Q31231.D	106	111	114	120	129	128	105	78
FA65213-2	2Q31232.D	93	98	101	109	119	125	112	90
FA65213-3	2Q31233.D	98	102	104	112	121	128	111	82
FA65213-4	2Q31503.D	88	96	102	113	124	128	115	102
FA65213-5	2Q31504.D	105	111	114	121	129	126	110	98
FA65213-6	2Q31240.D	104	107	106	113	121	124	101	86
FA65213-7	2Q31241.D	97	100	103	110	118	127	114	88
FA65213-8	2Q31242.D	100	102	104	111	119	124	112	90
OP75580-BS	2Q31218.D	102	108	109	113	117	125	101	81
OP75580-MB	2Q31219.D	96	101	102	108	116	113	85	72
OP75580-MS	2Q31234.D	96	100	101	109	116	127	117	92
OP75580-MSD	2Q31235.D	100	104	105	112	120	132	114	91
OP75639-BS	2Q31479.D	105	113	117	122	127	134	131	126
OP75639-MB	2Q31480.D	102	110	114	120	125	129	122	106
OP75639-MS	2Q31507.D	112	119	122	129	136	141	135	126

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	30-140%
S2 = 13C5-PFPeA	40-140%
S3 = 13C5-PFHxA	50-150%
S4 = 13C4-PFHpA	50-150%
S5 = 13C8-PFOA	50-150%
S6 = 13C9-PFNA	50-150%
S7 = 13C6-PFDA	50-150%
S8 = 13C7-PFUnDA	50-150%

Isotope Dilution Standard Recovery Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Method: EPA 537M BY ID **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FA65213-1	2Q31231.D	75	65	99	97	72	104	85	144
FA65213-2	2Q31232.D	85	66	89	90	77	91	90	135
FA65213-3	2Q31233.D	73	56	91	94	77	100	86	136
FA65213-4	2Q31503.D	97	58	86	91	75	80	106	144
FA65213-5	2Q31504.D	97	67	97	96	73	97	103	146
FA65213-6	2Q31240.D	86	73	96	92	62	94	89	135
FA65213-7	2Q31241.D	80	65	91	92	78	104	92	133
FA65213-8	2Q31242.D	88	70	93	91	75	98	97	133
OP75580-BS	2Q31218.D	84	68	94	91	71	95	83	135
OP75580-MB	2Q31219.D	81	63	88	87	56	83	73	127
OP75580-MS	2Q31234.D	77	60	91	91	86	90	93	136
OP75580-MSD	2Q31235.D	86	70	94	94	78	95	92	141
OP75639-BS	2Q31479.D	121	82	98	100	100	73	123	144
OP75639-MB	2Q31480.D	97	65	96	97	91	63	112	137
OP75639-MS	2Q31507.D	121	85	105	106	103	58	124	165* [a]

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	50-150%
S10 = 13C2-PFTeDA	40-150%
S11 = 13C3-PFBS	50-150%
S12 = 13C3-PFHxS	50-150%
S13 = 13C8-PFOS	50-150%
S14 = 13C8-FOSA	30-140%
S15 = d3-MeFOSAA	50-150%
S16 = 13C2-6:2FTS	50-150%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Method: EPA 537M BY ID **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17
FA65213-1	2Q31231.D	106
FA65213-2	2Q31232.D	119
FA65213-3	2Q31233.D	120
FA65213-4	2Q31503.D	122
FA65213-5	2Q31504.D	110
FA65213-6	2Q31240.D	101
FA65213-7	2Q31241.D	118
FA65213-8	2Q31242.D	118
OP75580-BS	2Q31218.D	110
OP75580-MB	2Q31219.D	83
OP75580-MS	2Q31234.D	134
OP75580-MSD	2Q31235.D	131
OP75639-BS	2Q31479.D	145
OP75639-MB	2Q31480.D	124
OP75639-MS	2Q31507.D	160* [a]

Isotope Dilution Standards	Recovery Limits
S17 = 13C2-8:2FTS	50-150%

(a) Outside control limits.

Initial Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICC498
Lab FileID: 2Q31101.D

Initial Calibration Report

Method Path	D:\MassHunter\damethods
Method File	ID_062119_S2Q498.quantmethod.xml
Batch Name	D:\MassHunter\Data\ID_062119_S2Q498\QuantResults\s2q498.batch.bin
Last Calib Update	6/24/2019 8:21:42 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d	6/21/2019 10:12:01 AM	6/24/2019 8:21:42 AM
2	D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d	6/21/2019 10:26:51 AM	6/24/2019 8:21:42 AM
3	D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d	6/21/2019 10:41:40 AM	6/24/2019 8:21:42 AM
4	D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d	6/21/2019 10:56:28 AM	6/24/2019 8:21:42 AM
5	D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d	6/21/2019 11:11:18 AM	6/24/2019 8:21:42 AM
6	D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d	6/21/2019 11:26:06 AM	6/24/2019 8:21:42 AM
7	D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d	6/21/2019 11:40:56 AM	6/24/2019 8:21:42 AM
8	D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d	6/21/2019 11:55:45 AM	6/24/2019 8:21:42 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	9760	9976	9877	10230	10227	9353	9944	13364	10341	12.113
S 13C5-PFPeA	Linear	7571	7679	7730	7949	8005	7307	7742	10237	8027	11.444
S 13C3-PFBS	Linear	1468	1491	1470	1520	1501	1380	1444	1880	1519	9.994
S 13C2-4:2FTS	Linear	4661	4708	4726	4883	4997	4659	5334		4853	5.085
S 13C5-PFHxA	Linear	11546	11814	11560	12011	12073	11019	11520	15276	12102	10.943
S 13C3-HFPO-DA	Linear	2493	2568	2502	2535	2525	2058	2252	2592	2441	7.638
S 13C4-PFHpA	Linear	13286	13429	13309	13760	13796	12543	13089	16637	13731	9.022
S 13C3-PFHxS	Linear	1248	1260	1243	1283	1286	1170	1204	1491	1273	7.569
S 13C2-6:2FTS	Linear	3853	3916	3892	4117	4168	3766	4159		3982	4.098
S 13C8-PFOA	Linear	12644	12673	12782	13204	13105	11730	12010	14468	12827	6.484
S 13C8-PFOS	Linear	1890	1901	1853	1901	1903	1773	1765	2201	1898	7.111
S 13C9-PFNA	Linear	10532	10690	10581	11045	10979	10025	10277	12800	10866	7.827
S 13C8-FOSA	Linear	5989	5975	6049	6269	6121	5521	5314	5827	5883	5.416
S 13C6-PFDA	Linear	17156	17451	17381	17993	17857	16159	16277	19284	17445	5.715
S 13C2-8:2FTS	Linear	2717	2833	2781	2913	2925	2756	3096		2860	4.536
S d3-MeFOSAA	Linear	1951	2047	2056	2090	2094	1937	1997	2504	2085	8.605
S 13C7-PFUnDA	Linear	20641	21094	20944	21307	21389	19740	19776	24365	21157	6.826
S 13C2-PFDoDA	Linear	22248	22555	22629	23412	23462	21372	21827	27152	23082	7.767
S 13C2-PFTeDA	Linear	17123	17382	17477	17986	17838	16207	16814	19397	17528	5.387
I 13C2-PFOA						ISTD					
S M2-PFOA	Linear	1.0002	0.9999	1.0007	1.0000	1.0002	1.0002	1.0001	1.0003	1.0002	0.023
I 13C4-PFOS						ISTD					
S M4-PFOS	Linear	1.0000	1.0003	0.9996	1.0001	0.9996	1.0002	1.0000	1.0001	1.0000	0.025
I M4-PFBA						ISTD					
T PFBA	Linear	0.1776	0.1639	0.1735	0.1693	0.1674	0.1673	0.1651	0.1728	0.1696	2.746
I M5-PFPeA						ISTD					
T PFPeA	Linear	0.9187	0.8122	0.8506	0.8210	0.8087	0.8151	0.8000	0.8419	0.8335	4.603

Generated at 8:22 AM on 6/24/2019

Initial Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICC498
Lab FileID: 2Q31101.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-PFHxA						ISTD					
T PFHxA	Linear	0.3275	0.2927	0.2914	0.2903	0.2881	0.2881	0.2882	0.2959	0.2953	4.508
I M4-PFHpA						ISTD					
T PFHpA	Linear	0.9236	0.8212	0.8718	0.8643	0.8580	0.8582	0.8465	0.8866	0.8663	3.459
I M8-PFOA						ISTD					
T ADONA	Linear	1.1491	1.0386	1.1126	1.0808	1.0957	1.1195	1.1279	1.3635	1.1360	8.611
T PFOA	Linear	0.6596	0.5435	0.5653	0.5676	0.5577	0.5663	0.5537	0.5836	0.5747	6.310
I M9-PFNA						ISTD					
T PFNA	Linear	0.5306	0.5034	0.5521	0.5336	0.5265	0.5289	0.5170	0.5474	0.5299	2.936
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Quadratic	0.0916	0.0795	0.0782	0.0767	0.0781	0.0780	0.0806	0.0940	0.0821	8.202
T PFDA	Linear	0.3474	0.3138	0.3373	0.3207	0.3159	0.3208	0.3158	0.3342	0.3257	3.780
I M7-PFUnDA						ISTD					
T PFUnDA	Linear	0.4201	0.3633	0.3927	0.3845	0.3941	0.3806	0.3835	0.3997	0.3898	4.222
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.2413	0.2125	0.2289	0.2281	0.2250	0.2290	0.2255	0.2411	0.2289	4.038
T PFDoDA	Linear	0.4718	0.4108	0.4424	0.4405	0.4381	0.4399	0.4388	0.4601	0.4428	4.017
I M2-PFTeDA						ISTD					
T PFTrDA	Linear	0.7981	0.7051	0.7561	0.7532	0.7638	0.7678	0.7559	0.7990	0.7624	3.870
T PFTeDA	Avg RF	0.9137	0.7603	0.7585	0.7377	0.7292	0.7286	0.7164	0.7548	0.7624	8.287
I M8-FOSA						ISTD					
T FOSA	Linear	0.5337	0.4398	0.4931	0.4882	0.4906	0.4940	0.4810	0.5034	0.4905	5.296
I M3-PFBS						ISTD					
T PFBS	Linear	1.4436	1.3212	1.3778	1.3487	1.3486	1.3433	1.3253	1.3858	1.3618	2.936
T PFPeS	Linear	0.9144	0.8819	0.9183	0.8952	0.8730	0.8861	0.8510	0.8873	0.8884	2.443
I M3-PFHxS						ISTD					
T PFHxS	Linear	1.5408	1.3130	1.4546	1.4020	1.3773	1.3758	1.3740	1.4442	1.4102	4.890
T PFHpS	Linear	1.2866	1.1870	1.2717	1.2388	1.2459	1.1968	1.1598	1.1094	1.2120	4.940
I M8-PFOS						ISTD					
T PFOS	Linear	1.0874	0.9890	0.9558	0.9764	0.9405	0.9270	0.9400	1.0046	0.9776	5.295
T PFNS	Linear	0.7837	0.6829	0.6960	0.6643	0.6474	0.6287	0.6331	0.6190	0.6694	7.980
T PFDS	Linear	0.4175	0.3909	0.4092	0.3885	0.3779	0.3739	0.3772	0.3622	0.3872	4.786
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	0.6512	0.5749	0.5910	0.5916	0.5806	0.5735	0.5197	0.4770	0.5699	9.099
I M2-6:2FTS						ISTD					

Initial Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICC498
Lab FileID: 2Q31101.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 6:2FTS	Avg RF	0.5900	0.5175	0.5341	0.5207	0.6906	0.5093	0.4655	0.4311	0.5323	14.887
I M2-8:2FTS				----------	----------	ISTD ----------	----------	----------			
T 8:2FTS	Avg RF	0.6504	0.4917	0.5672	0.5071	0.5143	0.5141	0.4777	0.4291	0.5189	12.679
I M3-MeFOSAA				----------	----------	ISTD ----------	----------	----------			
T MeFOSAA	Linear	0.4796	0.4844	0.5069	0.5102	0.5180	0.5217	0.5186	0.5490	0.5110	4.295
T EtFOSAA	Linear	0.4942	0.4613	0.4708	0.4735	0.4762	0.4786	0.4651	0.5007	0.4776	2.854
I M3-HFPO-DA				----------	----------	ISTD ----------	----------	----------			
T HFPO-DA	Linear	0.9165	0.7873	0.8660	0.8602	0.8497	0.9429	0.8363	0.8348	0.8617	5.663

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICC498
Lab FileID: 2Q31101.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 10341.412568 * x	0.000000
T PFBA	Linear	y = 0.171132 * x	0.999502
S 13C5-PFPeA	Linear	y = 8027.484115 * x	0.000000
T PFPeA	Linear	y = 0.832720 * x	0.999385
T PFBS	Linear	y = 1.372530 * x	0.999525
S 13C3-PFBS	Linear	y = 1519.379343 * x	0.000000
S 13C2-4:2FTS	Linear	y = 4852.567602 * x	0.000000
S 13C5-PFHxA	Linear	y = 12102.313964 * x	0.000000
T PFHxA	Linear	y = 0.294096 * x	0.999814
T PFPeS	Linear	y = 0.880244 * x	0.999601
T HFPO-DA	Linear	y = 0.838600 * x	0.999240
S 13C3-HFPO-DA	Linear	y = 2440.597285 * x	0.000000
S 13C4-PFHpA	Linear	y = 13731.158356 * x	0.000000
T PFHpA	Linear	y = 0.877734 * x	0.999488
S 13C3-PFHxS	Linear	y = 1273.270241 * x	0.000000
T PFHxS	Linear	y = 1.428023 * x	0.999362
T ADONA	Linear	y = 1.308125 * x	0.991480
S 13C2-6:2FTS	Linear	y = 3981.512241 * x	0.000000
S 13C8-PFOA	Linear	y = 12827.177228 * x	0.000000
S M2-PFOA	Linear	y = 1.000202 * x	0.000000
T PFOA	Linear	y = 0.577093 * x	0.999350
T PFHpS	Linear	y = 1.123116 * x	0.999118
S 13C8-PFOS	Linear	y = 1898.364110 * x	0.000000
S M4-PFOS	Linear	y = 0.999981 * x	0.000000
T PFOS	Linear	y = 0.989280 * x	0.998803
S 13C9-PFNA	Linear	y = 10866.192065 * x	0.000000
T PFNA	Linear	y = 0.540806 * x	0.999242
S 13C8-FOSA	Linear	y = 5883.104889 * x	0.000000
T FOSA	Linear	y = 0.498708 * x	0.999521
T 9Cl-PF3ONS	Quadratic	y = 0.004759 * x ^ 2 + 0.070091 * x	0.999823
T PFNS	Linear	y = 0.622333 * x	0.999832
S 13C6-PFDA	Linear	y = 17444.924364 * x	0.000000
T PFDA	Linear	y = 0.330120 * x	0.999222
S 13C2-8:2FTS	Linear	y = 2860.100080 * x	0.000000
S d3-MeFOSAA	Linear	y = 2084.512937 * x	0.000000
T MeFOSAA	Linear	y = 0.542000 * x	0.999176
T EtFOSAA	Linear	y = 0.492979 * x	0.998743
T PFDS	Linear	y = 0.365625 * x	0.999546
S 13C7-PFUnDA	Linear	y = 21157.064001 * x	0.000000
T PFUnDA	Linear	y = 0.395929 * x	0.999540
T 11Cl-PF3OUdS	Linear	y = 0.237554 * x	0.998915
S 13C2-PFDoDA	Linear	y = 23082.237949 * x	0.000000
T PFDoDA	Linear	y = 0.455198 * x	0.999416

Initial Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICC498
Lab FileID: 2Q31101.D

Initial Calibration Report

T PFTrDA	Linear	y = 0.789391 * x	0.999256	
S 13C2-PFTeDA	Linear	y = 17528.078686 * x	0.000000	

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31105.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062119_S2Q498\s2q498.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31105
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.954	-0.2	99.8
13C2-6:2FTS	20.000	20.122	0.6	100.6
13C2-8:2FTS	20.000	20.444	2.2	102.2
13C2-PFDoDA	20.000	21.205	6.0	106.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	21.611	8.1	108.1
13C3-PFBS	20.000	19.965	-0.2	99.8
13C3-PFHxS	20.000	20.342	1.7	101.7
13C4-PFBA	20.000	19.893	-0.5	99.5
13C4-PFHpA	20.000	20.363	1.8	101.8
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.246	1.2	101.2
13C5-PFPeA	20.000	20.137	0.7	100.7
13C6-PFDA	20.000	21.483	7.4	107.4
13C7-PFUnDA	20.000	21.594	8.0	108.0
13C8-FOSA	20.000	21.656	8.3	108.3
13C8-PFOA	20.000	20.625	3.1	103.1
13C8-PFOS	20.000	20.351	1.8	101.8
13C9-PFNA	20.000	20.531	2.7	102.7
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	20.749	3.7	103.7
M2-PFOA	20.000	20.001	0.0	100.0
EtFOSAA	20.000	16.175	-19.1	80.9
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	18.109	-9.5	90.5
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	0.000	# -100.0	0.0
PFDA	20.000	0.000	# -100.0	0.0
PFDoDA	20.000	0.000	# -100.0	0.0
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	0.000	# -100.0	0.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	0.000	# -100.0	0.0
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31105.D

PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	18.463	-7.7	92.3
PFOS	20.000	14.653	-26.7	73.3
PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	0.000	# -100.0	0.0
PFTrDA	20.000	0.000	# -100.0	0.0
PFUnDA	20.000	0.000	# -100.0	0.0
M4-PFOS	20.000	19.999	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	100.000	103.358	3.4	103.4
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31106.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062119_S2Q498\s2q498.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31106
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.066	10.3	110.3
13C2-6:2FTS	20.000	21.933	9.7	109.7
13C2-8:2FTS	20.000	22.429	12.1	112.1
13C2-PFDoDA	20.000	21.407	7.0	107.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.650	3.2	103.2
13C3-PFBS	20.000	21.061	5.3	105.3
13C3-PFHxS	20.000	21.058	5.3	105.3
13C4-PFBA	20.000	20.992	5.0	105.0
13C4-PFHpA	20.000	21.114	5.6	105.6
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	21.303	6.5	106.5
13C5-PFPeA	20.000	21.085	5.4	105.4
13C6-PFDA	20.000	21.424	7.1	107.1
13C7-PFUnDA	20.000	21.581	7.9	107.9
13C8-FOSA	20.000	21.479	7.4	107.4
13C8-PFOA	20.000	20.964	4.8	104.8
13C8-PFOS	20.000	21.152	5.8	105.8
13C9-PFNA	20.000	21.203	6.0	106.0
4:2FTS	20.000	17.425	-12.9	87.1
6:2FTS	20.000	16.453	-17.7	82.3
8:2FTS	20.000	18.172	-9.1	90.9
d3-MeFOSAA	20.000	21.444	7.2	107.2
M2-PFOA	20.000	20.001	0.0	100.0
EtFOSAA	20.000	17.640	-11.8	88.2
FOSA	20.000	18.927	-5.4	94.6
MeFOSAA	20.000	18.531	-7.3	92.7
PFBA	20.000	18.529	-7.4	92.6
PFBS	20.000	16.375	-18.1	81.9
PFDA	20.000	17.518	-12.4	87.6
PFDoDA	20.000	18.940	-5.3	94.7
PFDS	20.000	18.930	-5.4	94.6
PFHpA	20.000	18.659	-6.7	93.3
PFHpS	20.000	18.802	-6.0	94.0
PFHxA	20.000	17.118	-14.4	85.6
PFHxS	20.000	15.848	-20.8	79.2
PFNA	20.000	17.205	-14.0	86.0

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31106.D

PFNS	20.000	18.516	-7.4	92.6
PFOA	20.000	18.594	-7.0	93.0
PFOS	20.000	18.221	-8.9	91.1
PFPeA	20.000	18.002	-10.0	90.0
PFPeS	20.000	16.861	-15.7	84.3
PFTeDA	20.000	16.989	-15.1	84.9
PFTrDA	20.000	20.721	3.6	103.6
PFUnDA	20.000	19.361	-3.2	96.8
M4-PFOS	20.000	20.003	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	100.000	111.037	11.0	111.0
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	100.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31107.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062119_S2Q498\s2q498.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31107
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.248	-3.8	96.2
13C2-6:2FTS	20.000	20.922	4.6	104.6
13C2-8:2FTS	20.000	20.822	4.1	104.1
13C2-PFDoDA	20.000	22.312	11.6	111.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	23.605	18.0	118.0
13C3-PFBS	20.000	19.415	-2.9	97.1
13C3-PFHxS	20.000	19.739	-1.3	98.7
13C4-PFBA	20.000	18.939	-5.3	94.7
13C4-PFHpA	20.000	20.006	0.0	100.0
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	19.864	-0.7	99.3
13C5-PFPeA	20.000	19.682	-1.6	98.4
13C6-PFDA	20.000	21.585	7.9	107.9
13C7-PFUnDA	20.000	22.604	13.0	113.0
13C8-FOSA	20.000	21.679	8.4	108.4
13C8-PFOA	20.000	21.275	6.4	106.4
13C8-PFOS	20.000	20.062	0.3	100.3
13C9-PFNA	20.000	20.181	0.9	100.9
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	21.431	7.2	107.2
M2-PFOA	20.000	20.003	0.0	100.0
EtFOSAA	20.000	0.000	# -100.0	0.0
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	0.000	# -100.0	0.0
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	0.000	# -100.0	0.0
PFDA	20.000	0.000	# -100.0	0.0
PFDoDA	20.000	0.000	# -100.0	0.0
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	0.000	# -100.0	0.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	0.000	# -100.0	0.0
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q498-ICV498
Lab FileID: 2Q31107.D

PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	0.000	# -100.0	0.0
PFOS	20.000	0.000	# -100.0	0.0
PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	0.000	# -100.0	0.0
PFTrDA	20.000	0.000	# -100.0	0.0
PFUnDA	20.000	0.000	# -100.0	0.0
M4-PFOS	20.000	20.038	0.2	100.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	100.000	93.636	-6.4	93.6
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	24.348	21.7	121.7
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-CC498
Lab FileID: 2Q31216.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062319_S2Q499\S2Q499.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31216
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.708	8.5	108.5
13C2-6:2FTS	20.000	24.219	21.1	121.1
13C2-8:2FTS	20.000	25.686	28.4	128.4
13C2-PFDoDA	20.000	24.118	20.6	120.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.094	-4.5	95.5
13C3-PFBS	20.000	17.788	-11.1	88.9
13C3-PFHxS	20.000	17.937	-10.3	89.7
13C4-PFBA	20.000	18.327	-8.4	91.6
13C4-PFHpA	20.000	21.090	5.4	105.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.205	1.0	101.0
13C5-PFPeA	20.000	19.724	-1.4	98.6
13C6-PFDA	20.000	23.267	16.3	116.3
13C7-PFUnDA	20.000	23.914	19.6	119.6
13C8-FOSA	20.000	19.730	-1.3	98.7
13C8-PFOA	20.000	21.481	7.4	107.4
13C8-PFOS	20.000	18.885	-5.6	94.4
13C9-PFNA	20.000	22.479	12.4	112.4
4:2FTS	20.000	20.285	1.4	101.4
6:2FTS	20.000	19.222	-3.9	96.1
8:2FTS	20.000	20.872	4.4	104.4
d3-MeFOSAA	20.000	23.142	15.7	115.7
M2-PFOA	20.000	20.003	0.0	100.0
EtFOSAA	20.000	19.875	-0.6	99.4
FOSA	20.000	20.243	1.2	101.2
MeFOSAA	20.000	19.987	-0.1	99.9
PFBA	20.000	19.921	-0.4	99.6
PFBS	20.000	19.802	-1.0	99.0
PFDA	20.000	20.197	1.0	101.0
PFDoDA	20.000	19.451	-2.7	97.3
PFDS	20.000	20.889	4.4	104.4
PFHpA	20.000	19.816	-0.9	99.1
PFHpS	20.000	22.011	10.1	110.1
PFHxA	20.000	20.704	3.5	103.5
PFHxS	20.000	19.835	-0.8	99.2
PFNA	20.000	20.518	2.6	102.6

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-CC498
Lab FileID: 2Q31216.D

PFNS	20.000	21.819	9.1	109.1
PFOA	20.000	19.671	-1.6	98.4
PFOS	20.000	18.559	-7.2	92.8
PFPeA	20.000	19.498	-2.5	97.5
PFPeS	20.000	21.844	9.2	109.2
PFTeDA	20.000	19.232	-3.8	96.2
PFTrDA	20.000	24.026	20.1	120.1
PFUnDA	20.000	19.767	-1.2	98.8
M4-PFOS	20.000	20.038	0.2	100.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.310	-23.4	76.6
13C3-HFPO-DA	100.000	78.357	-21.6	78.4
9Cl-PF3ONS	20.000	14.802	-26.0	74.0
ADONA	20.000	16.631	-16.8	83.2
HFPO-DA	100.000	122.226	22.2	122.2
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-CC498
Lab FileID: 2Q31228.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062319_S2Q499\S2Q499.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31228
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.044	10.2	110.2
13C2-6:2FTS	20.000	24.442	22.2	122.2
13C2-8:2FTS	20.000	26.482	# 32.4	132.4
13C2-PFDoDA	20.000	24.807	24.0	124.0
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.591	-2.0	98.0
13C3-PFBS	20.000	17.965	-10.2	89.8
13C3-PFHxS	20.000	17.988	-10.1	89.9
13C4-PFBA	20.000	18.427	-7.9	92.1
13C4-PFHpA	20.000	21.031	5.2	105.2
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	20.065	0.3	100.3
13C5-PFPeA	20.000	19.529	-2.4	97.6
13C6-PFDA	20.000	23.814	19.1	119.1
13C7-PFUnDA	20.000	24.228	21.1	121.1
13C8-FOSA	20.000	19.900	-0.5	99.5
13C8-PFOA	20.000	21.411	7.1	107.1
13C8-PFOS	20.000	19.148	-4.3	95.7
13C9-PFNA	20.000	22.977	14.9	114.9
4:2FTS	20.000	20.259	1.3	101.3
6:2FTS	20.000	19.134	-4.3	95.7
8:2FTS	20.000	20.302	1.5	101.5
d3-MeFOSAA	20.000	23.208	16.0	116.0
M2-PFOA	20.000	20.002	0.0	100.0
EtFOSAA	20.000	20.188	0.9	100.9
FOSA	20.000	20.107	0.5	100.5
MeFOSAA	20.000	19.785	-1.1	98.9
PFBA	20.000	19.599	-2.0	98.0
PFBS	20.000	19.777	-1.1	98.9
PFDA	20.000	20.123	0.6	100.6
PFDoDA	20.000	19.450	-2.8	97.2
PFDS	20.000	20.263	1.3	101.3
PFHpA	20.000	19.882	-0.6	99.4
PFHpS	20.000	21.767	8.8	108.8
PFHxA	20.000	20.381	1.9	101.9
PFHxS	20.000	20.059	0.3	100.3
PFNA	20.000	20.493	2.5	102.5

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-CC498
Lab FileID: 2Q31228.D

PFNS	20.000	22.001	10.0	110.0
PFOA	20.000	19.805	-1.0	99.0
PFOS	20.000	18.167	-9.2	90.8
PFPeA	20.000	19.947	-0.3	99.7
PFPeS	20.000	21.173	5.9	105.9
PFTeDA	20.000	19.370	-3.1	96.9
PFTrDA	20.000	24.135	20.7	120.7
PFUnDA	20.000	19.807	-1.0	99.0
M4-PFOS	20.000	20.034	0.2	100.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.009	-25.0	75.0
13C3-HFPO-DA	100.000	79.508	-20.5	79.5
9Cl-PF3ONS	20.000	14.362	-28.2	71.8
ADONA	20.000	16.779	-16.1	83.9
HFPO-DA	100.000	123.020	23.0	123.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-CC498
Lab FileID: 2Q31236.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062319_S2Q499\S2Q499.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31236
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.033	10.2	110.2
13C2-6:2FTS	20.000	24.465	22.3	122.3
13C2-8:2FTS	20.000	26.277	# 31.4	131.4
13C2-PFDoDA	20.000	24.714	23.6	123.6
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	20.130	0.7	100.7
13C3-PFBS	20.000	17.877	-10.6	89.4
13C3-PFHxS	20.000	17.942	-10.3	89.7
13C4-PFBA	20.000	18.334	-8.3	91.7
13C4-PFHpA	20.000	21.080	5.4	105.4
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	19.807	-1.0	99.0
13C5-PFPeA	20.000	19.419	-2.9	97.1
13C6-PFDA	20.000	23.705	18.5	118.5
13C7-PFUnDA	20.000	24.413	22.1	122.1
13C8-FOSA	20.000	19.402	-3.0	97.0
13C8-PFOA	20.000	21.367	6.8	106.8
13C8-PFOS	20.000	18.686	-6.6	93.4
13C9-PFNA	20.000	22.892	14.5	114.5
4:2FTS	20.000	20.104	0.5	100.5
6:2FTS	20.000	19.378	-3.1	96.9
8:2FTS	20.000	20.428	2.1	102.1
d3-MeFOSAA	20.000	23.736	18.7	118.7
M2-PFOA	20.000	20.003	0.0	100.0
EtFOSAA	20.000	19.398	-3.0	97.0
FOSA	20.000	20.481	2.4	102.4
MeFOSAA	20.000	19.659	-1.7	98.3
PFBA	20.000	19.563	-2.2	97.8
PFBS	20.000	20.022	0.1	100.1
PFDA	20.000	20.045	0.2	100.2
PFDoDA	20.000	19.431	-2.8	97.2
PFDS	20.000	20.441	2.2	102.2
PFHpA	20.000	19.649	-1.8	98.2
PFHpS	20.000	21.610	8.1	108.1
PFHxA	20.000	20.555	2.8	102.8
PFHxS	20.000	19.930	-0.3	99.7
PFNA	20.000	20.732	3.7	103.7

Continuing Calibration Summary

Job Number: FA65213 **Sample:** S2Q499-CC498
Account: GZANYB GZA Geo Environmental **Lab FileID:** 2Q31236.D
Project: Former Signore Inc; Ellicottville, NY

PFNS	20.000	22.357	11.8	111.8
PFOA	20.000	19.711	-1.4	98.6
PFOS	20.000	18.458	-7.7	92.3
PFPeA	20.000	20.095	0.5	100.5
PFPeS	20.000	21.383	6.9	106.9
PFTeDA	20.000	19.408	-3.0	97.0
PFTrDA	20.000	23.556	17.8	117.8
PFUnDA	20.000	19.746	-1.3	98.7
M4-PFOS	20.000	19.999	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	14.964	-25.2	74.8
13C3-HFPO-DA	100.000	81.918	-18.1	81.9
9Cl-PF3ONS	20.000	13.990	# -30.1	69.9
ADONA	20.000	16.751	-16.2	83.8
HFPO-DA	100.000	121.089	21.1	121.1
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-ECC498
Lab FileID: 2Q31243.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062319_S2Q499\S2Q499.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\ID_062119_S2Q498\2Q31096.d
2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31243
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.126	10.6	110.6
13C2-6:2FTS	20.000	24.282	21.4	121.4
13C2-8:2FTS	20.000	25.941	29.7	129.7
13C2-PFDoDA	20.000	24.380	21.9	121.9
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	19.545	-2.3	97.7
13C3-PFBS	20.000	17.998	-10.0	90.0
13C3-PFHxS	20.000	17.956	-10.2	89.8
13C4-PFBA	20.000	18.216	-8.9	91.1
13C4-PFHpA	20.000	20.949	4.7	104.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	19.771	-1.1	98.9
13C5-PFPeA	20.000	19.282	-3.6	96.4
13C6-PFDA	20.000	23.182	15.9	115.9
13C7-PFUnDA	20.000	23.951	19.8	119.8
13C8-FOSA	20.000	19.580	-2.1	97.9
13C8-PFOA	20.000	21.392	7.0	107.0
13C8-PFOS	20.000	18.723	-6.4	93.6
13C9-PFNA	20.000	22.669	13.3	113.3
4:2FTS	20.000	20.162	0.8	100.8
6:2FTS	20.000	19.407	-3.0	97.0
8:2FTS	20.000	20.456	2.3	102.3
d3-MeFOSAA	20.000	23.163	15.8	115.8
M2-PFOA	20.000	20.000	0.0	100.0
EtFOSAA	20.000	19.468	-2.7	97.3
FOSA	20.000	20.236	1.2	101.2
MeFOSAA	20.000	19.820	-0.9	99.1
PFBA	20.000	19.597	-2.0	98.0
PFBS	20.000	19.714	-1.4	98.6
PFDA	20.000	20.069	0.3	100.3
PFDoDA	20.000	19.566	-2.2	97.8
PFDS	20.000	21.024	5.1	105.1
PFHpA	20.000	19.962	-0.2	99.8
PFHpS	20.000	21.748	8.7	108.7
PFHxA	20.000	20.442	2.2	102.2
PFHxS	20.000	20.010	0.1	100.1
PFNA	20.000	20.694	3.5	103.5

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q499-ECC498
Lab FileID: 2Q31243.D

PFNS	20.000	21.413	7.1	107.1
PFOA	20.000	19.510	-2.4	97.6
PFOS	20.000	18.592	-7.0	93.0
PFPeA	20.000	20.120	0.6	100.6
PFPeS	20.000	20.934	4.7	104.7
PFTeDA	20.000	19.510	-2.4	97.6
PFTrDA	20.000	23.984	19.9	119.9
PFUnDA	20.000	19.732	-1.3	98.7
M4-PFOS	20.000	19.998	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.313	-23.4	76.6
13C3-HFPO-DA	100.000	82.895	-17.1	82.9
9Cl-PF3ONS	20.000	14.227	-28.9	71.1
ADONA	20.000	16.941	-15.3	84.7
HFPO-DA	100.000	121.013	21.0	121.0
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31477.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062419_S2Q500\s2q501.batch.bin

Level ID:Calibration File
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3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31477
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.034	5.2	105.2
13C2-6:2FTS	20.000	23.528	17.6	117.6
13C2-8:2FTS	20.000	24.857	24.3	124.3
13C2-PFDoDA	20.000	22.969	14.8	114.8
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.649	-16.8	83.2
13C3-PFBS	20.000	15.895	-20.5	79.5
13C3-PFHxS	20.000	16.187	-19.1	80.9
13C4-PFBA	20.000	17.026	-14.9	85.1
13C4-PFHpA	20.000	20.092	0.5	100.5
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	19.348	-3.3	96.7
13C5-PFPeA	20.000	18.793	-6.0	94.0
13C6-PFDA	20.000	22.405	12.0	112.0
13C7-PFUnDA	20.000	22.716	13.6	113.6
13C8-FOSA	20.000	18.553	-7.2	92.8
13C8-PFOA	20.000	20.706	3.5	103.5
13C8-PFOS	20.000	16.630	-16.9	83.1
13C9-PFNA	20.000	21.855	9.3	109.3
4:2FTS	20.000	19.997	0.0	100.0
6:2FTS	20.000	19.296	-3.5	96.5
8:2FTS	20.000	20.061	0.3	100.3
d3-MeFOSAA	20.000	22.246	11.2	111.2
M2-PFOA	20.000	20.025	0.1	100.1
EtFOSAA	20.000	20.963	4.8	104.8
FOSA	20.000	20.168	0.8	100.8
MeFOSAA	20.000	20.894	4.5	104.5
PFBA	20.000	20.561	2.8	102.8
PFBS	20.000	19.805	-1.0	99.0
PFDA	20.000	19.931	-0.3	99.7
PFDoDA	20.000	19.702	-1.5	98.5
PFDS	20.000	21.618	8.1	108.1
PFHpA	20.000	19.669	-1.7	98.3
PFHpS	20.000	22.133	10.7	110.7
PFHxA	20.000	20.415	2.1	102.1
PFHxS	20.000	20.294	1.5	101.5
PFNA	20.000	20.080	0.4	100.4

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31477.D

PFNS	20.000	22.834	14.2	114.2
PFOA	20.000	19.685	-1.6	98.4
PFOS	20.000	19.204	-4.0	96.0
PFPeA	20.000	18.897	-5.5	94.5
PFPeS	20.000	21.633	8.2	108.2
PFTeDA	20.000	18.941	-5.3	94.7
PFTrDA	20.000	25.610	28.1	128.1
PFUnDA	20.000	20.412	2.1	102.1
M4-PFOS	20.000	20.036	0.2	100.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	14.600	-27.0	73.0
13C3-HFPO-DA	100.000	73.166	-26.8	73.2
9Cl-PF3ONS	20.000	14.207	-29.0	71.0
ADONA	20.000	16.344	-18.3	81.7
HFPO-DA	100.000	121.493	21.5	121.5
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31489.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062419_S2Q500\s2q501.batch.bin

Level ID:Calibration File
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3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31489
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.783	3.9	103.9
13C2-6:2FTS	20.000	23.582	17.9	117.9
13C2-8:2FTS	20.000	24.487	22.4	122.4
13C2-PFDoDA	20.000	22.228	11.1	111.1
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	15.715	-21.4	78.6
13C3-PFBS	20.000	15.987	-20.1	79.9
13C3-PFHxS	20.000	16.508	-17.5	82.5
13C4-PFBA	20.000	16.933	-15.3	84.7
13C4-PFHpA	20.000	19.891	-0.5	99.5
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.966	-5.2	94.8
13C5-PFPeA	20.000	18.275	-8.6	91.4
13C6-PFDA	20.000	22.142	10.7	110.7
13C7-PFUnDA	20.000	22.448	12.2	112.2
13C8-FOSA	20.000	18.499	-7.5	92.5
13C8-PFOA	20.000	20.363	1.8	101.8
13C8-PFOS	20.000	16.513	-17.4	82.6
13C9-PFNA	20.000	21.726	8.6	108.6
4:2FTS	20.000	20.246	1.2	101.2
6:2FTS	20.000	19.217	-3.9	96.1
8:2FTS	20.000	20.545	2.7	102.7
d3-MeFOSAA	20.000	22.194	11.0	111.0
M2-PFOA	20.000	20.022	0.1	100.1
EtFOSAA	20.000	20.370	1.8	101.8
FOSA	20.000	20.401	2.0	102.0
MeFOSAA	20.000	20.197	1.0	101.0
PFBA	20.000	20.095	0.5	100.5
PFBS	20.000	19.894	-0.5	99.5
PFDA	20.000	20.013	0.1	100.1
PFDoDA	20.000	19.650	-1.7	98.3
PFDS	20.000	21.414	7.1	107.1
PFHpA	20.000	19.725	-1.4	98.6
PFHpS	20.000	21.807	9.0	109.0
PFHxA	20.000	20.332	1.7	101.7
PFHxS	20.000	19.905	-0.5	99.5
PFNA	20.000	20.188	0.9	100.9

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31489.D

PFNS	20.000	22.060	10.3	110.3
PFOA	20.000	19.810	-1.0	99.0
PFOS	20.000	19.095	-4.5	95.5
PFPeA	20.000	19.545	-2.3	97.7
PFPeS	20.000	21.448	7.2	107.2
PFTeDA	20.000	19.018	-4.9	95.1
PFTrDA	20.000	26.253	# 31.3	131.3
PFUnDA	20.000	20.266	1.3	101.3
M4-PFOS	20.000	19.968	-0.2	99.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.127	-24.4	75.6
13C3-HFPO-DA	100.000	74.514	-25.5	74.5
9Cl-PF3ONS	20.000	14.217	-28.9	71.1
ADONA	20.000	16.656	-16.7	83.3
HFPO-DA	100.000	120.942	20.9	120.9
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31501.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062419_S2Q500\s2q501.batch.bin

Level ID:Calibration File
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2:D:\MassHunter\Data\ID_062119_S2Q498\2Q31097.d
3:D:\MassHunter\Data\ID_062119_S2Q498\2Q31098.d
4:D:\MassHunter\Data\ID_062119_S2Q498\2Q31099.d
5:D:\MassHunter\Data\ID_062119_S2Q498\2Q31100.d
6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31501
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.943	4.7	104.7
13C2-6:2FTS	20.000	23.468	17.3	117.3
13C2-8:2FTS	20.000	24.822	24.1	124.1
13C2-PFDoDA	20.000	23.385	16.9	116.9
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	17.058	-14.7	85.3
13C3-PFBS	20.000	16.003	-20.0	80.0
13C3-PFHxS	20.000	16.258	-18.7	81.3
13C4-PFBA	20.000	16.872	-15.6	84.4
13C4-PFHpA	20.000	19.775	-1.1	98.9
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.698	-6.5	93.5
13C5-PFPeA	20.000	18.034	-9.8	90.2
13C6-PFDA	20.000	22.088	10.4	110.4
13C7-PFUnDA	20.000	22.584	12.9	112.9
13C8-FOSA	20.000	18.490	-7.5	92.5
13C8-PFOA	20.000	20.078	0.4	100.4
13C8-PFOS	20.000	16.994	-15.0	85.0
13C9-PFNA	20.000	21.362	6.8	106.8
4:2FTS	20.000	20.177	0.9	100.9
6:2FTS	20.000	19.146	-4.3	95.7
8:2FTS	20.000	20.557	2.8	102.8
d3-MeFOSAA	20.000	22.582	12.9	112.9
M2-PFOA	20.000	20.026	0.1	100.1
EtFOSAA	20.000	20.087	0.4	100.4
FOSA	20.000	20.094	0.5	100.5
MeFOSAA	20.000	20.374	1.9	101.9
PFBA	20.000	19.916	-0.4	99.6
PFBS	20.000	19.854	-0.7	99.3
PFDA	20.000	19.738	-1.3	98.7
PFDoDA	20.000	19.552	-2.2	97.8
PFDS	20.000	20.694	3.5	103.5
PFHpA	20.000	19.750	-1.3	98.7
PFHpS	20.000	21.815	9.1	109.1
PFHxA	20.000	20.398	2.0	102.0
PFHxS	20.000	19.948	-0.3	99.7
PFNA	20.000	20.745	3.7	103.7

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-CC498
Lab FileID: 2Q31501.D

PFNS	20.000	21.318	6.6	106.6
PFOA	20.000	19.845	-0.8	99.2
PFOS	20.000	18.577	-7.1	92.9
PFPeA	20.000	19.985	-0.1	99.9
PFPeS	20.000	21.548	7.7	107.7
PFTeDA	20.000	19.295	-3.5	96.5
PFTrDA	20.000	24.949	24.7	124.7
PFUnDA	20.000	20.133	0.7	100.7
M4-PFOS	20.000	20.005	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	14.329	-28.4	71.6
13C3-HFPO-DA	100.000	78.483	-21.5	78.5
9Cl-PF3ONS	20.000	14.037	-29.8	70.2
ADONA	20.000	16.675	-16.6	83.4
HFPO-DA	100.000	120.083	20.1	120.1
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-ECC498
Lab FileID: 2Q31508.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\ID_062419_S2Q500\s2q501.batch.bin

Level ID:Calibration File
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6:D:\MassHunter\Data\ID_062119_S2Q498\2Q31101.d
7:D:\MassHunter\Data\ID_062119_S2Q498\2Q31102.d
8:D:\MassHunter\Data\ID_062119_S2Q498\2Q31103.d

Data File: 2Q31508
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.969	4.8	104.8
13C2-6:2FTS	20.000	23.317	16.6	116.6
13C2-8:2FTS	20.000	24.311	21.6	121.6
13C2-PFDoDA	20.000	22.439	12.2	112.2
13C2-PFOA	---	--ISTD--		
13C2-PFTeDA	20.000	16.081	-19.6	80.4
13C3-PFBS	20.000	15.878	-20.6	79.4
13C3-PFHxS	20.000	16.317	-18.4	81.6
13C4-PFBA	20.000	16.711	-16.4	83.6
13C4-PFHpA	20.000	19.750	-1.3	98.7
13C4-PFOS	---	--ISTD--		
13C5-PFHxA	20.000	18.326	-8.4	91.6
13C5-PFPeA	20.000	17.893	-10.5	89.5
13C6-PFDA	20.000	22.026	10.1	110.1
13C7-PFUnDA	20.000	22.228	11.1	111.1
13C8-FOSA	20.000	18.323	-8.4	91.6
13C8-PFOA	20.000	20.118	0.6	100.6
13C8-PFOS	20.000	16.478	-17.6	82.4
13C9-PFNA	20.000	21.073	5.4	105.4
4:2FTS	20.000	20.080	0.4	100.4
6:2FTS	20.000	19.282	-3.6	96.4
8:2FTS	20.000	20.513	2.6	102.6
d3-MeFOSAA	20.000	22.288	11.4	111.4
M2-PFOA	20.000	20.030	0.2	100.2
EtFOSAA	20.000	20.021	0.1	100.1
FOSA	20.000	20.247	1.2	101.2
MeFOSAA	20.000	19.608	-2.0	98.0
PFBA	20.000	19.954	-0.2	99.8
PFBS	20.000	20.179	0.9	100.9
PFDA	20.000	19.602	-2.0	98.0
PFDoDA	20.000	19.708	-1.5	98.5
PFDS	20.000	21.188	5.9	105.9
PFHpA	20.000	19.870	-0.6	99.4
PFHpS	20.000	21.788	8.9	108.9
PFHxA	20.000	20.377	1.9	101.9
PFHxS	20.000	20.263	1.3	101.3
PFNA	20.000	20.575	2.9	102.9

Continuing Calibration Summary

Job Number: FA65213
Account: GZANYB GZA Geo Environmental
Project: Former Signore Inc; Ellicottville, NY

Sample: S2Q501-ECC498
Lab FileID: 2Q31508.D

PFNS	20.000	21.957	9.8	109.8
PFOA	20.000	19.696	-1.5	98.5
PFOS	20.000	19.306	-3.5	96.5
PFPeA	20.000	20.059	0.3	100.3
PFPeS	20.000	21.400	7.0	107.0
PFTeDA	20.000	19.150	-4.3	95.7
PFTrDA	20.000	24.967	24.8	124.8
PFUnDA	20.000	20.064	0.3	100.3
M4-PFOS	20.000	20.007	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	14.995	-25.0	75.0
13C3-HFPO-DA	100.000	81.021	-19.0	81.0
9Cl-PF3ONS	20.000	13.872	# -30.6	69.4
ADONA	20.000	16.780	-16.1	83.9
HFPO-DA	100.000	119.185	19.2	119.2
M3-HFPO-DA	---	--ISTD--		

CC Criteria: +/- 30%

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File	:	2Q31231.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	6/23/2019 10:54:40 PM
Sample Name	:	fa65213-1
Vial	:	Vial 50
DA Method File	:	ID_062119_S2Q498.quantmethod.xml
Batch Name	:	S2Q499.batch.bin
Sample Information	:	op75580,S2Q499,250,,,1,1,water

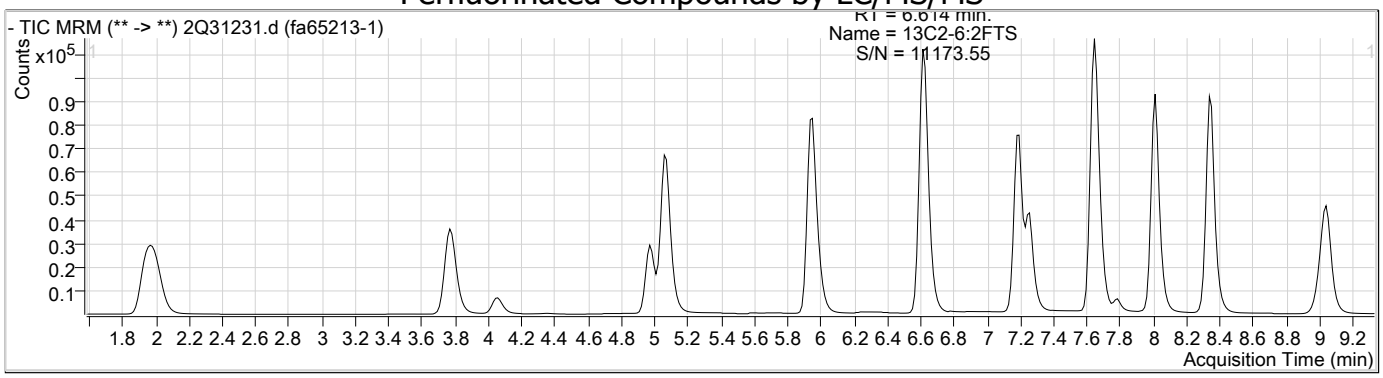
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.965	217.0 -> 172.0	221088	20.00 µg/L	-0.025
M5-PFPeA	3.774	268.0 -> 223.0	178550	20.00 µg/L	-0.026
M5-PFHxA	5.063	318.0 -> 273.0	275369	20.00 µg/L	-0.026
M4-PFHpA	5.942	367.0 -> 322.0	329208	20.00 µg/L	-0.026
M8-PFOA	6.618	421.0 -> 376.0	331594	20.00 µg/L	-0.016
M9-PFNA	7.196	472.0 -> 427.0	278879	20.00 µg/L	-0.005
M6-PFDA	7.653	519.0 -> 474.0	366267	20.00 µg/L	0.011
M7-PFUnDA	8.014	570.0 -> 525.0	332657	20.00 µg/L	0.010
M2-PFDoDA	8.339	615.0 -> 570.0	343887	20.00 µg/L	0.019
M2-PFTeDA	9.037	715.0 -> 670.0	228921	20.00 µg/L	0.100
M8-FOSA	7.259	506.0 -> 78.0	121867	20.00 µg/L	-0.015
M3-PFBS	4.055	302.0 -> 99.0	30185	20.00 µg/L	-0.026
M3-PFHxS	5.985	402.0 -> 99.0	24800	20.00 µg/L	-0.013
M8-PFOS	7.179	507.0 -> 99.0	27238	20.00 µg/L	0.007
M2-4:2FTS	4.971	329.0 -> 309.0	117725	20.00 µg/L	-0.026
M2-6:2FTS	6.614	429.0 -> 409.0	114518	20.00 µg/L	-0.001
M2-8:2FTS	7.677	529.0 -> 509.0	60769	20.00 µg/L	0.012
M3-MeFOSAA	7.658	573.0 -> 419.0	35466	20.00 µg/L	-0.014
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.971	329.0 -> 309.0	117708	24.26 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%	
13C2-6:2FTS	6.614	429.0 -> 409.0	114431	28.74 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 143.7%	
13C2-8:2FTS	7.677	529.0 -> 509.0	60786	21.25 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C2-PFDoDA	8.339	615.0 -> 570.0	344010	14.90 µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.5%	
13C2-PFTeDA	9.037	715.0 -> 670.0	227237	12.96 µg/L	0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.8%	
13C3-PFBS	4.055	302.0 -> 99.0	30171	19.86 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C3-PFHxS	5.985	402.0 -> 99.0	24796	19.47 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C4-PFBA	1.965	217.0 -> 172.0	220063	21.28 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C4-PFHpA	5.942	367.0 -> 322.0	329114	23.97 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C5-PFHxA	5.063	318.0 -> 273.0	274946	22.72 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.6%	
13C5-PFPeA	3.774	268.0 -> 223.0	178550	22.24 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C6-PFDA	7.653	519.0 -> 474.0	366177	20.99 µg/L	0.011

Perfluorinated Compounds by LC/MS/MS

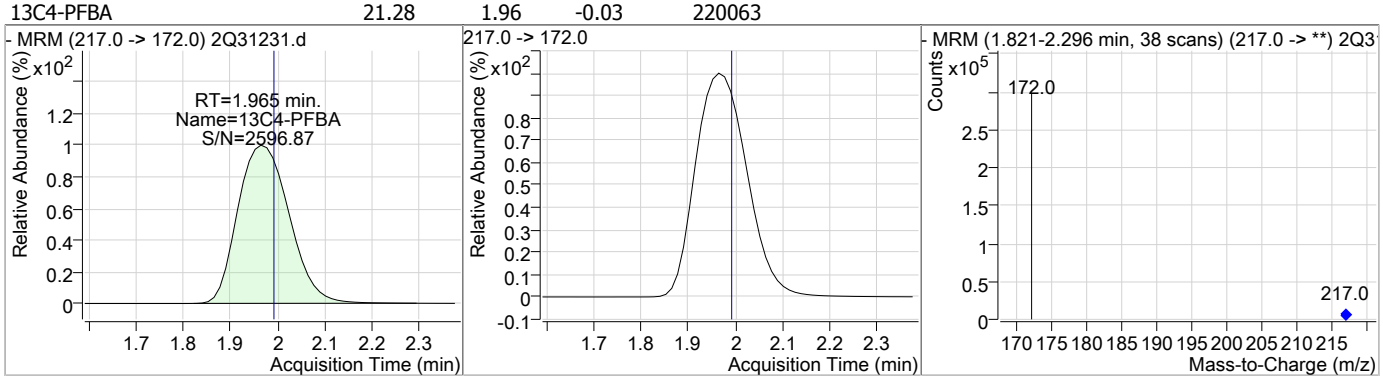
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C7-PFUnDA	8.014	570.0 -> 525.0	332152	15.70 µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C8-FOSA	7.259	506.0 -> 78.0	121833	20.71 µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-PFOA	6.618	421.0 -> 376.0	331558	25.85 µg/L		-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.2%		
13C8-PFOS	7.179	507.0 -> 99.0	27220	14.34 µg/L		0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.7%		
13C9-PFNA	7.196	472.0 -> 427.0	278836	25.66 µg/L		-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.3%		
d3-MeFOSAA	7.658	573.0 -> 419.0	35445	17.00 µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.986	213.0 -> 169.0	437	0.23 µg/L		100
PFBS	4.361	299.0 -> 80.0	0	0.00 µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

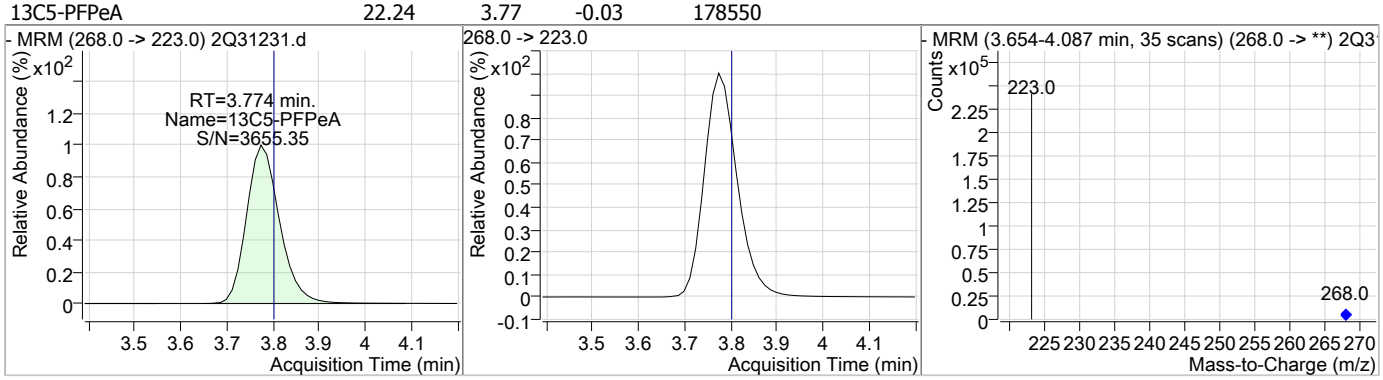
Perfluorinated Compounds by LC/MS/MS



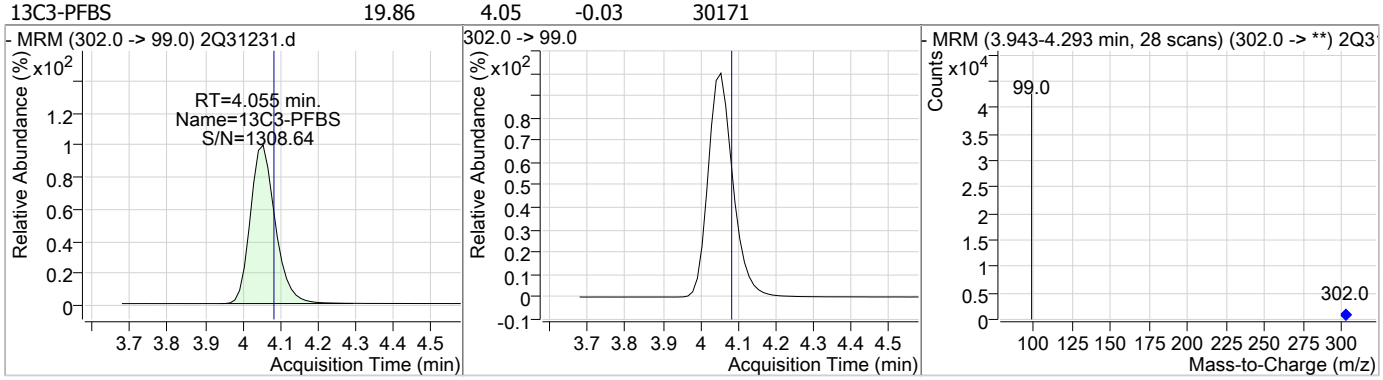
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.28	1.96	-0.03	220063				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.24	3.77	-0.03	178550				

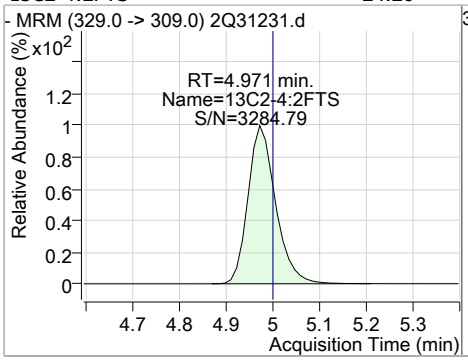


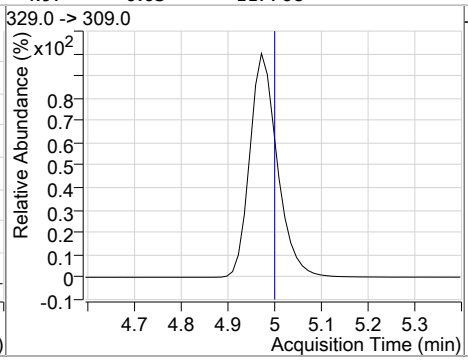
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.86	4.05	-0.03	30171				

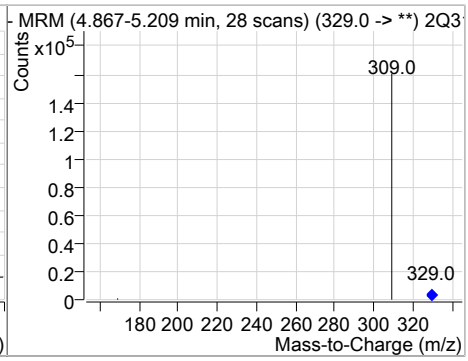


Perfluorinated Compounds by LC/MS/MS

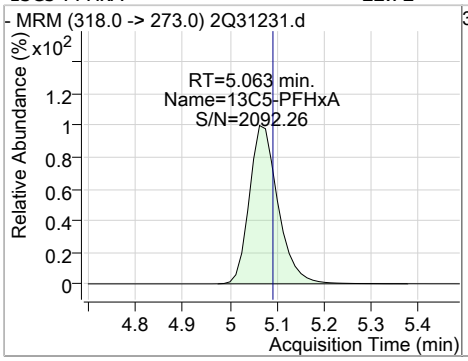
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.26	4.97	-0.03	117708				

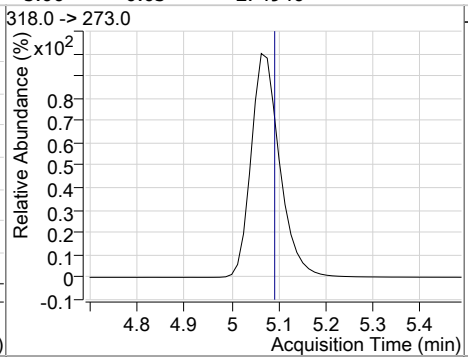


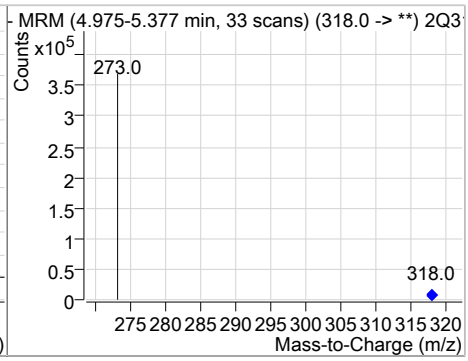




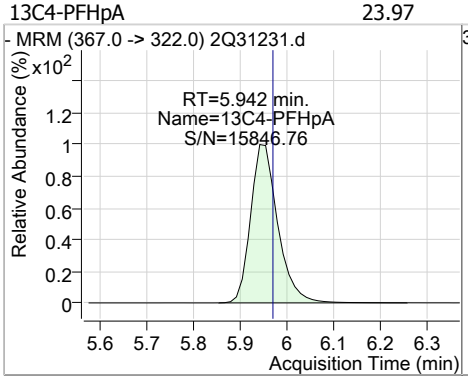
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.72	5.06	-0.03	274946				

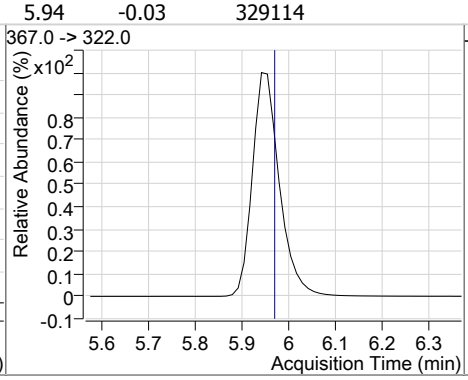


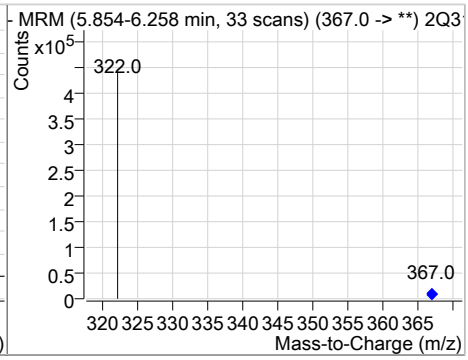




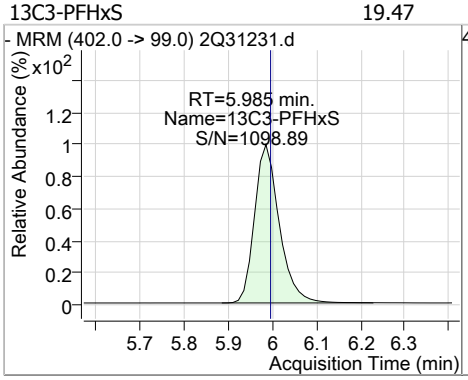
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.97	5.94	-0.03	329114				

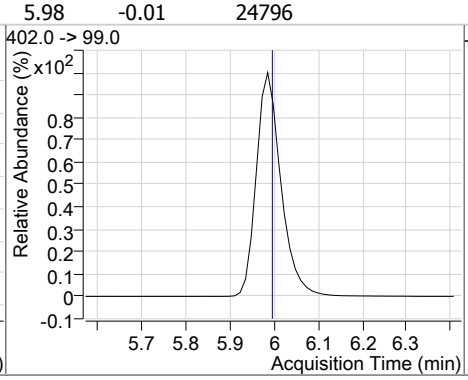


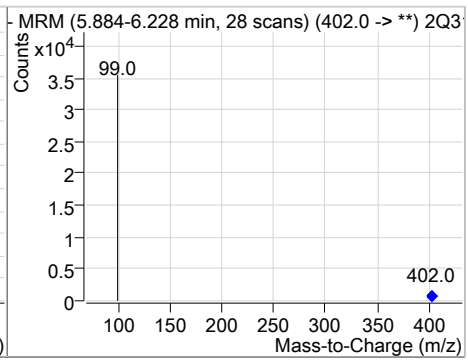




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.47	5.98	-0.01	24796				

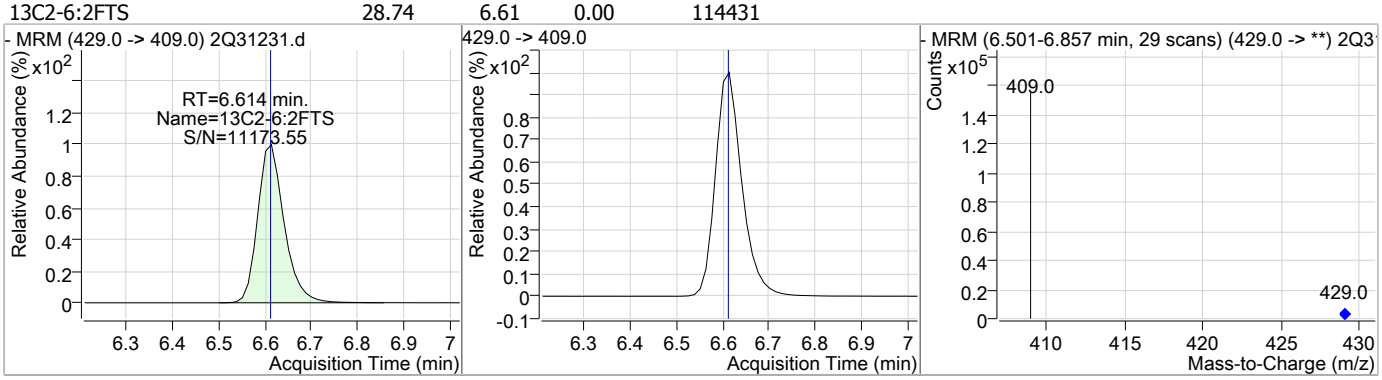




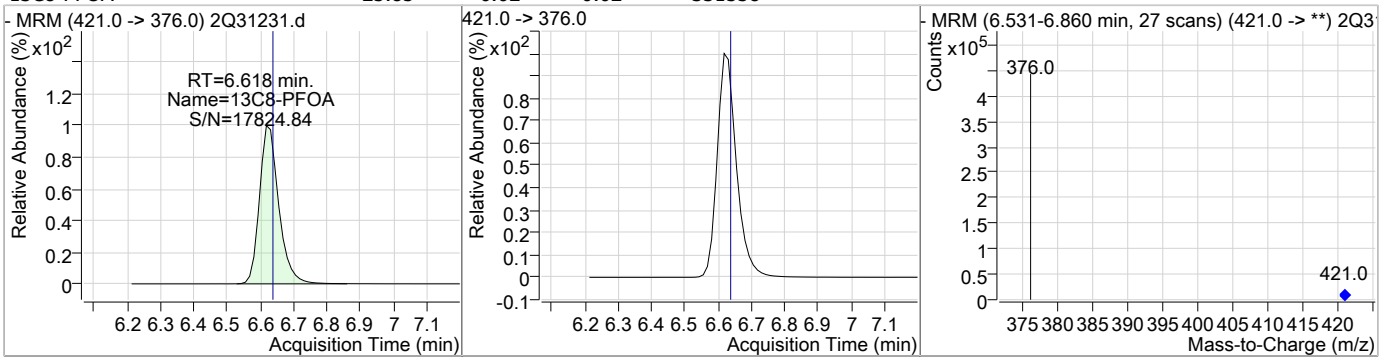


Perfluorinated Compounds by LC/MS/MS

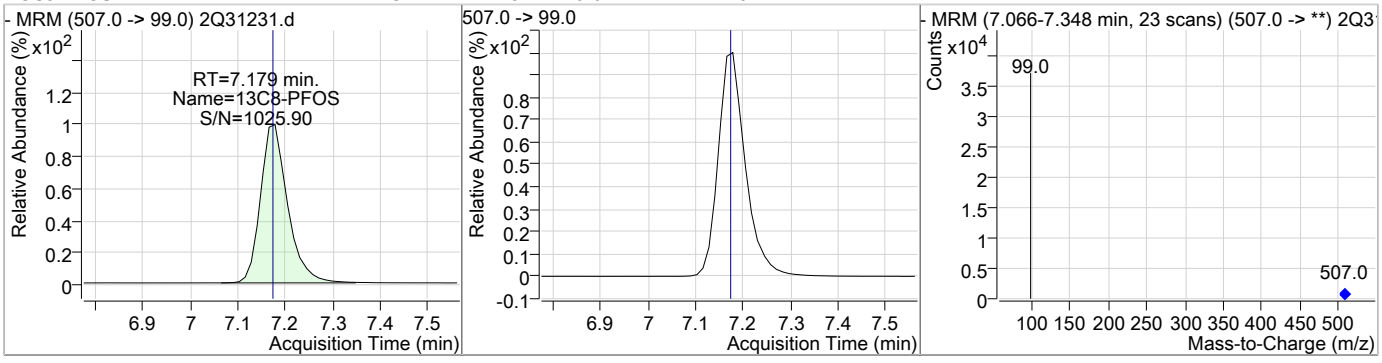
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	28.74	6.61	0.00	114431				



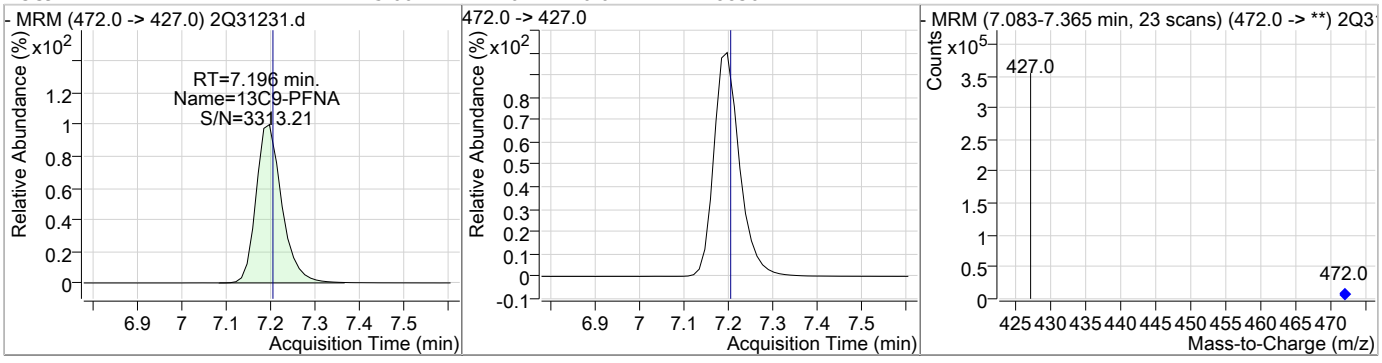
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.85	6.62	-0.02	331558				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.34	7.18	0.01	27220				

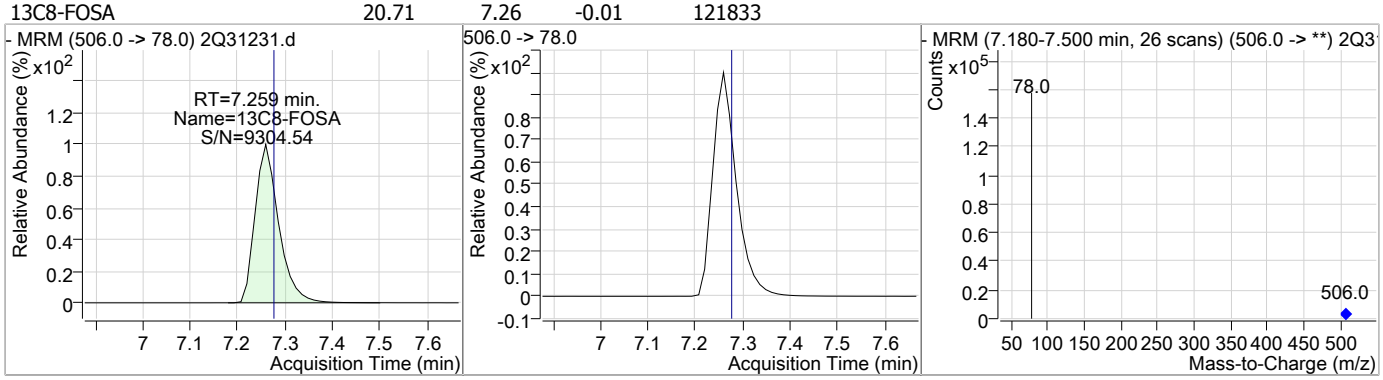


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.66	7.20	-0.01	278836				

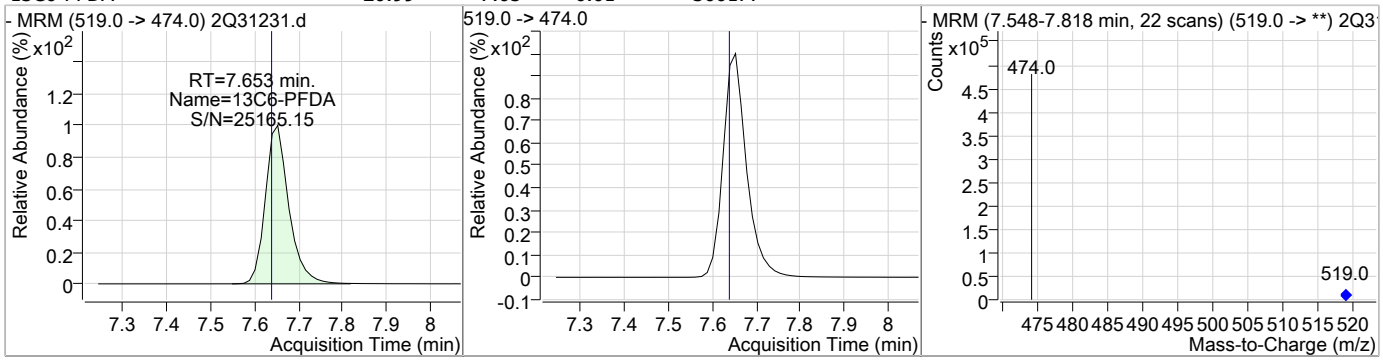


Perfluorinated Compounds by LC/MS/MS

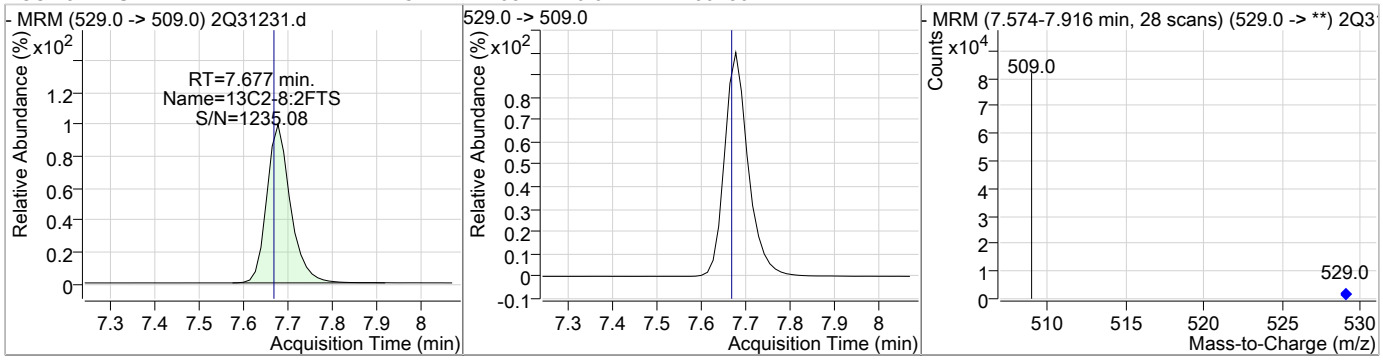
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.71	7.26	-0.01	121833				



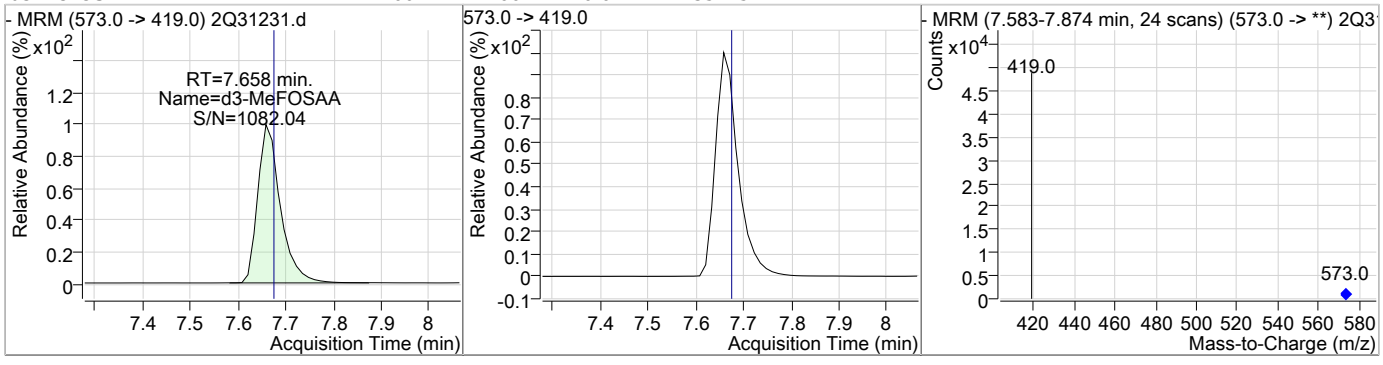
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.99	7.65	0.01	366177				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.25	7.68	0.01	60786				

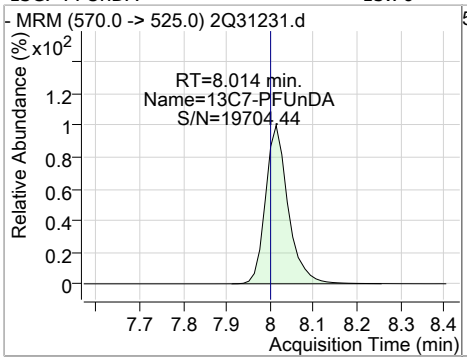


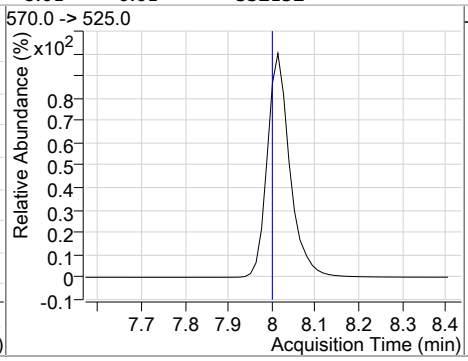
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.00	7.66	-0.01	35445				

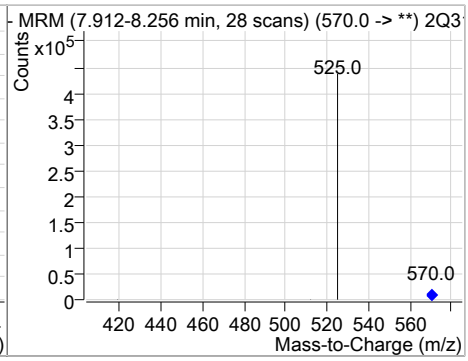


Perfluorinated Compounds by LC/MS/MS

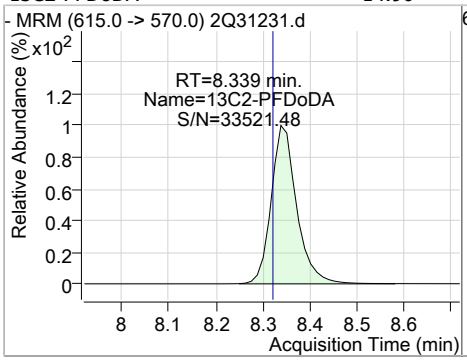
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.70	8.01	0.01	332152				

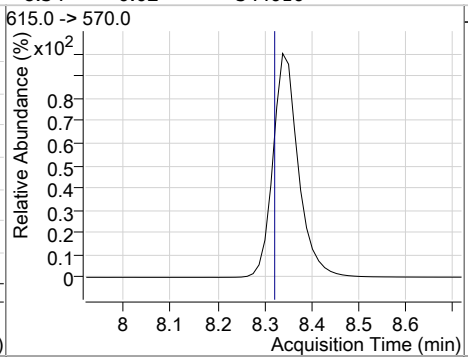


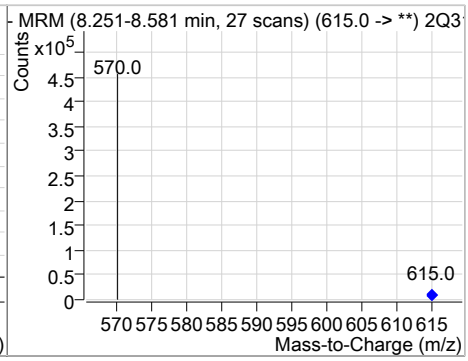




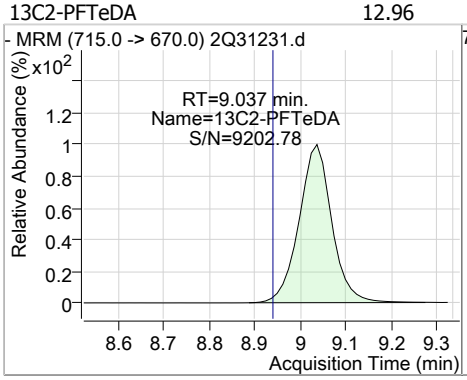
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.90	8.34	0.02	344010				

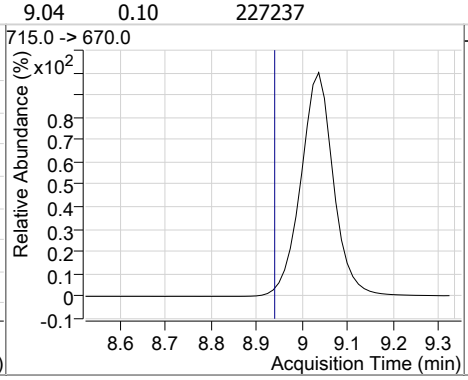


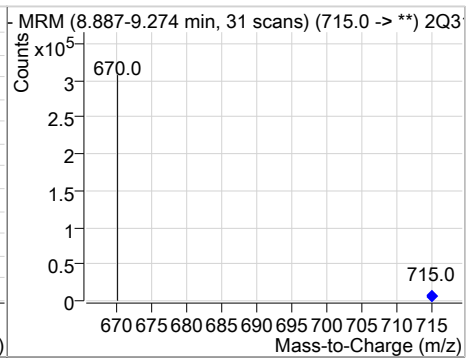




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.96	9.04	0.10	227237				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31232.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 11:09:28 PM
Sample Name : fa65213-2
Vial : Vial 51
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

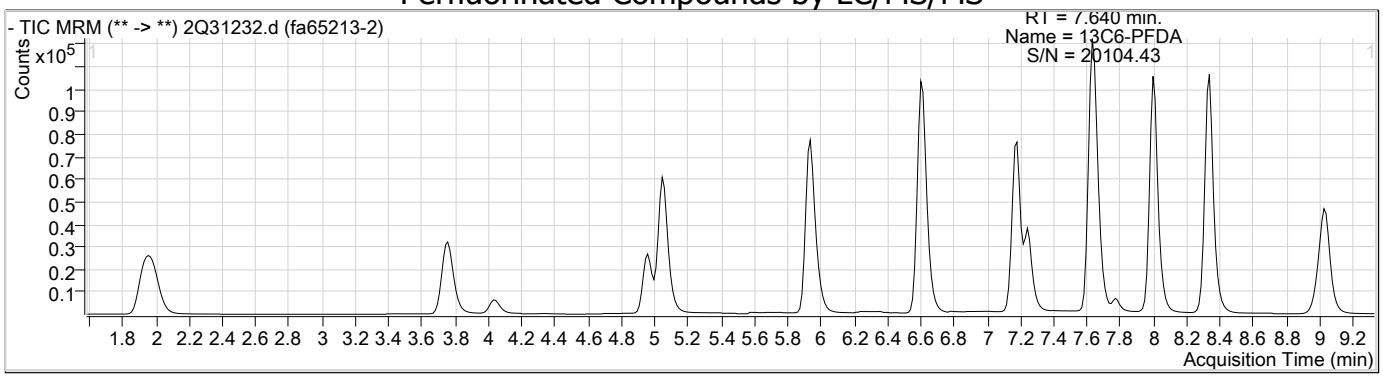
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.952	217.0 -> 172.0	193645	20.00	µg/L	-0.038
M5-PFPeA	3.761	268.0 -> 223.0	157520	20.00	µg/L	-0.038
M5-PFHxA	5.050	318.0 -> 273.0	243983	20.00	µg/L	-0.038
M4-PFHpA	5.942	367.0 -> 322.0	298792	20.00	µg/L	-0.026
M8-PFOA	6.606	421.0 -> 376.0	305807	20.00	µg/L	-0.029
M9-PFNA	7.184	472.0 -> 427.0	271609	20.00	µg/L	-0.018
M6-PFDA	7.640	519.0 -> 474.0	390394	20.00	µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	378918	20.00	µg/L	-0.002
M2-PFDoDA	8.339	615.0 -> 570.0	395252	20.00	µg/L	0.019
M2-PFTeDA	9.024	715.0 -> 670.0	234669	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	106653	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	27024	20.00	µg/L	-0.051
M3-PFHxS	5.972	402.0 -> 99.0	22895	20.00	µg/L	-0.026
M8-PFOS	7.166	507.0 -> 99.0	29365	20.00	µg/L	-0.006
M2-4:2FTS	4.958	329.0 -> 309.0	108339	20.00	µg/L	-0.038
M2-6:2FTS	6.602	429.0 -> 409.0	107349	20.00	µg/L	-0.013
M2-8:2FTS	7.663	529.0 -> 509.0	68357	20.00	µg/L	-0.001
M3-MeFOSAA	7.658	573.0 -> 419.0	37604	20.00	µg/L	-0.014
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.958	329.0 -> 309.0	108312	22.32	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
13C2-6:2FTS	6.602	429.0 -> 409.0	107250	26.94	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 134.7%		
13C2-8:2FTS	7.663	529.0 -> 509.0	68334	23.89	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.5%		
13C2-PFDoDA	8.339	615.0 -> 570.0	394471	17.09	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%		
13C2-PFTeDA	9.024	715.0 -> 670.0	232601	13.27	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.4%		
13C3-PFBS	4.030	302.0 -> 99.0	27026	17.79	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C3-PFHxS	5.972	402.0 -> 99.0	22902	17.99	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C4-PFBA	1.952	217.0 -> 172.0	192868	18.65	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFHpA	5.942	367.0 -> 322.0	298443	21.73	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C5-PFHxA	5.050	318.0 -> 273.0	243818	20.15	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFPeA	3.761	268.0 -> 223.0	157520	19.62	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C6-PFDA	7.640	519.0 -> 474.0	390394	22.38	µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

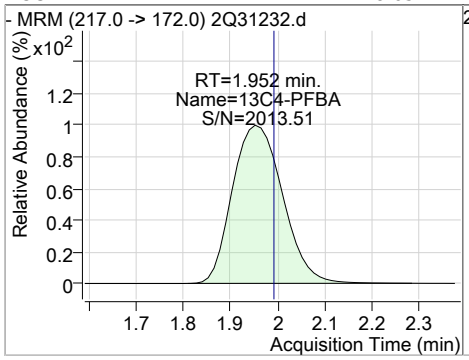
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%			
13C7-PFUnDA	8.001	570.0 -> 525.0	378723	17.90	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%			
13C8-FOSA	7.247	506.0 -> 78.0	106642	18.13	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C8-PFOA	6.606	421.0 -> 376.0	305835	23.84	µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.2%			
13C8-PFOS	7.166	507.0 -> 99.0	29349	15.46	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%			
13C9-PFNA	7.184	472.0 -> 427.0	271604	25.00	µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.0%			
d3-MeFOSAA	7.658	573.0 -> 419.0	37635	18.05	µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.948	213.0 -> 169.0	614	0.37	µg/L		100
PFBS	4.336	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.610	413.0 -> 369.0	1834	0.21	µg/L	m	96
PFOS	7.157	499.0 -> 80.0	872	0.60	µg/L	m	90
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

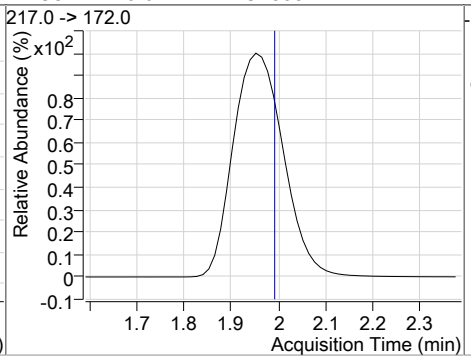
= Qualifier out of range, m = manually integrated, + = Area summed

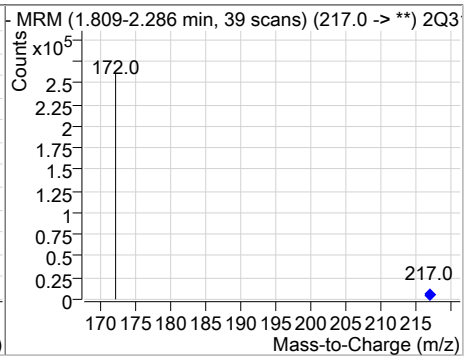
Perfluorinated Compounds by LC/MS/MS



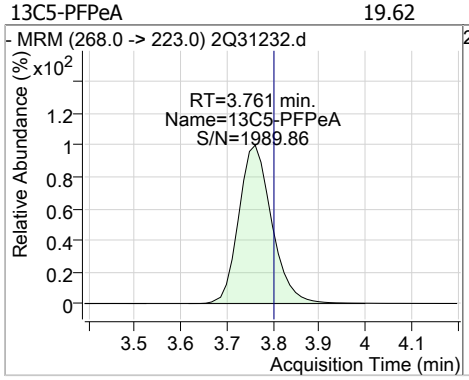
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.65	1.95	-0.04	192868				

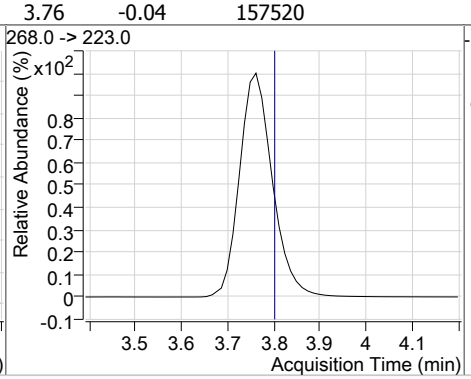


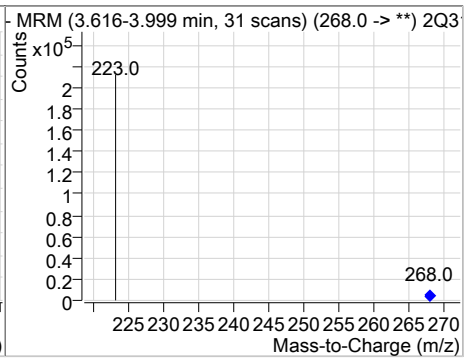




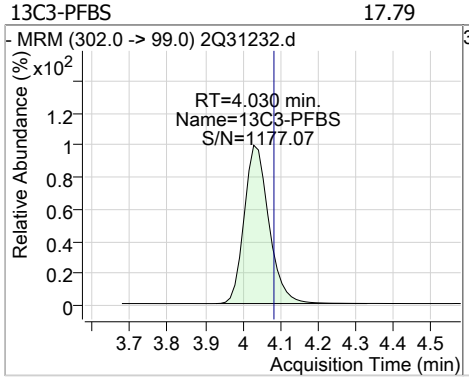
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.62	3.76	-0.04	157520				

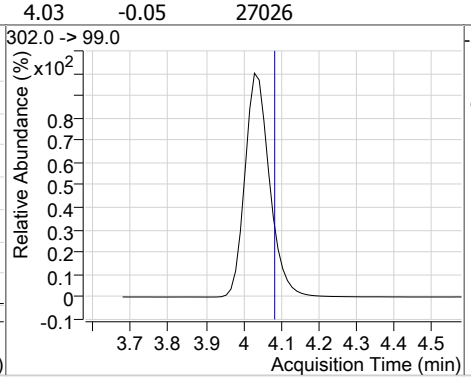


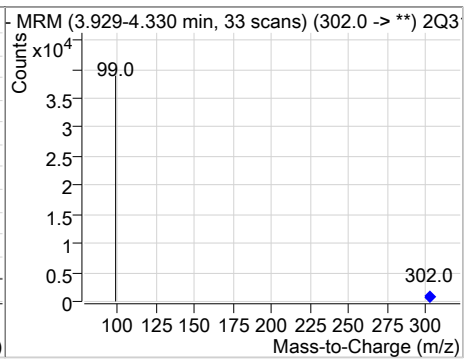




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.79	4.03	-0.05	27026				

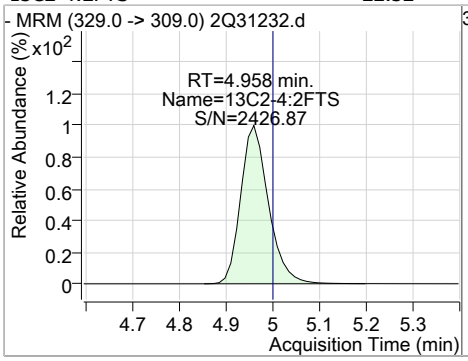


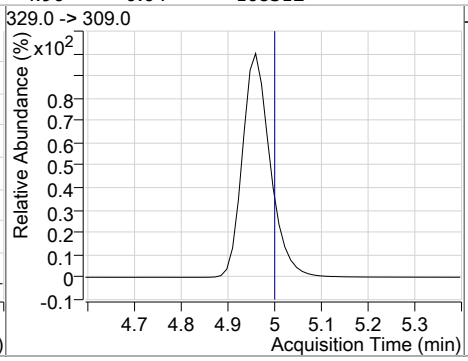


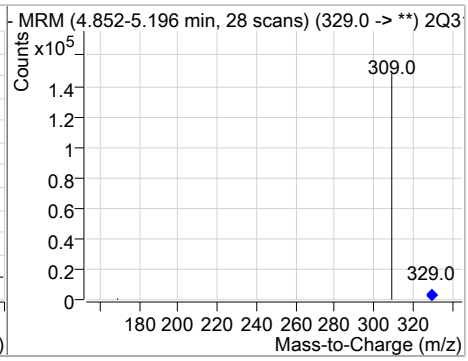


Perfluorinated Compounds by LC/MS/MS

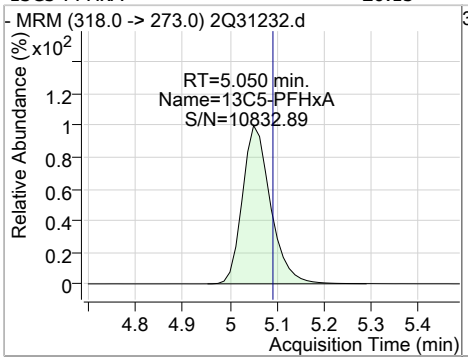
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.32	4.96	-0.04	108312				

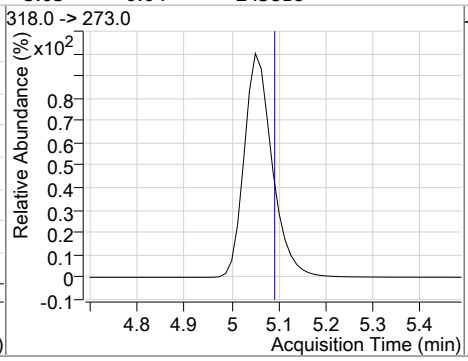


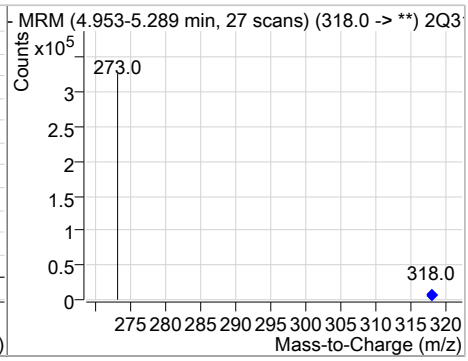




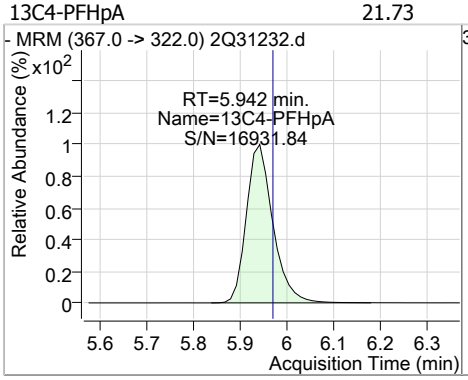
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.15	5.05	-0.04	243818				

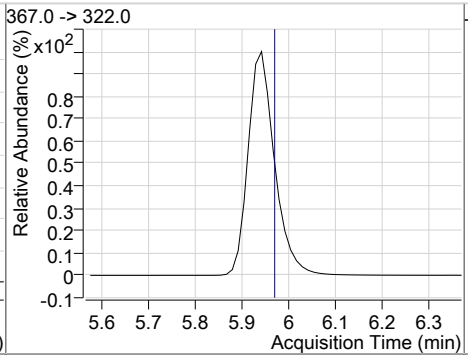


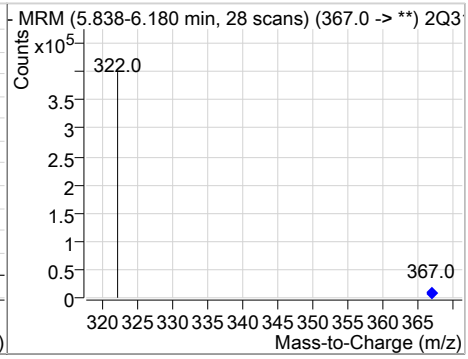




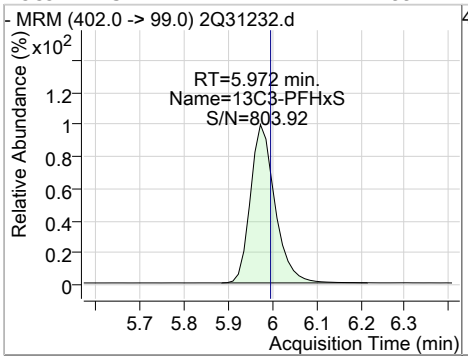
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.73	5.94	-0.03	298443				

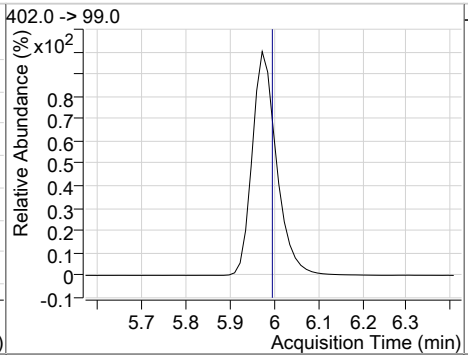


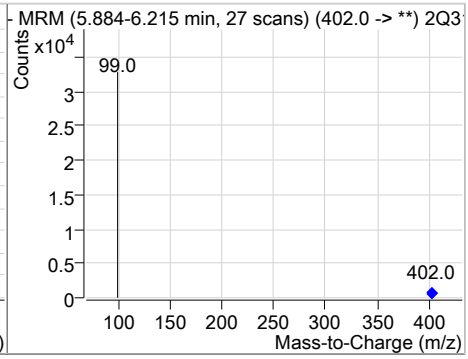




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.99	5.97	-0.03	22902				

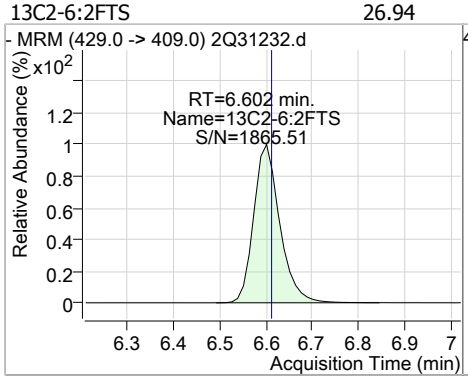


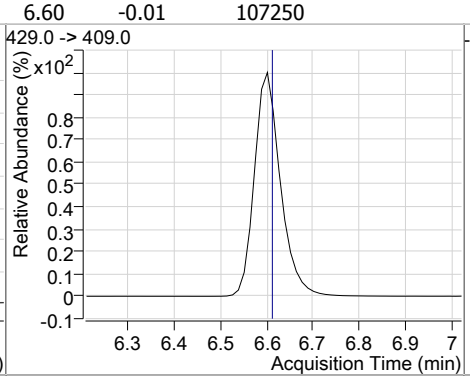


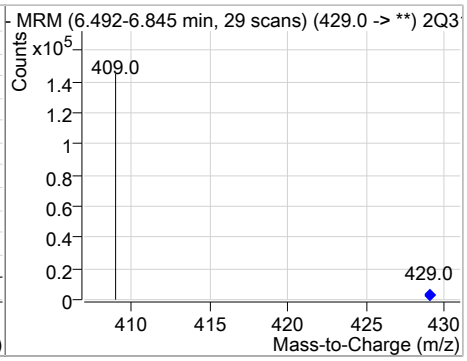


Perfluorinated Compounds by LC/MS/MS

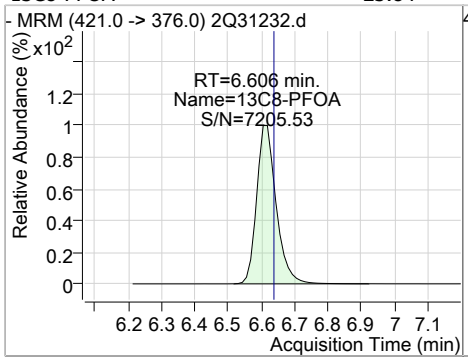
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	26.94	6.60	-0.01	107250				

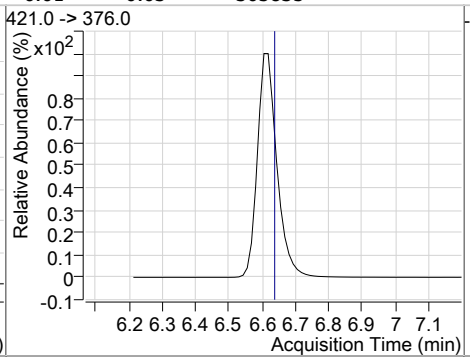


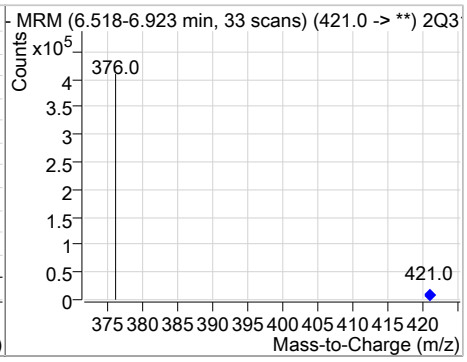




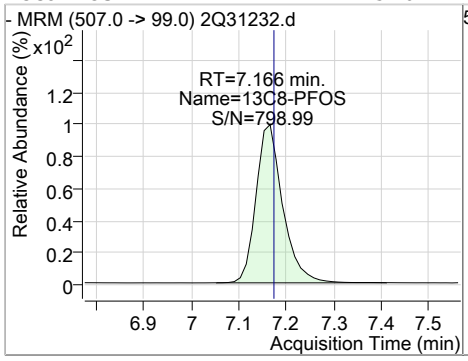
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.84	6.61	-0.03	305835				

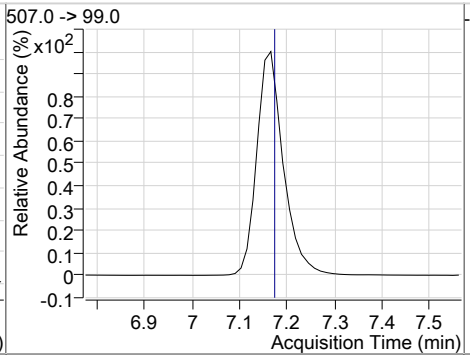


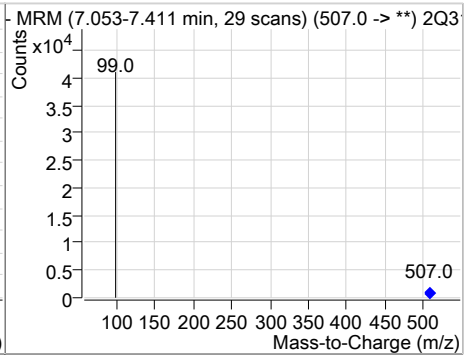




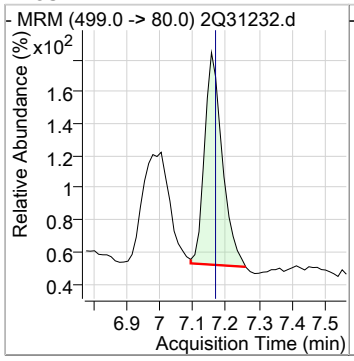
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.46	7.17	-0.01	29349				

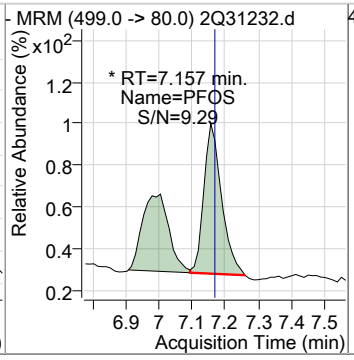


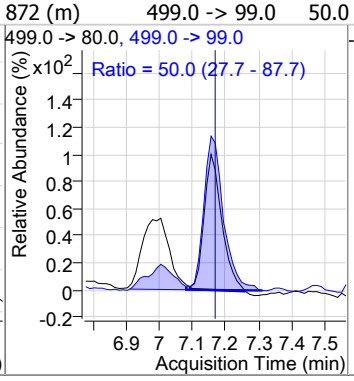


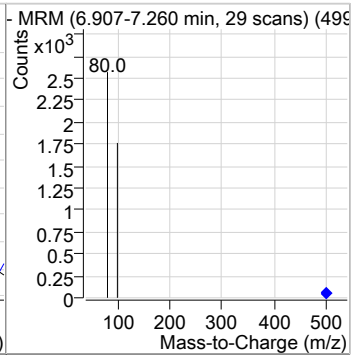


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.60	7.16	-0.02	872 (m)	499.0 -> 99.0	50.0	27.7	87.7



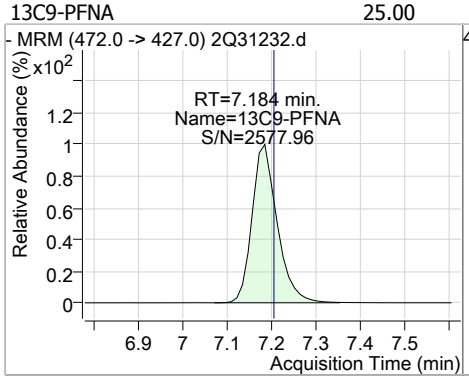


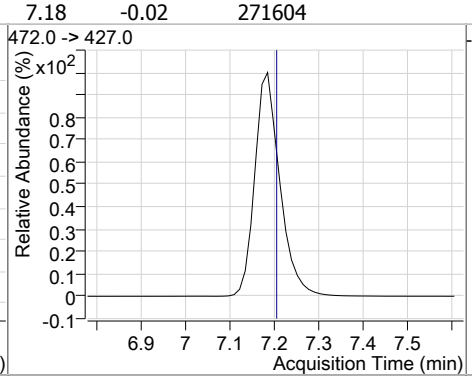


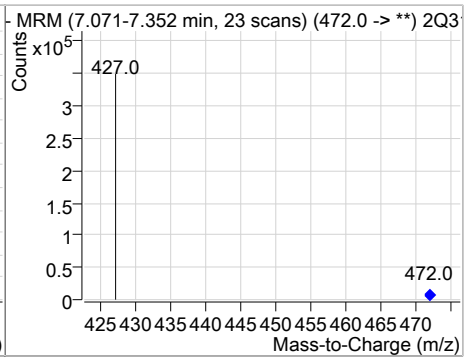


Perfluorinated Compounds by LC/MS/MS

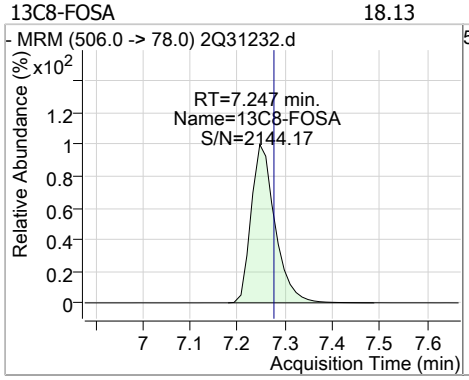
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.00	7.18	-0.02	271604				

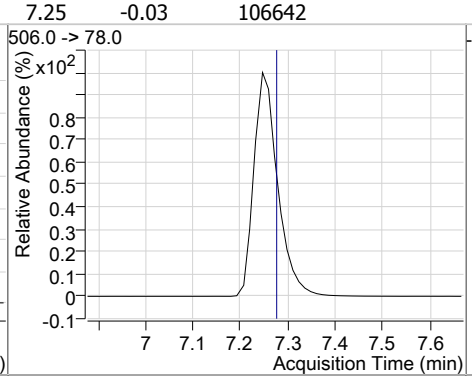


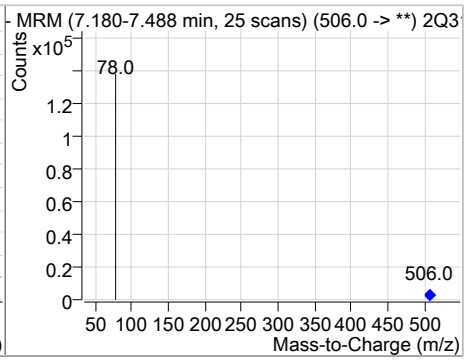




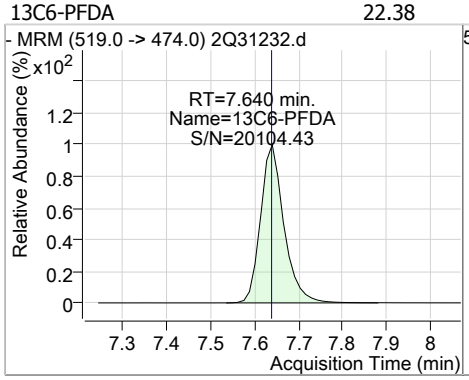
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.13	7.25	-0.03	106642				

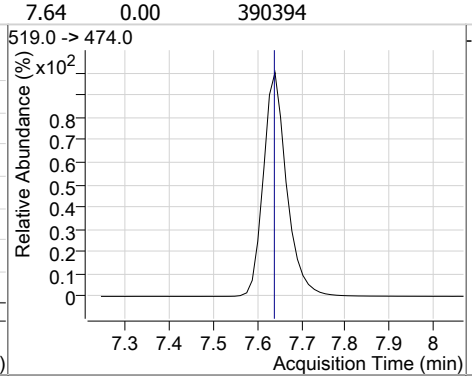


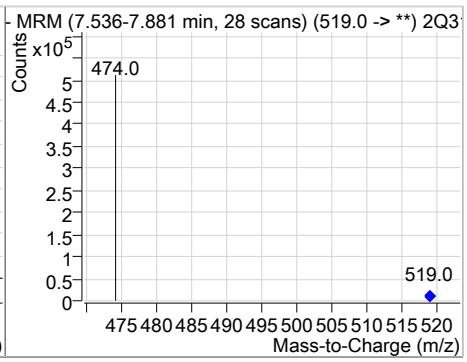




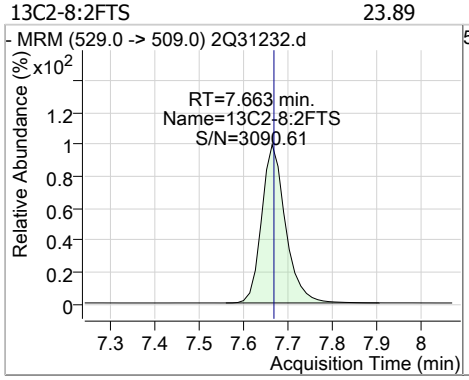
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.38	7.64	0.00	390394				

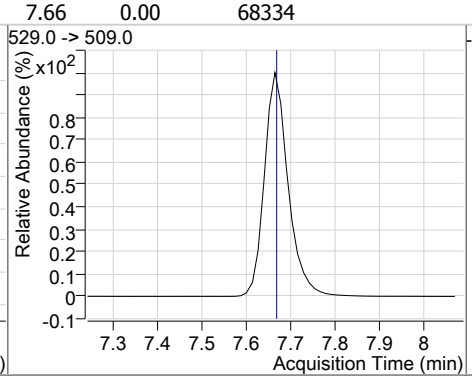


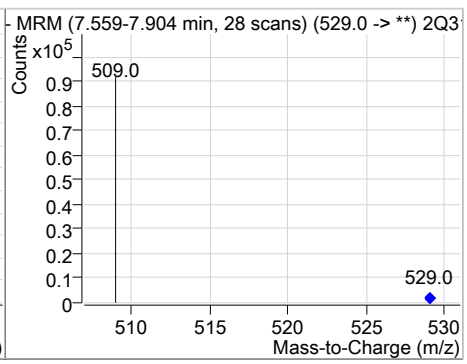




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.89	7.66	0.00	68334				

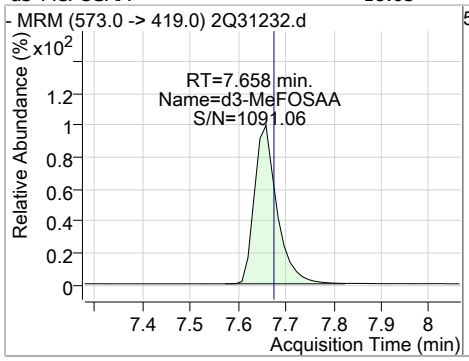


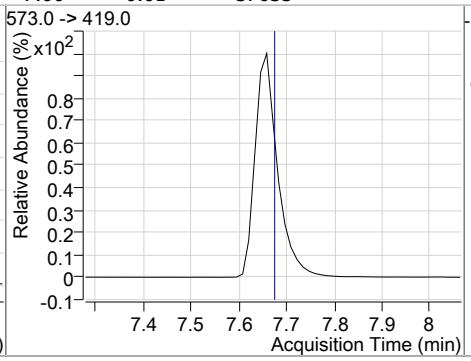


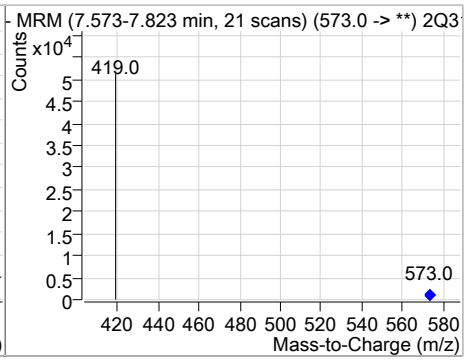


Perfluorinated Compounds by LC/MS/MS

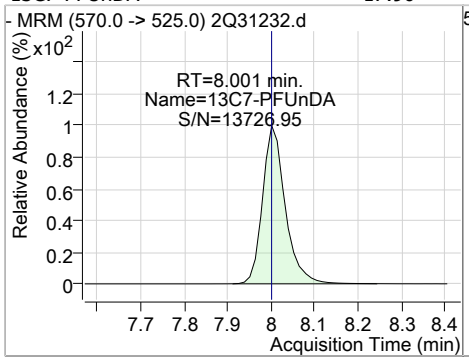
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.05	7.66	-0.01	37635				

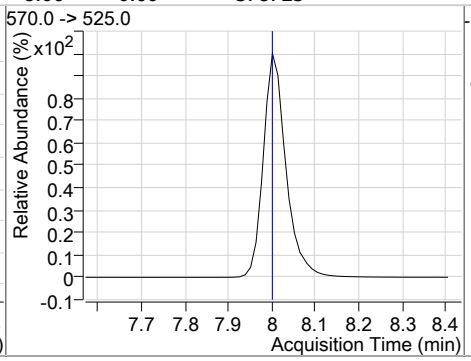


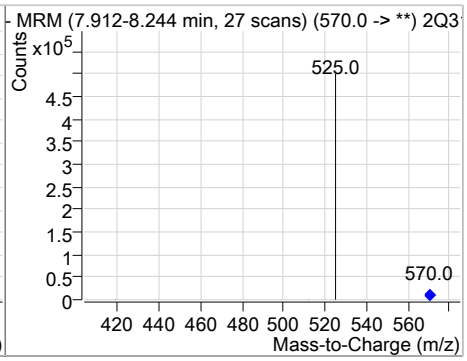




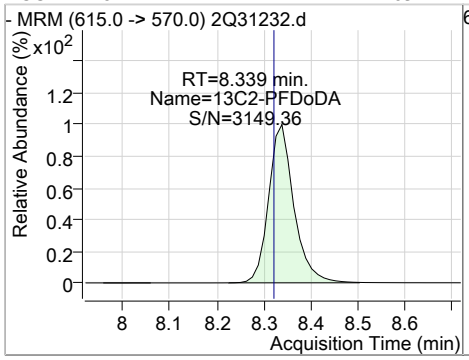
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.90	8.00	0.00	378723				

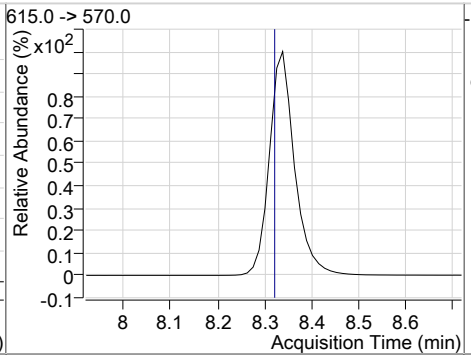


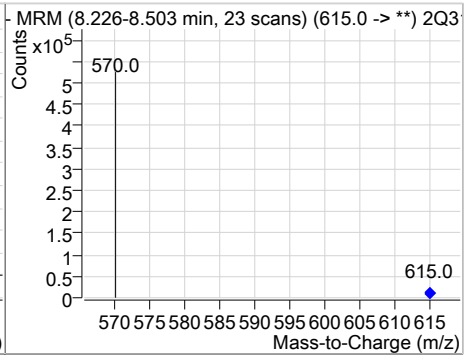




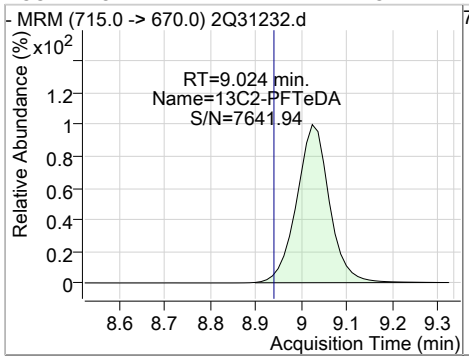
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.09	8.34	0.02	394471				

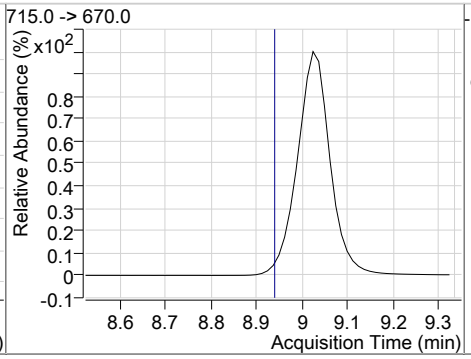


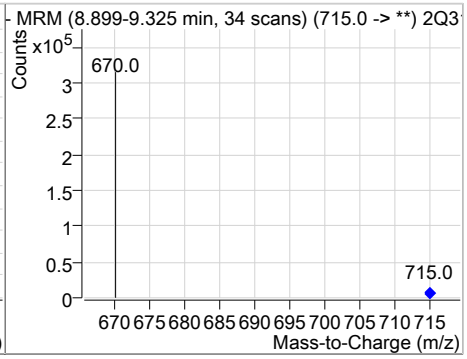




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.27	9.02	0.09	232601				







Manual Integration Approval Summary

Sample Number: FA65213-2
Lab FileID: 2Q31232.D
Injection Time: 06/23/19 23:09
Method: EPA 537M BY ID
Analyst approved: 06/24/19 13:45 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.61	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31233.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 11:24:17 PM
Sample Name : fa65213-3
Vial : Vial 52
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

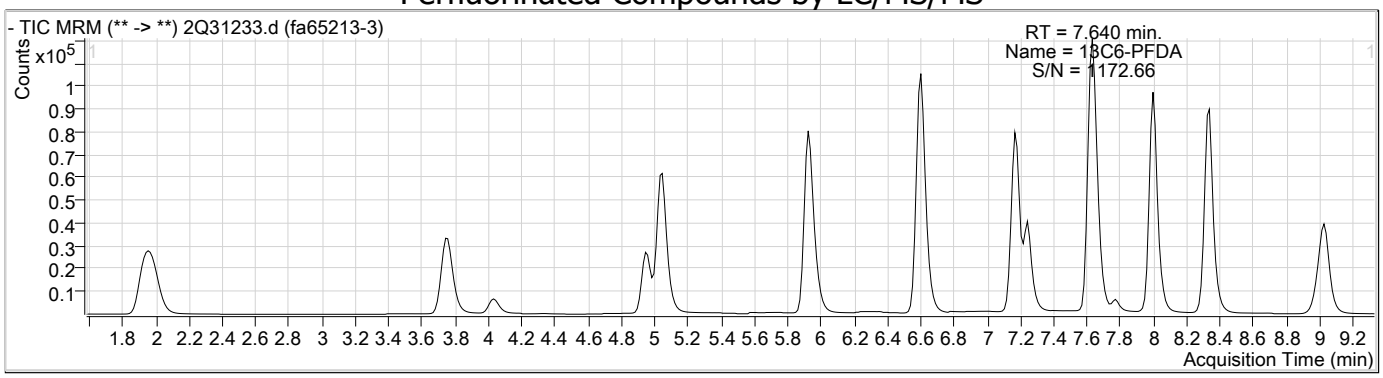
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.952	217.0 -> 172.0	202735	20.00	µg/L	-0.038
M5-PFPeA	3.749	268.0 -> 223.0	164539	20.00	µg/L	-0.051
M5-PFHxA	5.050	318.0 -> 273.0	252299	20.00	µg/L	-0.038
M4-PFHpA	5.930	367.0 -> 322.0	307435	20.00	µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	309421	20.00	µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	277239	20.00	µg/L	-0.030
M6-PFDA	7.640	519.0 -> 474.0	388603	20.00	µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	345421	20.00	µg/L	-0.002
M2-PFDoDA	8.339	615.0 -> 570.0	336632	20.00	µg/L	0.019
M2-PFTeDA	9.024	715.0 -> 670.0	196523	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	117569	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	27784	20.00	µg/L	-0.051
M3-PFHxS	5.960	402.0 -> 99.0	23980	20.00	µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	29320	20.00	µg/L	-0.018
M2-4:2FTS	4.946	329.0 -> 309.0	110230	20.00	µg/L	-0.050
M2-6:2FTS	6.589	429.0 -> 409.0	108234	20.00	µg/L	-0.026
M2-8:2FTS	7.663	529.0 -> 509.0	68448	20.00	µg/L	-0.001
M3-MeFOSAA	7.658	573.0 -> 419.0	35705	20.00	µg/L	-0.014
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.946	329.0 -> 309.0	110113	22.69	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C2-6:2FTS	6.589	429.0 -> 409.0	108193	27.17	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.9%		
13C2-8:2FTS	7.663	529.0 -> 509.0	68446	23.93	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.7%		
13C2-PFDoDA	8.339	615.0 -> 570.0	336625	14.58	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C2-PFTeDA	9.024	715.0 -> 670.0	195065	11.13	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.6%		
13C3-PFBS	4.030	302.0 -> 99.0	27780	18.28	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C3-PFHxS	5.960	402.0 -> 99.0	23973	18.83	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C4-PFBA	1.952	217.0 -> 172.0	201949	19.53	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C4-PFHpA	5.930	367.0 -> 322.0	307557	22.40	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C5-PFHxA	5.050	318.0 -> 273.0	252121	20.83	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C5-PFPeA	3.749	268.0 -> 223.0	164513	20.49	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C6-PFDA	7.640	519.0 -> 474.0	388555	22.27	µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

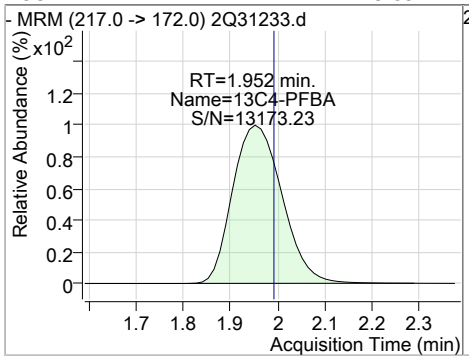
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C7-PFUnDA	8.001	570.0 -> 525.0	345566	16.33 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%		
13C8-FOSA	7.247	506.0 -> 78.0	117554	19.98 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C8-PFOA	6.606	421.0 -> 376.0	309349	24.12 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%		
13C8-PFOS	7.154	507.0 -> 99.0	29304	15.44 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%		
13C9-PFNA	7.171	472.0 -> 427.0	277157	25.51 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.5%		
d3-MeFOSAA	7.658	573.0 -> 419.0	35711	17.13 µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.948	213.0 -> 169.0	847	0.49 µg/L		100
PFBS	4.033	299.0 -> 80.0	351	0.18 µg/L		96
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.610	413.0 -> 369.0	2007	0.22 µg/L	m	98
PFOS	7.157	499.0 -> 80.0	1555	1.07 µg/L	m	85
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

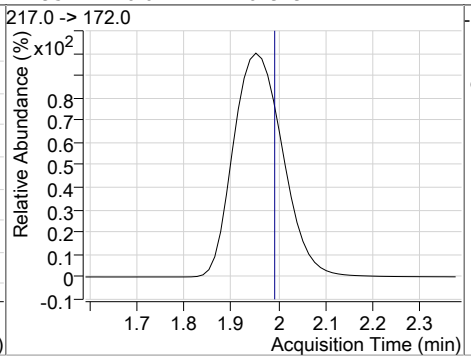
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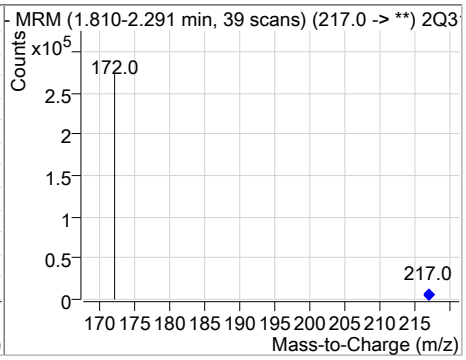
Perfluorinated Compounds by LC/MS/MS



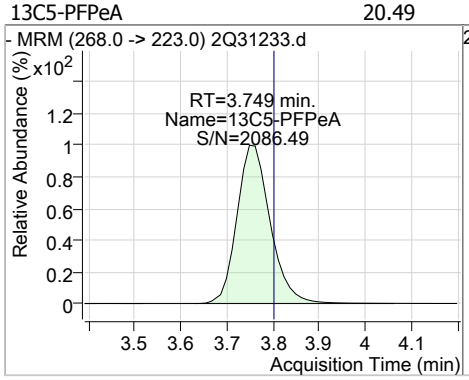
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.53	1.95	-0.04	201949				

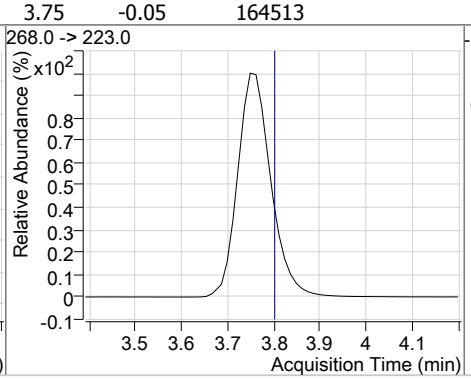


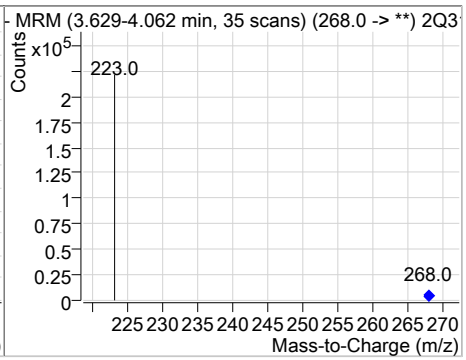




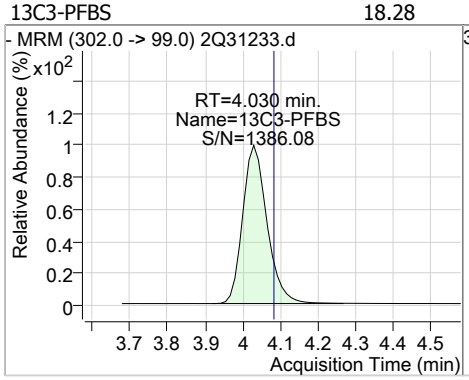
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.49	3.75	-0.05	164513				

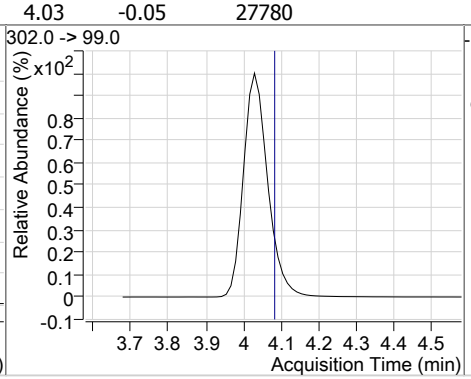


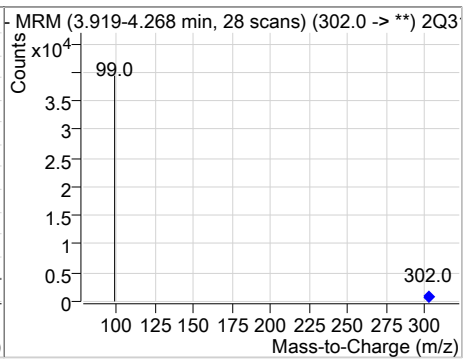




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.28	4.03	-0.05	27780				

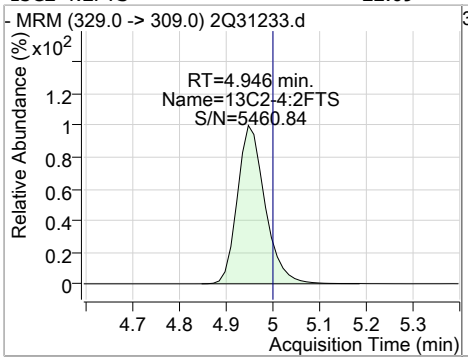


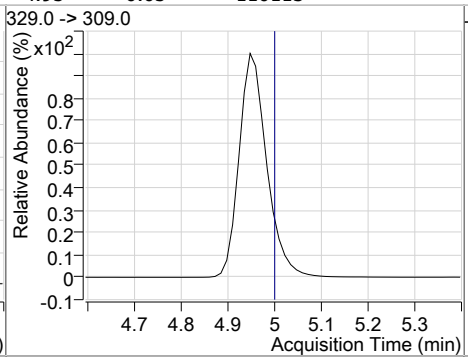


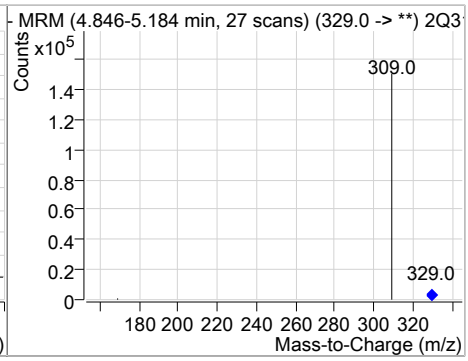


Perfluorinated Compounds by LC/MS/MS

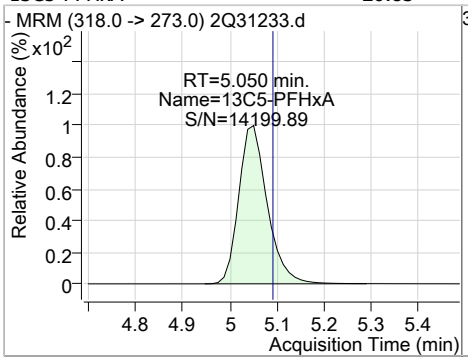
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.69	4.95	-0.05	110113				

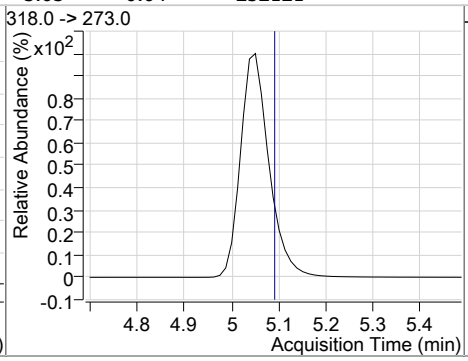


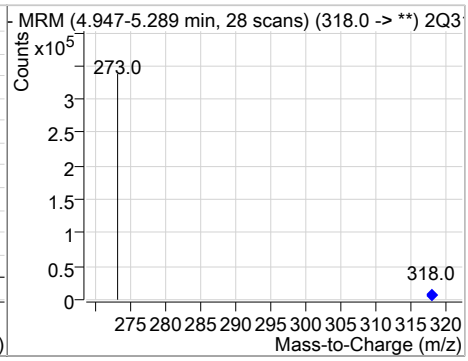




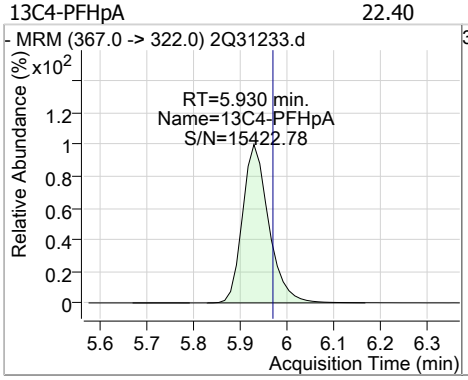
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.83	5.05	-0.04	252121				

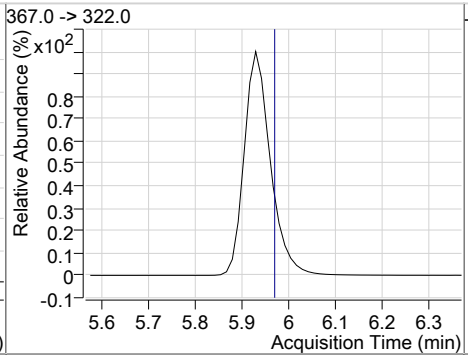


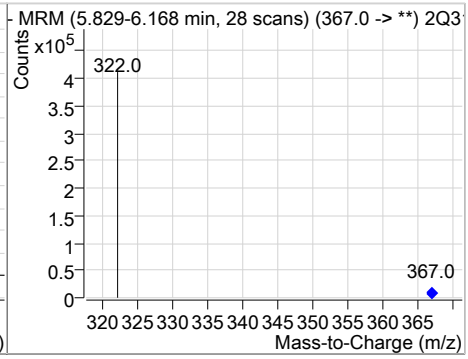




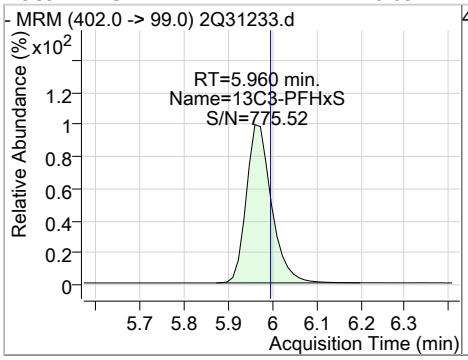
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.40	5.93	-0.04	307557				

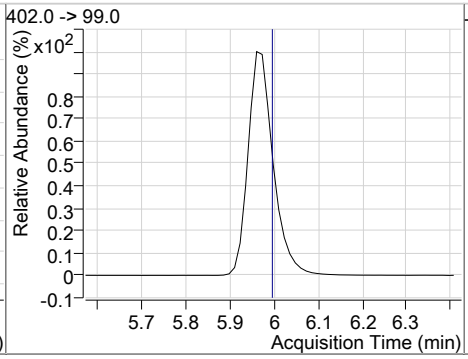


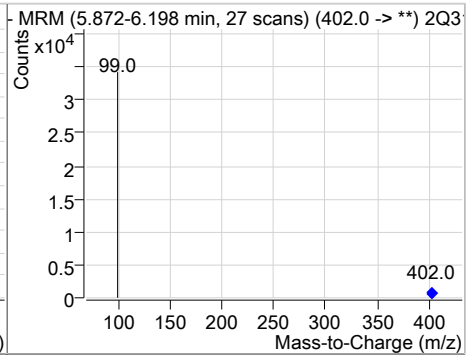




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.83	5.96	-0.04	23973				

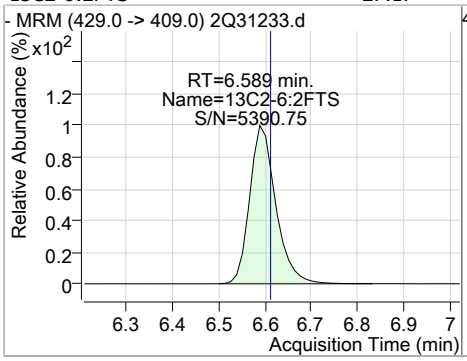


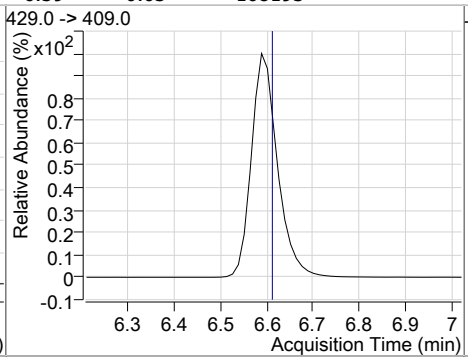


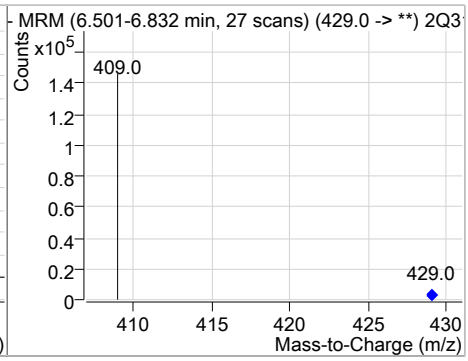


Perfluorinated Compounds by LC/MS/MS

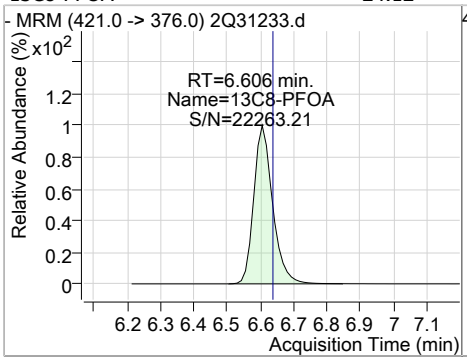
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	27.17	6.59	-0.03	108193				

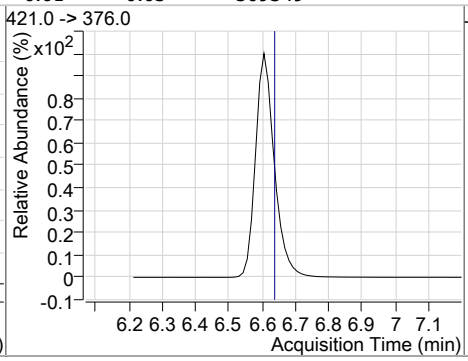


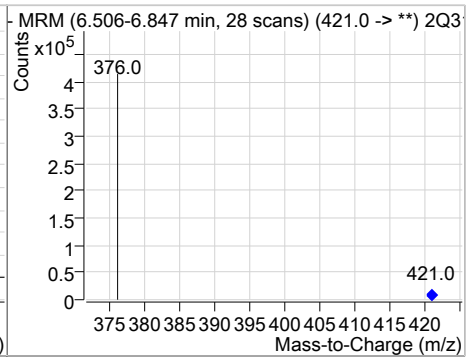




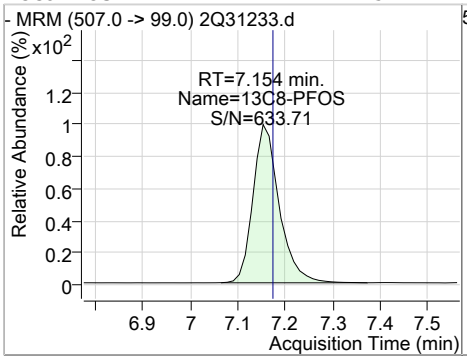
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.12	6.61	-0.03	309349				

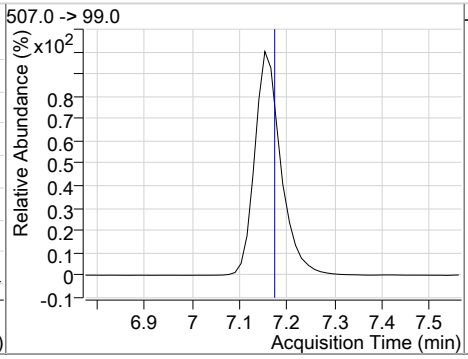


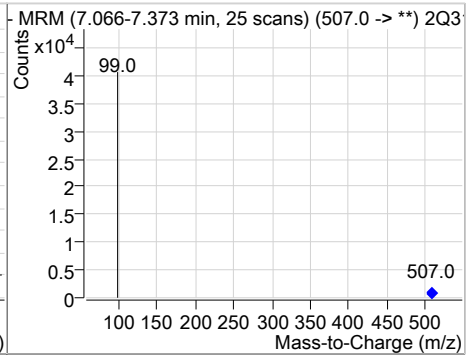




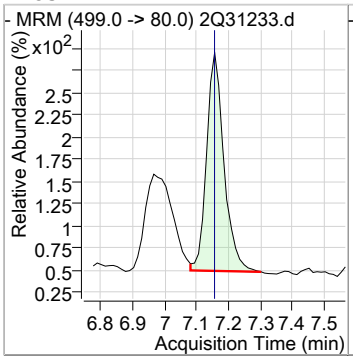
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.44	7.15	-0.02	29304				

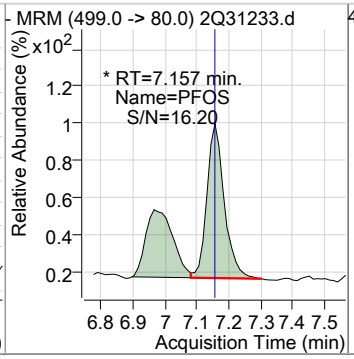


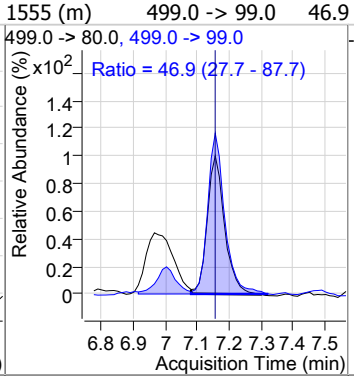


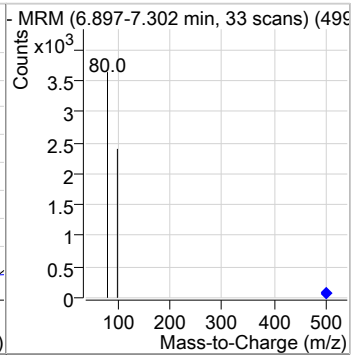


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.07	7.16	-0.02	1555 (m)	499.0 -> 99.0	46.9	27.7	87.7



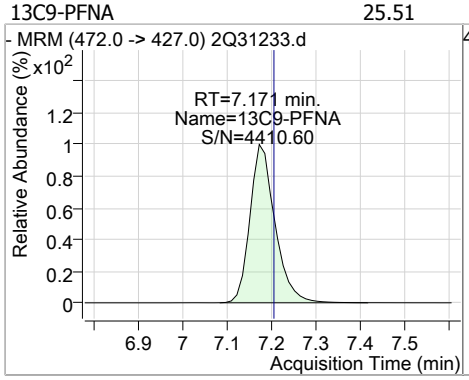


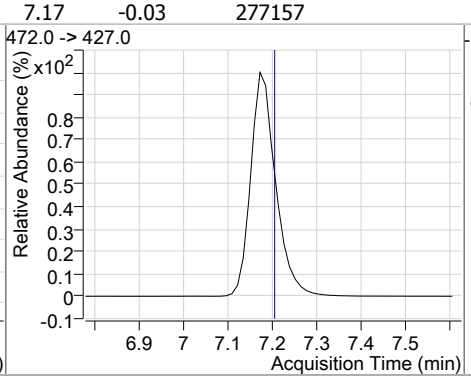


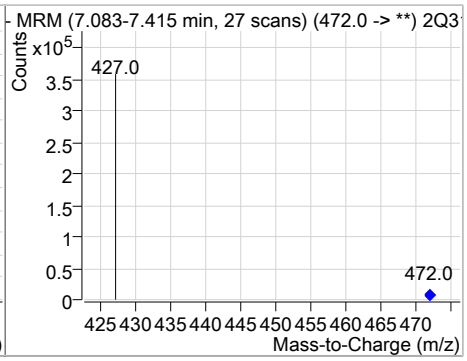


Perfluorinated Compounds by LC/MS/MS

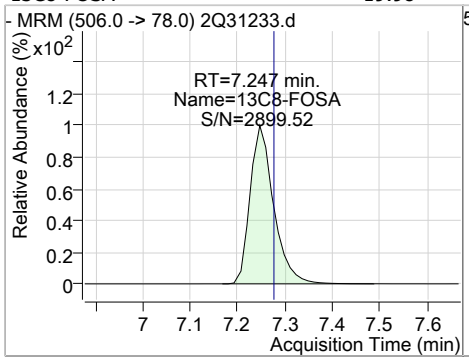
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.51	7.17	-0.03	277157				

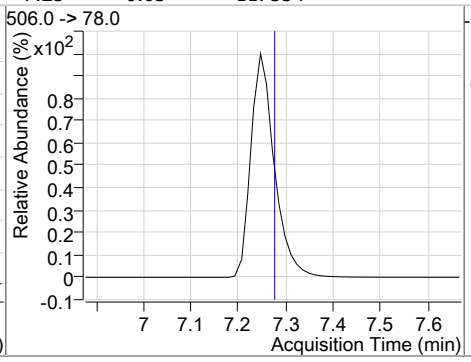


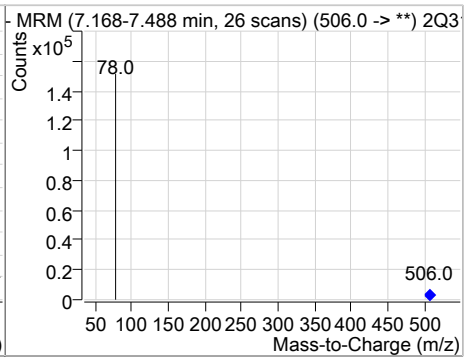




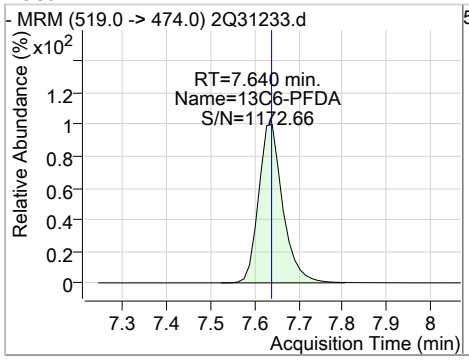
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.98	7.25	-0.03	117554				

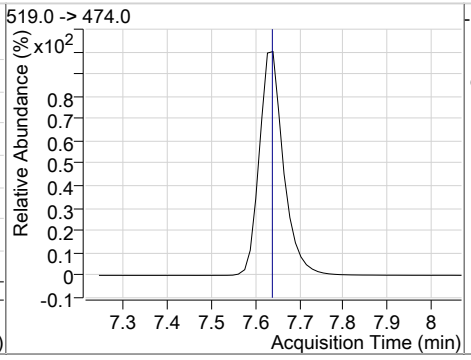


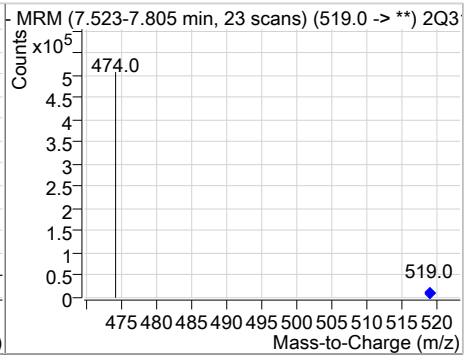




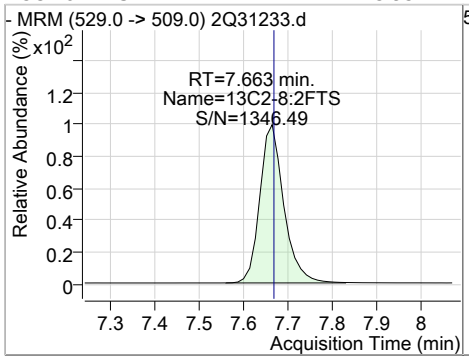
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13C6-PFDA	22.27	7.64	0.00	388555				

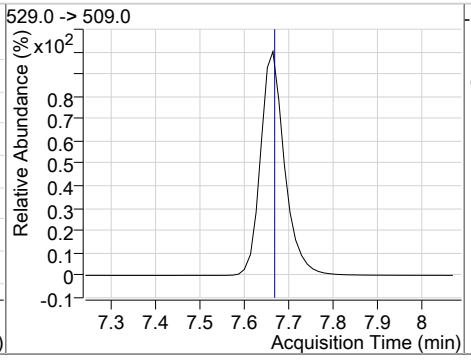


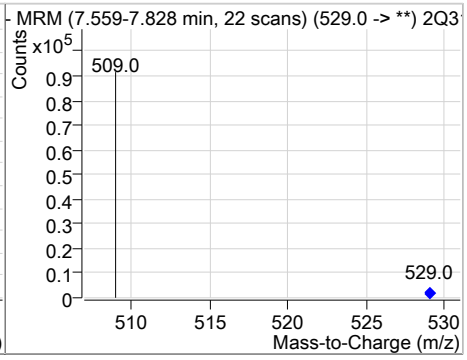




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.93	7.66	0.00	68446				

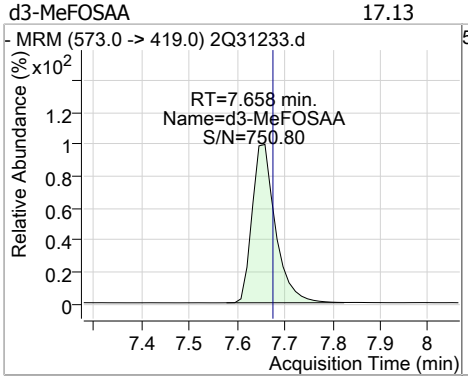


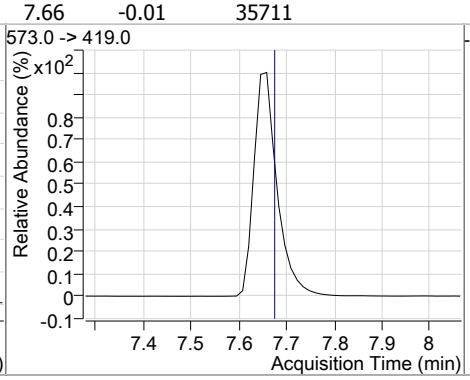


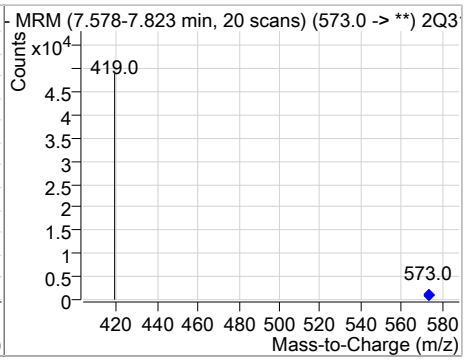


Perfluorinated Compounds by LC/MS/MS

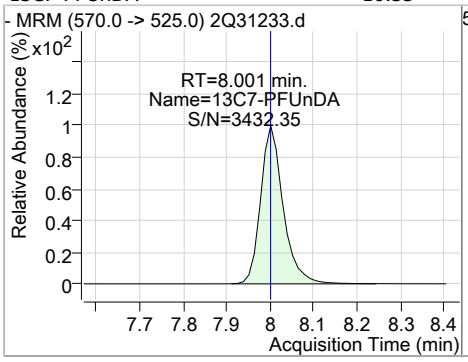
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.13	7.66	-0.01	35711				

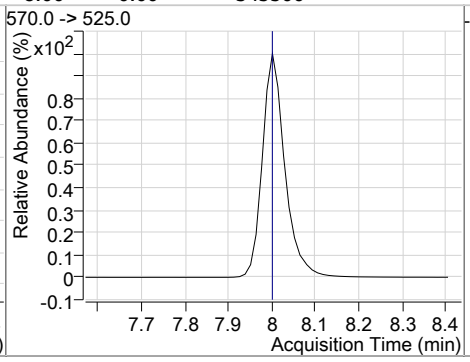


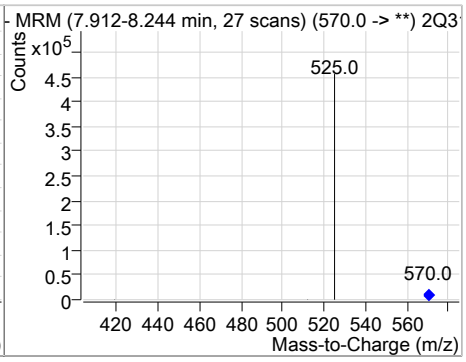




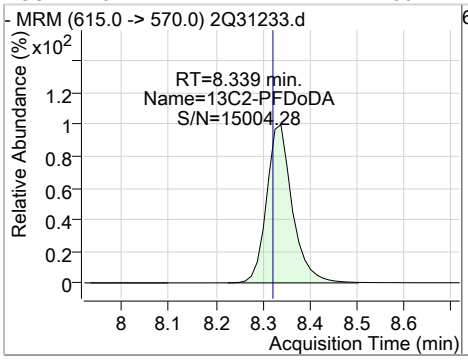
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.33	8.00	0.00	345566				

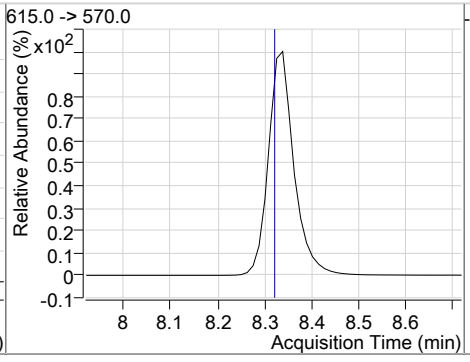


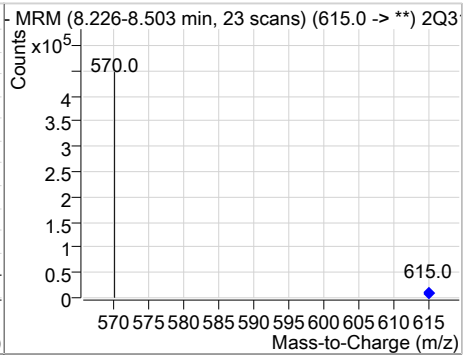




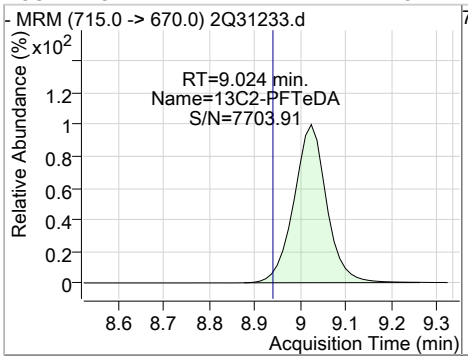
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.58	8.34	0.02	336625				

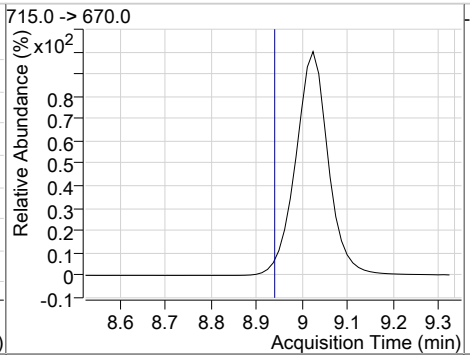


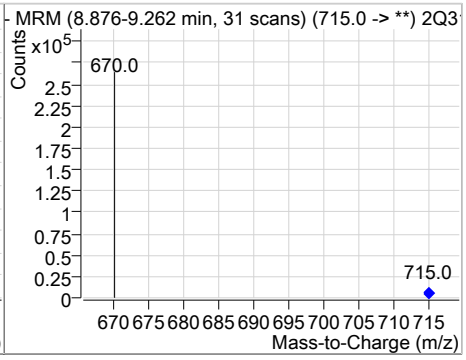




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.13	9.02	0.09	195065				







Manual Integration Approval Summary

Sample Number: FA65213-3
Lab FileID: 2Q31233.D
Injection Time: 06/23/19 23:24

Method: EPA 537M BY ID
Analyst approved: 06/24/19 13:45 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.61	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/27/19 17:05

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31503.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 4:51:49 AM
Sample Name : fa65213-4
Vial : Vial 28
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75639,S2Q501,250,,,1,1,water

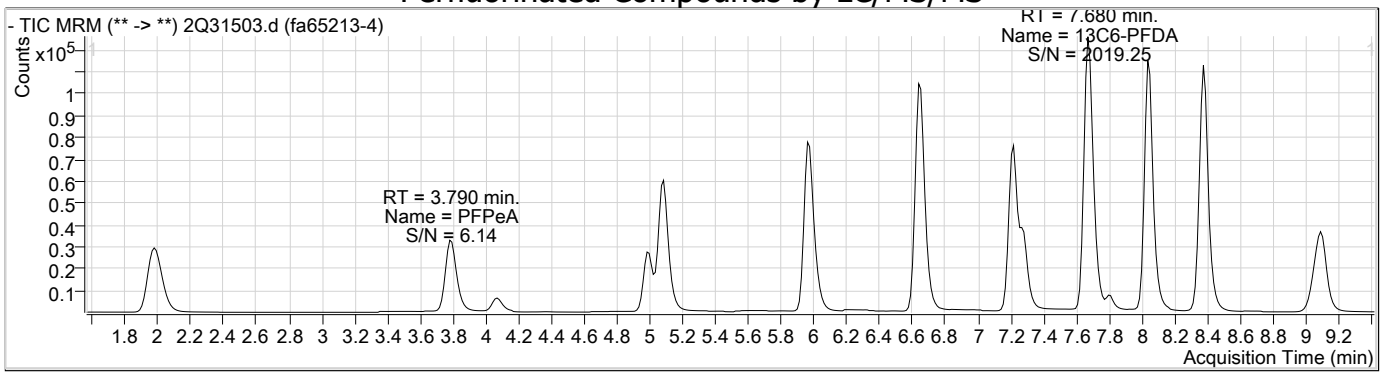
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.977	217.0 -> 172.0	181628	20.00 µg/L	0.000
M5-PFPeA	3.787	268.0 -> 223.0	153632	20.00 µg/L	0.025
M5-PFHxA	5.088	318.0 -> 273.0	247757	20.00 µg/L	0.038
M4-PFHpA	5.968	367.0 -> 322.0	309503	20.00 µg/L	0.038
M8-PFOA	6.656	421.0 -> 376.0	317146	20.00 µg/L	0.051
M9-PFNA	7.225	472.0 -> 427.0	278248	20.00 µg/L	0.054
M6-PFDA	7.680	519.0 -> 474.0	402888	20.00 µg/L	0.052
M7-PFUnDA	8.041	570.0 -> 525.0	434166	20.00 µg/L	0.040
M2-PFDoDA	8.377	615.0 -> 570.0	447148	20.00 µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	205667	20.00 µg/L	0.063
M8-FOSA	7.286	506.0 -> 78.0	94738	20.00 µg/L	0.039
M3-PFBS	4.067	302.0 -> 99.0	26040	20.00 µg/L	0.038
M3-PFHxS	6.010	402.0 -> 99.0	23074	20.00 µg/L	0.051
M8-PFOS	7.206	507.0 -> 99.0	28468	20.00 µg/L	0.052
M2-4:2FTS	4.984	329.0 -> 309.0	114798	20.00 µg/L	0.037
M2-6:2FTS	6.640	429.0 -> 409.0	114385	20.00 µg/L	0.051
M2-8:2FTS	7.703	529.0 -> 509.0	69761	20.00 µg/L	0.052
M3-MeFOSAA	7.684	573.0 -> 419.0	44296	20.00 µg/L	0.038
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.984	329.0 -> 309.0	114722	23.64 µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
13C2-6:2FTS	6.640	429.0 -> 409.0	114289	28.70 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 143.5%	
13C2-8:2FTS	7.703	529.0 -> 509.0	69714	24.37 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.9%	
13C2-PFDoDA	8.377	615.0 -> 570.0	445690	19.31 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C2-PFTeDA	9.087	715.0 -> 670.0	203226	11.59 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.0%	
13C3-PFBS	4.067	302.0 -> 99.0	26004	17.12 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%	
13C3-PFHxS	6.010	402.0 -> 99.0	23063	18.11 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C4-PFBA	1.977	217.0 -> 172.0	181610	17.56 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%	
13C4-PFHpA	5.968	367.0 -> 322.0	309395	22.53 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C5-PFHxA	5.088	318.0 -> 273.0	247746	20.47 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C5-PFPeA	3.787	268.0 -> 223.0	153632	19.14 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C6-PFDA	7.680	519.0 -> 474.0	402175	23.05 µg/L	0.052

Perfluorinated Compounds by LC/MS/MS

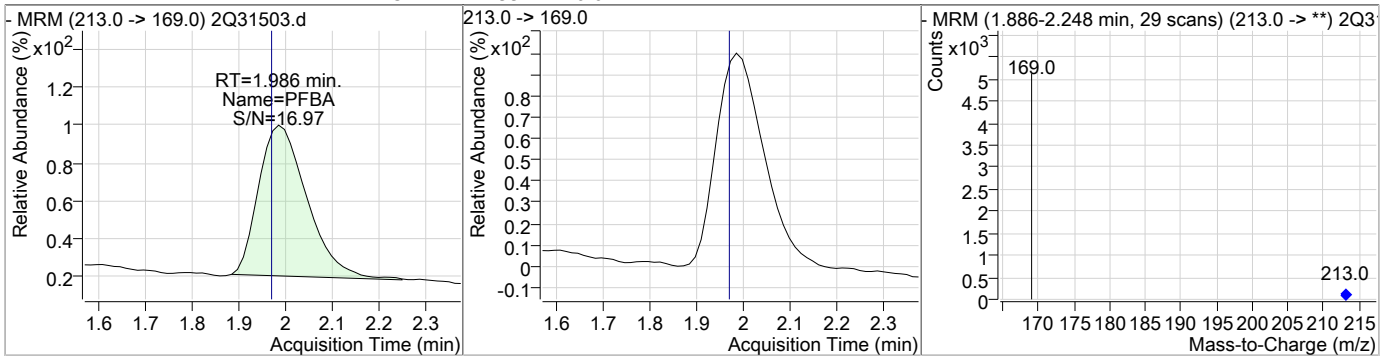
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.3%		
13C7-PFUnDA	8.041	570.0 -> 525.0	433303	20.48 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-FOSA	7.286	506.0 -> 78.0	94679	16.09 µg/L		0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%		
13C8-PFOA	6.656	421.0 -> 376.0	316835	24.70 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.5%		
13C8-PFOS	7.206	507.0 -> 99.0	28464	14.99 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C9-PFNA	7.225	472.0 -> 427.0	278008	25.58 µg/L		0.054
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.9%		
d3-MeFOSAA	7.684	573.0 -> 419.0	44290	21.25 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.986	213.0 -> 169.0	2217	1.43 µg/L		100
PFBS	4.059	299.0 -> 80.0	212	0.12 µg/L	m	81
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	5.970	363.0 -> 319.0	2326	0.17 µg/L		99
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.090	313.0 -> 269.0	1107	0.30 µg/L		96
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	6.648	413.0 -> 369.0	3872	0.42 µg/L	m	95
PFOS	7.034	499.0 -> 80.0	349	0.25 µg/L	m	60
PFPeA	3.790	263.0 -> 219.0	2706	0.42 µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

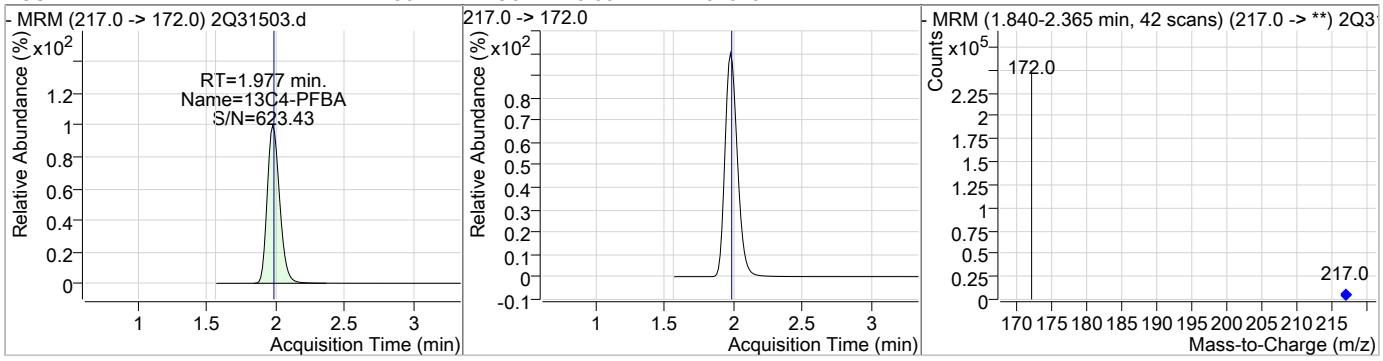
Perfluorinated Compounds by LC/MS/MS



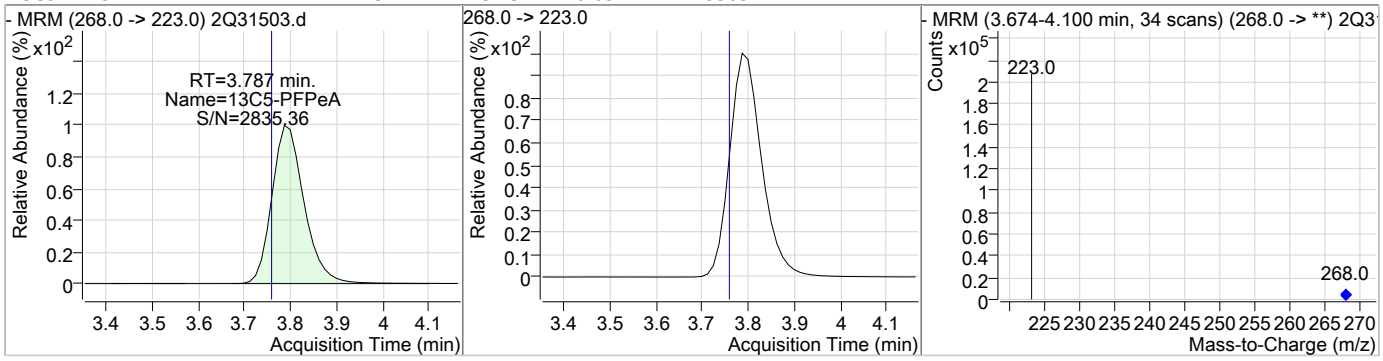
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.43	1.99	0.01	2217				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.56	1.98	0.00	181610				

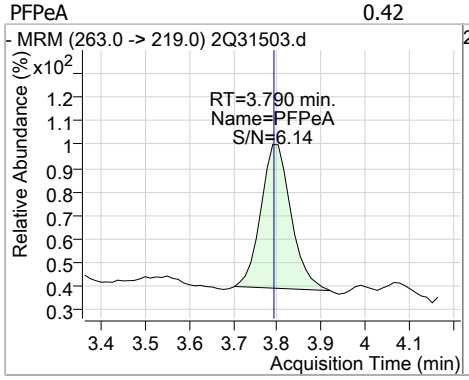


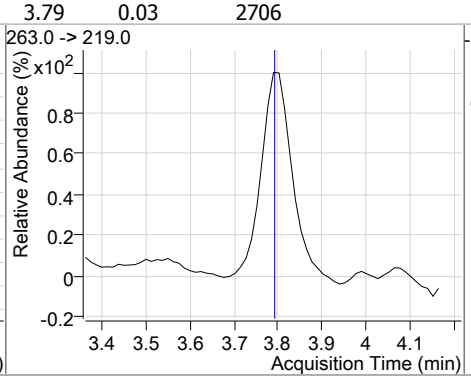
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.14	3.79	0.03	153632				

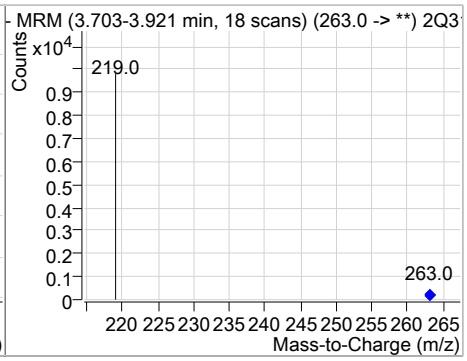


Perfluorinated Compounds by LC/MS/MS

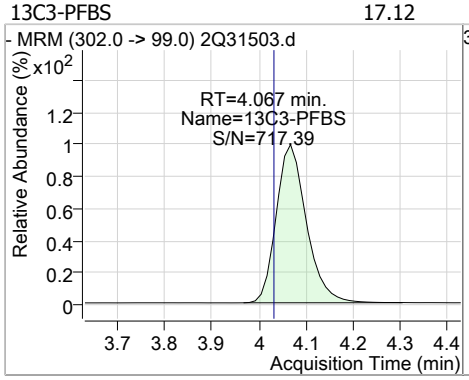
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.42	3.79	0.03	2706				

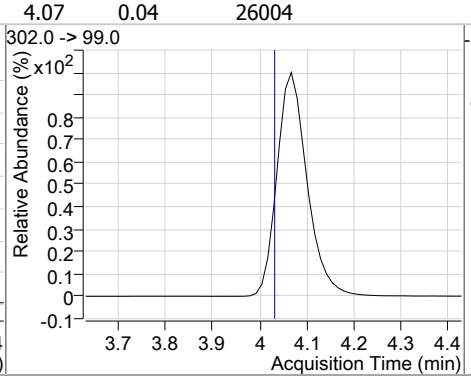


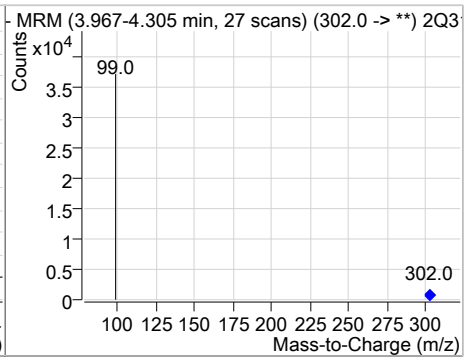




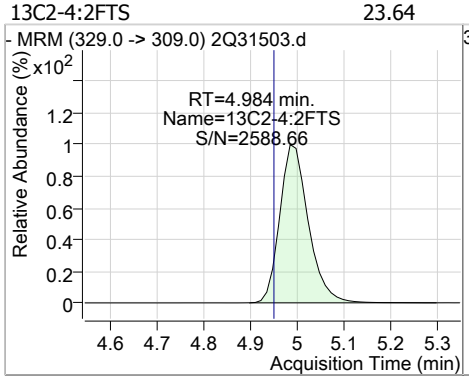
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.12	4.07	0.04	26004				

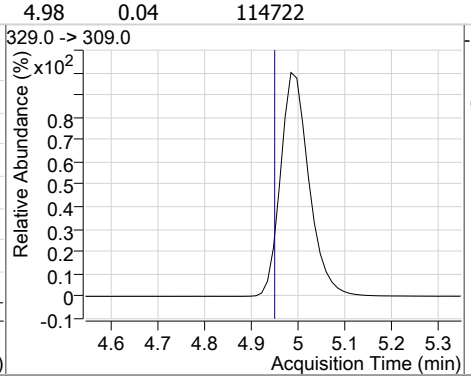


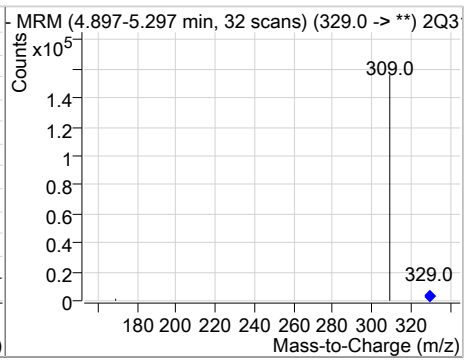




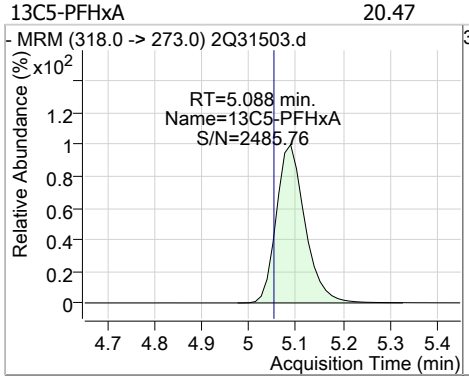
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.64	4.98	0.04	114722				

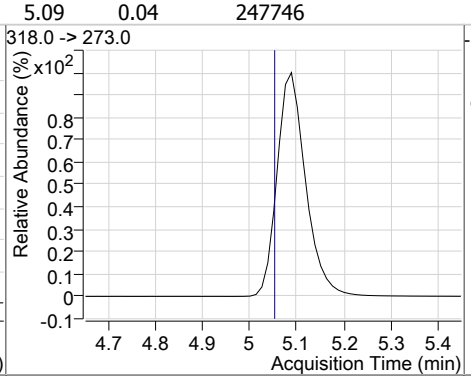


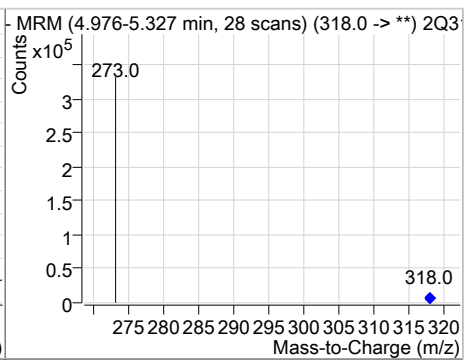




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.47	5.09	0.04	247746				

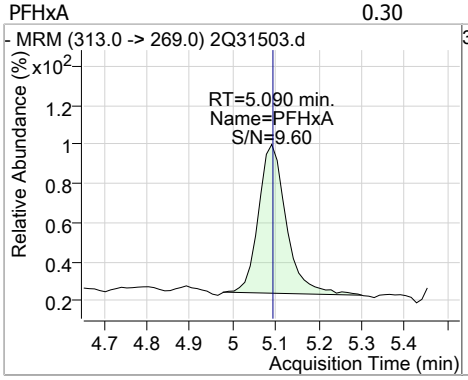


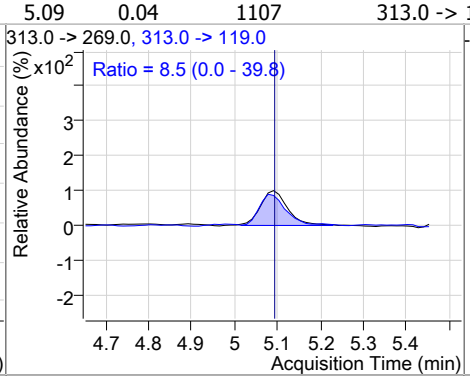


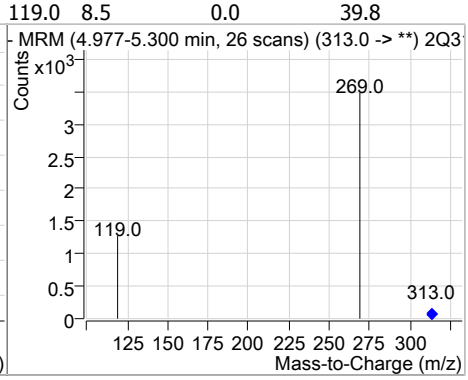


Perfluorinated Compounds by LC/MS/MS

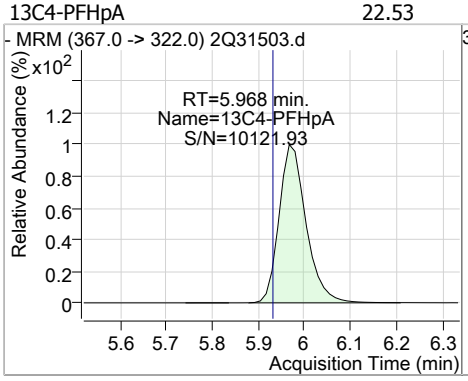
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.30	5.09	0.04	1107	313.0 -> 119.0	8.5	0.0	39.8

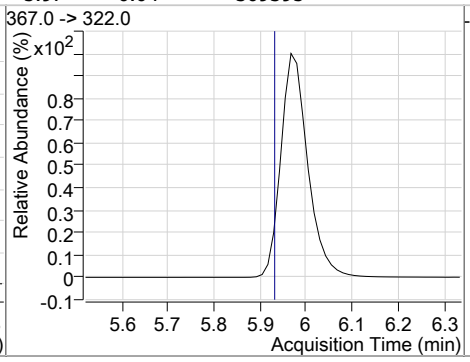


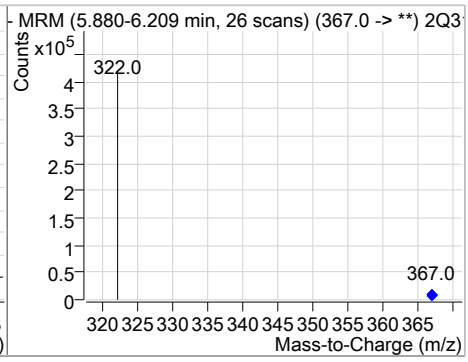




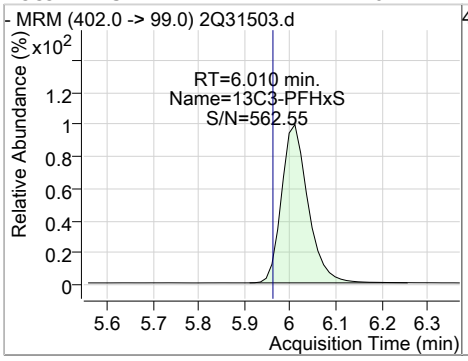
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.53	5.97	0.04	309395				

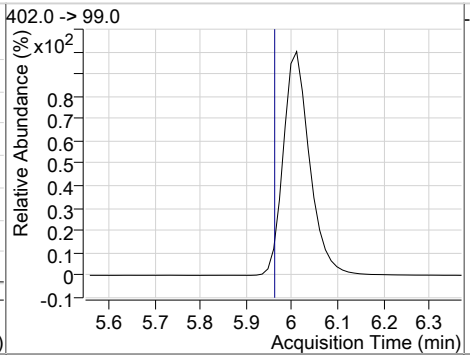


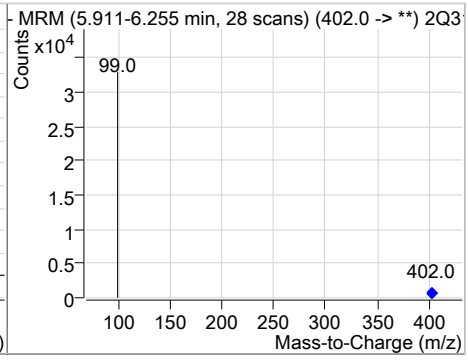




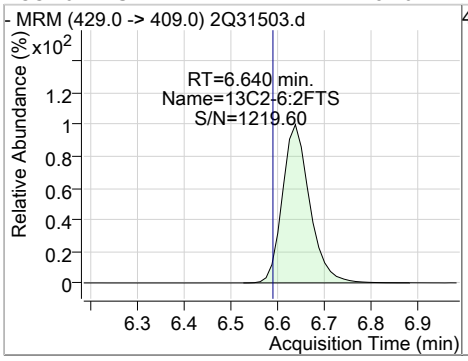
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.11	6.01	0.05	23063				

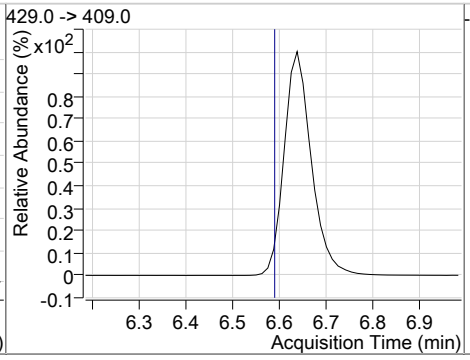


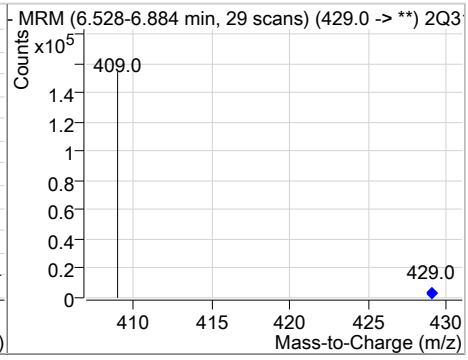




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	28.70	6.64	0.05	114289				

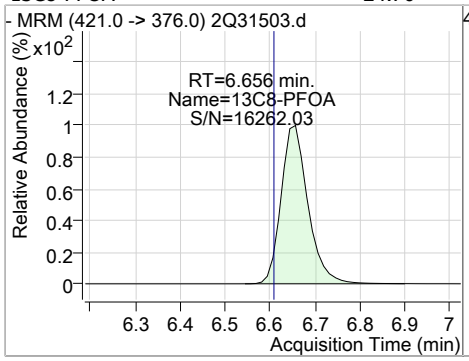


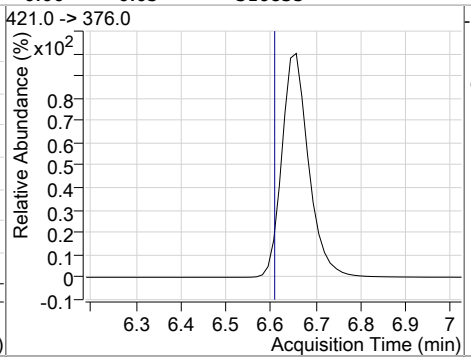


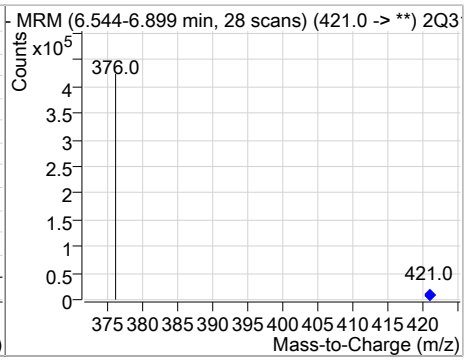


Perfluorinated Compounds by LC/MS/MS

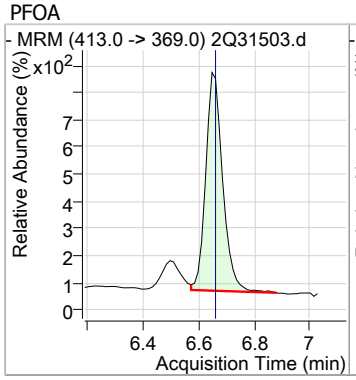
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.70	6.66	0.05	316835				

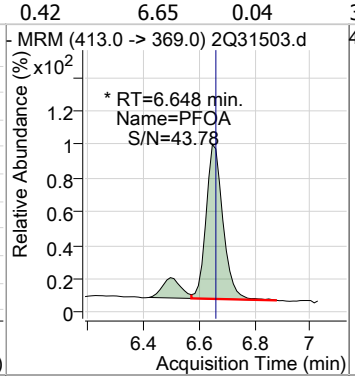


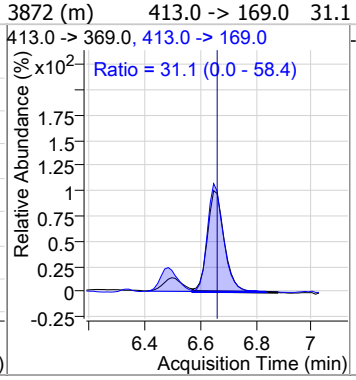


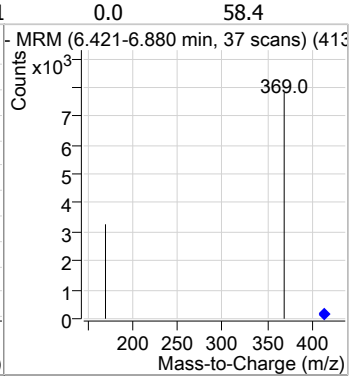


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.42	6.65	0.04	3872 (m)	413.0 -> 169.0	31.1	0.0	58.4

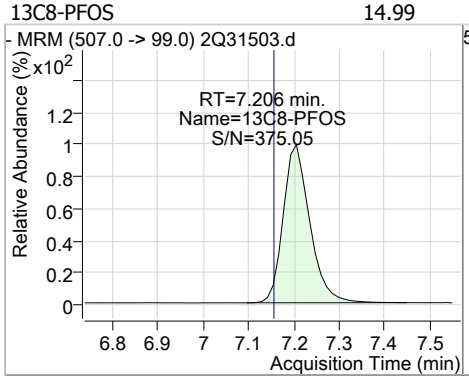


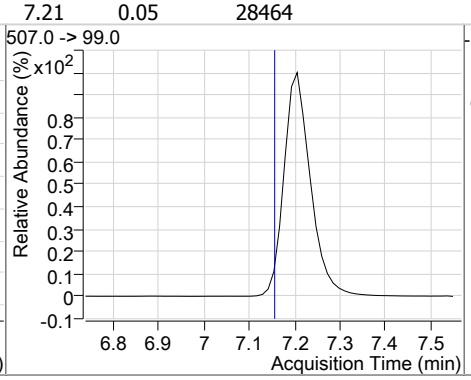


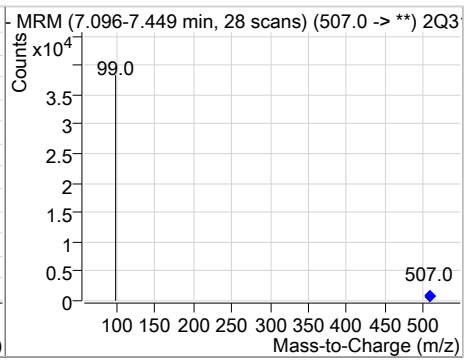




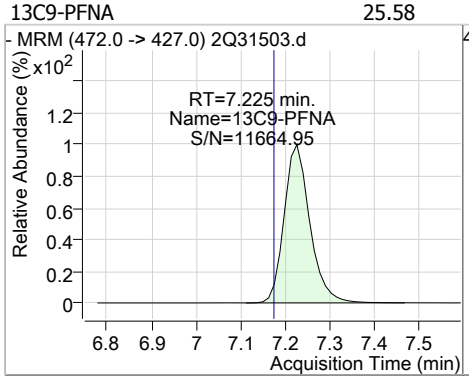
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.99	7.21	0.05	28464				

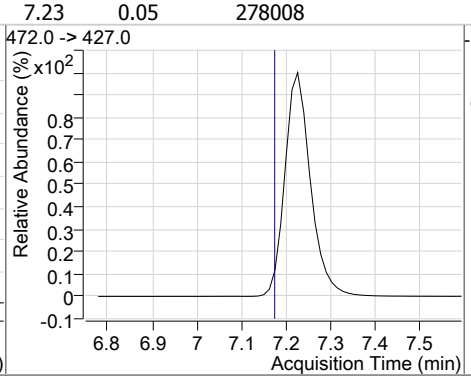


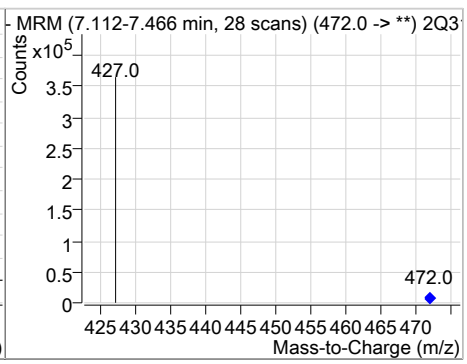




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.58	7.23	0.05	278008				

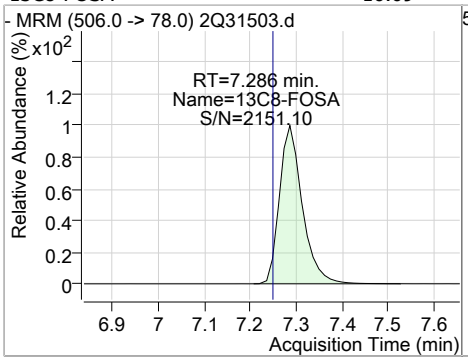


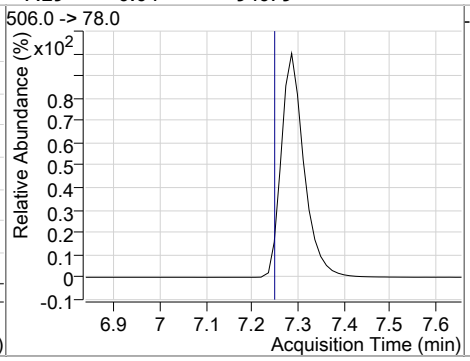


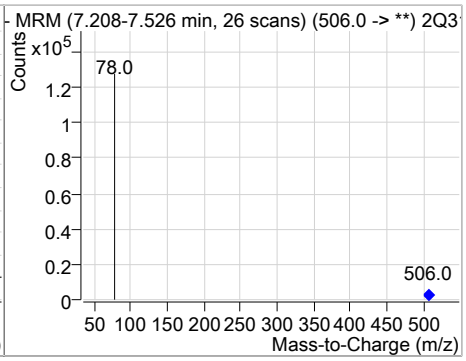


Perfluorinated Compounds by LC/MS/MS

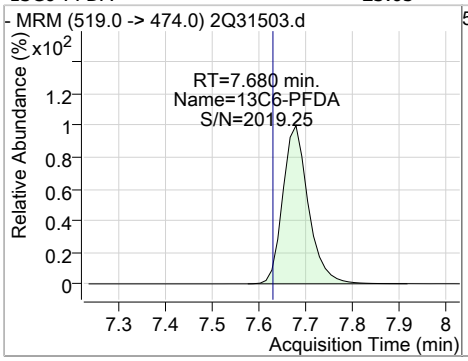
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.09	7.29	0.04	94679				

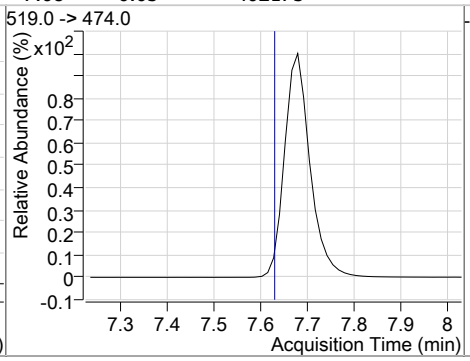


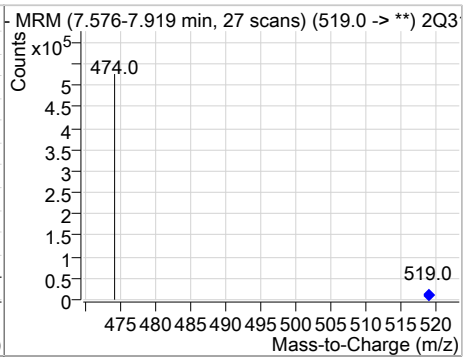




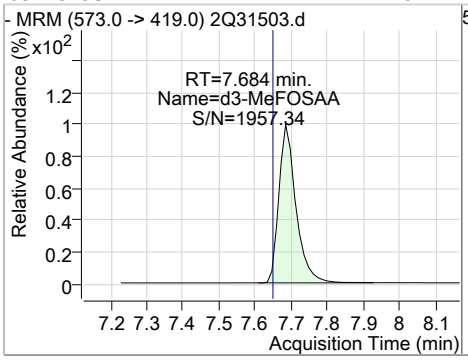
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.05	7.68	0.05	402175				

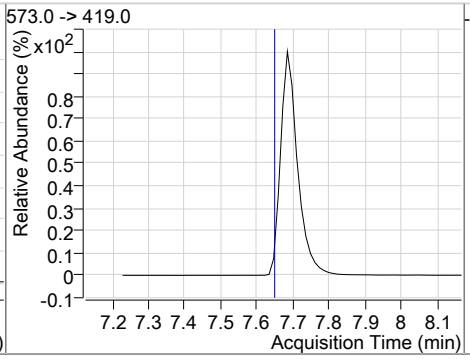


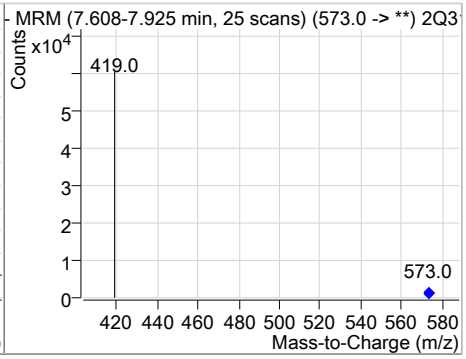




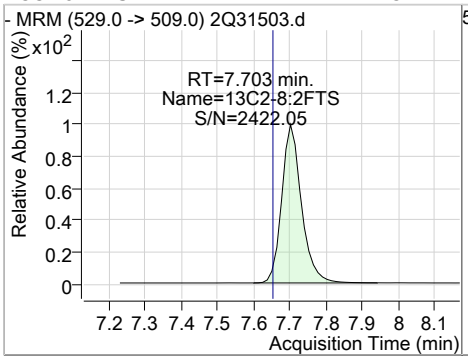
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.25	7.68	0.04	44290				

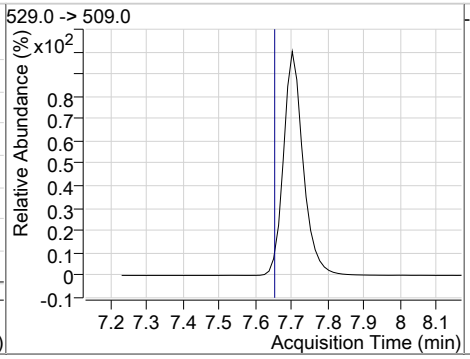


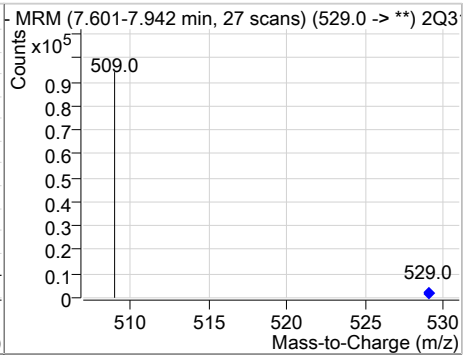




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.37	7.70	0.05	69714				

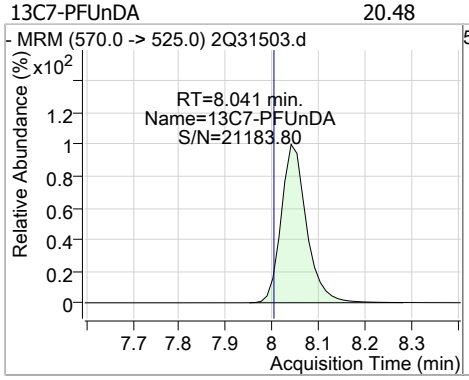


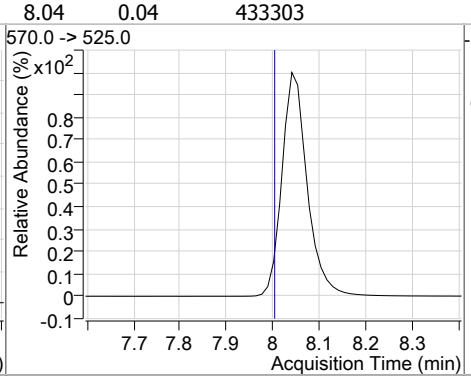


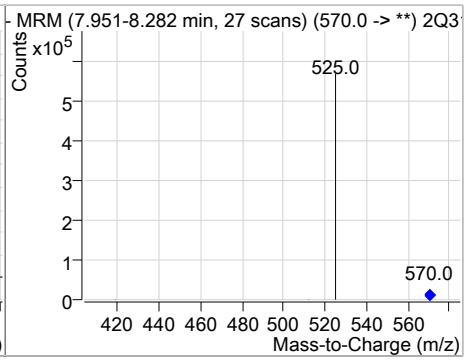


Perfluorinated Compounds by LC/MS/MS

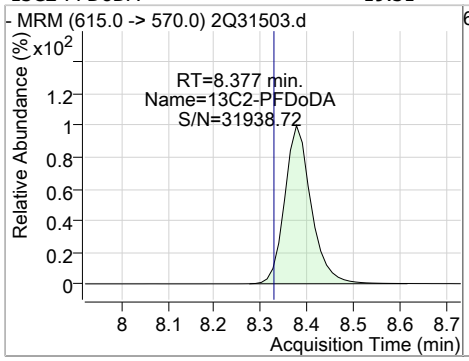
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.48	8.04	0.04	433303				

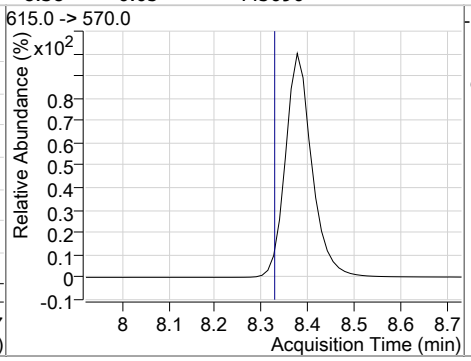


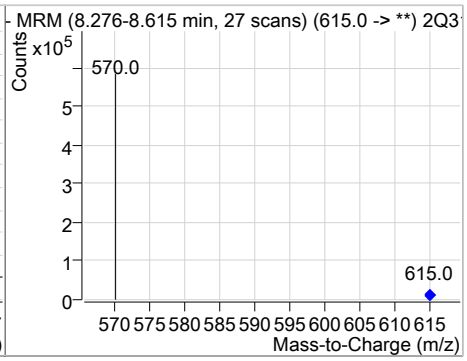




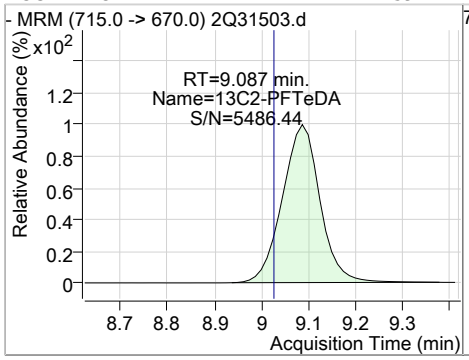
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.31	8.38	0.05	445690				

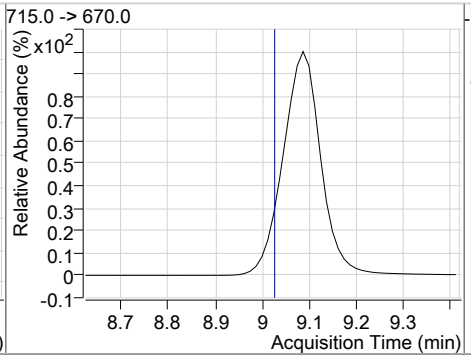


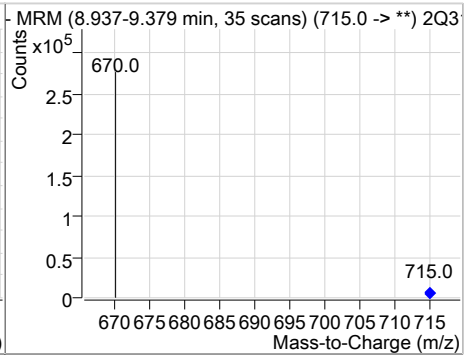




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.59	9.09	0.06	203226				







Manual Integration Approval Summary

Sample Number: FA65213-4
Lab FileID: 2Q31503.D
Injection Time: 06/27/19 04:51

Method: EPA 537M BY ID
Analyst approved: 06/27/19 14:53 Nancy Saunders
Supervisor approved: 06/27/19 17:05 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.06	Split peak
Perfluorooctanoic acid	335-67-1		6.65	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.03	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/27/19 17:05

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31504.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 5:06:38 AM
Sample Name : fa65213-5
Vial : Vial 29
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75639,S2Q501,250,,,1,1,water

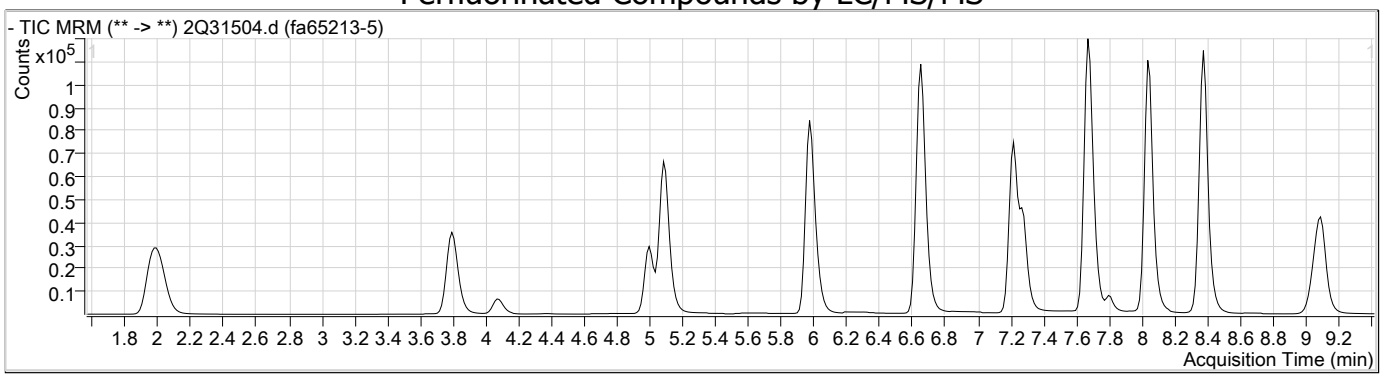
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.990	217.0 -> 172.0	216305	20.00 µg/L	0.013
M5-PFPeA	3.799	268.0 -> 223.0	177738	20.00 µg/L	0.038
M5-PFHxA	5.088	318.0 -> 273.0	275611	20.00 µg/L	0.038
M4-PFHpA	5.980	367.0 -> 322.0	333768	20.00 µg/L	0.051
M8-PFOA	6.656	421.0 -> 376.0	331539	20.00 µg/L	0.051
M9-PFNA	7.225	472.0 -> 427.0	273430	20.00 µg/L	0.054
M6-PFDA	7.680	519.0 -> 474.0	383059	20.00 µg/L	0.052
M7-PFUnDA	8.041	570.0 -> 525.0	415792	20.00 µg/L	0.040
M2-PFDoDA	8.377	615.0 -> 570.0	450111	20.00 µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	235950	20.00 µg/L	0.063
M8-FOSA	7.286	506.0 -> 78.0	113893	20.00 µg/L	0.039
M3-PFBS	4.067	302.0 -> 99.0	29551	20.00 µg/L	0.038
M3-PFHxS	6.010	402.0 -> 99.0	24470	20.00 µg/L	0.051
M8-PFOS	7.206	507.0 -> 99.0	27819	20.00 µg/L	0.052
M2-4:2FTS	4.996	329.0 -> 309.0	122564	20.00 µg/L	0.050
M2-6:2FTS	6.640	429.0 -> 409.0	116110	20.00 µg/L	0.051
M2-8:2FTS	7.703	529.0 -> 509.0	62667	20.00 µg/L	0.052
M3-MeFOSAA	7.684	573.0 -> 419.0	43082	20.00 µg/L	0.038
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.996	329.0 -> 309.0	122359	25.22 µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.1%	
13C2-6:2FTS	6.640	429.0 -> 409.0	116066	29.15 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 145.8%	
13C2-8:2FTS	7.703	529.0 -> 509.0	62690	21.92 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C2-PFDoDA	8.377	615.0 -> 570.0	448740	19.44 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C2-PFTeDA	9.087	715.0 -> 670.0	233857	13.34 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.7%	
13C3-PFBS	4.067	302.0 -> 99.0	29472	19.40 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C3-PFHxS	6.010	402.0 -> 99.0	24448	19.20 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C4-PFBA	1.990	217.0 -> 172.0	216298	20.92 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C4-PFHpA	5.980	367.0 -> 322.0	333275	24.27 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%	
13C5-PFHxA	5.088	318.0 -> 273.0	275191	22.74 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C5-PFPeA	3.799	268.0 -> 223.0	177745	22.14 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C6-PFDA	7.680	519.0 -> 474.0	382402	21.92 µg/L	0.052

Perfluorinated Compounds by LC/MS/MS

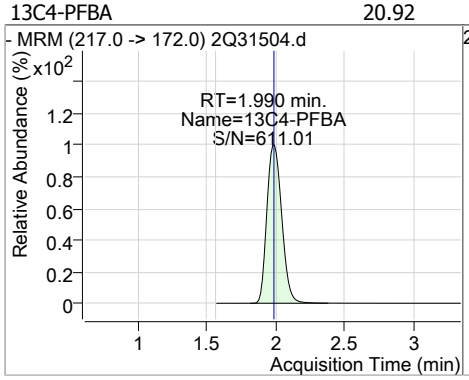
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C7-PFUnDA	8.041	570.0 -> 525.0	415788	19.65 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C8-FOSA	7.286	506.0 -> 78.0	113865	19.35 µg/L		0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C8-PFOA	6.656	421.0 -> 376.0	331238	25.82 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.1%		
13C8-PFOS	7.206	507.0 -> 99.0	27775	14.63 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%		
13C9-PFNA	7.225	472.0 -> 427.0	273166	25.14 µg/L		0.054
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.7%		
d3-MeFOSAA	7.684	573.0 -> 419.0	43081	20.67 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	4.071	299.0 -> 80.0	262	0.13 µg/L	m	97
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

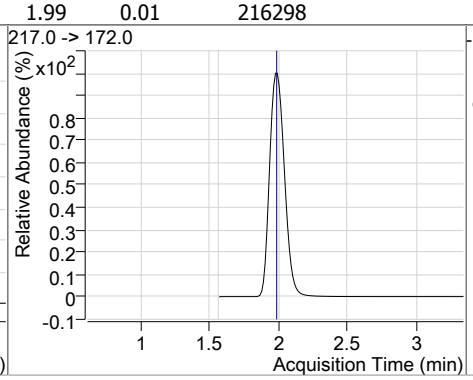
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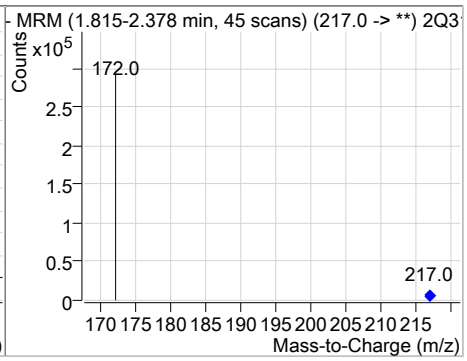
Perfluorinated Compounds by LC/MS/MS



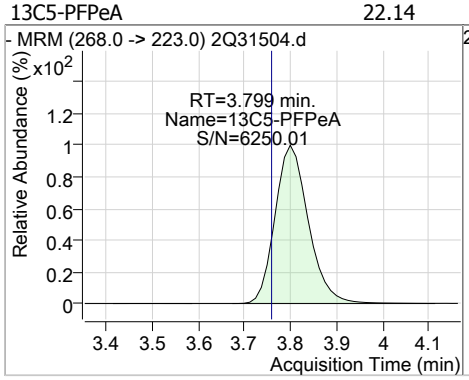
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.92	1.99	0.01	216298				

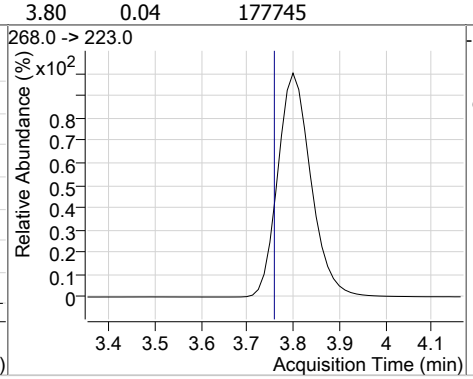


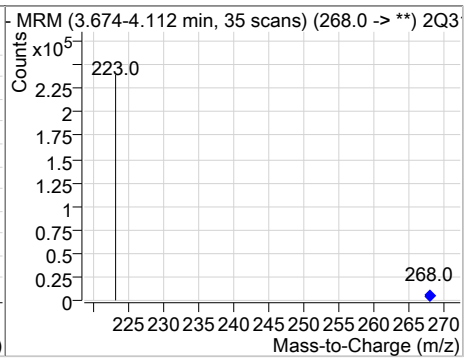




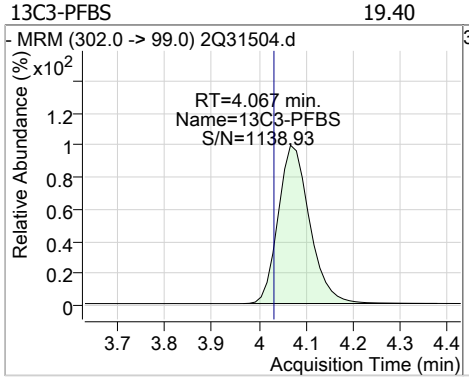
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.14	3.80	0.04	177745				

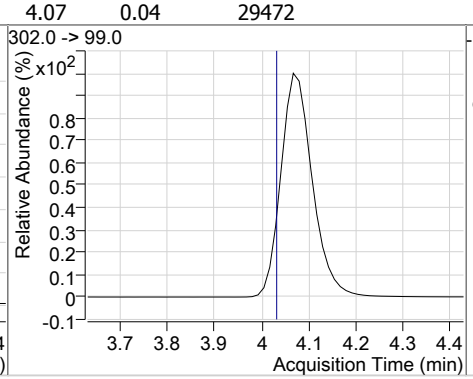


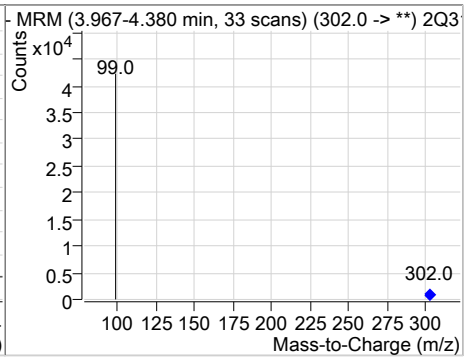




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.40	4.07	0.04	29472				

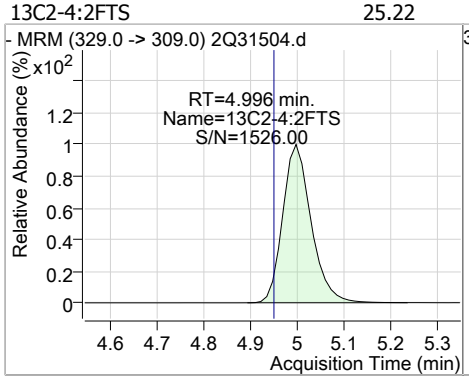


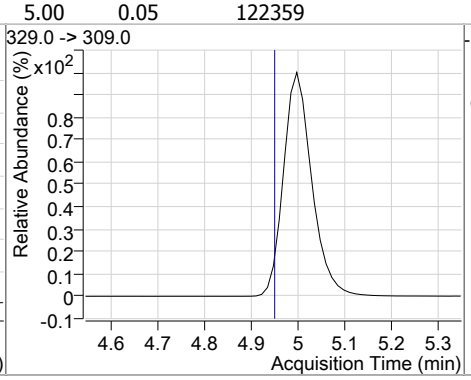


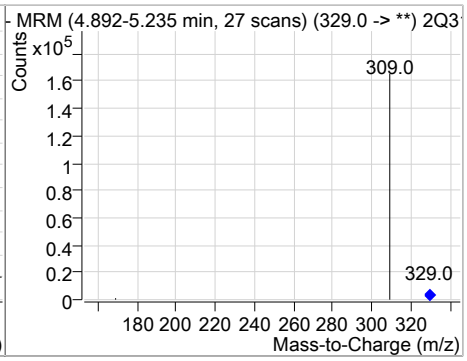


Perfluorinated Compounds by LC/MS/MS

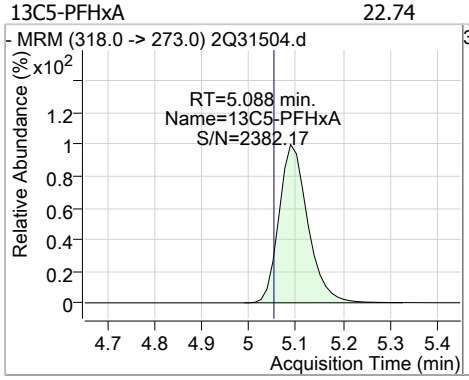
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	25.22	5.00	0.05	122359				

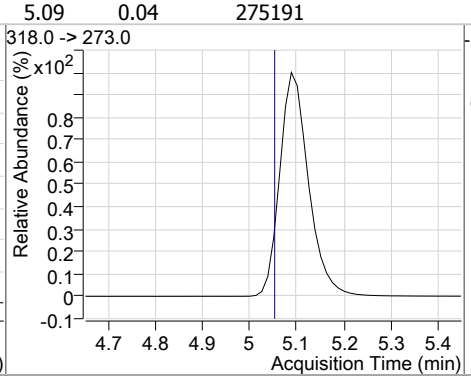


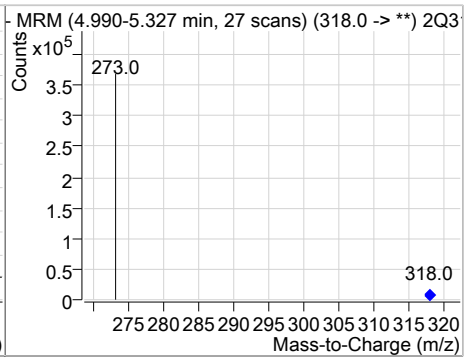




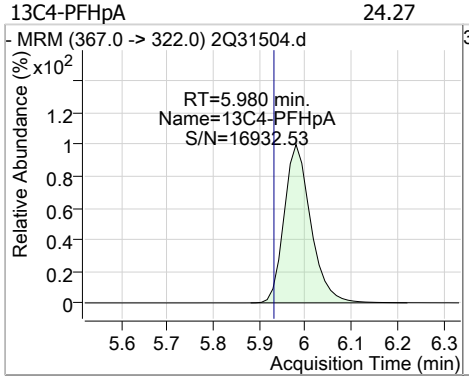
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.74	5.09	0.04	275191				

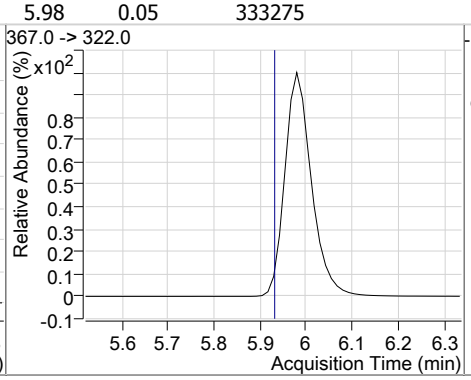


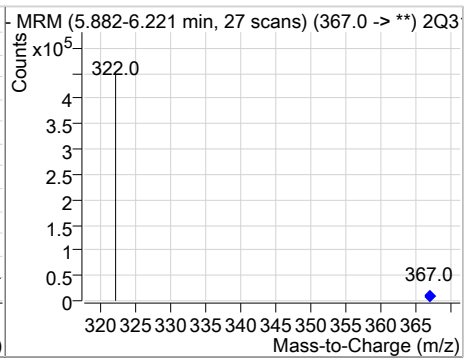




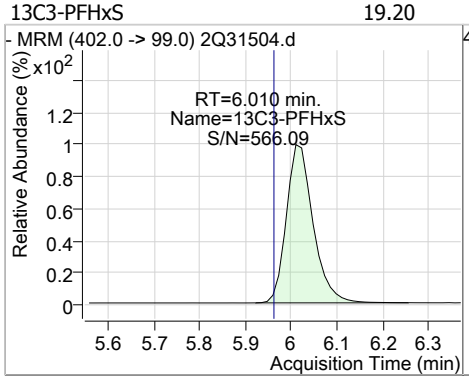
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.27	5.98	0.05	333275				

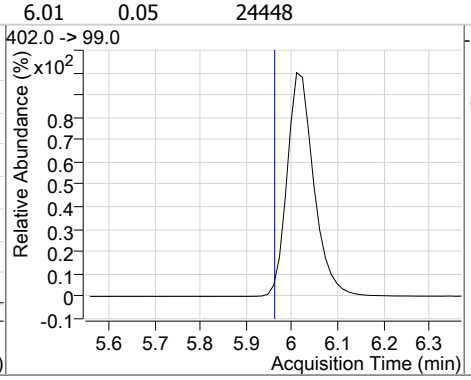


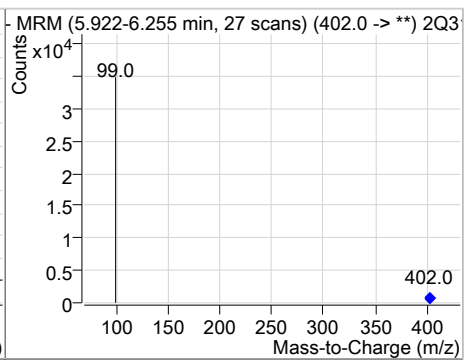




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.20	6.01	0.05	24448				

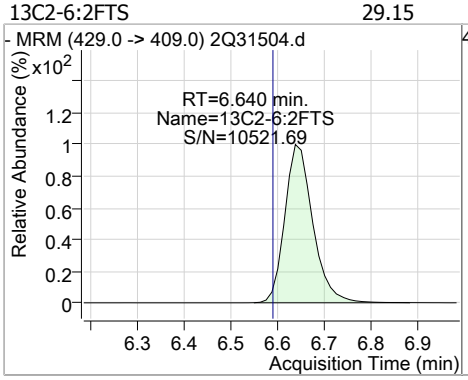


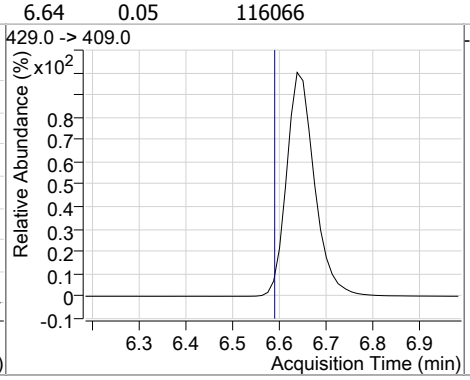


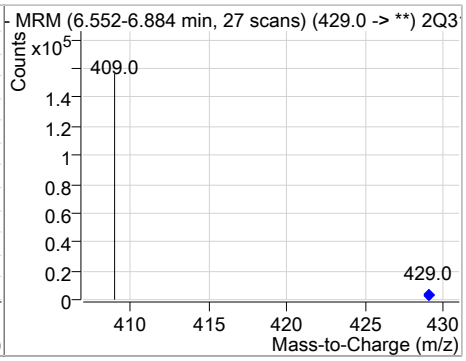


Perfluorinated Compounds by LC/MS/MS

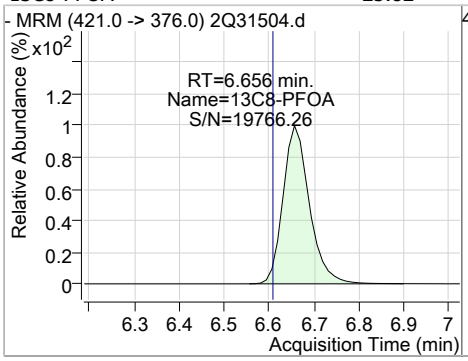
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	29.15	6.64	0.05	116066				

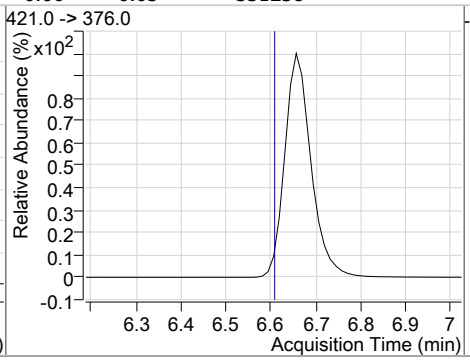


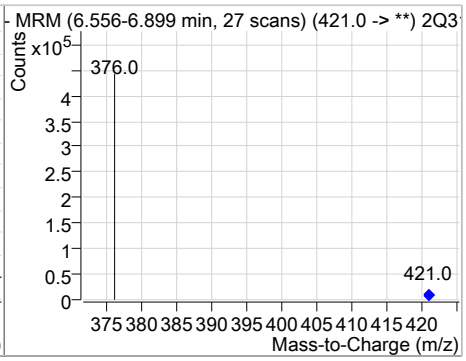




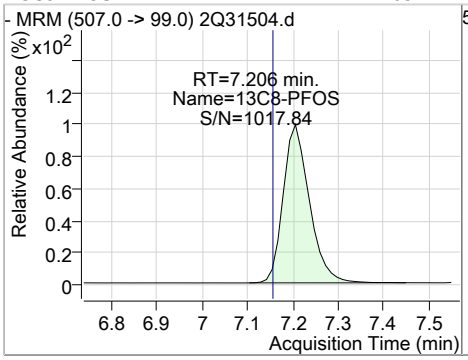
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.82	6.66	0.05	331238				

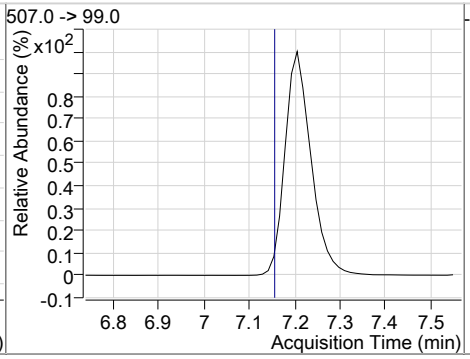


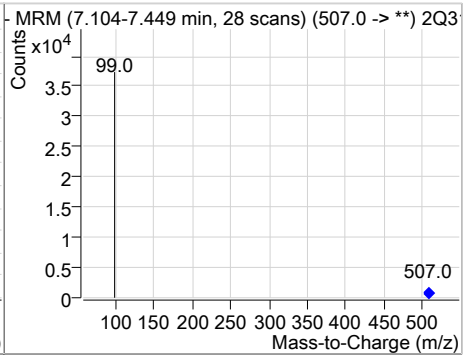




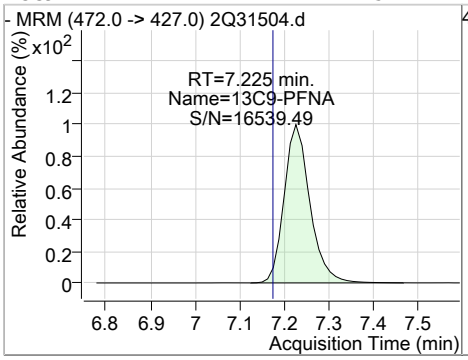
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.63	7.21	0.05	27775				

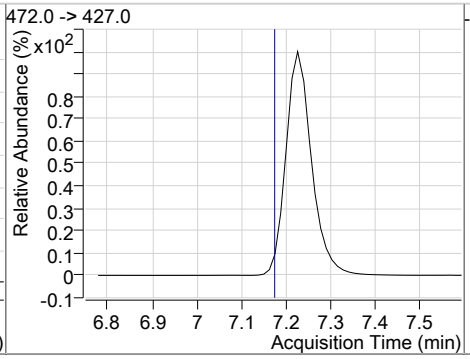


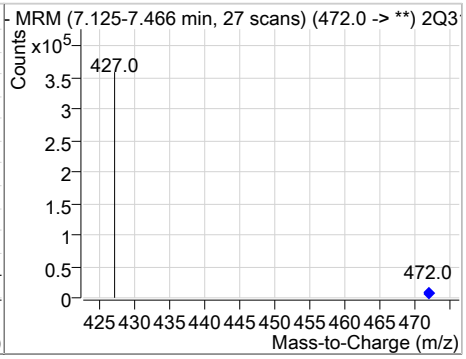




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.14	7.23	0.05	273166				

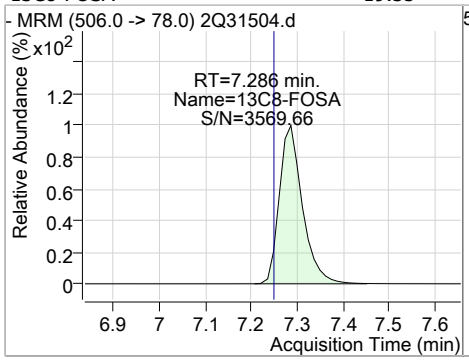


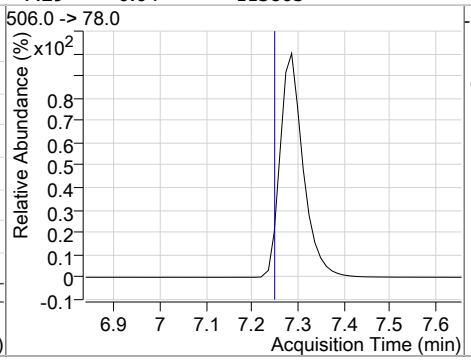


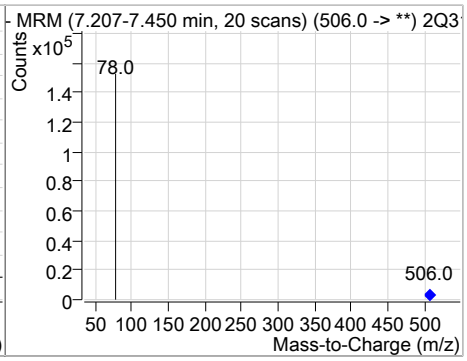


Perfluorinated Compounds by LC/MS/MS

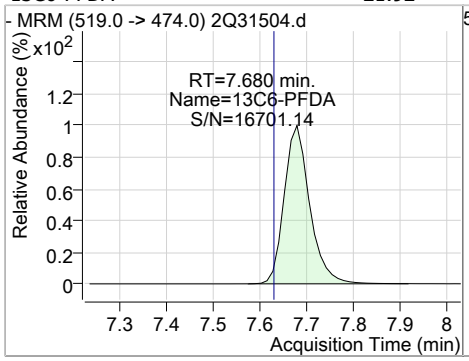
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.35	7.29	0.04	113865				

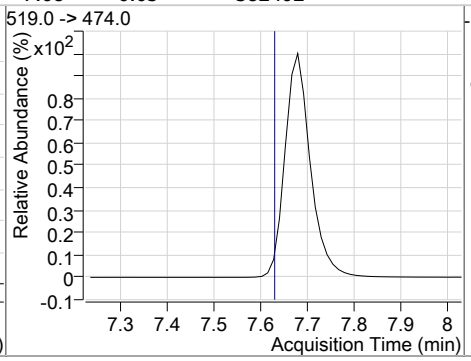


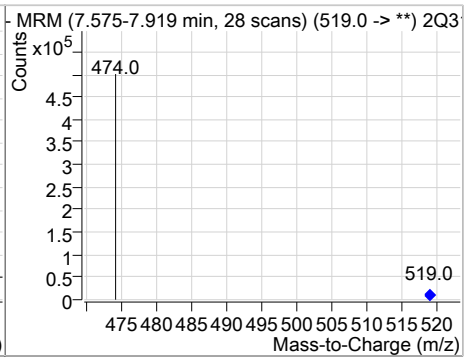




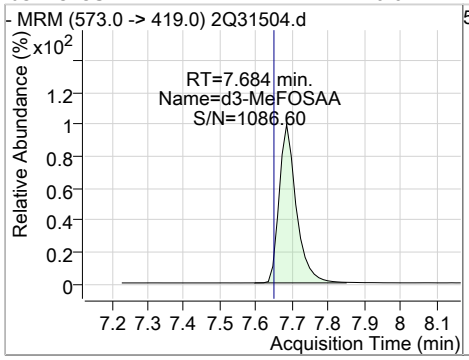
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.92	7.68	0.05	382402				

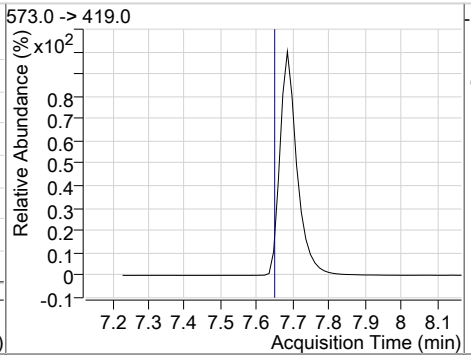


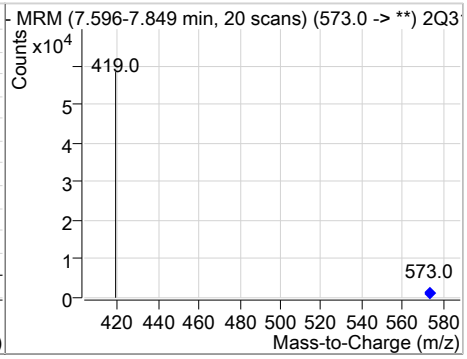




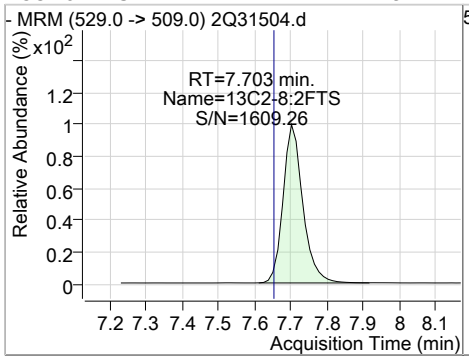
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.67	7.68	0.04	43081				

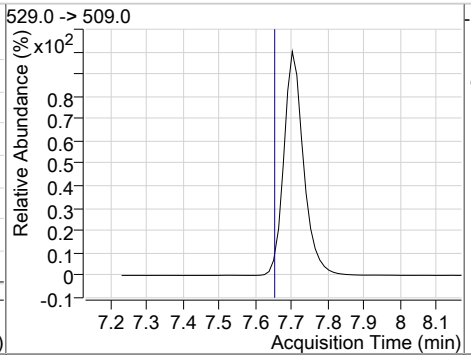


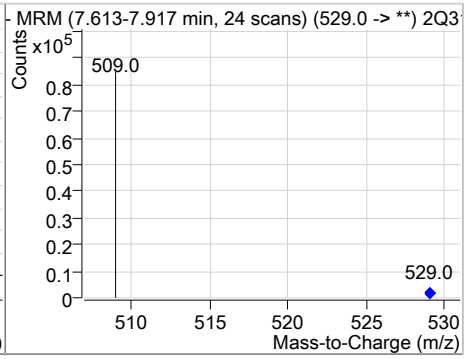




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.92	7.70	0.05	62690				

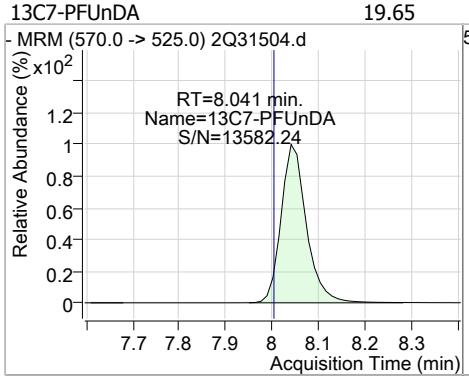


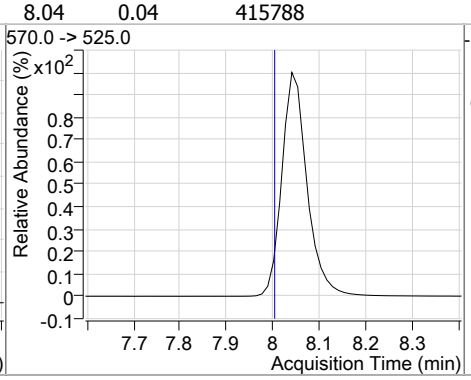


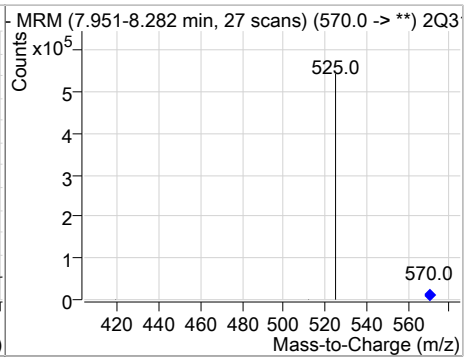


Perfluorinated Compounds by LC/MS/MS

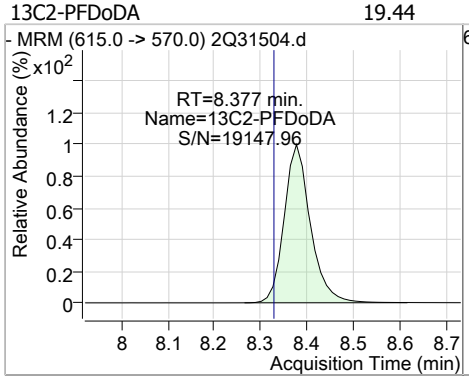
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.65	8.04	0.04	415788				

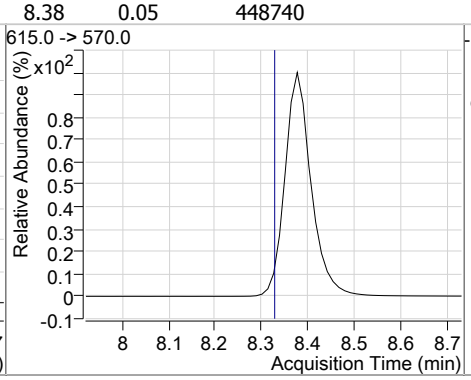


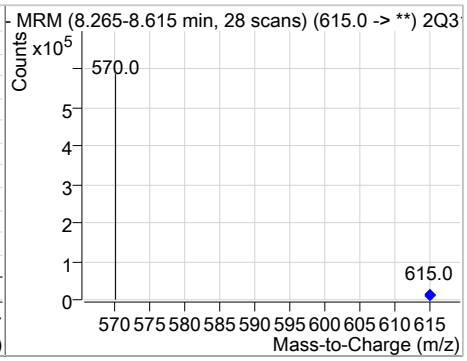




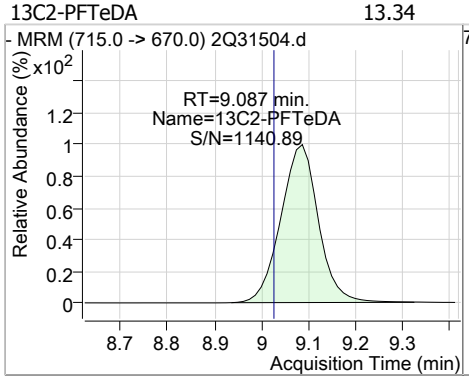
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.44	8.38	0.05	448740				

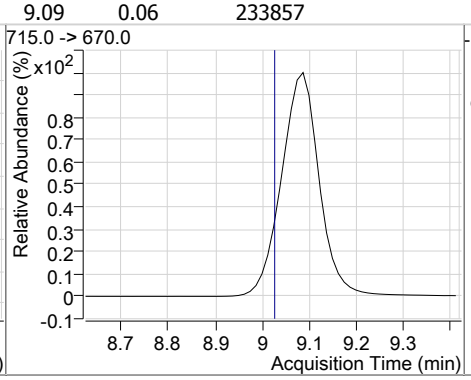


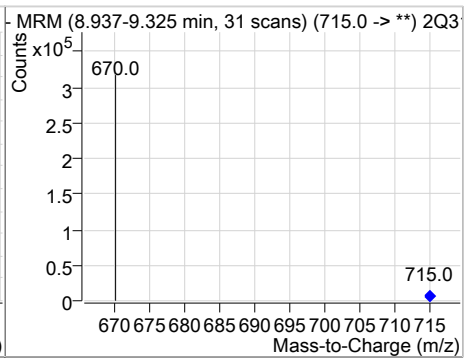




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.34	9.09	0.06	233857				







Manual Integration Approval Summary

Sample Number: FA65213-5
Lab FileID: 2Q31504.D
Injection Time: 06/27/19 05:06

Method: EPA 537M BY ID
Analyst approved: 06/27/19 14:53 Nancy Saunders
Supervisor approved: 06/27/19 17:05 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.07	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	2Q31240.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	6/24/2019 1:08:00 AM
Sample Name	:	fa65213-6
Vial	:	Vial 57
DA Method File	:	ID_062119_S2Q498.quantmethod.xml
Batch Name	:	S2Q499.batch.bin
Sample Information	:	op75580,S2Q499,250,,,1,1,water

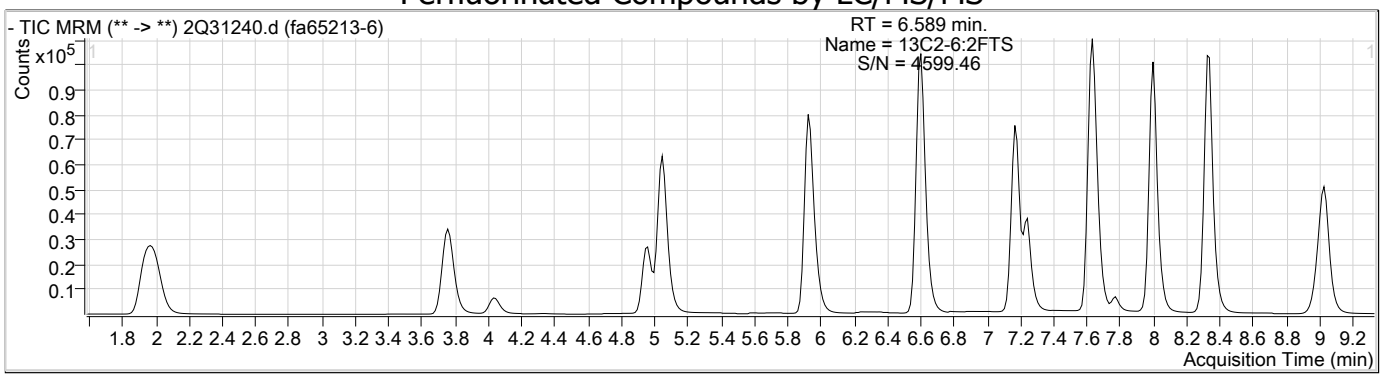
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.965	217.0 -> 172.0	216544	20.00	µg/L	-0.025
M5-PFPeA	3.761	268.0 -> 223.0	171251	20.00	µg/L	-0.038
M5-PFHxA	5.050	318.0 -> 273.0	257754	20.00	µg/L	-0.038
M4-PFHpA	5.930	367.0 -> 322.0	310583	20.00	µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	311030	20.00	µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	269825	20.00	µg/L	-0.030
M6-PFDA	7.640	519.0 -> 474.0	352789	20.00	µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	362925	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	397054	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	253446	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	110729	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	29047	20.00	µg/L	-0.051
M3-PFHxS	5.972	402.0 -> 99.0	23280	20.00	µg/L	-0.026
M8-PFOS	7.154	507.0 -> 99.0	23587	20.00	µg/L	-0.018
M2-4:2FTS	4.958	329.0 -> 309.0	111861	20.00	µg/L	-0.038
M2-6:2FTS	6.589	429.0 -> 409.0	107402	20.00	µg/L	-0.026
M2-8:2FTS	7.663	529.0 -> 509.0	57874	20.00	µg/L	-0.001
M3-MeFOSAA	7.646	573.0 -> 419.0	37017	20.00	µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.958	329.0 -> 309.0	111745	23.03	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
13C2-6:2FTS	6.589	429.0 -> 409.0	107340	26.96	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 134.8%		
13C2-8:2FTS	7.663	529.0 -> 509.0	57868	20.23	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C2-PFDoDA	8.326	615.0 -> 570.0	396203	17.16	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%		
13C2-PFTeDA	9.024	715.0 -> 670.0	255087	14.55	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%		
13C3-PFBS	4.030	302.0 -> 99.0	29044	19.12	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C3-PFHxS	5.972	402.0 -> 99.0	23303	18.30	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C4-PFBA	1.965	217.0 -> 172.0	215543	20.84	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C4-PFHpA	5.930	367.0 -> 322.0	310493	22.61	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
13C5-PFHxA	5.050	318.0 -> 273.0	257441	21.27	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFPeA	3.761	268.0 -> 223.0	171514	21.37	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C6-PFDA	7.640	519.0 -> 474.0	352804	20.22	µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

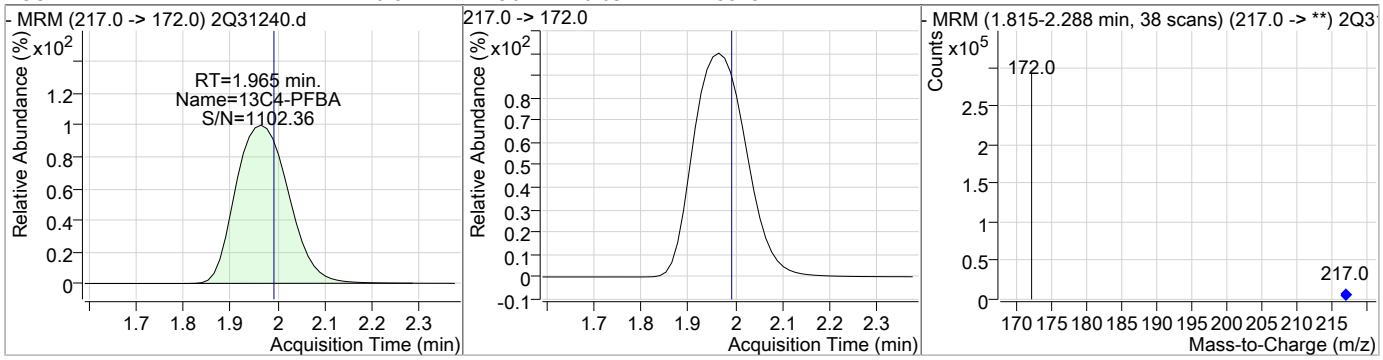
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C7-PFUnDA	8.001	570.0 -> 525.0	362916	17.15 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%		
13C8-FOSA	7.247	506.0 -> 78.0	110759	18.83 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C8-PFOA	6.606	421.0 -> 376.0	311032	24.25 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.2%		
13C8-PFOS	7.154	507.0 -> 99.0	23567	12.41 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.1%		
13C9-PFNA	7.171	472.0 -> 427.0	269600	24.81 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.1%		
d3-MeFOSAA	7.646	573.0 -> 419.0	36969	17.74 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.961	213.0 -> 169.0	287	0.16 µg/L		100
PFBS	4.336	299.0 -> 80.0	0	0.00 µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

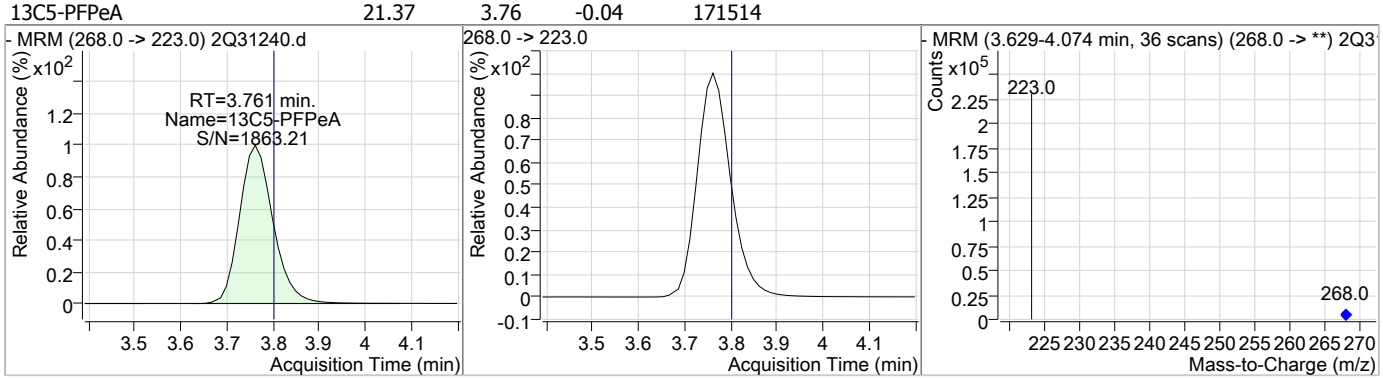
Perfluorinated Compounds by LC/MS/MS



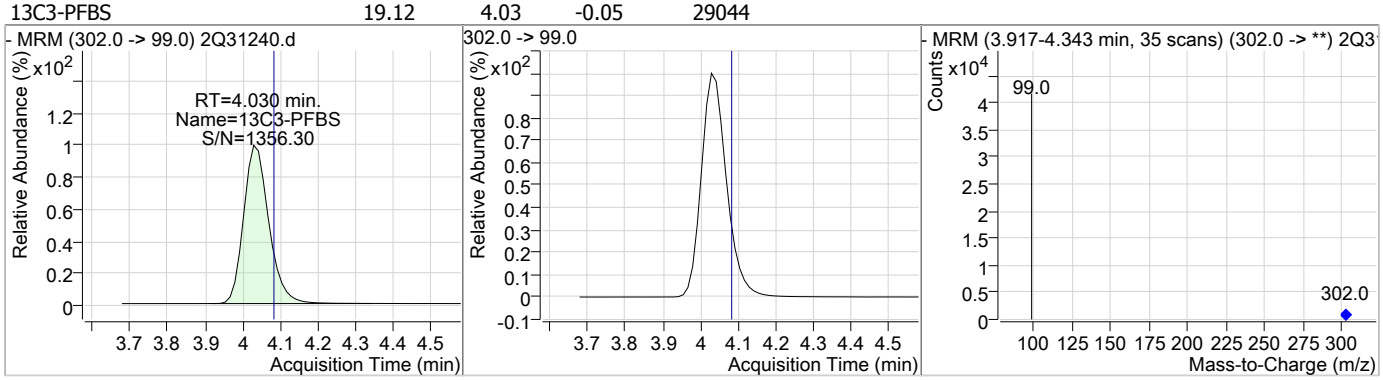
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.84	1.96	-0.03	215543				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.37	3.76	-0.04	171514				

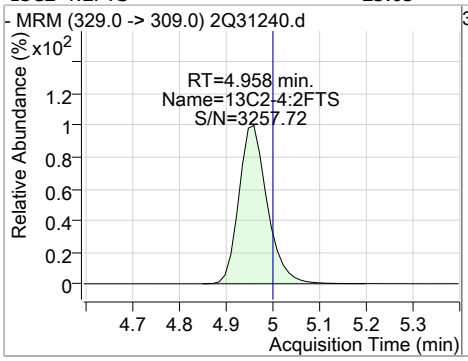


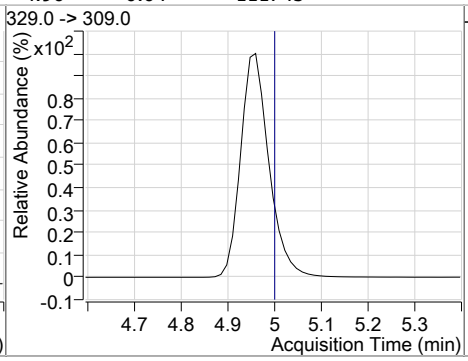
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.12	4.03	-0.05	29044				

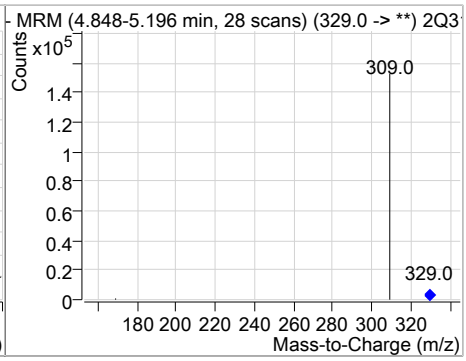


Perfluorinated Compounds by LC/MS/MS

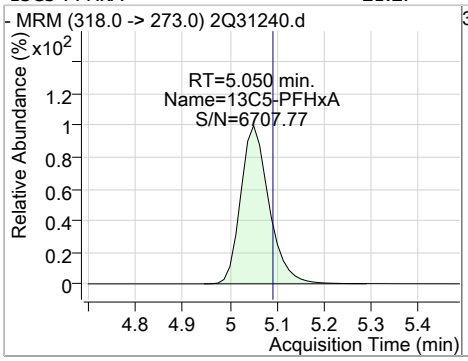
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.03	4.96	-0.04	111745				

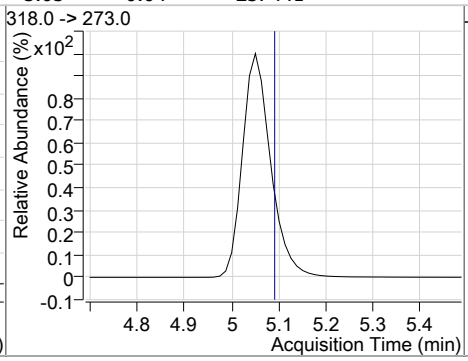


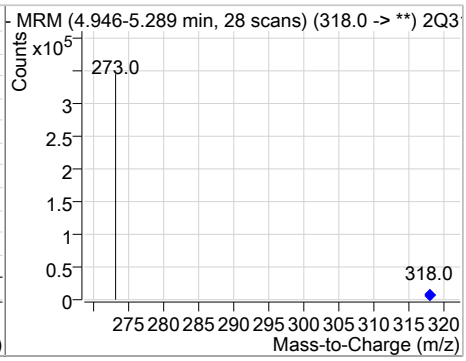




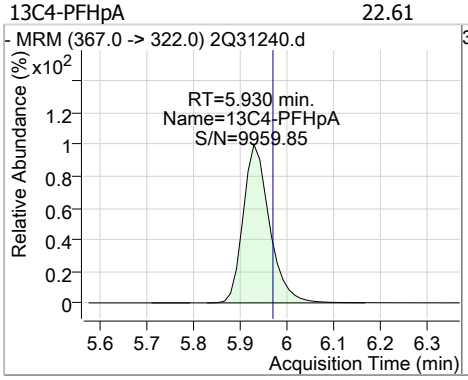
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.27	5.05	-0.04	257441				

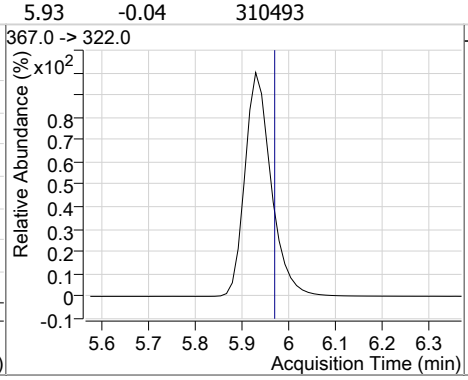


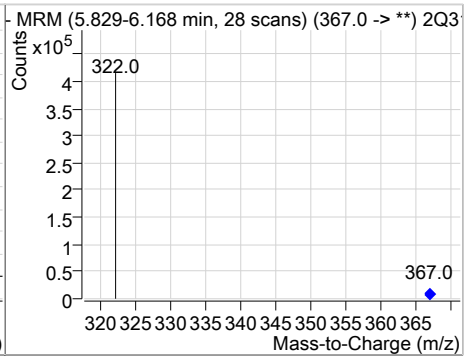




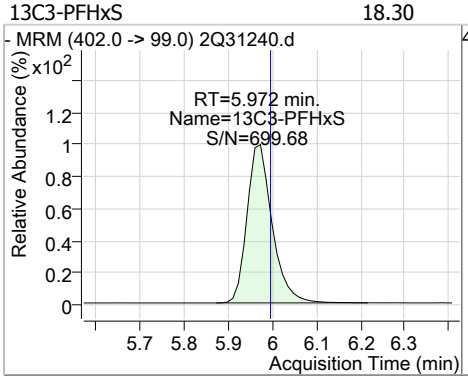
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.61	5.93	-0.04	310493				

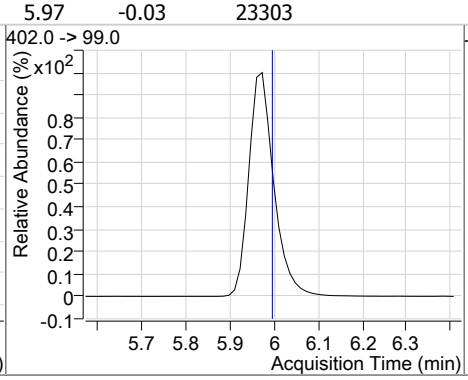


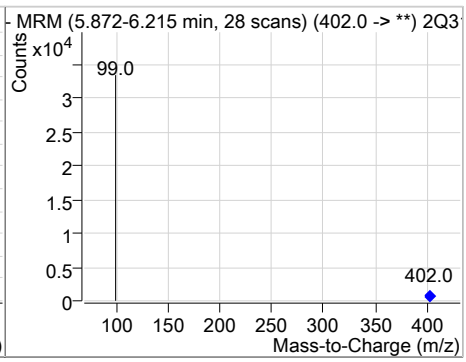




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.30	5.97	-0.03	23303				

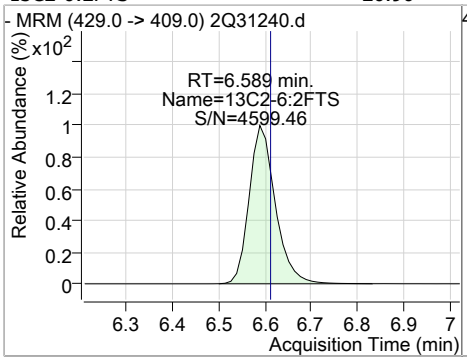


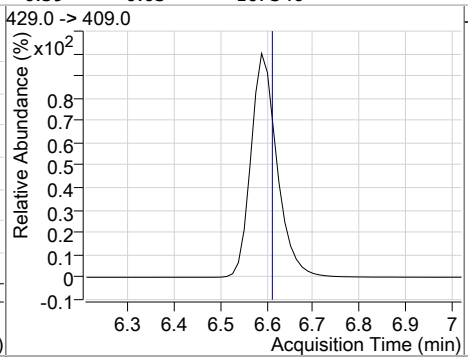


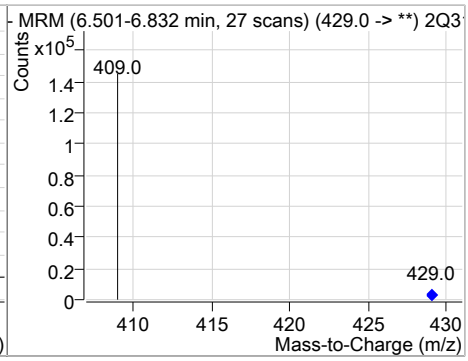


Perfluorinated Compounds by LC/MS/MS

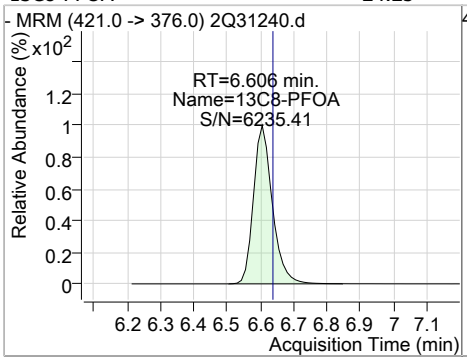
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	26.96	6.59	-0.03	107340				

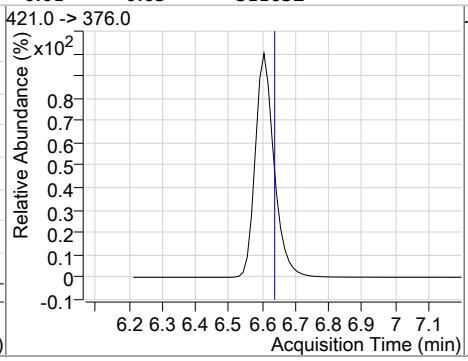


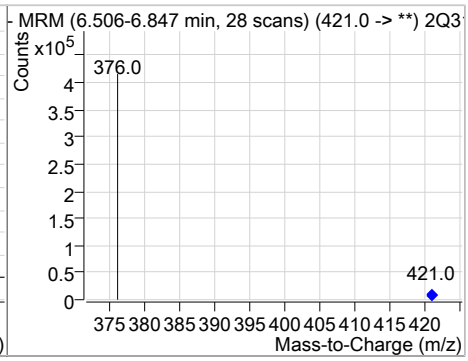




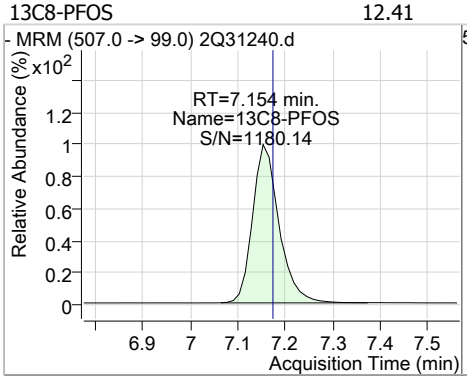
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.25	6.61	-0.03	311032				

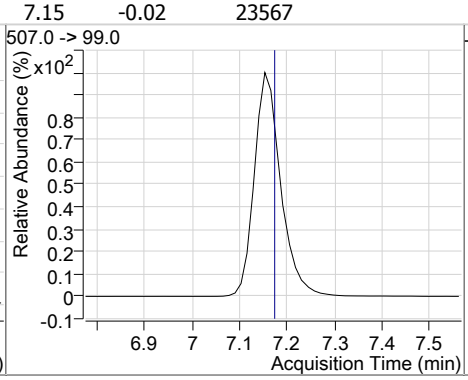


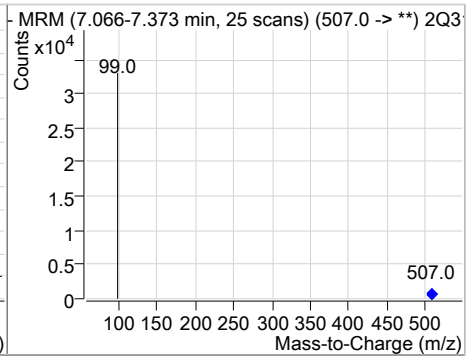




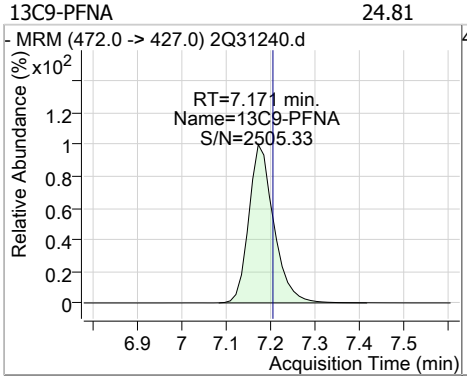
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.41	7.15	-0.02	23567				

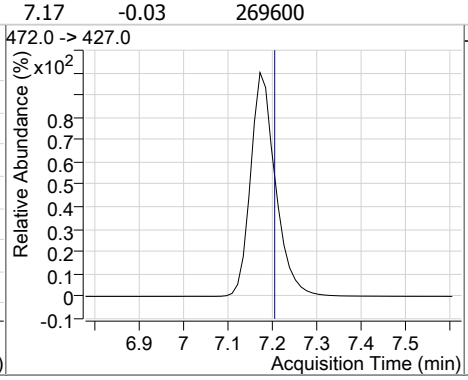


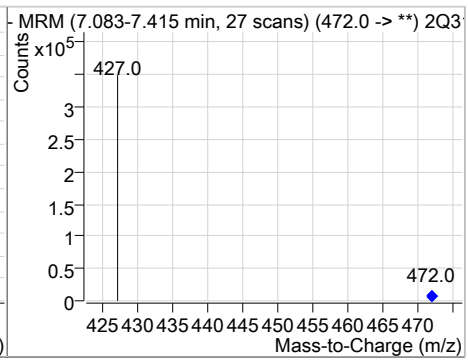




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	24.81	7.17	-0.03	269600				

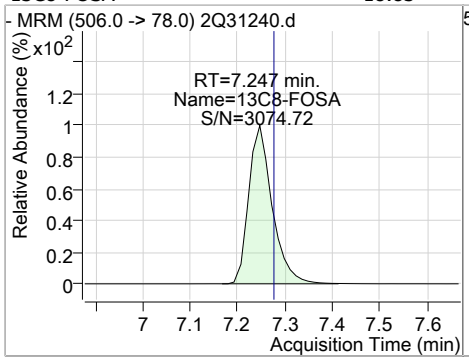


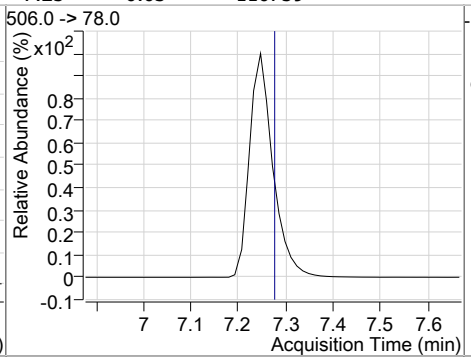


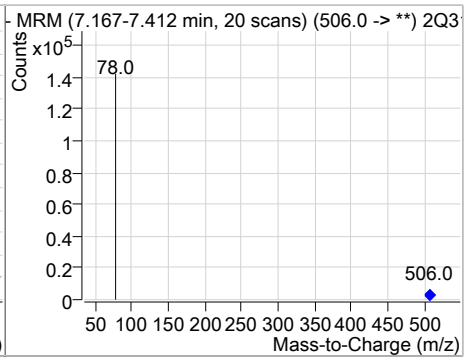


Perfluorinated Compounds by LC/MS/MS

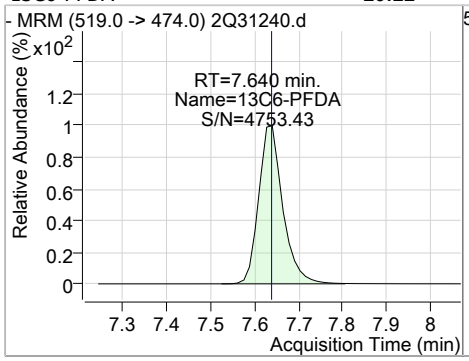
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.83	7.25	-0.03	110759				

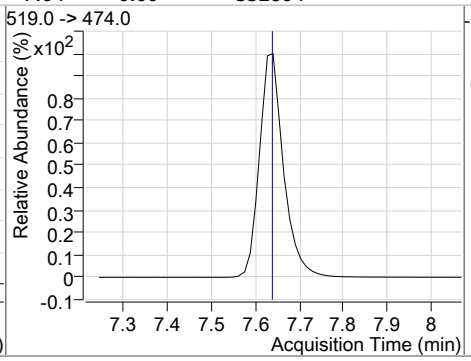


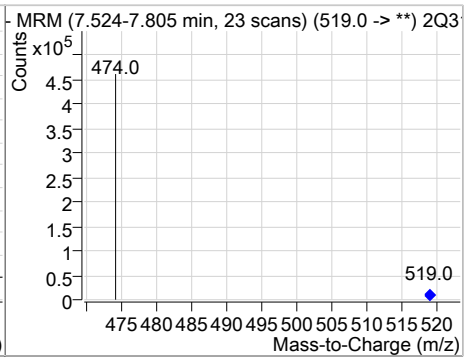




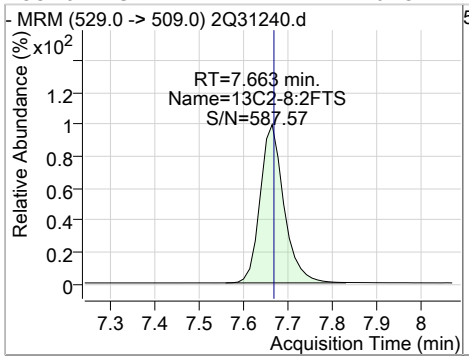
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.22	7.64	0.00	352804				

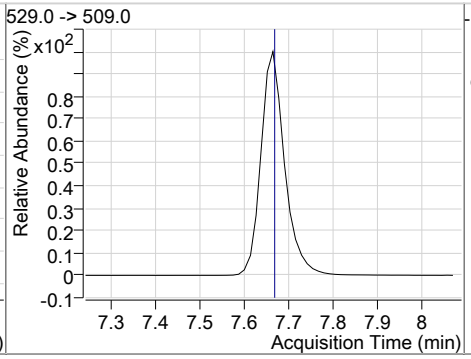


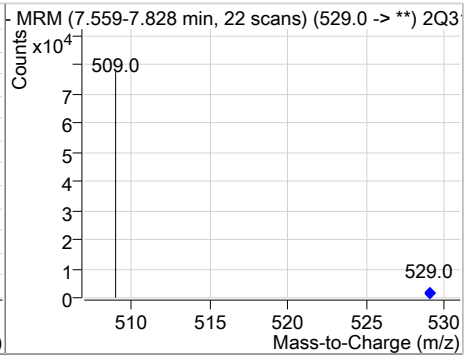




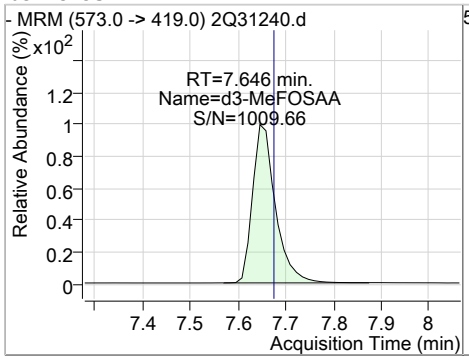
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.23	7.66	0.00	57868				

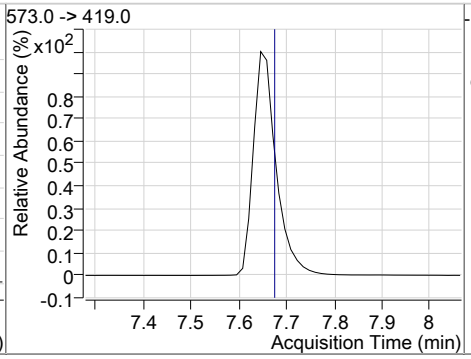


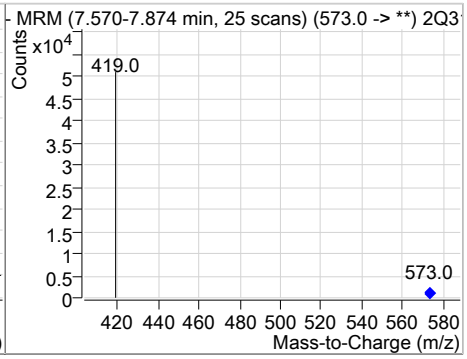




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.74	7.65	-0.03	36969				

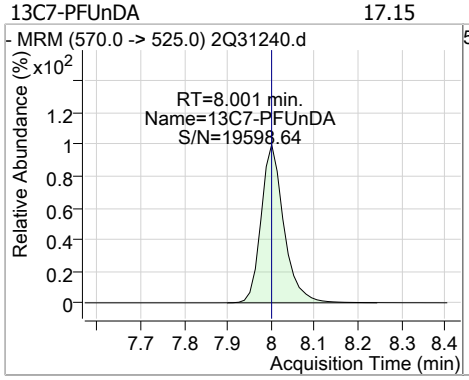


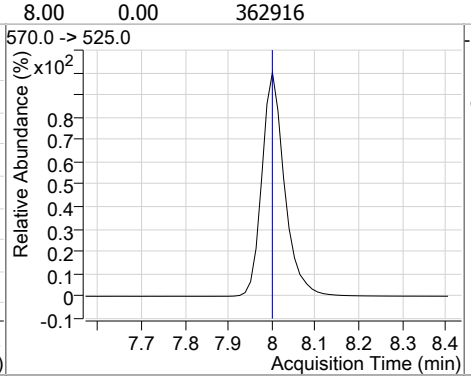


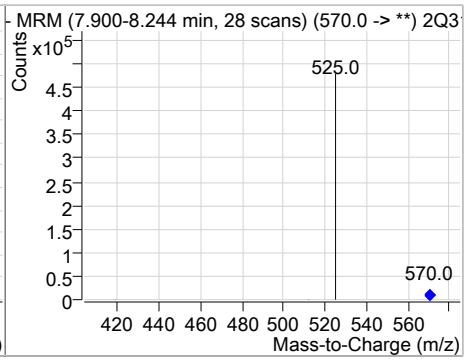


Perfluorinated Compounds by LC/MS/MS

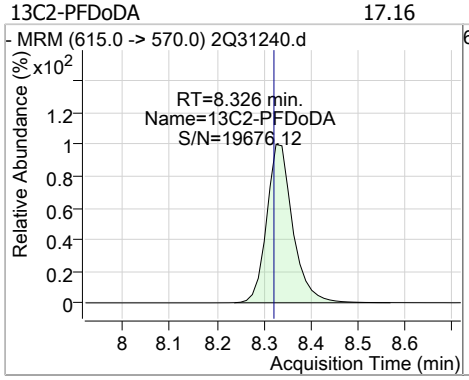
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.15	8.00	0.00	362916				

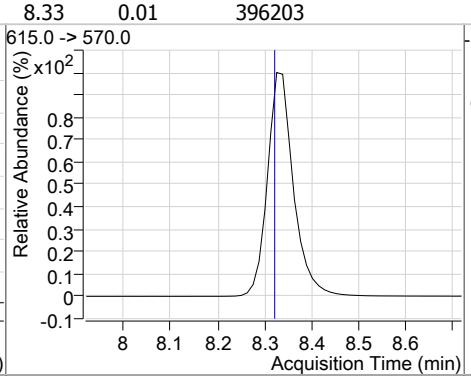


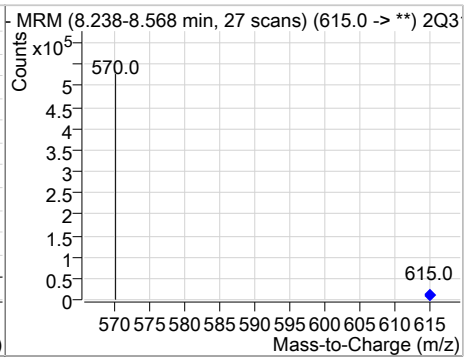




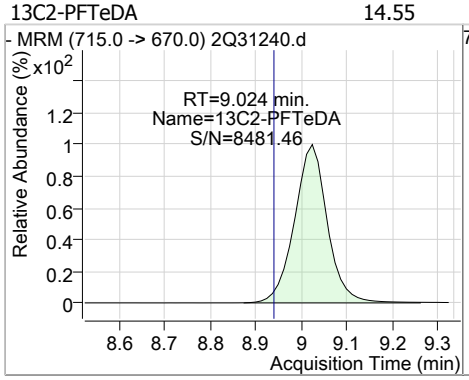
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.16	8.33	0.01	396203				

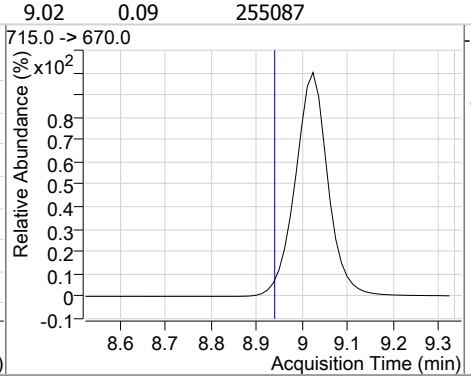


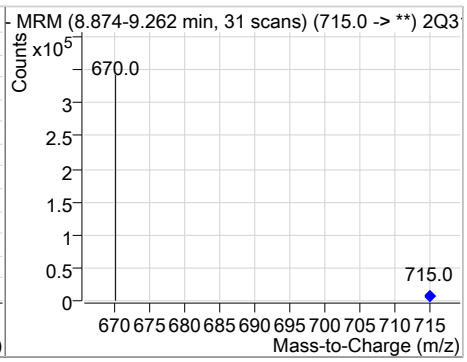




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.55	9.02	0.09	255087				







Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31241.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/24/2019 1:22:49 AM
Sample Name : fa65213-7
Vial : Vial 58
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

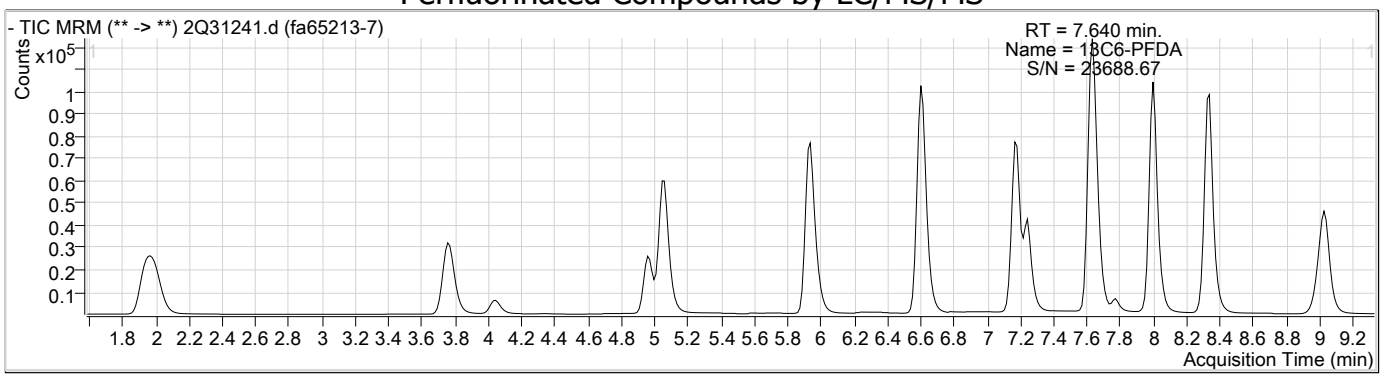
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.965	217.0 -> 172.0	201534	20.00 µg/L	-0.025
M5-PFPeA	3.761	268.0 -> 223.0	160300	20.00 µg/L	-0.038
M5-PFHxA	5.063	318.0 -> 273.0	248347	20.00 µg/L	-0.026
M4-PFHpA	5.942	367.0 -> 322.0	301170	20.00 µg/L	-0.026
M8-PFOA	6.606	421.0 -> 376.0	302543	20.00 µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	276352	20.00 µg/L	-0.030
M6-PFDA	7.640	519.0 -> 474.0	396997	20.00 µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	371117	20.00 µg/L	-0.002
M2-PFDoDA	8.339	615.0 -> 570.0	372238	20.00 µg/L	0.019
M2-PFTeDA	9.024	715.0 -> 670.0	230726	20.00 µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	122167	20.00 µg/L	-0.027
M3-PFBS	4.042	302.0 -> 99.0	27527	20.00 µg/L	-0.038
M3-PFHxS	5.972	402.0 -> 99.0	23312	20.00 µg/L	-0.026
M8-PFOS	7.154	507.0 -> 99.0	29656	20.00 µg/L	-0.018
M2-4:2FTS	4.958	329.0 -> 309.0	105824	20.00 µg/L	-0.038
M2-6:2FTS	6.602	429.0 -> 409.0	105648	20.00 µg/L	-0.013
M2-8:2FTS	7.663	529.0 -> 509.0	67546	20.00 µg/L	-0.001
M3-MeFOSAA	7.646	573.0 -> 419.0	38323	20.00 µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.958	329.0 -> 309.0	106226	21.89 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C2-6:2FTS	6.602	429.0 -> 409.0	105609	26.52 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 132.6%	
13C2-8:2FTS	7.663	529.0 -> 509.0	67503	23.60 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.0%	
13C2-PFDoDA	8.339	615.0 -> 570.0	371593	16.10 µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
13C2-PFTeDA	9.024	715.0 -> 670.0	229052	13.07 µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%	
13C3-PFBS	4.042	302.0 -> 99.0	27517	18.11 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%	
13C3-PFHxS	5.972	402.0 -> 99.0	23308	18.31 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C4-PFBA	1.965	217.0 -> 172.0	200634	19.40 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C4-PFHpA	5.942	367.0 -> 322.0	301066	21.93 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%	
13C5-PFHxA	5.063	318.0 -> 273.0	248227	20.51 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFPeA	3.761	268.0 -> 223.0	160411	19.98 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	7.640	519.0 -> 474.0	396833	22.75 µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

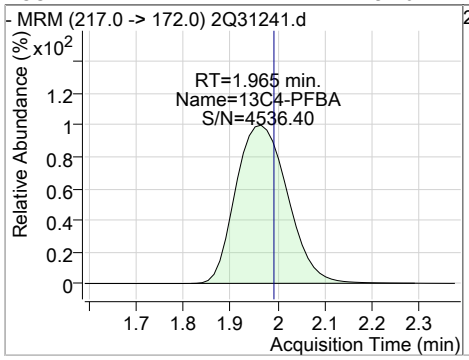
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%		
13C7-PFUnDA	8.001	570.0 -> 525.0	370609	17.52 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C8-FOSA	7.247	506.0 -> 78.0	122154	20.76 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C8-PFOA	6.606	421.0 -> 376.0	302442	23.58 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%		
13C8-PFOS	7.154	507.0 -> 99.0	29633	15.61 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%		
13C9-PFNA	7.171	472.0 -> 427.0	276316	25.43 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.1%		
d3-MeFOSAA	7.646	573.0 -> 419.0	38333	18.39 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	4.349	299.0 -> 80.0	0	0.00 µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

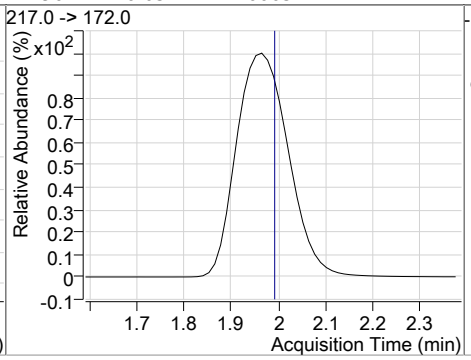
= Qualifier out of range, m = manually integrated, + = Area summed

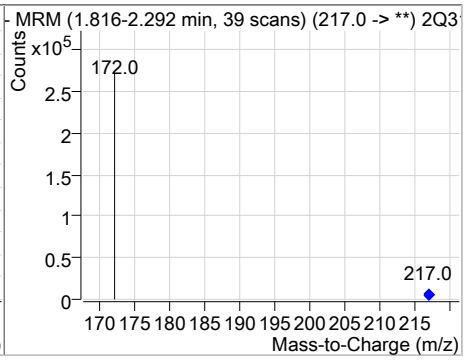
Perfluorinated Compounds by LC/MS/MS



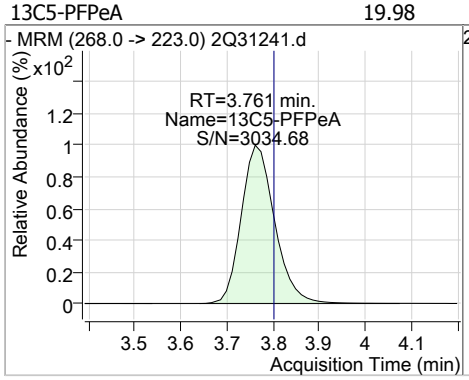
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.40	1.96	-0.03	200634				

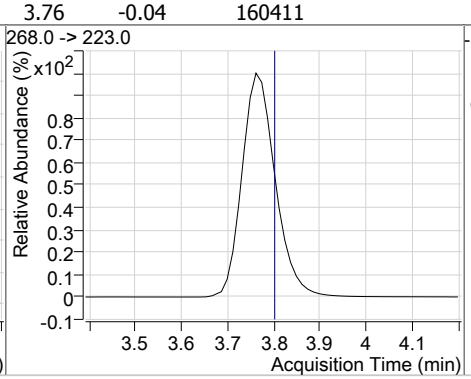


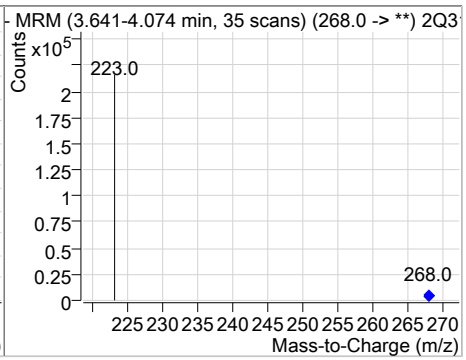




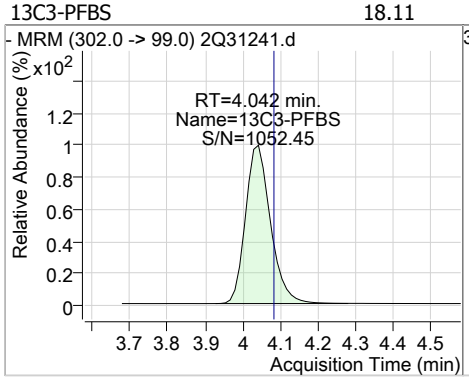
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13C5-PFPeA	19.98	3.76	-0.04	160411				

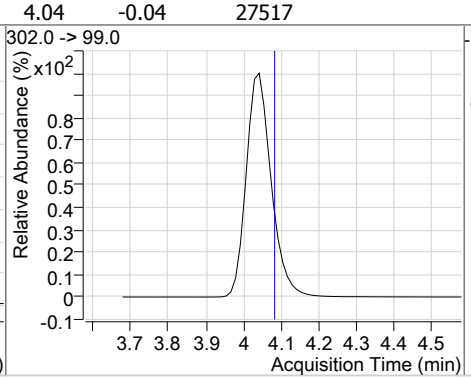


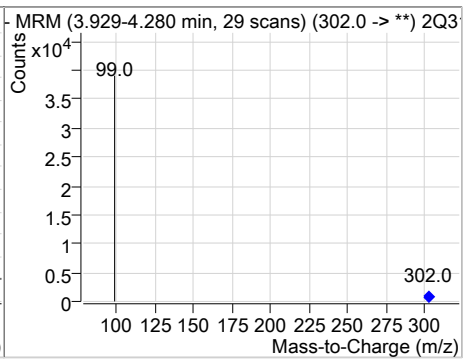




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.11	4.04	-0.04	27517				

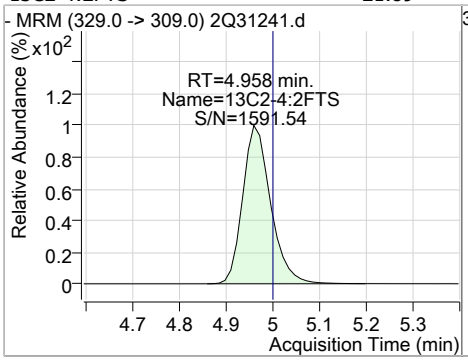


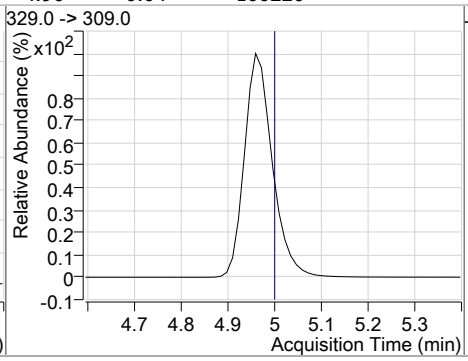


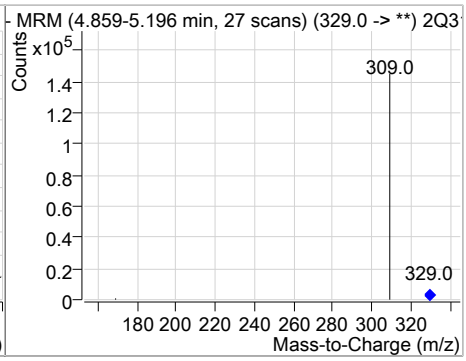


Perfluorinated Compounds by LC/MS/MS

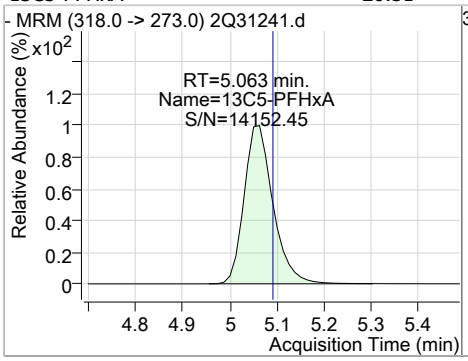
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.89	4.96	-0.04	106226				

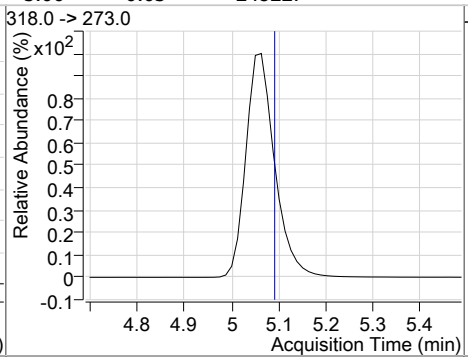


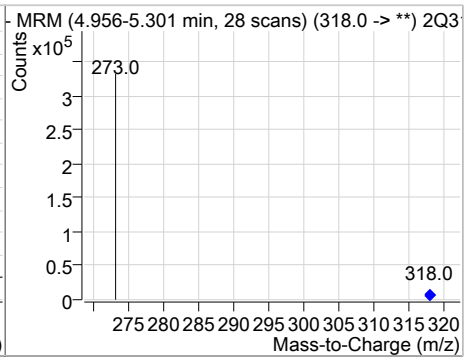




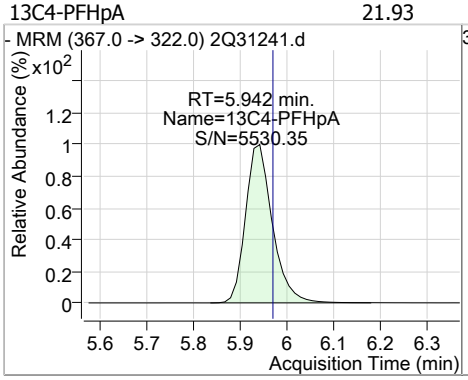
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.51	5.06	-0.03	248227				

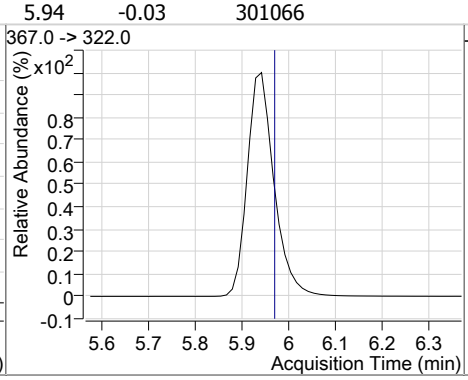


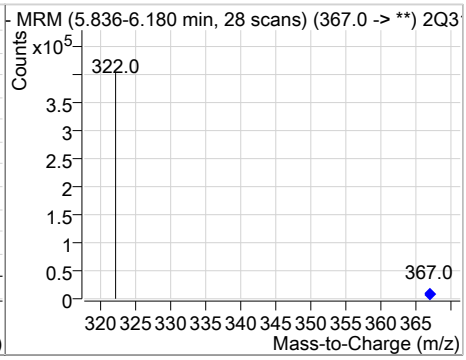




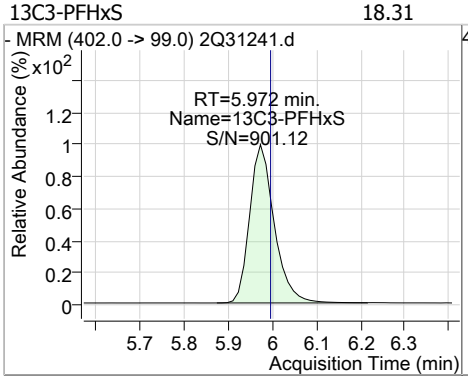
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.93	5.94	-0.03	301066				

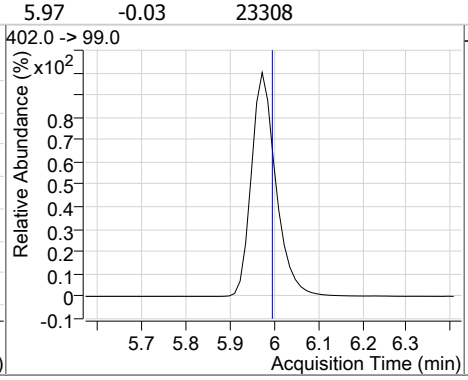


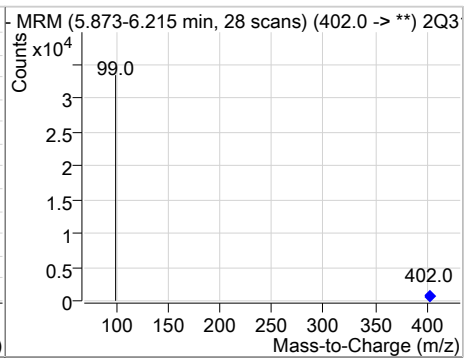




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.31	5.97	-0.03	23308				

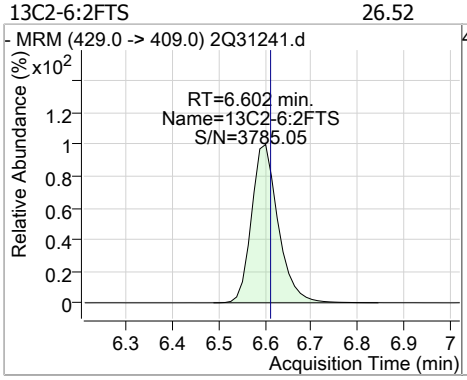


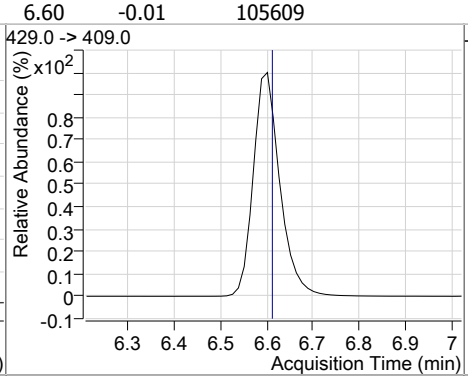


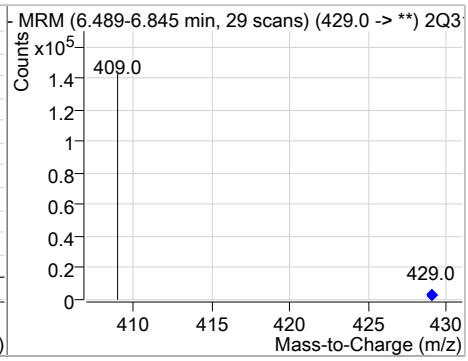


Perfluorinated Compounds by LC/MS/MS

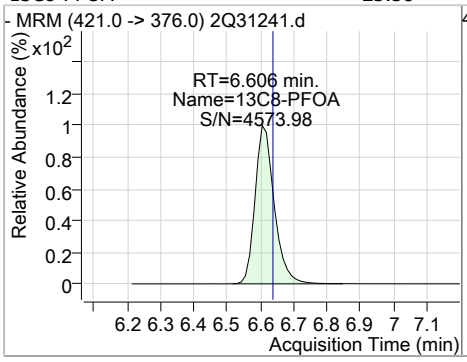
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	26.52	6.60	-0.01	105609				

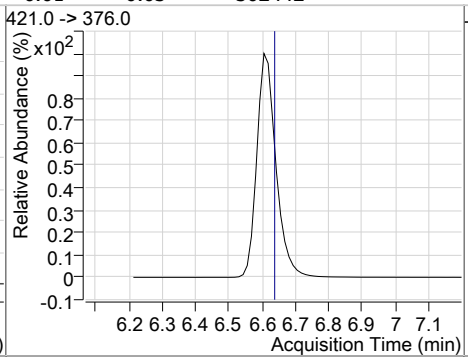


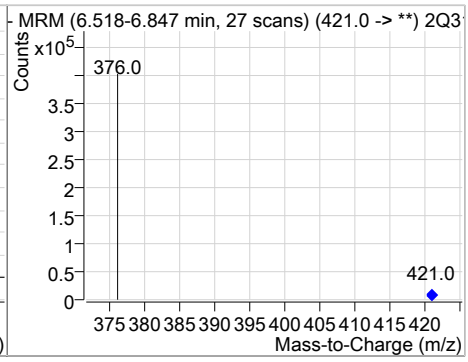




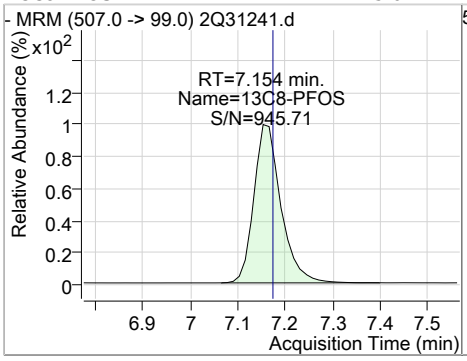
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.58	6.61	-0.03	302442				

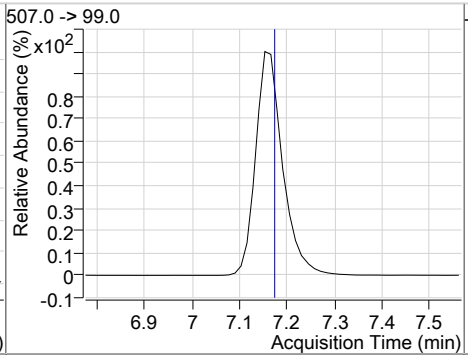


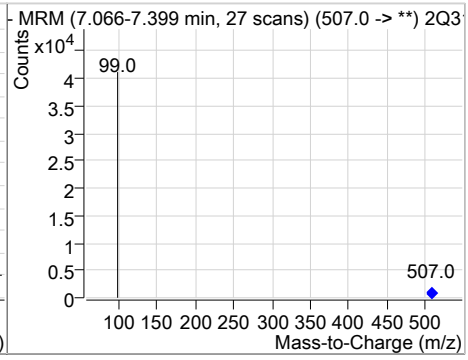




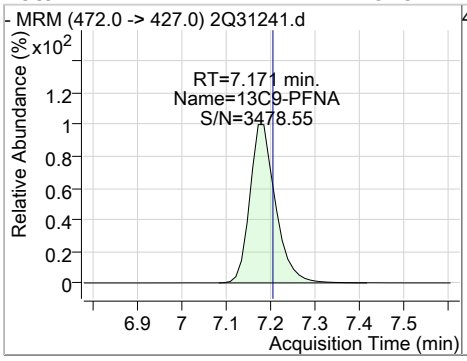
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.61	7.15	-0.02	29633				

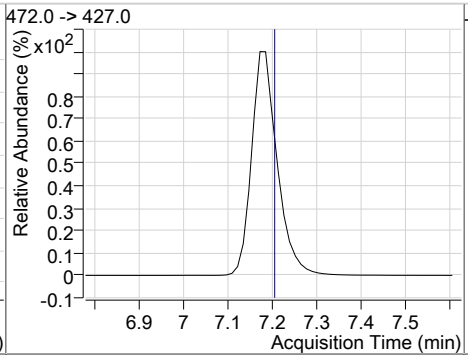


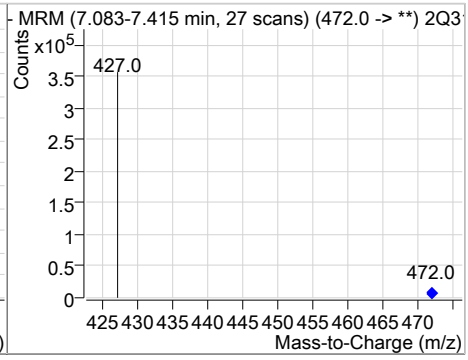




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.43	7.17	-0.03	276316				

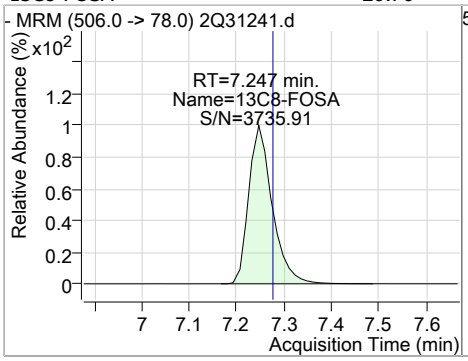


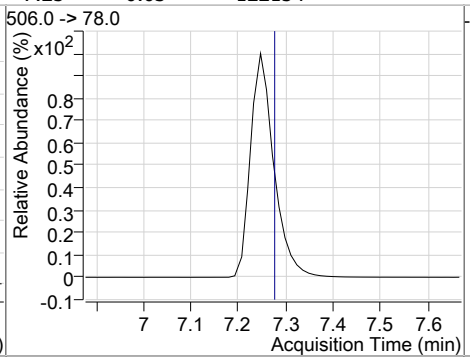


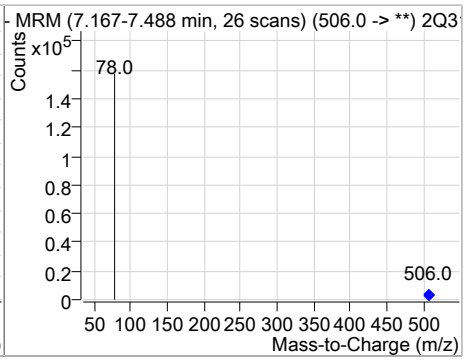


Perfluorinated Compounds by LC/MS/MS

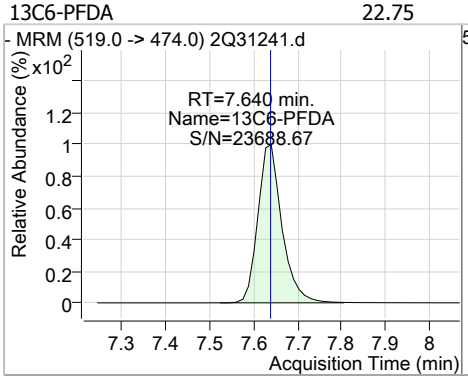
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13C8-FOSA	20.76	7.25	-0.03	122154				

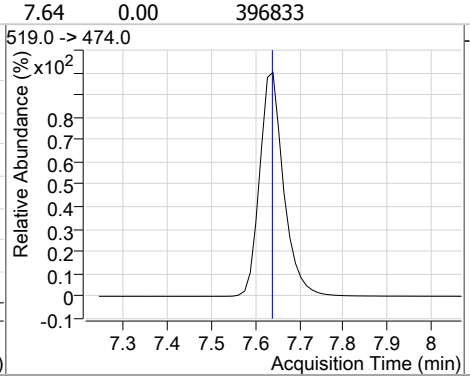


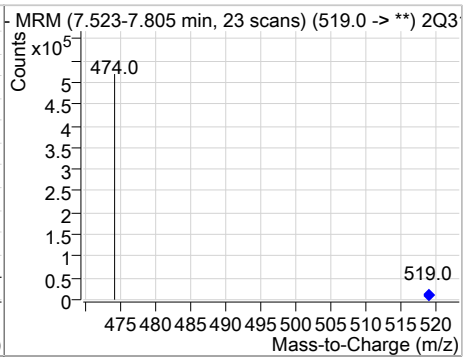




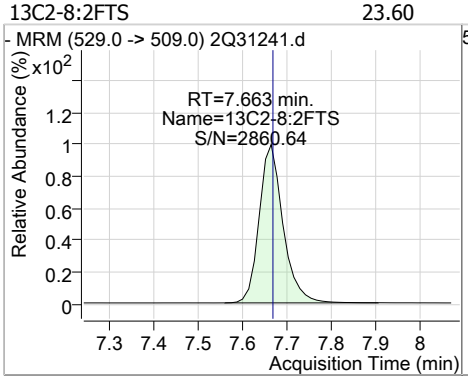
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.75	7.64	0.00	396833				

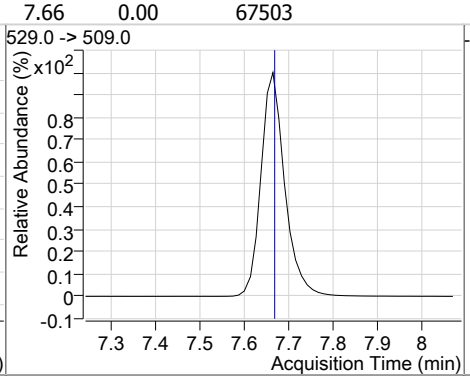


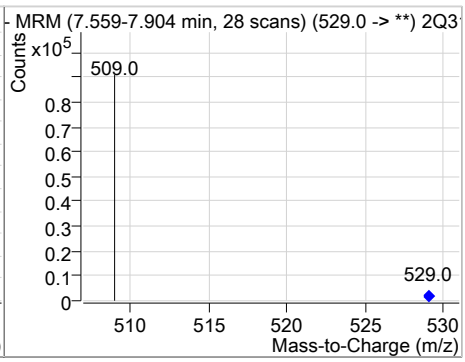




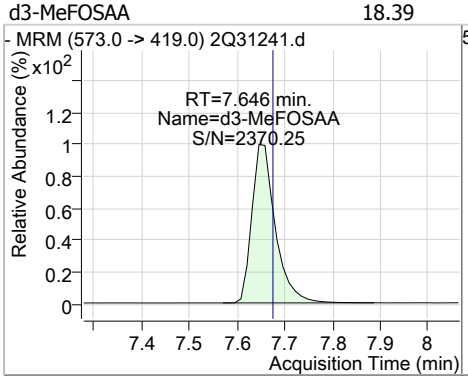
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.60	7.66	0.00	67503				

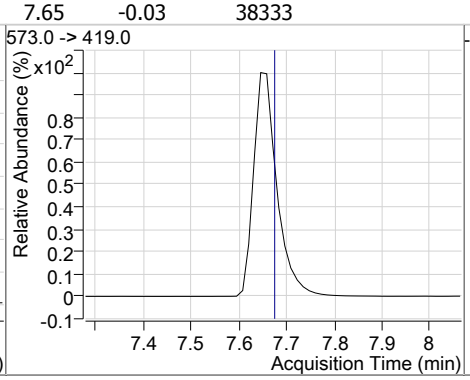


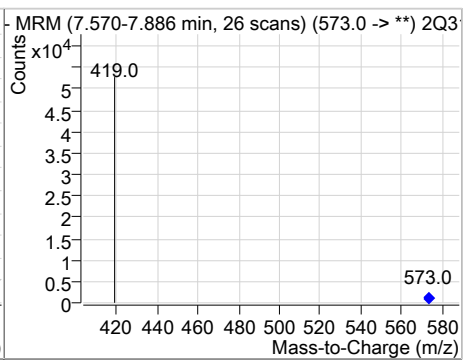




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.39	7.65	-0.03	38333				

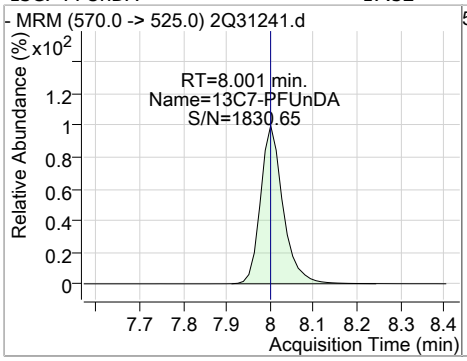


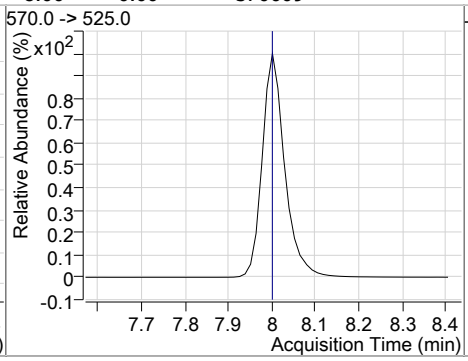


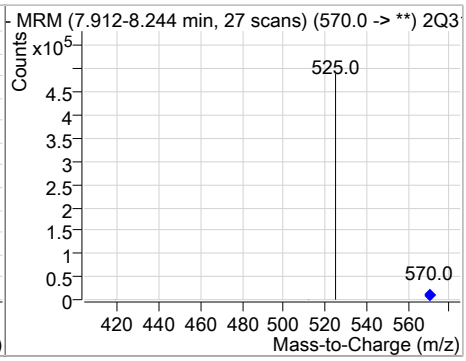


Perfluorinated Compounds by LC/MS/MS

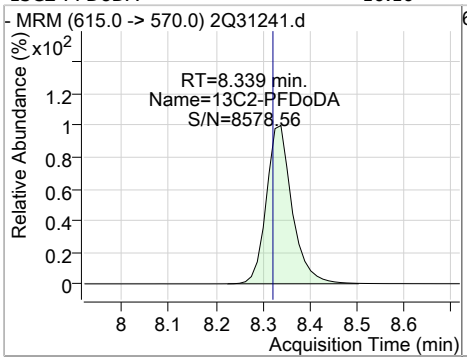
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.52	8.00	0.00	370609				

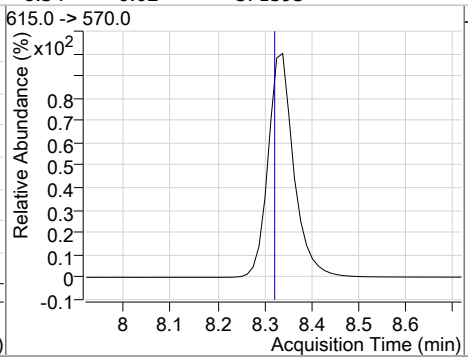


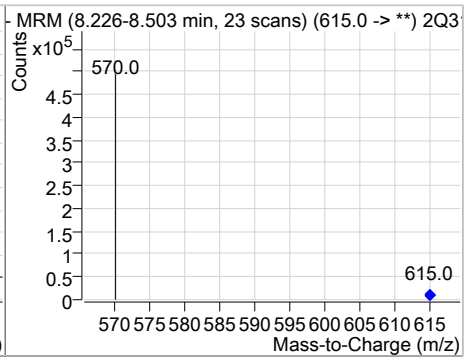




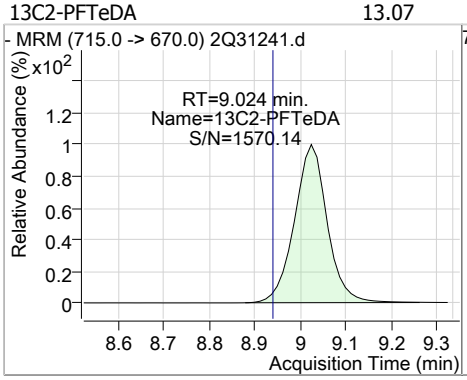
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.10	8.34	0.02	371593				

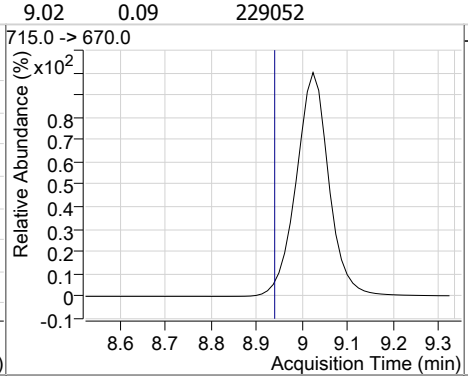


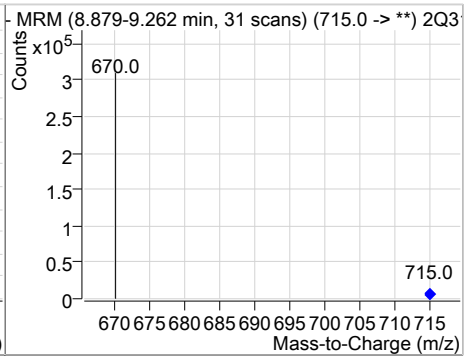




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.07	9.02	0.09	229052				







Perfluorinated Compounds by LC/MS/MS

Data File	:	2Q31242.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	6/24/2019 1:37:40 AM
Sample Name	:	fa65213-8
Vial	:	Vial 59
DA Method File	:	ID_062119_S2Q498.quantmethod.xml
Batch Name	:	S2Q499.batch.bin
Sample Information	:	op75580,S2Q499,250,,,1,1,water

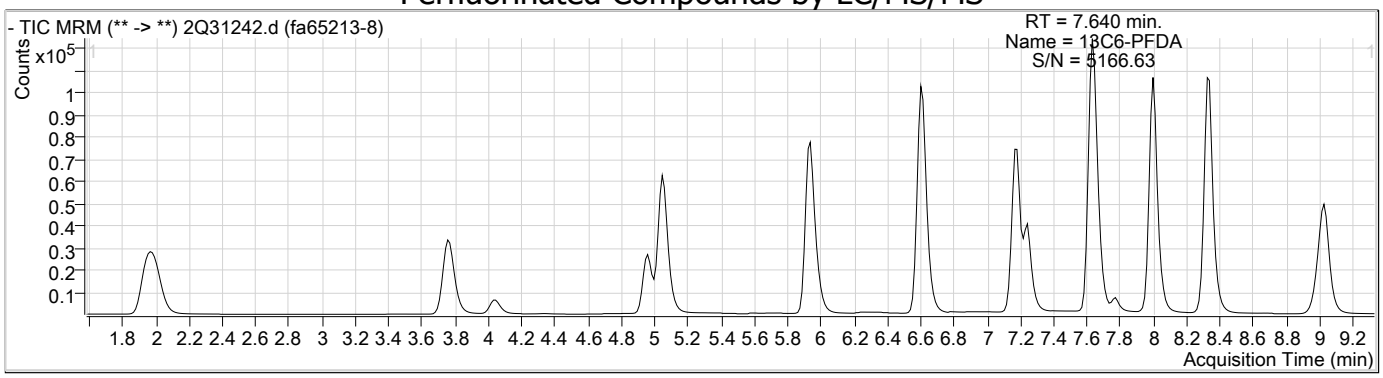
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.965	217.0 -> 172.0	206881	20.00	µg/L	-0.025
M5-PFPeA	3.761	268.0 -> 223.0	164424	20.00	µg/L	-0.038
M5-PFHxA	5.050	318.0 -> 273.0	252331	20.00	µg/L	-0.038
M4-PFHpA	5.942	367.0 -> 322.0	304532	20.00	µg/L	-0.026
M8-PFOA	6.606	421.0 -> 376.0	305118	20.00	µg/L	-0.029
M9-PFNA	7.184	472.0 -> 427.0	269647	20.00	µg/L	-0.018
M6-PFDA	7.640	519.0 -> 474.0	391438	20.00	µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	382705	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	403791	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	247316	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	114742	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	28210	20.00	µg/L	-0.051
M3-PFHxS	5.972	402.0 -> 99.0	23148	20.00	µg/L	-0.026
M8-PFOS	7.166	507.0 -> 99.0	28381	20.00	µg/L	-0.006
M2-4:2FTS	4.958	329.0 -> 309.0	109230	20.00	µg/L	-0.038
M2-6:2FTS	6.602	429.0 -> 409.0	105986	20.00	µg/L	-0.013
M2-8:2FTS	7.663	529.0 -> 509.0	67185	20.00	µg/L	-0.001
M3-MeFOSAA	7.646	573.0 -> 419.0	40535	20.00	µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.958	329.0 -> 309.0	109094	22.48	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
13C2-6:2FTS	6.602	429.0 -> 409.0	105934	26.61	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 133.0%		
13C2-8:2FTS	7.663	529.0 -> 509.0	67217	23.50	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.5%		
13C2-PFDoDA	8.326	615.0 -> 570.0	404666	17.53	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C2-PFTeDA	9.024	715.0 -> 670.0	245481	14.01	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
13C3-PFBS	4.030	302.0 -> 99.0	28187	18.55	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C3-PFHxS	5.972	402.0 -> 99.0	23146	18.18	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C4-PFBA	1.965	217.0 -> 172.0	206149	19.93	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	5.942	367.0 -> 322.0	304405	22.17	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C5-PFHxA	5.050	318.0 -> 273.0	252027	20.82	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C5-PFPeA	3.761	268.0 -> 223.0	164406	20.48	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C6-PFDA	7.640	519.0 -> 474.0	391390	22.44	µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

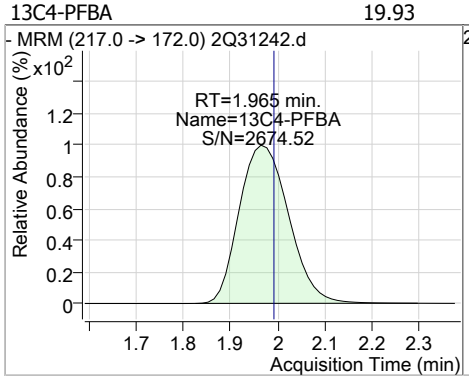
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%			
13C7-PFUnDA	8.001	570.0 -> 525.0	382097	18.06	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
13C8-FOSA	7.247	506.0 -> 78.0	114748	19.50	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%			
13C8-PFOA	6.606	421.0 -> 376.0	305084	23.78	µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.9%			
13C8-PFOS	7.166	507.0 -> 99.0	28358	14.94	µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.7%			
13C9-PFNA	7.184	472.0 -> 427.0	269474	24.80	µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.0%			
d3-MeFOSAA	7.646	573.0 -> 419.0	40518	19.44	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	4.336	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

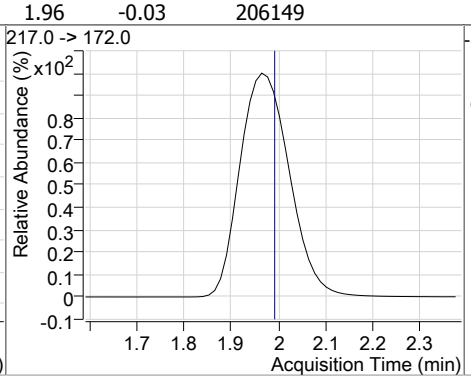
= Qualifier out of range, m = manually integrated, + = Area summed

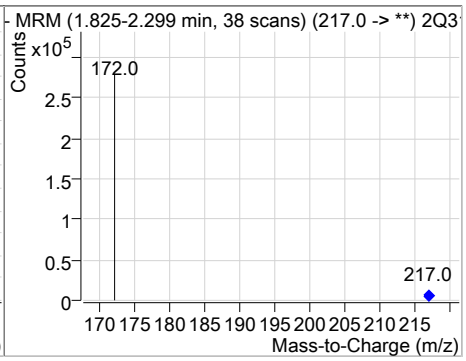
Perfluorinated Compounds by LC/MS/MS



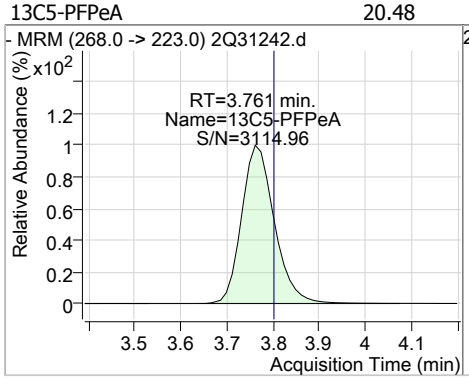
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.93	1.96	-0.03	206149				

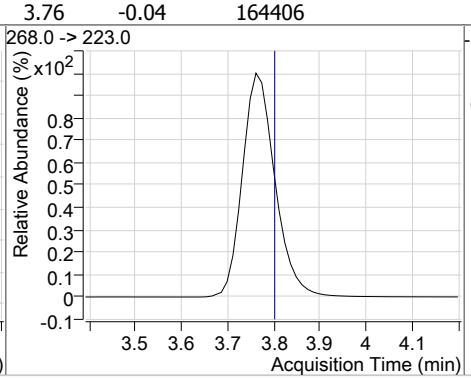


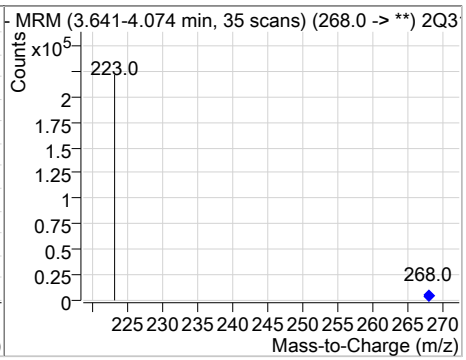




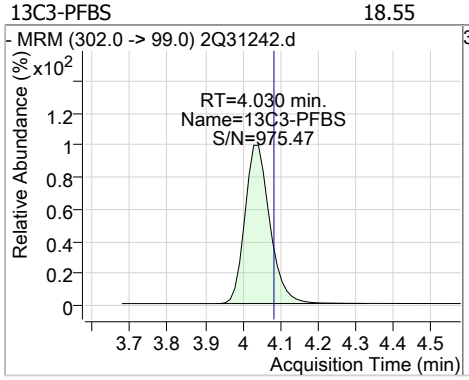
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.48	3.76	-0.04	164406				

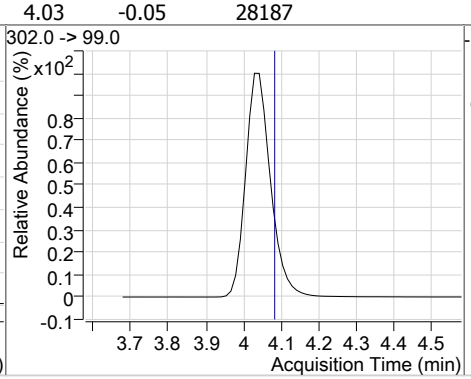


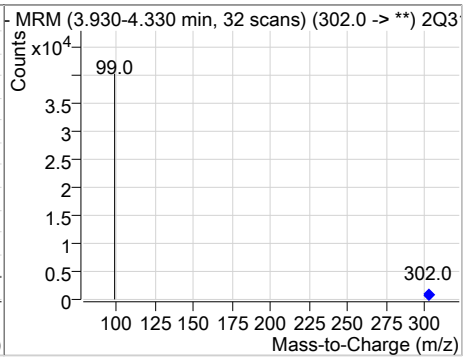




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.55	4.03	-0.05	28187				

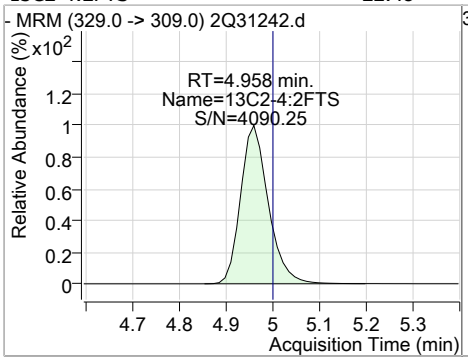


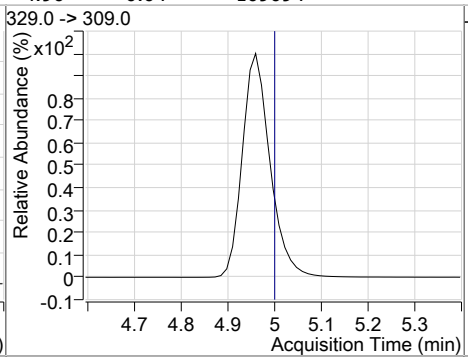


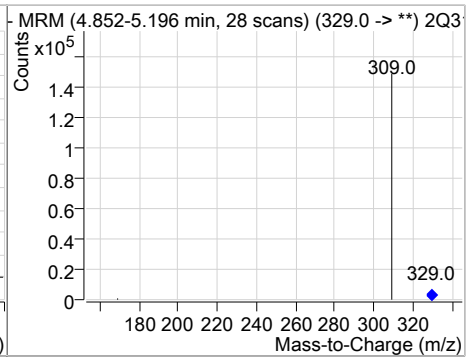


Perfluorinated Compounds by LC/MS/MS

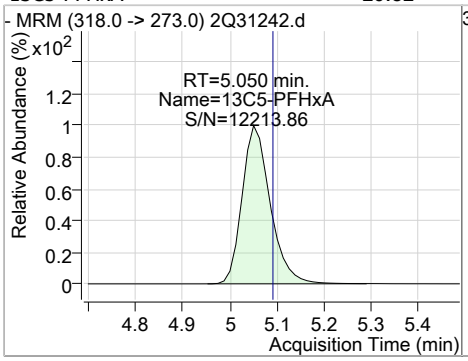
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.48	4.96	-0.04	109094				

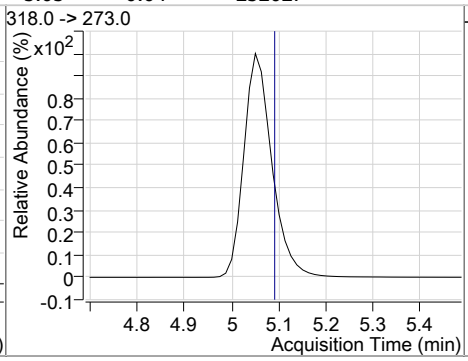


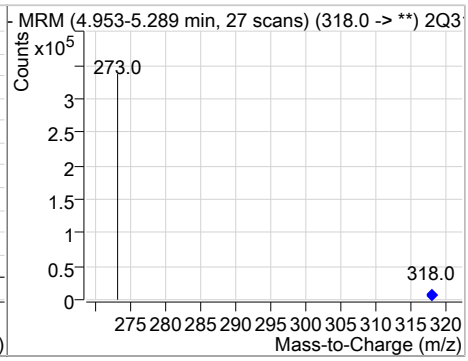




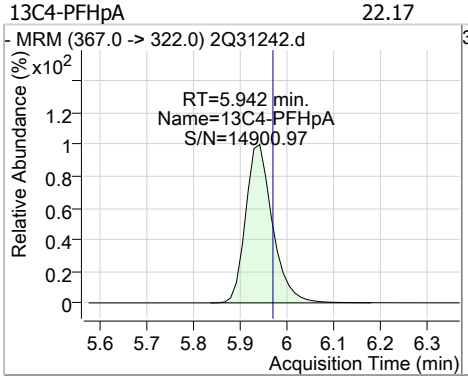
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.82	5.05	-0.04	252027				

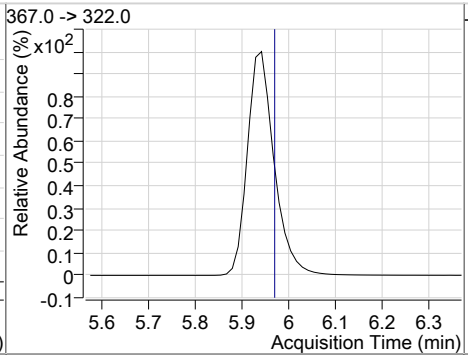


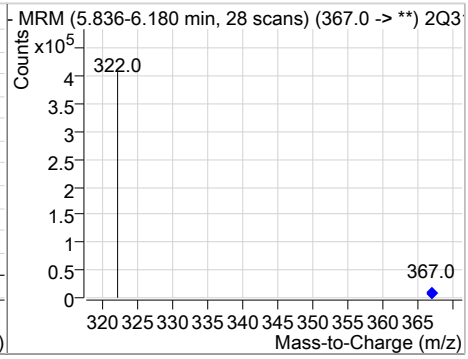




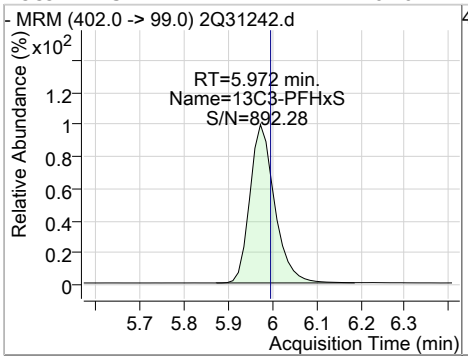
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.17	5.94	-0.03	304405				

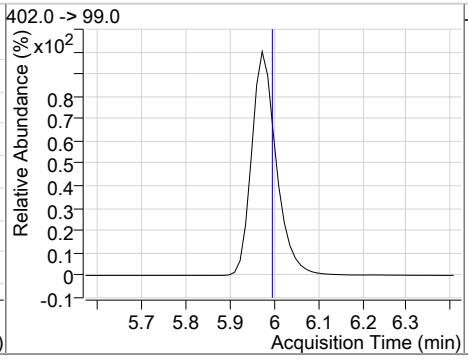


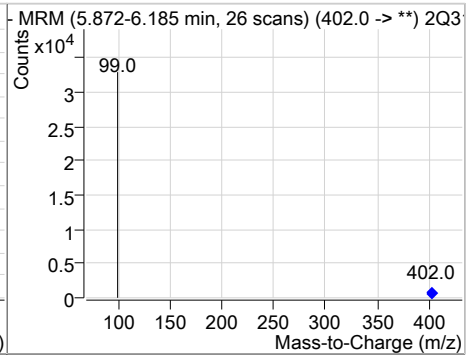




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.18	5.97	-0.03	23146				

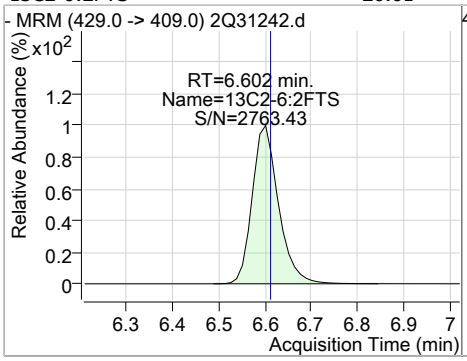


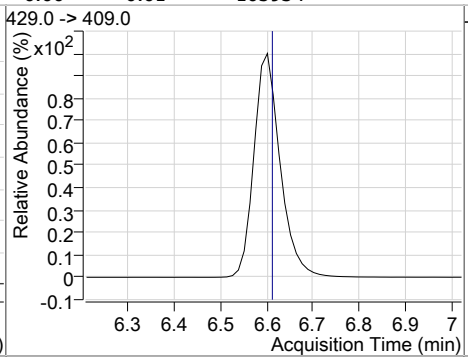


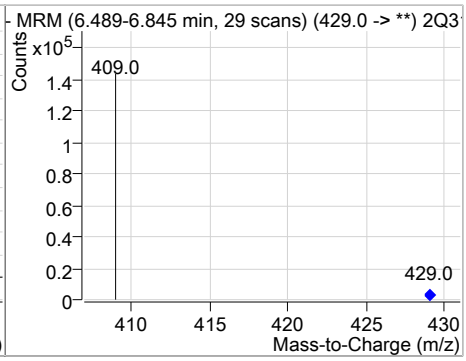


Perfluorinated Compounds by LC/MS/MS

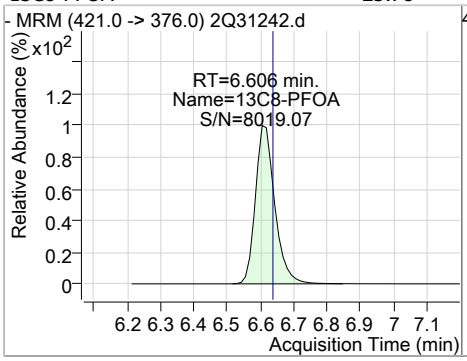
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	26.61	6.60	-0.01	105934				

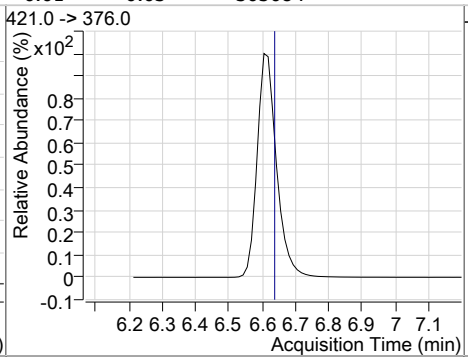


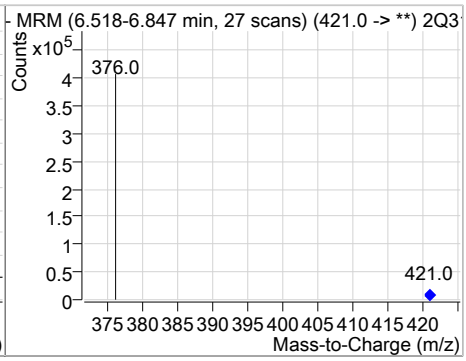




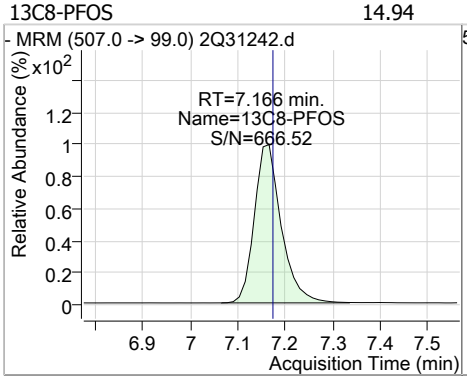
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.78	6.61	-0.03	305084				

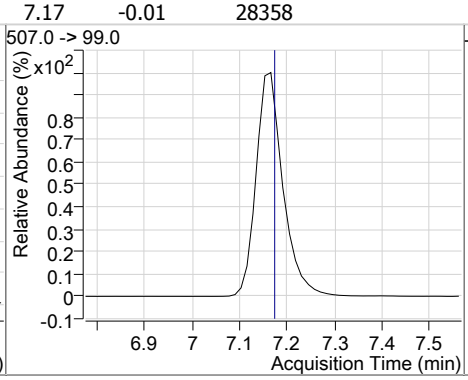


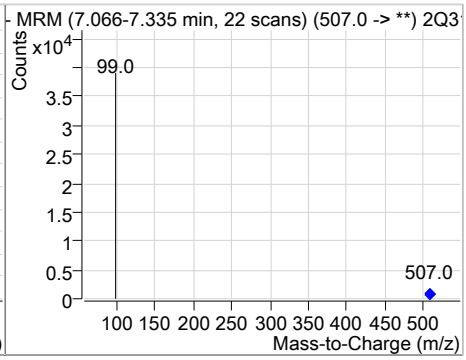




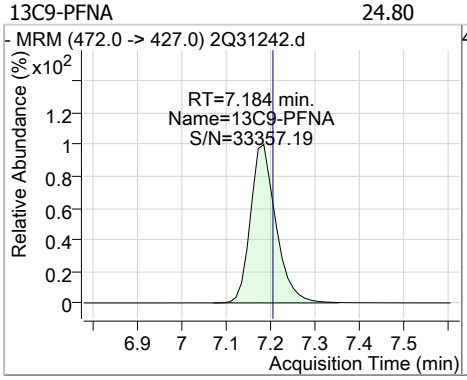
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.94	7.17	-0.01	28358				

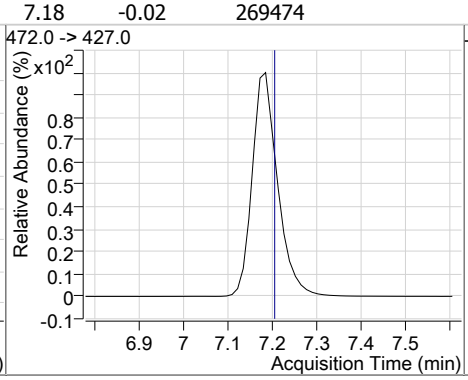


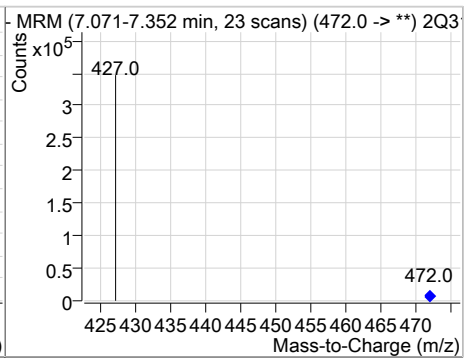




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	24.80	7.18	-0.02	269474				

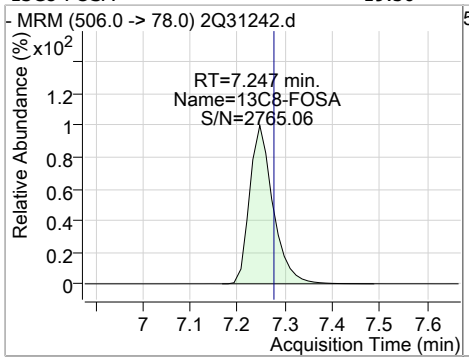


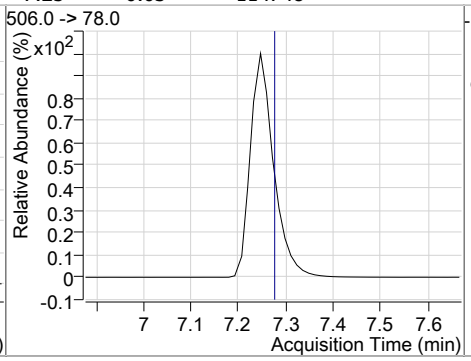


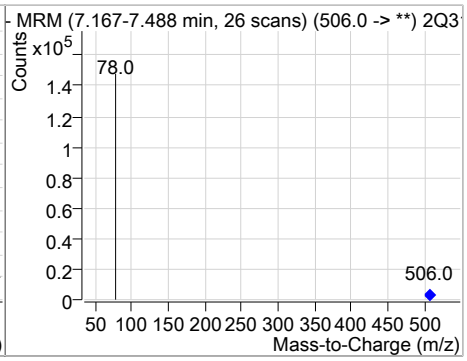


Perfluorinated Compounds by LC/MS/MS

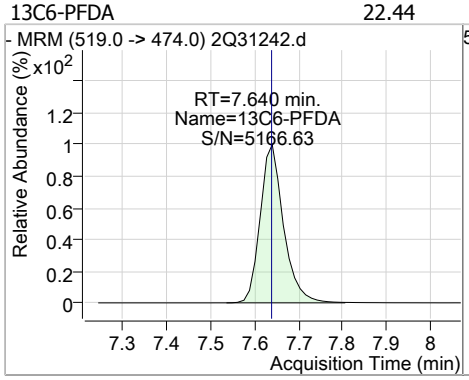
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.50	7.25	-0.03	114748				

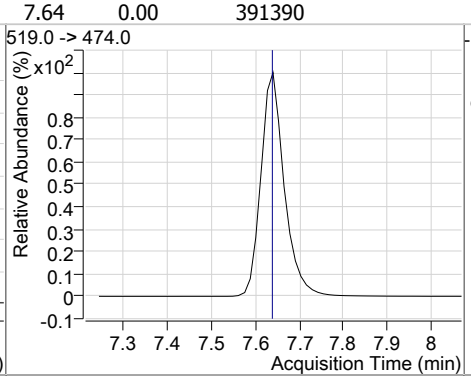


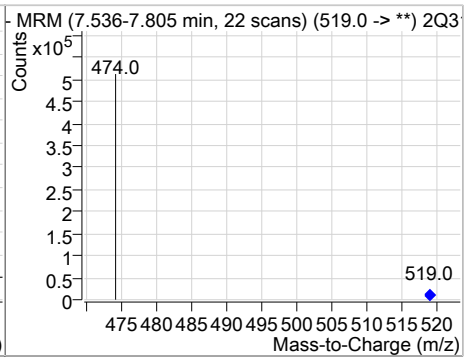




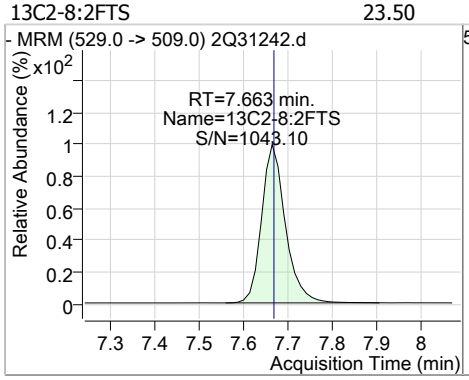
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.44	7.64	0.00	391390				

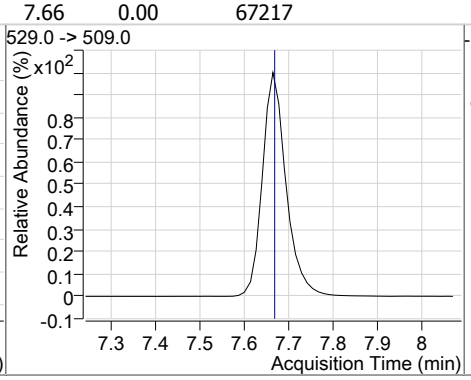


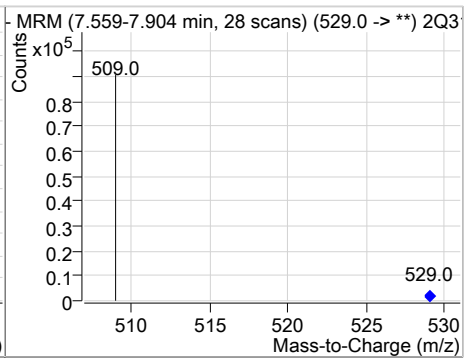




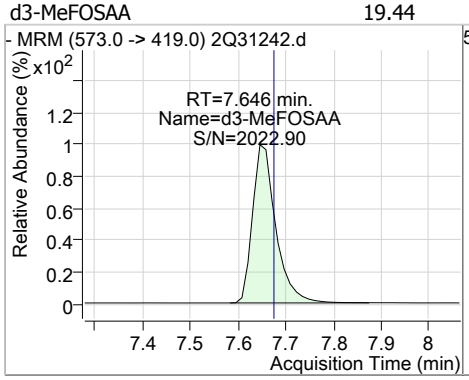
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.50	7.66	0.00	67217				

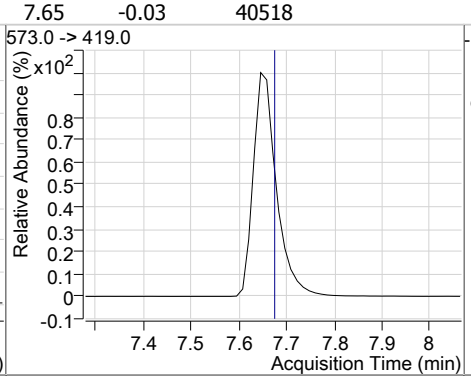


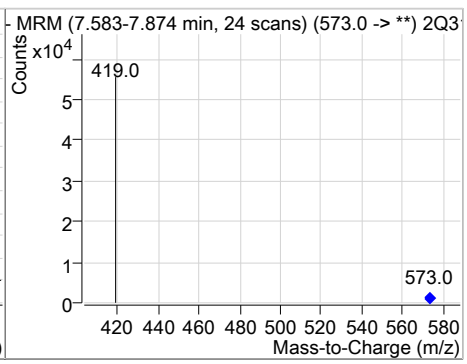




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.44	7.65	-0.03	40518				

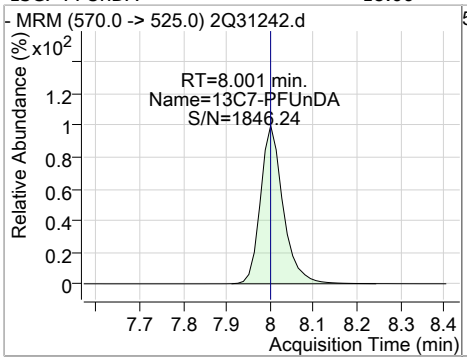


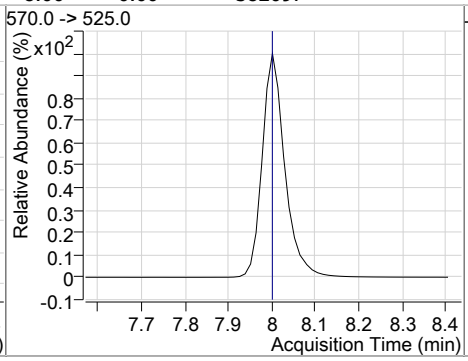


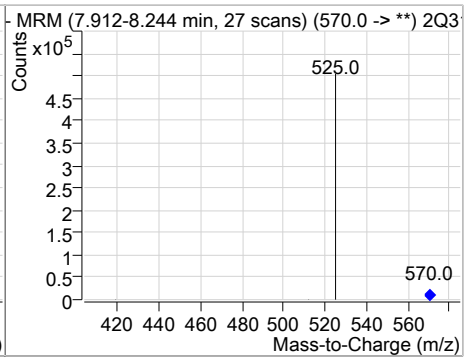


Perfluorinated Compounds by LC/MS/MS

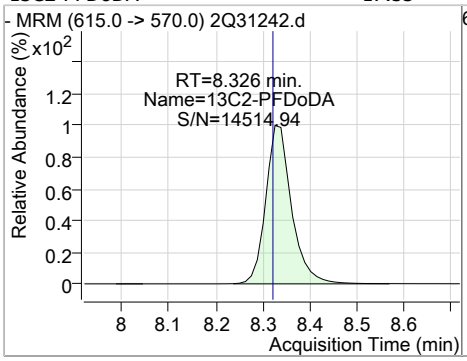
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.06	8.00	0.00	382097				

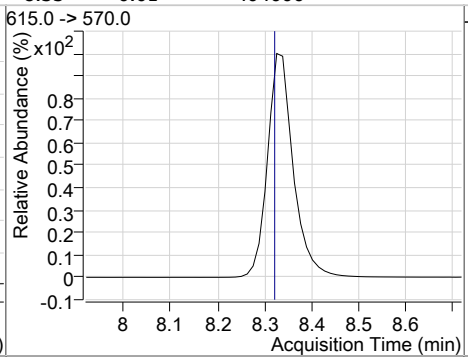


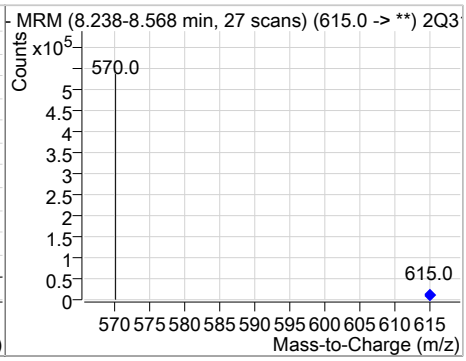




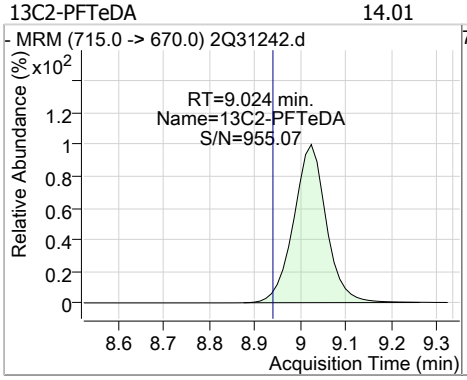
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.53	8.33	0.01	404666				

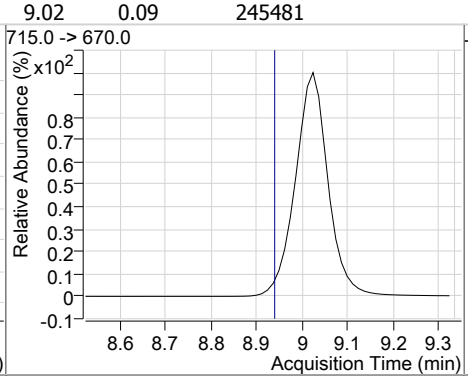


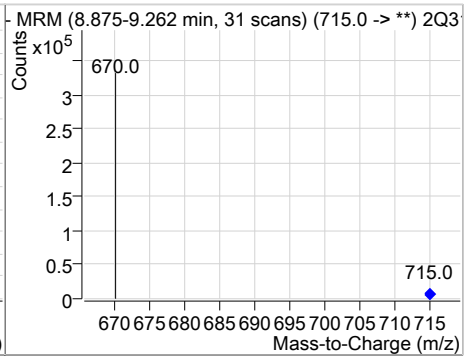




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.01	9.02	0.09	245481				







Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31219.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 7:56:48 PM
Sample Name : op75580-mb
Vial : Vial 40
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

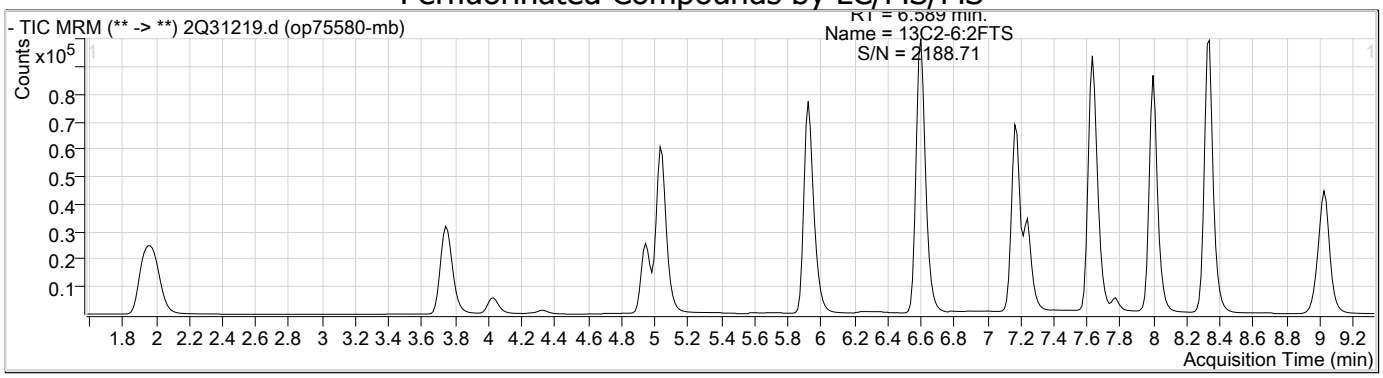
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.965	217.0 -> 172.0	198929	20.00 µg/L	-0.025
M5-PFPeA	3.749	268.0 -> 223.0	162838	20.00 µg/L	-0.051
M5-PFHxA	5.038	318.0 -> 273.0	247578	20.00 µg/L	-0.051
M4-PFHpA	5.930	367.0 -> 322.0	298071	20.00 µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	297711	20.00 µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	246442	20.00 µg/L	-0.030
M6-PFDA	7.640	519.0 -> 474.0	295242	20.00 µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	306396	20.00 µg/L	-0.002
M2-PFDoDA	8.339	615.0 -> 570.0	372542	20.00 µg/L	0.019
M2-PFTeDA	9.024	715.0 -> 670.0	218941	20.00 µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	97969	20.00 µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	26784	20.00 µg/L	-0.051
M3-PFHxS	5.960	402.0 -> 99.0	22038	20.00 µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	21174	20.00 µg/L	-0.018
M2-4:2FTS	4.946	329.0 -> 309.0	105071	20.00 µg/L	-0.050
M2-6:2FTS	6.589	429.0 -> 409.0	101002	20.00 µg/L	-0.026
M2-8:2FTS	7.663	529.0 -> 509.0	47747	20.00 µg/L	-0.001
M3-MeFOSAA	7.646	573.0 -> 419.0	30473	20.00 µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.946	329.0 -> 309.0	104940	21.63 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C2-6:2FTS	6.589	429.0 -> 409.0	100983	25.36 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.8%	
13C2-8:2FTS	7.663	529.0 -> 509.0	47755	16.70 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.5%	
13C2-PFDoDA	8.339	615.0 -> 570.0	371953	16.11 µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%	
13C2-PFTeDA	9.024	715.0 -> 670.0	220375	12.57 µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.9%	
13C3-PFBS	4.030	302.0 -> 99.0	26771	17.62 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%	
13C3-PFHxS	5.960	402.0 -> 99.0	22076	17.34 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%	
13C4-PFBA	1.965	217.0 -> 172.0	197981	19.14 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C4-PFHpA	5.930	367.0 -> 322.0	297925	21.70 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C5-PFHxA	5.038	318.0 -> 273.0	247365	20.44 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C5-PFPeA	3.749	268.0 -> 223.0	162381	20.23 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C6-PFDA	7.640	519.0 -> 474.0	295119	16.92 µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

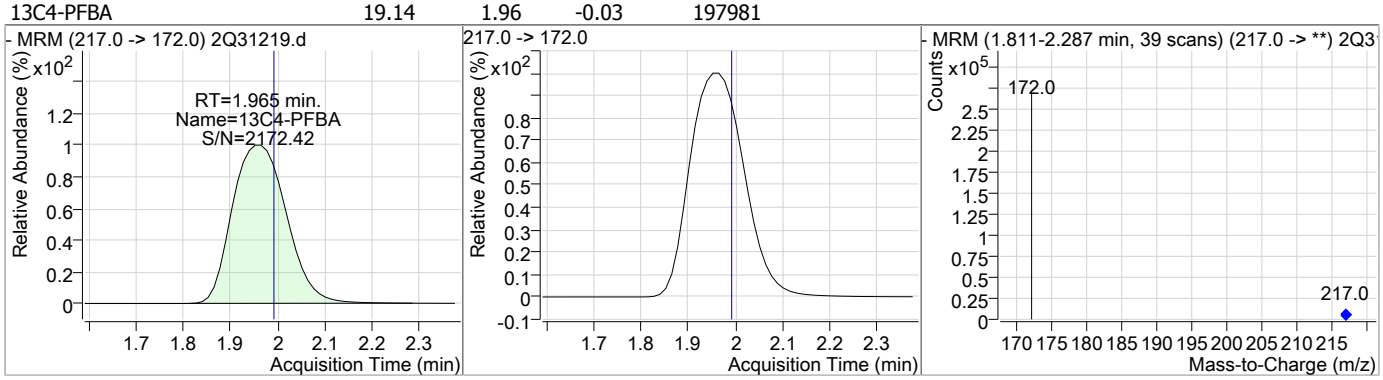
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.6%		
13C7-PFUnDA	8.001	570.0 -> 525.0	306008	14.46 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%		
13C8-FOSA	7.247	506.0 -> 78.0	97959	16.65 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C8-PFOA	6.606	421.0 -> 376.0	297708	23.21 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.0%		
13C8-PFOS	7.154	507.0 -> 99.0	21147	11.14 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.7%		
13C9-PFNA	7.171	472.0 -> 427.0	246569	22.69 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
d3-MeFOSAA	7.646	573.0 -> 419.0	30467	14.62 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.961	213.0 -> 169.0	303	0.18 µg/L		100
PFBS	4.324	299.0 -> 80.0	0	0.00 µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

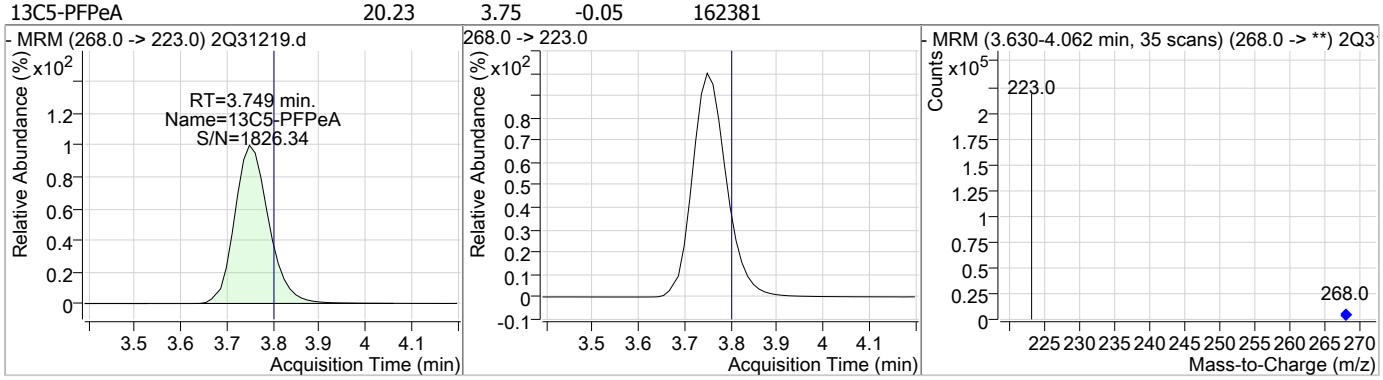
Perfluorinated Compounds by LC/MS/MS



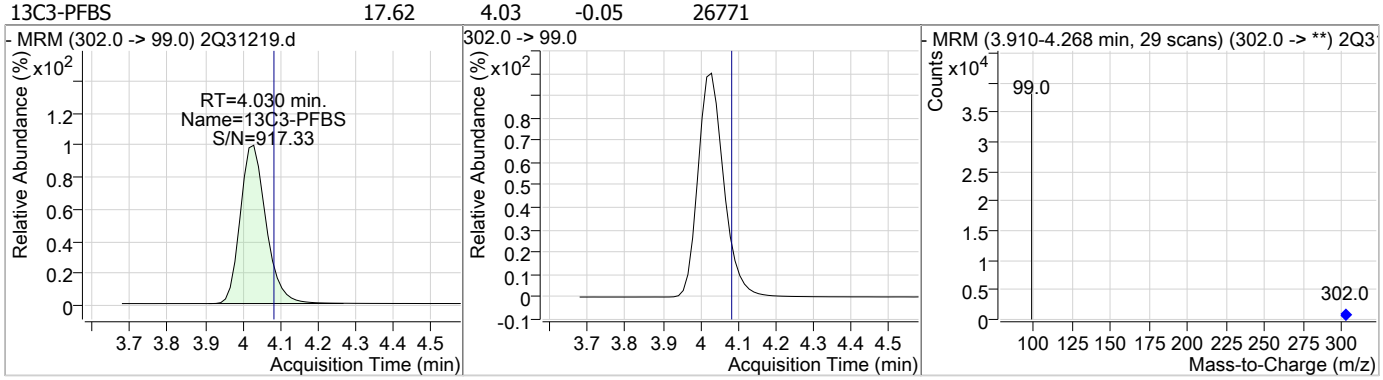
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.14	1.96	-0.03	197981				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.23	3.75	-0.05	162381				

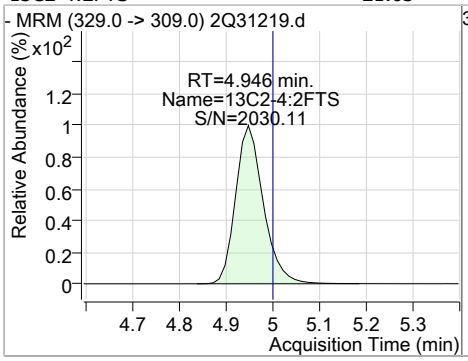


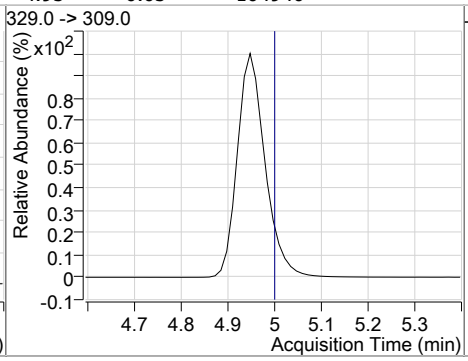
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.62	4.03	-0.05	26771				

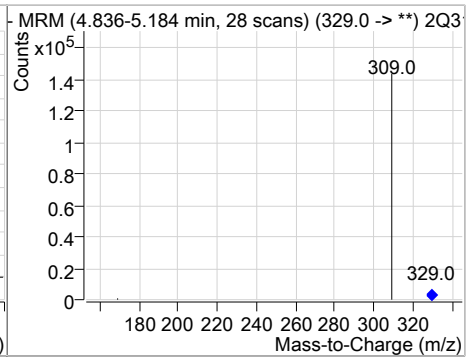


Perfluorinated Compounds by LC/MS/MS

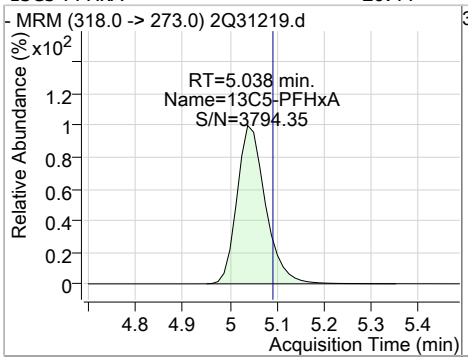
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.63	4.95	-0.05	104940				

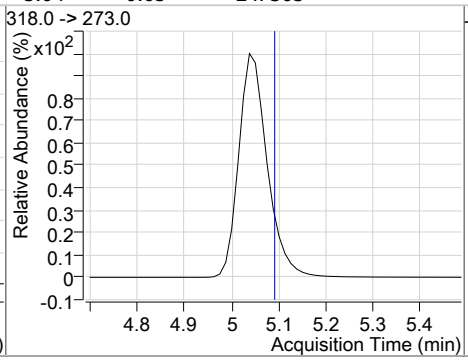


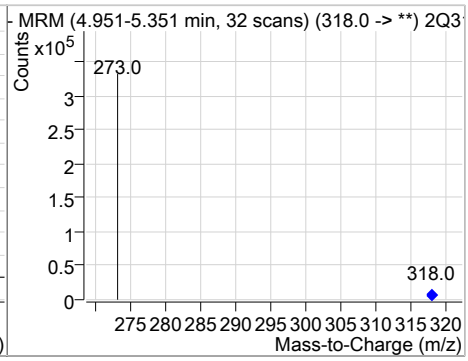




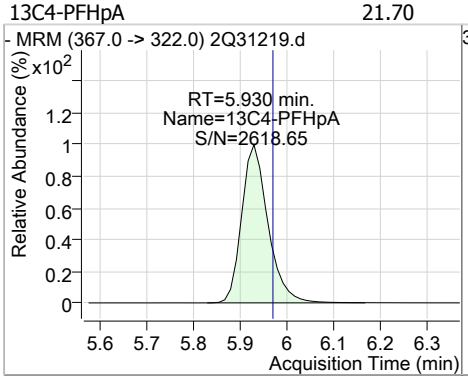
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.44	5.04	-0.05	247365				

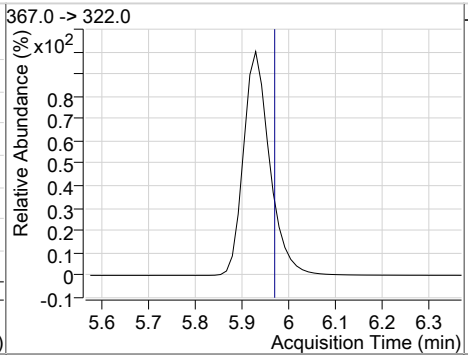


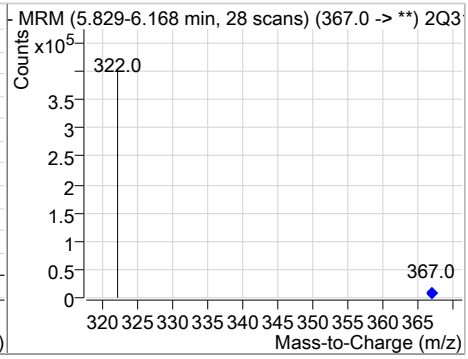




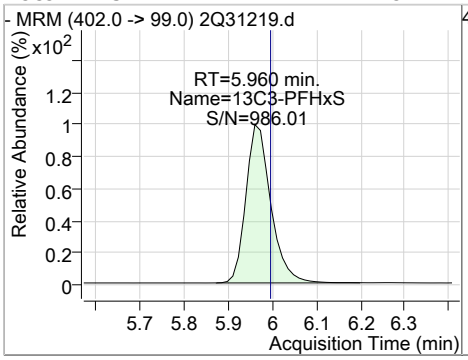
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.70	5.93	-0.04	297925				

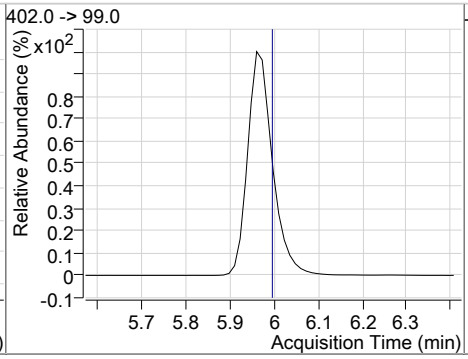


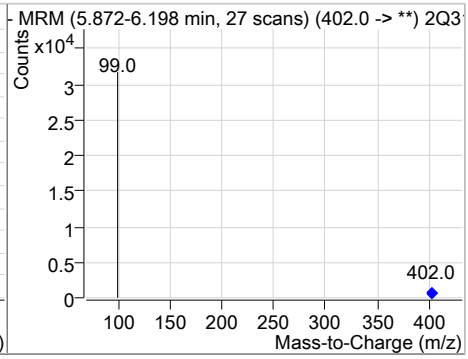




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.34	5.96	-0.04	22076				

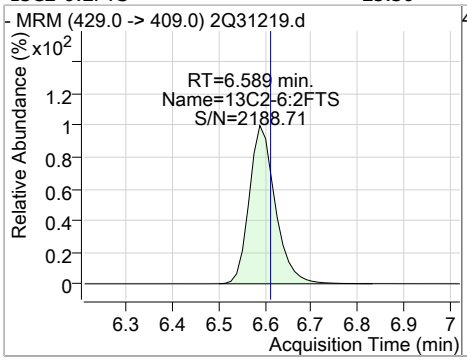


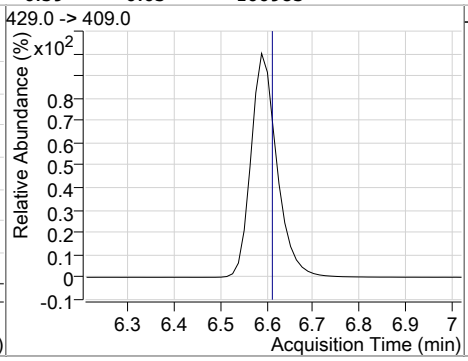


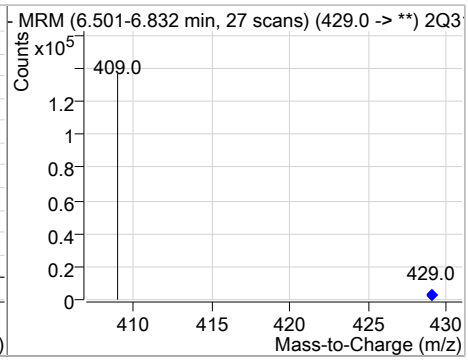


Perfluorinated Compounds by LC/MS/MS

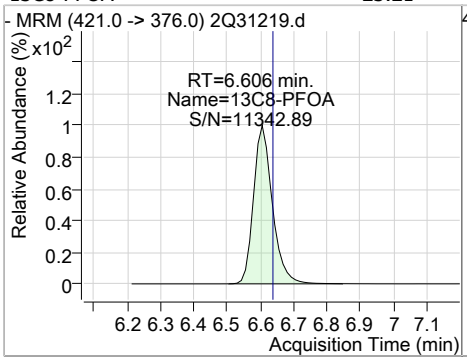
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	25.36	6.59	-0.03	100983				

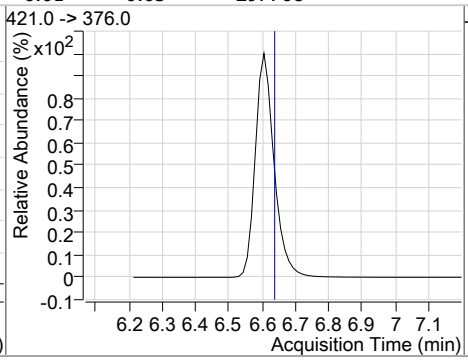


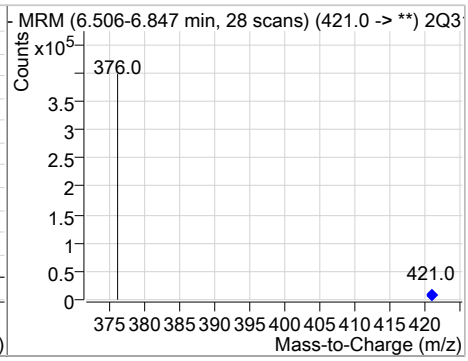




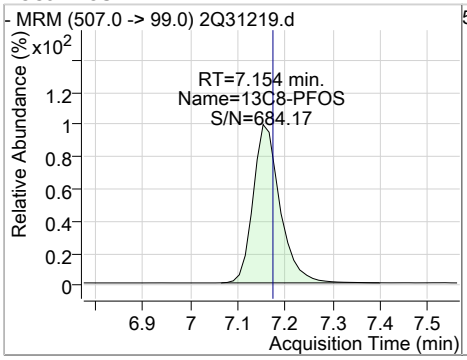
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.21	6.61	-0.03	297708				

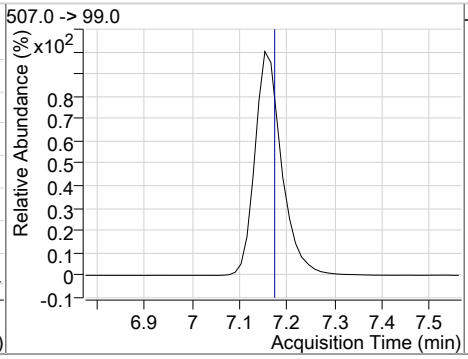


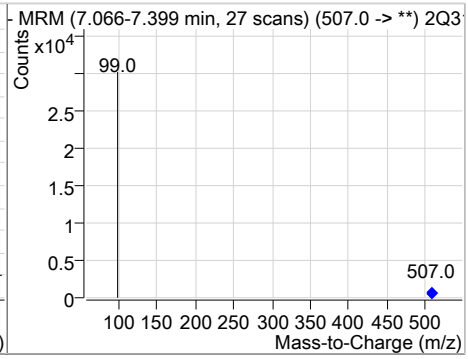




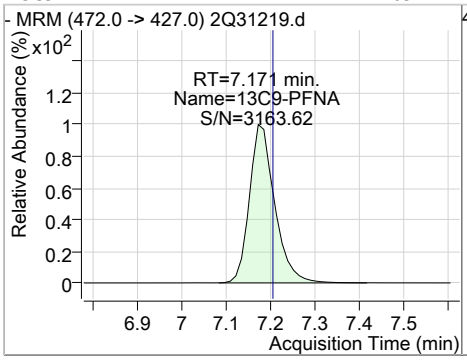
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.14	7.15	-0.02	21147				

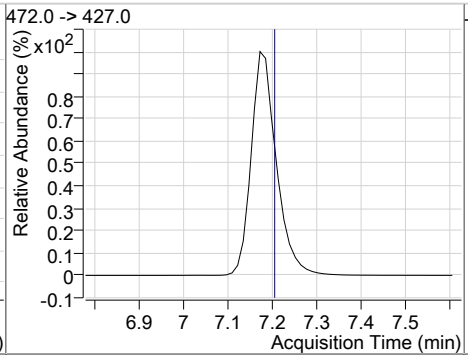


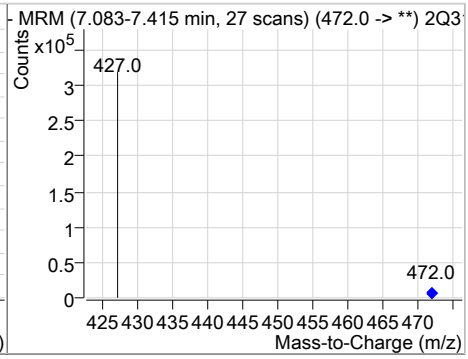




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.69	7.17	-0.03	246569				

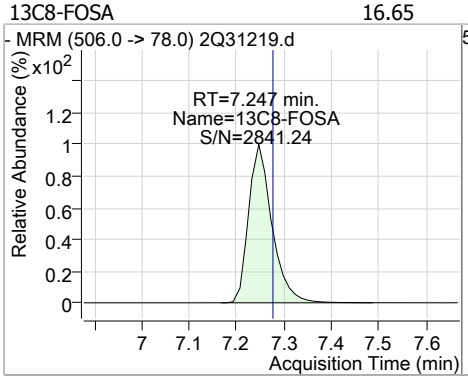


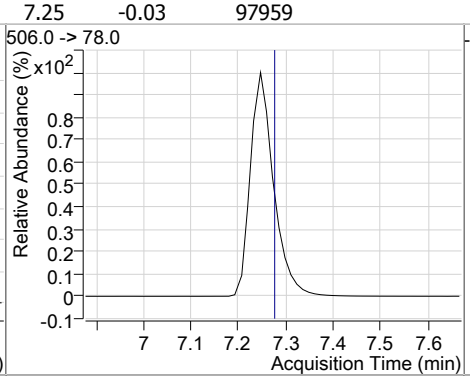


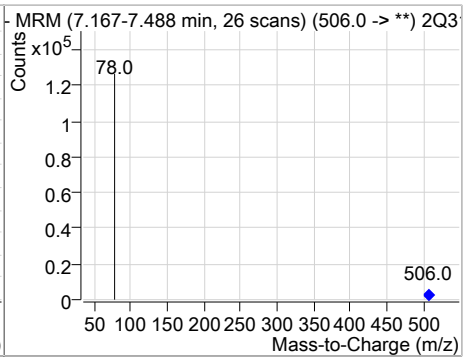


Perfluorinated Compounds by LC/MS/MS

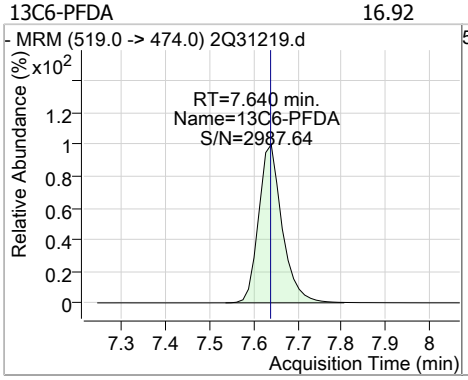
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.65	7.25	-0.03	97959				

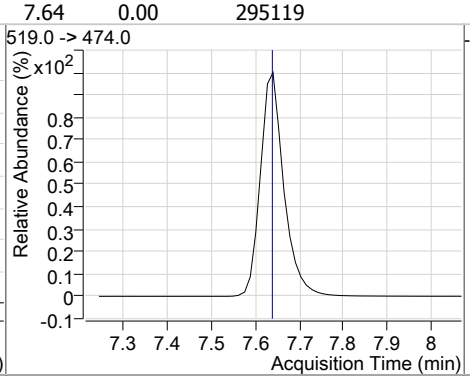


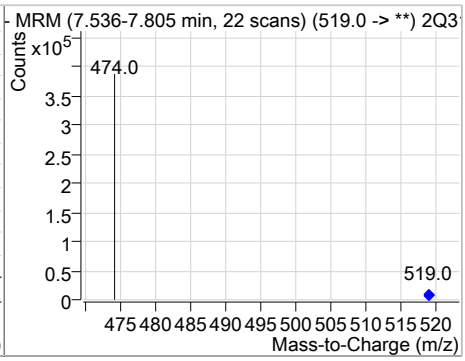




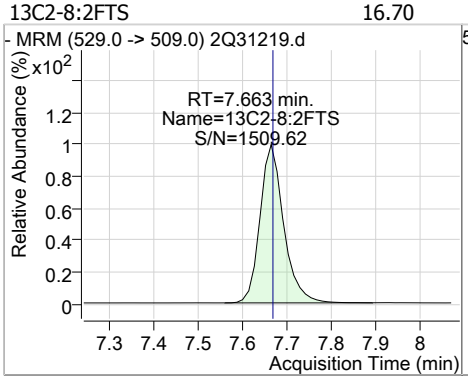
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.92	7.64	0.00	295119				

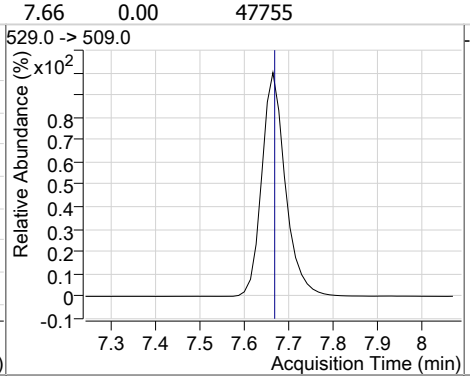


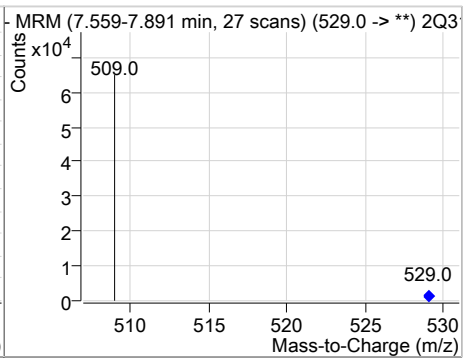




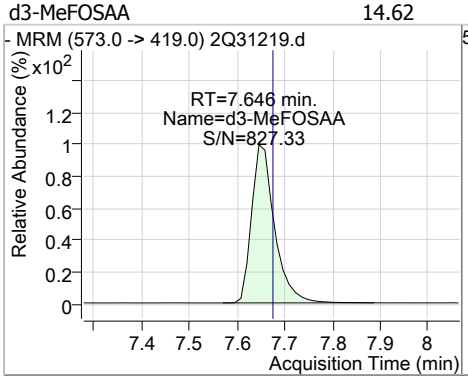
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.70	7.66	0.00	47755				

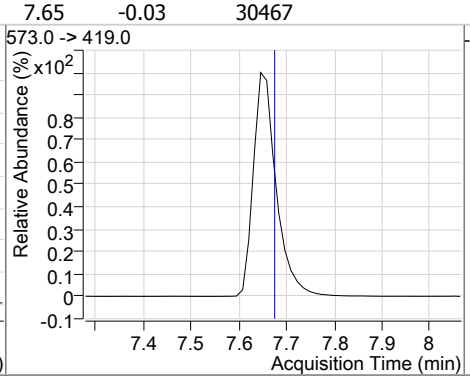


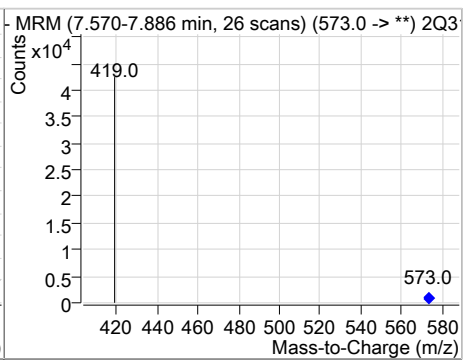




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.62	7.65	-0.03	30467				

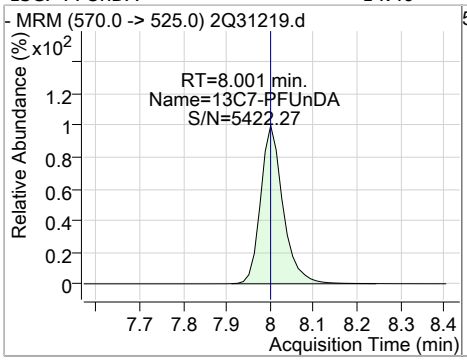


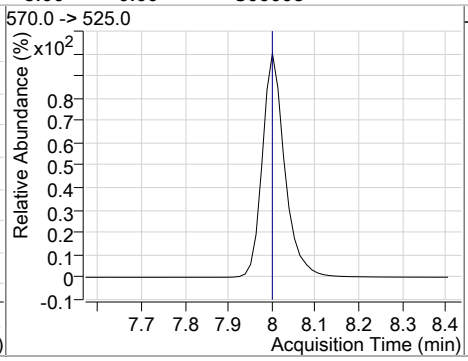


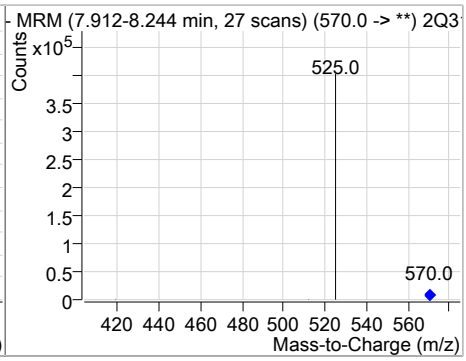


Perfluorinated Compounds by LC/MS/MS

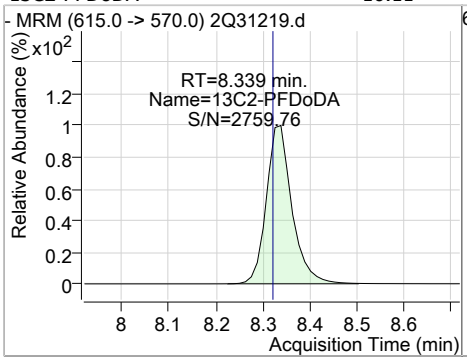
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.46	8.00	0.00	306008				

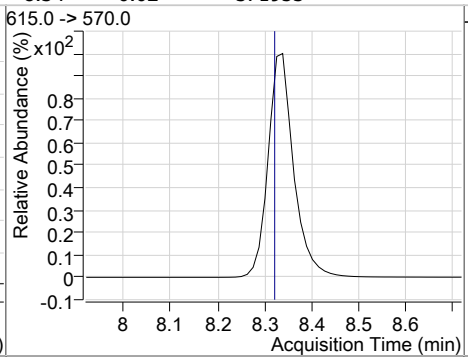


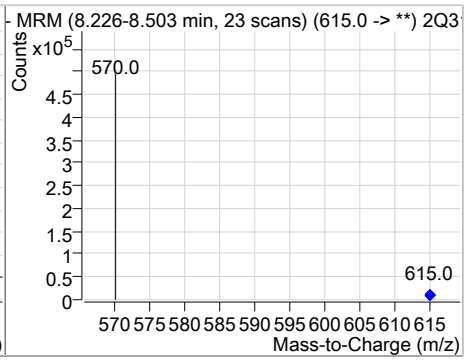




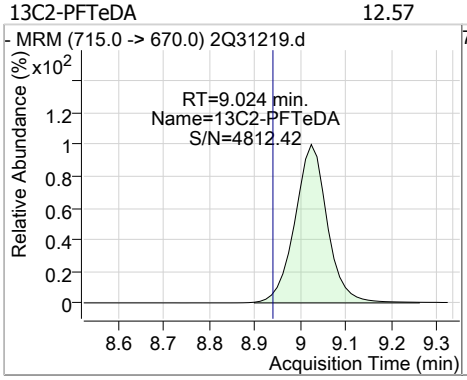
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.11	8.34	0.02	371953				

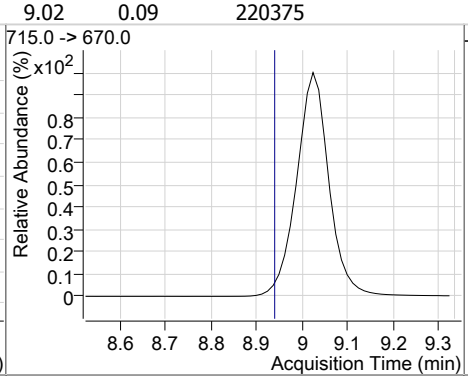


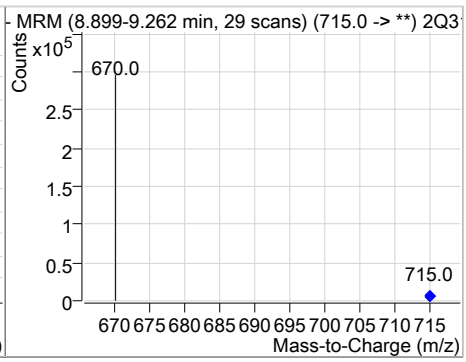




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.57	9.02	0.09	220375				







Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31480.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/26/2019 11:10:53 PM
Sample Name : op75639-mb
Vial : Vial 9
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75639,S2Q501,250,,,1,1,water

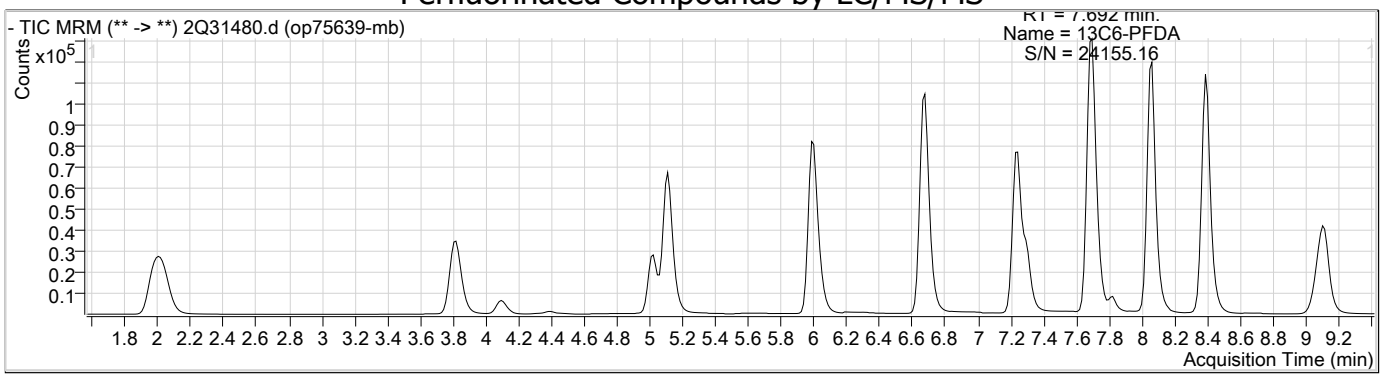
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	2.002	217.0 -> 172.0	211111	20.00 µg/L	0.025
M5-PFPeA	3.824	268.0 -> 223.0	176649	20.00 µg/L	0.063
M5-PFHxA	5.114	318.0 -> 273.0	275924	20.00 µg/L	0.063
M4-PFHpA	5.993	367.0 -> 322.0	331015	20.00 µg/L	0.063
M8-PFOA	6.682	421.0 -> 376.0	321929	20.00 µg/L	0.076
M9-PFNA	7.252	472.0 -> 427.0	279912	20.00 µg/L	0.080
M6-PFDA	7.692	519.0 -> 474.0	424709	20.00 µg/L	0.065
M7-PFUnDA	8.066	570.0 -> 525.0	448617	20.00 µg/L	0.065
M2-PFDoDA	8.390	615.0 -> 570.0	448434	20.00 µg/L	0.064
M2-PFTeDA	9.100	715.0 -> 670.0	229493	20.00 µg/L	0.075
M8-FOSA	7.299	506.0 -> 78.0	74172	20.00 µg/L	0.052
M3-PFBS	4.093	302.0 -> 99.0	29127	20.00 µg/L	0.063
M3-PFHxS	6.035	402.0 -> 99.0	24732	20.00 µg/L	0.076
M8-PFOS	7.218	507.0 -> 99.0	34563	20.00 µg/L	0.065
M2-4:2FTS	5.021	329.0 -> 309.0	117925	20.00 µg/L	0.075
M2-6:2FTS	6.665	429.0 -> 409.0	109417	20.00 µg/L	0.076
M2-8:2FTS	7.728	529.0 -> 509.0	71002	20.00 µg/L	0.077
M3-MeFOSAA	7.697	573.0 -> 419.0	46463	20.00 µg/L	0.051
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	5.021	329.0 -> 309.0	117759	24.27 µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%	
13C2-6:2FTS	6.665	429.0 -> 409.0	109344	27.46 µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 137.3%	
13C2-8:2FTS	7.728	529.0 -> 509.0	71101	24.86 µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%	
13C2-PFDoDA	8.390	615.0 -> 570.0	448487	19.43 µg/L	0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C2-PFTeDA	9.100	715.0 -> 670.0	229571	13.10 µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.5%	
13C3-PFBS	4.093	302.0 -> 99.0	29108	19.16 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%	
13C3-PFHxS	6.035	402.0 -> 99.0	24750	19.44 µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C4-PFBA	2.002	217.0 -> 172.0	211102	20.41 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C4-PFHpA	5.993	367.0 -> 322.0	330909	24.10 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%	
13C5-PFHxA	5.114	318.0 -> 273.0	275460	22.76 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.8%	
13C5-PFPeA	3.824	268.0 -> 223.0	176654	22.01 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C6-PFDA	7.692	519.0 -> 474.0	424312	24.32 µg/L	0.065

Perfluorinated Compounds by LC/MS/MS

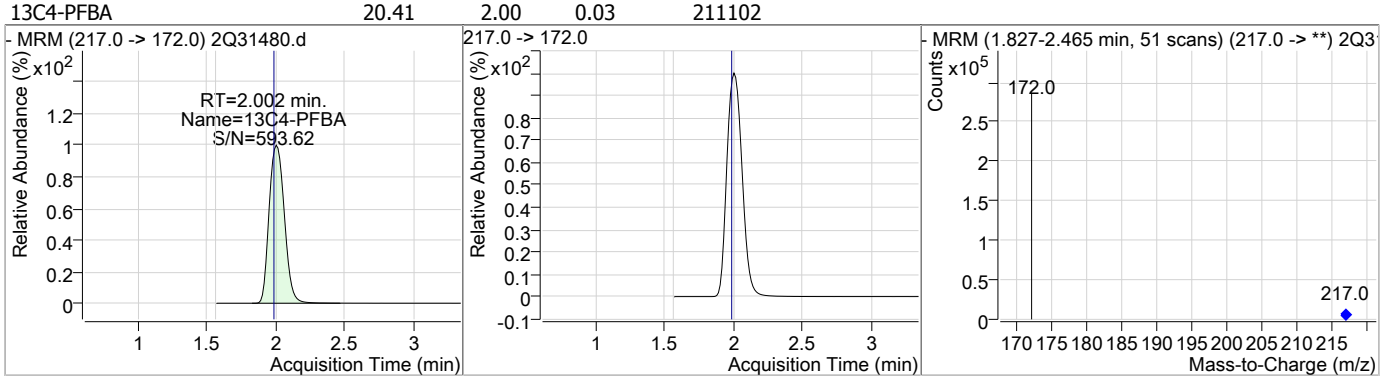
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.6%		
13C7-PFUnDA	8.066	570.0 -> 525.0	448086	21.18 µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C8-FOSA	7.299	506.0 -> 78.0	74201	12.61 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.1%		
13C8-PFOA	6.682	421.0 -> 376.0	321599	25.07 µg/L		0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.4%		
13C8-PFOS	7.218	507.0 -> 99.0	34540	18.19 µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C9-PFNA	7.252	472.0 -> 427.0	279376	25.71 µg/L		0.080
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.6%		
d3-MeFOSAA	7.697	573.0 -> 419.0	46514	22.31 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	4.399	299.0 -> 80.0	0	0.00 µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

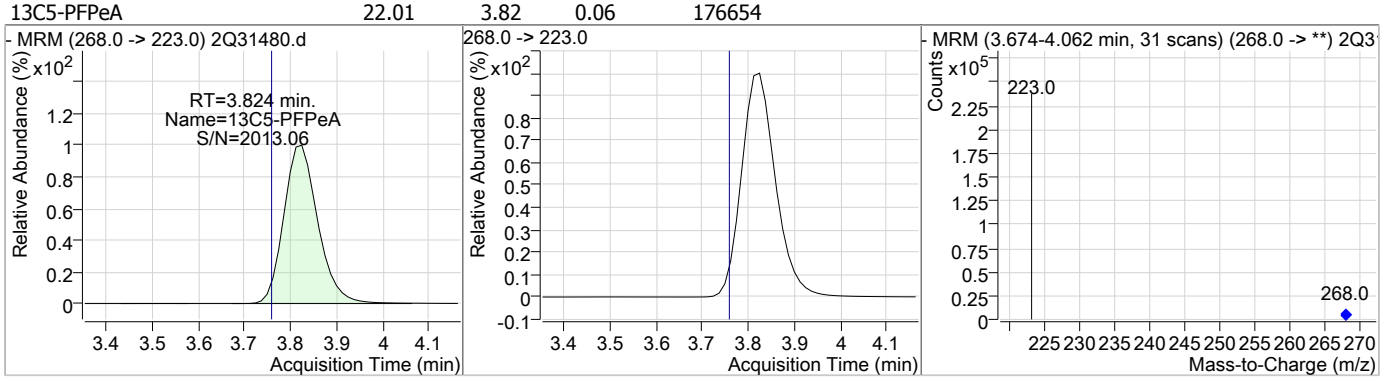
Perfluorinated Compounds by LC/MS/MS



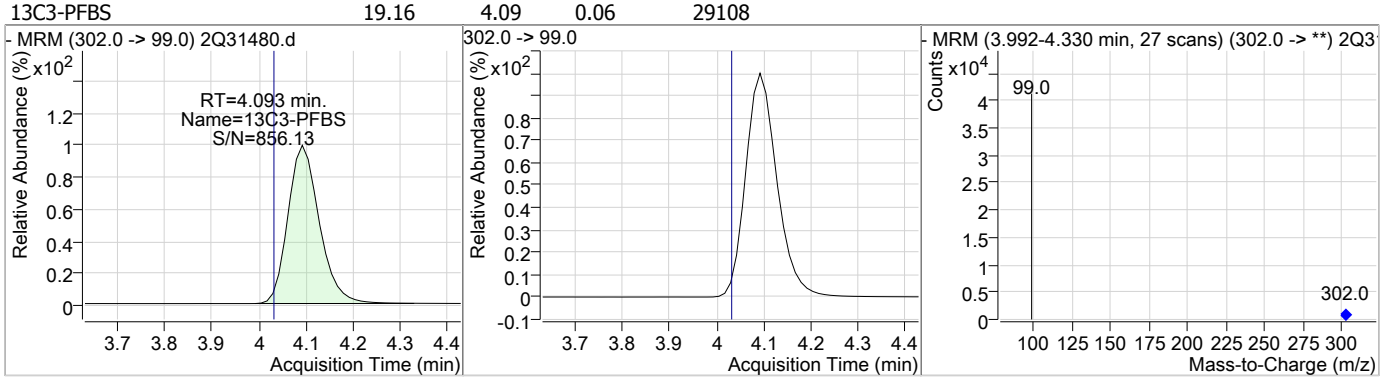
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.41	2.00	0.03	211102				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.01	3.82	0.06	176654				

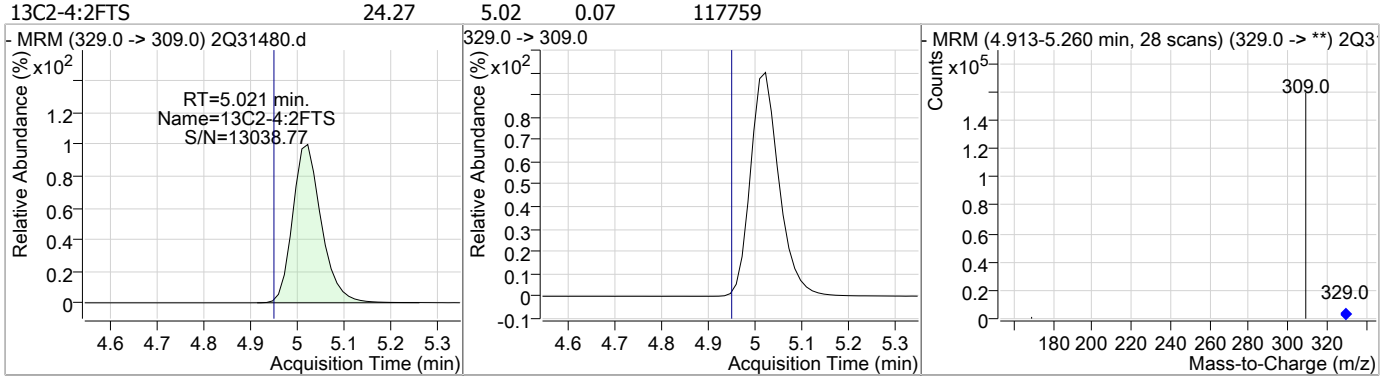


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.16	4.09	0.06	29108				

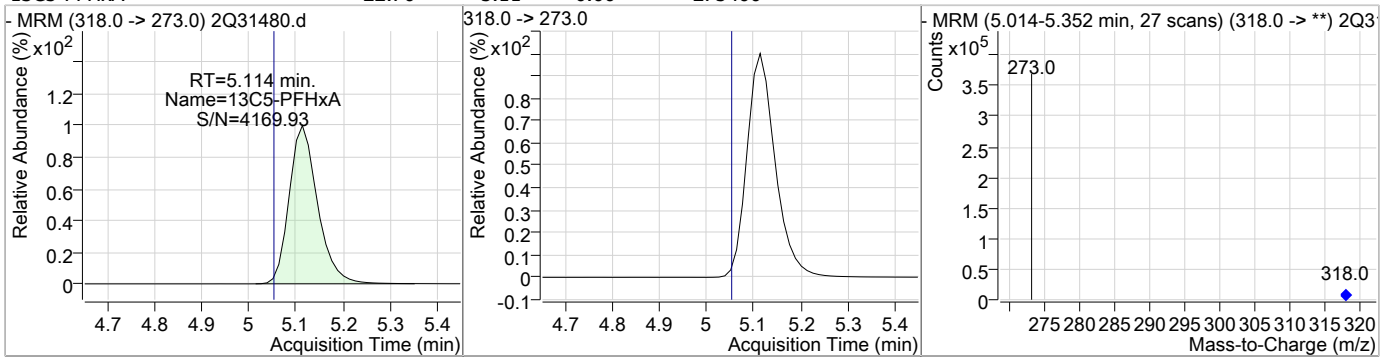


Perfluorinated Compounds by LC/MS/MS

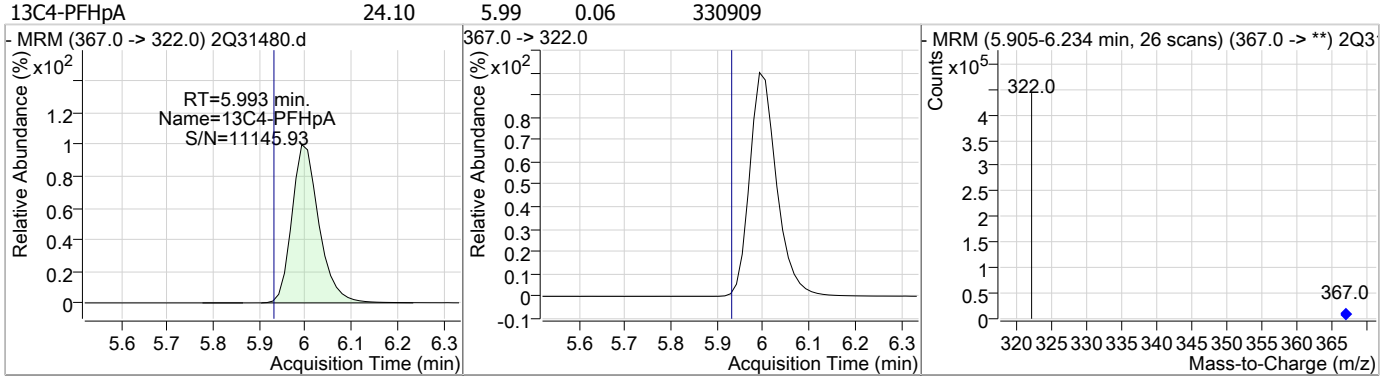
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.27	5.02	0.07	117759				



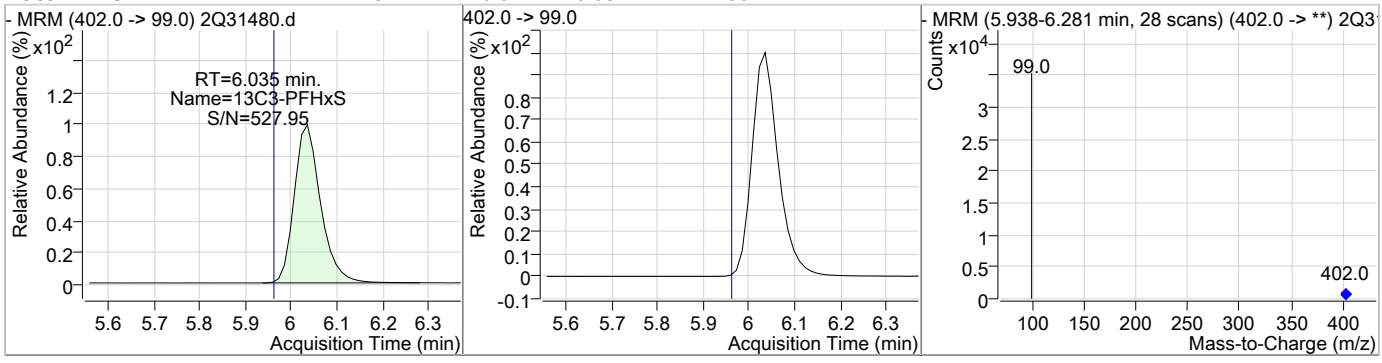
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.76	5.11	0.06	275460				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.10	5.99	0.06	330909				

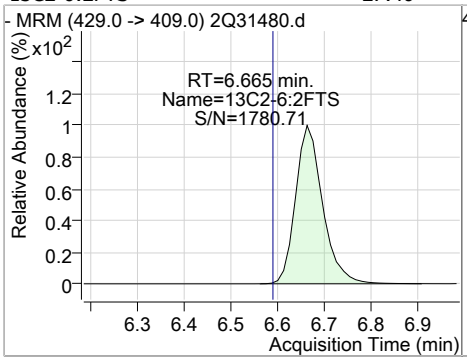


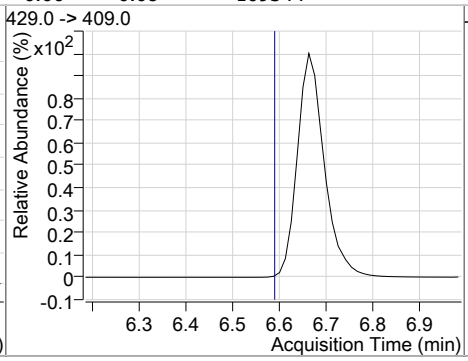
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13C3-PFHxS	19.44	6.04	0.08	24750				

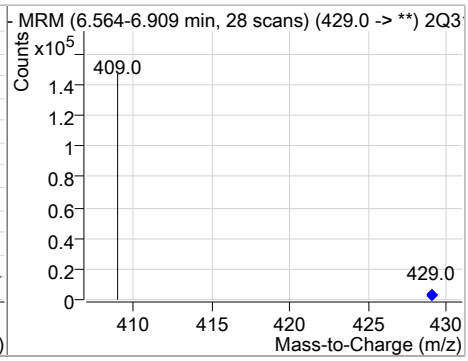


Perfluorinated Compounds by LC/MS/MS

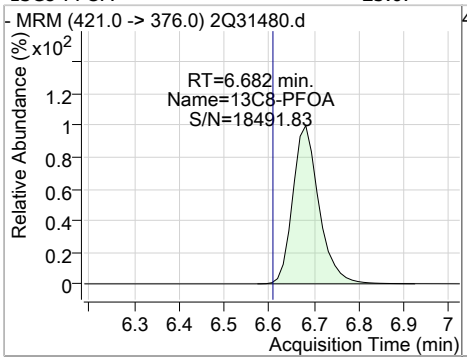
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	27.46	6.66	0.08	109344				

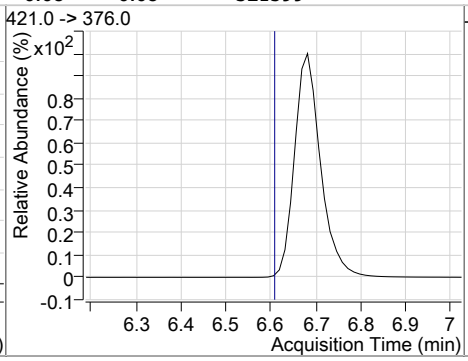


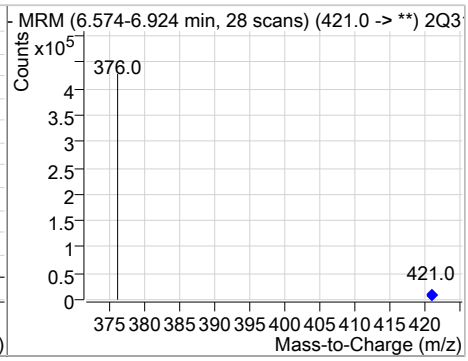




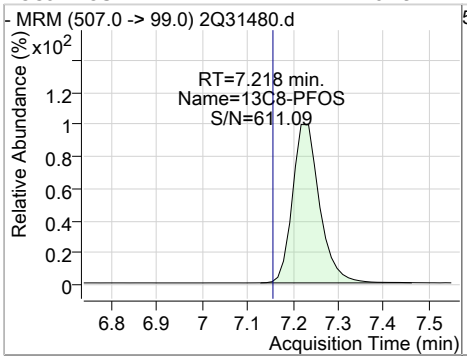
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.07	6.68	0.08	321599				

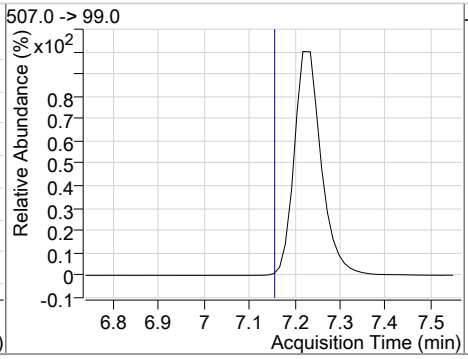


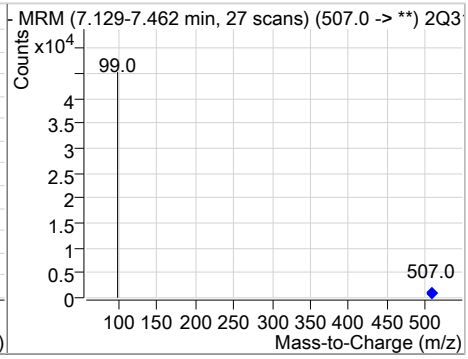




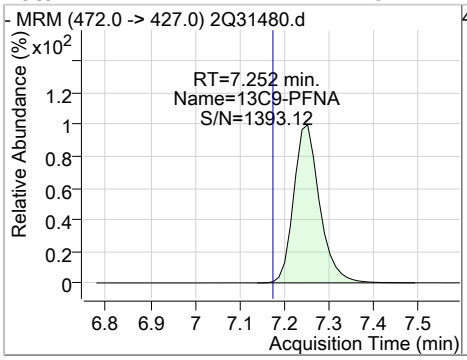
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.19	7.22	0.06	34540				

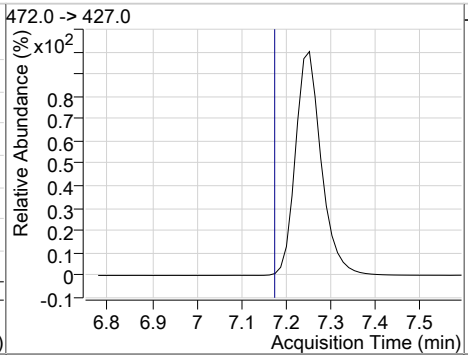


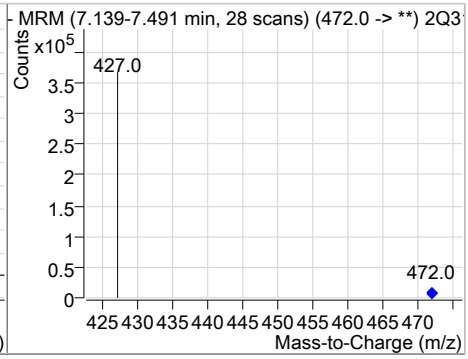




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.71	7.25	0.08	279376				

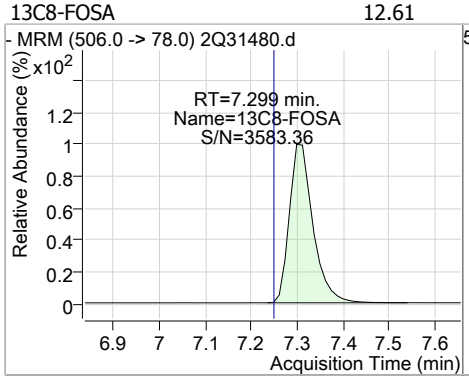


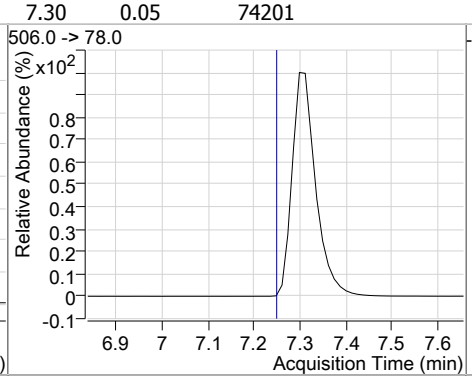


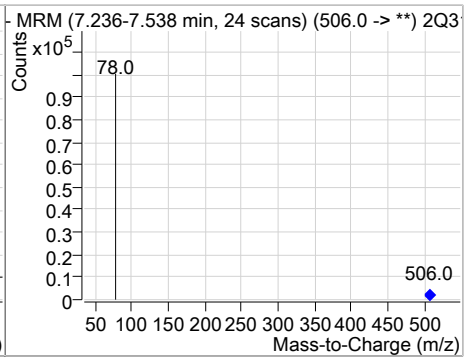


Perfluorinated Compounds by LC/MS/MS

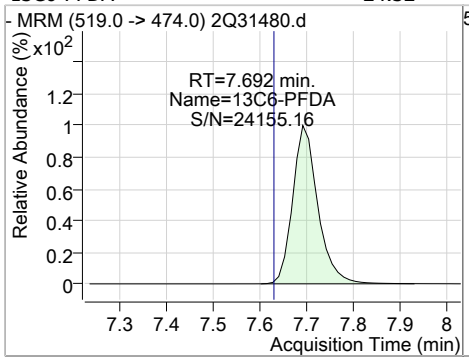
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.61	7.30	0.05	74201				

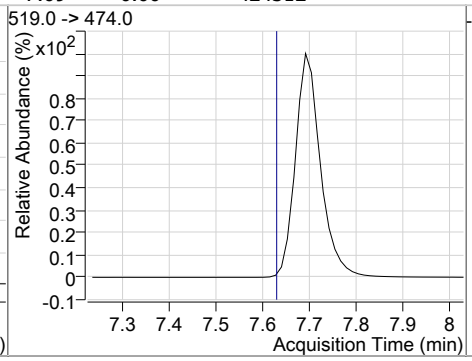


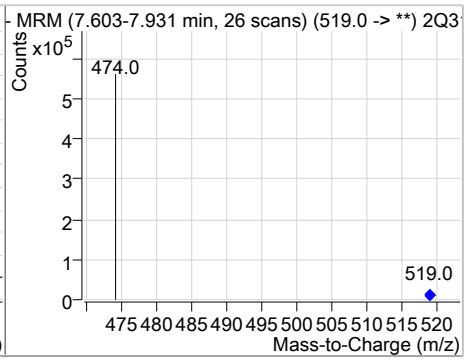




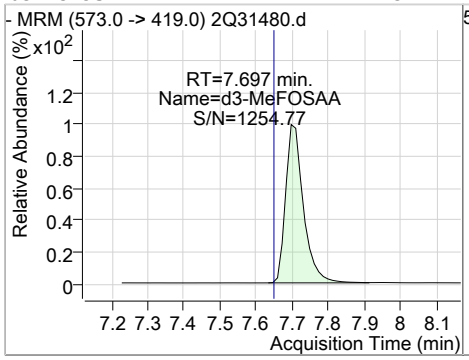
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.32	7.69	0.06	424312				

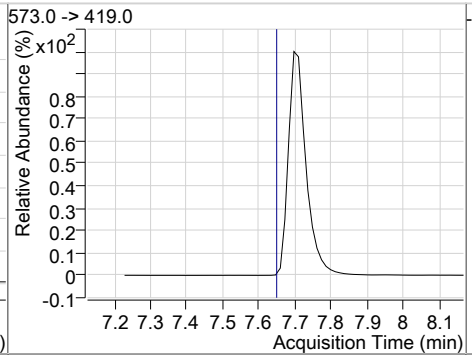


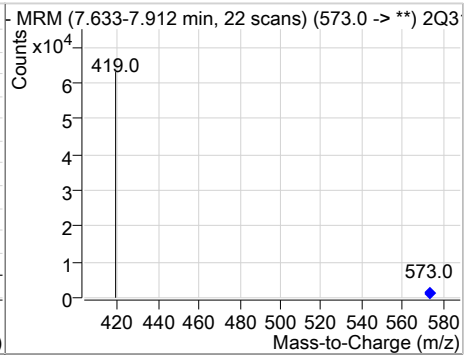




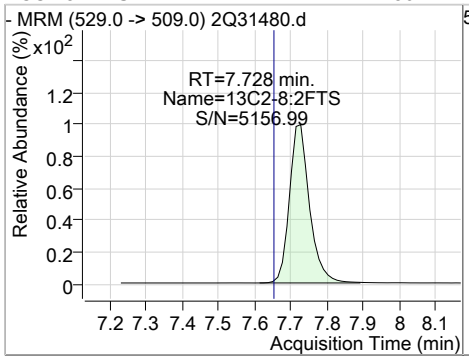
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.31	7.70	0.05	46514				

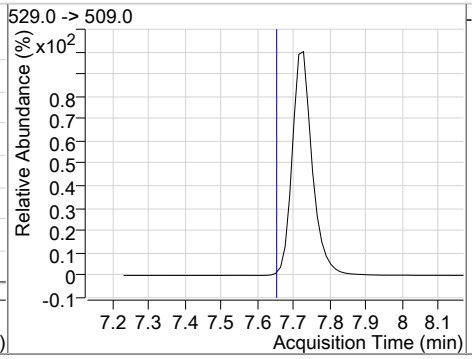


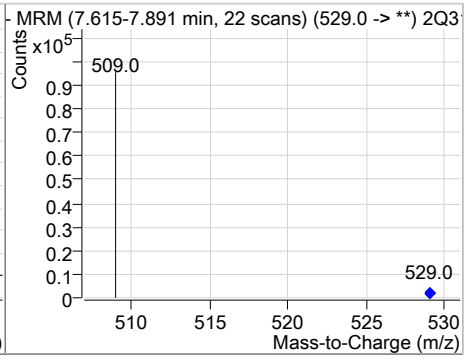




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.86	7.73	0.08	71101				

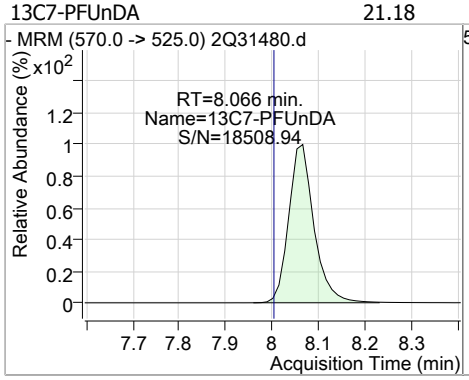


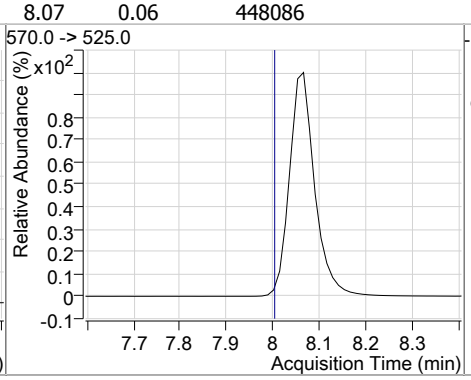


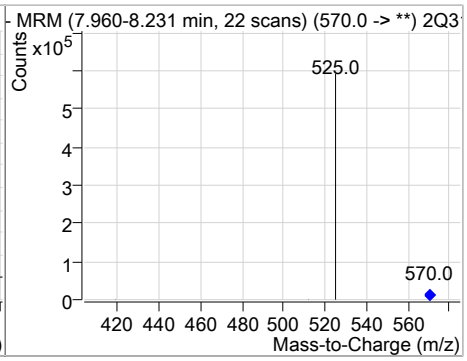


Perfluorinated Compounds by LC/MS/MS

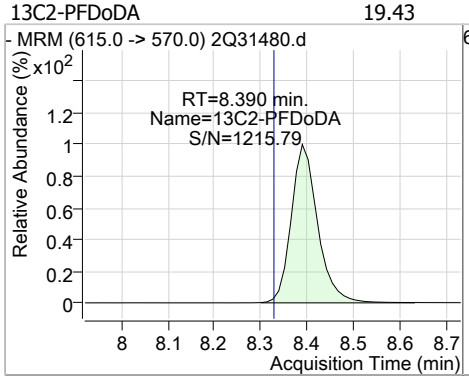
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.18	8.07	0.06	448086				

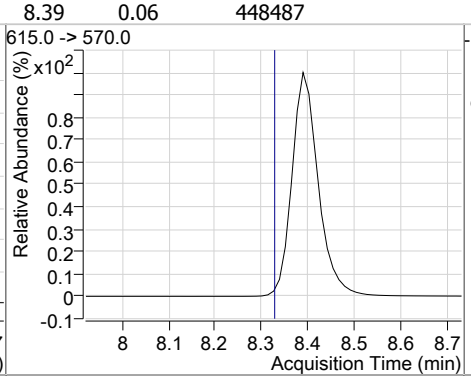


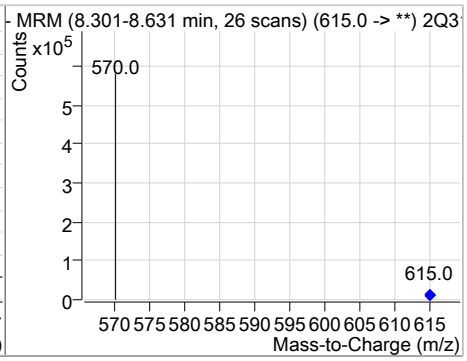




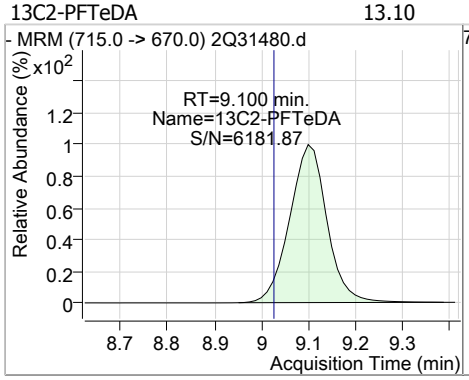
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.43	8.39	0.06	448487				

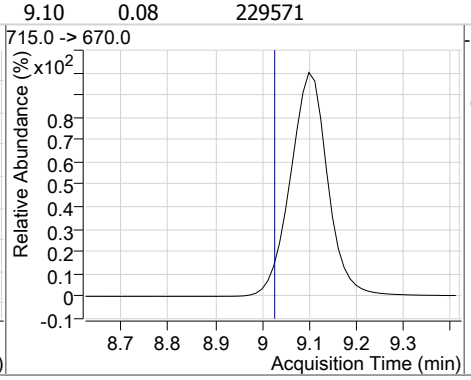


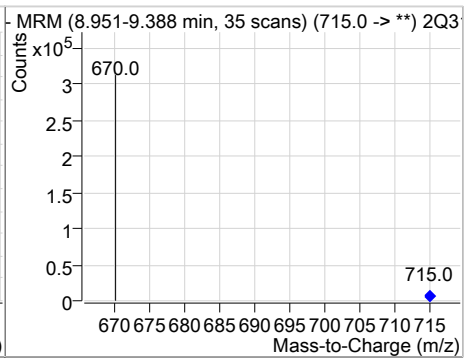




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.10	9.10	0.08	229571				







Perfluorinated Compounds by LC/MS/MS

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Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 10:22:22 AM
Sample Name : IBLK
Vial : Vial 1
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75546,S2Q499,250,,,1,1,water

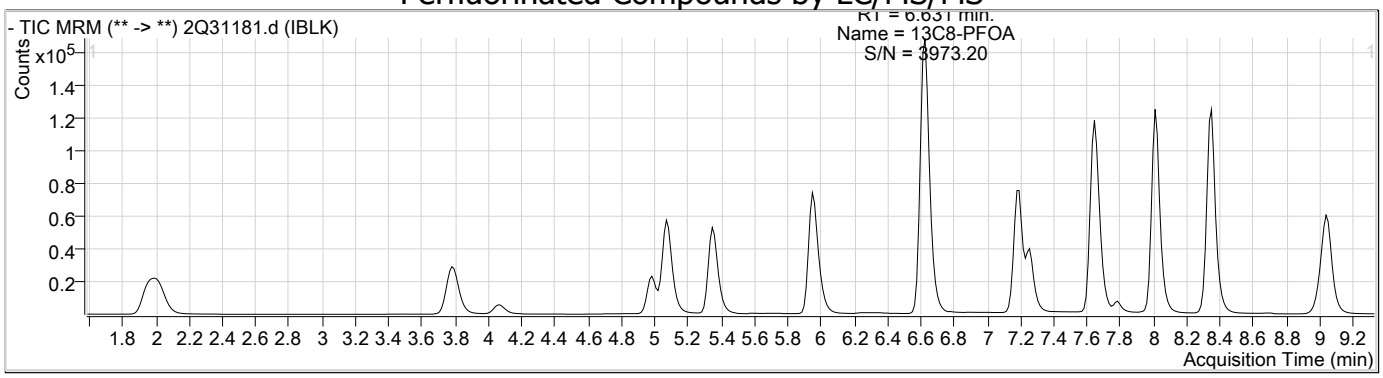
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.633	415.0 -> 370.0	319146	20.00	µg/L	-0.003
13C4-PFOS	7.181	503.0 -> 80.0	54879	20.00	µg/L	0.007
M4-PFBA	1.990	217.0 -> 172.0	184057	20.00	µg/L	0.000
M5-PFPeA	3.786	268.0 -> 223.0	152724	20.00	µg/L	-0.013
M5-PFHxA	5.075	318.0 -> 273.0	234011	20.00	µg/L	-0.013
M4-PFHpA	5.955	367.0 -> 322.0	286797	20.00	µg/L	-0.013
M8-PFOA	6.631	421.0 -> 376.0	264755	20.00	µg/L	-0.004
M9-PFNA	7.196	472.0 -> 427.0	224082	20.00	µg/L	-0.005
M6-PFDA	7.653	519.0 -> 474.0	371128	20.00	µg/L	0.011
M7-PFUnDA	8.014	570.0 -> 525.0	446648	20.00	µg/L	0.010
M2-PFDoDA	8.351	615.0 -> 570.0	469085	20.00	µg/L	0.032
M2-PFTeDA	9.037	715.0 -> 670.0	293873	20.00	µg/L	0.100
M8-FOSA	7.259	506.0 -> 78.0	111768	20.00	µg/L	-0.015
M3-PFBS	4.067	302.0 -> 99.0	26735	20.00	µg/L	-0.013
M3-PFHxS	5.985	402.0 -> 99.0	23052	20.00	µg/L	-0.013
M8-PFOS	7.179	507.0 -> 99.0	34666	20.00	µg/L	0.007
M2-4:2FTS	4.983	329.0 -> 309.0	95055	20.00	µg/L	-0.013
M2-6:2FTS	6.614	429.0 -> 409.0	86500	20.00	µg/L	-0.001
M2-8:2FTS	7.677	529.0 -> 509.0	62499	20.00	µg/L	0.012
M3-MeFOSAA	7.658	573.0 -> 419.0	42406	20.00	µg/L	-0.014
M3-HFPO-DA	5.355	287.0 -> 169.0	215344	100.00	µg/L	-0.010
System Monitoring Compounds						
13C2-4:2FTS	4.983	329.0 -> 309.0	94916	19.56	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-6:2FTS	6.614	429.0 -> 409.0	86489	21.72	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-8:2FTS	7.677	529.0 -> 509.0	62520	21.86	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C2-PFDoDA	8.351	615.0 -> 570.0	468179	20.28	µg/L	0.032
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-PFTeDA	9.037	715.0 -> 670.0	293985	16.77	µg/L	0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%		
13C3-PFBS	4.067	302.0 -> 99.0	26742	17.60	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C3-PFHxS	5.985	402.0 -> 99.0	23062	18.11	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C4-PFBA	1.990	217.0 -> 172.0	182809	17.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C4-PFHpA	5.955	367.0 -> 322.0	286608	20.87	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C5-PFHxA	5.075	318.0 -> 273.0	233687	19.31	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C5-PFPeA	3.786	268.0 -> 223.0	152702	19.02	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C6-PFDA	7.653	519.0 -> 474.0	370959	21.26	µg/L	0.011

Perfluorinated Compounds by LC/MS/MS

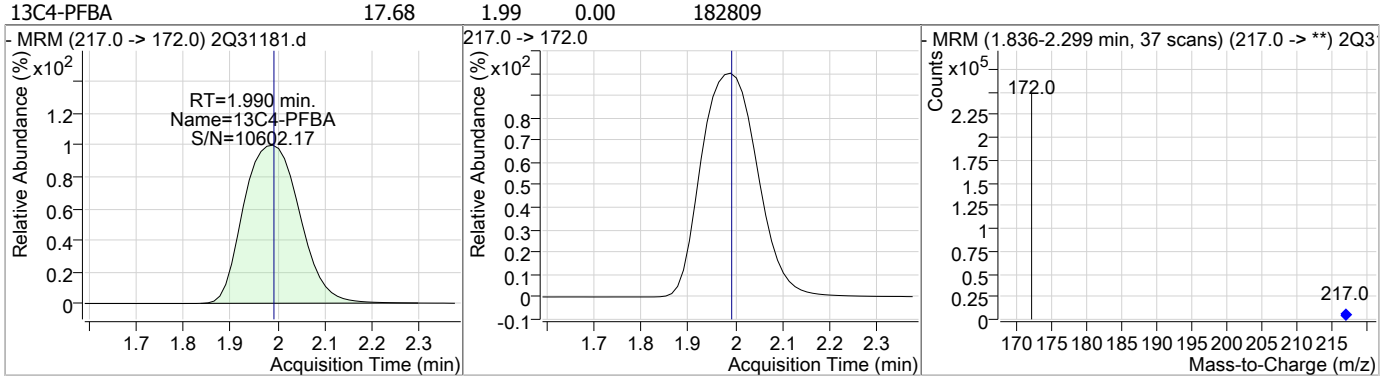
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C7-PFUnDA	8.014	570.0 -> 525.0	445891	21.08 µg/L	0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C8-FOSA	7.259	506.0 -> 78.0	111743	18.99 µg/L	-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C8-PFOA	6.631	421.0 -> 376.0	264743	20.64 µg/L	-0.004
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C8-PFOS	7.179	507.0 -> 99.0	34653	18.25 µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C9-PFNA	7.196	472.0 -> 427.0	224137	20.63 µg/L	-0.005
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
d3-MeFOSAA	7.658	573.0 -> 419.0	42409	20.34 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
M2-PFOA	6.633	415.0 -> 370.0	319219	20.00 µg/L	-0.003
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
M4-PFOS	7.181	503.0 -> 80.0	54896	20.01 µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C3-HFPO-DA	5.355	287.0 -> 169.0	215344	88.23 µg/L	-0.010
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
Target Compounds					**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	7.784	584.0 -> 419.0	302	0.29 µg/L	98
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.672	570.0 -> 419.0	274	0.24 µg/L	88
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	329.0 -> 169.0	-	N.D.	

= Qualifier out of range, m = manually integrated, + = Area summed

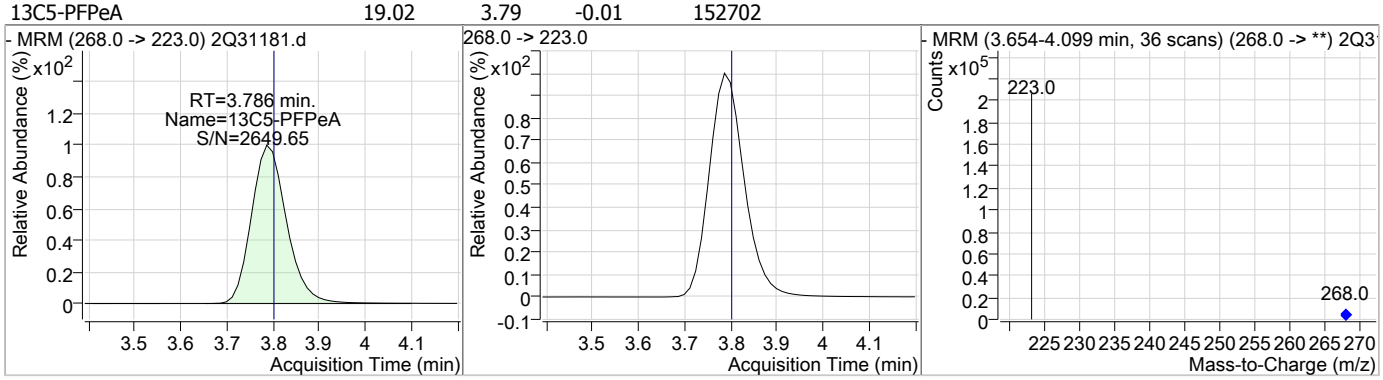
Perfluorinated Compounds by LC/MS/MS



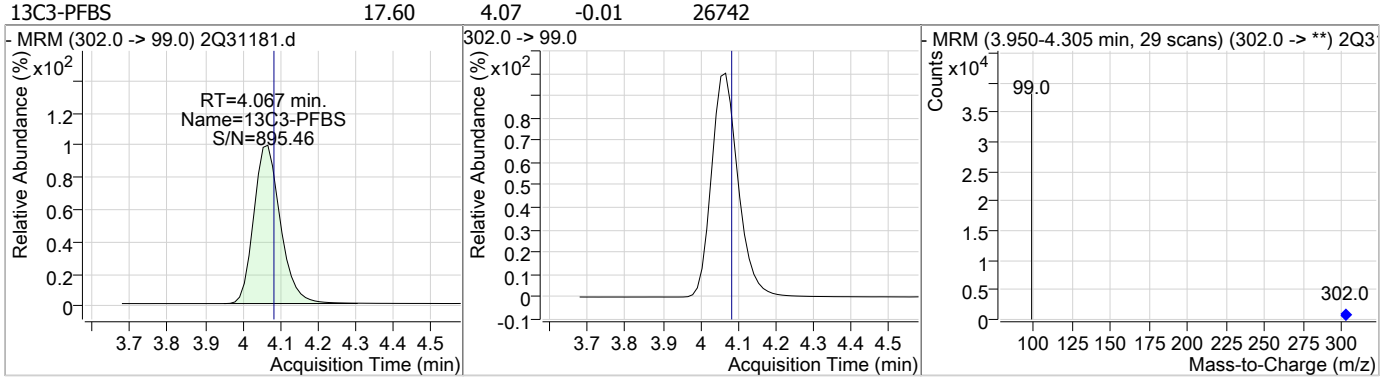
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.68	1.99	0.00	182809				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.02	3.79	-0.01	152702				

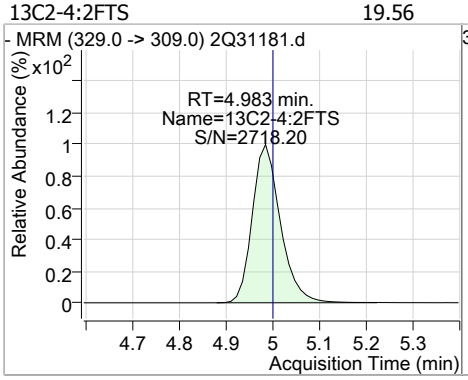


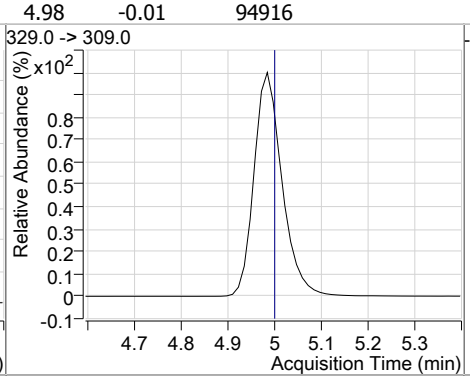
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.60	4.07	-0.01	26742				

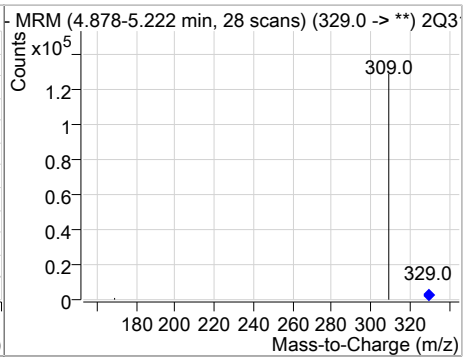


Perfluorinated Compounds by LC/MS/MS

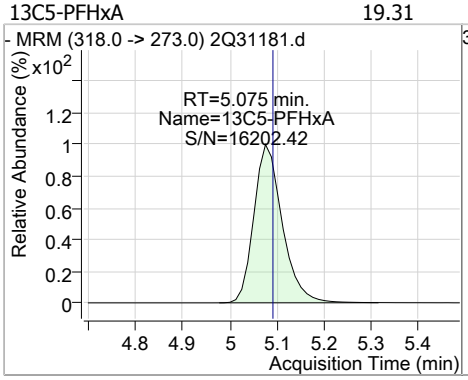
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.56	4.98	-0.01	94916				

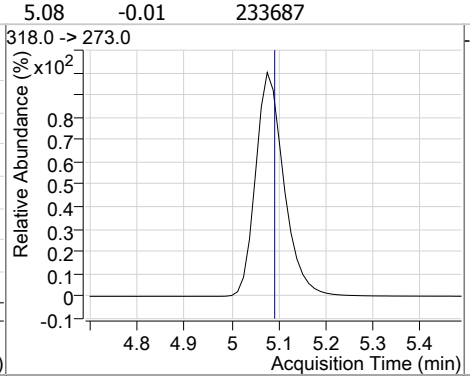


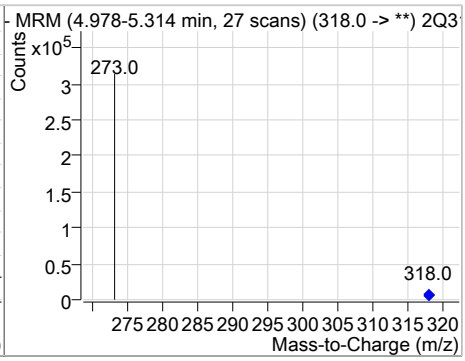




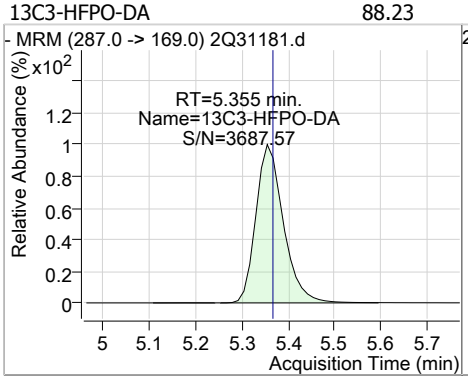
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.31	5.08	-0.01	233687				

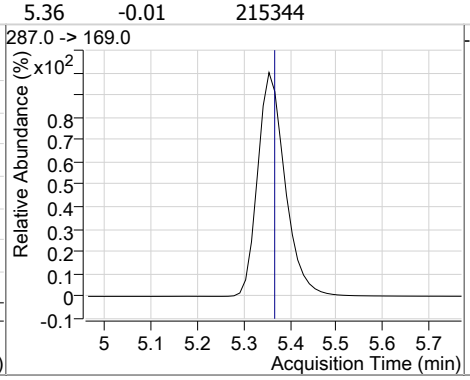


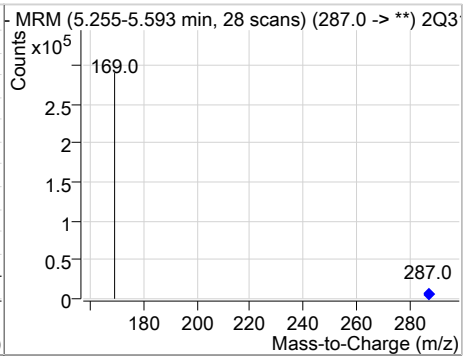




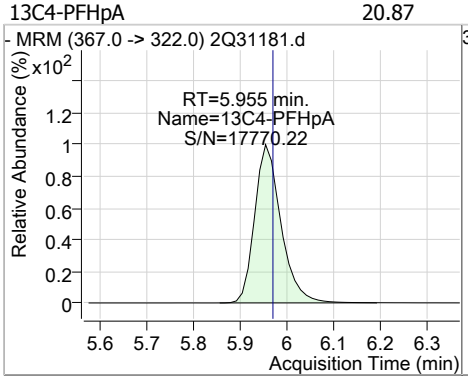
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	88.23	5.36	-0.01	215344				

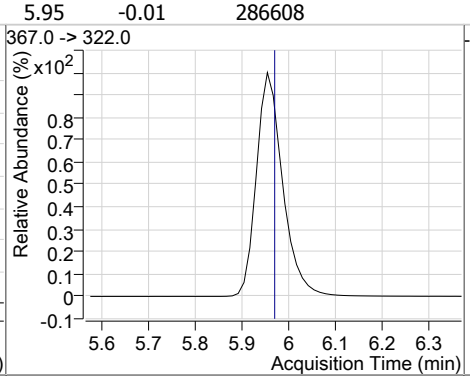


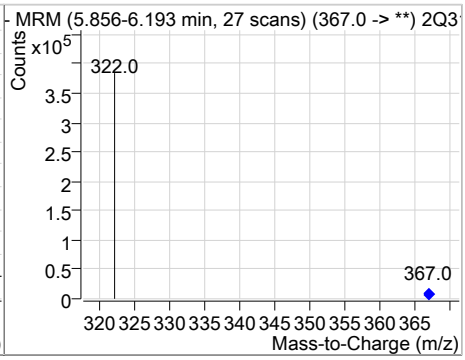




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.87	5.95	-0.01	286608				

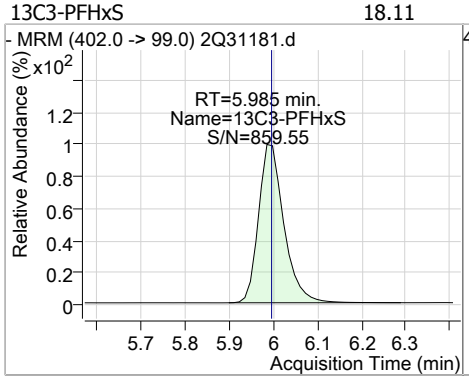


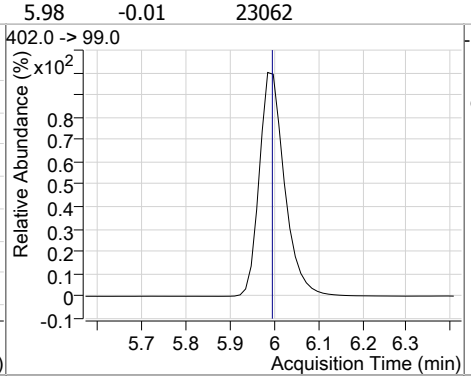


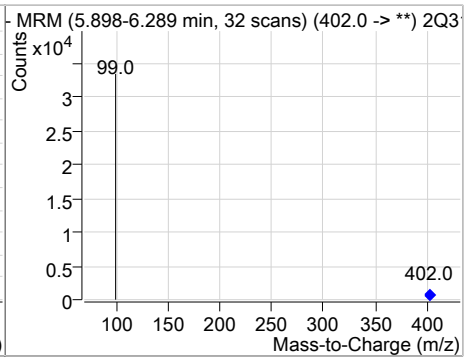


Perfluorinated Compounds by LC/MS/MS

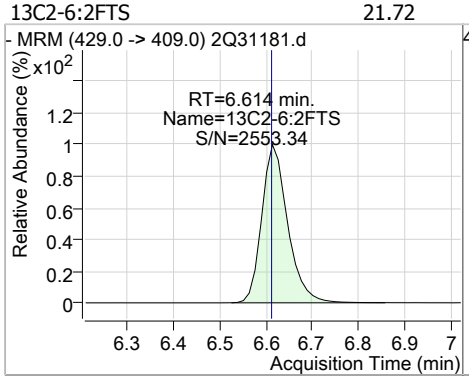
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.11	5.98	-0.01	23062				

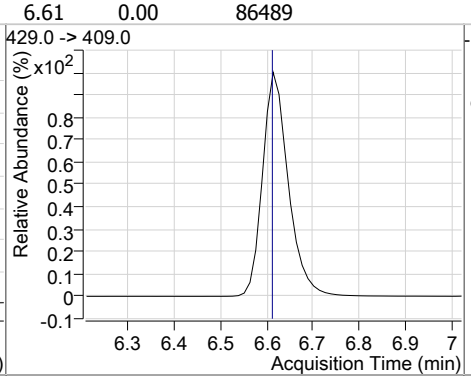


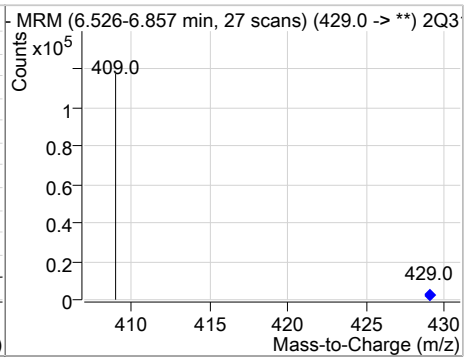




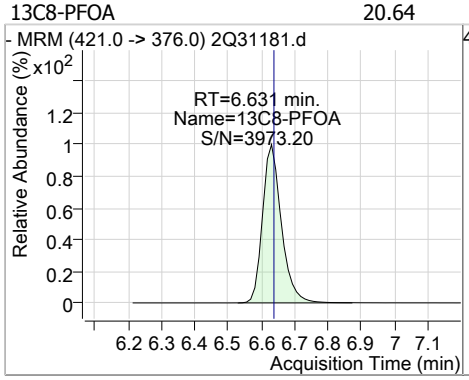
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.72	6.61	0.00	86489				

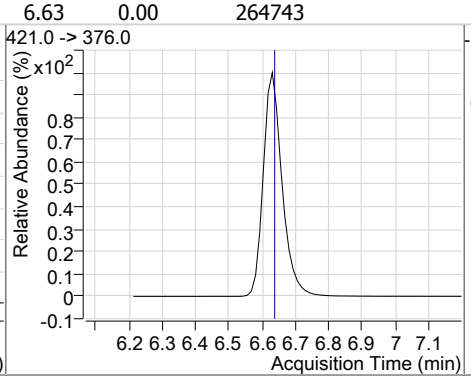


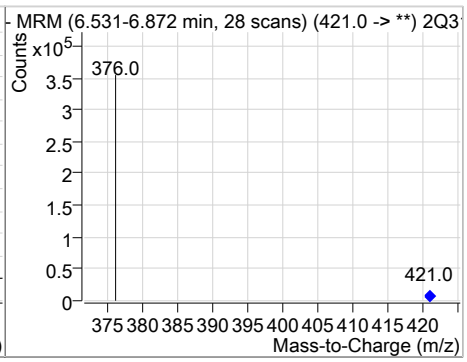




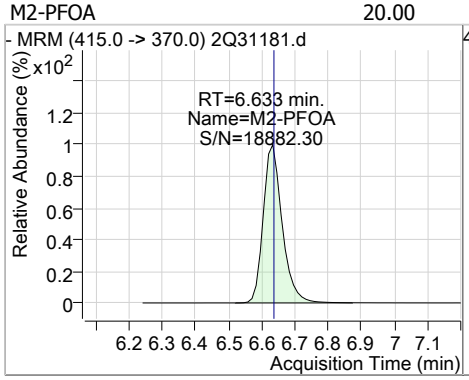
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.64	6.63	0.00	264743				

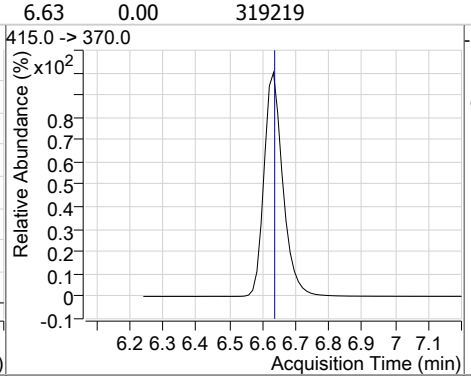


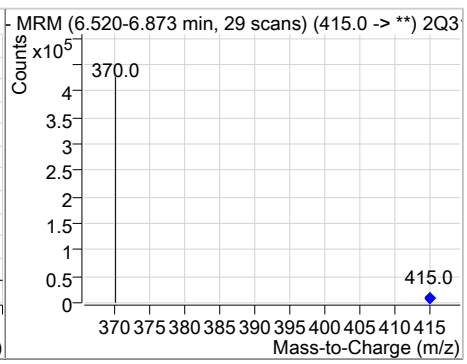




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.63	0.00	319219				

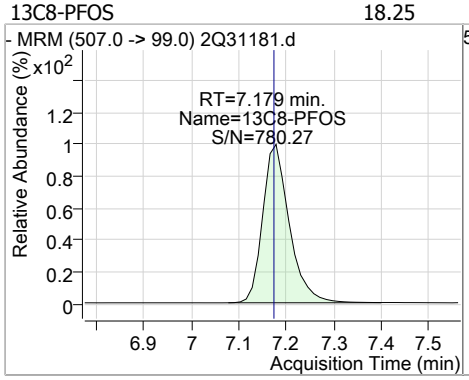


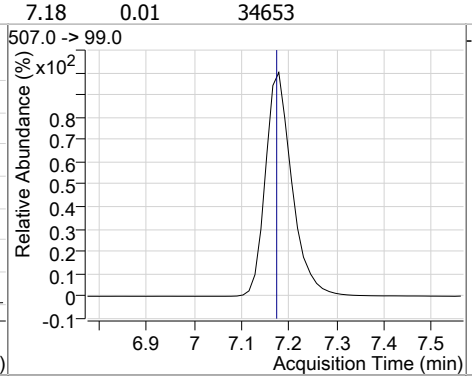


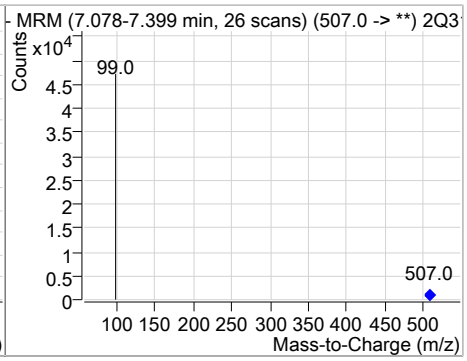


Perfluorinated Compounds by LC/MS/MS

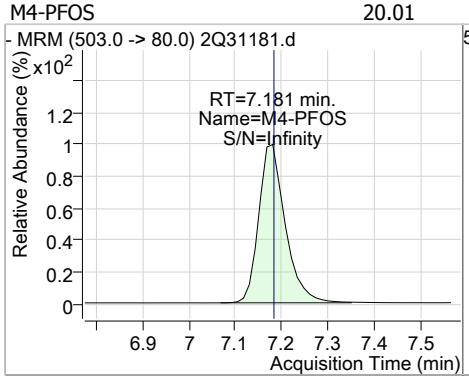
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.25	7.18	0.01	34653				

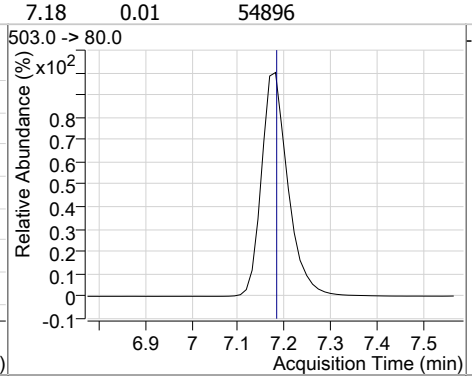


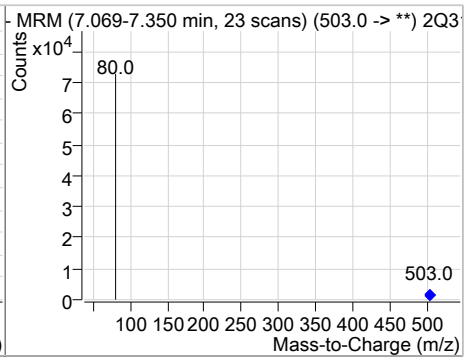




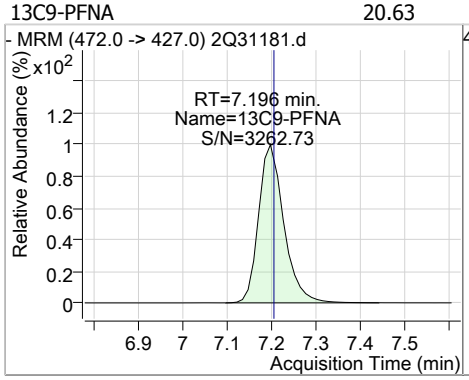
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.18	0.01	54896				

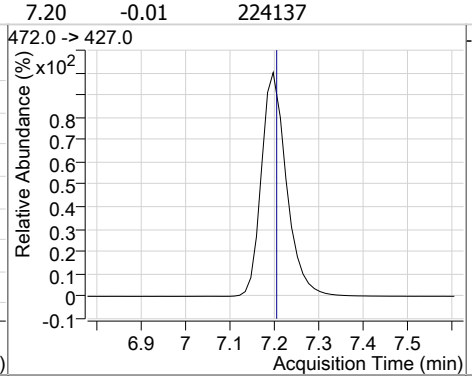


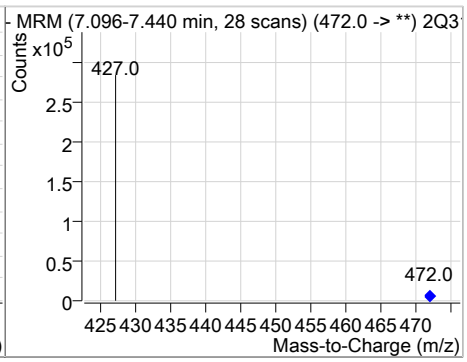




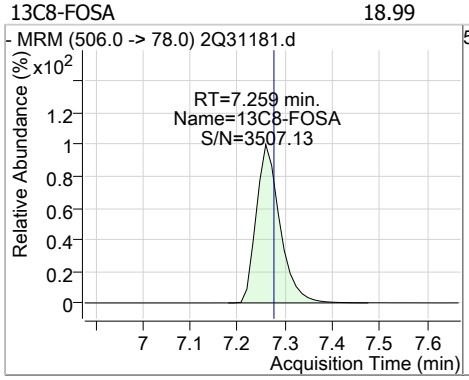
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.63	7.20	-0.01	224137				

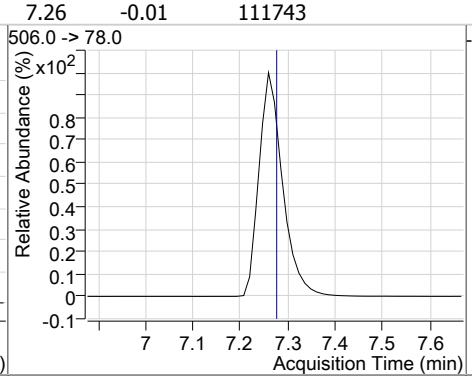


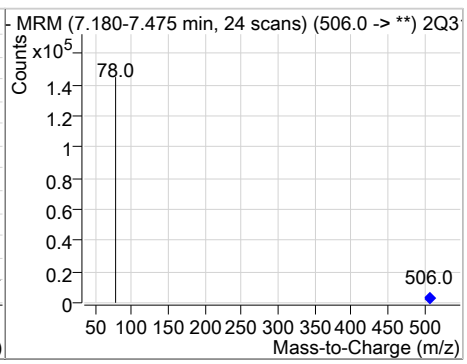




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.99	7.26	-0.01	111743				

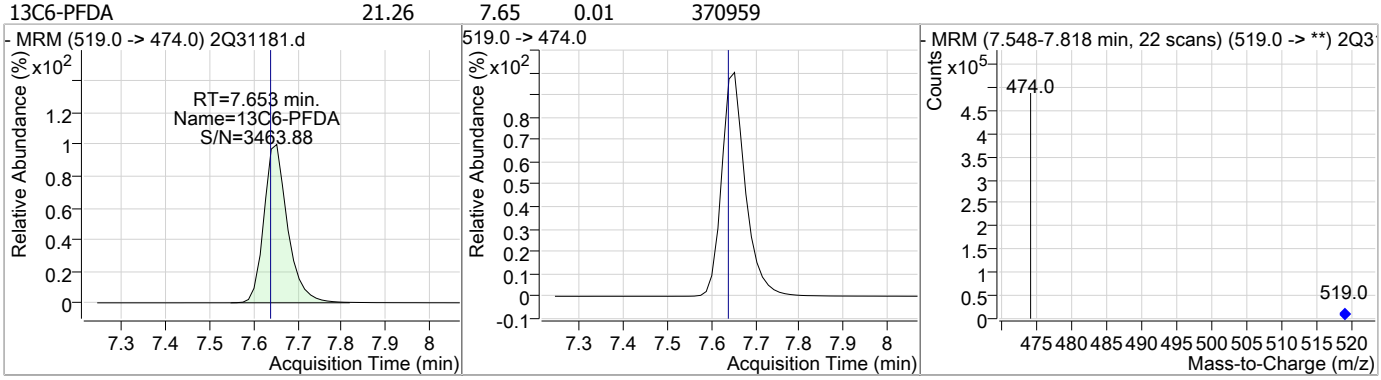




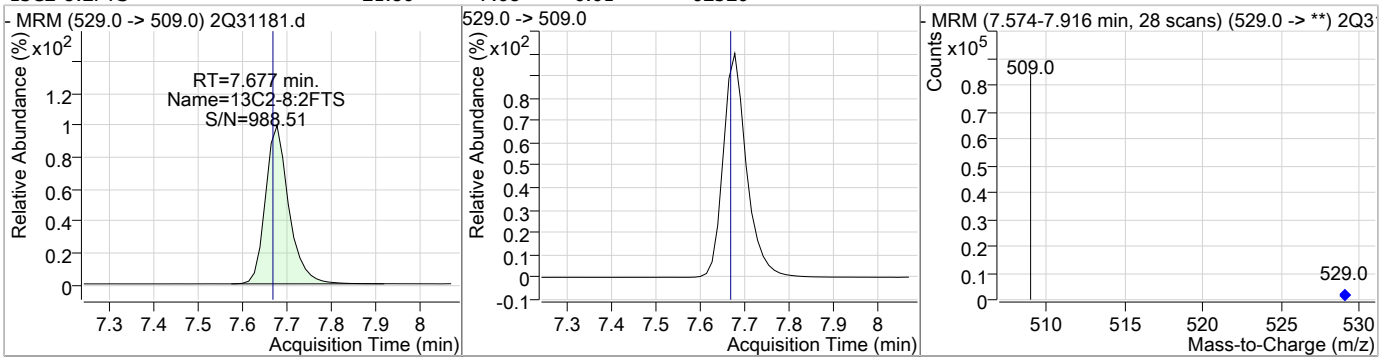


Perfluorinated Compounds by LC/MS/MS

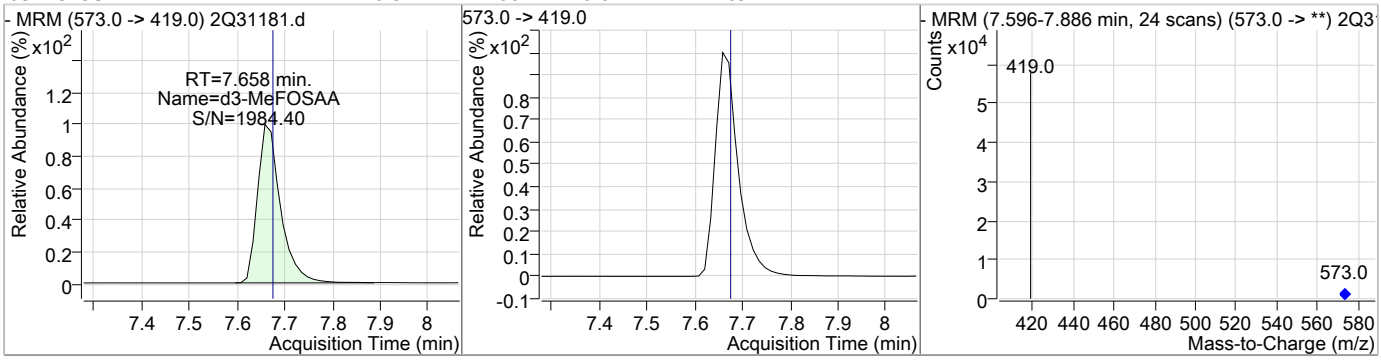
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.26	7.65	0.01	370959				



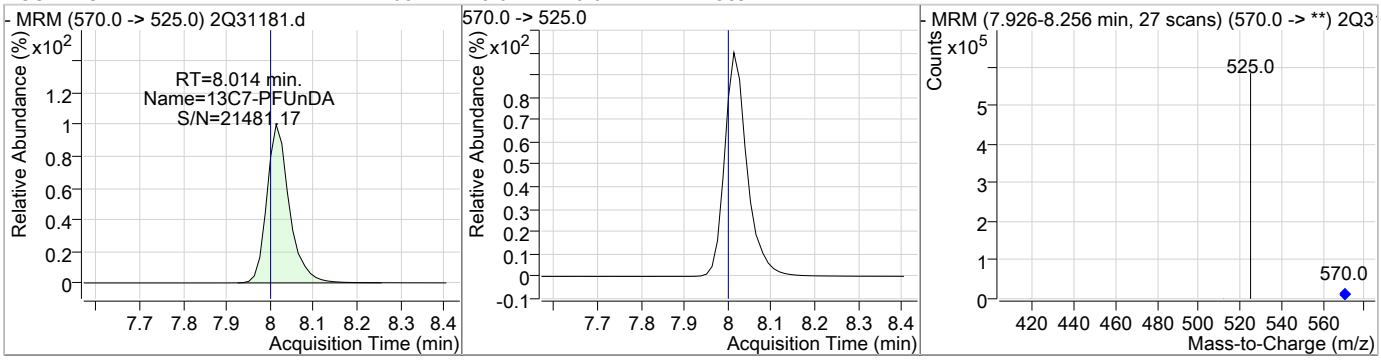
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.86	7.68	0.01	62520				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.34	7.66	-0.01	42409				

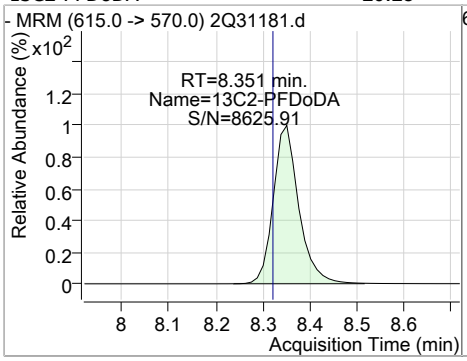


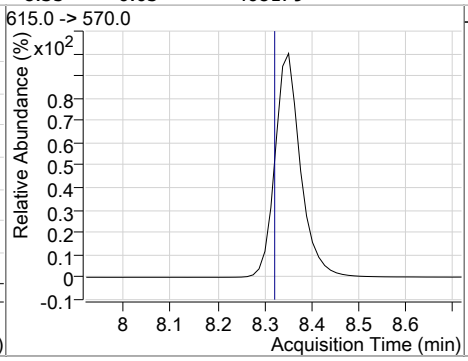
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.08	8.01	0.01	445891				

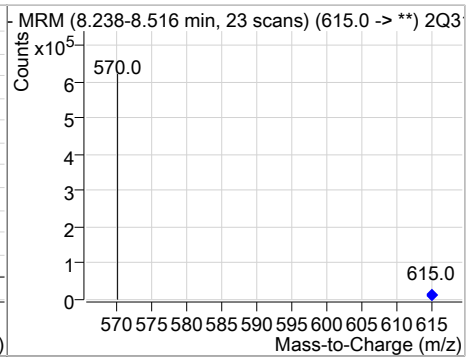


Perfluorinated Compounds by LC/MS/MS

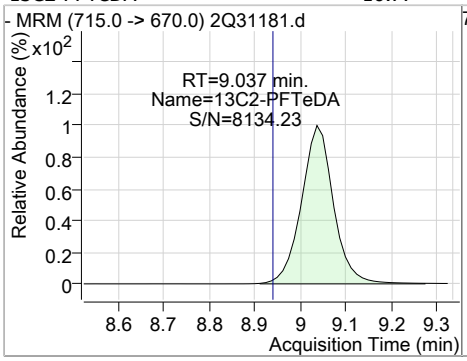
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.28	8.35	0.03	468179				

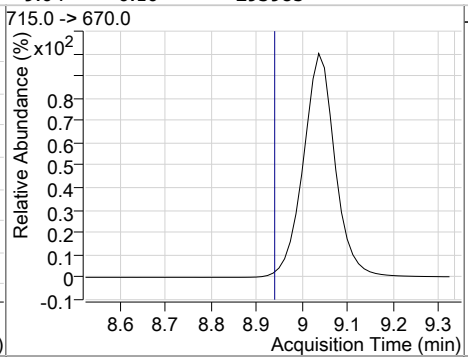


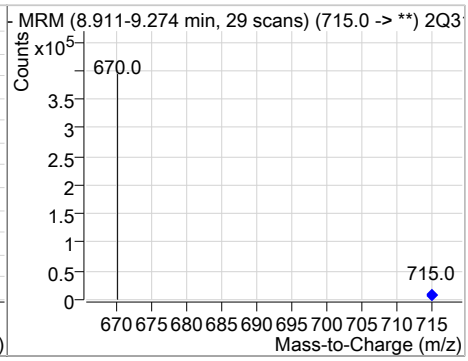




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.77	9.04	0.10	293985				







Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31355.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/25/2019 4:25:23 PM
Sample Name : IBLK
Vial : Vial 1
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75546,S2Q501,250,,,1,1,water

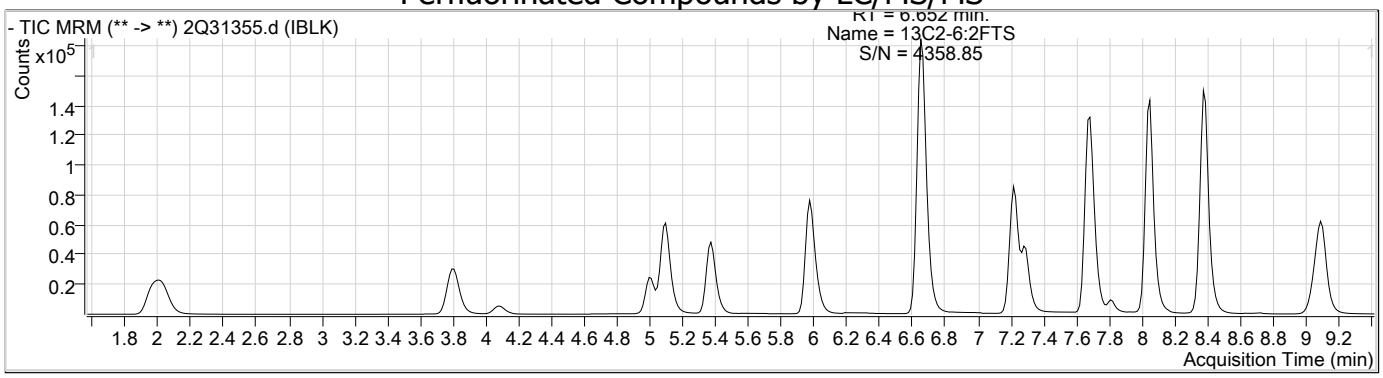
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.658	415.0 -> 370.0	355277	20.00	µg/L	0.051
13C4-PFOS	7.209	503.0 -> 80.0	56006	20.00	µg/L	0.053
M4-PFBA	2.002	217.0 -> 172.0	192167	20.00	µg/L	0.025
M5-PFPeA	3.799	268.0 -> 223.0	163777	20.00	µg/L	0.038
M5-PFHxA	5.101	318.0 -> 273.0	256791	20.00	µg/L	0.051
M4-PFHpA	5.980	367.0 -> 322.0	302003	20.00	µg/L	0.050
M8-PFOA	6.656	421.0 -> 376.0	295065	20.00	µg/L	0.050
M9-PFNA	7.225	472.0 -> 427.0	258317	20.00	µg/L	0.054
M6-PFDA	7.679	519.0 -> 474.0	430292	20.00	µg/L	0.052
M7-PFUnDA	8.054	570.0 -> 525.0	530254	20.00	µg/L	0.052
M2-PFDoDA	8.377	615.0 -> 570.0	584328	20.00	µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	328196	20.00	µg/L	0.063
M8-FOSA	7.299	506.0 -> 78.0	123755	20.00	µg/L	0.052
M3-PFBS	4.080	302.0 -> 99.0	26257	20.00	µg/L	0.050
M3-PFHxS	6.010	402.0 -> 99.0	22847	20.00	µg/L	0.051
M8-PFOS	7.206	507.0 -> 99.0	35357	20.00	µg/L	0.052
M2-4:2FTS	4.996	329.0 -> 309.0	104314	20.00	µg/L	0.050
M2-6:2FTS	6.652	429.0 -> 409.0	98065	20.00	µg/L	0.063
M2-8:2FTS	7.703	529.0 -> 509.0	71939	20.00	µg/L	0.052
M3-MeFOSAA	7.697	573.0 -> 419.0	51588	20.00	µg/L	0.051
M3-HFPO-DA	5.379	287.0 -> 169.0	199810	100.00	µg/L	0.062
System Monitoring Compounds						
13C2-4:2FTS	4.996	329.0 -> 309.0	104114	21.46	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C2-6:2FTS	6.652	429.0 -> 409.0	98073	24.63	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.2%		
13C2-8:2FTS	7.703	529.0 -> 509.0	71955	25.16	µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.8%		
13C2-PFDoDA	8.377	615.0 -> 570.0	584527	25.32	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.6%		
13C2-PFTeDA	9.087	715.0 -> 670.0	324741	18.53	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C3-PFBS	4.080	302.0 -> 99.0	26279	17.30	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C3-PFHxS	6.010	402.0 -> 99.0	22842	17.94	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C4-PFBA	2.002	217.0 -> 172.0	192115	18.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C4-PFHpA	5.980	367.0 -> 322.0	301906	21.99	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C5-PFHxA	5.101	318.0 -> 273.0	256149	21.17	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C5-PFPeA	3.799	268.0 -> 223.0	163777	20.40	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C6-PFDA	7.679	519.0 -> 474.0	430588	24.68	µg/L	0.052

Perfluorinated Compounds by LC/MS/MS

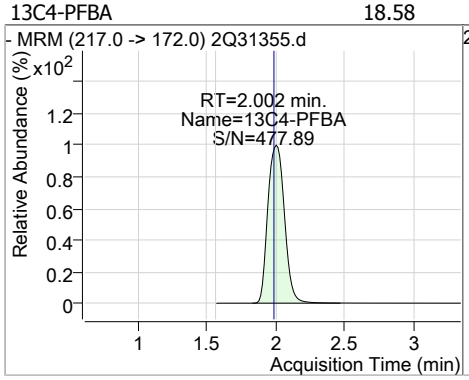
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.4%	
13C7-PFUnDA	8.054	570.0 -> 525.0	530317	25.07 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.3%	
13C8-FOSA	7.299	506.0 -> 78.0	123757	21.04 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C8-PFOA	6.656	421.0 -> 376.0	294894	22.99 µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C8-PFOS	7.206	507.0 -> 99.0	35329	18.61 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C9-PFNA	7.225	472.0 -> 427.0	258310	23.77 µg/L	0.054
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.9%	
d3-MeFOSAA	7.697	573.0 -> 419.0	51575	24.74 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.7%	
M2-PFOA	6.658	415.0 -> 370.0	355687	20.02 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
M4-PFOS	7.209	503.0 -> 80.0	56077	20.03 µg/L	0.053
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	5.379	287.0 -> 169.0	199810	81.87 µg/L	0.062
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 81.9%	
Target Compounds					**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	7.822	584.0 -> 419.0	387	0.30 µg/L	92
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	7.698	570.0 -> 419.0	300	0.21 µg/L	98
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	9.093	713.0 -> 669.0	2705	0.22 µg/L	96
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	329.0 -> 169.0	-	N.D.	

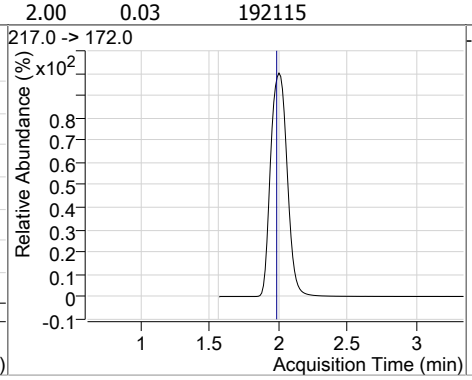
= Qualifier out of range, m = manually integrated, + = Area summed

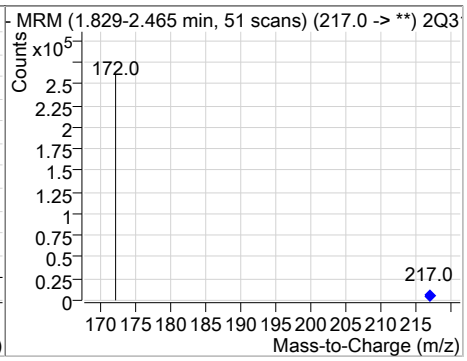
Perfluorinated Compounds by LC/MS/MS



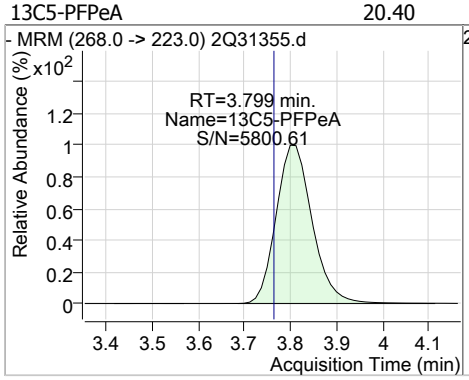
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.58	2.00	0.03	192115				

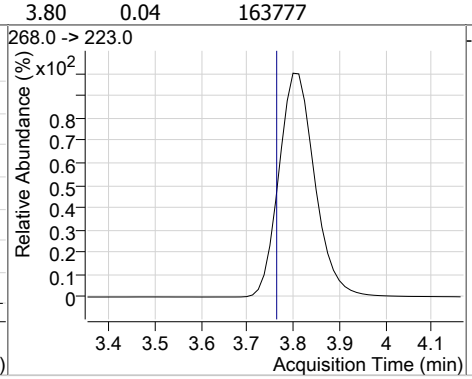


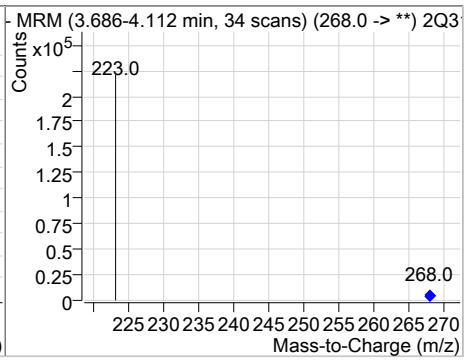




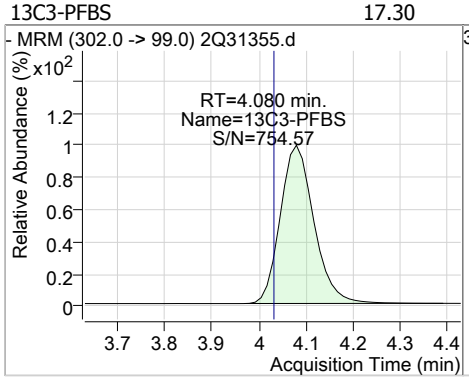
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.40	3.80	0.04	163777				

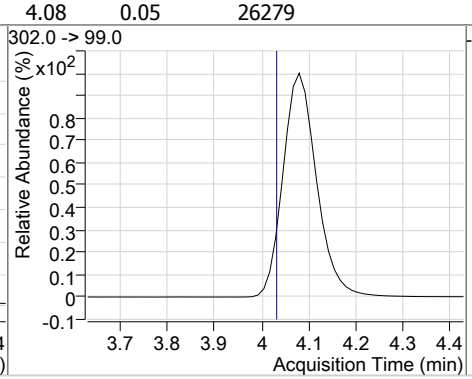


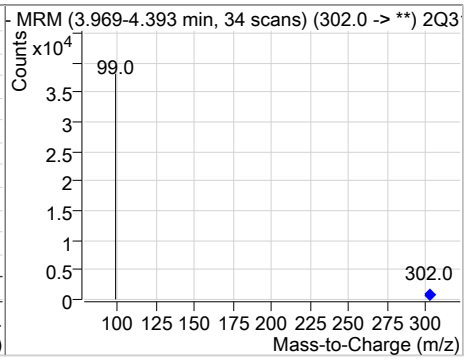




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.30	4.08	0.05	26279				

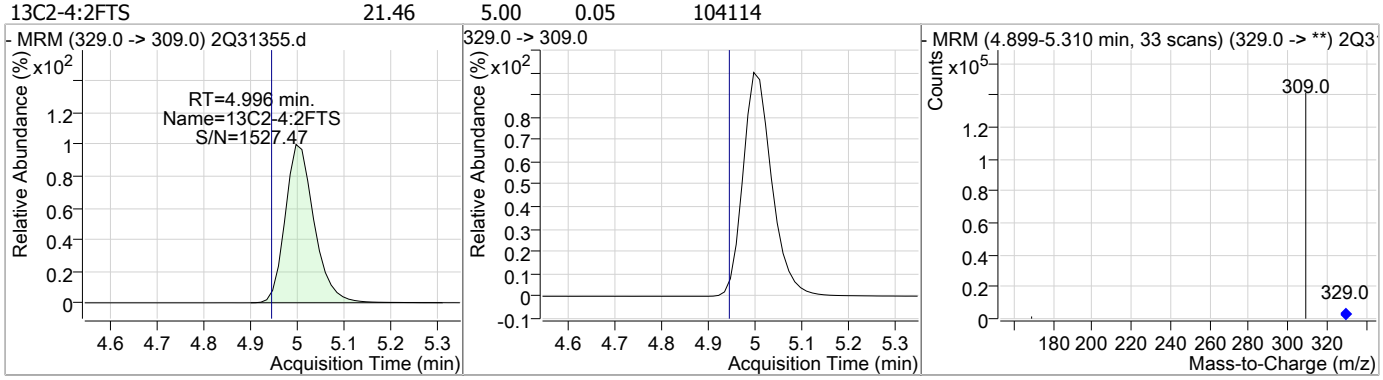




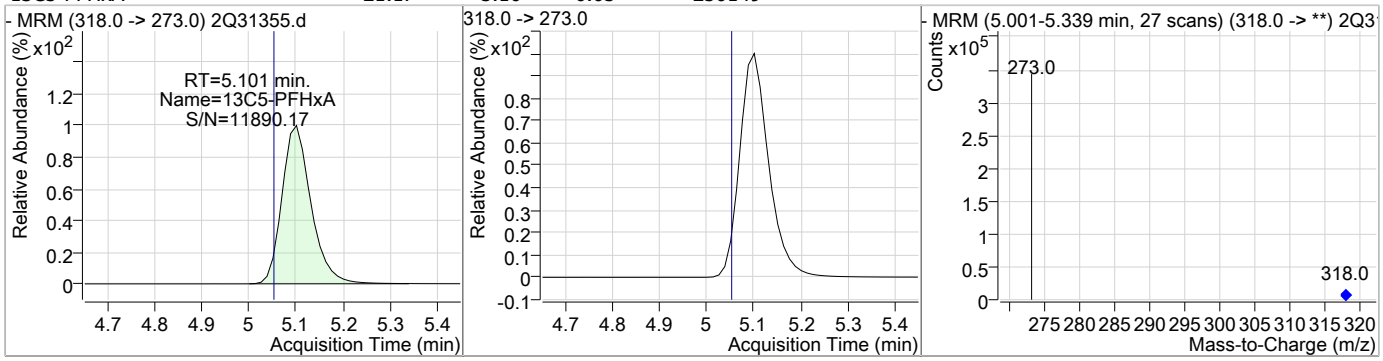


Perfluorinated Compounds by LC/MS/MS

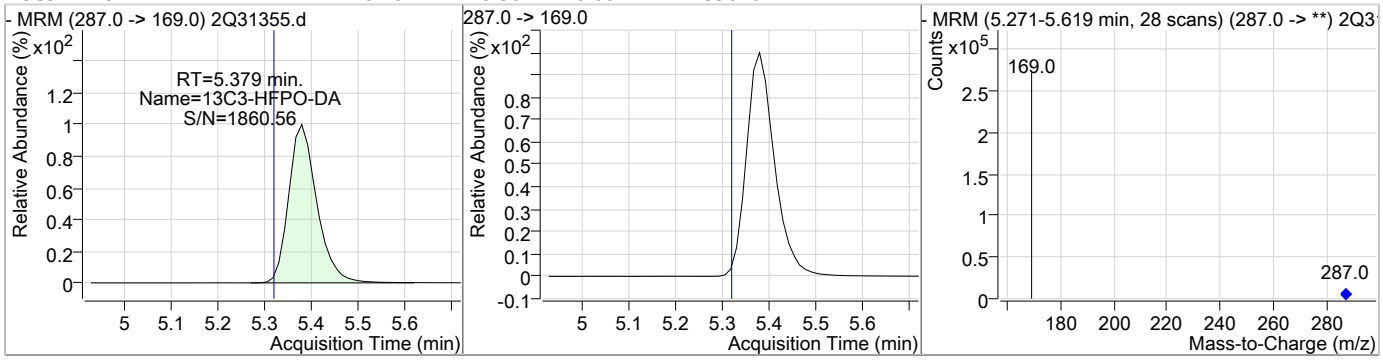
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.46	5.00	0.05	104114				



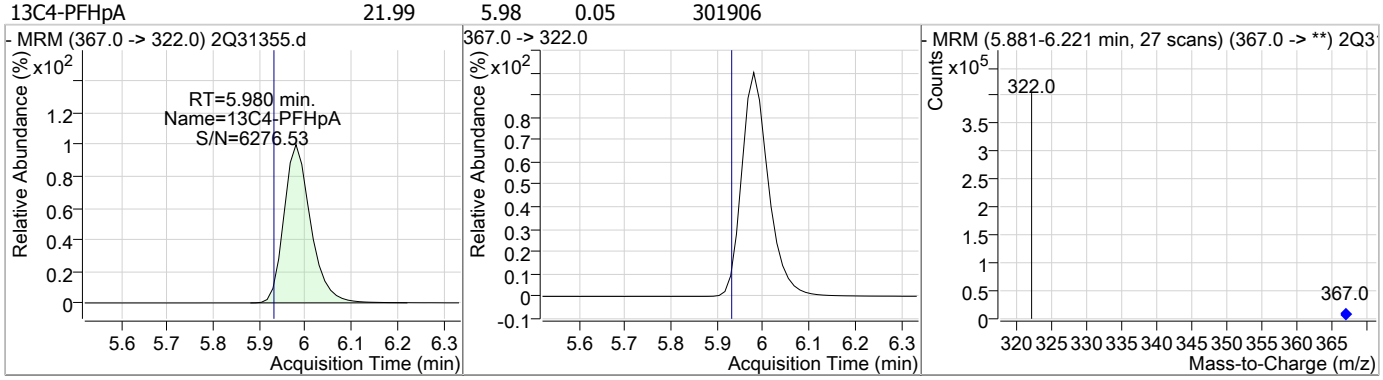
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.17	5.10	0.05	256149				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	81.87	5.38	0.06	199810				

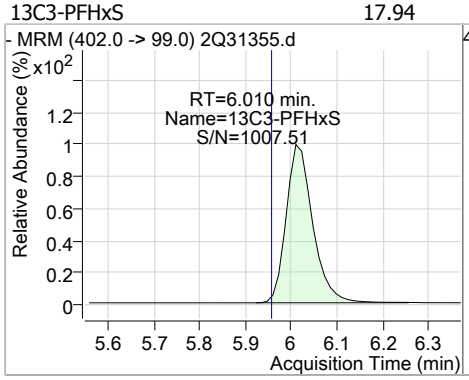


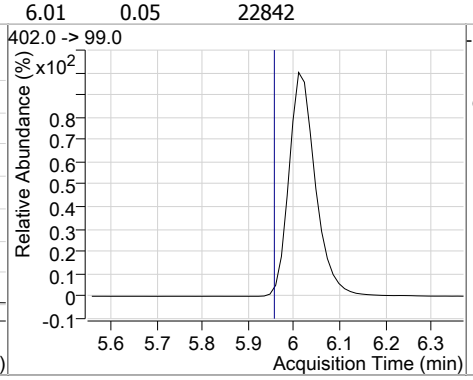
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.99	5.98	0.05	301906				

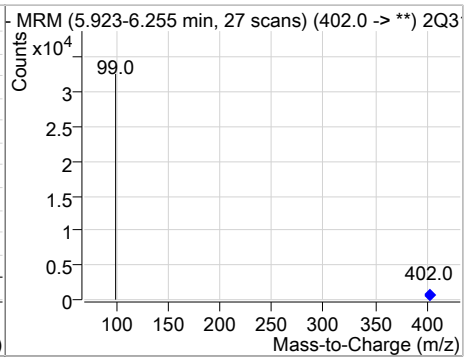


Perfluorinated Compounds by LC/MS/MS

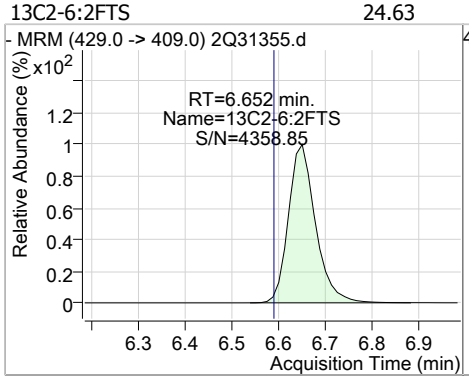
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.94	6.01	0.05	22842				

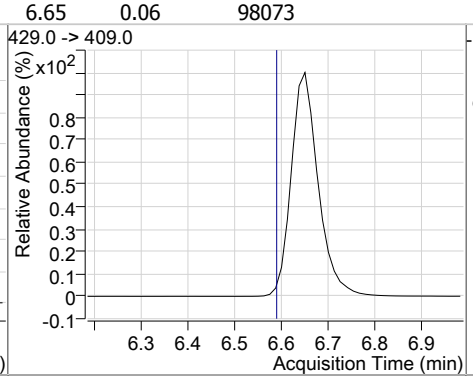


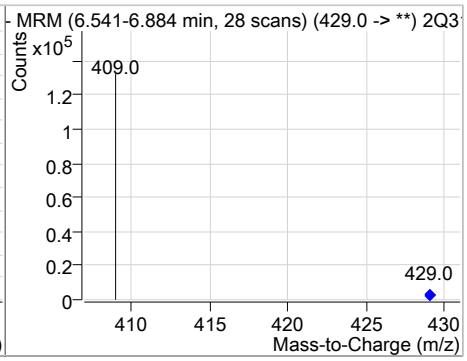




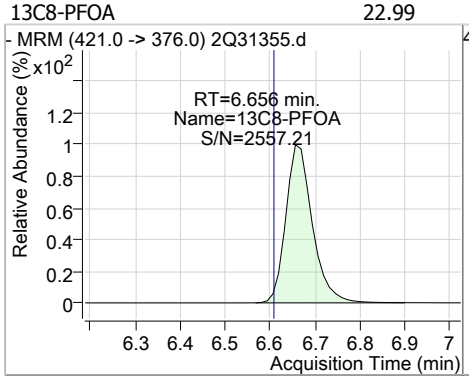
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.63	6.65	0.06	98073				

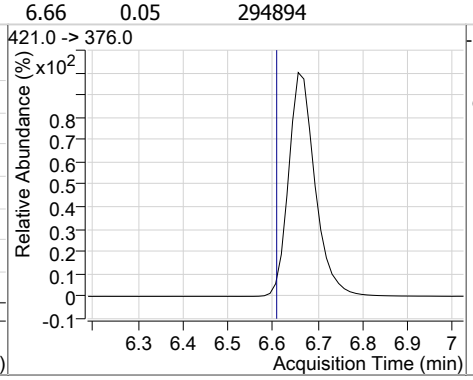


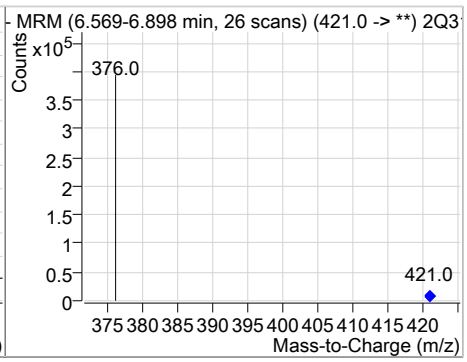




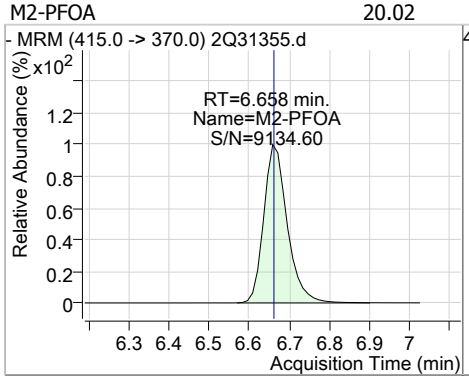
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.99	6.66	0.05	294894				

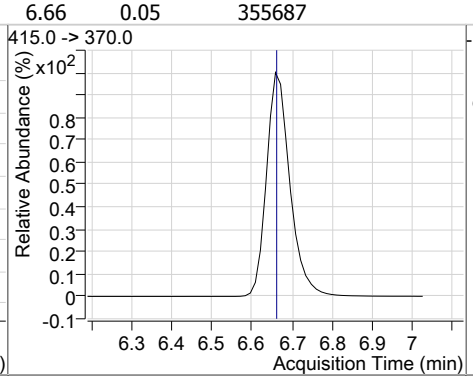


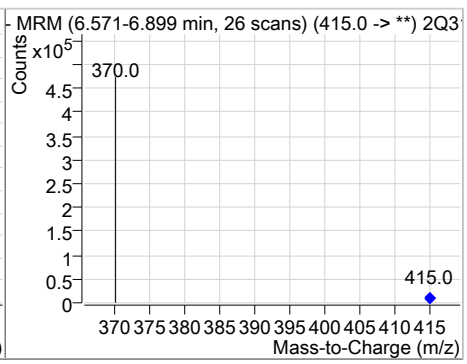




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.02	6.66	0.05	355687				

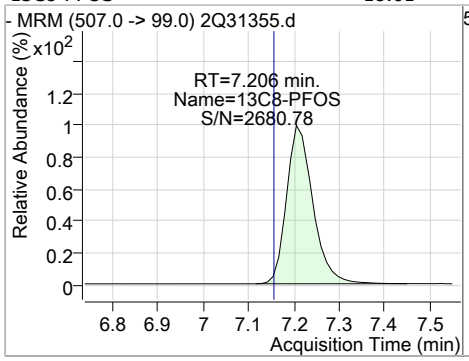


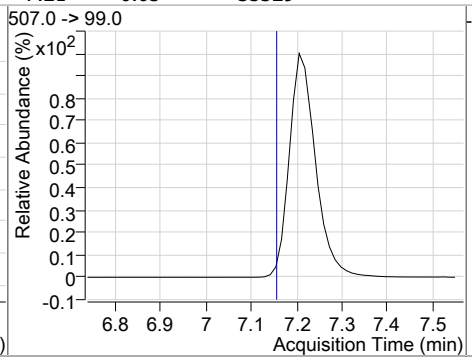


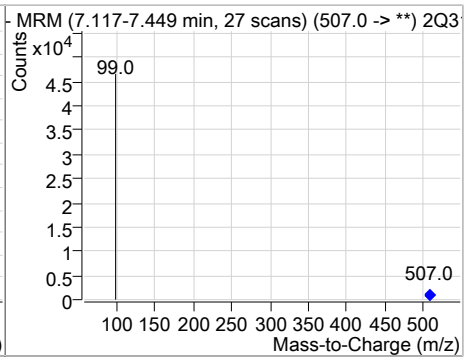


Perfluorinated Compounds by LC/MS/MS

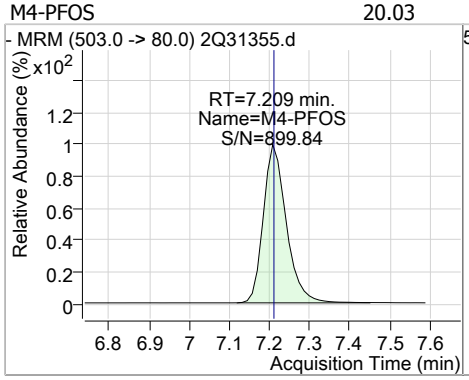
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.61	7.21	0.05	35329				

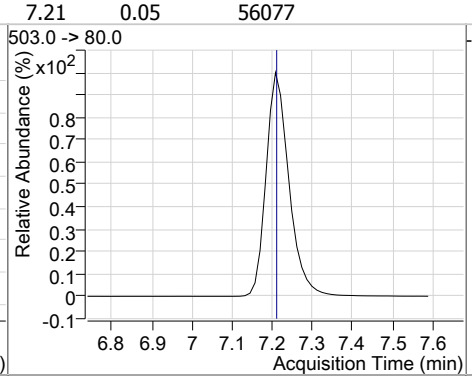


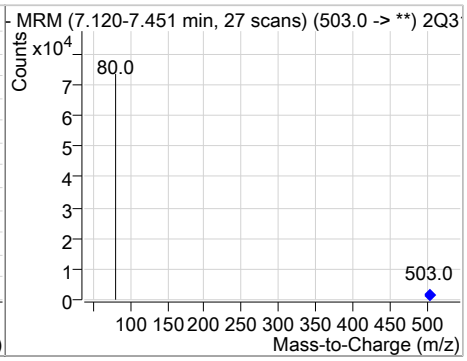




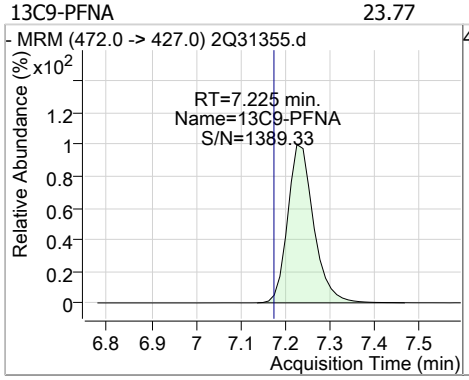
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.21	0.05	56077				

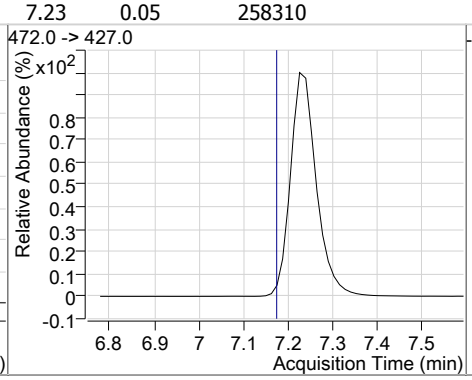


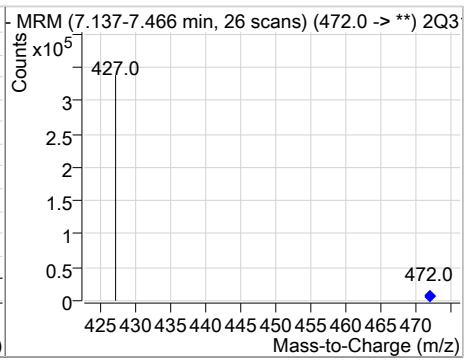




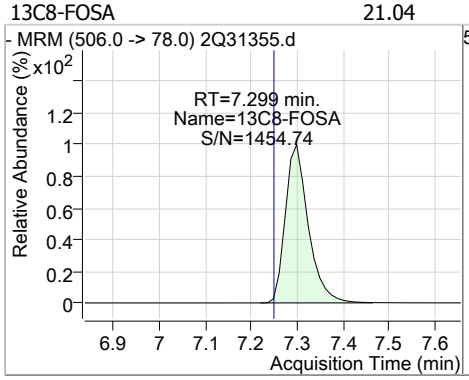
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	23.77	7.23	0.05	258310				

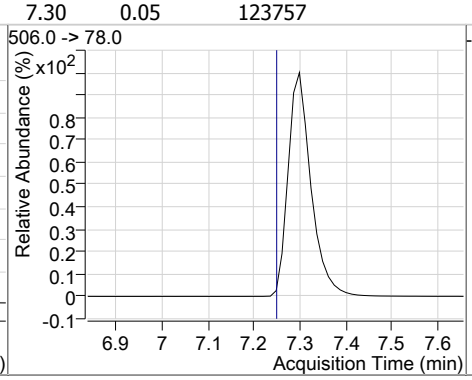


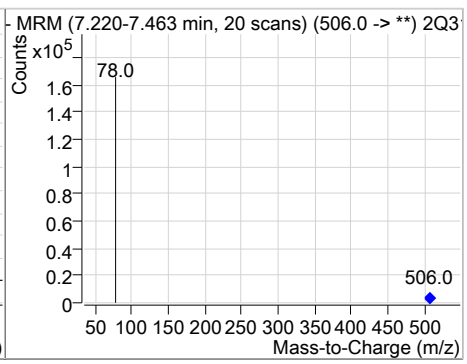




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.04	7.30	0.05	123757				

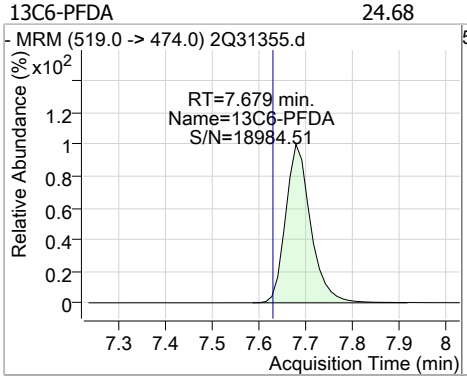


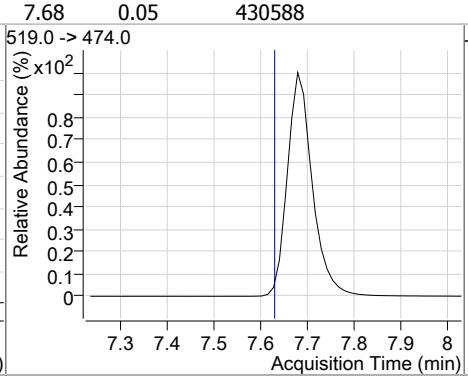


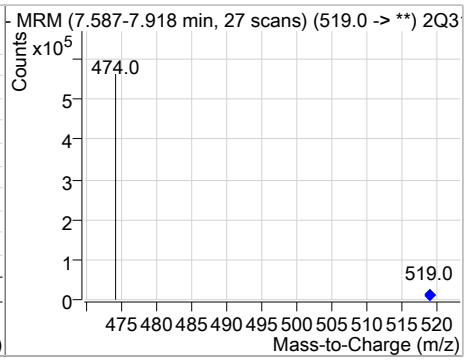


Perfluorinated Compounds by LC/MS/MS

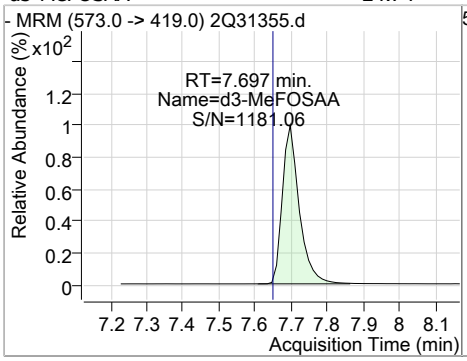
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.68	7.68	0.05	430588				

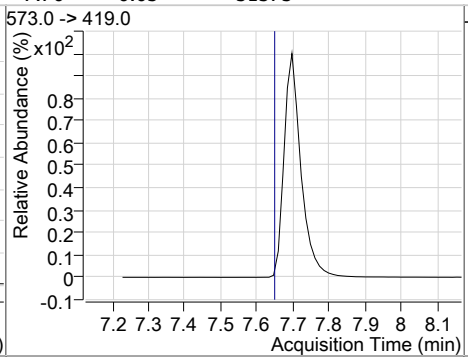


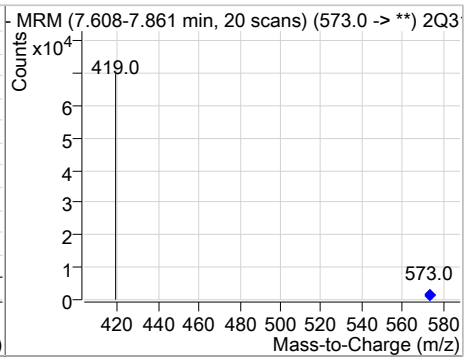




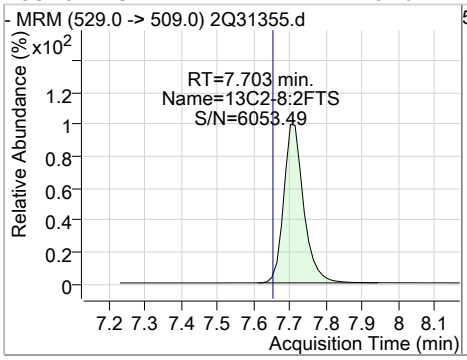
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.74	7.70	0.05	51575				

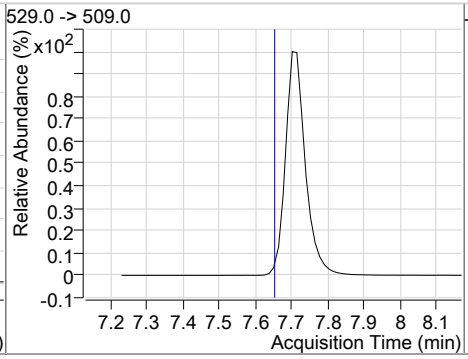


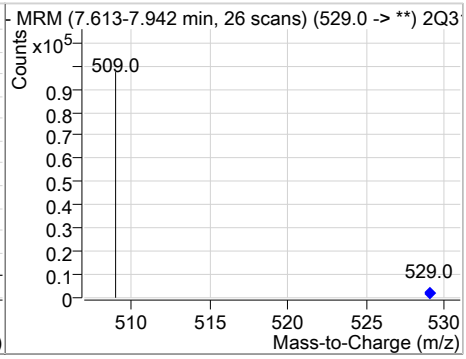




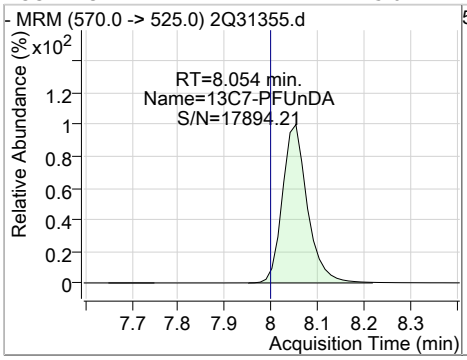
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	25.16	7.70	0.05	71955				

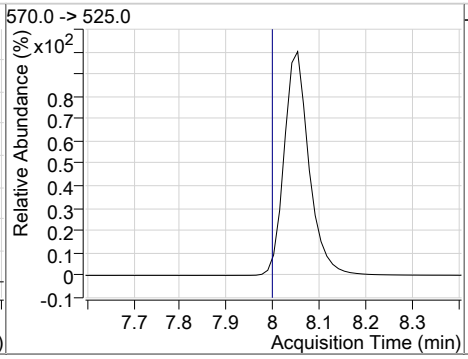


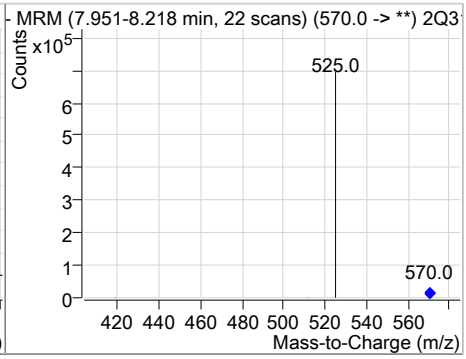




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	25.07	8.05	0.05	530317				

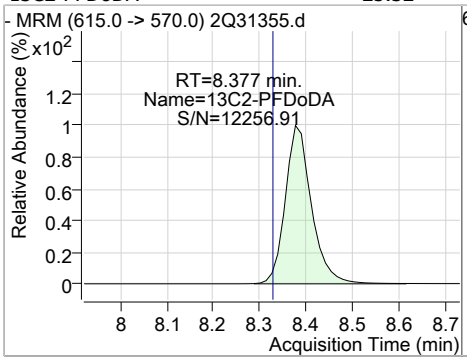


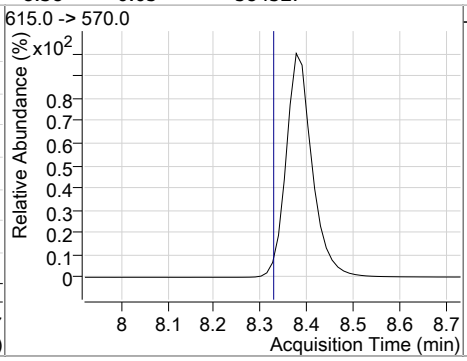


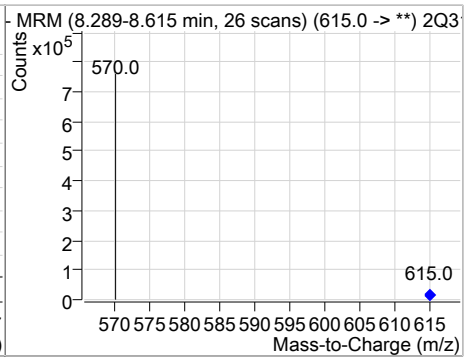


Perfluorinated Compounds by LC/MS/MS

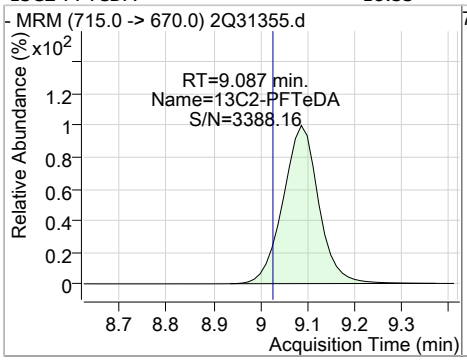
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	25.32	8.38	0.05	584527				

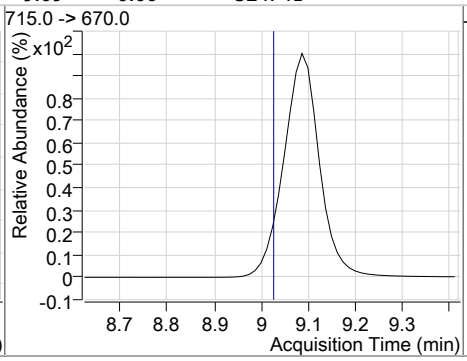


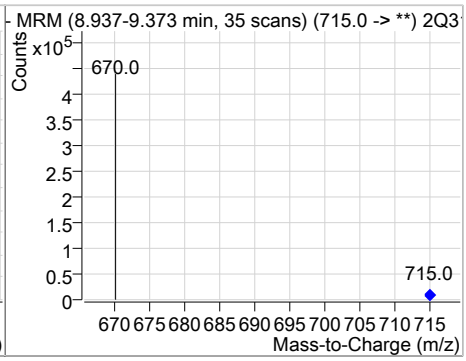




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.53	9.09	0.06	324741				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31218.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 7:41:59 PM
Sample Name : op75580-bs
Vial : Vial 39
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

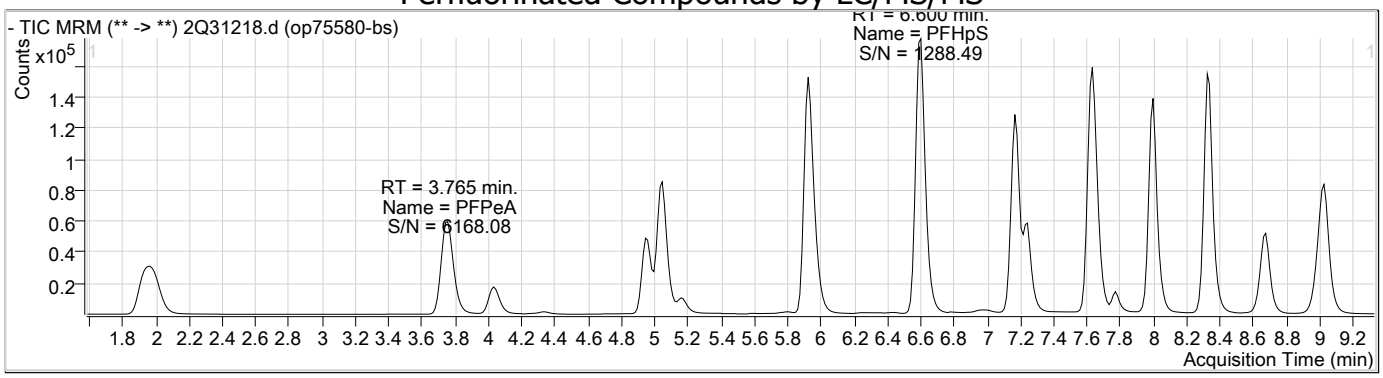
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.952	217.0 -> 172.0	212327	20.00 µg/L	-0.038
M5-PFPeA	3.761	268.0 -> 223.0	172571	20.00 µg/L	-0.038
M5-PFHxA	5.050	318.0 -> 273.0	263058	20.00 µg/L	-0.038
M4-PFHpA	5.930	367.0 -> 322.0	310342	20.00 µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	299961	20.00 µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	272375	20.00 µg/L	-0.030
M6-PFDA	7.627	519.0 -> 474.0	352065	20.00 µg/L	-0.014
M7-PFUnDA	8.001	570.0 -> 525.0	342341	20.00 µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	388449	20.00 µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	237908	20.00 µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	112095	20.00 µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	28671	20.00 µg/L	-0.051
M3-PFHxS	5.960	402.0 -> 99.0	23260	20.00 µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	26901	20.00 µg/L	-0.018
M2-4:2FTS	4.946	329.0 -> 309.0	116439	20.00 µg/L	-0.050
M2-6:2FTS	6.589	429.0 -> 409.0	107705	20.00 µg/L	-0.026
M2-8:2FTS	7.663	529.0 -> 509.0	62940	20.00 µg/L	-0.001
M3-MeFOSAA	7.646	573.0 -> 419.0	34563	20.00 µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.946	329.0 -> 309.0	116444	24.00 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.0%	
13C2-6:2FTS	6.589	429.0 -> 409.0	107653	27.04 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.2%	
13C2-8:2FTS	7.663	529.0 -> 509.0	62942	22.01 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C2-PFDoDA	8.326	615.0 -> 570.0	388246	16.82 µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%	
13C2-PFTeDA	9.024	715.0 -> 670.0	237950	13.58 µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%	
13C3-PFBS	4.030	302.0 -> 99.0	28669	18.87 µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%	
13C3-PFHxS	5.960	402.0 -> 99.0	23250	18.26 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C4-PFBA	1.952	217.0 -> 172.0	211267	20.43 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C4-PFHpA	5.930	367.0 -> 322.0	310192	22.59 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C5-PFHxA	5.050	318.0 -> 273.0	262815	21.72 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C5-PFPeA	3.761	268.0 -> 223.0	172706	21.51 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C6-PFDA	7.627	519.0 -> 474.0	351939	20.17 µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

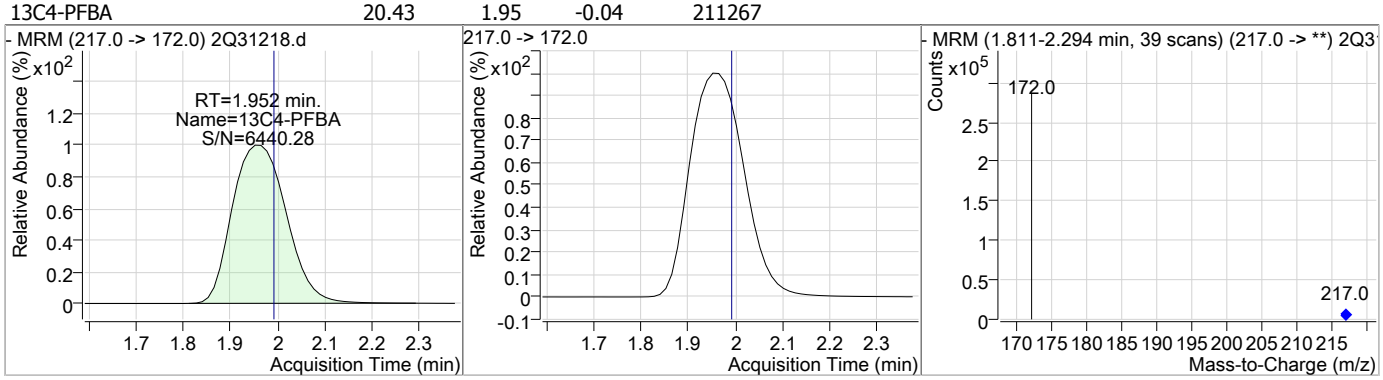
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C7-PFUnDA	8.001	570.0 -> 525.0	342550	16.19	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.0%			
13C8-FOSA	7.247	506.0 -> 78.0	112081	19.05	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
13C8-PFOA	6.606	421.0 -> 376.0	299904	23.38	µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%			
13C8-PFOS	7.154	507.0 -> 99.0	26872	14.16	µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%			
13C9-PFNA	7.171	472.0 -> 427.0	272311	25.06	µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.3%			
d3-MeFOSAA	7.646	573.0 -> 419.0	34536	16.57	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.949	327.0 -> 307.0	62974	18.98	µg/L		99
6:2FTS	6.591	427.0 -> 407.0	52803	18.42	µg/L		100
8:2FTS	7.664	527.0 -> 507.0	33525	20.53	µg/L		97
EtFOSAA	7.772	584.0 -> 419.0	15254	17.91	µg/L		100
FOSA	7.250	498.0 -> 78.0	56233	20.12	µg/L		100
MeFOSAA	7.647	570.0 -> 419.0	18253	19.49	µg/L		97
PFBA	1.961	213.0 -> 169.0	35216	19.38	µg/L		100
PFBS	4.033	299.0 -> 80.0	38646	19.64	µg/L		99
PFDA	7.628	513.0 -> 469.0	114895	19.77	µg/L		99
PFDoDA	8.328	613.0 -> 569.0	173453	19.62	µg/L		100
PFDS	7.961	599.0 -> 80.0	6500	13.22	µg/L		97
PFHpA	5.932	363.0 -> 319.0	258043	18.95	µg/L		100
PFHpS	6.600	449.0 -> 80.0	25924	19.85	µg/L		98
PFHxA	5.052	313.0 -> 269.0	77279	19.98	µg/L		100
PFHxS	5.962	399.0 -> 80.0	32812	19.76	µg/L	m	97
PFNA	7.172	463.0 -> 419.0	145676	19.78	µg/L		100
PFNS	7.611	549.0 -> 80.0	12642	15.10	µg/L		98
PFOA	6.610	413.0 -> 369.0	166208	19.20	µg/L		99
PFOS	7.157	499.0 -> 80.0	24198	18.19	µg/L	m	85
PFPeA	3.765	263.0 -> 219.0	136295	18.97	µg/L		100
PFPeS	5.157	349.0 -> 80.0	26178	20.74	µg/L		100
PFTeDA	9.028	713.0 -> 669.0	171196	18.88	µg/L		100
PFTrDA	8.678	663.0 -> 619.0	212645	22.65	µg/L		100
PFUnDA	8.003	563.0 -> 519.0	132192	19.51	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

= Qualifier out of range, m = manually integrated, + = Area summed

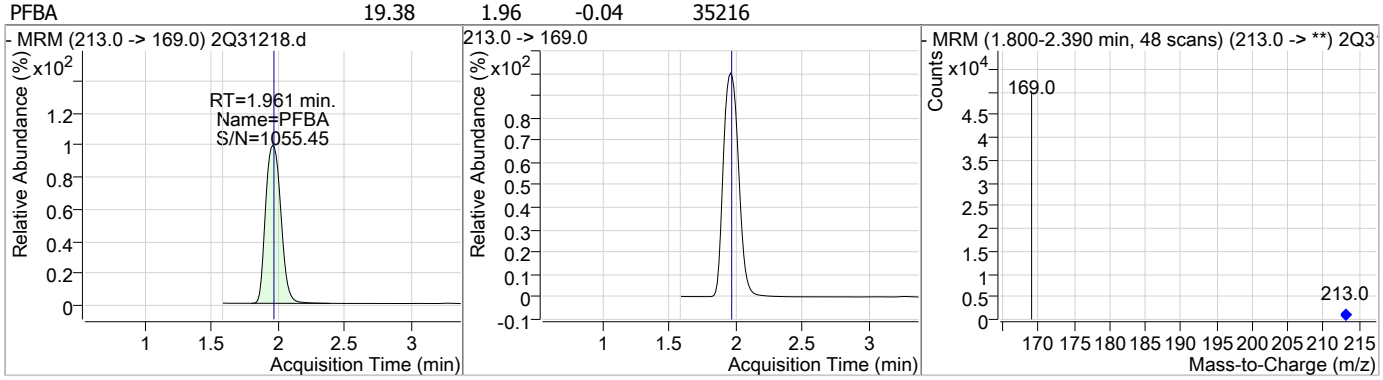
Perfluorinated Compounds by LC/MS/MS



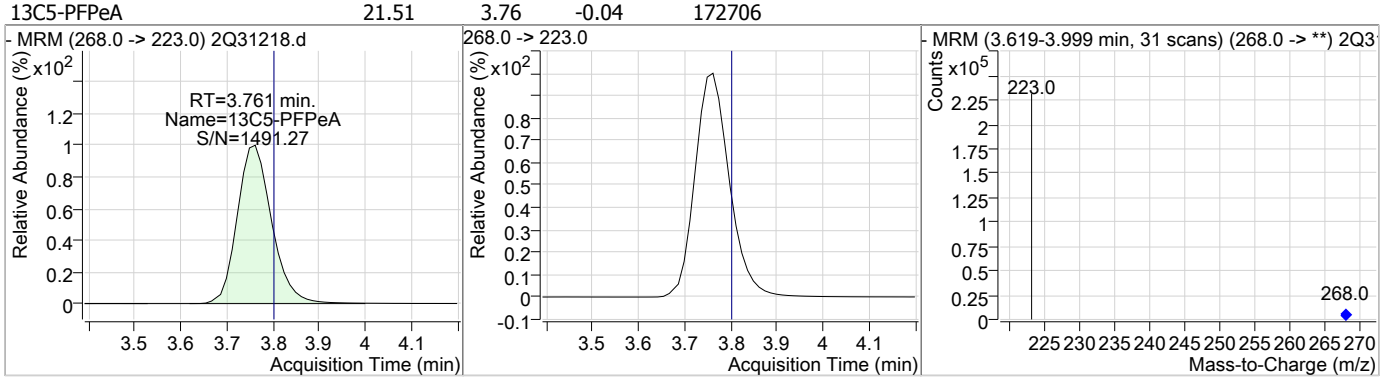
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.43	1.95	-0.04	211267				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.38	1.96	-0.04	35216				

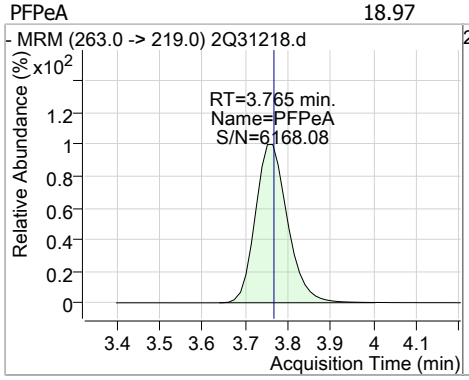


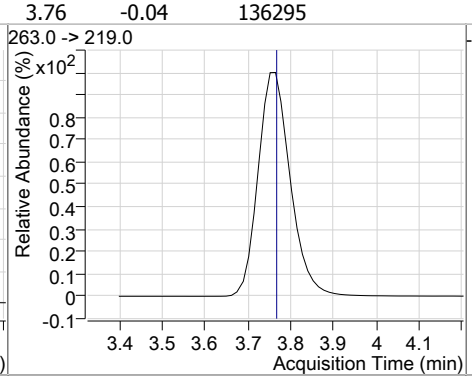
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.51	3.76	-0.04	172706				

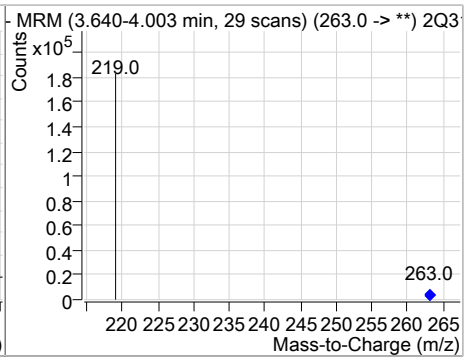


Perfluorinated Compounds by LC/MS/MS

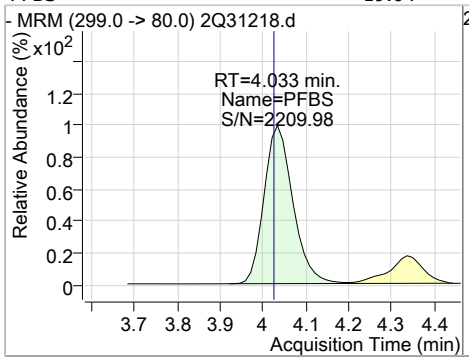
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.97	3.76	-0.04	136295				

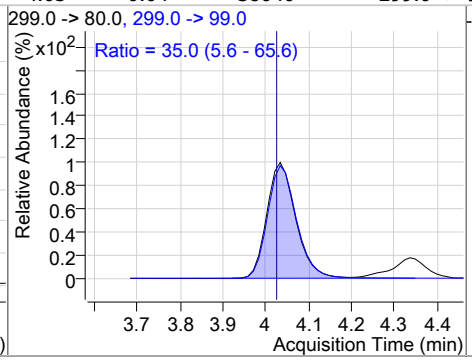


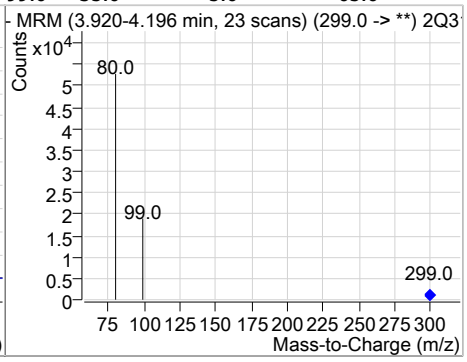




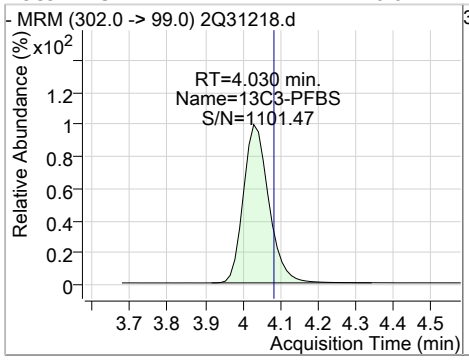
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.64	4.03	-0.04	38646	299.0 -> 99.0	35.0	5.6	65.6

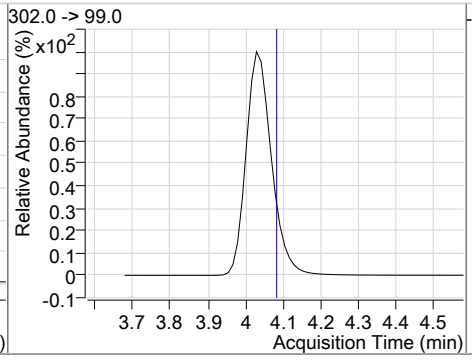


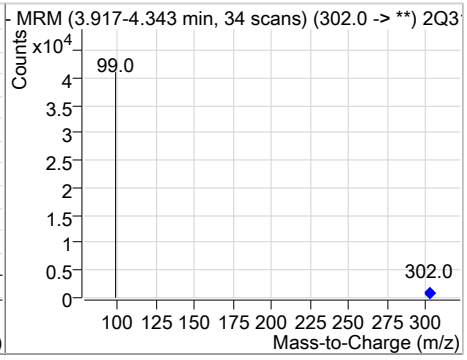




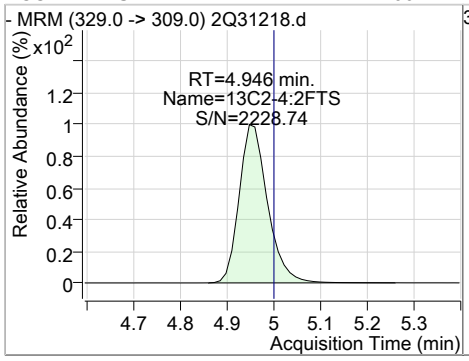
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.87	4.03	-0.05	28669				

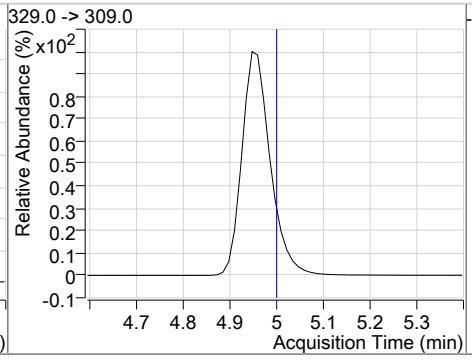


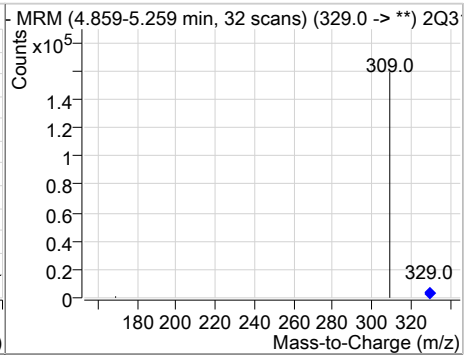




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.00	4.95	-0.05	116444				

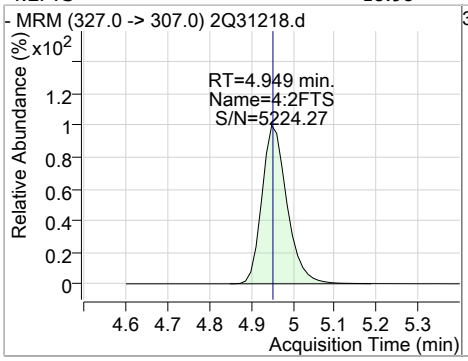


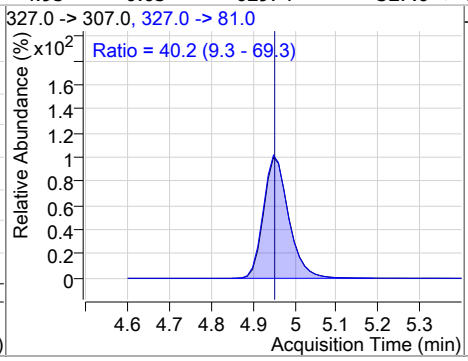


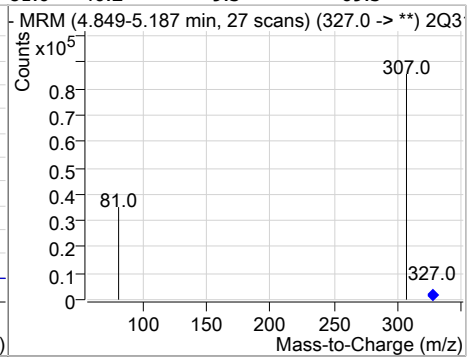


Perfluorinated Compounds by LC/MS/MS

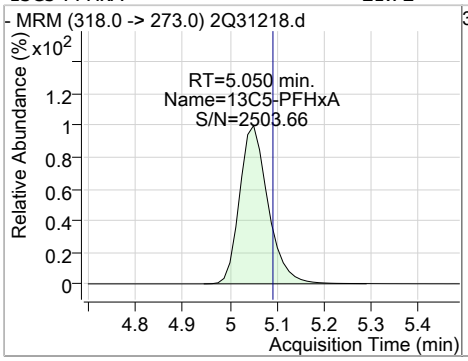
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.98	4.95	-0.05	62974	327.0 -> 81.0	40.2	9.3	69.3

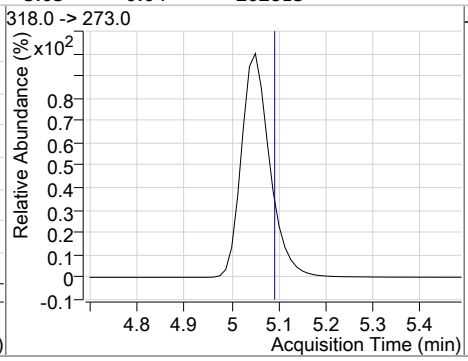


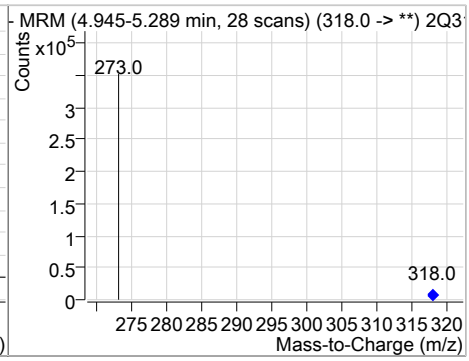




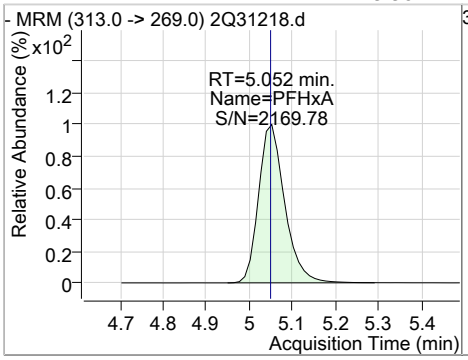
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.72	5.05	-0.04	262815				

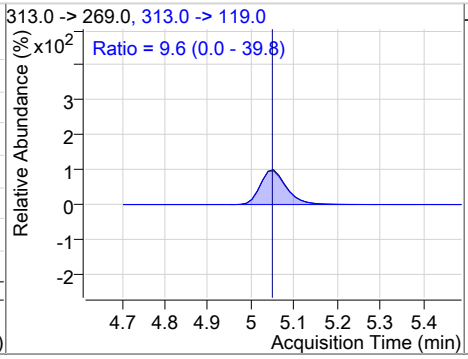


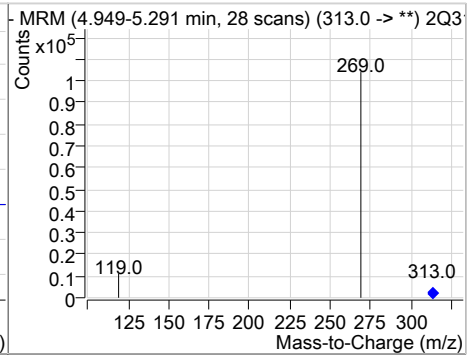




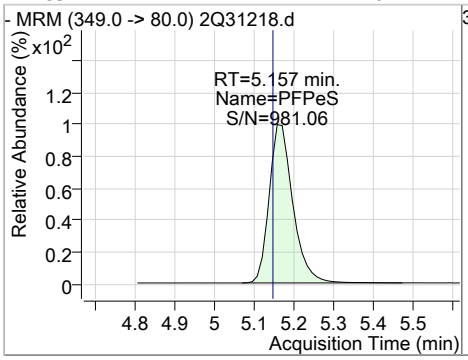
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.98	5.05	-0.04	77279	313.0 -> 119.0	9.6	0.0	39.8

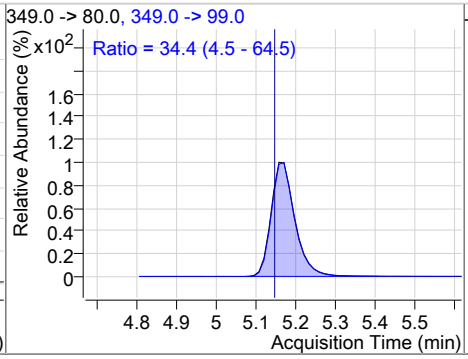


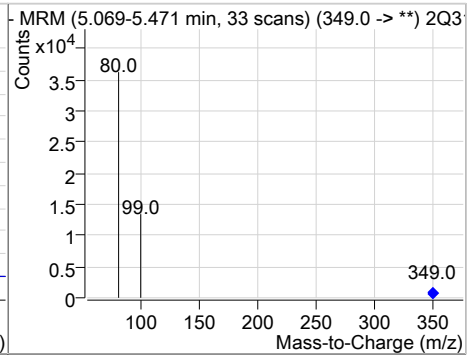




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.74	5.16	-0.05	26178	349.0 -> 99.0	34.4	4.5	64.5

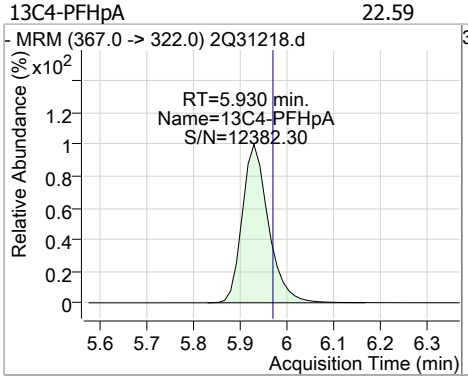


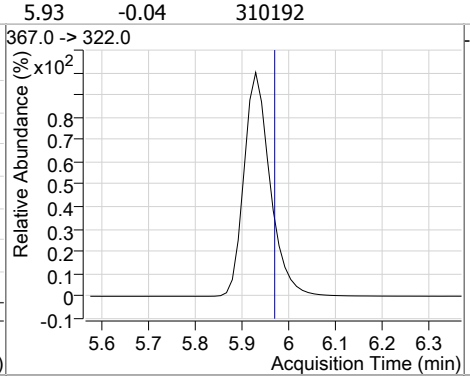


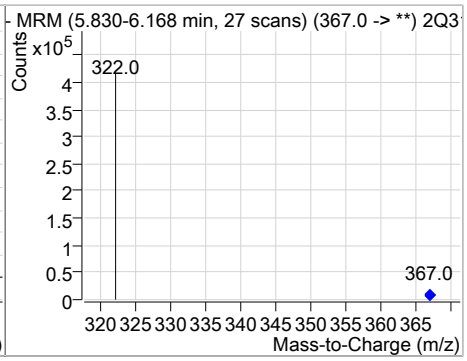


Perfluorinated Compounds by LC/MS/MS

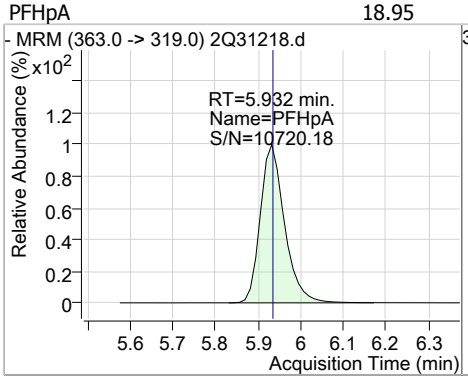
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.59	5.93	-0.04	310192				

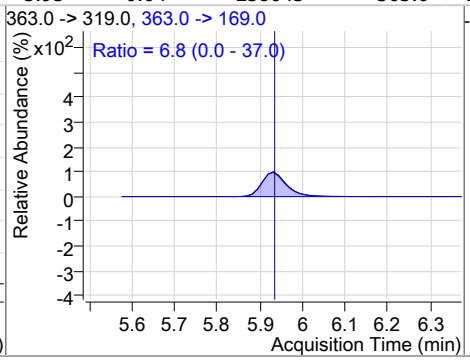


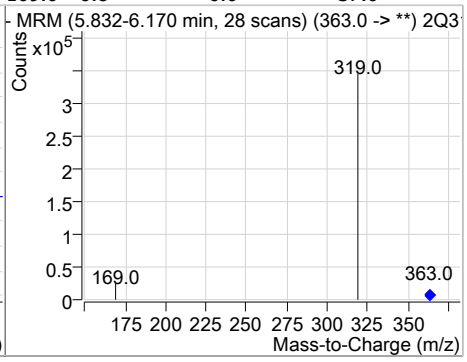




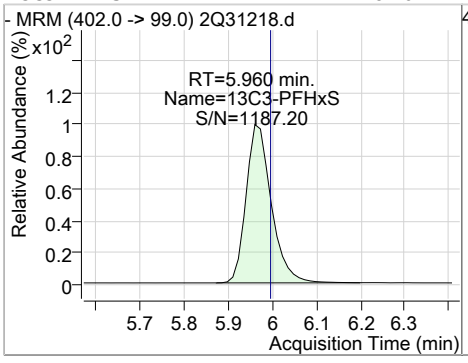
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.95	5.93	-0.04	258043	363.0 -> 169.0	6.8	0.0	37.0

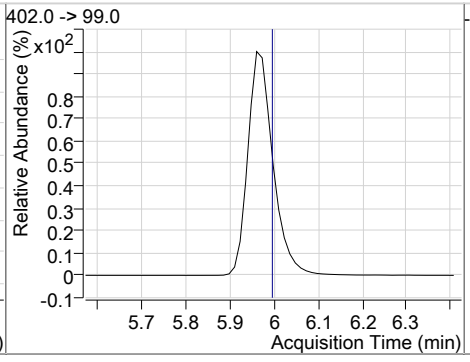


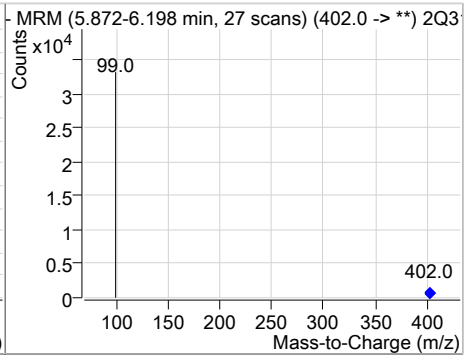




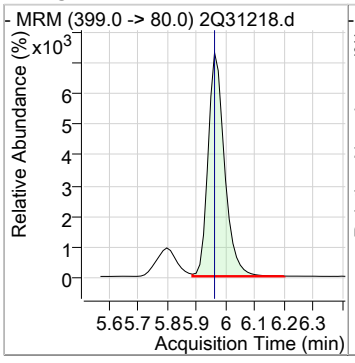
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.26	5.96	-0.04	23250				

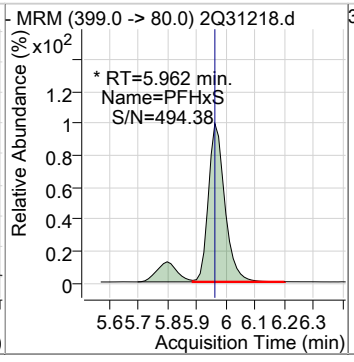


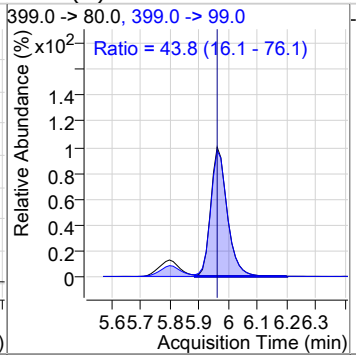


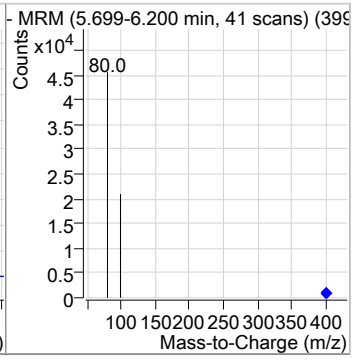


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.76	5.96	-0.04	32812 (m)	399.0 -> 99.0	43.8	16.1	76.1



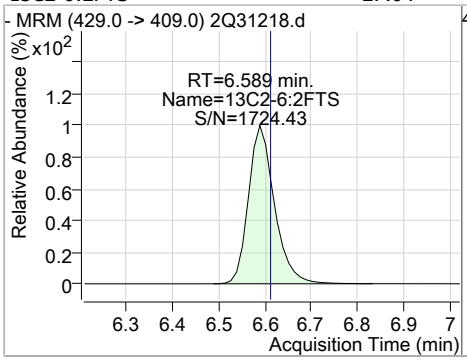


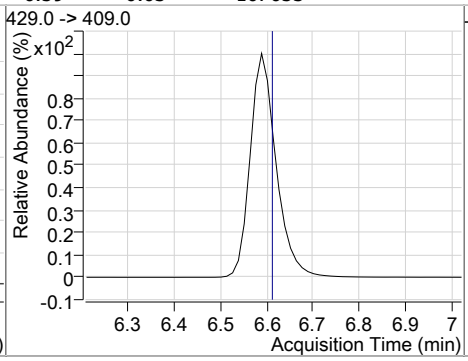


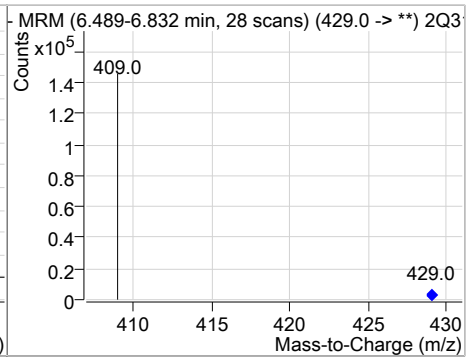


Perfluorinated Compounds by LC/MS/MS

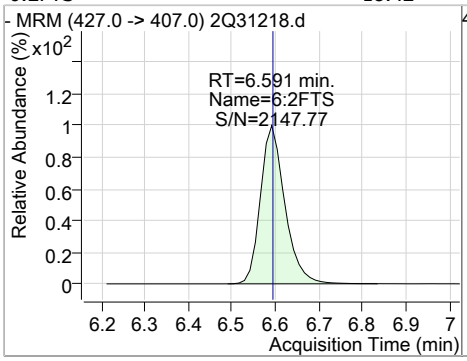
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	27.04	6.59	-0.03	107653				

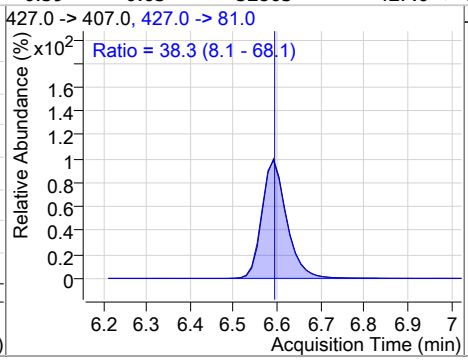


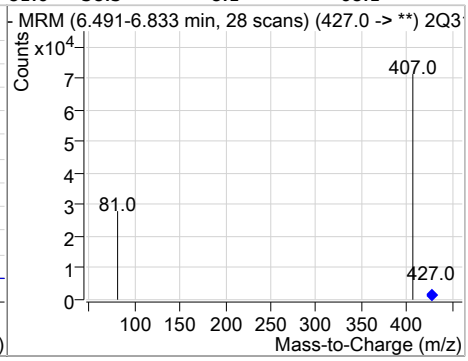




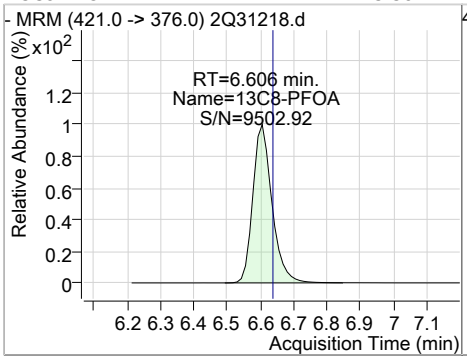
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.42	6.59	-0.03	52803	427.0 -> 81.0	38.3	8.1	68.1

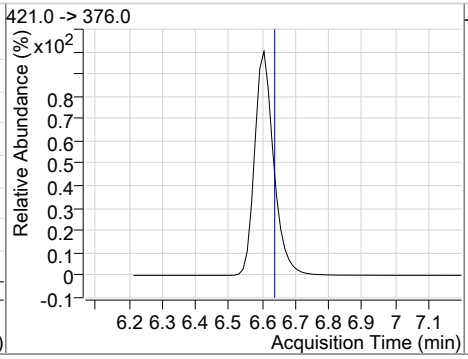


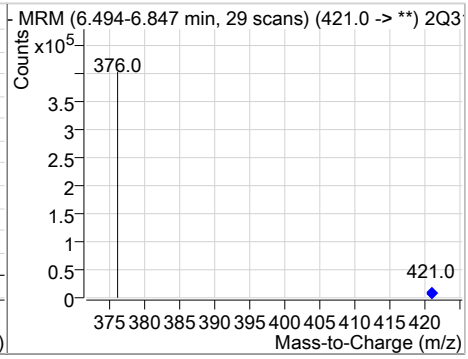




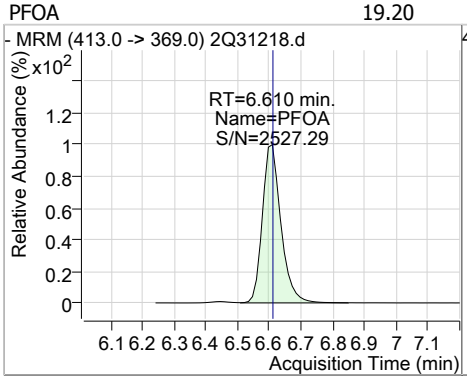
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.38	6.61	-0.03	299904				

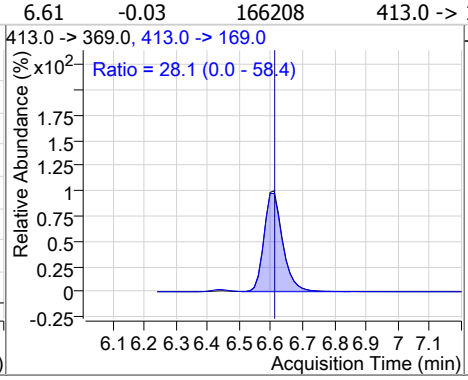


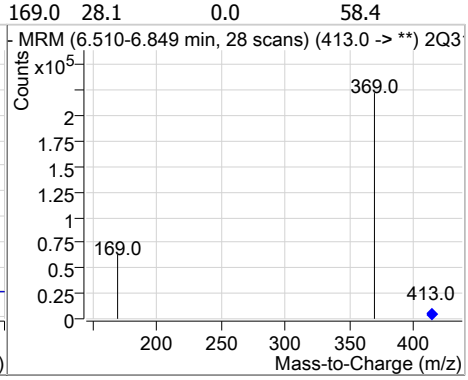




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.20	6.61	-0.03	166208	413.0 -> 169.0	28.1	0.0	58.4

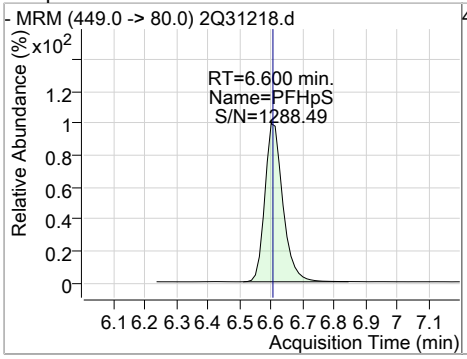


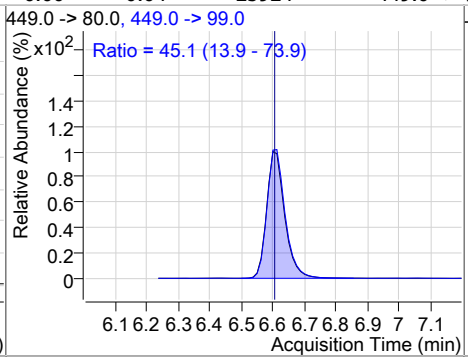


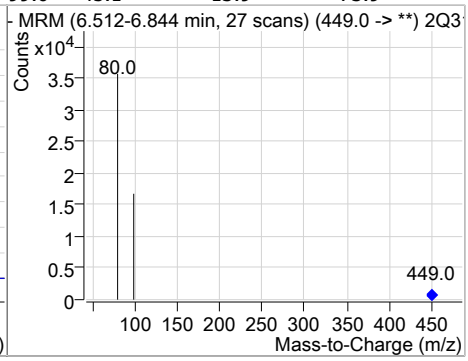


Perfluorinated Compounds by LC/MS/MS

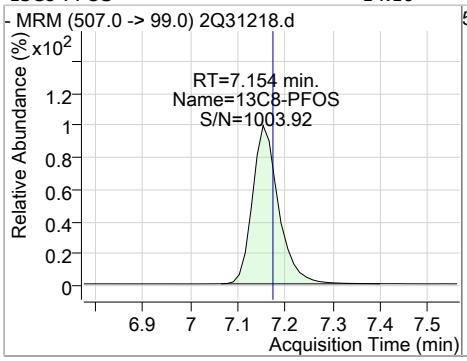
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.85	6.60	-0.04	25924	449.0 -> 99.0	45.1	13.9	73.9

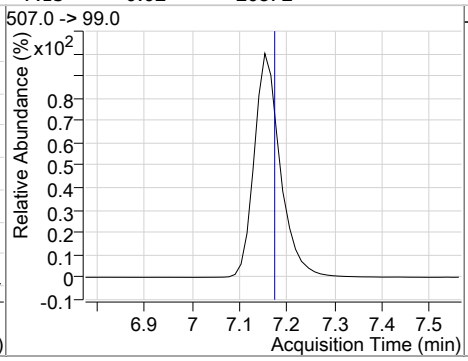


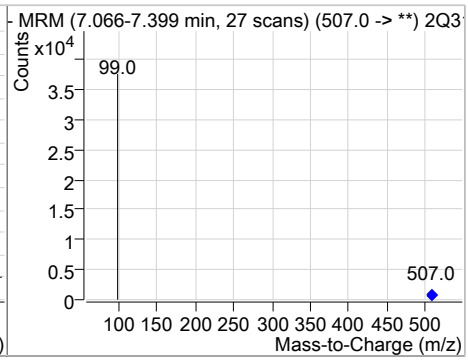




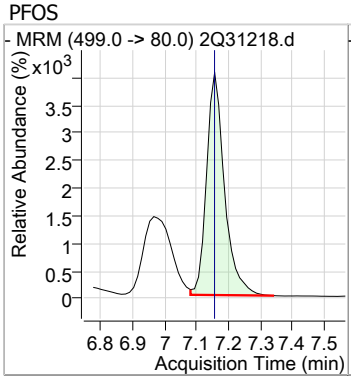
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.16	7.15	-0.02	26872				

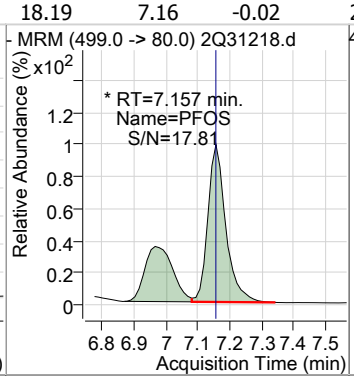


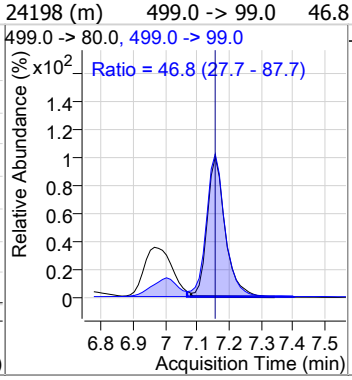


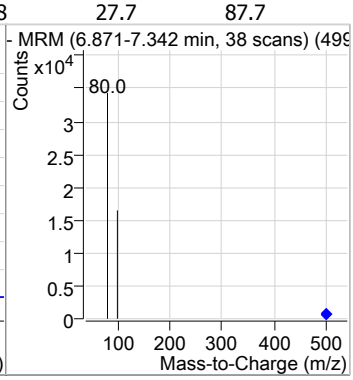


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.19	7.16	-0.02	24198 (m)	499.0 -> 99.0	46.8	27.7	87.7

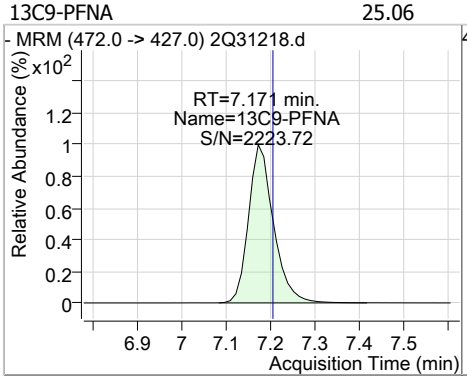


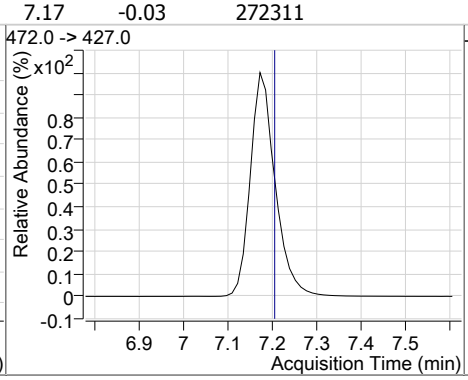


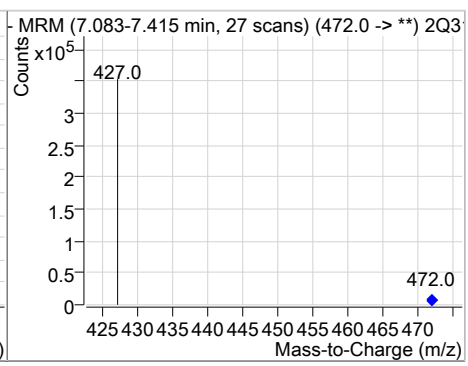




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.06	7.17	-0.03	272311				

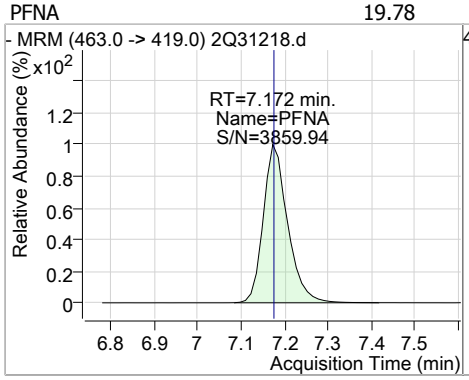


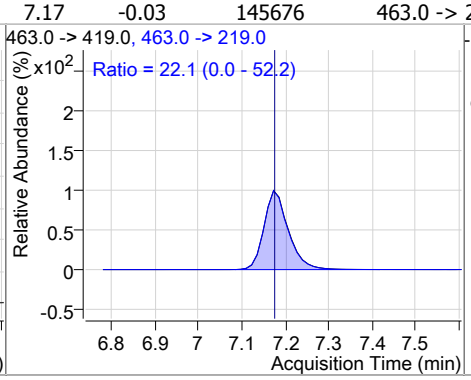


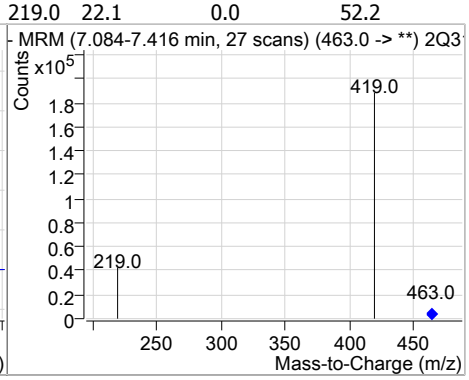


Perfluorinated Compounds by LC/MS/MS

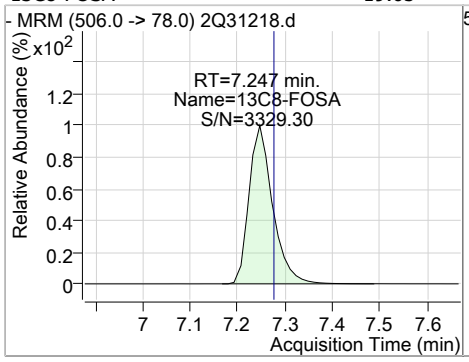
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.78	7.17	-0.03	145676	463.0 -> 219.0	22.1	0.0	52.2

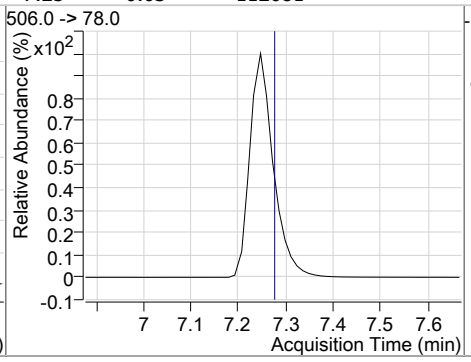


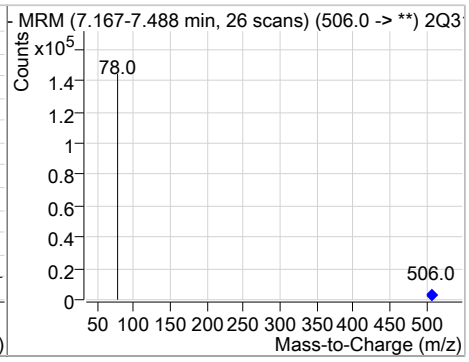




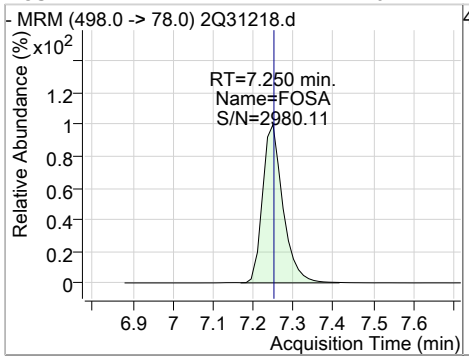
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.05	7.25	-0.03	112081				

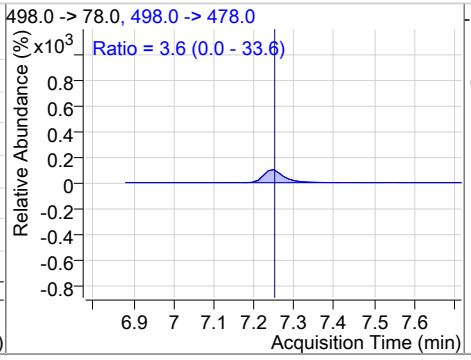


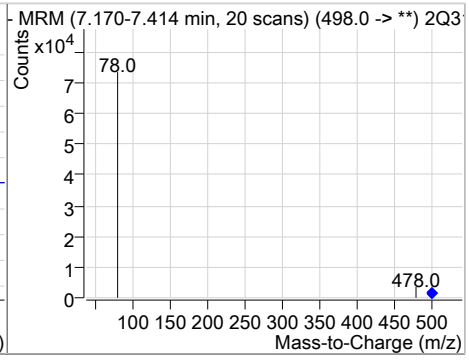




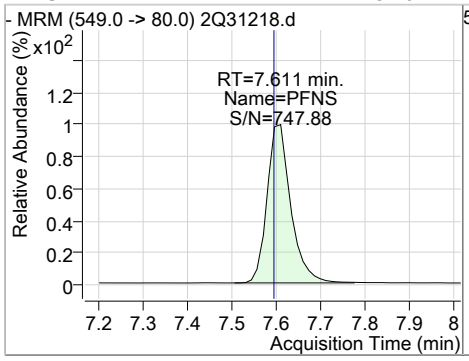
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.12	7.25	-0.03	56233	498.0 -> 478.0	3.6	0.0	33.6

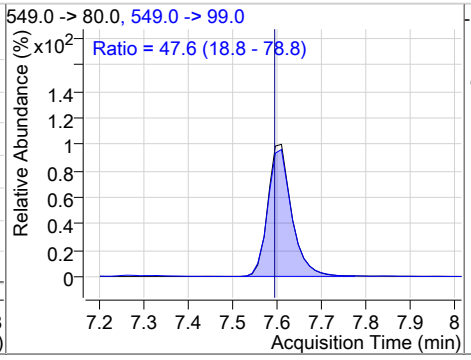


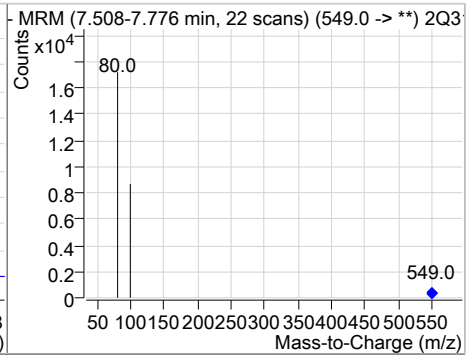




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	15.10	7.61	0.00	12642	549.0 -> 99.0	47.6	18.8	78.8

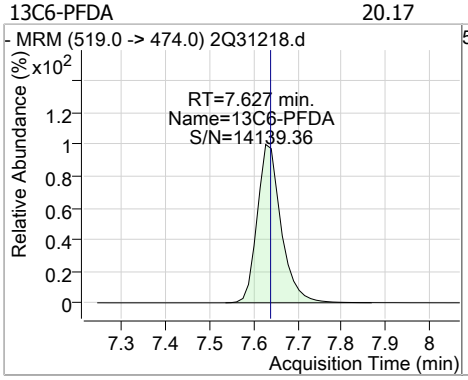


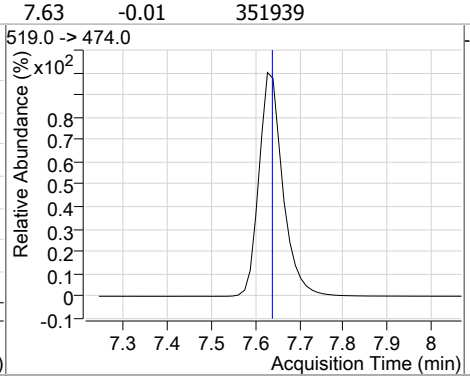


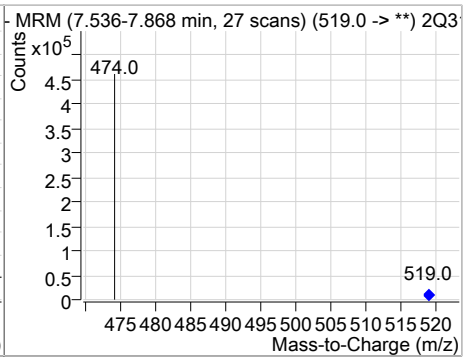


Perfluorinated Compounds by LC/MS/MS

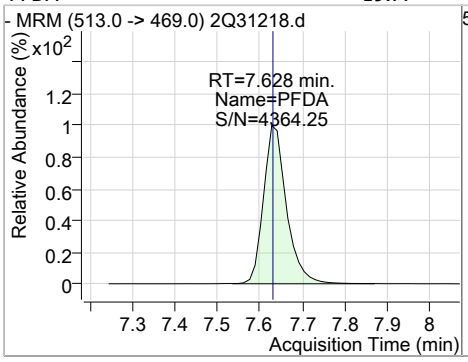
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.17	7.63	-0.01	351939				

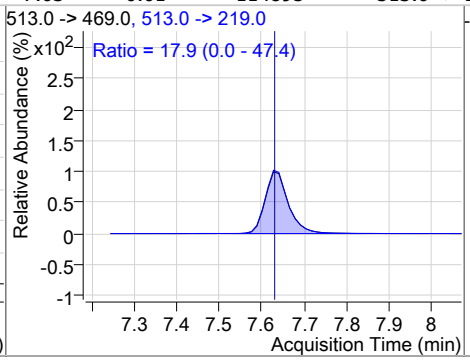


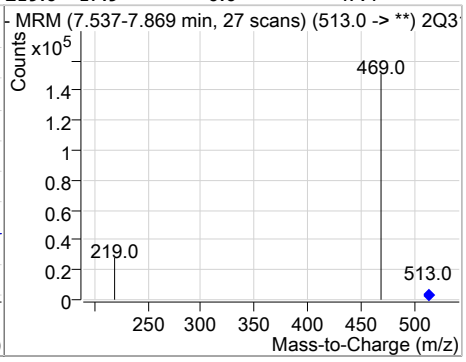




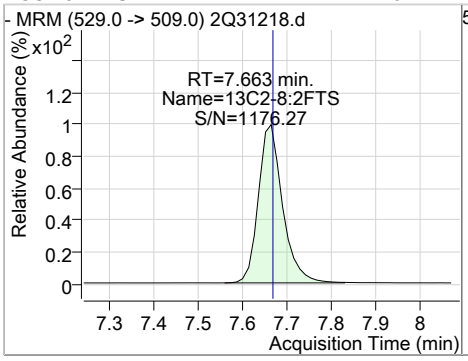
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.77	7.63	-0.01	114895	513.0 -> 219.0	17.9	0.0	47.4

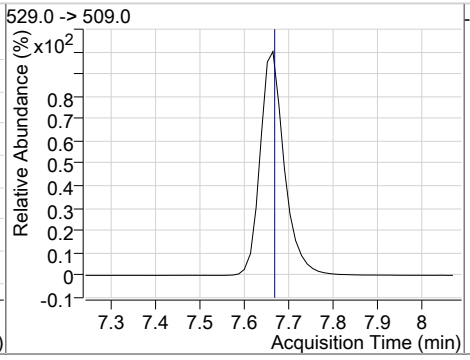


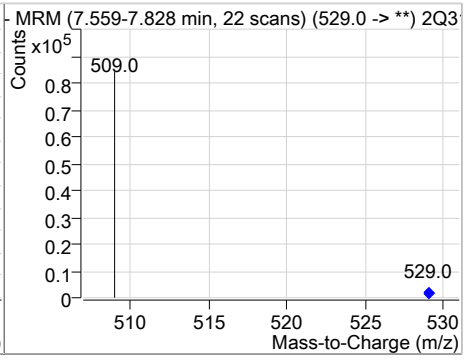




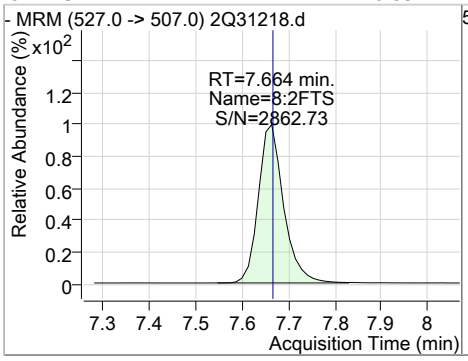
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.01	7.66	0.00	62942				

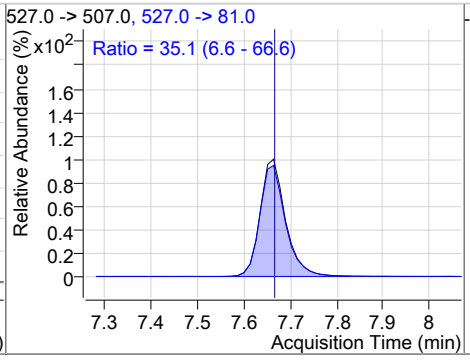


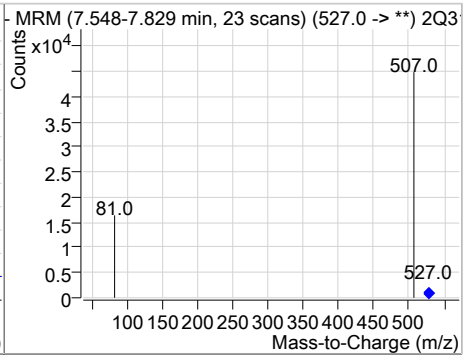




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.53	7.66	0.00	33525	527.0 -> 81.0	35.1	6.6	66.6

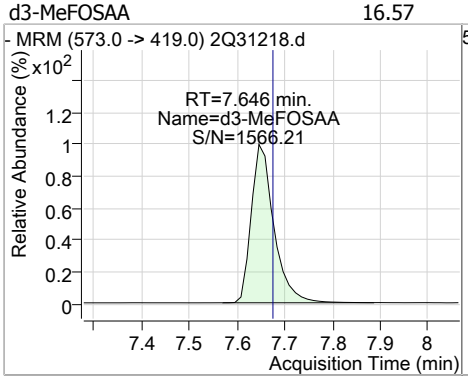


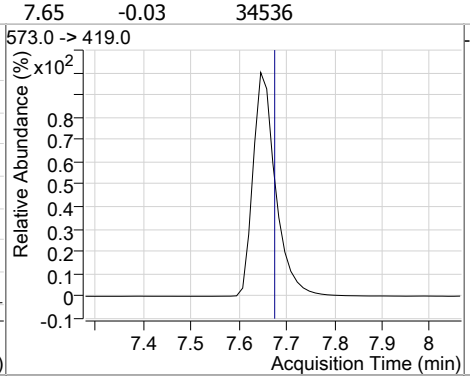


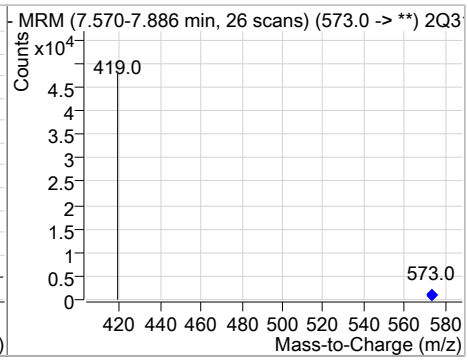


Perfluorinated Compounds by LC/MS/MS

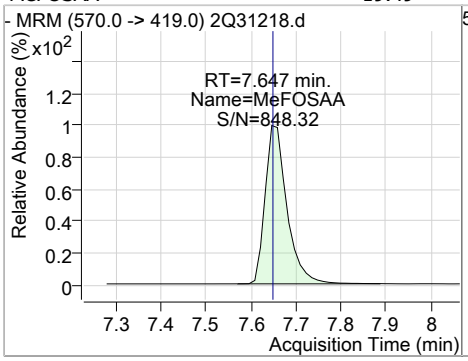
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.57	7.65	-0.03	34536				

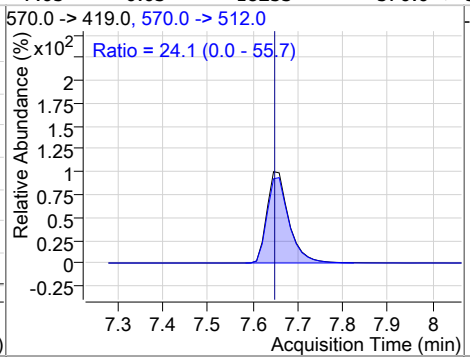


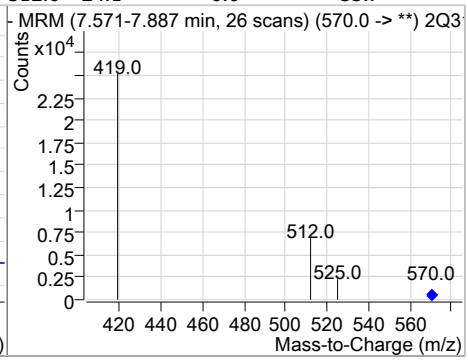




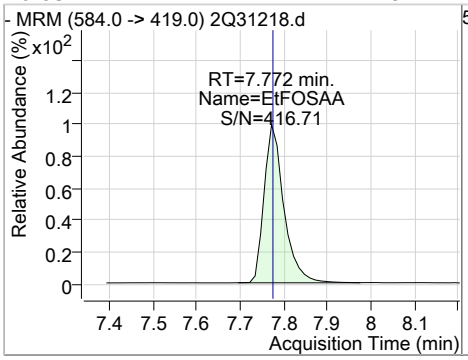
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.49	7.65	-0.03	18253	570.0 -> 512.0	24.1	0.0	55.7

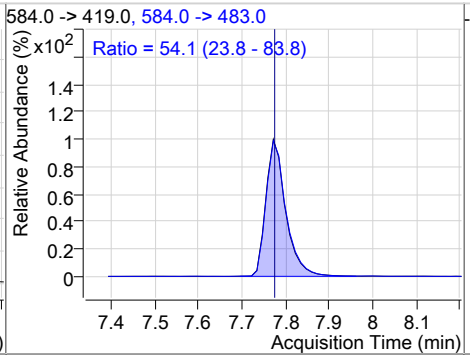


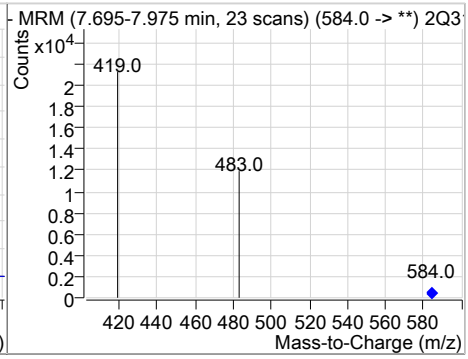




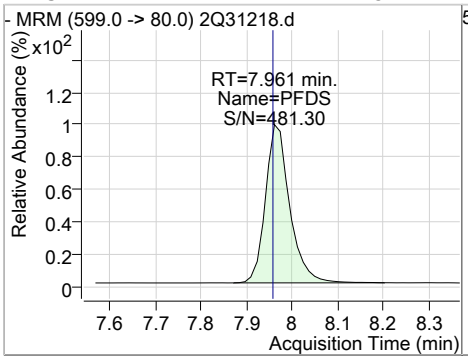
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.91	7.77	-0.03	15254	584.0 -> 483.0	54.1	23.8	83.8

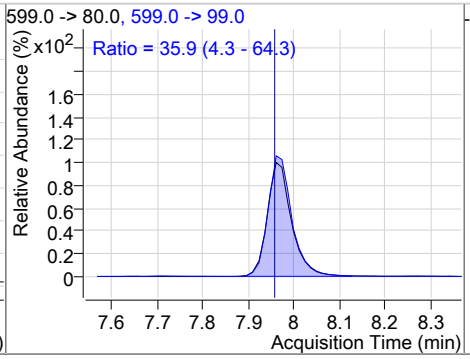


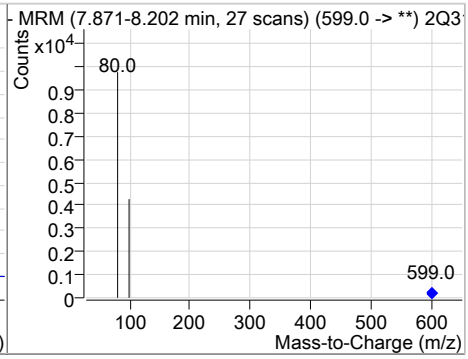




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	13.22	7.96	-0.01	6500	599.0 -> 99.0	35.9	4.3	64.3

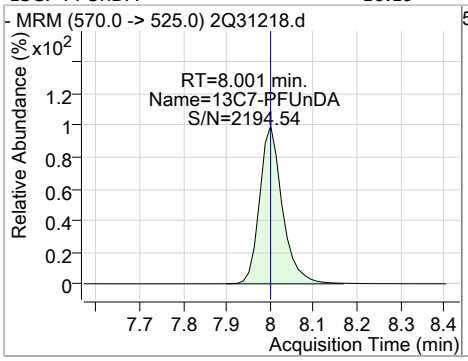


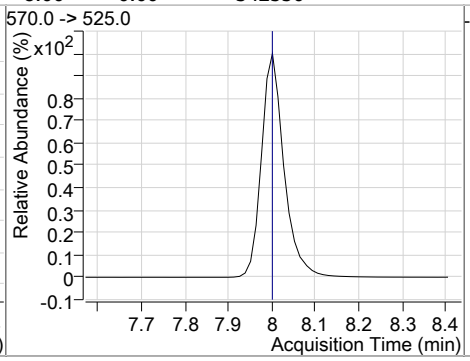


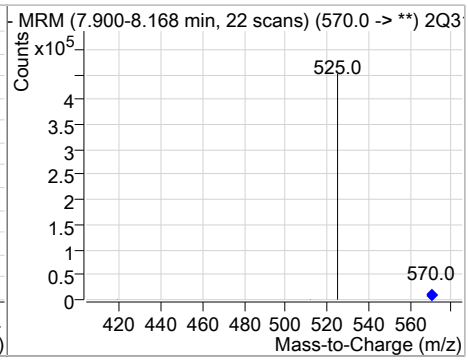


Perfluorinated Compounds by LC/MS/MS

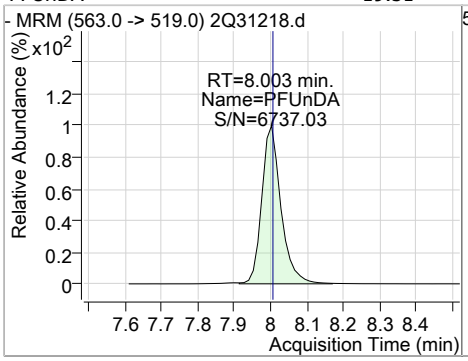
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.19	8.00	0.00	342550				

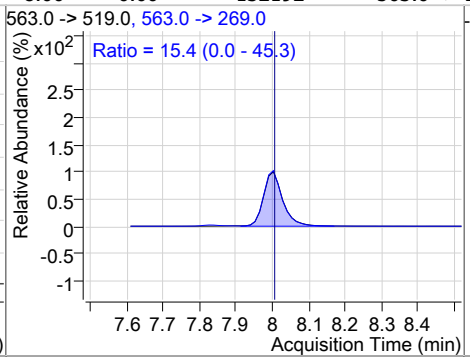


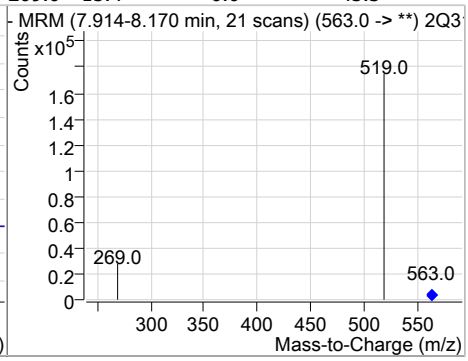




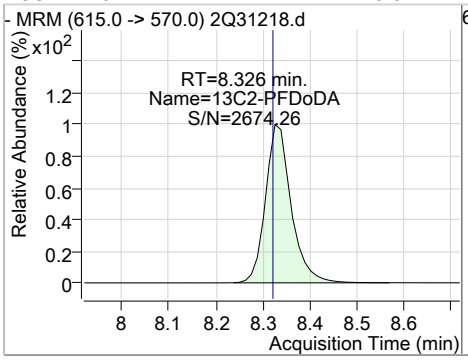
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.51	8.00	0.00	132192	563.0 -> 269.0	15.4	0.0	45.3

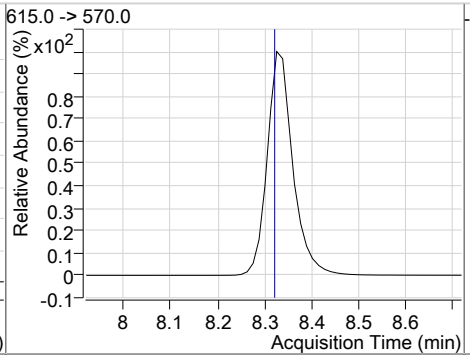


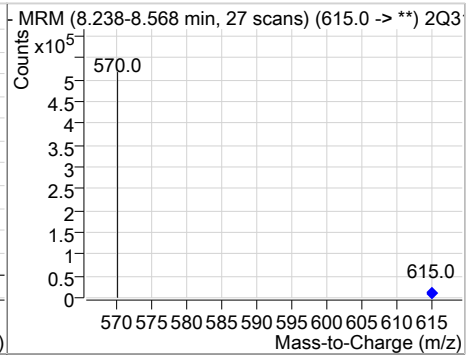




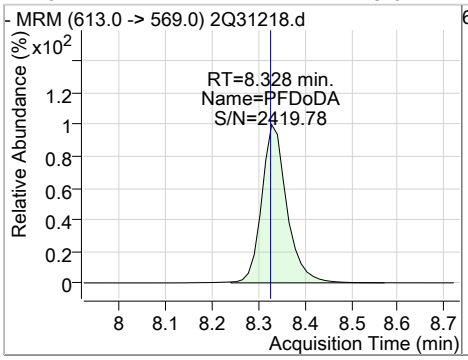
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.82	8.33	0.01	388246				

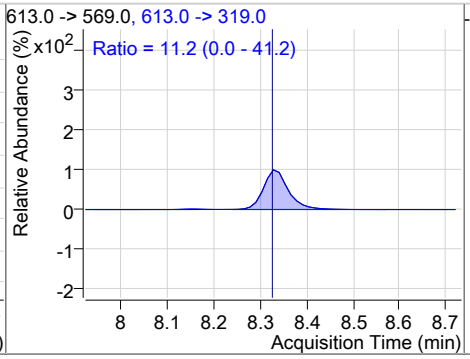


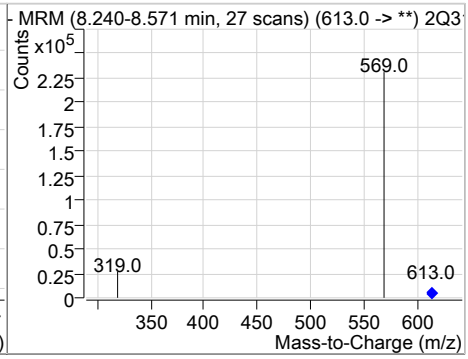




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.62	8.33	0.01	173453	613.0 -> 319.0	11.2	0.0	41.2

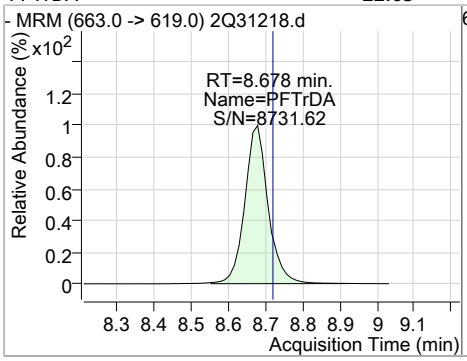


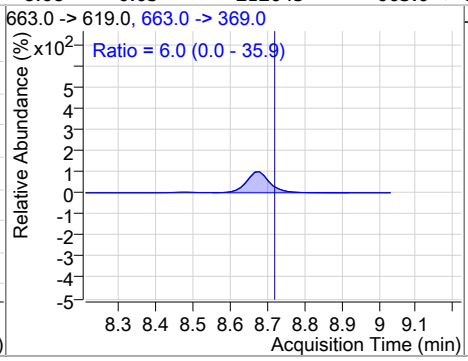


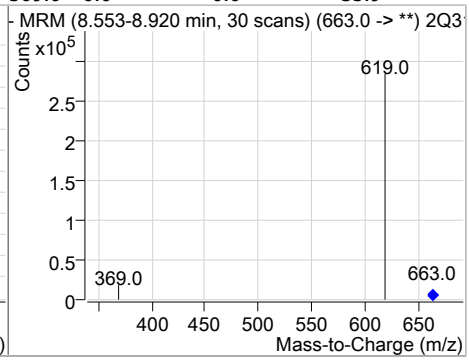


Perfluorinated Compounds by LC/MS/MS

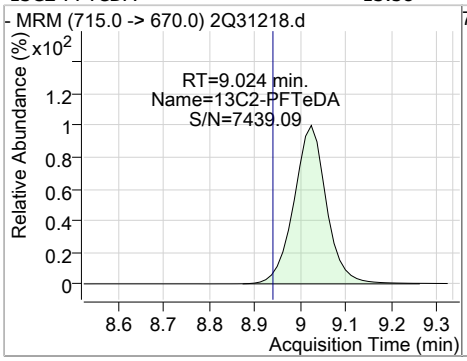
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.65	8.68	0.05	212645	663.0 -> 369.0	6.0	0.0	35.9

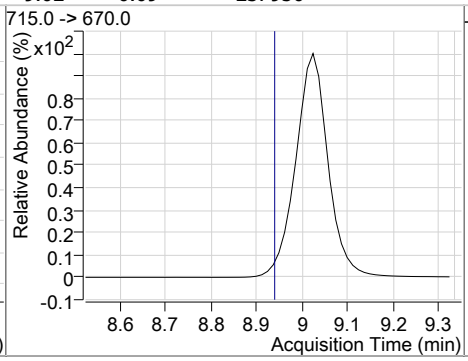


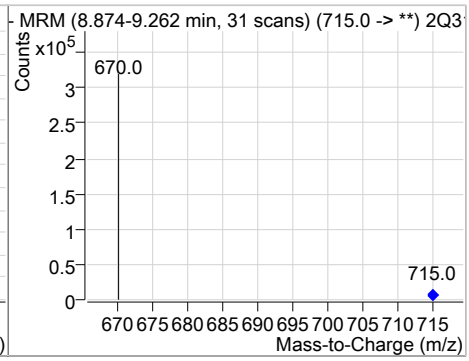




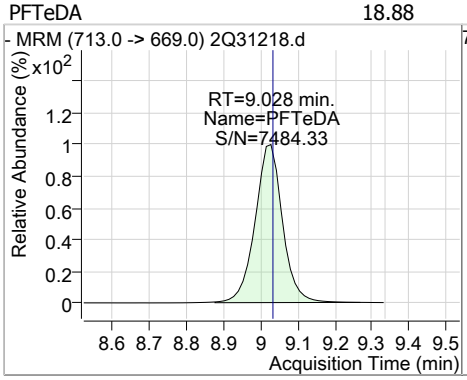
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.58	9.02	0.09	237950				

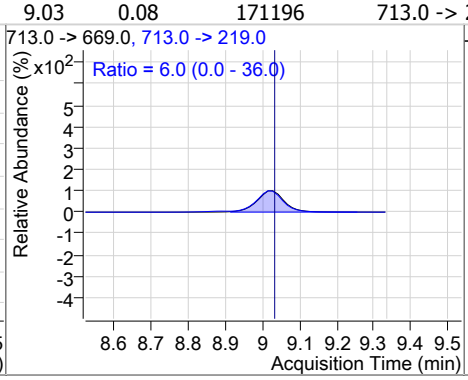


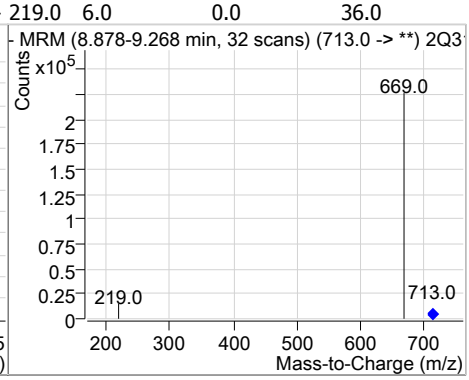




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.88	9.03	0.08	171196	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: OP75580-BS
Lab FileID: 2Q31218.D
Injection Time: 06/23/19 19:41
Method: EPA 537M BY ID
Analyst approved: 06/24/19 13:24 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/27/19 17:05

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31479.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/26/2019 10:56:04 PM
Sample Name : op75639-bs
Vial : Vial 8
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75639,S2Q501,250,,,1,1,water

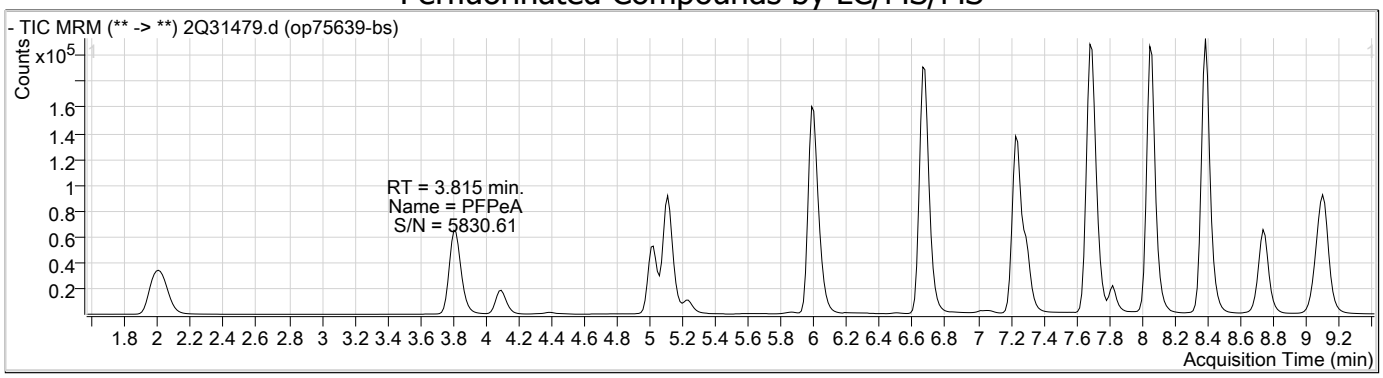
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	2.002	217.0 -> 172.0	217501	20.00	µg/L	0.025
M5-PFPeA	3.812	268.0 -> 223.0	181541	20.00	µg/L	0.050
M5-PFHxA	5.114	318.0 -> 273.0	283483	20.00	µg/L	0.063
M4-PFHpA	5.993	367.0 -> 322.0	335721	20.00	µg/L	0.063
M8-PFOA	6.682	421.0 -> 376.0	325410	20.00	µg/L	0.076
M9-PFNA	7.239	472.0 -> 427.0	291238	20.00	µg/L	0.068
M6-PFDA	7.692	519.0 -> 474.0	456286	20.00	µg/L	0.065
M7-PFUnDA	8.054	570.0 -> 525.0	532167	20.00	µg/L	0.052
M2-PFDoDA	8.390	615.0 -> 570.0	556842	20.00	µg/L	0.064
M2-PFTeDA	9.100	715.0 -> 670.0	288762	20.00	µg/L	0.075
M8-FOSA	7.299	506.0 -> 78.0	85625	20.00	µg/L	0.052
M3-PFBS	4.093	302.0 -> 99.0	29826	20.00	µg/L	0.063
M3-PFHxS	6.035	402.0 -> 99.0	25587	20.00	µg/L	0.076
M8-PFOS	7.218	507.0 -> 99.0	37857	20.00	µg/L	0.065
M2-4:2FTS	5.021	329.0 -> 309.0	125994	20.00	µg/L	0.075
M2-6:2FTS	6.665	429.0 -> 409.0	114800	20.00	µg/L	0.076
M2-8:2FTS	7.715	529.0 -> 509.0	82878	20.00	µg/L	0.064
M3-MeFOSAA	7.697	573.0 -> 419.0	51327	20.00	µg/L	0.051
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	5.021	329.0 -> 309.0	126057	25.98	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.9%		
13C2-6:2FTS	6.665	429.0 -> 409.0	114841	28.84	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 144.2%		
13C2-8:2FTS	7.715	529.0 -> 509.0	82835	28.96	µg/L	0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 144.8%		
13C2-PFDoDA	8.390	615.0 -> 570.0	557954	24.17	µg/L	0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.9%		
13C2-PFTeDA	9.100	715.0 -> 670.0	288970	16.49	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%		
13C3-PFBS	4.093	302.0 -> 99.0	29772	19.60	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C3-PFHxS	6.035	402.0 -> 99.0	25502	20.03	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C4-PFBA	2.002	217.0 -> 172.0	217491	21.03	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C4-PFHpA	5.993	367.0 -> 322.0	335666	24.45	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.2%		
13C5-PFHxA	5.114	318.0 -> 273.0	282988	23.38	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C5-PFPeA	3.812	268.0 -> 223.0	181541	22.61	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
13C6-PFDA	7.692	519.0 -> 474.0	456249	26.15	µg/L	0.065

Perfluorinated Compounds by LC/MS/MS

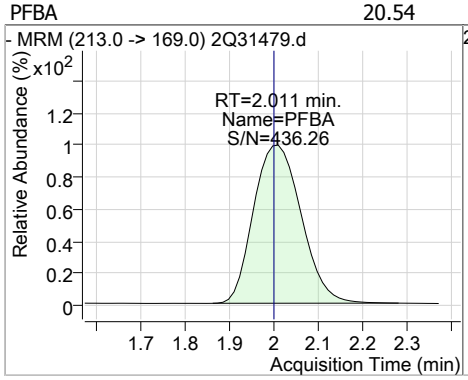
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 130.8%			
13C7-PFUnDA	8.054	570.0 -> 525.0	532191	25.15	µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.8%			
13C8-FOSA	7.299	506.0 -> 78.0	85680	14.56	µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%			
13C8-PFOA	6.682	421.0 -> 376.0	325053	25.34	µg/L		0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.7%			
13C8-PFOS	7.218	507.0 -> 99.0	37870	19.95	µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C9-PFNA	7.239	472.0 -> 427.0	290960	26.78	µg/L		0.068
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 133.9%			
d3-MeFOSAA	7.697	573.0 -> 419.0	51258	24.59	µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.9%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	5.011	327.0 -> 307.0	71603	19.94	µg/L		99
6:2FTS	6.667	427.0 -> 407.0	58729	19.22	µg/L		98
8:2FTS	7.716	527.0 -> 507.0	44755	20.81	µg/L		97
EtFOSAA	7.822	584.0 -> 419.0	24175	19.11	µg/L		99
FOSA	7.301	498.0 -> 78.0	43337	20.30	µg/L		99
MeFOSAA	7.698	570.0 -> 419.0	28065	20.18	µg/L		100
PFBA	2.011	213.0 -> 169.0	38231	20.54	µg/L		100
PFBS	4.096	299.0 -> 80.0	40371	19.72	µg/L		99
PFDA	7.693	513.0 -> 469.0	149939	19.91	µg/L		98
PFDoDA	8.392	613.0 -> 569.0	252424	19.92	µg/L		99
PFDS	8.024	599.0 -> 80.0	11793	17.04	µg/L		99
PFHpA	5.995	363.0 -> 319.0	286057	19.42	µg/L		99
PFHpS	6.675	449.0 -> 80.0	31171	21.69	µg/L		97
PFHxA	5.115	313.0 -> 269.0	84953	20.38	µg/L		98
PFHxS	6.038	399.0 -> 80.0	36495	19.98	µg/L	m	97
PFNA	7.252	463.0 -> 419.0	159118	20.21	µg/L		99
PFNS	7.663	549.0 -> 80.0	23013	19.54	µg/L		98
PFOA	6.673	413.0 -> 369.0	185049	19.71	µg/L		99
PFOS	7.223	499.0 -> 80.0	35252	18.83	µg/L	m	84
PFPeA	3.815	263.0 -> 219.0	146285	19.35	µg/L		100
PFPeS	5.233	349.0 -> 80.0	27877	21.24	µg/L		98
PFTeDA	9.106	713.0 -> 669.0	210056	19.08	µg/L		100
PFTrDA	8.745	663.0 -> 619.0	288927	25.35	µg/L		100
PFUnDA	8.056	563.0 -> 519.0	208637	19.80	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

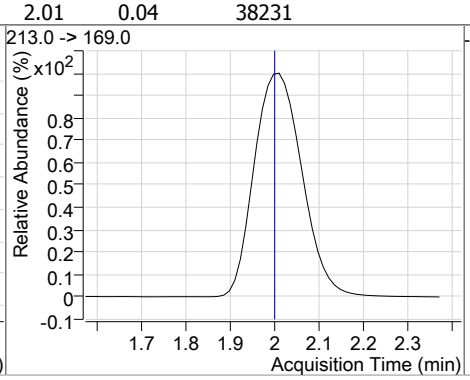
= Qualifier out of range, m = manually integrated, + = Area summed

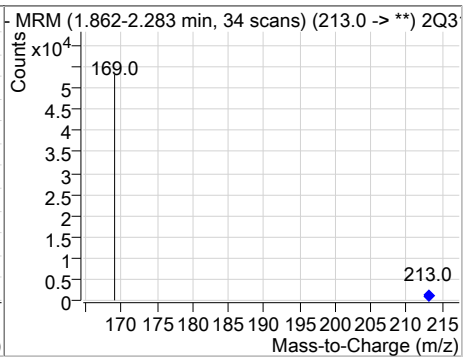
Perfluorinated Compounds by LC/MS/MS



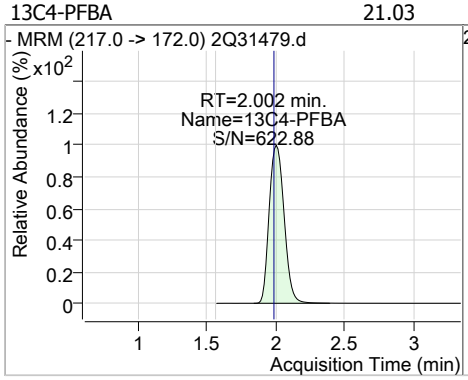
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.54	2.01	0.04	38231				

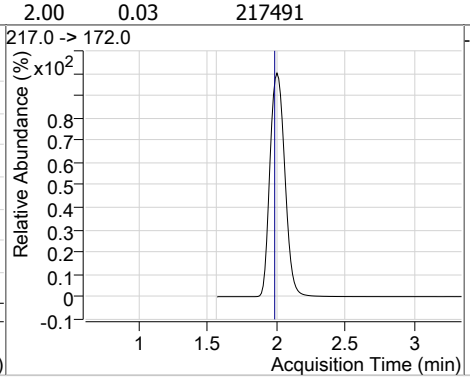


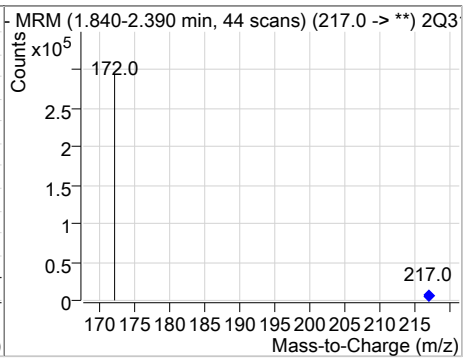




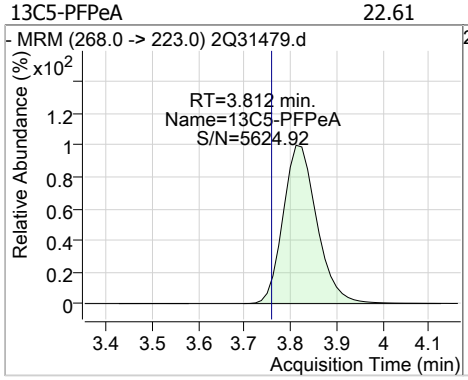
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.03	2.00	0.03	217491				

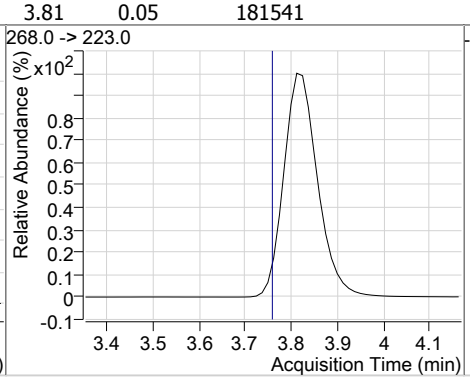


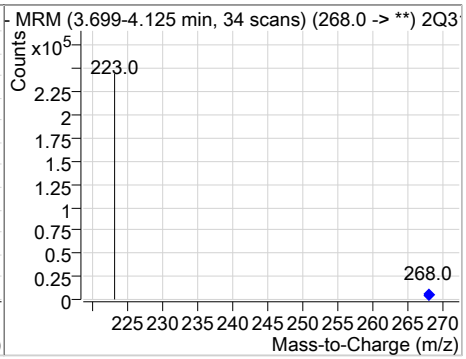




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.61	3.81	0.05	181541				

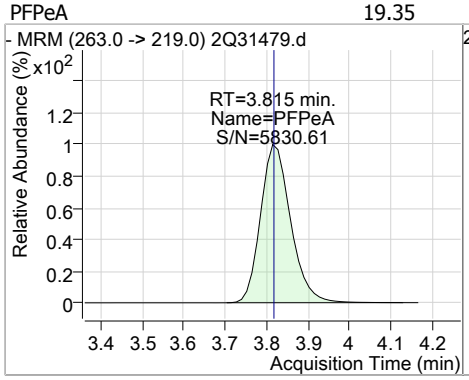


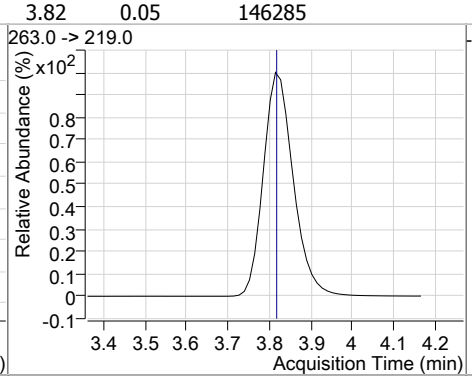


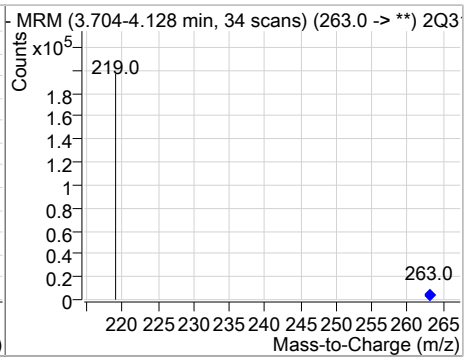


Perfluorinated Compounds by LC/MS/MS

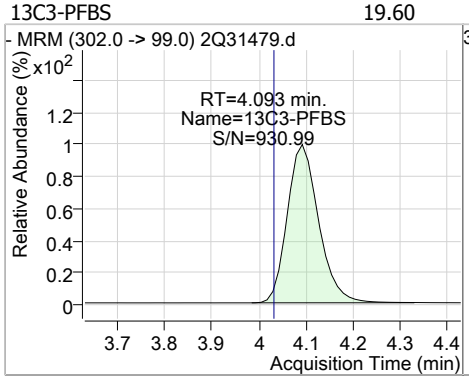
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.35	3.82	0.05	146285				

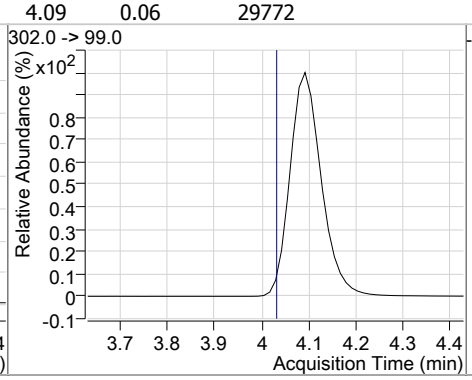


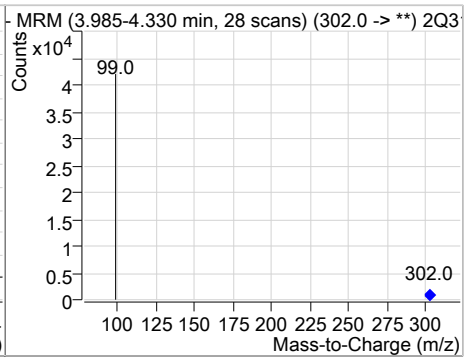




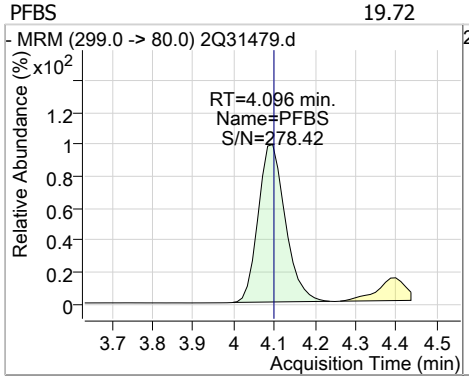
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.60	4.09	0.06	29772				

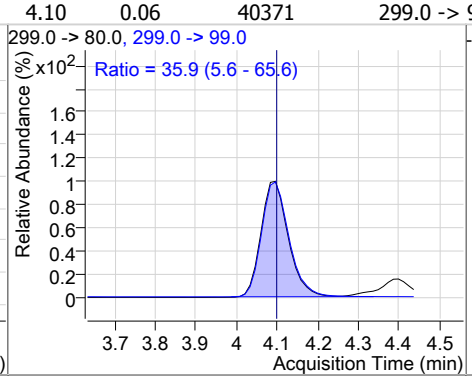


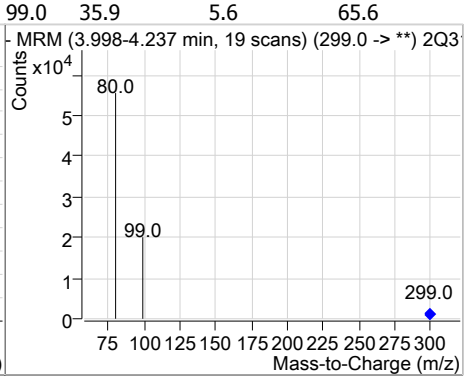




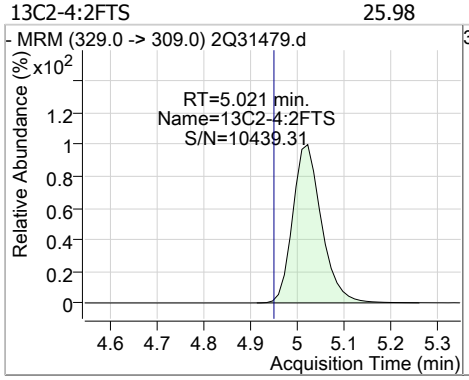
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.72	4.10	0.06	40371	299.0 -> 99.0	35.9	5.6	65.6

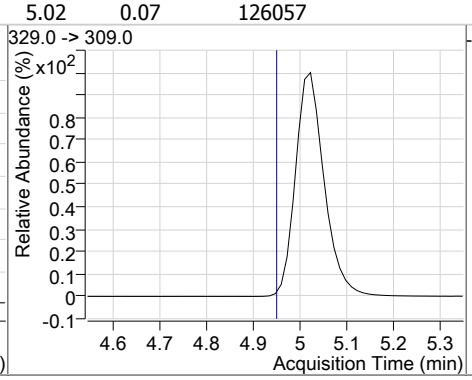


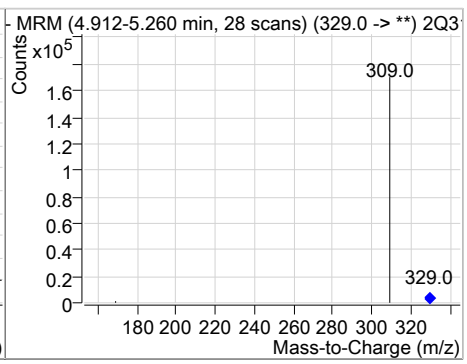




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	25.98	5.02	0.07	126057				

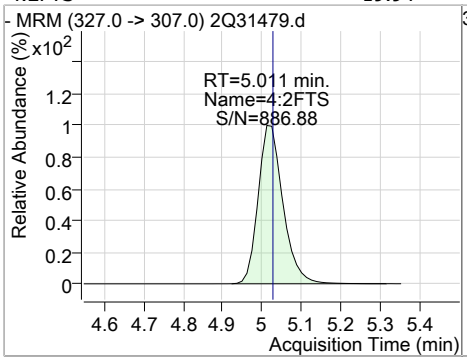


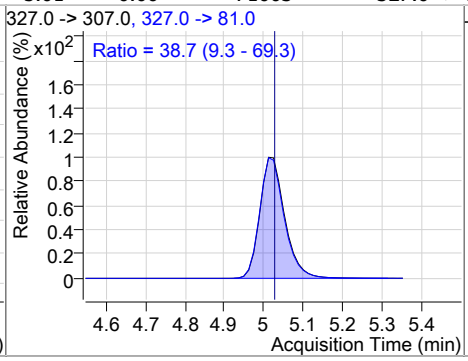


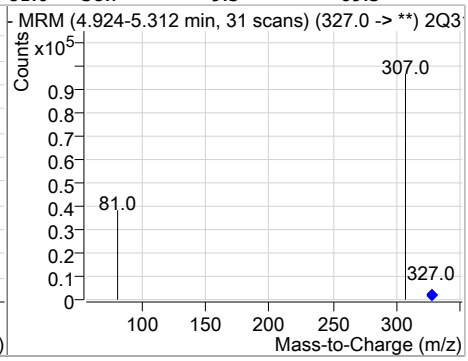


Perfluorinated Compounds by LC/MS/MS

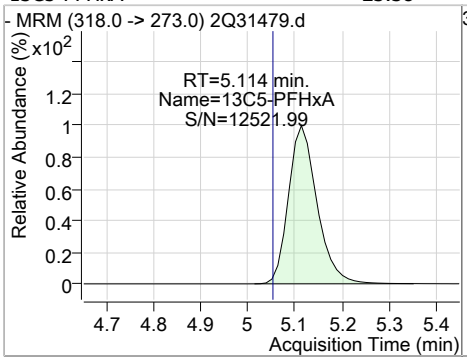
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.94	5.01	0.06	71603	327.0 -> 81.0	38.7	9.3	69.3

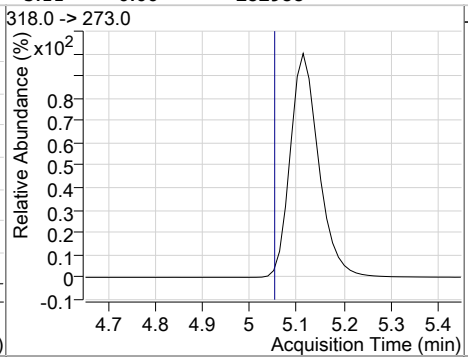


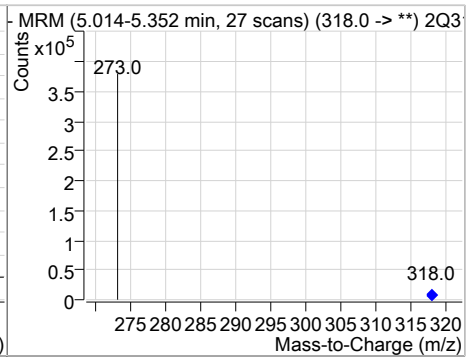




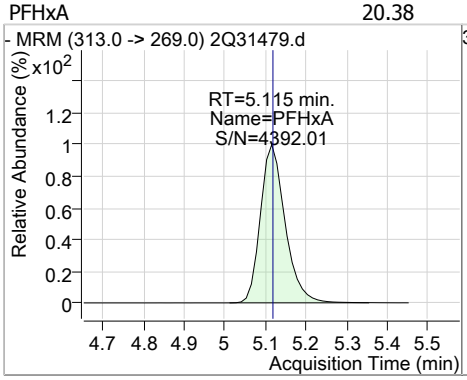
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	23.38	5.11	0.06	282988				

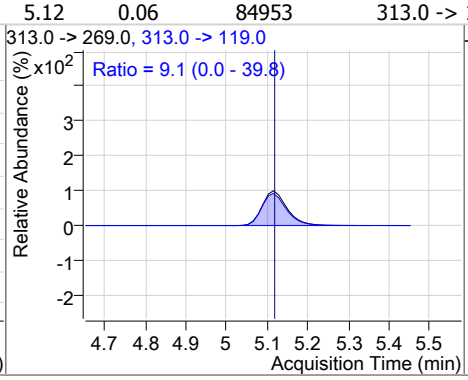


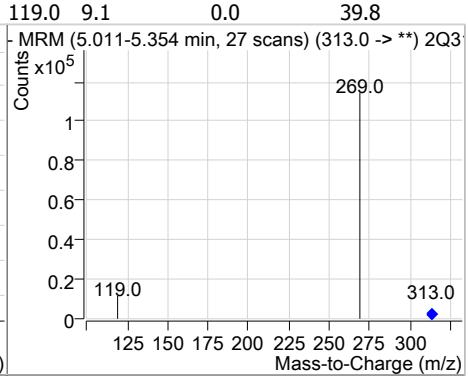




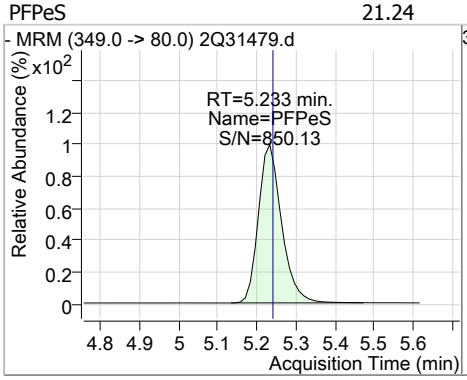
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.38	5.12	0.06	84953	313.0 -> 119.0	9.1	0.0	39.8

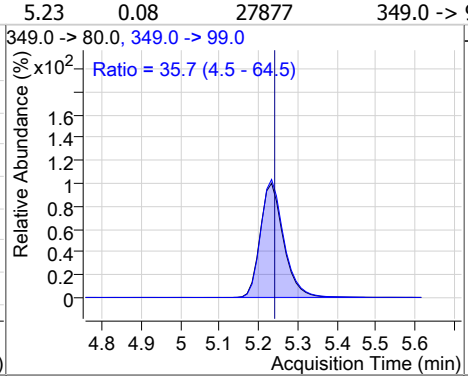


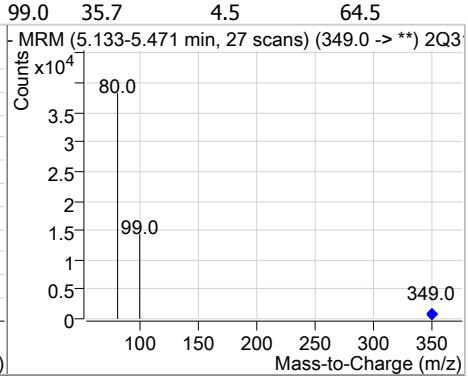




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.24	5.23	0.08	27877	349.0 -> 99.0	35.7	4.5	64.5

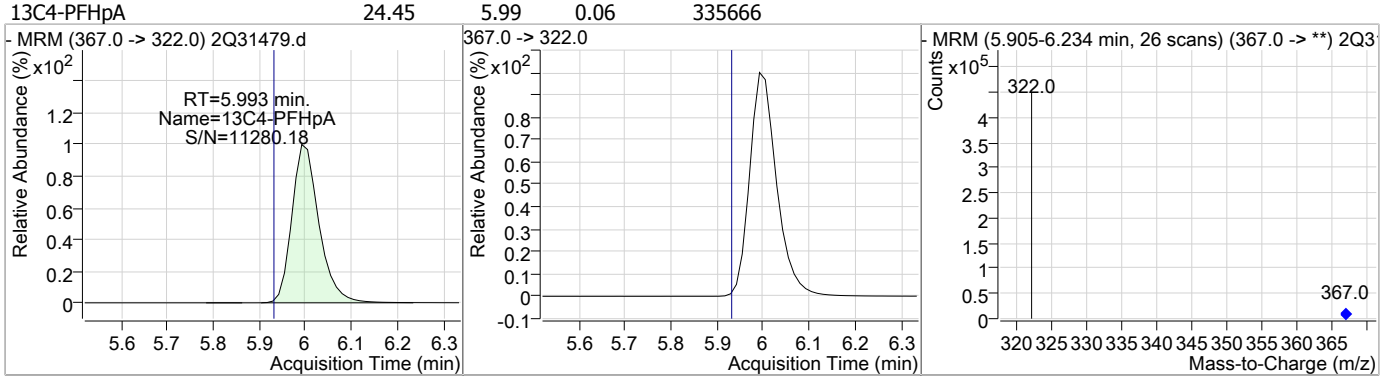




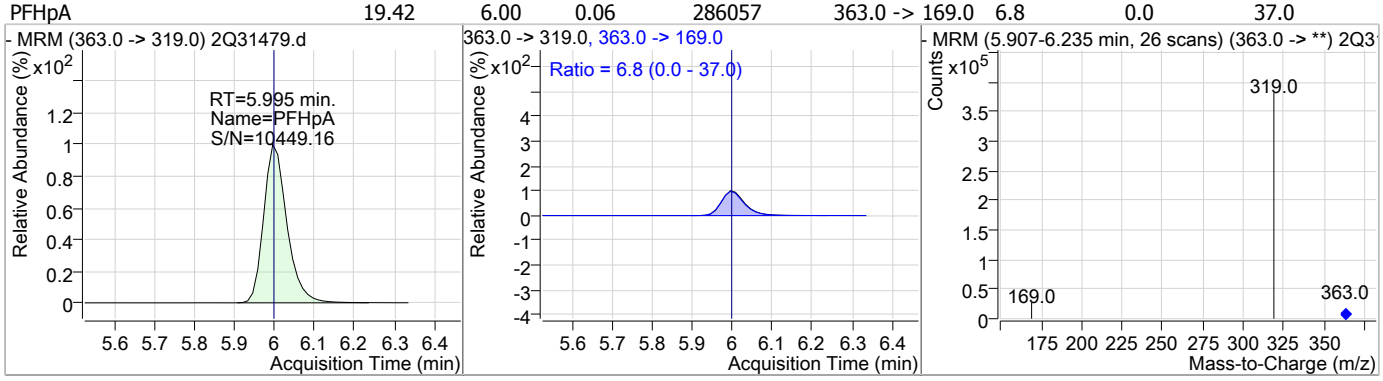


Perfluorinated Compounds by LC/MS/MS

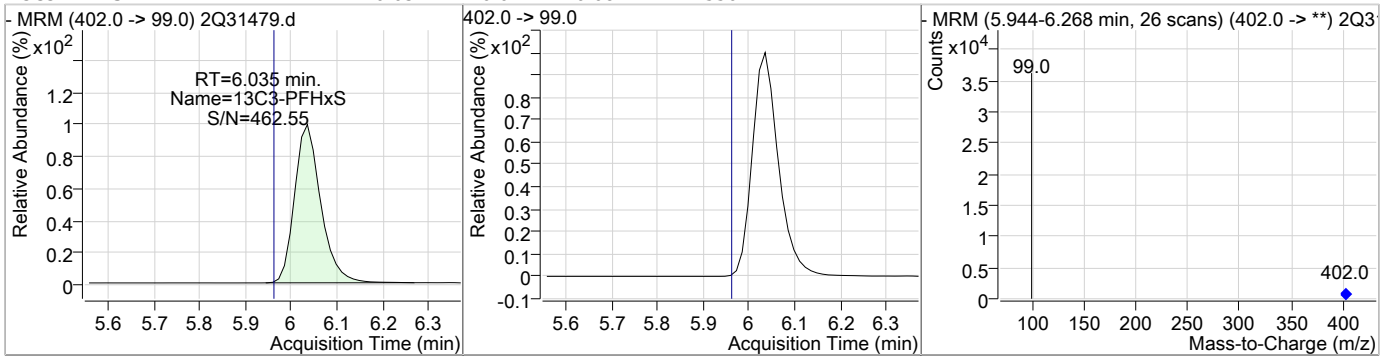
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.45	5.99	0.06	335666				



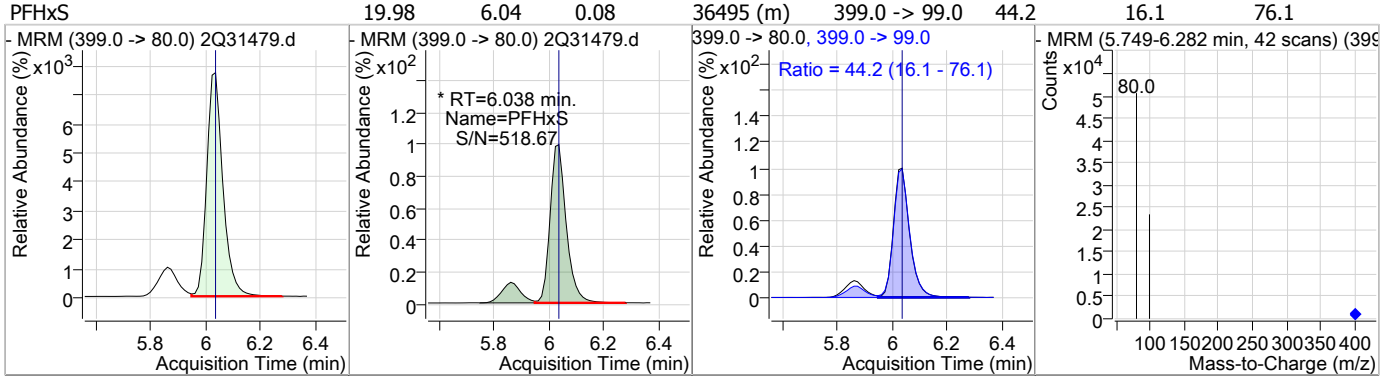
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.42	6.00	0.06	286057	363.0 -> 169.0	6.8	0.0	37.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.03	6.04	0.08	25502				

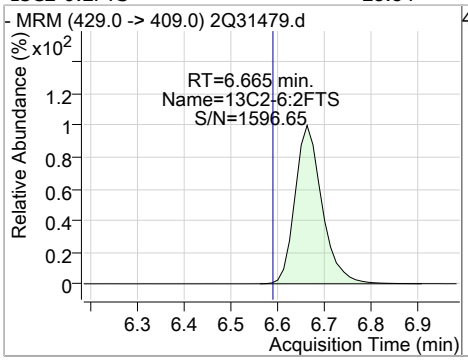


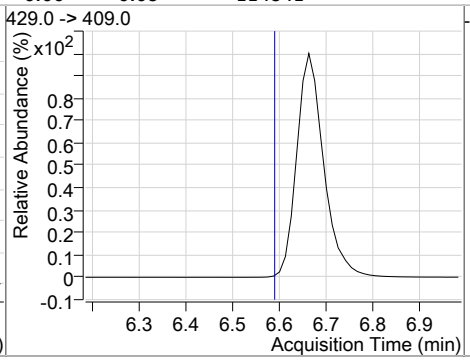
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.98	6.04	0.08	36495 (m)	399.0 -> 99.0	44.2	16.1	76.1

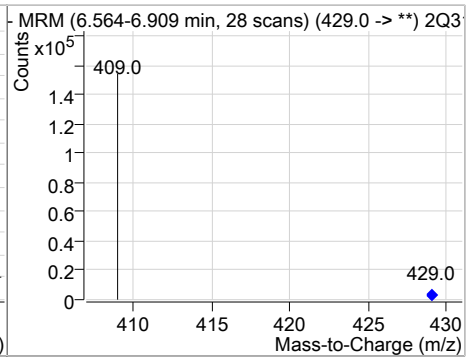


Perfluorinated Compounds by LC/MS/MS

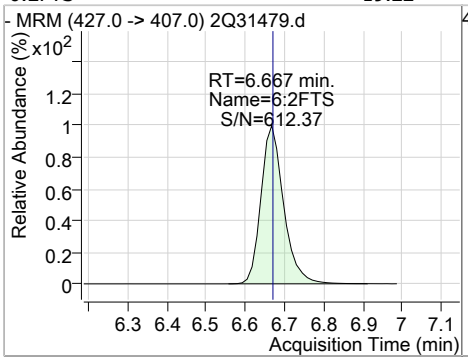
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	28.84	6.66	0.08	114841				

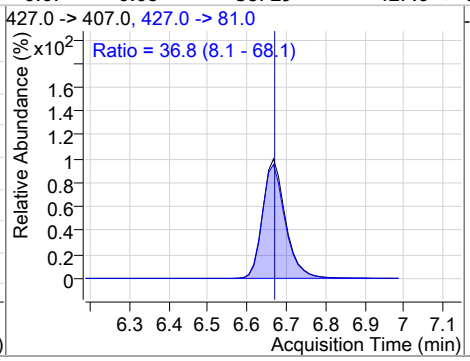


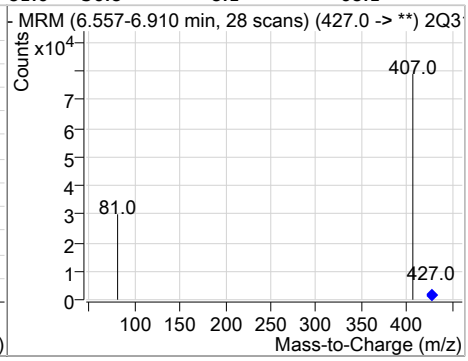




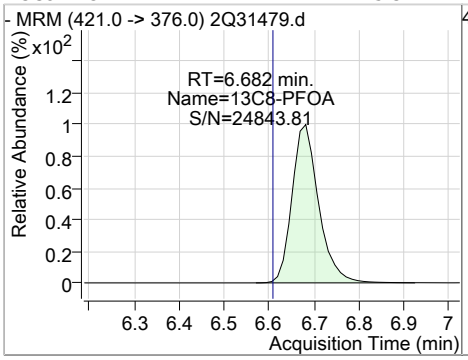
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.22	6.67	0.08	58729	427.0 -> 81.0	36.8	8.1	68.1

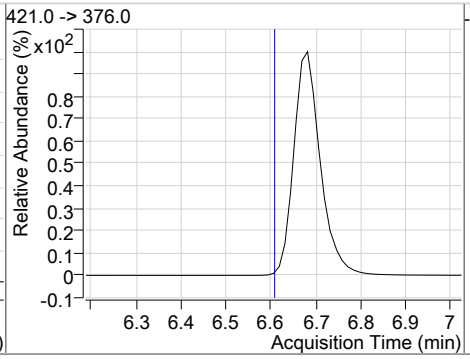


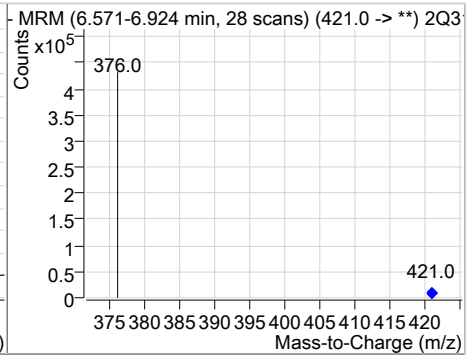




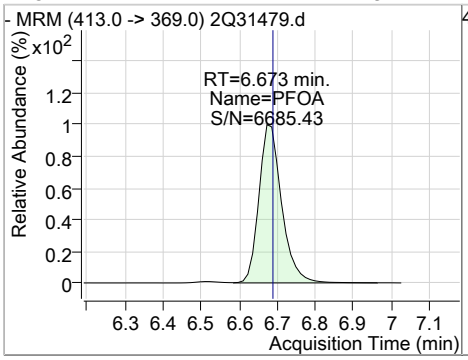
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.34	6.68	0.08	325053				

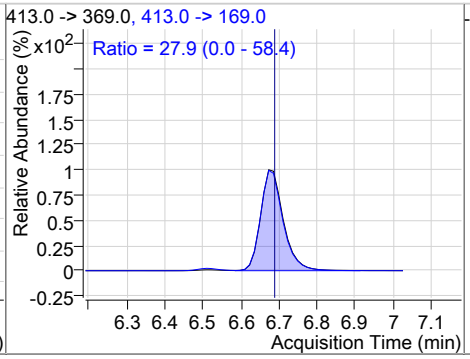


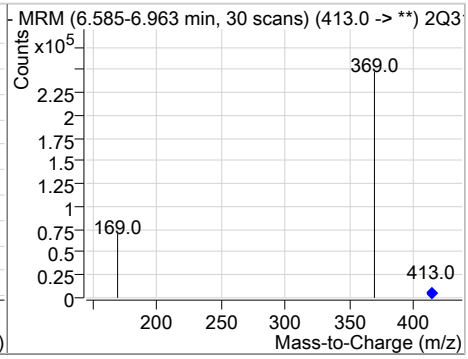




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.71	6.67	0.06	185049	413.0 -> 169.0	27.9	0.0	58.4

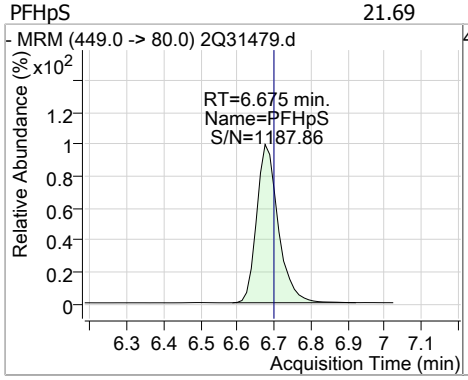


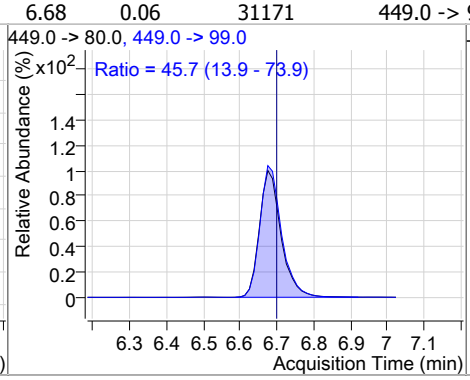


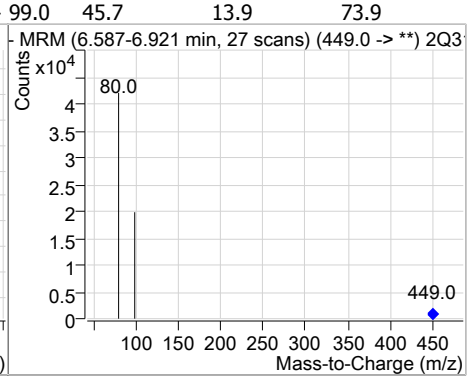


Perfluorinated Compounds by LC/MS/MS

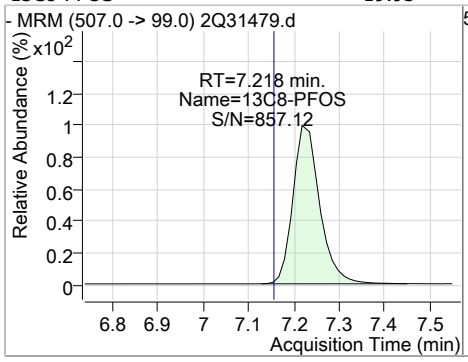
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.69	6.68	0.06	31171	449.0 -> 99.0	45.7	13.9	73.9

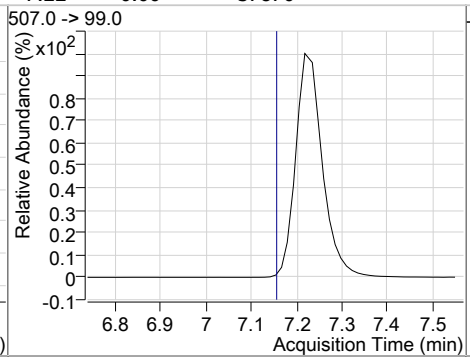


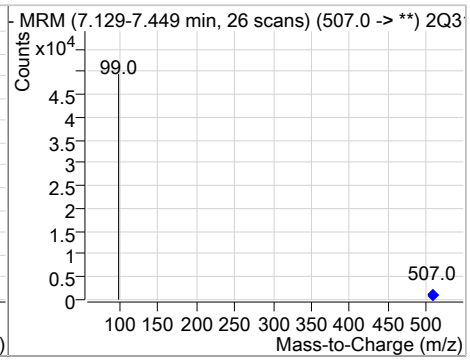




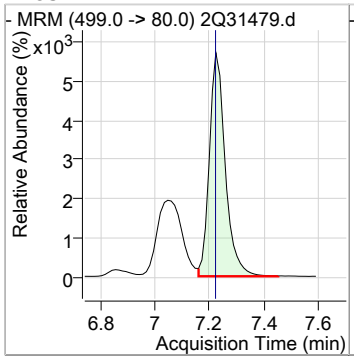
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.95	7.22	0.06	37870				

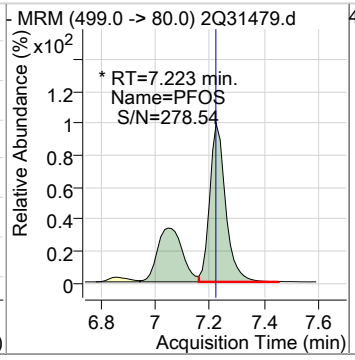


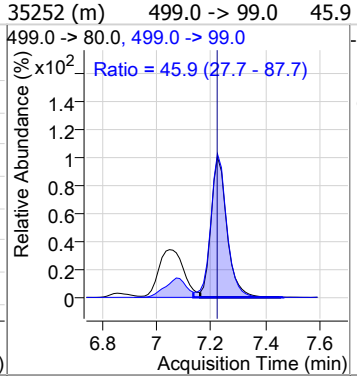


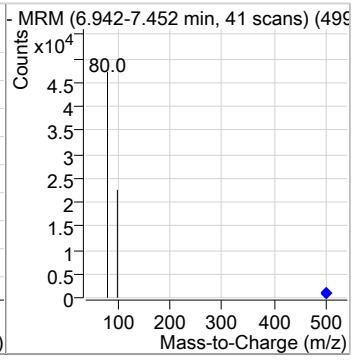


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.83	7.22	0.07	35252 (m)	499.0 -> 99.0	45.9	27.7	87.7

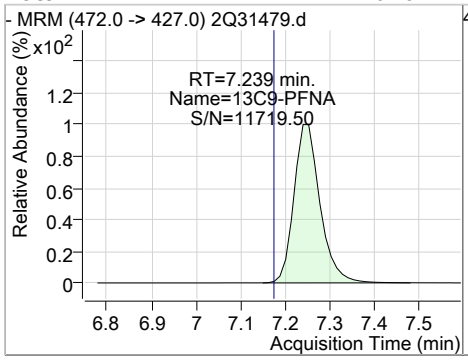


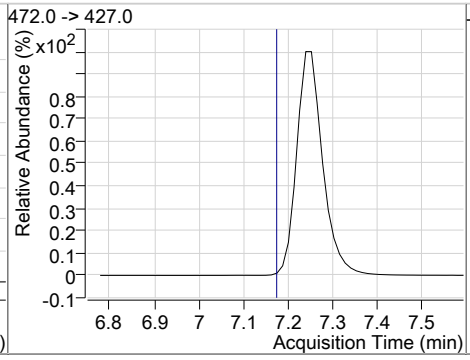


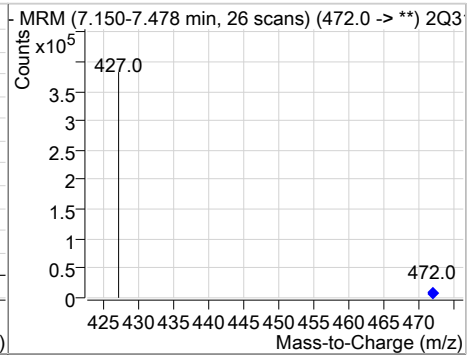




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	26.78	7.24	0.07	290960				

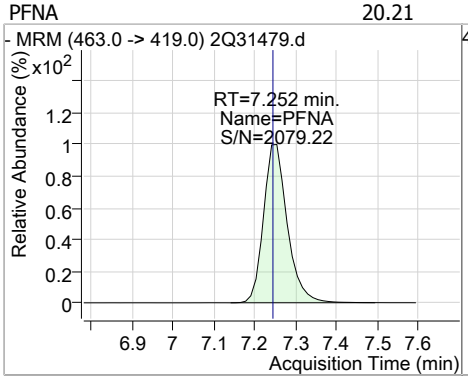


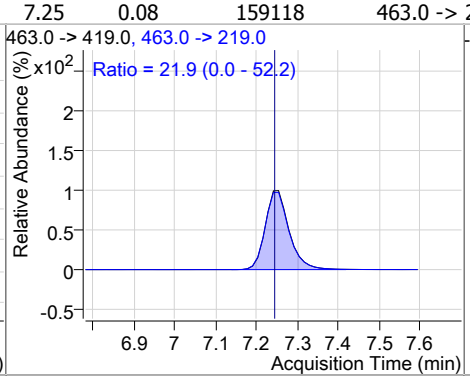


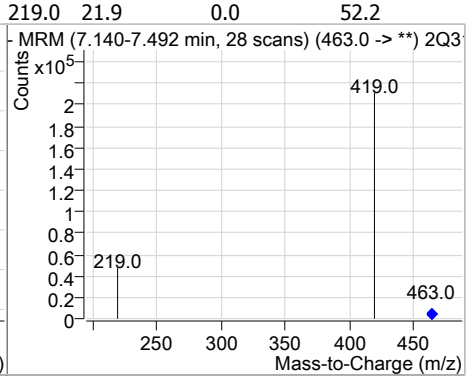


Perfluorinated Compounds by LC/MS/MS

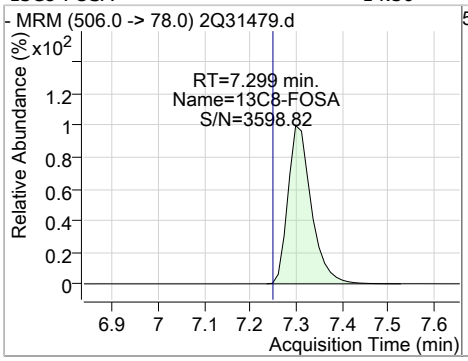
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.21	7.25	0.08	159118	463.0 -> 219.0	21.9	0.0	52.2

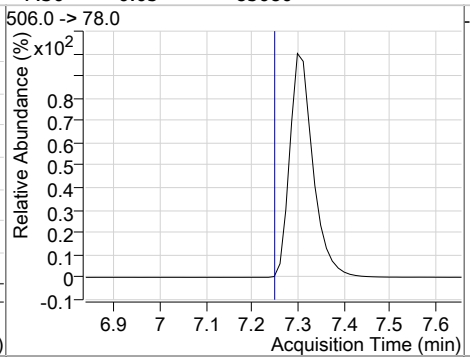


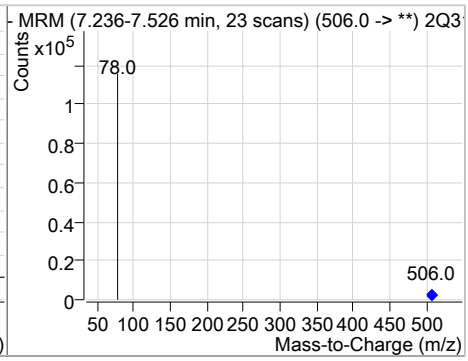




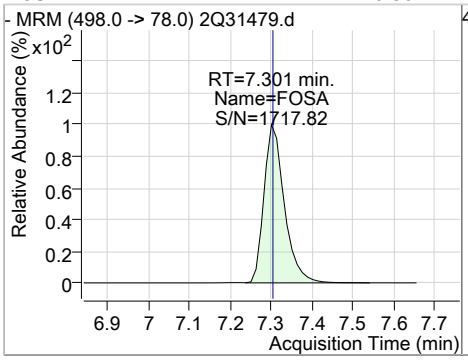
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.56	7.30	0.05	85680				

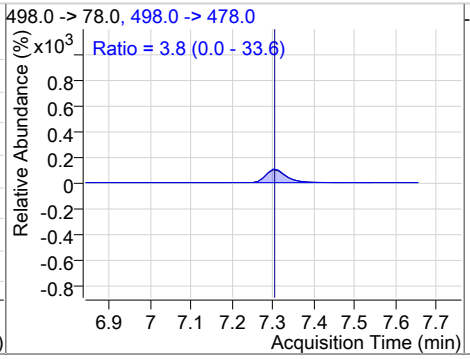


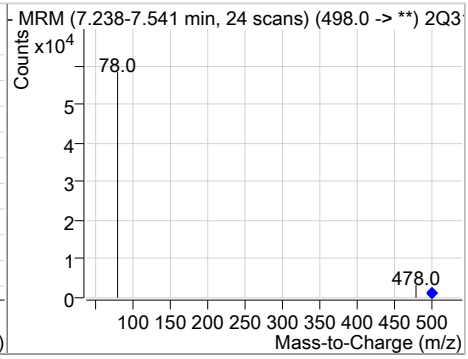




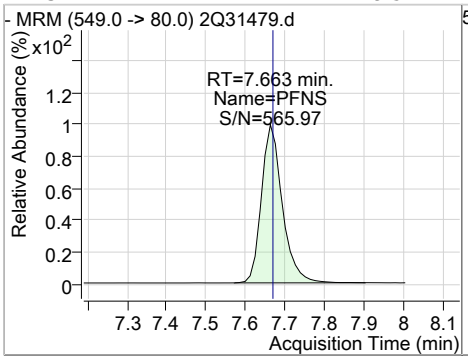
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.30	7.30	0.05	43337	498.0 -> 478.0	3.8	0.0	33.6

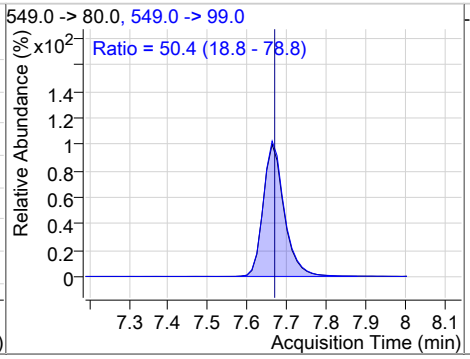


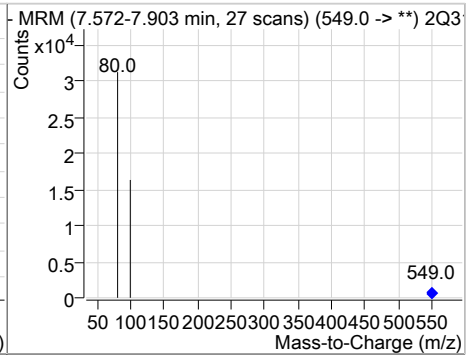




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.54	7.66	0.07	23013	549.0 -> 99.0	50.4	18.8	78.8

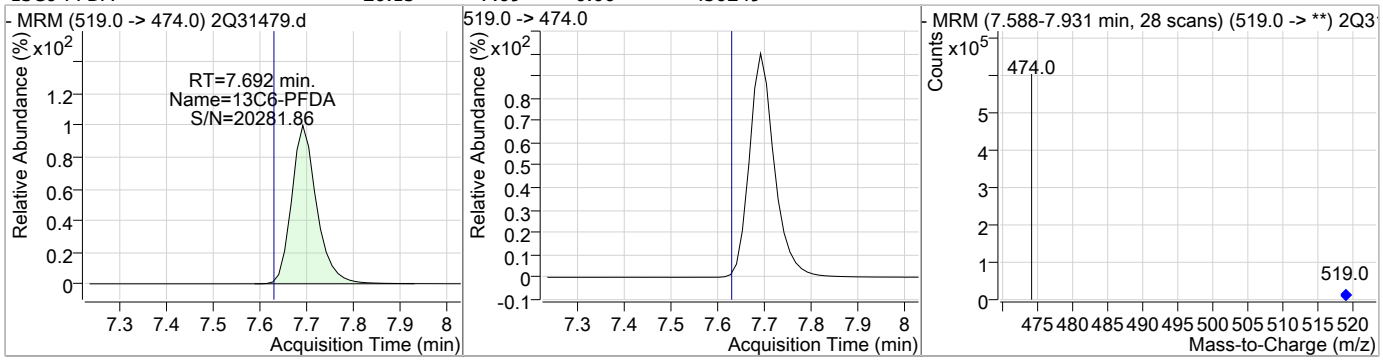




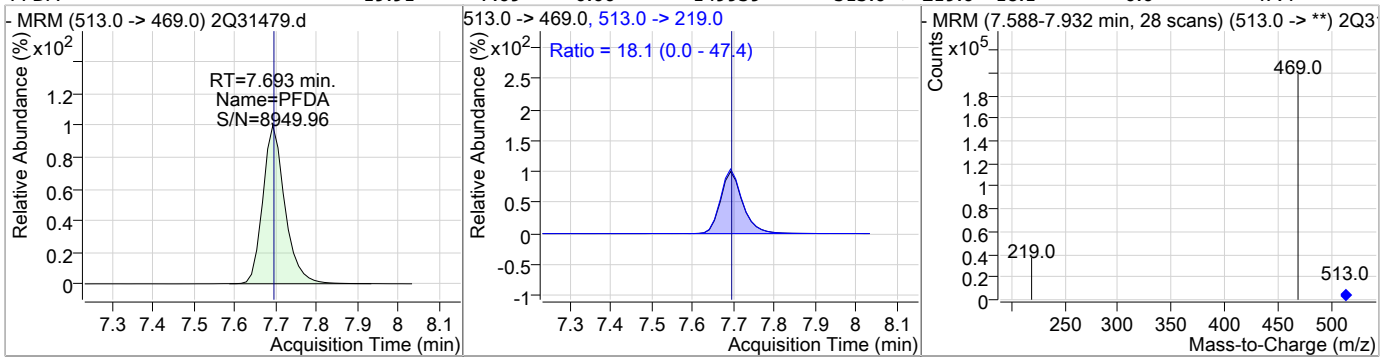


Perfluorinated Compounds by LC/MS/MS

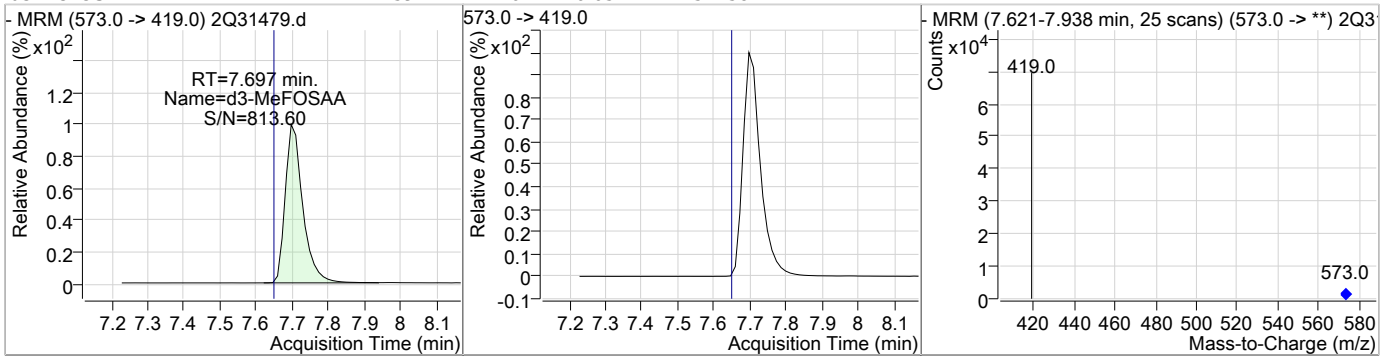
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	26.15	7.69	0.06	456249				



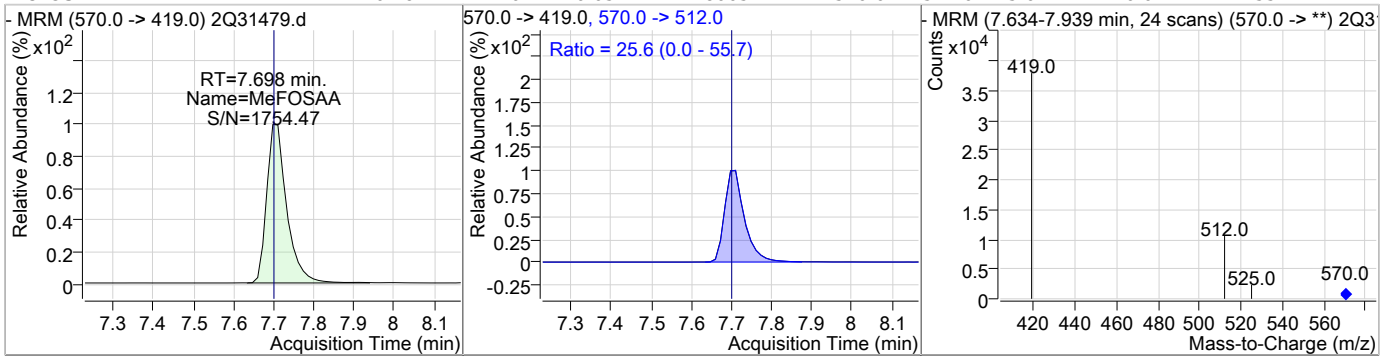
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.91	7.69	0.06	149939	513.0 -> 219.0	18.1	0.0	47.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.59	7.70	0.05	51258				

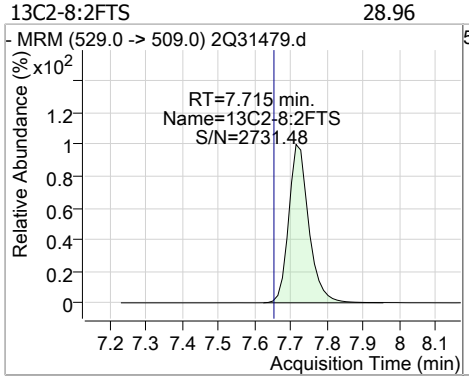


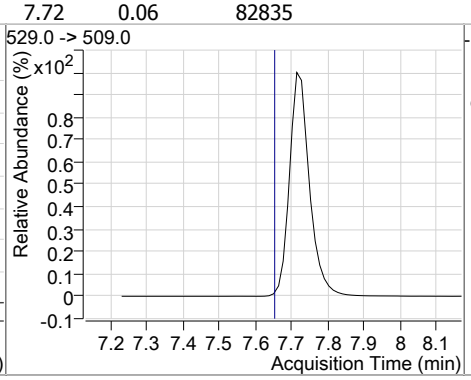
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.18	7.70	0.05	28065	570.0 -> 512.0	25.6	0.0	55.7

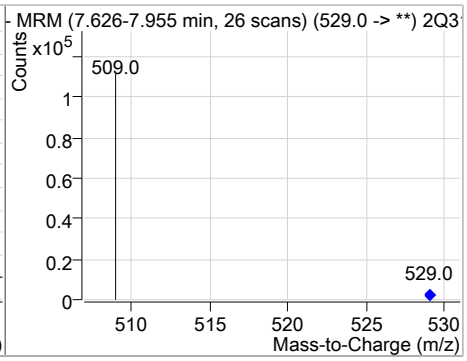


Perfluorinated Compounds by LC/MS/MS

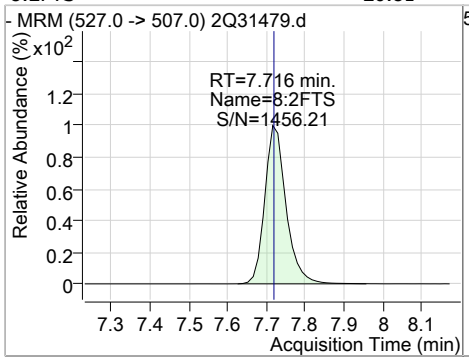
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	28.96	7.72	0.06	82835				

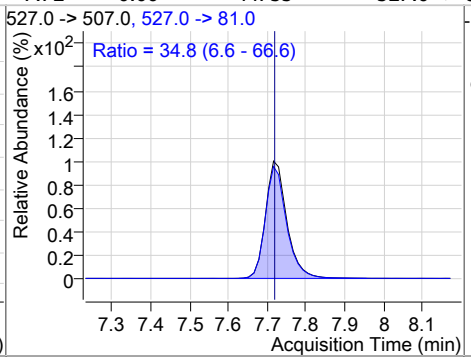


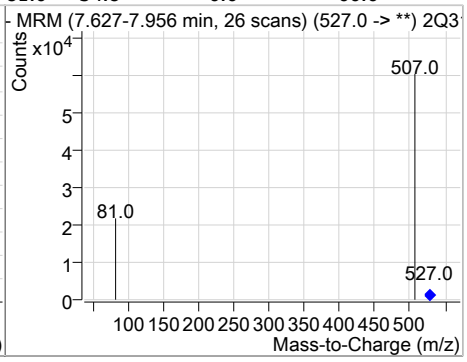




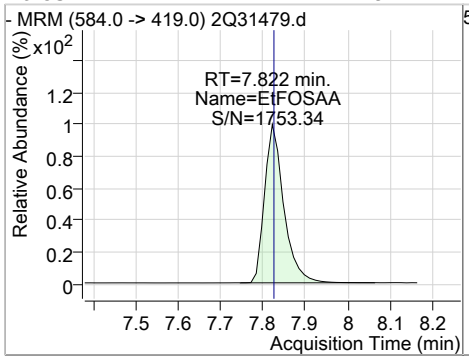
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.81	7.72	0.06	44755	527.0 -> 81.0	34.8	6.6	66.6

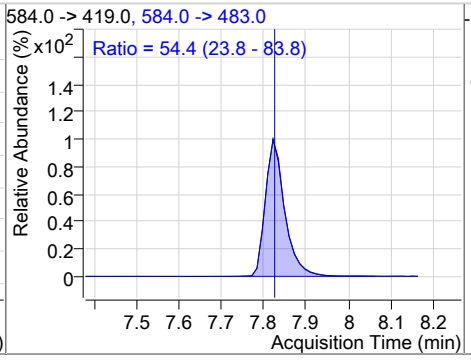


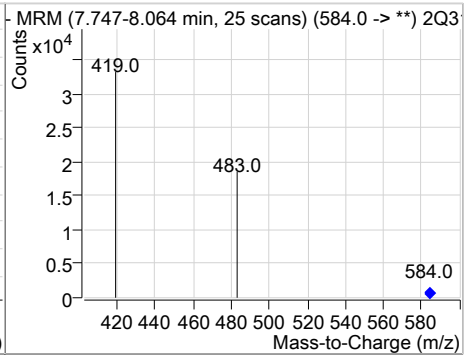




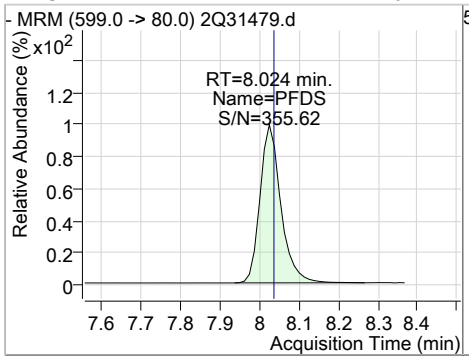
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.11	7.82	0.05	24175	584.0 -> 483.0	54.4	23.8	83.8

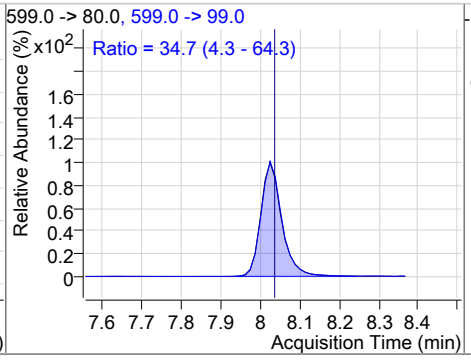


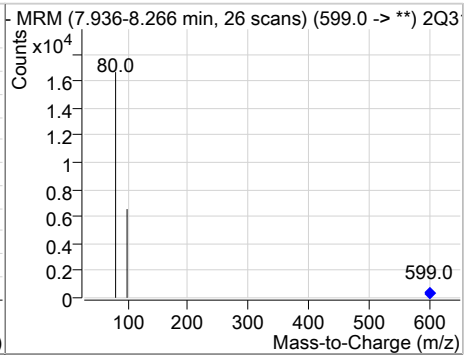




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.04	8.02	0.06	11793	599.0 -> 99.0	34.7	4.3	64.3

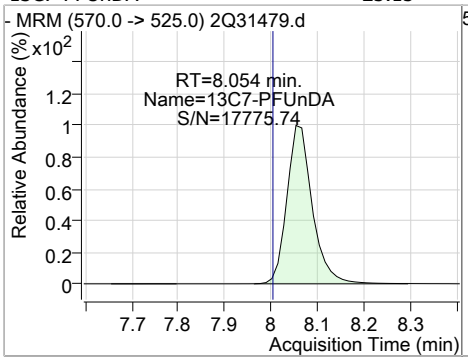


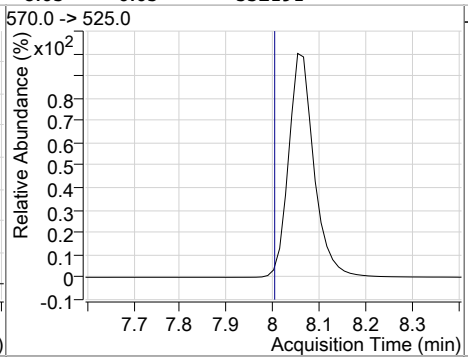


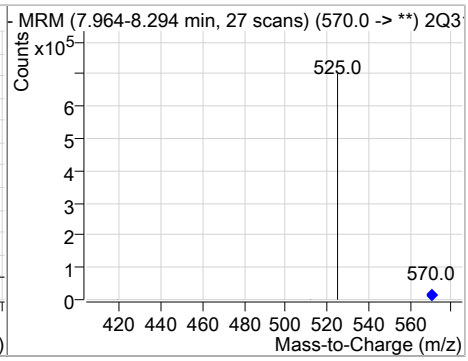


Perfluorinated Compounds by LC/MS/MS

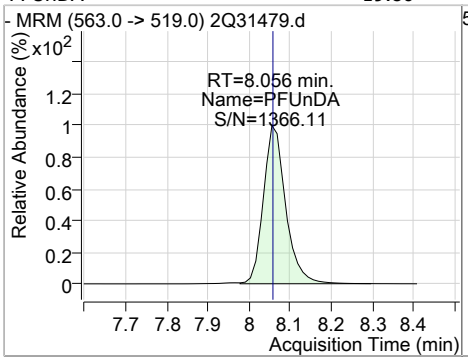
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	25.15	8.05	0.05	532191				

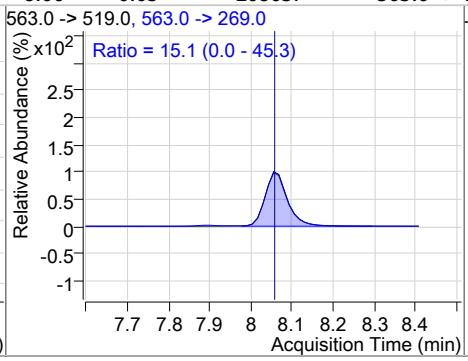


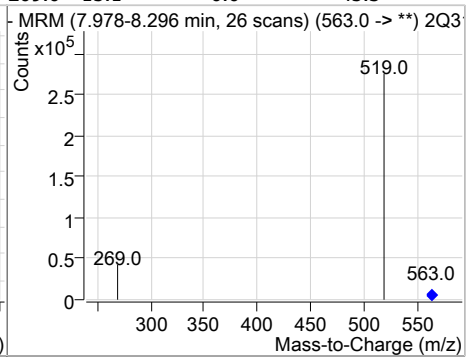




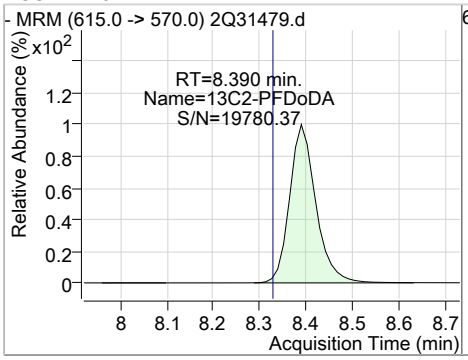
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.80	8.06	0.05	208637	563.0 -> 269.0	15.1	0.0	45.3

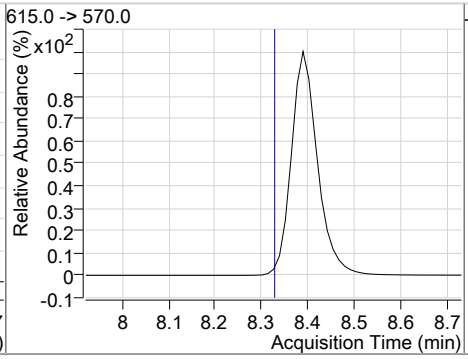


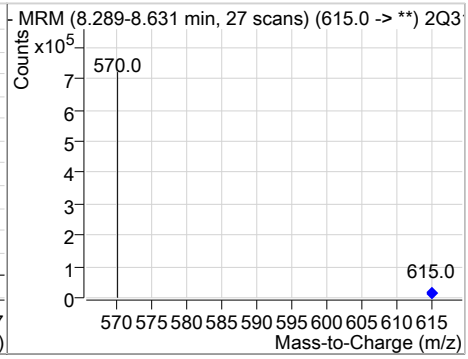




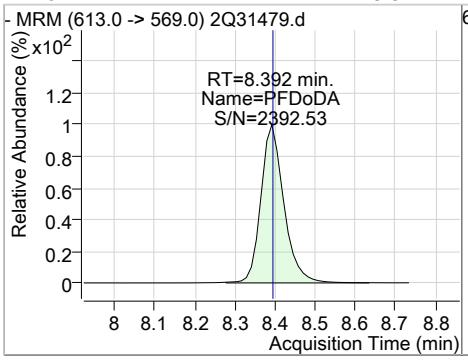
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.17	8.39	0.06	557954				

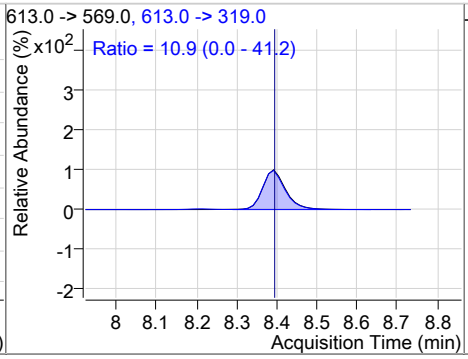


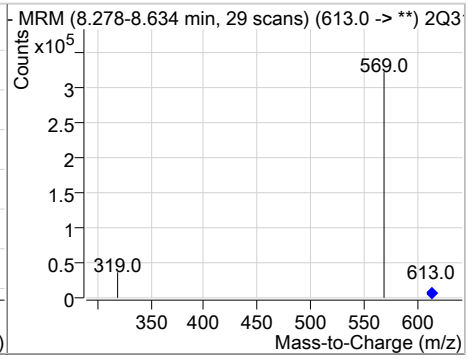




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.92	8.39	0.06	252424	613.0 -> 319.0	10.9	0.0	41.2

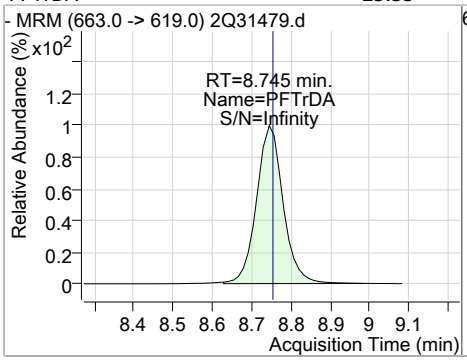


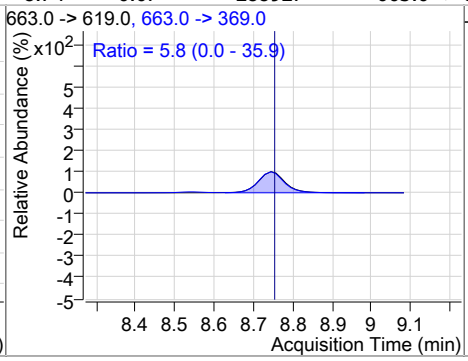


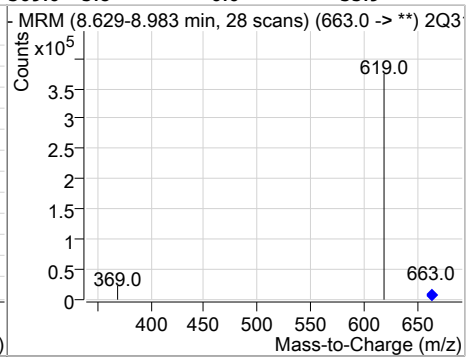


Perfluorinated Compounds by LC/MS/MS

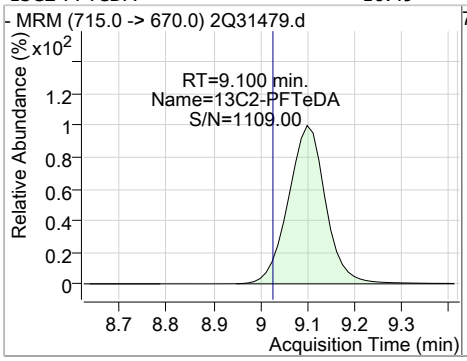
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.35	8.74	0.07	288927	663.0 -> 369.0	5.8	0.0	35.9

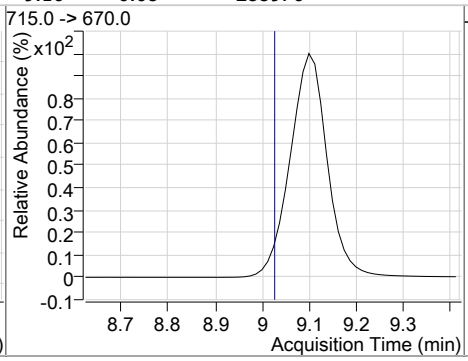


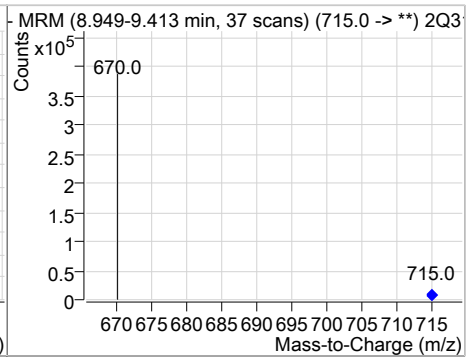




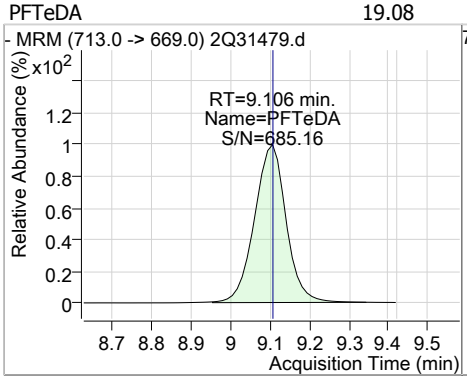
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.49	9.10	0.08	288970				

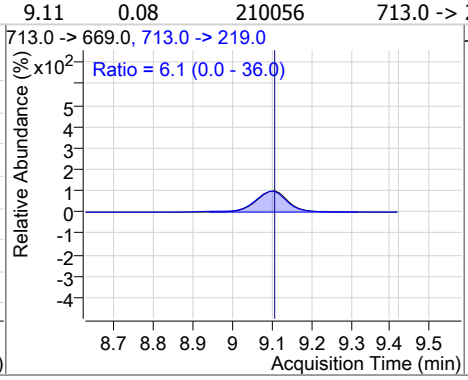


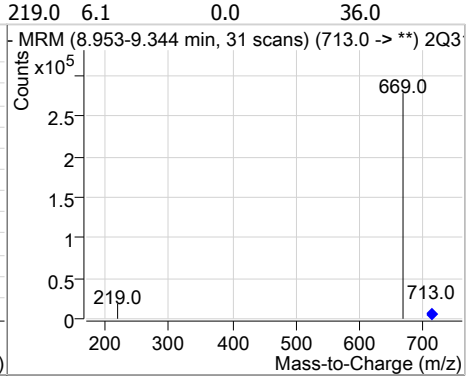




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.08	9.11	0.08	210056	713.0 -> 219.0	6.1	0.0	36.0







Manual Integration Approval Summary

Sample Number: OP75639-BS
Lab FileID: 2Q31479.D
Injection Time: 06/26/19 22:56
Method: EPA 537M BY ID
Analyst approved: 06/27/19 14:35 Nancy Saunders
Supervisor approved: 06/27/19 17:05 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31234.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 11:39:06 PM
Sample Name : op75580-ms
Vial : Vial 53
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

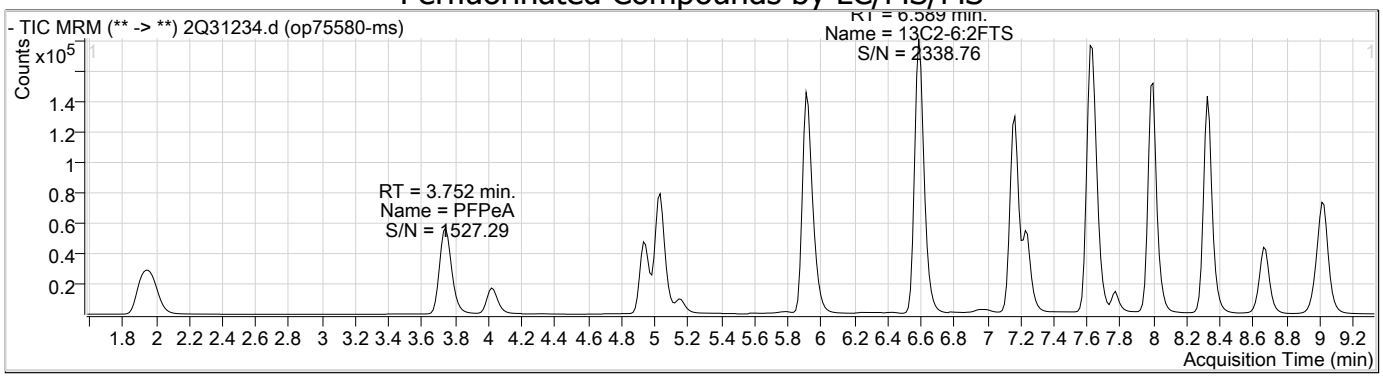
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.940	217.0 -> 172.0	198773	20.00	µg/L	-0.050
M5-PFPeA	3.749	268.0 -> 223.0	160499	20.00	µg/L	-0.051
M5-PFHxA	5.038	318.0 -> 273.0	245630	20.00	µg/L	-0.051
M4-PFHpA	5.917	367.0 -> 322.0	298860	20.00	µg/L	-0.051
M8-PFOA	6.593	421.0 -> 376.0	297396	20.00	µg/L	-0.041
M9-PFNA	7.171	472.0 -> 427.0	276831	20.00	µg/L	-0.030
M6-PFDA	7.627	519.0 -> 474.0	408684	20.00	µg/L	-0.014
M7-PFUnDA	8.001	570.0 -> 525.0	390656	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	355706	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	212329	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	105870	20.00	µg/L	-0.027
M3-PFBS	4.017	302.0 -> 99.0	27757	20.00	µg/L	-0.063
M3-PFHxS	5.960	402.0 -> 99.0	23065	20.00	µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	32644	20.00	µg/L	-0.018
M2-4:2FTS	4.934	329.0 -> 309.0	112713	20.00	µg/L	-0.063
M2-6:2FTS	6.589	429.0 -> 409.0	108652	20.00	µg/L	-0.026
M2-8:2FTS	7.651	529.0 -> 509.0	76555	20.00	µg/L	-0.014
M3-MeFOSAA	7.646	573.0 -> 419.0	38660	20.00	µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.934	329.0 -> 309.0	112670	23.22	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.1%		
13C2-6:2FTS	6.589	429.0 -> 409.0	108582	27.27	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 136.4%		
13C2-8:2FTS	7.651	529.0 -> 509.0	76557	26.77	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 133.8%		
13C2-PFDoDA	8.326	615.0 -> 570.0	355309	15.39	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%		
13C2-PFTeDA	9.024	715.0 -> 670.0	211006	12.04	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%		
13C3-PFBS	4.017	302.0 -> 99.0	27759	18.27	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C3-PFHxS	5.960	402.0 -> 99.0	23055	18.11	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFBA	1.940	217.0 -> 172.0	197902	19.14	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C4-PFHpA	5.917	367.0 -> 322.0	298620	21.75	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C5-PFHxA	5.038	318.0 -> 273.0	245418	20.28	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C5-PFPeA	3.749	268.0 -> 223.0	160401	19.98	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C6-PFDA	7.627	519.0 -> 474.0	408506	23.42	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

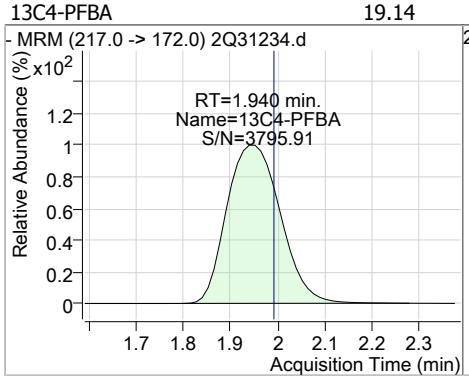
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.1%			
13C7-PFUnDA	8.001	570.0 -> 525.0	390943	18.48	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C8-FOSA	7.247	506.0 -> 78.0	105887	18.00	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
13C8-PFOA	6.593	421.0 -> 376.0	297379	23.18	µg/L		-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.9%			
13C8-PFOS	7.154	507.0 -> 99.0	32628	17.19	µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
13C9-PFNA	7.171	472.0 -> 427.0	276783	25.47	µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.4%			
d3-MeFOSAA	7.646	573.0 -> 419.0	38668	18.55	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.936	327.0 -> 307.0	61551	19.16	µg/L		100
6:2FTS	6.579	427.0 -> 407.0	53363	18.45	µg/L		99
8:2FTS	7.652	527.0 -> 507.0	39318	19.79	µg/L		98
EtFOSAA	7.772	584.0 -> 419.0	16072	16.87	µg/L		100
FOSA	7.236	498.0 -> 78.0	52857	20.02	µg/L		99
MeFOSAA	7.647	570.0 -> 419.0	20253	19.33	µg/L		100
PFBA	1.948	213.0 -> 169.0	33052	19.43	µg/L		100
PFBS	4.021	299.0 -> 80.0	37555	19.72	µg/L		99
PFDA	7.628	513.0 -> 469.0	127131	18.85	µg/L		98
PFDoDA	8.328	613.0 -> 569.0	158928	19.63	µg/L		100
PFDS	7.961	599.0 -> 80.0	6375	10.68	µg/L		99
PFHpA	5.920	363.0 -> 319.0	251446	19.17	µg/L		99
PFHpS	6.600	449.0 -> 80.0	26872	20.75	µg/L		97
PFHxA	5.040	313.0 -> 269.0	71147	19.70	µg/L		99
PFHxS	5.950	399.0 -> 80.0	32851	19.95	µg/L	m	97
PFNA	7.172	463.0 -> 419.0	148370	19.82	µg/L		100
PFNS	7.598	549.0 -> 80.0	15041	14.81	µg/L		98
PFOA	6.598	413.0 -> 369.0	165464	19.28	µg/L		99
PFOS	7.144	499.0 -> 80.0	29309	18.15	µg/L	m	86
PFPeA	3.752	263.0 -> 219.0	128989	19.30	µg/L		100
PFPeS	5.157	349.0 -> 80.0	25287	20.70	µg/L		99
PFTeDA	9.016	713.0 -> 669.0	152829	18.88	µg/L		100
PFTrDA	8.666	663.0 -> 619.0	183194	21.86	µg/L		100
PFUnDA	8.003	563.0 -> 519.0	148228	19.17	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

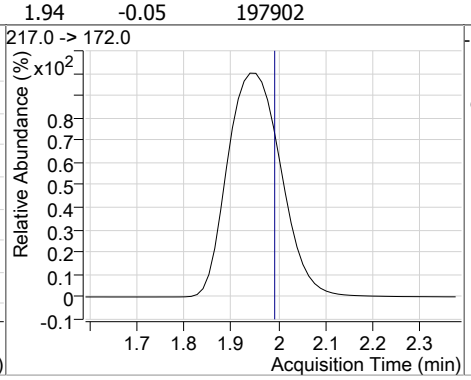
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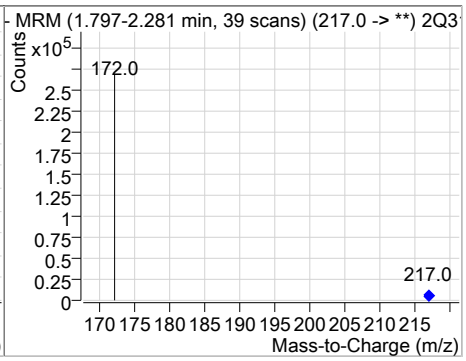
Perfluorinated Compounds by LC/MS/MS



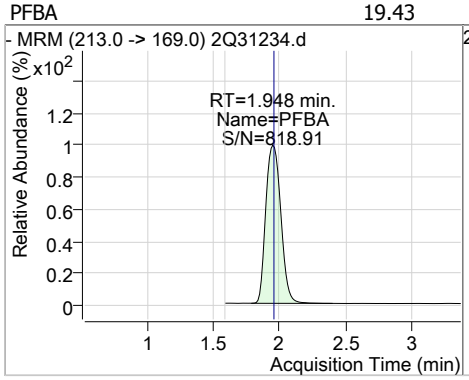
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.14	1.94	-0.05	197902				

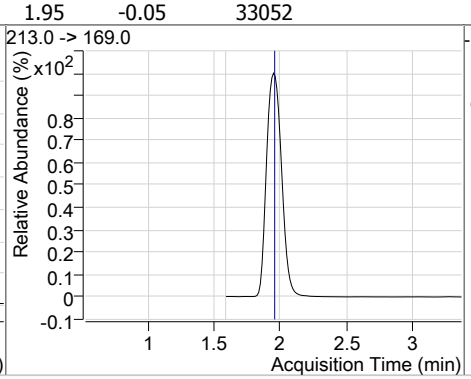


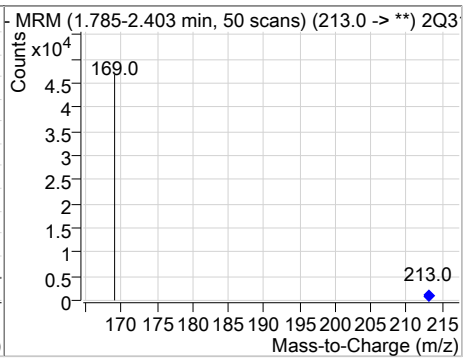




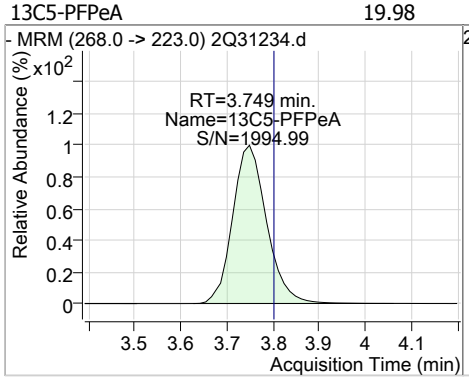
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.43	1.95	-0.05	33052				

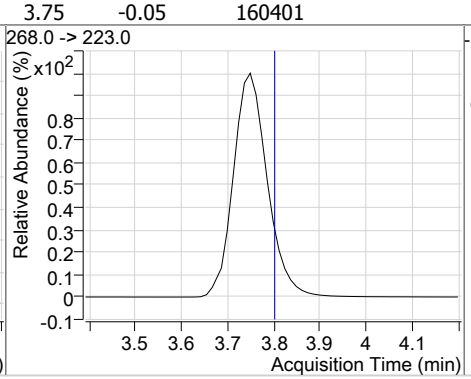


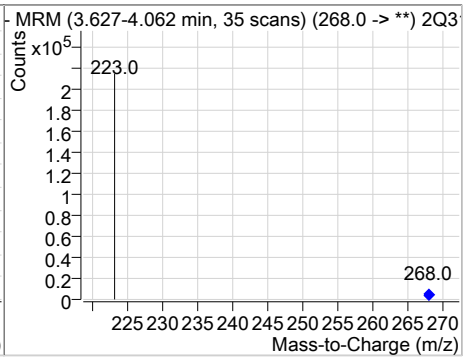




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.98	3.75	-0.05	160401				





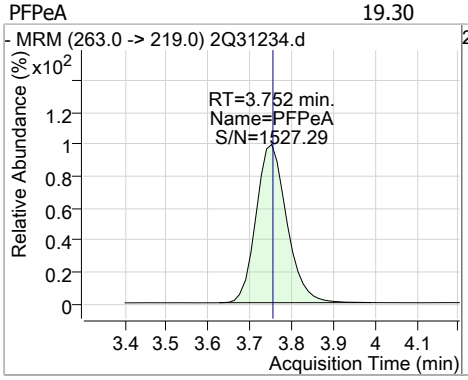


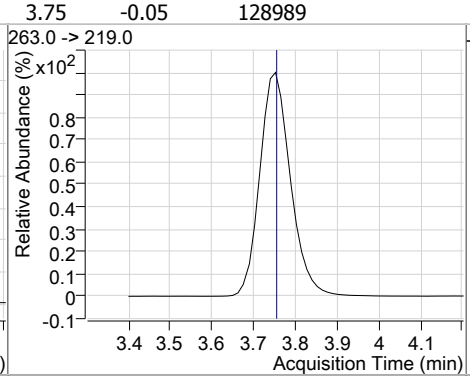
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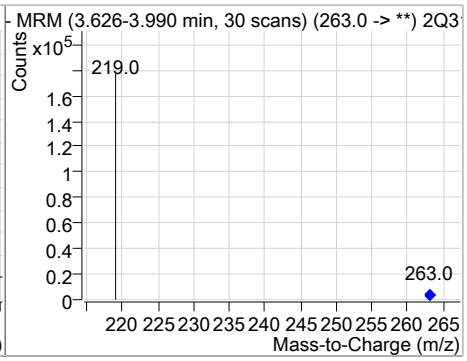
7

Perfluorinated Compounds by LC/MS/MS

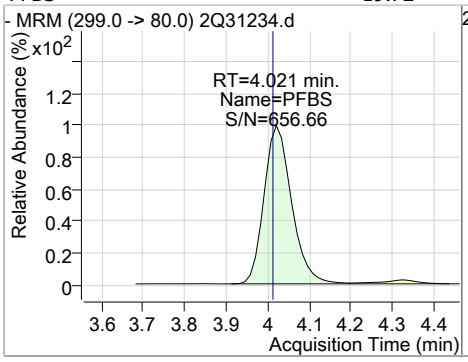
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.30	3.75	-0.05	128989				

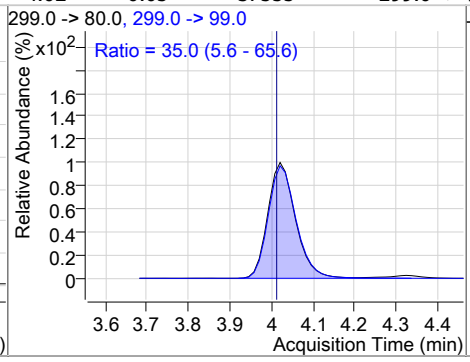


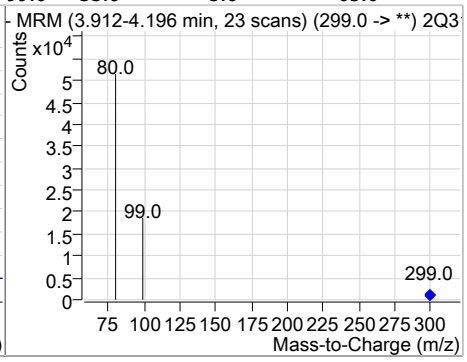




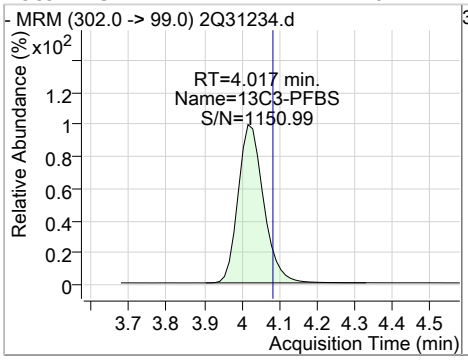
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.72	4.02	-0.05	37555	299.0 -> 99.0	35.0	5.6	65.6

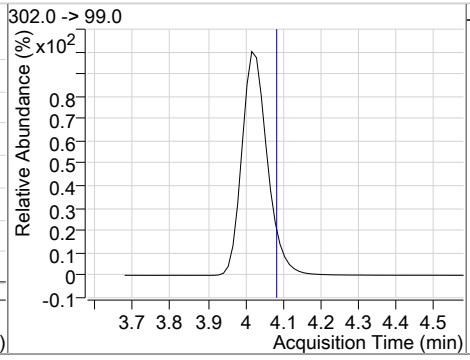


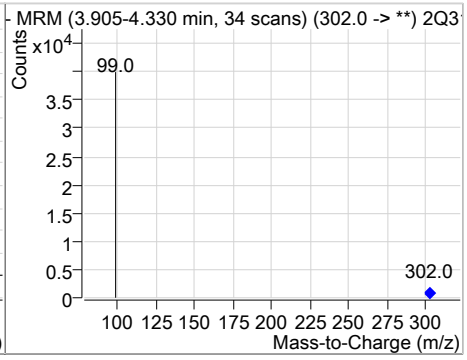




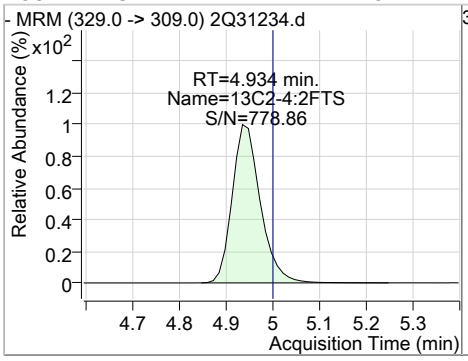
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.27	4.02	-0.06	27759				

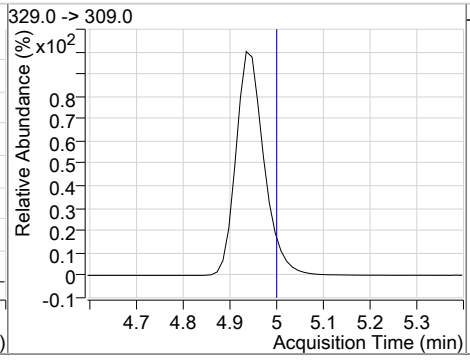


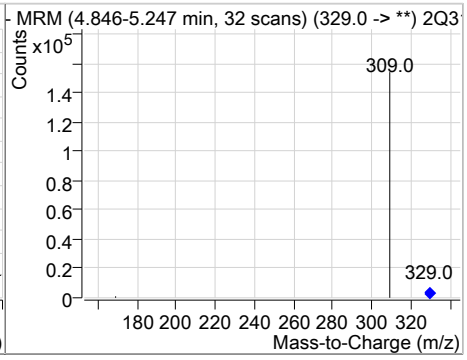




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.22	4.93	-0.06	112670				

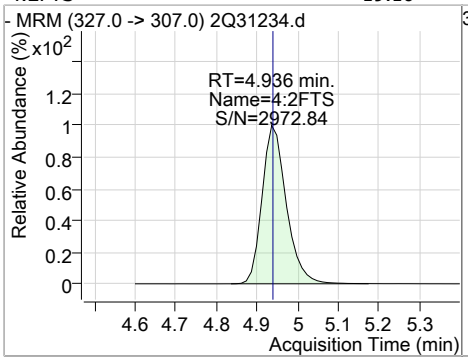


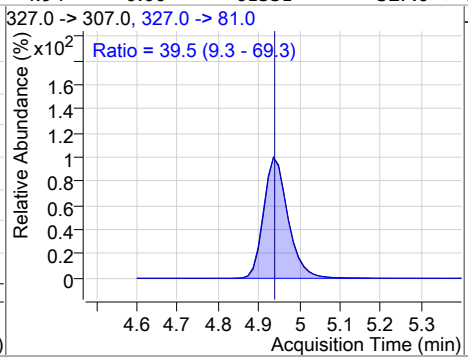


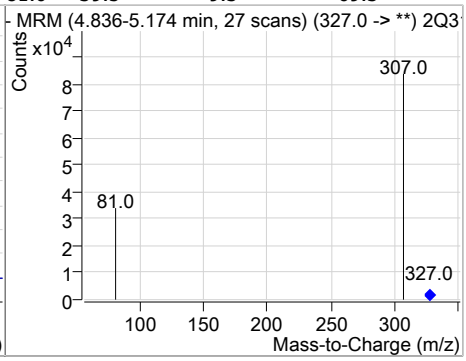


Perfluorinated Compounds by LC/MS/MS

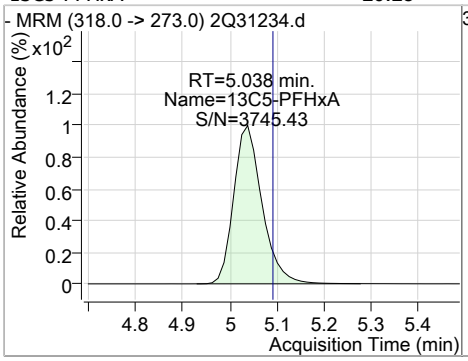
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.16	4.94	-0.06	61551	327.0 -> 81.0	39.5	9.3	69.3

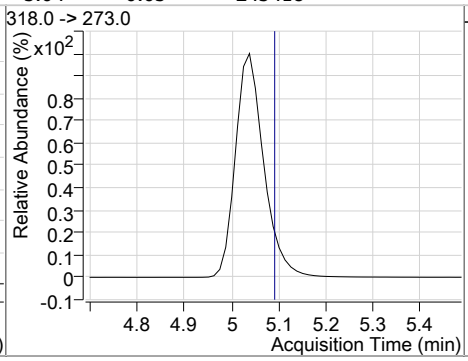


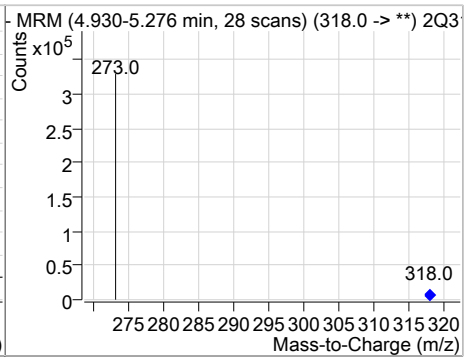




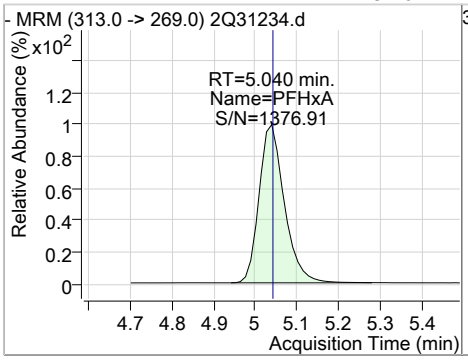
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.28	5.04	-0.05	245418				

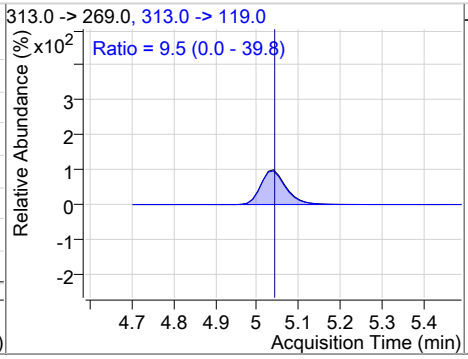


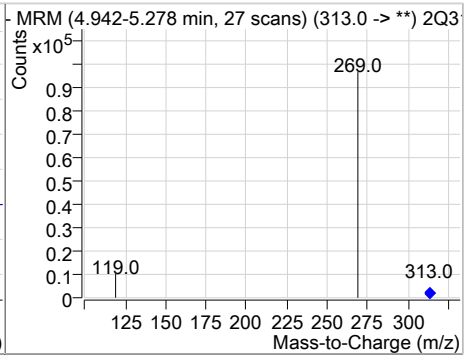




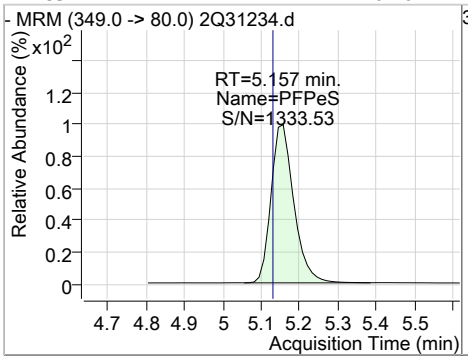
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.70	5.04	-0.05	71147	313.0 -> 119.0	9.5	0.0	39.8

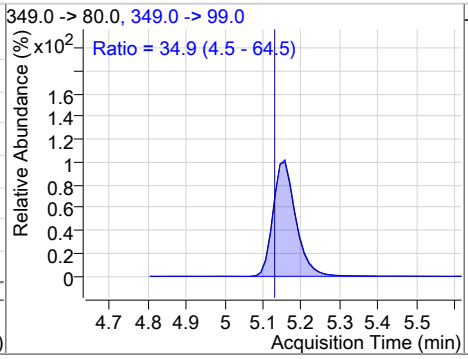


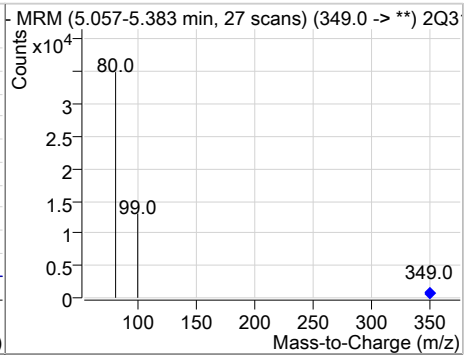




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.70	5.16	-0.05	25287	349.0 -> 99.0	34.9	4.5	64.5

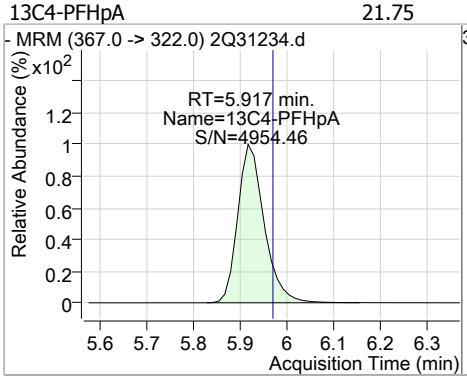


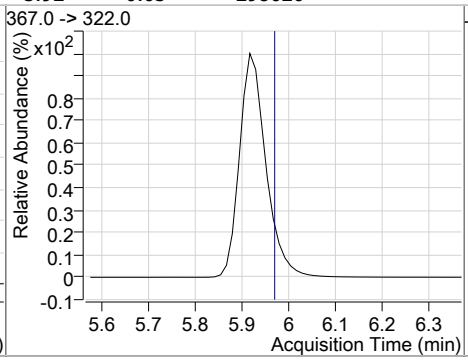


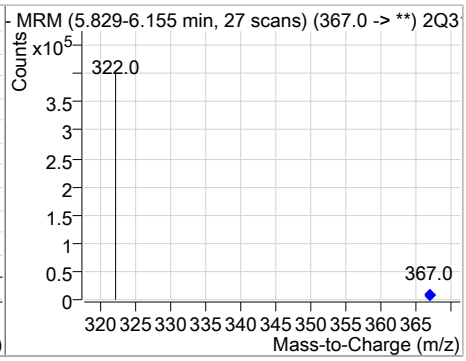


Perfluorinated Compounds by LC/MS/MS

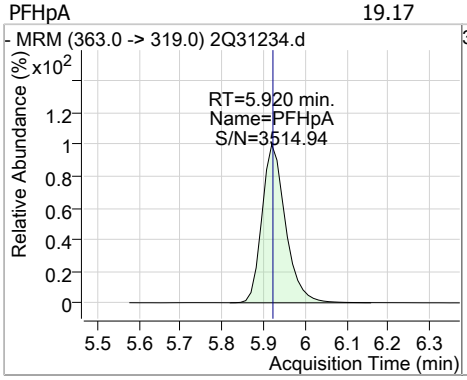
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.75	5.92	-0.05	298620				

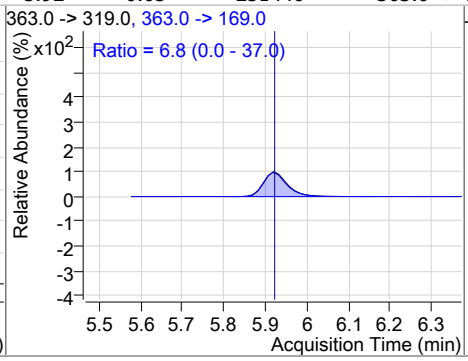


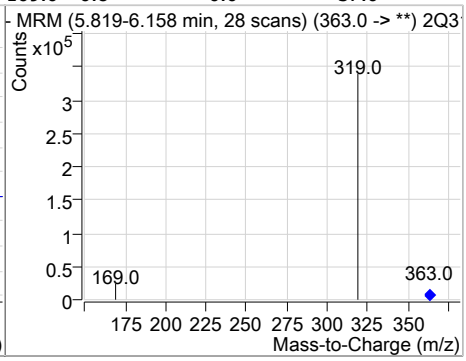




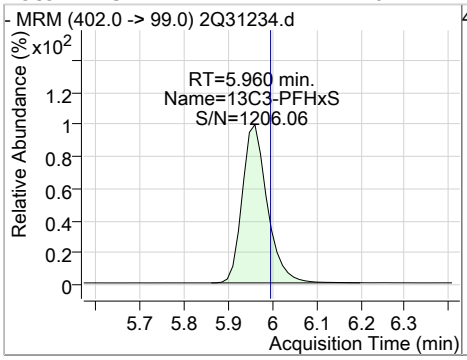
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.17	5.92	-0.05	251446	363.0 -> 169.0	6.8	0.0	37.0

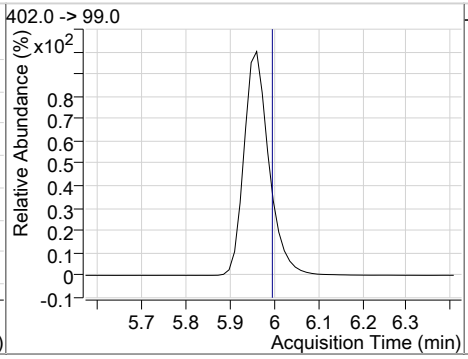


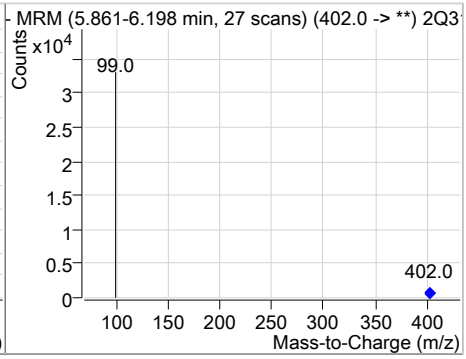




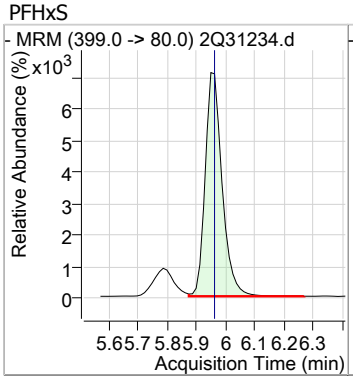
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.11	5.96	-0.04	23055				

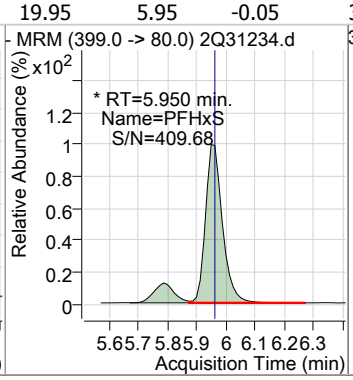


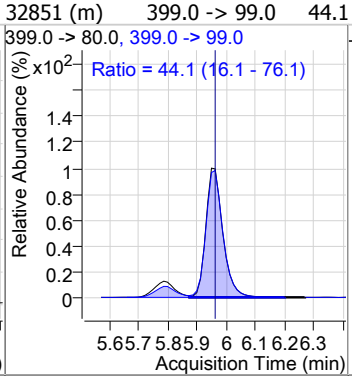


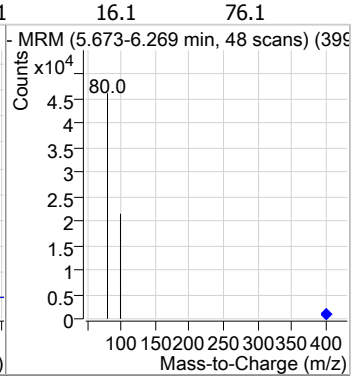


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.95	5.95	-0.05	32851 (m)	399.0 -> 99.0	44.1	16.1	76.1



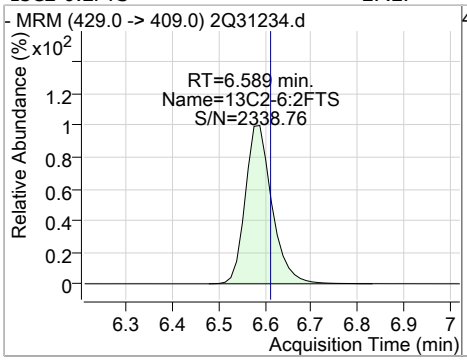


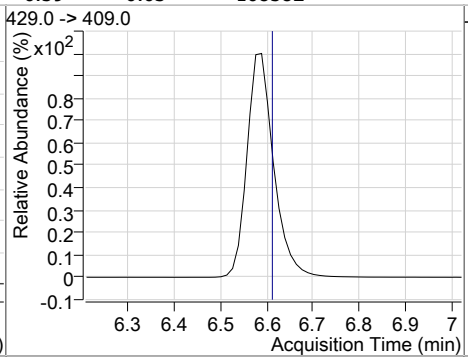


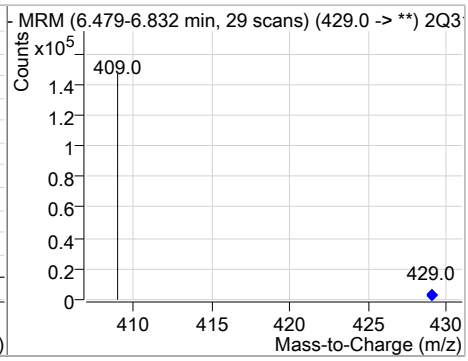


Perfluorinated Compounds by LC/MS/MS

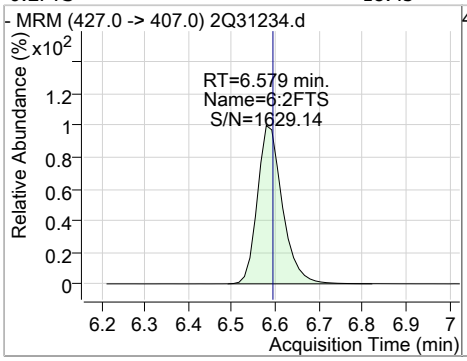
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	27.27	6.59	-0.03	108582				

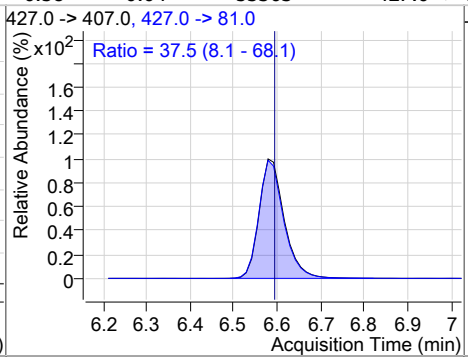


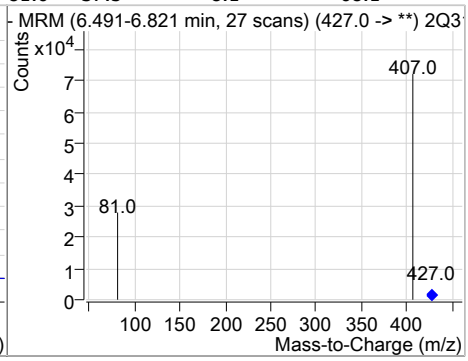




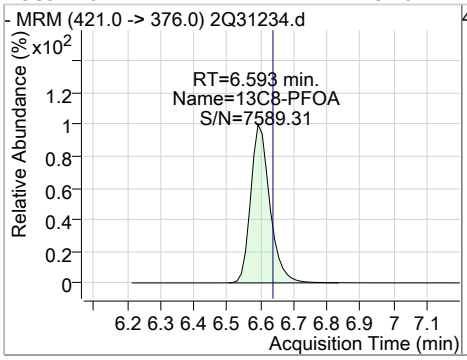
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.45	6.58	-0.04	53363	427.0 -> 81.0	37.5	8.1	68.1

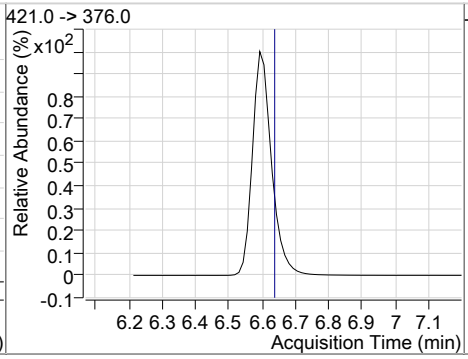


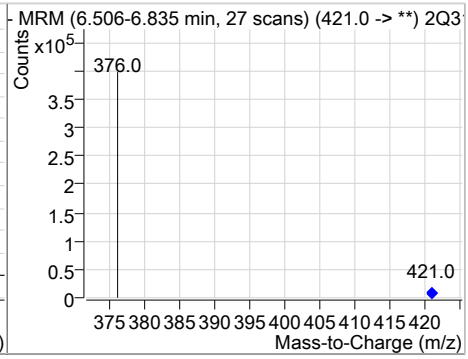




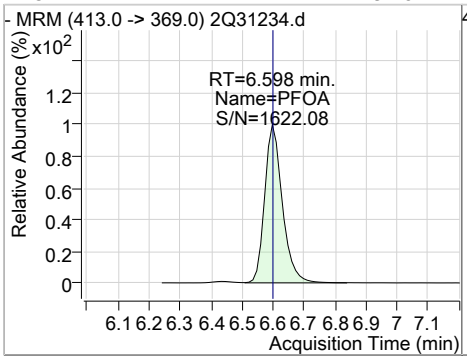
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.18	6.59	-0.04	297379				

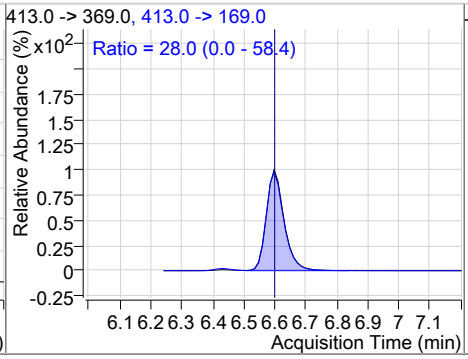


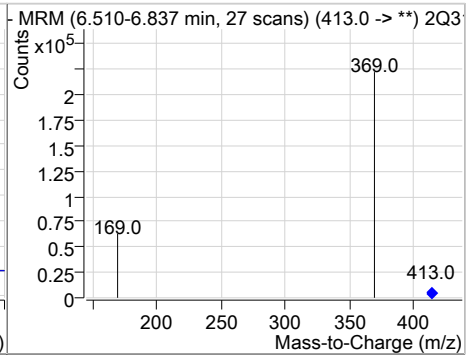




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.28	6.60	-0.04	165464	413.0 -> 169.0	28.0	0.0	58.4

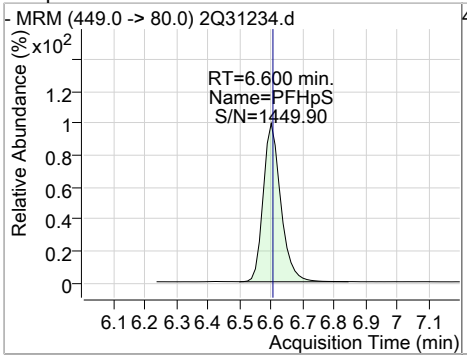


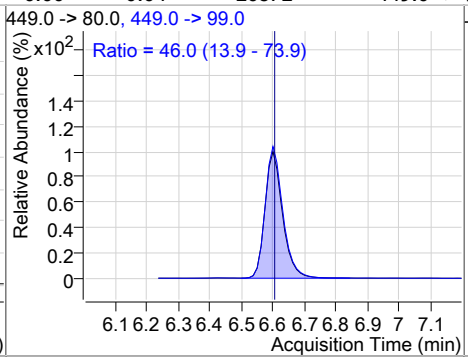


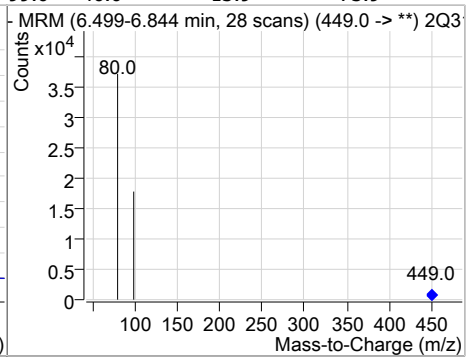


Perfluorinated Compounds by LC/MS/MS

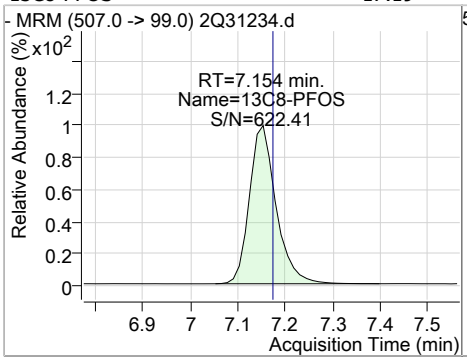
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.75	6.60	-0.04	26872	449.0 -> 99.0	46.0	13.9	73.9

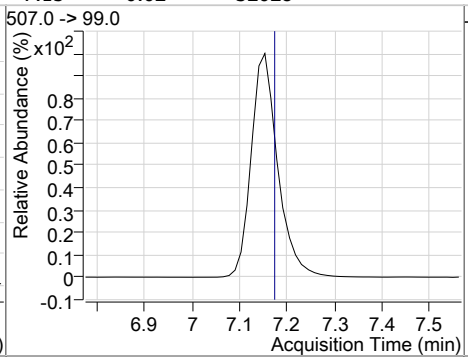


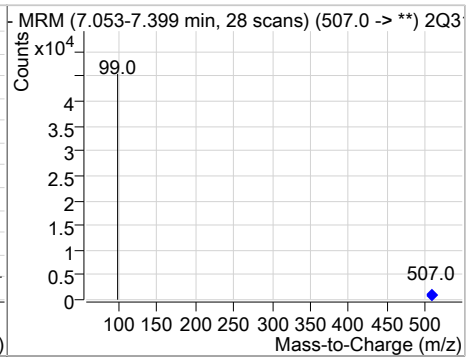




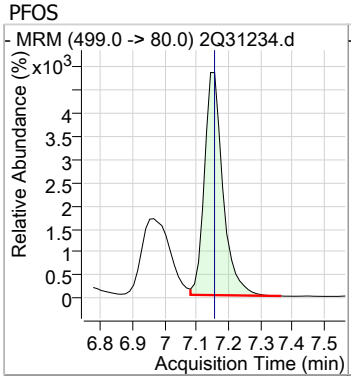
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.19	7.15	-0.02	32628				

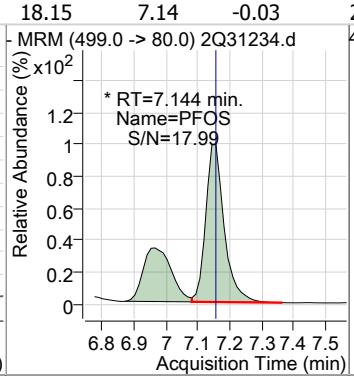


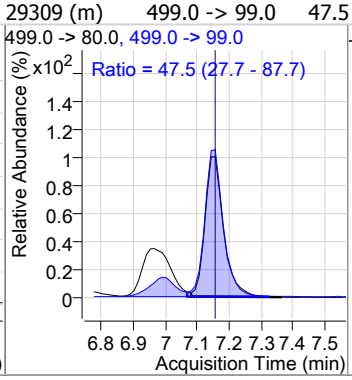


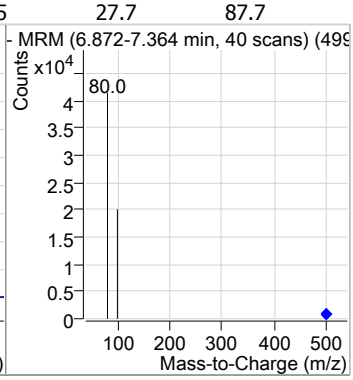


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.15	7.14	-0.03	29309 (m)	499.0 -> 99.0	47.5	27.7	87.7

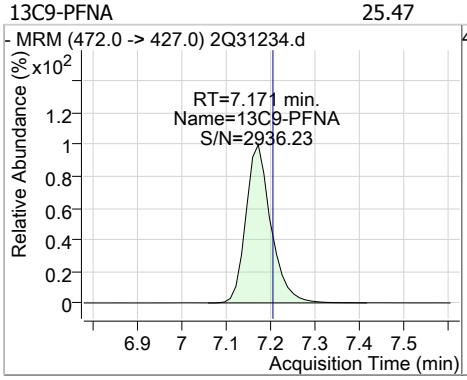


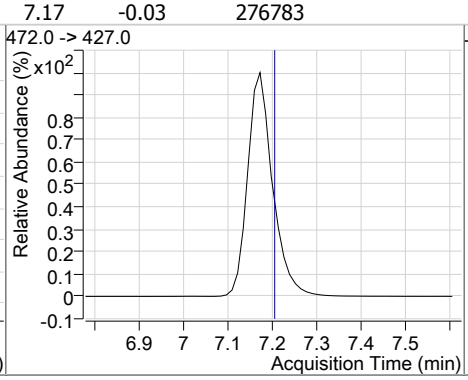


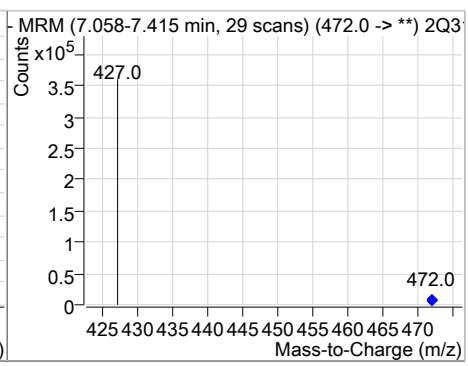




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.47	7.17	-0.03	276783				

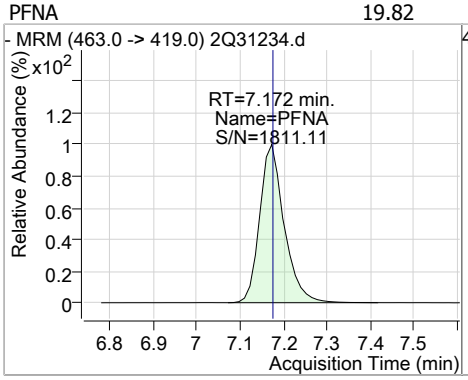


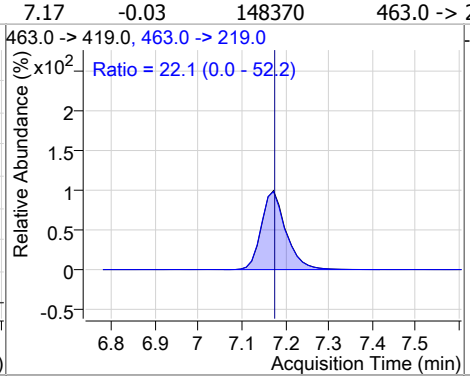


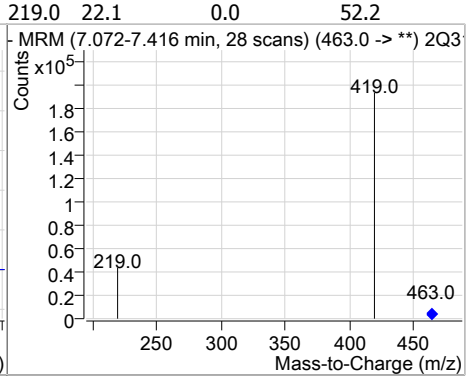


Perfluorinated Compounds by LC/MS/MS

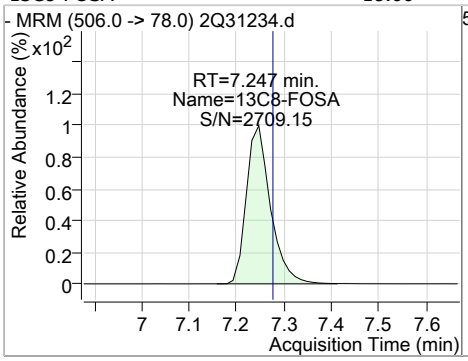
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.82	7.17	-0.03	148370	463.0 -> 219.0	22.1	0.0	52.2

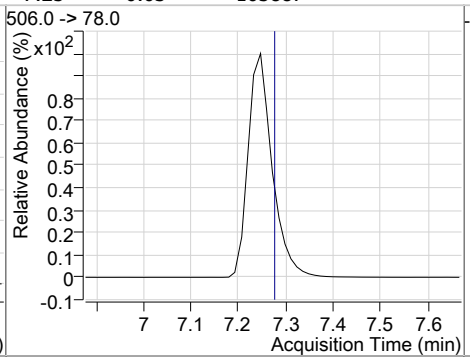


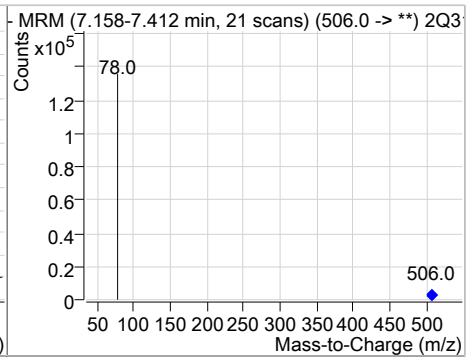




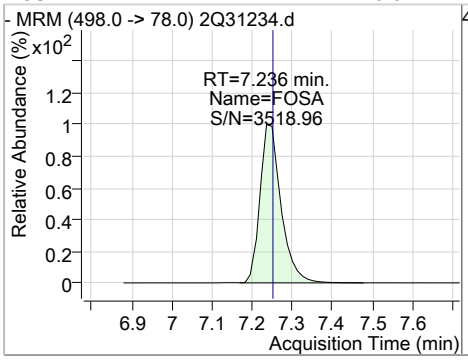
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.00	7.25	-0.03	105887				

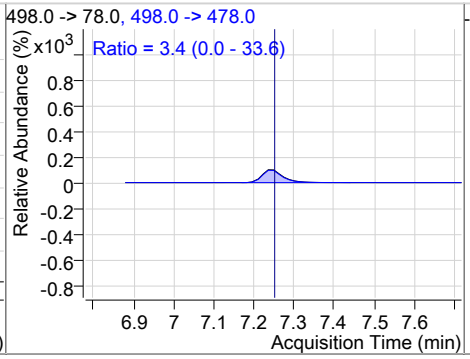


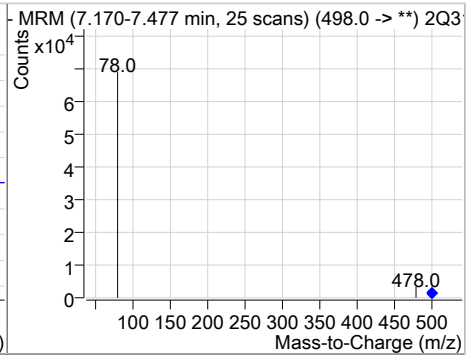




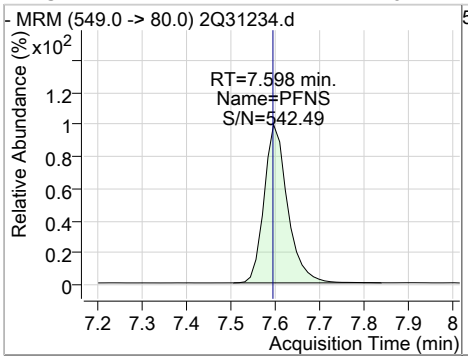
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.02	7.24	-0.04	52857	498.0 -> 478.0	3.4	0.0	33.6

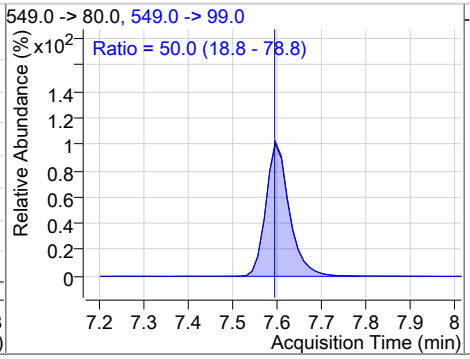


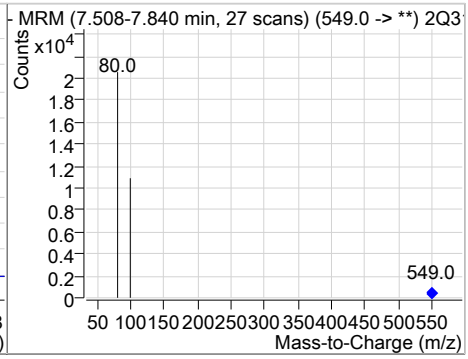




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	14.81	7.60	-0.02	15041	549.0 -> 99.0	50.0	18.8	78.8

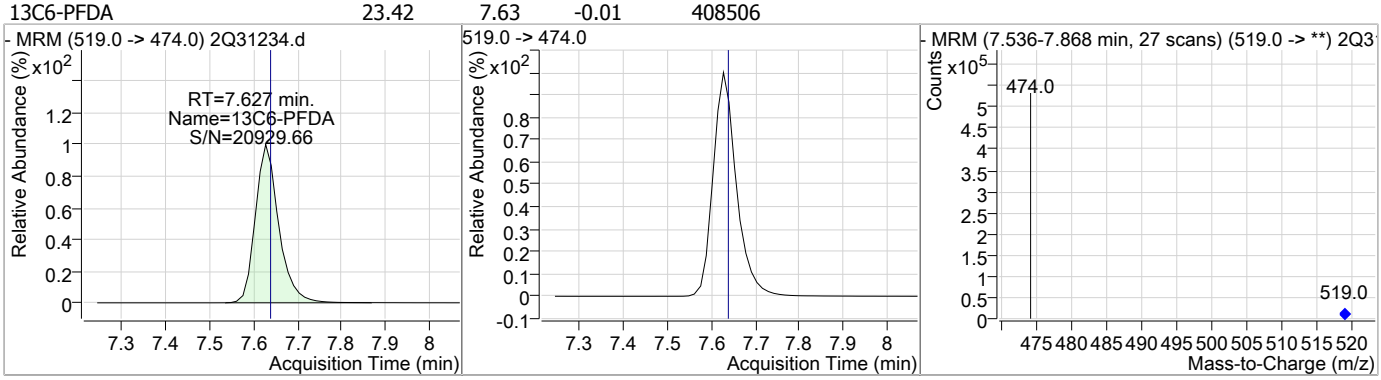




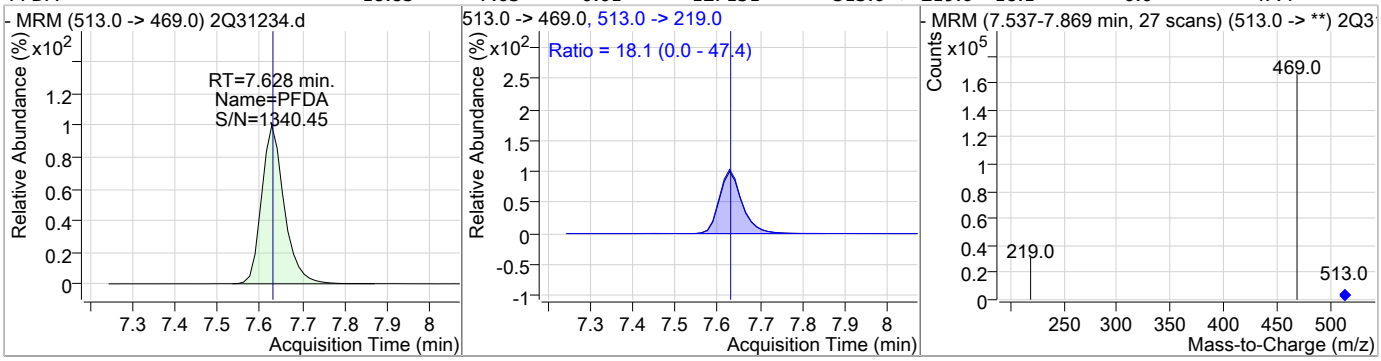


Perfluorinated Compounds by LC/MS/MS

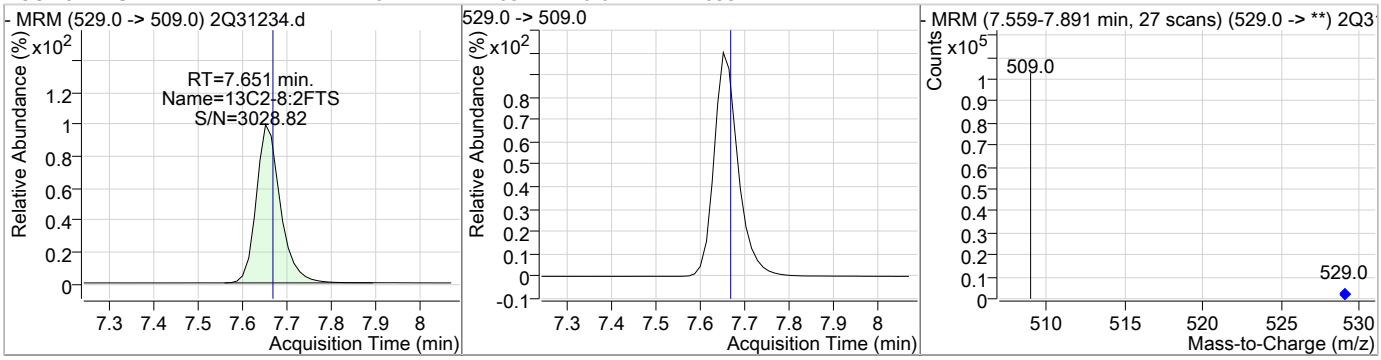
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.42	7.63	-0.01	408506				



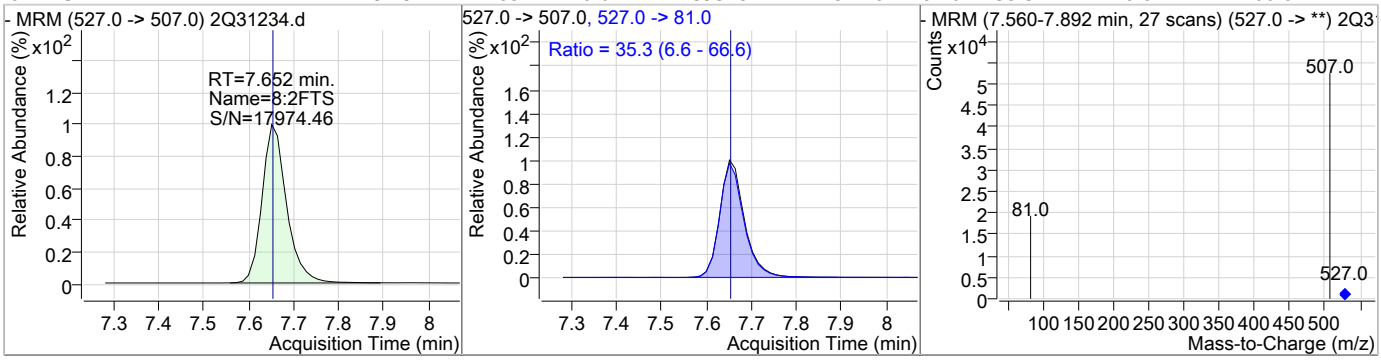
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.85	7.63	-0.01	127131	513.0 -> 219.0	18.1	0.0	47.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	26.77	7.65	-0.01	76557				

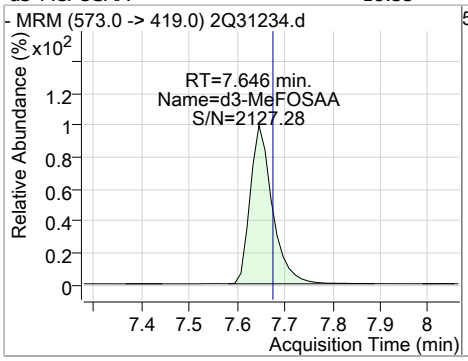


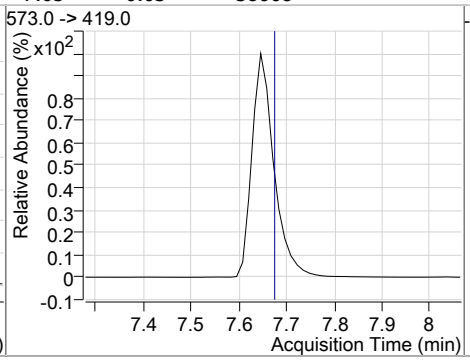
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.79	7.65	-0.01	39318	527.0 -> 81.0	35.3	6.6	66.6

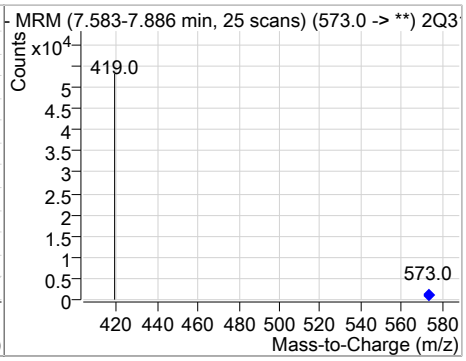


Perfluorinated Compounds by LC/MS/MS

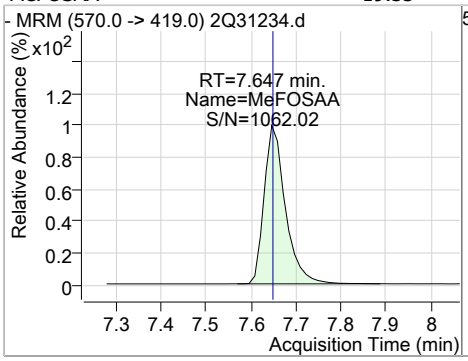
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.55	7.65	-0.03	38668				

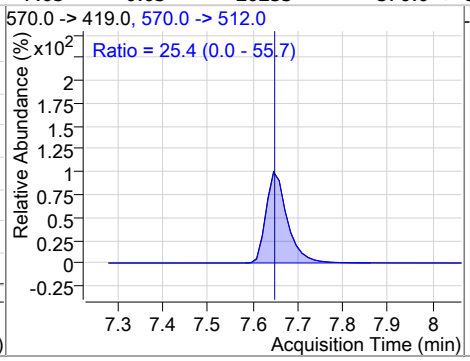


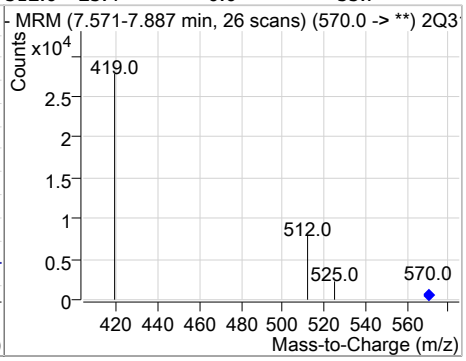




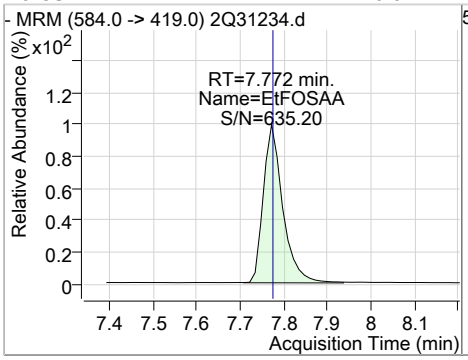
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.33	7.65	-0.03	20253	570.0 -> 512.0	25.4	0.0	55.7

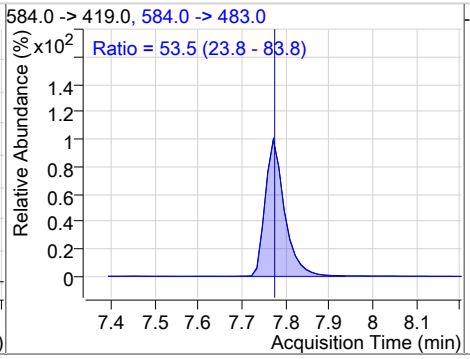


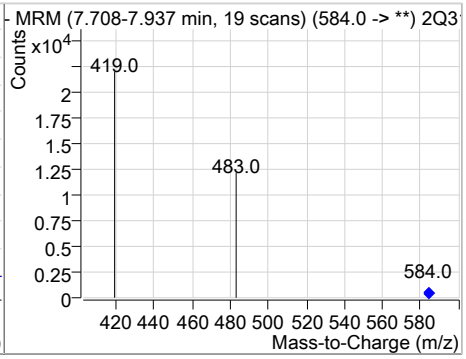




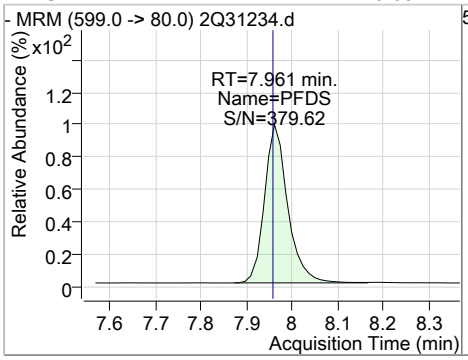
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.87	7.77	-0.03	16072	584.0 -> 483.0	53.5	23.8	83.8

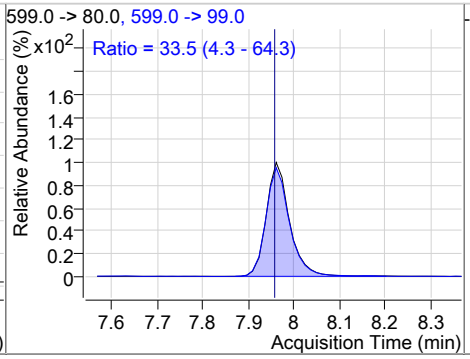


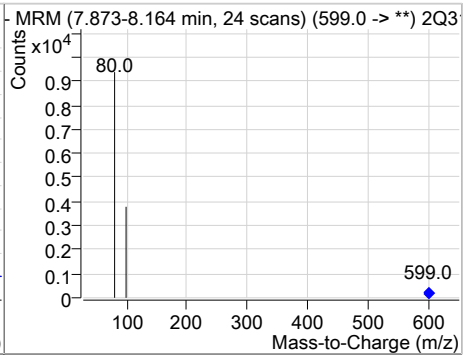




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.68	7.96	-0.01	6375	599.0 -> 99.0	33.5	4.3	64.3

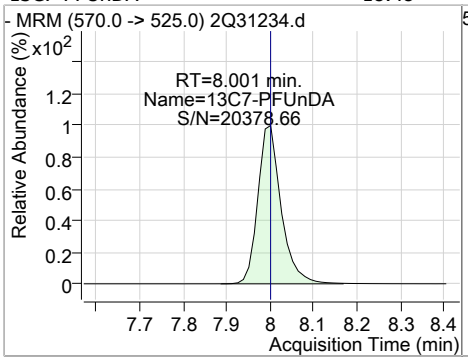


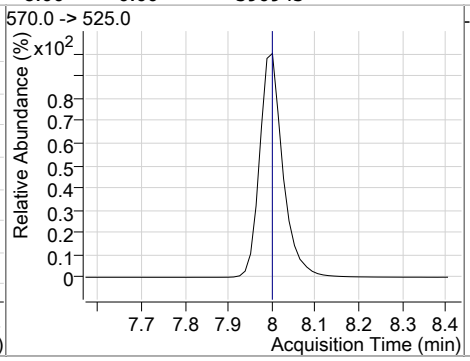


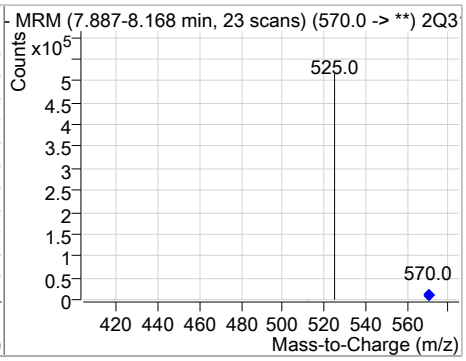


Perfluorinated Compounds by LC/MS/MS

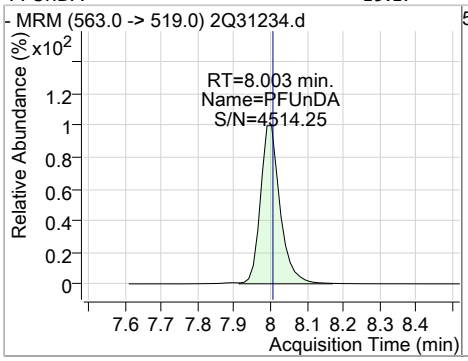
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.48	8.00	0.00	390943				

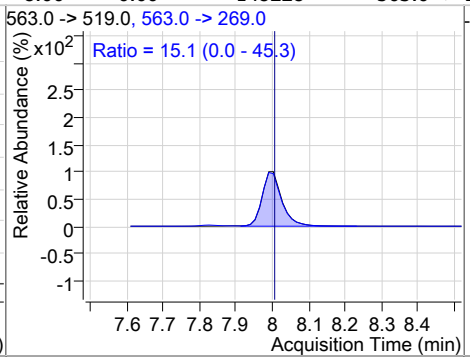


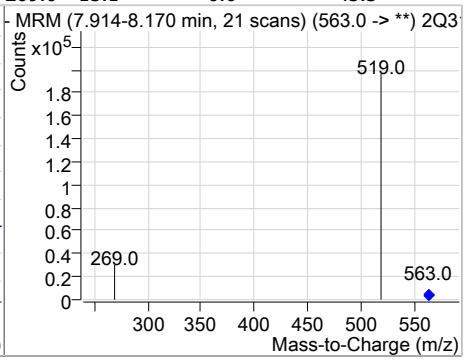




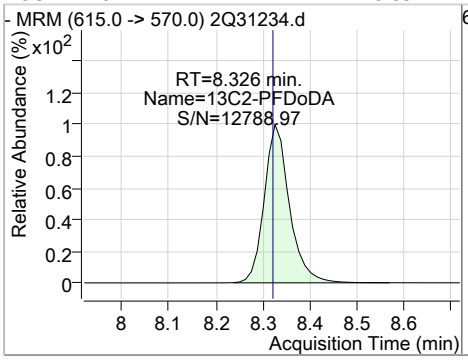
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.17	8.00	0.00	148228	563.0 -> 269.0	15.1	0.0	45.3

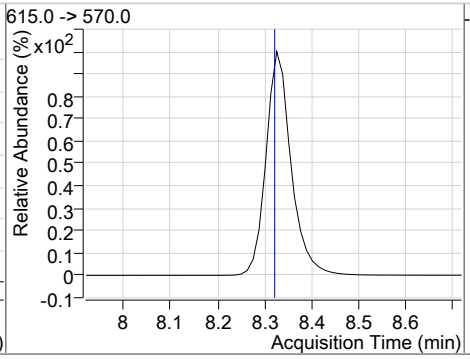


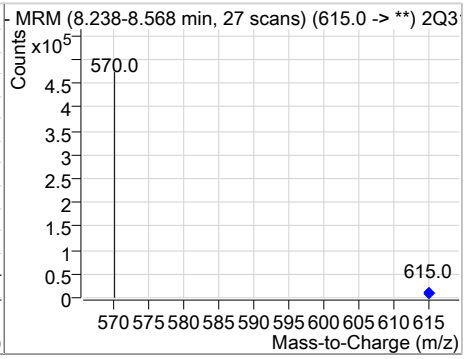




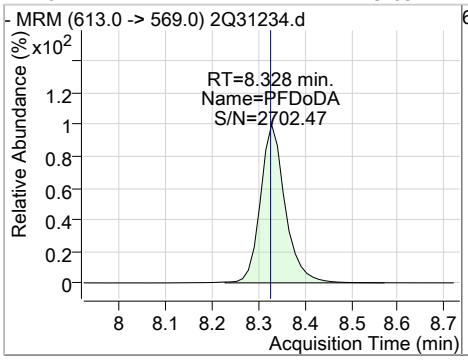
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.39	8.33	0.01	355309				

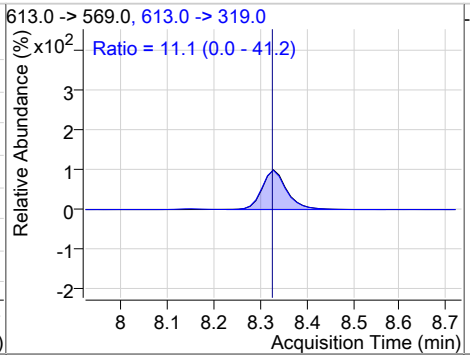


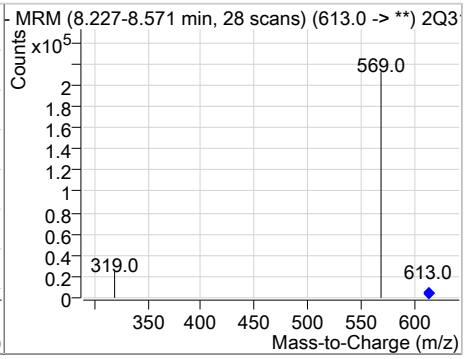




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.63	8.33	0.01	158928	613.0 -> 319.0	11.1	0.0	41.2

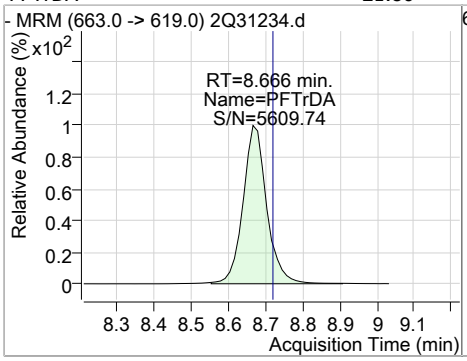


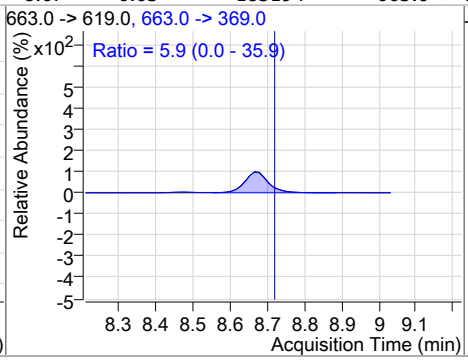


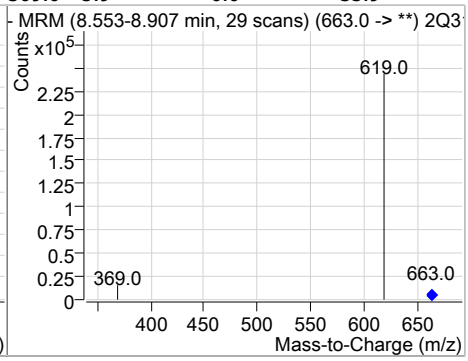


Perfluorinated Compounds by LC/MS/MS

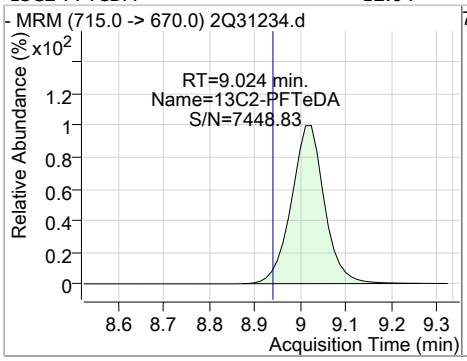
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.86	8.67	0.03	183194	663.0 -> 369.0	5.9	0.0	35.9

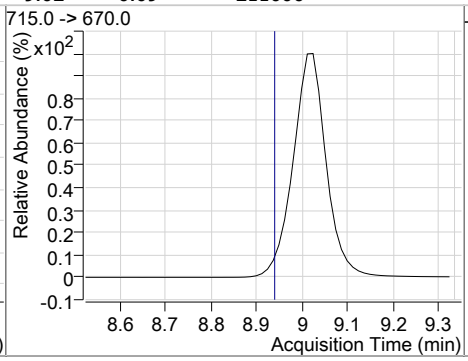


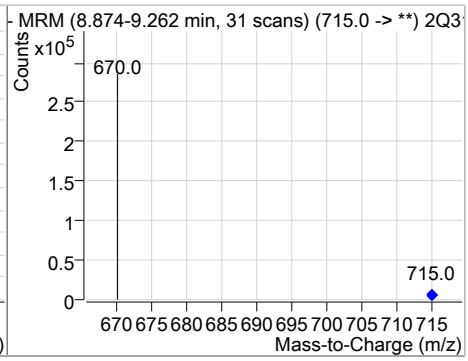




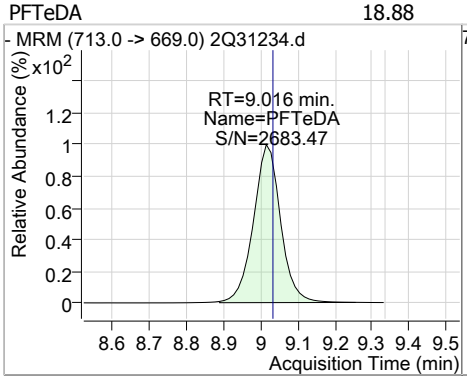
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.04	9.02	0.09	211006				

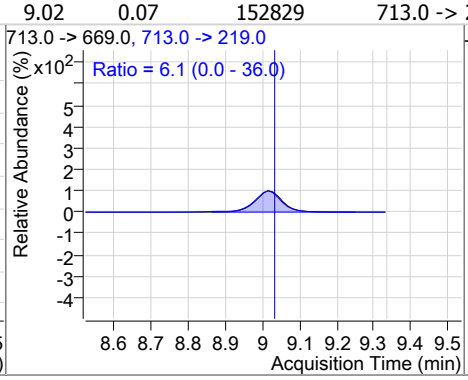


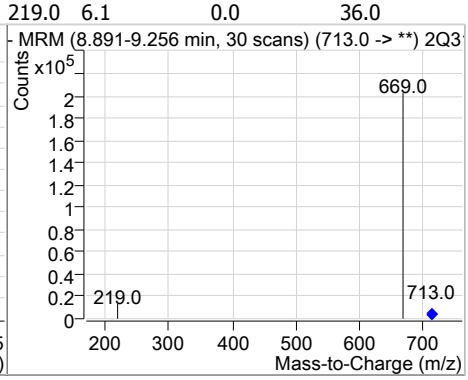




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.88	9.02	0.07	152829	713.0 -> 219.0	6.1	0.0	36.0







Manual Integration Approval Summary

Sample Number: OP75580-MS
Lab FileID: 2Q31234.D
Injection Time: 06/23/19 23:39
Method: EPA 537M BY ID
Analyst approved: 06/24/19 13:45 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.14	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31235.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 11:53:55 PM
Sample Name : op75580-msd
Vial : Vial 54
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75580,S2Q499,250,,,1,1,water

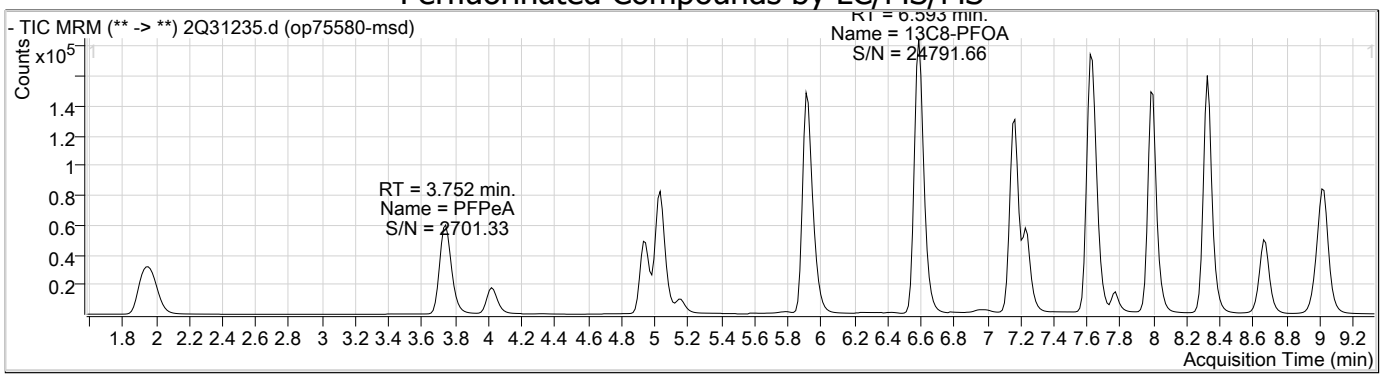
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	-	415.0 -> 370.0	-	N.D.		
13C4-PFOS	-	503.0 -> 80.0	-	N.D.		
M4-PFBA	1.952	217.0 -> 172.0	207037	20.00	µg/L	-0.038
M5-PFPeA	3.749	268.0 -> 223.0	166656	20.00	µg/L	-0.051
M5-PFHxA	5.038	318.0 -> 273.0	255424	20.00	µg/L	-0.051
M4-PFHpA	5.917	367.0 -> 322.0	307866	20.00	µg/L	-0.051
M8-PFOA	6.593	421.0 -> 376.0	308652	20.00	µg/L	-0.041
M9-PFNA	7.171	472.0 -> 427.0	287468	20.00	µg/L	-0.030
M6-PFDA	7.627	519.0 -> 474.0	398020	20.00	µg/L	-0.014
M7-PFUnDA	8.001	570.0 -> 525.0	384347	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	398721	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	246254	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	111623	20.00	µg/L	-0.027
M3-PFBS	4.017	302.0 -> 99.0	28493	20.00	µg/L	-0.063
M3-PFHxS	5.960	402.0 -> 99.0	23846	20.00	µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	29760	20.00	µg/L	-0.018
M2-4:2FTS	4.934	329.0 -> 309.0	117876	20.00	µg/L	-0.063
M2-6:2FTS	6.577	429.0 -> 409.0	112119	20.00	µg/L	-0.038
M2-8:2FTS	7.651	529.0 -> 509.0	75016	20.00	µg/L	-0.014
M3-MeFOSAA	7.646	573.0 -> 419.0	38241	20.00	µg/L	-0.027
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
System Monitoring Compounds						
13C2-4:2FTS	4.934	329.0 -> 309.0	117834	24.28	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C2-6:2FTS	6.577	429.0 -> 409.0	112065	28.15	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 140.7%		
13C2-8:2FTS	7.651	529.0 -> 509.0	75009	26.23	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 131.1%		
13C2-PFDoDA	8.326	615.0 -> 570.0	398651	17.27	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C2-PFTeDA	9.024	715.0 -> 670.0	244696	13.96	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%		
13C3-PFBS	4.017	302.0 -> 99.0	28465	18.73	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C3-PFHxS	5.960	402.0 -> 99.0	23845	18.73	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFBA	1.952	217.0 -> 172.0	206242	19.94	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	5.917	367.0 -> 322.0	307780	22.41	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C5-PFHxA	5.038	318.0 -> 273.0	255181	21.09	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C5-PFPeA	3.749	268.0 -> 223.0	166973	20.80	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C6-PFDA	7.627	519.0 -> 474.0	397873	22.81	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

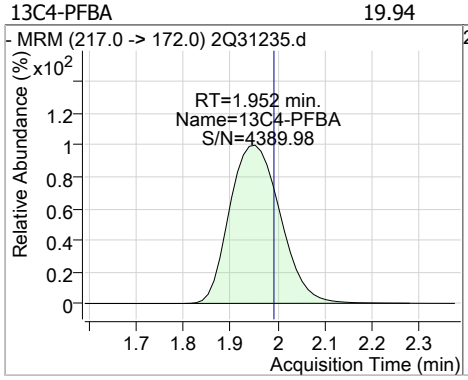
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.0%			
13C7-PFUnDA	8.001	570.0 -> 525.0	384088	18.15	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
13C8-FOSA	7.247	506.0 -> 78.0	111605	18.97	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
13C8-PFOA	6.593	421.0 -> 376.0	308675	24.06	µg/L		-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.3%			
13C8-PFOS	7.154	507.0 -> 99.0	29752	15.67	µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%			
13C9-PFNA	7.171	472.0 -> 427.0	287405	26.45	µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 132.2%			
d3-MeFOSAA	7.646	573.0 -> 419.0	38198	18.32	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%			
M2-PFOA	-	415.0 -> 370.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
M4-PFOS	-	503.0 -> 80.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							**QValue**
4:2FTS	4.936	327.0 -> 307.0	62356	18.56	µg/L		99
6:2FTS	6.579	427.0 -> 407.0	54004	18.10	µg/L		99
8:2FTS	7.652	527.0 -> 507.0	38262	19.66	µg/L		97
EtFOSAA	7.772	584.0 -> 419.0	16064	17.04	µg/L		100
FOSA	7.236	498.0 -> 78.0	54226	19.48	µg/L		99
MeFOSAA	7.647	570.0 -> 419.0	19280	18.60	µg/L		99
PFBA	1.948	213.0 -> 169.0	33691	19.02	µg/L		100
PFBS	4.021	299.0 -> 80.0	37990	19.43	µg/L		99
PFDA	7.628	513.0 -> 469.0	125190	19.06	µg/L		98
PFDoDA	8.328	613.0 -> 569.0	174209	19.20	µg/L		100
PFDS	7.961	599.0 -> 80.0	6747	12.40	µg/L		98
PFHpA	5.920	363.0 -> 319.0	251826	18.64	µg/L		100
PFHpS	6.600	449.0 -> 80.0	26426	19.73	µg/L		98
PFHxA	5.040	313.0 -> 269.0	72158	19.21	µg/L		100
PFHxS	5.962	399.0 -> 80.0	32942	19.35	µg/L	m	97
PFNA	7.172	463.0 -> 419.0	149706	19.26	µg/L		99
PFNS	7.598	549.0 -> 80.0	14165	15.30	µg/L		98
PFOA	6.598	413.0 -> 369.0	167294	18.78	µg/L		100
PFOS	7.144	499.0 -> 80.0	27150	18.44	µg/L	m	85
PFPeA	3.752	263.0 -> 219.0	132272	19.06	µg/L		100
PFPeS	5.157	349.0 -> 80.0	25426	20.28	µg/L		99
PFTeDA	9.016	713.0 -> 669.0	173622	18.50	µg/L		100
PFTrDA	8.666	663.0 -> 619.0	207481	21.35	µg/L		100
PFUnDA	7.991	563.0 -> 519.0	143065	18.80	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

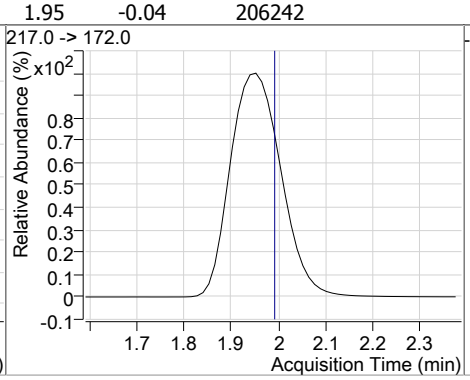
= Qualifier out of range, m = manually integrated, + = Area summed

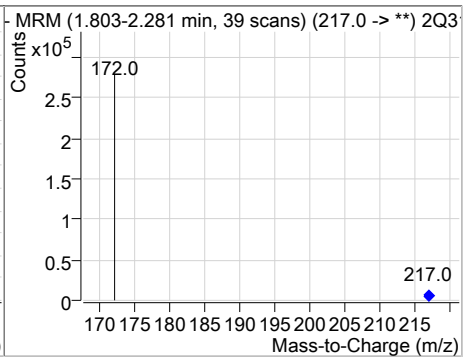
Perfluorinated Compounds by LC/MS/MS



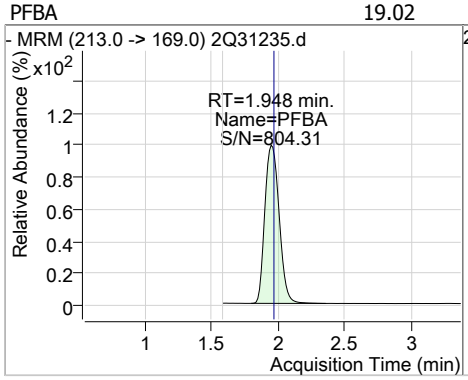
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.94	1.95	-0.04	206242				

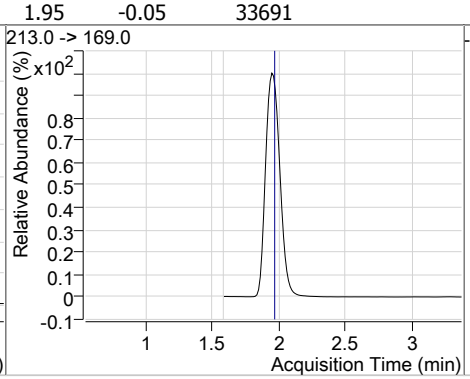


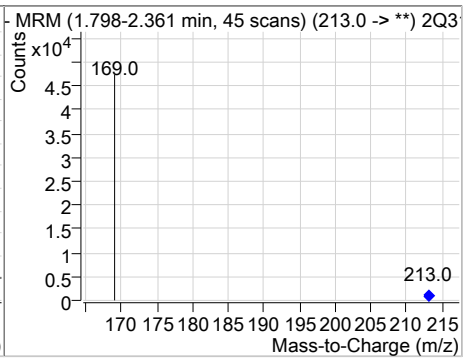




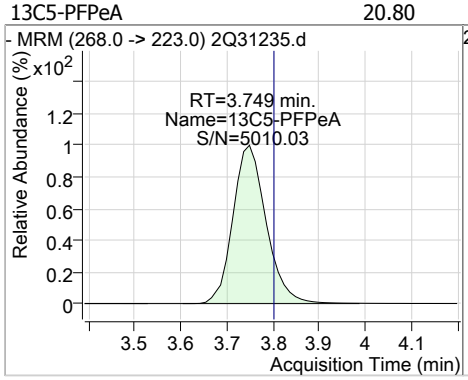
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.02	1.95	-0.05	33691				

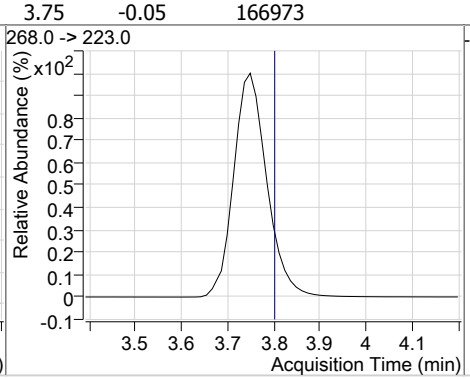


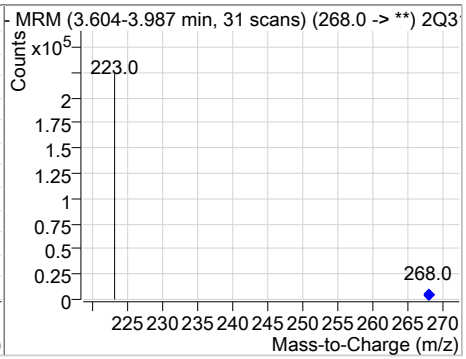




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.80	3.75	-0.05	166973				

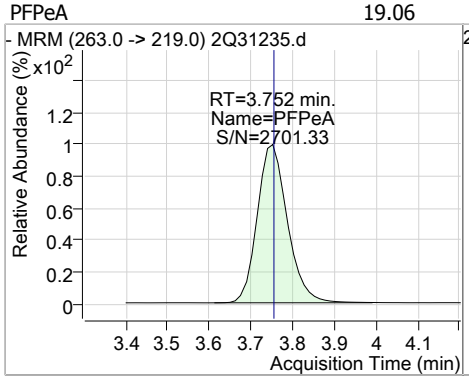


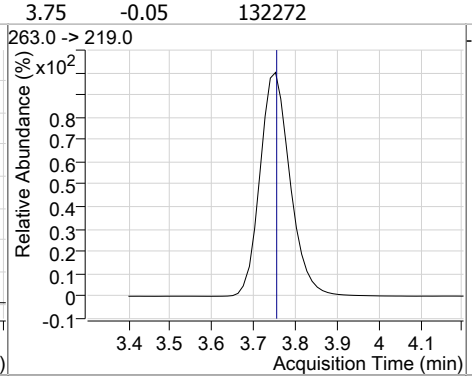


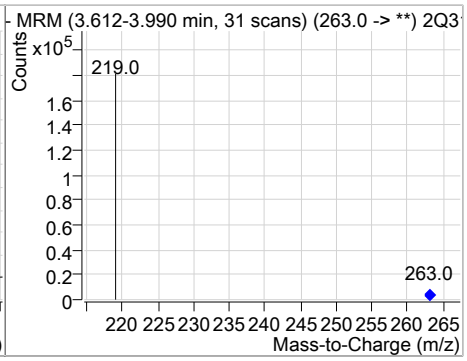


Perfluorinated Compounds by LC/MS/MS

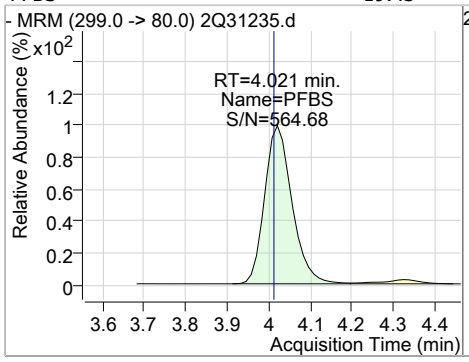
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.06	3.75	-0.05	132272				

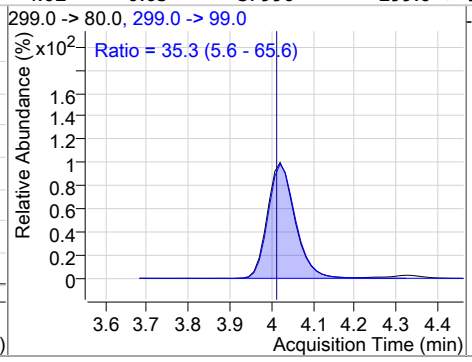


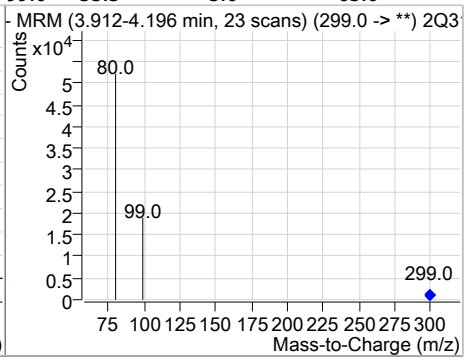




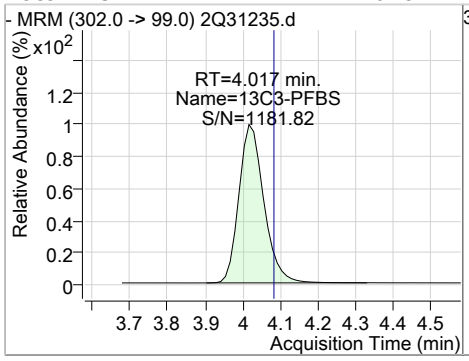
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.43	4.02	-0.05	37990	299.0 -> 99.0	35.3	5.6	65.6

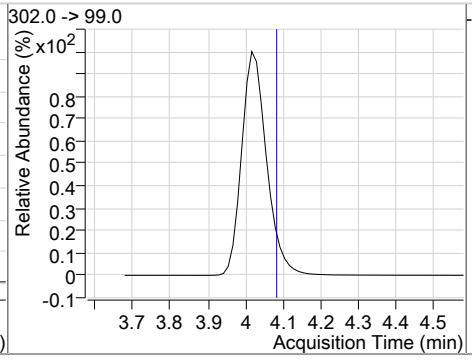


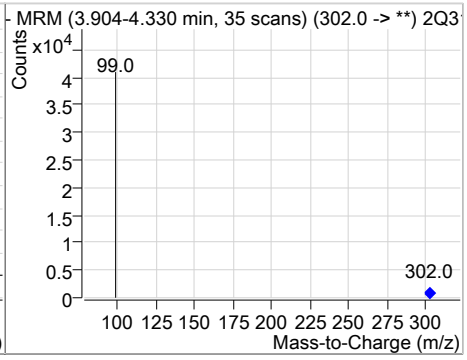




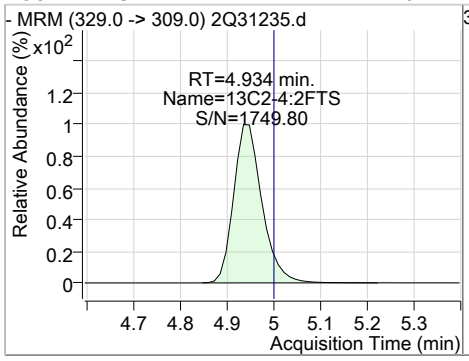
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.73	4.02	-0.06	28465				

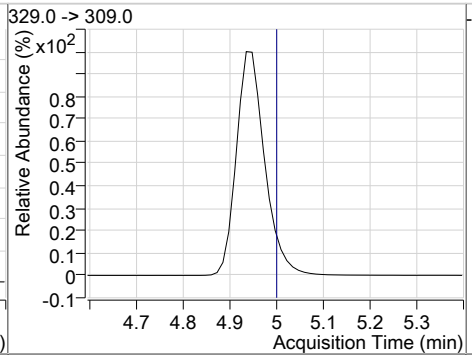


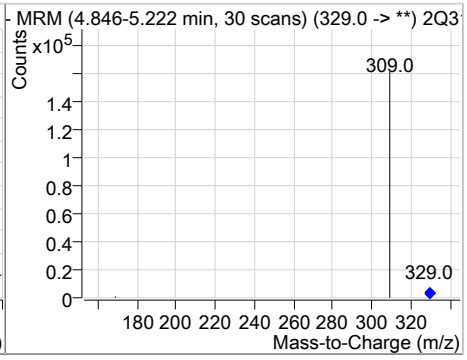




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.28	4.93	-0.06	117834				

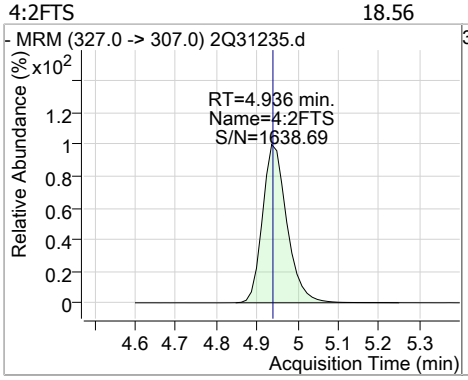


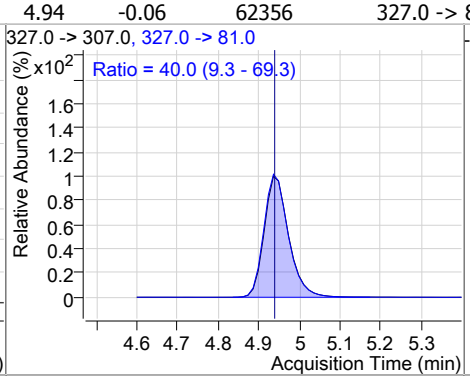


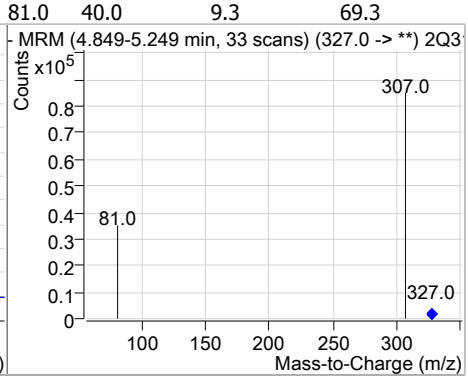


Perfluorinated Compounds by LC/MS/MS

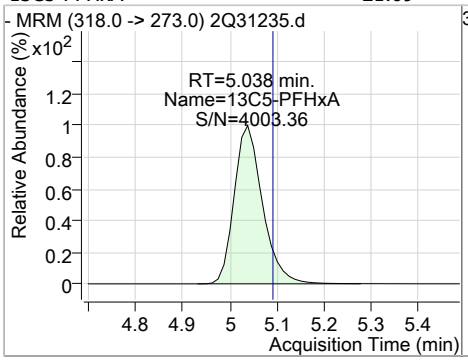
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.56	4.94	-0.06	62356	327.0 -> 81.0	40.0	9.3	69.3

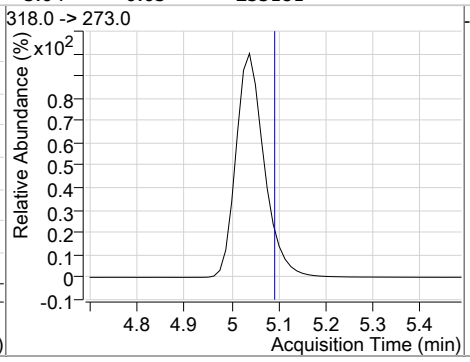


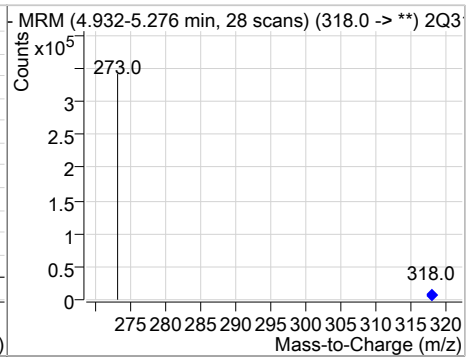




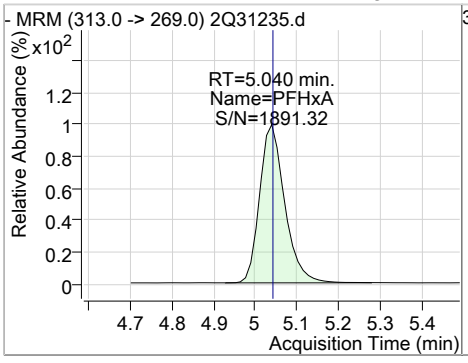
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.09	5.04	-0.05	255181				

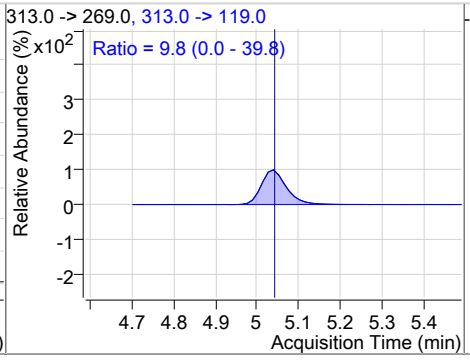


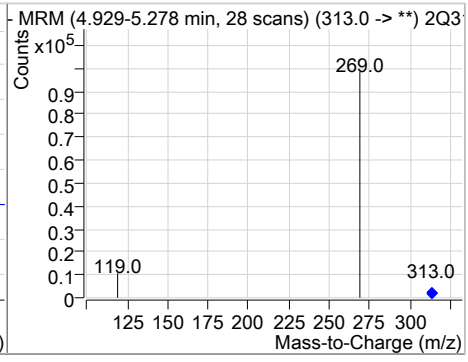




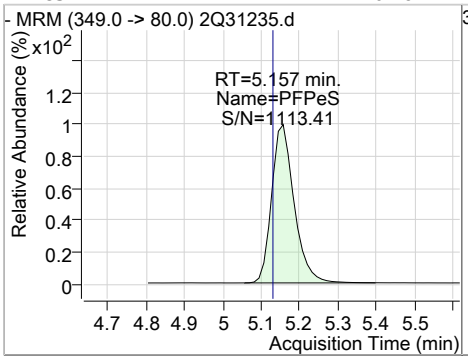
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.21	5.04	-0.05	72158	313.0 -> 119.0	9.8	0.0	39.8

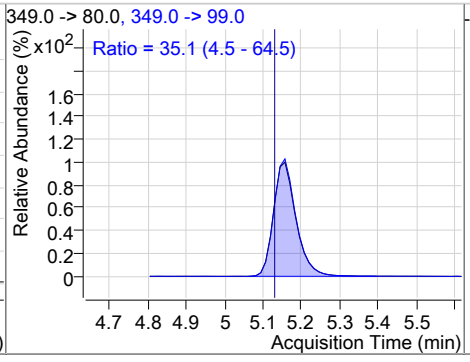


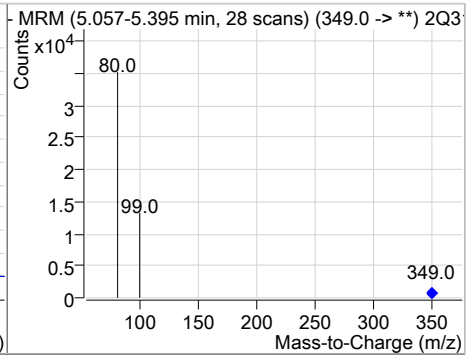




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.28	5.16	-0.05	25426	349.0 -> 99.0	35.1	4.5	64.5

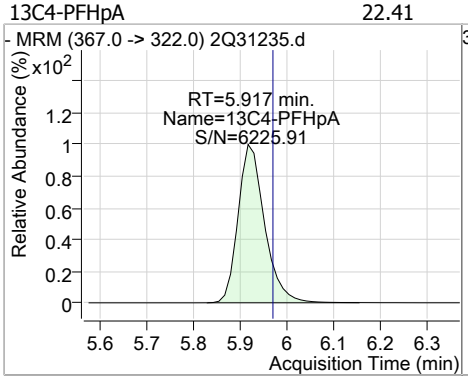


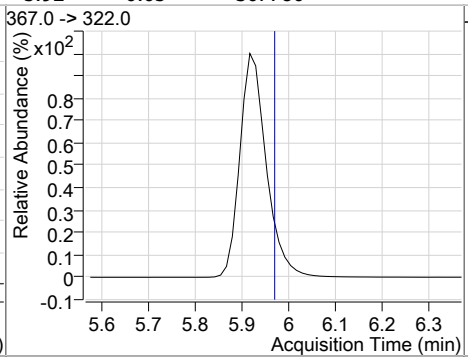


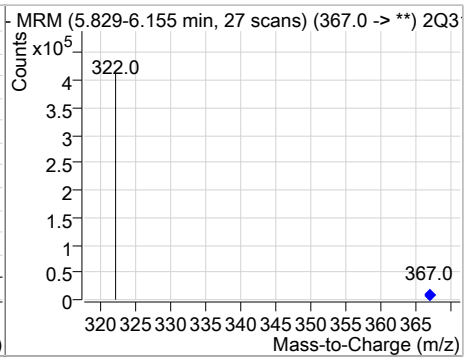


Perfluorinated Compounds by LC/MS/MS

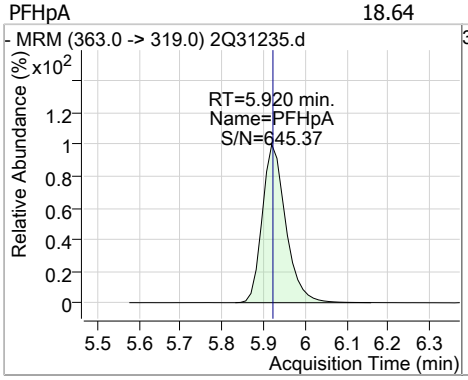
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.41	5.92	-0.05	307780				

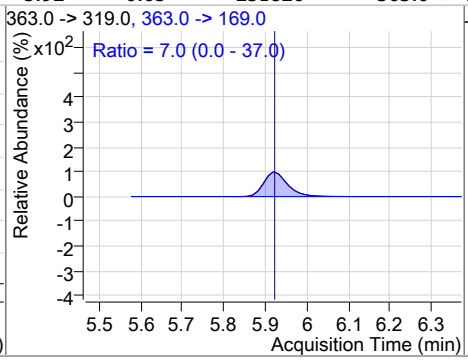


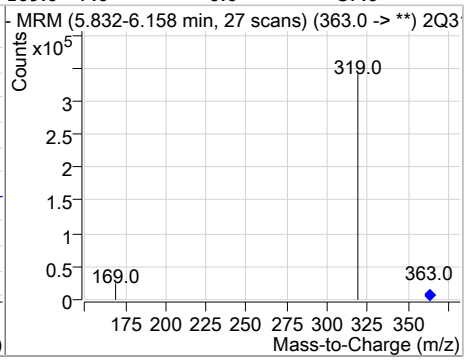




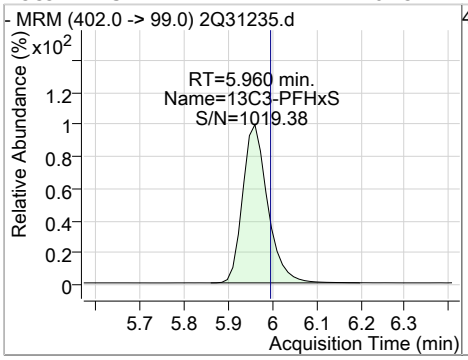
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.64	5.92	-0.05	251826	363.0 -> 169.0	7.0	0.0	37.0

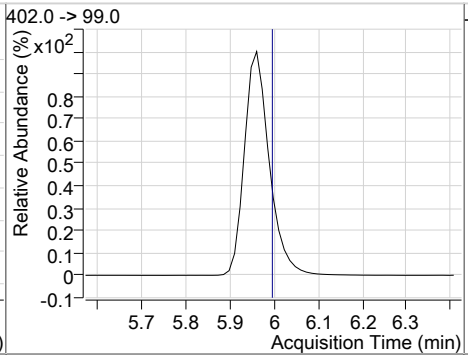


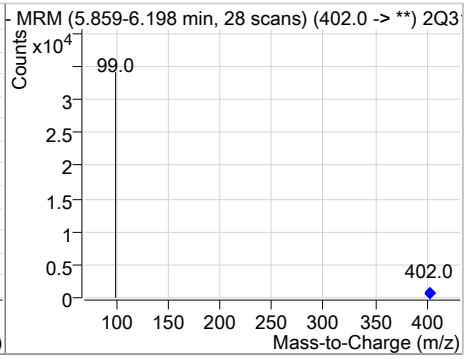




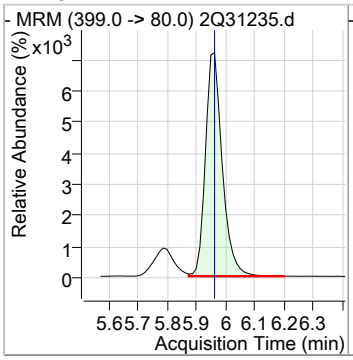
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.73	5.96	-0.04	23845				

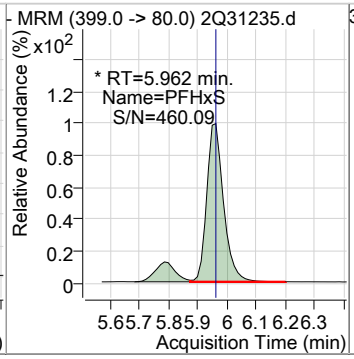


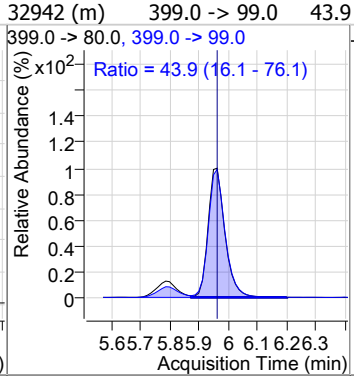


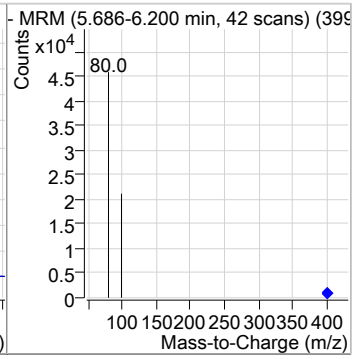


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.35	5.96	-0.04	32942 (m)	399.0 -> 99.0	43.9	16.1	76.1



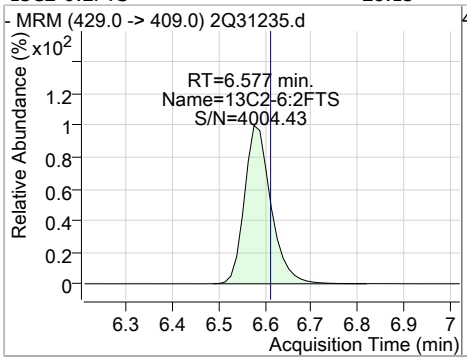


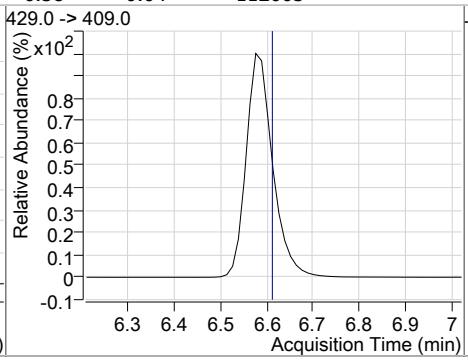


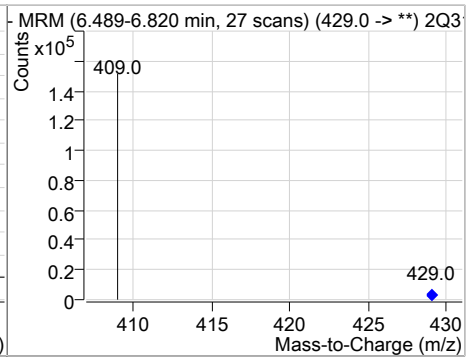


Perfluorinated Compounds by LC/MS/MS

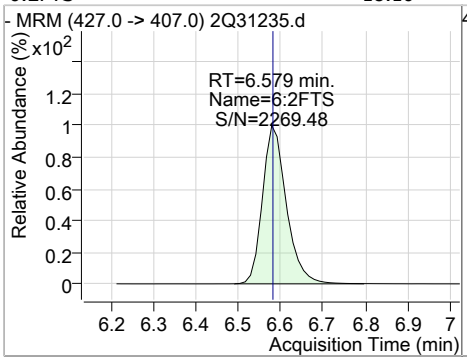
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	28.15	6.58	-0.04	112065				

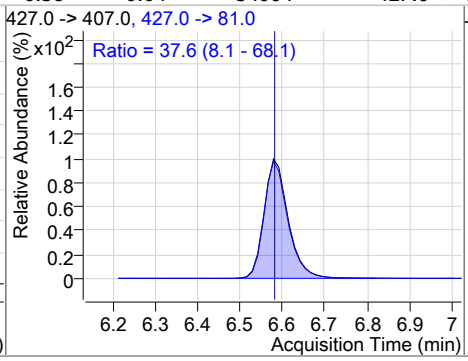


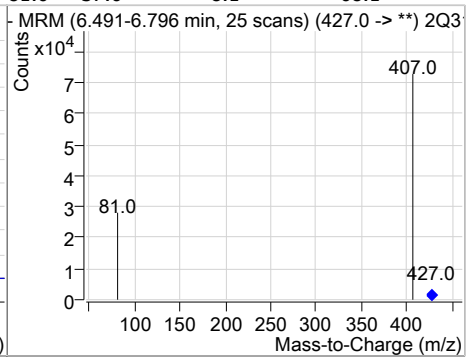




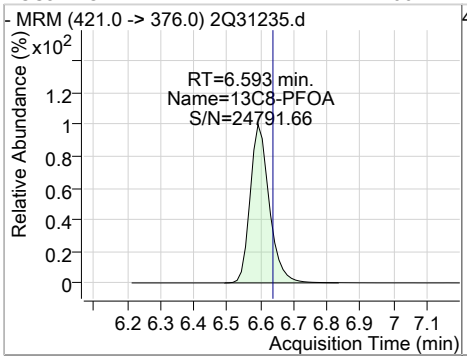
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.10	6.58	-0.04	54004	427.0 -> 81.0	37.6	8.1	68.1

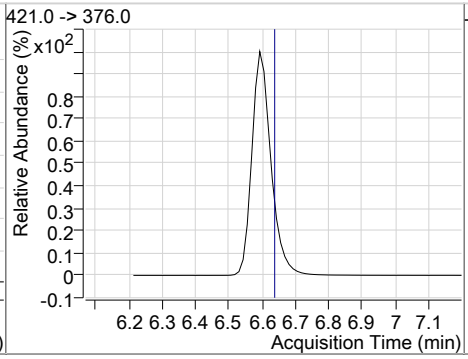


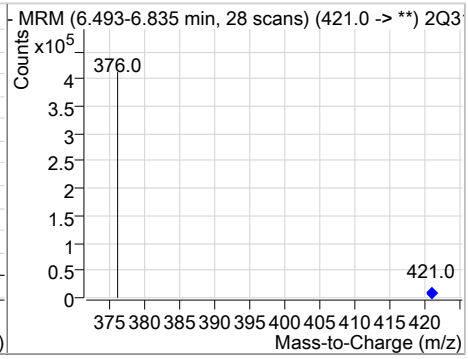




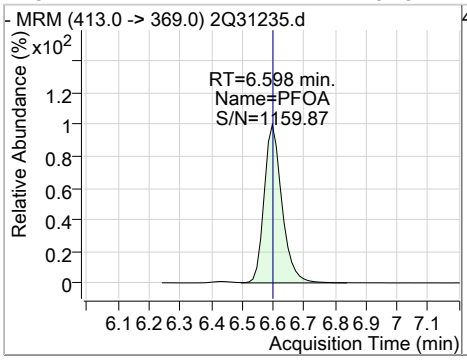
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.06	6.59	-0.04	308675				

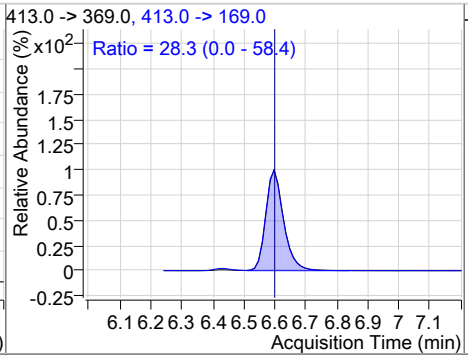


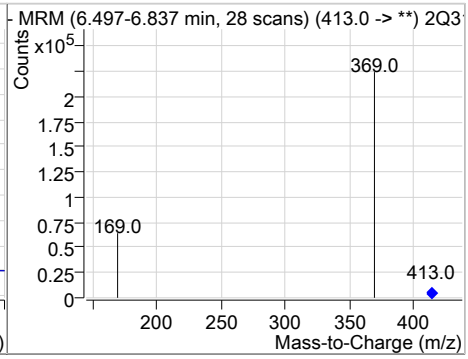




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.78	6.60	-0.04	167294	413.0 -> 169.0	28.3	0.0	58.4

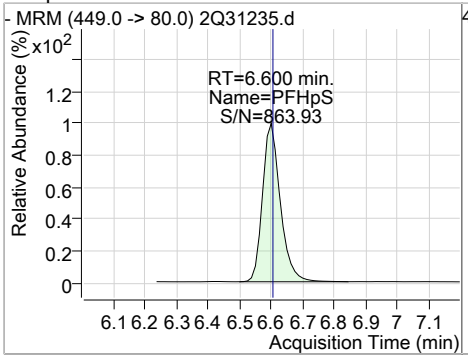


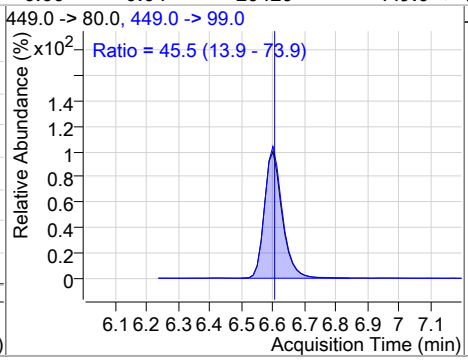


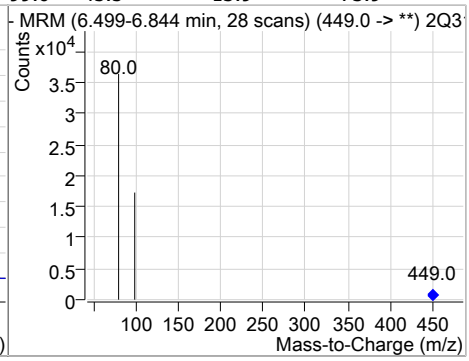


Perfluorinated Compounds by LC/MS/MS

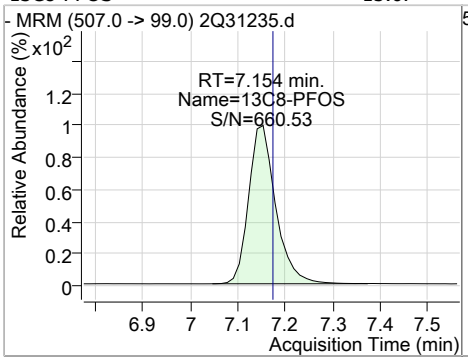
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.73	6.60	-0.04	26426	449.0 -> 99.0	45.5	13.9	73.9

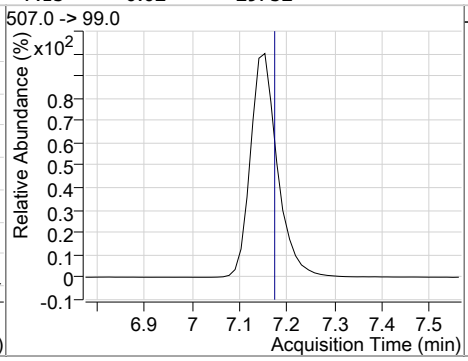


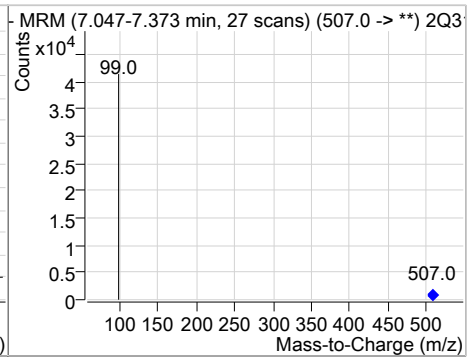




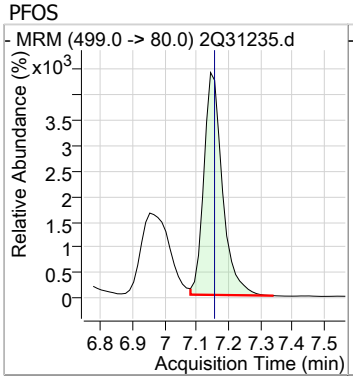
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.67	7.15	-0.02	29752				

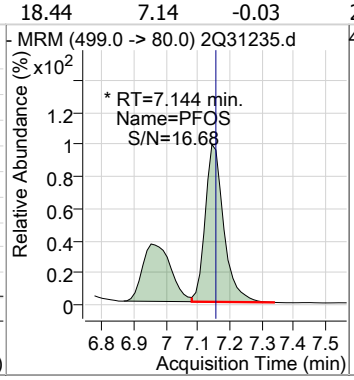


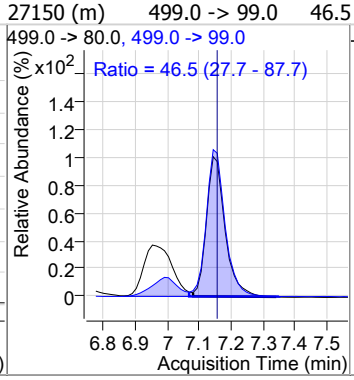


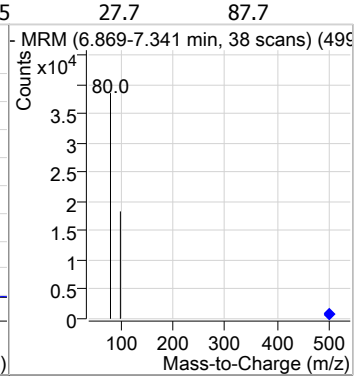


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.44	7.14	-0.03	27150 (m)	499.0 -> 99.0	46.5	27.7	87.7

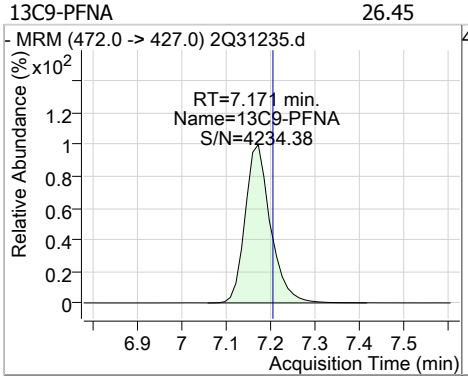


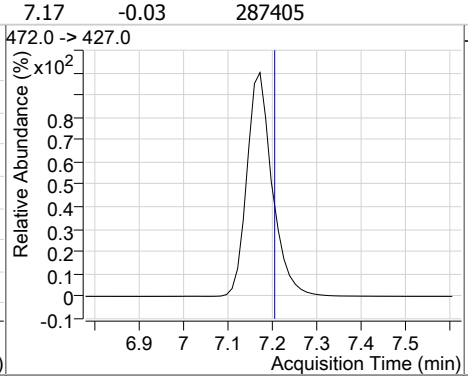


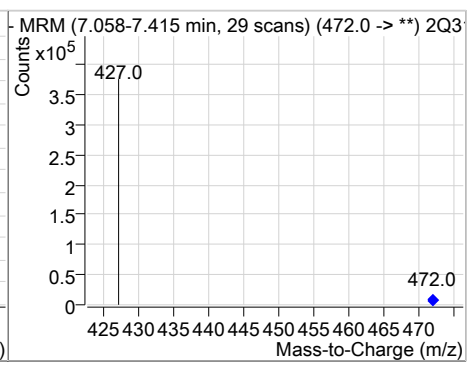




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	26.45	7.17	-0.03	287405				

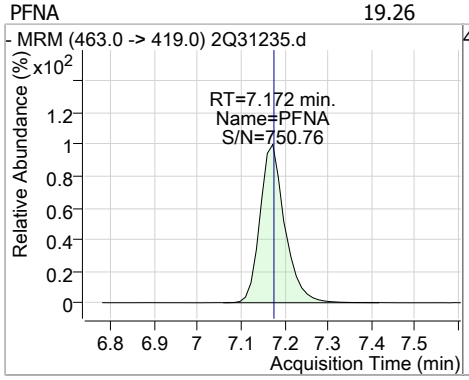


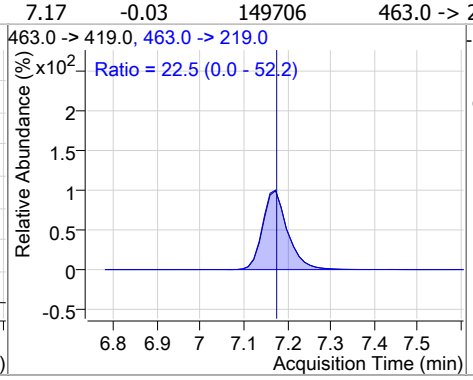


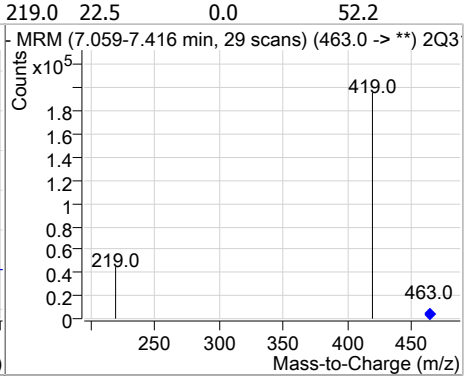


Perfluorinated Compounds by LC/MS/MS

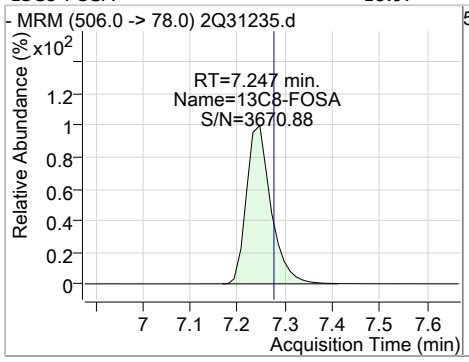
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.26	7.17	-0.03	149706	463.0 -> 219.0	22.5	0.0	52.2

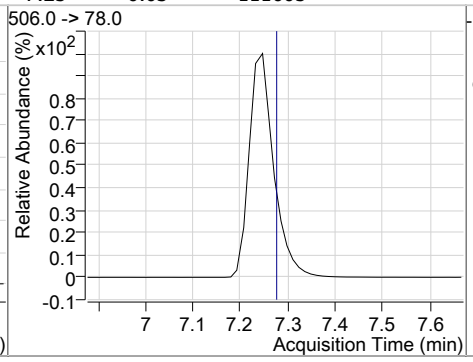


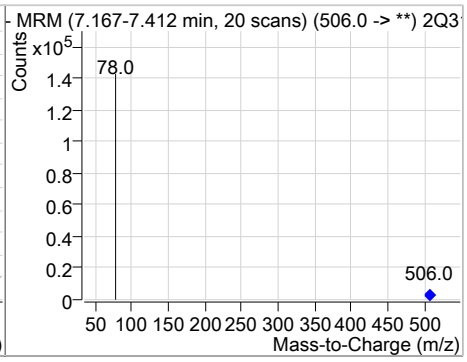




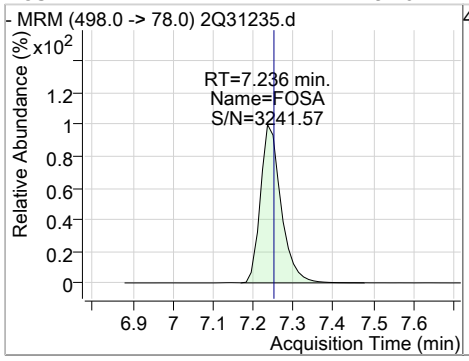
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.97	7.25	-0.03	111605				

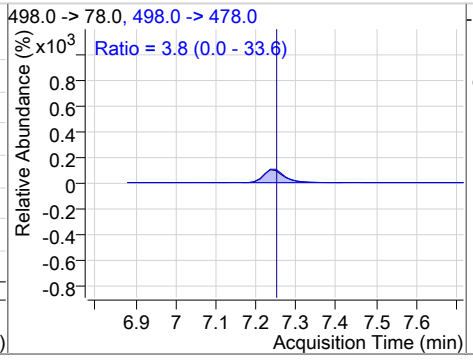


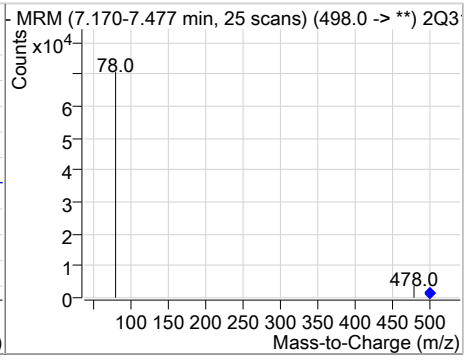




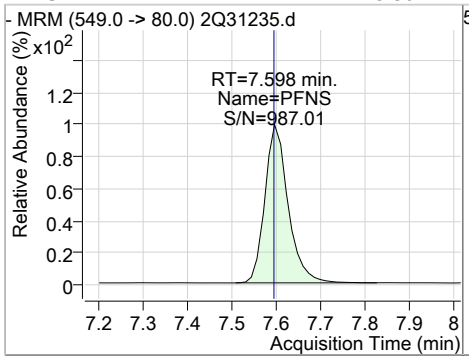
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.48	7.24	-0.04	54226	498.0 -> 478.0	3.8	0.0	33.6

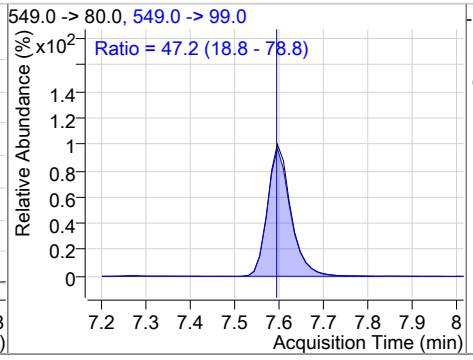


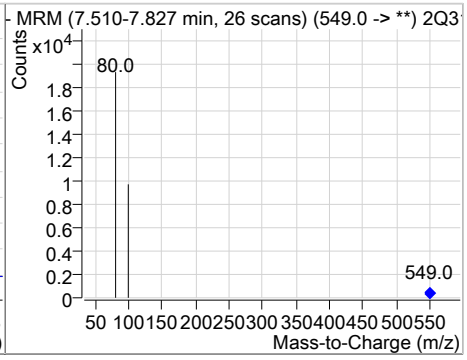




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	15.30	7.60	-0.02	14165	549.0 -> 99.0	47.2	18.8	78.8

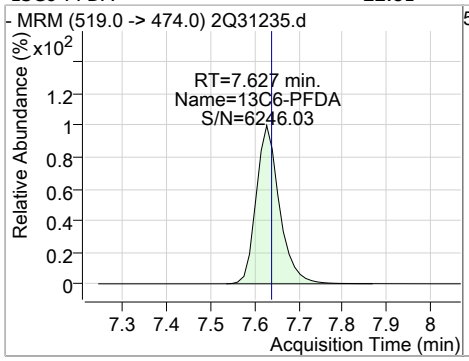


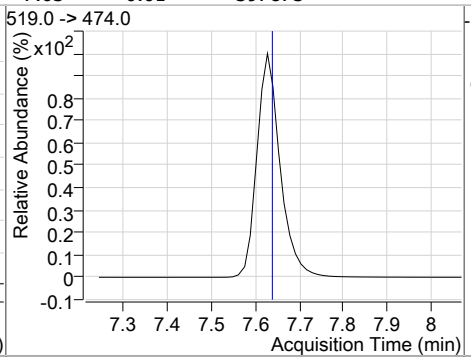


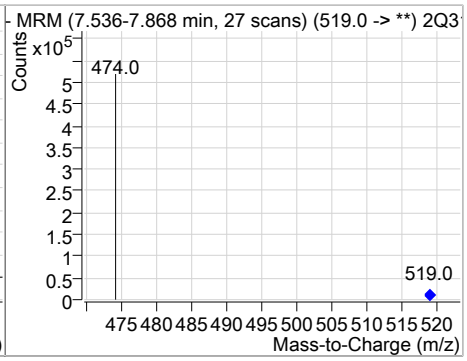


Perfluorinated Compounds by LC/MS/MS

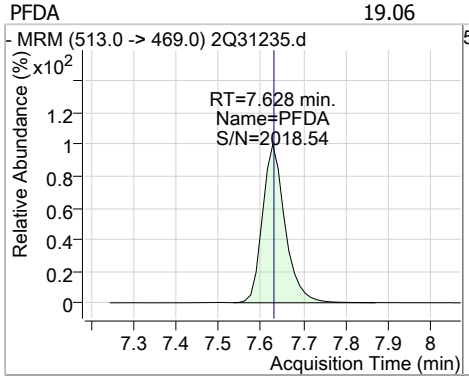
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.81	7.63	-0.01	397873				

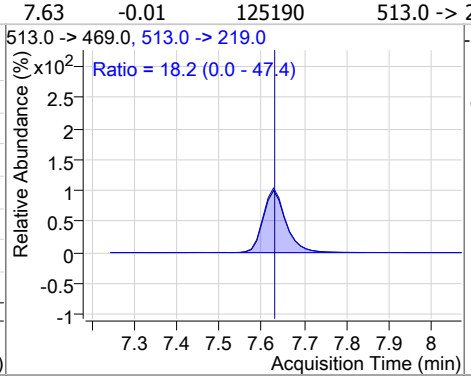


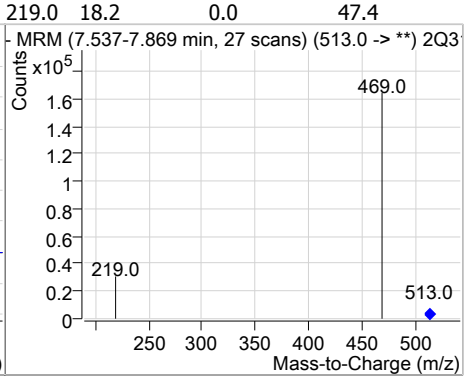




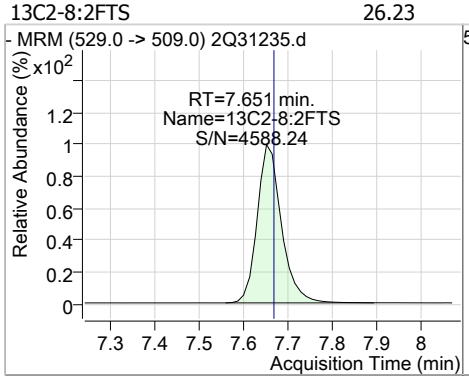
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.06	7.63	-0.01	125190	513.0 -> 219.0	18.2	0.0	47.4

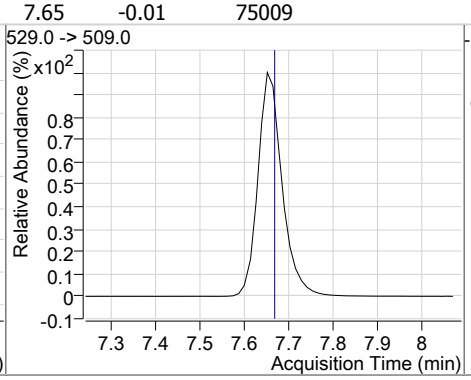


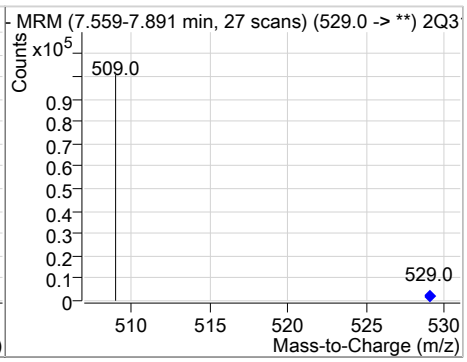




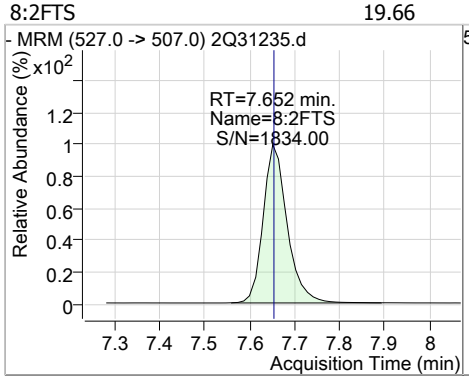
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	26.23	7.65	-0.01	75009				

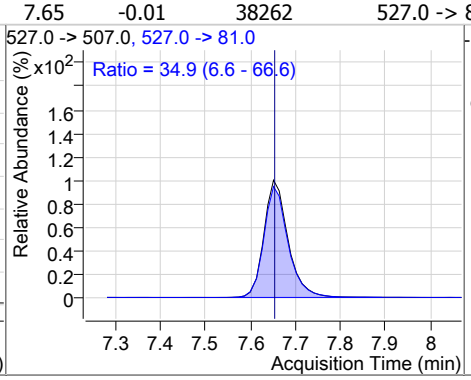


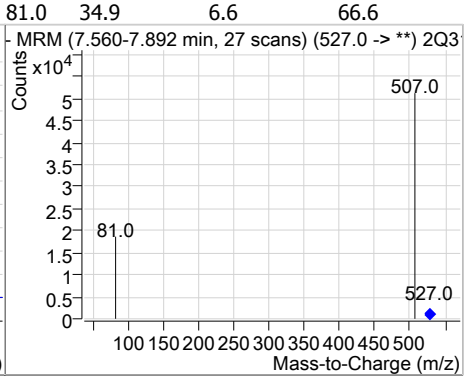




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.66	7.65	-0.01	38262	527.0 -> 81.0	34.9	6.6	66.6

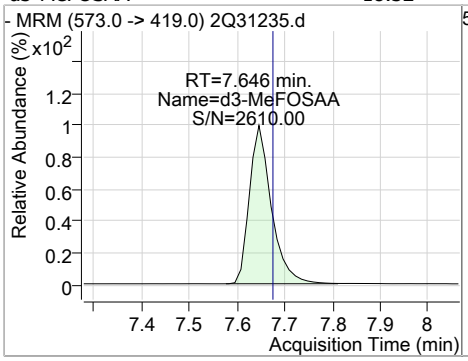


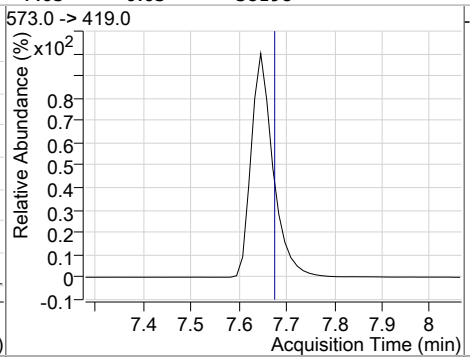


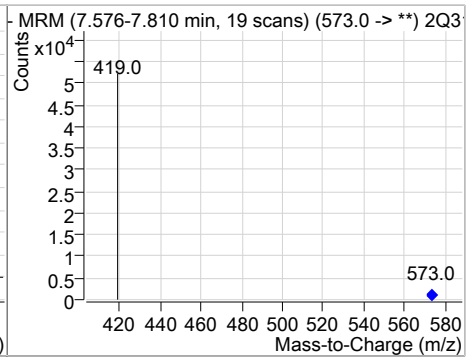


Perfluorinated Compounds by LC/MS/MS

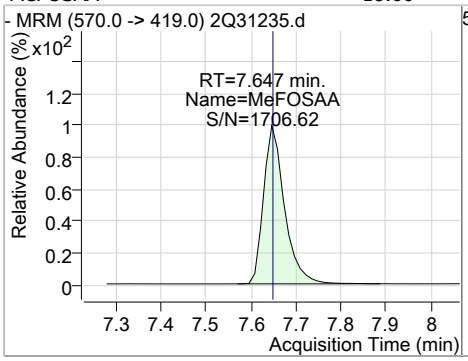
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.32	7.65	-0.03	38198				

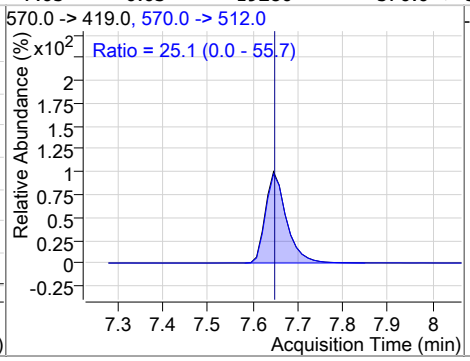


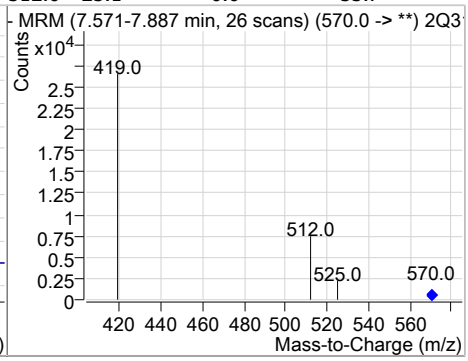




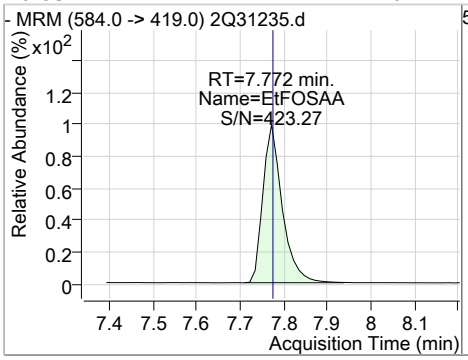
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.60	7.65	-0.03	19280	570.0 -> 512.0	25.1	0.0	55.7

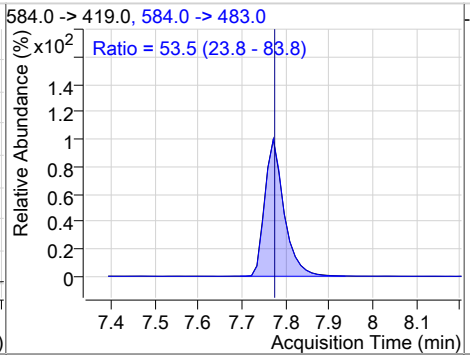


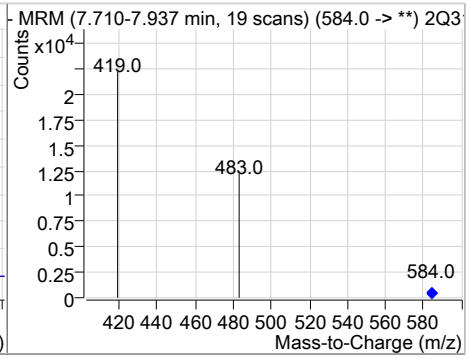




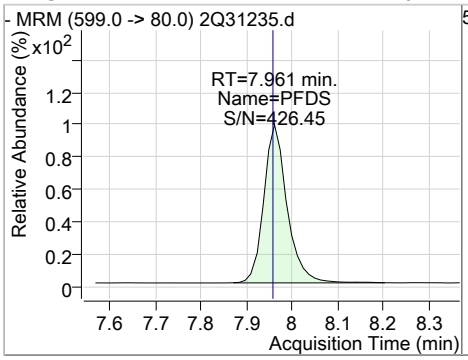
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.04	7.77	-0.03	16064	584.0 -> 483.0	53.5	23.8	83.8

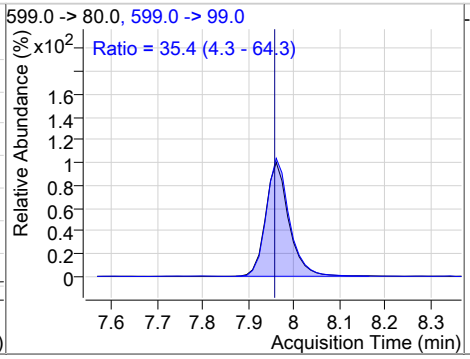


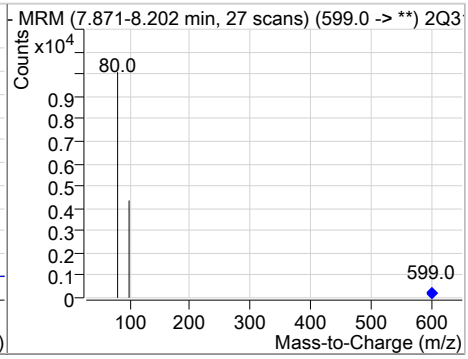




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.40	7.96	-0.01	6747	599.0 -> 99.0	35.4	4.3	64.3

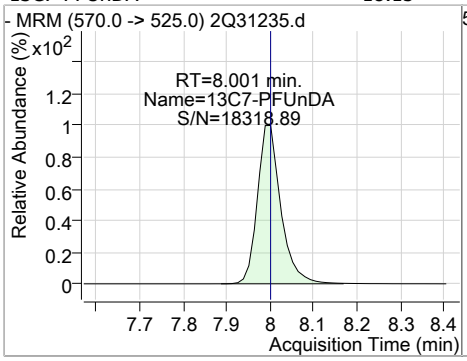


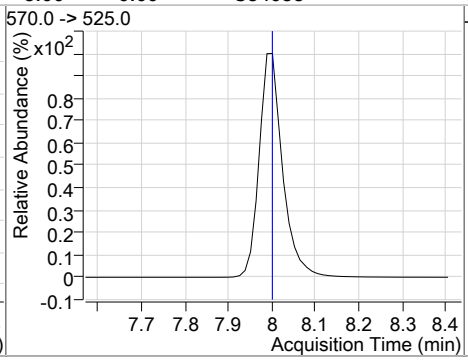


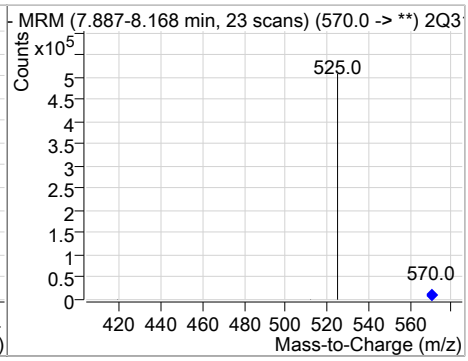


Perfluorinated Compounds by LC/MS/MS

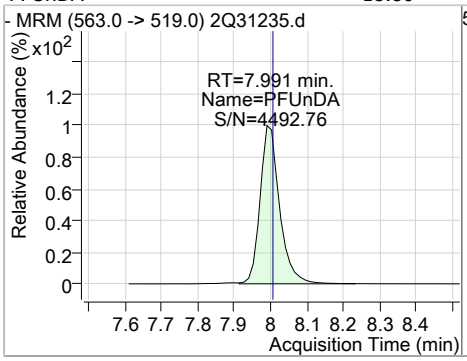
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.15	8.00	0.00	384088				

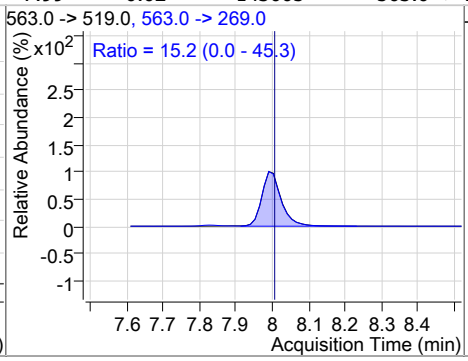


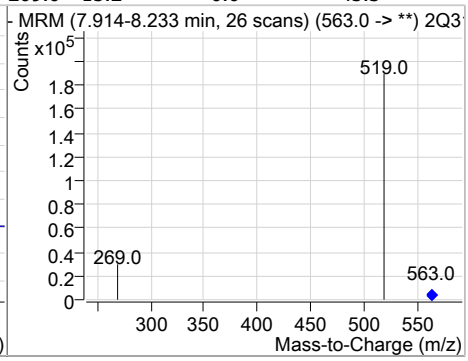




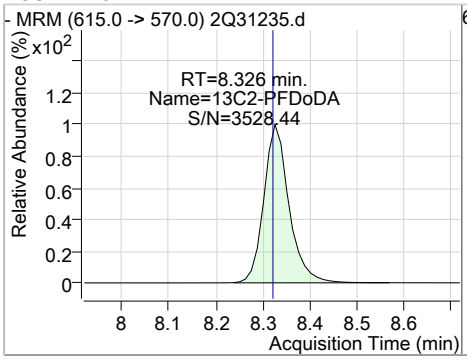
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.80	7.99	-0.02	143065	563.0 -> 269.0	15.2	0.0	45.3

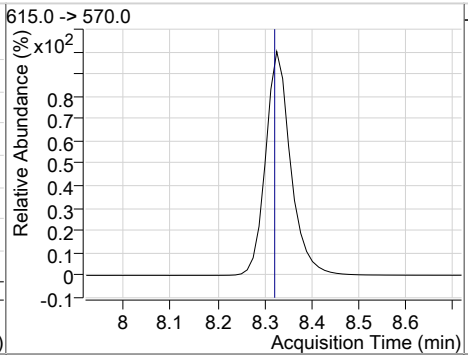


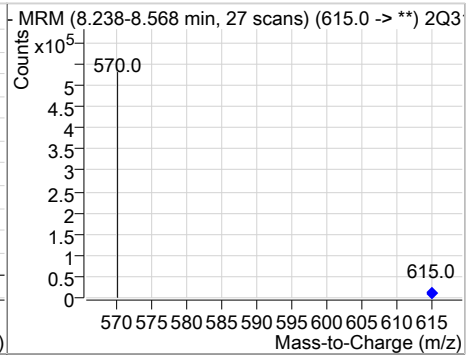




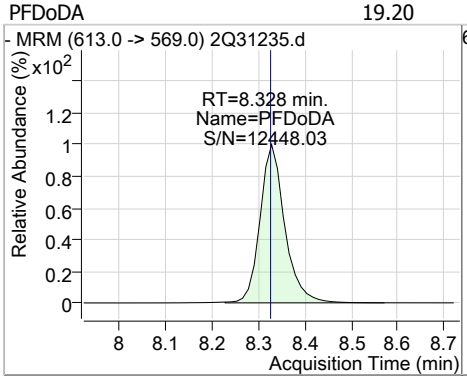
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.27	8.33	0.01	398651				

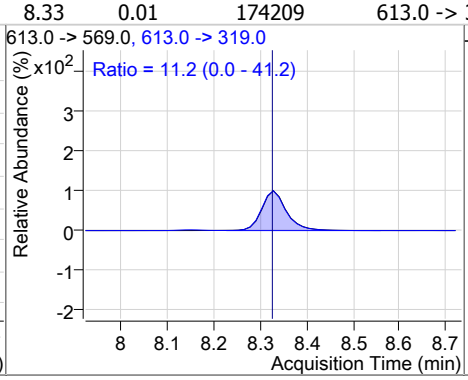


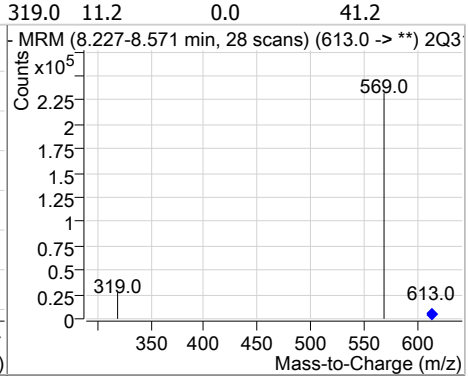




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.20	8.33	0.01	174209	613.0 -> 319.0	11.2	0.0	41.2

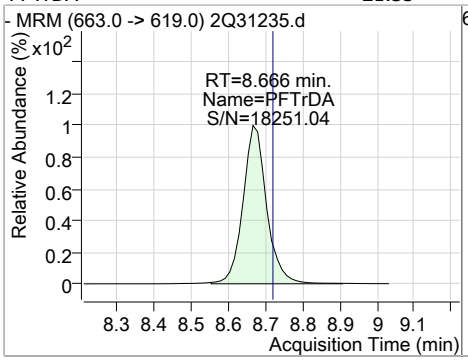


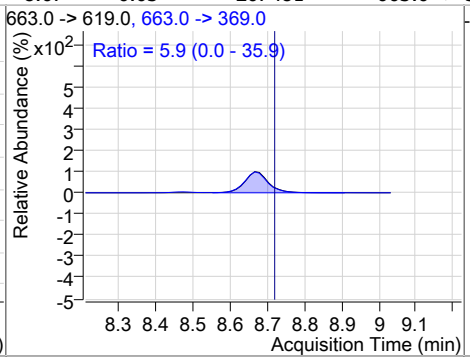


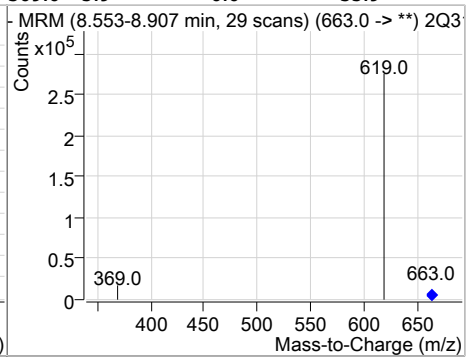


Perfluorinated Compounds by LC/MS/MS

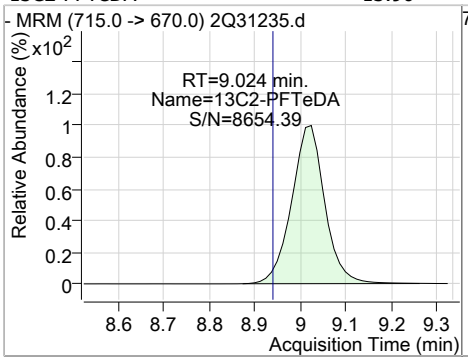
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.35	8.67	0.03	207481	663.0 -> 369.0	5.9	0.0	35.9

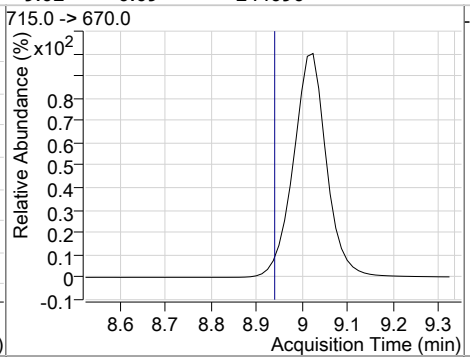


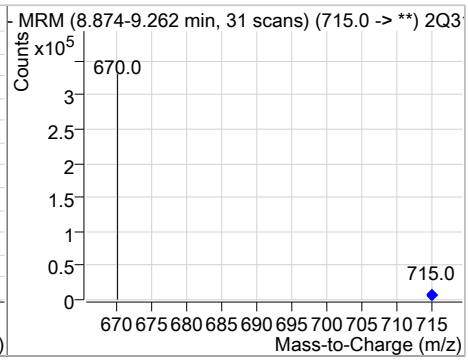




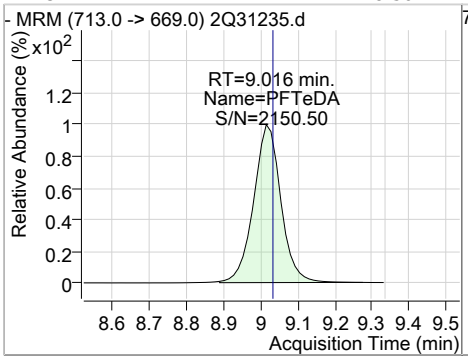
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.96	9.02	0.09	244696				

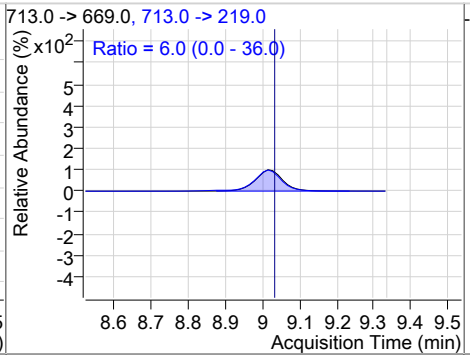


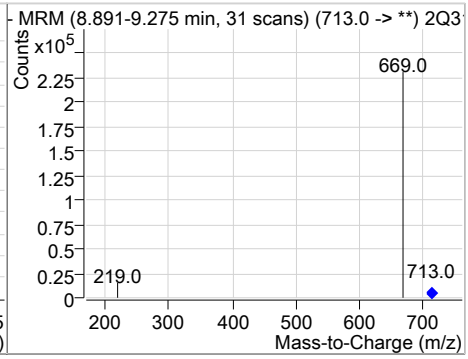




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.50	9.02	0.07	173622	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: OP75580-MSD
Lab FileID: 2Q31235.D
Injection Time: 06/23/19 23:53
Method: EPA 537M BY ID
Analyst approved: 06/24/19 13:45 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.14	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/27/19 17:05

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31507.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 5:51:04 AM
Sample Name : op75639-ms
Vial : Vial 32
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75639,S2Q501,250,,,1,1,water

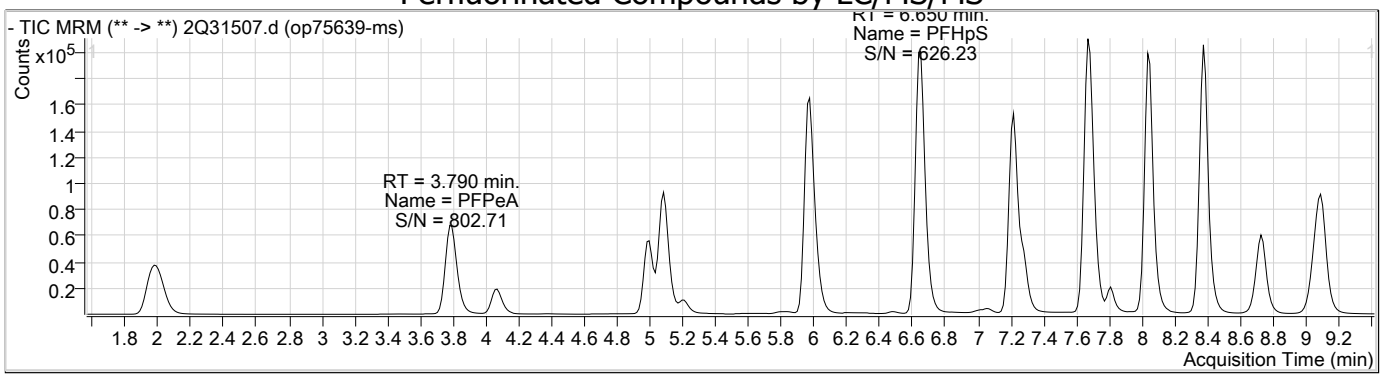
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	-	415.0 -> 370.0	-	N.D.	
13C4-PFOS	-	503.0 -> 80.0	-	N.D.	
M4-PFBA	1.977	217.0 -> 172.0	231073	20.00 µg/L	0.000
M5-PFPeA	3.787	268.0 -> 223.0	190087	20.00 µg/L	0.025
M5-PFHxA	5.088	318.0 -> 273.0	295384	20.00 µg/L	0.038
M4-PFHpA	5.980	367.0 -> 322.0	355832	20.00 µg/L	0.051
M8-PFOA	6.656	421.0 -> 376.0	348183	20.00 µg/L	0.051
M9-PFNA	7.225	472.0 -> 427.0	307157	20.00 µg/L	0.054
M6-PFDA	7.680	519.0 -> 474.0	472963	20.00 µg/L	0.052
M7-PFUnDA	8.041	570.0 -> 525.0	533045	20.00 µg/L	0.040
M2-PFDoDA	8.377	615.0 -> 570.0	557190	20.00 µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	296505	20.00 µg/L	0.063
M8-FOSA	7.286	506.0 -> 78.0	68749	20.00 µg/L	0.039
M3-PFBS	4.067	302.0 -> 99.0	31970	20.00 µg/L	0.038
M3-PFHxS	6.010	402.0 -> 99.0	27145	20.00 µg/L	0.051
M8-PFOS	7.206	507.0 -> 99.0	38973	20.00 µg/L	0.052
M2-4:2FTS	4.996	329.0 -> 309.0	140632	20.00 µg/L	0.050
M2-6:2FTS	6.640	429.0 -> 409.0	131898	20.00 µg/L	0.051
M2-8:2FTS	7.703	529.0 -> 509.0	91481	20.00 µg/L	0.052
M3-MeFOSAA	7.684	573.0 -> 419.0	51599	20.00 µg/L	0.038
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.	
System Monitoring Compounds					
13C2-4:2FTS	4.996	329.0 -> 309.0	140583	28.97 µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 144.9%	
13C2-6:2FTS	6.640	429.0 -> 409.0	131740	33.09 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 165.4%	
13C2-8:2FTS	7.703	529.0 -> 509.0	91485	31.99 µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 159.9%	
13C2-PFDoDA	8.377	615.0 -> 570.0	556681	24.12 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%	
13C2-PFTeDA	9.087	715.0 -> 670.0	296775	16.93 µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%	
13C3-PFBS	4.067	302.0 -> 99.0	31945	21.03 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C3-PFHxS	6.010	402.0 -> 99.0	27107	21.29 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C4-PFBA	1.977	217.0 -> 172.0	231043	22.34 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C4-PFHpA	5.980	367.0 -> 322.0	355319	25.88 µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.4%	
13C5-PFHxA	5.088	318.0 -> 273.0	294925	24.37 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.8%	
13C5-PFPeA	3.787	268.0 -> 223.0	190430	23.72 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.6%	
13C6-PFDA	7.680	519.0 -> 474.0	472155	27.07 µg/L	0.052

Perfluorinated Compounds by LC/MS/MS

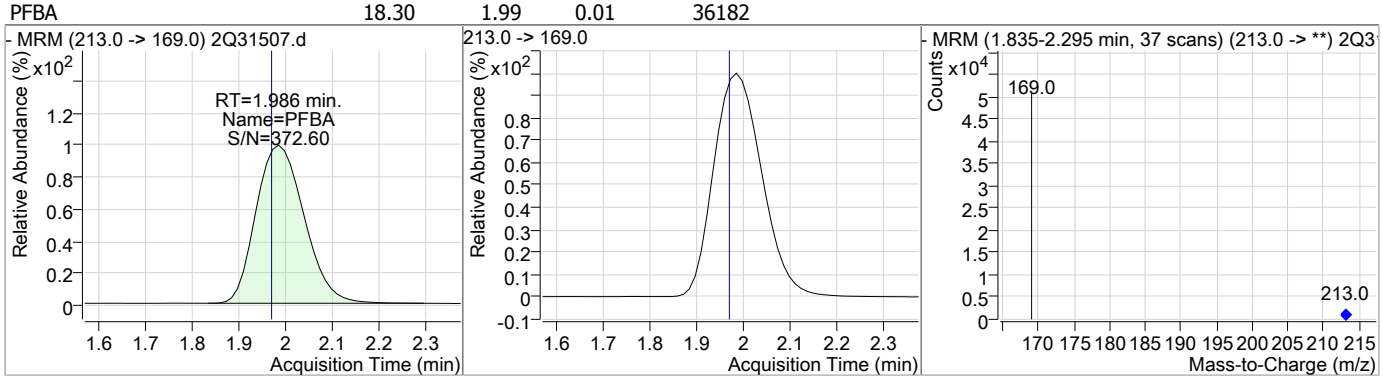
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.3%		
13C7-PFUnDA	8.041	570.0 -> 525.0	532031	25.15 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.7%		
13C8-FOSA	7.286	506.0 -> 78.0	68738	11.68 µg/L		0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.4%		
13C8-PFOA	6.656	421.0 -> 376.0	347786	27.11 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.6%		
13C8-PFOS	7.206	507.0 -> 99.0	38961	20.52 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C9-PFNA	7.225	472.0 -> 427.0	306794	28.23 µg/L		0.054
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 141.2%		
d3-MeFOSAA	7.684	573.0 -> 419.0	51648	24.78 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.9%		
M2-PFOA	-	415.0 -> 370.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
M4-PFOS	-	503.0 -> 80.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.		
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = NA%		
Target Compounds						**QValue**
4:2FTS	4.986	327.0 -> 307.0	71609	17.87 µg/L		100
6:2FTS	6.642	427.0 -> 407.0	61828	17.61 µg/L		98
8:2FTS	7.704	527.0 -> 507.0	45451	19.15 µg/L		95
EtFOSAA	7.810	584.0 -> 419.0	22043	17.33 µg/L		96
FOSA	7.289	498.0 -> 78.0	31774	18.53 µg/L		100
MeFOSAA	7.685	570.0 -> 419.0	25740	18.41 µg/L		99
PFBA	1.986	213.0 -> 169.0	36182	18.30 µg/L		100
PFBS	4.071	299.0 -> 80.0	40532	18.47 µg/L		100
PFDA	7.681	513.0 -> 469.0	144197	18.47 µg/L		98
PFDoDA	8.379	613.0 -> 569.0	229134	18.07 µg/L		100
PFDS	8.012	599.0 -> 80.0	10709	15.03 µg/L		100
PFHpA	5.970	363.0 -> 319.0	287931	18.44 µg/L		99
PFHpS	6.650	449.0 -> 80.0	29837	19.57 µg/L		98
PFHxA	5.090	313.0 -> 269.0	81620	18.79 µg/L		99
PFHxS	6.013	399.0 -> 80.0	36439	18.80 µg/L	m	98
PFNA	7.227	463.0 -> 419.0	200853	24.18 µg/L		100
PFNS	7.649	549.0 -> 80.0	20596	16.98 µg/L		99
PFOA	6.661	413.0 -> 369.0	197432	19.65 µg/L	m	99
PFOS	7.210	499.0 -> 80.0	34208	17.74 µg/L	m	84
PFPeA	3.790	263.0 -> 219.0	148429	18.75 µg/L		100
PFPeS	5.208	349.0 -> 80.0	27424	19.49 µg/L		98
PFTeDA	9.093	713.0 -> 669.0	205403	18.17 µg/L		100
PFTrDA	8.729	663.0 -> 619.0	271712	23.22 µg/L		100
PFUnDA	8.043	563.0 -> 519.0	190604	18.06 µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		

= Qualifier out of range, m = manually integrated, + = Area summed

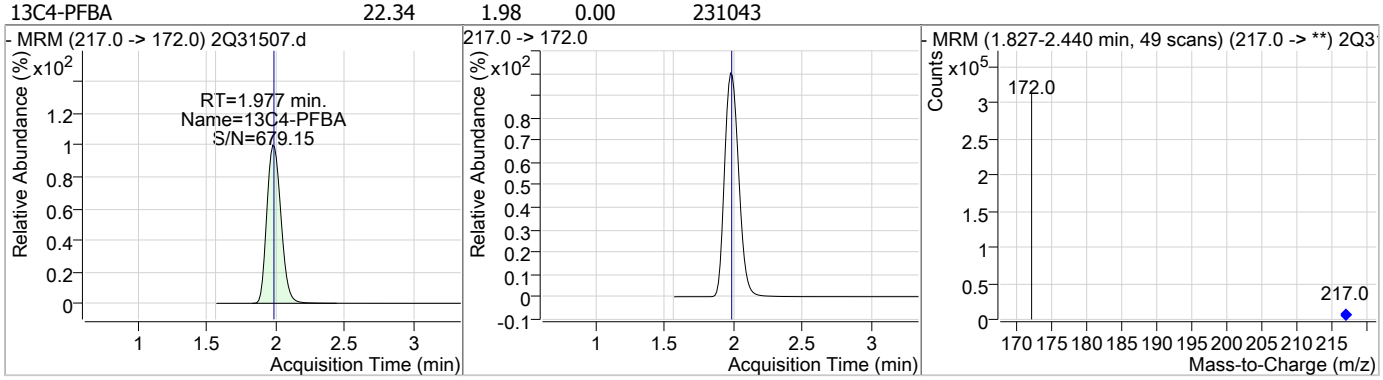
Perfluorinated Compounds by LC/MS/MS



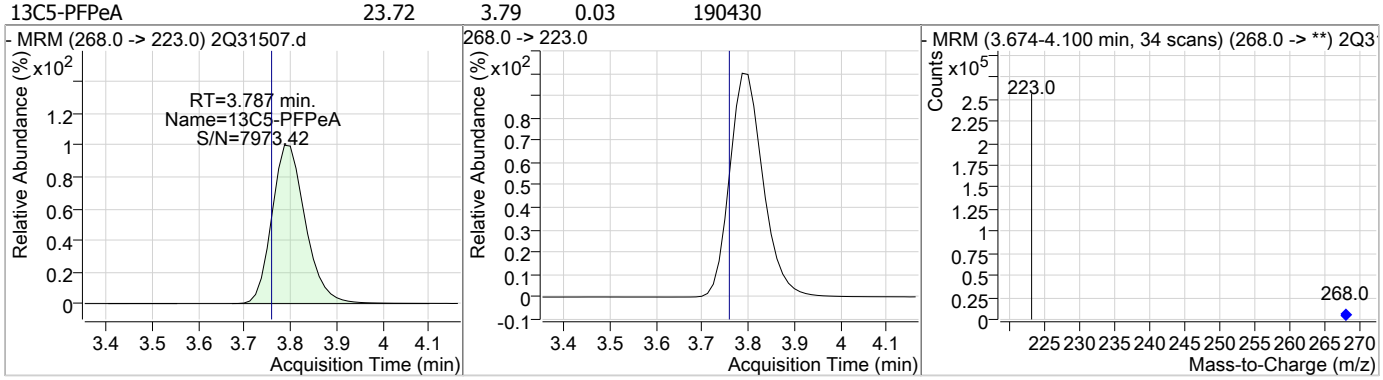
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.30	1.99	0.01	36182				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.34	1.98	0.00	231043				

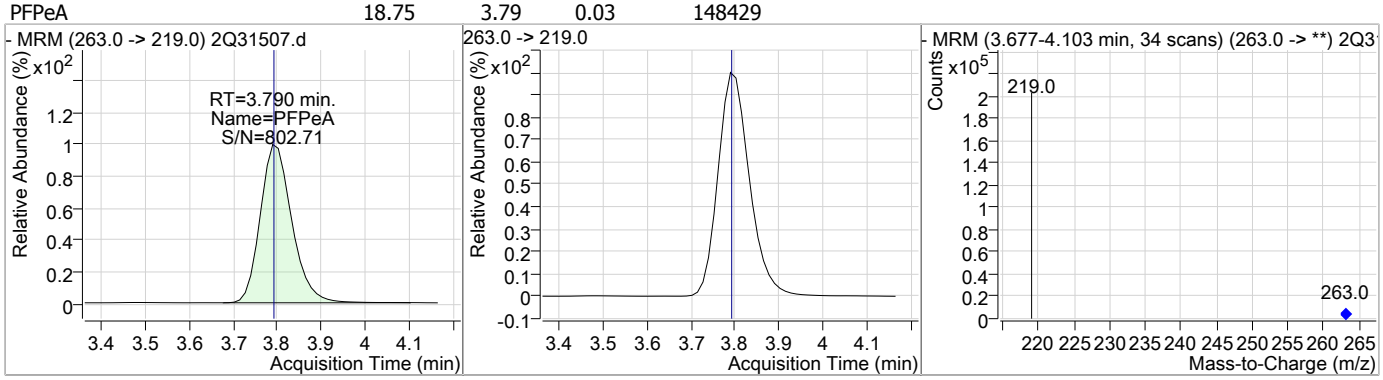


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.72	3.79	0.03	190430				

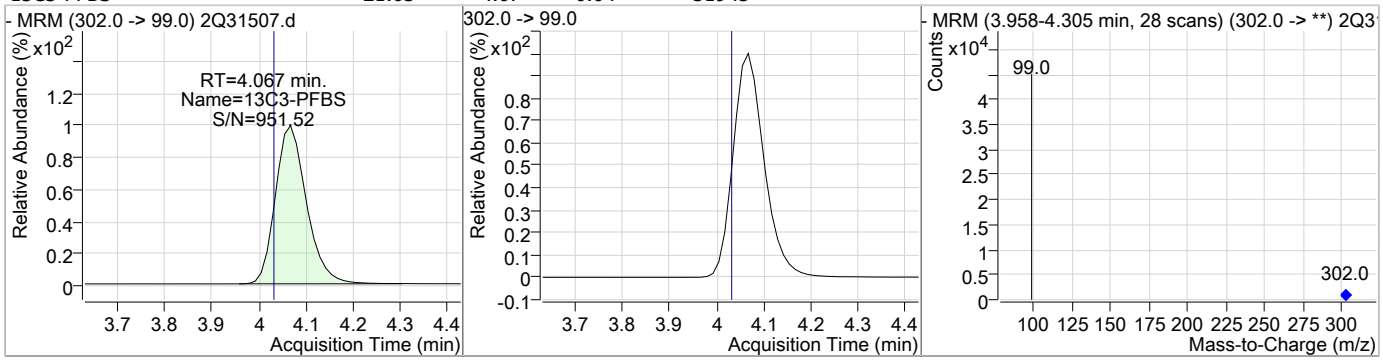


Perfluorinated Compounds by LC/MS/MS

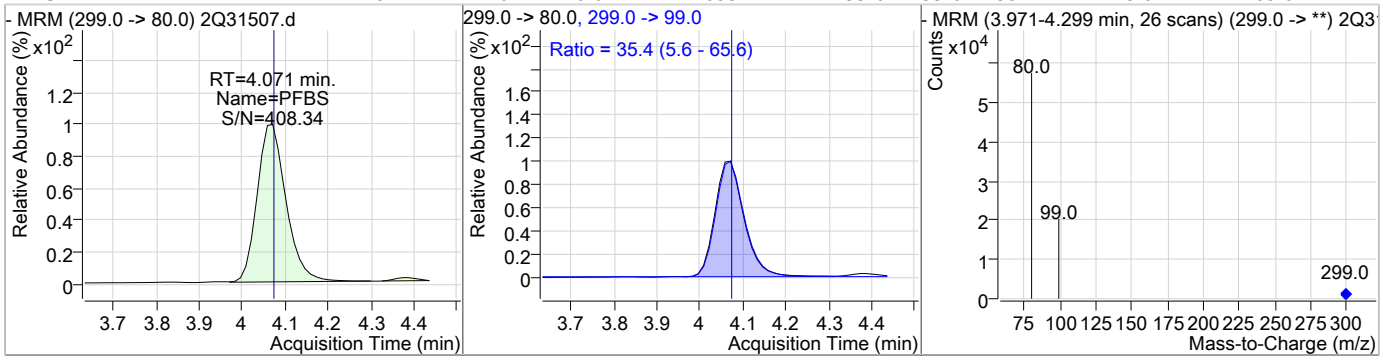
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.75	3.79	0.03	148429				



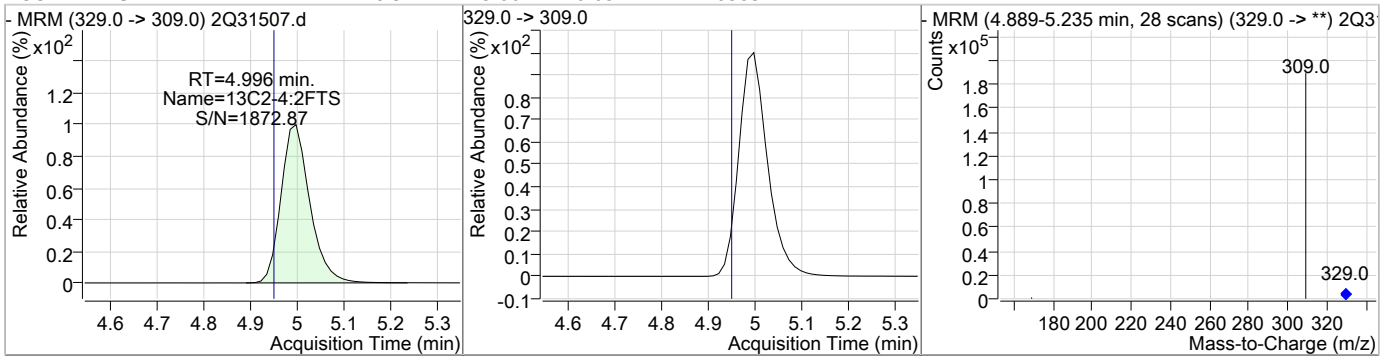
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.03	4.07	0.04	31945				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.47	4.07	0.04	40532	299.0 -> 99.0	35.4	5.6	65.6

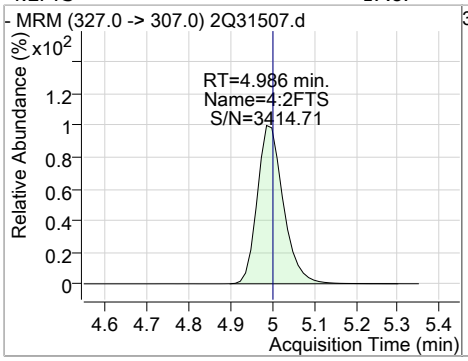


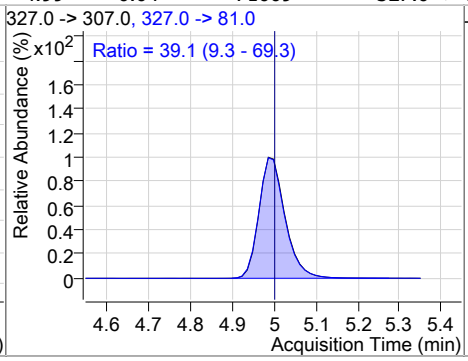
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	28.97	5.00	0.05	140583				

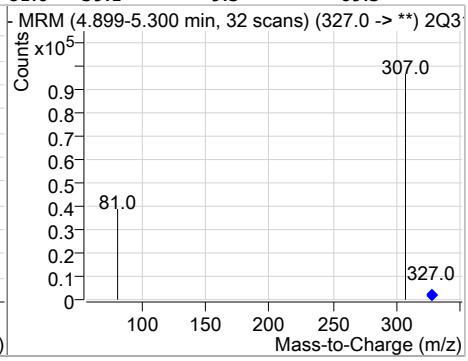


Perfluorinated Compounds by LC/MS/MS

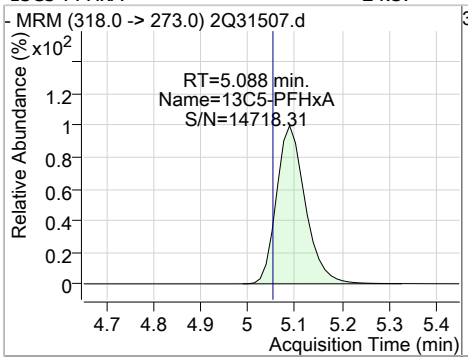
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.87	4.99	0.04	71609	327.0 -> 81.0	39.1	9.3	69.3

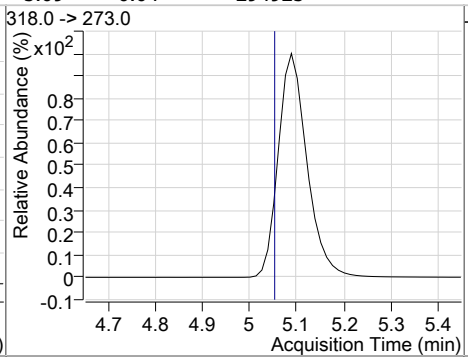


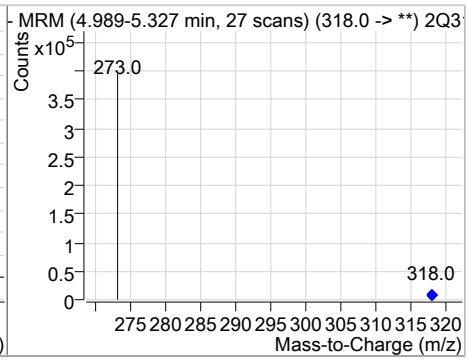




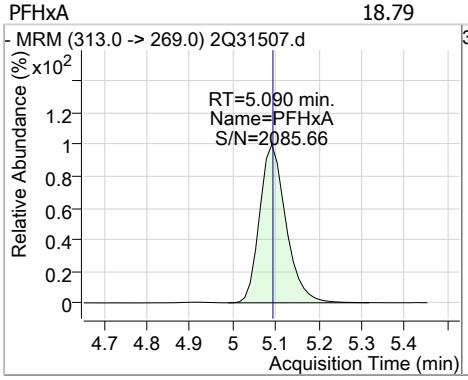
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.37	5.09	0.04	294925				

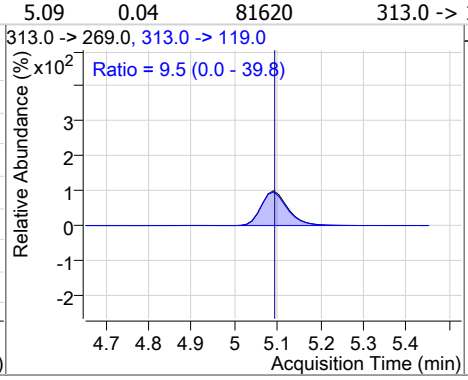


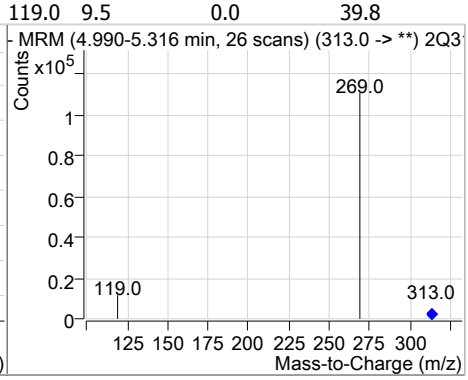




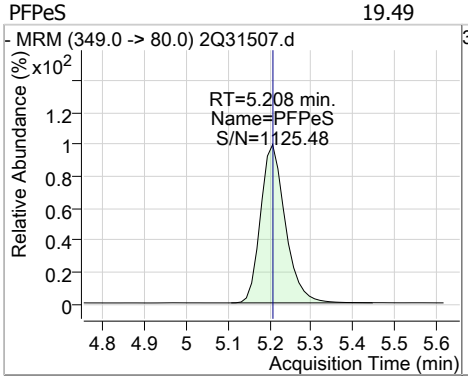
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.79	5.09	0.04	81620	313.0 -> 119.0	9.5	0.0	39.8

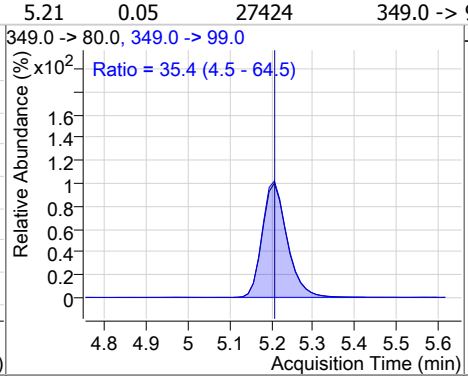


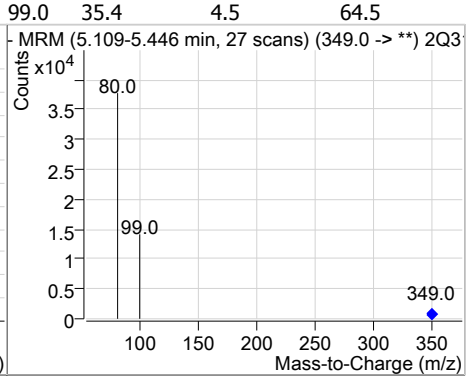




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.49	5.21	0.05	27424	349.0 -> 99.0	35.4	4.5	64.5

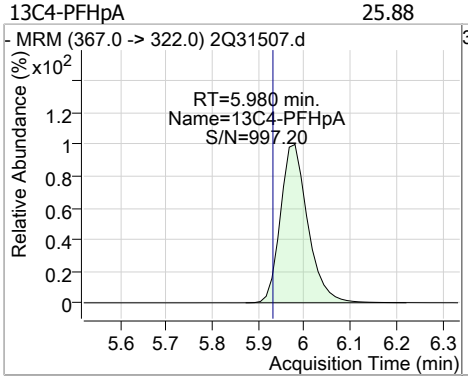


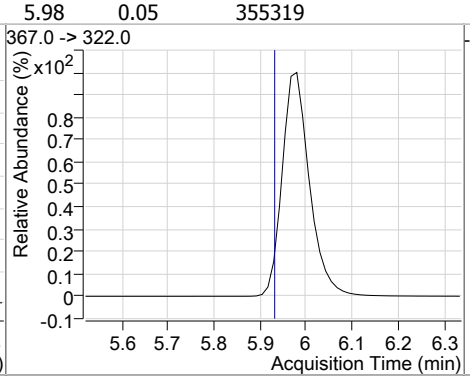


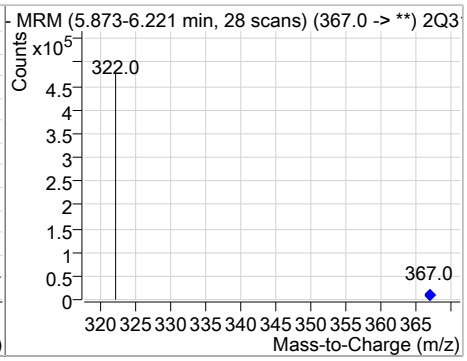


Perfluorinated Compounds by LC/MS/MS

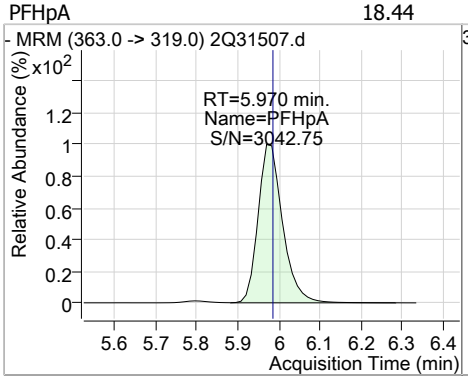
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	25.88	5.98	0.05	355319				

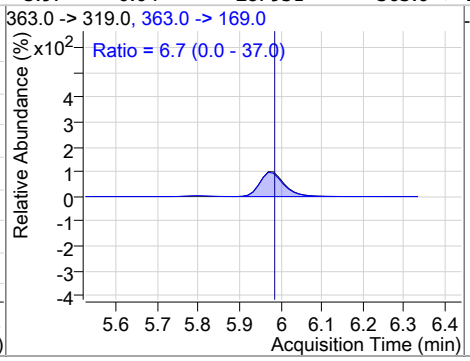


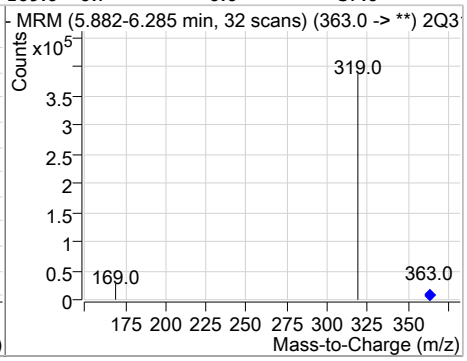




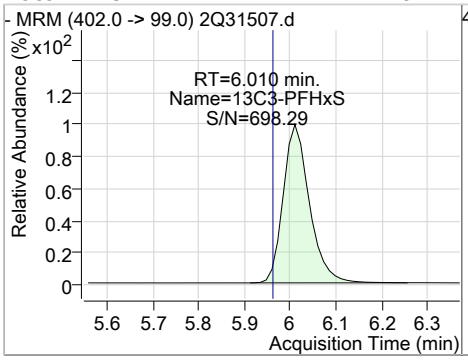
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.44	5.97	0.04	287931	363.0 -> 169.0	6.7	0.0	37.0

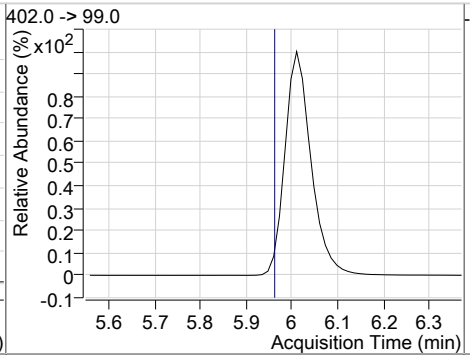


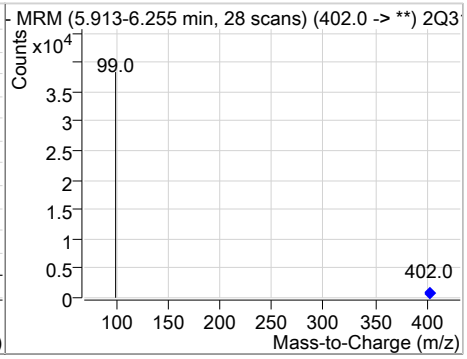




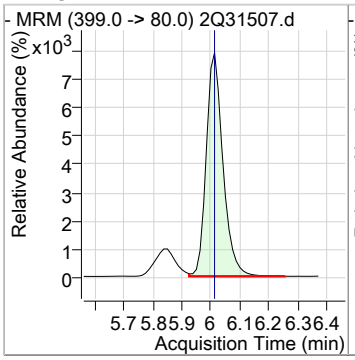
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.29	6.01	0.05	27107				

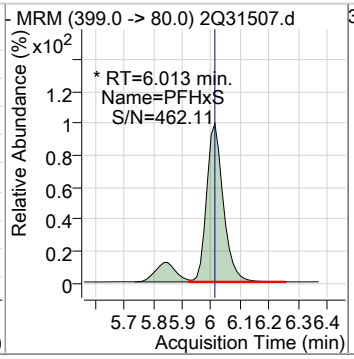


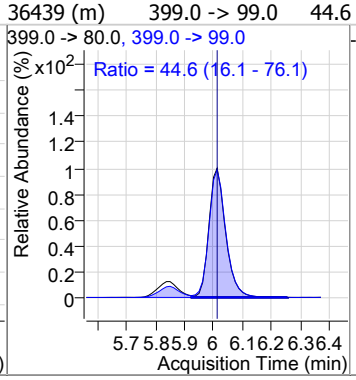


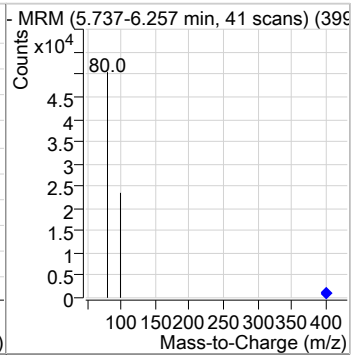


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.80	6.01	0.05	36439 (m)	399.0 -> 99.0	44.6	16.1	76.1



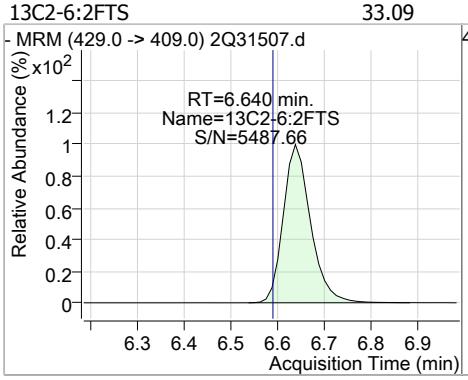


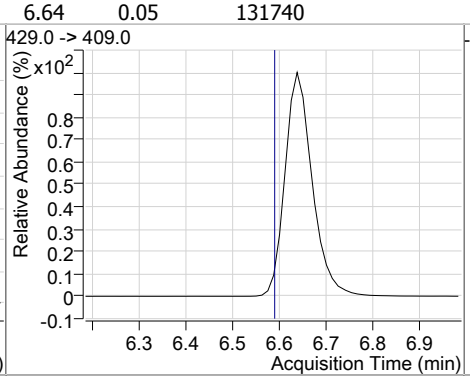


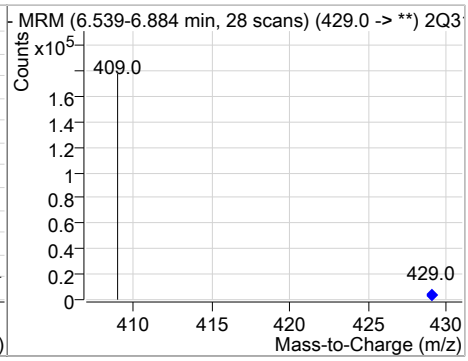


Perfluorinated Compounds by LC/MS/MS

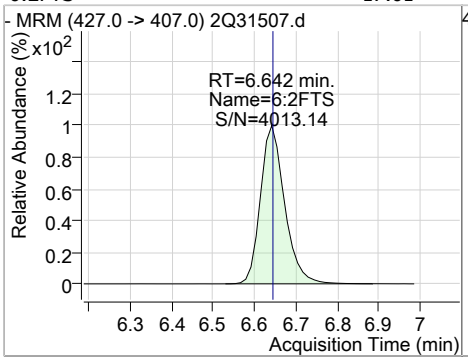
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	33.09	6.64	0.05	131740				

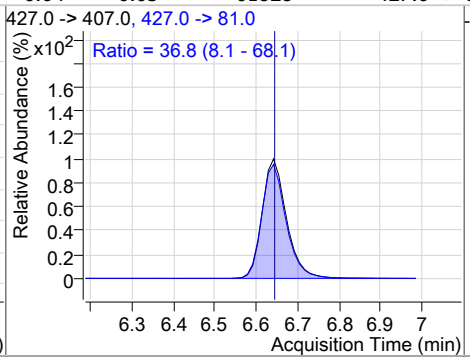


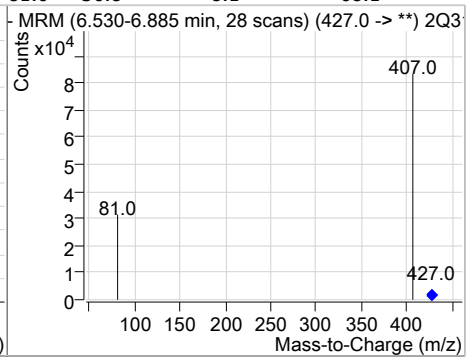




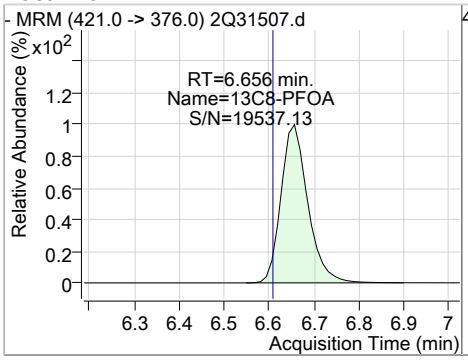
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.61	6.64	0.05	61828	427.0 -> 81.0	36.8	8.1	68.1

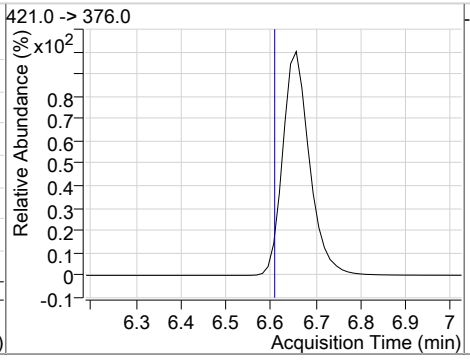


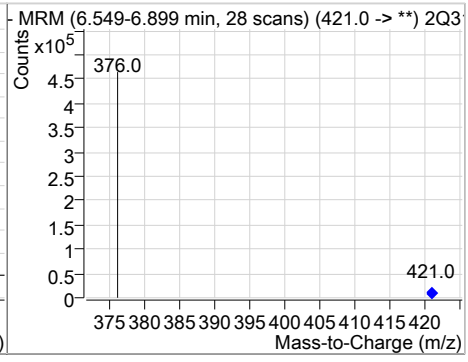




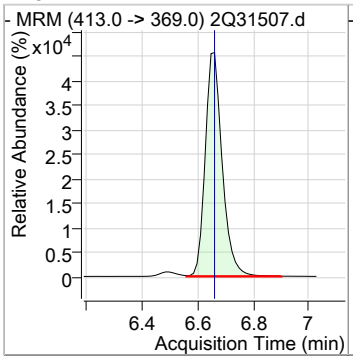
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	27.11	6.66	0.05	347786				

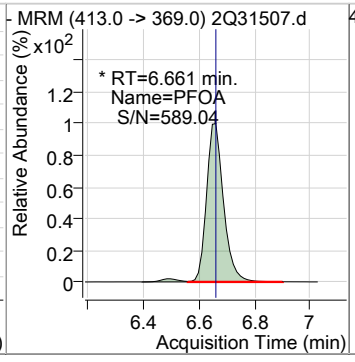


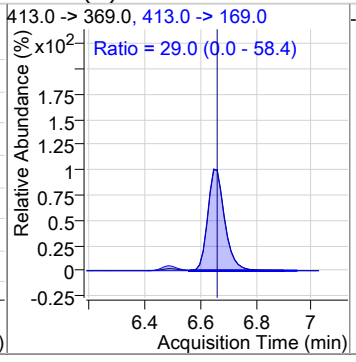


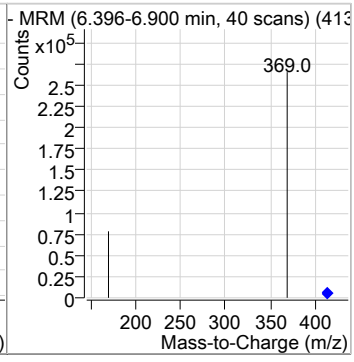


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.65	6.66	0.05	197432 (m)	413.0 -> 169.0	29.0	0.0	58.4



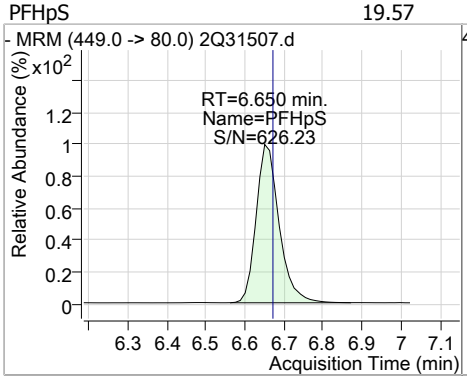


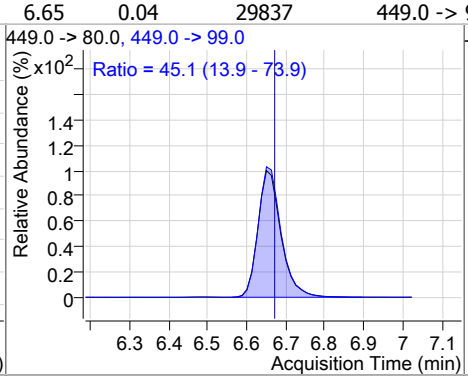


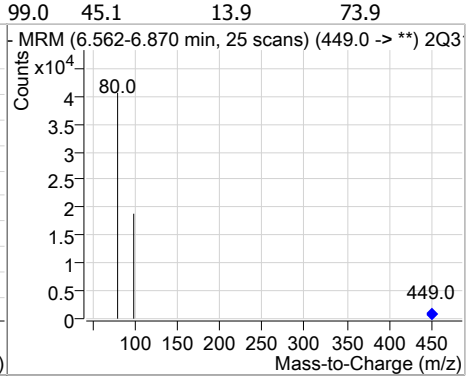


Perfluorinated Compounds by LC/MS/MS

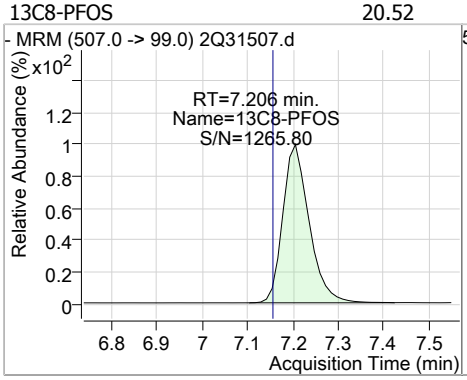
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.57	6.65	0.04	29837	449.0 -> 99.0	45.1	13.9	73.9

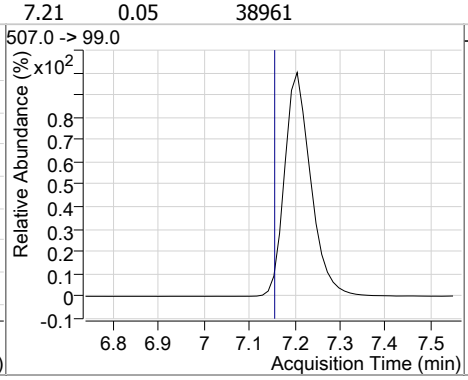


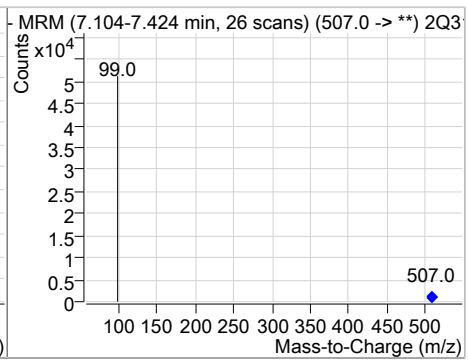




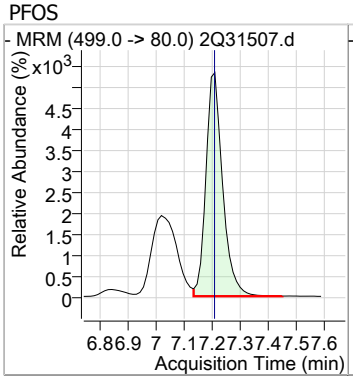
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.52	7.21	0.05	38961				

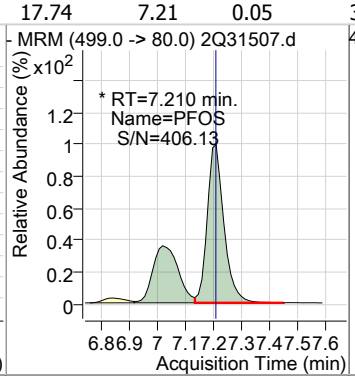


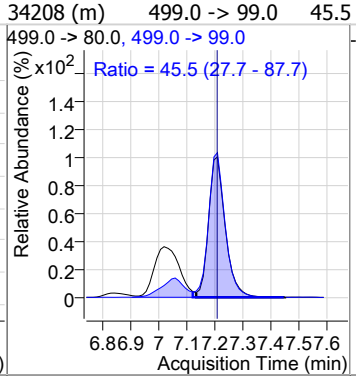


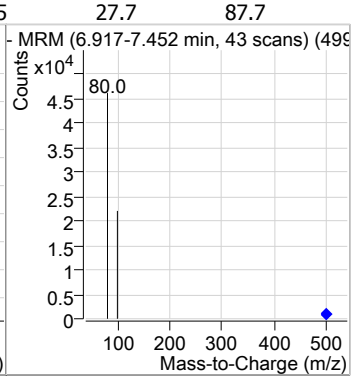


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.74	7.21	0.05	34208 (m)	499.0 -> 99.0	45.5	27.7	87.7

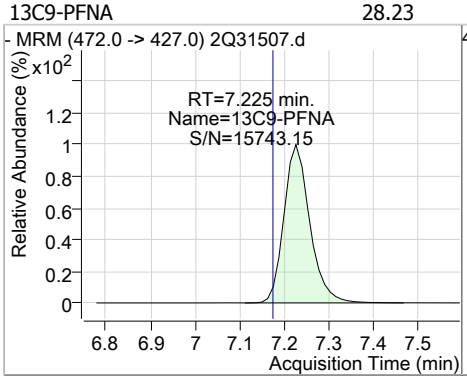


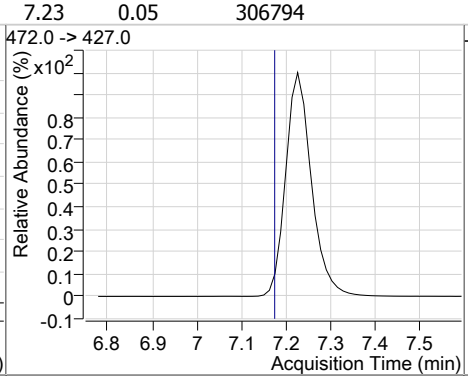


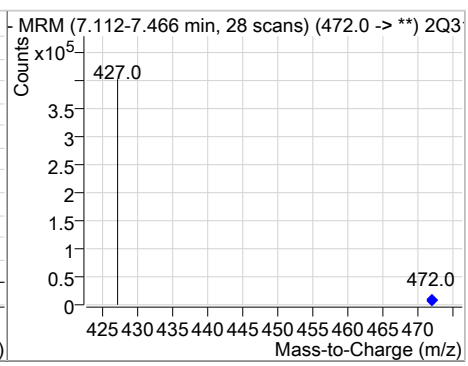




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	28.23	7.23	0.05	306794				

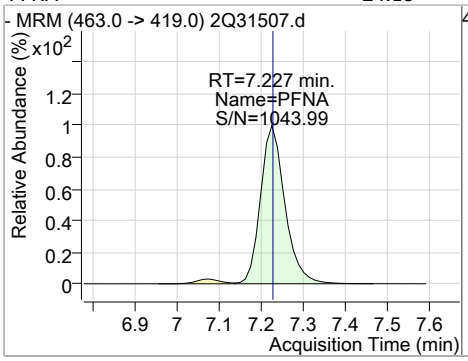


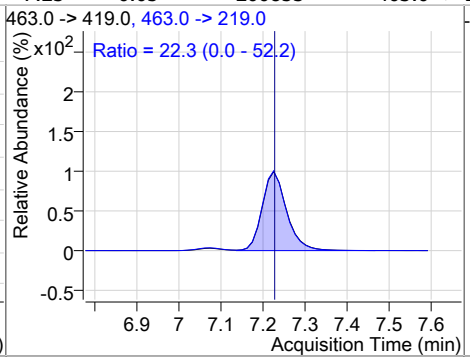


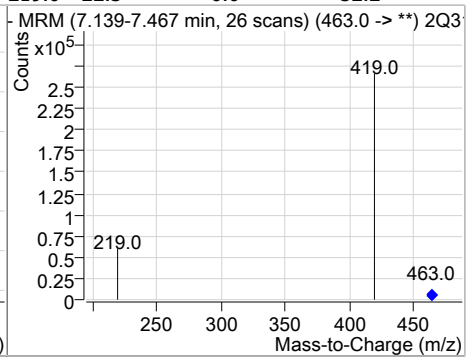


Perfluorinated Compounds by LC/MS/MS

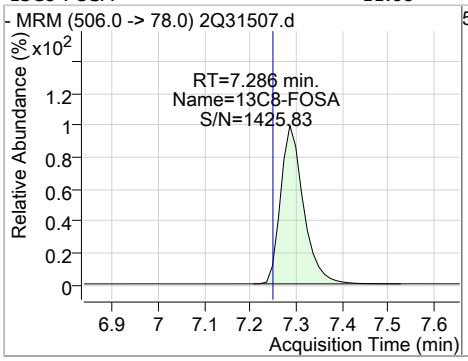
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	24.18	7.23	0.05	200853	463.0 -> 219.0	22.3	0.0	52.2

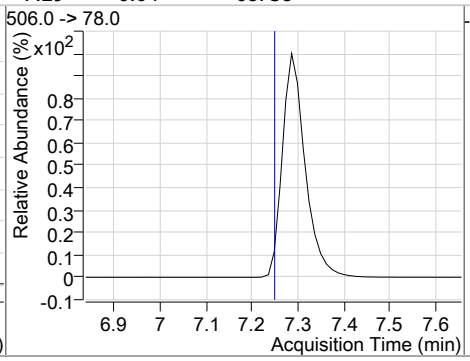


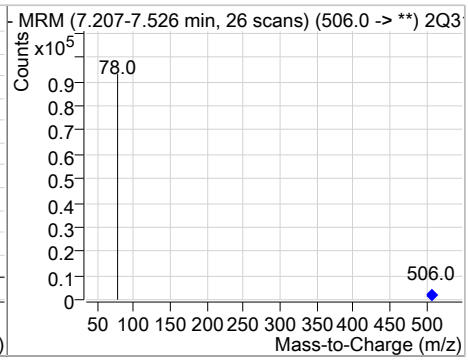




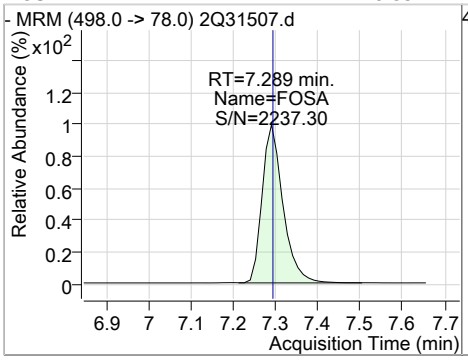
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.68	7.29	0.04	68738				

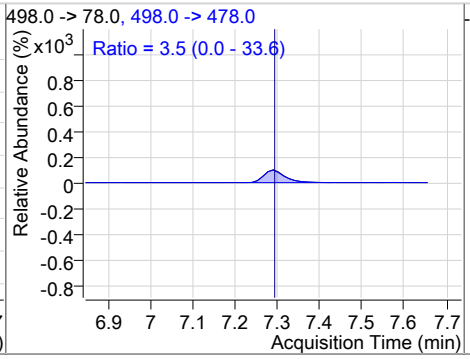


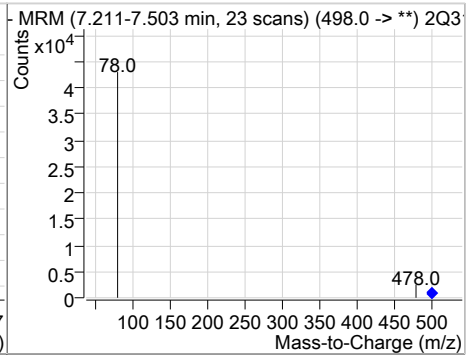




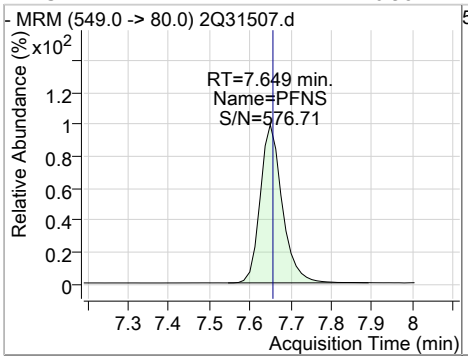
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.53	7.29	0.04	31774	498.0 -> 478.0	3.5	0.0	33.6

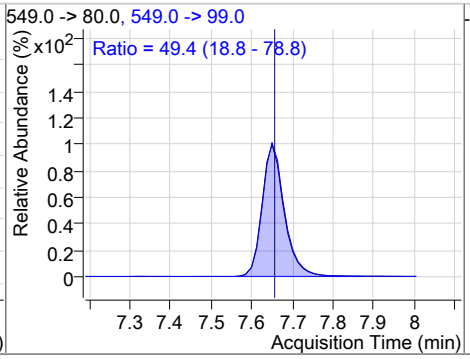


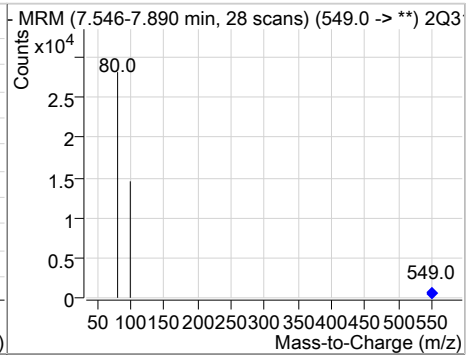




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.98	7.65	0.05	20596	549.0 -> 99.0	49.4	18.8	78.8

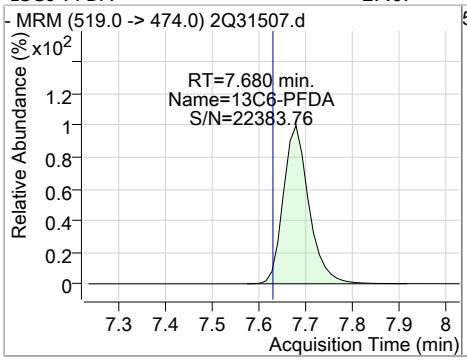


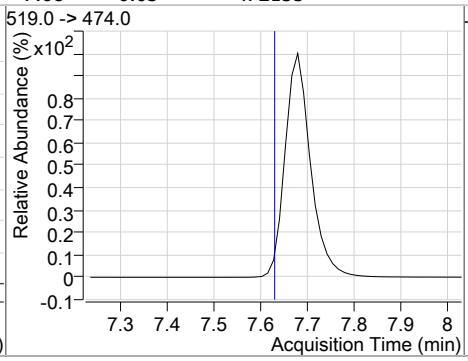


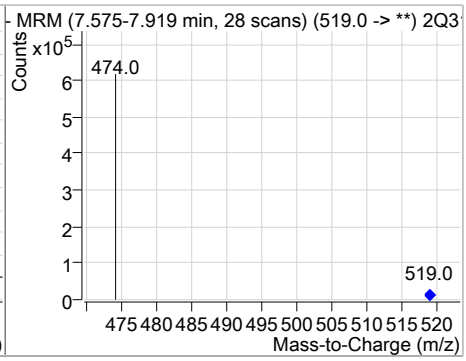


Perfluorinated Compounds by LC/MS/MS

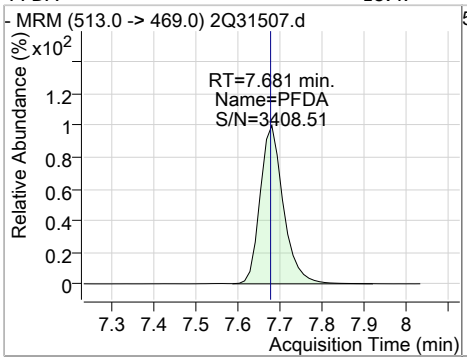
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	27.07	7.68	0.05	472155				

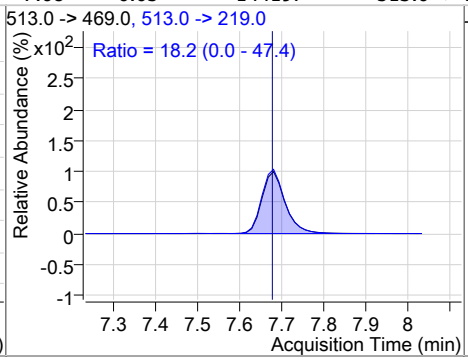


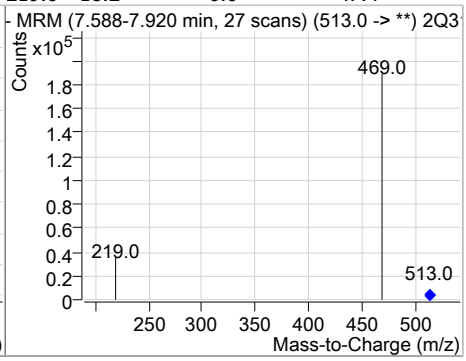




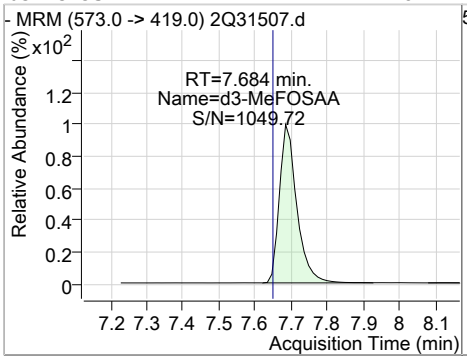
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.47	7.68	0.05	144197	513.0 -> 219.0	18.2	0.0	47.4

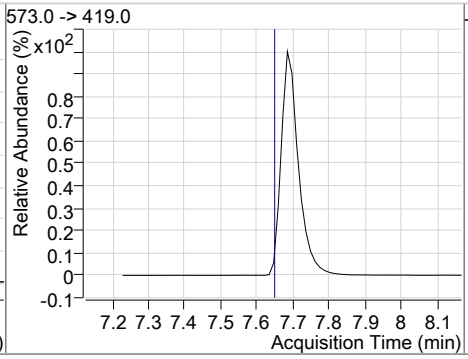


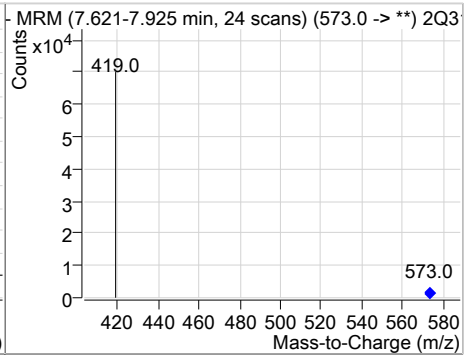




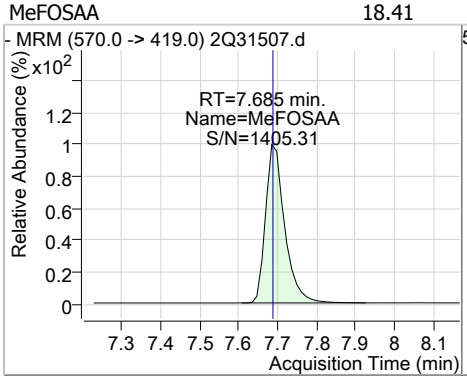
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.78	7.68	0.04	51648				

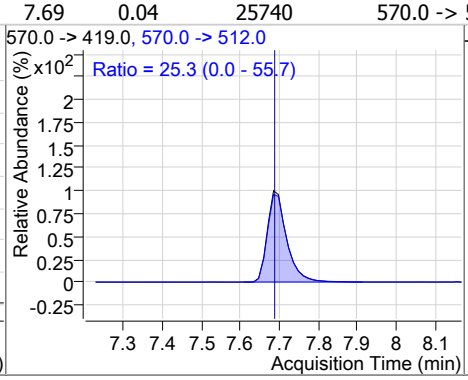


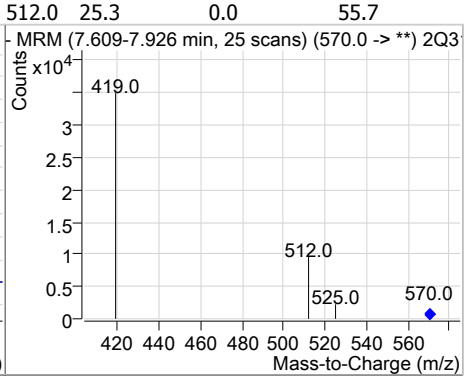




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.41	7.69	0.04	25740	570.0 -> 512.0	25.3	0.0	55.7

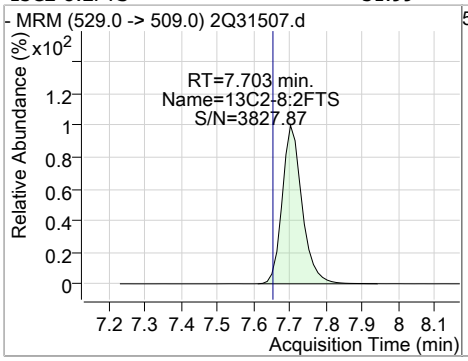


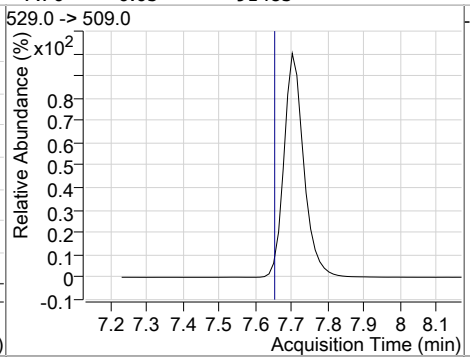


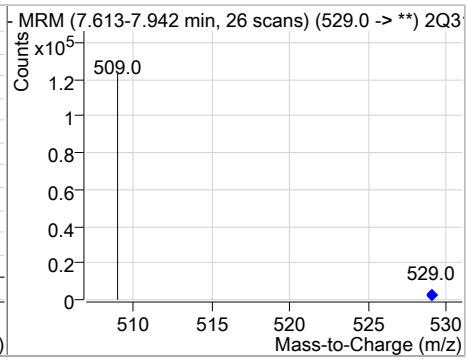


Perfluorinated Compounds by LC/MS/MS

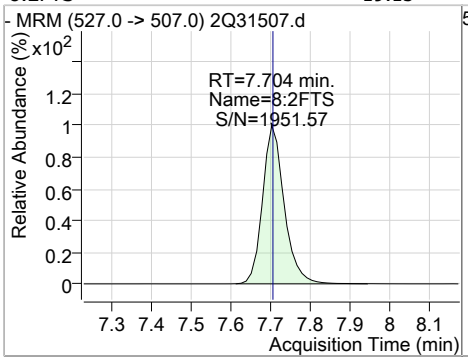
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	31.99	7.70	0.05	91485				

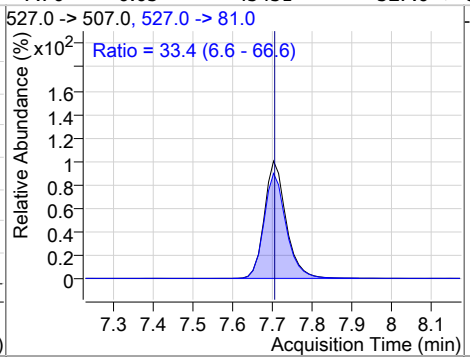


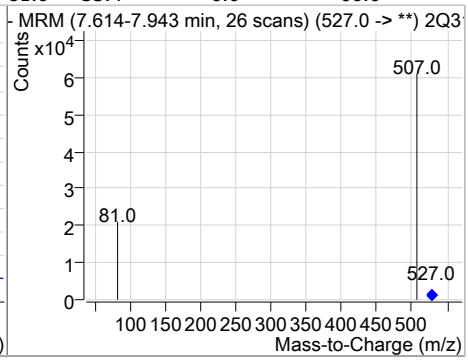




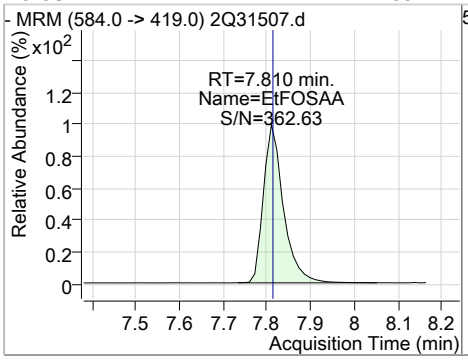
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.15	7.70	0.05	45451	527.0 -> 81.0	33.4	6.6	66.6

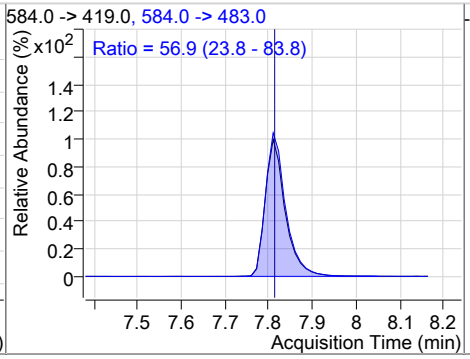


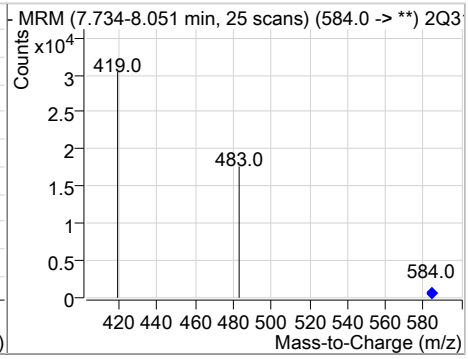




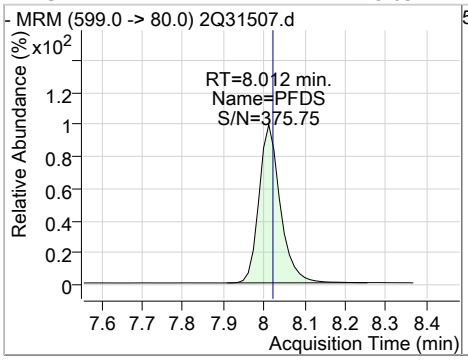
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.33	7.81	0.04	22043	584.0 -> 483.0	56.9	23.8	83.8

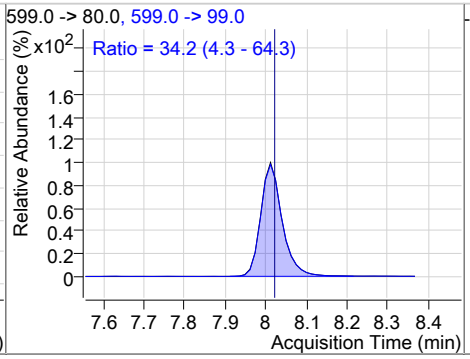


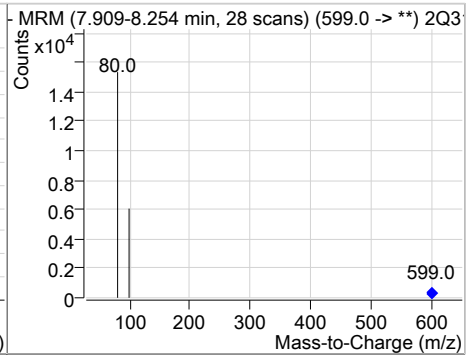




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.03	8.01	0.05	10709	599.0 -> 99.0	34.2	4.3	64.3

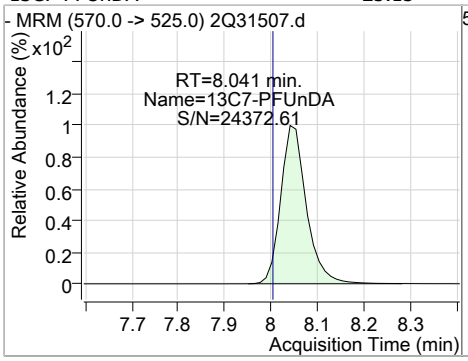


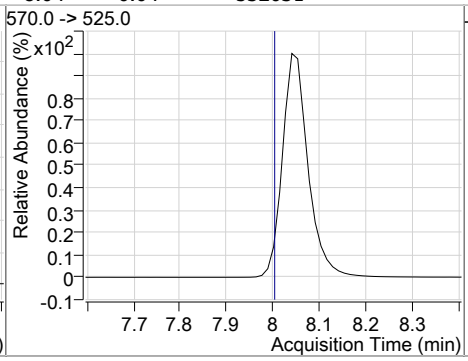


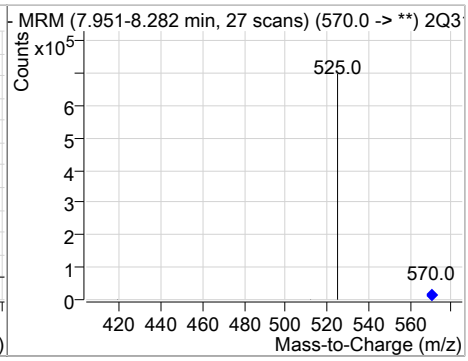


Perfluorinated Compounds by LC/MS/MS

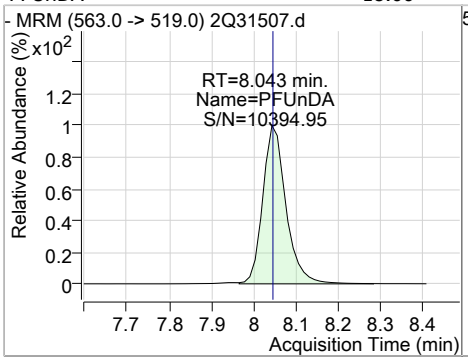
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	25.15	8.04	0.04	532031				

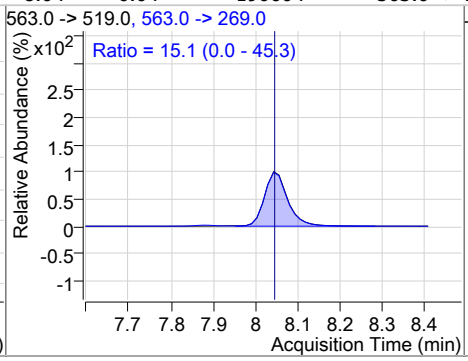


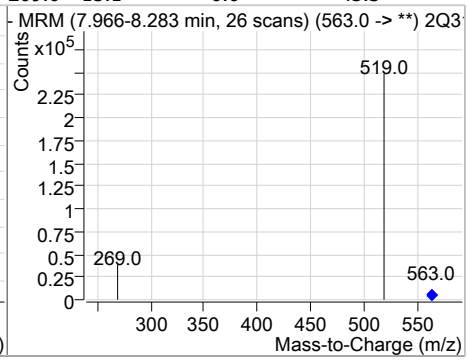




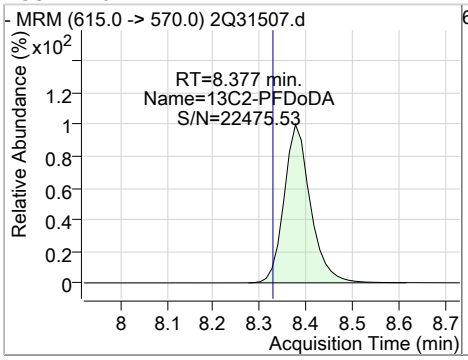
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.06	8.04	0.04	190604	563.0 -> 269.0	15.1	0.0	45.3

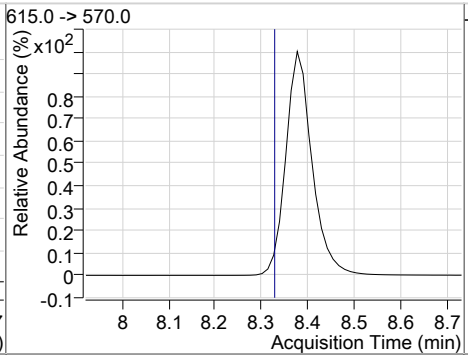


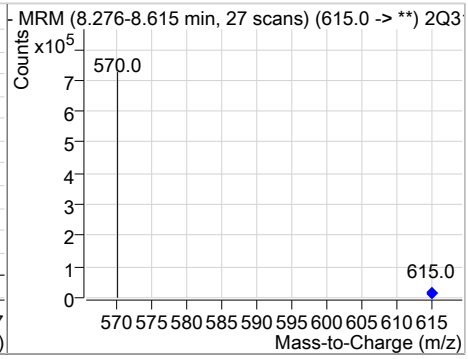




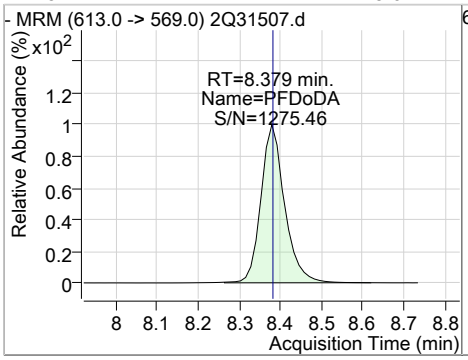
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.12	8.38	0.05	556681				

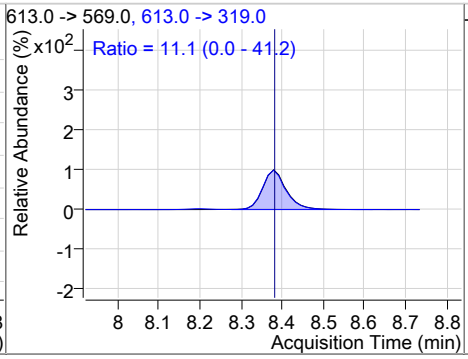


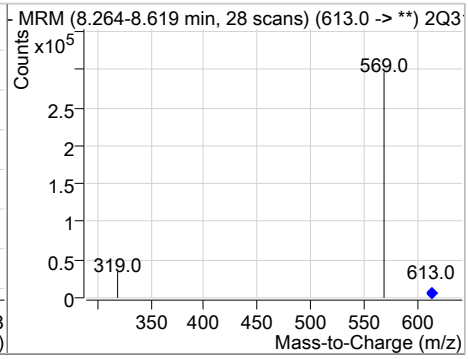




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.07	8.38	0.05	229134	613.0 -> 319.0	11.1	0.0	41.2

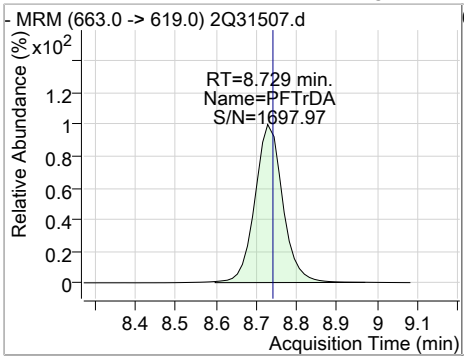


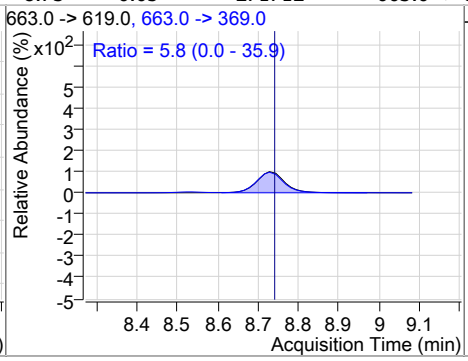


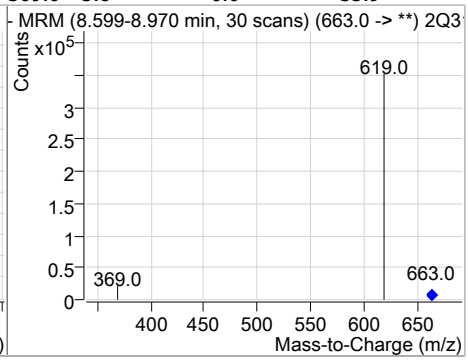


Perfluorinated Compounds by LC/MS/MS

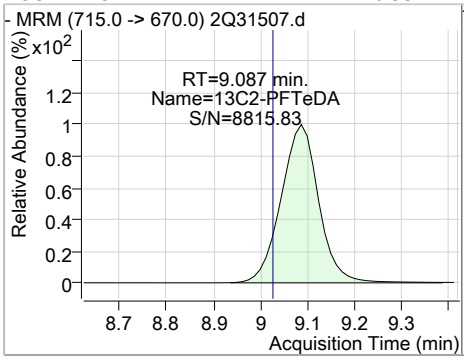
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.22	8.73	0.05	271712	663.0 -> 369.0	5.8	0.0	35.9

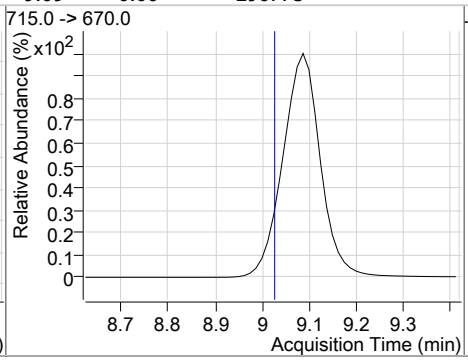


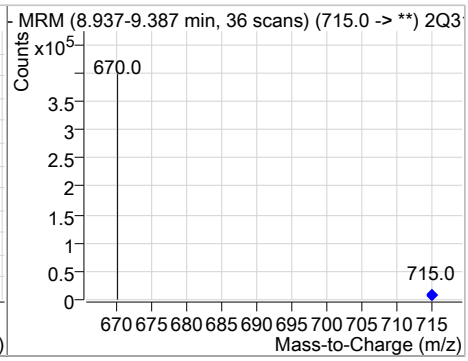




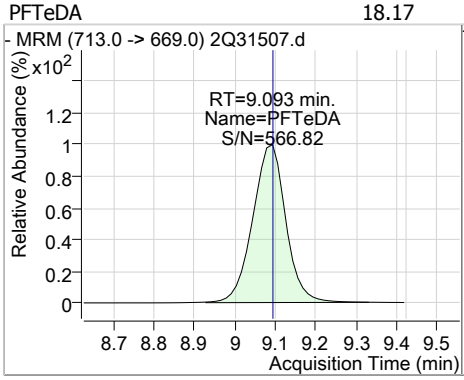
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.93	9.09	0.06	296775				

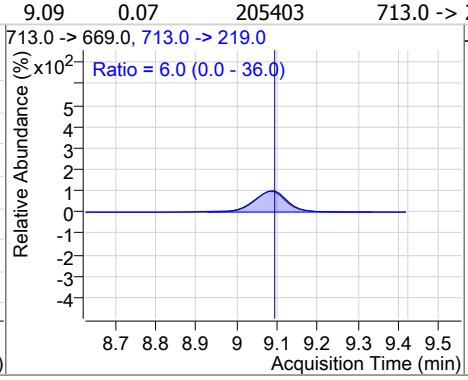


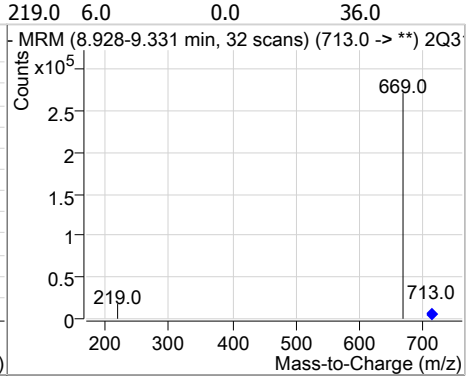




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.17	9.09	0.07	205403	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: OP75639-MS
Lab FileID: 2Q31507.D
Injection Time: 06/27/19 05:51
Method: EPA 537M BY ID
Analyst approved: 06/27/19 14:37 Nancy Saunders
Supervisor approved: 06/27/19 17:05 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanoic acid	335-67-1		6.66	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31096.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 10:12:01 AM
Sample Name : ic498-0.5
Vial : Vial 2
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

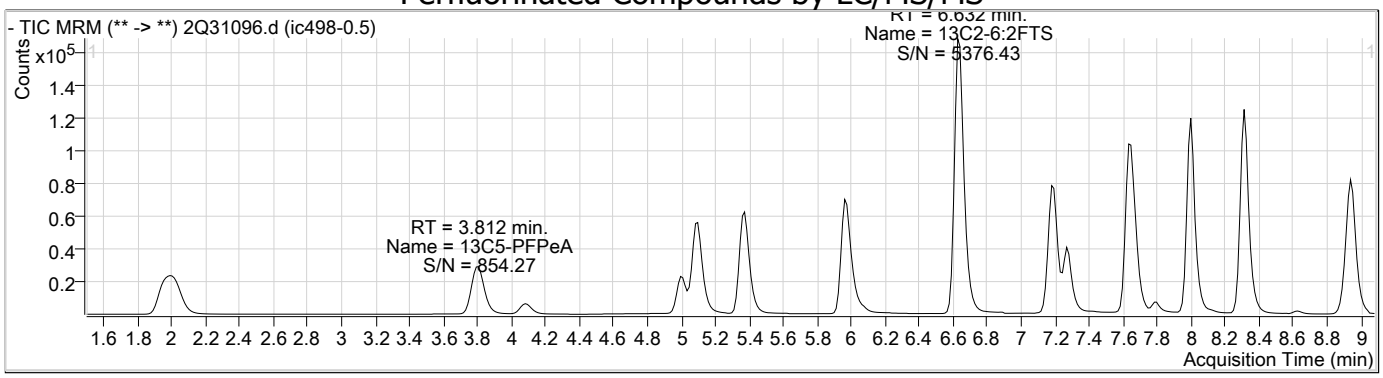
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	345837	20.00	µg/L	0.000
13C4-PFOS	7.174	503.0 -> 80.0	64952	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	196575	20.00	µg/L	0.000
M5-PFPeA	3.812	268.0 -> 223.0	151423	20.00	µg/L	0.013
M5-PFHxA	5.101	318.0 -> 273.0	230911	20.00	µg/L	0.013
M4-PFHpA	5.968	367.0 -> 322.0	265797	20.00	µg/L	0.000
M8-PFOA	6.647	421.0 -> 376.0	252952	20.00	µg/L	0.013
M9-PFNA	7.202	472.0 -> 427.0	210812	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	343101	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	412792	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	444961	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	342450	20.00	µg/L	0.000
M8-FOSA	7.274	506.0 -> 78.0	119800	20.00	µg/L	0.000
M3-PFBS	4.080	302.0 -> 99.0	29355	20.00	µg/L	0.000
M3-PFHxS	6.010	402.0 -> 99.0	24960	20.00	µg/L	0.013
M8-PFOS	7.184	507.0 -> 99.0	37798	20.00	µg/L	0.013
M2-4:2FTS	4.997	329.0 -> 309.0	93184	20.00	µg/L	0.000
M2-6:2FTS	6.632	429.0 -> 409.0	77051	20.00	µg/L	0.017
M2-8:2FTS	7.665	529.0 -> 509.0	54354	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	39017	20.00	µg/L	0.000
M3-HFPO-DA	5.377	287.0 -> 169.0	249250	100.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	93213	19.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-6:2FTS	6.632	429.0 -> 409.0	77065	19.36	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C2-8:2FTS	7.665	529.0 -> 509.0	54332	19.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-PFDoDA	8.319	615.0 -> 570.0	444963	19.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-PFTeDA	8.937	715.0 -> 670.0	342453	19.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C3-PFBS	4.080	302.0 -> 99.0	29361	19.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFHxS	6.010	402.0 -> 99.0	24970	19.61	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C4-PFBA	1.990	217.0 -> 172.0	195195	18.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C4-PFHpA	5.968	367.0 -> 322.0	265728	19.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C5-PFHxA	5.101	318.0 -> 273.0	230924	19.08	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C5-PFPeA	3.812	268.0 -> 223.0	151412	18.86	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C6-PFDA	7.641	519.0 -> 474.0	343127	19.67	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

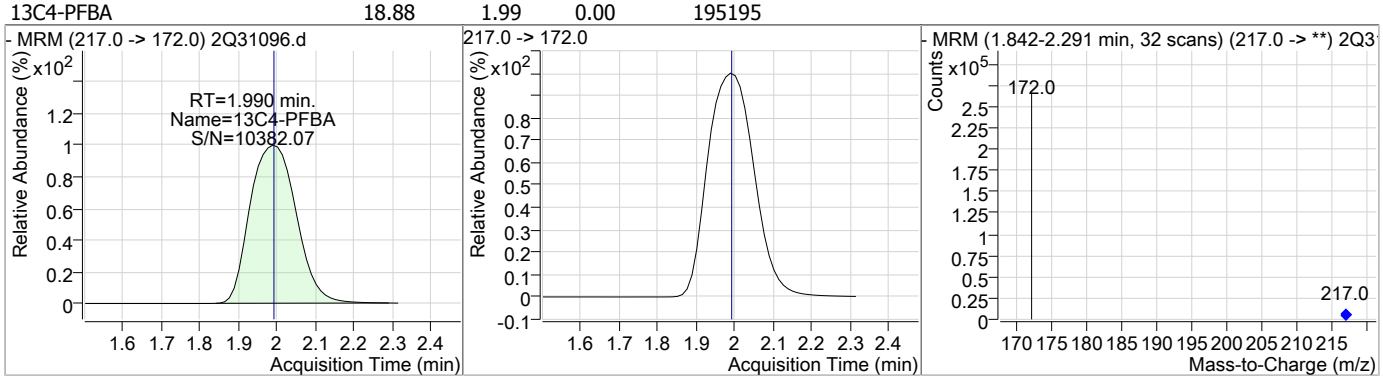
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C7-PFUnDA	8.004	570.0 -> 525.0	412823	19.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-FOSA	7.274	506.0 -> 78.0	119782	20.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C8-PFOA	6.647	421.0 -> 376.0	252887	19.71 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C8-PFOS	7.184	507.0 -> 99.0	37795	19.91 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C9-PFNA	7.202	472.0 -> 427.0	210638	19.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
d3-MeFOSAA	7.673	573.0 -> 419.0	39029	18.72 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
M2-PFOA	6.636	415.0 -> 370.0	345919	20.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.174	503.0 -> 80.0	64949	20.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.377	287.0 -> 169.0	249250	102.13 µg/L		0.013
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
Target Compounds						**QValue**
4:2FTS	4.999	327.0 -> 307.0	1517	0.57 µg/L		99
6:2FTS	6.633	427.0 -> 407.0	1137	0.55 µg/L		96
8:2FTS	7.666	527.0 -> 507.0	884	0.63 µg/L		95
EtFOSAA	7.799	584.0 -> 419.0	482	0.50 µg/L		88
FOSA	7.277	498.0 -> 78.0	1598	0.54 µg/L		100
MeFOSAA	7.673	570.0 -> 419.0	468	0.44 µg/L		94
PFBA	1.998	213.0 -> 169.0	873	0.52 µg/L		100
PFBS	4.085	299.0 -> 80.0	1059	0.53 µg/L		99
PFDA	7.642	513.0 -> 469.0	2980	0.53 µg/L		97
PFDoDA	8.321	613.0 -> 569.0	5248	0.52 µg/L		100
PFDS	7.975	599.0 -> 80.0	394	0.57 µg/L		88
PFHpA	5.970	363.0 -> 319.0	6137	0.53 µg/L		99
PFHpS	6.644	449.0 -> 80.0	803	0.57 µg/L		96
PFHxA	5.103	313.0 -> 269.0	1891	0.56 µg/L		98
PFHxS	6.013	399.0 -> 80.0	961	0.54 µg/L	m	97
PFNA	7.203	463.0 -> 419.0	2797	0.49 µg/L		97
PFNS	7.613	549.0 -> 80.0	741	0.63 µg/L		93
PFOA	6.637	413.0 -> 369.0	4171	0.57 µg/L		99
PFOS	7.175	499.0 -> 80.0	1028	0.55 µg/L	m	87
PFPeA	3.815	263.0 -> 219.0	3478	0.55 µg/L		100
PFPeS	5.208	349.0 -> 80.0	671	0.52 µg/L		88
PFTeDA	8.943	713.0 -> 669.0	7823	0.60 µg/L		98
PFTrDA	8.632	663.0 -> 619.0	6833	0.51 µg/L		100
PFUnDA	8.006	563.0 -> 519.0	4335	0.53 µg/L		100
11Cl-PF3OUdS	8.125	631.0 -> 451.0	2684	0.51 µg/L		98
9Cl-PF3ONS	7.422	531.0 -> 351.0	786	0.65 µg/L		94
ADONA	6.066	377.0 -> 251.0	7267	0.44 µg/L		100
HFPO-DA	5.375	329.0 -> 169.0	5711	2.73 µg/L		99

= Qualifier out of range, m = manually integrated, + = Area summed

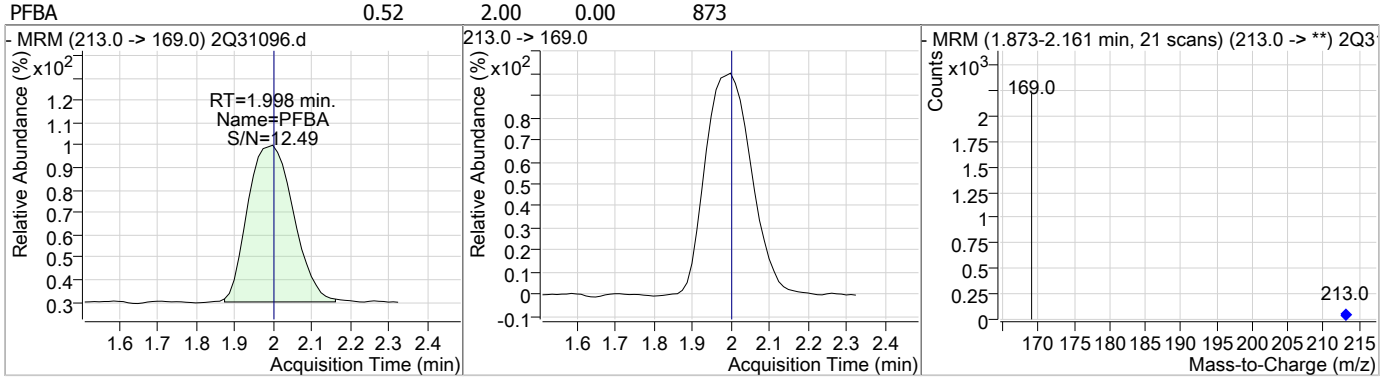
Perfluorinated Compounds by LC/MS/MS



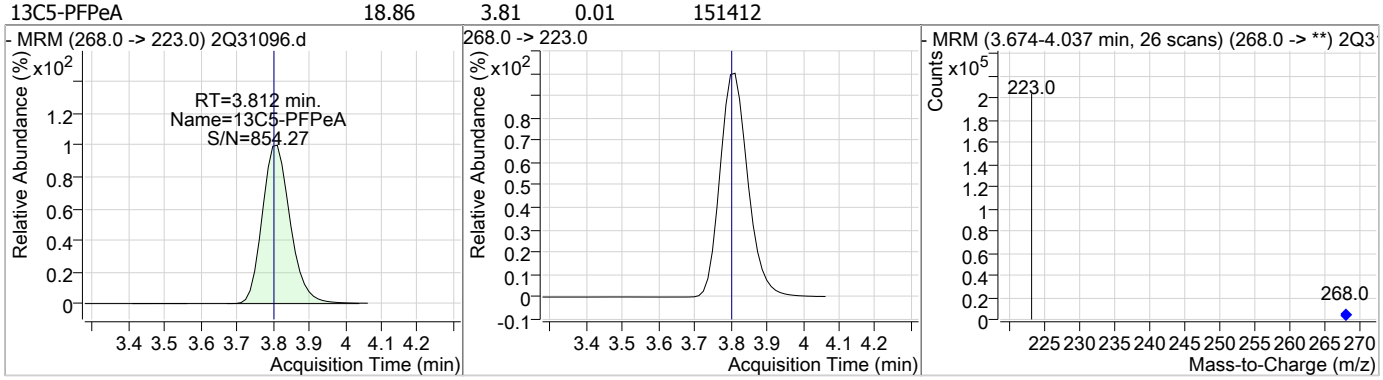
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.88	1.99	0.00	195195				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.52	2.00	0.00	873				

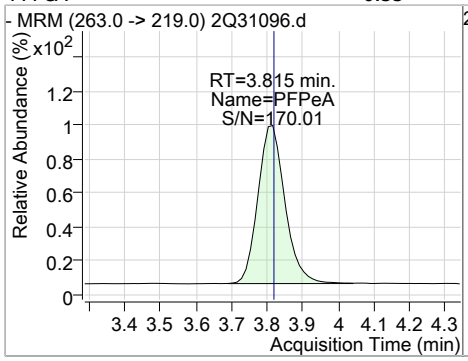


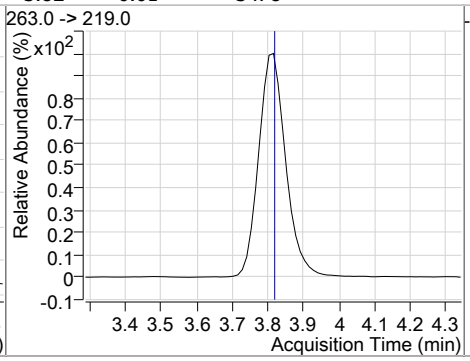
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.86	3.81	0.01	151412				

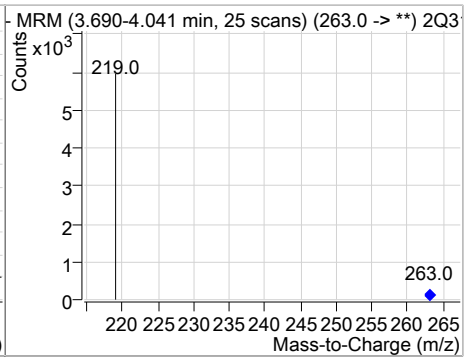


Perfluorinated Compounds by LC/MS/MS

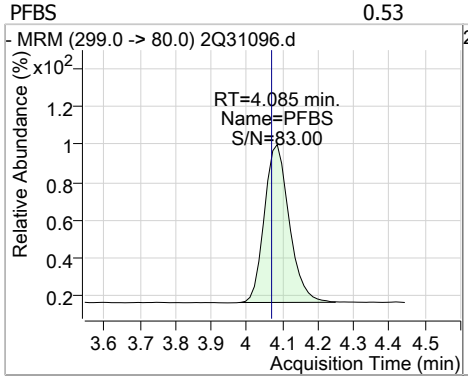
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.55	3.82	0.01	3478				

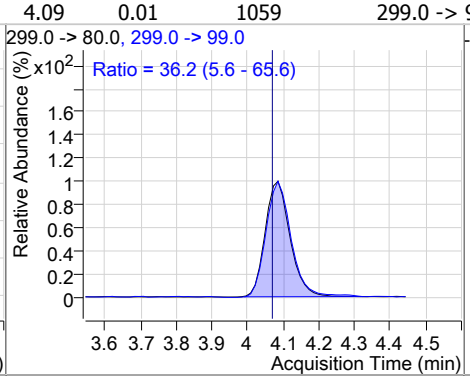


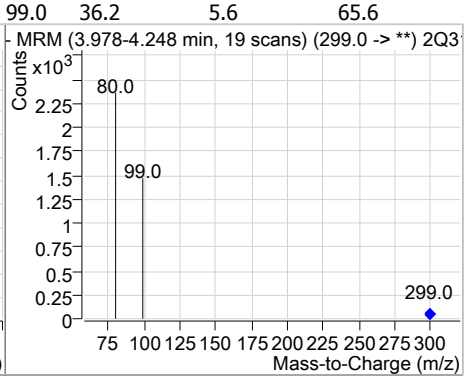




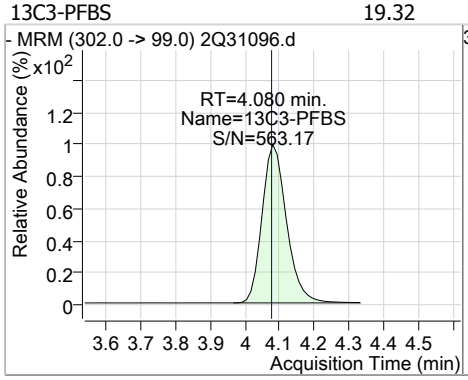
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.53	4.09	0.01	1059	299.0 -> 99.0	36.2	5.6	65.6

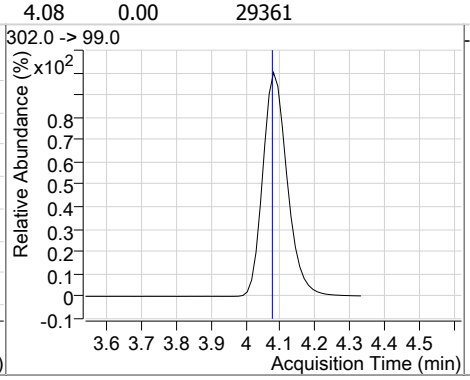


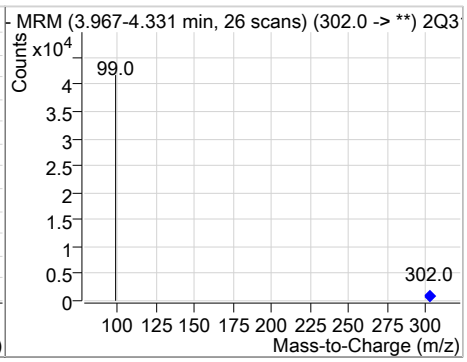




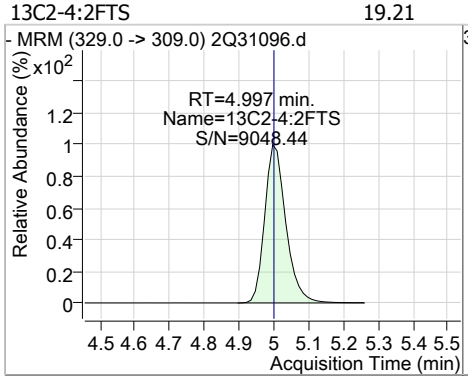
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.32	4.08	0.00	29361				

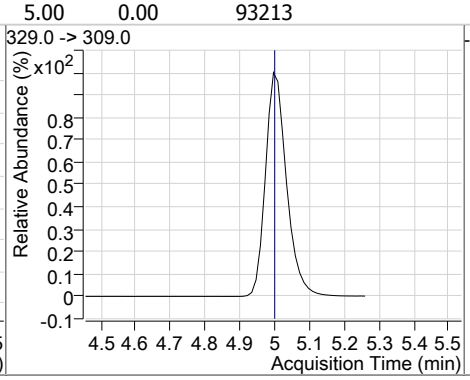


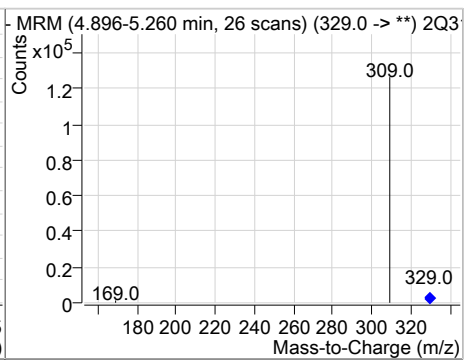




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.21	5.00	0.00	93213				

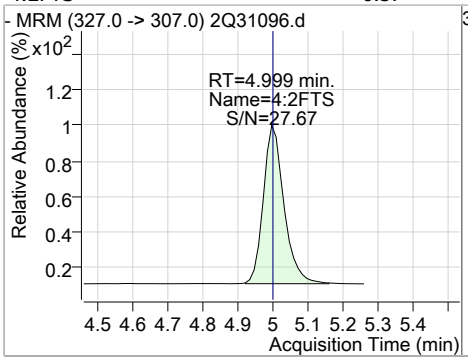


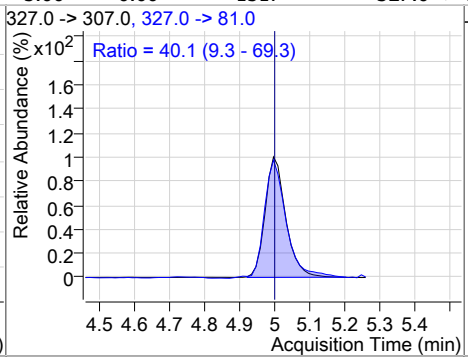


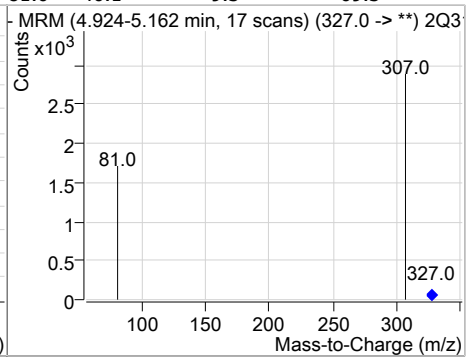


Perfluorinated Compounds by LC/MS/MS

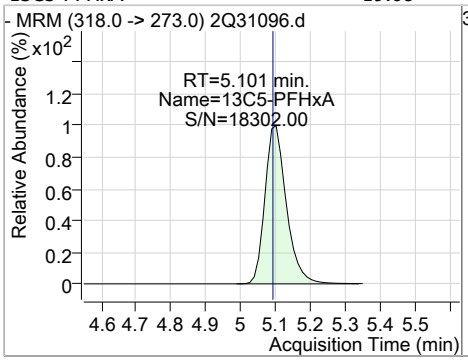
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.57	5.00	0.00	1517	327.0 -> 81.0	40.1	9.3	69.3

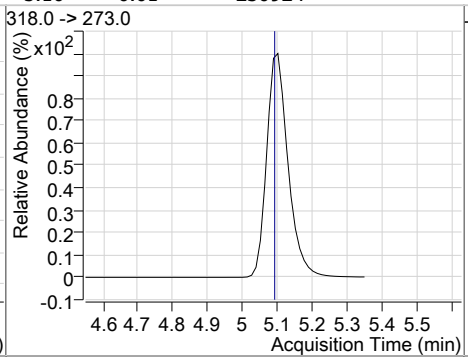


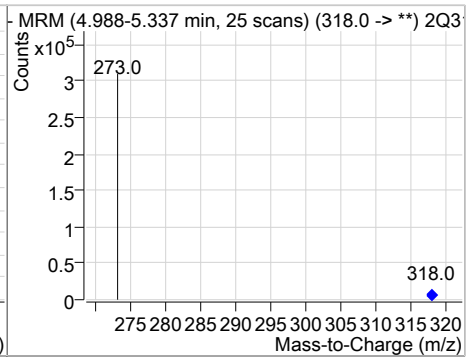




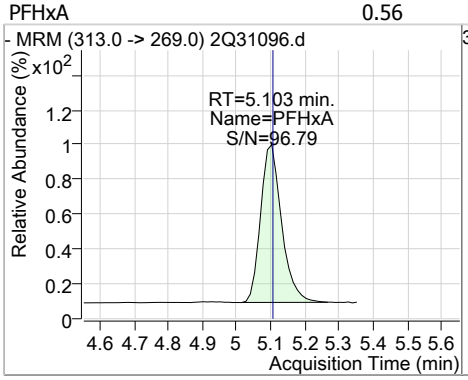
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.08	5.10	0.01	230924				

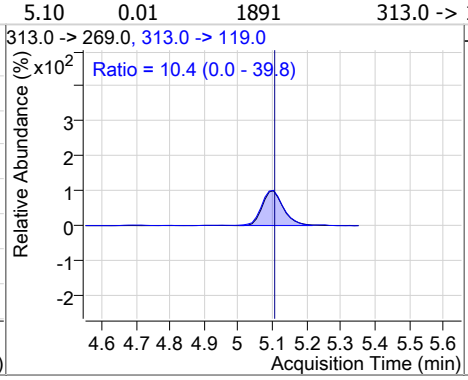


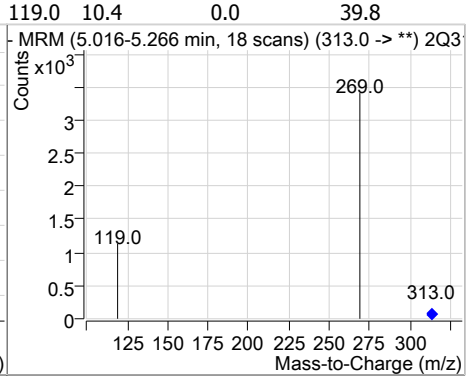




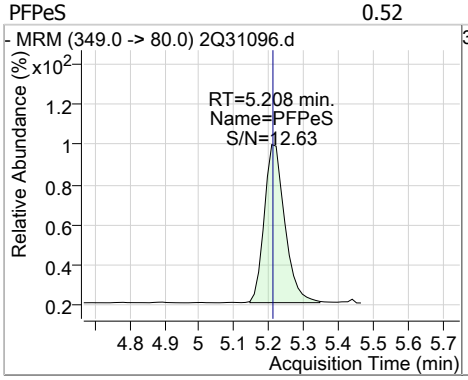
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.56	5.10	0.01	1891	313.0 -> 119.0	10.4	0.0	39.8

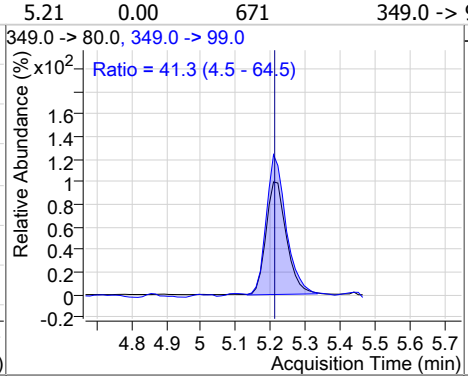


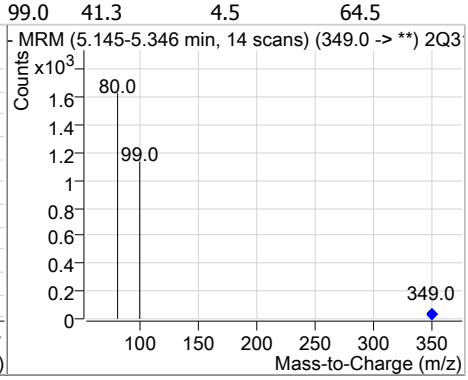




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.52	5.21	0.00	671	349.0 -> 99.0	41.3	4.5	64.5

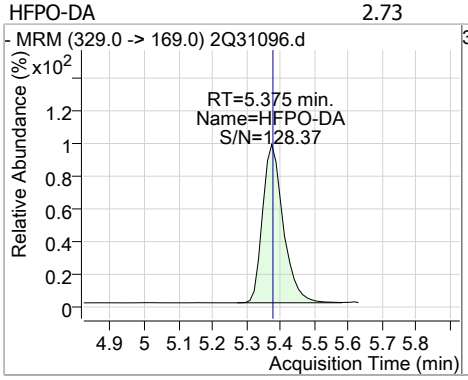


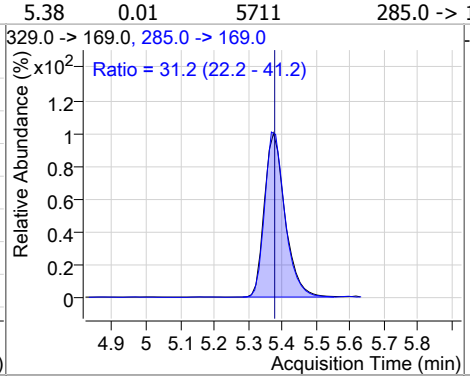


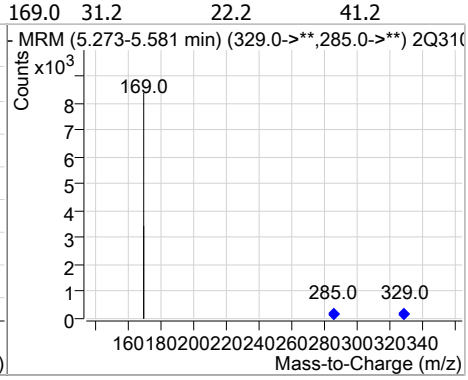


Perfluorinated Compounds by LC/MS/MS

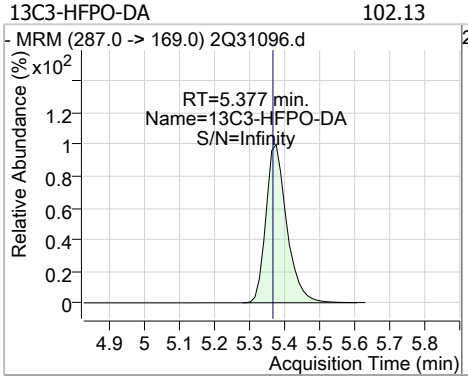
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.73	5.38	0.01	5711	285.0 -> 169.0	31.2	22.2	41.2

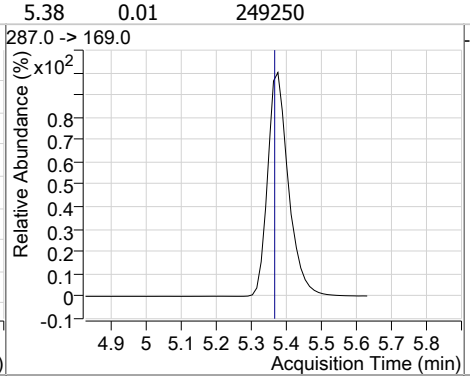


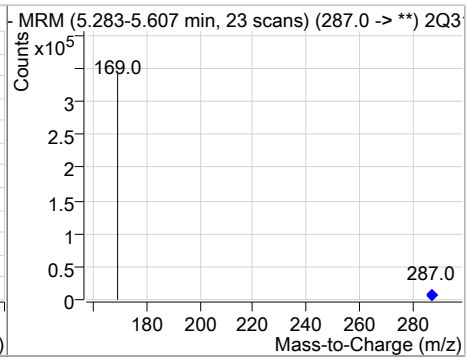




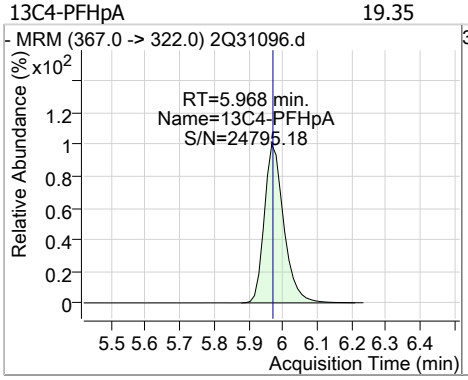
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	102.13	5.38	0.01	249250				

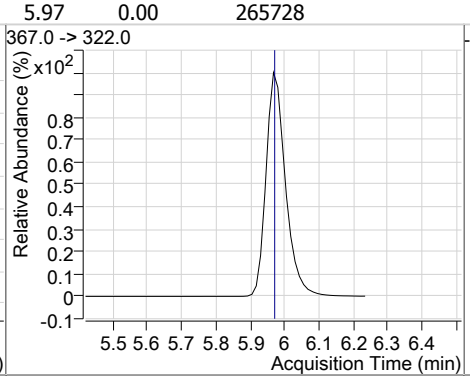


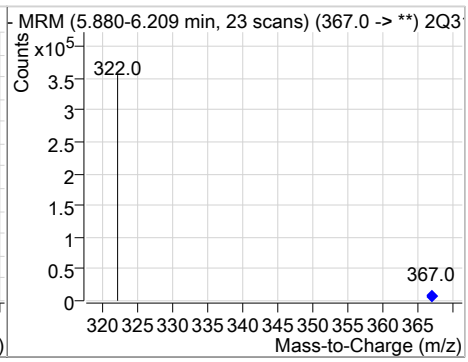




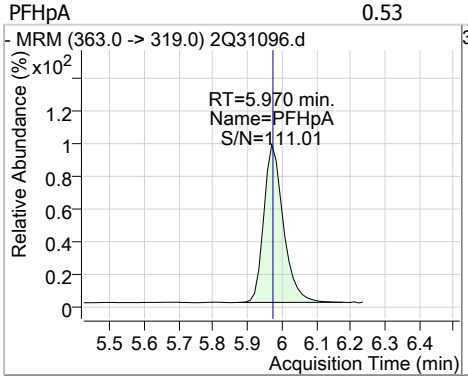
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.35	5.97	0.00	265728				

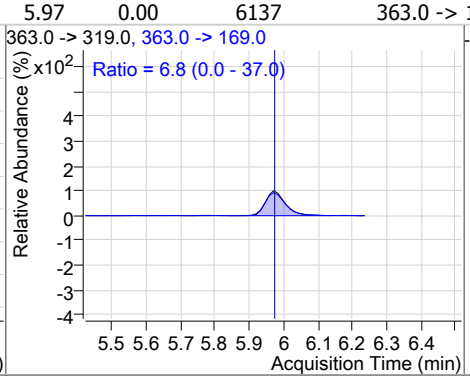


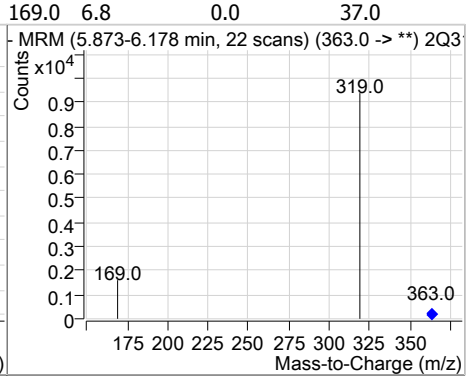




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.53	5.97	0.00	6137	363.0 -> 169.0	6.8	0.0	37.0

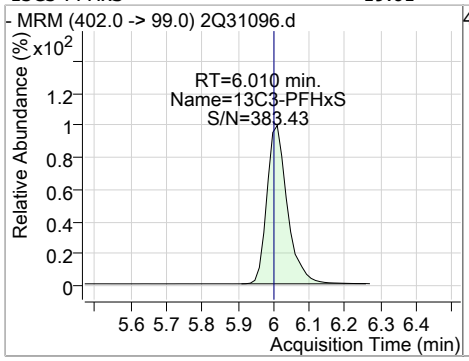


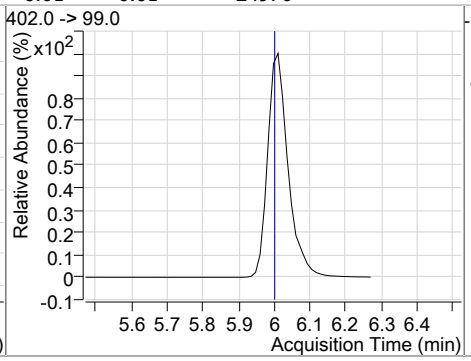


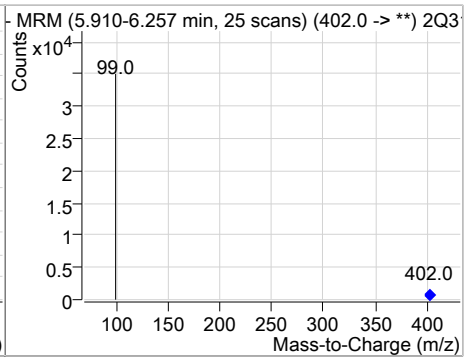


Perfluorinated Compounds by LC/MS/MS

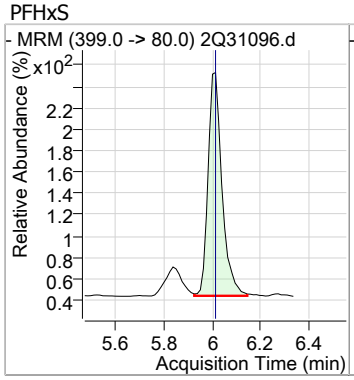
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.61	6.01	0.01	24970				

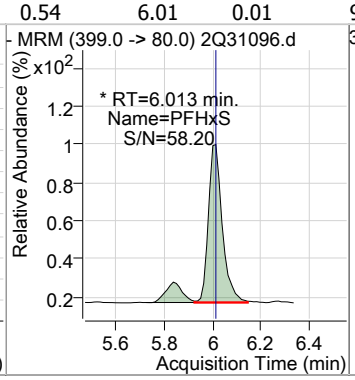


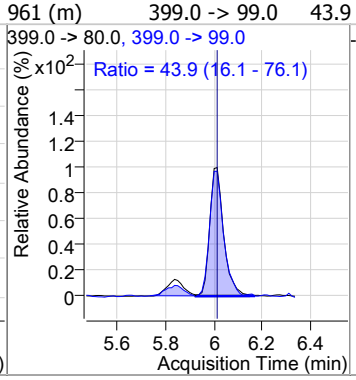


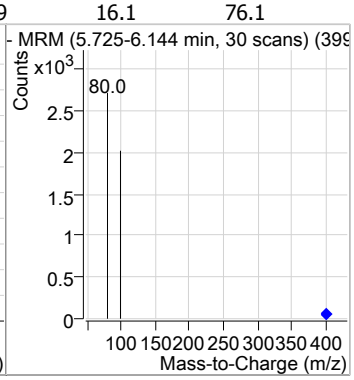


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.54	6.01	0.01	961 (m)	399.0 -> 99.0	43.9	16.1	76.1

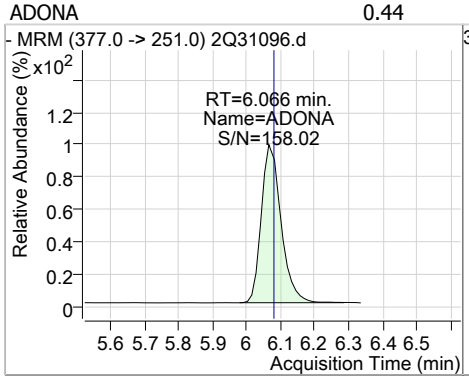


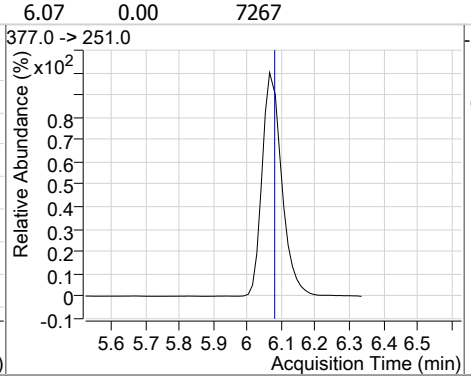


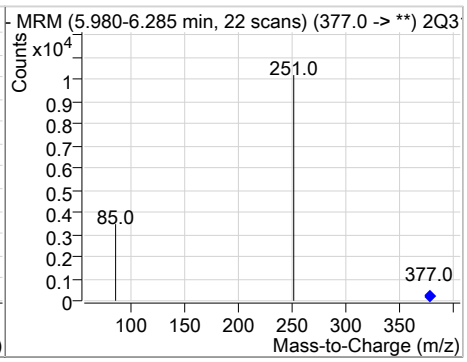




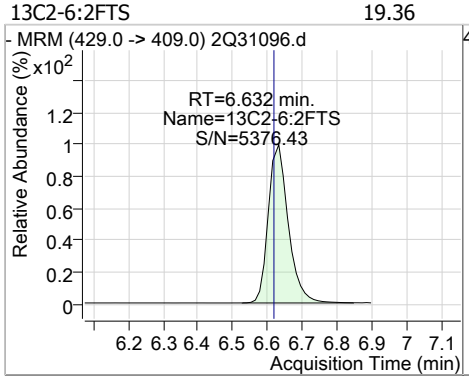
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.44	6.07	0.00	7267				

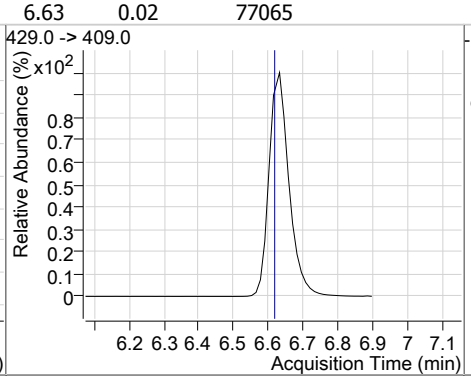


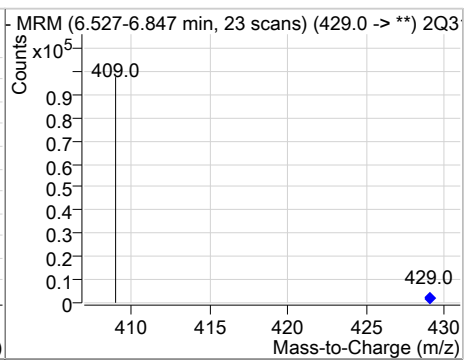




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.36	6.63	0.02	77065				

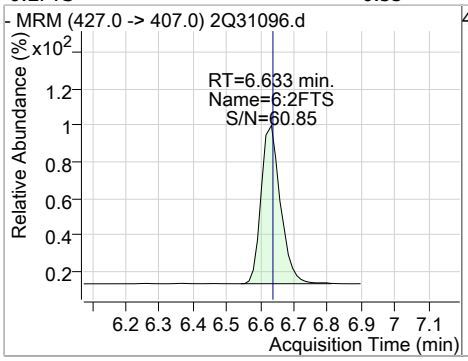


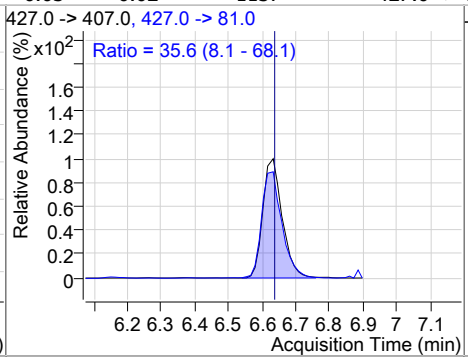


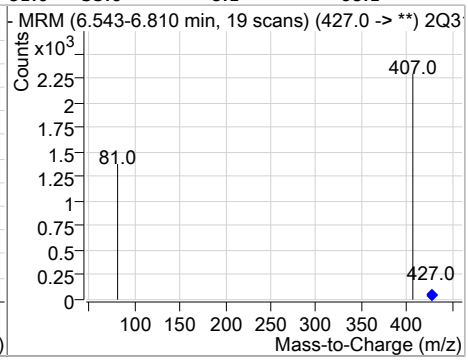


Perfluorinated Compounds by LC/MS/MS

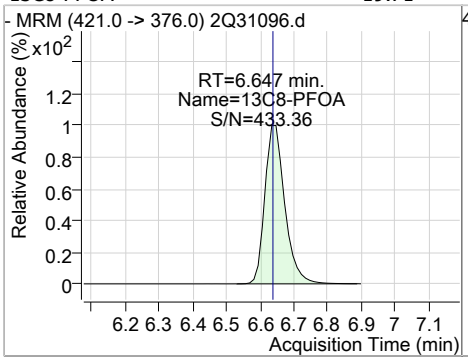
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.55	6.63	0.02	1137	427.0 -> 81.0	35.6	8.1	68.1

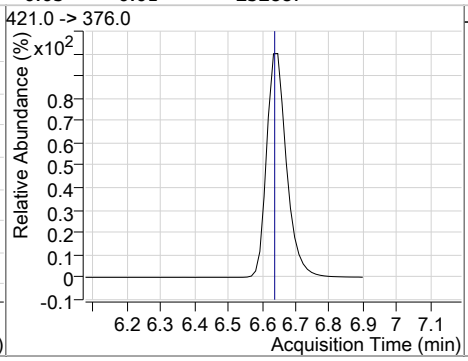


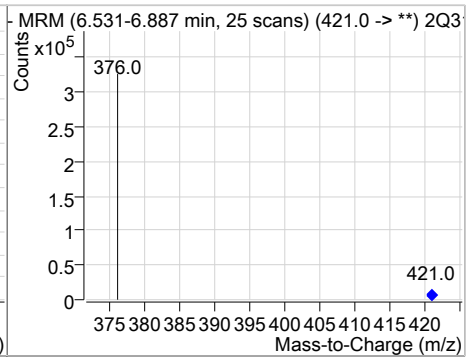




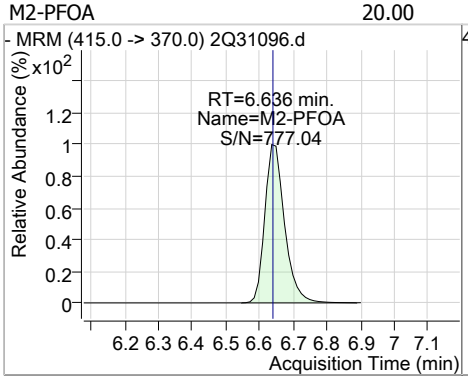
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.71	6.65	0.01	252887				

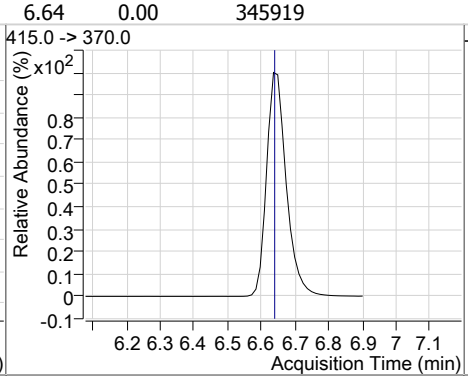


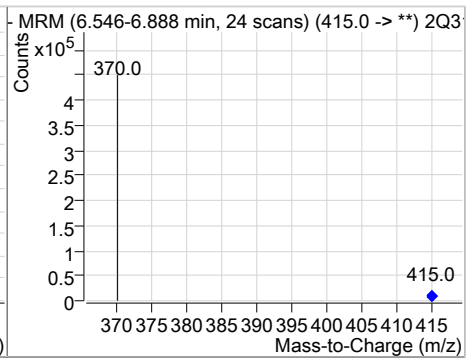




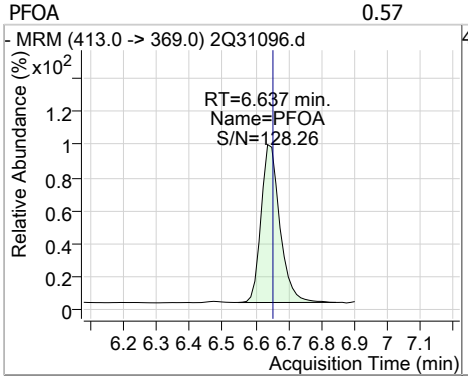
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.64	0.00	345919				

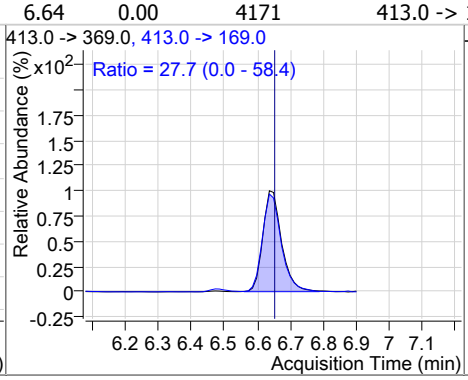


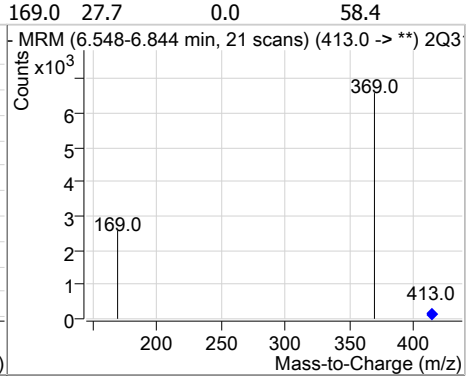




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.57	6.64	0.00	4171	413.0 -> 169.0	27.7	0.0	58.4

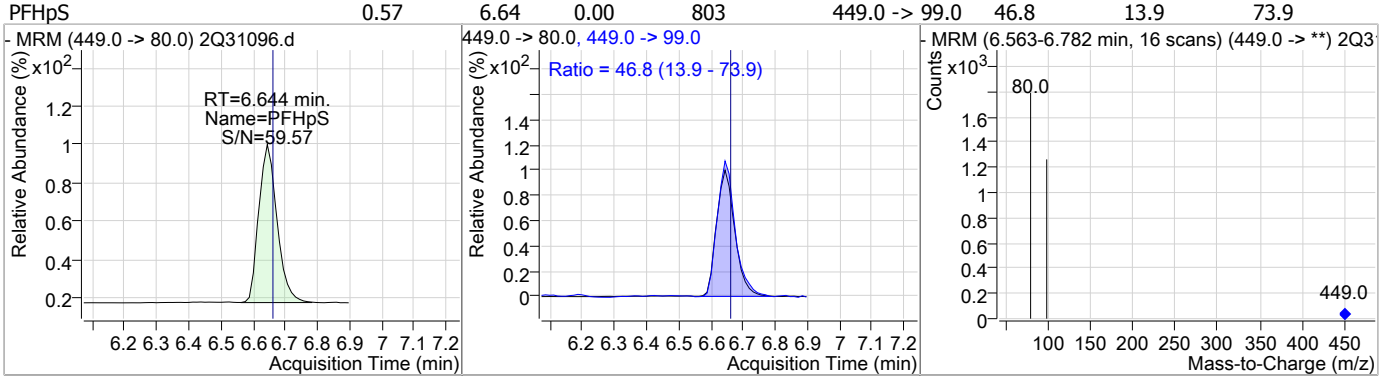




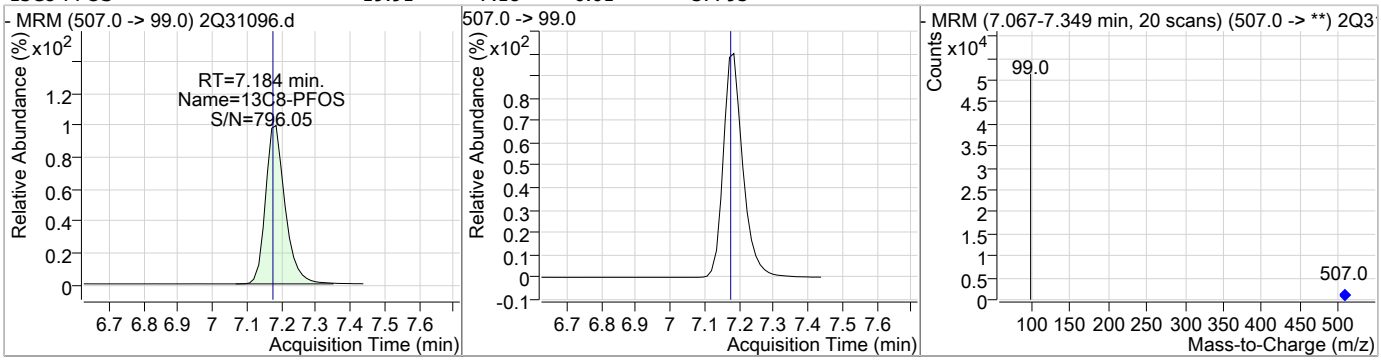


Perfluorinated Compounds by LC/MS/MS

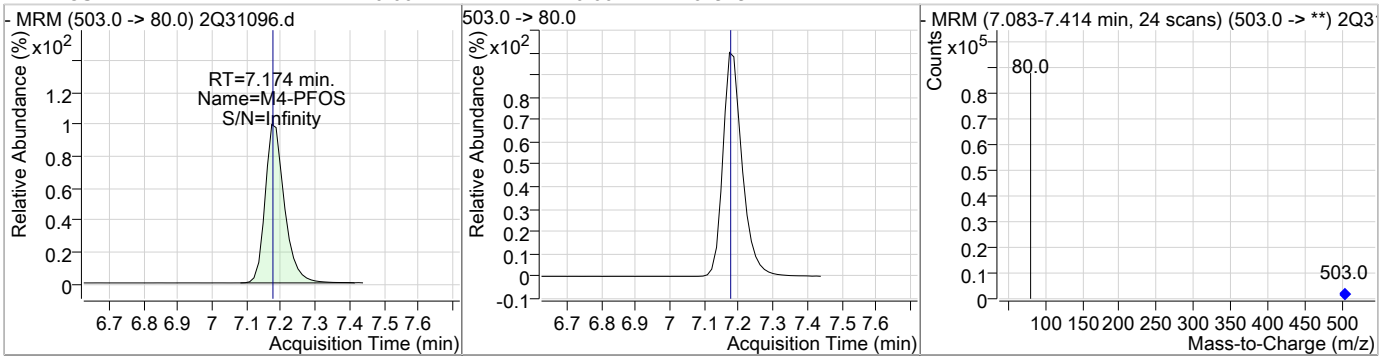
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.57	6.64	0.00	803	449.0 -> 99.0	46.8	13.9	73.9



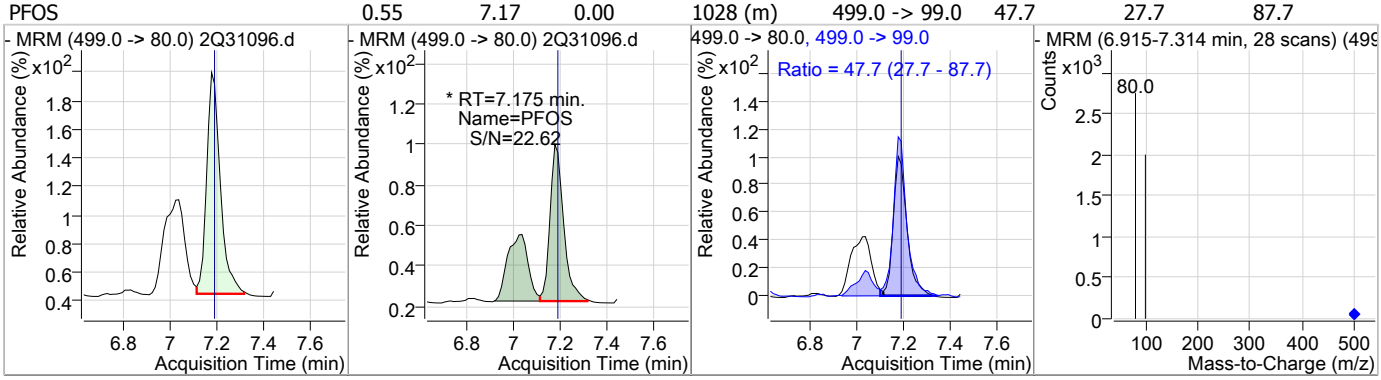
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.91	7.18	0.01	37795				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.17	0.00	64949				

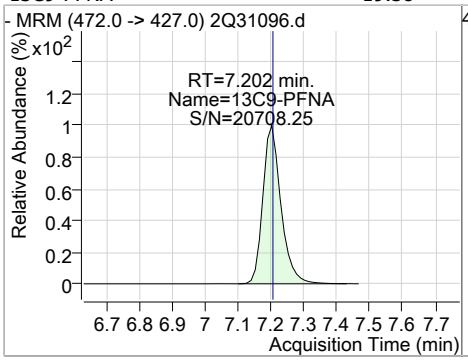


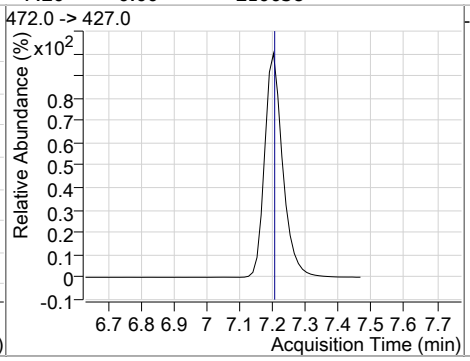
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.55	7.17	0.00	1028 (m)	499.0 -> 99.0	47.7	27.7	87.7

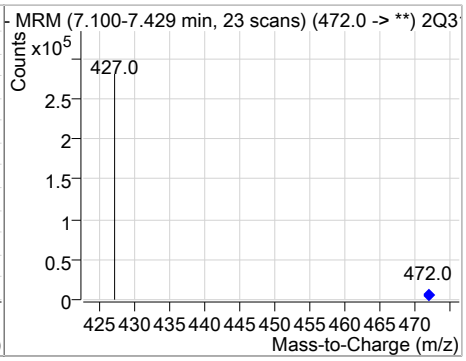


Perfluorinated Compounds by LC/MS/MS

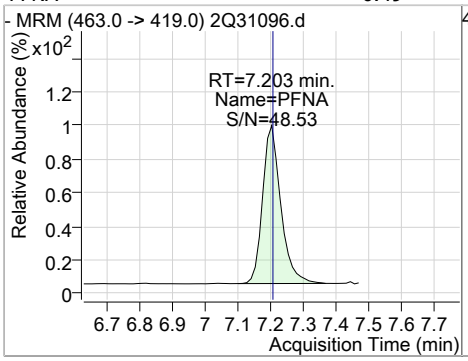
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.38	7.20	0.00	210638				

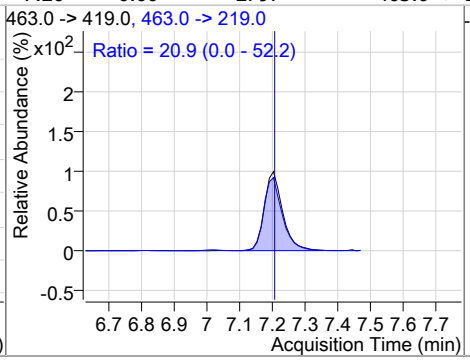


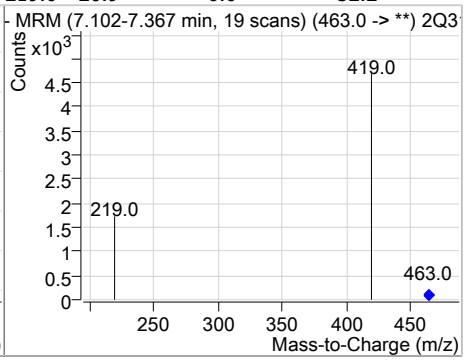




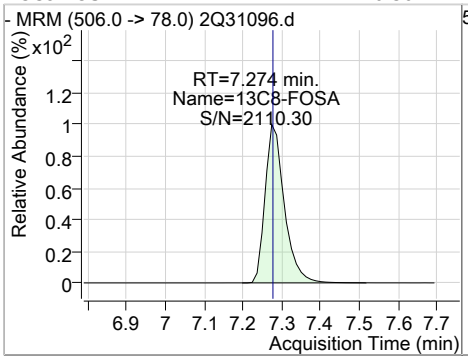
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	7.20	0.00	2797	463.0 -> 219.0	20.9	0.0	52.2

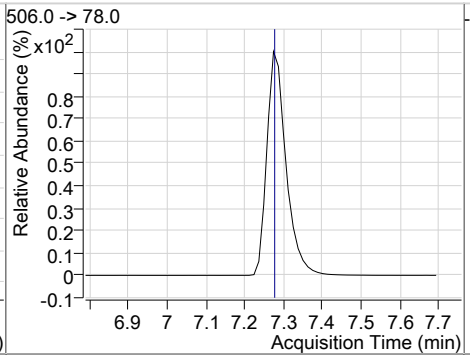


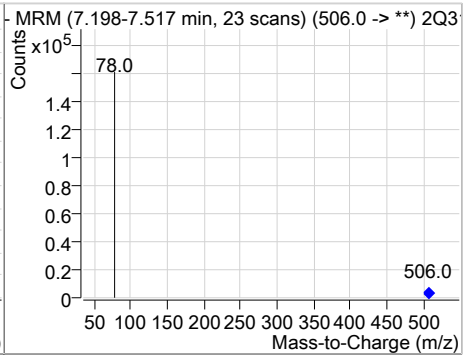




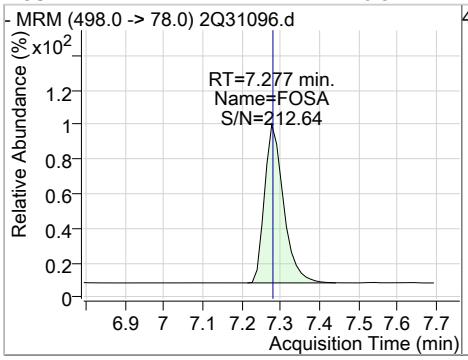
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.36	7.27	0.00	119782				

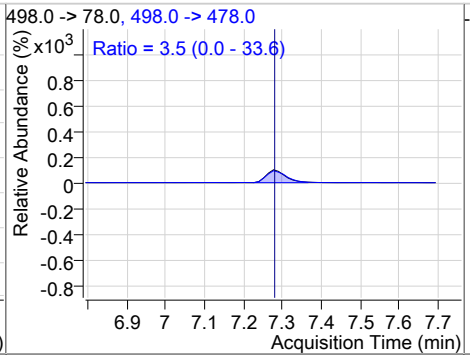


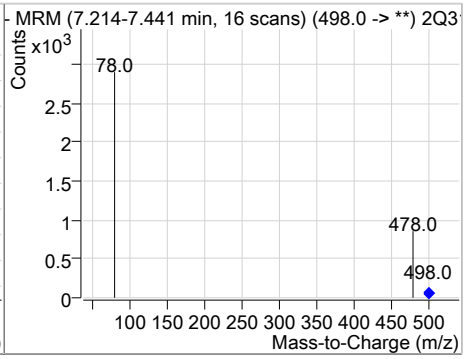




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.54	7.28	0.00	1598	498.0 -> 478.0	3.5	0.0	33.6

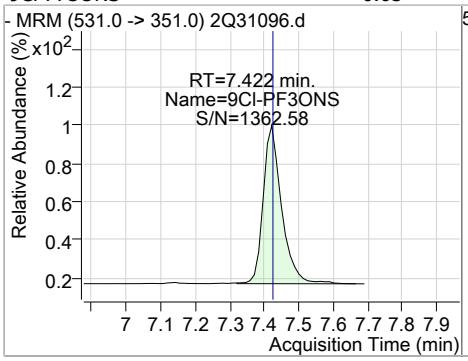


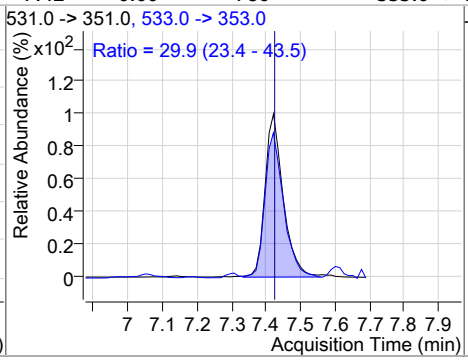


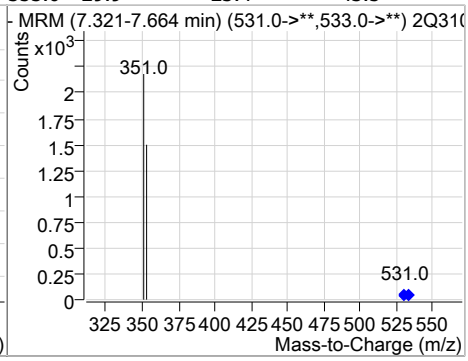


Perfluorinated Compounds by LC/MS/MS

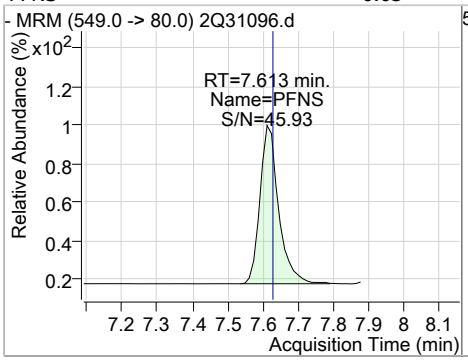
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.65	7.42	0.00	786	533.0 -> 353.0	29.9	23.4	43.5

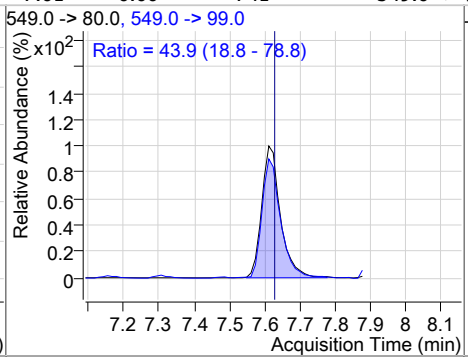


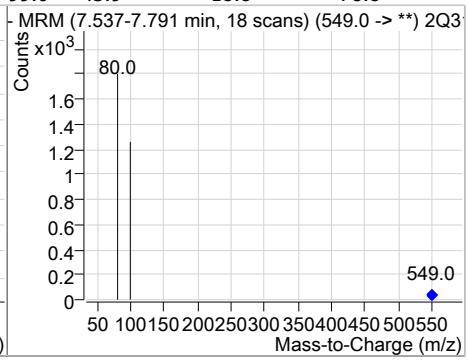




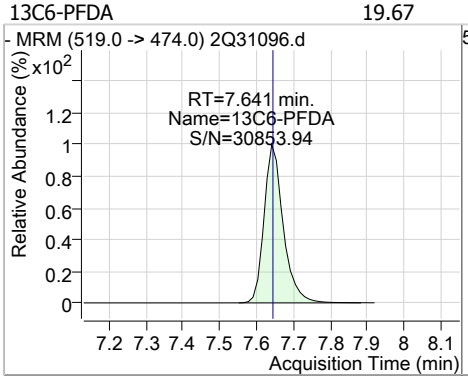
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.63	7.61	0.00	741	549.0 -> 99.0	43.9	18.8	78.8

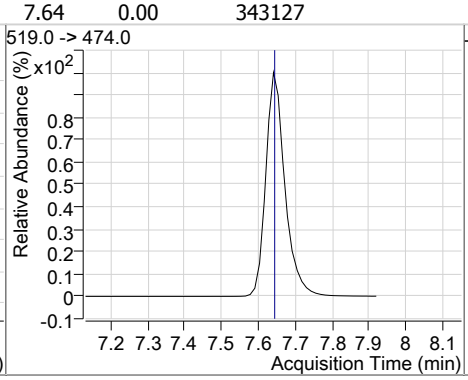


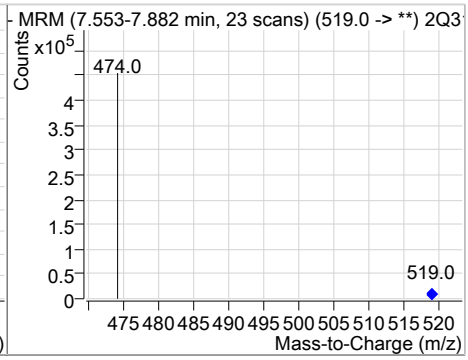




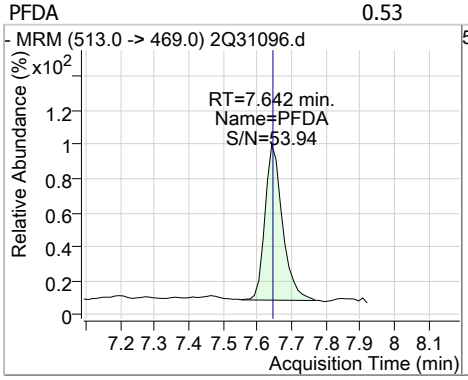
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.67	7.64	0.00	343127				

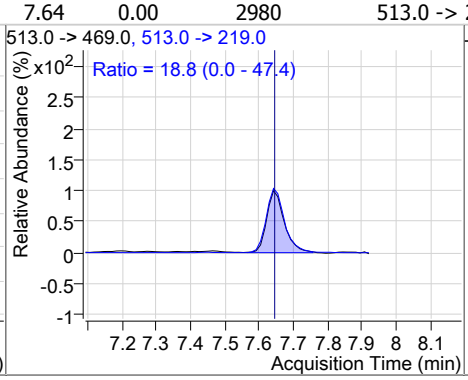


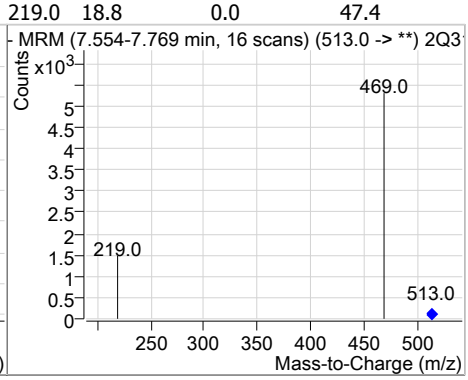




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.53	7.64	0.00	2980	513.0 -> 219.0	18.8	0.0	47.4

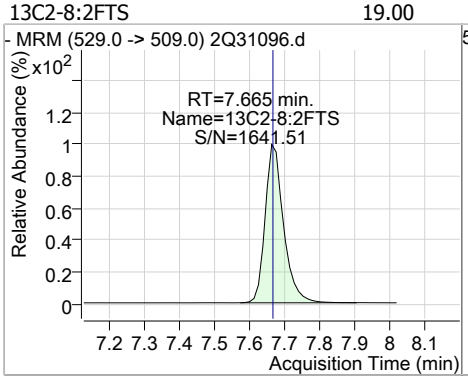


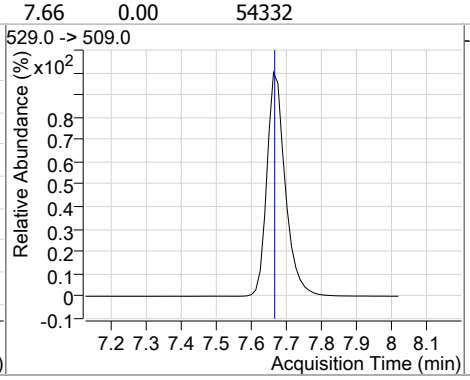


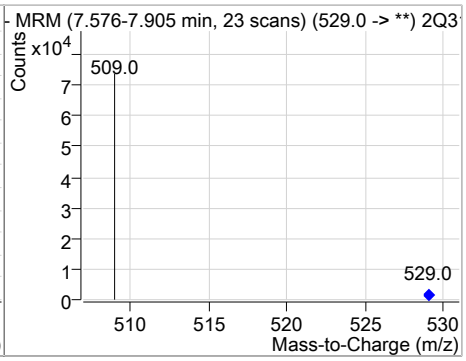


Perfluorinated Compounds by LC/MS/MS

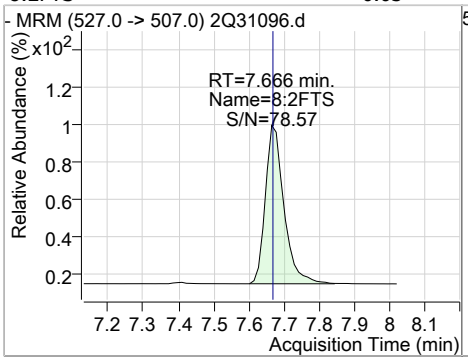
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.00	7.66	0.00	54332				

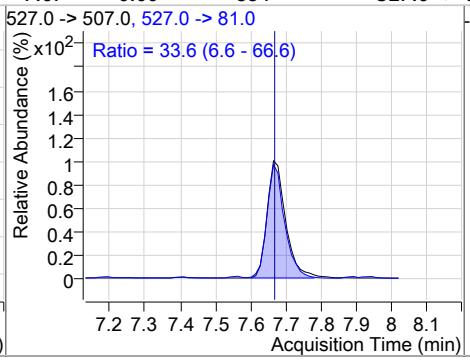


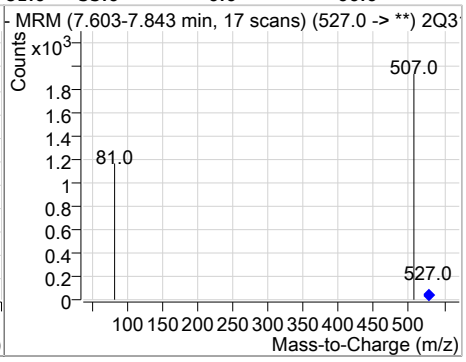




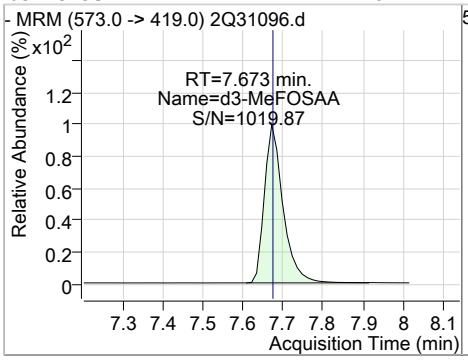
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.63	7.67	0.00	884	527.0 -> 81.0	33.6	6.6	66.6

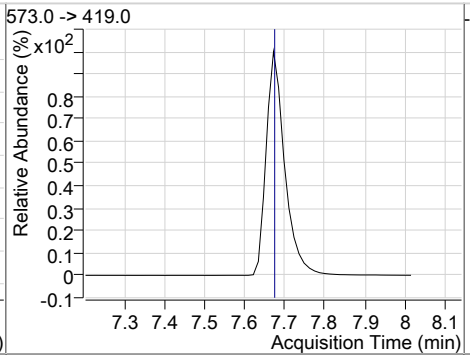


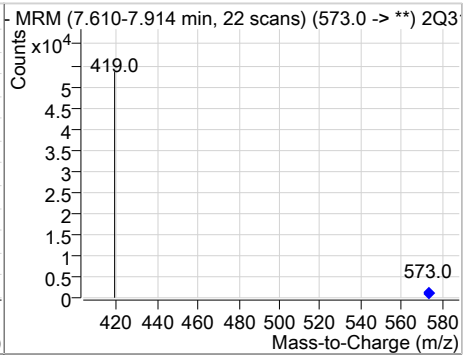




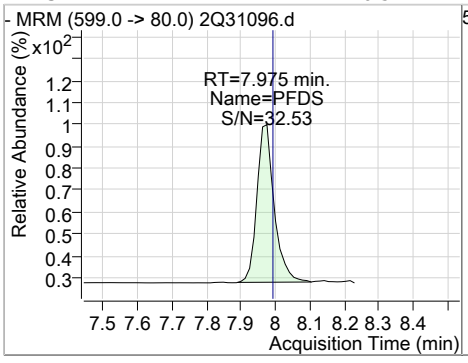
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.72	7.67	0.00	39029				

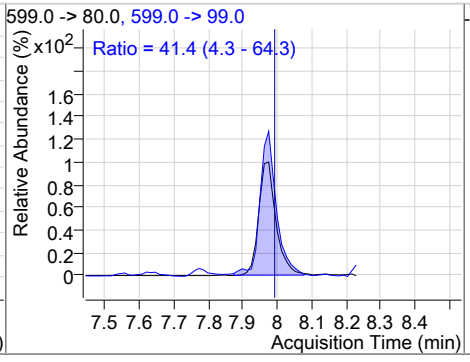


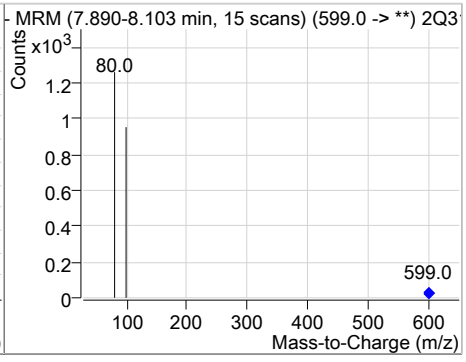




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.57	7.97	0.00	394	599.0 -> 99.0	41.4	4.3	64.3

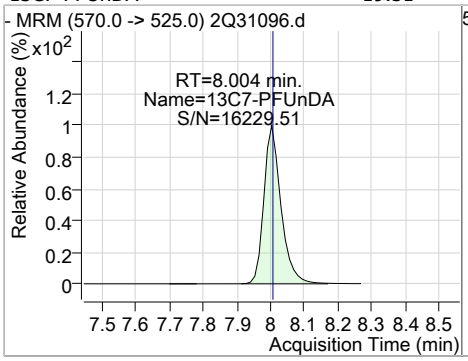


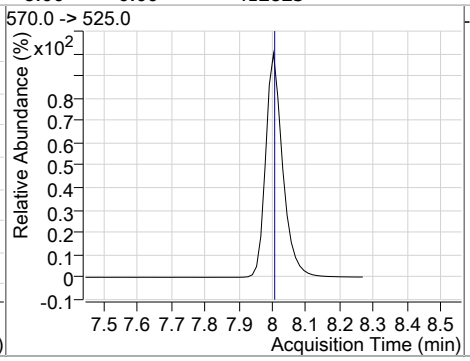


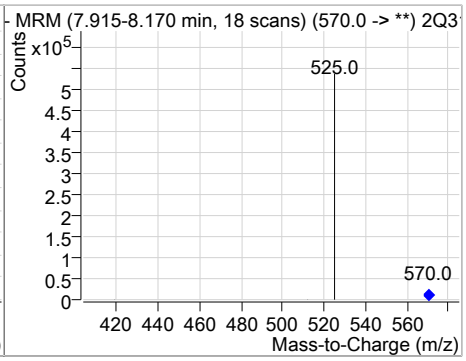


Perfluorinated Compounds by LC/MS/MS

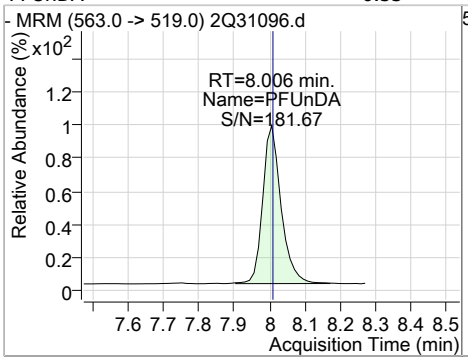
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.51	8.00	0.00	412823				

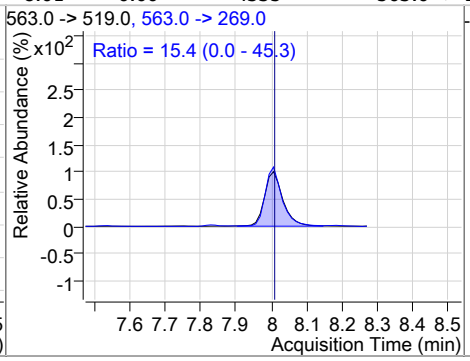


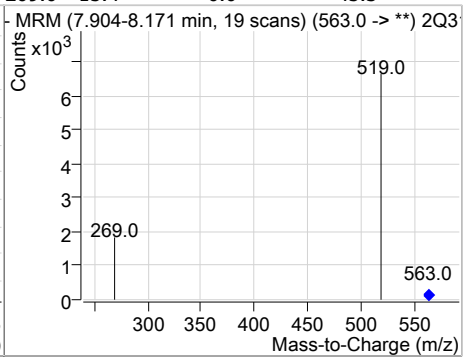




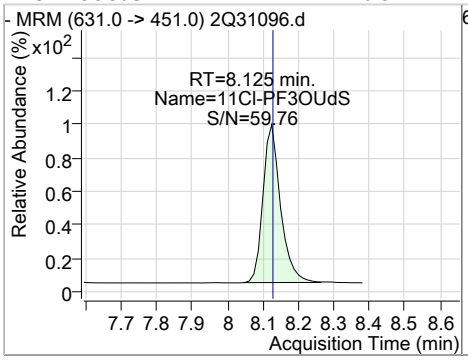
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.53	8.01	0.00	4335	563.0 -> 269.0	15.4	0.0	45.3

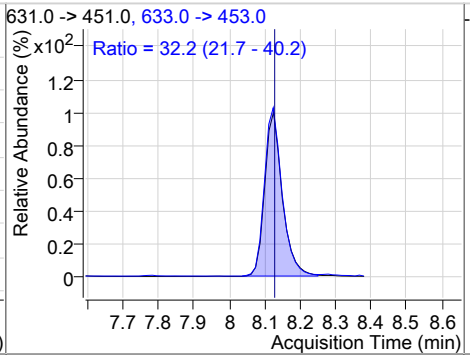


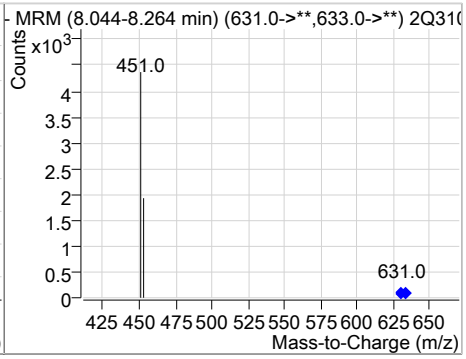




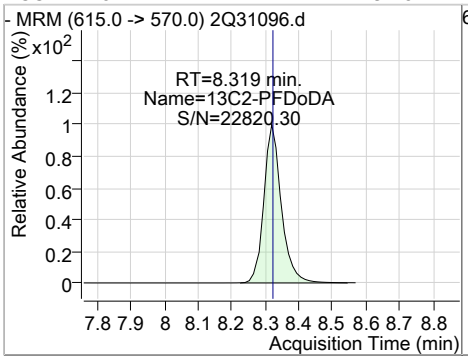
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.51	8.12	0.00	2684	633.0 -> 453.0	32.2	21.7	40.2

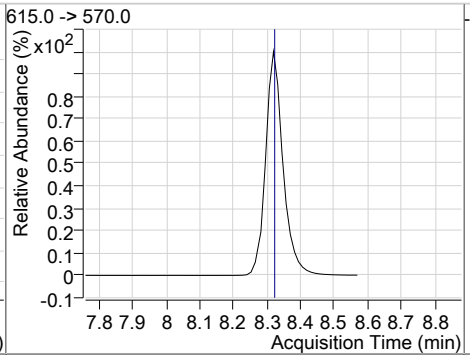


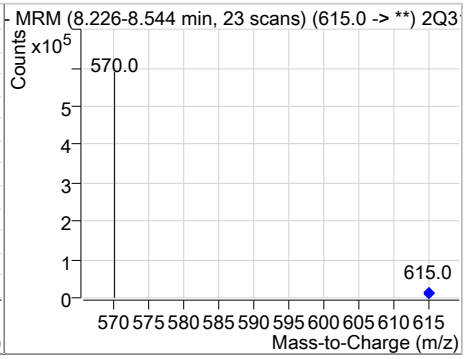




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.28	8.32	0.00	444963				

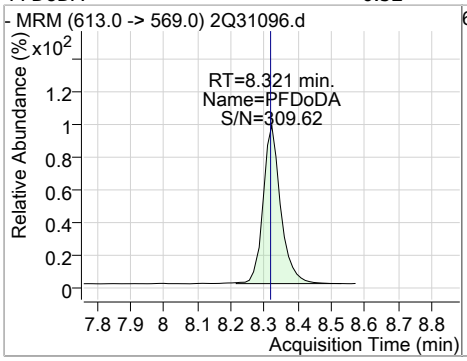


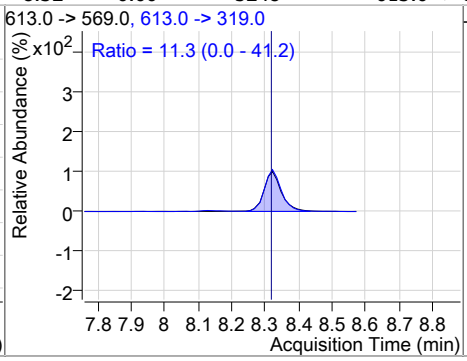


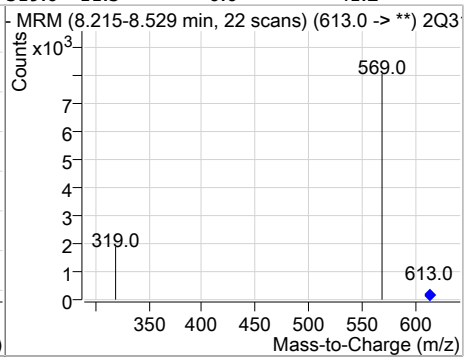


Perfluorinated Compounds by LC/MS/MS

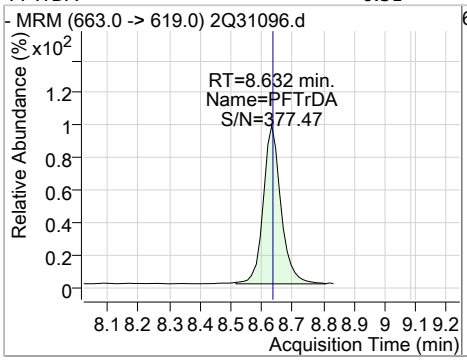
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.52	8.32	0.00	5248	613.0 -> 319.0	11.3	0.0	41.2

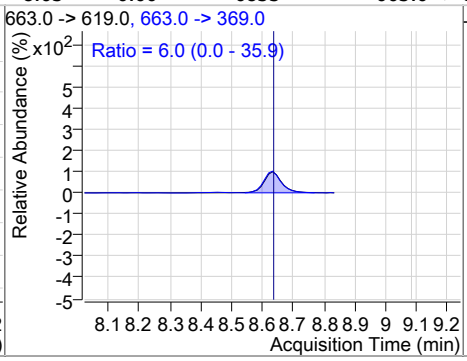


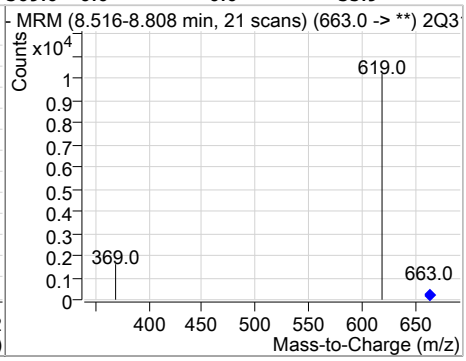




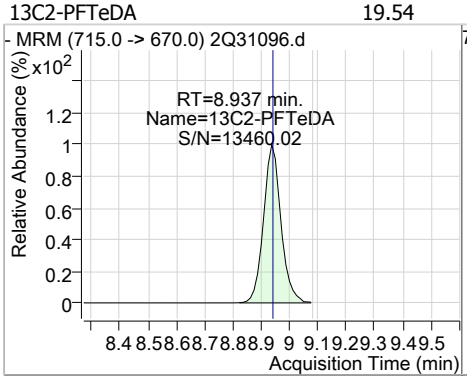
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.51	8.63	0.00	6833	663.0 -> 369.0	6.0	0.0	35.9

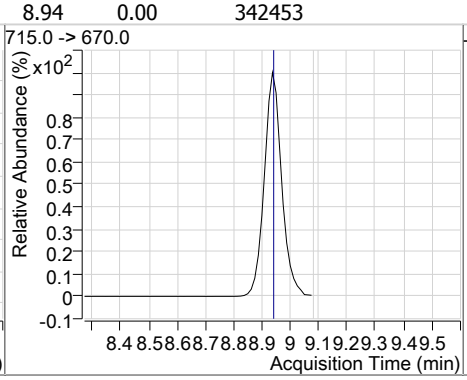


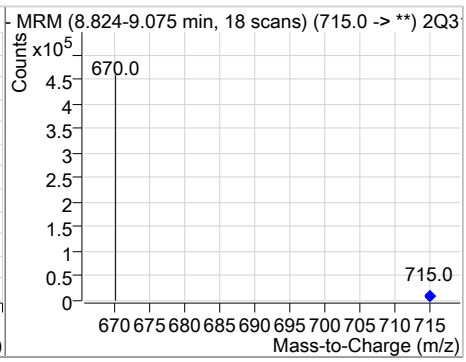




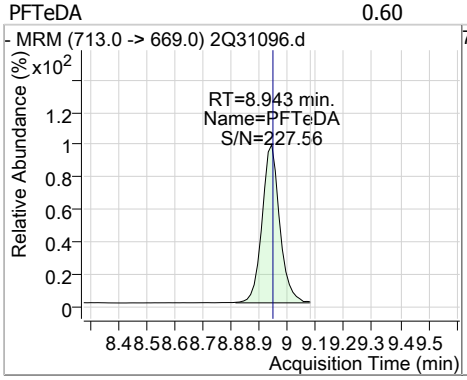
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.54	8.94	0.00	342453				

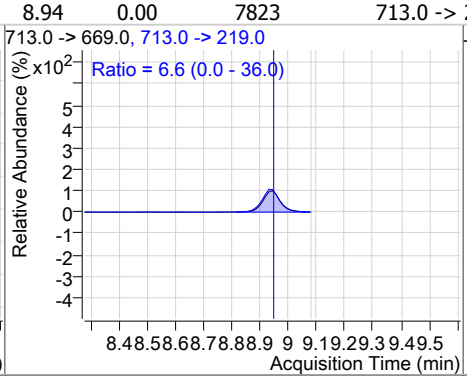


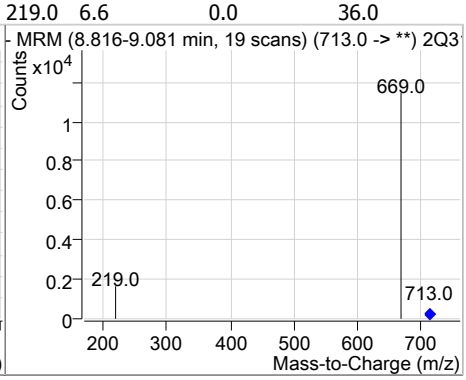




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.60	8.94	0.00	7823	713.0 -> 219.0	6.6	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31096.D
Injection Time: 06/21/19 10:12
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31097.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 10:26:51 AM
Sample Name : ic498-1
Vial : Vial 3
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

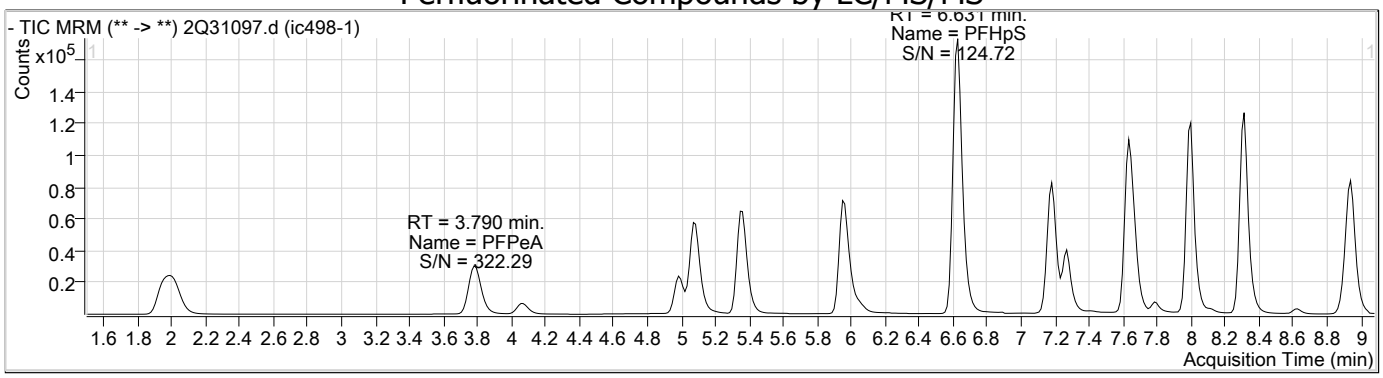
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	357252	20.00	µg/L	0.000
13C4-PFOS	7.174	503.0 -> 80.0	67408	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	200958	20.00	µg/L	0.000
M5-PFPeA	3.787	268.0 -> 223.0	153567	20.00	µg/L	-0.013
M5-PFHxA	5.076	318.0 -> 273.0	236261	20.00	µg/L	-0.013
M4-PFHpA	5.955	367.0 -> 322.0	268535	20.00	µg/L	-0.013
M8-PFOA	6.635	421.0 -> 376.0	253472	20.00	µg/L	0.000
M9-PFNA	7.189	472.0 -> 427.0	214097	20.00	µg/L	-0.013
M6-PFDA	7.641	519.0 -> 474.0	349025	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	420875	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	451022	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	347643	20.00	µg/L	0.000
M8-FOSA	7.274	506.0 -> 78.0	119518	20.00	µg/L	0.000
M3-PFBS	4.068	302.0 -> 99.0	29820	20.00	µg/L	-0.013
M3-PFHxS	5.998	402.0 -> 99.0	25318	20.00	µg/L	0.000
M8-PFOS	7.172	507.0 -> 99.0	37976	20.00	µg/L	0.000
M2-4:2FTS	4.984	329.0 -> 309.0	94166	20.00	µg/L	-0.013
M2-6:2FTS	6.615	429.0 -> 409.0	78317	20.00	µg/L	0.000
M2-8:2FTS	7.665	529.0 -> 509.0	56715	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	40962	20.00	µg/L	0.000
M3-HFPO-DA	5.355	287.0 -> 169.0	256806	100.00	µg/L	-0.010
System Monitoring Compounds						
13C2-4:2FTS	4.984	329.0 -> 309.0	94163	19.40	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-6:2FTS	6.615	429.0 -> 409.0	78318	19.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-8:2FTS	7.665	529.0 -> 509.0	56661	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFDoDA	8.319	615.0 -> 570.0	451098	19.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFTeDA	8.937	715.0 -> 670.0	347645	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFBS	4.068	302.0 -> 99.0	29818	19.63	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFHxS	5.998	402.0 -> 99.0	25197	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFBA	1.990	217.0 -> 172.0	199517	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C4-PFHpA	5.955	367.0 -> 322.0	268581	19.56	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C5-PFHxA	5.076	318.0 -> 273.0	236283	19.52	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C5-PFPeA	3.787	268.0 -> 223.0	153571	19.13	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C6-PFDA	7.641	519.0 -> 474.0	349025	20.01	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

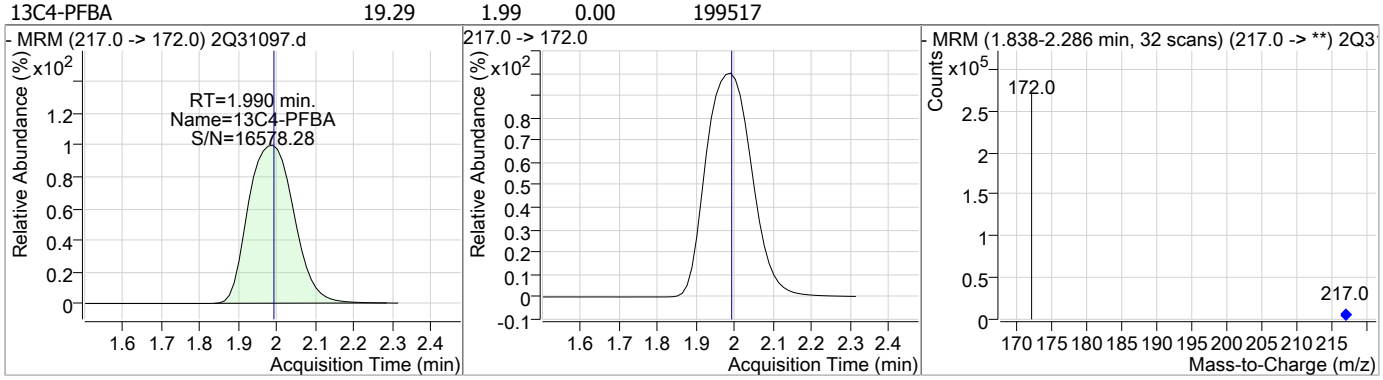
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C7-PFUnDA	8.004	570.0 -> 525.0	421883	19.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C8-FOSA	7.274	506.0 -> 78.0	119504	20.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C8-PFOA	6.635	421.0 -> 376.0	253460	19.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C8-PFOS	7.172	507.0 -> 99.0	38013	20.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C9-PFNA	7.189	472.0 -> 427.0	213795	19.68 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
d3-MeFOSAA	7.673	573.0 -> 419.0	40943	19.64 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
M2-PFOA	6.636	415.0 -> 370.0	357224	19.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.174	503.0 -> 80.0	67427	20.01 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.355	287.0 -> 169.0	256806	105.22 µg/L		-0.010
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
Target Compounds						**QValue**
4:2FTS	4.987	327.0 -> 307.0	2707	1.01 µg/L		97
6:2FTS	6.617	427.0 -> 407.0	2027	0.97 µg/L		98
8:2FTS	7.666	527.0 -> 507.0	1394	0.95 µg/L		94
EtFOSAA	7.799	584.0 -> 419.0	945	0.94 µg/L		97
FOSA	7.277	498.0 -> 78.0	2628	0.88 µg/L		98
MeFOSAA	7.673	570.0 -> 419.0	992	0.89 µg/L		92
PFBA	1.986	213.0 -> 169.0	1646	0.96 µg/L		100
PFBS	4.059	299.0 -> 80.0	1970	0.96 µg/L		99
PFDA	7.642	513.0 -> 469.0	5477	0.95 µg/L		99
PFDoDA	8.321	613.0 -> 569.0	9265	0.90 µg/L		98
PFDS	7.962	599.0 -> 80.0	742	1.07 µg/L		92
PFHpA	5.958	363.0 -> 319.0	11026	0.94 µg/L		100
PFHpS	6.631	449.0 -> 80.0	1503	1.06 µg/L		99
PFHxA	5.078	313.0 -> 269.0	3457	1.00 µg/L		99
PFHxS	6.000	399.0 -> 80.0	1662	0.92 µg/L	m	99
PFNA	7.190	463.0 -> 419.0	5388	0.93 µg/L		94
PFNS	7.613	549.0 -> 80.0	1297	1.10 µg/L		88
PFOA	6.637	413.0 -> 369.0	6888	0.94 µg/L		95
PFOS	7.175	499.0 -> 80.0	1878	1.00 µg/L	m	84
PFPeA	3.790	263.0 -> 219.0	6236	0.98 µg/L		100
PFPeS	5.195	349.0 -> 80.0	1315	1.00 µg/L		99
PFTeDA	8.931	713.0 -> 669.0	13216	1.00 µg/L		98
PFTrDA	8.632	663.0 -> 619.0	12256	0.89 µg/L		99
PFUnDA	7.994	563.0 -> 519.0	7645	0.92 µg/L		100
11Cl-PF3OUdS	8.125	631.0 -> 451.0	4792	0.89 µg/L		96
9Cl-PF3ONS	7.409	531.0 -> 351.0	1388	1.13 µg/L		96
ADONA	6.053	377.0 -> 251.0	13162	0.79 µg/L		100
HFPO-DA	5.363	329.0 -> 169.0	10109	4.69 µg/L		99

= Qualifier out of range, m = manually integrated, + = Area summed

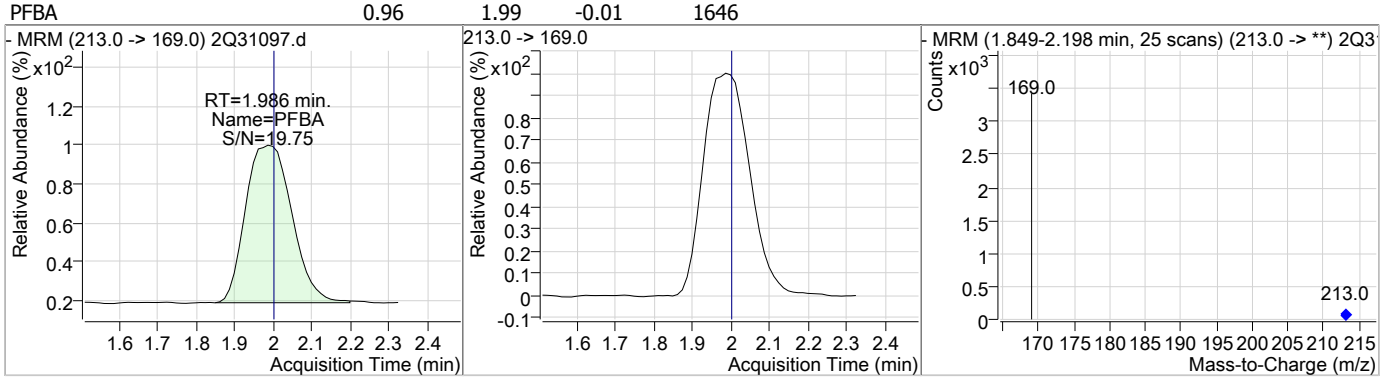
Perfluorinated Compounds by LC/MS/MS



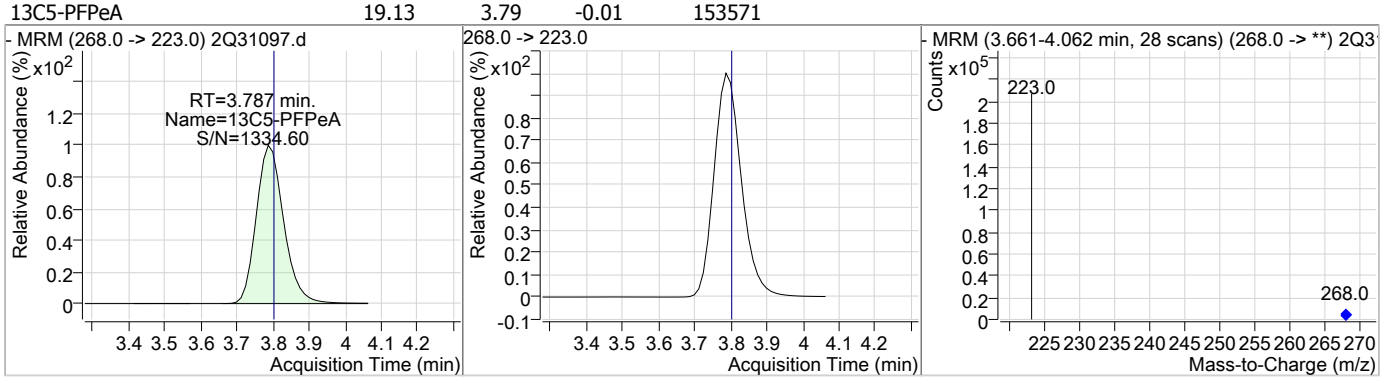
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.29	1.99	0.00	199517				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.96	1.99	-0.01	1646				

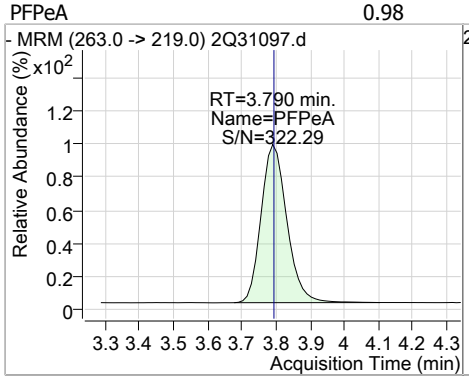


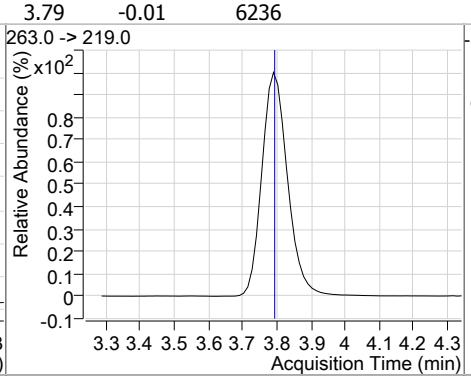
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.13	3.79	-0.01	153571				

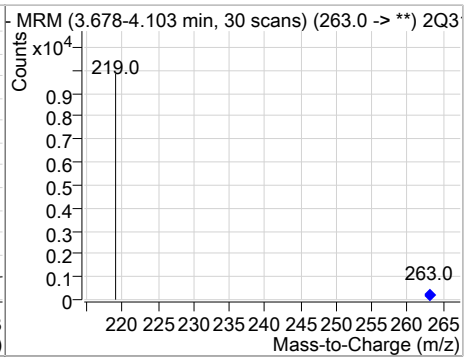


Perfluorinated Compounds by LC/MS/MS

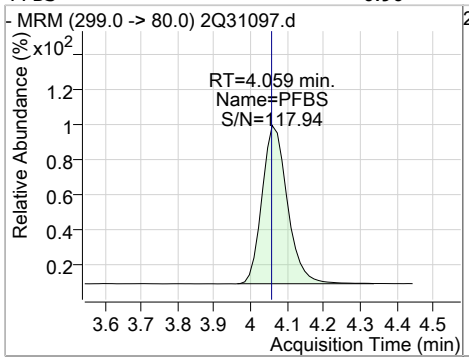
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.98	3.79	-0.01	6236				

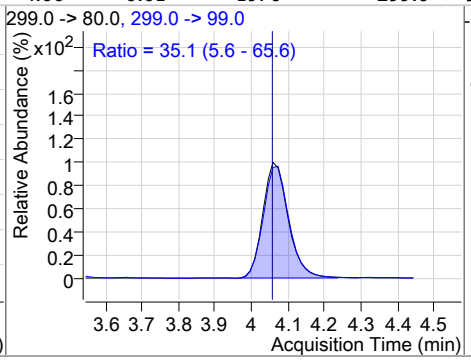


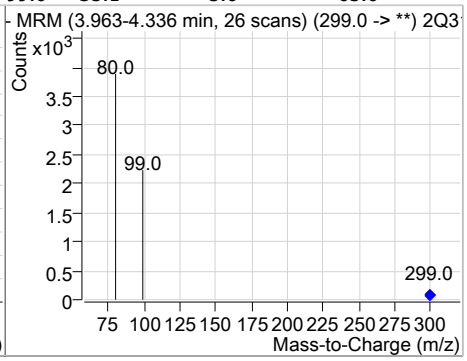




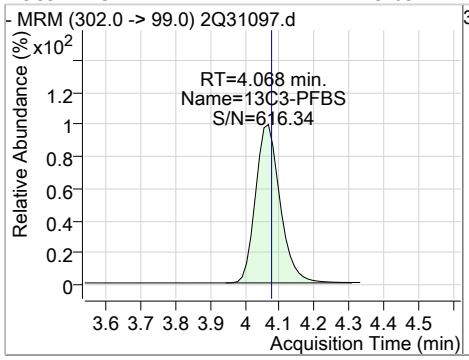
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.96	4.06	-0.01	1970	299.0 -> 99.0	35.1	5.6	65.6

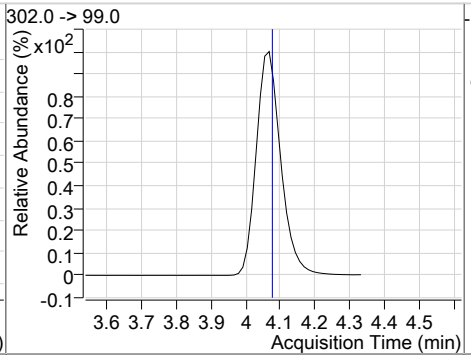


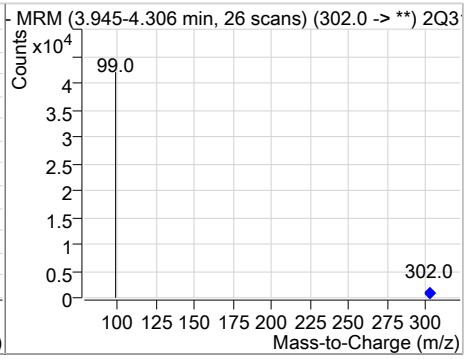




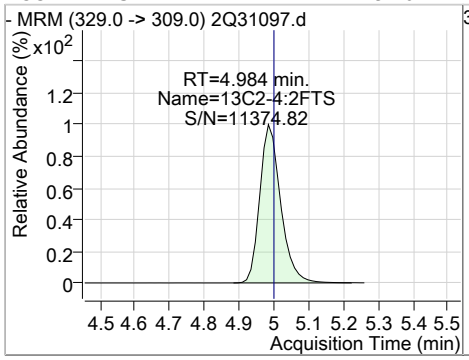
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.63	4.07	-0.01	29818				

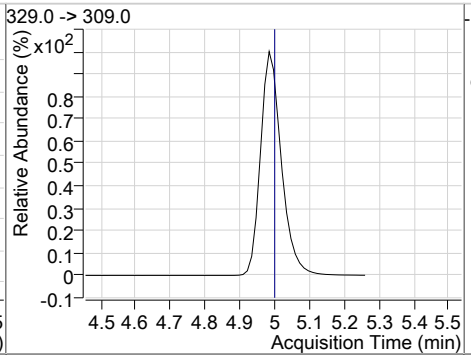


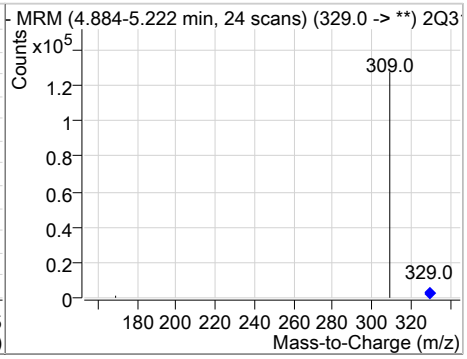




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.40	4.98	-0.01	94163				

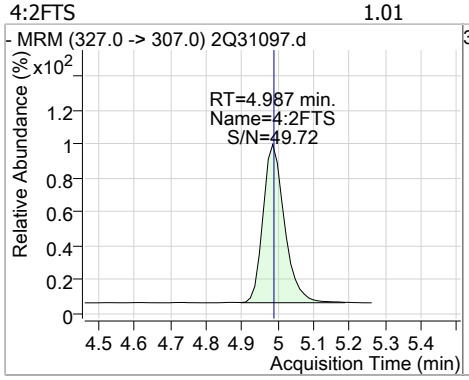


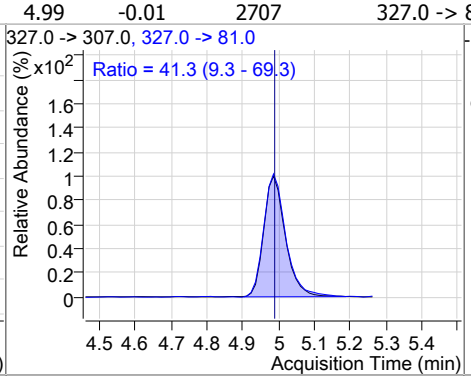


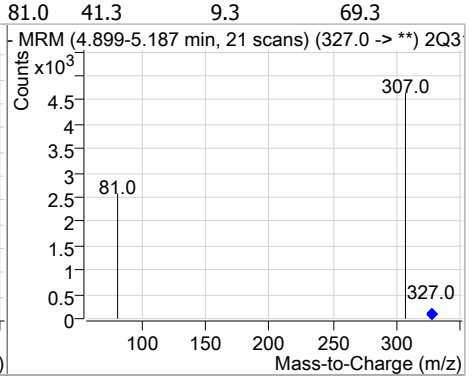


Perfluorinated Compounds by LC/MS/MS

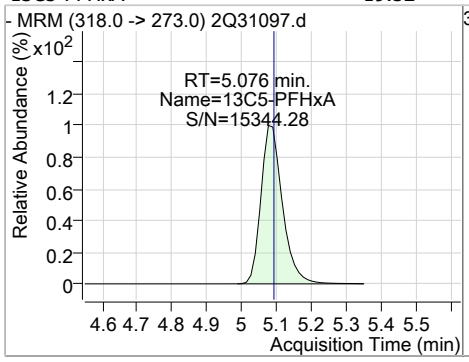
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	4.99	-0.01	2707	327.0 -> 81.0	41.3	9.3	69.3

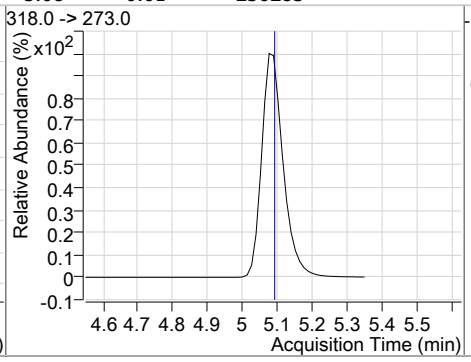


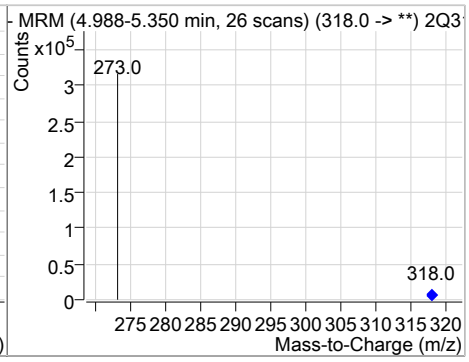




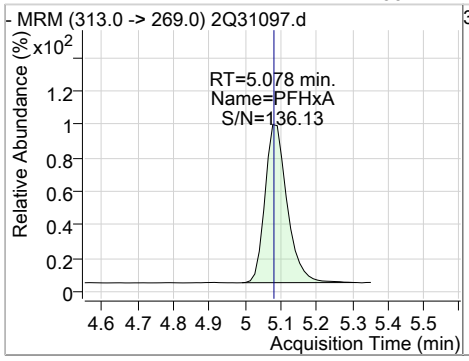
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.52	5.08	-0.01	236283				

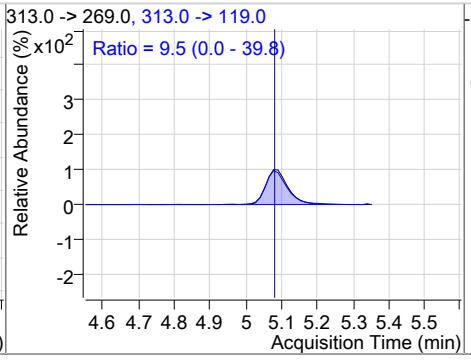


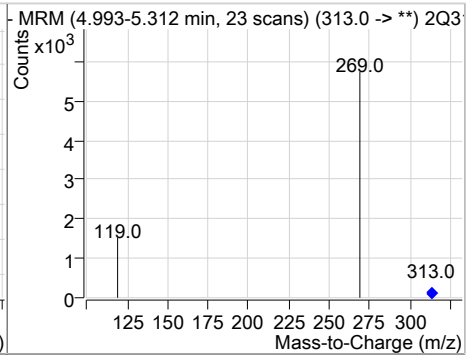




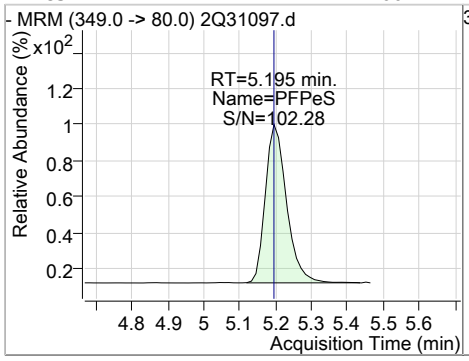
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.00	5.08	-0.01	3457	313.0 -> 119.0	9.5	0.0	39.8

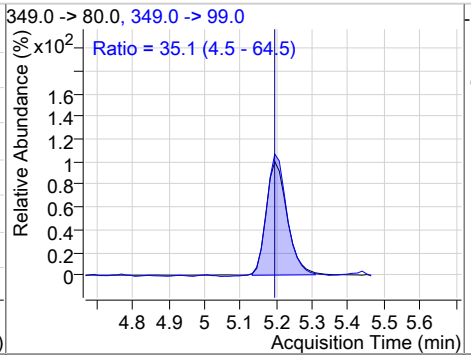


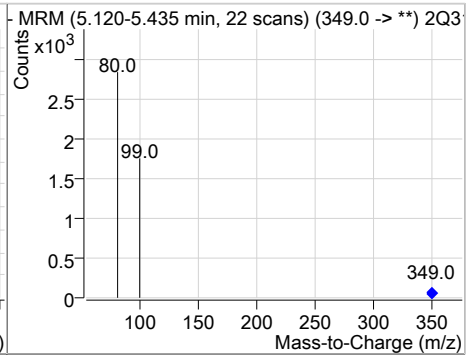




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.00	5.20	-0.01	1315	349.0 -> 99.0	35.1	4.5	64.5

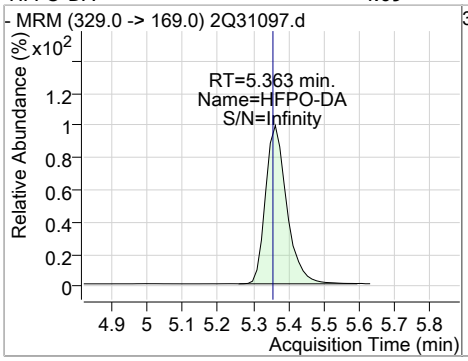


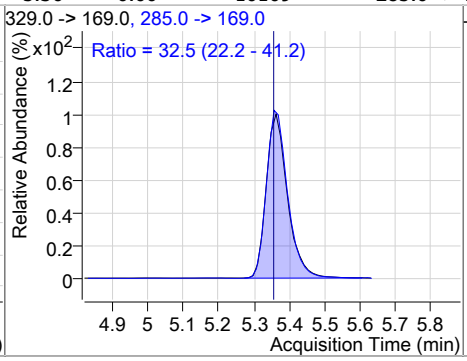


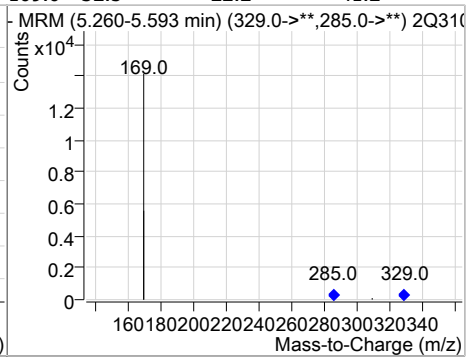


Perfluorinated Compounds by LC/MS/MS

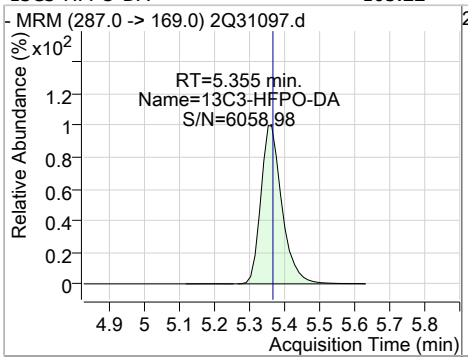
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.69	5.36	0.00	10109	285.0 -> 169.0	32.5	22.2	41.2

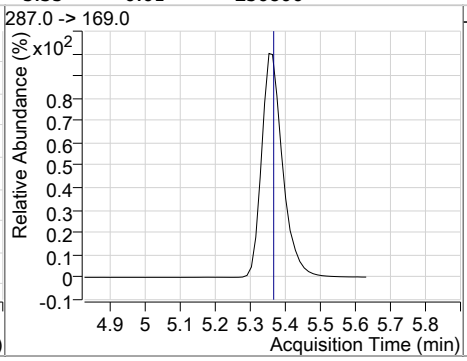


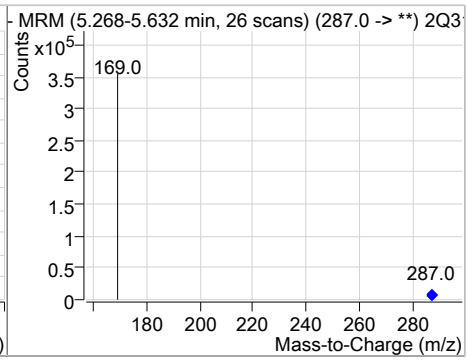




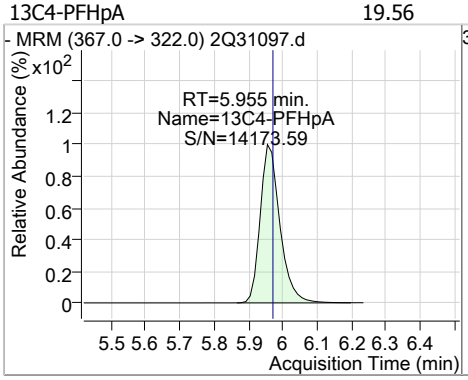
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	105.22	5.35	-0.01	256806				

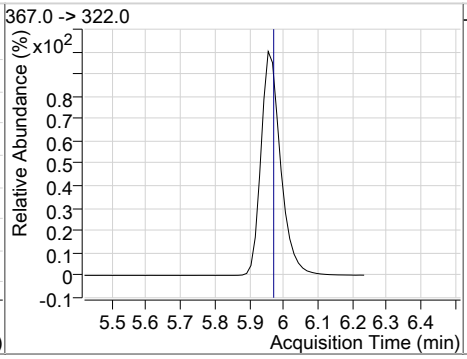


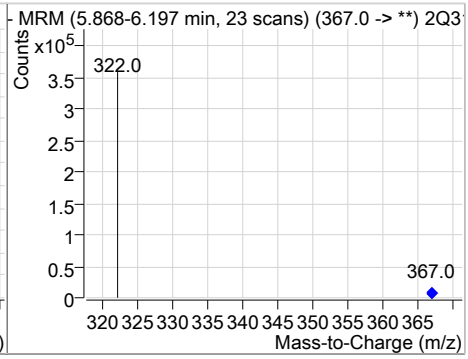




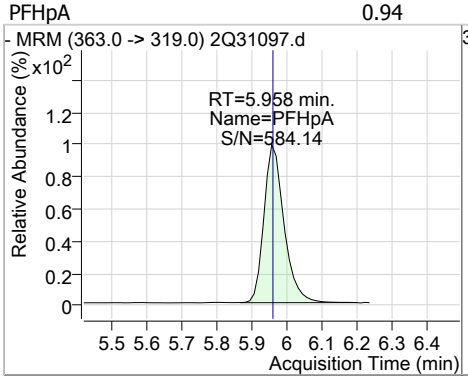
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.56	5.96	-0.01	268581				

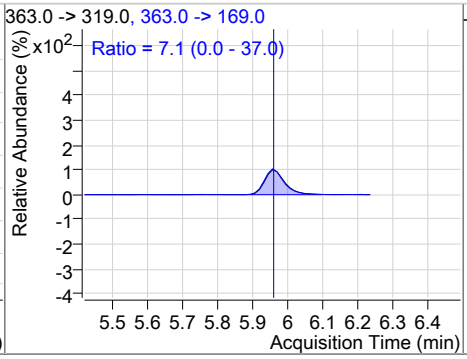


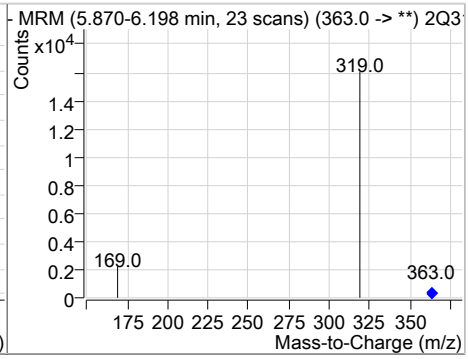




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	5.96	-0.01	11026	363.0 -> 169.0	7.1	0.0	37.0

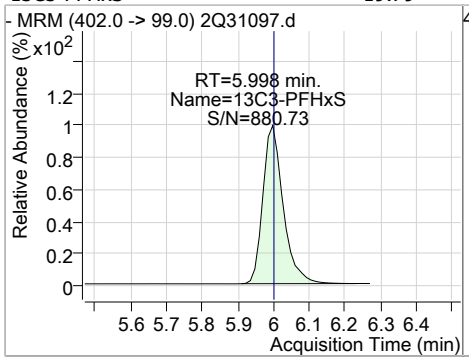


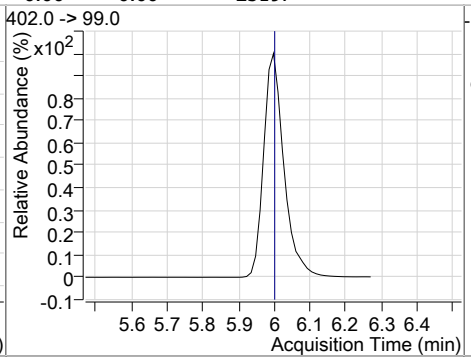


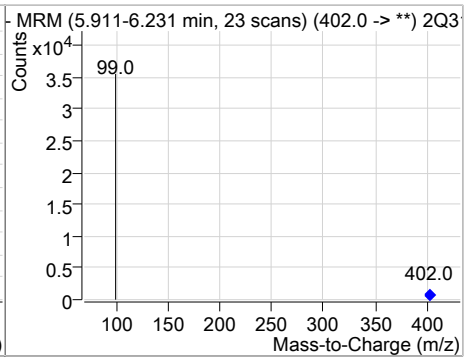


Perfluorinated Compounds by LC/MS/MS

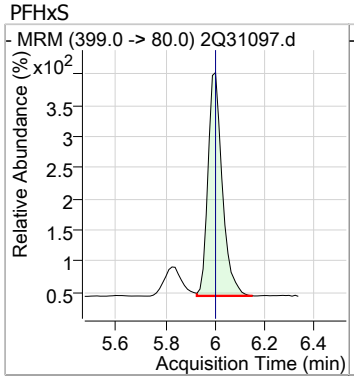
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.79	6.00	0.00	25197				

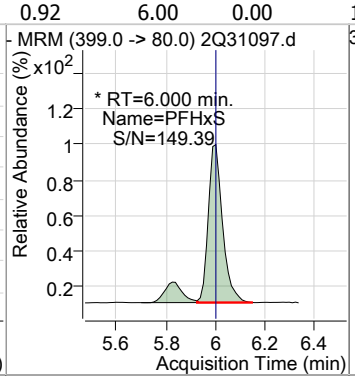


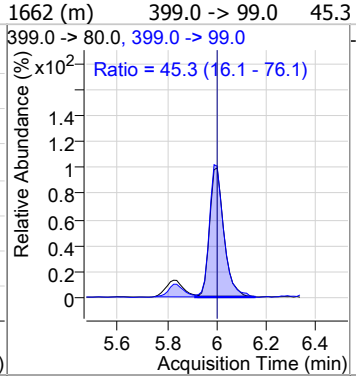


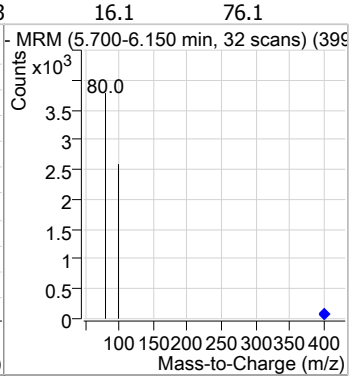


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.92	6.00	0.00	1662 (m)	399.0 -> 99.0	45.3	16.1	76.1

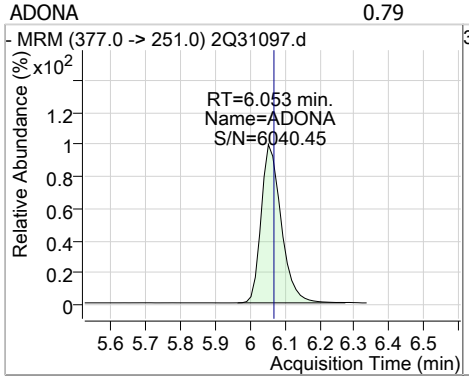


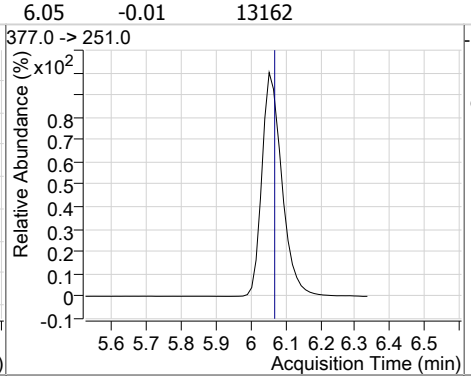


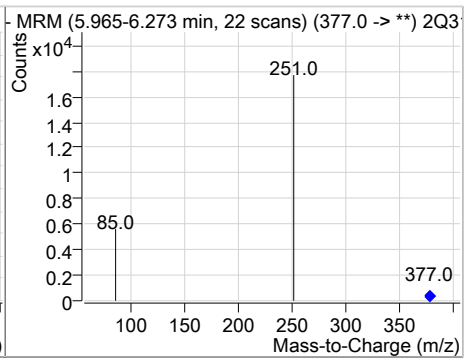




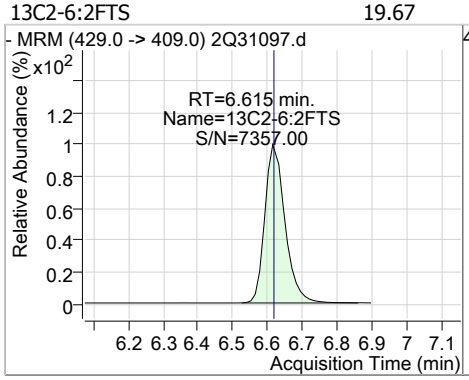
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.79	6.05	-0.01	13162				

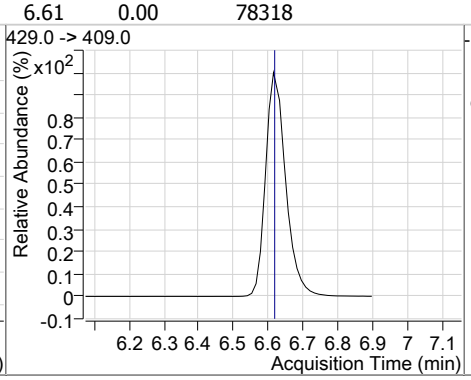


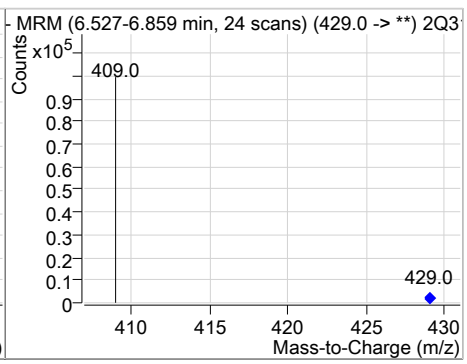




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.67	6.61	0.00	78318				

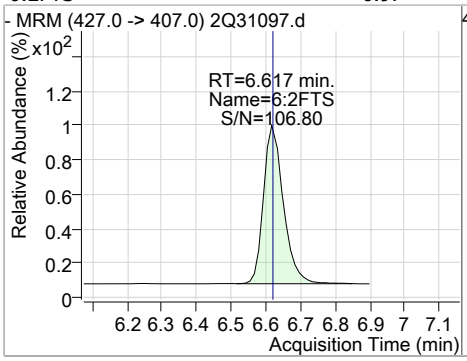


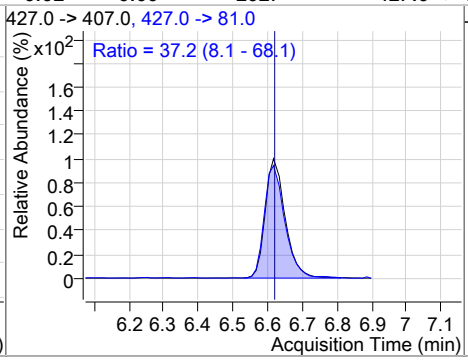


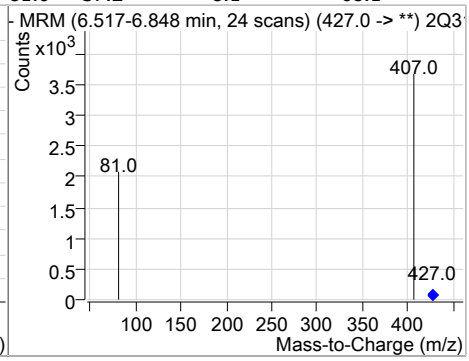


Perfluorinated Compounds by LC/MS/MS

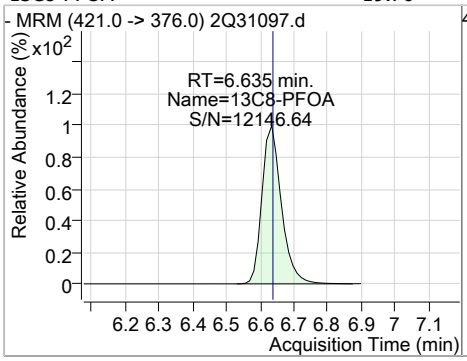
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.97	6.62	0.00	2027	427.0 -> 81.0	37.2	8.1	68.1

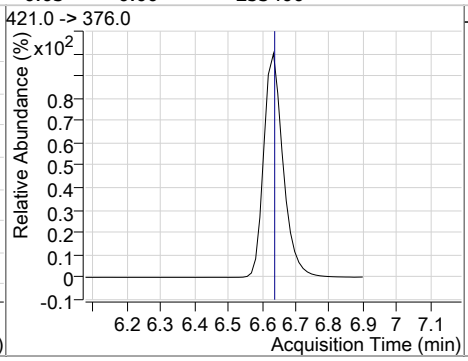


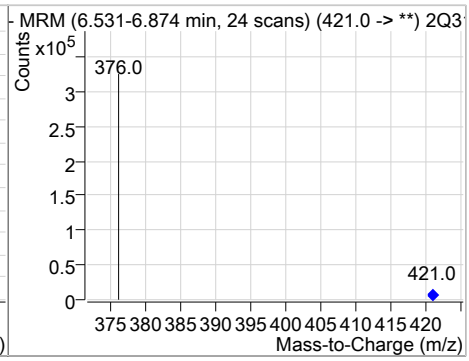




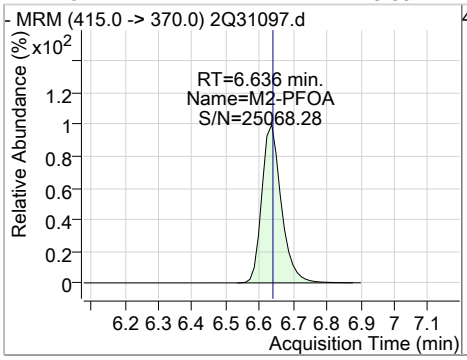
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.76	6.63	0.00	253460				

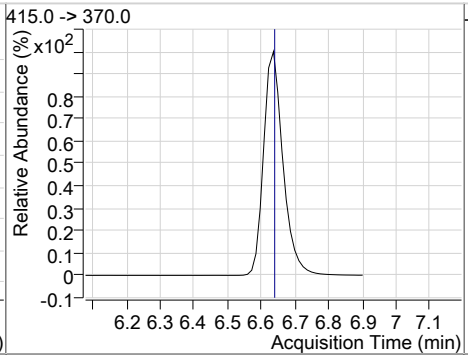


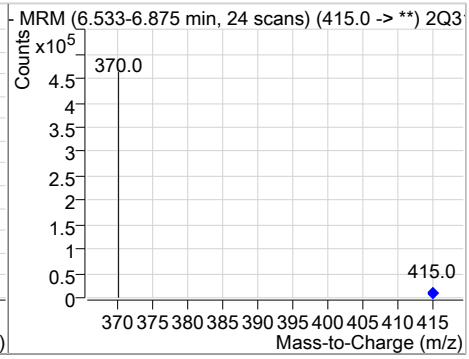




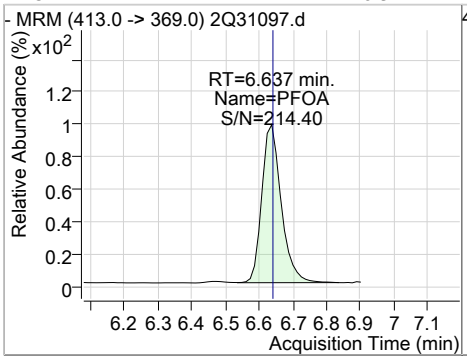
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	19.99	6.64	0.00	357224				

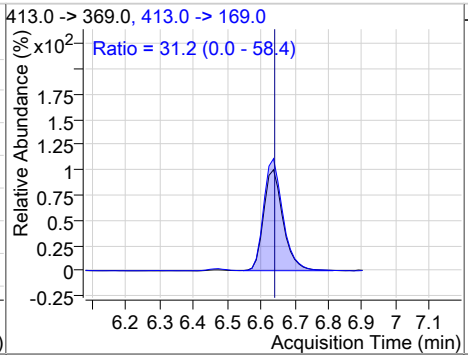


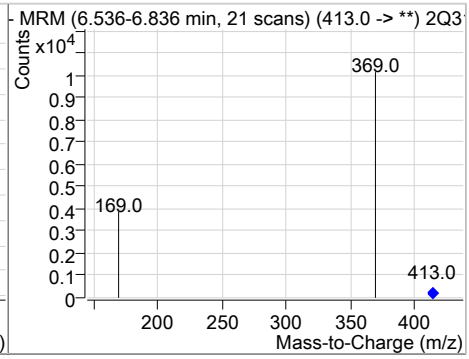




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.94	6.64	0.00	6888	413.0 -> 169.0	31.2	0.0	58.4

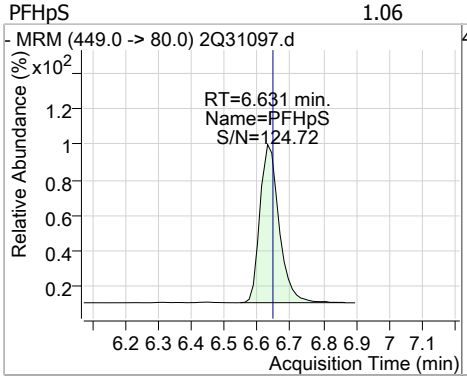


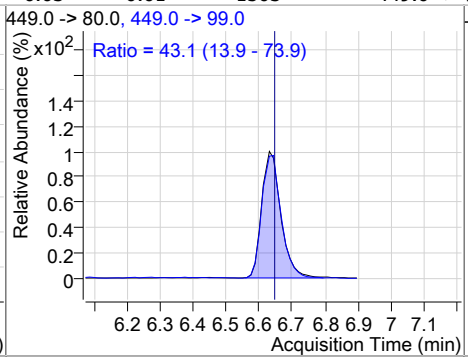


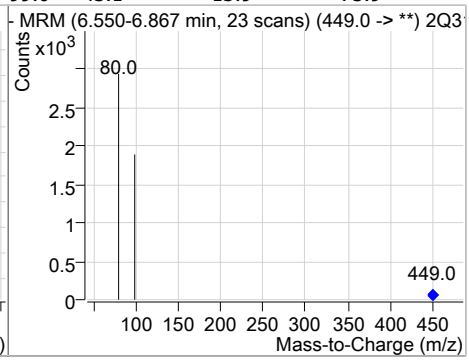


Perfluorinated Compounds by LC/MS/MS

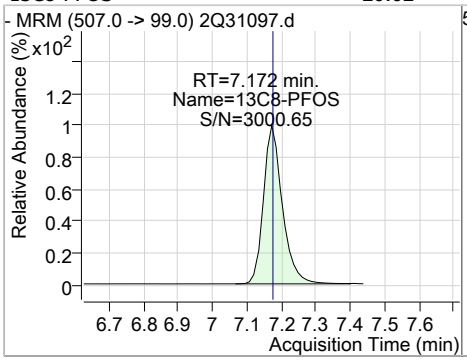
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.06	6.63	-0.01	1503	449.0 -> 99.0	43.1	13.9	73.9

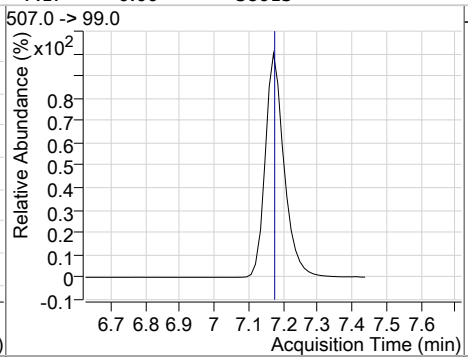


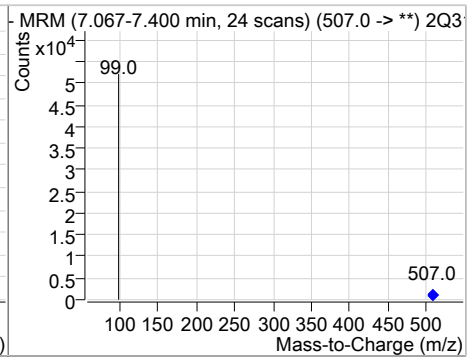




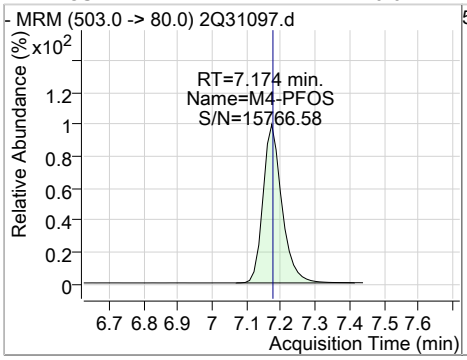
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.02	7.17	0.00	38013				

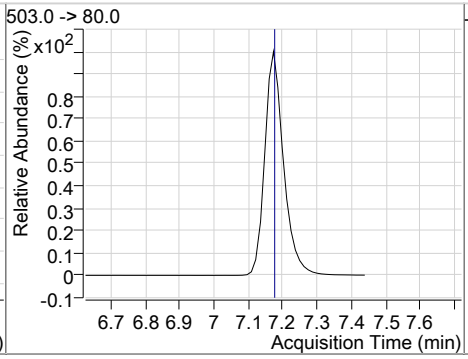


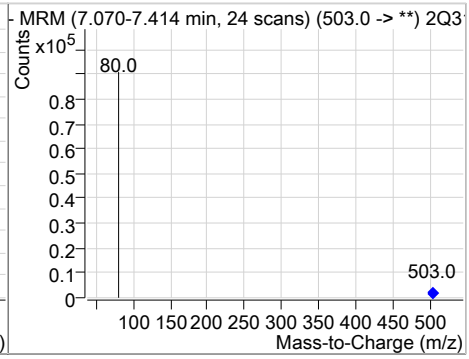




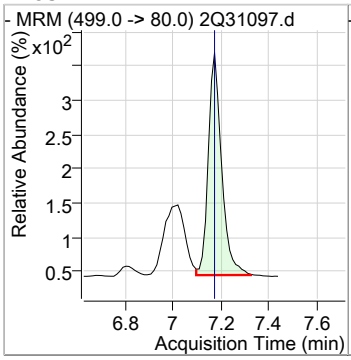
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.17	0.00	67427				

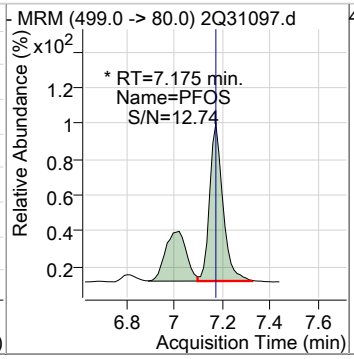


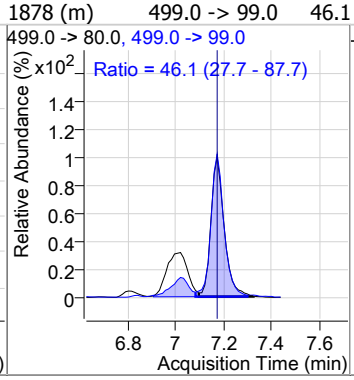


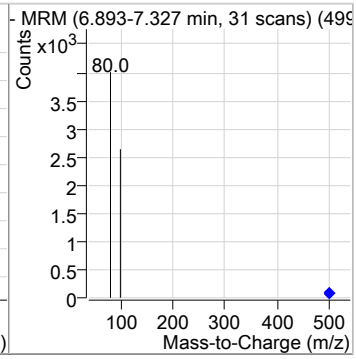


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	7.17	0.00	1878 (m)	499.0 -> 99.0	46.1	27.7	87.7



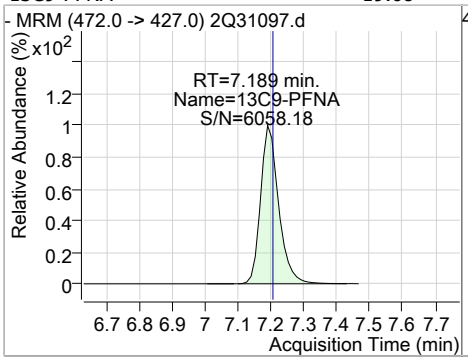


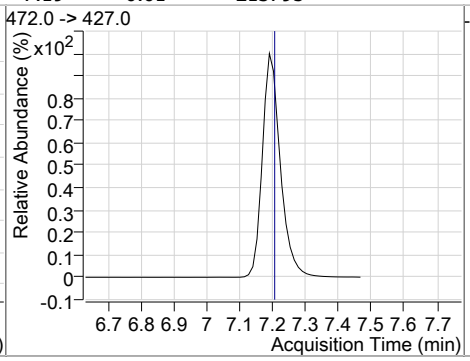


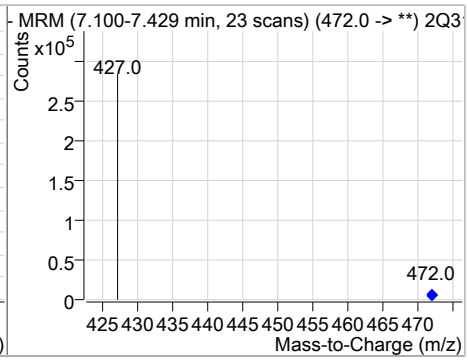


Perfluorinated Compounds by LC/MS/MS

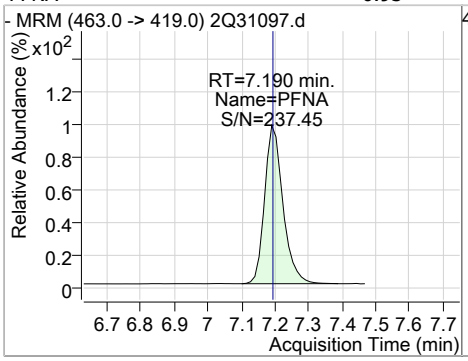
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.68	7.19	-0.01	213795				

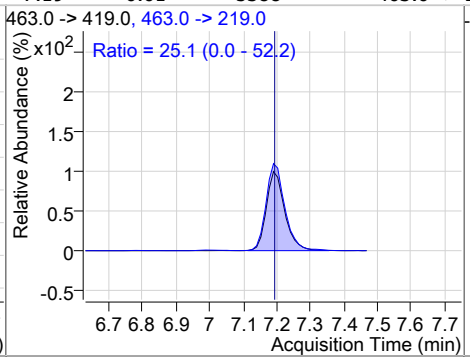


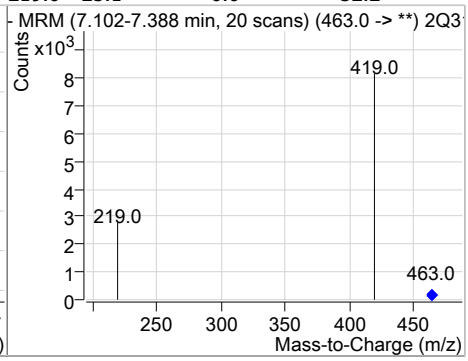




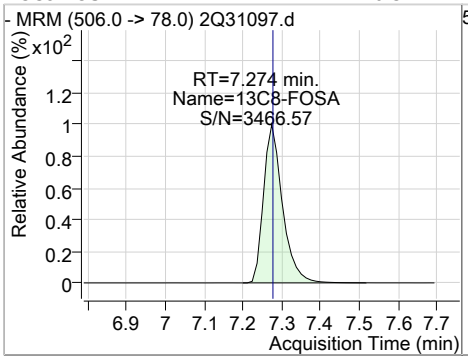
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	7.19	-0.01	5388	463.0 -> 219.0	25.1	0.0	52.2

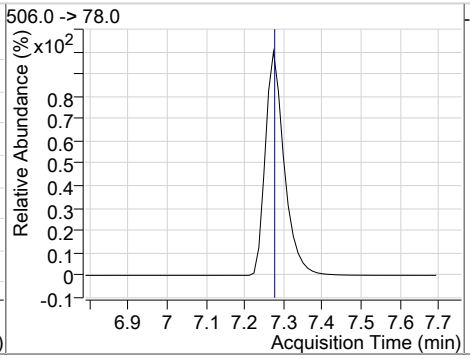


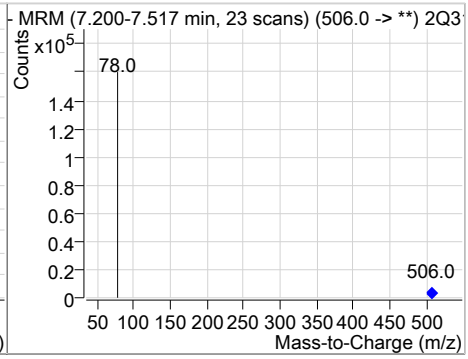




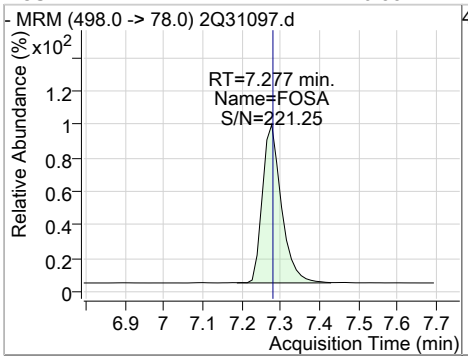
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.31	7.27	0.00	119504				

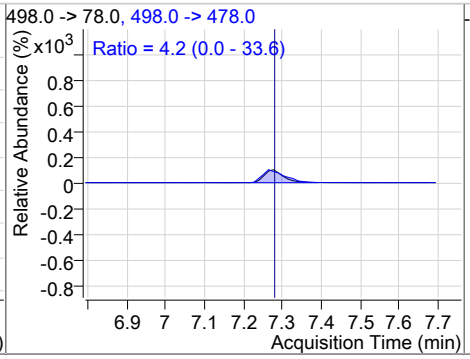


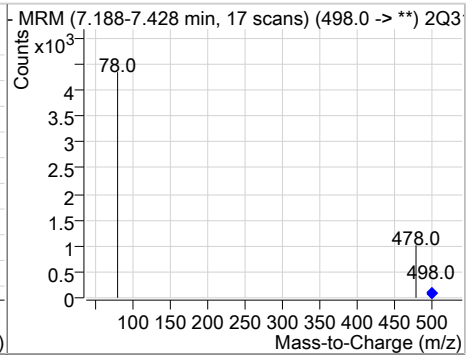




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.88	7.28	0.00	2628	498.0 -> 478.0	4.2	0.0	33.6

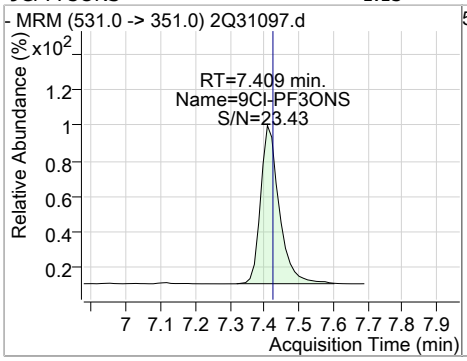


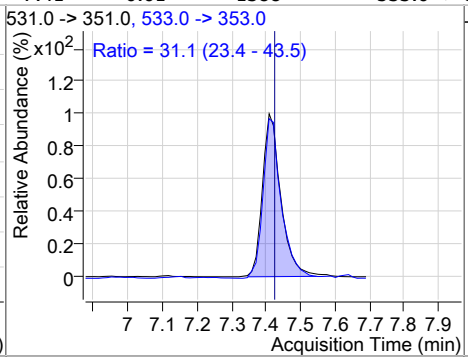


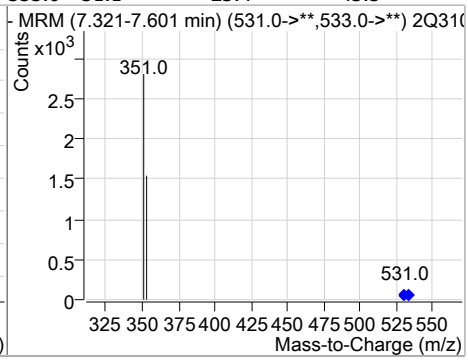


Perfluorinated Compounds by LC/MS/MS

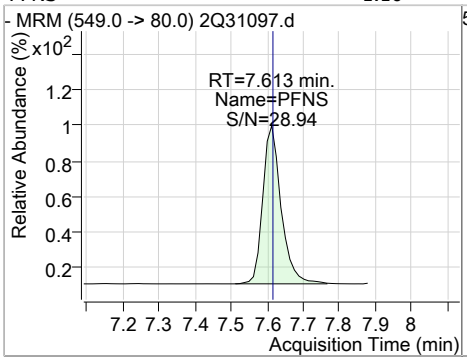
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.13	7.41	-0.01	1388	533.0 -> 353.0	31.1	23.4	43.5

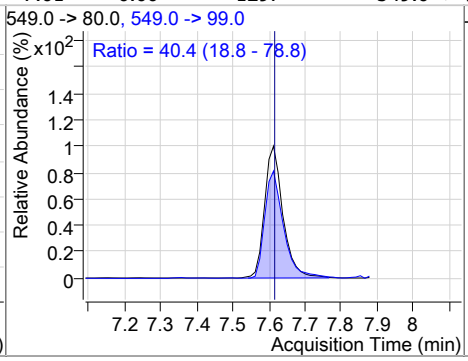


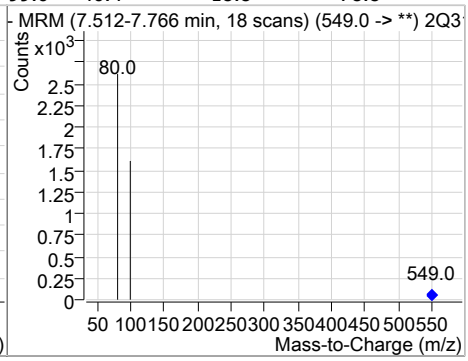




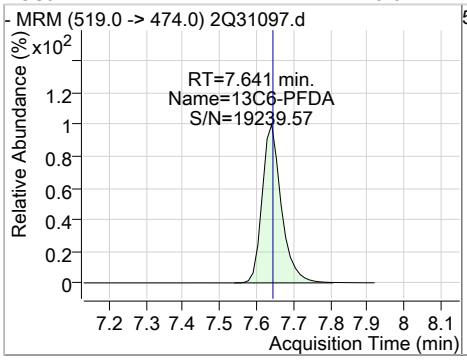
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.10	7.61	0.00	1297	549.0 -> 99.0	40.4	18.8	78.8

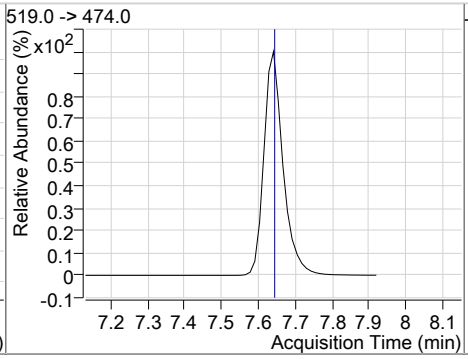


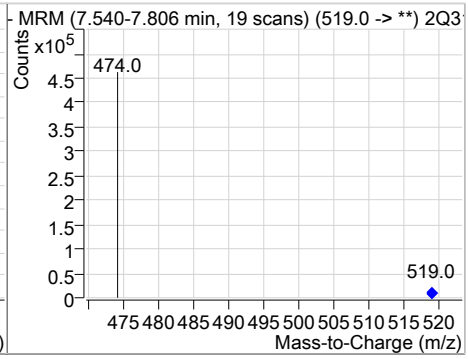




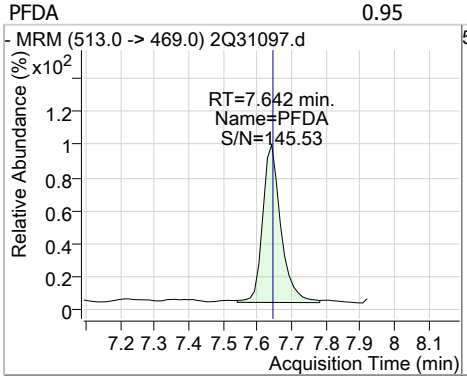
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.01	7.64	0.00	349025				

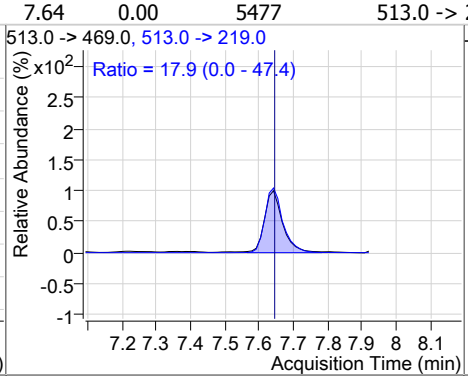


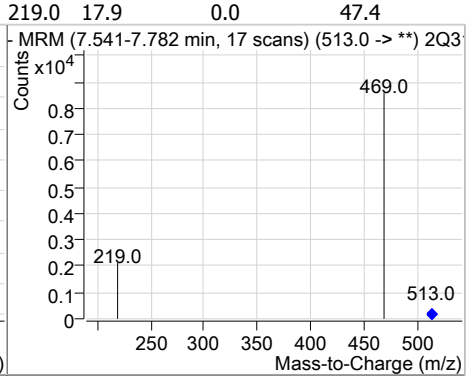




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	7.64	0.00	5477	513.0 -> 219.0	17.9	0.0	47.4

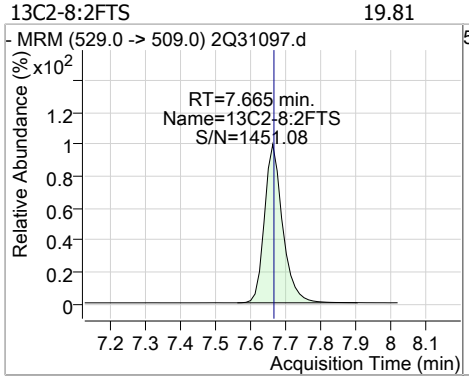


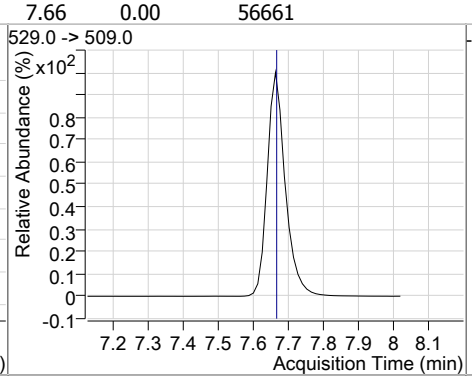


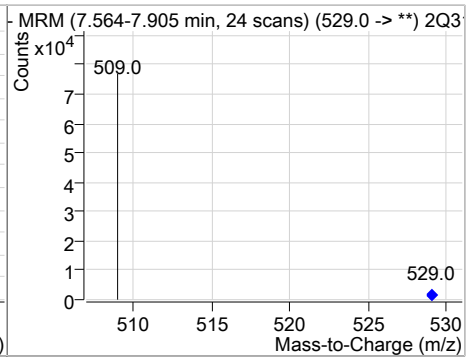


Perfluorinated Compounds by LC/MS/MS

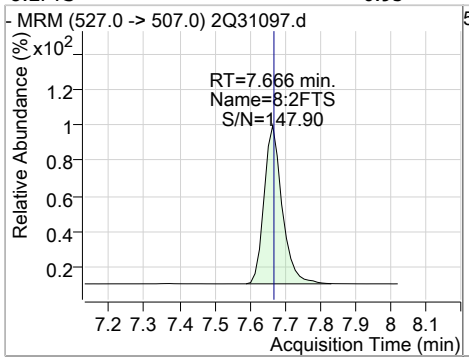
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.81	7.66	0.00	56661				

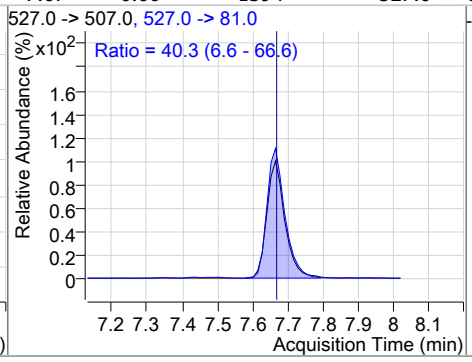


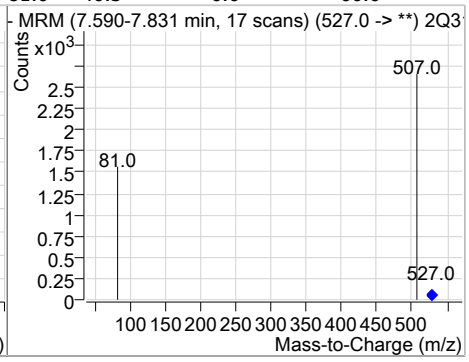




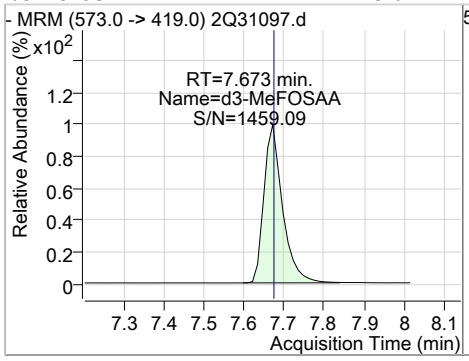
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.95	7.67	0.00	1394	527.0 -> 81.0	40.3	6.6	66.6

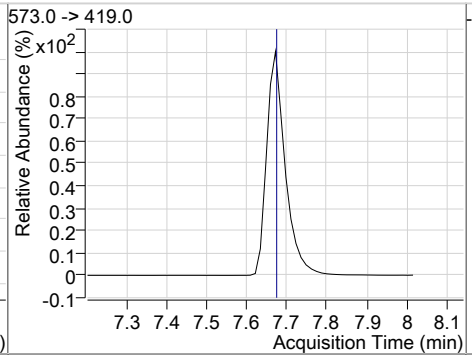


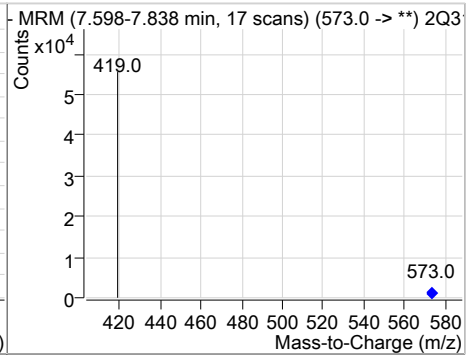




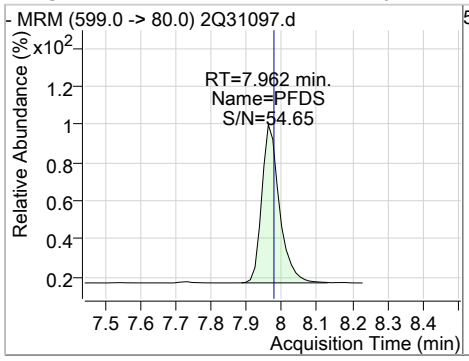
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.64	7.67	0.00	40943				

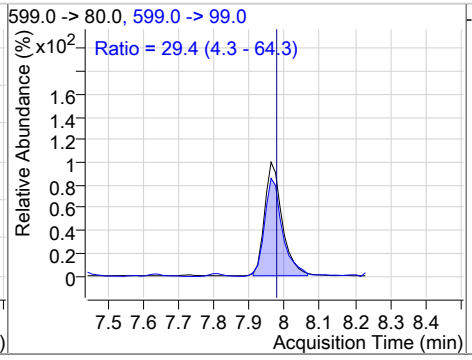


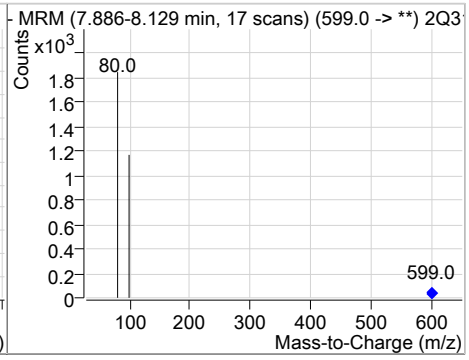




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.07	7.96	-0.01	742	599.0 -> 99.0	29.4	4.3	64.3

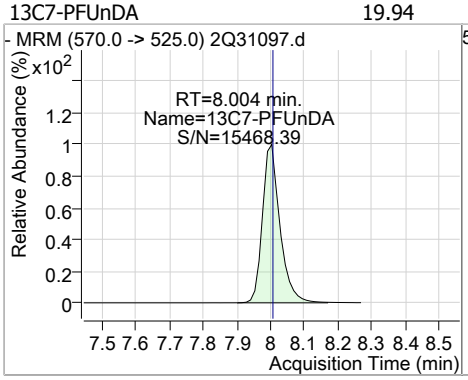


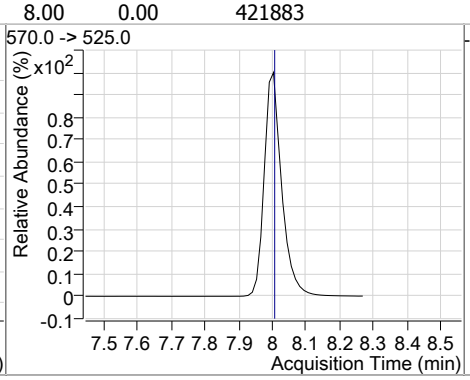


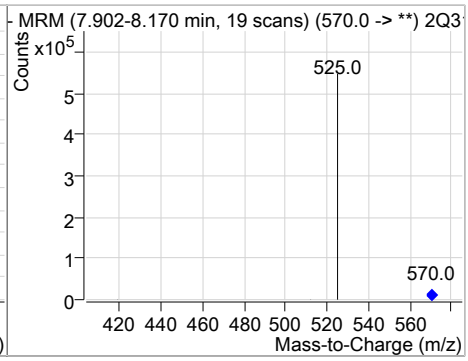


Perfluorinated Compounds by LC/MS/MS

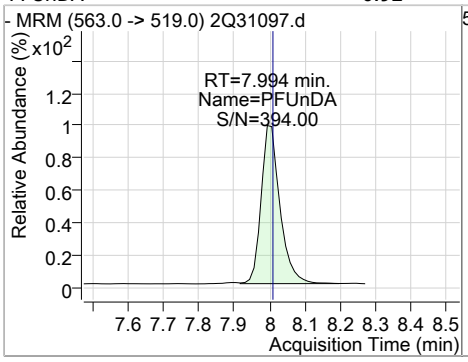
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.94	8.00	0.00	421883				

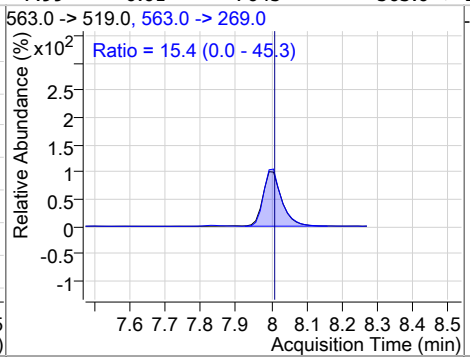


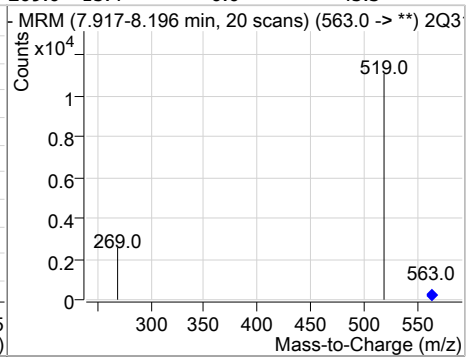




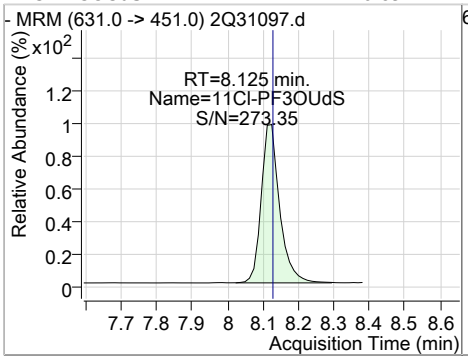
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.92	7.99	-0.01	7645	563.0 -> 269.0	15.4	0.0	45.3

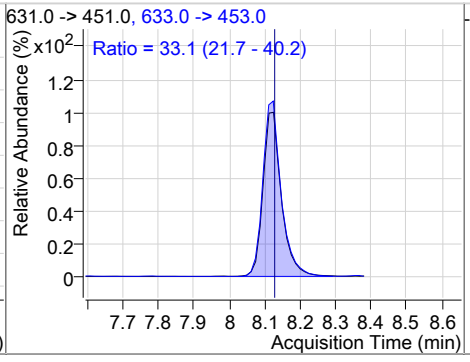


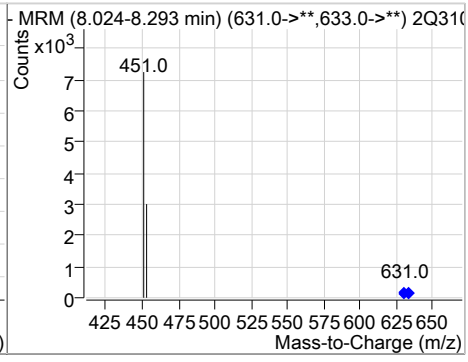




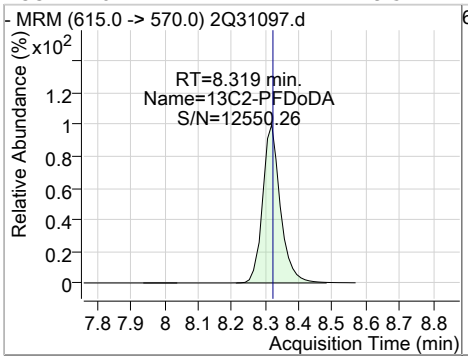
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.89	8.12	0.00	4792	633.0 -> 453.0	33.1	21.7	40.2

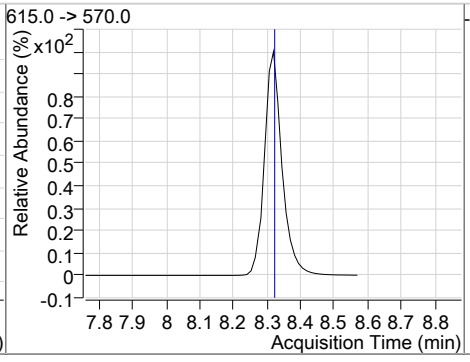


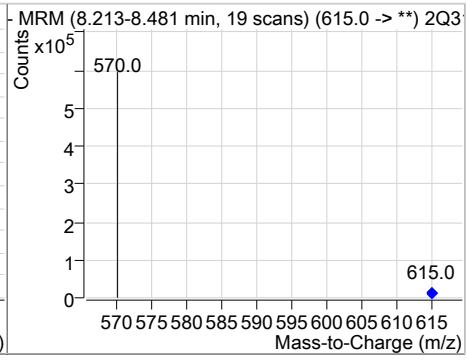




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.54	8.32	0.00	451098				

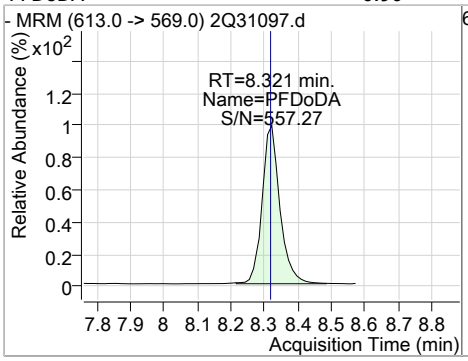


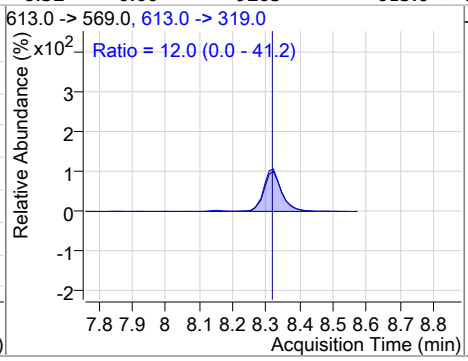


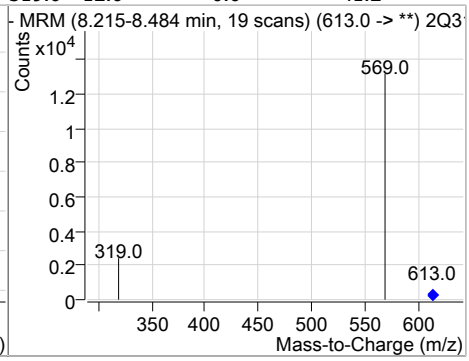


Perfluorinated Compounds by LC/MS/MS

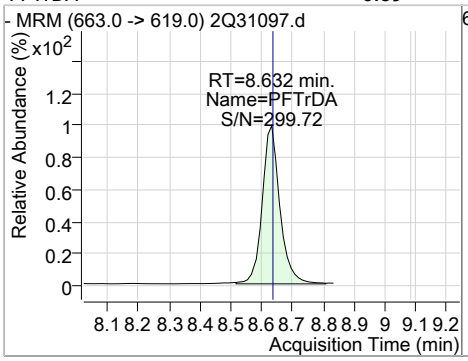
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.90	8.32	0.00	9265	613.0 -> 319.0	12.0	0.0	41.2

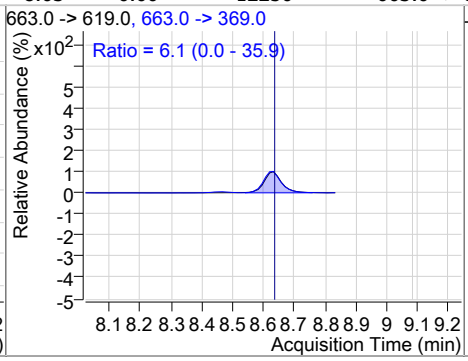


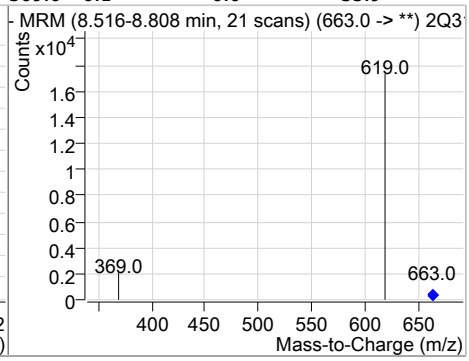




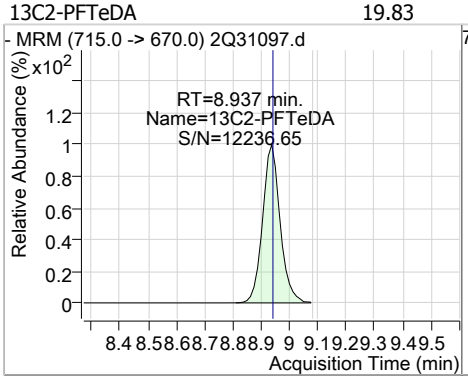
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.89	8.63	0.00	12256	663.0 -> 369.0	6.1	0.0	35.9

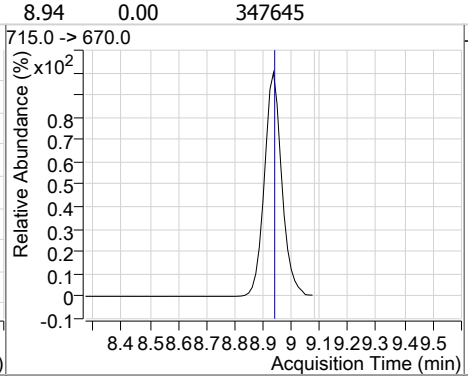


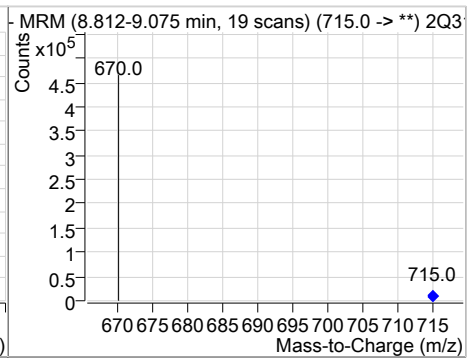




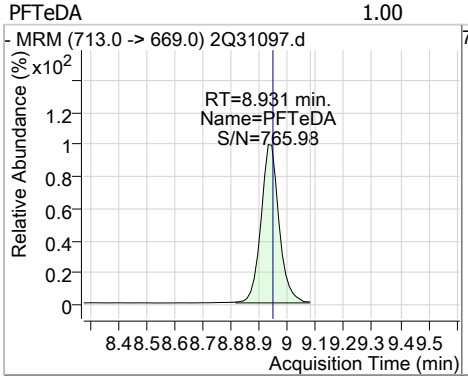
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.83	8.94	0.00	347645				

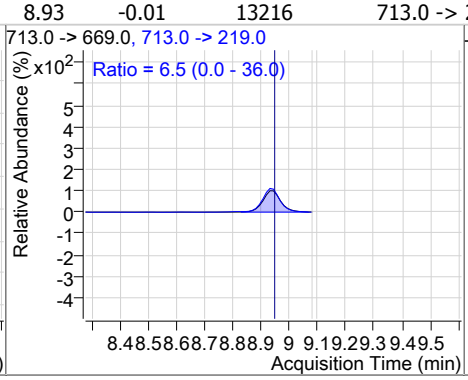


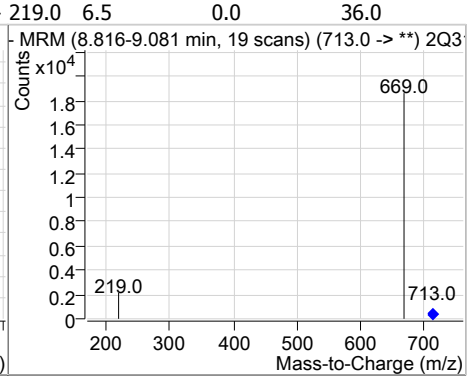




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.00	8.93	-0.01	13216	713.0 -> 219.0	6.5	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31097.D
Injection Time: 06/21/19 10:26
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31098.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 10:41:40 AM
Sample Name : ic498-2
Vial : Vial 4
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

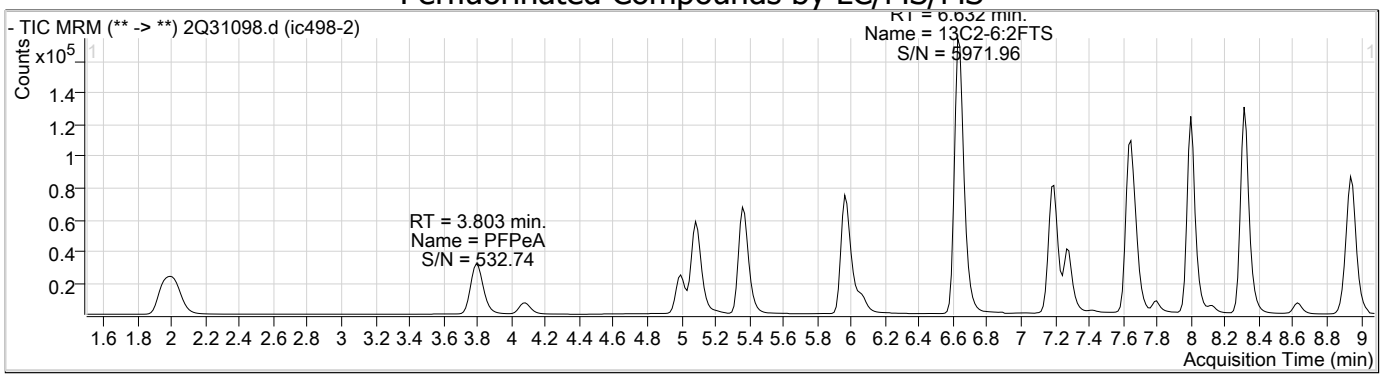
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	349792	20.00	µg/L	0.000
13C4-PFOS	7.186	503.0 -> 80.0	65694	20.00	µg/L	0.013
M4-PFBA	1.990	217.0 -> 172.0	198880	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	154594	20.00	µg/L	0.000
M5-PFHxA	5.089	318.0 -> 273.0	231197	20.00	µg/L	0.000
M4-PFHpA	5.968	367.0 -> 322.0	266171	20.00	µg/L	0.000
M8-PFOA	6.635	421.0 -> 376.0	255626	20.00	µg/L	0.000
M9-PFNA	7.202	472.0 -> 427.0	211701	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	347536	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	418880	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	452621	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	349501	20.00	µg/L	0.000
M8-FOSA	7.287	506.0 -> 78.0	121004	20.00	µg/L	0.013
M3-PFBS	4.080	302.0 -> 99.0	29393	20.00	µg/L	0.000
M3-PFHxS	6.010	402.0 -> 99.0	24869	20.00	µg/L	0.013
M8-PFOS	7.184	507.0 -> 99.0	37067	20.00	µg/L	0.013
M2-4:2FTS	4.997	329.0 -> 309.0	94533	20.00	µg/L	0.000
M2-6:2FTS	6.632	429.0 -> 409.0	77823	20.00	µg/L	0.017
M2-8:2FTS	7.665	529.0 -> 509.0	55606	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	41087	20.00	µg/L	0.000
M3-HFPO-DA	5.365	287.0 -> 169.0	250165	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	94521	19.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C2-6:2FTS	6.632	429.0 -> 409.0	77838	19.55	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-8:2FTS	7.665	529.0 -> 509.0	55626	19.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-PFDoDA	8.319	615.0 -> 570.0	452579	19.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFTeDA	8.937	715.0 -> 670.0	349541	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFBS	4.080	302.0 -> 99.0	29397	19.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFHxS	6.010	402.0 -> 99.0	24865	19.53	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C4-PFBA	1.990	217.0 -> 172.0	197547	19.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C4-PFHpA	5.968	367.0 -> 322.0	266177	19.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C5-PFHxA	5.089	318.0 -> 273.0	231207	19.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C5-PFPeA	3.799	268.0 -> 223.0	154592	19.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C6-PFDA	7.641	519.0 -> 474.0	347628	19.93	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

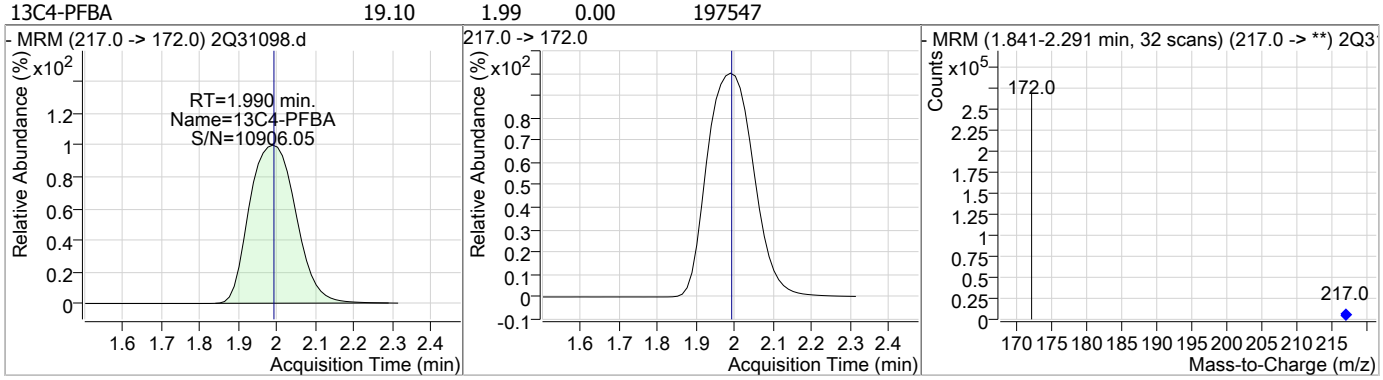
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C7-PFUnDA	8.004	570.0 -> 525.0	418884	19.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C8-FOSA	7.287	506.0 -> 78.0	120988	20.57	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
13C8-PFOA	6.635	421.0 -> 376.0	255635	19.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C8-PFOS	7.184	507.0 -> 99.0	37060	19.52	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C9-PFNA	7.202	472.0 -> 427.0	211625	19.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
d3-MeFOSAA	7.673	573.0 -> 419.0	41112	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
M2-PFOA	6.636	415.0 -> 370.0	350025	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.186	503.0 -> 80.0	65671	19.99	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.365	287.0 -> 169.0	250165	102.50	µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
Target Compounds							**QValue**
4:2FTS	4.999	327.0 -> 307.0	5587	2.07	µg/L		97
6:2FTS	6.633	427.0 -> 407.0	4156	2.01	µg/L		97
8:2FTS	7.666	527.0 -> 507.0	3154	2.19	µg/L		97
EtFOSAA	7.799	584.0 -> 419.0	1935	1.91	µg/L		98
FOSA	7.277	498.0 -> 78.0	5966	1.98	µg/L		98
MeFOSAA	7.673	570.0 -> 419.0	2083	1.87	µg/L		98
PFBA	1.986	213.0 -> 169.0	3450	2.03	µg/L		100
PFBS	4.073	299.0 -> 80.0	4050	2.01	µg/L		99
PFDA	7.642	513.0 -> 469.0	11723	2.04	µg/L		99
PFDoDA	8.321	613.0 -> 569.0	20025	1.94	µg/L		100
PFDS	7.975	599.0 -> 80.0	1517	2.24	µg/L		90
PFHpA	5.970	363.0 -> 319.0	23205	1.99	µg/L		99
PFHpS	6.644	449.0 -> 80.0	3163	2.26	µg/L		97
PFHxA	5.091	313.0 -> 269.0	6737	1.98	µg/L		98
PFHxS	6.000	399.0 -> 80.0	3618	2.04	µg/L	m	96
PFNA	7.203	463.0 -> 419.0	11688	2.04	µg/L		99
PFNS	7.613	549.0 -> 80.0	2580	2.24	µg/L		99
PFOA	6.637	413.0 -> 369.0	14450	1.96	µg/L		98
PFOS	7.187	499.0 -> 80.0	3543	1.93	µg/L	m	86
PFPeA	3.803	263.0 -> 219.0	13150	2.04	µg/L		100
PFPeS	5.208	349.0 -> 80.0	2699	2.09	µg/L		99
PFTeDA	8.943	713.0 -> 669.0	26510	1.99	µg/L		99
PFTrDA	8.632	663.0 -> 619.0	26427	1.92	µg/L		100
PFUnDA	8.006	563.0 -> 519.0	16449	1.98	µg/L		100
11Cl-PF3OUdS	8.125	631.0 -> 451.0	10362	1.93	µg/L		99
9Cl-PF3ONS	7.422	531.0 -> 351.0	2718	2.21	µg/L		97
ADONA	6.066	377.0 -> 251.0	28441	1.70	µg/L		100
HFPO-DA	5.375	329.0 -> 169.0	21664	10.33	µg/L		100

= Qualifier out of range, m = manually integrated, + = Area summed

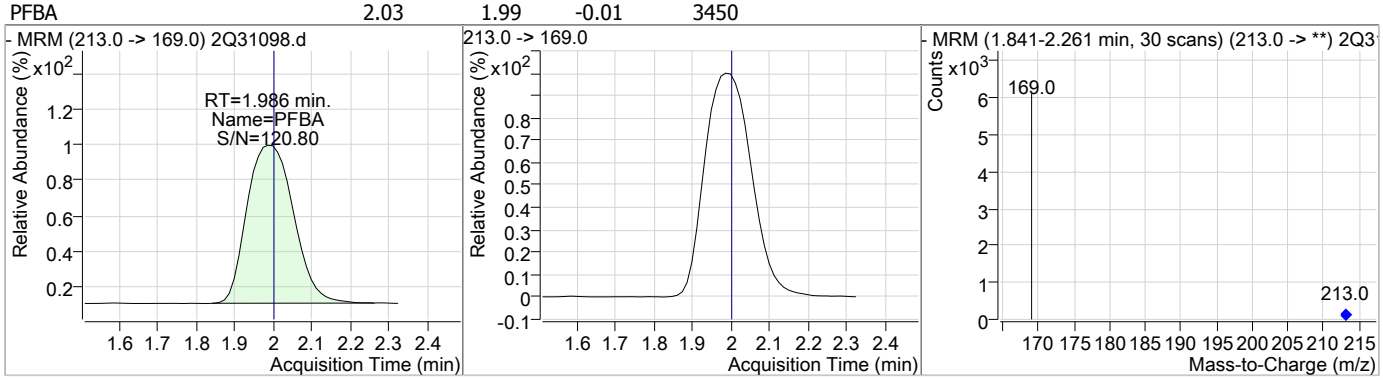
Perfluorinated Compounds by LC/MS/MS



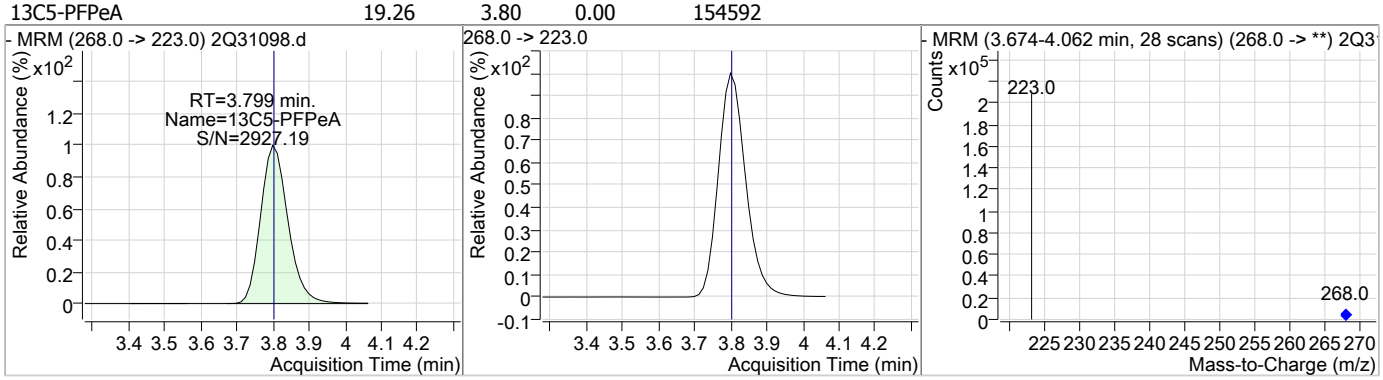
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.10	1.99	0.00	197547				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.03	1.99	-0.01	3450				

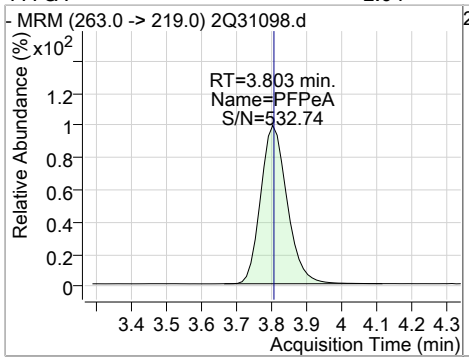


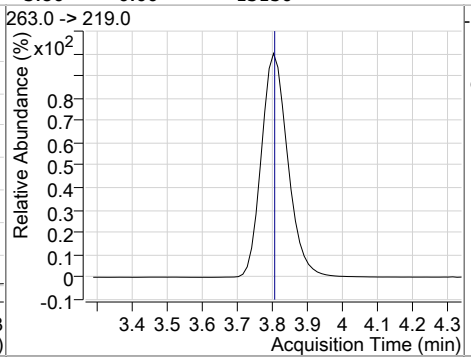
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.26	3.80	0.00	154592				

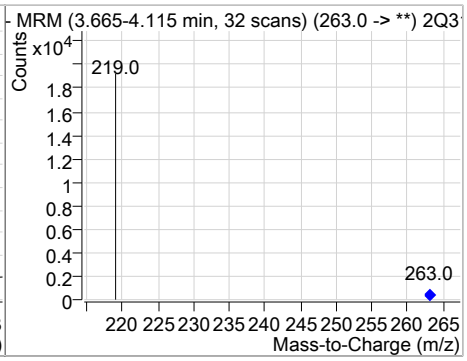


Perfluorinated Compounds by LC/MS/MS

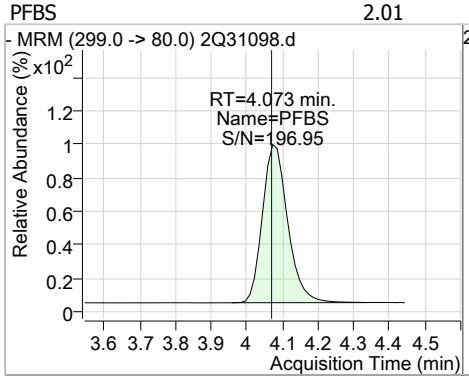
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.04	3.80	0.00	13150				

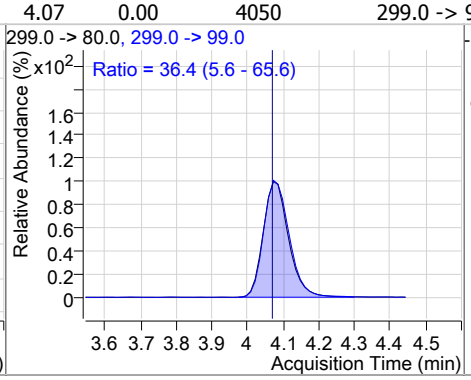


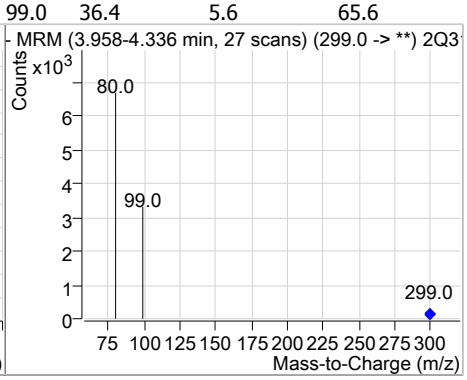




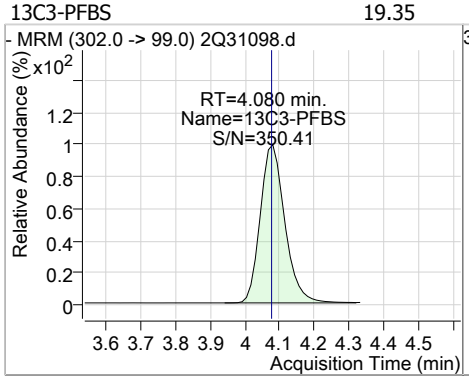
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.01	4.07	0.00	4050	299.0 -> 99.0	36.4	5.6	65.6

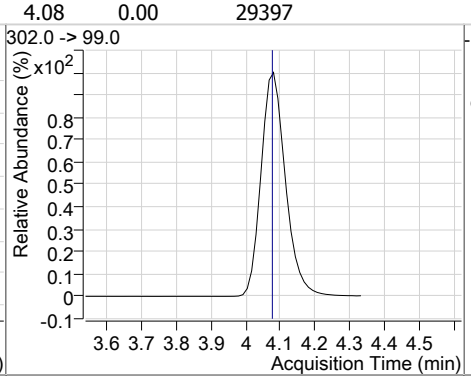


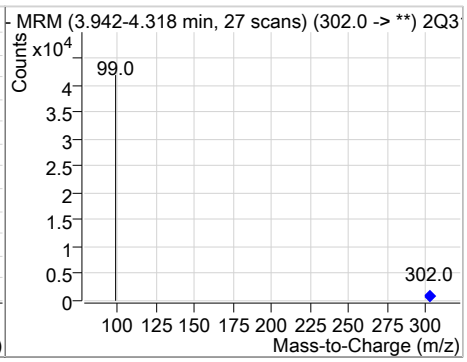




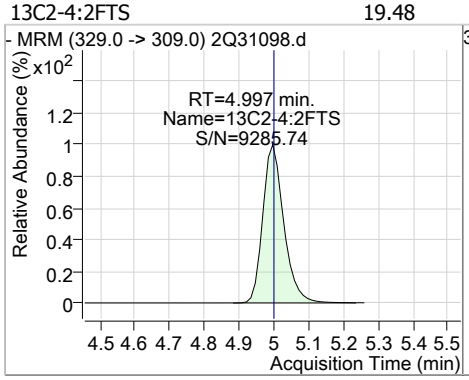
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.35	4.08	0.00	29397				

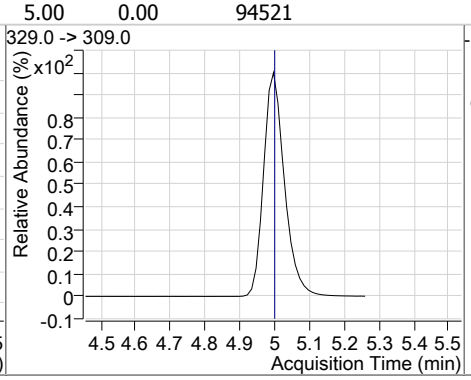


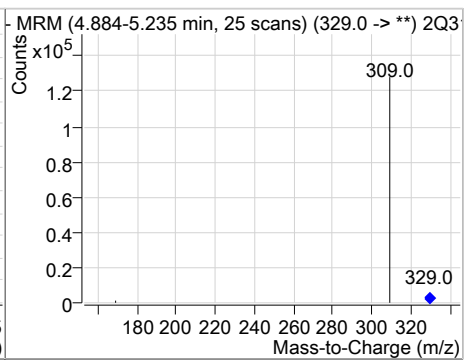




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.48	5.00	0.00	94521				

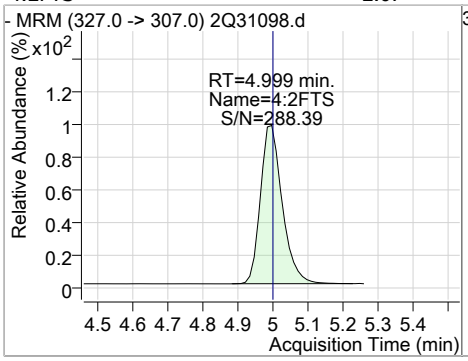


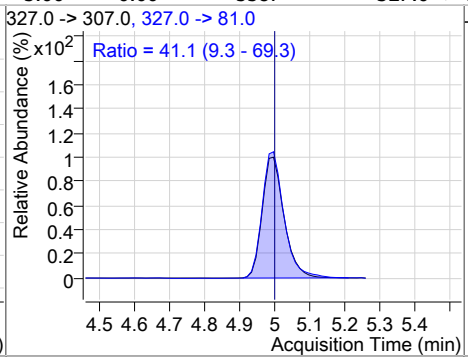


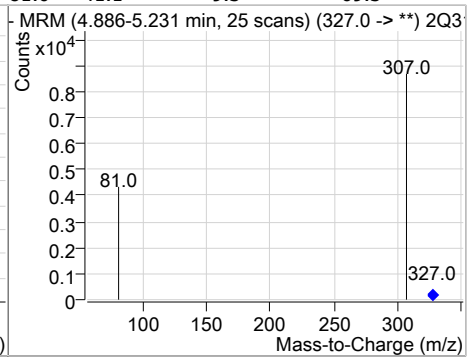


Perfluorinated Compounds by LC/MS/MS

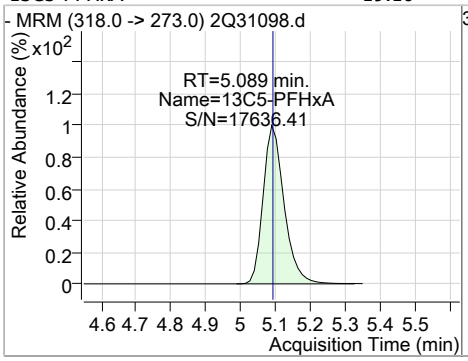
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.07	5.00	0.00	5587	327.0 -> 81.0	41.1	9.3	69.3

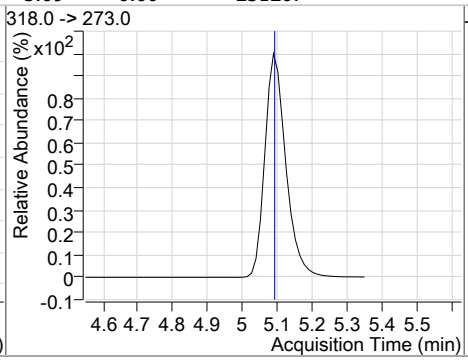


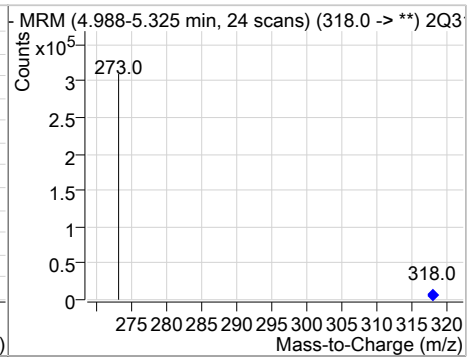




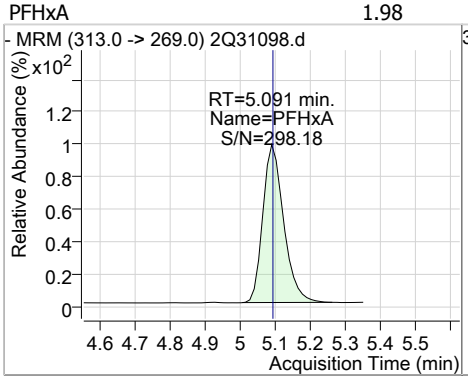
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.10	5.09	0.00	231207				

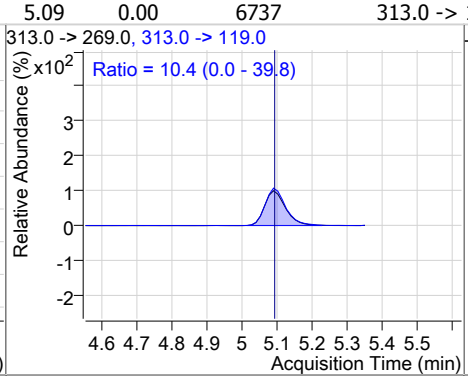


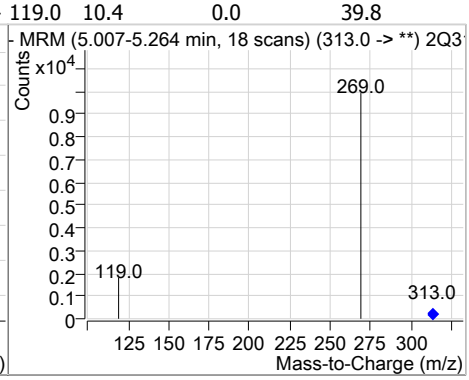




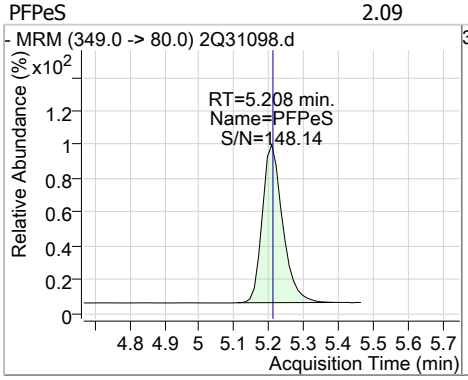
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.98	5.09	0.00	6737	313.0 -> 119.0	10.4	0.0	39.8

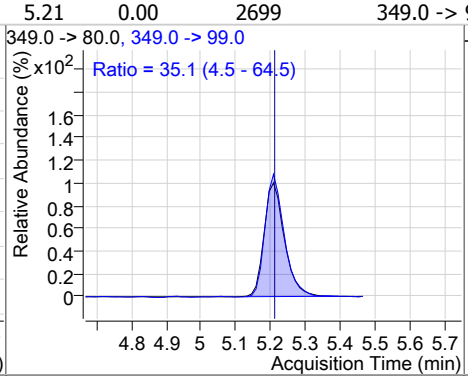


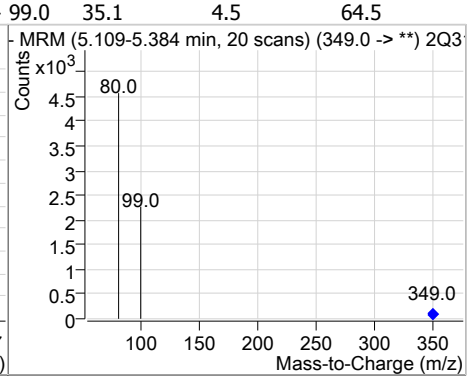




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.09	5.21	0.00	2699	349.0 -> 99.0	35.1	4.5	64.5

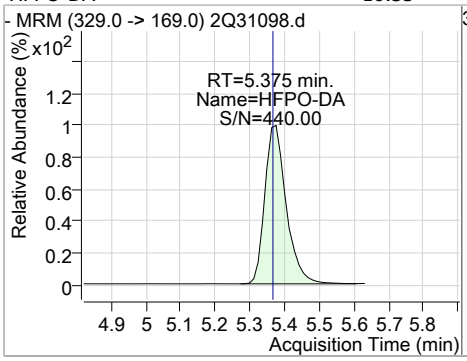


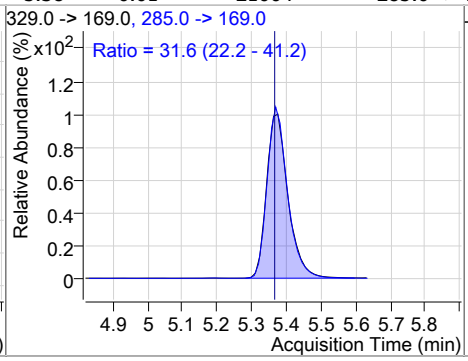


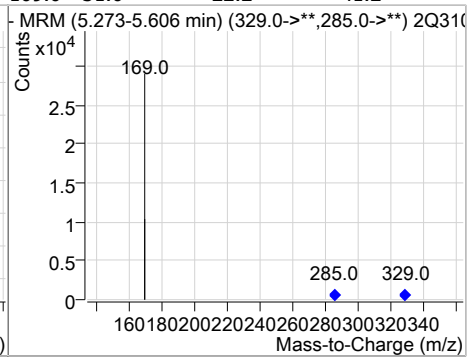


Perfluorinated Compounds by LC/MS/MS

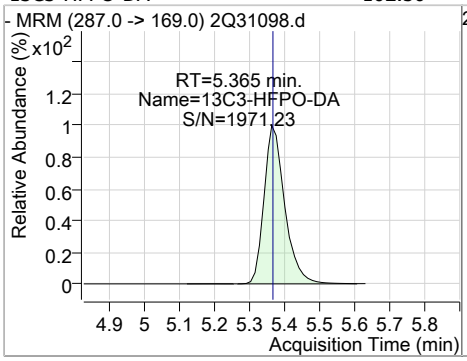
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.33	5.38	0.01	21664	285.0 -> 169.0	31.6	22.2	41.2

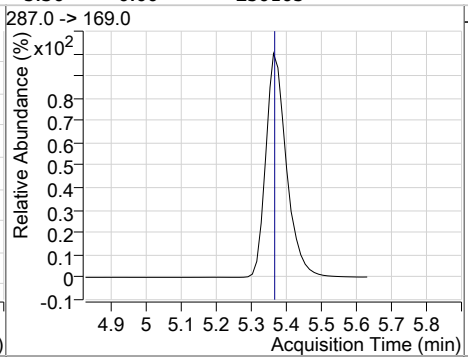


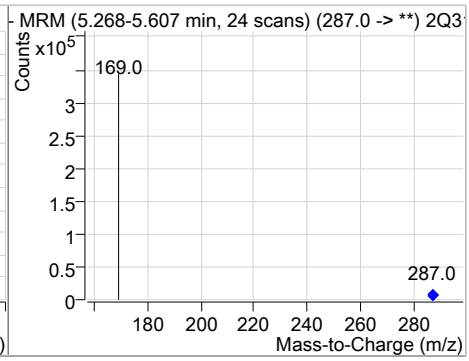




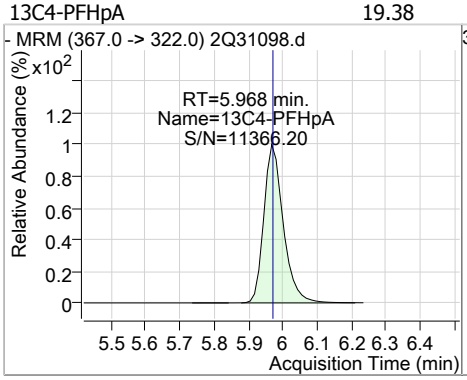
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	102.50	5.36	0.00	250165				

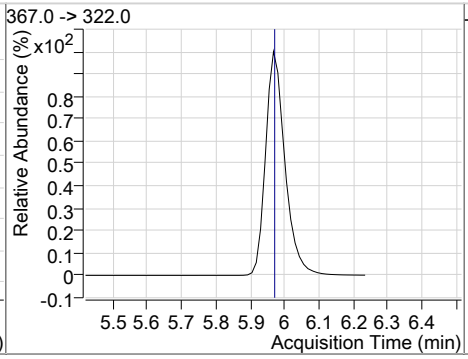


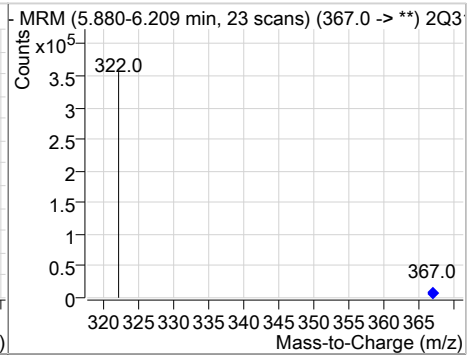




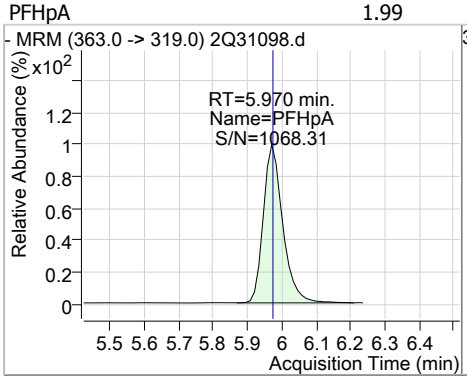
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.38	5.97	0.00	266177				

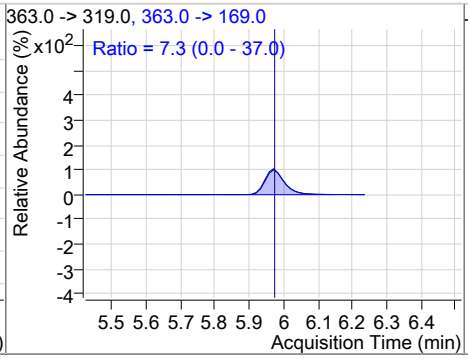


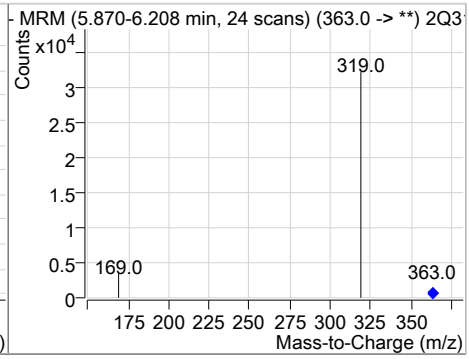




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.99	5.97	0.00	23205	363.0 -> 169.0	7.3	0.0	37.0

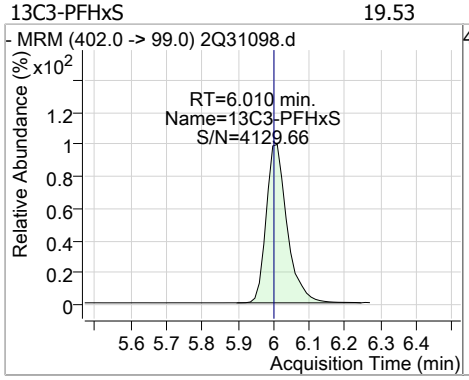


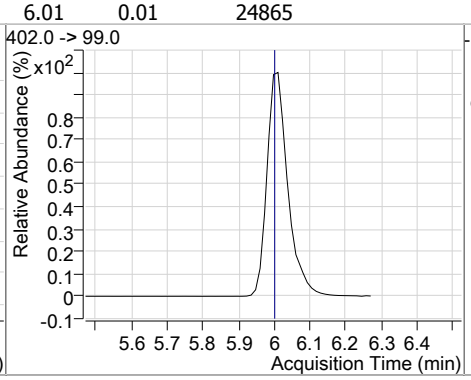


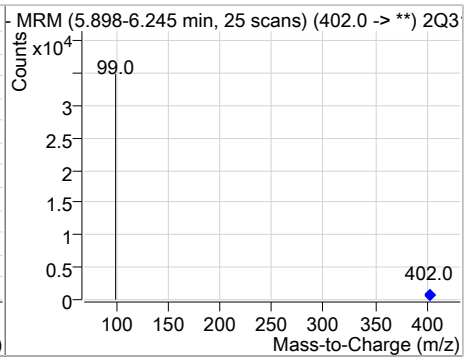


Perfluorinated Compounds by LC/MS/MS

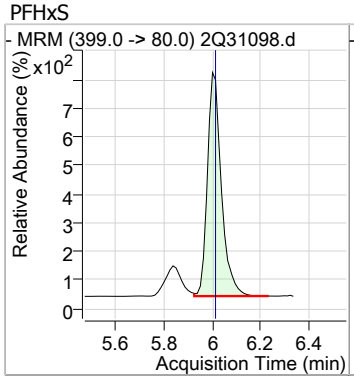
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.53	6.01	0.01	24865				

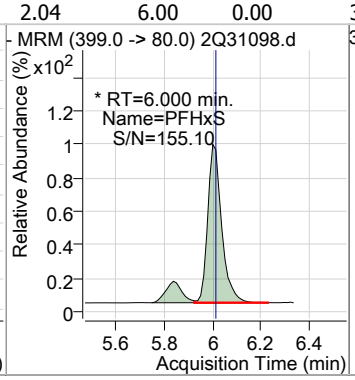


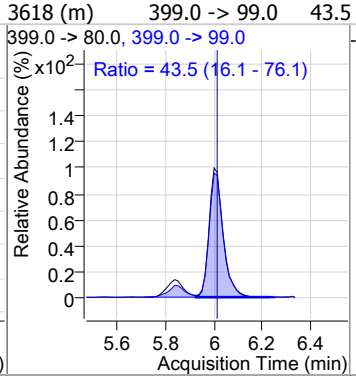


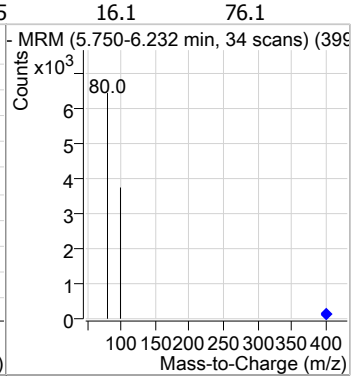


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.04	6.00	0.00	3618 (m)	399.0 -> 99.0	43.5	16.1	76.1

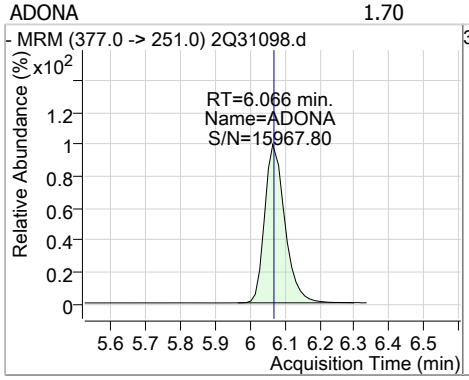


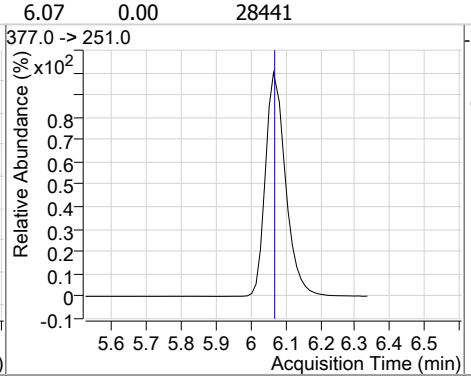


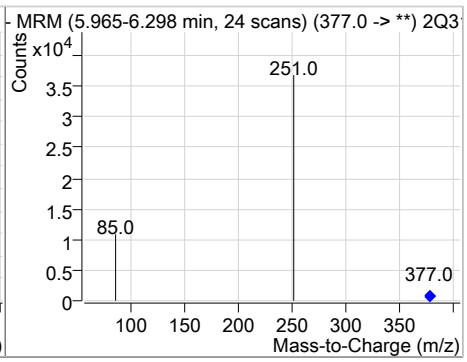




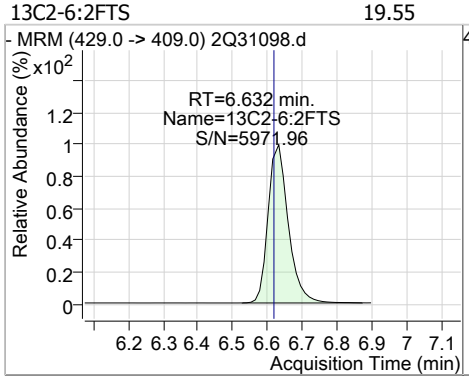
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.70	6.07	0.00	28441				

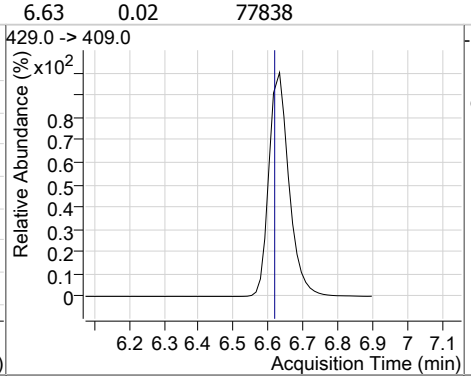


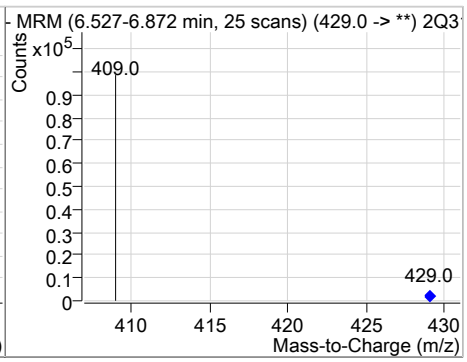




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.55	6.63	0.02	77838				

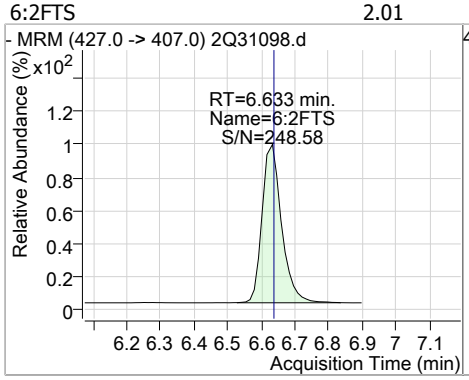


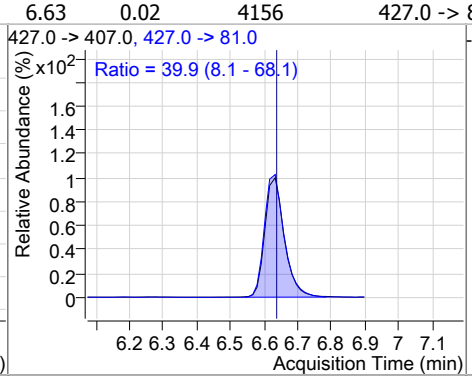


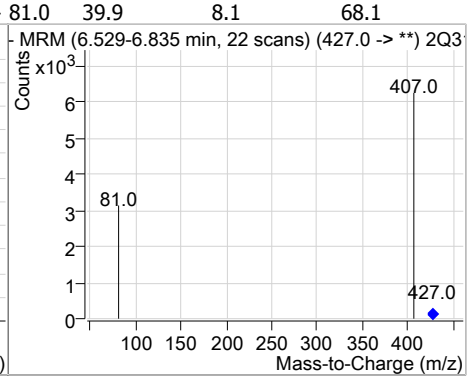


Perfluorinated Compounds by LC/MS/MS

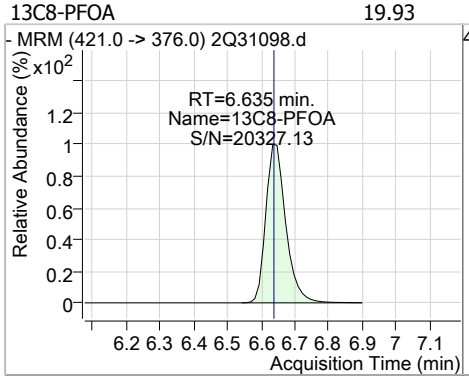
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.01	6.63	0.02	4156	427.0 -> 81.0	39.9	8.1	68.1

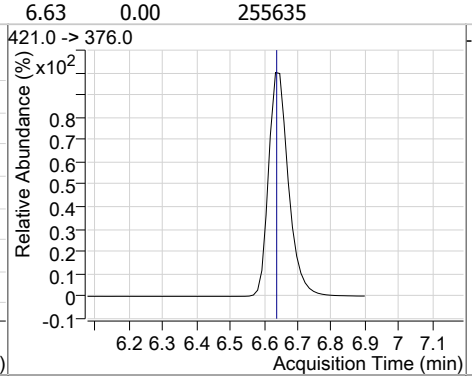


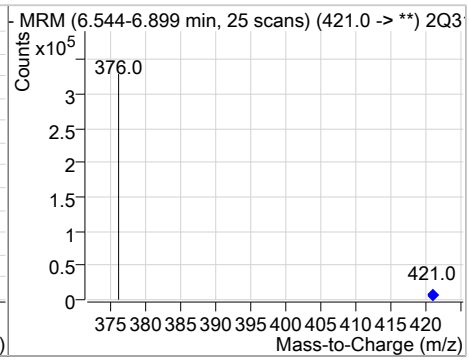




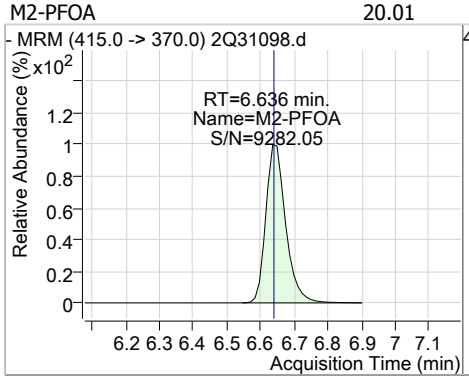
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.93	6.63	0.00	255635				

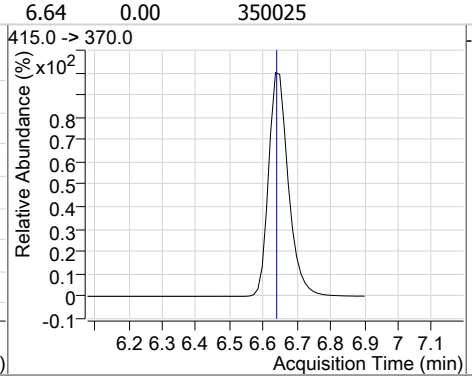


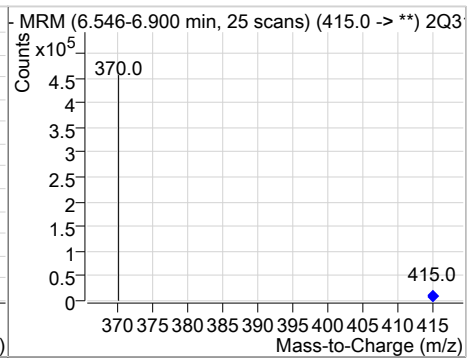




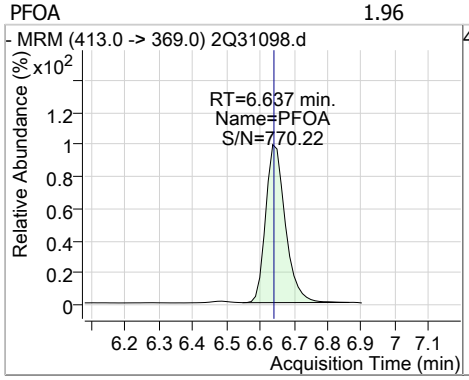
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.01	6.64	0.00	350025				

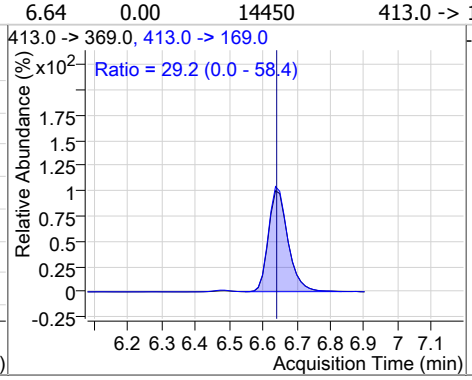


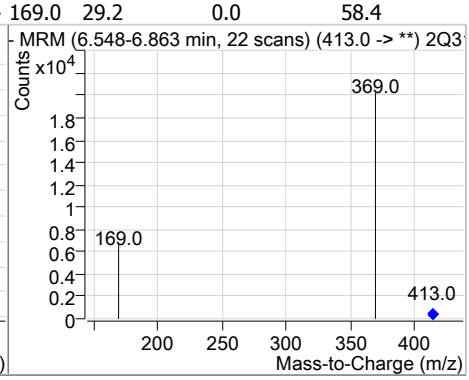




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.96	6.64	0.00	14450	413.0 -> 169.0	29.2	0.0	58.4

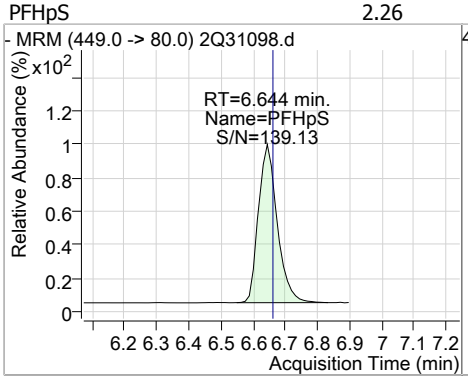


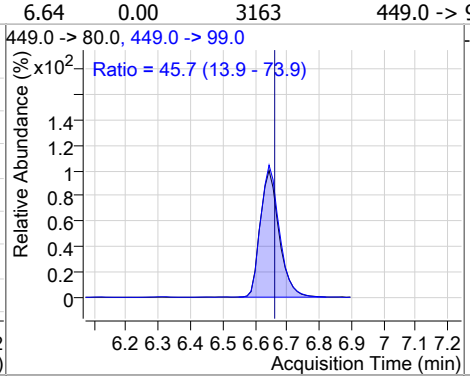


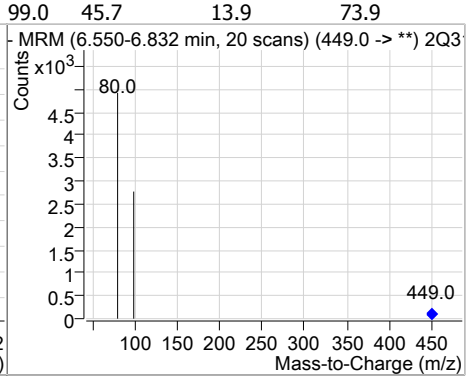


Perfluorinated Compounds by LC/MS/MS

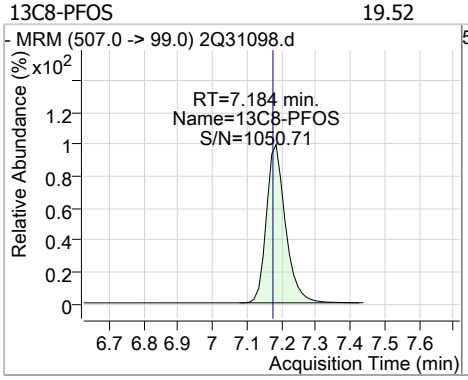
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.26	6.64	0.00	3163	449.0 -> 99.0	45.7	13.9	73.9

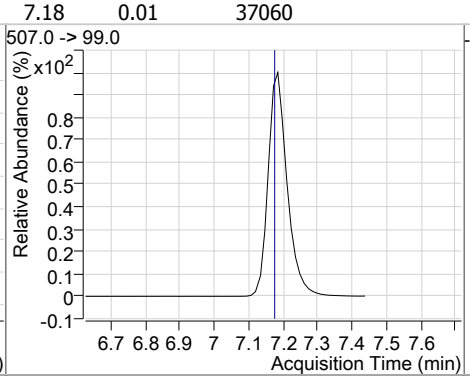


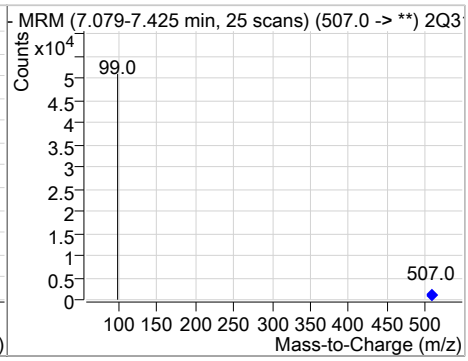




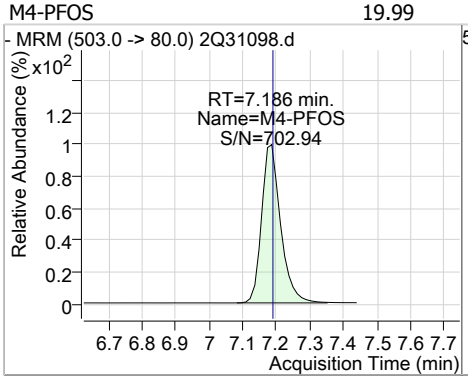
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.52	7.18	0.01	37060				

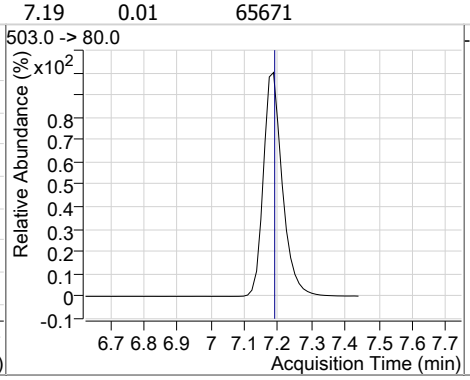


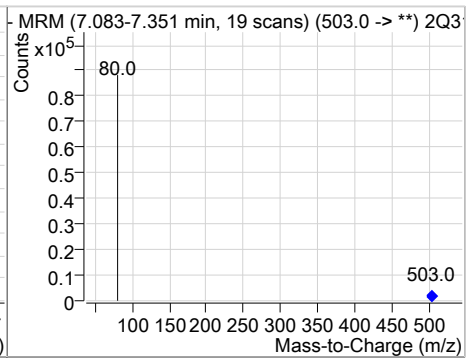




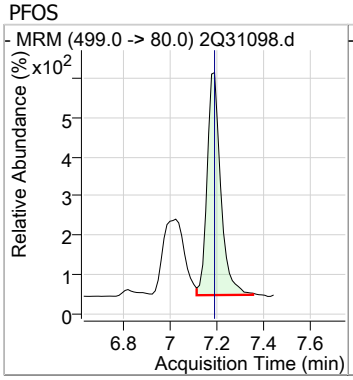
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.19	0.01	65671				

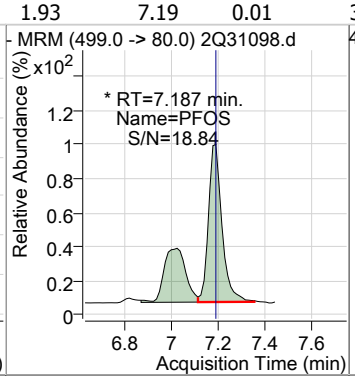


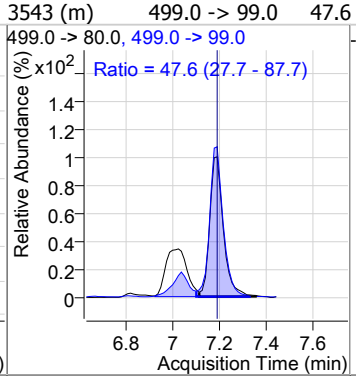


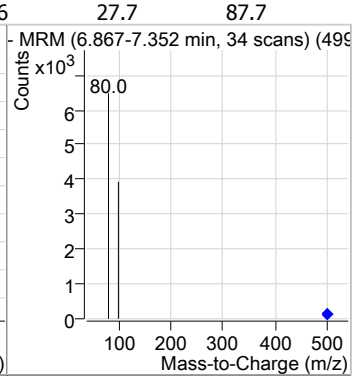


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.93	7.19	0.01	3543 (m)	499.0 -> 99.0	47.6	27.7	87.7



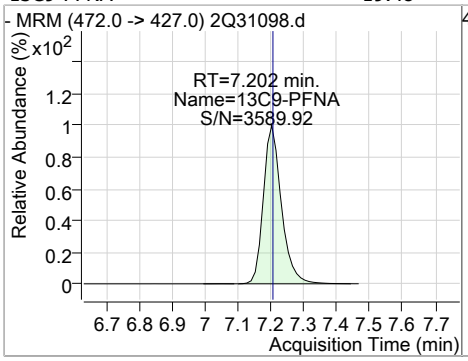


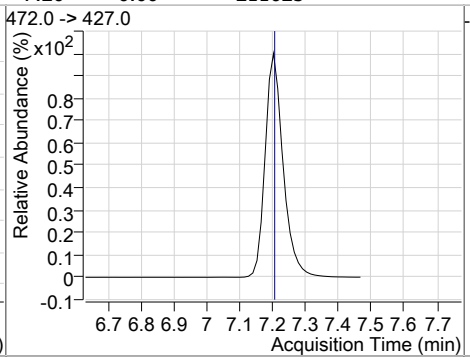


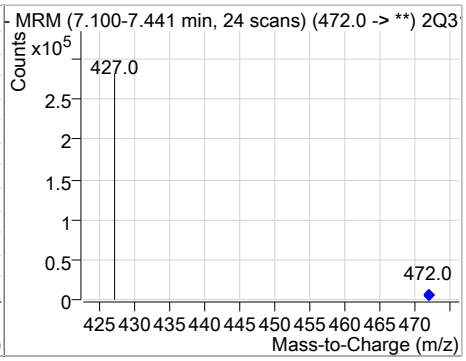


Perfluorinated Compounds by LC/MS/MS

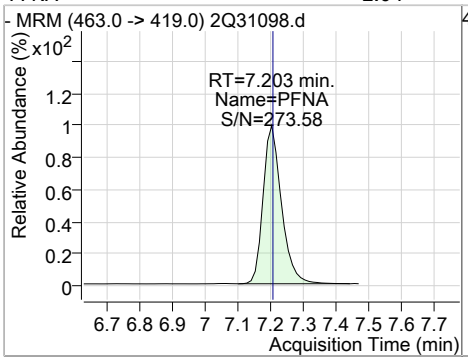
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.48	7.20	0.00	211625				

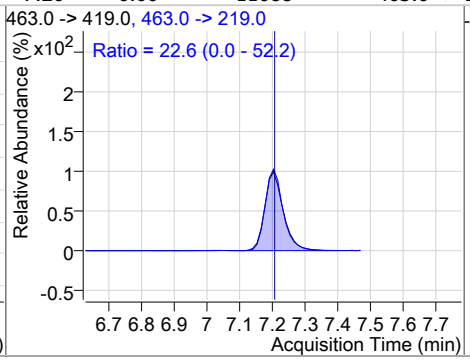


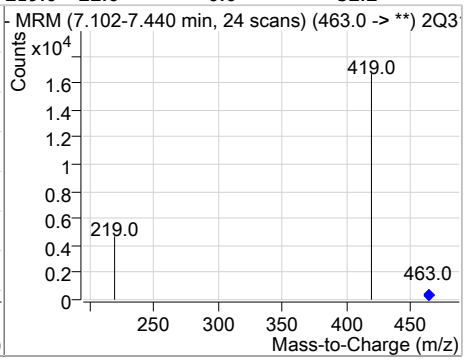




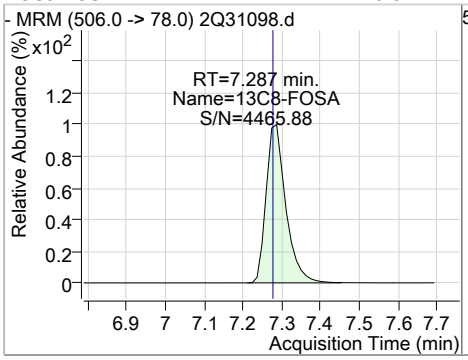
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.04	7.20	0.00	11688	463.0 -> 219.0	22.6	0.0	52.2

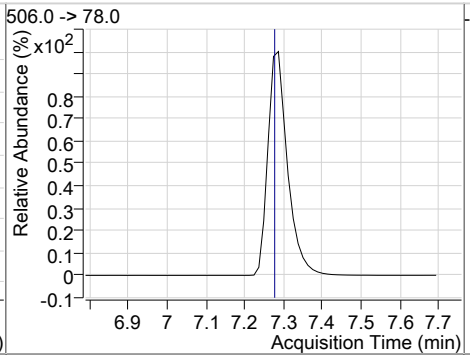


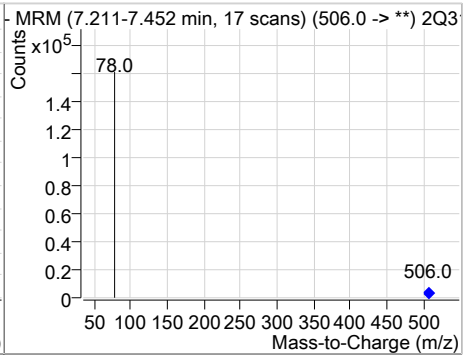




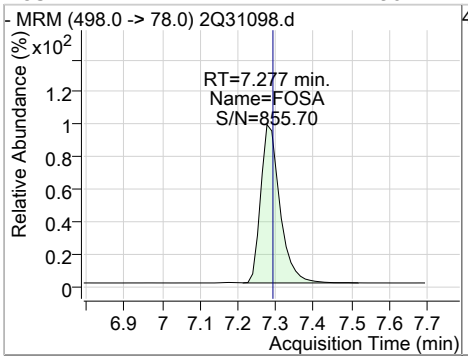
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.57	7.29	0.01	120988				

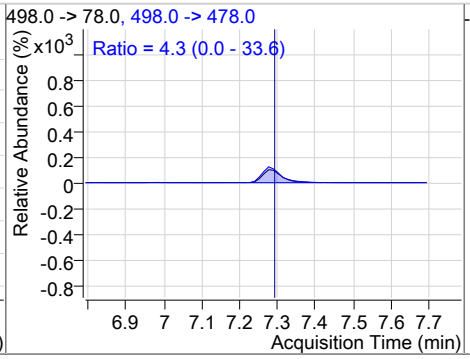


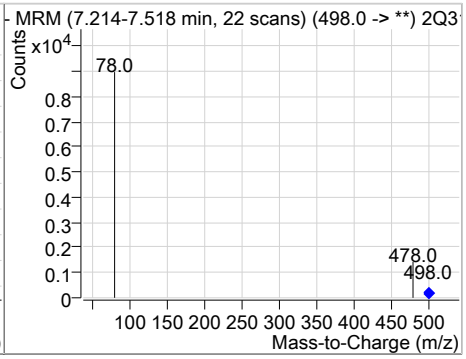




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.98	7.28	0.00	5966	498.0 -> 478.0	4.3	0.0	33.6

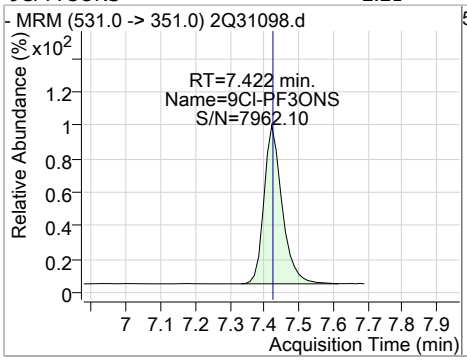


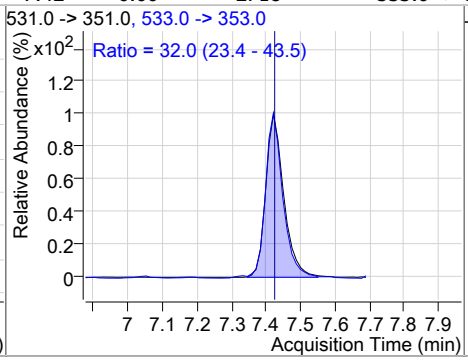


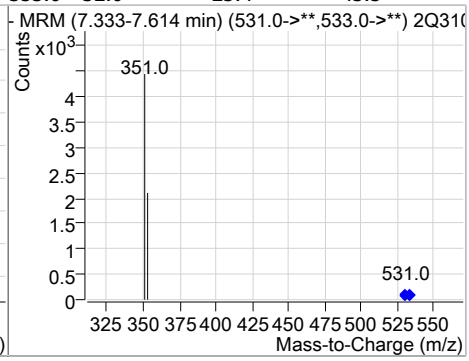


Perfluorinated Compounds by LC/MS/MS

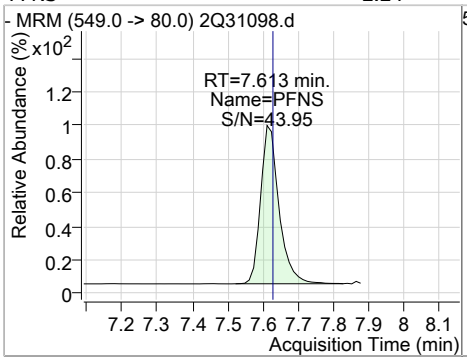
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	2.21	7.42	0.00	2718	533.0 -> 353.0	32.0	23.4	43.5

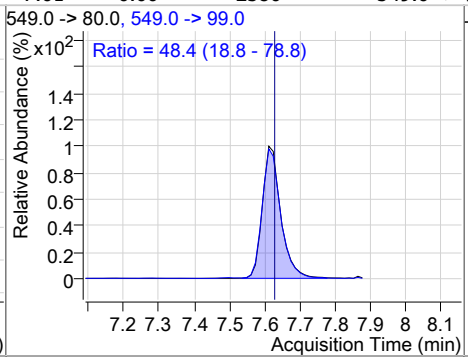


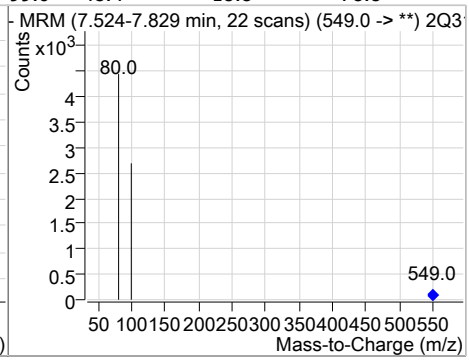




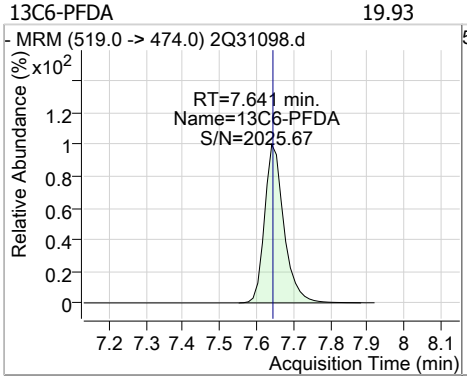
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.24	7.61	0.00	2580	549.0 -> 99.0	48.4	18.8	78.8

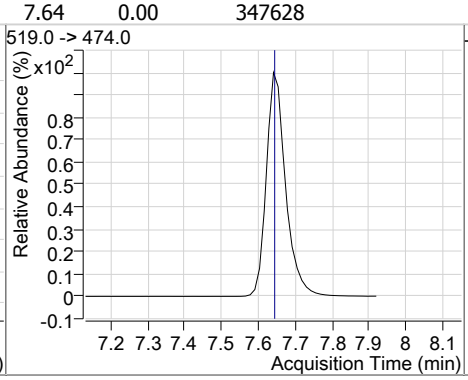


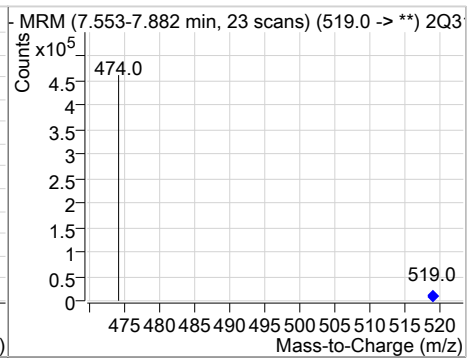




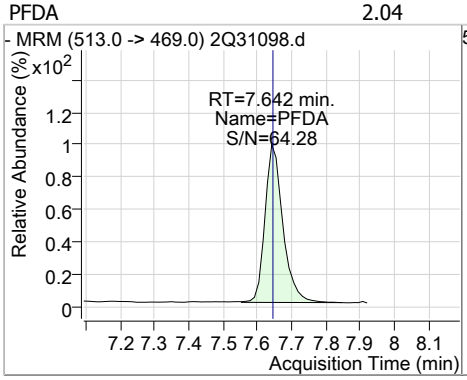
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.93	7.64	0.00	347628				

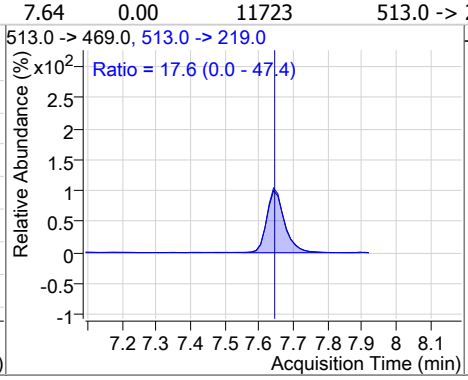


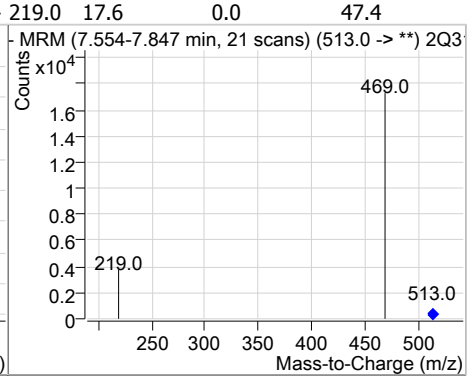




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.04	7.64	0.00	11723	513.0 -> 219.0	17.6	0.0	47.4

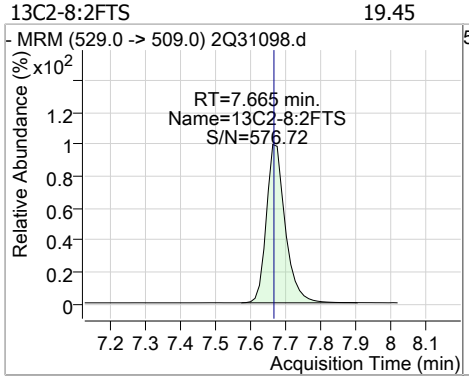


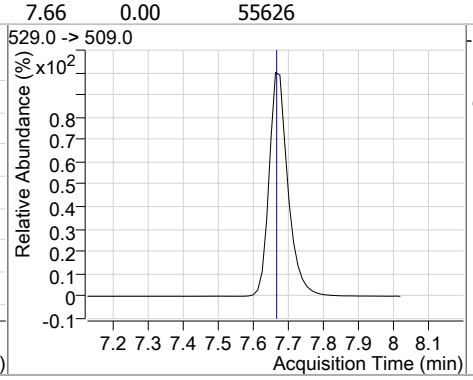


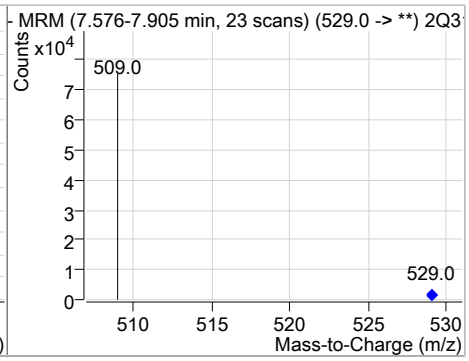


Perfluorinated Compounds by LC/MS/MS

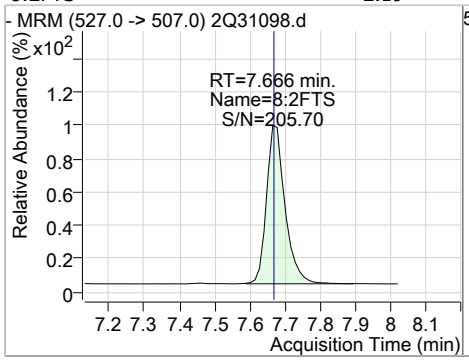
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.45	7.66	0.00	55626				

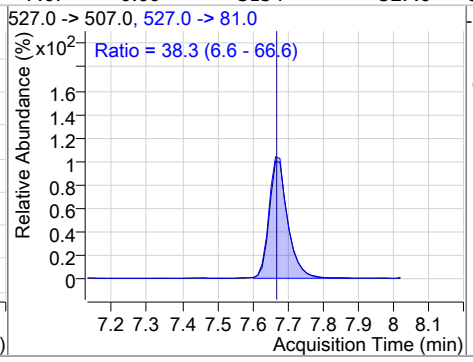


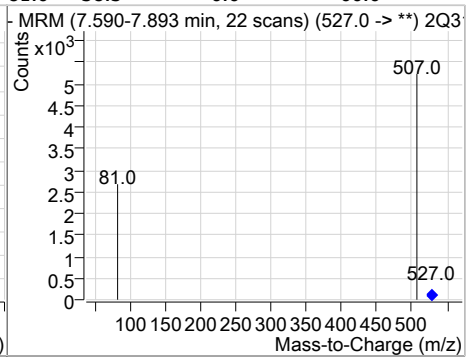




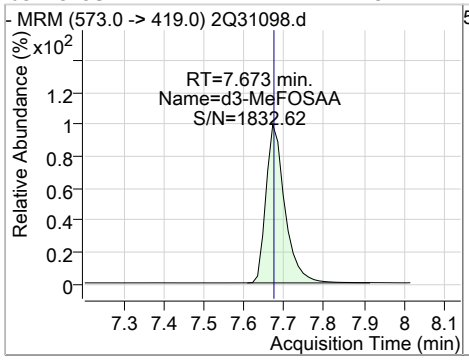
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.19	7.67	0.00	3154	527.0 -> 81.0	38.3	6.6	66.6

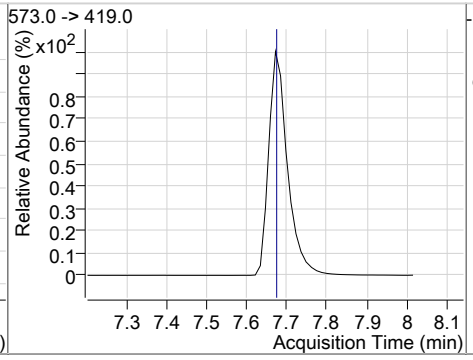


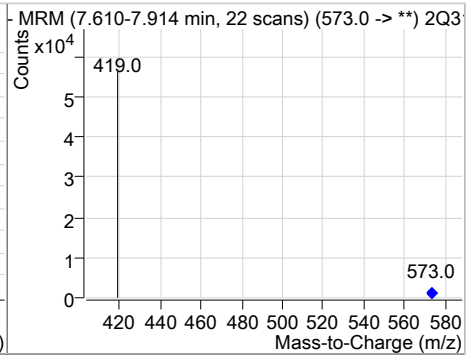




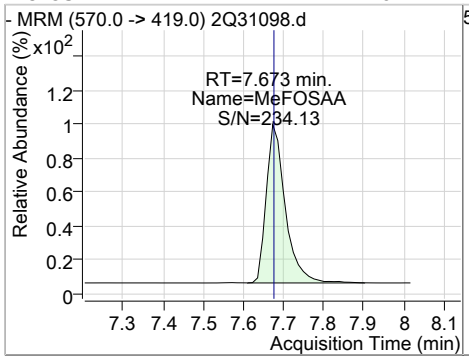
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.72	7.67	0.00	41112				

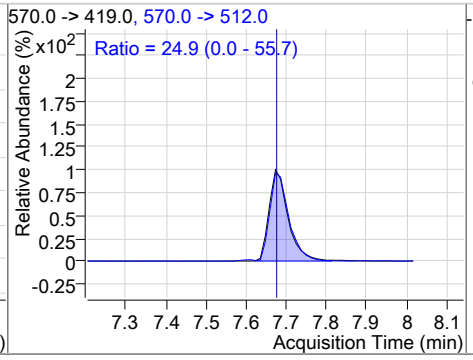


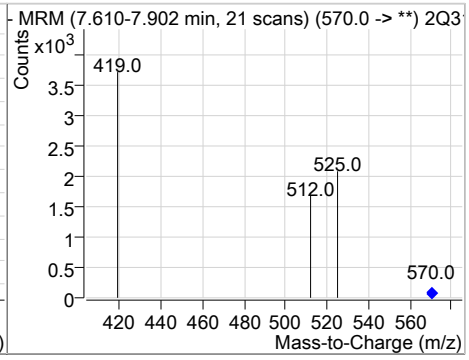




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.87	7.67	0.00	2083	570.0 -> 512.0	24.9	0.0	55.7

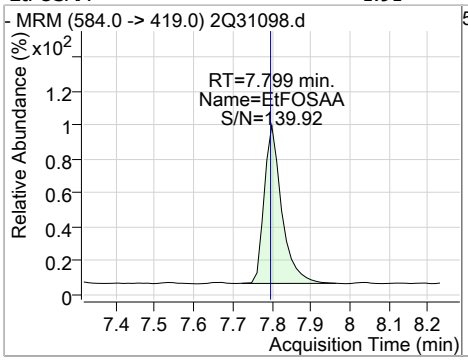


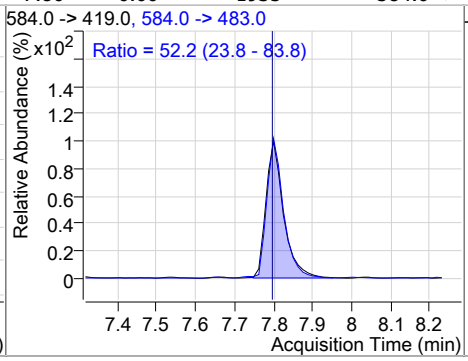


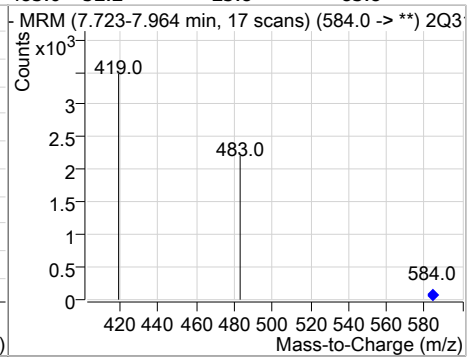


Perfluorinated Compounds by LC/MS/MS

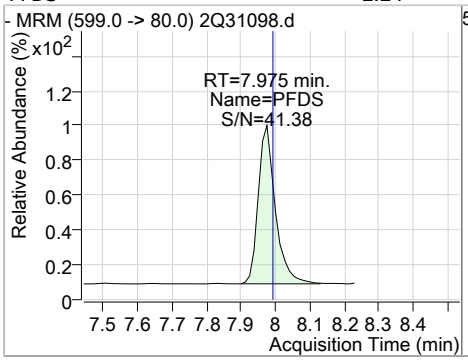
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.91	7.80	0.00	1935	584.0 -> 483.0	52.2	23.8	83.8

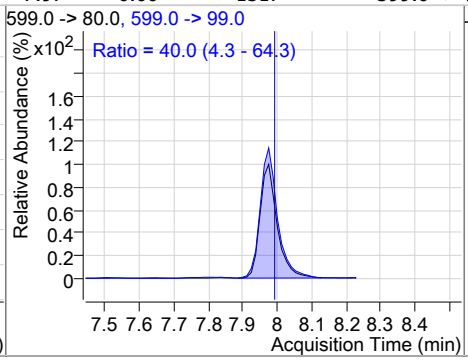


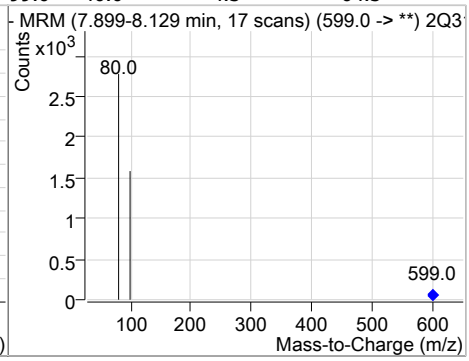




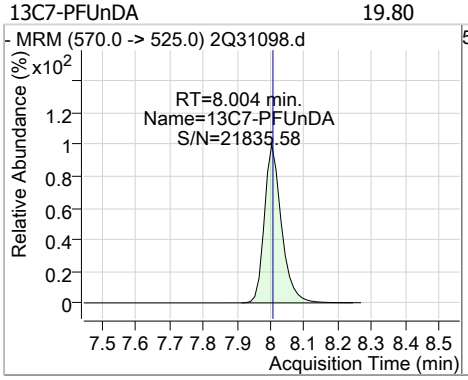
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.24	7.97	0.00	1517	599.0 -> 99.0	40.0	4.3	64.3

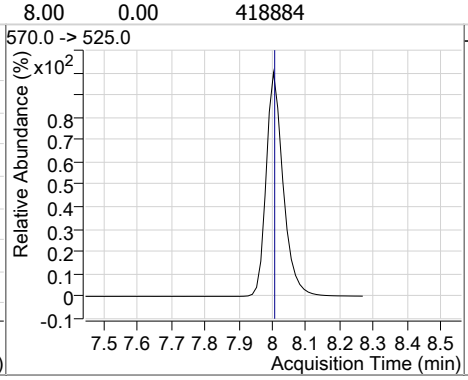


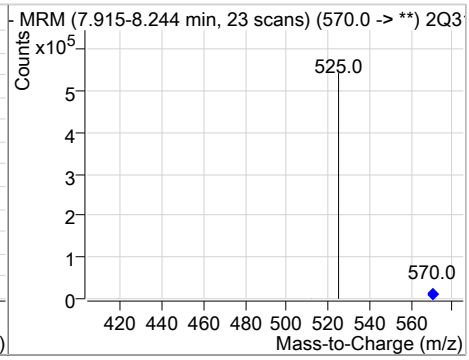




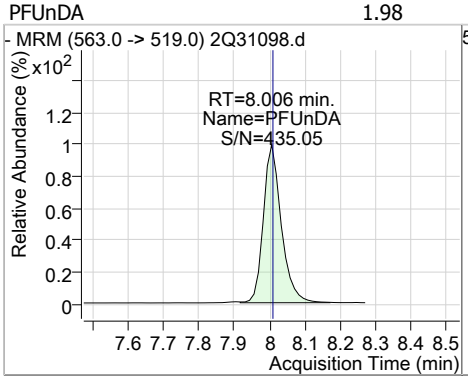
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.80	8.00	0.00	418884				

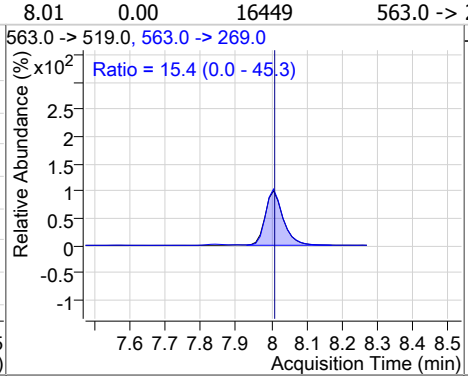


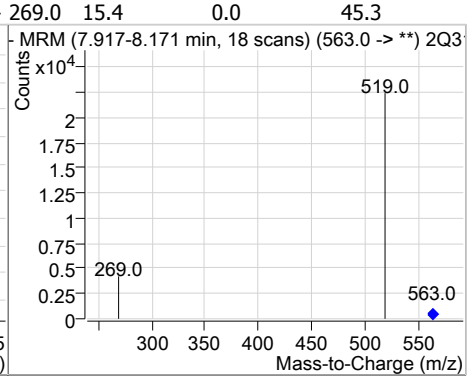




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.98	8.01	0.00	16449	563.0 -> 269.0	15.4	0.0	45.3

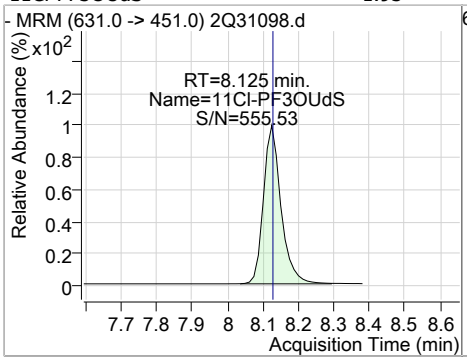


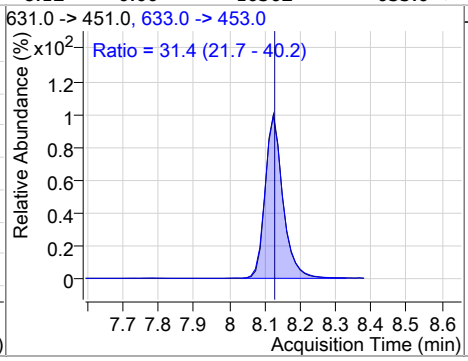


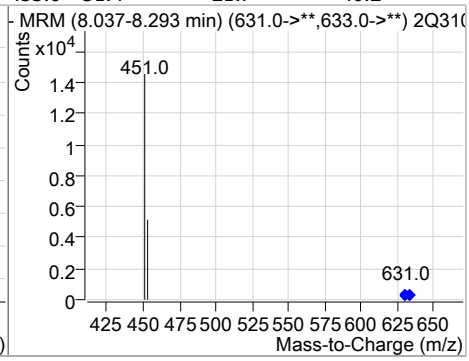


Perfluorinated Compounds by LC/MS/MS

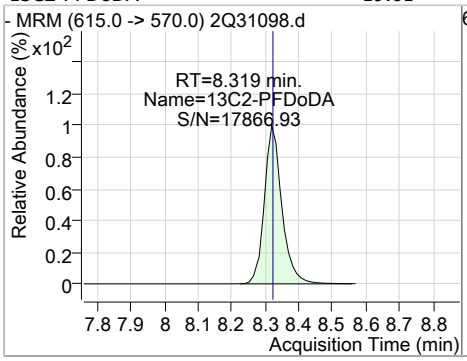
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.93	8.12	0.00	10362	633.0 -> 453.0	31.4	21.7	40.2

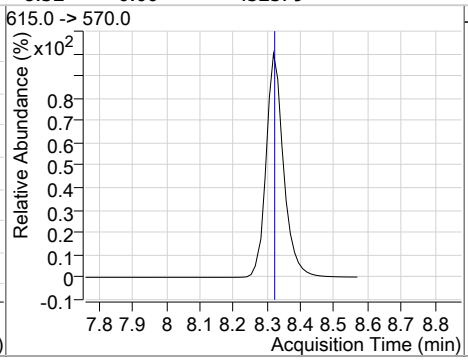


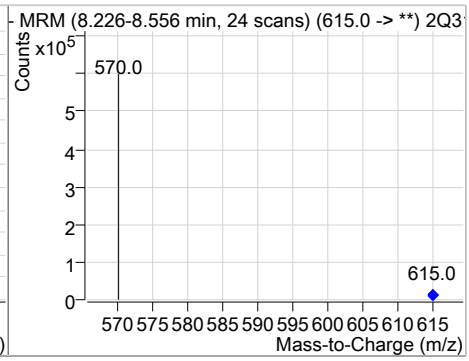




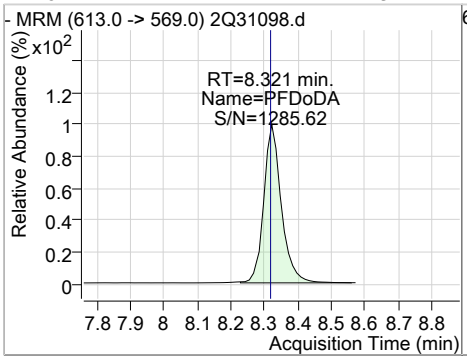
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.61	8.32	0.00	452579				

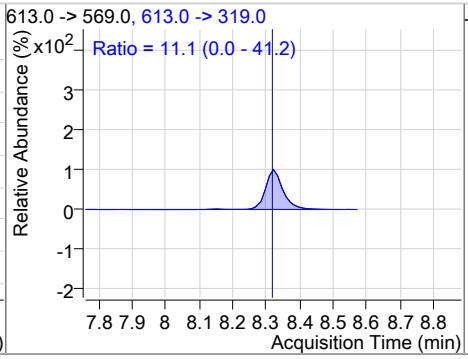


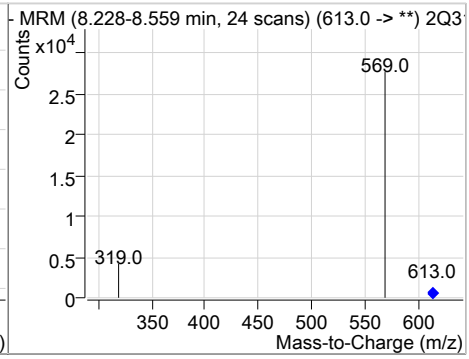




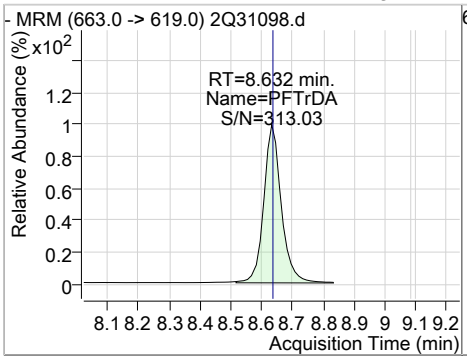
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.94	8.32	0.00	20025	613.0 -> 319.0	11.1	0.0	41.2

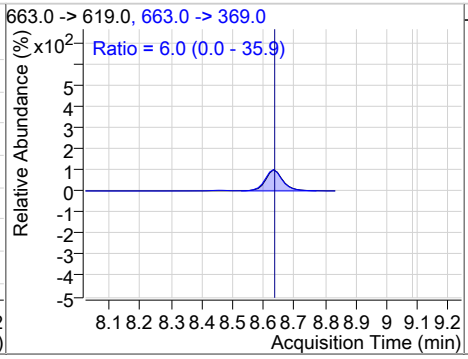


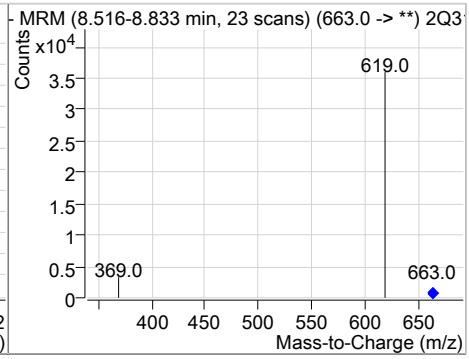




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.92	8.63	0.00	26427	663.0 -> 369.0	6.0	0.0	35.9

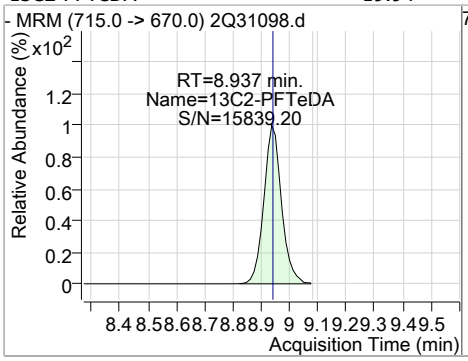


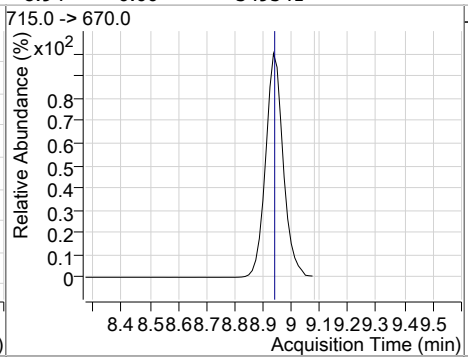


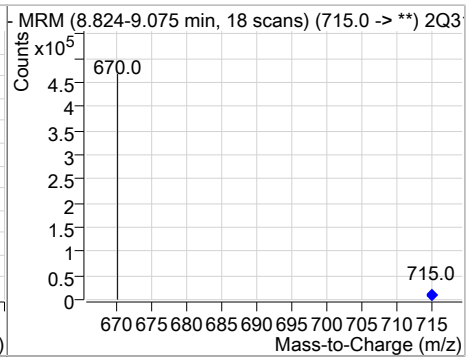


Perfluorinated Compounds by LC/MS/MS

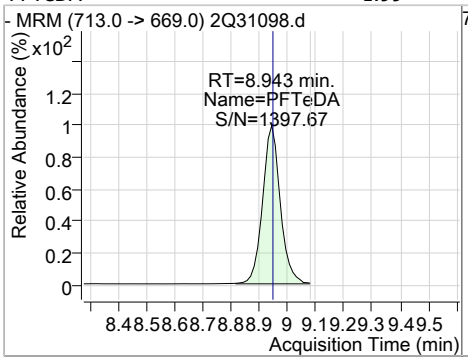
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.94	8.94	0.00	349541				

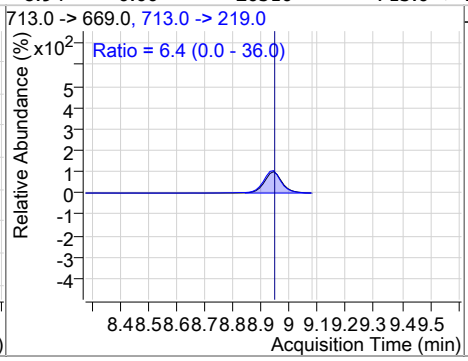


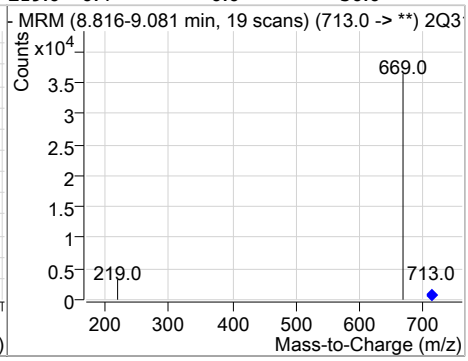




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.99	8.94	0.00	26510	713.0 -> 219.0	6.4	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31098.D
Injection Time: 06/21/19 10:41

Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.19	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31099.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 10:56:28 AM
Sample Name : ic498-5
Vial : Vial 5
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

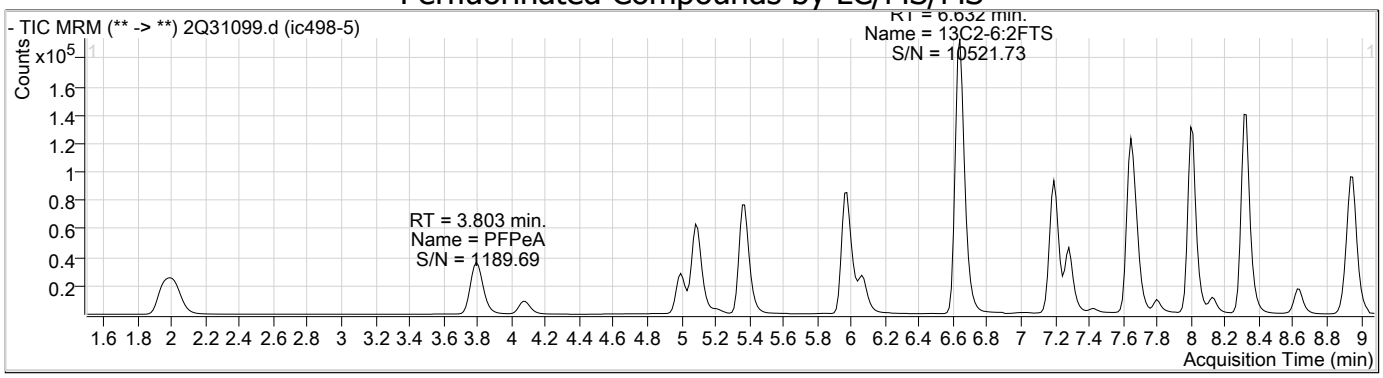
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.648	415.0 -> 370.0	362336	20.00	µg/L	0.013
13C4-PFOS	7.186	503.0 -> 80.0	66666	20.00	µg/L	0.013
M4-PFBA	1.990	217.0 -> 172.0	206089	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	158981	20.00	µg/L	0.000
M5-PFHxA	5.089	318.0 -> 273.0	240225	20.00	µg/L	0.000
M4-PFHpA	5.968	367.0 -> 322.0	275239	20.00	µg/L	0.000
M8-PFOA	6.647	421.0 -> 376.0	264081	20.00	µg/L	0.013
M9-PFNA	7.202	472.0 -> 427.0	221171	20.00	µg/L	0.000
M6-PFDA	7.654	519.0 -> 474.0	359801	20.00	µg/L	0.013
M7-PFUnDA	8.004	570.0 -> 525.0	426117	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	468236	20.00	µg/L	0.013
M2-PFTeDA	8.950	715.0 -> 670.0	359716	20.00	µg/L	0.013
M8-FOSA	7.287	506.0 -> 78.0	125378	20.00	µg/L	0.013
M3-PFBS	4.080	302.0 -> 99.0	30395	20.00	µg/L	0.000
M3-PFHxS	6.010	402.0 -> 99.0	25687	20.00	µg/L	0.013
M8-PFOS	7.184	507.0 -> 99.0	38023	20.00	µg/L	0.013
M2-4:2FTS	4.997	329.0 -> 309.0	97643	20.00	µg/L	0.000
M2-6:2FTS	6.632	429.0 -> 409.0	82327	20.00	µg/L	0.017
M2-8:2FTS	7.677	529.0 -> 509.0	58563	20.00	µg/L	0.013
M3-MeFOSAA	7.685	573.0 -> 419.0	41729	20.00	µg/L	0.013
M3-HFPO-DA	5.365	287.0 -> 169.0	253494	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	97661	20.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-6:2FTS	6.632	429.0 -> 409.0	82332	20.68	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C2-8:2FTS	7.677	529.0 -> 509.0	58262	20.37	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFDoDA	8.332	615.0 -> 570.0	468238	20.29	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-PFTeDA	8.950	715.0 -> 670.0	359717	20.52	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C3-PFBS	4.080	302.0 -> 99.0	30407	20.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C3-PFHxS	6.010	402.0 -> 99.0	25665	20.16	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFBA	1.990	217.0 -> 172.0	204602	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	5.968	367.0 -> 322.0	275190	20.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFHxA	5.089	318.0 -> 273.0	240215	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFPeA	3.799	268.0 -> 223.0	158979	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	7.654	519.0 -> 474.0	359869	20.63	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

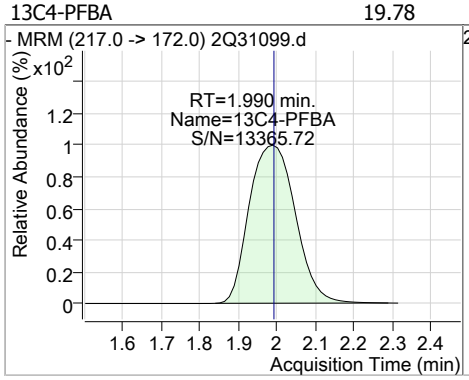
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C7-PFUnDA	8.004	570.0 -> 525.0	426133	20.14 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C8-FOSA	7.287	506.0 -> 78.0	125372	21.31 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C8-PFOA	6.647	421.0 -> 376.0	264084	20.59 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C8-PFOS	7.184	507.0 -> 99.0	38022	20.03 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C9-PFNA	7.202	472.0 -> 427.0	220900	20.33 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d3-MeFOSAA	7.685	573.0 -> 419.0	41802	20.05 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
M2-PFOA	6.648	415.0 -> 370.0	362348	20.00 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.186	503.0 -> 80.0	66676	20.00 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.365	287.0 -> 169.0	253494	103.87 µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
Target Compounds						**QValue**
4:2FTS	4.999	327.0 -> 307.0	14441	5.19 µg/L		98
6:2FTS	6.633	427.0 -> 407.0	10716	4.89 µg/L		98
8:2FTS	7.678	527.0 -> 507.0	7424	4.89 µg/L		97
EtFOSAA	7.799	584.0 -> 419.0	4940	4.80 µg/L		98
FOSA	7.289	498.0 -> 78.0	15302	4.89 µg/L		100
MeFOSAA	7.686	570.0 -> 419.0	5322	4.71 µg/L		98
PFBA	1.986	213.0 -> 169.0	8722	4.95 µg/L		100
PFBS	4.073	299.0 -> 80.0	10248	4.91 µg/L		99
PFDA	7.655	513.0 -> 469.0	28847	4.86 µg/L		99
PFDoDA	8.321	613.0 -> 569.0	51562	4.84 µg/L		99
PFDS	7.975	599.0 -> 80.0	3693	5.31 µg/L		98
PFHpA	5.970	363.0 -> 319.0	59472	4.92 µg/L		100
PFHpS	6.644	449.0 -> 80.0	7955	5.52 µg/L		98
PFHxA	5.091	313.0 -> 269.0	17434	4.94 µg/L		99
PFHxS	6.013	399.0 -> 80.0	9003	4.91 µg/L	m	97
PFNA	7.203	463.0 -> 419.0	29504	4.93 µg/L		99
PFNS	7.625	549.0 -> 80.0	6315	5.34 µg/L		98
PFOA	6.649	413.0 -> 369.0	37474	4.92 µg/L		100
PFOS	7.187	499.0 -> 80.0	9282	4.94 µg/L	m	82
PFPeA	3.803	263.0 -> 219.0	32630	4.93 µg/L		100
PFPeS	5.208	349.0 -> 80.0	6802	5.08 µg/L		98
PFTeDA	8.943	713.0 -> 669.0	66341	4.84 µg/L		99
PFTrDA	8.632	663.0 -> 619.0	67734	4.77 µg/L		100
PFUnDA	8.006	563.0 -> 519.0	40963	4.86 µg/L		99
11Cl-PF3OUdS	8.125	631.0 -> 451.0	26700	4.80 µg/L		98
9Cl-PF3ONS	7.422	531.0 -> 351.0	6903	5.38 µg/L		98
ADONA	6.066	377.0 -> 251.0	71355	4.13 µg/L		100
HFPO-DA	5.375	329.0 -> 169.0	54512	25.64 µg/L		100

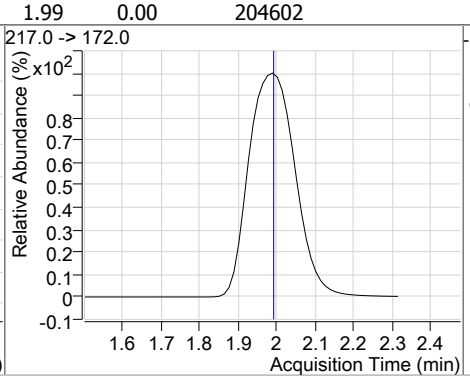
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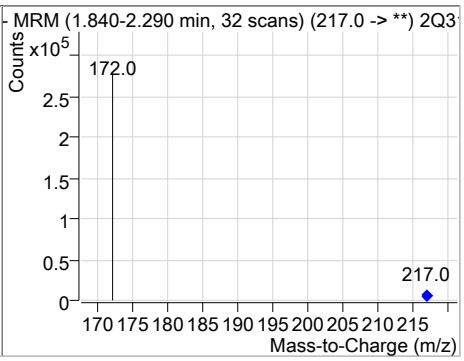
Perfluorinated Compounds by LC/MS/MS



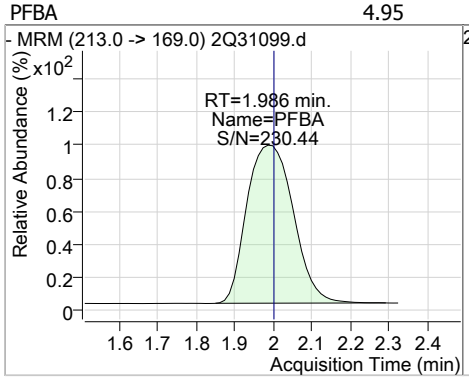
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.78	1.99	0.00	204602				

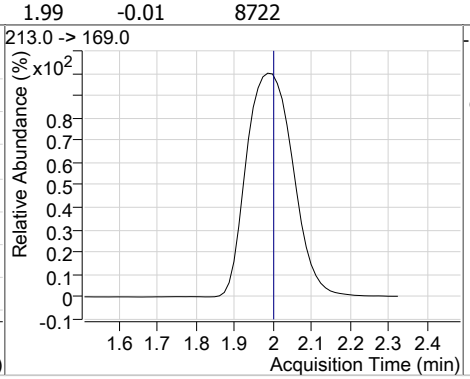


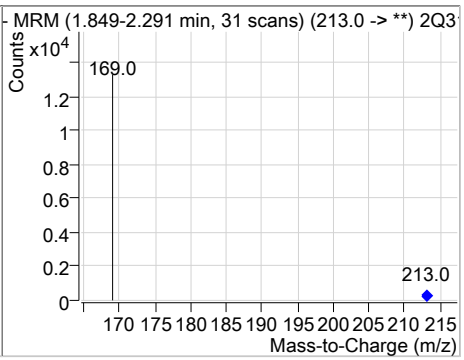




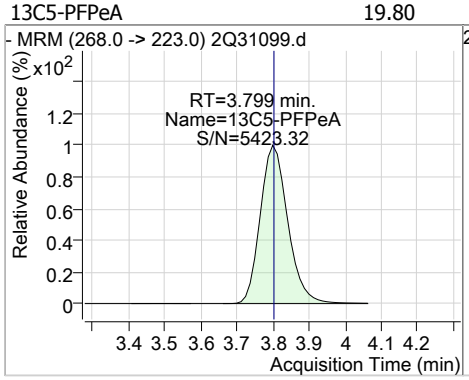
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.95	1.99	-0.01	8722				

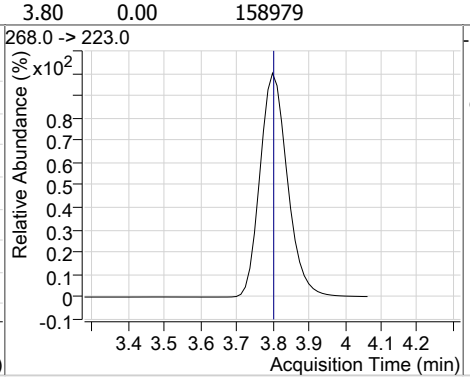


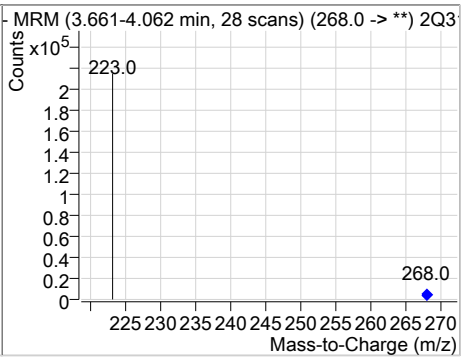




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.80	3.80	0.00	158979				

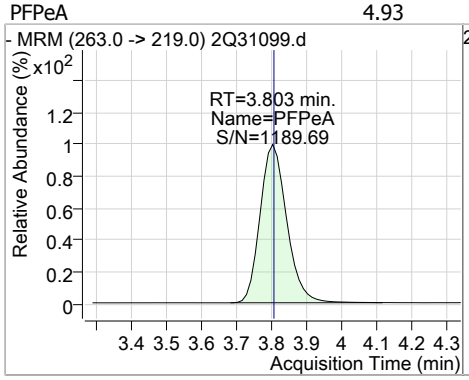


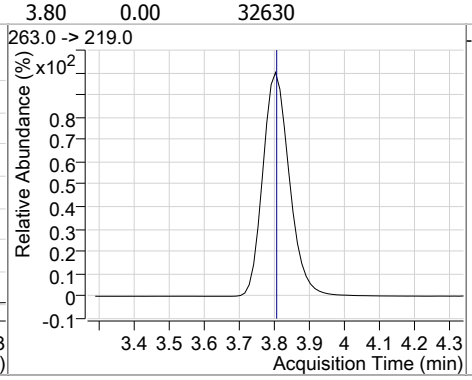


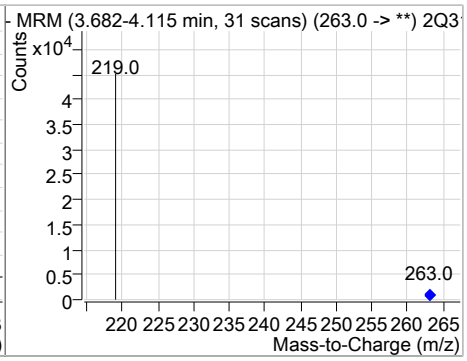


Perfluorinated Compounds by LC/MS/MS

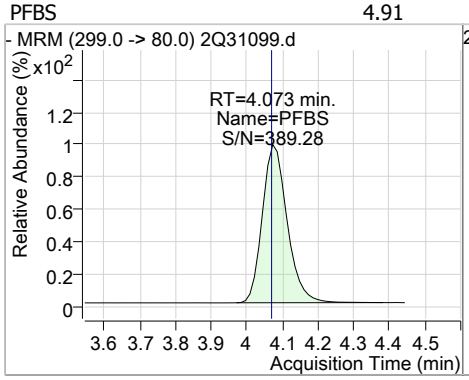
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.93	3.80	0.00	32630				

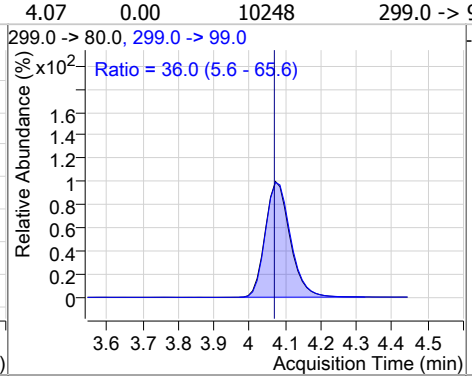


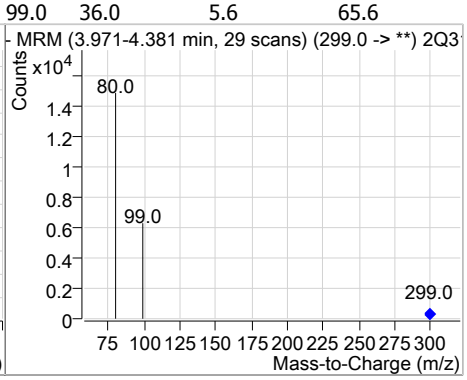




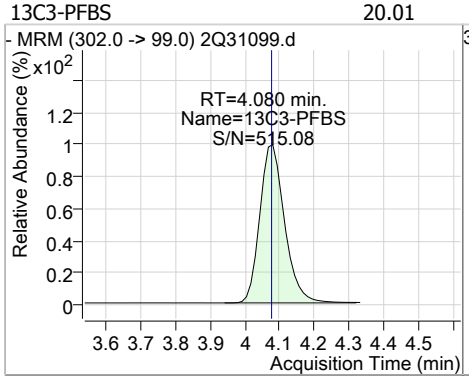
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.91	4.07	0.00	10248	299.0 -> 99.0	36.0	5.6	65.6

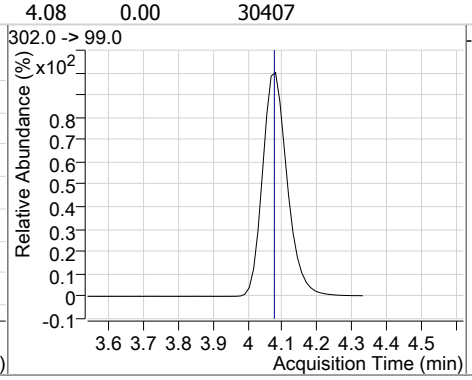


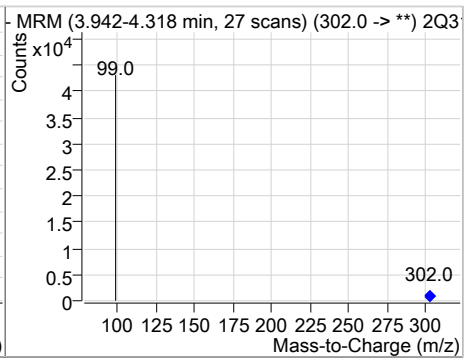




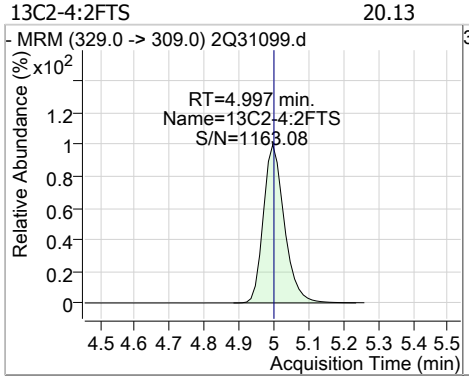
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.01	4.08	0.00	30407				

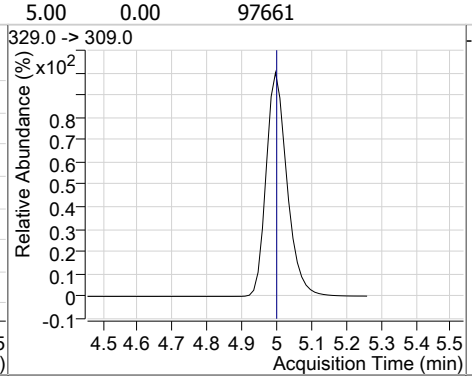


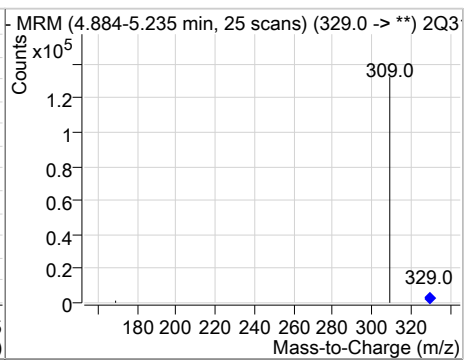




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.13	5.00	0.00	97661				

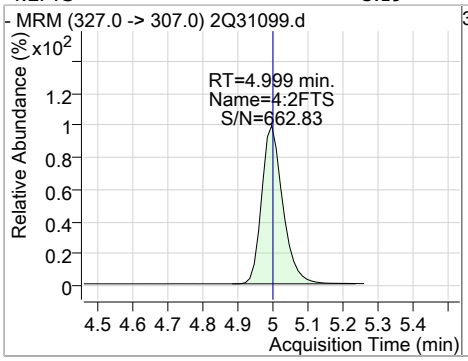


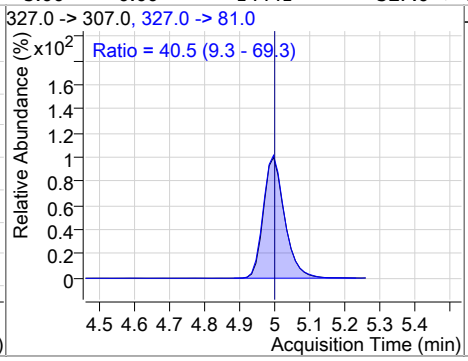


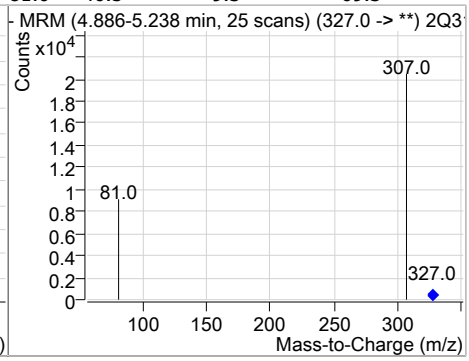


Perfluorinated Compounds by LC/MS/MS

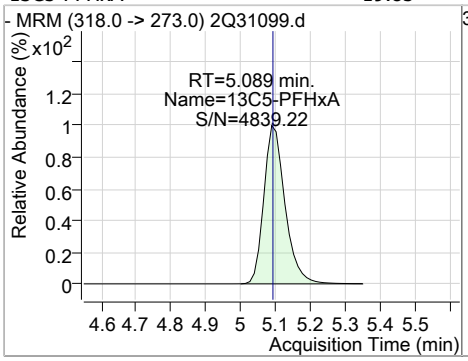
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.19	5.00	0.00	14441	327.0 -> 81.0	40.5	9.3	69.3

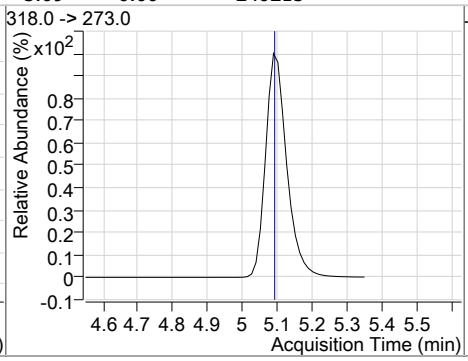


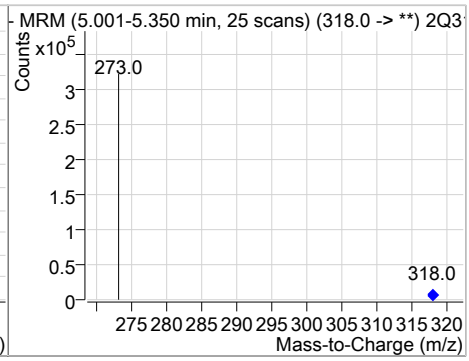




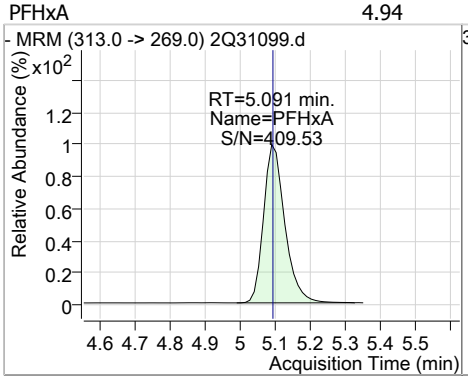
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.85	5.09	0.00	240215				

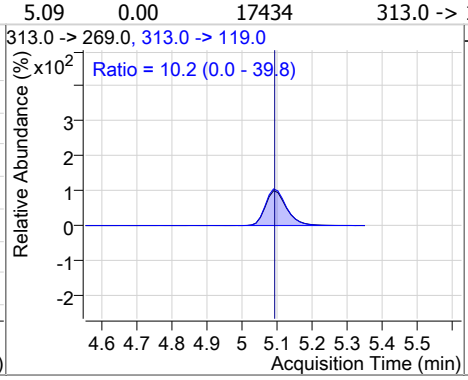


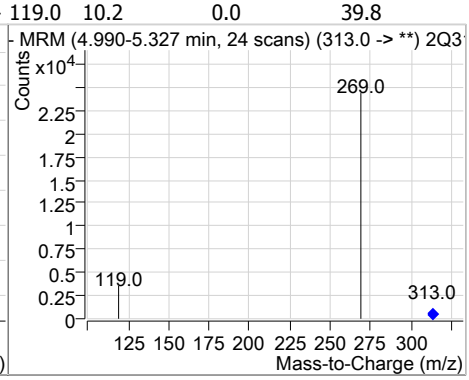




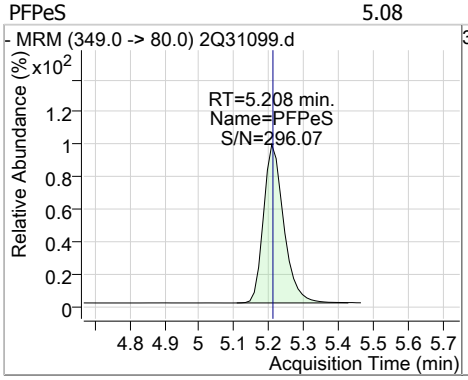
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.94	5.09	0.00	17434	313.0 -> 119.0	10.2	0.0	39.8

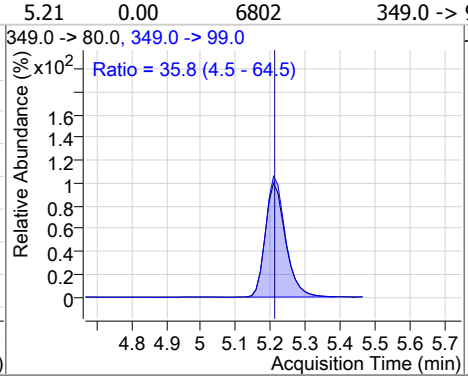


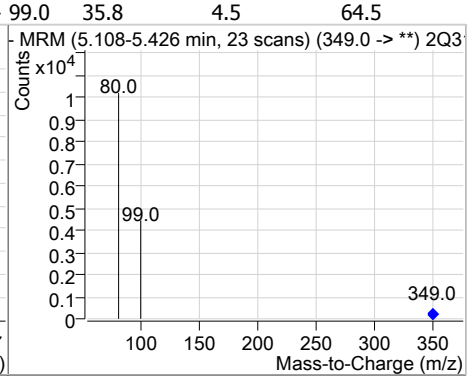




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.08	5.21	0.00	6802	349.0 -> 99.0	35.8	4.5	64.5

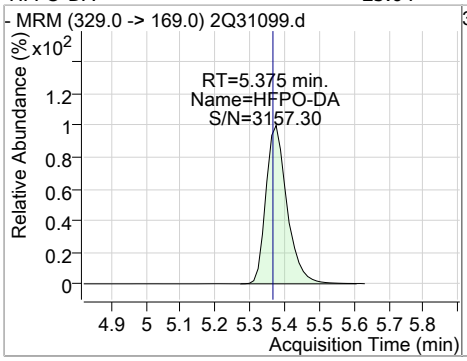


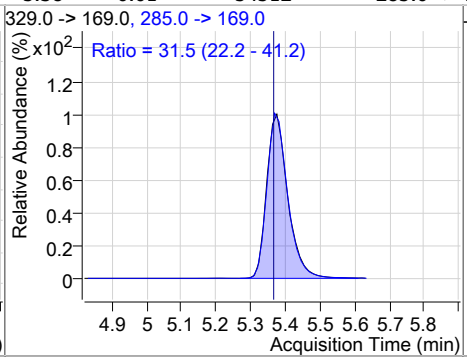


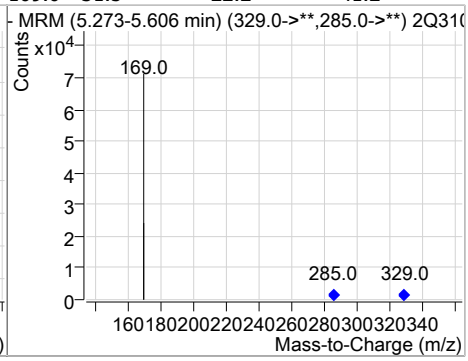


Perfluorinated Compounds by LC/MS/MS

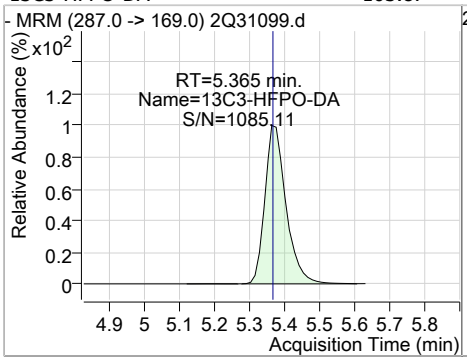
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	25.64	5.38	0.01	54512	285.0 -> 169.0	31.5	22.2	41.2

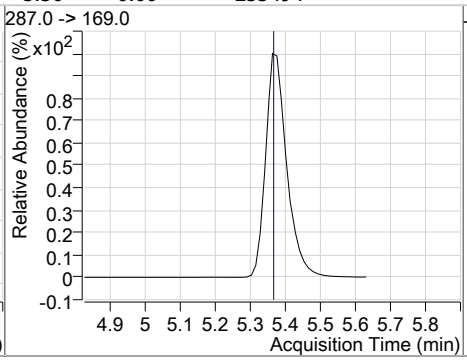


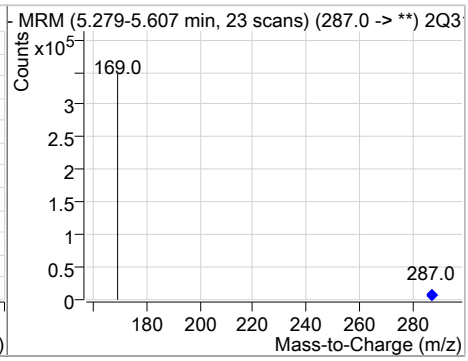




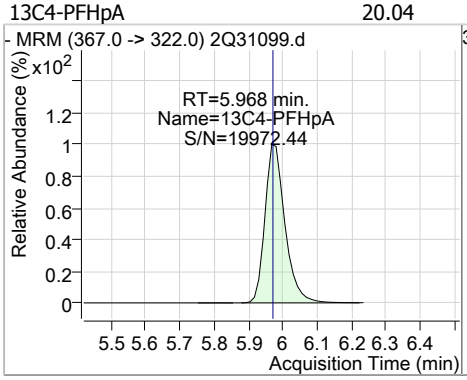
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	103.87	5.36	0.00	253494				

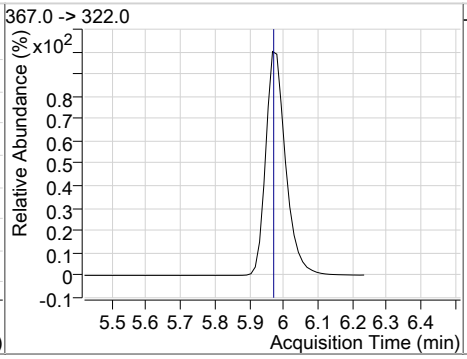


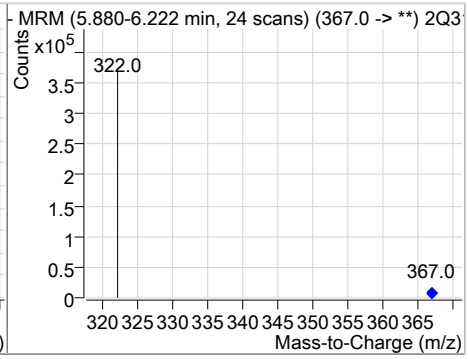




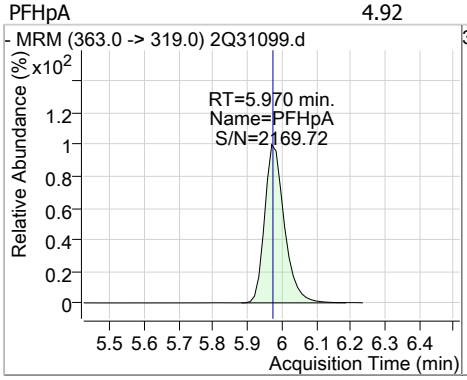
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.04	5.97	0.00	275190				

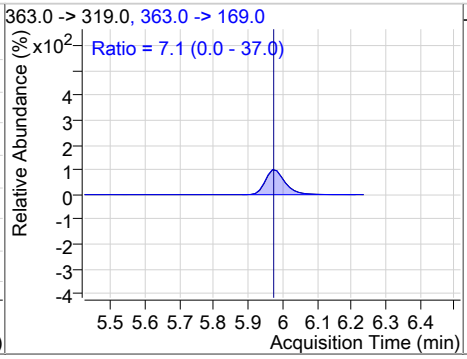


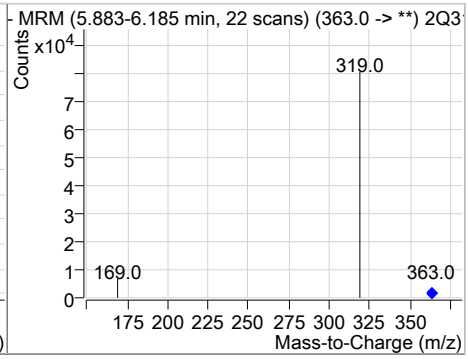




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.92	5.97	0.00	59472	363.0 -> 169.0	7.1	0.0	37.0

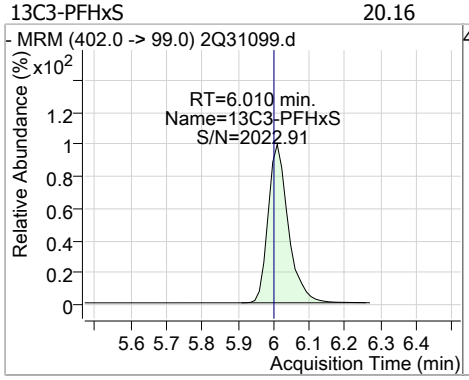


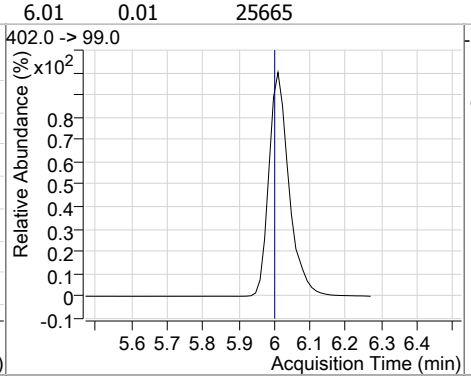


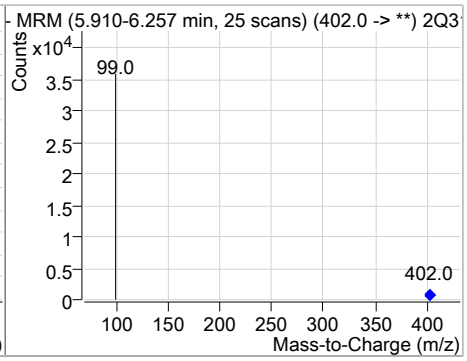


Perfluorinated Compounds by LC/MS/MS

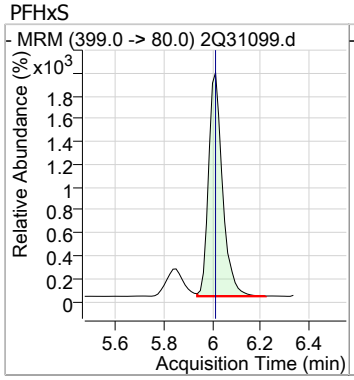
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.16	6.01	0.01	25665				

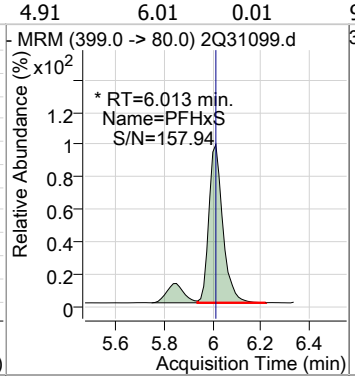


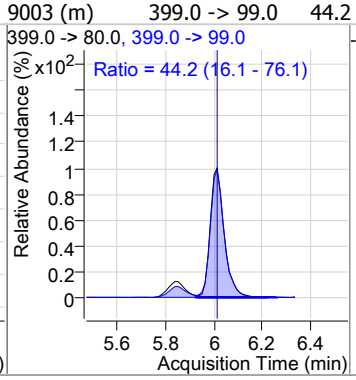


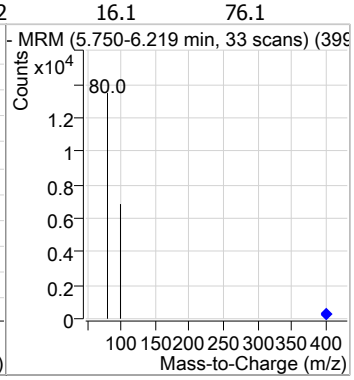


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.91	6.01	0.01	9003 (m)	399.0 -> 99.0	44.2	16.1	76.1

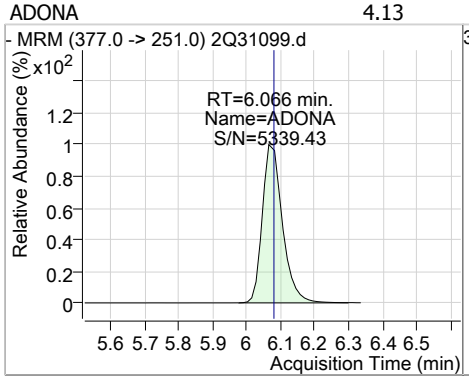


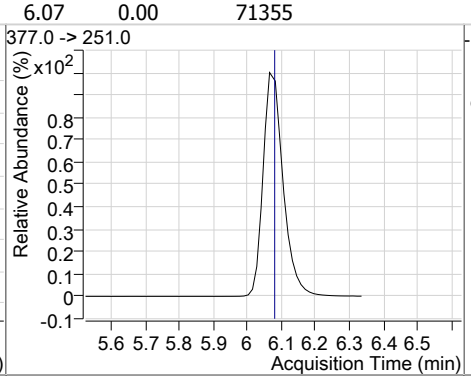


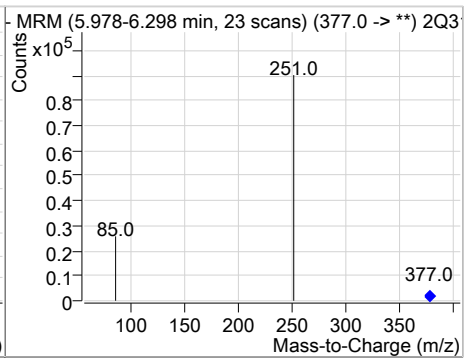




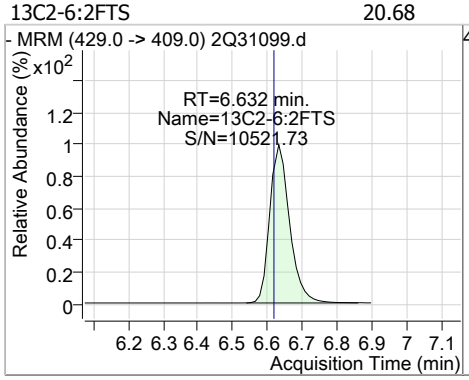
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.13	6.07	0.00	71355				

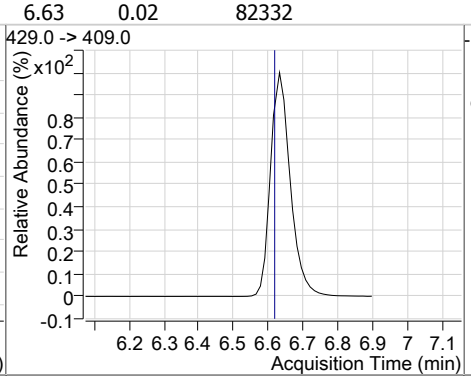


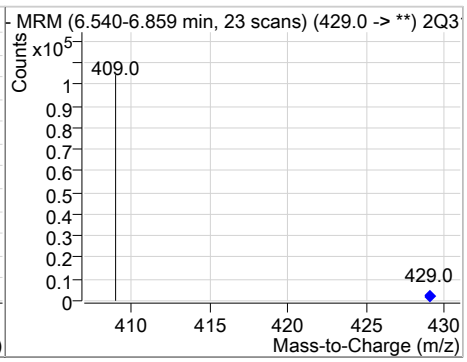




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.68	6.63	0.02	82332				

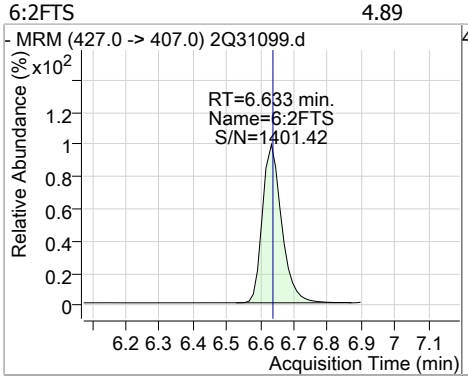


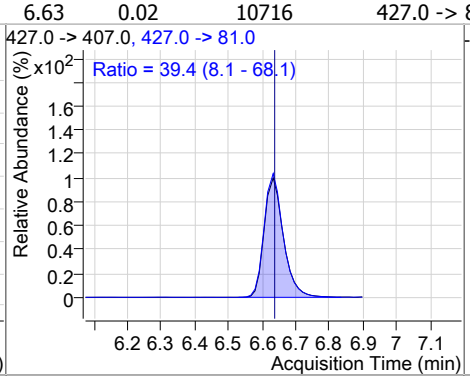


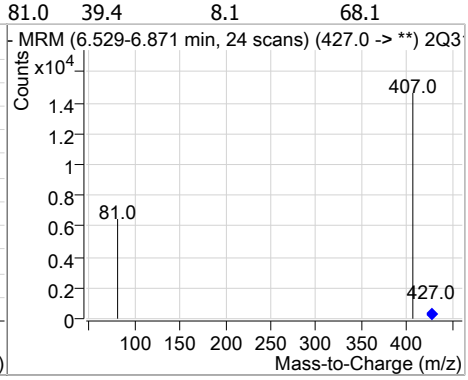


Perfluorinated Compounds by LC/MS/MS

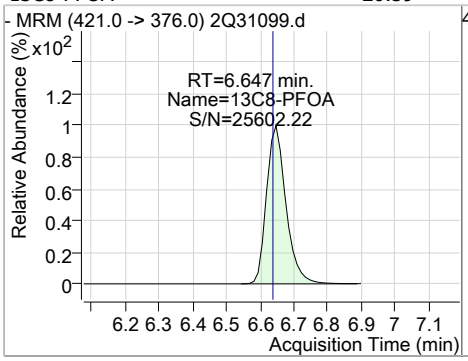
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.89	6.63	0.02	10716	427.0 -> 81.0	39.4	8.1	68.1

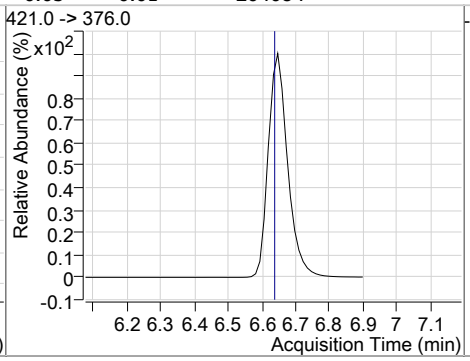


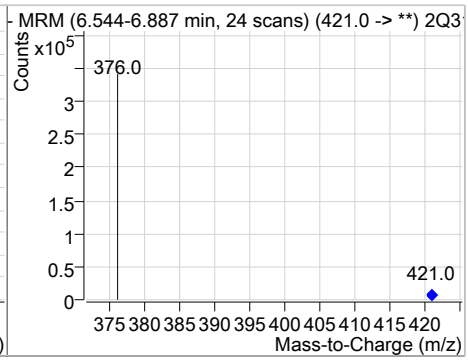




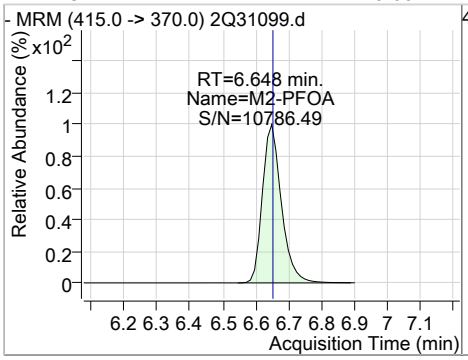
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.59	6.65	0.01	264084				

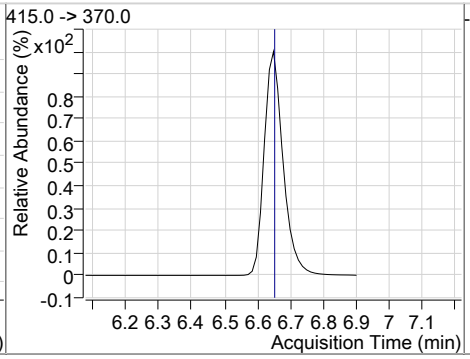


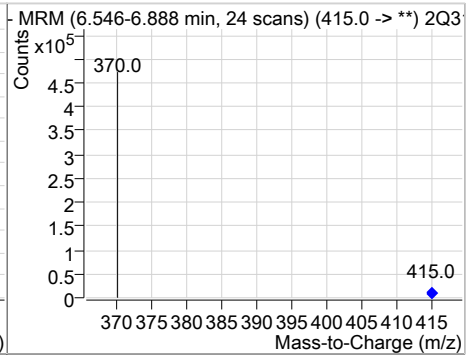




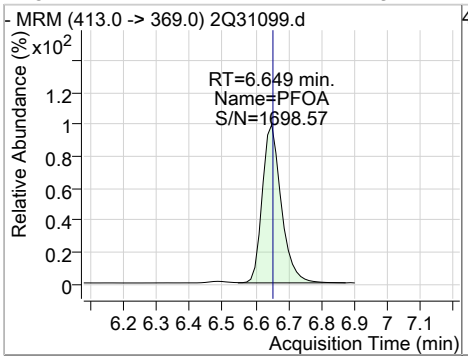
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.65	0.01	362348				

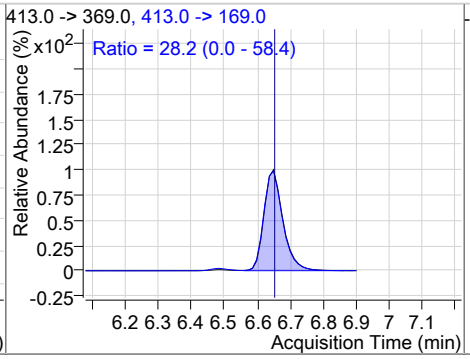


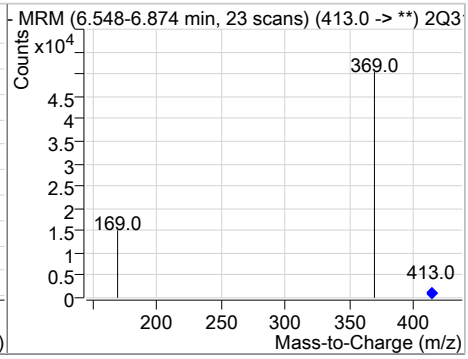




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.92	6.65	0.01	37474	413.0 -> 169.0	28.2	0.0	58.4

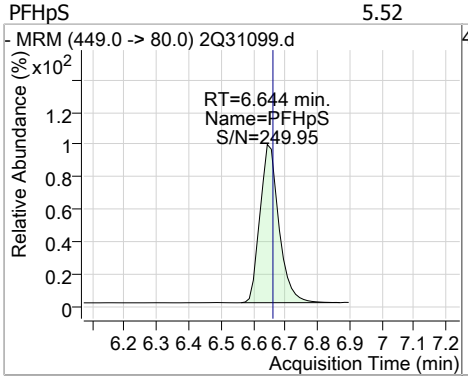


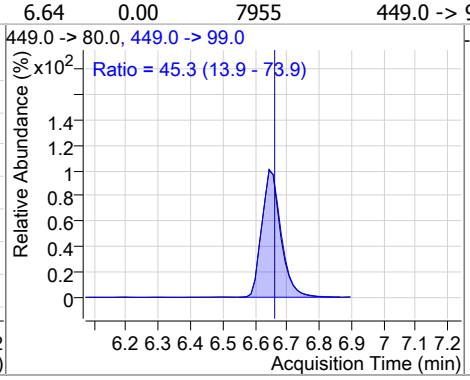


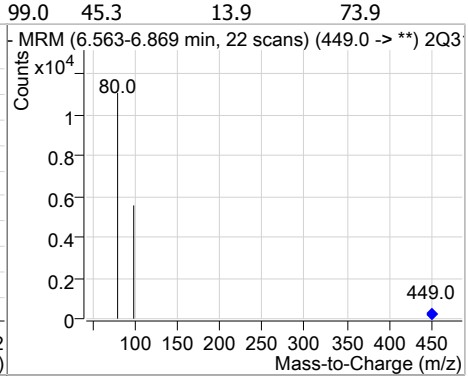


Perfluorinated Compounds by LC/MS/MS

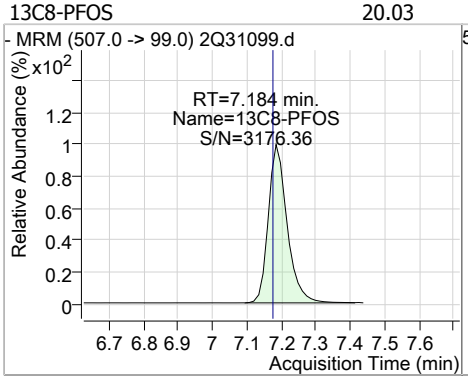
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.52	6.64	0.00	7955	449.0 -> 99.0	45.3	13.9	73.9

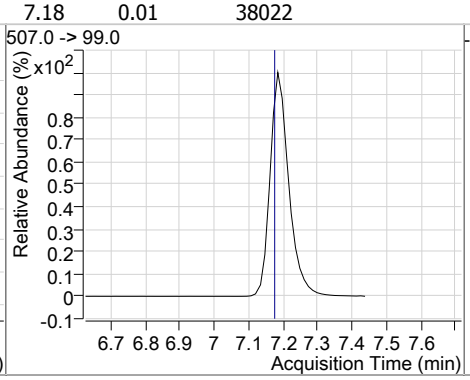


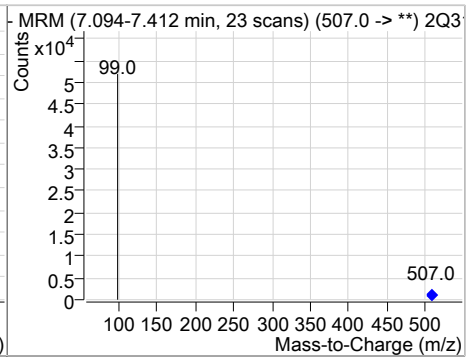




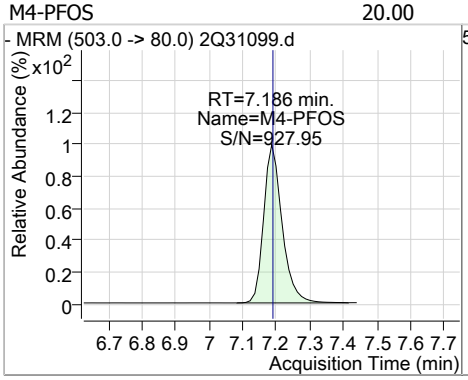
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.03	7.18	0.01	38022				

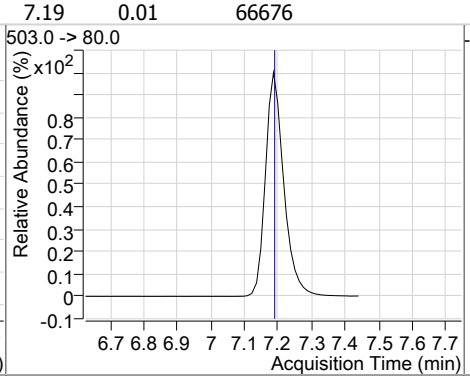


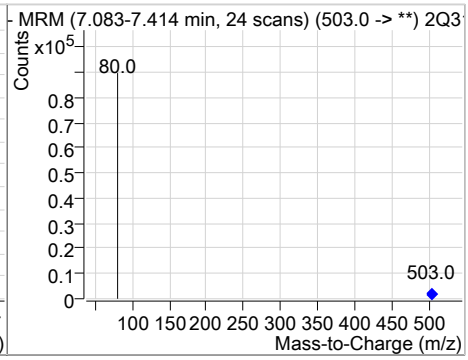




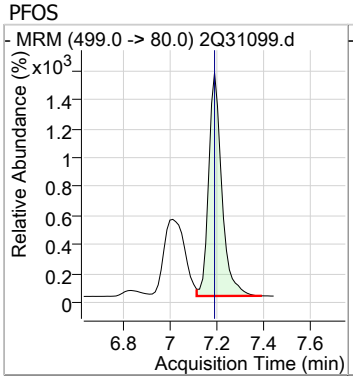
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.19	0.01	66676				

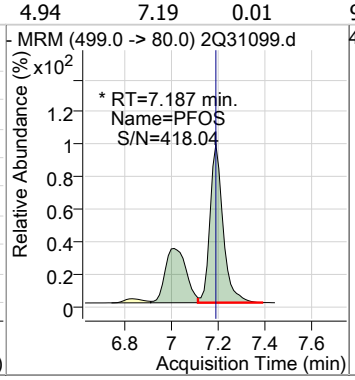


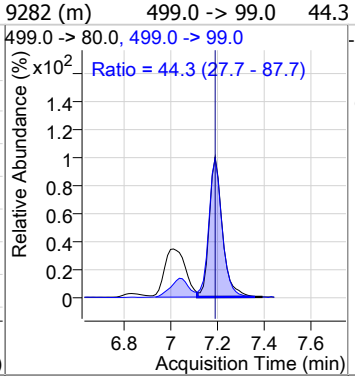


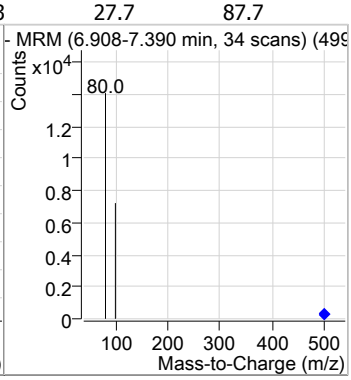


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.94	7.19	0.01	9282 (m)	499.0 -> 99.0	44.3	27.7	87.7



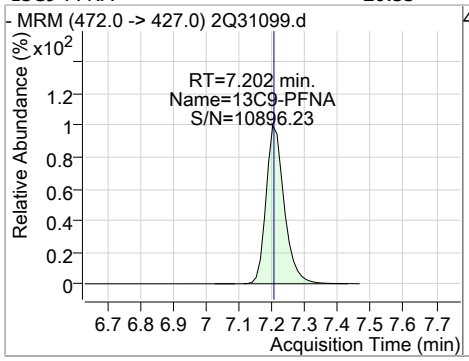


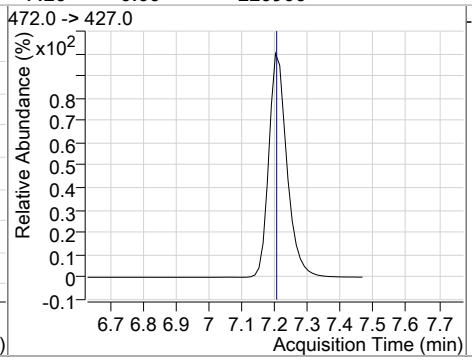


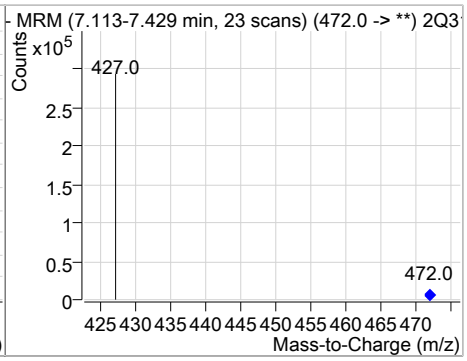


Perfluorinated Compounds by LC/MS/MS

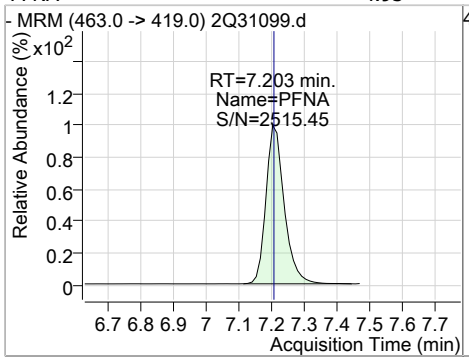
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.33	7.20	0.00	220900				

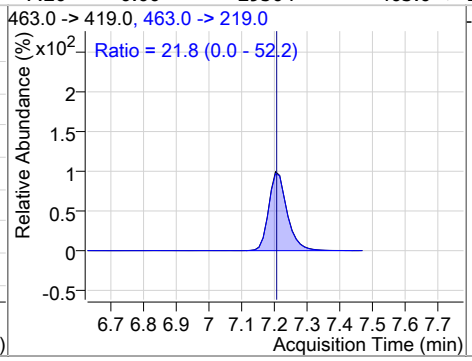


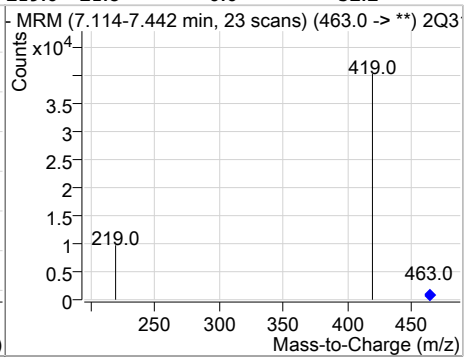




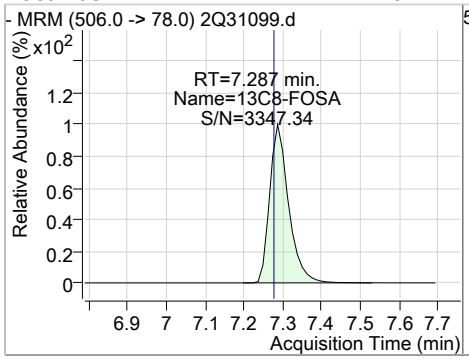
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.93	7.20	0.00	29504	463.0 -> 219.0	21.8	0.0	52.2

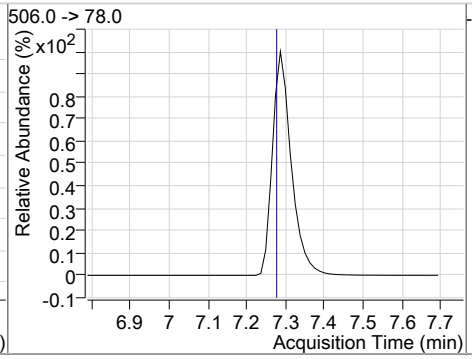


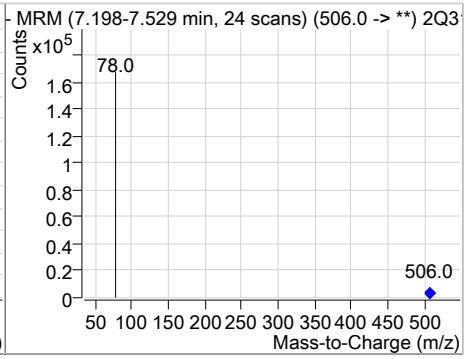




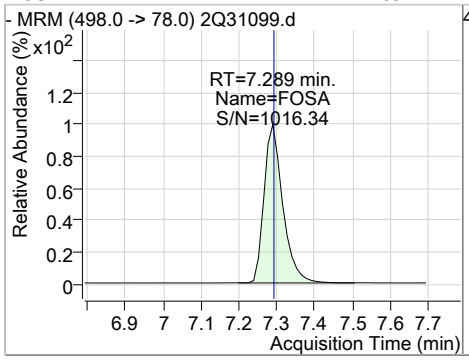
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.31	7.29	0.01	125372				

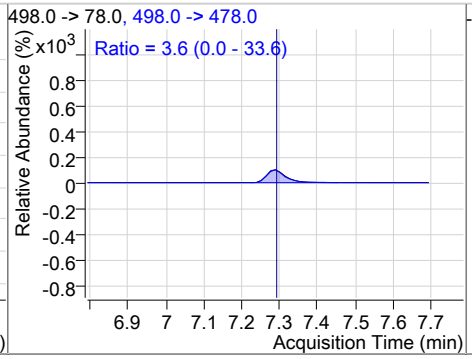


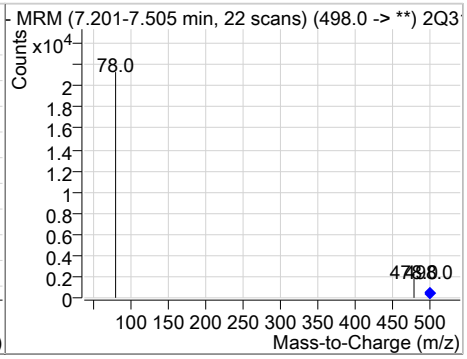




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.89	7.29	0.01	15302	498.0 -> 478.0	3.6	0.0	33.6

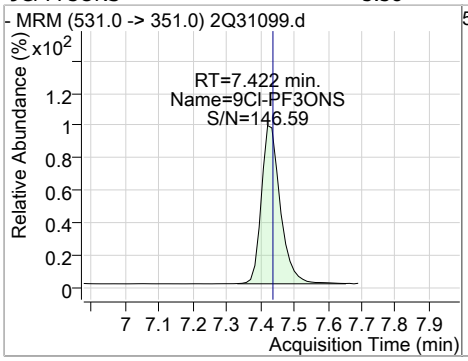


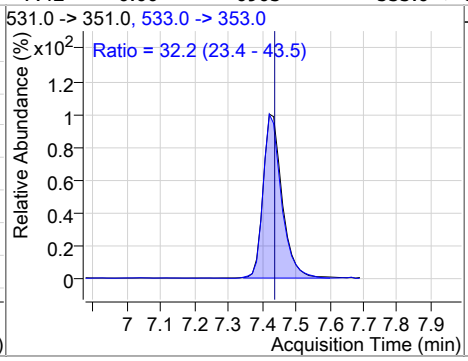


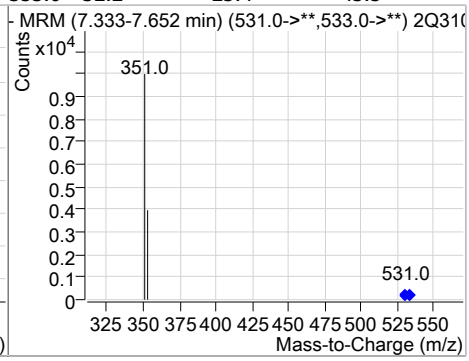


Perfluorinated Compounds by LC/MS/MS

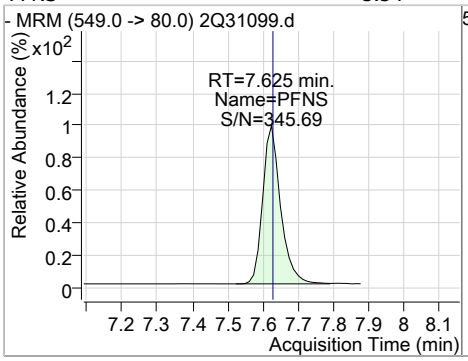
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.38	7.42	0.00	6903	533.0 -> 353.0	32.2	23.4	43.5

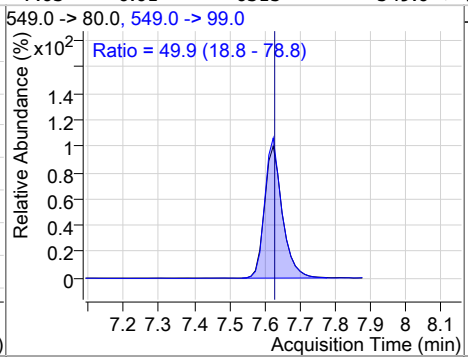


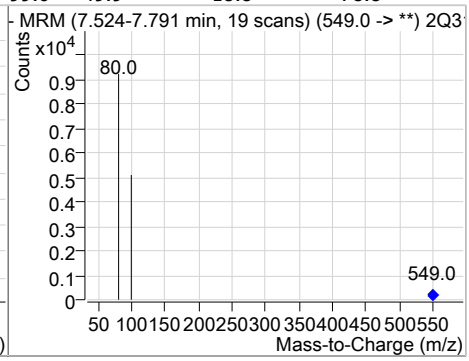




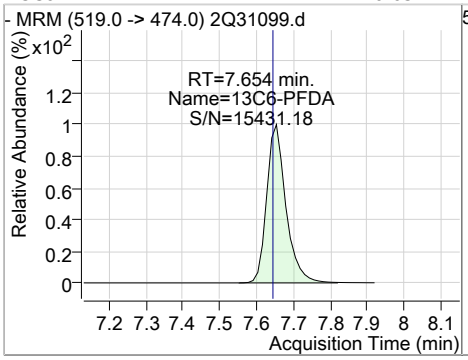
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.34	7.63	0.01	6315	549.0 -> 99.0	49.9	18.8	78.8

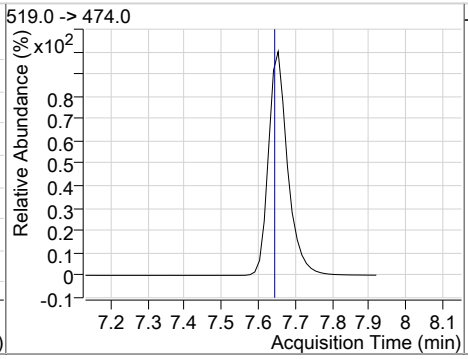


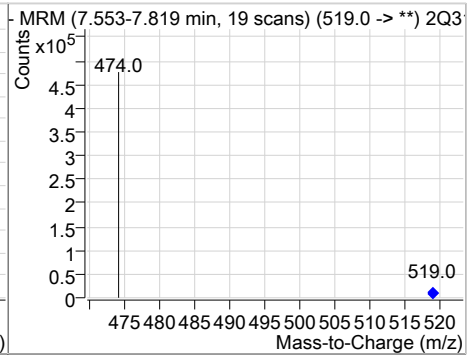




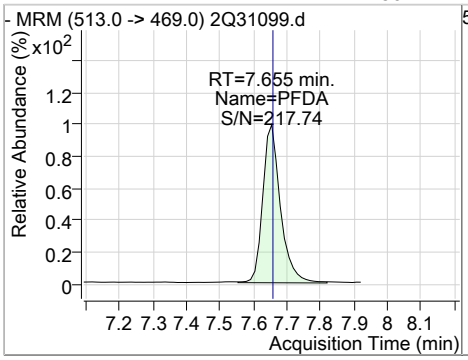
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.63	7.65	0.01	359869				

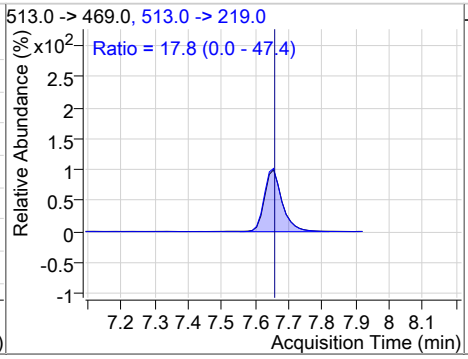


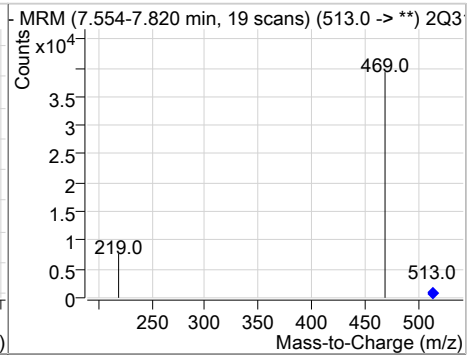




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.86	7.65	0.01	28847	513.0 -> 219.0	17.8	0.0	47.4

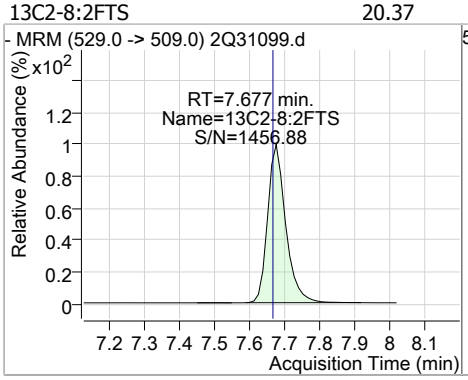


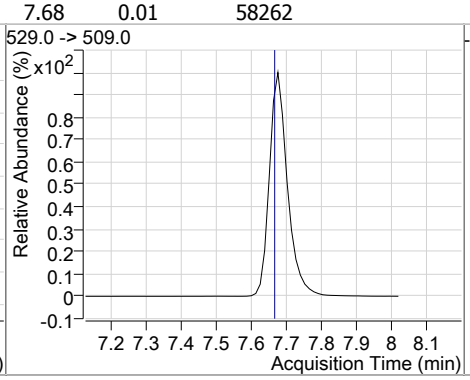


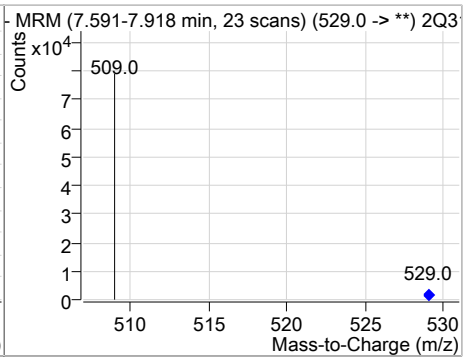


Perfluorinated Compounds by LC/MS/MS

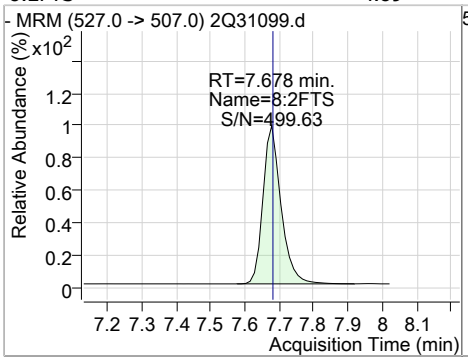
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.37	7.68	0.01	58262				

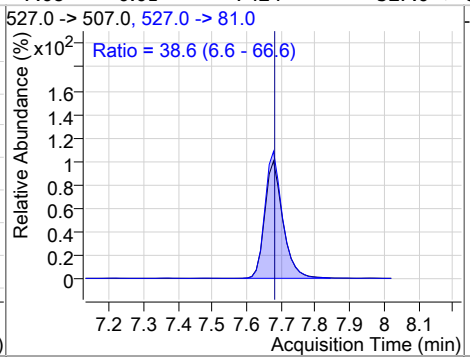


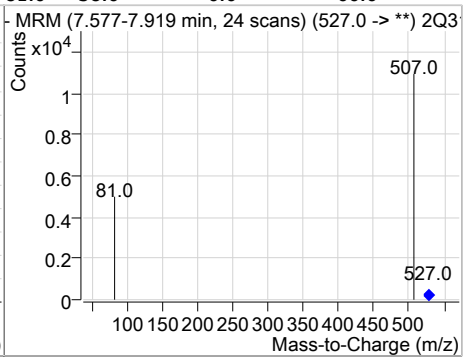




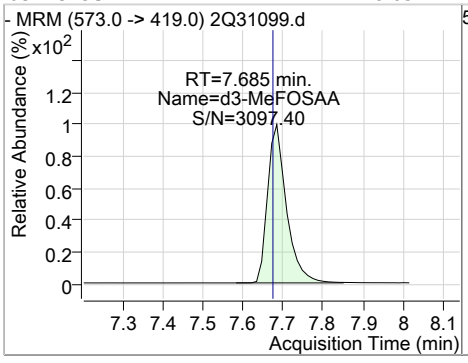
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.89	7.68	0.01	7424	527.0 -> 81.0	38.6	6.6	66.6

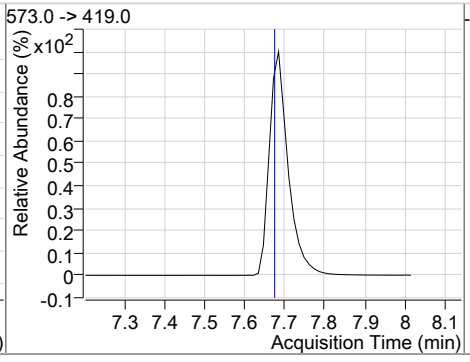


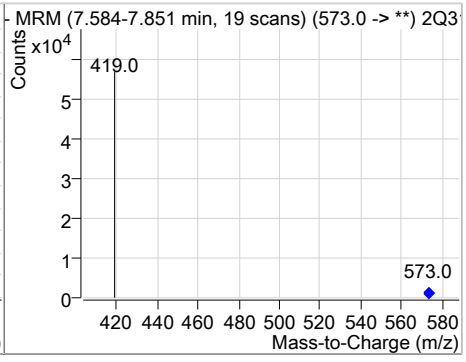




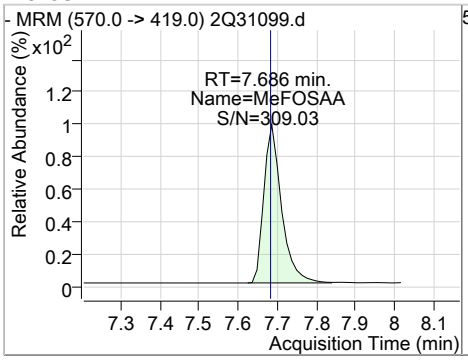
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.05	7.69	0.01	41802				

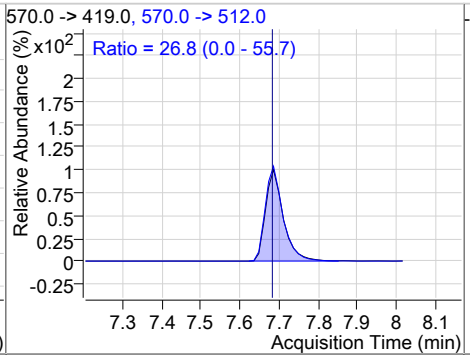


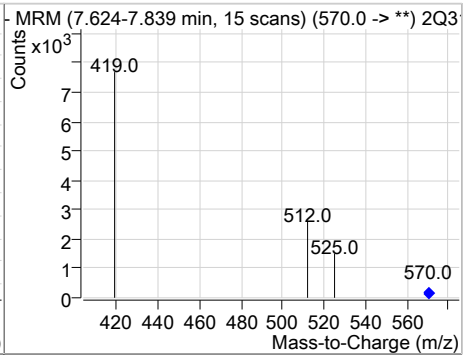




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.71	7.69	0.01	5322	570.0 -> 512.0	26.8	0.0	55.7

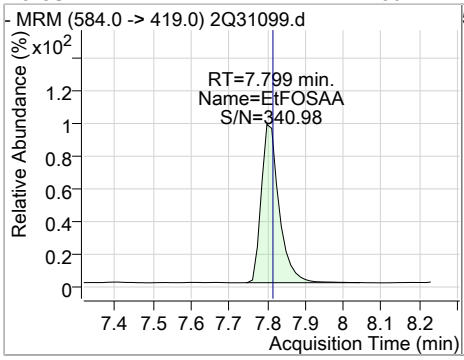


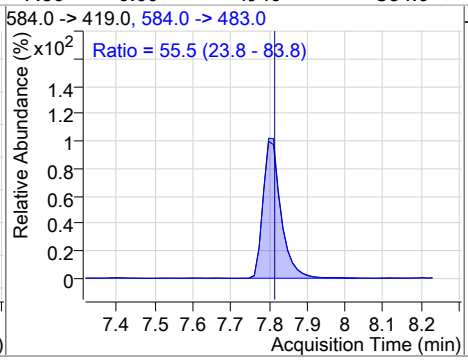


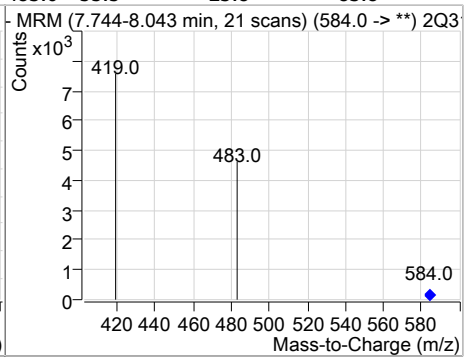


Perfluorinated Compounds by LC/MS/MS

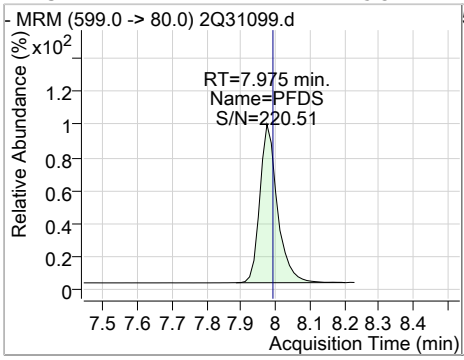
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.80	7.80	0.00	4940	584.0 -> 483.0	55.5	23.8	83.8

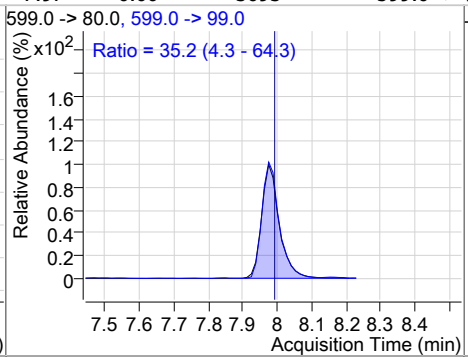


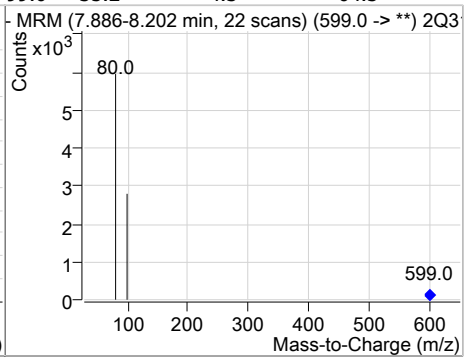




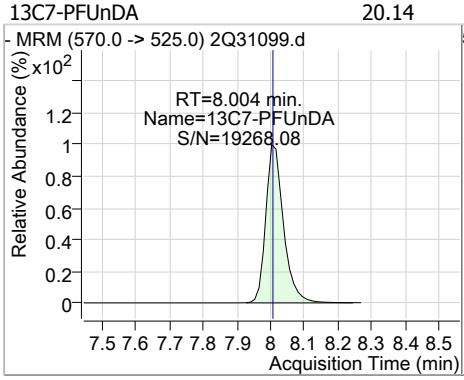
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.31	7.97	0.00	3693	599.0 -> 99.0	35.2	4.3	64.3

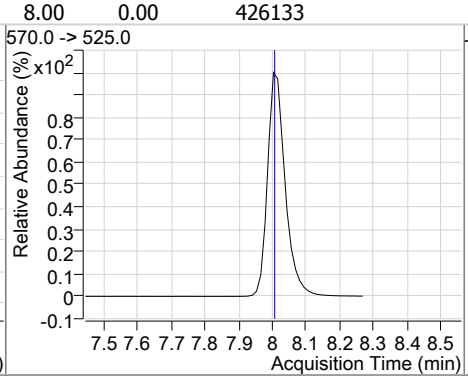


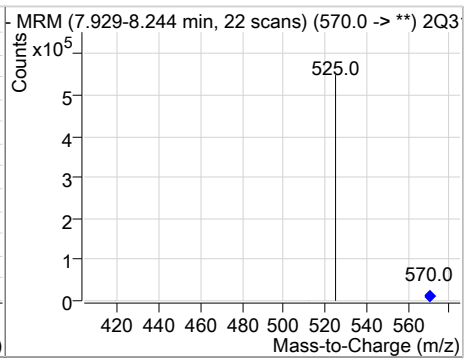




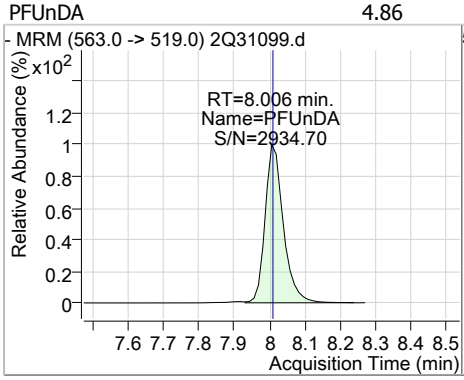
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.14	8.00	0.00	426133				

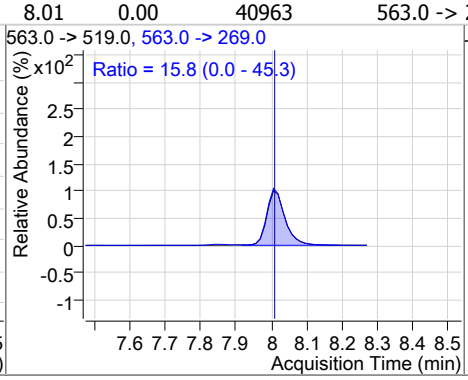


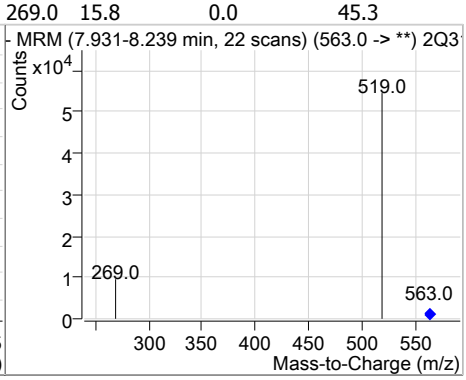




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.86	8.01	0.00	40963	563.0 -> 269.0	15.8	0.0	45.3

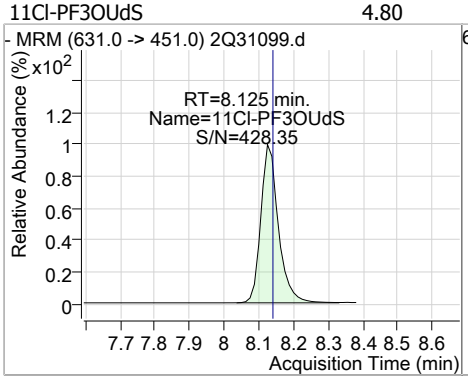


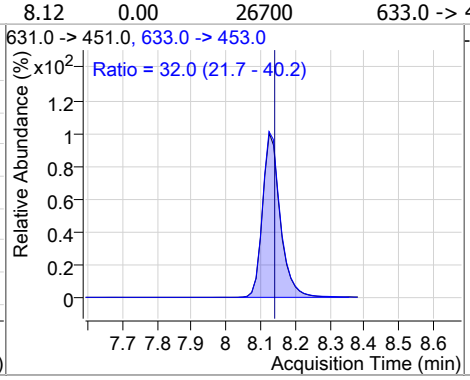


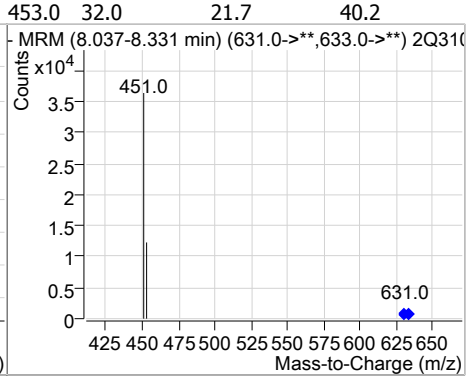


Perfluorinated Compounds by LC/MS/MS

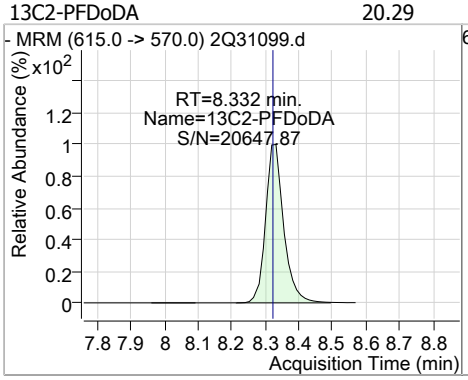
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.80	8.12	0.00	26700	633.0 -> 453.0	32.0	21.7	40.2

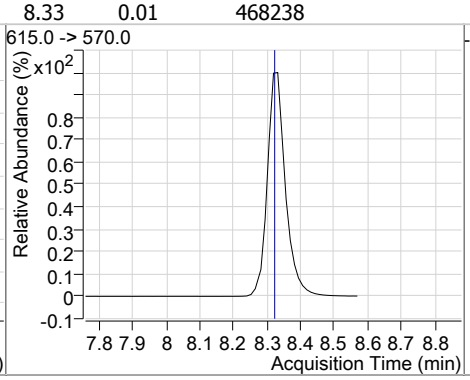


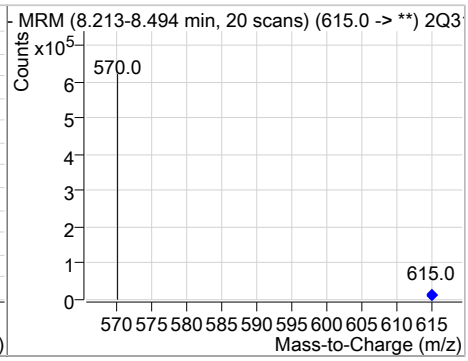




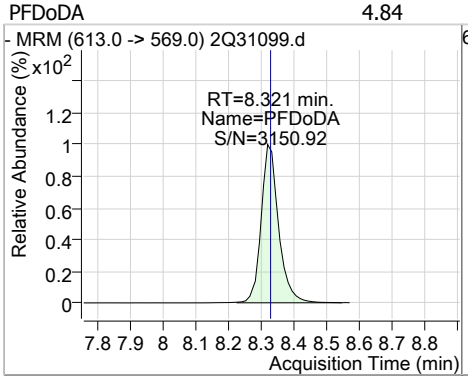
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.29	8.33	0.01	468238				

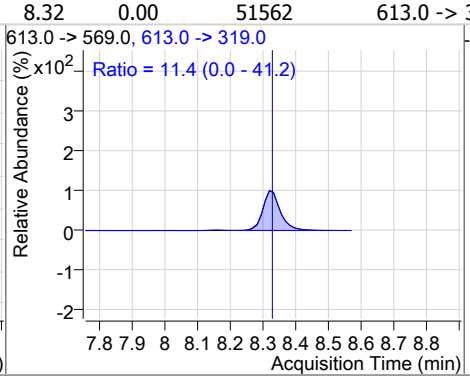


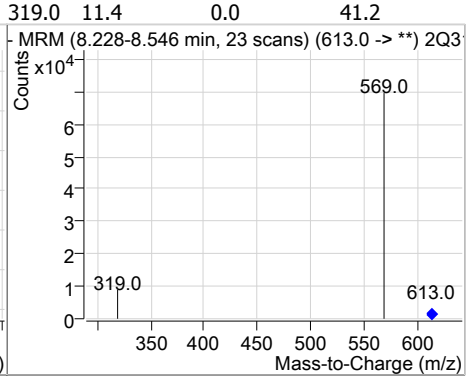




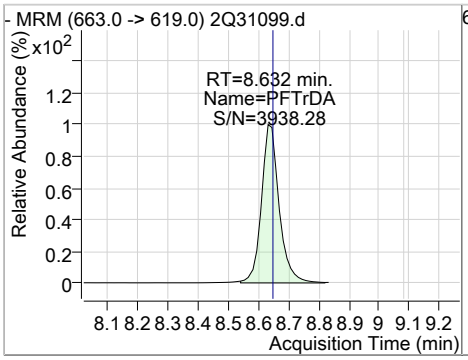
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.84	8.32	0.00	51562	613.0 -> 319.0	11.4	0.0	41.2

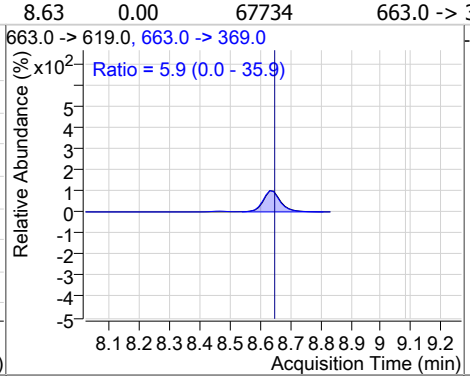


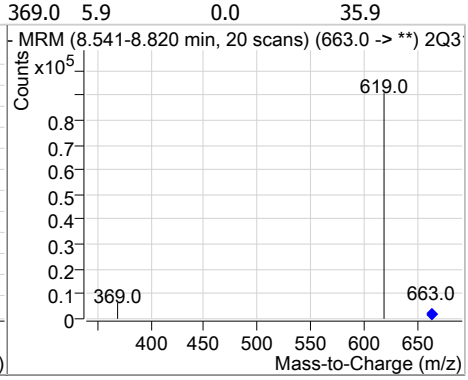




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.77	8.63	0.00	67734	663.0 -> 369.0	5.9	0.0	35.9

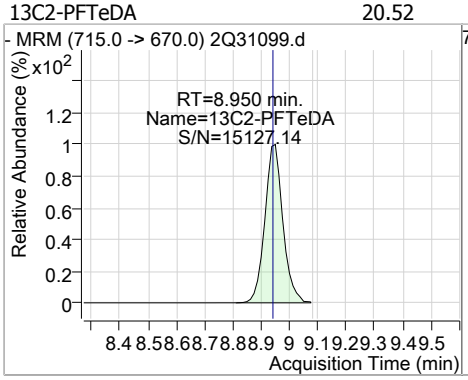


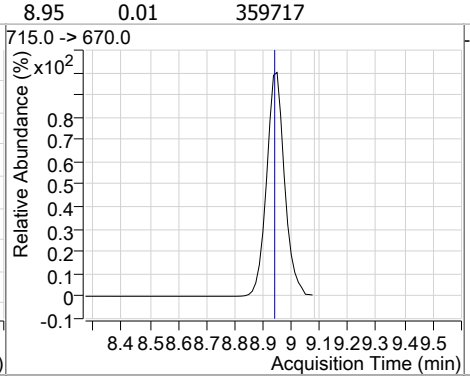


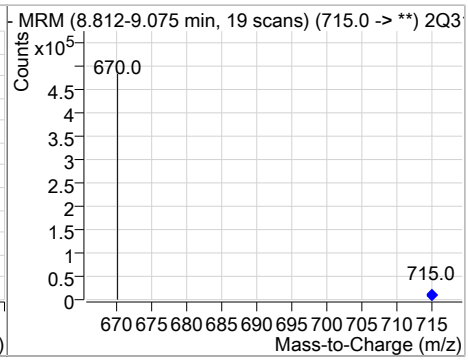


Perfluorinated Compounds by LC/MS/MS

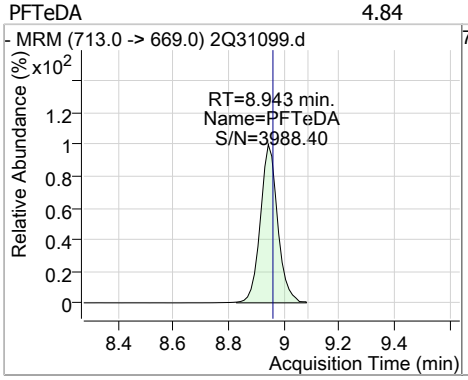
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.52	8.95	0.01	359717				

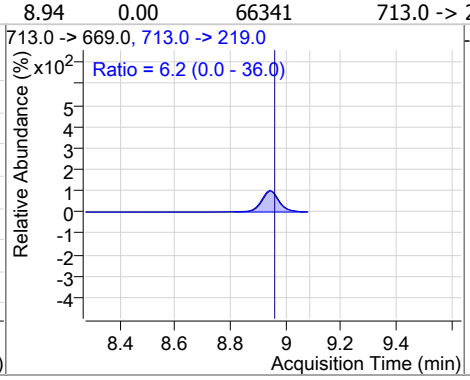


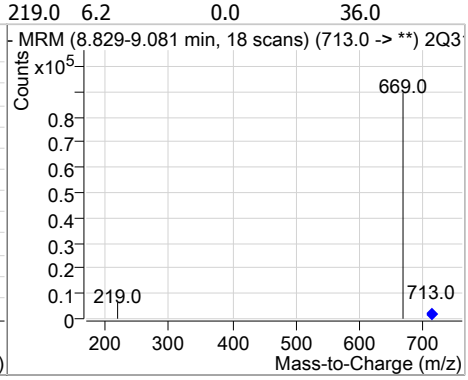




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.84	8.94	0.00	66341	713.0 -> 219.0	6.2	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31099.D
Injection Time: 06/21/19 10:56
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.19	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31100.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 11:11:18 AM
Sample Name : ic498-10
Vial : Vial 6
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

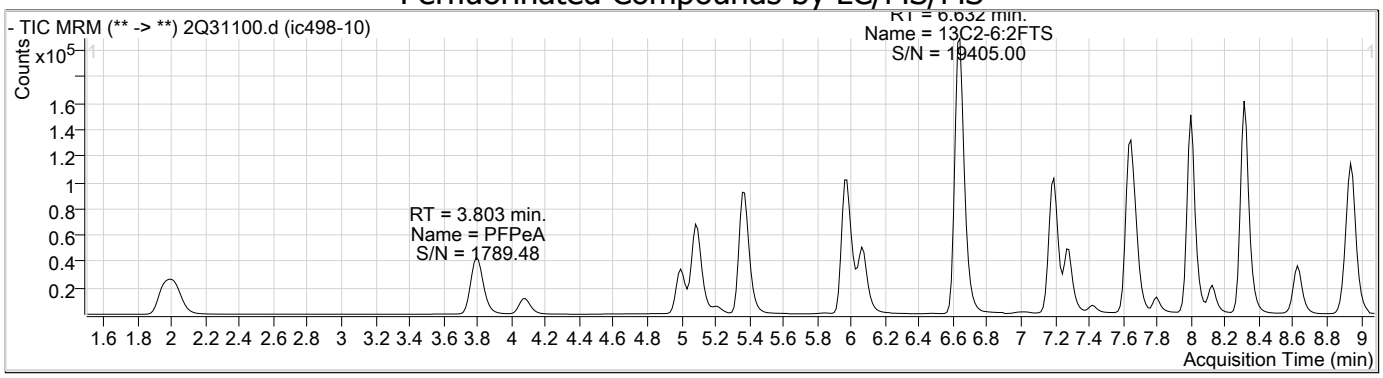
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.648	415.0 -> 370.0	358804	20.00	µg/L	0.013
13C4-PFOS	7.186	503.0 -> 80.0	67311	20.00	µg/L	0.013
M4-PFBA	1.990	217.0 -> 172.0	205974	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	160114	20.00	µg/L	0.000
M5-PFHxA	5.089	318.0 -> 273.0	241468	20.00	µg/L	0.000
M4-PFHpA	5.968	367.0 -> 322.0	275972	20.00	µg/L	0.000
M8-PFOA	6.647	421.0 -> 376.0	262132	20.00	µg/L	0.013
M9-PFNA	7.202	472.0 -> 427.0	219664	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	357086	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	427820	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	469253	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	356758	20.00	µg/L	0.000
M8-FOSA	7.287	506.0 -> 78.0	122452	20.00	µg/L	0.013
M3-PFBS	4.080	302.0 -> 99.0	30252	20.00	µg/L	0.000
M3-PFHxS	6.010	402.0 -> 99.0	25717	20.00	µg/L	0.013
M8-PFOS	7.184	507.0 -> 99.0	37932	20.00	µg/L	0.013
M2-4:2FTS	4.997	329.0 -> 309.0	99953	20.00	µg/L	0.000
M2-6:2FTS	6.632	429.0 -> 409.0	83348	20.00	µg/L	0.017
M2-8:2FTS	7.677	529.0 -> 509.0	58488	20.00	µg/L	0.013
M3-MeFOSAA	7.673	573.0 -> 419.0	41839	20.00	µg/L	0.000
M3-HFPO-DA	5.365	287.0 -> 169.0	252484	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	99943	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C2-6:2FTS	6.632	429.0 -> 409.0	83351	20.93	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C2-8:2FTS	7.677	529.0 -> 509.0	58508	20.46	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-PFDoDA	8.319	615.0 -> 570.0	469245	20.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-PFTeDA	8.937	715.0 -> 670.0	356769	20.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-PFBS	4.080	302.0 -> 99.0	30023	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C3-PFHxS	6.010	402.0 -> 99.0	25721	20.20	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFBA	1.990	217.0 -> 172.0	204533	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	5.968	367.0 -> 322.0	275924	20.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFHxA	5.089	318.0 -> 273.0	241451	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFPeA	3.799	268.0 -> 223.0	160110	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C6-PFDA	7.641	519.0 -> 474.0	357138	20.47	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

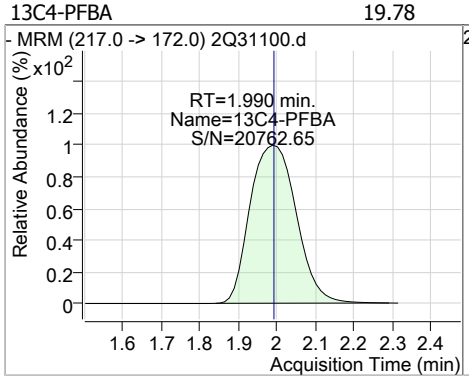
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C7-PFUnDA	8.004	570.0 -> 525.0	427771	20.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-FOSA	7.287	506.0 -> 78.0	122414	20.81 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C8-PFOA	6.647	421.0 -> 376.0	262109	20.43 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C8-PFOS	7.184	507.0 -> 99.0	38063	20.05 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C9-PFNA	7.202	472.0 -> 427.0	219580	20.21 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
d3-MeFOSAA	7.673	573.0 -> 419.0	41887	20.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
M2-PFOA	6.648	415.0 -> 370.0	358864	20.00 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.186	503.0 -> 80.0	67282	19.99 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.365	287.0 -> 169.0	252484	103.45 µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
Target Compounds						**QValue**
4:2FTS	4.999	327.0 -> 307.0	29014	10.19 µg/L		99
6:2FTS	6.633	427.0 -> 407.0	28778	12.97 µg/L		100
8:2FTS	7.666	527.0 -> 507.0	15041	9.91 µg/L		100
EtFOSAA	7.799	584.0 -> 419.0	9961	9.66 µg/L		99
FOSA	7.277	498.0 -> 78.0	30039	9.84 µg/L		100
MeFOSAA	7.673	570.0 -> 419.0	10836	9.56 µg/L		96
PFBA	1.998	213.0 -> 169.0	17237	9.78 µg/L		100
PFBS	4.073	299.0 -> 80.0	20399	9.83 µg/L		100
PFDA	7.642	513.0 -> 469.0	56400	9.57 µg/L		99
PFDoDA	8.321	613.0 -> 569.0	102779	9.62 µg/L		100
PFDS	7.975	599.0 -> 80.0	7167	10.34 µg/L		97
PFHpA	5.970	363.0 -> 319.0	118398	9.78 µg/L		100
PFHpS	6.644	449.0 -> 80.0	16021	11.09 µg/L		100
PFHxA	5.091	313.0 -> 269.0	34781	9.80 µg/L		100
PFHxS	6.013	399.0 -> 80.0	17711	9.65 µg/L	m	98
PFNA	7.203	463.0 -> 419.0	57823	9.73 µg/L		99
PFNS	7.613	549.0 -> 80.0	12279	10.40 µg/L		99
PFOA	6.649	413.0 -> 369.0	73101	9.66 µg/L		99
PFOS	7.187	499.0 -> 80.0	17837	9.51 µg/L	m	86
PFPeA	3.803	263.0 -> 219.0	64739	9.71 µg/L		100
PFPeS	5.208	349.0 -> 80.0	13205	9.92 µg/L		98
PFTeDA	8.943	713.0 -> 669.0	130068	9.56 µg/L		100
PFTrDA	8.632	663.0 -> 619.0	136245	9.68 µg/L		100
PFUnDA	8.006	563.0 -> 519.0	84292	9.95 µg/L		99
11Cl-PF3OUdS	8.125	631.0 -> 451.0	52786	9.47 µg/L		100
9Cl-PF3ONS	7.422	531.0 -> 351.0	13942	10.75 µg/L		99
ADONA	6.066	377.0 -> 251.0	143605	8.38 µg/L		100
HFPO-DA	5.375	329.0 -> 169.0	107265	50.66 µg/L		99

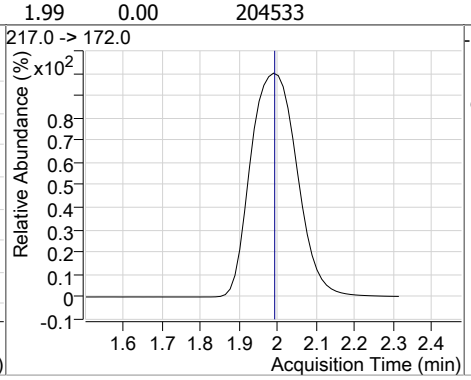
= Qualifier out of range, m = manually integrated, + = Area summed

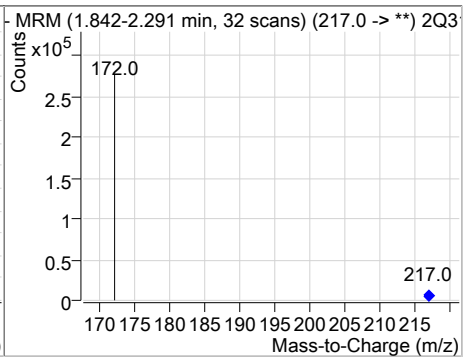
Perfluorinated Compounds by LC/MS/MS



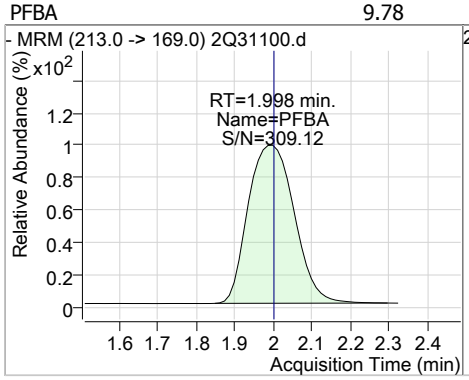
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.78	1.99	0.00	204533				

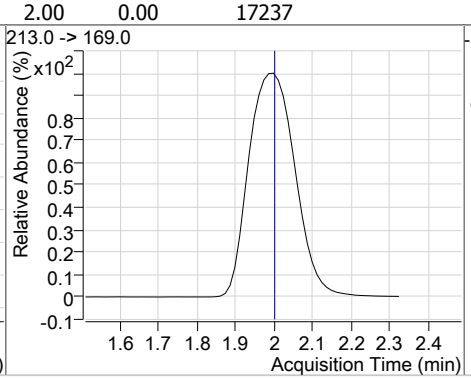


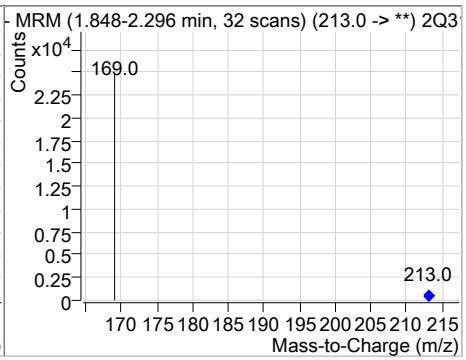




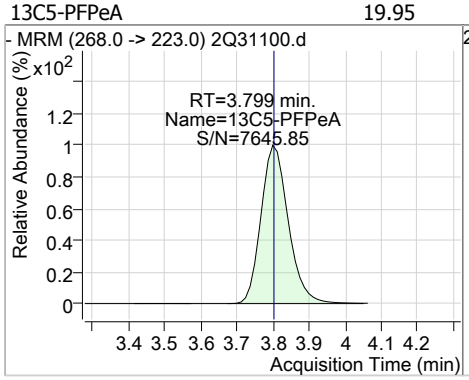
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.78	2.00	0.00	17237				

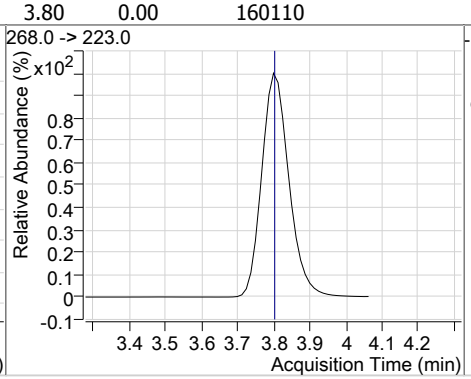


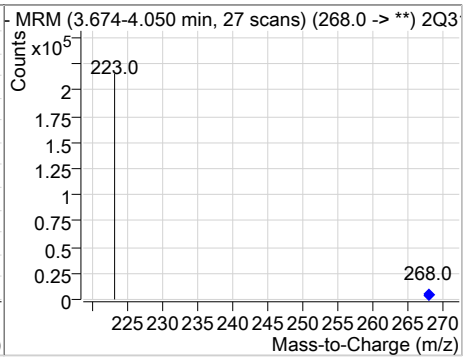




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.95	3.80	0.00	160110				

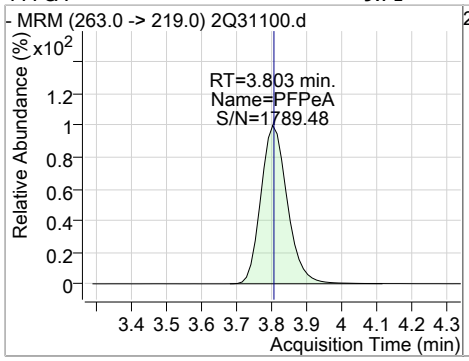


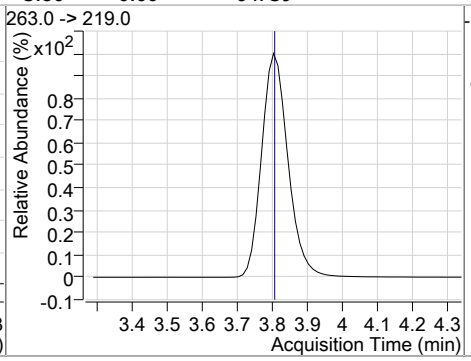


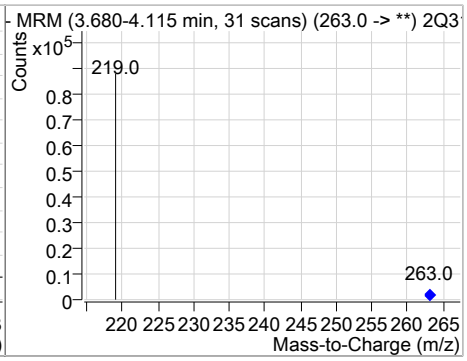


Perfluorinated Compounds by LC/MS/MS

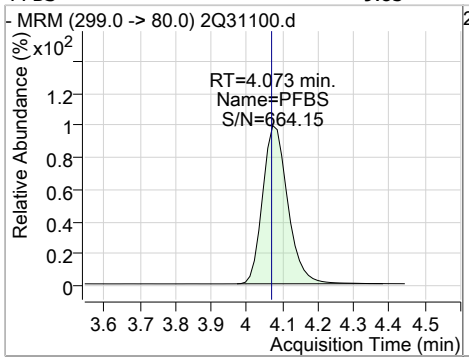
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.71	3.80	0.00	64739				

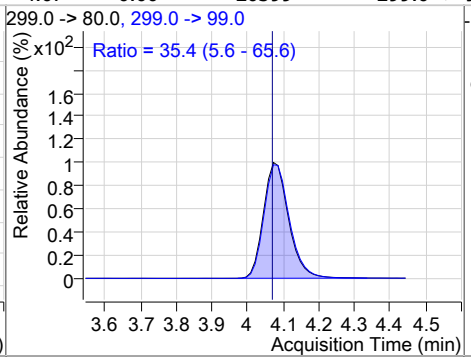


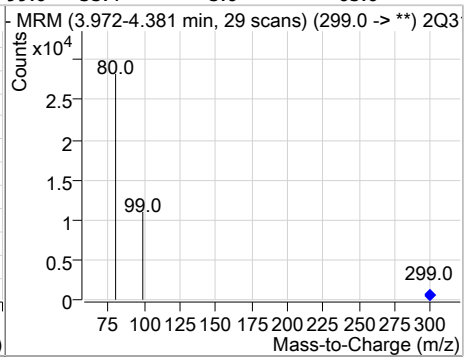




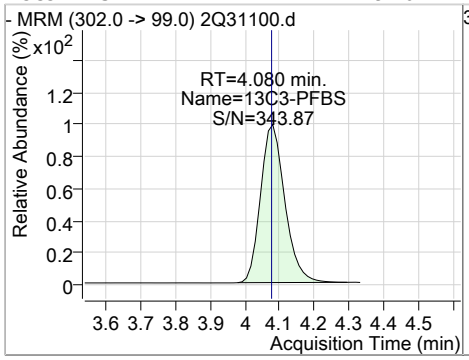
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.83	4.07	0.00	20399	299.0 -> 99.0	35.4	5.6	65.6

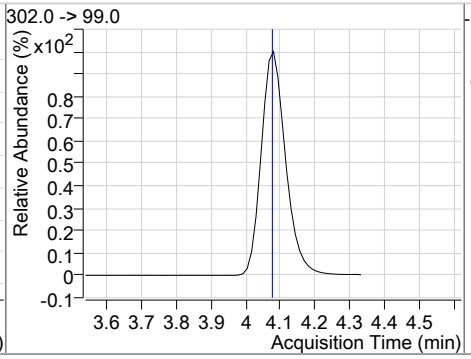


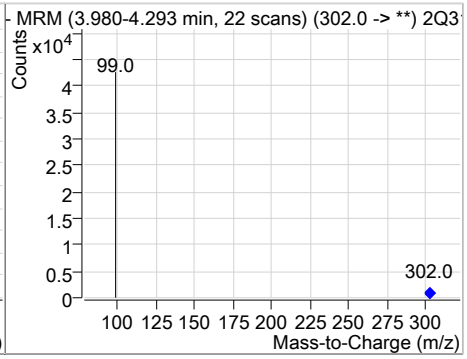




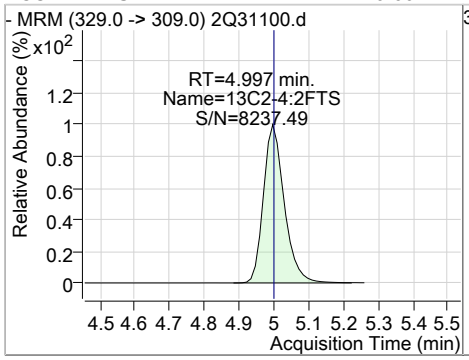
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.76	4.08	0.00	30023				

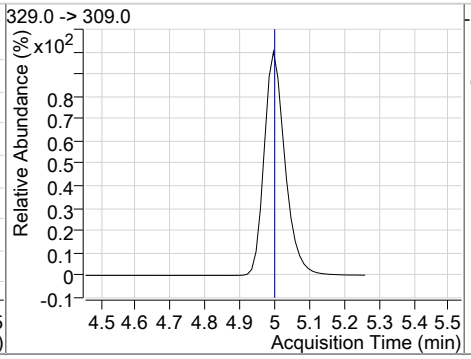


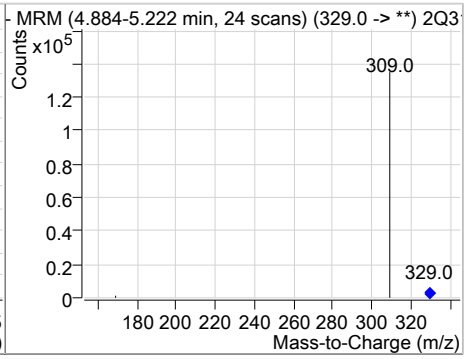




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.60	5.00	0.00	99943				

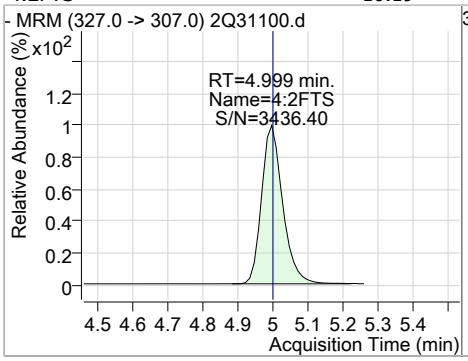


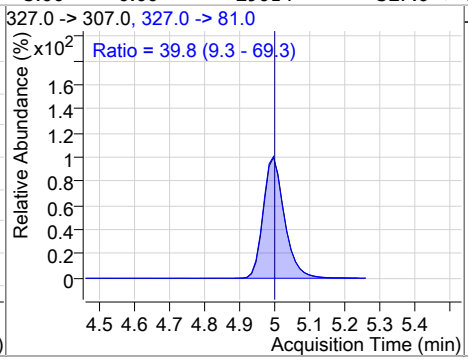


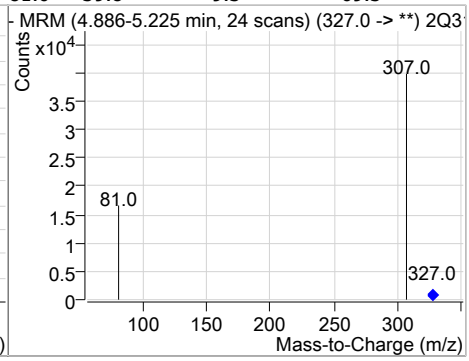


Perfluorinated Compounds by LC/MS/MS

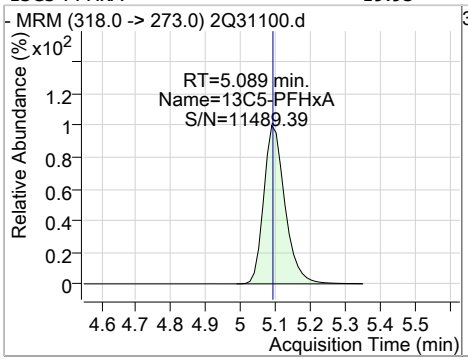
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.19	5.00	0.00	29014	327.0 -> 81.0	39.8	9.3	69.3

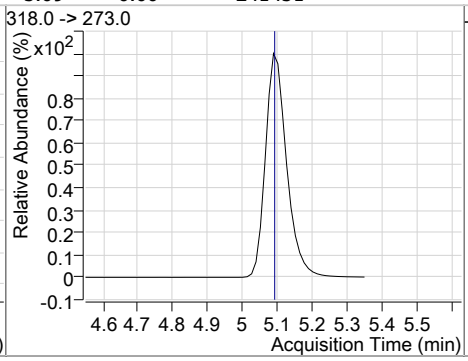


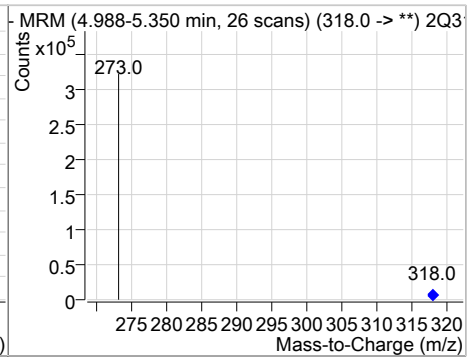




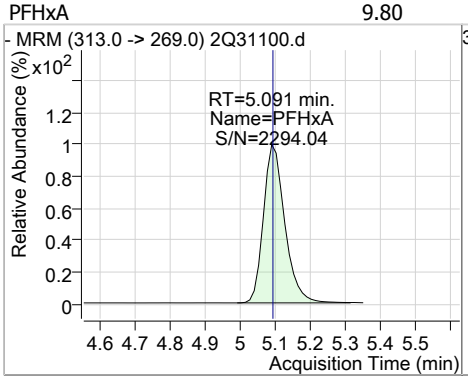
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.95	5.09	0.00	241451				

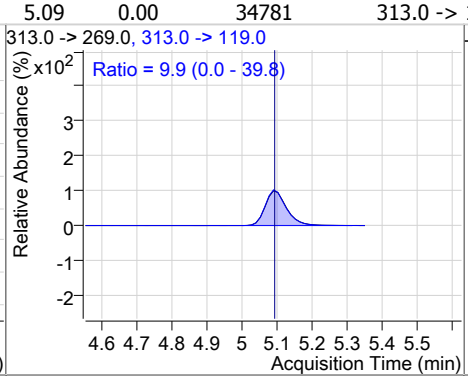


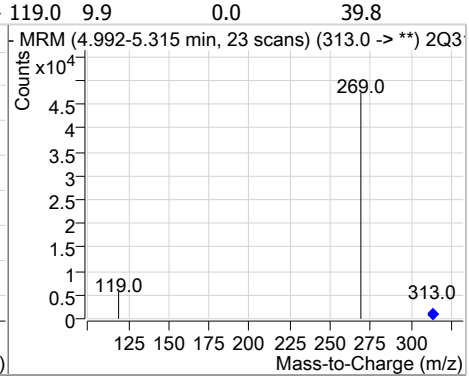




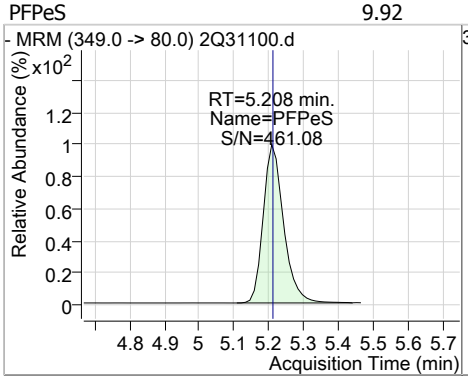
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.80	5.09	0.00	34781	313.0 -> 119.0	9.9	0.0	39.8

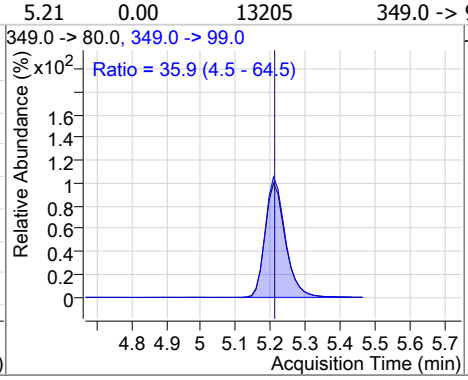


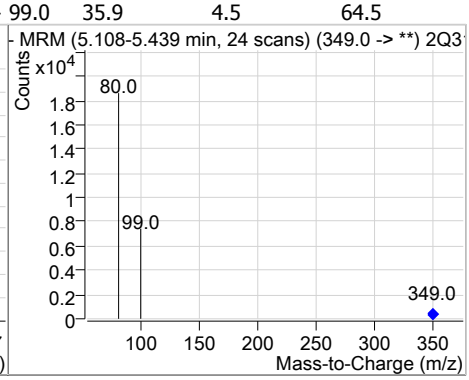




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.92	5.21	0.00	13205	349.0 -> 99.0	35.9	4.5	64.5

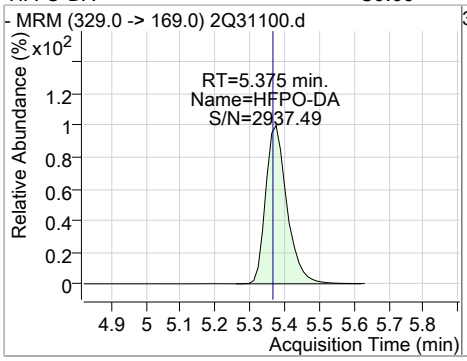


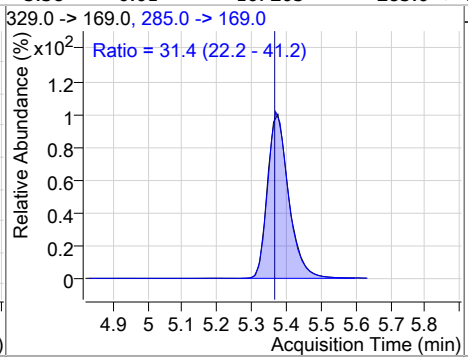


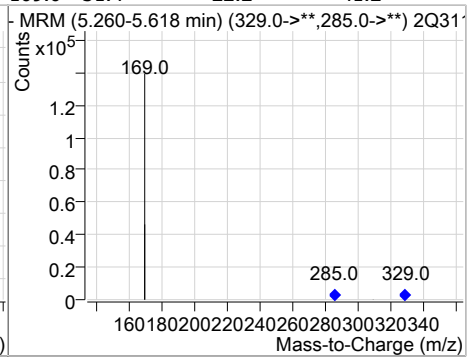


Perfluorinated Compounds by LC/MS/MS

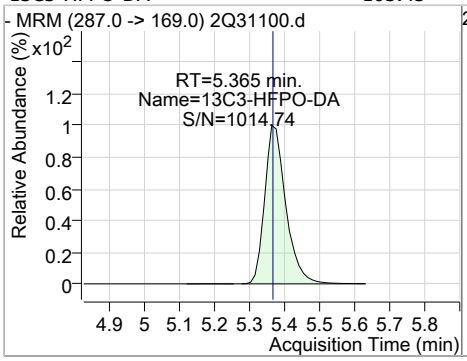
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.66	5.38	0.01	107265	285.0 -> 169.0	31.4	22.2	41.2

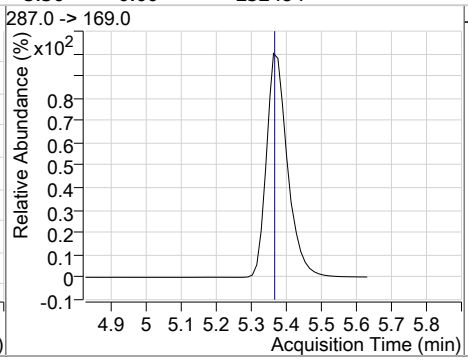


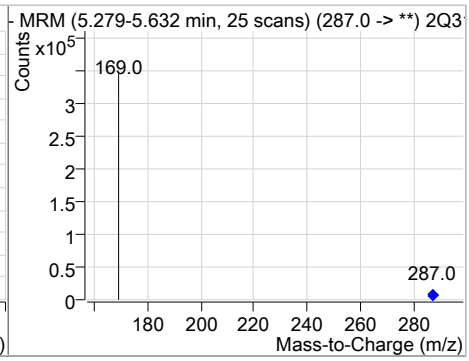




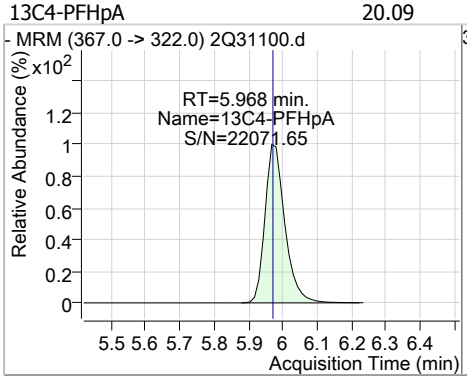
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	103.45	5.36	0.00	252484				

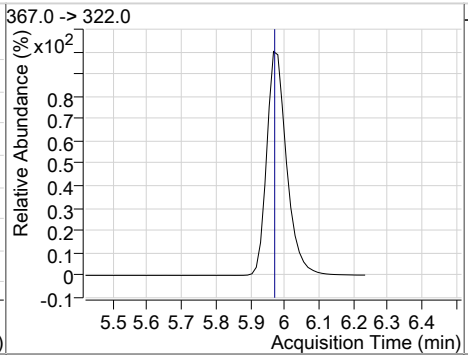


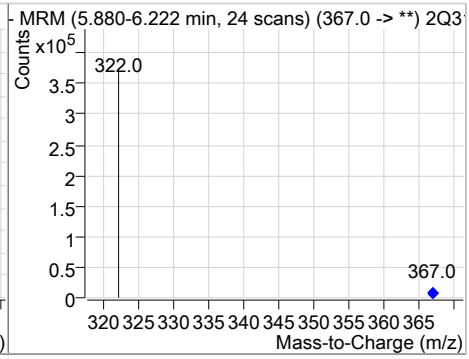




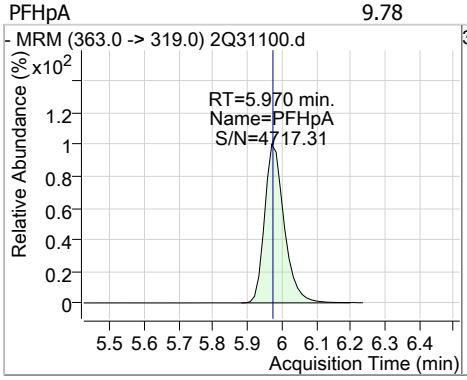
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.09	5.97	0.00	275924				

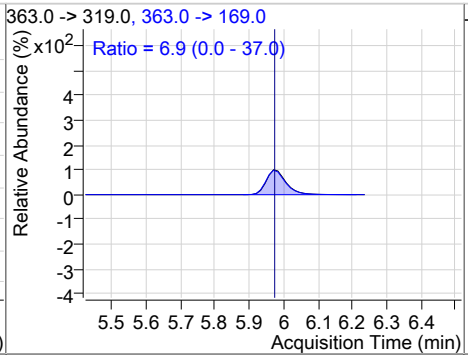


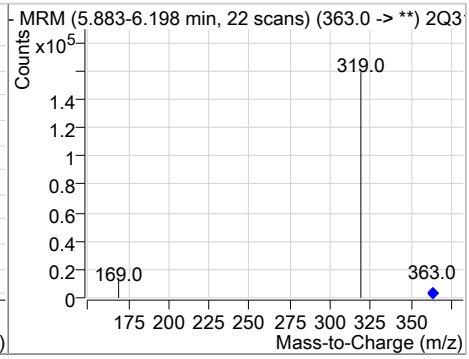




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.78	5.97	0.00	118398	363.0 -> 169.0	6.9	0.0	37.0

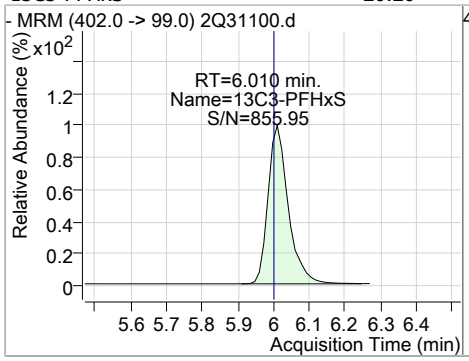


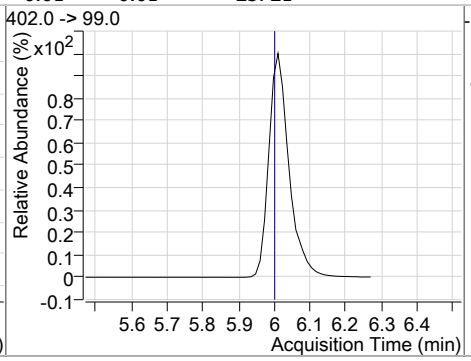


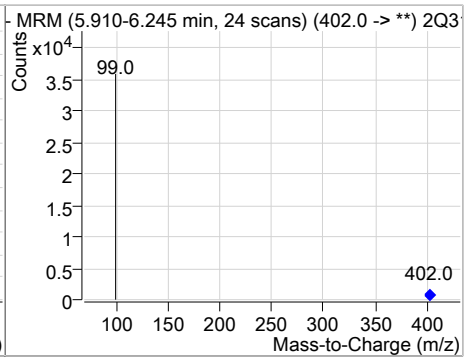


Perfluorinated Compounds by LC/MS/MS

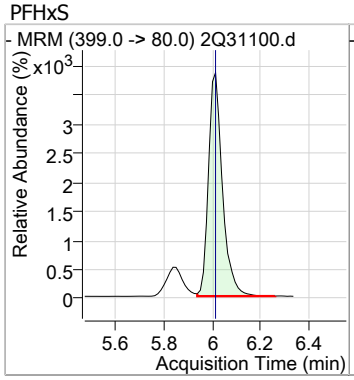
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.20	6.01	0.01	25721				

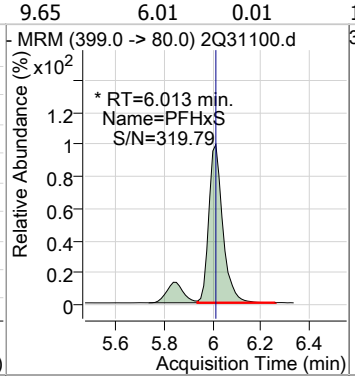


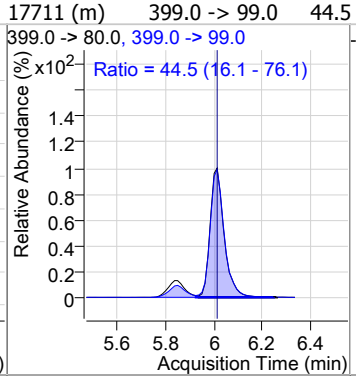


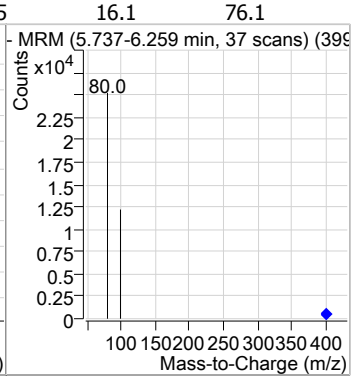


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.65	6.01	0.01	17711 (m)	399.0 -> 99.0	44.5	16.1	76.1

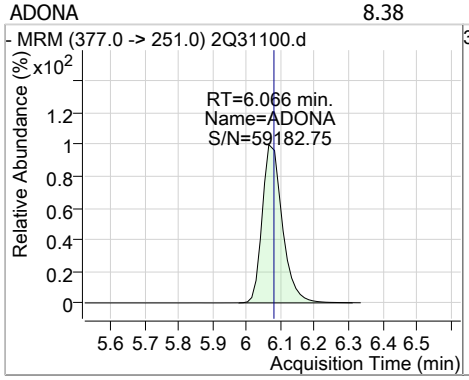


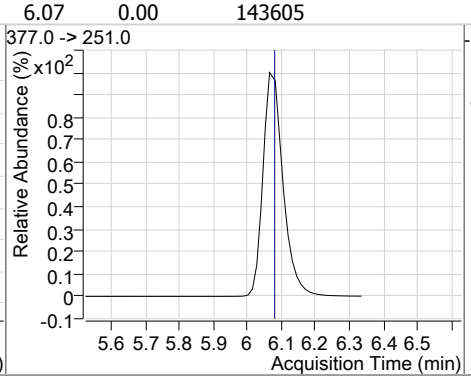


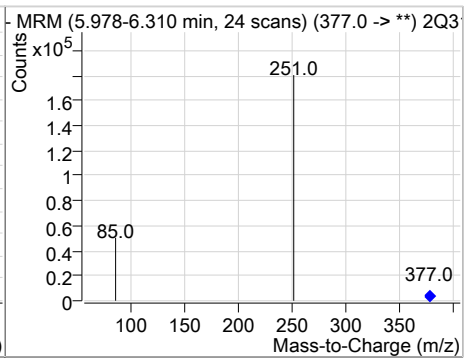




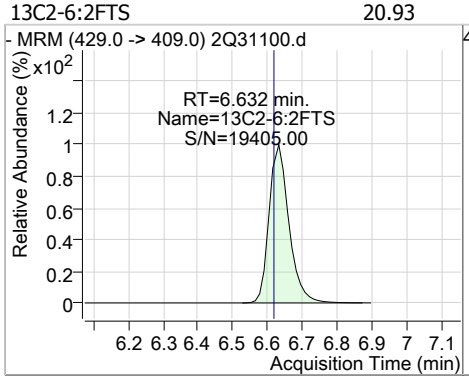
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	8.38	6.07	0.00	143605				

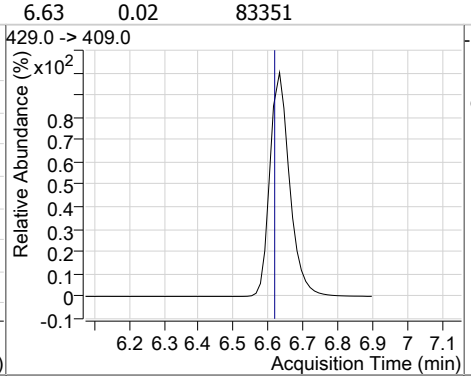


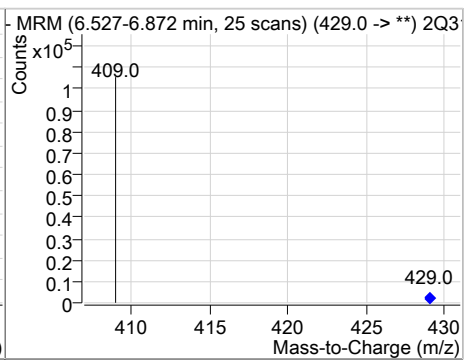




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.93	6.63	0.02	83351				

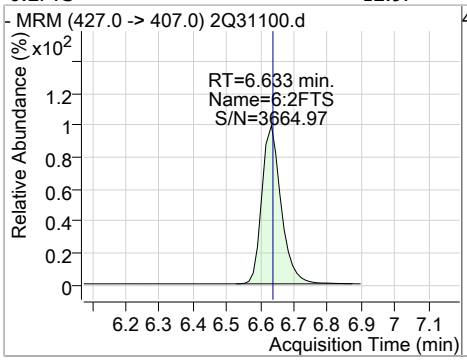


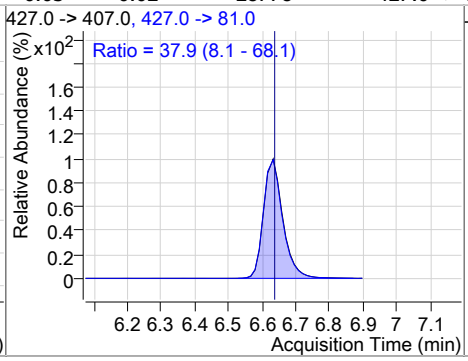


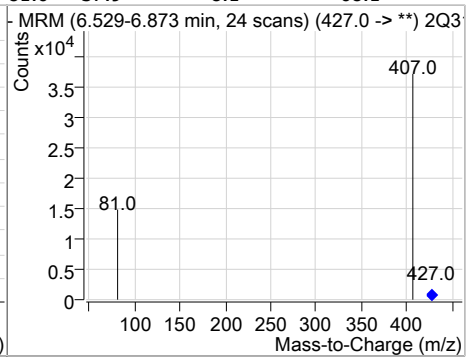


Perfluorinated Compounds by LC/MS/MS

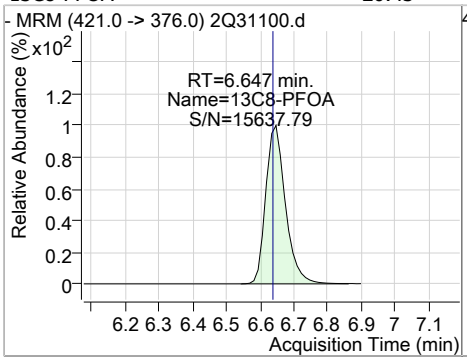
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	12.97	6.63	0.02	28778	427.0 -> 81.0	37.9	8.1	68.1

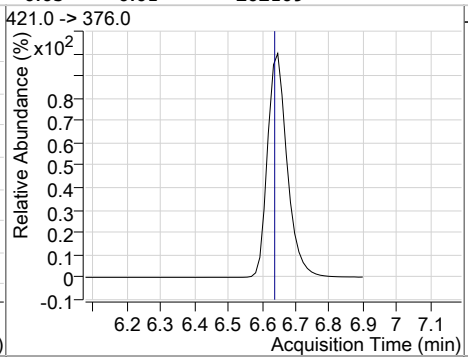


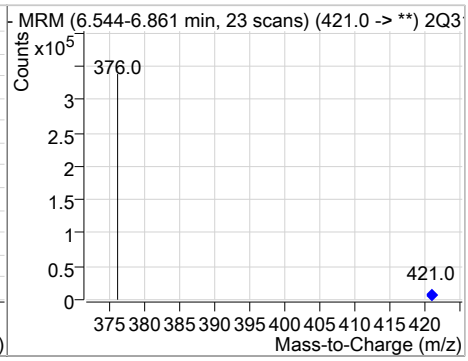




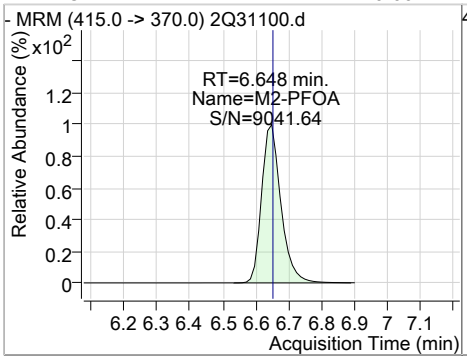
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.43	6.65	0.01	262109				

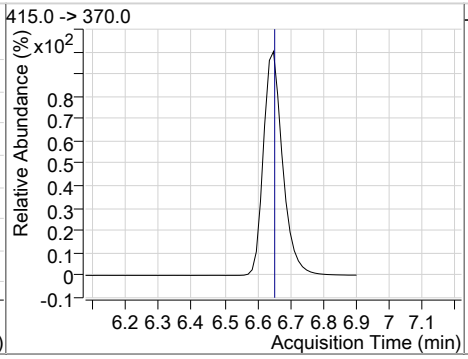


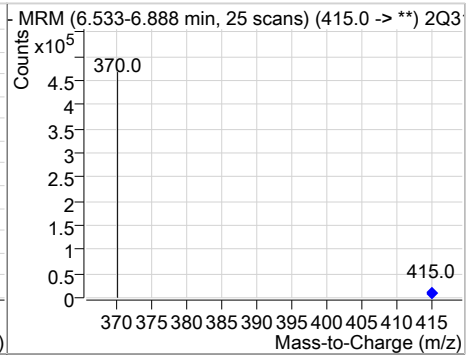




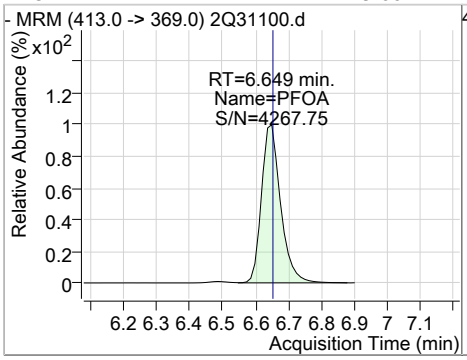
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.65	0.01	358864				

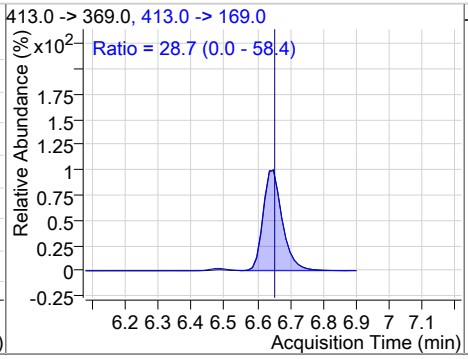


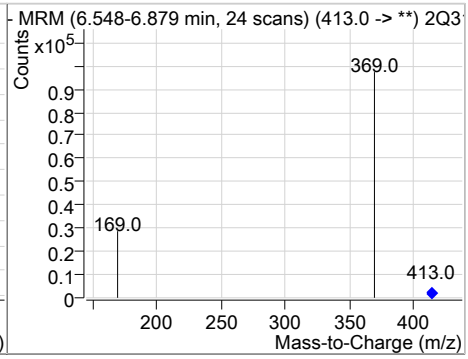




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.66	6.65	0.01	73101	413.0 -> 169.0	28.7	0.0	58.4

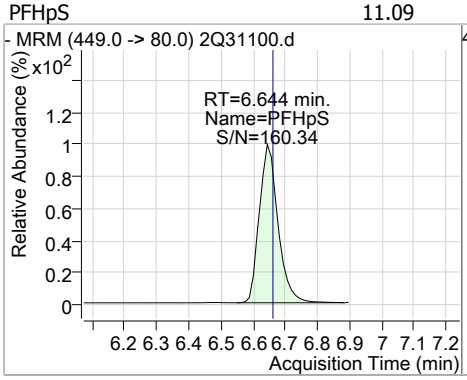


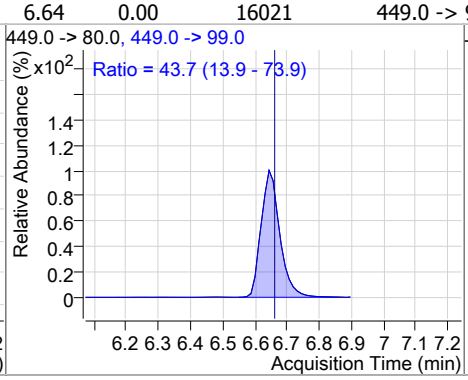


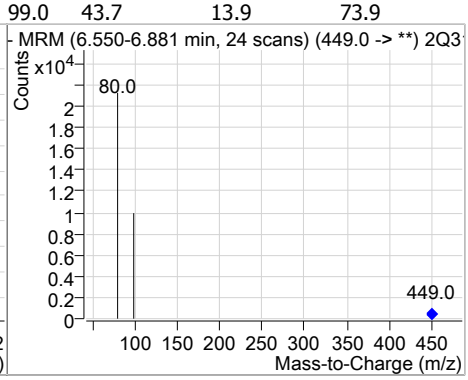


Perfluorinated Compounds by LC/MS/MS

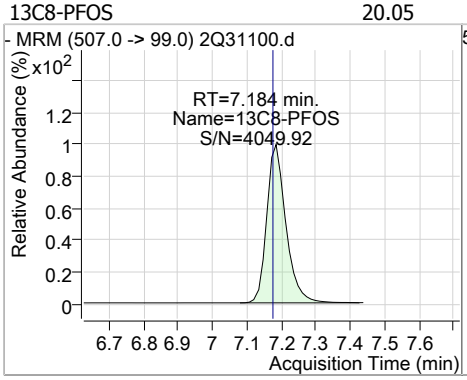
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.09	6.64	0.00	16021	449.0 -> 99.0	43.7	13.9	73.9

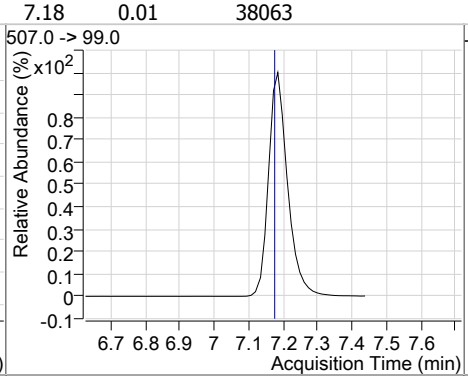


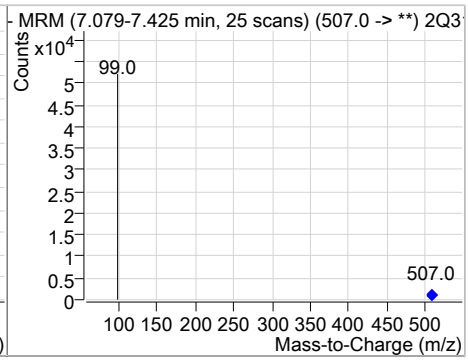




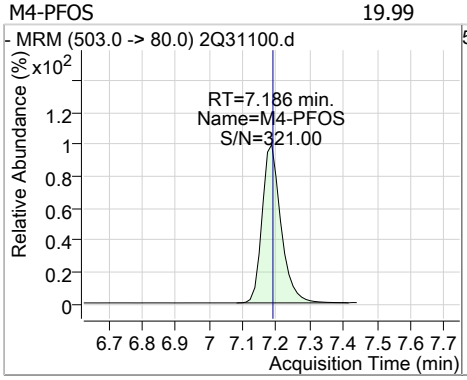
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.05	7.18	0.01	38063				

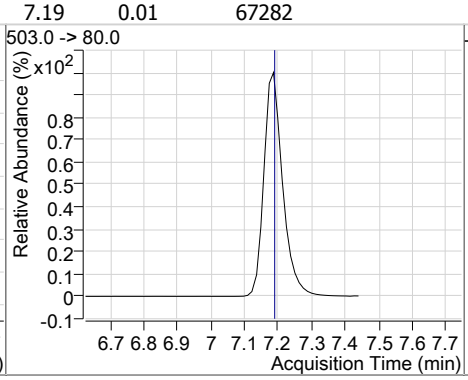


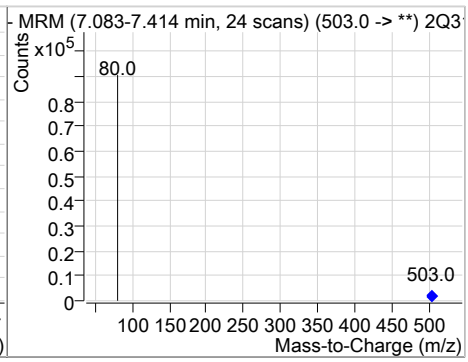




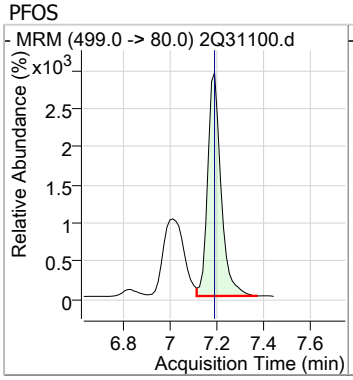
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.99	7.19	0.01	67282				

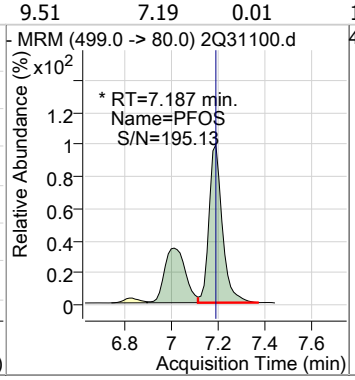


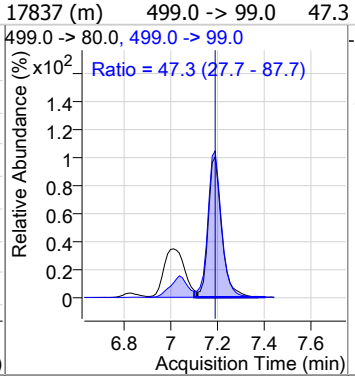


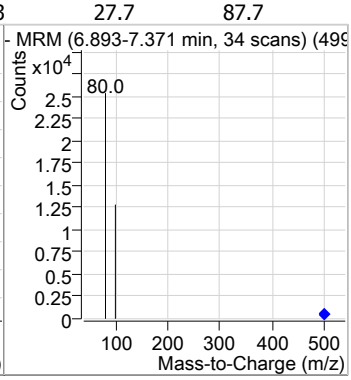


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.51	7.19	0.01	17837 (m)	499.0 -> 99.0	47.3	27.7	87.7



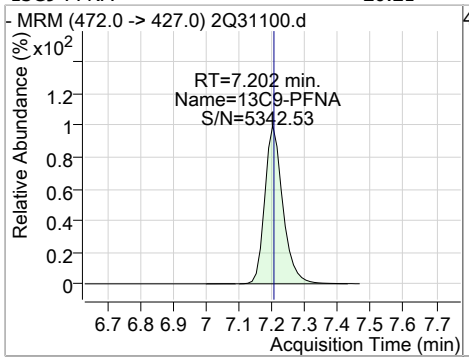


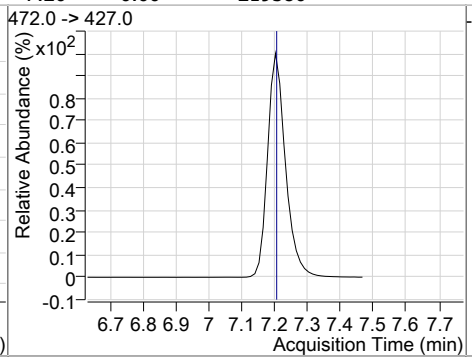


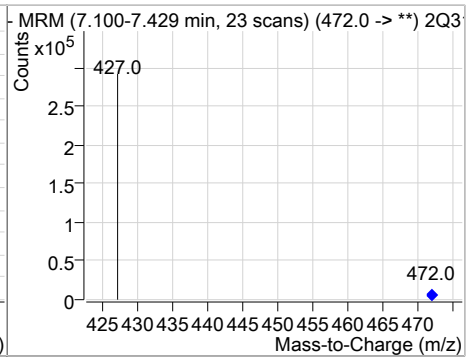


Perfluorinated Compounds by LC/MS/MS

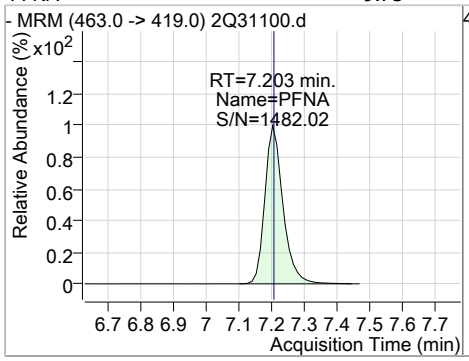
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.21	7.20	0.00	219580				

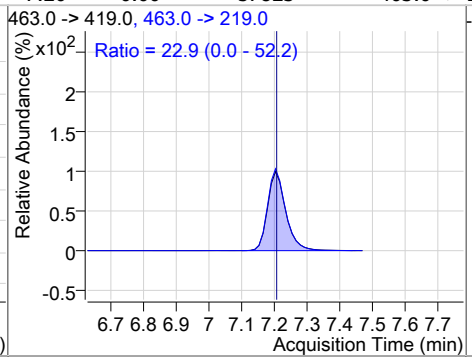


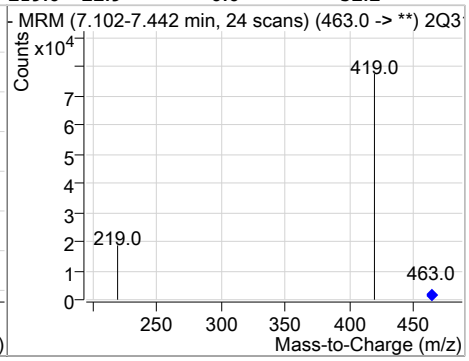




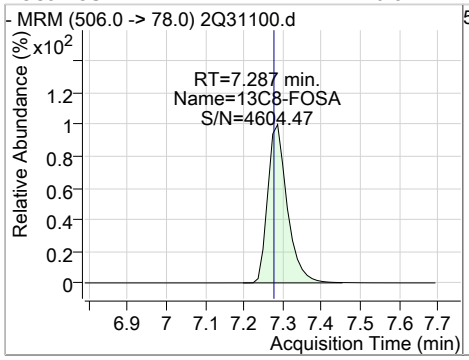
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.73	7.20	0.00	57823	463.0 -> 219.0	22.9	0.0	52.2

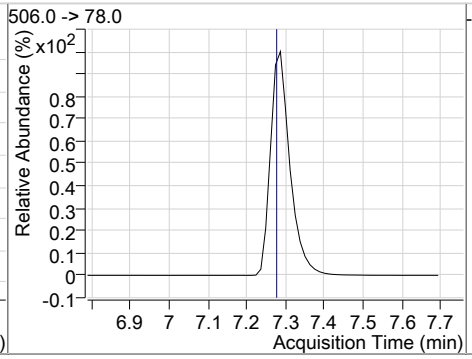


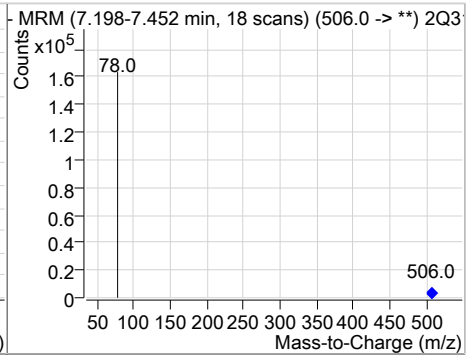




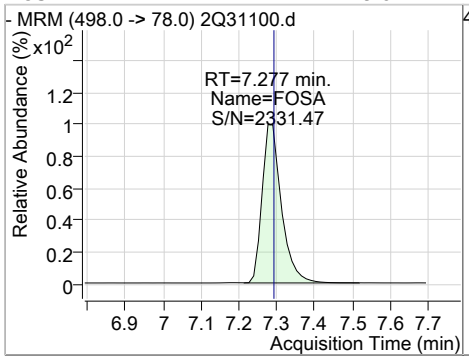
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.81	7.29	0.01	122414				

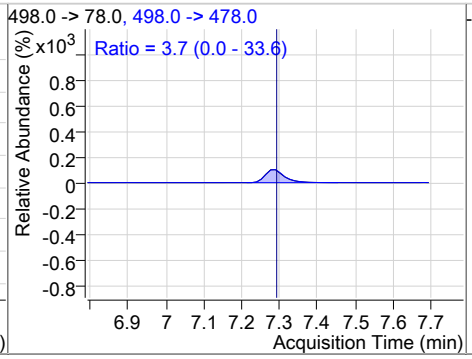


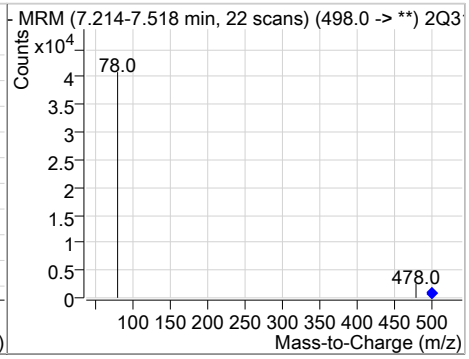




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.84	7.28	0.00	30039	498.0 -> 478.0	3.7	0.0	33.6

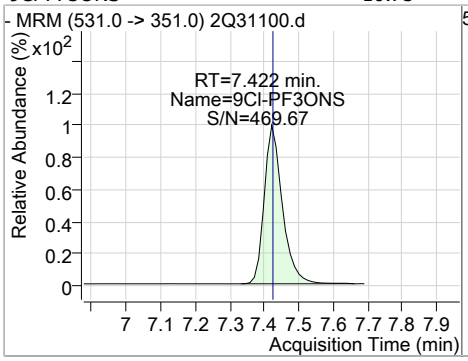


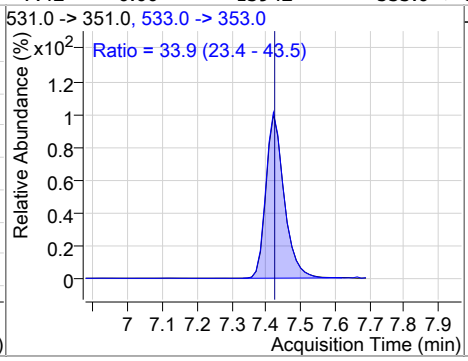


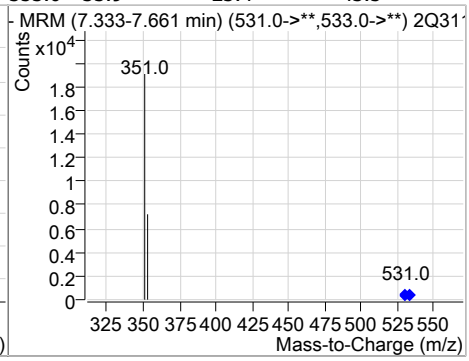


Perfluorinated Compounds by LC/MS/MS

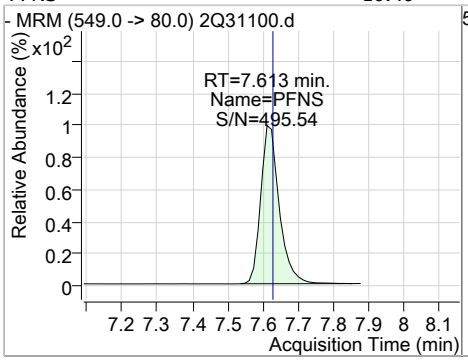
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	10.75	7.42	0.00	13942	533.0 -> 353.0	33.9	23.4	43.5

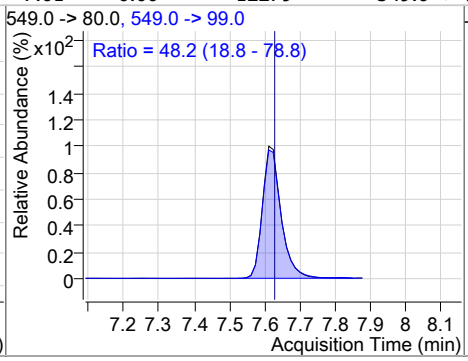


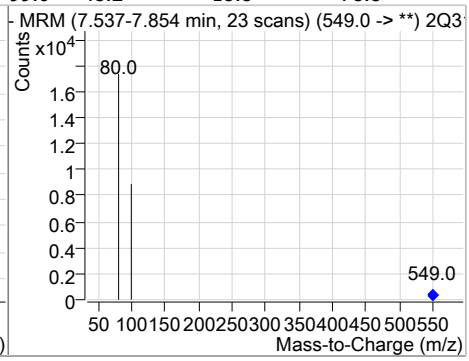




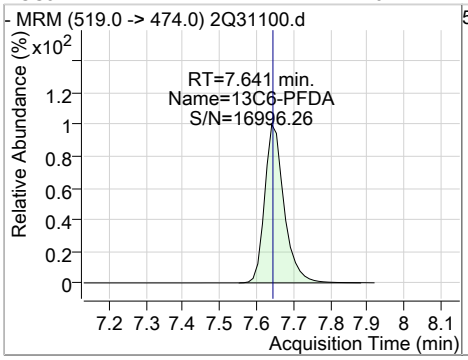
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.40	7.61	0.00	12279	549.0 -> 99.0	48.2	18.8	78.8

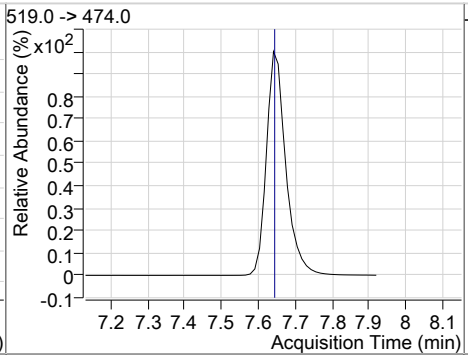


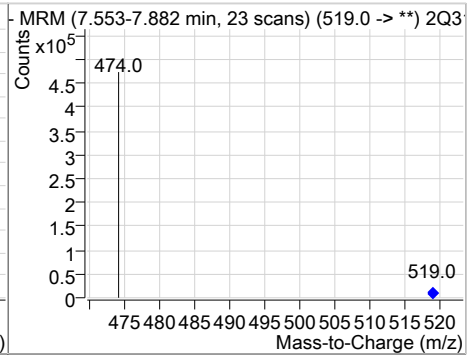




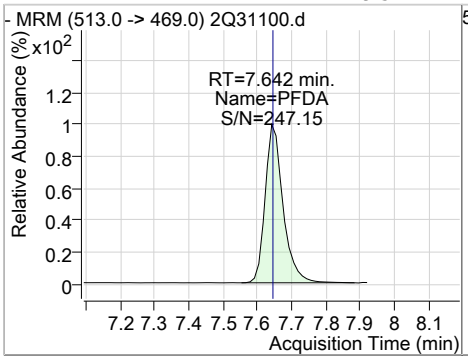
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.47	7.64	0.00	357138				

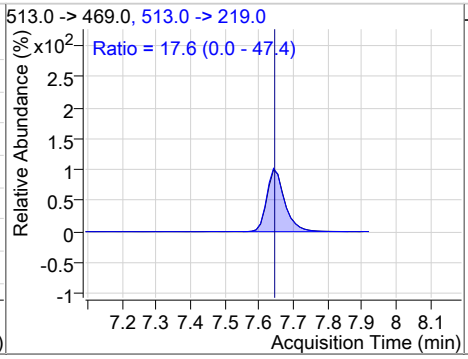


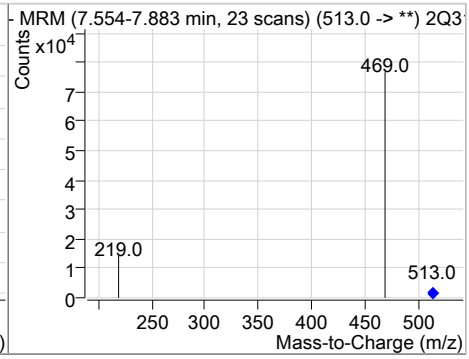




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.57	7.64	0.00	56400	513.0 -> 219.0	17.6	0.0	47.4

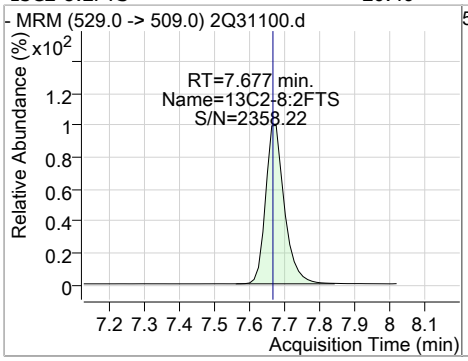


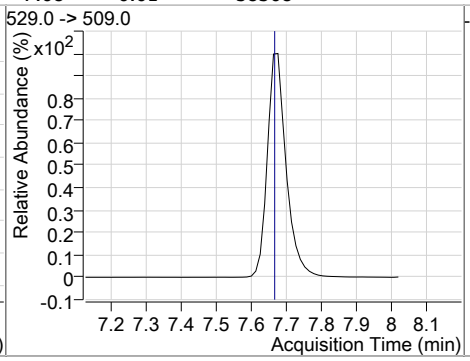


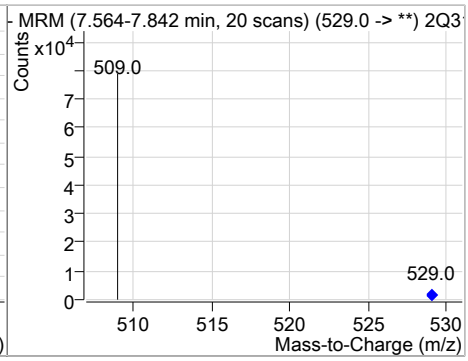


Perfluorinated Compounds by LC/MS/MS

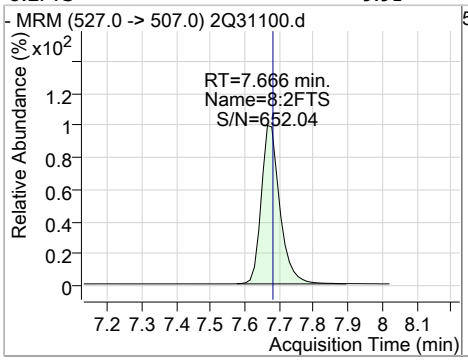
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.46	7.68	0.01	58508				

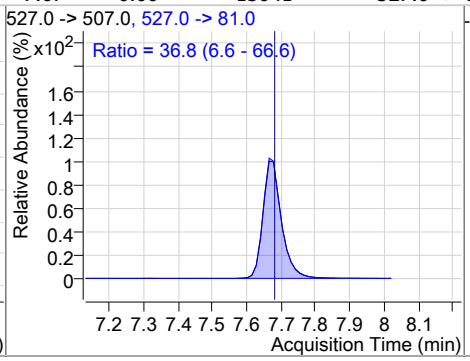


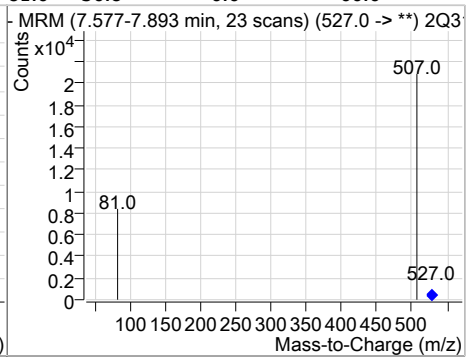




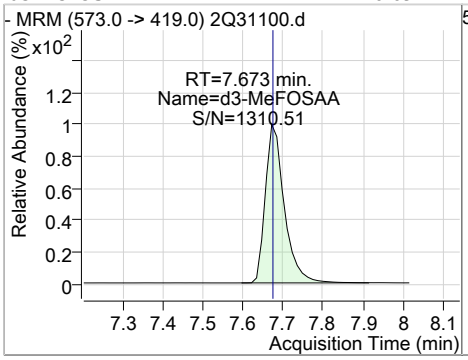
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.91	7.67	0.00	15041	527.0 -> 81.0	36.8	6.6	66.6

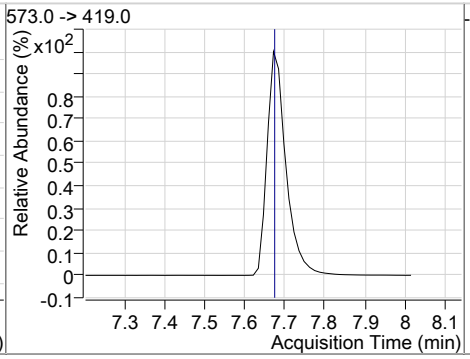


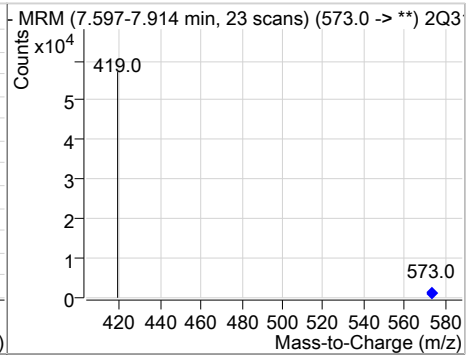




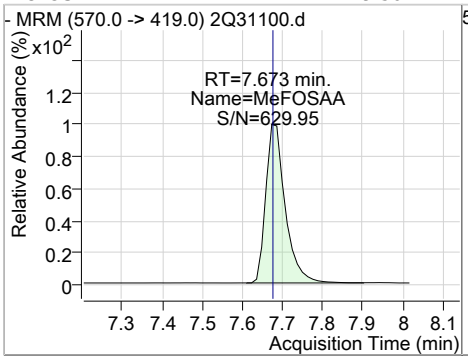
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.09	7.67	0.00	41887				

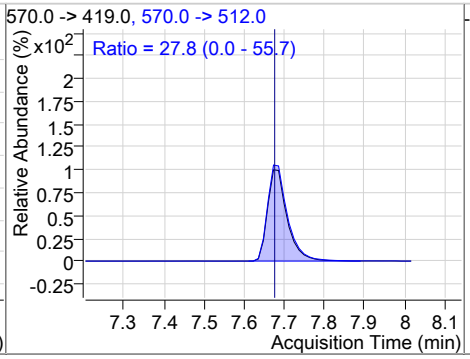


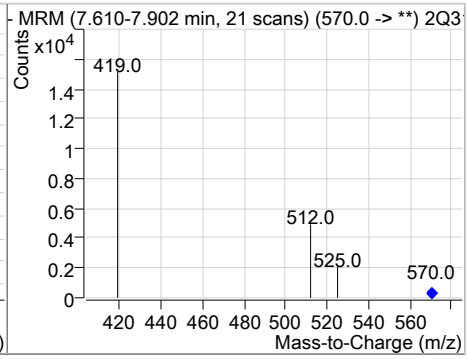




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.56	7.67	0.00	10836	570.0 -> 512.0	27.8	0.0	55.7

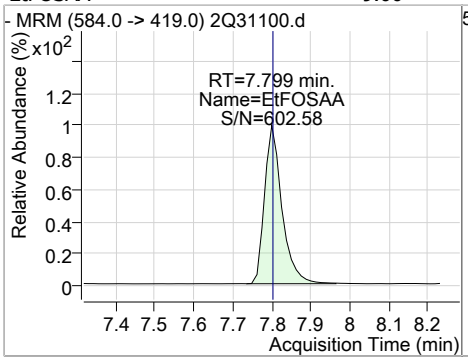


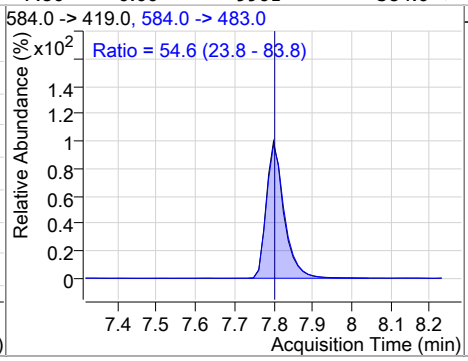


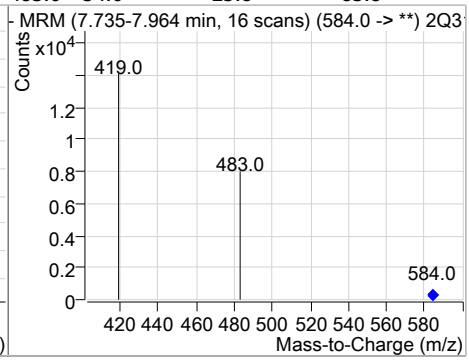


Perfluorinated Compounds by LC/MS/MS

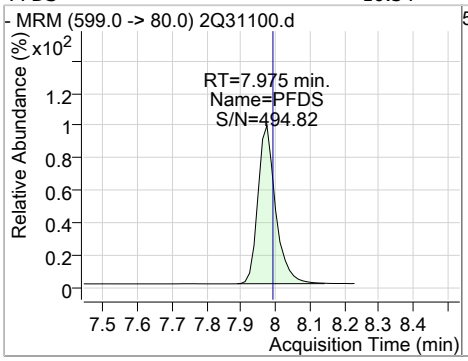
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.66	7.80	0.00	9961	584.0 -> 483.0	54.6	23.8	83.8

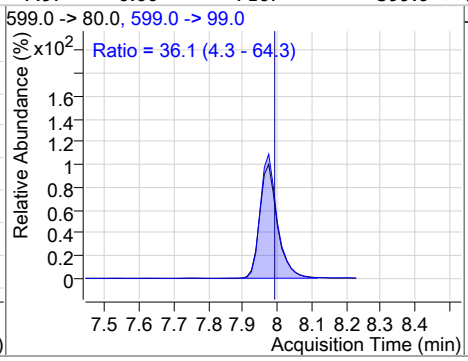


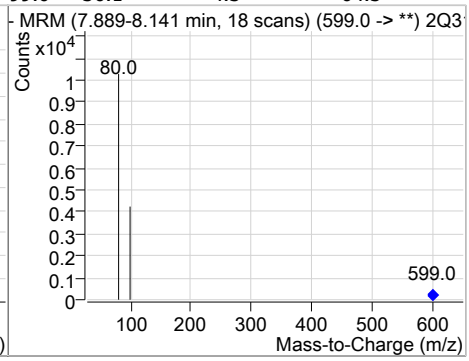




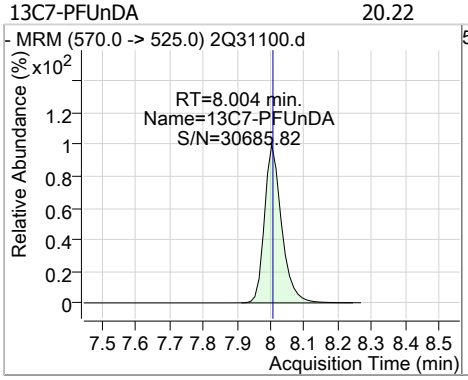
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.34	7.97	0.00	7167	599.0 -> 99.0	36.1	4.3	64.3

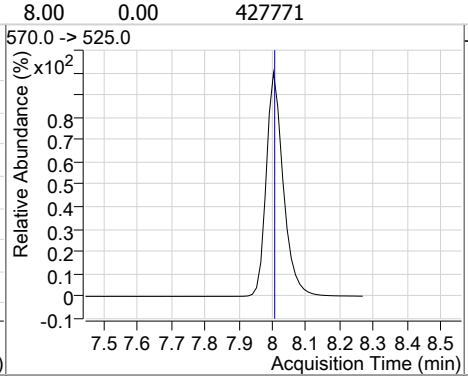


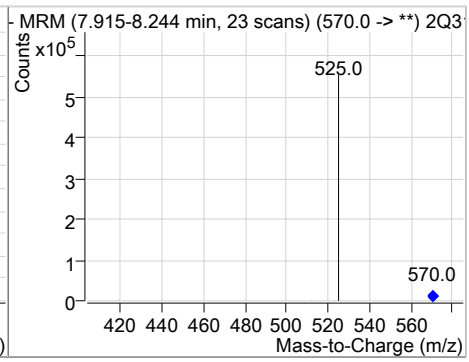




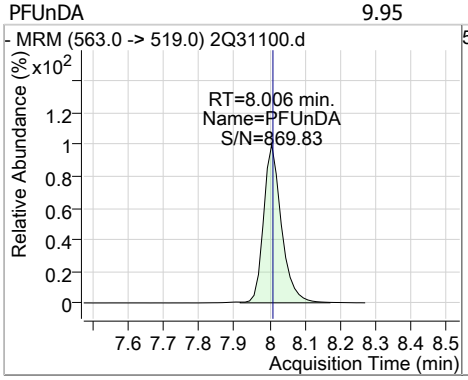
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.22	8.00	0.00	427771				

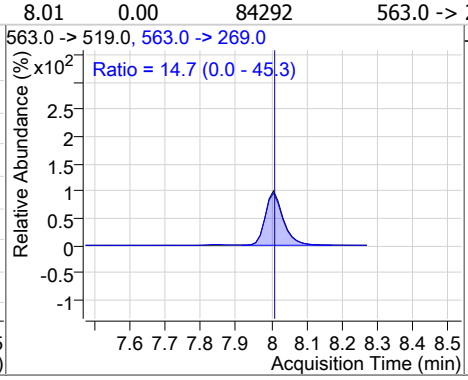


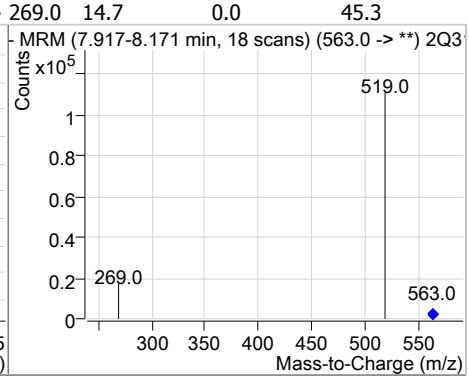




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.95	8.01	0.00	84292	563.0 -> 269.0	14.7	0.0	45.3

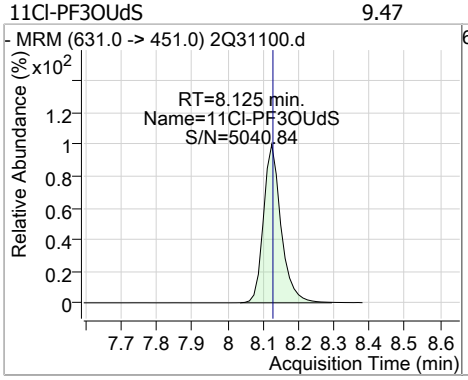


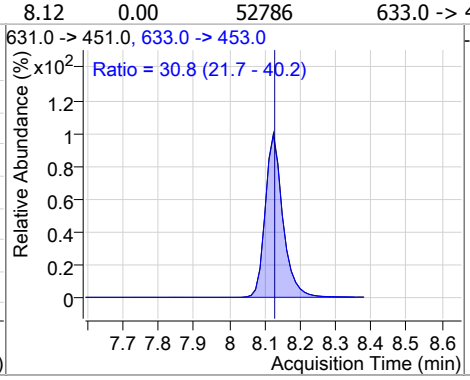


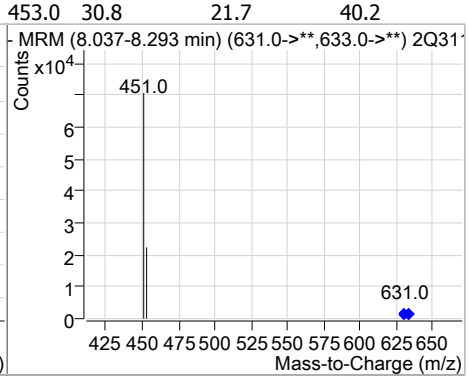


Perfluorinated Compounds by LC/MS/MS

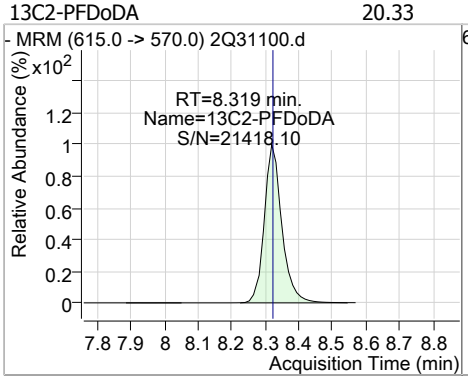
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.47	8.12	0.00	52786	633.0 -> 453.0	30.8	21.7	40.2

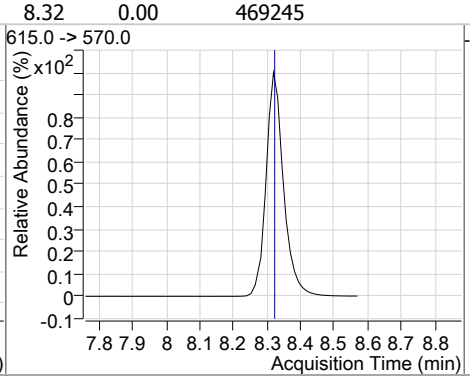


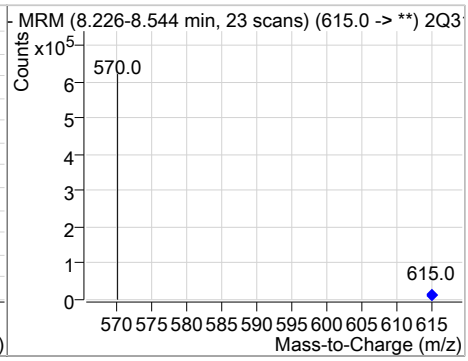




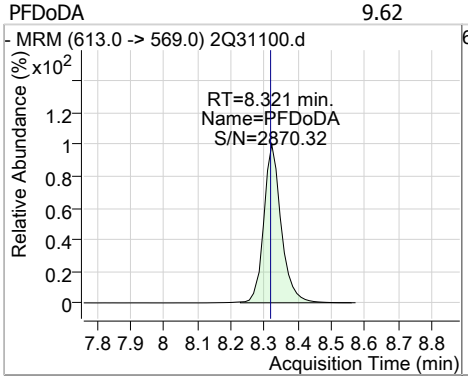
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.33	8.32	0.00	469245				

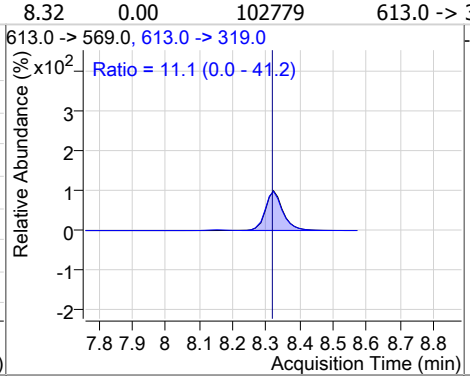


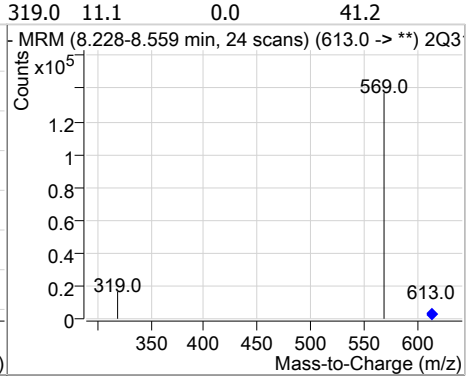




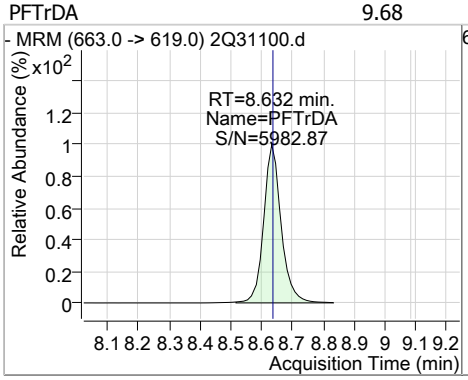
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.62	8.32	0.00	102779	613.0 -> 319.0	11.1	0.0	41.2

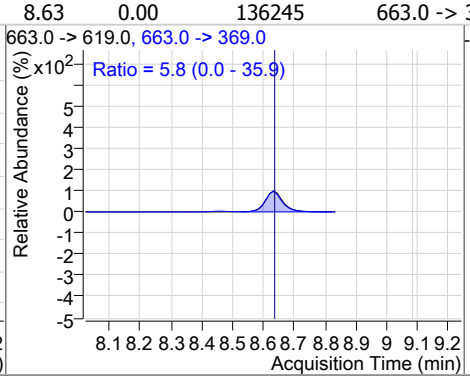


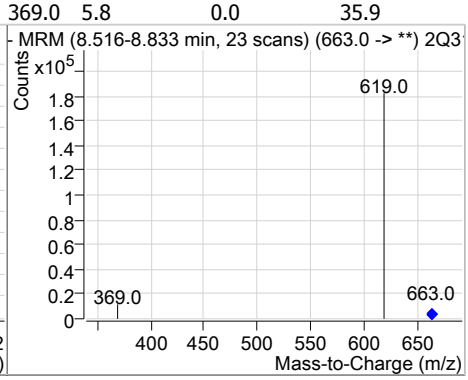




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.68	8.63	0.00	136245	663.0 -> 369.0	5.8	0.0	35.9

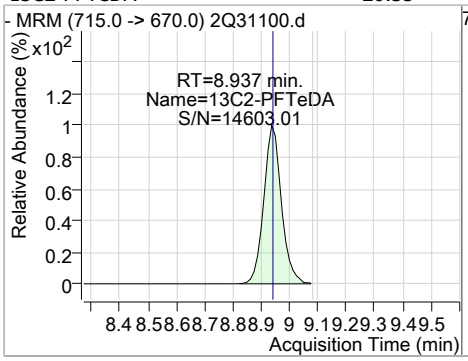


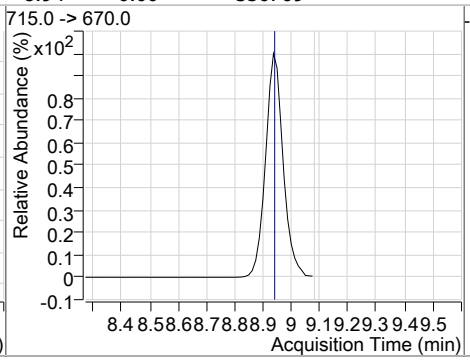


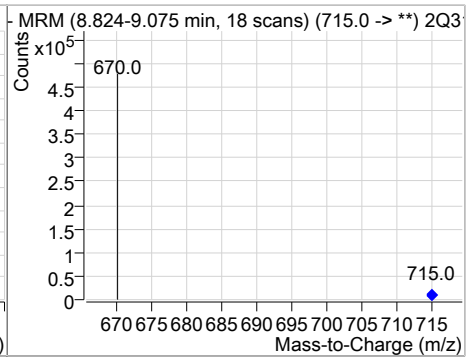


Perfluorinated Compounds by LC/MS/MS

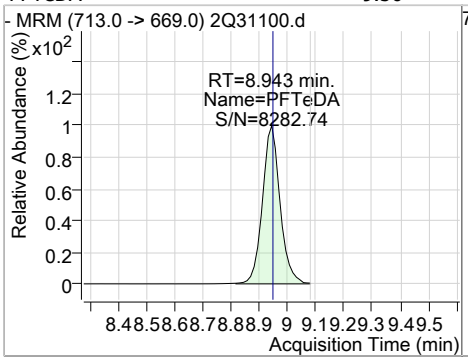
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.35	8.94	0.00	356769				

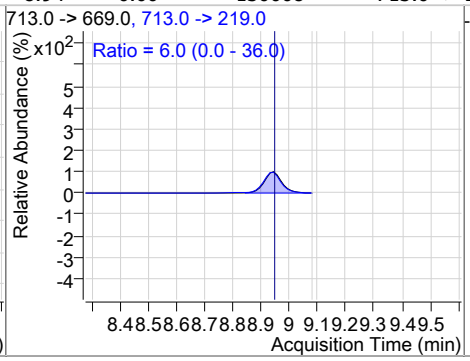


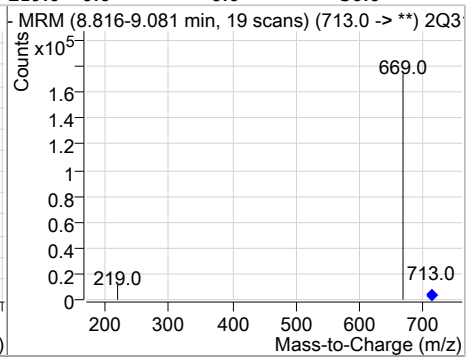




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.56	8.94	0.00	130068	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31100.D
Injection Time: 06/21/19 11:11

Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.19	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31101.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 11:26:06 AM
Sample Name : icc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

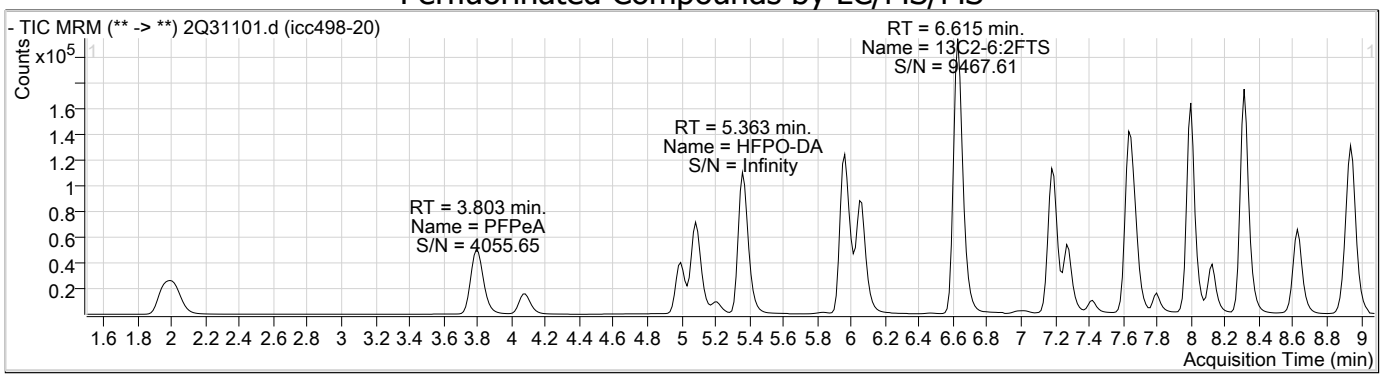
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	292522	20.00	µg/L	0.000
13C4-PFOS	7.174	503.0 -> 80.0	56227	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	188364	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	146150	20.00	µg/L	0.000
M5-PFHxA	5.089	318.0 -> 273.0	220380	20.00	µg/L	0.000
M4-PFHpA	5.968	367.0 -> 322.0	250937	20.00	µg/L	0.000
M8-PFOA	6.635	421.0 -> 376.0	234646	20.00	µg/L	0.000
M9-PFNA	7.202	472.0 -> 427.0	200795	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	323131	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	394731	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	427393	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	324166	20.00	µg/L	0.000
M8-FOSA	7.274	506.0 -> 78.0	110408	20.00	µg/L	0.000
M3-PFBS	4.080	302.0 -> 99.0	27606	20.00	µg/L	0.000
M3-PFHxS	5.998	402.0 -> 99.0	23394	20.00	µg/L	0.000
M8-PFOS	7.172	507.0 -> 99.0	35457	20.00	µg/L	0.000
M2-4:2FTS	4.997	329.0 -> 309.0	93159	20.00	µg/L	0.000
M2-6:2FTS	6.615	429.0 -> 409.0	75303	20.00	µg/L	0.000
M2-8:2FTS	7.665	529.0 -> 509.0	55158	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	38694	20.00	µg/L	0.000
M3-HFPO-DA	5.365	287.0 -> 169.0	205840	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	93170	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-6:2FTS	6.615	429.0 -> 409.0	75320	18.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-8:2FTS	7.665	529.0 -> 509.0	55112	19.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-PFDoDA	8.319	615.0 -> 570.0	427442	18.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-PFTeDA	8.937	715.0 -> 670.0	324146	18.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C3-PFBS	4.080	302.0 -> 99.0	27605	18.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C3-PFHxS	5.998	402.0 -> 99.0	23402	18.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C4-PFBA	1.990	217.0 -> 172.0	187061	18.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%		
13C4-PFHpA	5.968	367.0 -> 322.0	250864	18.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C5-PFHxA	5.089	318.0 -> 273.0	220372	18.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C5-PFPeA	3.799	268.0 -> 223.0	146145	18.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C6-PFDA	7.641	519.0 -> 474.0	323184	18.53	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

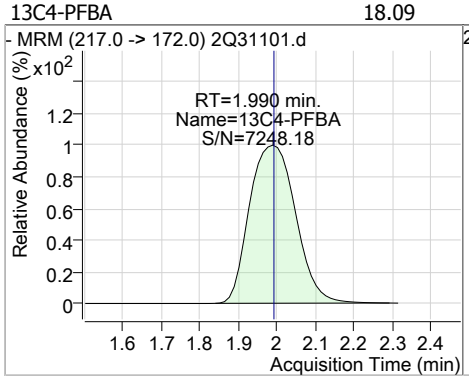
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%			
13C7-PFUnDA	8.004	570.0 -> 525.0	394805	18.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C8-FOSA	7.274	506.0 -> 78.0	110416	18.77	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C8-PFOA	6.635	421.0 -> 376.0	234607	18.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-PFOS	7.172	507.0 -> 99.0	35457	18.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C9-PFNA	7.202	472.0 -> 427.0	200507	18.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
d3-MeFOSAA	7.673	573.0 -> 419.0	38742	18.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
M2-PFOA	6.636	415.0 -> 370.0	292571	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.174	503.0 -> 80.0	56236	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.365	287.0 -> 169.0	205840	84.34	µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 84.3%			
Target Compounds							**QValue**
4:2FTS	4.999	327.0 -> 307.0	53430	20.13	µg/L		100
6:2FTS	6.617	427.0 -> 407.0	38355	19.14	µg/L		100
8:2FTS	7.666	527.0 -> 507.0	28358	19.81	µg/L		100
EtFOSAA	7.799	584.0 -> 419.0	18520	19.42	µg/L		100
FOSA	7.277	498.0 -> 78.0	54543	19.81	µg/L		100
MeFOSAA	7.673	570.0 -> 419.0	20186	19.25	µg/L		100
PFBA	1.998	213.0 -> 169.0	31521	19.56	µg/L		100
PFBS	4.073	299.0 -> 80.0	37083	19.57	µg/L		100
PFDA	7.642	513.0 -> 469.0	103656	19.43	µg/L		100
PFDoDA	8.321	613.0 -> 569.0	188020	19.33	µg/L		100
PFDS	7.975	599.0 -> 80.0	13259	20.46	µg/L		100
PFHpA	5.970	363.0 -> 319.0	215353	19.55	µg/L		100
PFHpS	6.644	449.0 -> 80.0	27999	21.31	µg/L		100
PFHxA	5.091	313.0 -> 269.0	63486	19.59	µg/L		100
PFHxS	6.000	399.0 -> 80.0	32185	19.27	µg/L	m	97
PFNA	7.203	463.0 -> 419.0	106202	19.56	µg/L		100
PFNS	7.613	549.0 -> 80.0	22292	20.20	µg/L		100
PFOA	6.637	413.0 -> 369.0	132884	19.63	µg/L		100
PFOS	7.175	499.0 -> 80.0	32869	18.74	µg/L	m	82
PFPeA	3.803	263.0 -> 219.0	119124	19.58	µg/L		100
PFPeS	5.208	349.0 -> 80.0	24460	20.13	µg/L		100
PFTeDA	8.943	713.0 -> 669.0	236178	19.11	µg/L		100
PFTrDA	8.632	663.0 -> 619.0	248886	19.45	µg/L		100
PFUnDA	8.006	563.0 -> 519.0	150244	19.23	µg/L		100
11Cl-PF3OUdS	8.125	631.0 -> 451.0	97885	19.28	µg/L		100
9Cl-PF3ONS	7.422	531.0 -> 351.0	25208	20.79	µg/L		100
ADONA	6.066	377.0 -> 251.0	262688	17.12	µg/L		100
HFPO-DA	5.363	329.0 -> 169.0	194091	112.44	µg/L		100

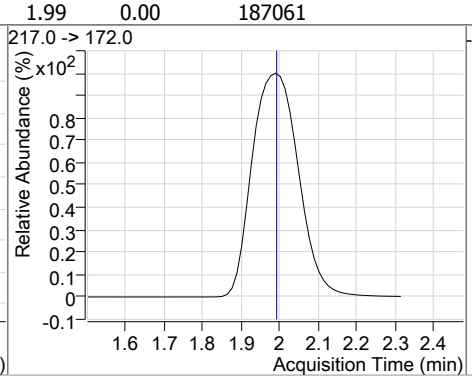
= Qualifier out of range, m = manually integrated, + = Area summed

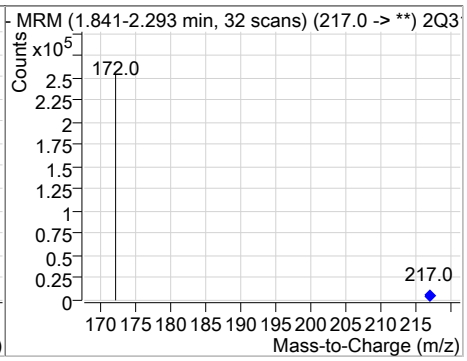
Perfluorinated Compounds by LC/MS/MS



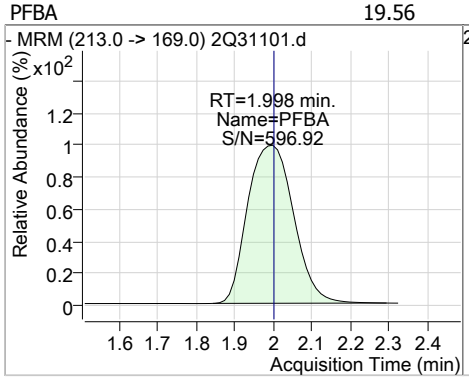
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.09	1.99	0.00	187061				

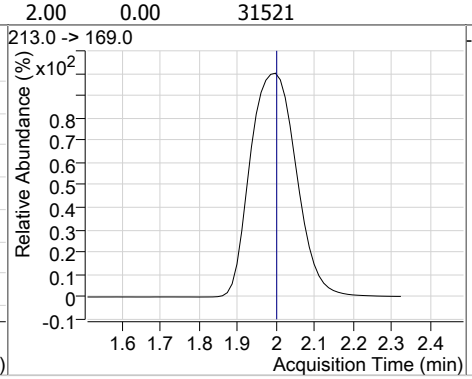


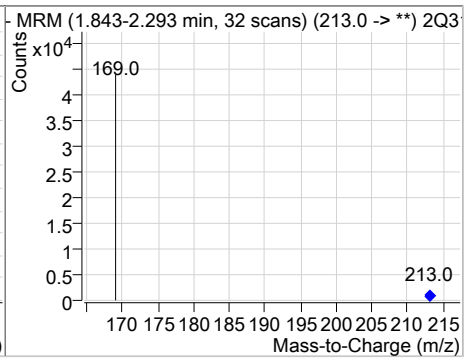




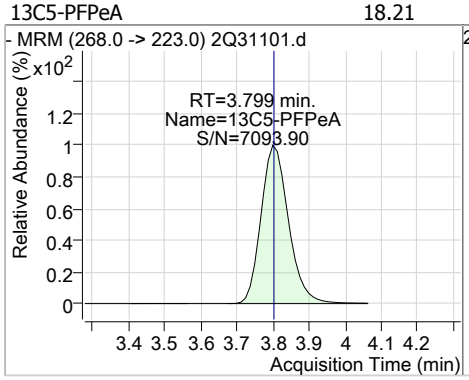
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.56	2.00	0.00	31521				

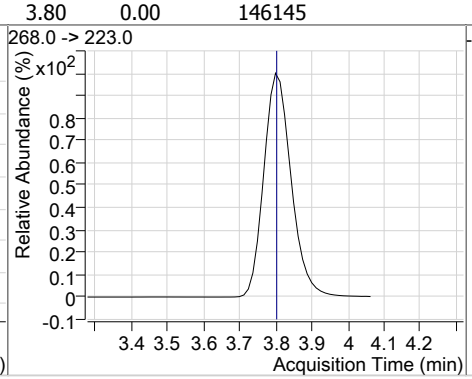


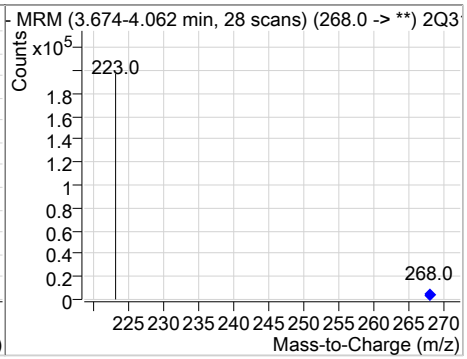




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.21	3.80	0.00	146145				

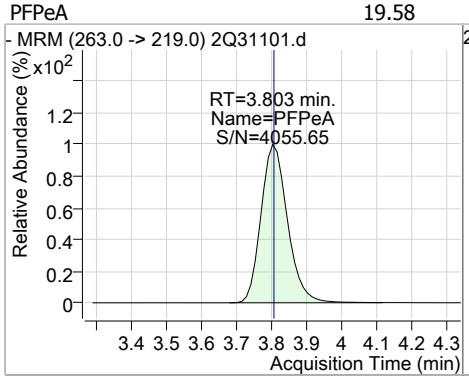


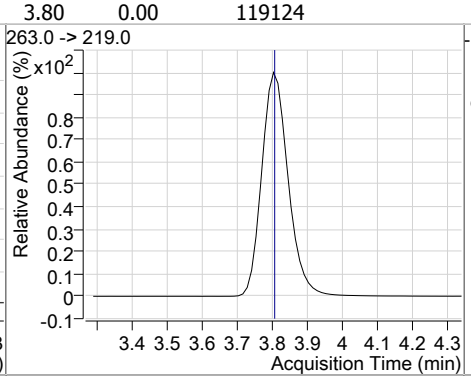


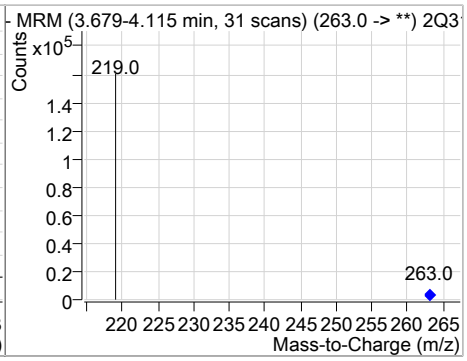


Perfluorinated Compounds by LC/MS/MS

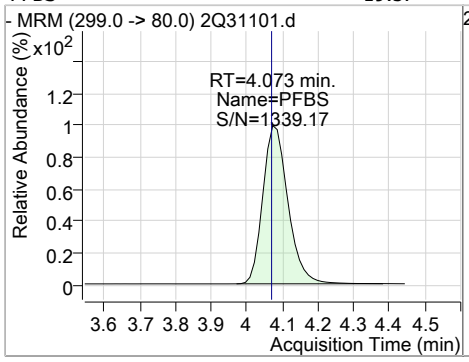
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.58	3.80	0.00	119124				

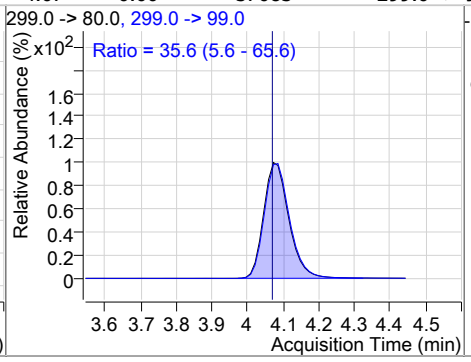


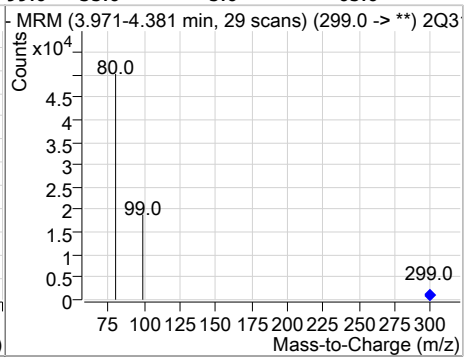




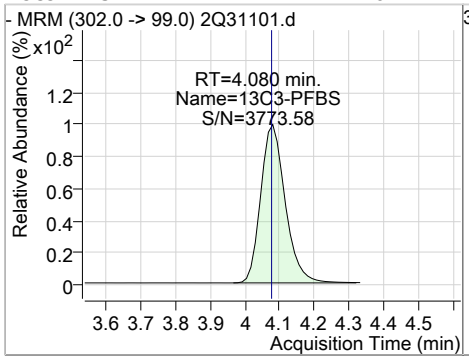
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.57	4.07	0.00	37083	299.0 -> 99.0	35.6	5.6	65.6

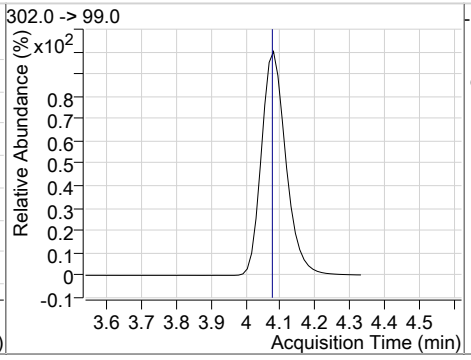


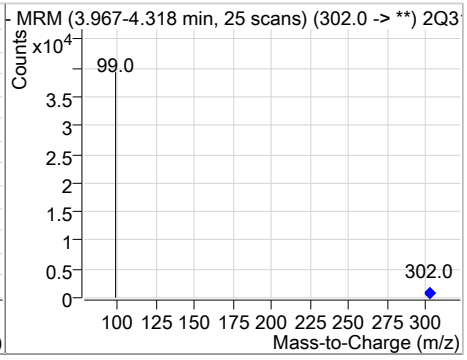




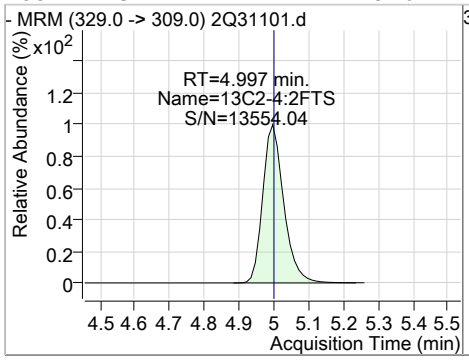
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.17	4.08	0.00	27605				

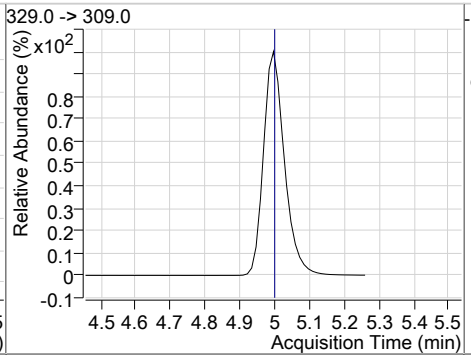


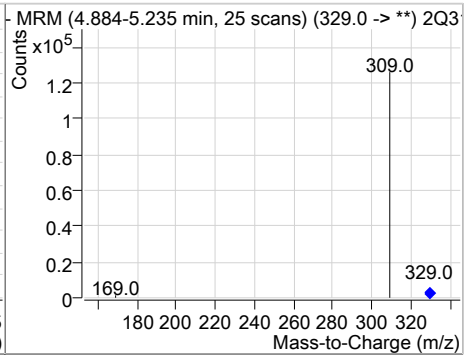




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.20	5.00	0.00	93170				

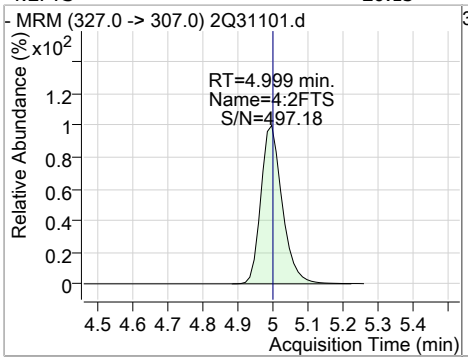


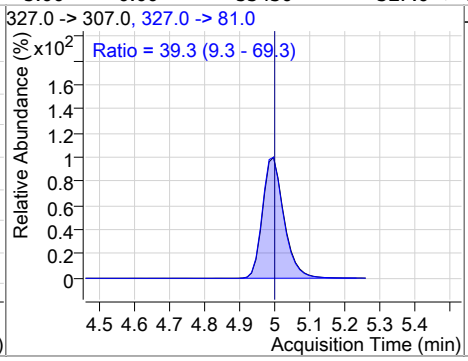


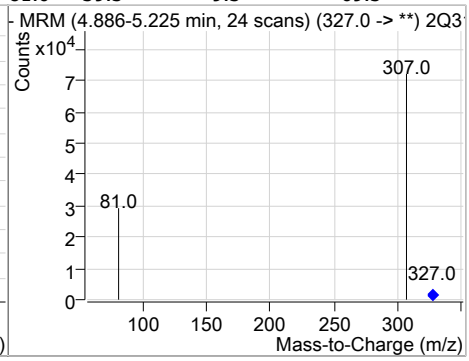


Perfluorinated Compounds by LC/MS/MS

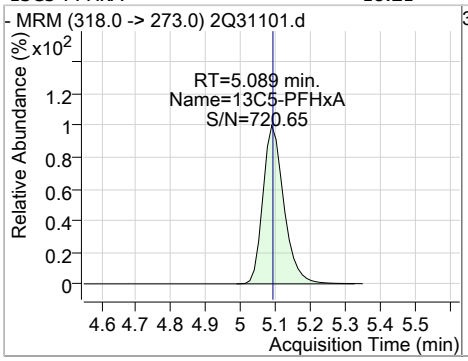
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.13	5.00	0.00	53430	327.0 -> 81.0	39.3	9.3	69.3

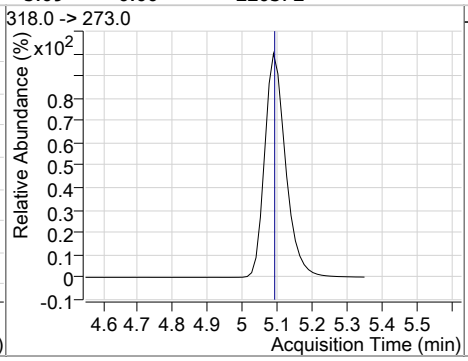


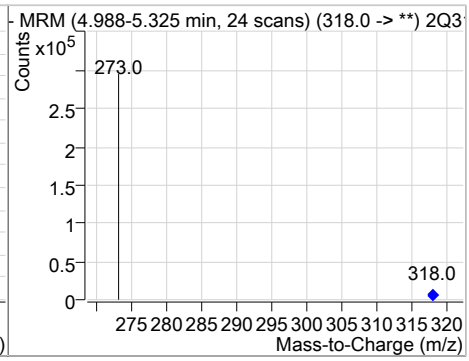




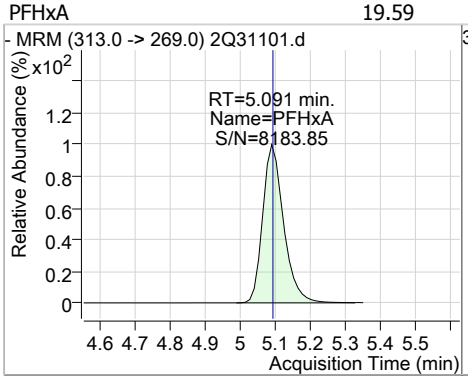
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.21	5.09	0.00	220372				

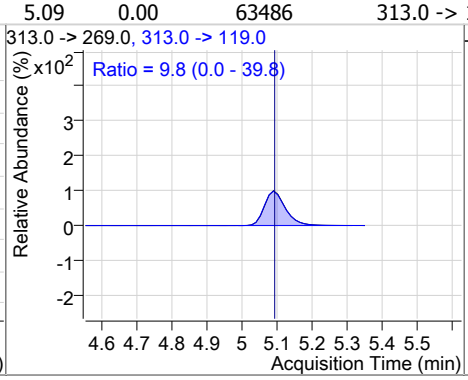


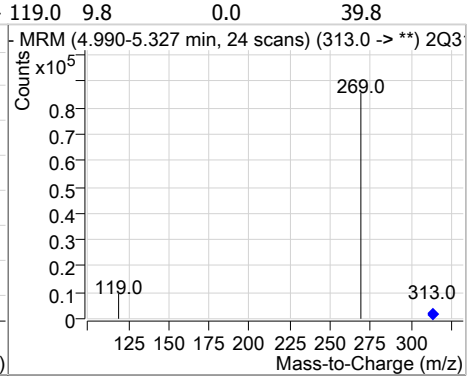




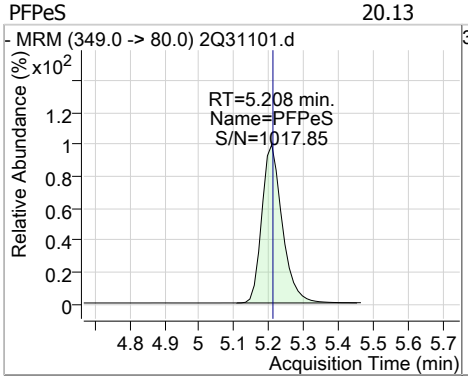
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.59	5.09	0.00	63486	313.0 -> 119.0	9.8	0.0	39.8

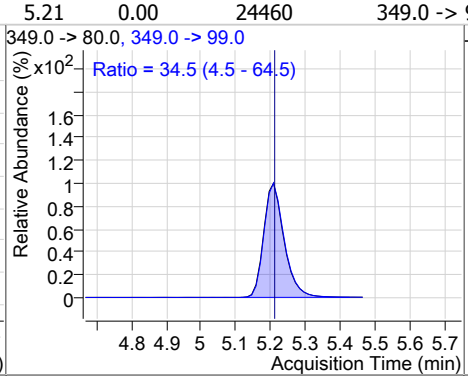


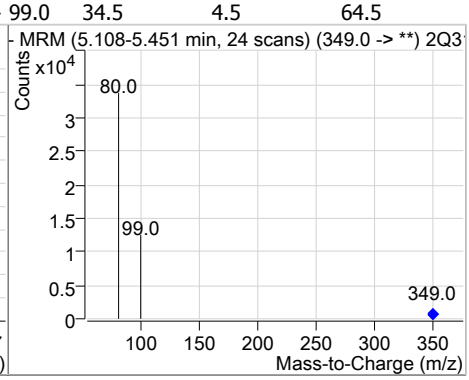




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.13	5.21	0.00	24460	349.0 -> 99.0	34.5	4.5	64.5

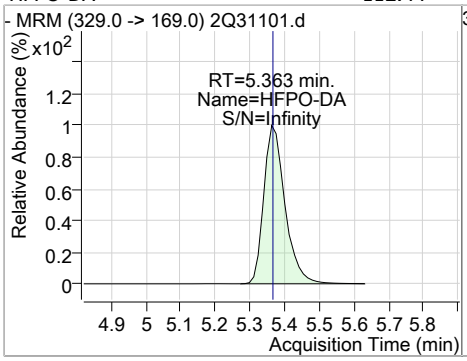


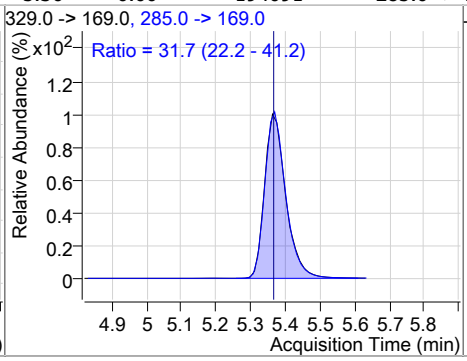


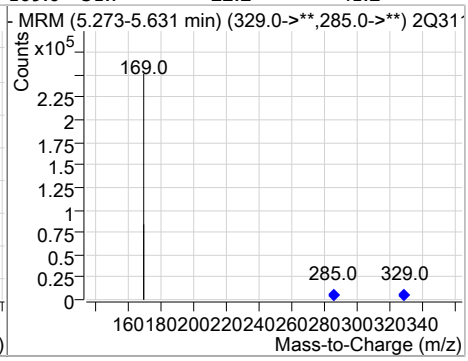


Perfluorinated Compounds by LC/MS/MS

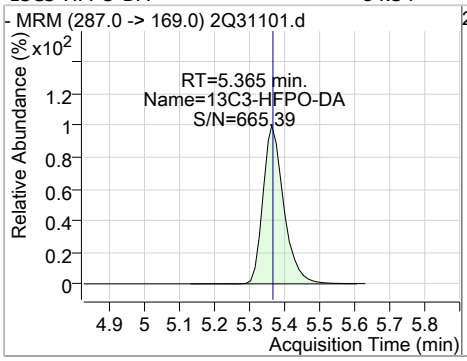
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	112.44	5.36	0.00	194091	285.0 -> 169.0	31.7	22.2	41.2

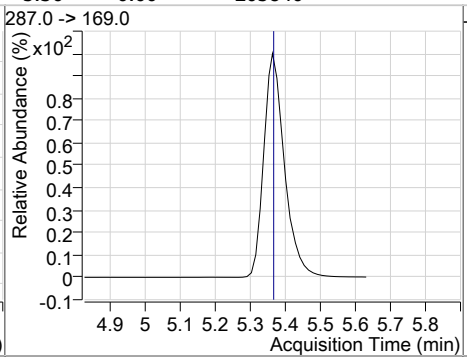


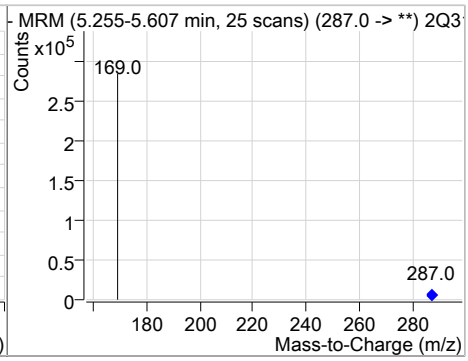




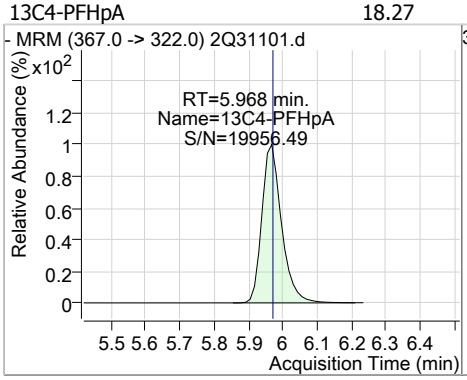
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	84.34	5.36	0.00	205840				

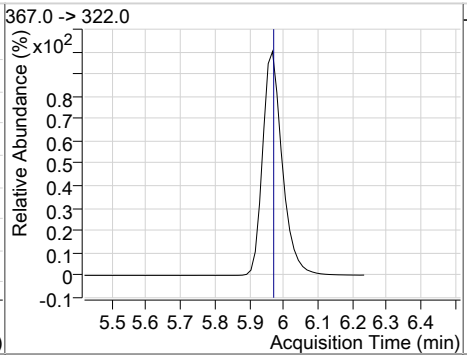


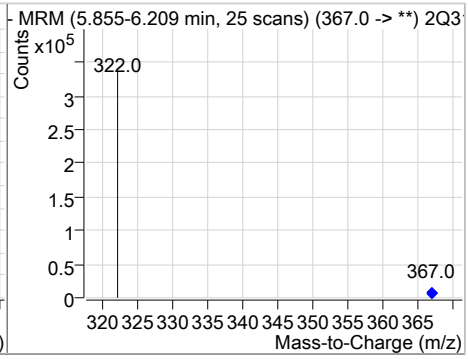




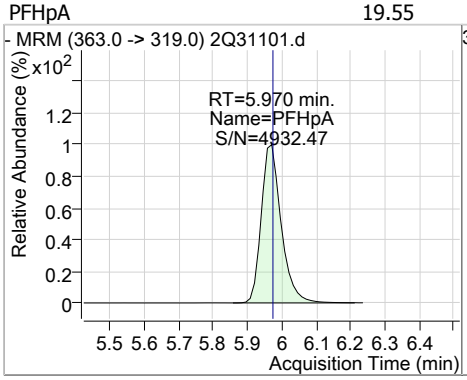
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.27	5.97	0.00	250864				

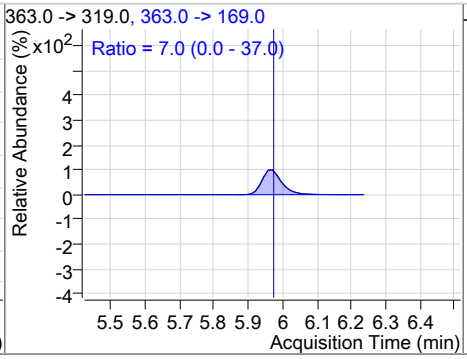


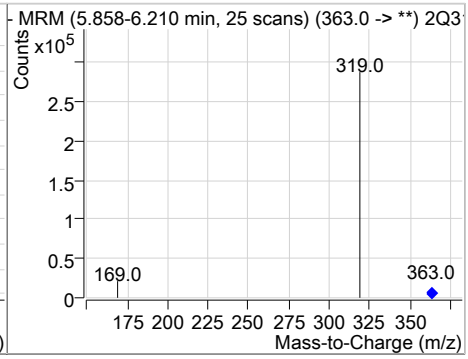




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.55	5.97	0.00	215353	363.0 -> 169.0	7.0	0.0	37.0

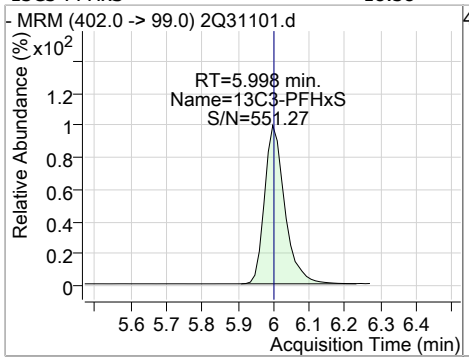


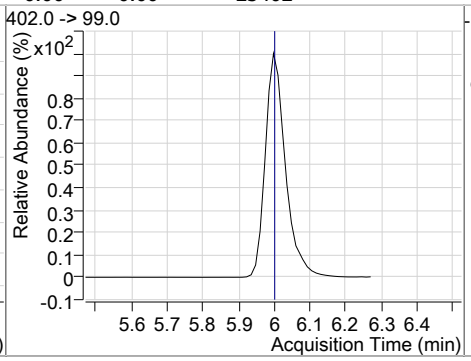


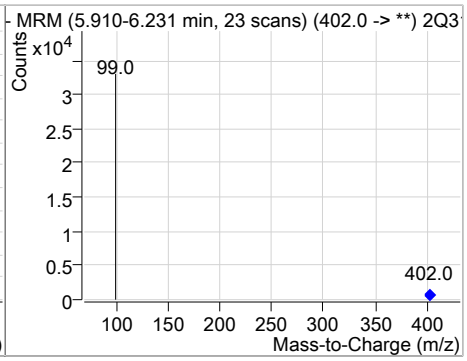


Perfluorinated Compounds by LC/MS/MS

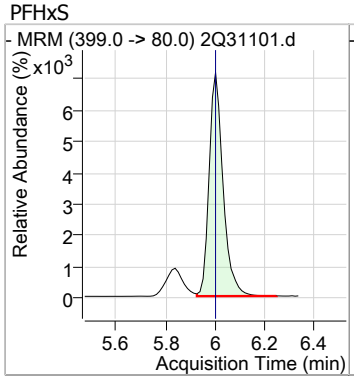
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.38	6.00	0.00	23402				

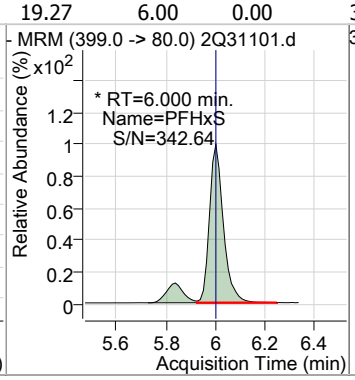


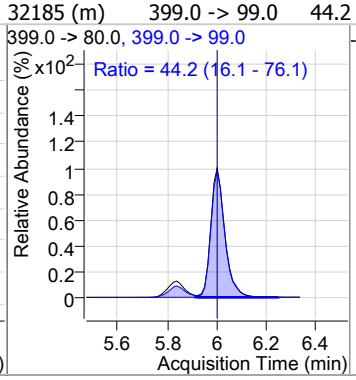


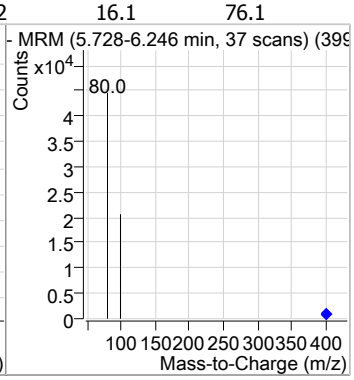


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.27	6.00	0.00	32185 (m)	399.0 -> 99.0	44.2	16.1	76.1

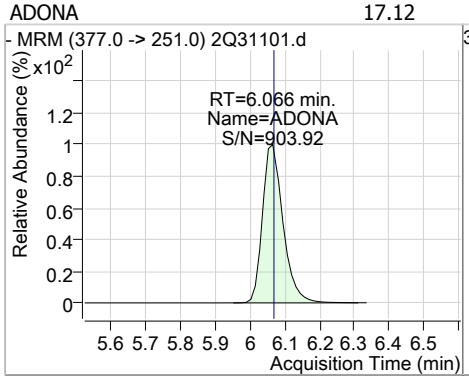


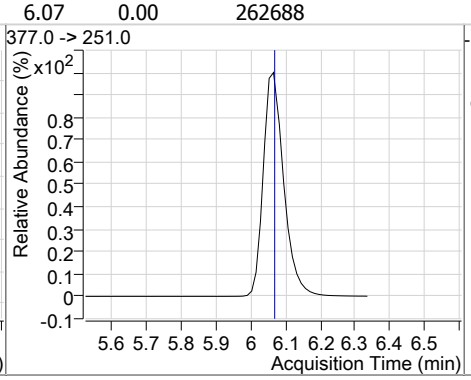


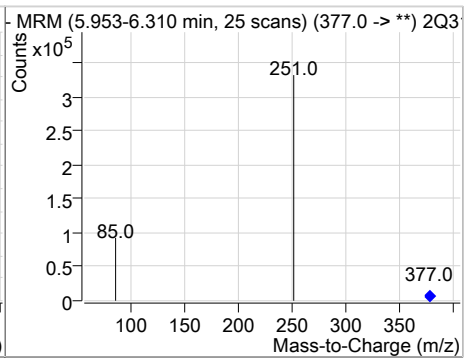




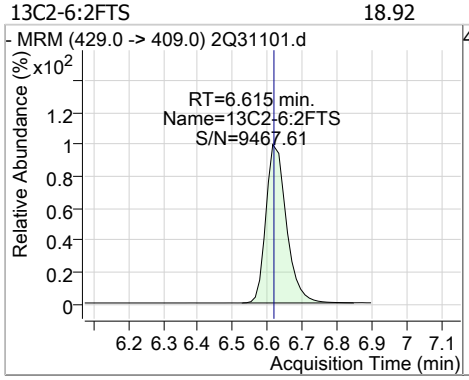
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.12	6.07	0.00	262688				

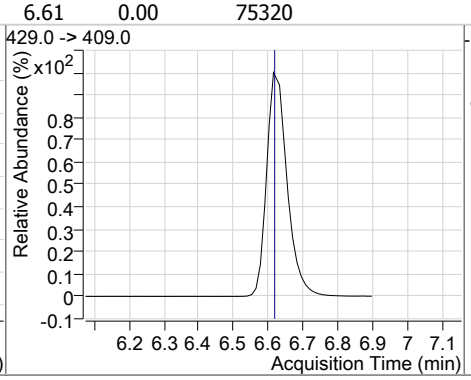


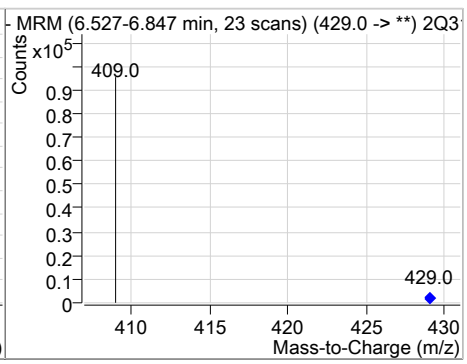




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.92	6.61	0.00	75320				

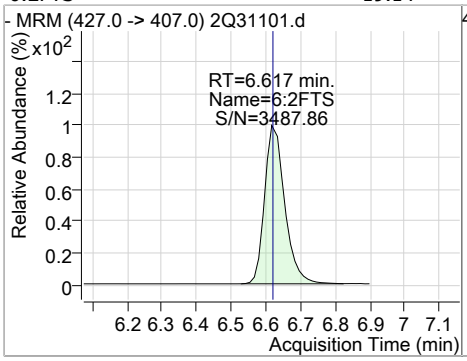


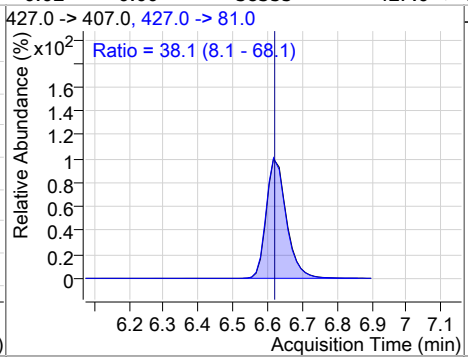


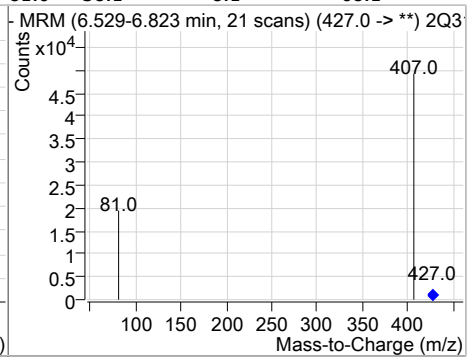


Perfluorinated Compounds by LC/MS/MS

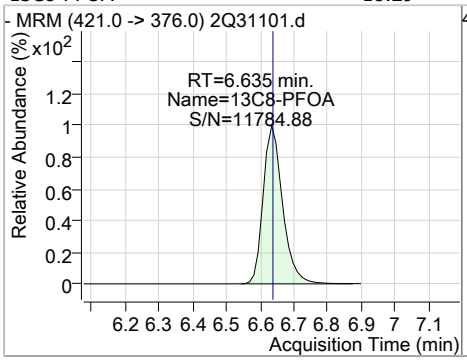
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.14	6.62	0.00	38355	427.0 -> 81.0	38.1	8.1	68.1

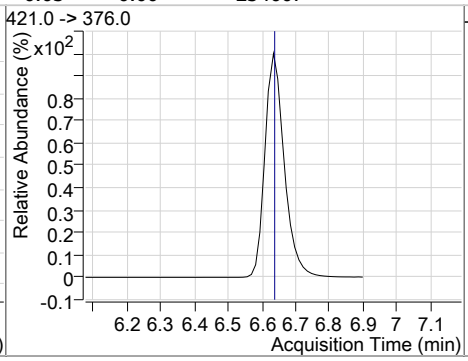


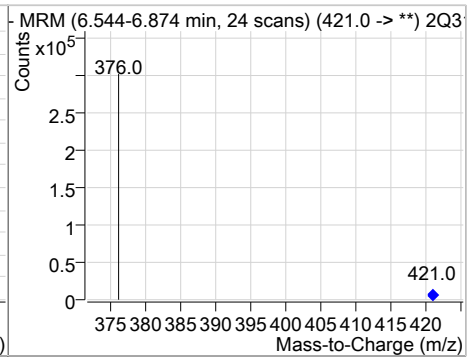




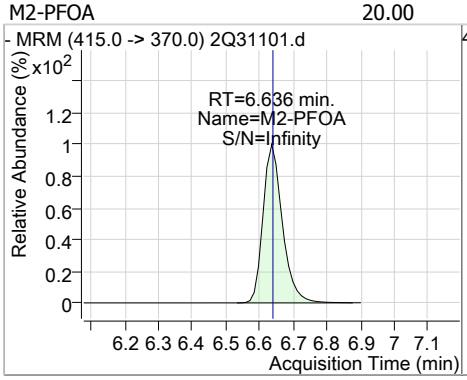
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.29	6.63	0.00	234607				

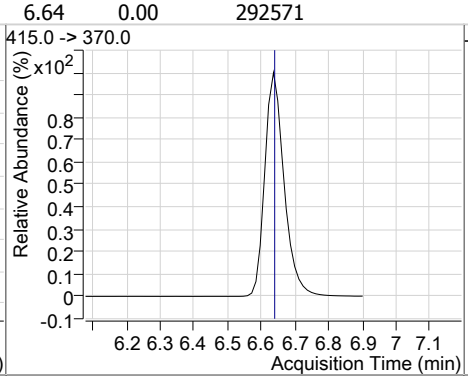


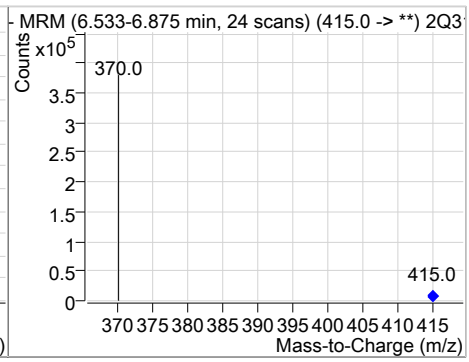




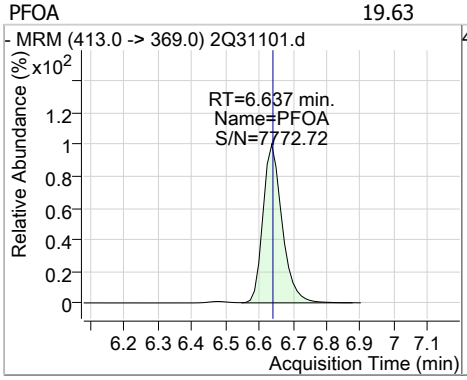
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.64	0.00	292571				

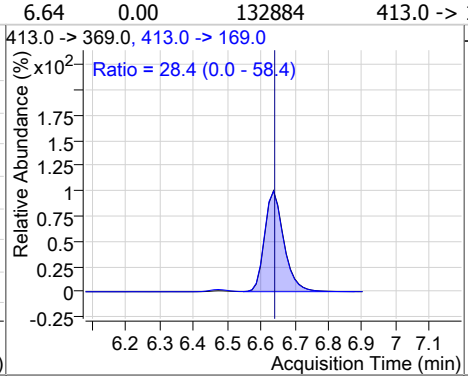


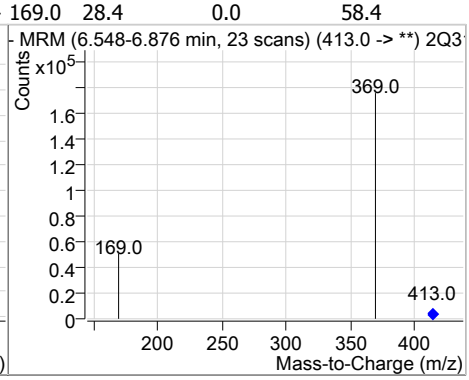




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.63	6.64	0.00	132884	413.0 -> 169.0	28.4	0.0	58.4

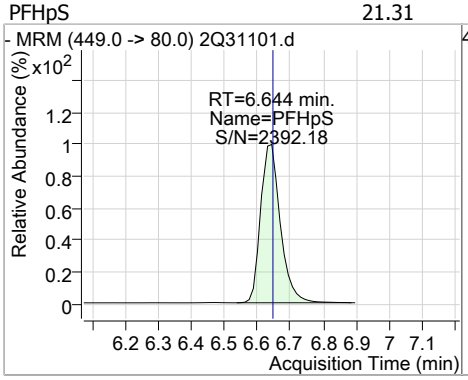


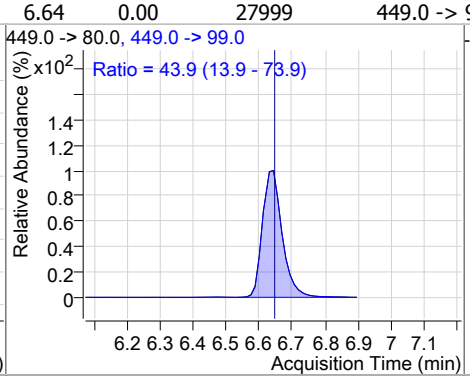


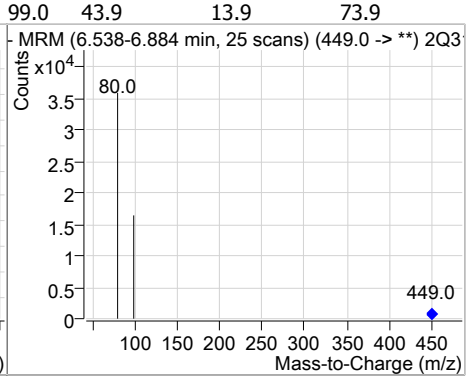


Perfluorinated Compounds by LC/MS/MS

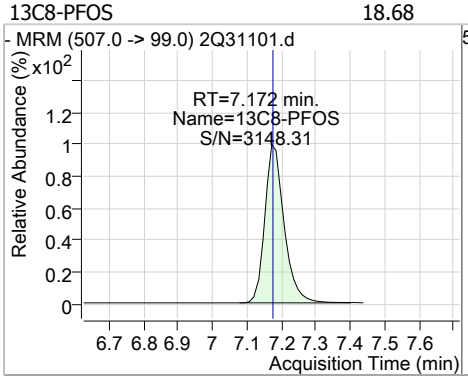
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.31	6.64	0.00	27999	449.0 -> 99.0	43.9	13.9	73.9

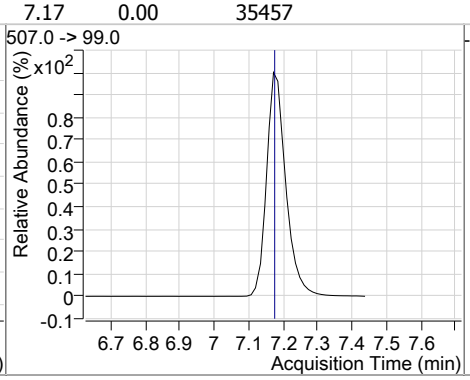


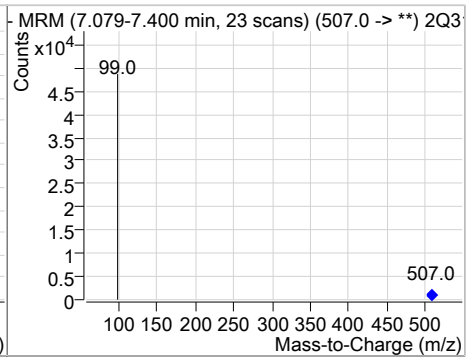




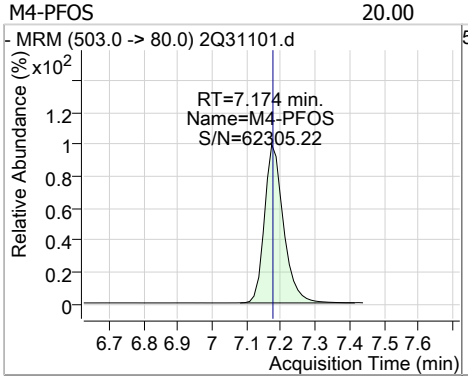
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.68	7.17	0.00	35457				

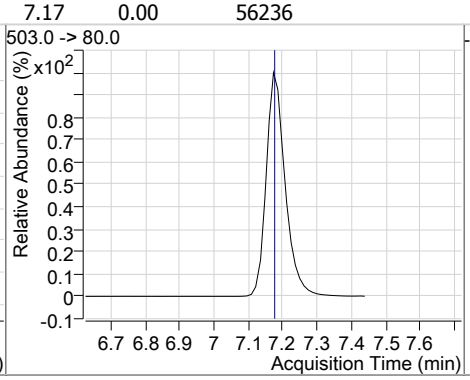


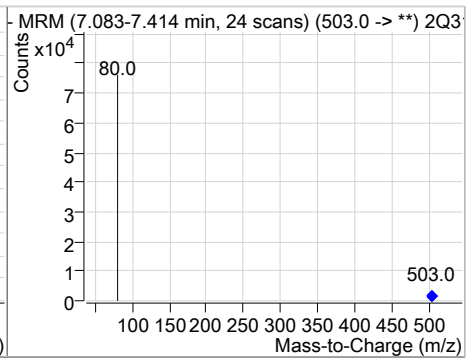




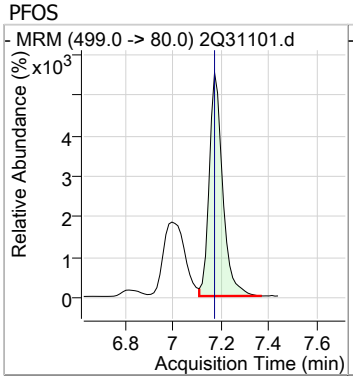
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.17	0.00	56236				

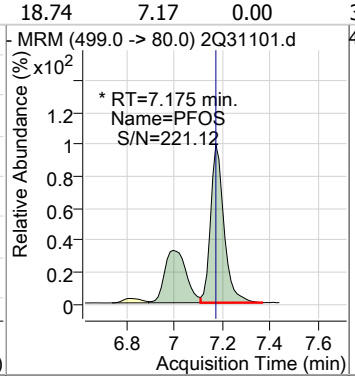


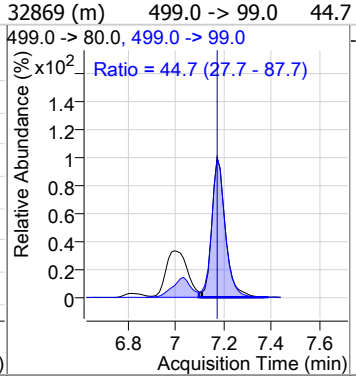


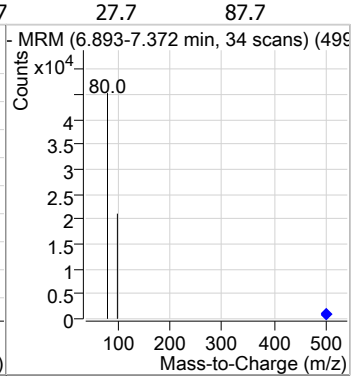


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.74	7.17	0.00	32869 (m)	499.0 -> 99.0	44.7	27.7	87.7



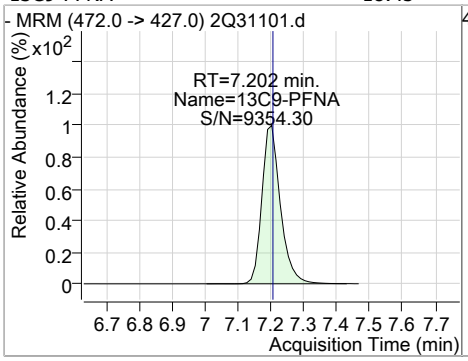


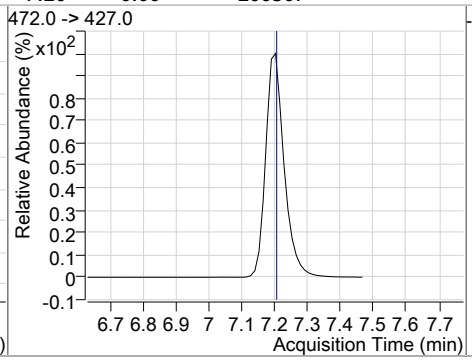


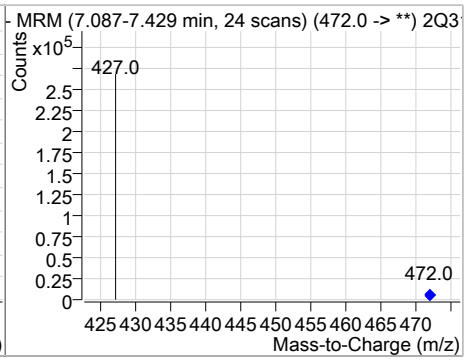


Perfluorinated Compounds by LC/MS/MS

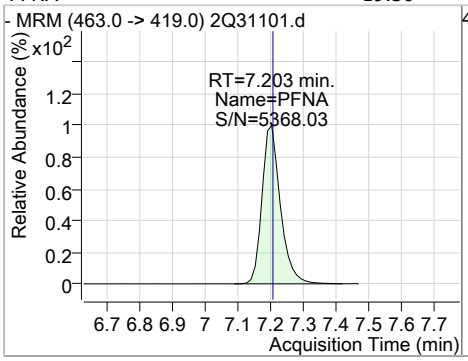
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.45	7.20	0.00	200507				

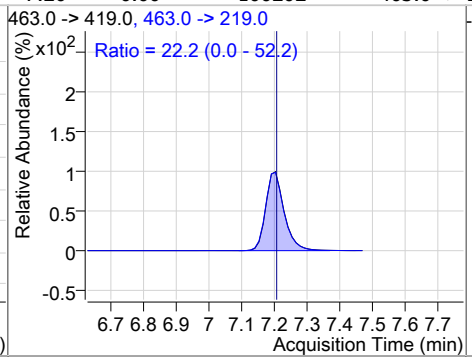


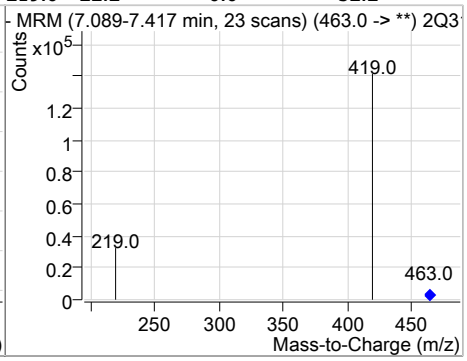




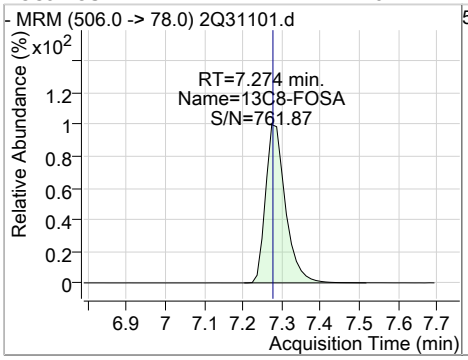
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.56	7.20	0.00	106202	463.0 -> 219.0	22.2	0.0	52.2

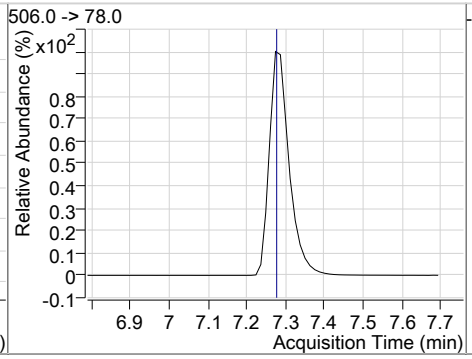


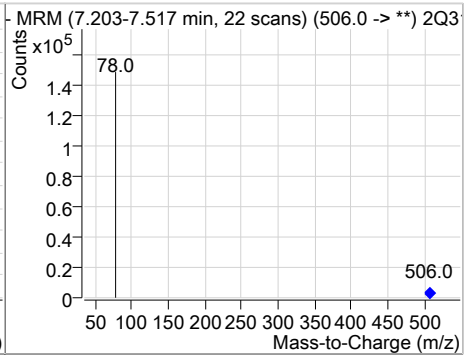




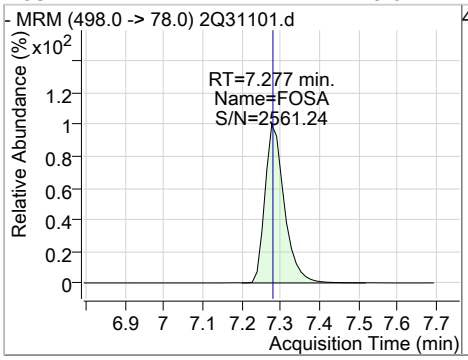
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.77	7.27	0.00	110416				

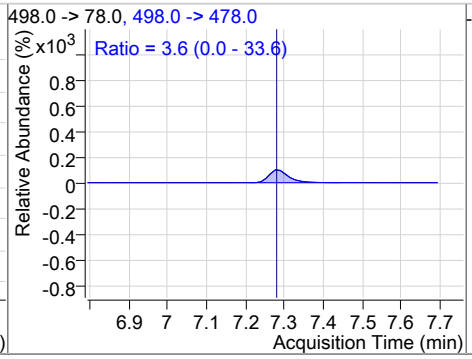


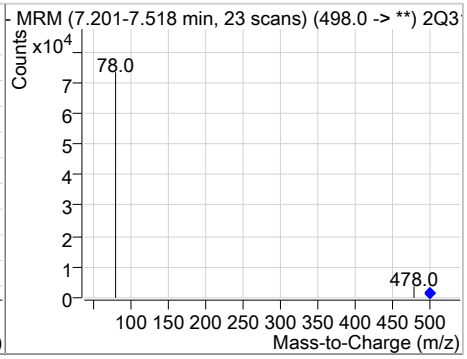




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.81	7.28	0.00	54543	498.0 -> 478.0	3.6	0.0	33.6

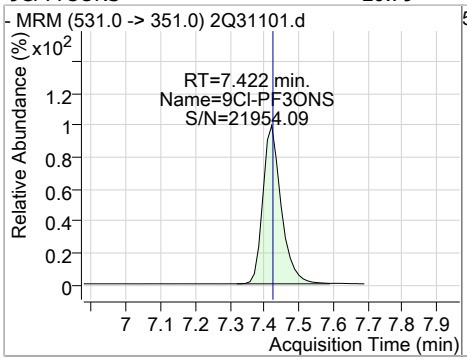


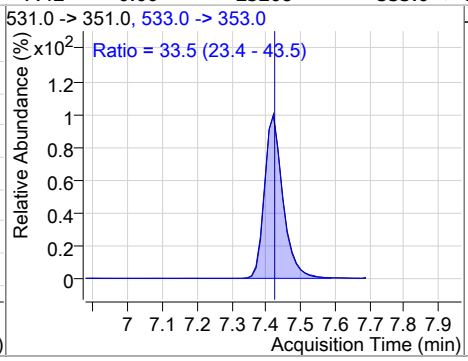


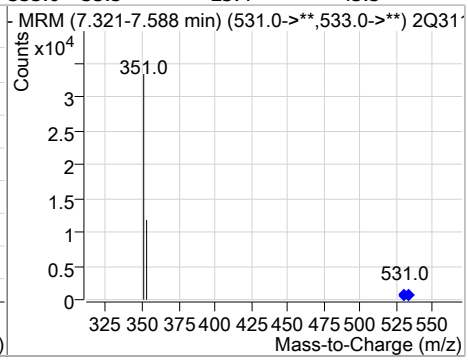


Perfluorinated Compounds by LC/MS/MS

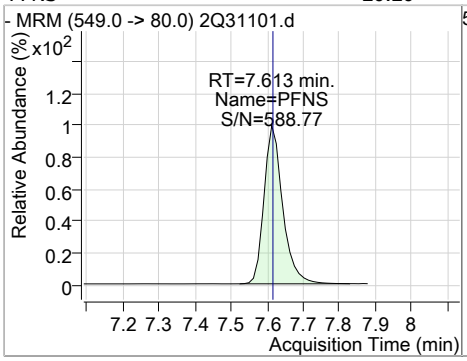
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.79	7.42	0.00	25208	533.0 -> 353.0	33.5	23.4	43.5

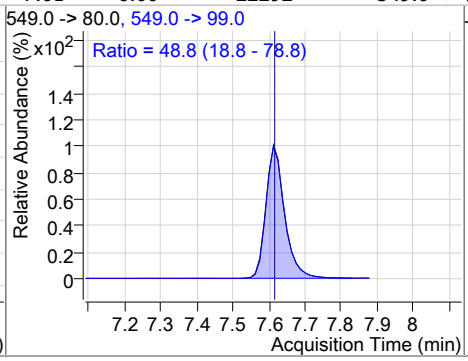


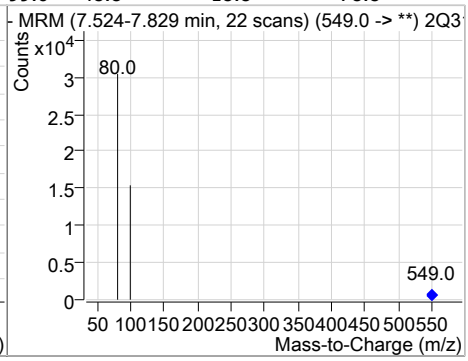




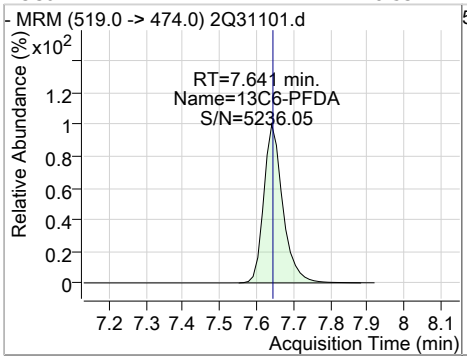
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.20	7.61	0.00	22292	549.0 -> 99.0	48.8	18.8	78.8

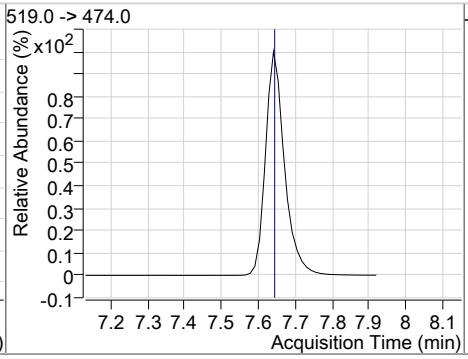


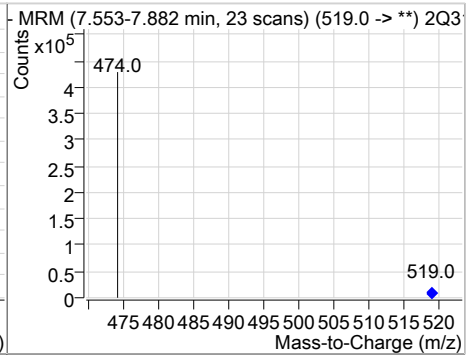




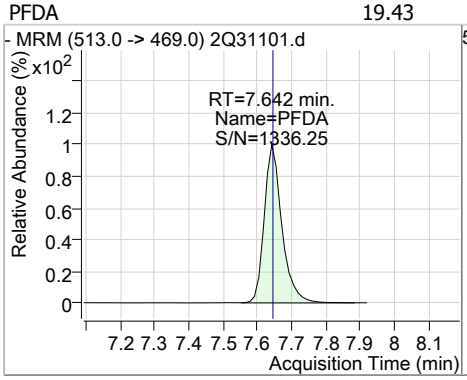
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.53	7.64	0.00	323184				

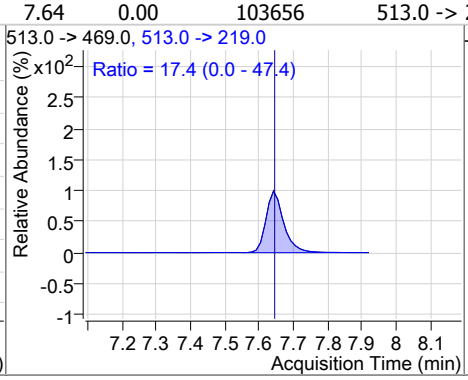


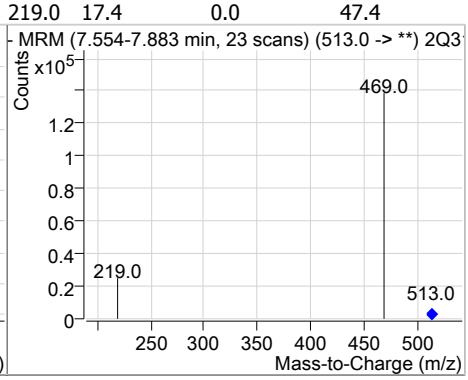




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.43	7.64	0.00	103656	513.0 -> 219.0	17.4	0.0	47.4

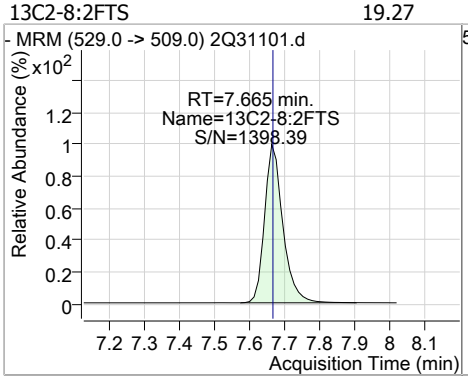


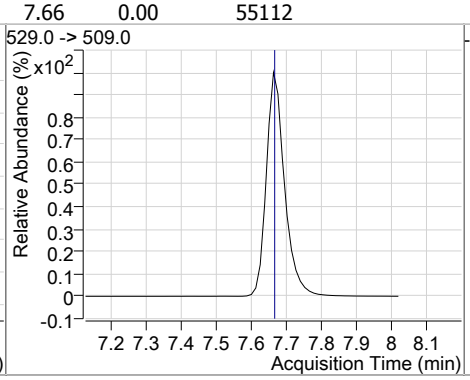


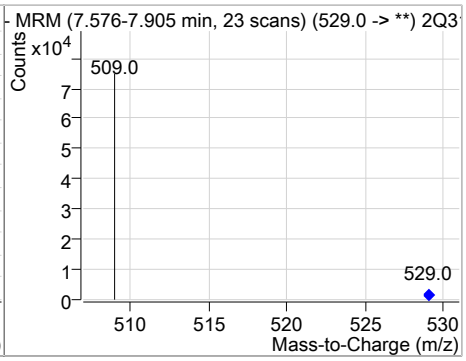


Perfluorinated Compounds by LC/MS/MS

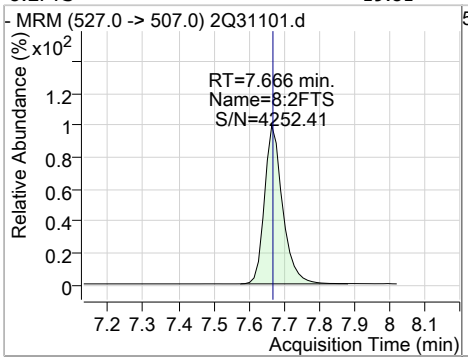
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.27	7.66	0.00	55112				

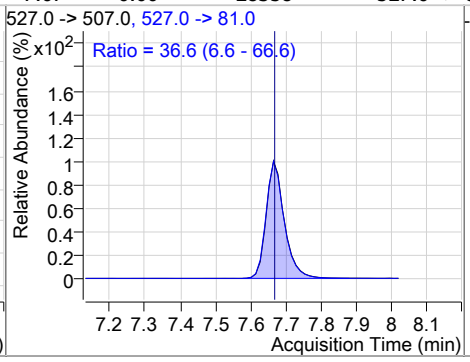


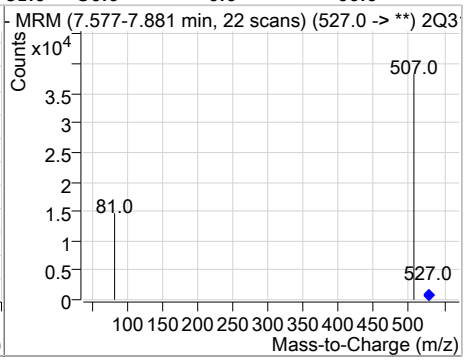




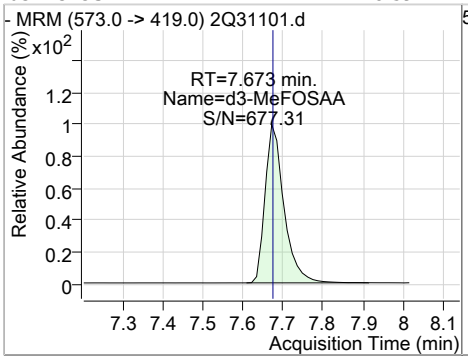
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.81	7.67	0.00	28358	527.0 -> 81.0	36.6	6.6	66.6

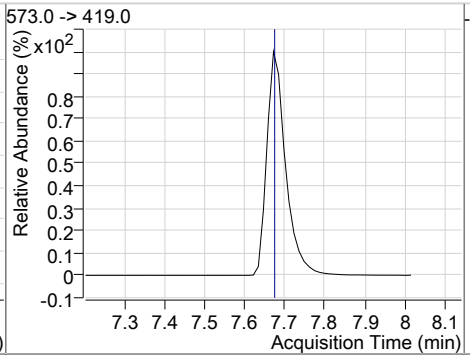


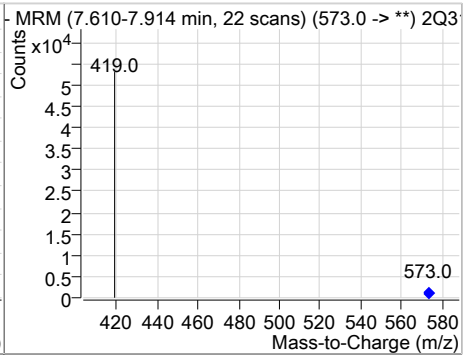




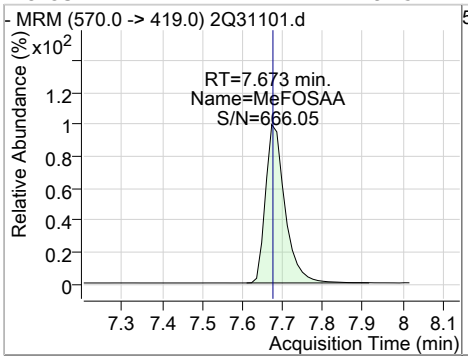
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.59	7.67	0.00	38742				

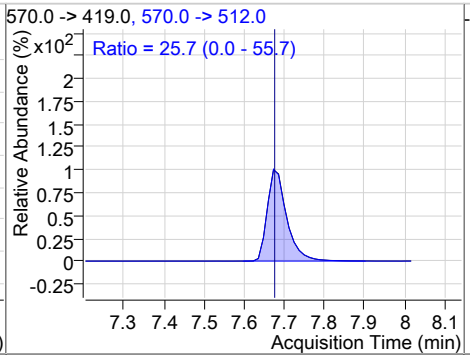


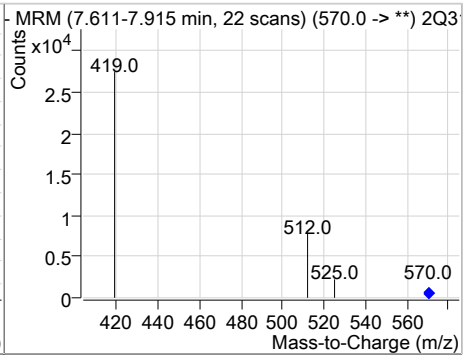




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.25	7.67	0.00	20186	570.0 -> 512.0	25.7	0.0	55.7

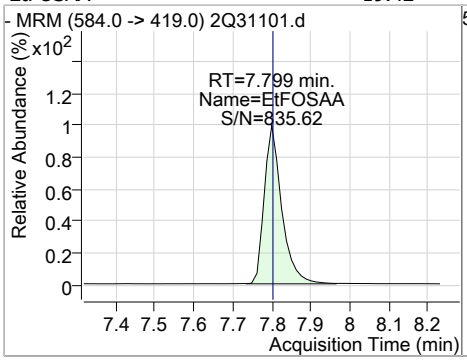


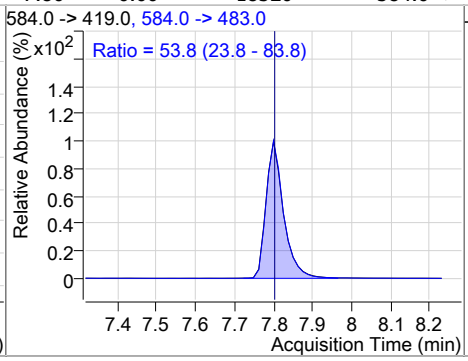


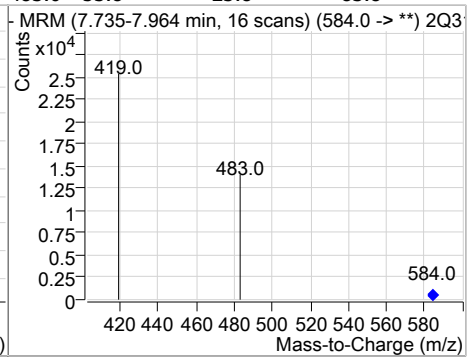


Perfluorinated Compounds by LC/MS/MS

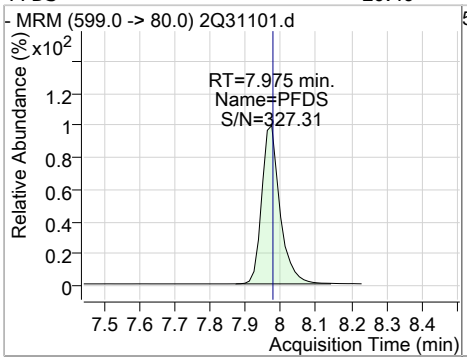
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.42	7.80	0.00	18520	584.0 -> 483.0	53.8	23.8	83.8

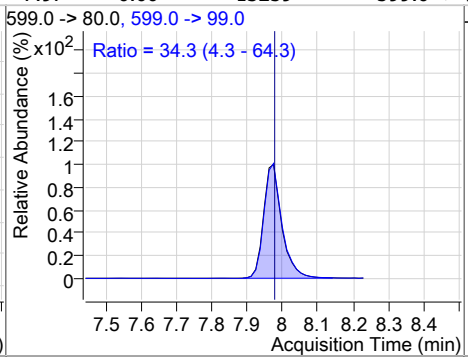


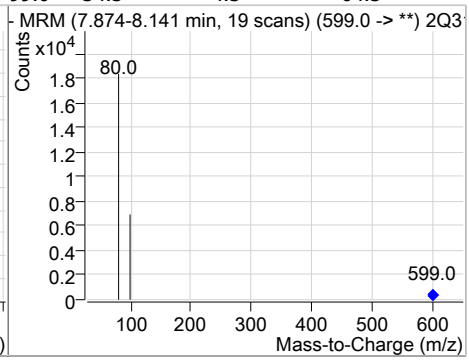




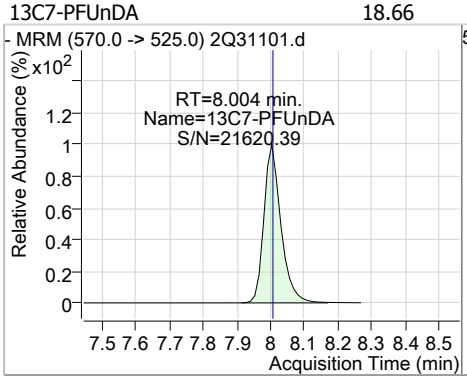
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.46	7.97	0.00	13259	599.0 -> 99.0	34.3	4.3	64.3

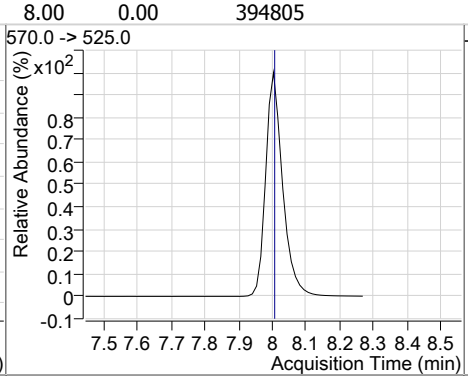


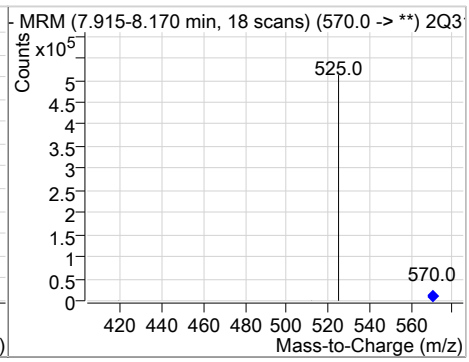




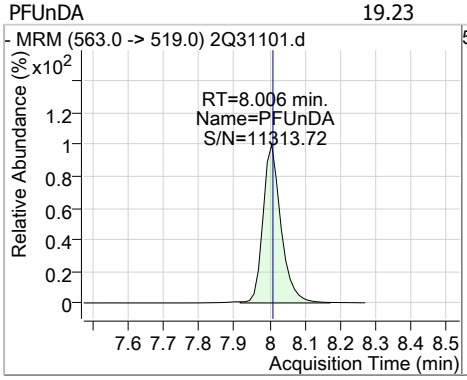
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.66	8.00	0.00	394805				

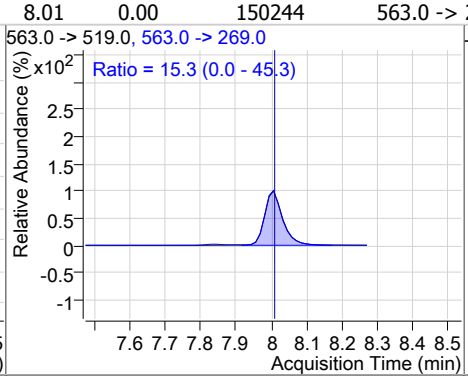


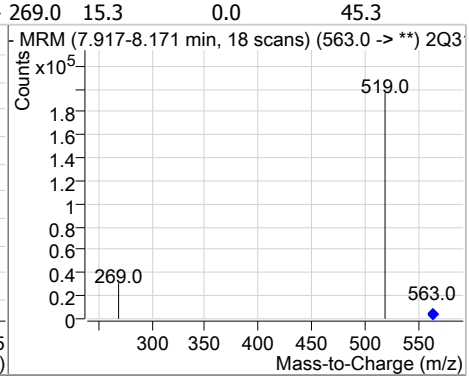




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.23	8.01	0.00	150244	563.0 -> 269.0	15.3	0.0	45.3

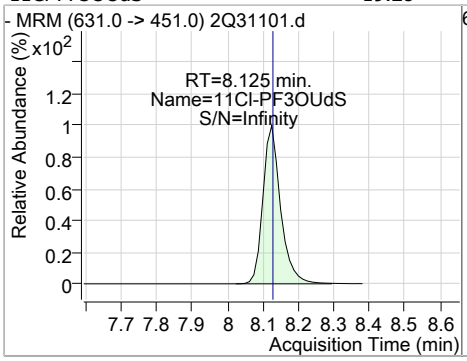


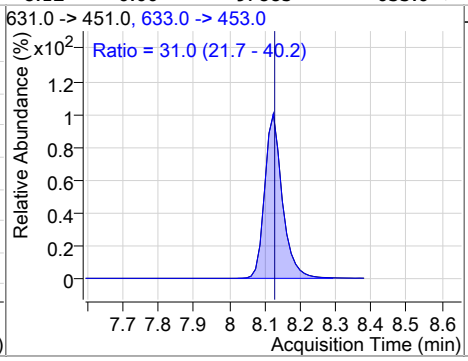


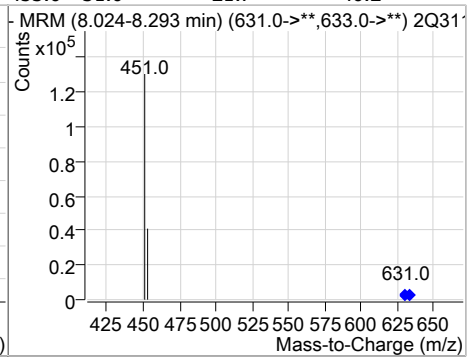


Perfluorinated Compounds by LC/MS/MS

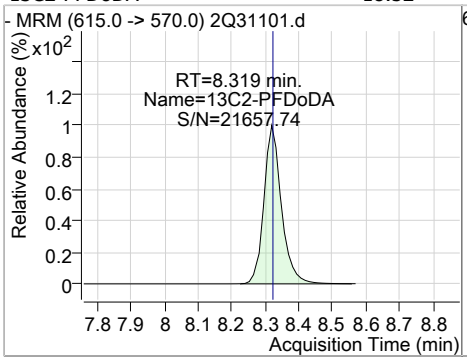
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.28	8.12	0.00	97885	633.0 -> 453.0	31.0	21.7	40.2

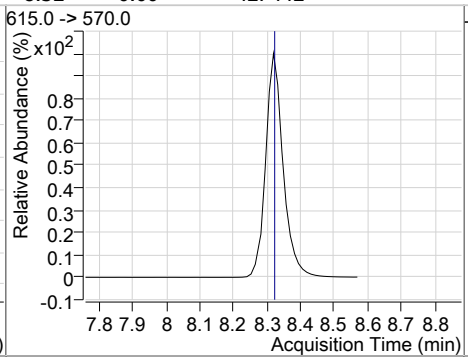


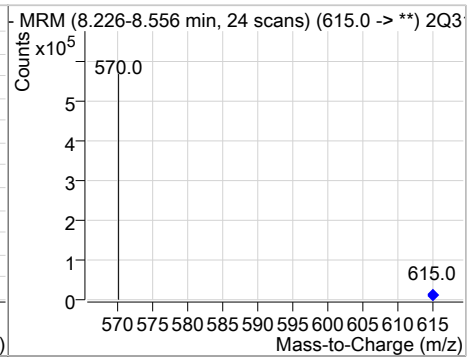




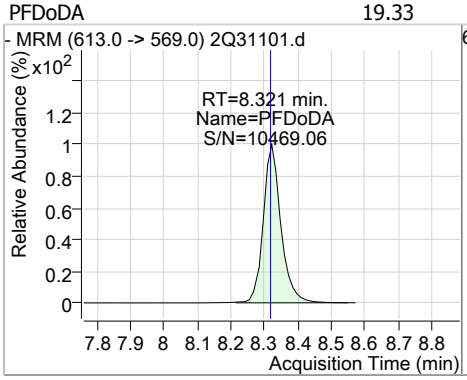
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.52	8.32	0.00	427442				

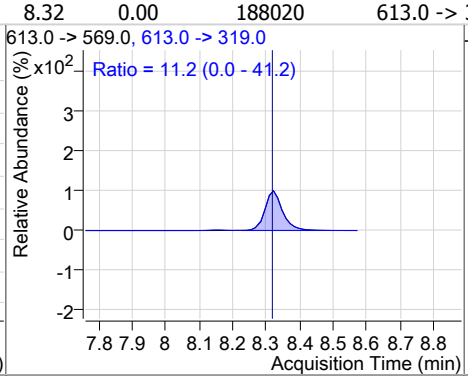


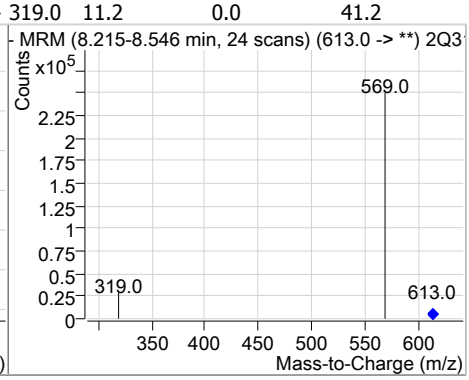




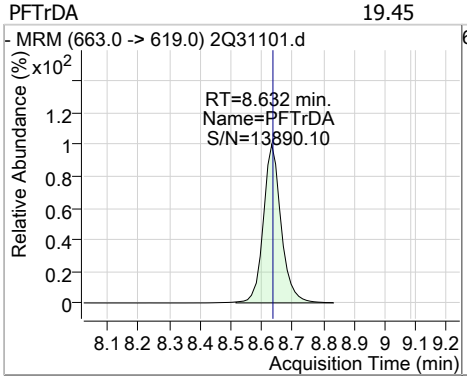
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.33	8.32	0.00	188020	613.0 -> 319.0	11.2	0.0	41.2

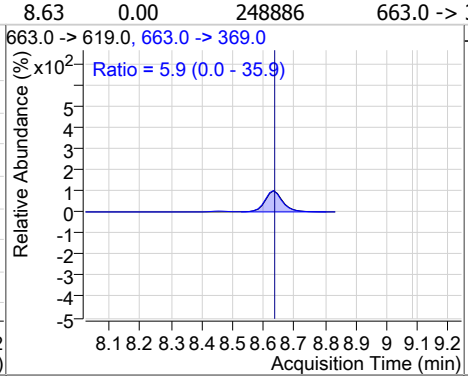


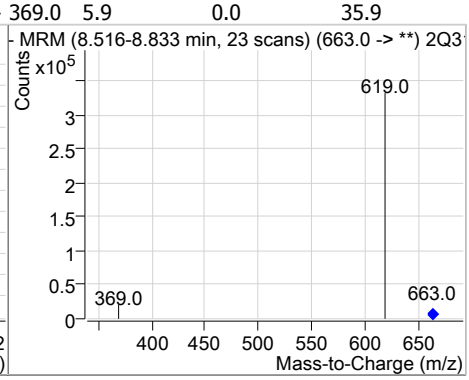




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.45	8.63	0.00	248886	663.0 -> 369.0	5.9	0.0	35.9

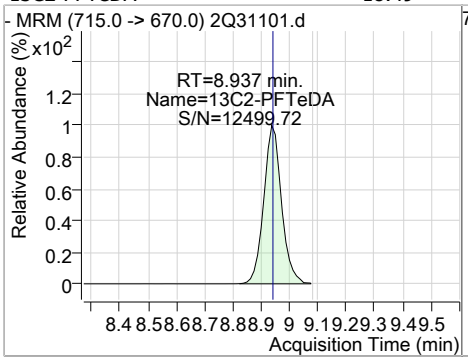


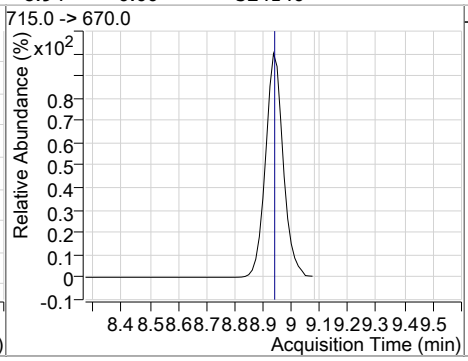


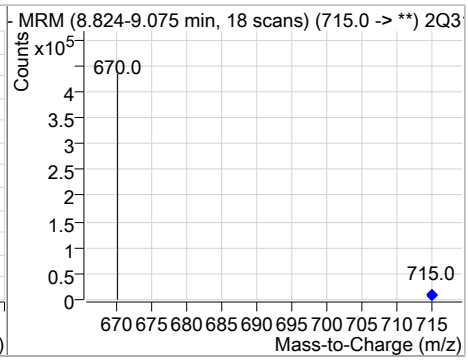


Perfluorinated Compounds by LC/MS/MS

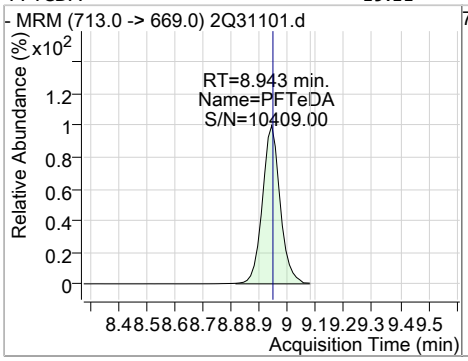
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.49	8.94	0.00	324146				

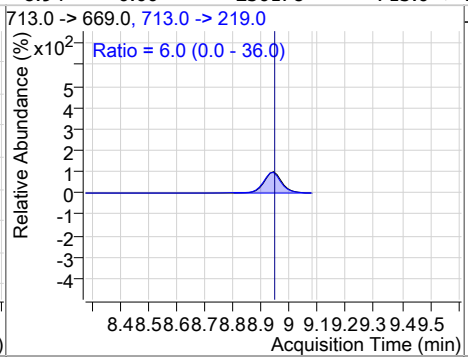


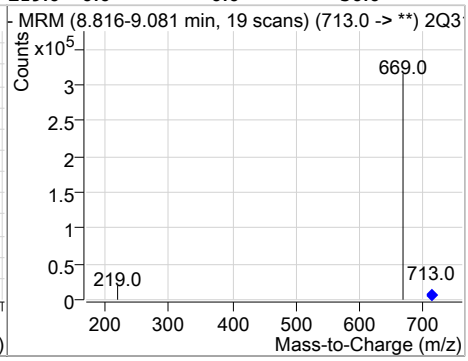




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.11	8.94	0.00	236178	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-ICC498
Lab FileID: 2Q31101.D
Injection Time: 06/21/19 11:26
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak

2Q31102.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File	:	2Q31102.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	6/21/2019 11:40:56 AM
Sample Name	:	ic498-50
Vial	:	Vial 8
DA Method File	:	ID_062119_S2Q498.quantmethod.xml
Batch Name	:	s2q498.batch.bin
Sample Information	:	op75544,S2Q498,250,,,1,1,water

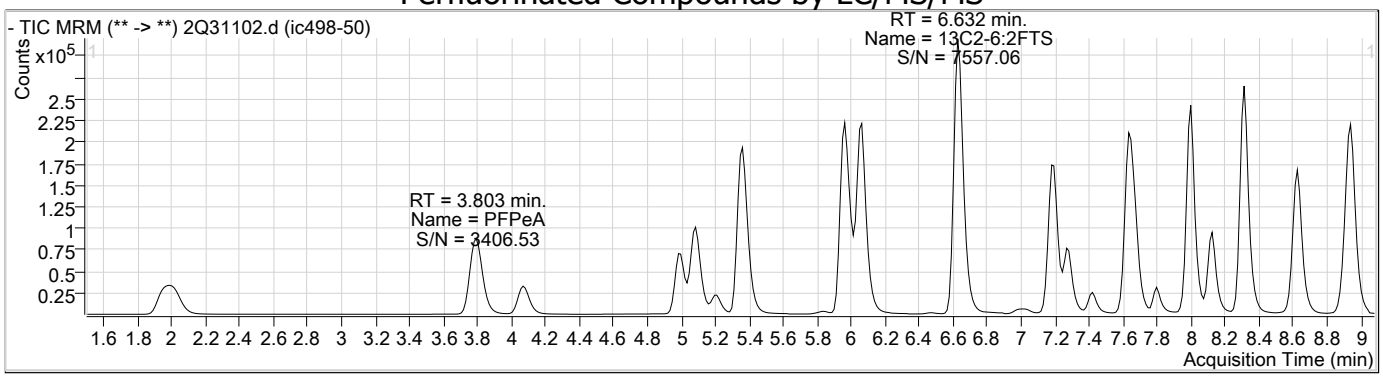
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	325709	20.00	µg/L	0.000
13C4-PFOS	7.174	503.0 -> 80.0	62031	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	200251	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	154847	20.00	µg/L	0.000
M5-PFHxA	5.089	318.0 -> 273.0	230447	20.00	µg/L	0.000
M4-PFHpA	5.968	367.0 -> 322.0	261868	20.00	µg/L	0.000
M8-PFOA	6.635	421.0 -> 376.0	240182	20.00	µg/L	0.000
M9-PFNA	7.202	472.0 -> 427.0	206214	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	325630	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	395517	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	436514	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	336250	20.00	µg/L	0.000
M8-FOSA	7.287	506.0 -> 78.0	106327	20.00	µg/L	0.013
M3-PFBS	4.068	302.0 -> 99.0	28894	20.00	µg/L	-0.013
M3-PFHxS	5.998	402.0 -> 99.0	24076	20.00	µg/L	0.000
M8-PFOS	7.184	507.0 -> 99.0	35444	20.00	µg/L	0.013
M2-4:2FTS	4.997	329.0 -> 309.0	106698	20.00	µg/L	0.000
M2-6:2FTS	6.632	429.0 -> 409.0	83188	20.00	µg/L	0.017
M2-8:2FTS	7.665	529.0 -> 509.0	61964	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	39914	20.00	µg/L	0.000
M3-HFPO-DA	5.365	287.0 -> 169.0	225216	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.997	329.0 -> 309.0	106687	21.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C2-6:2FTS	6.632	429.0 -> 409.0	83188	20.89	µg/L	0.017
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C2-8:2FTS	7.665	529.0 -> 509.0	61912	21.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C2-PFDoDA	8.319	615.0 -> 570.0	436545	18.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-PFTeDA	8.937	715.0 -> 670.0	336284	19.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFBS	4.068	302.0 -> 99.0	28886	19.01	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C3-PFHxS	5.998	402.0 -> 99.0	24076	18.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C4-PFBA	1.990	217.0 -> 172.0	198890	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C4-PFHpA	5.968	367.0 -> 322.0	261771	19.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C5-PFHxA	5.089	318.0 -> 273.0	230407	19.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C5-PFPeA	3.799	268.0 -> 223.0	154850	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C6-PFDA	7.641	519.0 -> 474.0	325535	18.66	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

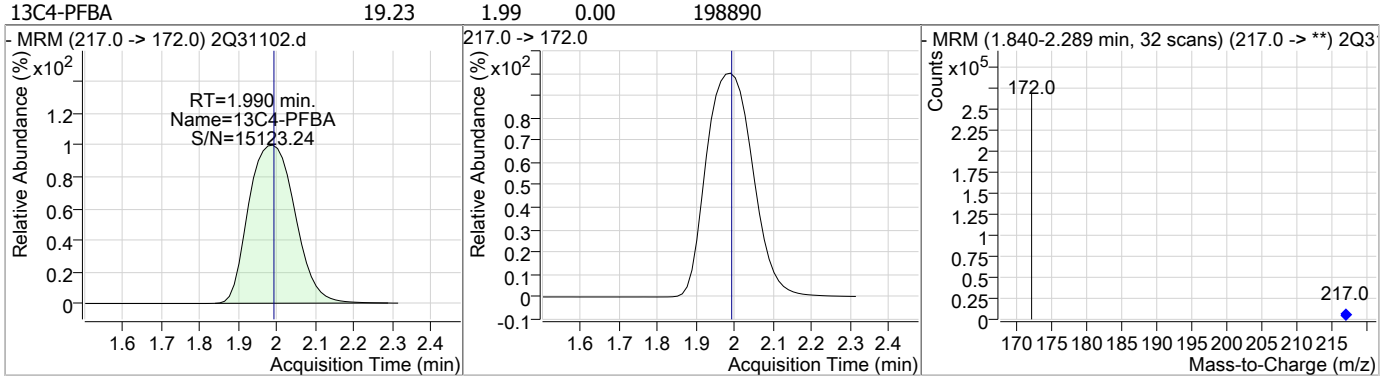
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C7-PFUnDA	8.004	570.0 -> 525.0	395526	18.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C8-FOSA	7.287	506.0 -> 78.0	106282	18.07	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
13C8-PFOA	6.635	421.0 -> 376.0	240203	18.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-PFOS	7.184	507.0 -> 99.0	35300	18.59	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C9-PFNA	7.202	472.0 -> 427.0	205540	18.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
d3-MeFOSAA	7.673	573.0 -> 419.0	39933	19.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
M2-PFOA	6.636	415.0 -> 370.0	325737	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.174	503.0 -> 80.0	62031	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.365	287.0 -> 169.0	225216	92.28	µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
Target Compounds							**QValue**
4:2FTS	4.987	327.0 -> 307.0	138625	45.59	µg/L		99
6:2FTS	6.617	427.0 -> 407.0	96807	43.72	µg/L		100
8:2FTS	7.666	527.0 -> 507.0	74004	46.03	µg/L		98
EtFOSAA	7.799	584.0 -> 419.0	46415	47.18	µg/L		97
FOSA	7.277	498.0 -> 78.0	127854	48.22	µg/L		99
MeFOSAA	7.673	570.0 -> 419.0	51753	47.85	µg/L		100
PFBA	1.986	213.0 -> 169.0	82666	48.24	µg/L		100
PFBS	4.073	299.0 -> 80.0	95734	48.28	µg/L		100
PFDA	7.642	513.0 -> 469.0	257113	47.84	µg/L		98
PFDoDA	8.321	613.0 -> 569.0	478802	48.19	µg/L		100
PFDS	7.975	599.0 -> 80.0	33421	51.58	µg/L		98
PFHpA	5.970	363.0 -> 319.0	554169	48.22	µg/L		100
PFHpS	6.644	449.0 -> 80.0	69811	51.63	µg/L		99
PFHxA	5.091	313.0 -> 269.0	166015	48.99	µg/L		100
PFHxS	6.000	399.0 -> 80.0	82701	48.11	µg/L	m	97
PFNA	7.203	463.0 -> 419.0	266556	47.80	µg/L		98
PFNS	7.613	549.0 -> 80.0	56094	50.86	µg/L		99
PFOA	6.637	413.0 -> 369.0	332483	47.97	µg/L		100
PFOS	7.175	499.0 -> 80.0	83292	47.51	µg/L	m	83
PFPeA	3.803	263.0 -> 219.0	309702	48.04	µg/L		100
PFPeS	5.208	349.0 -> 80.0	61475	48.34	µg/L		98
PFTeDA	8.943	713.0 -> 669.0	602260	46.99	µg/L		100
PFTrDA	8.632	663.0 -> 619.0	635402	47.88	µg/L		100
PFUnDA	8.006	563.0 -> 519.0	379221	48.43	µg/L		99
11Cl-PF3OUdS	8.125	631.0 -> 451.0	246087	47.46	µg/L		100
9Cl-PF3ONS	7.422	531.0 -> 351.0	65643	49.28	µg/L		98
ADONA	6.066	377.0 -> 251.0	677276	43.11	µg/L		100
HFPO-DA	5.363	329.0 -> 169.0	470876	249.32	µg/L		99

= Qualifier out of range, m = manually integrated, + = Area summed

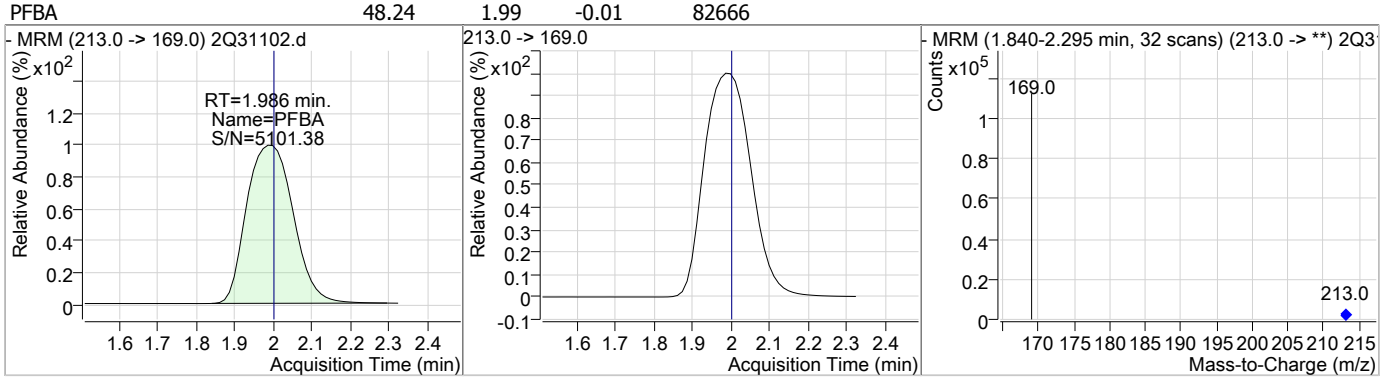
Perfluorinated Compounds by LC/MS/MS



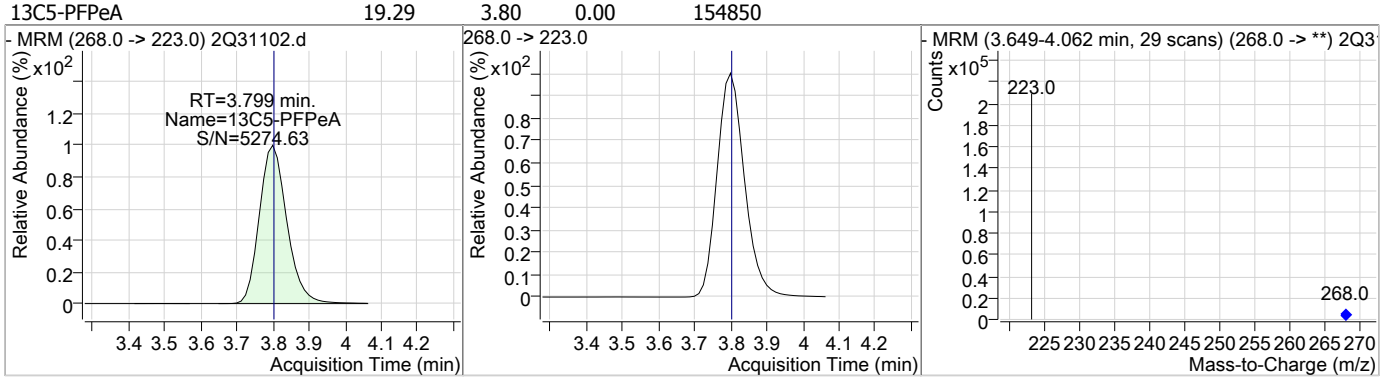
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.23	1.99	0.00	198890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	48.24	1.99	-0.01	82666				

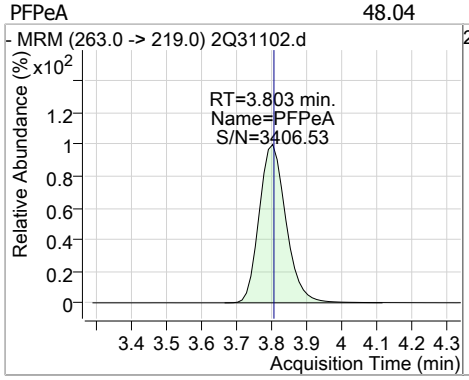


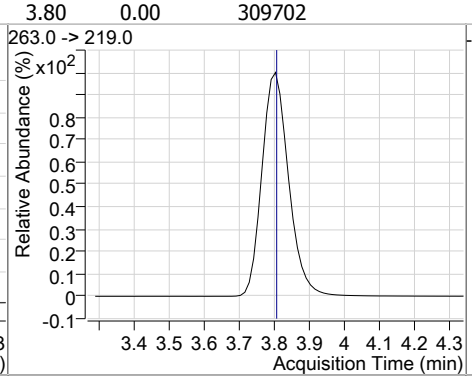
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.29	3.80	0.00	154850				

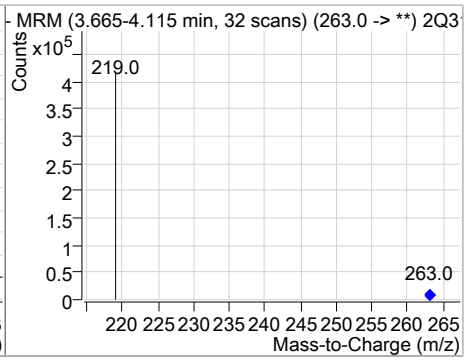


Perfluorinated Compounds by LC/MS/MS

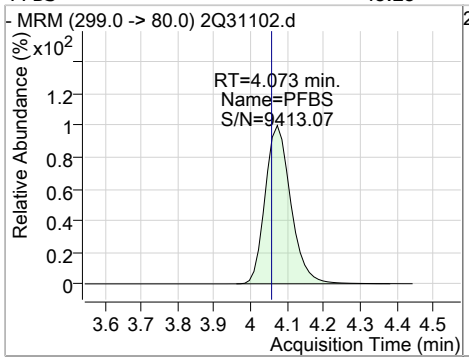
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	48.04	3.80	0.00	309702				

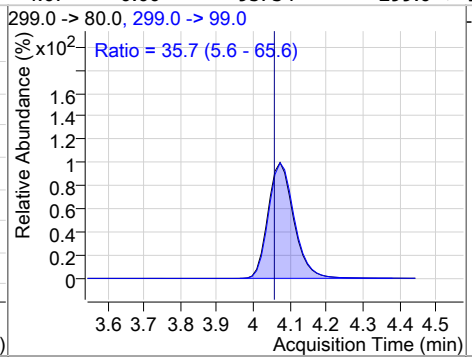


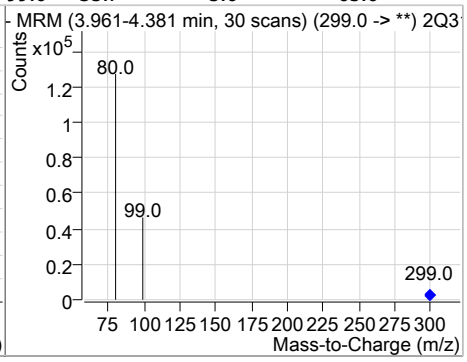




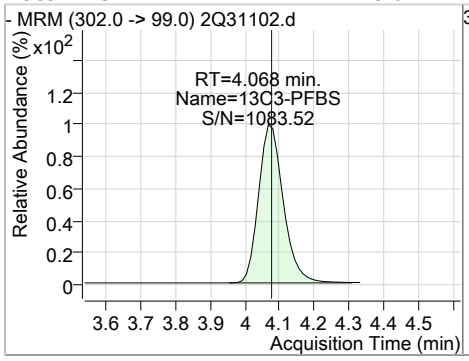
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	48.28	4.07	0.00	95734	299.0 -> 99.0	35.7	5.6	65.6

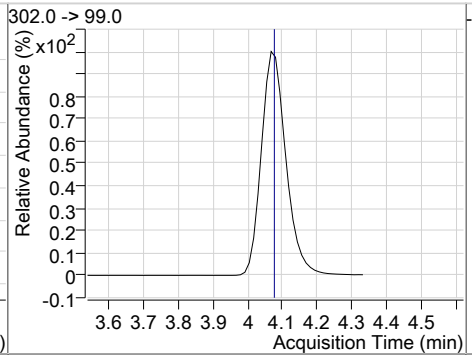


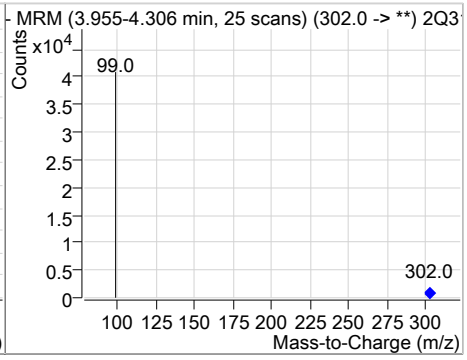




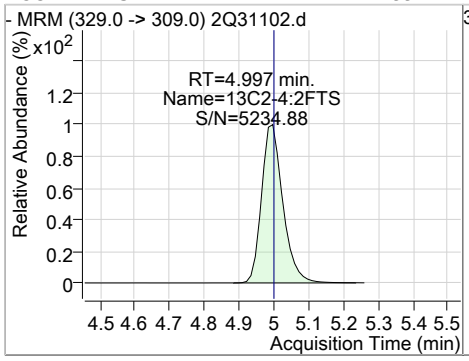
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.01	4.07	-0.01	28886				

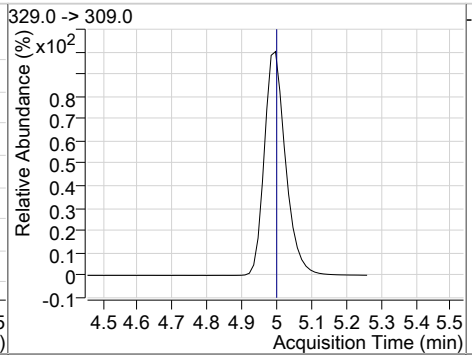


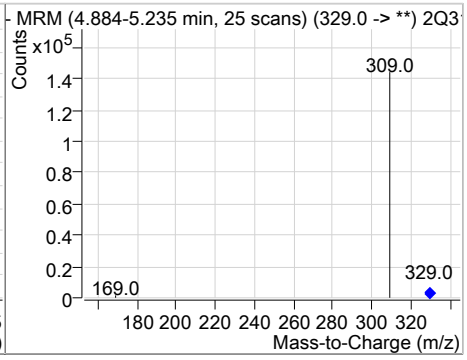




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.99	5.00	0.00	106687				

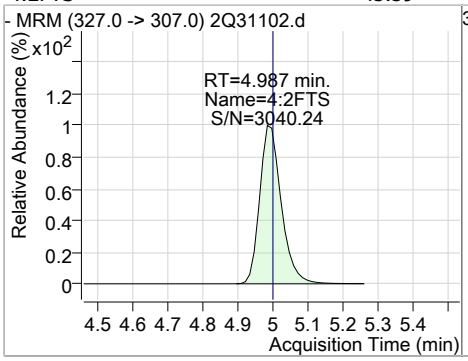


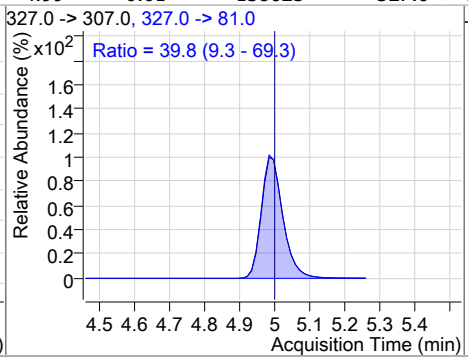


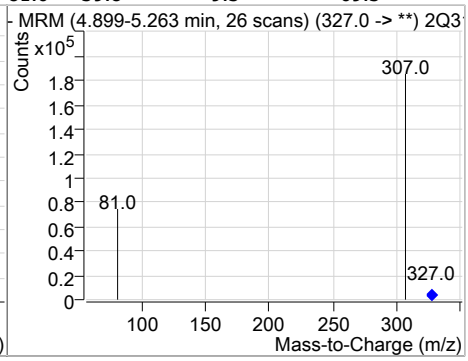


Perfluorinated Compounds by LC/MS/MS

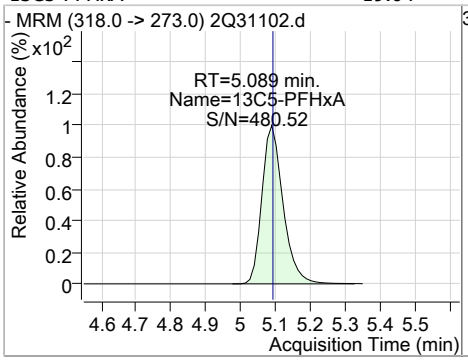
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	45.59	4.99	-0.01	138625	327.0 -> 81.0	39.8	9.3	69.3

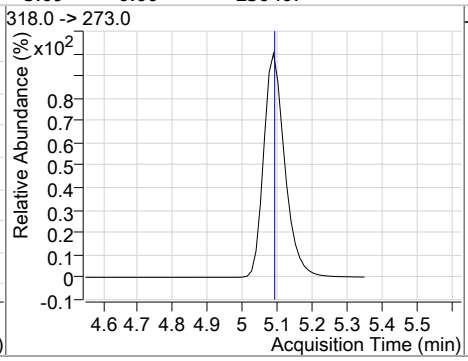


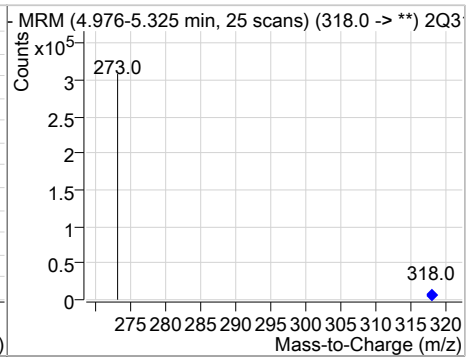




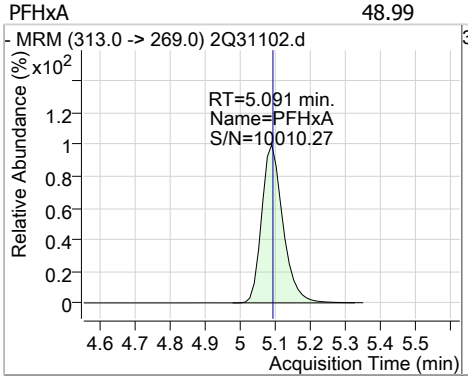
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.04	5.09	0.00	230407				

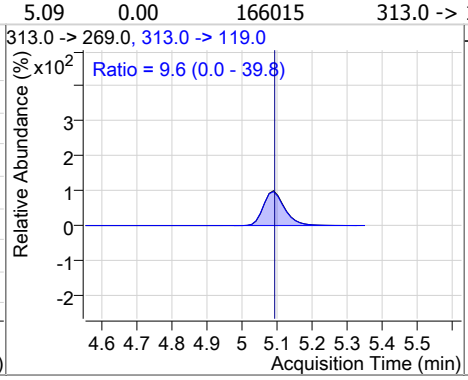


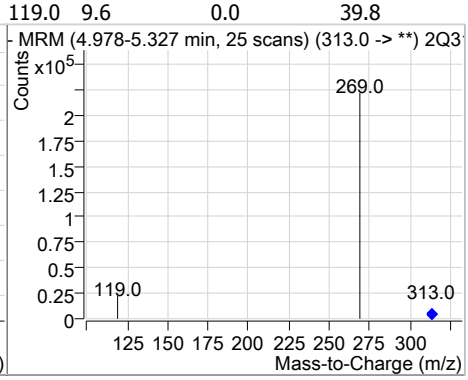




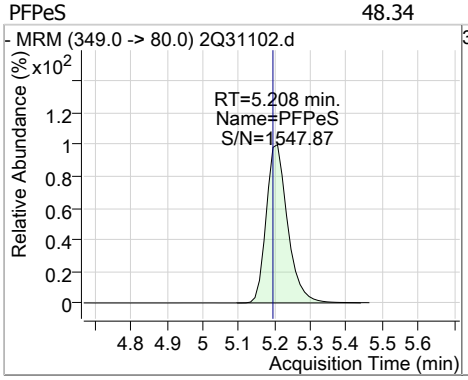
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	48.99	5.09	0.00	166015	313.0 -> 119.0	9.6	0.0	39.8

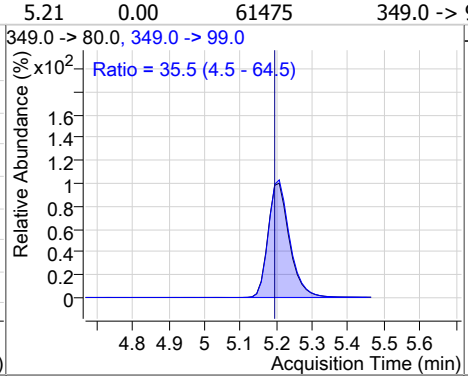


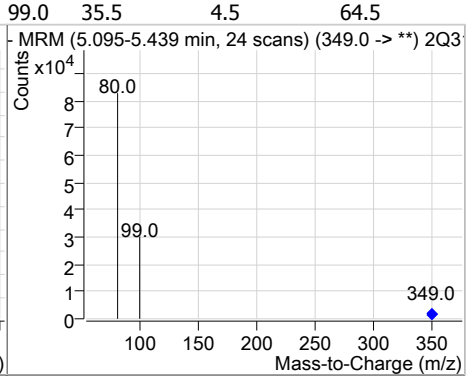




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	48.34	5.21	0.00	61475	349.0 -> 99.0	35.5	4.5	64.5

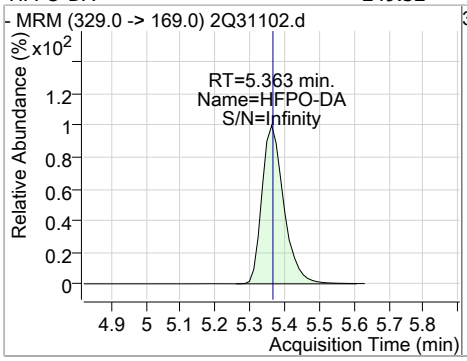


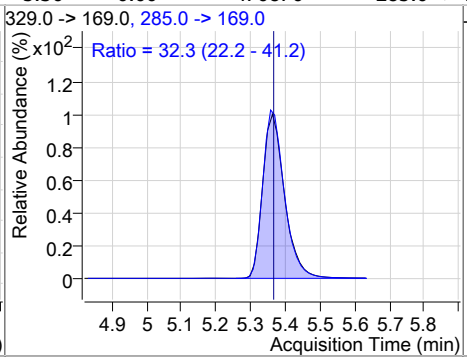


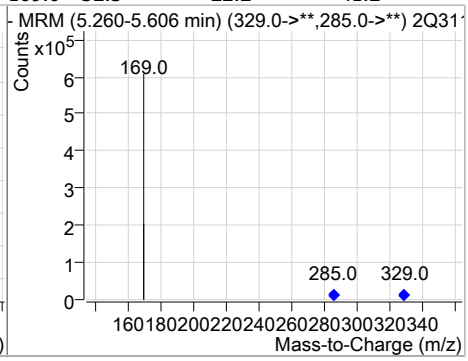


Perfluorinated Compounds by LC/MS/MS

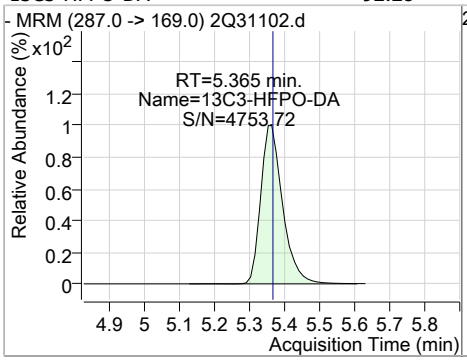
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	249.32	5.36	0.00	470876	285.0 -> 169.0	32.3	22.2	41.2

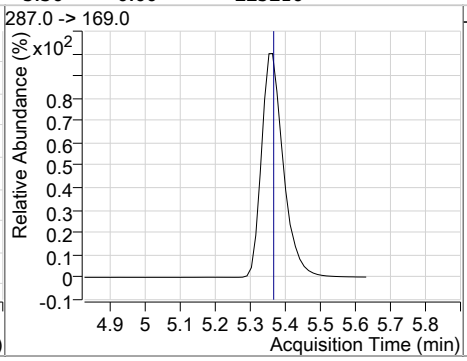


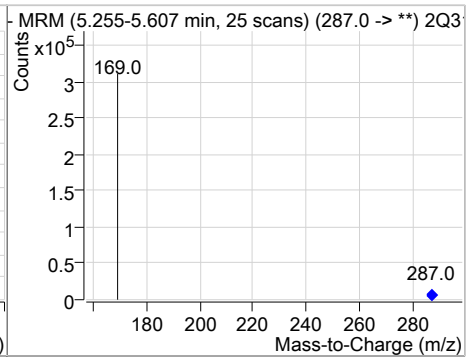




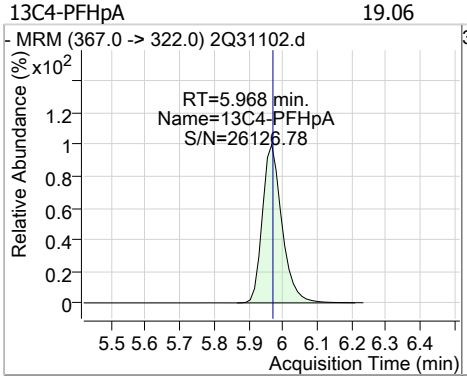
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	92.28	5.36	0.00	225216				

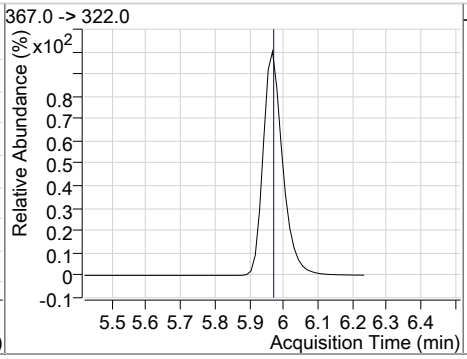


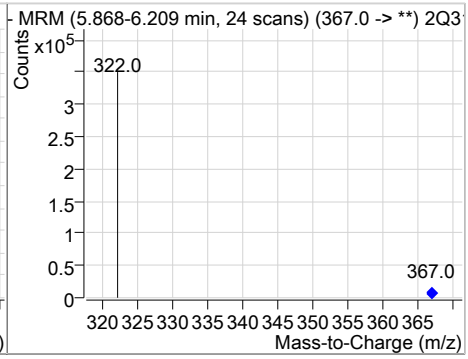




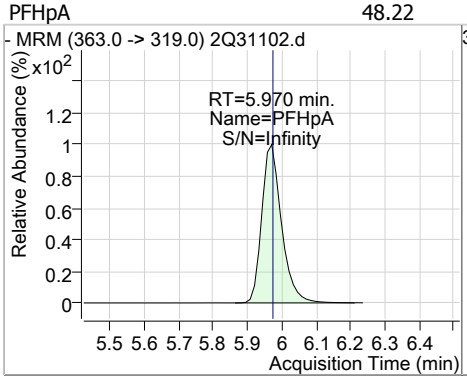
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.06	5.97	0.00	261771				

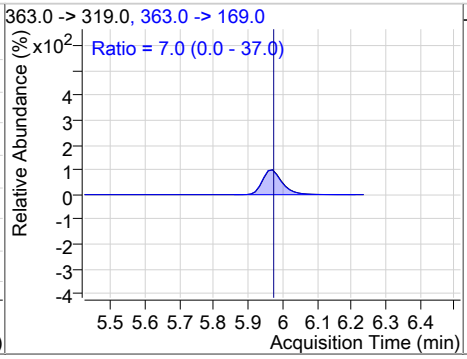


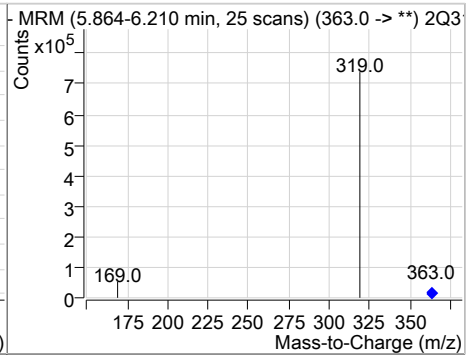




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	48.22	5.97	0.00	554169	363.0 -> 169.0	7.0	0.0	37.0

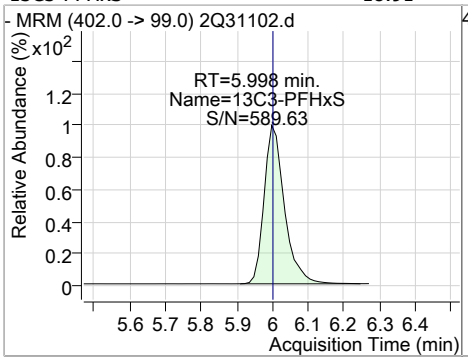


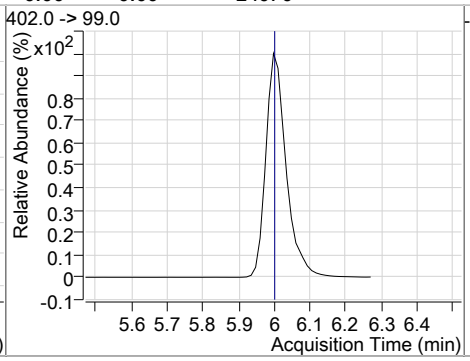


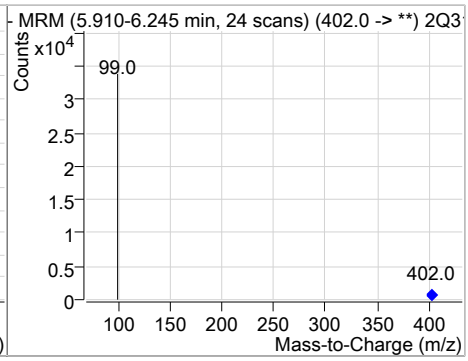


Perfluorinated Compounds by LC/MS/MS

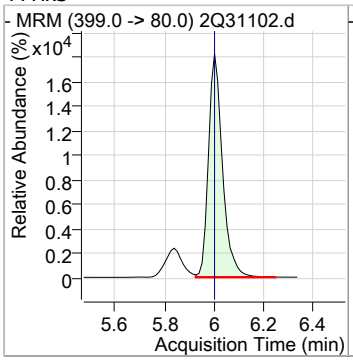
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.91	6.00	0.00	24076				

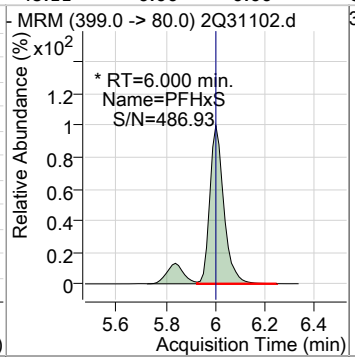


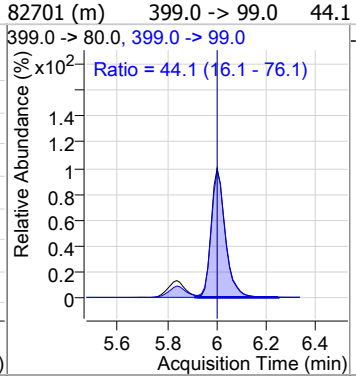


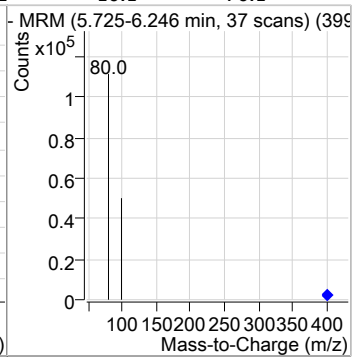


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.11	6.00	0.00	82701 (m)	399.0 -> 99.0	44.1	16.1	76.1

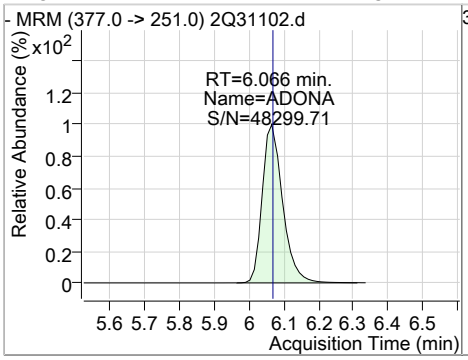


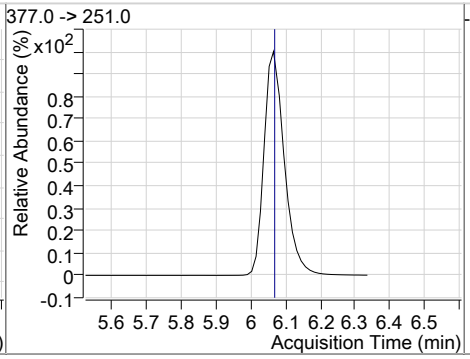


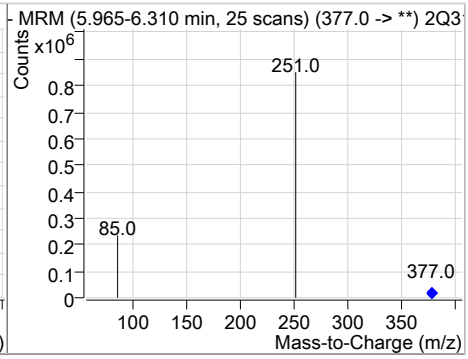




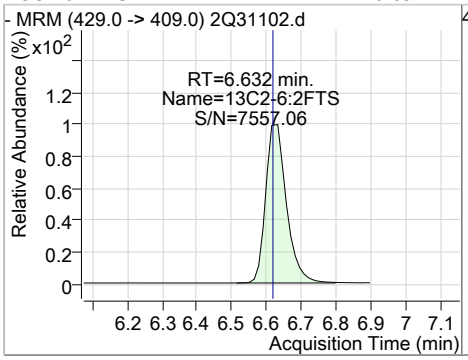
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	43.11	6.07	0.00	677276				

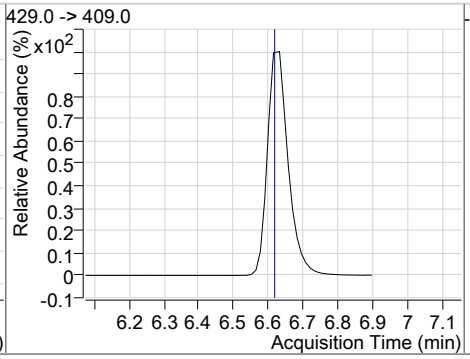


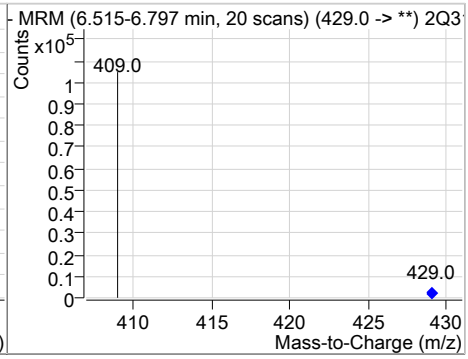




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.89	6.63	0.02	83188				

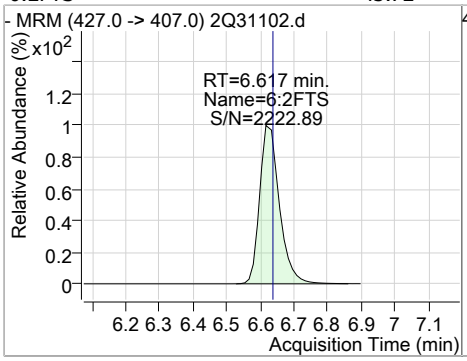


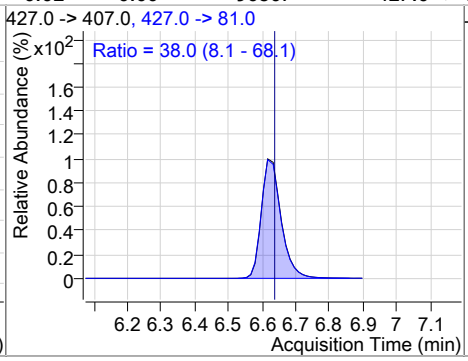


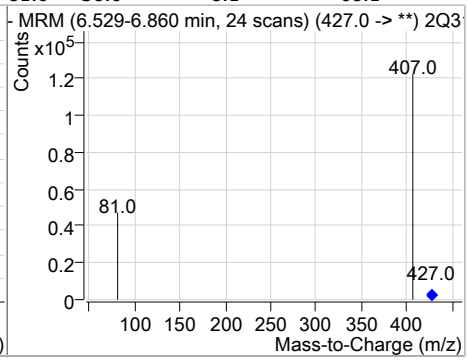


Perfluorinated Compounds by LC/MS/MS

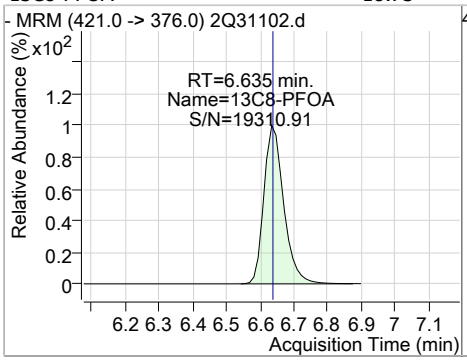
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	43.72	6.62	0.00	96807	427.0 -> 81.0	38.0	8.1	68.1

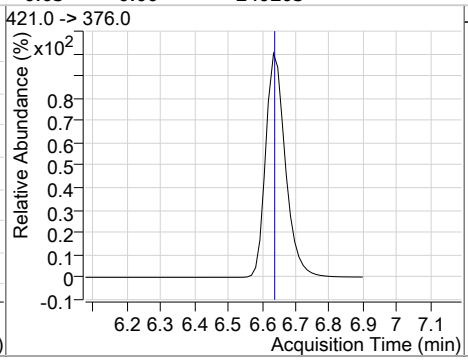


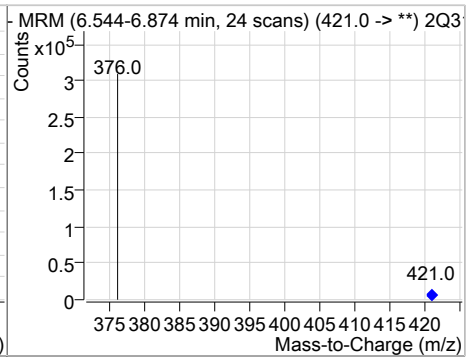




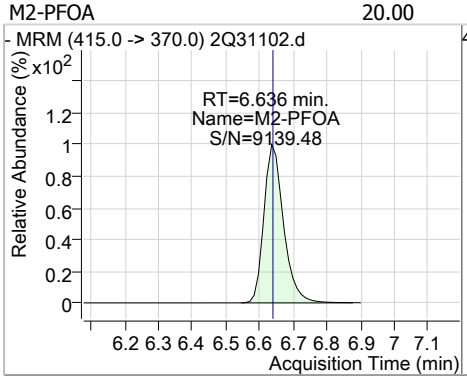
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.73	6.63	0.00	240203				

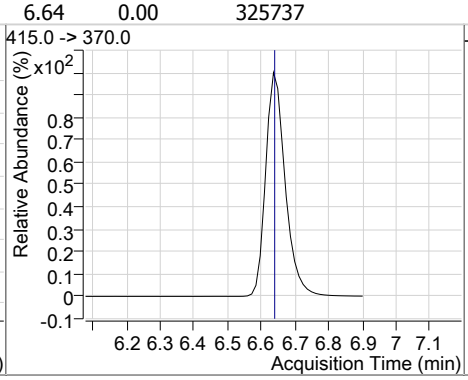


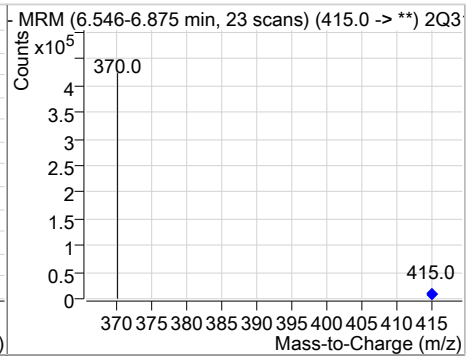




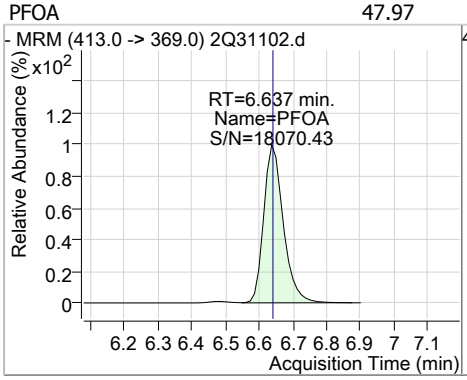
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.64	0.00	325737				

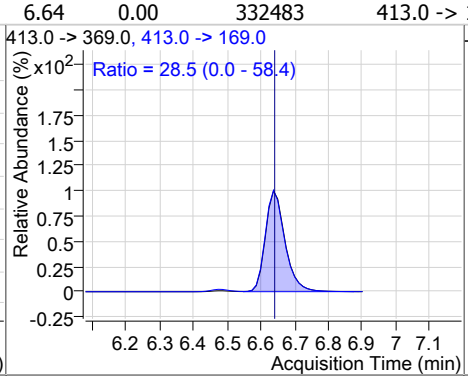


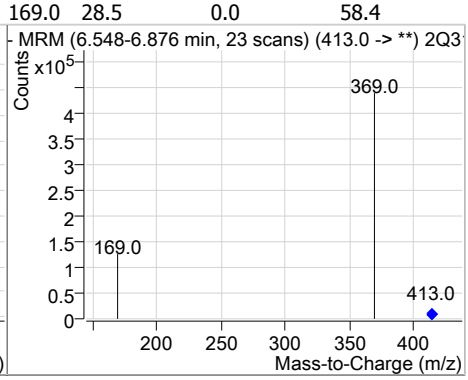




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	47.97	6.64	0.00	332483	413.0 -> 169.0	28.5	0.0	58.4

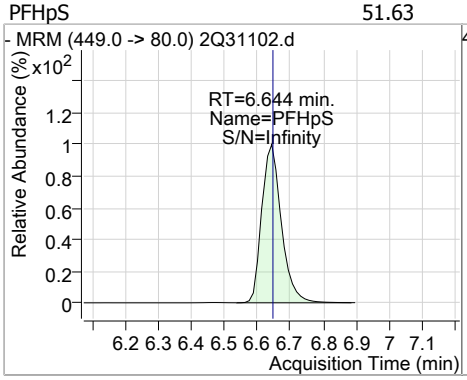


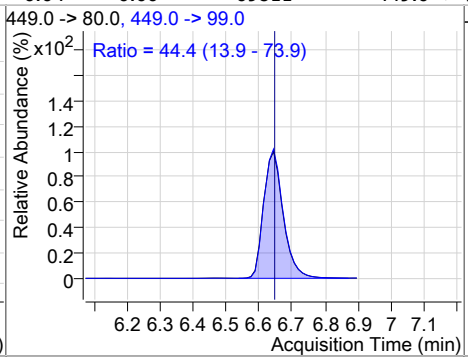


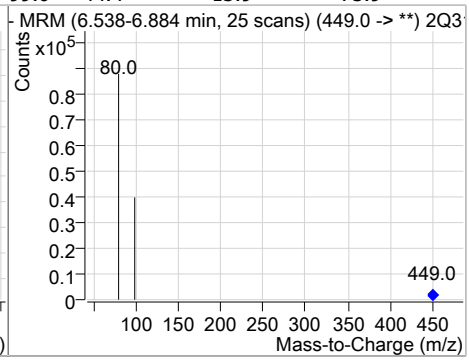


Perfluorinated Compounds by LC/MS/MS

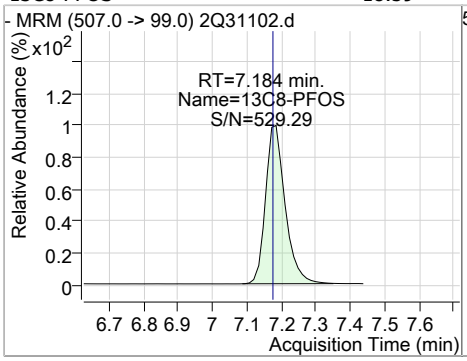
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.63	6.64	0.00	69811	449.0 -> 99.0	44.4	13.9	73.9

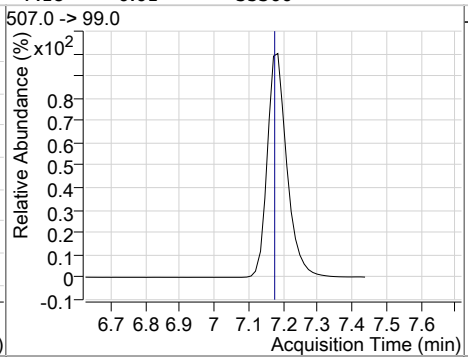


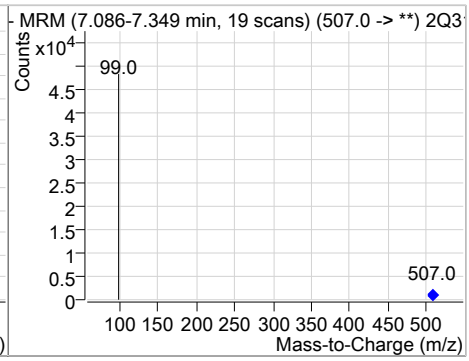




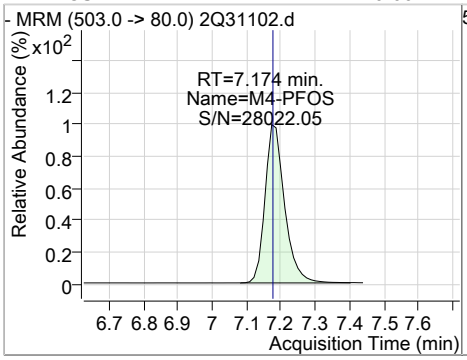
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.59	7.18	0.01	35300				

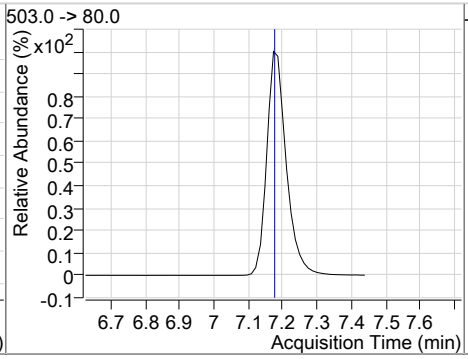


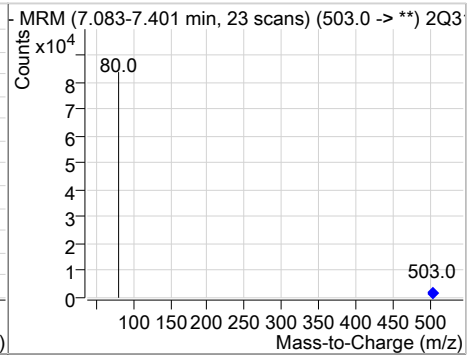




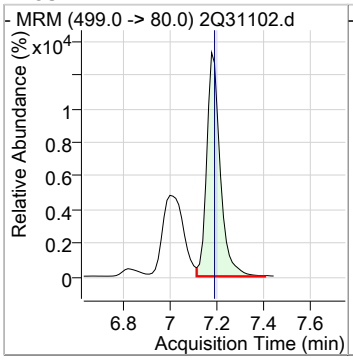
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.17	0.00	62031				

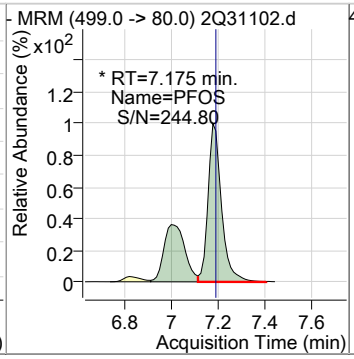


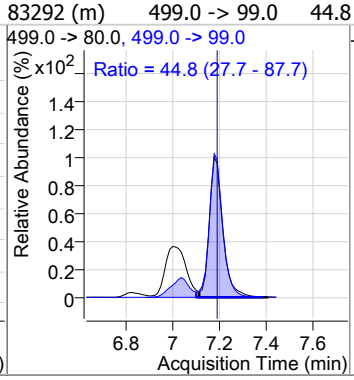


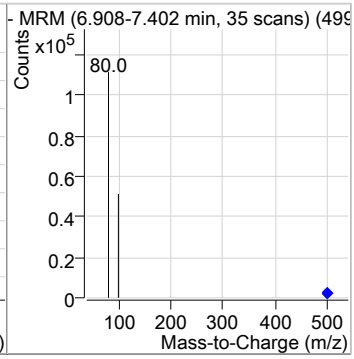


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	47.51	7.17	0.00	83292 (m)	499.0 -> 99.0	44.8	27.7	87.7



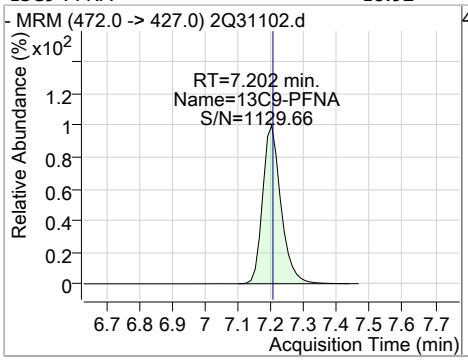


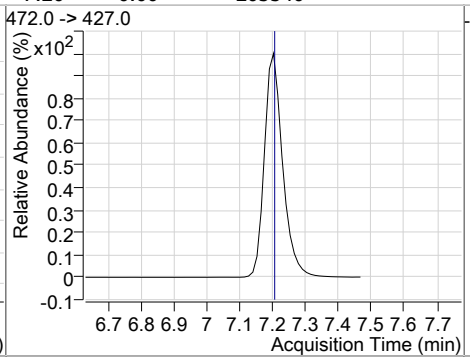


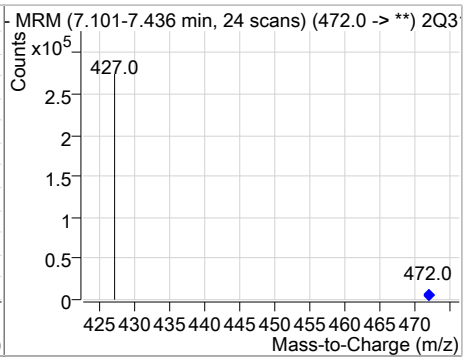


Perfluorinated Compounds by LC/MS/MS

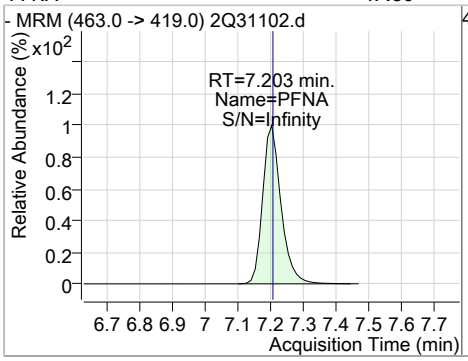
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.92	7.20	0.00	205540				

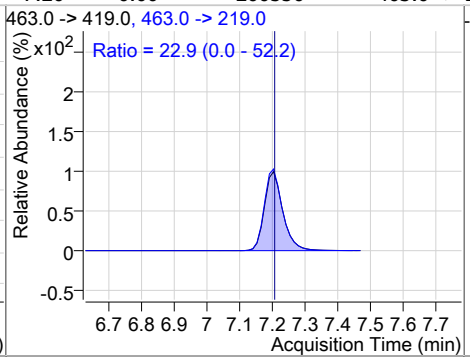


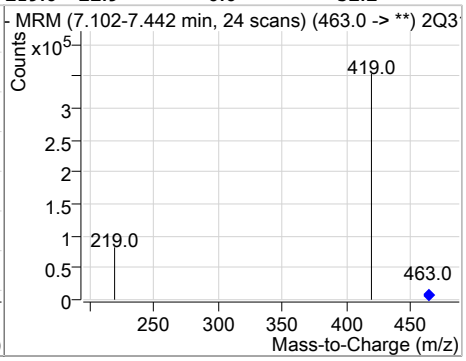




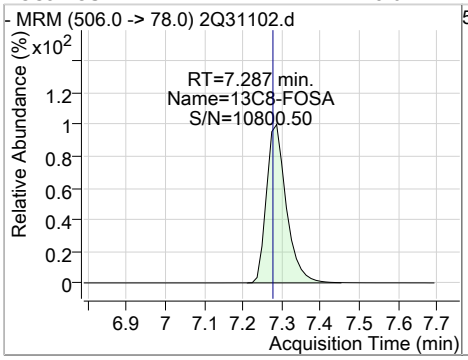
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	47.80	7.20	0.00	266556	463.0 -> 219.0	22.9	0.0	52.2

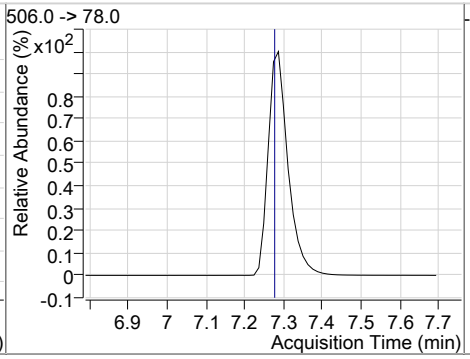


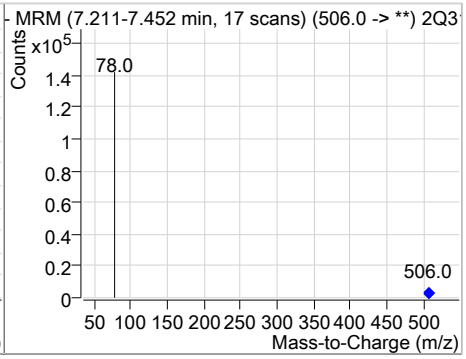




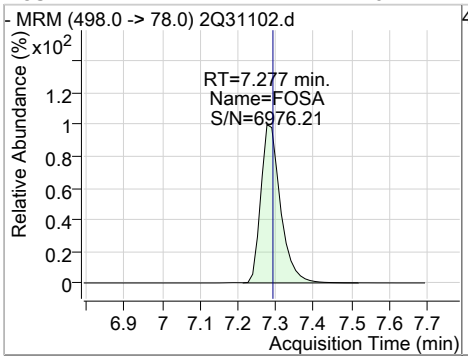
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.07	7.29	0.01	106282				

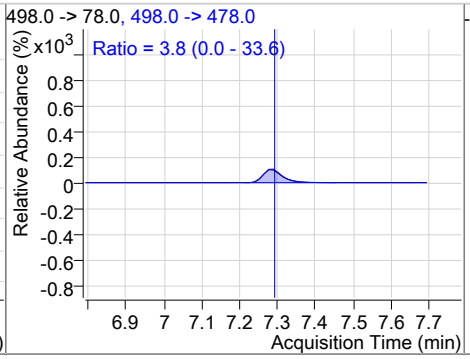


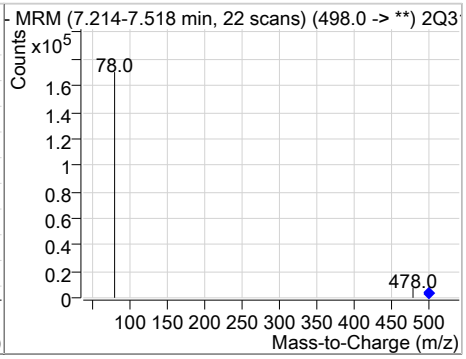




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.22	7.28	0.00	127854	498.0 -> 478.0	3.8	0.0	33.6

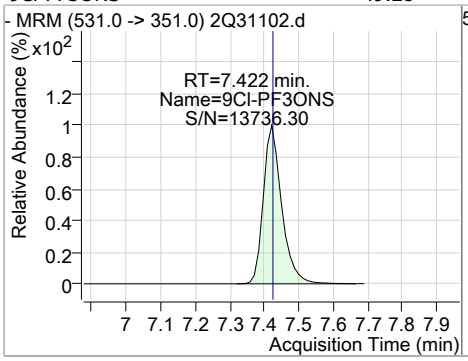


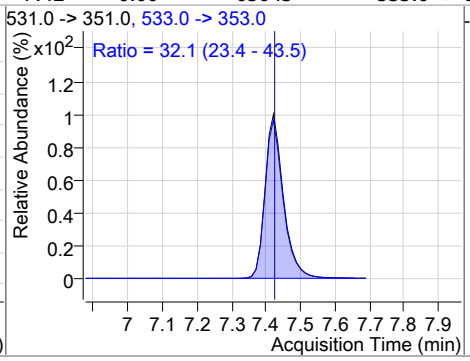


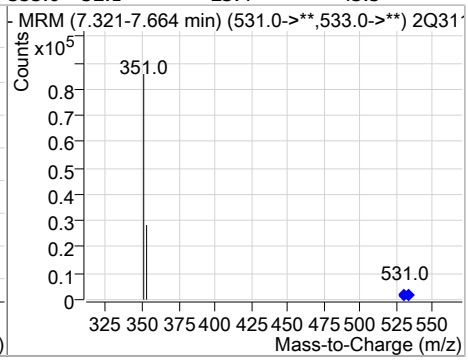


Perfluorinated Compounds by LC/MS/MS

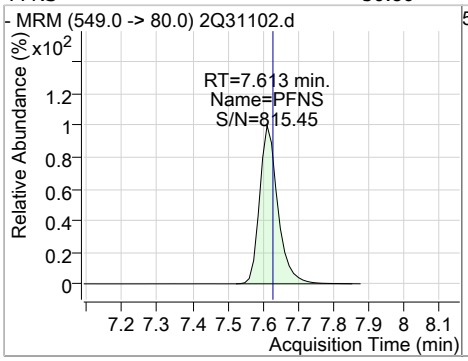
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	49.28	7.42	0.00	65643	533.0 -> 353.0	32.1	23.4	43.5

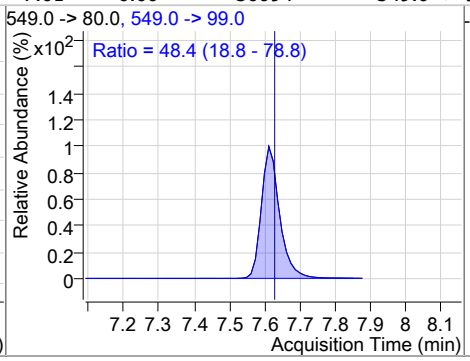


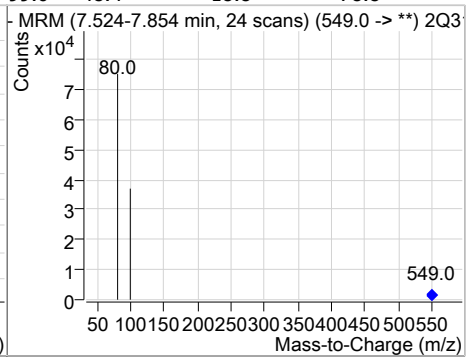




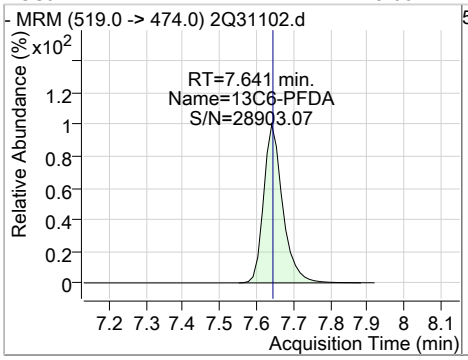
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.86	7.61	0.00	56094	549.0 -> 99.0	48.4	18.8	78.8

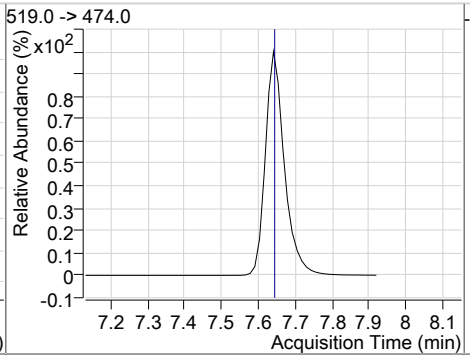


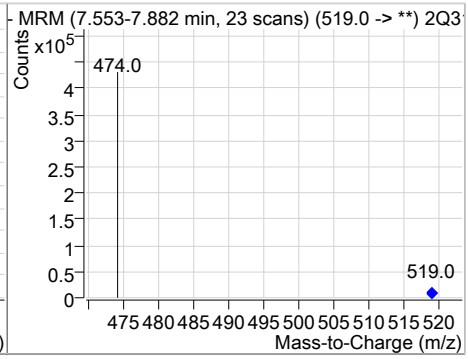




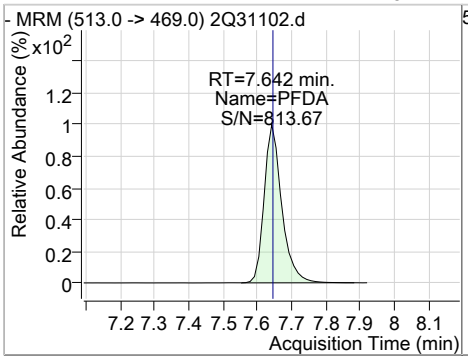
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.66	7.64	0.00	325535				

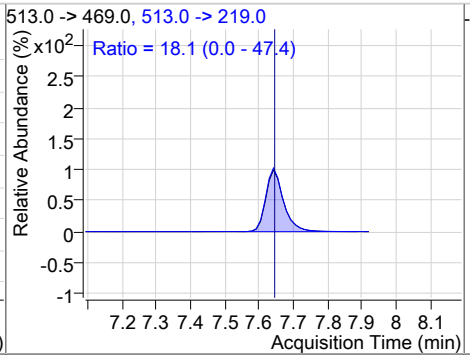


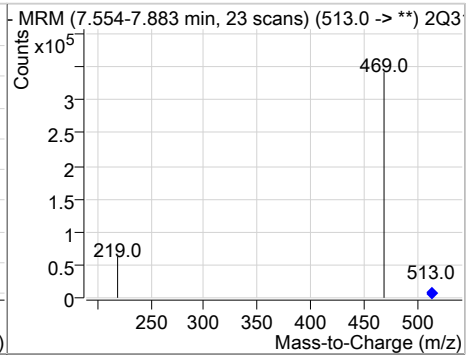




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	47.84	7.64	0.00	257113	513.0 -> 219.0	18.1	0.0	47.4

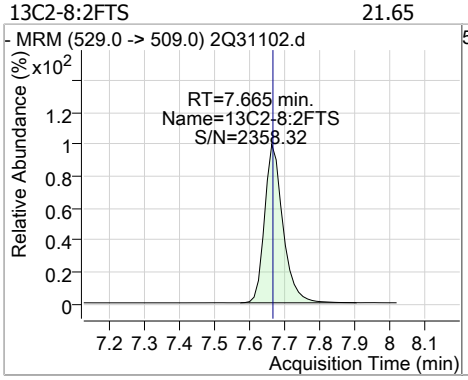


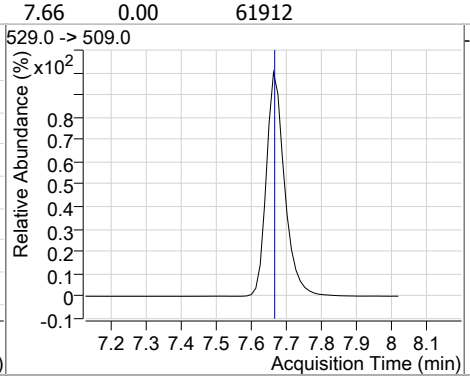


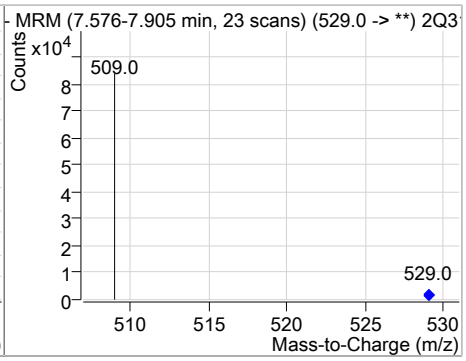


Perfluorinated Compounds by LC/MS/MS

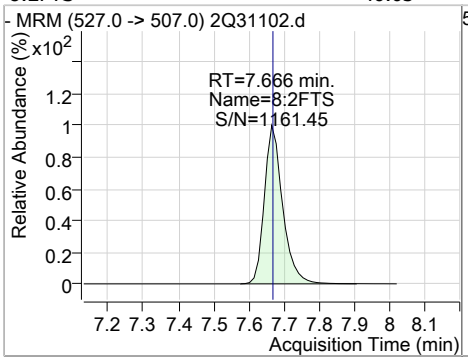
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.65	7.66	0.00	61912				

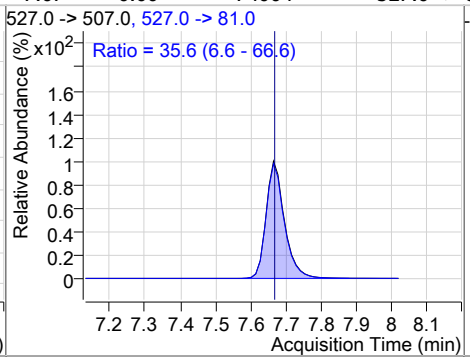


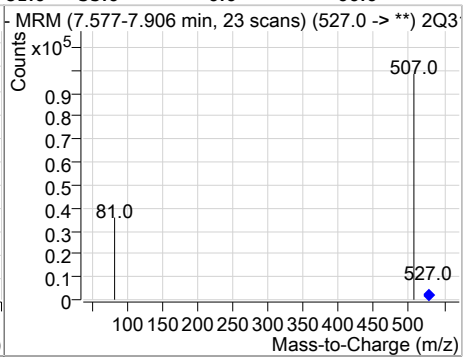




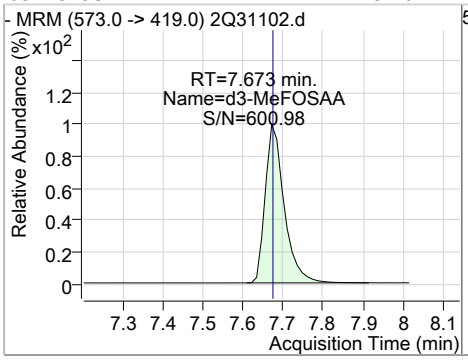
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	46.03	7.67	0.00	74004	527.0 -> 81.0	35.6	6.6	66.6

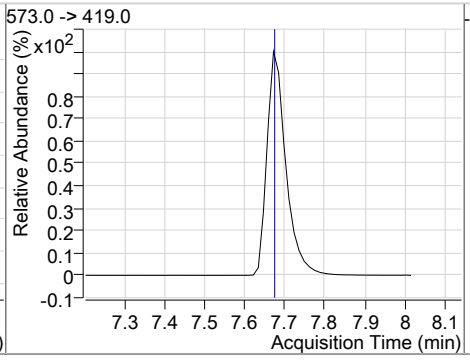


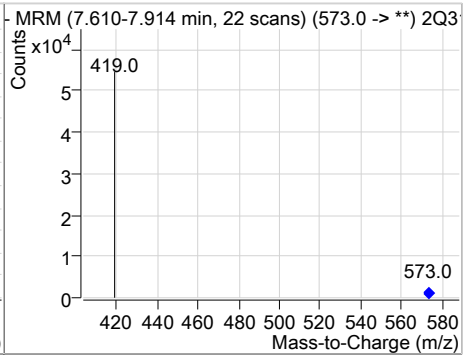




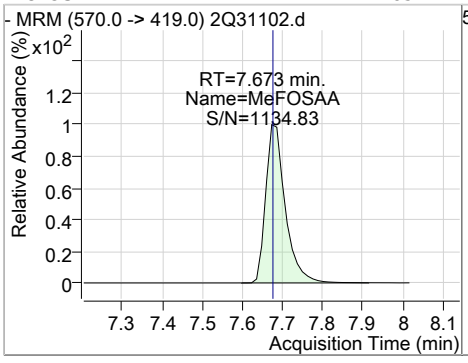
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.16	7.67	0.00	39933				

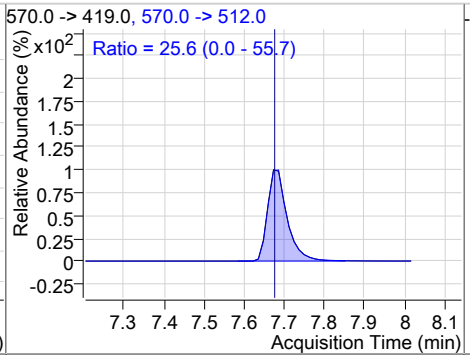


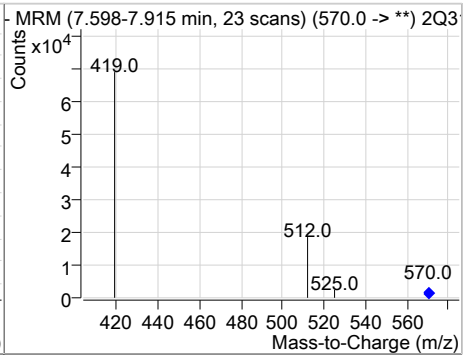




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	47.85	7.67	0.00	51753	570.0 -> 512.0	25.6	0.0	55.7

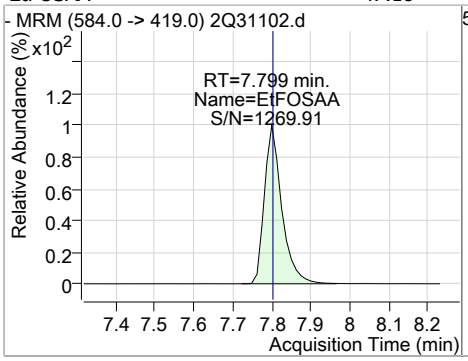


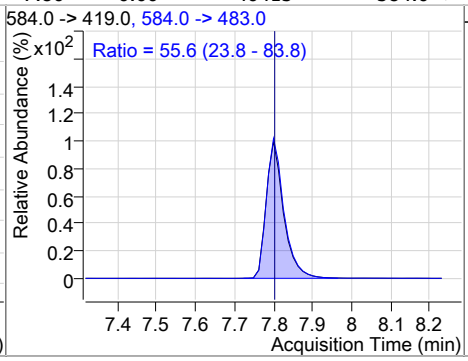


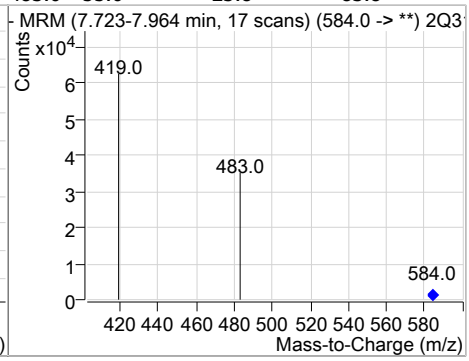


Perfluorinated Compounds by LC/MS/MS

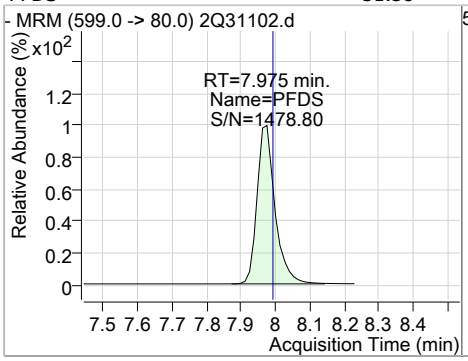
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	47.18	7.80	0.00	46415	584.0 -> 483.0	55.6	23.8	83.8

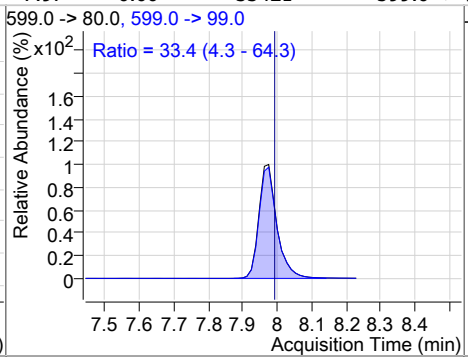


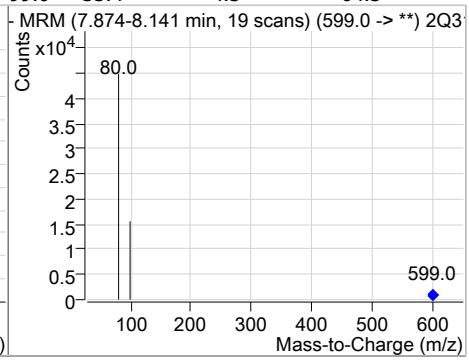




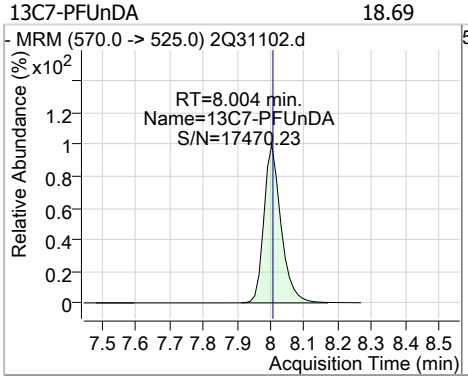
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	51.58	7.97	0.00	33421	599.0 -> 99.0	33.4	4.3	64.3

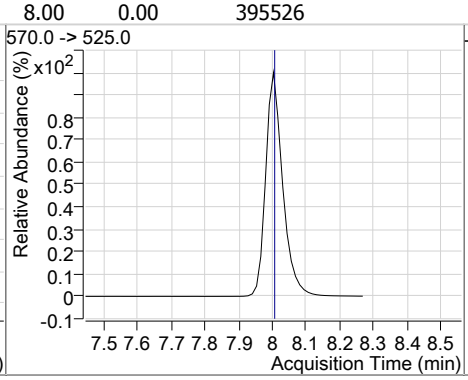


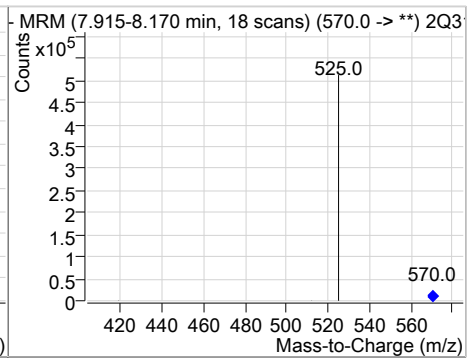




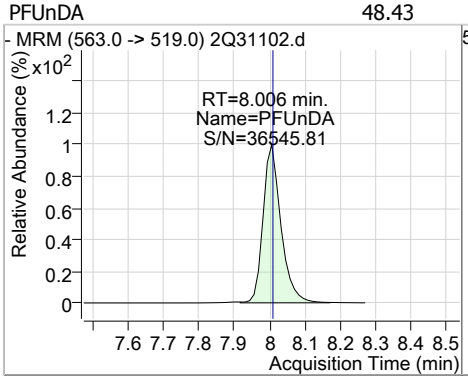
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.69	8.00	0.00	395526				

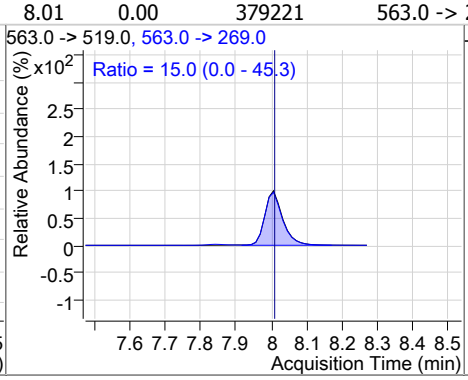


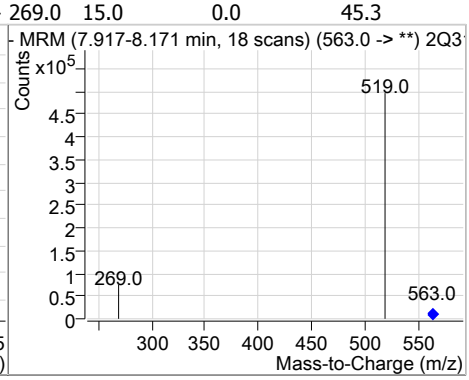




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	48.43	8.01	0.00	379221	563.0 -> 269.0	15.0	0.0	45.3

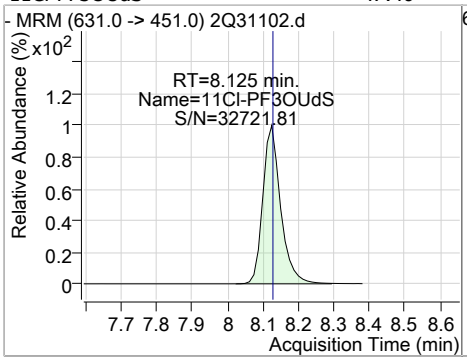


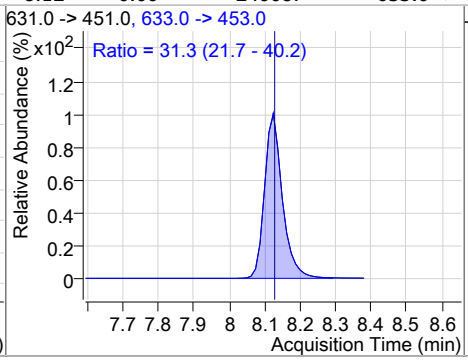


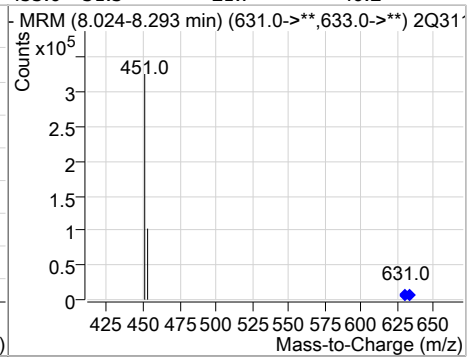


Perfluorinated Compounds by LC/MS/MS

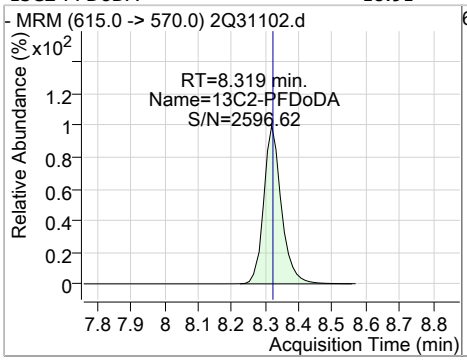
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	47.46	8.12	0.00	246087	633.0 -> 453.0	31.3	21.7	40.2

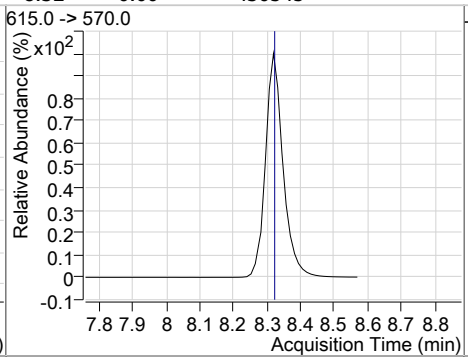


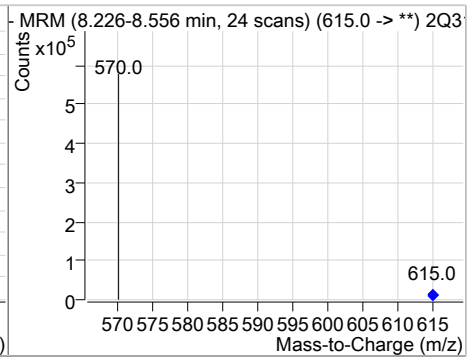




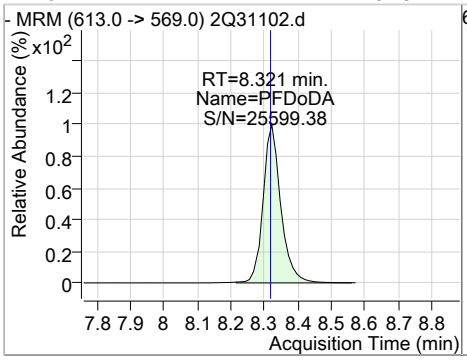
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.91	8.32	0.00	436545				

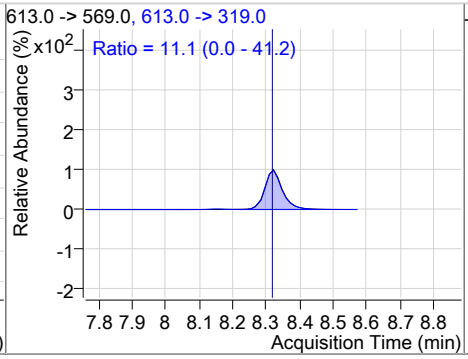


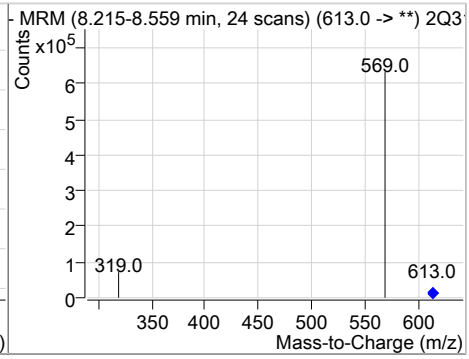




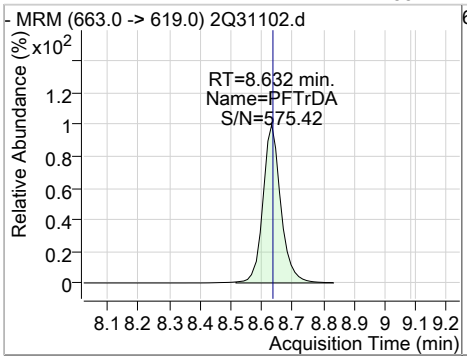
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	48.19	8.32	0.00	478802	613.0 -> 319.0	11.1	0.0	41.2

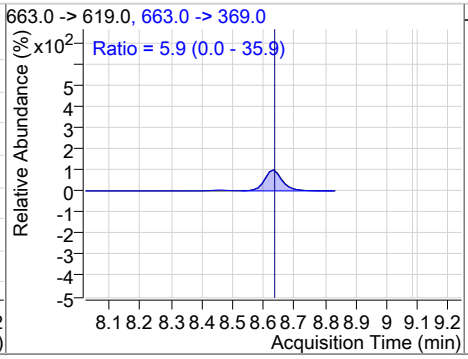


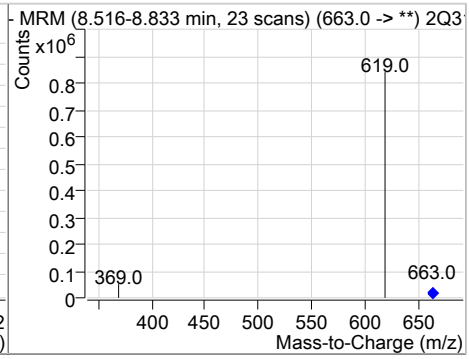




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	47.88	8.63	0.00	635402	663.0 -> 369.0	5.9	0.0	35.9

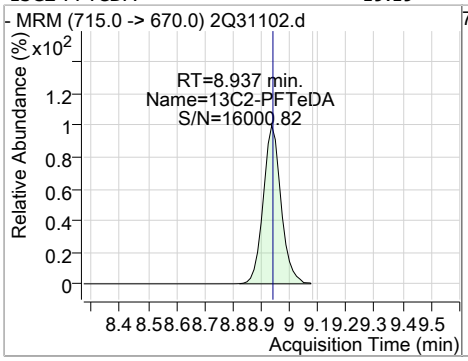


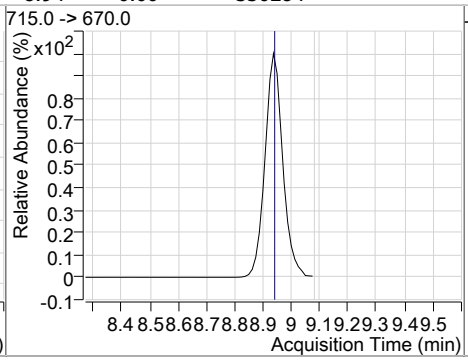


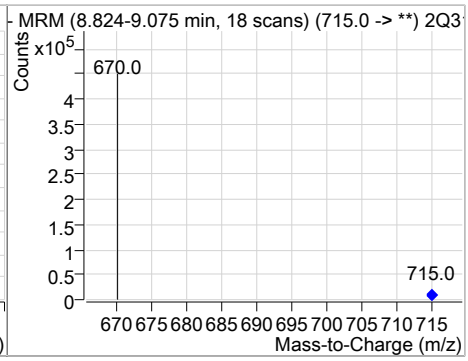


Perfluorinated Compounds by LC/MS/MS

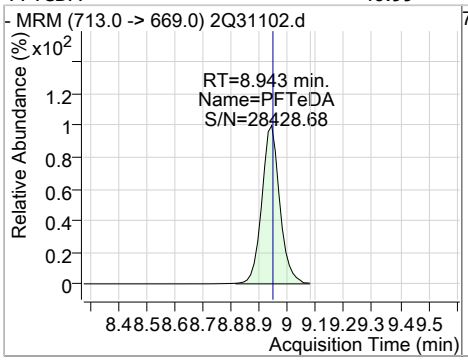
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.19	8.94	0.00	336284				

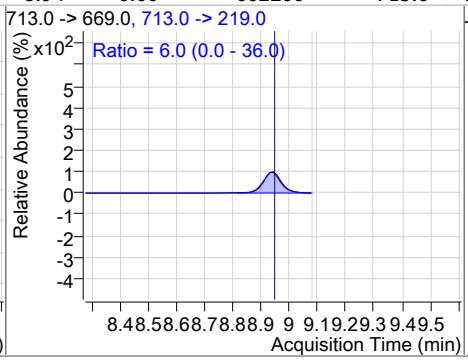


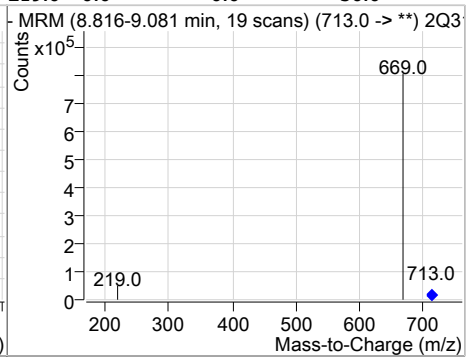




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	46.99	8.94	0.00	602260	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31102.D
Injection Time: 06/21/19 11:40
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31103.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 11:55:45 AM
Sample Name : ic498-100
Vial : Vial 9
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

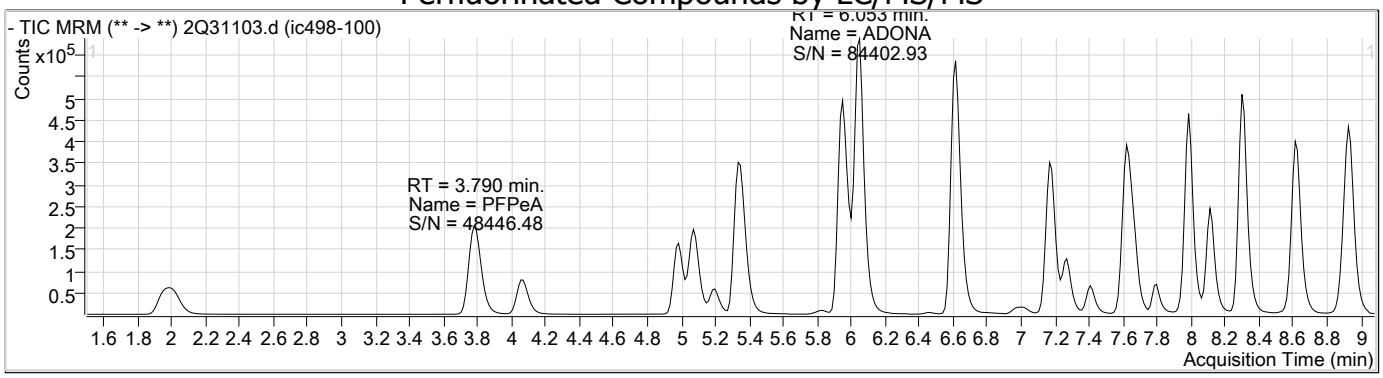
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
13C2-PFOA	6.621	415.0 -> 370.0	409152	20.00 µg/L	-0.015
13C4-PFOS	7.161	503.0 -> 80.0	77693	20.00 µg/L	-0.013
M4-PFBA	1.990	217.0 -> 172.0	269110	20.00 µg/L	0.000
M5-PFPeA	3.787	268.0 -> 223.0	204757	20.00 µg/L	-0.013
M5-PFHxA	5.076	318.0 -> 273.0	305527	20.00 µg/L	-0.013
M4-PFHpA	5.955	367.0 -> 322.0	332752	20.00 µg/L	-0.013
M8-PFOA	6.619	421.0 -> 376.0	289271	20.00 µg/L	-0.015
M9-PFNA	7.189	472.0 -> 427.0	256102	20.00 µg/L	-0.013
M6-PFDA	7.629	519.0 -> 474.0	385871	20.00 µg/L	-0.013
M7-PFUnDA	7.991	570.0 -> 525.0	487253	20.00 µg/L	-0.013
M2-PFDoDA	8.307	615.0 -> 570.0	543035	20.00 µg/L	-0.013
M2-PFTeDA	8.925	715.0 -> 670.0	387939	20.00 µg/L	-0.013
M8-FOSA	7.274	506.0 -> 78.0	116548	20.00 µg/L	0.000
M3-PFBS	4.068	302.0 -> 99.0	37600	20.00 µg/L	-0.013
M3-PFHxS	5.985	402.0 -> 99.0	29885	20.00 µg/L	-0.013
M8-PFOS	7.159	507.0 -> 99.0	44031	20.00 µg/L	-0.013
M2-4:2FTS	4.984	329.0 -> 309.0	159688	20.00 µg/L	-0.013
M2-6:2FTS	6.602	429.0 -> 409.0	118885	20.00 µg/L	-0.013
M2-8:2FTS	7.652	529.0 -> 509.0	90734	20.00 µg/L	-0.013
M3-MeFOSAA	7.673	573.0 -> 419.0	50085	20.00 µg/L	0.000
M3-HFPO-DA	5.342	287.0 -> 169.0	259223	100.00 µg/L	-0.023
System Monitoring Compounds					
13C2-4:2FTS	4.984	329.0 -> 309.0	159688	32.91 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 164.5%	
13C2-6:2FTS	6.602	429.0 -> 409.0	118875	29.86 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 149.3%	
13C2-8:2FTS	7.652	529.0 -> 509.0	90799	31.75 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 158.7%	
13C2-PFDoDA	8.307	615.0 -> 570.0	543049	23.53 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.6%	
13C2-PFTeDA	8.925	715.0 -> 670.0	387937	22.13 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C3-PFBS	4.068	302.0 -> 99.0	37604	24.75 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.7%	
13C3-PFHxS	5.985	402.0 -> 99.0	29828	23.43 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.1%	
13C4-PFBA	1.990	217.0 -> 172.0	267281	25.85 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.2%	
13C4-PFHpA	5.955	367.0 -> 322.0	332748	24.23 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.2%	
13C5-PFHxA	5.076	318.0 -> 273.0	305511	25.24 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.2%	
13C5-PFPeA	3.787	268.0 -> 223.0	204738	25.50 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.5%	
13C6-PFDA	7.629	519.0 -> 474.0	385681	22.11 µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

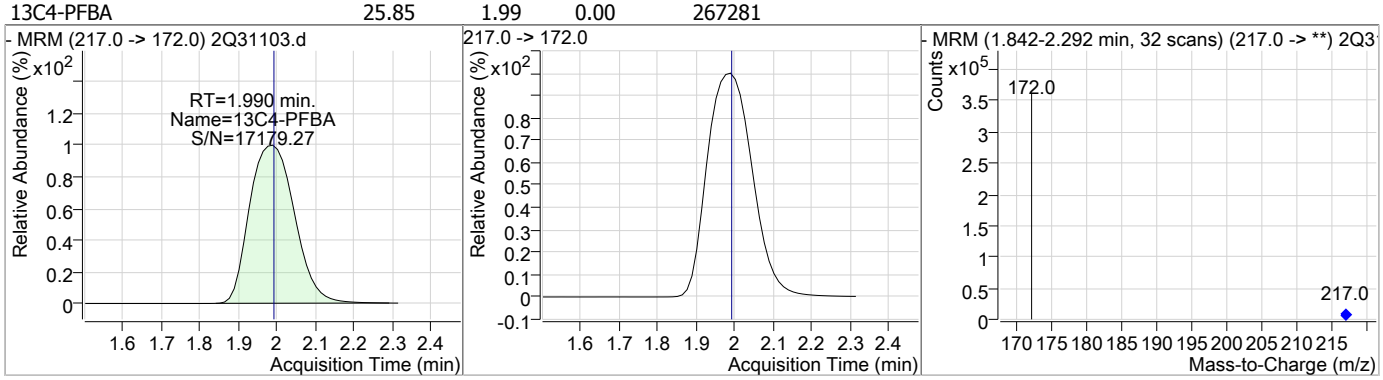
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%			
13C7-PFUnDA	7.991	570.0 -> 525.0	487305	23.03	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%			
13C8-FOSA	7.274	506.0 -> 78.0	116539	19.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C8-PFOA	6.619	421.0 -> 376.0	289363	22.56	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%			
13C8-PFOS	7.159	507.0 -> 99.0	44029	23.19	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.0%			
13C9-PFNA	7.189	472.0 -> 427.0	256005	23.56	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.8%			
d3-MeFOSAA	7.673	573.0 -> 419.0	50074	24.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.1%			
M2-PFOA	6.621	415.0 -> 370.0	409287	20.00	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.161	503.0 -> 80.0	77702	20.00	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.342	287.0 -> 169.0	259223	106.21	µg/L		-0.023
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
Target Compounds							**QValue**
4:2FTS	4.987	327.0 -> 307.0	380875	83.70	µg/L		99
6:2FTS	6.605	427.0 -> 407.0	256258	80.98	µg/L		100
8:2FTS	7.653	527.0 -> 507.0	194660	82.68	µg/L		97
EtFOSAA	7.799	584.0 -> 419.0	125398	101.57	µg/L		98
FOSA	7.277	498.0 -> 78.0	293375	100.95	µg/L		100
MeFOSAA	7.673	570.0 -> 419.0	137482	101.29	µg/L		99
PFBA	1.986	213.0 -> 169.0	232548	100.99	µg/L		100
PFBS	4.059	299.0 -> 80.0	260531	100.97	µg/L		100
PFDA	7.629	513.0 -> 469.0	644846	101.24	µg/L		98
PFDoDA	8.309	613.0 -> 569.0	1249356	101.09	µg/L		100
PFDS	7.962	599.0 -> 80.0	79742	99.06	µg/L		99
PFHpA	5.958	363.0 -> 319.0	1475032	101.01	µg/L		100
PFHpS	6.631	449.0 -> 80.0	165771	98.78	µg/L		100
PFHxA	5.078	313.0 -> 269.0	452013	100.61	µg/L		99
PFHxS	5.988	399.0 -> 80.0	215797	101.13	µg/L	m	97
PFNA	7.190	463.0 -> 419.0	700928	101.22	µg/L		100
PFNS	7.600	549.0 -> 80.0	136278	99.46	µg/L		99
PFOA	6.623	413.0 -> 369.0	844079	101.13	µg/L		100
PFOS	7.162	499.0 -> 80.0	221174	101.55	µg/L	m	82
PFPeA	3.790	263.0 -> 219.0	861884	101.10	µg/L		100
PFPeS	5.195	349.0 -> 80.0	166818	100.81	µg/L		99
PFTeDA	8.931	713.0 -> 669.0	1464016	99.00	µg/L		100
PFTrDA	8.620	663.0 -> 619.0	1549828	101.22	µg/L		100
PFUnDA	7.994	563.0 -> 519.0	973761	100.95	µg/L		100
11Cl-PF3OUdS	8.112	631.0 -> 451.0	654530	101.48	µg/L		100
9Cl-PF3ONS	7.409	531.0 -> 351.0	181404	100.12	µg/L		97
ADONA	6.053	377.0 -> 251.0	1972128	104.23	µg/L		100
HFPO-DA	5.348	329.0 -> 169.0	1082031	497.75	µg/L		99

= Qualifier out of range, m = manually integrated, + = Area summed

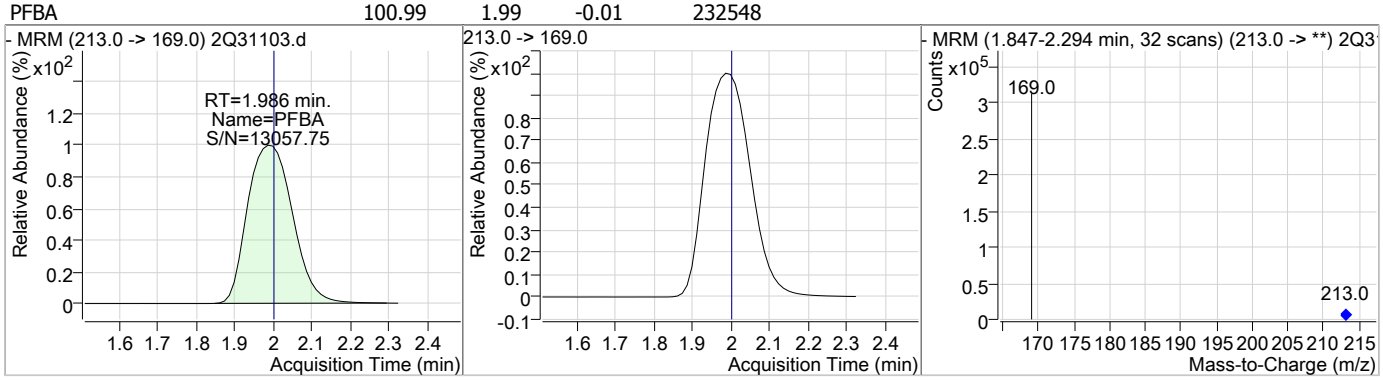
Perfluorinated Compounds by LC/MS/MS



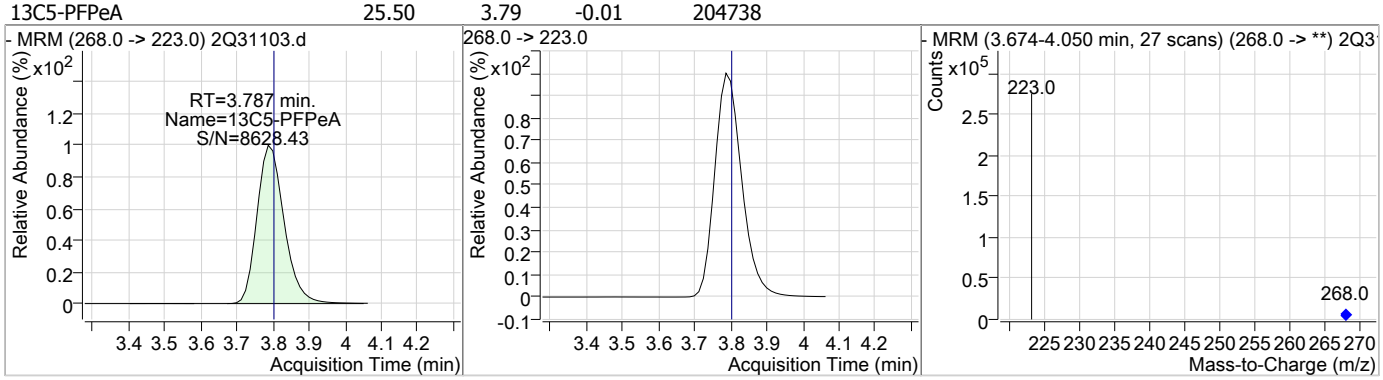
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	25.85	1.99	0.00	267281				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.99	1.99	-0.01	232548				

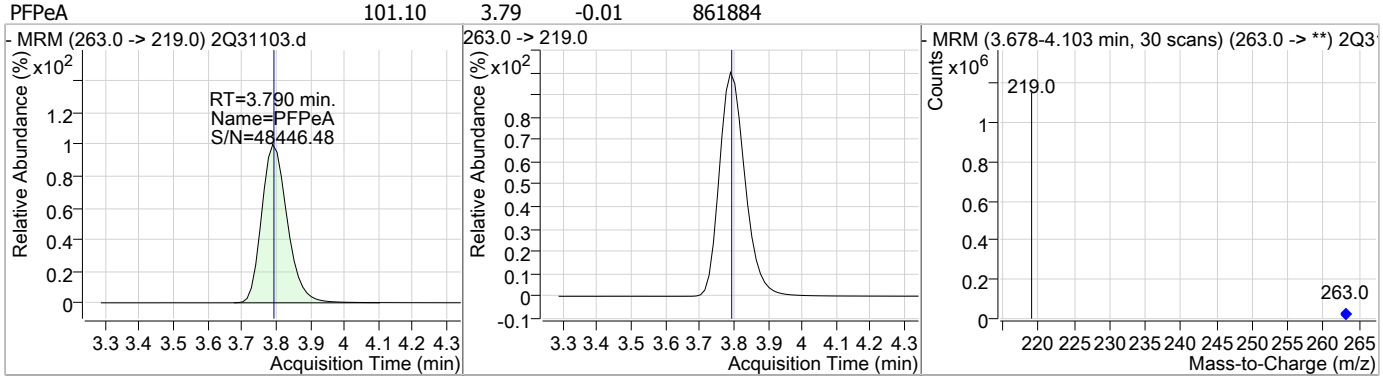


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	25.50	3.79	-0.01	204738				

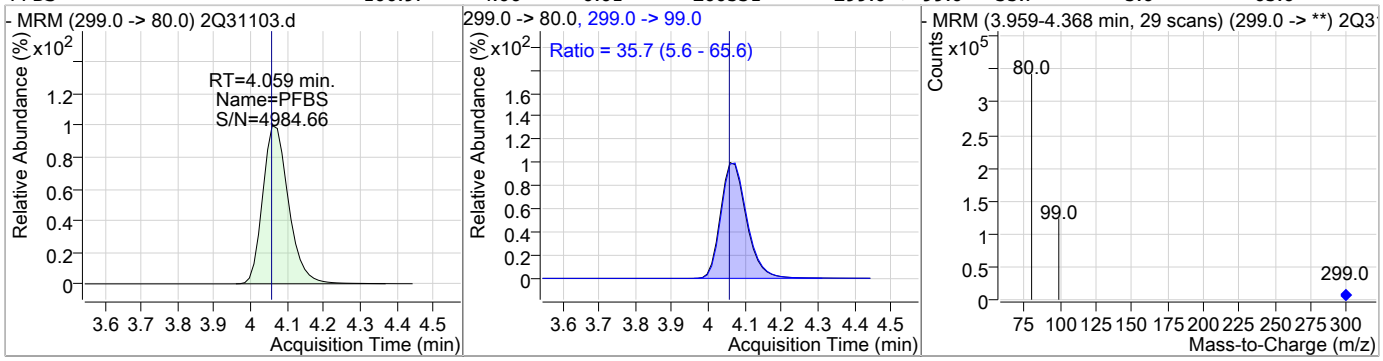


Perfluorinated Compounds by LC/MS/MS

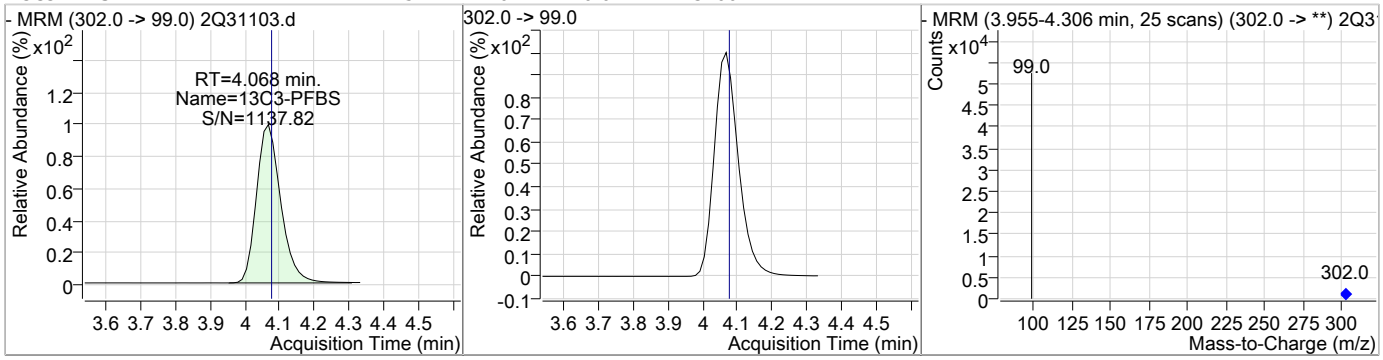
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	101.10	3.79	-0.01	861884				



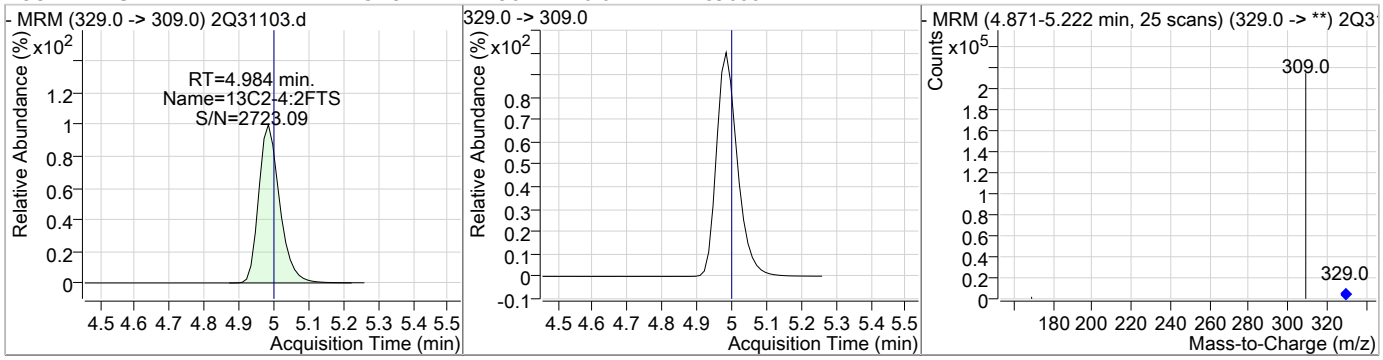
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.97	4.06	-0.01	260531	299.0 -> 99.0	35.7	5.6	65.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	24.75	4.07	-0.01	37604				

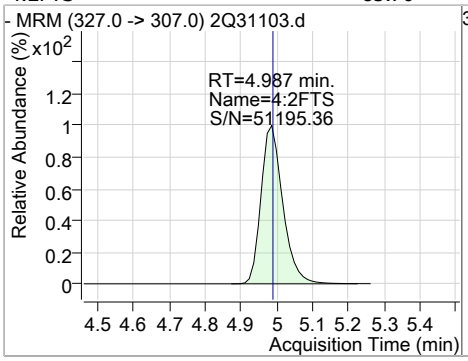


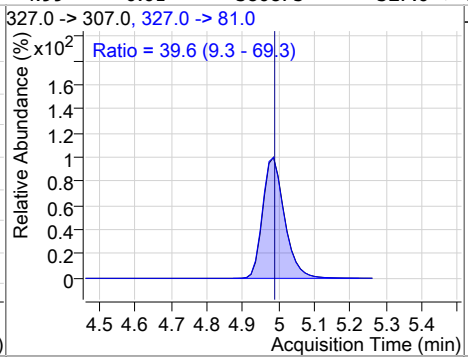
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	32.91	4.98	-0.01	159688				

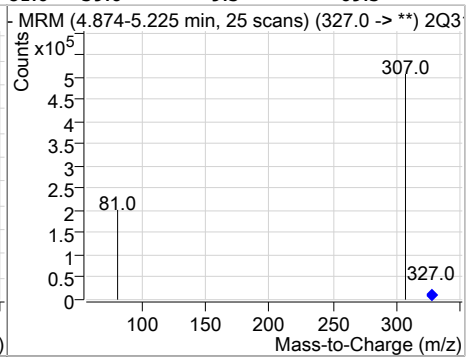


Perfluorinated Compounds by LC/MS/MS

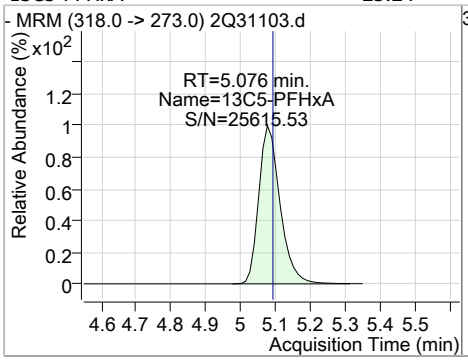
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	83.70	4.99	-0.01	380875	327.0 -> 81.0	39.6	9.3	69.3

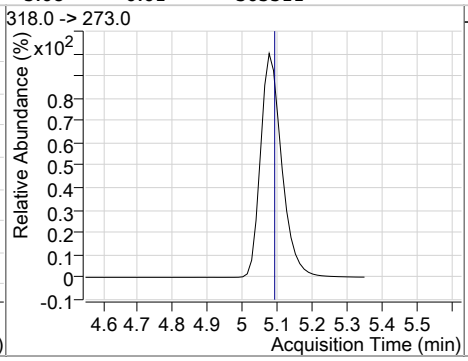


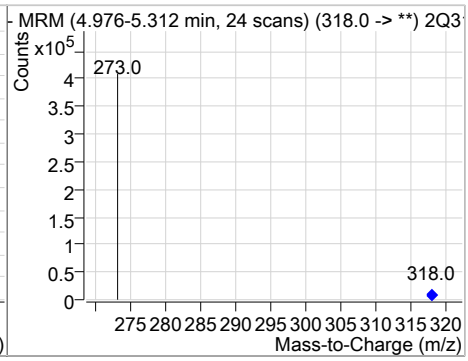




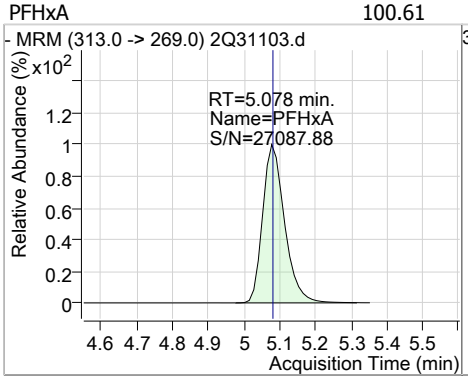
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	25.24	5.08	-0.01	305511				

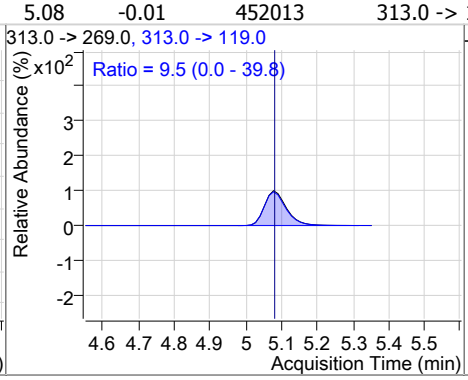


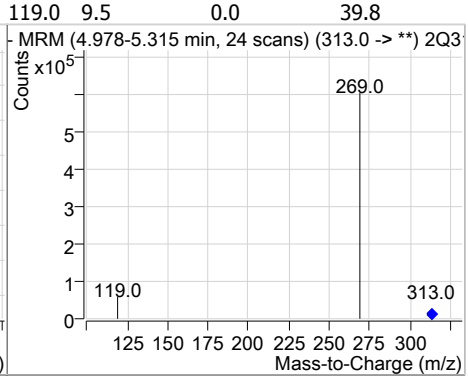




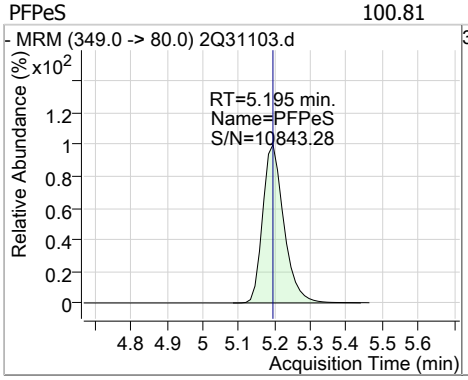
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.61	5.08	-0.01	452013	313.0 -> 119.0	9.5	0.0	39.8

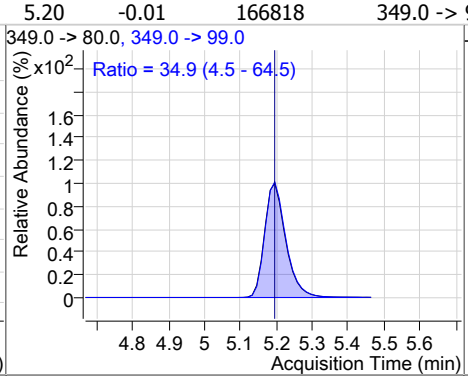


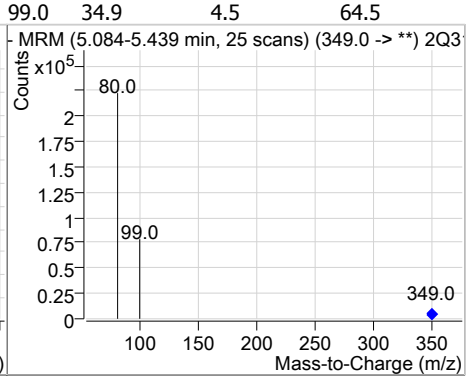




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.81	5.20	-0.01	166818	349.0 -> 99.0	34.9	4.5	64.5

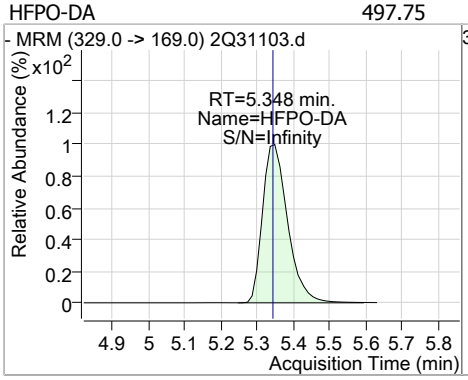


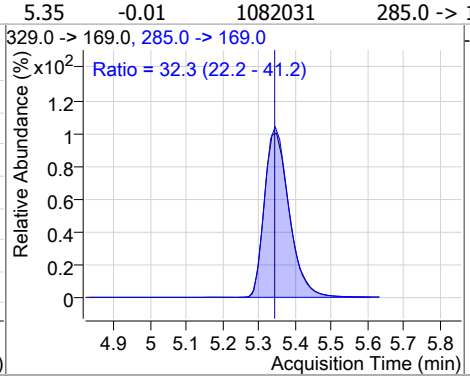


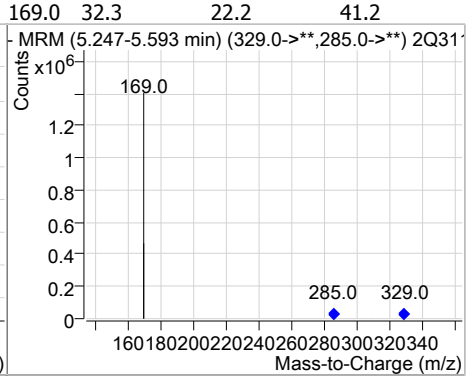


Perfluorinated Compounds by LC/MS/MS

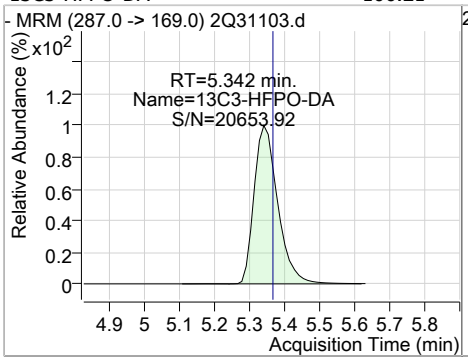
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	497.75	5.35	-0.01	1082031	285.0 -> 169.0	32.3	22.2	41.2

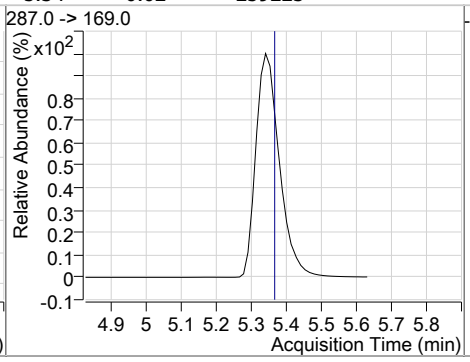


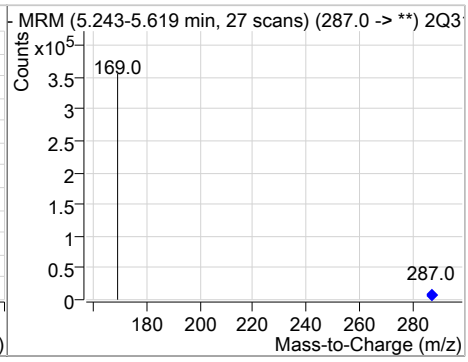




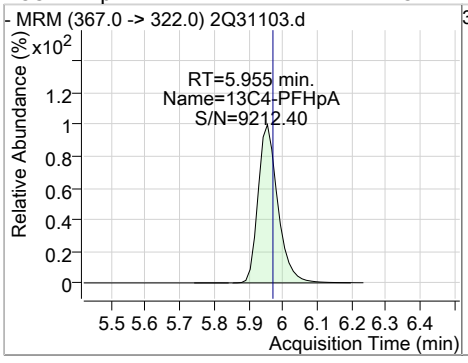
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	106.21	5.34	-0.02	259223				

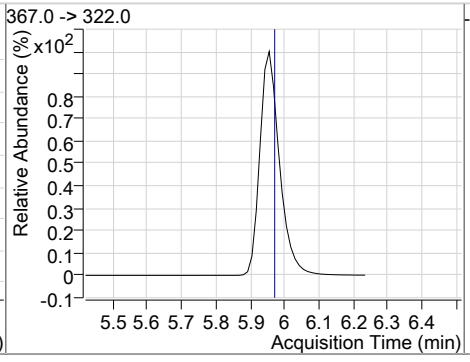


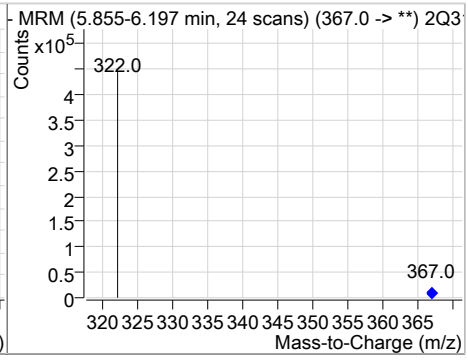




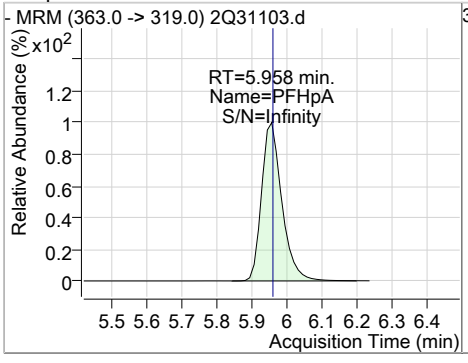
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.23	5.96	-0.01	332748				

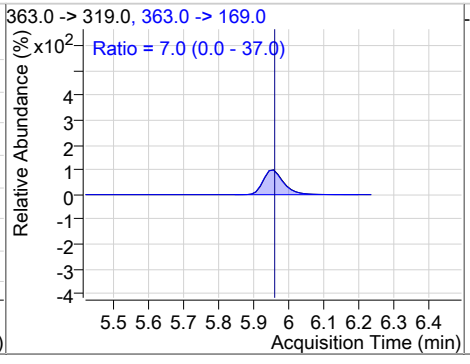


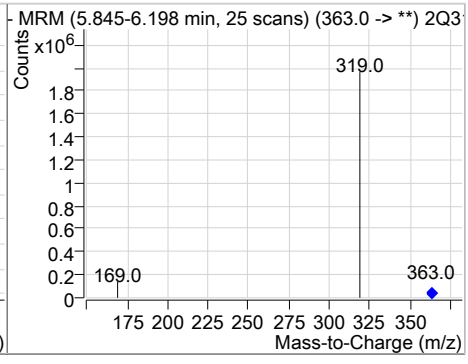




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	101.01	5.96	-0.01	1475032	363.0 -> 169.0	7.0	0.0	37.0

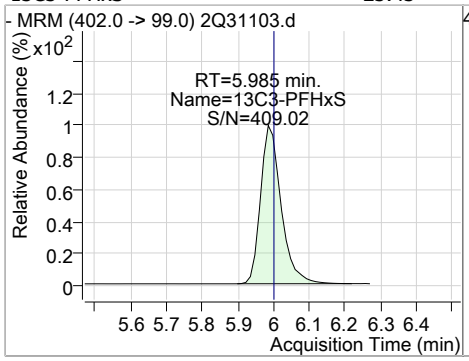


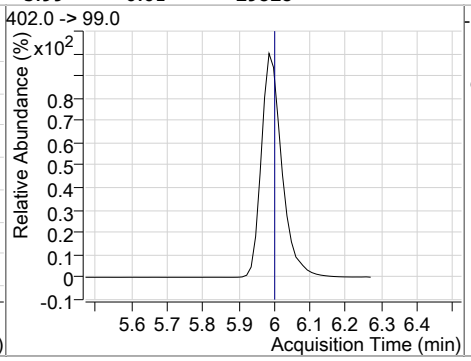


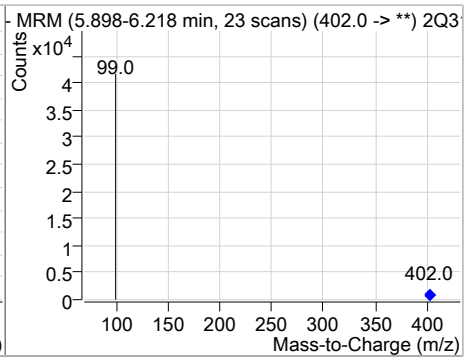


Perfluorinated Compounds by LC/MS/MS

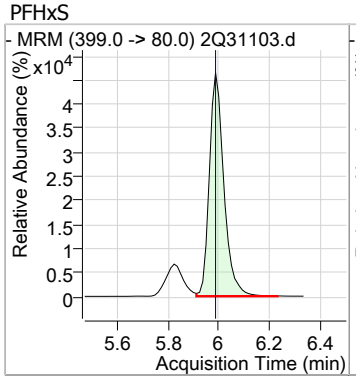
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	23.43	5.99	-0.01	29828				

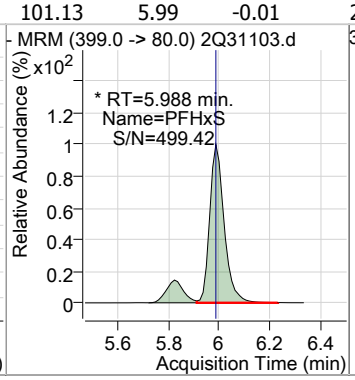


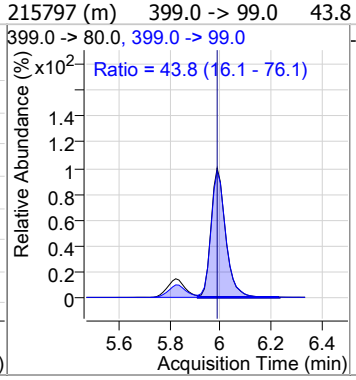


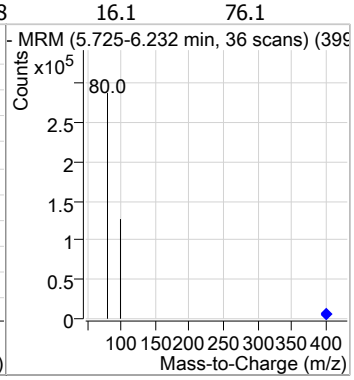


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	101.13	5.99	-0.01	215797 (m)	399.0 -> 99.0	43.8	16.1	76.1

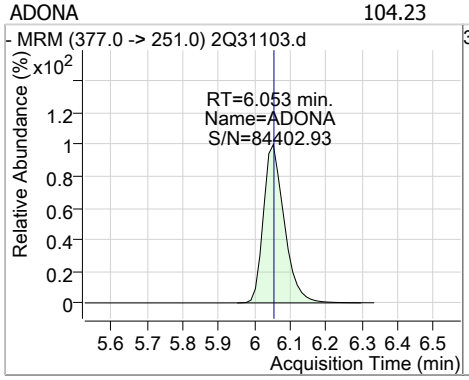


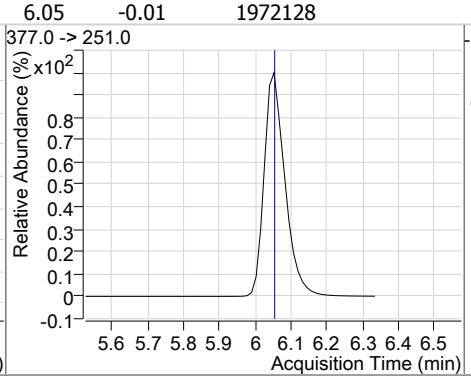


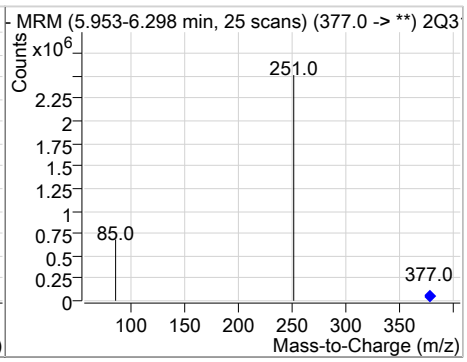




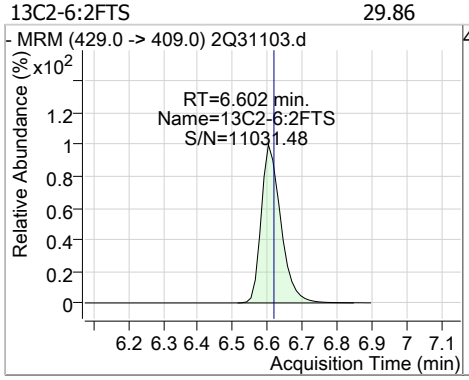
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	104.23	6.05	-0.01	1972128				

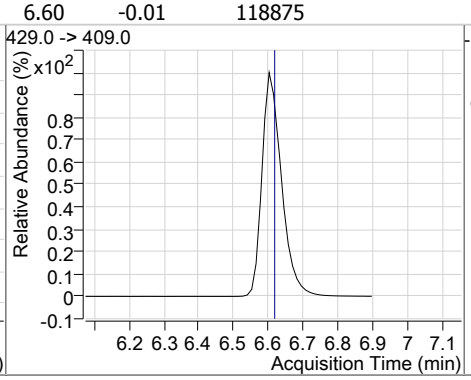


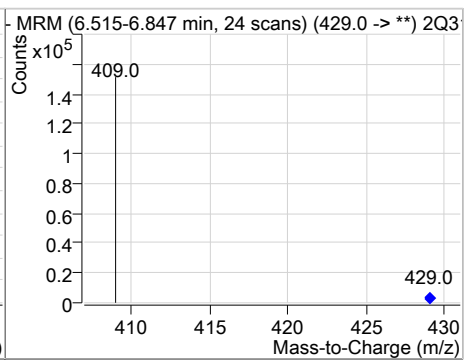




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	29.86	6.60	-0.01	118875				

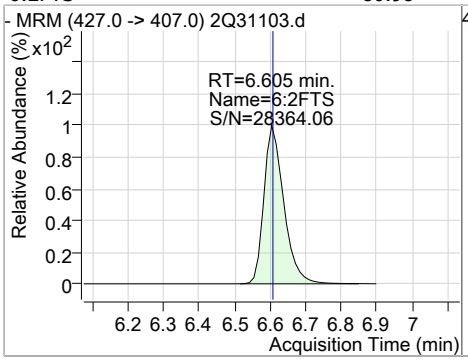


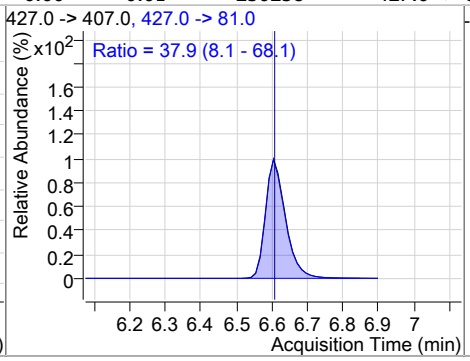


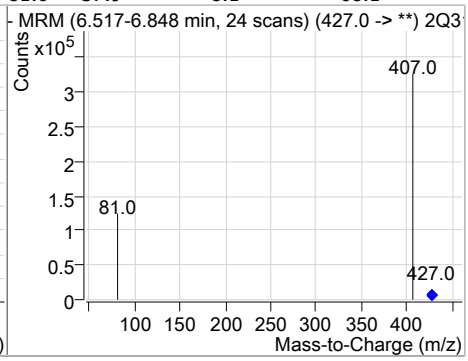


Perfluorinated Compounds by LC/MS/MS

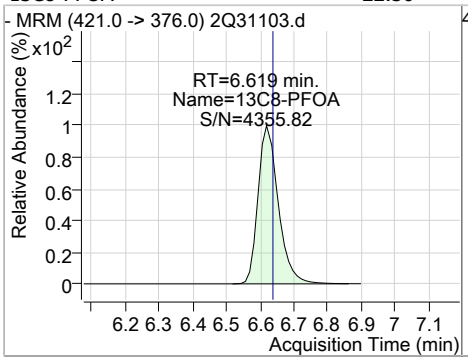
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	80.98	6.60	-0.01	256258	427.0 -> 81.0	37.9	8.1	68.1

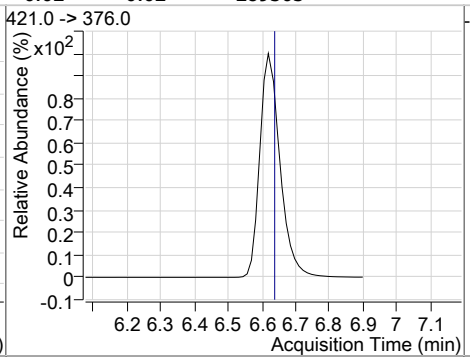


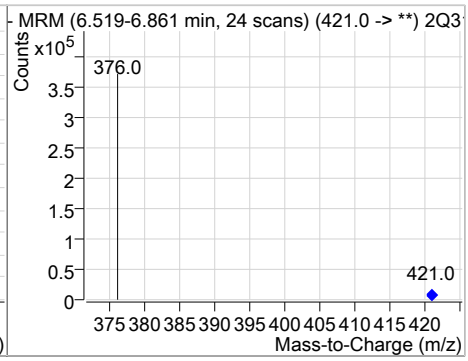




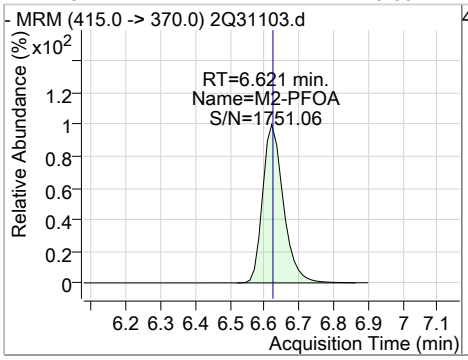
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.56	6.62	-0.02	289363				

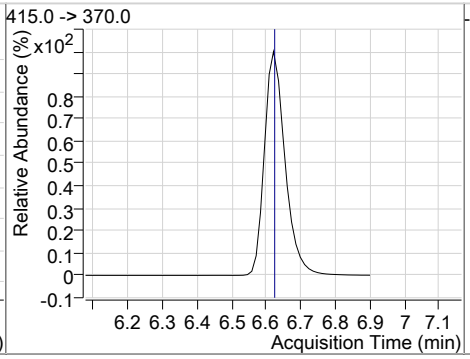


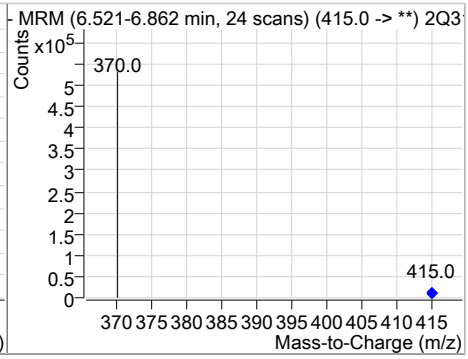




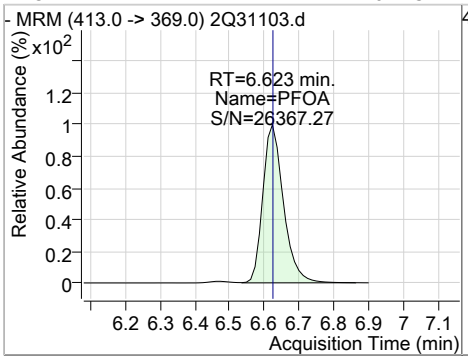
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.62	-0.01	409287				

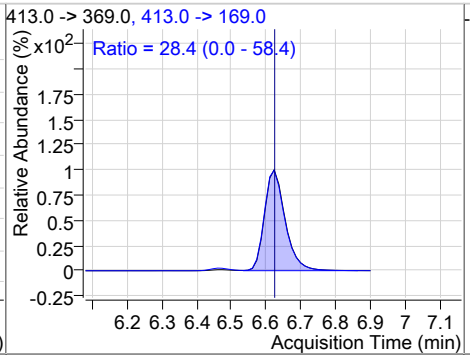


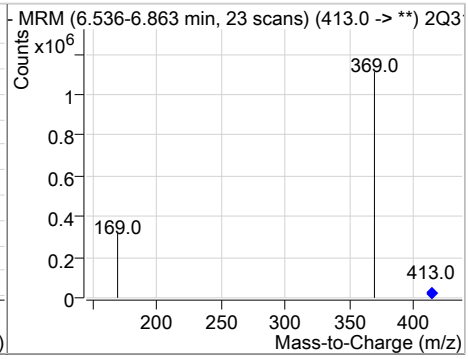




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	101.13	6.62	-0.01	844079	413.0 -> 169.0	28.4	0.0	58.4

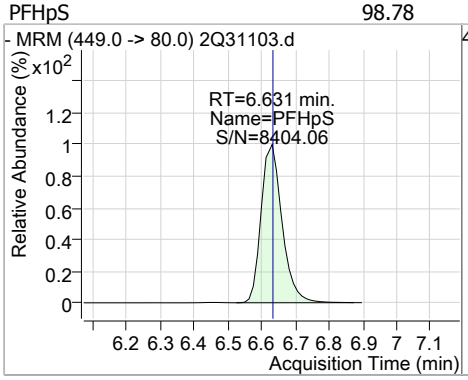


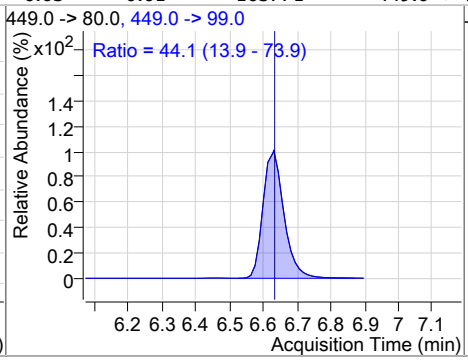


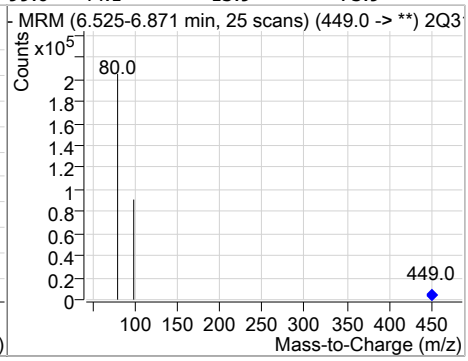


Perfluorinated Compounds by LC/MS/MS

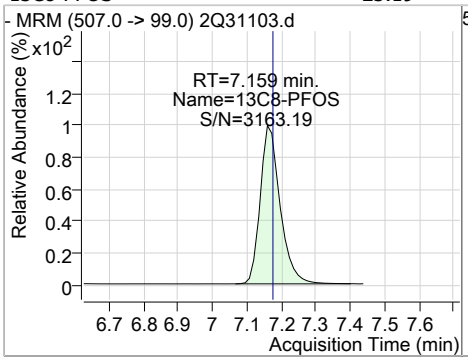
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	98.78	6.63	-0.01	165771	449.0 -> 99.0	44.1	13.9	73.9

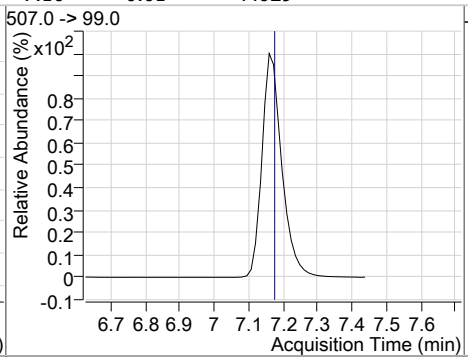


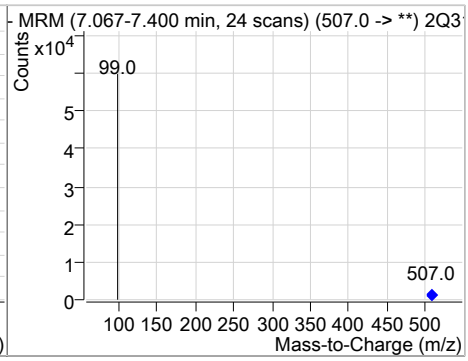




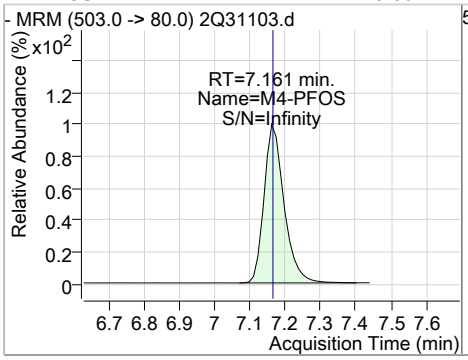
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.19	7.16	-0.01	44029				

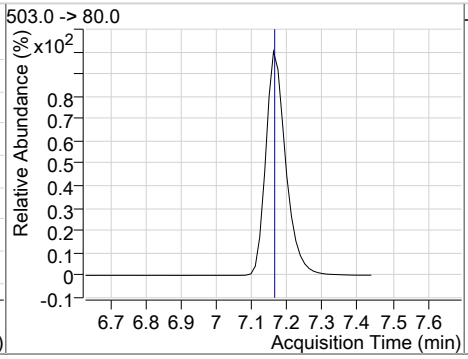


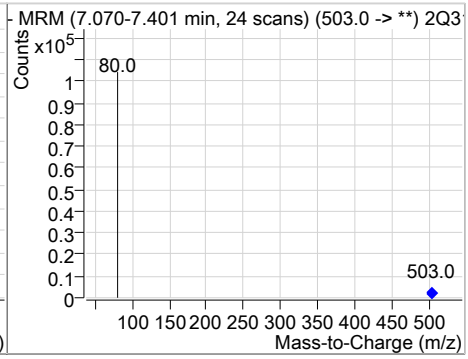




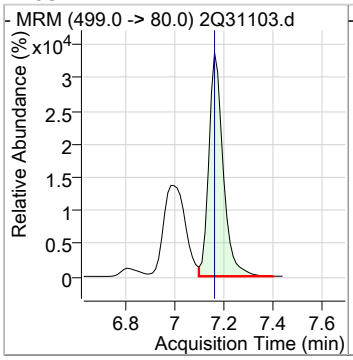
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.16	-0.01	77702				

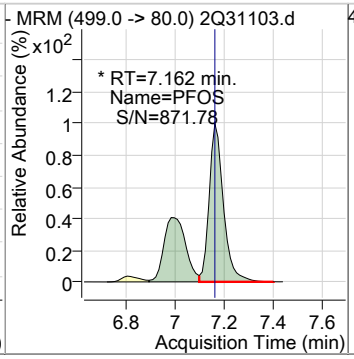


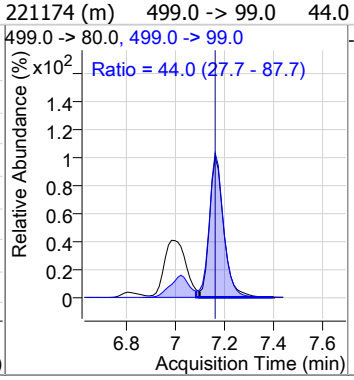


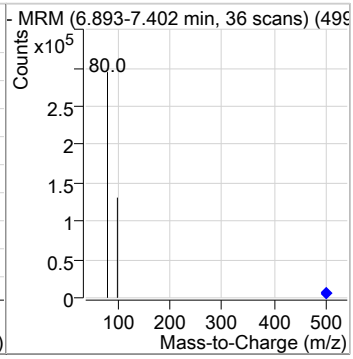


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	101.55	7.16	-0.01	221174 (m)	499.0 -> 99.0	44.0	27.7	87.7



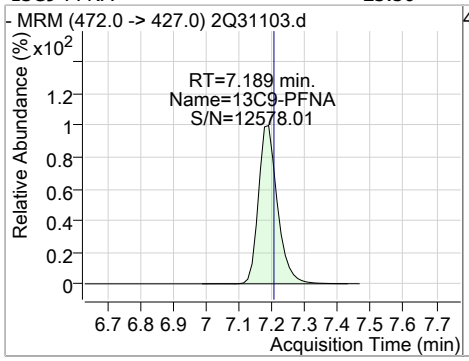


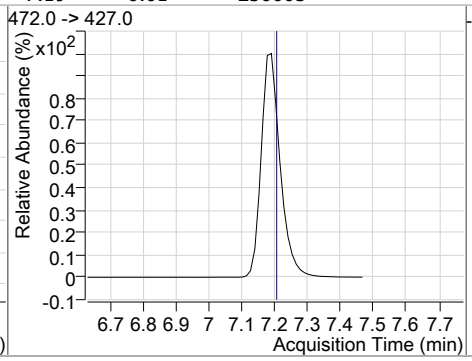


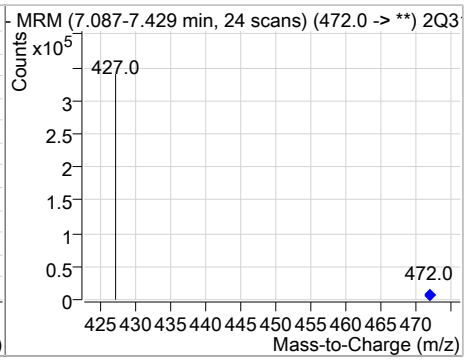


Perfluorinated Compounds by LC/MS/MS

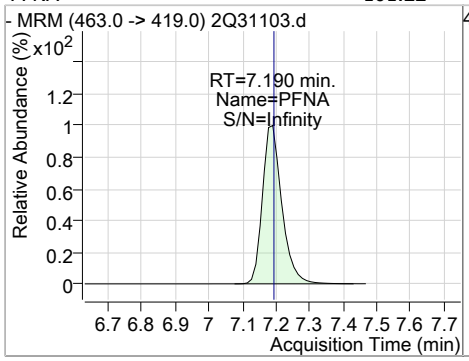
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	23.56	7.19	-0.01	256005				

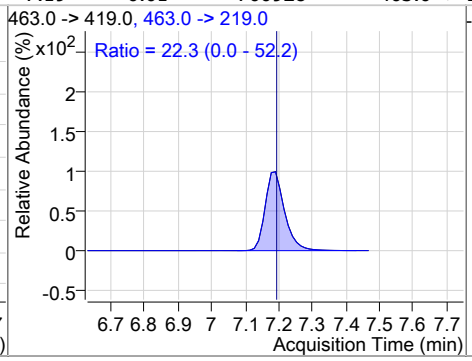


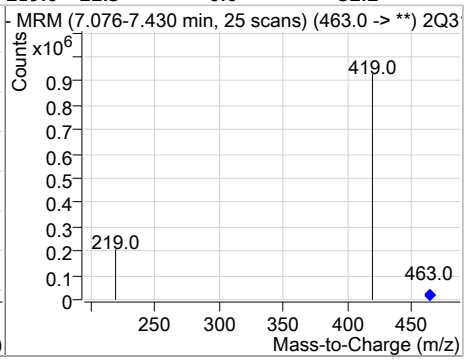




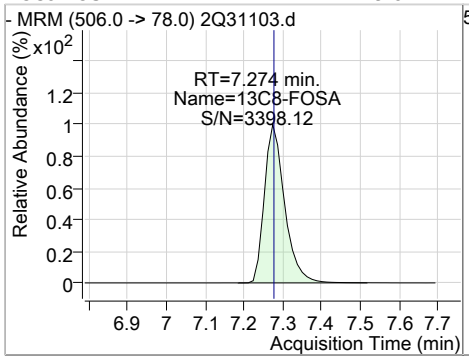
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	101.22	7.19	-0.01	700928	463.0 -> 219.0	22.3	0.0	52.2

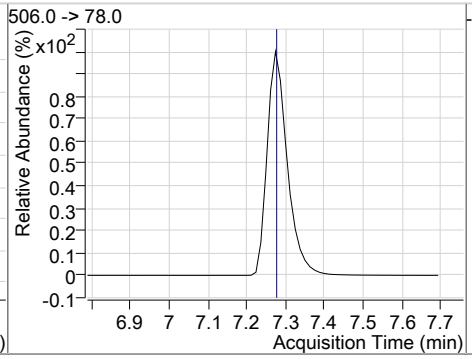


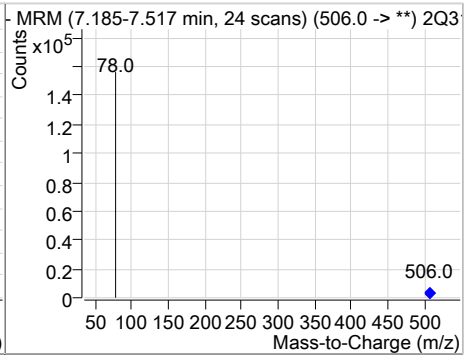




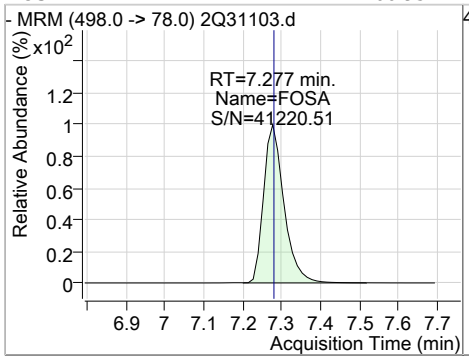
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.81	7.27	0.00	116539				

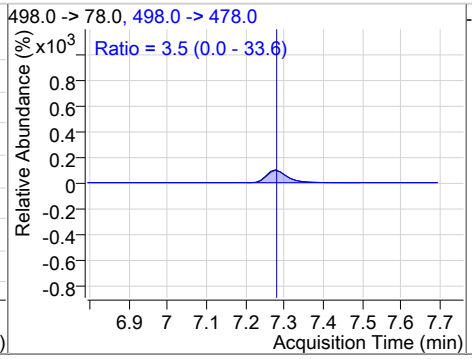


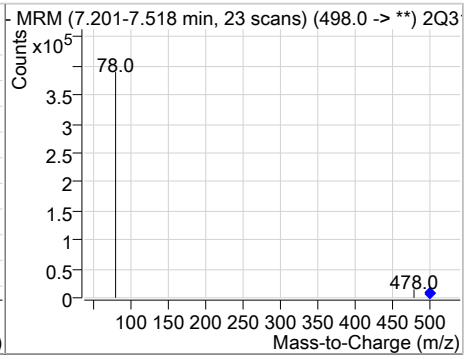




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.95	7.28	0.00	293375	498.0 -> 478.0	3.5	0.0	33.6

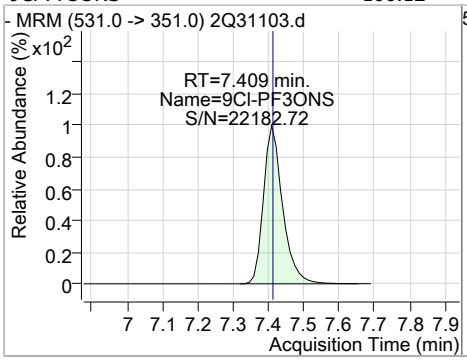


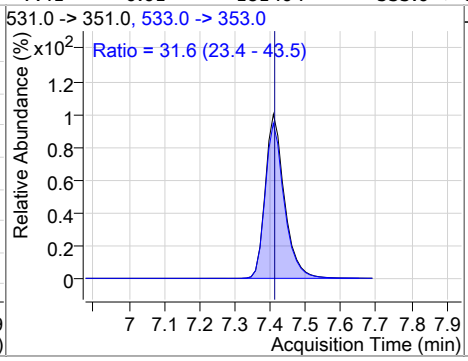


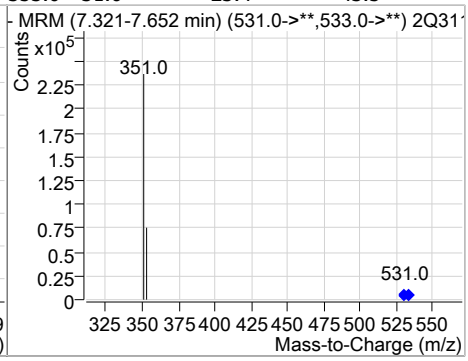


Perfluorinated Compounds by LC/MS/MS

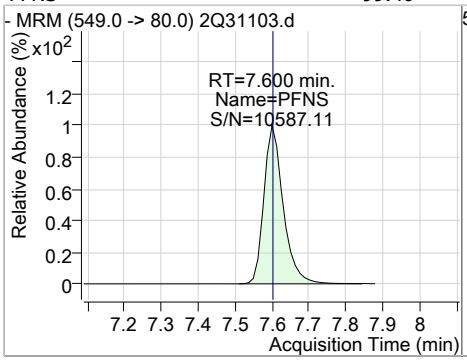
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	100.12	7.41	-0.01	181404	533.0 -> 353.0	31.6	23.4	43.5

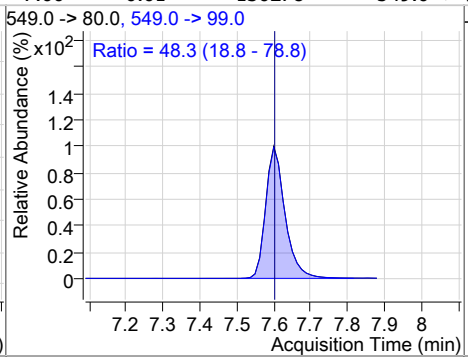


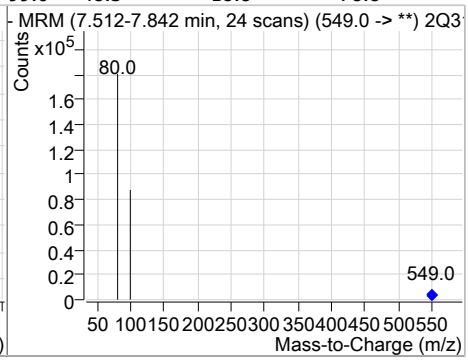




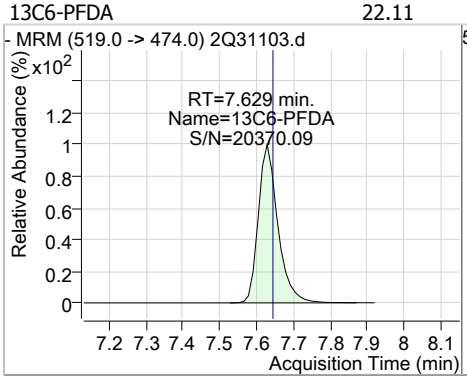
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.46	7.60	-0.01	136278	549.0 -> 99.0	48.3	18.8	78.8

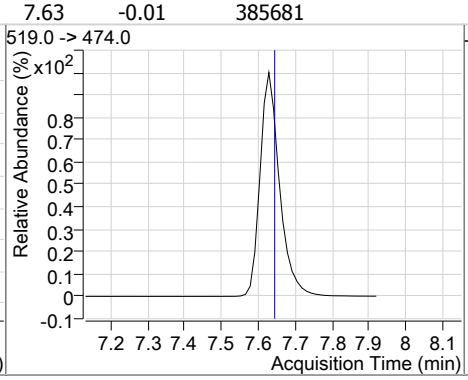


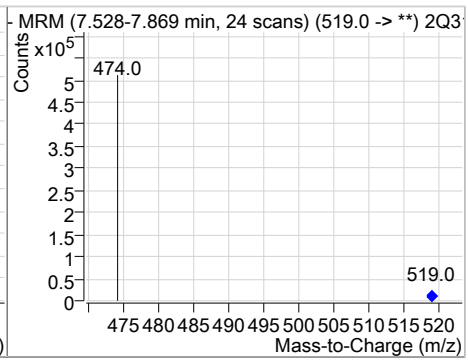




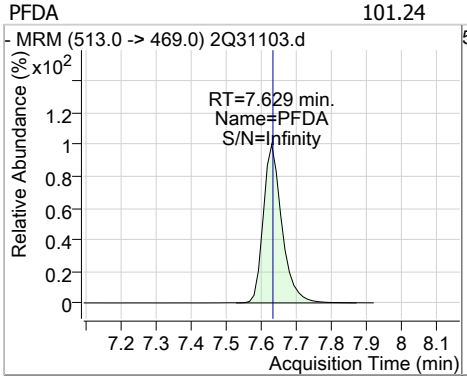
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.11	7.63	-0.01	385681				

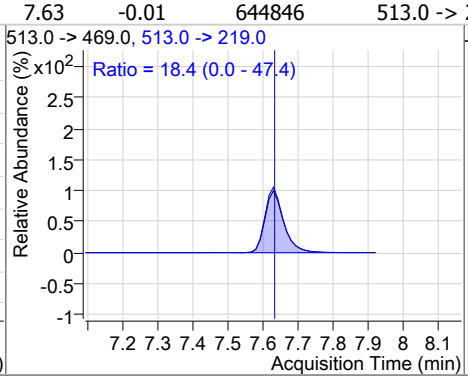


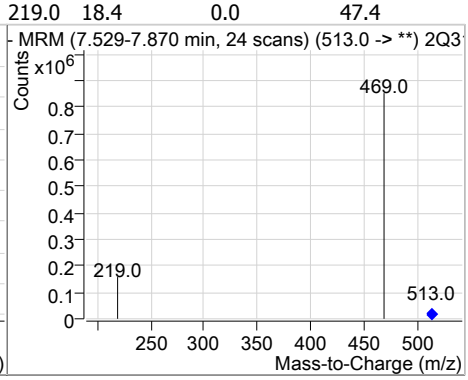




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	101.24	7.63	-0.01	644846	513.0 -> 219.0	18.4	0.0	47.4

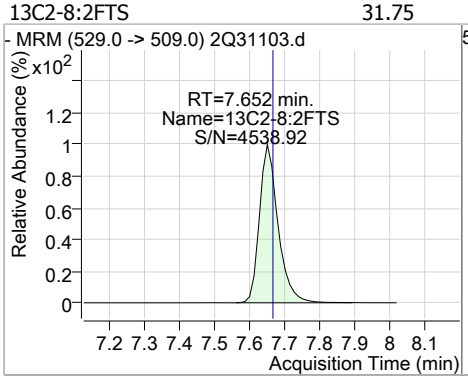


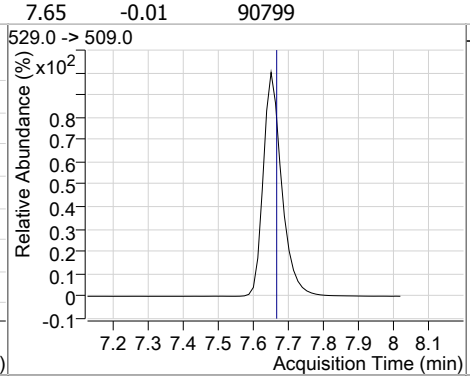


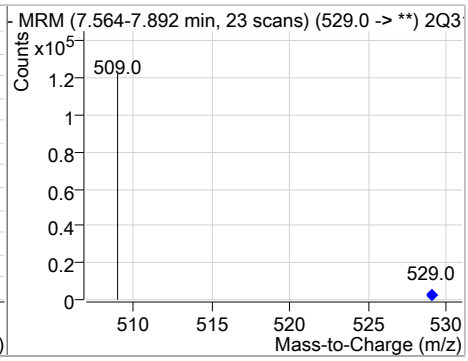


Perfluorinated Compounds by LC/MS/MS

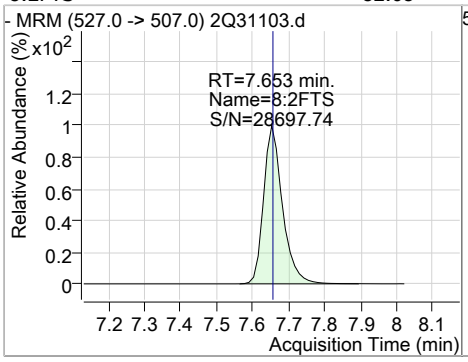
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	31.75	7.65	-0.01	90799				

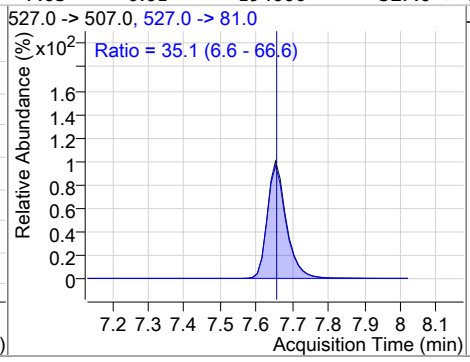


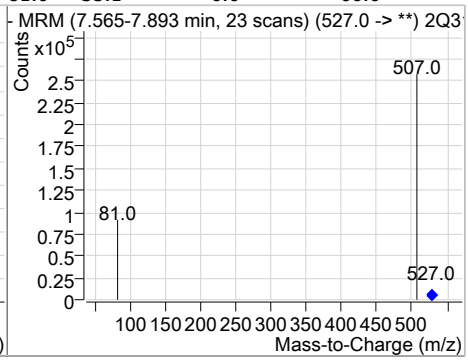




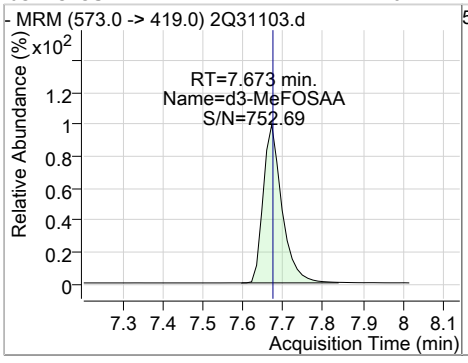
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	82.68	7.65	-0.01	194660	527.0 -> 81.0	35.1	6.6	66.6

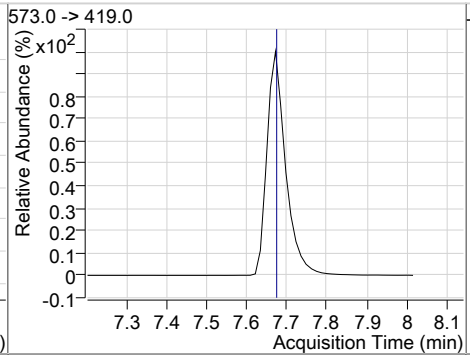


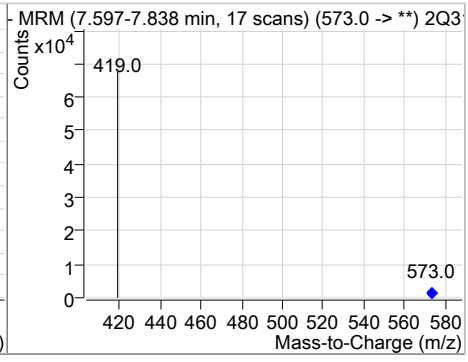




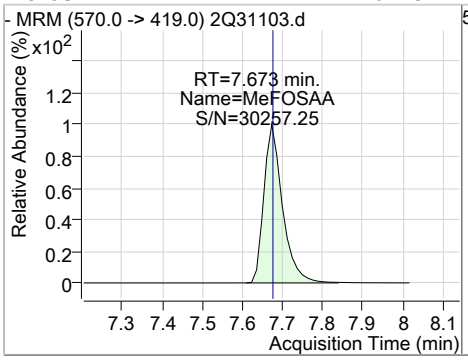
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.02	7.67	0.00	50074				

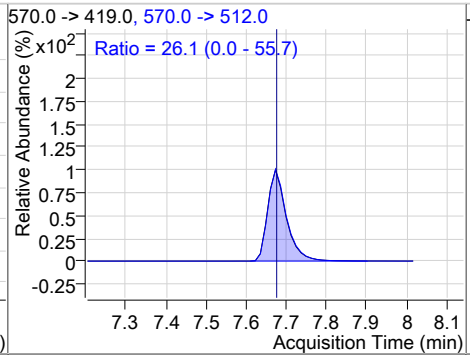


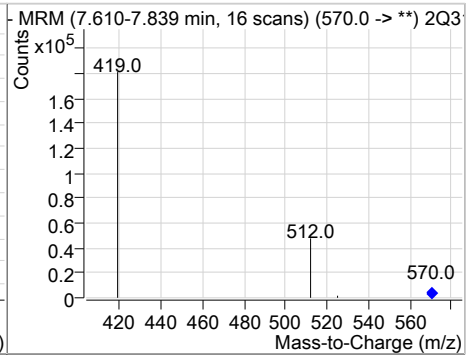




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	101.29	7.67	0.00	137482	570.0 -> 512.0	26.1	0.0	55.7

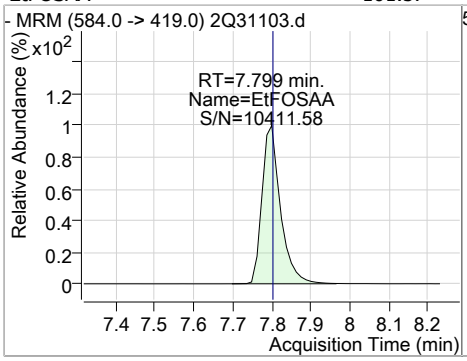


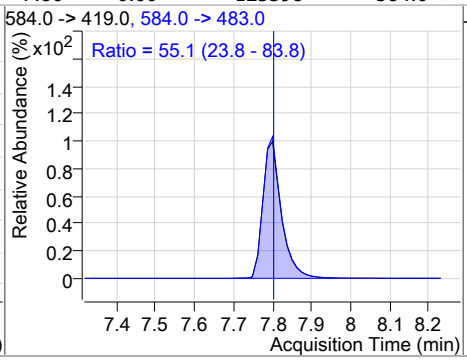


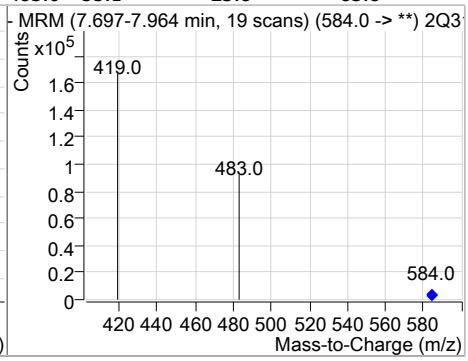


Perfluorinated Compounds by LC/MS/MS

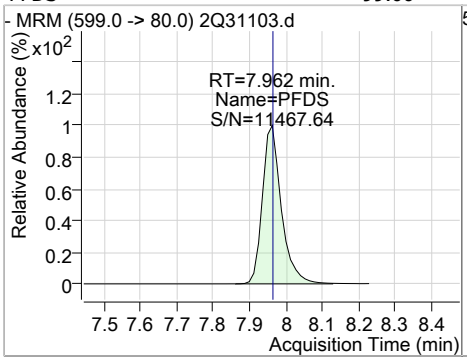
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	101.57	7.80	0.00	125398	584.0 -> 483.0	55.1	23.8	83.8

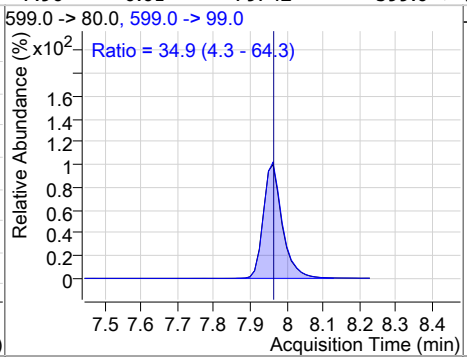


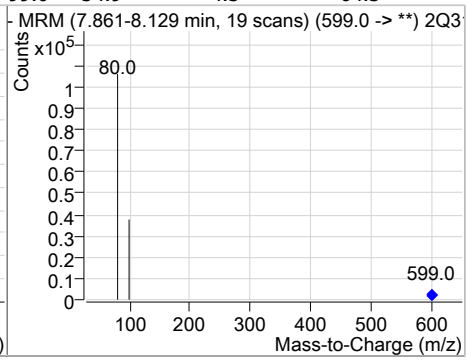




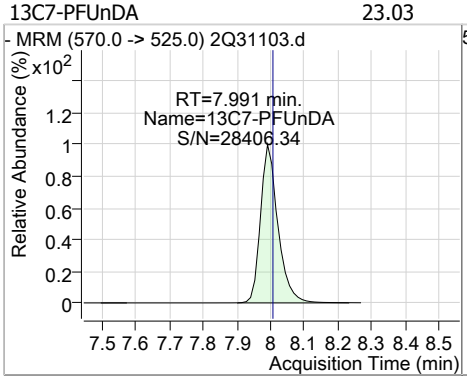
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	99.06	7.96	-0.01	79742	599.0 -> 99.0	34.9	4.3	64.3

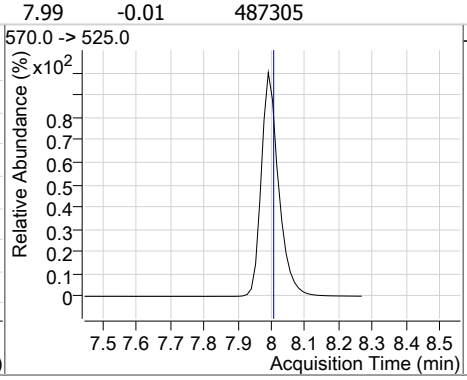


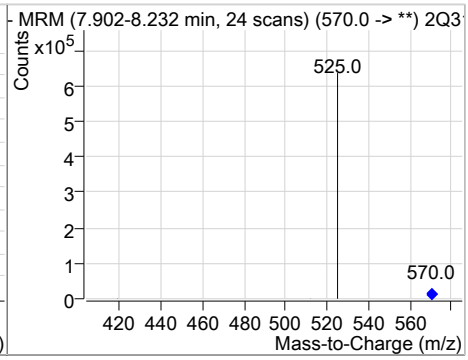




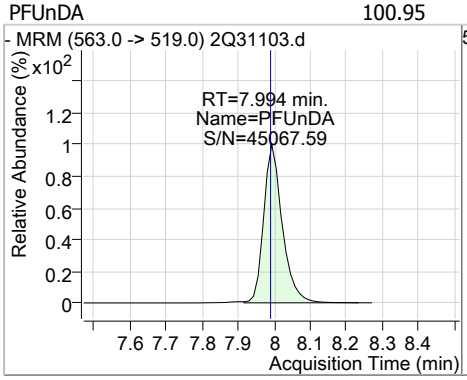
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.03	7.99	-0.01	487305				

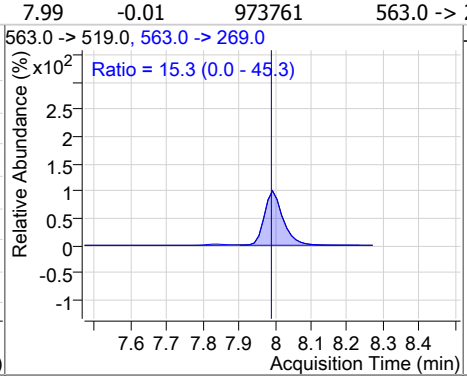


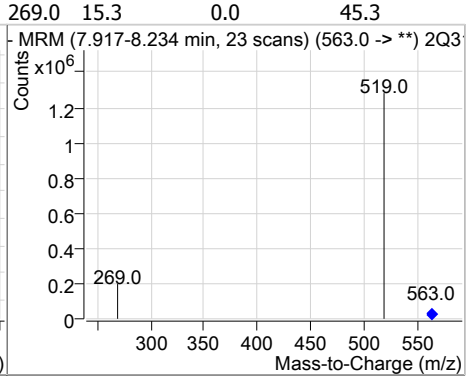




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.95	7.99	-0.01	973761	563.0 -> 269.0	15.3	0.0	45.3

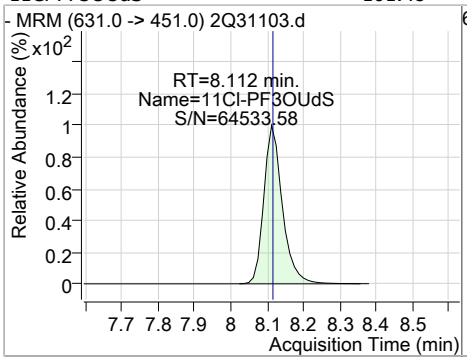


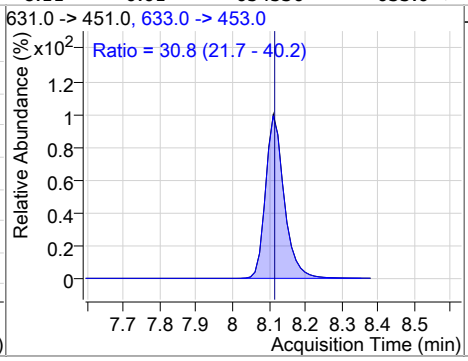


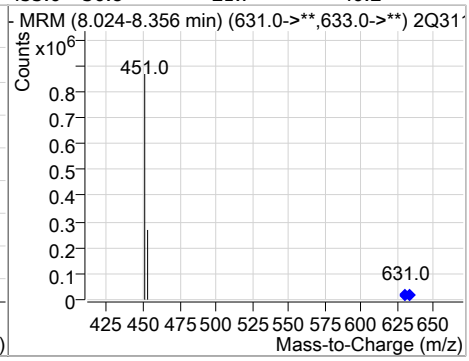


Perfluorinated Compounds by LC/MS/MS

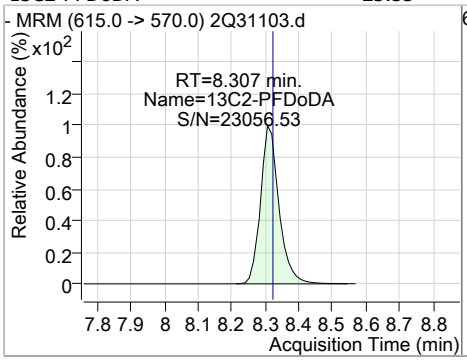
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	101.48	8.11	-0.01	654530	633.0 -> 453.0	30.8	21.7	40.2

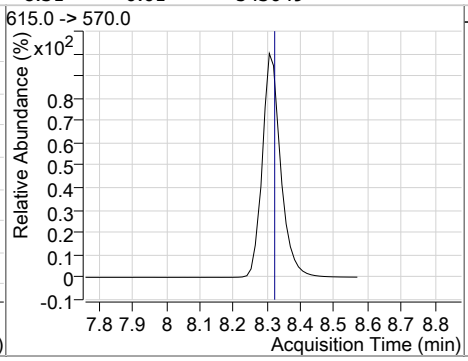


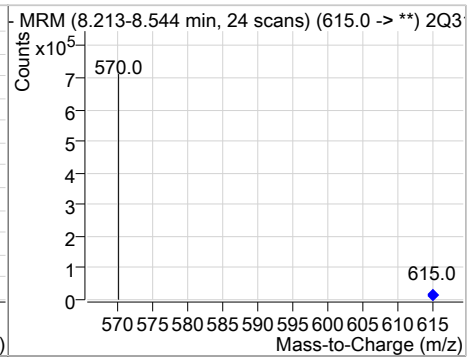




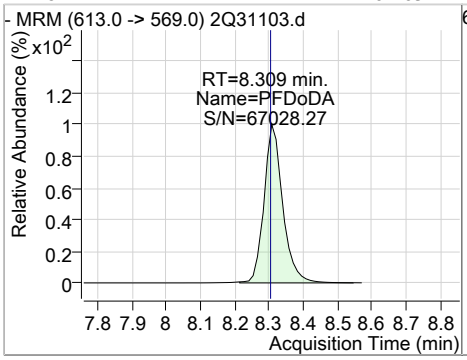
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	23.53	8.31	-0.01	543049				

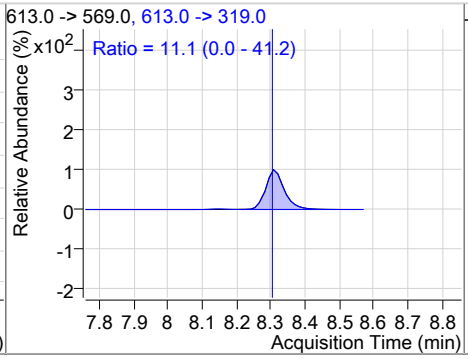


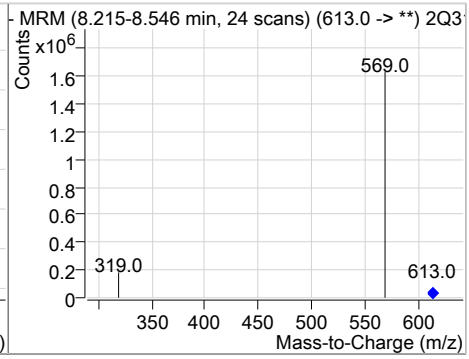




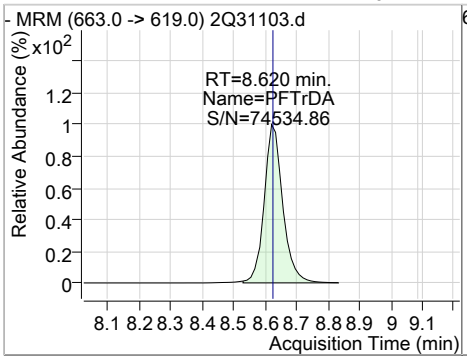
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	101.09	8.31	-0.01	1249356	613.0 -> 319.0	11.1	0.0	41.2

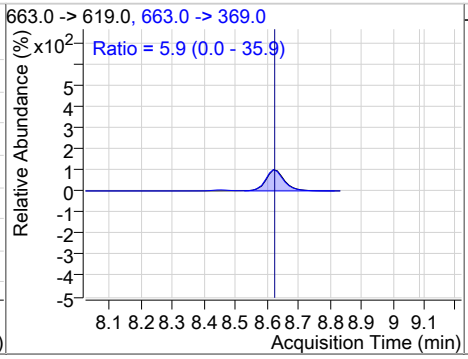


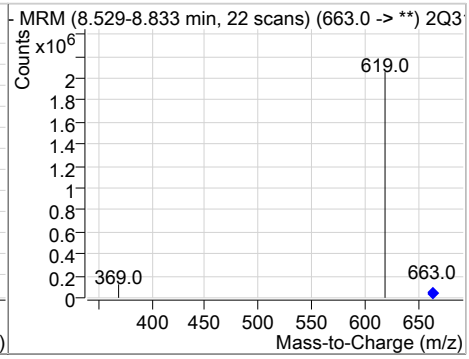




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	101.22	8.62	-0.01	1549828	663.0 -> 369.0	5.9	0.0	35.9

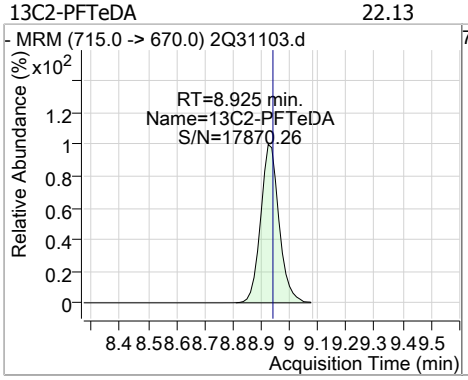


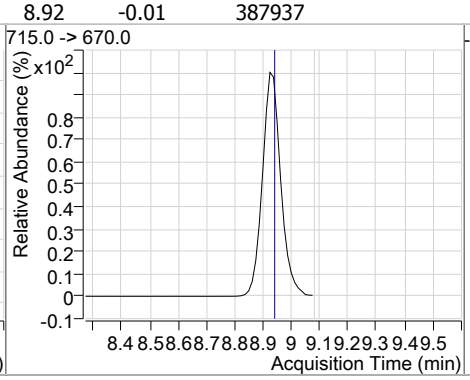


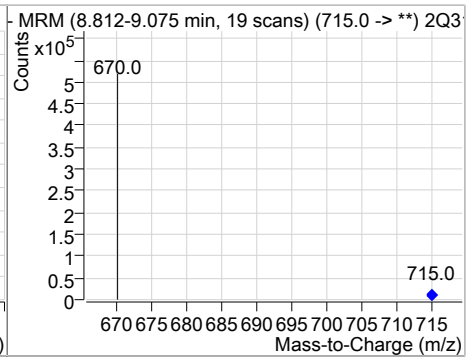


Perfluorinated Compounds by LC/MS/MS

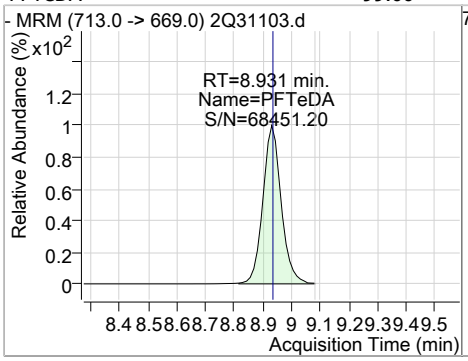
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.13	8.92	-0.01	387937				

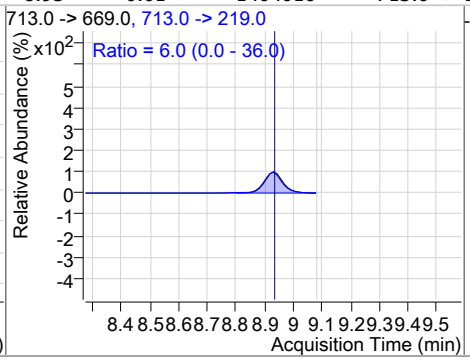


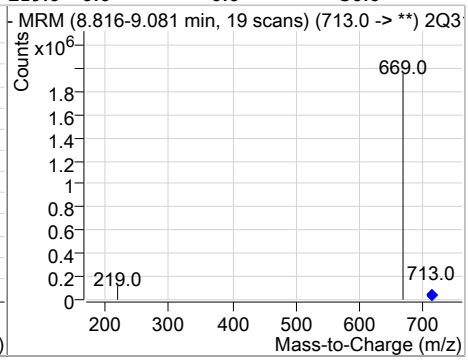




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.00	8.93	-0.01	1464016	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-IC498
Lab FileID: 2Q31103.D
Injection Time: 06/21/19 11:55
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.99	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31105.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 12:25:35 PM
Sample Name : icv498-20
Vial : Vial 10
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

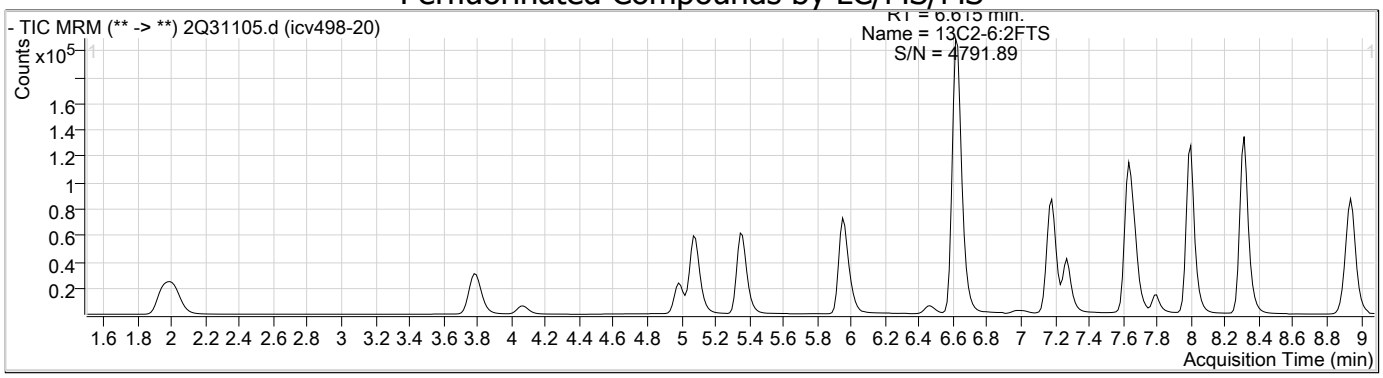
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.621	415.0 -> 370.0	356604	20.00	µg/L	-0.015
13C4-PFOS	7.174	503.0 -> 80.0	66926	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	207177	20.00	µg/L	0.000
M5-PFPeA	3.787	268.0 -> 223.0	161639	20.00	µg/L	-0.013
M5-PFHxA	5.076	318.0 -> 273.0	245019	20.00	µg/L	-0.013
M4-PFHpA	5.955	367.0 -> 322.0	279709	20.00	µg/L	-0.013
M8-PFOA	6.635	421.0 -> 376.0	264574	20.00	µg/L	0.000
M9-PFNA	7.189	472.0 -> 427.0	223742	20.00	µg/L	-0.013
M6-PFDA	7.641	519.0 -> 474.0	374718	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	456814	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	489447	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	378820	20.00	µg/L	0.000
M8-FOSA	7.274	506.0 -> 78.0	127402	20.00	µg/L	0.000
M3-PFBS	4.068	302.0 -> 99.0	30332	20.00	µg/L	-0.013
M3-PFHxS	5.998	402.0 -> 99.0	26034	20.00	µg/L	0.000
M8-PFOS	7.172	507.0 -> 99.0	38614	20.00	µg/L	0.000
M2-4:2FTS	4.984	329.0 -> 309.0	96825	20.00	µg/L	-0.013
M2-6:2FTS	6.615	429.0 -> 409.0	80004	20.00	µg/L	0.000
M2-8:2FTS	7.665	529.0 -> 509.0	58506	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	43263	20.00	µg/L	0.000
M3-HFPO-DA	5.355	287.0 -> 169.0	252255	100.00	µg/L	-0.010
System Monitoring Compounds						
13C2-4:2FTS	4.984	329.0 -> 309.0	96830	19.95	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-6:2FTS	6.615	429.0 -> 409.0	80117	20.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-8:2FTS	7.665	529.0 -> 509.0	58472	20.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C2-PFDoDA	8.319	615.0 -> 570.0	489455	21.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C2-PFTeDA	8.937	715.0 -> 670.0	378797	21.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C3-PFBS	4.068	302.0 -> 99.0	30334	19.96	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFHxS	5.998	402.0 -> 99.0	25901	20.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	1.990	217.0 -> 172.0	205717	19.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C4-PFHpA	5.955	367.0 -> 322.0	279614	20.36	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C5-PFHxA	5.076	318.0 -> 273.0	245020	20.25	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFPeA	3.787	268.0 -> 223.0	161646	20.14	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C6-PFDA	7.641	519.0 -> 474.0	374764	21.48	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

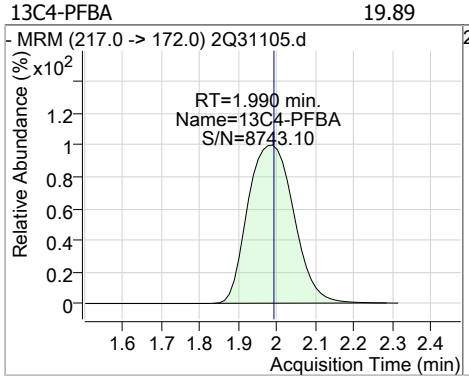
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%			
13C7-PFUnDA	8.004	570.0 -> 525.0	456860	21.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%			
13C8-FOSA	7.274	506.0 -> 78.0	127402	21.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%			
13C8-PFOA	6.635	421.0 -> 376.0	264563	20.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
13C8-PFOS	7.172	507.0 -> 99.0	38633	20.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%			
13C9-PFNA	7.189	472.0 -> 427.0	223095	20.53	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
d3-MeFOSAA	7.673	573.0 -> 419.0	43252	20.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
M2-PFOA	6.621	415.0 -> 370.0	356687	20.00	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.174	503.0 -> 80.0	66920	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.355	287.0 -> 169.0	252255	103.36	µg/L		-0.010
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.799	584.0 -> 419.0	17248	16.17	µg/L	m	91
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.673	570.0 -> 419.0	21231	18.11	µg/L	m	97
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.958	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	6.631	449.0 -> 80.0	0	0.00	µg/L	m	1
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	5.988	399.0 -> 80.0	0	0.00	µg/L	m	1
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	6.623	413.0 -> 369.0	140947	18.46	µg/L	m	96
PFOS	7.175	499.0 -> 80.0	27988	14.65	µg/L	m	77
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

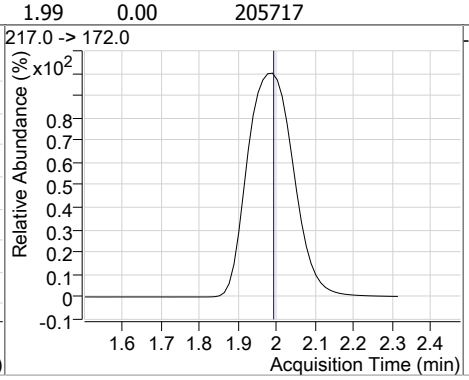
= Qualifier out of range, m = manually integrated, + = Area summed

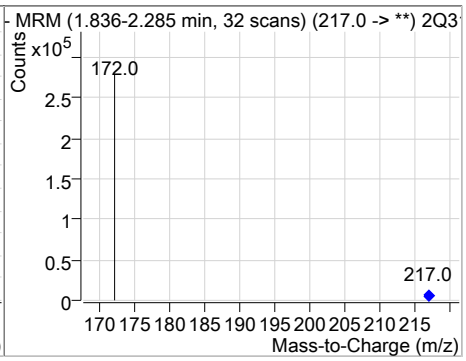
Perfluorinated Compounds by LC/MS/MS



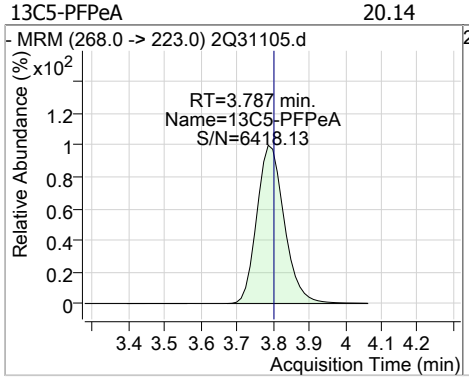
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.89	1.99	0.00	205717				

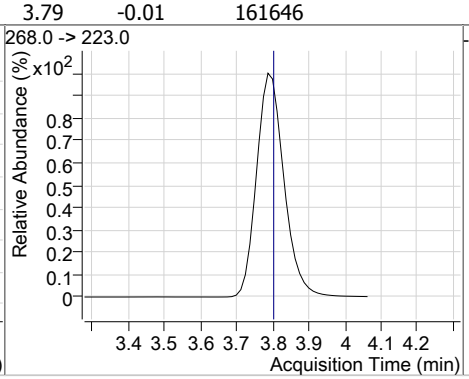


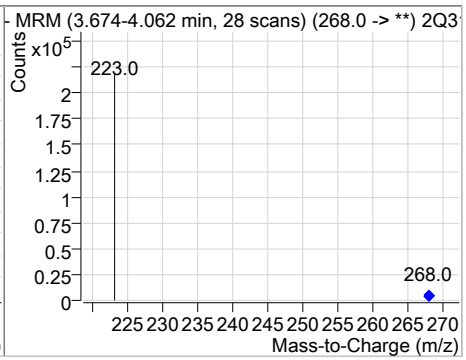




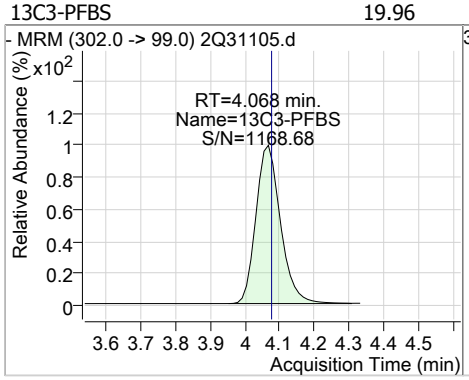
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.14	3.79	-0.01	161646				

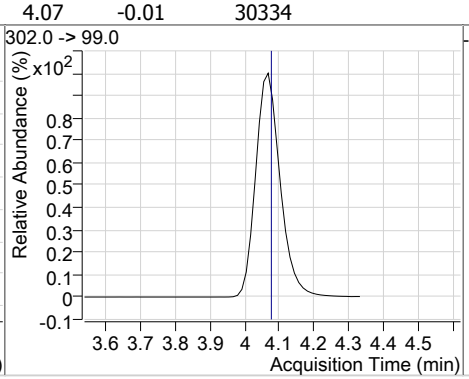


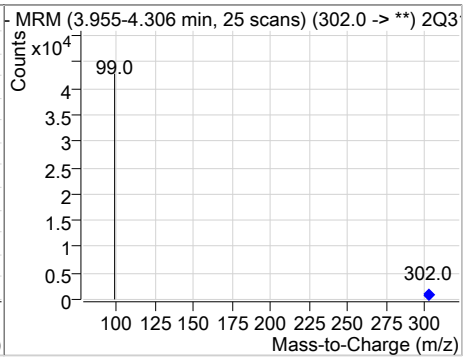




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.96	4.07	-0.01	30334				

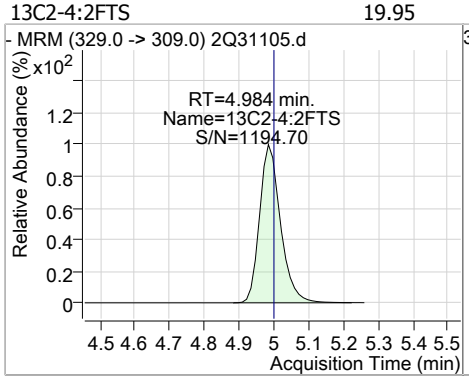


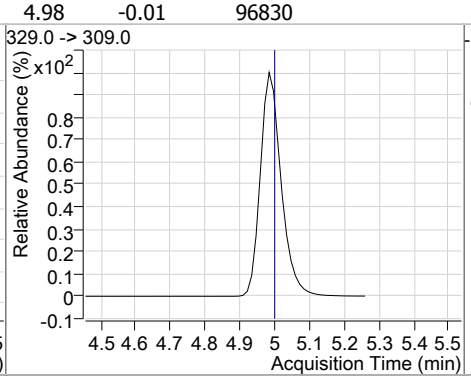


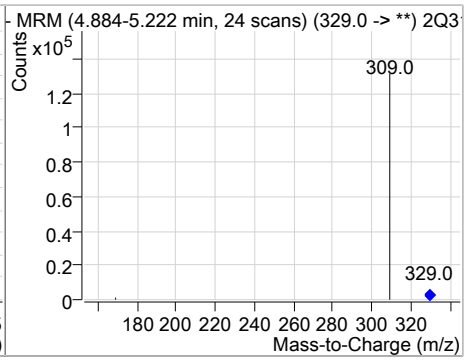


Perfluorinated Compounds by LC/MS/MS

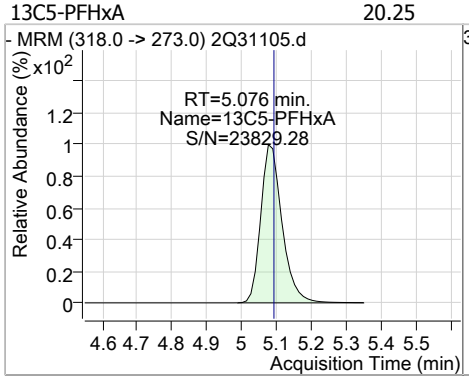
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.95	4.98	-0.01	96830				

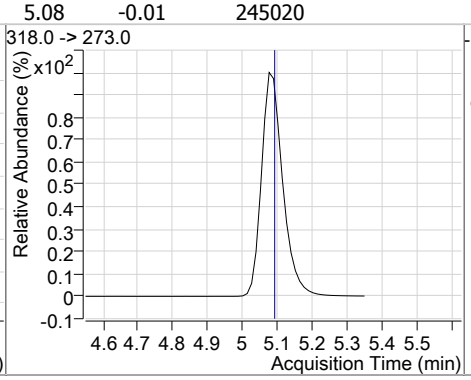


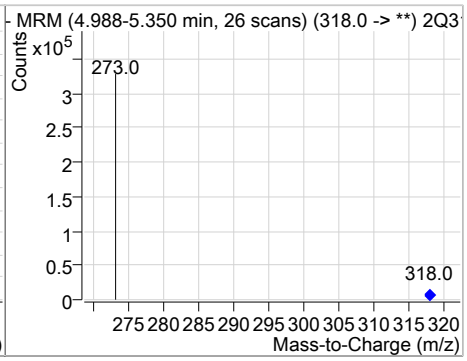




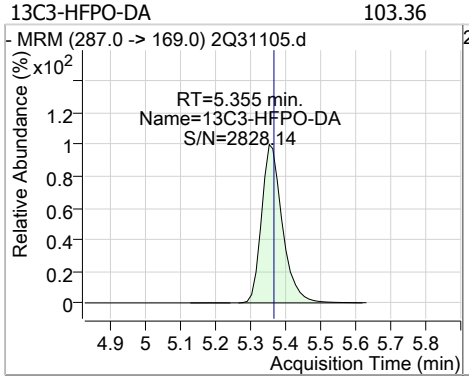
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.25	5.08	-0.01	245020				

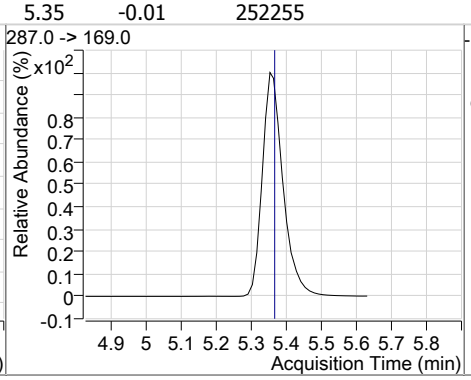


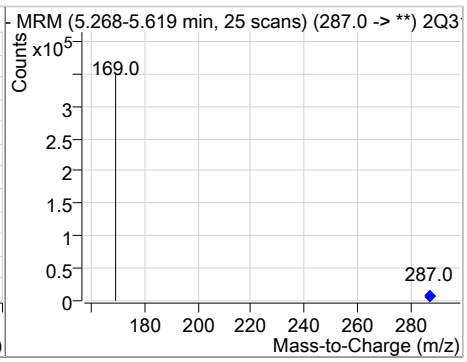




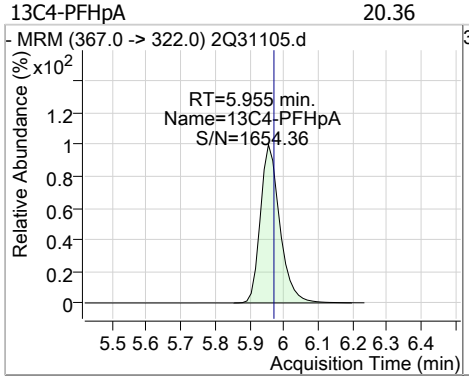
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	103.36	5.35	-0.01	252255				

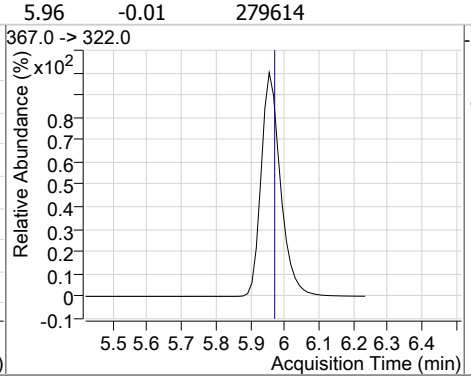


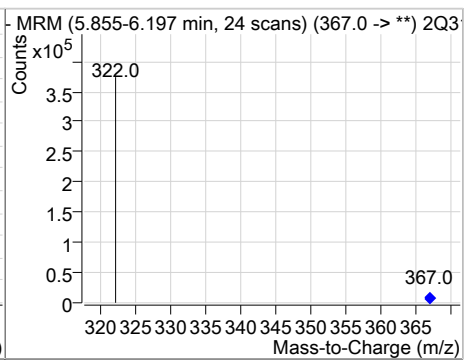




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.36	5.96	-0.01	279614				

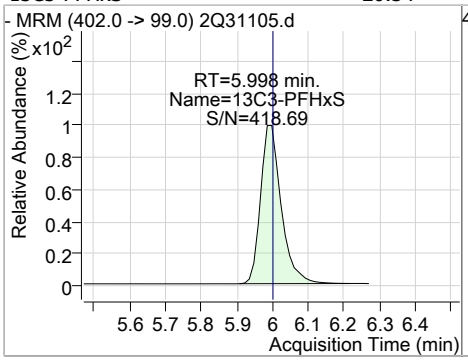


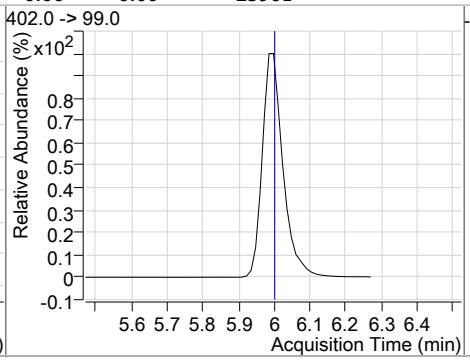


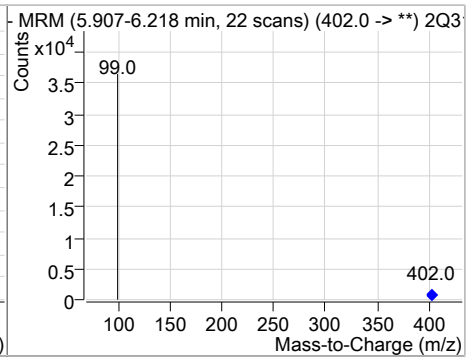


Perfluorinated Compounds by LC/MS/MS

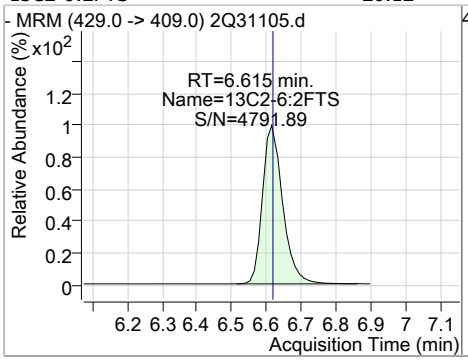
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.34	6.00	0.00	25901				

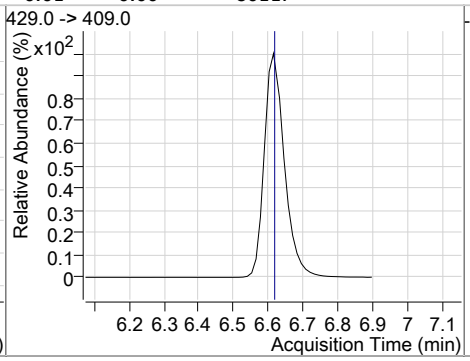


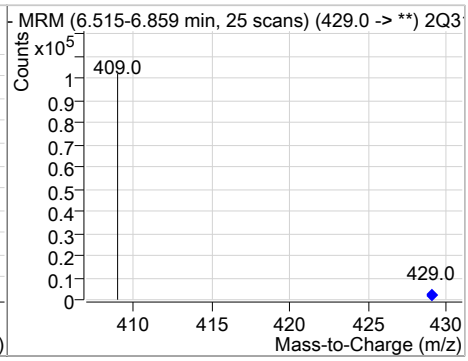




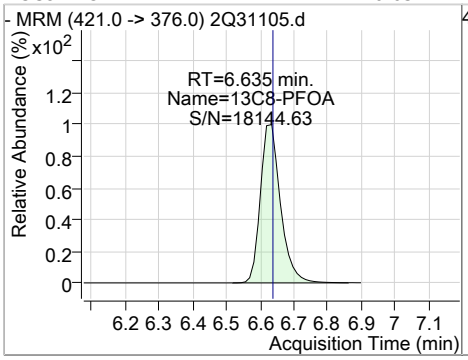
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.12	6.61	0.00	80117				

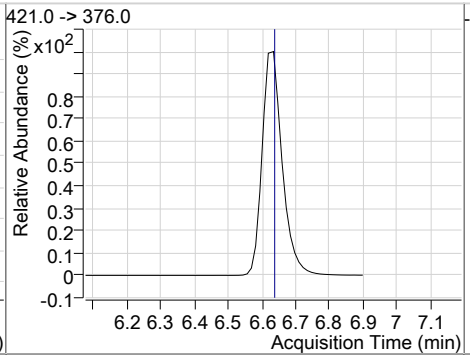


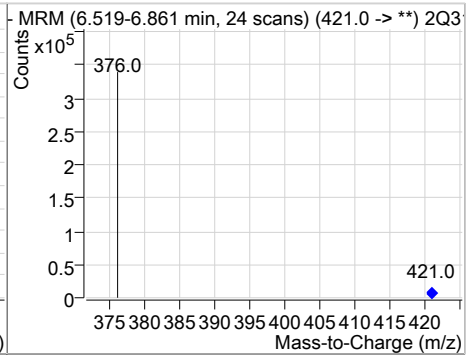




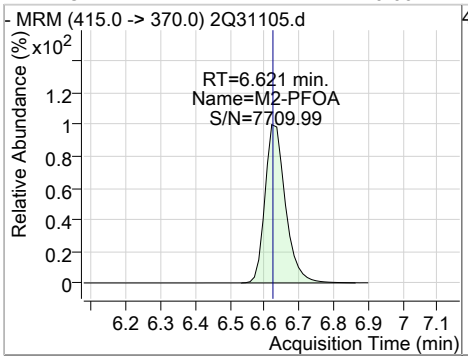
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.63	6.63	0.00	264563				

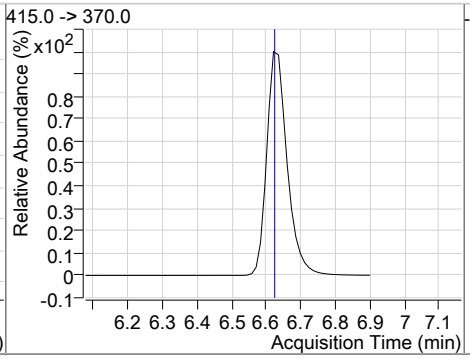


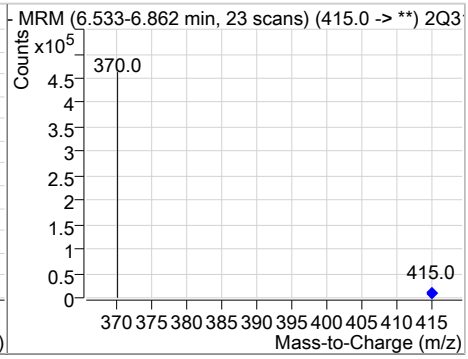




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.62	-0.01	356687				

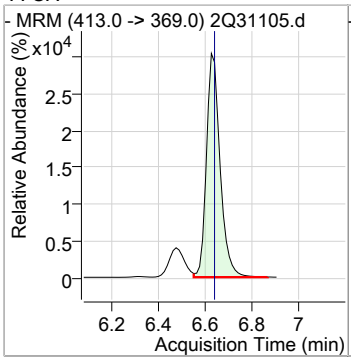


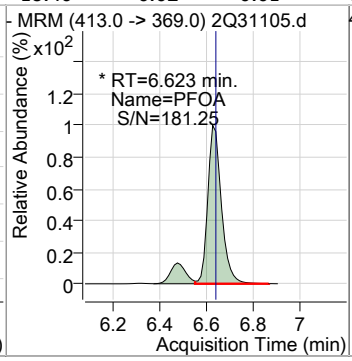


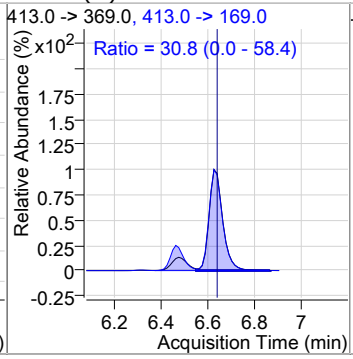


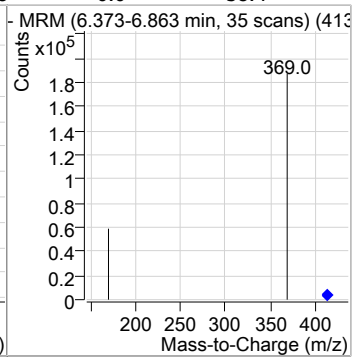
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.46	6.62	-0.01	140947 (m)	413.0 -> 169.0	30.8	0.0	58.4

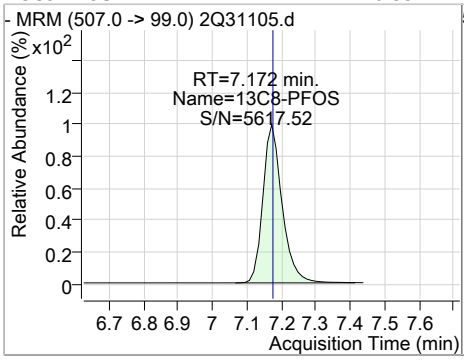


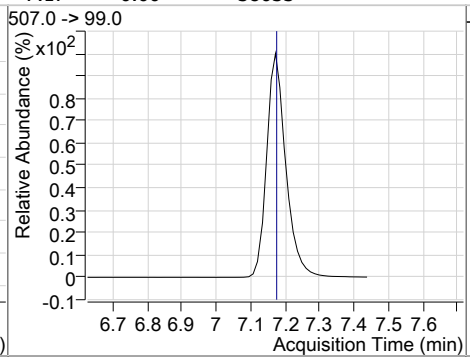


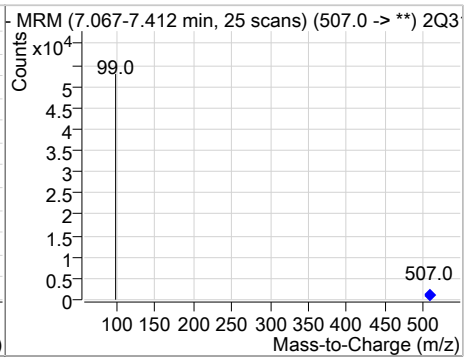




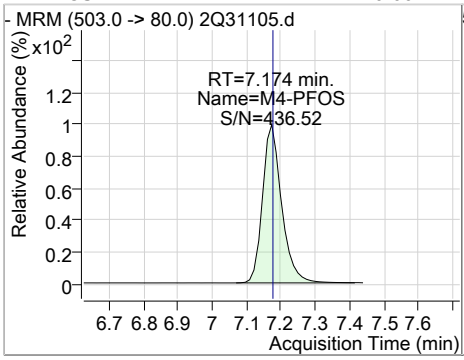
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.35	7.17	0.00	38633				

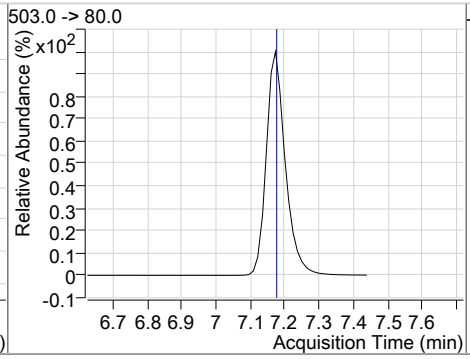


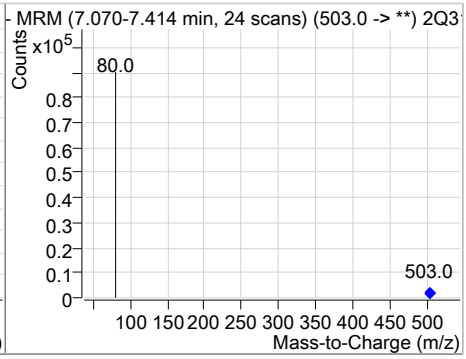




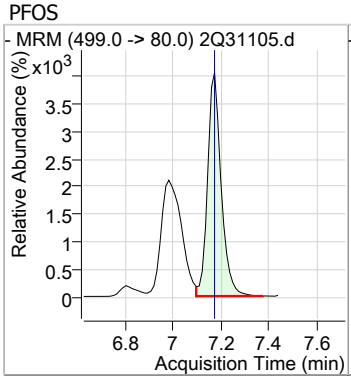
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.17	0.00	66920				

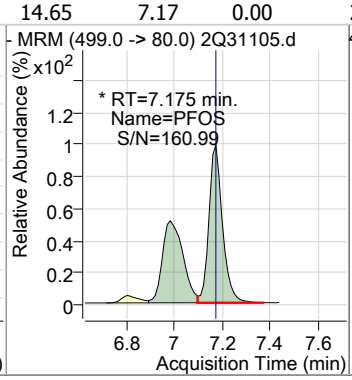


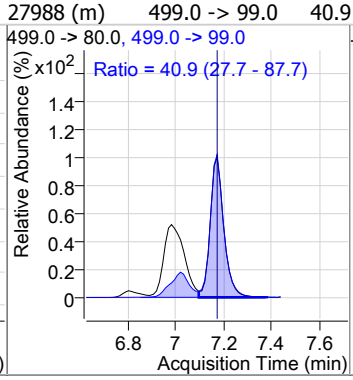


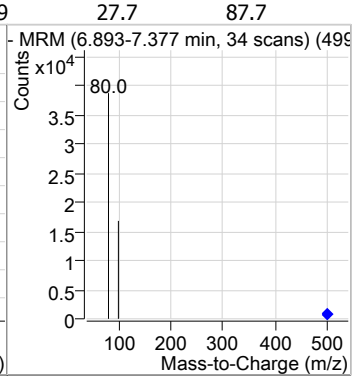


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	14.65	7.17	0.00	27988 (m)	499.0 -> 99.0	40.9	27.7	87.7



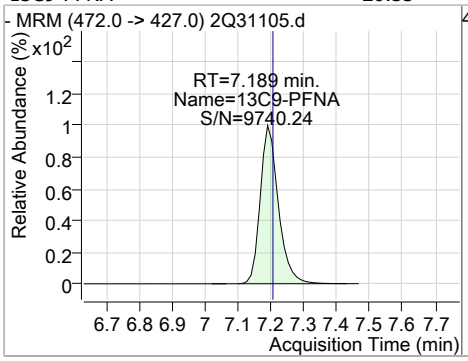


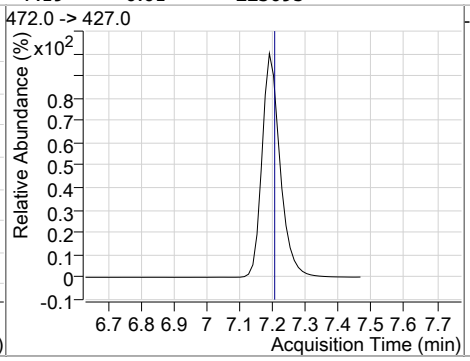


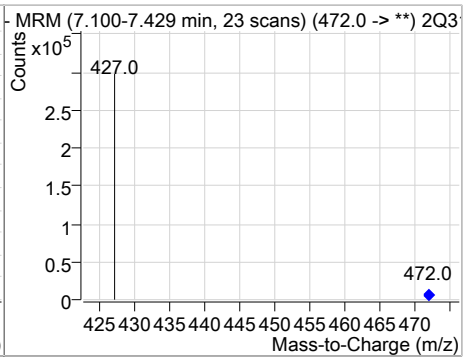


Perfluorinated Compounds by LC/MS/MS

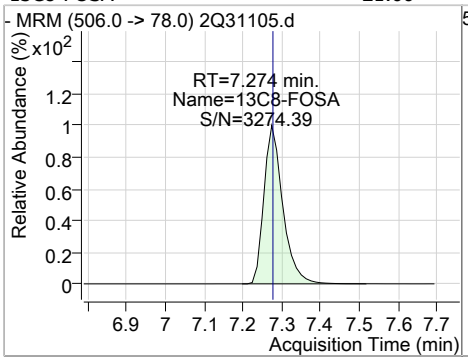
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.53	7.19	-0.01	223095				

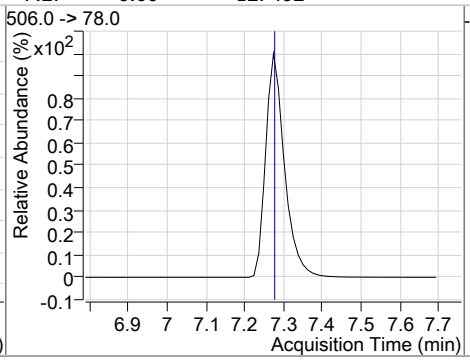


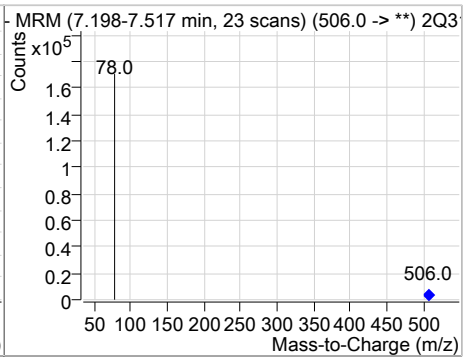




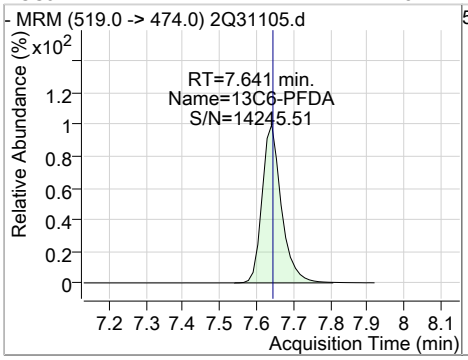
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.66	7.27	0.00	127402				

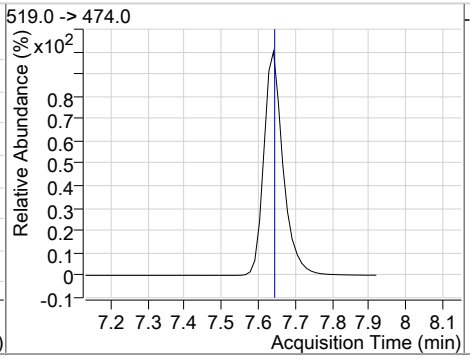


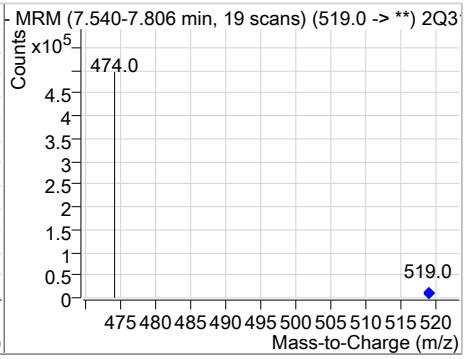




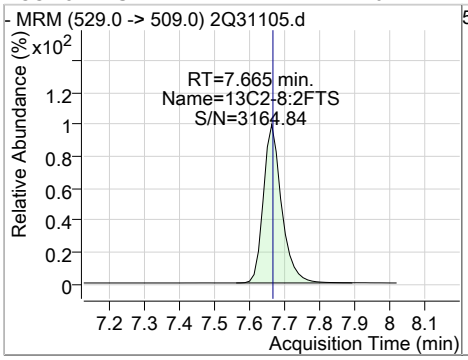
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.48	7.64	0.00	374764				

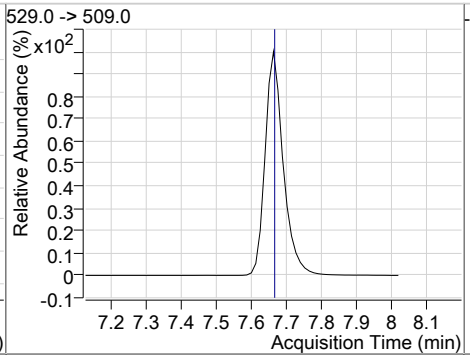


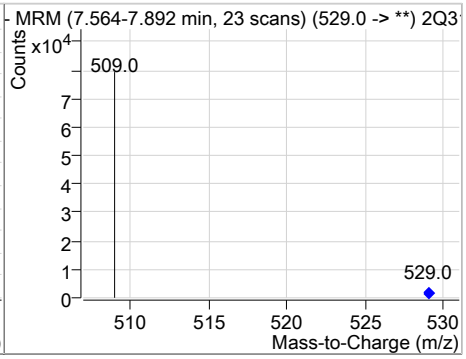




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.44	7.66	0.00	58472				

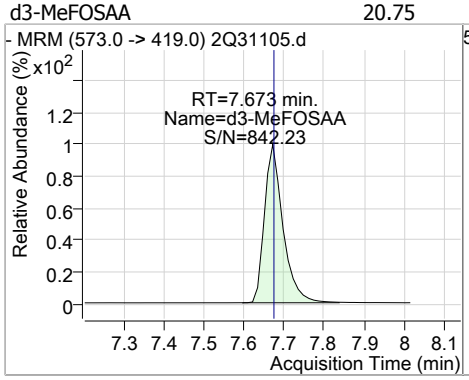


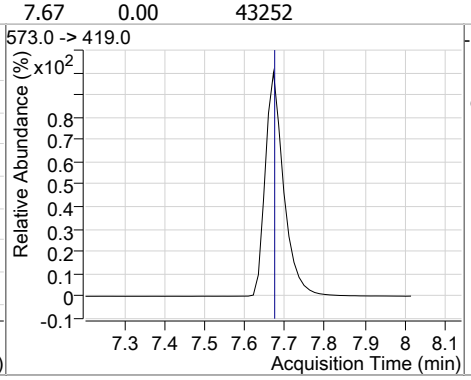


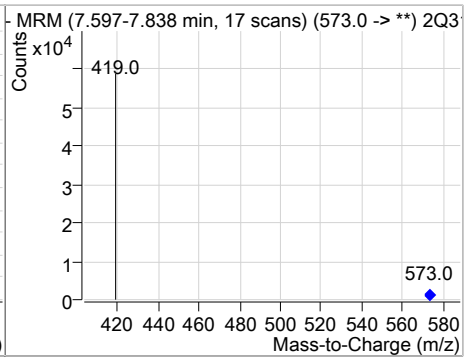


Perfluorinated Compounds by LC/MS/MS

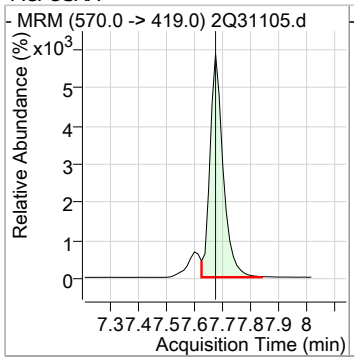
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.75	7.67	0.00	43252				

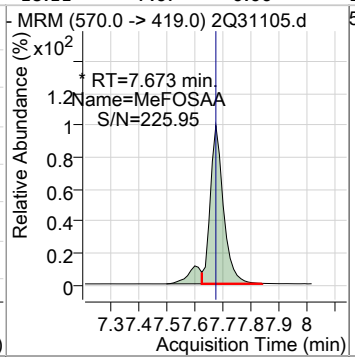


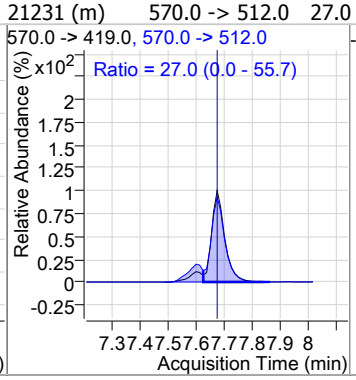


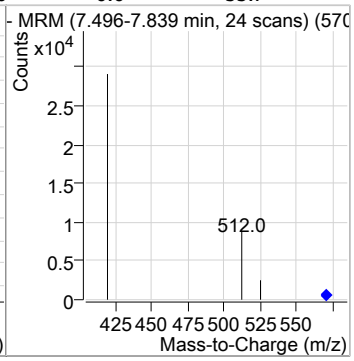


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.11	7.67	0.00	21231 (m)	570.0 -> 512.0	27.0	0.0	55.7

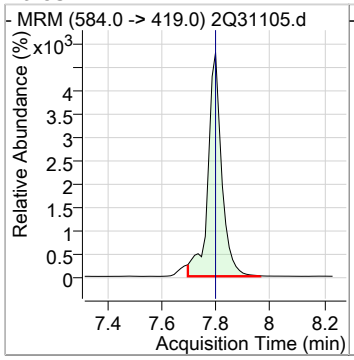


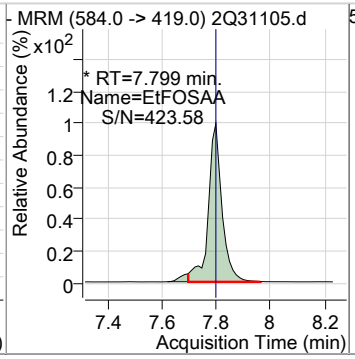


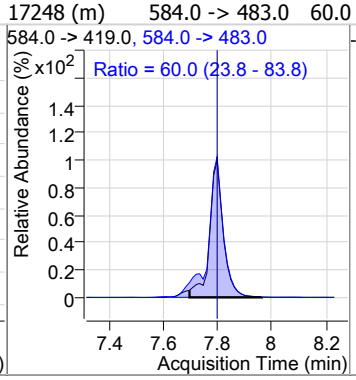


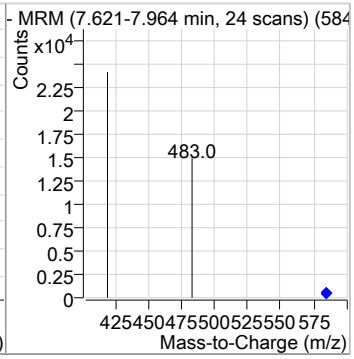


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.17	7.80	0.00	17248 (m)	584.0 -> 483.0	60.0	23.8	83.8

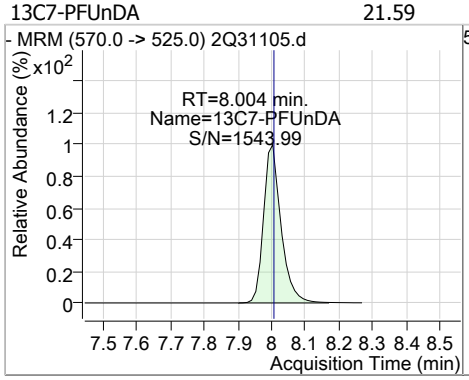


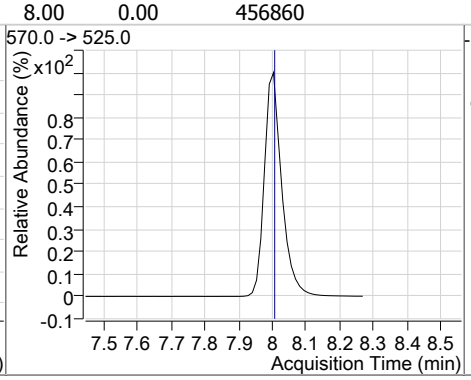


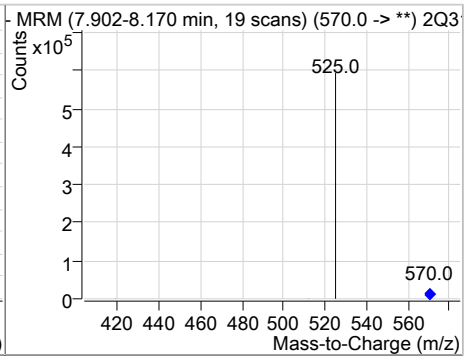




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.59	8.00	0.00	456860				

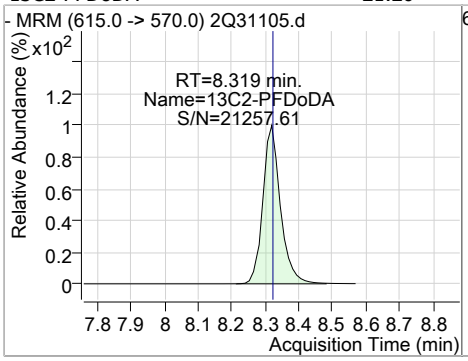


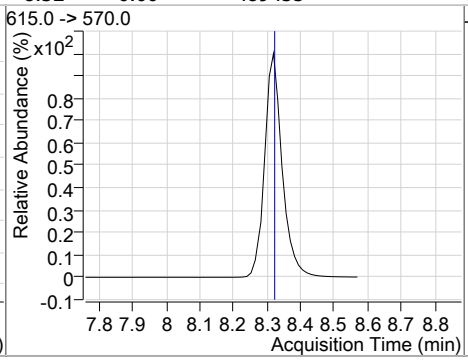


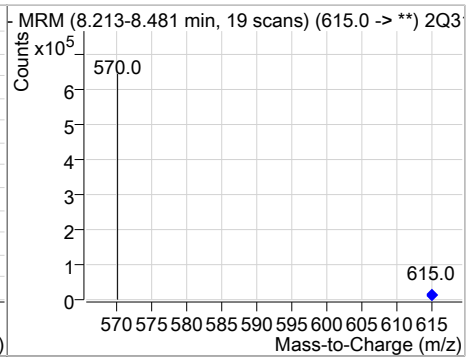


Perfluorinated Compounds by LC/MS/MS

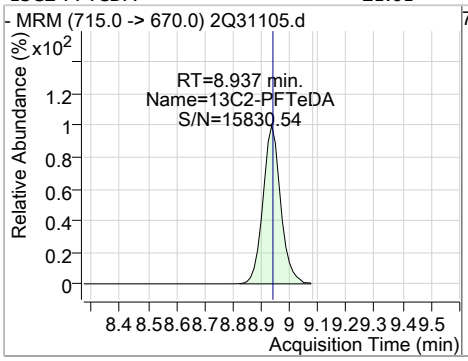
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.20	8.32	0.00	489455				

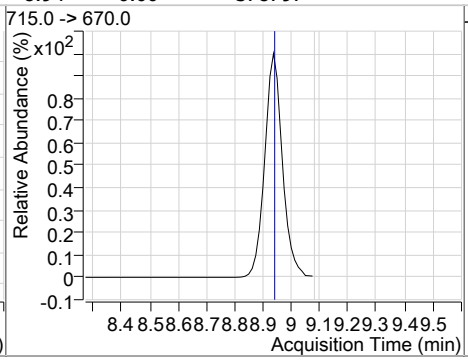


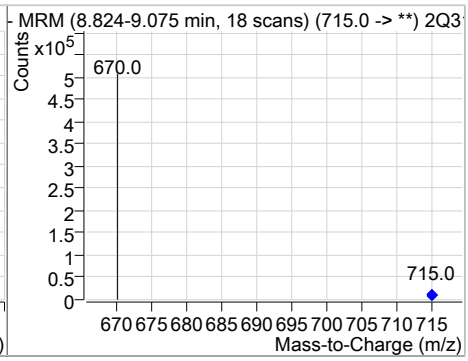




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.61	8.94	0.00	378797				







Manual Integration Approval Summary

Sample Number: S2Q498-ICV498
Lab FileID: 2Q31105.D
Injection Time: 06/21/19 12:25
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.62	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak
MeFOSAA	2355-31-9		7.67	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31106.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 12:40:24 PM
Sample Name : icv498-20
Vial : Vial 11
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

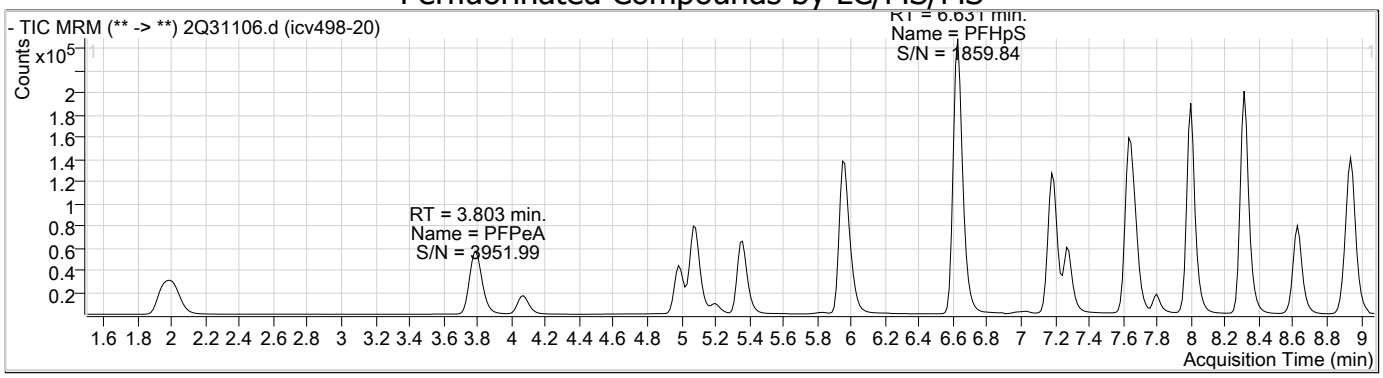
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.636	415.0 -> 370.0	374792	20.00	µg/L	0.000
13C4-PFOS	7.174	503.0 -> 80.0	70215	20.00	µg/L	0.000
M4-PFBA	1.990	217.0 -> 172.0	218614	20.00	µg/L	0.000
M5-PFPeA	3.799	268.0 -> 223.0	169217	20.00	µg/L	0.000
M5-PFHxA	5.076	318.0 -> 273.0	257849	20.00	µg/L	-0.013
M4-PFHpA	5.955	367.0 -> 322.0	290003	20.00	µg/L	-0.013
M8-PFOA	6.635	421.0 -> 376.0	268889	20.00	µg/L	0.000
M9-PFNA	7.202	472.0 -> 427.0	230448	20.00	µg/L	0.000
M6-PFDA	7.641	519.0 -> 474.0	372850	20.00	µg/L	0.000
M7-PFUnDA	8.004	570.0 -> 525.0	456598	20.00	µg/L	0.000
M2-PFDoDA	8.319	615.0 -> 570.0	494138	20.00	µg/L	0.000
M2-PFTeDA	8.937	715.0 -> 670.0	361906	20.00	µg/L	0.000
M8-FOSA	7.287	506.0 -> 78.0	126346	20.00	µg/L	0.013
M3-PFBS	4.068	302.0 -> 99.0	31983	20.00	µg/L	-0.013
M3-PFHxS	5.998	402.0 -> 99.0	26807	20.00	µg/L	0.000
M8-PFOS	7.172	507.0 -> 99.0	40145	20.00	µg/L	0.000
M2-4:2FTS	4.984	329.0 -> 309.0	107070	20.00	µg/L	-0.013
M2-6:2FTS	6.615	429.0 -> 409.0	87347	20.00	µg/L	0.000
M2-8:2FTS	7.665	529.0 -> 509.0	64152	20.00	µg/L	0.000
M3-MeFOSAA	7.673	573.0 -> 419.0	44726	20.00	µg/L	0.000
M3-HFPO-DA	5.365	287.0 -> 169.0	270997	100.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.984	329.0 -> 309.0	107076	22.07	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C2-6:2FTS	6.615	429.0 -> 409.0	87326	21.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C2-8:2FTS	7.665	529.0 -> 509.0	64149	22.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C2-PFDoDA	8.319	615.0 -> 570.0	494119	21.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-PFTeDA	8.937	715.0 -> 670.0	361955	20.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-PFBS	4.068	302.0 -> 99.0	32000	21.06	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C3-PFHxS	5.998	402.0 -> 99.0	26813	21.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C4-PFBA	1.990	217.0 -> 172.0	217086	20.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C4-PFHpA	5.955	367.0 -> 322.0	289925	21.11	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C5-PFHxA	5.076	318.0 -> 273.0	257819	21.30	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C5-PFPeA	3.799	268.0 -> 223.0	169257	21.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C6-PFDA	7.641	519.0 -> 474.0	373735	21.42	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

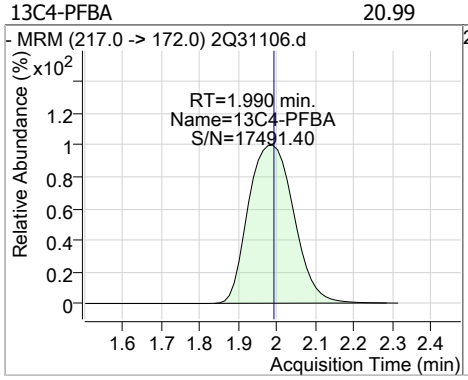
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%			
13C7-PFUnDA	8.004	570.0 -> 525.0	456591	21.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%			
13C8-FOSA	7.287	506.0 -> 78.0	126364	21.48	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%			
13C8-PFOA	6.635	421.0 -> 376.0	268914	20.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%			
13C8-PFOS	7.172	507.0 -> 99.0	40154	21.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%			
13C9-PFNA	7.202	472.0 -> 427.0	230396	21.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%			
d3-MeFOSAA	7.673	573.0 -> 419.0	44700	21.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%			
M2-PFOA	6.636	415.0 -> 370.0	374881	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
M4-PFOS	7.174	503.0 -> 80.0	70224	20.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C3-HFPO-DA	5.365	287.0 -> 169.0	270997	111.04	µg/L		0.000
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 111.0%			
Target Compounds							**QValue**
4:2FTS	4.987	327.0 -> 307.0	53167	17.43	µg/L		100
6:2FTS	6.617	427.0 -> 407.0	38252	16.45	µg/L		98
8:2FTS	7.666	527.0 -> 507.0	30248	18.17	µg/L		98
EtFOSAA	7.799	584.0 -> 419.0	19447	17.64	µg/L		96
FOSA	7.277	498.0 -> 78.0	59629	18.93	µg/L		99
MeFOSAA	7.673	570.0 -> 419.0	22461	18.53	µg/L		99
PFBA	1.986	213.0 -> 169.0	34660	18.53	µg/L		100
PFBS	4.073	299.0 -> 80.0	35942	16.38	µg/L		99
PFDA	7.642	513.0 -> 469.0	107810	17.52	µg/L		99
PFDoDA	8.321	613.0 -> 569.0	213005	18.94	µg/L		100
PFDS	7.975	599.0 -> 80.0	13893	18.93	µg/L		100
PFHpA	5.958	363.0 -> 319.0	237477	18.66	µg/L		100
PFHpS	6.631	449.0 -> 80.0	28304	18.80	µg/L		100
PFHxA	5.078	313.0 -> 269.0	64904	17.12	µg/L		99
PFHxS	6.000	399.0 -> 80.0	30334	15.85	µg/L	m	99
PFNA	7.203	463.0 -> 419.0	107214	17.21	µg/L		100
PFNS	7.613	549.0 -> 80.0	23130	18.52	µg/L		98
PFOA	6.637	413.0 -> 369.0	144268	18.59	µg/L		100
PFOS	7.175	499.0 -> 80.0	36183	18.22	µg/L	m	86
PFPeA	3.803	263.0 -> 219.0	126834	18.00	µg/L		100
PFPeS	5.195	349.0 -> 80.0	23735	16.86	µg/L		100
PFTeDA	8.943	713.0 -> 669.0	234385	16.99	µg/L		100
PFTrDA	8.632	663.0 -> 619.0	295987	20.72	µg/L		100
PFUnDA	8.006	563.0 -> 519.0	175008	19.36	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			

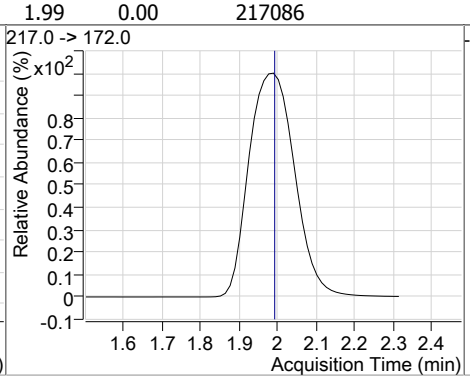
= Qualifier out of range, m = manually integrated, + = Area summed

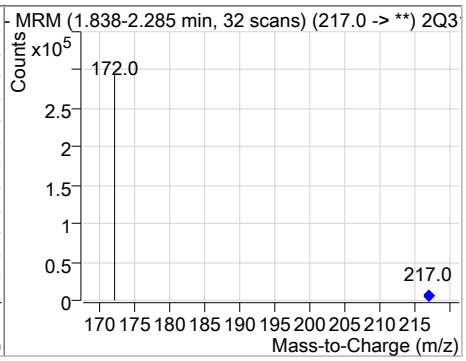
Perfluorinated Compounds by LC/MS/MS



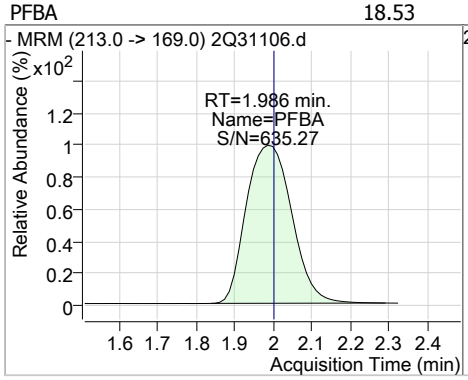
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.99	1.99	0.00	217086				

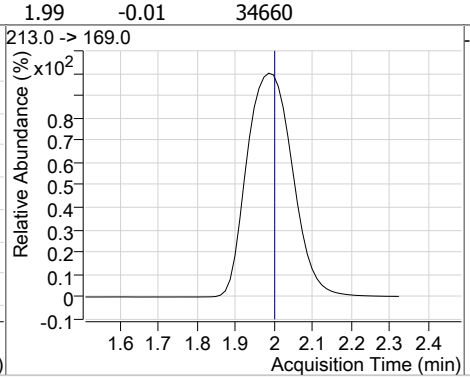


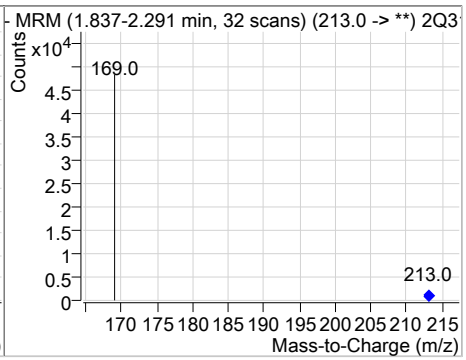




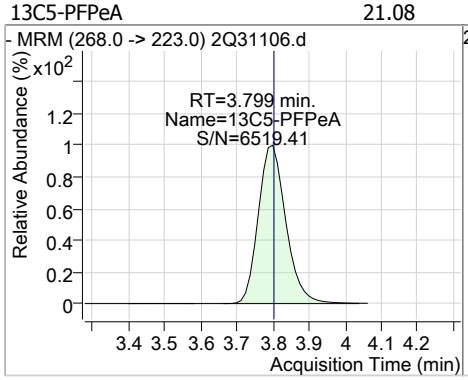
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.53	1.99	-0.01	34660				

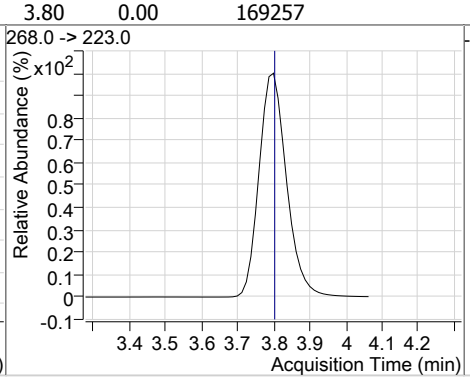


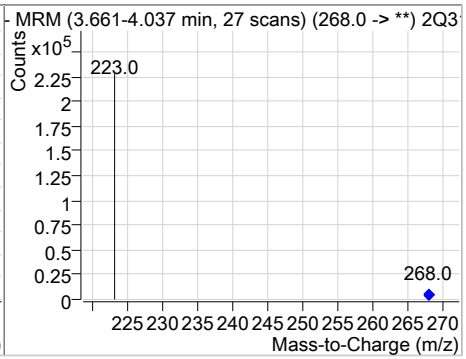




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.08	3.80	0.00	169257				

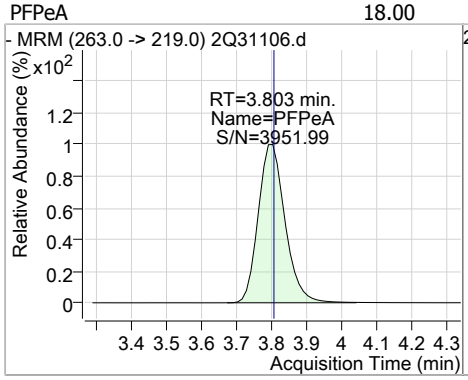


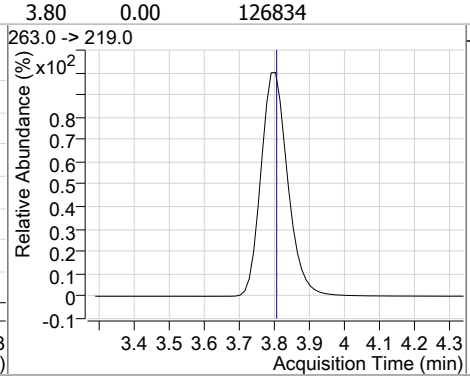


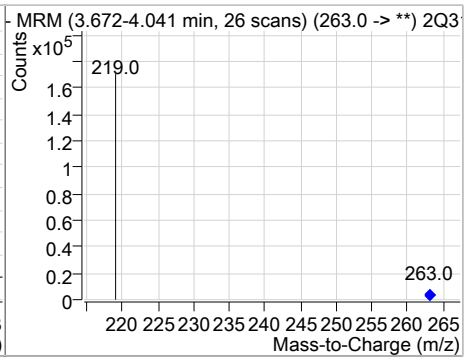


Perfluorinated Compounds by LC/MS/MS

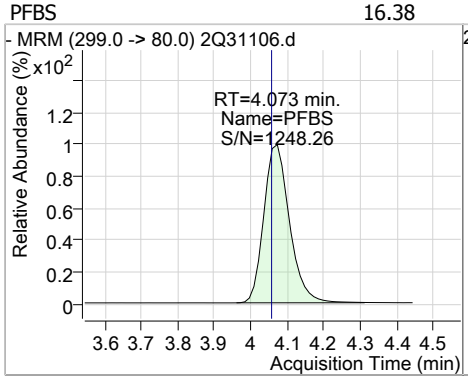
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.00	3.80	0.00	126834				

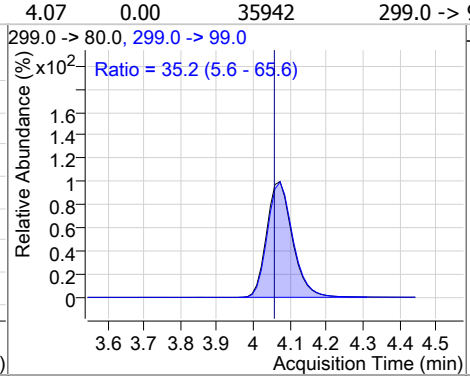


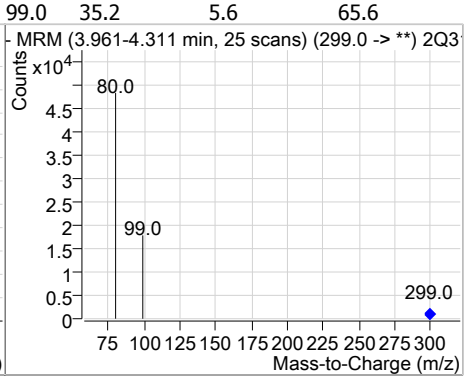




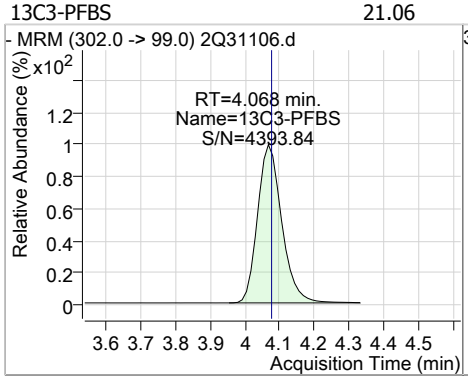
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.38	4.07	0.00	35942	299.0 -> 99.0	35.2	5.6	65.6

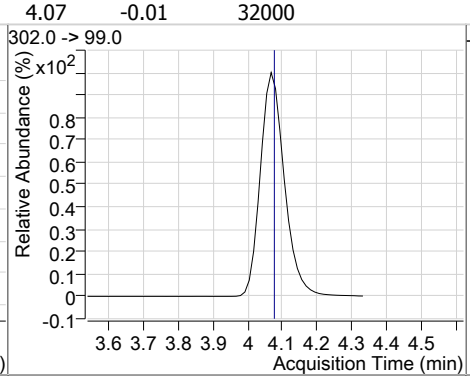


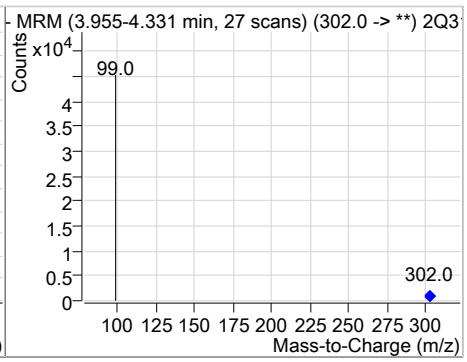




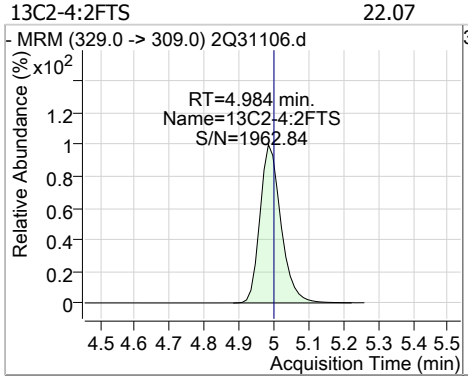
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.06	4.07	-0.01	32000				

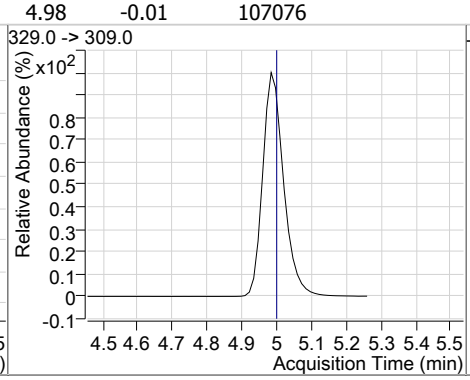


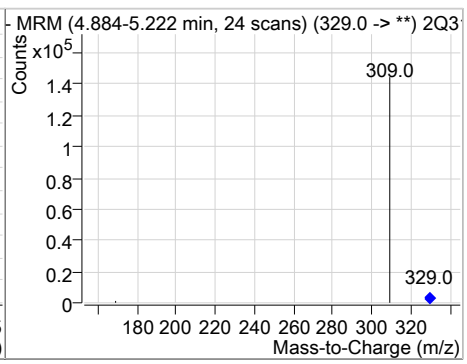




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.07	4.98	-0.01	107076				

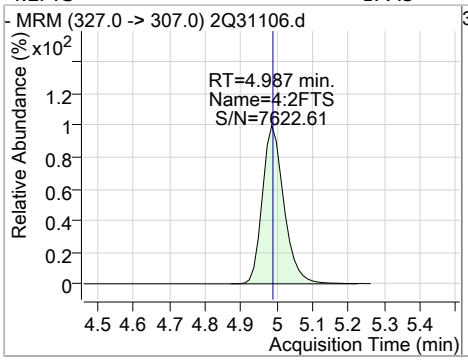


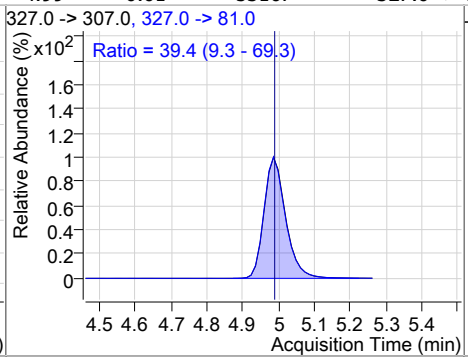


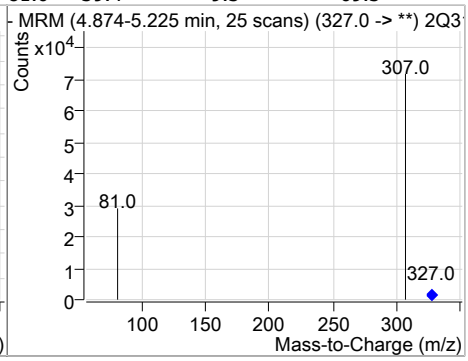


Perfluorinated Compounds by LC/MS/MS

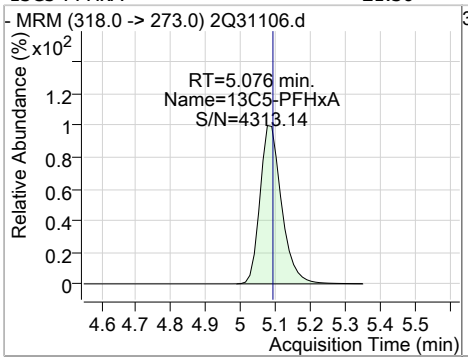
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.43	4.99	-0.01	53167	327.0 -> 81.0	39.4	9.3	69.3

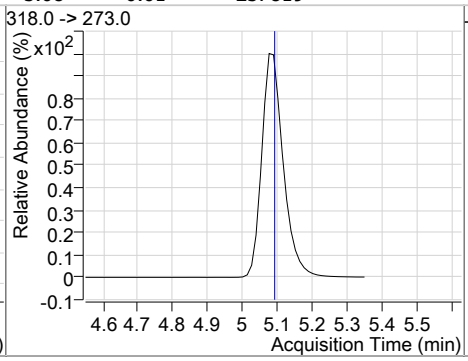


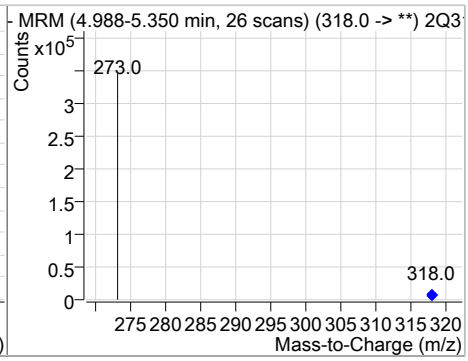




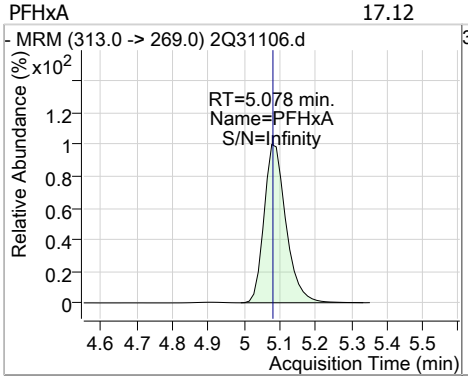
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.30	5.08	-0.01	257819				

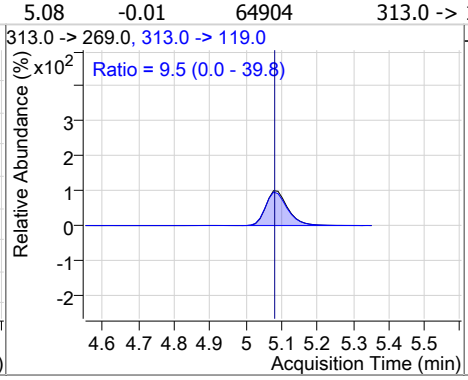


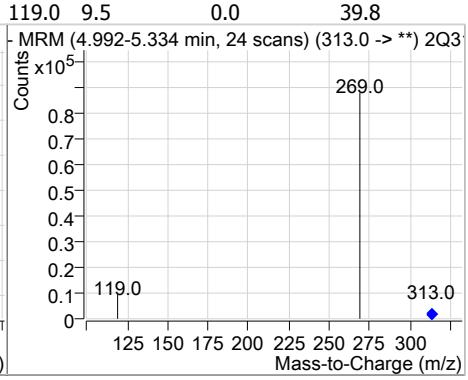




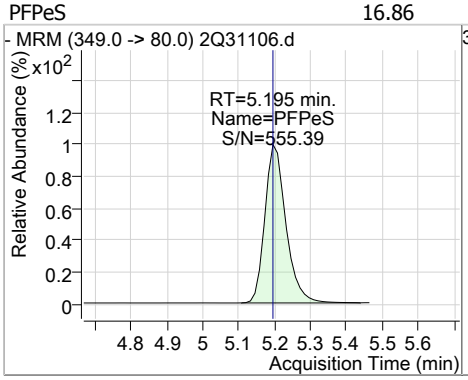
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.12	5.08	-0.01	64904	313.0 -> 119.0	9.5	0.0	39.8

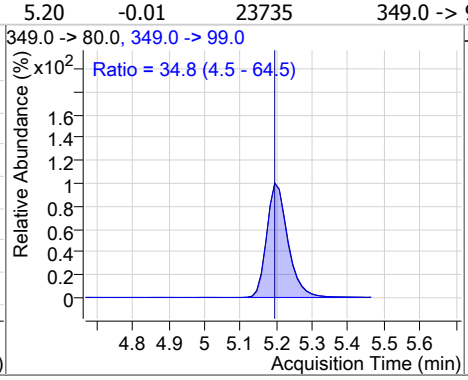


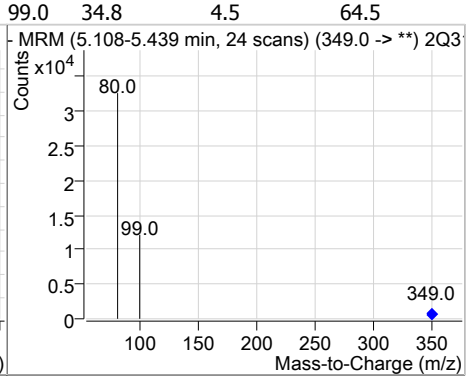




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.86	5.20	-0.01	23735	349.0 -> 99.0	34.8	4.5	64.5

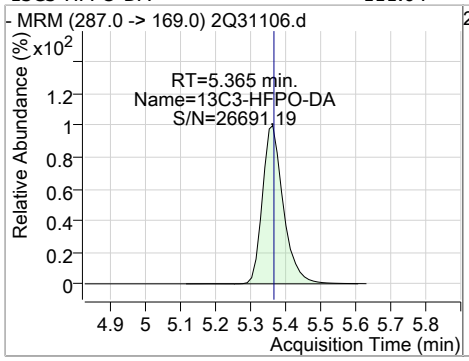


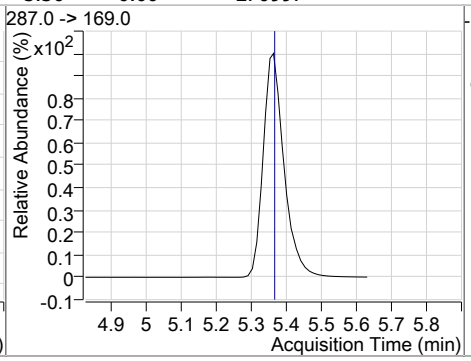


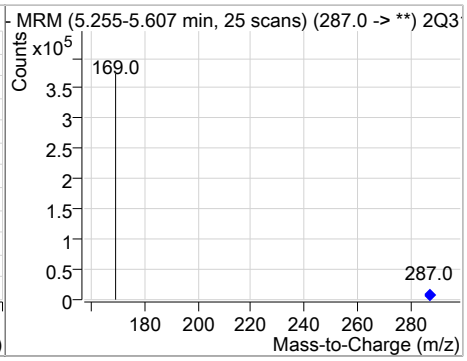


Perfluorinated Compounds by LC/MS/MS

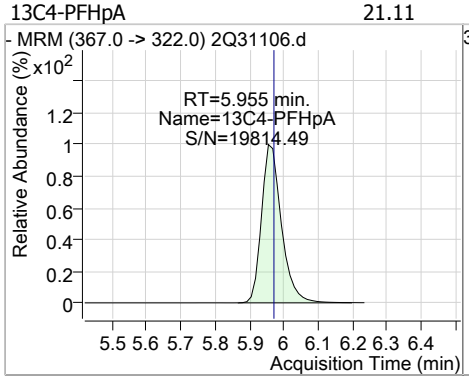
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	111.04	5.36	0.00	270997				

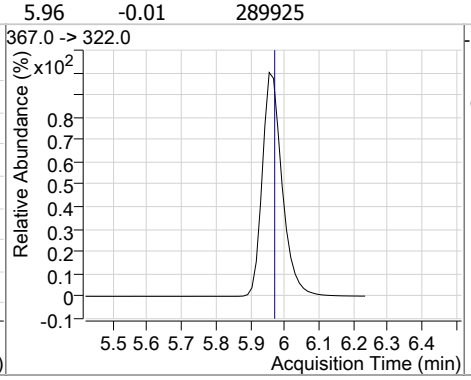


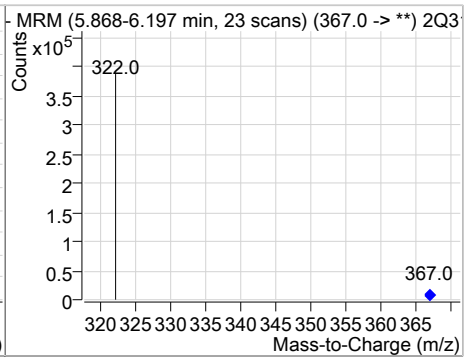




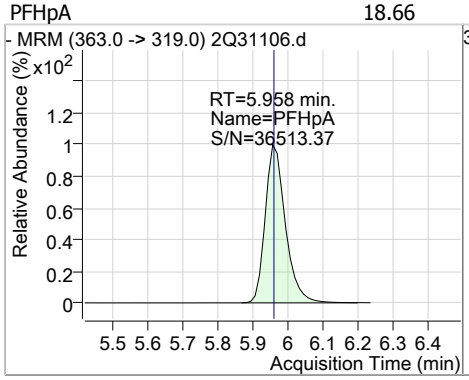
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.11	5.96	-0.01	289925				

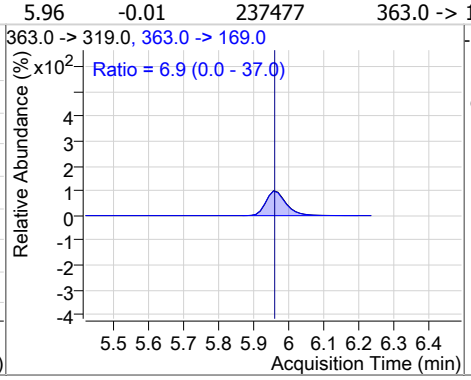


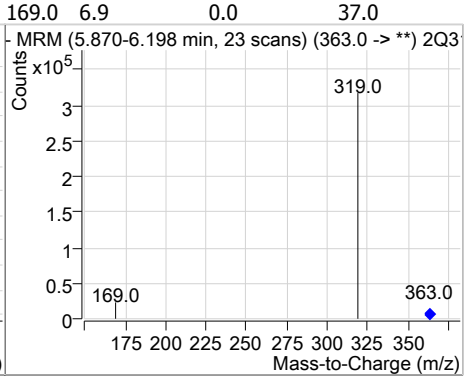




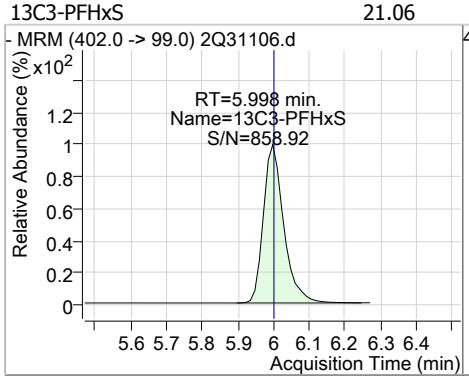
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.66	5.96	-0.01	237477	363.0 -> 169.0	6.9	0.0	37.0

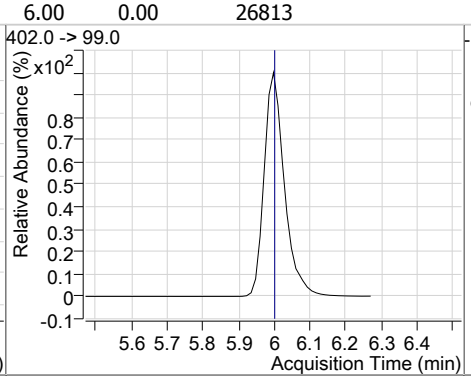


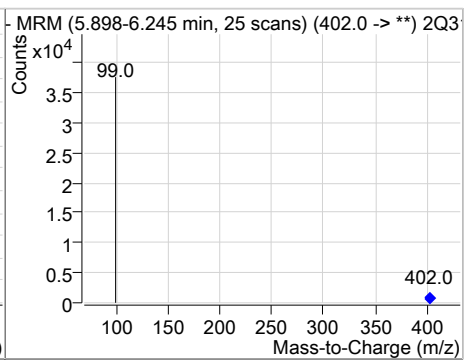




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.06	6.00	0.00	26813				

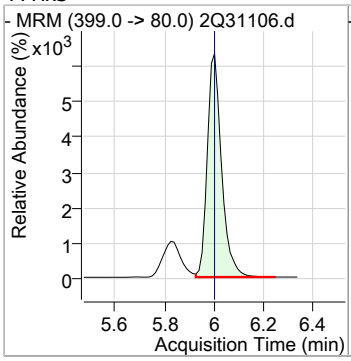


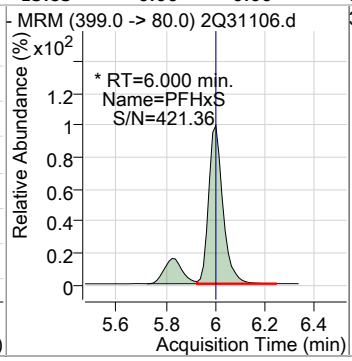


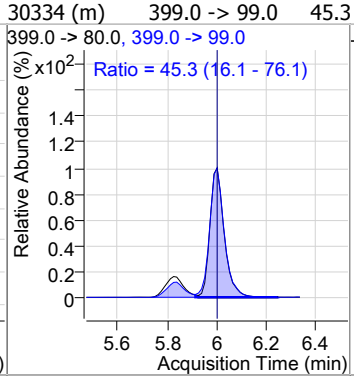


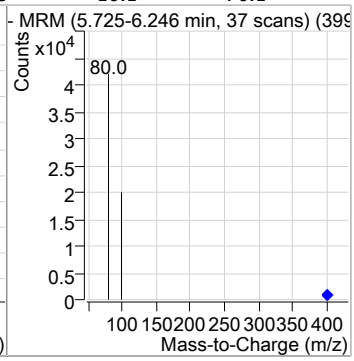
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.85	6.00	0.00	30334 (m)	399.0 -> 99.0	45.3	16.1	76.1

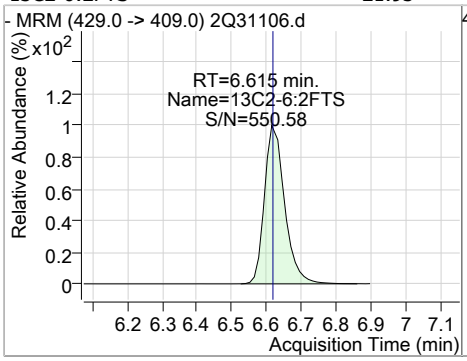


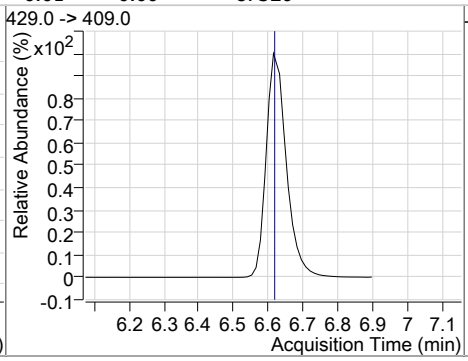


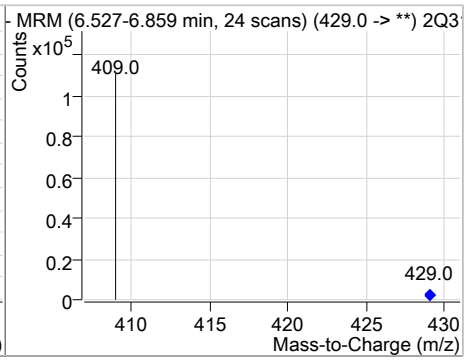




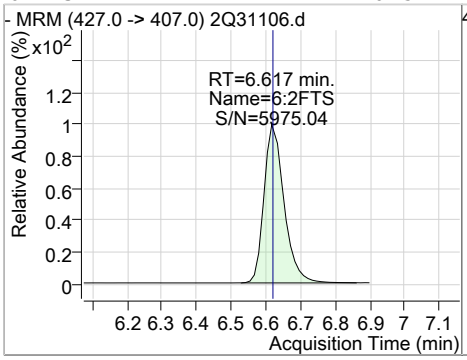
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.93	6.61	0.00	87326				

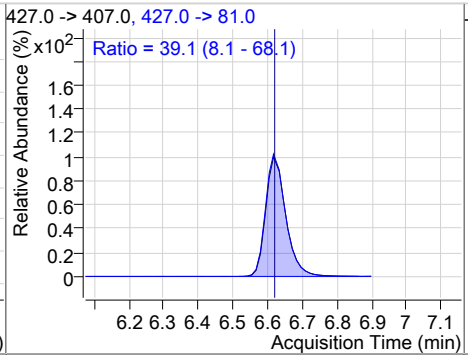


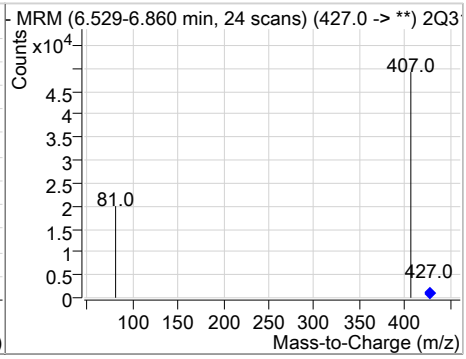




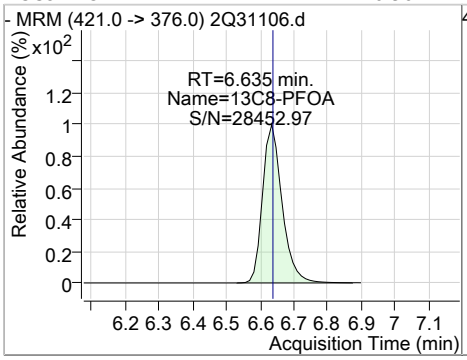
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	16.45	6.62	0.00	38252	427.0 -> 81.0	39.1	8.1	68.1

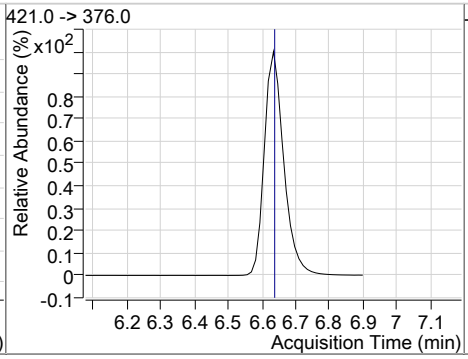


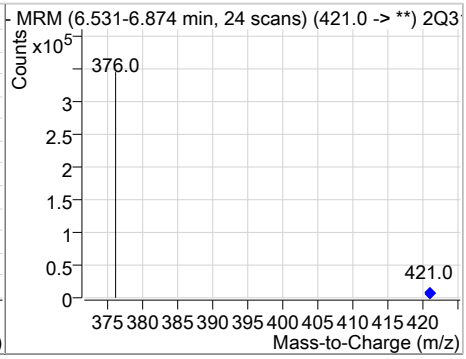




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.96	6.63	0.00	268914				

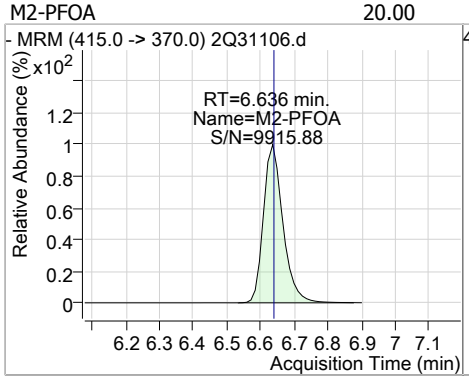


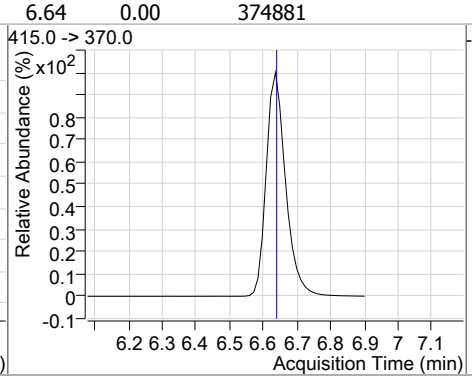


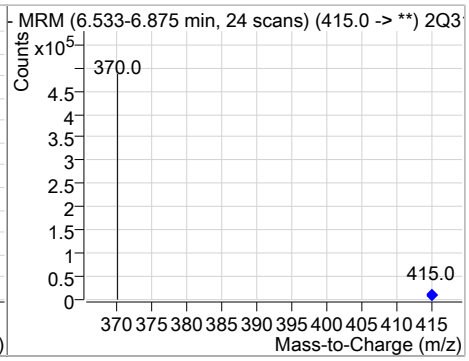


Perfluorinated Compounds by LC/MS/MS

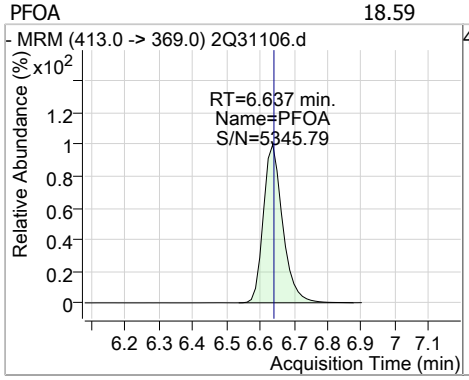
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.64	0.00	374881				

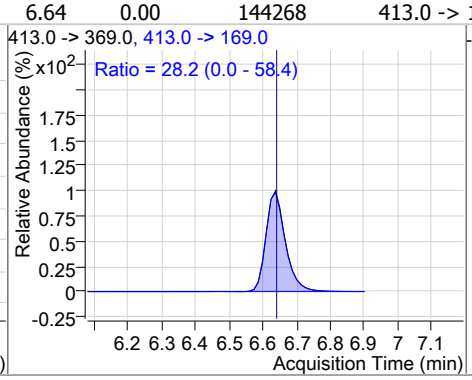


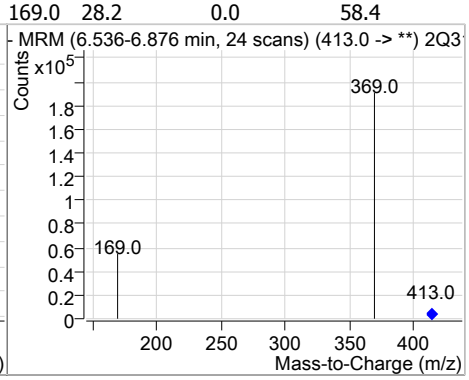




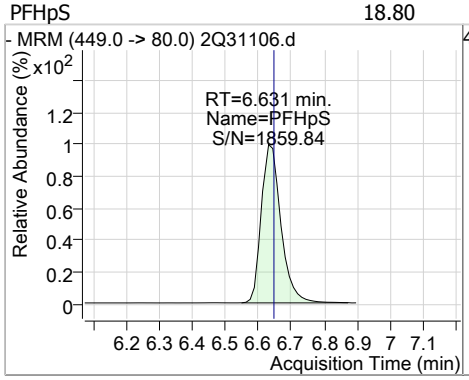
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.59	6.64	0.00	144268	413.0 -> 169.0	28.2	0.0	58.4

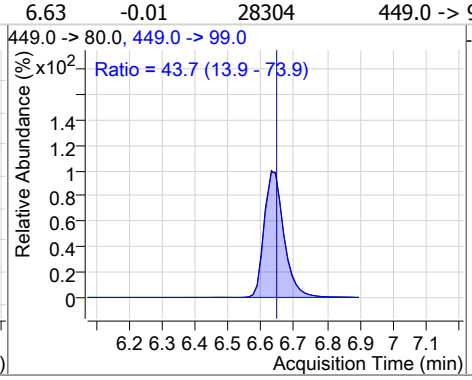


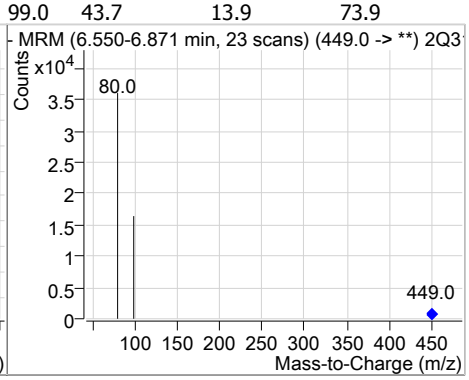




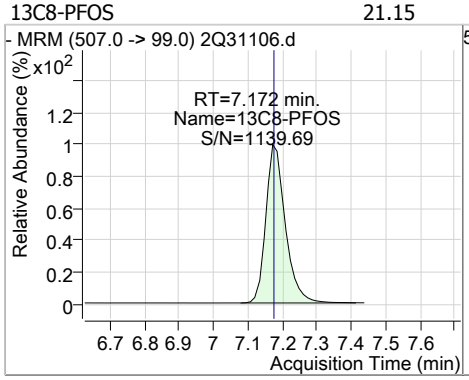
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.80	6.63	-0.01	28304	449.0 -> 99.0	43.7	13.9	73.9

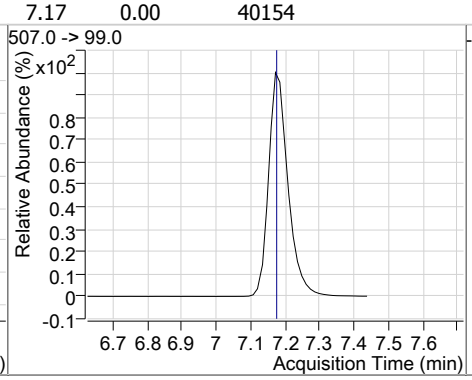


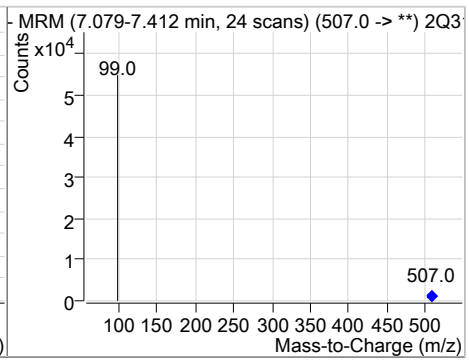




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.15	7.17	0.00	40154				

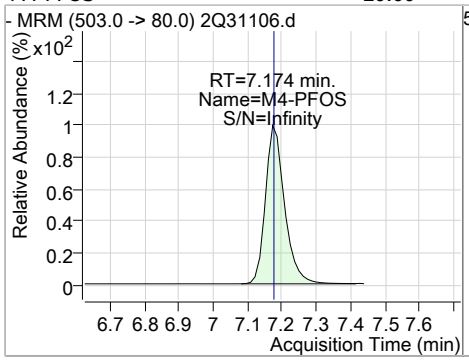


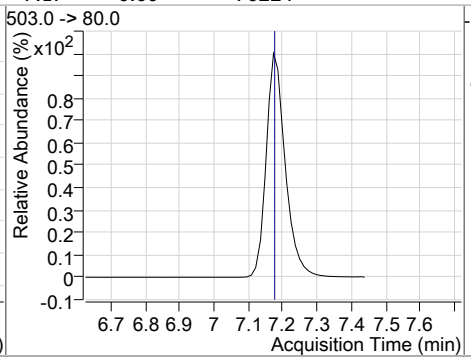


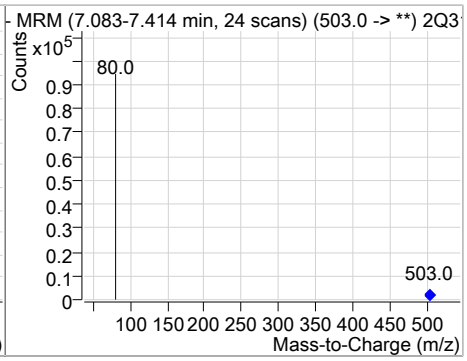


Perfluorinated Compounds by LC/MS/MS

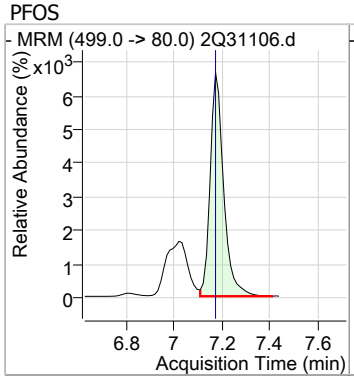
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.17	0.00	70224				

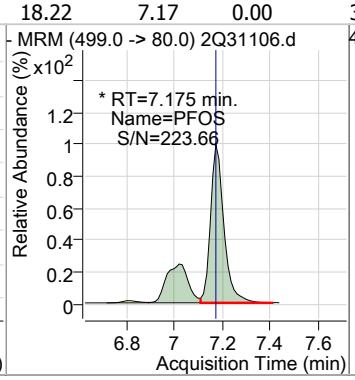


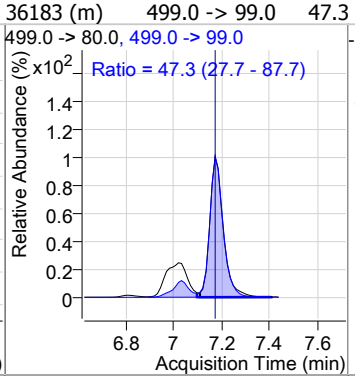


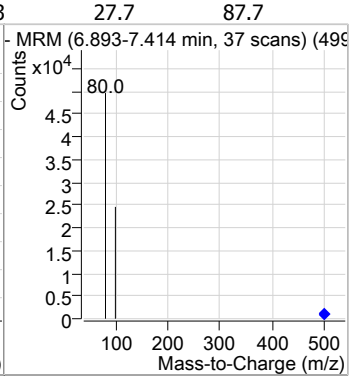


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.22	7.17	0.00	36183 (m)	499.0 -> 99.0	47.3	27.7	87.7

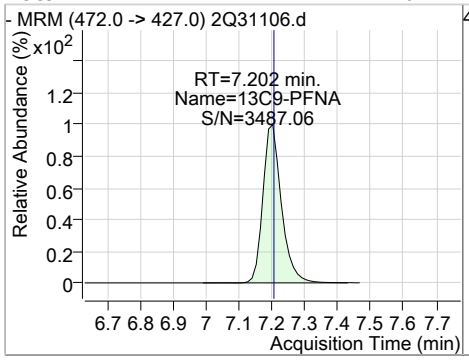


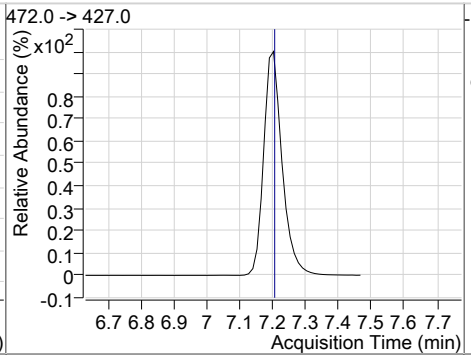


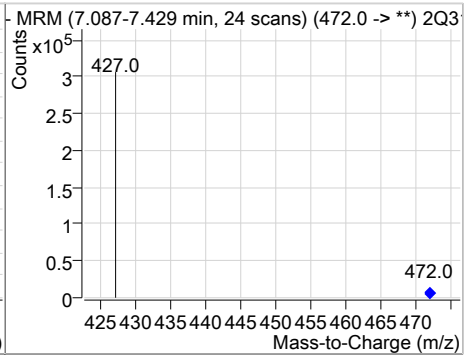




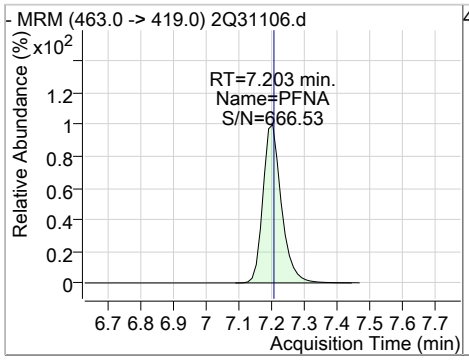
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.20	7.20	0.00	230396				

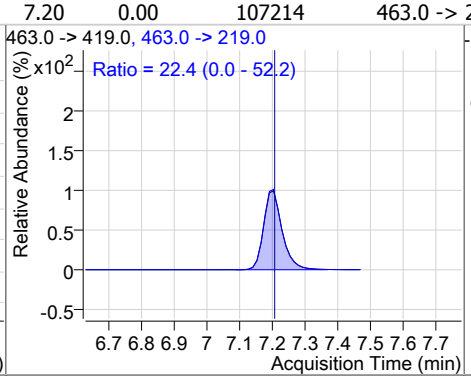


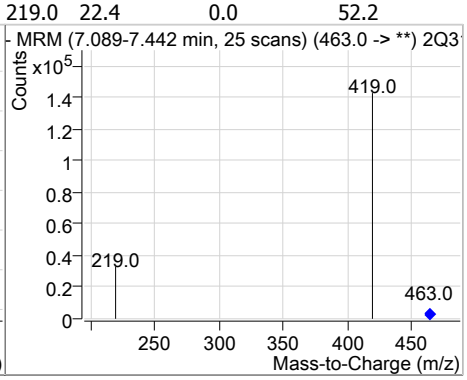




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.21	7.20	0.00	107214	463.0 -> 219.0	22.4	0.0	52.2

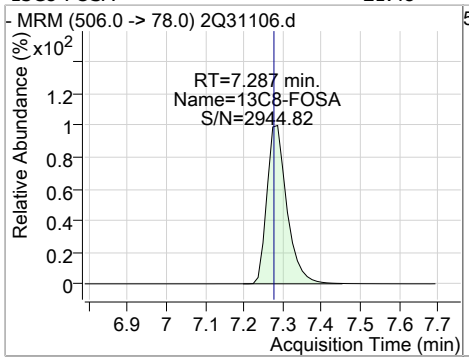


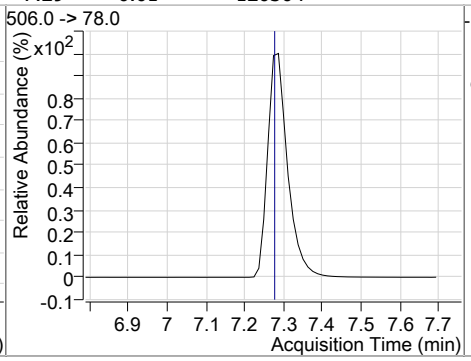


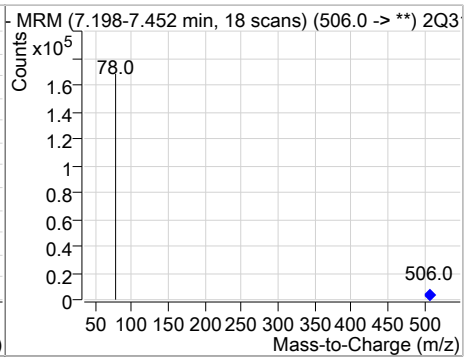


Perfluorinated Compounds by LC/MS/MS

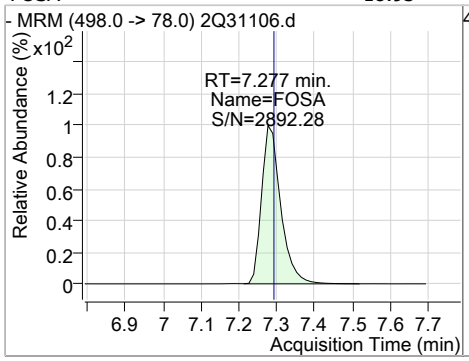
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.48	7.29	0.01	126364				

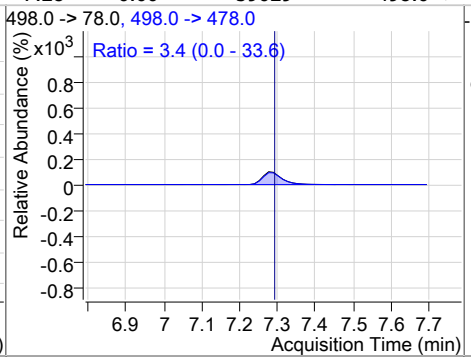


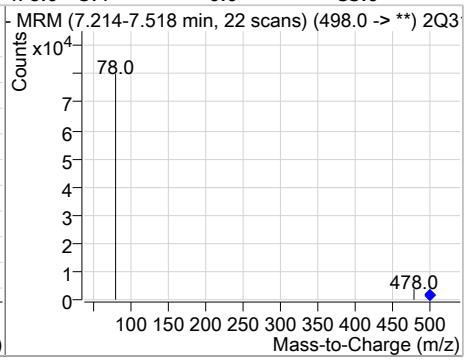




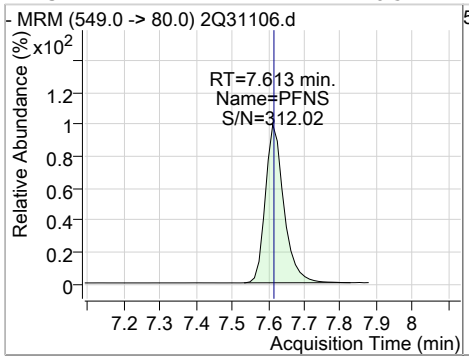
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.93	7.28	0.00	59629	498.0 -> 478.0	3.4	0.0	33.6

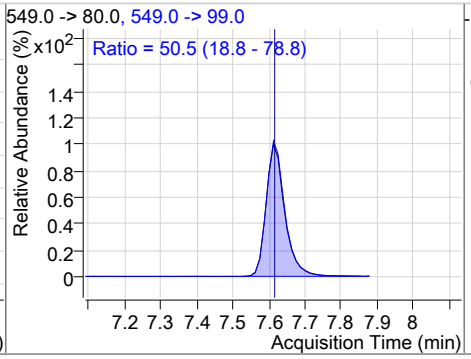


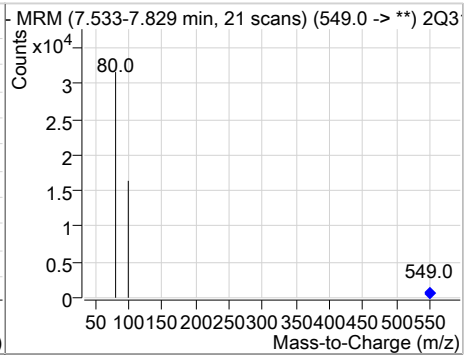




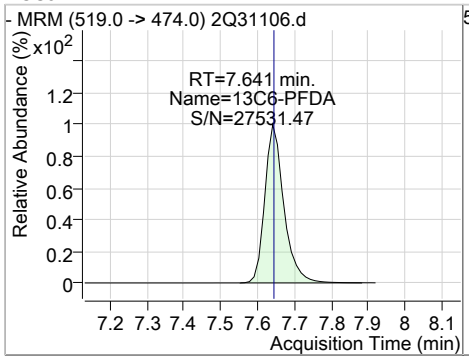
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.52	7.61	0.00	23130	549.0 -> 99.0	50.5	18.8	78.8

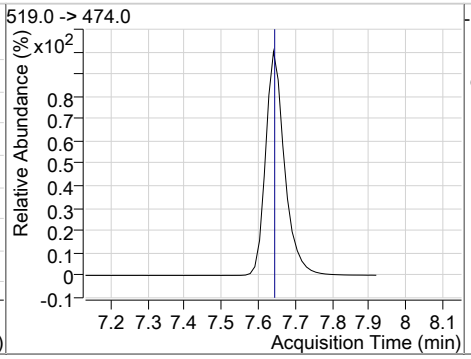


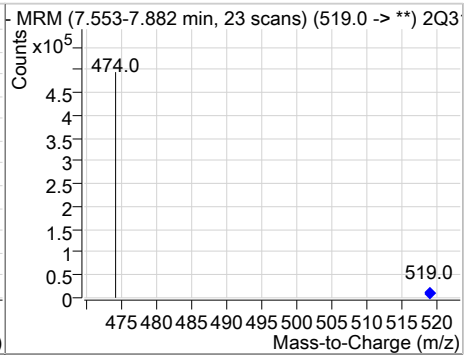




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.42	7.64	0.00	373735				

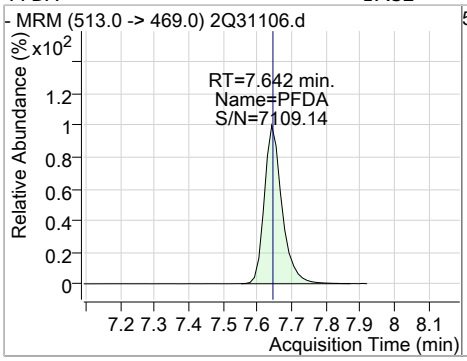


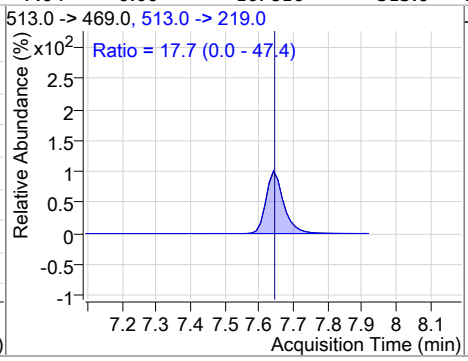


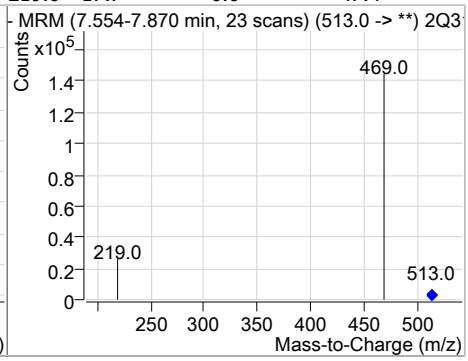


Perfluorinated Compounds by LC/MS/MS

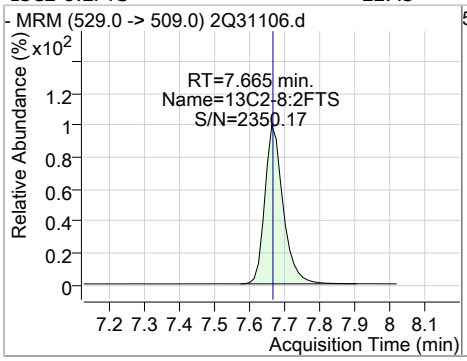
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.52	7.64	0.00	107810	513.0 -> 219.0	17.7	0.0	47.4

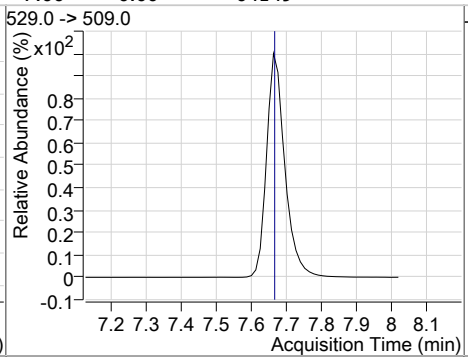


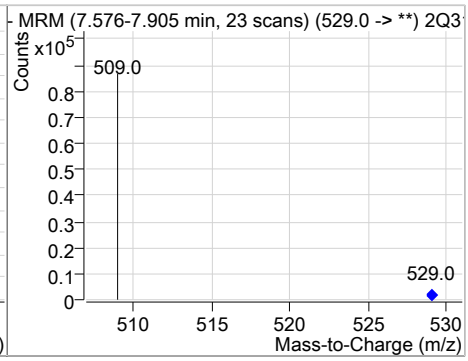




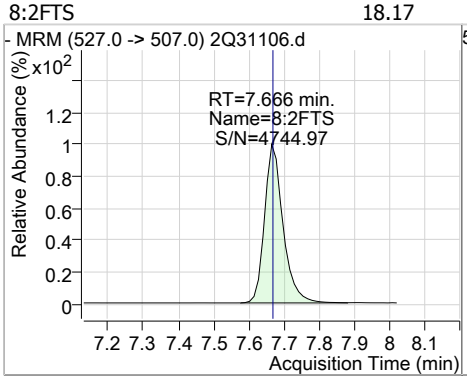
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.43	7.66	0.00	64149				

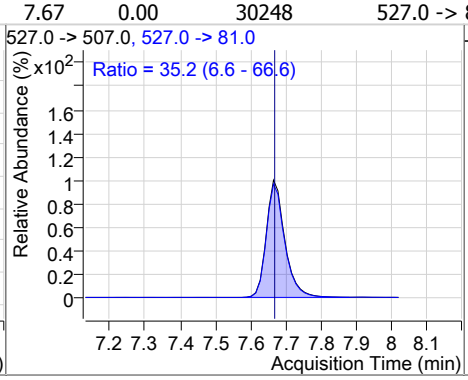


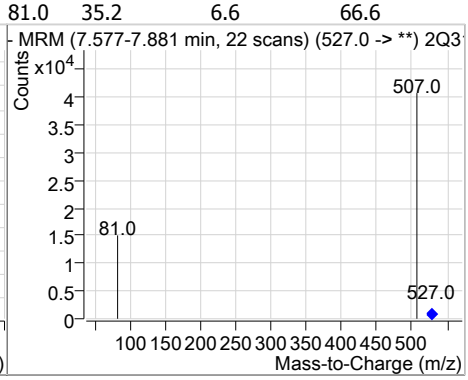




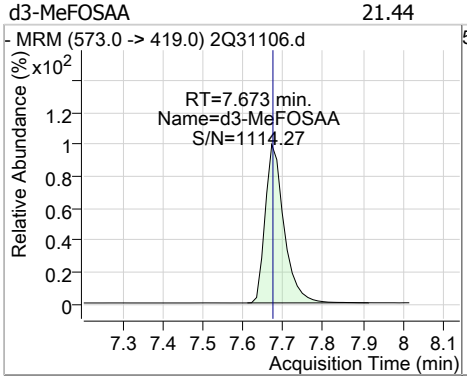
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.17	7.67	0.00	30248	527.0 -> 81.0	35.2	6.6	66.6

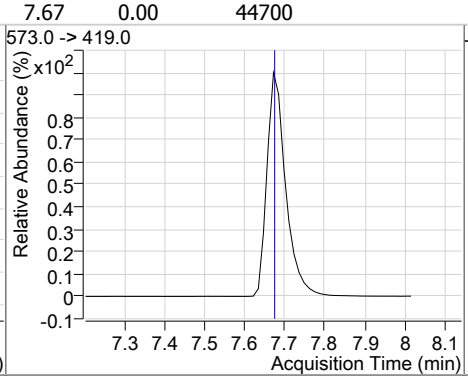


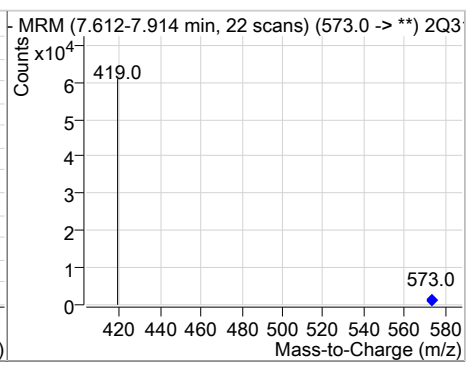




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.44	7.67	0.00	44700				

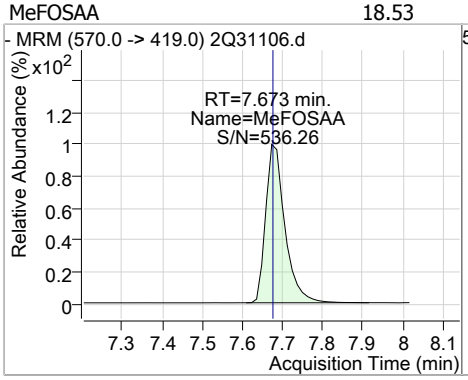


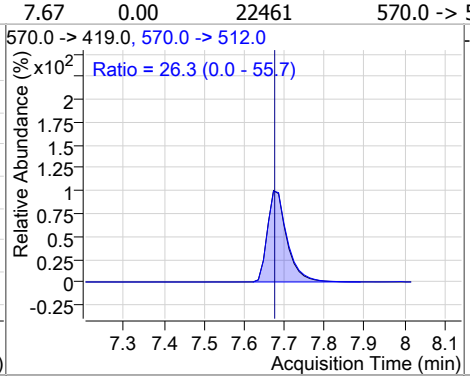


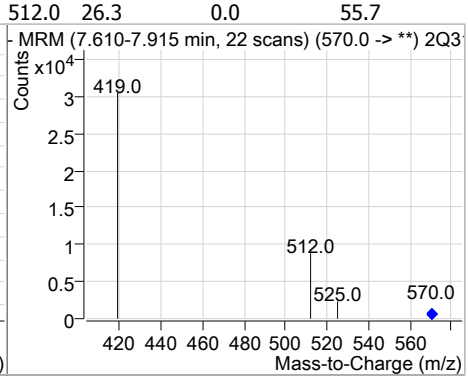


Perfluorinated Compounds by LC/MS/MS

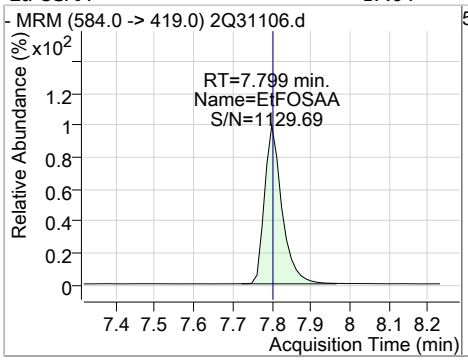
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.53	7.67	0.00	22461	570.0 -> 512.0	26.3	0.0	55.7

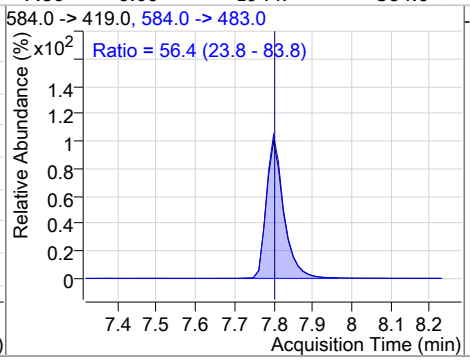


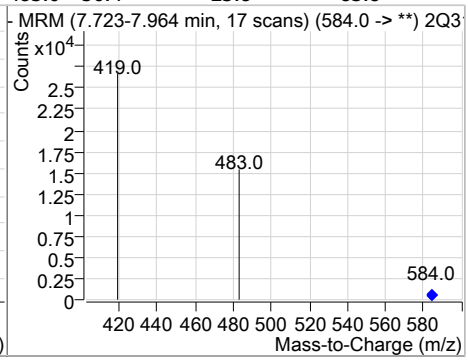




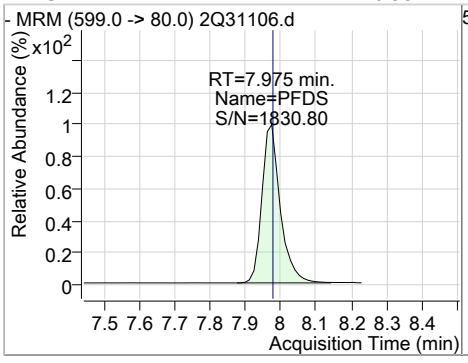
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.64	7.80	0.00	19447	584.0 -> 483.0	56.4	23.8	83.8

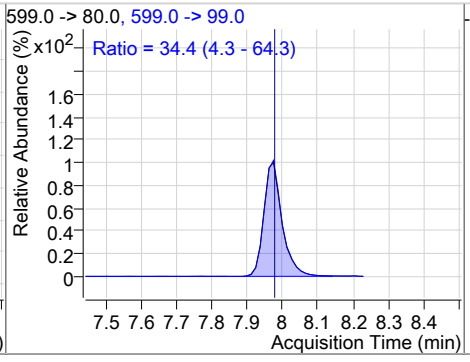


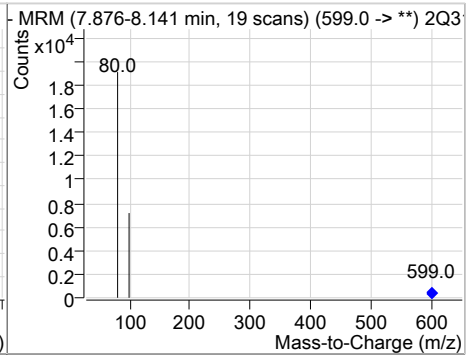




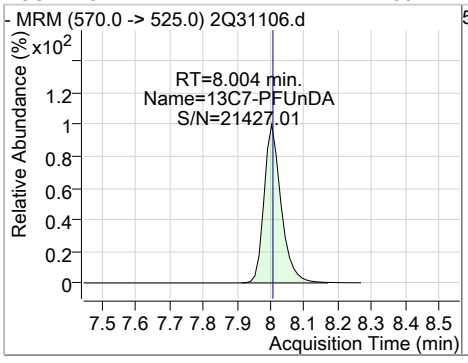
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.93	7.97	0.00	13893	599.0 -> 99.0	34.4	4.3	64.3

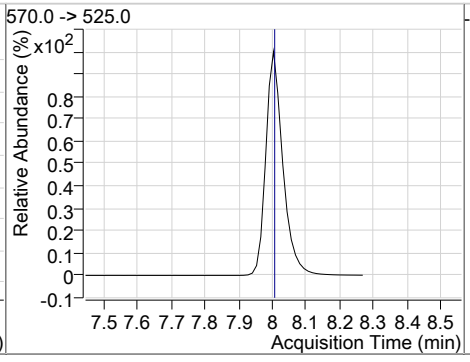


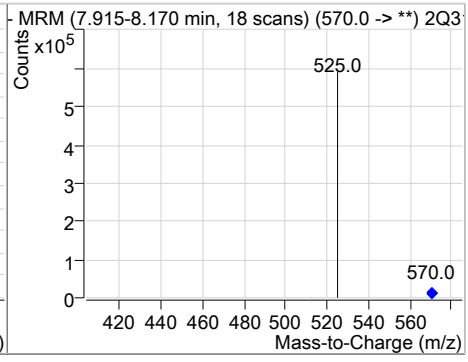




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.58	8.00	0.00	456591				

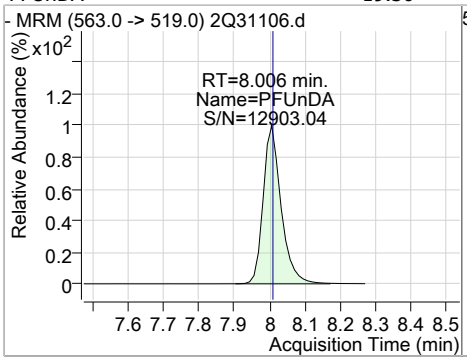


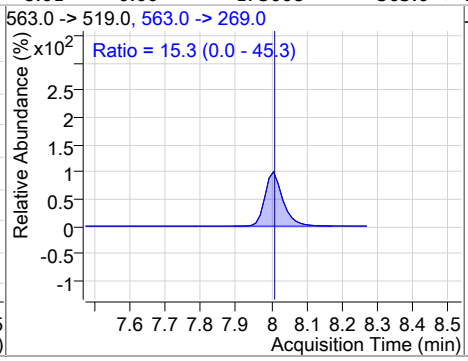


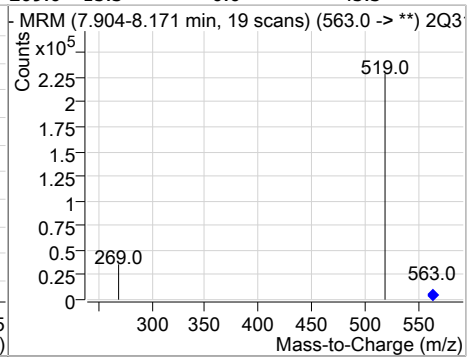


Perfluorinated Compounds by LC/MS/MS

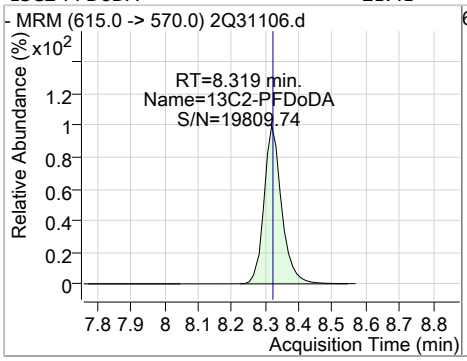
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.36	8.01	0.00	175008	563.0 -> 269.0	15.3	0.0	45.3

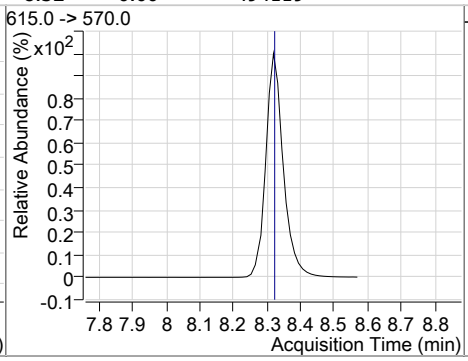


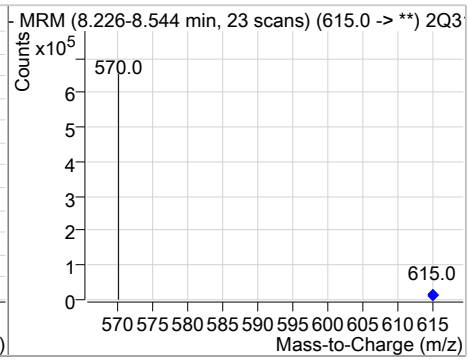




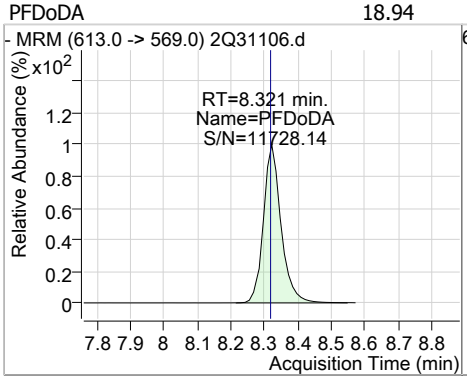
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.41	8.32	0.00	494119				

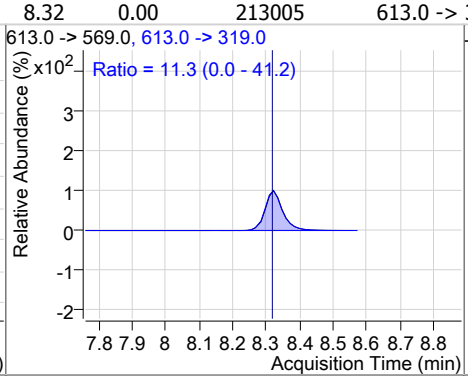


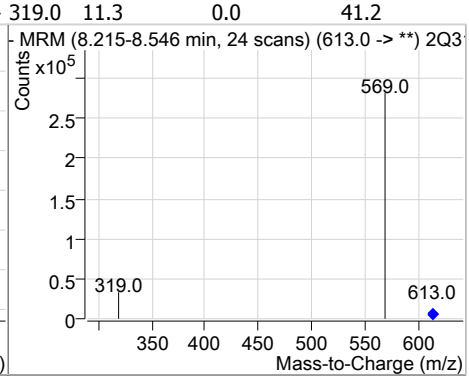




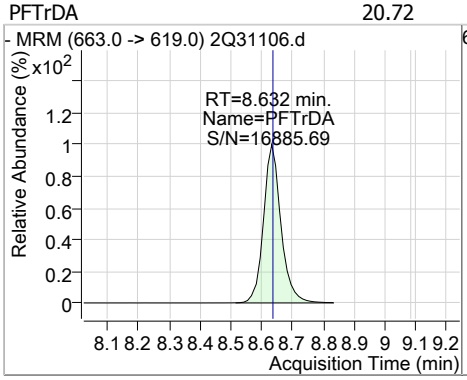
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.94	8.32	0.00	213005	613.0 -> 319.0	11.3	0.0	41.2

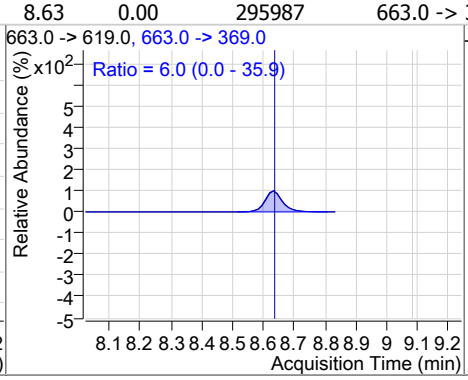


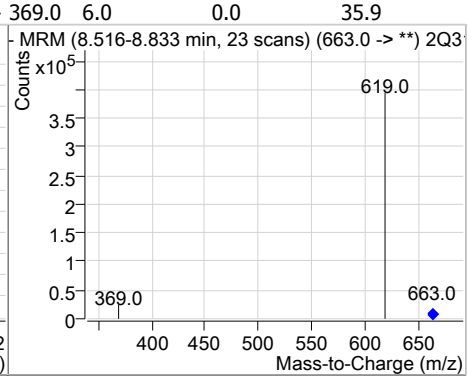




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.72	8.63	0.00	295987	663.0 -> 369.0	6.0	0.0	35.9

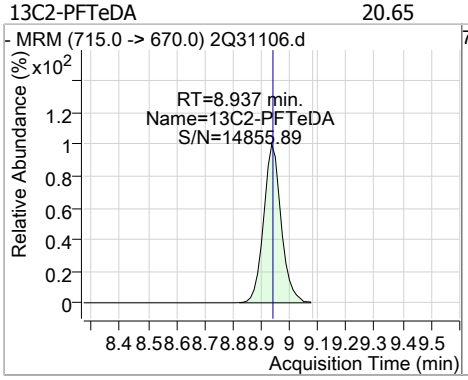


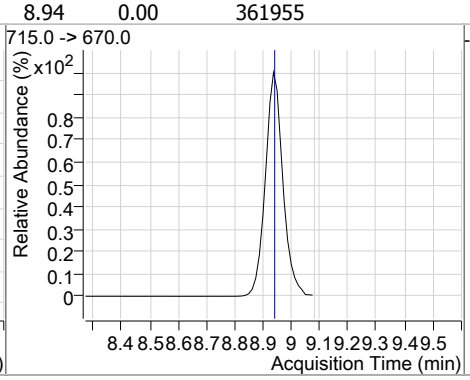


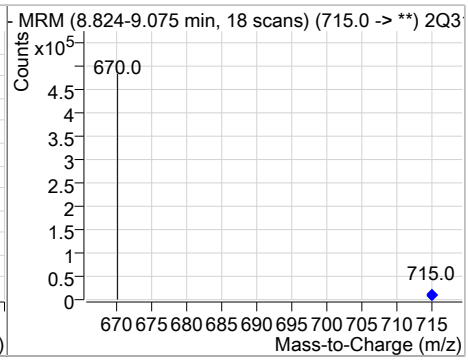


Perfluorinated Compounds by LC/MS/MS

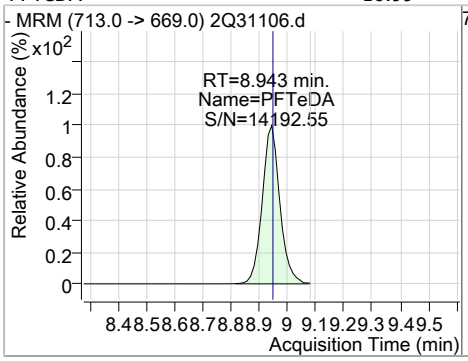
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.65	8.94	0.00	361955				

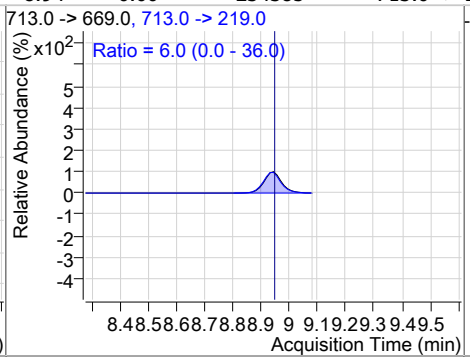


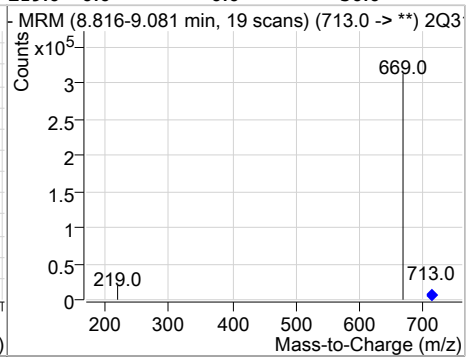




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.99	8.94	0.00	234385	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q498-ICV498
Lab FileID: 2Q31106.D
Injection Time: 06/21/19 12:40
Method: EPA 537M BY ID
Analyst approved: 06/24/19 10:33 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.17	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31107.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/21/2019 1:09:53 PM
Sample Name : icv498-20
Vial : Vial 12
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q498.batch.bin
Sample Information : op75544,S2Q498,250,,,1,1,water

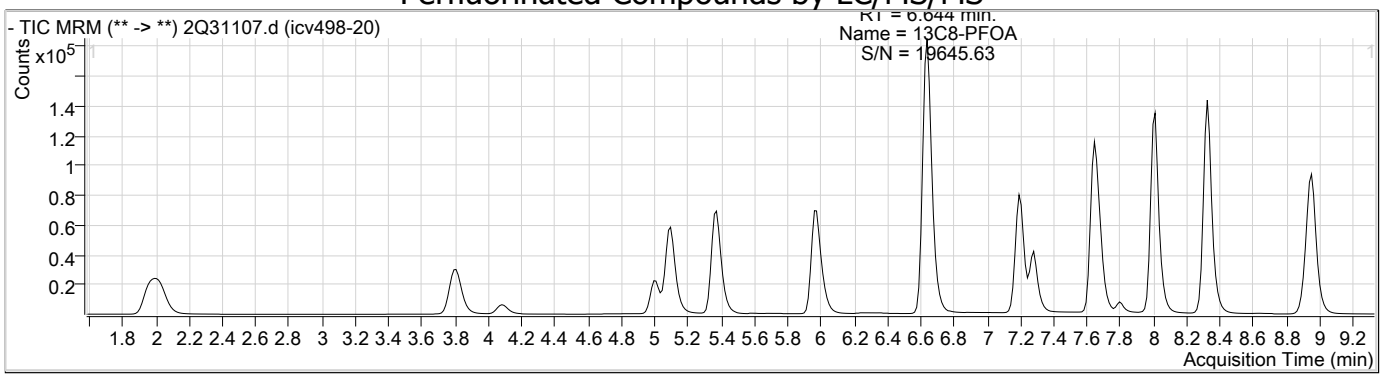
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.646	415.0 -> 370.0	369311	20.00	µg/L	0.010
13C4-PFOS	7.181	503.0 -> 80.0	65843	20.00	µg/L	0.007
M4-PFBA	1.990	217.0 -> 172.0	197201	20.00	µg/L	0.000
M5-PFPeA	3.811	268.0 -> 223.0	157433	20.00	µg/L	0.012
M5-PFHxA	5.101	318.0 -> 273.0	240399	20.00	µg/L	0.012
M4-PFHpA	5.967	367.0 -> 322.0	275029	20.00	µg/L	-0.001
M8-PFOA	6.644	421.0 -> 376.0	273001	20.00	µg/L	0.009
M9-PFNA	7.213	472.0 -> 427.0	219509	20.00	µg/L	0.011
M6-PFDA	7.653	519.0 -> 474.0	376280	20.00	µg/L	0.011
M7-PFUnDA	8.014	570.0 -> 525.0	478673	20.00	µg/L	0.010
M2-PFDoDA	8.326	615.0 -> 570.0	516114	20.00	µg/L	0.007
M2-PFTeDA	8.949	715.0 -> 670.0	415039	20.00	µg/L	0.012
M8-FOSA	7.286	506.0 -> 78.0	127593	20.00	µg/L	0.012
M3-PFBS	4.080	302.0 -> 99.0	29516	20.00	µg/L	-0.001
M3-PFHxS	6.010	402.0 -> 99.0	25138	20.00	µg/L	0.012
M8-PFOS	7.179	507.0 -> 99.0	38105	20.00	µg/L	0.007
M2-4:2FTS	4.996	329.0 -> 309.0	93616	20.00	µg/L	-0.001
M2-6:2FTS	6.627	429.0 -> 409.0	83354	20.00	µg/L	0.012
M2-8:2FTS	7.677	529.0 -> 509.0	59614	20.00	µg/L	0.012
M3-MeFOSAA	7.684	573.0 -> 419.0	44683	20.00	µg/L	0.011
M3-HFPO-DA	5.380	287.0 -> 169.0	228528	100.00	µg/L	0.015
System Monitoring Compounds						
13C2-4:2FTS	4.996	329.0 -> 309.0	93402	19.25	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-6:2FTS	6.627	429.0 -> 409.0	83299	20.92	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-8:2FTS	7.677	529.0 -> 509.0	59554	20.82	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C2-PFDoDA	8.326	615.0 -> 570.0	515011	22.31	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
13C2-PFTeDA	8.949	715.0 -> 670.0	413752	23.61	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.0%		
13C3-PFBS	4.080	302.0 -> 99.0	29498	19.41	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C3-PFHxS	6.010	402.0 -> 99.0	25133	19.74	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C4-PFBA	1.990	217.0 -> 172.0	195855	18.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C4-PFHpA	5.967	367.0 -> 322.0	274706	20.01	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C5-PFHxA	5.101	318.0 -> 273.0	240396	19.86	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFPeA	3.811	268.0 -> 223.0	158000	19.68	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C6-PFDA	7.653	519.0 -> 474.0	376546	21.58	µg/L	0.011

Perfluorinated Compounds by LC/MS/MS

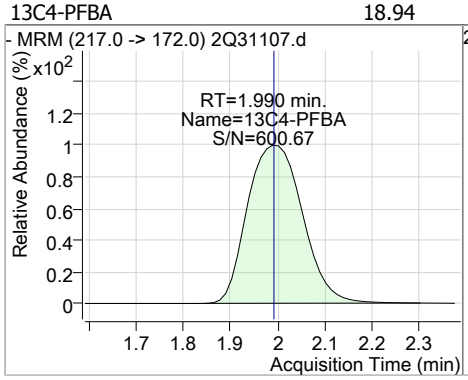
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C7-PFUnDA	8.014	570.0 -> 525.0	478239	22.60 µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C8-FOSA	7.286	506.0 -> 78.0	127542	21.68 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C8-PFOA	6.644	421.0 -> 376.0	272897	21.27 µg/L		0.009
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C8-PFOS	7.179	507.0 -> 99.0	38085	20.06 µg/L		0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C9-PFNA	7.213	472.0 -> 427.0	219293	20.18 µg/L		0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSAA	7.684	573.0 -> 419.0	44672	21.43 µg/L		0.011
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
M2-PFOA	6.646	415.0 -> 370.0	369448	20.00 µg/L		0.010
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.181	503.0 -> 80.0	65966	20.04 µg/L		0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-HFPO-DA	5.380	287.0 -> 169.0	228528	93.64 µg/L		0.015
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	6.629	427.0 -> 407.0	0	0.00 µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	5.372	329.0 -> 169.0	46662	24.35 µg/L		98

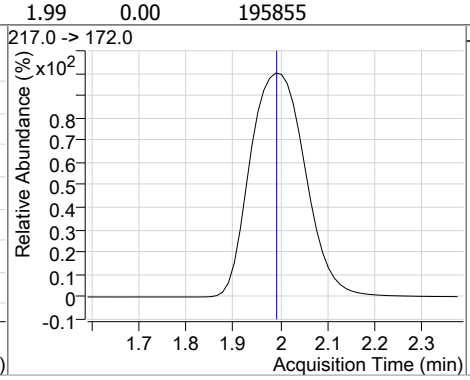
= Qualifier out of range, m = manually integrated, + = Area summed

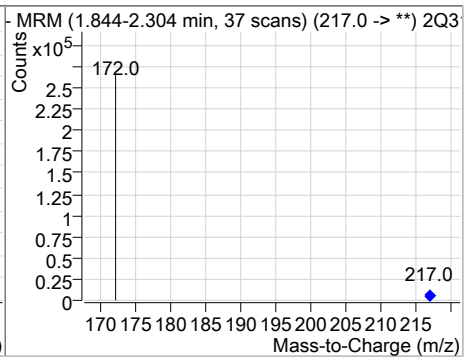
Perfluorinated Compounds by LC/MS/MS



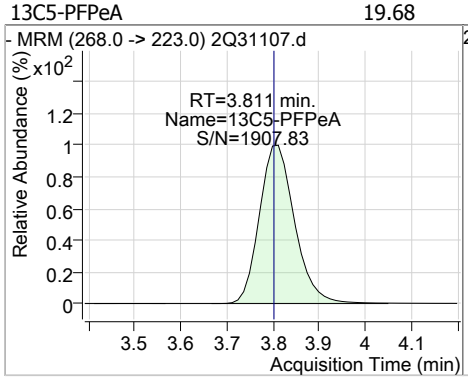
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.94	1.99	0.00	195855				

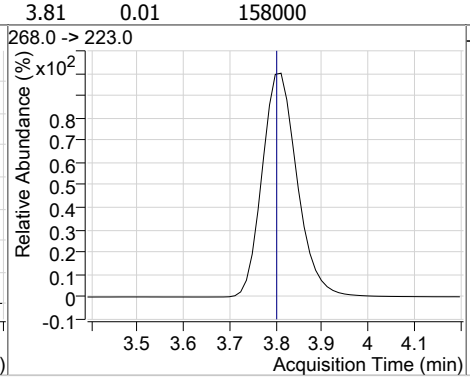


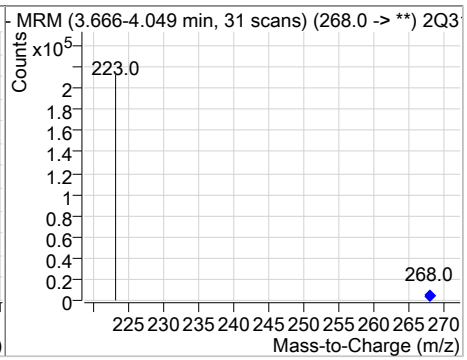




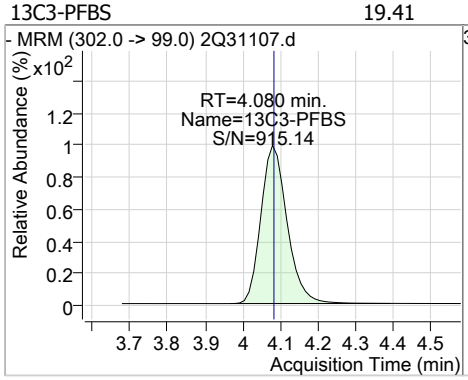
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.68	3.81	0.01	158000				

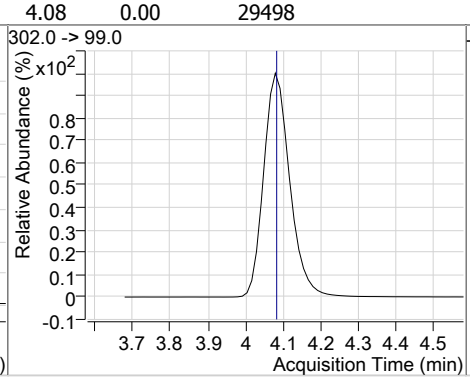


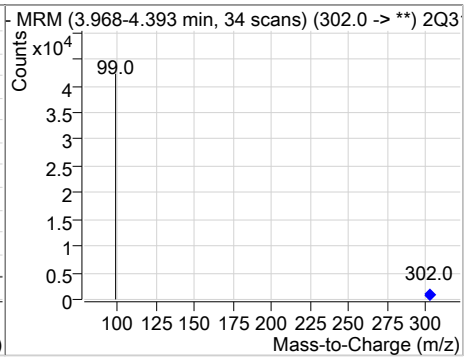




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.41	4.08	0.00	29498				

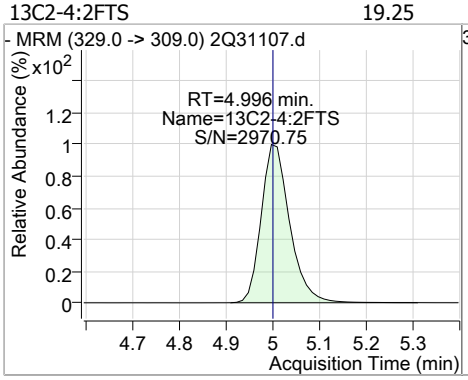


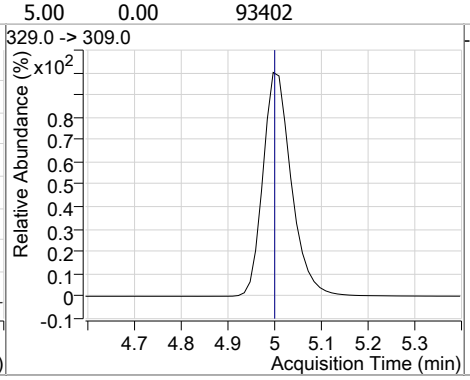


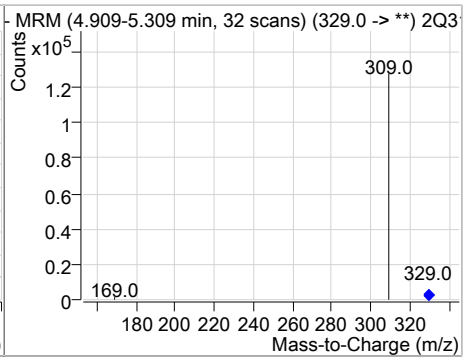


Perfluorinated Compounds by LC/MS/MS

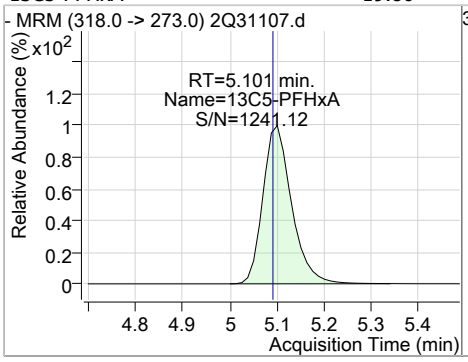
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.25	5.00	0.00	93402				

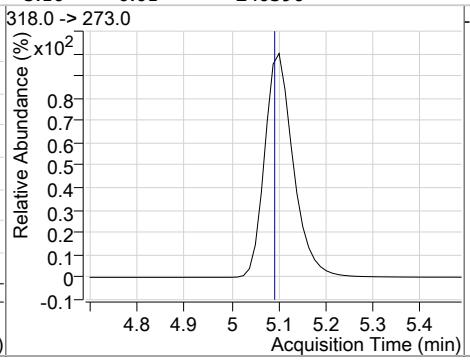


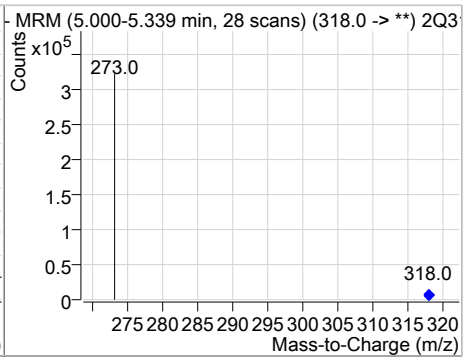




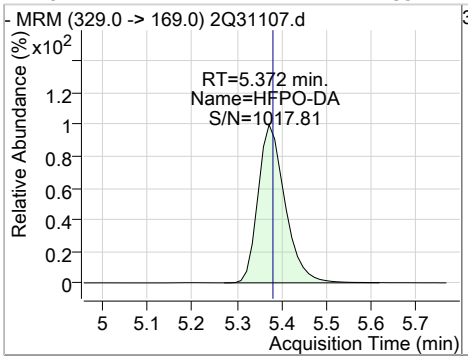
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.86	5.10	0.01	240396				

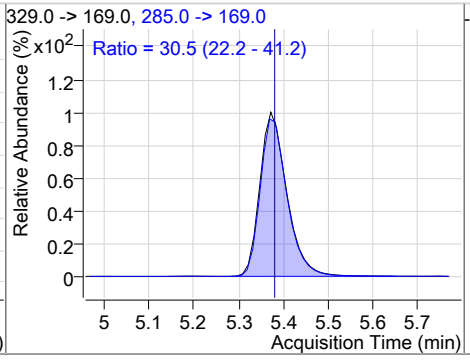


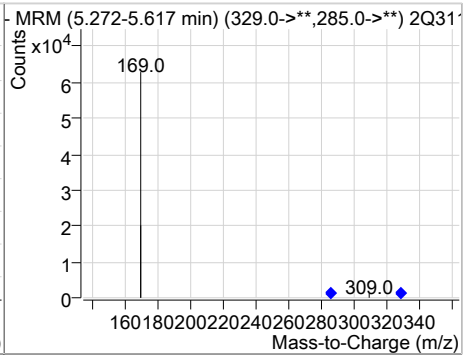




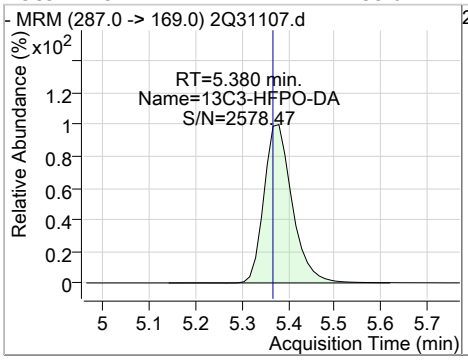
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	24.35	5.37	0.01	46662	285.0 -> 169.0	30.5	22.2	41.2

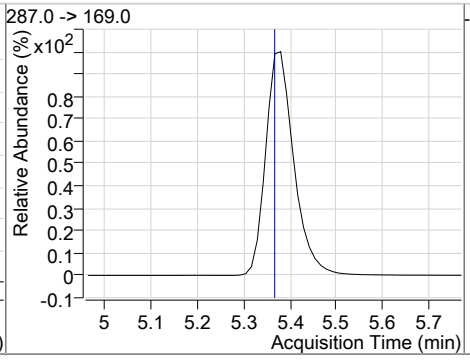


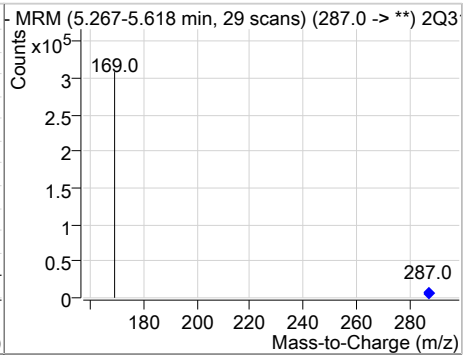




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	93.64	5.38	0.02	228528				

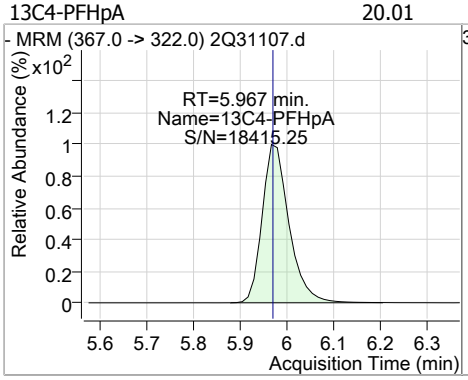


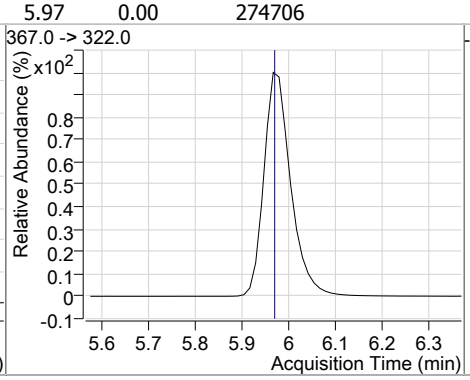


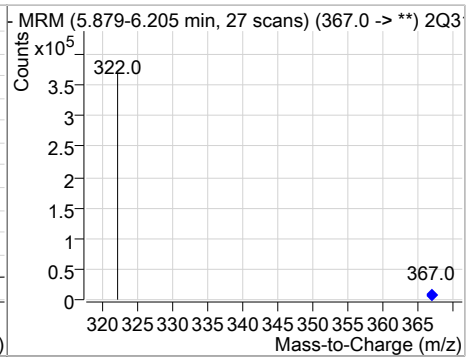


Perfluorinated Compounds by LC/MS/MS

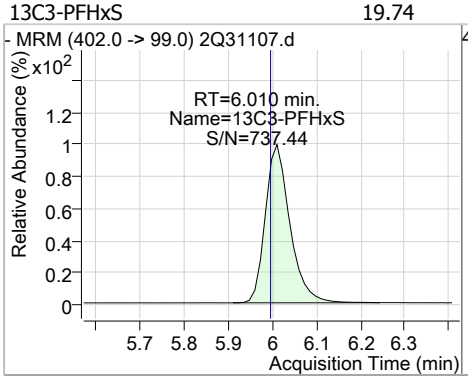
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.01	5.97	0.00	274706				

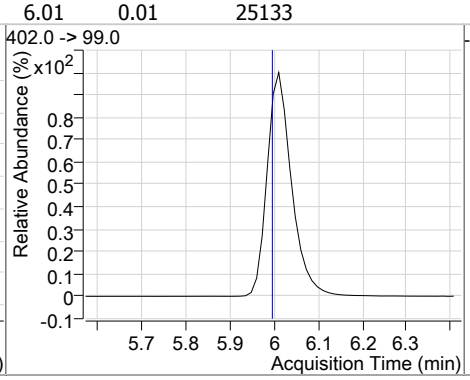


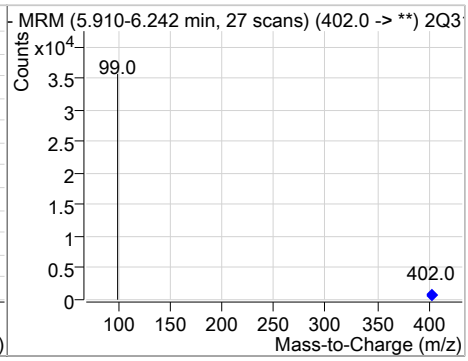




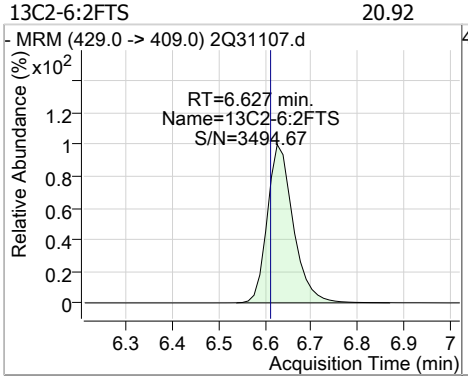
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.74	6.01	0.01	25133				

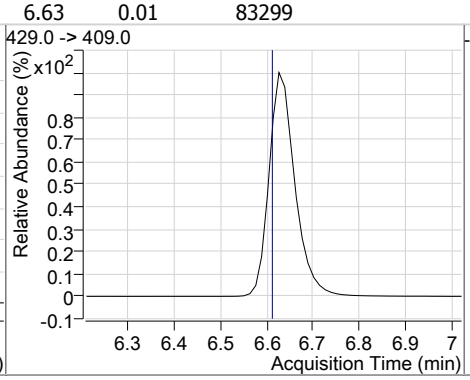


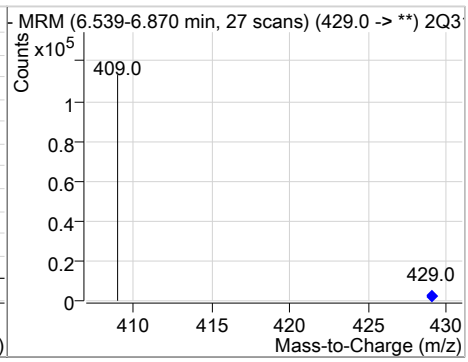




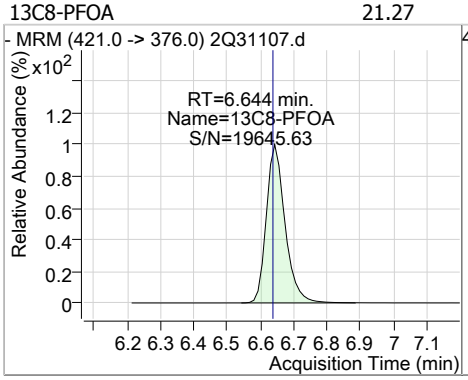
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.92	6.63	0.01	83299				

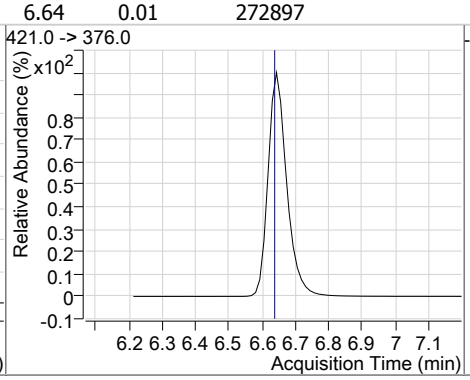


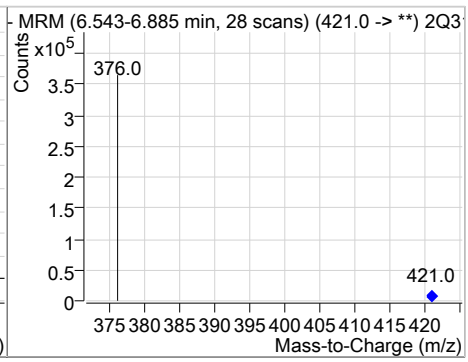




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.27	6.64	0.01	272897				

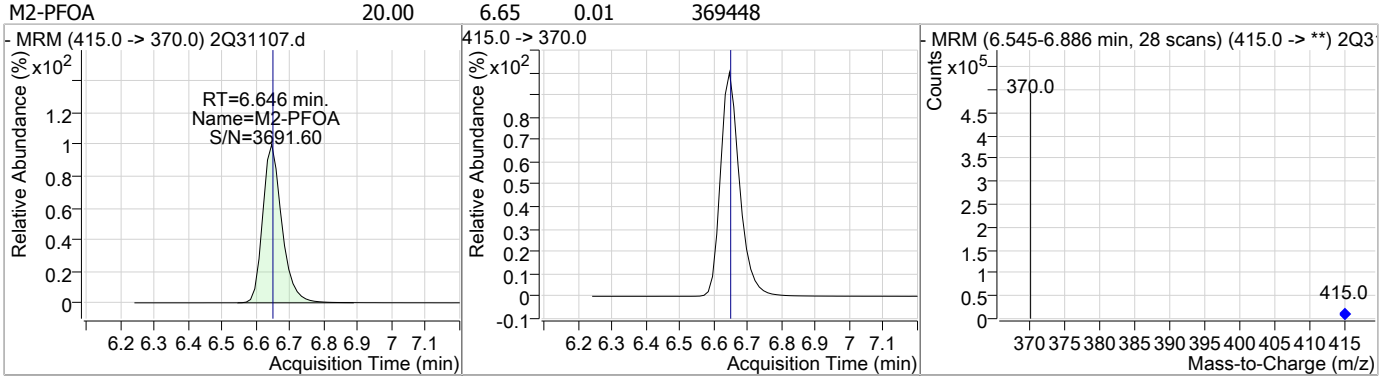




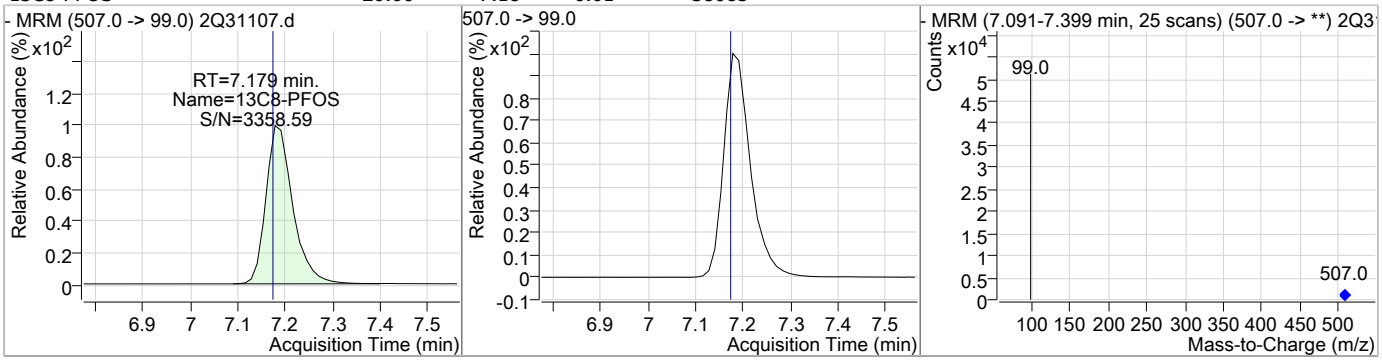


Perfluorinated Compounds by LC/MS/MS

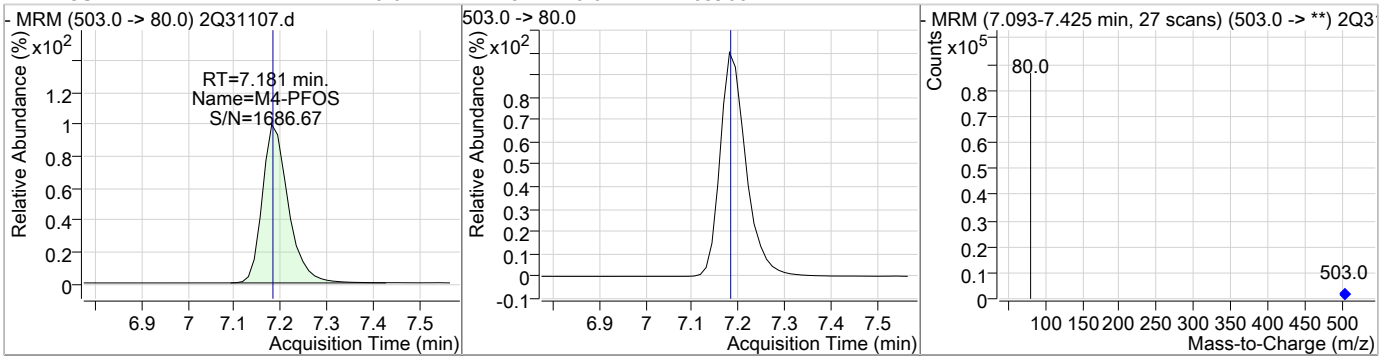
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M2-PFOA	20.00	6.65	0.01	369448				



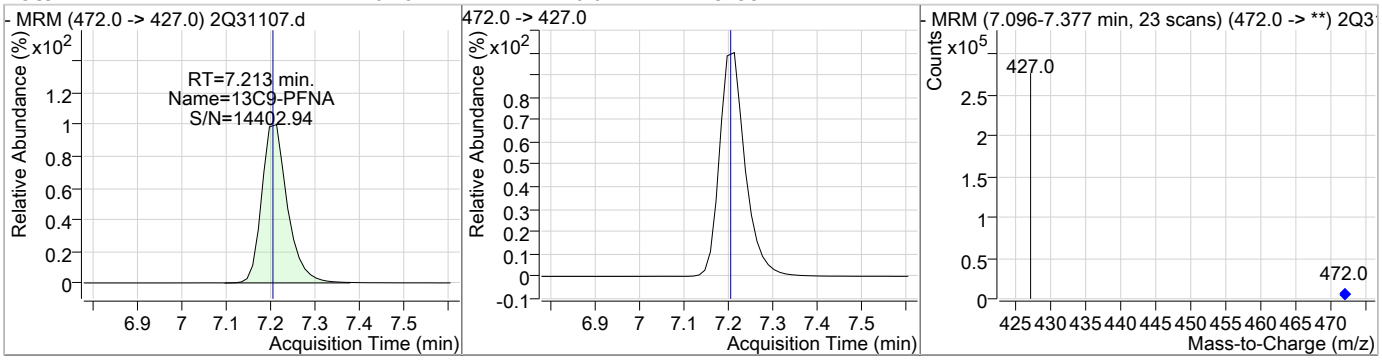
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.06	7.18	0.01	38085				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.04	7.18	0.01	65966				

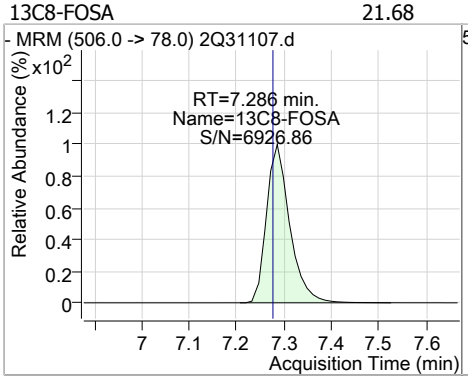


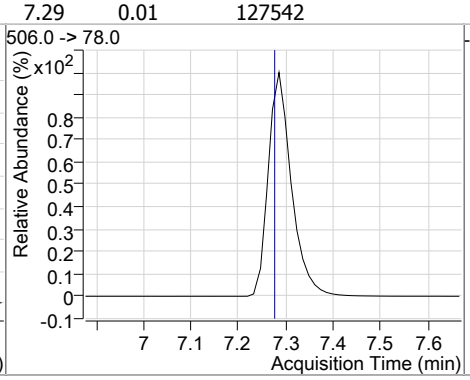
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.18	7.21	0.01	219293				

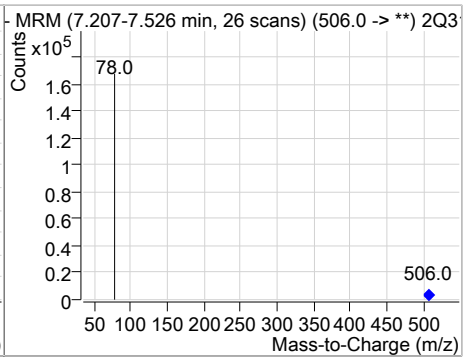


Perfluorinated Compounds by LC/MS/MS

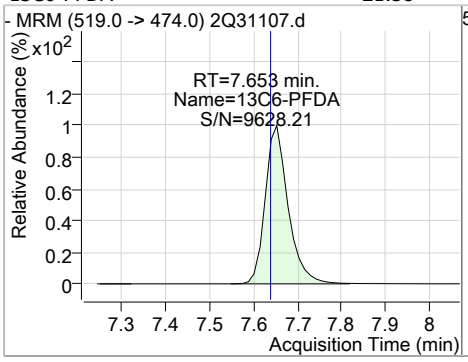
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.68	7.29	0.01	127542				

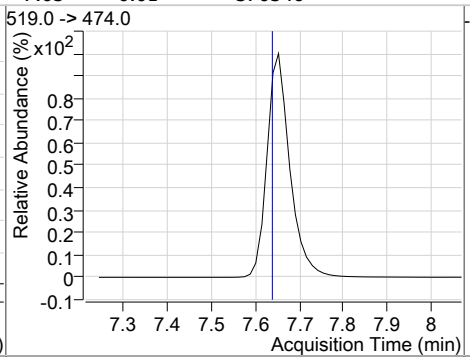


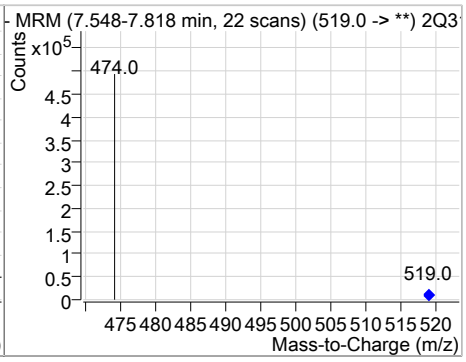




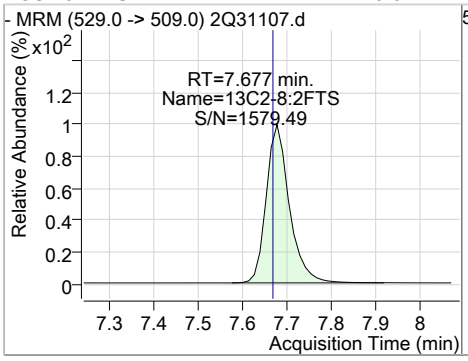
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.58	7.65	0.01	376546				

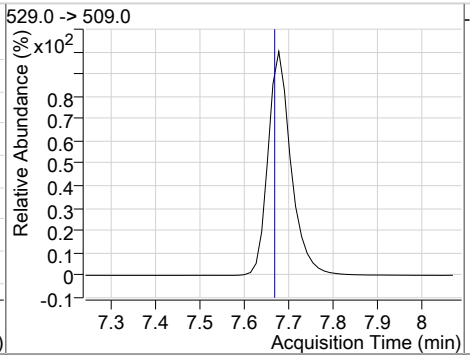


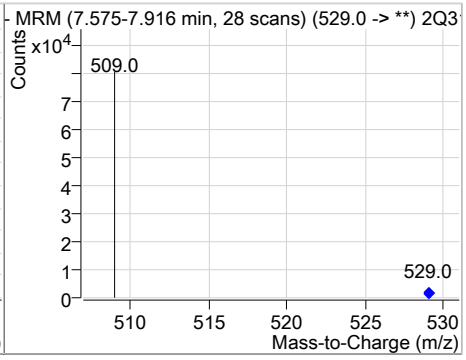




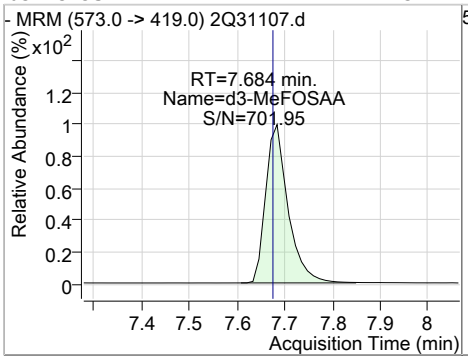
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.82	7.68	0.01	59554				

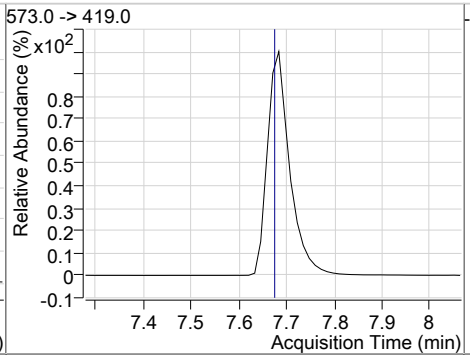


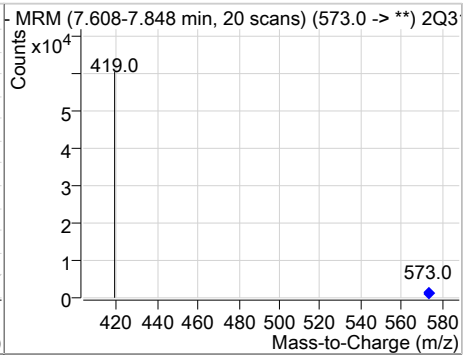




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.43	7.68	0.01	44672				

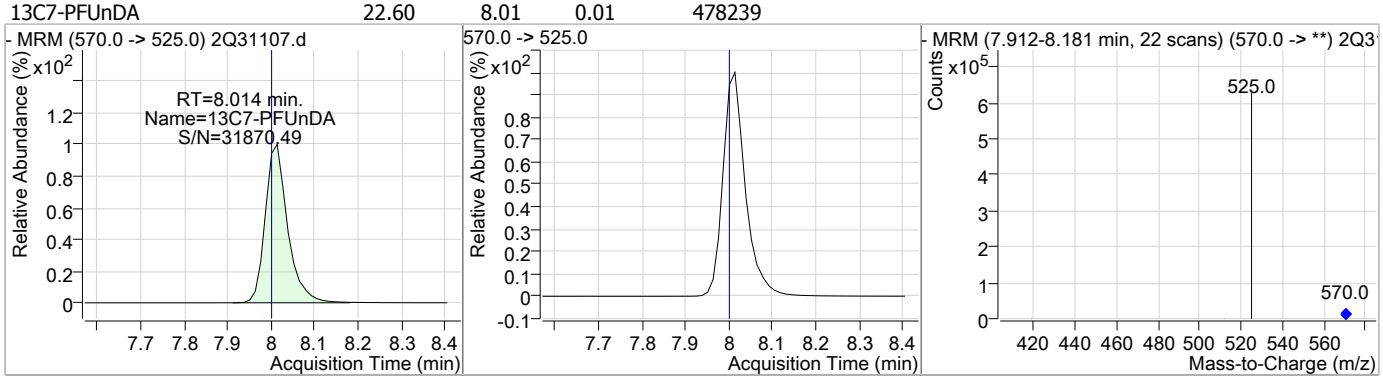




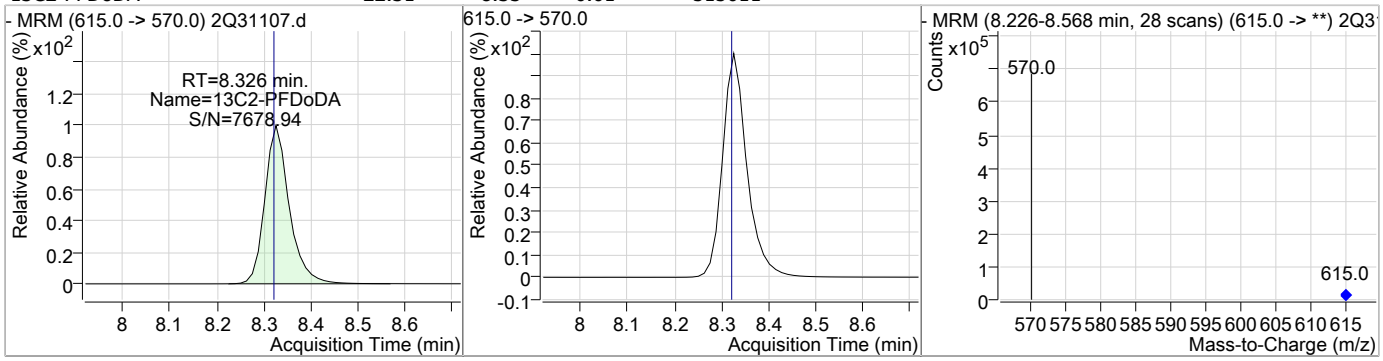


Perfluorinated Compounds by LC/MS/MS

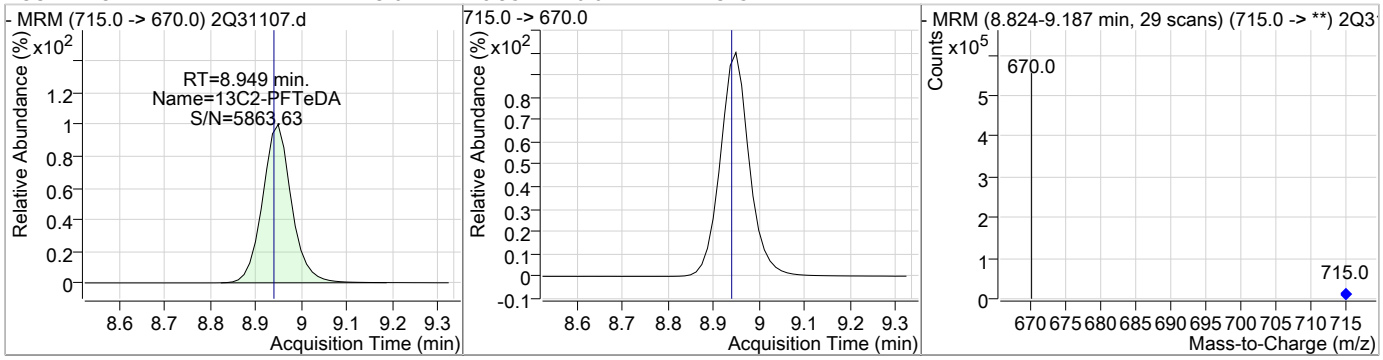
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.60	8.01	0.01	478239				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.31	8.33	0.01	515011				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	23.61	8.95	0.01	413752				



Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31216.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 7:12:21 PM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75546,S2Q499,250,,,1,1,water

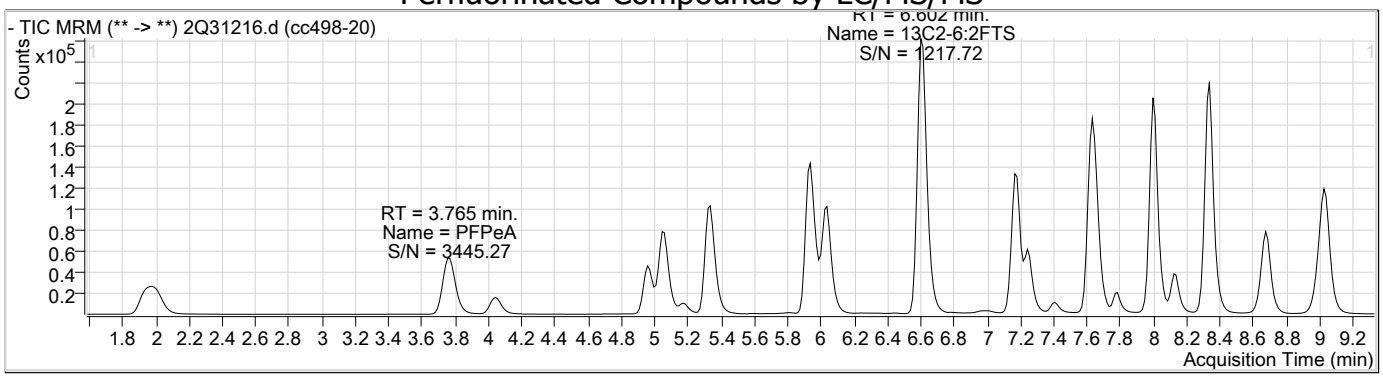
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.608	415.0 -> 370.0	383965	20.00	µg/L	-0.028
13C4-PFOS	7.156	503.0 -> 80.0	65041	20.00	µg/L	-0.018
M4-PFBA	1.977	217.0 -> 172.0	190727	20.00	µg/L	-0.013
M5-PFPeA	3.774	268.0 -> 223.0	158682	20.00	µg/L	-0.026
M5-PFHxA	5.063	318.0 -> 273.0	244668	20.00	µg/L	-0.026
M4-PFHpA	5.942	367.0 -> 322.0	289883	20.00	µg/L	-0.026
M8-PFOA	6.618	421.0 -> 376.0	275606	20.00	µg/L	-0.016
M9-PFNA	7.184	472.0 -> 427.0	244402	20.00	µg/L	-0.018
M6-PFDA	7.640	519.0 -> 474.0	406191	20.00	µg/L	-0.001
M7-PFUnDA	8.001	570.0 -> 525.0	506041	20.00	µg/L	-0.002
M2-PFDoDA	8.339	615.0 -> 570.0	556722	20.00	µg/L	0.019
M2-PFTeDA	9.024	715.0 -> 670.0	337180	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	116080	20.00	µg/L	-0.027
M3-PFBS	4.042	302.0 -> 99.0	27044	20.00	µg/L	-0.038
M3-PFHxS	5.972	402.0 -> 99.0	22829	20.00	µg/L	-0.026
M8-PFOS	7.166	507.0 -> 99.0	35856	20.00	µg/L	-0.006
M2-4:2FTS	4.958	329.0 -> 309.0	105511	20.00	µg/L	-0.038
M2-6:2FTS	6.602	429.0 -> 409.0	96496	20.00	µg/L	-0.013
M2-8:2FTS	7.663	529.0 -> 509.0	73497	20.00	µg/L	-0.001
M3-MeFOSAA	7.658	573.0 -> 419.0	48255	20.00	µg/L	-0.014
M3-HFPO-DA	5.330	287.0 -> 169.0	191237	100.00	µg/L	-0.035
System Monitoring Compounds						
13C2-4:2FTS	4.958	329.0 -> 309.0	105341	21.71	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C2-6:2FTS	6.602	429.0 -> 409.0	96427	24.22	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%		
13C2-8:2FTS	7.663	529.0 -> 509.0	73464	25.69	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.4%		
13C2-PFDoDA	8.339	615.0 -> 570.0	556691	24.12	µg/L	0.019
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%		
13C2-PFTeDA	9.024	715.0 -> 670.0	334689	19.09	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C3-PFBS	4.042	302.0 -> 99.0	27027	17.79	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C3-PFHxS	5.972	402.0 -> 99.0	22838	17.94	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C4-PFBA	1.977	217.0 -> 172.0	189528	18.33	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C4-PFHpA	5.942	367.0 -> 322.0	289587	21.09	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C5-PFHxA	5.063	318.0 -> 273.0	244531	20.21	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C5-PFPeA	3.774	268.0 -> 223.0	158330	19.72	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C6-PFDA	7.640	519.0 -> 474.0	405883	23.27	µg/L	-0.001

Perfluorinated Compounds by LC/MS/MS

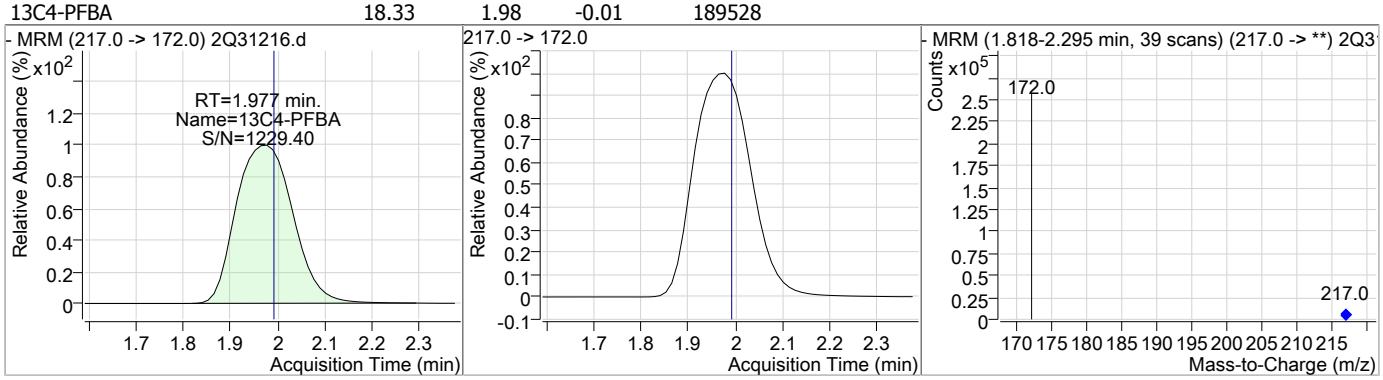
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.3%		
13C7-PFUnDA	8.001	570.0 -> 525.0	505949	23.91 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.6%		
13C8-FOSA	7.247	506.0 -> 78.0	116074	19.73 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C8-PFOA	6.618	421.0 -> 376.0	275544	21.48 µg/L		-0.016
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C8-PFOS	7.166	507.0 -> 99.0	35850	18.88 µg/L		-0.006
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C9-PFNA	7.184	472.0 -> 427.0	244261	22.48 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
d3-MeFOSAA	7.658	573.0 -> 419.0	48239	23.14 µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.7%		
M2-PFOA	6.608	415.0 -> 370.0	384097	20.00 µg/L		-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.156	503.0 -> 80.0	65163	20.04 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-HFPO-DA	5.330	287.0 -> 169.0	191237	78.36 µg/L		-0.035
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
Target Compounds						**QValue**
4:2FTS	4.961	327.0 -> 307.0	60992	20.29 µg/L		98
6:2FTS	6.604	427.0 -> 407.0	49372	19.22 µg/L		100
8:2FTS	7.664	527.0 -> 507.0	39804	20.87 µg/L		97
EtFOSAA	7.784	584.0 -> 419.0	23640	19.88 µg/L		96
FOSA	7.250	498.0 -> 78.0	58593	20.24 µg/L		99
MeFOSAA	7.659	570.0 -> 419.0	26137	19.99 µg/L		99
PFBA	1.973	213.0 -> 169.0	32511	19.92 µg/L		100
PFBS	4.046	299.0 -> 80.0	36752	19.80 µg/L		100
PFDA	7.641	513.0 -> 469.0	135414	20.20 µg/L		98
PFDoDA	8.340	613.0 -> 569.0	246465	19.45 µg/L		100
PFDS	7.973	599.0 -> 80.0	13692	20.89 µg/L		98
PFHpA	5.945	363.0 -> 319.0	252101	19.82 µg/L		100
PFHpS	6.612	449.0 -> 80.0	28218	22.01 µg/L		99
PFHxA	5.052	313.0 -> 269.0	74489	20.70 µg/L		99
PFHxS	5.975	399.0 -> 80.0	32331	19.84 µg/L	m	97
PFNA	7.185	463.0 -> 419.0	135595	20.52 µg/L		99
PFNS	7.611	549.0 -> 80.0	24343	21.82 µg/L		99
PFOA	6.610	413.0 -> 369.0	156435	19.67 µg/L		99
PFOS	7.157	499.0 -> 80.0	32916	18.56 µg/L	m	86
PFPeA	3.765	263.0 -> 219.0	128823	19.50 µg/L		100
PFPeS	5.170	349.0 -> 80.0	25999	21.84 µg/L		99
PFTeDA	9.028	713.0 -> 669.0	247197	19.23 µg/L		100
PFTrDA	8.678	663.0 -> 619.0	319751	24.03 µg/L		100
PFUnDA	8.003	563.0 -> 519.0	198022	19.77 µg/L		100
11Cl-PF3OUdS	8.122	631.0 -> 451.0	101240	15.31 µg/L		99
9Cl-PF3ONS	7.408	531.0 -> 351.0	27296	14.80 µg/L		98
ADONA	6.040	377.0 -> 251.0	299793	16.63 µg/L		100
HFPO-DA	5.334	329.0 -> 169.0	196015	122.23 µg/L		92

= Qualifier out of range, m = manually integrated, + = Area summed

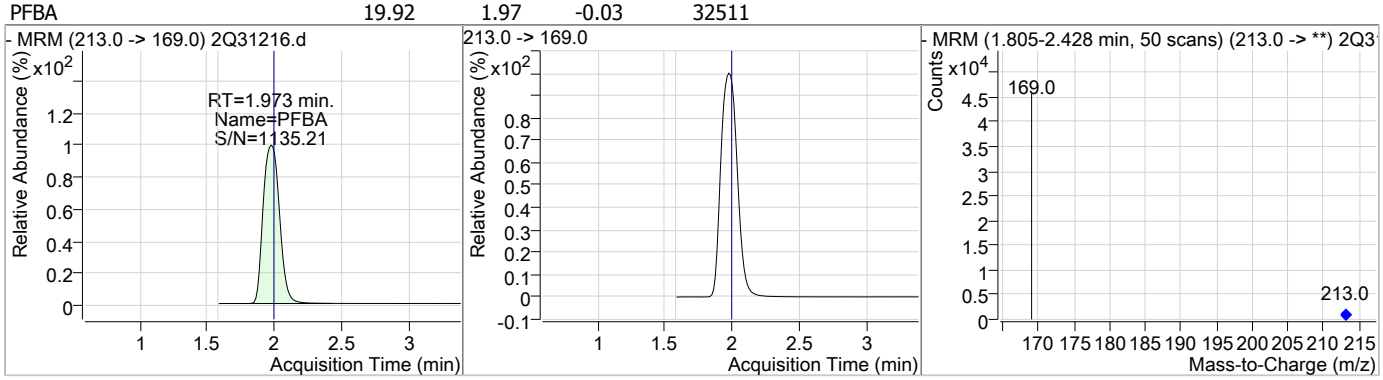
Perfluorinated Compounds by LC/MS/MS



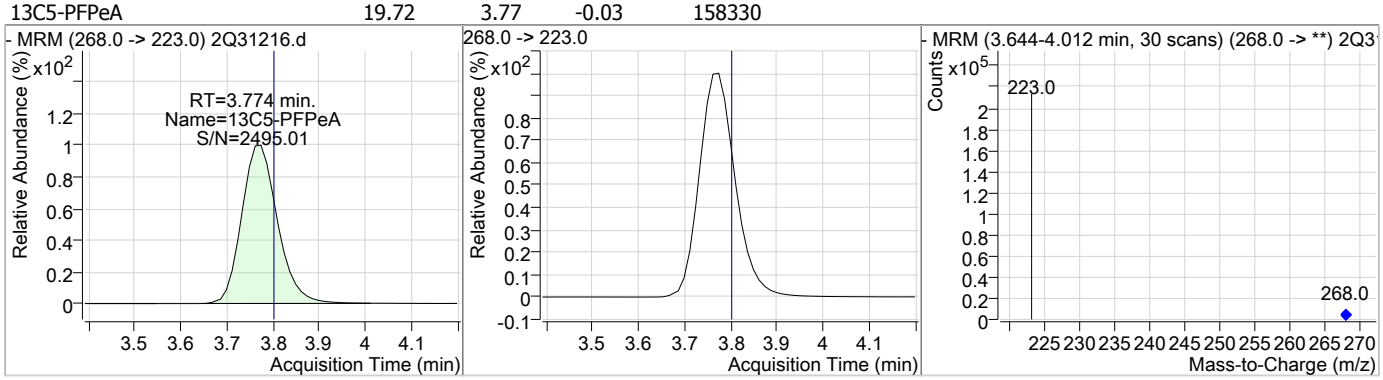
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.33	1.98	-0.01	189528				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.92	1.97	-0.03	32511				

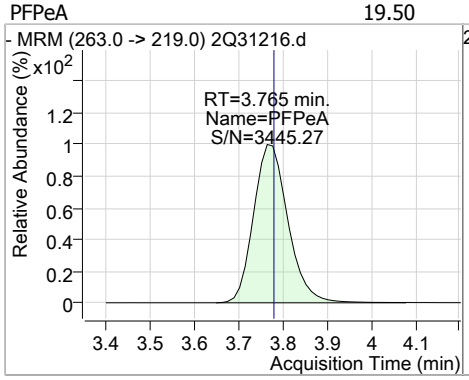


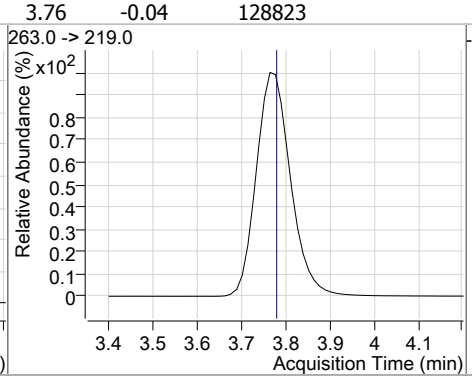
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.72	3.77	-0.03	158330				

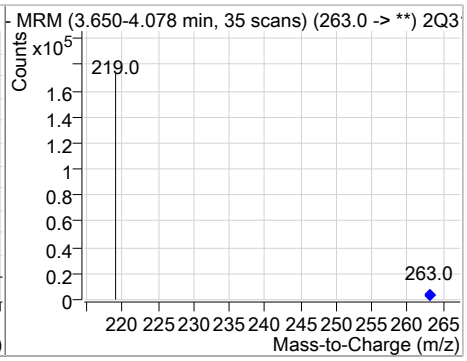


Perfluorinated Compounds by LC/MS/MS

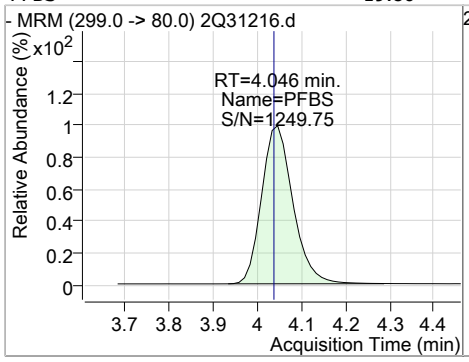
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.50	3.76	-0.04	128823				

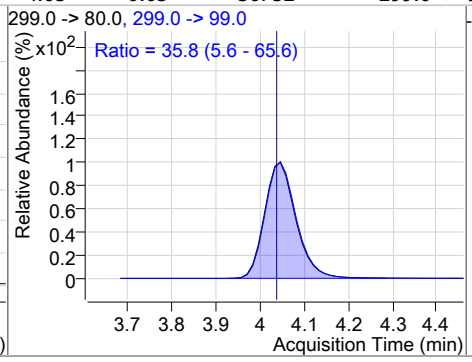


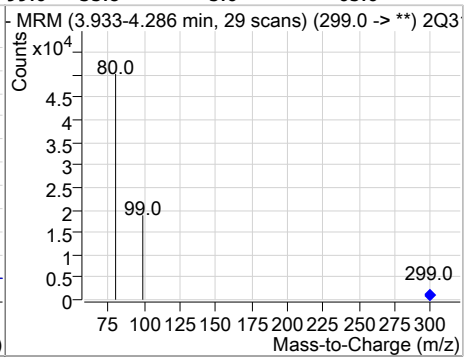




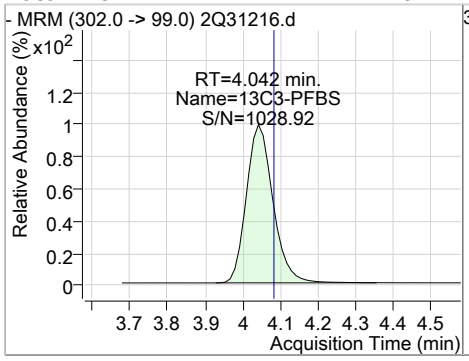
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.80	4.05	-0.03	36752	299.0 -> 99.0	35.8	5.6	65.6

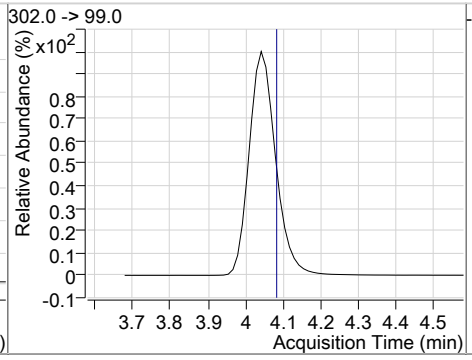


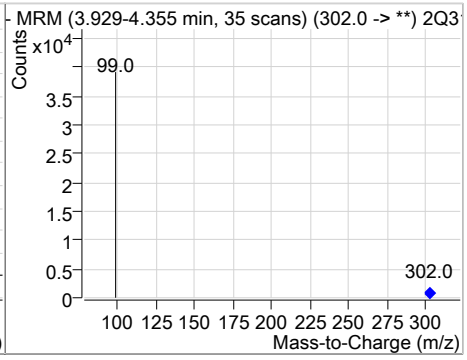




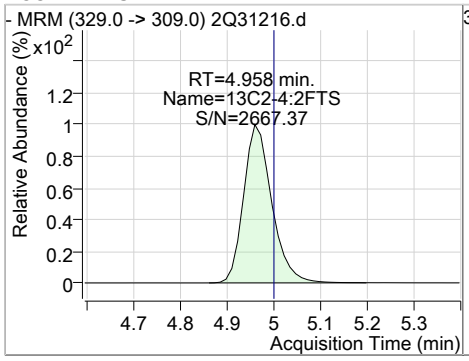
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.79	4.04	-0.04	27027				

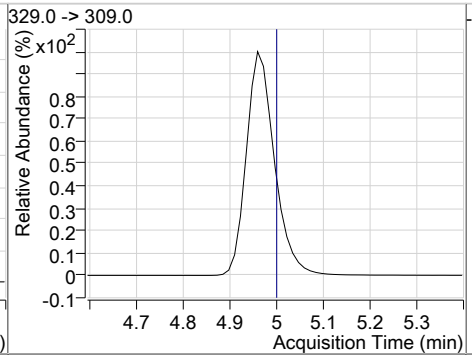


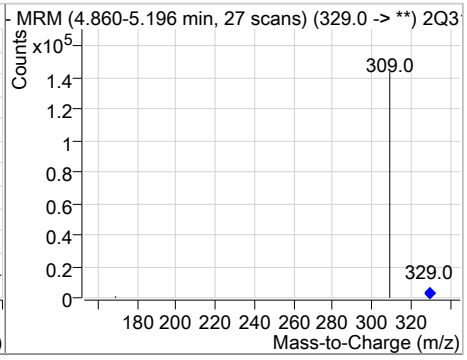




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.71	4.96	-0.04	105341				

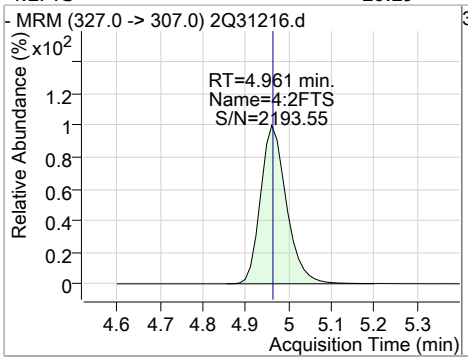


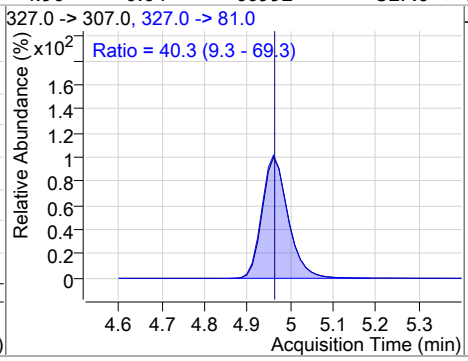


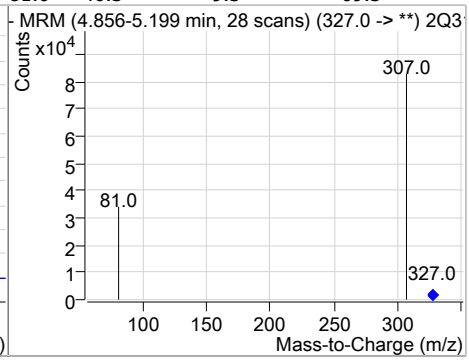


Perfluorinated Compounds by LC/MS/MS

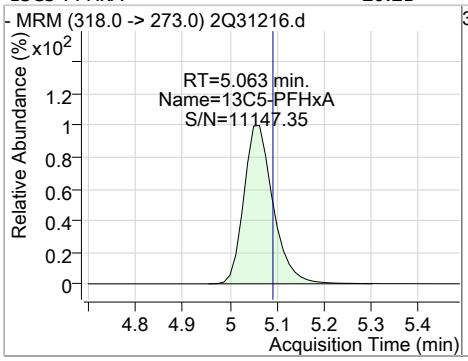
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.29	4.96	-0.04	60992	327.0 -> 81.0	40.3	9.3	69.3

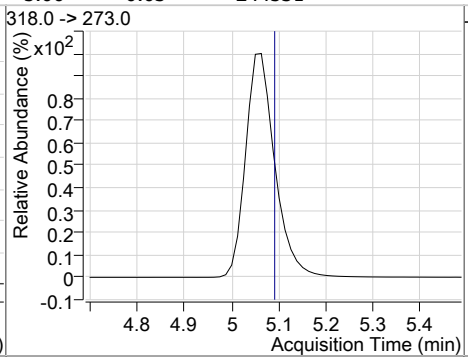


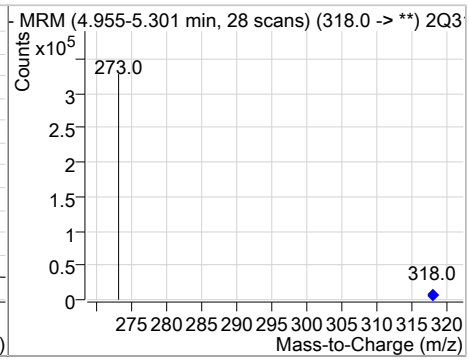




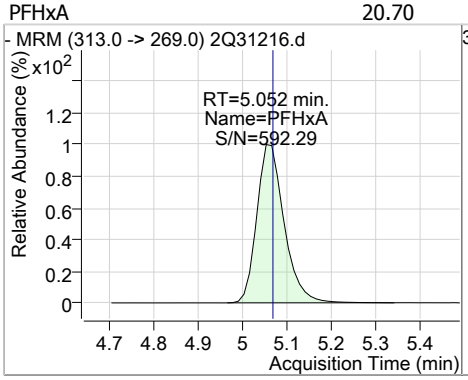
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.21	5.06	-0.03	244531				

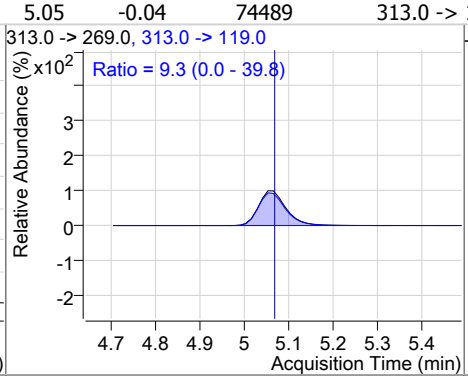


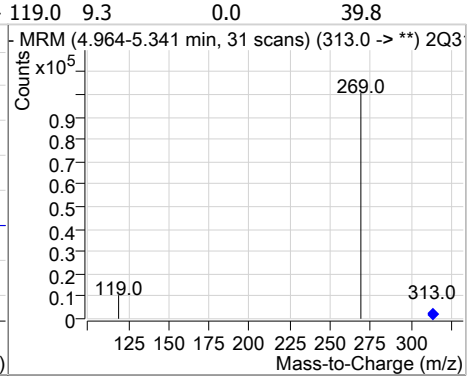




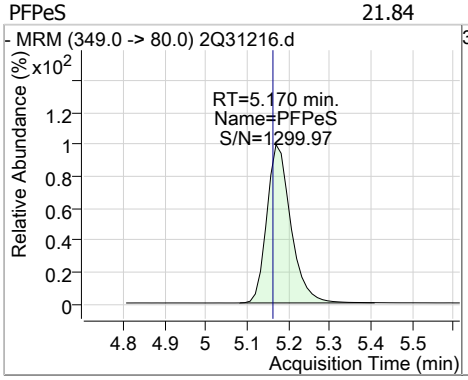
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.70	5.05	-0.04	74489	313.0 -> 119.0	9.3	0.0	39.8

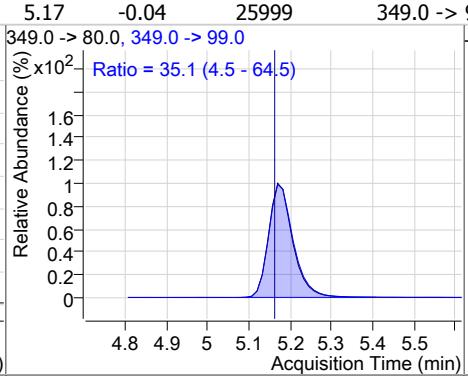


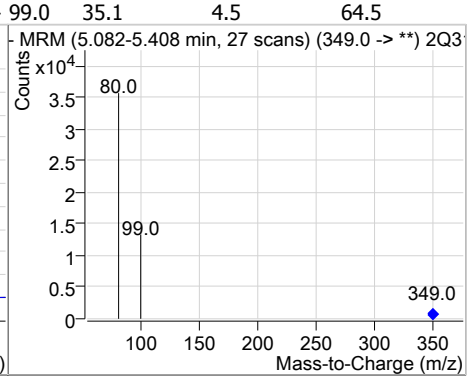




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.84	5.17	-0.04	25999	349.0 -> 99.0	35.1	4.5	64.5

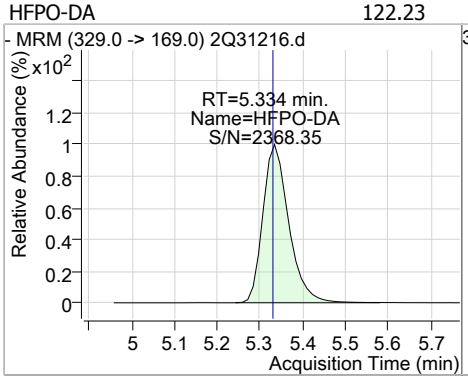


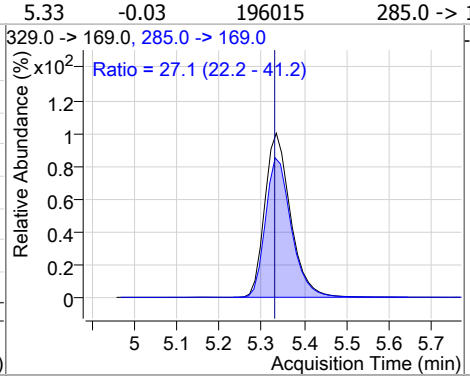


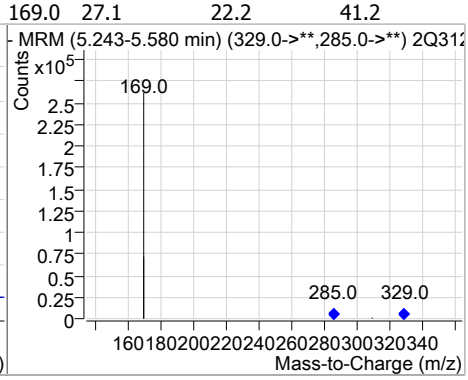


Perfluorinated Compounds by LC/MS/MS

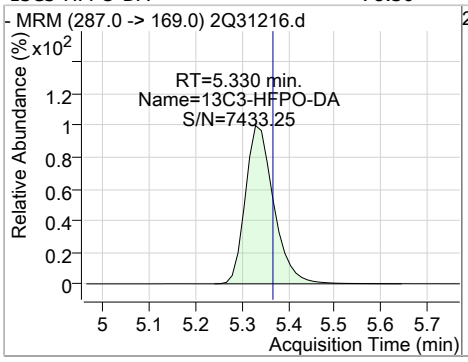
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	122.23	5.33	-0.03	196015	285.0 -> 169.0	27.1	22.2	41.2

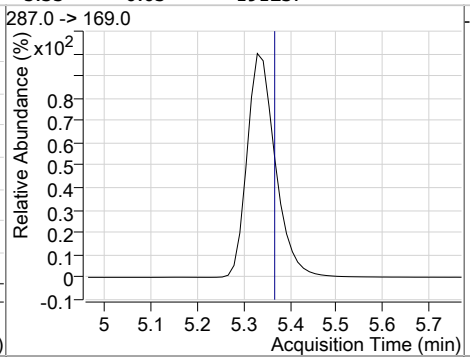


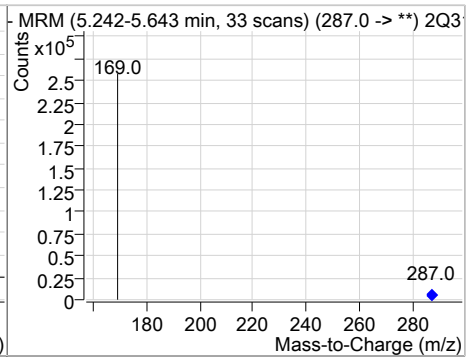




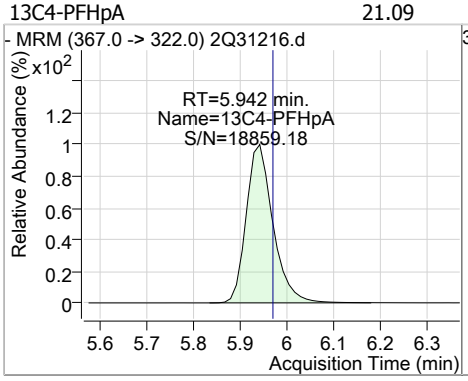
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	78.36	5.33	-0.03	191237				

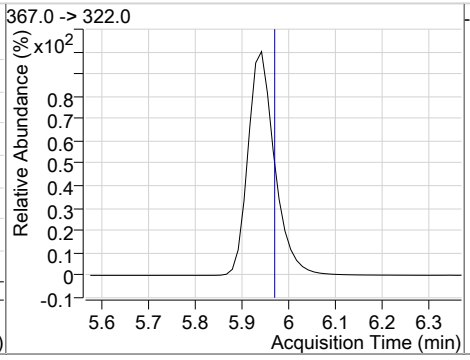


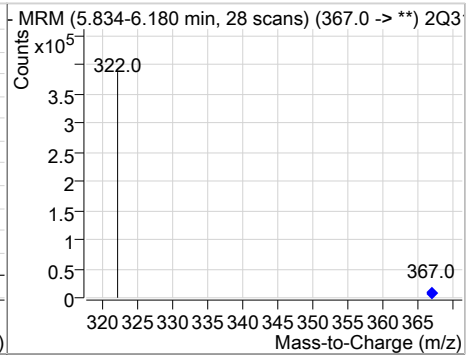




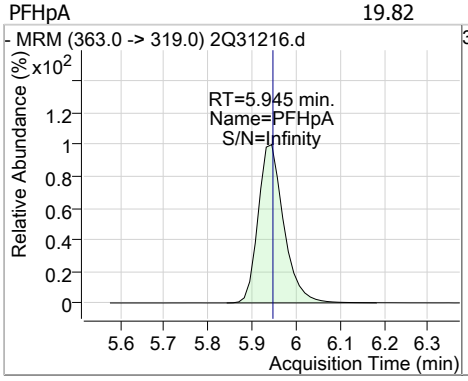
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.09	5.94	-0.03	289587				

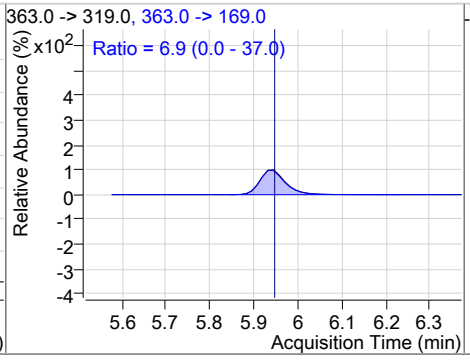


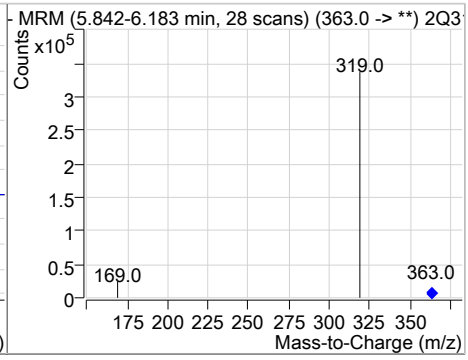




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.82	5.94	-0.03	252101	363.0 -> 169.0	6.9	0.0	37.0

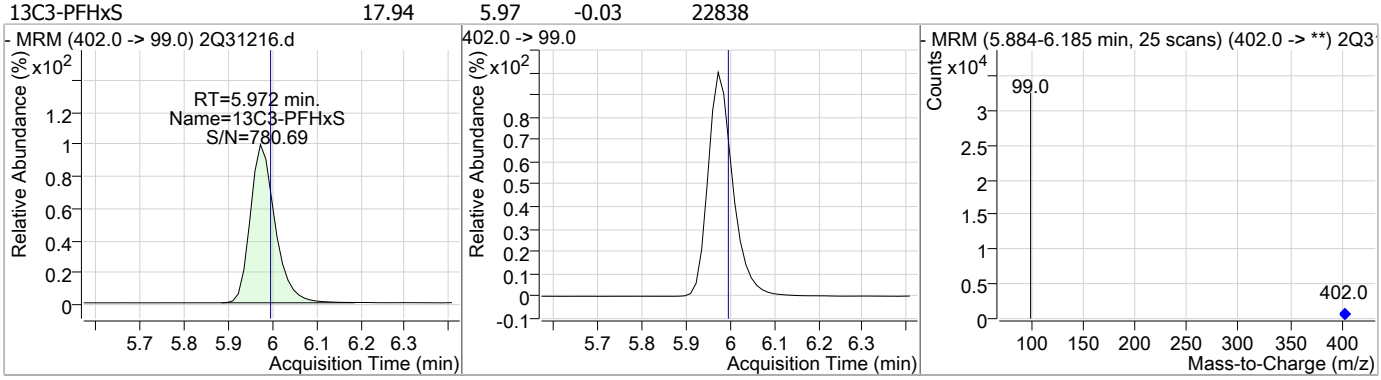




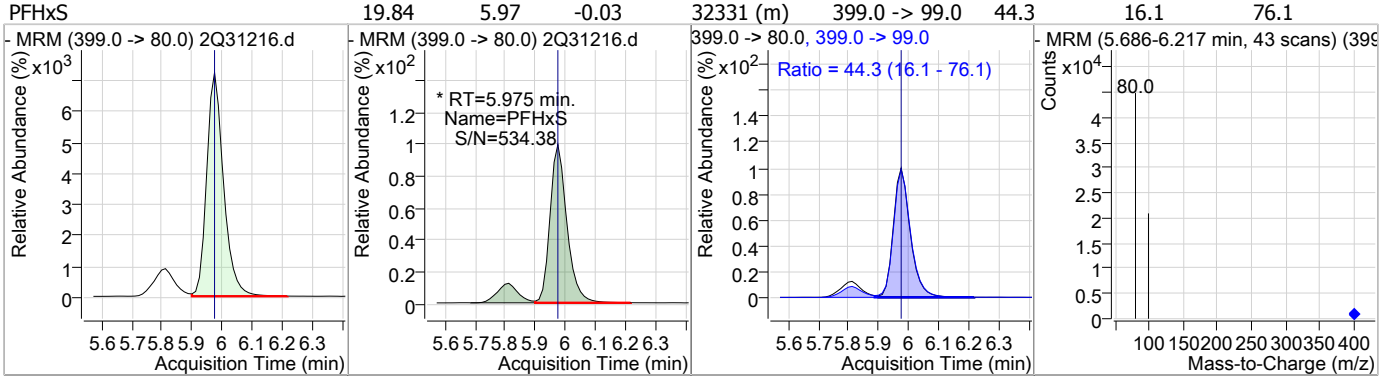


Perfluorinated Compounds by LC/MS/MS

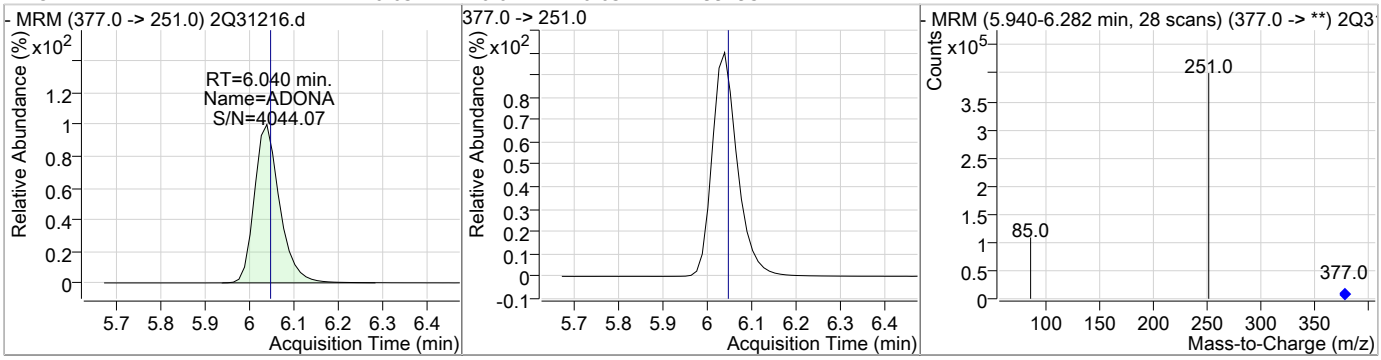
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.94	5.97	-0.03	22838				



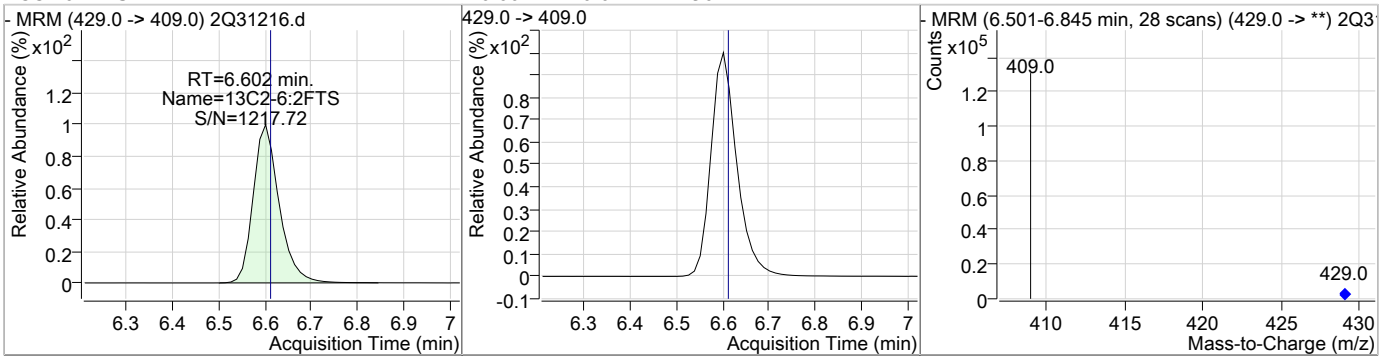
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.84	5.97	-0.03	32331 (m)	399.0 -> 99.0	44.3	16.1	76.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.63	6.04	-0.03	299793				

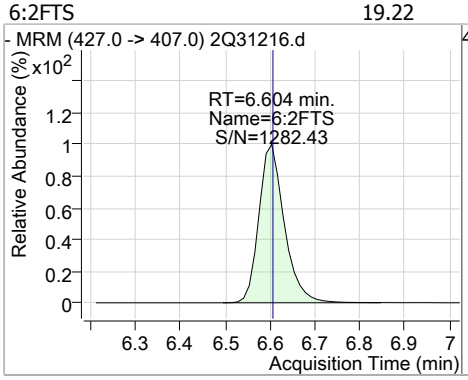


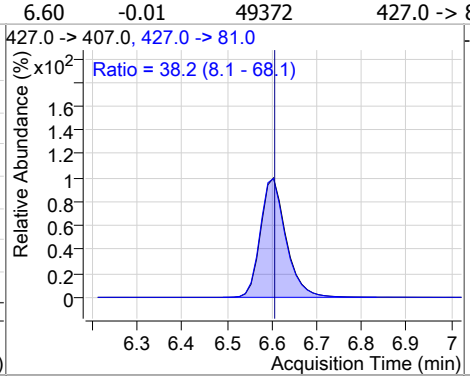
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.22	6.60	-0.01	96427				

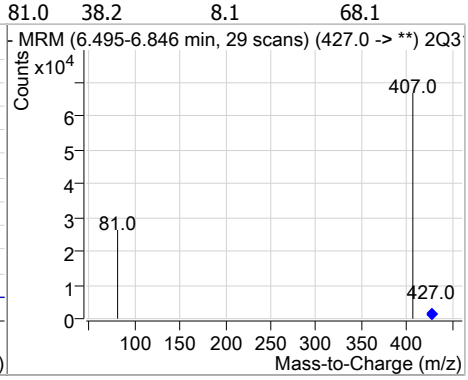


Perfluorinated Compounds by LC/MS/MS

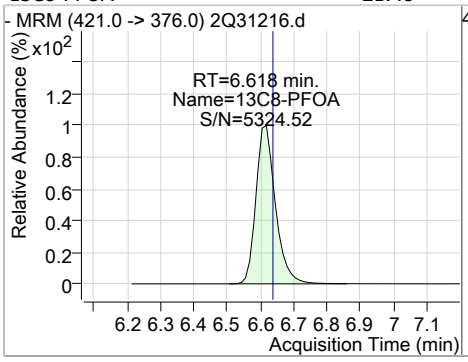
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.22	6.60	-0.01	49372	427.0 -> 81.0	38.2	8.1	68.1

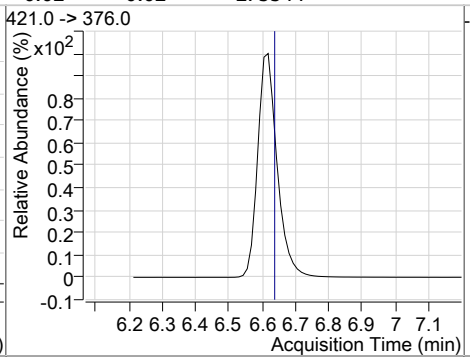


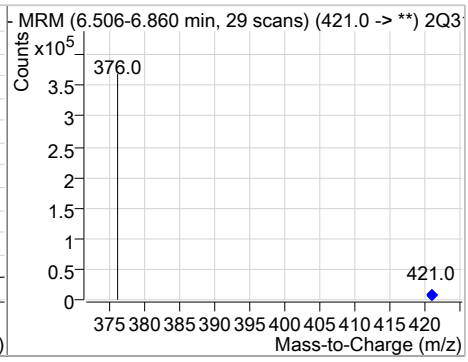




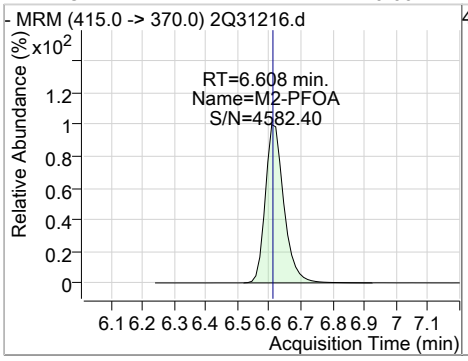
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.48	6.62	-0.02	275544				

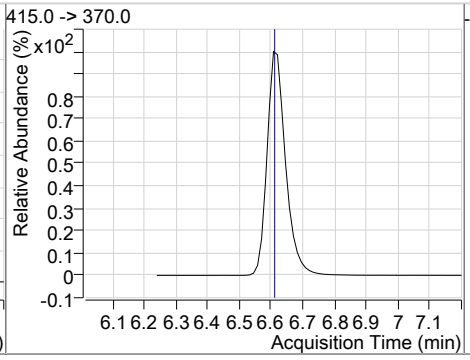


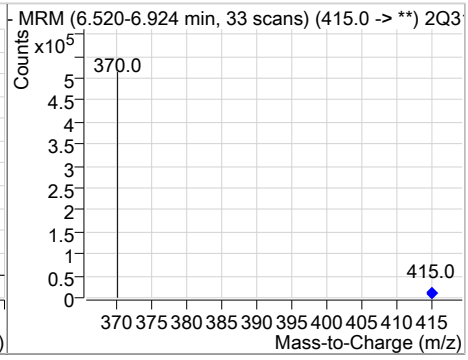




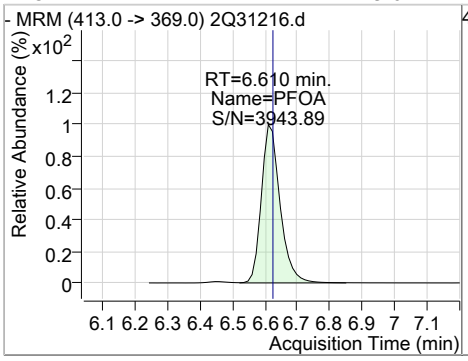
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.61	-0.03	384097				

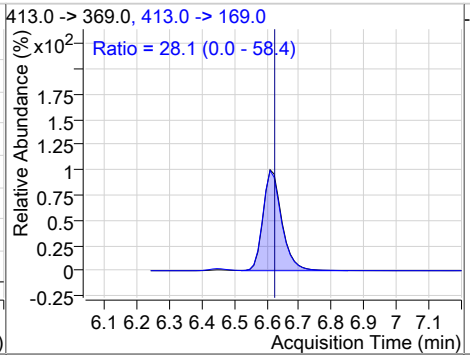


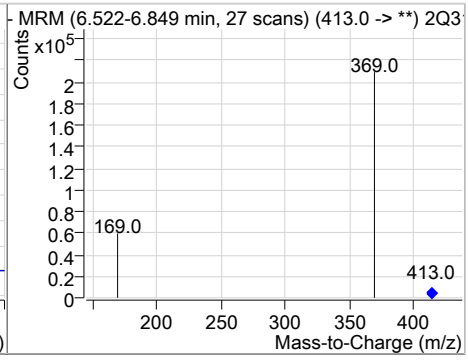




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.67	6.61	-0.03	156435	413.0 -> 169.0	28.1	0.0	58.4

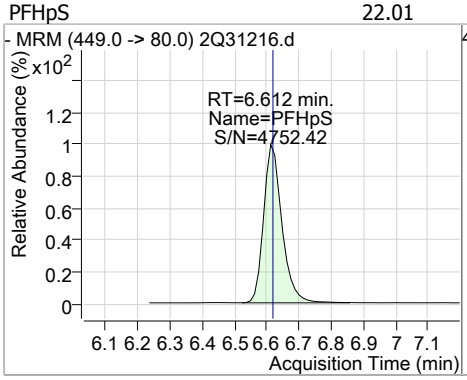


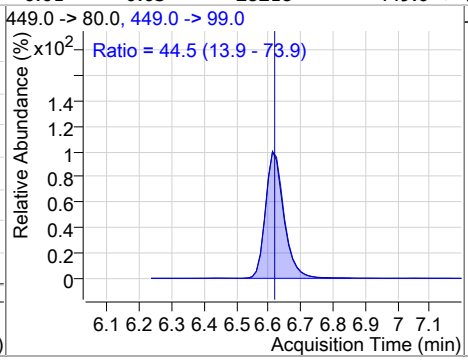


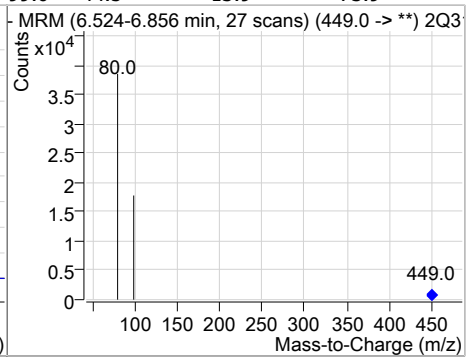


Perfluorinated Compounds by LC/MS/MS

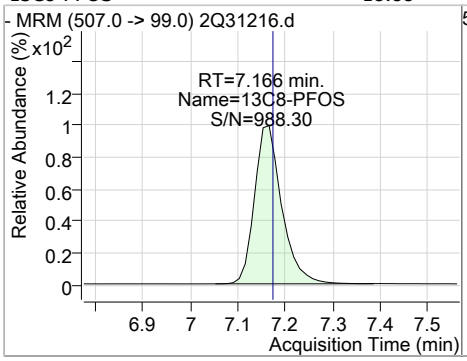
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.01	6.61	-0.03	28218	449.0 -> 99.0	44.5	13.9	73.9

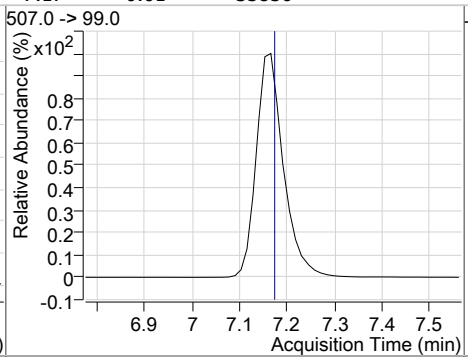


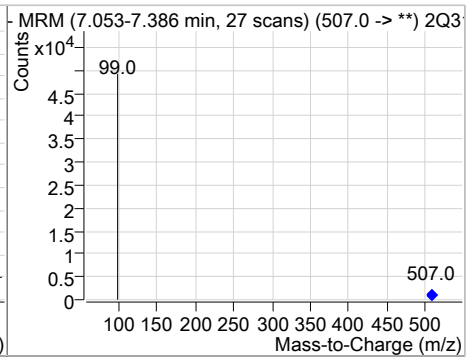




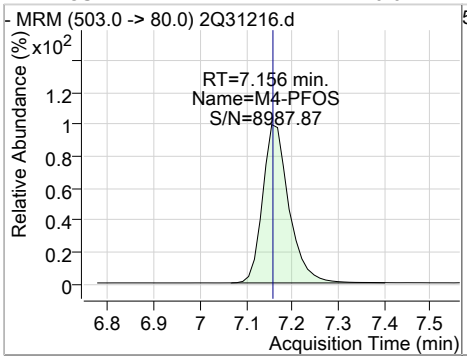
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.88	7.17	-0.01	35850				

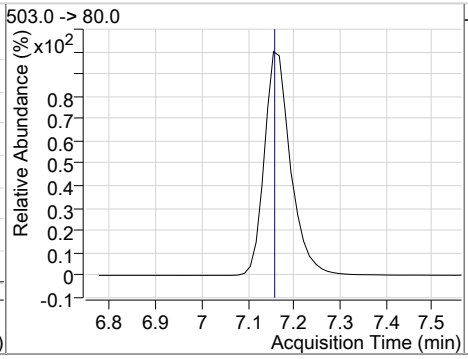


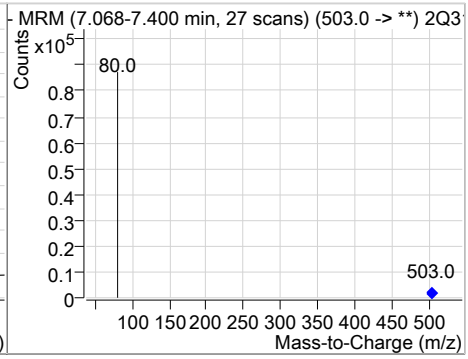




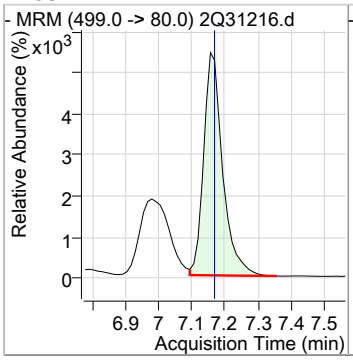
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.04	7.16	-0.02	65163				

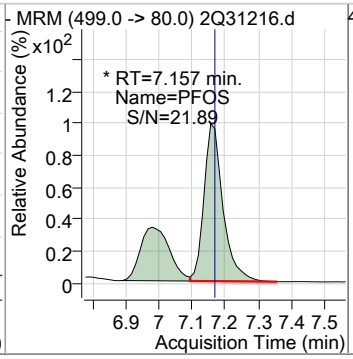


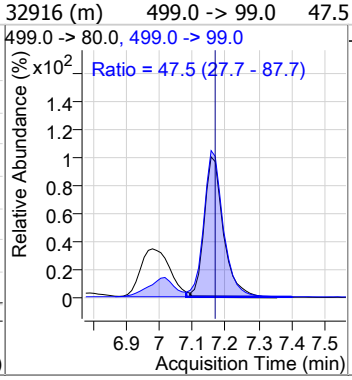


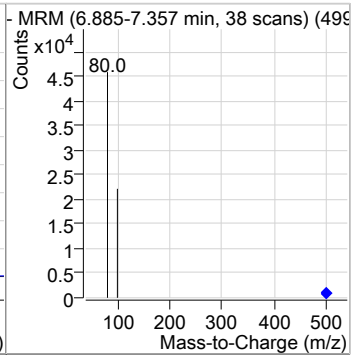


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.56	7.16	-0.02	32916 (m)	499.0 -> 99.0	47.5	27.7	87.7



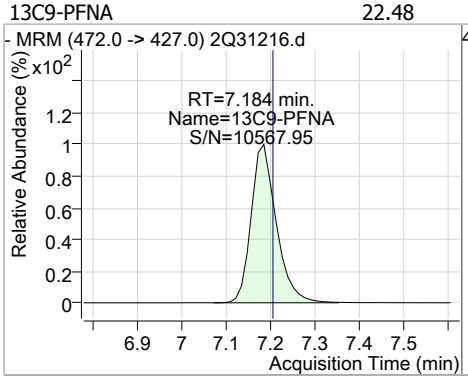


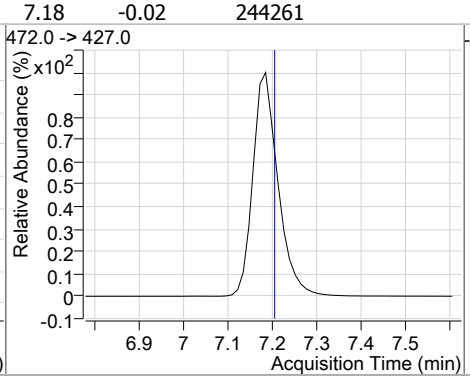


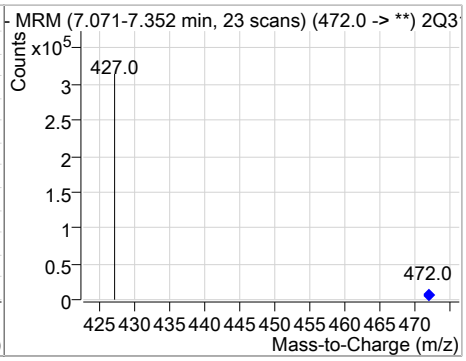


Perfluorinated Compounds by LC/MS/MS

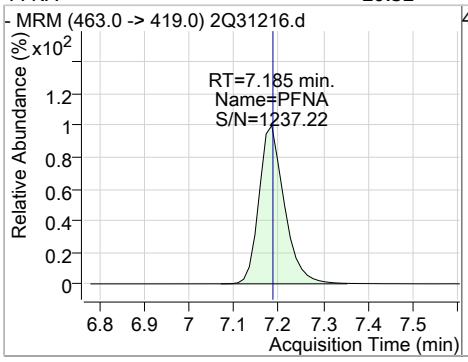
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.48	7.18	-0.02	244261				

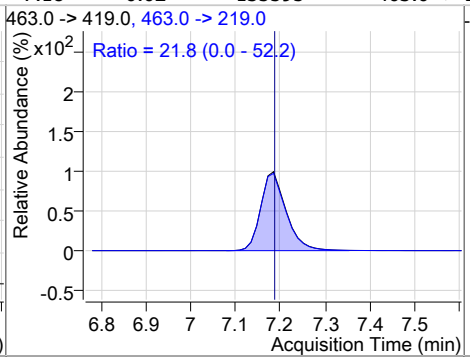


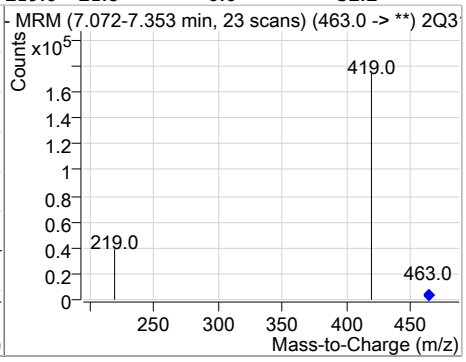




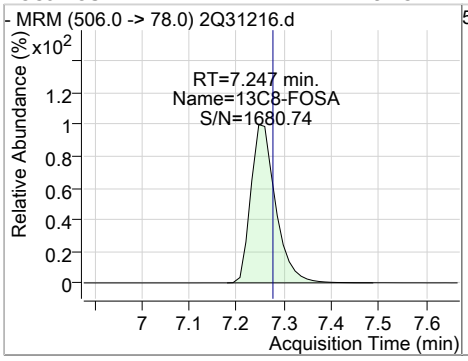
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.52	7.18	-0.02	135595	463.0 -> 219.0	21.8	0.0	52.2

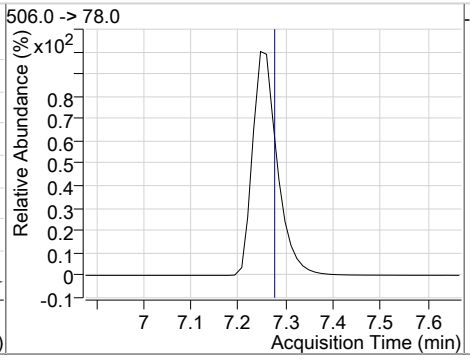


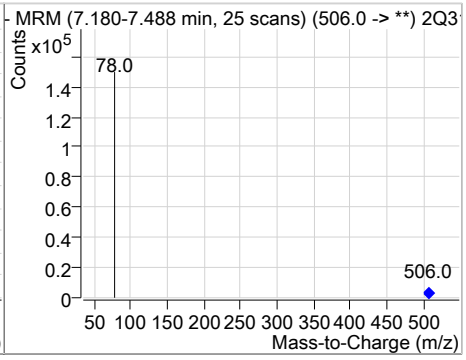




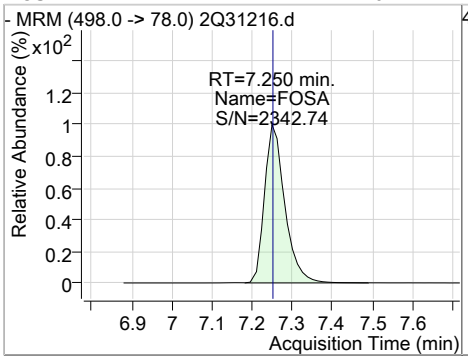
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.73	7.25	-0.03	116074				

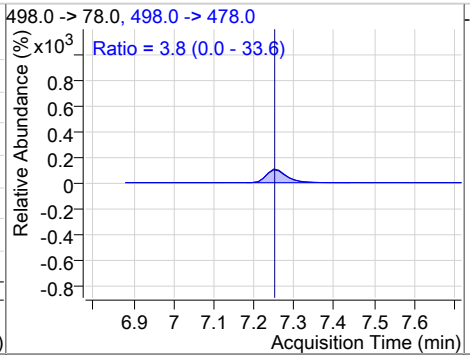


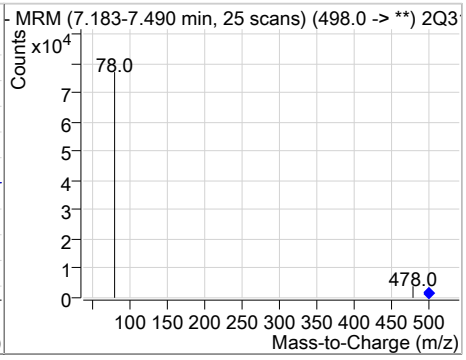




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.24	7.25	-0.03	58593	498.0 -> 478.0	3.8	0.0	33.6

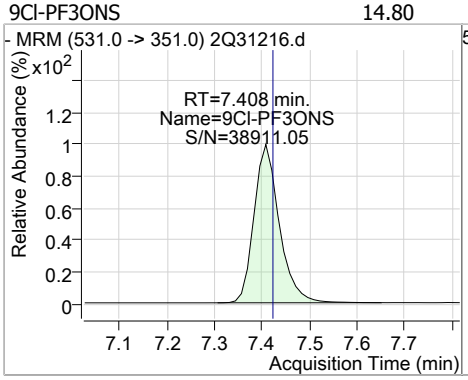


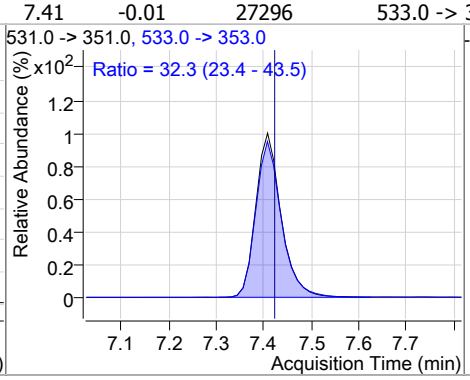


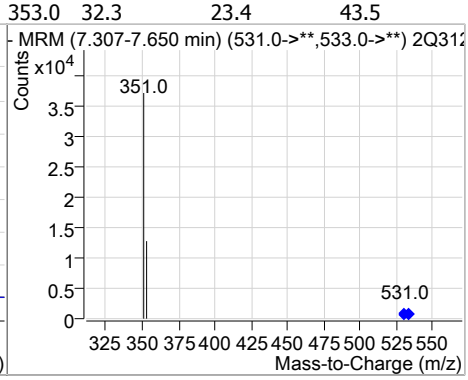


Perfluorinated Compounds by LC/MS/MS

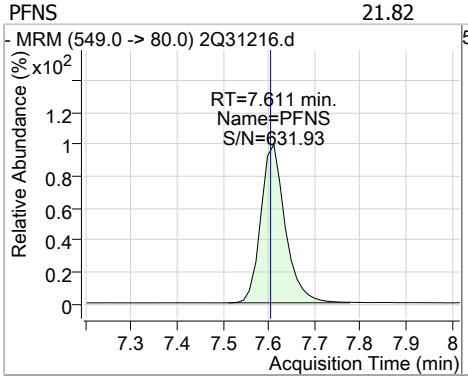
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.80	7.41	-0.01	27296	533.0 -> 353.0	32.3	23.4	43.5

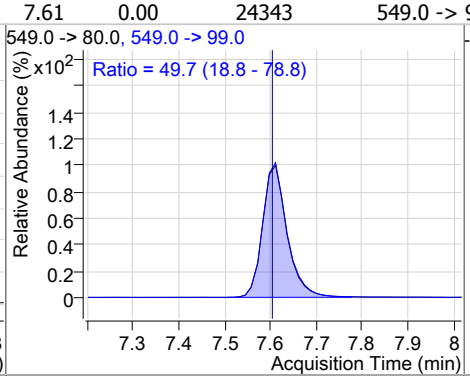


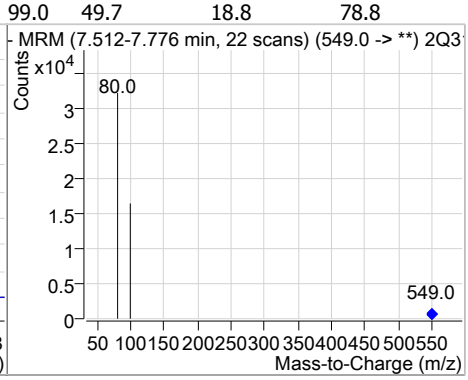




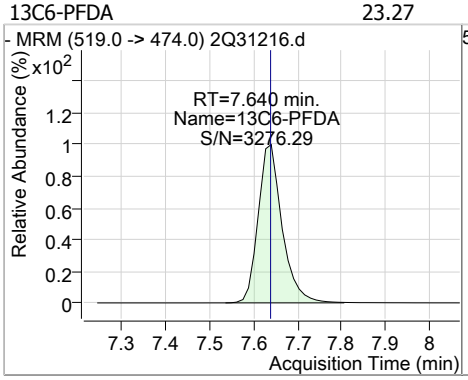
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.82	7.61	0.00	24343	549.0 -> 99.0	49.7	18.8	78.8

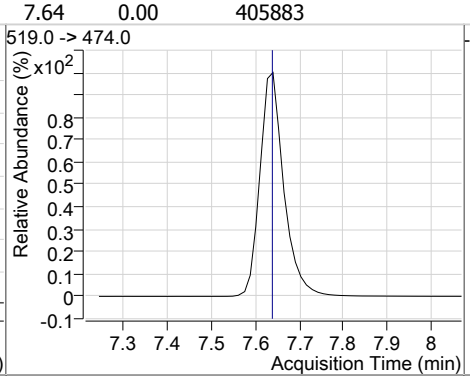


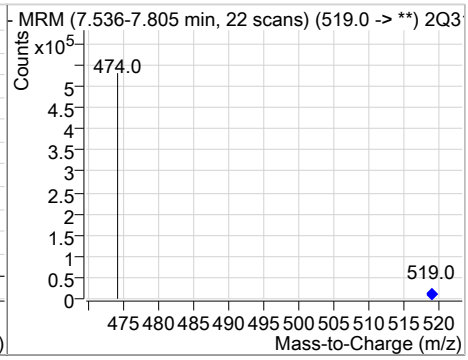




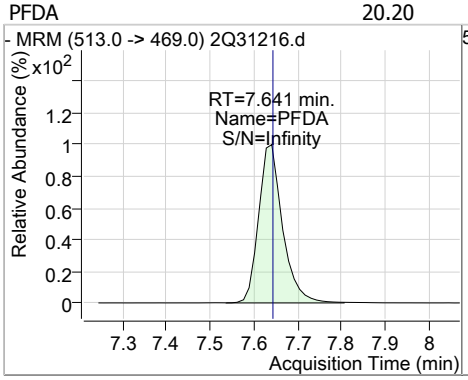
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.27	7.64	0.00	405883				

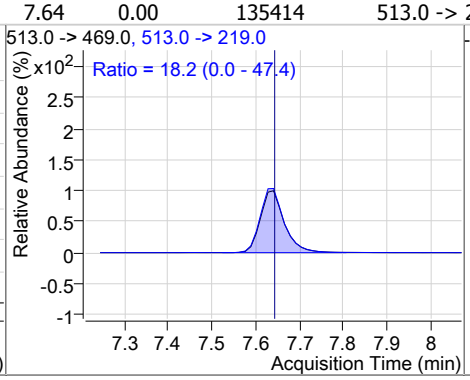


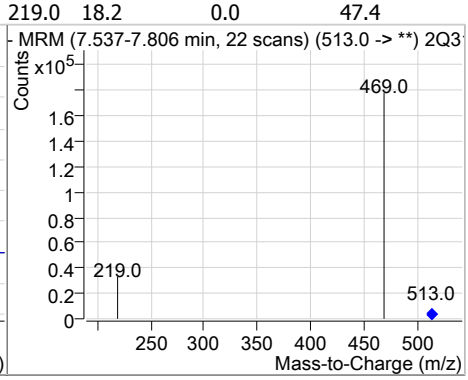




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.20	7.64	0.00	135414	513.0 -> 219.0	18.2	0.0	47.4

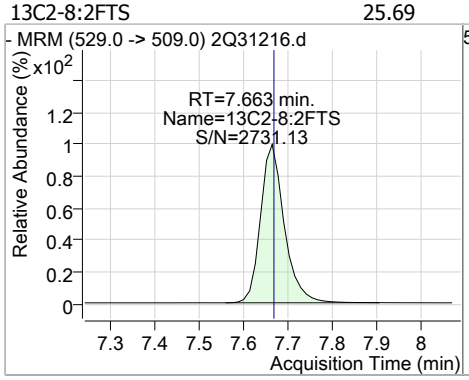


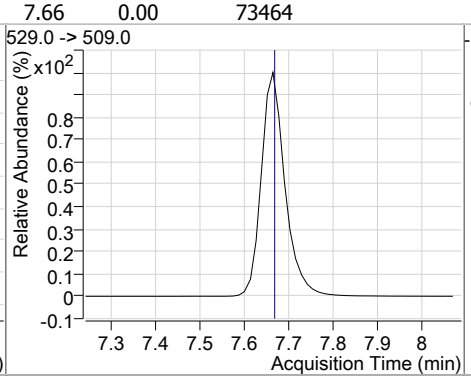


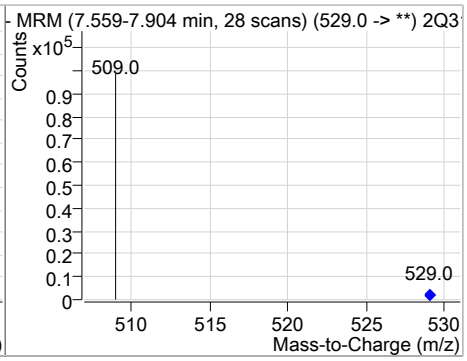


Perfluorinated Compounds by LC/MS/MS

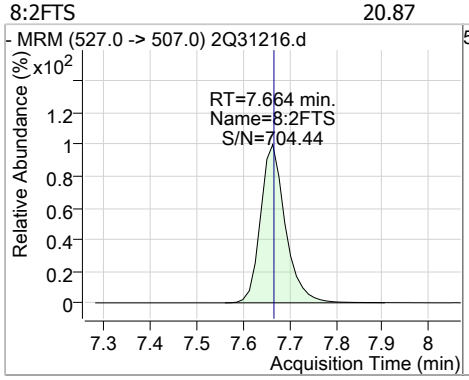
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	25.69	7.66	0.00	73464				

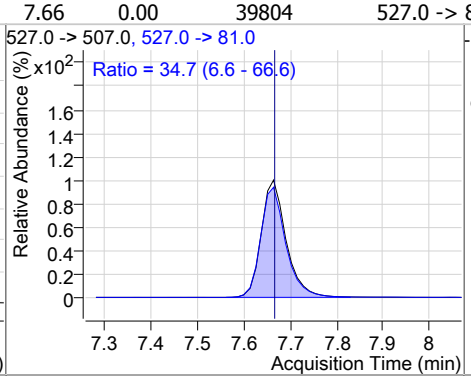


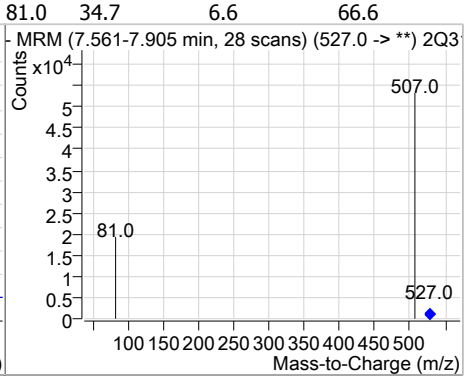




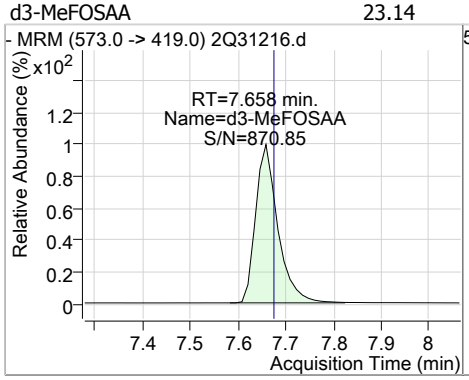
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.87	7.66	0.00	39804	527.0 -> 81.0	34.7	6.6	66.6

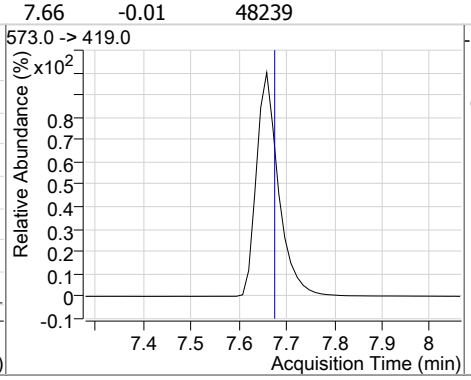


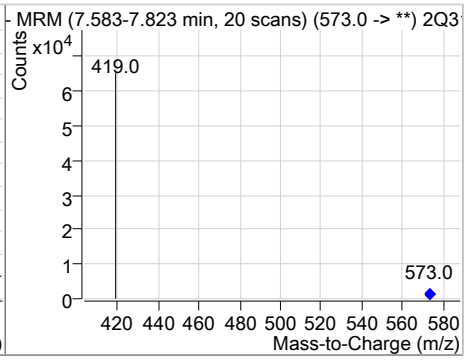




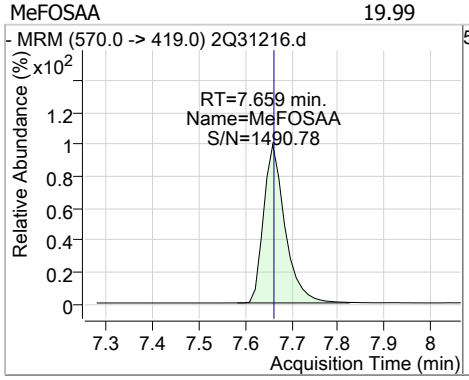
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.14	7.66	-0.01	48239				

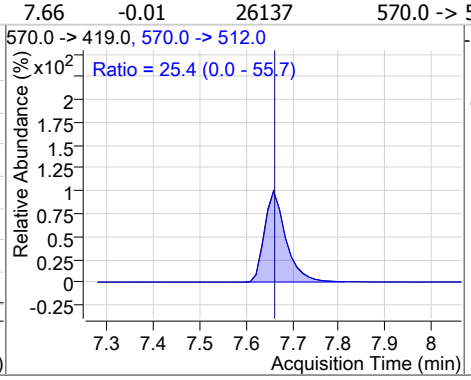


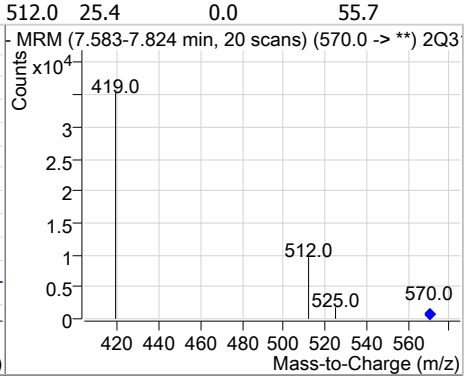




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.99	7.66	-0.01	26137	570.0 -> 512.0	25.4	0.0	55.7

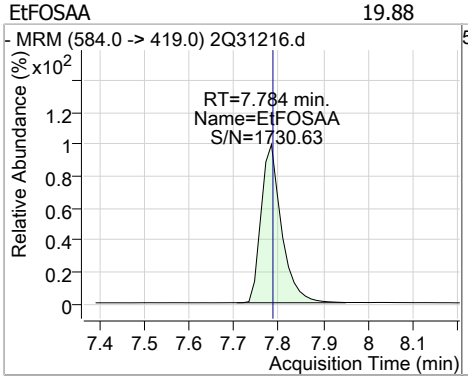


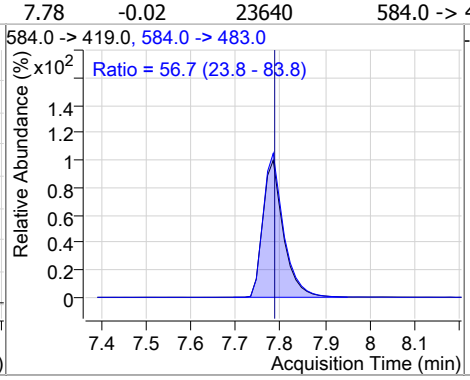


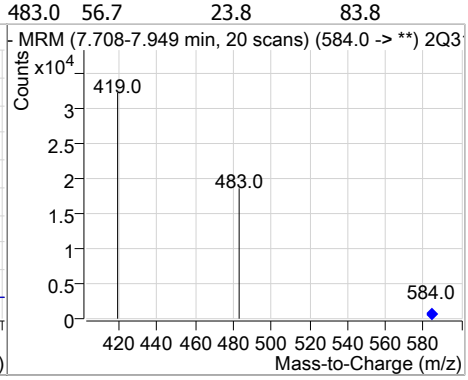


Perfluorinated Compounds by LC/MS/MS

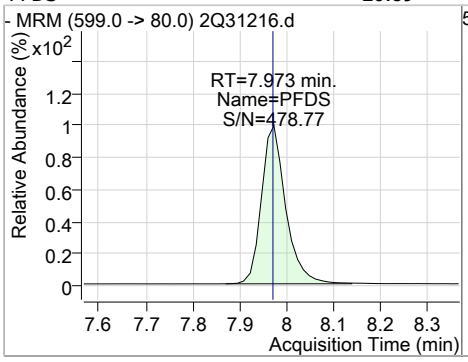
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.88	7.78	-0.02	23640	584.0 -> 483.0	56.7	23.8	83.8

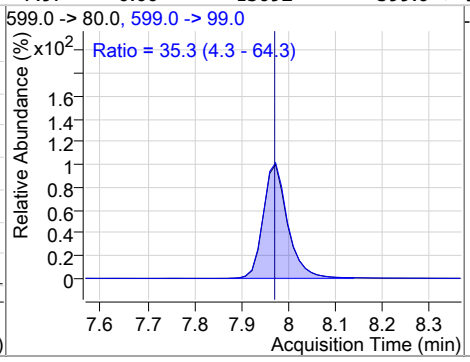


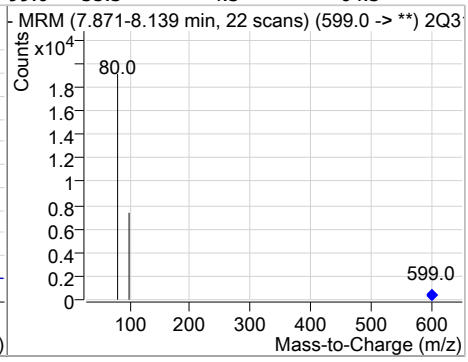




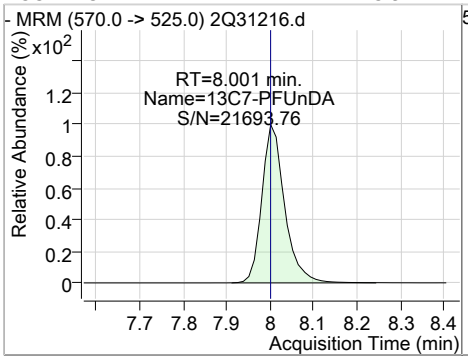
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.89	7.97	0.00	13692	599.0 -> 99.0	35.3	4.3	64.3

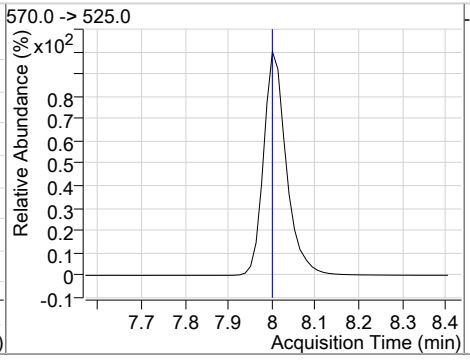


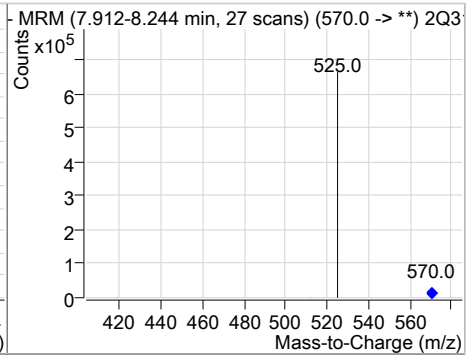




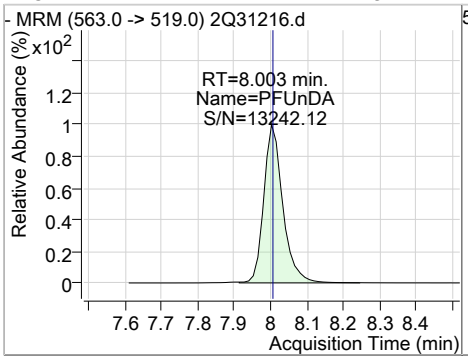
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.91	8.00	0.00	505949				

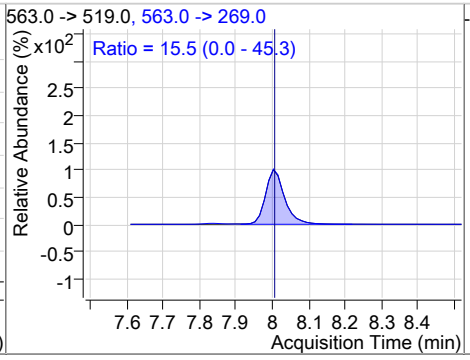


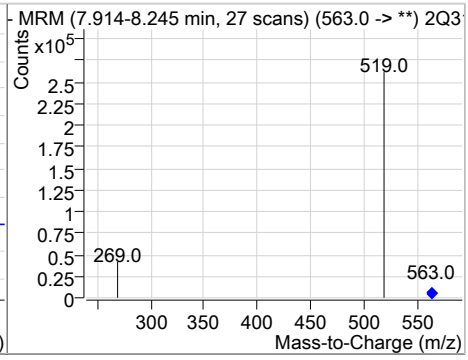




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.77	8.00	0.00	198022	563.0 -> 269.0	15.5	0.0	45.3

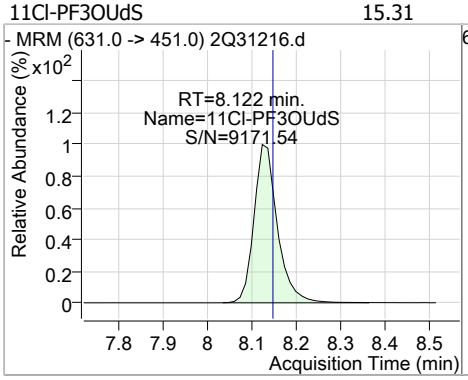


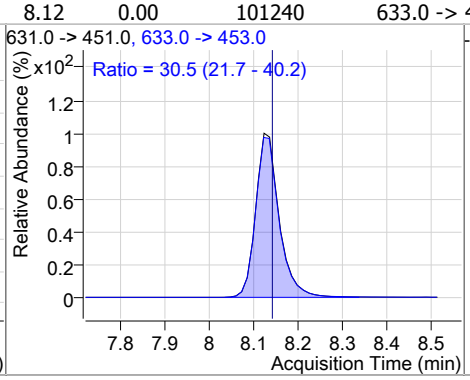


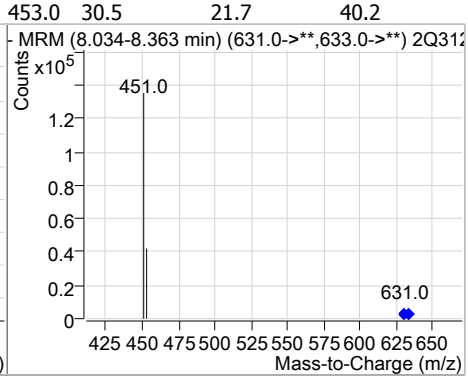


Perfluorinated Compounds by LC/MS/MS

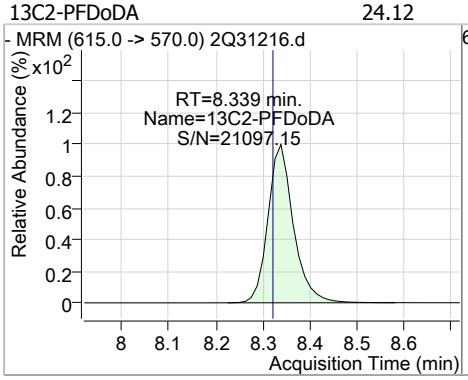
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.31	8.12	0.00	101240	633.0 -> 453.0	30.5	21.7	40.2

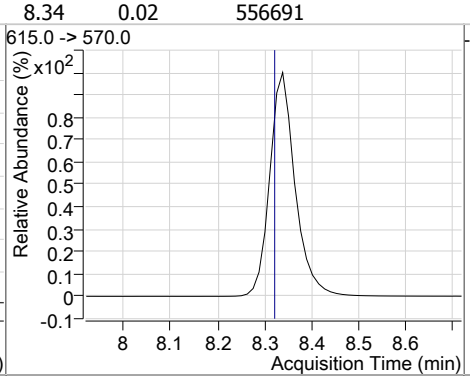


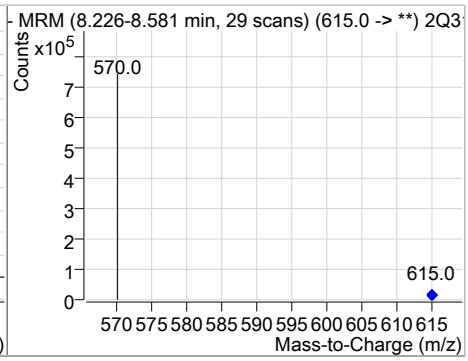




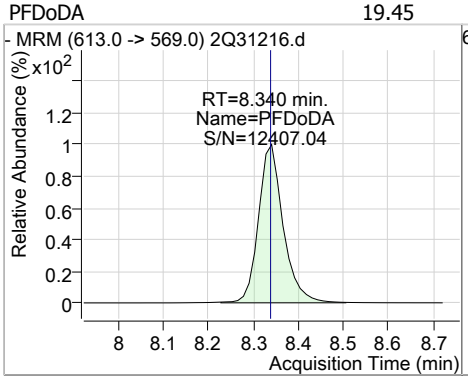
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.12	8.34	0.02	556691				

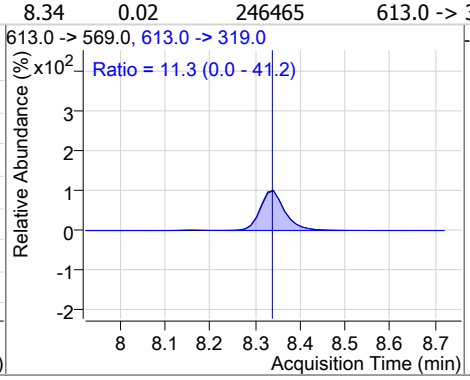


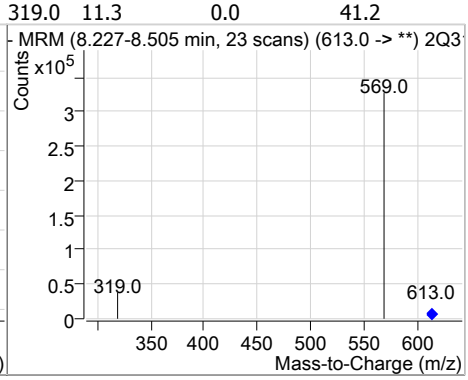




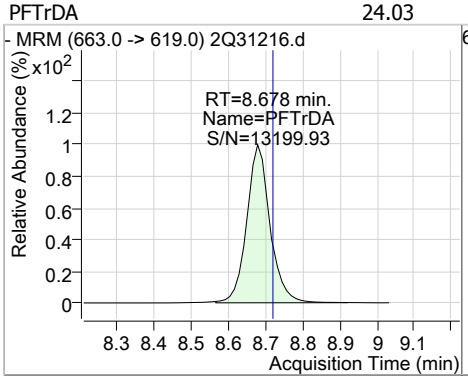
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.45	8.34	0.02	246465	613.0 -> 319.0	11.3	0.0	41.2

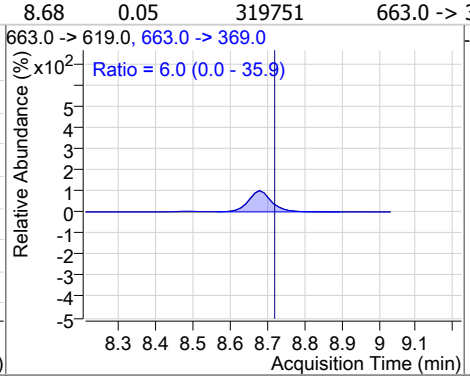


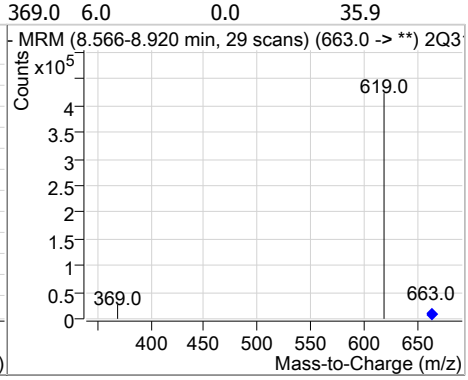




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.03	8.68	0.05	319751	663.0 -> 369.0	6.0	0.0	35.9

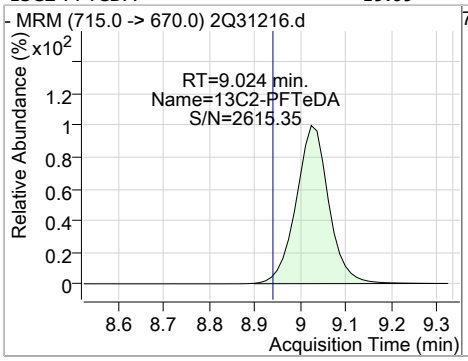


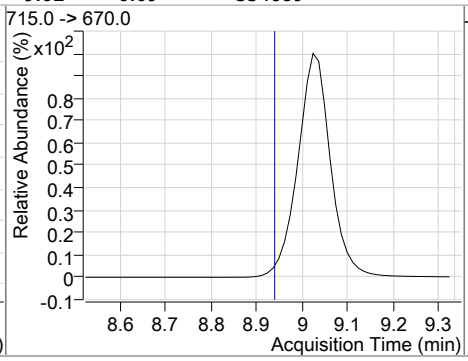


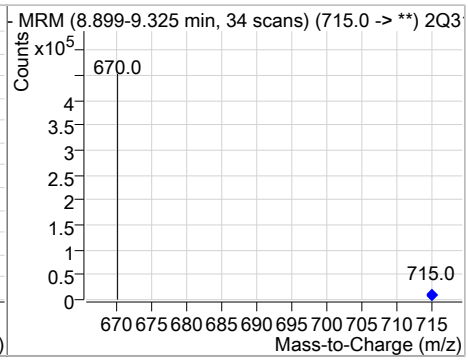


Perfluorinated Compounds by LC/MS/MS

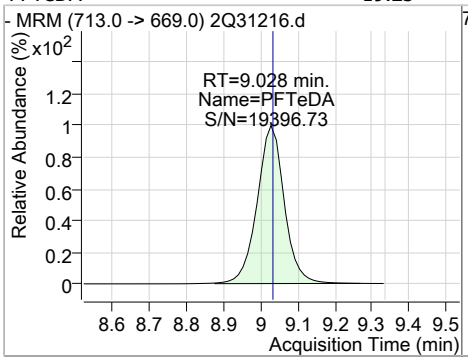
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.09	9.02	0.09	334689				

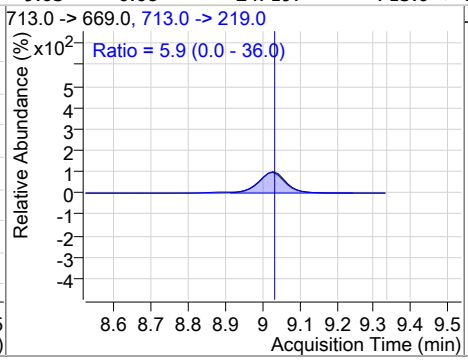


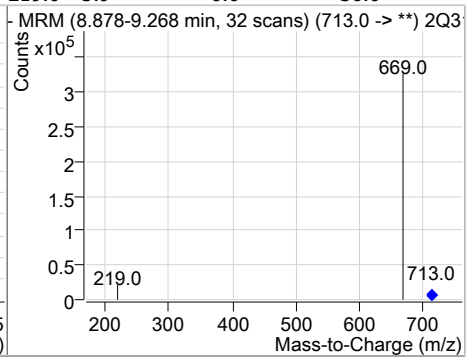




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.23	9.03	0.08	247197	713.0 -> 219.0	5.9	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q499-CC498
Lab FileID: 2Q31216.D
Injection Time: 06/23/19 19:12
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/24/19 13:24 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.97	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31228.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/23/2019 10:10:11 PM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75546,S2Q499,250,,,1,1,water

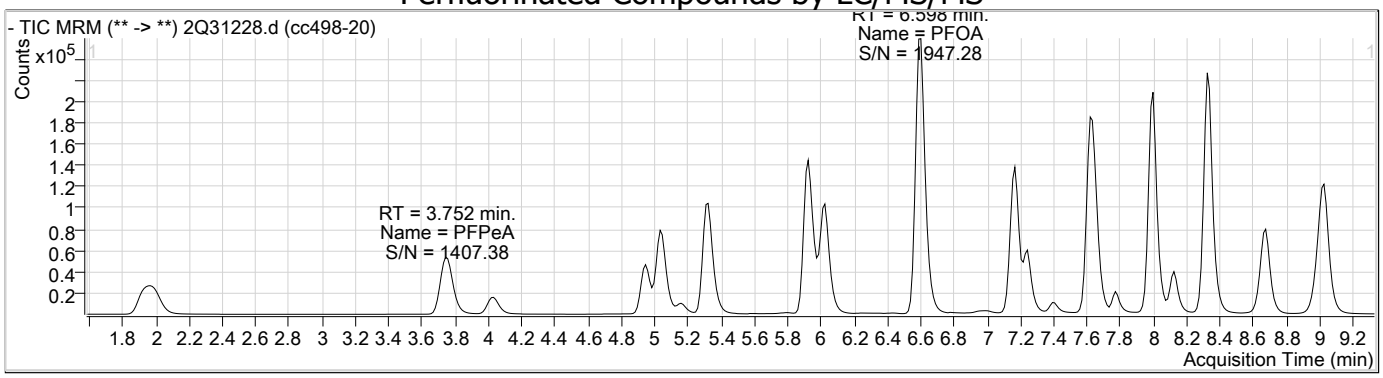
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.608	415.0 -> 370.0	385037	20.00	µg/L	-0.028
13C4-PFOS	7.156	503.0 -> 80.0	65686	20.00	µg/L	-0.018
M4-PFBA	1.965	217.0 -> 172.0	191581	20.00	µg/L	-0.025
M5-PFPeA	3.749	268.0 -> 223.0	156337	20.00	µg/L	-0.051
M5-PFHxA	5.038	318.0 -> 273.0	243188	20.00	µg/L	-0.051
M4-PFHpA	5.930	367.0 -> 322.0	288740	20.00	µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	274662	20.00	µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	249797	20.00	µg/L	-0.030
M6-PFDA	7.627	519.0 -> 474.0	415648	20.00	µg/L	-0.014
M7-PFUnDA	8.001	570.0 -> 525.0	513104	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	573519	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	345539	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	117076	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	27333	20.00	µg/L	-0.051
M3-PFHxS	5.960	402.0 -> 99.0	22933	20.00	µg/L	-0.038
M8-PFOS	7.154	507.0 -> 99.0	36377	20.00	µg/L	-0.018
M2-4:2FTS	4.946	329.0 -> 309.0	107109	20.00	µg/L	-0.050
M2-6:2FTS	6.589	429.0 -> 409.0	97395	20.00	µg/L	-0.026
M2-8:2FTS	7.651	529.0 -> 509.0	75739	20.00	µg/L	-0.014
M3-MeFOSAA	7.646	573.0 -> 419.0	48384	20.00	µg/L	-0.027
M3-HFPO-DA	5.317	287.0 -> 169.0	194048	100.00	µg/L	-0.047
System Monitoring Compounds						
13C2-4:2FTS	4.946	329.0 -> 309.0	106970	22.04	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C2-6:2FTS	6.589	429.0 -> 409.0	97315	24.44	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.2%		
13C2-8:2FTS	7.651	529.0 -> 509.0	75740	26.48	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 132.4%		
13C2-PFDoDA	8.326	615.0 -> 570.0	572590	24.81	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.0%		
13C2-PFTeDA	9.024	715.0 -> 670.0	343394	19.59	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C3-PFBS	4.030	302.0 -> 99.0	27296	17.96	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C3-PFHxS	5.960	402.0 -> 99.0	22904	17.99	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C4-PFBA	1.965	217.0 -> 172.0	190566	18.43	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C4-PFHpA	5.930	367.0 -> 322.0	288781	21.03	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C5-PFHxA	5.038	318.0 -> 273.0	242833	20.07	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFPeA	3.749	268.0 -> 223.0	156765	19.53	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C6-PFDA	7.627	519.0 -> 474.0	415435	23.81	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

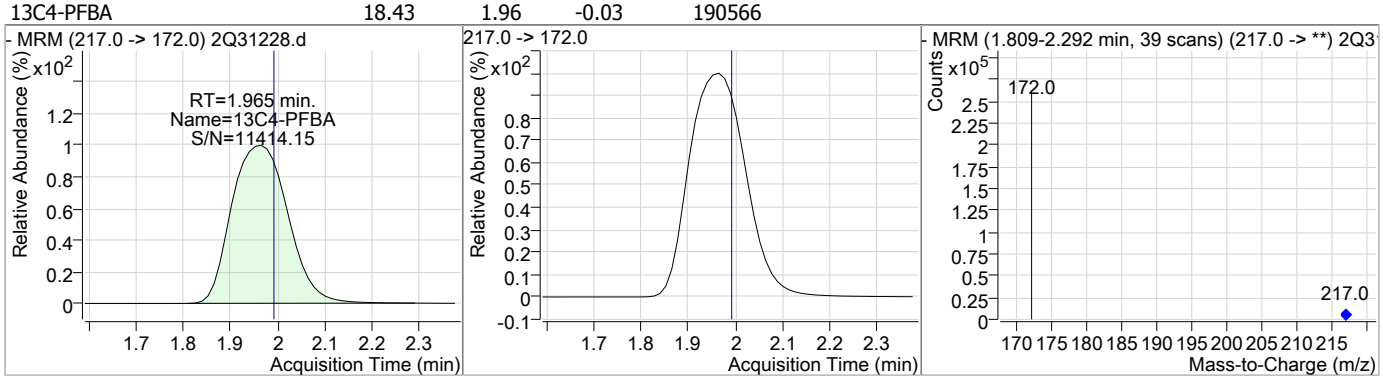
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.1%		
13C7-PFUnDA	8.001	570.0 -> 525.0	512592	24.23 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%		
13C8-FOSA	7.247	506.0 -> 78.0	117074	19.90 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C8-PFOA	6.606	421.0 -> 376.0	274638	21.41 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C8-PFOS	7.154	507.0 -> 99.0	36350	19.15 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C9-PFNA	7.171	472.0 -> 427.0	249672	22.98 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%		
d3-MeFOSAA	7.646	573.0 -> 419.0	48377	23.21 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.0%		
M2-PFOA	6.608	415.0 -> 370.0	385160	20.00 µg/L		-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.156	503.0 -> 80.0	65795	20.03 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-HFPO-DA	5.317	287.0 -> 169.0	194048	79.51 µg/L		-0.047
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
Target Compounds						**QValue**
4:2FTS	4.949	327.0 -> 307.0	61834	20.26 µg/L		100
6:2FTS	6.591	427.0 -> 407.0	49603	19.13 µg/L		100
8:2FTS	7.652	527.0 -> 507.0	39898	20.30 µg/L		96
EtFOSAA	7.772	584.0 -> 419.0	24076	20.19 µg/L		98
FOSA	7.250	498.0 -> 78.0	58701	20.11 µg/L		100
MeFOSAA	7.659	570.0 -> 419.0	25943	19.79 µg/L		99
PFBA	1.961	213.0 -> 169.0	32129	19.60 µg/L		100
PFBS	4.021	299.0 -> 80.0	37097	19.78 µg/L		100
PFDA	7.628	513.0 -> 469.0	138060	20.12 µg/L		100
PFDoDA	8.328	613.0 -> 569.0	253882	19.45 µg/L		100
PFDS	7.961	599.0 -> 80.0	13476	20.26 µg/L		98
PFHpA	5.932	363.0 -> 319.0	251945	19.88 µg/L		100
PFHpS	6.600	449.0 -> 80.0	28032	21.77 µg/L		98
PFHxA	5.040	313.0 -> 269.0	72884	20.38 µg/L		100
PFHxS	5.962	399.0 -> 80.0	32845	20.06 µg/L	m	97
PFNA	7.172	463.0 -> 419.0	138424	20.49 µg/L		99
PFNS	7.598	549.0 -> 80.0	24904	22.00 µg/L		99
PFOA	6.598	413.0 -> 369.0	156961	19.81 µg/L		100
PFOS	7.157	499.0 -> 80.0	32689	18.17 µg/L	m	86
PFPeA	3.752	263.0 -> 219.0	129843	19.95 µg/L		100
PFPeS	5.157	349.0 -> 80.0	25471	21.17 µg/L		98
PFTeDA	9.016	713.0 -> 669.0	255142	19.37 µg/L		100
PFTrDA	8.678	663.0 -> 619.0	329156	24.13 µg/L		100
PFUnDA	8.003	563.0 -> 519.0	201193	19.81 µg/L		100
11Cl-PF3OUdS	8.122	631.0 -> 451.0	102246	15.01 µg/L		100
9Cl-PF3ONS	7.395	531.0 -> 351.0	27102	14.36 µg/L		96
ADONA	6.027	377.0 -> 251.0	301435	16.78 µg/L		100
HFPO-DA	5.322	329.0 -> 169.0	200188	123.02 µg/L		92

= Qualifier out of range, m = manually integrated, + = Area summed

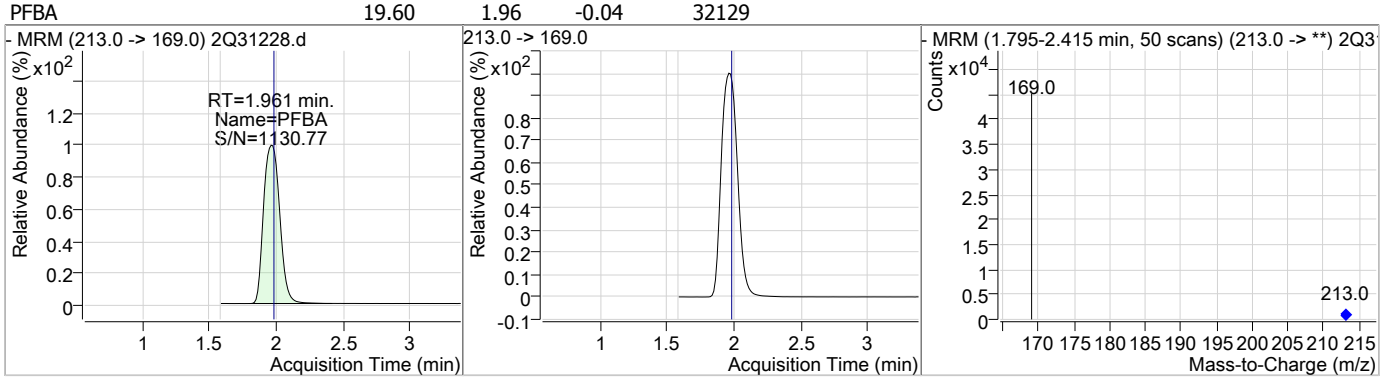
Perfluorinated Compounds by LC/MS/MS



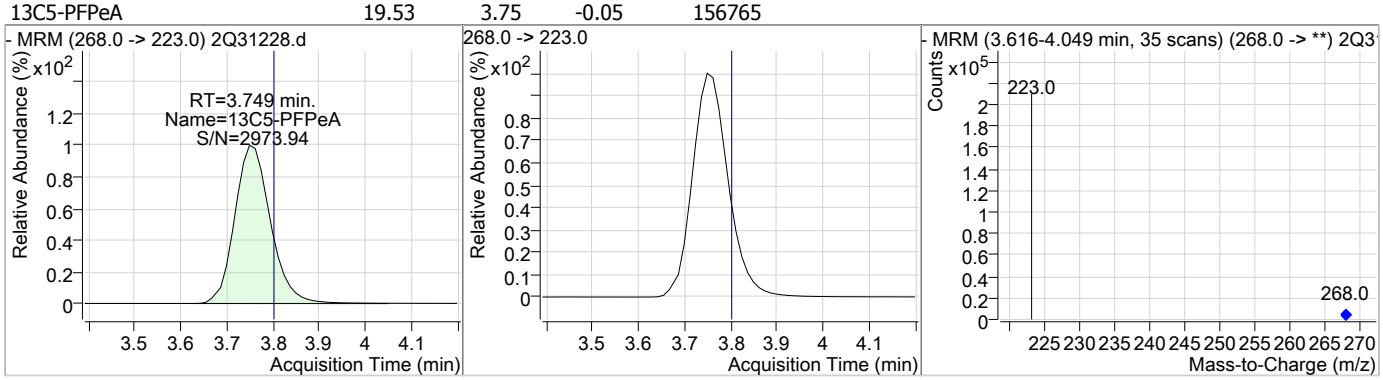
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.43	1.96	-0.03	190566				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.60	1.96	-0.04	32129				

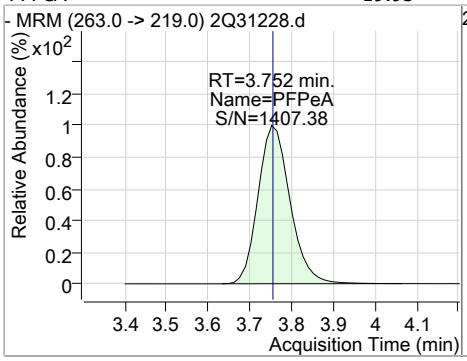


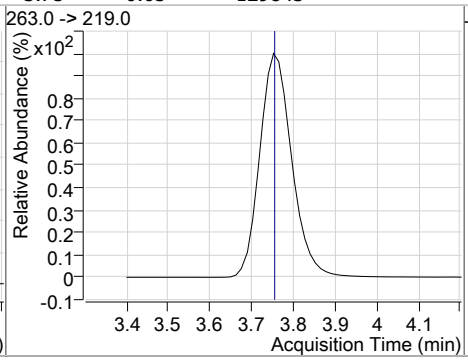
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.53	3.75	-0.05	156765				

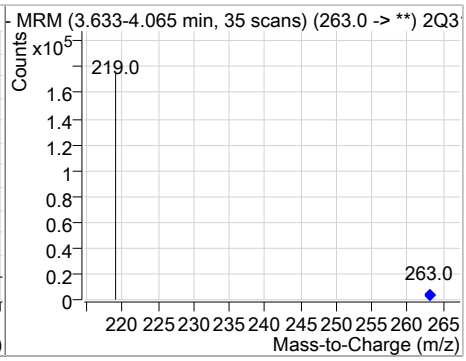


Perfluorinated Compounds by LC/MS/MS

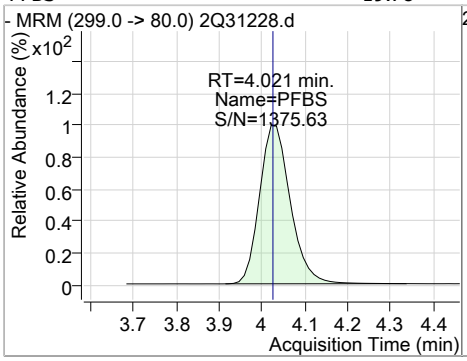
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PFPeA	19.95	3.75	-0.05	129843				

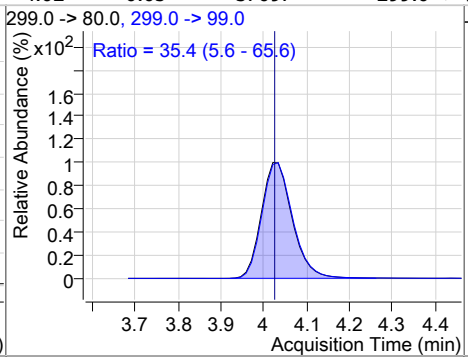


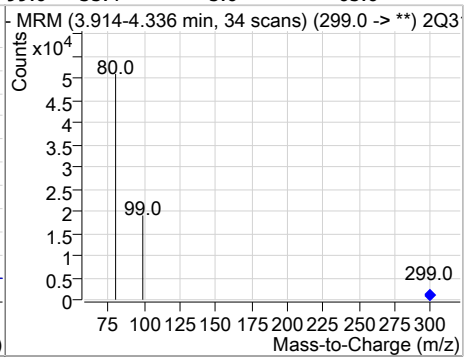




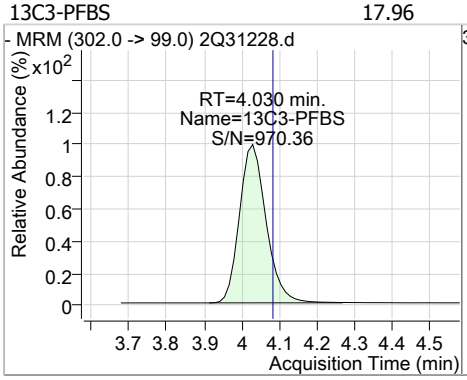
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.78	4.02	-0.05	37097	299.0 -> 99.0	35.4	5.6	65.6

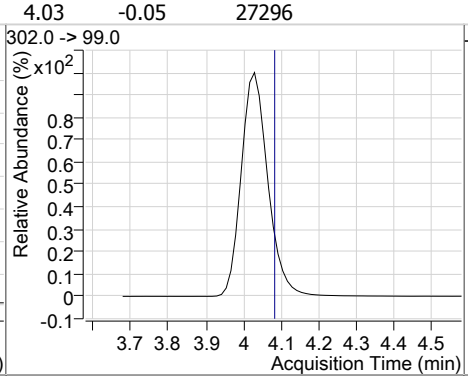


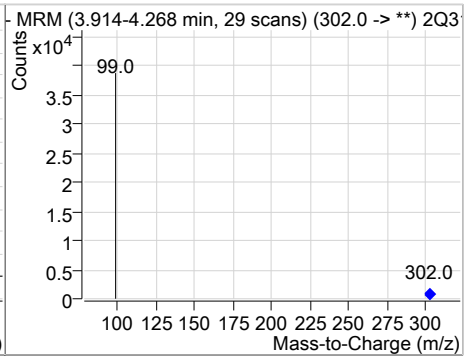




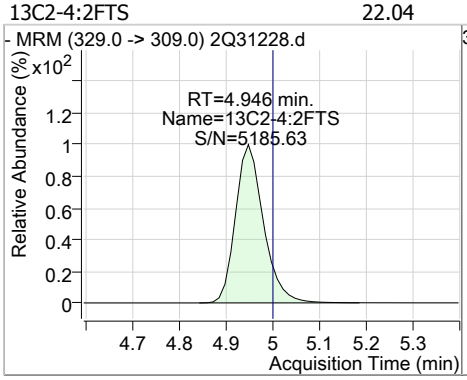
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13C3-PFBS	17.96	4.03	-0.05	27296				

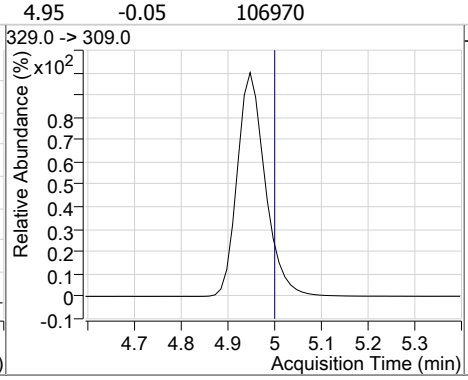


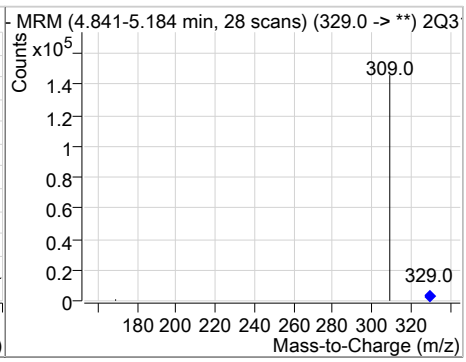




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.04	4.95	-0.05	106970				

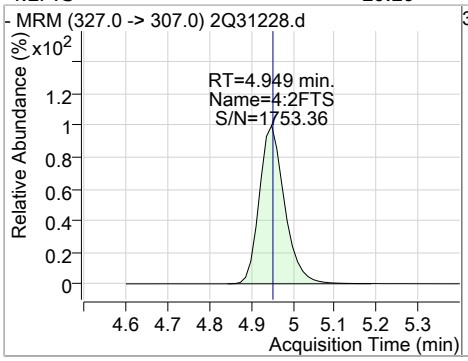


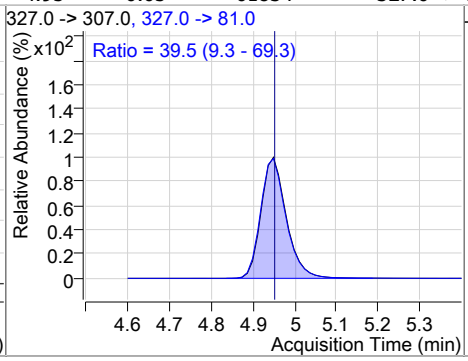


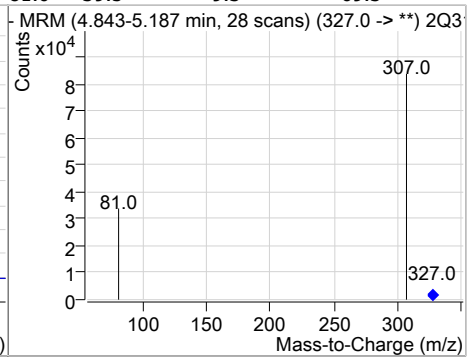


Perfluorinated Compounds by LC/MS/MS

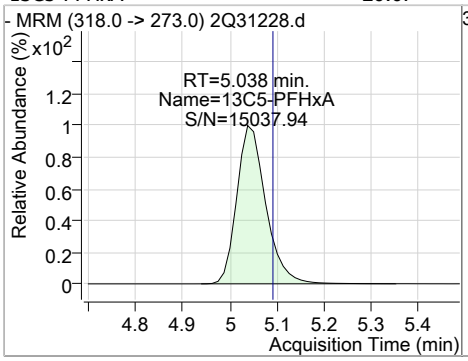
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.26	4.95	-0.05	61834	327.0 -> 81.0	39.5	9.3	69.3

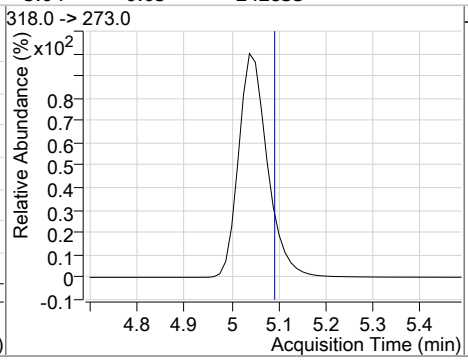


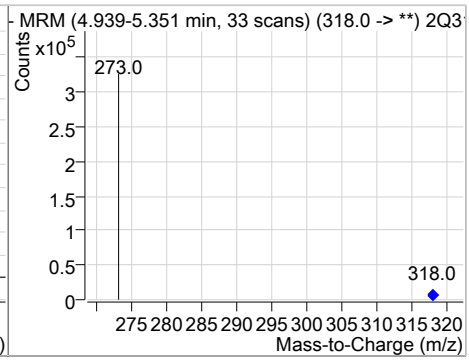




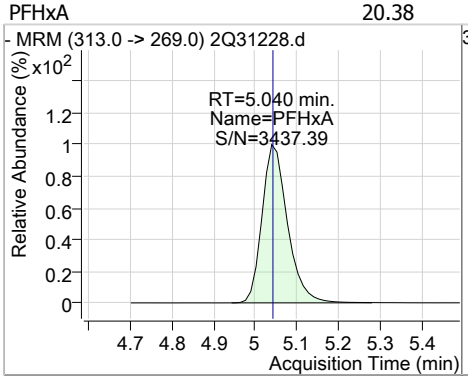
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.07	5.04	-0.05	242833				

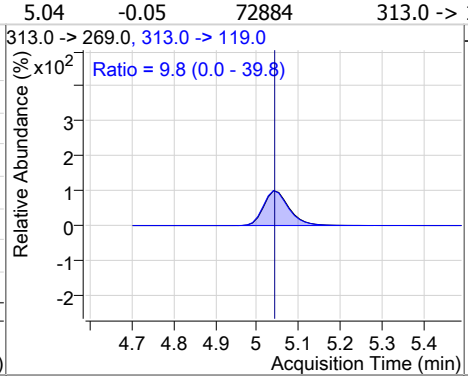


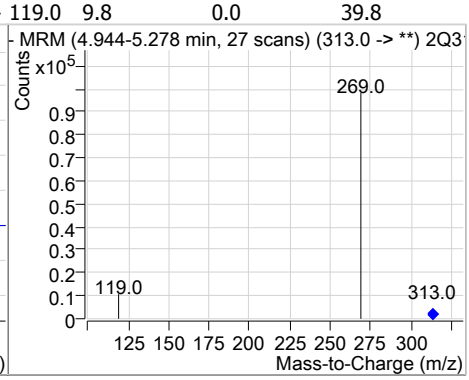




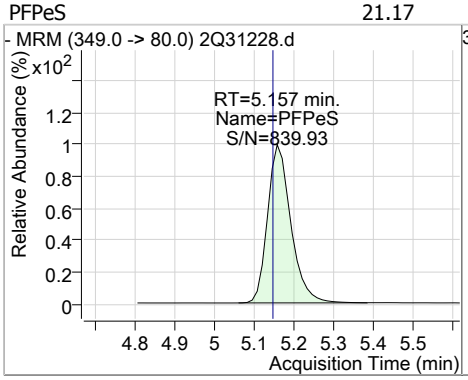
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.38	5.04	-0.05	72884	313.0 -> 119.0	9.8	0.0	39.8

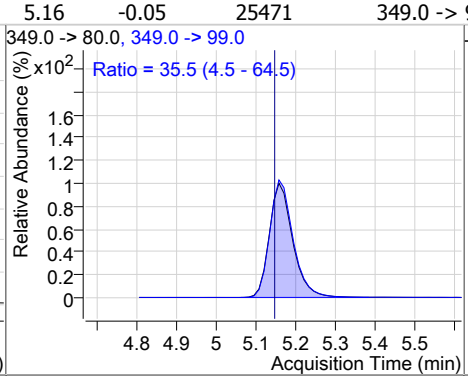


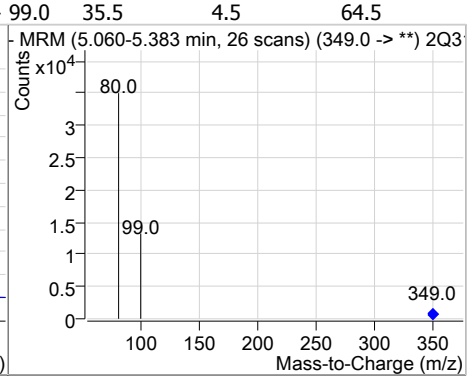




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.17	5.16	-0.05	25471	349.0 -> 99.0	35.5	4.5	64.5

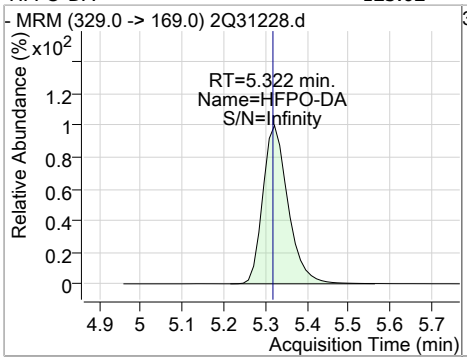


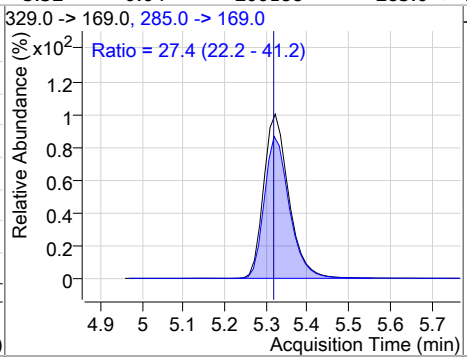


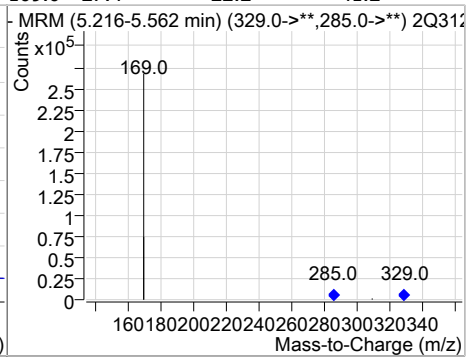


Perfluorinated Compounds by LC/MS/MS

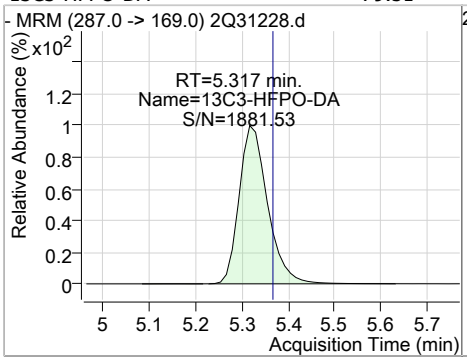
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	123.02	5.32	-0.04	200188	285.0 -> 169.0	27.4	22.2	41.2

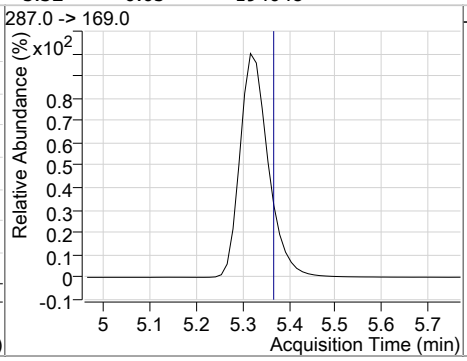


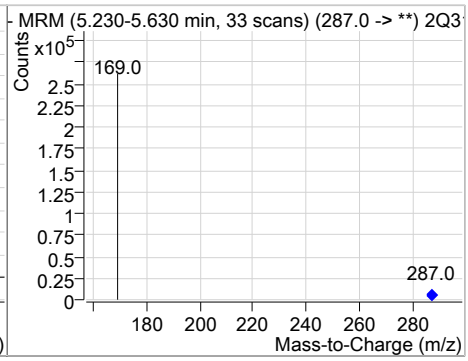




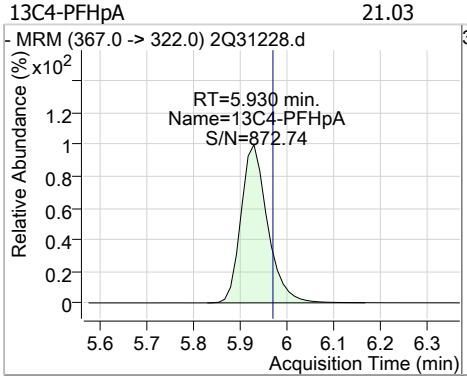
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	79.51	5.32	-0.05	194048				

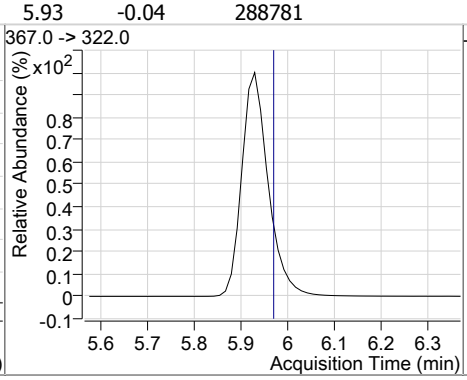


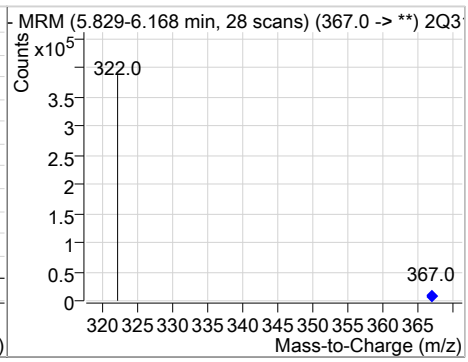




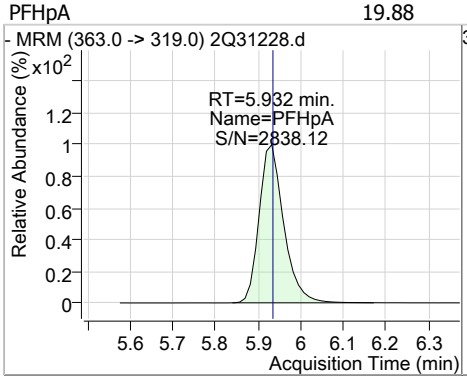
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.03	5.93	-0.04	288781				

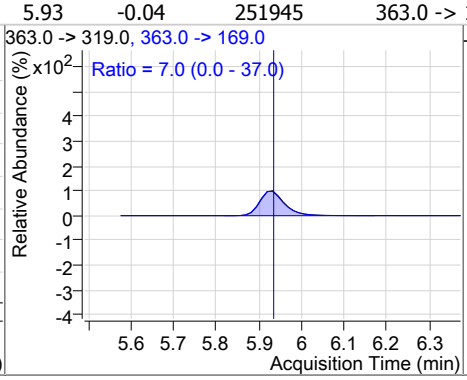


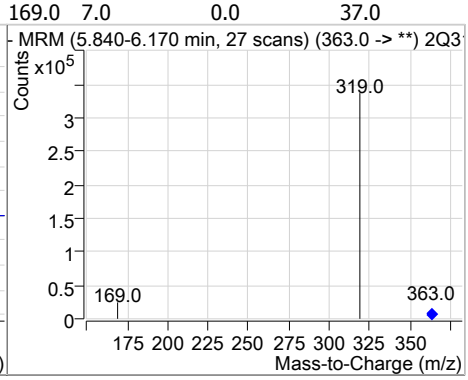




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.88	5.93	-0.04	251945	363.0 -> 169.0	7.0	0.0	37.0

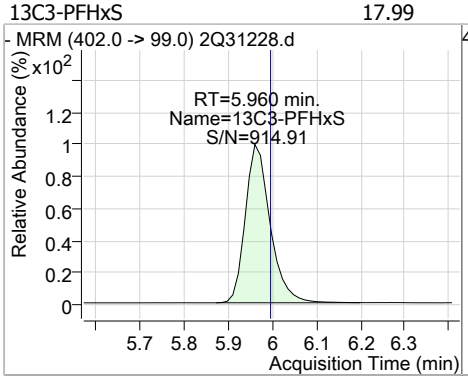


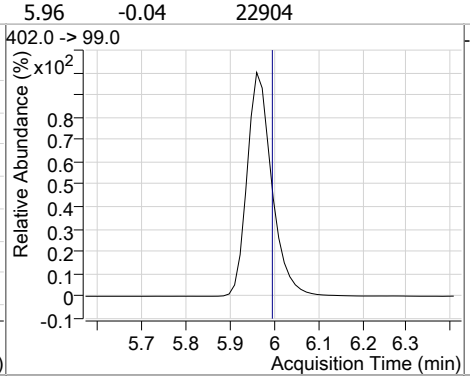


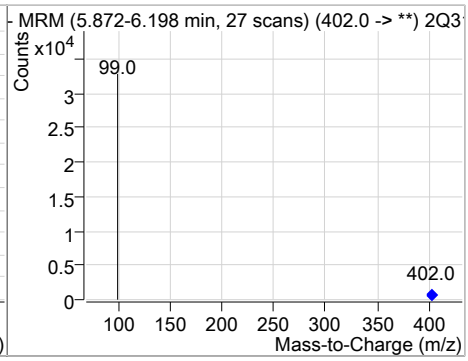


Perfluorinated Compounds by LC/MS/MS

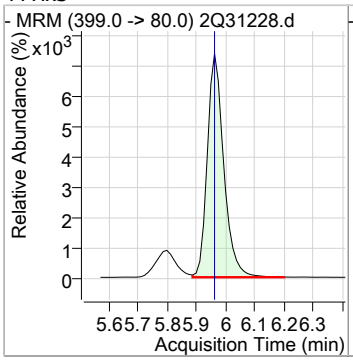
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.99	5.96	-0.04	22904				

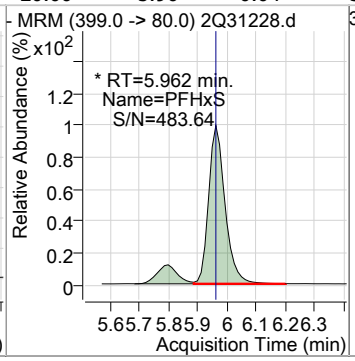


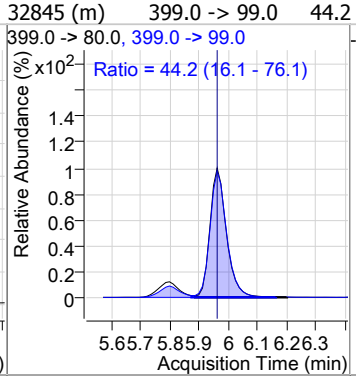


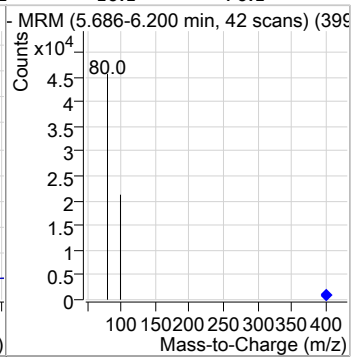


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.06	5.96	-0.04	32845 (m)	399.0 -> 99.0	44.2	16.1	76.1

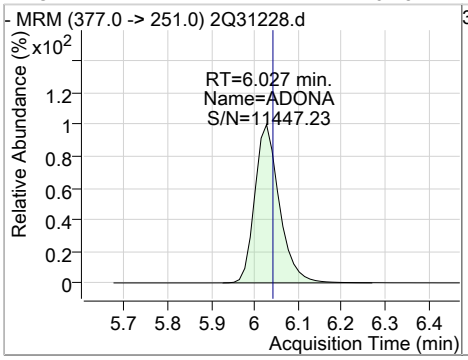


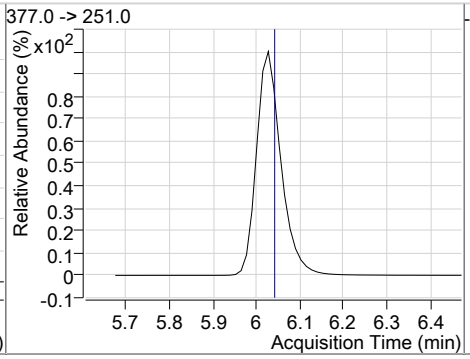


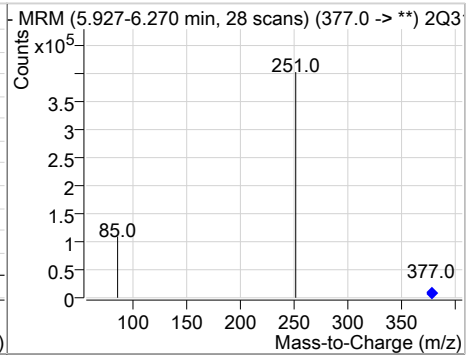




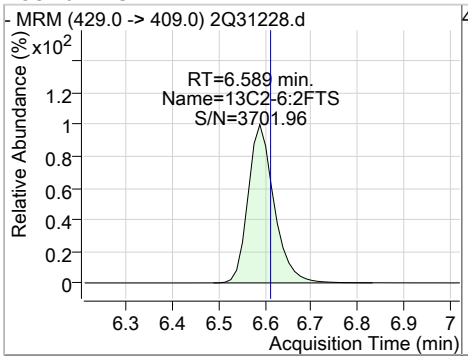
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.78	6.03	-0.04	301435				

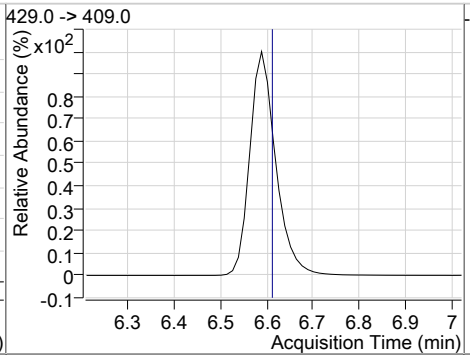


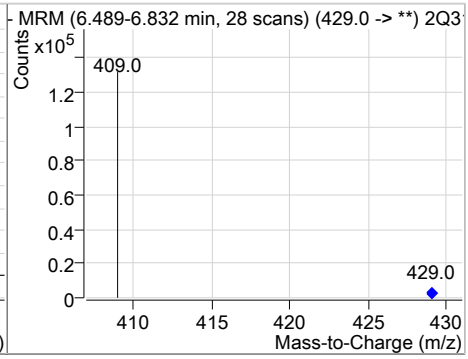




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.44	6.59	-0.03	97315				

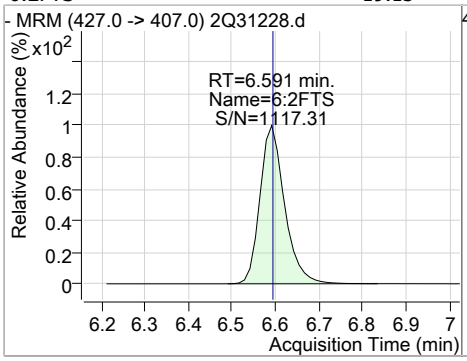


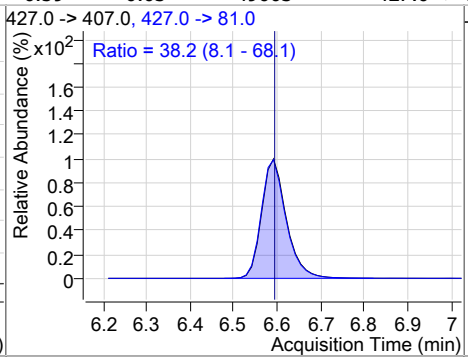


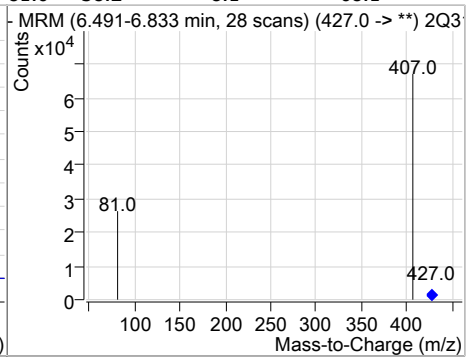


Perfluorinated Compounds by LC/MS/MS

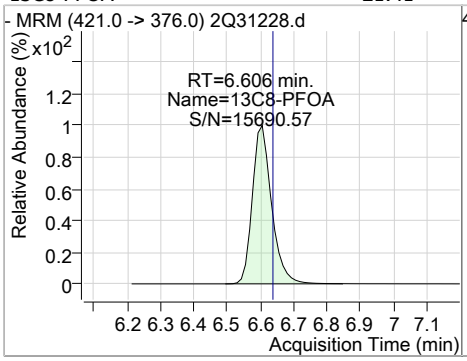
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.13	6.59	-0.03	49603	427.0 -> 81.0	38.2	8.1	68.1

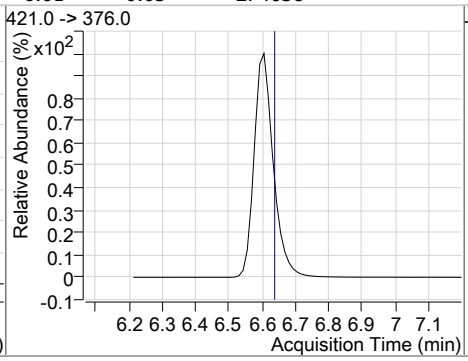


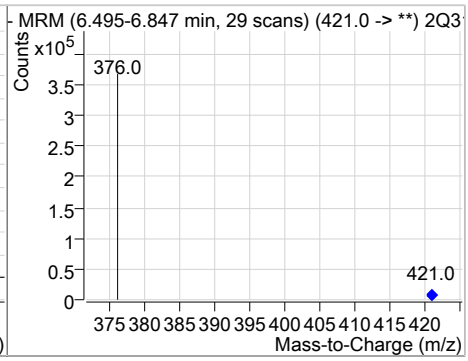




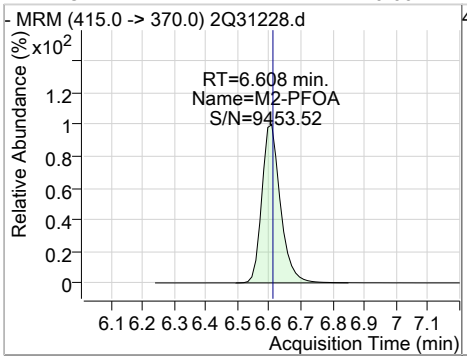
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.41	6.61	-0.03	274638				

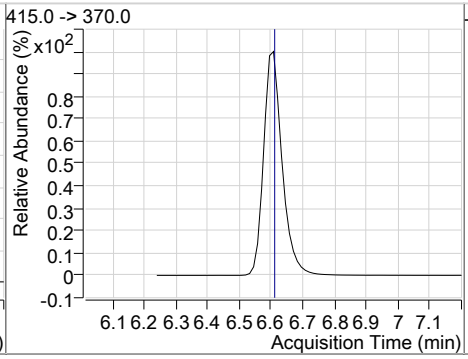


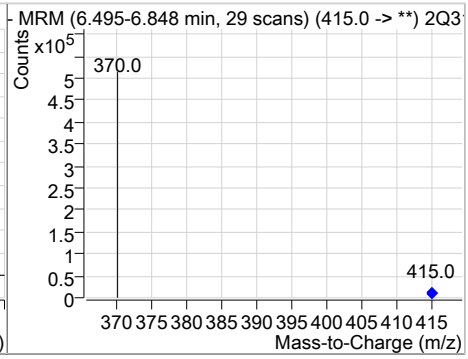




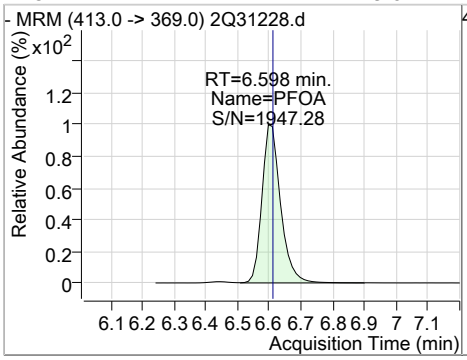
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.61	-0.03	385160				

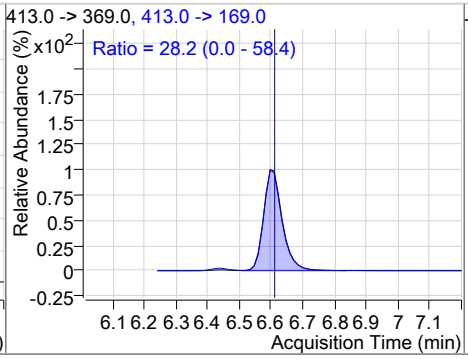


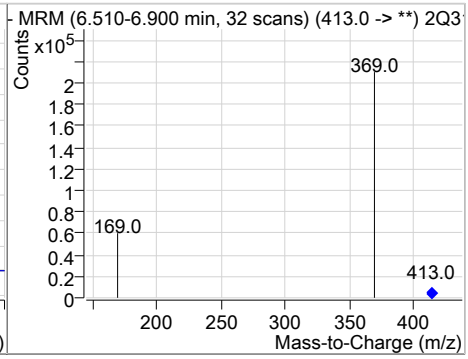




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.81	6.60	-0.04	156961	413.0 -> 169.0	28.2	0.0	58.4

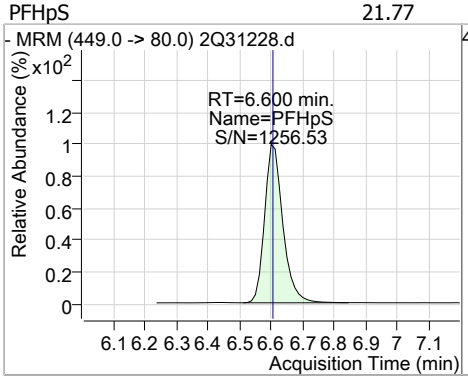


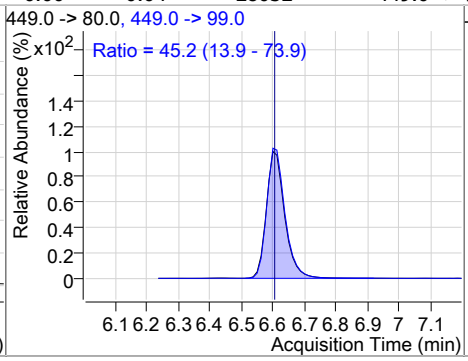


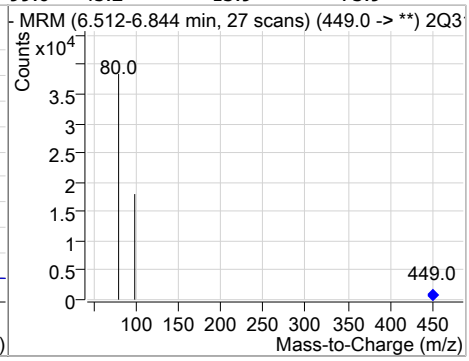


Perfluorinated Compounds by LC/MS/MS

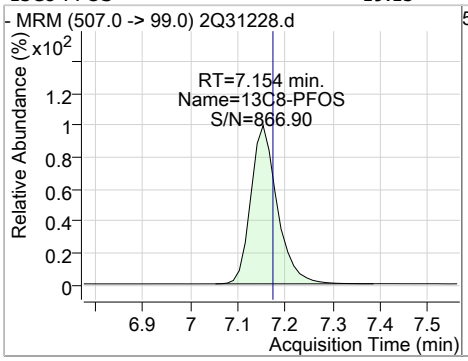
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.77	6.60	-0.04	28032	449.0 -> 99.0	45.2	13.9	73.9

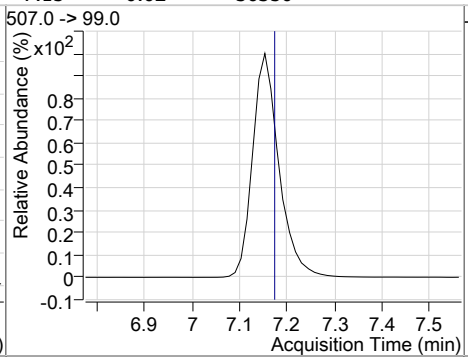


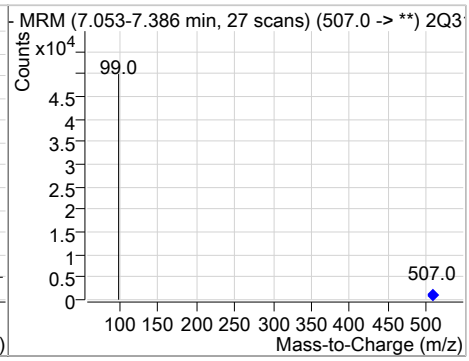




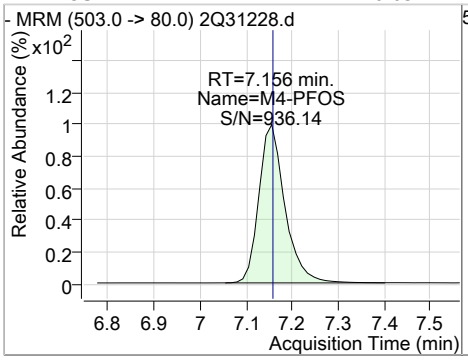
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.15	7.15	-0.02	36350				

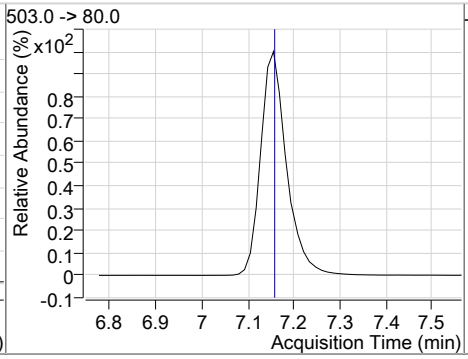


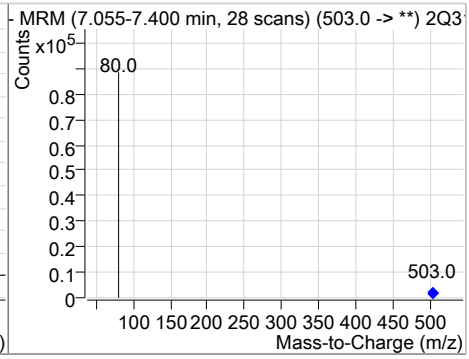




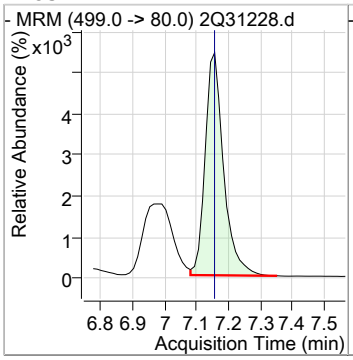
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.03	7.16	-0.02	65795				

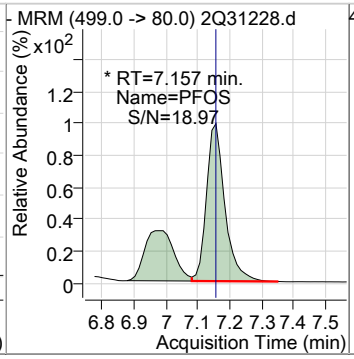


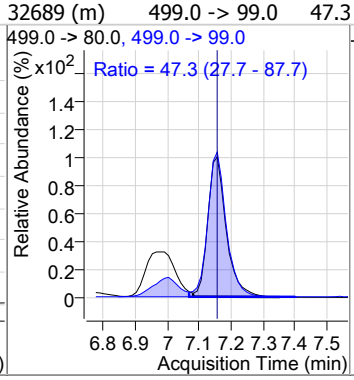


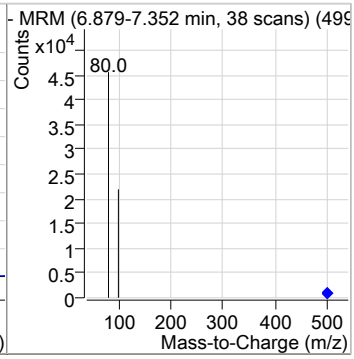


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.17	7.16	-0.02	32689 (m)	499.0 -> 99.0	47.3	27.7	87.7



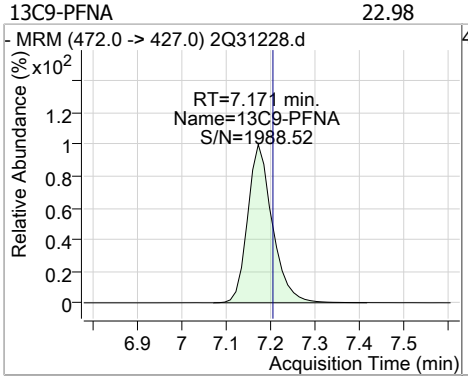


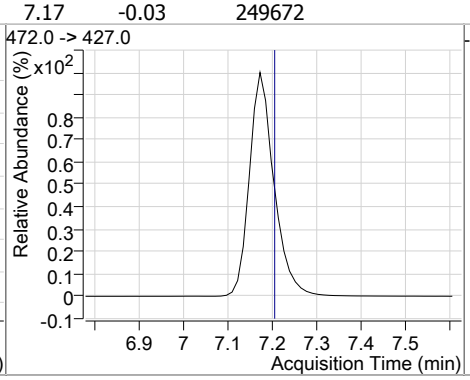


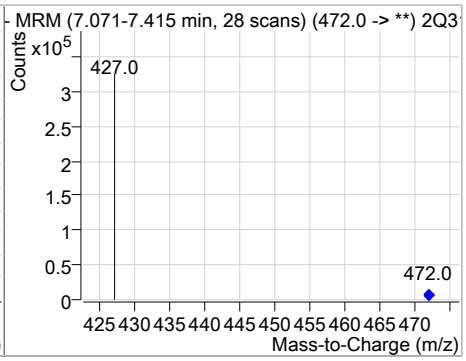


Perfluorinated Compounds by LC/MS/MS

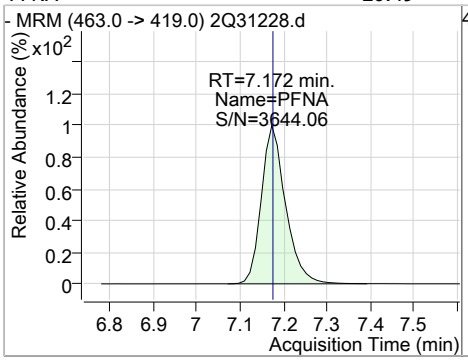
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.98	7.17	-0.03	249672				

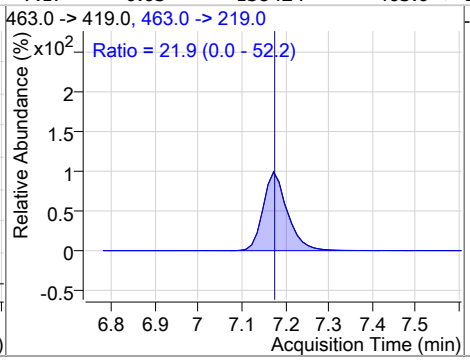


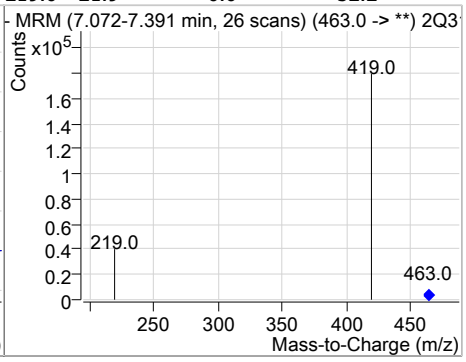




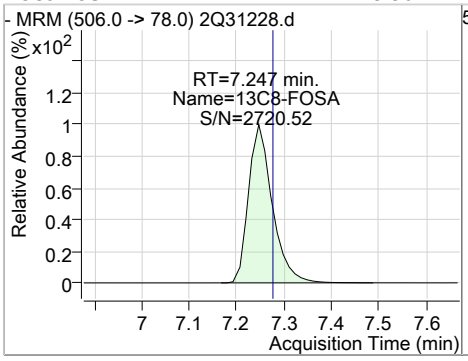
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.49	7.17	-0.03	138424	463.0 -> 219.0	21.9	0.0	52.2

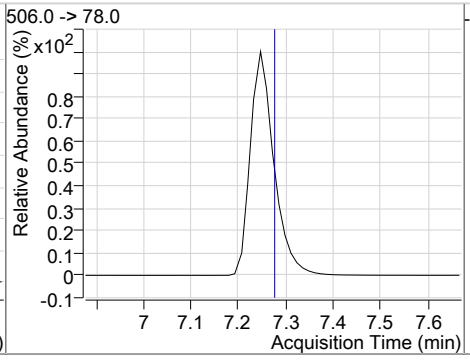


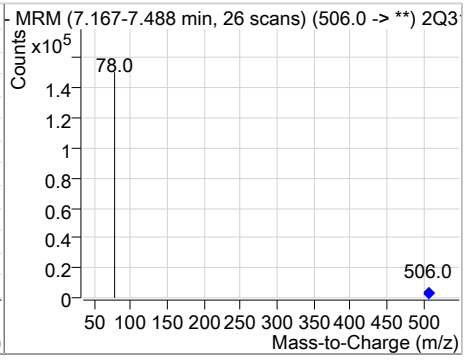




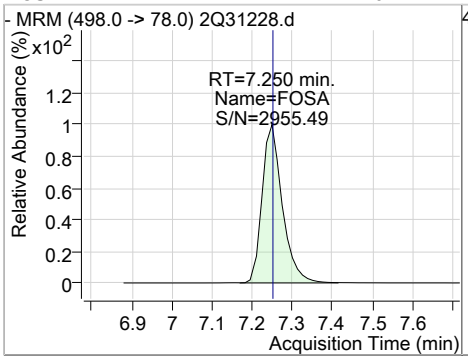
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.90	7.25	-0.03	117074				

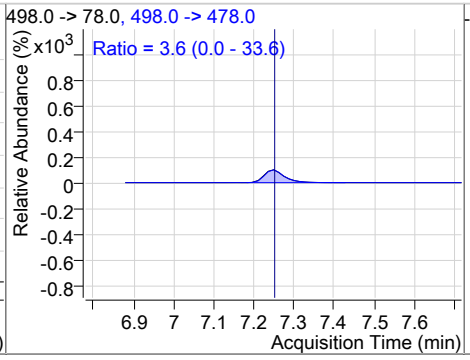


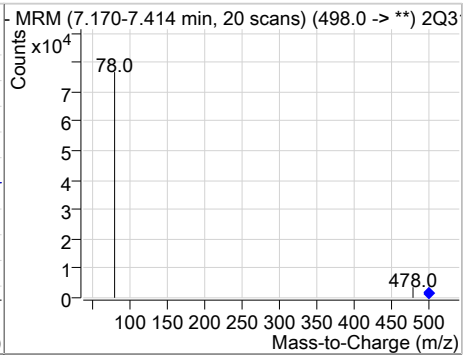




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.11	7.25	-0.03	58701	498.0 -> 478.0	3.6	0.0	33.6

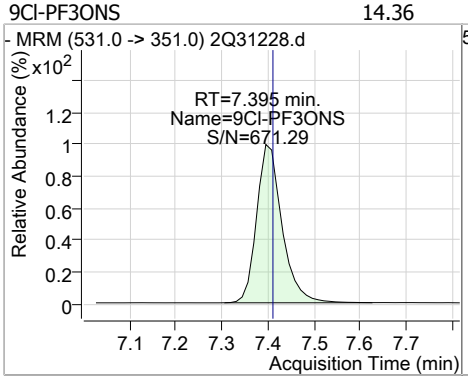


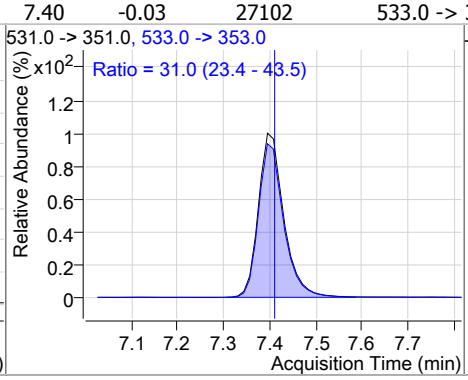


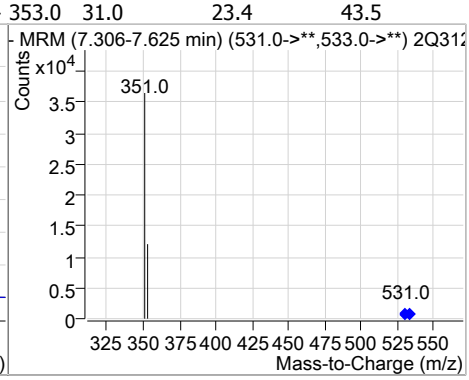


Perfluorinated Compounds by LC/MS/MS

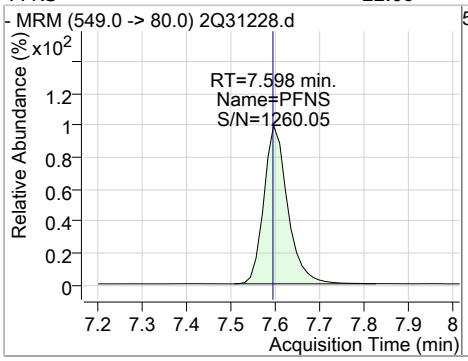
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.36	7.40	-0.03	27102	533.0 -> 353.0	31.0	23.4	43.5

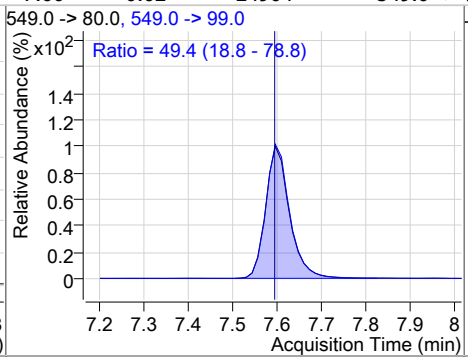


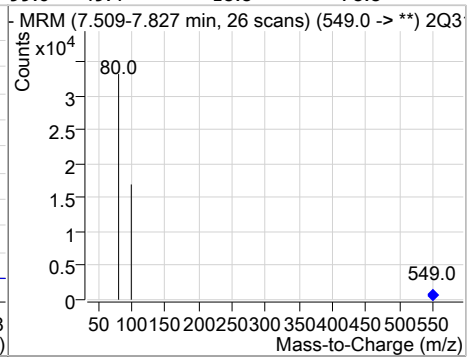




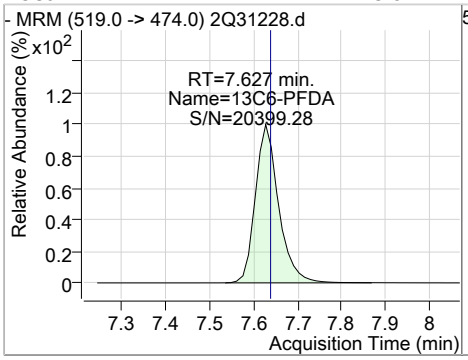
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.00	7.60	-0.02	24904	549.0 -> 99.0	49.4	18.8	78.8

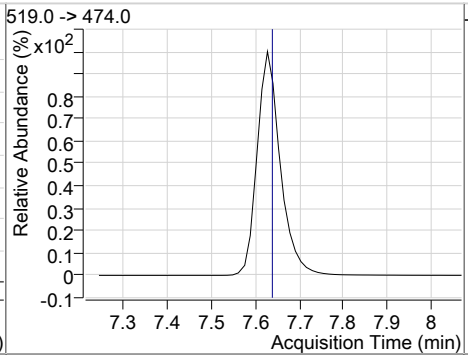


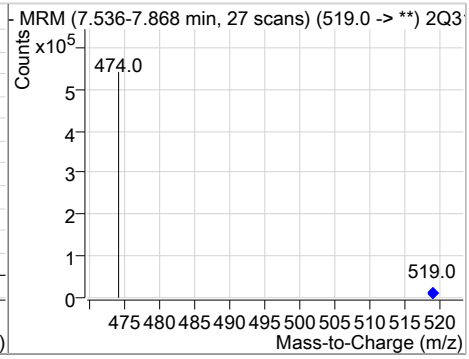




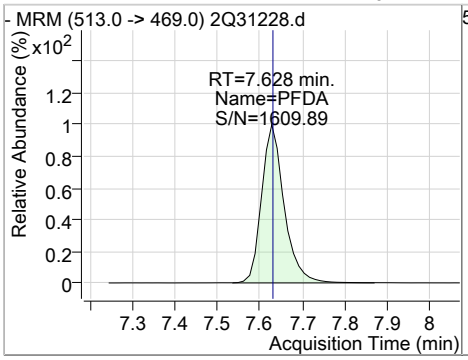
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.81	7.63	-0.01	415435				

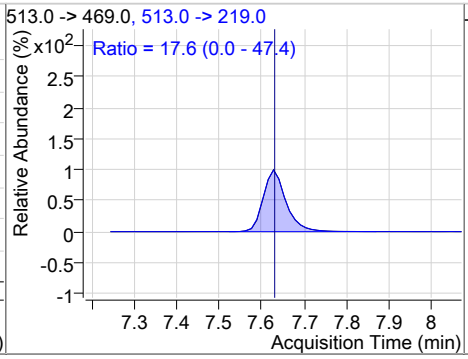


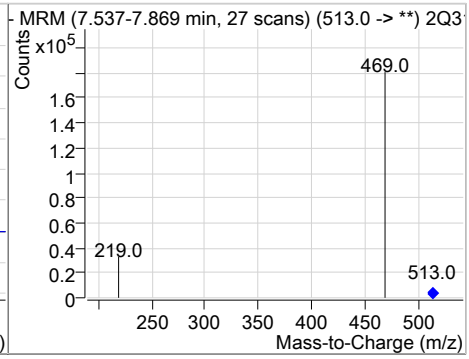




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.12	7.63	-0.01	138060	513.0 -> 219.0	17.6	0.0	47.4

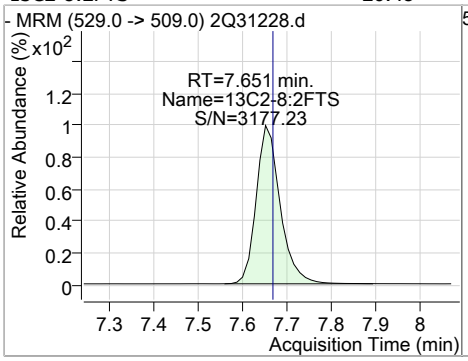


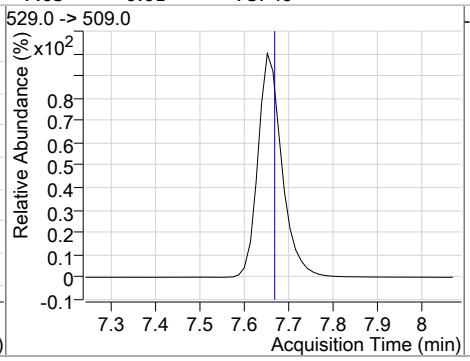


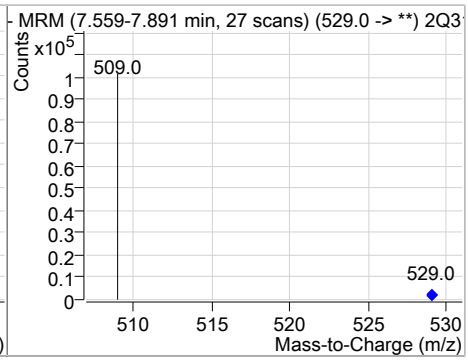


Perfluorinated Compounds by LC/MS/MS

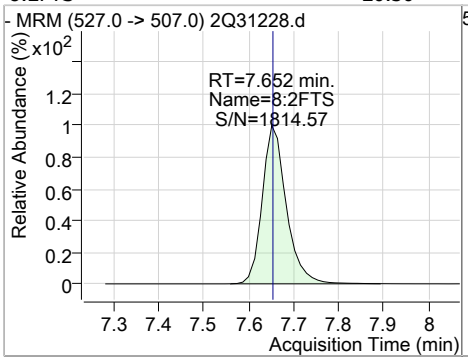
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	26.48	7.65	-0.01	75740				

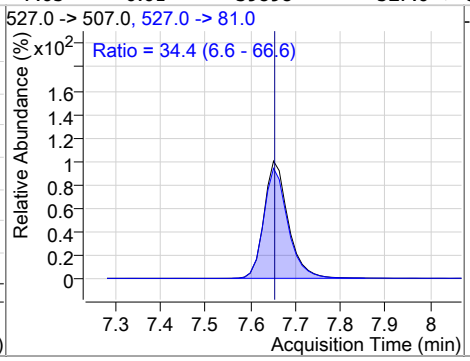


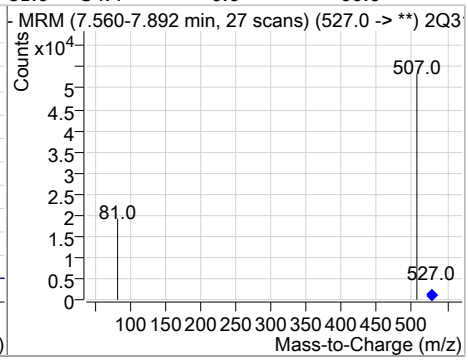




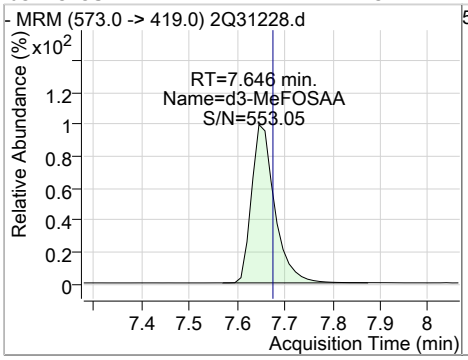
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.30	7.65	-0.01	39898	527.0 -> 81.0	34.4	6.6	66.6

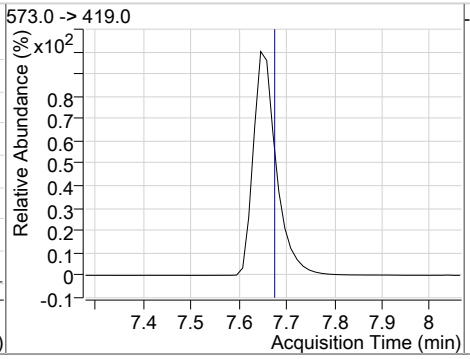


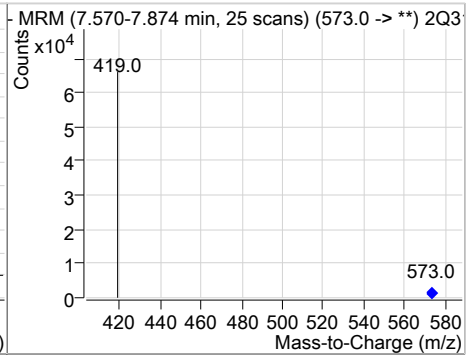




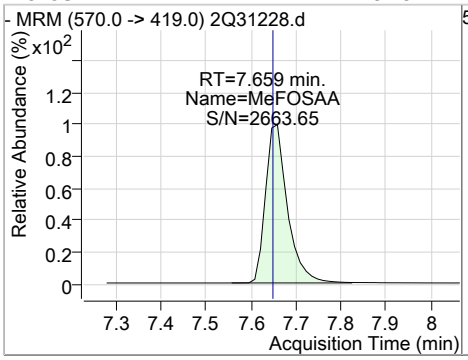
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.21	7.65	-0.03	48377				

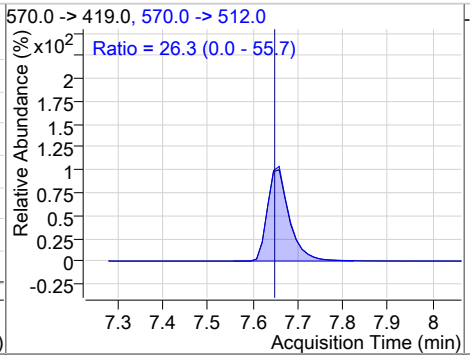


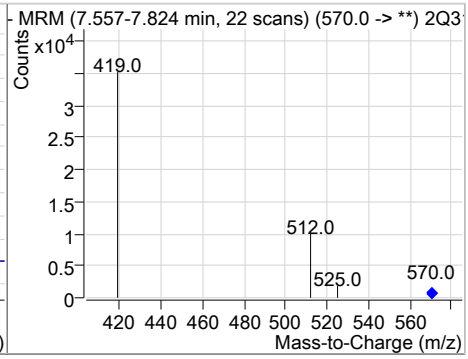




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.79	7.66	-0.01	25943	570.0 -> 512.0	26.3	0.0	55.7

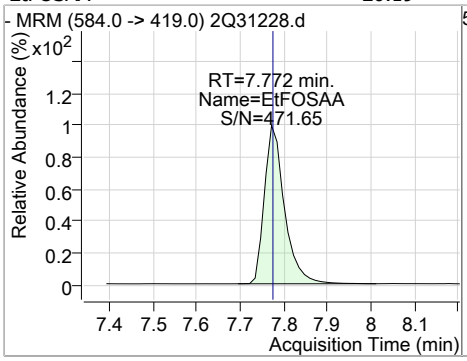


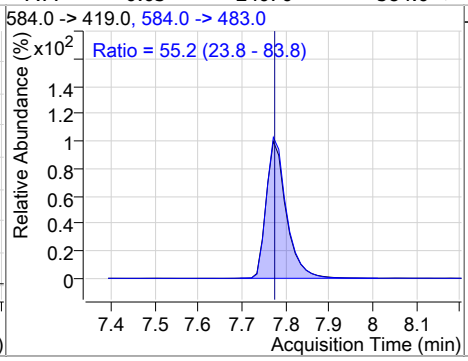


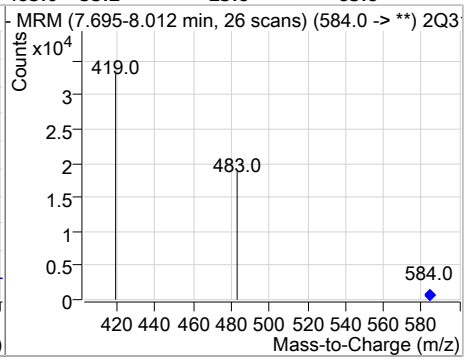


Perfluorinated Compounds by LC/MS/MS

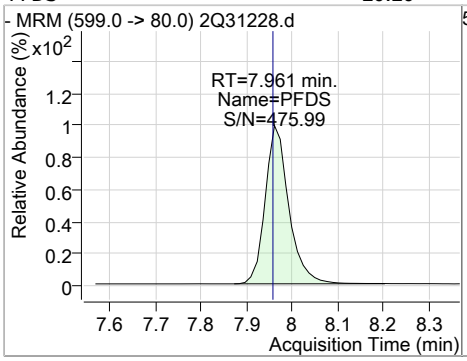
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.19	7.77	-0.03	24076	584.0 -> 483.0	55.2	23.8	83.8

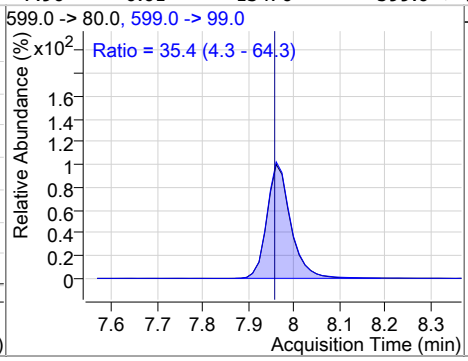


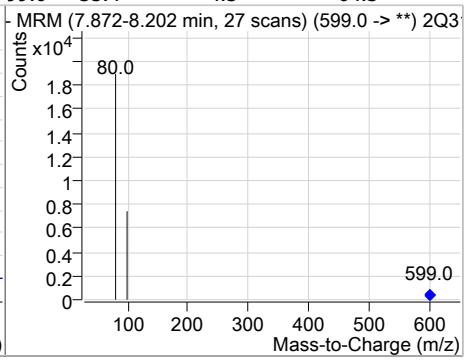




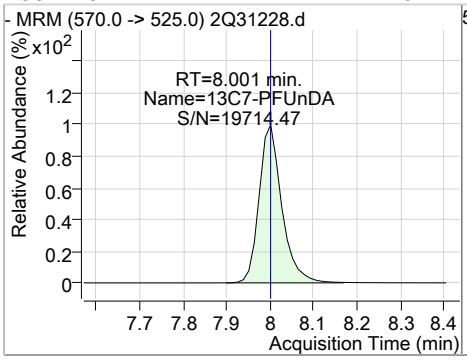
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.26	7.96	-0.01	13476	599.0 -> 99.0	35.4	4.3	64.3

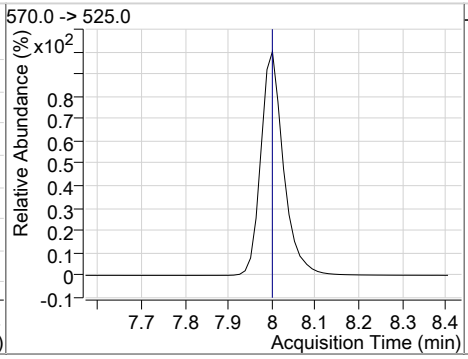


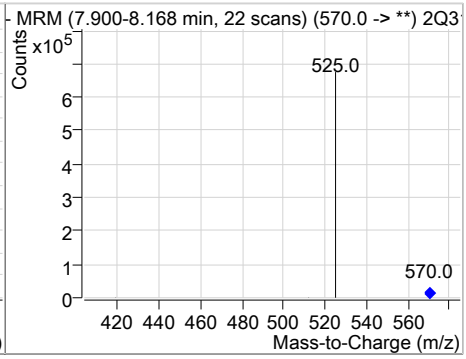




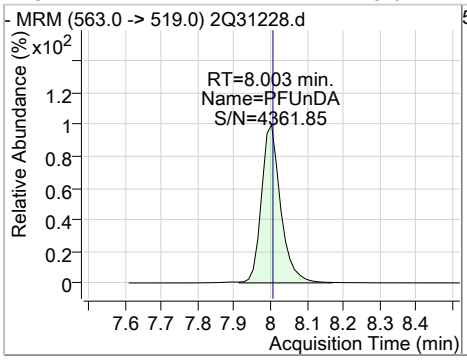
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	24.23	8.00	0.00	512592				

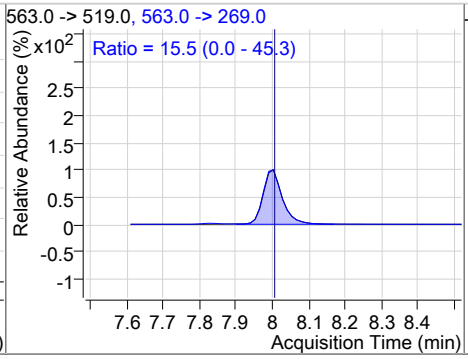


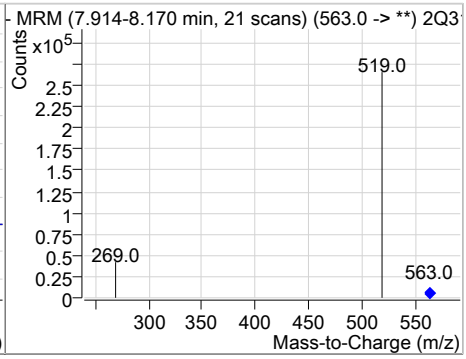




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.81	8.00	0.00	201193	563.0 -> 269.0	15.5	0.0	45.3

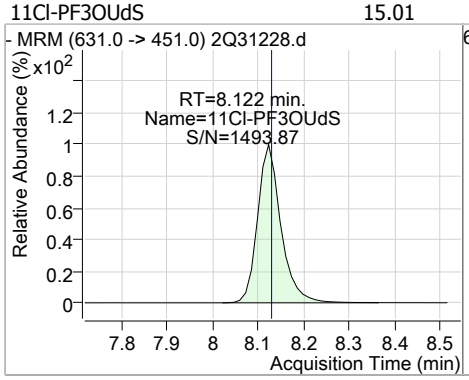


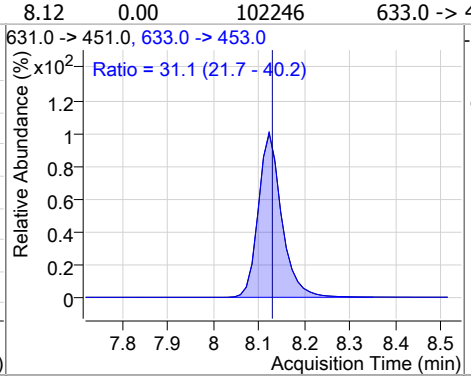


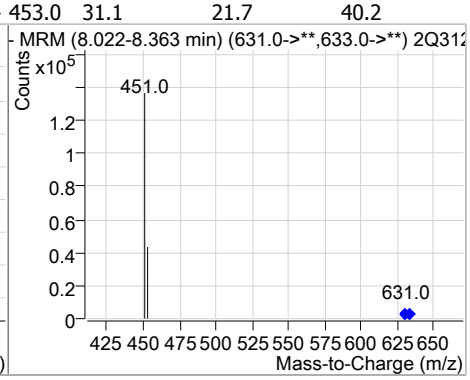


Perfluorinated Compounds by LC/MS/MS

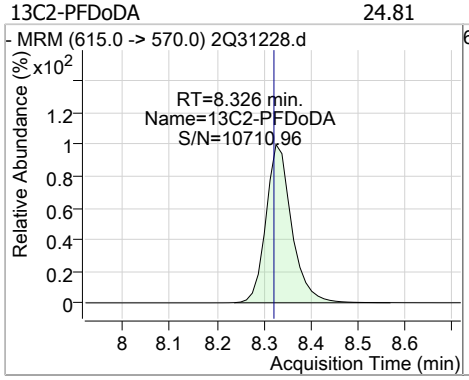
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.01	8.12	0.00	102246	633.0 -> 453.0	31.1	21.7	40.2

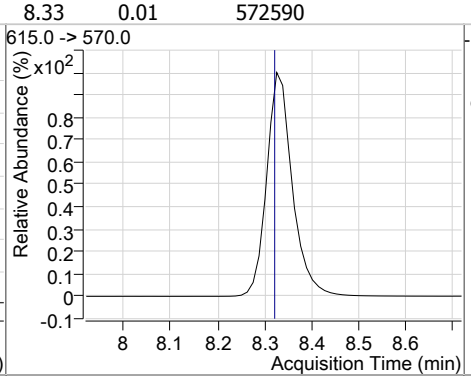


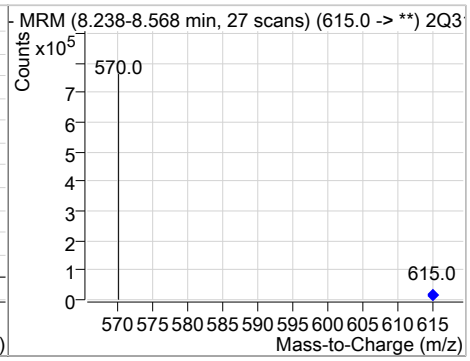




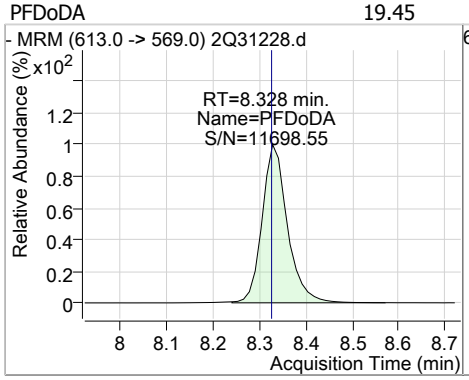
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.81	8.33	0.01	572590				

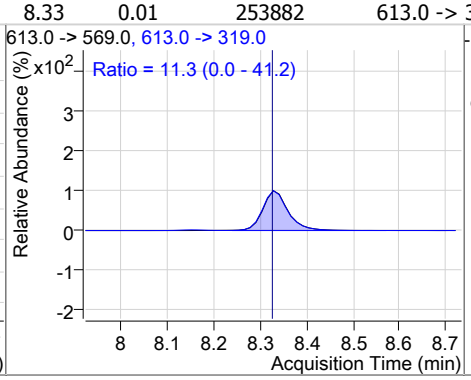


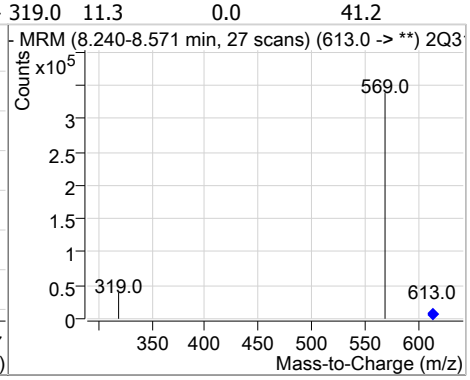




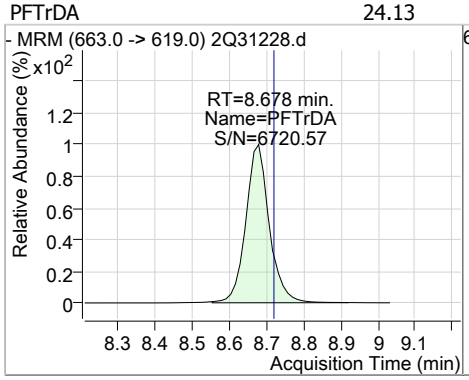
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.45	8.33	0.01	253882	613.0 -> 319.0	11.3	0.0	41.2

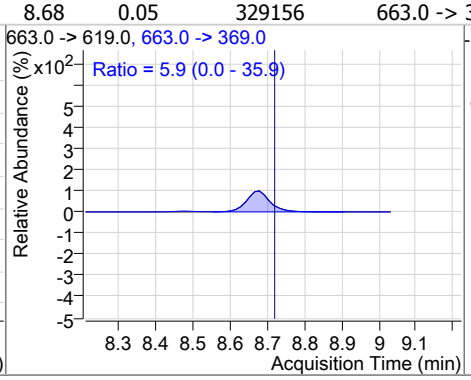


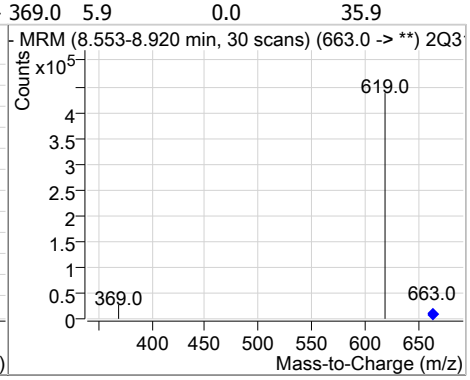




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.13	8.68	0.05	329156	663.0 -> 369.0	5.9	0.0	35.9

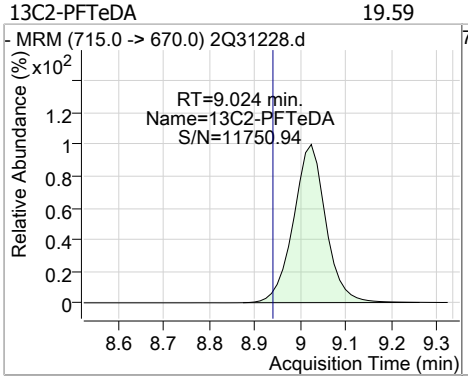


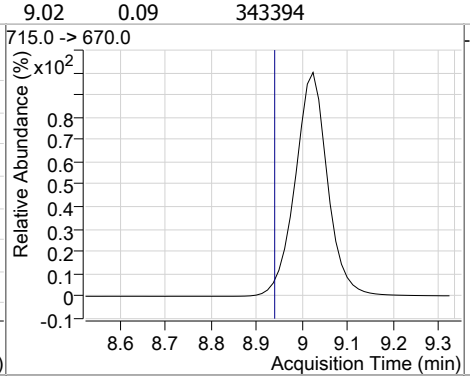


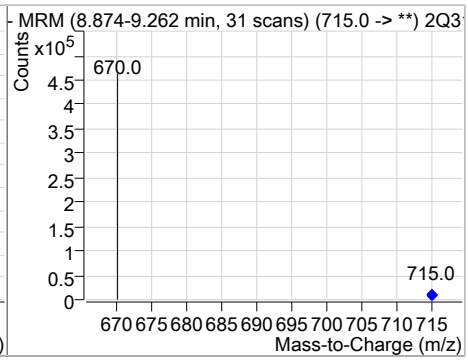


Perfluorinated Compounds by LC/MS/MS

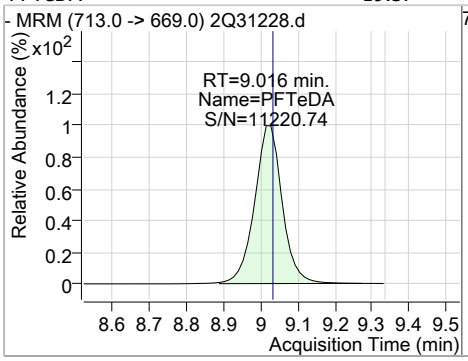
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.59	9.02	0.09	343394				

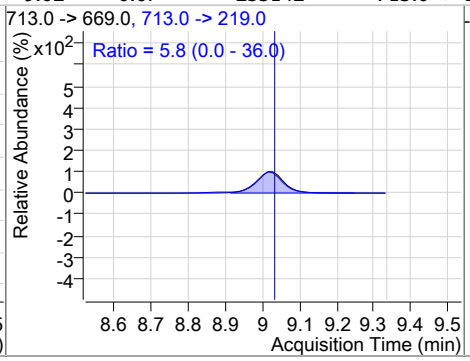


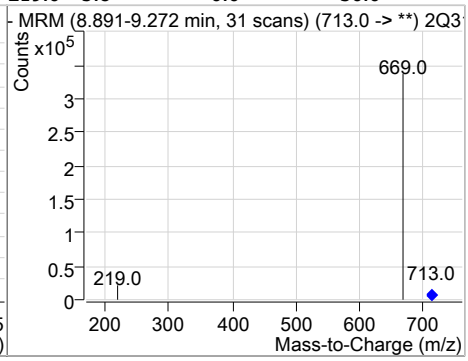




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.37	9.02	0.07	255142	713.0 -> 219.0	5.8	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q499-CC498
Lab FileID: 2Q31228.D
Injection Time: 06/23/19 22:10
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/24/19 13:24 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31236.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/24/2019 12:08:44 AM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75546,S2Q499,250,,,1,1,water

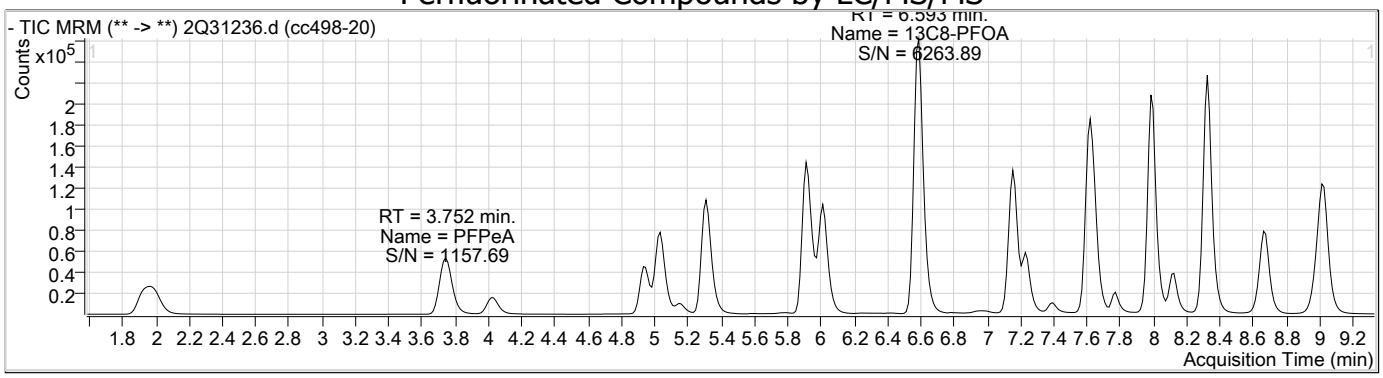
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.595	415.0 -> 370.0	382422	20.00	µg/L	-0.040
13C4-PFOS	7.143	503.0 -> 80.0	64571	20.00	µg/L	-0.031
M4-PFBA	1.965	217.0 -> 172.0	190788	20.00	µg/L	-0.025
M5-PFPeA	3.749	268.0 -> 223.0	155683	20.00	µg/L	-0.051
M5-PFHxA	5.038	318.0 -> 273.0	239896	20.00	µg/L	-0.051
M4-PFHpA	5.917	367.0 -> 322.0	289350	20.00	µg/L	-0.051
M8-PFOA	6.593	421.0 -> 376.0	274145	20.00	µg/L	-0.041
M9-PFNA	7.159	472.0 -> 427.0	249020	20.00	µg/L	-0.043
M6-PFDA	7.615	519.0 -> 474.0	413886	20.00	µg/L	-0.026
M7-PFUnDA	7.989	570.0 -> 525.0	517164	20.00	µg/L	-0.015
M2-PFDoDA	8.326	615.0 -> 570.0	571625	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	352724	20.00	µg/L	0.087
M8-FOSA	7.232	506.0 -> 78.0	114174	20.00	µg/L	-0.042
M3-PFBS	4.030	302.0 -> 99.0	27169	20.00	µg/L	-0.051
M3-PFHxS	5.960	402.0 -> 99.0	22863	20.00	µg/L	-0.038
M8-PFOS	7.141	507.0 -> 99.0	35501	20.00	µg/L	-0.031
M2-4:2FTS	4.934	329.0 -> 309.0	107013	20.00	µg/L	-0.063
M2-6:2FTS	6.577	429.0 -> 409.0	97478	20.00	µg/L	-0.038
M2-8:2FTS	7.651	529.0 -> 509.0	75221	20.00	µg/L	-0.014
M3-MeFOSAA	7.646	573.0 -> 419.0	49500	20.00	µg/L	-0.027
M3-HFPO-DA	5.317	287.0 -> 169.0	199930	100.00	µg/L	-0.047
System Monitoring Compounds						
13C2-4:2FTS	4.934	329.0 -> 309.0	106916	22.03	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C2-6:2FTS	6.577	429.0 -> 409.0	97408	24.47	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.3%		
13C2-8:2FTS	7.651	529.0 -> 509.0	75154	26.28	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 131.4%		
13C2-PFDoDA	8.326	615.0 -> 570.0	570465	24.71	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.6%		
13C2-PFTeDA	9.024	715.0 -> 670.0	352841	20.13	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C3-PFBS	4.030	302.0 -> 99.0	27162	17.88	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C3-PFHxS	5.960	402.0 -> 99.0	22845	17.94	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C4-PFBA	1.965	217.0 -> 172.0	189603	18.33	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C4-PFHpA	5.917	367.0 -> 322.0	289457	21.08	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C5-PFHxA	5.038	318.0 -> 273.0	239708	19.81	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C5-PFPeA	3.749	268.0 -> 223.0	155887	19.42	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C6-PFDA	7.615	519.0 -> 474.0	413525	23.70	µg/L	-0.026

Perfluorinated Compounds by LC/MS/MS

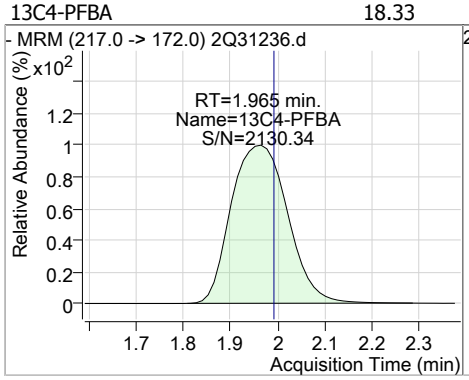
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.5%		
13C7-PFUnDA	7.989	570.0 -> 525.0	516505	24.41 µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.1%		
13C8-FOSA	7.232	506.0 -> 78.0	114143	19.40 µg/L		-0.042
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOA	6.593	421.0 -> 376.0	274074	21.37 µg/L		-0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C8-PFOS	7.141	507.0 -> 99.0	35473	18.69 µg/L		-0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C9-PFNA	7.159	472.0 -> 427.0	248750	22.89 µg/L		-0.043
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
d3-MeFOSAA	7.646	573.0 -> 419.0	49479	23.74 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.7%		
M2-PFOA	6.595	415.0 -> 370.0	382561	20.00 µg/L		-0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.143	503.0 -> 80.0	64566	20.00 µg/L		-0.031
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.317	287.0 -> 169.0	199930	81.92 µg/L		-0.047
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 81.9%		
Target Compounds						**QValue**
4:2FTS	4.936	327.0 -> 307.0	61307	20.10 µg/L		99
6:2FTS	6.579	427.0 -> 407.0	50279	19.38 µg/L		98
8:2FTS	7.652	527.0 -> 507.0	39871	20.43 µg/L		98
EtFOSAA	7.772	584.0 -> 419.0	23668	19.40 µg/L		98
FOSA	7.236	498.0 -> 78.0	58310	20.48 µg/L		100
MeFOSAA	7.647	570.0 -> 419.0	26371	19.66 µg/L		99
PFBA	1.961	213.0 -> 169.0	31937	19.56 µg/L		100
PFBS	4.021	299.0 -> 80.0	37331	20.02 µg/L		99
PFDA	7.616	513.0 -> 469.0	136941	20.05 µg/L		99
PFDoDA	8.328	613.0 -> 569.0	252805	19.43 µg/L		100
PFDS	7.961	599.0 -> 80.0	13267	20.44 µg/L		96
PFHpA	5.920	363.0 -> 319.0	249520	19.65 µg/L		100
PFHpS	6.600	449.0 -> 80.0	27746	21.61 µg/L		98
PFHxA	5.040	313.0 -> 269.0	72510	20.55 µg/L		100
PFHxS	5.950	399.0 -> 80.0	32535	19.93 µg/L	m	97
PFNA	7.160	463.0 -> 419.0	139598	20.73 µg/L		100
PFNS	7.598	549.0 -> 80.0	24698	22.36 µg/L		98
PFOA	6.598	413.0 -> 369.0	155918	19.71 µg/L		100
PFOS	7.144	499.0 -> 80.0	32412	18.46 µg/L	m	86
PFPeA	3.752	263.0 -> 219.0	130256	20.09 µg/L		100
PFPeS	5.157	349.0 -> 80.0	25569	21.38 µg/L		100
PFTeDA	9.016	713.0 -> 669.0	260951	19.41 µg/L		100
PFTrDA	8.666	663.0 -> 619.0	327939	23.56 µg/L		100
PFUnDA	7.991	563.0 -> 519.0	202161	19.75 µg/L		100
11Cl-PF3OUdS	8.122	631.0 -> 451.0	101598	14.96 µg/L		99
9Cl-PF3ONS	7.395	531.0 -> 351.0	26288	13.99 µg/L		98
ADONA	6.015	377.0 -> 251.0	300356	16.75 µg/L		100
HFPO-DA	5.309	329.0 -> 169.0	203019	121.09 µg/L		92

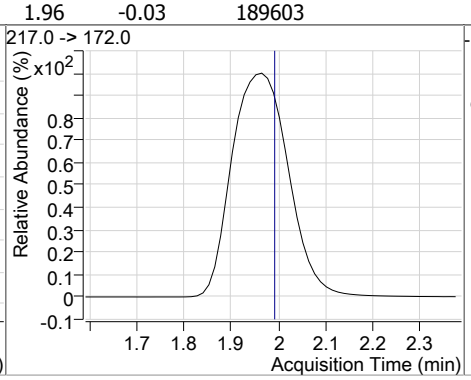
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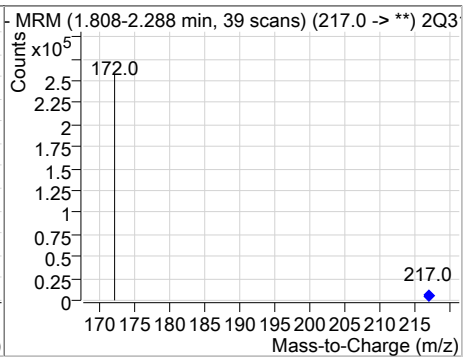
Perfluorinated Compounds by LC/MS/MS



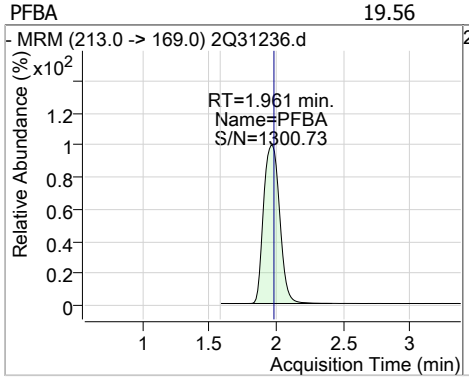
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.33	1.96	-0.03	189603				

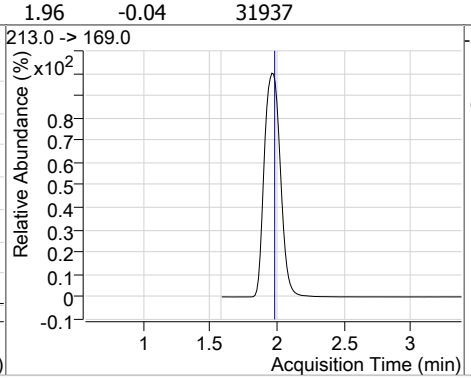


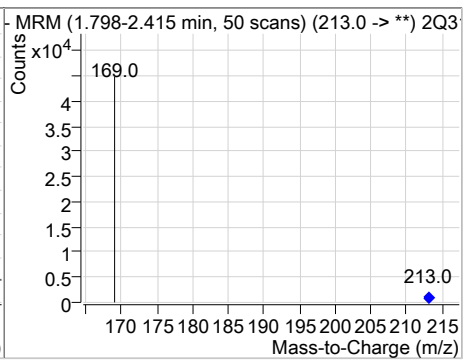




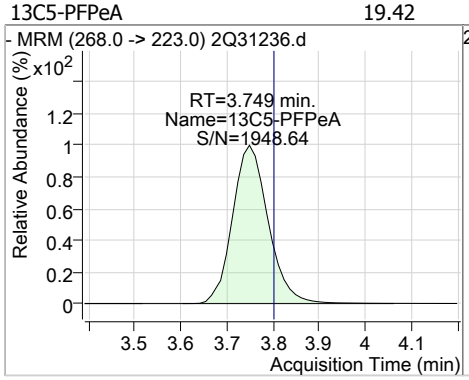
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.56	1.96	-0.04	31937				

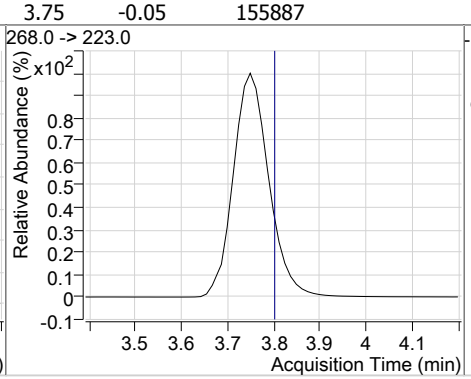


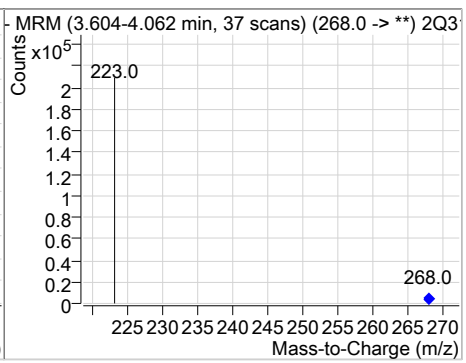




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.42	3.75	-0.05	155887				

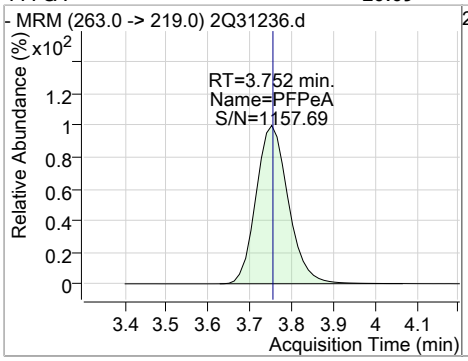


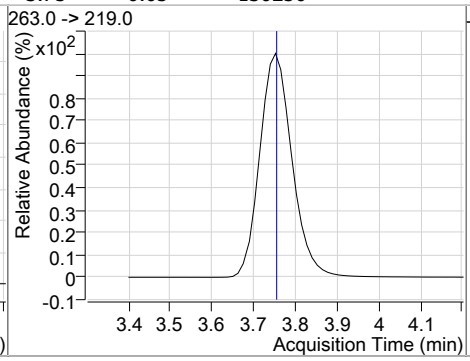


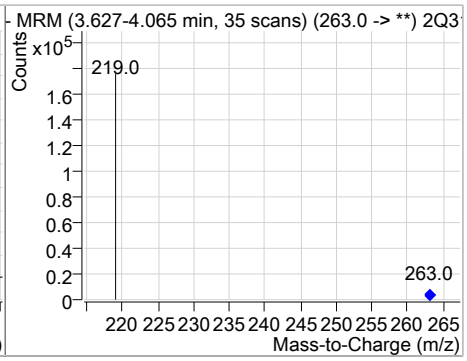


Perfluorinated Compounds by LC/MS/MS

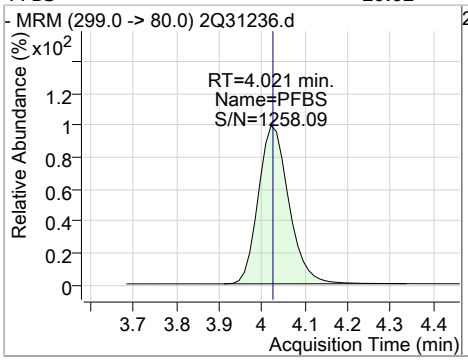
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.09	3.75	-0.05	130256				

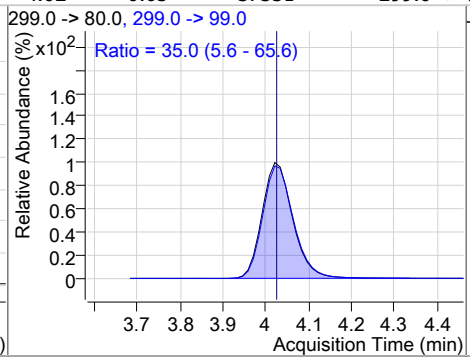


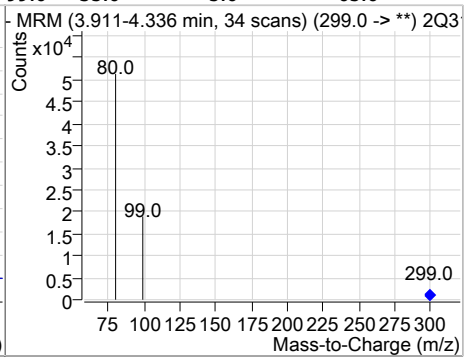




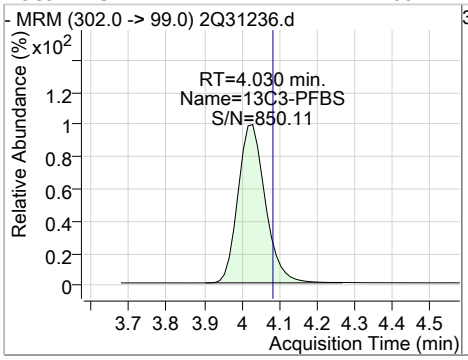
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.02	4.02	-0.05	37331	299.0 -> 99.0	35.0	5.6	65.6

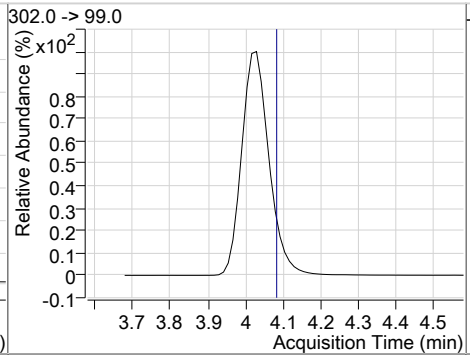


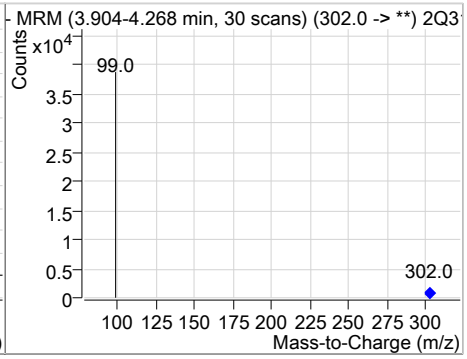




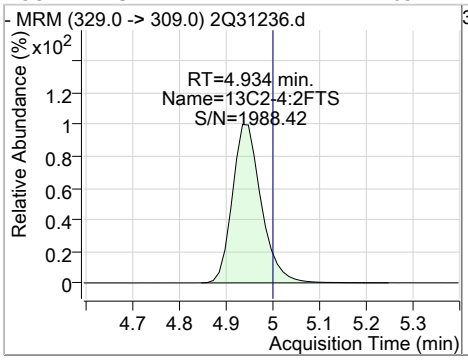
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.88	4.03	-0.05	27162				

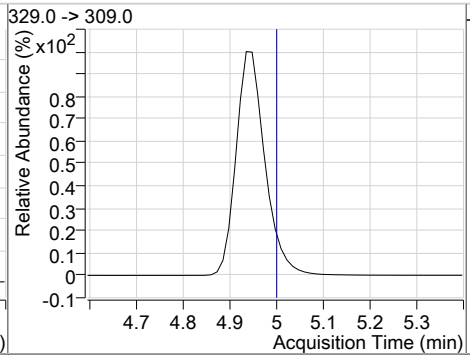


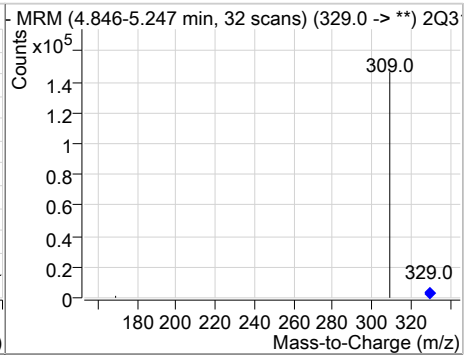




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.03	4.93	-0.06	106916				

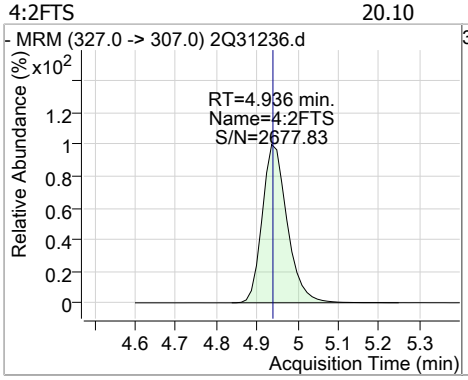


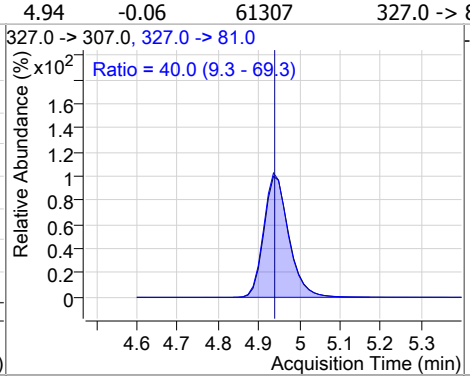


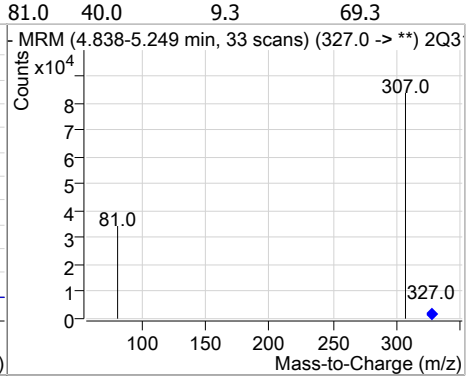


Perfluorinated Compounds by LC/MS/MS

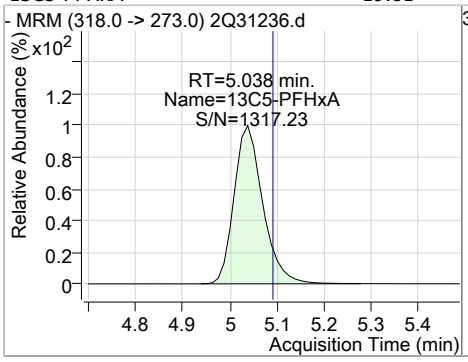
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.10	4.94	-0.06	61307	327.0 -> 81.0	40.0	9.3	69.3

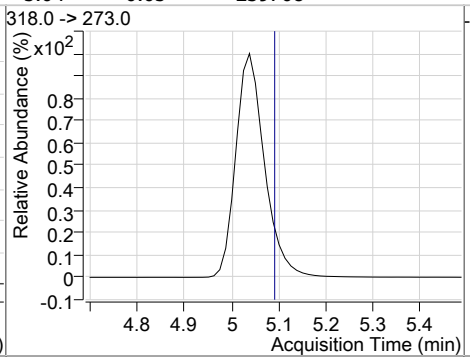


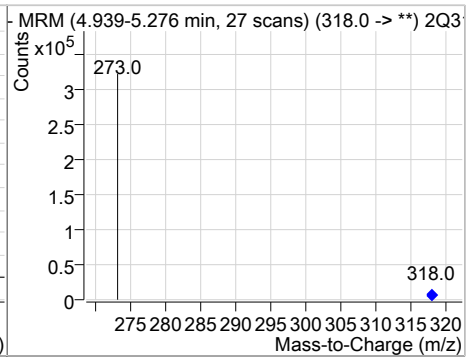




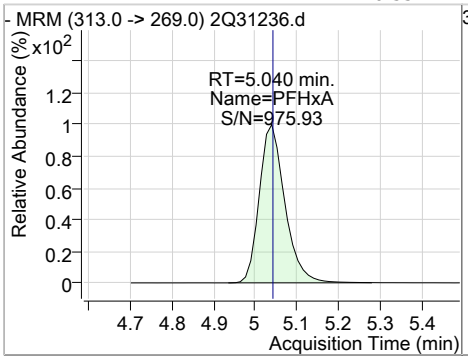
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.81	5.04	-0.05	239708				

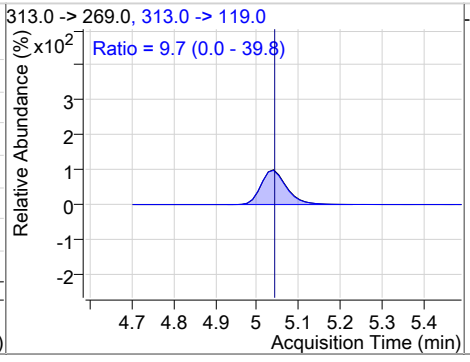


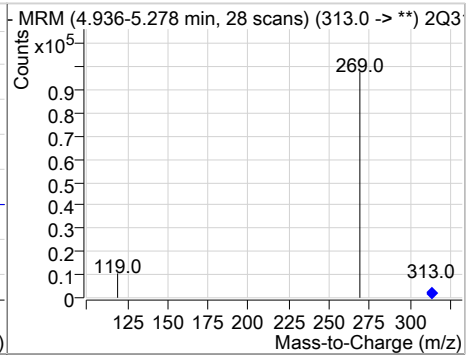




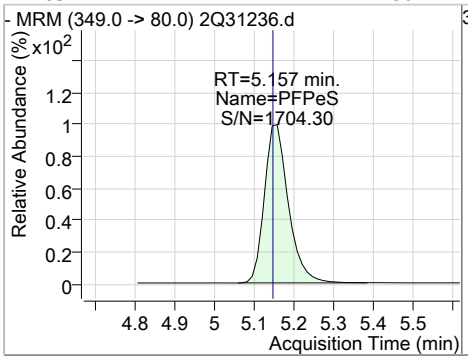
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.55	5.04	-0.05	72510	313.0 -> 119.0	9.7	0.0	39.8

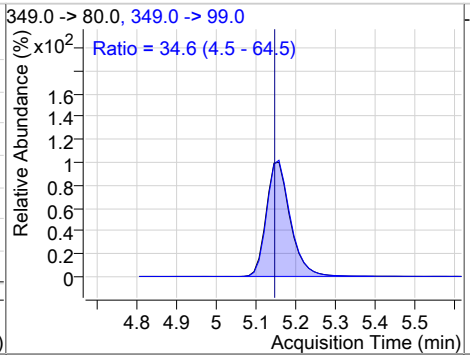


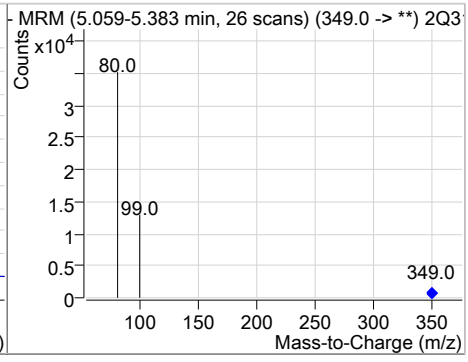




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.38	5.16	-0.05	25569	349.0 -> 99.0	34.6	4.5	64.5

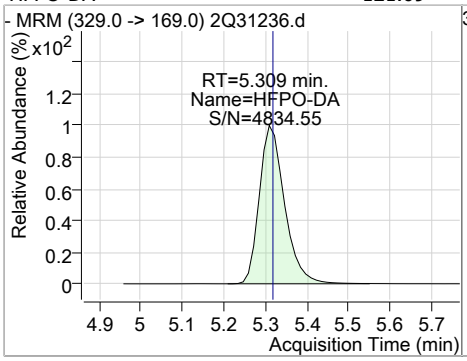


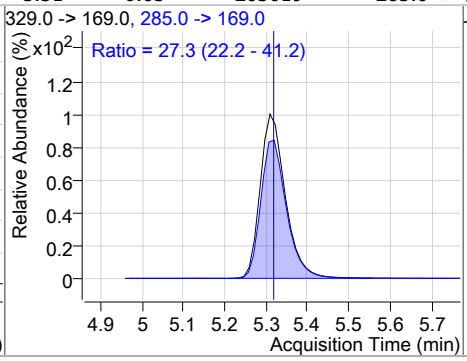


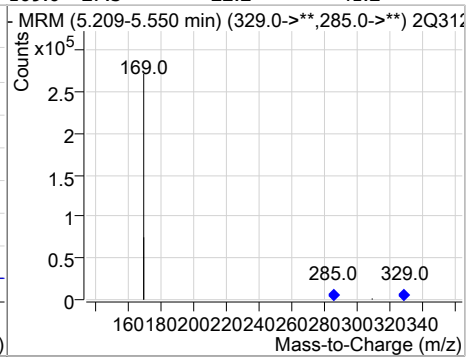


Perfluorinated Compounds by LC/MS/MS

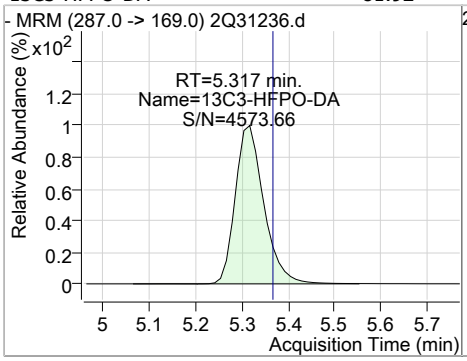
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	121.09	5.31	-0.05	203019	285.0 -> 169.0	27.3	22.2	41.2

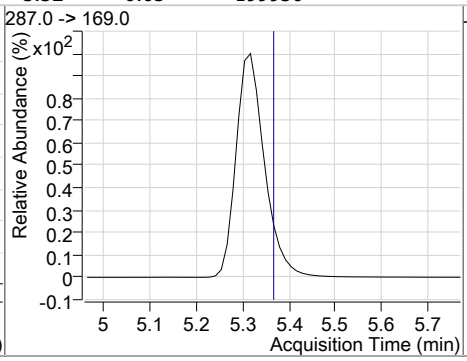


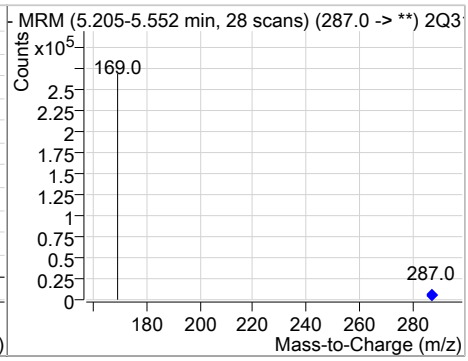




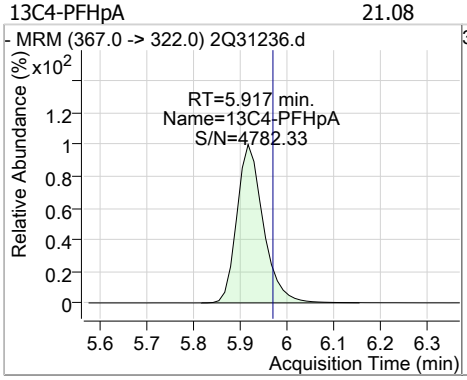
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	81.92	5.32	-0.05	199930				

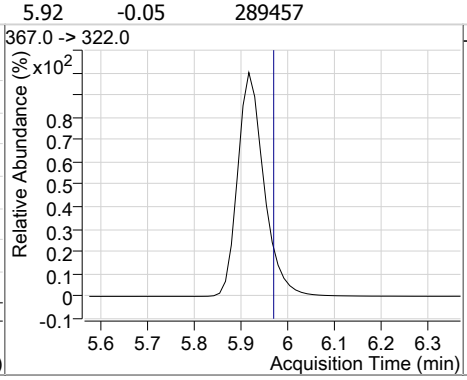


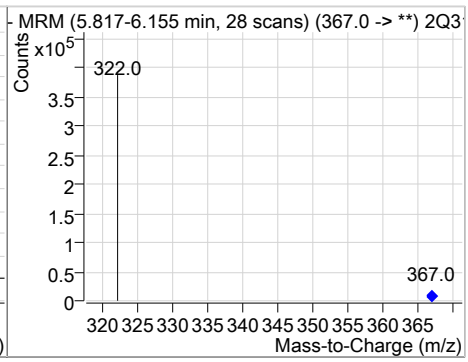




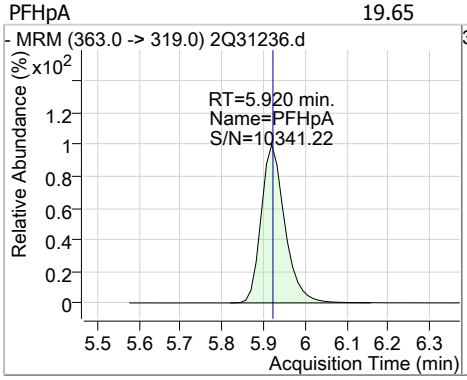
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.08	5.92	-0.05	289457				

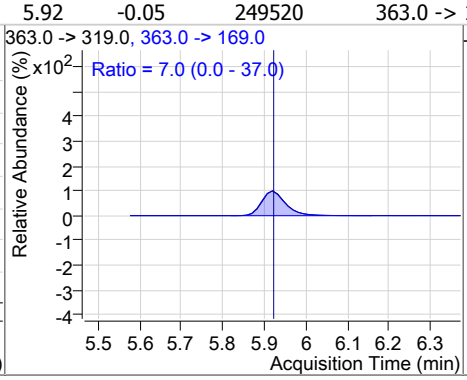


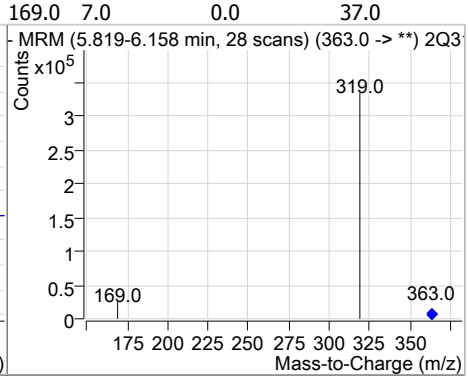




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.65	5.92	-0.05	249520	363.0 -> 169.0	7.0	0.0	37.0

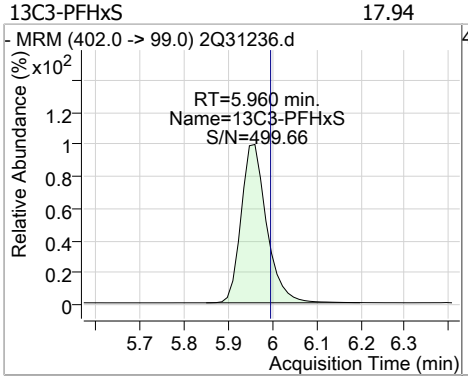


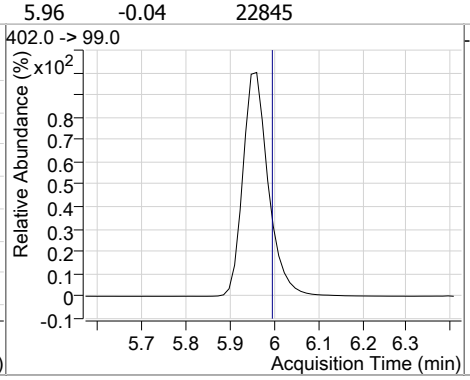


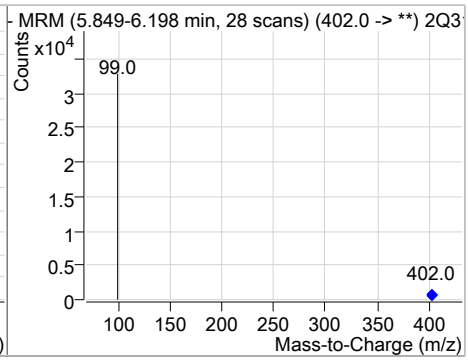


Perfluorinated Compounds by LC/MS/MS

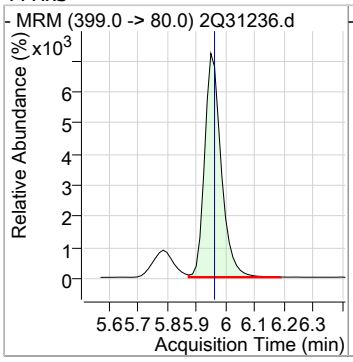
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.94	5.96	-0.04	22845				

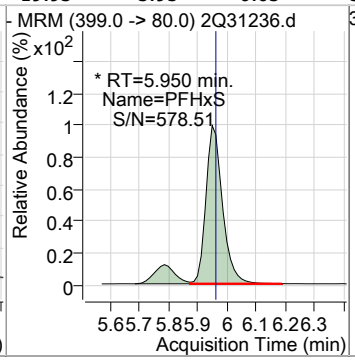


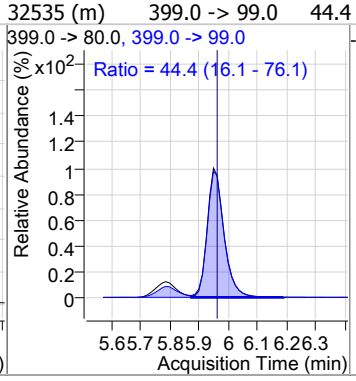


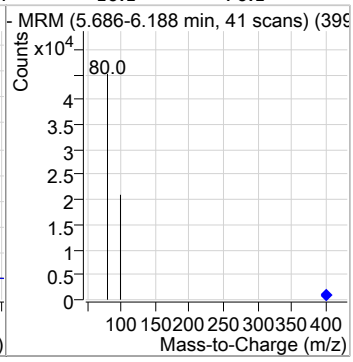


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.93	5.95	-0.05	32535 (m)	399.0 -> 99.0	44.4	16.1	76.1

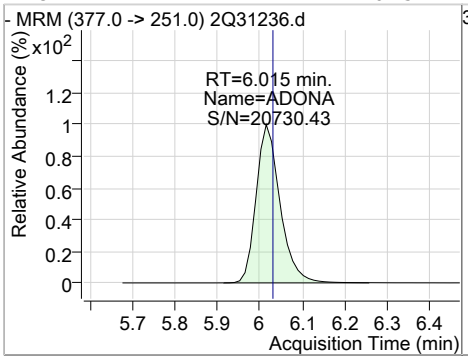


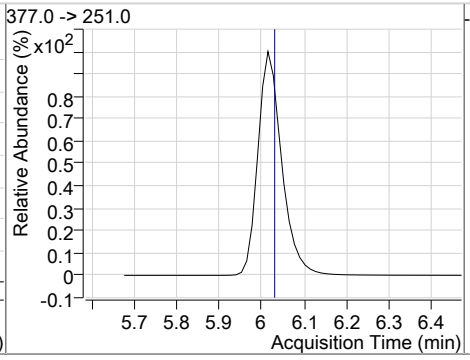


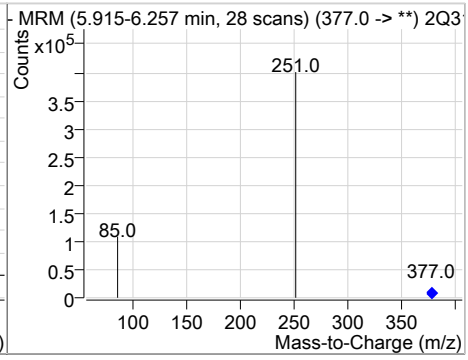




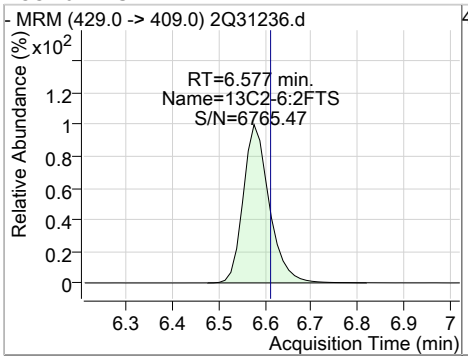
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.75	6.01	-0.05	300356				

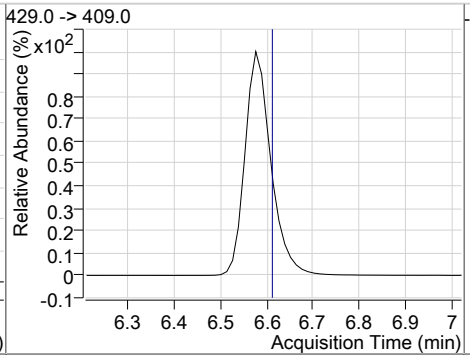


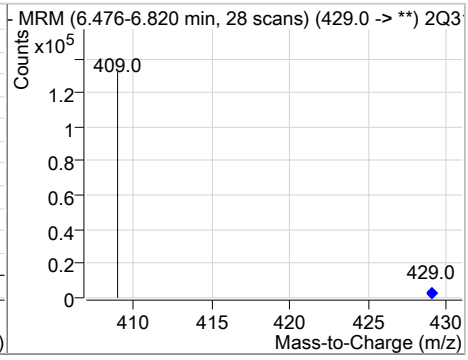




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.47	6.58	-0.04	97408				

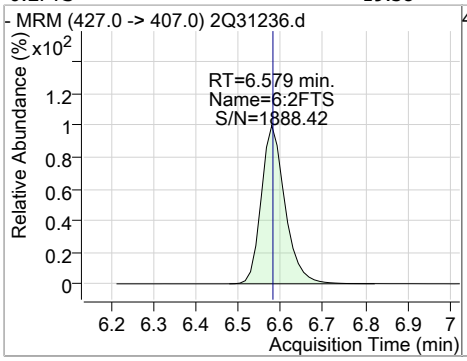


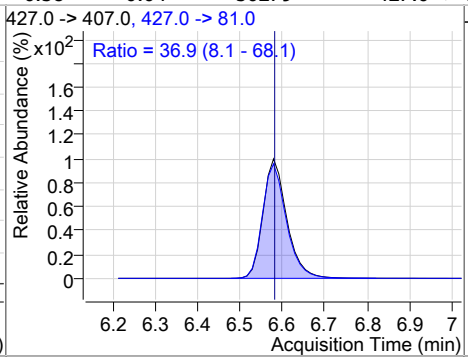


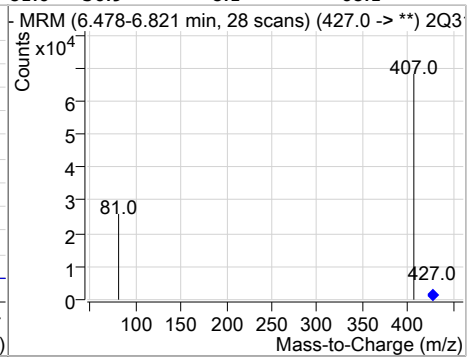


Perfluorinated Compounds by LC/MS/MS

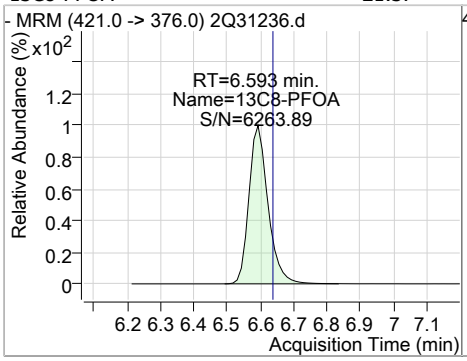
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.38	6.58	-0.04	50279	427.0 -> 81.0	36.9	8.1	68.1

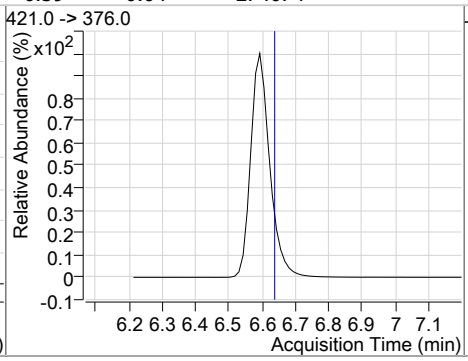


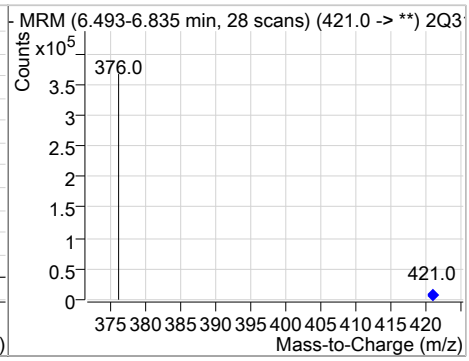




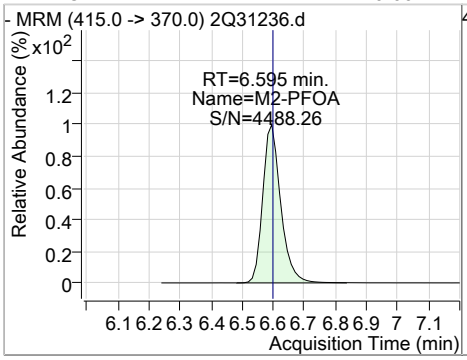
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.37	6.59	-0.04	274074				

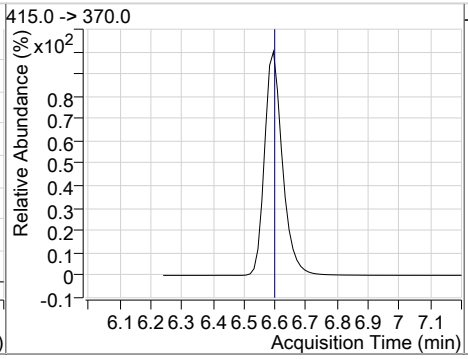


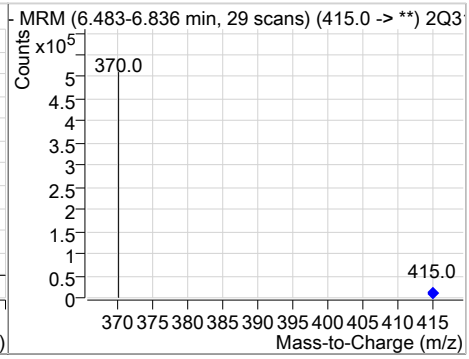




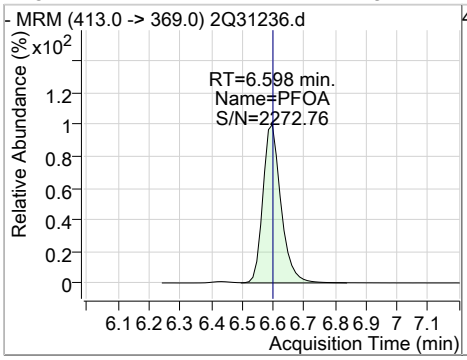
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.60	-0.04	382561				

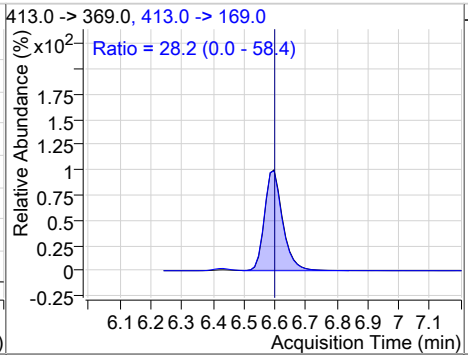


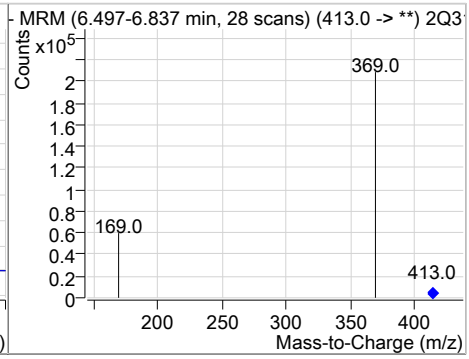




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.71	6.60	-0.04	155918	413.0 -> 169.0	28.2	0.0	58.4

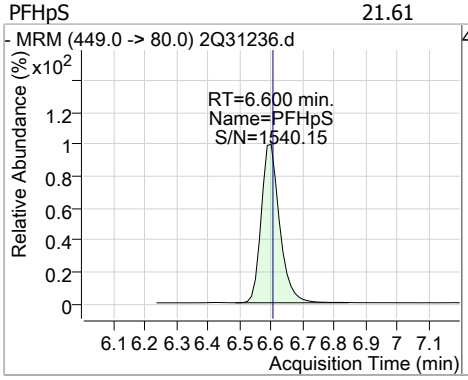


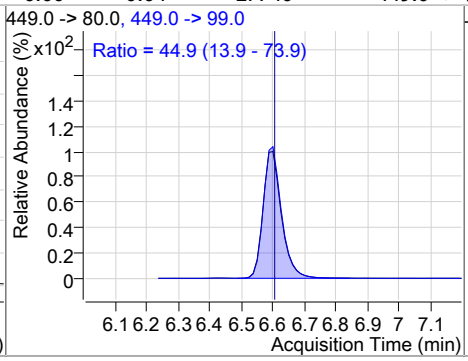


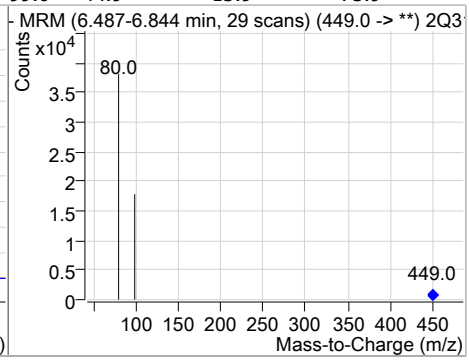


Perfluorinated Compounds by LC/MS/MS

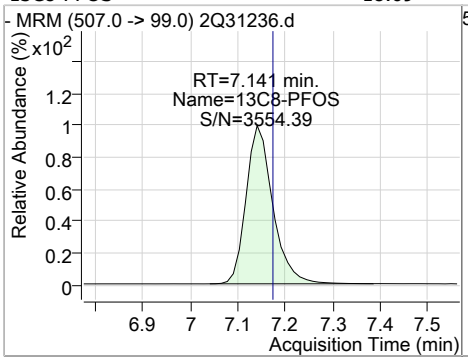
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.61	6.60	-0.04	27746	449.0 -> 99.0	44.9	13.9	73.9

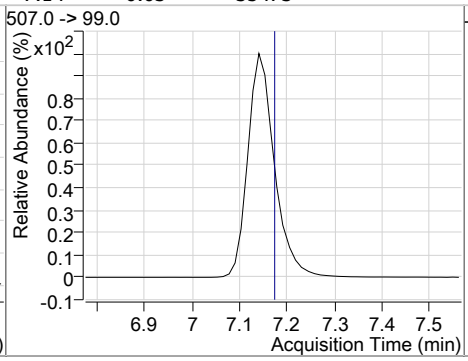


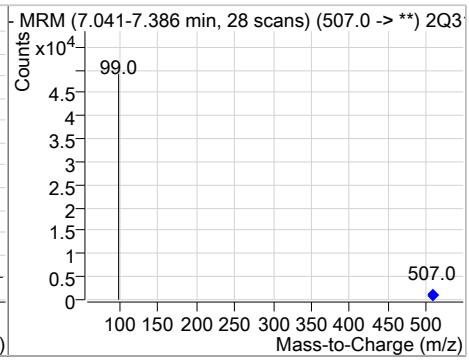




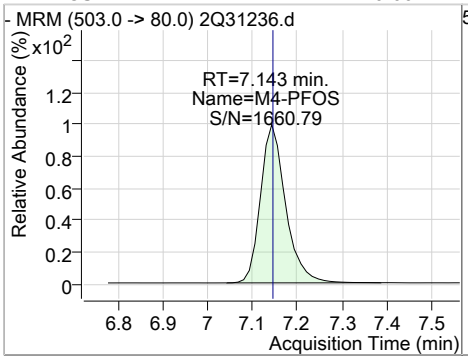
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.69	7.14	-0.03	35473				

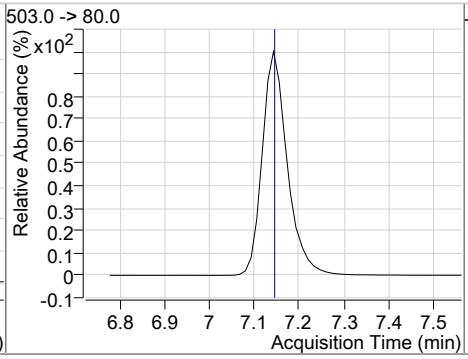


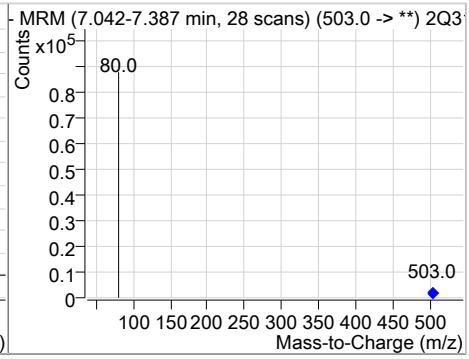




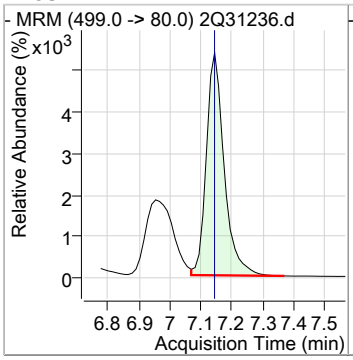
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.14	-0.03	64566				

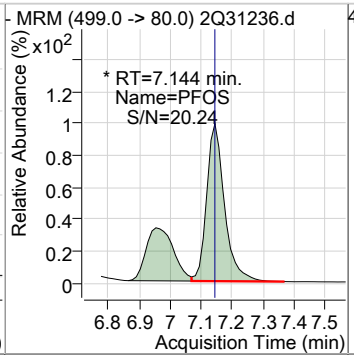


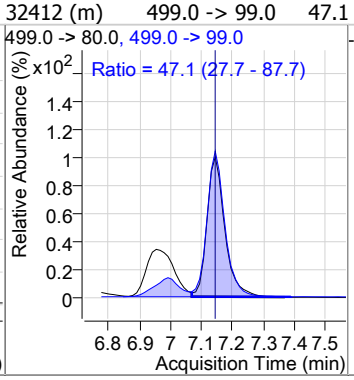


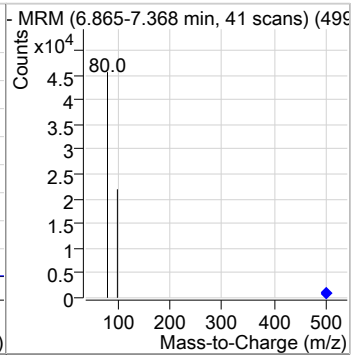


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.46	7.14	-0.03	32412 (m)	499.0 -> 99.0	47.1	27.7	87.7



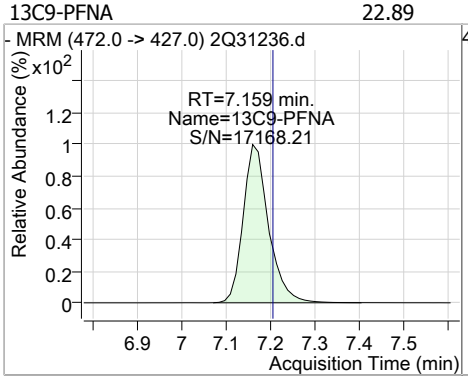


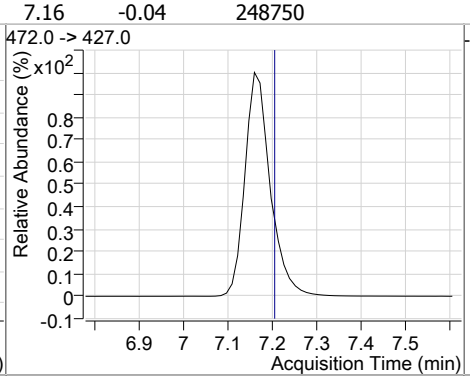


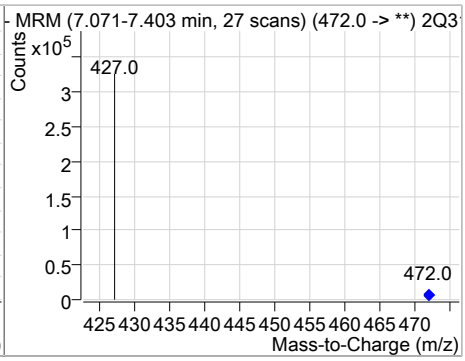


Perfluorinated Compounds by LC/MS/MS

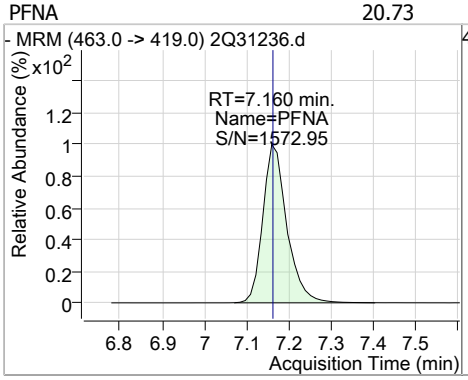
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.89	7.16	-0.04	248750				

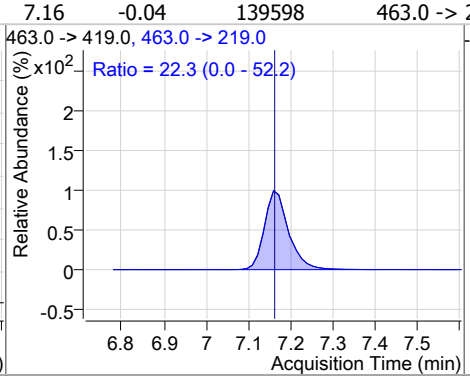


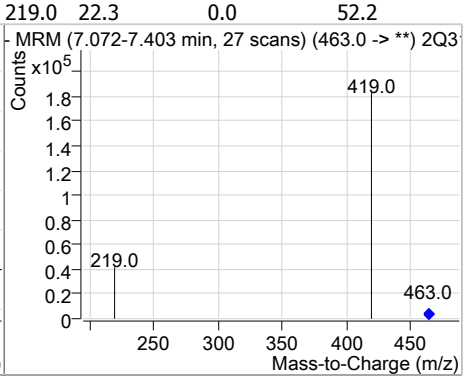




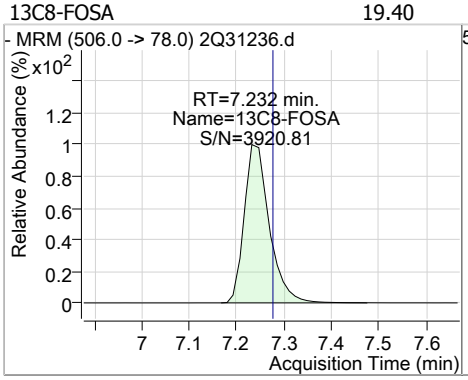
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.73	7.16	-0.04	139598	463.0 -> 219.0	22.3	0.0	52.2

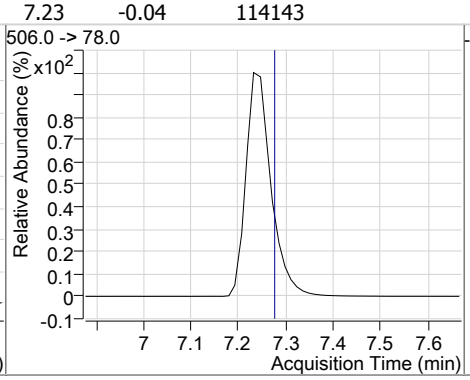


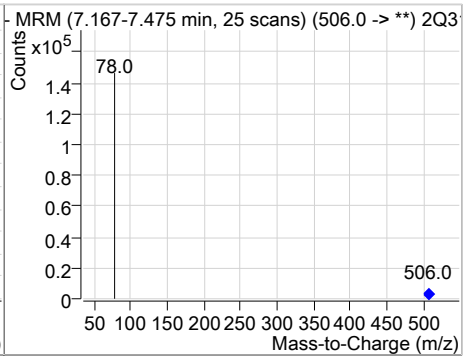




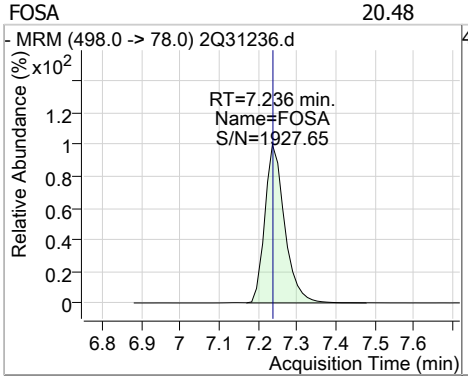
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.40	7.23	-0.04	114143				

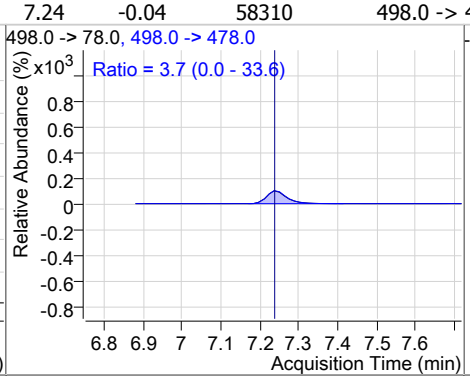


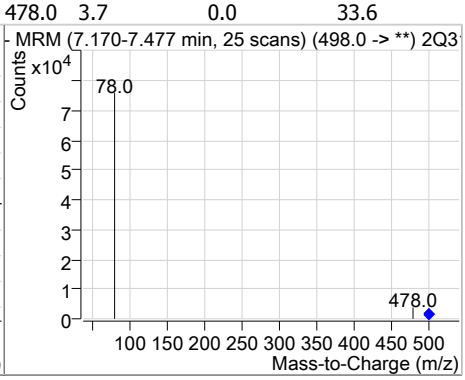




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.48	7.24	-0.04	58310	498.0 -> 478.0	3.7	0.0	33.6

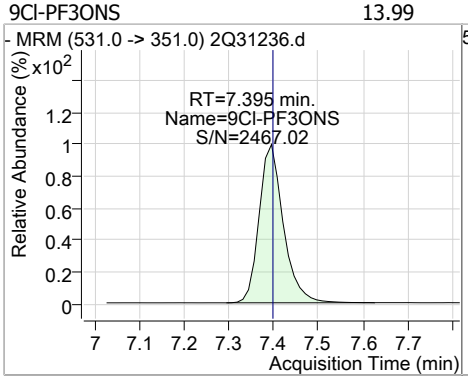


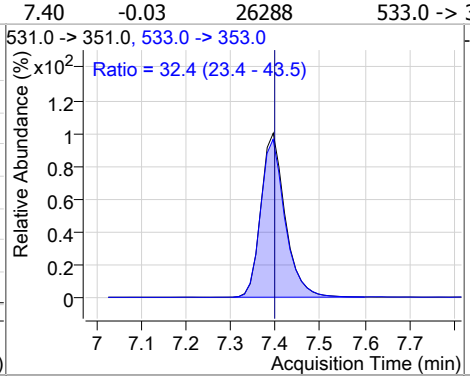


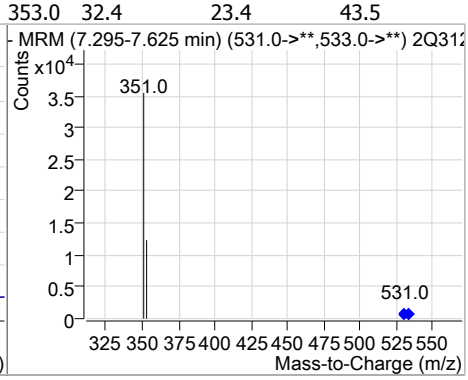


Perfluorinated Compounds by LC/MS/MS

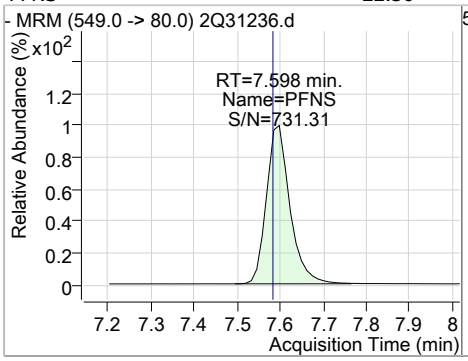
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	13.99	7.40	-0.03	26288	533.0 -> 353.0	32.4	23.4	43.5

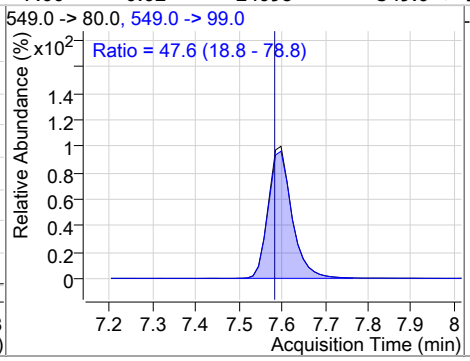


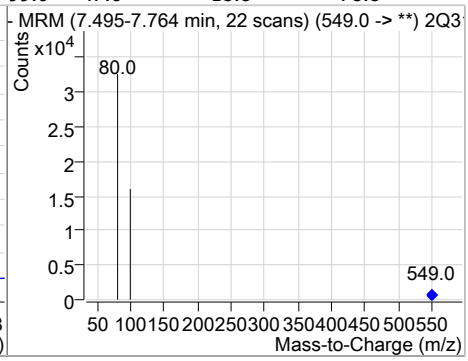




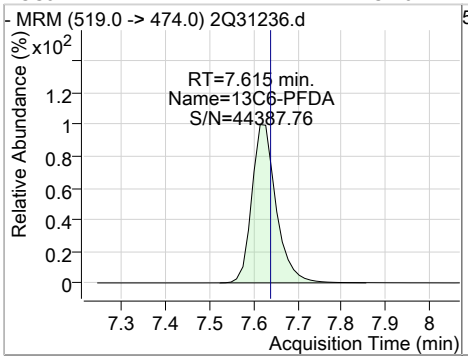
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.36	7.60	-0.02	24698	549.0 -> 99.0	47.6	18.8	78.8

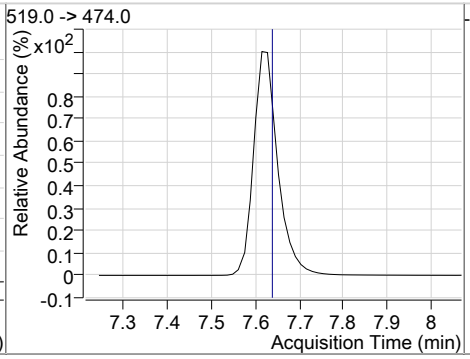


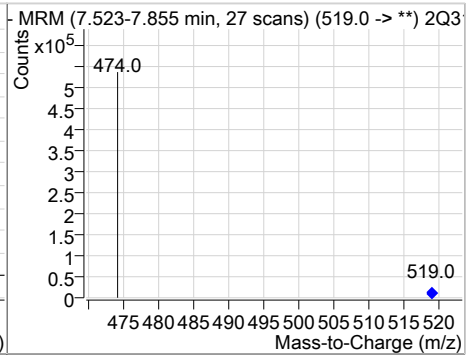




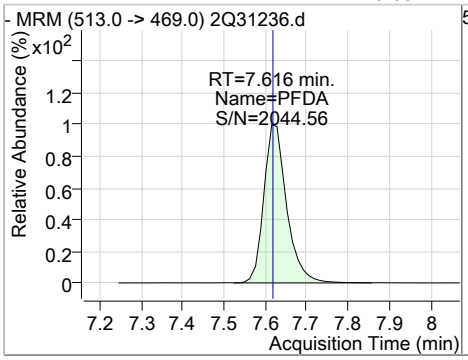
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.70	7.61	-0.03	413525				

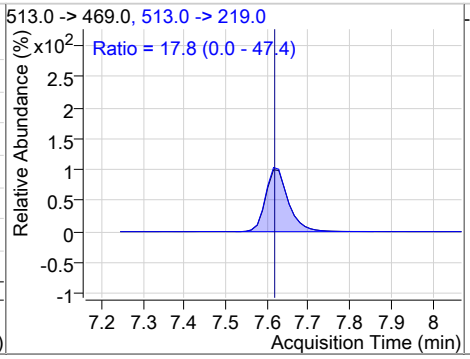


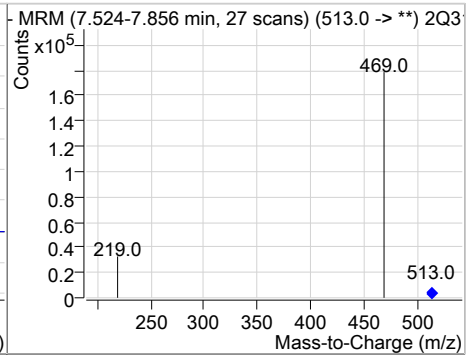




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.05	7.62	-0.03	136941	513.0 -> 219.0	17.8	0.0	47.4

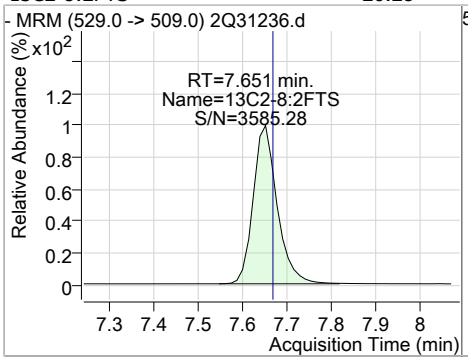


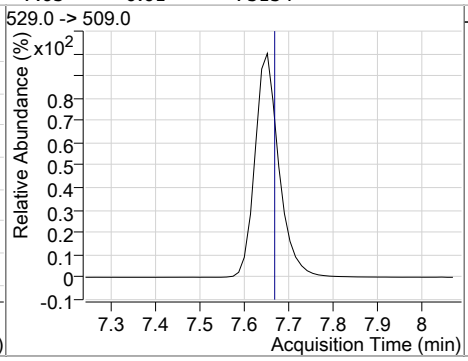


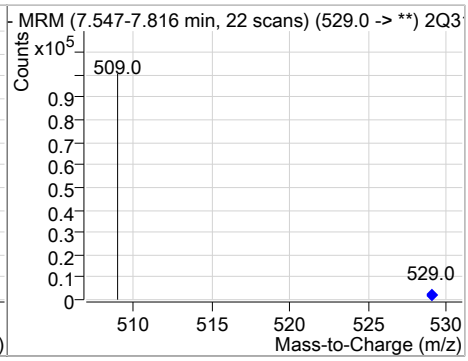


Perfluorinated Compounds by LC/MS/MS

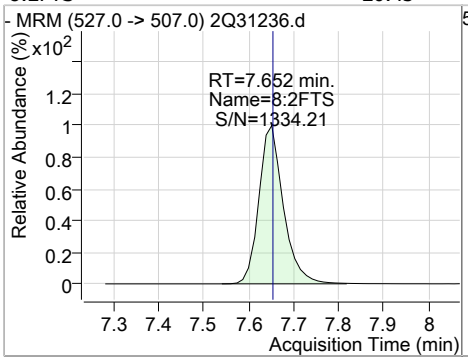
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	26.28	7.65	-0.01	75154				

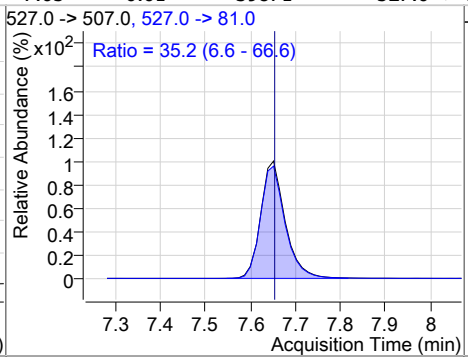


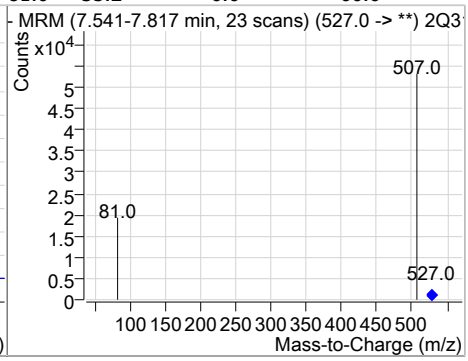




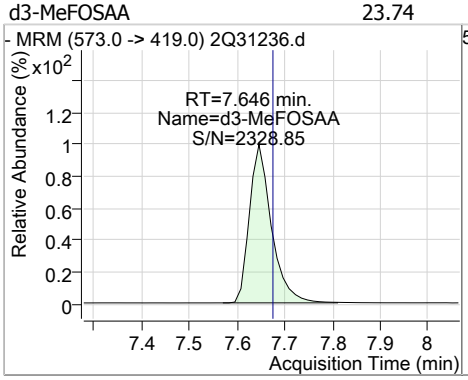
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.43	7.65	-0.01	39871	527.0 -> 81.0	35.2	6.6	66.6

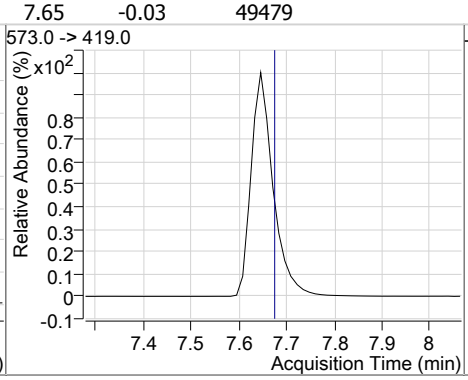


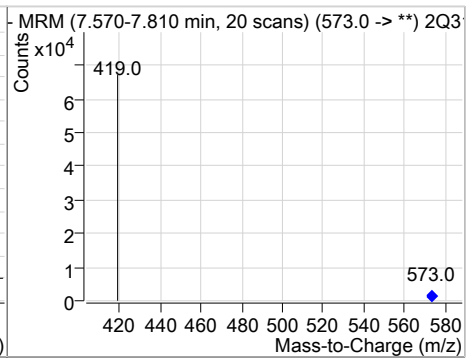




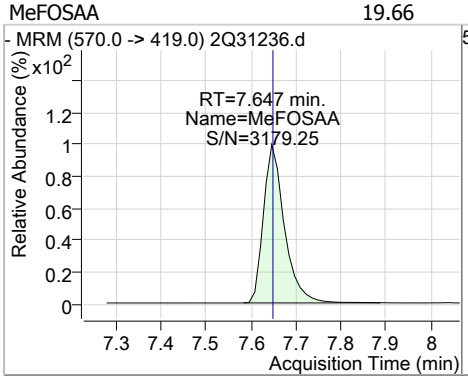
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.74	7.65	-0.03	49479				

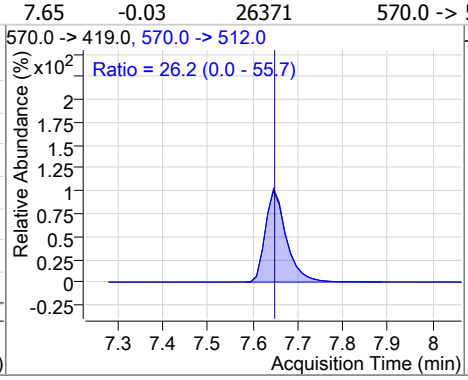


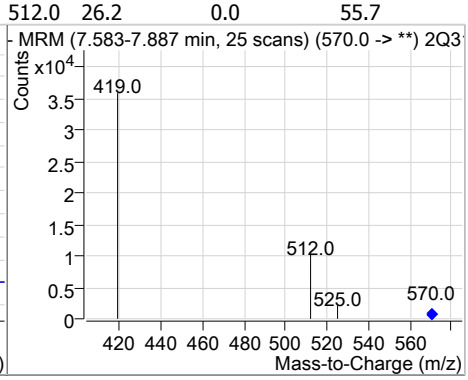




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.66	7.65	-0.03	26371	570.0 -> 512.0	26.2	0.0	55.7

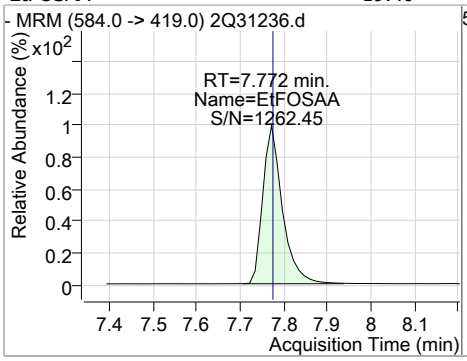


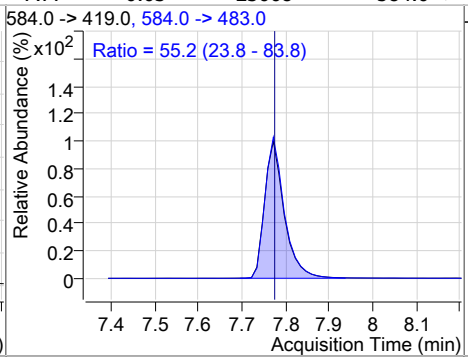


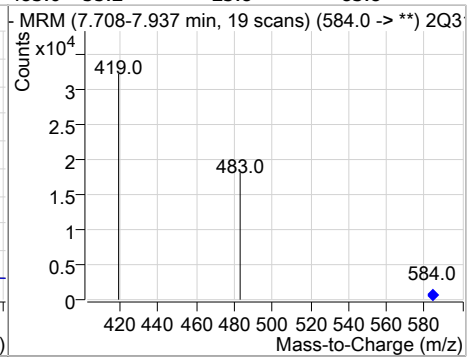


Perfluorinated Compounds by LC/MS/MS

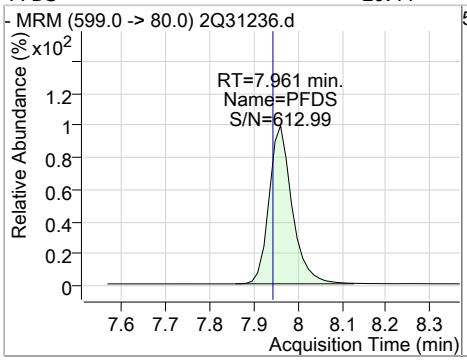
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.40	7.77	-0.03	23668	584.0 -> 483.0	55.2	23.8	83.8

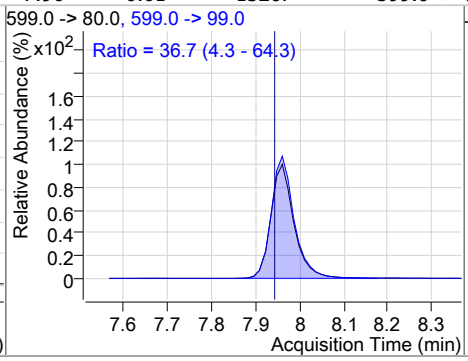


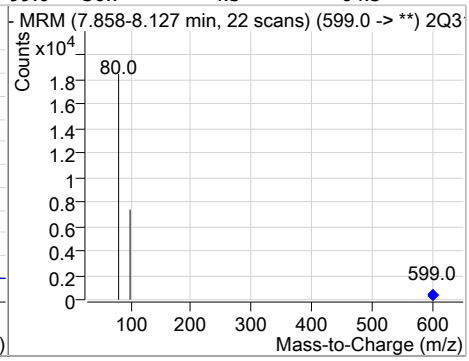




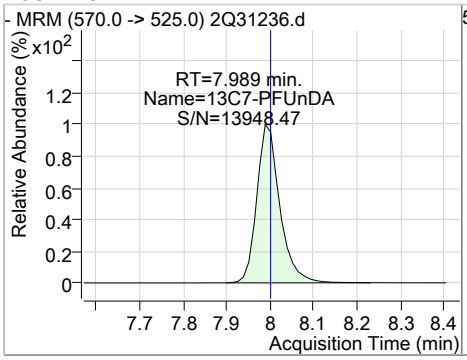
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.44	7.96	-0.01	13267	599.0 -> 99.0	36.7	4.3	64.3

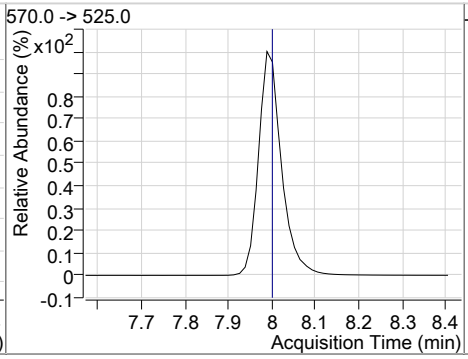


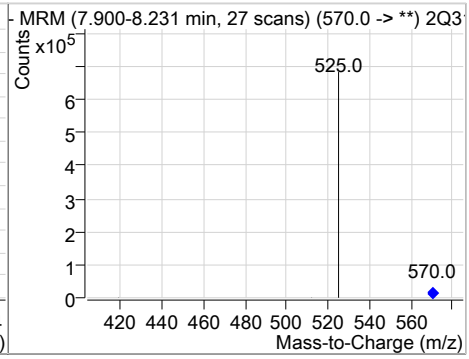




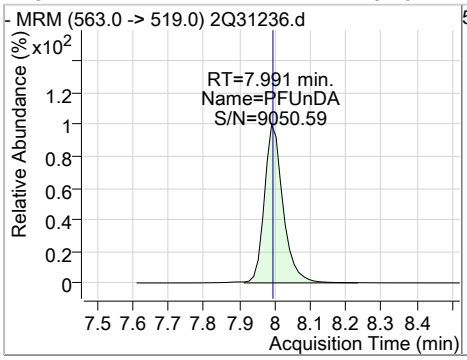
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	24.41	7.99	-0.02	516505				

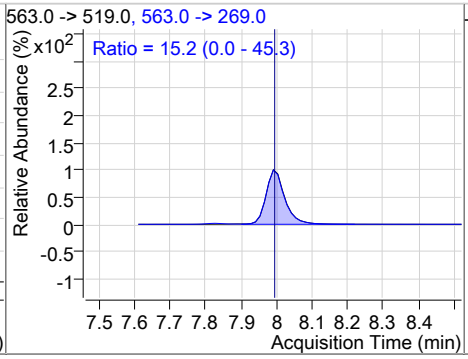


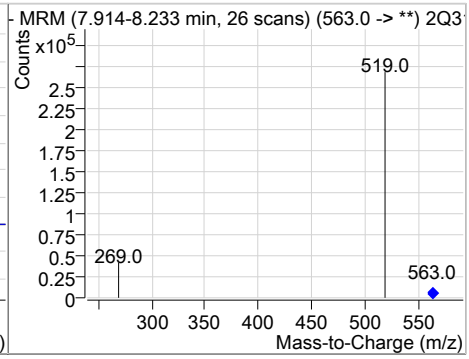




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.75	7.99	-0.02	202161	563.0 -> 269.0	15.2	0.0	45.3

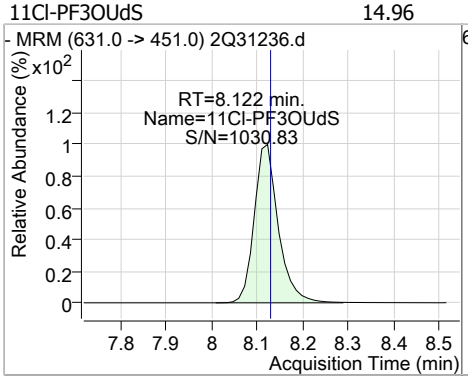


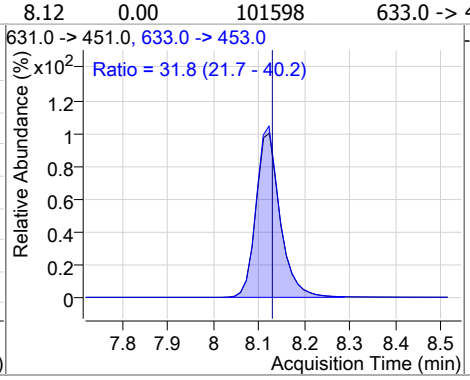


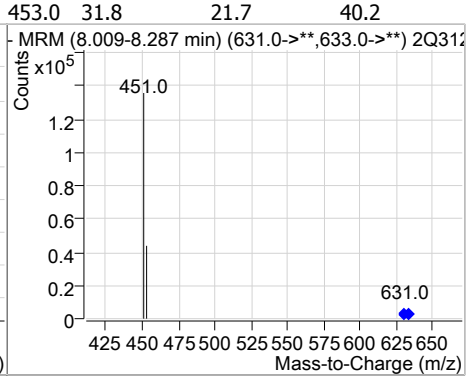


Perfluorinated Compounds by LC/MS/MS

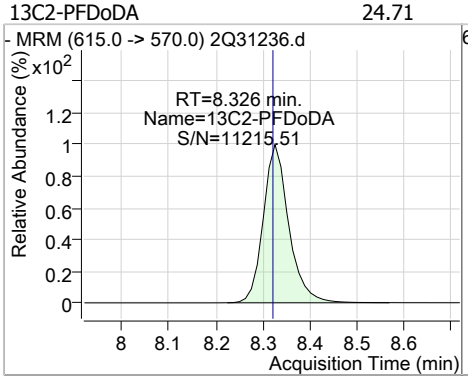
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	14.96	8.12	0.00	101598	633.0 -> 453.0	31.8	21.7	40.2

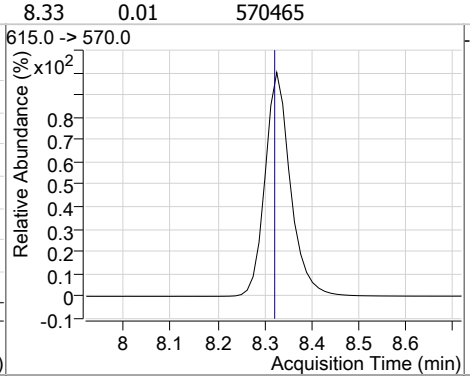


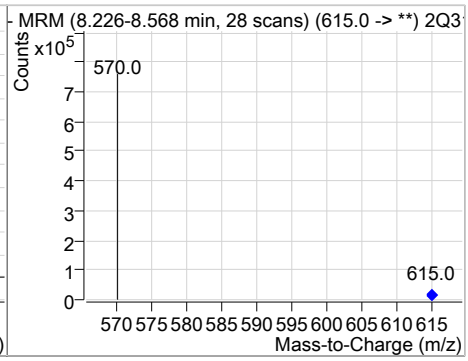




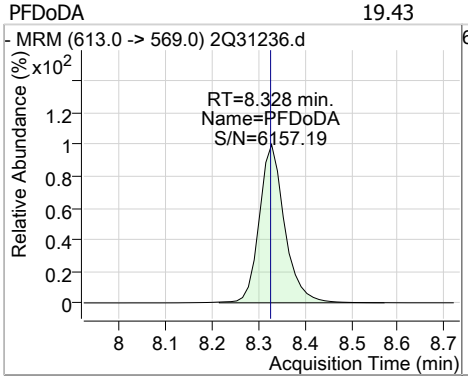
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.71	8.33	0.01	570465				

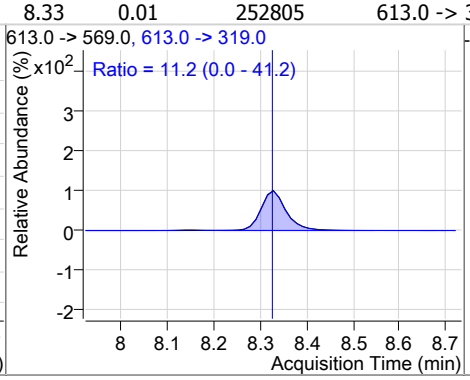


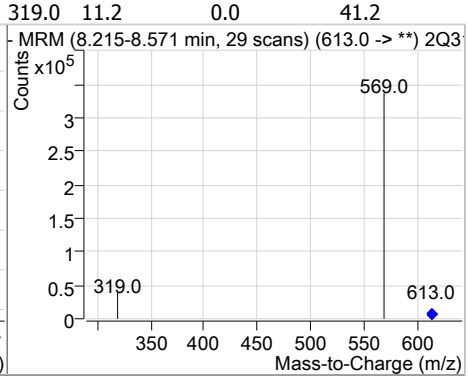




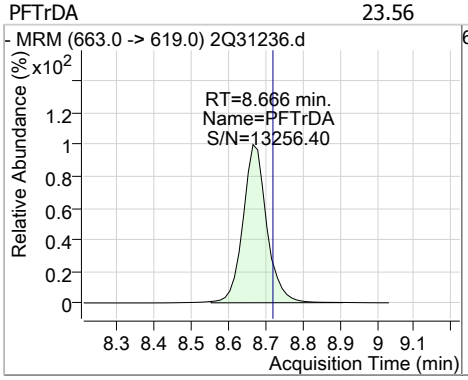
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.43	8.33	0.01	252805	613.0 -> 319.0	11.2	0.0	41.2

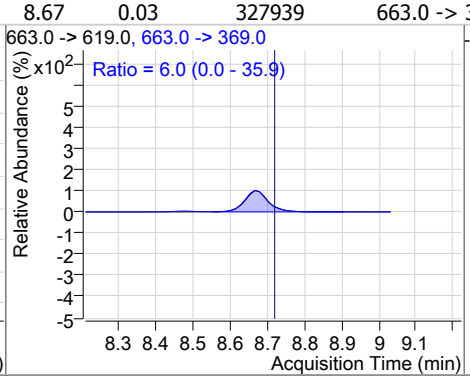


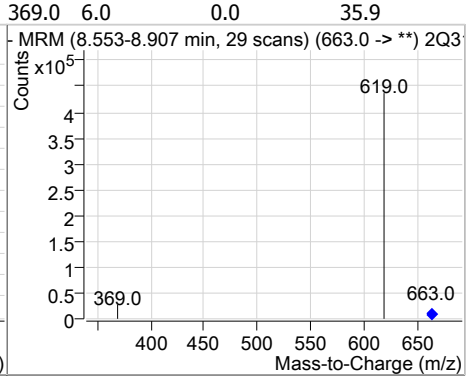




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.56	8.67	0.03	327939	663.0 -> 369.0	6.0	0.0	35.9

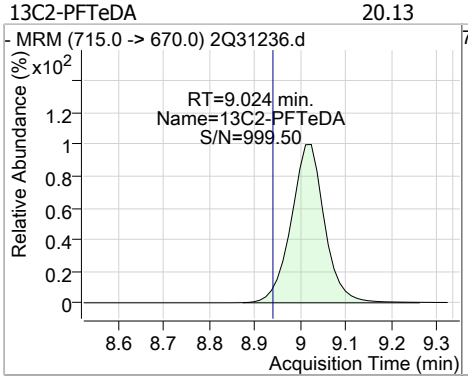


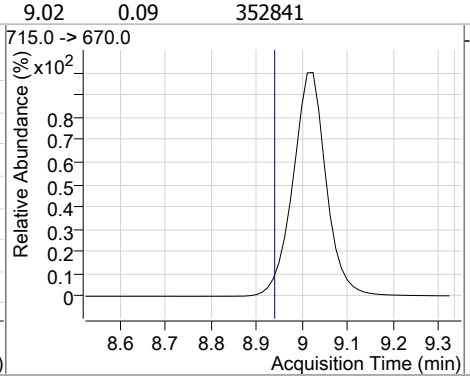


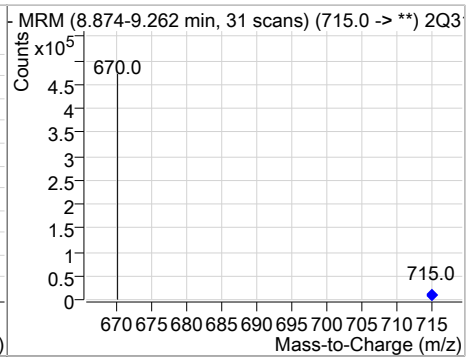


Perfluorinated Compounds by LC/MS/MS

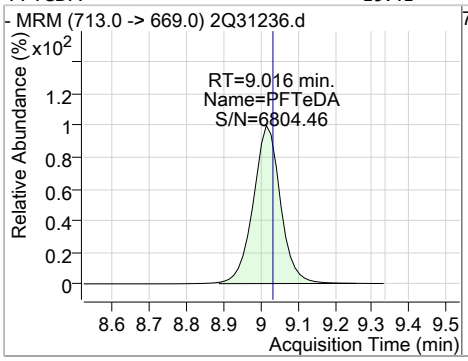
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.13	9.02	0.09	352841				

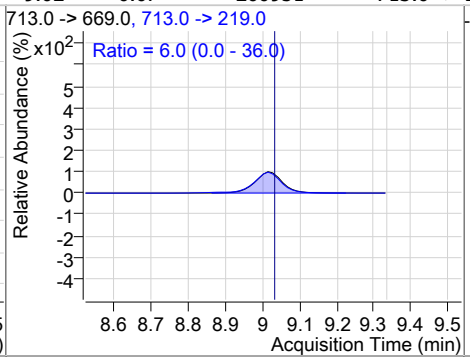


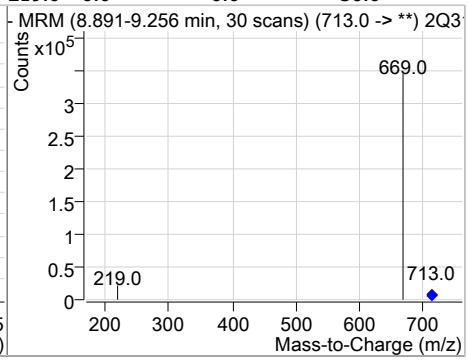




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.41	9.02	0.07	260951	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q499-CC498
Lab FileID: 2Q31236.D
Injection Time: 06/24/19 00:08
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/24/19 13:24 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.95	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.14	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/24/19 14:09

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31243.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/24/2019 1:52:29 AM
Sample Name : ecc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : S2Q499.batch.bin
Sample Information : op75546,S2Q499,250,,,1,1,water

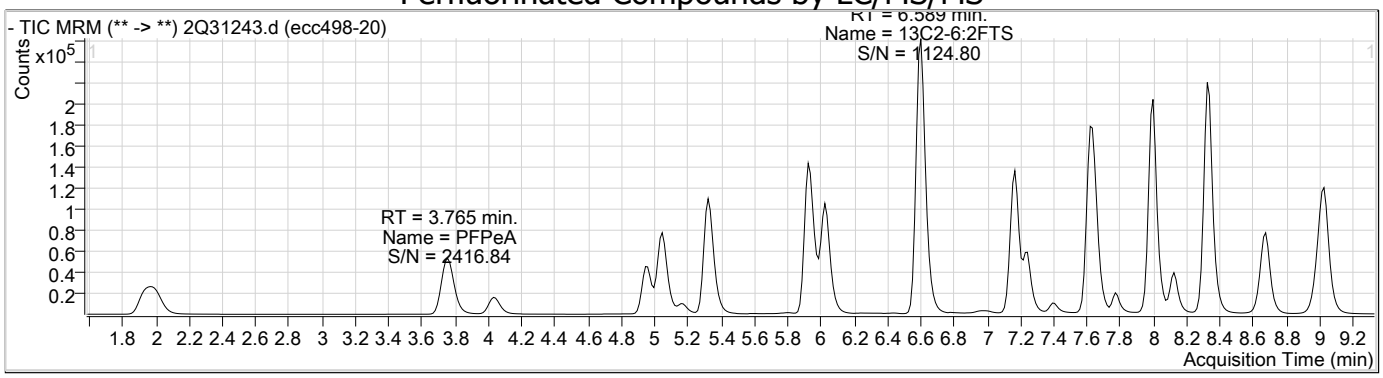
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.608	415.0 -> 370.0	382478	20.00	µg/L	-0.028
13C4-PFOS	7.156	503.0 -> 80.0	65296	20.00	µg/L	-0.018
M4-PFBA	1.965	217.0 -> 172.0	189087	20.00	µg/L	-0.025
M5-PFPeA	3.761	268.0 -> 223.0	155128	20.00	µg/L	-0.038
M5-PFHxA	5.050	318.0 -> 273.0	239612	20.00	µg/L	-0.038
M4-PFHpA	5.930	367.0 -> 322.0	287935	20.00	µg/L	-0.038
M8-PFOA	6.606	421.0 -> 376.0	274427	20.00	µg/L	-0.029
M9-PFNA	7.171	472.0 -> 427.0	246369	20.00	µg/L	-0.030
M6-PFDA	7.627	519.0 -> 474.0	404782	20.00	µg/L	-0.014
M7-PFUnDA	8.001	570.0 -> 525.0	507200	20.00	µg/L	-0.002
M2-PFDoDA	8.326	615.0 -> 570.0	561571	20.00	µg/L	0.007
M2-PFTeDA	9.024	715.0 -> 670.0	342503	20.00	µg/L	0.087
M8-FOSA	7.247	506.0 -> 78.0	115288	20.00	µg/L	-0.027
M3-PFBS	4.030	302.0 -> 99.0	27356	20.00	µg/L	-0.051
M3-PFHxS	5.972	402.0 -> 99.0	22879	20.00	µg/L	-0.026
M8-PFOS	7.154	507.0 -> 99.0	35591	20.00	µg/L	-0.018
M2-4:2FTS	4.958	329.0 -> 309.0	107330	20.00	µg/L	-0.038
M2-6:2FTS	6.589	429.0 -> 409.0	96757	20.00	µg/L	-0.026
M2-8:2FTS	7.651	529.0 -> 509.0	74216	20.00	µg/L	-0.014
M3-MeFOSAA	7.646	573.0 -> 419.0	48248	20.00	µg/L	-0.027
M3-HFPO-DA	5.330	287.0 -> 169.0	202313	100.00	µg/L	-0.035
System Monitoring Compounds						
13C2-4:2FTS	4.958	329.0 -> 309.0	107369	22.13	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C2-6:2FTS	6.589	429.0 -> 409.0	96677	24.28	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C2-8:2FTS	7.651	529.0 -> 509.0	74193	25.94	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.7%		
13C2-PFDoDA	8.326	615.0 -> 570.0	562745	24.38	µg/L	0.007
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.9%		
13C2-PFTeDA	9.024	715.0 -> 670.0	342591	19.55	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C3-PFBS	4.030	302.0 -> 99.0	27346	18.00	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C3-PFHxS	5.972	402.0 -> 99.0	22863	17.96	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C4-PFBA	1.965	217.0 -> 172.0	188381	18.22	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C4-PFHpA	5.930	367.0 -> 322.0	287654	20.95	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C5-PFHxA	5.050	318.0 -> 273.0	239278	19.77	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFPeA	3.761	268.0 -> 223.0	154786	19.28	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C6-PFDA	7.627	519.0 -> 474.0	404403	23.18	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

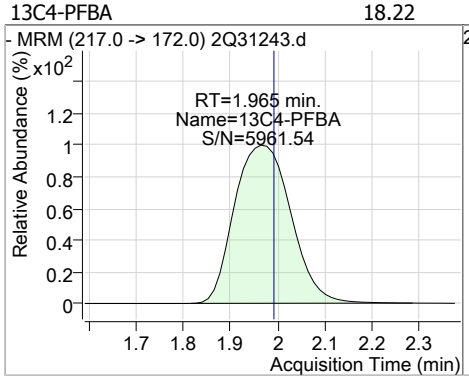
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.9%		
13C7-PFUnDA	8.001	570.0 -> 525.0	506730	23.95 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.8%		
13C8-FOSA	7.247	506.0 -> 78.0	115192	19.58 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C8-PFOA	6.606	421.0 -> 376.0	274402	21.39 µg/L		-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C8-PFOS	7.154	507.0 -> 99.0	35543	18.72 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C9-PFNA	7.171	472.0 -> 427.0	246330	22.67 µg/L		-0.030
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.3%		
d3-MeFOSAA	7.646	573.0 -> 419.0	48284	23.16 µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.8%		
M2-PFOA	6.608	415.0 -> 370.0	382563	20.00 µg/L		-0.028
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
M4-PFOS	7.156	503.0 -> 80.0	65289	20.00 µg/L		-0.018
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.330	287.0 -> 169.0	202313	82.90 µg/L		-0.035
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
Target Compounds						**QValue**
4:2FTS	4.949	327.0 -> 307.0	61667	20.16 µg/L		99
6:2FTS	6.591	427.0 -> 407.0	49980	19.41 µg/L		100
8:2FTS	7.652	527.0 -> 507.0	39392	20.46 µg/L		97
EtFOSAA	7.772	584.0 -> 419.0	23153	19.47 µg/L		99
FOSA	7.250	498.0 -> 78.0	58174	20.24 µg/L		99
MeFOSAA	7.659	570.0 -> 419.0	25915	19.82 µg/L		99
PFBA	1.973	213.0 -> 169.0	31707	19.60 µg/L		100
PFBS	4.033	299.0 -> 80.0	37010	19.71 µg/L		100
PFDA	7.628	513.0 -> 469.0	134087	20.07 µg/L		99
PFDoDA	8.328	613.0 -> 569.0	250081	19.57 µg/L		100
PFDS	7.961	599.0 -> 80.0	13679	21.02 µg/L		100
PFHpA	5.932	363.0 -> 319.0	252251	19.96 µg/L		100
PFHpS	6.612	449.0 -> 80.0	27942	21.75 µg/L		99
PFHxA	5.052	313.0 -> 269.0	72026	20.44 µg/L		99
PFHxS	5.962	399.0 -> 80.0	32689	20.01 µg/L	m	97
PFNA	7.172	463.0 -> 419.0	137860	20.69 µg/L		100
PFNS	7.598	549.0 -> 80.0	23714	21.41 µg/L		99
PFOA	6.610	413.0 -> 369.0	154491	19.51 µg/L		99
PFOS	7.157	499.0 -> 80.0	32730	18.59 µg/L	m	84
PFPeA	3.765	263.0 -> 219.0	129951	20.12 µg/L		100
PFPeS	5.170	349.0 -> 80.0	25204	20.93 µg/L		98
PFTeDA	9.028	713.0 -> 669.0	254728	19.51 µg/L		99
PFTrDA	8.678	663.0 -> 619.0	324225	23.98 µg/L		100
PFUnDA	8.003	563.0 -> 519.0	198126	19.73 µg/L		100
11Cl-PF3OUdS	8.122	631.0 -> 451.0	102138	15.31 µg/L		100
9Cl-PF3ONS	7.395	531.0 -> 351.0	26146	14.23 µg/L		95
ADONA	6.027	377.0 -> 251.0	304085	16.94 µg/L		100
HFPO-DA	5.322	329.0 -> 169.0	205311	121.01 µg/L		92

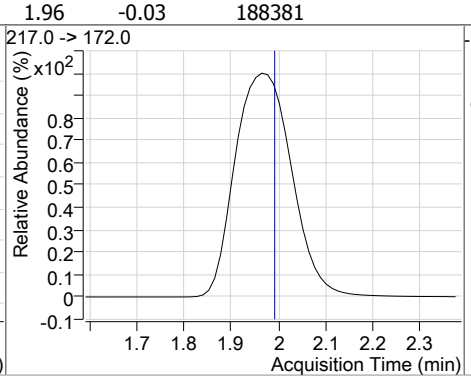
= Qualifier out of range, m = manually integrated, + = Area summed

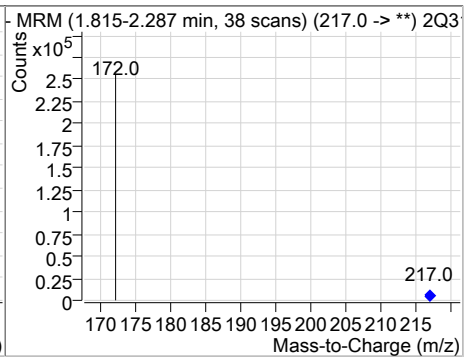
Perfluorinated Compounds by LC/MS/MS



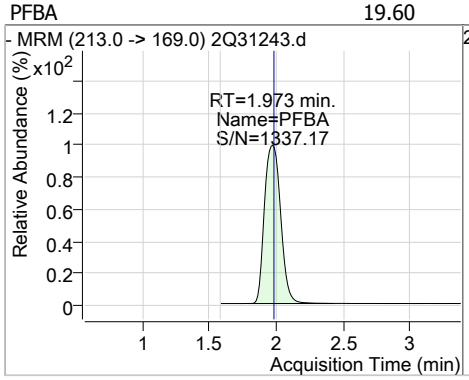
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.22	1.96	-0.03	188381				

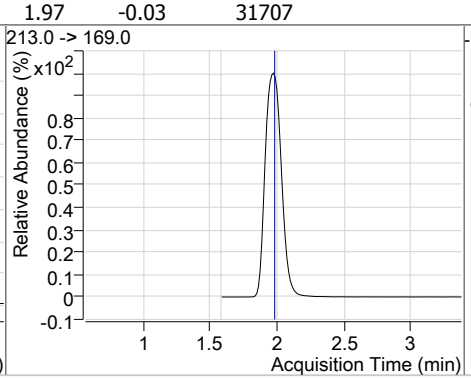


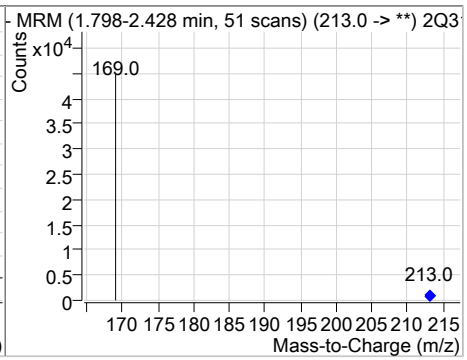




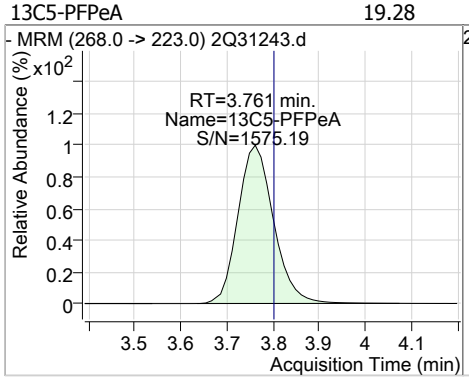
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.60	1.97	-0.03	31707				

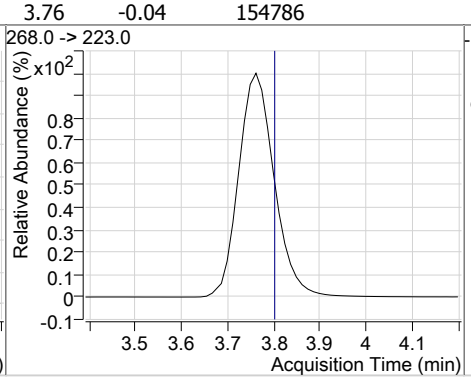


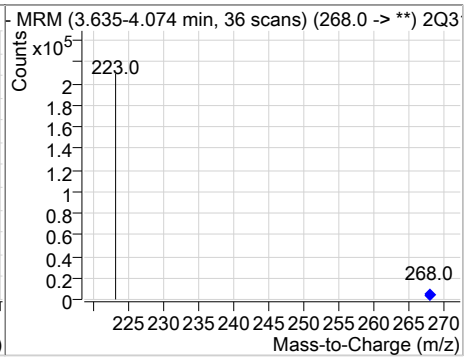




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.28	3.76	-0.04	154786				

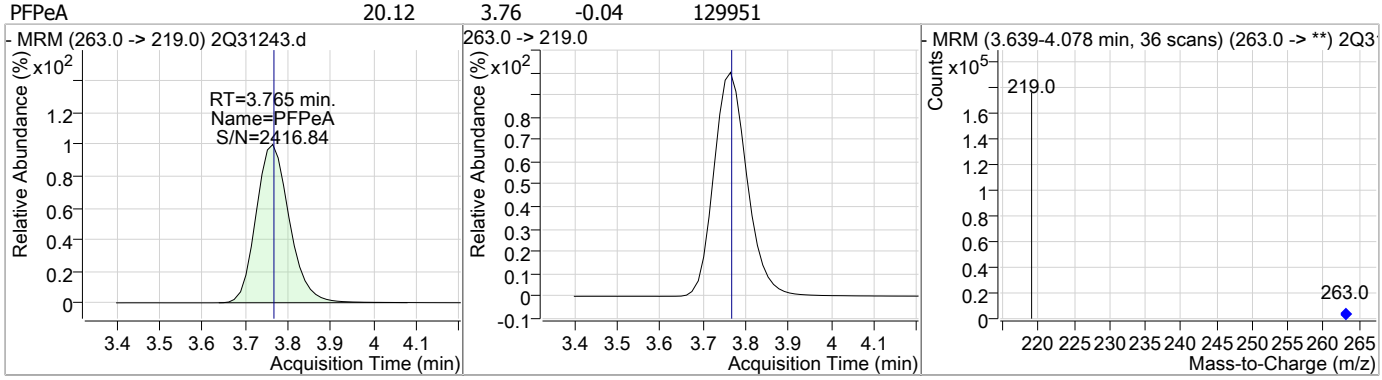




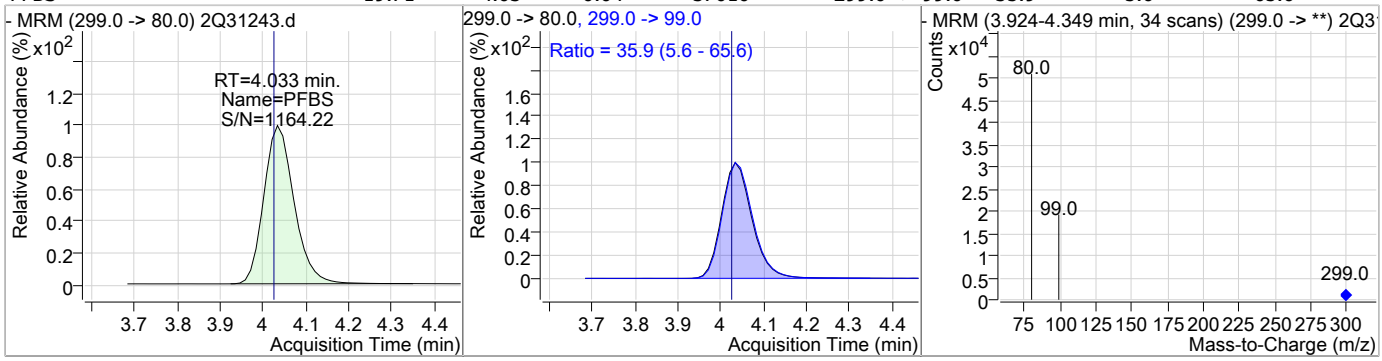


Perfluorinated Compounds by LC/MS/MS

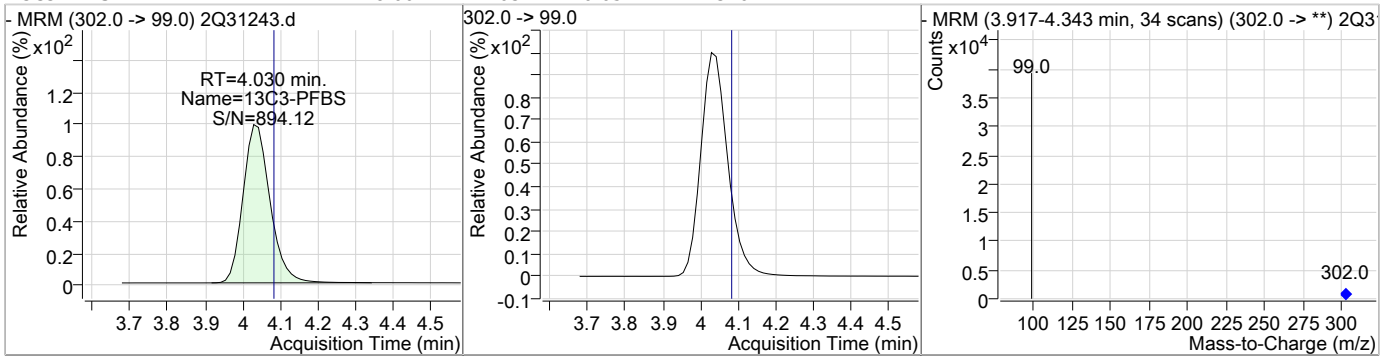
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.12	3.76	-0.04	129951				



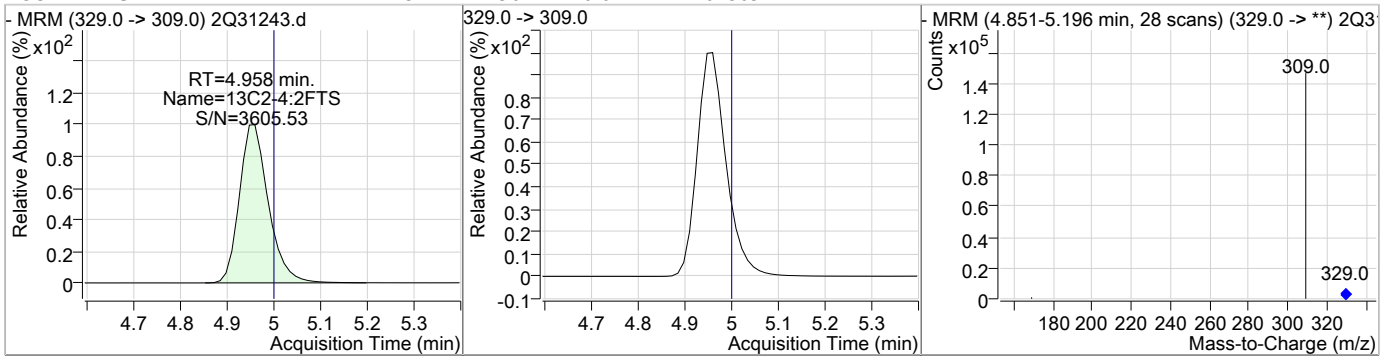
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.71	4.03	-0.04	37010	299.0 -> 99.0	35.9	5.6	65.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.00	4.03	-0.05	27346				

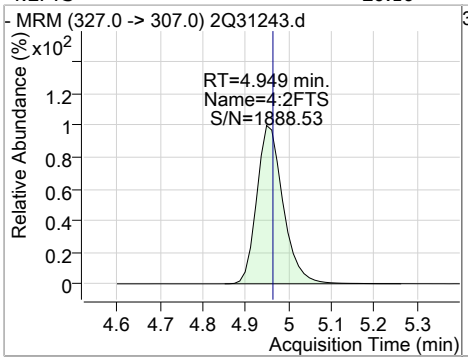


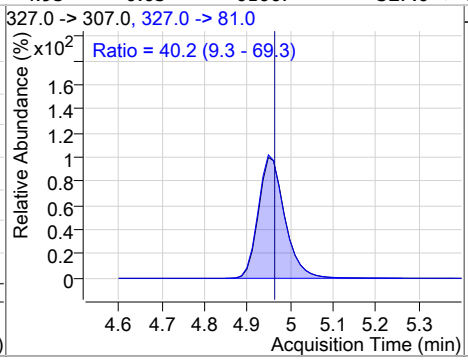
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.13	4.96	-0.04	107369				

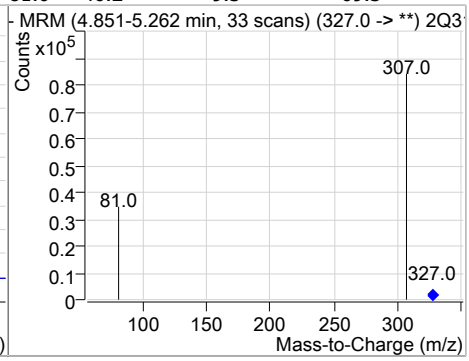


Perfluorinated Compounds by LC/MS/MS

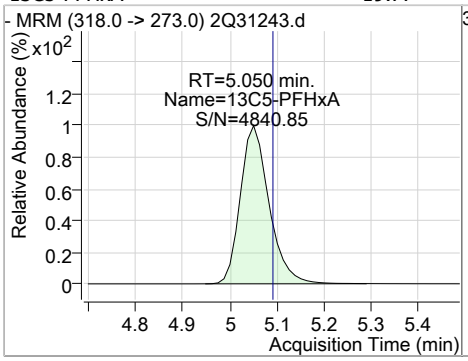
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.16	4.95	-0.05	61667	327.0 -> 81.0	40.2	9.3	69.3

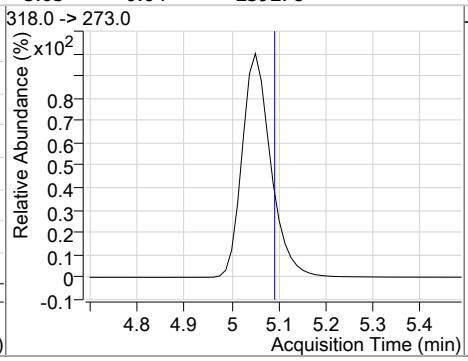


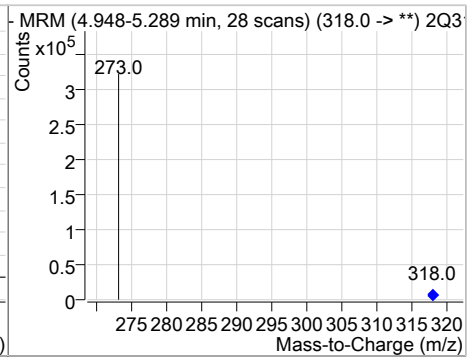




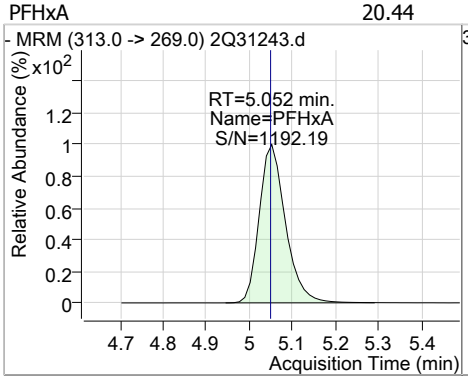
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.77	5.05	-0.04	239278				

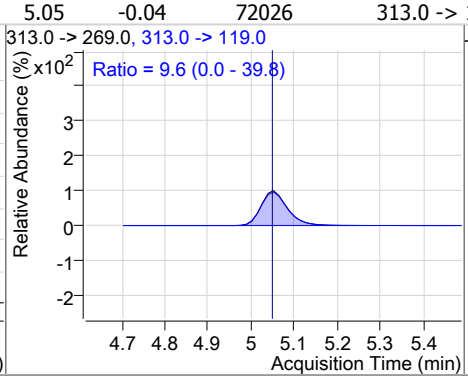


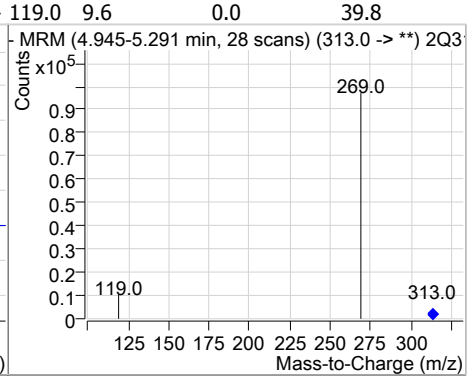




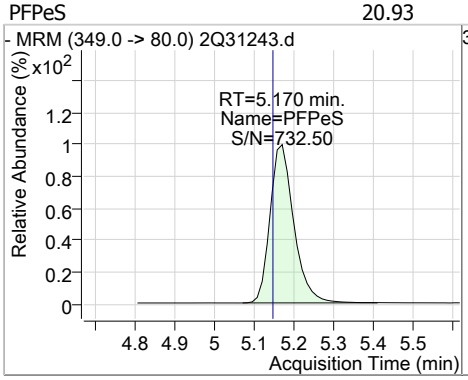
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.44	5.05	-0.04	72026	313.0 -> 119.0	9.6	0.0	39.8

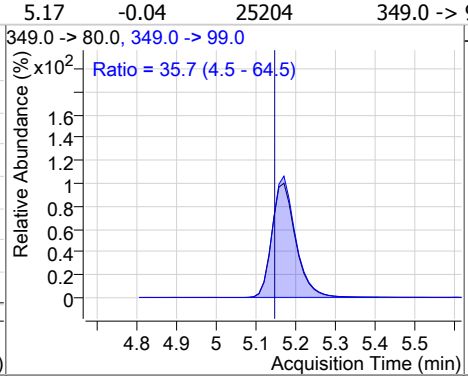


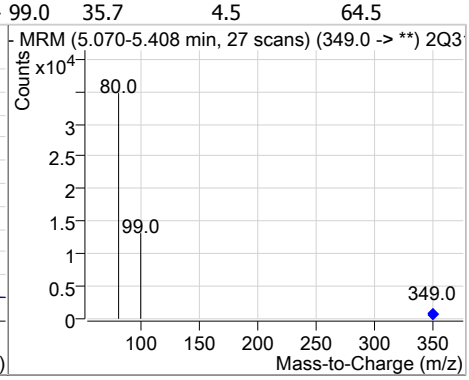




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.93	5.17	-0.04	25204	349.0 -> 99.0	35.7	4.5	64.5

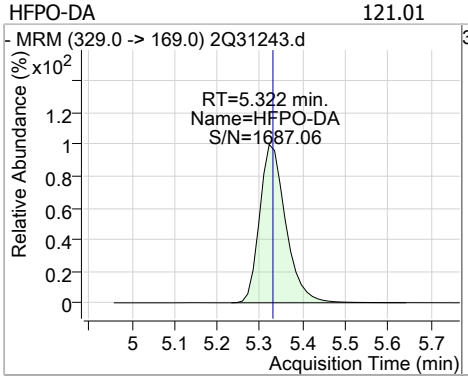


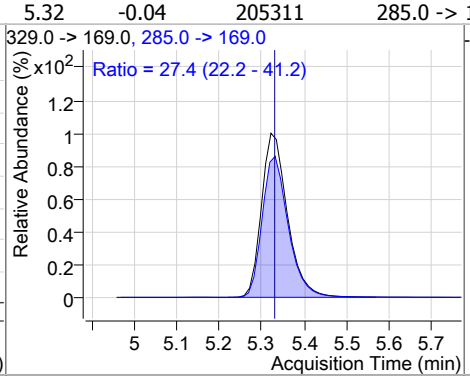


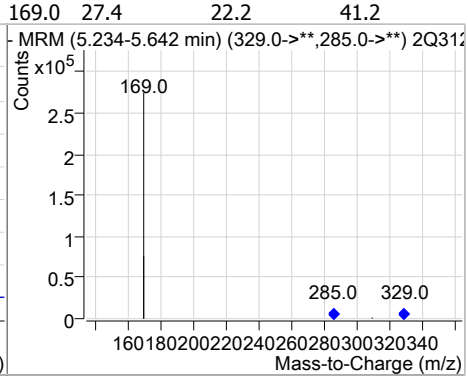


Perfluorinated Compounds by LC/MS/MS

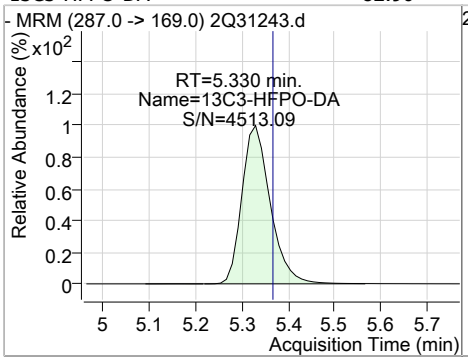
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	121.01	5.32	-0.04	205311	285.0 -> 169.0	27.4	22.2	41.2

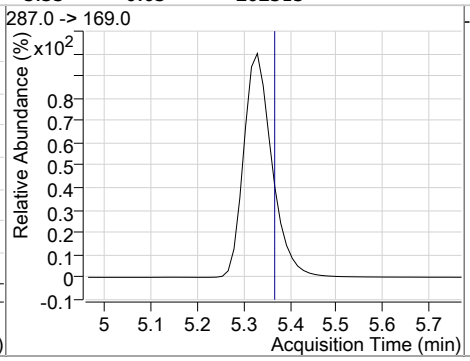


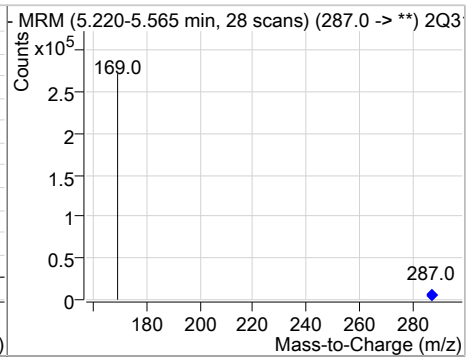




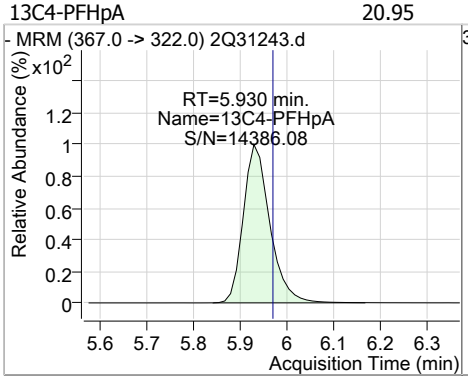
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	82.90	5.33	-0.03	202313				

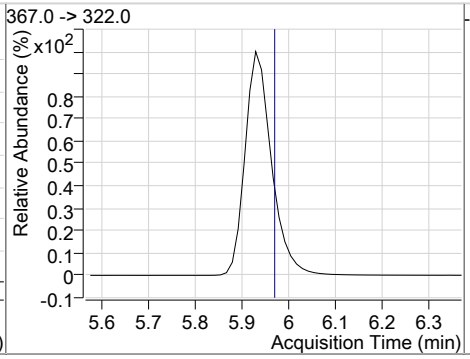


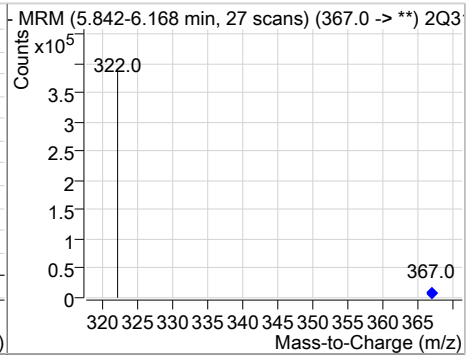




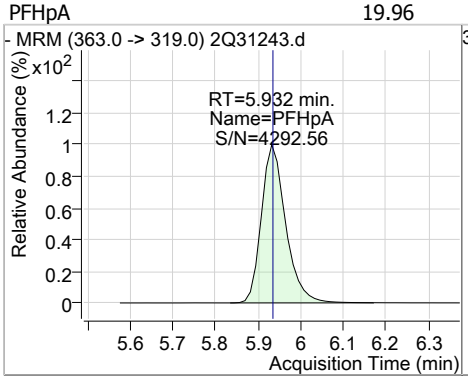
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.95	5.93	-0.04	287654				

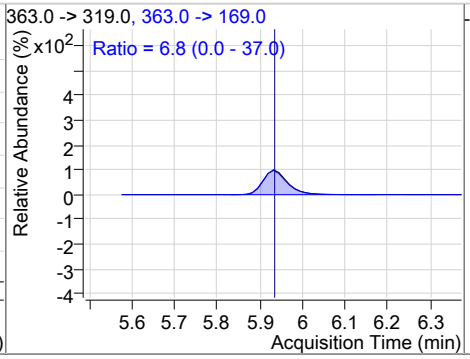


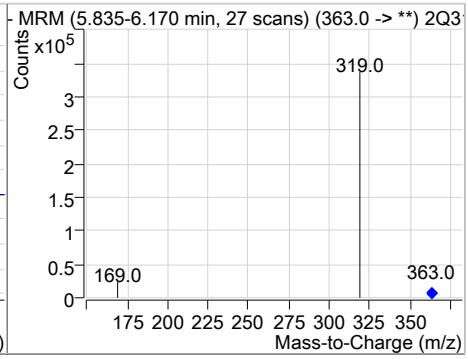




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.96	5.93	-0.04	252251	363.0 -> 169.0	6.8	0.0	37.0

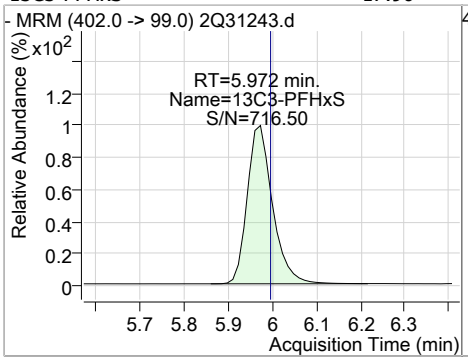


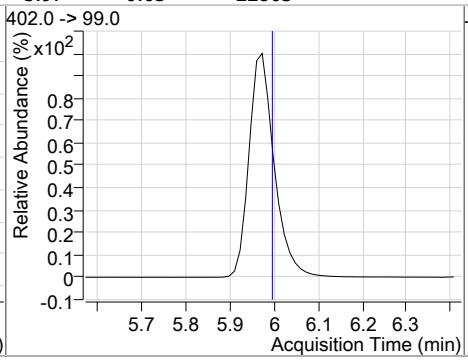


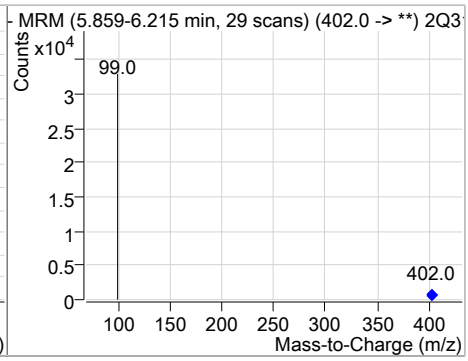


Perfluorinated Compounds by LC/MS/MS

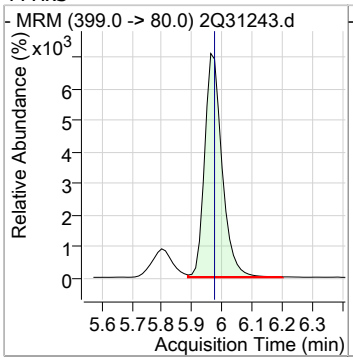
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.96	5.97	-0.03	22863				

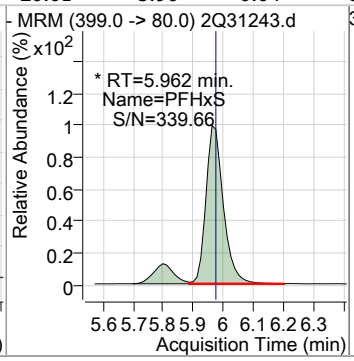


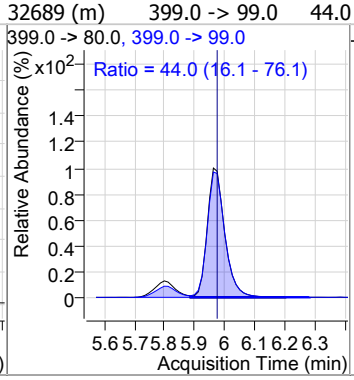


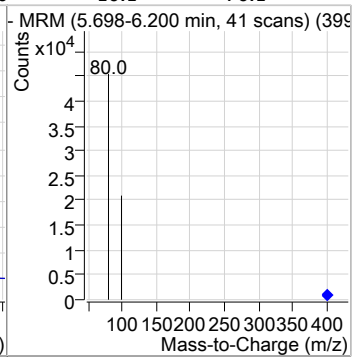


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.01	5.96	-0.04	32689 (m)	399.0 -> 99.0	44.0	16.1	76.1

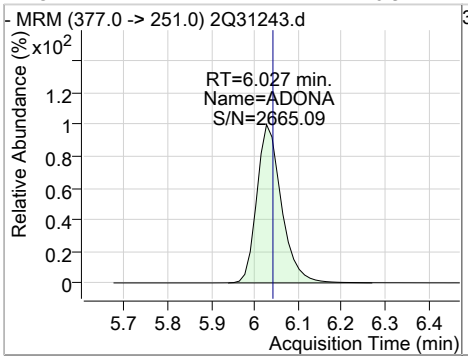


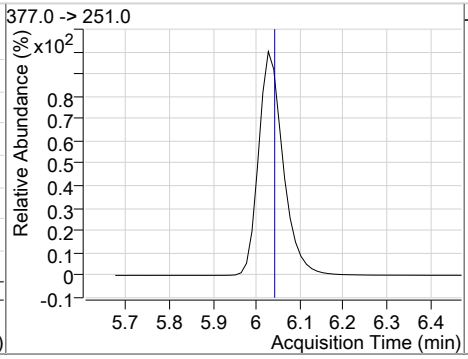


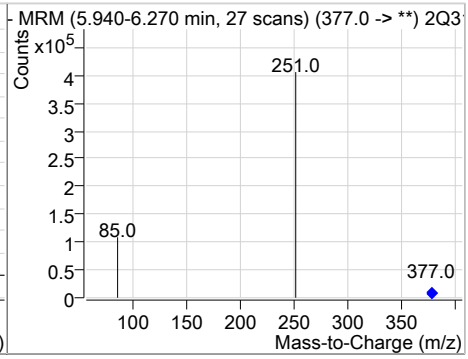




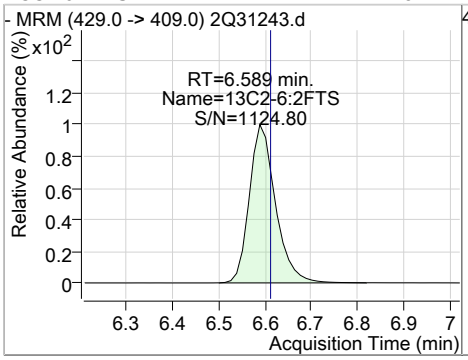
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.94	6.03	-0.04	304085				

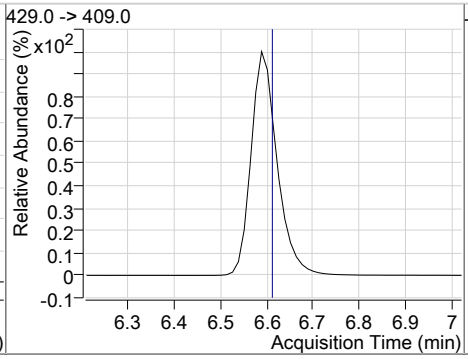


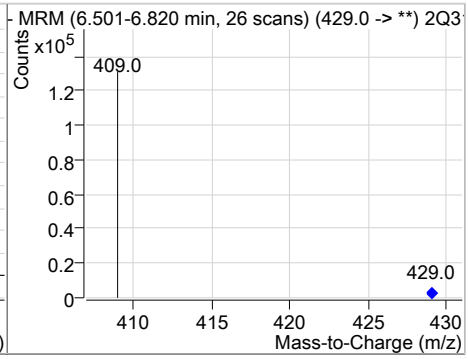




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.28	6.59	-0.03	96677				

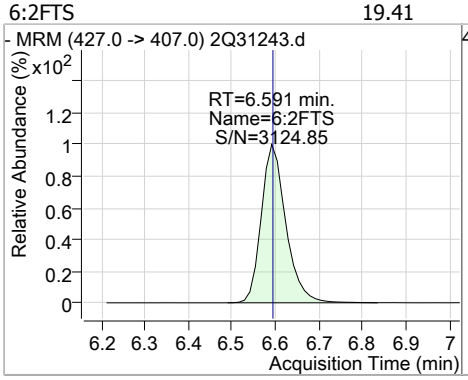


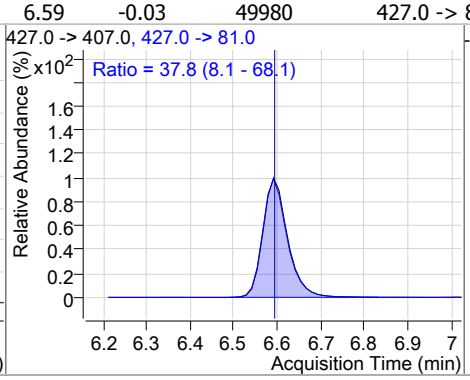


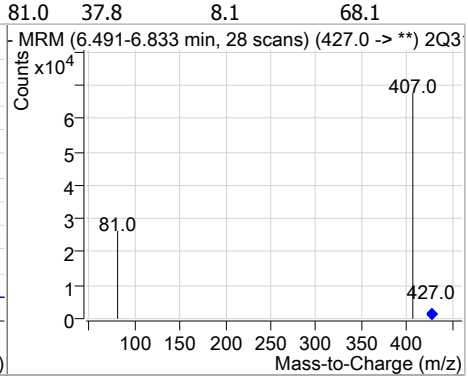


Perfluorinated Compounds by LC/MS/MS

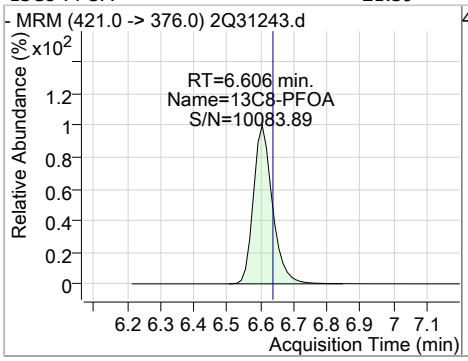
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.41	6.59	-0.03	49980	427.0 -> 81.0	37.8	8.1	68.1

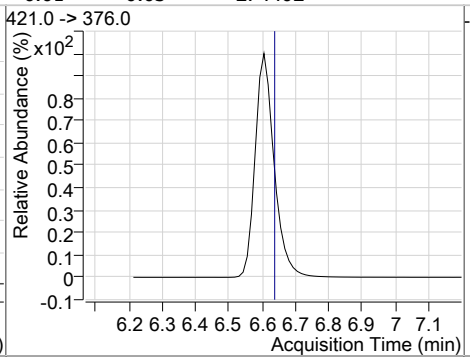


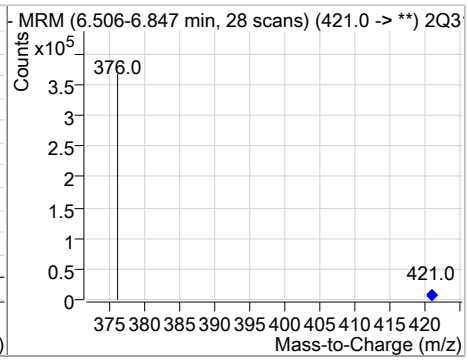




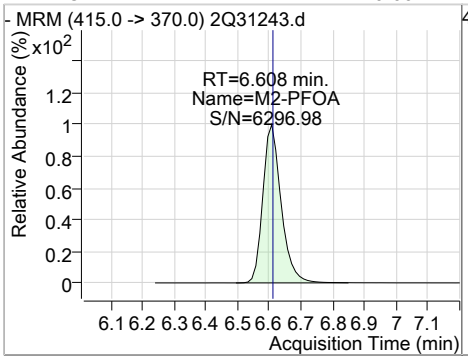
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.39	6.61	-0.03	274402				

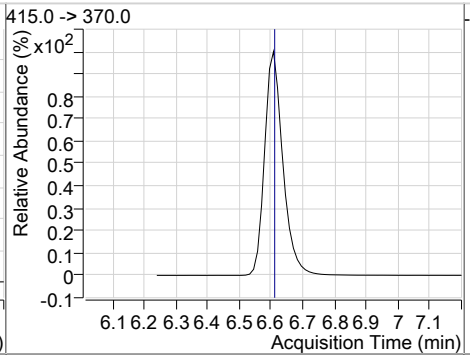


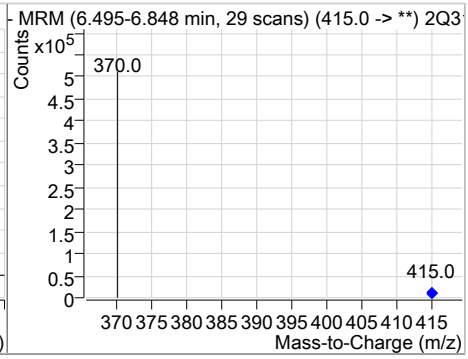




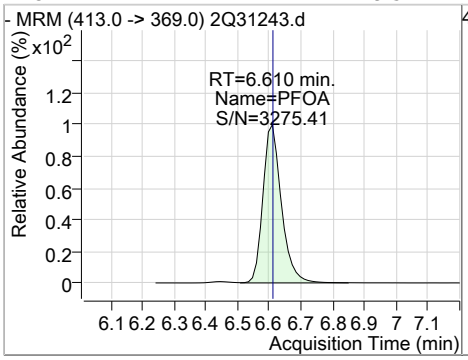
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.00	6.61	-0.03	382563				

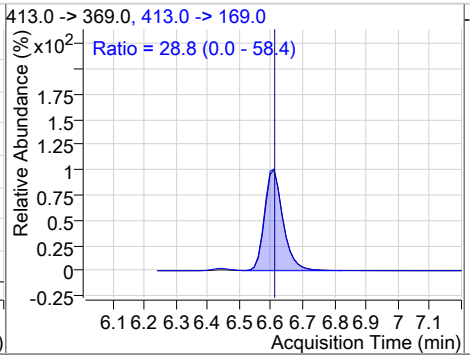


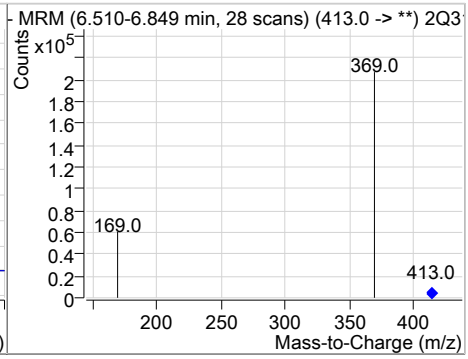




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.51	6.61	-0.03	154491	413.0 -> 169.0	28.8	0.0	58.4

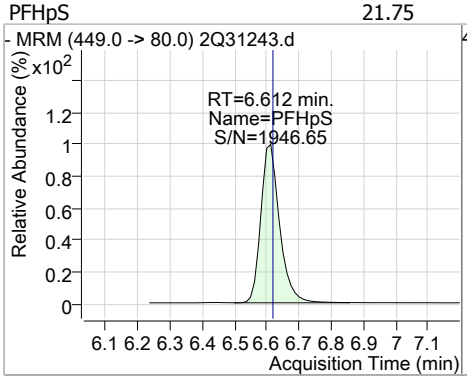


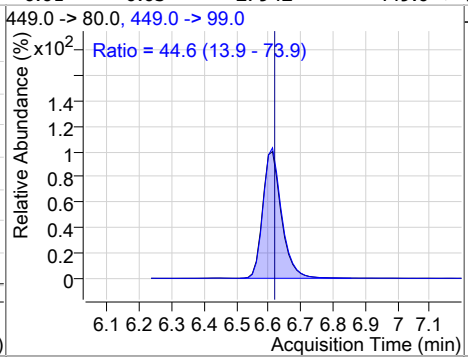


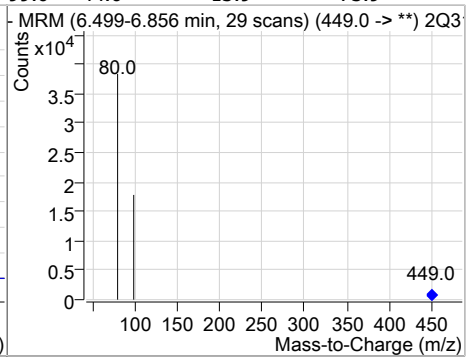


Perfluorinated Compounds by LC/MS/MS

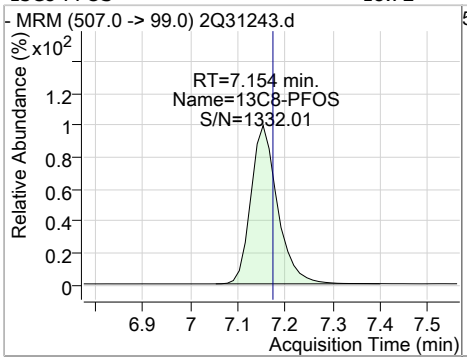
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.75	6.61	-0.03	27942	449.0 -> 99.0	44.6	13.9	73.9

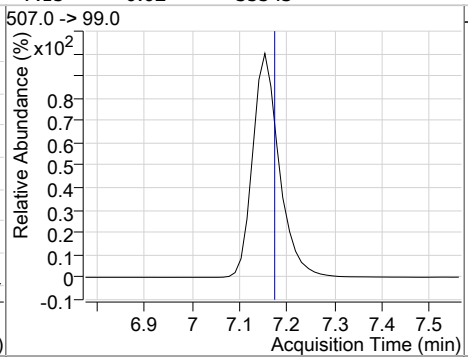


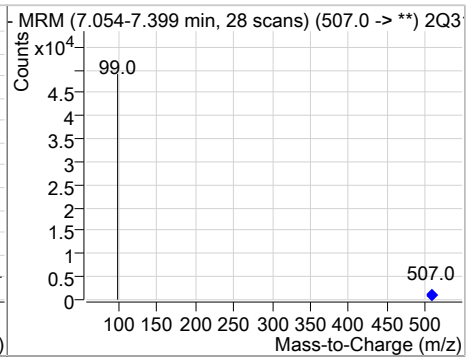




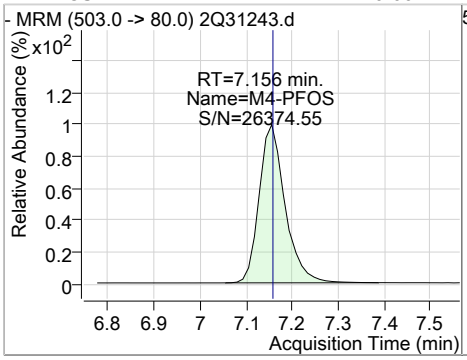
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.72	7.15	-0.02	35543				

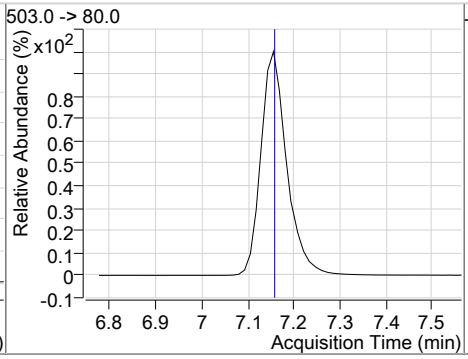


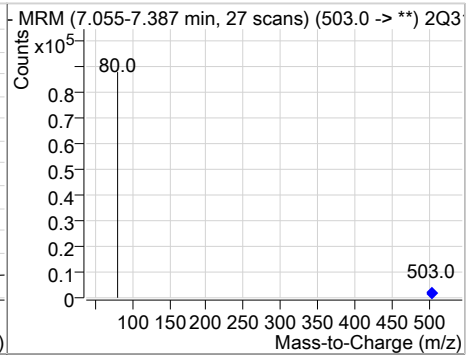




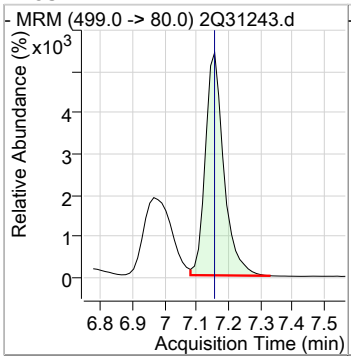
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.00	7.16	-0.02	65289				

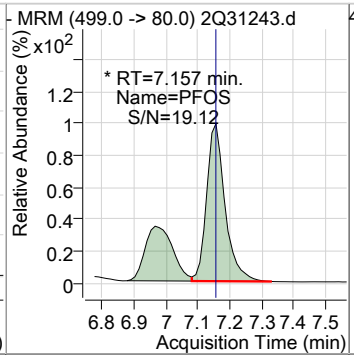


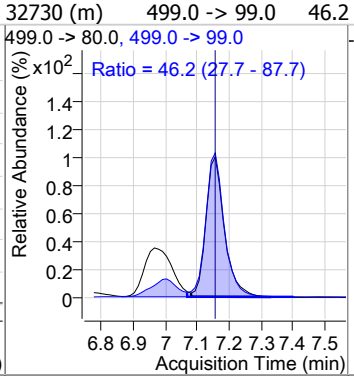


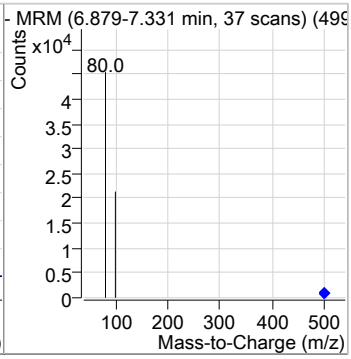


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.59	7.16	-0.02	32730 (m)	499.0 -> 99.0	46.2	27.7	87.7



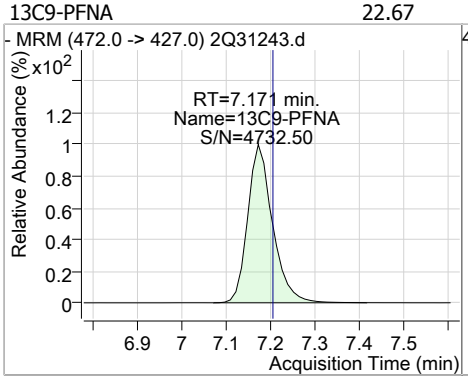


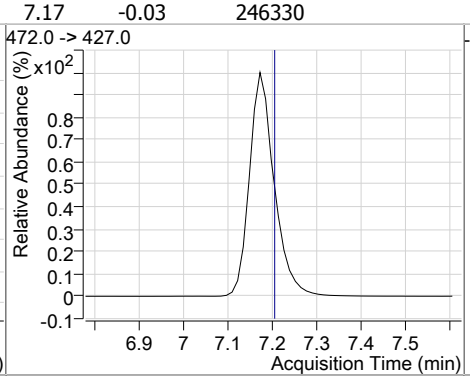


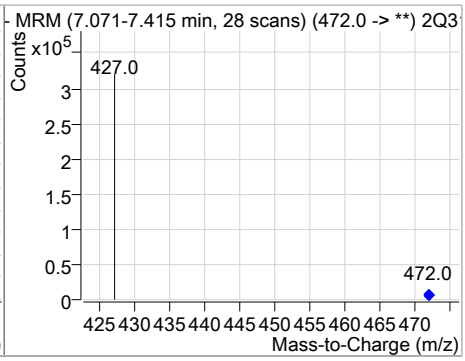


Perfluorinated Compounds by LC/MS/MS

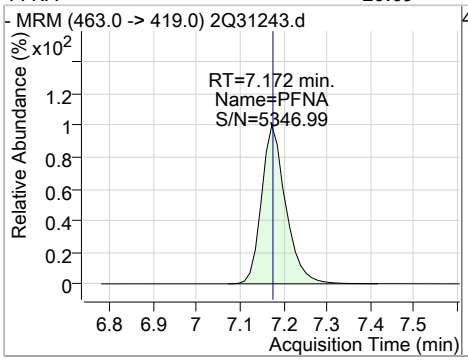
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.67	7.17	-0.03	246330				

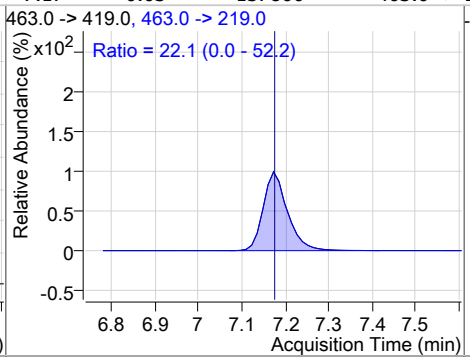


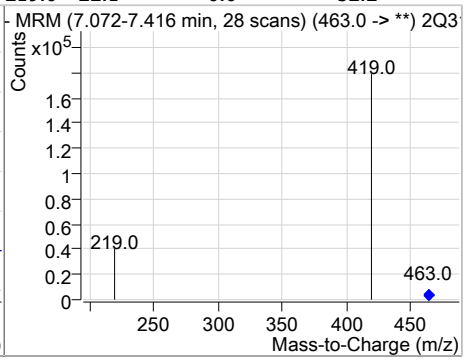




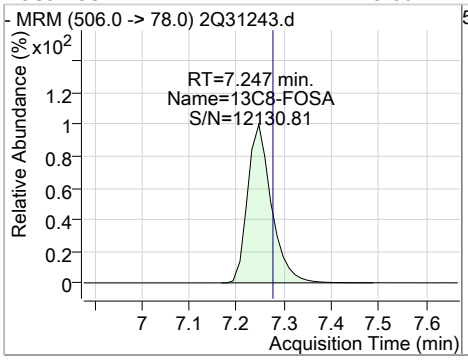
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.69	7.17	-0.03	137860	463.0 -> 219.0	22.1	0.0	52.2

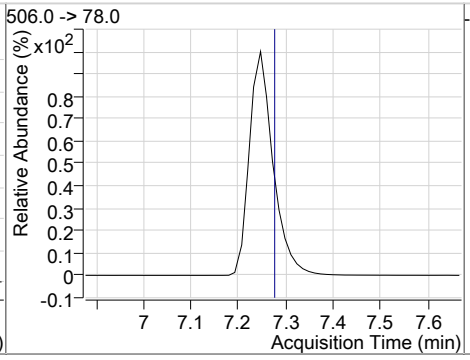


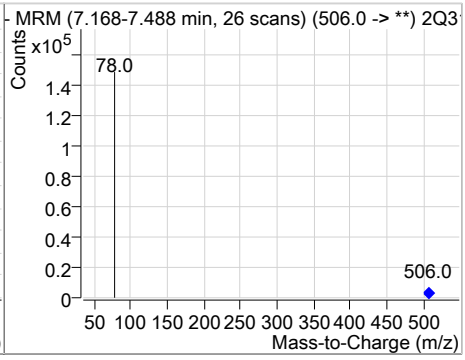




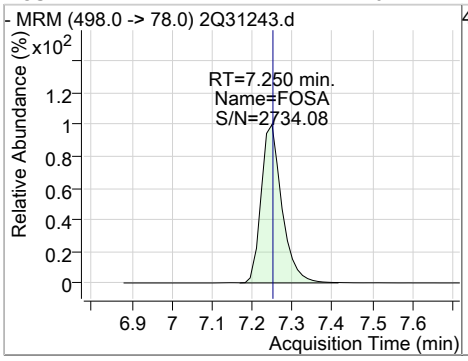
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.58	7.25	-0.03	115192				

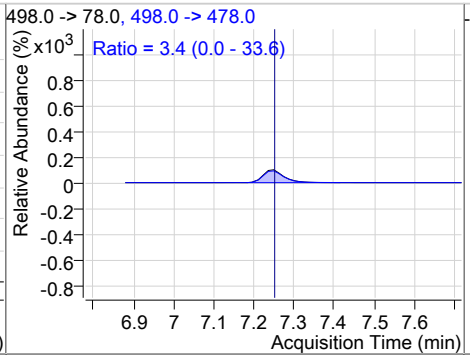


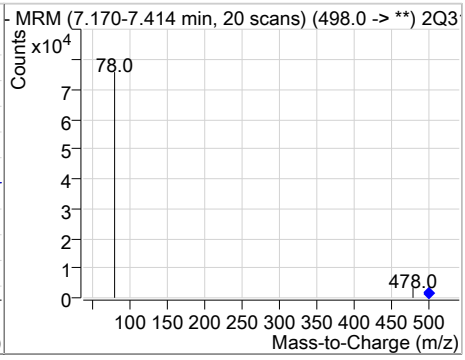




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.24	7.25	-0.03	58174	498.0 -> 478.0	3.4	0.0	33.6

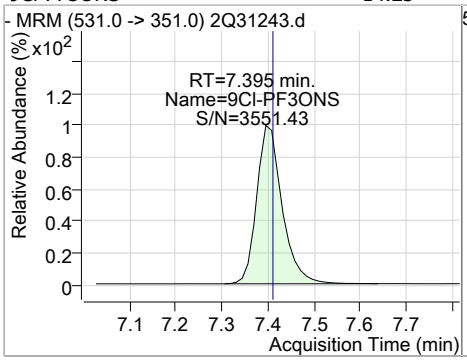


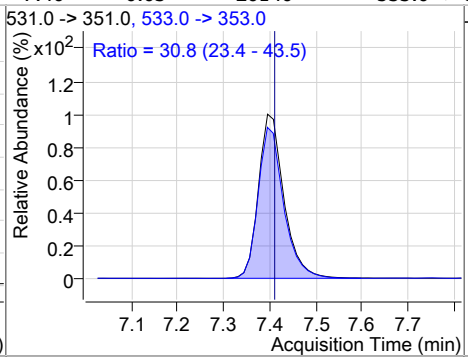


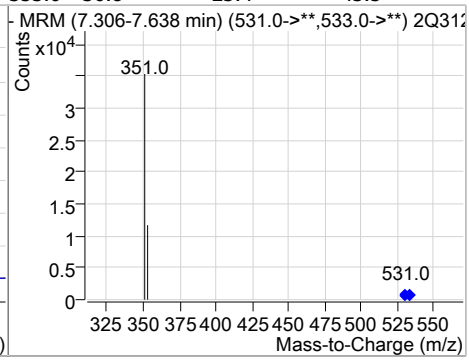


Perfluorinated Compounds by LC/MS/MS

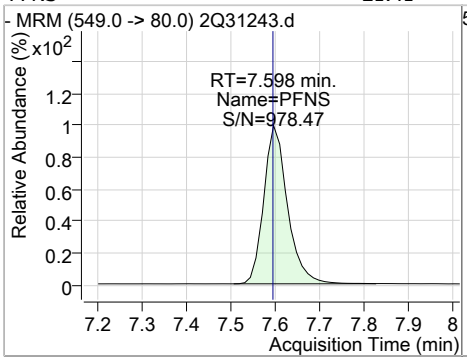
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.23	7.40	-0.03	26146	533.0 -> 353.0	30.8	23.4	43.5

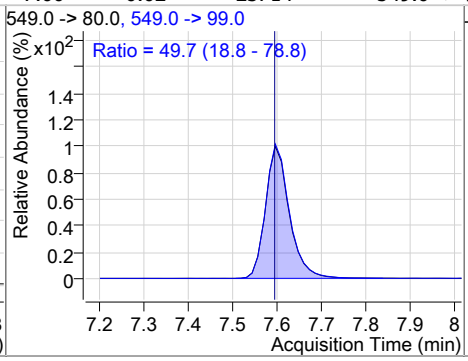


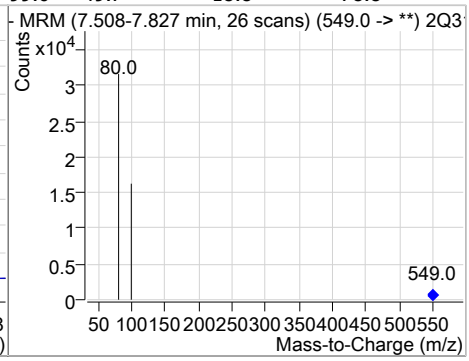




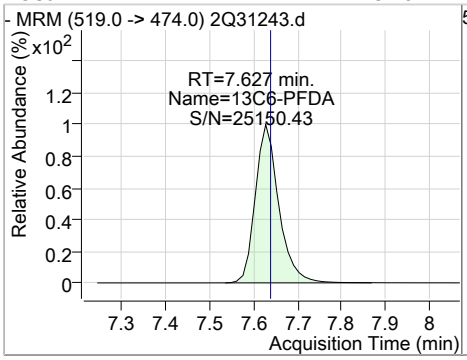
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.41	7.60	-0.02	23714	549.0 -> 99.0	49.7	18.8	78.8

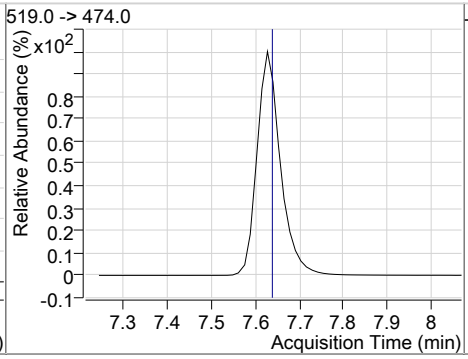


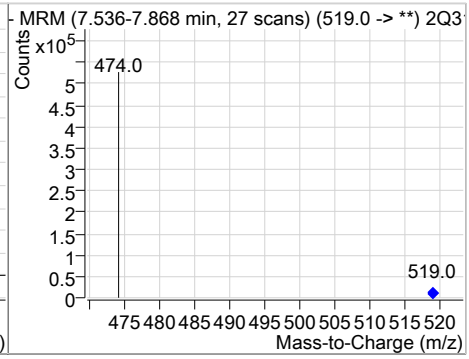




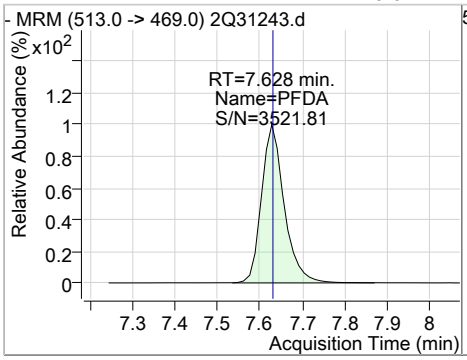
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.18	7.63	-0.01	404403				

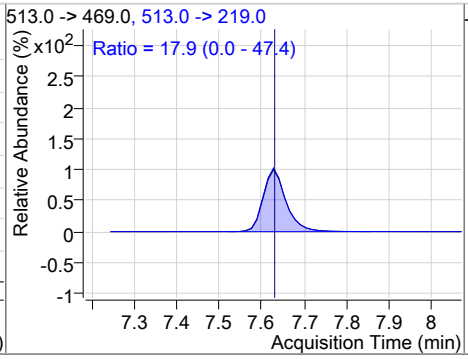


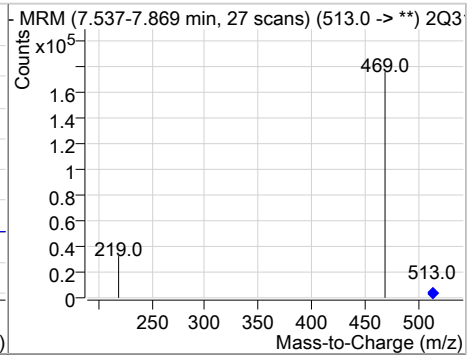




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.07	7.63	-0.01	134087	513.0 -> 219.0	17.9	0.0	47.4

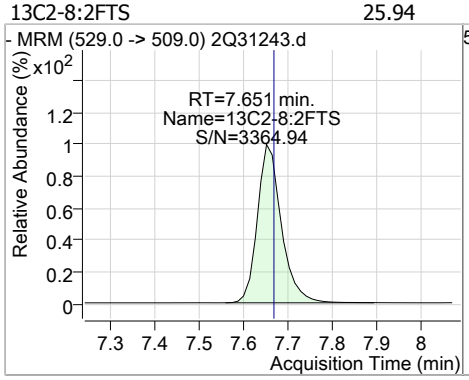


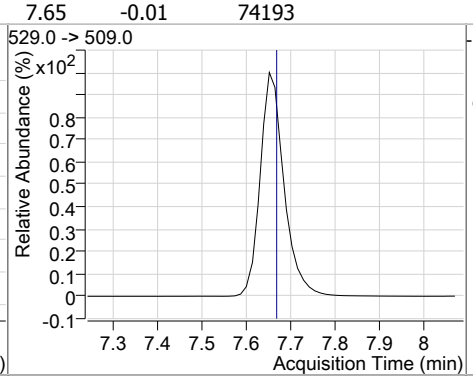


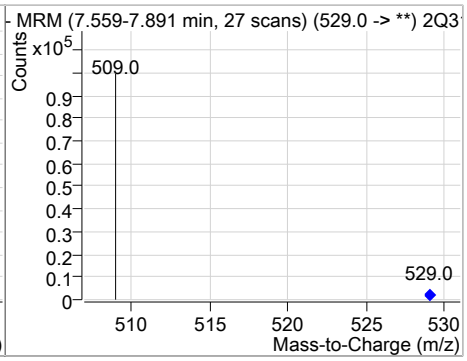


Perfluorinated Compounds by LC/MS/MS

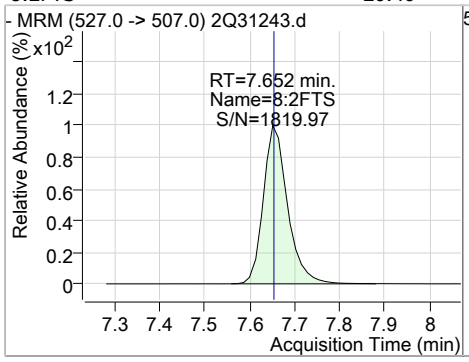
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	25.94	7.65	-0.01	74193				

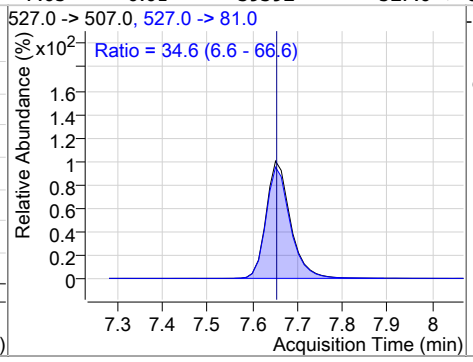


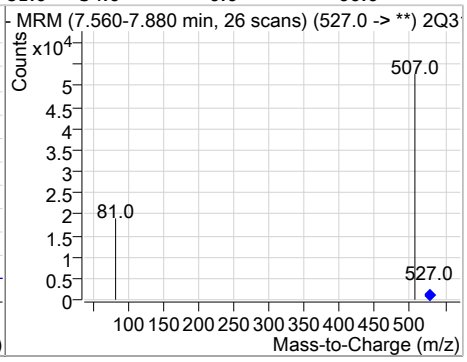




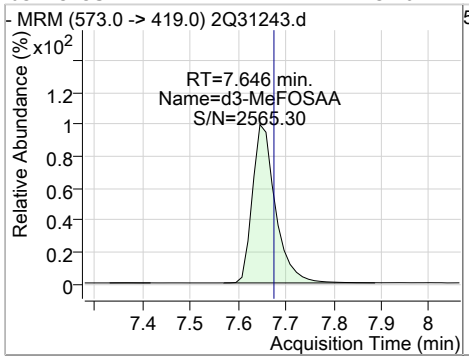
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.46	7.65	-0.01	39392	527.0 -> 81.0	34.6	6.6	66.6

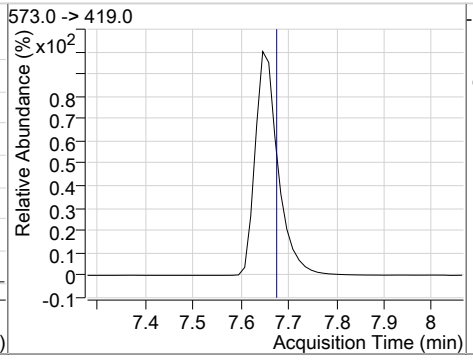


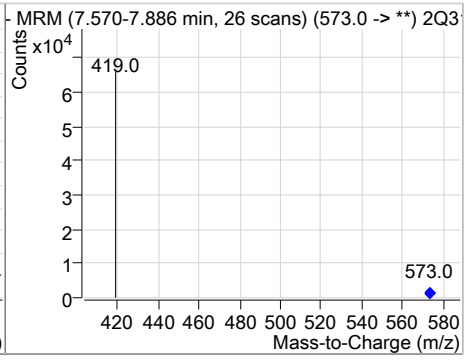




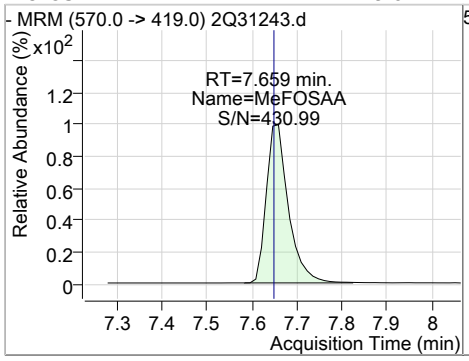
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.16	7.65	-0.03	48284				

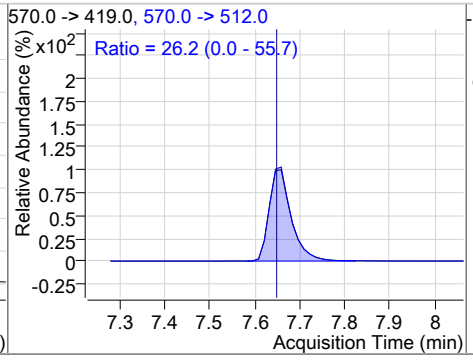


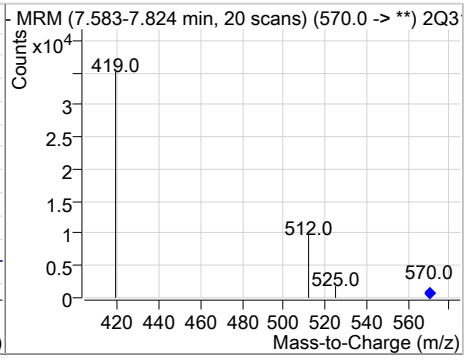




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.82	7.66	-0.01	25915	570.0 -> 512.0	26.2	0.0	55.7

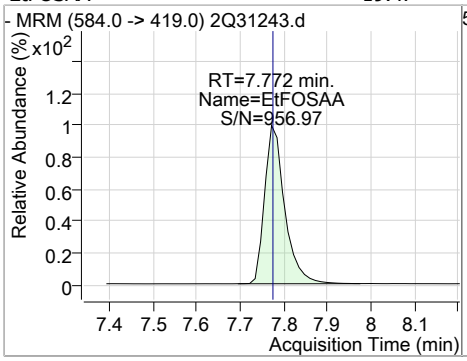


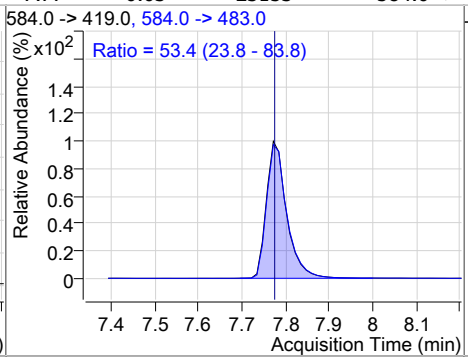


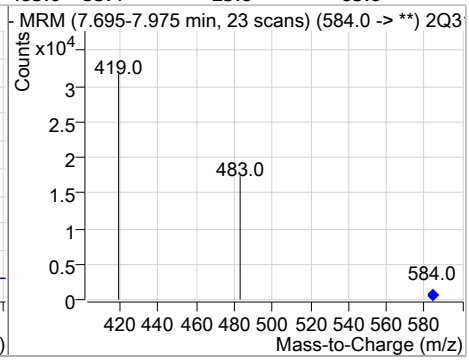


Perfluorinated Compounds by LC/MS/MS

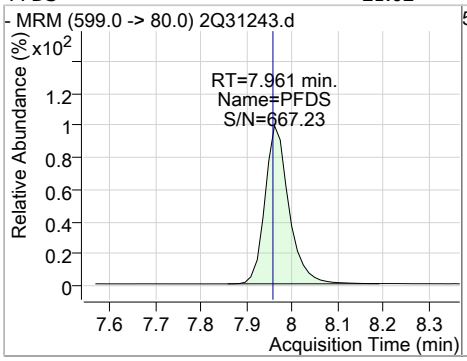
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.47	7.77	-0.03	23153	584.0 -> 483.0	53.4	23.8	83.8

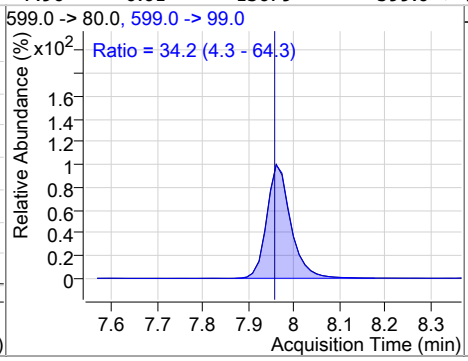


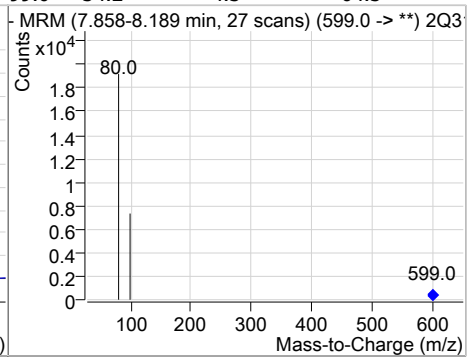




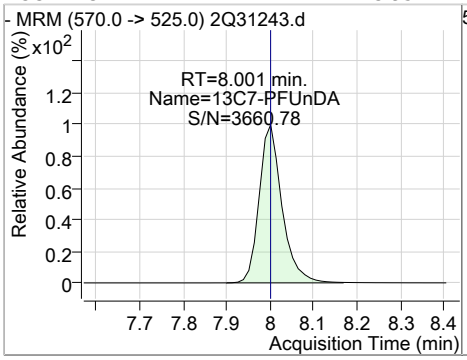
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.02	7.96	-0.01	13679	599.0 -> 99.0	34.2	4.3	64.3

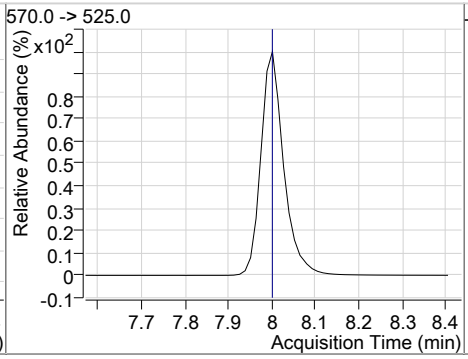


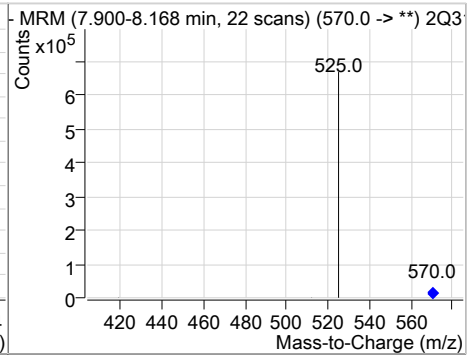




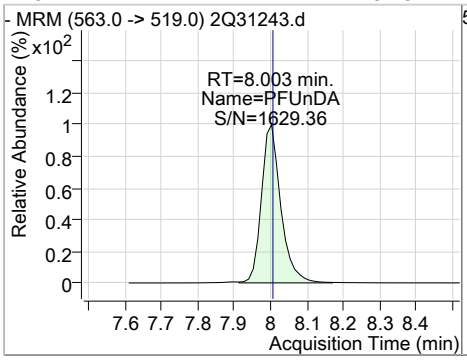
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.95	8.00	0.00	506730				

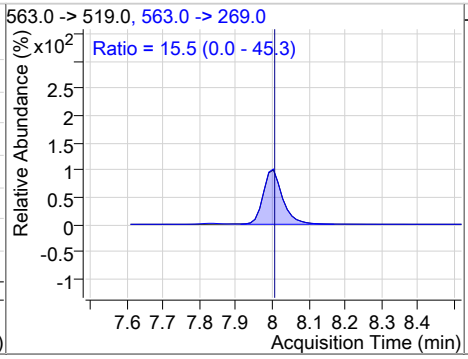


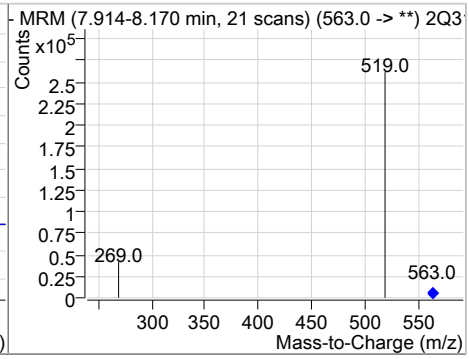




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.73	8.00	0.00	198126	563.0 -> 269.0	15.5	0.0	45.3

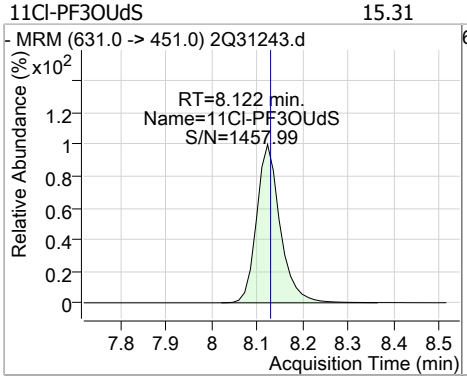


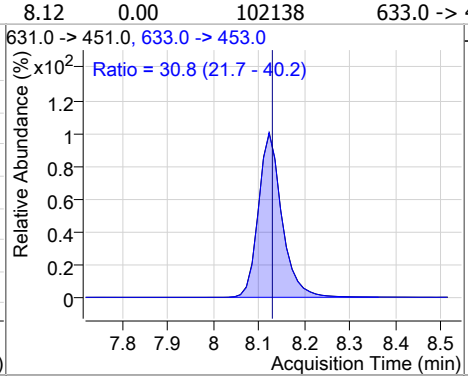


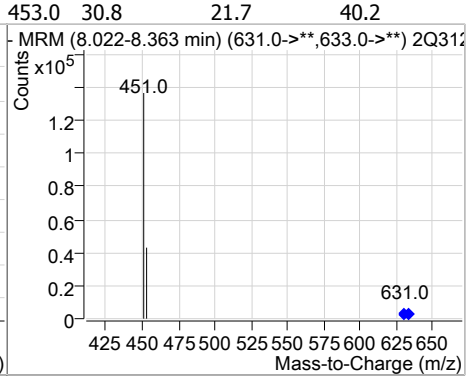


Perfluorinated Compounds by LC/MS/MS

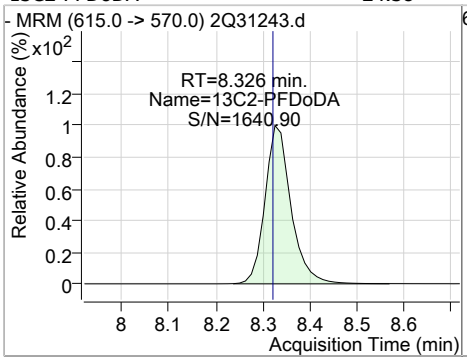
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.31	8.12	0.00	102138	633.0 -> 453.0	30.8	21.7	40.2

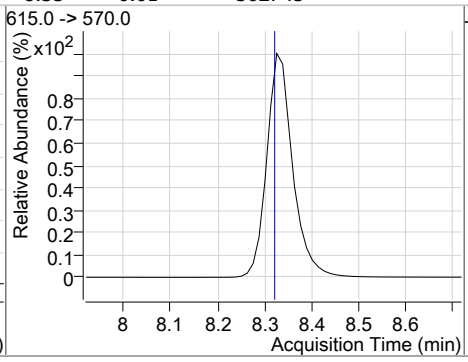


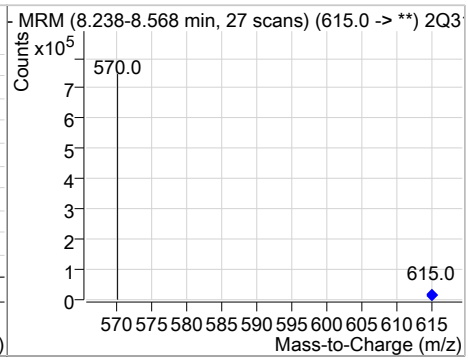




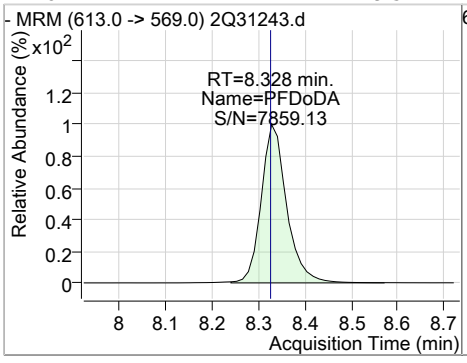
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.38	8.33	0.01	562745				

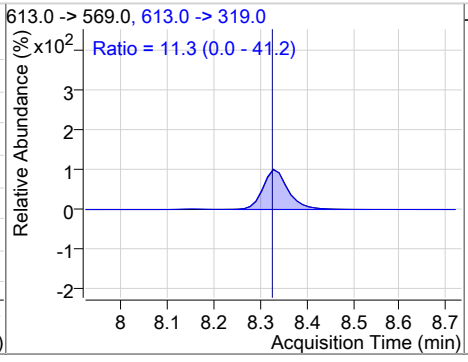


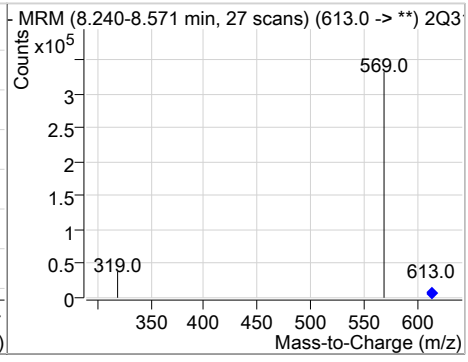




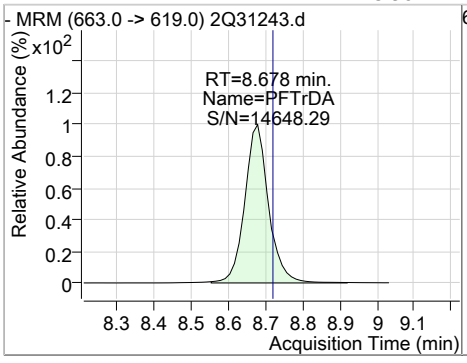
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.57	8.33	0.01	250081	613.0 -> 319.0	11.3	0.0	41.2

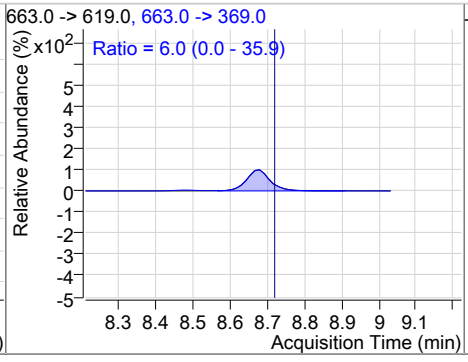


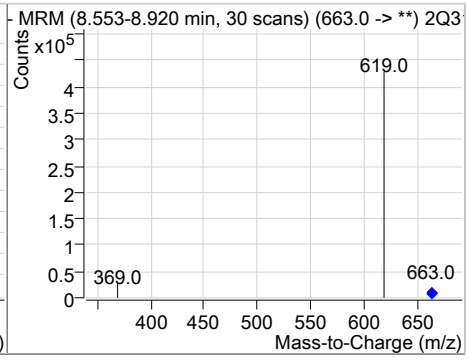




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.98	8.68	0.05	324225	663.0 -> 369.0	6.0	0.0	35.9

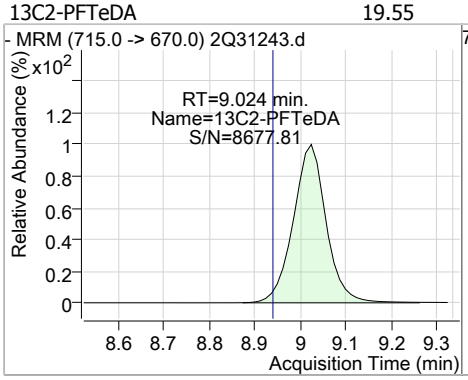


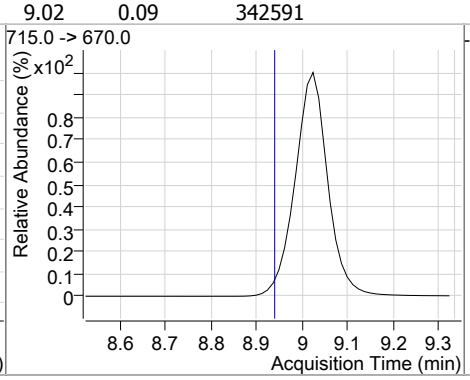


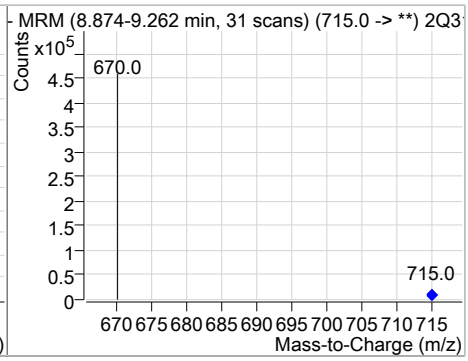


Perfluorinated Compounds by LC/MS/MS

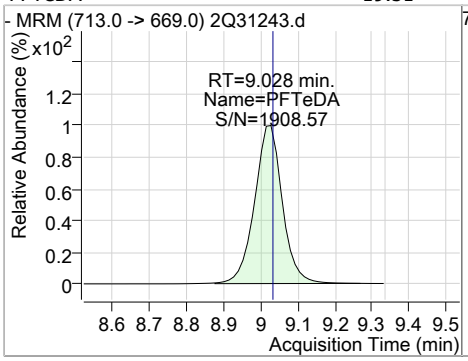
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.55	9.02	0.09	342591				

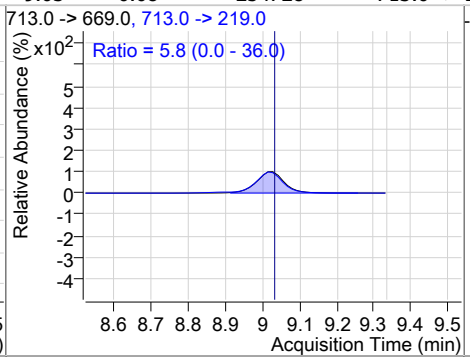


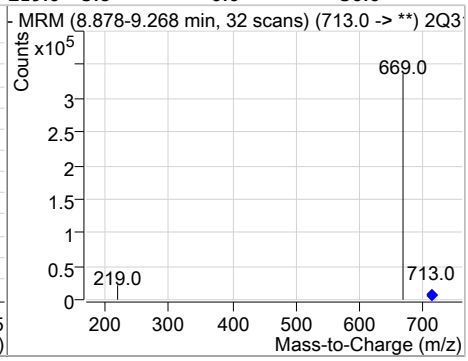




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.51	9.03	0.08	254728	713.0 -> 219.0	5.8	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q499-ECC498
Lab FileID: 2Q31243.D
Injection Time: 06/24/19 01:52
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/24/19 13:24 Natasha Gumtie
Supervisor approved: 06/24/19 14:09 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.96	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.16	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
06/27/19 16:58

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31477.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/26/2019 10:26:26 PM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75546,S2Q501,250,,,1,1,water

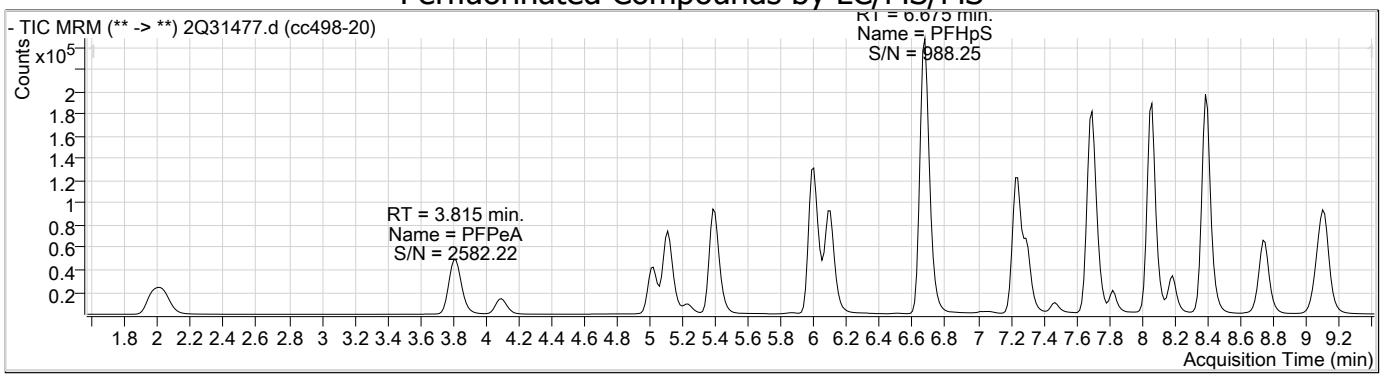
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.684	415.0 -> 370.0	372240	20.00	µg/L	0.076
13C4-PFOS	7.221	503.0 -> 80.0	57427	20.00	µg/L	0.066
M4-PFBA	2.002	217.0 -> 172.0	176121	20.00	µg/L	0.025
M5-PFPeA	3.812	268.0 -> 223.0	150888	20.00	µg/L	0.050
M5-PFHxA	5.114	318.0 -> 273.0	234698	20.00	µg/L	0.063
M4-PFHpA	6.005	367.0 -> 322.0	275885	20.00	µg/L	0.076
M8-PFOA	6.682	421.0 -> 376.0	265979	20.00	µg/L	0.076
M9-PFNA	7.252	472.0 -> 427.0	237854	20.00	µg/L	0.080
M6-PFDA	7.692	519.0 -> 474.0	391074	20.00	µg/L	0.065
M7-PFUnDA	8.066	570.0 -> 525.0	481231	20.00	µg/L	0.065
M2-PFDoDA	8.390	615.0 -> 570.0	530198	20.00	µg/L	0.064
M2-PFTeDA	9.100	715.0 -> 670.0	294800	20.00	µg/L	0.075
M8-FOSA	7.311	506.0 -> 78.0	109162	20.00	µg/L	0.064
M3-PFBS	4.093	302.0 -> 99.0	24255	20.00	µg/L	0.063
M3-PFHxS	6.035	402.0 -> 99.0	20680	20.00	µg/L	0.076
M8-PFOS	7.235	507.0 -> 99.0	31565	20.00	µg/L	0.081
M2-4:2FTS	5.021	329.0 -> 309.0	102244	20.00	µg/L	0.075
M2-6:2FTS	6.665	429.0 -> 409.0	93641	20.00	µg/L	0.076
M2-8:2FTS	7.728	529.0 -> 509.0	71145	20.00	µg/L	0.077
M3-MeFOSAA	7.709	573.0 -> 419.0	46396	20.00	µg/L	0.064
M3-HFPO-DA	5.392	287.0 -> 169.0	178570	100.00	µg/L	0.075
System Monitoring Compounds						
13C2-4:2FTS	5.021	329.0 -> 309.0	102067	21.03	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C2-6:2FTS	6.665	429.0 -> 409.0	93678	23.53	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.6%		
13C2-8:2FTS	7.728	529.0 -> 509.0	71093	24.86	µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		
13C2-PFDoDA	8.390	615.0 -> 570.0	530170	22.97	µg/L	0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%		
13C2-PFTeDA	9.100	715.0 -> 670.0	291832	16.65	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%		
13C3-PFBS	4.093	302.0 -> 99.0	24150	15.89	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
13C3-PFHxS	6.035	402.0 -> 99.0	20611	16.19	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.9%		
13C4-PFBA	2.002	217.0 -> 172.0	176077	17.03	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.1%		
13C4-PFHpA	6.005	367.0 -> 322.0	275881	20.09	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFHxA	5.114	318.0 -> 273.0	234159	19.35	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C5-PFPeA	3.812	268.0 -> 223.0	150859	18.79	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C6-PFDA	7.692	519.0 -> 474.0	390860	22.41	µg/L	0.065

Perfluorinated Compounds by LC/MS/MS

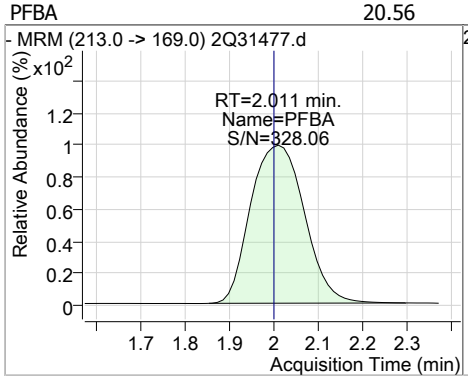
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
13C7-PFUnDA	8.066	570.0 -> 525.0	480605	22.72 µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.6%		
13C8-FOSA	7.311	506.0 -> 78.0	109146	18.55 µg/L		0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C8-PFOA	6.682	421.0 -> 376.0	265602	20.71 µg/L		0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-PFOS	7.235	507.0 -> 99.0	31569	16.63 µg/L		0.081
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%		
13C9-PFNA	7.252	472.0 -> 427.0	237476	21.85 µg/L		0.080
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
d3-MeFOSAA	7.709	573.0 -> 419.0	46372	22.25 µg/L		0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
M2-PFOA	6.684	415.0 -> 370.0	372782	20.03 µg/L		0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
M4-PFOS	7.221	503.0 -> 80.0	57529	20.04 µg/L		0.066
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-HFPO-DA	5.392	287.0 -> 169.0	178570	73.17 µg/L		0.075
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 73.2%		
Target Compounds						**QValue**
4:2FTS	5.011	327.0 -> 307.0	58264	20.00 µg/L		100
6:2FTS	6.667	427.0 -> 407.0	48096	19.30 µg/L		98
8:2FTS	7.729	527.0 -> 507.0	37034	20.06 µg/L		97
EtFOSAA	7.822	584.0 -> 419.0	23973	20.96 µg/L		97
FOSA	7.301	498.0 -> 78.0	54898	20.17 µg/L		100
MeFOSAA	7.710	570.0 -> 419.0	26271	20.89 µg/L		99
PFBA	2.011	213.0 -> 169.0	30986	20.56 µg/L		100
PFBS	4.096	299.0 -> 80.0	32966	19.80 µg/L		99
PFDA	7.693	513.0 -> 469.0	128657	19.93 µg/L		99
PFDoDA	8.392	613.0 -> 569.0	237747	19.70 µg/L		100
PFDS	8.024	599.0 -> 80.0	12475	21.62 µg/L		100
PFHpA	5.995	363.0 -> 319.0	238148	19.67 µg/L		99
PFHpS	6.675	449.0 -> 80.0	25704	22.13 µg/L		97
PFHxA	5.115	313.0 -> 269.0	70457	20.42 µg/L		98
PFHxS	6.038	399.0 -> 80.0	29966	20.29 µg/L	m	96
PFNA	7.252	463.0 -> 419.0	129146	20.08 µg/L		100
PFNS	7.663	549.0 -> 80.0	22427	22.83 µg/L		98
PFOA	6.686	413.0 -> 369.0	151077	19.68 µg/L		98
PFOS	7.223	499.0 -> 80.0	29984	19.20 µg/L	m	83
PFPeA	3.815	263.0 -> 219.0	118721	18.90 µg/L		100
PFPeS	5.233	349.0 -> 80.0	23094	21.63 µg/L		98
PFTeDA	9.106	713.0 -> 669.0	212858	18.94 µg/L		99
PFTrDA	8.745	663.0 -> 619.0	297992	25.61 µg/L		100
PFUnDA	8.068	563.0 -> 519.0	194461	20.41 µg/L		99
11Cl-PF3OUdS	8.186	631.0 -> 451.0	91944	14.60 µg/L		100
9Cl-PF3ONS	7.471	531.0 -> 351.0	25224	14.21 µg/L		96
ADONA	6.103	377.0 -> 251.0	284325	16.34 µg/L		100
HFPO-DA	5.398	329.0 -> 169.0	181934	121.49 µg/L		92

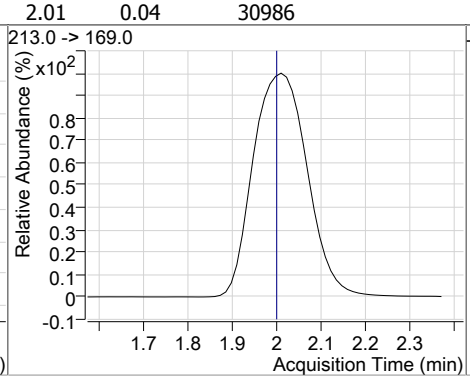
= Qualifier out of range, m = manually integrated, + = Area summed

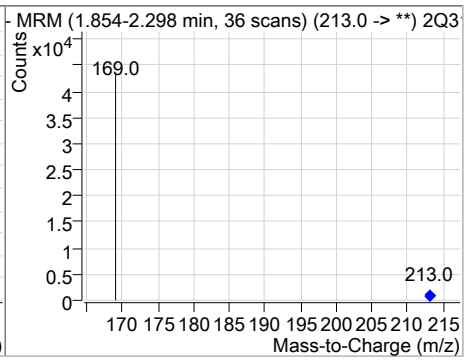
Perfluorinated Compounds by LC/MS/MS



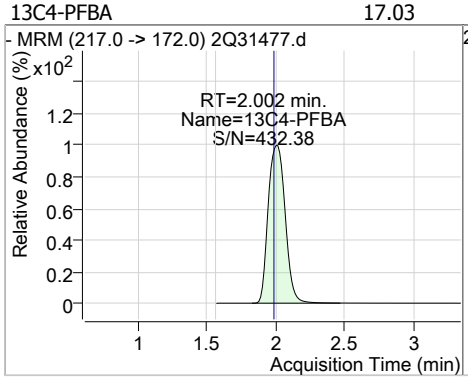
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.56	2.01	0.04	30986				

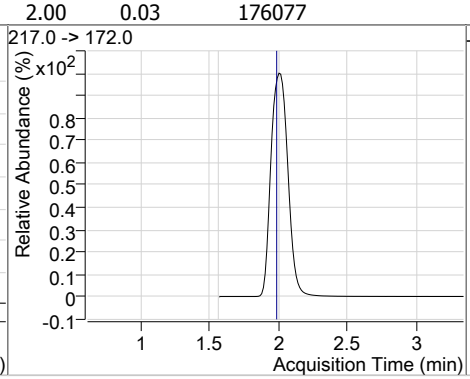


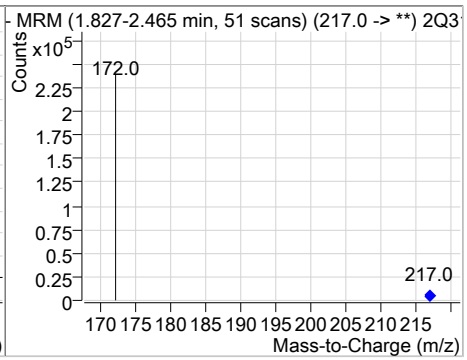




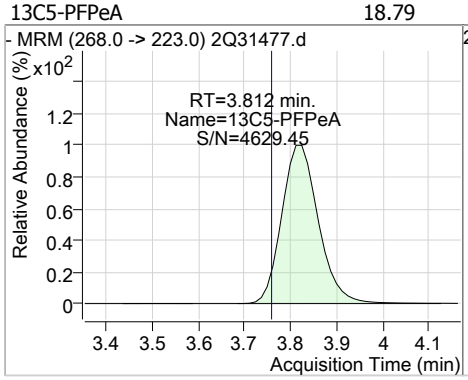
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.03	2.00	0.03	176077				

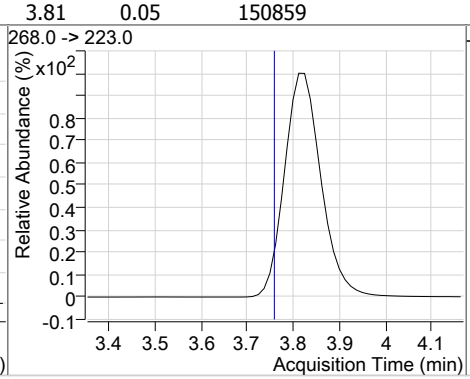


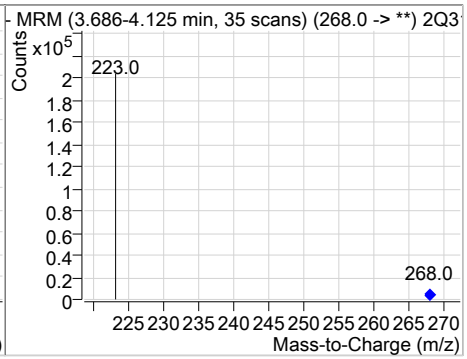




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.79	3.81	0.05	150859				

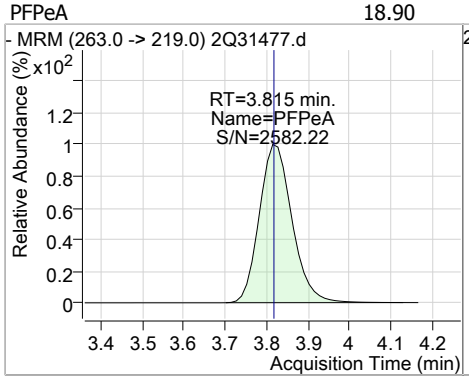


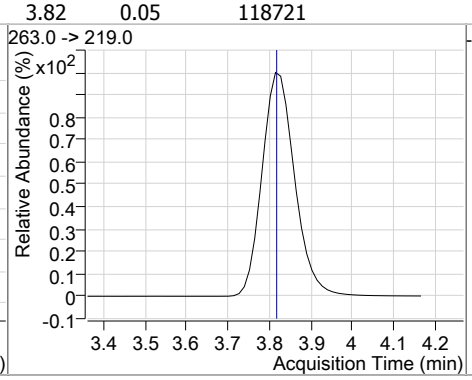


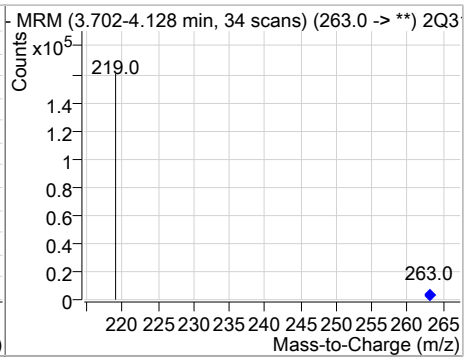


Perfluorinated Compounds by LC/MS/MS

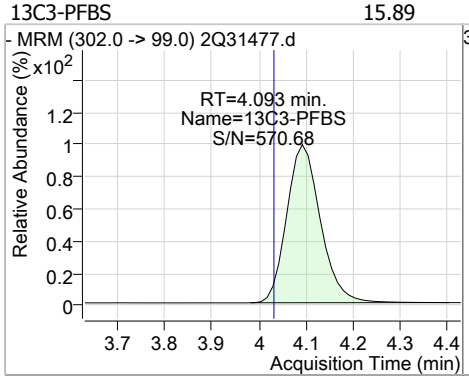
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.90	3.82	0.05	118721				

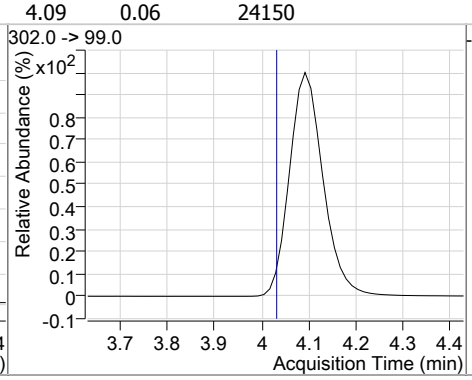


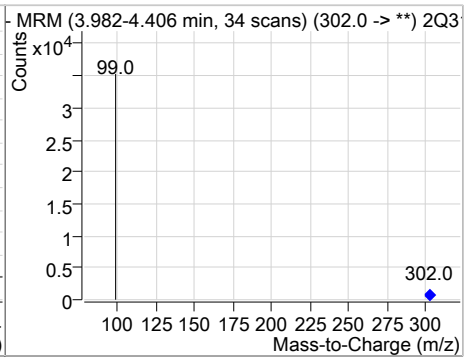




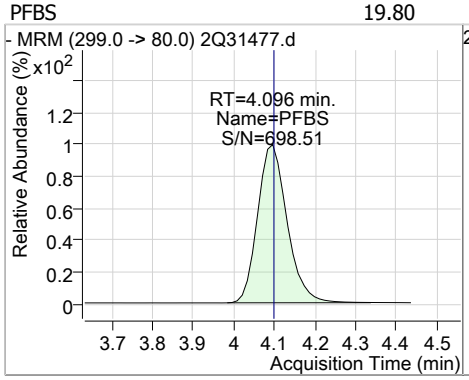
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.89	4.09	0.06	24150				

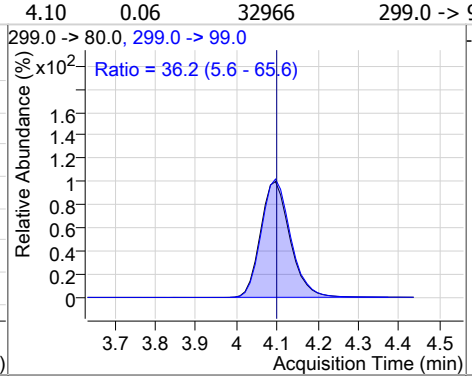


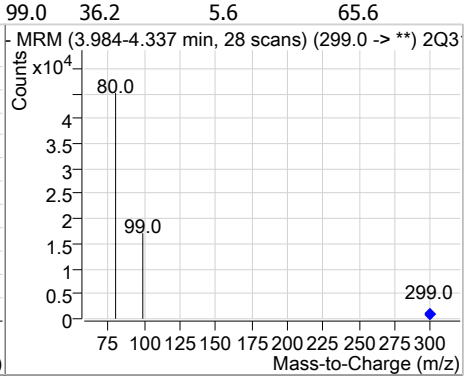




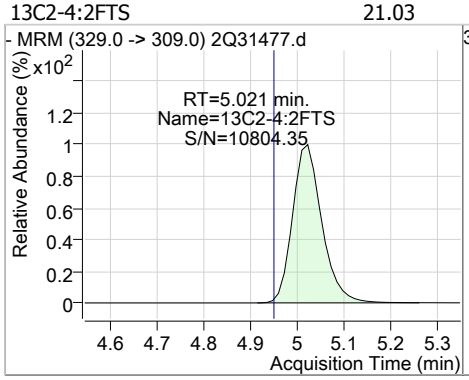
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.80	4.10	0.06	32966	299.0 -> 99.0	36.2	5.6	65.6

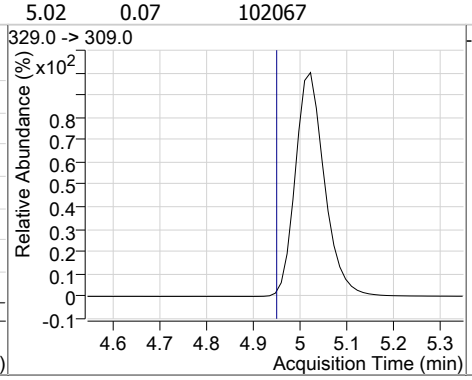


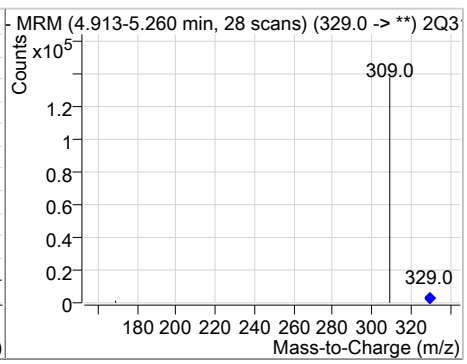




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.03	5.02	0.07	102067				

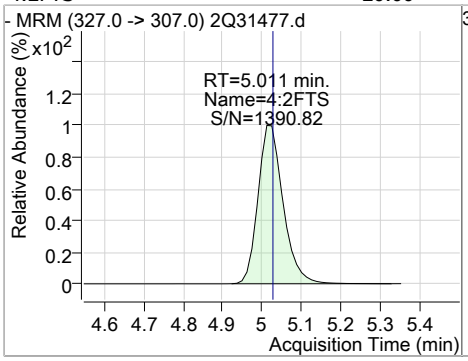


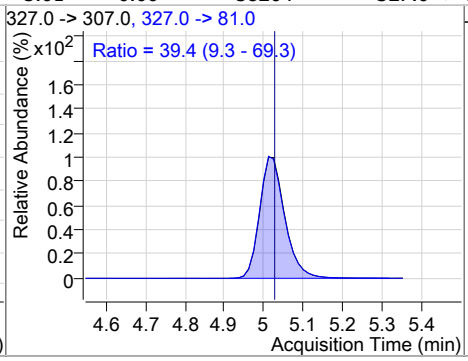


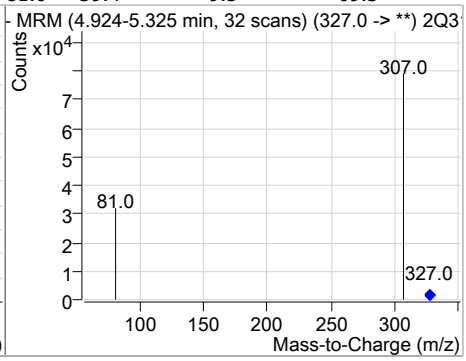


Perfluorinated Compounds by LC/MS/MS

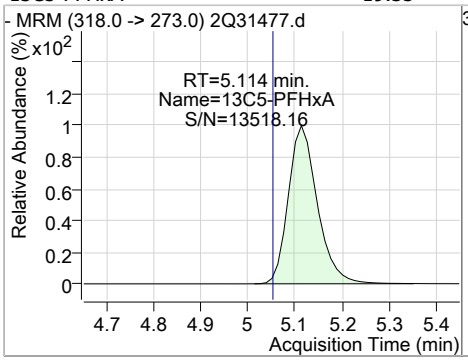
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.00	5.01	0.06	58264	327.0 -> 81.0	39.4	9.3	69.3

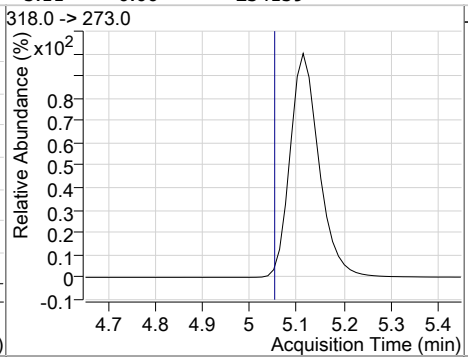


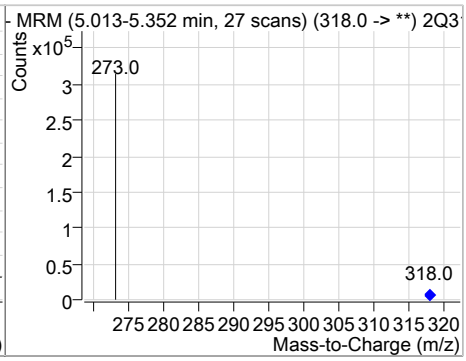




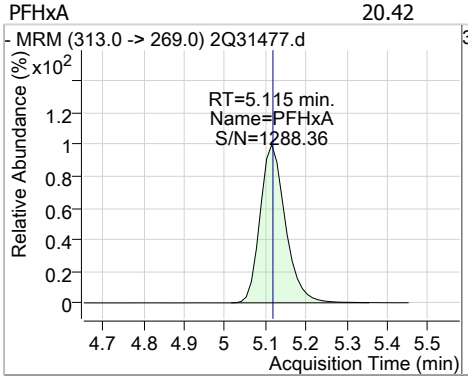
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.35	5.11	0.06	234159				

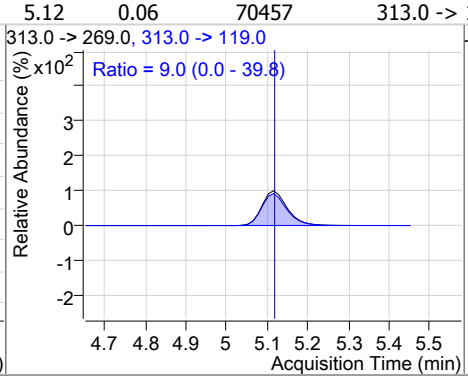


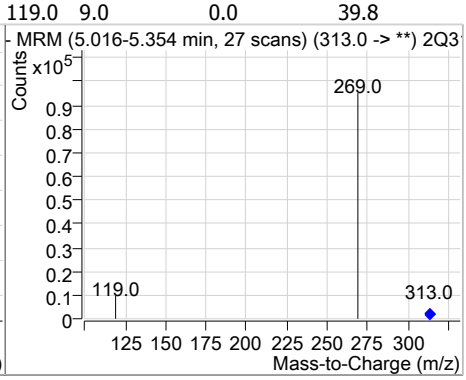




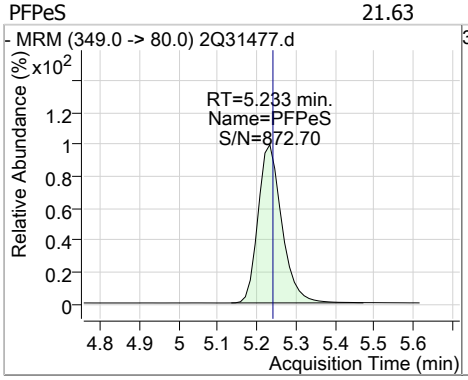
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.42	5.12	0.06	70457	313.0 -> 119.0	9.0	0.0	39.8

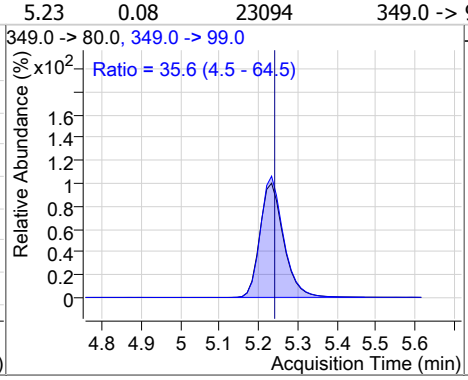


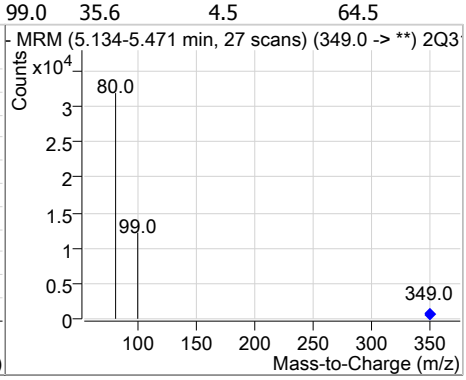




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.63	5.23	0.08	23094	349.0 -> 99.0	35.6	4.5	64.5

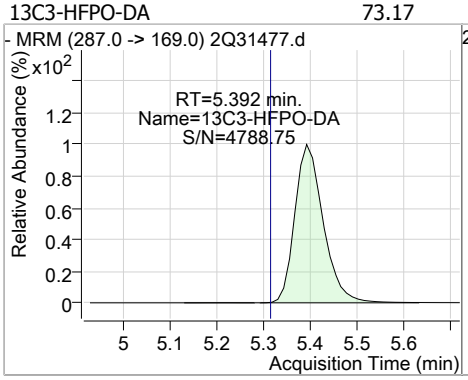


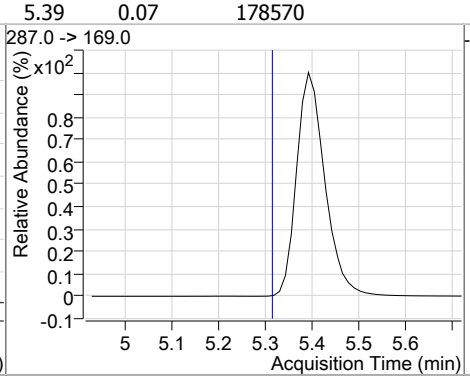


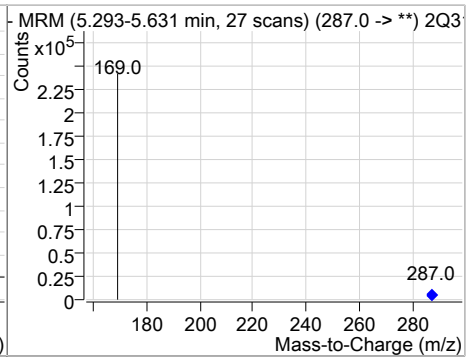


Perfluorinated Compounds by LC/MS/MS

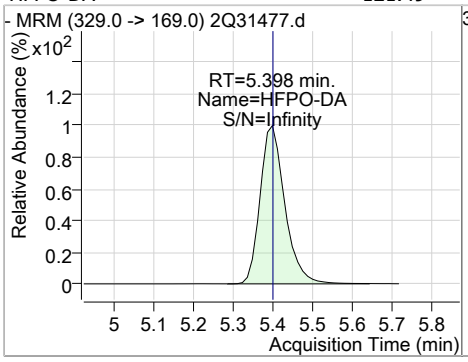
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	73.17	5.39	0.07	178570				

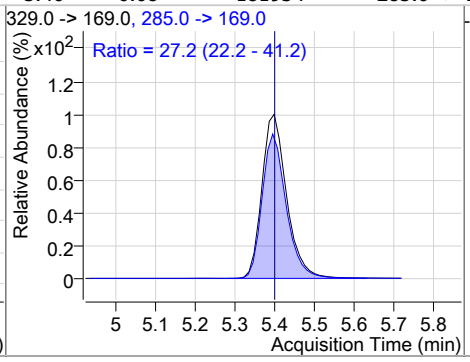


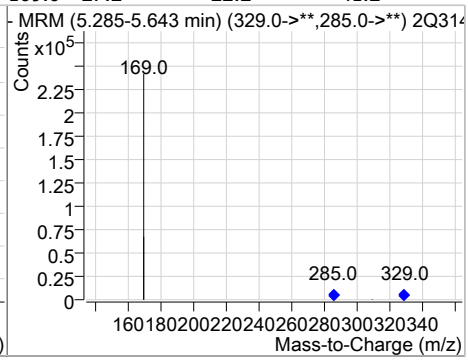




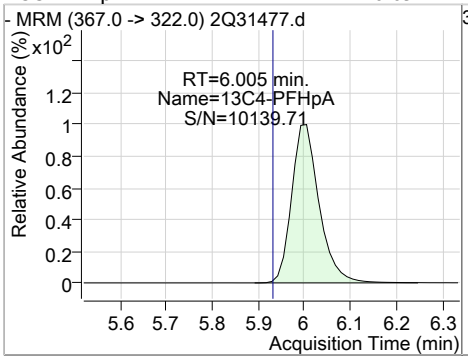
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	121.49	5.40	0.08	181934	285.0 -> 169.0	27.2	22.2	41.2

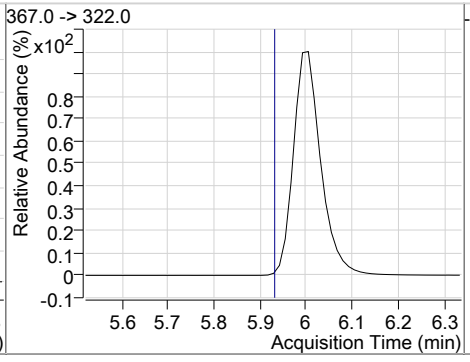


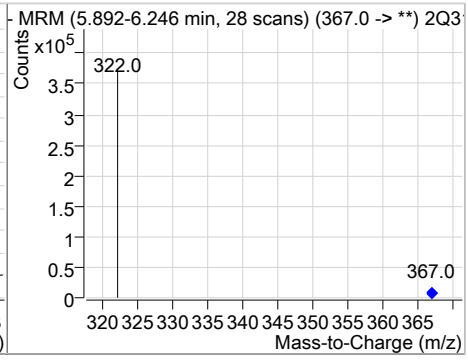




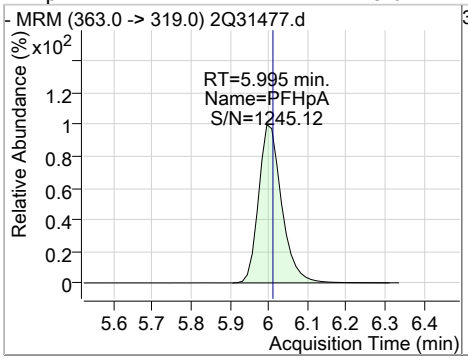
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.09	6.01	0.08	275881				

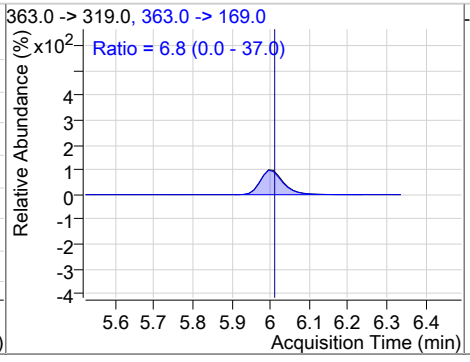


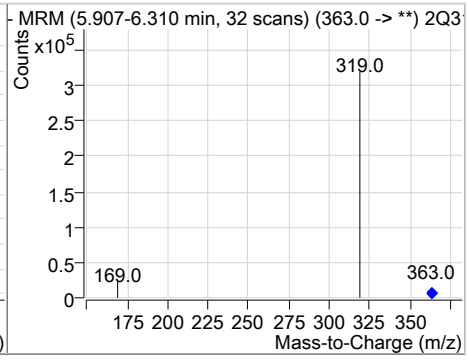




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.67	6.00	0.06	238148	363.0 -> 169.0	6.8	0.0	37.0

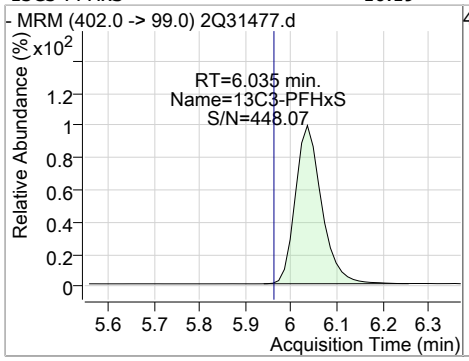


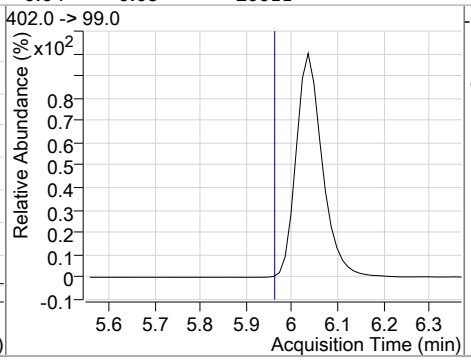


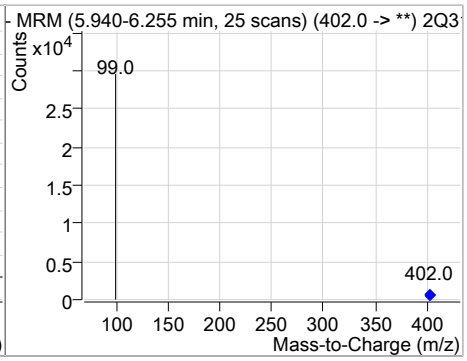


Perfluorinated Compounds by LC/MS/MS

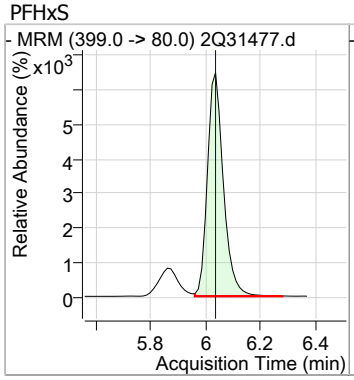
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.19	6.04	0.08	20611				

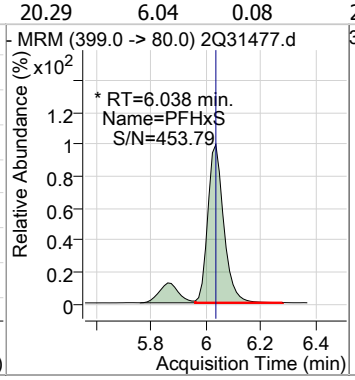


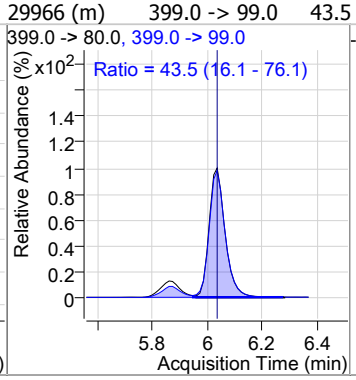


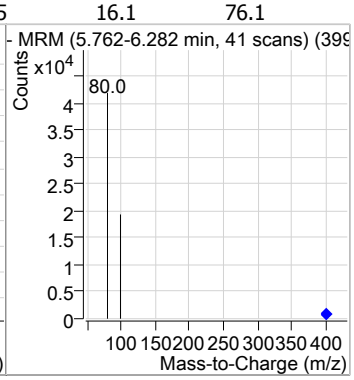


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.29	6.04	0.08	29966 (m)	399.0 -> 99.0	43.5	16.1	76.1

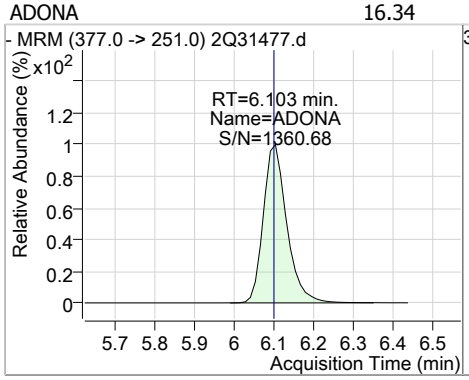


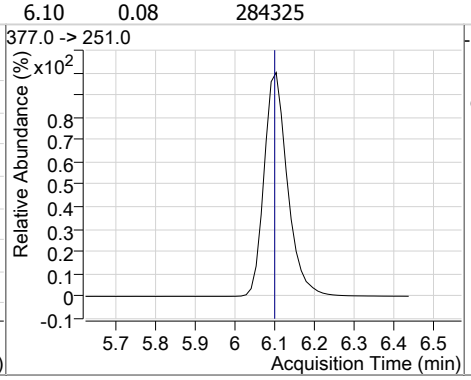


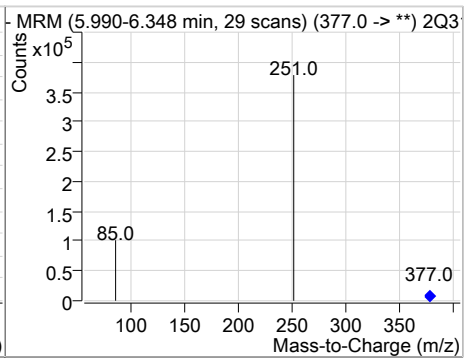




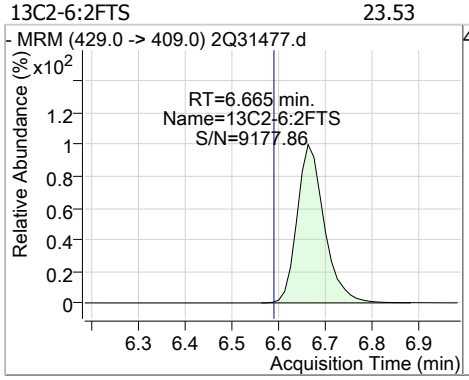
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.34	6.10	0.08	284325				

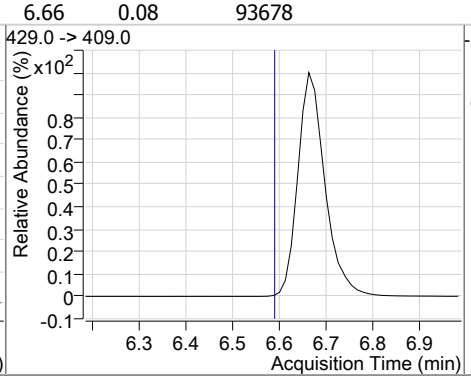


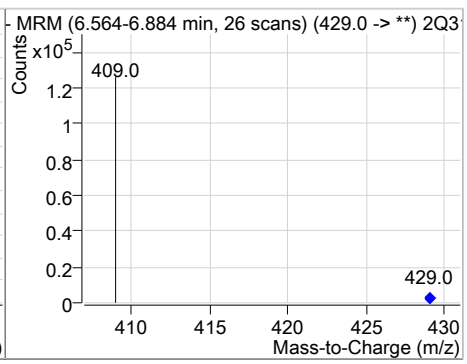




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.53	6.66	0.08	93678				

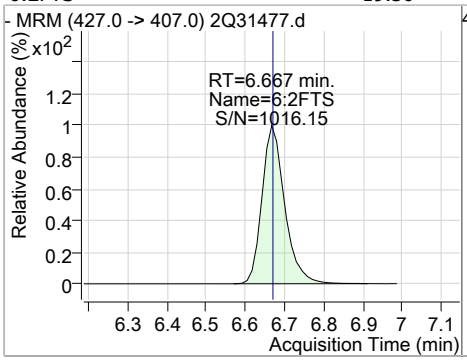


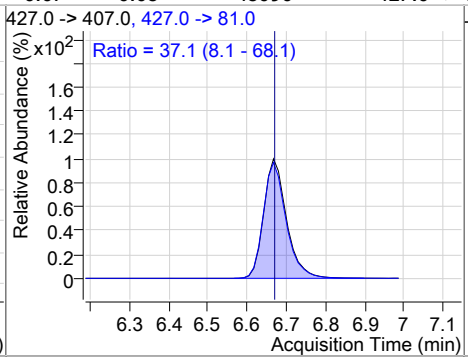


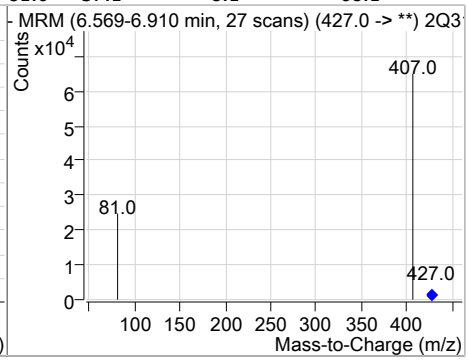


Perfluorinated Compounds by LC/MS/MS

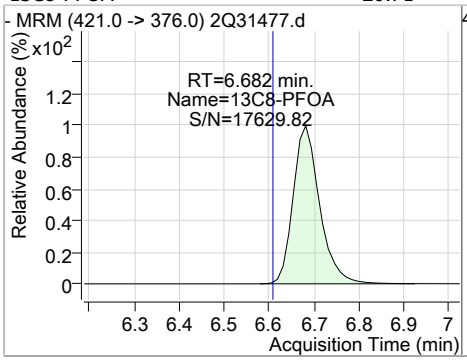
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.30	6.67	0.08	48096	427.0 -> 81.0	37.1	8.1	68.1

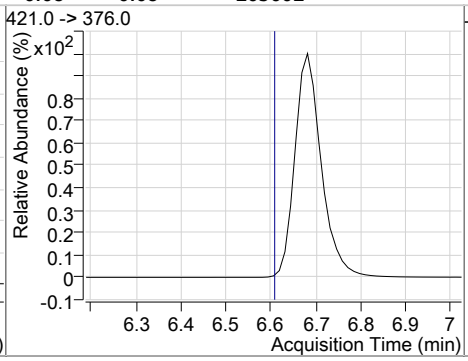


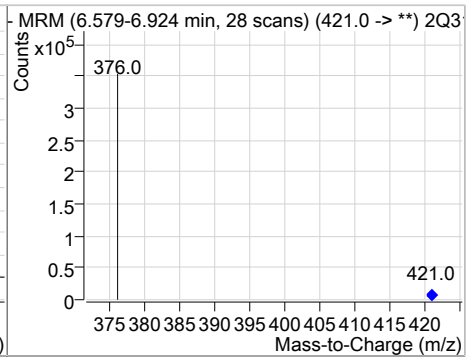




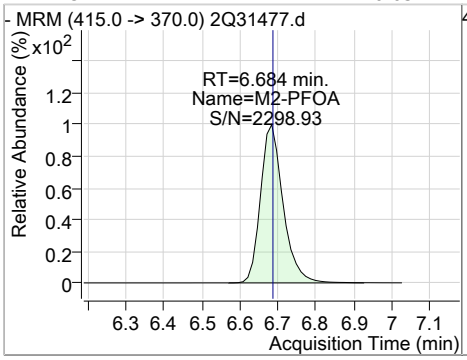
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.71	6.68	0.08	265602				

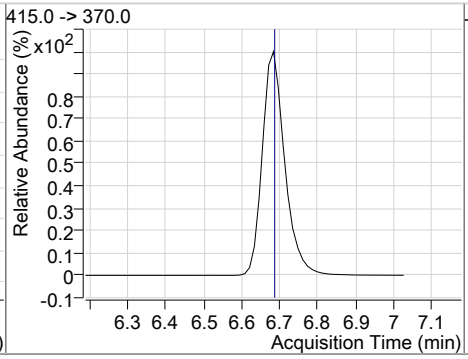


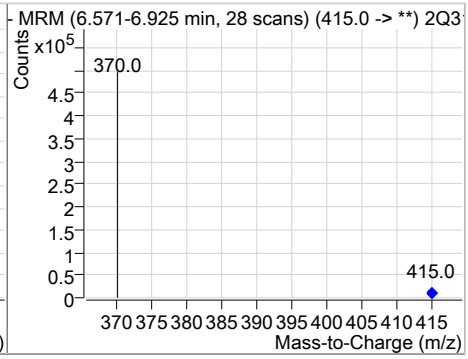




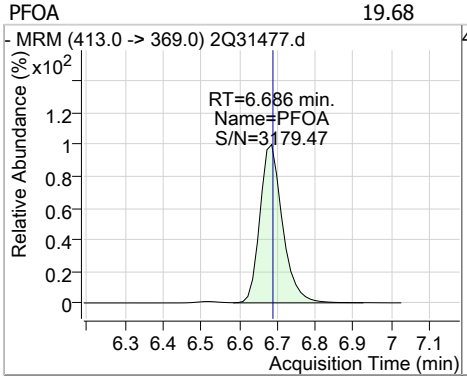
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.03	6.68	0.08	372782				

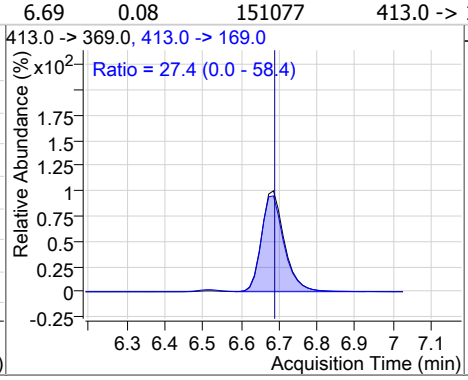


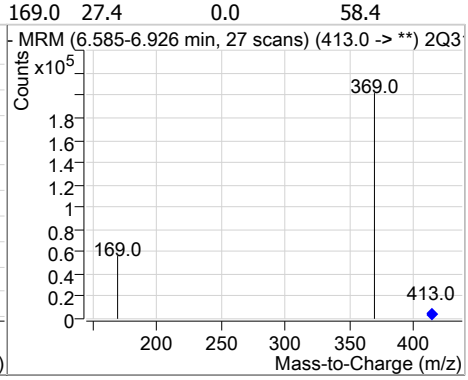




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.68	6.69	0.08	151077	413.0 -> 169.0	27.4	0.0	58.4

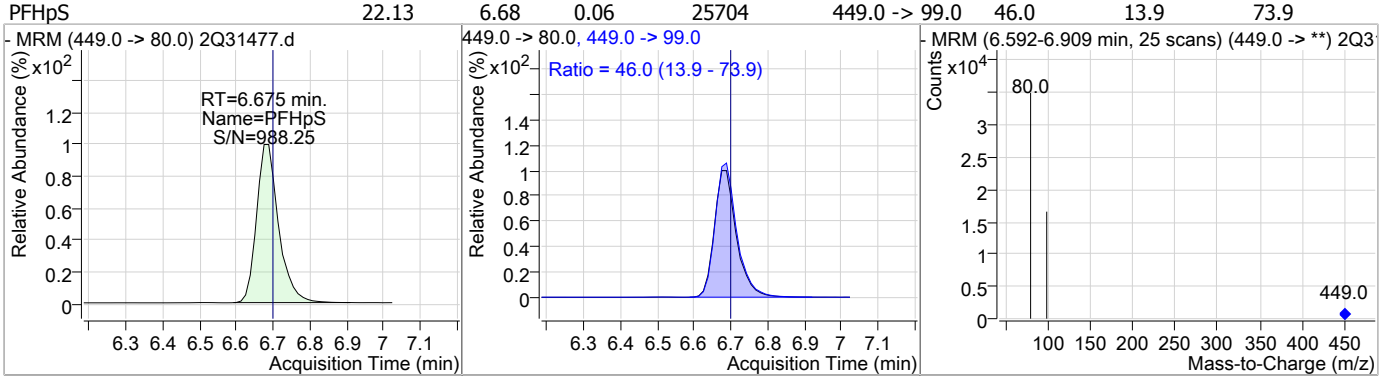




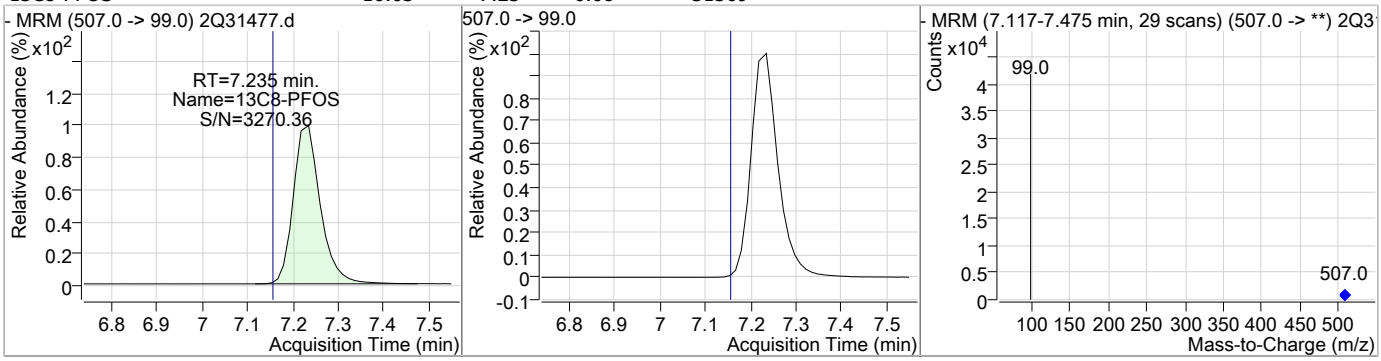


Perfluorinated Compounds by LC/MS/MS

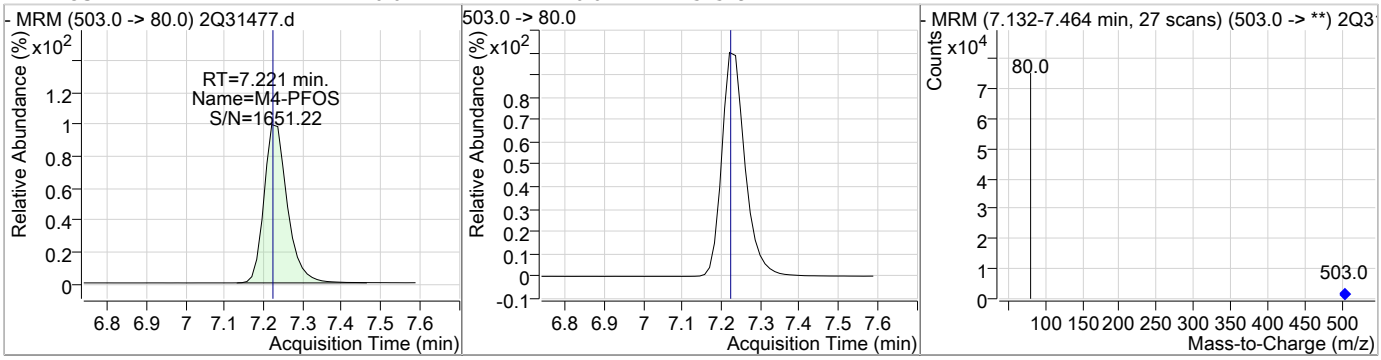
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.13	6.68	0.06	25704	449.0 -> 99.0	46.0	13.9	73.9



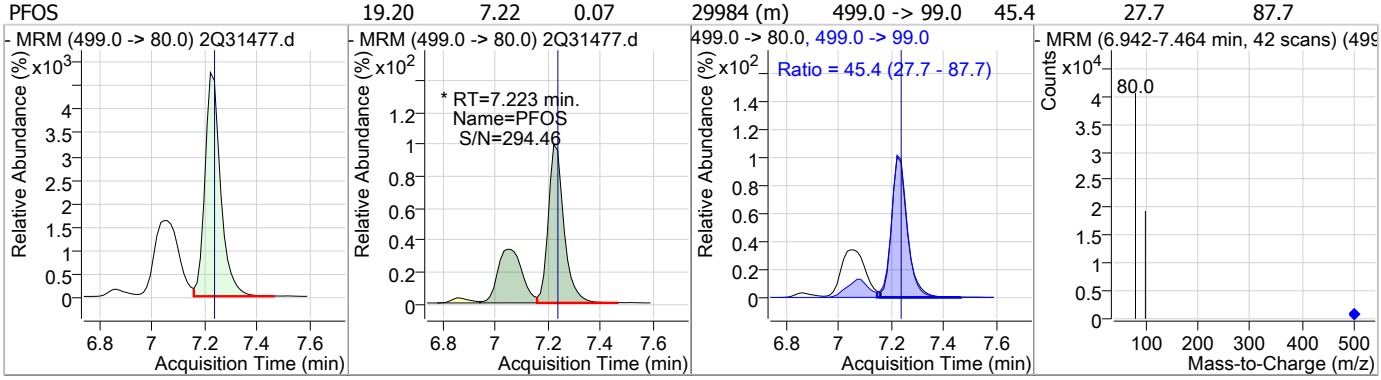
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.63	7.23	0.08	31569				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.04	7.22	0.07	57529				

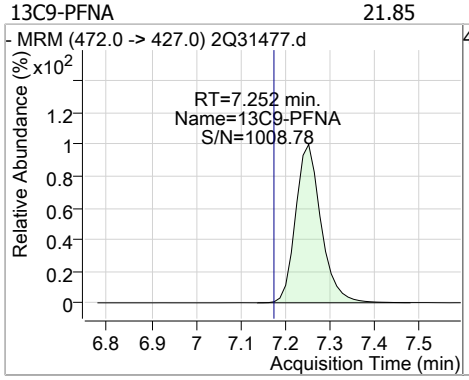


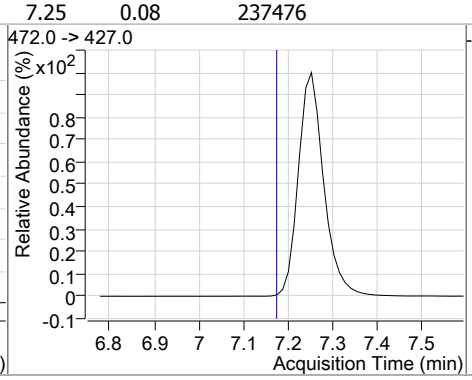
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.20	7.22	0.07	29984 (m)	499.0 -> 99.0	45.4	27.7	87.7

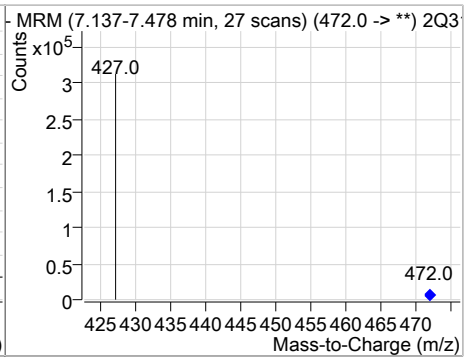


Perfluorinated Compounds by LC/MS/MS

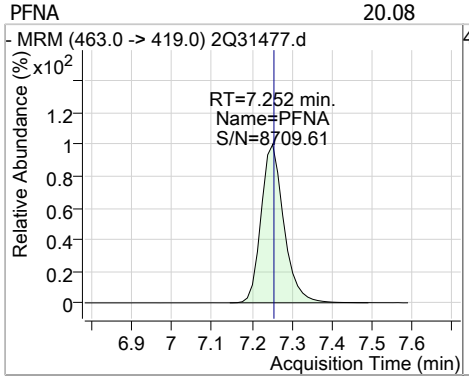
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.85	7.25	0.08	237476				

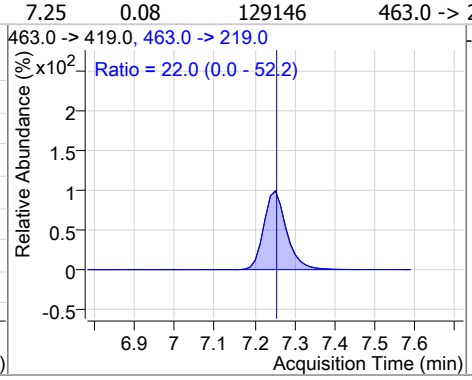


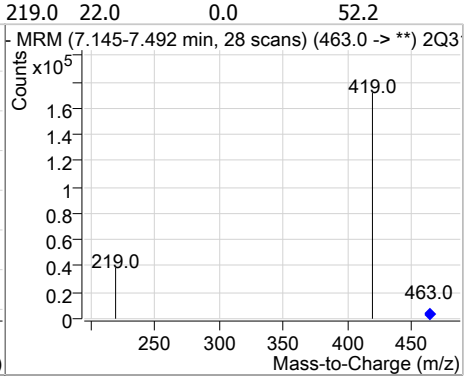




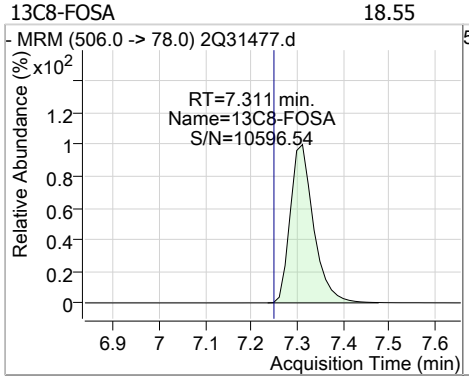
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.08	7.25	0.08	129146	463.0 -> 219.0	22.0	0.0	52.2

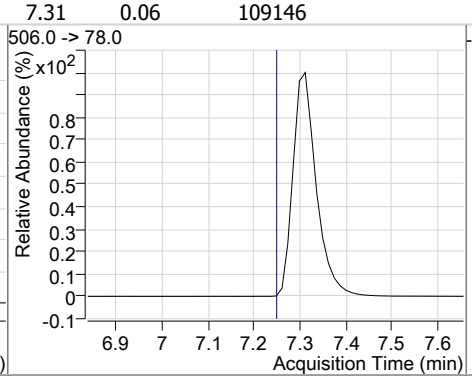


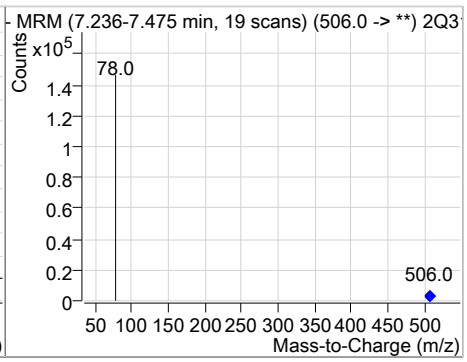




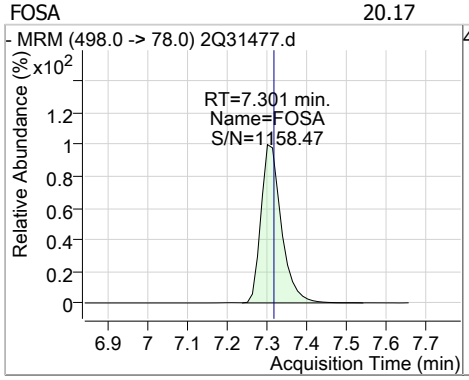
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.55	7.31	0.06	109146				

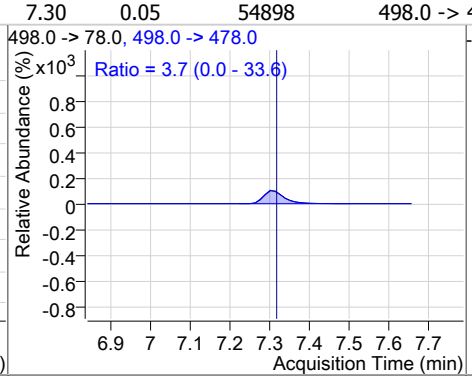


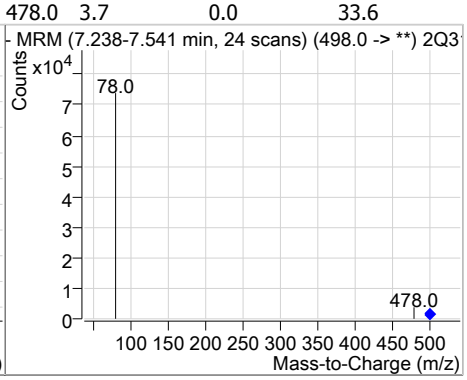




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.17	7.30	0.05	54898	498.0 -> 478.0	3.7	0.0	33.6

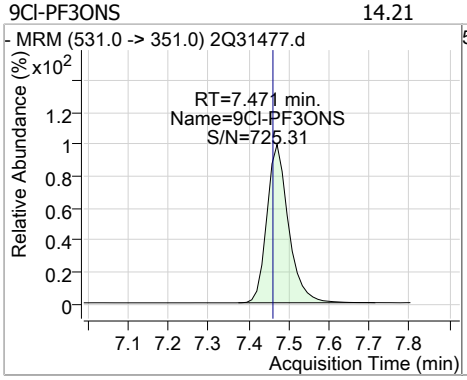


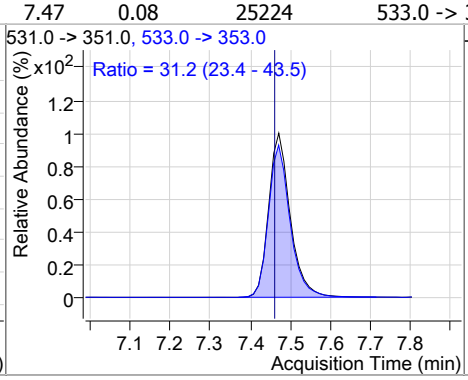


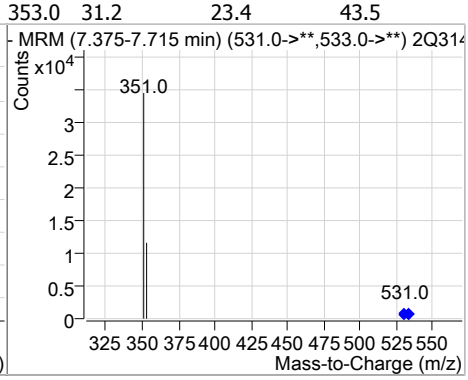


Perfluorinated Compounds by LC/MS/MS

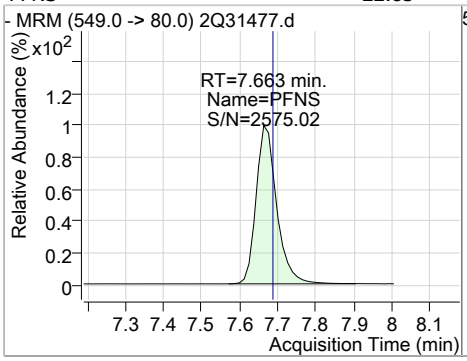
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.21	7.47	0.08	25224	533.0 -> 353.0	31.2	23.4	43.5

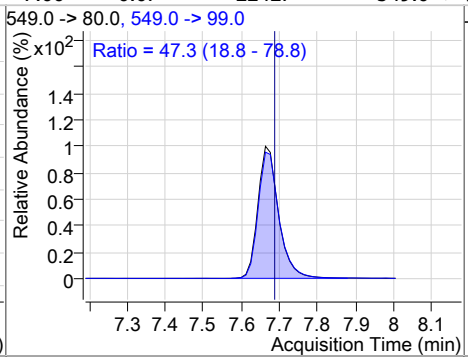


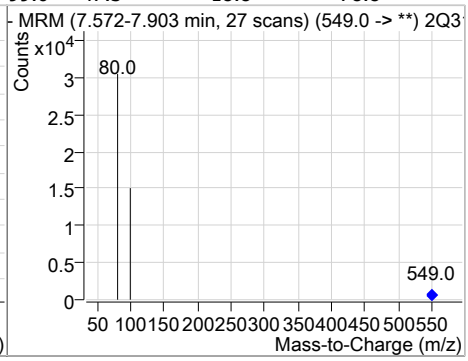




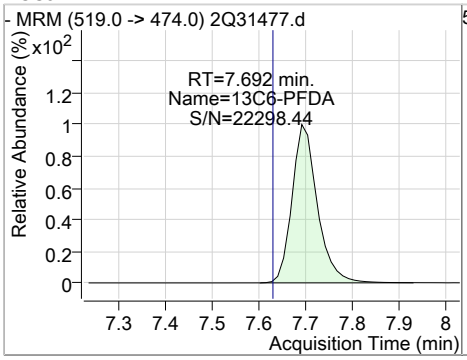
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.83	7.66	0.07	22427	549.0 -> 99.0	47.3	18.8	78.8

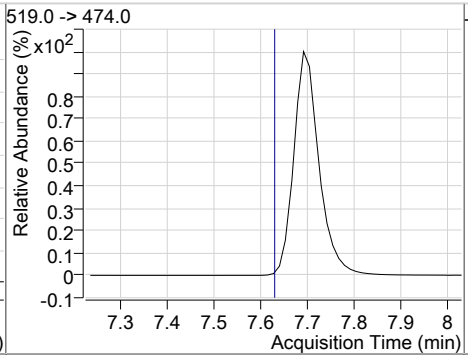


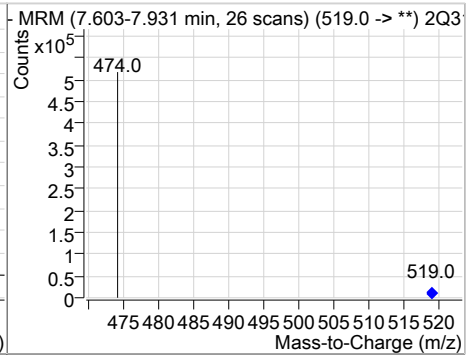




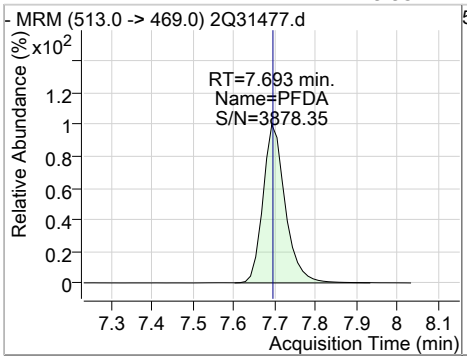
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.41	7.69	0.06	390860				

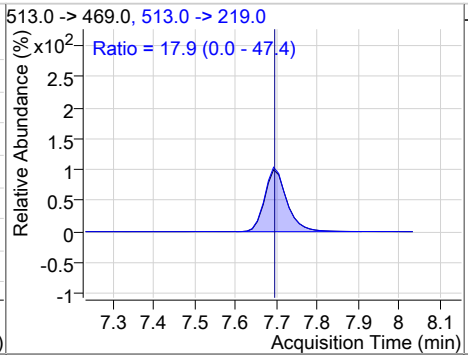


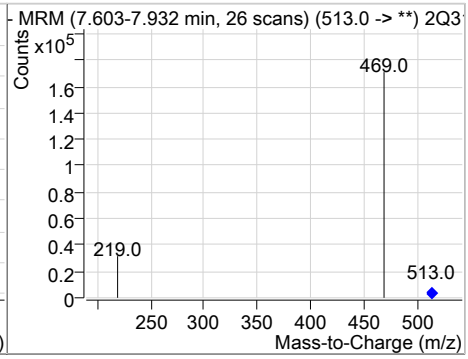




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.93	7.69	0.06	128657	513.0 -> 219.0	17.9	0.0	47.4

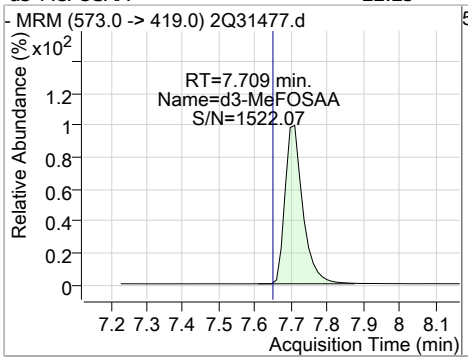


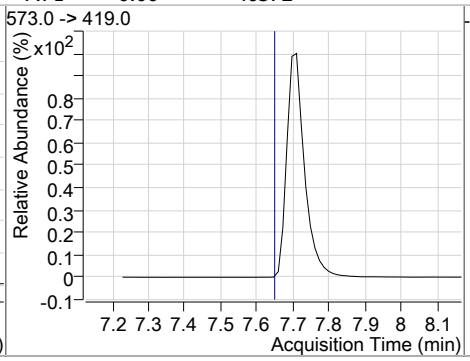


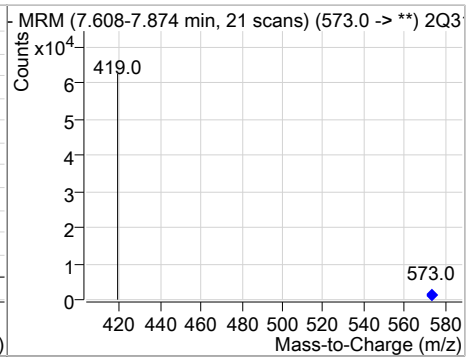


Perfluorinated Compounds by LC/MS/MS

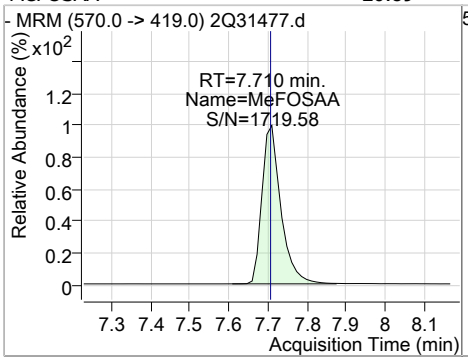
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.25	7.71	0.06	46372				

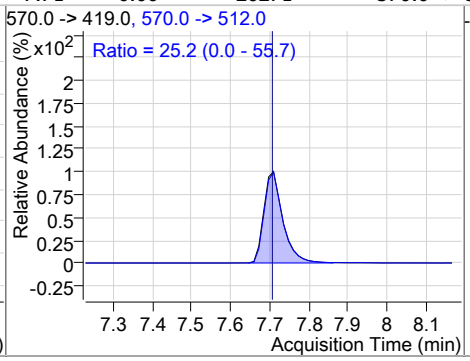


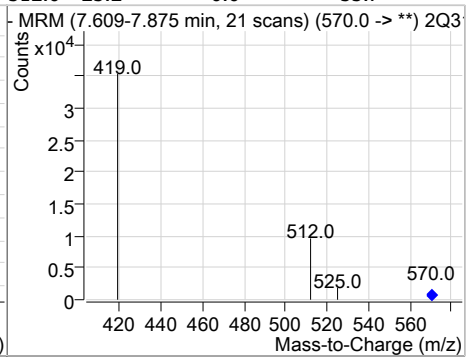




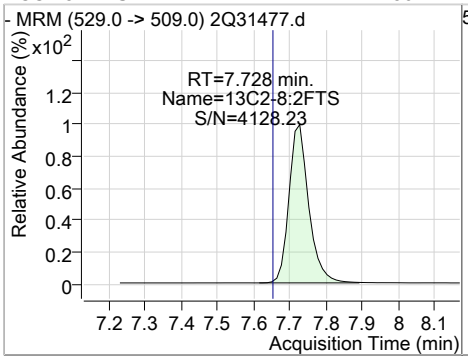
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.89	7.71	0.06	26271	570.0 -> 512.0	25.2	0.0	55.7

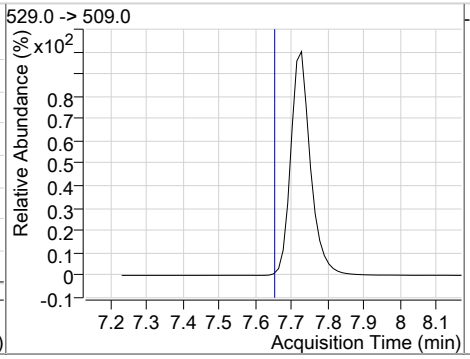


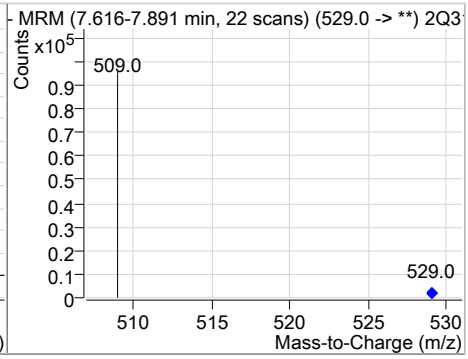




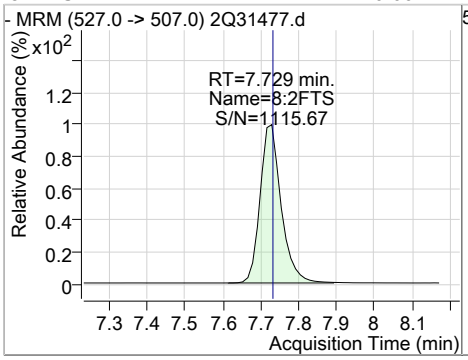
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.86	7.73	0.08	71093				

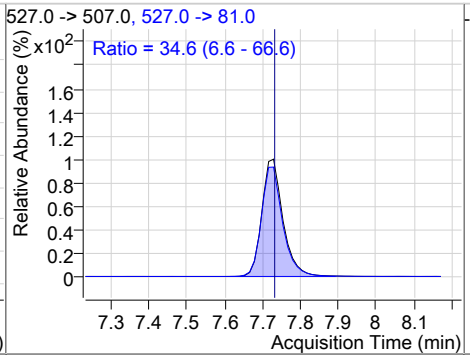


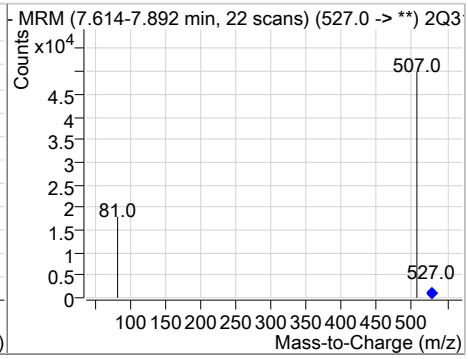




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.06	7.73	0.08	37034	527.0 -> 81.0	34.6	6.6	66.6

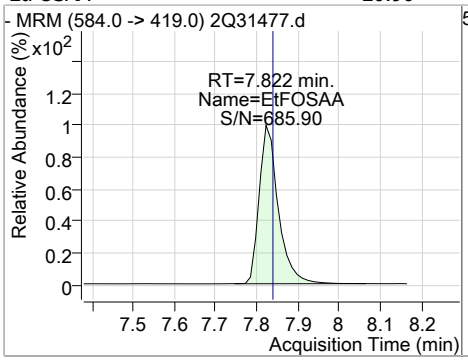


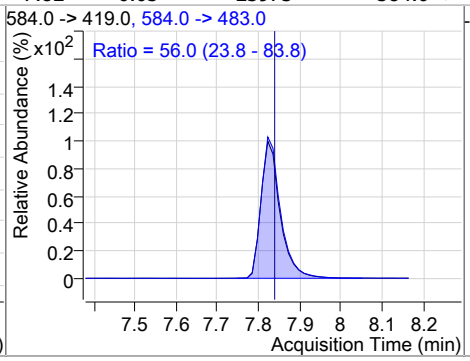


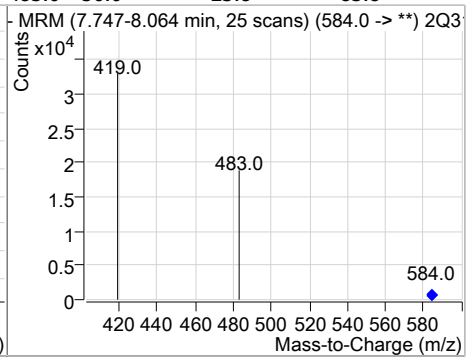


Perfluorinated Compounds by LC/MS/MS

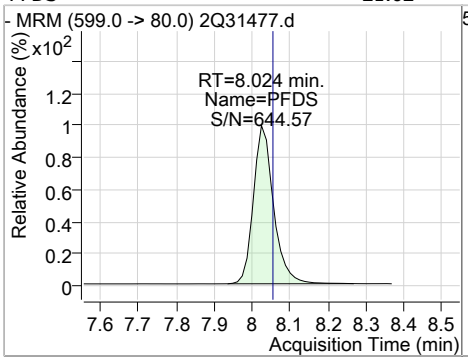
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.96	7.82	0.05	23973	584.0 -> 483.0	56.0	23.8	83.8

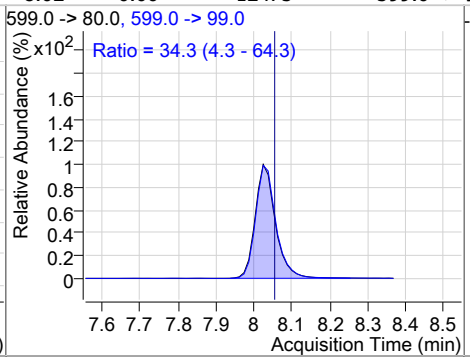


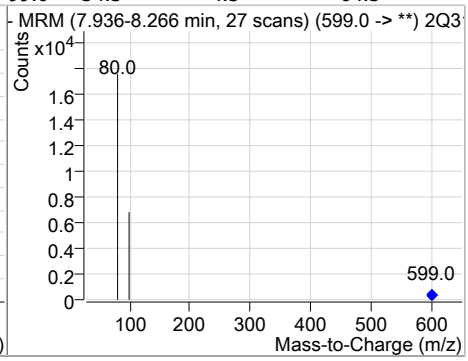




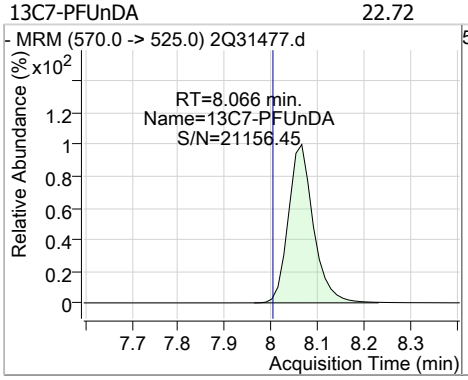
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.62	8.02	0.06	12475	599.0 -> 99.0	34.3	4.3	64.3

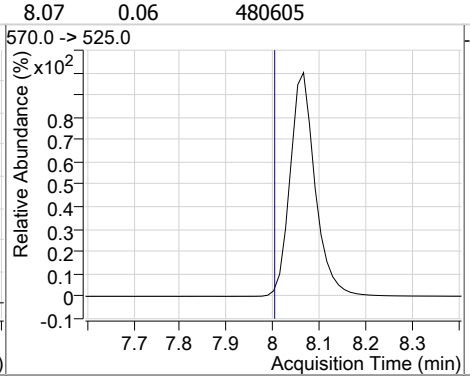


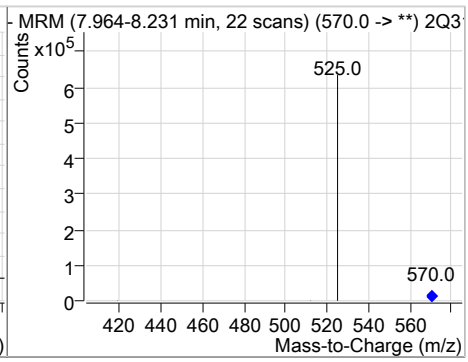




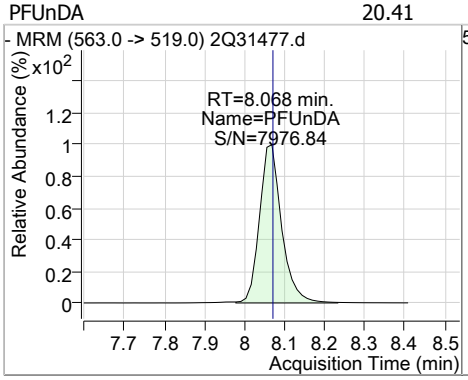
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.72	8.07	0.06	480605				

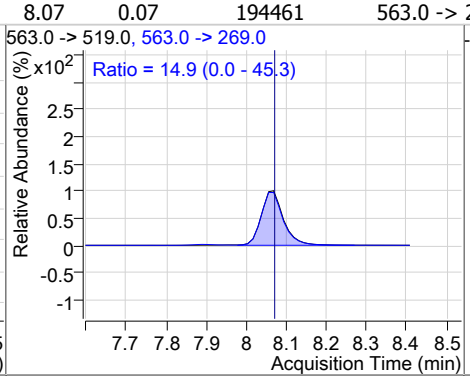


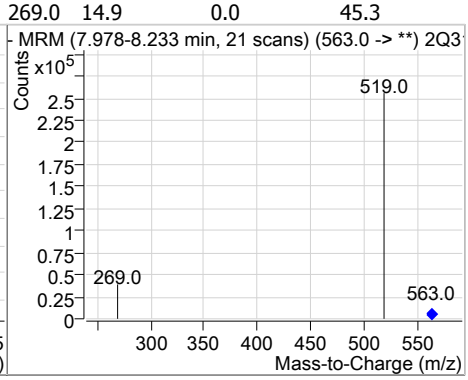




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.41	8.07	0.07	194461	563.0 -> 269.0	14.9	0.0	45.3

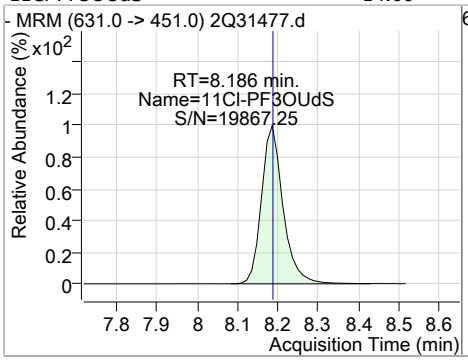


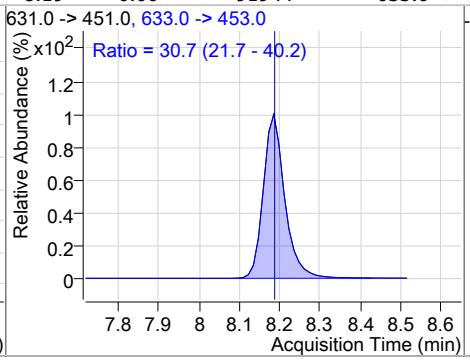


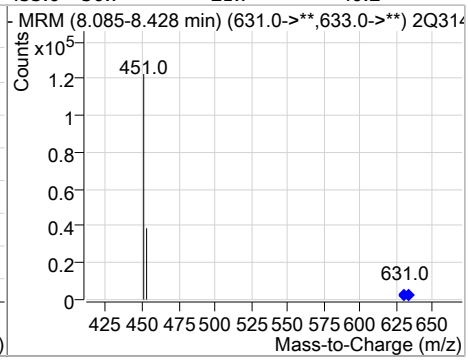


Perfluorinated Compounds by LC/MS/MS

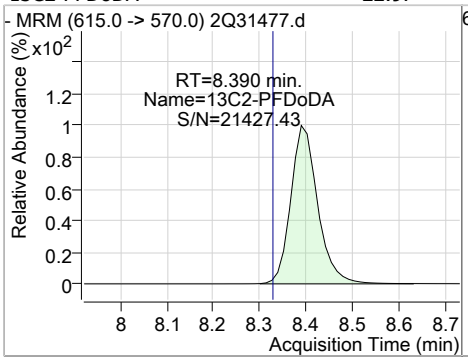
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	14.60	8.19	0.06	91944	633.0 -> 453.0	30.7	21.7	40.2

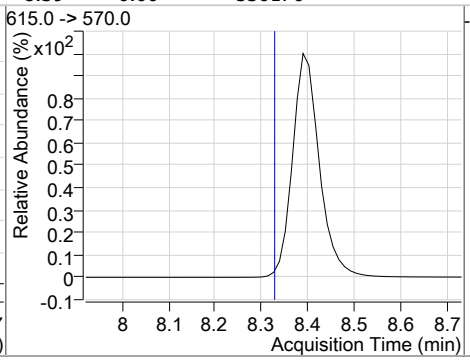


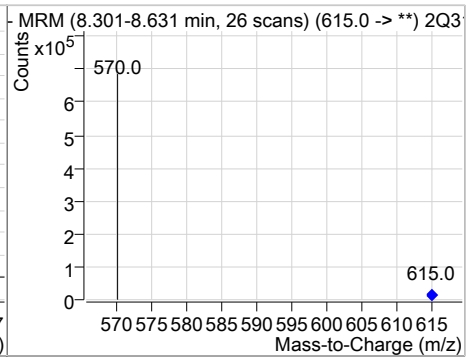




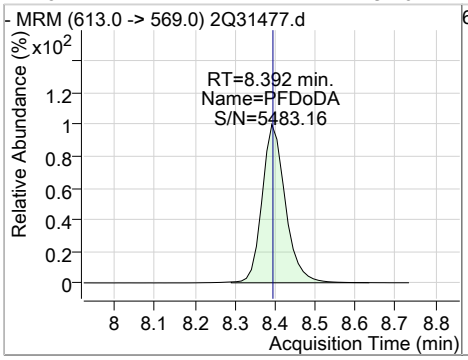
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.97	8.39	0.06	530170				

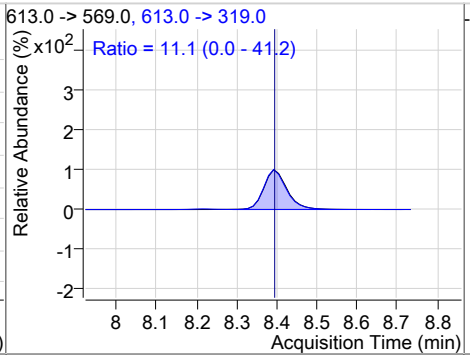


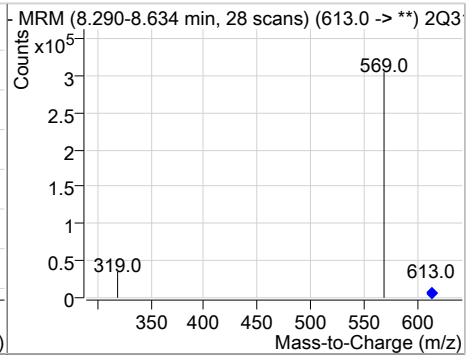




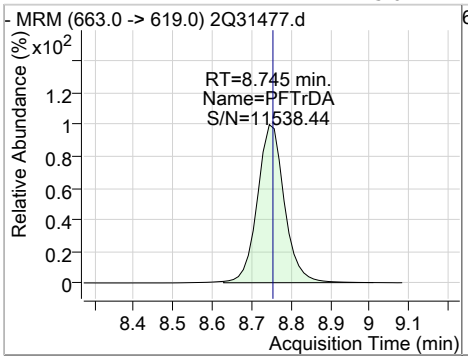
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.70	8.39	0.06	237747	613.0 -> 319.0	11.1	0.0	41.2

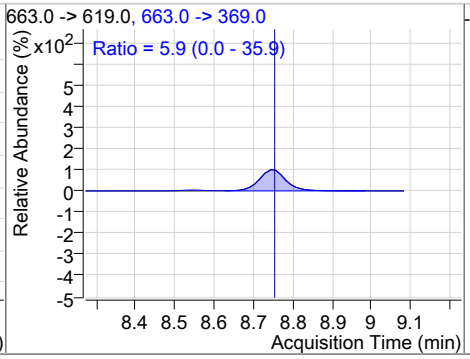


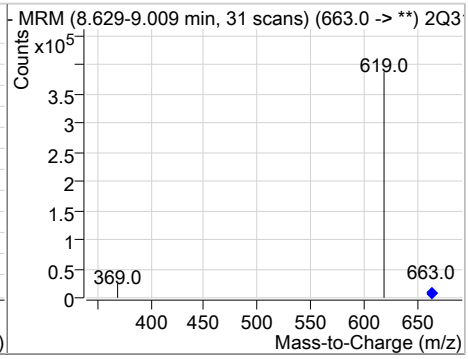




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	25.61	8.74	0.07	297992	663.0 -> 369.0	5.9	0.0	35.9

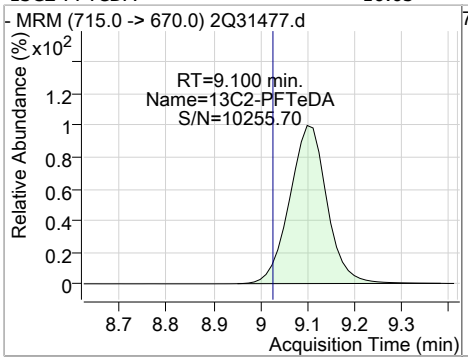


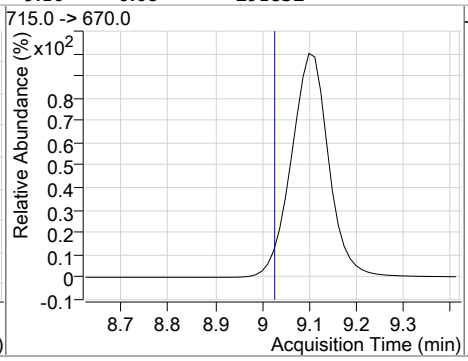


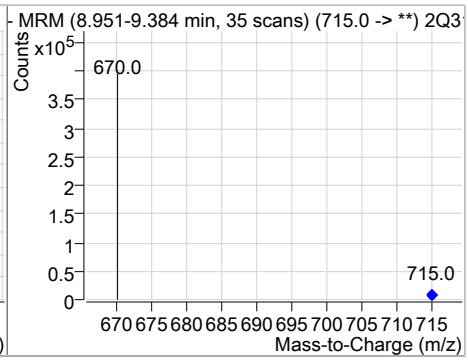


Perfluorinated Compounds by LC/MS/MS

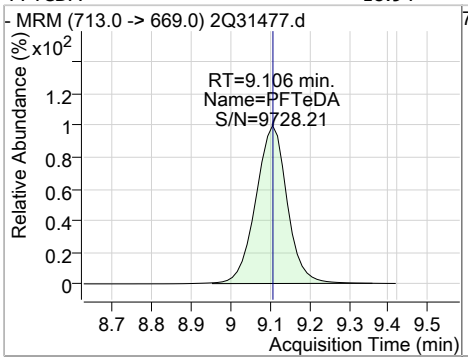
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.65	9.10	0.08	291832				

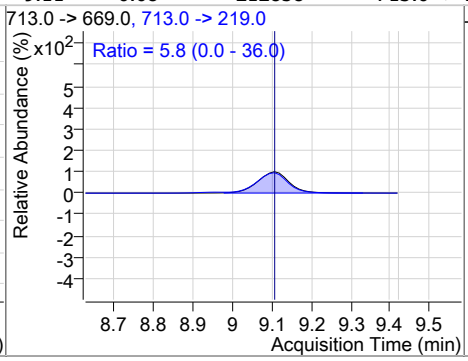


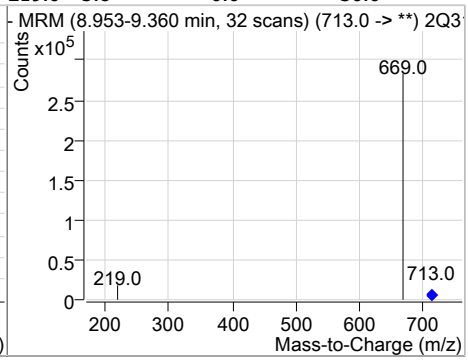




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.94	9.11	0.08	212858	713.0 -> 219.0	5.8	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q501-CC498
Lab FileID: 2Q31477.D
Injection Time: 06/26/19 22:26

Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/27/19 13:27 Nancy Saunders
Supervisor approved: 06/27/19 16:58 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/27/19 16:58

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31489.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 1:24:22 AM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75546,S2Q501,250,,,1,1,water

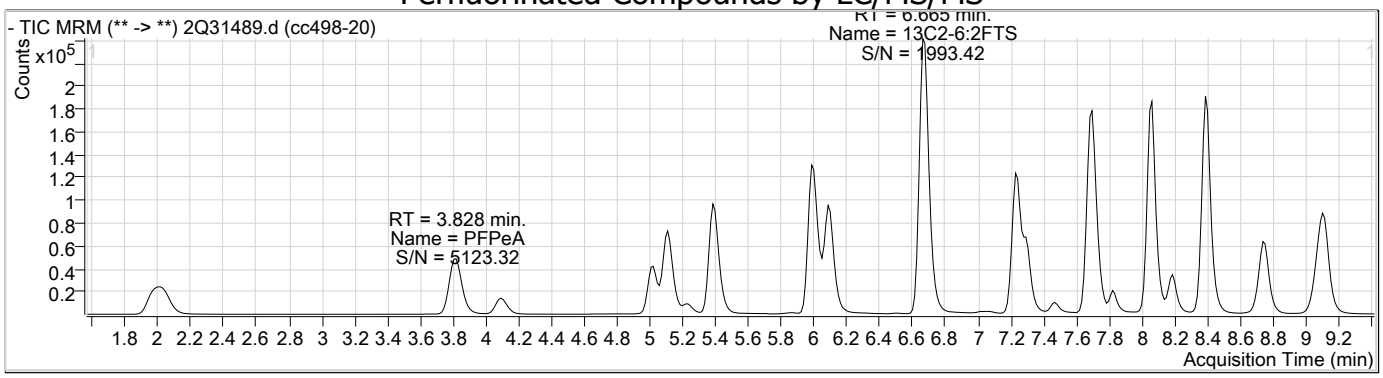
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.671	415.0 -> 370.0	367331	20.00	µg/L	0.063
13C4-PFOS	7.221	503.0 -> 80.0	58298	20.00	µg/L	0.066
M4-PFBA	2.015	217.0 -> 172.0	175148	20.00	µg/L	0.038
M5-PFPeA	3.824	268.0 -> 223.0	146702	20.00	µg/L	0.063
M5-PFHxA	5.114	318.0 -> 273.0	230139	20.00	µg/L	0.063
M4-PFHpA	5.993	367.0 -> 322.0	273188	20.00	µg/L	0.063
M8-PFOA	6.682	421.0 -> 376.0	261587	20.00	µg/L	0.076
M9-PFNA	7.252	472.0 -> 427.0	236385	20.00	µg/L	0.080
M6-PFDA	7.692	519.0 -> 474.0	386730	20.00	µg/L	0.065
M7-PFUnDA	8.066	570.0 -> 525.0	475524	20.00	µg/L	0.065
M2-PFDoDA	8.390	615.0 -> 570.0	514378	20.00	µg/L	0.064
M2-PFTeDA	9.100	715.0 -> 670.0	278111	20.00	µg/L	0.075
M8-FOSA	7.299	506.0 -> 78.0	108828	20.00	µg/L	0.052
M3-PFBS	4.093	302.0 -> 99.0	24406	20.00	µg/L	0.063
M3-PFHxS	6.035	402.0 -> 99.0	20959	20.00	µg/L	0.076
M8-PFOS	7.218	507.0 -> 99.0	31442	20.00	µg/L	0.065
M2-4:2FTS	5.021	329.0 -> 309.0	100910	20.00	µg/L	0.075
M2-6:2FTS	6.665	429.0 -> 409.0	93986	20.00	µg/L	0.076
M2-8:2FTS	7.728	529.0 -> 509.0	70040	20.00	µg/L	0.077
M3-MeFOSAA	7.709	573.0 -> 419.0	46243	20.00	µg/L	0.064
M3-HFPO-DA	5.392	287.0 -> 169.0	181859	100.00	µg/L	0.075
System Monitoring Compounds						
13C2-4:2FTS	5.021	329.0 -> 309.0	100850	20.78	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C2-6:2FTS	6.665	429.0 -> 409.0	93893	23.58	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%		
13C2-8:2FTS	7.728	529.0 -> 509.0	70035	24.49	µg/L	0.077
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.4%		
13C2-PFDoDA	8.390	615.0 -> 570.0	513071	22.23	µg/L	0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C2-PFTeDA	9.100	715.0 -> 670.0	275461	15.72	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.6%		
13C3-PFBS	4.093	302.0 -> 99.0	24291	15.99	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C3-PFHxS	6.035	402.0 -> 99.0	21019	16.51	µg/L	0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
13C4-PFBA	2.015	217.0 -> 172.0	175110	16.93	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%		
13C4-PFHpA	5.993	367.0 -> 322.0	273123	19.89	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFHxA	5.114	318.0 -> 273.0	229527	18.97	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C5-PFPeA	3.824	268.0 -> 223.0	146698	18.27	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C6-PFDA	7.692	519.0 -> 474.0	386269	22.14	µg/L	0.065

Perfluorinated Compounds by LC/MS/MS

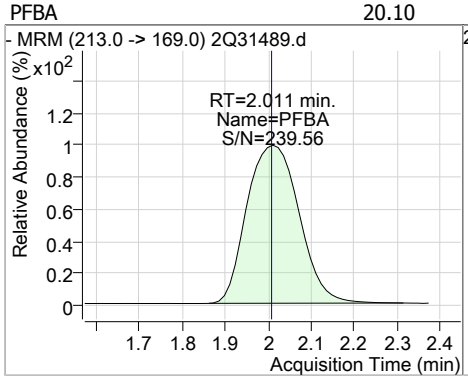
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C7-PFUnDA	8.066	570.0 -> 525.0	474940	22.45 µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C8-FOSA	7.299	506.0 -> 78.0	108829	18.50 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C8-PFOA	6.682	421.0 -> 376.0	261196	20.36 µg/L		0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C8-PFOS	7.218	507.0 -> 99.0	31348	16.51 µg/L		0.065
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C9-PFNA	7.252	472.0 -> 427.0	236074	21.73 µg/L		0.080
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
d3-MeFOSAA	7.709	573.0 -> 419.0	46263	22.19 µg/L		0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
M2-PFOA	6.671	415.0 -> 370.0	367803	20.02 µg/L		0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
M4-PFOS	7.221	503.0 -> 80.0	58204	19.97 µg/L		0.066
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-HFPO-DA	5.392	287.0 -> 169.0	181859	74.51 µg/L		0.075
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 74.5%		
Target Compounds						**QValue**
4:2FTS	5.011	327.0 -> 307.0	58219	20.25 µg/L		100
6:2FTS	6.667	427.0 -> 407.0	48075	19.22 µg/L		98
8:2FTS	7.729	527.0 -> 507.0	37337	20.54 µg/L		97
EtFOSAA	7.822	584.0 -> 419.0	23218	20.37 µg/L		98
FOSA	7.301	498.0 -> 78.0	55361	20.40 µg/L		100
MeFOSAA	7.710	570.0 -> 419.0	25310	20.20 µg/L		100
PFBA	2.011	213.0 -> 169.0	30116	20.10 µg/L		100
PFBS	4.096	299.0 -> 80.0	33319	19.89 µg/L		100
PFDA	7.693	513.0 -> 469.0	127748	20.01 µg/L		100
PFDoDA	8.392	613.0 -> 569.0	230050	19.65 µg/L		99
PFDS	8.024	599.0 -> 80.0	12309	21.41 µg/L		100
PFHpA	5.995	363.0 -> 319.0	236493	19.73 µg/L		100
PFHpS	6.675	449.0 -> 80.0	25665	21.81 µg/L		98
PFHxA	5.115	313.0 -> 269.0	68807	20.33 µg/L		99
PFHxS	6.025	399.0 -> 80.0	29788	19.91 µg/L	m	97
PFNA	7.252	463.0 -> 419.0	129041	20.19 µg/L		100
PFNS	7.663	549.0 -> 80.0	21582	22.06 µg/L		100
PFOA	6.673	413.0 -> 369.0	149524	19.81 µg/L		99
PFOS	7.223	499.0 -> 80.0	29697	19.09 µg/L	m	85
PFPeA	3.828	263.0 -> 219.0	119381	19.54 µg/L		100
PFPeS	5.233	349.0 -> 80.0	23038	21.45 µg/L		99
PFTeDA	9.106	713.0 -> 669.0	201622	19.02 µg/L		100
PFTrDA	8.745	663.0 -> 619.0	288178	26.25 µg/L		100
PFUnDA	8.068	563.0 -> 519.0	190781	20.27 µg/L		99
11Cl-PF3OUdS	8.186	631.0 -> 451.0	92421	15.13 µg/L		100
9Cl-PF3ONS	7.471	531.0 -> 351.0	24962	14.22 µg/L		96
ADONA	6.090	377.0 -> 251.0	284969	16.66 µg/L		100
HFPO-DA	5.398	329.0 -> 169.0	184445	120.94 µg/L		93

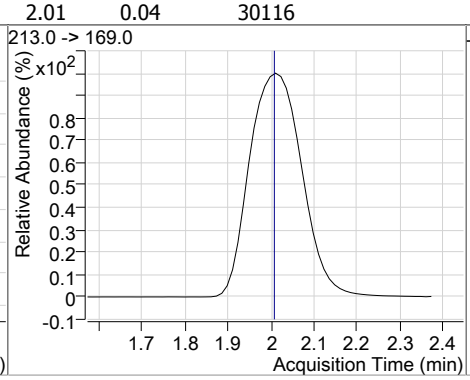
= Qualifier out of range, m = manually integrated, + = Area summed

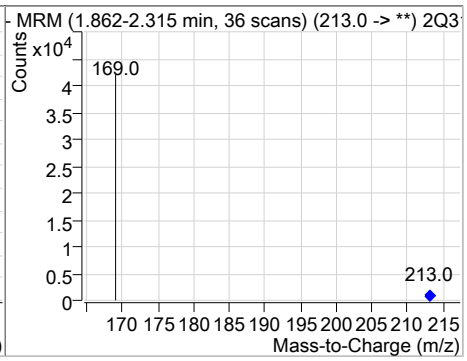
Perfluorinated Compounds by LC/MS/MS



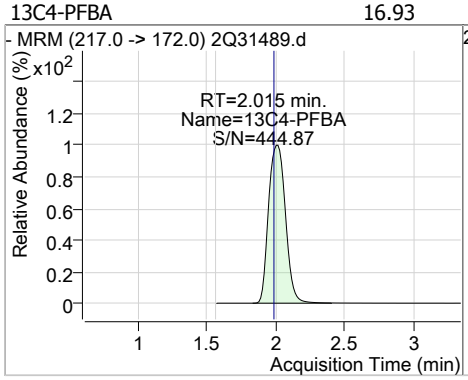
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.10	2.01	0.04	30116				

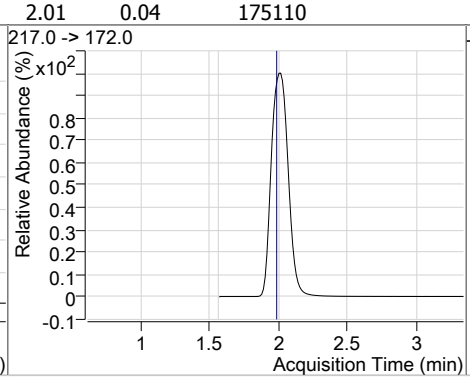


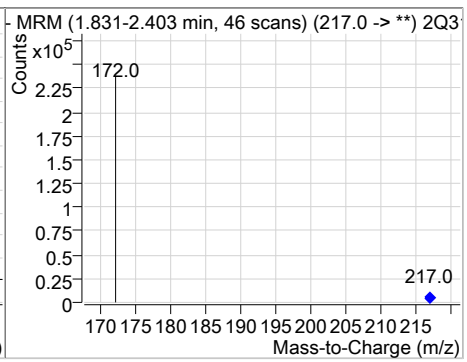




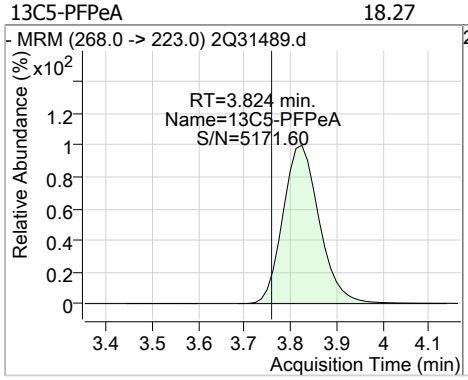
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.93	2.01	0.04	175110				

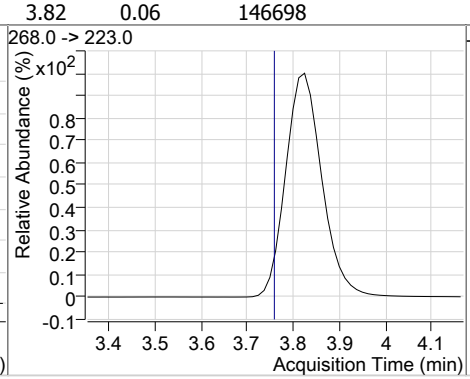


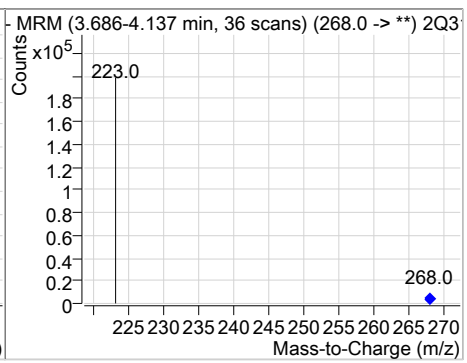




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.27	3.82	0.06	146698				

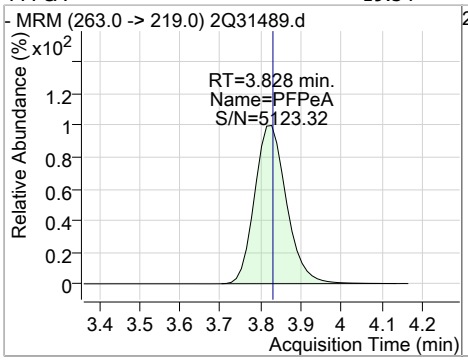


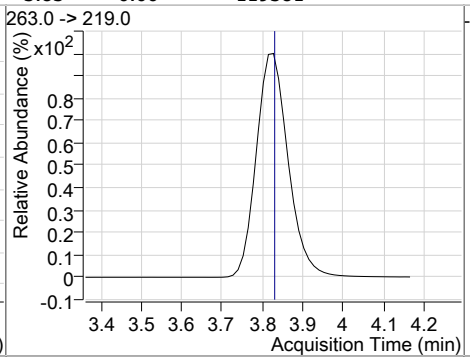


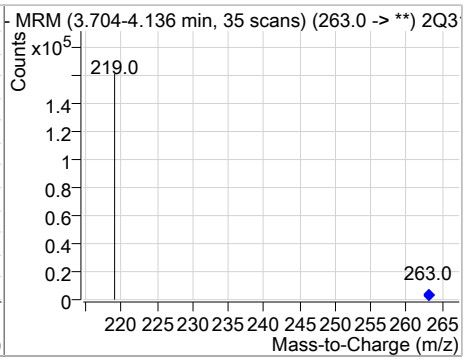


Perfluorinated Compounds by LC/MS/MS

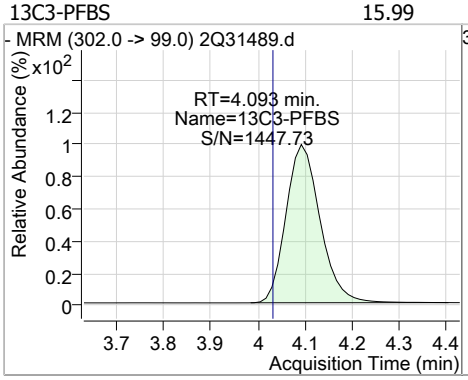
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.54	3.83	0.06	119381				

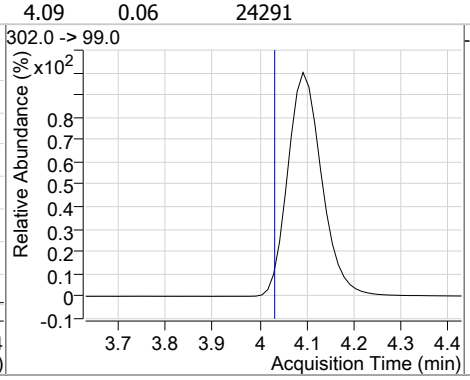


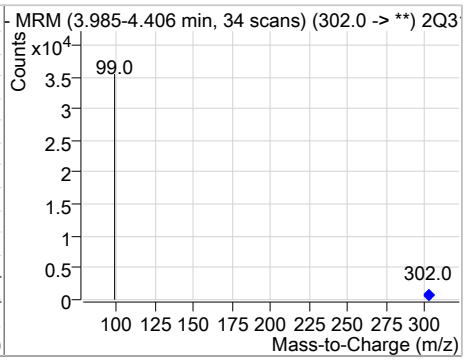




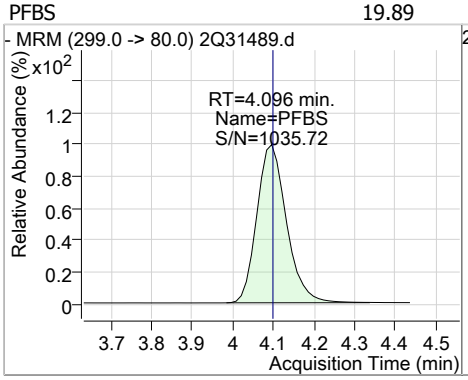
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.99	4.09	0.06	24291				

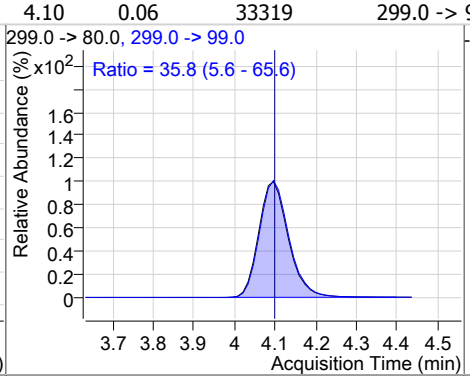


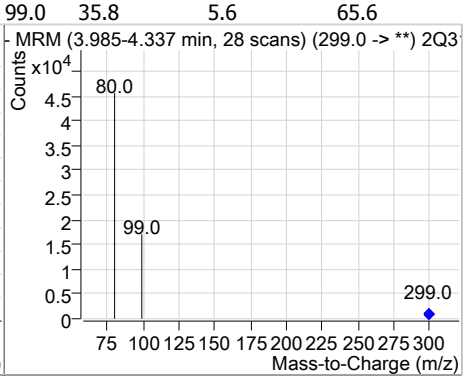




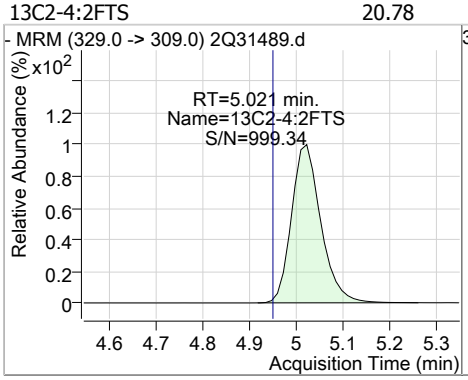
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.89	4.10	0.06	33319	299.0 -> 99.0	35.8	5.6	65.6

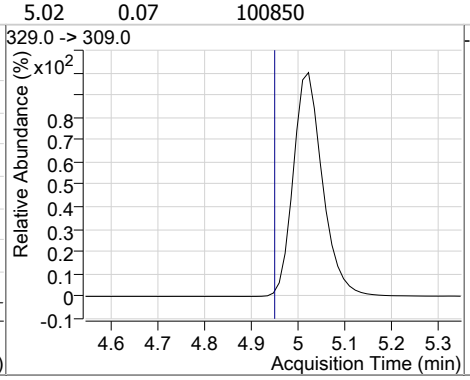


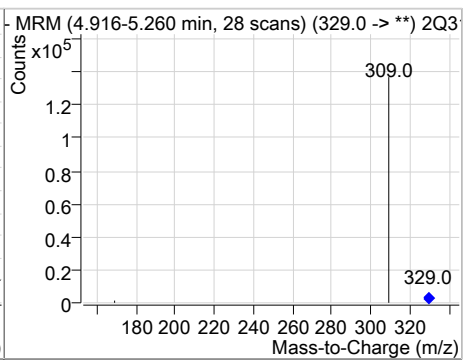




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.78	5.02	0.07	100850				

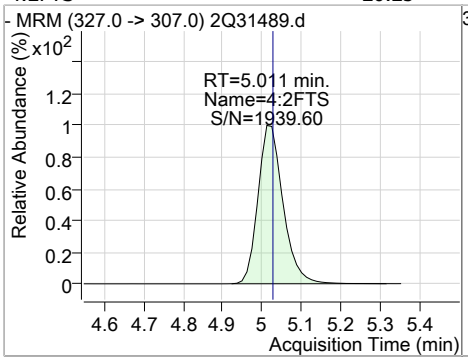


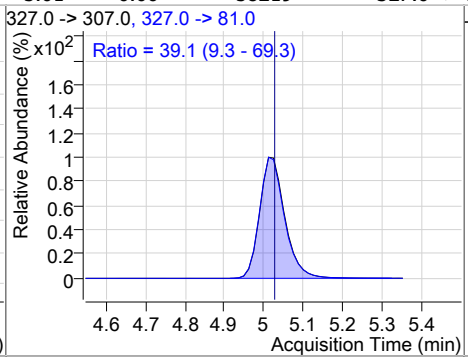


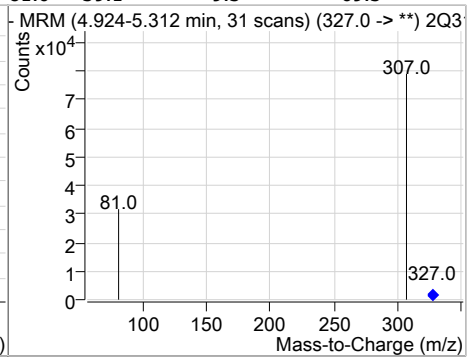


Perfluorinated Compounds by LC/MS/MS

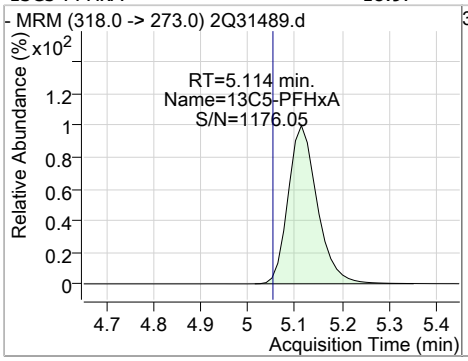
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.25	5.01	0.06	58219	327.0 -> 81.0	39.1	9.3	69.3

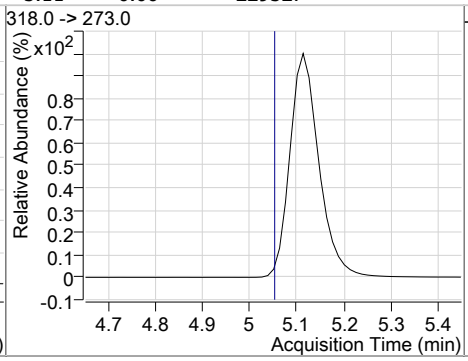


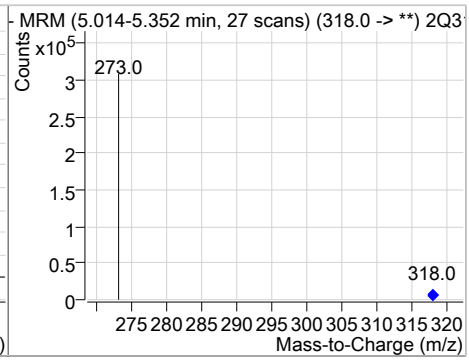




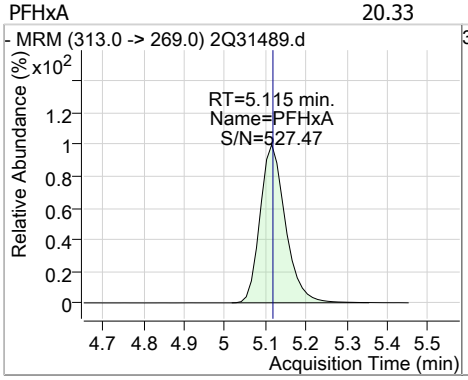
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.97	5.11	0.06	229527				

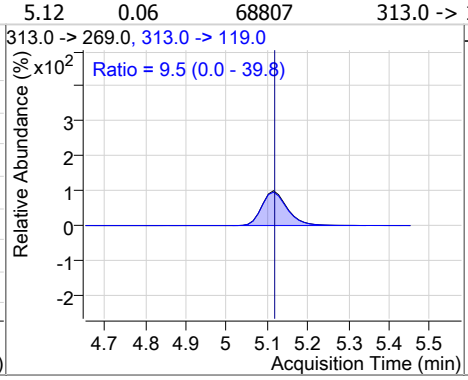


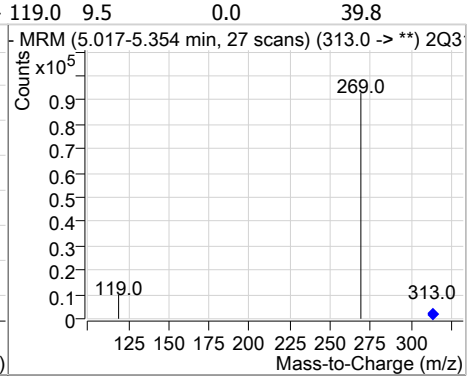




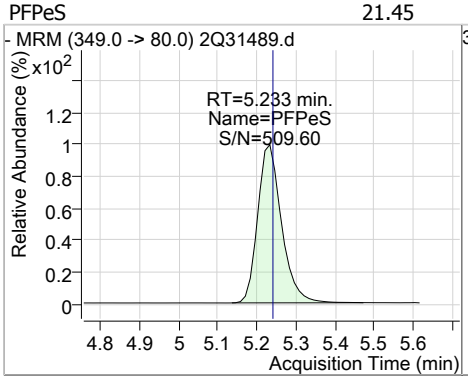
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.33	5.12	0.06	68807	313.0 -> 119.0	9.5	0.0	39.8

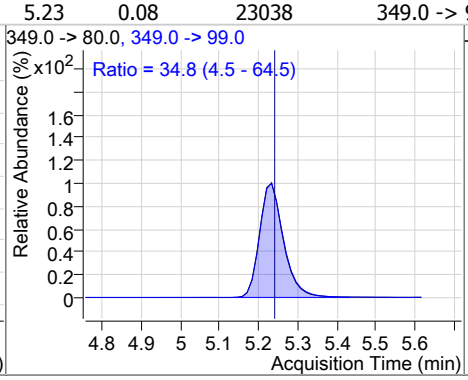


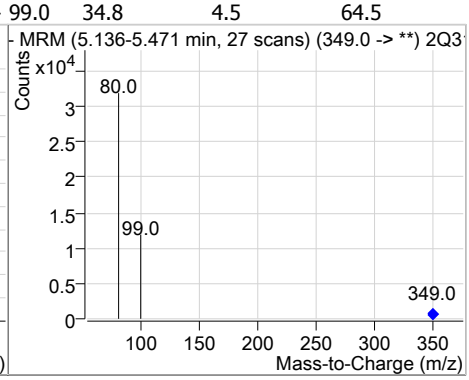




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.45	5.23	0.08	23038	349.0 -> 99.0	34.8	4.5	64.5

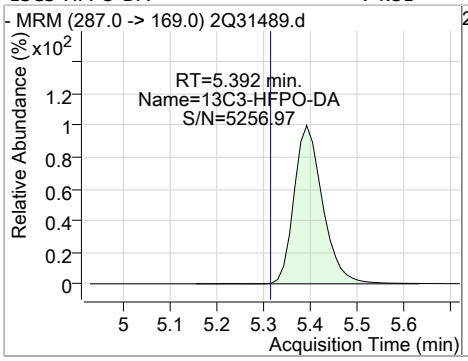


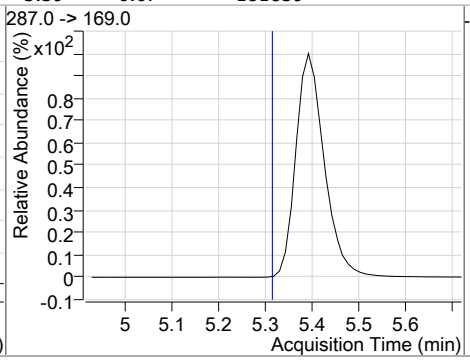


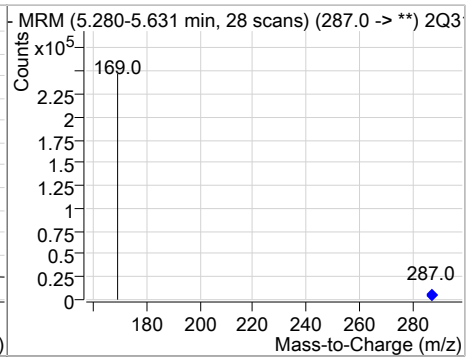


Perfluorinated Compounds by LC/MS/MS

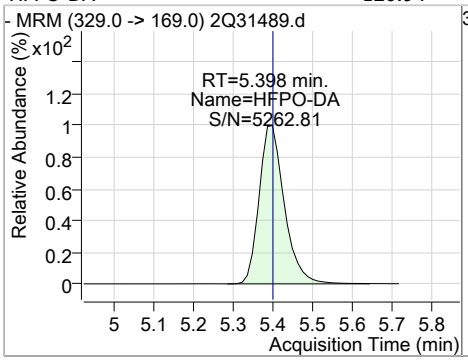
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	74.51	5.39	0.07	181859				

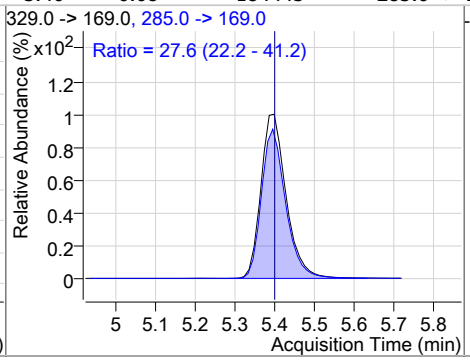


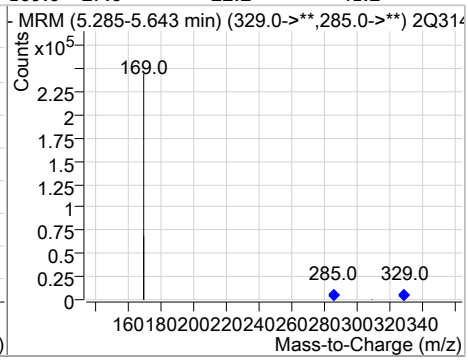




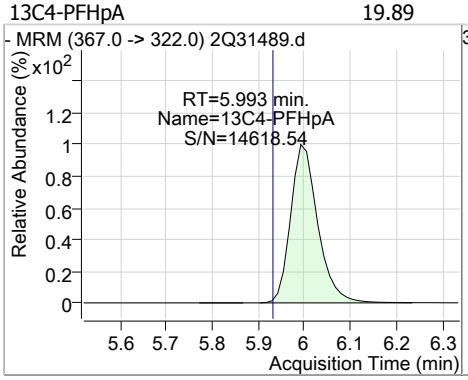
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	120.94	5.40	0.08	184445	285.0 -> 169.0	27.6	22.2	41.2

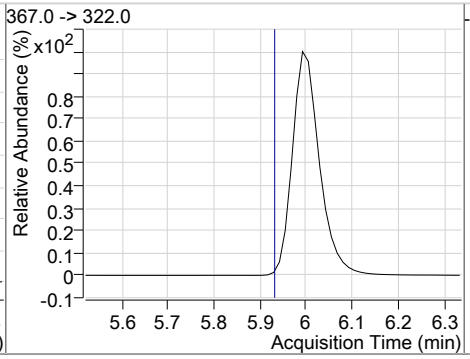


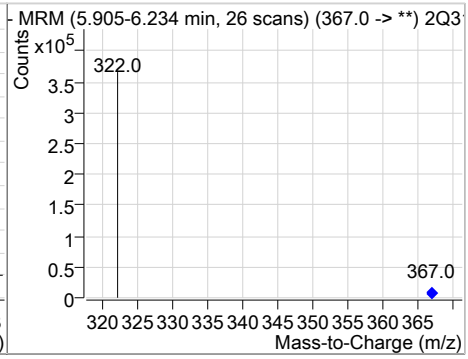




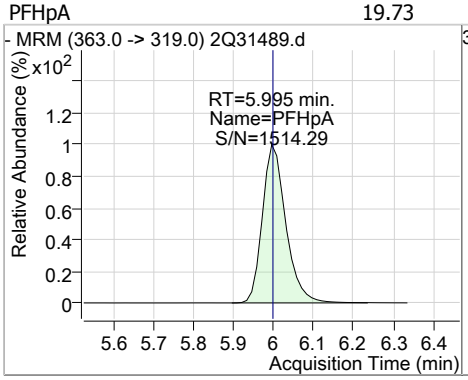
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.89	5.99	0.06	273123				

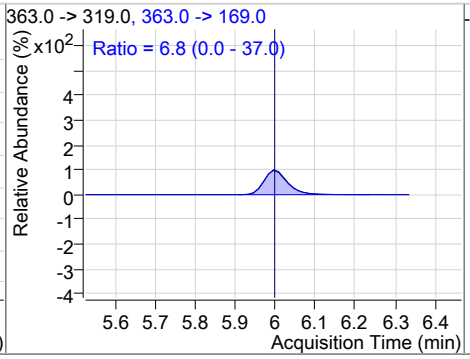


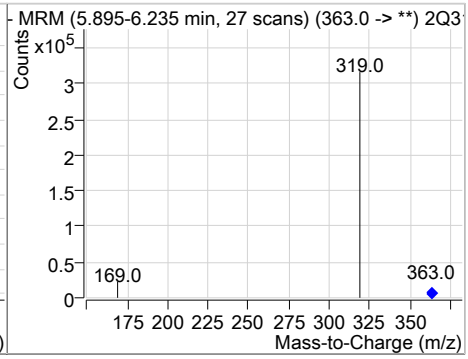




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.73	6.00	0.06	236493	363.0 -> 169.0	6.8	0.0	37.0

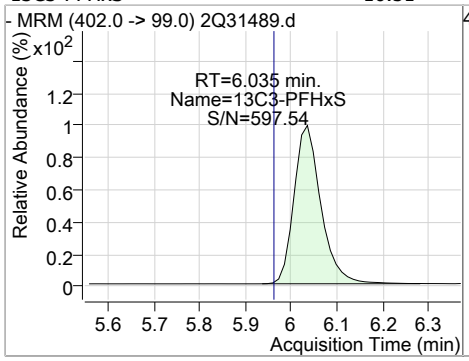


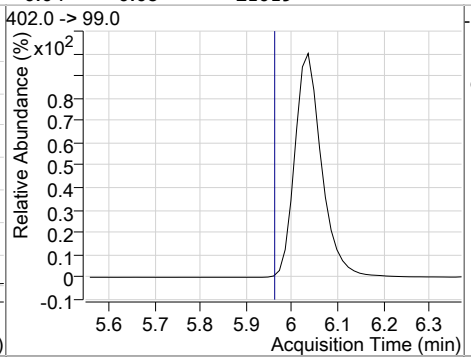


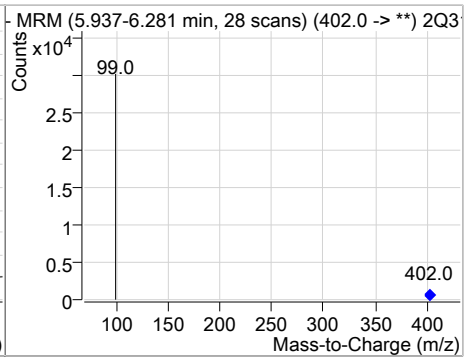


Perfluorinated Compounds by LC/MS/MS

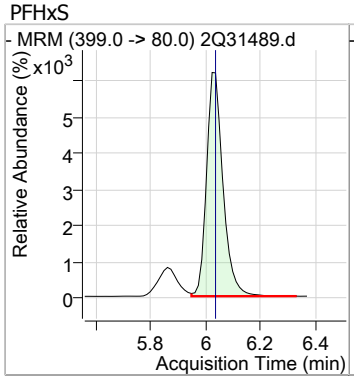
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.51	6.04	0.08	21019				

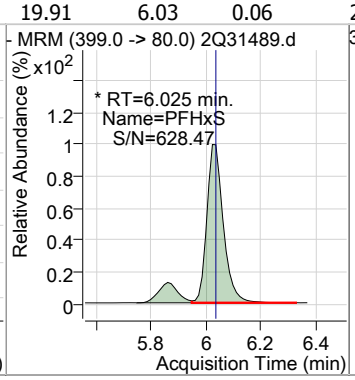


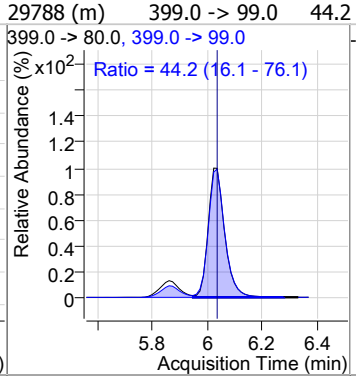


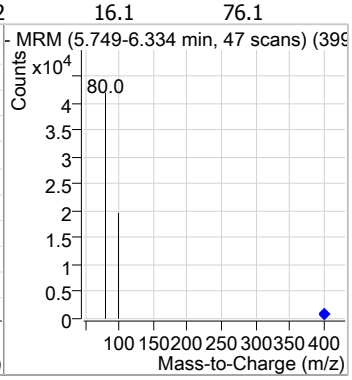


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.91	6.03	0.06	29788 (m)	399.0 -> 99.0	44.2	16.1	76.1

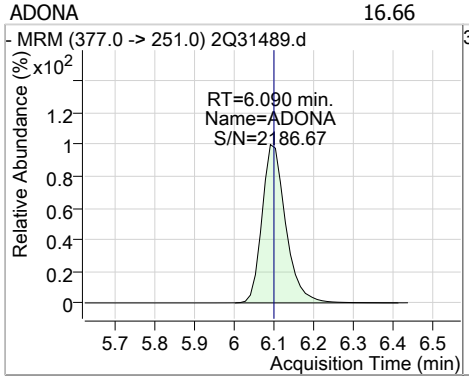


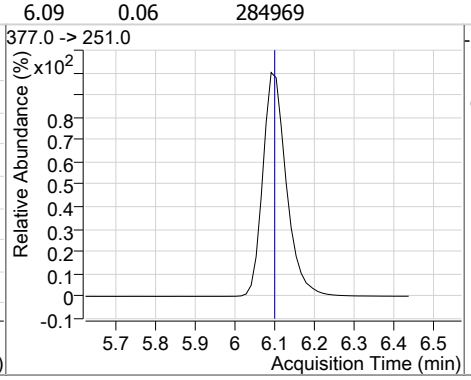


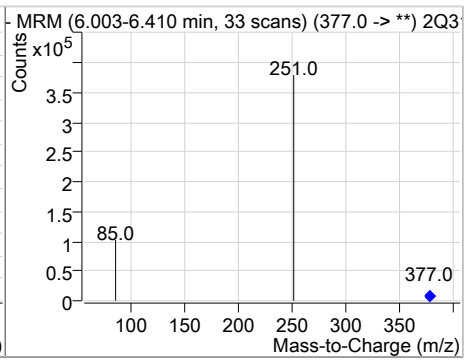




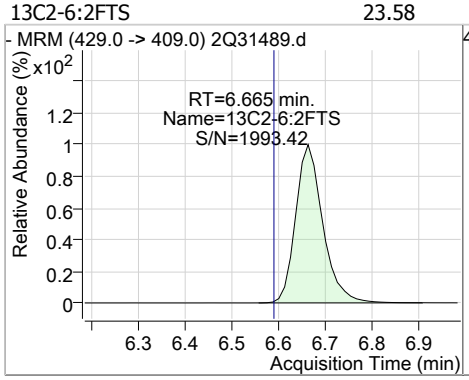
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.66	6.09	0.06	284969				

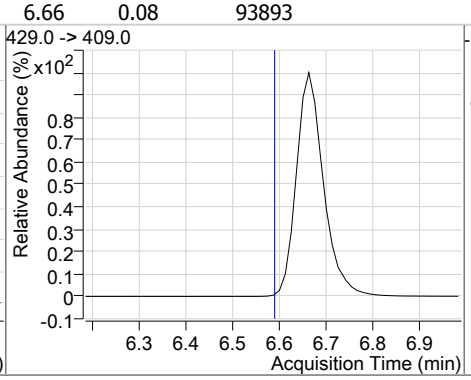


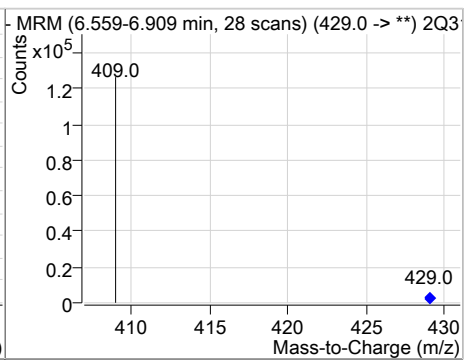




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.58	6.66	0.08	93893				

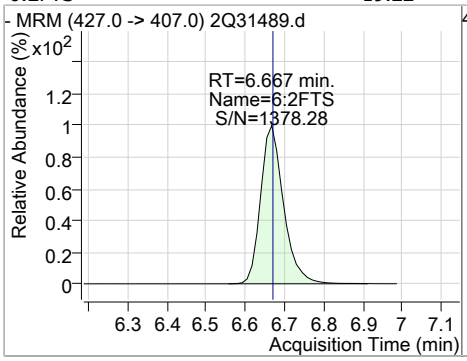


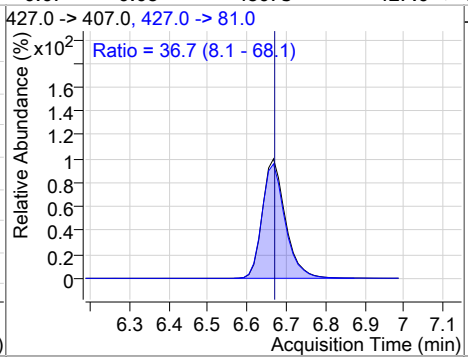


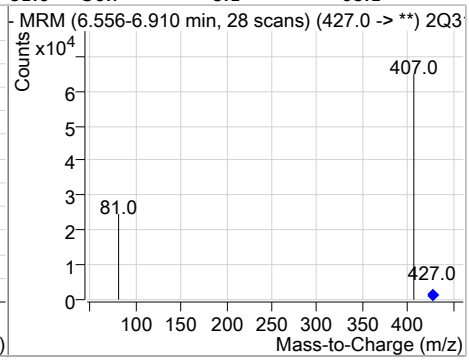


Perfluorinated Compounds by LC/MS/MS

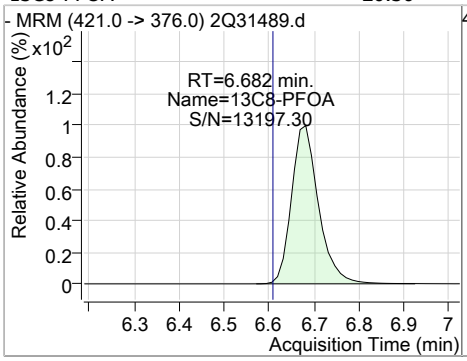
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.22	6.67	0.08	48075	427.0 -> 81.0	36.7	8.1	68.1

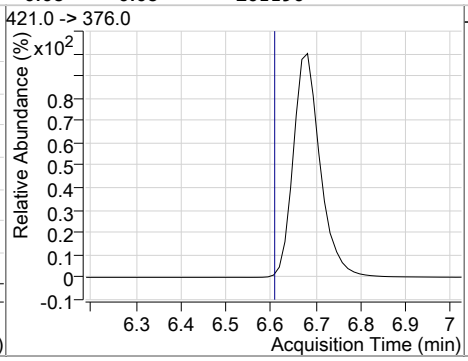


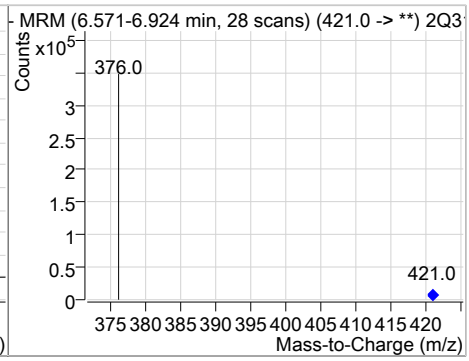




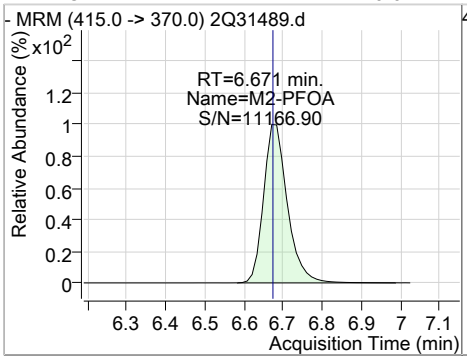
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.36	6.68	0.08	261196				

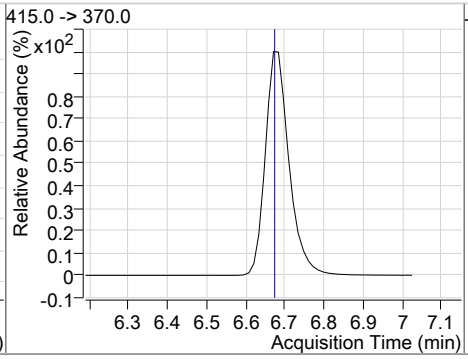


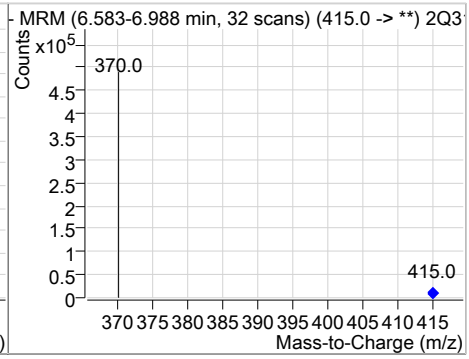




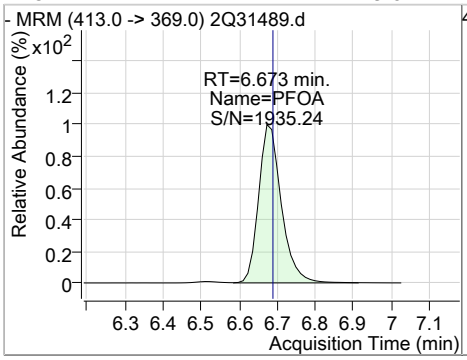
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.02	6.67	0.06	367803				

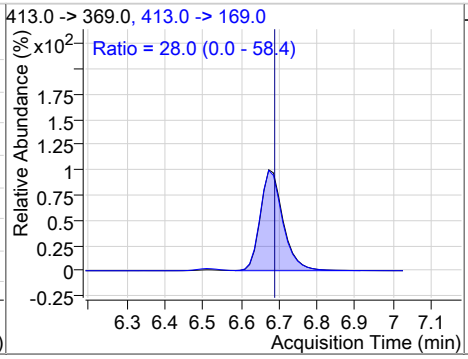


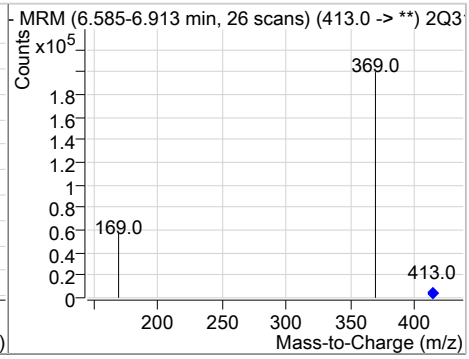




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.81	6.67	0.06	149524	413.0 -> 169.0	28.0	0.0	58.4

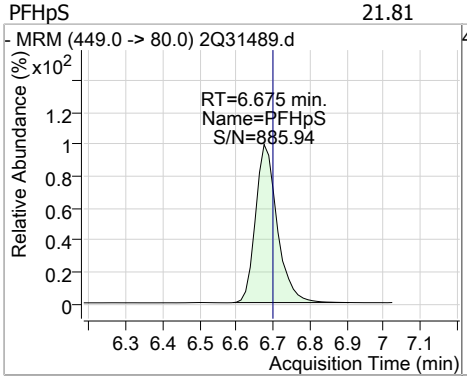


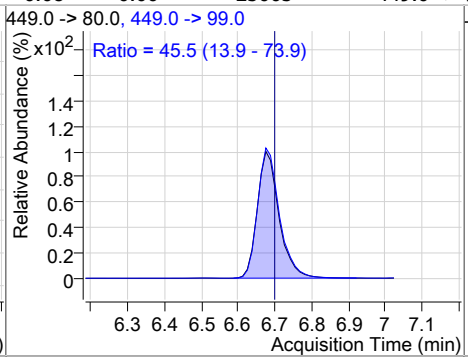


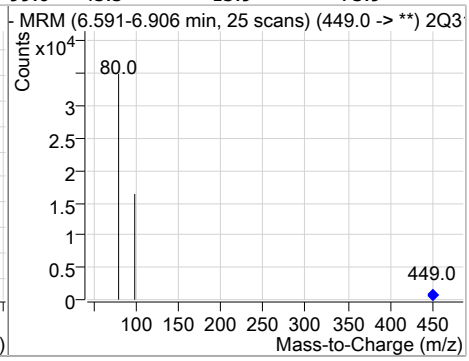


Perfluorinated Compounds by LC/MS/MS

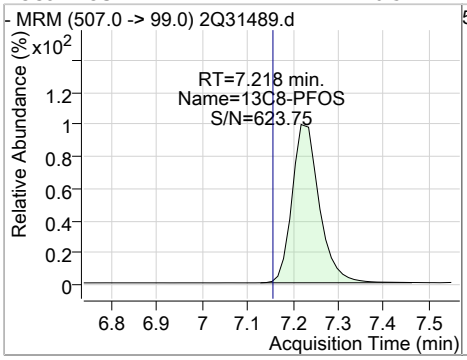
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.81	6.68	0.06	25665	449.0 -> 99.0	45.5	13.9	73.9

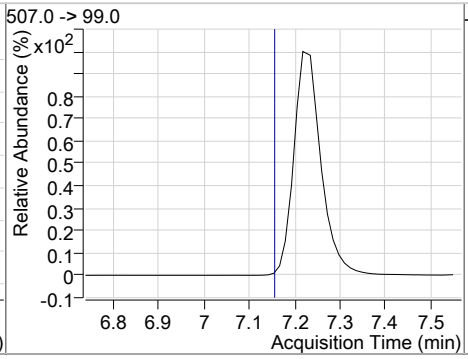


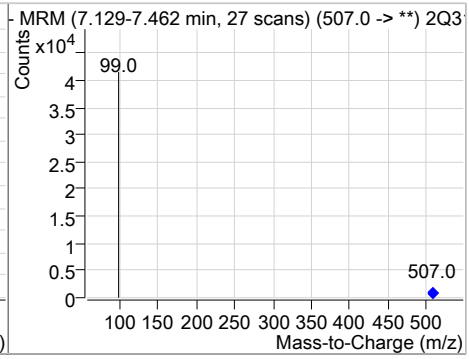




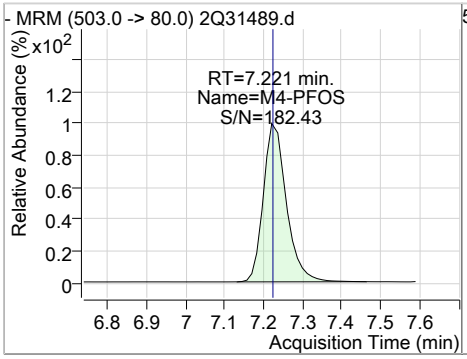
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.51	7.22	0.06	31348				

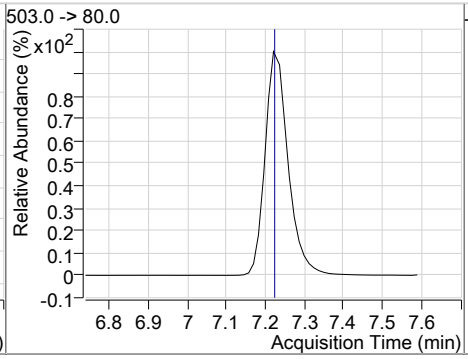


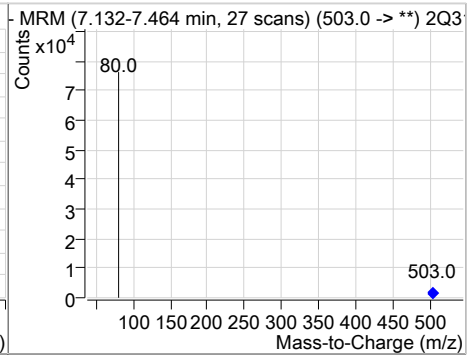




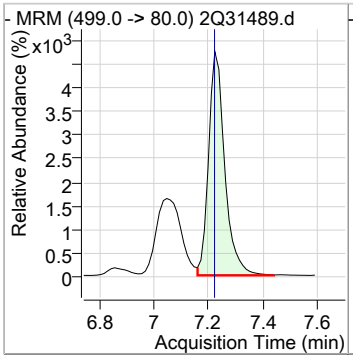
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	19.97	7.22	0.07	58204				

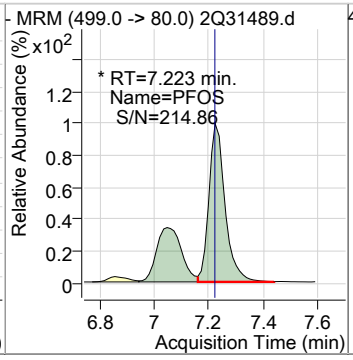


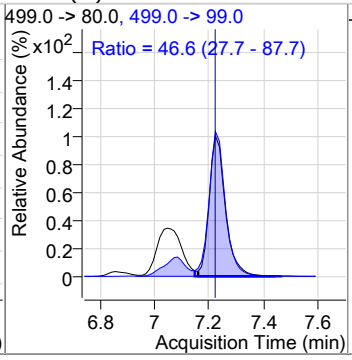


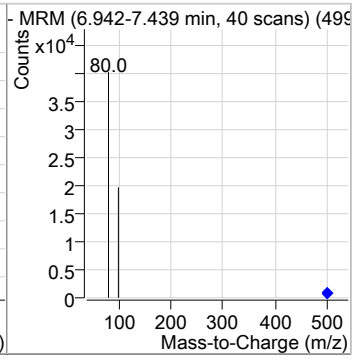


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.09	7.22	0.07	29697 (m)	499.0 -> 99.0	46.6	27.7	87.7



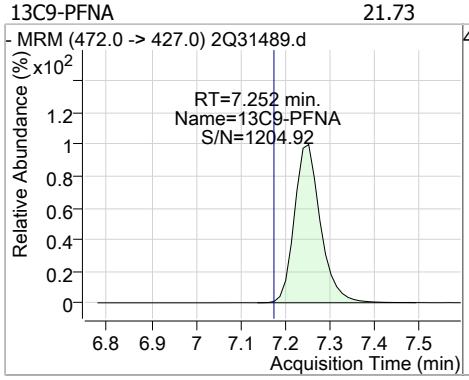


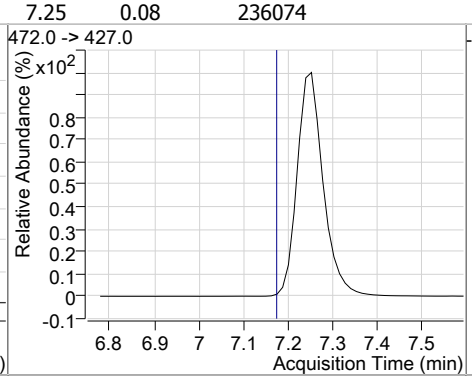


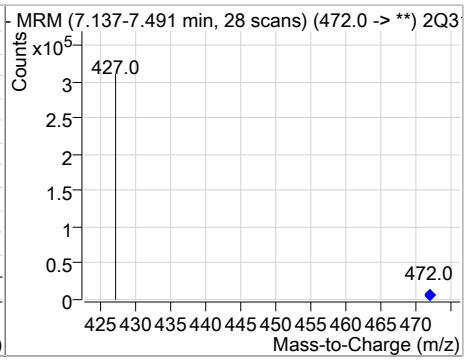


Perfluorinated Compounds by LC/MS/MS

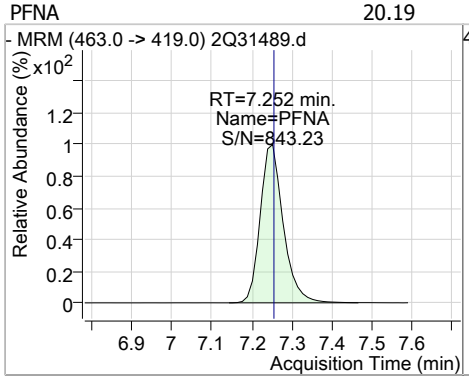
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.73	7.25	0.08	236074				

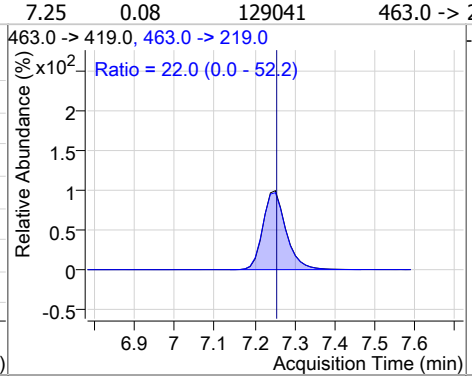


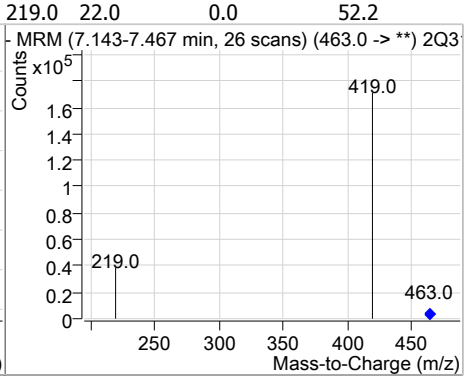




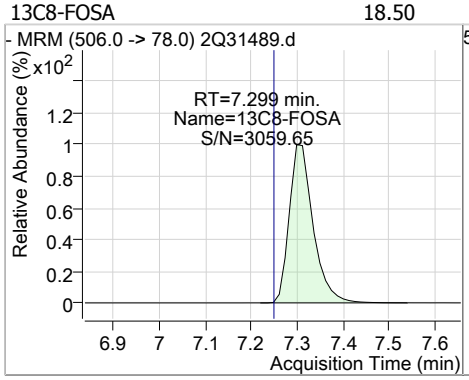
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.19	7.25	0.08	129041	463.0 -> 219.0	22.0	0.0	52.2

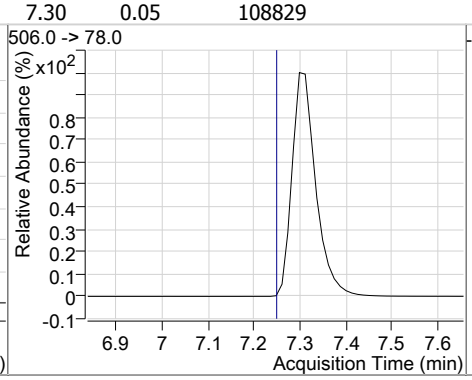


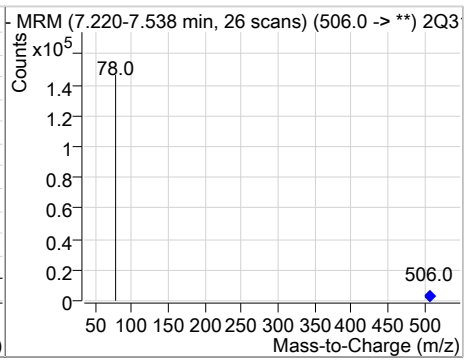




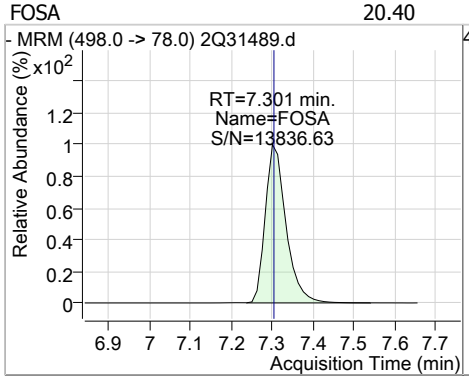
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.50	7.30	0.05	108829				

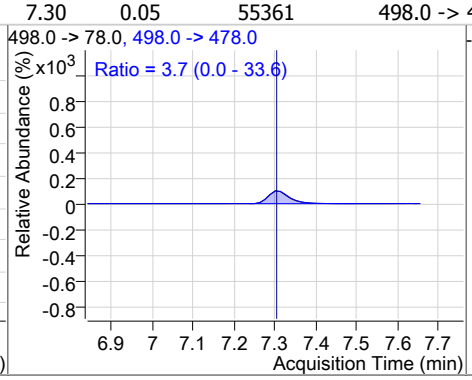


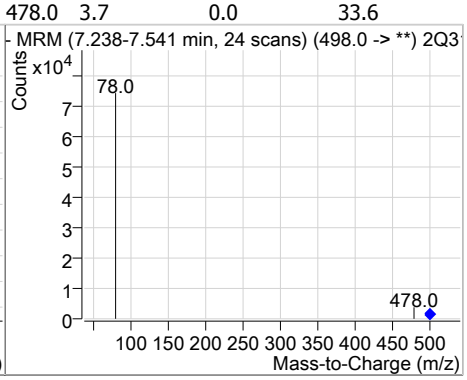




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.40	7.30	0.05	55361	498.0 -> 478.0	3.7	0.0	33.6

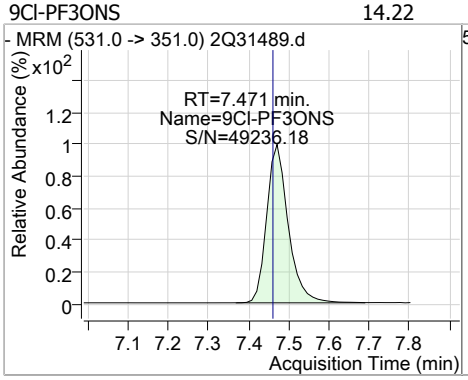


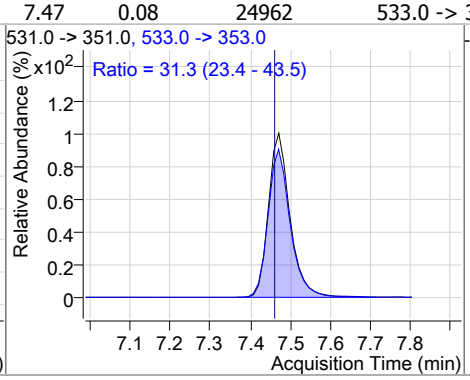


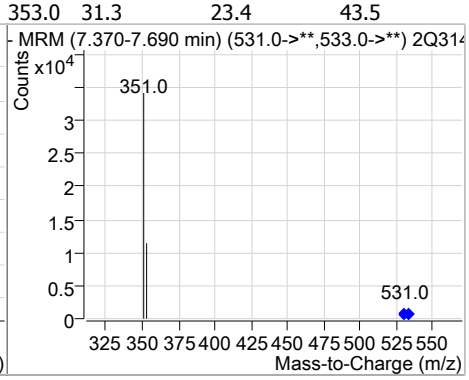


Perfluorinated Compounds by LC/MS/MS

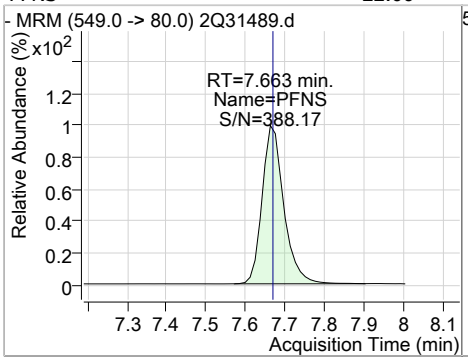
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.22	7.47	0.08	24962	533.0 -> 353.0	31.3	23.4	43.5

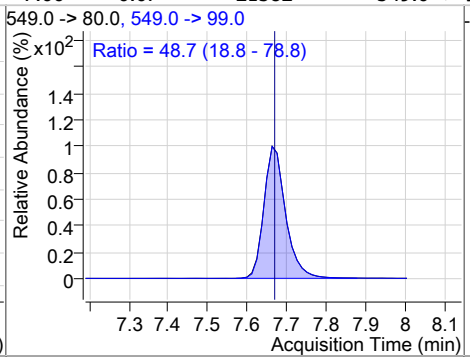


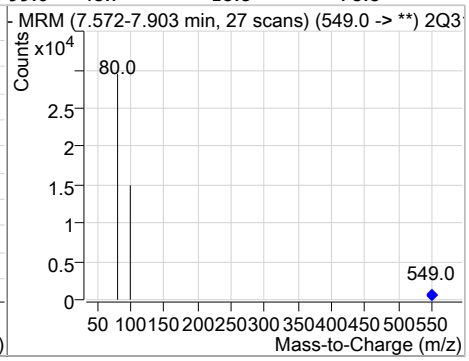




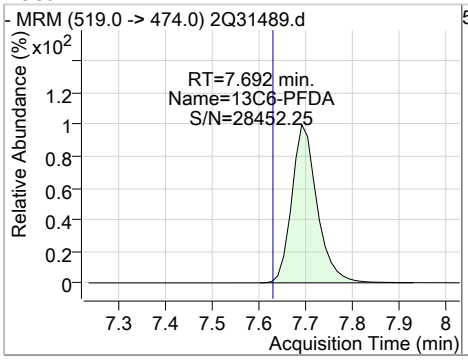
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	22.06	7.66	0.07	21582	549.0 -> 99.0	48.7	18.8	78.8

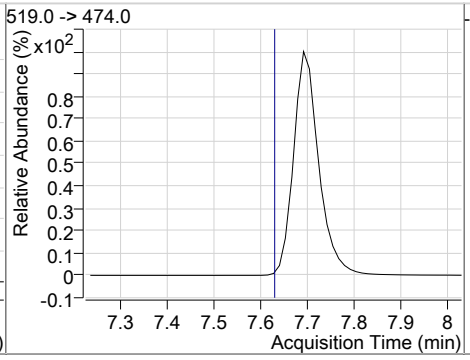


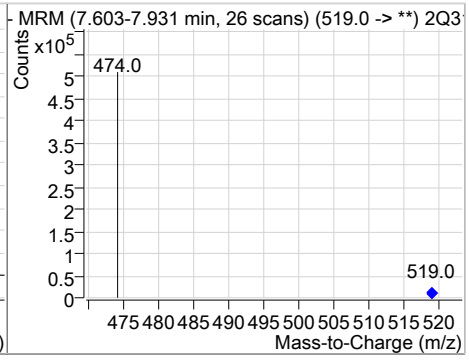




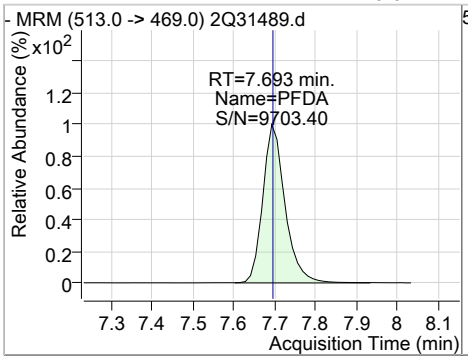
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.14	7.69	0.06	386269				

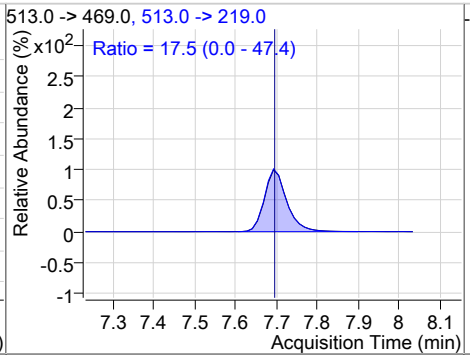


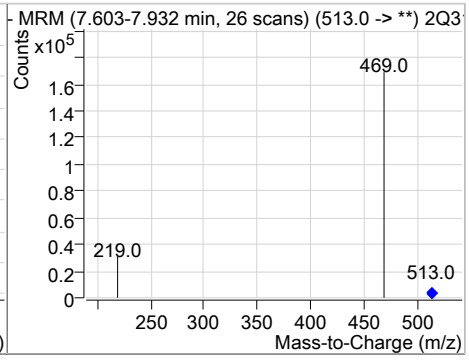




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.01	7.69	0.06	127748	513.0 -> 219.0	17.5	0.0	47.4

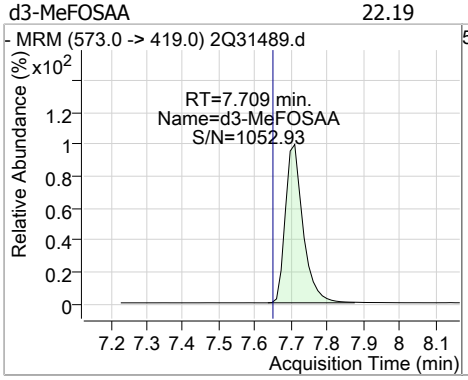


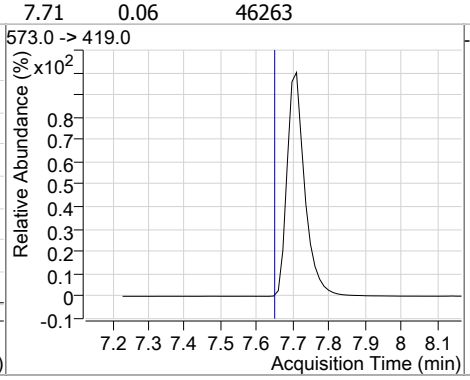


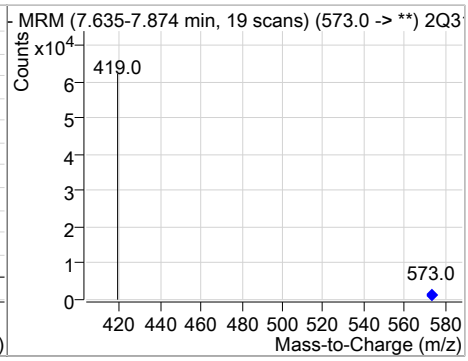


Perfluorinated Compounds by LC/MS/MS

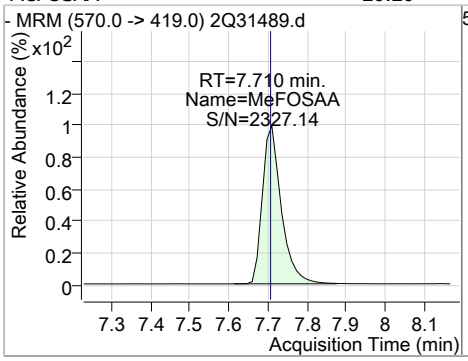
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.19	7.71	0.06	46263				

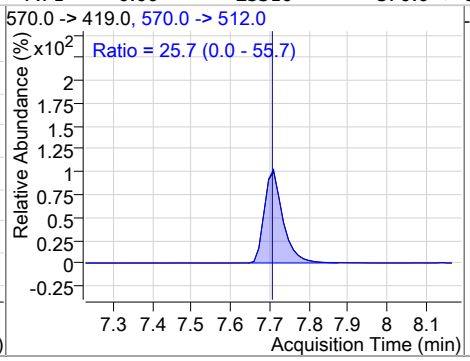


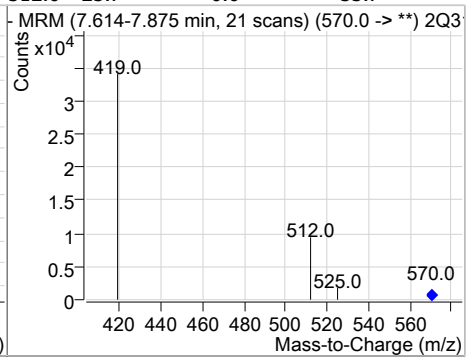




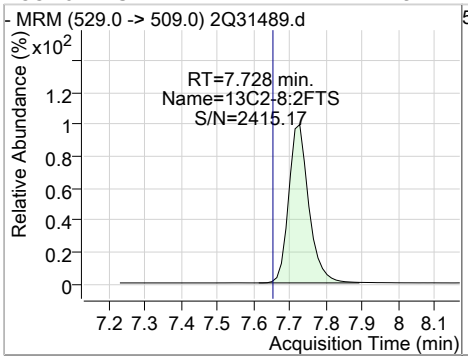
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.20	7.71	0.06	25310	570.0 -> 512.0	25.7	0.0	55.7

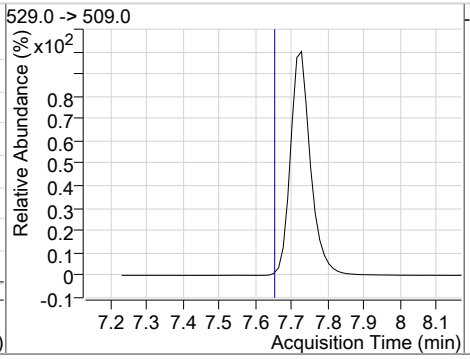


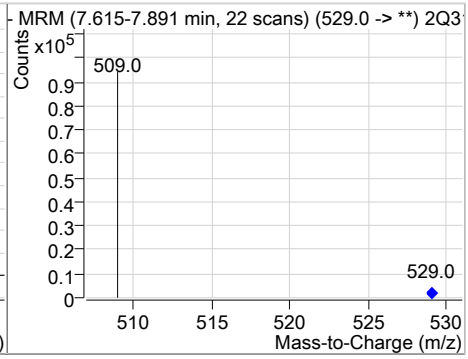




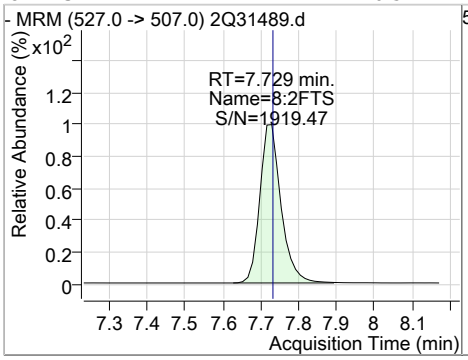
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.49	7.73	0.08	70035				

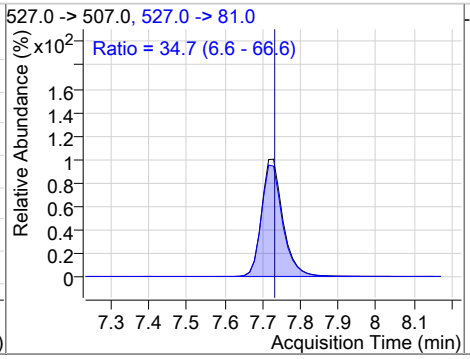


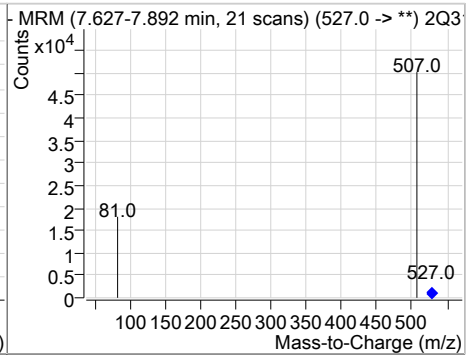




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.54	7.73	0.08	37337	527.0 -> 81.0	34.7	6.6	66.6

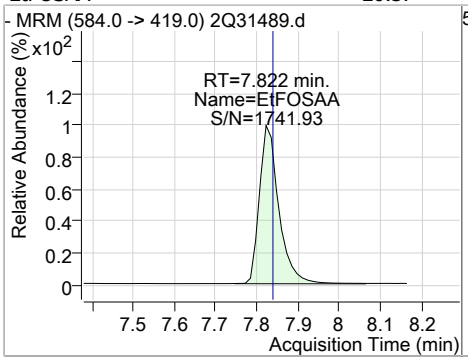


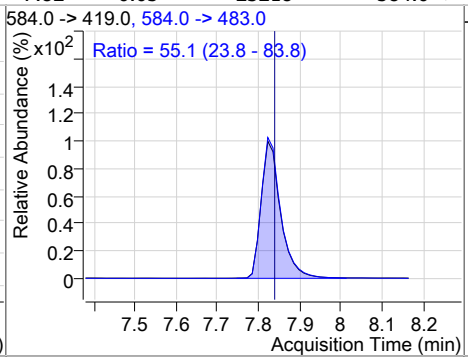


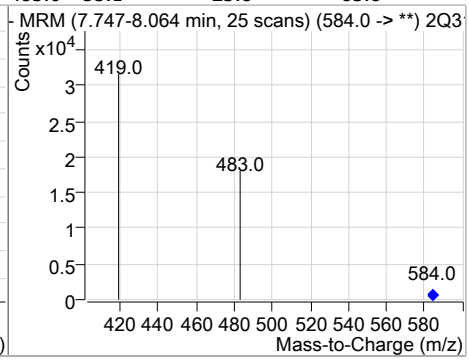


Perfluorinated Compounds by LC/MS/MS

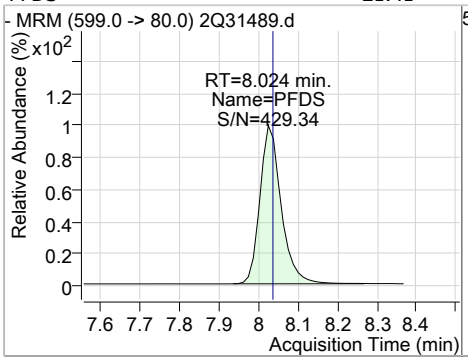
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.37	7.82	0.05	23218	584.0 -> 483.0	55.1	23.8	83.8

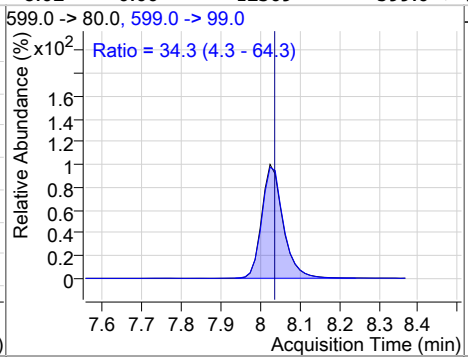


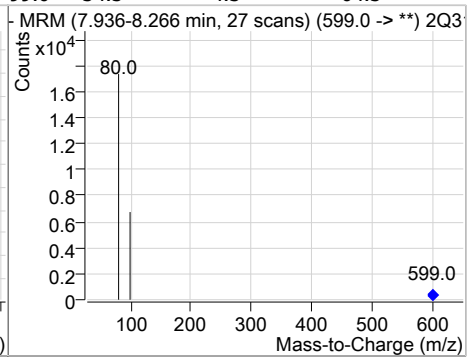




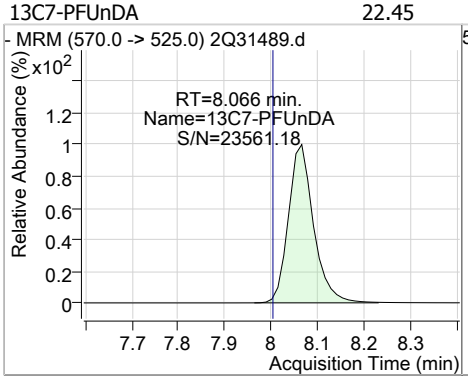
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.41	8.02	0.06	12309	599.0 -> 99.0	34.3	4.3	64.3

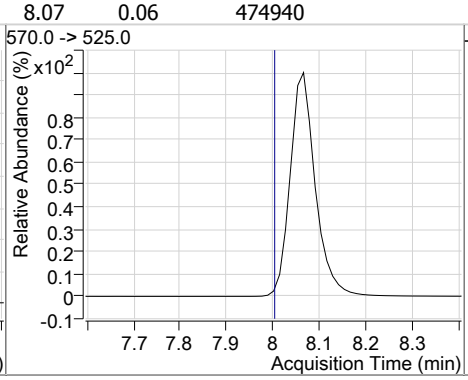


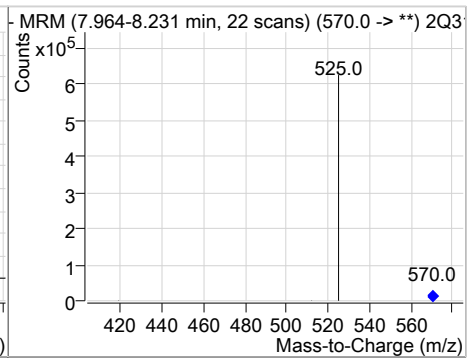




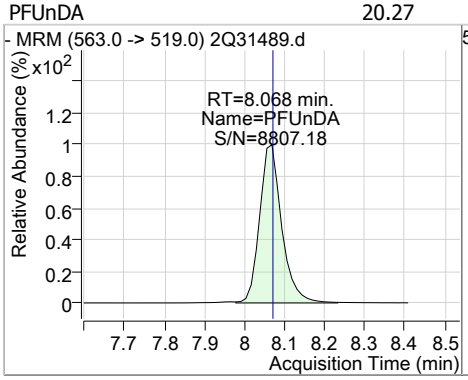
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.45	8.07	0.06	474940				

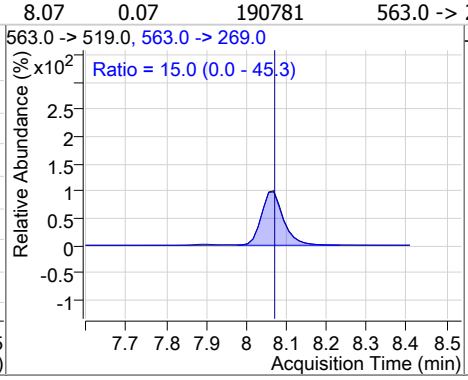


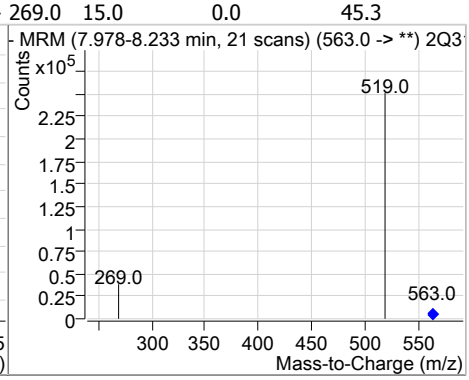




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.27	8.07	0.07	190781	563.0 -> 269.0	15.0	0.0	45.3

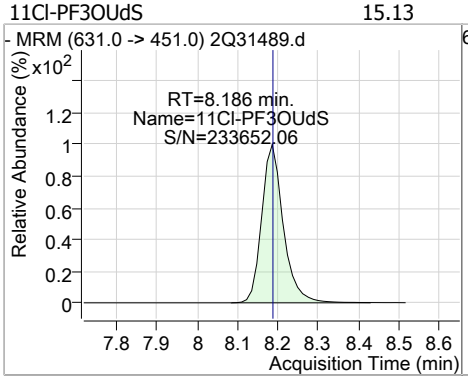


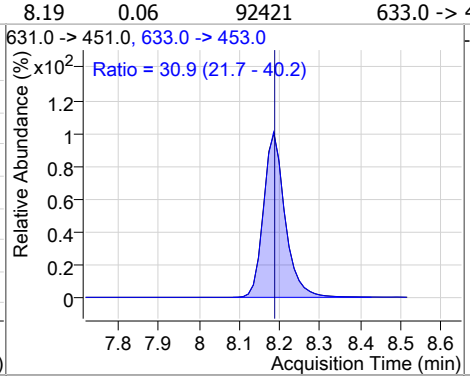


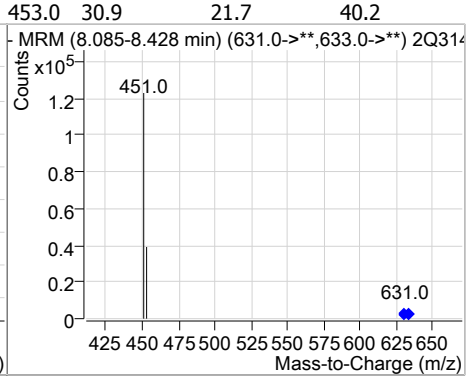


Perfluorinated Compounds by LC/MS/MS

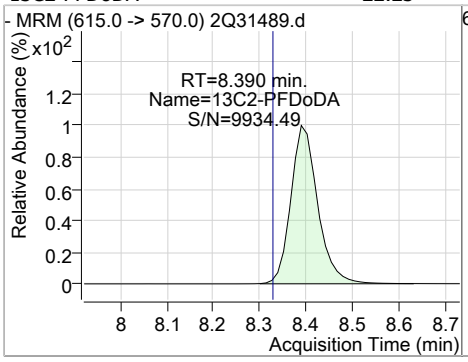
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.13	8.19	0.06	92421	633.0 -> 453.0	30.9	21.7	40.2

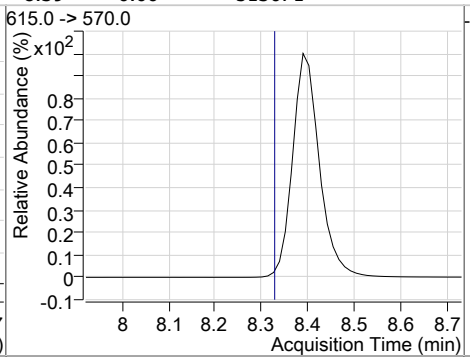


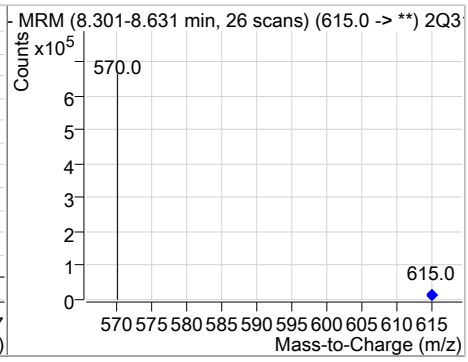




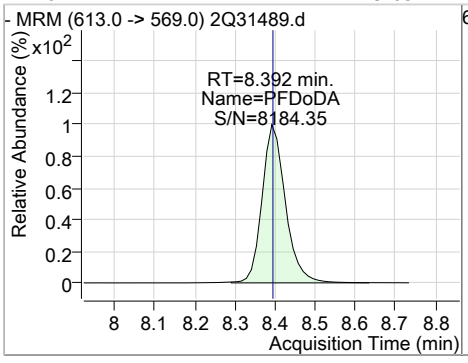
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.23	8.39	0.06	513071				

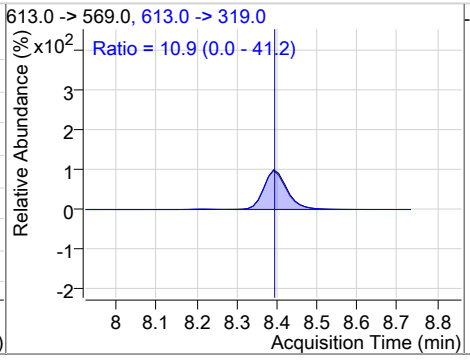


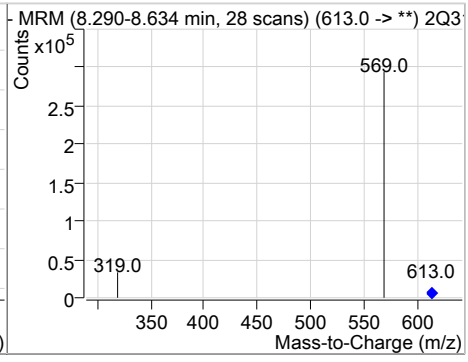




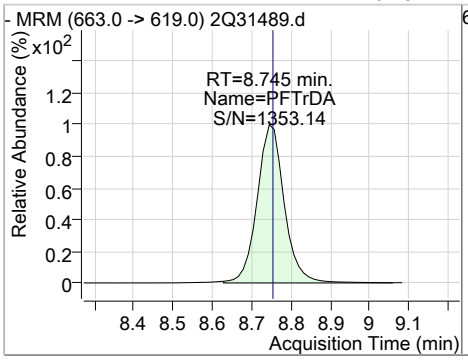
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.65	8.39	0.06	230050	613.0 -> 319.0	10.9	0.0	41.2

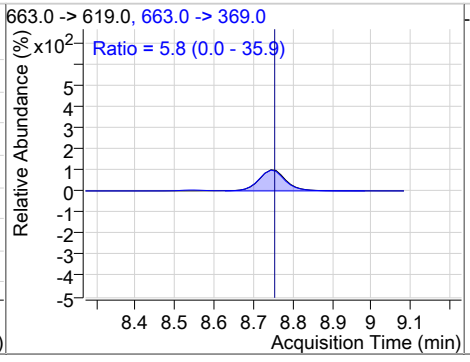


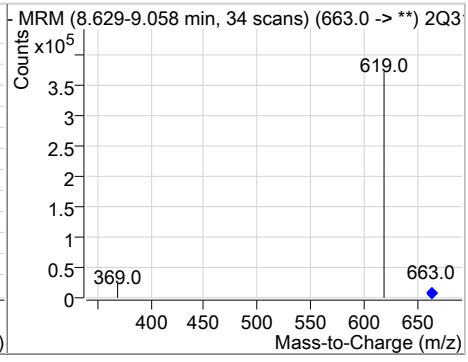




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	26.25	8.74	0.07	288178	663.0 -> 369.0	5.8	0.0	35.9

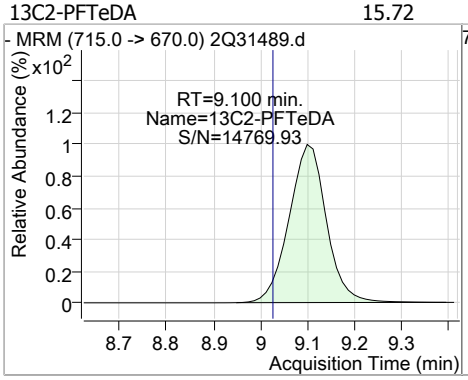


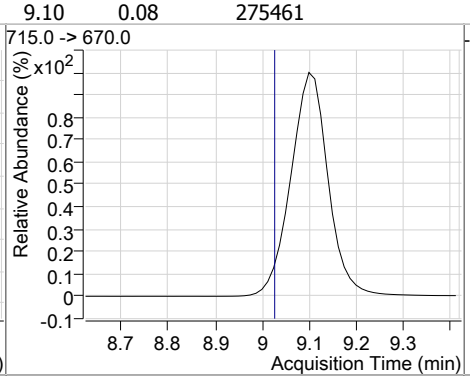


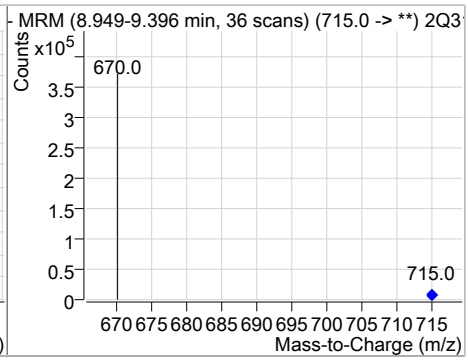


Perfluorinated Compounds by LC/MS/MS

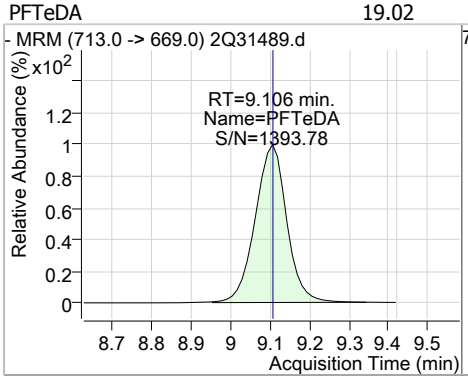
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.72	9.10	0.08	275461				

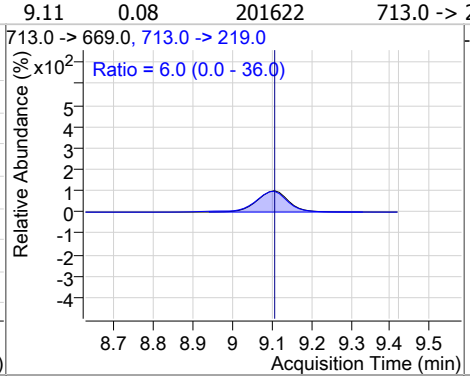


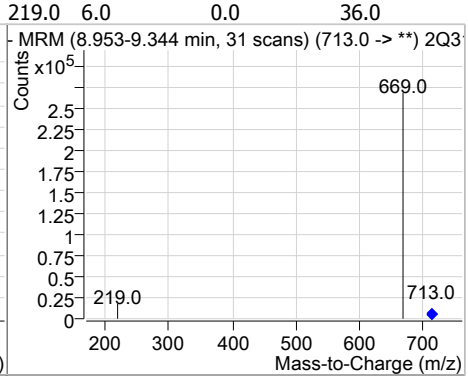




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.02	9.11	0.08	201622	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q501-CC498
Lab FileID: 2Q31489.D
Injection Time: 06/27/19 01:24
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/27/19 13:27 Nancy Saunders
Supervisor approved: 06/27/19 16:58 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/27/19 16:58

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31501.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 4:22:10 AM
Sample Name : cc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75546,S2Q501,250,,,1,1,water

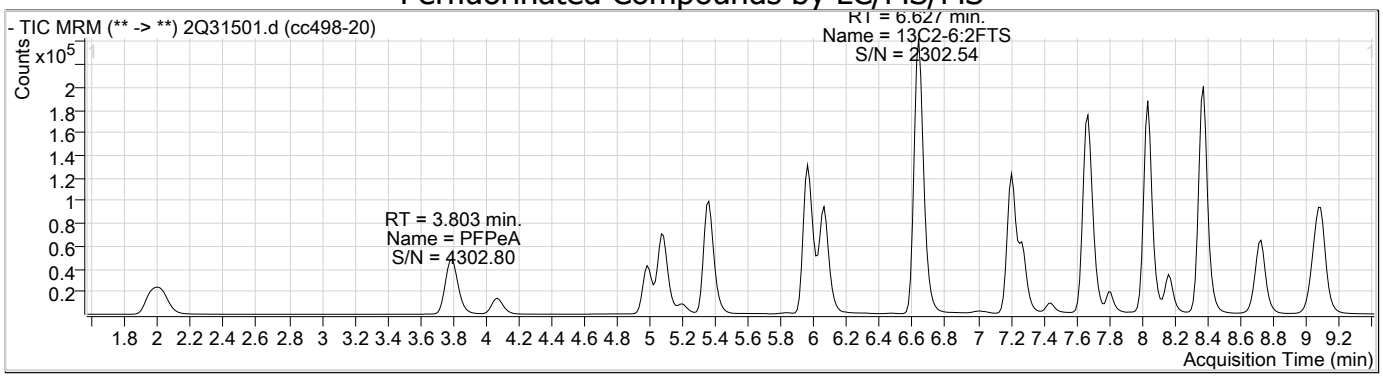
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.646	415.0 -> 370.0	362940	20.00	µg/L	0.038
13C4-PFOS	7.196	503.0 -> 80.0	58621	20.00	µg/L	0.040
M4-PFBA	2.002	217.0 -> 172.0	174524	20.00	µg/L	0.025
M5-PFPeA	3.799	268.0 -> 223.0	144770	20.00	µg/L	0.038
M5-PFHxA	5.076	318.0 -> 273.0	226763	20.00	µg/L	0.026
M4-PFHpA	5.968	367.0 -> 322.0	271593	20.00	µg/L	0.038
M8-PFOA	6.644	421.0 -> 376.0	258046	20.00	µg/L	0.038
M9-PFNA	7.213	472.0 -> 427.0	230184	20.00	µg/L	0.041
M6-PFDA	7.667	519.0 -> 474.0	385850	20.00	µg/L	0.040
M7-PFUnDA	8.041	570.0 -> 525.0	477946	20.00	µg/L	0.040
M2-PFDoDA	8.377	615.0 -> 570.0	539855	20.00	µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	301412	20.00	µg/L	0.063
M8-FOSA	7.273	506.0 -> 78.0	108848	20.00	µg/L	0.027
M3-PFBS	4.067	302.0 -> 99.0	24429	20.00	µg/L	0.038
M3-PFHxS	5.998	402.0 -> 99.0	20753	20.00	µg/L	0.038
M8-PFOS	7.193	507.0 -> 99.0	32316	20.00	µg/L	0.040
M2-4:2FTS	4.984	329.0 -> 309.0	101803	20.00	µg/L	0.037
M2-6:2FTS	6.627	429.0 -> 409.0	93518	20.00	µg/L	0.038
M2-8:2FTS	7.703	529.0 -> 509.0	70979	20.00	µg/L	0.052
M3-MeFOSAA	7.684	573.0 -> 419.0	47074	20.00	µg/L	0.038
M3-HFPO-DA	5.355	287.0 -> 169.0	191546	100.00	µg/L	0.038
System Monitoring Compounds						
13C2-4:2FTS	4.984	329.0 -> 309.0	101628	20.94	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C2-6:2FTS	6.627	429.0 -> 409.0	93438	23.47	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.3%		
13C2-8:2FTS	7.703	529.0 -> 509.0	70992	24.82	µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.1%		
13C2-PFDoDA	8.377	615.0 -> 570.0	539783	23.39	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C2-PFTeDA	9.087	715.0 -> 670.0	298987	17.06	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%		
13C3-PFBS	4.067	302.0 -> 99.0	24315	16.00	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%		
13C3-PFHxS	5.998	402.0 -> 99.0	20701	16.26	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%		
13C4-PFBA	2.002	217.0 -> 172.0	174484	16.87	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%		
13C4-PFHpA	5.968	367.0 -> 322.0	271532	19.77	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFHxA	5.076	318.0 -> 273.0	226284	18.70	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C5-PFPeA	3.799	268.0 -> 223.0	144770	18.03	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C6-PFDA	7.667	519.0 -> 474.0	385323	22.09	µg/L	0.040

Perfluorinated Compounds by LC/MS/MS

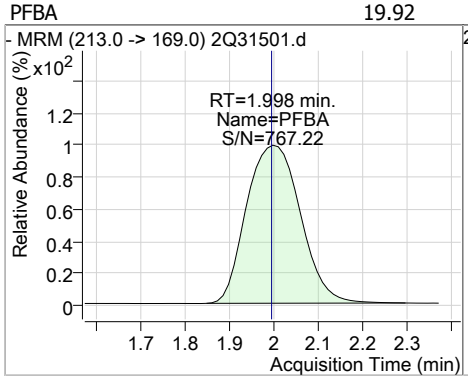
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C7-PFUnDA	8.041	570.0 -> 525.0	477810	22.58 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
13C8-FOSA	7.273	506.0 -> 78.0	108781	18.49 µg/L		0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C8-PFOA	6.644	421.0 -> 376.0	257547	20.08 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-PFOS	7.193	507.0 -> 99.0	32261	16.99 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%		
13C9-PFNA	7.213	472.0 -> 427.0	232128	21.36 µg/L		0.041
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
d3-MeFOSAA	7.684	573.0 -> 419.0	47072	22.58 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
M2-PFOA	6.646	415.0 -> 370.0	363485	20.03 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
M4-PFOS	7.196	503.0 -> 80.0	58635	20.01 µg/L		0.040
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.355	287.0 -> 169.0	191546	78.48 µg/L		0.038
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
Target Compounds						**QValue**
4:2FTS	4.986	327.0 -> 307.0	58535	20.18 µg/L		100
6:2FTS	6.629	427.0 -> 407.0	47657	19.15 µg/L		97
8:2FTS	7.704	527.0 -> 507.0	37859	20.56 µg/L		96
EtFOSAA	7.810	584.0 -> 419.0	23307	20.09 µg/L		98
FOSA	7.276	498.0 -> 78.0	54539	20.09 µg/L		99
MeFOSAA	7.685	570.0 -> 419.0	25991	20.37 µg/L		99
PFBA	1.998	213.0 -> 169.0	29741	19.92 µg/L		100
PFBS	4.071	299.0 -> 80.0	33285	19.85 µg/L		100
PFDA	7.668	513.0 -> 469.0	125711	19.74 µg/L		99
PFDoDA	8.379	613.0 -> 569.0	240239	19.55 µg/L		100
PFDS	8.012	599.0 -> 80.0	12225	20.69 µg/L		100
PFHpA	5.970	363.0 -> 319.0	235406	19.75 µg/L		99
PFHpS	6.650	449.0 -> 80.0	25424	21.82 µg/L		98
PFHxA	5.078	313.0 -> 269.0	68018	20.40 µg/L		99
PFHxS	6.000	399.0 -> 80.0	29558	19.95 µg/L	m	97
PFNA	7.214	463.0 -> 419.0	129119	20.74 µg/L		100
PFNS	7.637	549.0 -> 80.0	21437	21.32 µg/L		100
PFOA	6.648	413.0 -> 369.0	147763	19.85 µg/L		100
PFOS	7.197	499.0 -> 80.0	29696	18.58 µg/L	m	83
PFPeA	3.803	263.0 -> 219.0	120462	19.98 µg/L		100
PFPeS	5.195	349.0 -> 80.0	23167	21.55 µg/L		99
PFTeDA	9.079	713.0 -> 669.0	221698	19.30 µg/L		100
PFTrDA	8.729	663.0 -> 619.0	296812	24.95 µg/L		100
PFUnDA	8.043	563.0 -> 519.0	190486	20.13 µg/L		98
11Cl-PF3OUdS	8.160	631.0 -> 451.0	91884	14.33 µg/L		99
9Cl-PF3ONS	7.446	531.0 -> 351.0	24589	14.04 µg/L		95
ADONA	6.065	377.0 -> 251.0	281440	16.68 µg/L		100
HFPO-DA	5.361	329.0 -> 169.0	192889	120.08 µg/L		92

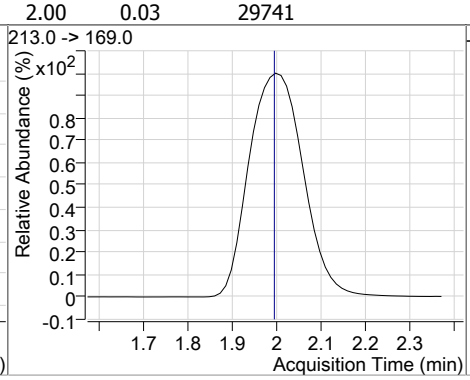
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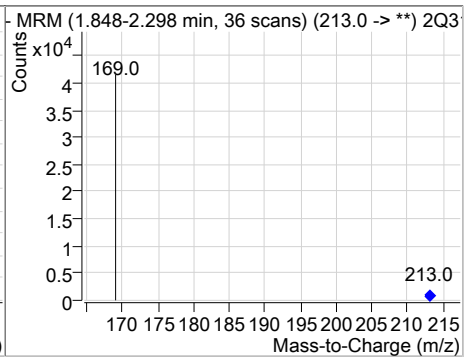
Perfluorinated Compounds by LC/MS/MS



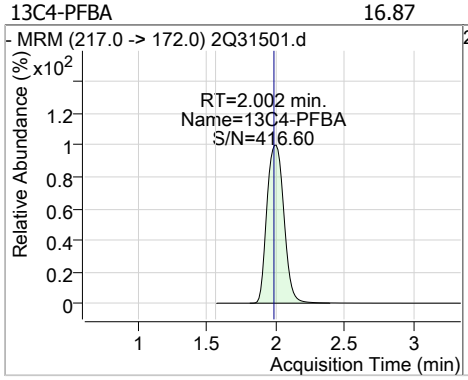
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.92	2.00	0.03	29741				

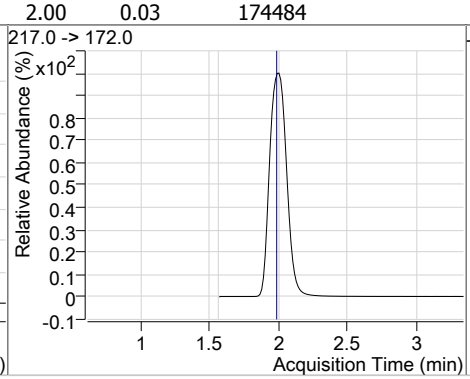


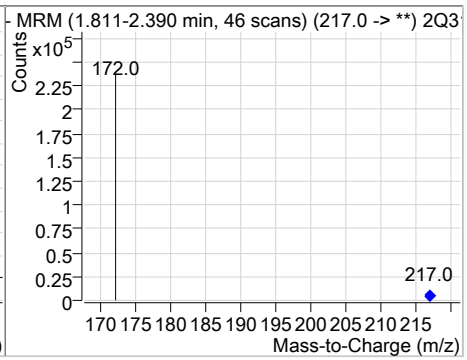




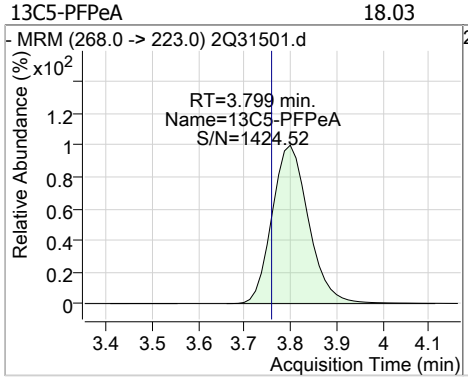
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.87	2.00	0.03	174484				

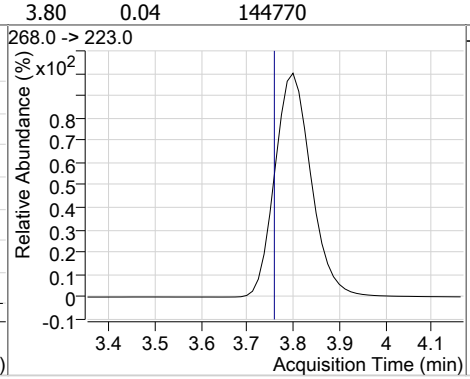


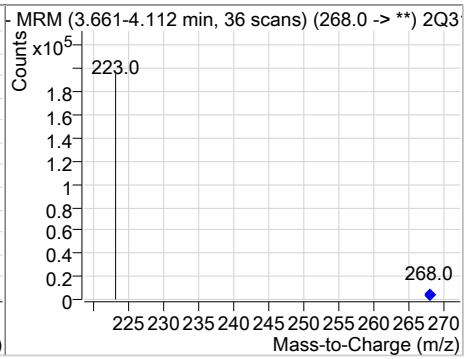




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.03	3.80	0.04	144770				

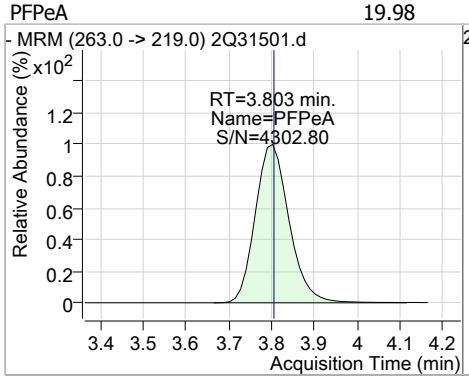


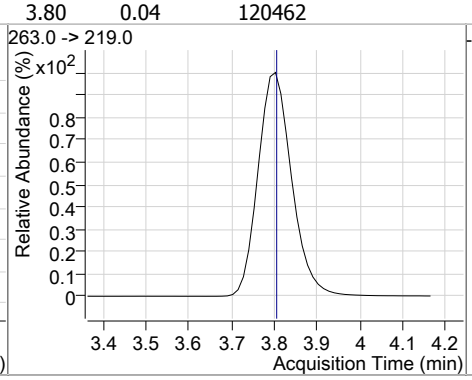


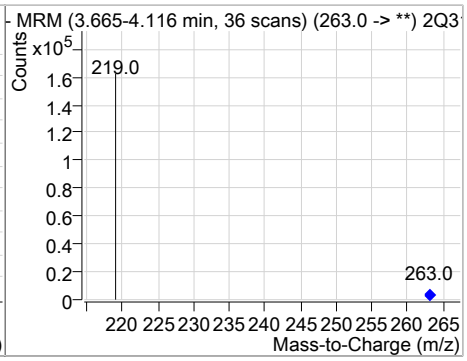


Perfluorinated Compounds by LC/MS/MS

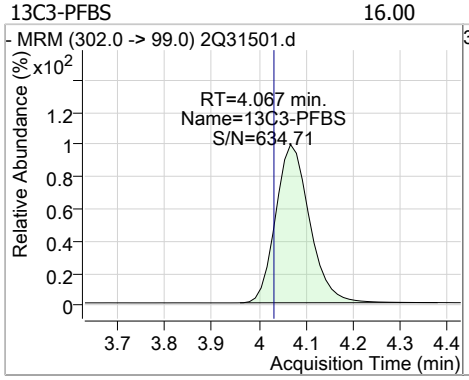
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.98	3.80	0.04	120462				

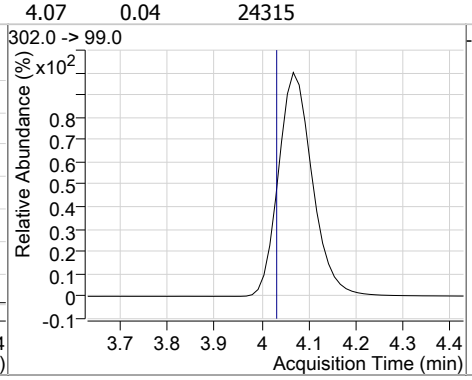


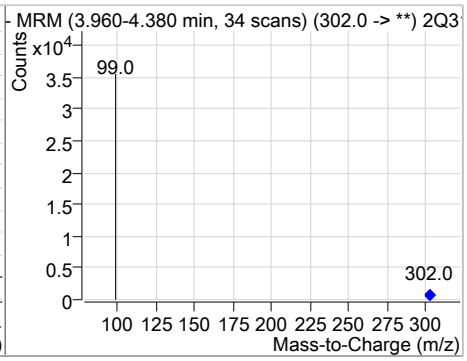




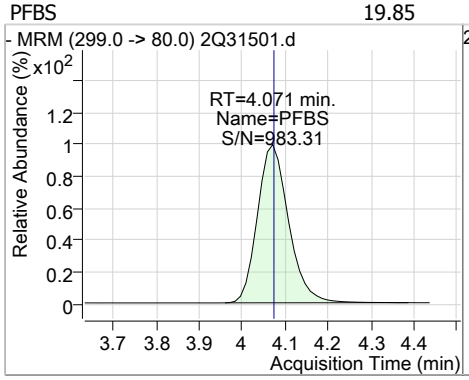
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.00	4.07	0.04	24315				

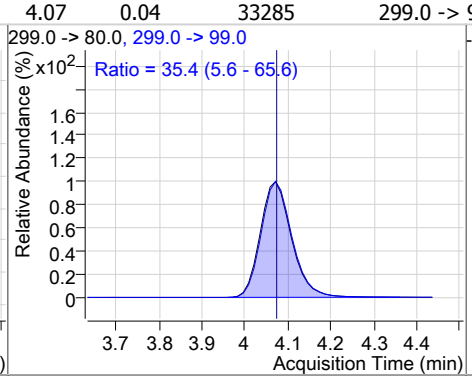


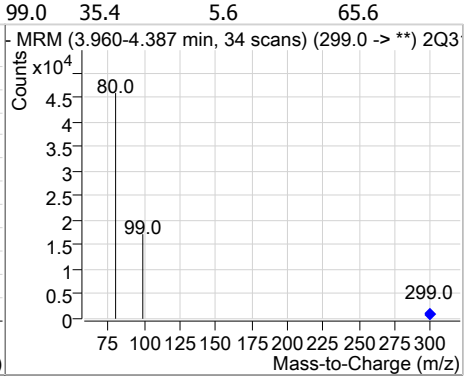




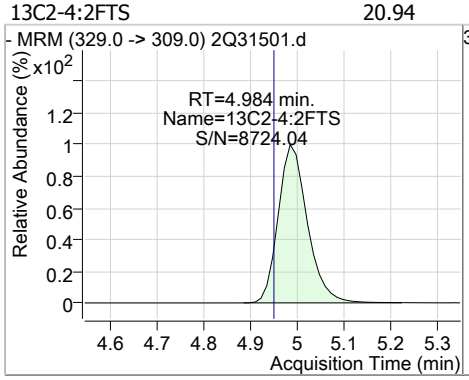
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.85	4.07	0.04	33285	299.0 -> 99.0	35.4	5.6	65.6

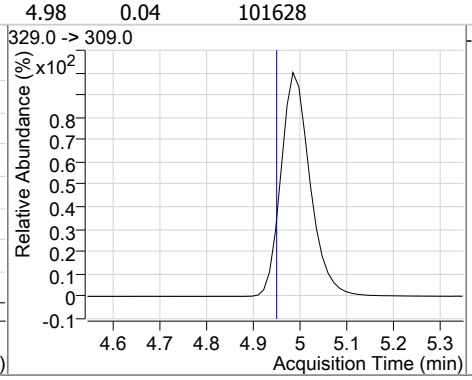


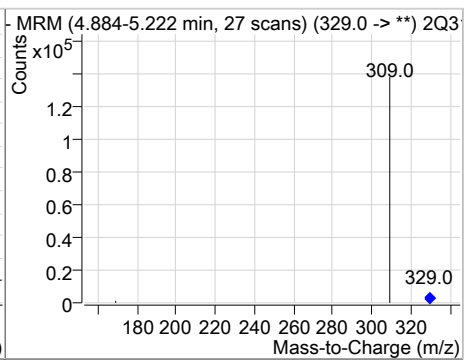




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.94	4.98	0.04	101628				

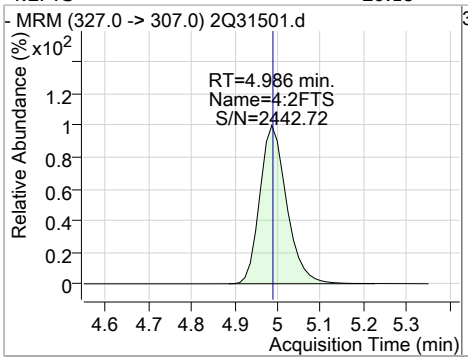


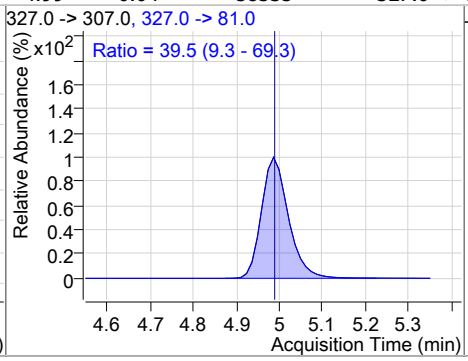


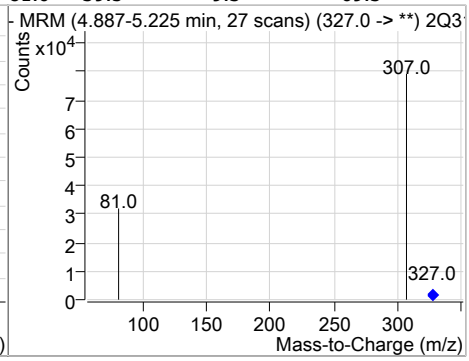


Perfluorinated Compounds by LC/MS/MS

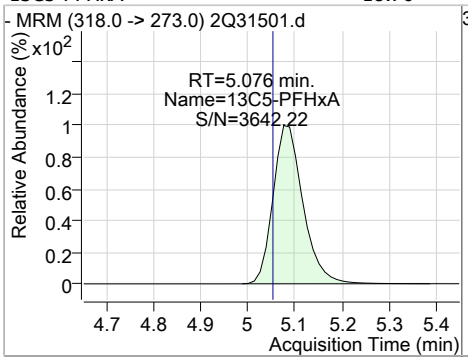
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.18	4.99	0.04	58535	327.0 -> 81.0	39.5	9.3	69.3

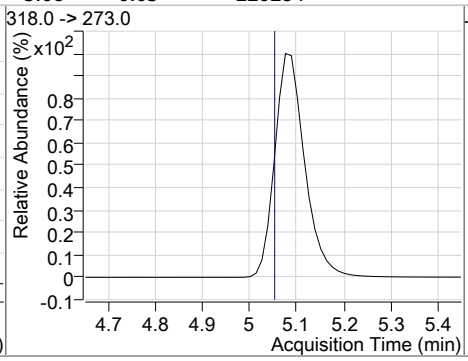


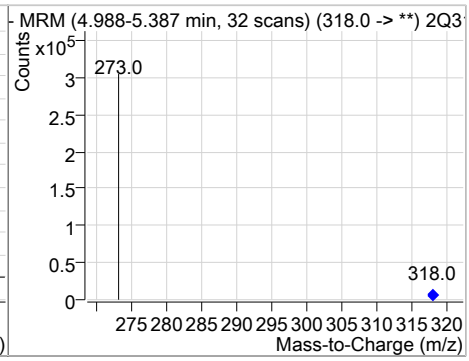




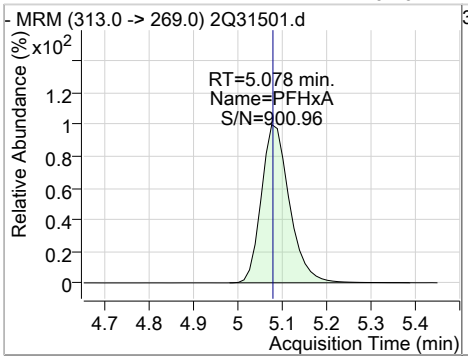
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.70	5.08	0.03	226284				

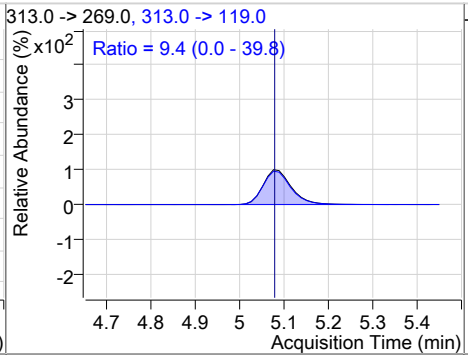


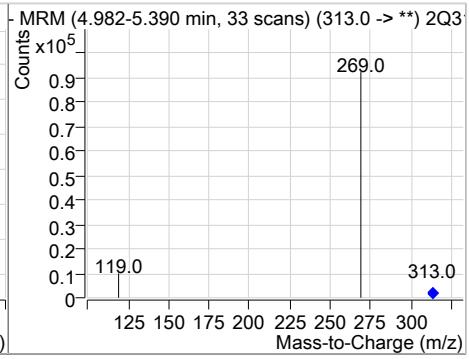




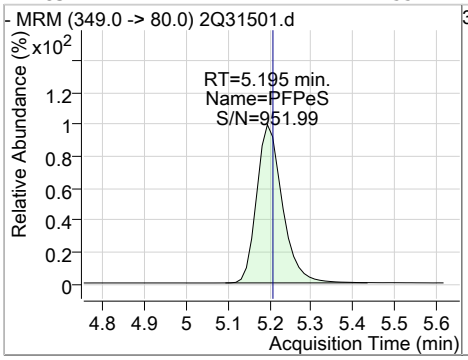
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.40	5.08	0.03	68018	313.0 -> 119.0	9.4	0.0	39.8

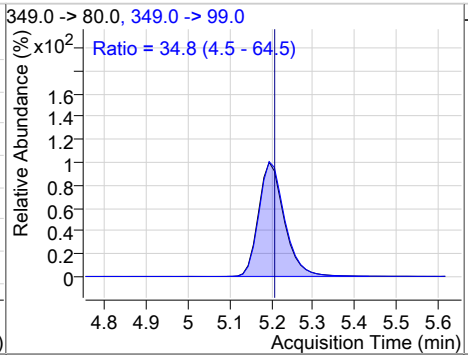


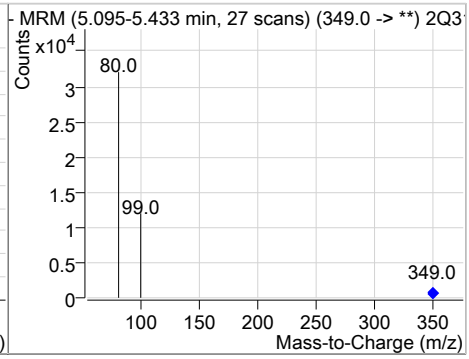




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.55	5.20	0.04	23167	349.0 -> 99.0	34.8	4.5	64.5

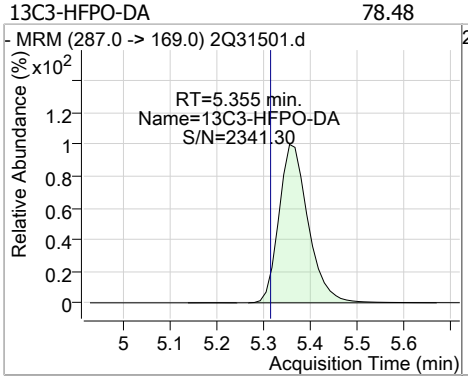


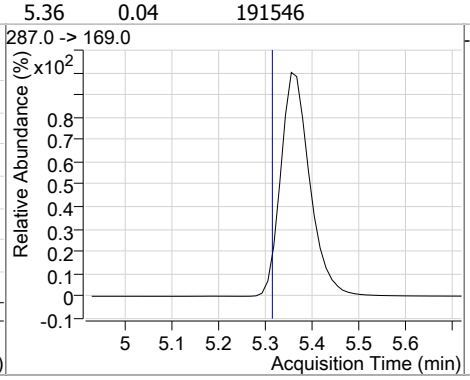


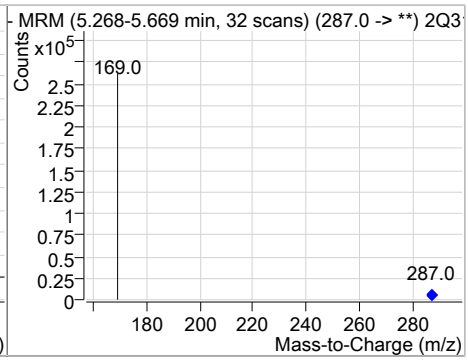


Perfluorinated Compounds by LC/MS/MS

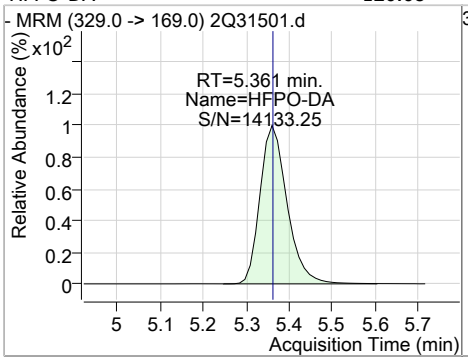
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	78.48	5.36	0.04	191546				

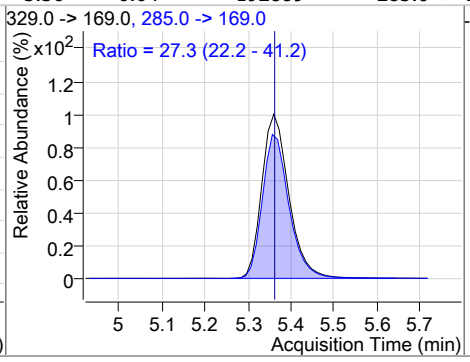


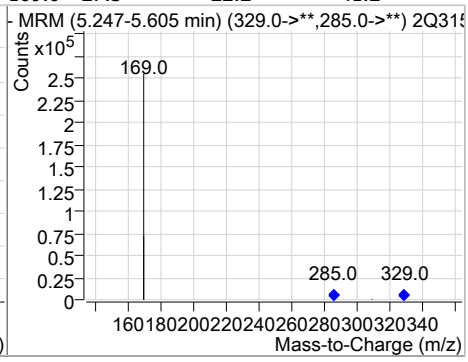




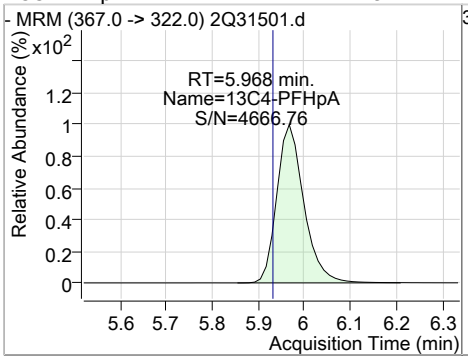
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	120.08	5.36	0.04	192889	285.0 -> 169.0	27.3	22.2	41.2

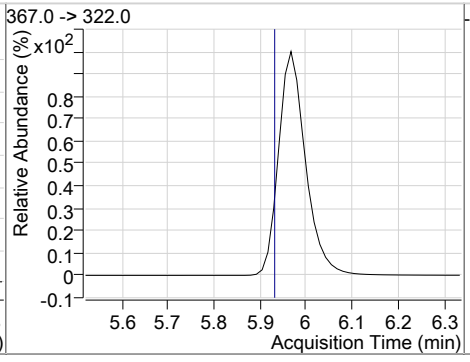


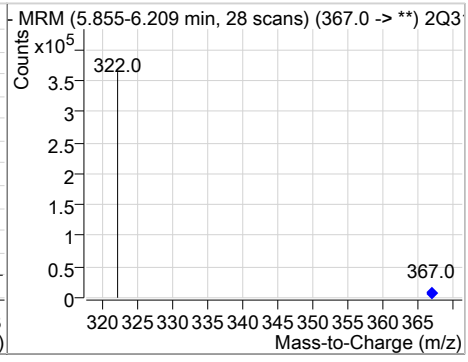




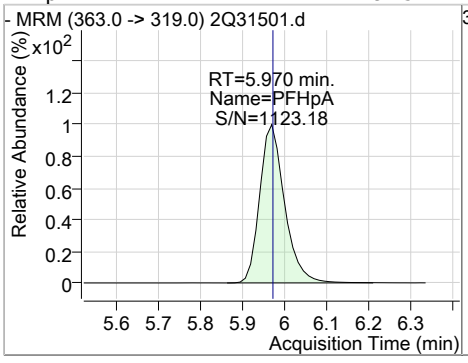
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.77	5.97	0.04	271532				

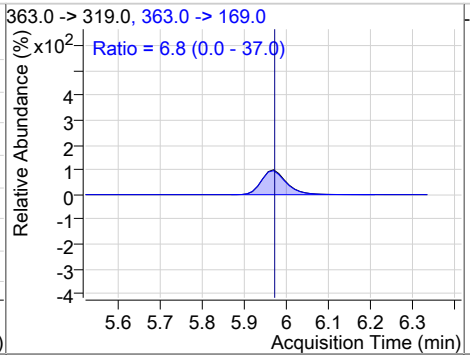


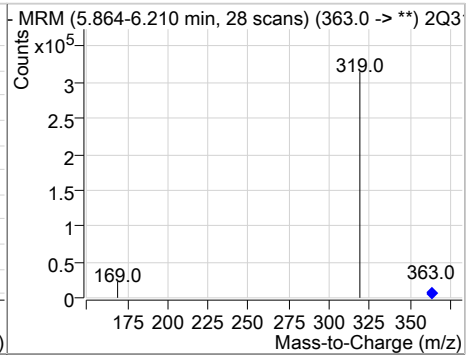




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.75	5.97	0.04	235406	363.0 -> 169.0	6.8	0.0	37.0

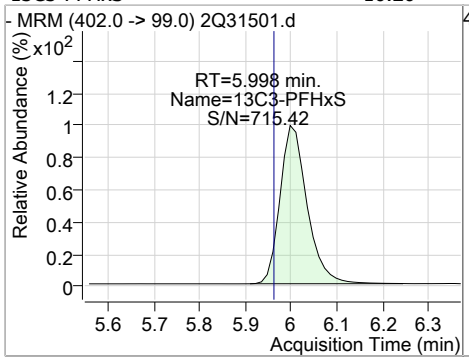


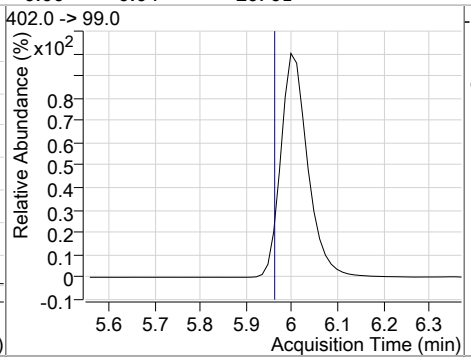


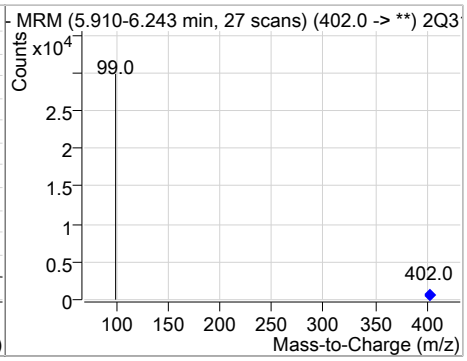


Perfluorinated Compounds by LC/MS/MS

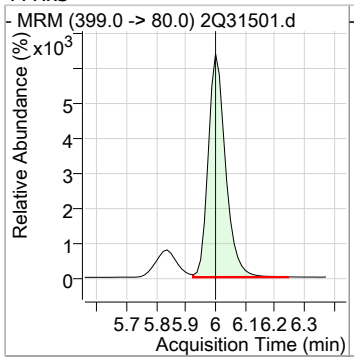
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.26	6.00	0.04	20701				

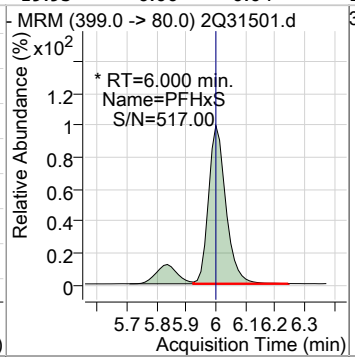


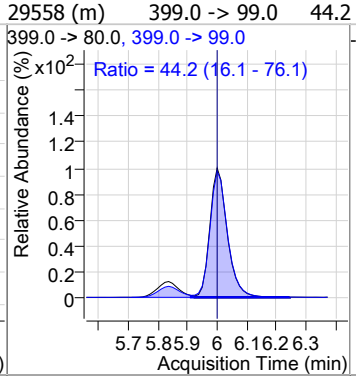


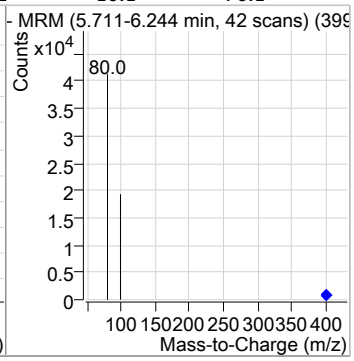


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.95	6.00	0.04	29558 (m)	399.0 -> 99.0	44.2	16.1	76.1

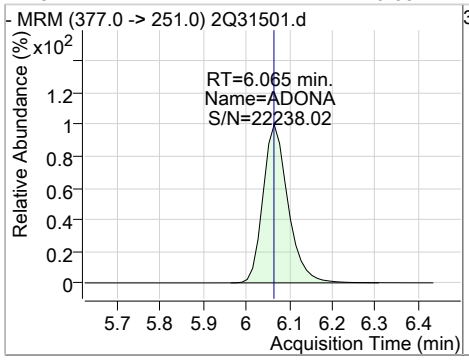


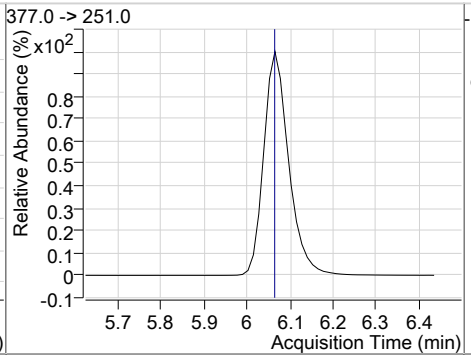


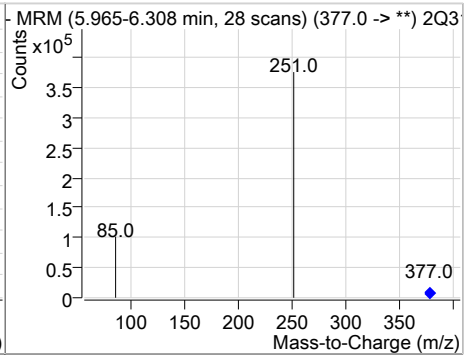




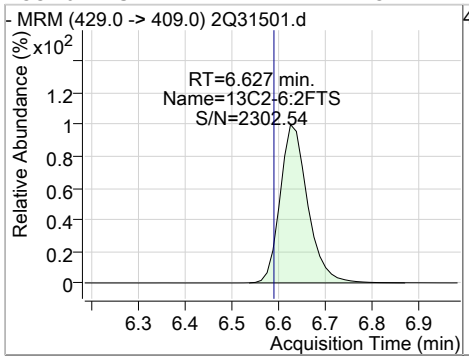
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.68	6.07	0.04	281440				

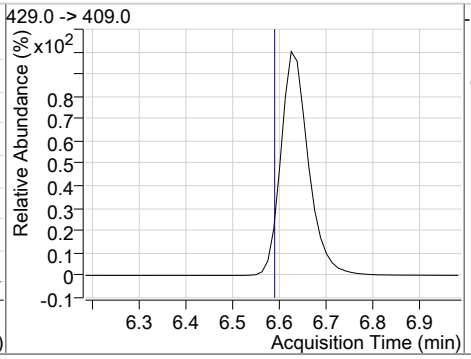


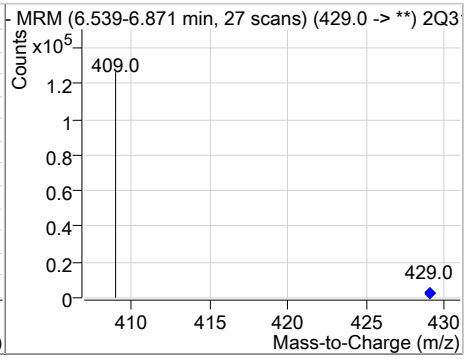




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.47	6.63	0.04	93438				

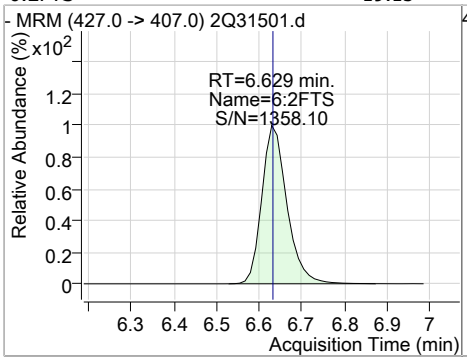


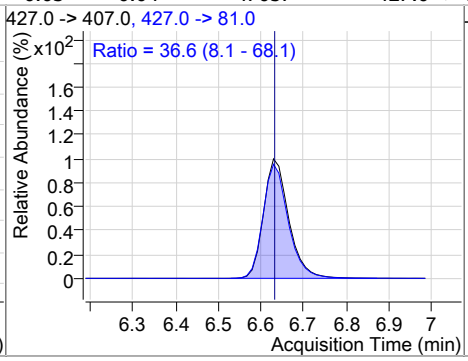


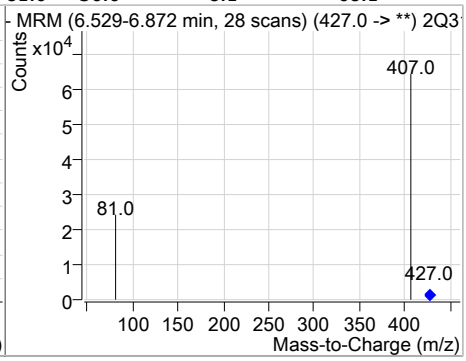


Perfluorinated Compounds by LC/MS/MS

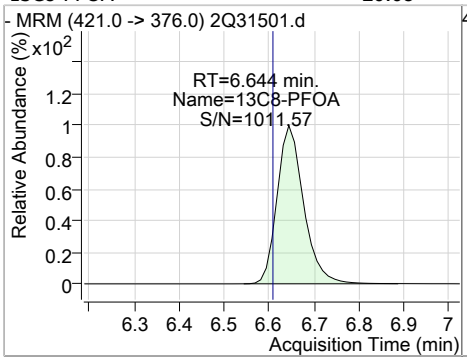
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.15	6.63	0.04	47657	427.0 -> 81.0	36.6	8.1	68.1

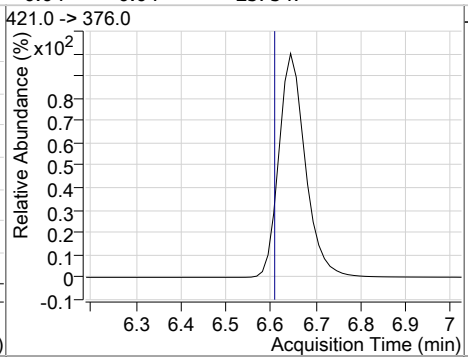


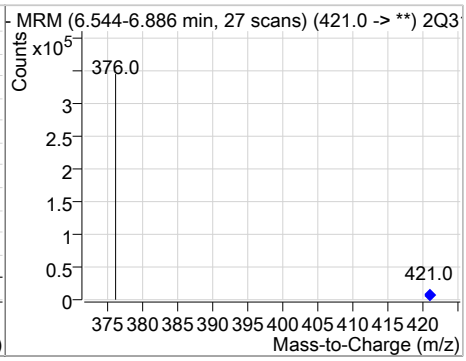




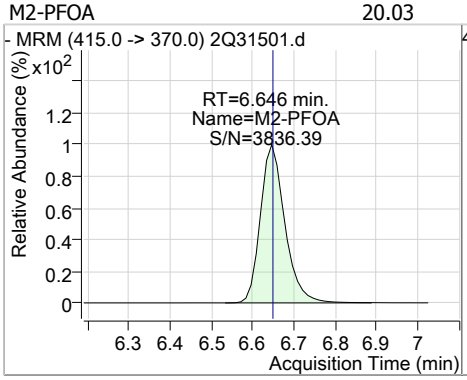
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.08	6.64	0.04	257547				

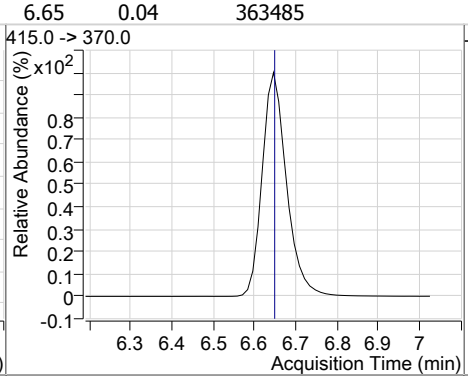


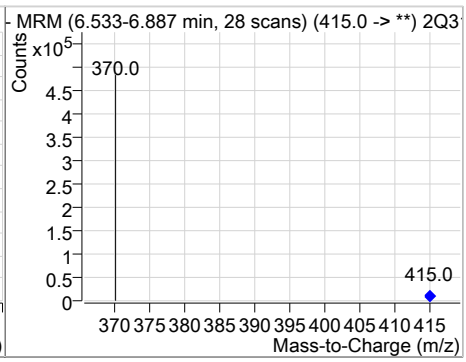




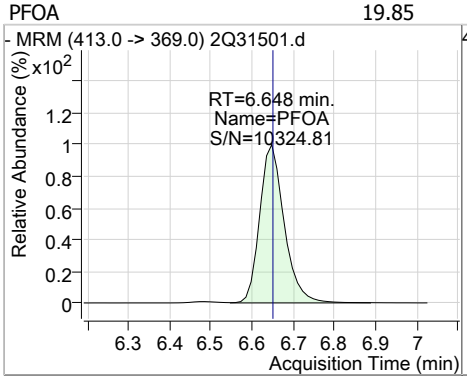
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.03	6.65	0.04	363485				

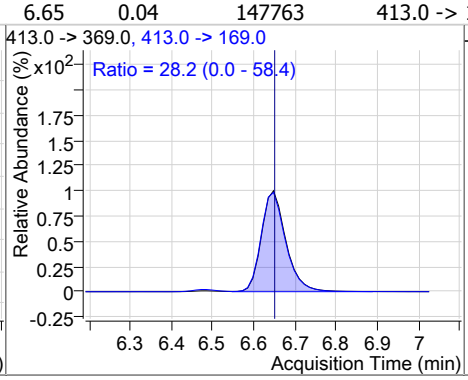


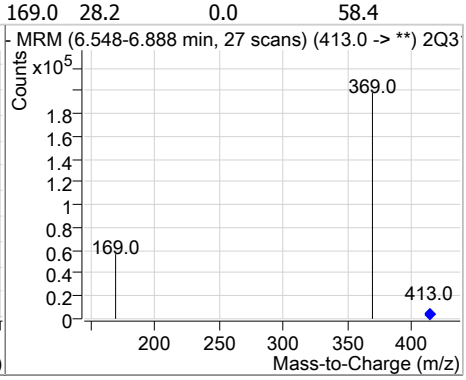




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.85	6.65	0.04	147763	413.0 -> 169.0	28.2	0.0	58.4

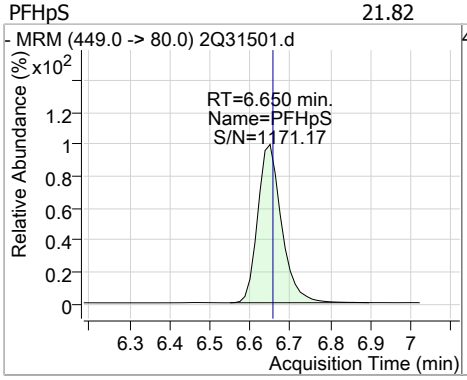


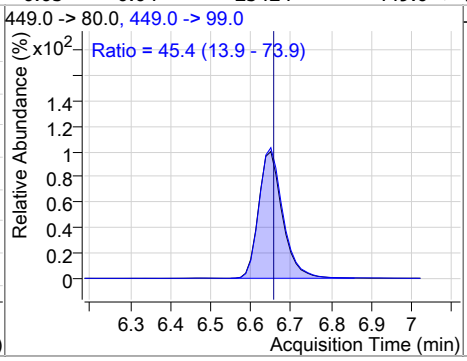


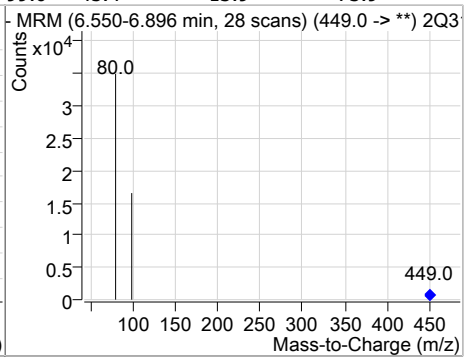


Perfluorinated Compounds by LC/MS/MS

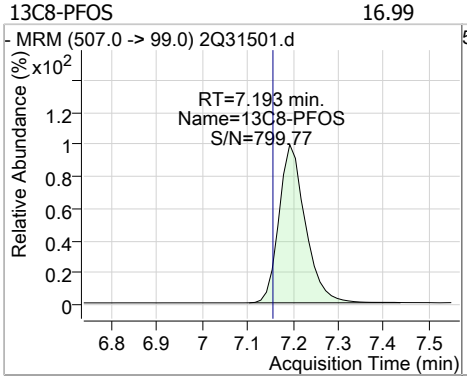
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.82	6.65	0.04	25424	449.0 -> 99.0	45.4	13.9	73.9

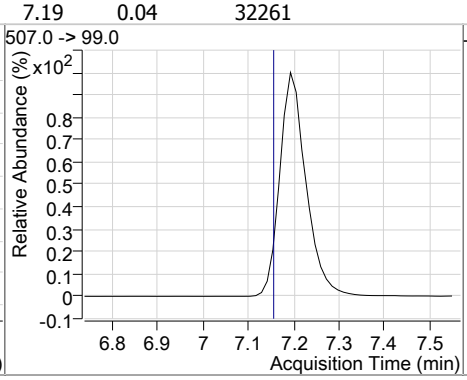


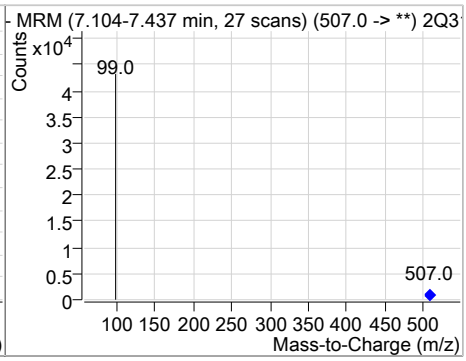




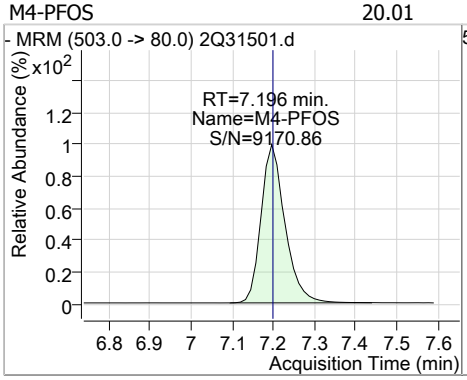
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.99	7.19	0.04	32261				

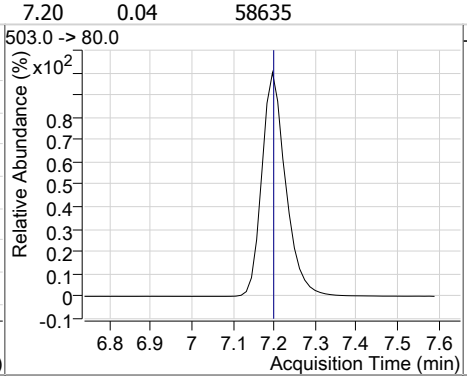


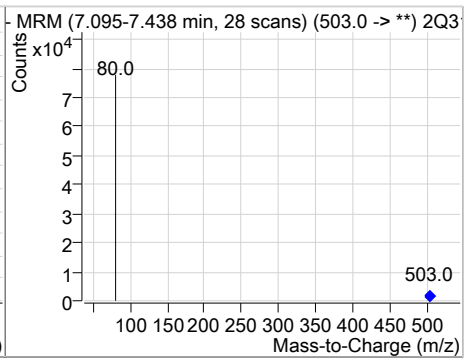




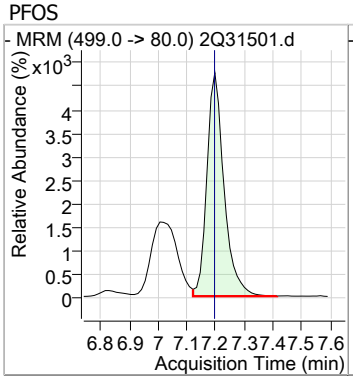
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.20	0.04	58635				

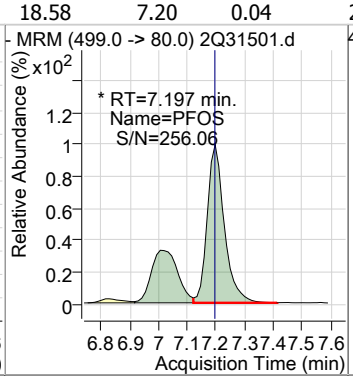


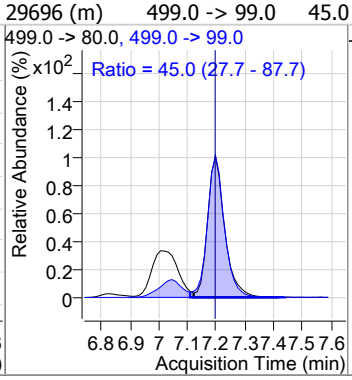


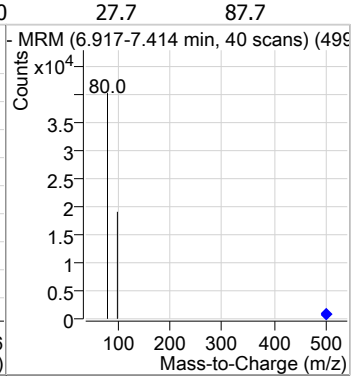


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.58	7.20	0.04	29696 (m)	499.0 -> 99.0	45.0	27.7	87.7



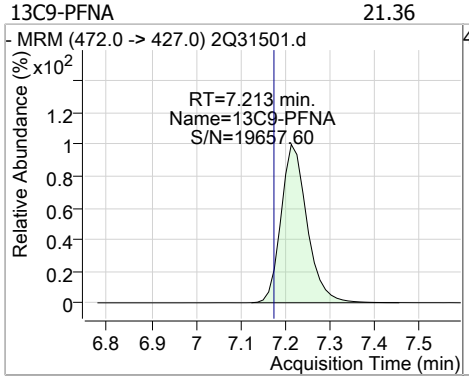


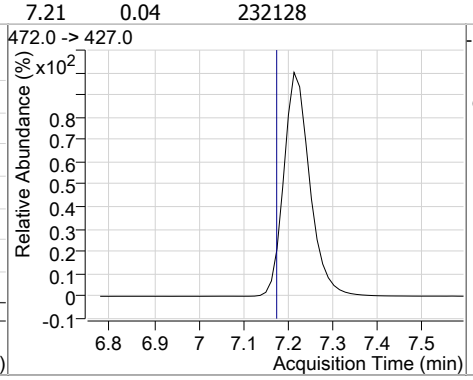


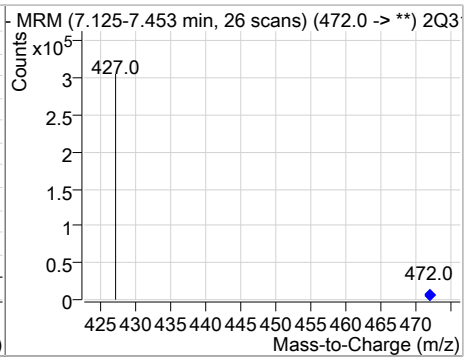


Perfluorinated Compounds by LC/MS/MS

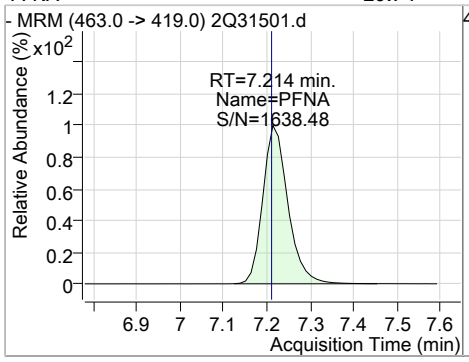
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.36	7.21	0.04	232128				

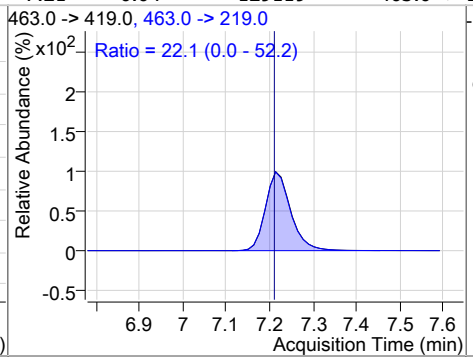


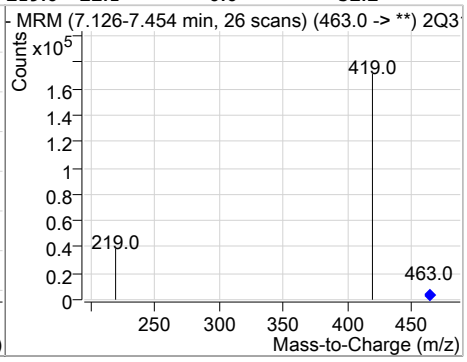




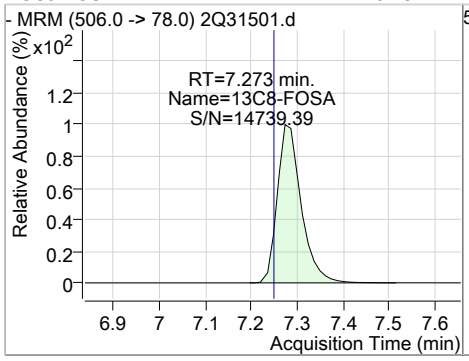
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.74	7.21	0.04	129119	463.0 -> 219.0	22.1	0.0	52.2

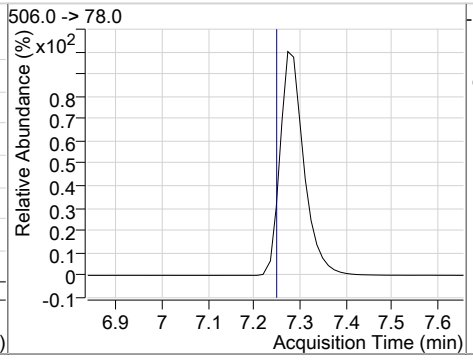


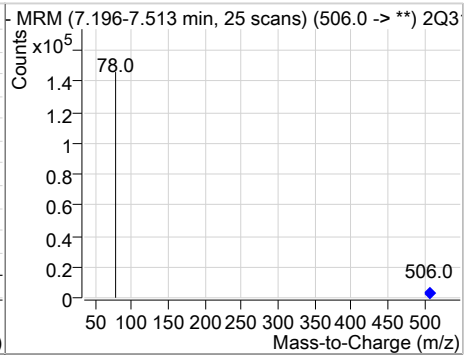




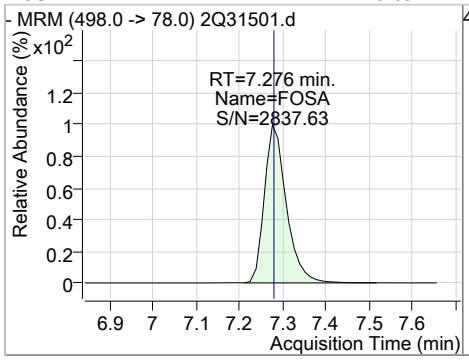
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.49	7.27	0.03	108781				

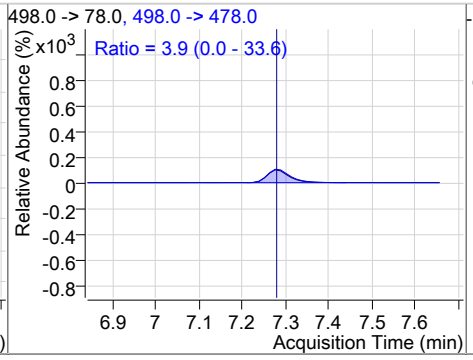


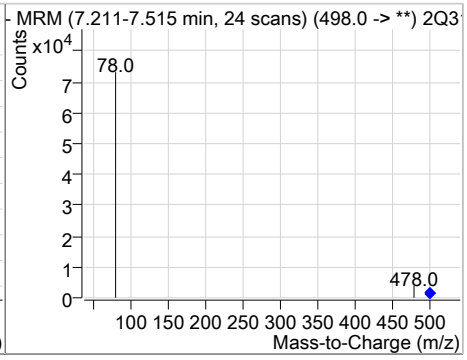




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.09	7.28	0.03	54539	498.0 -> 478.0	3.9	0.0	33.6

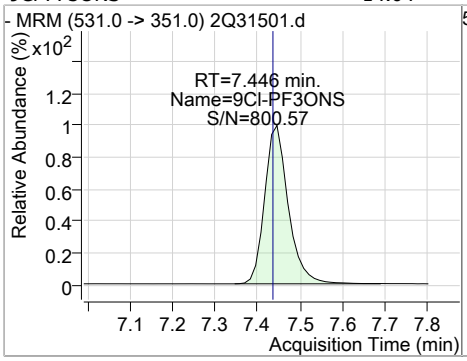


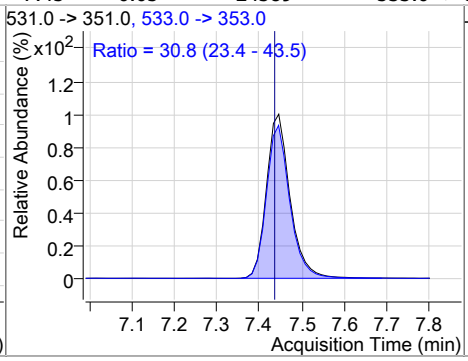


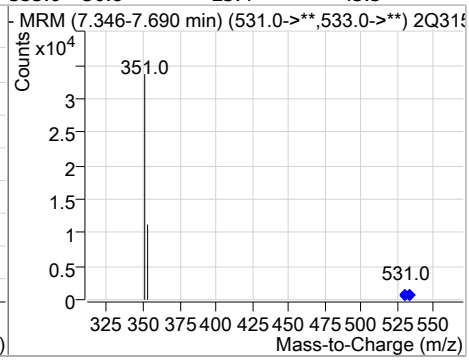


Perfluorinated Compounds by LC/MS/MS

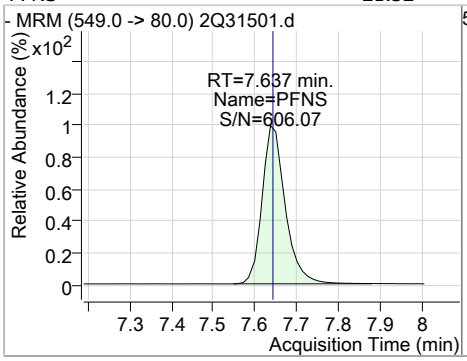
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	14.04	7.45	0.05	24589	533.0 -> 353.0	30.8	23.4	43.5

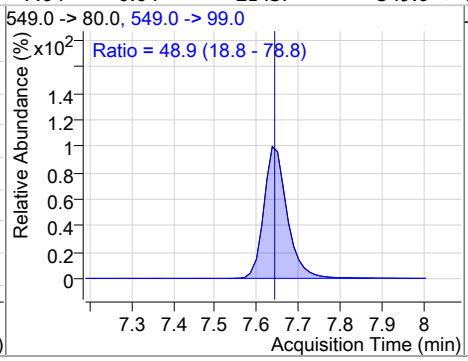


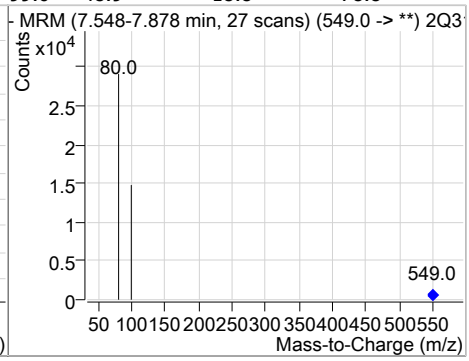




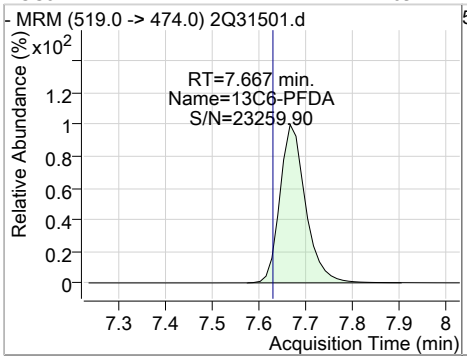
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.32	7.64	0.04	21437	549.0 -> 99.0	48.9	18.8	78.8

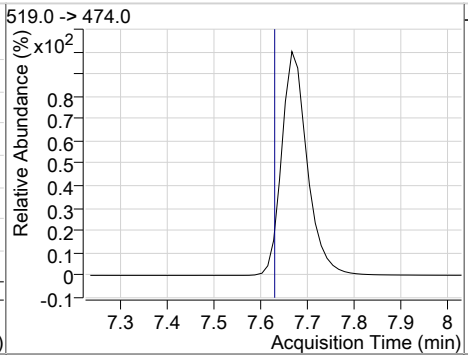


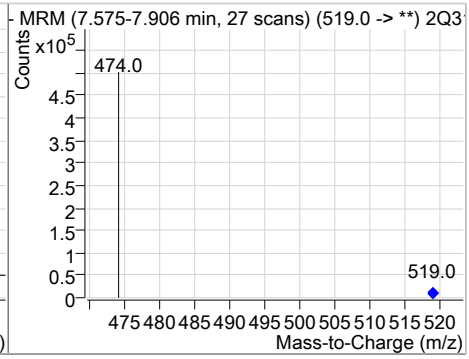




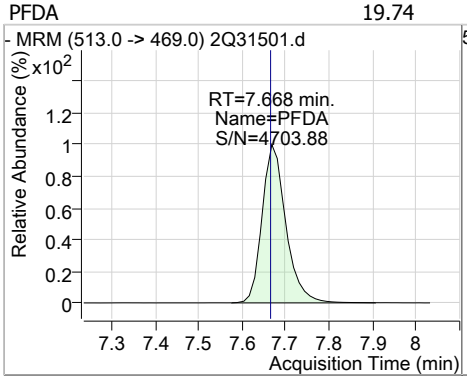
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.09	7.67	0.04	385323				

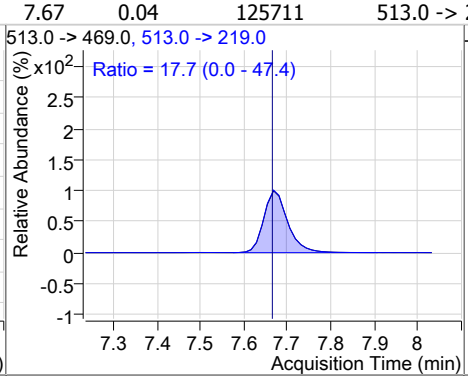


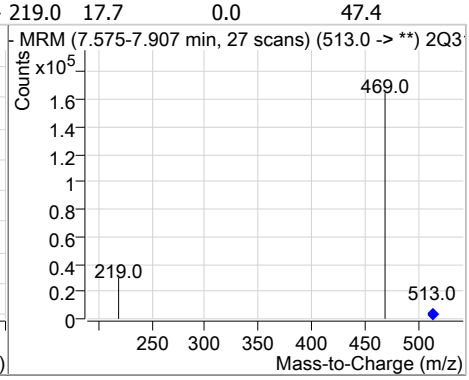




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.74	7.67	0.04	125711	513.0 -> 219.0	17.7	0.0	47.4

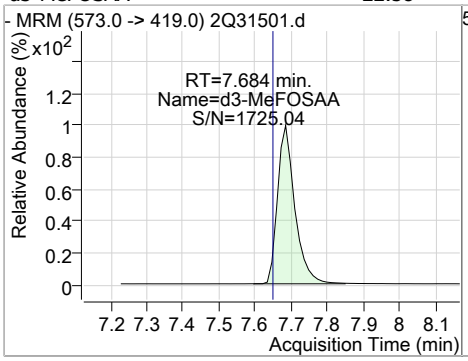


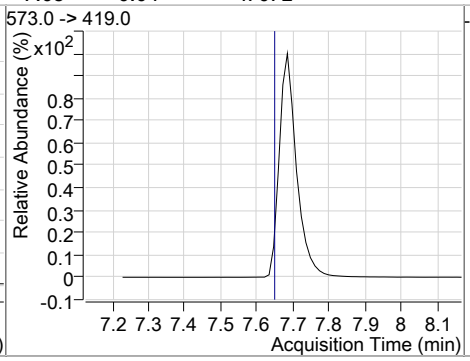


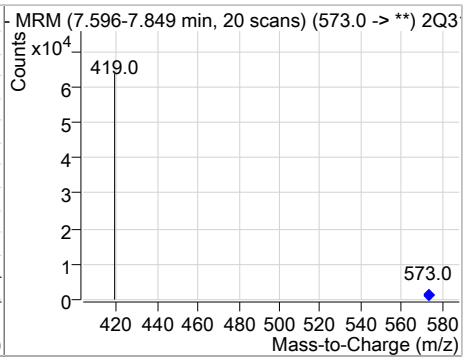


Perfluorinated Compounds by LC/MS/MS

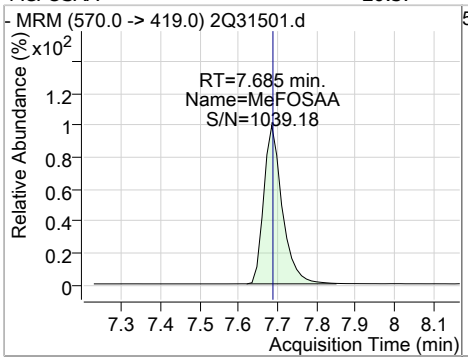
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.58	7.68	0.04	47072				

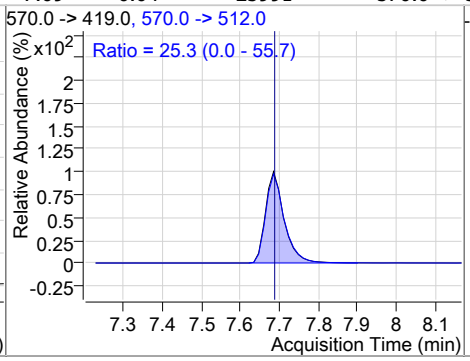


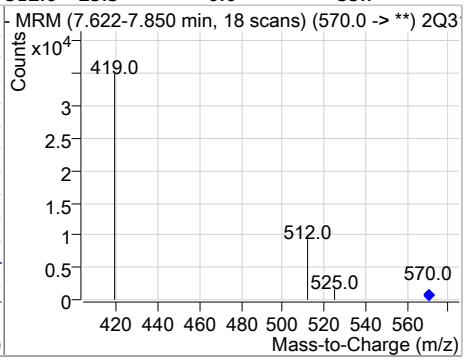




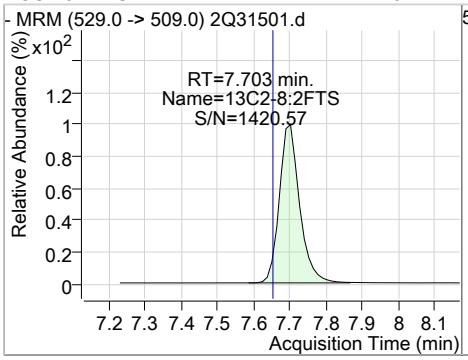
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.37	7.69	0.04	25991	570.0 -> 512.0	25.3	0.0	55.7

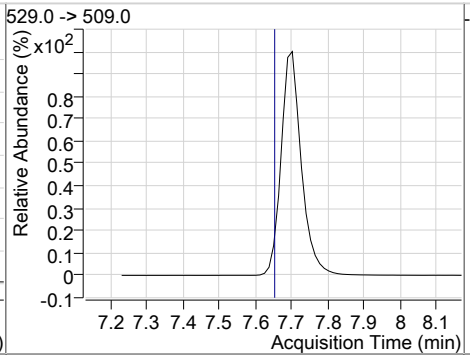


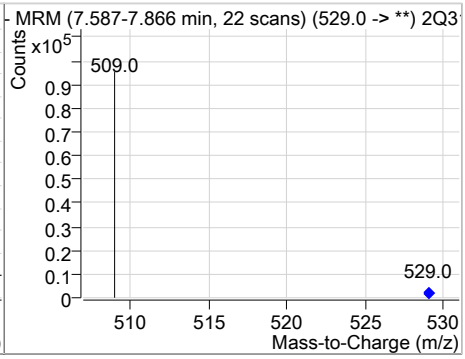




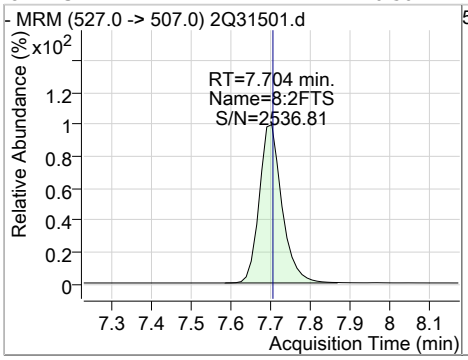
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.82	7.70	0.05	70992				

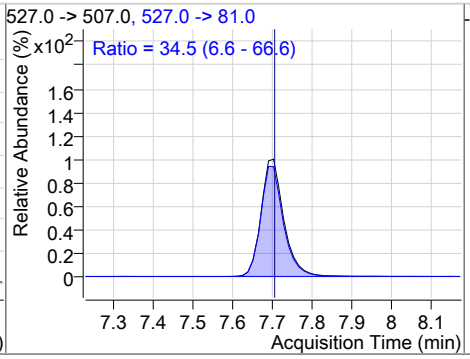


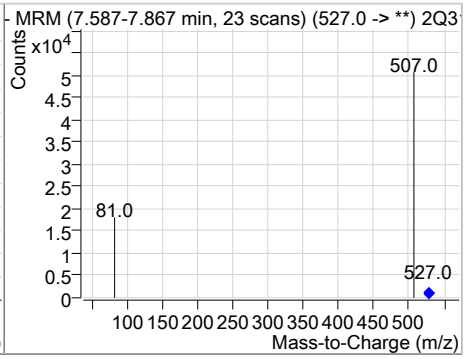




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.56	7.70	0.05	37859	527.0 -> 81.0	34.5	6.6	66.6

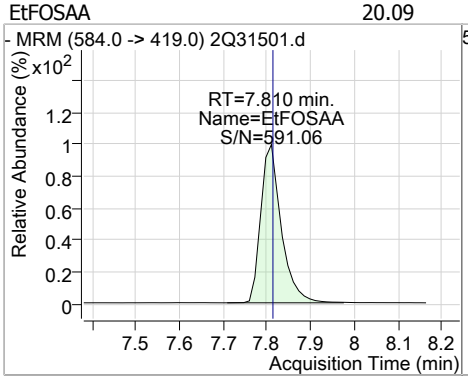


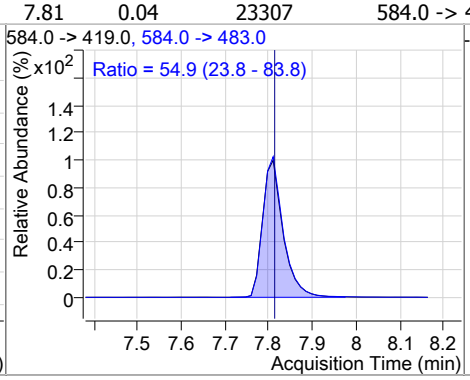


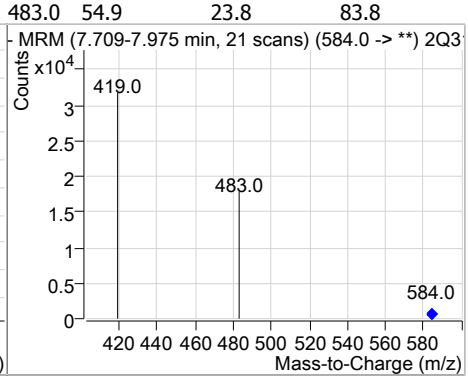


Perfluorinated Compounds by LC/MS/MS

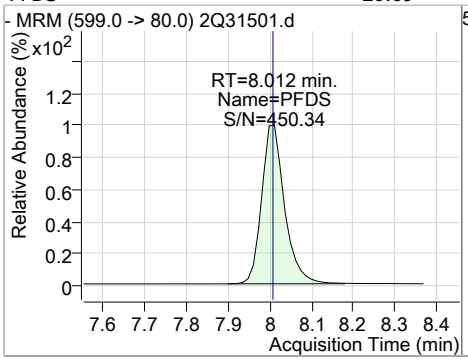
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.09	7.81	0.04	23307	584.0 -> 483.0	54.9	23.8	83.8

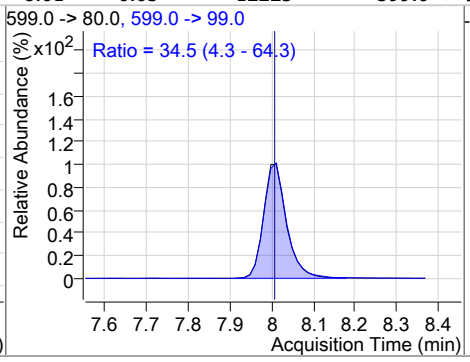


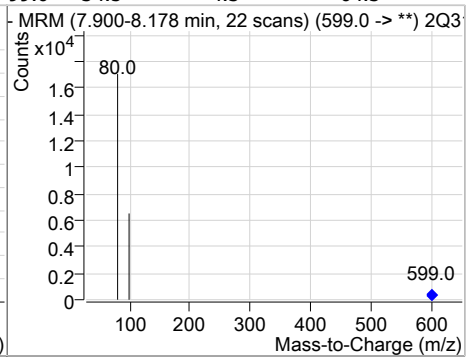




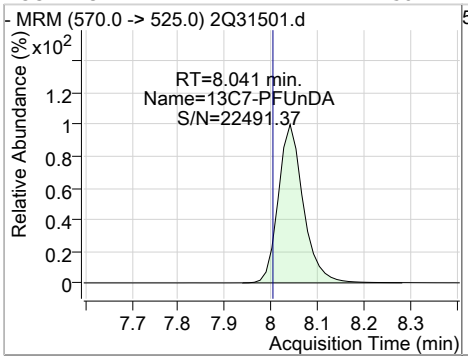
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.69	8.01	0.05	12225	599.0 -> 99.0	34.5	4.3	64.3

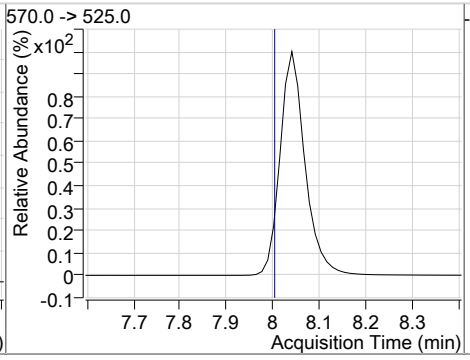


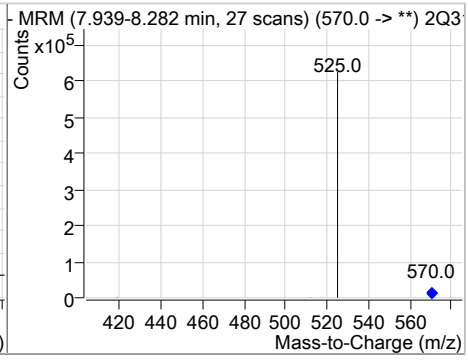




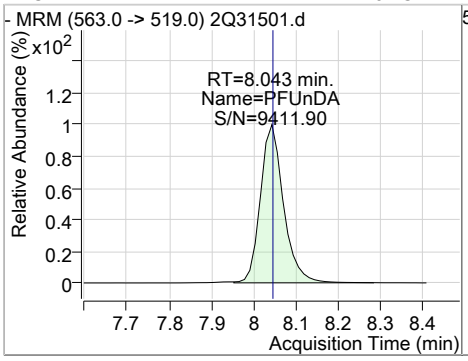
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.58	8.04	0.04	477810				

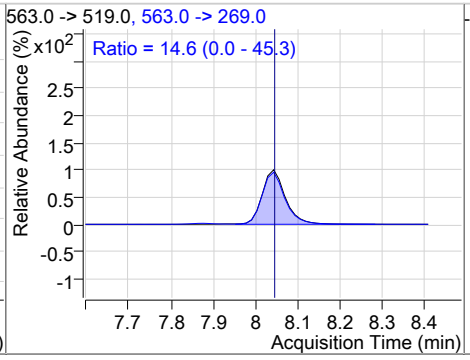


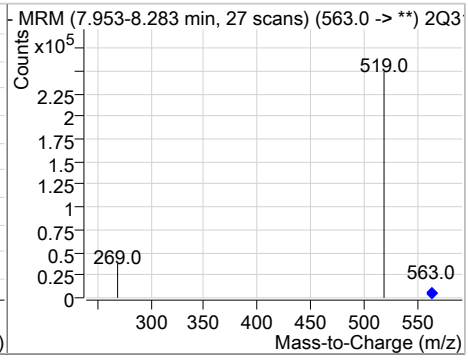




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.13	8.04	0.04	190486	563.0 -> 269.0	14.6	0.0	45.3

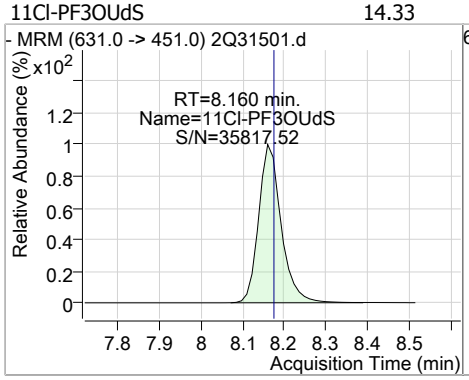


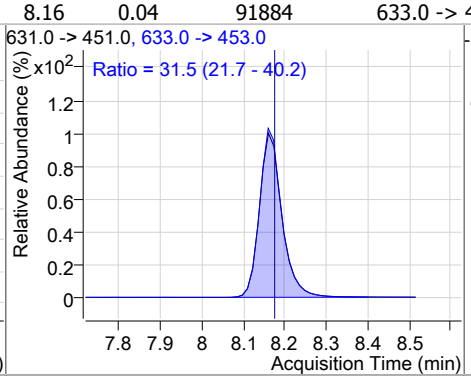


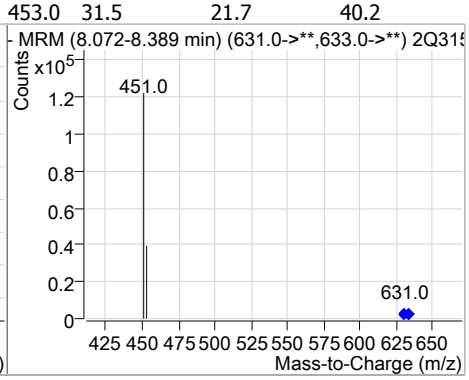


Perfluorinated Compounds by LC/MS/MS

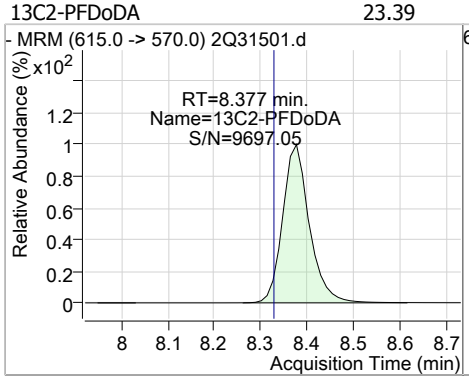
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	14.33	8.16	0.04	91884	633.0 -> 453.0	31.5	21.7	40.2

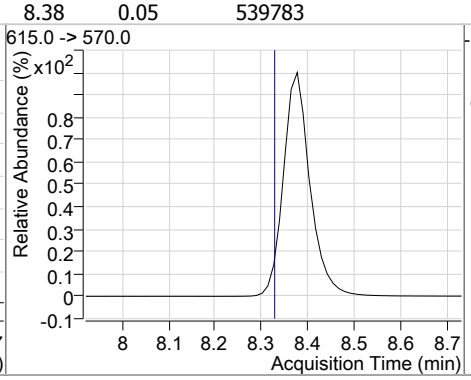


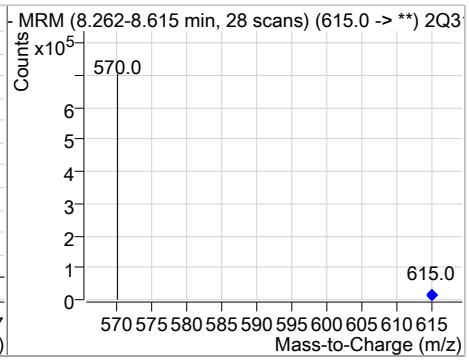




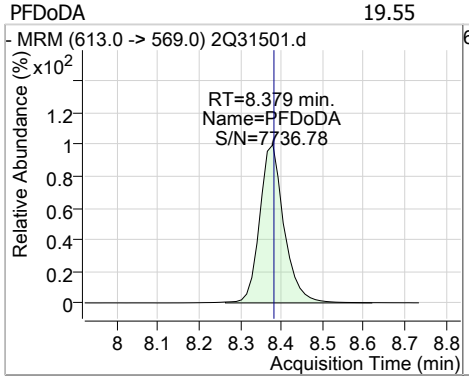
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	23.39	8.38	0.05	539783				

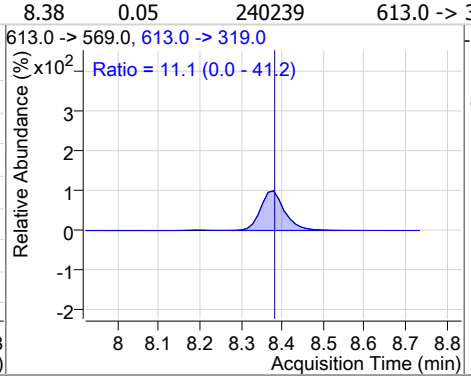


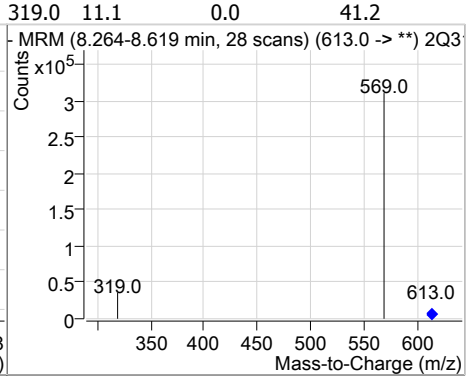




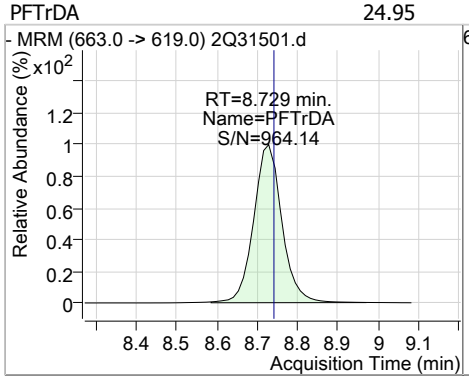
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.55	8.38	0.05	240239	613.0 -> 319.0	11.1	0.0	41.2

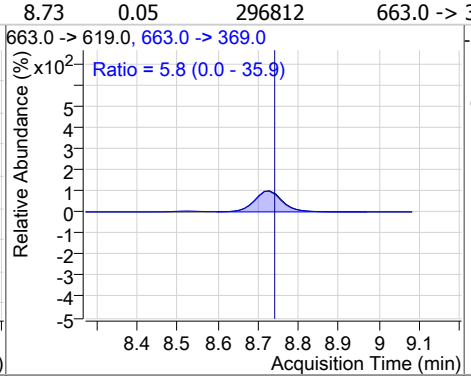


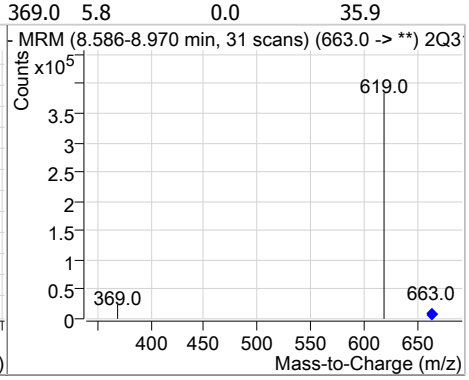




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.95	8.73	0.05	296812	663.0 -> 369.0	5.8	0.0	35.9

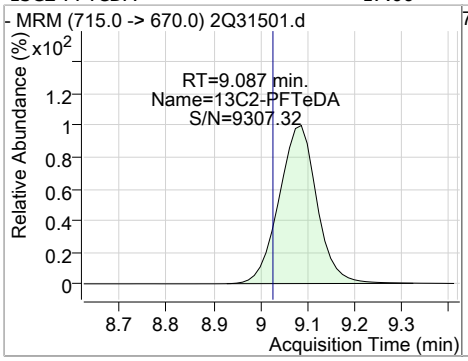


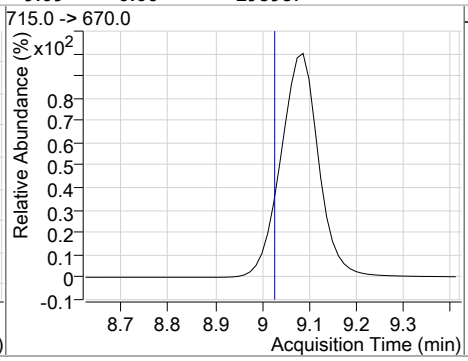


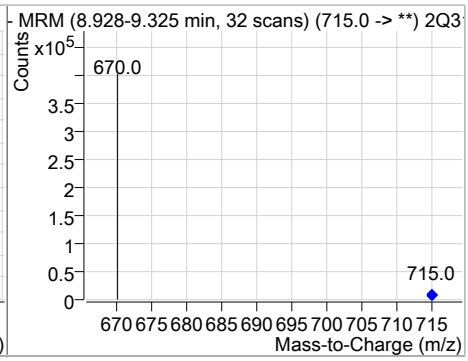


Perfluorinated Compounds by LC/MS/MS

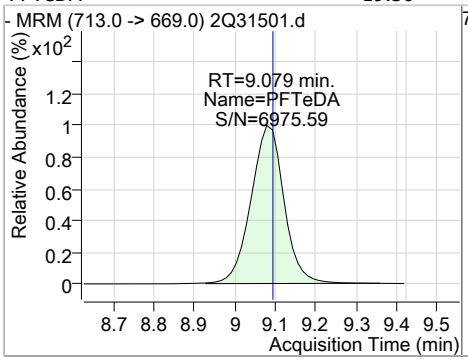
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.06	9.09	0.06	298987				

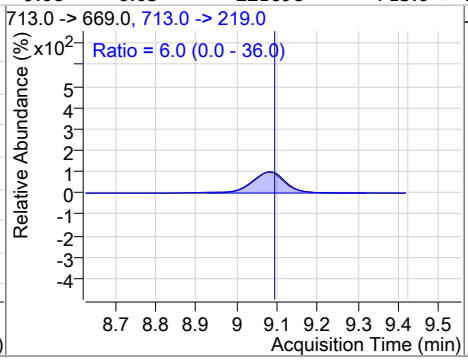


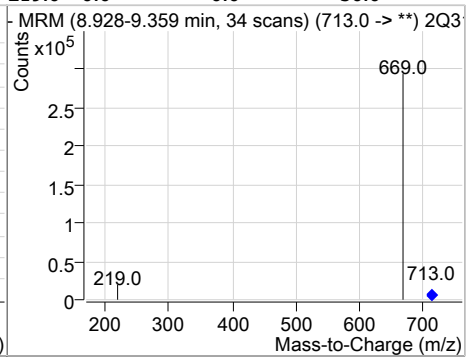




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.30	9.08	0.05	221698	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q501-CC498
Lab FileID: 2Q31501.D
Injection Time: 06/27/19 04:22

Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/27/19 13:27 Nancy Saunders
Supervisor approved: 06/27/19 16:58 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 06/27/19 16:58

Perfluorinated Compounds by LC/MS/MS

Data File : 2Q31508.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 6/27/2019 6:05:54 AM
Sample Name : ecc498-20
Vial : Vial 7
DA Method File : ID_062119_S2Q498.quantmethod.xml
Batch Name : s2q501.batch.bin
Sample Information : op75546,S2Q501,250,,,1,1,water

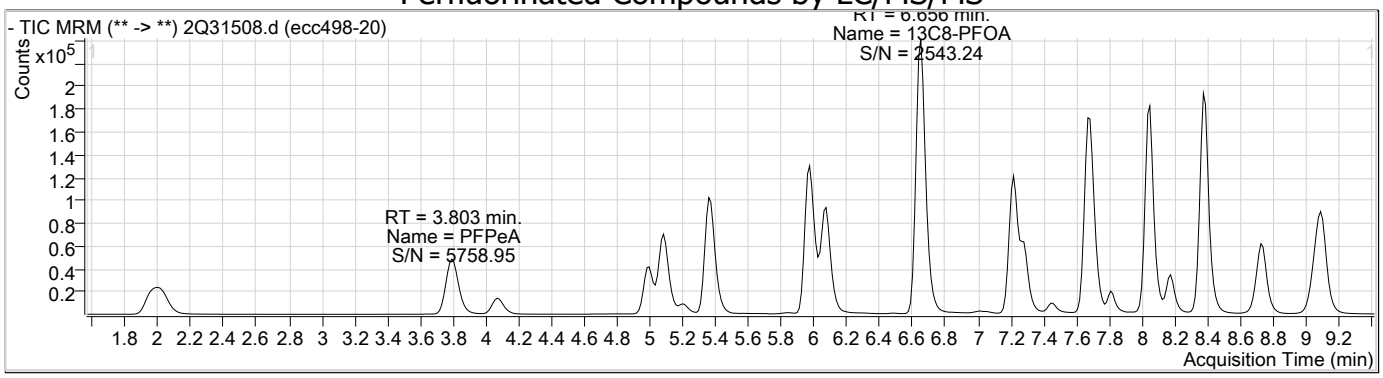
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
13C2-PFOA	6.659	415.0 -> 370.0	364195	20.00	µg/L	0.051
13C4-PFOS	7.209	503.0 -> 80.0	57721	20.00	µg/L	0.053
M4-PFBA	2.002	217.0 -> 172.0	172853	20.00	µg/L	0.025
M5-PFPeA	3.799	268.0 -> 223.0	143268	20.00	µg/L	0.038
M5-PFHxA	5.088	318.0 -> 273.0	222285	20.00	µg/L	0.038
M4-PFHpA	5.980	367.0 -> 322.0	271463	20.00	µg/L	0.051
M8-PFOA	6.656	421.0 -> 376.0	258275	20.00	µg/L	0.051
M9-PFNA	7.225	472.0 -> 427.0	229186	20.00	µg/L	0.054
M6-PFDA	7.680	519.0 -> 474.0	384869	20.00	µg/L	0.052
M7-PFUnDA	8.054	570.0 -> 525.0	470917	20.00	µg/L	0.052
M2-PFDoDA	8.377	615.0 -> 570.0	518995	20.00	µg/L	0.051
M2-PFTeDA	9.087	715.0 -> 670.0	284654	20.00	µg/L	0.063
M8-FOSA	7.286	506.0 -> 78.0	107792	20.00	µg/L	0.039
M3-PFBS	4.067	302.0 -> 99.0	24128	20.00	µg/L	0.038
M3-PFHxS	6.010	402.0 -> 99.0	20824	20.00	µg/L	0.051
M8-PFOS	7.206	507.0 -> 99.0	31312	20.00	µg/L	0.052
M2-4:2FTS	4.996	329.0 -> 309.0	101924	20.00	µg/L	0.050
M2-6:2FTS	6.640	429.0 -> 409.0	93003	20.00	µg/L	0.051
M2-8:2FTS	7.703	529.0 -> 509.0	69548	20.00	µg/L	0.052
M3-MeFOSAA	7.697	573.0 -> 419.0	46464	20.00	µg/L	0.051
M3-HFPO-DA	5.367	287.0 -> 169.0	197739	100.00	µg/L	0.050
System Monitoring Compounds						
13C2-4:2FTS	4.996	329.0 -> 309.0	101756	20.97	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C2-6:2FTS	6.640	429.0 -> 409.0	92838	23.32	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.6%		
13C2-8:2FTS	7.703	529.0 -> 509.0	69532	24.31	µg/L	0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.6%		
13C2-PFDoDA	8.377	615.0 -> 570.0	517951	22.44	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C2-PFTeDA	9.087	715.0 -> 670.0	281867	16.08	µg/L	0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C3-PFBS	4.067	302.0 -> 99.0	24124	15.88	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.4%		
13C3-PFHxS	6.010	402.0 -> 99.0	20776	16.32	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%		
13C4-PFBA	2.002	217.0 -> 172.0	172815	16.71	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%		
13C4-PFHpA	5.980	367.0 -> 322.0	271186	19.75	µg/L	0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C5-PFHxA	5.088	318.0 -> 273.0	221793	18.33	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C5-PFPeA	3.799	268.0 -> 223.0	143635	17.89	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C6-PFDA	7.680	519.0 -> 474.0	384241	22.03	µg/L	0.052

Perfluorinated Compounds by LC/MS/MS

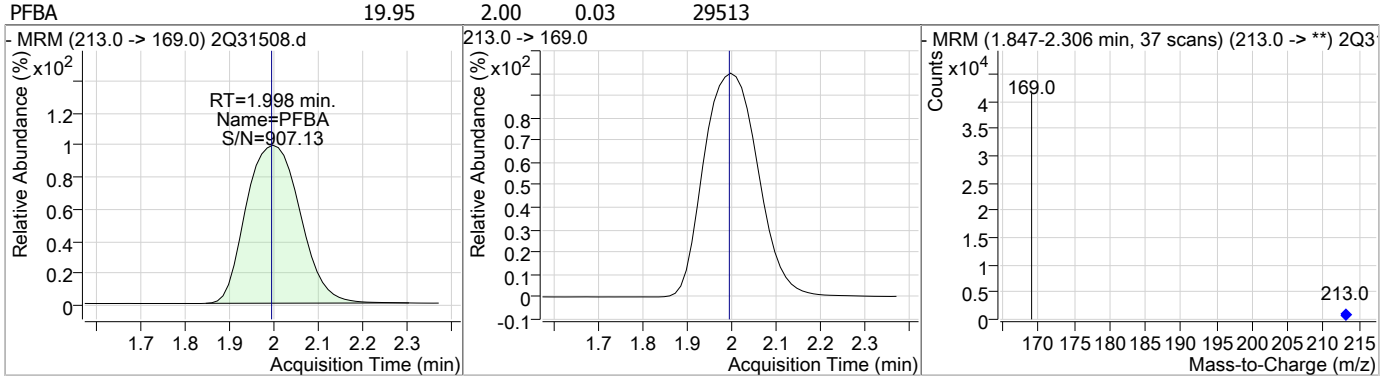
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
13C7-PFUnDA	8.054	570.0 -> 525.0	470285	22.23 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C8-FOSA	7.286	506.0 -> 78.0	107797	18.32 µg/L		0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C8-PFOA	6.656	421.0 -> 376.0	258063	20.12 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C8-PFOS	7.206	507.0 -> 99.0	31282	16.48 µg/L		0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.4%		
13C9-PFNA	7.225	472.0 -> 427.0	228980	21.07 µg/L		0.054
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
d3-MeFOSAA	7.697	573.0 -> 419.0	46461	22.29 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
M2-PFOA	6.659	415.0 -> 370.0	364817	20.03 µg/L		0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
M4-PFOS	7.209	503.0 -> 80.0	57741	20.01 µg/L		0.053
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-HFPO-DA	5.367	287.0 -> 169.0	197739	81.02 µg/L		0.050
Spiked Amount: 100.00	Range: 50.0 - 150.0%			Recovery = 81.0%		
Target Compounds						**QValue**
4:2FTS	4.986	327.0 -> 307.0	58321	20.08 µg/L		99
6:2FTS	6.642	427.0 -> 407.0	47732	19.28 µg/L		97
8:2FTS	7.704	527.0 -> 507.0	37018	20.51 µg/L		96
EtFOSAA	7.810	584.0 -> 419.0	22930	20.02 µg/L		98
FOSA	7.289	498.0 -> 78.0	54420	20.25 µg/L		100
MeFOSAA	7.698	570.0 -> 419.0	24691	19.61 µg/L		100
PFBA	1.998	213.0 -> 169.0	29513	19.95 µg/L		100
PFBS	4.071	299.0 -> 80.0	33412	20.18 µg/L		100
PFDA	7.681	513.0 -> 469.0	124522	19.60 µg/L		99
PFDoDA	8.379	613.0 -> 569.0	232796	19.71 µg/L		100
PFDS	8.012	599.0 -> 80.0	12129	21.19 µg/L		100
PFHpA	5.983	363.0 -> 319.0	236728	19.87 µg/L		99
PFHpS	6.663	449.0 -> 80.0	25479	21.79 µg/L		99
PFHxA	5.090	313.0 -> 269.0	66607	20.38 µg/L		100
PFHxS	6.013	399.0 -> 80.0	30128	20.26 µg/L	m	97
PFNA	7.227	463.0 -> 419.0	127511	20.58 µg/L		100
PFNS	7.649	549.0 -> 80.0	21393	21.96 µg/L		98
PFOA	6.661	413.0 -> 369.0	146780	19.70 µg/L		100
PFOS	7.210	499.0 -> 80.0	29900	19.31 µg/L	m	83
PFPeA	3.803	263.0 -> 219.0	119655	20.06 µg/L		100
PFPeS	5.208	349.0 -> 80.0	22725	21.40 µg/L		99
PFTeDA	9.093	713.0 -> 669.0	207793	19.15 µg/L		100
PFTrDA	8.729	663.0 -> 619.0	280509	24.97 µg/L		100
PFUnDA	8.056	563.0 -> 519.0	187047	20.06 µg/L		100
11Cl-PF3OUdS	8.173	631.0 -> 451.0	92439	15.00 µg/L		100
9Cl-PF3ONS	7.459	531.0 -> 351.0	24239	13.87 µg/L		93
ADONA	6.078	377.0 -> 251.0	283460	16.78 µg/L		100
HFPO-DA	5.373	329.0 -> 169.0	197638	119.19 µg/L		94

= Qualifier out of range, m = manually integrated, + = Area summed

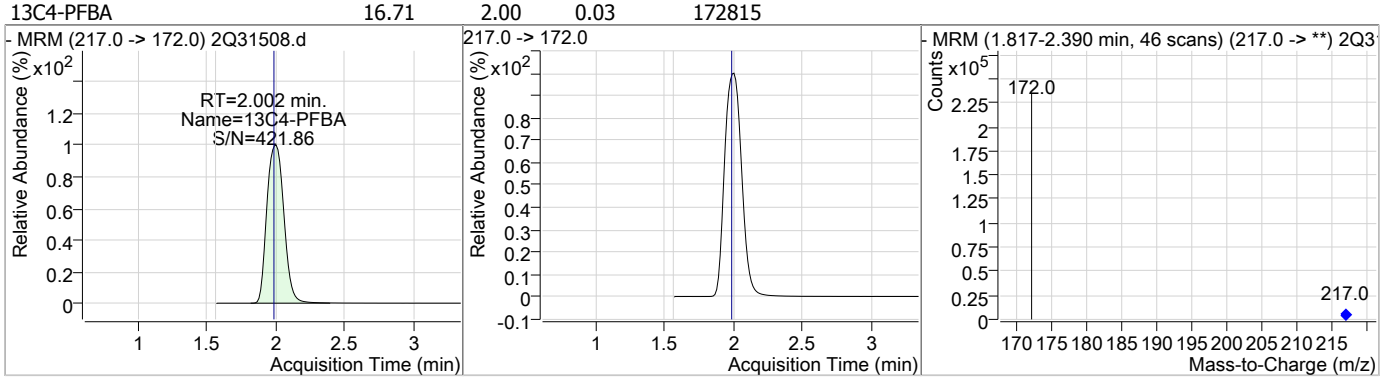
Perfluorinated Compounds by LC/MS/MS



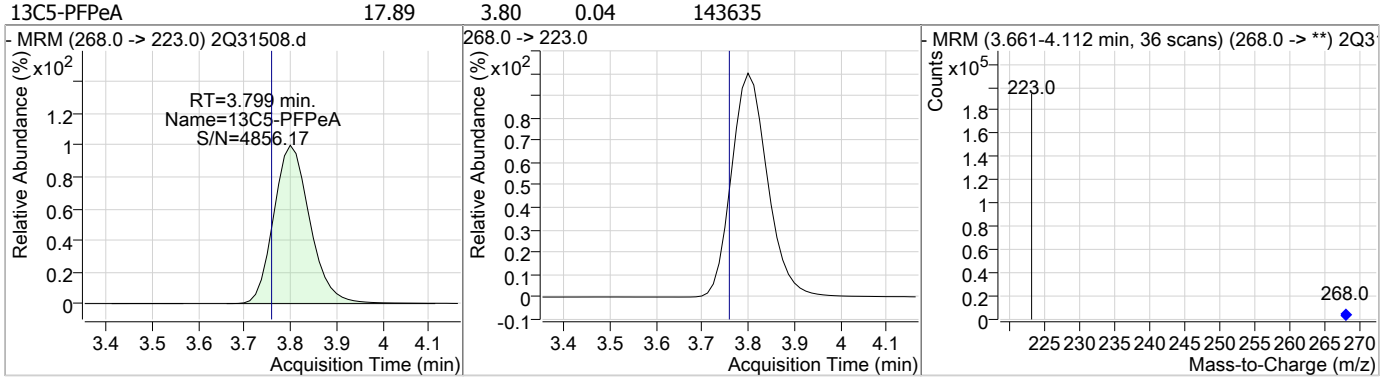
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.95	2.00	0.03	29513				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.71	2.00	0.03	172815				

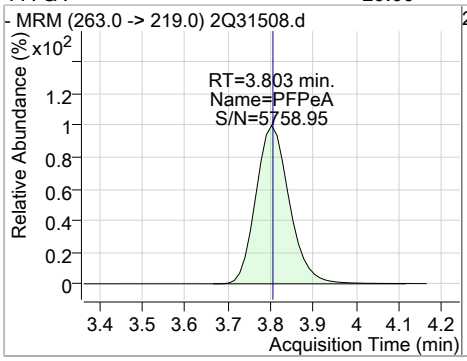


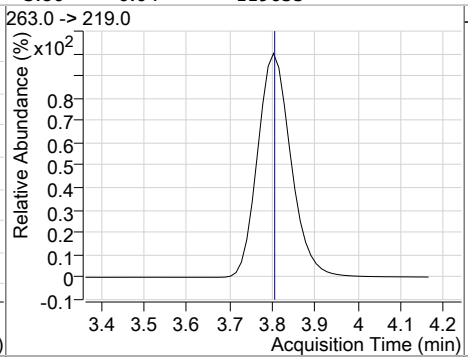
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.89	3.80	0.04	143635				

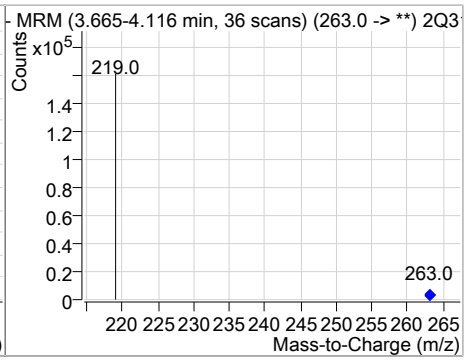


Perfluorinated Compounds by LC/MS/MS

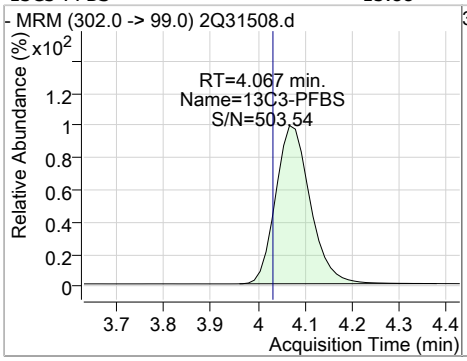
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.06	3.80	0.04	119655				

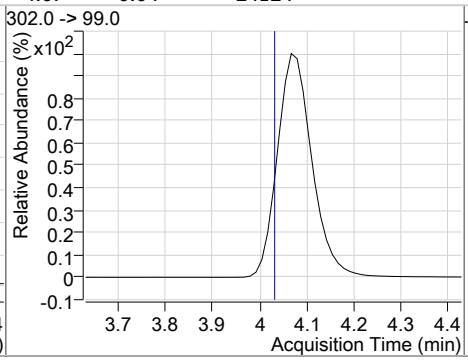


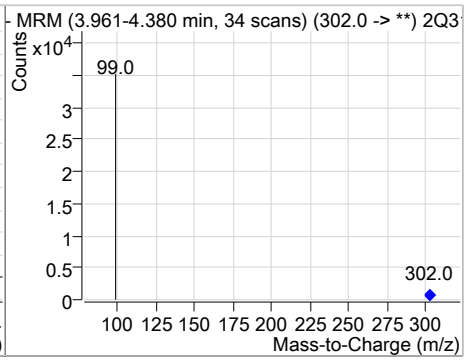




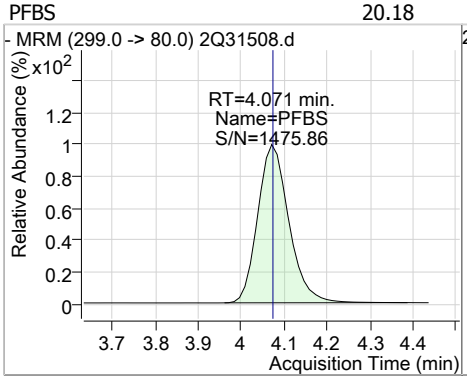
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.88	4.07	0.04	24124				

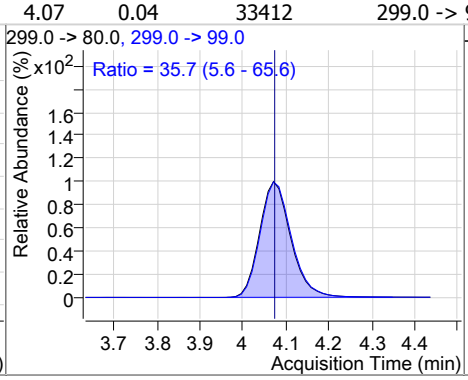


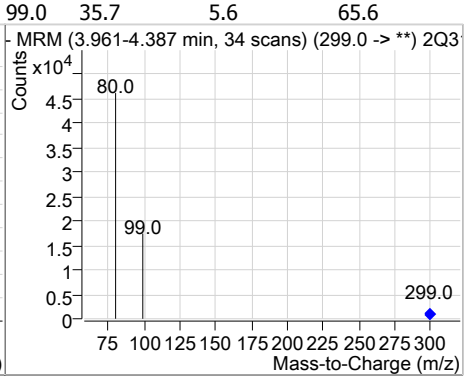




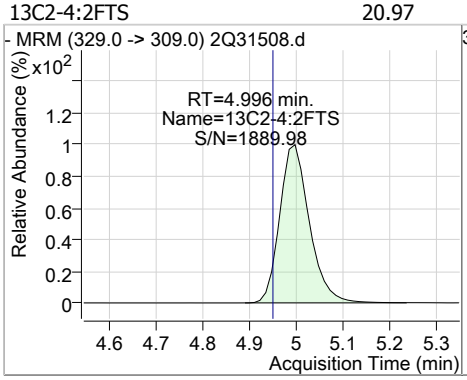
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.18	4.07	0.04	33412	299.0 -> 99.0	35.7	5.6	65.6

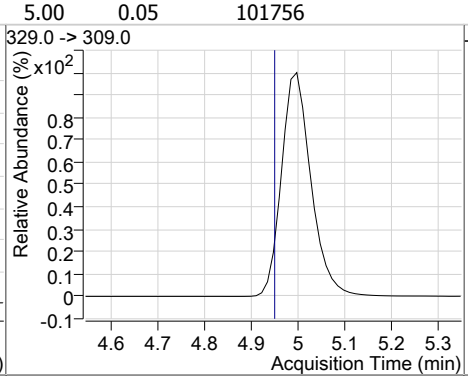


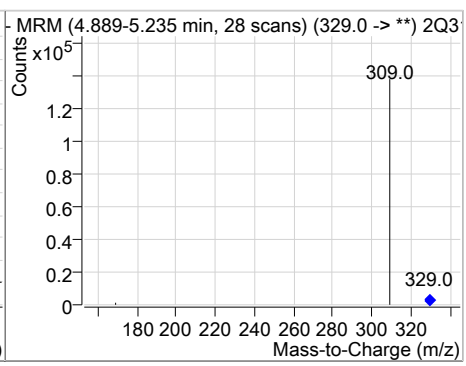




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.97	5.00	0.05	101756				

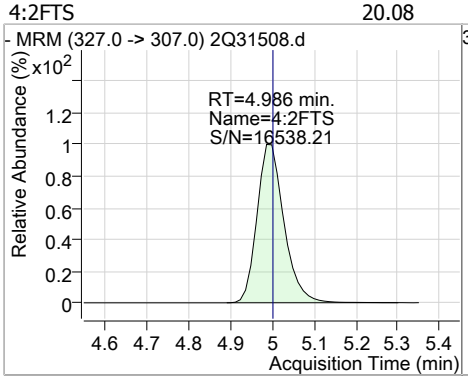


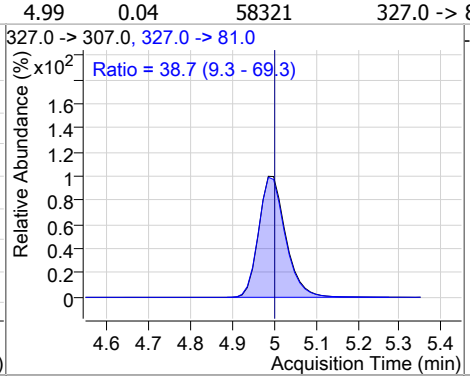


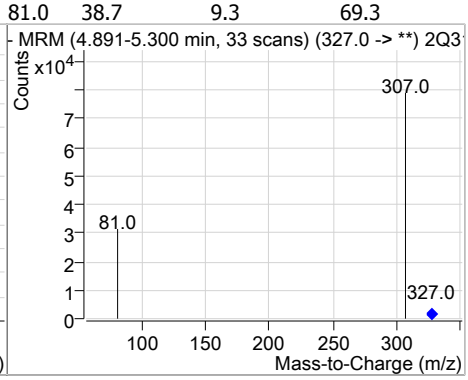


Perfluorinated Compounds by LC/MS/MS

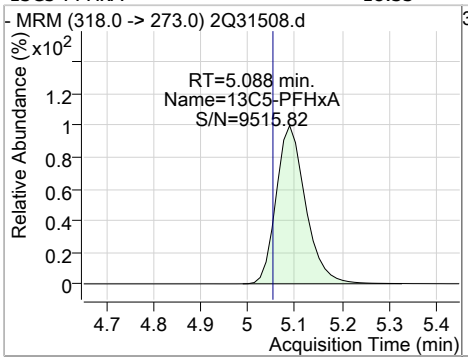
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.08	4.99	0.04	58321	327.0 -> 81.0	38.7	9.3	69.3

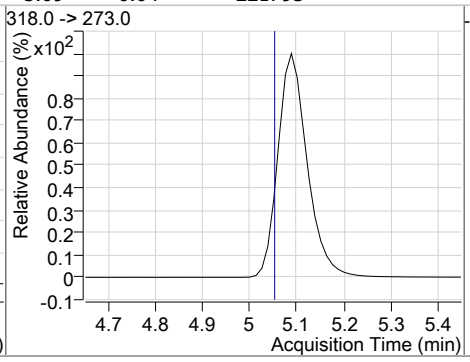


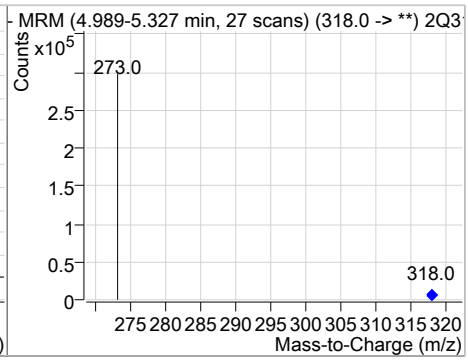




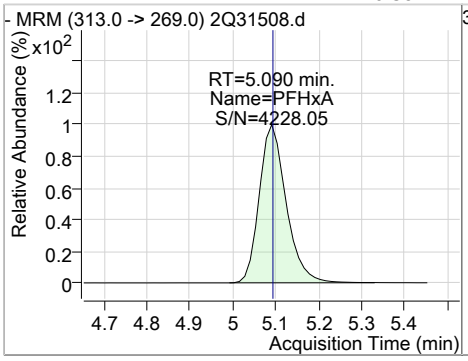
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.33	5.09	0.04	221793				

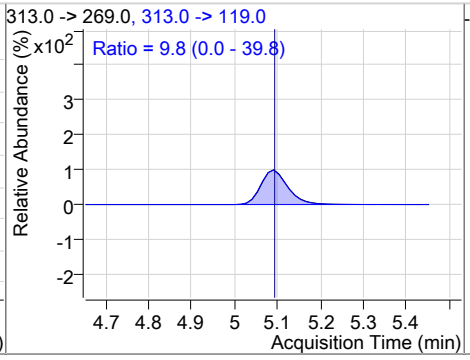


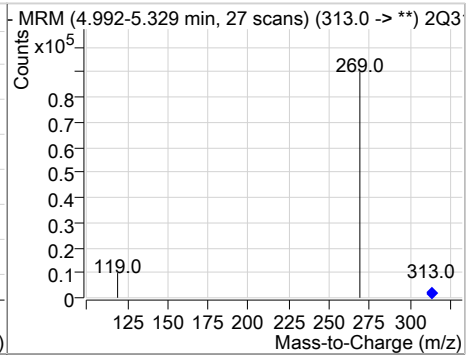




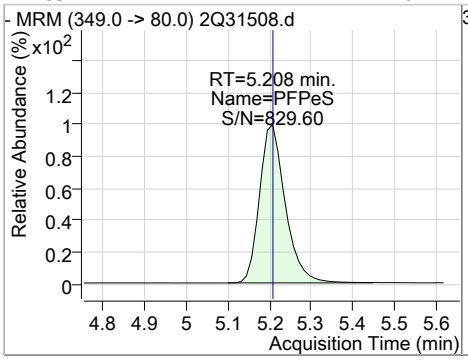
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.38	5.09	0.04	66607	313.0 -> 119.0	9.8	0.0	39.8

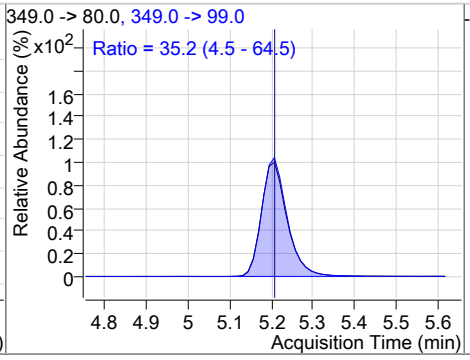


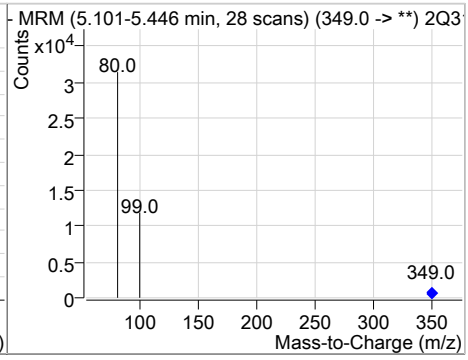




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.40	5.21	0.05	22725	349.0 -> 99.0	35.2	4.5	64.5

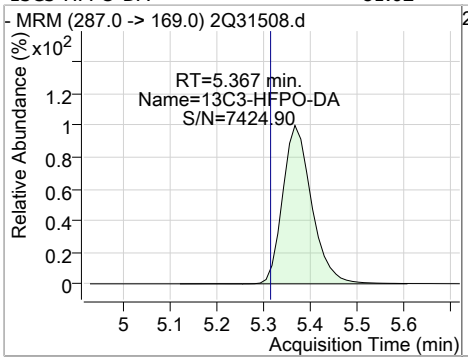


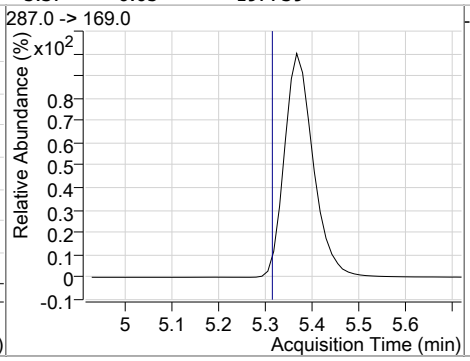


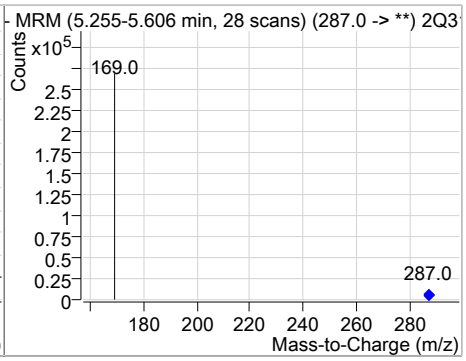


Perfluorinated Compounds by LC/MS/MS

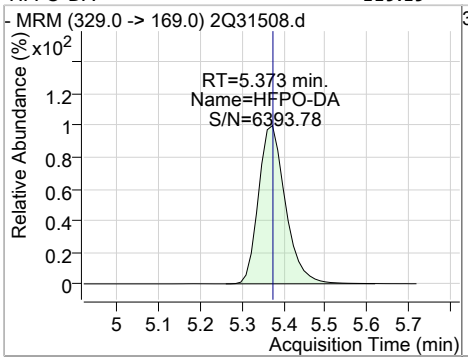
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	81.02	5.37	0.05	197739				

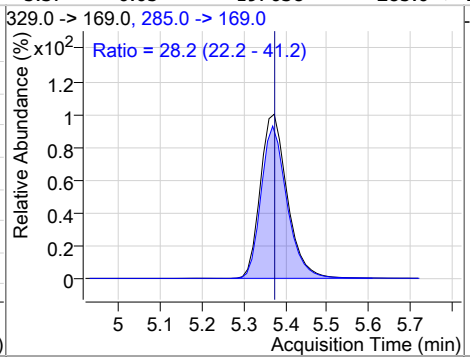


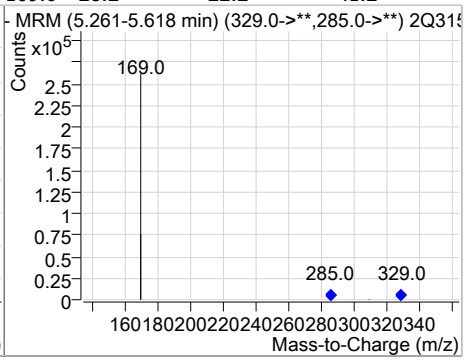




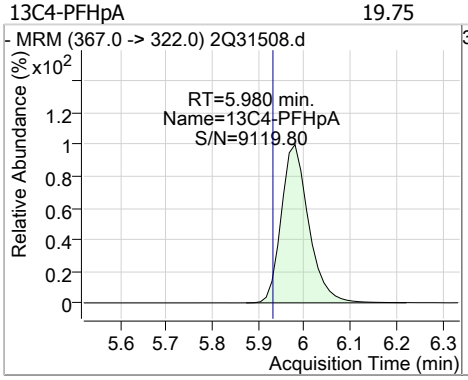
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	119.19	5.37	0.05	197638	285.0 -> 169.0	28.2	22.2	41.2

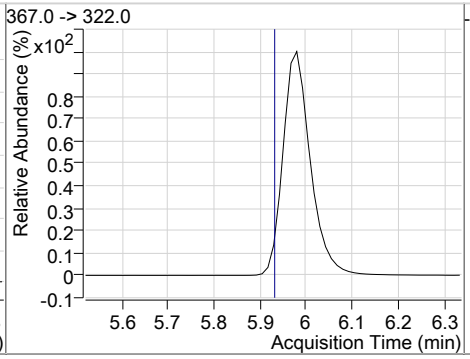


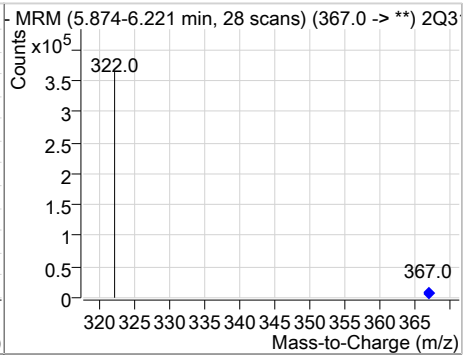




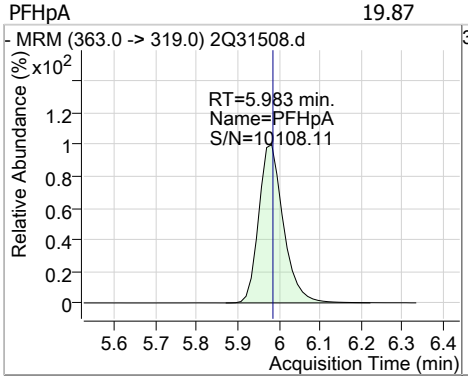
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.75	5.98	0.05	271186				

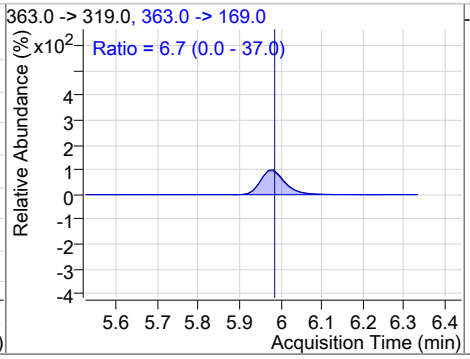


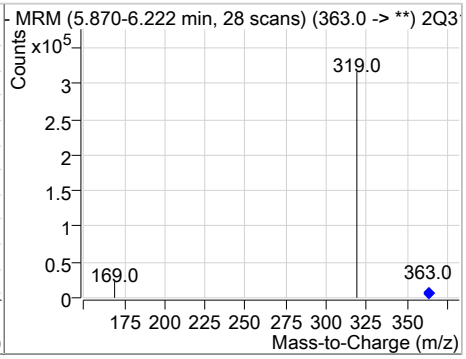




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.87	5.98	0.05	236728	363.0 -> 169.0	6.7	0.0	37.0

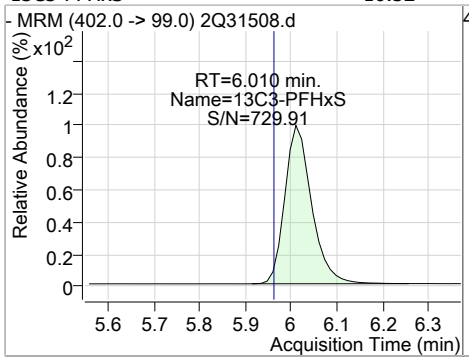


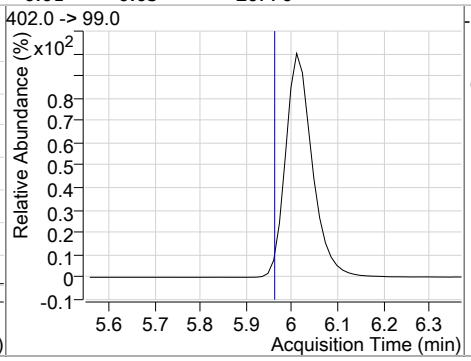


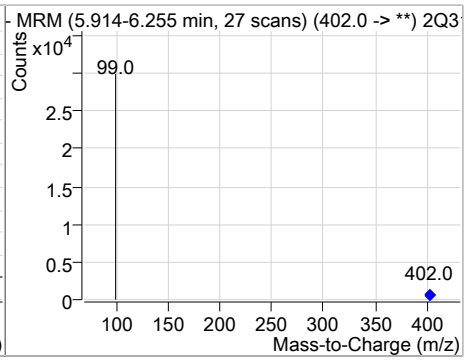


Perfluorinated Compounds by LC/MS/MS

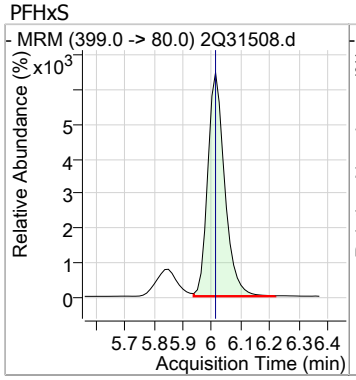
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.32	6.01	0.05	20776				

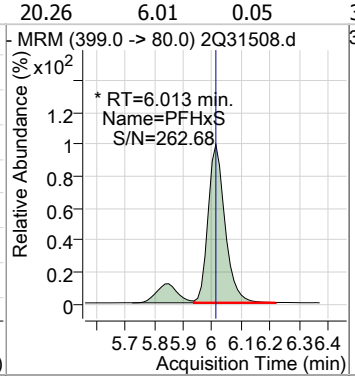


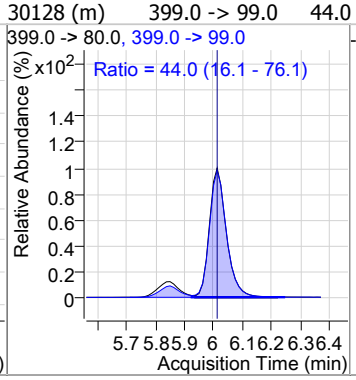


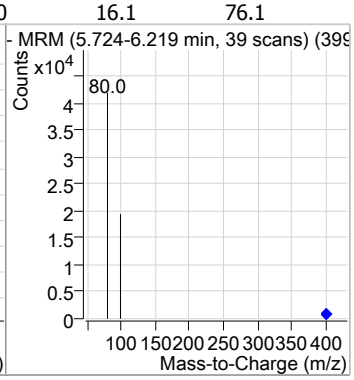


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.26	6.01	0.05	30128 (m)	399.0 -> 99.0	44.0	16.1	76.1

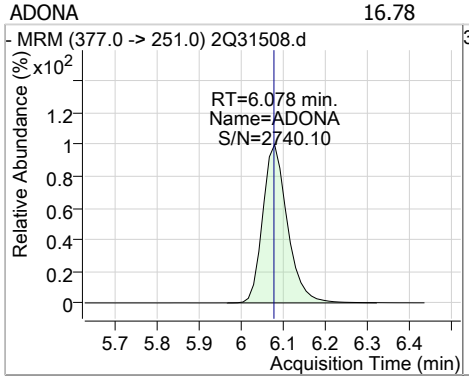


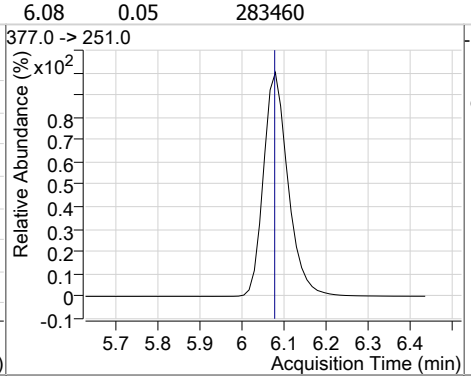


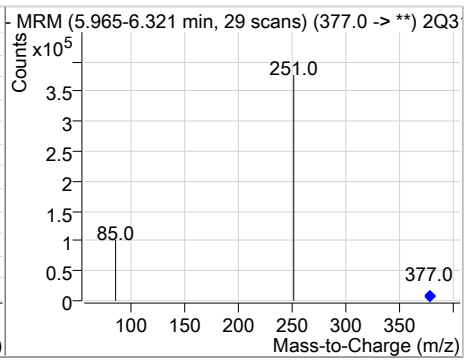




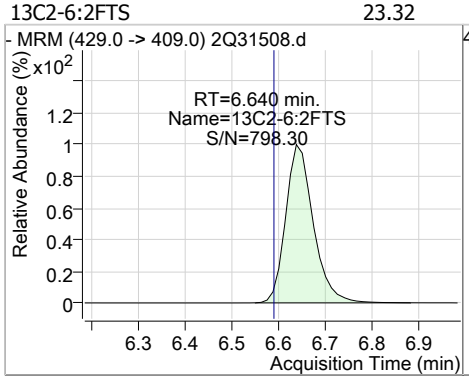
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.78	6.08	0.05	283460				

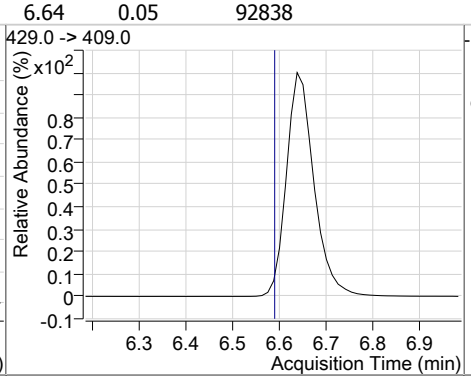


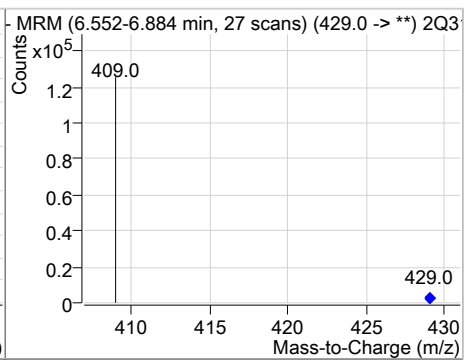




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.32	6.64	0.05	92838				

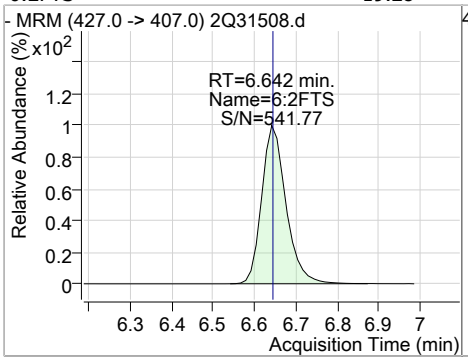


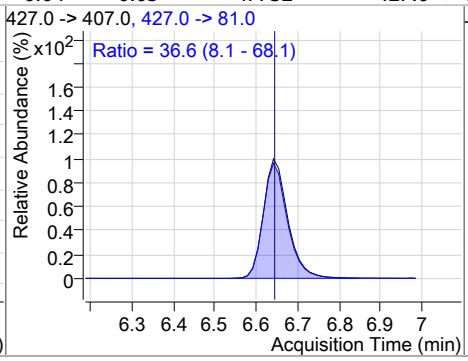


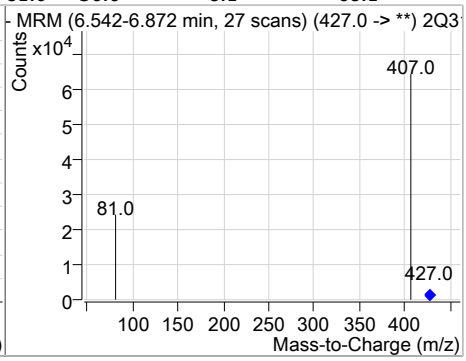


Perfluorinated Compounds by LC/MS/MS

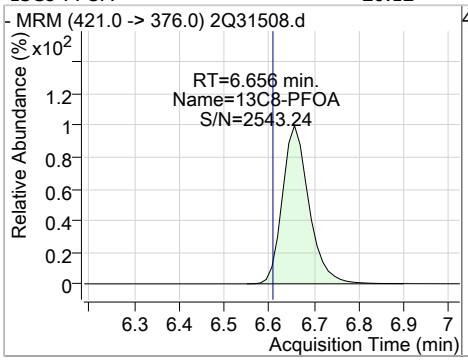
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.28	6.64	0.05	47732	427.0 -> 81.0	36.6	8.1	68.1

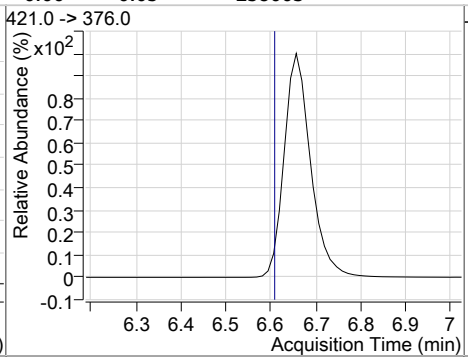


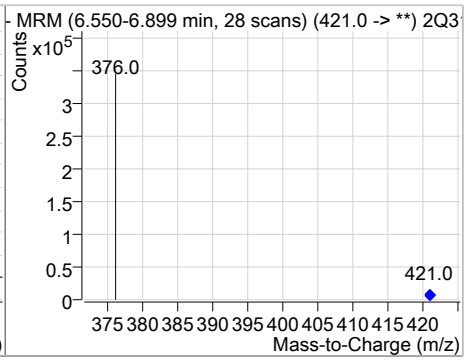




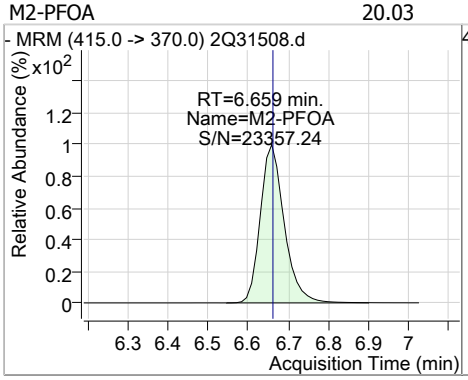
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.12	6.66	0.05	258063				

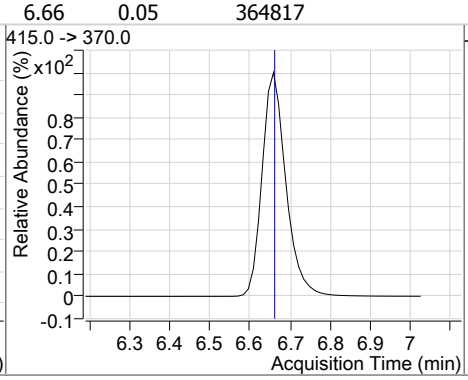


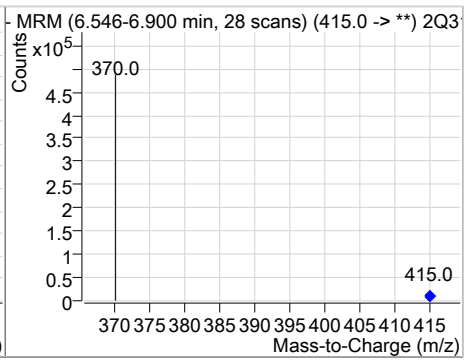




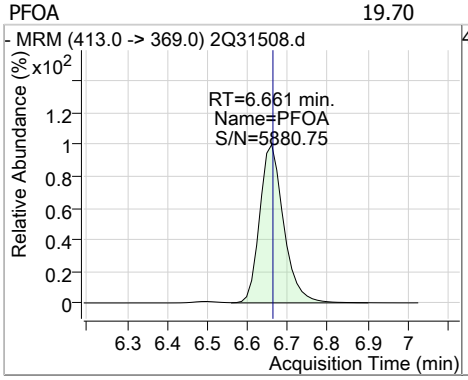
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M2-PFOA	20.03	6.66	0.05	364817				

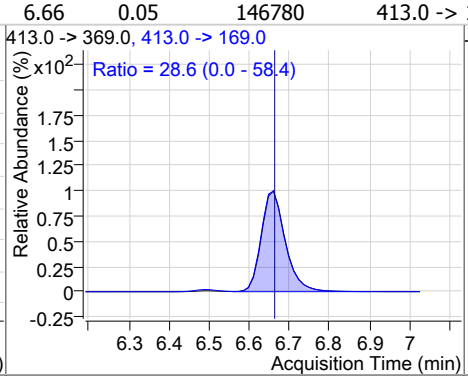


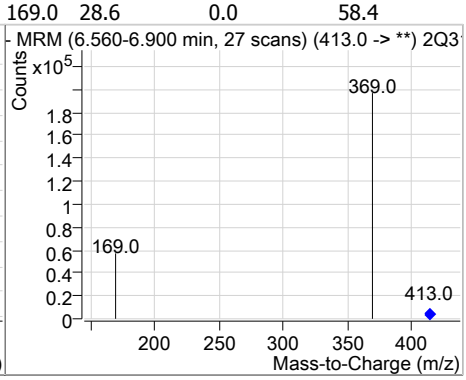




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.70	6.66	0.05	146780	413.0 -> 169.0	28.6	0.0	58.4

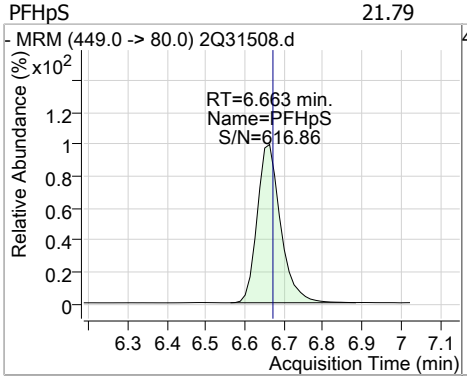


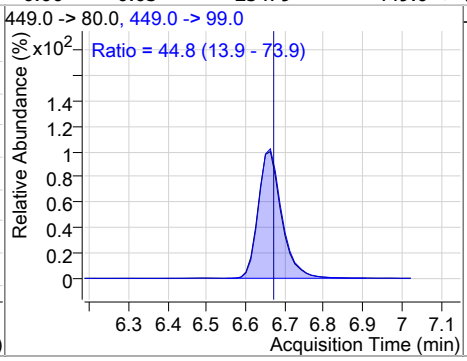


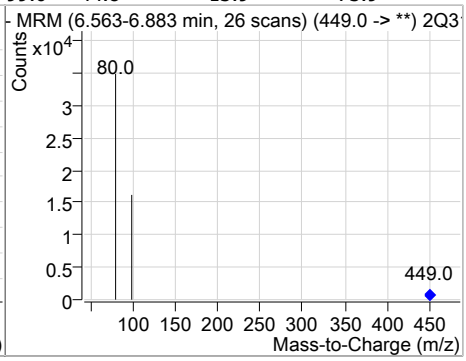


Perfluorinated Compounds by LC/MS/MS

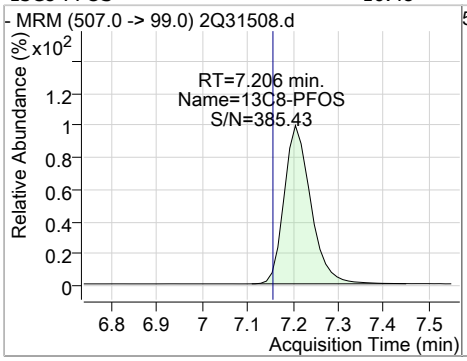
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.79	6.66	0.05	25479	449.0 -> 99.0	44.8	13.9	73.9

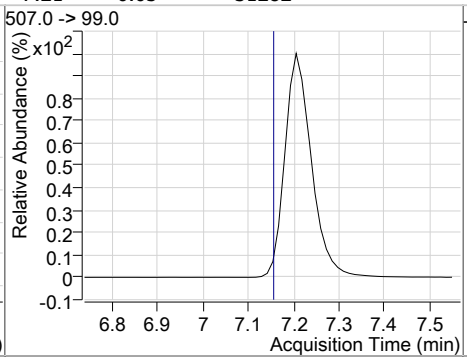


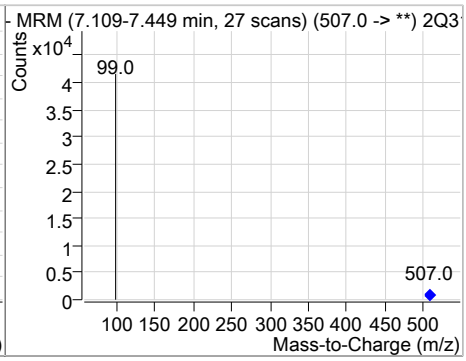




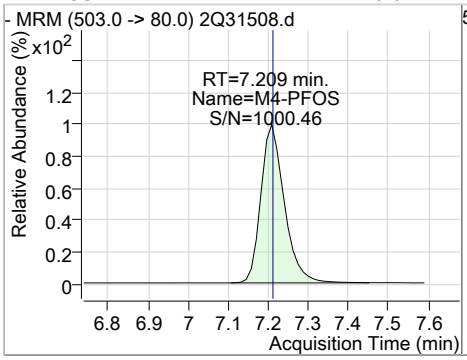
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.48	7.21	0.05	31282				

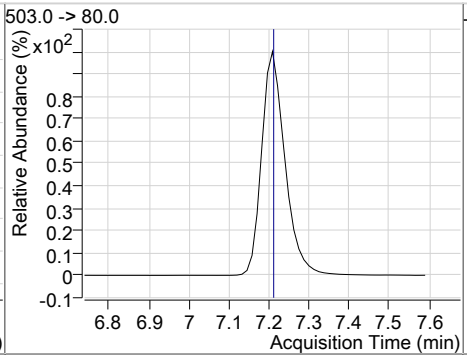


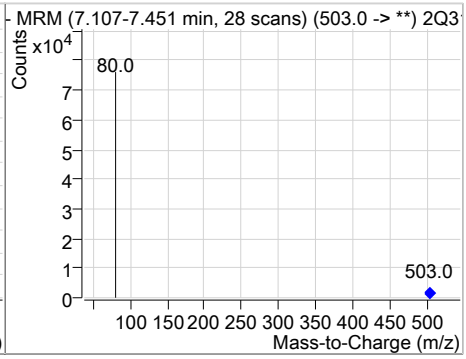




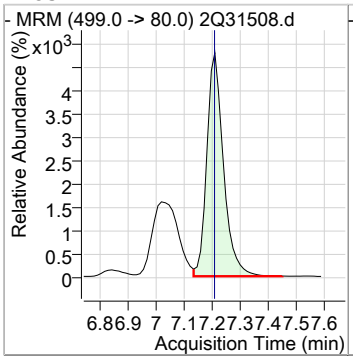
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
M4-PFOS	20.01	7.21	0.05	57741				

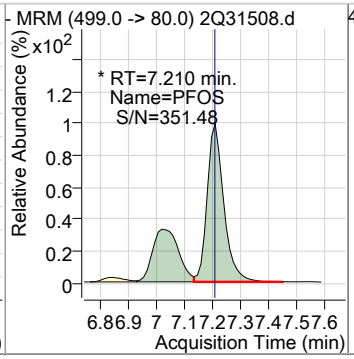


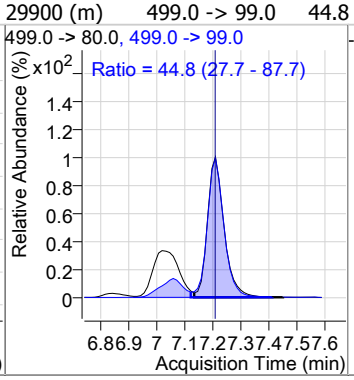


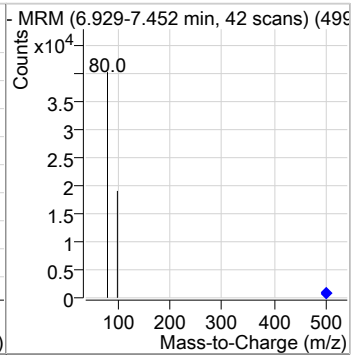


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.31	7.21	0.05	29900 (m)	499.0 -> 99.0	44.8	27.7	87.7



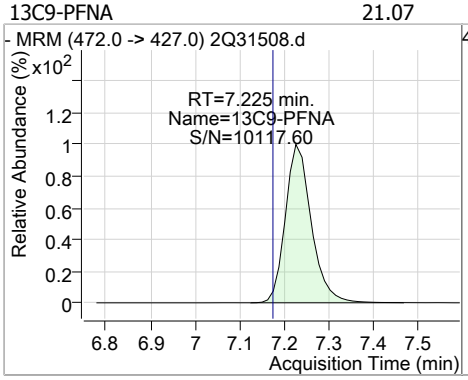


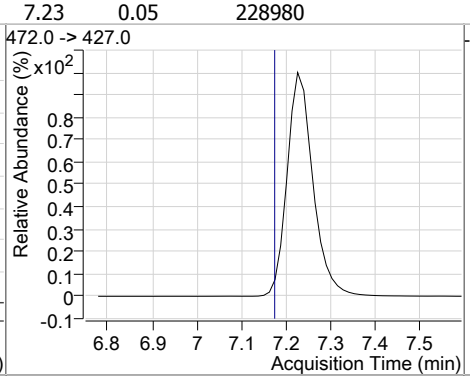


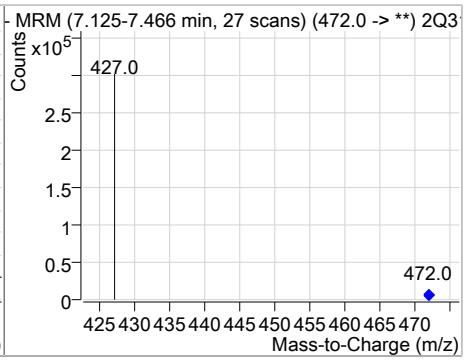


Perfluorinated Compounds by LC/MS/MS

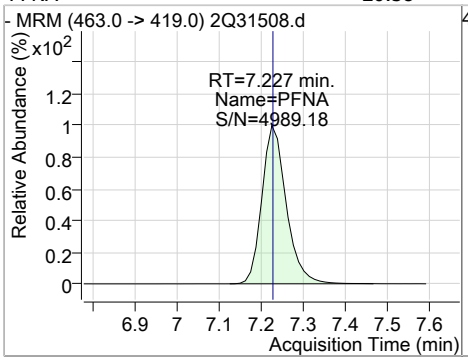
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.07	7.23	0.05	228980				

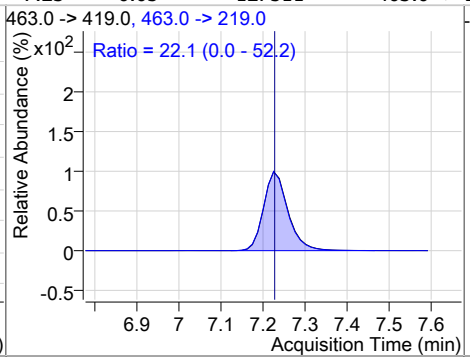


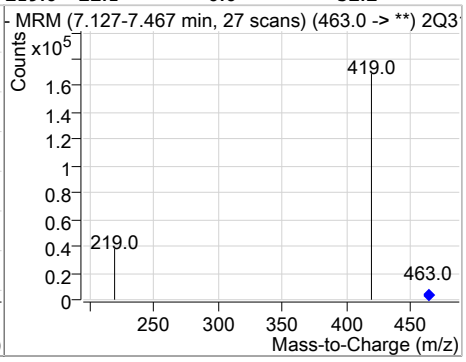




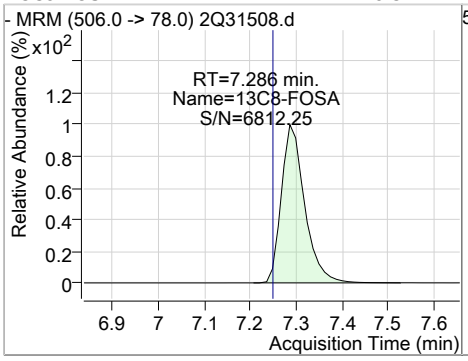
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.58	7.23	0.05	127511	463.0 -> 219.0	22.1	0.0	52.2

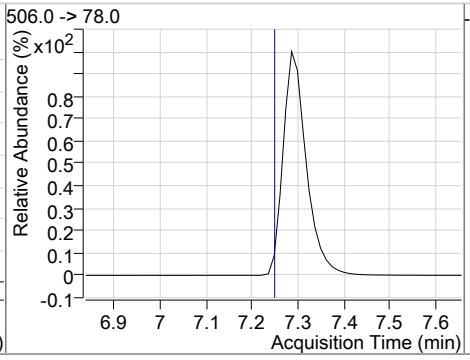


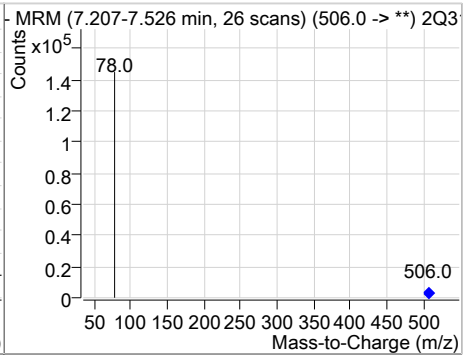




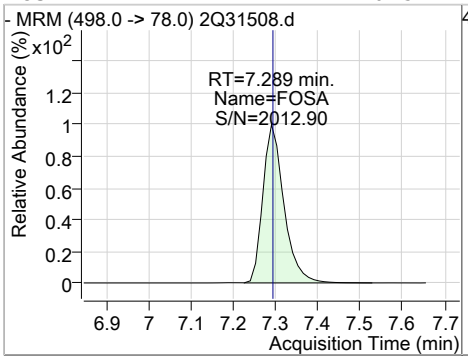
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.32	7.29	0.04	107797				

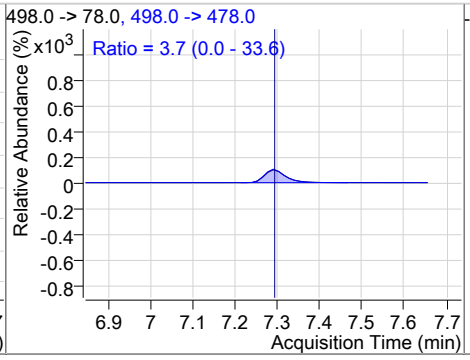


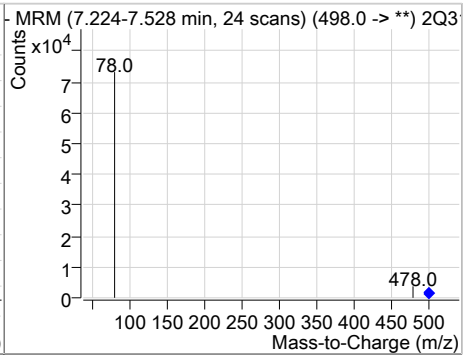




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.25	7.29	0.04	54420	498.0 -> 478.0	3.7	0.0	33.6

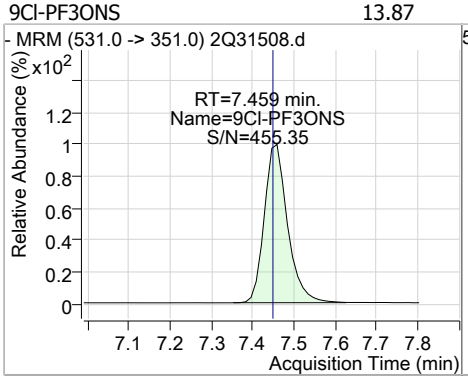


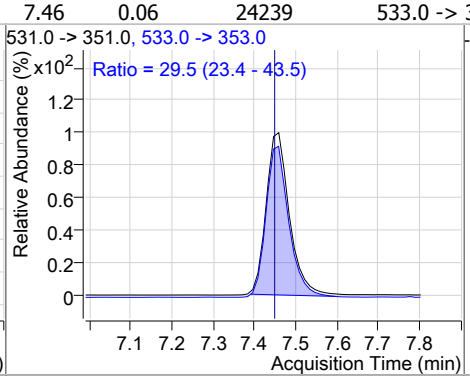


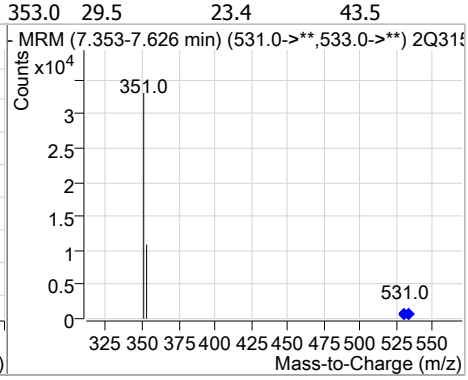


Perfluorinated Compounds by LC/MS/MS

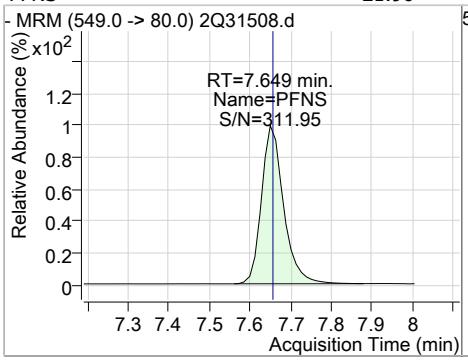
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	13.87	7.46	0.06	24239	533.0 -> 353.0	29.5	23.4	43.5

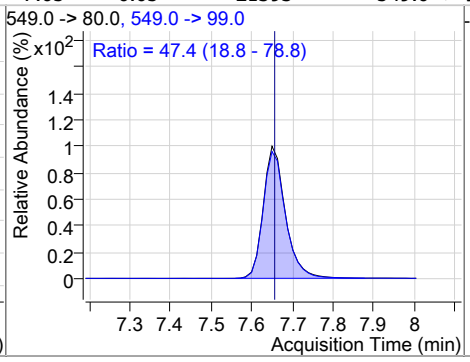


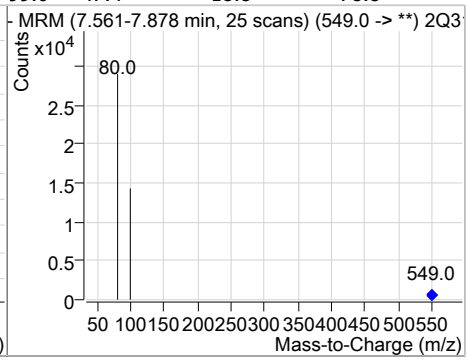




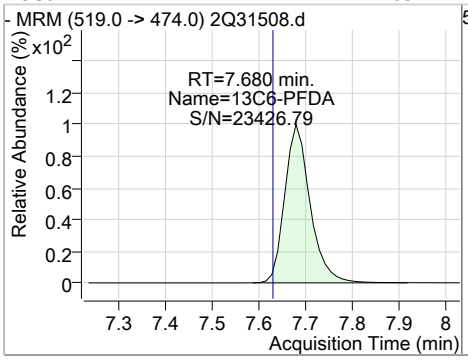
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.96	7.65	0.05	21393	549.0 -> 99.0	47.4	18.8	78.8

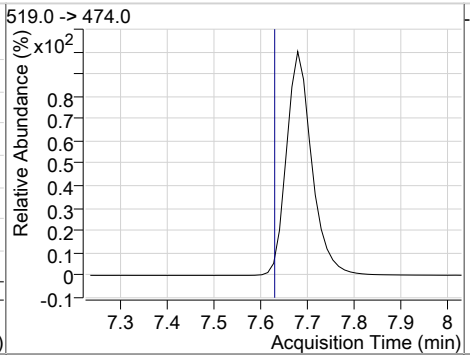


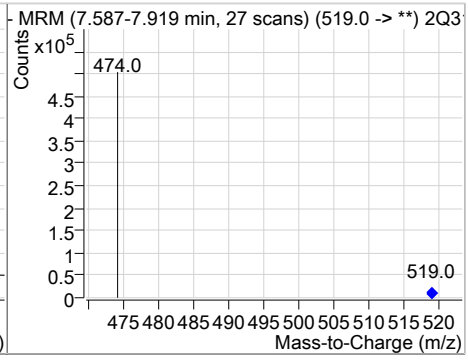




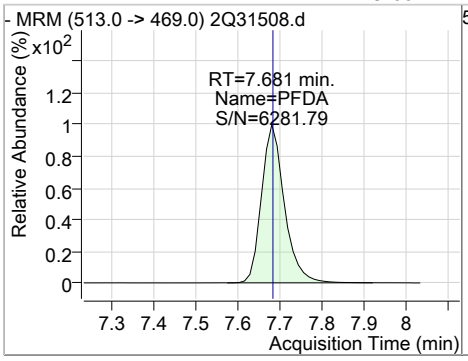
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.03	7.68	0.05	384241				

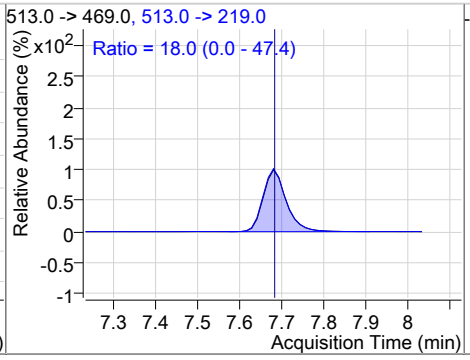


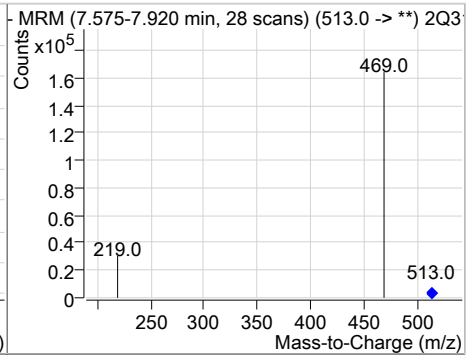




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.60	7.68	0.05	124522	513.0 -> 219.0	18.0	0.0	47.4

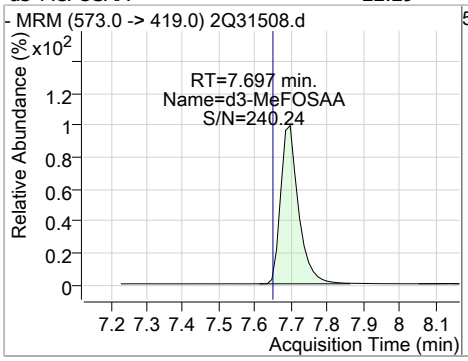


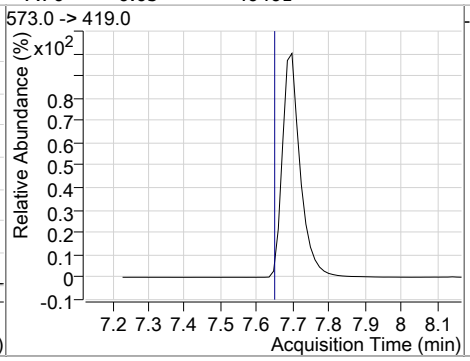


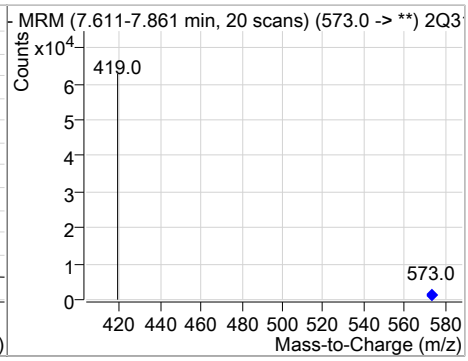


Perfluorinated Compounds by LC/MS/MS

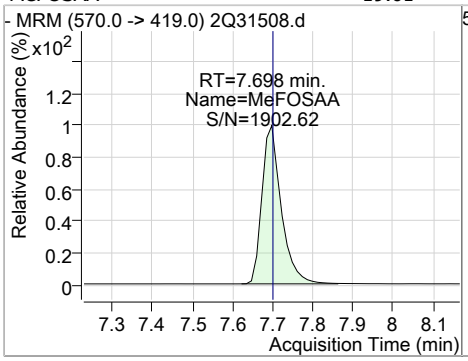
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.29	7.70	0.05	46461				

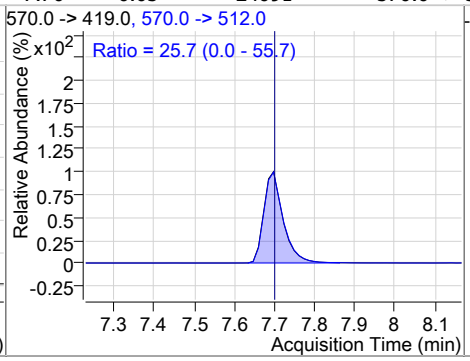


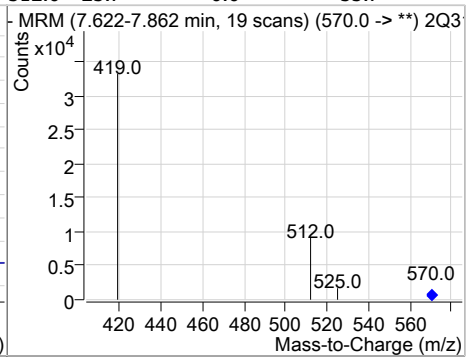




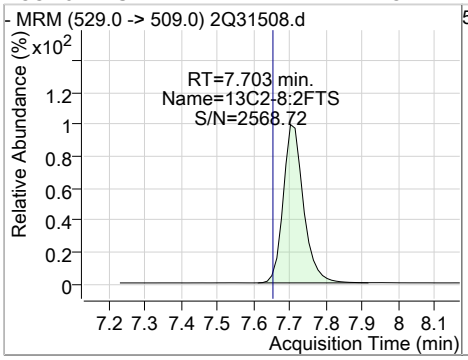
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.61	7.70	0.05	24691	570.0 -> 512.0	25.7	0.0	55.7

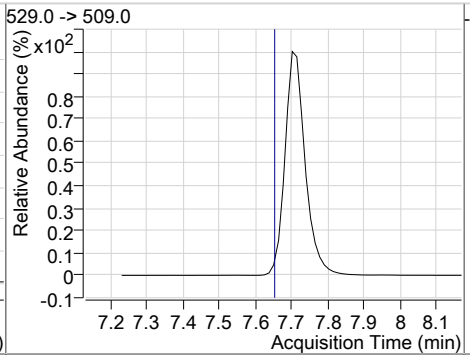


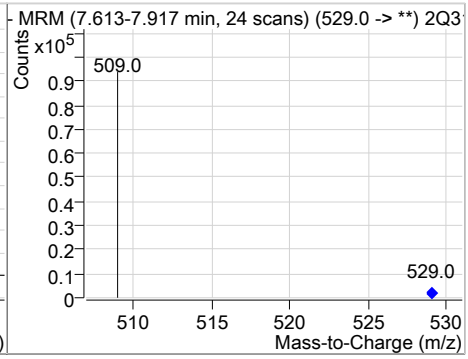




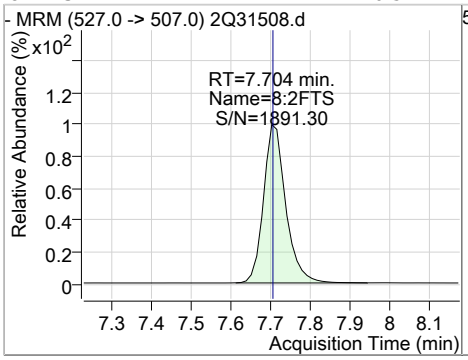
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.31	7.70	0.05	69532				

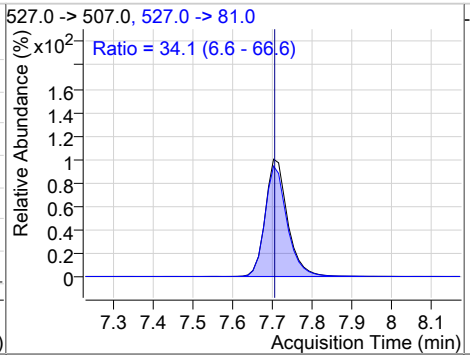


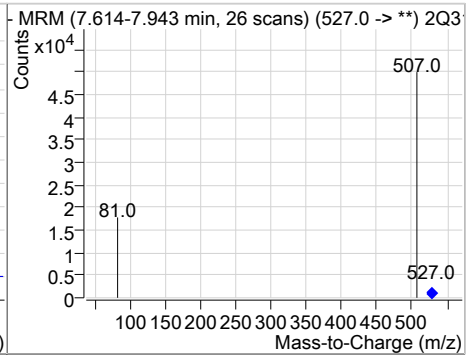




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.51	7.70	0.05	37018	527.0 -> 81.0	34.1	6.6	66.6

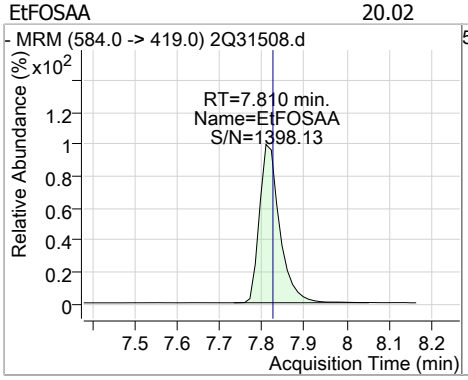


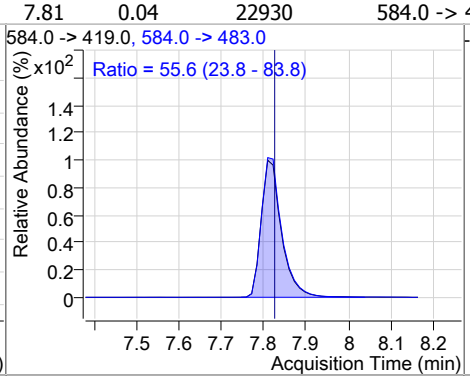


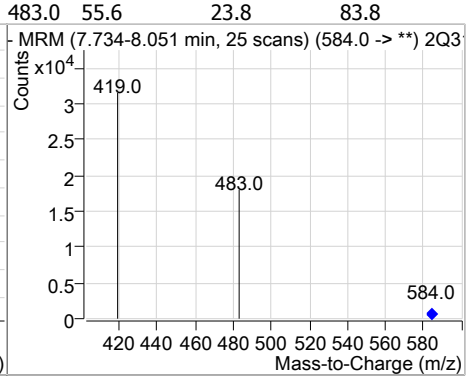


Perfluorinated Compounds by LC/MS/MS

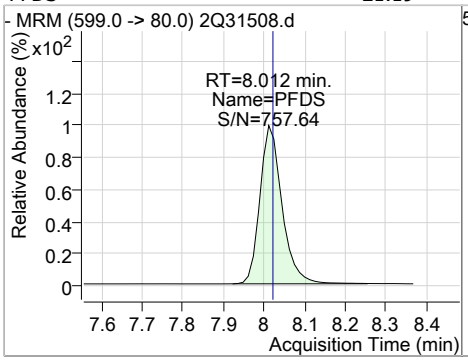
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.02	7.81	0.04	22930	584.0 -> 483.0	55.6	23.8	83.8

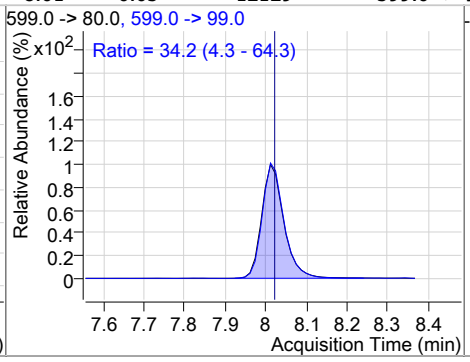


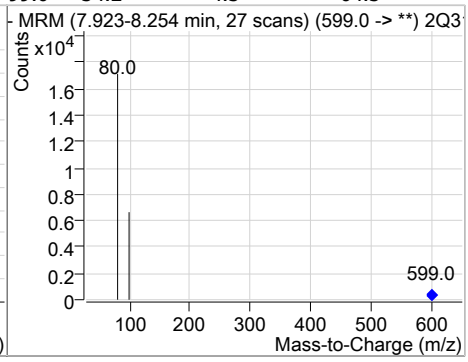




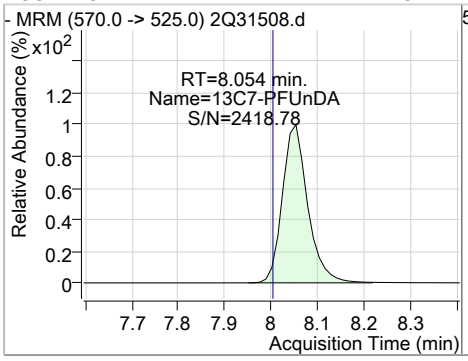
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.19	8.01	0.05	12129	599.0 -> 99.0	34.2	4.3	64.3

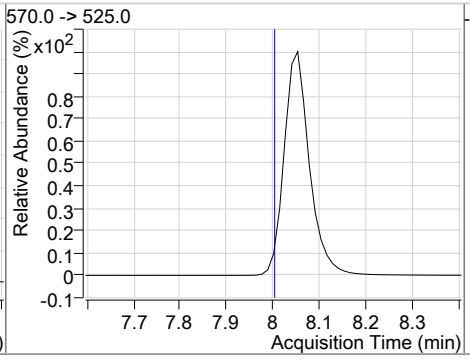


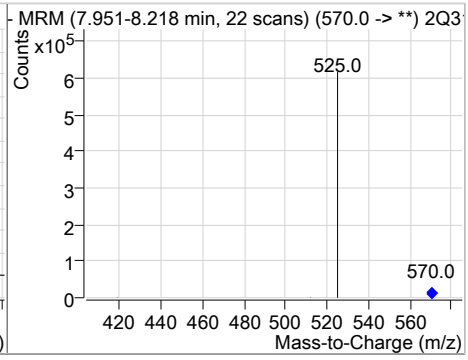




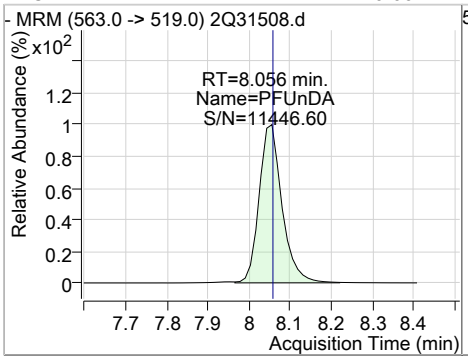
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.23	8.05	0.05	470285				

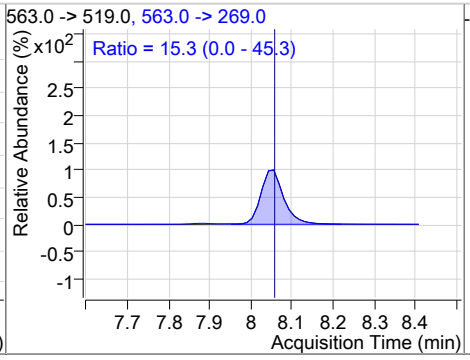


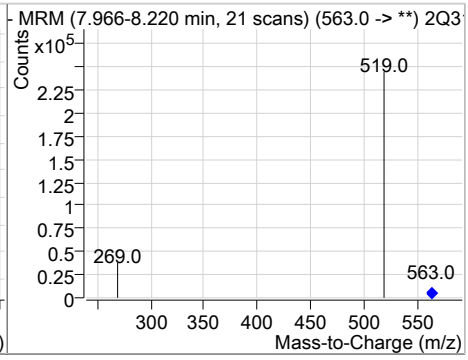




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.06	8.06	0.05	187047	563.0 -> 269.0	15.3	0.0	45.3

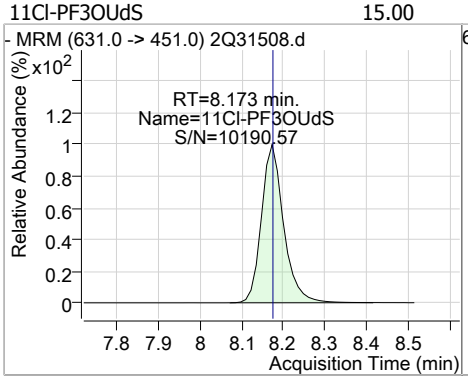


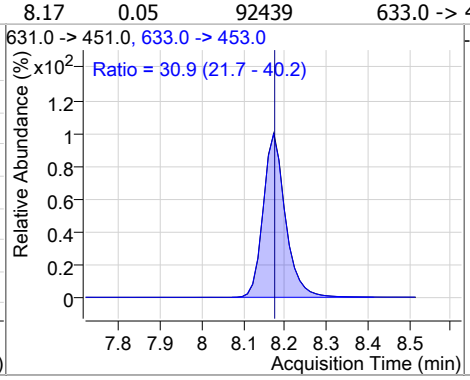


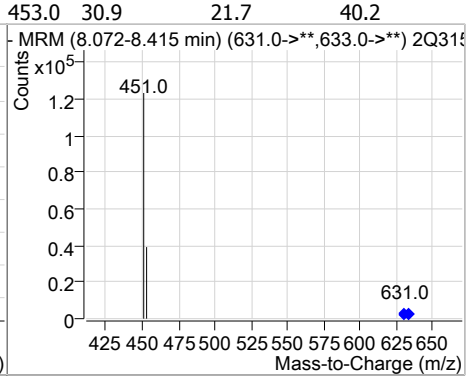


Perfluorinated Compounds by LC/MS/MS

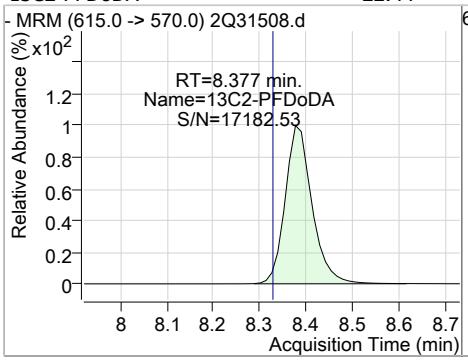
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.00	8.17	0.05	92439	633.0 -> 453.0	30.9	21.7	40.2

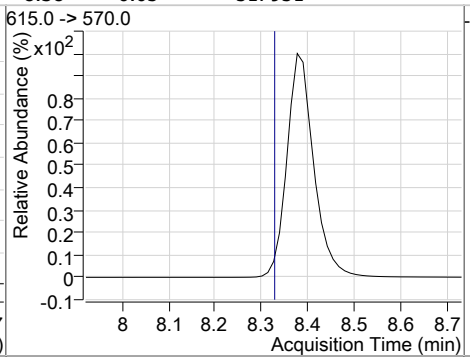


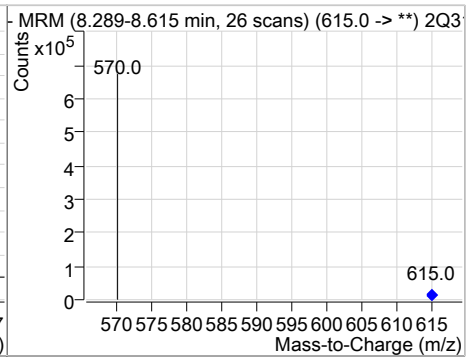




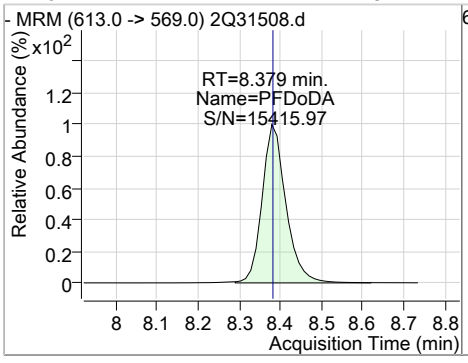
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.44	8.38	0.05	517951				

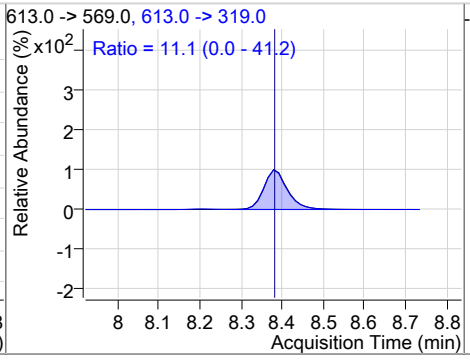


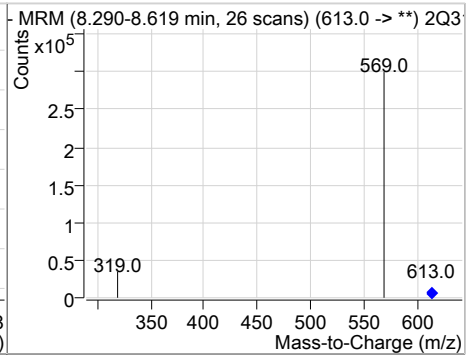




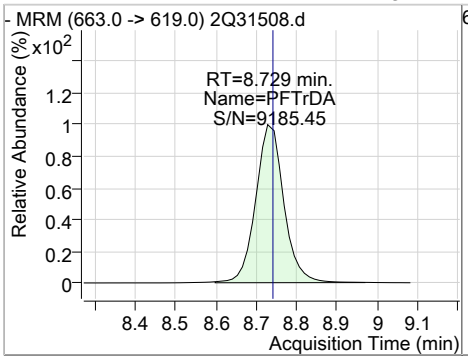
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.71	8.38	0.05	232796	613.0 -> 319.0	11.1	0.0	41.2

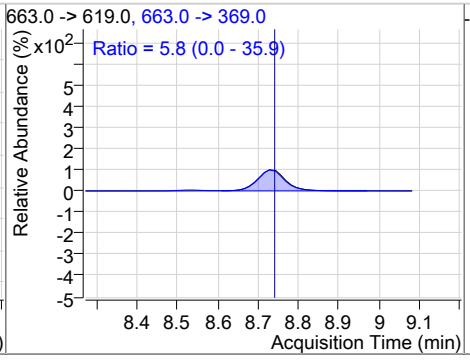


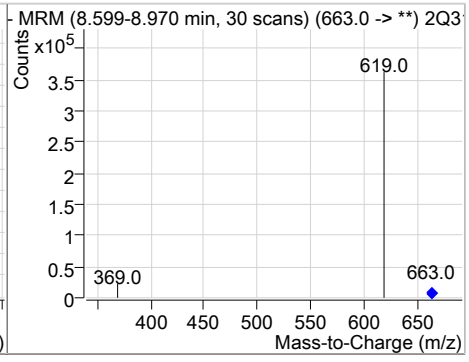




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	24.97	8.73	0.05	280509	663.0 -> 369.0	5.8	0.0	35.9

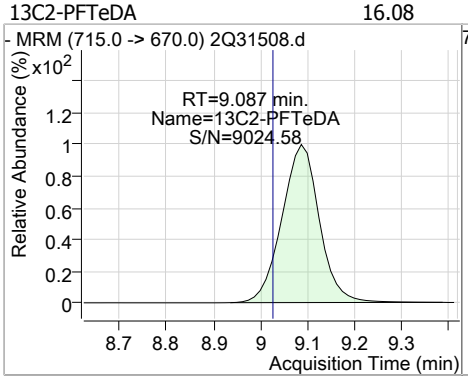


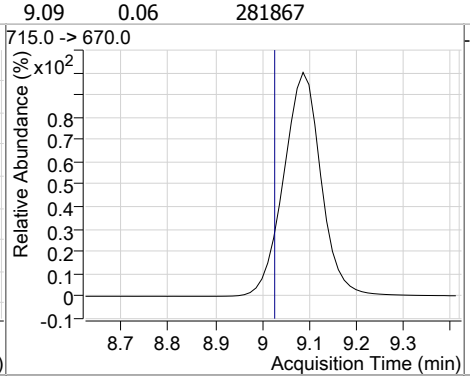


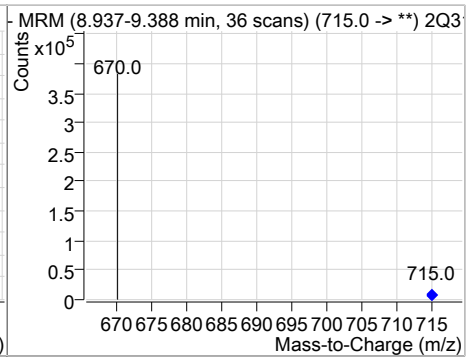


Perfluorinated Compounds by LC/MS/MS

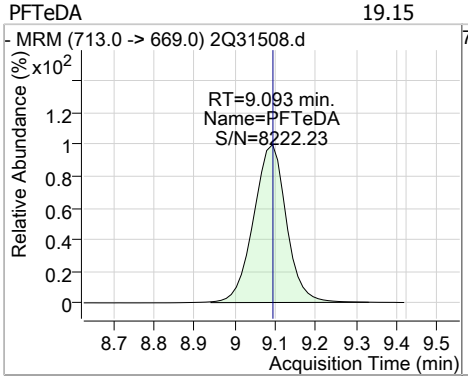
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.08	9.09	0.06	281867				

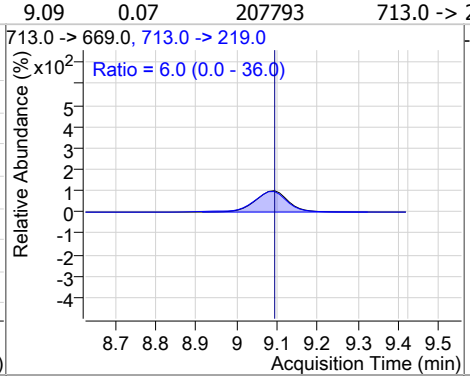


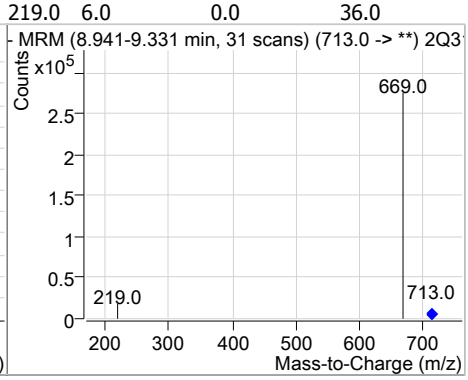




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.15	9.09	0.07	207793	713.0 -> 219.0	6.0	0.0	36.0







Manual Integration Approval Summary

Sample Number: S2Q501-ECC498
Lab FileID: 2Q31508.D
Injection Time: 06/27/19 06:05
Method: EPA 537M QSM5.1 B-15
Analyst approved: 06/27/19 13:27 Nancy Saunders
Supervisor approved: 06/27/19 16:58 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.01	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.21	Split peak

SGS ACCUTEST-ORLANDO

DATE:	06/21/19
COLUMN TYPE:	PoroshellEC8
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	S37-ID
ACQ. METHOD:	S37-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	498

ANALYST:	NG
ELUENT A LOT #:	190453 WLAA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31089	1	ccb	PFC-ID	—	—				—
2Q 90	1	ccb		—	—				—
2Q 91	2	high std.		—	—				—
2Q 92	1	iblk		—	—				—
2Q 93	3	cc498-1		—	—				—
2Q 94	4	↓ -20		—	—				—
2Q 95	1	ccb		—	—				—
2Q 96	2	ic498-0.5		LCMS1272	2.5/500				updated
2Q 97	3	-1			5/500				
2Q 98	4	-2			10/500				
2Q 99	5	-5			25/500				
2Q 31100	6	-10			50/500				
2Q 01	7	icc498-20			100/500				
2Q 02	8	ic498-50			200/500				
2Q 03	9	↓ -100		↓	1X				↓
2Q 04	1	iblk		—	—				—
2Q 05	10	icv498-20		LCMS1271	100/500				pass
2Q 06	11	icv498-20		9542A	5/500				pass
2Q 07	12	icv498-20		LCMS1276	1X				pass
2Q ↓ 08	13	op75544-bs	↓	op75544	1X				PASS

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	06/21/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH:	S2Q 498

ANALYST:	NG
ELUENT A LOT #:	190453 w/ AA
ELUENT B LOT #:	188687 ↓
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31109	14	OP75514-MB	PFC-ID	OP75514	1X				✓
2Q 10	15	FA65143-1							✓
2Q 11	16	-2							✓
2Q 12	17	-3							✓
2Q 13	18	-4							✓
2Q 14	19	OP75514-MS							✓
2Q 15	20	FA65143-5							✓
2Q 16	21	OP75514-dup							✓
2Q 17	7	CC498-20		LCMS1272	100/500				pass
2Q 18	1	CCB			—				—
2Q 19	22	FA65145-1		OP75514	1X				✓
2Q 20	23	-2							✓
2Q 21	24	-3							✓
2Q 22	25	FA65146-1							✓
2Q 23	26	-2							✓
2Q 24	27	-3							✓
2Q 25	28	FA65152-1							✓
2Q 26	29	-2							↓ Istds Redo
2Q 27	30	-3							✓
2Q 28	7	CC498-20		LCMS1272	100/500				pass

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	06/21/19
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-060219-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH:	S2Q 498

ANALYST:	NS
ELUENT A LOT #:	190453 w/ AA
ELUENT B LOT #:	188687 ↓
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31129	1	ccb	PFC-ID	—					—
2Q 30	31	FA65165-1		OP75514	1X				✓
2Q 31	32	↓ -2							✓
2Q 32	33	-3							✓
2Q 33	34	↓ -4							✓
2Q 34	35	FA65302-1							✓
2Q 35	3	CC498-1		LCMS1272	5/500				pass
2Q 36	7	↓ -20			100/500				pass
2Q 37	1	ccb			—				—
2Q 38	36	OP75546-bs		OP75546	1X				✓ PASS
2Q 39	37	↓ -mb							✓
2Q 40	38	FA65167-1							✓
2Q 41	39	OP75546-ms							✓
2Q 42	40	FA65167-2							✓
2Q 43	41	OP75546-dup							✓
2Q 44	42	FA65167-3							✓
2Q 45	43	-4							✓ recomb RT 2x HxS
2Q 46	44	-5							✓
2Q 47	45	↓ -6							✓
2Q ↓ 48	7	CC498-20	↓	LCMS1272	100/500				pass

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration.
All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	06/21/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH:	S2Q 498

ANALYST:	NG
ELUENT A LOT #:	190453 w/AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31149	1	ccb	PFC-ID	—					—
2Q 50	46	FA65167-7		OP75546	1X				✓
2Q 51	47	-8							✓
2Q 52	48	-9							✓
2Q 53	49	-10							✓
2Q 54	50	-11							✓
2Q 55	51	-12							✓
2Q 56	52	-13							✓
2Q 57	53	-14							✓
2Q 58	54	-15							✓
2Q 59	55	-16							✓
2Q 60	7	CC498-20		LCMS1272	100/500				pass
2Q 61	1	ccb		—					—
2Q 62	56	FA65167-17		OP75546	1X				✓
2Q 63	57	-18							✓
2Q 64	58	-19							✓
2Q 65	59	-20							✓
2Q 66	7	CC498-20		LCMS1272	100/500				pass
2Q 67	1	ccb		—					—
2Q 68	60	OP75546-bs		OP75546	1X				✓ PASS

NG 06/24/19

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

DATE:	06/21/19
COLUMN TYPE:	Poroshell 120
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119_S2Q498
CALIB. DATE:	06/21/19
RUN BATCH:	S2Q 498

ANALYST:	NG
ELUENT A LOT #:	190453 w/ AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31169	61	OP75546-mb	PFC-ID	OP75546	1X				✓
2Q 70	62	FA65130-2							✓
2Q 71	63	FA65139-2							✓
2Q 72	64	JC89808-3							✓
2Q 73	65	OP75564-ms							✓
2Q 74	66	JC89808-4							✓
2Q 75	7	ccc498-20		LCMS1272	100/500				pass
2Q 76	1	ccb			—				—
2Q 77	7	test			—				—
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

NG 06/24/19

NG 06/24/19

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

DATE:	06/23/19
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	499

ANALYST:	NG
ELUENT A LOT #:	190453 w/AA
ELUENT B LOT #:	188687 ↓
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31178	1	ccb	PFC-ID	—	—				—
2Q 179	9	high std.		—	—				—
2Q 80	9	high std.		—	—				—
2Q 81	1	iblk		—	—				—
2Q 82	3	CC498-1		LCMS1272	5/500				pass
2Q 83	7	↓ -20		↓	100/500				rr
2Q 84	7	-20			↓				pass
2Q 85	7	↓ -20		↓					pass
2Q 86	13	FA65167-4		OP75546	2X				✓
2Q 87	14	FA65152-2		OP75544	1X				✓ 3 compds
2Q 88	15	↓ -2		↓	2X				✓
2Q 89	16	OP75586-bs		OP75586	1X				✓ PASS
2Q 90	17	↓ -mb		↓	↓				✓ PFOS ↓
2Q 91	18	FA65169-1							✓
2Q 92	19	↓ -2							✓
2Q 93	20	-3							✓
2Q 94	21	-4							✓ rr for PFOS (MB)
2Q 95	22	↓ -5		↓	↓				✓
2Q 96	7	CC498-20		LCMS1272	100/500				pass
2Q ↓ 97	1	ccb	↓	—	—				—

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: Natalie

SGS ACCUTEST-ORLANDO

DATE:	06/23/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	499

ANALYST:	NS
ELUENT A LOT #:	190453 WAA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31198	23	FA65169-6	Ptc-ID	OP75586	1X				✓
2Q ↓ 99	24	OP75586-MS							✓
2Q 31200	25	↓ -msd							✓
2Q 01	26	FA65169-7							✓
2Q 02	27	↓ -8							✓
2Q 03	28	↓ -9							✓ rr for PFOS (MB)
2Q 04	29	FA65239-7							✓ recomb rr 10x HxS, PFOS
2Q 05	30	↓ -8							✓ recomb NG 06/23/19 ~~rr for~~, rr 10x HxS, PFOS
2Q 06	31	OP75586-MS2							rr 10x
2Q 07	32	↓ -msd2		↓	↓				rr 10x
2Q 08	7	CC498-20		LCMS1272	100/500				pass
2Q 09	1	ccb		—					—
2Q 10	33	FA65239-9		OP75586	1X				✓ recomb rr 10x HxS, PFOS
2Q 11	34	FA65304-1							rr 1x clo, rr 10x PFOS
2Q 12	35	↓ -2							✓ recomb, rr 10x HxS, PFOS
2Q 13	36	-3							✓ recomb rr 10x HxS, PFOS
2Q 14	37	-4							✓
2Q 15	38	↓ -5		↓	↓				✓
2Q 16	7	CC498-20		LCMS1272	100/500				pass
2Q ↓ 17	1	ccb	↓	—					—

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS ACCUTEST-ORLANDO

DATE:	06/23/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH:	S2Q 499

ANALYST:	NG
ELUENT A LOT #:	190453 wIAA
ELUENT B LOT #:	188687 ↓
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31218	39	OP75580-bs	PFC-ID	OP75580	1X				✓ PFOS ↓
2Q 19	40	↓ -mb							✓
2Q 20	41	FA65188-1							↓TEDA, ↓DOA redo
2Q 21	42	-2							✓
2Q 22	43	-3							✓
2Q 23	44	-4							↓PFBA, ↓PeA redo
2Q 24	45	-5							↓Istds redo
2Q 25	46	-6							↓TEDA redo
2Q 26	47	-7					NG 06/23/19		↓TEDA redo ✓
2Q 27	48	↓ -8		↓	↓				↓TEDA redo
2Q	7	CC498-20		LCMS1272	100/500				pass
2Q 29	1	ccb			—				—
2Q 30	49	FA65188-9		OP75580	1X				↓Istds redo
2Q 31	50	FA65213-1							✓
2Q 32	51	↓ -2							✓
2Q 33	52	↓ -3							✓
2Q 34	53	OP75580-ms							✓
2Q 35	54	↓ -msd		↓	↓				✓
2Q 36	7	CC498-20		LCMS1272	100/500				pass
2Q ↓ 37	1	ccb	↓	—	—				—

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

SGS ACCUTEST-ORLANDO

DATE:	06/23/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	499

ANALYST:	NS
ELUENT A LOT #:	190453 w/ AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31238	55	FA65213-4	PFC-ID	OP75580	1X				↓Istds redo
2Q 39	56	-5							↓PFOS redo
2Q 40	57	-6							✓
2Q 41	58	-7							✓
2Q 42	59	-8							✓
2Q 43	1	ecs498-20		LCMS272	100/500				pass
2Q 44	1	CCb		—	—				—
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									
2Q				NS 06/23/19					
2Q									
2Q									
2Q									
2Q									
2Q									
2Q									

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

NG 06/25/19

SGS ACCUTEST-ORLANDO

DATE:	06/24/19 06/25/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	501

ANALYST:	NG
ELUENT A LOT #:	190453 WI AA
ELUENT B LOT #:	188687 ↓
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31353	1	CCb	PFC-ID	—					—
2Q 54	9	high std.	↓	—					—
2Q 55	1	blk		—					—
2Q 56	3	CC498-1		LCMS1272	5/500		4:40 pm		pass
2Q 57	7	↓ -20		↓	100/500				pass
2Q 58	13	OP75600-bs		OP75600	1X				✓ PASS
2Q 59	14	↓ -mb							✓
2Q 60	15	FA65243-1							✓
2Q 61	16	-2							✓
2Q 62	17	-3							✓
2Q 63	18	-4							✓
2Q 64	19	-5							✓
2Q 65	20	-6							✓
2Q 66	21	-7							✓
2Q 67	22	↓ -8		↓	↓				✓
2Q 68	7	CC498-20		LCMS1272	100/500				pass
2Q 69	1	CCb		—					—
2Q 70	23	FA65243-11		OP75600	1X				✓
2Q 71	24	↓ -12		↓	↓				✓
2Q 72	25	↓ -13	↓	↓	↓				✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: Natalia M.

NG 06/25/19

SGS ACCUTEST-ORLANDO

DATE:	06/24/19 06/25/19
COLUMN TYPE:	Poroshell EC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	501

ANALYST:	NG
ELUENT A LOT #:	190453 w/ AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31373	26	FA65243-1M	PFC-ID	OP75600	1X				✓
2Q 74	27	-1S							✓
2Q 75	28	-1b							✓
2Q 76	29	OP75591-MS		OP75591			rr due to inj high		✓
2Q 77	3	CC498-1		LCMS1272	5/500		d:5 pm		pass
2Q 78	7	-20			100/500				pass
2Q 79	1	ccb			—				—
2Q 80	30	OP75595-bS		OP75595	1X				✓ PASS
2Q 81	31	-mb							✓
2Q 82	32	FA65233-1							✓
2Q 83	33	-2							✓ ↑ inj rr
2Q 84	34	-3							✓
2Q 85	35	-4							✓
2Q 86	36	OP75595-dup							✓ ↑ inj rr
2Q 87	37	FA65233-5							✓ ↑ inj rr
2Q 88	38	-6							✓ ↑ inj rr
2Q 89	7	CC498-20		LCMS1272	100/500				pass
2Q 90	1	ccb			—				—
2Q 91	39	FA65233-7		OP75595	1X				✓ ↑ inj rr
2Q 92	40	OP75595-MS							✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: N Stathos

NG 06/25/19

SGS ACCUTEST-ORLANDO

DATE:	~~06/24/19~~ 06/25/19
COLUMN TYPE:	PoroshellEC18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-IO
ACQ. METHOD:	537-IO
PROC. METHOD:	IO-060219-S2Q498*
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	S01

ANALYST:	NG
ELUENT A LOT #:	190453 WI AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31393	41	FA65233-8	PFC-IO	OP75595	1X				✓
2Q 94	42	-9							✓ ↑inj rr
2Q 95	43	-10							✓ ↑inj rr
2Q 96	44	-11							✓
2Q 97	45	-12							✓
2Q 98	46	-13							✓
2Q 99	47	-14							✓ ↑inj rr
2Q 31400	48	-15							✓
2Q 01	3	CC498-1		LCMSB72	5/500	NG060619	3:47 am		pass
2Q 02	7	-20			100/500				pass
2Q 03	1	CCb			—				—
2Q 04	49	FA65233-16		OP75595	1X				✓
2Q 05	50	OP75596-bs		OP75596					✓ PASS
2Q 06	51	-mb							✓
2Q 07	52	FA65240-1							✓ ↑inj rr
2Q 08	53	-2							✓
2Q 09	54	-3							✓ ↑inj rr
2Q 10	55	-4							✓
2Q 11	56	-5							✓
2Q 12	57	-6							✓

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

All strikeouts must be initialed and dated. If correction was not due to a transcription error, then list the reason for correction.

Analyst's Signature: Natasha M.

NG 06/25/19

SGS ACCUTEST-ORLANDO

DATE:	06/24/19 06/25/19
COLUMN TYPE:	Prosphere C18
AMOUNT INJECTED:	4 ul
INSTRUMENT:	LCMS2-2Q
HEAD PRESSURE:	345

LCMS2-2Q ANALYSIS LOG

METHODS:	537-ID
ACQ. METHOD:	537-ID
PROC. METHOD:	ID-062119-S2Q498
CALIB. DATE:	06/21/19
RUN BATCH: S2Q	501

ANALYST:	NG
ELUENT A LOT #:	190453 WI AA
ELUENT B LOT #:	188687
WATER LOT #:	190453
ISTD Lot #:	LCMS1253

DATA FILE	ALS #	SAMPLE ID	SAMPLE METHOD	OP BATCH	DF	ION RATIO	MANUAL INTS RATIONALE, PK #	SCON <CL*	COMMENTS
2Q 31413	58	FA65240-7	PFC-ID	Op75596	1X				✓
2Q 14	7	CC498-20		LCMS1272	100/500				pass
2Q 15	1	CCb							—
2Q 16	59	FA65240-8		Op75596	1X				✓
2Q 17	60	" -9		"	"				✓ ↑inj rr
2Q 18	61	-10							✓
2Q 19	62	-11							✓
2Q 20	63	↓ -12							✓ ↑inj rr
2Q 21	64	Op75596-MS							✓
2Q 22	65	↓ -msd							✓
2Q 23	66	FA65240-13							✓
2Q 24	67	↓ -14		↓	↓				✓ ↑inj rr
2Q 25	93	FA65243-10		Op75600	1X				✓ (CFR)
2Q 26	7	CC498-20		LCMS1272	100/500				pass
2Q 27	1	CCb							—
2Q									
2Q									
2Q									
2Q									
2Q									

ARTHQ

*< Conductivity Limit For Perchlorate by SW846 6850

Manual Integration Rationale SOP QA029: **MP** Missed Peak, **OP** Overlapping Peak, **SP** Split Peak, **PDB** Poorly Defined Baseline, **BR** Baseline Ripple, **PII** Poor Instrument Integration

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 6-21-19 13:50 Started {mm/dd/yy 24:00}

Date/Time: 06/22/19 1000 Finished {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: LC 537 (10)

Batch#: OP 75580 Ext. By: MF Conc. By: MB Vialed By: MF

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 75580 MB	X	250	6	N/A	20 uL		1 ml	C	
OP 75580 BS	X	250				50 uL			
FA45188-1	1	250							
-2	1	250							
-3	1	250	↓						
-4	1	250	10						
-5	1	250	6						
-6	1	250							
-7	1	250							
-8	1	250						↓	
-9	1	250						D	
FA45213-1	1	250							
-2	1	250							
-3	1	250							
-4	1	250							
-5	1	250							
-6	1	250							
-7	1	250							
-8	1	250	↓	↓	↓		↓	↓	
			MB 06/22/19						
FA45213-3 MS	2	250	6	N/A	20 uL	50 uL	1 ml	C	
↓ MSD	3	250	↓	↓	↓	↓	↓	↓	
DUP									

Comments:

Surr.1 ID: LCMS1280H Conc: 1.0 PPM Exp. Date: 6-12-20 Inj. By: MF Ver. By MF

Spk.1 ID: LCMS1281 Conc: 400 PPB Exp. Date: 12-18-19 Inj. By: MF Ver. By MF

Spk.2 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By —

Spk.3 ID: — Conc: — Exp. Date: — Inj. By: — Ver. By —

TurboVap Temp (Therm ID): TV # 12 N-Evap Temp (Therm ID): —

Observed Temp °C: 45°C Corr. Temp °C: — Observed Temp °C: — Corr. Temp °C: —

Methanol Lot # 190933 SPE Lot # 6449472-05 pH Paper # 212218

Acetonitrile Lot # — Syringe filter Lot # — Reagent # 27. MTBE 188687 NH4OH: 747040

Water Lot# OP 75436 Pre-filter Lot# — Reagent # —

Solvent# — Carbon Lot# — Other —

Relinquished By: Date: 06/22/19

Accepted By: Date: 06-23-19

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: Started 6-26-19 7:30 {mm/dd/yy 24:00}

Date/Time: Finished 6-26-19 13:15 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or (537MOD) (circle)

Analytical Method: Cc 537 (ID)

Batch#: OP75639 Ext. By: MV Conc. By: _____ Vialed By: _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP75639 MB		250	6	NA	20 ul		1 ml	B	
OP75639 BS		250				50 ul			
FA65174-1 RE	2	250							
-3 RE	2	250							
-4 RE	2	250							
-6 RE	2	250							
-7 RE	2	250							
-8 RE	2	250							
-11 RE	2	250							
-12 RE	2	250							
-13 RE	2	250							
FA65179-5 RE	2	250						C	
FA65188-1 RE	2	250							
-4 RE	2	250	11						
-5 RE	2	250	6						
-6 RE	2	250							
-8 RE	2	250							
-9 RE	2	250							
FA65213-4 RE	2	250							
-5 RE	2	250							
SC90114-1	1	250							
-2	1	250							
SC90114-2 MS	2					50 ul		B	
MSD									
DUP									

Comments:

Surr.1 ID: LCM51282F Conc: 1.0 ppm Exp. Date: 06-21-20 Inj. By: MV Ver. By MV

Spk.1 ID: LCM51281 Conc: 400 ppb Exp. Date: 12-18-19 Inj. By: MV Ver. By MV

Spk.2 ID: ✓ Conc: ✓ Exp. Date: ✓ Inj. By: ✓ Ver. By ✓

Spk.3 ID: ✓ Conc: ✓ Exp. Date: ✓ Inj. By: ✓ Ver. By ✓

TurboVap Temp (Therm ID): TV #12

Observed Temp °C: 45 Corr. Temp °C: ✓

N-Evap Temp (Therm ID): ✓

Observed Temp °C: — Corr. Temp °C: ✓

Methanol Lot # 191341

Acetonitrile Lot # ✓

Water Lot# OP75436

Solvent# ✓

SPE Lot # 6429443-12

Syringe filter Lot # ✓

Pre-filter Lot# ✓

Carbon Lot# ✓

pH Paper # 212216

Reagent # 2% MEOH, 191341

Reagent # 2% NA4OH, 7117040

Other ✓

Relinquished By: _____ Date: 6-26-19

Accepted By: _____ Date: 06/26/19 @ 13:18

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report



Technical Report for

GZA Geo Environmental

Former Signore, Ellicottville, NY

21.0056867.00

SGS Job Number: JC89788

Sampling Dates: 06/11/19 - 06/14/19

Report to:

GZA GeoEnvironmental, Incorporated
300 Pearl Street, Suite 700
Buffalo, NY 14202
Thomas.Bohlen@GZA.com

ATTN: Thomas Bohlen

Total number of pages in report: **495**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

Client Service contact: Tammy McCloskey 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc.

Sample Summary

GZA Geo Environmental

Job No: JC89788

Former Signore, Ellicottville, NY
Project No: 21.0056867.00

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC89788-1	06/11/19	12:20	TB	06/12/19	AQ	Ground Water	EW-4.5-2019
JC89788-2	06/11/19	14:30	TB	06/12/19	AQ	Ground Water	MW-5S-2019
JC89788-3	06/11/19	15:30	TB	06/12/19	AQ	Ground Water	MW-4S-2019
JC89788-3D	06/11/19	15:30	TB	06/12/19	AQ	Water Dup/MSD	MW-4S-2019MSD
JC89788-3S	06/11/19	15:30	TB	06/12/19	AQ	Water Matrix Spike	MW-4S-2019MS
JC89788-4	06/11/19	12:10	TB	06/12/19	AQ	Equipment Blank	1,4-DIOXANE RINSATE
JC89788-5	06/14/19	09:30	TB	06/15/19	AQ	Ground Water	EW-1.25R-2019
JC89788-6	06/14/19	00:00	TB	06/15/19	AQ	Ground Water	1,4-DIOXANE DUPLICATE

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	GZA Geo Environmental	**Job No**	JC89788
Site:	Former Signore, Ellicottville, NY	**Report Date**	6/27/2019 5:58:04 PM

Between 06/12/2019 and 06/15/2019, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC89788 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Semi-volatiles By Method SW846 8270D BY SIM

Matrix: AQ **Batch ID:** OP21044A

- All samples were extracted within the recommended method holding time.
- Sample(s) JC89788-3MS, JC89788-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP21044A-MB1 for Terphenyl-d14: Outside of in house control limits.

Matrix: AQ **Batch ID:** OP21117A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- OP21117A-MB1 for Terphenyl-d14: Outside of control limits.
- OP21117A-BS12 for Terphenyl-d14: Outside of control limits.
- OP21117A-BSD12 for Terphenyl-d14: Outside of control limits.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC89788
Account: GZA Geo Environmental
Project: Former Signore, Ellicottville, NY
Collected: 06/11/19 thru 06/14/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

JC89788-1 **EW-4.5-2019**

No hits reported in this sample.

JC89788-2 **MW-5S-2019**

No hits reported in this sample.

JC89788-3 **MW-4S-2019**

No hits reported in this sample.

JC89788-4 **1,4-DIOXANE RINSATE**

No hits reported in this sample.

JC89788-5 **EW-1.25R-2019**

No hits reported in this sample.

JC89788-6 **1,4-DIOXANE DUPLICATE**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-4.5-2019		
Lab Sample ID:	JC89788-1	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/12/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85131.D	1	06/22/19 05:56	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		29-124%
321-60-8	2-Fluorobiphenyl	82%		23-122%
1718-51-0	Terphenyl-d14	61%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	MW-5S-2019		
Lab Sample ID:	JC89788-2	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/12/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85132.D	1	06/22/19 06:17	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		29-124%
321-60-8	2-Fluorobiphenyl	81%		23-122%
1718-51-0	Terphenyl-d14	84%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	MW-4S-2019		
Lab Sample ID:	JC89788-3	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/12/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85092A.D	1	06/21/19 15:39	KC	06/17/19 07:30	OP21044A	E4M3947
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		29-124%
321-60-8	2-Fluorobiphenyl	71%		23-122%
1718-51-0	Terphenyl-d14	82%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: 1,4-DIOXANE RINSATE
Lab Sample ID: JC89788-4
Matrix: AQ - Equipment Blank
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/12/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85130.D	1	06/22/19 05:35	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		29-124%
321-60-8	2-Fluorobiphenyl	83%		23-122%
1718-51-0	Terphenyl-d14	104%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-1.25R-2019		
Lab Sample ID:	JC89788-5	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85133.D	1	06/22/19 06:38	CS	06/21/19 06:00	OP21117A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.096	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	82%		29-124%
321-60-8	2-Fluorobiphenyl	99%		23-122%
1718-51-0	Terphenyl-d14	124%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	1,4-DIOXANE DUPLICATE		
Lab Sample ID:	JC89788-6	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85134.D	1	06/22/19 06:59	CS	06/21/19 06:00	OP21117A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.098	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		29-124%
321-60-8	2-Fluorobiphenyl	76%		23-122%
1718-51-0	Terphenyl-d14	121%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SGS

GW
RB

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 1

FED-EX Tracking # 1019 2801 4194
Bottle Order Control #
SGS Quote #
SGS Job # JC89788

Client / Reporting Information

Company Name: GZA
Street Address: 300 Pearl St. Suite 700
City: Buffalo State: NY Zip: 14086
Project Contact: Tammy McCloskey E-mail:
Phone #
Sampler(s) Name(s): T. Bohlen 716 844-7159 Phone #

Project Information

Project Name: Signore
Street: Ellicottville, NY
Project # ~~36867.20~~
Client Purchase Order #
Project Manager: T. Bohlen

Billing Information (if different from Report to)
Company Name: Same
Street Address
City State Zip
Attention: T. Bohlen

Requested Analysis

1,4 Dioxane - SIMS
↳ see W.O.

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
1	EW-4.5-2019		6/11/19	1000	TB	G	GW	2									X
2	MW-5S-2019			1430				2									X
3	MW-4S-2019MS/MSD			1530				6									X
4	1,4-Dioxane Rinsate		6/11/19	1210	TB	G	GW	2									X

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: ~~KG 6/14~~

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment ~~KG~~ 2A
Label Verification

All data available via Labtrak
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSMS

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

1 Relinquished by: Thomas Bohlen	Date / Time: 6/11/19/	1 Received By: Fedex	2 Relinquished By: Fedex	Date / Time: 6/12/19 9:20	2 Received By:
3 Relinquished by:	Date / Time:	3 Received By:	4 Relinquished By:	Date / Time:	4 Received By:
5 Relinquished by:	Date / Time:	5 Received By:	Custody Seal #	Intact / Not Intact	Preserved where applicable / Absent / Therm. ID:	On Ice ✓	Cooler Temp. °C 2.7 IR

SGS Sample Receipt Summary

Job Number: JC89788 **Client:** GZA GEOENVIRONMENTAL, INCORPOR **Project:** FORMER SIGNORE, ELLICOTTVILLE, NY

Date / Time Received: 6/12/2019 9:20:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.7);

Cooler Temps (Corrected) °C: Cooler 1: (1.7);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

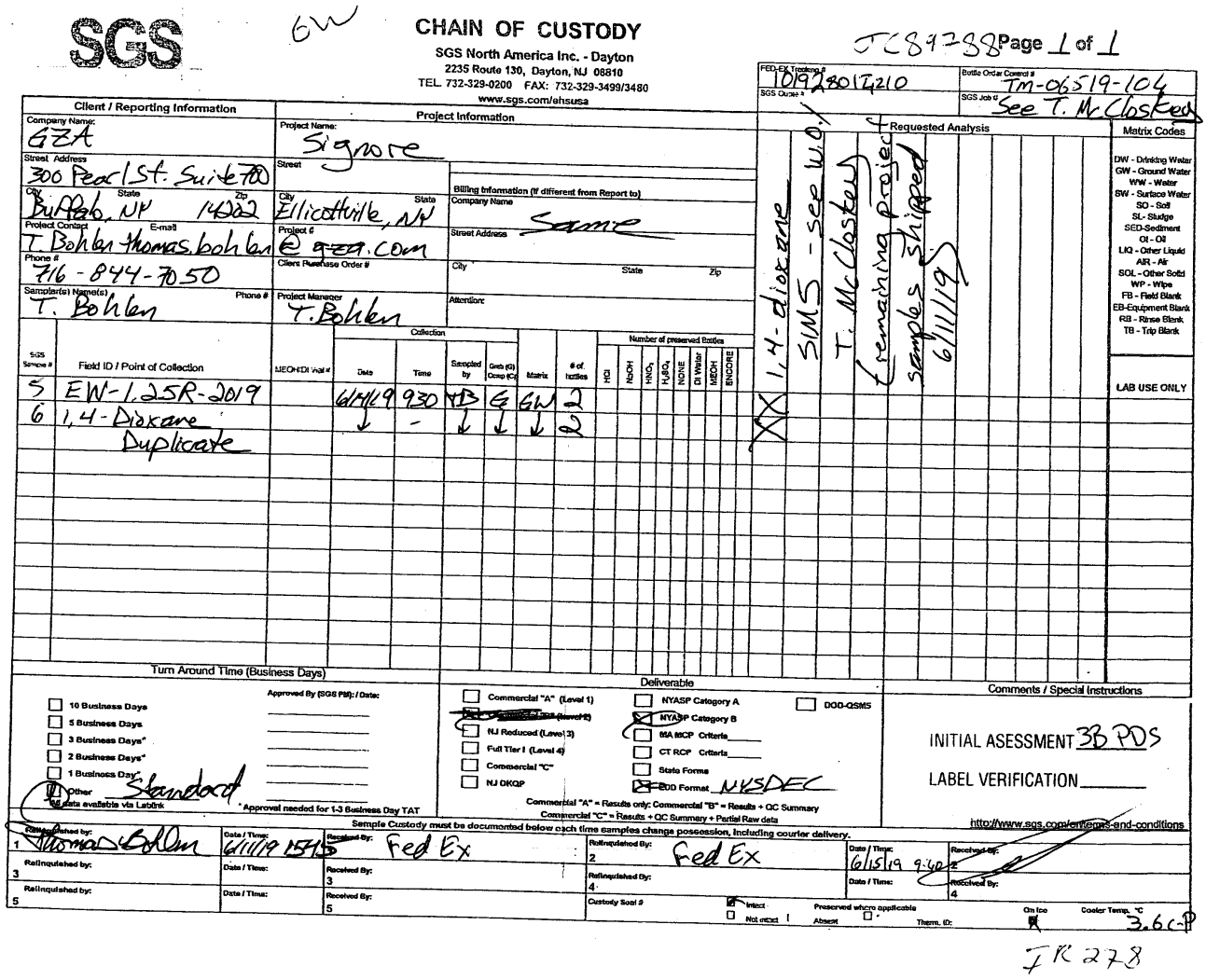
Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JC89788: Chain of Custody
Page 2 of 3



SGS

GW

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

JC89788 Page 1 of 1

FED-EX Tracking # 1019 2801 7210
SGS Quote #
Bottle Order Control # TM-06519-104
SGS Job # See T. McClosky

Client / Reporting Information

Company Name: GZA
Street Address: 300 Pearl St. Suite 700
City: Buffalo State: NY Zip: 14202
Project Contact: T. Bohlen E-mail: Thomas.bohlen@gza.com
Phone #: 716-844-7050
Sampler(s) Name(s): T. Bohlen Phone #:

Project Information

Project Name: Sigmore
Street:
City: Ellicottville State: NY
Project #:
Client Purchase Order #:
Project Manager: T. Bohlen

Billing Information (If different from Report to)
Company Name: Same
Street Address:
City: State: Zip:
Attention:

Requested Analysis

1,4-dioxane
SIM5 - see W.O.
T. McClosky
Remaining project samples shipped 6/11/19

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
5	EW-1.25R-2019		6/11/19	930	TB	G	GW	2									
6	1,4-Dioxane Duplicate		↓	-	↓	↓	↓	2									

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [x] Other Standard

Data available via Labtink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] ~~NYASP Category A~~ (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [x] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format NYSDEC
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

INITIAL ASESSMENT 36 PDS
LABEL VERIFICATION

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:
1	Thomas Bohlen	6/11/19 1515	Fed Ex
2	Fed Ex	6/15/19 9:40	
3			
4			
5			

Custody Seal # Intact / Not Intact
Preserved where applicable / Absent
Therm. ID:
On Ice
Cooler Temp. °C: 3.6c-P

IR 278

Internal Sample Tracking Chronicle

GZA Geo Environmental

Job No: JC89788

Former Signore, Ellicottville, NY
Project No: 21.0056867.00

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC89788-1 Collected: 11-JUN-19 12:20 By: TB EW-4.5-2019		Received: 12-JUN-19 By: AS				
JC89788-1	SW846 8270D BY SIM	22-JUN-19 05:56	CS	17-JUN-19	VP	B8270SIM14DIOX
JC89788-2 Collected: 11-JUN-19 14:30 By: TB MW-5S-2019		Received: 12-JUN-19 By: AS				
JC89788-2	SW846 8270D BY SIM	22-JUN-19 06:17	CS	17-JUN-19	VP	B8270SIM14DIOX
JC89788-3 Collected: 11-JUN-19 15:30 By: TB MW-4S-2019		Received: 12-JUN-19 By: AS				
JC89788-3	SW846 8270D BY SIM	21-JUN-19 15:39	KC	17-JUN-19	VP	B8270SIM14DIOX
JC89788-4 Collected: 11-JUN-19 12:10 By: TB 1,4-DIOXANE RINSATE		Received: 12-JUN-19 By: AS				
JC89788-4	SW846 8270D BY SIM	22-JUN-19 05:35	CS	17-JUN-19	VP	B8270SIM14DIOX
JC89788-5 Collected: 14-JUN-19 09:30 By: TB EW-1.25R-2019		Received: 15-JUN-19 By: DG				
JC89788-5	SW846 8270D BY SIM	22-JUN-19 06:38	CS	21-JUN-19	HW	B8270SIM14DIOX
JC89788-6 Collected: 14-JUN-19 00:00 By: TB 1,4-DIOXANE DUPLICATE		Received: 15-JUN-19 By: DG				
JC89788-6	SW846 8270D BY SIM	22-JUN-19 06:59	CS	21-JUN-19	HW	B8270SIM14DIOX

SGS Internal Chain of Custody

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY
Received: 06/12/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC89788-1.1	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-1.2	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-1.2	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-1.2	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-1.2	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage
JC89788-1.2	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-1.2.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-1.2
JC89788-1.2.1	Organics Prep	Henny Salim	06/20/19 11:38	Extract from JC89788-1.2
JC89788-1.2.1	Henny Salim	Extract Storage	06/20/19 11:38	Return to Storage
JC89788-1.2.1	Extract Storage	Henny Salim	06/20/19 11:38	Retrieve from Storage
JC89788-1.2.1	Henny Salim	GCMSM	06/20/19 11:38	Load on Instrument
JC89788-1.2.1	GCMSM	Henny Salim	06/21/19 10:23	Unload from Instrument
JC89788-1.2.1	Henny Salim	Extract Freezer	06/21/19 10:23	Return to Storage
JC89788-1.2.1	Extract Freezer	Krizhka Cuenta	06/21/19 12:02	Retrieve from Storage
JC89788-1.2.1	Krizhka Cuenta	GCMS4M	06/21/19 12:02	Load on Instrument
JC89788-1.2.1	GCMS4M	Krizhka Cuenta	06/24/19 10:47	Unload from Instrument
JC89788-1.2.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:47	Return to Storage
JC89788-2.1	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-2.1	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-2.1	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-2.1	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage
JC89788-2.1	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-2.1.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-2.1
JC89788-2.1.1	Organics Prep	Henny Salim	06/20/19 11:38	Extract from JC89788-2.1
JC89788-2.1.1	Henny Salim	Extract Storage	06/20/19 11:38	Return to Storage
JC89788-2.1.1	Extract Storage	Henny Salim	06/20/19 11:38	Retrieve from Storage
JC89788-2.1.1	Henny Salim	GCMSM	06/20/19 11:38	Load on Instrument
JC89788-2.1.1	GCMSM	Henny Salim	06/21/19 10:23	Unload from Instrument
JC89788-2.1.1	Henny Salim	Extract Freezer	06/21/19 10:23	Return to Storage
JC89788-2.1.1	Extract Freezer	Krizhka Cuenta	06/21/19 12:02	Retrieve from Storage
JC89788-2.1.1	Krizhka Cuenta	GCMS4M	06/21/19 12:02	Load on Instrument
JC89788-2.1.1	GCMS4M	Krizhka Cuenta	06/24/19 10:47	Unload from Instrument
JC89788-2.1.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:47	Return to Storage
JC89788-2.2	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.1	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.1	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-3.1	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-3.1	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage

SGS Internal Chain of Custody

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY
Received: 06/12/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC89788-3.1	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-3.1.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-3.1
JC89788-3.1.1	Organics Prep	Henny Salim	06/20/19 11:38	Extract from JC89788-3.1
JC89788-3.1.1	Henny Salim	Extract Storage	06/20/19 11:38	Return to Storage
JC89788-3.1.1	Extract Storage	Henny Salim	06/20/19 11:38	Retrieve from Storage
JC89788-3.1.1	Henny Salim	GCMSM	06/20/19 11:38	Load on Instrument
JC89788-3.1.1	GCMSM	Henny Salim	06/21/19 10:23	Unload from Instrument
JC89788-3.1.1	Henny Salim	Extract Freezer	06/21/19 10:23	Return to Storage
JC89788-3.1.1	Extract Freezer	Krizhka Cuenta	06/21/19 12:02	Retrieve from Storage
JC89788-3.1.1	Krizhka Cuenta	GCMS4M	06/21/19 12:02	Load on Instrument
JC89788-3.1.1	GCMS4M	Krizhka Cuenta	06/24/19 10:47	Unload from Instrument
JC89788-3.1.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:47	Return to Storage
JC89788-3.2	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.3	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.4	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.5	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.5	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-3.5	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-3.5	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage
JC89788-3.5	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-3.5.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-3.5
JC89788-3.6	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-3.6	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-3.6	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-3.6	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage
JC89788-3.6	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-3.6.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-3.6
JC89788-4.1	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-4.1	Secured Storage	Todd Shoemaker	06/17/19 08:27	Retrieve from Storage
JC89788-4.1	Todd Shoemaker	Secured Staging Area	06/17/19 08:28	Return to Storage
JC89788-4.1	Secured Staging Area	Vikas Parikh	06/17/19 08:35	Retrieve from Storage
JC89788-4.1	Vikas Parikh		06/18/19 07:24	Depleted
JC89788-4.1.1	Vikas Parikh	Organics Prep	06/17/19 08:35	Extract from JC89788-4.1
JC89788-4.1.1	Organics Prep	Henny Salim	06/20/19 11:38	Extract from JC89788-4.1

SGS Internal Chain of Custody

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY
Received: 06/12/19

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC89788-4.1.1	Henny Salim	Extract Storage	06/20/19 11:38	Return to Storage
JC89788-4.1.1	Extract Storage	Henny Salim	06/20/19 11:38	Retrieve from Storage
JC89788-4.1.1	Henny Salim	GCMSM	06/20/19 11:38	Load on Instrument
JC89788-4.1.1	GCMSM	Henny Salim	06/21/19 10:23	Unload from Instrument
JC89788-4.1.1	Henny Salim	Extract Freezer	06/21/19 10:23	Return to Storage
JC89788-4.1.1	Extract Freezer	Krizhka Cuenta	06/21/19 12:02	Retrieve from Storage
JC89788-4.1.1	Krizhka Cuenta	GCMS4M	06/21/19 12:02	Load on Instrument
JC89788-4.1.1	GCMS4M	Krizhka Cuenta	06/24/19 10:47	Unload from Instrument
JC89788-4.1.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:47	Return to Storage
JC89788-4.2	Sahara Feliciano	Secured Storage	06/13/19 18:57	Return to Storage
JC89788-5.1	Dominic Guerriero	Secured Storage	06/18/19 12:16	Return to Storage
JC89788-5.2	Dominic Guerriero	Secured Storage	06/18/19 12:16	Return to Storage
JC89788-5.2	Secured Storage	Sahara Feliciano	06/20/19 17:29	Retrieve from Storage
JC89788-5.2	Sahara Feliciano	Secured Staging Area	06/20/19 17:29	Return to Storage
JC89788-5.2	Secured Staging Area	Lionel (Tiger) Thomas	06/21/19 04:52	Retrieve from Storage
JC89788-5.2	Lionel (Tiger) Thomas		06/21/19 12:05	Depleted
JC89788-5.2.1	Lionel (Tiger) Thomas	Organics Prep	06/21/19 04:52	Extract from JC89788-5.2
JC89788-5.2.1	Organics Prep	Huachi Wu	06/21/19 14:54	Extract from JC89788-5.2
JC89788-5.2.1	Huachi Wu	Extract Storage	06/21/19 14:54	Return to Storage
JC89788-5.2.1	Extract Storage	Christopher Sowa	06/22/19 02:02	Retrieve from Storage
JC89788-5.2.1	Christopher Sowa	GCMS4M	06/22/19 02:02	Load on Instrument
JC89788-5.2.1	GCMS4M	Krizhka Cuenta	06/24/19 10:50	Unload from Instrument
JC89788-5.2.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:50	Return to Storage
JC89788-6.1	Dominic Guerriero	Secured Storage	06/18/19 12:16	Return to Storage
JC89788-6.1	Secured Storage	Sahara Feliciano	06/20/19 17:29	Retrieve from Storage
JC89788-6.1	Sahara Feliciano	Secured Staging Area	06/20/19 17:29	Return to Storage
JC89788-6.1	Secured Staging Area	Lionel (Tiger) Thomas	06/21/19 04:52	Retrieve from Storage
JC89788-6.1	Lionel (Tiger) Thomas		06/21/19 12:05	Depleted
JC89788-6.1.1	Lionel (Tiger) Thomas	Organics Prep	06/21/19 04:52	Extract from JC89788-6.1
JC89788-6.1.1	Organics Prep	Huachi Wu	06/21/19 14:54	Extract from JC89788-6.1
JC89788-6.1.1	Huachi Wu	Extract Storage	06/21/19 14:54	Return to Storage
JC89788-6.1.1	Extract Storage	Christopher Sowa	06/22/19 02:02	Retrieve from Storage
JC89788-6.1.1	Christopher Sowa	GCMS4M	06/22/19 02:02	Load on Instrument
JC89788-6.1.1	GCMS4M	Krizhka Cuenta	06/24/19 10:50	Unload from Instrument
JC89788-6.1.1	Krizhka Cuenta	Extract Freezer	06/24/19 10:50	Return to Storage
JC89788-6.2	Dominic Guerriero	Secured Storage	06/18/19 12:16	Return to Storage

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21044A-MB1	4M85086.D	1	06/21/19	KC	06/17/19	OP21044A	E4M3947

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-1, JC89788-2, JC89788-3, JC89788-4

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	79%	29-124%
321-60-8	2-Fluorobiphenyl	89%	23-122%
1718-51-0	Terphenyl-d14	139%* [a]	22-130%

(a) Outside of in house control limits.

Method Blank Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21044A-MB1	3P77302.D	1	06/21/19	CS	06/17/19	OP21044A	E3P3624

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-1, JC89788-2, JC89788-3, JC89788-4

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	92%	29-124%
321-60-8	2-Fluorobiphenyl	79%	23-122%
1718-51-0	Terphenyl-d14	110%	22-130%

Method Blank Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21117A-MB1	Z138961.D	1	06/21/19	AR	06/21/19	OP21117A	EZ6841

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-5, JC89788-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	1.0	0.049	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	51%	15-110%
4165-62-2	Phenol-d5	31%	12-110%
118-79-6	2,4,6-Tribromophenol	84%	32-143%
4165-60-0	Nitrobenzene-d5	88%	29-124%
321-60-8	2-Fluorobiphenyl	80%	23-122%
1718-51-0	Terphenyl-d14	83%	22-130%
84-15-1	o-Terphenyl	0%	-%

Method Blank Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21117A-MB1	4M85118.D	1	06/22/19	CS	06/21/19	OP21117A	E4M3948

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-5, JC89788-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	61%	15-110%
4165-62-2	Phenol-d5	35%	12-110%
118-79-6	2,4,6-Tribromophenol	88%	32-143%
4165-60-0	Nitrobenzene-d5	88%	29-124%
321-60-8	2-Fluorobiphenyl	100%	23-122%
1718-51-0	Terphenyl-d14	136%* [a]	22-130%

(a) Outside of control limits.

Method Blank Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21117A-MB1	3P77349.D	1	06/24/19	CS	06/21/19	OP21117A	E3P3626

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-5, JC89788-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.0558	0.10	0.049	ug/l	J

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	56%	15-110%
4165-62-2	Phenol-d5	39%	12-110%
118-79-6	2,4,6-Tribromophenol	117%	32-143%
4165-60-0	Nitrobenzene-d5	106%	29-124%
321-60-8	2-Fluorobiphenyl	88%	23-122%
1718-51-0	Terphenyl-d14	103%	22-130%

Blank Spike Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21044A-BS12	3P77303.D	1	06/21/19	CS	06/17/19	OP21044A	E3P3624

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-1, JC89788-2, JC89788-3, JC89788-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	1	0.411	41	10-110

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	80%	29-124%
321-60-8	2-Fluorobiphenyl	72%	23-122%
1718-51-0	Terphenyl-d14	103%	22-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21117A-BS12	4M85119.D	1	06/22/19	CS	06/21/19	OP21117A	E4M3948
OP21117A-BSD12	4M85120.D	1	06/22/19	CS	06/21/19	OP21117A	E4M3948

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-5, JC89788-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	1	0.493	49	0.520	52	5	10-110/40

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	64%	66%	15-110%
4165-62-2	Phenol-d5	37%	38%	12-110%
118-79-6	2,4,6-Tribromophenol	95%	96%	32-143%
4165-60-0	Nitrobenzene-d5	89%	91%	29-124%
321-60-8	2-Fluorobiphenyl	101%	102%	23-122%
1718-51-0	Terphenyl-d14	148%* [a]	141%* [a]	22-130%

(a) Outside of control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21117A-BS12	4M85119.D	1	06/22/19	CS	06/21/19	OP21117A	E4M3948
OP21117A-BSD12	3P77351.D	1	06/25/19	CS	06/21/19	OP21117A	E3P3626

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-5, JC89788-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	1	0.493	49	0.488	49	9	10-110/40

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	64%	60%	15-110%
4165-62-2	Phenol-d5	37%	42%	12-110%
118-79-6	2,4,6-Tribromophenol	95%	127%	32-143%
4165-60-0	Nitrobenzene-d5	89%	106%	29-124%
321-60-8	2-Fluorobiphenyl	101%	92%	23-122%
1718-51-0	Terphenyl-d14	148%* [a]	109%	22-130%

(a) Outside of control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP21044A-MSA	3P77480.D	1	06/27/19	HSS	06/17/19	OP21044A	E3P3631
OP21044A-MSDA	3P77481.D	1	06/27/19	HSS	06/17/19	OP21044A	E3P3631
JC89788-3	4M85092A.D	1	06/21/19	KC	06/17/19	OP21044A	E4M3947

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JC89788-1, JC89788-2, JC89788-3, JC89788-4

CAS No.	Compound	JC89788-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	ND		1	0.329	33	1	0.390	39	17	10-125/46

CAS No.	Surrogate Recoveries	MS	MSD	JC89788-3	Limits
4165-60-0	Nitrobenzene-d5	79%	88%	63%	29-124%
321-60-8	2-Fluorobiphenyl	66%	71%	71%	23-122%
1718-51-0	Terphenyl-d14	94%	102%	82%	22-130%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-DFTPP
Lab File ID: 3P77284.D
Instrument ID: GCMS3P
Injection Date: 06/21/19
Injection Time: 03:40

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	231130	44.7		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	272888	52.7		Pass
70	Less than 2.0% of mass 69	1349	0.26	(0.49) [a]	Pass
127	40.0 - 60.0% of mass 198	269936	52.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	517376	100.0		Pass
199	5.0 - 9.0% of mass 198	35403	6.84		Pass
275	10.0 - 30.0% of mass 198	118208	22.8		Pass
365	1.0 - 100.0% of mass 198	13867	2.68		Pass
441	Present, but less than mass 443	37346	7.22	(83.8) [b]	Pass
442	40.0 - 100.0% of mass 198	230725	44.6		Pass
443	17.0 - 23.0% of mass 442	44585	8.62	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P3623-IC3623	3P77285.D	06/21/19	03:58	00:18	Initial cal 5
E3P3623-IC3623	3P77286.D	06/21/19	04:50	01:10	Initial cal 2.5
E3P3623-ICC3623	3P77287.D	06/21/19	05:11	01:31	Initial cal 1
E3P3623-IC3623	3P77288.D	06/21/19	05:32	01:52	Initial cal 0.5
E3P3623-IC3623	3P77289.D	06/21/19	05:53	02:13	Initial cal 0.2
E3P3623-IC3623	3P77290.D	06/21/19	06:14	02:34	Initial cal 0.1
E3P3623-IC3623	3P77291.D	06/21/19	06:35	02:55	Initial cal 0.05
E3P3623-IC3623	3P77292.D	06/21/19	06:56	03:16	Initial cal 0.02
E3P3623-IC3623	3P77293.D	06/21/19	07:17	03:37	Initial cal 0.01
E3P3623-ICV3623	3P77294.D	06/21/19	07:38	03:58	Initial cal verification 5
E3P3623-ICV3623	3P77295.D	06/21/19	08:00	04:20	Initial cal verification 1

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3624-DFTPP
Lab File ID: 3P77297.D
Instrument ID: GCMS3P
Injection Date: 06/21/19
Injection Time: 16:10

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	155742	44.1		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	177381	50.2		Pass
70	Less than 2.0% of mass 69	792	0.22	(0.45) [a]	Pass
127	40.0 - 60.0% of mass 198	182526	51.6		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	353437	100.0		Pass
199	5.0 - 9.0% of mass 198	21990	6.22		Pass
275	10.0 - 30.0% of mass 198	90206	25.5		Pass
365	1.0 - 100.0% of mass 198	11779	3.33		Pass
441	Present, but less than mass 443	30762	8.70	(83.2) [b]	Pass
442	40.0 - 100.0% of mass 198	178797	50.6		Pass
443	17.0 - 23.0% of mass 442	36970	10.5	(20.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P3624-CC3623	3P77298.D	06/21/19	16:21	00:11	Continuing cal 1
OP21127A-MB1	3P77299.D	06/21/19	16:43	00:33	Method Blank
OP21127A-BS12	3P77300.D	06/21/19	17:04	00:54	Blank Spike
OP21127A-BSD12	3P77301.D	06/21/19	17:24	01:14	Blank Spike Duplicate
OP21044A-MB1	3P77302.D	06/21/19	17:45	01:35	Method Blank
OP21044A-BS12	3P77303.D	06/21/19	18:06	01:56	Blank Spike
OP20969A-MB1	3P77304.D	06/21/19	18:27	02:17	Method Blank
ZZZZZZ	3P77306.D	06/21/19	19:09	02:59	(unrelated sample)
ZZZZZZ	3P77307.D	06/21/19	19:30	03:20	(unrelated sample)
ZZZZZZ	3P77308.D	06/21/19	19:50	03:40	(unrelated sample)
ZZZZZZ	3P77309.D	06/21/19	20:11	04:01	(unrelated sample)
ZZZZZZ	3P77310.D	06/21/19	20:32	04:22	(unrelated sample)
ZZZZZZ	3P77311.D	06/21/19	20:53	04:43	(unrelated sample)
ZZZZZZ	3P77312.D	06/21/19	21:14	05:04	(unrelated sample)
ZZZZZZ	3P77313.D	06/21/19	21:34	05:24	(unrelated sample)
ZZZZZZ	3P77314.D	06/21/19	21:55	05:45	(unrelated sample)
ZZZZZZ	3P77316.D	06/21/19	22:37	06:27	(unrelated sample)
ZZZZZZ	3P77317.D	06/21/19	22:58	06:48	(unrelated sample)
ZZZZZZ	3P77318.D	06/21/19	23:18	07:08	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E3P3624-DFTPP	**Injection Date:**	06/21/19
Lab File ID:	3P77297.D	**Injection Time:**	16:10
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P77319.D	06/21/19	23:39	07:29	(unrelated sample)
ZZZZZZ	3P77320.D	06/22/19	00:00	07:50	(unrelated sample)
ZZZZZZ	3P77321.D	06/22/19	00:21	08:11	(unrelated sample)
ZZZZZZ	3P77322.D	06/22/19	00:42	08:32	(unrelated sample)
ZZZZZZ	3P77323.D	06/22/19	01:02	08:52	(unrelated sample)
ZZZZZZ	3P77325.D	06/22/19	01:44	09:34	(unrelated sample)
ZZZZZZ	3P77326.D	06/22/19	02:05	09:55	(unrelated sample)
ZZZZZZ	3P77327.D	06/22/19	02:26	10:16	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E3P3626-DFTPP	**Injection Date:**	06/24/19
Lab File ID:	3P77345.D	**Injection Time:**	22:00
Instrument ID:	GCMS3P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	109404	40.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	130319	48.0		Pass
70	Less than 2.0% of mass 69	1159	0.43	(0.89) [a]	Pass
127	40.0 - 60.0% of mass 198	135522	49.9		Pass
197	Less than 1.0% of mass 198	199	0.07		Pass
198	Base peak, 100% relative abundance	271632	100.0		Pass
199	5.0 - 9.0% of mass 198	18895	6.96		Pass
275	10.0 - 30.0% of mass 198	67651	24.9		Pass
365	1.0 - 100.0% of mass 198	9593	3.53		Pass
441	Present, but less than mass 443	23780	8.75	(90.2) [b]	Pass
442	40.0 - 100.0% of mass 198	150229	55.3		Pass
443	17.0 - 23.0% of mass 442	26363	9.71	(17.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P3626-CC3623	3P77347.D	06/24/19	22:36	00:36	Continuing cal 1
OP21117A-MB1	3P77349.D	06/24/19	23:43	01:43	Method Blank
OP21117A-BS12	3P77350.D	06/25/19	00:04	02:04	Blank Spike
OP21117A-BSD12	3P77351.D	06/25/19	00:26	02:26	Blank Spike Duplicate
OP21144A-MB1	3P77352.D	06/25/19	00:57	02:57	Method Blank
OP21144A-BS12	3P77353.D	06/25/19	01:18	03:18	Blank Spike
OP21144A-BSD12	3P77354.D	06/25/19	01:39	03:39	Blank Spike Duplicate
OP21174A-MB1	3P77355.D	06/25/19	02:00	04:00	Method Blank
OP21174A-BS12	3P77356.D	06/25/19	02:21	04:21	Blank Spike
OP21174A-BSD12	3P77357.D	06/25/19	02:42	04:42	Blank Spike Duplicate
OP21175A-MB1	3P77358.D	06/25/19	03:03	05:03	Method Blank
OP21175A-BS12	3P77359.D	06/25/19	03:24	05:24	Blank Spike
OP21175A-BSD12	3P77360.D	06/25/19	03:45	05:45	Blank Spike Duplicate
ZZZZZZ	3P77361.D	06/25/19	04:06	06:06	(unrelated sample)
ZZZZZZ	3P77362.D	06/25/19	04:27	06:27	(unrelated sample)
ZZZZZZ	3P77363.D	06/25/19	04:48	06:48	(unrelated sample)
ZZZZZZ	3P77364.D	06/25/19	05:09	07:09	(unrelated sample)
ZZZZZZ	3P77365.D	06/25/19	05:30	07:30	(unrelated sample)
ZZZZZZ	3P77366.D	06/25/19	05:51	07:51	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E3P3626-DFTPP	**Injection Date:**	06/24/19
Lab File ID:	3P77345.D	**Injection Time:**	22:00
Instrument ID:	GCMS3P		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3P77367.D	06/25/19	06:12	08:12	(unrelated sample)
ZZZZZZ	3P77368.D	06/25/19	06:33	08:33	(unrelated sample)
ZZZZZZ	3P77369.D	06/25/19	06:54	08:54	(unrelated sample)
ZZZZZZ	3P77370.D	06/25/19	07:15	09:15	(unrelated sample)
ZZZZZZ	3P77371.D	06/25/19	07:36	09:36	(unrelated sample)
ZZZZZZ	3P77372.D	06/25/19	07:57	09:57	(unrelated sample)
ZZZZZZ	3P77373.D	06/25/19	08:18	10:18	(unrelated sample)
ZZZZZZ	3P77374.D	06/25/19	08:39	10:39	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3631-DFTPP
Lab File ID: 3P77472.D
Instrument ID: GCMS3P
Injection Date: 06/27/19
Injection Time: 09:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	198773	47.3		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	236198	56.2		Pass
70	Less than 2.0% of mass 69	1187	0.28	(0.50) [a]	Pass
127	40.0 - 60.0% of mass 198	224957	53.5		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	420331	100.0		Pass
199	5.0 - 9.0% of mass 198	28109	6.69		Pass
275	10.0 - 30.0% of mass 198	98709	23.5		Pass
365	1.0 - 100.0% of mass 198	11801	2.81		Pass
441	Present, but less than mass 443	26570	6.32	(80.2) [b]	Pass
442	40.0 - 100.0% of mass 198	183037	43.5		Pass
443	17.0 - 23.0% of mass 442	33142	7.88	(18.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3P3631-CC3623	3P77473.D	06/27/19	10:10	00:12	Continuing cal 1
OP21176A-MB1	3P77476.D	06/27/19	11:29	01:31	Method Blank
OP21176A-BS12	3P77477.D	06/27/19	11:52	01:54	Blank Spike
OP21176A-MSA	3P77478.D	06/27/19	12:15	02:17	Matrix Spike
OP21176A-MSDA	3P77479.D	06/27/19	12:39	02:41	Matrix Spike Duplicate
OP21044A-MSA	3P77480.D	06/27/19	13:02	03:04	Matrix Spike
OP21044A-MSDA	3P77481.D	06/27/19	13:26	03:28	Matrix Spike Duplicate
JC90462-14	3P77482.D	06/27/19	13:49	03:51	(used for QC only; not part of job JC89788)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-DFTPP
Lab File ID: 4M83368.D
Instrument ID: GCMS4M
Injection Date: 04/22/19
Injection Time: 13:43

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	68687	40.4		Pass
68	Less than 2.0% of mass 69	1604	0.94	(1.59) [a]	Pass
69	Mass 69 relative abundance	100836	59.3		Pass
70	Less than 2.0% of mass 69	474	0.28	(0.47) [a]	Pass
127	40.0 - 60.0% of mass 198	96848	56.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	170152	100.0		Pass
199	5.0 - 9.0% of mass 198	12191	7.16		Pass
275	10.0 - 30.0% of mass 198	43728	25.7		Pass
365	1.0 - 100.0% of mass 198	6067	3.57		Pass
441	Present, but less than mass 443	13044	7.67	(80.1) [b]	Pass
442	40.0 - 100.0% of mass 198	92160	54.2		Pass
443	17.0 - 23.0% of mass 442	16281	9.57	(17.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4M3886-IC3886	4M83369.D	04/22/19	14:09	00:26	Initial cal 5.0
E4M3886-IC3886	4M83370.D	04/22/19	14:32	00:49	Initial cal 2.5
E4M3886-ICC3886	4M83371.D	04/22/19	14:55	01:12	Initial cal 1.0
E4M3886-IC3886	4M83372.D	04/22/19	15:17	01:34	Initial cal 0.5
E4M3886-IC3886	4M83373.D	04/22/19	15:40	01:57	Initial cal 0.2
E4M3886-IC3886	4M83374.D	04/22/19	16:03	02:20	Initial cal 0.1
E4M3886-IC3886	4M83375.D	04/22/19	16:25	02:42	Initial cal 0.05
E4M3886-IC3886	4M83376.D	04/22/19	16:48	03:05	Initial cal 0.02
E4M3886-IC3886	4M83377.D	04/22/19	17:11	03:28	Initial cal 0.01
E4M3886-ICV3886	4M83378.D	04/22/19	17:33	03:50	Initial cal verification 1.0
E4M3886-ICV3886	4M83379.D	04/22/19	17:56	04:13	Initial cal verification 5.0

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E4M3947-DFTPP	**Injection Date:**	06/21/19
Lab File ID:	4M85079.D	**Injection Time:**	08:51
Instrument ID:	GCMS4M		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	34133	36.0		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	51540	54.4		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	49003	51.7		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	94811	100.0		Pass
199	5.0 - 9.0% of mass 198	6459	6.81		Pass
275	10.0 - 30.0% of mass 198	28099	29.6		Pass
365	1.0 - 100.0% of mass 198	4064	4.29		Pass
441	Present, but less than mass 443	10558	11.1	(81.2) [b]	Pass
442	40.0 - 100.0% of mass 198	68589	72.3		Pass
443	17.0 - 23.0% of mass 442	13002	13.7	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4M3947-CC3886	4M85080.D	06/21/19	09:06	00:15	Continuing cal 1
E4M3947-CC3886	4M85081.D	06/21/19	09:41	00:50	Continuing cal 1
OP21024A-MB1	4M85083.D	06/21/19	10:57	02:06	Method Blank
OP21024A-BS1	4M85084.D	06/21/19	11:20	02:29	Blank Spike
OP21024A-BSD	4M85085.D	06/21/19	11:43	02:52	Blank Spike Duplicate
OP21044A-MB1	4M85086.D	06/21/19	12:13	03:22	Method Blank
ZZZZZZ	4M85088.D	06/21/19	12:59	04:08	(unrelated sample)
ZZZZZZ	4M85089.D	06/21/19	13:21	04:30	(unrelated sample)
JC89788-3	4M85092A.D	06/21/19	15:39	06:48	MW-4S-2019
ZZZZZZ	4M85112.D	06/21/19	15:59	07:08	(unrelated sample)
ZZZZZZ	4M85093.D	06/21/19	16:20	07:29	(unrelated sample)
ZZZZZZ	4M85094.D	06/21/19	16:41	07:50	(unrelated sample)
ZZZZZZ	4M85095.D	06/21/19	17:02	08:11	(unrelated sample)
ZZZZZZ	4M85096.D	06/21/19	17:43	08:52	(unrelated sample)
ZZZZZZ	4M85097.D	06/21/19	18:04	09:13	(unrelated sample)
ZZZZZZ	4M85098.D	06/21/19	18:25	09:34	(unrelated sample)
ZZZZZZ	4M85099.D	06/21/19	18:46	09:55	(unrelated sample)
ZZZZZZ	4M85100.D	06/21/19	19:07	10:16	(unrelated sample)
ZZZZZZ	4M85101.D	06/21/19	19:28	10:37	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E4M3947-DFTPP	**Injection Date:**	06/21/19
Lab File ID:	4M85079.D	**Injection Time:**	08:51
Instrument ID:	GCMS4M		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4M85102.D	06/21/19	19:49	10:58	(unrelated sample)
ZZZZZZ	4M85103.D	06/21/19	20:10	11:19	(unrelated sample)
ZZZZZZ	4M85104.D	06/21/19	20:30	11:39	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3948-DFTPP
Lab File ID: 4M85115.D
Instrument ID: GCMS4M
Injection Date: 06/22/19
Injection Time: 00:12

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	58434	37.9		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	85224	55.3		Pass
70	Less than 2.0% of mass 69	522	0.34	(0.61) [a]	Pass
127	40.0 - 60.0% of mass 198	81195	52.7		Pass
197	Less than 1.0% of mass 198	433	0.28		Pass
198	Base peak, 100% relative abundance	154205	100.0		Pass
199	5.0 - 9.0% of mass 198	10698	6.94		Pass
275	10.0 - 30.0% of mass 198	41728	27.1		Pass
365	1.0 - 100.0% of mass 198	6262	4.06		Pass
441	Present, but less than mass 443	16648	10.8	(83.1) [b]	Pass
442	40.0 - 100.0% of mass 198	103072	66.8		Pass
443	17.0 - 23.0% of mass 442	20029	13.0	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E4M3948-CC3886	4M85116.D	06/22/19	00:27	00:15	Continuing cal 0.5
OP21117A-MB1	4M85118.D	06/22/19	01:21	01:09	Method Blank
OP21117A-BS12	4M85119.D	06/22/19	01:43	01:31	Blank Spike
OP21117A-BSD12	4M85120.D	06/22/19	02:04	01:52	Blank Spike Duplicate
OP20974A-MB1	4M85121.D	06/22/19	02:25	02:13	Method Blank
OP20974A-BS1	4M85122.D	06/22/19	02:46	02:34	Blank Spike
OP20974A-BSD	4M85123.D	06/22/19	03:07	02:55	Blank Spike Duplicate
ZZZZZZ	4M85124.D	06/22/19	03:28	03:16	(unrelated sample)
ZZZZZZ	4M85125.D	06/22/19	03:49	03:37	(unrelated sample)
ZZZZZZ	4M85126.D	06/22/19	04:11	03:59	(unrelated sample)
ZZZZZZ	4M85127.D	06/22/19	04:32	04:20	(unrelated sample)
ZZZZZZ	4M85128.D	06/22/19	04:53	04:41	(unrelated sample)
ZZZZZZ	4M85129.D	06/22/19	05:14	05:02	(unrelated sample)
JC89788-4	4M85130.D	06/22/19	05:35	05:23	1,4-DIOXANE RINSATE
JC89788-1	4M85131.D	06/22/19	05:56	05:44	EW-4.5-2019
JC89788-2	4M85132.D	06/22/19	06:17	06:05	MW-5S-2019
JC89788-5	4M85133.D	06/22/19	06:38	06:26	EW-1.25R-2019
JC89788-6	4M85134.D	06/22/19	06:59	06:47	1,4-DIOXANE DUPLICATE
ZZZZZZ	4M85135.D	06/22/19	07:20	07:08	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	E4M3948-DFTPP	**Injection Date:**	06/22/19
Lab File ID:	4M85115.D	**Injection Time:**	00:12
Instrument ID:	GCMS4M		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	4M85136.D	06/22/19	07:41	07:29	(unrelated sample)
ZZZZZZ	4M85137.D	06/22/19	08:02	07:50	(unrelated sample)
ZZZZZZ	4M85138.D	06/22/19	08:23	08:11	(unrelated sample)
ZZZZZZ	4M85139.D	06/22/19	08:44	08:32	(unrelated sample)
ZZZZZZ	4M85140.D	06/22/19	09:05	08:53	(unrelated sample)
ZZZZZZ	4M85141.D	06/22/19	09:26	09:14	(unrelated sample)
ZZZZZZ	4M85143.D	06/22/19	10:08	09:56	(unrelated sample)
ZZZZZZ	4M85144.D	06/22/19	10:29	10:17	(unrelated sample)
ZZZZZZ	4M85145.D	06/22/19	10:50	10:38	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	EZ6787-DFTPP	**Injection Date:**	05/24/19
Lab File ID:	Z137813.D	**Injection Time:**	07:29
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	28112	38.2		Pass
68	Less than 2.0% of mass 69	165	0.22	(0.48) [a]	Pass
69	Mass 69 relative abundance	34109	46.4		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	39763	54.1		Pass
197	Less than 1.0% of mass 198	198	0.27		Pass
198	Base peak, 100% relative abundance	73544	100.0		Pass
199	5.0 - 9.0% of mass 198	4983	6.78		Pass
275	10.0 - 30.0% of mass 198	19410	26.4		Pass
365	1.0 - 100.0% of mass 198	2827	3.84		Pass
441	Present, but less than mass 443	9436	12.8	(78.3) [b]	Pass
442	40.0 - 100.0% of mass 198	61571	83.7		Pass
443	17.0 - 23.0% of mass 442	12053	16.4	(19.6) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ6787-IC6787	Z137814.D	05/24/19	07:43	00:14	Initial cal 100
EZ6787-IC6787	Z137815.D	05/24/19	08:10	00:41	Initial cal 80
EZ6787-ICC6787	Z137816.D	05/24/19	08:37	01:08	Initial cal 50
EZ6787-IC6787	Z137817.D	05/24/19	09:04	01:35	Initial cal 25
EZ6787-IC6787	Z137818.D	05/24/19	09:31	02:02	Initial cal 10
EZ6787-IC6787	Z137819.D	05/24/19	09:58	02:29	Initial cal 5
EZ6787-IC6787	Z137820.D	05/24/19	10:25	02:56	Initial cal 2
EZ6787-IC6787	Z137821.D	05/24/19	10:52	03:23	Initial cal 1
EZ6787-ICV6787	Z137822.D	05/24/19	11:19	03:50	Initial cal verification 50
EZ6787-ICV6787	Z137823.D	05/24/19	11:46	04:17	Initial cal verification 50
EZ6787-ICV6786	Z137825.D	05/24/19	12:49	05:20	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	EZ6826-DFTPP	**Injection Date:**	06/14/19
Lab File ID:	Z138699.D	**Injection Time:**	13:24
Instrument ID:	GCMSZ		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	18645	40.2		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	22642	48.8		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	24591	53.0		Pass
197	Less than 1.0% of mass 198	160	0.34		Pass
198	Base peak, 100% relative abundance	46432	100.0		Pass
199	5.0 - 9.0% of mass 198	3355	7.23		Pass
275	10.0 - 30.0% of mass 198	11711	25.2		Pass
365	1.0 - 100.0% of mass 198	1646	3.54		Pass
441	Present, but less than mass 443	5562	12.0	(82.5) [b]	Pass
442	40.0 - 100.0% of mass 198	37036	79.8		Pass
443	17.0 - 23.0% of mass 442	6745	14.5	(18.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ6826-IC6826	Z138700.D	06/14/19	13:38	00:14	Initial cal 100
EZ6826-IC6826	Z138701.D	06/14/19	14:05	00:41	Initial cal 80
EZ6826-ICC6826	Z138702.D	06/14/19	14:32	01:08	Initial cal 50
EZ6826-IC6826	Z138703.D	06/14/19	14:58	01:34	Initial cal 25
EZ6826-IC6826	Z138704.D	06/14/19	15:25	02:01	Initial cal 10
EZ6826-IC6826	Z138705.D	06/14/19	15:52	02:28	Initial cal 5
EZ6826-IC6826	Z138706.D	06/14/19	16:19	02:55	Initial cal 2
EZ6826-IC6826	Z138707.D	06/14/19	16:45	03:21	Initial cal 1
EZ6826-ICV6826	Z138708.D	06/14/19	17:12	03:48	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-DFTPP
Lab File ID: Z138896.D
Instrument ID: GCMSZ
Injection Date: 06/20/19
Injection Time: 00:23

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	27614	37.7		Pass
68	Less than 2.0% of mass 69	122	0.17	(0.35) [a]	Pass
69	Mass 69 relative abundance	34781	47.5		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	39381	53.8		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	73171	100.0		Pass
199	5.0 - 9.0% of mass 198	4944	6.76		Pass
275	10.0 - 30.0% of mass 198	17751	24.3		Pass
365	1.0 - 100.0% of mass 198	2942	4.02		Pass
441	Present, but less than mass 443	8229	11.2	(75.6) [b]	Pass
442	40.0 - 100.0% of mass 198	55197	75.4		Pass
443	17.0 - 23.0% of mass 442	10889	14.9	(19.7) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ6838-IC6838	Z138897.D	06/20/19	00:43	00:20	Initial cal 100
EZ6838-IC6838	Z138898.D	06/20/19	01:37	01:14	Initial cal 80
EZ6838-ICC6838	Z138899.D	06/20/19	02:04	01:41	Initial cal 50
EZ6838-IC6838	Z138900.D	06/20/19	02:31	02:08	Initial cal 25
EZ6838-IC6838	Z138901.D	06/20/19	02:58	02:35	Initial cal 10
EZ6838-IC6838	Z138902.D	06/20/19	03:25	03:02	Initial cal 5
EZ6838-IC6838	Z138903.D	06/20/19	03:52	03:29	Initial cal 2
EZ6838-IC6838	Z138904.D	06/20/19	04:19	03:56	Initial cal 1
EZ6838-ICV6838	Z138905.D	06/20/19	04:46	04:23	Initial cal verification 50
EZ6838-ICV6838	Z138906.D	06/20/19	05:13	04:50	Initial cal verification 50
EZ6838-ICV6838	Z138907.D	06/20/19	05:40	05:17	Initial cal verification 50
EZ6838-ICV6838	Z138908.D	06/20/19	06:07	05:44	Initial cal verification 50
EZ6838-ICV6838	Z138909.D	06/20/19	06:34	06:11	Initial cal verification 50
EZ6838-ICV6838	Z138910.D	06/20/19	07:01	06:38	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-DFTPP
Lab File ID: Z138954.D
Instrument ID: GCMSZ
Injection Date: 06/21/19
Injection Time: 12:50

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	19922	40.6		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	23447	47.8		Pass
70	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
127	40.0 - 60.0% of mass 198	26499	54.1		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	49013	100.0		Pass
199	5.0 - 9.0% of mass 198	3399	6.93		Pass
275	10.0 - 30.0% of mass 198	12474	25.5		Pass
365	1.0 - 100.0% of mass 198	2115	4.32		Pass
441	Present, but less than mass 443	6097	12.4	(80.0) [b]	Pass
442	40.0 - 100.0% of mass 198	39192	80.0		Pass
443	17.0 - 23.0% of mass 442	7619	15.5	(19.4) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ6841-CC6838	Z138956.D	06/21/19	13:32	00:42	Continuing cal 50
EZ6841-CC6787	Z138957.D	06/21/19	13:59	01:09	Continuing cal 50
EZ6841-CC6826	Z138958.D	06/21/19	14:25	01:35	Continuing cal 50
OP20994-MB1	Z138960.D	06/21/19	15:19	02:29	Method Blank
OP21117A-MB1	Z138961.D	06/21/19	15:46	02:56	Method Blank
OP21117-MB1	Z138961.D	06/21/19	15:46	02:56	Method Blank
OP21117-BS1	Z138962.D	06/21/19	16:13	03:23	Blank Spike
OP21117-BSD	Z138963.D	06/21/19	16:40	03:50	Blank Spike Duplicate
OP21060-MB1	Z138964.D	06/21/19	17:06	04:16	Method Blank
ZZZZZZ	Z138965.D	06/21/19	17:33	04:43	(unrelated sample)
ZZZZZZ	Z138966.D	06/21/19	18:00	05:10	(unrelated sample)
ZZZZZZ	Z138967.D	06/21/19	18:27	05:37	(unrelated sample)
ZZZZZZ	Z138968.D	06/21/19	18:54	06:04	(unrelated sample)
ZZZZZZ	Z138969.D	06/21/19	19:20	06:30	(unrelated sample)
ZZZZZZ	Z138970.D	06/21/19	19:47	06:57	(unrelated sample)
ZZZZZZ	Z138971.D	06/21/19	20:14	07:24	(unrelated sample)
ZZZZZZ	Z138972.D	06/21/19	20:41	07:51	(unrelated sample)
JC89576-1	Z138973.D	06/21/19	21:07	08:17	(used for QC only; not part of job JC89788)
ZZZZZZ	Z138974.D	06/21/19	21:34	08:44	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample:	EZ6841-DFTPP	**Injection Date:**	06/21/19
Lab File ID:	Z138954.D	**Injection Time:**	12:50
Instrument ID:	GCMSZ		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
EZ6841-ECC6838	Z138975.D	06/21/19	22:01	09:11	Ending cal 50
EZ6841-ECC6787	Z138976.D	06/21/19	22:27	09:37	Ending cal 50
EZ6841-ECC6826	Z138977.D	06/21/19	22:54	10:04	Ending cal 50

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E3P3624-CC3623	**Injection Date:**	06/21/19
Lab File ID:	3P77298.D	**Injection Time:**	16:21
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	197735	7.15	272319	8.61	433644	10.73	255514	13.41
Upper Limit [a]	395470	7.65	544638	9.11	867288	11.23	511028	13.91
Lower Limit [b]	98868	6.65	136160	8.11	216822	10.23	127757	12.91

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP21127A-MB1 [c]	132113	7.15	93926*	8.61	12497*	10.73	115*	13.40
OP21127A-BS12 [d]	181630	7.15	239498	8.61	384544	10.73	66091*	13.41
OP21127A-BSD12	194654	7.14	253193	8.60	418829	10.73	204038	13.40
OP21044A-MB1	240670	7.14	329150	8.60	548059	10.73	299924	13.40
OP21044A-BS12	218413	7.14	288562	8.60	488165	10.73	248455	13.40
OP20969A-MB1	225883	7.14	315958	8.61	509471	10.73	321600	13.40
ZZZZZZ	226103	7.14	289348	8.61	484574	10.73	234443	13.41
ZZZZZZ	204483	7.14	270238	8.61	452898	10.73	267237	13.40
ZZZZZZ	203024	7.14	259141	8.60	447034	10.73	254869	13.40
ZZZZZZ	192517	7.14	246978	8.60	419264	10.73	204948	13.40
ZZZZZZ	186572	7.14	237549	8.60	414187	10.73	221005	13.40
ZZZZZZ	176794	7.14	218401	8.60	371937	10.73	200140	13.40
ZZZZZZ	168077	7.14	209049	8.60	356591	10.73	181273	13.40
ZZZZZZ	167428	7.14	209681	8.60	369967	10.73	208982	13.40
ZZZZZZ	265504	7.15	403930	8.60	656644	10.73	434570	13.40
ZZZZZZ	247290	7.14	345608	8.60	580316	10.73	408548	13.40
ZZZZZZ	248251	7.14	345328	8.60	587772	10.73	392952	13.40
ZZZZZZ	238039	7.14	328541	8.60	550222	10.73	365525	13.40
ZZZZZZ	209069	7.14	291046	8.61	481793	10.73	325331	13.40
ZZZZZZ	206721	7.14	277612	8.61	455893	10.73	303871	13.40
ZZZZZZ	235043	7.14	323165	8.60	538355	10.72	370413	13.40
ZZZZZZ	236191	7.14	340153	8.61	578501	10.74	348044	13.41
ZZZZZZ	280011	7.15	382922	8.61	593361	10.73	405862	13.40
ZZZZZZ	213131	7.15	289365	8.61	498668	10.73	361362	13.40
ZZZZZZ	184325	7.16	265635	8.62	453928	10.73	316517	13.41
ZZZZZZ	190365	7.16	322492	8.62	450985	10.74	331903	13.41

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) corr-re-inject, istds low

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E3P3624-CC3623	**Injection Date:**	06/21/19
Lab File ID:	3P77298.D	**Injection Time:**	16:21
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT

(d) corr-rr, low istd/rec out

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E3P3626-CC3623	**Injection Date:**	06/24/19
Lab File ID:	3P77347.D	**Injection Time:**	22:36
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	167894	7.12	237373	8.58	386919	10.70	268489	13.38
Upper Limit [a]	335788	7.62	474746	9.08	773838	11.20	536978	13.88
Lower Limit [b]	83947	6.62	118687	8.08	193460	10.20	134245	12.88

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP21117A-MB1	124079	7.12	169311	8.59	284471	10.70	193661	13.38
OP21117A-BS12	130137	7.12	177784	8.58	298107	10.70	200726	13.38
OP21117A-BSD12	116243	7.12	156684	8.58	260140	10.70	173277	13.38
OP21144A-MB1	121744	7.12	168388	8.58	280647	10.71	199502	13.38
OP21144A-BS12	116350	7.12	158986	8.58	266464	10.70	185667	13.38
OP21144A-BSD12	120278	7.12	163769	8.58	269983	10.70	186875	13.38
OP21174A-MB1	108920	7.12	145161	8.58	251313	10.70	170798	13.38
OP21174A-BS12	116544	7.12	159852	8.58	270411	10.70	189590	13.38
OP21174A-BSD12	121134	7.12	170119	8.58	277217	10.70	191006	13.38
OP21175A-MB1	113469	7.12	151164	8.58	264143	10.70	180740	13.38
OP21175A-BS12	120364	7.12	169985	8.58	282144	10.70	195152	13.38
OP21175A-BSD12	104725	7.12	141990	8.59	244649	10.70	168032	13.38
ZZZZZZ	123007	7.12	175596	8.58	297720	10.70	208560	13.38
ZZZZZZ	122056	7.12	170457	8.59	296303	10.70	207835	13.38
ZZZZZZ	127273	7.12	169883	8.59	299374	10.70	221375	13.38
ZZZZZZ	129754	7.12	186639	8.58	314564	10.70	219279	13.38
ZZZZZZ	127974	7.12	174713	8.59	315559	10.70	221854	13.38
ZZZZZZ	123935	7.12	170221	8.58	289055	10.70	199981	13.38
ZZZZZZ	122741	7.12	164167	8.58	284467	10.70	197873	13.38
ZZZZZZ	125449	7.12	162771	8.59	291953	10.70	204125	13.38
ZZZZZZ	118753	7.12	157406	8.58	279561	10.70	200606	13.38
ZZZZZZ	121983	7.12	166300	8.59	290106	10.70	202006	13.38
ZZZZZZ	136382	7.12	192410	8.58	339009	10.70	237761	13.38
ZZZZZZ	134633	7.12	188685	8.58	311126	10.70	217872	13.38
ZZZZZZ	148517	7.12	205365	8.58	345500	10.71	239506	13.38
ZZZZZZ	157943	7.13	230384	8.59	394955	10.72	289528	13.39

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E3P3631-CC3623	**Injection Date:**	06/27/19
Lab File ID:	3P77473.D	**Injection Time:**	10:10
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	227737	7.07	326880	8.53	538810	10.65	392744	13.31
Upper Limit [a]	455474	7.57	653760	9.03	1077620	11.15	785488	13.81
Lower Limit [b]	113869	6.57	163440	8.03	269405	10.15	196372	12.81

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP21176A-MB1	172619	7.07	227819	8.53	380838	10.65	278864	13.39
OP21176A-BS12	198393	7.07	267699	8.53	441126	10.65	281591	13.32
OP21176A-MSA	211295	7.07	274356	8.53	463906	10.65	326374	13.32
OP21176A-MSDA	193880	7.07	253684	8.53	430053	10.65	307386	13.32
OP21044A-MSA	212007	7.07	285285	8.53	471235	10.65	332623	13.32
OP21044A-MSDA	221137	7.07	299893	8.53	488797	10.65	341740	13.32
JC90462-14	206526	7.07	273967	8.53	464867	10.65	340982	13.32

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E4M3947-CC3886	**Injection Date:**	06/21/19
Lab File ID:	4M85080.D	**Injection Time:**	09:06
Instrument ID:	GCMS4M	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	37998	6.83	40888	8.29	68790	10.41	53531	13.09
Upper Limit [a]	75996	7.33	81776	8.79	137580	10.91	107062	13.59
Lower Limit [b]	18999	6.33	20444	7.79	34395	9.91	26766	12.59

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP21024A-MB1	44434	6.83	49679	8.30	85322	10.42	62961	13.10
OP21024A-BS1	41078	6.83	44746	8.30	74182	10.41	54975	13.09
OP21024A-BSD	39852	6.83	42813	8.30	71051	10.41	53637	13.09
OP21044A-MB1	46323	6.83	50216	8.30	79867	10.42	57316	13.09
ZZZZZZ	38664	6.83	42622	8.30	68406	10.42	51685	13.09
ZZZZZZ	47031	6.83	46782	8.30	77891	10.42	63245	13.10
JC89788-3	42278	6.84	45263	8.30	74840	10.42	55168	13.10
ZZZZZZ	86915*	6.84	58432	8.30	81854	10.42	64059	13.10
ZZZZZZ	44486	6.84	52618	8.31	82078	10.42	64181	13.09
ZZZZZZ	55891	6.85	103019*	8.33	102195	10.44	71805	13.10
ZZZZZZ	51017	6.83	56531	8.30	94270	10.41	72539	13.09
ZZZZZZ	46594	6.83	51148	8.30	85957	10.42	65414	13.09
ZZZZZZ	46011	6.83	49733	8.30	82993	10.42	62503	13.09
ZZZZZZ	46169	6.84	50971	8.30	85291	10.41	63768	13.09
ZZZZZZ	47855	6.83	52369	8.30	89355	10.41	64940	13.09
ZZZZZZ	46236	6.83	50397	8.30	84659	10.42	62133	13.09
ZZZZZZ	45153	6.83	49042	8.30	83635	10.41	60818	13.09
ZZZZZZ	44794	6.83	48371	8.30	82868	10.42	60026	13.09
ZZZZZZ	45243	6.83	49793	8.30	83824	10.41	60949	13.09
ZZZZZZ	45913	6.83	50243	8.30	86077	10.41	60675	13.09

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	E4M3948-CC3886	**Injection Date:**	06/22/19
Lab File ID:	4M85116.D	**Injection Time:**	00:27
Instrument ID:	GCMS4M	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	48291	6.82	53749	8.28	91344	10.40	70756	13.08
Upper Limit [a]	96582	7.32	107498	8.78	182688	10.90	141512	13.58
Lower Limit [b]	24146	6.32	26875	7.78	45672	9.90	35378	12.58

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP21117A-MB1	34118	6.82	39235	8.28	65184	10.40	50975	13.08
OP21117A-BS12	36286	6.82	40103	8.28	66743	10.40	52159	13.08
OP21117A-BSD12	34005	6.82	37165	8.28	62184	10.40	47786	13.08
OP20974A-MB1	38095	6.82	42028	8.28	73168	10.40	48392	13.08
OP20974A-BS1	32341	6.82	36688	8.28	65303	10.40	48710	13.08
OP20974A-BSD	32881	6.82	36380	8.28	64052	10.40	47581	13.08
ZZZZZZ	38237	6.82	41905	8.28	71268	10.40	52994	13.08
ZZZZZZ	37798	6.82	41518	8.28	72610	10.40	51262	13.08
ZZZZZZ	36763	6.82	40167	8.28	70731	10.40	48404	13.08
ZZZZZZ	44935	6.82	50647	8.29	90681	10.41	67098	13.09
ZZZZZZ	42070	6.82	47512	8.28	84585	10.40	60832	13.08
ZZZZZZ	39746	6.82	44935	8.28	79202	10.41	56613	13.08
JC89788-4	35846	6.82	40857	8.28	70439	10.40	52509	13.08
JC89788-1	34441	6.82	38307	8.28	65303	10.40	48538	13.08
JC89788-2	35222	6.82	39761	8.28	70336	10.41	53564	13.08
JC89788-5	31668	6.82	35666	8.28	62494	10.40	47593	13.08
JC89788-6	33287	6.82	37482	8.28	66201	10.40	50250	13.08
ZZZZZZ	33360	6.82	38074	8.28	67146	10.40	52883	13.08
ZZZZZZ	32948	6.82	37436	8.29	66106	10.40	52037	13.08
ZZZZZZ	33276	6.82	37749	8.28	66991	10.40	52384	13.08
ZZZZZZ	36683	6.82	40945	8.28	68276	10.40	53804	13.08
ZZZZZZ	37882	6.82	42623	8.28	74084	10.40	60079	13.08
ZZZZZZ	36540	6.82	41867	8.28	72493	10.40	58875	13.08
ZZZZZZ	32595	6.82	36770	8.28	63610	10.40	50303	13.08
ZZZZZZ	35377	6.82	40124	8.28	69736	10.40	54280	13.08
ZZZZZZ	34913	6.82	39601	8.28	68632	10.40	54753	13.08
ZZZZZZ	41211	6.82	51799	8.29	75692	10.41	60497	13.09

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Check Std:	EZ6841-CC6838	**Injection Date:**	06/21/19
Lab File ID:	Z138956.D	**Injection Time:**	13:32
Instrument ID:	GCMSZ	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	64518	4.54	247175	5.45	137853	6.78	277461	8.31	284816	12.05	261963	14.12
Upper Limit [a]	129036	5.04	494350	5.95	275706	7.28	554922	8.81	569632	12.55	523926	14.62
Lower Limit [b]	32259	4.04	123588	4.95	68927	6.28	138731	7.81	142408	11.55	130982	13.62
Lab Sample ID	**IS 1 AREA**	**RT**	**IS 2 AREA**	**RT**	**IS 3 AREA**	**RT**	**IS 4 AREA**	**RT**	**IS 5 AREA**	**RT**	**IS 6 AREA**	**RT**
OP20994-MB1	64371	4.53	227516	5.45	123777	6.78	241825	8.31	236105	12.04	238519	14.11
OP21117A-MB1	72020	4.53	265888	5.45	161925	6.78	299564	8.31	279047	12.04	310470	14.11
OP21117-MB1	72020	4.53	265888	5.45	161925	6.78	299564	8.31	279047	12.04	310470	14.11
OP21117-BS1	73235	4.53	255956	5.45	154073	6.78	279540	8.31	276589	12.05	271773	14.12
OP21117-BSD	71551	4.53	254936	5.45	152212	6.78	279082	8.31	282732	12.05	281660	14.12
OP21060-MB1	79337	4.53	284169	5.45	156653	6.78	313856	8.31	309933	12.04	308622	14.11
ZZZZZZ	73097	4.53	264276	5.45	163768	6.78	303242	8.31	282128	12.04	316326	14.11
ZZZZZZ	76266	4.53	277142	5.45	168997	6.78	317850	8.31	298963	12.05	338162	14.11
ZZZZZZ	64472	4.53	235831	5.45	143995	6.78	269118	8.30	254710	12.04	291254	14.11
ZZZZZZ	67108	4.53	247512	5.45	153494	6.78	285509	8.31	262806	12.04	295147	14.11
ZZZZZZ	73370	4.53	259124	5.45	160476	6.78	302998	8.31	279041	12.04	316777	14.11
ZZZZZZ	67075	4.53	249723	5.45	154011	6.78	284756	8.30	265644	12.04	297049	14.11
ZZZZZZ	66855	4.53	243010	5.45	150370	6.78	276002	8.31	263856	12.04	294227	14.11
ZZZZZZ	71510	4.53	242380	5.45	143735	6.78	255507	8.31	210100	12.05	233451	14.12
JC89576-1	78098	4.53	288697	5.45	167494	6.78	291607	8.31	245114	12.05	264110	14.12
ZZZZZZ	79896	4.53	273446	5.45	140985	6.78	256940	8.31	224690	12.05	238823	14.12
EZ6841-ECC6838	60058	4.54	229926	5.46	127449	6.78	251085	8.31	228580	12.06	216371	14.13
EZ6841-ECC6787	69385	4.53	255797	5.45	143450	6.78	290256	8.31	259717	12.05	238073	14.12
EZ6841-ECC6826	70008	4.53	264247	5.45	147814	6.78	296069	8.31	279771	12.05	244855	14.12

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Method: SW846 8270D BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
JC89788-1	4M85131.D	67	82	61
JC89788-2	4M85132.D	67	81	84
JC89788-3	4M85092A.D	63	71	82
JC89788-4	4M85130.D	68	83	104
JC89788-5	4M85133.D	82	99	124
JC89788-6	4M85134.D	61	76	121
OP21044A-BS12	3P77303.D	80	72	103
OP21044A-MB1	4M85086.D	79	89	139* [a]
OP21044A-MB1	3P77302.D	92	79	110
OP21044A-MSA	3P77480.D	79	66	94
OP21044A-MSDA	3P77481.D	88	71	102
OP21117A-BS12	4M85119.D	89	101	148* [b]
OP21117A-BS12	3P77350.D	104	88	111
OP21117A-BSD12	4M85120.D	91	102	141* [b]
OP21117A-BSD12	3P77351.D	106	92	109
OP21117A-MB1	4M85118.D	88	100	136* [b]
OP21117A-MB1	3P77349.D	106	88	103
OP21117A-MB1	Z138961.D	88	80	83

Surrogate Compounds	Recovery Limits
S1 = Nitrobenzene-d5	29-124%
S2 = 2-Fluorobiphenyl	23-122%
S3 = Terphenyl-d14	22-130%

(a) Outside of in house control limits.
(b) Outside of control limits.

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-ICC3623
Lab FileID: 3P77287.D

Response Factor Report MSGC3P

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

Calibration Files
2.5 =3p77286.D 1.0 =3p77287.D 0.5 =3p77288.D 0.2 =3p77289.D
0.1 =3p77290.D 0.05=3p77291.D 0.02=3p77292.D 0.01=3p77293.D
5 =3p77285.D = = =

Compound	2.5	1.0	0.5	0.2	0.1	0.05	0.02	0.01	5	Avg	%RSD
1) I 1-Methylnaphthalene-d	----------ISTD----------										
2) 1,4-dioxane	0.318	0.282	0.304	0.291	0.268	0.309	0.293		0.285	0.294	5.42
3) 2-Fluorophenol	0.576	0.584	0.613	0.611	0.588	0.550	0.491	0.469	0.541	0.558	9.10
4) Phenol-d5	0.750	0.746	0.776	0.753	0.711	0.673	0.566	0.549	0.693	0.691	11.90
5) Phenol	0.803	0.810	0.849	0.853	0.829	0.749	0.665	0.649	0.746	0.772	9.81
6) bis(2-Chloroethyl)ether	0.640	0.616	0.643	0.672	0.705	0.584	0.525	0.792	0.604	0.642	11.87
7) Nitrobenzene-d5	0.706	0.703	0.721	0.701	0.665	0.648	0.582	0.581	0.670	0.664	7.88
8) Naphthalene	2.104	2.092	2.164	2.177	2.125	2.101	1.943	1.969	2.008	2.076	4.02
9) Hexachlorobutadiene	0.387	0.382	0.404	0.418	0.425	0.416	0.393	0.445	0.368	0.404	5.99
10) 2-Methylnaphthalene	1.107	1.135	1.169	1.171	1.169	1.144	1.123	1.007	1.081	1.123	4.73
11) 1-Methylnaphthalene	1.234	1.265	1.297	1.357	1.313	1.314	1.342	1.180	1.206	1.279	4.79
12) I Fluorene-d10	----------ISTD----------										
13) 2-Fluorobiphenyl	0.971	1.005	1.088	1.166	1.241	1.141	1.135	1.169	0.880	1.088	10.50
14) Acenaphthylene	1.264	1.211	1.174	1.162	1.206	1.063	1.054	1.129	1.364	1.181	8.20
15) Acenaphthene	0.949	0.930	0.950	0.967	1.012	0.931	0.921	0.917	0.973	0.950	3.19
16) 4,6-dinitro-2-methylphenol	0.176	0.131	0.101	0.080	0.072				0.203	0.127	41.73
---- Quadratic regression ---- Coefficient = 0.9994											
Response Ratio = -0.02306 + 0.15159 *A + 0.00889 *A^2											
17) Fluorene	1.034	0.971	0.987	1.017	1.108	1.011	1.081	1.278	1.083	1.063	8.72
18) 2,4,6-Tribromophenol	0.111	0.104	0.102	0.089	0.078	0.066			0.115	0.095	18.87
19) I Fluoranthene-d10	----------ISTD----------										
20) Hexachlorobenzene	0.179	0.177	0.181	0.193	0.183	0.179	0.192	0.191	0.159	0.182	5.84
21) Pentachlorophenol	0.112	0.099	0.085	0.075	0.069	0.066			0.105	0.087	21.29

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-ICC3623
Lab FileID: 3P77287.D

```
            ---- Quadratic regression ----  Coefficient =  0.9990
              Response Ratio = -0.01084 + 0.11829 *A + -0.00173 *A^2

22)  Phenanthrene
          0.945 0.940 0.942 0.934 1.043 0.855 0.818 0.868 0.886        0.915    7.22
23)  Anthracene
          0.863 0.812 0.773 0.760 0.755 0.623 0.597 0.550 0.844        0.731   15.48
24)  Fluoranthene
          1.037 1.032 1.057 1.086 1.089 1.077 1.147 1.078 0.980        1.065    4.36
25)  Pyrene
          1.054 1.009 0.999 0.954 0.917 0.885 0.872 0.935 1.025        0.961    6.66
26)  Terphenyl-d14
          0.579 0.599 0.617 0.615 0.585 0.541 0.505 0.484 0.542        0.563    8.51
27)  Benzo[a]anthracene
          0.762 0.651 0.554 0.483 0.457 0.451 0.454 0.545 0.848        0.578   25.17
            ---- Quadratic regression ----  Coefficient =  0.9997
              Response Ratio = -0.00577 + 0.66200 *A + 0.15382 *A^2

28)  Chrysene
          1.013 1.045 1.017 0.886 0.926 0.871 0.842 0.915 0.971        0.943    7.62

29) I   Benzo(a)pyrene-d12    ----------------ISTD---------------------
30)  Benzo[b]fluoranthene
          1.661 1.594 1.481 1.318 1.195 1.099 1.131       1.687        1.396   17.25
31)  Benzo[k]fluoranthene
          1.625 1.514 1.641 1.584 1.577 1.264 1.377       1.414        1.499    8.99
32)  Benzo[a]pyrene
          1.406 1.378 1.517 1.668 1.733 1.757 1.437       1.365        1.533   10.64
33)  Indeno[1,2,3-cd]pyrene
          1.425 1.219 1.159 1.051 0.913 0.833 0.987       1.427        1.127   19.74
34)  Dibenz[a,h]anthracene
          1.208 1.056 1.001 0.881 0.622 0.719             1.201        0.956   23.75
            ---- Quadratic regression ----  Coefficient =  0.9995
              Response Ratio = -0.01785 + 1.20778 *A + 0.00806 *A^2

35)  Benzo[g,h,i]perylene
          1.212 1.170 1.161 1.035 1.016 0.822 0.878       1.190        1.060   14.00
---------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M3P3623SIM.M        Mon Jun 24 07:51:47 2019
```

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-ICV3623
Lab FileID: 3P77294.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3623\3p77294.D Vial: 11
Acq On : 21 Jun 2019 7:38 am Operator: chriss2
Sample : icv3623-5 Inst : MSGC3P
Misc : op20672a,e3p3623,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Jun 21 11:41:08 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	129	0.00	7.14
5		Phenol	0.772	0.903	-17.0	144	0.00	4.88
12	I	Fluorene-d10	1.000	1.000	0.0	124	0.00	8.61
		----------	True	Calc.	% Drift	----------		
16	t	4,6-dinitro-2-methylpheno	5.000	5.500	-10.0	153	0.02	8.69
19	I	Fluoranthene-d10	1.000	1.000	0.0	124	0.00	10.73
		----------	True	Calc.	% Drift	----------		
21	t	Pentachlorophenol	5.000	6.224	-24.5	169	0.00	9.39

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p77287.D M3P3623SIM.M Fri Jun 21 11:45:23 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-ICV3623
Lab FileID: 3P77295.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3623\3p77295.D Vial: 12
Acq On : 21 Jun 2019 8:00 am Operator: chriss2
Sample : icv3623-1 Inst : MSGC3P
Misc : op20672a,e3p3623,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Fri Jun 21 11:41:08 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	83	0.00	7.15
2	t	1,4-dioxane	0.294	0.247	16.0	73	-0.01	2.26
6	t	bis(2-Chloroethyl)ether	0.642	0.701	-9.2	95	0.00	4.91
8	t	Naphthalene	2.076	2.318	-11.7	92	0.00	6.40
9	t	Hexachlorobutadiene	0.404	0.432	-6.9	94	0.00	6.55
10	t	2-Methylnaphthalene	1.123	1.247	-11.0	91	0.00	7.08
12	I	Fluorene-d10	1.000	1.000	0.0	75	0.00	8.60
14	t	Acenaphthylene	1.181	1.367	-15.7	85	0.00	7.96
15	t	Acenaphthene	0.950	1.072	-12.8	87	0.00	8.14
		----------	AvgRF	CCRF	% Dev			
17	t	Fluorene	1.063	1.210	-13.8	94	0.00	8.63
19	I	Fluoranthene-d10	1.000	1.000	0.0	80	0.00	10.73
20	t	Hexachlorobenzene	0.182	0.181	0.5	81	0.00	9.18
		----------	AvgRF	CCRF	% Dev			
22	t	Phenanthrene	0.915	1.141	-24.7	97	0.00	9.58
23	t	Anthracene	0.731	0.823	-12.6	81	0.00	9.63
24	t	Fluoranthene	1.065	1.115	-4.7	86	0.00	10.74
25	t	Pyrene	0.961	1.075	-11.9	85	0.00	10.97
		----------	True	Calc.	% Drift			
27	t	Benzo[a]anthracene	1.000	1.070	-7.0	89	0.00	12.14
		----------	AvgRF	CCRF	% Dev			
28	t	Chrysene	0.943	1.105	-17.2	84	0.00	12.18
29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	80	0.00	13.41
30	t	Benzo[b]fluoranthene	1.396	1.354	3.0	68	0.00	13.14
31	t	Benzo[k]fluoranthene	1.499	1.590	-6.1	84	0.00	13.16
32	t	Benzo[a]pyrene	1.533	1.356	11.5	79	0.00	13.43
33	t	Indeno[1,2,3-cd]pyrene	1.127	1.164	-3.3	76	0.00	14.59

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3623-ICV3623
Lab FileID: 3P77295.D

		True	Calc.	% Drift			
34 t	Dibenz[a,h]anthracene	1.000	0.834	16.6	71	0.00	14.62

		AvgRF	CCRF	% Dev			
35 t	Benzo[g,h,i]perylene	1.060	1.201	-13.3	82	0.00	14.91

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p77287.D M3P3623SIM.M Fri Jun 21 11:45:25 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3624-CC3623
Lab FileID: 3P77298.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3624\3p77298.D Vial: 2
Acq On : 21 Jun 2019 4:21 pm Operator: chriss2
Sample : cc3623-1 Inst : MSGC3P
Misc : op21127a,e3p3624,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Jun 24 07:50:43 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	84	0.00	7.15
2	t	1,4-dioxane	0.294	0.289	1.7	85	-0.02	2.26
3	S	2-Fluorophenol	0.558	0.553	0.9	79	0.00	3.95
4	S	Phenol-d5	0.691	0.711	-2.9	80	0.00	4.86
5		Phenol	0.772	0.763	1.2	79	0.00	4.87
6	t	bis(2-Chloroethyl)ether	0.642	0.589	8.3	80	0.00	4.91
7	S	Nitrobenzene-d5	0.664	0.687	-3.5	82	0.00	5.68
8	t	Naphthalene	2.076	2.001	3.6	80	0.00	6.40
9	t	Hexachlorobutadiene	0.404	0.387	4.2	85	0.00	6.55
10	t	2-Methylnaphthalene	1.123	1.068	4.9	79	0.00	7.08
11	t	1-Methylnaphthalene	1.279	1.208	5.6	80	0.00	7.18
12	I	Fluorene-d10	1.000	1.000	0.0	81	0.00	8.61
13	S	2-Fluorobiphenyl	1.088	1.031	5.2	84	0.00	7.45
14	t	Acenaphthylene	1.181	1.141	3.4	77	0.00	7.96
15	t	Acenaphthene	0.950	0.922	2.9	81	0.00	8.14
		----------	True	Calc.	% Drift		----------	
16	t	4,6-dinitro-2-methylpheno	5.000	4.585	8.3	81	0.02	8.69
		----------	AvgRF	CCRF	% Dev		----------	
17	t	Fluorene	1.063	0.999	6.0	84	0.00	8.63
18	S	2,4,6-Tribromophenol	0.095	0.112	-17.9	87	0.00	8.88
19	I	Fluoranthene-d10	1.000	1.000	0.0	83	0.00	10.73
20	t	Hexachlorobenzene	0.182	0.187	-2.7	87	0.00	9.19
		----------	True	Calc.	% Drift		----------	
21	t	Pentachlorophenol	5.000	5.001	-0.0	90	0.00	9.39
		----------	AvgRF	CCRF	% Dev		----------	
22	t	Phenanthrene	0.915	1.043	-14.0	92	0.00	9.58
23	t	Anthracene	0.731	0.793	-8.5	81	0.00	9.63
24	t	Fluoranthene	1.065	1.040	2.3	83	0.00	10.74
25	t	Pyrene	0.961	1.023	-6.5	84	0.00	10.97
26	S	Terphenyl-d14	0.563	0.590	-4.8	81	0.00	11.13
		----------	True	Calc.	% Drift		----------	
27	t	Benzo[a]anthracene	1.000	0.882	11.8	75	0.00	12.14
		----------	AvgRF	CCRF	% Dev		----------	
28	t	Chrysene	0.943	1.006	-6.7	80	0.00	12.18

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3624-CC3623
Lab FileID: 3P77298.D

29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	83	0.00	13.41
30	t	Benzo[b]fluoranthene	1.396	1.508	-8.0	78	0.00	13.13
31	t	Benzo[k]fluoranthene	1.499	1.534	-2.3	84	0.00	13.16
32	t	Benzo[a]pyrene	1.533	1.413	7.8	85	0.00	13.43
33	t	Indeno[1,2,3-cd]pyrene	1.127	1.187	-5.3	81	0.00	14.59
		----------	True	Calc.	% Drift	----------		
34	t	Dibenz[a,h]anthracene	1.000	0.915	8.5	81	0.00	14.61
		----------	AvgRF	CCRF	% Dev	----------		
35	t	Benzo[g,h,i]perylene	1.060	1.101	-3.9	78	0.00	14.91

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p77287.D M3P3623SIM.M Mon Jun 24 09:22:37 2019

6.8.4

6

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3626-CC3623
Lab FileID: 3P77347.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3626\3p77347.D Vial: 2
Acq On : 24 Jun 2019 10:36 pm Operator: chriss2
Sample : cc3623-1 Inst : MSGC3P
Misc : op21144a,e3p3626,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Jun 24 07:50:43 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	71	-0.03	7.12
2	t	1,4-dioxane	0.294	0.279	5.1	70	-0.06	2.22
3	S	2-Fluorophenol	0.558	0.571	-2.3	69	-0.03	3.92
4	S	Phenol-d5	0.691	0.732	-5.9	70	-0.02	4.84
5		Phenol	0.772	0.791	-2.5	69	-0.03	4.85
6	t	bis(2-Chloroethyl)ether	0.642	0.627	2.3	72	-0.02	4.89
7	S	Nitrobenzene-d5	0.664	0.698	-5.1	70	-0.02	5.66
8	t	Naphthalene	2.076	2.046	1.4	69	-0.03	6.38
9	t	Hexachlorobutadiene	0.404	0.364	9.9	68	-0.02	6.52
10	t	2-Methylnaphthalene	1.123	1.117	0.5	70	-0.02	7.06
11	t	1-Methylnaphthalene	1.279	1.263	1.3	71	-0.02	7.16
12	I	Fluorene-d10	1.000	1.000	0.0	71	-0.03	8.58
13	S	2-Fluorobiphenyl	1.088	0.990	9.0	70	-0.03	7.43
14	t	Acenaphthylene	1.181	1.229	-4.1	72	-0.03	7.94
15	t	Acenaphthene	0.950	0.934	1.7	71	-0.03	8.11
		----------	True	Calc.	% Drift		----------	
16	t	4,6-dinitro-2-methylpheno	5.000	5.028	-0.6	79	0.00	8.67
		----------	AvgRF	CCRF	% Dev		----------	
17	t	Fluorene	1.063	1.003	5.6	73	-0.02	8.61
18	S	2,4,6-Tribromophenol	0.095	0.106	-11.6	72	-0.03	8.85
19	I	Fluoranthene-d10	1.000	1.000	0.0	74	-0.02	10.70
20	t	Hexachlorobenzene	0.182	0.167	8.2	70	-0.03	9.16
		----------	True	Calc.	% Drift		----------	
21	t	Pentachlorophenol	5.000	3.552	29.0#	55	-0.03	9.36
		----------	AvgRF	CCRF	% Dev		----------	
22	t	Phenanthrene	0.915	0.923	-0.9	72	-0.02	9.55
23	t	Anthracene	0.731	0.833	-14.0	76	-0.02	9.60
24	t	Fluoranthene	1.065	1.023	3.9	73	-0.02	10.72
25	t	Pyrene	0.961	1.020	-6.1	75	-0.03	10.94
26	S	Terphenyl-d14	0.563	0.588	-4.4	72	-0.02	11.11
		----------	True	Calc.	% Drift		----------	
27	t	Benzo[a]anthracene	1.000	1.177	-17.7	92	-0.03	12.11
		----------	AvgRF	CCRF	% Dev		----------	
28	t	Chrysene	0.943	0.906	3.9	64	-0.03	12.15

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3626-CC3623
Lab FileID: 3P77347.D

29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	87	-0.03	13.38
30	t	Benzo[b]fluoranthene	1.396	1.578	-13.0	86	-0.03	13.10
31	t	Benzo[k]fluoranthene	1.499	1.280	14.6	73	-0.03	13.12
32	t	Benzo[a]pyrene	1.533	1.265	17.5	80	-0.03	13.40
33	t	Indeno[1,2,3-cd]pyrene	1.127	1.378	-22.3#	98	-0.04	14.55
		----------	True	Calc.	% Drift	----------		
34	t	Dibenz[a,h]anthracene	1.000	1.051	-5.1	99	-0.05	14.56
		----------	AvgRF	CCRF	% Dev	----------		
35	t	Benzo[g,h,i]perylene	1.060	1.159	-9.3	86	-0.04	14.87

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p77287.D M3P3623SIM.M Tue Jun 25 10:34:51 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3631-CC3623
Lab FileID: 3P77473.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\E3P3631\3p77473.D Vial: 2
Acq On : 27 Jun 2019 10:10 am Operator: HENNYS
Sample : cc3623-1 Inst : MSGC3P
Misc : op21044a,e3p3631,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M (RTE Integrator)
Title : Semi Volatile Extractables by GC/MS
Last Update : Mon Jun 24 07:50:43 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	96	-0.08	7.07
2	t	1,4-dioxane	0.294	0.279	5.1	95	-0.12	2.15
3	S	2-Fluorophenol	0.558	0.580	-3.9	95	-0.10	3.85
4	S	Phenol-d5	0.691	0.767	-11.0	99	-0.10	4.77
5		Phenol	0.772	0.832	-7.8	99	-0.10	4.78
6	t	bis(2-Chloroethyl)ether	0.642	0.734	-14.3	115	-0.08	4.83
7	S	Nitrobenzene-d5	0.664	0.740	-11.4	101	-0.07	5.61
8	t	Naphthalene	2.076	2.150	-3.6	99	-0.08	6.33
9	t	Hexachlorobutadiene	0.404	0.389	3.7	98	-0.08	6.47
10	t	2-Methylnaphthalene	1.123	1.136	-1.2	96	-0.07	7.01
11	t	1-Methylnaphthalene	1.279	1.269	0.8	97	-0.08	7.10
12	I	Fluorene-d10	1.000	1.000	0.0	98	-0.08	8.53
13	S	2-Fluorobiphenyl	1.088	0.989	9.1	96	-0.08	7.38
14	t	Acenaphthylene	1.181	1.354	-14.6	109	-0.08	7.89
15	t	Acenaphthene	0.950	0.959	-0.9	101	-0.08	8.06
		----------	True	Calc.	% Drift		----------	
16	t	4,6-dinitro-2-methylpheno	5.000	6.010	-20.2#	134	0.00	8.61
		----------	AvgRF	CCRF	% Dev		----------	
17	t	Fluorene	1.063	1.018	4.2	102	-0.07	8.56
18	S	2,4,6-Tribromophenol	0.095	0.114	-20.0#	107	-0.08	8.80
19	I	Fluoranthene-d10	1.000	1.000	0.0	103	-0.08	10.65
20	t	Hexachlorobenzene	0.182	0.169	7.1	98	-0.08	9.11
		----------	True	Calc.	% Drift		----------	
21	t	Pentachlorophenol	5.000	5.159	-3.2	115	-0.08	9.31
		----------	AvgRF	CCRF	% Dev		----------	
22	t	Phenanthrene	0.915	0.930	-1.6	102	-0.08	9.50
23	t	Anthracene	0.731	0.906	-23.9#	115	-0.08	9.55
24	t	Fluoranthene	1.065	1.027	3.6	102	-0.08	10.67
25	t	Pyrene	0.961	1.091	-13.5	111	-0.08	10.88
26	S	Terphenyl-d14	0.563	0.567	-0.7	97	-0.08	11.05
		----------	True	Calc.	% Drift		----------	
27	t	Benzo[a]anthracene	1.000	1.350	-35.0#	148	-0.08	12.06
		----------	AvgRF	CCRF	% Dev		----------	
28	t	Chrysene	0.943	0.961	-1.9	94	-0.08	12.09

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E3P3631-CC3623
Lab FileID: 3P77473.D

29	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	127	-0.09	13.31
30	t	Benzo[b]fluoranthene	1.396	1.520	-8.9	121	-0.08	13.05
31	t	Benzo[k]fluoranthene	1.499	1.384	7.7	116	-0.08	13.07
32	t	Benzo[a]pyrene	1.533	1.323	13.7	122	-0.09	13.33
33	t	Indeno[1,2,3-cd]pyrene	1.127	1.439	-27.7#	150	-0.13	14.46
		----------	True	Calc.	% Drift	----------		
34	t	Dibenz[a,h]anthracene	1.000	1.053	-5.3	145	-0.14	14.47
		----------	AvgRF	CCRF	% Dev	----------		
35	t	Benzo[g,h,i]perylene	1.060	1.183	-11.6	129	-0.15	14.76

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3p77287.D M3P3623SIM.M Thu Jun 27 14:45:46 2019

6.8.6

6

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-ICC3886
Lab FileID: 4M83371.D

Response Factor Report GCMS4M

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration

Calibration Files
0.05=4m83375.D .2 =4m83373.D 2.5 =4m83370.D .02 =4m83376.D
.1 =4m83374.D 1 =4m83371.D .01 =4m83377.D .5 =4m83372.D
5 =4m83369.D = = =

Compound	0.05	.2	2.5	.02	.1	1	.01	.5	5	Avg	%RSD
1) I 1-Methylnaphthalene-d	----------ISTD----------										
2) 2-Fluorophenol	0.497	0.547	0.540	0.489	0.541	0.516	0.509	0.552	0.527	0.524	4.35
3) Phenol-d5	0.628	0.689	0.682	0.609	0.669	0.649	0.613	0.690	0.675	0.656	4.94
4) Phenol	0.696	0.760	0.744	0.705	0.744	0.710	0.719	0.763	0.740	0.731	3.32
5) bis(2-Chloroethyl)ether	0.500	0.544	0.522	0.528	0.547	0.502	0.503	0.535	0.525	0.523	3.42
6) Nitrobenzene-d5	0.650	0.709	0.664	0.646	0.696	0.655	0.644	0.699	0.652	0.668	3.84
7) Naphthalene	1.778	1.801	1.736	1.741	1.833	1.728	1.835	1.776	1.693	1.769	2.75
8) Hexachlorobutadiene	0.313	0.333	0.308	0.328	0.331	0.299	0.289	0.326	0.297	0.313	5.25
9) 2-Methylnaphthalene	1.057	1.138	1.106	1.158	1.138	1.076	1.066	1.126	1.079	1.105	3.31
10) Hexachlorocyclopentadiene	0.251	0.291	0.331	0.249	0.266	0.312	0.248	0.312	0.333	0.288	12.24
11) 2-Fluorobiphenyl	1.261	1.337	1.240	1.245	1.328	1.224	1.273	1.299	1.210	1.269	3.53
12) I Fluorene-d10	----------ISTD----------										
13) Acenaphthylene	1.633	1.654	1.629	1.586	1.593	1.598	1.643	1.570	1.666	1.619	2.06
14) Acenaphthene	1.022	1.069	1.041	0.975	1.043	1.040	1.016	1.032	1.043	1.031	2.51
15) Dibenzofuran	1.369	1.365	1.407	1.282	1.338	1.329	1.425	1.344	1.424	1.365	3.50
16) Fluorene	1.116	1.188	1.145	1.115	1.190	1.124	1.193	1.157	1.113	1.149	2.99
17) 2,4,6-Tribromophenol	0.162	0.175	0.171	0.158	0.169	0.172	0.157	0.175	0.169	0.168	4.15
18) Hexachlorobenzene	0.391	0.409	0.393	0.397	0.429	0.383	0.389	0.406	0.376	0.397	4.01
19) Pentachlorophenol	0.160	0.181	0.230		0.176	0.215		0.199	0.214	0.196	12.82
20) Phenanthrene	1.607	1.719	1.650	1.765	1.681	1.674	1.745	1.735	1.484	1.673	5.18
21) Anthracene	1.664	1.735	1.645	1.682	1.648	1.657	1.677	1.698	1.526	1.659	3.45
22) I Fluoranthene-d10	----------ISTD----------										
23) Fluoranthene											

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-ICC3886
Lab FileID: 4M83371.D

```
           1.139 1.095 1.052 1.027 1.129 1.044 1.133 1.084 1.032        1.082    4.15
24)  Pyrene
           1.078 1.118 1.094 1.045 1.128 1.085 1.189 1.118 1.081        1.104    3.69
25)  Terphenyl-d14
           0.540 0.576 0.543 0.516 0.569 0.539 0.540 0.575 0.532        0.548    3.79
26)  Benzo[a]anthracene
           0.885 0.922 0.921 0.886 0.938 0.906 0.960 0.931 0.924        0.919    2.63
27)  Chrysene
           0.848 0.920 0.917 0.851 0.926 0.897 0.956 0.940 0.871        0.903    4.29

28) I   Benzo(a)pyrene-d12    ----------------ISTD---------------------
29)  Benzo[b]fluoranthene
           1.418 1.499 1.459 1.426 1.467 1.417 1.615 1.489 1.595        1.487    4.93
30)  Benzo[k]fluoranthene
           1.343 1.441 1.384 1.356 1.438 1.353 1.395 1.354 1.208        1.364    5.05
31)  Benzo[a]pyrene
           1.509 1.375 1.301 1.301 1.507 1.236 1.495 1.318 1.297        1.371    7.70
32)  Indeno[1,2,3-cd]pyrene
           1.404 1.458 1.503 1.380 1.465 1.425 1.462 1.489 1.494        1.453    2.91
33)  Dibenz[a,h]anthracene
           1.148 1.220 1.248 1.131 1.221 1.190 1.235 1.245 1.236        1.208    3.55
34)  Benzo[g,h,i]perylene
           1.138 1.205 1.219 1.154 1.197 1.146 1.135 1.203 1.203        1.178    2.87

35) I   1-Methylnaphthalene-d ----------------ISTD---------------------
36)  1,4-Dioxane
           0.260 0.256 0.244 0.239 0.255 0.229 0.274 0.244 0.262        0.251    5.44
37)  1-Methylnaphthalene
           1.201 1.255 1.207 1.266 1.285 1.188 1.295 1.250 1.170        1.235    3.63

38) I   Fluorene-d10a         ----------------ISTD---------------------
39)  4,6-dinitro-2-methylphenol
           0.080 0.116 0.196       0.098 0.166       0.146 0.209        0.145   33.91
            ---- Quadratic regression ----  Coefficient =  0.9997
              Response Ratio = -0.01568 + 0.18266 *A + 0.00474 *A^2

--------------------------------------------------------------------------------
(#) = Out of Range  ###  Number of calibration levels exceeded format  ###

          M4M3886SIM.M        Tue Apr 23 08:06:59 2019   MANAGER
```

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-ICV3886
Lab FileID: 4M83378.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3886\4m83378.D Vial: 11
Acq On : 22 Apr 2019 5:33 pm Operator: christc2
Sample : icv3886-1.0 Inst : GCMS4M
Misc : op13576a,e4m3886,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Apr 23 07:57:48 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	117	0.00	7.13
5	t	bis(2-Chloroethyl)ether	0.523	0.571	-9.2	133	0.00	4.89
7	t	Naphthalene	1.769	1.935	-9.4	131	0.00	6.38
8	t	Hexachlorobutadiene	0.313	0.342	-9.3	134	0.00	6.52
9	t	2-Methylnaphthalene	1.105	1.276	-15.5	139	0.00	7.07
10	t	Hexachlorocyclopentadiene	0.288	0.300	-4.2	112	0.00	7.23
12	I	Fluorene-d10	1.000	1.000	0.0	117	0.00	8.59
13	t	Acenaphthylene	1.619	1.676	-3.5	123	0.00	7.94
14	t	Acenaphthene	1.031	1.036	-0.5	117	0.00	8.12
15	t	Dibenzofuran	1.365	1.502	-10.0	133	0.00	8.29
16	t	Fluorene	1.149	1.255	-9.2	131	0.00	8.62
18	t	Hexachlorobenzene	0.397	0.413	-4.0	127	0.00	9.17
20	t	Phenanthrene	1.673	1.864	-11.4	131	0.00	9.56
21	t	Anthracene	1.659	1.821	-9.8	129	0.00	9.60
22	I	Fluoranthene-d10	1.000	1.000	0.0	115	0.00	10.72
23	t	Fluoranthene	1.082	1.177	-8.8	129	0.00	10.74
24	t	Pyrene	1.104	1.171	-6.1	124	0.00	10.96
26	t	Benzo[a]anthracene	0.919	0.958	-4.2	121	0.00	12.14
27	t	Chrysene	0.903	0.953	-5.5	122	0.00	12.18
28	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	105	0.00	13.42
29	t	Benzo[b]fluoranthene	1.487	1.436	3.4	106	0.00	13.15
30	t	Benzo[k]fluoranthene	1.364	1.500	-10.0	116	0.00	13.18
31	t	Benzo[a]pyrene	1.371	1.352	1.4	115	0.00	13.45
32	t	Indeno[1,2,3-cd]pyrene	1.453	1.452	0.1	107	0.00	14.63
33	t	Dibenz[a,h]anthracene	1.208	1.156	4.3	102	0.00	14.64
34	t	Benzo[g,h,i]perylene	1.178	1.218	-3.4	111	0.00	14.95
35	I	1-Methylnaphthalene-d10a	1.000	1.000	0.0	117	0.00	7.13
36	t	1,4-Dioxane	0.251	0.213	15.1	109	0.02	2.23

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-ICV3886
Lab FileID: 4M83378.D

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 4m83371.D  M4M3886SIM.M       Tue Apr 23 08:00:47 2019   MANAGER
```

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3886-ICV3886
Lab FileID: 4M83379.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3886\4m83379.D Vial: 12
Acq On : 22 Apr 2019 5:56 pm Operator: christc2
Sample : icv3886-5.0 Inst : GCMS4M
Misc : op13576a,e4m3886,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Apr 23 07:57:48 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	85	0.00	7.13
4	t	Phenol	0.731	0.808	-10.5	97	0.00	4.81
12	I	Fluorene-d10	1.000	1.000	0.0	85	0.00	8.59
19	t	Pentachlorophenol	0.196	0.253	-29.1	101	0.00	9.36
38	I	Fluorene-d10a	1.000	1.000	0.0	85	0.00	8.59
		----------	True	Calc.	% Drift		----------	
39	t	4,6-dinitro-2-methylpheno	5.000	4.755	4.9	86	0.00	8.67

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4m83371.D M4M3886SIM.M Tue Apr 23 08:00:50 2019 MANAGER

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3947-CC3886
Lab FileID: 4M85080.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3947\4m85080.D Vial: 2
Acq On : 21 Jun 2019 9:06 am Operator: krizhkac
Sample : cc3886-1 Inst : GCMS4M
Misc : op13576a,e4m3947,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Apr 23 07:57:48 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	69	0.09	6.83
5	t	bis(2-Chloroethyl)ether	0.523	0.666	-27.3#	92	0.06	4.60
7	t	Naphthalene	1.769	2.033	-14.9	81	0.09	6.09
8	t	Hexachlorobutadiene	0.313	0.320	-2.2	74	0.09	6.23
9	t	2-Methylnaphthalene	1.105	1.211	-9.6	78	0.09	6.77
12	I	Fluorene-d10	1.000	1.000	0.0	69	0.10	8.29
13	t	Acenaphthylene	1.619	1.622	-0.2	70	0.10	7.64
14	t	Acenaphthene	1.031	1.125	-9.1	75	0.10	7.82
15	t	Dibenzofuran	1.365	1.538	-12.7	80	0.10	7.98
16	t	Fluorene	1.149	1.223	-6.4	75	0.10	8.32
18	t	Hexachlorobenzene	0.397	0.319	19.6	57	0.10	8.86
20	t	Phenanthrene	1.673	1.699	-1.6	70	0.11	9.25
21	t	Anthracene	1.659	1.509	9.0	63	0.11	9.31
22	I	Fluoranthene-d10	1.000	1.000	0.0	73	0.11	10.41
23	t	Fluoranthene	1.082	1.124	-3.9	78	0.11	10.43
24	t	Pyrene	1.104	1.135	-2.8	76	0.10	10.64
26	t	Benzo[a]anthracene	0.919	0.944	-2.7	76	0.11	11.83
27	t	Chrysene	0.903	1.021	-13.1	83	0.10	11.86
28	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	85	0.11	13.09
29	t	Benzo[b]fluoranthene	1.487	1.213	18.4	73	0.10	12.83
30	t	Benzo[k]fluoranthene	1.364	1.261	7.6	80	0.10	12.85
31	t	Benzo[a]pyrene	1.371	1.165	15.0	80	0.10	13.10
32	t	Indeno[1,2,3-cd]pyrene	1.453	1.250	14.0	75	0.14	14.15
33	t	Dibenz[a,h]anthracene	1.208	1.016	15.9	73	0.14	14.17
34	t	Benzo[g,h,i]perylene	1.178	1.084	8.0	81	0.15	14.43
35	I	1-Methylnaphthalene-d10a	1.000	1.000	0.0	69	0.09	6.83
36	t	1,4-Dioxane	0.251	0.260	-3.6	78	0.14	1.88
38	I	Fluorene-d10a	1.000	1.000	0.0	69	0.10	8.29

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3947-CC3886
Lab FileID: 4M85080.D

```
(#) = Out of Range              SPCC's out = 0  CCC's out = 0
 4m83371.D  M4M3886SIM.M      Fri Jun 21 16:35:40 2019   MANAGER
```

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3947-CC3886
Lab FileID: 4M85081.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\E4M3947\4m85081.D Vial: 3
Acq On : 21 Jun 2019 9:41 am Operator: krizhkac
Sample : cc3886-1 Inst : GCMS4M
Misc : op13576a,e4m3947,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Tue Apr 23 07:57:48 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	82	0.10	6.83
2	S	2-Fluorophenol	0.524	0.621	-18.5	99	0.10	3.61
3	S	Phenol-d5	0.656	0.671	-2.3	85	0.06	4.54
6	S	Nitrobenzene-d5	0.668	0.603	9.7	76	0.09	5.38
11	S	2-Fluorobiphenyl	1.269	1.300	-2.4	87	0.08	7.14
12	I	Fluorene-d10	1.000	1.000	0.0	83	0.10	8.30
17	S	2,4,6-Tribromophenol	0.168	0.145	13.7	70	0.11	8.57
22	I	Fluoranthene-d10	1.000	1.000	0.0	85	0.11	10.42
25	S	Terphenyl-d14	0.548	0.715	-30.5#	113	0.11	10.83

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4m83371.D M4M3886SIM.M Fri Jun 21 16:35:42 2019 MANAGER

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3948-CC3886
Lab FileID: 4M85116.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\e4m3948\4m85116.d Vial: 2
Acq On : 22 Jun 2019 12:27 am Operator: chriss2
Sample : cc3886-0.5 Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1 Multiplr: 1.00
MS Integration Params: lscint.p

Method : C:\msdchem\1\METHODS\M4M3886SIM.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
Last Update : Sun Jun 23 22:56:49 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1-Methylnaphthalene-d10	1.000	1.000	0.0	97	-0.08	6.82
2	S	2-Fluorophenol	0.524	0.612	-16.8	107	-0.12	3.59
3	S	Phenol-d5	0.656	0.667	-1.7	93	-0.11	4.53
4	t	Phenol	0.731	0.790	-8.1	100	-0.11	4.54
5	t	bis(2-Chloroethyl)ether	0.523	0.644	-23.1#	117	-0.07	4.59
6	S	Nitrobenzene-d5	0.668	0.605	9.4	84	-0.08	5.36
7	t	Naphthalene	1.769	1.881	-6.3	102	-0.08	6.08
8	t	Hexachlorobutadiene	0.313	0.315	-0.6	93	-0.08	6.22
9	t	2-Methylnaphthalene	1.105	1.173	-6.2	101	-0.08	6.76
10	t	Hexachlorocyclopentadiene	0.288	0.160	44.4#	50#	-0.08	6.92
11	S	2-Fluorobiphenyl	1.269	1.374	-8.3	102	-0.07	7.13
12	I	Fluorene-d10	1.000	1.000	0.0	98	-0.08	8.28
13	t	Acenaphthylene	1.619	1.458	9.9	91	-0.07	7.63
14	t	Acenaphthene	1.031	1.100	-6.7	104	-0.08	7.80
15	t	Dibenzofuran	1.365	1.524	-11.6	111	-0.07	7.98
16	t	Fluorene	1.149	1.164	-1.3	98	-0.07	8.31
17	S	2,4,6-Tribromophenol	0.168	0.145	13.7	81	-0.09	8.55
18	t	Hexachlorobenzene	0.397	0.322	18.9	78	-0.07	8.86
19	t	Pentachlorophenol	0.196	0.031#	84.2#	15#	-0.08	9.06
20	t	Phenanthrene	1.673	1.727	-3.2	97	-0.08	9.24
21	t	Anthracene	1.659	1.440	13.2	83	-0.07	9.30
22	I	Fluoranthene-d10	1.000	1.000	0.0	105	-0.08	10.40
23	t	Fluoranthene	1.082	1.109	-2.5	107	-0.08	10.42
24	t	Pyrene	1.104	1.086	1.6	102	0.14	10.64
25	S	Terphenyl-d14	0.548	0.757	-38.1#	138	-0.08	10.82
26	t	Benzo[a]anthracene	0.919	0.894	2.7	101	-0.08	11.83
27	t	Chrysene	0.903	1.080	-19.6	121	-0.08	11.86
28	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	124	-0.10	13.08
29	t	Benzo[b]fluoranthene	1.487	1.287	13.4	107	-0.09	12.82
30	t	Benzo[k]fluoranthene	1.364	1.413	-3.6	129	-0.09	12.85
31	t	Benzo[a]pyrene	1.371	1.286	6.2	121	-0.10	13.10
32	t	Indeno[1,2,3-cd]pyrene	1.453	1.345	7.4	112	-0.17	14.15
33	t	Dibenz[a,h]anthracene	1.208	1.138	5.8	113	-0.17	14.17
34	t	Benzo[g,h,i]perylene	1.178	1.127	4.3	116	-0.19	14.43
35	I	1-Methylnaphthalene-d10a	1.000	1.000	0.0	97	-0.08	6.82
36	t	1,4-Dioxane	0.251	0.274	-9.2	109	-0.12	1.84
37	t	1-Methylnaphthalene	1.235	1.320	-6.9	102	-0.08	6.85

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: E4M3948-CC3886
Lab FileID: 4M85116.D

38	I	Fluorene-d10a	1.000	1.000	0.0	98	-0.08	8.28
		----------	True	Calc.	% Drift	----------		
39	t	4,6-dinitro-2-methylpheno	2.500	1.361	45.6#	50	-0.14	8.39

(#) = Out of Range SPCC's out = 0 CCC's out = 0
4m83372.D M4M3886SIM.M Sun Jun 23 22:59:36 2019

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6787-ICC6787
Lab FileID: Z137816.D

Response Factor Report GCMSZ

Method : C:\MSDCHEM\1\METHODS\MZ6787.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Fri May 24 12:18:55 2019
Response via : Initial Calibration

Calibration Files
100 =z137814.D 80 =z137815.D 50 =z137816.D 25 =z137817.D
10 =z137818.D 5 =z137819.D 2 =z137820.D 1 =z137821.D

Compound	100	80	50	25	10	5	2	1	Avg	%RSD
101) 1,4-Dichlorobenzene-d	ISTD									
102) Benzaldehyde	1.048	1.084	1.109	1.136	1.118	1.128	1.073	1.060	1.095	2.99
103) Phenanthrene-d10a	ISTD									
104) 1-chloroocta	0.287	0.299	0.301	0.305	0.312	0.284	0.276	0.241	0.288	7.76
105) o-terphenyl	0.471	0.489	0.499	0.509	0.528	0.506	0.516	0.475	0.499	3.91
106) Atrazine	0.092	0.097	0.096	0.095	0.095	0.089	0.091		0.094	3.11
109) Acenaphthene-d10a	ISTD									
110) 1,2,4,5-Tetr	0.511	0.535	0.550	0.568	0.577	0.573	0.555	0.588	0.557	4.49
111) I Naphthalene-d8a	ISTD									
112) Hydroquinone	0.371	0.381	0.372	0.366	0.346	0.307	0.250		0.342	13.91
113) Phenanthrene-d10b	ISTD									
114) Pentachloron	0.050	0.053	0.051	0.051	0.047	0.040			0.048#	9.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

MZ6786.M Fri May 24 12:28:03 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6787-ICV6787
Lab FileID: Z137822.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6786\z137822.D Vial: 24
Acq On : 24 May 2019 11:19 am Operator: chriss2
Sample : icv6787-50 Inst : GCMSZ
Misc : op20426,ez6787,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6786.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Fri May 24 12:18:55 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101	1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	106	0.00	4.55
102	Benzaldehyde	1.095	1.143	-4.4	110	0.00	4.22
103	Phenanthrene-d10a	1.000	1.000	0.0	107	0.00	8.33
106	Atrazine	0.094	0.103	-9.6	114	0.00	8.02
109	Acenaphthene-d10a	1.000	1.000	0.0	106	0.00	6.79
110	1,2,4,5-Tetrachlorobenzen	0.557	0.554	0.5	107	0.00	6.10
113	Phenanthrene-d10b	1.000	1.000	0.0	107	0.00	8.33
114	Pentachloronitrobenzene	0.048	0.045#	6.3	95	0.00	8.13

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z137816a.D MZ6786.M Fri May 24 12:27:36 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6787-ICV6787
Lab FileID: Z137823.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6786\z137823.D Vial: 25
Acq On : 24 May 2019 11:46 am Operator: chriss2
Sample : icv6787-50 Inst : GCMSZ
Misc : op20426,ez6787,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6786.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Fri May 24 12:18:55 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
111 I	Naphthalene-d8a	1.000	1.000	0.0	145	0.00	5.47
112	Hydroquinone	0.342	0.359	-5.0	140	0.00	5.79

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z137816a.D MZ6786.M Fri May 24 12:27:41 2019

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6826-ICC6826
Lab FileID: Z138702.D

Response Factor Report GCMSZ

Method : C:\MSDCHEM\1\METHODS\MZ6826.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Fri Jun 14 17:20:33 2019
Response via : Initial Calibration

Calibration Files
100 =z138700.D 80 =z138701.D 50 =z138702.D 25 =z138703.D
10 =z138704.D 5 =z138705.D 2 =z138706.D 1 =z138707.D

Compound	100	80	50	25	10	5	2	1	Avg	%RSD
107) Chrysene-d12a	ISTD									
108) Benzidine	0.930	0.926	0.901	0.835	0.753				0.869	8.63

(#) = Out of Range ### Number of calibration levels exceeded format ###

MZ6786.M Fri Jun 14 17:29:24 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6826-ICV6826
Lab FileID: Z138708.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6826\z138708.D Vial: 10
Acq On : 14 Jun 2019 5:12 pm Operator: angelar
Sample : icv6826-50 Inst : GCMSZ
Misc : op20426,ez6826,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6786.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Fri Jun 14 17:20:33 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
107	Chrysene-d12a	1.000	1.000	0.0	106	0.00	12.04
108	Benzidine	0.869	0.787	9.4	93	0.00	10.14

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6786.M Fri Jun 14 17:32:38 2019

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICC6838
Lab FileID: Z138899.D

Response Factor Report GCMSZ

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Initial Calibration

Calibration Files
100 =z138897.D 80 =z138898.D 50 =z138899.D 25 =z138900.D
10 =z138901.D 5 =z138902.D 2 =z138903.D 1 =z138904.D

Compound	100	80	50	25	10	5	2	1	Avg	%RSD
1) I 1,4-Dichlorobenzene-d	ISTD									
2) 1,4-Dioxane	0.471	0.478	0.485	0.472	0.476	0.435	0.473	0.302	0.449	13.69
3) Pyridine	1.284	1.282	1.269	1.272	1.165	1.114	1.113		1.214	6.62
4) N-Nitrosodim	0.741	0.731	0.737	0.709	0.699	0.669	0.562	0.505	0.669	13.19
5) 2-Fluorophen	1.260	1.240	1.219	1.157	1.112	1.084	0.892	0.861	1.103	13.86
6) Indene	2.197	2.174	2.165	2.092	2.058	2.116	2.022	1.867	2.086	5.13
7) Cumene	3.492	3.478	3.446	3.336	3.264	3.272	3.269	3.118	3.334	3.89
8) Phenol-d5	1.733	1.690	1.666	1.603	1.530	1.482	1.377	1.319	1.550	9.69
9) Phenol	1.987	1.944	1.929	1.812	1.801	1.704	1.613	1.621	1.801	8.10
10) Aniline	2.136	2.112	2.071	1.984	1.937	1.996	1.901	1.768	1.988	6.10
11) bis(2-Chloro	1.242	1.245	1.239	1.208	1.165	1.159	1.228	1.085	1.196	4.70
12) 2-Chlorophen	1.433	1.408	1.400	1.349	1.308	1.331	1.241	1.142	1.327	7.31
13) Decane	1.317	1.315	1.373	1.354	1.284	1.329	1.309	1.393	1.334	2.71
14) 1,3-Dichloro	1.537	1.503	1.534	1.522	1.496	1.444	1.532	1.431	1.500	2.75
15) 1,4-Dichloro	1.571	1.552	1.578	1.557	1.546	1.544	1.624	1.521	1.562	1.96
16) Benzyl alcoh	0.851	0.838	0.830	0.800	0.756	0.716	0.616		0.772	10.88
17) 1,2-Dichloro	1.471	1.440	1.443	1.426	1.418	1.428	1.370	1.220	1.402	5.63
18) Acetophenone	2.067	2.020	2.028	1.963	1.917	1.889	1.844	1.516	1.906	9.17
19) 2-Methylphen	1.309	1.271	1.297	1.240	1.189	1.239	1.122	1.007	1.209	8.39
20) 2,2'-oxybis(	0.393	0.383	0.393	0.384	0.377	0.372	0.348		0.379	4.07
21) 3&4-Methylph	1.379	1.373	1.355	1.291	1.258	1.223	1.184	1.083	1.268	8.15
22) n-Nitroso-di	1.059	1.032	1.047	1.023	0.983	0.949	0.865	0.840	0.975	8.57
23) Hexachloroet	0.543	0.535	0.556	0.557	0.531	0.548	0.533	0.542	0.543	1.83
24) I Naphthalene-d8	ISTD									
25) Nitrobenzene	0.453	0.442	0.436	0.440	0.418	0.406	0.386	0.354	0.417	8.08
26) Nitrobenzene	0.469	0.455	0.451	0.450	0.428	0.434	0.426	0.387	0.438	5.70
27) Quinoline	0.763	0.747	0.741	0.754	0.707	0.715	0.679	0.603	0.714	7.37
28) Isophorone	0.741	0.730	0.730	0.732	0.681	0.666	0.665	0.623	0.696	6.20
29) 2-Nitropheno	0.223	0.219	0.214	0.213	0.188	0.201	0.161	0.153	0.196	13.53
30) 2,4-Dimethyl	0.429	0.418	0.415	0.413	0.391	0.365	0.359	0.329	0.390	9.03
31) Benzoic Acid	0.350	0.343	0.327	0.317	0.263	0.224			0.304	16.40
32) bis(2-Chloro	0.434	0.424	0.427	0.421	0.395	0.387	0.377	0.337	0.400	8.23
33) 2,4-Dichloro	0.345	0.333	0.332	0.335	0.304	0.303	0.287	0.250	0.311	10.16
34) 2,6-Dichloro	0.331	0.324	0.324	0.321	0.304	0.304	0.283	0.244	0.304	9.54
35) 1,3,5-Trichl	0.390	0.382	0.380	0.383	0.370	0.366	0.365	0.340	0.372	4.20
36) 1,2,4-Trichl	0.363	0.351	0.352	0.358	0.347	0.342	0.351	0.313	0.347	4.35
37) 1,2,3-Trichl	0.364	0.356	0.354	0.360	0.337	0.345	0.322	0.330	0.346	4.36
38) Naphthalene	1.154	1.142	1.116	1.125	1.058	1.099	1.122	1.123	1.117	2.60
39) 4-Chloroanil	0.496	0.476	0.465	0.478	0.445	0.437	0.414	0.356	0.446	10.02
40) 2,3-Dichloro	0.418	0.407	0.405	0.401	0.393	0.373	0.381	0.333	0.389	6.90
41) Caprolactam	0.171	0.168	0.165	0.169	0.158	0.155	0.142	0.114	0.155	12.40
42) Hexachlorobu	0.219	0.215	0.212	0.214	0.214	0.205	0.204	0.188	0.209	4.72
43) 4-Chloro-3-m	0.377	0.367	0.365	0.355	0.330	0.333	0.327	0.255	0.339	11.47
44) 2-Methylnaph	0.617	0.607	0.598	0.608	0.573	0.575	0.584	0.502	0.583	6.28
45) 1-Methylnaph	0.706	0.686	0.680	0.677	0.661	0.674	0.685	0.613	0.673	4.05

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY
Sample: EZ6838-ICC6838
Lab FileID: Z138899.D

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46) Dimethylnaph 0.720 0.701 0.693 0.695 0.660 0.670 0.673 0.639 0.682   3.80

47) I   Acenaphthene-d10      ----------------ISTD--------------------
48) Hexachlorocy 0.318 0.316 0.280 0.222 0.146 0.100             0.230  39.62
         ----- Quadratic regression -----                Coefficient =  0.9988
              Response Ratio = -0.06628 + 0.28254 *A + 0.01044 *A^2

49) 2,4,6-Trichl 0.419 0.426 0.413 0.397 0.384 0.367 0.363 0.326 0.387   8.72
50) 2,4,5-Trichl 0.441 0.449 0.440 0.432 0.408 0.402 0.380 0.323 0.409  10.29
51) 2-Fluorobiph 1.506 1.516 1.502 1.451 1.412 1.399 1.358 1.450 1.449   3.92
52) 2-Chloronaph 1.202 1.195 1.198 1.168 1.128 1.135 1.216 1.039 1.160   5.03
53) Biphenyl     1.660 1.663 1.637 1.589 1.534 1.531 1.534 1.429 1.572   5.13
54) 2-Nitroanili 0.425 0.439 0.571 0.585 0.540 0.547 0.355       0.494  17.79
55) Dimethylphth 1.375 1.397 1.390 1.388 1.320 1.343 1.392 1.240 1.356   4.00
56) Acenaphthyle 1.947 1.958 1.933 1.911 1.833 1.817 1.868 1.556 1.853   7.05
57) 2,6-Dinitrot 0.308 0.311 0.312 0.304 0.292 0.283 0.266 0.176 0.282  16.20
58) 3-Nitroanili 0.351 0.350 0.340 0.335 0.322 0.320 0.251 0.237 0.313  14.19
59) Acenaphthene 1.268 1.268 1.249 1.231 1.187 1.194 1.219 1.071 1.211   5.31
60) 2,4-Dinitrop 0.204 0.199 0.186 0.171 0.117 0.088 0.038       0.143  44.36
         ----- Quadratic regression -----                Coefficient =  0.9998
              Response Ratio = -0.02318 + 0.18175 *A + 0.00544 *A^2

61) 4-Nitropheno 0.259 0.253 0.237 0.226 0.198 0.171             0.224  15.22
62) Dibenzofuran 1.774 1.770 1.700 1.682 1.626 1.683 1.630 1.472 1.667   5.76
63) 2,4-Dinitrot 0.458 0.449 0.437 0.425 0.402 0.389 0.354 0.282 0.400  14.63
64) 2,3,4,6-Tetr 0.352 0.346 0.343 0.333 0.297 0.281 0.249 0.221 0.303  16.27
65) Diethylphtha 1.539 1.507 1.506 1.545 1.681 1.999 2.907       1.812  28.36
         ----- Quadratic regression -----                Coefficient =  1.0000
              Response Ratio = 0.07857 + 1.37104 *A + 0.05305 *A^2

66) Fluorene     1.524 1.506 1.441 1.417 1.349 1.360 1.351 1.224 1.396   6.96
67) 4-Chlorophen 0.710 0.690 0.673 0.663 0.638 0.659 0.668 0.638 0.667   3.65
68) 4-Nitroanili 0.355 0.355 0.359 0.362 0.346 0.342 0.265       0.340  10.03

69) I   Phenanthrene-d10      ----------------ISTD--------------------
70) 4,6-Dinitro- 0.168 0.160 0.151 0.144 0.113 0.091             0.138  21.41
         ----- Quadratic regression -----                Coefficient =  0.9999
              Response Ratio = -0.00623 + 0.14222 *A + 0.01096 *A^2

71) n-Nitrosodip 0.589 0.572 0.561 0.566 0.549 0.548 0.526 0.511 0.553   4.56
72) 1,2-Diphenyl 0.916 0.872 0.868 0.870 0.816 0.808 0.804 0.751 0.838   6.28
73) 2,4,6-Tribro 0.148 0.144 0.143 0.145 0.129 0.116 0.121       0.135   9.55
74) 4-Bromopheny 0.244 0.232 0.232 0.240 0.223 0.213 0.217 0.169 0.221  10.65
75) Hexachlorobe 0.282 0.272 0.268 0.269 0.264 0.271 0.279 0.247 0.269   4.03
76) Pentachlorop 0.168 0.161 0.155 0.151 0.129 0.108 0.098 0.076 0.131  25.64
         ----- Quadratic regression -----                Coefficient =  0.9998
              Response Ratio = -0.00581 + 0.14552 *A + 0.00456 *A^2

77) Phenanthrene 1.164 1.123 1.108 1.116 1.067 1.096 1.139 1.142 1.119   2.69
78) Anthracene   1.188 1.155 1.125 1.165 1.086 1.103 1.089 1.077 1.123   3.69
79) Carbazole    1.138 1.090 1.061 1.085 1.030 1.029 1.023 0.943 1.050   5.54
80) Di-n-butylph 1.472 1.423 1.380 1.383 1.311 1.286 1.292 1.287 1.354   5.20
81) Fluoranthene 1.375 1.305 1.264 1.256 1.171 1.176 1.145 1.094 1.223   7.57
82) Octadecane   0.522 0.502 0.498 0.497 0.462 0.455 0.447 0.373 0.470  10.02

83) I   Chrysene-d12          ----------------ISTD--------------------
84) Pyrene       1.386 1.383 1.392 1.386 1.331 1.390 1.355 1.335 1.370   1.86
85) Terphenyl-d1 0.942 0.935 0.931 0.949 0.918 0.890 0.895 0.823 0.910   4.51
86) Butylbenzylp 0.682 0.666 0.659 0.641 0.613 0.605 0.571 0.541 0.622   7.86
87) Benzo[a]anth 1.315 1.298 1.301 1.284 1.239 1.284 1.282 1.363 1.296   2.70
```

Initial Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICC6838
Lab FileID: Z138899.D

88)	3,3'-Dichlor	0.520	0.515	0.504	0.504	0.477	0.472	0.398	0.380	0.471	11.38
89)	Chrysene	1.222	1.210	1.221	1.225	1.215	1.255	1.185	1.177	1.214	1.99
90)	bis(2-Ethylh	0.881	0.870	0.871	0.857	0.832	0.784	0.763	0.711	0.821	7.51
91)	I Perylene-d12	----------ISTD----------									
92)	Di-n-octylph	1.645	1.594	1.516	1.438	1.398	1.255	1.160	1.055	1.383	15.18
93)	Benzo[b]fluo	1.393	1.387	1.355	1.256	1.223	1.209	1.223	1.216	1.283	6.31
94)	Benzo[k]fluo	1.195	1.146	1.164	1.181	1.142	1.131	1.115	1.085	1.145	3.10
95)	Benzo[a]pyre	1.166	1.130	1.151	1.120	1.069	1.075	1.012	1.032	1.094	5.12
96)	Indeno[1,2,3	1.456	1.394	1.428	1.384	1.292	1.252	1.229	1.178	1.327	7.72
97)	Dibenz(a,h)a	1.147	1.097	1.104	1.077	0.992	0.933	0.934	0.895	1.022	9.34
98)	Dibenz[a,h]a	1.254	1.199	1.226	1.169	1.095	1.041	1.069	1.042	1.137	7.53
99)	7,12-Dimethy	0.622	0.614	0.593	0.571	0.547	0.548	0.484	0.446	0.553	11.16
100)	Benzo[g,h,i]	1.116	1.071	1.099	1.090	0.988	0.982	0.978	0.924	1.031	6.92

(#) = Out of Range ### Number of calibration levels exceeded format ###

MZ6838.M Thu Jun 20 12:08:41 2019

6.8.18

6

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138905.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138905.D Vial: 10
Acq On : 20 Jun 2019 4:46 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	107	0.00	4.55
4	t	N-Nitrosodimethylamine	0.669	0.616	7.9	90	0.02	2.40
11	t	bis(2-Chloroethyl)ether	1.196	1.154	3.5	100	0.00	4.36
14	t	1,3-Dichlorobenzene	1.500	1.403	6.5	98	0.00	4.51
15	t	1,4-Dichlorobenzene	1.562	1.480	5.2	101	0.00	4.56
17	t	1,2-Dichlorobenzene	1.402	1.358	3.1	101	0.00	4.68
20	t	2,2'-oxybis(1-Chloropropa	0.379	0.415	-9.5	113	0.00	4.75
22	t	n-Nitroso-di-n-propylamin	0.975	0.939	3.7	96	0.00	4.85
23	t	Hexachloroethane	0.543	0.509	6.3	98	0.00	4.92
24	I	Naphthalene-d8	1.000	1.000	0.0	105	0.00	5.47
26	t	Nitrobenzene	0.438	0.419	4.3	97	0.00	4.97
28	t	Isophorone	0.696	0.711	-2.2	102	0.00	5.14
32	t	bis(2-Chloroethoxy)methan	0.400	0.407	-1.7	100	0.00	5.29
36	t	1,2,4-Trichlorobenzene	0.347	0.329	5.2	98	0.00	5.43
38	t	Naphthalene	1.117	1.101	1.4	103	0.00	5.48
42	t	Hexachlorobutadiene	0.209	0.209	0.0	103	0.00	5.57
47	I	Acenaphthene-d10	1.000	1.000	0.0	96	0.00	6.80
52	t	2-Chloronaphthalene	1.160	1.192	-2.8	96	0.00	6.34
55	t	Dimethylphthalate	1.356	1.367	-0.8	95	0.00	6.56
56	t	Acenaphthylene	1.853	1.921	-3.7	96	0.00	6.67
57	t	2,6-Dinitrotoluene	0.282	0.296	-5.0	91	0.00	6.62
59	t	Acenaphthene	1.211	1.216	-0.4	94	0.00	6.82

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138905.D

63	t	2,4-Dinitrotoluene	0.400	0.372	7.0	82	0.00	6.97
			True	Calc.	% Drift			
65	t	Diethylphthalate	50.000	47.409	5.2	91	0.00	7.19
			AvgRF	CCRF	% Dev			
66	t	Fluorene	1.396	1.403	-0.5	94	0.00	7.30
67	t	4-Chlorophenyl-phenylethe	0.667	0.655	1.8	94	0.00	7.30
69	I	Phenanthrene-d10	1.000	1.000	0.0	98	0.00	8.33
			AvgRF	CCRF	% Dev			
71	t	n-Nitrosodiphenylamine	0.553	0.519	6.1	90	0.00	7.42
72	t	1,2-Diphenylhydrazine	0.838	0.839	-0.1	94	0.00	7.47
74	t	4-Bromophenyl-phenylether	0.221	0.214	3.2	90	0.00	7.82
75	t	Hexachlorobenzene	0.269	0.245	8.9	89	0.00	7.90
			AvgRF	CCRF	% Dev			
77	t	Phenanthrene	1.119	1.032	7.8	91	0.00	8.36
78	t	Anthracene	1.123	1.023	8.9	89	0.00	8.42
80	t	Di-n-butylphthalate	1.354	1.197	11.6	85	0.00	9.12
81	t	Fluoranthene	1.223	1.089	11.0	84	0.00	9.94
83	I	Chrysene-d12	1.000	1.000	0.0	93	0.00	12.08
84	t	Pyrene	1.370	1.256	8.3	84	0.00	10.25
86	t	Butylbenzylphthalate	0.622	0.562	9.6	80	0.00	11.30
87	t	Benzo[a]anthracene	1.296	1.089	16.0	78	0.00	12.06
89	t	Chrysene	1.214	1.029	15.2	79	0.00	12.11
90	t	bis(2-Ethylhexyl)phthalat	0.821	0.725	11.7	78	0.00	12.24
91	I	Perylene-d12	1.000	1.000	0.0	75	0.00	14.14
92	t	Di-n-octylphthalate	1.383	1.475	-6.7	73	0.00	13.20
93	t	Benzo[b]fluoranthene	1.283	1.178	8.2	66	0.00	13.63
94	t	Benzo[k]fluoranthene	1.145	1.186	-3.6	77	-0.01	13.67
95	t	Benzo[a]pyrene	1.094	1.119	-2.3	73	0.00	14.06
96	t	Indeno[1,2,3-cd]pyrene	1.327	1.515	-14.2	80	0.00	15.46
98	t	Dibenz[a,h]anthracene	1.137	1.228	-8.0	76	0.00	15.48
100	t	Benzo[g,h,i]perylene	1.031	1.221	-18.4	84	0.00	15.78

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138899.D MZ6838.M Thu Jun 20 12:09:39 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138906.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138906.D Vial: 11
Acq On : 20 Jun 2019 5:13 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	119	0.00	4.55
2		1,4-Dioxane	0.449	0.445	0.9	109	0.02	2.10
6	t	Indene	2.086	2.316	-11.0	128	0.00	4.74
7	t	Cumene	3.334	3.331	0.1	115	0.00	3.96
13	t	Decane	1.334	1.291	3.2	112	0.00	4.44
18	t	Acetophenone	1.906	1.894	0.6	112	0.00	4.84
24	I	Naphthalene-d8	1.000	1.000	0.0	138	0.00	5.47
27	t	Quinoline	0.714	0.628	12.0	117	-0.01	5.72
40	t	2,3-Dichloroaniline	0.389	0.298	23.4	102	0.00	6.18
41	t	Caprolactam	0.155	0.125	19.4	104	-0.03	5.77
45	t	1-Methylnaphthalene	0.673	0.533	20.8	108	0.00	6.04
46	t	Dimethylnaphthalene	0.682	0.560	17.9	112	0.00	6.44
47	I	Acenaphthene-d10	1.000	1.000	0.0	116	0.00	6.80
			True	Calc.	% Drift			
48	t	Hexachlorocyclopentadiene	50.000	48.486	3.0	134	0.00	6.09
53	t	Biphenyl	1.572	1.570	0.1	112	0.00	6.32
69	I	Phenanthrene-d10	1.000	1.000	0.0	113	0.00	8.33
82	t	Octadecane	0.470	0.493	-4.9	112	0.00	8.23
91	I	Perylene-d12	1.000	1.000	0.0	90	0.00	14.14
99	t	7,12-Dimethylbenz(a)anthr	0.553	0.333	39.8#	51	-0.02	13.62

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138906.D

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   (#) = Out of Range              SPCC's out = 0  CCC's out = 0
    z138899.D  MZ6838.M         Thu Jun 20 12:09:41 2019
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Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138907.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138907.D Vial: 12
Acq On : 20 Jun 2019 5:40 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	86	0.00	4.55
3	t	Pyridine	1.214	1.406	-15.8	96	0.10	2.51
10	t	Aniline	1.988	2.248	-13.1	94	0.00	4.32
16	t	Benzyl alcohol	0.772	1.023	-32.5#	106	0.00	4.66
24	I	Naphthalene-d8	1.000	1.000	0.0	102	0.00	5.47
39	t	4-Chloroaniline	0.446	0.439	1.6	96	0.00	5.52
44	t	2-Methylnaphthalene	0.583	0.596	-2.2	101	0.00	5.97
47	I	Acenaphthene-d10	1.000	1.000	0.0	106	0.00	6.80
54	t	2-Nitroaniline	0.494	0.386	21.9	72	0.00	6.42
58	t	3-Nitroaniline	0.313	0.317	-1.3	99	0.00	6.76
62	t	Dibenzofuran	1.667	1.659	0.5	103	0.00	6.98
68	t	4-Nitroaniline	0.340	0.320	5.9	94	0.00	7.33
69	I	Phenanthrene-d10	1.000	1.000	0.0	110	0.00	8.33
79	t	Carbazole	1.050	1.019	3.0	106	0.00	8.63

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138899.D MZ6838.M Thu Jun 20 12:09:43 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138908.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138908.D Vial: 13
Acq On : 20 Jun 2019 6:07 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	141	0.00	4.55
9	t	Phenol	1.801	1.716	4.7	126	0.00	4.31
12	t	2-Chlorophenol	1.327	1.442	-8.7	146	0.00	4.40
19	t	2-Methylphenol	1.209	1.251	-3.5	136	0.00	4.75
21	t	3&4-Methylphenol	1.268	1.328	-4.7	139	0.00	4.86
24	I	Naphthalene-d8	1.000	1.000	0.0	140	0.00	5.47
29	t	2-Nitrophenol	0.196	0.206	-5.1	135	0.00	5.20
30	t	2,4-Dimethylphenol	0.390	0.339	13.1	114	0.00	5.23
31		Benzoic Acid	0.304	0.289	4.9	124	0.00	5.35
33	t	2,4-Dichlorophenol	0.311	0.324	-4.2	137	0.00	5.38
34		2,6-Dichlorophenol	0.304	0.323	-6.3	140	0.00	5.53
43	t	4-Chloro-3-methylphenol	0.339	0.351	-3.5	135	-0.01	5.87
47	I	Acenaphthene-d10	1.000	1.000	0.0	133	0.00	6.80
		----------	AvgRF	CCRF	% Dev	----------		
49	t	2,4,6-Trichlorophenol	0.387	0.437	-12.9	141	0.00	6.18
50	t	2,4,5-Trichlorophenol	0.409	0.458	-12.0	138	0.00	6.21
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	50.000	53.793	-7.6	158	0.00	6.86
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.224	0.244	-8.9	137	0.00	6.92
64		2,3,4,6-Tetrachlorophenol	0.303	0.369	-21.8	143	0.00	7.10

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138908.D

69	I	Phenanthrene-d10	1.000	1.000	0.0	132	0.00	8.33
			True	Calc.	% Drift			
70	t	4,6-Dinitro-2-methylpheno	50.000	49.171	1.7	129	0.00	7.37
			True	Calc.	% Drift			
76	t	Pentachlorophenol	50.000	49.350	1.3	140	0.00	8.12

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138899.D MZ6838.M Thu Jun 20 12:09:45 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138909.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138909.D Vial: 14
Acq On : 20 Jun 2019 6:34 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	103	0.00	4.55
5	S	2-Fluorophenol	1.103	1.203	-9.1	101	0.00	3.58
8	S	Phenol-d5	1.550	1.560	-0.6	96	0.00	4.30
24	I	Naphthalene-d8	1.000	1.000	0.0	108	0.00	5.47
25	S	Nitrobenzene-d5	0.417	0.404	3.1	100	0.00	4.95
47	I	Acenaphthene-d10	1.000	1.000	0.0	100	0.00	6.80
51	S	2-Fluorobiphenyl	1.449	1.420	2.0	95	0.00	6.24
69	I	Phenanthrene-d10	1.000	1.000	0.0	98	0.00	8.33
73	S	2,4,6-Tribromophenol	0.135	0.131	3.0	90	0.00	7.55
83	I	Chrysene-d12	1.000	1.000	0.0	81	-0.01	12.07
85	S	Terphenyl-d14	0.910	1.068	-17.4	93	0.00	10.53

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138899.D MZ6838.M Thu Jun 20 12:09:47 2019

Initial Calibration Verification

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6838-ICV6838
Lab FileID: Z138910.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\ez6838\z138910.D Vial: 15
Acq On : 20 Jun 2019 7:01 am Operator: chriss2
Sample : icv6838-50 Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:05:16 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
83 I	Chrysene-d12	1.000	1.000	0.0	142	0.00	12.08
88 t	3,3'-Dichlorobenzidine	0.471	0.441	6.4	124	0.00	12.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138899.D MZ6838.M Thu Jun 20 12:09:49 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-CC6838
Lab FileID: Z138956.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138956.d Vial: 2
Acq On : 21 Jun 2019 1:32 pm Operator: angelar
Sample : cc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	73	-0.02	4.54
2		1,4-Dioxane	0.449	0.520	-15.8	78	0.00	2.08
3	t	Pyridine	1.214	1.428	-17.6	82	0.08	2.50
4	t	N-Nitrosodimethylamine	0.669	0.825	-23.3#	82	0.15	2.53
5	S	2-Fluorophenol	1.103	0.928	15.9	55	0.00	3.58
6	t	Indene		----------NA----------				
7	t	Cumene		----------NA----------				
8	S	Phenol-d5	1.550	1.526	1.5	67	0.00	4.30
9	t	Phenol	1.801	1.808	-0.4	68	0.00	4.31
10	t	Aniline	1.988	1.890	4.9	67	-0.02	4.30
11	t	bis(2-Chloroethyl)ether	1.196	1.190	0.5	70	-0.02	4.35
12	t	2-Chlorophenol	1.327	1.261	5.0	66	-0.01	4.39
13	t	Decane		----------NA----------				
14	t	1,3-Dichlorobenzene	1.500	1.420	5.3	68	-0.02	4.49
15	t	1,4-Dichlorobenzene	1.562	1.458	6.7	67	-0.02	4.55
16	t	Benzyl alcohol	0.772	0.852	-10.4	75	-0.02	4.64
17	t	1,2-Dichlorobenzene	1.402	1.397	0.4	71	-0.02	4.66
18	t	Acetophenone	1.906	1.879	1.4	68	-0.02	4.83
19	t	2-Methylphenol	1.209	1.242	-2.7	70	-0.01	4.74
20	t	2,2'-oxybis(1-Chloropropa	0.379	0.409	-7.9	76	-0.02	4.74
21	t	3&4-Methylphenol	1.268	1.257	0.9	68	0.00	4.85
22	t	n-Nitroso-di-n-propylamin	0.975	1.015	-4.1	71	-0.02	4.84
23	t	Hexachloroethane	0.543	0.545	-0.4	72	-0.02	4.91
24	I	Naphthalene-d8	1.000	1.000	0.0	79	-0.02	5.45
25	S	Nitrobenzene-d5	0.417	0.457	-9.6	82	-0.02	4.94
26	t	Nitrobenzene	0.438	0.414	5.5	72	-0.02	4.95
27	t	Quinoline		----------NA----------				
28	t	Isophorone	0.696	0.712	-2.3	77	-0.02	5.13
29	t	2-Nitrophenol	0.196	0.180	8.2	66	-0.02	5.18
30	t	2,4-Dimethylphenol	0.390	0.387	0.8	73	0.00	5.23
31		Benzoic Acid		----------NA----------				
32	t	bis(2-Chloroethoxy)methan	0.400	0.394	1.5	72	-0.01	5.28
33	t	2,4-Dichlorophenol	0.311	0.298	4.2	70	-0.01	5.37
34		2,6-Dichlorophenol	0.304	0.284	6.6	69	-0.01	5.52
35	t	1,3,5-Trichlorobenzene		----------NA----------				
36	t	1,2,4-Trichlorobenzene	0.347	0.332	4.3	74	-0.02	5.41
37	t	1,2,3-Trichlorobenzene		----------NA----------				
38	t	Naphthalene	1.117	1.040	6.9	73	-0.02	5.47
39	t	4-Chloroaniline	0.446	0.427	4.3	72	-0.02	5.51
40	t	2,3-Dichloroaniline		----------NA----------				
41	t	Caprolactam	0.155	0.158	-1.9	75	-0.03	5.76

Continuing Calibration Summary

Job Number: JC89788 **Sample:** EZ6841-CC6838
Account: GZANYB GZA Geo Environmental **Lab FileID:** Z138956.D
Project: Former Signore, Ellicottville, NY

42	t	Hexachlorobutadiene	0.209	0.202	3.3	75	-0.02	5.56
43	t	4-Chloro-3-methylphenol	0.339	0.338	0.3	73	-0.01	5.87
44	t	2-Methylnaphthalene	0.583	0.623	-6.9	82	-0.02	5.96
45	t	1-Methylnaphthalene	0.673	0.610	9.4	70	-0.02	6.03
46	t	Dimethylnaphthalene		----------NA----------				
47	I	Acenaphthene-d10	1.000	1.000	0.0	75	-0.02	6.78
		----------	True	Calc.	% Drift	----------		
48	t	Hexachlorocyclopentadiene	50.000	50.110	-0.2	66	-0.02	6.08
		----------	AvgRF	CCRF	% Dev	----------		
49	t	2,4,6-Trichlorophenol	0.387	0.395	-2.1	72	-0.02	6.17
50	t	2,4,5-Trichlorophenol	0.409	0.435	-6.4	75	0.00	6.21
51	S	2-Fluorobiphenyl	1.449	1.672	-15.4	84	-0.02	6.23
52	t	2-Chloronaphthalene	1.160	1.291	-11.3	81	-0.02	6.32
53	t	Biphenyl	1.572	1.556	1.0	72	-0.02	6.31
54	t	2-Nitroaniline	0.494	0.410	17.0	54	-0.02	6.41
55	t	Dimethylphthalate	1.356	1.373	-1.3	74	-0.02	6.55
56	t	Acenaphthylene	1.853	1.918	-3.5	75	-0.02	6.66
57	t	2,6-Dinitrotoluene	0.282	0.317	-12.4	77	-0.02	6.60
58	t	3-Nitroaniline	0.313	0.340	-8.6	76	-0.02	6.74
59	t	Acenaphthene	1.211	1.247	-3.0	75	-0.02	6.81
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	50.000	48.450	3.1	66	-0.02	6.85
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.224	0.286	-27.7#	91	0.00	6.93
62	t	Dibenzofuran	1.667	1.760	-5.6	78	-0.02	6.96
63	t	2,4-Dinitrotoluene	0.400	0.454	-13.5	78	-0.02	6.96
64		2,3,4,6-Tetrachlorophenol	0.303	0.378	-24.8#	83	-0.02	7.09
		----------	True	Calc.	% Drift	----------		
65	t	Diethylphthalate	50.000	51.046	-2.1	77	-0.02	7.17
		----------	AvgRF	CCRF	% Dev	----------		
66	t	Fluorene	1.396	1.444	-3.4	76	-0.02	7.29
67	t	4-Chlorophenyl-phenylethe	0.667	0.688	-3.1	77	-0.02	7.28
68	t	4-Nitroaniline	0.340	0.357	-5.0	75	-0.02	7.32
69	I	Phenanthrene-d10	1.000	1.000	0.0	85	-0.02	8.31
		----------	True	Calc.	% Drift	----------		
70	t	4,6-Dinitro-2-methylpheno	50.000	40.250	19.5	67	-0.02	7.35
		----------	AvgRF	CCRF	% Dev	----------		
71	t	n-Nitrosodiphenylamine	0.553	0.607	-9.8	92	-0.02	7.41
72	t	1,2-Diphenylhydrazine	0.838	0.817	2.5	80	-0.02	7.44
73	S	2,4,6-Tribromophenol	0.135	0.125	7.4	74	-0.02	7.53
74	t	4-Bromophenyl-phenylether	0.221	0.211	4.5	77	-0.02	7.80
75	t	Hexachlorobenzene	0.269	0.242	10.0	76	-0.02	7.88
		----------	True	Calc.	% Drift	----------		
76	t	Pentachlorophenol	50.000	37.440	25.1#	58	-0.02	8.11
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.119	1.044	6.7	80	-0.02	8.34
78	t	Anthracene	1.123	1.076	4.2	81	-0.02	8.41
79	t	Carbazole	1.050	0.986	6.1	79	-0.02	8.61

Continuing Calibration Summary

Job Number: JC89788 **Sample:** EZ6841-CC6838
Account: GZANYB GZA Geo Environmental **Lab FileID:** Z138956.D
Project: Former Signore, Ellicottville, NY

80	t	Di-n-butylphthalate	1.354	1.292	4.6	79	-0.02	9.10
81	t	Fluoranthene	1.223	1.199	2.0	80	-0.03	9.91
82	t	Octadecane		----------NA----------				
83	I	Chrysene-d12	1.000	1.000	0.0	94	-0.03	12.05
84	t	Pyrene	1.370	1.212	11.5	81	-0.03	10.23
85	S	Terphenyl-d14	0.910	0.948	-4.2	95	-0.03	10.50
86	t	Butylbenzylphthalate	0.622	0.588	5.5	84	-0.03	11.28
87	t	Benzo[a]anthracene	1.296	1.115	14.0	80	-0.03	12.04
88	t	3,3'-Dichlorobenzidine	0.471	0.412	12.5	76	-0.02	12.04
89	t	Chrysene	1.214	1.032	15.0	79	-0.03	12.09
90	t	bis(2-Ethylhexyl)phthalat	0.821	0.748	8.9	80	-0.02	12.21
91	I	Perylene-d12	1.000	1.000	0.0	86	-0.03	14.12
92	t	Di-n-octylphthalate	1.383	1.426	-3.1	81	-0.02	13.18
93	t	Benzo[b]fluoranthene	1.283	1.173	8.6	74	-0.03	13.61
94	t	Benzo[k]fluoranthene	1.145	1.052	8.1	78	-0.03	13.65
95	t	Benzo[a]pyrene	1.094	1.064	2.7	79	-0.03	14.04
96	t	Indeno[1,2,3-cd]pyrene	1.327	1.245	6.2	75	-0.03	15.44
97	t	Dibenz(a,h)acridine		----------NA----------				
98	t	Dibenz[a,h]anthracene	1.137	1.060	6.8	74	-0.03	15.46
99	t	7,12-Dimethylbenz(a)anthr	0.553	0.519	6.1	75	-0.03	13.61
100	t	Benzo[g,h,i]perylene	1.031	1.065	-3.3	83	-0.03	15.76

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:50:40 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-CC6787
Lab FileID: Z138957.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138957.d Vial: 3
Acq On : 21 Jun 2019 1:59 pm Operator: angelar
Sample : cc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101		1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	86	-0.02	4.53
102		Benzaldehyde	1.095	1.053	3.8	81	-0.01	4.21
103		Phenanthrene-d10a	1.000	1.000	0.0	108	-0.02	8.31
104	s	1-chlorooctadecane		----------NA----------				
105	s	o-terphenyl		----------NA----------				
106		Atrazine	0.094	0.108	-14.9	121	-0.02	7.99
107		Chrysene-d12a	1.000	1.000	0.0	83	0.00	12.04
108		Benzidine		----------NA----------				
109		Acenaphthene-d10a	1.000	1.000	0.0	96	-0.02	6.78
110		1,2,4,5-Tetrachlorobenzen	0.557	0.599	-7.5	104	-0.02	6.08
111	I	Naphthalene-d8a	1.000	1.000	0.0	90	-0.02	5.45
112		Hydroquinone		----------NA----------				
113		Phenanthrene-d10b	1.000	1.000	0.0	108	-0.02	8.31
114		Pentachloronitrobenzene	0.048	0.043#	10.4	91	-0.02	8.12
115		Chrysene-d12b	1.000	1.000	0.0	124	-0.02	12.04
116		2,3,7,8-TCDD		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:50:48 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-CC6826
Lab FileID: Z138958.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138958.d Vial: 4
Acq On : 21 Jun 2019 2:25 pm Operator: angelar
Sample : cc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
107	Chrysene-d12a	1.000	1.000	0.0	80	0.00	12.04
108	Benzidine	0.869	0.735	15.4	65	0.00	10.13

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:50:53 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-ECC6838
Lab FileID: Z138975.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138975.d Vial: 2
Acq On : 21 Jun 2019 10:01 pm Operator: angelar
Sample : ecc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	68	-0.02	4.54
2		1,4-Dioxane	0.449	0.466	-3.8	65	0.01	2.09
3	t	Pyridine	1.214	1.318	-8.6	71	0.10	2.51
4	t	N-Nitrosodimethylamine	0.669	0.754	-12.7	69	0.16	2.54
5	S	2-Fluorophenol	1.103	0.910	17.5	51	0.00	3.58
6	t	Indene		----------NA----------				
7	t	Cumene		----------NA----------				
8	S	Phenol-d5	1.550	1.522	1.8	62	0.00	4.30
9	t	Phenol	1.801	1.834	-1.8	65	0.00	4.31
10	t	Aniline	1.988	1.864	6.2	61	-0.02	4.30
11	t	bis(2-Chloroethyl)ether	1.196	1.189	0.6	65	-0.02	4.35
12	t	2-Chlorophenol	1.327	1.283	3.3	62	-0.01	4.39
13	t	Decane		----------NA----------				
14	t	1,3-Dichlorobenzene	1.500	1.406	6.3	62	-0.02	4.49
15	t	1,4-Dichlorobenzene	1.562	1.466	6.1	63	-0.02	4.55
16	t	Benzyl alcohol	0.772	0.870	-12.7	71	-0.01	4.65
17	t	1,2-Dichlorobenzene	1.402	1.378	1.7	65	-0.02	4.66
18	t	Acetophenone	1.906	1.910	-0.2	64	-0.02	4.83
19	t	2-Methylphenol	1.209	1.204	0.4	63	0.00	4.75
20	t	2,2'-oxybis(1-Chloropropa	0.379	0.420	-10.8	73	-0.01	4.74
21	t	3&4-Methylphenol	1.268	1.269	-0.1	64	0.00	4.85
22	t	n-Nitroso-di-n-propylamin	0.975	1.042	-6.9	68	-0.02	4.84
23	t	Hexachloroethane	0.543	0.537	1.1	66	-0.02	4.91
24	I	Naphthalene-d8	1.000	1.000	0.0	73	-0.01	5.46
25	S	Nitrobenzene-d5	0.417	0.465	-11.5	78	-0.01	4.94
26	t	Nitrobenzene	0.438	0.428	2.3	69	-0.02	4.95
27	t	Quinoline		----------NA----------				
28	t	Isophorone	0.696	0.716	-2.9	72	-0.01	5.13
29	t	2-Nitrophenol	0.196	0.179	8.7	61	-0.02	5.18
30	t	2,4-Dimethylphenol	0.390	0.392	-0.5	69	0.00	5.23
31		Benzoic Acid		----------NA----------				
32	t	bis(2-Chloroethoxy)methan	0.400	0.397	0.8	68	-0.01	5.28
33	t	2,4-Dichlorophenol	0.311	0.303	2.6	67	0.00	5.37
34		2,6-Dichlorophenol	0.304	0.286	5.9	65	-0.01	5.52
35	t	1,3,5-Trichlorobenzene		----------NA----------				
36	t	1,2,4-Trichlorobenzene	0.347	0.325	6.3	68	-0.02	5.41
37	t	1,2,3-Trichlorobenzene		----------NA----------				
38	t	Naphthalene	1.117	1.055	5.6	69	-0.01	5.47
39	t	4-Chloroaniline	0.446	0.423	5.2	66	-0.02	5.51
40	t	2,3-Dichloroaniline		----------NA----------				
41	t	Caprolactam	0.155	0.158	-1.9	70	-0.02	5.77

Continuing Calibration Summary

Job Number: JC89788 **Sample:** EZ6841-ECC6838
Account: GZANYB GZA Geo Environmental **Lab FileID:** Z138975.D
Project: Former Signore, Ellicottville, NY

42	t	Hexachlorobutadiene	0.209	0.204	2.4	70	-0.02	5.56
43	t	4-Chloro-3-methylphenol	0.339	0.345	-1.8	69	0.00	5.87
44	t	2-Methylnaphthalene	0.583	0.626	-7.4	76	-0.02	5.96
45	t	1-Methylnaphthalene	0.673	0.623	7.4	67	-0.01	6.03
46	t	Dimethylnaphthalene		----------NA----------				
47	I	Acenaphthene-d10	1.000	1.000	0.0	70	-0.02	6.78
		----------	True	Calc.	% Drift	----------		
48	t	Hexachlorocyclopentadiene	50.000	27.612	44.8	26	-0.02	6.08
		----------	AvgRF	CCRF	% Dev	----------		
49	t	2,4,6-Trichlorophenol	0.387	0.404	-4.4	68	-0.01	6.18
50	t	2,4,5-Trichlorophenol	0.409	0.436	-6.6	69	0.00	6.22
51	S	2-Fluorobiphenyl	1.449	1.726	-19.1	80	-0.01	6.23
52	t	2-Chloronaphthalene	1.160	1.217	-4.9	71	-0.01	6.33
53	t	Biphenyl	1.572	1.585	-0.8	67	-0.02	6.31
54	t	2-Nitroaniline	0.494	0.442	10.5	54	-0.02	6.41
55	t	Dimethylphthalate	1.356	1.390	-2.5	70	-0.01	6.55
56	t	Acenaphthylene	1.853	1.928	-4.0	70	-0.02	6.66
57	t	2,6-Dinitrotoluene	0.282	0.320	-13.5	71	-0.02	6.60
58	t	3-Nitroaniline	0.313	0.345	-10.2	71	-0.01	6.75
59	t	Acenaphthene	1.211	1.255	-3.6	70	-0.01	6.81
		----------	True	Calc.	% Drift	----------		
60	t	2,4-Dinitrophenol	50.000	20.978	58.0#	22	-0.02	6.85
		----------	AvgRF	CCRF	% Dev	----------		
61	t	4-Nitrophenol	0.224	0.309	-37.9	91	0.00	6.93
62	t	Dibenzofuran	1.667	1.806	-8.3	74	-0.02	6.96
63	t	2,4-Dinitrotoluene	0.400	0.463	-15.8	74	-0.02	6.96
64		2,3,4,6-Tetrachlorophenol	0.303	0.382	-26.1	78	-0.01	7.09
		----------	True	Calc.	% Drift	----------		
65	t	Diethylphthalate	50.000	50.198	-0.4	70	-0.02	7.18
		----------	AvgRF	CCRF	% Dev	----------		
66	t	Fluorene	1.396	1.460	-4.6	71	-0.02	7.29
67	t	4-Chlorophenyl-phenylethe	0.667	0.680	-1.9	70	-0.02	7.28
68	t	4-Nitroaniline	0.340	0.352	-3.5	68	-0.02	7.32
69	I	Phenanthrene-d10	1.000	1.000	0.0	77	-0.02	8.31
		----------	True	Calc.	% Drift	----------		
70	t	4,6-Dinitro-2-methylpheno	50.000	21.840	56.3#	30	-0.02	7.36
		----------	AvgRF	CCRF	% Dev	----------		
71	t	n-Nitrosodiphenylamine	0.553	0.626	-13.2	86	-0.02	7.41
72	t	1,2-Diphenylhydrazine	0.838	0.850	-1.4	75	-0.02	7.45
73	S	2,4,6-Tribromophenol	0.135	0.125	7.4	67	-0.02	7.54
74	t	4-Bromophenyl-phenylether	0.221	0.210	5.0	70	-0.02	7.80
75	t	Hexachlorobenzene	0.269	0.248	7.8	71	-0.02	7.88
		----------	True	Calc.	% Drift	----------		
76	t	Pentachlorophenol	50.000	41.301	17.4	58	-0.01	8.12
		----------	AvgRF	CCRF	% Dev	----------		
77	t	Phenanthrene	1.119	1.061	5.2	73	-0.02	8.35
78	t	Anthracene	1.123	1.090	2.9	74	-0.02	8.41
79	t	Carbazole	1.050	0.994	5.3	72	-0.01	8.62

Continuing Calibration Summary

Job Number: JC89788 **Sample:** EZ6841-ECC6838
Account: GZANYB GZA Geo Environmental **Lab FileID:** Z138975.D
Project: Former Signore, Ellicottville, NY

80	t	Di-n-butylphthalate	1.354	1.300	4.0	72	-0.02	9.11
81	t	Fluoranthene	1.223	1.145	6.4	69	-0.02	9.92
82	t	Octadecane		----------NA----------				
83	I	Chrysene-d12	1.000	1.000	0.0	75	-0.02	12.06
84	t	Pyrene	1.370	1.280	6.6	69	-0.02	10.24
85	S	Terphenyl-d14	0.910	1.016	-11.6	82	-0.02	10.50
86	t	Butylbenzylphthalate	0.622	0.608	2.3	69	-0.02	11.28
87	t	Benzo[a]anthracene	1.296	1.126	13.1	65	-0.02	12.04
88	t	3,3'-Dichlorobenzidine	0.471	0.396	15.9	59	-0.02	12.05
89	t	Chrysene	1.214	1.023	15.7	63	-0.02	12.10
90	t	bis(2-Ethylhexyl)phthalat	0.821	0.811	1.2	70	-0.02	12.22
91	I	Perylene-d12	1.000	1.000	0.0	71	-0.02	14.13
92	t	Di-n-octylphthalate	1.383	1.507	-9.0	70	-0.02	13.19
93	t	Benzo[b]fluoranthene	1.283	1.214	5.4	63	-0.02	13.62
94	t	Benzo[k]fluoranthene	1.145	1.060	7.4	65	-0.02	13.66
95	t	Benzo[a]pyrene	1.094	1.071	2.1	66	-0.02	14.05
96	t	Indeno[1,2,3-cd]pyrene	1.327	1.335	-0.6	66	-0.02	15.45
97	t	Dibenz(a,h)acridine		----------NA----------				
98	t	Dibenz[a,h]anthracene	1.137	1.133	0.4	65	-0.02	15.47
99	t	7,12-Dimethylbenz(a)anthr	0.553	0.524	5.2	63	-0.02	13.62
100	t	Benzo[g,h,i]perylene	1.031	1.122	-8.8	72	-0.02	15.77

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:51:38 2019

Continuing Calibration Summary

Job Number: JC89788 **Sample:** EZ6841-ECC6787
Account: GZANYB GZA Geo Environmental **Lab FileID:** Z138976.D
Project: Former Signore, Ellicottville, NY

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138976.d Vial: 3
Acq On : 21 Jun 2019 10:27 pm Operator: angelar
Sample : ecc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
101		1,4-Dichlorobenzene-d4a	1.000	1.000	0.0	78	-0.02	4.53
102		Benzaldehyde	1.095	1.053	3.8	74	-0.01	4.21
103		Phenanthrene-d10a	1.000	1.000	0.0	98	-0.01	8.31
104	s	1-chlorooctadecane		----------NA----------				
105	s	o-terphenyl		----------NA----------				
106		Atrazine	0.094	0.105	-11.7	107	-0.02	8.00
107		Chrysene-d12a	1.000	1.000	0.0	64	0.00	12.05
108		Benzidine		----------NA----------				
109		Acenaphthene-d10a	1.000	1.000	0.0	87	-0.02	6.78
110		1,2,4,5-Tetrachlorobenzen	0.557	0.614	-10.2	97	-0.01	6.09
111	I	Naphthalene-d8a	1.000	1.000	0.0	81	-0.02	5.45
112		Hydroquinone		----------NA----------				
113		Phenanthrene-d10b	1.000	1.000	0.0	98	-0.01	8.31
114		Pentachloronitrobenzene	0.048	0.042#	12.5	80	-0.01	8.12
115		Chrysene-d12b	1.000	1.000	0.0	96	-0.01	12.05
116		2,3,7,8-TCDD		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:51:43 2019

Continuing Calibration Summary

Job Number: JC89788
Account: GZANYB GZA Geo Environmental
Project: Former Signore, Ellicottville, NY

Sample: EZ6841-ECC6826
Lab FileID: Z138977.D

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\data\michellc\ez6841\z138977.d Vial: 4
Acq On : 21 Jun 2019 10:54 pm Operator: angelar
Sample : ecc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\MZ6838.M (RTE Integrator)
Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
Last Update : Thu Jun 20 12:53:00 2019
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
107	Chrysene-d12a	1.000	1.000	0.0	69	0.00	12.05
108	Benzidine	0.869	0.840	3.3	64	0.00	10.14

(#) = Out of Range SPCC's out = 0 CCC's out = 0
z138702a.D MZ6838.M Mon Jun 24 02:51:46 2019

MS Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85131.d
Acq On : 22 Jun 2019 5:56 am
Operator : chriss2
Sample : jc89788-1 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:28:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

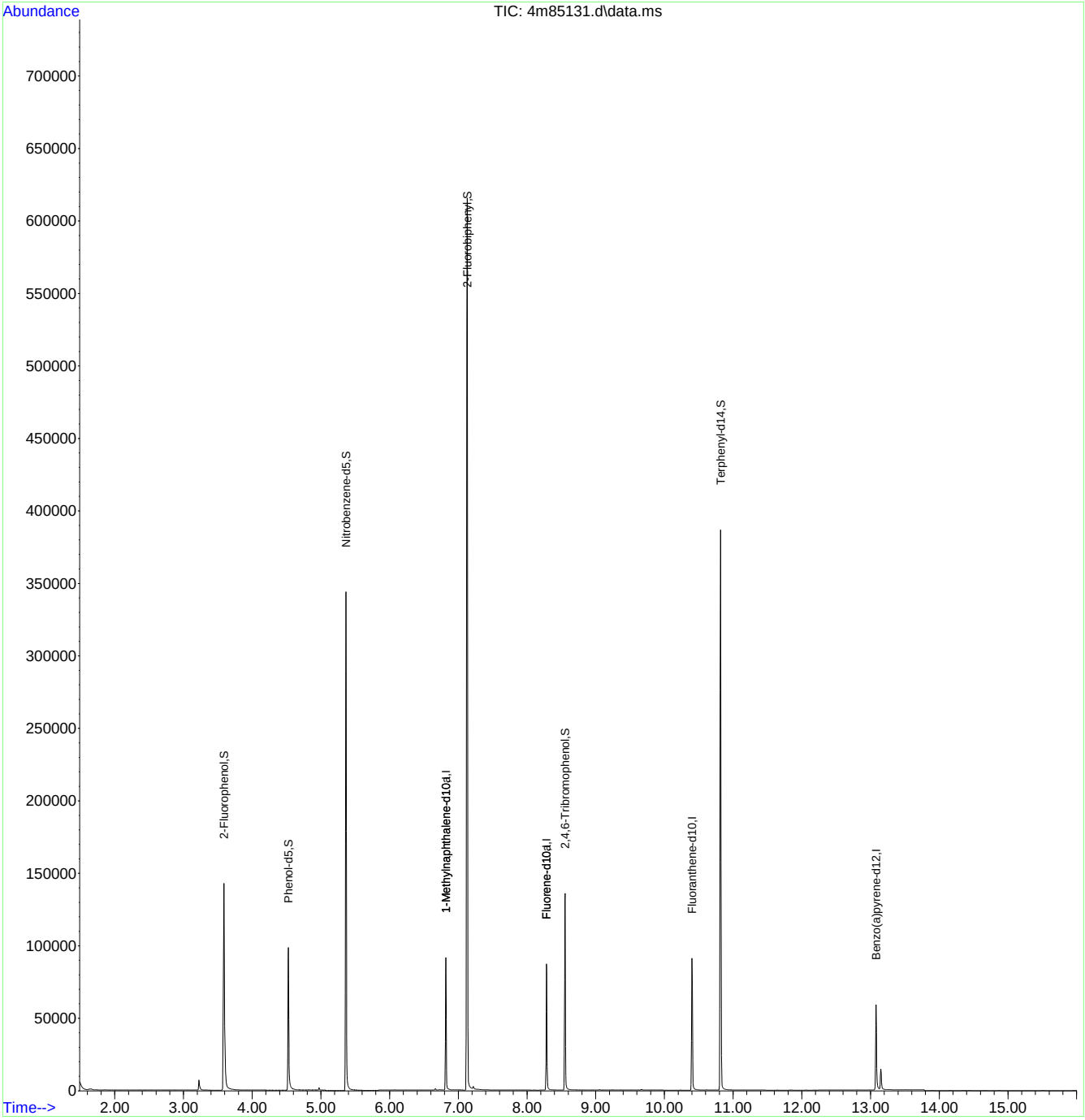
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	34441	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	38307	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	65303	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	48538	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	34441	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	38307	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	87649	19.42	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 38.84%			
3) Phenol-d5	4.526	99	63189	11.19	ppm	0.00
Spiked Amount 50.000			Recovery = 22.38%			
6) Nitrobenzene-d5	5.364	82	194202	33.74	ppm	0.00
Spiked Amount 50.000			Recovery = 67.48%			
11) 2-Fluorobiphenyl	7.131	172	448402	41.05	ppm	0.00
Spiked Amount 50.000			Recovery = 82.10%			
17) 2,4,6-Tribromophenol	8.554	330	55590	34.65	ppm	0.00
Spiked Amount 50.000			Recovery = 69.30%			
25) Terphenyl-d14	10.818	244	274182	30.66	ppm	0.00
Spiked Amount 50.000			Recovery = 61.32%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85131.d
Acq On : 22 Jun 2019 5:56 am
Operator : chriss2
Sample : jc89788-1 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:28:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85132.d
Acq On : 22 Jun 2019 6:17 am
Operator : chriss2
Sample : jc89788-2 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:29:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

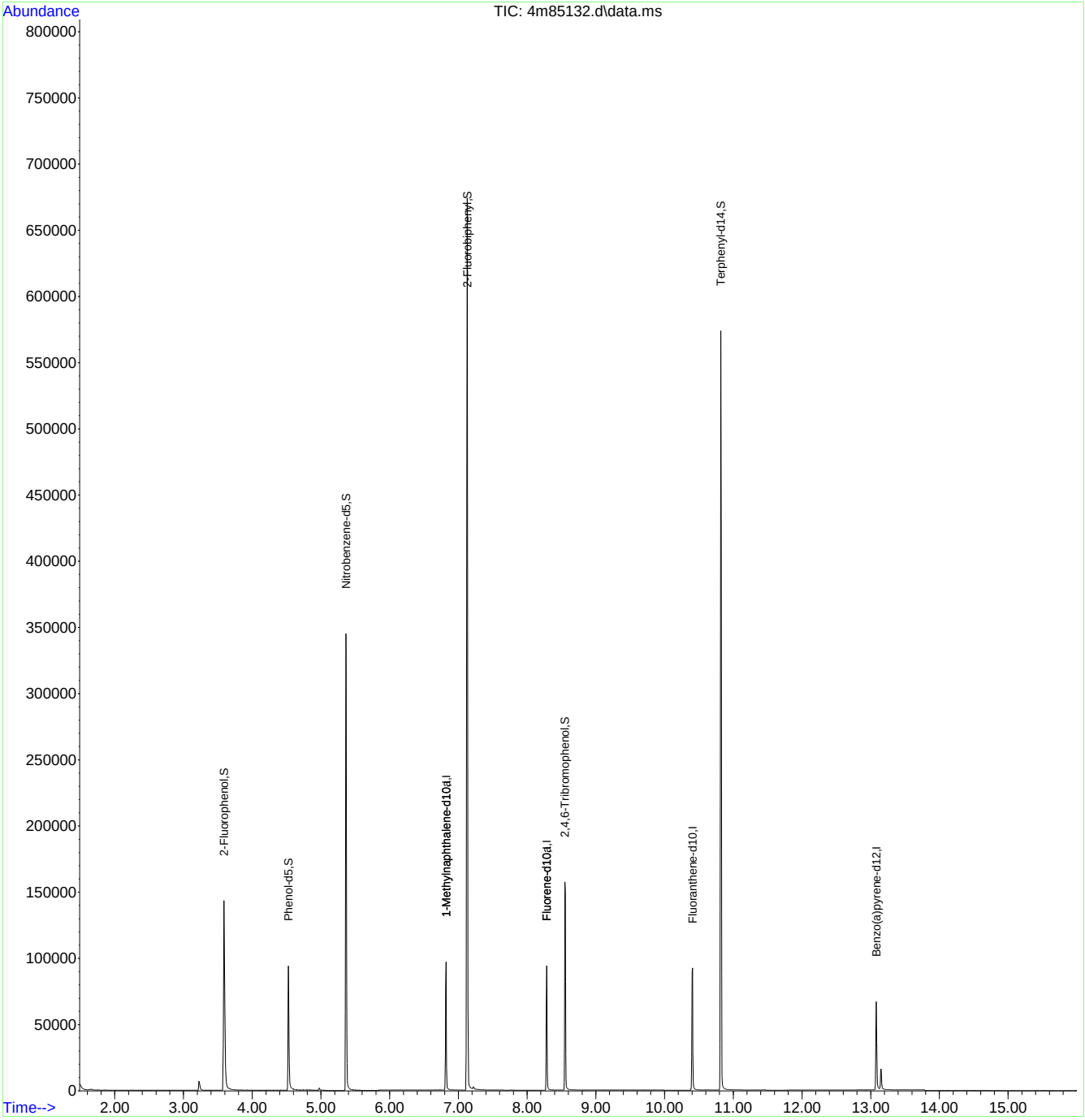
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	35222	4.00	ppm	0.00
12) Fluorene-d10	8.284	176	39761	4.00	ppm	0.00
22) Fluoranthene-d10	10.407	212	70336	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.082	264	53564	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	35222	4.00	ppm	0.00
38) Fluorene-d10a	8.284	176	39761	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	84574	18.32	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 36.64%			
3) Phenol-d5	4.526	99	61429	10.63	ppm	0.00
Spiked Amount 50.000			Recovery = 21.26%			
6) Nitrobenzene-d5	5.364	82	197760	33.60	ppm	0.00
Spiked Amount 50.000			Recovery = 67.20%			
11) 2-Fluorobiphenyl	7.131	172	455142	40.75	ppm	0.00
Spiked Amount 50.000			Recovery = 81.50%			
17) 2,4,6-Tribromophenol	8.551	330	62576	37.58	ppm	0.00
Spiked Amount 50.000			Recovery = 75.16%			
25) Terphenyl-d14	10.819	244	403571	41.89	ppm	0.00
Spiked Amount 50.000			Recovery = 83.78%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85132.d
Acq On : 22 Jun 2019 6:17 am
Operator : chriss2
Sample : jc89788-2 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:29:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3947\
Data File : 4m85092a.d
Acq On : 21 Jun 2019 3:39 pm
Operator : krizhkac
Sample : jc89788-3 Inst : GCMS4M
Misc : op21044a,e4m3947,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 24 01:09:12 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Jun 24 00:42:53 2019
Response via : Initial Calibration

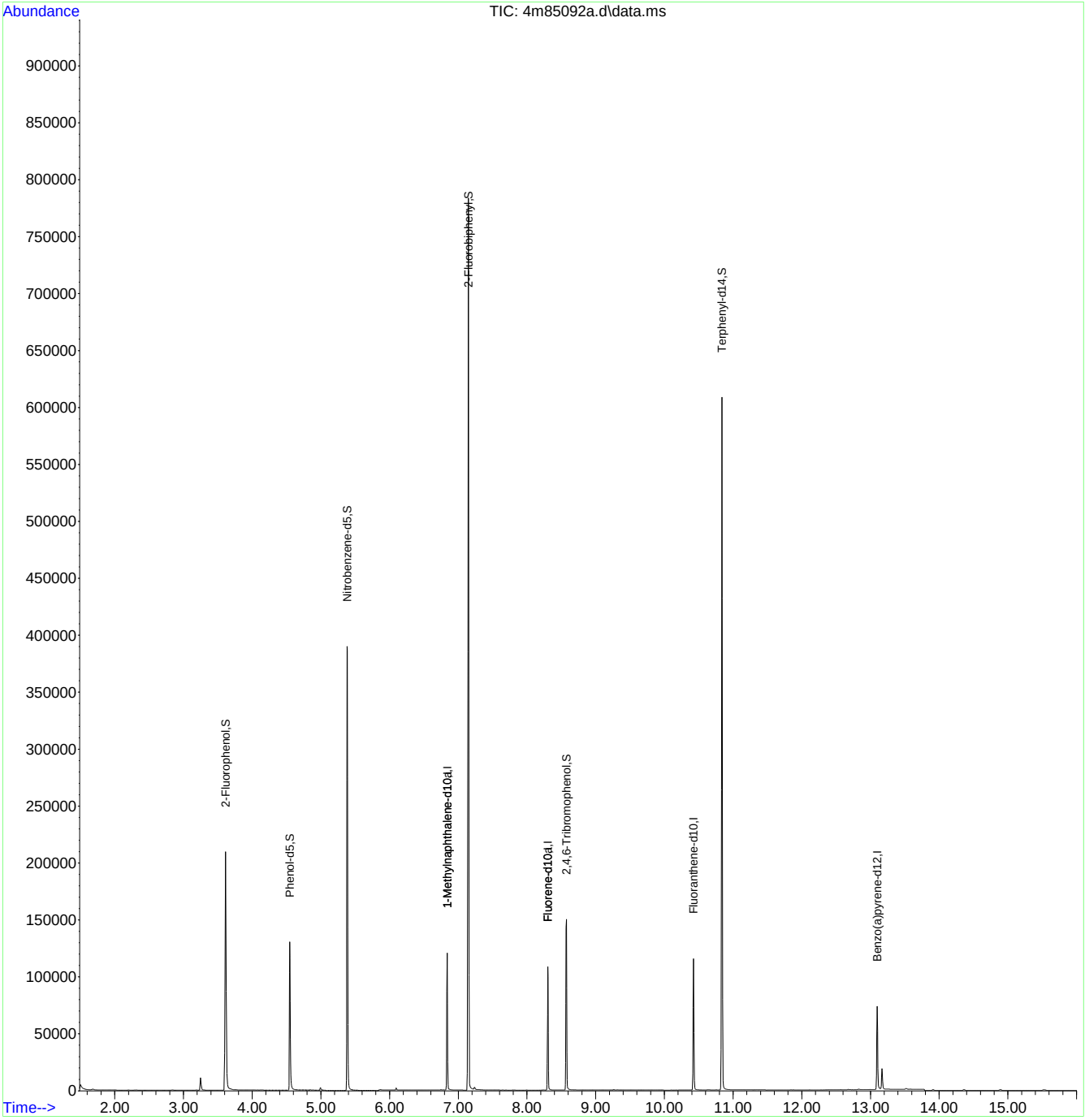
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.838	152	42278	4.00	ppm	0.00
12) Fluorene-d10	8.302	176	45263	4.00	ppm	0.00
22) Fluoranthene-d10	10.424	212	74840	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.097	264	55168	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.838	152	42278	4.00	ppm	0.00
38) Fluorene-d10a	8.302	176	45263	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.611	112	109893	19.83	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 39.66%			
3) Phenol-d5	4.547	99	79600	11.48	ppm	0.00
Spiked Amount 50.000			Recovery = 22.96%			
6) Nitrobenzene-d5	5.383	82	221703	31.38	ppm	0.00
Spiked Amount 50.000			Recovery = 62.76%			
11) 2-Fluorobiphenyl	7.148	172	473243	35.30	ppm	0.00
Spiked Amount 50.000			Recovery = 70.60%			
17) 2,4,6-Tribromophenol	8.574	330	58625	30.93	ppm	0.00
Spiked Amount 50.000			Recovery = 61.86%			
25) Terphenyl-d14	10.836	244	421807	41.15	ppm	0.00
Spiked Amount 50.000			Recovery = 82.30%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3947\
Data File : 4m85092a.d
Acq On : 21 Jun 2019 3:39 pm
Operator : krizhkac
Sample : jc89788-3 Inst : GCMS4M
Misc : op21044a,e4m3947,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 24 01:09:12 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Jun 24 00:42:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85130.d
Acq On : 22 Jun 2019 5:35 am
Operator : chriss2
Sample : jc89788-4 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:27:53 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

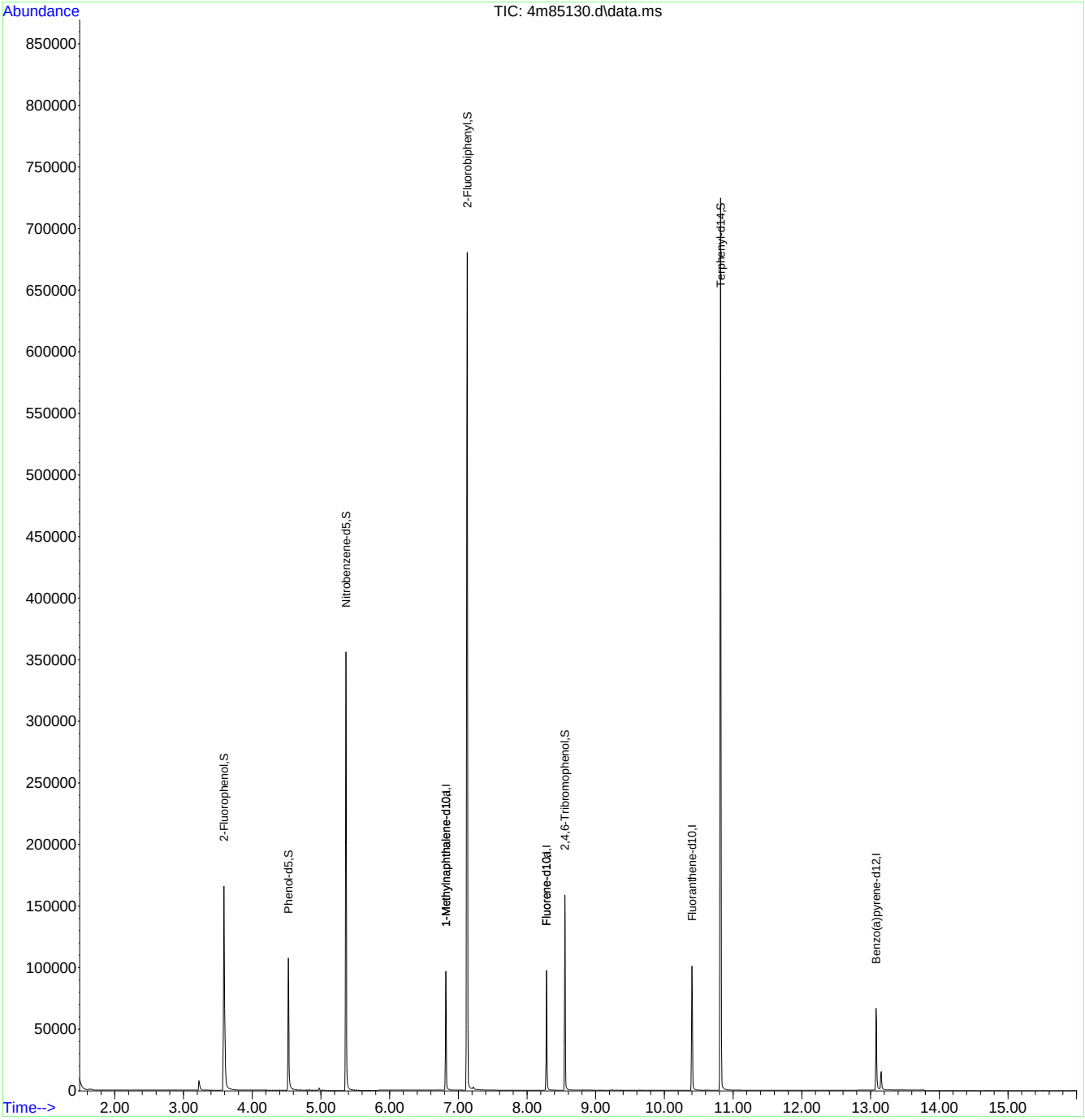
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	35846	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	40857	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	70439	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	52509	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	35846	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	40857	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	97785	20.81	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 41.62%			
3) Phenol-d5	4.526	99	68905	11.72	ppm	0.00
Spiked Amount 50.000			Recovery = 23.44%			
6) Nitrobenzene-d5	5.364	82	204957	34.21	ppm	0.00
Spiked Amount 50.000			Recovery = 68.42%			
11) 2-Fluorobiphenyl	7.131	172	473863	41.68	ppm	0.00
Spiked Amount 50.000			Recovery = 83.36%			
17) 2,4,6-Tribromophenol	8.551	330	60306	35.25	ppm	0.00
Spiked Amount 50.000			Recovery = 70.50%			
25) Terphenyl-d14	10.818	244	499792	51.81	ppm	0.00
Spiked Amount 50.000			Recovery = 103.62%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85130.d
Acq On : 22 Jun 2019 5:35 am
Operator : chriss2
Sample : jc89788-4 Inst : GCMS4M
Misc : op21044a,e4m3948,1000,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:27:53 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85133.d
Acq On : 22 Jun 2019 6:38 am
Operator : chriss2
Sample : jc89788-5 Inst : GCMS4M
Misc : op21117a,e4m3948,1040,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:29:36 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

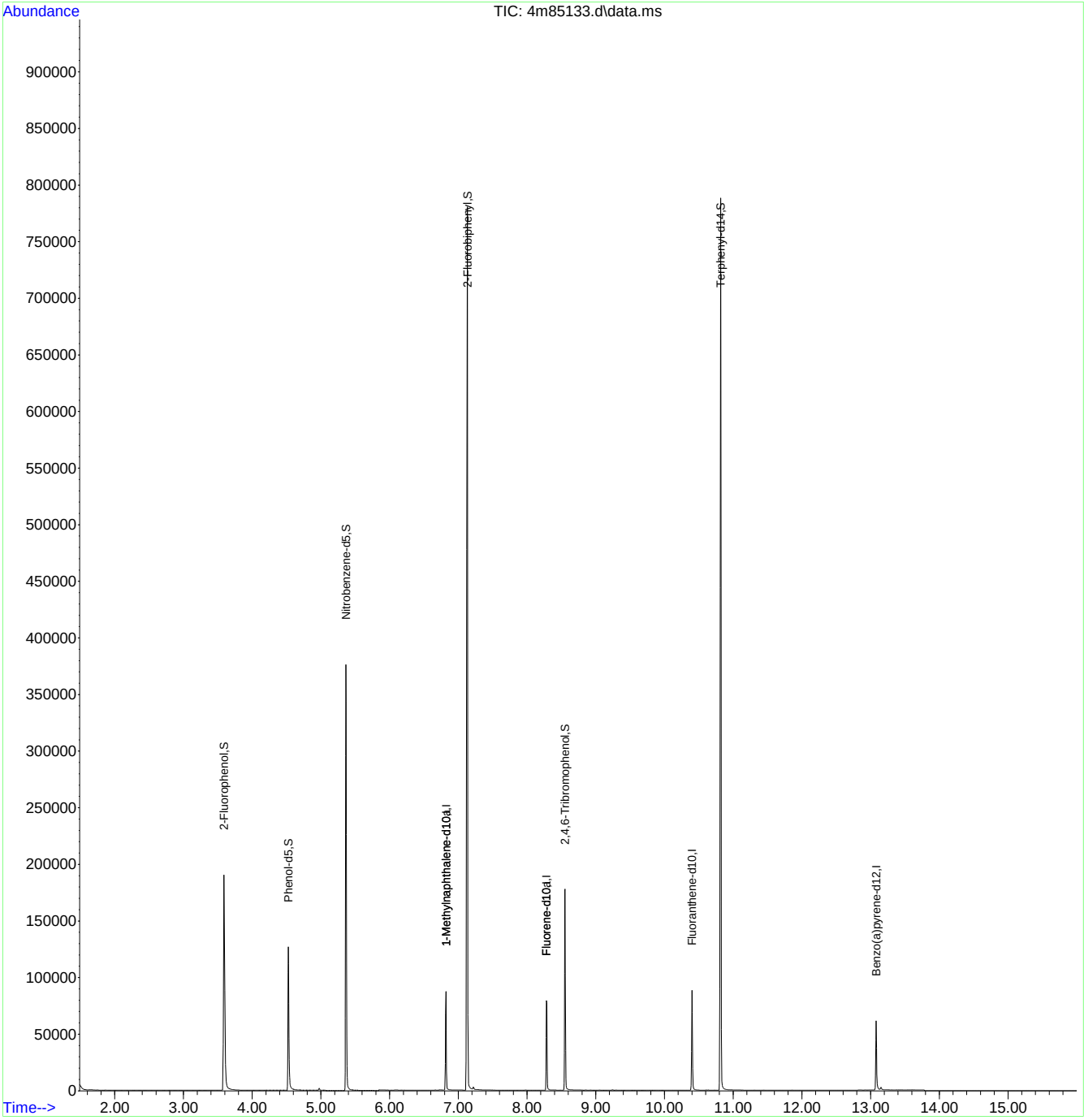
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	31668	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	35666	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	62494	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	47593	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	31668	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	35666	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	113554	27.36	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 54.72%			
3) Phenol-d5	4.526	99	81977	15.78	ppm	0.00
Spiked Amount 50.000			Recovery = 31.56%			
6) Nitrobenzene-d5	5.364	82	216598	40.93	ppm	0.00
Spiked Amount 50.000			Recovery = 81.86%			
11) 2-Fluorobiphenyl	7.131	172	495812	49.37	ppm	0.00
Spiked Amount 50.000			Recovery = 98.74%			
17) 2,4,6-Tribromophenol	8.554	330	71550	47.91	ppm	0.00
Spiked Amount 50.000			Recovery = 95.82%			
25) Terphenyl-d14	10.818	244	532161	62.17	ppm	0.00
Spiked Amount 50.000			Recovery = 124.34%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85133.d
Acq On : 22 Jun 2019 6:38 am
Operator : chriss2
Sample : jc89788-5 Inst : GCMS4M
Misc : op21117a,e4m3948,1040,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:29:36 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85134.d
Acq On : 22 Jun 2019 6:59 am
Operator : chriss2
Sample : jc89788-6 Inst : GCMS4M
Misc : op21117a,e4m3948,1020,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:30:43 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

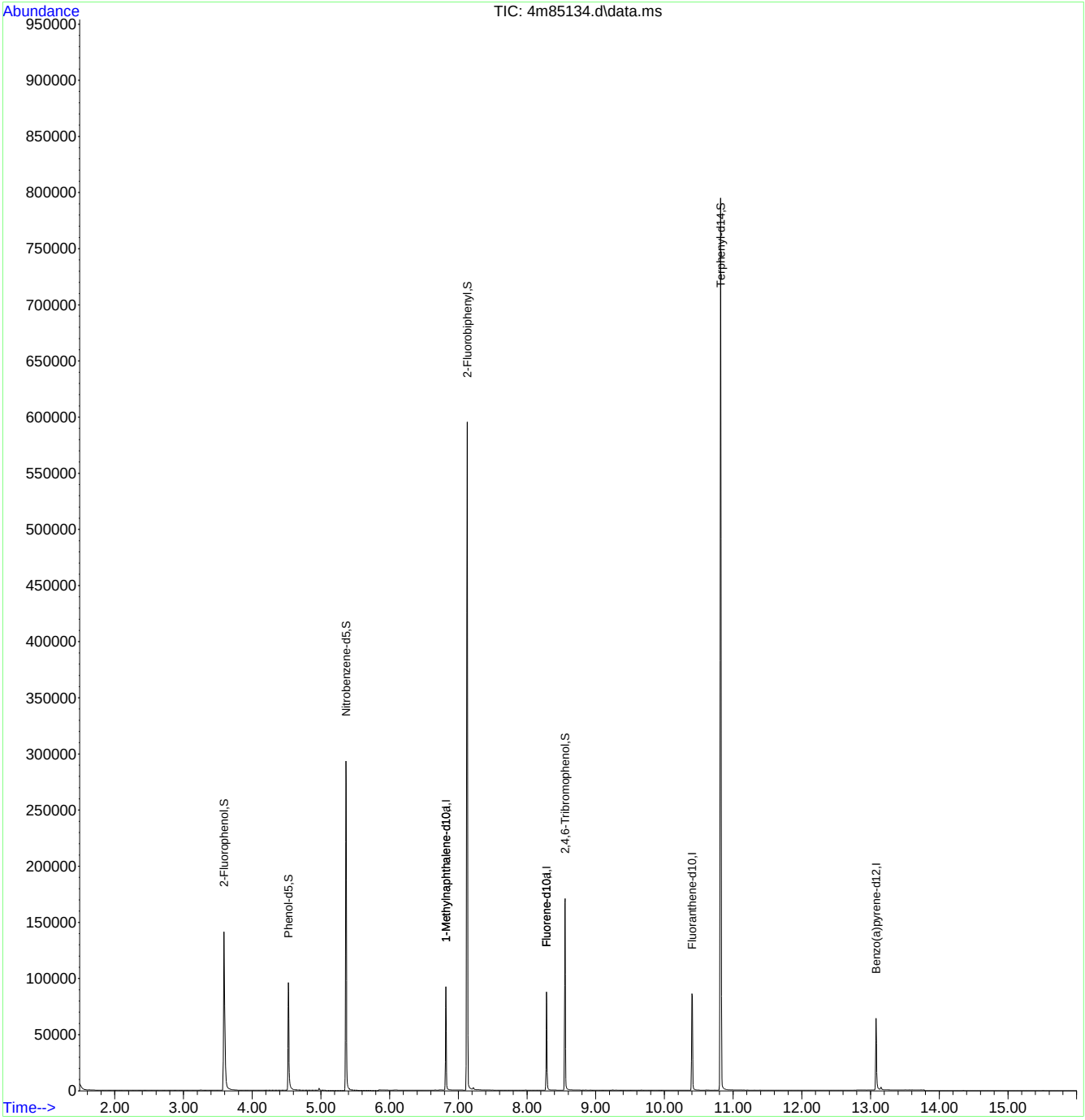
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	33287	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	37482	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	66201	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	50250	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	33287	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	37482	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	88616	20.31	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 40.62%			
3) Phenol-d5	4.525	99	64418	11.80	ppm	0.00
Spiked Amount 50.000			Recovery = 23.60%			
6) Nitrobenzene-d5	5.364	82	171040	30.75	ppm	0.00
Spiked Amount 50.000			Recovery = 61.50%			
11) 2-Fluorobiphenyl	7.131	172	400954	37.98	ppm	0.00
Spiked Amount 50.000			Recovery = 75.96%			
17) 2,4,6-Tribromophenol	8.554	330	68210	43.46	ppm	0.00
Spiked Amount 50.000			Recovery = 86.92%			
25) Terphenyl-d14	10.818	244	546614	60.29	ppm	0.00
Spiked Amount 50.000			Recovery = 120.58%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85134.d
Acq On : 22 Jun 2019 6:59 am
Operator : chriss2
Sample : jc89788-6 Inst : GCMS4M
Misc : op21117a,e4m3948,1020,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:30:43 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3947\
Data File : 4m85086.d
Acq On : 21 Jun 2019 12:13 pm
Operator : krizhkac
Sample : op21044a-mb1 Inst : GCMS4M
Misc : op21044a,e4m3947,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 24 00:51:32 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Jun 24 00:42:53 2019
Response via : Initial Calibration

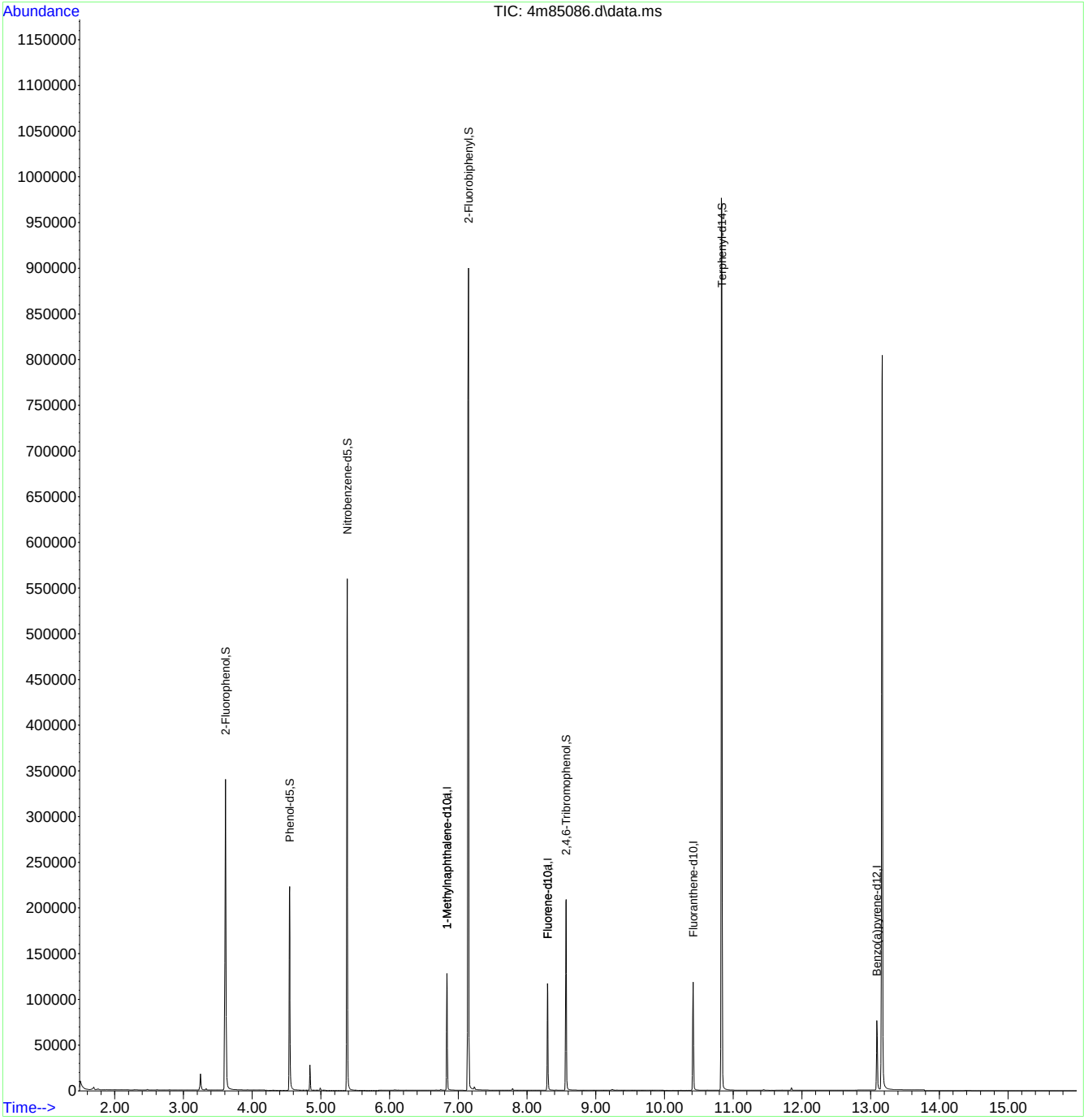
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.833	152	46323	4.00	ppm	0.00
12) Fluorene-d10	8.298	176	50216	4.00	ppm	0.00
22) Fluoranthene-d10	10.418	212	79867	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.092	264	57316	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.833	152	46323	4.00	ppm	0.00
38) Fluorene-d10a	8.298	176	50216	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.611	112	181073	29.82	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 59.64%#			
3) Phenol-d5	4.544	99	135527	17.84	ppm	0.00
Spiked Amount 50.000			Recovery = 35.68%			
6) Nitrobenzene-d5	5.383	82	307028	39.66	ppm	0.00
Spiked Amount 50.000			Recovery = 79.32%			
11) 2-Fluorobiphenyl	7.148	172	651608	44.36	ppm	0.00
Spiked Amount 50.000			Recovery = 88.72%			
17) 2,4,6-Tribromophenol	8.570	330	86003	40.90	ppm	0.00
Spiked Amount 50.000			Recovery = 81.80%			
25) Terphenyl-d14	10.836	244	760793	69.55	ppm	0.00
Spiked Amount 50.000			Recovery = 139.10%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3947\
Data File : 4m85086.d
Acq On : 21 Jun 2019 12:13 pm
Operator : krizhkac
Sample : op21044a-mb1 Inst : GCMS4M
Misc : op21044a,e4m3947,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 24 00:51:32 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Jun 24 00:42:53 2019
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 11:34

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77302.D
Acq On : 21 Jun 2019 5:45 pm
Operator : angelar
Sample : op21044a-mb1
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 24 09:42:17 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

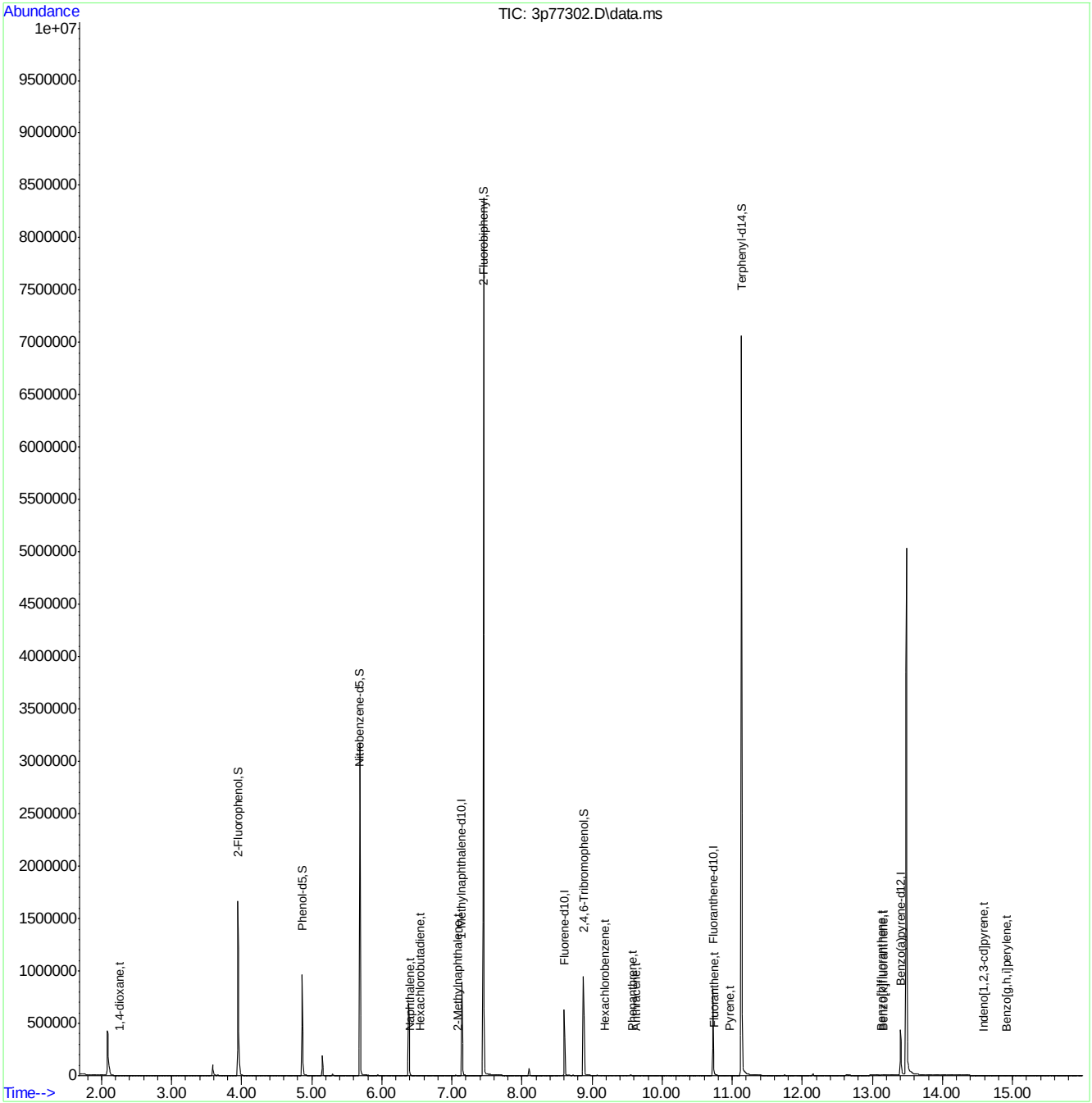
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.143	150	240670	4.00	ppm	0.00
12) Fluorene-d10	8.602	176	329150	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	548059	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.403	264	299924	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.945	112	896986	26.71	ppm	0.00
Spiked Amount 50.000			Recovery = 53.42%			
4) Phenol-d5	4.865	99	809294	19.48	ppm	0.00
Spiked Amount 50.000			Recovery = 38.96%			
7) Nitrobenzene-d5	5.684	82	1844730	46.16	ppm	0.00
Spiked Amount 50.000			Recovery = 92.32%			
13) 2-Fluorobiphenyl	7.452	172	3543650	39.56	ppm	0.00
Spiked Amount 50.000			Recovery = 79.12%			
18) 2,4,6-Tribromophenol	8.876	330	406915	52.00	ppm	0.00
Spiked Amount 50.000			Recovery = 104.00%			
26) Terphenyl-d14	11.131	244	4237455	54.93	ppm	0.00
Spiked Amount 50.000			Recovery = 109.86%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.255	88	443m	0.03	ppm	
8) Naphthalene	6.403	128	795	0.01	ppm	84
9) Hexachlorobutadiene	6.545	225	188	0.01	ppm	93
10) 2-Methylnaphthalene	7.082	141	790	0.01	ppm	90
20) Hexachlorobenzene	9.180	284	192	0.01	ppm	78
22) Phenanthrene	9.579	178	1854	0.01	ppm	81
23) Anthracene	9.626	178	599m	0.01	ppm	
24) Fluoranthene	10.745	202	1336	0.01	ppm	91
25) Pyrene	10.968	202	1195	0.01	ppm	95
30) Benzo[b]fluoranthene	13.130	252	842	0.01	ppm	95
31) Benzo[k]fluoranthene	13.158	252	846	0.01	ppm	70
33) Indeno[1,2,3-cd]pyrene	14.590	276	452	0.01	ppm	84
35) Benzo[g,h,i]perylene	14.908	276	1047	0.01	ppm	99

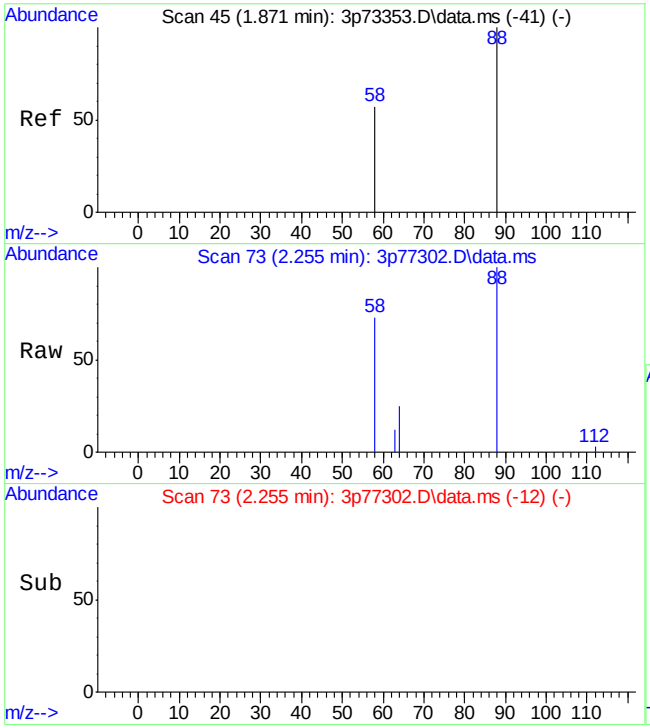
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77302.D
Acq On : 21 Jun 2019 5:45 pm
Operator : angelar
Sample : op21044a-mb1
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 24 09:42:17 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

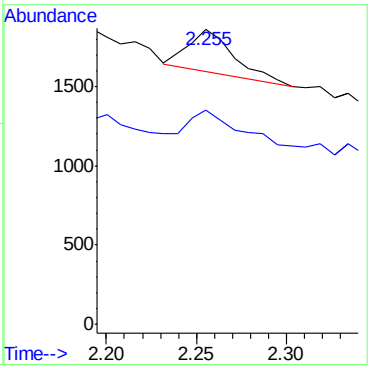


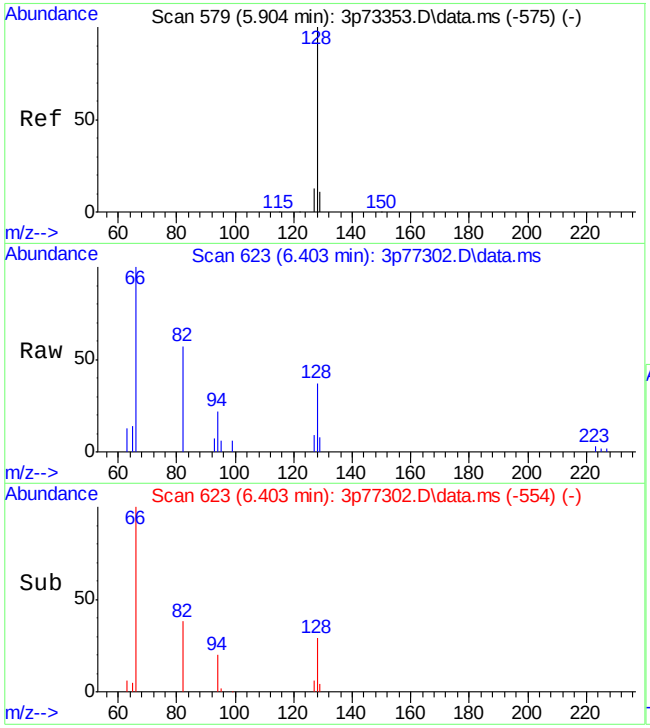


#2
1,4-dioxane
Concen: 0.03 ppm m
RT: 2.255 min Scan# 73
Delta R.T. -0.021 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion: 88 Resp: 443

Ion	Ratio	Lower	Upper
88	100		
58	72.6	34.0	74.0

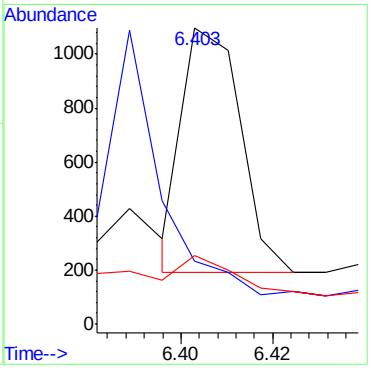


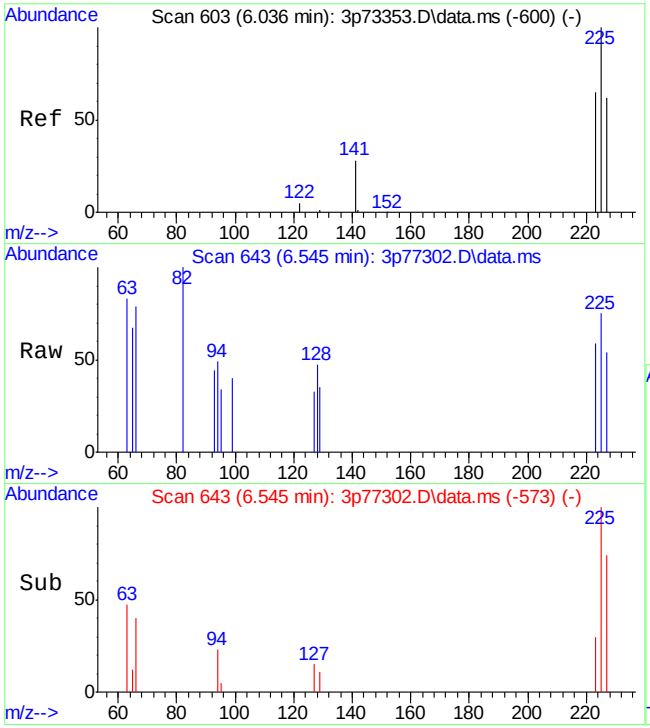


#8
Naphthalene
Concen: 0.01 ppm
RT: 6.403 min Scan# 623
Delta R.T. -0.007 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:128 Resp: 795

Ion	Ratio	Lower	Upper
128	100		
129	0.0	0.0	41.6
127	13.3	0.0	42.3

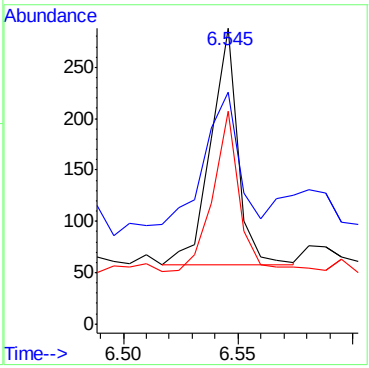


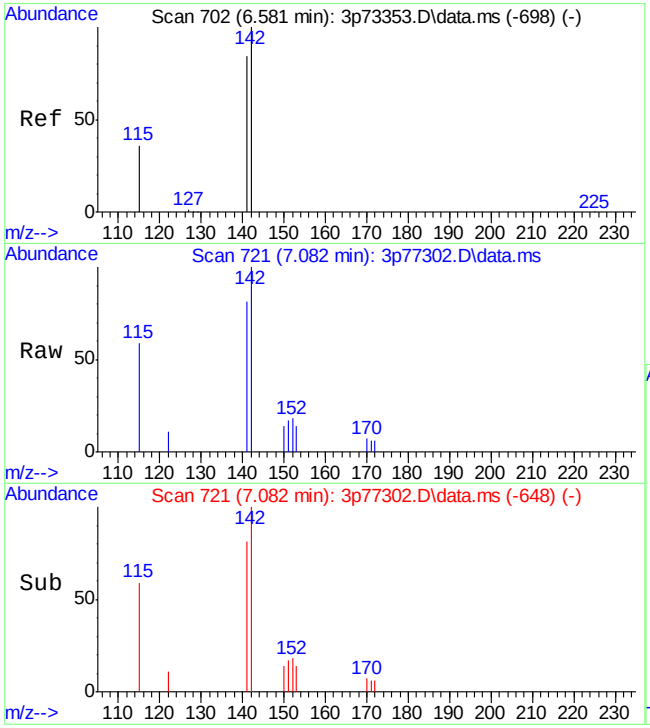


#9
Hexachlorobutadiene
Concen: 0.01 ppm
RT: 6.545 min Scan# 643
Delta R.T. -0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:225 Resp: 188

Ion	Ratio	Lower	Upper
225	100		
223	50.2	30.4	90.4
227	67.2	36.6	96.6

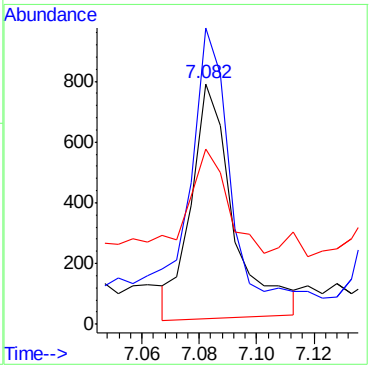


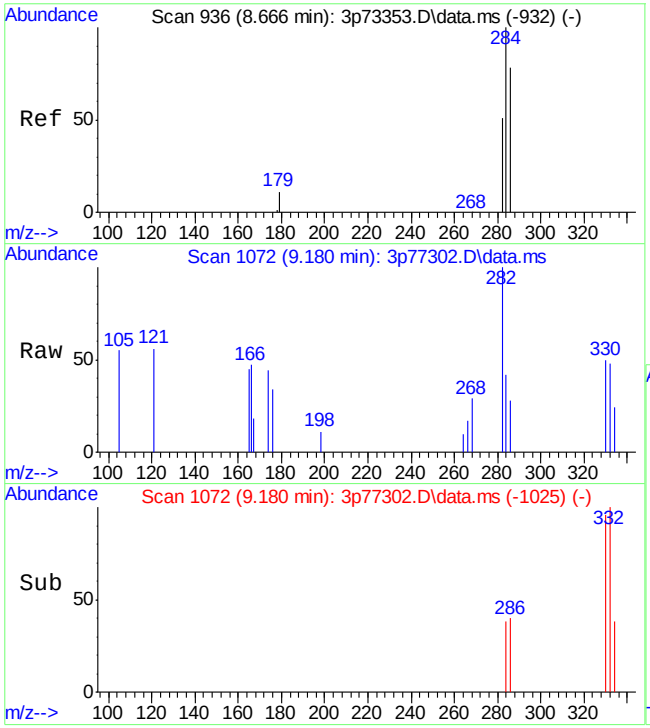


#10
2-Methylnaphthalene
Concen: 0.01 ppm
RT: 7.082 min Scan# 721
Delta R.T. -0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:141 Resp: 790

Ion	Ratio	Lower	Upper
141	100		
142	123.4	83.6	143.6
115	41.7	19.4	79.4

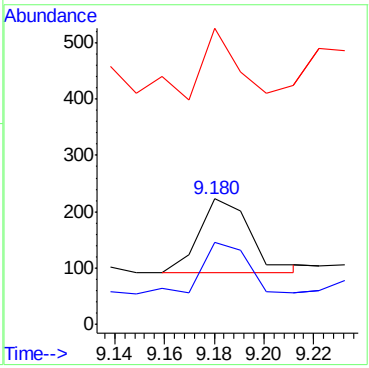


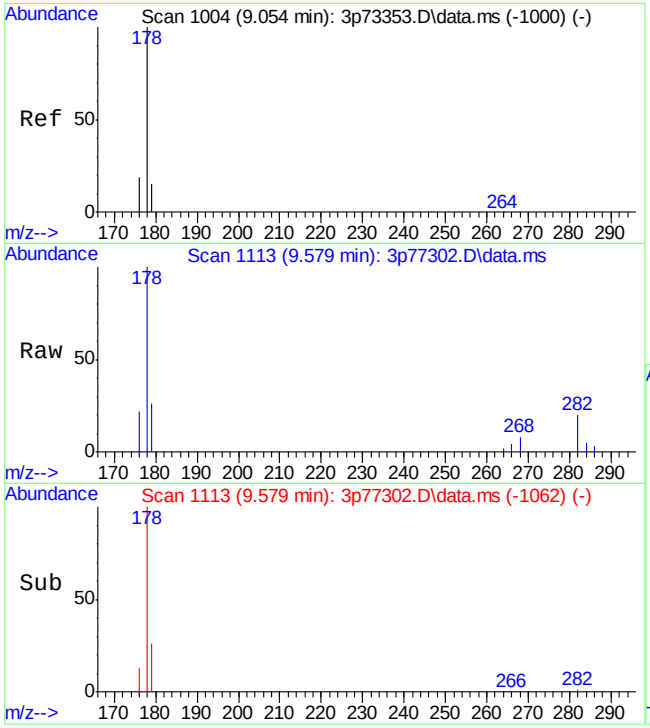


#20
Hexachlorobenzene
Concen: 0.01 ppm
RT: 9.180 min Scan# 1072
Delta R.T. -0.006 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:284 Resp: 192

Ion	Ratio	Lower	Upper
284	100		
286	69.6	53.8	113.8
282	74.4	21.0	81.0

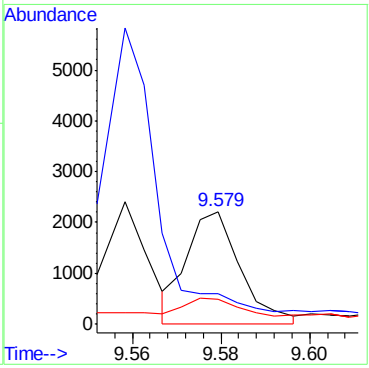


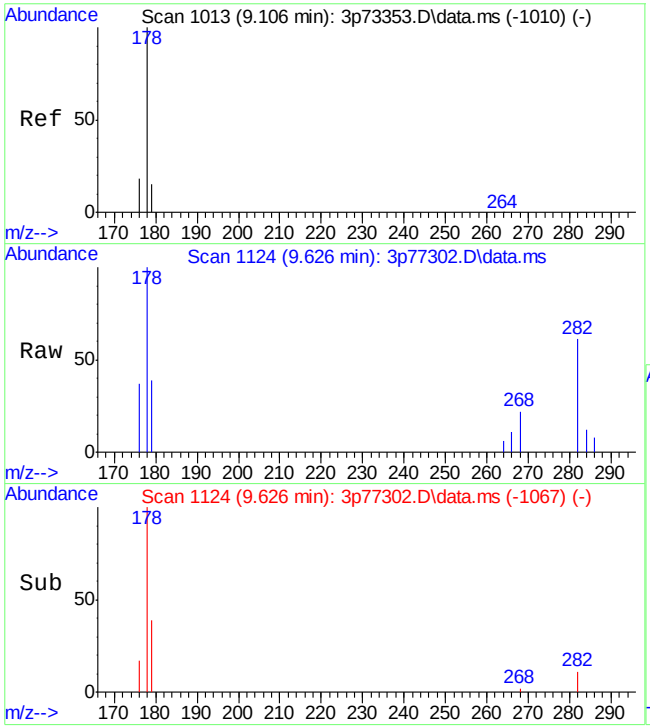


#22
Phenanthrene
Concen: 0.01 ppm
RT: 9.579 min Scan# 1113
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:178 Resp: 1854

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	45.4
176	16.6	0.0	48.5

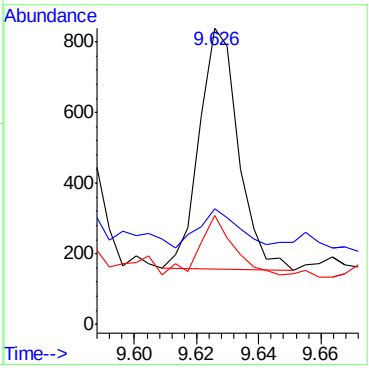


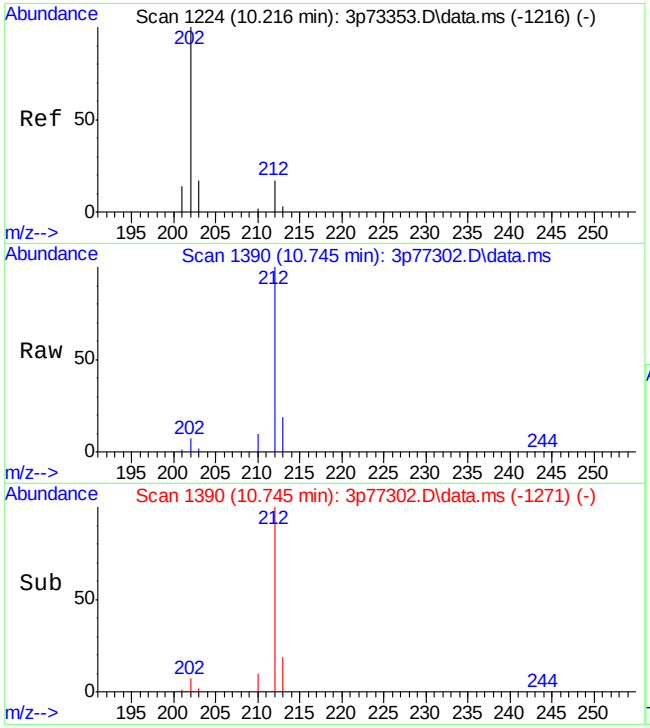


#23
Anthracene
Concen: 0.01 ppm m
RT: 9.626 min Scan# 1124
Delta R.T. 0.001 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:178 Resp: 599

Ion	Ratio	Lower	Upper
178	100		
179	39.0	0.0	44.9
176	36.8	0.0	48.5

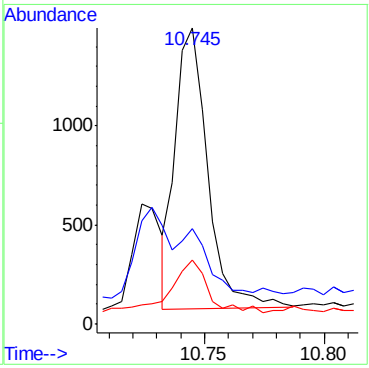


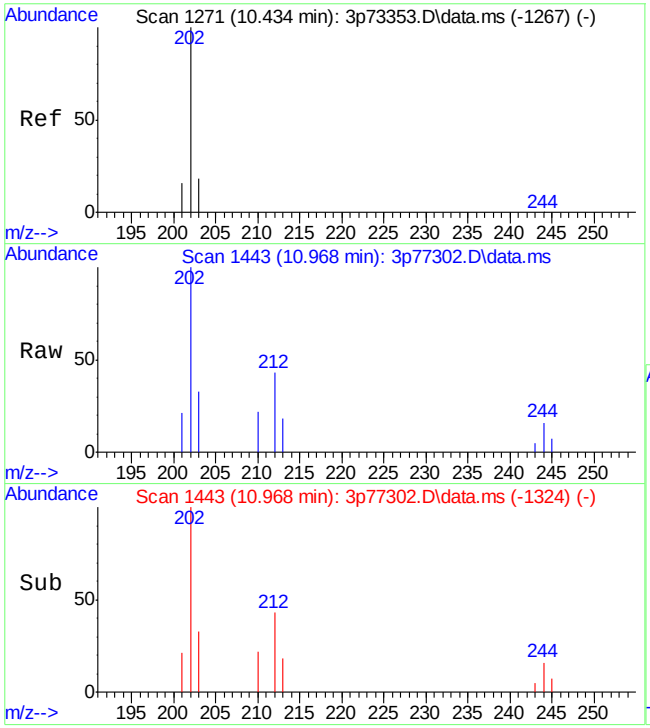


#24
Fluoranthene
Concen: 0.01 ppm
RT: 10.745 min Scan# 1390
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:202 Resp: 1336

Ion	Ratio	Lower	Upper
202	100		
203	12.7	0.0	47.1
201	18.4	0.0	45.1

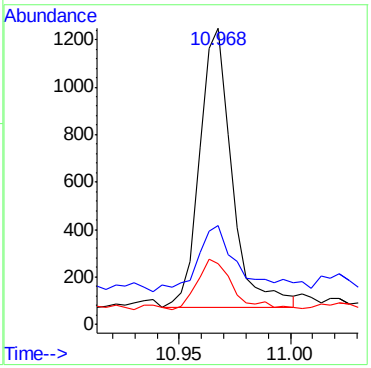


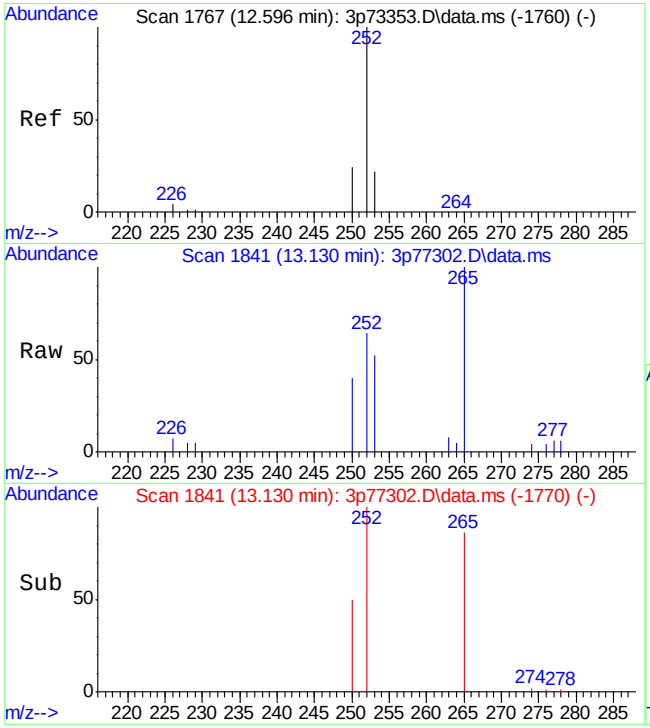


#25
Pyrene
Concen: 0.01 ppm
RT: 10.968 min Scan# 1443
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:202 Resp: 1195

Ion	Ratio	Lower	Upper
202	100		
203	21.1	0.0	47.7
201	16.1	0.0	47.3

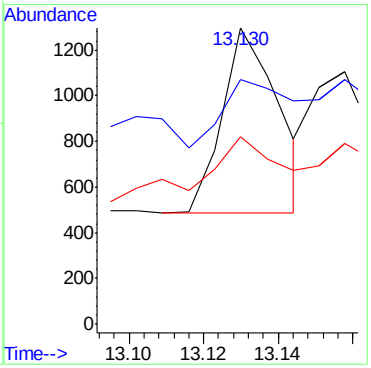


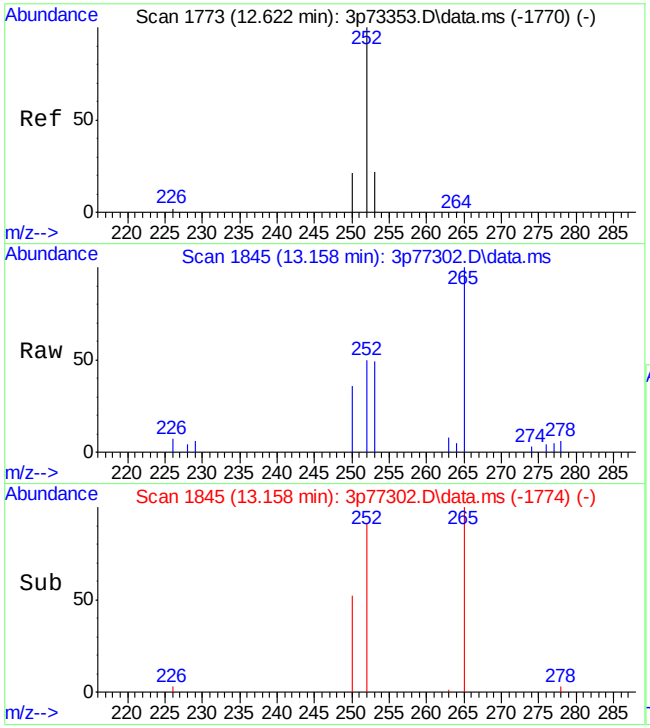


#30
Benzo[b]fluoranthene
Concen: 0.01 ppm
RT: 13.130 min Scan# 1841
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:252 Resp: 842

Ion	Ratio	Lower	Upper
252	100		
253	20.3	0.0	52.9
250	25.9	0.0	53.7

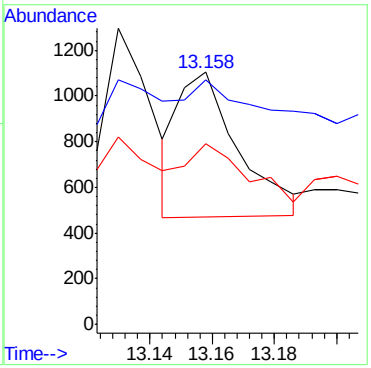


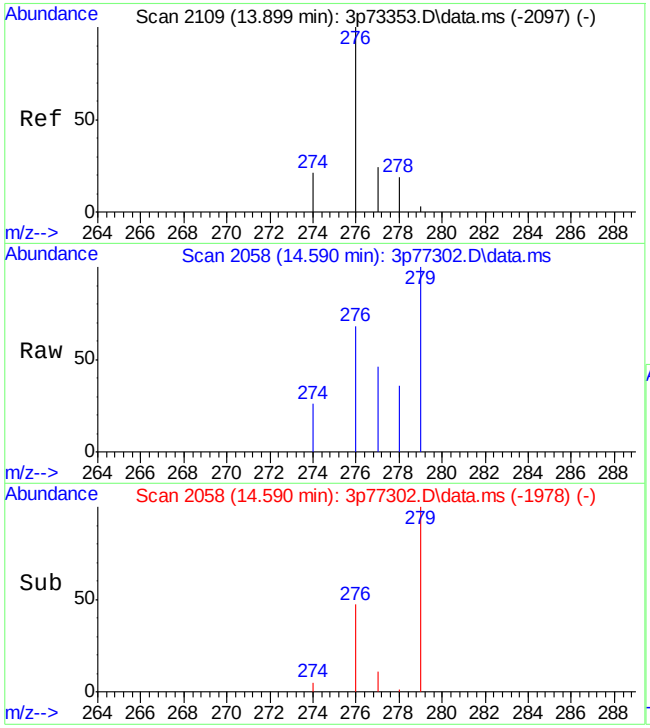


#31
Benzo[k]fluoranthene
Concen: 0.01 ppm
RT: 13.158 min Scan# 1845
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:252 Resp: 846

Ion	Ratio	Lower	Upper
252	100		
253	27.5	0.0	53.0
250	44.9	0.0	50.6

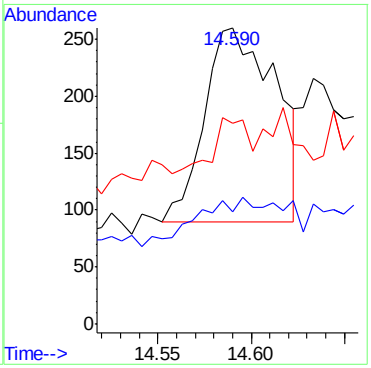


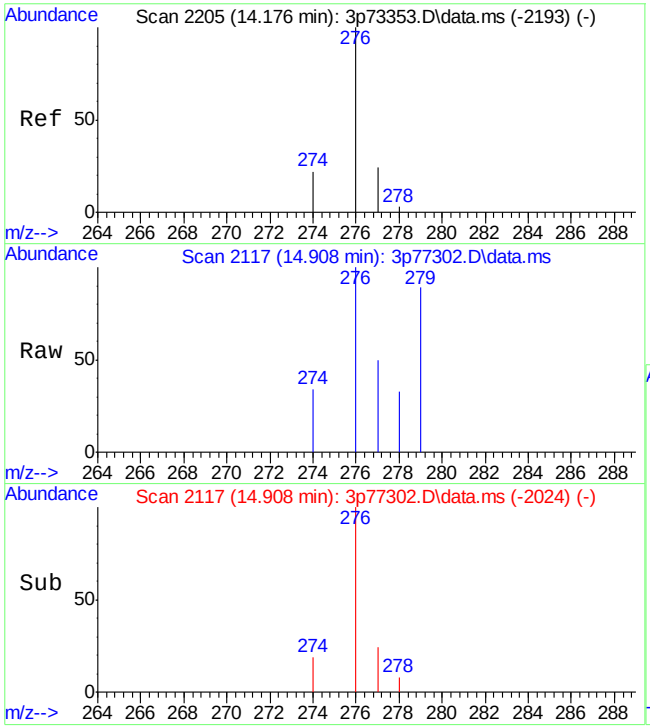


#33
Indeno[1,2,3-cd]pyrene
Concen: 0.01 ppm
RT: 14.590 min Scan# 2058
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:276 Resp: 452

Ion	Ratio	Lower	Upper
276	100		
274	5.4	0.0	50.2
277	22.4	0.0	53.6

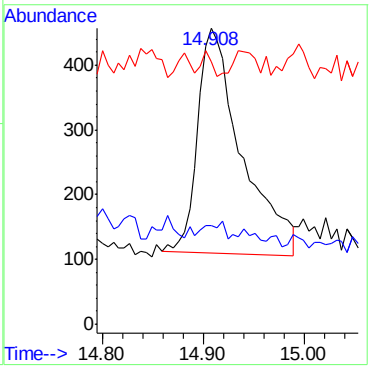




#35
Benzo[g,h,i]perylene
Concen: 0.01 ppm
RT: 14.908 min Scan# 2117
Delta R.T. 0.000 min
Lab File: 3p77302.D
Acq: 21 Jun 2019 5:45 pm

Tgt Ion:276 Resp: 1047

Ion	Ratio	Lower	Upper
276	100		
278	3.2	0.0	32.9
279	0.0	0.0	30.4



7.2.2

7

Manual Integration Approval Summary

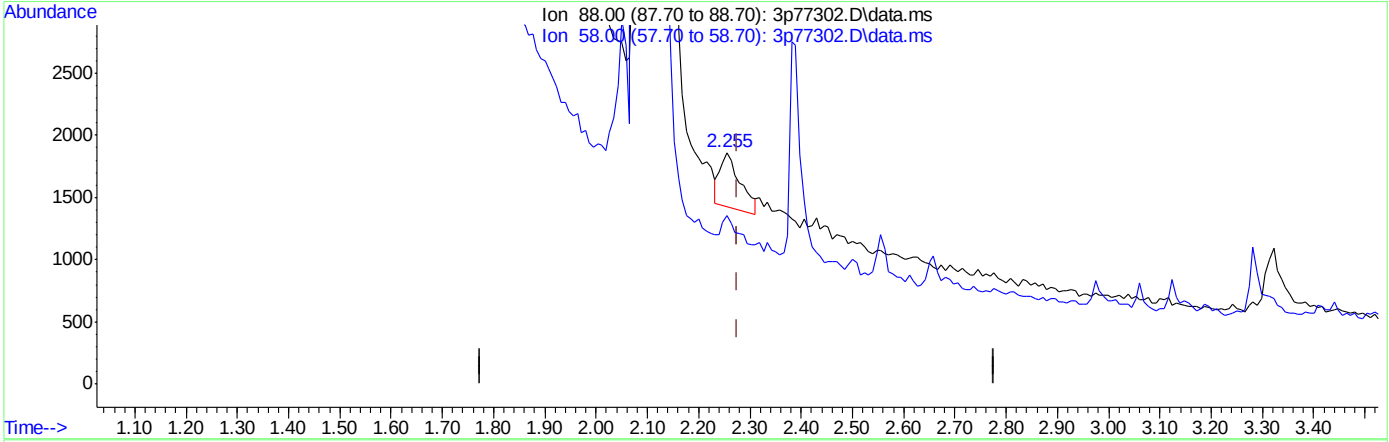
Sample Number:	OP21044A-MB1	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77302.D	**Analyst approved:**	06/24/19 10:31 Dipa Patel
Injection Time:	06/21/19 17:45	**Supervisor approved:**	06/24/19 11:34 Nina Pandya

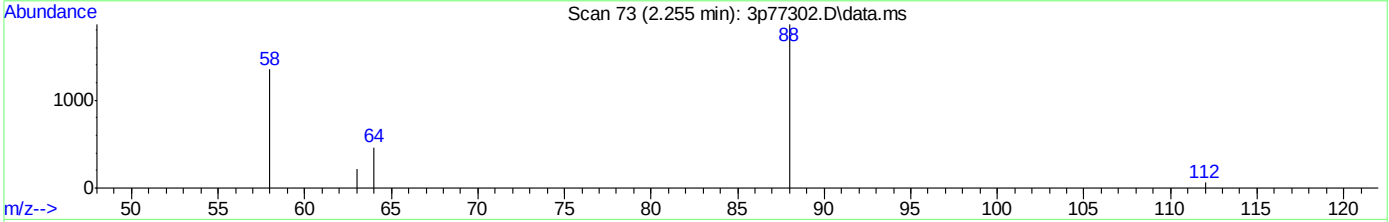
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration
Anthracene	120-12-7		9.63	Poor instrument integration

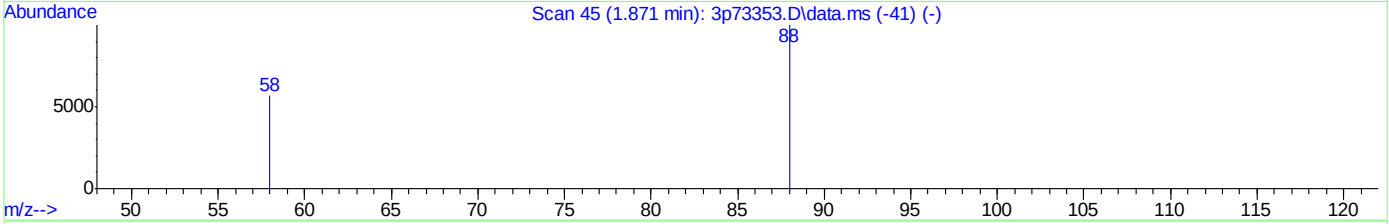
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77302.D
Acq On : 21 Jun 2019 5:45 pm
Operator : angelar
Sample : op21044a-mb1
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 24 07:57:22 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration







TIC: 3p77302.D\data.ms

(2) 1,4-dioxane (t)

2.255min (-0.021) 0.07ppm

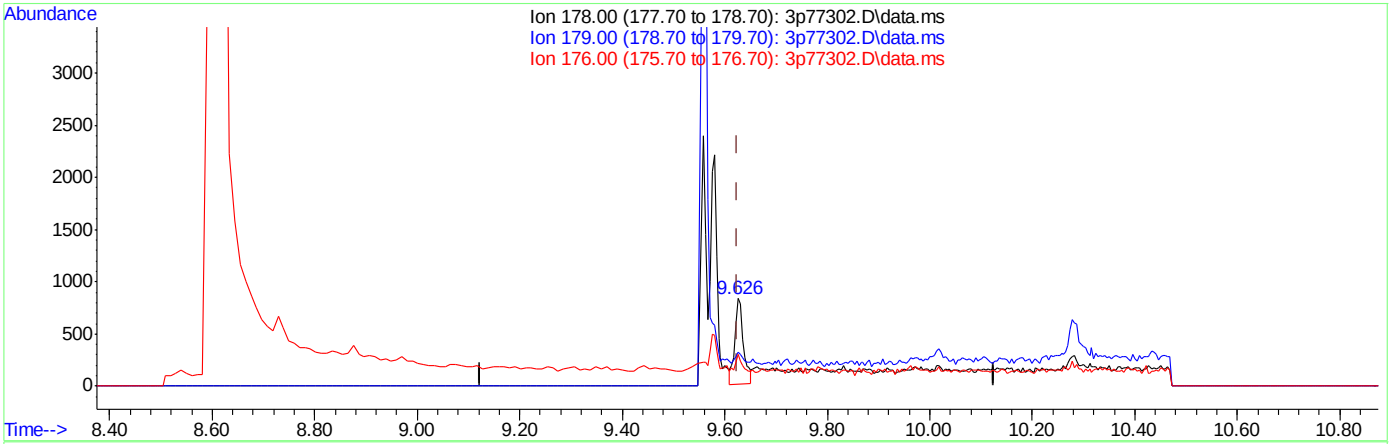
response 1167

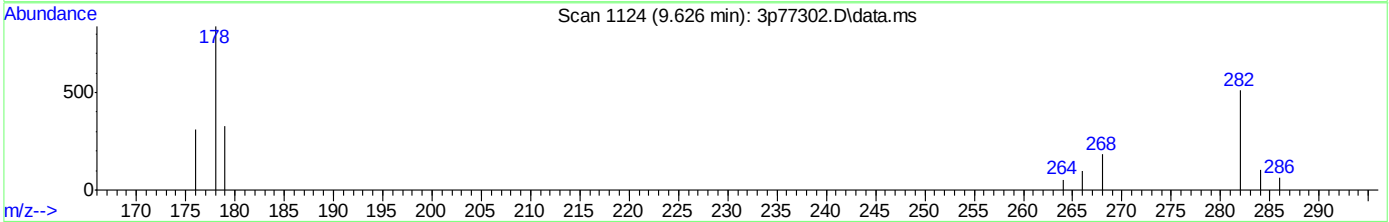
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	65.69
0.00	0.00	0.00
0.00	0.00	0.00

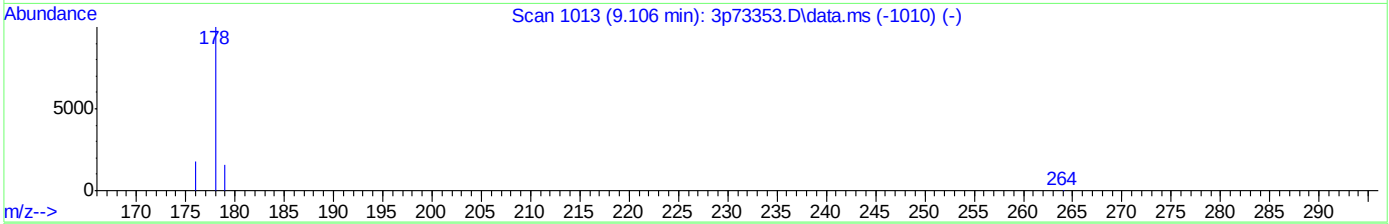
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77302.D
Acq On : 21 Jun 2019 5:45 pm
Operator : angelar
Sample : op21044a-mb1
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 24 07:57:22 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration







TIC: 3p77302.D\data.ms

(23) Anthracene (t)

9.626min (+0.001) 0.01ppm

response 937

Ion	Exp%	Act%
178.00	100	100
179.00	14.90	13.18
176.00	18.50	24.45
0.00	0.00	0.00

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138961.d
Acq On : 21 Jun 2019 3:46 pm
Operator : angelar
Sample : op21117-mb1 Inst : GCMSZ
Misc : op21117,ez6841,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 03:12:43 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Mon Jun 24 03:06:21 2019
Response via : Initial Calibration

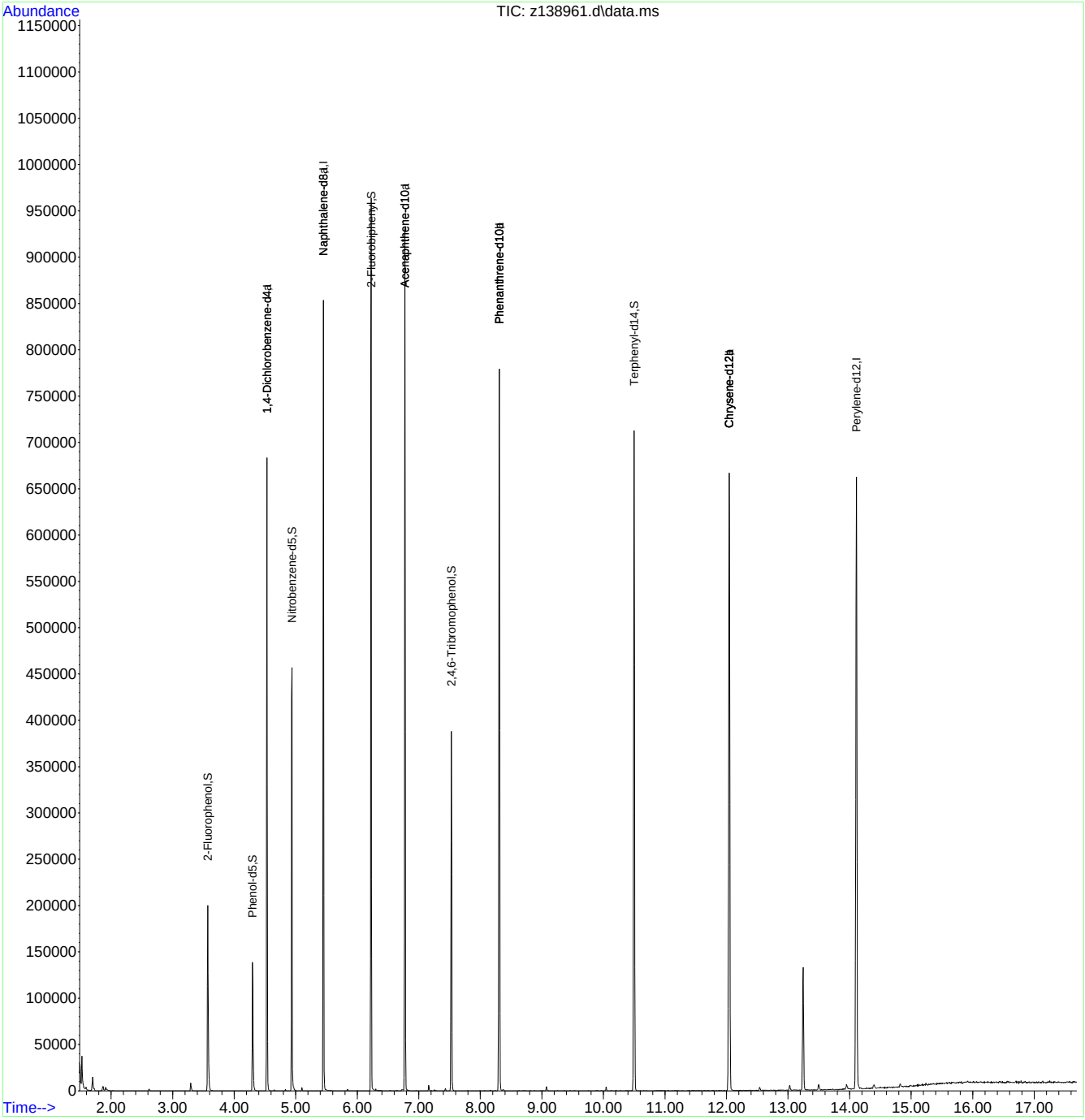
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.532	152	72020	40.00	ppm	0.00
24) Naphthalene-d8	5.451	136	265888	40.00	ppm	0.00
47) Acenaphthene-d10	6.776	164	161925	40.00	ppm	0.00
69) Phenanthrene-d10	8.309	188	299564	40.00	ppm	0.00
83) Chrysene-d12	12.043	240	279047	40.00	ppm	0.00
91) Perylene-d12	14.111	264	310470	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.532	152	72020	40.00	ppm	0.00
103) Phenanthrene-d10a	8.309	188	299564	40.00	ppm	0.00
107) Chrysene-d12a	12.043	240	279047	40.00	ppm	0.00
109) Acenaphthene-d10a	6.776	164	161925	40.00	ppm	0.00
111) Naphthalene-d8a	5.451	136	265888	40.00	ppm	0.00
113) Phenanthrene-d10b	8.309	188	299564	40.00	ppm	0.00
115) Chrysene-d12b	12.043	240	279047	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.571	112	50171	25.26	ppm	0.00
Spiked Amount 50.000			Recovery = 50.52%			
8) Phenol-d5	4.297	99	43930	15.74	ppm	0.00
Spiked Amount 50.000			Recovery = 31.48%			
25) Nitrobenzene-d5	4.938	82	121391	43.82	ppm	0.00
Spiked Amount 50.000			Recovery = 87.64%			
51) 2-Fluorobiphenyl	6.226	172	233319	39.77	ppm	0.00
Spiked Amount 50.000			Recovery = 79.54%			
73) 2,4,6-Tribromophenol	7.529	330	42469	41.94	ppm	0.00
Spiked Amount 50.000			Recovery = 83.88%			
85) Terphenyl-d14	10.500	244	263405	41.47	ppm	0.00
Spiked Amount 50.000			Recovery = 82.94%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue

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

Quantitation Report (QT/LSC Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138961.d
Acq On : 21 Jun 2019 3:46 pm
Operator : angelar
Sample : op21117-mb1 Inst : GCMSZ
Misc : op21117,ez6841,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 03:12:43 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Mon Jun 24 03:06:21 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85118.d
Acq On : 22 Jun 2019 1:21 am
Operator : chriss2
Sample : op21117a-mb1 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:09:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration

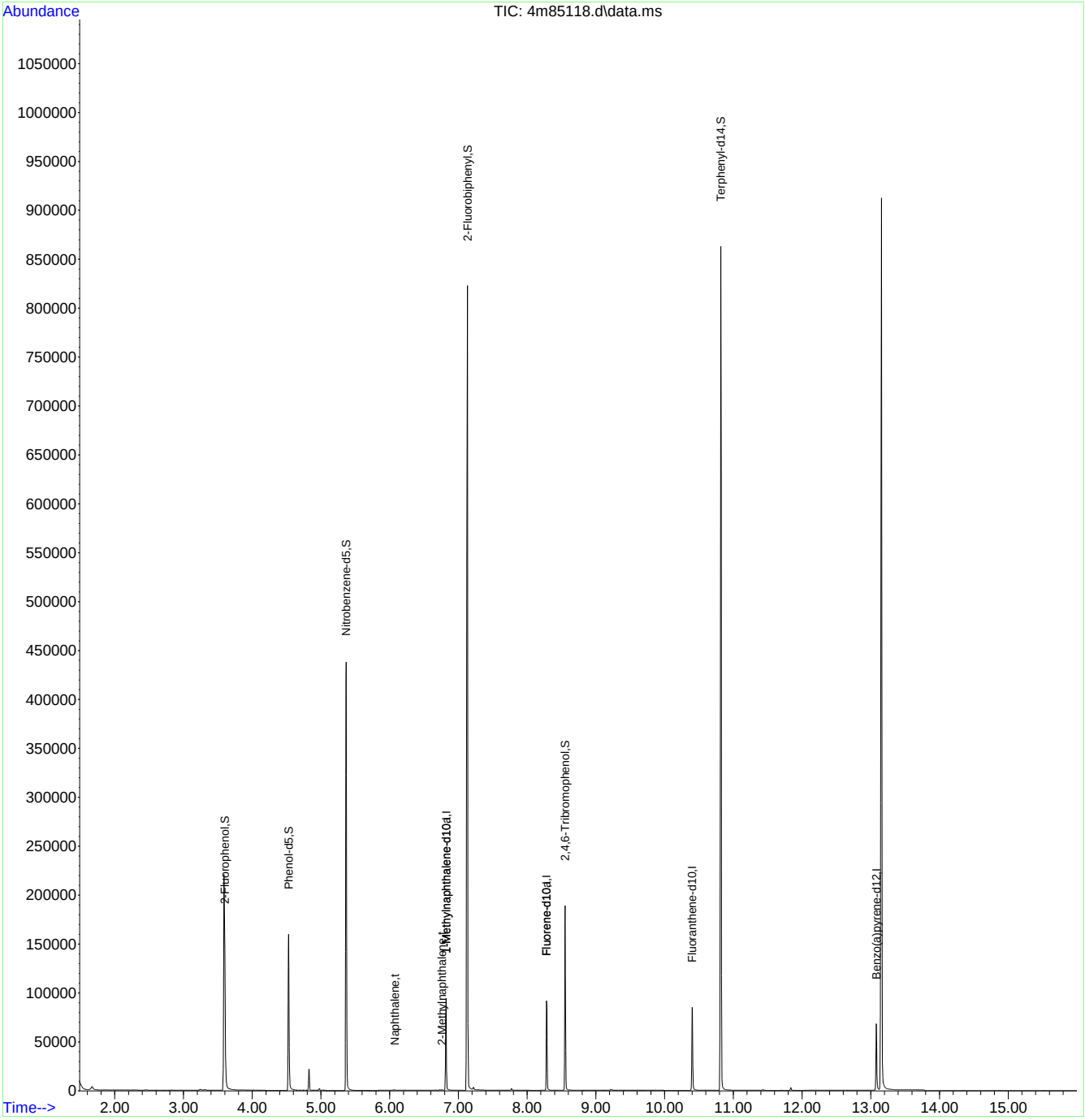
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	34118	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	39235	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	65184	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	50975	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	34118	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	39235	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.600	112	135829	30.38	ppm	0.01
Spiked Amount 50.000	Range 11 - 58		Recovery = 60.76%#			
3) Phenol-d5	4.529	99	98936	17.68	ppm	0.00
Spiked Amount 50.000			Recovery = 35.36%			
6) Nitrobenzene-d5	5.364	82	251436	44.10	ppm	0.00
Spiked Amount 50.000			Recovery = 88.20%			
11) 2-Fluorobiphenyl	7.131	172	542532	50.14	ppm	0.00
Spiked Amount 50.000			Recovery = 100.28%			
17) 2,4,6-Tribromophenol	8.554	330	72128	43.90	ppm	0.00
Spiked Amount 50.000			Recovery = 87.80%			
25) Terphenyl-d14	10.818	244	607941	68.10	ppm	0.00
Spiked Amount 50.000			Recovery = 136.20%			
Target Compounds						Qvalue
7) Naphthalene	6.077	128	295	0.02	ppm	99
9) 2-Methylnaphthalene	6.761	142	312	0.03	ppm	96

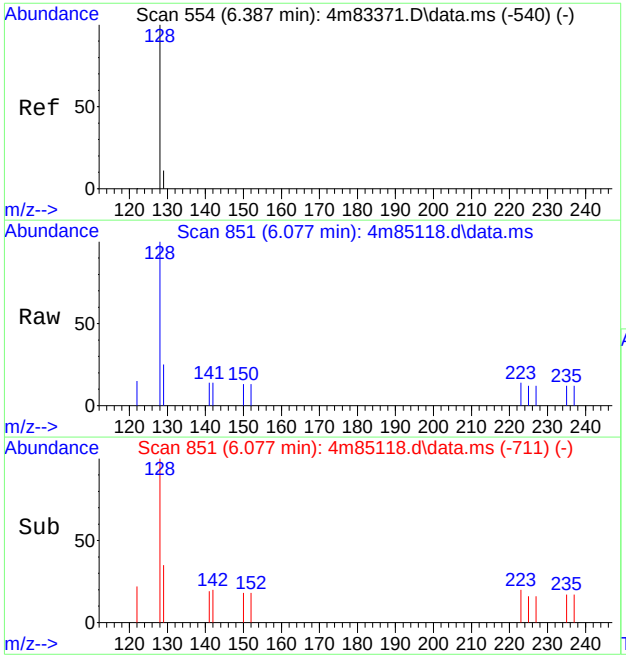
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85118.d
Acq On : 22 Jun 2019 1:21 am
Operator : chriss2
Sample : op21117a-mb1 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:09:16 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration

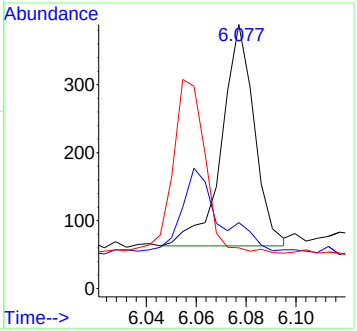


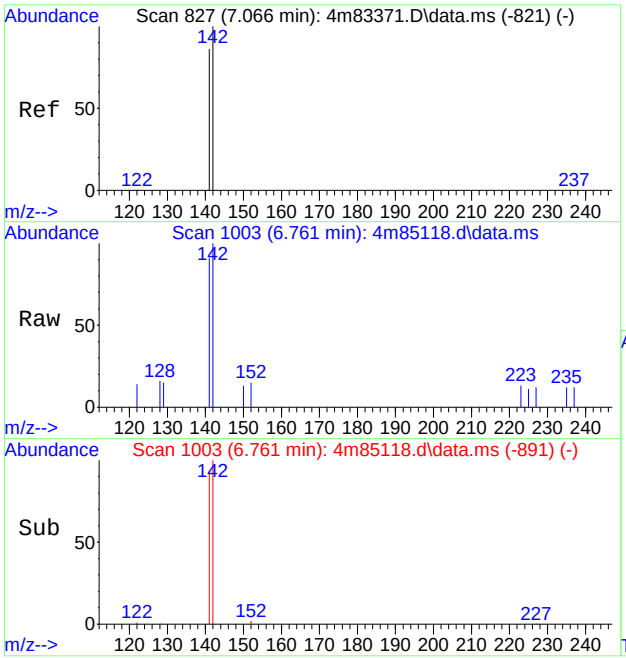


#7
Naphthalene
Concen: 0.02 ppm
RT: 6.077 min Scan# 851
Delta R.T. 0.000 min
Lab File: 4m85118.d
Acq: 22 Jun 2019 1:21 am

Tgt Ion:128 Resp: 295

Ion	Ratio	Lower	Upper
128	100		
129	11.9	0.0	41.3
122	0.0	0.0	30.2

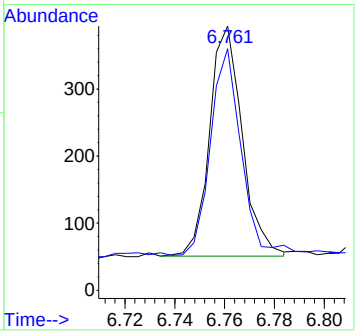




#9
2-Methylnaphthalene
Concen: 0.03 ppm
RT: 6.761 min Scan# 1003
Delta R.T. 0.005 min
Lab File: 4m85118.d
Acq: 22 Jun 2019 1:21 am

Tgt Ion:142 Resp: 312

Ion	Ratio	Lower	Upper
142	100		
141	87.8	61.7	121.7



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/26/19 13:18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 11:21:09 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

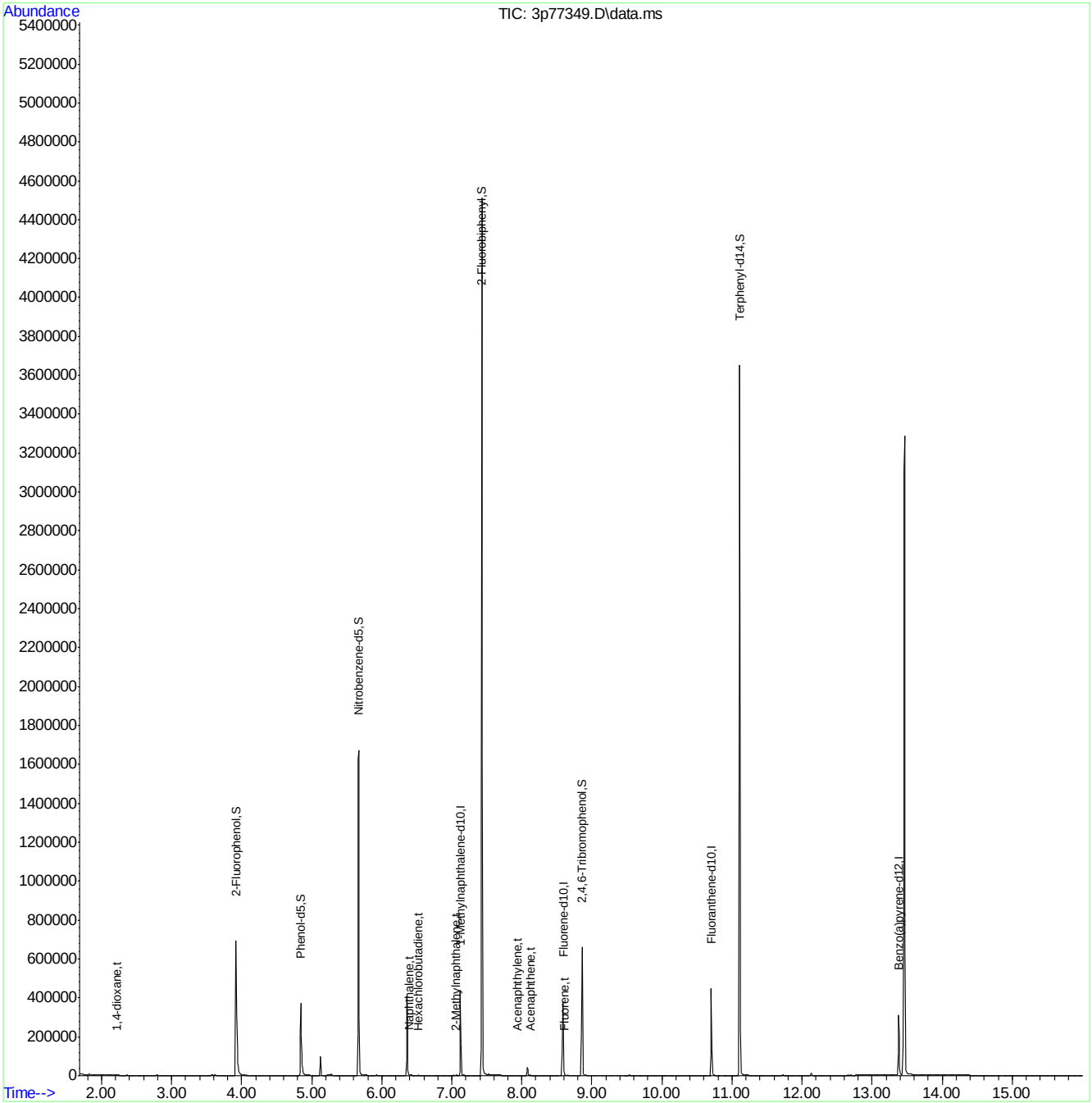
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.123	150	124079	4.00	ppm	-0.03
12) Fluorene-d10	8.587	176	169311	4.00	ppm	-0.02
19) Fluoranthene-d10	10.705	212	284471	4.00	ppm	-0.02
29) Benzo(a)pyrene-d12	13.377	264	193661	4.00	ppm	-0.03
System Monitoring Compounds						
3) 2-Fluorophenol	3.922	112	485368	28.03	ppm	-0.03
Spiked Amount 50.000			Recovery = 56.06%			
4) Phenol-d5	4.844	99	416782	19.45	ppm	-0.02
Spiked Amount 50.000			Recovery = 38.90%			
7) Nitrobenzene-d5	5.663	82	1094202	53.11	ppm	-0.02
Spiked Amount 50.000			Recovery = 106.22%			
13) 2-Fluorobiphenyl	7.432	172	2020605	43.86	ppm	-0.02
Spiked Amount 50.000			Recovery = 87.72%			
18) 2,4,6-Tribromophenol	8.861	330	235049	58.39	ppm	-0.02
Spiked Amount 50.000			Recovery = 116.78%			
26) Terphenyl-d14	11.108	244	2057736	51.39	ppm	-0.02
Spiked Amount 50.000			Recovery = 102.78%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.216	88	508m	0.06	ppm	
8) Naphthalene	6.389	128	1107m	0.02	ppm	
9) Hexachlorobutadiene	6.524	225	373	0.03	ppm	95
10) 2-Methylnaphthalene	7.062	141	1069	0.03	ppm	97
14) Acenaphthylene	7.943	152	271	0.01	ppm	90
15) Acenaphthene	8.115	153	365m	0.01	ppm	
17) Fluorene	8.608	166	355m	0.01	ppm	

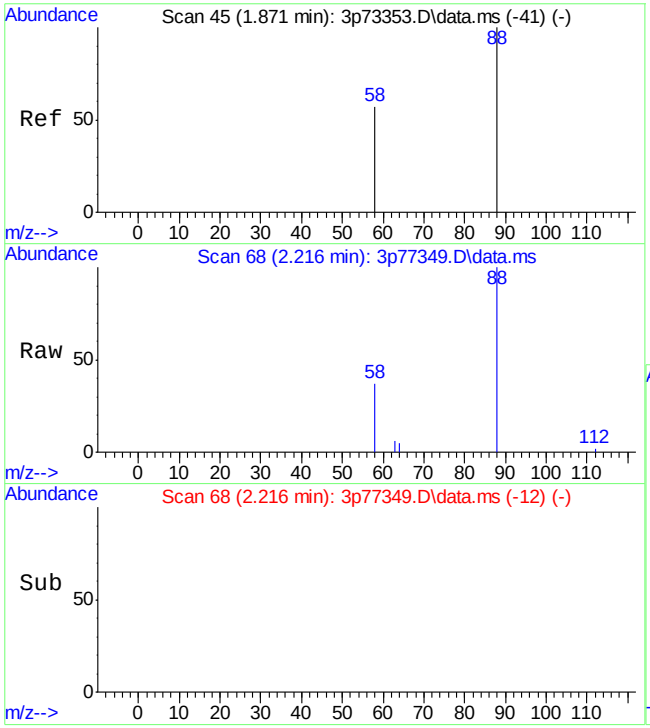
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 25 11:21:09 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

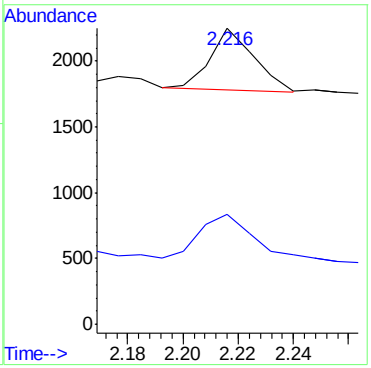


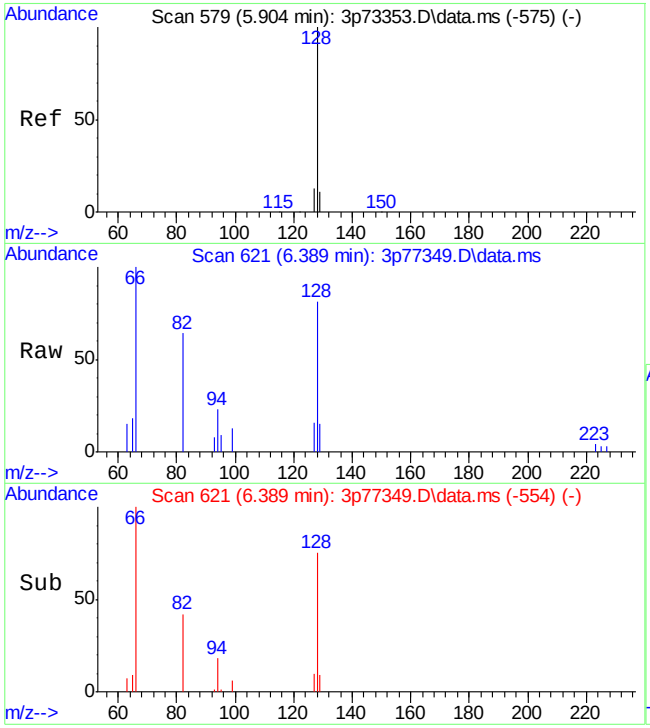


#2
1,4-dioxane
Concen: 0.06 ppm m
RT: 2.216 min Scan# 68
Delta R.T. -0.060 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion: 88 Resp: 508

Ion	Ratio	Lower	Upper
88	100		
58	37.0	34.0	74.0

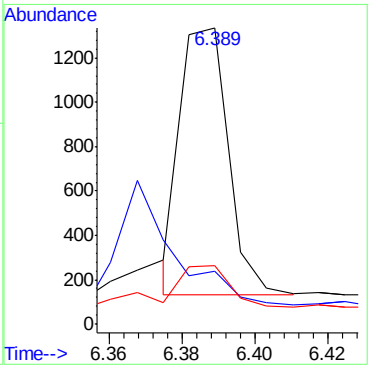


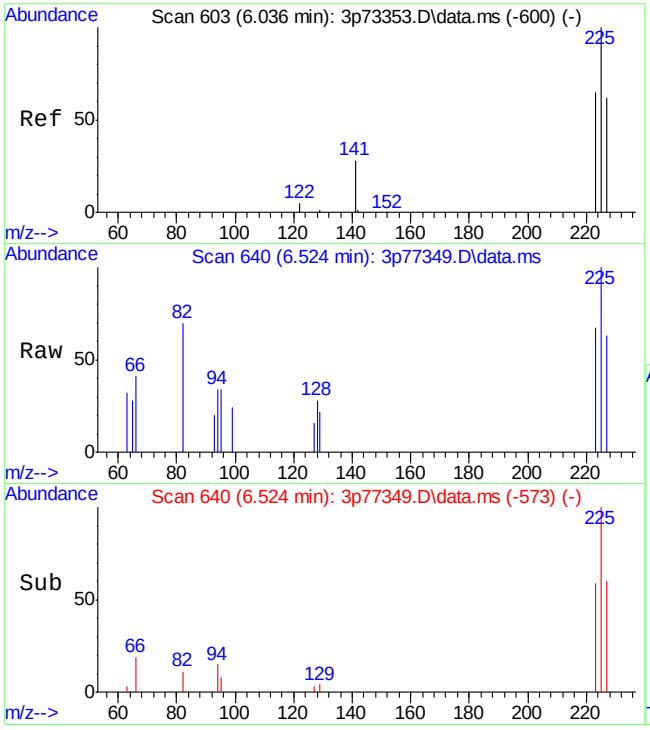


#8
Naphthalene
Concen: 0.02 ppm m
RT: 6.389 min Scan# 621
Delta R.T. -0.021 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:128 Resp: 1107

Ion	Ratio	Lower	Upper
128	100		
129	17.9	0.0	41.6
127	19.6	0.0	42.3

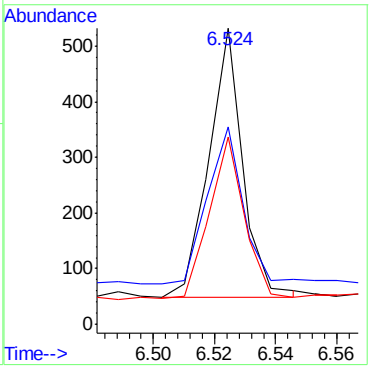


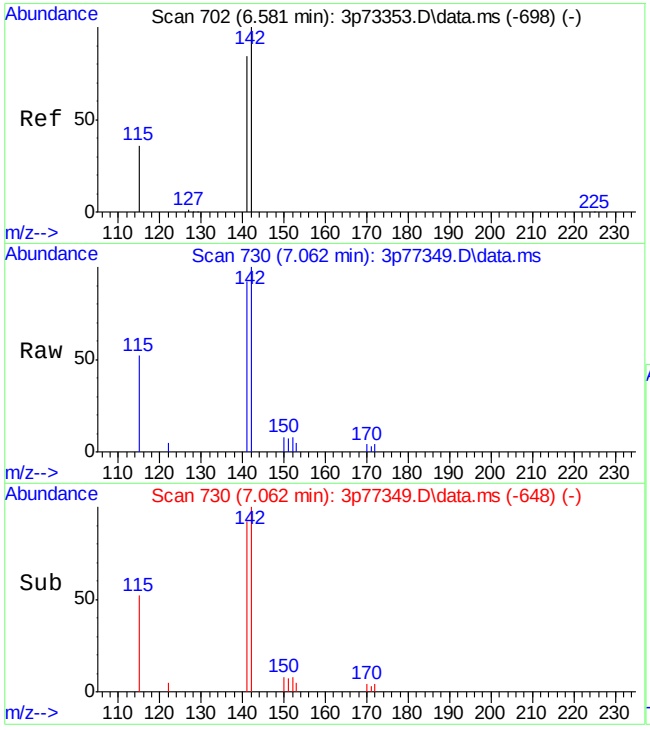


#9
Hexachlorobutadiene
Concen: 0.03 ppm
RT: 6.524 min Scan# 640
Delta R.T. -0.021 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:225 Resp: 373

Ion	Ratio	Lower	Upper
225	100		
223	58.0	30.4	90.4
227	60.5	36.6	96.6

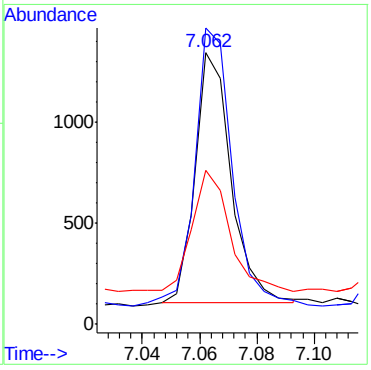


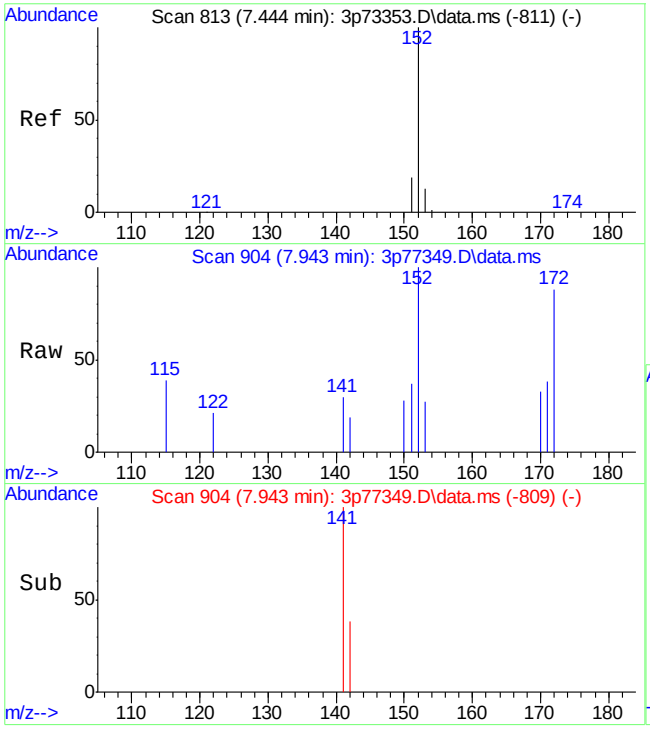


#10
2-Methylnaphthalene
Concen: 0.03 ppm
RT: 7.062 min Scan# 730
Delta R.T. -0.020 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:141 Resp: 1069

Ion	Ratio	Lower	Upper
141	100		
142	109.1	83.6	143.6
115	48.5	19.4	79.4

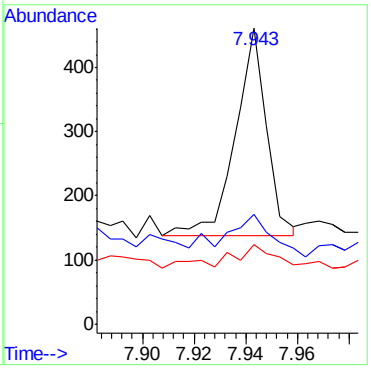


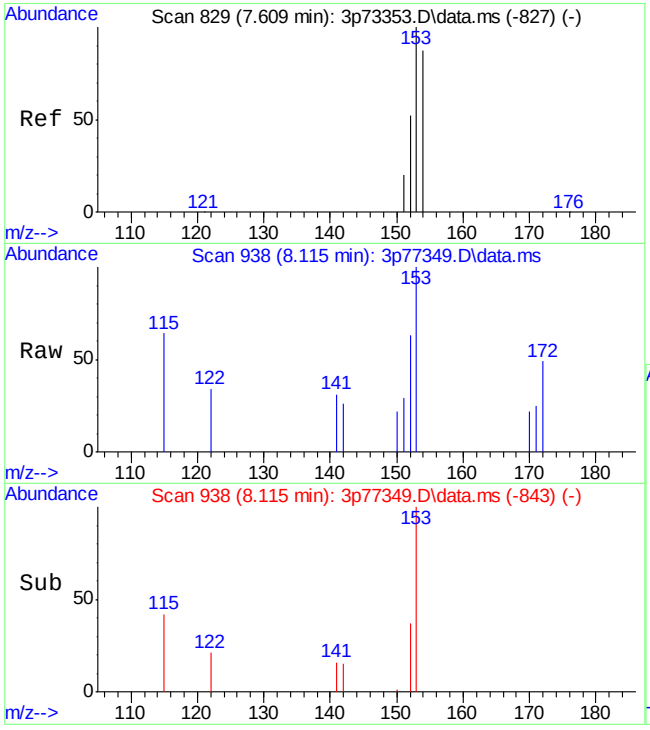


#14
Acenaphthylene
Concen: 0.01 ppm
RT: 7.943 min Scan# 904
Delta R.T. -0.020 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:152 Resp: 271

Ion	Ratio	Lower	Upper
152	100		
151	14.2	0.0	50.2
153	10.6	0.0	42.9

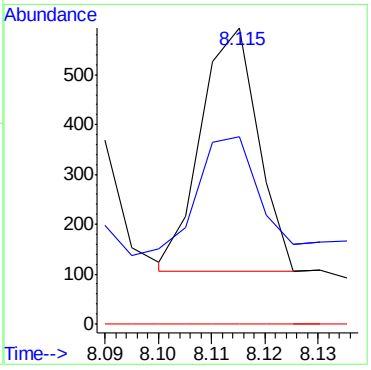


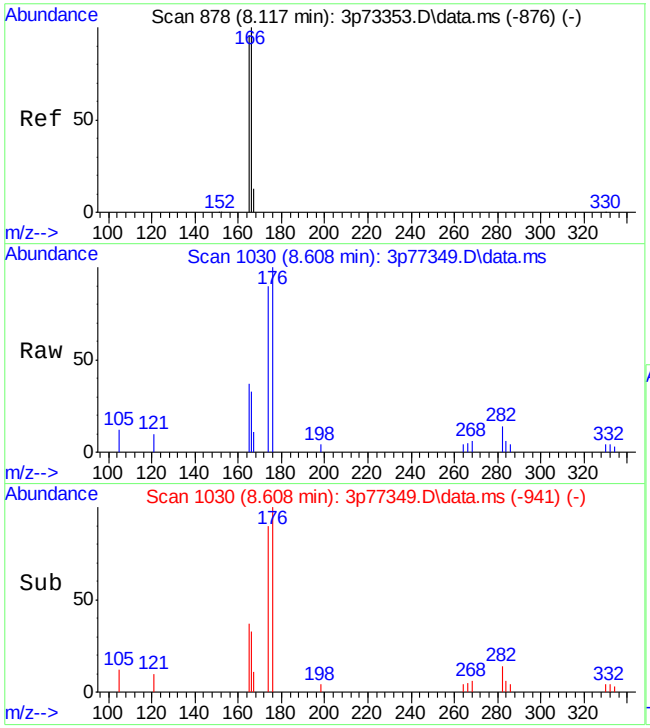


#15
Acenaphthene
Concen: 0.01 ppm m
RT: 8.115 min Scan# 938
Delta R.T. -0.020 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:153 Resp: 365

Ion	Ratio	Lower	Upper
153	100		
152	63.3	17.8	77.8
154	0.0	0.0	30.0

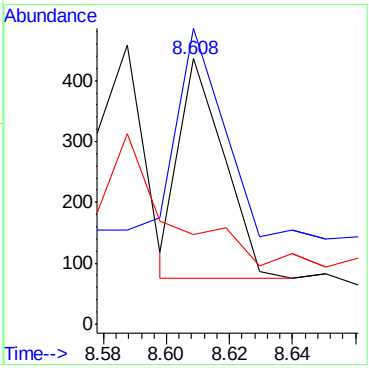




#17
Fluorene
Concen: 0.01 ppm m
RT: 8.608 min Scan# 1030
Delta R.T. -0.021 min
Lab File: 3p77349.D
Acq: 24 Jun 2019 11:43 pm

Tgt Ion:166 Resp: 355

Ion	Ratio	Lower	Upper
166	100		
165	111.5	75.8	135.8
167	33.9	0.0	41.9



Manual Integration Approval Summary

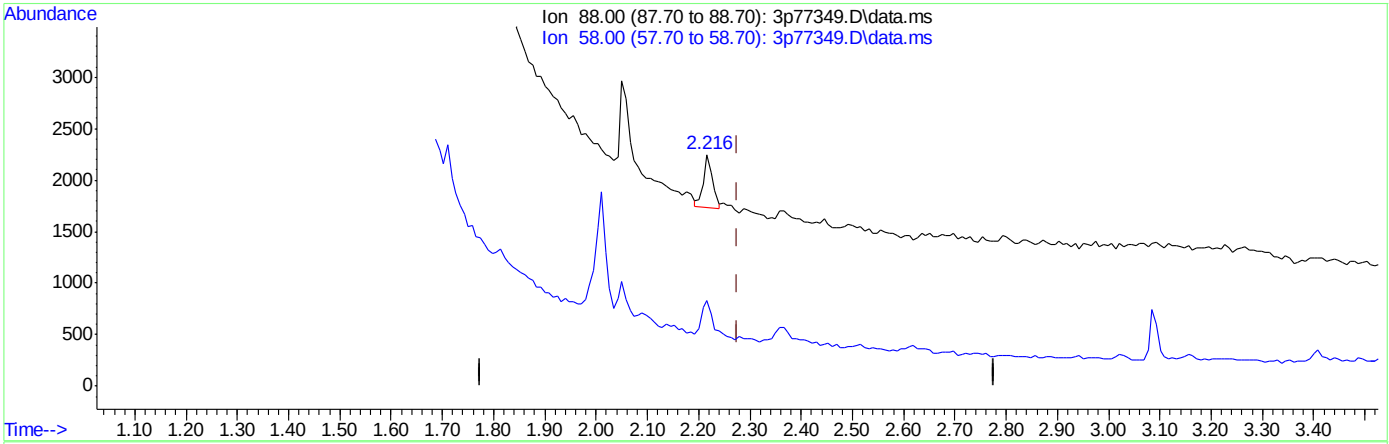
Sample Number:	OP21117A-MB1	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77349.D	**Analyst approved:**	06/25/19 12:03 Dipa Patel
Injection Time:	06/24/19 23:43	**Supervisor approved:**	06/26/19 13:18 Nina Pandya

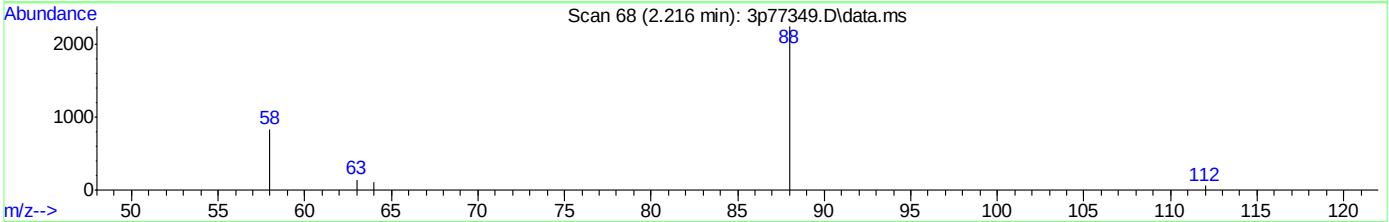
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.22	Poor instrument integration
Naphthalene	91-20-3		6.39	Poor instrument integration
Acenaphthene	83-32-9		8.12	Poor instrument integration
Fluorene	86-73-7		8.61	Poor instrument integration

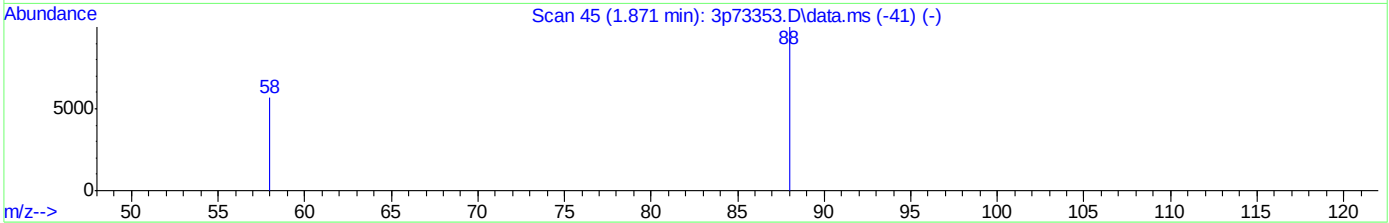
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 24 23:59:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77349.D\data.ms

(2) 1,4-dioxane (t)

2.216min (-0.060) 0.07ppm

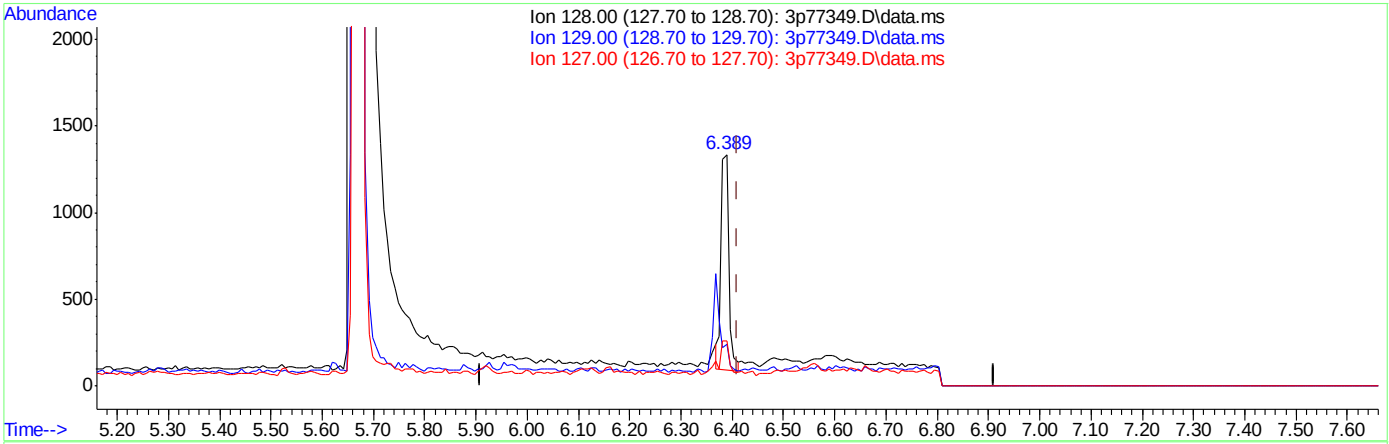
response 639

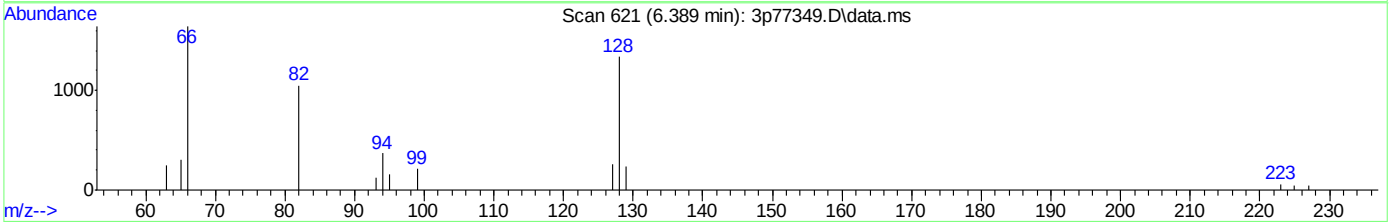
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	68.18
0.00	0.00	0.00
0.00	0.00	0.00

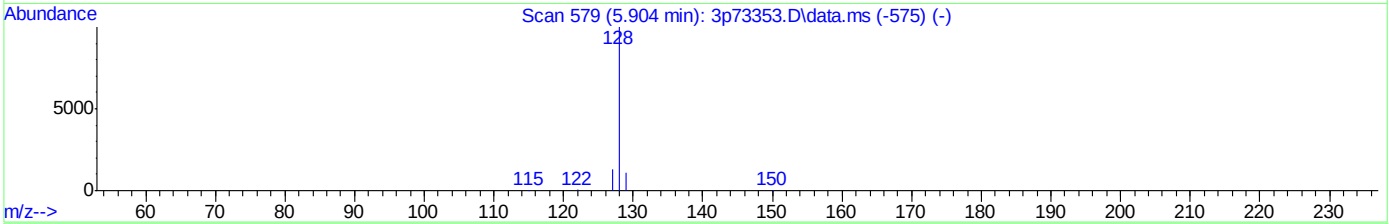
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 24 23:59:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77349.D\data.ms

(8) Naphthalene (t)

6.389min (-0.021) 0.02ppm

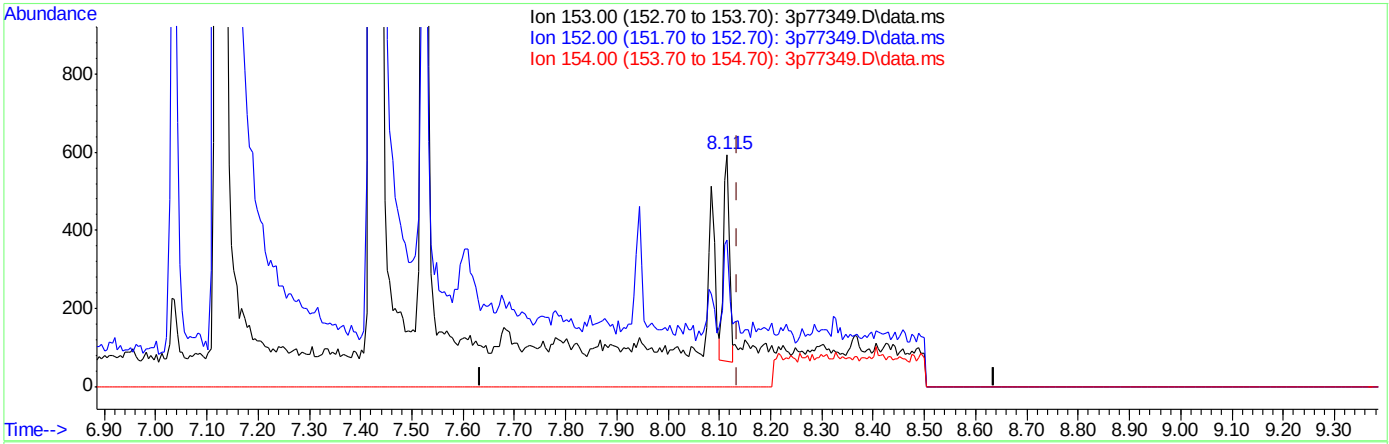
response 1279

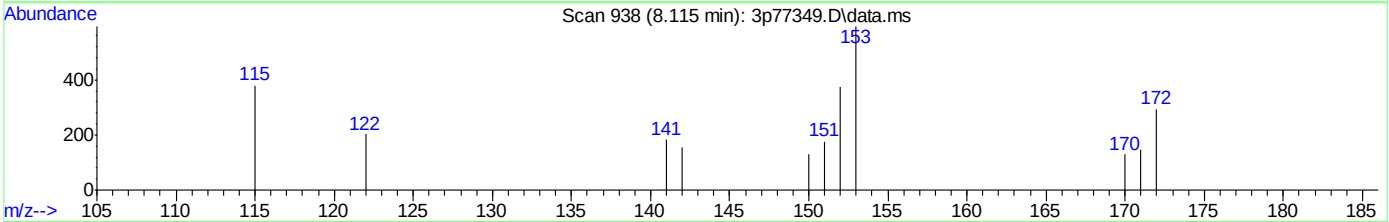
Ion	Exp%	Act%
128.00	100	100
129.00	11.60	0.00
127.00	12.30	13.09
0.00	0.00	0.00

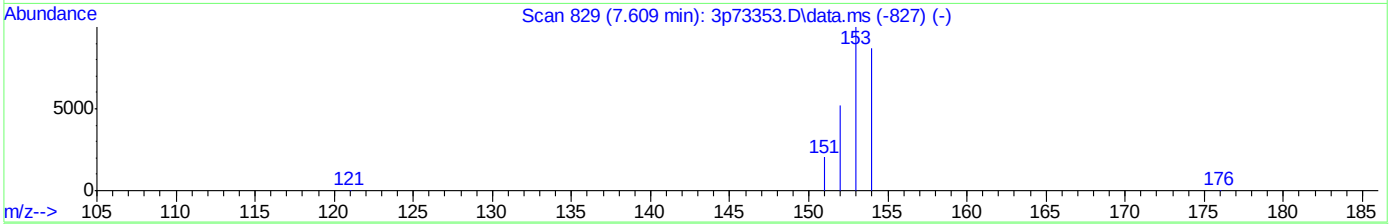
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 24 23:59:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77349.D\data.ms

(15) Acenaphthene (t)

8.115min (-0.020) 0.01ppm

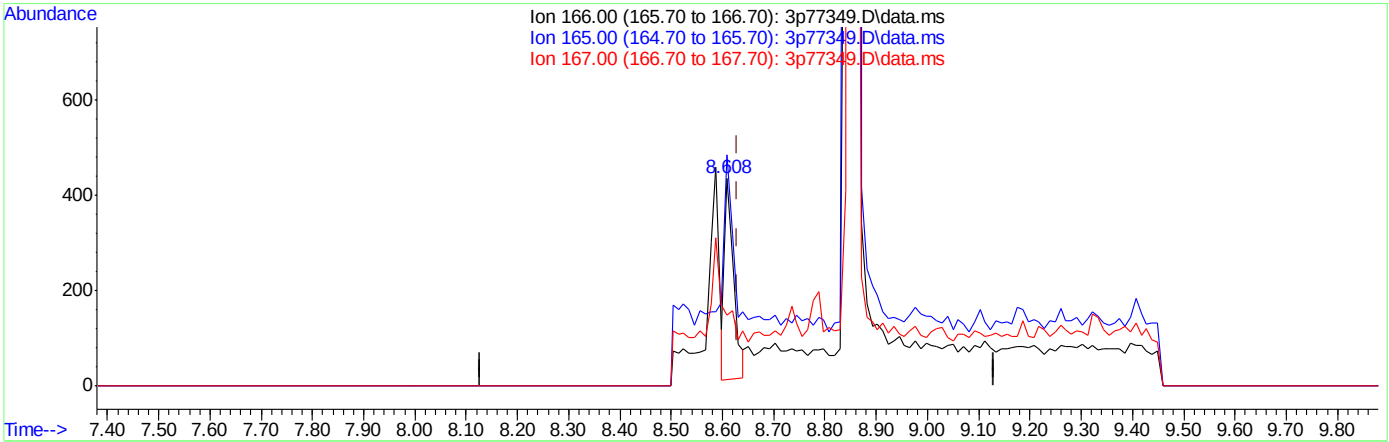
response 425

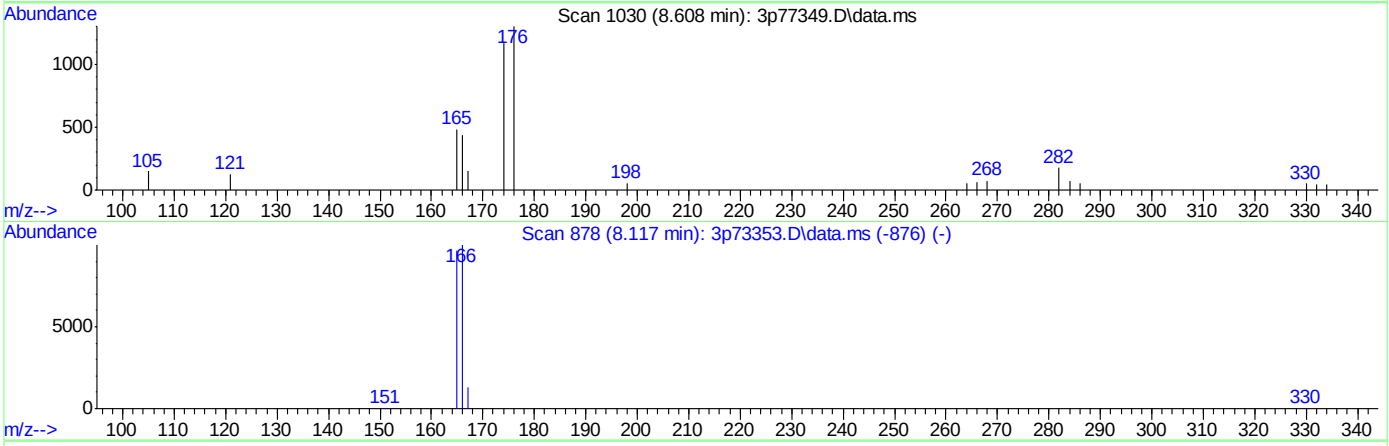
Ion	Exp%	Act%
153.00	100	100
152.00	47.80	46.19
154.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77349.D
Acq On : 24 Jun 2019 11:43 pm
Operator : chriss2
Sample : op21117a-mb1
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 24 23:59:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration





TIC: 3p77349.D\data.ms

(17) Fluorene (t)

8.608min (-0.021) 0.01ppm

response 508

Ion	Exp%	Act%
166.00	100	100
165.00	105.80	94.55
167.00	11.90	1.77
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77303.D
Acq On : 21 Jun 2019 6:06 pm
Operator : angelar
Sample : op21044a-bs12
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 09:42:39 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

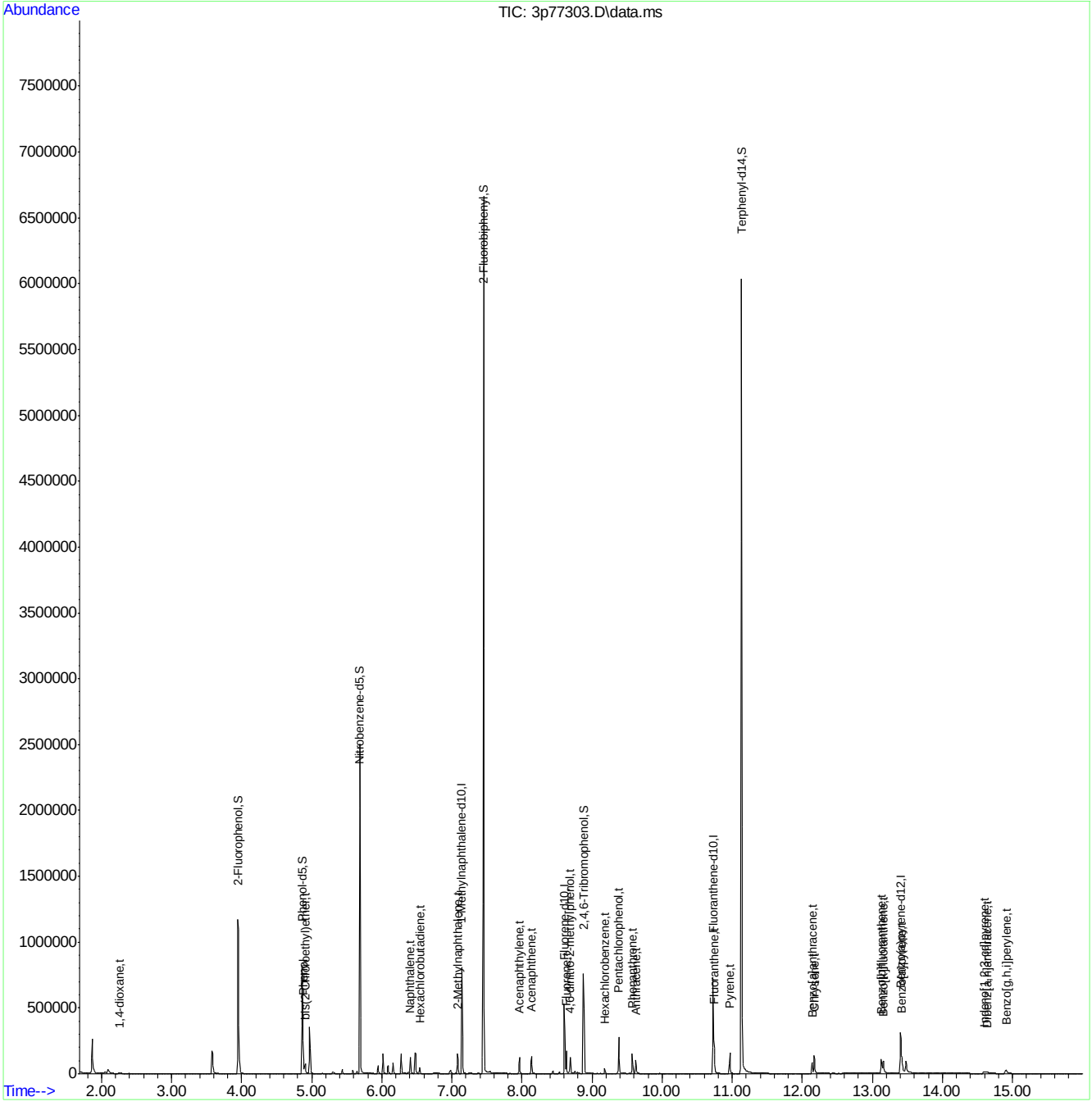
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.143	150	218413	4.00	ppm		0.00
12) Fluorene-d10	8.602	176	288562	4.00	ppm		0.00
19) Fluoranthene-d10	10.728	212	488165	4.00	ppm		0.00
29) Benzo(a)pyrene-d12	13.403	264	248455	4.00	ppm		0.00
System Monitoring Compounds							
3) 2-Fluorophenol	3.953	112	698181	22.91	ppm		0.00
Spiked Amount 50.000			Recovery = 45.82%				
4) Phenol-d5	4.865	99	645955	17.13	ppm		0.00
Spiked Amount 50.000			Recovery = 34.26%				
7) Nitrobenzene-d5	5.684	82	1448242	39.93	ppm		0.00
Spiked Amount 50.000			Recovery = 79.86%				
13) 2-Fluorobiphenyl	7.452	172	2843788	36.22	ppm		0.00
Spiked Amount 50.000			Recovery = 72.44%				
18) 2,4,6-Tribromophenol	8.876	330	337203	49.15	ppm		0.00
Spiked Amount 50.000			Recovery = 98.30%				
26) Terphenyl-d14	11.131	244	3524185	51.28	ppm		0.00
Spiked Amount 50.000			Recovery = 102.56%				
Target Compounds							Qvalue
2) 1,4-dioxane	2.255	88	6582	0.41	ppm		89
5) Phenol	4.879	94	93134	2.21	ppm		99
6) bis(2-Chloroethyl)ether	4.908	93	25310	0.72	ppm		97
8) Naphthalene	6.403	128	84755	0.75	ppm		95
9) Hexachlorobutadiene	6.545	225	13971	0.63	ppm		97
10) 2-Methylnaphthalene	7.082	141	44280	0.72	ppm		98
14) Acenaphthylene	7.963	152	63856	0.75	ppm		100
15) Acenaphthene	8.135	153	56717	0.83	ppm		99
16) 4,6-dinitro-2-methylph...	8.686	198	52425	5.03	ppm	#	76
17) Fluorene	8.634	166	64294	0.84	ppm		89
20) Hexachlorobenzene	9.180	284	16222	0.73	ppm		88
21) Pentachlorophenol	9.380	266	75521	5.72	ppm		87
22) Phenanthrene	9.575	178	110670	0.99	ppm		99
23) Anthracene	9.626	178	72245	0.81	ppm		100
24) Fluoranthene	10.745	202	111456	0.86	ppm		99
25) Pyrene	10.968	202	106554	0.91	ppm		99
27) Benzo[a]anthracene	12.142	228	65959	0.81	ppm		99
28) Chrysene	12.170	228	108280	0.94	ppm		96
30) Benzo[b]fluoranthene	13.130	252	75489	0.87	ppm		97
31) Benzo[k]fluoranthene	13.158	252	82141	0.88	ppm		98
32) Benzo[a]pyrene	13.424	252	64693	0.68	ppm		99
33) Indeno[1,2,3-cd]pyrene	14.595	276	37668	0.54	ppm		99
34) Dibenz[a,h]anthracene	14.633	278	25794	0.40	ppm		80
35) Benzo[g,h,i]perylene	14.908	276	45079	0.68	ppm		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77303.D
Acq On : 21 Jun 2019 6:06 pm
Operator : angelar
Sample : op21044a-bs12
Misc : op21044a,e3p3624,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 09:42:39 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85119.d
Acq On : 22 Jun 2019 1:43 am
Operator : chriss2
Sample : op21117a-bs12 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:09:45 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration

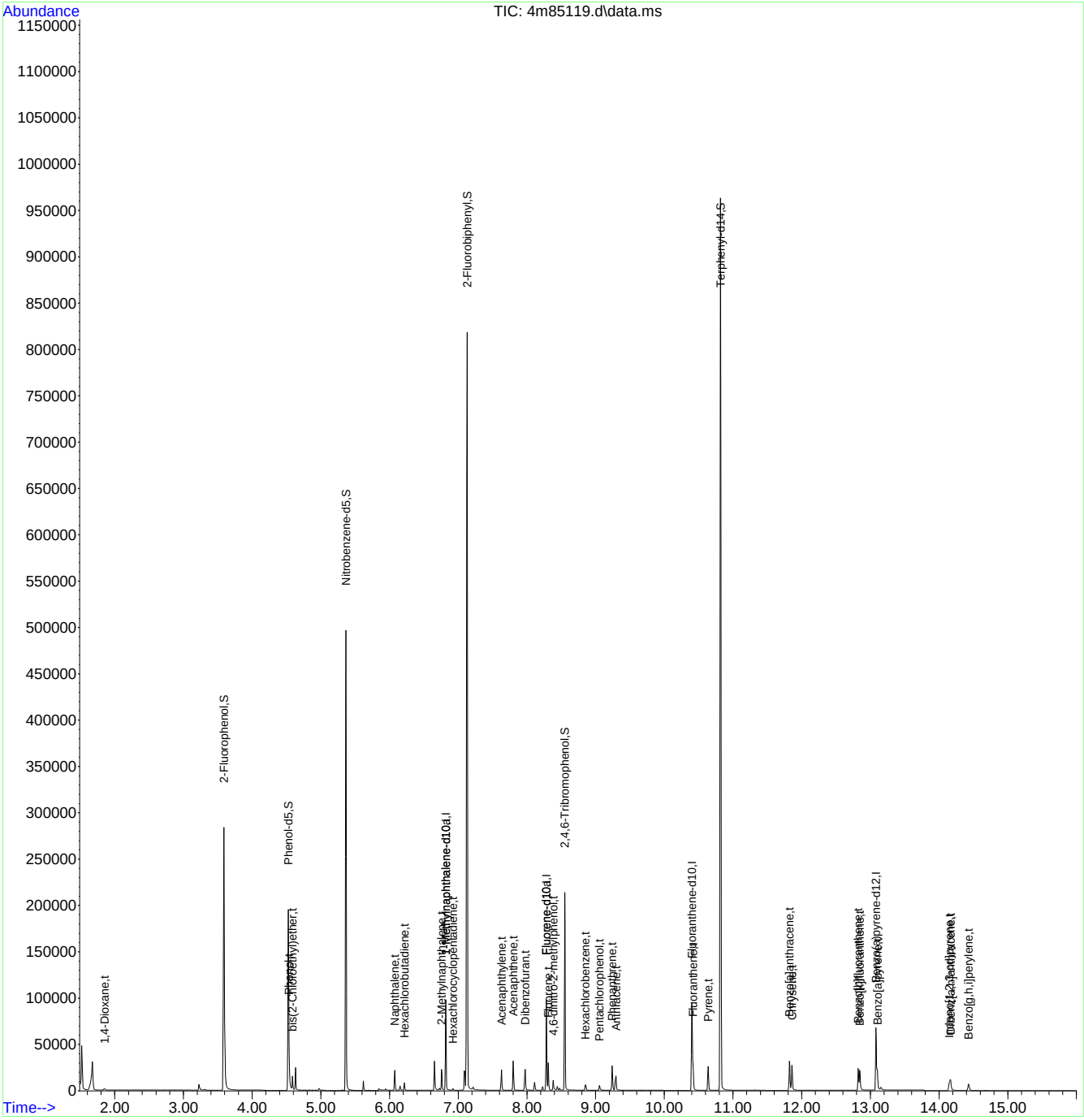
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	36286	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	40103	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	66743	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	52159	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	36286	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	40103	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	151807	31.92	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 63.84%#			
3) Phenol-d5	4.525	99	111558	18.75	ppm	0.00
Spiked Amount 50.000			Recovery = 37.50%			
6) Nitrobenzene-d5	5.364	82	270466	44.60	ppm	0.00
Spiked Amount 50.000			Recovery = 89.20%			
11) 2-Fluorobiphenyl	7.131	172	579044	50.32	ppm	0.00
Spiked Amount 50.000			Recovery = 100.64%			
17) 2,4,6-Tribromophenol	8.550	330	79472	47.32	ppm	0.00
Spiked Amount 50.000			Recovery = 94.64%			
25) Terphenyl-d14	10.818	244	676349	73.99	ppm	0.00
Spiked Amount 50.000			Recovery = 147.98%			
Target Compounds						Qvalue
4) Phenol	4.538	94	16063	2.42	ppm	94
5) bis(2-Chloroethyl)ether	4.588	93	5266	1.11	ppm	100
7) Naphthalene	6.077	128	15943	0.99	ppm	99
8) Hexachlorobutadiene	6.217	225	2305	0.81	ppm	98
9) 2-Methylnaphthalene	6.757	142	10162	1.01	ppm	100
10) Hexachlorocyclopentadiene	6.923	237	627	0.24	ppm	98
13) Acenaphthylene	7.629	152	13476	0.83	ppm	97
14) Acenaphthene	7.798	153	10629	1.03	ppm	98
15) Dibenzofuran	7.976	168	14791	1.08	ppm	88
16) Fluorene	8.310	166	11421	0.99	ppm	94
18) Hexachlorobenzene	8.849	284	2947	0.74	ppm	73
19) Pentachlorophenol	9.056	266	2312	1.17	ppm	97
20) Phenanthrene	9.241	178	17015	1.01	ppm	99
21) Anthracene	9.296	178	12800	0.77	ppm	99
23) Fluoranthene	10.418	202	18981	1.05	ppm	99
24) Pyrene	10.639	202	18254	0.99	ppm	97
26) Benzo[a]anthracene	11.822	228	14684	0.96	ppm	96
27) Chrysene	11.859	228	17524	1.16	ppm	99
29) Benzo[b]fluoranthene	12.823	252	14198	0.73	ppm	96
30) Benzo[k]fluoranthene	12.844	252	16393	0.92	ppm	99
31) Benzo[a]pyrene	13.102	252	13214	0.74	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.147	276	13363	0.71	ppm	99
33) Dibenz[a,h]anthracene	14.166	278	11681	0.74	ppm	96
34) Benzo[g,h,i]perylene	14.429	276	11132	0.72	ppm	97
36) 1,4-Dioxane	1.851	88	1124	0.49	ppm	91
39) 4,6-dinitro-2-methylph...	8.382	198	6401	3.75	ppm	94

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85119.d
Acq On : 22 Jun 2019 1:43 am
Operator : chriss2
Sample : op21117a-bs12 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:09:45 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85120.d
Acq On : 22 Jun 2019 2:04 am
Operator : chriss2
Sample : op21117a-bsd12 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:12:00 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration

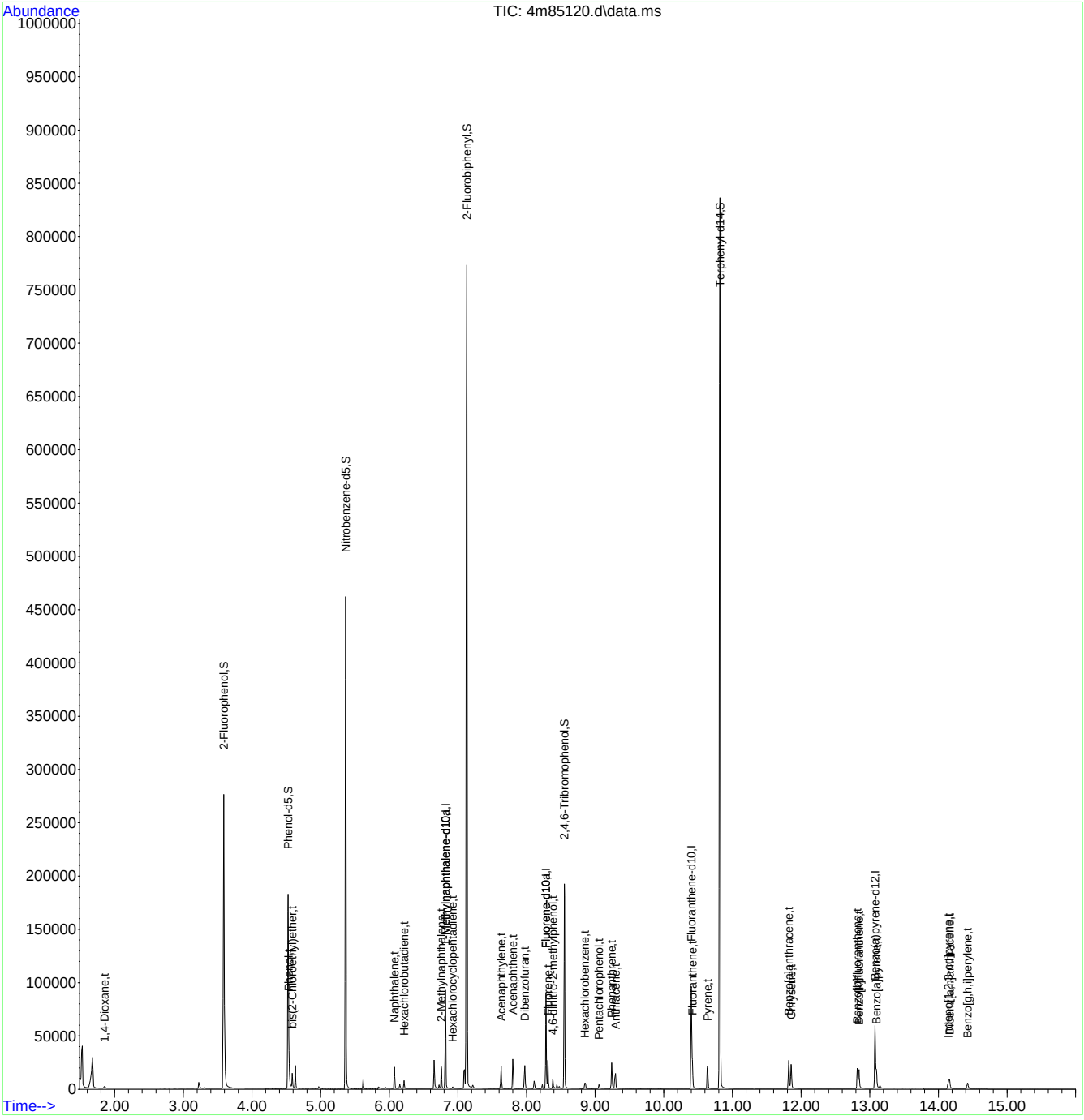
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	34005	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	37165	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	62184	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.076	264	47786	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	34005	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	37165	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	146742	32.92	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 65.84%#			
3) Phenol-d5	4.525	99	106189	19.04	ppm	0.00
Spiked Amount 50.000			Recovery = 38.08%			
6) Nitrobenzene-d5	5.364	82	257195	45.26	ppm	0.00
Spiked Amount 50.000			Recovery = 90.52%			
11) 2-Fluorobiphenyl	7.131	172	549730	50.98	ppm	0.00
Spiked Amount 50.000			Recovery = 101.96%			
17) 2,4,6-Tribromophenol	8.550	330	74319	47.75	ppm	0.00
Spiked Amount 50.000			Recovery = 95.50%			
25) Terphenyl-d14	10.818	244	599878	70.43	ppm	0.00
Spiked Amount 50.000			Recovery = 140.86%			
Target Compounds						Qvalue
4) Phenol	4.538	94	14291	2.30	ppm	93
5) bis(2-Chloroethyl)ether	4.588	93	4828	1.09	ppm	97
7) Naphthalene	6.077	128	14671	0.98	ppm	100
8) Hexachlorobutadiene	6.217	225	2067	0.78	ppm	99
9) 2-Methylnaphthalene	6.757	142	9404	1.00	ppm	98
10) Hexachlorocyclopentadiene	6.923	237	572	0.23	ppm	95
13) Acenaphthylene	7.629	152	12804	0.85	ppm	99
14) Acenaphthene	7.798	153	9926	1.04	ppm	99
15) Dibenzofuran	7.976	168	13753	1.08	ppm	93
16) Fluorene	8.313	166	10674	1.00	ppm	100
18) Hexachlorobenzene	8.849	284	2763	0.75	ppm	74
19) Pentachlorophenol	9.056	266	1694	0.93	ppm	97
20) Phenanthrene	9.241	178	15973	1.03	ppm	99
21) Anthracene	9.296	178	11789	0.76	ppm	99
23) Fluoranthene	10.418	202	17496	1.04	ppm	98
24) Pyrene	10.639	202	16487	0.96	ppm	96
26) Benzo[a]anthracene	11.822	228	12824	0.90	ppm	98
27) Chrysene	11.854	228	15894	1.13	ppm	99
29) Benzo[b]fluoranthene	12.818	252	11744	0.66	ppm	98
30) Benzo[k]fluoranthene	12.844	252	14026	0.86	ppm	98
31) Benzo[a]pyrene	13.097	252	11096	0.68	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.143	276	10112	0.58	ppm	99
33) Dibenz[a,h]anthracene	14.162	278	8526	0.59	ppm	100
34) Benzo[g,h,i]perylene	14.425	276	8737	0.62	ppm	97
36) 1,4-Dioxane	1.851	88	1111	0.52	ppm	82
39) 4,6-dinitro-2-methylph...	8.382	198	5012	3.23	ppm	89

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85120.d
Acq On : 22 Jun 2019 2:04 am
Operator : chriss2
Sample : op21117a-bsd12 Inst : GCMS4M
Misc : op21117a,e4m3948,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 23:12:00 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 23:11:14 2019
Response via : Initial Calibration



Manual Integrations APPROVED
(compounds with "m" flag)
Nina Pandya
06/26/19 13:18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77350.D
Acq On : 25 Jun 2019 12:04 am
Operator : chriss2
Sample : op21117a-bs12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 25 11:21:52 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

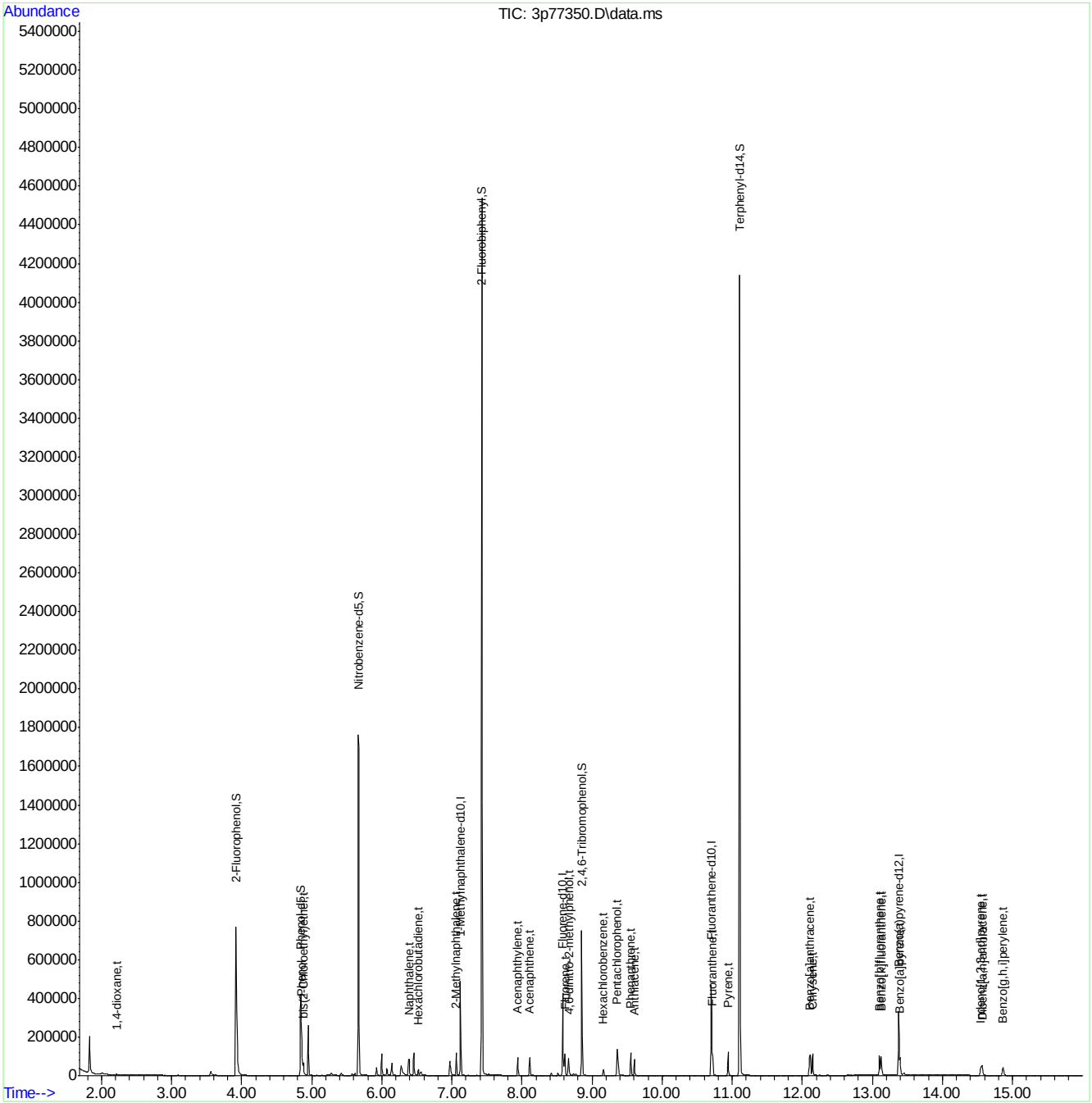
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.123	150	130137	4.00	ppm		-0.03
12) Fluorene-d10	8.581	176	177784	4.00	ppm		-0.03
19) Fluoranthene-d10	10.703	212	298107	4.00	ppm		-0.02
29) Benzo(a)pyrene-d12	13.375	264	200726	4.00	ppm		-0.03
System Monitoring Compounds							
3) 2-Fluorophenol	3.922	112	520266	28.65	ppm		-0.03
Spiked Amount 50.000			Recovery = 57.30%				
4) Phenol-d5	4.844	99	458412	20.40	ppm		-0.02
Spiked Amount 50.000			Recovery = 40.80%				
7) Nitrobenzene-d5	5.663	82	1120322	51.84	ppm		-0.02
Spiked Amount 50.000			Recovery = 103.68%				
13) 2-Fluorobiphenyl	7.432	172	2138479	44.20	ppm		-0.02
Spiked Amount 50.000			Recovery = 88.40%				
18) 2,4,6-Tribromophenol	8.855	330	264042	62.47	ppm		-0.03
Spiked Amount 50.000			Recovery = 124.94%				
26) Terphenyl-d14	11.106	244	2318787	55.26	ppm		-0.02
Spiked Amount 50.000			Recovery = 110.52%				
Target Compounds							Qvalue
2) 1,4-dioxane	2.216	88	4272m	0.45	ppm		
5) Phenol	4.858	94	62026	2.47	ppm		97
6) bis(2-Chloroethyl)ether	4.887	93	18926	0.91	ppm		99
8) Naphthalene	6.389	128	63008	0.93	ppm		99
9) Hexachlorobutadiene	6.524	225	10121	0.77	ppm		98
10) 2-Methylnaphthalene	7.062	141	35036	0.96	ppm		99
14) Acenaphthylene	7.943	152	53942	1.03	ppm		99
15) Acenaphthene	8.110	153	42566	1.01	ppm		99
16) 4,6-dinitro-2-methylph...	8.665	198	39592	5.96	ppm	#	68
17) Fluorene	8.613	166	47881	1.01	ppm		83
20) Hexachlorobenzene	9.159	284	12012	0.89	ppm		93
21) Pentachlorophenol	9.359	266	33380	4.22	ppm		89
22) Phenanthrene	9.554	178	70232	1.03	ppm		99
23) Anthracene	9.605	178	55327	1.02	ppm		98
24) Fluoranthene	10.720	202	79526	1.00	ppm		99
25) Pyrene	10.943	202	77807	1.09	ppm		99
27) Benzo[a]anthracene	12.115	228	62315	1.21	ppm		99
28) Chrysene	12.150	228	68714	0.98	ppm		100
30) Benzo[b]fluoranthene	13.102	252	66648	0.95	ppm		98
31) Benzo[k]fluoranthene	13.130	252	63335	0.84	ppm		100
32) Benzo[a]pyrene	13.396	252	54485	0.71	ppm		99
33) Indeno[1,2,3-cd]pyrene	14.547	276	52026	0.92	ppm		99
34) Dibenz[a,h]anthracene	14.569	278	44852	0.80	ppm		92
35) Benzo[g,h,i]perylene	14.865	276	44613	0.84	ppm		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77350.D
Acq On : 25 Jun 2019 12:04 am
Operator : chriss2
Sample : op21117a-bs12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 25 11:21:52 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration



Manual Integration Approval Summary

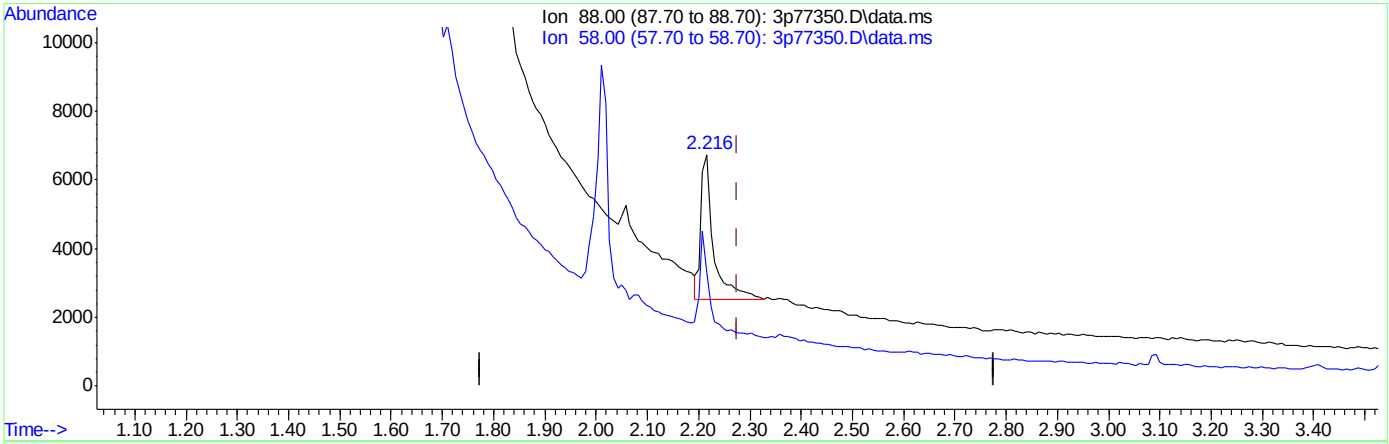
Sample Number:	OP21117A-BS12	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77350.D	**Analyst approved:**	06/25/19 12:03 Dipa Patel
Injection Time:	06/25/19 00:04	**Supervisor approved:**	06/26/19 13:18 Nina Pandya

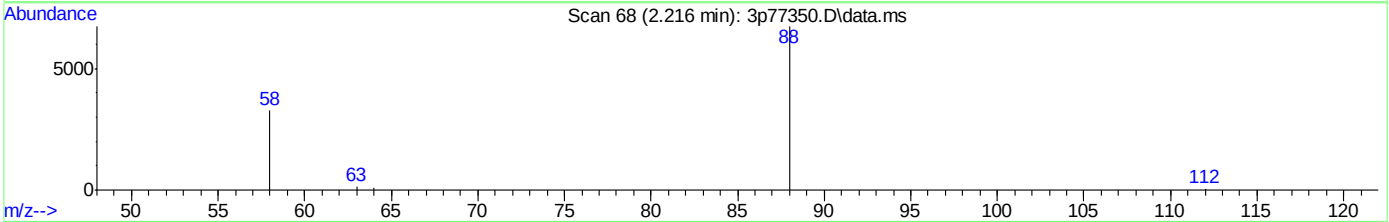
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.22	Poor instrument integration

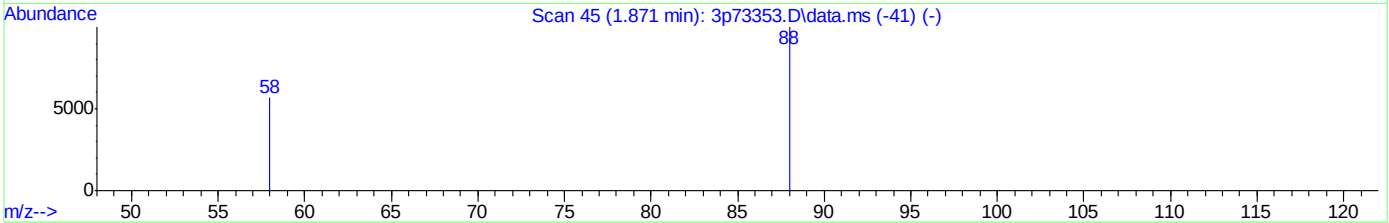
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77350.D
Acq On : 25 Jun 2019 12:04 am
Operator : chriss2
Sample : op21117a-bs12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 25 00:20:55 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77350.D\data.ms

(2) 1,4-dioxane (t)

2.216min (-0.060) 0.76ppm

response 7253

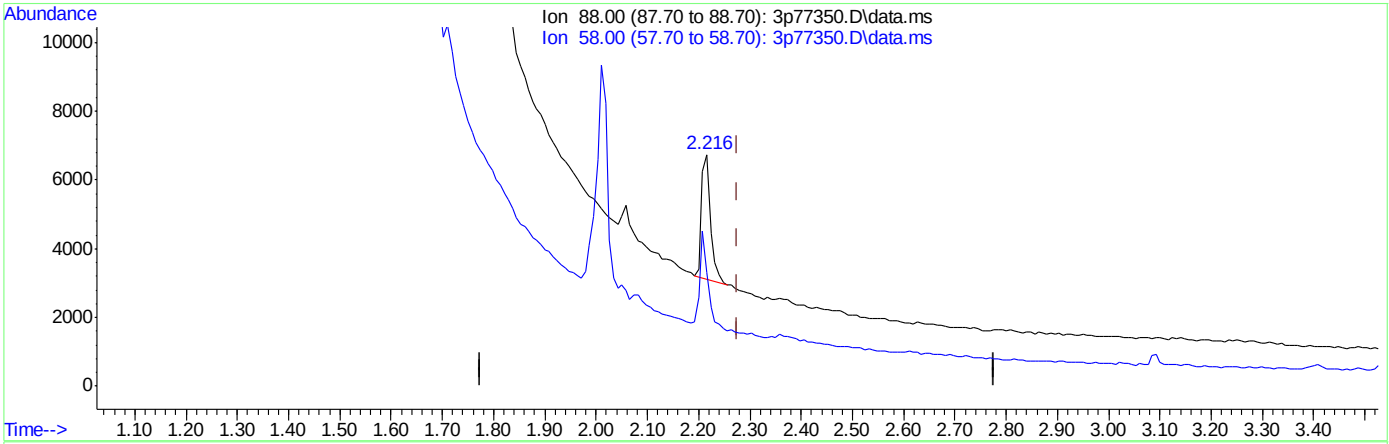
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	42.83
0.00	0.00	0.00
0.00	0.00	0.00

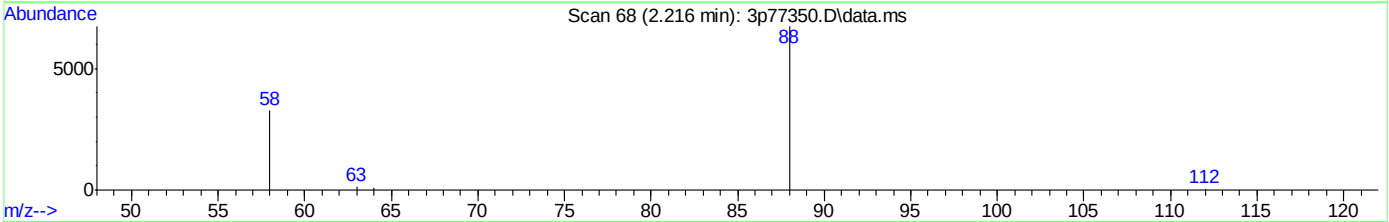
3P77350.D edits: 1,4-dioxane

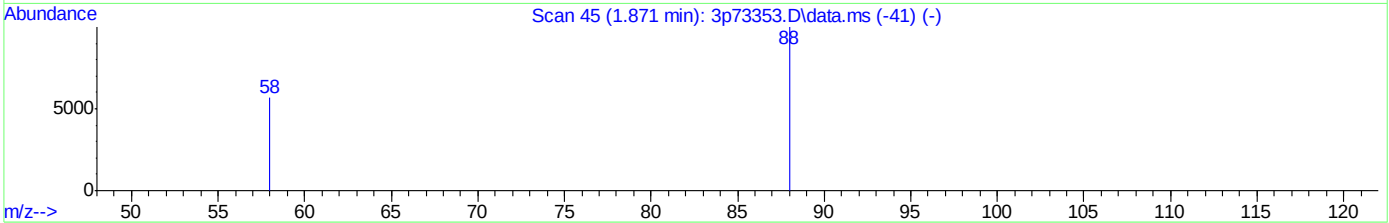
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77350.D
Acq On : 25 Jun 2019 12:04 am
Operator : chriss2
Sample : op21117a-bs12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 25 11:21:52 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77350.D\data.ms

(2) 1,4-dioxane (t)

2.216min (-0.060) 0.45ppm m

response 4272

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	48.99
0.00	0.00	0.00
0.00	0.00	0.00

3P77350.D edits: 1,4-dioxane

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/26/19 13:18

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77351.D
Acq On : 25 Jun 2019 12:26 am
Operator : chriss2
Sample : op21117a-bsd12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 25 11:23:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

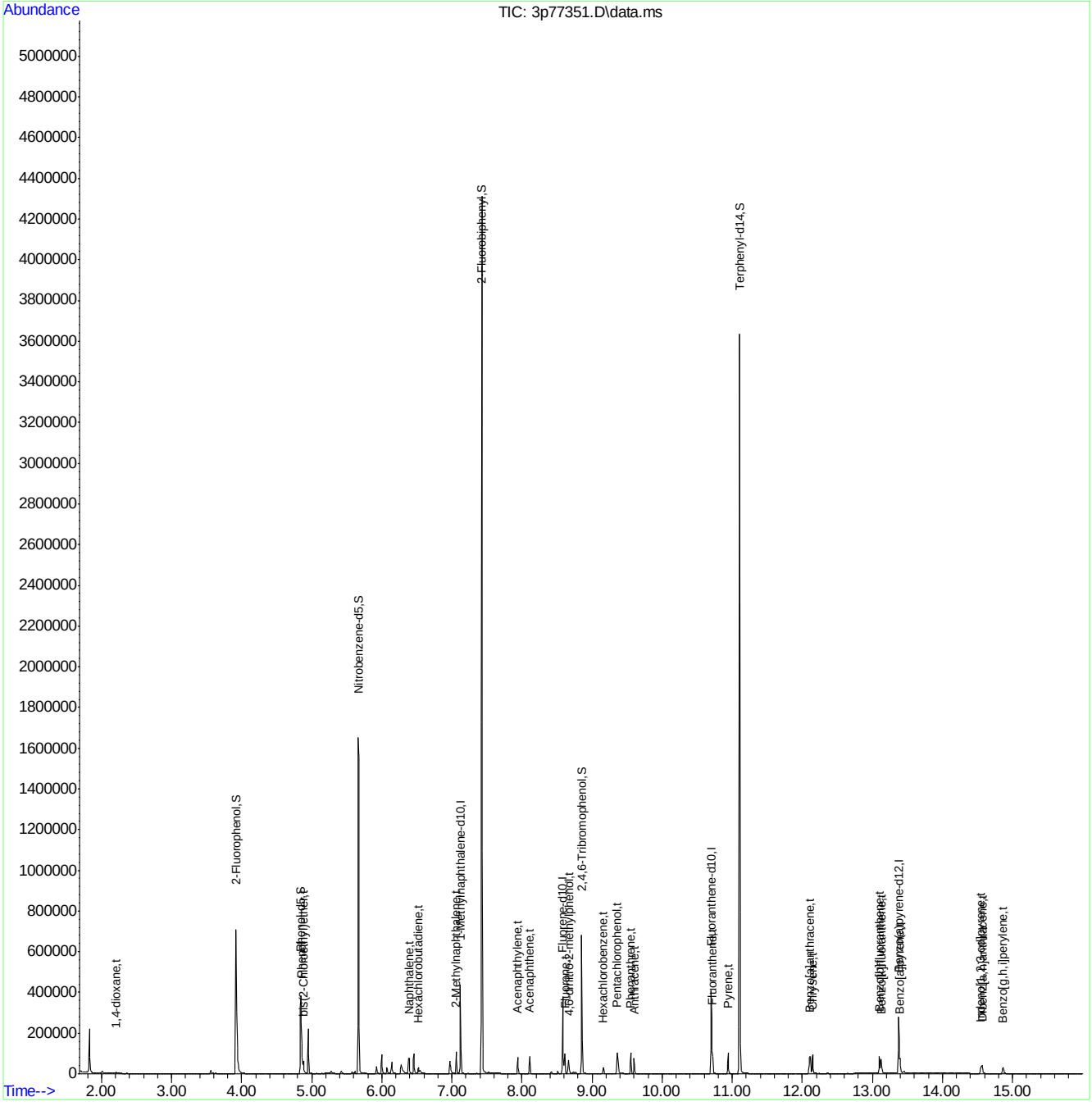
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.123	150	116243	4.00	ppm	-0.03
12) Fluorene-d10	8.581	176	156684	4.00	ppm	-0.03
19) Fluoranthene-d10	10.703	212	260140	4.00	ppm	-0.02
29) Benzo(a)pyrene-d12	13.375	264	173277	4.00	ppm	-0.03
System Monitoring Compounds						
3) 2-Fluorophenol	3.922	112	483941	29.83	ppm	-0.03
Spiked Amount 50.000			Recovery = 59.66%			
4) Phenol-d5	4.844	99	422080	21.03	ppm	-0.02
Spiked Amount 50.000			Recovery = 42.06%			
7) Nitrobenzene-d5	5.663	82	1027057	53.21	ppm	-0.02
Spiked Amount 50.000			Recovery = 106.42%			
13) 2-Fluorobiphenyl	7.426	172	1958393	45.93	ppm	-0.03
Spiked Amount 50.000			Recovery = 91.86%			
18) 2,4,6-Tribromophenol	8.854	330	237451	63.74	ppm	-0.03
Spiked Amount 50.000			Recovery = 127.48%			
26) Terphenyl-d14	11.106	244	1991060	54.37	ppm	-0.02
Spiked Amount 50.000			Recovery = 108.74%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.208	88	4165m	0.49	ppm	
5) Phenol	4.851	94	53400	2.38	ppm	# 77
6) bis(2-Chloroethyl)ether	4.886	93	17583	0.94	ppm	98
8) Naphthalene	6.389	128	56550	0.94	ppm	100
9) Hexachlorobutadiene	6.524	225	8794	0.75	ppm	99
10) 2-Methylnaphthalene	7.062	141	31303	0.96	ppm	98
14) Acenaphthylene	7.943	152	47051	1.02	ppm	99
15) Acenaphthene	8.110	153	37687	1.01	ppm	97
16) 4,6-dinitro-2-methylph...	8.665	198	31850	5.52	ppm	# 65
17) Fluorene	8.613	166	41932	1.01	ppm	83
20) Hexachlorobenzene	9.159	284	10480	0.89	ppm	93
21) Pentachlorophenol	9.359	266	29220	4.23	ppm	88
22) Phenanthrene	9.554	178	62837	1.06	ppm	100
23) Anthracene	9.601	178	49983	1.05	ppm	99
24) Fluoranthene	10.720	202	69708	1.01	ppm	99
25) Pyrene	10.943	202	66577	1.06	ppm	99
27) Benzo[a]anthracene	12.114	228	51632	1.16	ppm	99
28) Chrysene	12.149	228	57743	0.94	ppm	99
30) Benzo[b]fluoranthene	13.102	252	54722	0.90	ppm	97
31) Benzo[k]fluoranthene	13.130	252	50277	0.77	ppm	99
32) Benzo[a]pyrene	13.396	252	43271	0.65	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.553	276	37112	0.76	ppm	98
34) Dibenz[a,h]anthracene	14.569	278	32204	0.67	ppm	93
35) Benzo[g,h,i]perylene	14.865	276	33366	0.73	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77351.D
Acq On : 25 Jun 2019 12:26 am
Operator : chriss2
Sample : op21117a-bsd12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 25 11:23:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration



Manual Integration Approval Summary

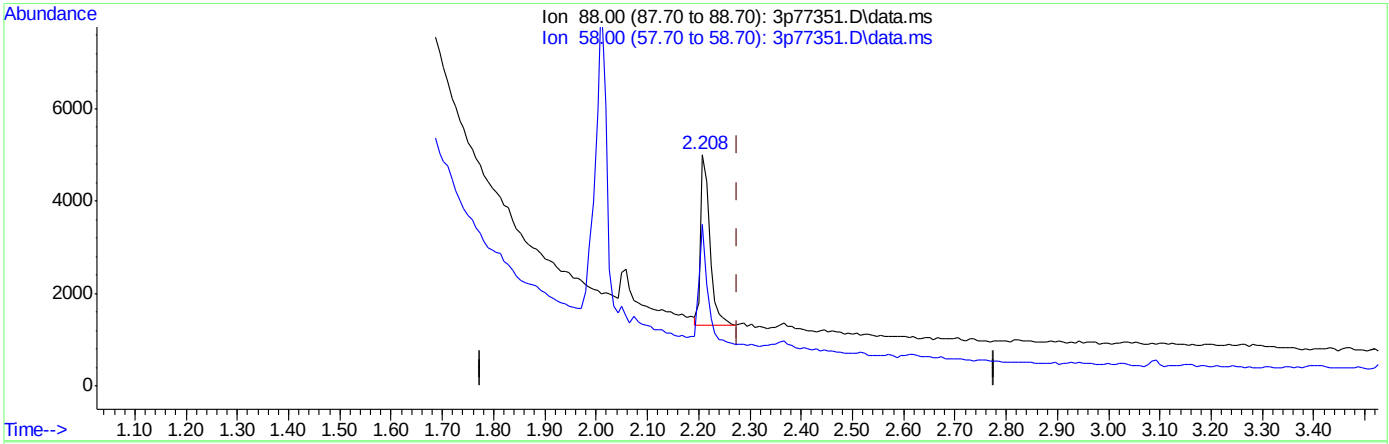
Sample Number: OP21117A-BSD12
Lab FileID: 3P77351.D
Injection Time: 06/25/19 00:26
Method: SW846 8270D BY SIM
Analyst approved: 06/25/19 12:03 Dipa Patel
Supervisor approved: 06/26/19 13:18 Nina Pandya

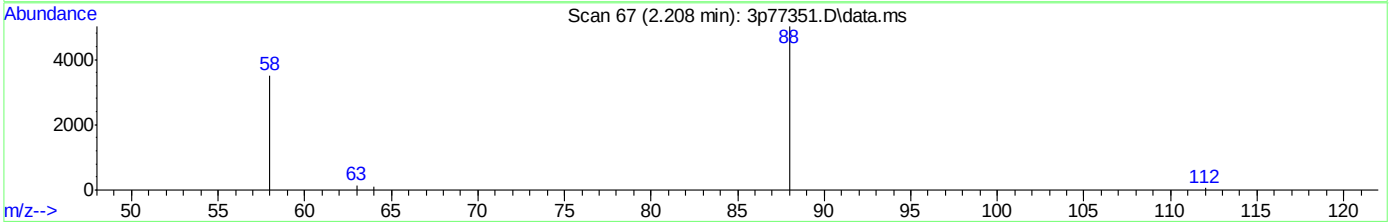
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.21	Poor instrument integration

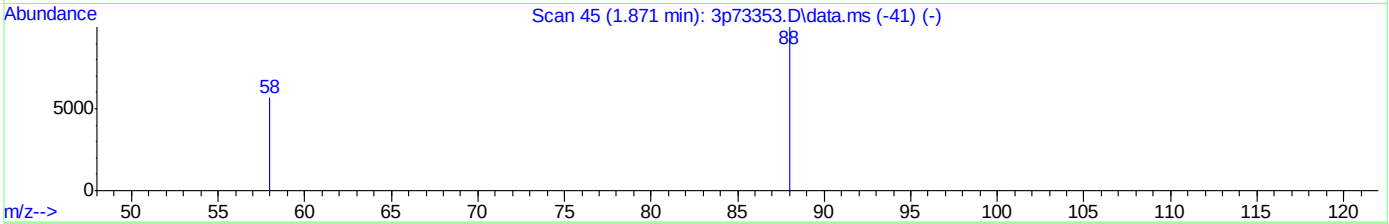
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77351.D
Acq On : 25 Jun 2019 12:26 am
Operator : chriss2
Sample : op21117a-bsd12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 25 00:42:05 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77351.D\data.ms

(2) 1,4-dioxane (t)

2.208min (-0.068) 0.54ppm

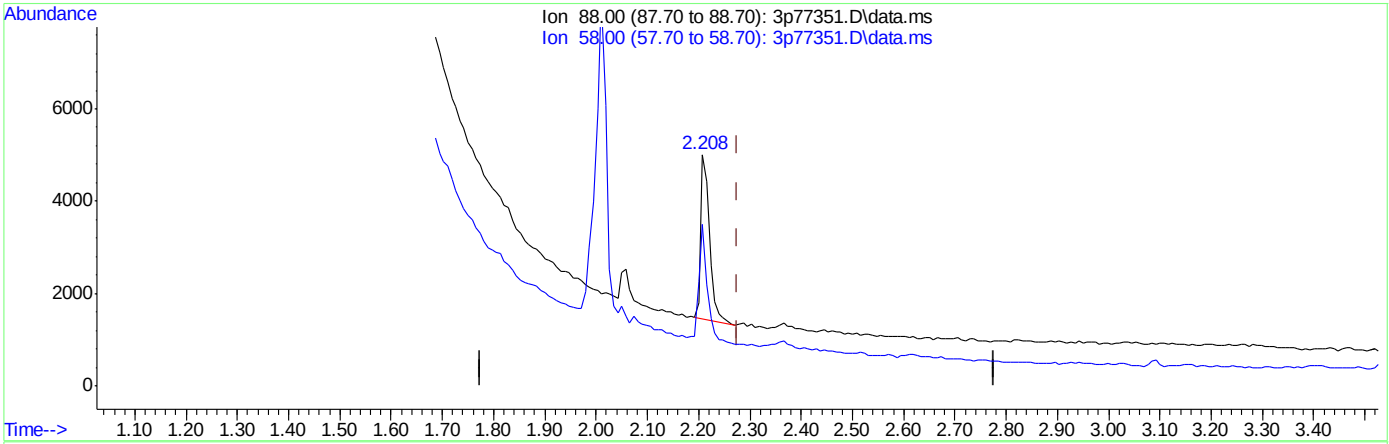
response 4568

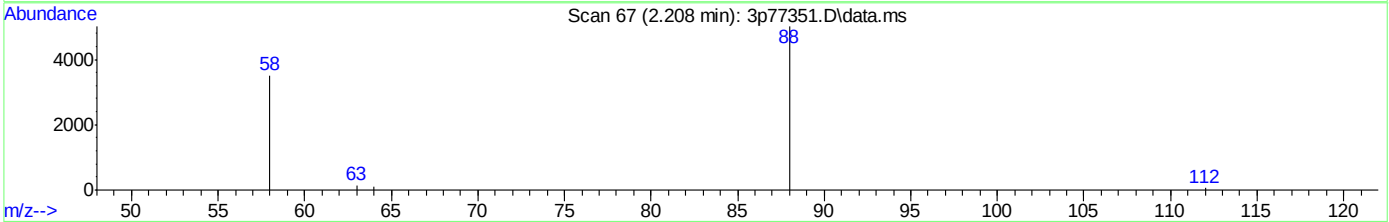
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	69.60
0.00	0.00	0.00
0.00	0.00	0.00

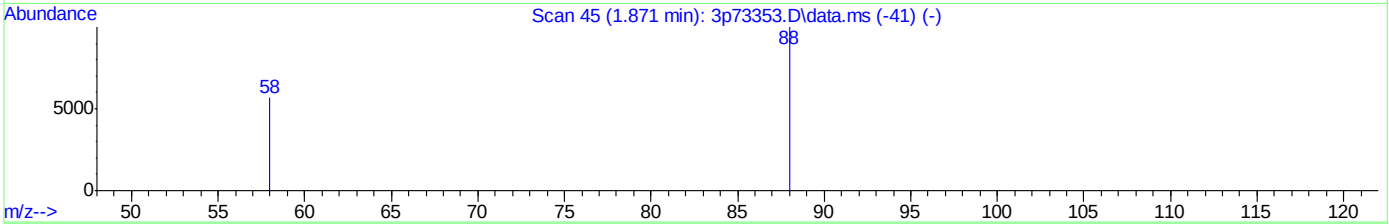
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77351.D
Acq On : 25 Jun 2019 12:26 am
Operator : chriss2
Sample : op21117a-bsd12
Misc : op21117a,e3p3626,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 25 00:42:05 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77351.D\data.ms

(2) 1,4-dioxane (t)

2.208min (-0.068) 0.49ppm m

response 4165

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	70.06
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/27/19 15:44

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77480.D
Acq On : 27 Jun 2019 1:02 pm
Operator : HENNYS
Sample : op21044a-msa
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 27 15:06:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

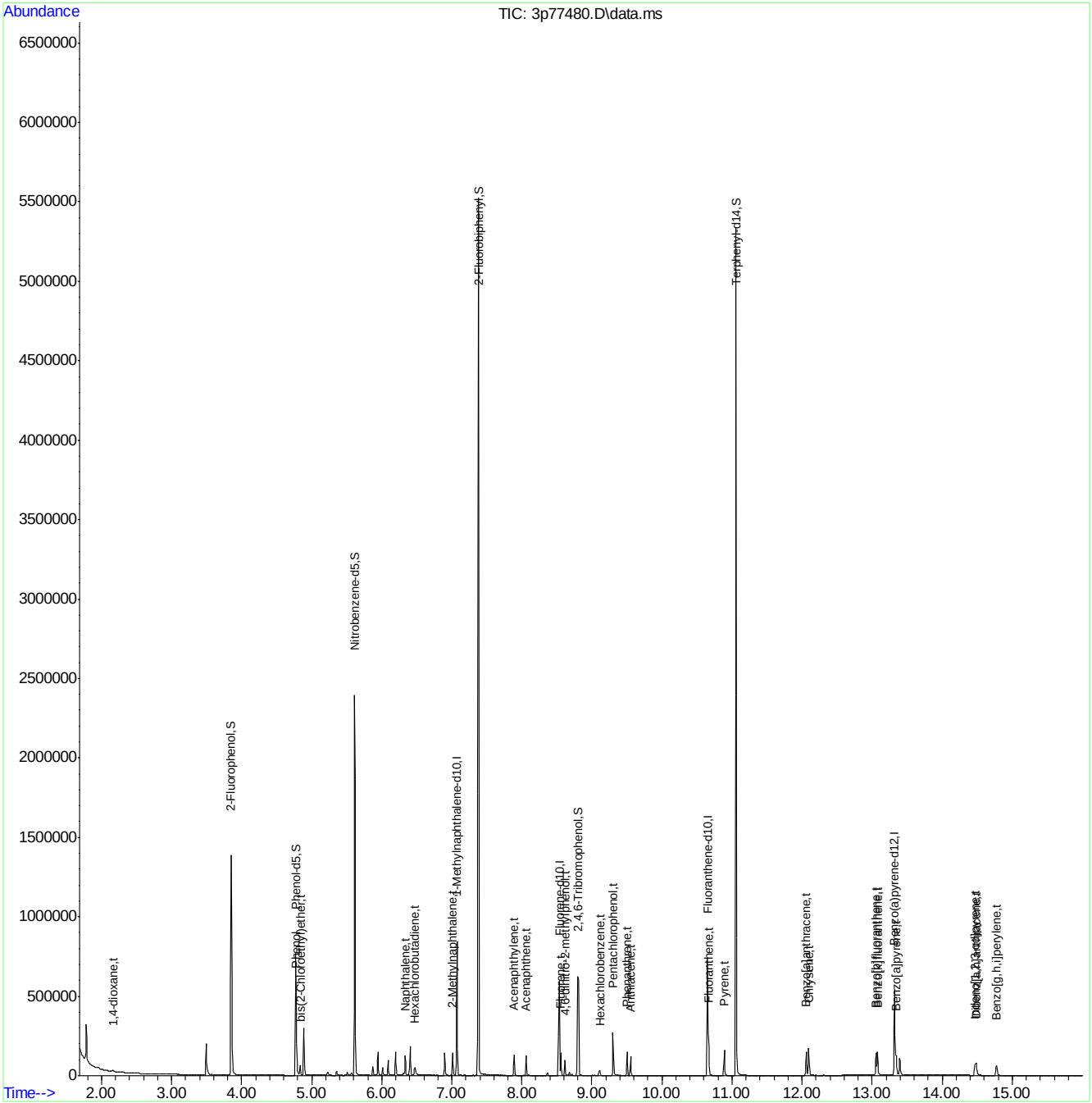
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.072	150	212007	4.00	ppm	-0.08
12) Fluorene-d10	8.535	176	285285	4.00	ppm	-0.07
19) Fluoranthene-d10	10.650	212	471235	4.00	ppm	-0.08
29) Benzo(a)pyrene-d12	13.321	264	332623	4.00	ppm	-0.08
System Monitoring Compounds						
3) 2-Fluorophenol	3.851	112	677425	22.90	ppm	-0.10
Spiked Amount 50.000			Recovery = 45.80%			
4) Phenol-d5	4.773	99	641085	17.51	ppm	-0.09
Spiked Amount 50.000			Recovery = 35.02%			
7) Nitrobenzene-d5	5.613	82	1382739	39.28	ppm	-0.07
Spiked Amount 50.000			Recovery = 78.56%			
13) 2-Fluorobiphenyl	7.381	172	2550711	32.86	ppm	-0.07
Spiked Amount 50.000			Recovery = 65.72%			
18) 2,4,6-Tribromophenol	8.797	330	319295	47.08	ppm	-0.08
Spiked Amount 50.000			Recovery = 94.16%			
26) Terphenyl-d14	11.058	244	3101354	46.75	ppm	-0.07
Spiked Amount 50.000			Recovery = 93.50%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.161	88	5114m	0.33	ppm	
5) Phenol	4.780	94	87870	2.15	ppm	97
6) bis(2-Chloroethyl)ether	4.837	93	23370	0.69	ppm	98
8) Naphthalene	6.332	128	78204	0.71	ppm	96
9) Hexachlorobutadiene	6.474	225	12689	0.59	ppm	99
10) 2-Methylnaphthalene	7.012	141	41581	0.70	ppm	97
14) Acenaphthylene	7.887	152	69603	0.83	ppm	99
15) Acenaphthene	8.059	153	52935	0.78	ppm	100
16) 4,6-dinitro-2-methylph...	8.619	198	60623	5.73	ppm #	37
17) Fluorene	8.556	166	57445	0.76	ppm	95
20) Hexachlorobenzene	9.113	284	14339	0.67	ppm	95
21) Pentachlorophenol	9.302	266	73173	5.74	ppm	87
22) Phenanthrene	9.501	178	90643	0.84	ppm	100
23) Anthracene	9.552	178	73380	0.85	ppm	99
24) Fluoranthene	10.667	202	100990	0.80	ppm	99
25) Pyrene	10.890	202	101311	0.89	ppm	99
27) Benzo[a]anthracene	12.060	228	86969	1.08	ppm	99
28) Chrysene	12.095	228	100029	0.90	ppm	97
30) Benzo[b]fluoranthene	13.055	252	86198	0.74	ppm	97
31) Benzo[k]fluoranthene	13.076	252	94810	0.76	ppm	98
32) Benzo[a]pyrene	13.342	252	75729	0.59	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.468	276	80960	0.86	ppm	99
34) Dibenz[a,h]anthracene	14.484	278	68169	0.74	ppm	96
35) Benzo[g,h,i]perylene	14.775	276	73151	0.83	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77480.D
Acq On : 27 Jun 2019 1:02 pm
Operator : HENNYS
Sample : op21044a-msa
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 27 15:06:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration



Manual Integration Approval Summary

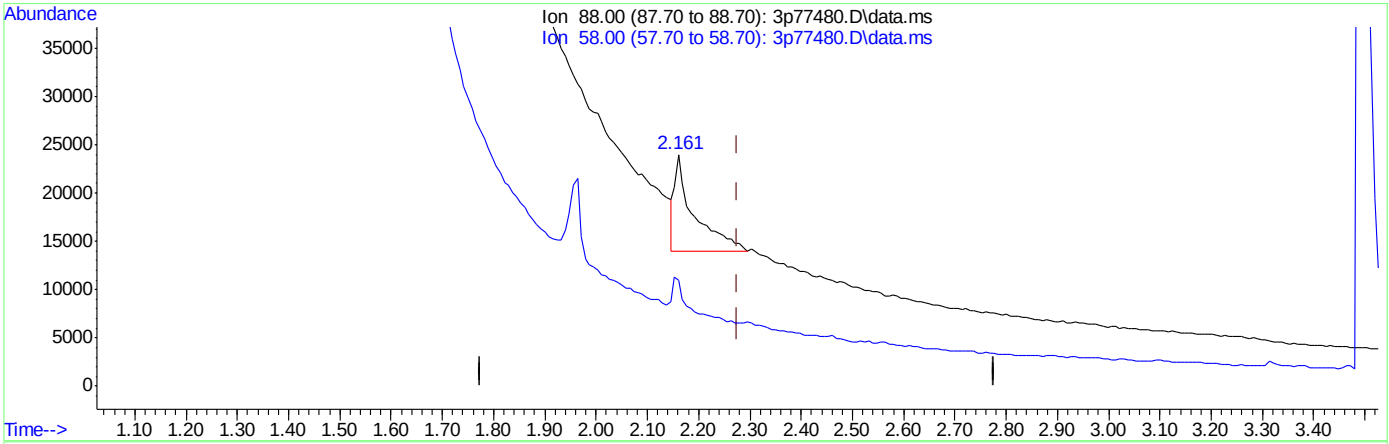
Sample Number:	OP21044A-MSA	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77480.D	**Analyst approved:**	06/27/19 15:13 Ying Li
Injection Time:	06/27/19 13:02	**Supervisor approved:**	06/27/19 15:44 Nina Pandya

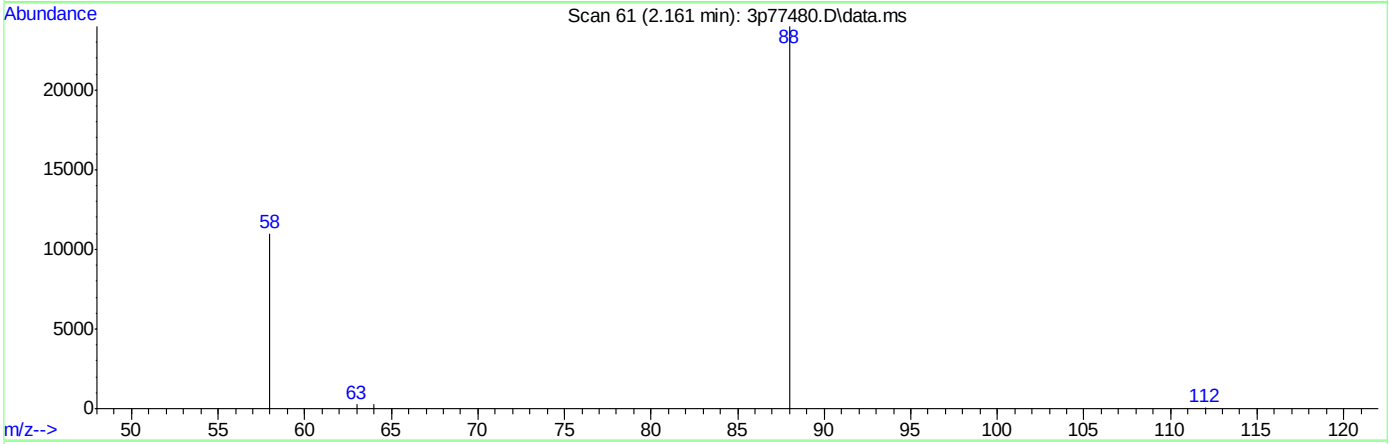
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.16	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77480.D
Acq On : 27 Jun 2019 1:02 pm
Operator : HENNYS
Sample : op21044a-msa
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 27 13:18:42 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration





TIC: 3p77480.D\data.ms

(2) 1,4-dioxane (t)

2.161min (-0.115) 1.70ppm

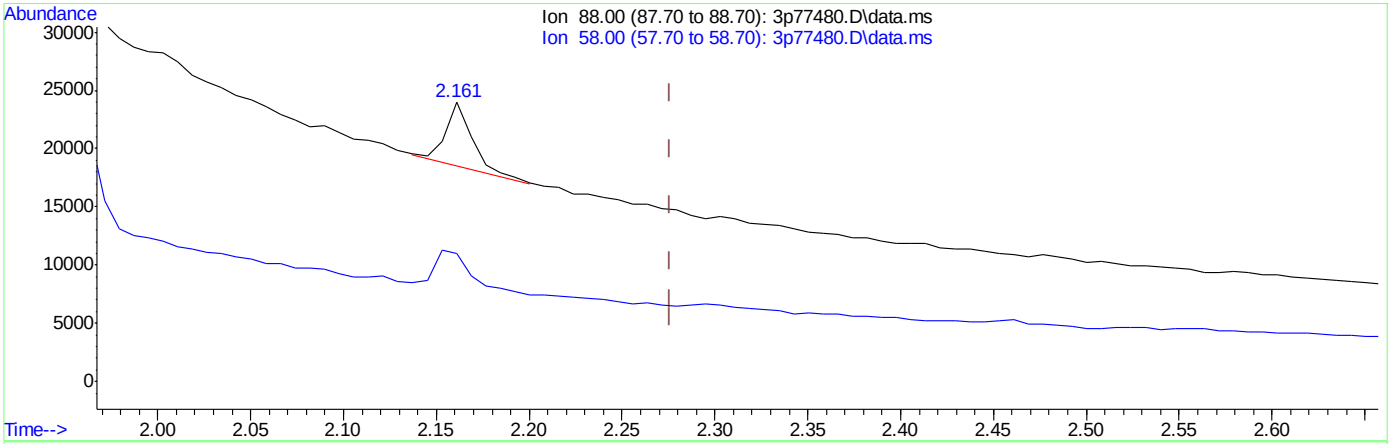
response 26529

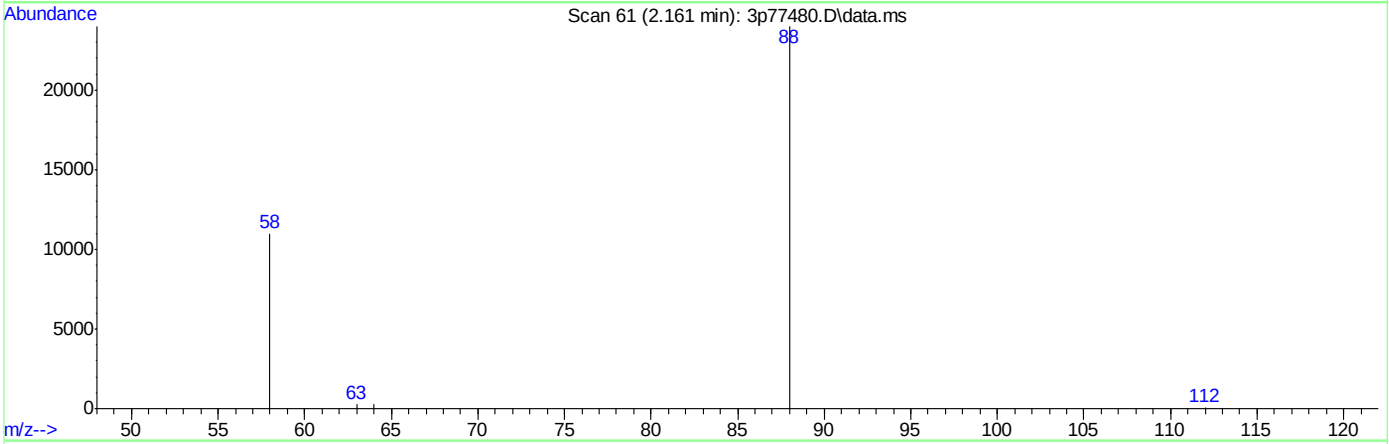
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	45.58
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77480.D
Acq On : 27 Jun 2019 1:02 pm
Operator : HENNYS
Sample : op21044a-msa
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 27 15:05:37 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration





TIC: 3p77480.D\data.ms

(2) 1,4-dioxane (t)

2.161min (-0.115) 0.33ppm m

response 5114

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	45.87
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/27/19 15:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77481.D
Acq On : 27 Jun 2019 1:26 pm
Operator : HENNYS
Sample : op21044a-msda
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 27 15:07:34 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

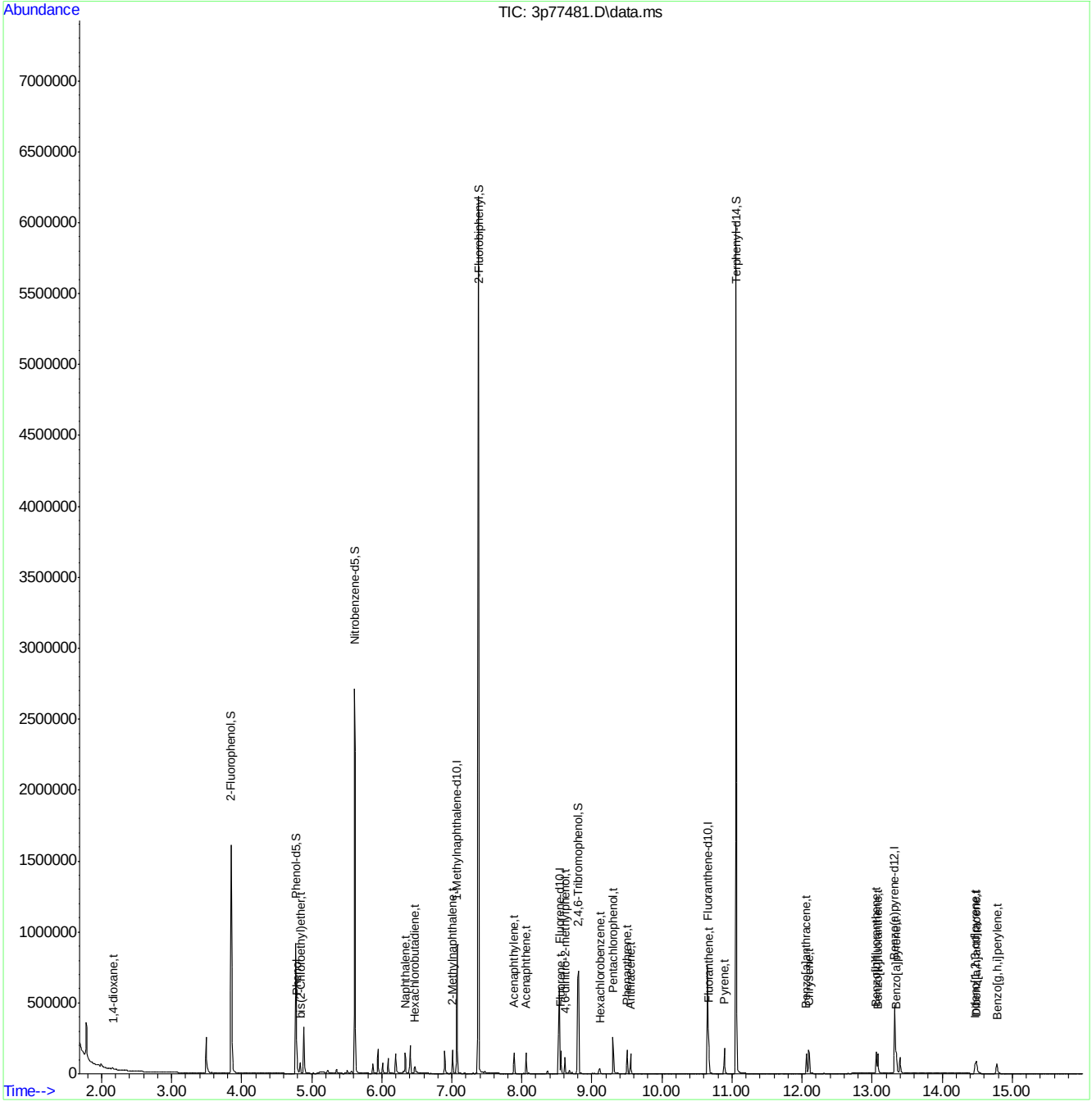
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.072	150	221137	4.00	ppm		-0.08
12) Fluorene-d10	8.535	176	299893	4.00	ppm		-0.07
19) Fluoranthene-d10	10.650	212	488797	4.00	ppm		-0.08
29) Benzo(a)pyrene-d12	13.321	264	341740	4.00	ppm		-0.08
System Monitoring Compounds							
3) 2-Fluorophenol	3.851	112	788015	25.54	ppm		-0.10
Spiked Amount 50.000			Recovery =	51.08%			
4) Phenol-d5	4.773	99	746713	19.56	ppm		-0.09
Spiked Amount 50.000			Recovery =	39.12%			
7) Nitrobenzene-d5	5.613	82	1611941	43.90	ppm		-0.07
Spiked Amount 50.000			Recovery =	87.80%			
13) 2-Fluorobiphenyl	7.381	172	2912591	35.69	ppm		-0.07
Spiked Amount 50.000			Recovery =	71.38%			
18) 2,4,6-Tribromophenol	8.808	330	361316	50.68	ppm		-0.07
Spiked Amount 50.000			Recovery =	101.36%			
26) Terphenyl-d14	11.058	244	3509530	51.01	ppm		-0.07
Spiked Amount 50.000			Recovery =	102.02%			
Target Compounds							Qvalue
2) 1,4-dioxane	2.161	88	6335m	0.39	ppm		
5) Phenol	4.787	94	99272	2.33	ppm		94
6) bis(2-Chloroethyl)ether	4.837	93	27902	0.79	ppm		99
8) Naphthalene	6.332	128	93126	0.81	ppm		96
9) Hexachlorobutadiene	6.474	225	14954	0.67	ppm		99
10) 2-Methylnaphthalene	7.012	141	48682	0.78	ppm		98
14) Acenaphthylene	7.887	152	81609	0.92	ppm		100
15) Acenaphthene	8.059	153	61762	0.87	ppm		99
16) 4,6-dinitro-2-methylph...	8.619	198	68251	6.07	ppm	#	37
17) Fluorene	8.556	166	66535	0.83	ppm		96
20) Hexachlorobenzene	9.113	284	16234	0.73	ppm		96
21) Pentachlorophenol	9.302	266	76082	5.75	ppm		86
22) Phenanthrene	9.501	178	103668	0.93	ppm		100
23) Anthracene	9.552	178	85543	0.96	ppm		99
24) Fluoranthene	10.667	202	114610	0.88	ppm		100
25) Pyrene	10.890	202	114623	0.98	ppm		99
27) Benzo[a]anthracene	12.060	228	93529	1.12	ppm		96
28) Chrysene	12.095	228	114938	1.00	ppm		96
30) Benzo[b]fluoranthene	13.055	252	100344	0.84	ppm		97
31) Benzo[k]fluoranthene	13.083	252	98570	0.77	ppm		100
32) Benzo[a]pyrene	13.342	252	81436	0.62	ppm		99
33) Indeno[1,2,3-cd]pyrene	14.474	276	86413	0.90	ppm		99
34) Dibenz[a,h]anthracene	14.490	278	73653	0.77	ppm		95
35) Benzo[g,h,i]perylene	14.781	276	76424	0.84	ppm		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77481.D
Acq On : 27 Jun 2019 1:26 pm
Operator : HENNYS
Sample : op21044a-msda
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 27 15:07:34 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration



Manual Integration Approval Summary

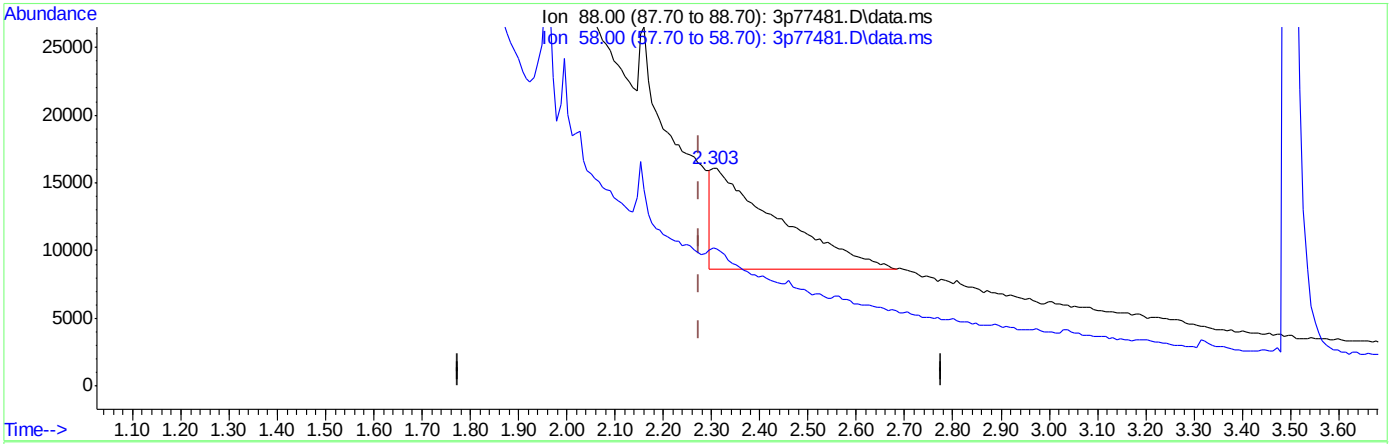
Sample Number:	OP21044A-MSDA	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77481.D	**Analyst approved:**	06/27/19 15:46 Nina Pandya
Injection Time:	06/27/19 13:26	**Supervisor approved:**	06/27/19 15:46 Nina Pandya

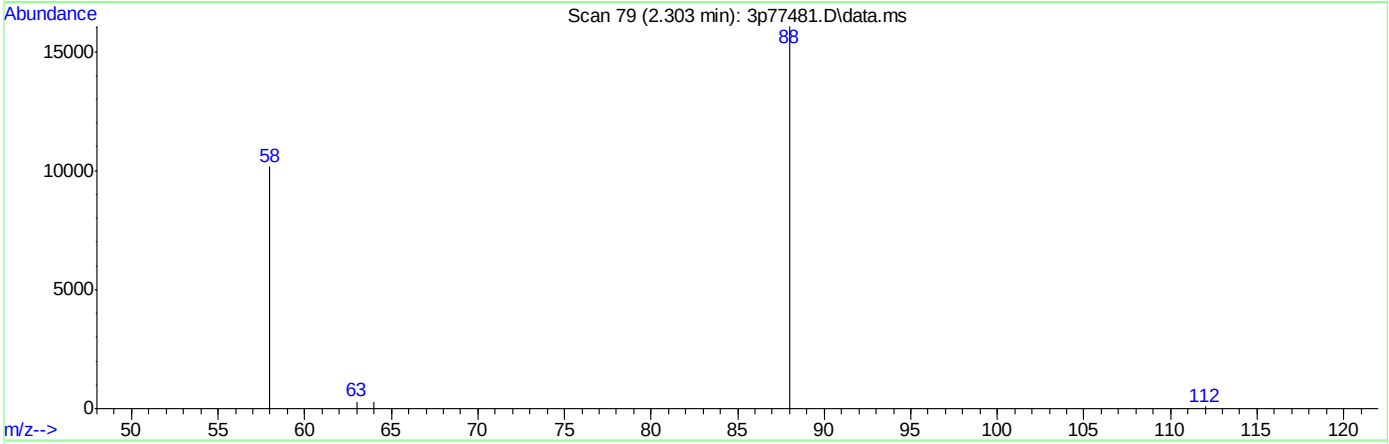
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.16	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77481.D
Acq On : 27 Jun 2019 1:26 pm
Operator : HENNYS
Sample : op21044a-msda
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 27 13:42:13 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration





TIC: 3p77481.D\data.ms

(2) 1,4-dioxane (t)

2.303min (+0.027) 4.27ppm

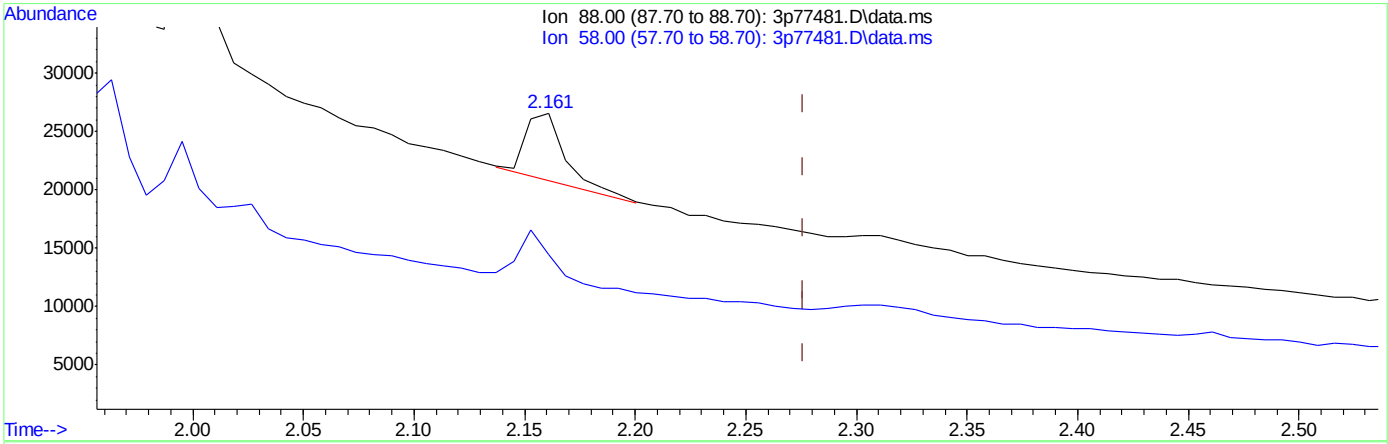
response 69296

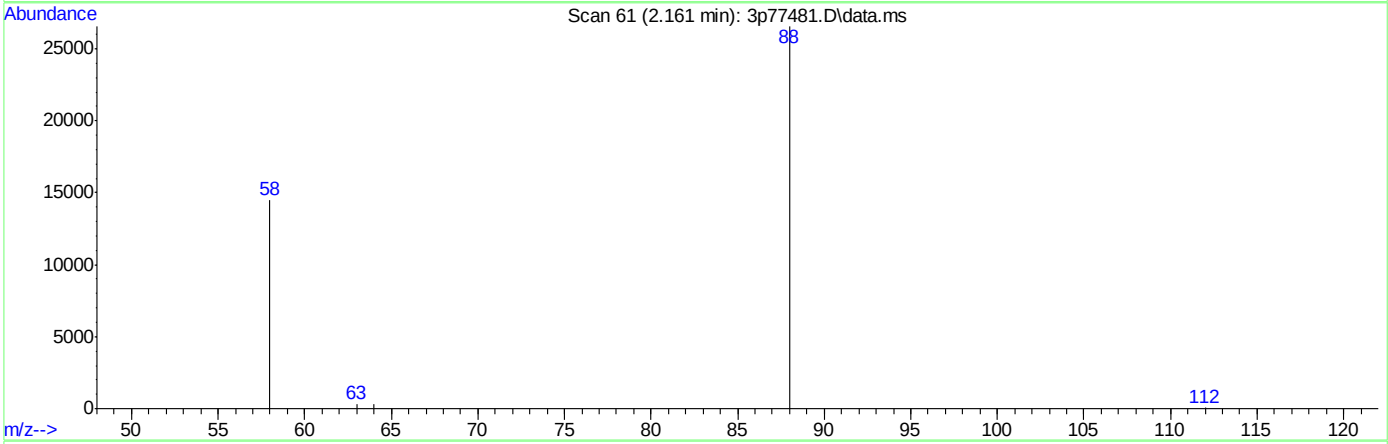
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	63.21
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77481.D
Acq On : 27 Jun 2019 1:26 pm
Operator : HENNYS
Sample : op21044a-msda
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 27 13:42:13 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration





TIC: 3p77481.D\data.ms

(2) 1,4-dioxane (t)

2.161min (-0.115) 0.39ppm m

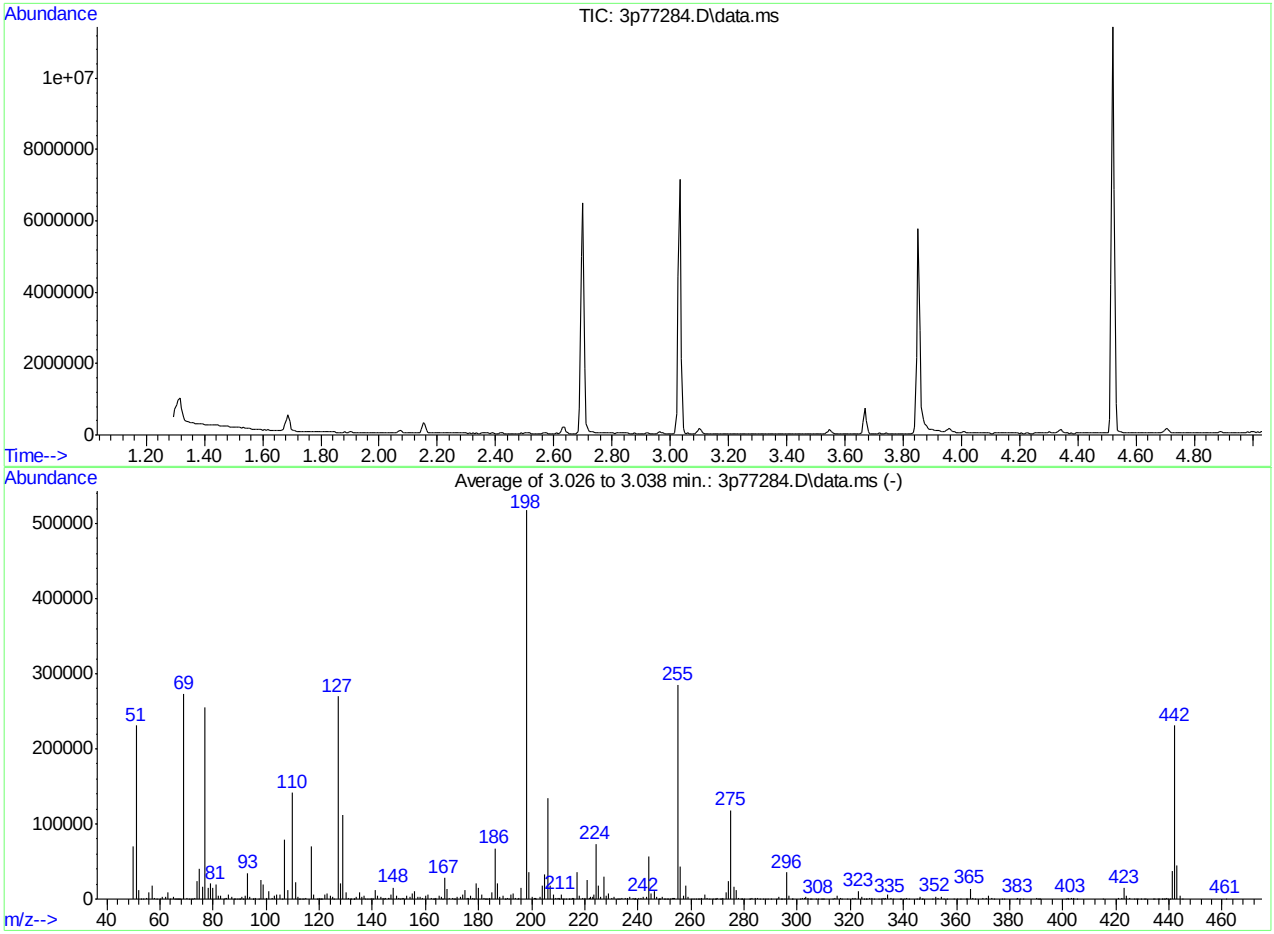
response 6335

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	54.55
0.00	0.00	0.00
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\E3P3623\3p77284.D Vial: 1
Acq On : 21 Jun 2019 3:40 am Operator: chriss2
Sample : dftpp Inst : MSGC3P
Misc : op20806,e3p3623,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 304, 305, 306; Background Corrected with Scan 298

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.7	231130	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	52.7	272888	PASS
70	69	0.00	2	0.5	1349	PASS
127	198	40	60	52.2	269936	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	517376	PASS
199	198	5	9	6.8	35403	PASS
275	198	10	30	22.8	118208	PASS
365	198	1	100	2.7	13867	PASS
441	443	0.01	100	83.8	37346	PASS
442	198	40	100	44.6	230725	PASS
443	442	17	23	19.3	44585	PASS

3p77284.D DFTPP3P.M Fri Jun 21 10:26:36 2019

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	70592	61.00	3220	69.00	272888	79.00	21687
51.05	231130	62.05	2756	69.95	1349	80.00	14562
52.05	12157	63.05	8540	71.05	407	81.00	20128
52.90	475	63.95	623	71.90	487	81.95	4134
53.85	258	65.05	3226	72.20	295	83.00	4643
55.00	1249	65.60	192	73.05	1293	84.00	366
55.95	8848	66.00	261	73.95	24319	84.90	1194
56.95	18010	66.20	278	75.00	39912	85.10	1661
58.00	1063	66.60	172	76.10	16552	85.95	5287
58.60	176	67.00	80	77.10	255532	87.00	2721
59.90	438	67.50	386	78.05	14959	87.90	439

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
88.10	631	96.05	1774	107.00	79576	118.00	5704
89.05	692	97.00	120	108.05	11730	118.95	650
90.00	75	98.00	26164	110.00	141587	120.10	1058
90.20	88	99.00	20128	111.00	22612	120.50	87
90.95	3299	100.05	1778	112.00	3060	120.80	177
91.20	578	101.05	10040	112.20	155	121.00	612
92.05	4106	102.05	993	112.85	361	121.95	6153
93.00	34749	102.95	4020	113.50	125	123.00	7153
94.00	2459	104.00	6382	114.10	316	124.05	4837
94.90	446	105.00	6291	115.05	962	125.10	3758
95.20	175	106.00	435	117.00	70067	125.60	85

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
127.00	269936	136.05	3364	144.30	444	152.00	617
128.05	20354	137.00	4366	145.00	1306	153.00	4065
129.00	111403	137.20	393	145.95	1494	154.00	3056
130.00	9160	138.05	647	146.20	1207	155.10	7673
131.05	2238	139.05	657	147.00	6038	156.00	10000
131.80	460	139.85	1425	148.00	15389	157.05	2618
131.95	417	140.20	186	149.05	4021	158.00	2304
132.90	277	141.00	12544	149.90	952	158.90	1757
133.20	212	142.05	4495	150.30	269	160.00	4098
134.00	3031	143.00	2744	151.05	1867	161.05	6443
135.00	9737	143.95	1019	151.60	883	162.05	1870

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
162.90	341	170.80	495	179.00	20666	188.10	3124
163.20	266	171.00	692	180.00	14941	189.00	4633
163.50	190	172.00	2737	181.00	6723	189.90	314
164.00	970	173.05	3096	182.05	1173	190.20	257
165.00	4508	174.05	6381	182.60	119	191.00	2190
165.95	3769	175.05	11700	183.00	424	191.20	425
166.40	564	175.90	1140	183.20	228	192.05	6387
167.10	28070	176.10	1642	183.95	1304	193.00	7469
168.05	13377	177.00	3849	185.05	9008	194.05	1466
169.05	1959	177.85	1961	186.10	67741	194.60	202
170.05	1145	178.20	443	187.10	20591	195.10	1336

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
196.00	15695	207.05	18007	214.10	139	223.00	2768
198.00	517376	208.05	5307	215.00	525	223.20	5627
199.00	35403	209.05	1439	215.20	878	224.10	73200
200.05	2779	209.90	1856	215.95	1581	225.05	18010

DFTPP3P.M Fri Jun 21 10:26:17 2019 Page: 0

201.05	1006	210.10	361	217.00	35923	226.00	2521
201.30	231	210.50	1159	218.05	4672	227.05	30008
201.55	2165	211.05	6113	219.10	850	228.05	4641
203.05	3367	211.70	530	220.05	861	229.05	7059
204.05	18479	212.20	624	221.00	26138	229.95	1357
205.00	32643	212.80	181	221.90	1249	231.05	2743
206.10	134301	213.90	67	222.10	3765	232.20	280

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
232.70	95	241.00	2302	249.90	542	258.05	17932
233.05	452	242.05	3523	250.10	177	259.00	2754
234.00	1883	243.15	3421	250.90	223	260.10	643
235.05	1946	244.10	56309	251.15	687	261.10	608
236.05	1742	245.10	6872	252.15	728	261.90	78
237.00	3077	246.00	10930	253.00	1553	262.85	268
238.00	1224	246.95	2953	253.25	1302	263.20	75
238.40	288	247.80	385	253.95	1809	263.90	949
238.85	650	248.05	286	255.10	285035	265.00	6505
239.10	924	248.30	169	256.00	42952	265.90	952
240.10	1187	249.00	2763	257.10	3907	267.05	281

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
268.15	267	277.05	12042	285.95	601	297.00	4900
269.00	137	278.00	1426	287.10	75	297.95	590
269.20	248	278.80	123	287.90	115	298.20	115
269.90	842	279.10	305	288.95	268	301.00	436
271.05	578	279.30	162	290.05	285	302.10	1067
271.30	261	279.80	70	292.15	706	302.80	838
272.15	1634	281.95	580	293.00	3173	303.10	3106
273.00	8999	282.15	160	294.10	728	304.05	1081
274.10	23417	283.05	1175	294.30	129	305.00	178
275.05	118208	284.05	1246	295.00	379	305.35	248
276.10	15844	285.05	1561	296.10	35165	306.85	299

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
307.95	669	321.95	1445	332.10	911	344.80	203
309.10	291	323.10	10837	332.80	359	345.70	299
309.70	115	324.10	2350	333.15	942	346.05	2509
309.95	412	325.10	72	334.10	6296	346.90	80
313.10	387	325.80	91	335.15	1957	347.05	491
314.05	1706	326.05	377	336.25	229	351.00	166
315.05	4008	327.10	1682	338.50	88	352.10	3445
316.10	1667	328.05	1188	339.20	103	353.05	2282
316.80	200	329.00	67	340.20	72	354.10	3284
318.95	204	330.45	151	341.05	1596	354.90	214
321.05	1065	331.60	172	342.00	214	356.20	235

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
359.10	74	373.15	1381	391.30	188	424.05	5123
360.00	75	374.30	162	401.05	514	425.15	1029
361.40	115	377.20	126	401.90	286	427.00	80
363.50	132	378.10	86	402.05	1399	427.50	73
364.00	79	382.50	114	403.10	2249	428.20	109
365.10	13867	383.05	1591	404.05	1366	429.50	130
366.00	1969	383.90	297	405.15	248	430.50	257
367.10	83	385.00	135	415.10	267	431.10	69
370.00	842	390.00	851	421.10	2111	434.00	291
371.00	1370	390.40	202	422.15	2059	434.30	88
372.10	4704	391.05	589	423.10	14602	435.90	101

Average of 3.026 to 3.038 min.: 3p77284.D\data.ms

DFTPP3P.M Fri Jun 21 10:26:17 2019 Page: 1

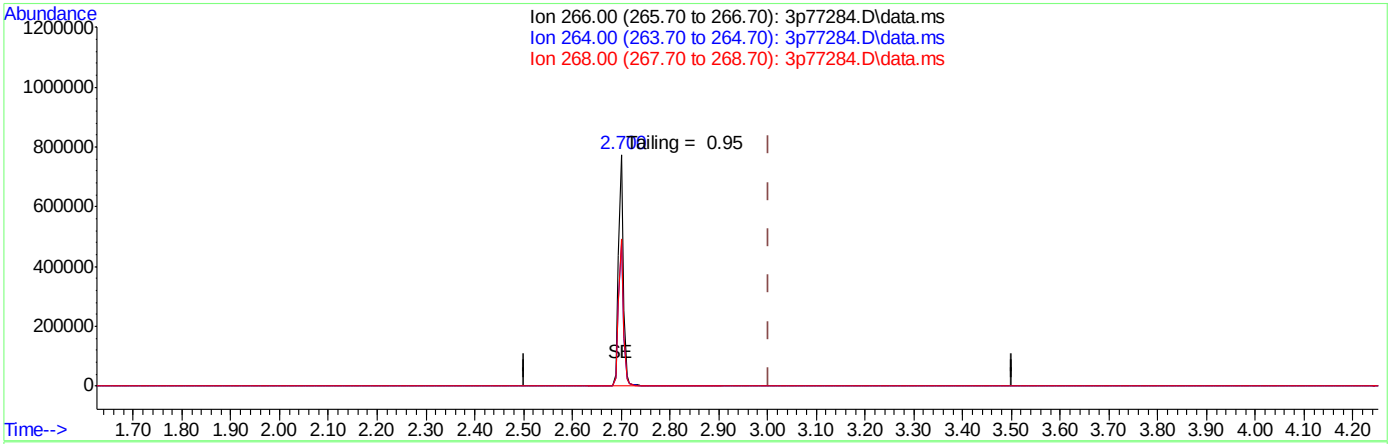
dftpp
Modified:subtracted

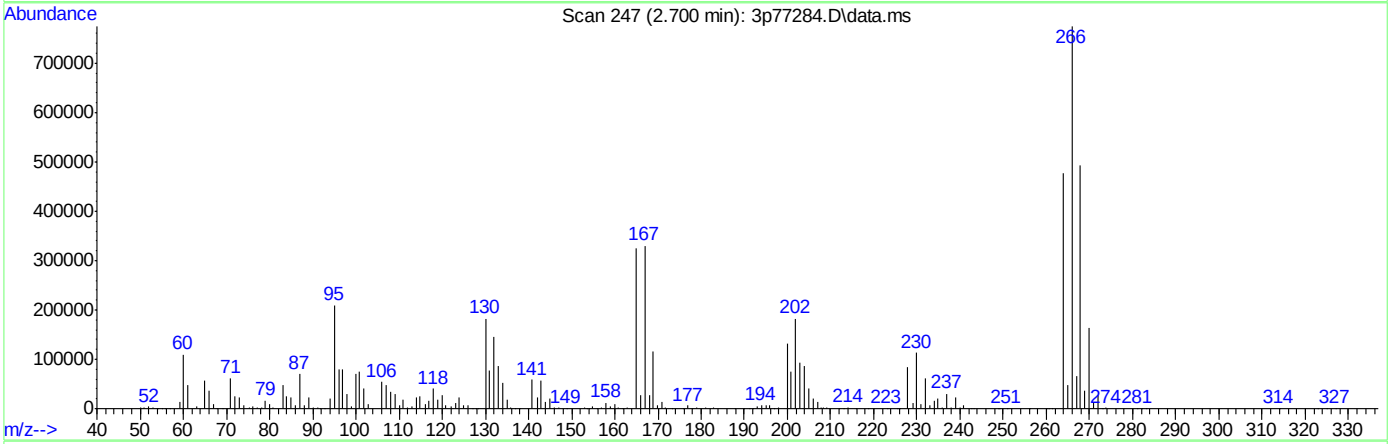
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
436.20	162	444.15	4471				
437.30	320	444.90	172				
437.50	199	461.30	107				
438.15	310						
438.40	348						
439.25	909						
439.65	382						
440.20	188						
441.10	37346						
442.10	230725						
443.10	44585						

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77284.D
Acq On : 21 Jun 2019 3:40 am
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3623,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 03:46:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77284.D\data.ms

(1) Pentachlorophenol

2.700min (-0.302) 54.21 m

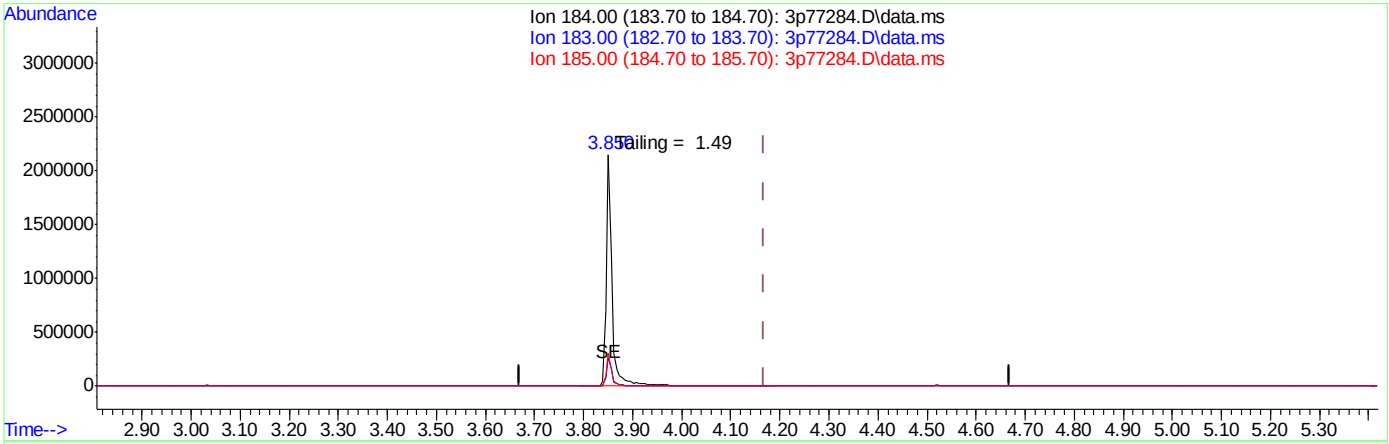
response 5441235

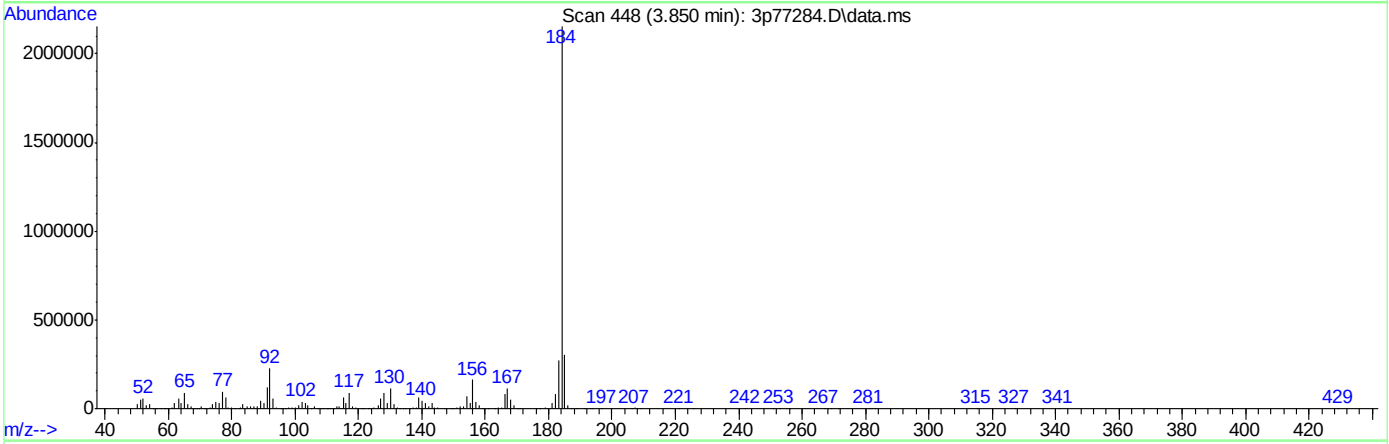
Ion	Exp%	Act%
266.00	100	100
264.00	61.70	0.00#
268.00	64.20	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77284.D
Acq On : 21 Jun 2019 3:40 am
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3623,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 03:46:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77284.D\data.ms

(2) Benzidine

3.850min (-0.319) 47.34 m

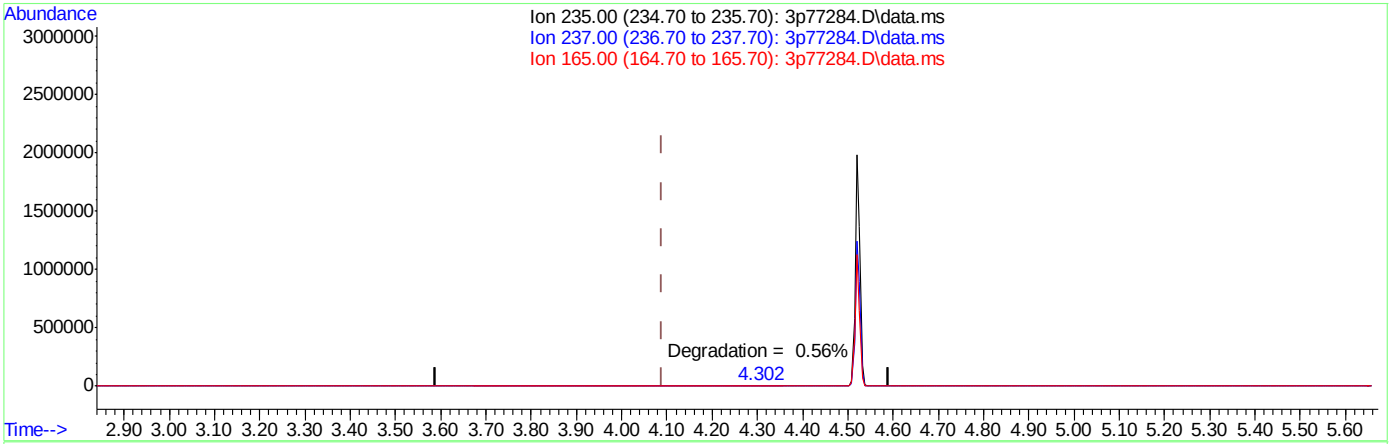
response 17963879

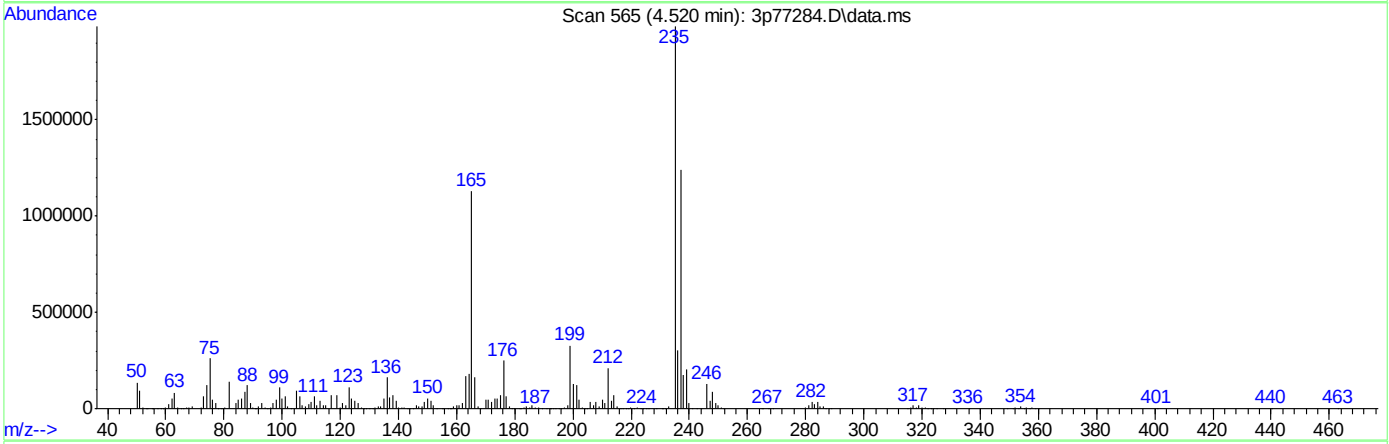
Ion	Exp%	Act%
184.00	100	100
183.00	11.20	0.00#
185.00	14.00	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77284.D
Acq On : 21 Jun 2019 3:40 am
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3623,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 03:46:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77284.D\data.ms

(3) PP-DDT

4.520min (+0.430) 84.95 m

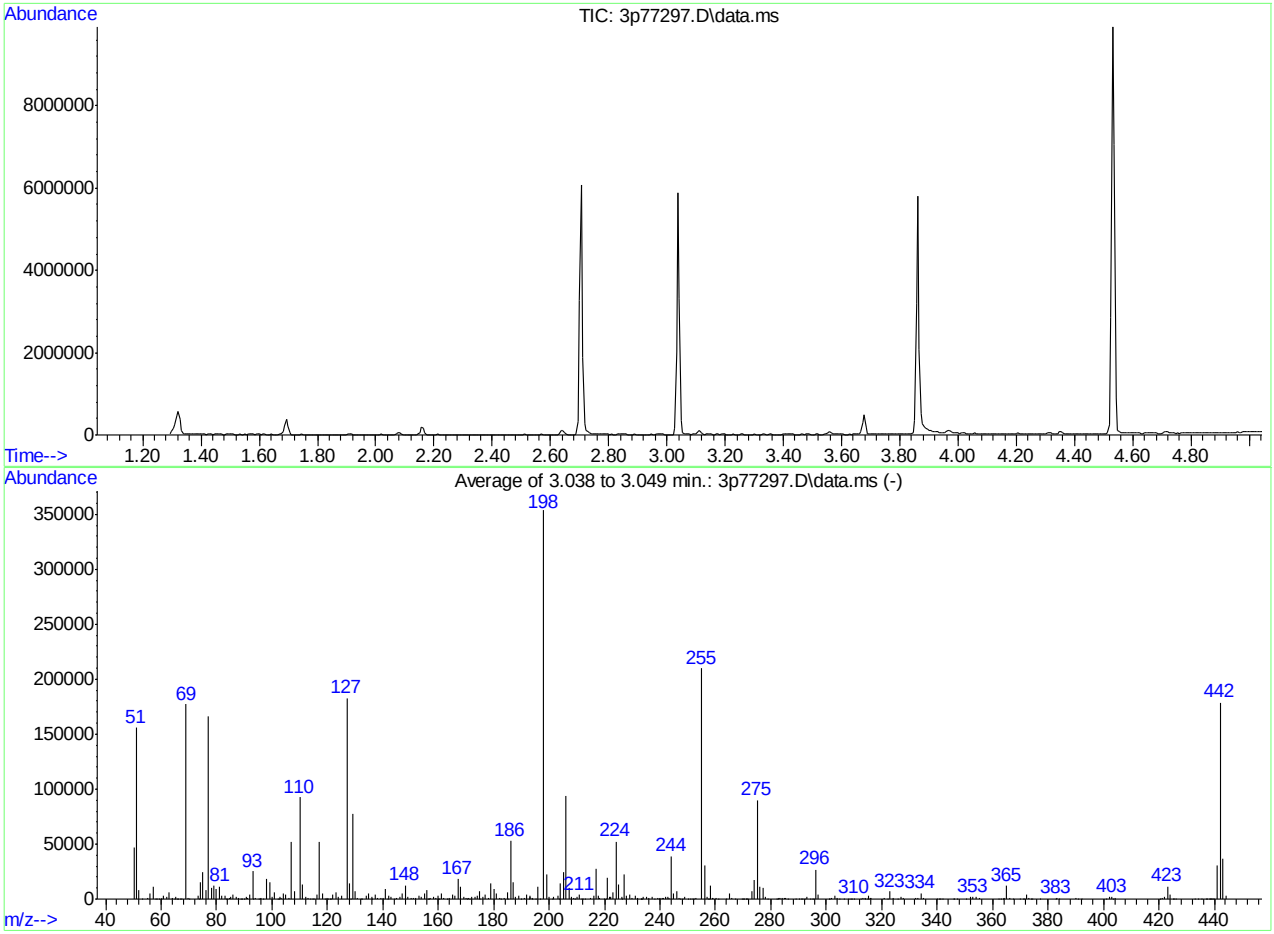
response 14361417

Ion	Exp%	Act%
235.00	100	100
237.00	65.20	0.00#
165.00	48.20	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\E3P3624\3p77297.D Vial: 1
Acq On : 21 Jun 2019 4:10 pm Operator: chriss2
Sample : dftpp Inst : MSGC3P
Misc : op20806,e3p3624,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 306, 307, 308; Background Corrected with Scan 302

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.1	155742	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	50.2	177381	PASS
70	69	0.00	2	0.4	792	PASS
127	198	40	60	51.6	182526	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	353437	PASS
199	198	5	9	6.2	21990	PASS
275	198	10	30	25.5	90206	PASS
365	198	1	100	3.3	11779	PASS
441	443	0.01	100	83.2	30762	PASS
442	198	40	100	50.6	178797	PASS
443	442	17	23	20.7	36970	PASS

3p77297.D DFTPP3P.M Mon Jun 24 09:21:05 2019

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	47088	60.10	270	69.00	177381	80.00	9153
51.10	155742	61.00	2986	69.90	792	81.05	11638
52.10	8345	62.05	1831	70.10	226	82.00	3028
53.20	111	63.00	5809	73.15	2991	83.05	3111
55.05	1233	64.10	900	73.70	205	83.60	136
56.00	5362	64.80	68	74.05	15512	83.95	299
57.05	11361	65.05	1976	75.05	24233	84.80	546
57.90	412	65.70	112	76.10	8168	85.10	1971
58.20	281	66.20	156	77.10	166665	85.95	4043
59.10	83	66.90	169	78.05	10625	87.05	2024
59.80	122	67.40	81	79.05	12249	88.00	928

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
88.80	151	95.95	1196	105.00	4307	116.05	4109
89.10	417	96.60	97	105.95	694	117.00	52106
89.80	90	98.00	17962	107.05	51826	118.05	4626
90.90	2338	99.05	15154	108.00	6970	119.00	425
91.10	1209	100.10	1804	110.00	92669	119.90	600
92.00	3960	101.00	5907	111.00	13254	120.10	514
93.00	25108	101.90	494	112.00	1985	120.90	71
93.20	442	102.40	97	112.90	686	121.10	126
94.05	1321	102.90	1745	113.80	122	122.00	3838
95.15	325	103.10	603	114.50	156	123.10	5958
95.60	212	104.05	5018	115.20	492	124.05	2335

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
125.05	3230	136.00	2022	145.00	793	156.00	7847
127.00	182526	136.20	171	146.05	1726	156.20	183
128.00	13910	137.10	3887	147.00	4713	156.80	155
128.20	283	138.00	602	148.00	12458	157.15	1442
129.00	77066	139.10	779	149.05	2143	158.10	2206
130.00	7119	140.15	1305	150.05	874	159.00	1273
130.90	1114	141.05	9139	151.10	1428	159.70	93
132.00	448	141.60	84	151.90	994	160.00	3026
132.20	199	142.00	2955	153.10	2843	160.30	154
134.00	2826	143.05	1730	154.00	2039	160.95	4960
135.00	5063	144.15	524	155.00	5391	162.05	1455

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
163.05	523	172.00	2199	182.15	850	192.05	4215
163.95	763	173.05	1884	182.70	72	192.70	111
165.00	3676	174.05	3612	183.95	1273	193.00	2594
166.15	3062	174.80	89	184.80	376	193.20	1610
167.05	18095	175.05	6876	185.05	5972	193.80	91
168.00	11047	176.05	2101	186.05	52945	194.05	1227
169.00	1693	177.05	3947	187.05	14973	195.00	310
169.95	951	178.00	1563	187.95	2243	196.00	11497
170.40	137	179.00	14790	189.05	3144	196.60	181
171.00	566	180.00	9633	190.00	481	198.00	353437
171.30	357	181.00	4757	190.90	1415	199.00	21990

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
200.00	2282	209.00	1315	218.20	1356	227.05	22809
201.00	493	209.20	128	219.90	224	227.95	2608
201.60	2378	209.95	1713	220.40	74	229.10	4577
203.05	2855	211.05	3958	221.10	19125	230.00	762

M3P3623SIM.M Mon Jun 24 09:16:54 2019 Page: 0

203.70	437	211.70	188	221.90	2011	230.95	2611
204.05	14381	212.10	354	222.10	1707	231.90	566
205.10	24645	212.95	304	223.05	6113	233.00	260
206.10	93574	214.95	1503	224.10	52225	233.20	287
207.10	10691	216.05	3002	225.10	12996	233.60	110
208.00	1051	217.00	27559	226.10	2397	234.00	1806
208.20	1900	217.90	2734	226.30	207	235.05	2545

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
236.05	1325	243.20	1226	252.30	157	261.20	359
237.05	2473	244.10	39017	253.10	1135	263.80	81
237.95	494	245.00	5064	255.10	209659	265.00	5488
239.05	699	246.00	7615	256.05	30418	265.95	716
239.50	86	247.00	1494	257.00	2510	267.00	278
240.00	834	247.20	69	257.20	237	269.40	168
240.90	814	248.05	280	257.60	240	270.00	122
241.10	760	249.05	1612	258.05	11780	270.20	167
242.00	2030	250.20	146	258.90	1342	271.00	381
242.20	846	250.85	326	259.10	1125	271.30	309
243.00	2165	251.85	432	260.15	712	271.70	380

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
273.05	6741	284.15	737	294.80	265	308.00	250
274.00	16978	285.00	633	295.30	164	308.70	70
275.10	90206	285.20	714	296.10	26760	309.15	179
276.05	11717	286.10	356	297.05	3697	310.00	329
277.10	9775	289.05	160	301.00	164	312.35	264
278.00	1728	290.00	159	301.20	202	313.20	573
278.95	305	290.80	248	302.00	667	314.00	1336
281.95	268	291.30	256	303.15	2927	314.20	185
282.30	102	292.05	400	304.05	796	314.80	144
282.90	581	293.10	1917	304.80	70	315.05	3383
283.30	572	294.15	348	306.30	106	315.40	87

Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
316.00	561	334.05	5414	353.00	2012	371.10	376
316.15	687	335.05	1226	354.05	2010	371.30	448
320.90	1383	339.90	69	355.10	690	372.10	4018
321.90	182	340.90	285	362.00	92	373.05	1189
323.10	7026	341.30	326	363.10	116	373.80	110
324.00	1317	341.90	124	363.60	99	374.30	78
325.90	306	345.80	516	364.30	638	377.20	167
327.00	2185	346.10	542	365.00	11779	382.70	131
327.90	753	347.20	210	366.00	1553	383.05	920
332.05	631	350.45	219	367.20	144	384.00	122
333.15	1355	352.05	2009	369.95	342	390.10	549

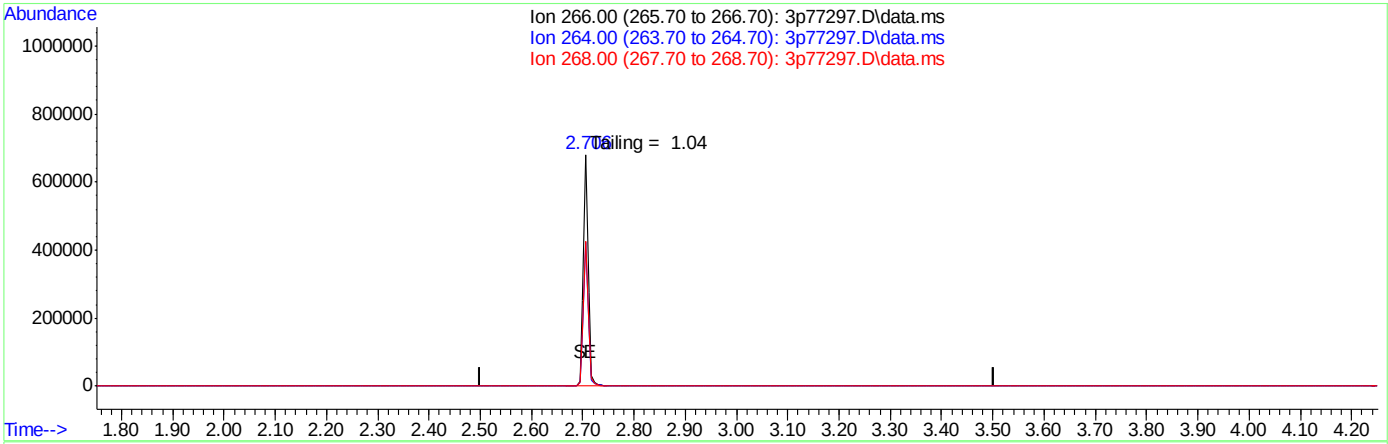
Average of 3.038 to 3.049 min.: 3p77297.D\data.ms
dftpp
Modified:subtracted

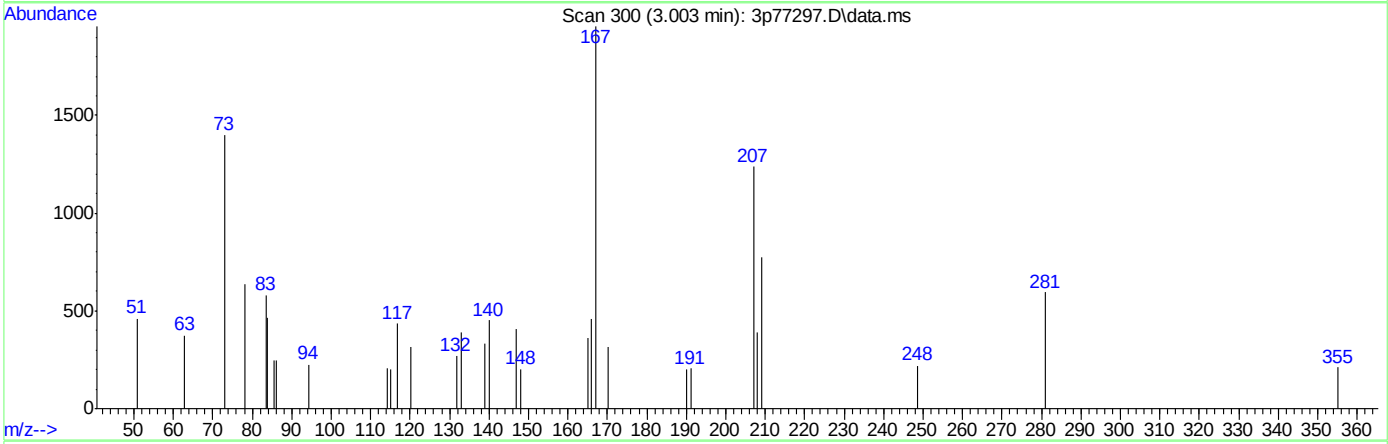
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
391.00	525	424.10	4198	438.70	254		
392.05	406	425.20	201	438.90	191		
400.95	422	425.40	134	439.50	122		
402.05	1677	426.10	183	439.80	383		
403.10	1952	432.85	271	441.15	30762		
403.30	238	434.20	132	442.10	178797		
404.00	1114	435.40	300	443.10	36970		
420.20	98	437.10	134	444.05	3252		
421.05	1485	437.50	148				
422.00	1885	438.10	274				
423.10	11296	438.40	69				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77297.D
Acq On : 21 Jun 2019 4:10 pm
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 16:16:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77297.D\data.ms

(1) Pentachlorophenol

3.002min (-3.002) 0.00

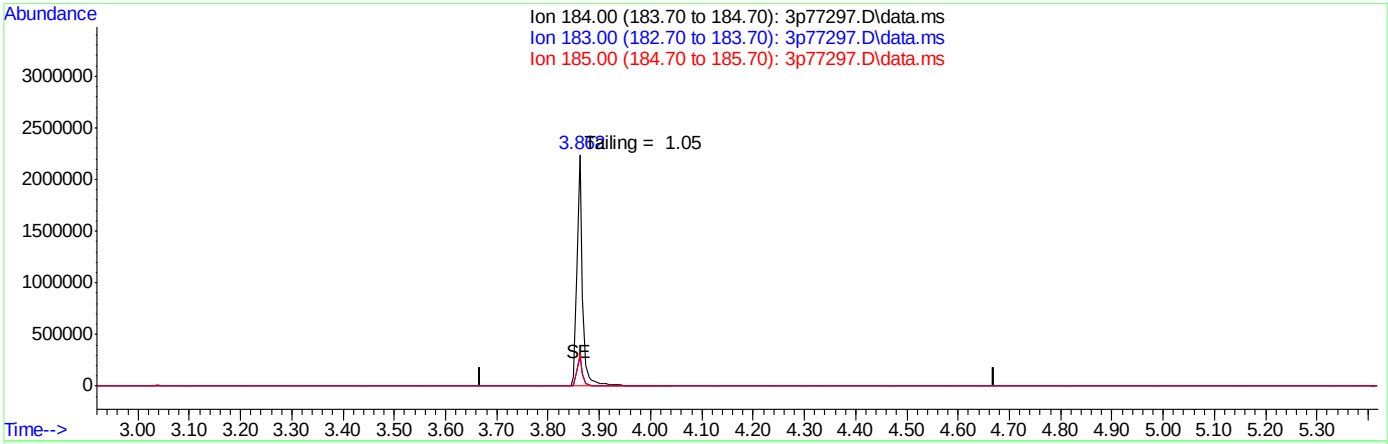
response 0

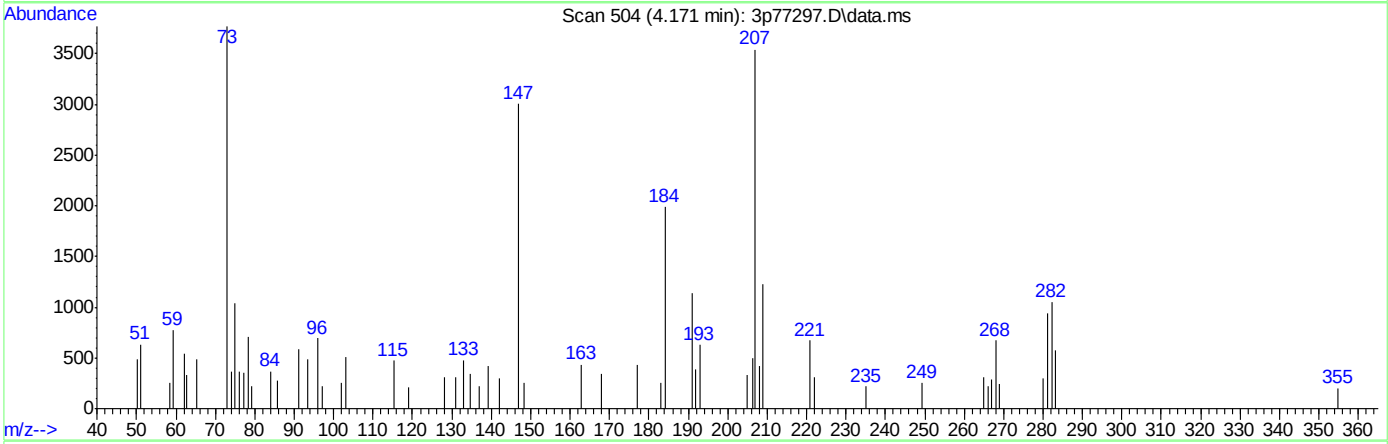
Ion	Exp%	Act%
266.00	100	0.00
264.00	61.70	0.00#
268.00	64.20	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77297.D
Acq On : 21 Jun 2019 4:10 pm
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 16:16:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77297.D\data.ms

(2) Benzidine

4.170min (-4.170) 0.00

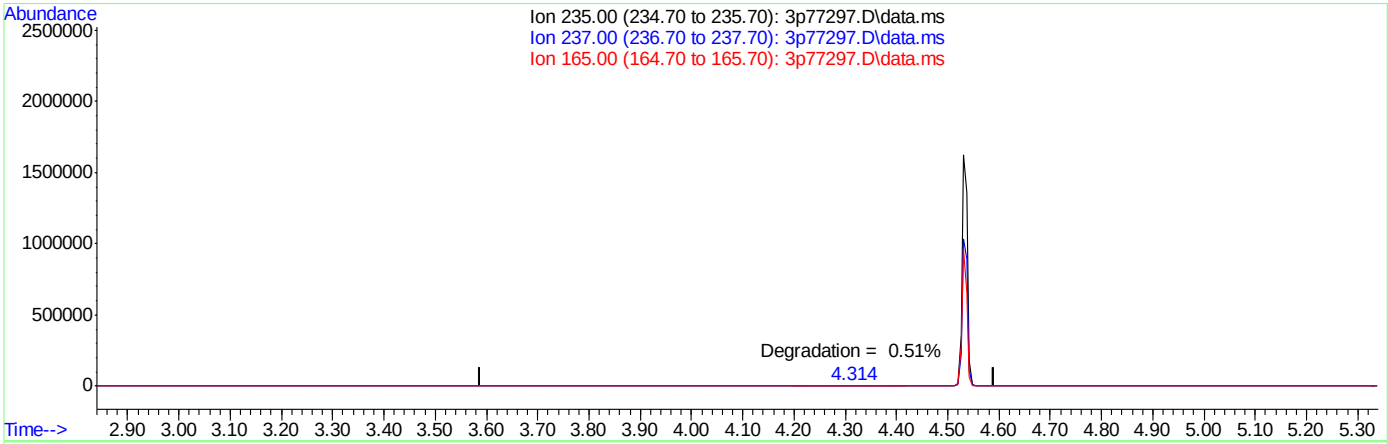
response 0

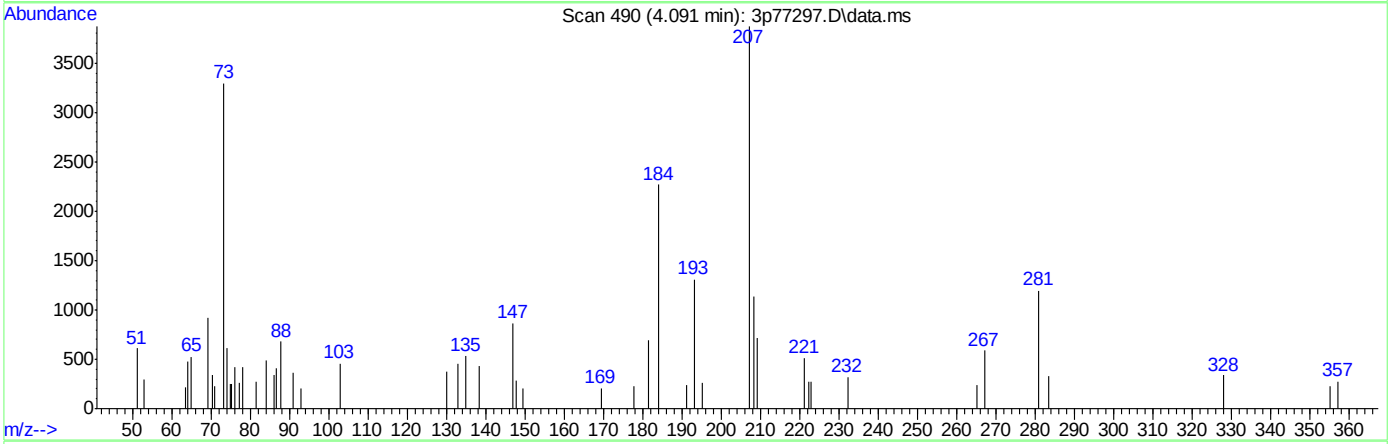
Ion	Exp%	Act%
184.00	100	0.00
183.00	11.20	0.00#
185.00	14.00	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77297.D
Acq On : 21 Jun 2019 4:10 pm
Operator : chriss2
Sample : dftpp
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 16:16:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77297.D\data.ms

(3) PP-DDT

4.090min (-4.090) 0.00

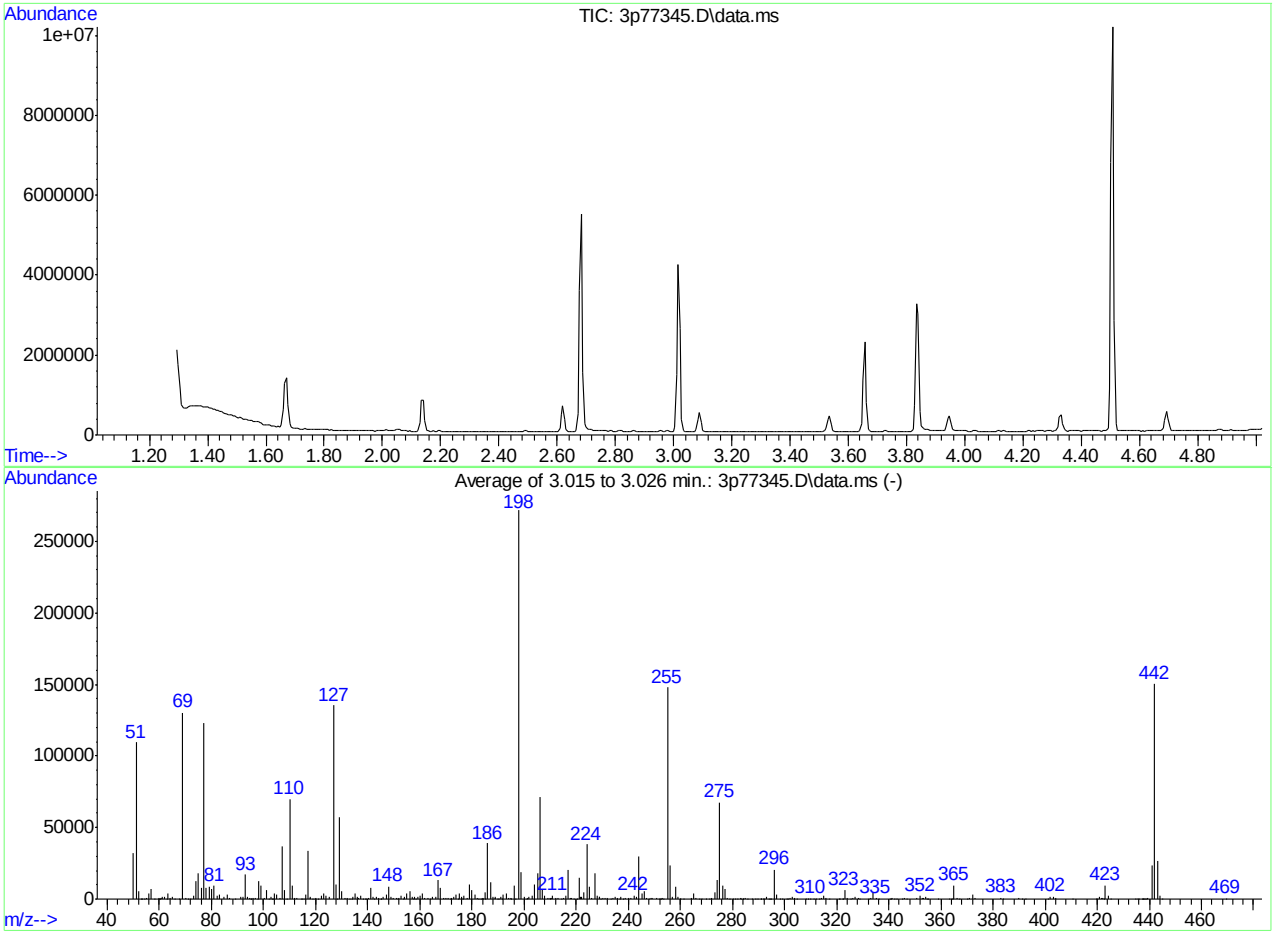
response 0

Ion	Exp%	Act%
235.00	100	0.00
237.00	65.20	0.00#
165.00	48.20	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\E3P3626\3p77345.D Vial: 1
Acq On : 24 Jun 2019 10:00 pm Operator: chriss2
Sample : dftpp Inst : MSGC3P
Misc : op20806a,e3p3626,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 302, 303, 304; Background Corrected with Scan 297

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.3	109404	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	48.0	130319	PASS
70	69	0.00	2	0.9	1159	PASS
127	198	40	60	49.9	135522	PASS
197	198	0.00	1	0.1	199	PASS
198	198	100	100	100.0	271632	PASS
199	198	5	9	7.0	18895	PASS
275	198	10	30	24.9	67651	PASS
365	198	1	100	3.5	9593	PASS
441	443	0.01	100	90.2	23780	PASS
442	198	40	100	55.3	150229	PASS
443	442	17	23	17.5	26363	PASS

3p77345.D DFTPP3P.M Tue Jun 25 10:30:29 2019

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	32176	60.00	433	69.00	130319	80.00	7383
51.05	109404	60.20	163	69.95	1159	81.00	9279
52.05	5700	60.85	457	70.90	177	82.05	2159
52.95	170	61.10	1306	71.80	170	83.05	3143
53.20	87	62.10	1871	73.05	2071	84.95	1722
54.00	128	62.80	169	74.05	12791	85.95	3135
55.00	772	63.10	4226	75.00	18227	87.10	1005
56.00	3659	63.95	560	76.15	7936	88.90	121
57.00	7111	65.00	1656	77.05	122712	91.05	1903
58.05	224	65.90	420	78.00	8038	91.95	1791
59.70	70	67.60	116	79.00	8799	93.00	16926

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
93.95	1219	101.95	214	111.00	9433	119.70	181
94.85	486	102.90	1358	112.00	1092	120.05	653
95.00	103	103.20	72	112.85	522	121.00	369
95.20	109	103.70	136	114.30	154	122.00	2758
96.15	848	103.95	4003	114.80	351	123.00	3989
97.00	686	104.95	3312	115.80	100	123.95	1999
97.70	250	106.10	455	116.05	2791	125.00	1525
98.00	12681	107.00	37123	117.00	33928	127.00	135522
99.00	9244	108.00	5911	117.90	1507	128.00	10392
100.05	640	109.00	113	118.10	935	128.20	247
101.00	6353	110.00	69910	118.90	130	128.95	56843

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
130.00	5145	139.15	287	147.00	2959	156.10	5420
131.20	512	139.40	194	148.00	8647	157.10	1412
132.05	578	140.20	442	148.90	1258	157.30	78
133.00	56	141.05	7938	149.95	688	157.95	1471
133.80	152	142.00	1973	151.05	760	158.40	207
134.05	1754	142.60	94	151.55	260	159.05	1316
135.00	4267	143.10	1502	152.10	719	160.05	2083
136.00	1311	143.95	458	152.95	2255	161.05	3710
136.20	749	144.90	135	153.60	119	162.00	1122
137.05	2247	145.20	342	153.95	1683	162.90	471
138.05	299	146.00	1220	155.05	3641	163.90	143

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
165.00	1899	174.80	166	182.60	174	189.10	925
166.05	1644	175.05	4327	183.10	154	189.90	152
167.00	13047	175.90	1232	183.80	201	190.20	250
168.00	8232	176.10	615	184.10	568	190.90	1276
168.95	1127	176.50	162	184.30	360	191.40	101
170.00	526	176.95	2354	185.00	4508	192.00	3116
170.90	833	178.00	918	185.20	236	193.00	3822
171.70	358	179.00	9936	186.10	39175	194.05	695
172.00	789	180.00	6299	187.05	11640	194.90	585
173.10	1795	181.05	2964	188.00	1343	195.10	87
174.05	2852	182.05	751	188.90	1223	196.00	9123

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
196.70	199	207.05	7432	216.00	2046	225.10	8991
198.00	271632	208.00	2686	217.00	20107	226.00	928
199.00	18895	209.05	761	217.90	1136	227.05	17813
200.05	1307	209.80	381	218.10	1170	227.95	2540

M3P3623SIM.M Mon Jun 24 15:50:15 2019 Page: 0

201.05	344	210.10	1033	219.00	162	228.90	1775
201.40	1057	210.40	628	220.10	362	229.10	1273
201.90	1313	210.95	2736	221.00	15064	229.30	175
202.95	2397	212.10	488	221.60	1557	230.05	481
204.00	10391	213.00	476	222.00	1601	231.00	1087
205.05	18169	214.50	75	223.10	4500	231.95	569
206.10	71213	215.05	585	224.10	38169	233.10	289

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
234.05	1031	244.10	30032	253.15	1022	265.05	3664
235.00	1237	245.10	3984	253.60	133	265.90	609
235.95	489	246.05	5844	255.05	147781	267.10	337
236.80	117	246.95	949	256.00	23792	267.95	178
237.05	1478	247.95	377	257.05	1604	269.95	264
238.00	158	248.90	768	258.05	8679	271.00	50
238.85	815	249.10	550	259.00	1407	272.00	708
240.15	717	251.00	484	259.90	219	273.10	4798
241.10	823	251.70	211	260.10	105	274.05	12963
242.05	2544	252.10	92	261.05	287	275.10	67651
243.10	1518	252.80	418	264.20	487	276.05	9371

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
277.00	7219	285.90	237	294.90	256	308.00	291
278.05	1106	287.60	67	296.10	20722	308.90	128
278.85	285	288.85	290	297.00	2800	310.00	384
280.20	83	289.80	133	298.00	254	311.10	81
281.00	179	290.80	82	299.10	67	311.90	111
281.95	202	291.00	83	300.90	108	313.30	145
283.00	656	291.90	169	301.20	118	313.95	916
283.30	191	292.20	241	301.95	446	315.10	2061
283.95	291	293.05	1391	303.05	1664	315.95	1004
284.15	93	293.80	178	304.00	723	317.10	135
285.05	982	294.20	160	304.70	102	321.00	269

Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
321.20	236	333.05	650	347.00	161	364.40	84
322.10	83	334.10	4371	350.90	476	365.05	9593
322.25	297	335.05	698	352.05	2167	366.05	1185
323.10	6408	336.15	283	353.05	919	367.00	152
324.05	877	340.20	68	353.40	480	369.95	167
325.10	166	340.60	67	354.05	1942	370.95	434
326.15	450	341.05	446	354.70	98	372.15	2930
327.10	1244	342.00	81	355.00	21	373.00	921
328.15	562	343.00	120	359.00	166	383.05	904
328.95	271	345.20	201	363.20	111	383.80	207
332.10	315	346.00	1161	364.20	377	390.00	446

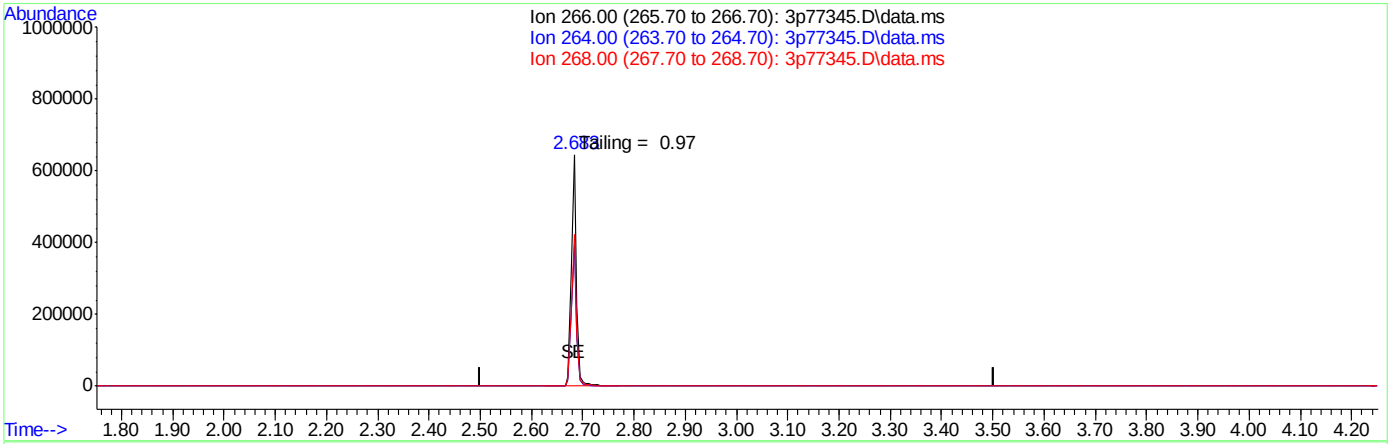
Average of 3.015 to 3.026 min.: 3p77345.D\data.ms
dftpp
Modified:subtracted

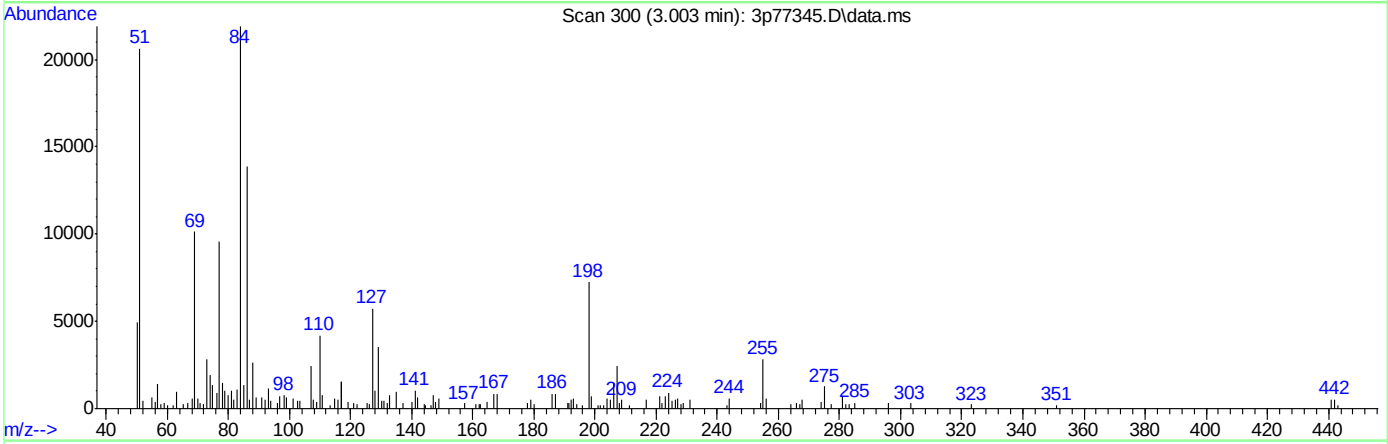
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
391.15	358	422.20	599	438.10	110		
392.30	200	422.40	422	438.60	184		
401.10	98	423.10	9507	438.90	102		
402.05	1603	424.10	2425	439.40	551		
403.05	1594	424.95	241	441.15	23780		
404.05	592	434.70	122	442.10	150229		
410.30	114	435.30	104	443.10	26363		
419.60	68	435.80	105	444.10	2639		
420.10	80	437.10	81	445.10	89		
421.05	1434	437.50	96	469.30	87		
421.90	643	437.80	171				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77345.D
Acq On : 24 Jun 2019 10:00 pm
Operator : chriss2
Sample : dftpp
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 24 22:05:44 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77345.D\data.ms

(1) Pentachlorophenol

3.002min (-3.002) 0.00

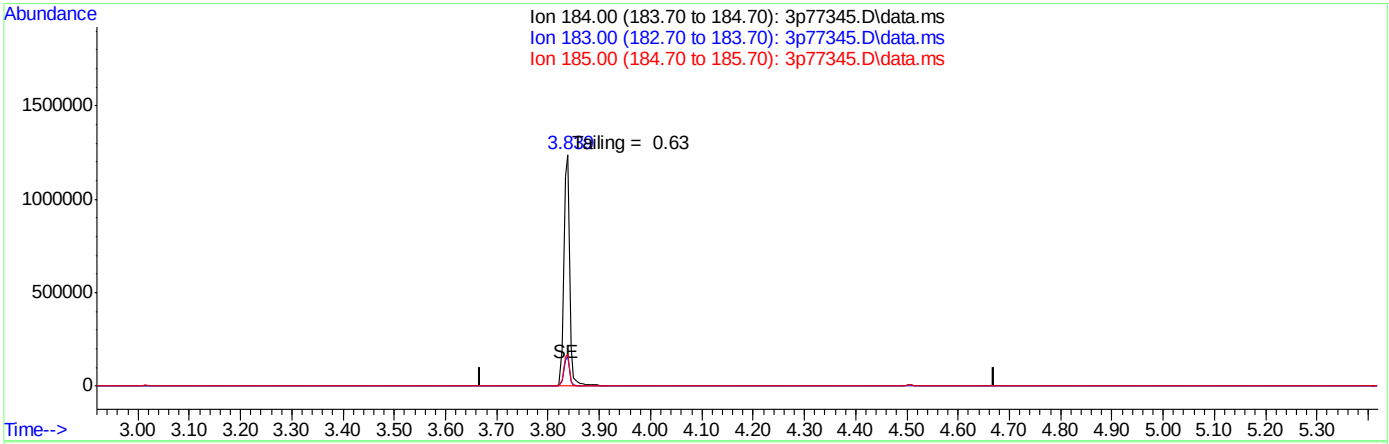
response 0

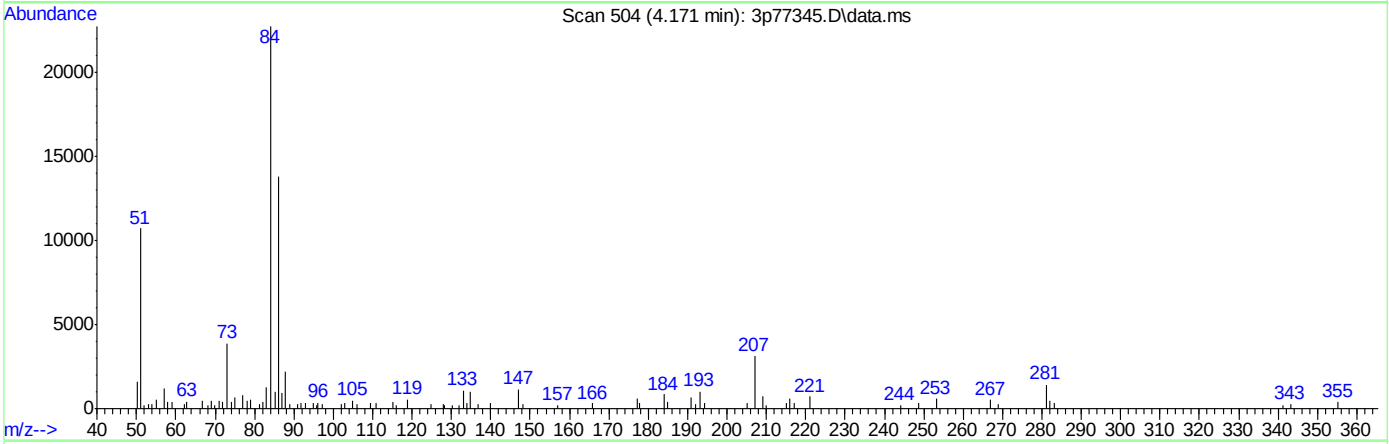
Ion	Exp%	Act%
266.00	100	0.00
264.00	61.70	0.00#
268.00	64.20	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77345.D
Acq On : 24 Jun 2019 10:00 pm
Operator : chriss2
Sample : dftpp
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 24 22:05:44 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77345.D\data.ms

(2) Benzidine

4.170min (-4.170) 0.00

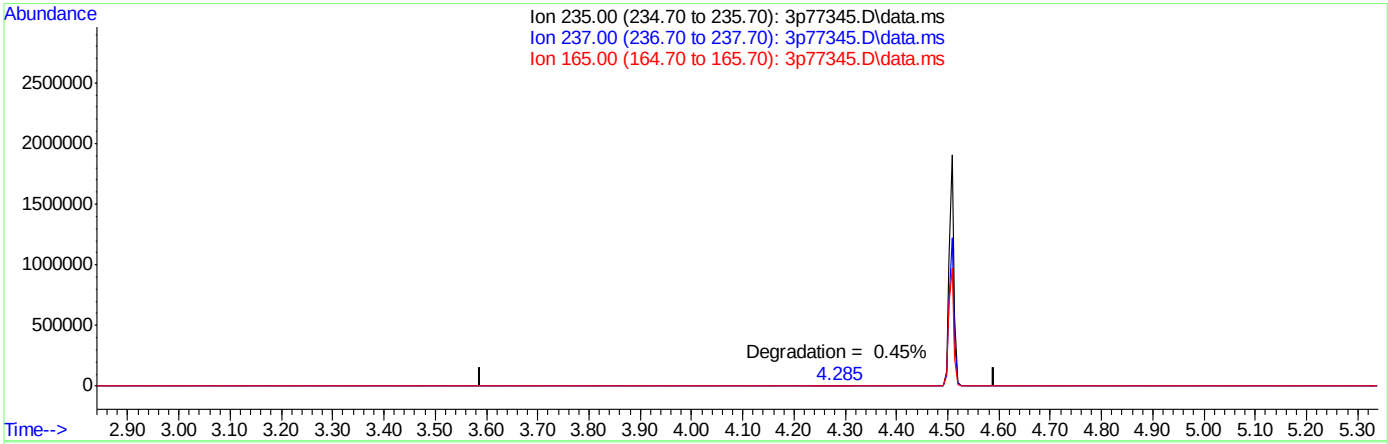
response 0

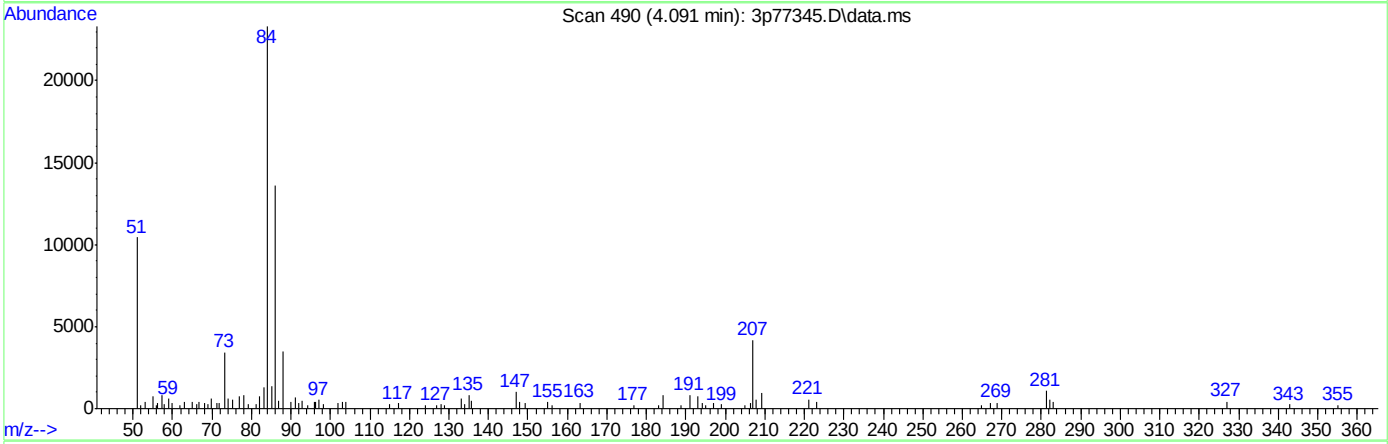
Ion	Exp%	Act%
184.00	100	0.00
183.00	11.20	0.00#
185.00	14.00	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77345.D
Acq On : 24 Jun 2019 10:00 pm
Operator : chriss2
Sample : dftpp
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 24 22:05:44 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77345.D\data.ms

(3) PP-DDT

4.090min (-4.090) 0.00

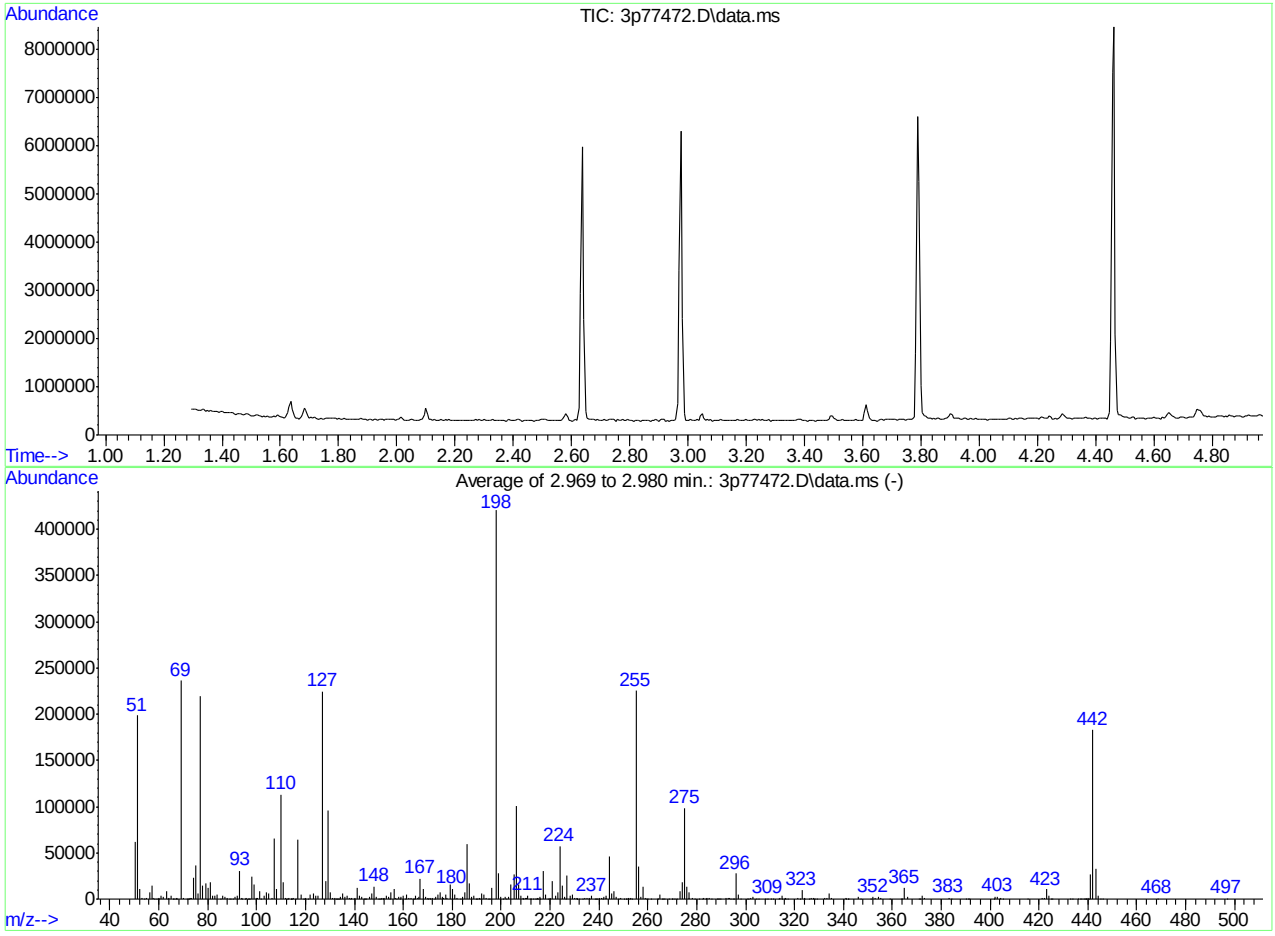
response 0

Ion	Exp%	Act%
235.00	100	0.00
237.00	65.20	0.00#
165.00	48.20	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\E3P3631\3p77472.D Vial: 1
Acq On : 27 Jun 2019 9:58 am Operator: HENNYS
Sample : dftpp Inst : MSGC3P
Misc : op20806a,e3p3631,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M (ChemStation Integrator)
Title : zebron ZB-5msi 30mx0.25mmx0.25um



AutoFind: Scans 294, 295, 296; Background Corrected with Scan 290

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	47.3	198773	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	56.2	236198	PASS
70	69	0.00	2	0.5	1187	PASS
127	198	40	60	53.5	224957	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	420331	PASS
199	198	5	9	6.7	28109	PASS
275	198	10	30	23.5	98709	PASS
365	198	1	100	2.8	11801	PASS
441	443	0.01	100	80.2	26570	PASS
442	198	40	100	43.5	183037	PASS
443	442	17	23	18.1	33142	PASS

3p77472.D DFTPP3P.M Thu Jun 27 14:42:42 2019

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	61584	59.85	666	67.20	706	76.20	6208
51.05	198773	60.10	284	67.50	261	77.10	219518
52.05	10553	61.05	3419	69.00	236198	78.00	15059
52.95	789	62.00	2857	69.95	1187	79.00	17201
53.85	342	63.00	8213	71.30	188	79.95	12255
55.00	1072	63.80	246	71.85	521	81.00	18191
56.05	7015	64.10	1400	72.10	29	82.00	3886
57.05	14269	65.10	4129	73.00	1615	82.95	3169
57.85	754	65.80	190	73.20	1235	84.00	5077
58.10	221	66.10	580	74.05	23645	85.05	117
58.80	234	66.75	186	75.10	36493	86.00	3259

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
87.05	2605	95.20	482	103.10	3360	113.10	899
87.90	923	95.80	918	104.05	7228	113.90	102
88.95	266	96.50	163	105.00	5888	114.05	255
89.20	489	96.70	317	106.05	1643	114.70	300
90.10	169	96.95	93	107.00	65531	115.05	1127
91.00	3040	98.00	23786	107.95	10918	115.70	488
91.90	600	99.10	15903	110.00	113213	117.00	64408
92.15	3784	99.90	805	111.00	18525	118.00	4828
93.05	30702	100.10	970	111.90	712	119.20	651
93.80	101	101.05	8815	112.20	553	119.40	255
94.05	1509	101.85	647	112.90	473	120.00	1134

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
120.95	505	132.50	173	139.70	302	149.00	2732
122.00	4679	133.00	413	140.05	1054	149.90	602
123.00	6606	133.40	317	141.00	12164	150.20	225
124.00	3789	133.80	369	142.05	4146	150.85	638
125.05	3107	134.05	2307	143.00	2734	151.15	1386
127.00	224957	135.00	6308	143.95	167	151.50	381
128.05	19375	136.00	1885	144.30	147	151.80	317
129.00	95269	137.10	4061	144.80	438	152.10	819
130.00	7464	137.80	902	146.00	2860	153.05	3963
131.05	1811	138.50	266	146.95	6066	153.95	2470
132.00	770	138.95	707	148.00	13810	154.20	537

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
155.00	6897	162.95	763	170.70	435	179.00	15857
156.10	10875	164.00	167	171.05	1172	180.00	11428
156.90	1490	164.30	280	172.00	1779	181.00	4338
157.10	566	164.95	3713	172.70	368	182.10	1167
157.95	2769	165.95	1710	173.05	2600	183.10	406
158.30	241	166.20	1965	174.00	5013	184.00	1939
158.95	1979	167.00	22319	175.00	6873	185.05	7369
160.05	3832	168.00	10873	175.95	3010	186.10	58941
160.80	184	169.05	2304	176.30	760	187.00	17121
161.05	5160	169.90	343	177.10	4794	187.95	1911
162.10	1787	170.10	751	178.00	657	189.00	3921

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
189.90	625	199.00	28109	208.90	287	215.15	808
190.20	155	199.95	2691	209.05	885	215.80	434
190.90	488	200.90	426	210.00	1803	216.05	2101
191.05	1737	201.60	3024	210.40	1375	217.00	30203

DFTPP3P.M Thu Jun 27 14:42:19 2019 Page: 0

192.00	5627	202.30	328	211.00	3872	217.95	4580
193.05	5503	203.00	3064	211.50	297	219.20	336
194.05	1626	204.10	15669	212.20	416	219.80	354
194.70	210	205.10	26816	213.05	448	220.15	762
195.10	299	206.05	101064	213.80	90	221.10	19222
196.00	12093	207.05	15255	214.30	120	222.05	3360
198.00	420331	208.00	3423	215.00	355	223.05	7135

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
224.10	57405	232.05	607	241.00	1523	250.15	375
225.05	14253	233.10	608	241.60	264	251.00	124
226.05	1894	234.05	1521	242.10	2918	251.15	233
226.30	638	235.10	1682	242.90	804	252.25	665
227.05	25608	235.90	925	243.10	3529	252.60	236
228.05	4183	236.10	150	244.10	45632	253.05	861
229.05	5059	236.95	3255	245.10	6199	253.50	421
229.95	729	238.10	417	246.05	8765	255.05	225323
230.90	357	238.90	352	246.95	2330	256.05	34619
231.00	312	239.10	551	248.00	269	257.10	2792
231.15	1645	240.00	783	249.05	1398	258.00	13262

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
259.00	1848	269.75	354	278.90	238	289.10	100
259.20	244	270.10	108	281.05	30	289.80	201
260.00	493	270.95	349	282.10	424	292.00	708
261.15	395	271.80	149	283.00	903	292.80	934
263.90	231	273.05	8388	283.50	189	293.15	952
264.20	439	274.10	17834	283.90	88	293.85	627
265.00	5426	275.05	98709	284.05	1009	294.50	437
265.90	317	276.05	12908	285.15	1201	295.00	209
266.25	328	276.90	1784	286.00	304	296.05	27755
266.95	490	277.05	7056	288.15	389	297.05	4349
268.80	80	278.00	1605	288.90	131	297.70	81

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
300.80	359	314.10	1650	324.15	1288	340.80	218
301.30	277	314.90	357	326.10	169	341.00	1231
302.05	1068	315.05	3599	326.90	1576	341.95	182
303.10	2601	315.80	505	327.60	125	342.15	171
304.15	644	316.10	873	327.90	722	346.05	1903
305.10	251	316.40	154	328.20	444	347.00	488
307.95	647	317.10	345	329.05	191	351.25	260
309.05	312	321.15	689	332.10	1356	352.10	2268
310.15	304	322.20	546	333.05	728	353.05	1454
311.40	70	323.10	10175	334.10	5704	354.10	2153
313.30	103	323.90	471	335.00	1481	355.15	959

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
359.00	73	389.95	516	422.10	1764	438.50	296
363.40	103	390.95	175	423.10	10639	439.00	461
364.10	282	391.30	170	424.05	3082	439.30	188
365.00	11801	401.40	82	424.95	293	440.00	756
366.05	2107	402.10	1954	425.30	144	440.30	265
370.80	208	403.10	2798	432.80	92	441.10	26570
371.25	536	403.90	152	433.50	261	442.10	183037
372.05	3515	404.20	690	436.05	622	443.10	33142
373.00	1215	405.10	177	436.95	269	444.10	3301
383.10	1286	415.20	180	437.40	112	444.90	177
384.20	190	421.05	1794	438.30	230	446.20	76

Average of 2.969 to 2.980 min.: 3p77472.D\data.ms

DFTPP3P.M Thu Jun 27 14:42:19 2019 Page: 1

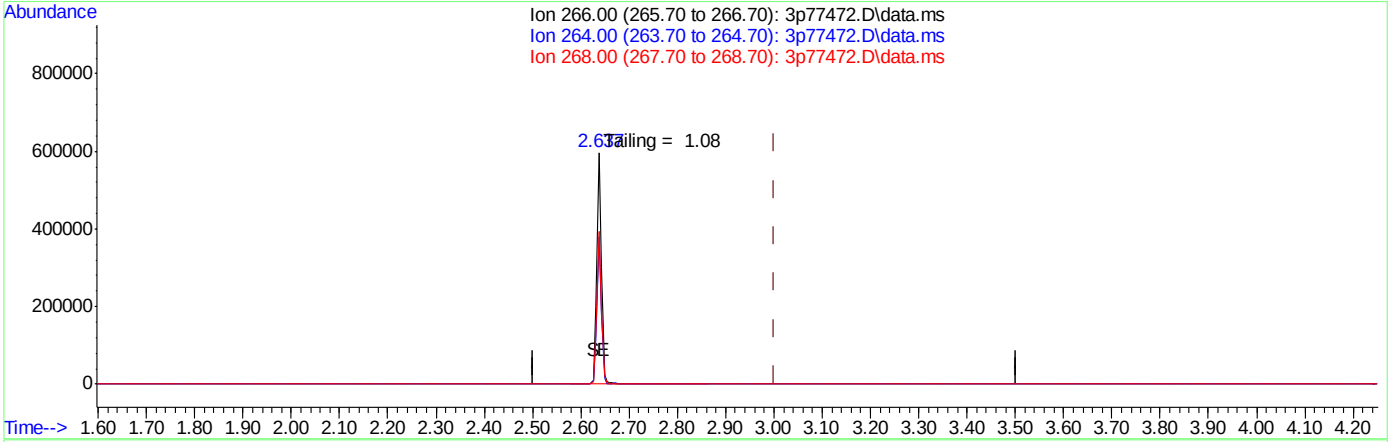
dftpp
Modified:subtracted

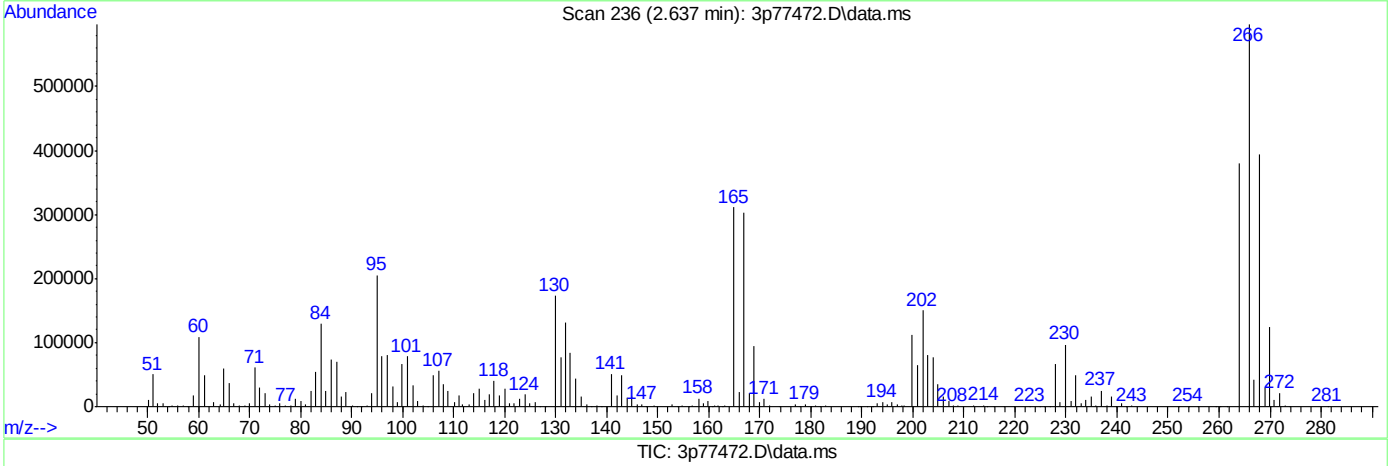
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
468.30	87						
496.70	73						

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77472.D
Acq On : 27 Jun 2019 9:58 am
Operator : HENNYS
Sample : dftpp
Misc : op20806a,e3p3631,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 10:03:56 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77472.D\data.ms

(1) Pentachlorophenol

2.637min (-0.365) 39.97 m

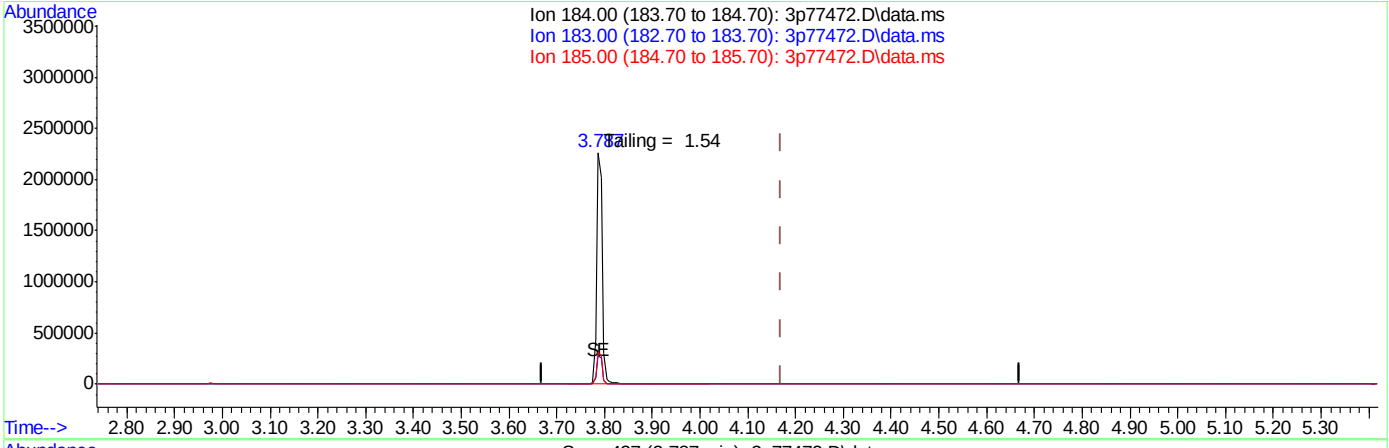
response 4011297

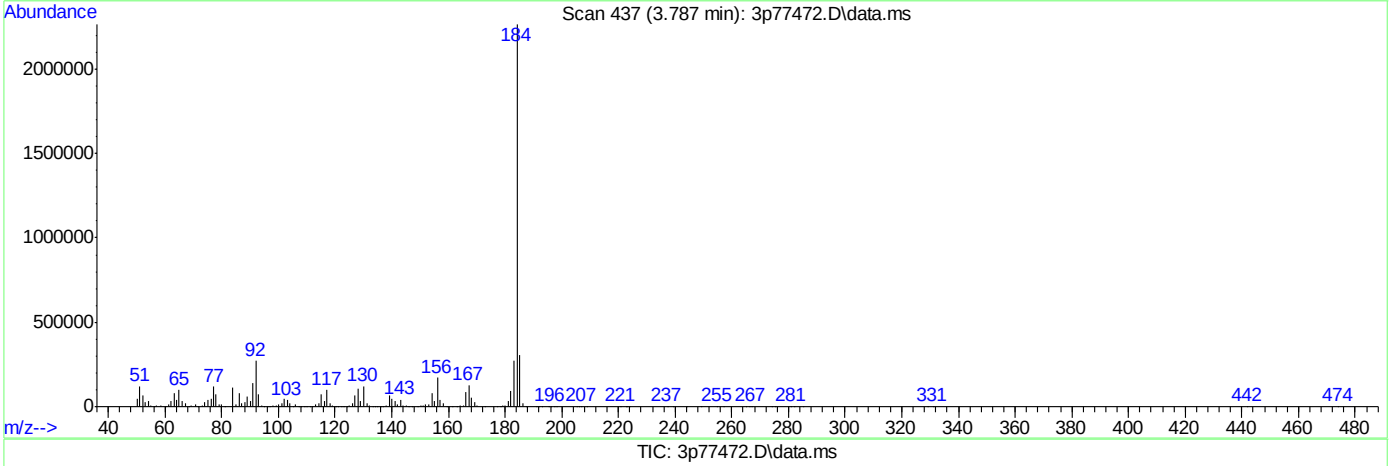
Ion	Exp%	Act%
266.00	100	100
264.00	61.70	0.00#
268.00	64.20	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77472.D
Acq On : 27 Jun 2019 9:58 am
Operator : HENNYS
Sample : dftpp
Misc : op20806a,e3p3631,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 10:03:56 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77472.D\data.ms

(2) Benzidine

3.787min (-0.383) 47.44 m

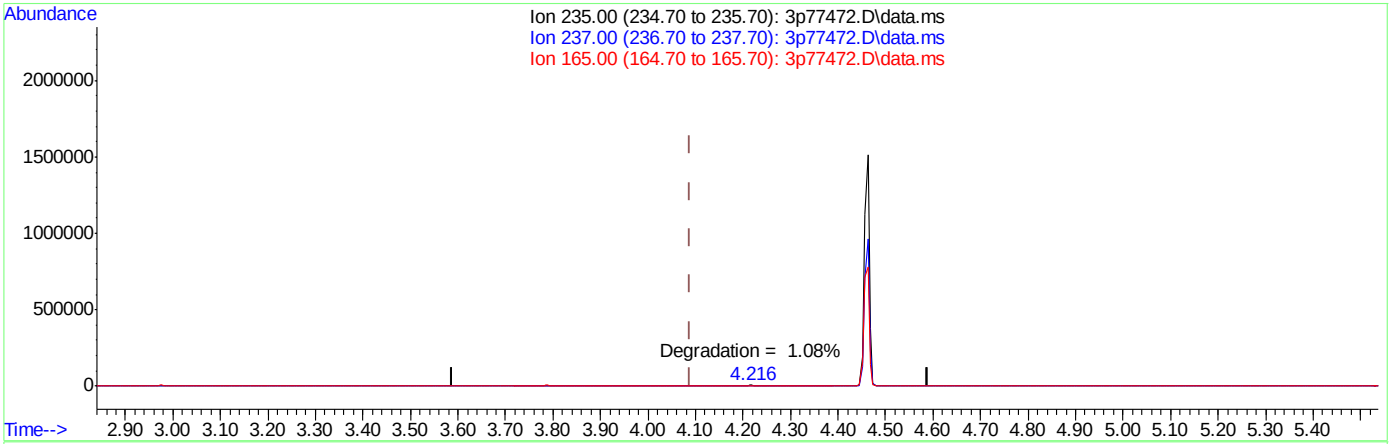
response 17999743

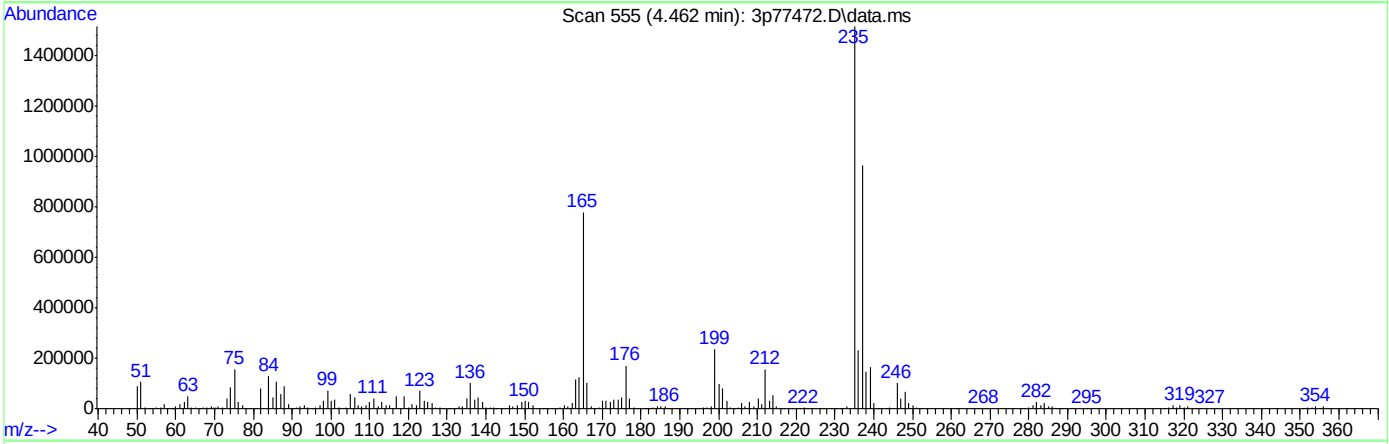
Ion	Exp%	Act%
184.00	100	100
183.00	11.20	0.00#
185.00	14.00	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77472.D
Acq On : 27 Jun 2019 9:58 am
Operator : HENNYS
Sample : dftpp
Misc : op20806a,e3p3631,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 10:03:56 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP3P.M
Quant Title : zebron ZB-5msi 30mx0.25mmx0.25um
QLast Update : Fri Jan 04 17:18:11 2019
Response via : Initial Calibration





TIC: 3p77472.D\data.ms

(3) PP-DDT

4.462min (+0.372) 65.98 m

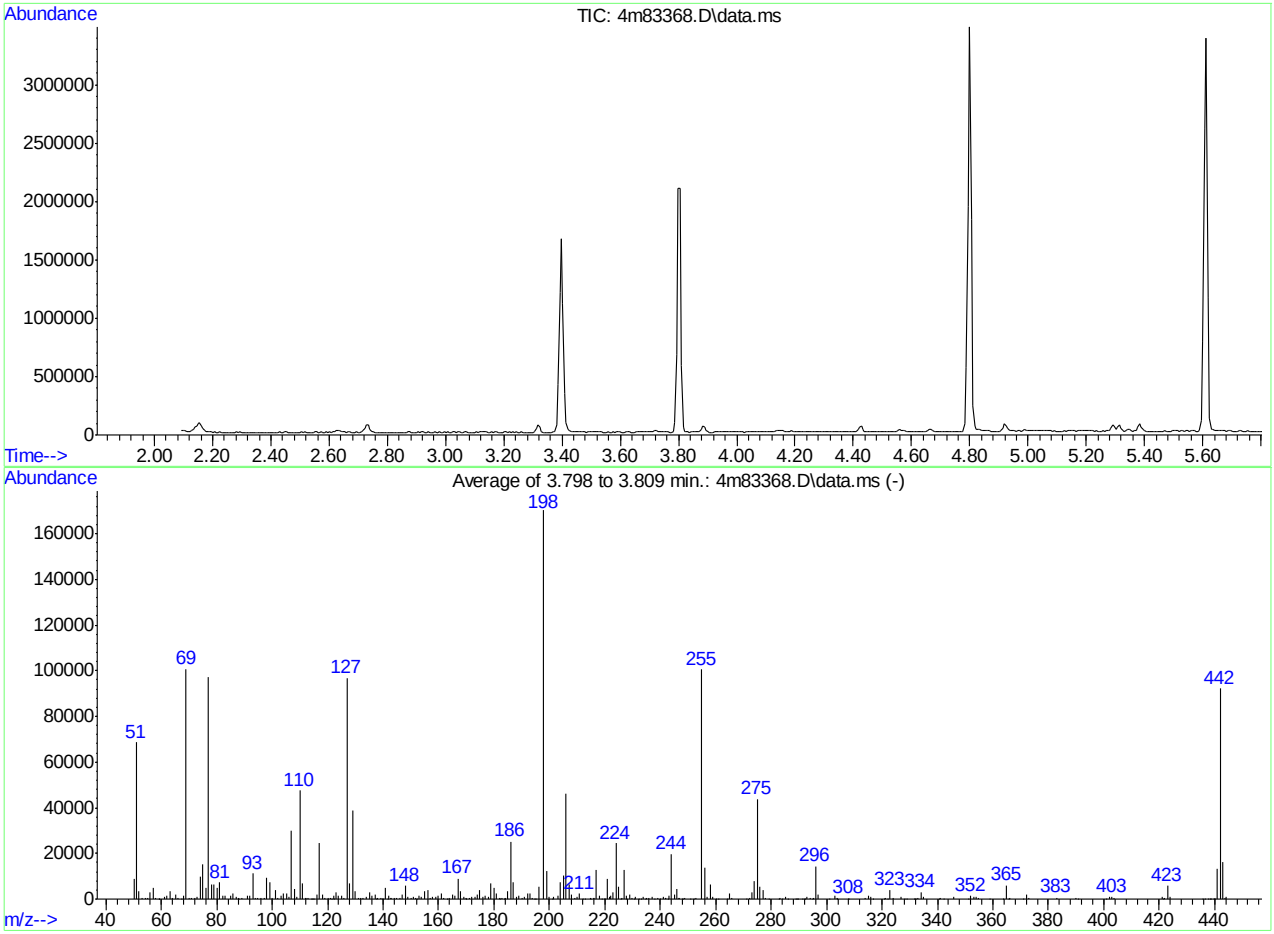
response 11153779

Ion	Exp%	Act%
235.00	100	100
237.00	65.20	0.00#
165.00	48.20	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\E4M3886\4m83368.D Vial: 1
Acq On : 22 Apr 2019 1:43 pm Operator: christc2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3886,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um



AutoFind: Scans 299, 300, 301; Background Corrected with Scan 294

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.4	68687	PASS
68	69	0.00	2	1.6	1604	PASS
69	198	0.00	100	59.3	100836	PASS
70	69	0.00	2	0.5	474	PASS
127	198	40	60	56.9	96848	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	170152	PASS
199	198	5	9	7.2	12191	PASS
275	198	10	30	25.7	43728	PASS
365	198	1	100	3.6	6067	PASS
441	443	0.01	100	80.1	13044	PASS
442	198	40	100	54.2	92160	PASS
443	442	17	23	17.7	16281	PASS

4m83368.D DFTPP4M.M Mon Apr 22 16:57:54 2019 MANAGER

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.00	9033	61.00	1048	72.05	289	83.00	1326
51.00	68687	62.00	1455	73.00	763	84.90	1321
52.00	3459	63.00	3375	74.00	10053	85.90	2374
52.95	270	63.95	632	75.00	15025	87.00	1149
54.20	272	65.00	1736	76.05	4806	87.80	137
55.00	722	65.95	268	77.00	96992	88.00	389
55.95	2953	67.00	7	78.00	6262	89.05	360
57.00	4690	68.00	1604	79.00	6291	91.00	1690
57.95	603	68.95	100836	80.00	4965	91.90	1565
58.90	170	70.00	474	80.95	7358	93.00	11135
59.10	208	71.00	360	81.95	1618	94.00	721

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
94.80	528	106.00	979	114.85	200	123.95	1439
95.95	340	107.00	29835	116.00	1818	124.95	1270
97.00	526	107.95	4282	117.00	24533	126.00	494
98.00	9122	108.95	1191	117.95	1756	127.00	96848
99.00	7201	110.00	47424	118.95	379	127.95	7016
99.85	618	110.95	7026	120.00	328	129.00	38802
101.00	3773	112.00	455	120.95	326	130.00	3555
101.95	355	112.15	507	121.20	119	130.95	445
103.00	1307	113.05	410	122.00	1283	131.80	293
103.95	2697	113.90	206	122.20	138	132.90	426
105.00	2412	114.60	129	123.00	2939	133.95	1046

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
135.00	3030	142.80	430	152.00	226	163.00	239
135.95	1268	143.00	584	152.95	1533	164.00	276
136.95	1795	143.95	422	153.90	1095	164.95	1886
137.70	196	144.95	361	155.00	3496	165.90	1612
138.00	312	146.05	716	156.00	3732	167.00	9013
139.00	450	146.90	2211	156.95	543	168.00	3516
139.70	76	147.95	5787	157.95	907	168.95	945
139.95	202	148.90	1056	158.85	816	169.90	308
140.95	4751	150.00	415	160.00	1423	170.10	146
141.70	114	150.95	881	160.95	2252	171.00	293
142.00	1260	151.70	391	162.00	598	171.95	1072

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
173.10	865	182.85	465	192.00	2505	203.00	1697
173.95	2150	183.80	124	192.95	2657	204.00	7349
174.95	4101	184.05	422	193.90	676	205.00	10286
176.00	1152	184.70	307	194.70	192	206.00	46061
176.95	1645	185.00	3381	195.10	151	207.00	6638
177.90	868	186.00	25149	196.00	5377	208.05	1841
178.90	6809	186.95	7477	197.90	170152	208.95	558
180.00	4709	188.00	783	198.90	12191	210.05	908
180.90	2233	188.95	1589	200.00	1038	210.95	2238
181.95	275	189.95	424	201.00	110	212.00	216
182.20	87	190.95	771	201.50	1032	212.85	251

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
214.80	216	222.00	1379	230.60	150	239.85	261
215.00	369	223.00	3082	231.05	921	240.95	780
215.90	409	224.00	24500	232.00	130	241.80	694
216.05	616	225.00	5661	233.10	225	242.00	585

DFTPP4M.M Mon Apr 22 16:57:34 2019 MANAGER Page: 0

216.95	13004	225.70	229	233.95	988	242.80	235
218.00	1583	226.10	342	234.70	100	243.10	1425
218.80	114	227.00	12665	234.95	694	244.00	19859
219.80	100	227.70	214	235.95	466	245.00	2132
220.10	174	227.95	1390	236.95	1142	246.00	4617
221.00	8801	228.95	2023	237.90	115	246.70	350
221.75	1139	229.85	406	238.95	468	246.95	456

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
247.90	87	259.95	156	277.00	3859	291.10	84
248.10	134	260.90	70	277.90	690	291.90	151
248.95	553	264.05	258	279.00	150	292.10	156
250.95	234	264.95	2580	282.80	138	292.90	825
251.95	181	265.90	557	283.05	375	293.95	305
252.90	585	270.90	159	283.80	199	294.70	212
255.00	100539	272.05	629	285.00	762	295.10	292
256.00	13757	273.00	3172	285.90	131	296.00	14265
257.00	1183	274.00	7752	288.75	209	297.00	1790
258.00	6218	275.00	43728	289.10	113	300.90	108
258.95	1127	276.00	5285	289.80	94	303.00	1518

Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
303.70	92	323.00	4148	340.75	239	364.95	6067
303.95	548	324.00	520	341.10	426	365.80	137
307.70	116	327.00	879	342.05	205	366.00	579
308.00	152	327.90	249	345.90	935	370.80	139
314.00	613	328.70	111	351.00	67	372.00	1763
314.95	1449	331.70	68	352.00	1268	372.85	574
315.95	799	331.85	259	352.95	966	382.95	559
316.90	85	332.20	150	354.00	1077	389.95	278
320.90	123	332.95	525	354.95	296	390.90	262
321.15	447	334.00	2971	359.00	74	401.00	82
321.95	207	334.95	786	363.80	96	401.95	789

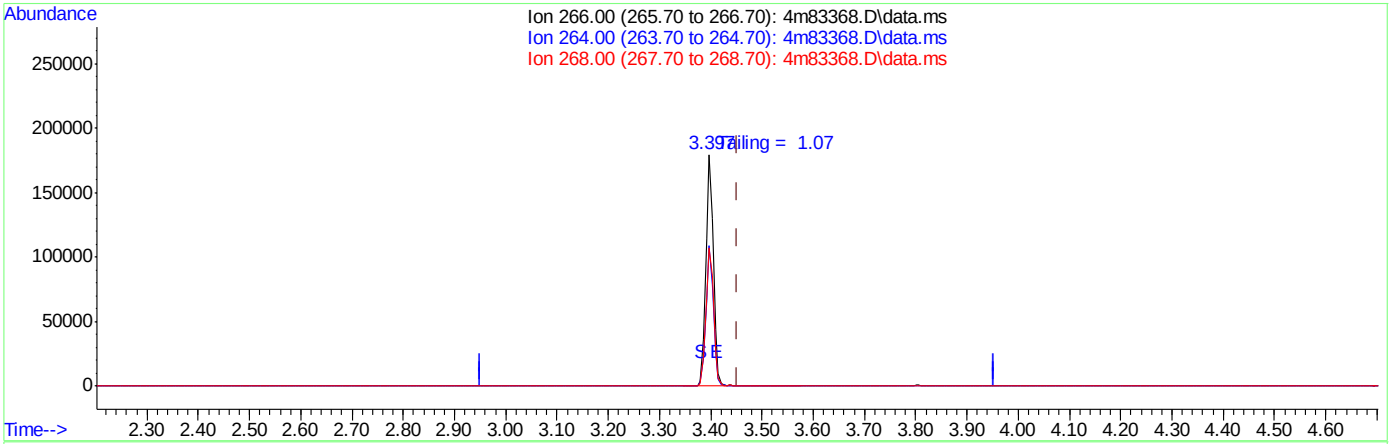
Average of 3.798 to 3.809 min.: 4m83368.D\data.ms
dftpp
Modified:subtracted

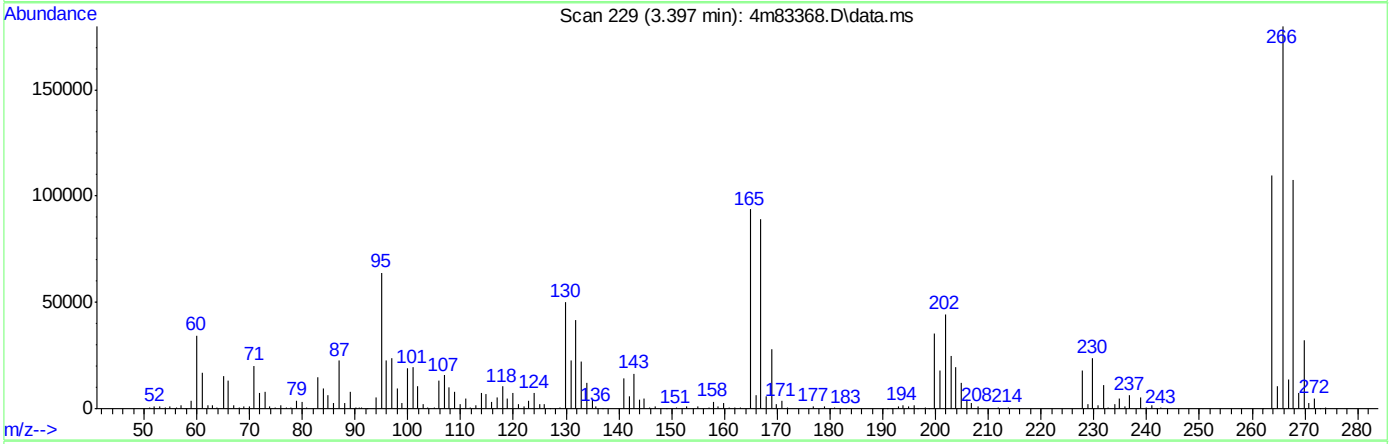
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
403.05	953	438.50	74				
403.85	372	439.50	115				
420.95	913	439.70	81				
421.60	167	440.00	160				
422.05	489	441.00	13044				
423.00	5789	442.00	92160				
423.95	1010	443.00	16281				
435.70	94	443.80	339				
436.50	80	443.95	1140				
437.80	154						
438.30	107						

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83368.D
Acq On : 22 Apr 2019 1:43 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 22 13:50:47 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m83368.D\data.ms

(1) pentachlorophenol (t)

3.397min (-0.055) 10.94ppb

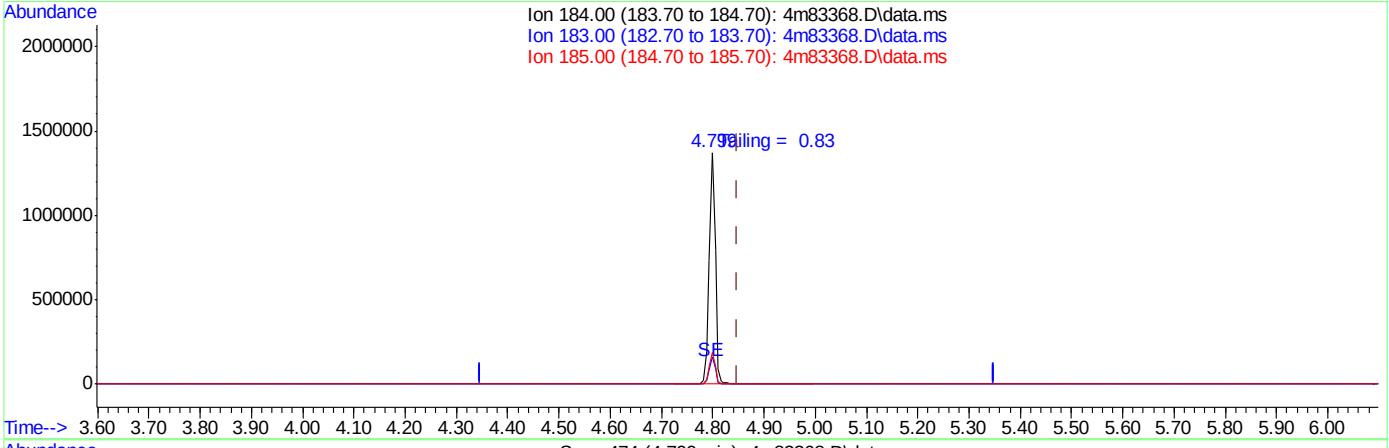
response 180455

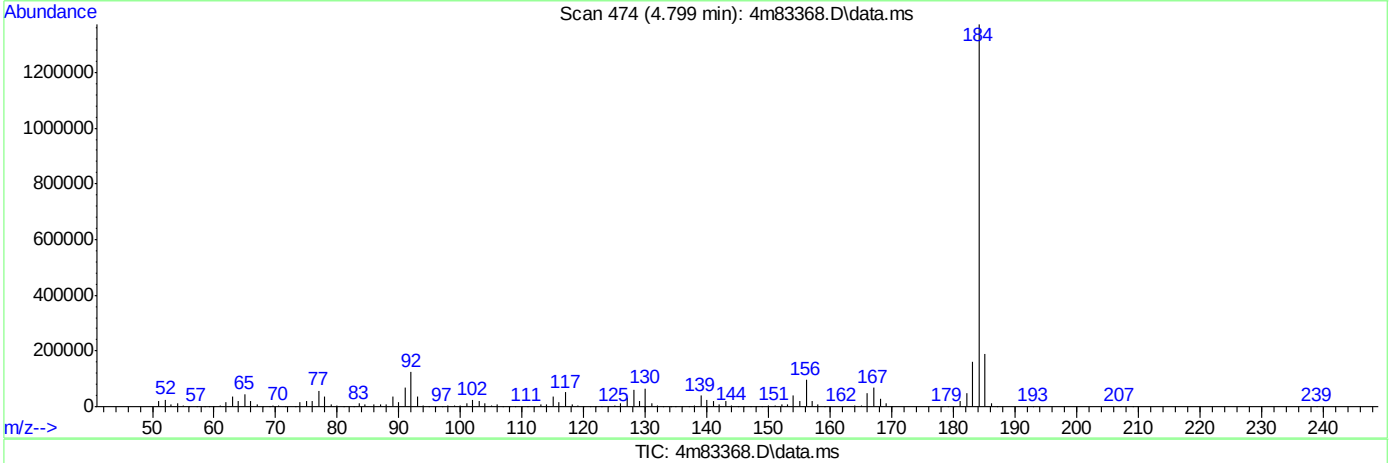
Ion	Exp%	Act%
266.00	100	100
264.00	63.60	59.97
268.00	65.50	61.62
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83368.D
Acq On : 22 Apr 2019 1:43 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 22 13:50:47 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m83368.D\data.ms

(2) benzidine (t)

4.799min (-0.049) 18.76ppb

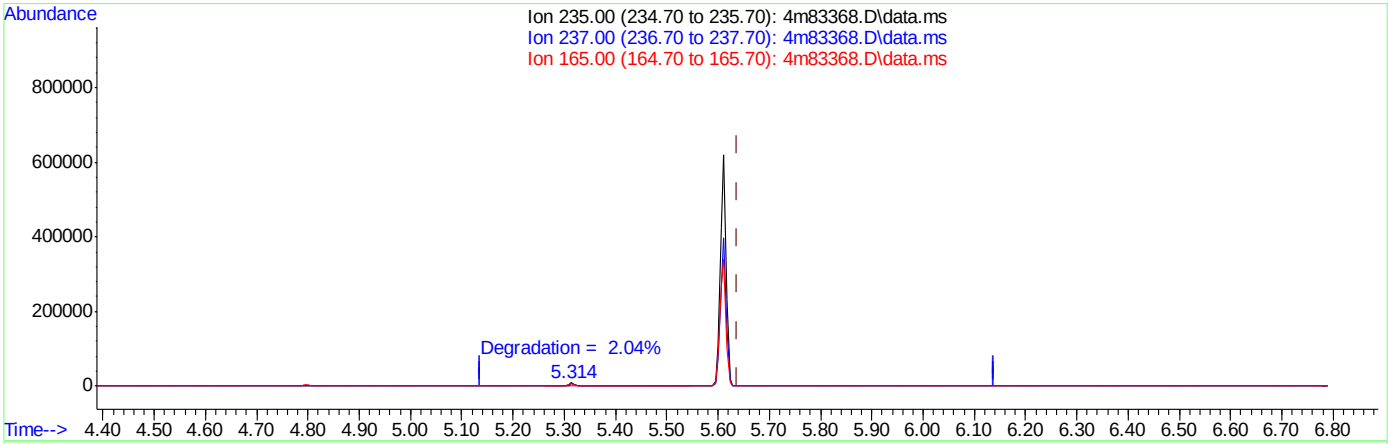
response 1119691

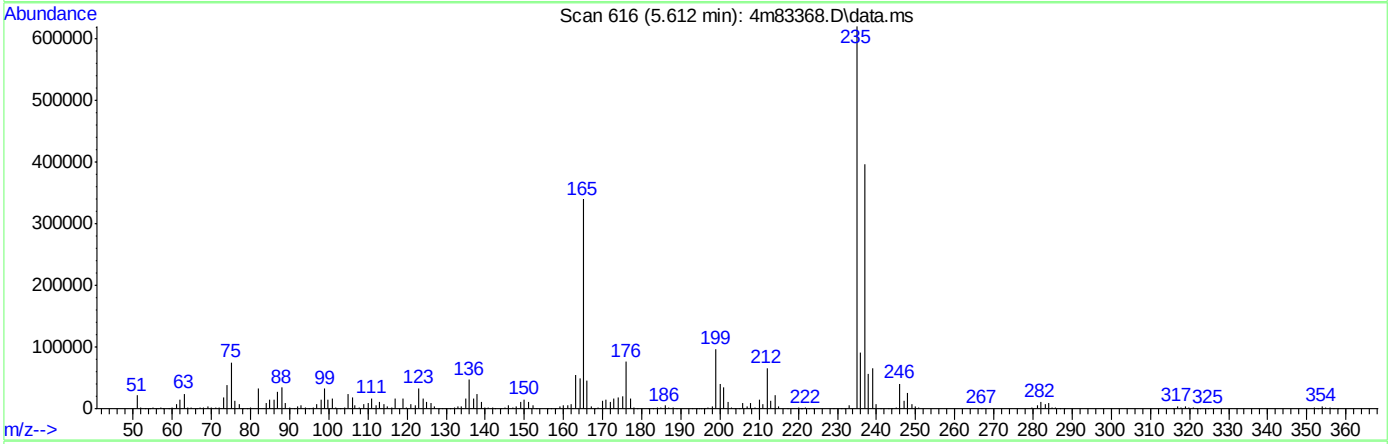
Ion	Exp%	Act%
184.00	100	100
183.00	11.00	11.50
185.00	13.60	13.65
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83368.D
Acq On : 22 Apr 2019 1:43 pm
Operator : christc2
Sample : dftpp
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 22 13:50:47 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m83368.D\data.ms

(3) ddt (t)

5.612min (-0.026) 17.64ppb

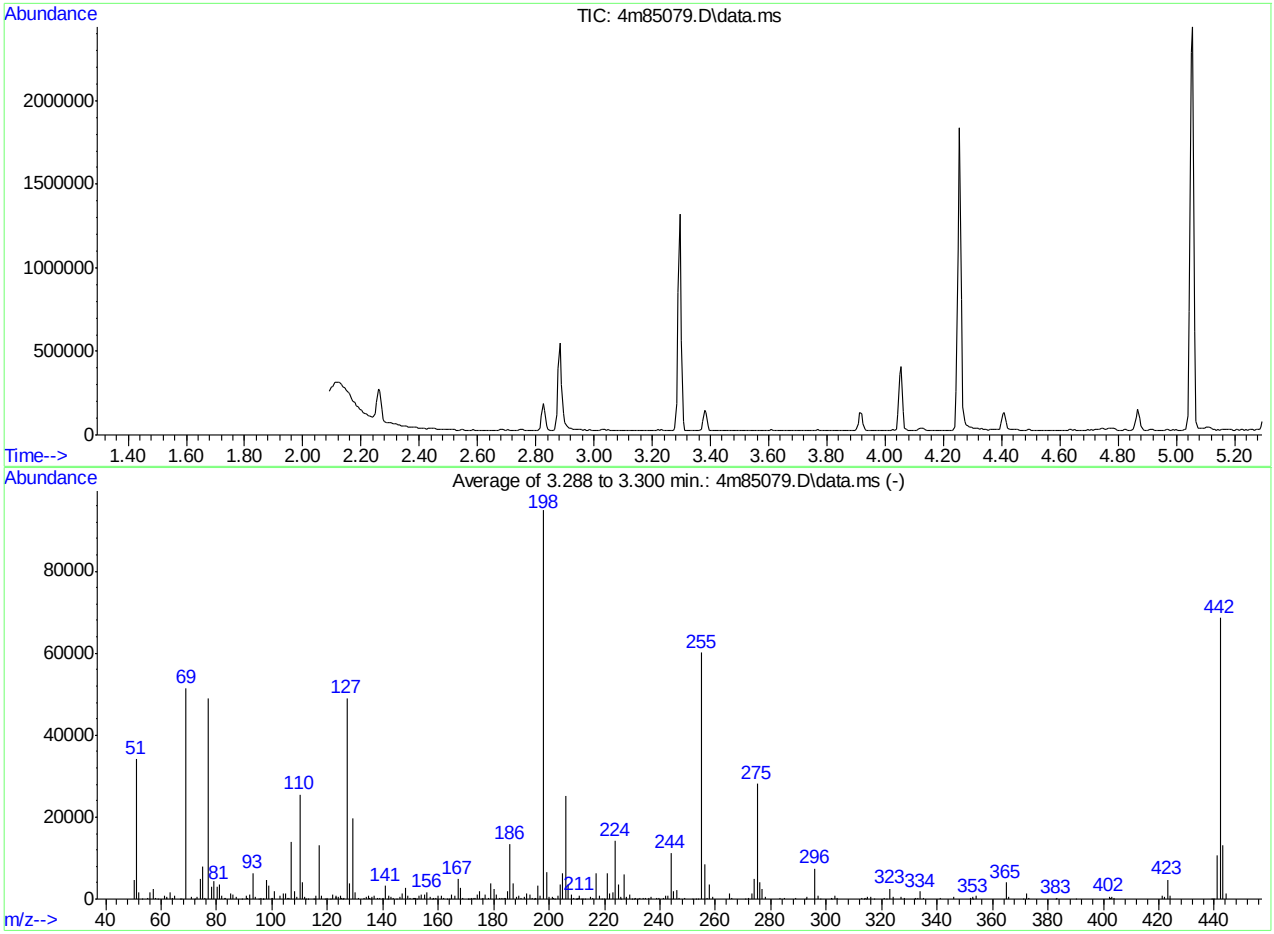
response 488174

Ion	Exp%	Act%
235.00	100	100
237.00	63.80	63.94
165.00	51.90	56.93
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\E4M3947\4m85079.D Vial: 1
Acq On : 21 Jun 2019 8:51 am Operator: krizhkac
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3947,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um



AutoFind: Scans 210, 211, 212; Background Corrected with Scan 205

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	36.0	34133	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	54.4	51540	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	51.7	49003	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	94811	PASS
199	198	5	9	6.8	6459	PASS
275	198	10	30	29.6	28099	PASS
365	198	1	100	4.3	4064	PASS
441	443	0.01	100	81.2	10558	PASS
442	198	40	100	72.3	68589	PASS
443	442	17	23	19.0	13002	PASS

4m85079.D DFTPP4M.M Fri Jun 21 16:28:20 2019 MANAGER

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.10	4564	62.10	391	74.95	7909	86.00	1183
51.00	34133	63.05	1710	75.90	332	87.05	642
52.05	1756	64.05	253	77.05	49077	89.00	89
53.00	69	65.00	916	78.05	2925	90.90	834
55.00	279	66.80	138	79.00	4363	91.10	162
56.00	1532	67.10	80	80.05	2976	92.05	979
57.00	2411	69.00	51540	81.00	3688	93.00	6293
57.95	197	71.05	432	82.00	704	93.90	634
58.90	72	72.00	68	82.90	348	95.10	145
61.05	816	73.05	564	83.20	387	95.95	226
61.90	437	74.00	4911	85.00	1414	96.70	93

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.00	48	107.00	13847	117.00	13131	125.60	75
98.00	4543	108.00	1947	118.00	745	125.90	240
99.00	3362	109.10	591	119.00	104	127.00	49003
100.00	208	110.00	25527	120.00	227	128.00	3941
100.20	248	111.00	4153	120.90	86	129.00	19682
101.00	1957	111.95	471	122.00	1129	129.95	1755
103.05	750	112.20	91	122.90	652	131.00	283
104.00	1386	112.90	101	123.10	957	133.05	187
105.05	1249	115.00	107	124.00	543	134.05	679
105.70	167	115.30	103	124.85	761	134.90	765
106.00	253	116.00	866	125.30	256	135.10	304

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
135.70	90	143.75	152	153.00	812	163.00	111
135.95	685	144.90	67	153.95	1046	164.10	72
137.05	706	146.00	568	154.95	1235	164.95	1190
137.95	197	147.00	1456	156.00	1768	166.05	772
138.95	274	148.00	2825	157.05	432	167.00	4898
139.80	76	149.00	718	157.90	80	168.00	2631
140.05	294	149.95	327	158.20	195	168.95	214
141.00	3212	151.10	252	159.00	281	170.80	78
141.80	104	151.40	255	159.95	783	171.00	91
142.05	788	151.70	176	160.95	790	171.70	121
142.90	499	152.10	91	161.90	359	172.05	322

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
172.80	157	182.00	152	191.95	1260	201.25	563
173.10	281	182.90	164	193.00	1222	201.50	227
173.95	1063	183.95	264	194.05	262	201.80	101
175.00	1968	184.25	205	194.60	74	203.00	850
175.80	90	185.00	1923	194.90	102	204.00	3690
176.00	360	186.00	13457	195.10	195	205.00	6233
176.90	1019	187.00	3872	196.05	3283	206.00	25156
177.95	279	188.05	457	196.60	946	207.00	3470
178.95	3813	188.95	805	198.00	94811	208.00	1092
180.00	2510	189.90	166	198.95	6459	208.85	386
180.95	979	191.00	481	200.05	513	209.80	78

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
210.00	67	219.10	116	228.05	680	238.95	163
210.50	255	219.80	128	228.95	1177	239.80	234
210.80	229	221.00	6273	229.90	82	241.05	228
211.05	836	221.85	1352	230.80	110	242.00	825

DFTPP4M.M Fri Jun 21 16:27:05 2019 MANAGER Page: 4

211.80	94	223.05	1690	231.00	369	243.00	787
212.20	119	224.00	14220	232.00	105	244.00	11331
213.00	82	225.00	3622	232.90	149	245.05	2051
214.95	432	225.70	76	234.05	404	245.95	2117
215.85	358	226.00	433	234.95	333	247.00	410
216.95	6180	227.00	6042	235.95	183	249.00	408
218.00	798	227.80	169	236.95	614	251.90	112

Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
252.80	146	273.05	1439	296.00	7388	315.00	695
253.60	104	274.05	4805	296.95	903	316.05	606
255.00	60075	275.00	28099	298.00	135	317.10	84
256.00	8561	276.00	4009	301.80	159	321.10	338
257.05	406	277.00	2380	302.10	74	321.90	93
257.90	3441	278.00	573	303.00	874	323.05	2528
258.85	534	283.10	189	304.00	207	324.10	445
265.00	1279	285.05	379	312.85	206	326.95	526
265.95	205	288.95	228	313.70	95	328.05	224
270.70	67	292.70	84	314.00	392	331.90	73
272.10	193	292.95	495	314.60	118	332.20	215

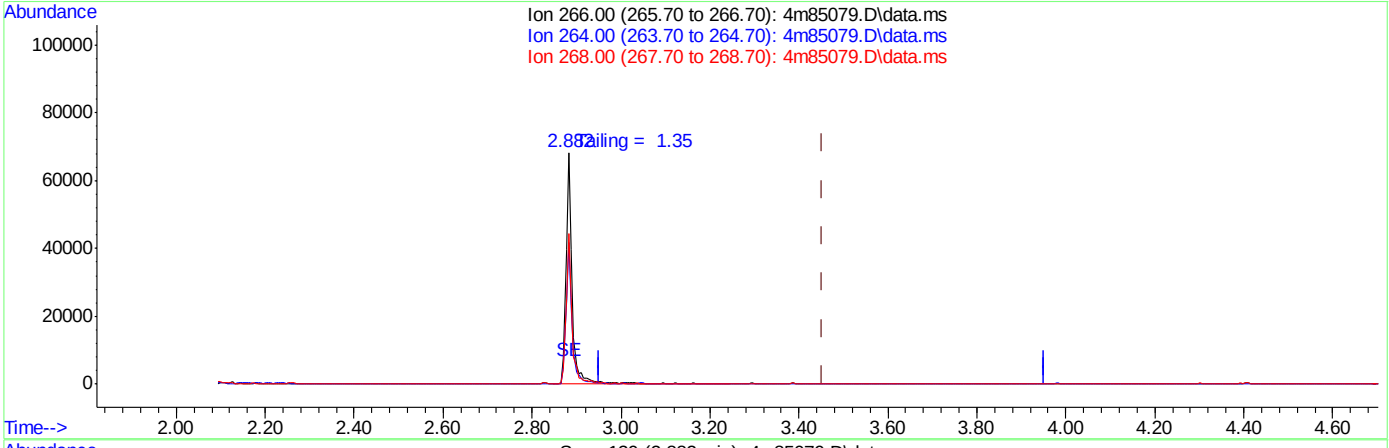
Average of 3.288 to 3.300 min.: 4m85079.D\data.ms
dftpp
Modified:subtracted

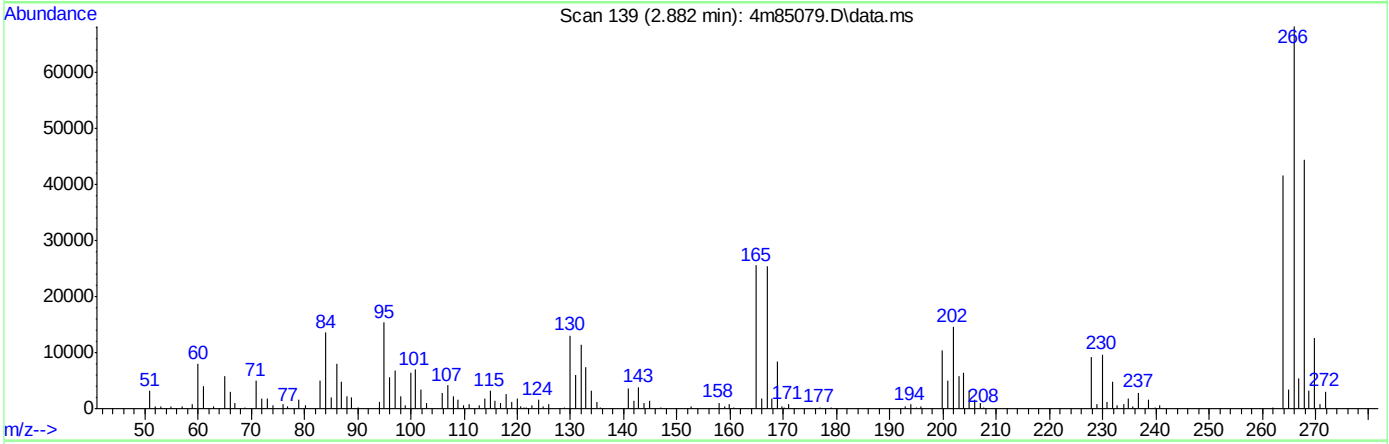
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
333.00	274	366.00	591	421.05	799	444.10	1344
334.05	1854	370.90	89	421.90	493		
334.90	302	372.10	1417	422.10	308		
341.00	258	373.10	234	423.10	4769		
346.05	480	382.80	69	424.05	736		
352.00	352	383.05	246	439.10	83		
352.20	148	390.10	143	439.60	93		
352.80	108	402.05	671	440.00	126		
353.05	483	402.80	200	441.10	10558		
354.10	763	403.05	558	442.10	68589		
364.95	4064	403.95	419	443.10	13002		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85079.D
Acq On : 21 Jun 2019 8:51 am
Operator : krizhkac
Sample : dftpp
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 08:58:39 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85079.D\data.ms

(1) pentachlorophenol (t)

2.882min (-0.570) 4.08ppb m

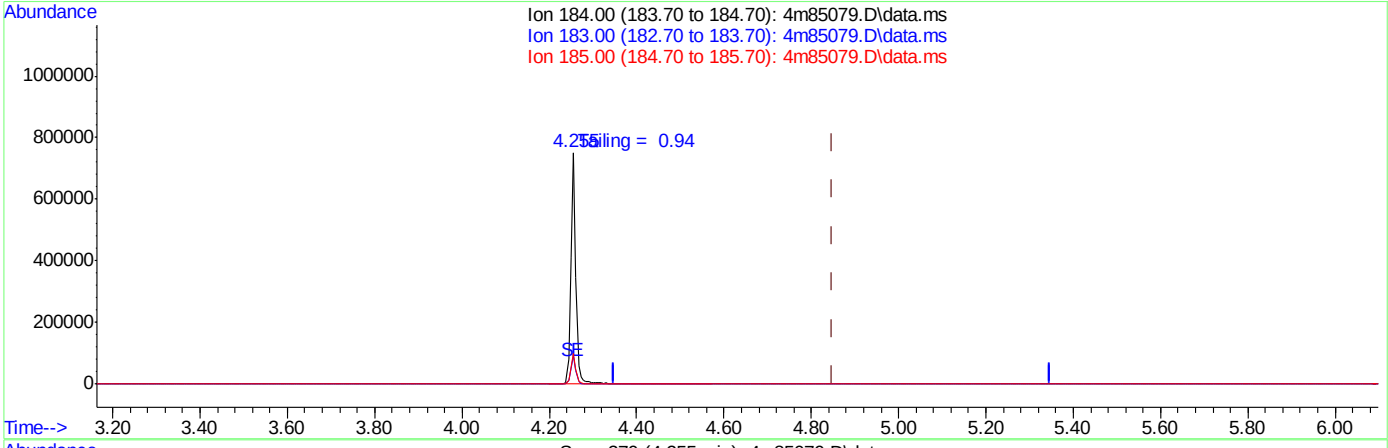
response 67354

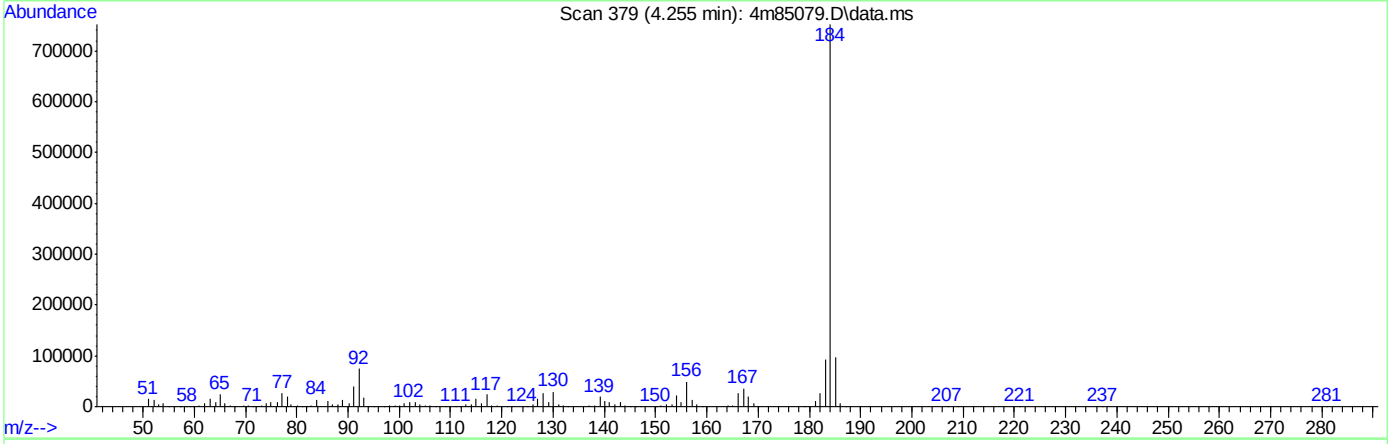
Ion	Exp%	Act%
266.00	100	100
264.00	63.60	0.00#
268.00	65.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85079.D
Acq On : 21 Jun 2019 8:51 am
Operator : krizhkac
Sample : dftpp
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 08:58:39 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85079.D\data.ms

(2) benzidine (t)

4.255min (-0.593) 10.15ppb m

response 605512

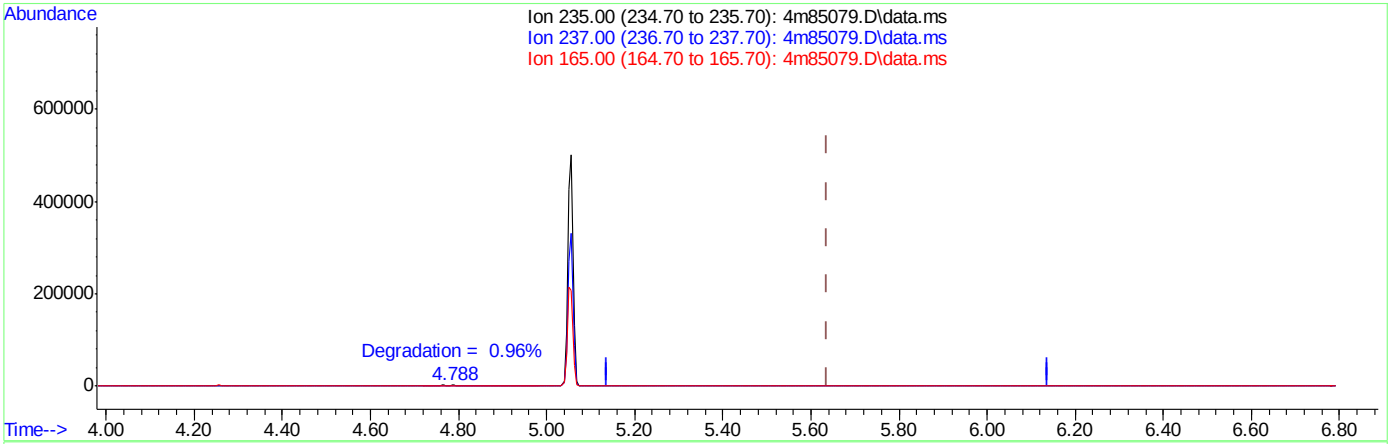
Ion	Exp%	Act%
184.00	100	100
183.00	11.00	0.00#
185.00	13.60	0.00#
0.00	0.00	0.00

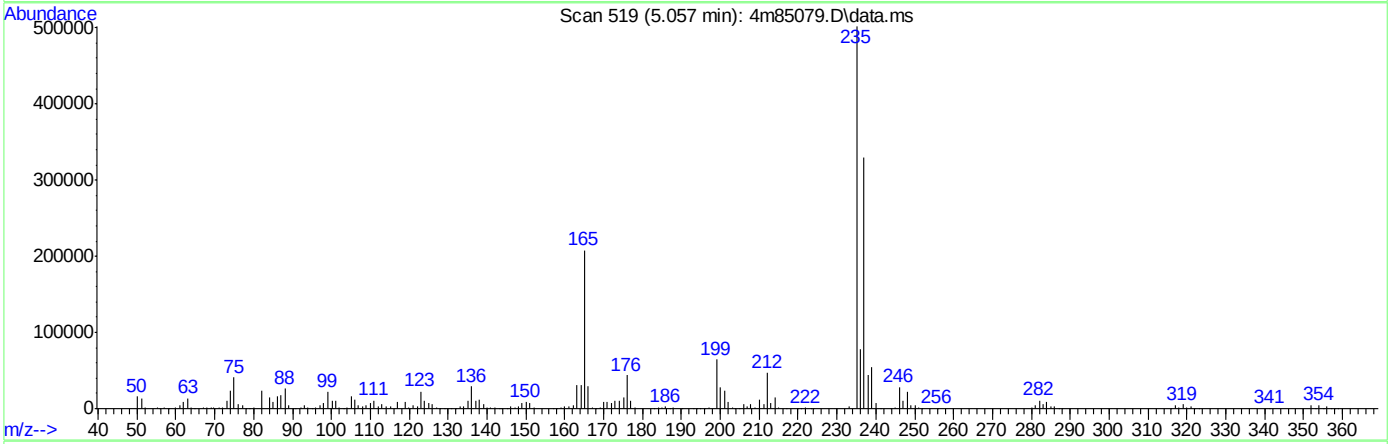
SGS JC89788

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85079.D
Acq On : 21 Jun 2019 8:51 am
Operator : krizhkac
Sample : dftpp
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 08:58:39 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85079.D\data.ms

(3) ddt (t)

5.057min (-0.582) 14.92ppb m

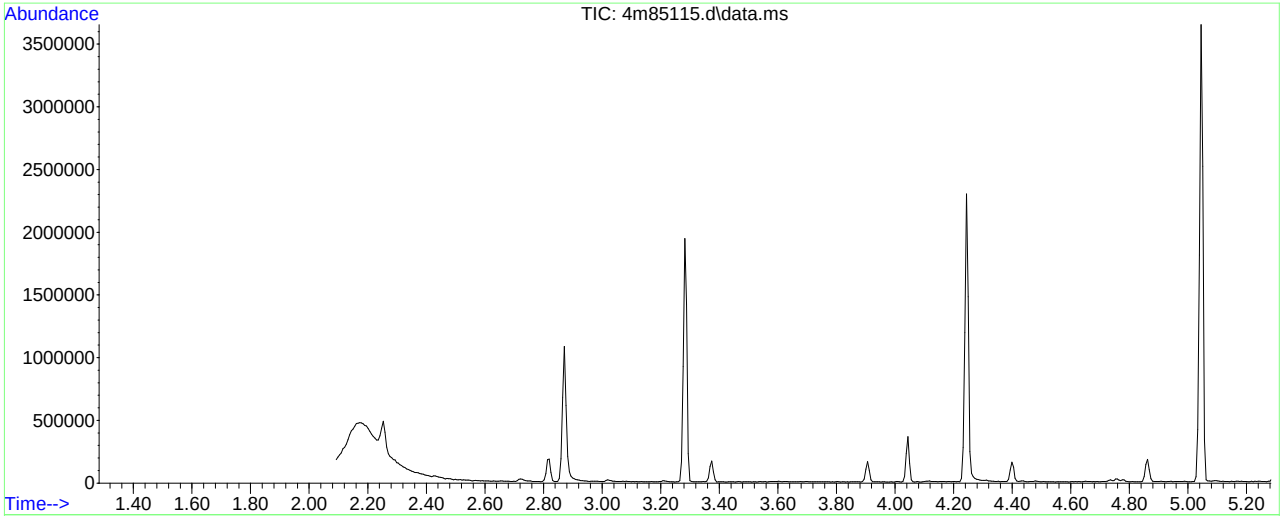
response 412837

Ion	Exp%	Act%
235.00	100	100
237.00	63.80	0.00#
165.00	51.90	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\michellc\e4m3948\4m85115.d Vial: 1
Acq On : 22 Jun 2019 12:12 am Operator: chriss2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M (RTE Integrator)
Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um



AutoFind: Scans 208, 209, 210; Background Corrected with Scan 203

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.9	58434	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	55.3	85224	PASS
70	69	0.00	2	0.6	522	PASS
127	198	40	60	52.7	81195	PASS
197	198	0.00	1	0.3	433	PASS
198	198	100	100	100.0	154205	PASS
199	198	5	9	6.9	10698	PASS
275	198	10	30	27.1	41728	PASS
365	198	1	100	4.1	6262	PASS
441	443	0.01	100	83.1	16648	PASS
442	198	40	100	66.8	103072	PASS
443	442	17	23	19.4	20029	PASS

4m85115.d DFTPP4M.M Sun Jun 23 23:00:16 2019

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
50.00	4276	59.95	201	69.00	85224	80.00	5147
51.05	58434	60.90	390	69.95	522	81.00	6511
52.00	3125	61.05	631	71.30	84	82.05	1339
53.05	181	62.05	939	72.40	100	83.00	1273
54.90	276	63.00	2956	73.00	1011	83.95	1119
55.15	454	63.90	194	74.00	8146	85.05	1448
56.00	2023	64.10	183	75.00	12932	86.00	2254
56.95	4060	65.05	1185	76.10	2530	86.95	826
57.90	119	65.90	160	77.05	79309	87.90	434
58.10	90	66.80	74	78.05	5632	89.05	158
59.00	87	67.10	360	79.00	6965	90.95	1396

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
91.95	1815	103.00	1707	115.05	293	124.95	881
93.00	10935	104.00	2258	116.05	1448	127.00	81195
94.00	634	105.05	2320	117.00	20217	128.00	5992
95.00	259	106.00	389	118.00	1361	129.00	33413
96.00	447	107.00	23509	118.95	258	129.95	3406
97.00	168	108.00	3395	119.80	115	131.00	612
98.00	7032	110.00	43963	120.05	270	131.95	314
99.00	5174	111.00	6925	121.10	70	132.30	134
100.05	657	112.00	709	122.00	1965	132.70	87
101.05	3362	112.90	154	123.00	2385	133.00	405
102.00	304	113.40	75	124.00	1020	133.40	74

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
134.00	915	141.95	1447	150.95	280	159.05	382
135.00	2672	142.95	954	151.20	353	159.95	1453
135.80	148	143.95	194	151.80	178	160.95	2061
135.95	924	144.70	78	152.85	1122	161.60	199
136.95	1307	144.90	138	153.95	1106	161.95	477
137.65	278	145.95	910	155.00	2030	162.90	132
137.95	241	147.00	2660	156.00	3259	163.90	75
138.95	210	148.00	4608	156.95	411	164.30	237
139.30	73	148.95	769	157.20	368	164.95	1742
140.00	634	150.10	351	157.95	837	165.95	1399
140.95	4338	150.40	69	158.80	282	166.95	8062

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
168.05	3350	176.00	1372	185.00	2999	194.05	414
169.05	620	176.70	280	186.00	22688	194.95	232
169.80	80	177.05	1846	187.00	6083	195.20	298
170.20	166	178.05	556	188.00	656	196.05	5470
170.40	115	178.95	5887	188.95	1533	196.70	433
170.70	157	180.00	3844	190.00	143	198.00	154205
170.95	219	180.95	1990	190.95	460	199.00	10698
172.00	725	181.75	289	191.30	232	200.10	786
172.95	1113	182.25	237	192.00	2025	201.00	245
174.05	1318	183.70	231	192.80	374	201.40	498
175.05	2889	184.15	318	193.00	1883	201.70	681

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
203.05	1490	215.05	550	226.10	912	234.10	197
204.05	5875	216.00	1243	227.00	9631	234.80	81
205.00	10126	217.00	10427	228.00	1623	235.10	337
206.05	41013	218.00	1179	228.95	1808	235.70	76
206.95	5471	219.10	99	229.70	69	236.00	434
207.95	1363	220.10	148	229.90	125	237.00	810
208.95	479	221.05	10342	230.15	215	237.90	75
209.95	329	222.05	1603	231.00	1123	239.05	526
211.00	1603	223.05	2589	232.00	180	239.85	473
211.40	418	224.05	22422	233.05	221	240.95	792
212.95	173	225.05	6346	233.90	349	241.95	1360

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms

M4M3886SIM.M Sun Jun 23 22:59:11 2019

dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
243.00	224	257.05	1034	272.05	251	284.00	292
243.20	801	258.00	5219	273.00	3256	284.80	124
244.10	19081	259.00	778	274.00	7326	285.00	677
245.00	2379	259.90	144	275.00	41728	288.90	189
245.95	4401	264.00	88	276.00	5807	289.90	137
246.95	686	265.00	2168	277.05	3663	292.05	196
248.95	960	265.95	494	278.05	607	293.00	925
251.00	162	266.85	147	279.00	71	294.00	253
252.60	106	270.00	129	282.70	97	294.95	300
255.00	92755	271.00	116	282.90	148	296.05	12466
256.00	13982	271.80	97	283.10	189	297.00	1653

Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
298.10	67	316.05	923	333.80	276	354.05	1258
301.90	265	321.00	401	334.05	2147	355.30	172
302.30	94	322.00	69	335.00	676	363.95	146
303.00	1347	323.10	3800	338.90	73	365.00	6262
303.60	96	323.90	1002	340.75	237	365.70	77
303.80	81	326.80	328	340.90	110	365.90	584
304.10	126	327.05	535	341.10	104	366.20	90
307.90	96	327.85	224	345.70	316	370.90	366
313.10	123	331.90	83	346.10	381	371.80	208
314.10	750	332.15	301	352.05	1400	372.10	1855
314.95	1437	333.25	481	353.05	860	373.10	549

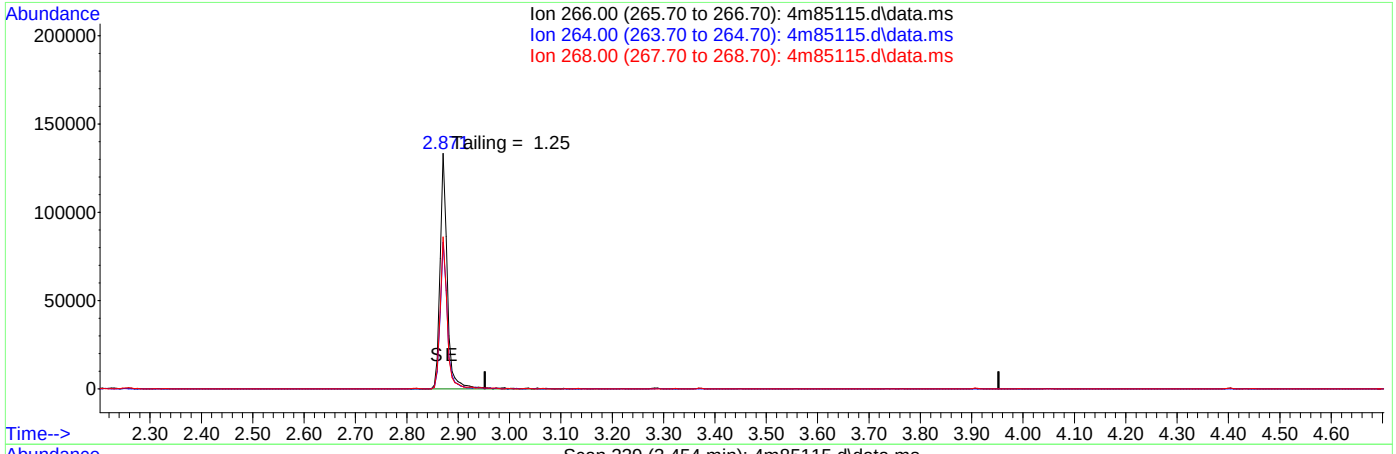
Average of 3.277 to 3.288 min.: 4m85115.d\data.ms
dftpp
Modified:subtracted

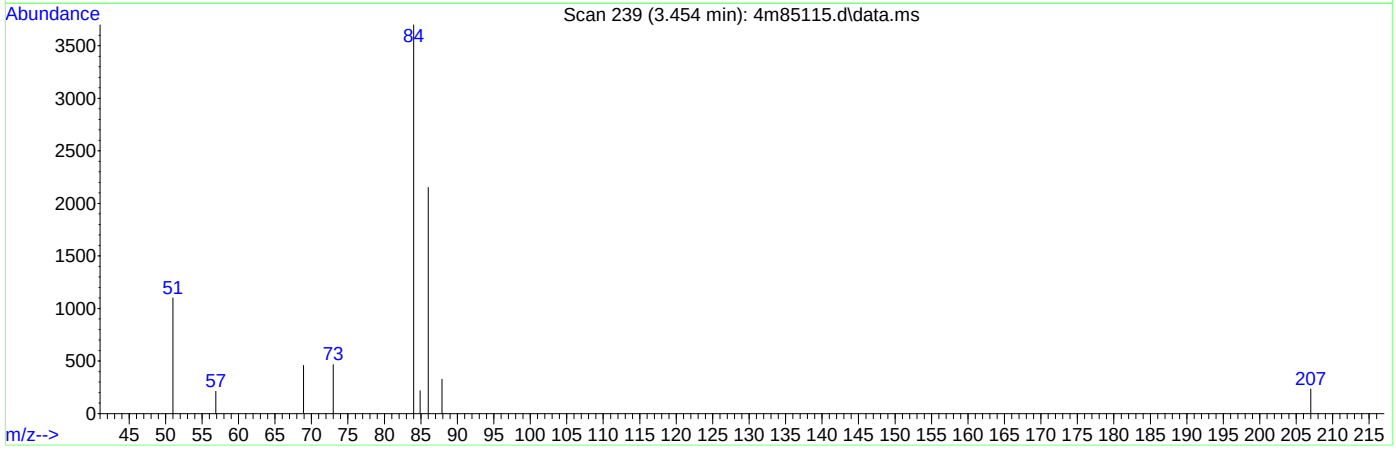
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
382.95	667	423.05	6348				
384.00	79	424.05	1148				
390.05	346	424.80	74				
401.30	132	437.40	85				
401.95	623	438.90	76				
402.90	143	439.10	117				
403.05	1231	440.00	315				
404.05	316	441.10	16648				
420.90	82	442.10	103072				
421.10	1078	443.10	20029				
422.05	945	444.10	1645				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85115.d
Acq On : 22 Jun 2019 12:12 am
Operator : chriss2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFTPP4M.RES
Quant Time: Jun 22 00:19:11 2019
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85115.d\data.ms

(1) pentachlorophenol (t)

3.452min (-3.452) 0.00ppb

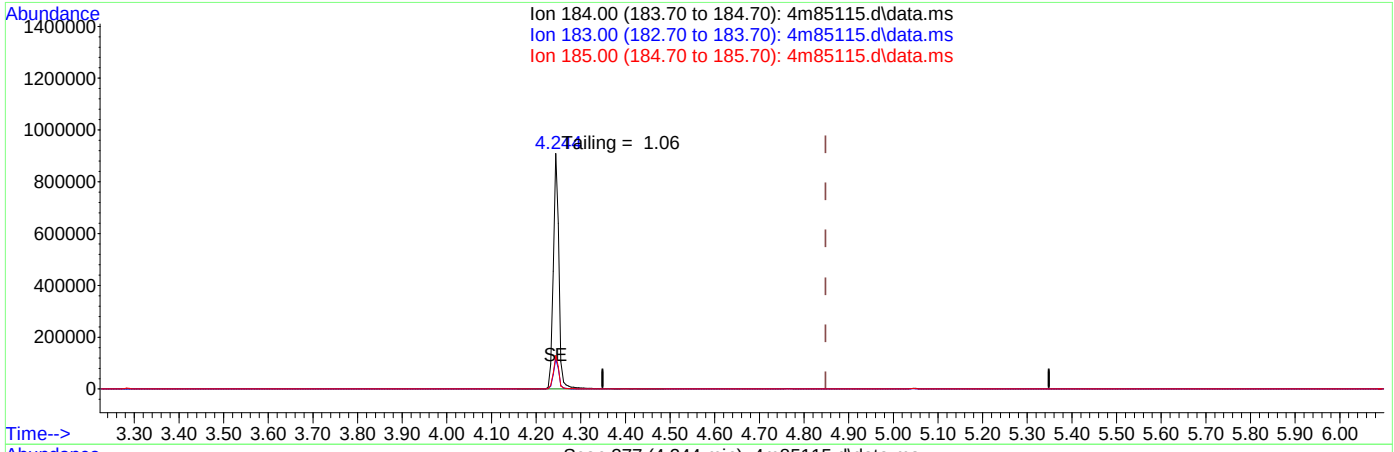
response 0

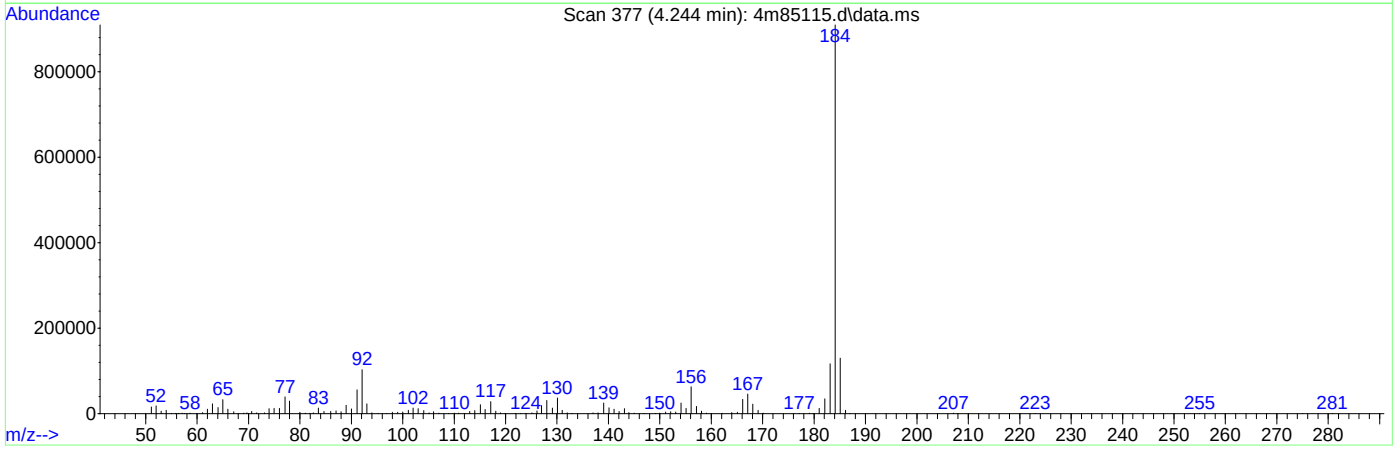
Ion	Exp%	Act%
266.00	100	0.00
264.00	63.60	0.00#
268.00	65.50	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85115.d
Acq On : 22 Jun 2019 12:12 am
Operator : chriss2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFTPP4M.RES
Quant Time: Jun 22 00:19:11 2019
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85115.d\data.ms

(2) benzidine (t)

4.244min (-0.604) 13.52ppb m

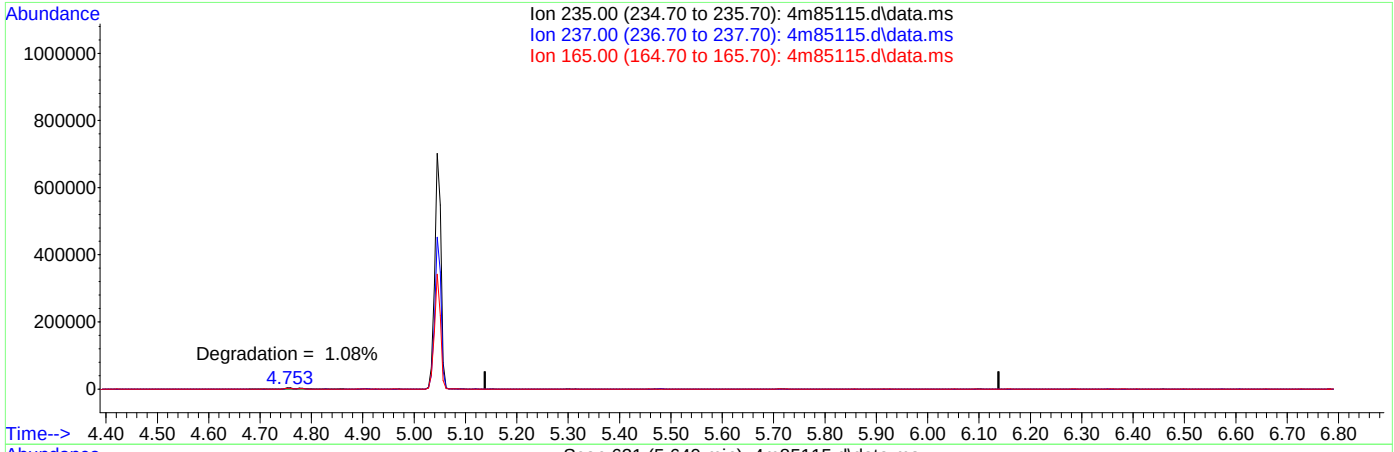
response 807014

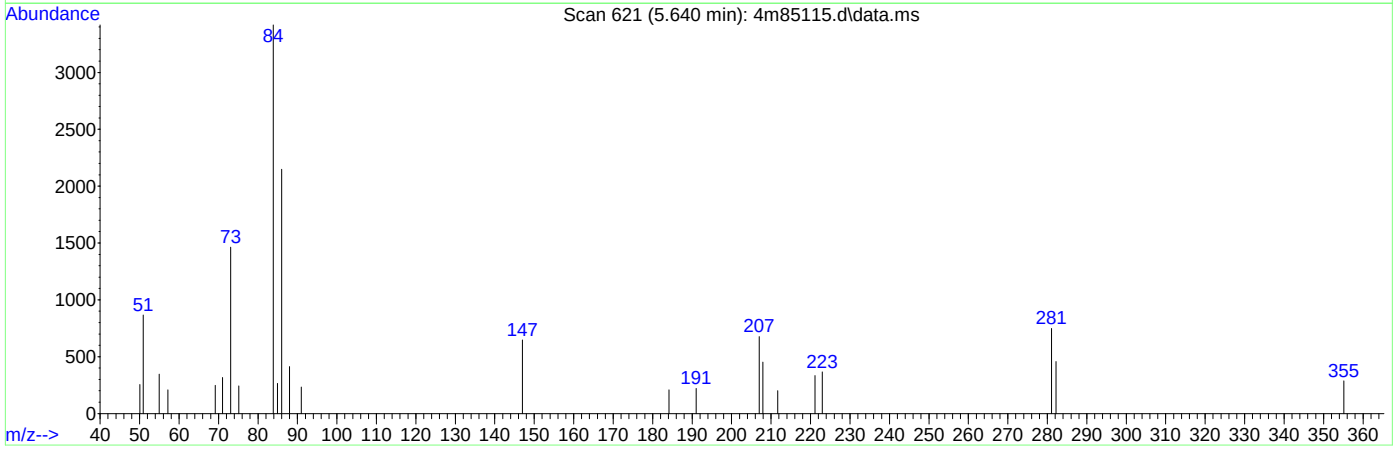
Ion	Exp%	Act%
184.00	100	100
183.00	11.00	0.00#
185.00	13.60	0.00#
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85115.d
Acq On : 22 Jun 2019 12:12 am
Operator : chriss2
Sample : dftpp Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\DFTPP4M.M
Quant Results File: DFTPP4M.RES
Quant Time: Jun 22 00:19:11 2019
Quant Title : Semi Volatile GC/MS,zb-5 30m x .25mm x .50um
QLast Update : Thu Jul 19 16:10:41 2018
Response via : Initial Calibration





TIC: 4m85115.d\data.ms

(3) ddt (t)

5.638min (-5.638) 0.00ppb

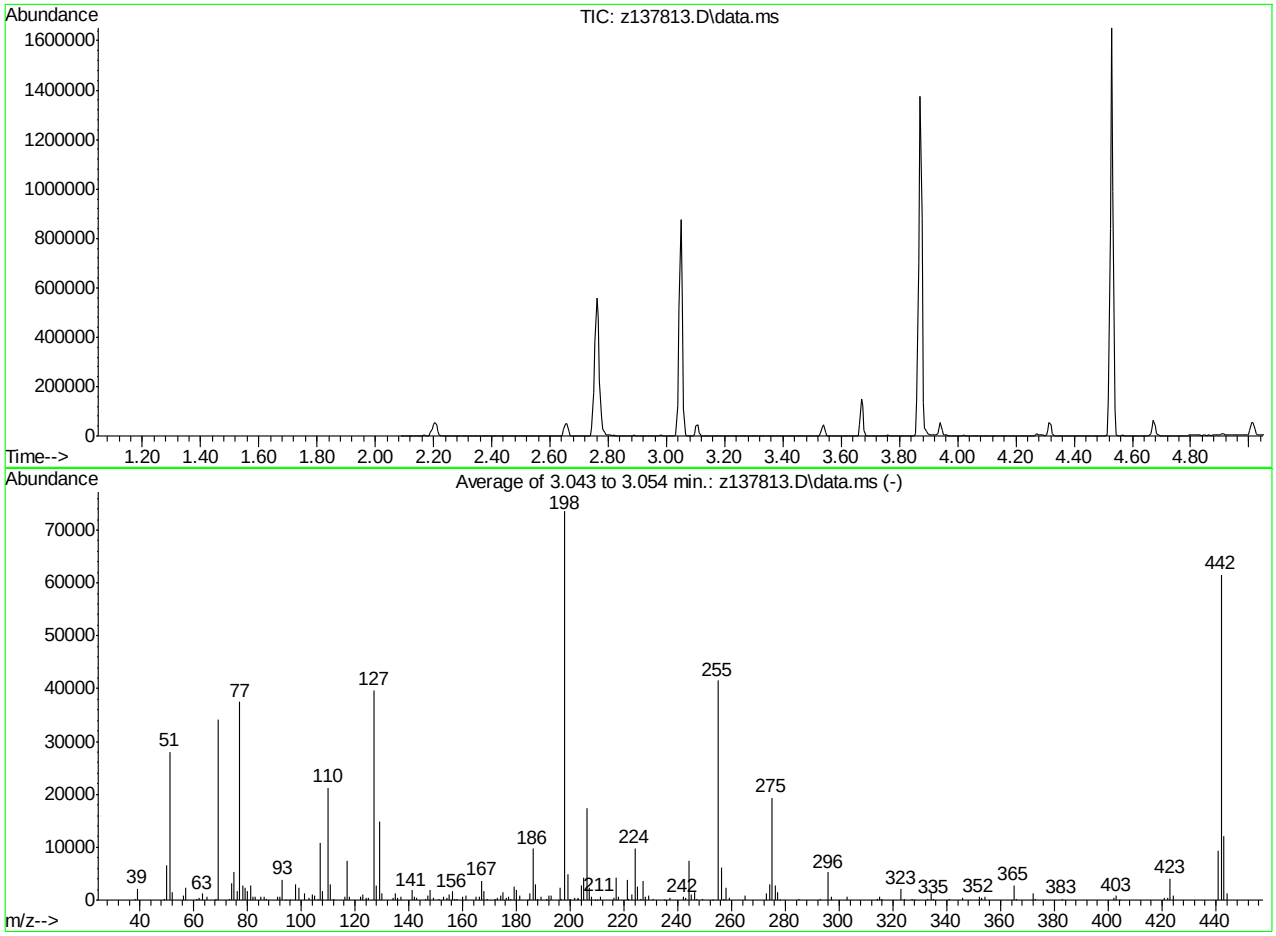
response 0

Ion	Exp%	Act%
235.00	100	0.00
237.00	63.80	0.00#
165.00	51.90	0.00#
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\ez6786\z137813.D Vial: 1
Acq On : 24 May 2019 7:29 am Operator: chriss2
Sample : dftpp Inst : GCMSZ
Misc : op20426,ez6787,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M (ChemStation Integrator)
Title : column rtx-5msi 30mx0.25mmx0.25um



AutoFind: Scans 180, 181, 182; Background Corrected with Scan 176

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.2	28112	PASS
68	69	0.00	2	0.5	165	PASS
69	198	0.00	100	46.4	34109	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	54.1	39763	PASS
197	198	0.00	1	0.3	198	PASS
198	198	100	100	100.0	73544	PASS
199	198	5	9	6.8	4983	PASS
275	198	10	30	26.4	19410	PASS
365	198	1	100	3.8	2827	PASS
441	443	0.01	100	78.3	9436	PASS
442	198	40	100	83.7	61571	PASS
443	442	17	23	19.6	12053	PASS

z137813.D DFTPPZ.M Fri May 24 11:53:54 2019

Average of 3.043 to 3.054 min.: z137813.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.10	292	65.10	558	81.10	2665	98.05	2899
39.10	2199	68.10	165	82.05	593	99.00	2350
49.10	117	69.10	34109	83.00	650	101.05	1371
50.10	6642	73.10	274	85.05	703	103.05	509
51.10	28112	74.10	3149	86.05	733	104.00	967
52.10	1496	75.10	5223	87.05	283	105.05	787
56.10	871	76.10	1687	91.05	607	106.15	238
57.10	2322	77.10	37504	92.00	718	107.10	10910
61.10	186	78.10	2730	93.00	3883	108.05	1678
62.05	333	79.10	2368	94.00	103	110.00	21243
63.10	1176	80.10	1695	96.00	103	111.00	2931

Average of 3.043 to 3.054 min.: z137813.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
112.00	257	130.00	1283	149.05	342	166.05	601
116.05	605	134.05	338	151.10	137	167.10	3707
117.00	7538	135.05	1249	153.05	635	168.05	1773
118.05	576	136.00	374	154.00	470	169.00	230
122.05	688	137.05	653	155.05	1030	172.00	257
123.00	1052	141.05	1891	156.05	1636	172.95	328
124.05	534	142.00	676	157.05	270	174.10	763
125.00	522	143.00	515	158.10	129	175.05	1466
127.10	39763	146.05	247	160.00	543	176.05	454
128.00	2858	147.00	927	161.10	944	177.00	683
129.00	14798	148.00	1855	165.00	655	178.05	222

Average of 3.043 to 3.054 min.: z137813.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
179.00	2579	193.05	891	206.10	17459	223.05	1125
180.05	1822	196.10	2252	207.05	2251	224.05	9843
181.05	788	196.70	198	208.00	566	225.10	2511
184.00	104	198.00	73544	209.00	101	226.20	125
185.05	1295	199.00	4983	210.10	115	227.00	3697
186.10	9749	200.00	310	211.05	742	228.00	586
187.05	2933	201.50	407	216.10	401	229.05	838
188.10	159	202.90	150	217.00	4312	230.95	299
189.00	633	203.05	332	218.00	548	235.00	111
191.10	251	204.05	2740	221.05	3902	237.05	365
192.05	774	205.10	4187	221.70	279	242.00	584

Average of 3.043 to 3.054 min.: z137813.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
243.10	514	259.05	332	297.05	719	335.05	287
244.05	7451	265.00	840	303.00	728	341.05	207
245.10	1081	273.05	1304	314.10	129	345.95	397
246.05	1418	274.05	3067	315.00	575	352.00	614
247.00	251	275.00	19410	316.00	153	353.00	363
249.00	271	276.05	2775	323.05	2112	354.05	658
253.00	108	277.00	1517	324.05	274	365.00	2827
255.00	41493	278.00	112	326.90	283	365.95	321
256.05	6183	285.05	249	328.10	114	372.00	1192
257.05	313	293.00	293	333.00	127	372.95	248
258.00	2283	296.00	5280	334.05	1253	382.95	293

Average of 3.043 to 3.054 min.: z137813.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
402.00	455						
403.00	842						
404.10	111						
420.95	514						

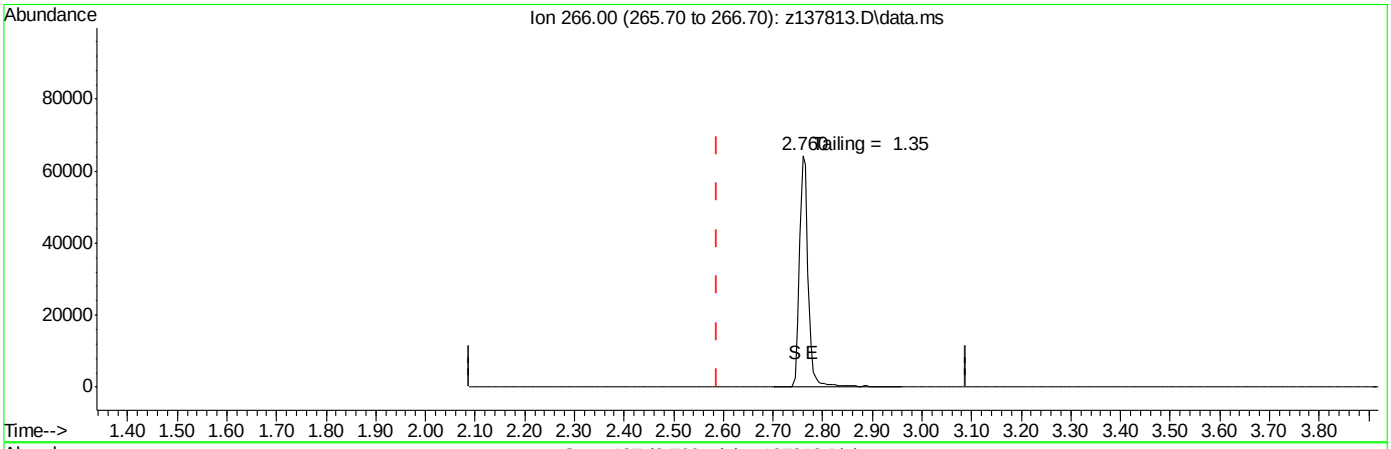
DFTPPZ.M Fri May 24 11:53:15 2019 Page: 2

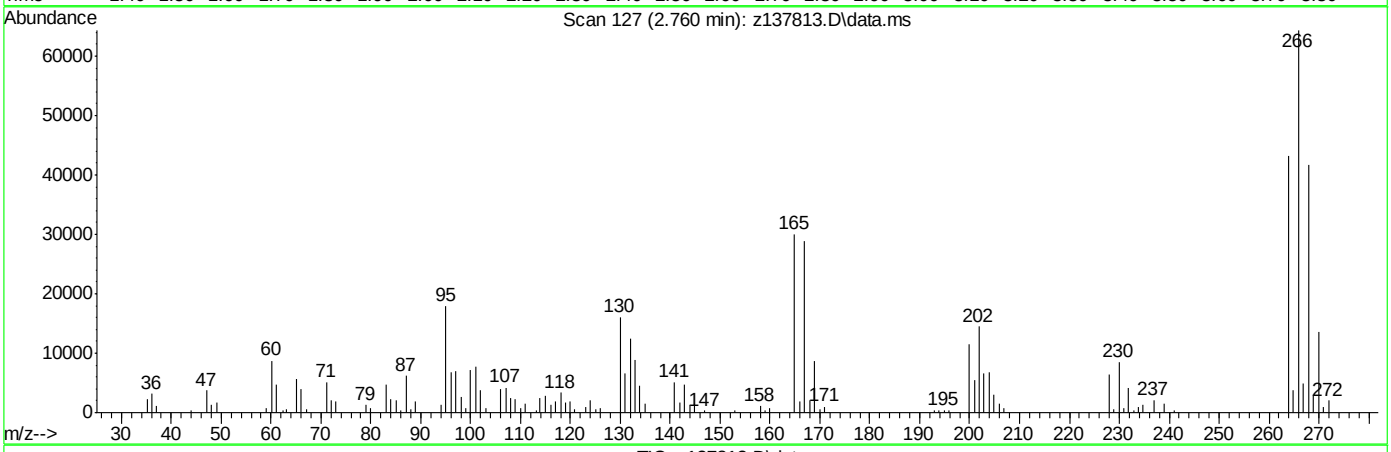
422.00	455
423.00	4114
424.00	937
441.00	9436
442.00	61571
443.00	12053
444.00	1190

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137813.D
Acq On : 24 May 2019 7:29 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 24 09:40:15 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z137813.D\data.ms

(1) Pentachlorophenol

2.760min (+0.172) 25.92 m

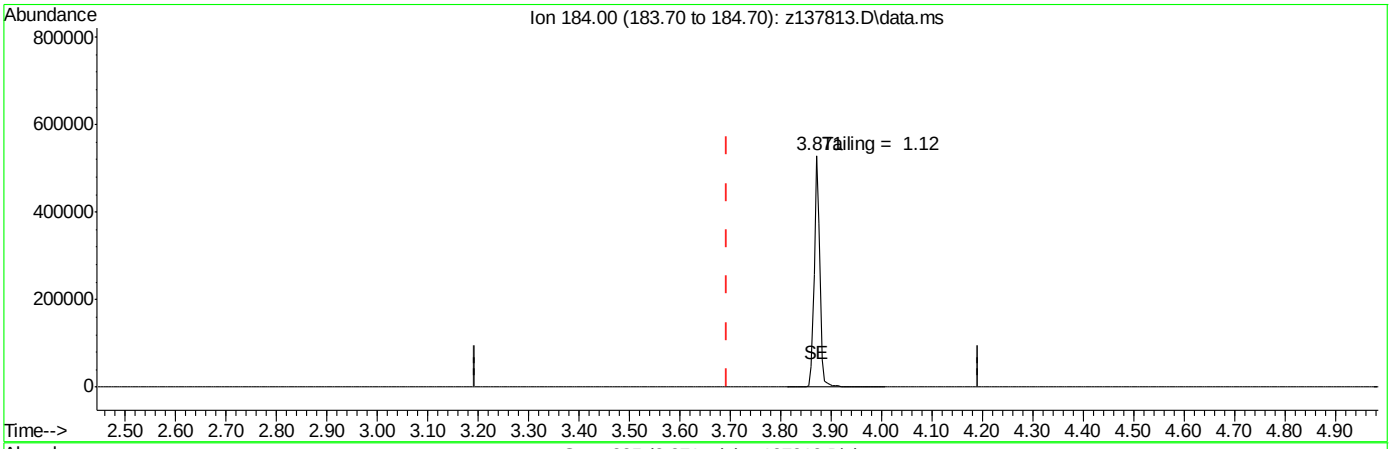
response 794320

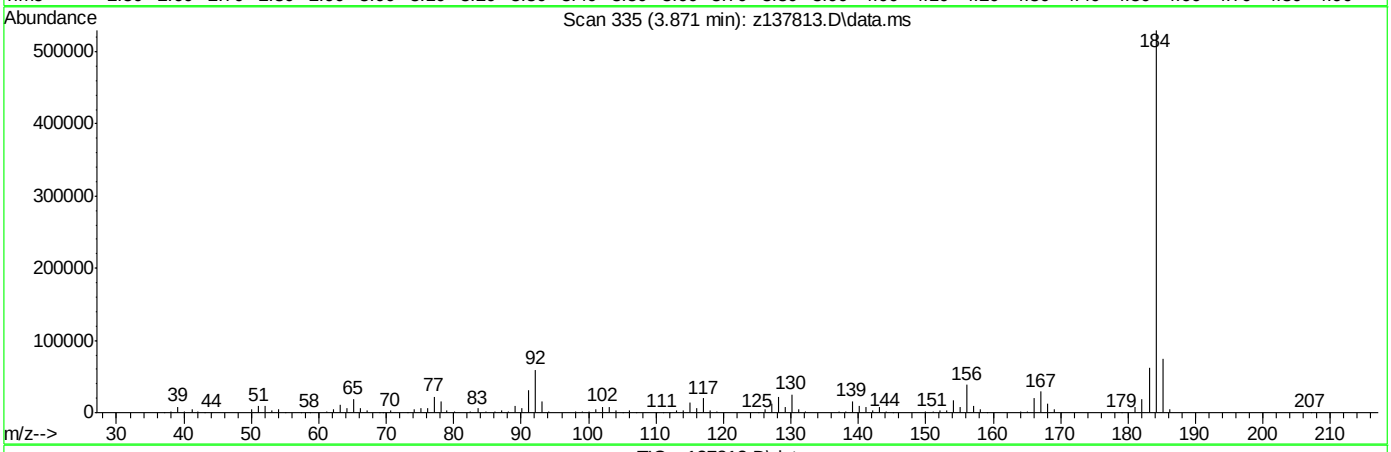
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137813.D
Acq On : 24 May 2019 7:29 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 24 09:40:15 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z137813.D\data.ms

(2) Benzidine

3.871min (+0.178) 23.61 m

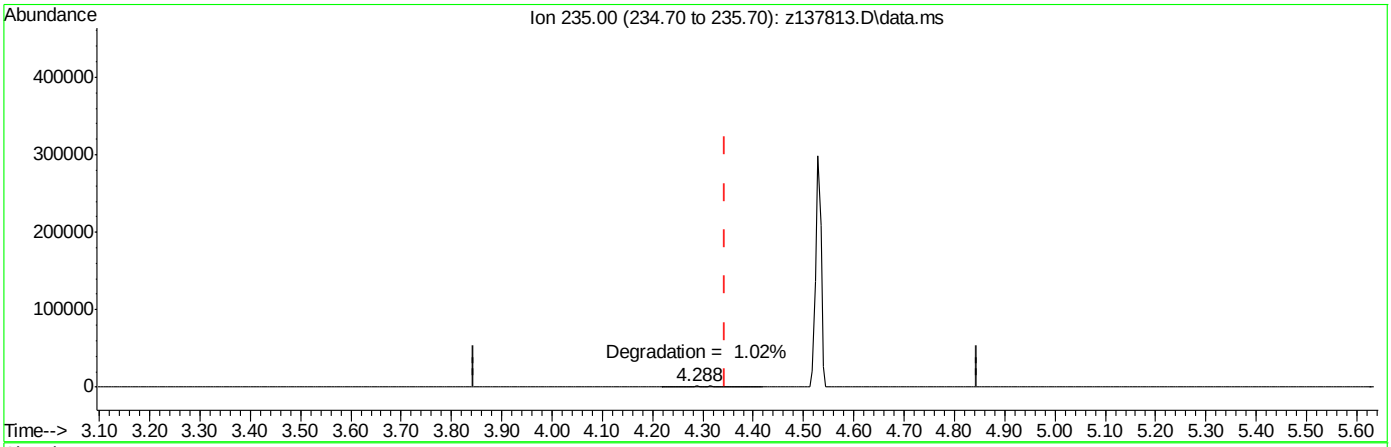
response 4262793

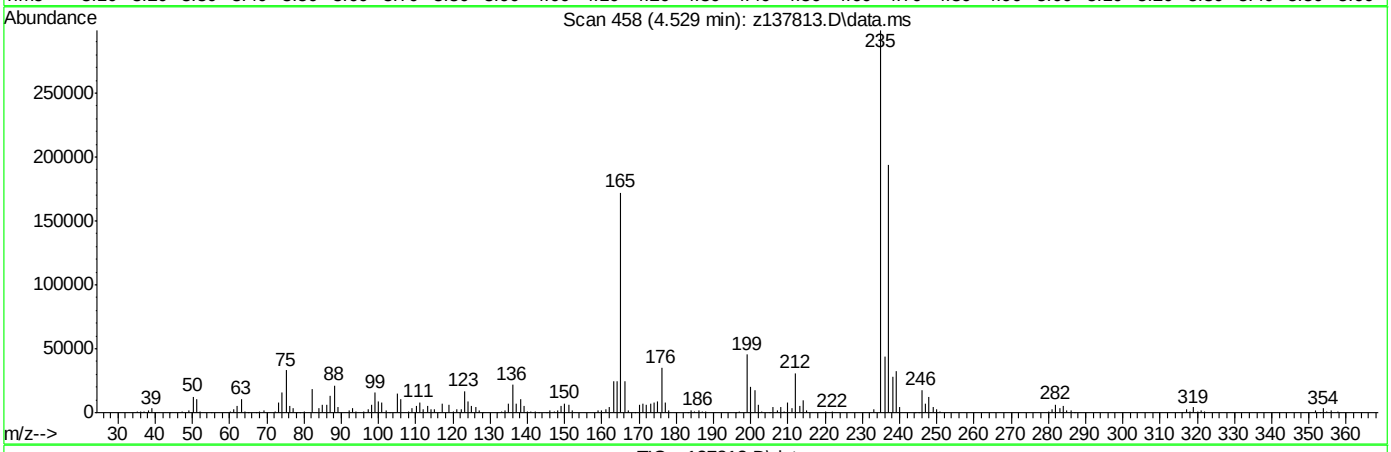
Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137813.D
Acq On : 24 May 2019 7:29 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 24 09:40:15 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z137813.D\data.ms

(3) PP-DDT

4.529min (+0.184) 26.43 m

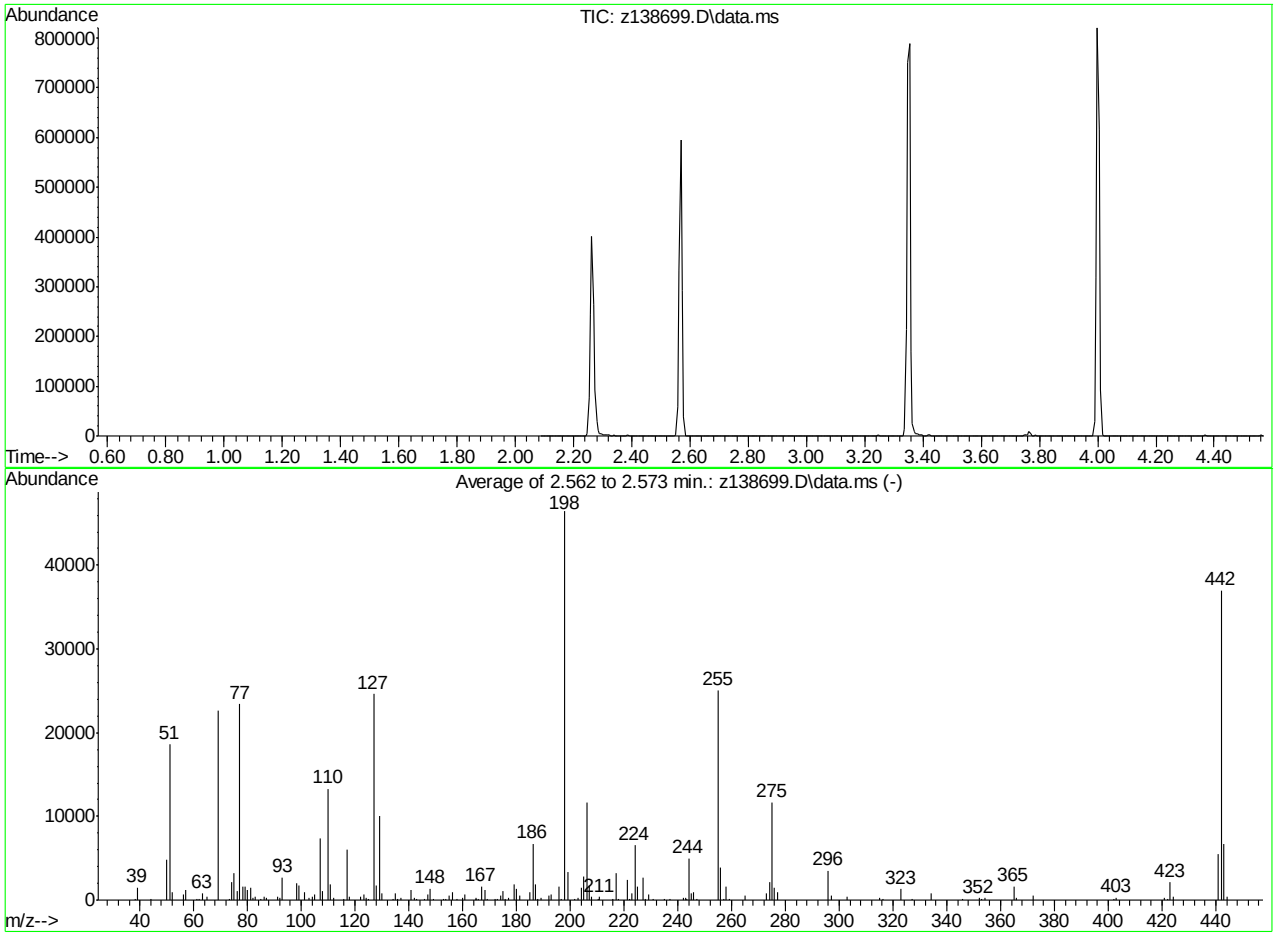
response 2225055

Ion	Exp%	Act%
235.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\ez6826\z138699.D Vial: 1
Acq On : 14 Jun 2019 1:24 pm Operator: angelar
Sample : dftpp Inst : GCMSZ
Misc : op20426,ez6826,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M (ChemStation Integrator)
Title : column rtx-5msi 30mx0.25mmx0.25um



AutoFind: Scans 90, 91, 92; Background Corrected with Scan 86

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.2	18645	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	48.8	22642	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	53.0	24591	PASS
197	198	0.00	1	0.3	160	PASS
198	198	100	100	100.0	46432	PASS
199	198	5	9	7.2	3355	PASS
275	198	10	30	25.2	11711	PASS
365	198	1	100	3.5	1646	PASS
441	443	0.01	100	82.5	5562	PASS
442	198	40	100	79.8	37036	PASS
443	442	17	23	18.2	6745	PASS

z138699.D DFTPPZ.M Fri Jun 14 16:57:22 2019

Average of 2.562 to 2.573 min.: z138699.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.10	147	65.10	408	82.00	324	103.05	242
39.10	1501	69.05	22642	83.05	415	104.10	418
44.10	113	73.10	105	85.10	118	105.00	688
50.10	4827	74.10	2188	86.05	341	107.05	7402
51.10	18645	75.10	3233	87.05	258	108.05	1072
52.10	975	76.15	1069	91.05	463	110.00	13266
56.10	629	77.10	23397	92.10	295	111.00	1914
57.10	1275	78.10	1660	93.05	2740	112.00	250
61.10	117	79.05	1570	98.10	2029	116.00	122
62.20	149	80.00	1194	99.05	1726	117.05	5982
63.10	858	81.10	1447	101.05	908	118.00	453

Average of 2.562 to 2.573 min.: z138699.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
122.00	372	137.05	324	156.10	999	173.00	123
123.10	697	141.00	1150	158.00	103	174.05	541
124.05	258	142.10	244	160.00	269	175.05	1050
125.00	146	143.00	144	161.00	654	176.00	121
127.05	24591	145.90	105	164.80	102	177.00	334
128.05	1805	147.00	631	165.00	322	179.00	1879
129.00	10079	148.00	1342	166.00	195	180.05	1314
130.10	808	149.00	106	167.00	1673	181.10	582
134.00	118	153.00	199	168.10	1209	185.00	889
135.00	763	153.90	134	169.00	131	186.10	6728
136.00	134	155.05	583	172.00	122	187.05	1839

Average of 2.562 to 2.573 min.: z138699.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
188.00	101	205.10	2873	223.05	761	243.20	103
189.10	307	206.10	11675	224.05	6566	244.05	4965
192.05	574	207.05	1756	225.10	1599	245.05	753
193.05	694	208.05	445	227.00	2670	246.00	941
196.00	1570	210.20	111	228.00	200	247.00	114
196.70	160	210.95	401	228.95	658	255.00	25067
198.00	46432	216.00	133	231.00	103	256.00	3868
199.00	3355	217.00	3201	235.00	113	257.00	157
201.50	176	218.00	190	237.00	127	258.00	1581
203.00	237	221.05	2477	242.05	283	259.00	141
204.00	1486	221.90	150	243.00	233	264.90	567

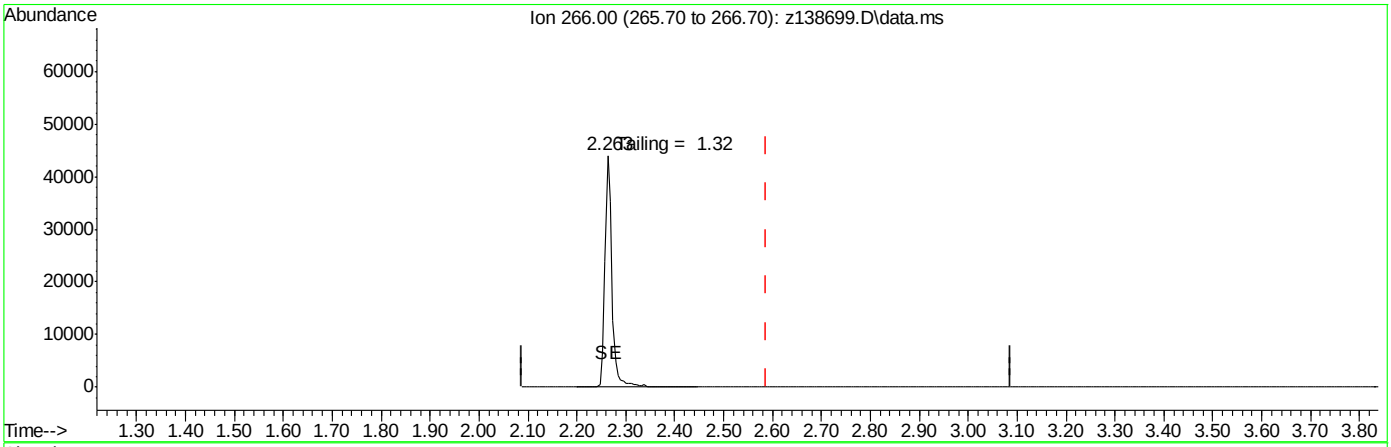
Average of 2.562 to 2.573 min.: z138699.D\data.ms
dftpp
Modified:subtracted

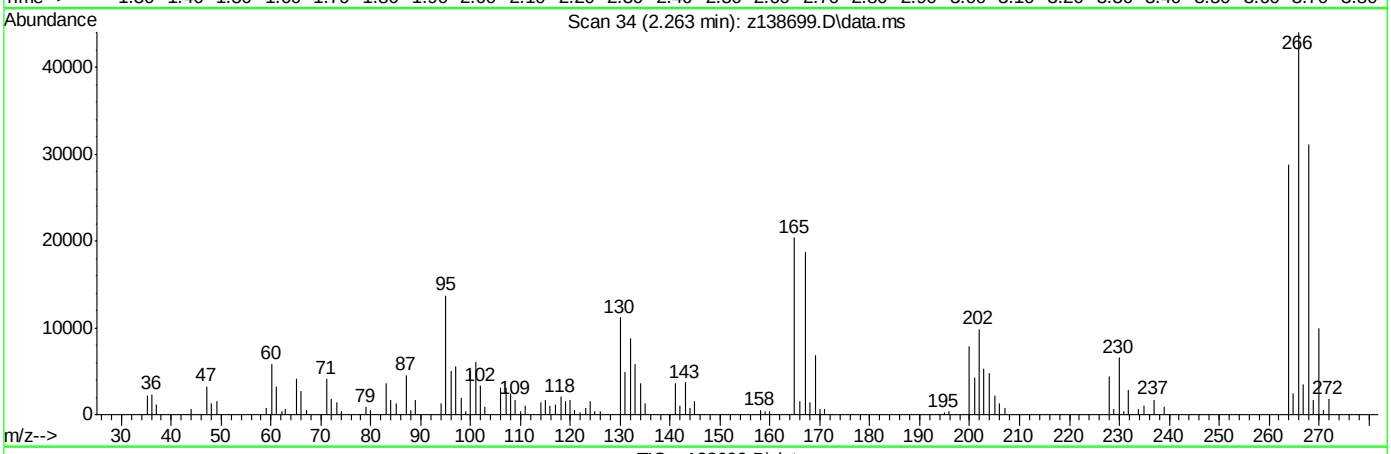
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
273.00	825	327.00	173	420.95	336		
274.05	2093	334.05	765	422.00	149		
275.00	11711	346.00	170	423.00	2179		
276.00	1523	352.00	252	424.00	429		
277.00	897	353.00	137	441.00	5562		
296.00	3549	354.05	328	442.00	37036		
296.95	541	364.95	1646	443.00	6745		
303.05	455	366.00	266	443.95	433		
314.95	271	372.10	533				
316.10	115	402.10	164				
323.05	1293	403.05	322				

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138699.D
Acq On : 14 Jun 2019 1:24 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 14 13:30:02 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138699.D\data.ms

(1) Pentachlorophenol

2.263min (-0.325) 14.27 m

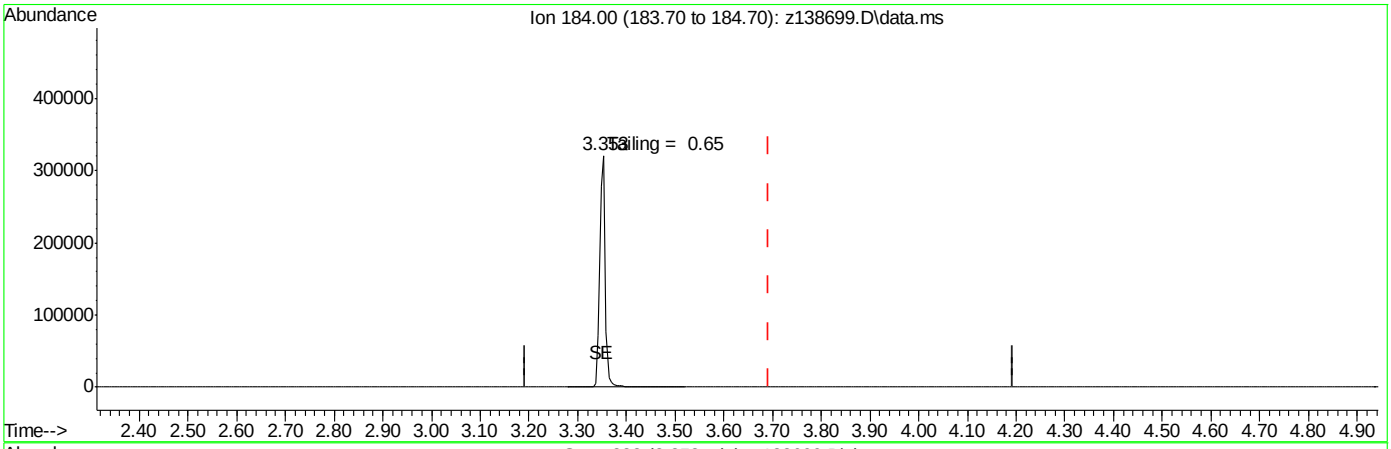
response 437271

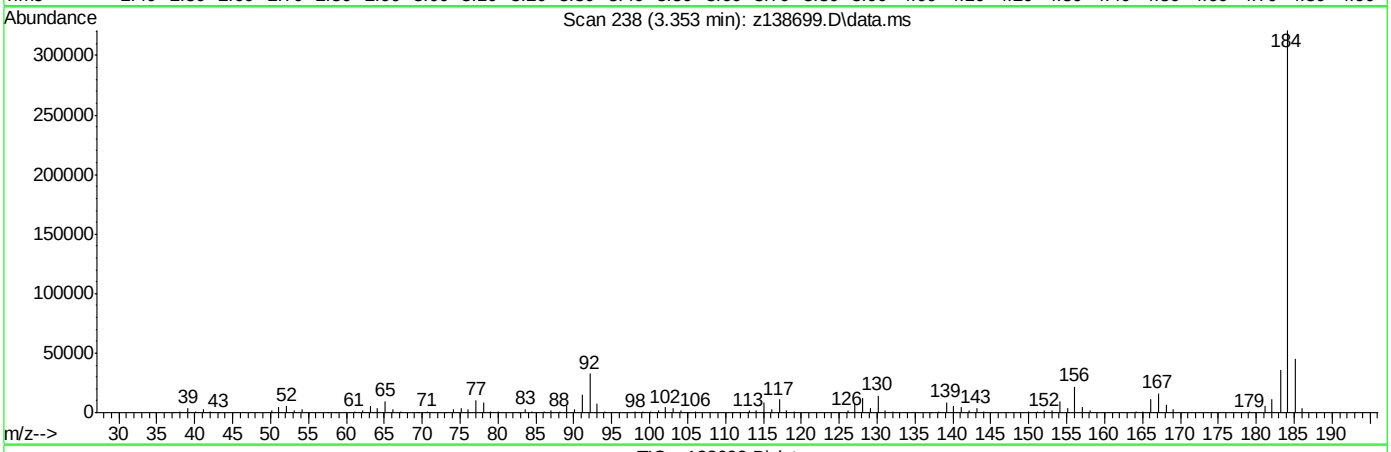
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138699.D
Acq On : 14 Jun 2019 1:24 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 14 13:30:02 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138699.D\data.ms

(2) Benzidine

3.353min (-0.340) 14.08 m

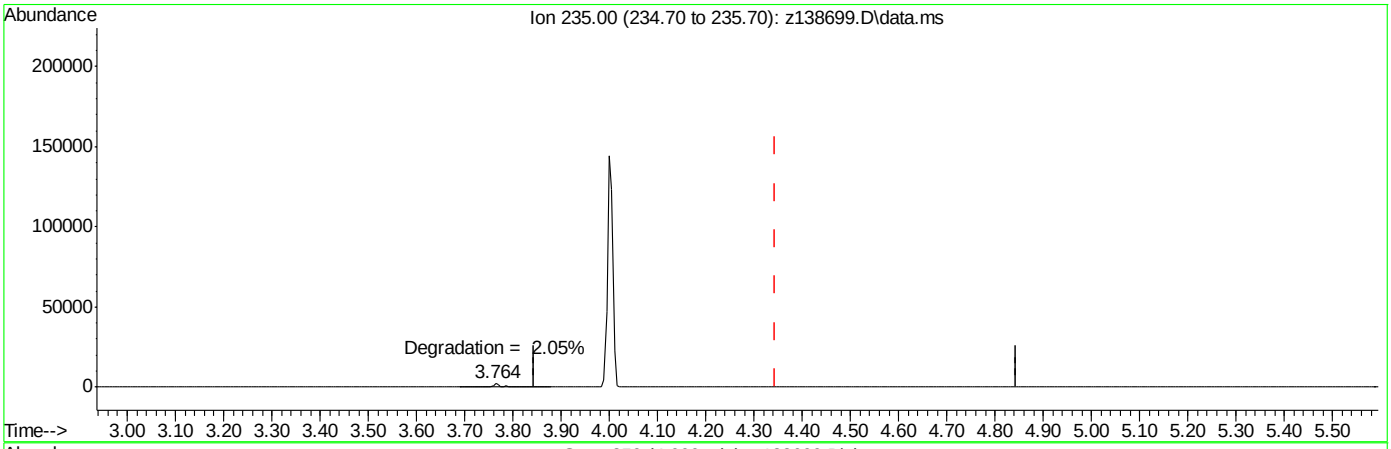
response 2542285

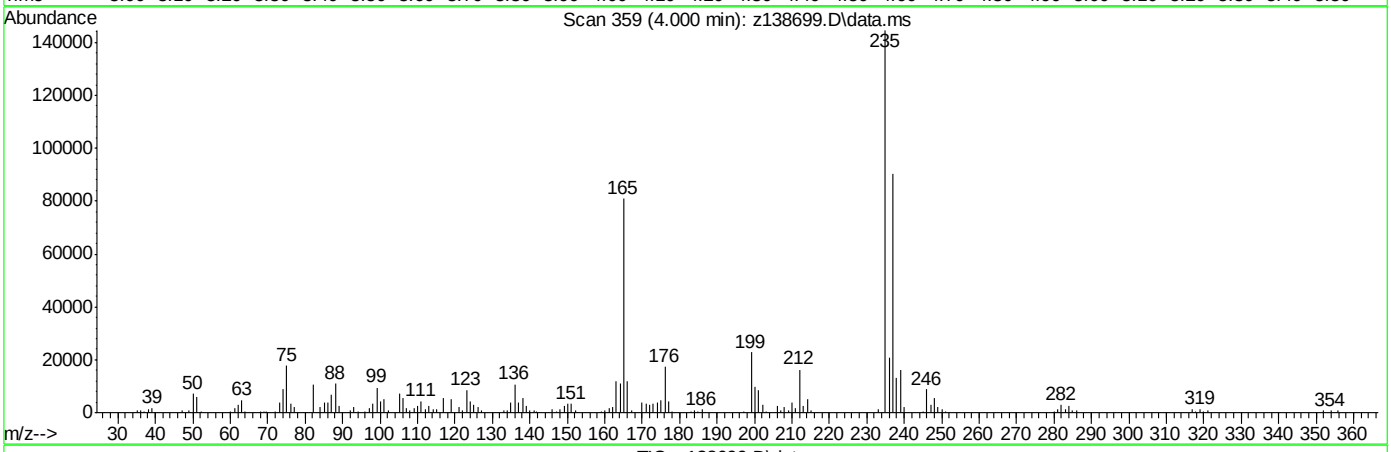
Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138699.D
Acq On : 14 Jun 2019 1:24 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 14 13:30:02 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138699.D\data.ms

(3) PP-DDT

4.000min (-0.345) 13.10 m

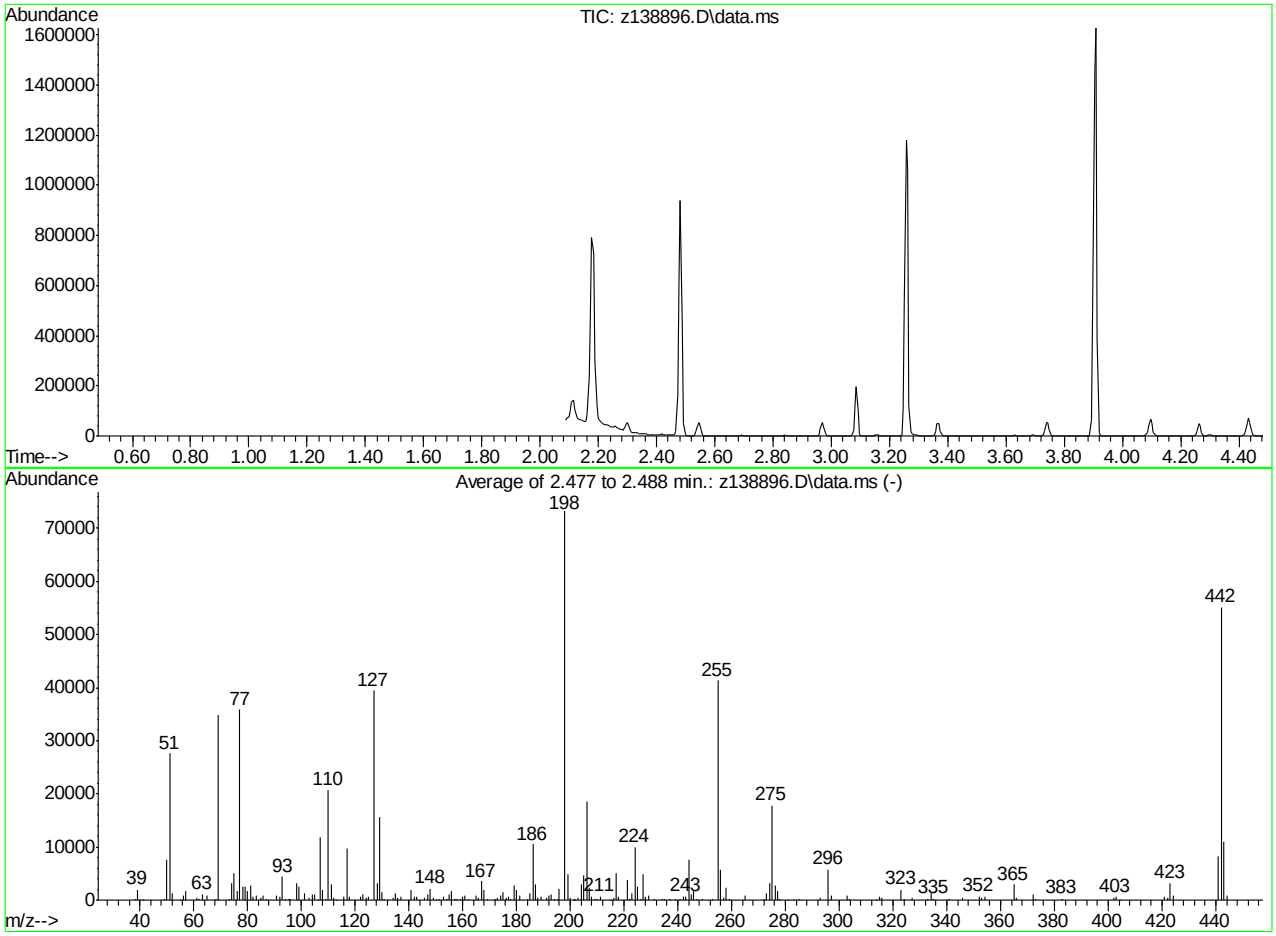
response 1102657

Ion	Exp%	Act%
235.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\DATA\ez6838\z138896.D Vial: 1
Acq On : 20 Jun 2019 12:23 am Operator: chriss2
Sample : dftpp Inst : GCMSZ
Misc : op20426,ez6838,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M (ChemStation Integrator)
Title : column rtx-5msi 30mx0.25mmx0.25um



AutoFind: Scans 74, 75, 76; Background Corrected with Scan 70

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.7	27614	PASS
68	69	0.00	2	0.4	122	PASS
69	198	0.00	100	47.5	34781	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	53.8	39381	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	73171	PASS
199	198	5	9	6.8	4944	PASS
275	198	10	30	24.3	17751	PASS
365	198	1	100	4.0	2942	PASS
441	443	0.01	100	75.6	8229	PASS
442	198	40	100	75.4	55197	PASS
443	442	17	23	19.7	10889	PASS

z138896.D DFTPPZ.M Thu Jun 20 10:12:45 2019

Average of 2.477 to 2.488 min.: z138896.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.10	289	61.10	369	78.10	2558	93.05	4383
39.10	1923	62.05	293	79.10	2493	94.05	254
40.10	100	63.10	1156	80.10	1776	95.20	129
41.10	89	65.10	766	81.10	2802	96.00	259
49.10	142	68.10	122	82.05	682	98.10	3169
50.10	7548	69.05	34781	83.10	808	99.05	2605
51.10	27614	73.10	274	85.10	393	101.10	1204
52.10	1298	74.10	3142	86.00	821	103.05	442
55.10	25	75.10	5059	87.05	271	104.05	964
56.10	872	76.10	1643	91.00	794	105.10	1017
57.10	1729	77.10	35807	92.00	721	106.10	106

Average of 2.477 to 2.488 min.: z138896.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
107.05	11737	123.05	1083	136.00	429	153.00	613
108.05	1853	124.00	393	137.05	610	154.05	317
109.00	130	125.05	625	141.00	1921	155.05	1126
110.00	20763	127.05	39381	142.05	618	156.00	1692
111.05	3021	128.10	3126	143.00	570	157.00	129
112.00	333	129.00	15636	146.00	342	157.20	168
113.00	105	130.05	1428	147.00	1032	158.00	287
116.00	654	131.00	248	148.00	2163	159.00	250
117.05	9621	132.10	102	149.00	468	160.00	553
118.00	702	134.05	405	150.10	107	161.00	911
122.10	714	135.05	1349	151.10	253	162.05	212

Average of 2.477 to 2.488 min.: z138896.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
165.00	832	177.00	578	189.00	708	201.60	283
166.00	425	177.20	175	191.10	424	201.80	108
167.05	3576	178.10	139	192.00	920	203.00	518
168.05	1920	179.00	2819	193.00	1163	204.05	2919
169.00	222	180.05	1900	193.95	255	205.10	4548
171.95	312	181.05	864	195.20	189	206.10	18549
173.05	515	184.10	120	196.00	2182	207.05	2389
174.05	780	185.05	1334	198.00	73171	208.10	731
175.10	1471	186.10	10468	199.00	4944	209.10	228
175.90	103	187.10	2918	200.00	415	210.00	179
176.10	365	188.10	362	201.30	112	211.05	710

Average of 2.477 to 2.488 min.: z138896.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
215.00	107	228.05	743	245.05	1155	272.20	116
216.05	412	229.00	872	246.00	1668	273.00	1303
217.00	5065	231.05	248	246.95	280	274.00	3231
218.00	683	234.05	235	249.00	160	275.00	17751
221.05	3794	235.00	162	253.05	235	276.05	2667
222.00	243	236.90	139	255.00	41339	277.00	1712
223.00	1209	239.00	225	256.00	5663	277.90	183
224.00	9980	241.00	167	257.05	479	281.00	101
225.00	2496	242.05	614	258.00	2317	283.10	108
226.10	152	243.10	649	259.00	226	285.10	130
227.00	4764	244.10	7543	265.00	943	292.95	371

Average of 2.477 to 2.488 min.: z138896.D\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
296.00	5704	334.05	1233	382.95	241	444.00	900
297.00	831	335.05	318	402.05	508		
303.10	780	341.05	258	402.95	634		
303.90	134	345.95	506	404.00	110		

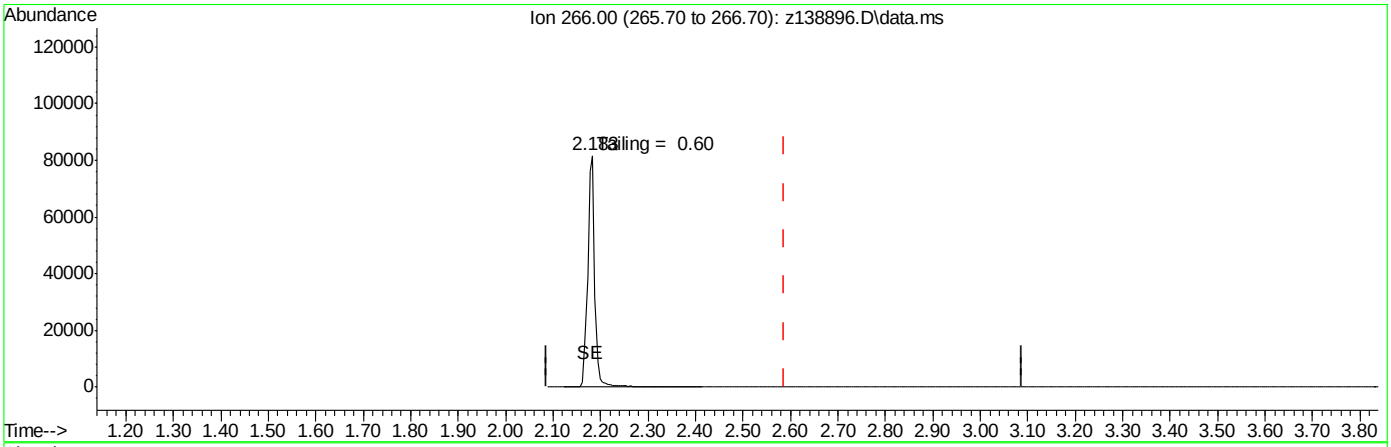
DFTPPZ.M Thu Jun 20 10:11:49 2019 Page: 0

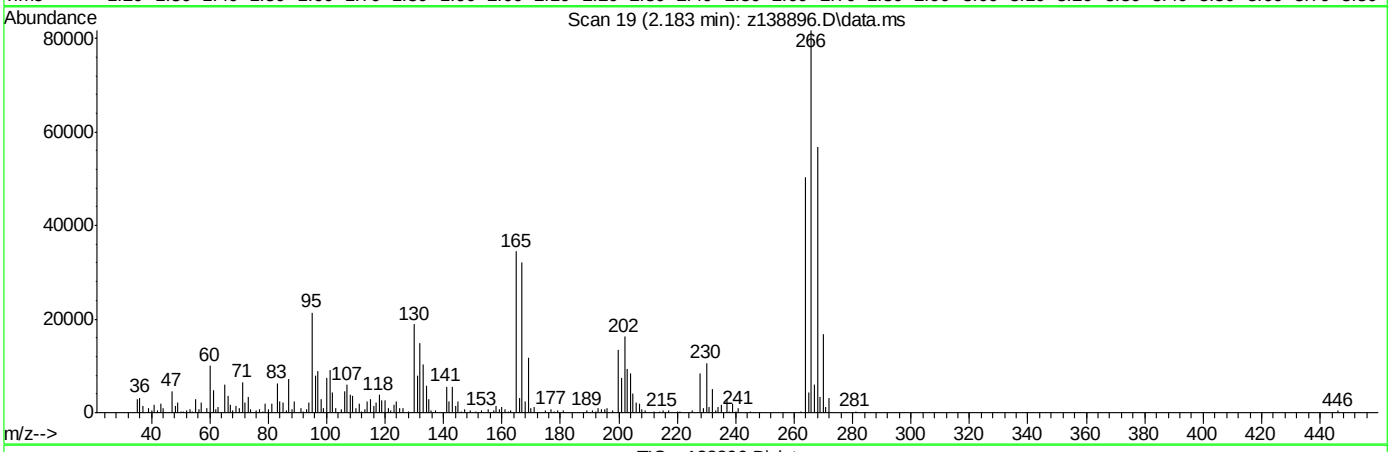
313.90	115	351.95	676	421.05	670
314.95	636	353.05	510	422.10	465
315.95	452	354.00	612	423.00	3251
323.05	1974	365.00	2942	424.00	758
324.00	191	366.00	491	441.00	8229
326.95	411	372.00	1037	442.00	55197
333.10	119	373.00	286	443.00	10889

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138896.D
Acq On : 20 Jun 2019 12:23 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 20 00:29:04 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138896.D\data.ms

(1) Pentachlorophenol

2.183min (-0.405) 27.75 m

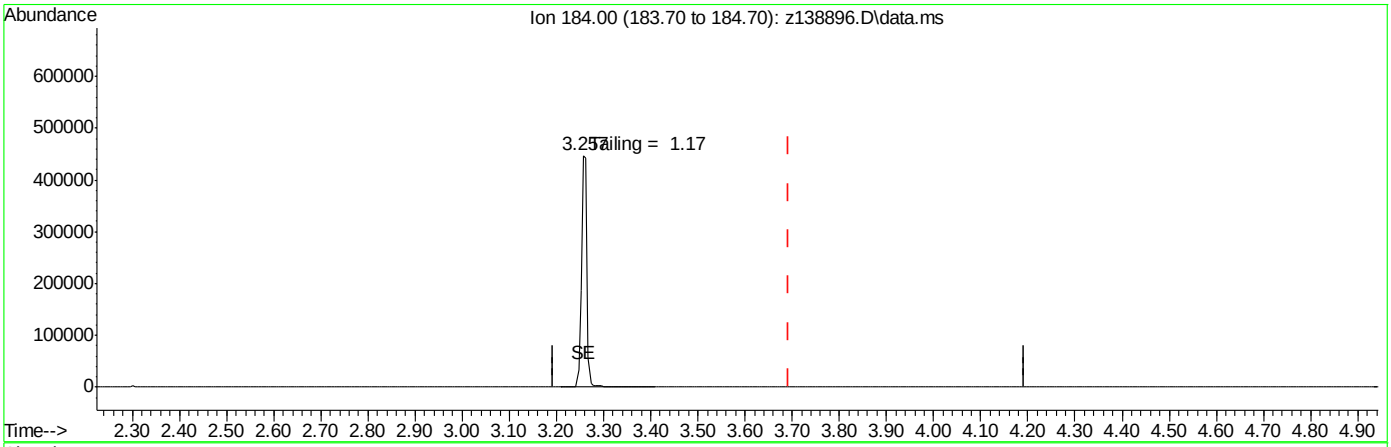
response 850477

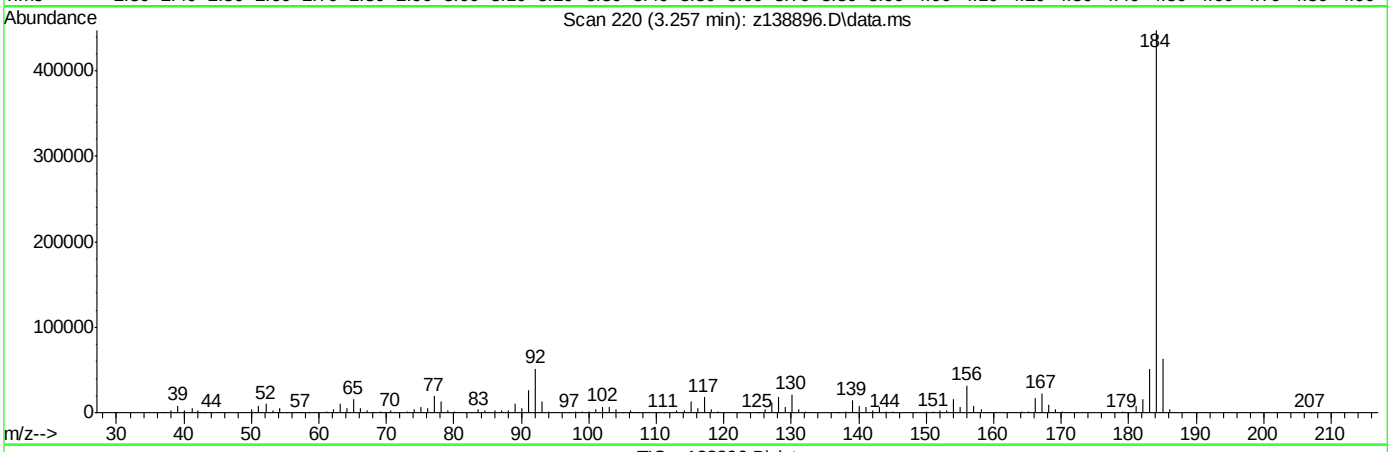
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138896.D
Acq On : 20 Jun 2019 12:23 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 20 00:29:04 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138896.D\data.ms

(2) Benzidine

3.257min (-0.436) 21.25 m

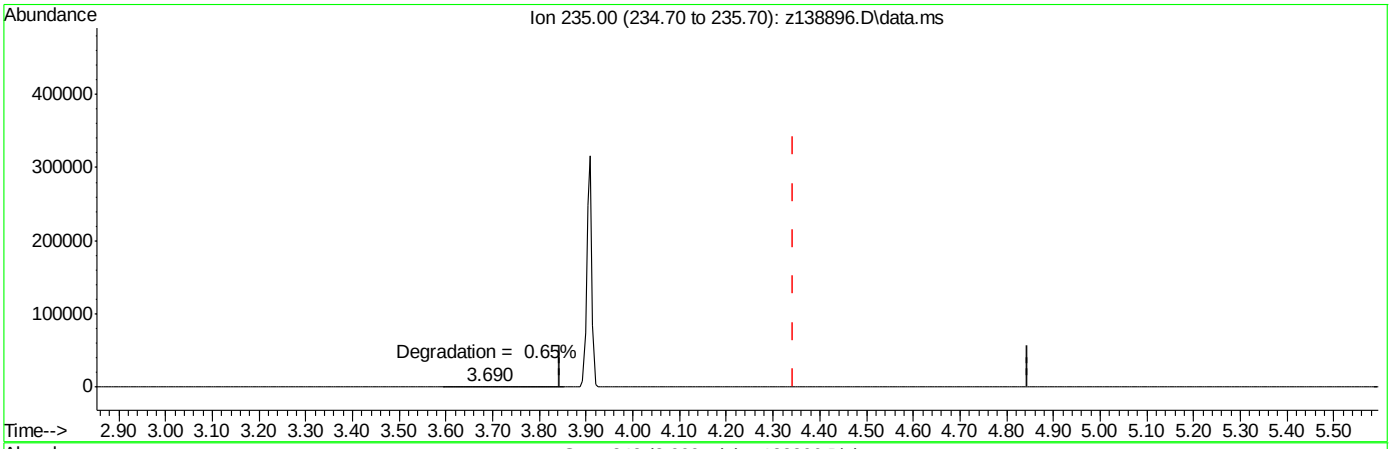
response 3835822

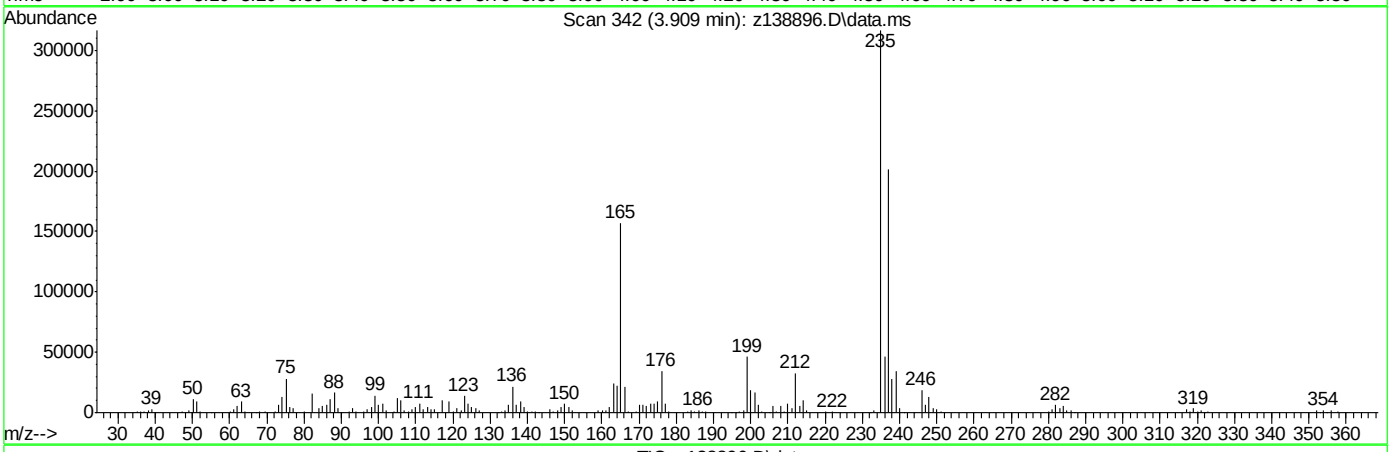
Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138896.D
Acq On : 20 Jun 2019 12:23 am
Operator : chriss2
Sample : dftpp
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 20 00:29:04 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138896.D\data.ms

(3) PP-DDT

3.909min (-0.436) 28.07 m

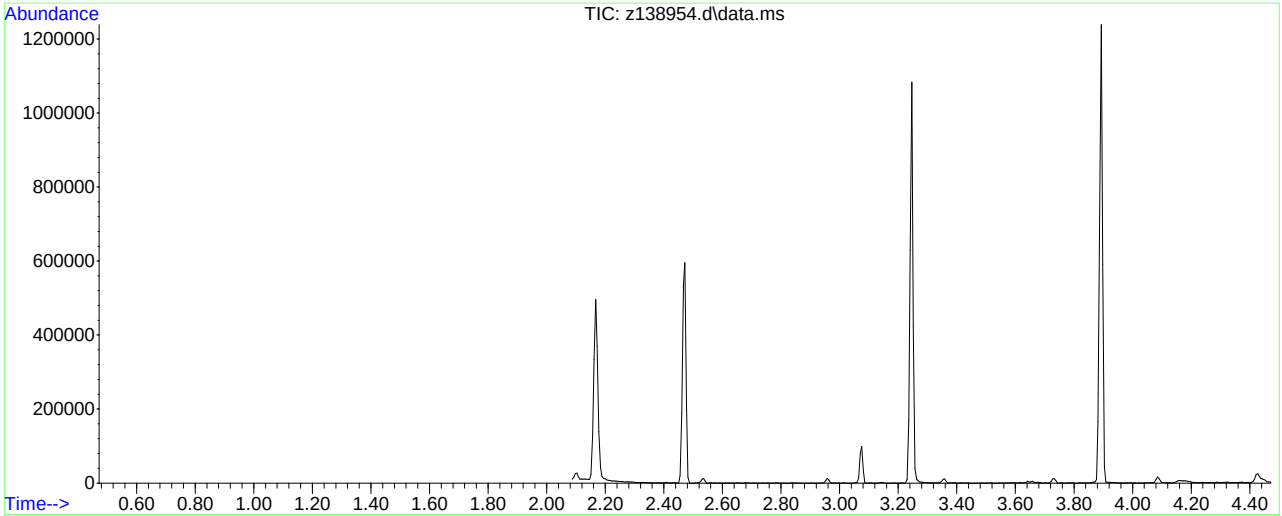
response 2362950

Ion	Exp%	Act%
235.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

DFTPP

Data File : C:\msdchem\1\data\michellc\ez6841\z138954.d Vial: 1
Acq On : 21 Jun 2019 12:50 pm Operator: angelar
Sample : dftpp Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1 Multiplr: 1.00
MS Integration Params: events.e

Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M (ChemStation Integrator)
Title : column rtx-5msi 30mx0.25mmx0.25um



AutoFind: Scans 72, 73, 74; Background Corrected with Scan 67

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.6	19922	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	47.8	23447	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	54.1	26499	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	49013	PASS
199	198	5	9	6.9	3399	PASS
275	198	10	30	25.5	12474	PASS
365	198	1	100	4.3	2115	PASS
441	443	0.01	100	80.0	6097	PASS
442	198	40	100	80.0	39192	PASS
443	442	17	23	19.4	7619	PASS

z138954.d DFTPPZ.M Mon Jun 24 02:55:25 2019

Average of 2.466 to 2.477 min.: z138954.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
38.05	325	63.10	799	81.05	1763	99.05	1628
39.10	1653	65.10	386	82.05	408	101.05	1081
49.10	260	69.10	23447	83.10	393	103.00	118
50.10	5547	73.15	221	84.00	106	104.00	470
51.10	19922	74.10	2227	85.05	268	105.00	723
52.10	985	75.10	3699	86.05	479	106.10	137
55.10	248	76.15	948	91.00	410	107.05	8181
56.10	509	77.10	24702	92.10	336	108.00	1212
57.10	1740	78.10	1784	93.05	3021	110.00	13404
61.00	115	79.05	1657	94.00	104	111.00	2051
62.10	206	80.10	1241	98.05	2210	111.90	113

Average of 2.466 to 2.477 min.: z138954.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
116.00	318	131.00	115	149.00	268	166.00	292
117.05	6848	134.00	114	153.00	450	167.05	2777
118.00	336	135.05	894	154.00	244	168.00	1430
122.00	462	136.00	332	155.10	842	169.10	140
123.10	800	137.00	436	156.05	1150	172.10	128
124.00	354	141.00	1305	157.00	101	172.95	277
125.05	333	142.05	330	158.00	201	174.00	535
127.05	26499	143.00	129	160.00	419	175.05	1032
128.00	2060	146.00	204	161.00	686	176.10	148
129.00	10308	147.05	564	162.00	106	176.90	348
130.00	941	148.00	1554	164.95	463	179.00	1889

Average of 2.466 to 2.477 min.: z138954.d\data.ms
dftpp
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
180.05	1421	200.00	269	217.00	3393	235.00	137
181.00	647	201.60	218	217.90	349	242.05	385
185.00	872	203.00	310	221.00	2685	243.10	400
186.10	6748	204.05	1825	223.05	898	244.10	5526
187.00	2009	205.05	3286	224.10	7420	245.10	810
189.05	388	206.10	13088	225.05	1712	246.00	1226
192.00	672	207.05	1699	226.00	122	255.00	28674
193.05	782	207.95	395	227.00	3193	256.00	4191
195.95	1628	210.50	156	228.05	386	256.90	103
198.00	49013	211.05	569	229.00	557	257.20	145
199.00	3399	216.10	122	231.00	114	258.00	1828

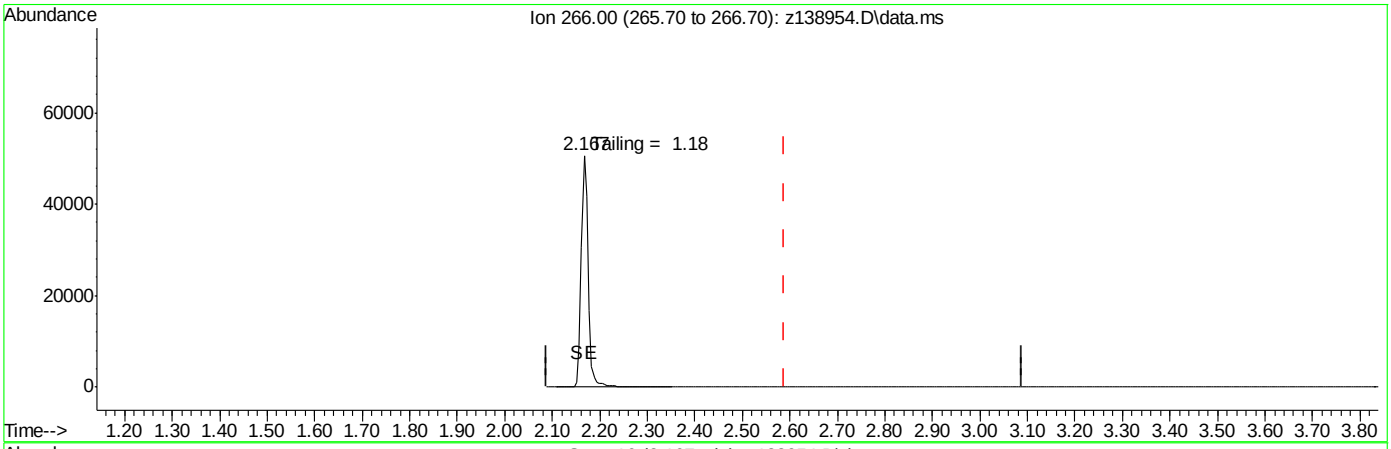
Average of 2.466 to 2.477 min.: z138954.d\data.ms
dftpp
Modified:subtracted

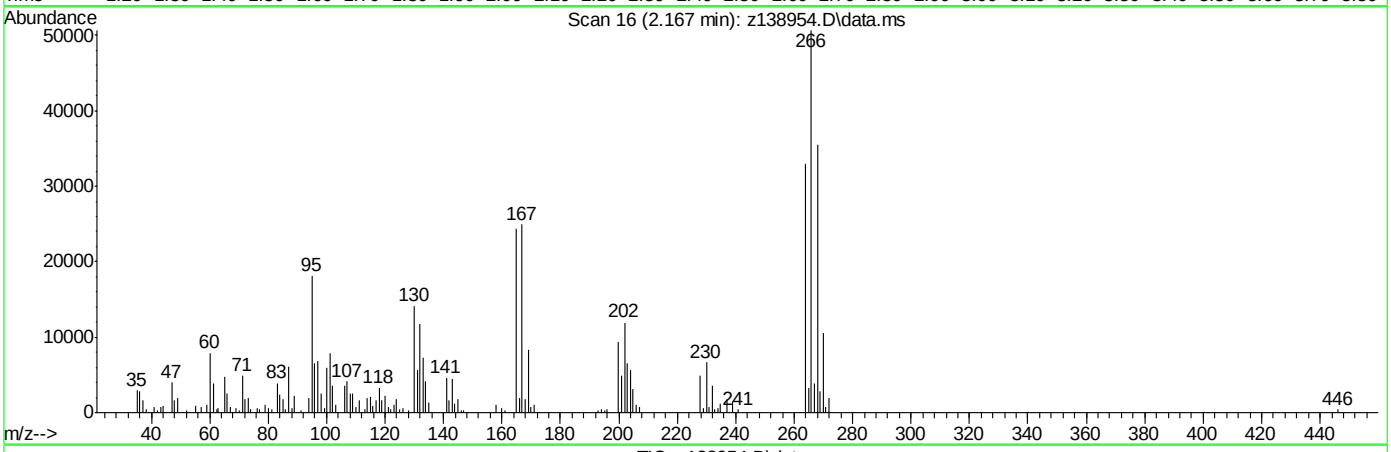
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
259.00	179	296.00	4366	345.90	284	423.00	2272
265.00	716	296.95	580	352.00	304	424.00	564
273.00	981	302.95	496	353.00	115	441.00	6097
274.00	2314	315.00	571	354.05	354	442.00	39192
275.00	12474	316.10	120	365.00	2115	443.00	7619
276.00	1766	323.00	1414	365.90	286	444.05	687
277.00	1234	324.00	103	372.00	992		
278.00	140	326.95	253	402.00	368		
283.10	107	333.00	110	403.00	313		
285.00	117	334.00	994	421.00	331		
292.90	116	335.10	244	422.00	456		

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6841\
Data File : z138954.D
Acq On : 21 Jun 2019 12:50 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 12:55:46 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138954.D\data.ms

(1) Pentachlorophenol

2.167min (-0.421) 16.80 m

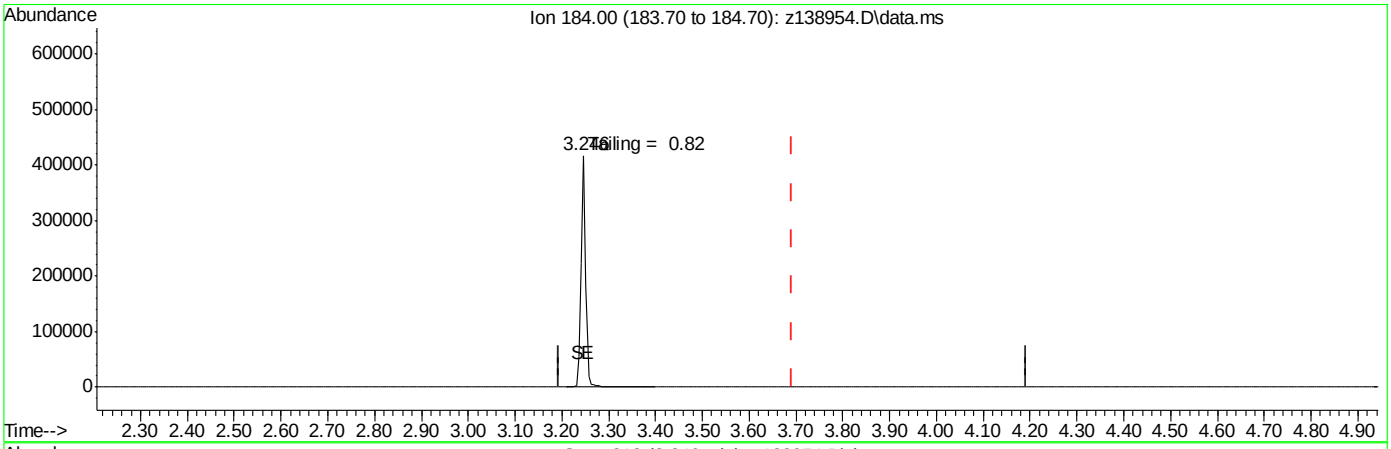
response 514782

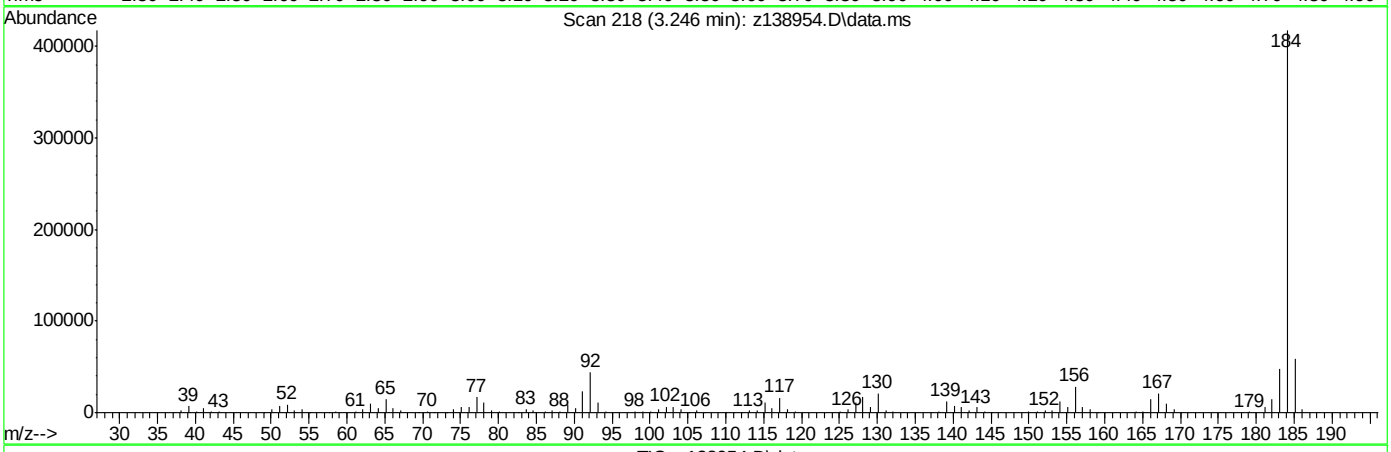
Ion	Exp%	Act%
266.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6841\
Data File : z138954.D
Acq On : 21 Jun 2019 12:50 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 12:55:46 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138954.D\data.ms

(2) Benzidine

3.246min (-0.447) 16.41 m

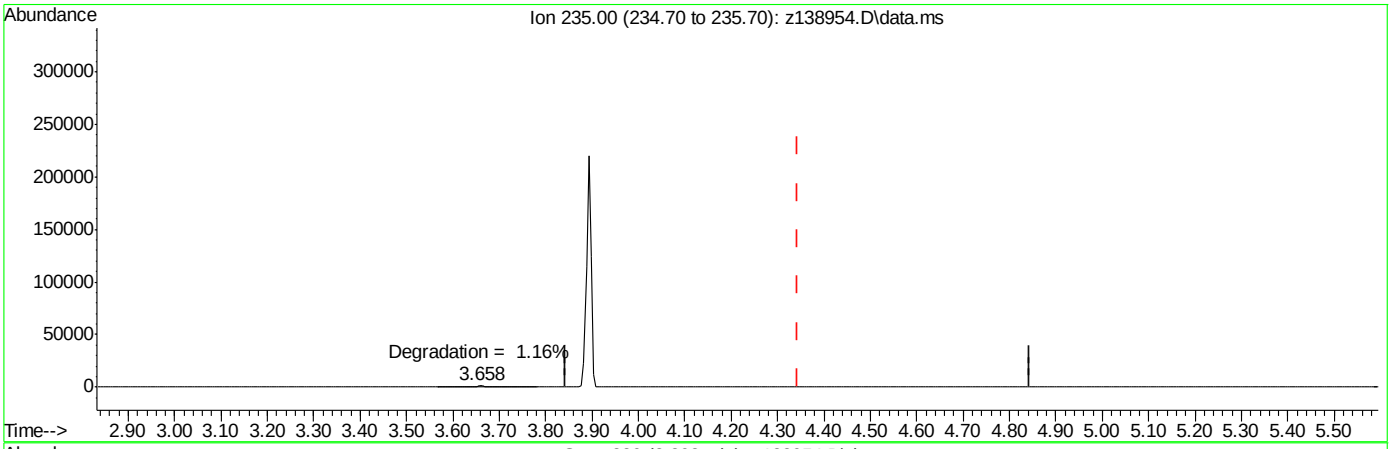
response 2961735

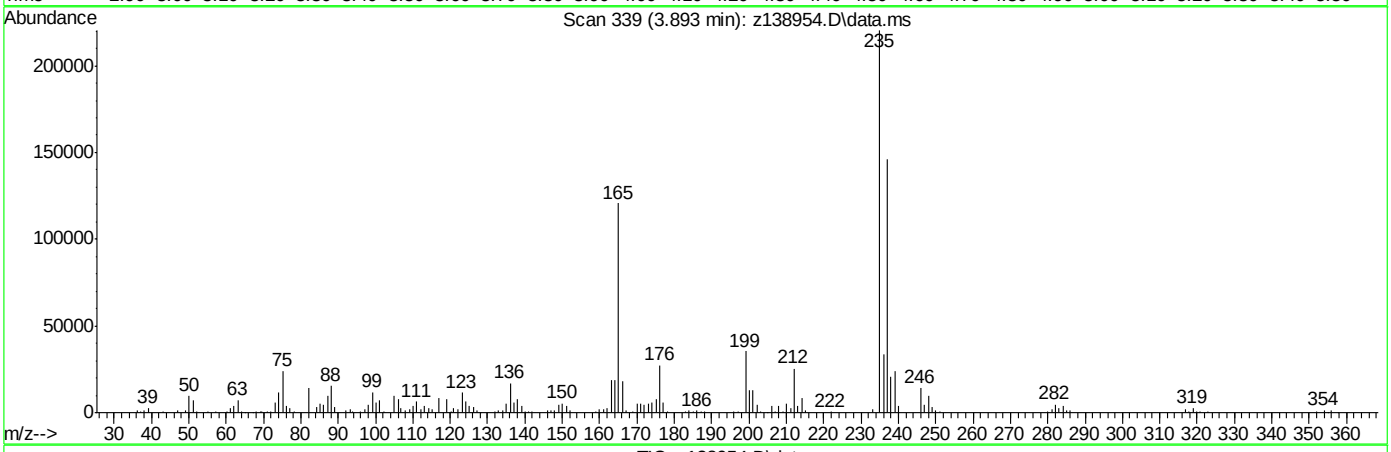
Ion	Exp%	Act%
184.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6841\
Data File : z138954.D
Acq On : 21 Jun 2019 12:50 pm
Operator : angelar
Sample : dftpp
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 12:55:46 2019
Quant Method : C:\MSDCHEM\1\METHODS\DFTPPZ.M
Quant Title : column rtx-5msi 30mx0.25mmx0.25um
QLast Update : Sat Apr 06 19:32:42 2019
Response via : Initial Calibration





TIC: z138954.D\data.ms

(3) PP-DDT

3.893min (-0.452) 18.87 m

response 1588594

Ion	Exp%	Act%
235.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77285.D
Acq On : 21 Jun 2019 3:58 am
Operator : chriss2
Sample : ic3623-5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 11:21:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:20:44 2019
Response via : Initial Calibration

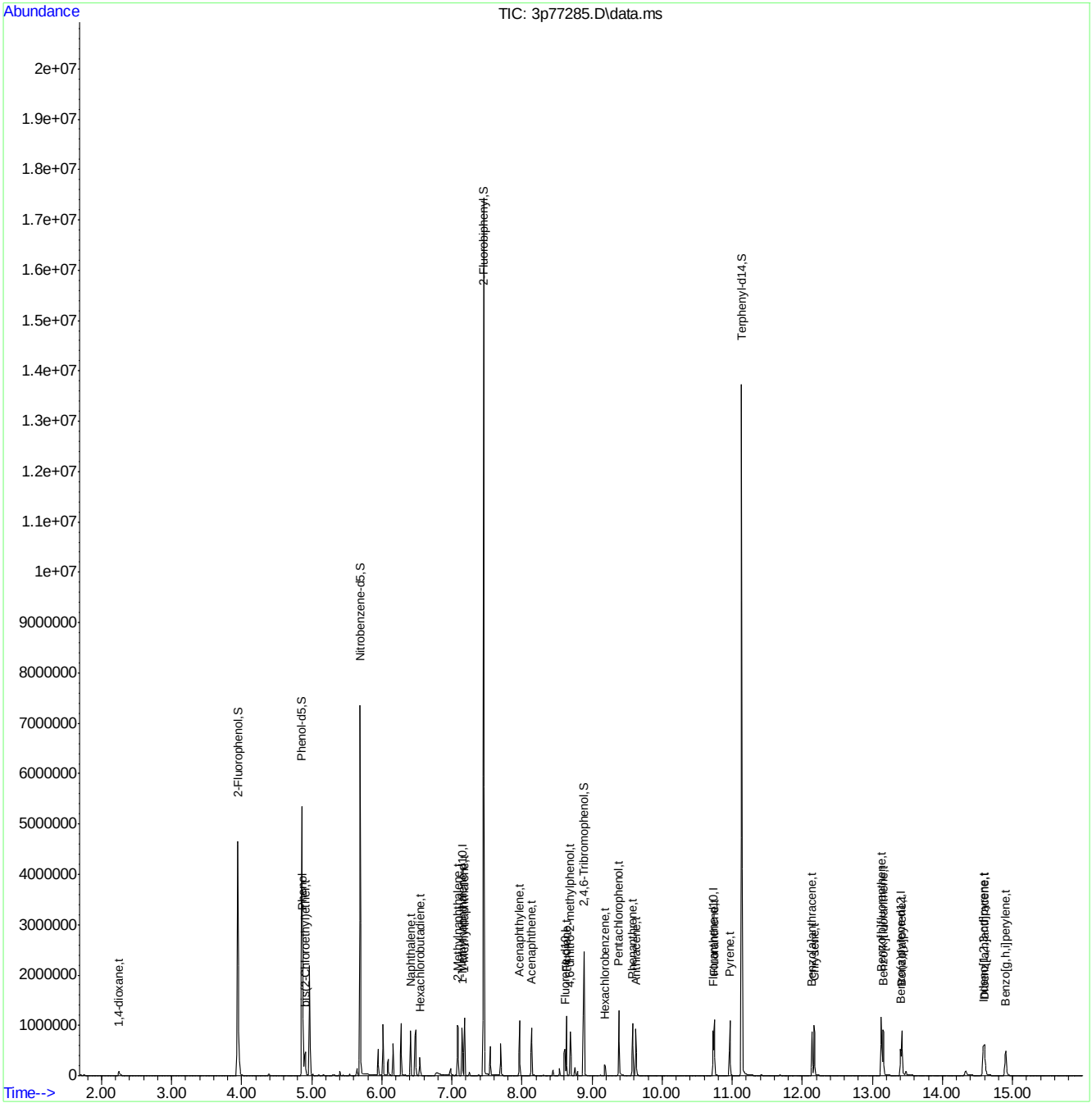
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	230655	4.00	ppm	0.00
12) Fluorene-d10	8.613	176	327465	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	558102	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.403	264	348979	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.945	112	3122016	96.99	ppm	0.00
Spiked Amount 50.000			Recovery =	193.98%		
4) Phenol-d5	4.858	99	3996133	100.34	ppm	0.00
Spiked Amount 50.000			Recovery =	200.68%		
7) Nitrobenzene-d5	5.691	82	3866027	100.94	ppm	0.00
Spiked Amount 50.000			Recovery =	201.88%		
13) 2-Fluorobiphenyl	7.457	172	7206624	80.87	ppm	0.00
Spiked Amount 50.000			Recovery =	161.74%		
18) 2,4,6-Tribromophenol	8.886	330	937605	129.54	ppm	0.00
Spiked Amount 50.000			Recovery =	259.08%		
26) Terphenyl-d14	11.135	244	7563191	96.27	ppm	0.00
Spiked Amount 50.000			Recovery =	192.54%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.247	88	82249	4.86	ppm	98
5) Phenol	4.872	94	1074725	24.13	ppm	98
6) bis(2-Chloroethyl)ether	4.908	93	174040	4.70	ppm	95
8) Naphthalene	6.410	128	579042	4.84	ppm	99
9) Hexachlorobutadiene	6.545	225	106132	4.55	ppm	99
10) 2-Methylnaphthalene	7.082	141	311757	4.82	ppm	97
11) 1-Methylnaphthalene	7.178	141	347803	4.72	ppm	98
14) Acenaphthylene	7.963	152	558299	5.78	ppm	100
15) Acenaphthene	8.135	153	398152	5.12	ppm	100
16) 4,6-dinitro-2-methylph...	8.686	198	415632	56.75	ppm	99
17) Fluorene	8.634	166	443194	5.09	ppm	89
20) Hexachlorobenzene	9.180	284	110651	4.37	ppm	84
21) Pentachlorophenol	9.380	266	367618	31.10	ppm	85
22) Phenanthrene	9.579	178	618374	4.85	ppm	99
23) Anthracene	9.626	178	588869	5.77	ppm	99
24) Fluoranthene	10.745	202	683682	4.60	ppm	99
25) Pyrene	10.967	202	714747	5.33	ppm	99
27) Benzo[a]anthracene	12.135	228	591814	7.34	ppm	97
28) Chrysene	12.170	228	677107	5.15	ppm	96
30) Benzo[b]fluoranthene	13.130	252	736013	6.04	ppm	99
31) Benzo[k]fluoranthene	13.151	252	616740	4.71	ppm	96
32) Benzo[a]pyrene	13.424	252	595607	4.45	ppm	99
33) Indeno[1,2,3-cd]pyrene	14.585	276	622522	6.33	ppm	98
34) Dibenz[a,h]anthracene	14.601	278	524021	6.44	ppm	98
35) Benzo[g,h,i]perylene	14.903	276	518949	5.61	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77285.D
Acq On : 21 Jun 2019 3:58 am
Operator : chriss2
Sample : ic3623-5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 11:21:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:20:44 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77286.D
Acq On : 21 Jun 2019 4:50 am
Operator : chriss2
Sample : ic3623-2.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 21 10:40:21 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

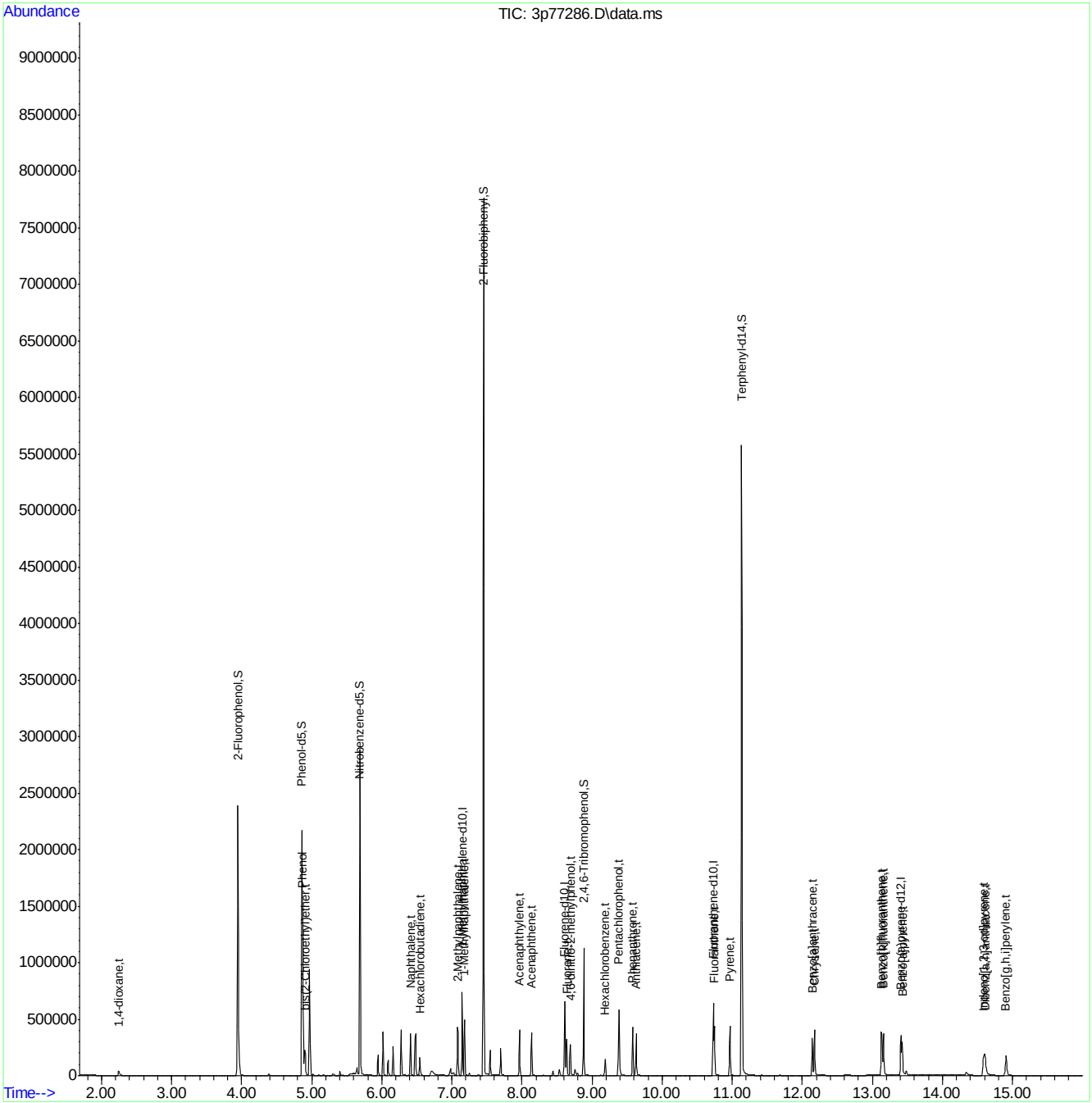
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	186163	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	265666	4.00	ppm	0.00
19) Fluoranthene-d10	10.732	212	420979	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	249731	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.946	112	1340986	49.32	ppm	0.00
Spiked Amount 50.000			Recovery = 98.64%			
4) Phenol-d5	4.858	99	1745242	50.29	ppm	0.00
Spiked Amount 50.000			Recovery = 100.58%			
7) Nitrobenzene-d5	5.684	82	1642989	50.18	ppm	0.00
Spiked Amount 50.000			Recovery = 100.36%			
13) 2-Fluorobiphenyl	7.452	172	3225628	48.31	ppm	0.00
Spiked Amount 50.000			Recovery = 96.62%			
18) 2,4,6-Tribromophenol	8.881	330	370098	53.32	ppm	0.00
Spiked Amount 50.000			Recovery = 106.64%			
26) Terphenyl-d14	11.135	244	3047261	48.31	ppm	0.00
Spiked Amount 50.000			Recovery = 96.62%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.248	88	36957	2.76	ppm	96
5) Phenol	4.872	94	466955	12.39	ppm	99
6) bis(2-Chloroethyl)ether	4.908	93	74521	2.60	ppm	95
8) Naphthalene	6.410	128	244858	2.51	ppm	99
9) Hexachlorobutadiene	6.546	225	44993	2.53	ppm	99
10) 2-Methylnaphthalene	7.082	141	128782	2.44	ppm	98
11) 1-Methylnaphthalene	7.179	141	143632	2.44	ppm	99
14) Acenaphthylene	7.963	152	209848	2.61	ppm	99
15) Acenaphthene	8.135	153	157590	2.55	ppm	100
16) 4,6-dinitro-2-methylph...	8.692	198	146225	16.77	ppm	92
17) Fluorene	8.640	166	171699	2.66	ppm	80
20) Hexachlorobenzene	9.186	284	47025	2.52	ppm	96
21) Pentachlorophenol	9.386	266	147971	14.23	ppm	97
22) Phenanthrene	9.579	178	248683	2.51	ppm	100
23) Anthracene	9.630	178	227149	2.66	ppm	99
24) Fluoranthene	10.749	202	272961	2.51	ppm	98
25) Pyrene	10.967	202	277325	2.61	ppm	99
27) Benzo[a]anthracene	12.142	228	200479	2.93	ppm	100
28) Chrysene	12.177	228	266548	2.42	ppm	99
30) Benzo[b]fluoranthene	13.137	252	259248	2.61	ppm	97
31) Benzo[k]fluoranthene	13.158	252	253679	2.69	ppm	98
32) Benzo[a]pyrene	13.431	252	219479	2.55	ppm	97
33) Indeno[1,2,3-cd]pyrene	14.590	276	222485	2.92	ppm	99
34) Dibenz[a,h]anthracene	14.611	278	188618	2.86	ppm	94
35) Benzo[g,h,i]perylene	14.908	276	189113	2.58	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77286.D
Acq On : 21 Jun 2019 4:50 am
Operator : chriss2
Sample : ic3623-2.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 21 10:40:21 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77287.D
Acq On : 21 Jun 2019 5:11 am
Operator : chriss2
Sample : icc3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 21 10:37:06 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

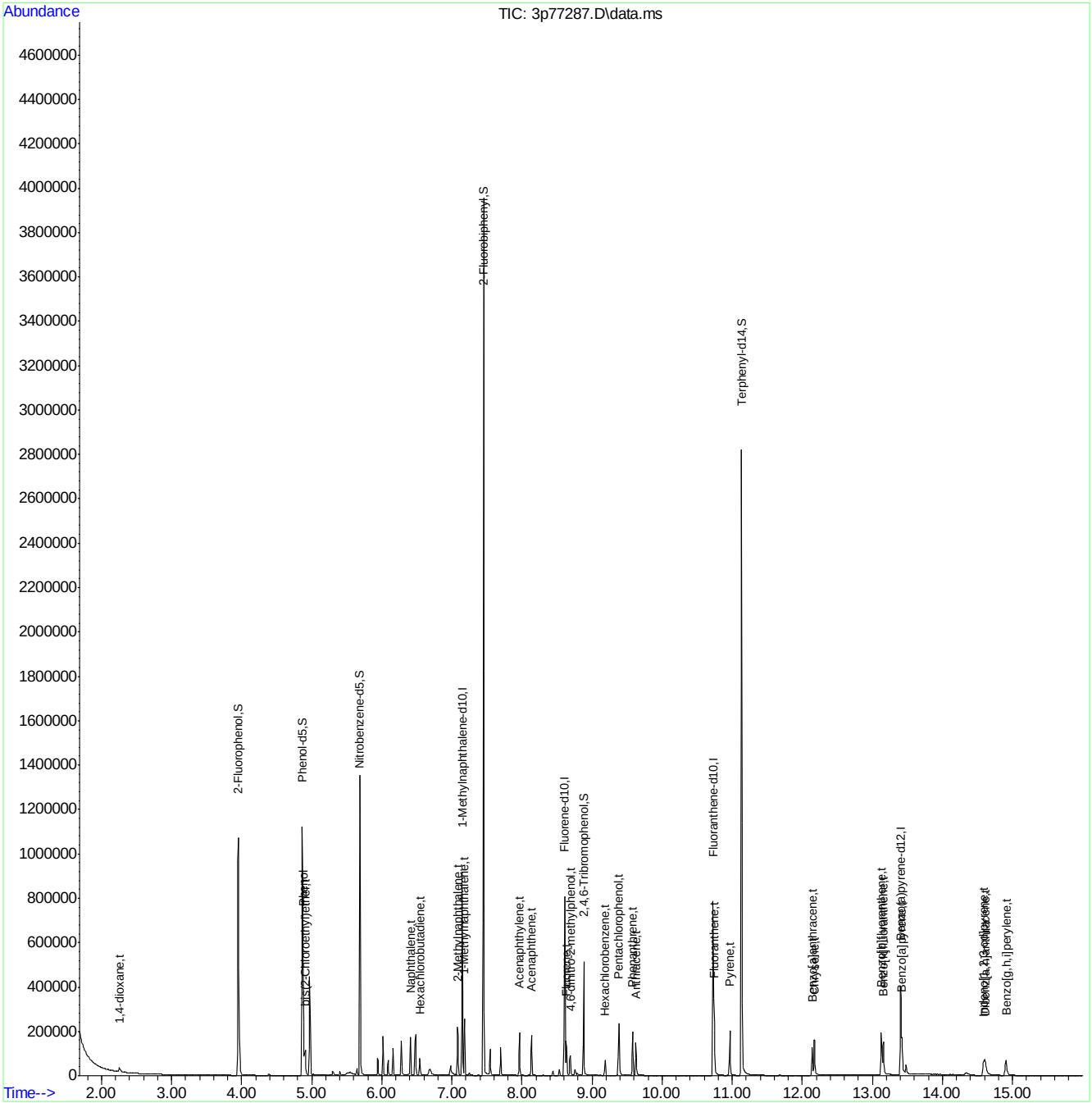
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	236744	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	334584	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	524727	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.403	264	308837	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.954	112	691492	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
4) Phenol-d5	4.865	99	882752	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
7) Nitrobenzene-d5	5.684	82	832737	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
13) 2-Fluorobiphenyl	7.452	172	1681699	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
18) 2,4,6-Tribromophenol	8.882	330	174819	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
26) Terphenyl-d14	11.131	244	1572492	20.00	ppm	0.00
Spiked Amount 50.000			Recovery = 40.00%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.256	88	16703m	0.98	ppm	
5) Phenol	4.880	94	239705	5.00	ppm	100
6) bis(2-Chloroethyl)ether	4.908	93	36460	1.00	ppm	100
8) Naphthalene	6.410	128	123842	1.00	ppm	100
9) Hexachlorobutadiene	6.546	225	22605	1.00	ppm	100
10) 2-Methylnaphthalene	7.082	141	67163	1.00	ppm	100
11) 1-Methylnaphthalene	7.179	141	74878	1.00	ppm	100
14) Acenaphthylene	7.963	152	101257	1.00	ppm	100
15) Acenaphthene	8.135	153	77806	1.00	ppm	100
16) 4,6-dinitro-2-methylph...	8.692	198	54892	5.00	ppm	100
17) Fluorene	8.629	166	81208	1.00	ppm	100
20) Hexachlorobenzene	9.186	284	23275	1.00	ppm	100
21) Pentachlorophenol	9.386	266	64784	5.00	ppm	100
22) Phenanthrene	9.579	178	123316	1.00	ppm	100
23) Anthracene	9.625	178	106521	1.00	ppm	100
24) Fluoranthene	10.745	202	135401	1.00	ppm	100
25) Pyrene	10.967	202	132378	1.00	ppm	100
27) Benzo[a]anthracene	12.142	228	85381	1.00	ppm	100
28) Chrysene	12.177	228	137022	1.00	ppm	100
30) Benzo[b]fluoranthene	13.130	252	123072	1.00	ppm	100
31) Benzo[k]fluoranthene	13.158	252	116909	1.00	ppm	100
32) Benzo[a]pyrene	13.424	252	106387	1.00	ppm	100
33) Indeno[1,2,3-cd]pyrene	14.590	276	94146	1.00	ppm	100
34) Dibenz[a,h]anthracene	14.611	278	81557	1.00	ppm	100
35) Benzo[g,h,i]perylene	14.908	276	90353	1.00	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77287.D
Acq On : 21 Jun 2019 5:11 am
Operator : chriss2
Sample : icc3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 21 10:37:06 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

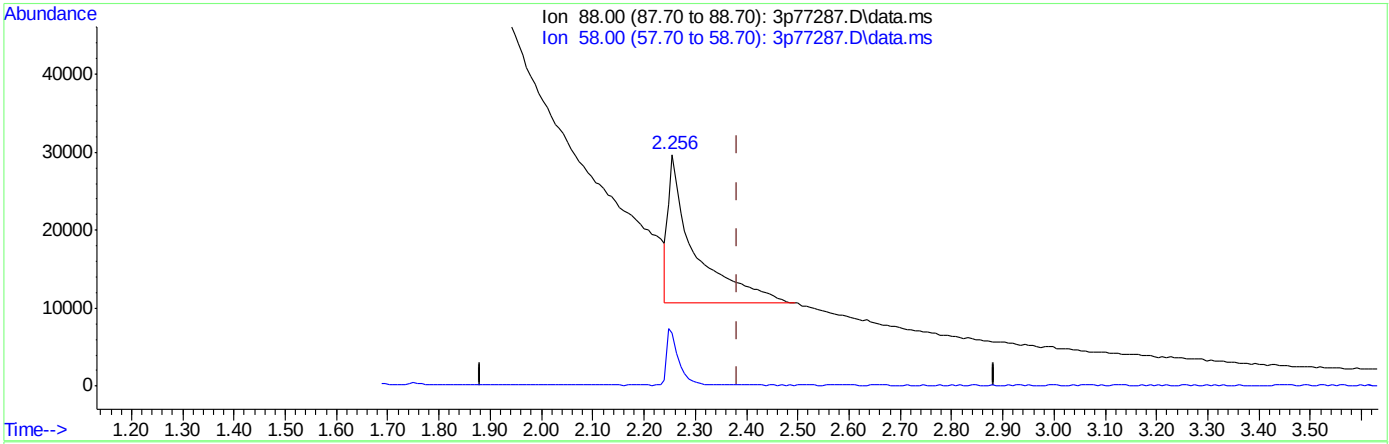
Sample Number:	E3P3623-ICC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77287.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 05:11	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

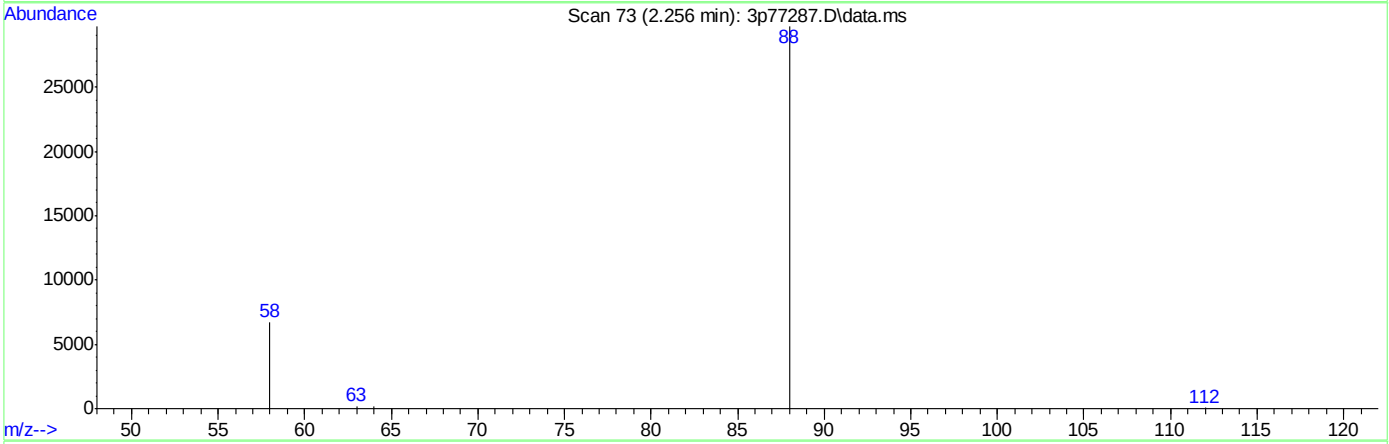
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77287.D
Acq On : 21 Jun 2019 5:11 am
Operator : chriss2
Sample : icc3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 21 05:27:21 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Thu Jun 06 09:00:23 2019
Response via : Initial Calibration





TIC: 3p77287.D\data.ms

(2) 1,4-dioxane (t)

2.256min (-0.127) 3.48ppm

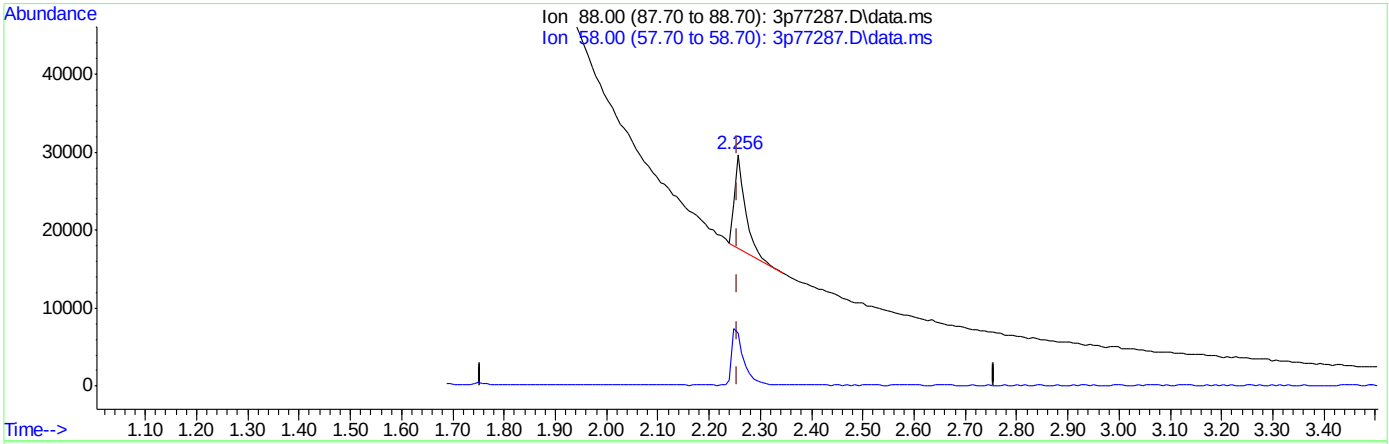
response 67230

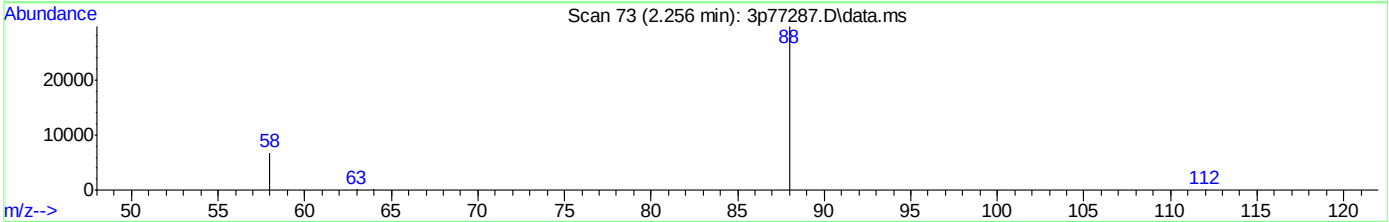
Ion	Exp%	Act%
88.00	100	100
58.00	31.80	41.28
0.00	0.00	0.00
0.00	0.00	0.00

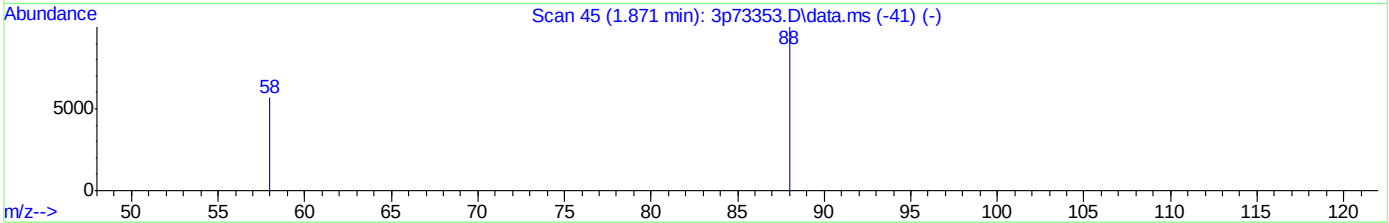
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77287.D
Acq On : 21 Jun 2019 5:11 am
Operator : chriss2
Sample : icc3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 21 10:37:06 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration







TIC: 3p77287.D\data.ms

(2) 1,4-dioxane (t)

2.256min (0.000) 0.98ppm m

response 16703

Ion	Exp%	Act%
88.00	100	100
58.00	22.70	22.68
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77288.D
Acq On : 21 Jun 2019 5:32 am
Operator : chriss2
Sample : ic3623-0.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 21 10:42:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

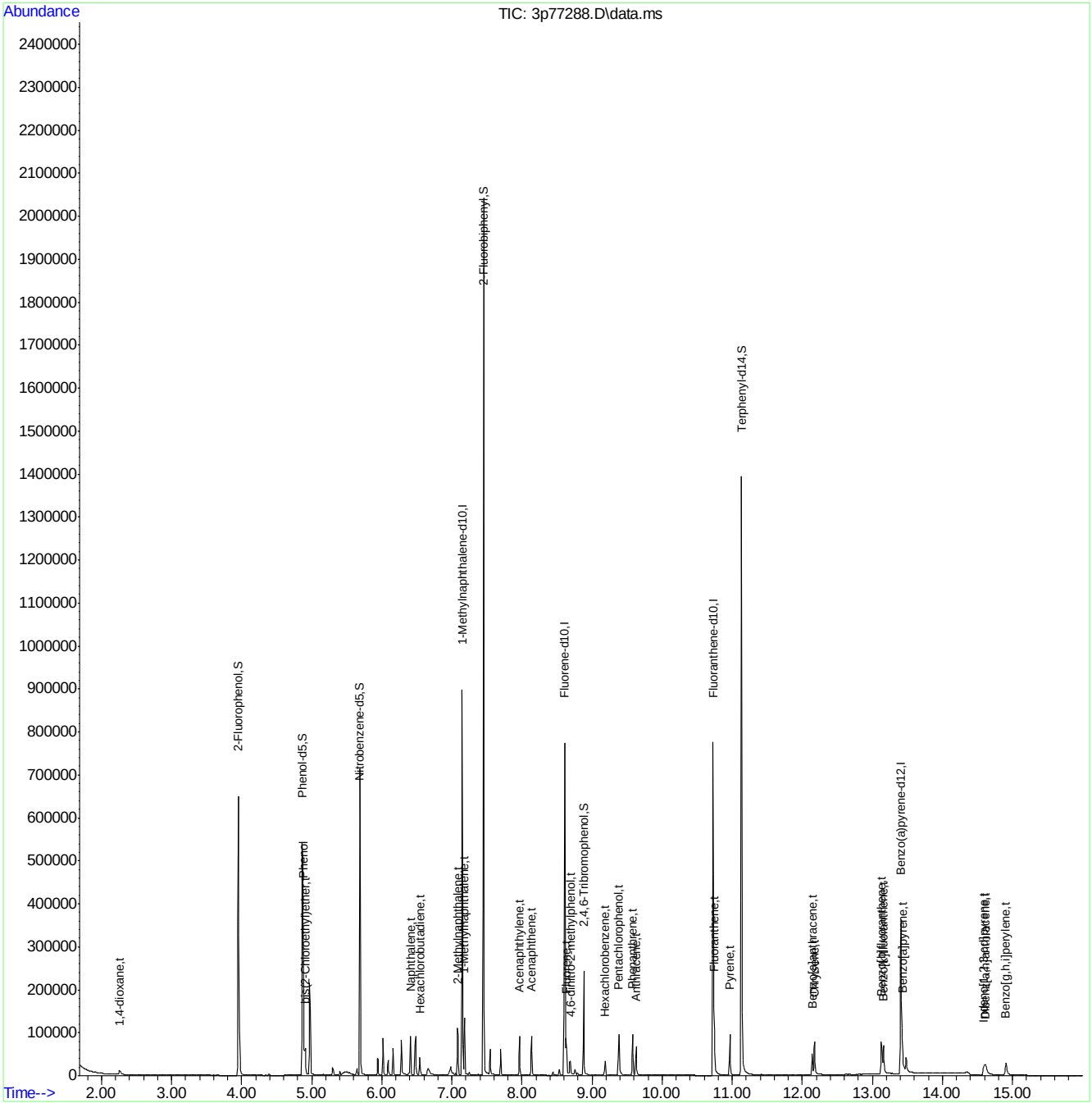
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	237046	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	325142	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	511015	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	278861	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.954	112	363099	10.49	ppm	0.00
Spiked Amount 50.000			Recovery = 20.98%			
4) Phenol-d5	4.865	99	459799	10.41	ppm	0.00
Spiked Amount 50.000			Recovery = 20.82%			
7) Nitrobenzene-d5	5.684	82	427334	10.25	ppm	0.00
Spiked Amount 50.000			Recovery = 20.50%			
13) 2-Fluorobiphenyl	7.452	172	884279	10.82	ppm	0.00
Spiked Amount 50.000			Recovery = 21.64%			
18) 2,4,6-Tribromophenol	8.882	330	82511	9.71	ppm	0.00
Spiked Amount 50.000			Recovery = 19.42%			
26) Terphenyl-d14	11.131	244	788492	10.30	ppm	0.00
Spiked Amount 50.000			Recovery = 20.60%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.256	88	9000m	0.53	ppm	
5) Phenol	4.880	94	125778	2.62	ppm	98
6) bis(2-Chloroethyl)ether	4.908	93	19061	0.52	ppm	97
8) Naphthalene	6.410	128	64128	0.52	ppm	100
9) Hexachlorobutadiene	6.546	225	11958	0.53	ppm	100
10) 2-Methylnaphthalene	7.082	141	34647	0.52	ppm	98
11) 1-Methylnaphthalene	7.179	141	38429	0.51	ppm	99
14) Acenaphthylene	7.963	152	47700	0.48	ppm	100
15) Acenaphthene	8.135	153	38593	0.51	ppm	99
16) 4,6-dinitro-2-methylph...	8.692	198	20609	1.93	ppm	96
17) Fluorene	8.629	166	40114	0.51	ppm	98
20) Hexachlorobenzene	9.186	284	11538	0.51	ppm	99
21) Pentachlorophenol	9.386	266	27221	2.16	ppm	97
22) Phenanthrene	9.579	178	60184	0.50	ppm	99
23) Anthracene	9.630	178	49408	0.48	ppm	99
24) Fluoranthene	10.745	202	67538	0.51	ppm	100
25) Pyrene	10.967	202	63841	0.50	ppm	100
27) Benzo[a]anthracene	12.142	228	35385	0.43	ppm	99
28) Chrysene	12.177	228	64987	0.49	ppm	99
30) Benzo[b]fluoranthene	13.130	252	51615	0.46	ppm	98
31) Benzo[k]fluoranthene	13.158	252	57205	0.54	ppm	97
32) Benzo[a]pyrene	13.431	252	52886	0.55	ppm	97
33) Indeno[1,2,3-cd]pyrene	14.590	276	40406	0.48	ppm	99
34) Dibenz[a,h]anthracene	14.617	278	34885	0.47	ppm	96
35) Benzo[g,h,i]perylene	14.908	276	40455	0.49	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77288.D
Acq On : 21 Jun 2019 5:32 am
Operator : chriss2
Sample : ic3623-0.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 21 10:42:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

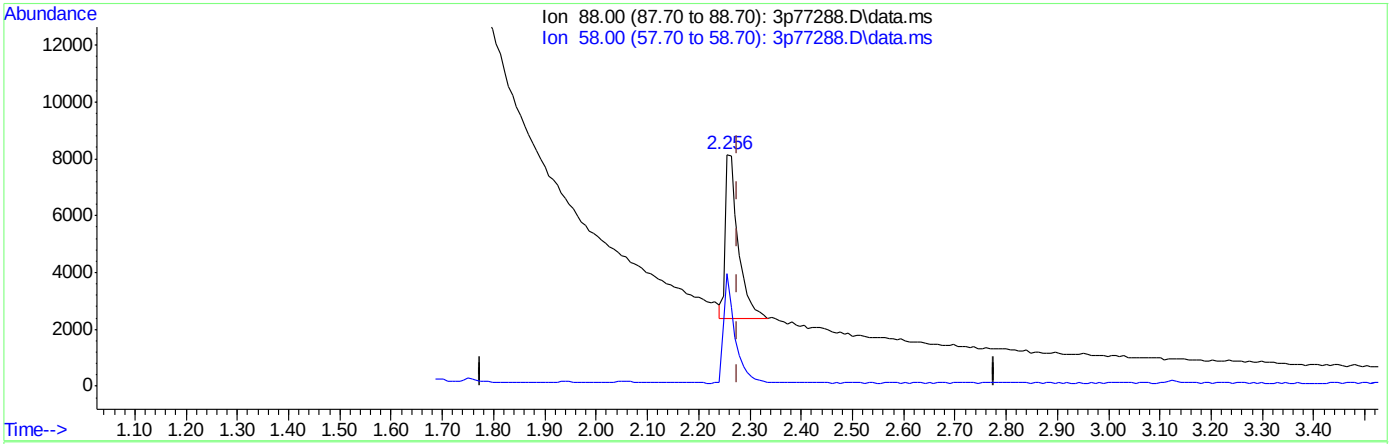
Sample Number:	E3P3623-IC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77288.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 05:32	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

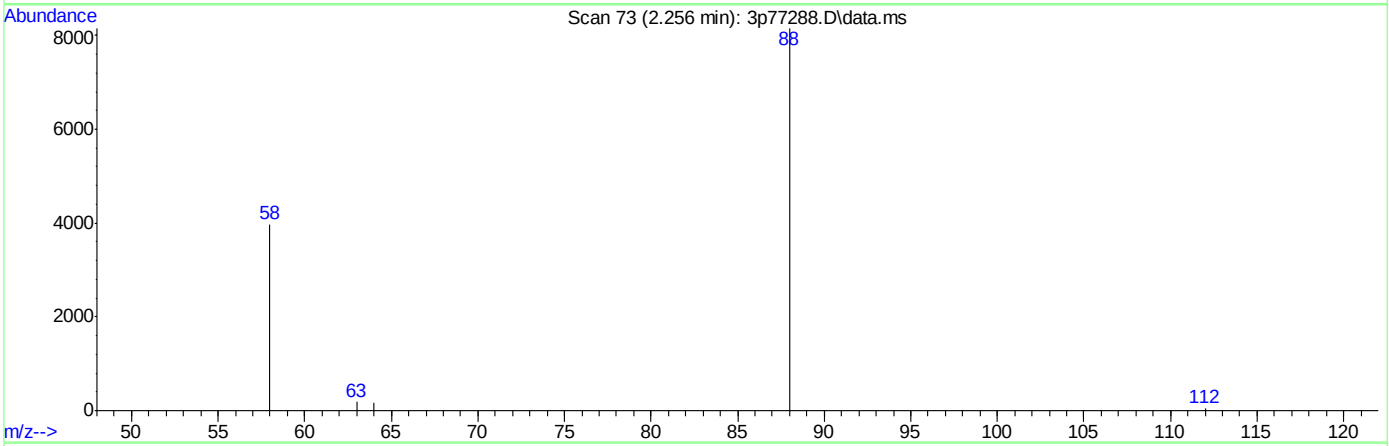
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77288.D
Acq On : 21 Jun 2019 5:32 am
Operator : chriss2
Sample : ic3623-0.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 21 10:41:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77288.D\data.ms

(2) 1,4-dioxane (t)

2.256min (-0.020) 0.60ppm

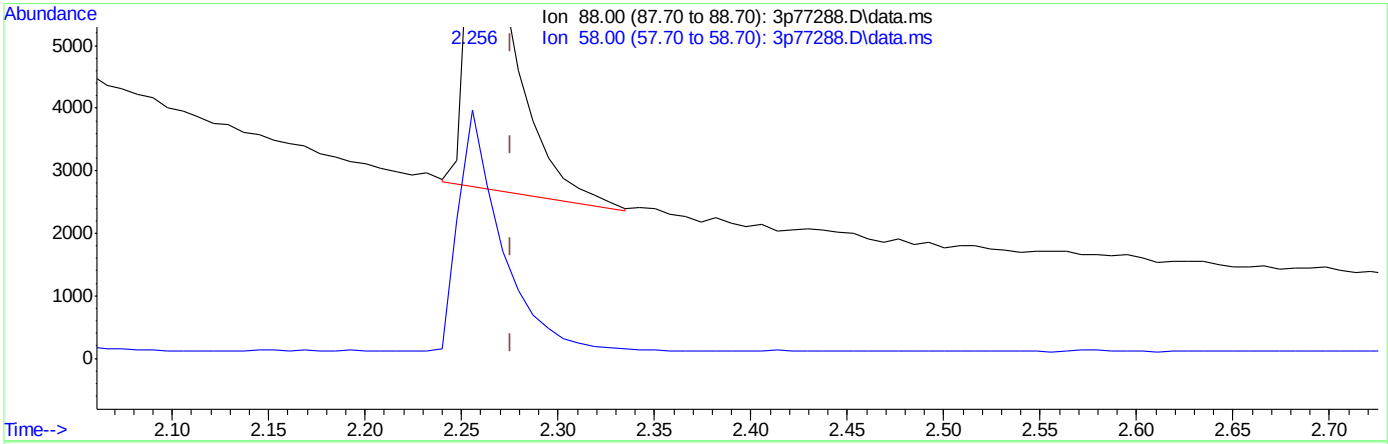
response 10185

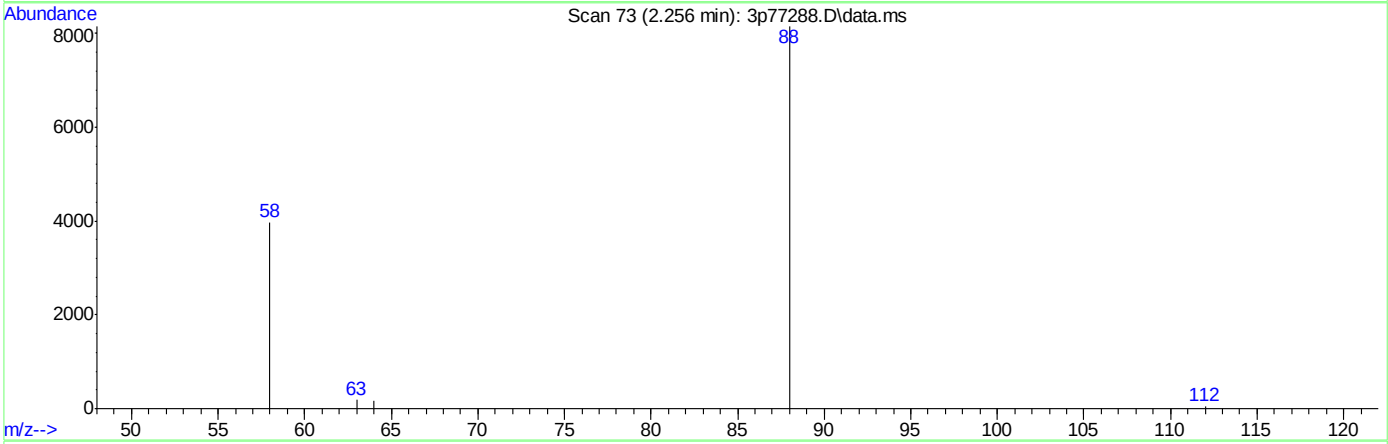
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	69.16
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77288.D
Acq On : 21 Jun 2019 5:32 am
Operator : chriss2
Sample : ic3623-0.5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 21 10:41:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77288.D\data.ms

(2) 1,4-dioxane (t)

2.256min (-0.020) 0.53ppm m

response 9000

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	48.72
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77289.D
Acq On : 21 Jun 2019 5:53 am
Operator : chriss2
Sample : ic3623-0.2
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 21 10:43:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

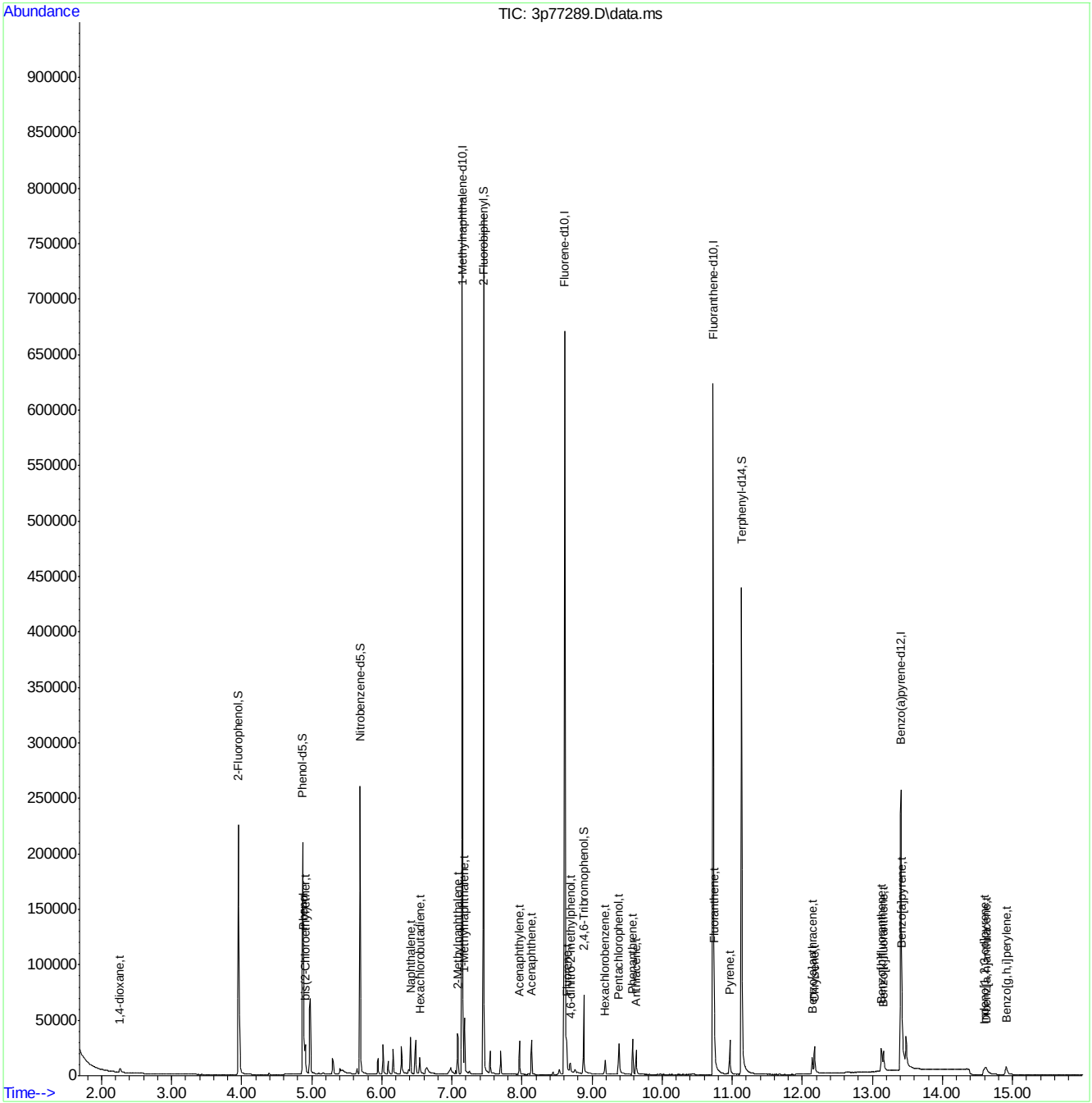
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	210351	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	282008	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	448168	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	227891	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.954	112	128556	4.18	ppm	0.00
Spiked Amount 50.000			Recovery =	8.36%		
4) Phenol-d5	4.872	99	158362	4.04	ppm	0.00
Spiked Amount 50.000			Recovery =	8.08%		
7) Nitrobenzene-d5	5.691	82	147449	3.99	ppm	0.00
Spiked Amount 50.000			Recovery =	7.98%		
13) 2-Fluorobiphenyl	7.452	172	328917	4.64	ppm	0.00
Spiked Amount 50.000			Recovery =	9.28%		
18) 2,4,6-Tribromophenol	8.882	330	25210	3.42	ppm	0.00
Spiked Amount 50.000			Recovery =	6.84%		
26) Terphenyl-d14	11.131	244	275810	4.11	ppm	0.00
Spiked Amount 50.000			Recovery =	8.22%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.263	88	3056m	0.20	ppm	
5) Phenol	4.887	94	44846	1.05	ppm	93
6) bis(2-Chloroethyl)ether	4.908	93	7066	0.22	ppm	88
8) Naphthalene	6.410	128	22901	0.21	ppm	99
9) Hexachlorobutadiene	6.546	225	4399	0.22	ppm	99
10) 2-Methylnaphthalene	7.082	141	12317	0.21	ppm	97
11) 1-Methylnaphthalene	7.179	141	14271	0.21	ppm	99
14) Acenaphthylene	7.963	152	16378	0.19	ppm	99
15) Acenaphthene	8.135	153	13638	0.21	ppm	100
16) 4,6-dinitro-2-methylph...	8.692	198	5650	0.61	ppm	83
17) Fluorene	8.640	166	14337	0.21	ppm	80
20) Hexachlorobenzene	9.186	284	4320	0.22	ppm	97
21) Pentachlorophenol	9.386	266	8391	0.76	ppm	98
22) Phenanthrene	9.579	178	20927	0.20	ppm	98
23) Anthracene	9.630	178	17033	0.19	ppm	98
24) Fluoranthene	10.745	202	24328	0.21	ppm	100
25) Pyrene	10.967	202	21387	0.19	ppm	100
27) Benzo[a]anthracene	12.142	228	10817	0.15	ppm	98
28) Chrysene	12.177	228	19865	0.17	ppm	99
30) Benzo[b]fluoranthene	13.130	252	15021	0.17	ppm	99
31) Benzo[k]fluoranthene	13.158	252	18048	0.21	ppm	97
32) Benzo[a]pyrene	13.424	252	19006	0.24	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.595	276	11976	0.17	ppm	99
34) Dibenz[a,h]anthracene	14.622	278	10038	0.17	ppm	90
35) Benzo[g,h,i]perylene	14.908	276	11788	0.18	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77289.D
Acq On : 21 Jun 2019 5:53 am
Operator : chriss2
Sample : ic3623-0.2
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 21 10:43:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

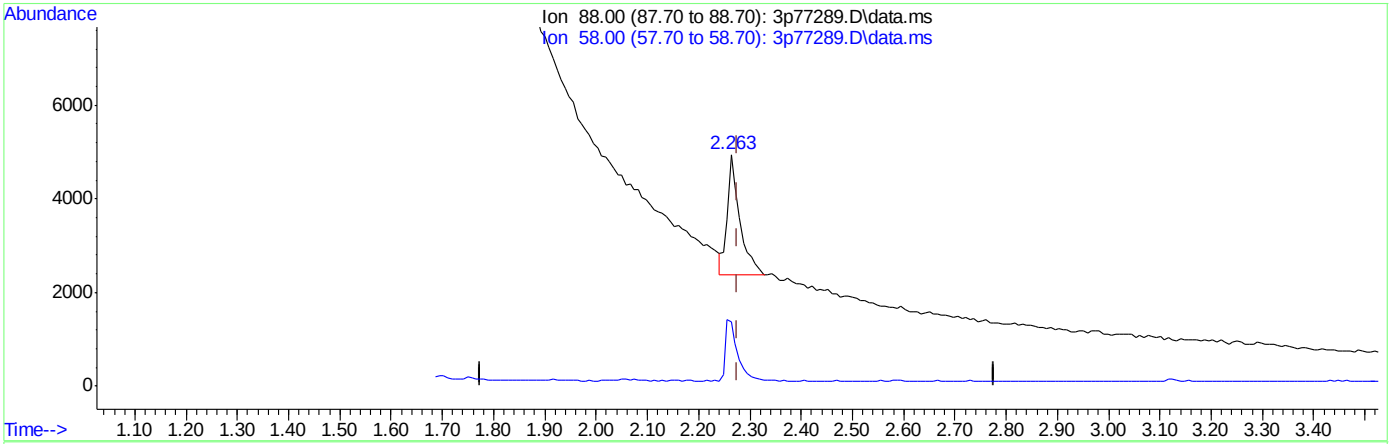
Sample Number:	E3P3623-IC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77289.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 05:53	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

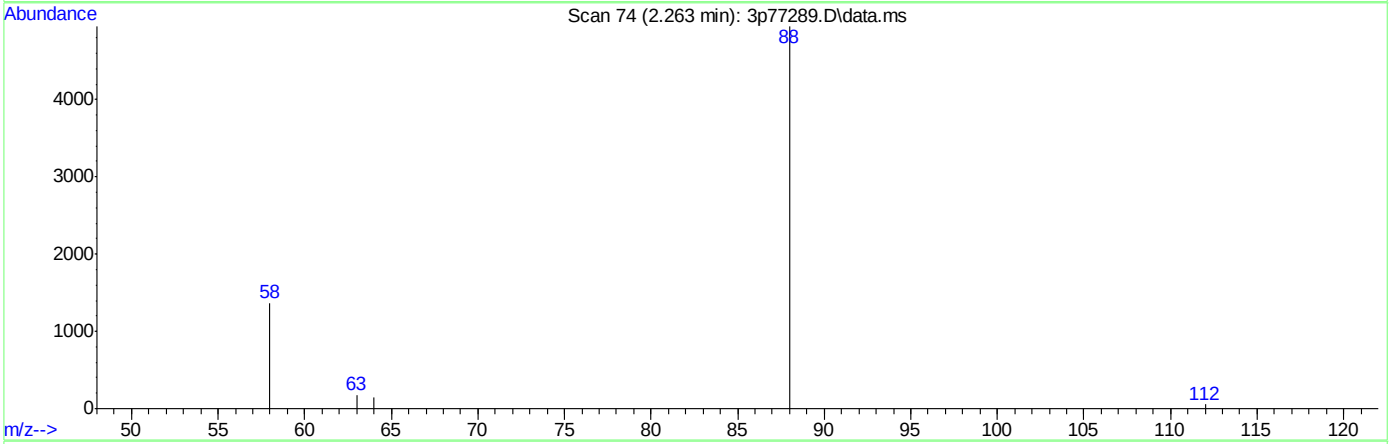
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77289.D
Acq On : 21 Jun 2019 5:53 am
Operator : chriss2
Sample : ic3623-0.2
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 21 10:41:59 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77289.D\data.ms

(2) 1,4-dioxane (t)

2.263min (-0.013) 0.29ppm

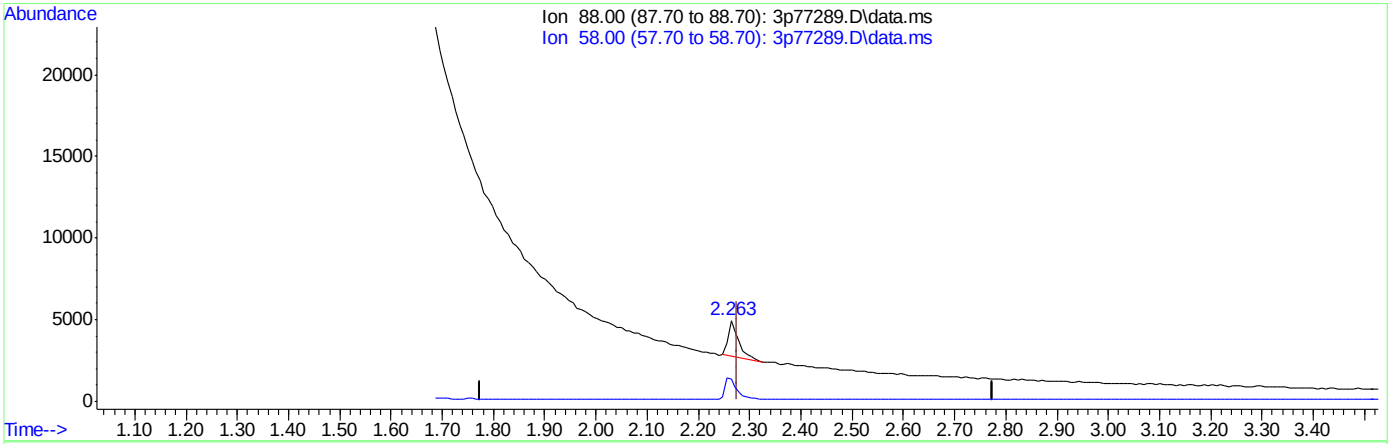
response 4388

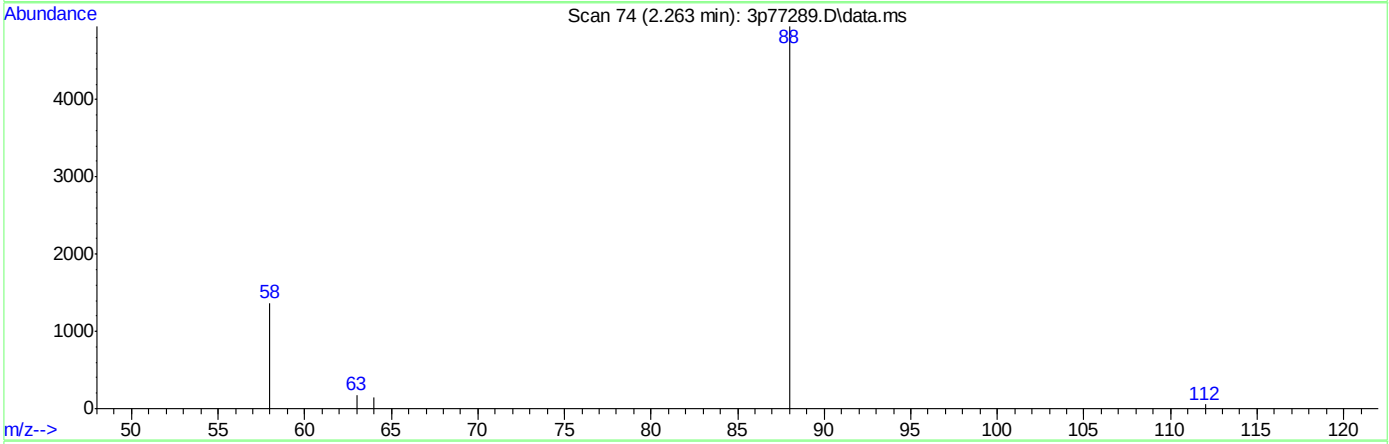
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	53.09
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77289.D
Acq On : 21 Jun 2019 5:53 am
Operator : chriss2
Sample : ic3623-0.2
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 21 10:41:59 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77289.D\data.ms

(2) 1,4-dioxane (t)

2.263min (-0.013) 0.20ppm m

response 3056

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	27.57#
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77290.D
Acq On : 21 Jun 2019 6:14 am
Operator : chriss2
Sample : ic3623-0.1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 21 10:43:58 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

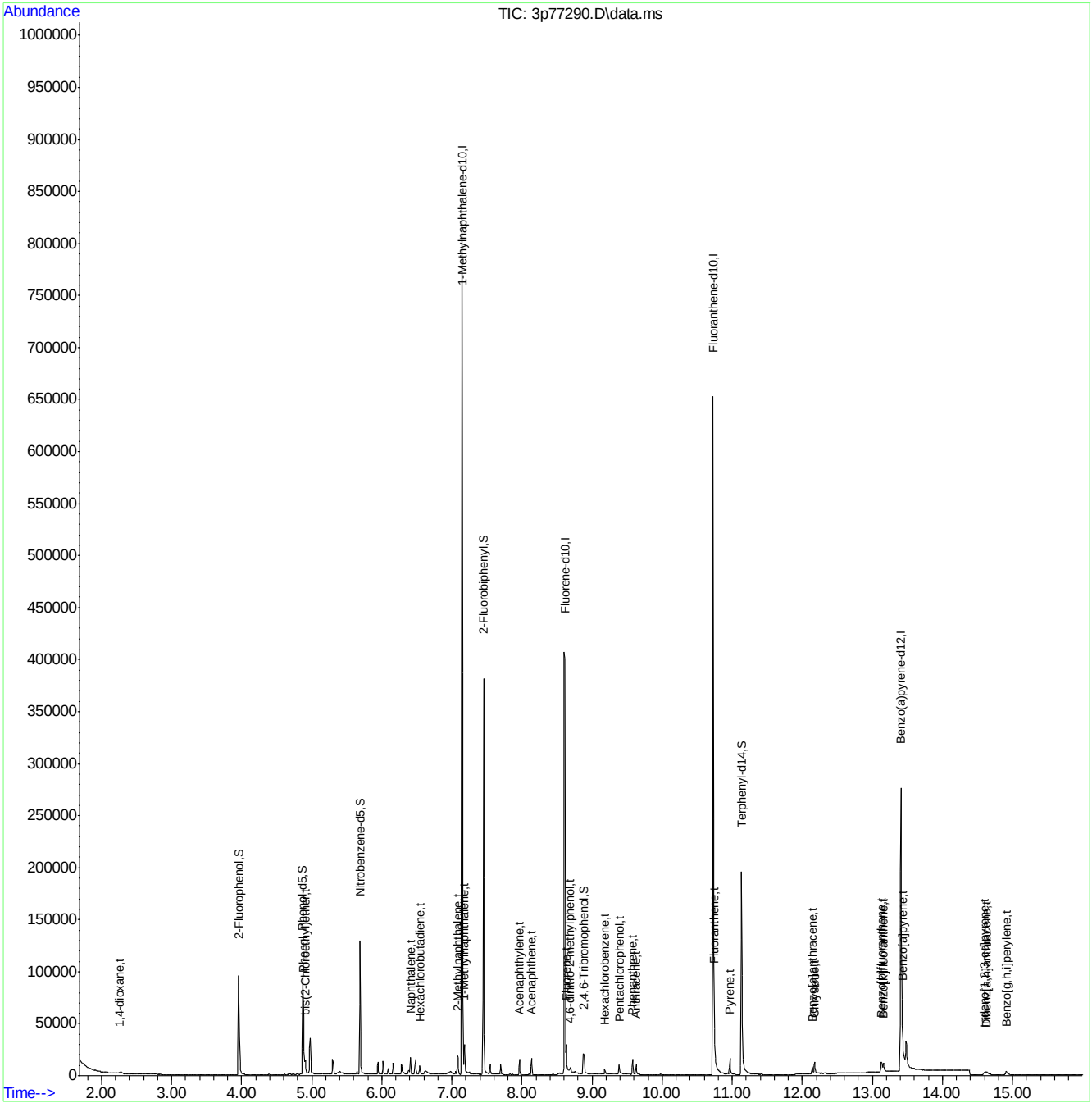
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.148	150	216106	4.00	ppm		0.00
12) Fluorene-d10	8.613	176	272785	4.00	ppm		0.00
19) Fluoranthene-d10	10.728	212	463110	4.00	ppm		0.00
29) Benzo(a)pyrene-d12	13.410	264	229840	4.00	ppm		0.00
System Monitoring Compounds							
3) 2-Fluorophenol	3.961	112	63585	2.01	ppm		0.00
Spiked Amount 50.000			Recovery	=	4.02%		
4) Phenol-d5	4.872	99	76780	1.91	ppm		0.00
Spiked Amount 50.000			Recovery	=	3.82%		
7) Nitrobenzene-d5	5.691	82	71904	1.89	ppm		0.00
Spiked Amount 50.000			Recovery	=	3.78%		
13) 2-Fluorobiphenyl	7.452	172	169215	2.47	ppm		0.00
Spiked Amount 50.000			Recovery	=	4.94%		
18) 2,4,6-Tribromophenol	8.876	330	10662	1.50	ppm		0.00
Spiked Amount 50.000			Recovery	=	3.00%		
26) Terphenyl-d14	11.131	244	135455	1.95	ppm		0.00
Spiked Amount 50.000			Recovery	=	3.90%		
Target Compounds							Qvalue
2) 1,4-dioxane	2.263	88	1449m	0.09	ppm		
5) Phenol	4.887	94	22381	0.51	ppm		92
6) bis(2-Chloroethyl)ether	4.908	93	3810	0.11	ppm		85
8) Naphthalene	6.410	128	11481	0.10	ppm		99
9) Hexachlorobutadiene	6.545	225	2296	0.11	ppm		98
10) 2-Methylnaphthalene	7.082	141	6314	0.10	ppm		99
11) 1-Methylnaphthalene	7.179	141	7096	0.10	ppm		97
14) Acenaphthylene	7.963	152	8224	0.10	ppm		99
15) Acenaphthene	8.135	153	6900	0.11	ppm		99
16) 4,6-dinitro-2-methylph...	8.686	198	2450	0.27	ppm	#	14
17) Fluorene	8.634	166	7555	0.11	ppm		93
20) Hexachlorobenzene	9.180	284	2120	0.10	ppm		89
21) Pentachlorophenol	9.390	266	3977	0.35	ppm		94
22) Phenanthrene	9.579	178	12070	0.11	ppm		99
23) Anthracene	9.630	178	8736	0.09	ppm		97
24) Fluoranthene	10.745	202	12609	0.11	ppm		99
25) Pyrene	10.968	202	10615	0.09	ppm		100
27) Benzo[a]anthracene	12.142	228	5289	0.07	ppm		97
28) Chrysene	12.177	228	10723	0.09	ppm		98
30) Benzo[b]fluoranthene	13.130	252	6867	0.07	ppm		97
31) Benzo[k]fluoranthene	13.158	252	9060	0.10	ppm		96
32) Benzo[a]pyrene	13.431	252	9955	0.13	ppm		97
33) Indeno[1,2,3-cd]pyrene	14.601	276	5244	0.07	ppm		97
34) Dibenz[a,h]anthracene	14.622	278	3576	0.06	ppm		85
35) Benzo[g,h,i]perylene	14.913	276	5840	0.09	ppm		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77290.D
Acq On : 21 Jun 2019 6:14 am
Operator : chriss2
Sample : ic3623-0.1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 21 10:43:58 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

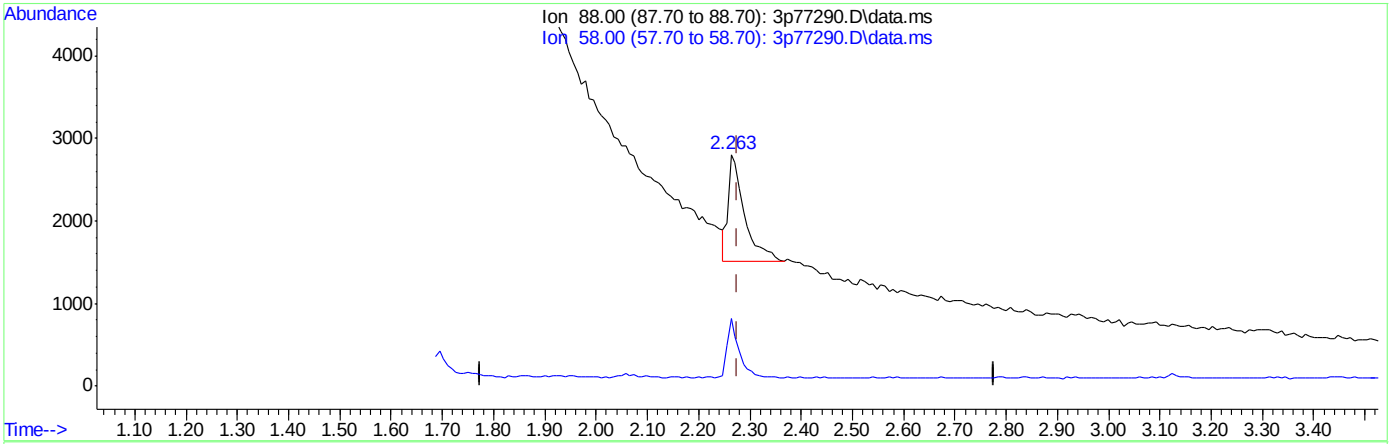
Sample Number:	E3P3623-IC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77290.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 06:14	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

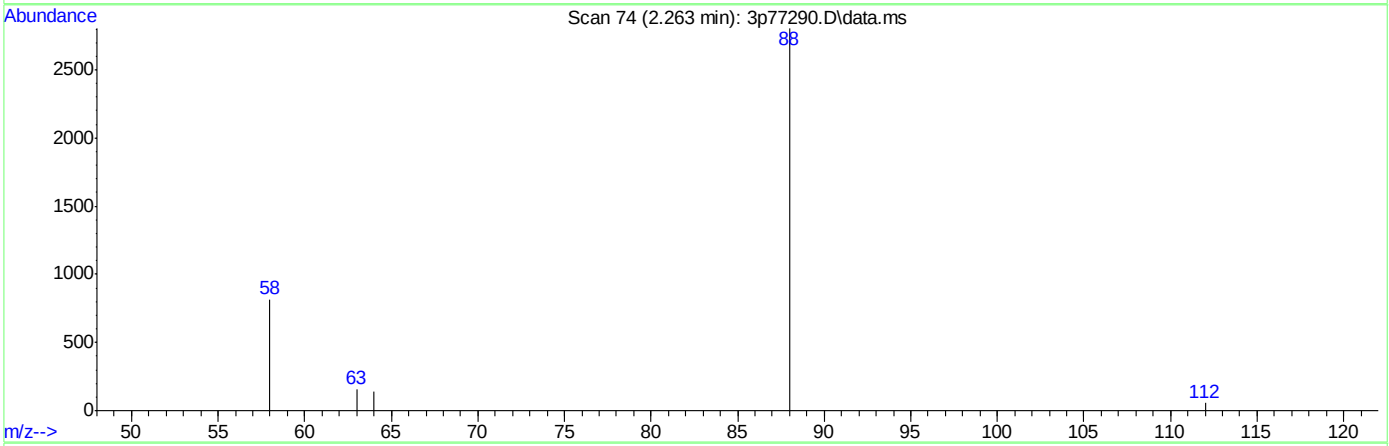
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77290.D
Acq On : 21 Jun 2019 6:14 am
Operator : chriss2
Sample : ic3623-0.1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 21 10:43:46 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77290.D\data.ms

(2) 1,4-dioxane (t)

2.263min (-0.013) 0.18ppm

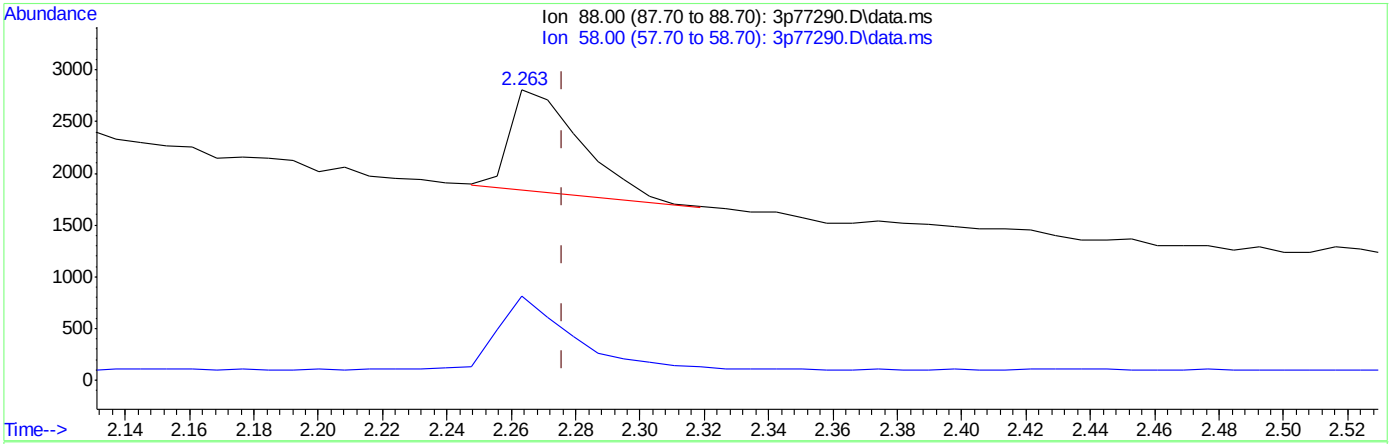
response 2800

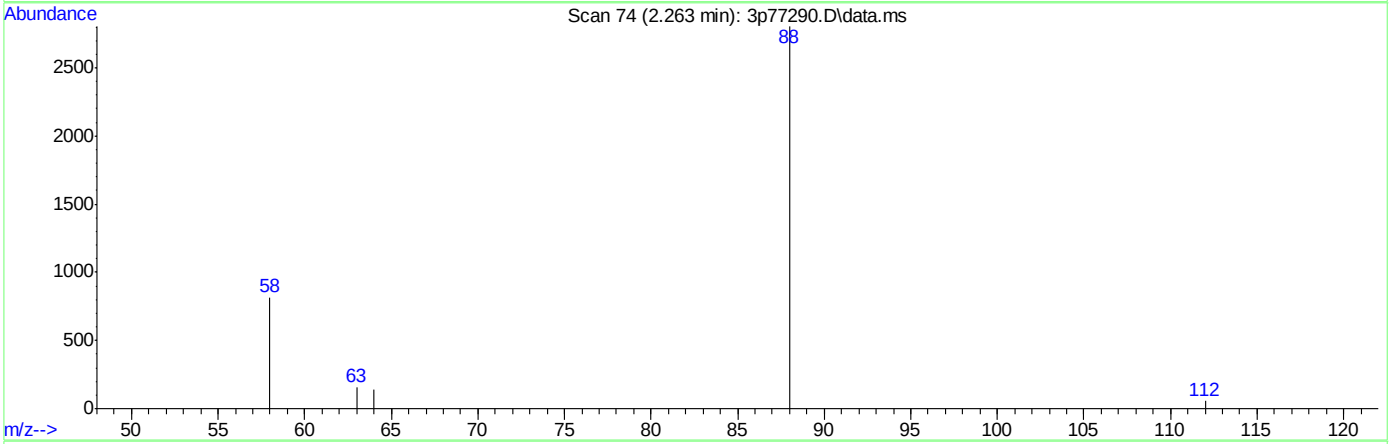
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	63.80
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77290.D
Acq On : 21 Jun 2019 6:14 am
Operator : chriss2
Sample : ic3623-0.1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 21 10:43:46 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77290.D\data.ms

(2) 1,4-dioxane (t)

2.263min (-0.013) 0.09ppm m

response 1449

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	29.10#
0.00	0.00	0.00
0.00	0.00	0.00

3P77291.D

Manual Integrations APPROVED (compounds with "m" flag)

Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77291.D
Acq On : 21 Jun 2019 6:35 am
Operator : chriss2
Sample : ic3623-0.05
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 21 11:48:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

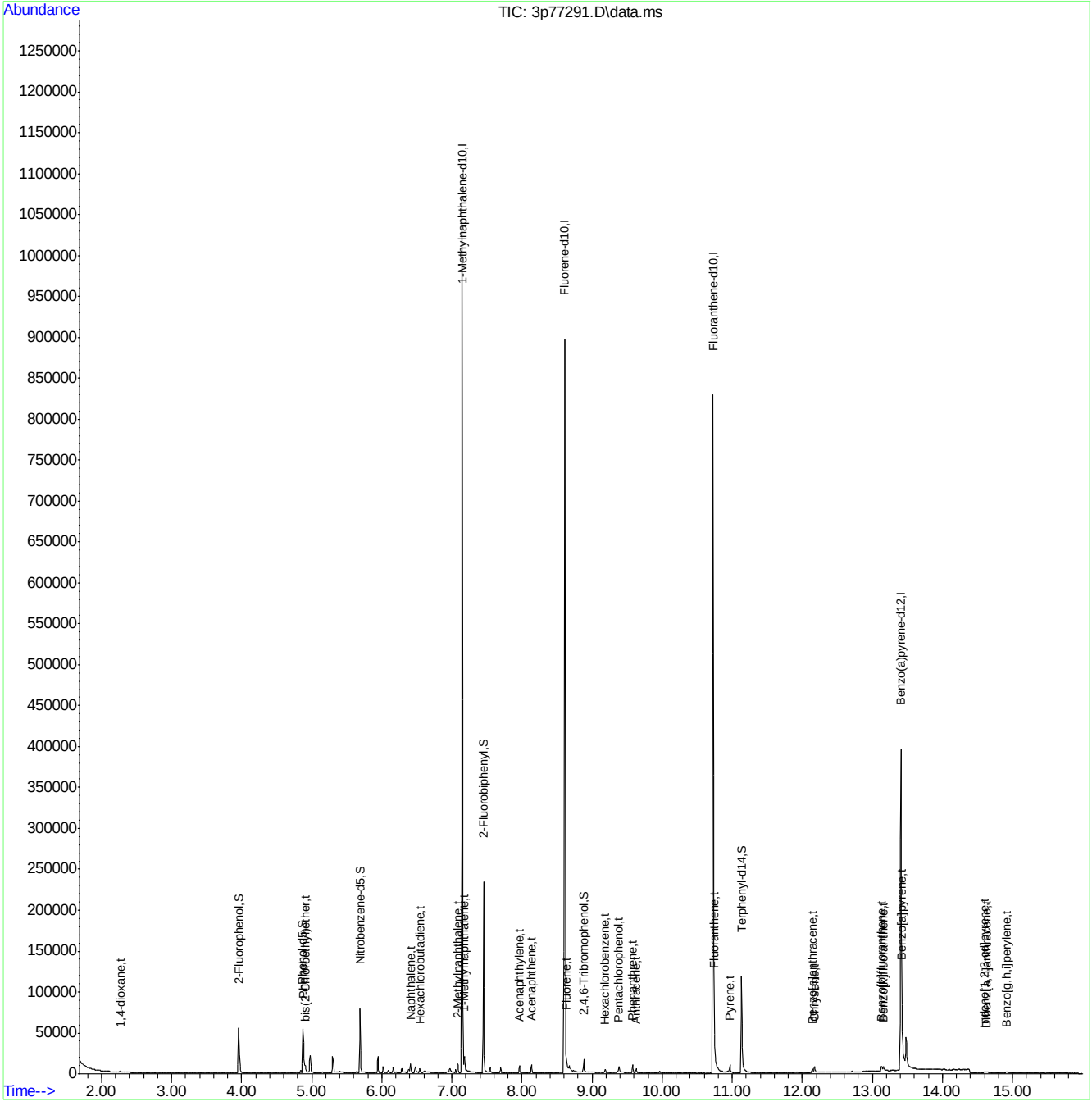
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	280396	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	372376	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	603320	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	316027	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.961	112	38585	0.94	ppm	0.00
Spiked Amount 50.000			Recovery =	1.88%		
4) Phenol-d5	4.872	99	47168	0.90	ppm	0.00
Spiked Amount 50.000			Recovery =	1.80%		
7) Nitrobenzene-d5	5.691	82	45390	0.92	ppm	0.00
Spiked Amount 50.000			Recovery =	1.84%		
13) 2-Fluorobiphenyl	7.452	172	106176	1.13	ppm	0.00
Spiked Amount 50.000			Recovery =	2.26%		
18) 2,4,6-Tribromophenol	8.881	330	6156	0.63	ppm	0.00
Spiked Amount 50.000			Recovery =	1.26%		
26) Terphenyl-d14	11.131	244	81630	0.90	ppm	0.00
Spiked Amount 50.000			Recovery =	1.80%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.271	88	1083m	0.05	ppm	
5) Phenol	4.887	94	13122	0.23	ppm	97
6) bis(2-Chloroethyl)ether	4.908	93	2046	0.05	ppm	84
8) Naphthalene	6.410	128	7363	0.05	ppm	97
9) Hexachlorobutadiene	6.546	225	1459	0.05	ppm	96
10) 2-Methylnaphthalene	7.082	141	4008	0.05	ppm	95
11) 1-Methylnaphthalene	7.179	141	4604	0.05	ppm	99
14) Acenaphthylene	7.963	152	4950	0.04	ppm	99
15) Acenaphthene	8.135	153	4333	0.05	ppm	95
17) Fluorene	8.629	166	4704	0.05	ppm	96
20) Hexachlorobenzene	9.186	284	1348	0.05	ppm	96
21) Pentachlorophenol	9.386	266	2471	0.17	ppm	94
22) Phenanthrene	9.579	178	6449	0.05	ppm	97
23) Anthracene	9.630	178	4697	0.04	ppm	98
24) Fluoranthene	10.745	202	8122	0.05	ppm	100
25) Pyrene	10.967	202	6675	0.04	ppm	99
27) Benzo[a]anthracene	12.142	228	3398	0.03	ppm	98
28) Chrysene	12.177	228	6567	0.04	ppm	98
30) Benzo[b]fluoranthene	13.130	252	4343	0.03	ppm	97
31) Benzo[k]fluoranthene	13.158	252	4992	0.04	ppm	94
32) Benzo[a]pyrene	13.424	252	6942	0.06	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.595	276	3290	0.03	ppm	98
34) Dibenz[a,h]anthracene	14.627	278	2840	0.03	ppm	88
35) Benzo[g,h,i]perylene	14.913	276	3248	0.03	ppm	97

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77291.D
Acq On : 21 Jun 2019 6:35 am
Operator : chriss2
Sample : ic3623-0.05
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 21 11:48:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

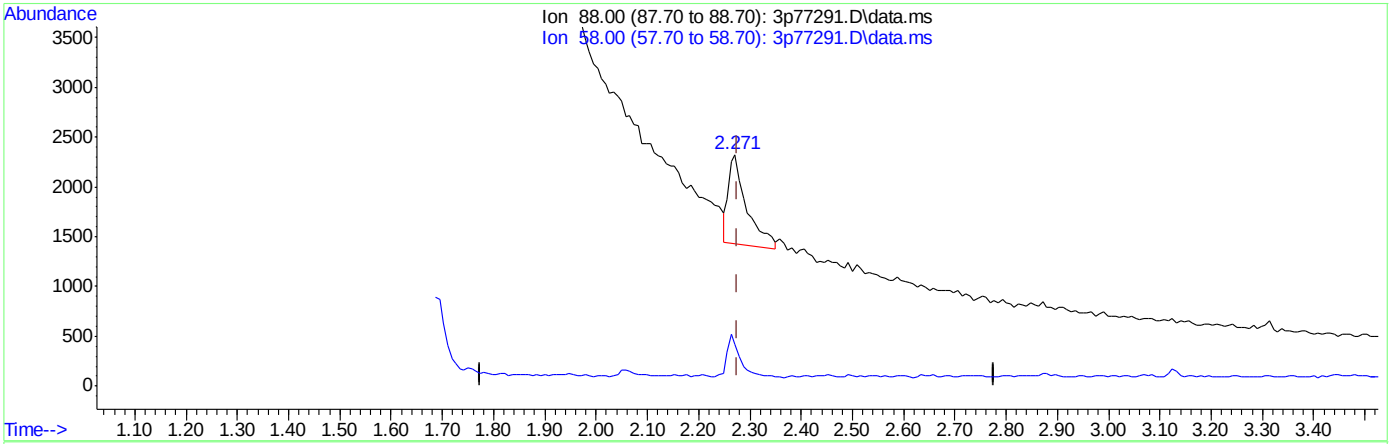
Sample Number:	E3P3623-IC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77291.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 06:35	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

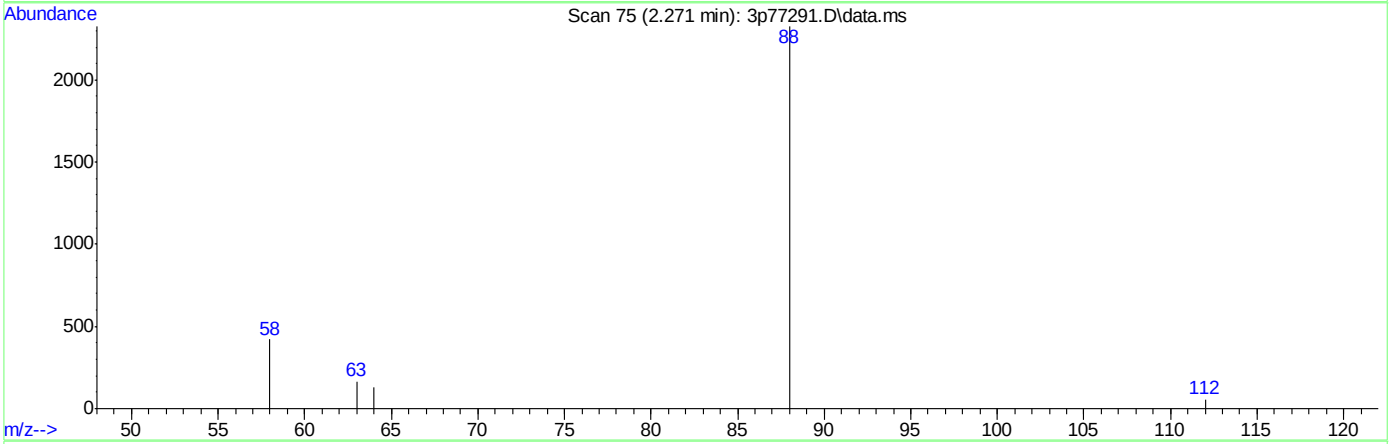
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.27	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77291.D
Acq On : 21 Jun 2019 6:35 am
Operator : chriss2
Sample : ic3623-0.05
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 21 10:44:41 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77291.D\data.ms

(2) 1,4-dioxane (t)

2.271min (-0.005) 0.11ppm

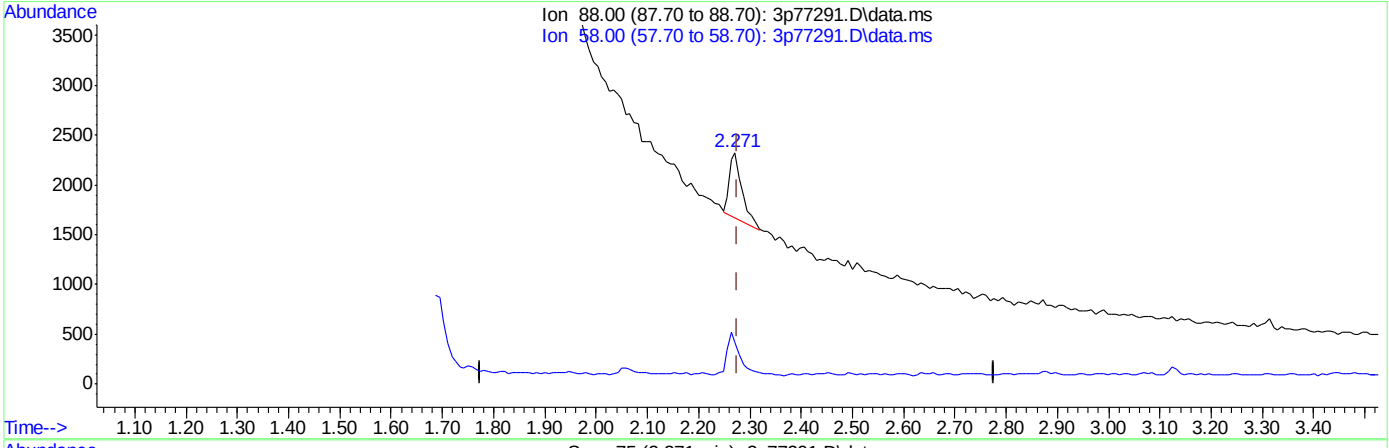
response 2237

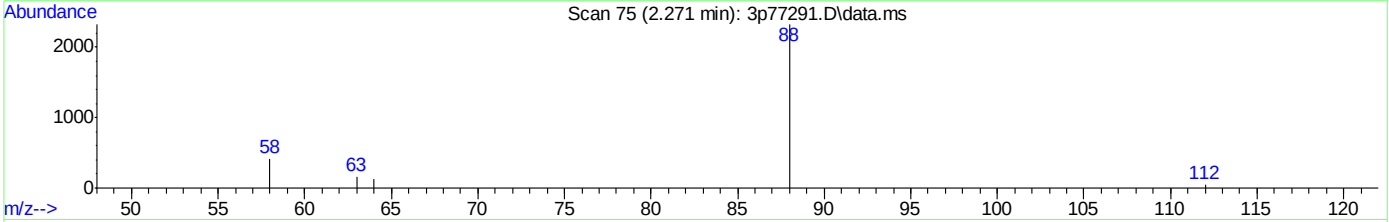
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	41.47
0.00	0.00	0.00
0.00	0.00	0.00

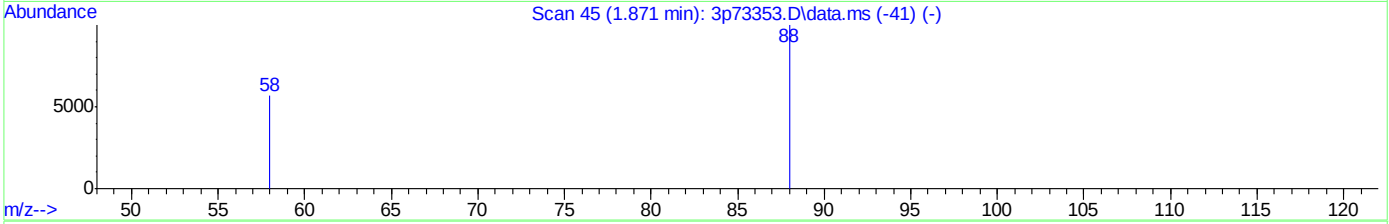
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77291.D
Acq On : 21 Jun 2019 6:35 am
Operator : chriss2
Sample : ic3623-0.05
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 21 11:48:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration







TIC: 3p77291.D\data.ms

(2) 1,4-dioxane (t)

2.271min (-0.005) 0.05ppm m

response 1083

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	18.10#
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 11:48:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

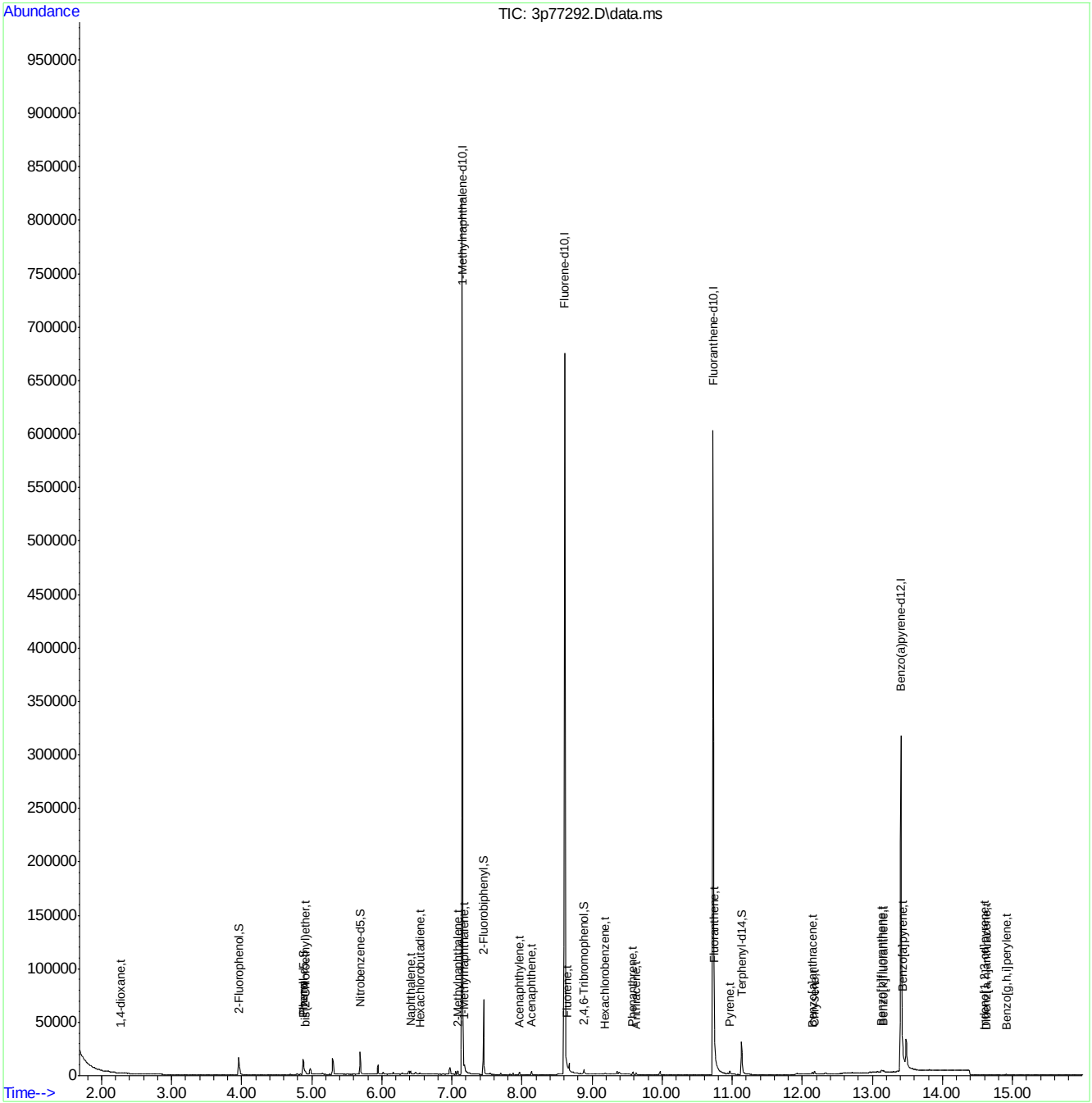
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	220163	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	286754	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	469065	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	245769	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.961	112	10799	0.34	ppm	0.00
Spiked Amount 50.000			Recovery =	0.68%		
4) Phenol-d5	4.880	99	12455	0.30	ppm	0.01
Spiked Amount 50.000			Recovery =	0.60%		
7) Nitrobenzene-d5	5.691	82	12816	0.33	ppm	0.00
Spiked Amount 50.000			Recovery =	0.66%		
13) 2-Fluorobiphenyl	7.452	172	32547	0.45	ppm	0.00
Spiked Amount 50.000			Recovery =	0.90%		
18) 2,4,6-Tribromophenol	8.882	330	1835	0.24	ppm	0.00
Spiked Amount 50.000			Recovery =	0.48%		
26) Terphenyl-d14	11.135	244	23669	0.34	ppm	0.00
Spiked Amount 50.000			Recovery =	0.68%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.271	88	322m	0.02	ppm	
5) Phenol	4.887	94	3659	0.08	ppm	# 83
6) bis(2-Chloroethyl)ether	4.908	93	578	0.02	ppm	78
8) Naphthalene	6.410	128	2139	0.02	ppm	99
9) Hexachlorobutadiene	6.546	225	433	0.02	ppm	96
10) 2-Methylnaphthalene	7.082	141	1236m	0.02	ppm	
11) 1-Methylnaphthalene	7.179	141	1477	0.02	ppm	96
14) Acenaphthylene	7.963	152	1511	0.02	ppm	99
15) Acenaphthene	8.135	153	1321	0.02	ppm	99
17) Fluorene	8.640	166	1550	0.02	ppm	78
20) Hexachlorobenzene	9.186	284	451	0.02	ppm	84
22) Phenanthrene	9.579	178	1919	0.02	ppm	96
23) Anthracene	9.630	178	1401	0.01	ppm	93
24) Fluoranthene	10.745	202	2691	0.02	ppm	97
25) Pyrene	10.967	202	2046	0.02	ppm	97
27) Benzo[a]anthracene	12.142	228	1064	0.01	ppm	97
28) Chrysene	12.177	228	1974	0.02	ppm	99
30) Benzo[b]fluoranthene	13.137	252	1390	0.01	ppm	89
31) Benzo[k]fluoranthene	13.158	252	1692	0.02	ppm	97
32) Benzo[a]pyrene	13.431	252	1766	0.02	ppm	90
33) Indeno[1,2,3-cd]pyrene	14.595	276	1213	0.02	ppm	99
34) Dibenz[a,h]anthracene	14.628	278	952	0.01	ppm	92
35) Benzo[g,h,i]perylene	14.913	276	1079	0.01	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 11:48:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

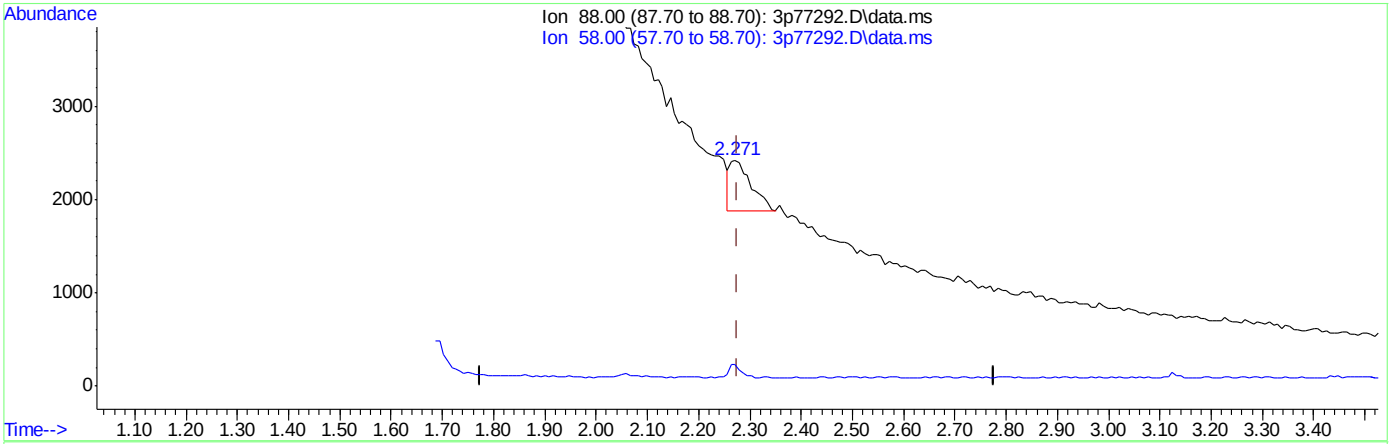
Sample Number:	E3P3623-IC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77292.D	**Analyst approved:**	06/21/19 12:04 Ying Li
Injection Time:	06/21/19 06:56	**Supervisor approved:**	06/24/19 09:23 Nina Pandya

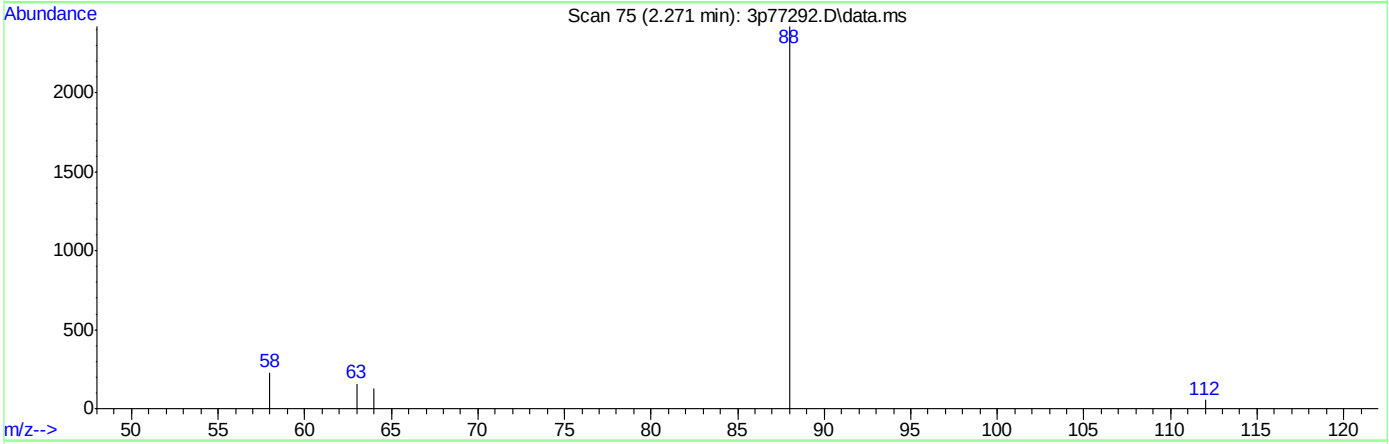
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.27	Poor instrument integration
2-Methylnaphthalene	91-57-6		7.08	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 10:46:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77292.D\data.ms

(2) 1,4-dioxane (t)

2.271min (-0.005) 0.10ppm

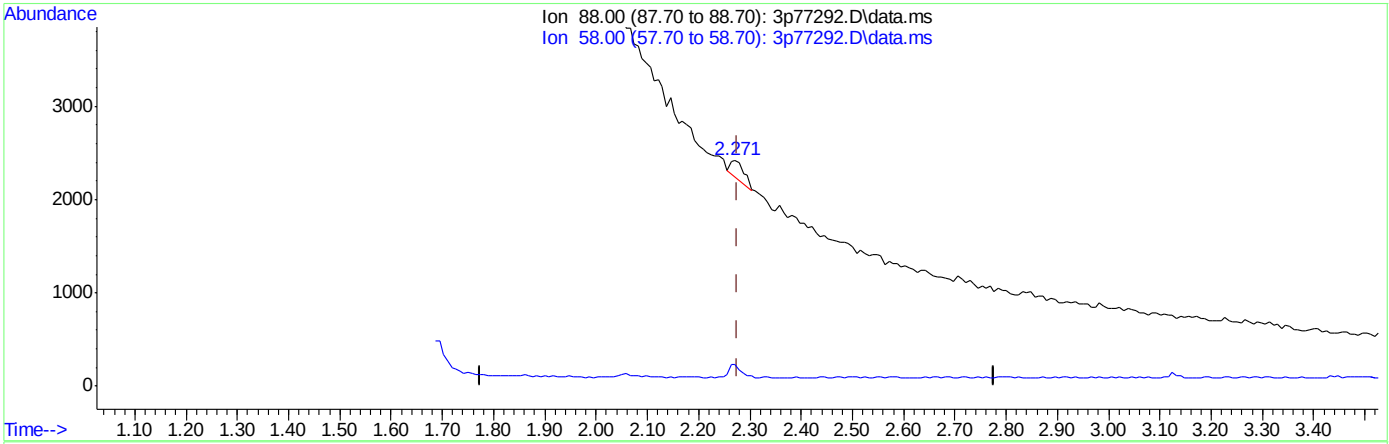
response 1559

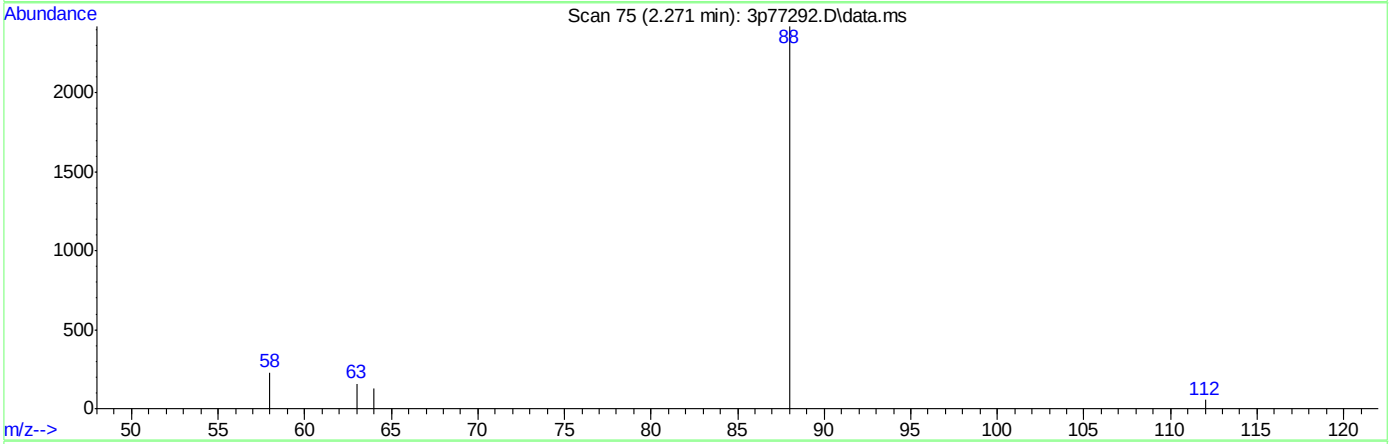
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	36.52
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 10:46:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77292.D\data.ms

(2) 1,4-dioxane (t)

2.271min (-0.005) 0.02ppm m

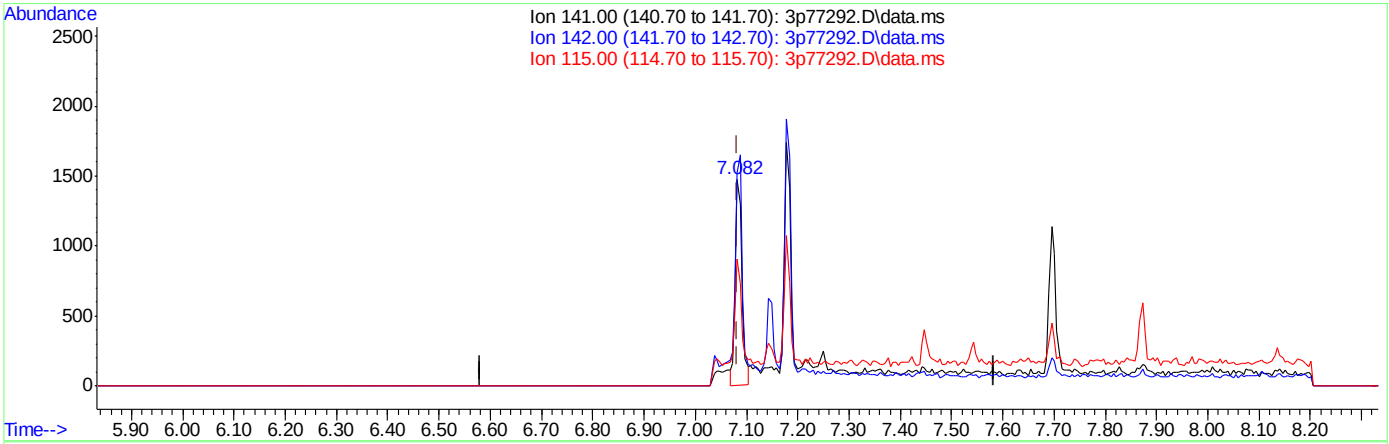
response 322

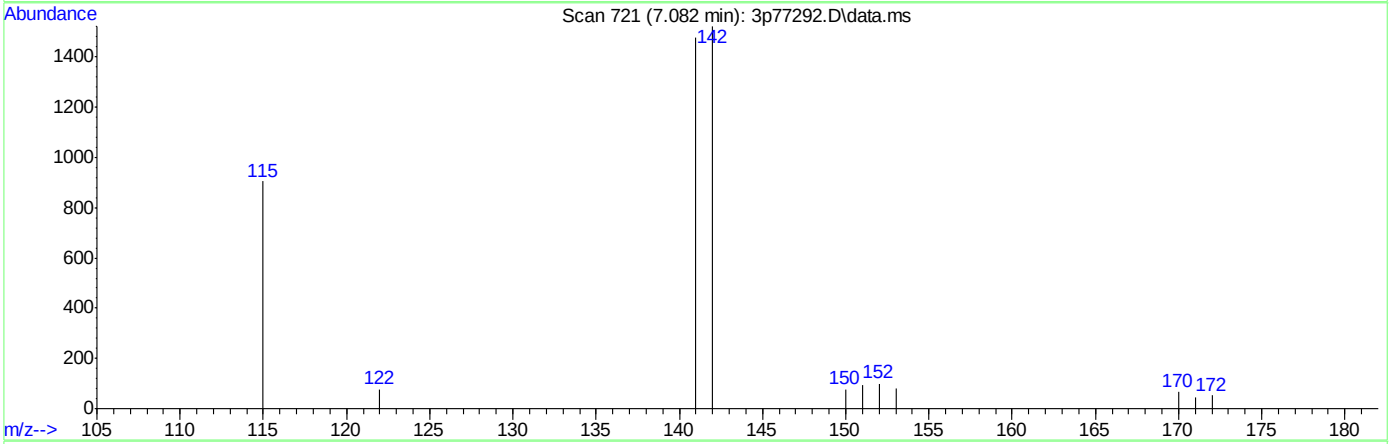
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	9.50#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 10:46:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77292.D\data.ms

(10) 2-Methylnaphthalene (t)

7.082min (-0.000) 0.02ppm

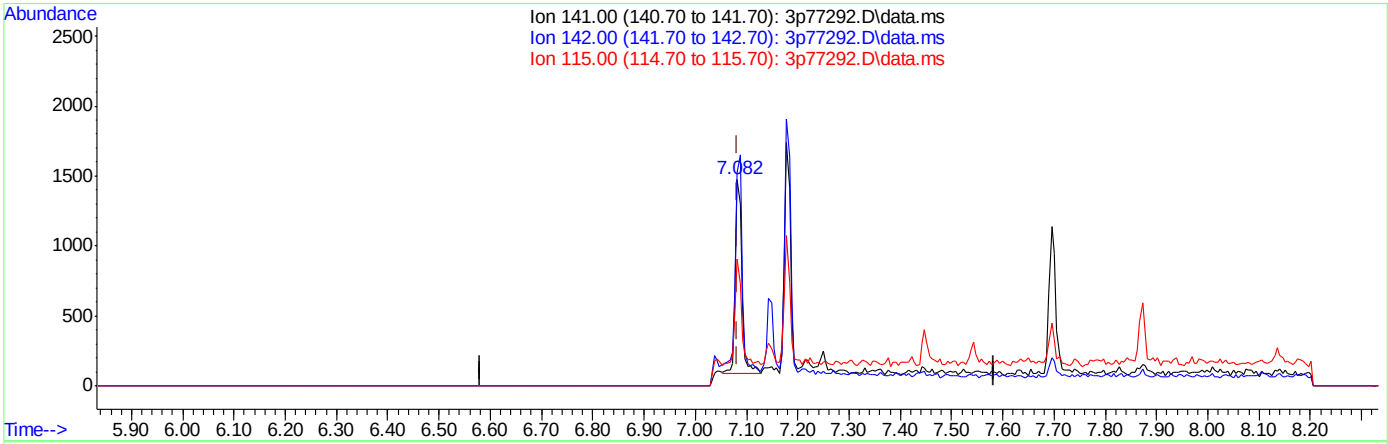
response 1321

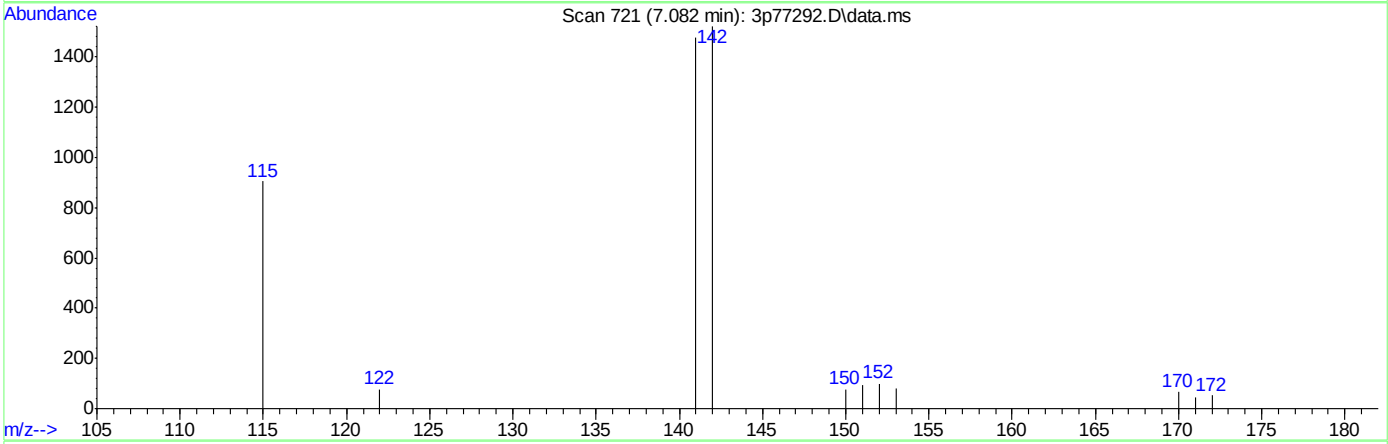
Ion	Exp%	Act%
141.00	100	100
142.00	113.60	99.85
115.00	49.40	53.63
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77292.D
Acq On : 21 Jun 2019 6:56 am
Operator : chriss2
Sample : ic3623-0.02
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 10:46:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77292.D\data.ms

(10) 2-Methylnaphthalene (t)

7.082min (-0.000) 0.02ppm m

response 1236

Ion	Exp%	Act%
141.00	100	100
142.00	113.60	102.91
115.00	49.40	61.12
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 09:23

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:50:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration

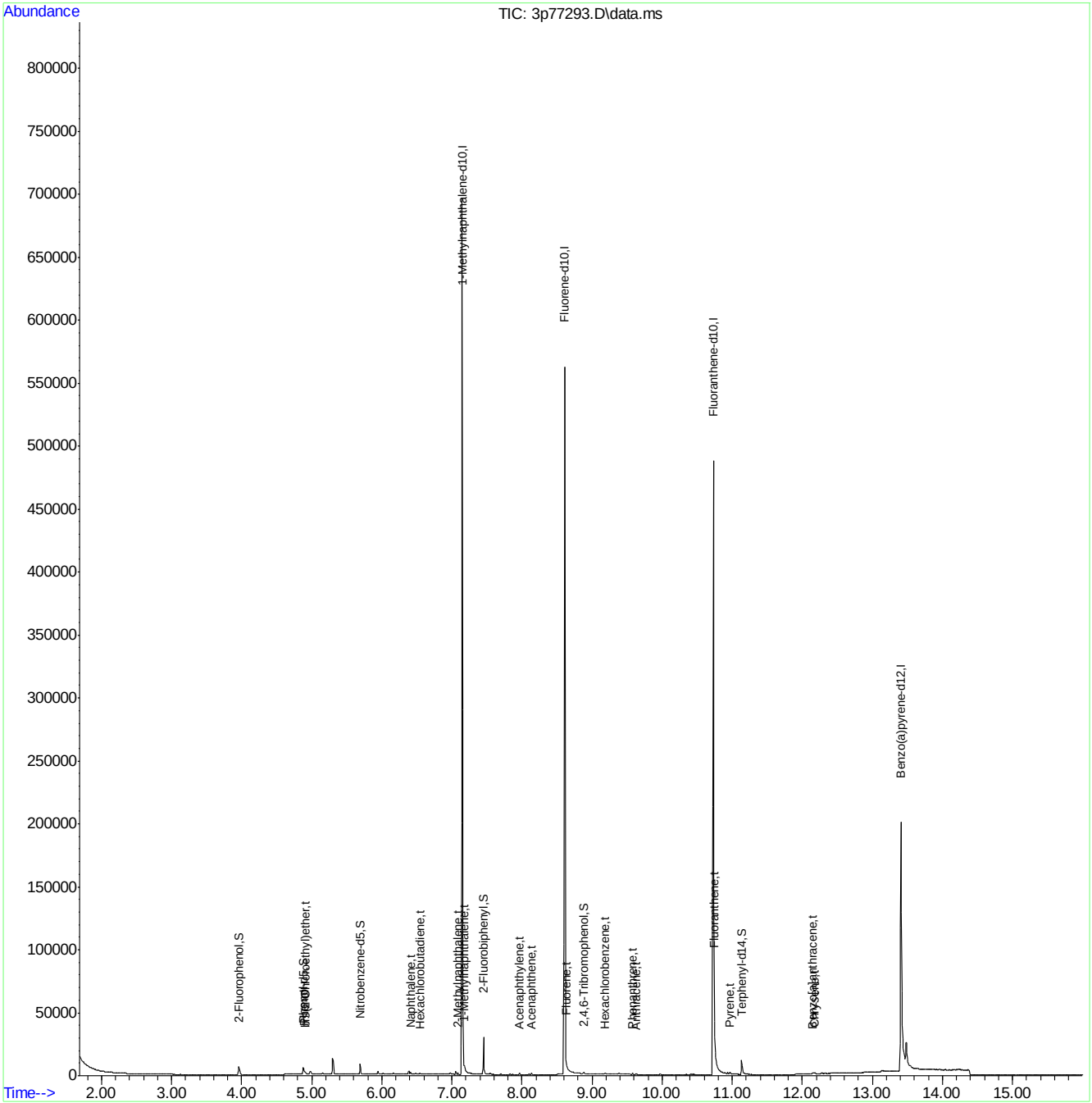
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	189501	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	239168	4.00	ppm	0.00
19) Fluoranthene-d10	10.732	212	386971	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	176319	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	3.961	112	4441	0.16	ppm	0.00
Spiked Amount 50.000			Recovery =	0.32%		
4) Phenol-d5	4.880	99	5202	0.15	ppm	0.01
Spiked Amount 50.000			Recovery =	0.30%		
7) Nitrobenzene-d5	5.691	82	5502	0.17	ppm	0.00
Spiked Amount 50.000			Recovery =	0.34%		
13) 2-Fluorobiphenyl	7.452	172	13979	0.23	ppm	0.00
Spiked Amount 50.000			Recovery =	0.46%		
18) 2,4,6-Tribromophenol	8.882	330	790	0.13	ppm	0.00
Spiked Amount 50.000			Recovery =	0.26%		
26) Terphenyl-d14	11.135	244	9360	0.16	ppm	0.00
Spiked Amount 50.000			Recovery =	0.32%		
Target Compounds						Qvalue
5) Phenol	4.894	94	1537m	0.04	ppm	
6) bis(2-Chloroethyl)ether	4.908	93	375	0.01	ppm	# 45
8) Naphthalene	6.410	128	933	0.01	ppm	91
9) Hexachlorobutadiene	6.546	225	211	0.01	ppm	94
10) 2-Methylnaphthalene	7.082	141	477m	0.01	ppm	
11) 1-Methylnaphthalene	7.179	141	559m	0.01	ppm	
14) Acenaphthylene	7.963	152	675	0.01	ppm	95
15) Acenaphthene	8.135	153	548	0.01	ppm	92
17) Fluorene	8.629	166	764	0.01	ppm	96
20) Hexachlorobenzene	9.186	284	185	0.01	ppm	98
22) Phenanthrene	9.579	178	840m	0.01	ppm	
23) Anthracene	9.630	178	532m	0.01	ppm	
24) Fluoranthene	10.745	202	1043	0.01	ppm	88
25) Pyrene	10.967	202	905	0.01	ppm	98
27) Benzo[a]anthracene	12.142	228	527	0.01	ppm	90
28) Chrysene	12.177	228	885	0.01	ppm	96

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:50:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration



Manual Integration Approval Summary

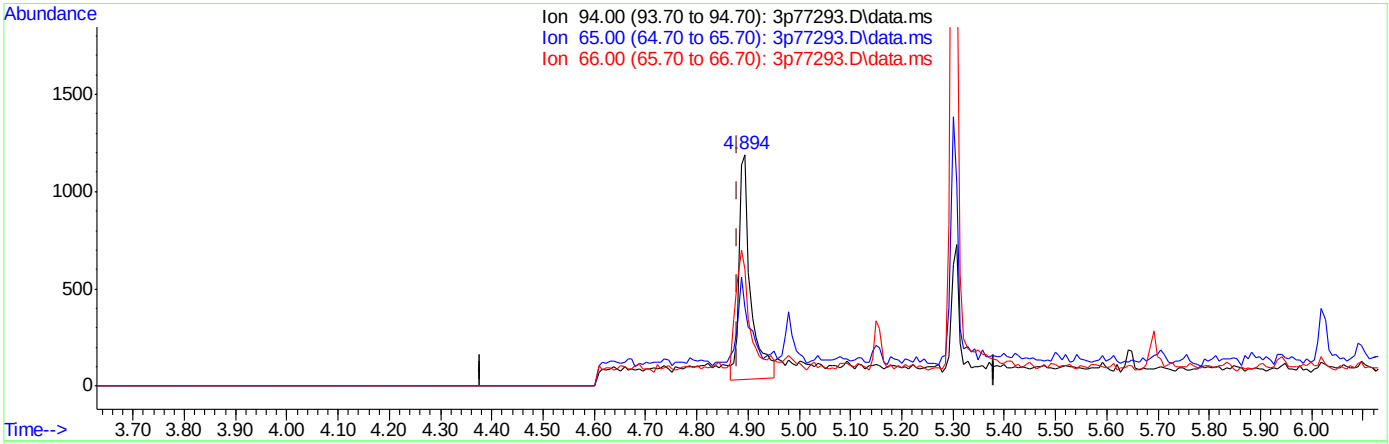
Sample Number: E3P3623-IC3623
Lab FileID: 3P77293.D
Injection Time: 06/21/19 07:17
Method: SW846 8270D BY SIM
Analyst approved: 06/21/19 12:04 Ying Li
Supervisor approved: 06/24/19 09:23 Nina Pandya

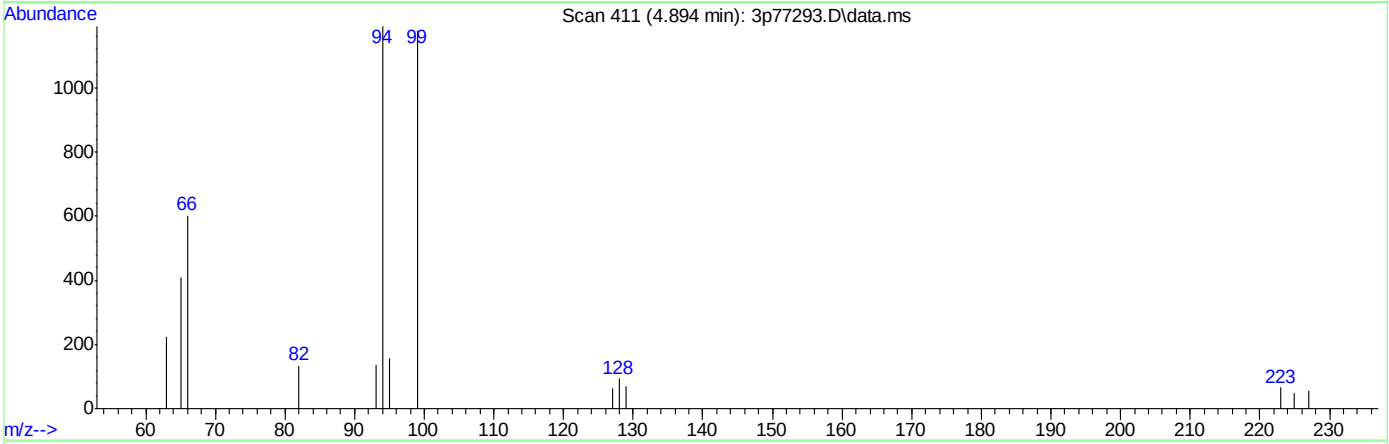
Parameter	CAS	Sig#	R.T. (min.)	Reason
Phenol	108-95-2		4.89	Poor instrument integration
2-Methylnaphthalene	91-57-6		7.08	Poor instrument integration
Phenanthrene	85-01-8		9.58	Poor instrument integration
Anthracene	120-12-7		9.63	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(5) Phenol

4.894min (+0.014) 0.05ppm

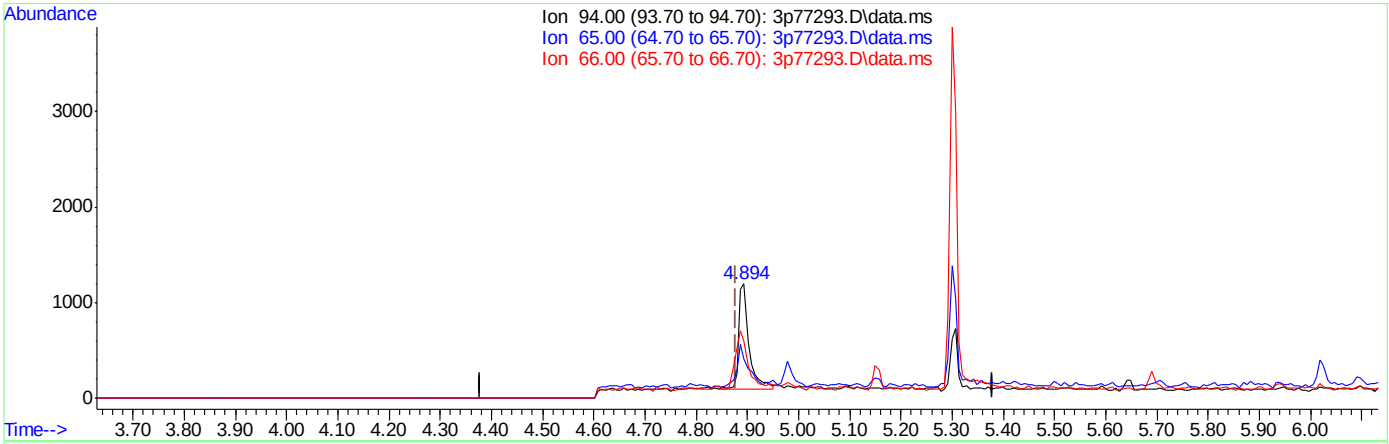
response 1796

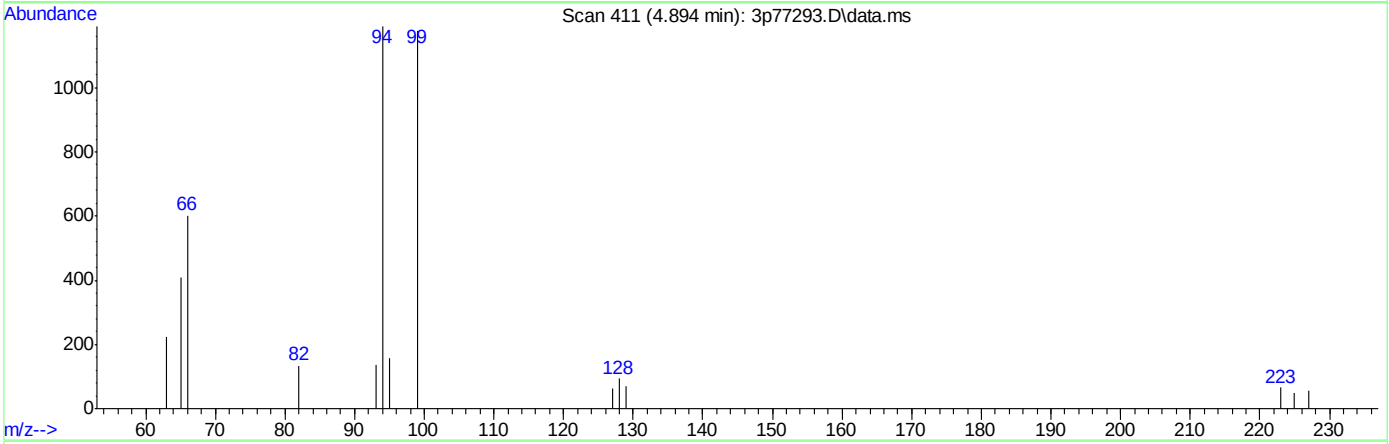
Ion	Exp%	Act%
94.00	100	100
65.00	29.70	22.34#
66.00	44.30	44.07
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(5) Phenol

4.894min (+0.014) 0.04ppm m

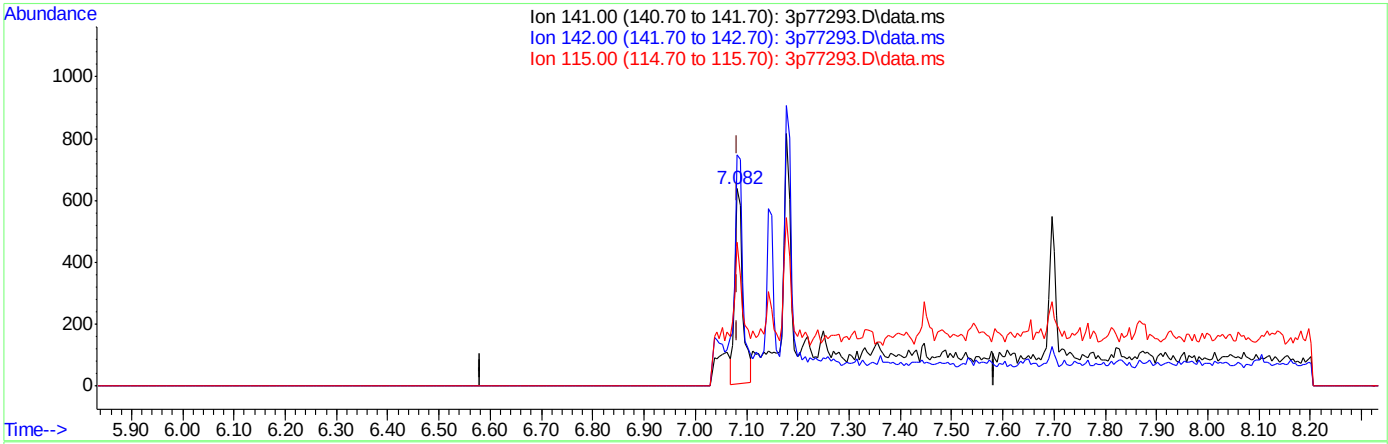
response 1537

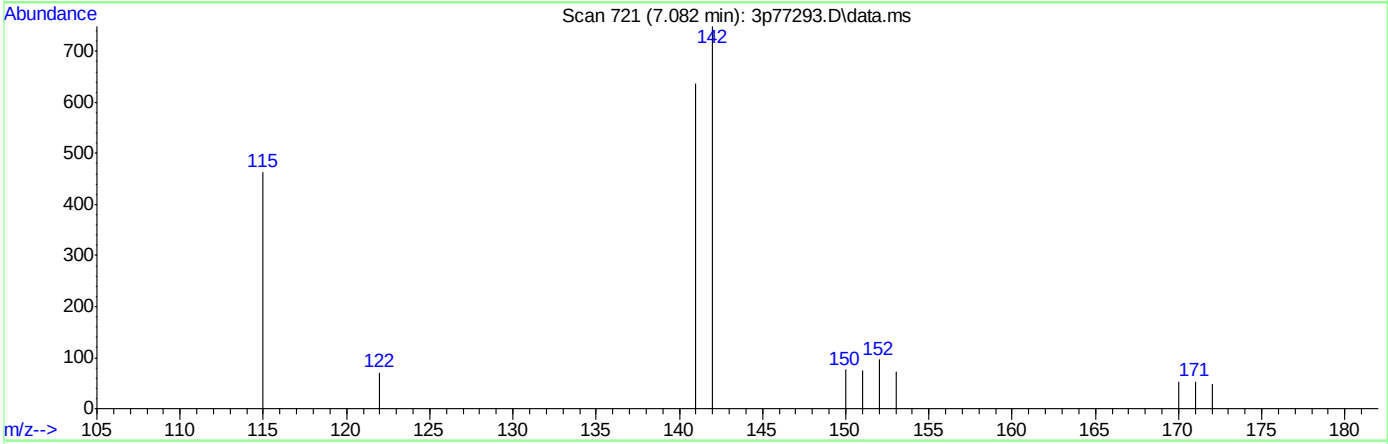
Ion	Exp%	Act%
94.00	100	100
65.00	29.70	34.26
66.00	44.30	50.46
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(10) 2-Methylnaphthalene (t)

7.082min (-0.000) 0.01ppm

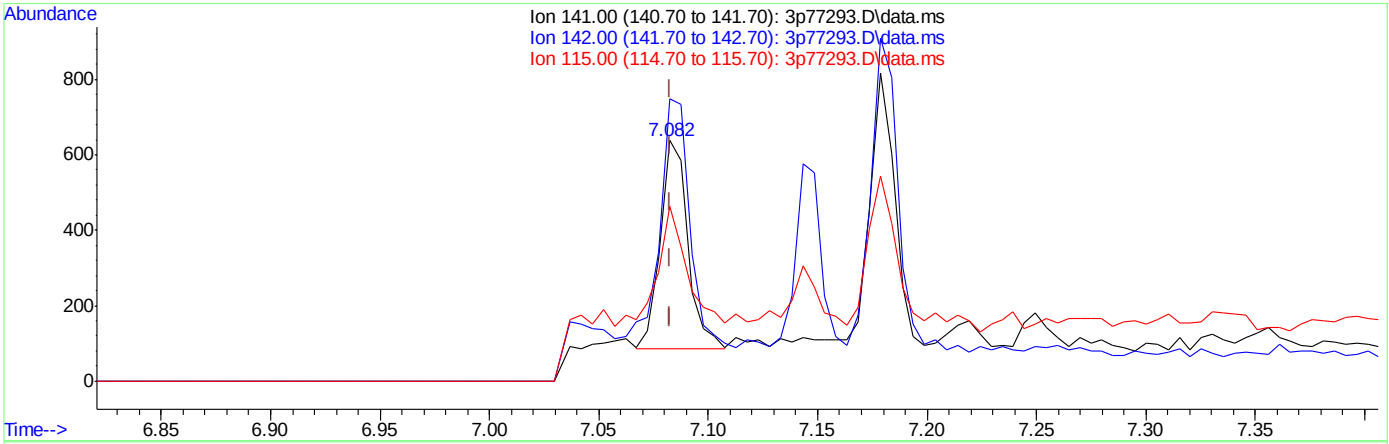
response 664

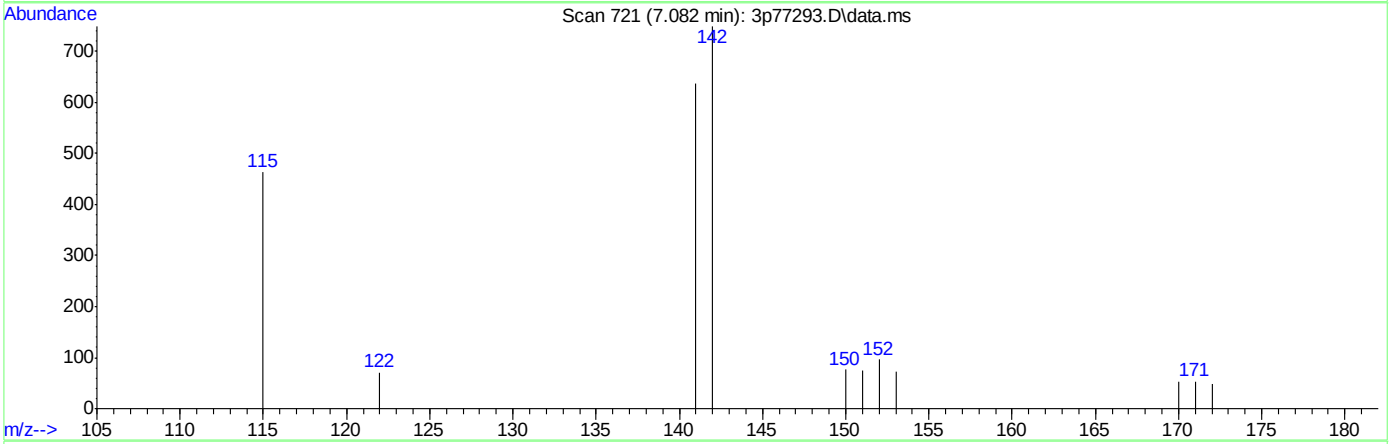
Ion	Exp%	Act%
141.00	100	100
142.00	113.60	112.73
115.00	49.40	55.55
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(10) 2-Methylnaphthalene (t)

7.082min (-0.000) 0.01ppm m

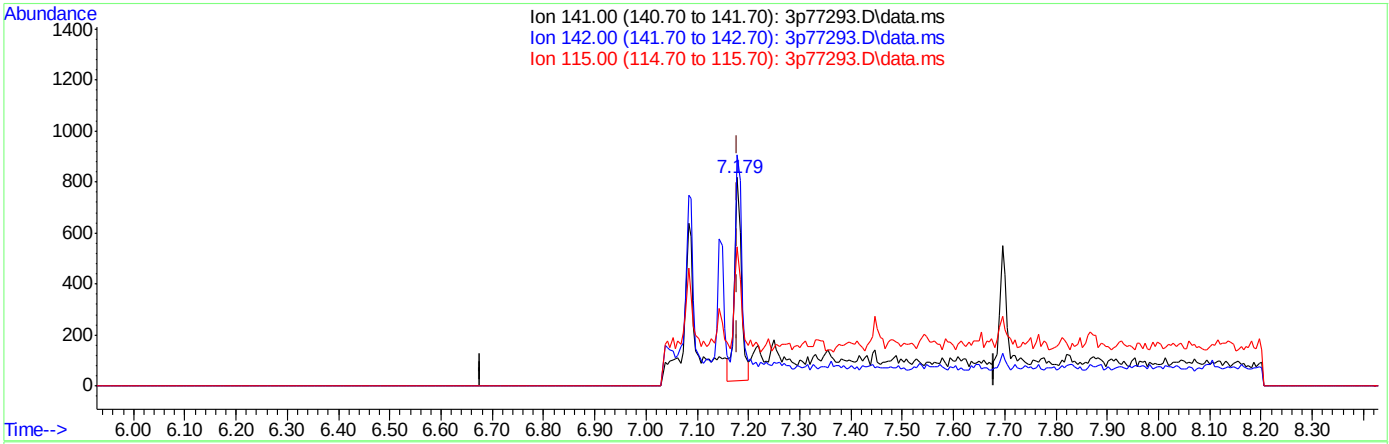
response 477

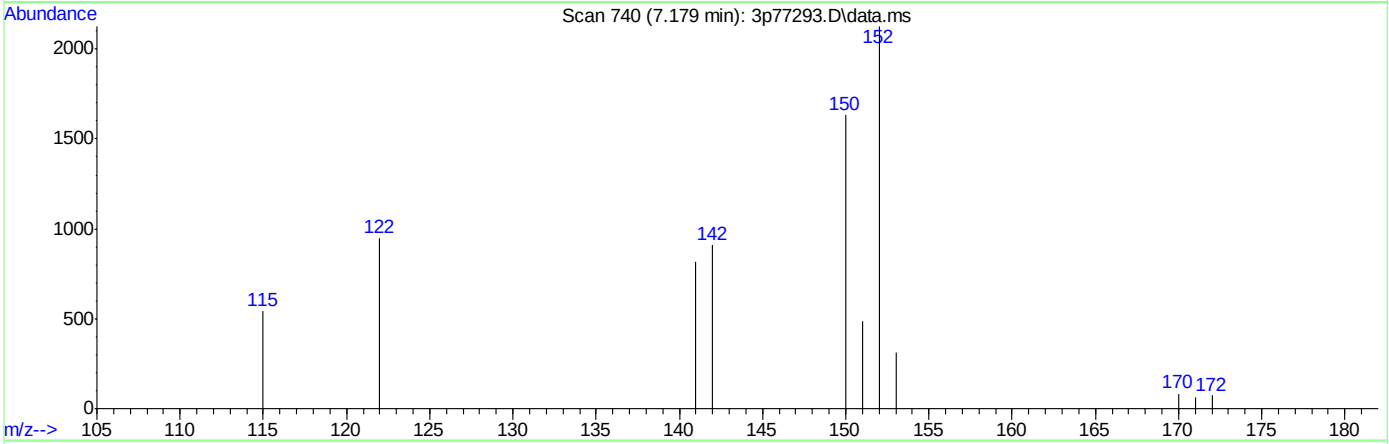
Ion	Exp%	Act%
141.00	100	100
142.00	113.60	117.40
115.00	49.40	72.73
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(11) 1-Methylnaphthalene (t)

7.179min (-0.000) 0.01ppm

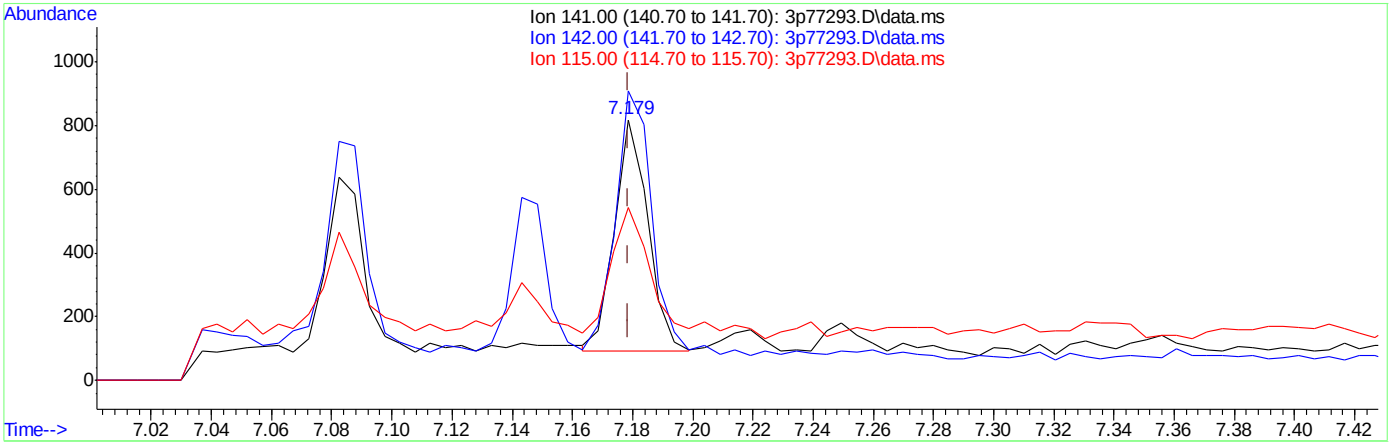
response 740

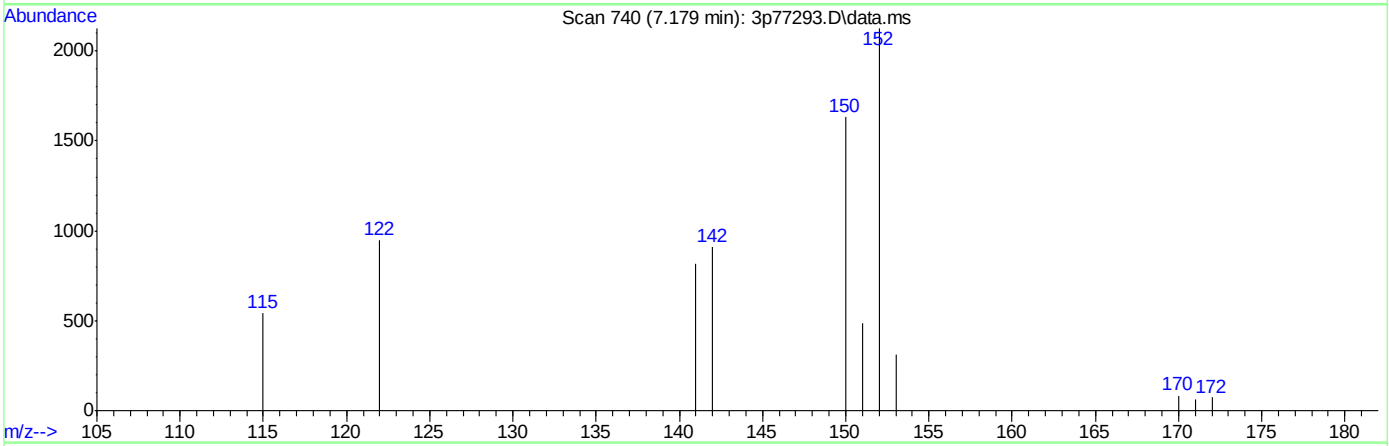
Ion	Exp%	Act%
141.00	100	100
142.00	108.80	111.73
115.00	49.30	52.65
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(11) 1-Methylnaphthalene (t)

7.179min (-0.000) 0.01ppm m

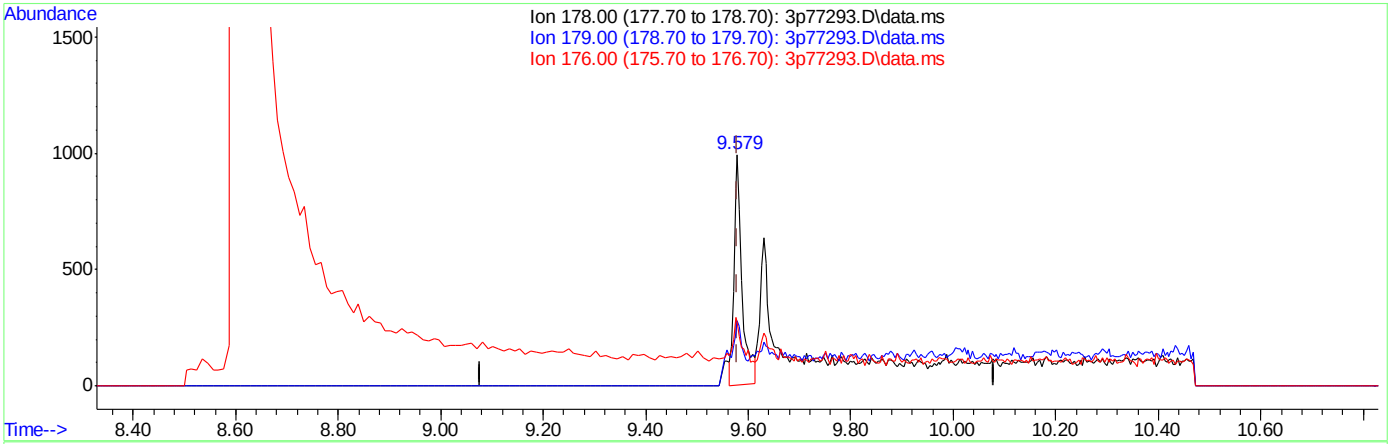
response 559

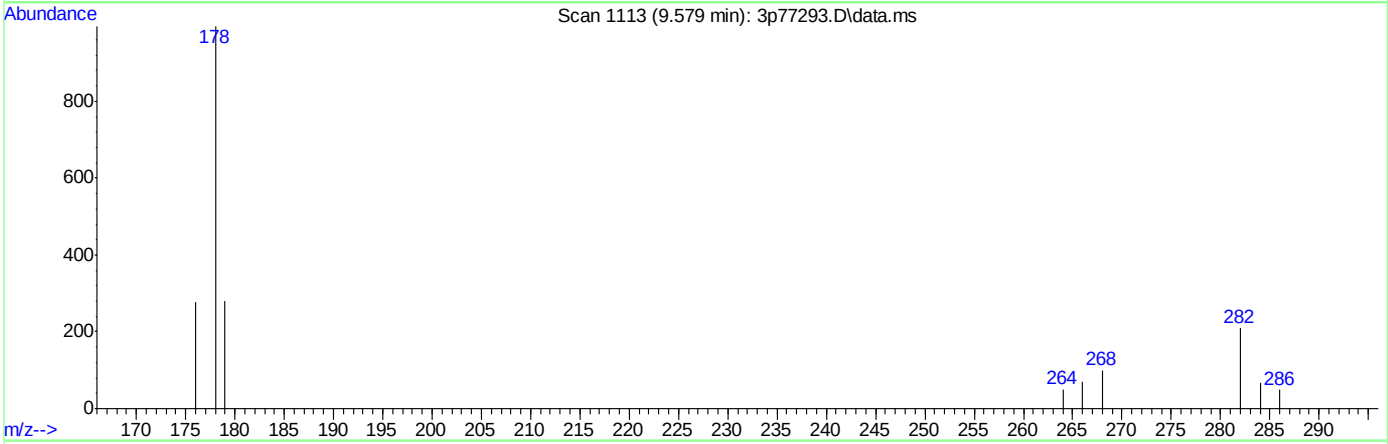
Ion	Exp%	Act%
141.00	100	100
142.00	108.80	111.14
115.00	49.30	66.59
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(22) Phenanthrene (t)

9.579min (-0.000) 0.01ppm

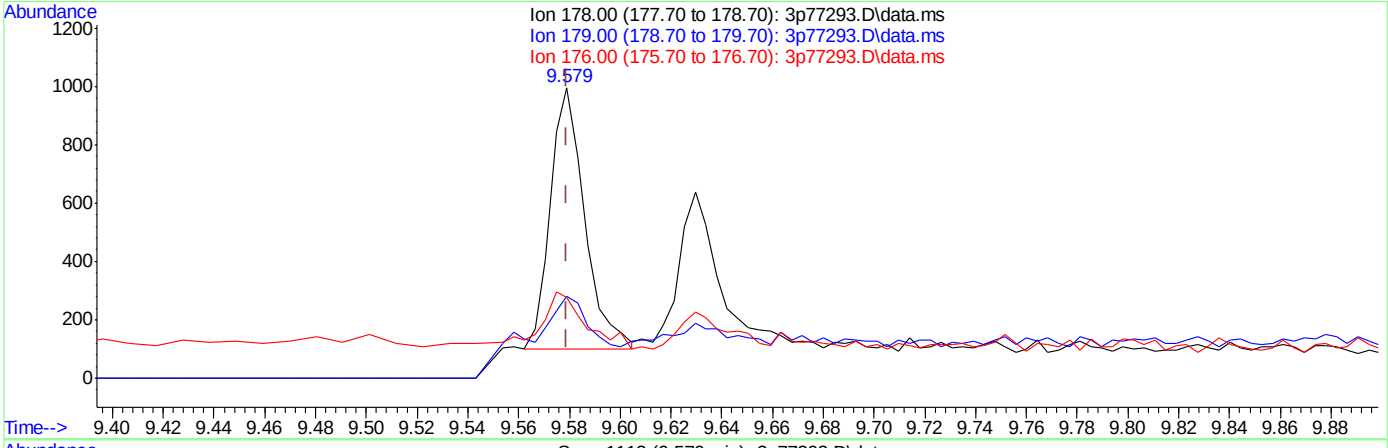
response 1136

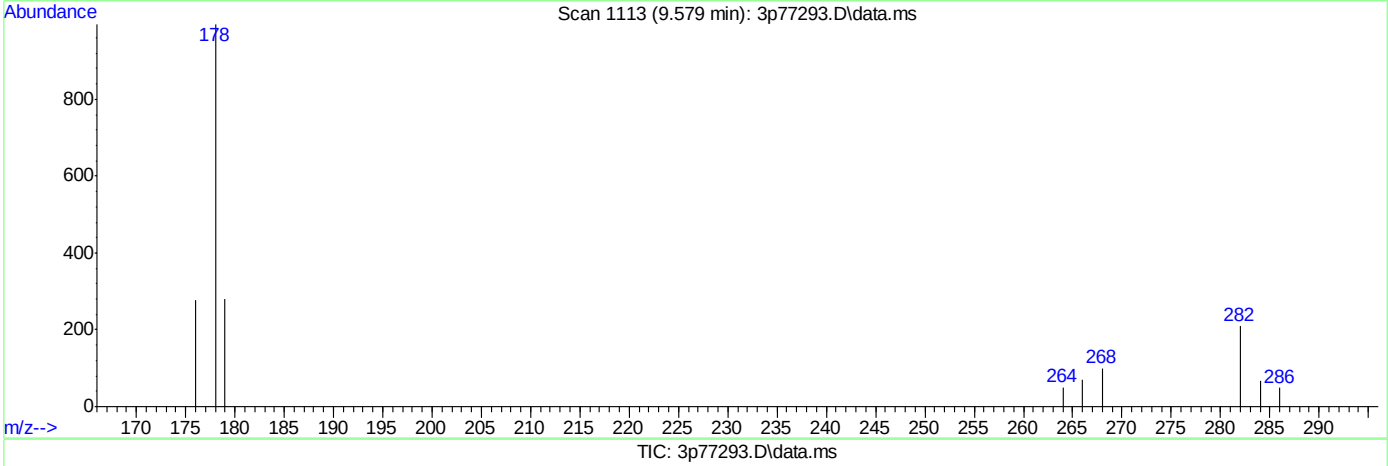
Ion	Exp%	Act%
178.00	100	100
179.00	15.40	16.82
176.00	18.50	18.23
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(22) Phenanthrene (t)

9.579min (-0.000) 0.01ppm m

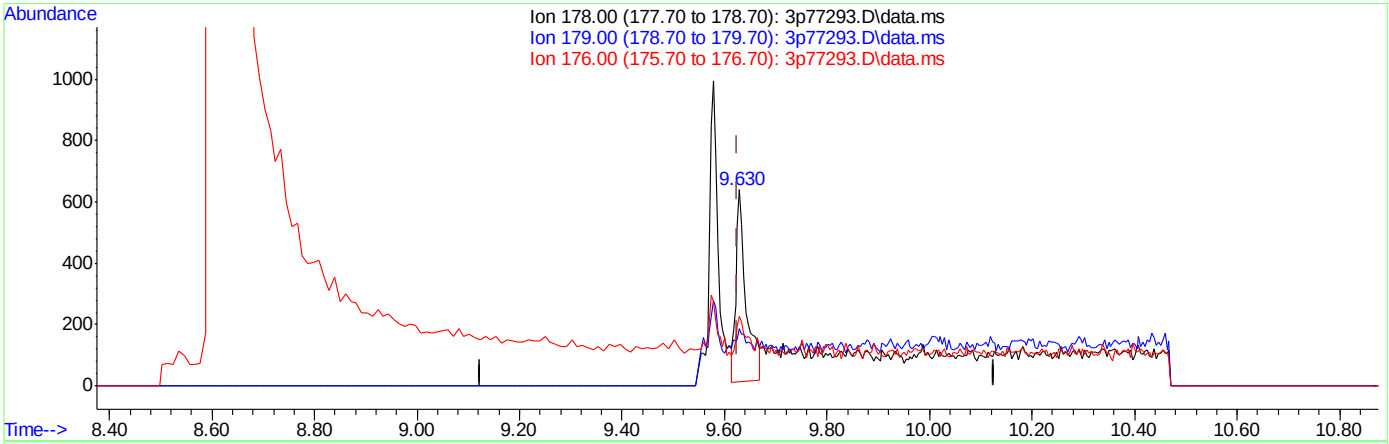
response 840

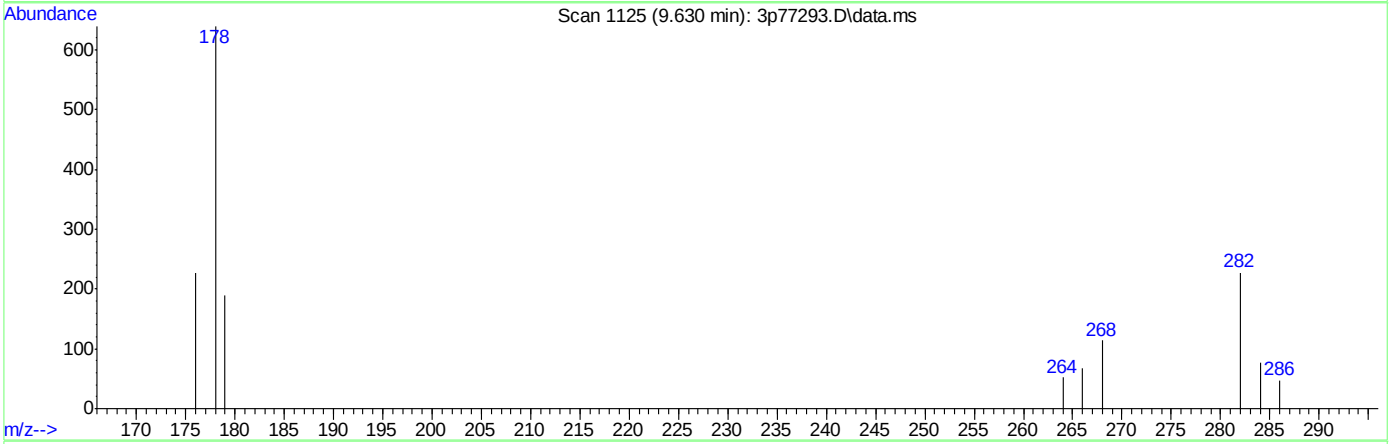
Ion	Exp%	Act%
178.00	100	100
179.00	15.40	28.14
176.00	18.50	27.74
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(23) Anthracene (t)

9.630min (+0.004) 0.01ppm

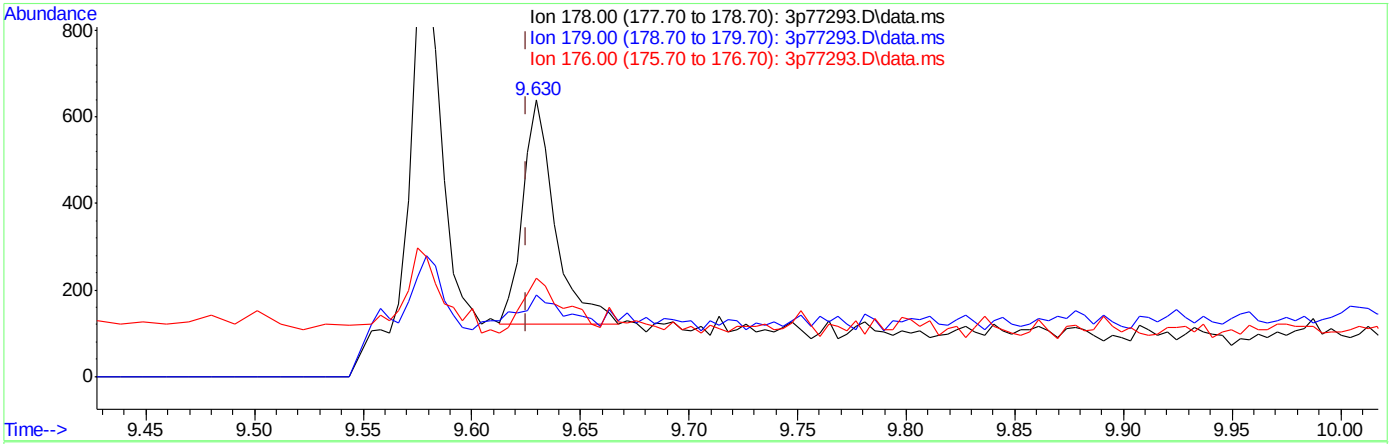
response 883

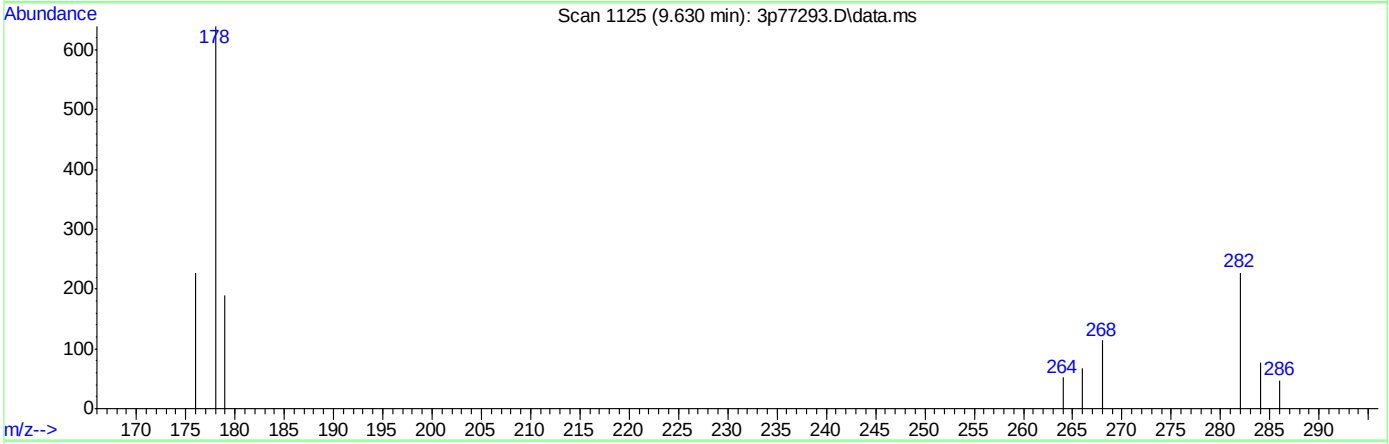
Ion	Exp%	Act%
178.00	100	100
179.00	14.90	11.42
176.00	18.50	21.88
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77293.D
Acq On : 21 Jun 2019 7:17 am
Operator : chriss2
Sample : ic3623-0.01
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 21 10:48:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 10:36:28 2019
Response via : Initial Calibration





TIC: 3p77293.D\data.ms

(23) Anthracene (t)

9.630min (+0.004) 0.01ppm m

response 532

Ion	Exp%	Act%
178.00	100	100
179.00	14.90	29.58
176.00	18.50	35.52
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77294.D
Acq On : 21 Jun 2019 7:38 am
Operator : chriss2
Sample : icv3623-5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 11:42:41 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:41:08 2019
Response via : Initial Calibration

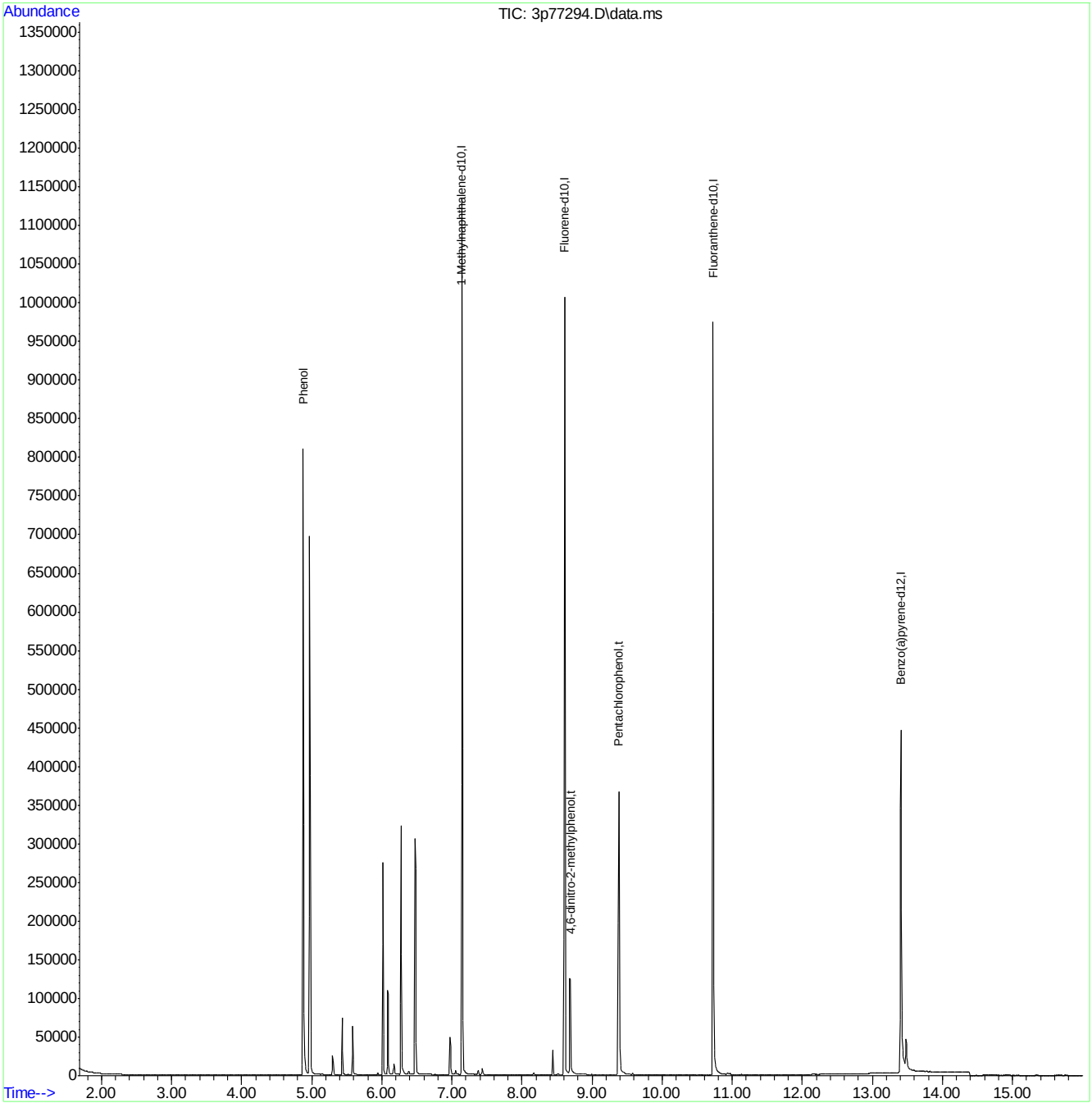
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.143	150	306039	4.00	ppm	0.00
12) Fluorene-d10	8.608	176	414928	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	649528	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	358162	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	0.000	112	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
4) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
7) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
13) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
18) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
26) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
5) Phenol	4.880	94	345434	5.85	ppm	98
16) 4,6-dinitro-2-methylph...	8.692	198	83895	5.50	ppm #	34
21) Pentachlorophenol	9.386	266	109790	6.22	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77294.D
Acq On : 21 Jun 2019 7:38 am
Operator : chriss2
Sample : icv3623-5
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 11:42:41 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:41:08 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77295.D
Acq On : 21 Jun 2019 8:00 am
Operator : chriss2
Sample : icv3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 21 11:44:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:41:08 2019
Response via : Initial Calibration

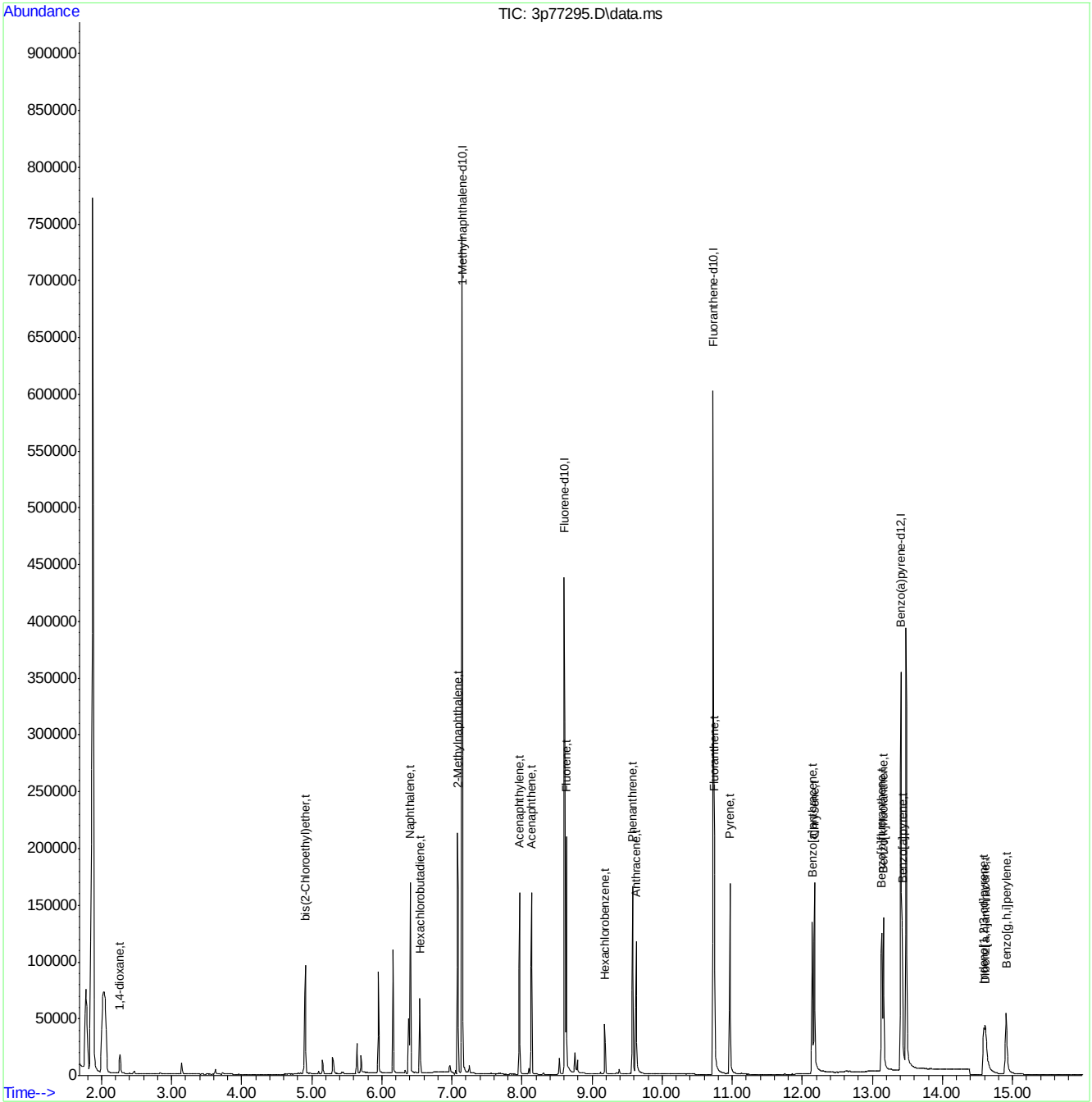
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.148	150	196776	4.00	ppm	0.00
12) Fluorene-d10	8.602	176	251439	4.00	ppm	0.00
19) Fluoranthene-d10	10.728	212	418812	4.00	ppm	0.00
29) Benzo(a)pyrene-d12	13.410	264	247220	4.00	ppm	0.00
System Monitoring Compounds						
3) 2-Fluorophenol	0.000	112	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
4) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
7) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
13) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
18) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
26) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-dioxane	2.263	88	12175	0.84	ppm	95
6) bis(2-Chloroethyl)ether	4.908	93	34488	1.09	ppm	95
8) Naphthalene	6.403	128	114008	1.12	ppm	95
9) Hexachlorobutadiene	6.545	225	21231	1.07	ppm	98
10) 2-Methylnaphthalene	7.082	141	61363	1.11	ppm	99
14) Acenaphthylene	7.963	152	85917	1.16	ppm	100
15) Acenaphthene	8.135	153	67371	1.13	ppm	99
17) Fluorene	8.634	166	76066	1.14	ppm	89
20) Hexachlorobenzene	9.180	284	18931	1.00	ppm	87
22) Phenanthrene	9.579	178	119460	1.25	ppm	99
23) Anthracene	9.630	178	86207	1.13	ppm	98
24) Fluoranthene	10.745	202	116743	1.05	ppm	100
25) Pyrene	10.967	202	112597	1.12	ppm	100
27) Benzo[a]anthracene	12.142	228	76348	1.07	ppm	99
28) Chrysene	12.177	228	115646	1.17	ppm	99
30) Benzo[b]fluoranthene	13.137	252	83706	0.97	ppm	97
31) Benzo[k]fluoranthene	13.158	252	98289	1.06	ppm	97
32) Benzo[a]pyrene	13.431	252	83833	0.88	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.590	276	71941	1.03	ppm	99
34) Dibenz[a,h]anthracene	14.617	278	57959	0.83	ppm	95
35) Benzo[g,h,i]perylene	14.908	276	74250	1.13	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3623\
Data File : 3p77295.D
Acq On : 21 Jun 2019 8:00 am
Operator : chriss2
Sample : icv3623-1
Misc : op20672a,e3p3623,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 21 11:44:01 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:41:08 2019
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya 06/24/19 11:38

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77298.D
Acq On : 21 Jun 2019 4:21 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 09:22:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

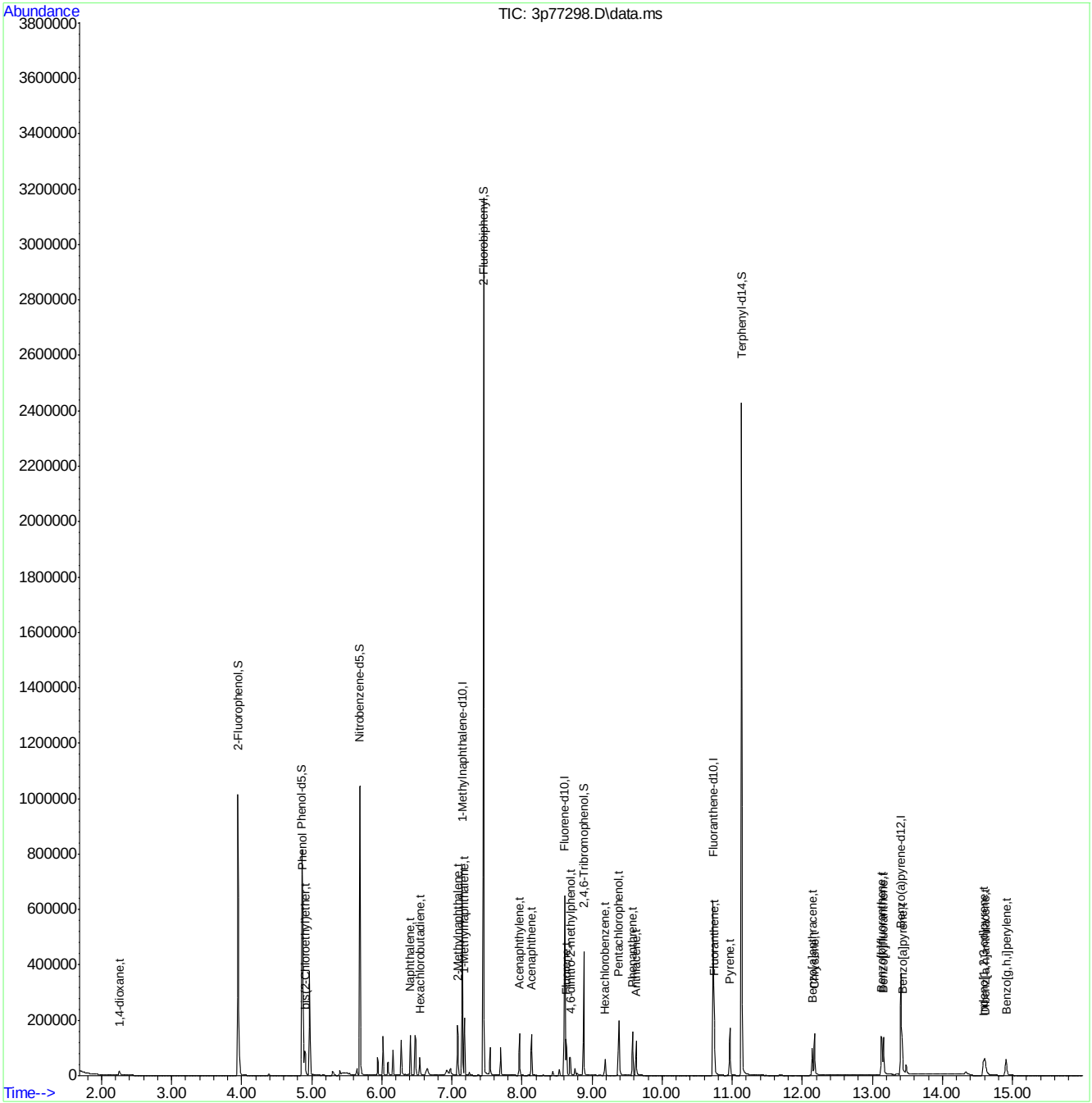
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.148	150	197735	4.00	ppm		0.00
12) Fluorene-d10	8.608	176	272319	4.00	ppm		0.00
19) Fluoranthene-d10	10.728	212	433644	4.00	ppm		0.00
29) Benzo(a)pyrene-d12	13.410	264	255514	4.00	ppm		0.00
System Monitoring Compounds							
3) 2-Fluorophenol	3.946	112	547204	19.83	ppm		0.00
Spiked Amount 50.000			Recovery = 39.66%				
4) Phenol-d5	4.858	99	703326	20.60	ppm		0.00
Spiked Amount 50.000			Recovery = 41.20%				
7) Nitrobenzene-d5	5.684	82	679507	20.70	ppm		0.00
Spiked Amount 50.000			Recovery = 41.40%				
13) 2-Fluorobiphenyl	7.452	172	1404463	18.95	ppm		0.00
Spiked Amount 50.000			Recovery = 37.90%				
18) 2,4,6-Tribromophenol	8.881	330	152738	23.59	ppm		0.00
Spiked Amount 50.000			Recovery = 47.18%				
26) Terphenyl-d14	11.131	244	1279081	20.95	ppm		0.00
Spiked Amount 50.000			Recovery = 41.90%				
Target Compounds							Qvalue
2) 1,4-dioxane	2.256	88	14270m	0.98	ppm		
5) Phenol	4.872	94	188624	4.94	ppm		90
6) bis(2-Chloroethyl)ether	4.908	93	29113	0.92	ppm		96
8) Naphthalene	6.403	128	98906	0.96	ppm		95
9) Hexachlorobutadiene	6.546	225	19119	0.96	ppm		99
10) 2-Methylnaphthalene	7.082	141	52786	0.95	ppm		99
11) 1-Methylnaphthalene	7.179	141	59698	0.94	ppm		99
14) Acenaphthylene	7.963	152	77707	0.97	ppm		100
15) Acenaphthene	8.135	153	62751	0.97	ppm		99
16) 4,6-dinitro-2-methylph...	8.692	198	44220	4.58	ppm	#	34
17) Fluorene	8.629	166	68038	0.94	ppm		99
20) Hexachlorobenzene	9.186	284	20236	1.03	ppm		99
21) Pentachlorophenol	9.386	266	58256	5.00	ppm		98
22) Phenanthrene	9.579	178	113116	1.14	ppm		99
23) Anthracene	9.630	178	85928	1.08	ppm		98
24) Fluoranthene	10.745	202	112774	0.98	ppm		100
25) Pyrene	10.967	202	110868	1.06	ppm		99
27) Benzo[a]anthracene	12.142	228	64032	0.88	ppm		100
28) Chrysene	12.177	228	109110	1.07	ppm		99
30) Benzo[b]fluoranthene	13.130	252	96336	1.08	ppm		98
31) Benzo[k]fluoranthene	13.158	252	97977	1.02	ppm		98
32) Benzo[a]pyrene	13.431	252	90238	0.92	ppm		97
33) Indeno[1,2,3-cd]pyrene	14.590	276	75847	1.05	ppm		99
34) Dibenz[a,h]anthracene	14.611	278	66167	0.92	ppm		96
35) Benzo[g,h,i]perylene	14.908	276	70316	1.04	ppm		100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77298.D
Acq On : 21 Jun 2019 4:21 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 09:22:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration



Manual Integration Approval Summary

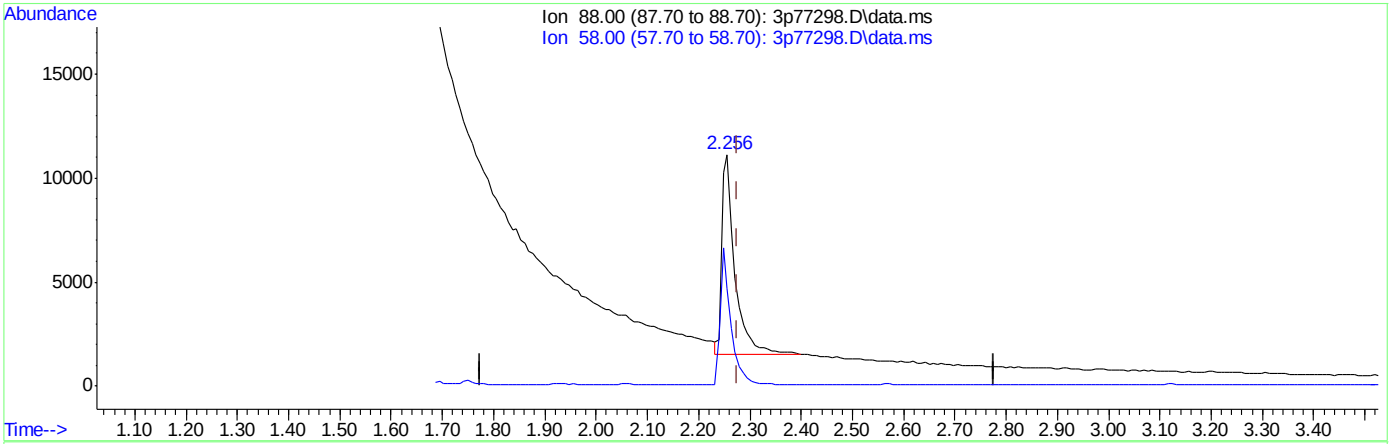
Sample Number:	E3P3624-CC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77298.D	**Analyst approved:**	06/24/19 10:58 Dipa Patel
Injection Time:	06/21/19 16:21	**Supervisor approved:**	06/24/19 11:38 Nina Pandya

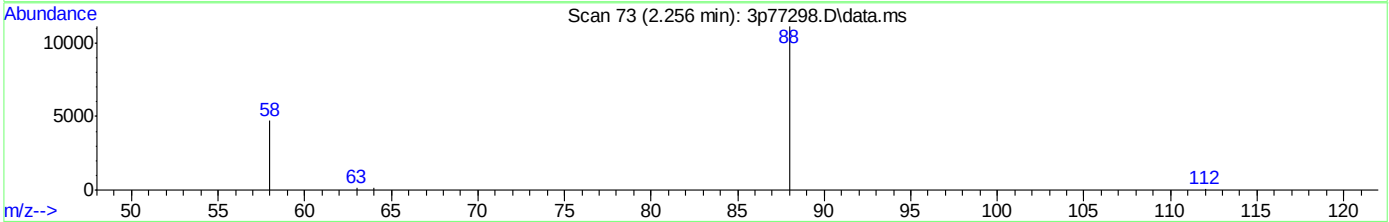
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.26	Poor instrument integration

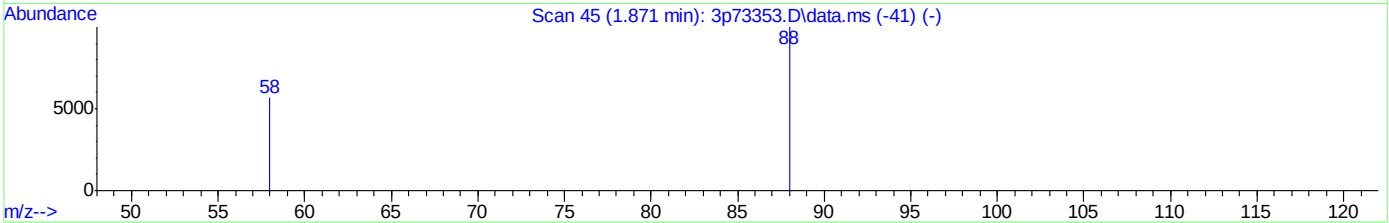
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77298.D
Acq On : 21 Jun 2019 4:21 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 07:57:13 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration







TIC: 3p77298.D\data.ms

(2) 1,4-dioxane (t)

2.256min (-0.020) 1.19ppm

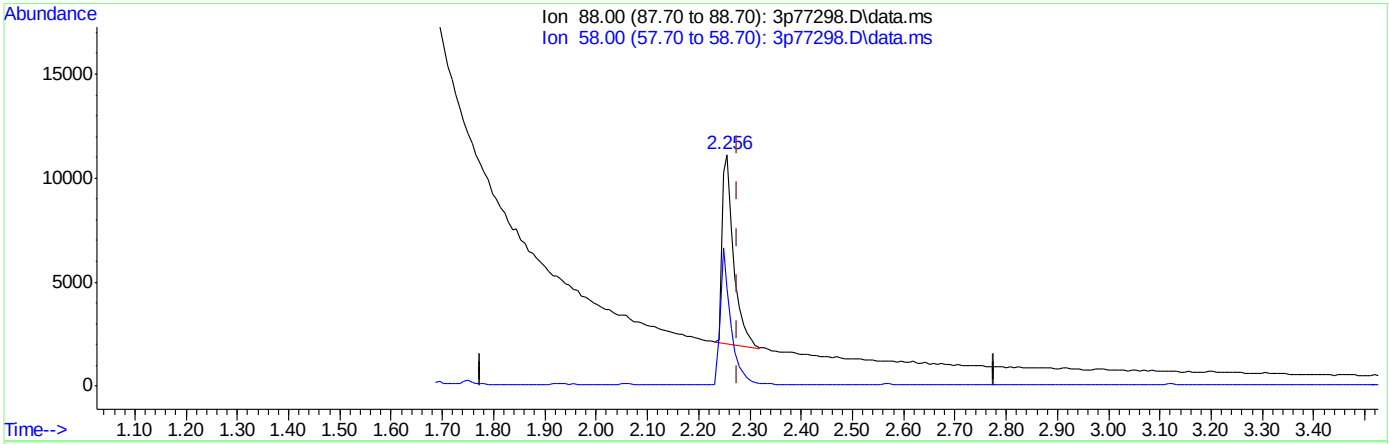
response 17282

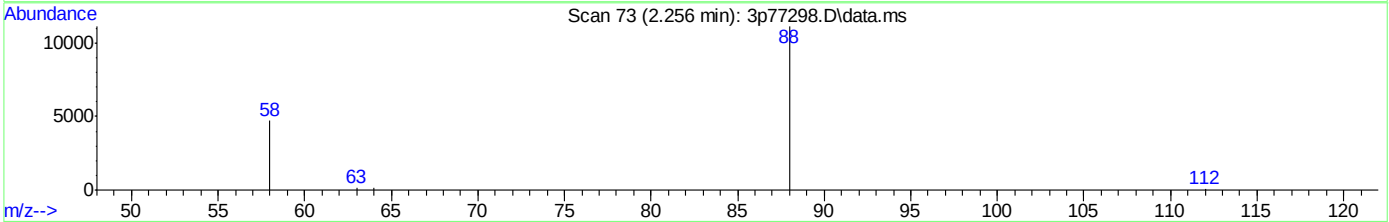
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	49.73
0.00	0.00	0.00
0.00	0.00	0.00

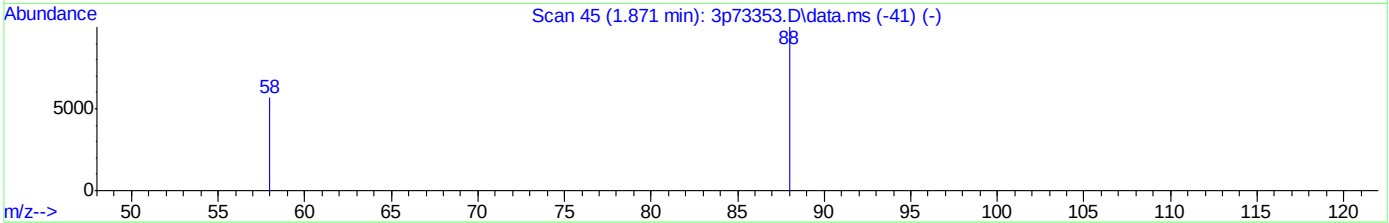
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3624\
Data File : 3p77298.D
Acq On : 21 Jun 2019 4:21 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806,e3p3624,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 07:57:13 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration







TIC: 3p77298.D\data.ms

(2) 1,4-dioxane (t)

2.256min (-0.020) 0.98ppm m

response 14270

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	42.42
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nancy Ma
06/25/19 13:46

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77347.D
Acq On : 24 Jun 2019 10:36 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:34:28 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration

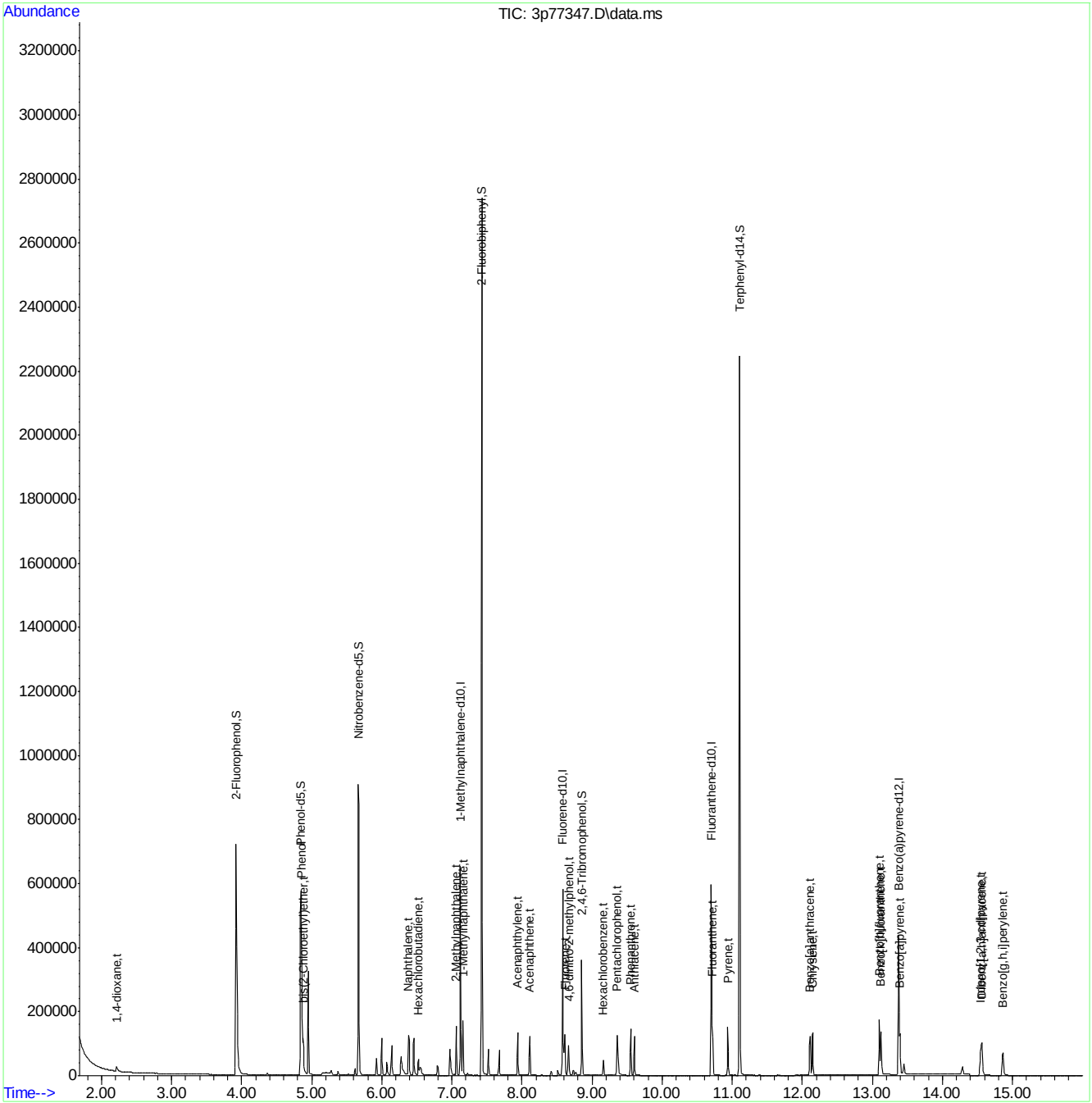
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.123	150	167894	4.00	ppm	-0.03
12) Fluorene-d10	8.581	176	237373	4.00	ppm	-0.03
19) Fluoranthene-d10	10.703	212	386919	4.00	ppm	-0.02
29) Benzo(a)pyrene-d12	13.375	264	268489	4.00	ppm	-0.03
System Monitoring Compounds						
3) 2-Fluorophenol	3.922	112	479368	20.46	ppm	-0.03
Spiked Amount 50.000			Recovery = 40.92%			
4) Phenol-d5	4.844	99	614605	21.20	ppm	-0.02
Spiked Amount 50.000			Recovery = 42.40%			
7) Nitrobenzene-d5	5.663	82	585538	21.00	ppm	-0.02
Spiked Amount 50.000			Recovery = 42.00%			
13) 2-Fluorobiphenyl	7.426	172	1175475	18.20	ppm	-0.03
Spiked Amount 50.000			Recovery = 36.40%			
18) 2,4,6-Tribromophenol	8.854	330	125288	22.20	ppm	-0.03
Spiked Amount 50.000			Recovery = 44.40%			
26) Terphenyl-d14	11.106	244	1137362	20.88	ppm	-0.02
Spiked Amount 50.000			Recovery = 41.76%			
Target Compounds						Qvalue
2) 1,4-dioxane	2.216	88	11727m	0.95	ppm	
5) Phenol	4.851	94	166066	5.12	ppm	# 88
6) bis(2-Chloroethyl)ether	4.886	93	26316	0.98	ppm	92
8) Naphthalene	6.382	128	85886	0.99	ppm	96
9) Hexachlorobutadiene	6.524	225	15285	0.90	ppm	99
10) 2-Methylnaphthalene	7.062	141	46875	0.99	ppm	97
11) 1-Methylnaphthalene	7.158	141	53008	0.99	ppm	95
14) Acenaphthylene	7.938	152	72917	1.04	ppm	99
15) Acenaphthene	8.110	153	55409	0.98	ppm	99
16) 4,6-dinitro-2-methylph...	8.665	198	43096	5.03	ppm	# 57
17) Fluorene	8.613	166	59505	0.94	ppm	82
20) Hexachlorobenzene	9.159	284	16197	0.92	ppm	93
21) Pentachlorophenol	9.359	266	35922	3.55	ppm	88
22) Phenanthrene	9.554	178	89307	1.01	ppm	99
23) Anthracene	9.605	178	80608	1.14	ppm	99
24) Fluoranthene	10.720	202	98928	0.96	ppm	99
25) Pyrene	10.938	202	98710	1.06	ppm	99
27) Benzo[a]anthracene	12.114	228	78269	1.18	ppm	99
28) Chrysene	12.149	228	87643	0.96	ppm	100
30) Benzo[b]fluoranthene	13.102	252	105944	1.13	ppm	99
31) Benzo[k]fluoranthene	13.123	252	85899	0.85	ppm	95
32) Benzo[a]pyrene	13.396	252	84920	0.83	ppm	98
33) Indeno[1,2,3-cd]pyrene	14.547	276	92497	1.22	ppm	99
34) Dibenz[a,h]anthracene	14.563	278	80571	1.05	ppm	94
35) Benzo[g,h,i]perylene	14.865	276	77766	1.09	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77347.D
Acq On : 24 Jun 2019 10:36 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:34:28 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration



Manual Integration Approval Summary

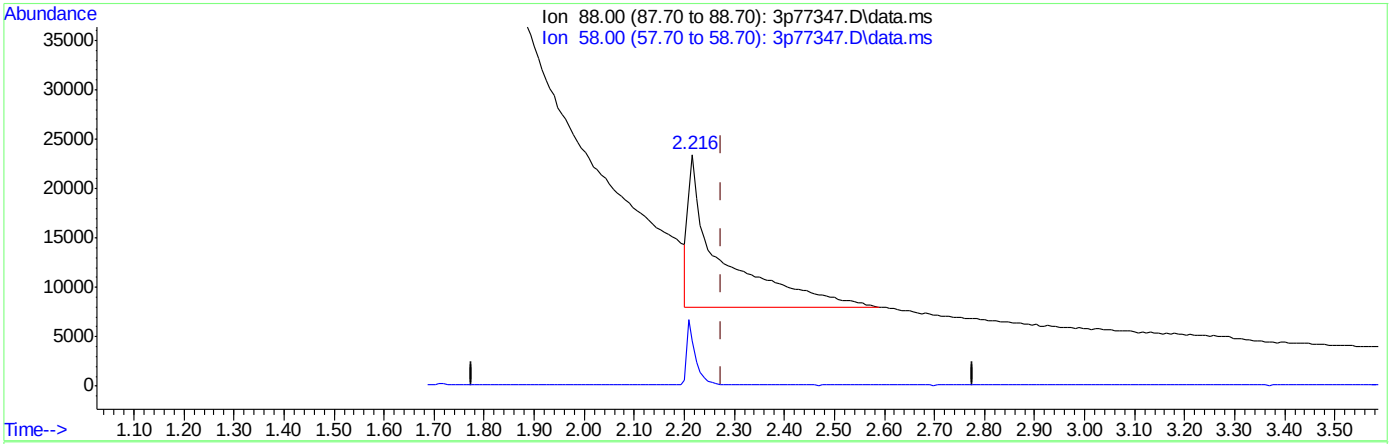
Sample Number:	E3P3626-CC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77347.D	**Analyst approved:**	06/25/19 12:02 Dipa Patel
Injection Time:	06/24/19 22:36	**Supervisor approved:**	06/25/19 13:46 Nancy Ma

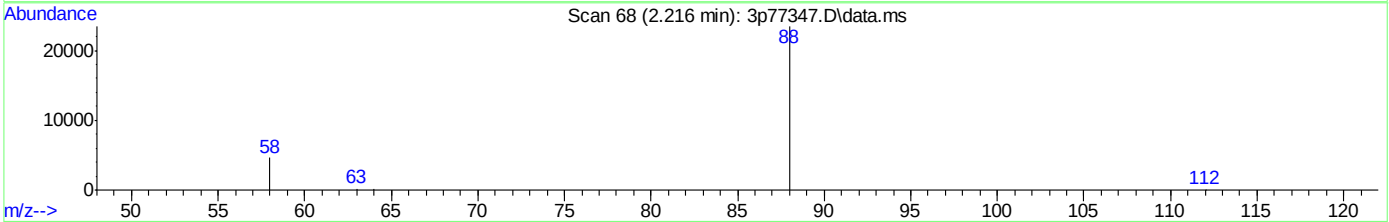
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.22	Poor instrument integration

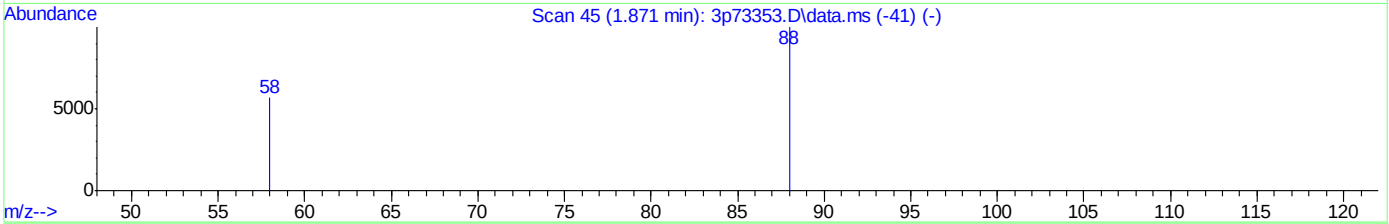
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77347.D
Acq On : 24 Jun 2019 10:36 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 22:52:20 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77347.D\data.ms

(2) 1,4-dioxane (t)

2.216min (-0.060) 5.83ppm

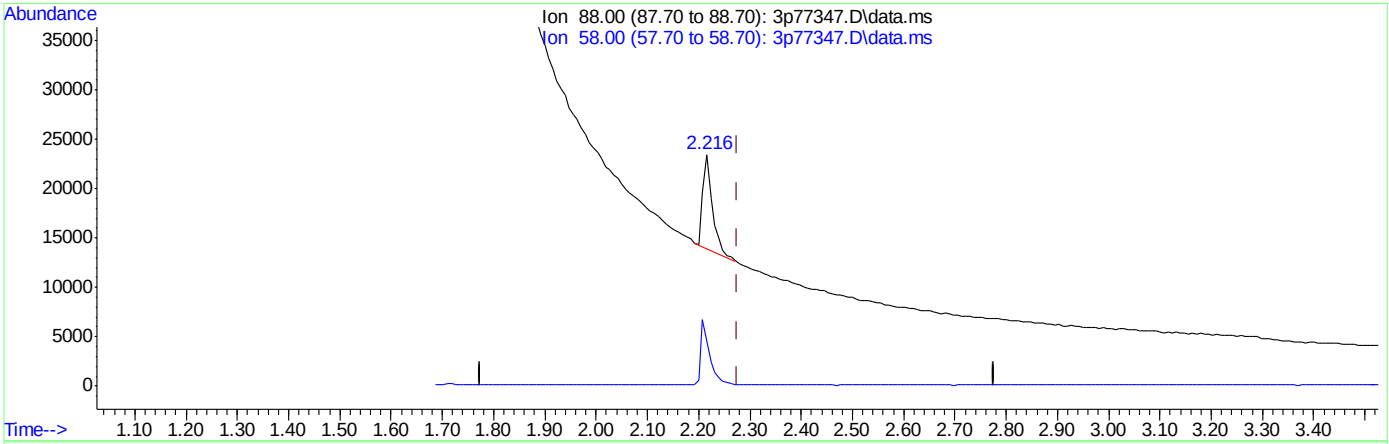
response 71913

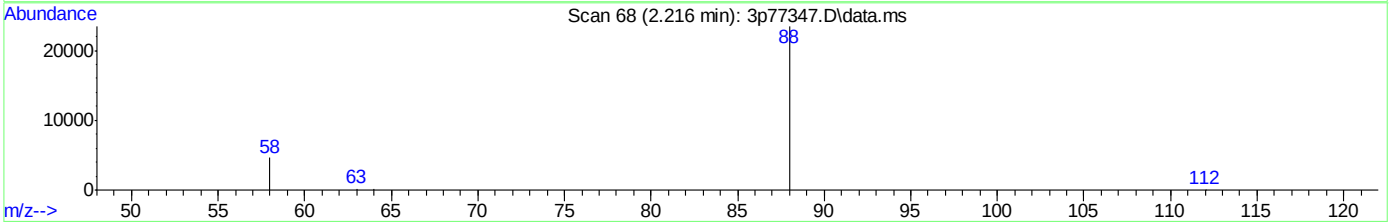
Ion	Exp%	Act%
88.00	100	100
58.00	54.00	34.94
0.00	0.00	0.00
0.00	0.00	0.00

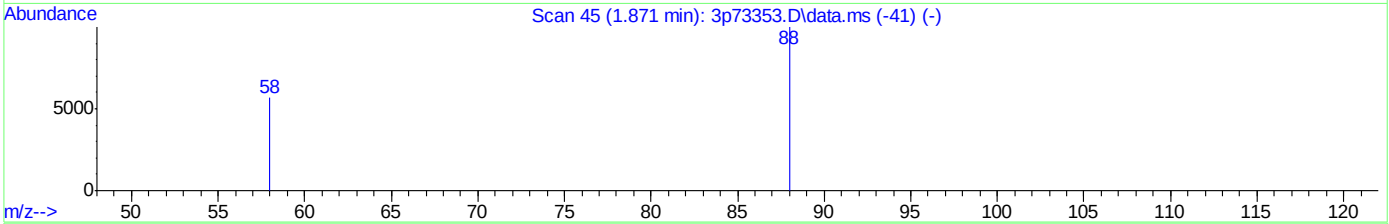
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3626\
Data File : 3p77347.D
Acq On : 24 Jun 2019 10:36 pm
Operator : chriss2
Sample : cc3623-1
Misc : op20806a,e3p3626,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 24 22:52:20 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Fri Jun 21 11:22:12 2019
Response via : Initial Calibration







TIC: 3p77347.D\data.ms

(2) 1,4-dioxane (t)

2.216min (-0.060) 0.95ppm m

response 11727

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	19.76#
0.00	0.00	0.00
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/27/19 15:45

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77473.D
Acq On : 27 Jun 2019 10:10 am
Operator : HENNYS
Sample : cc3623-1
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 14:45:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration

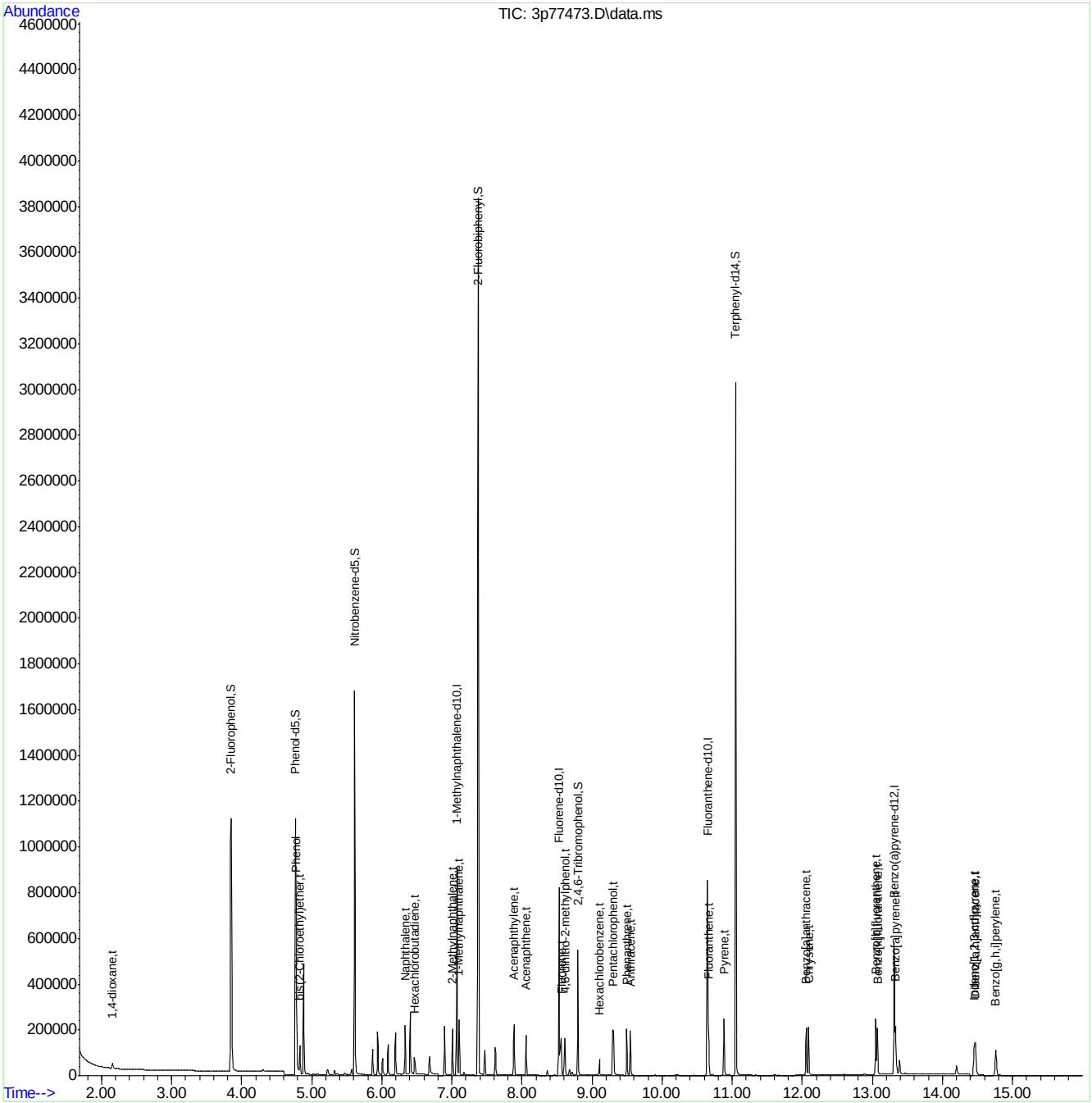
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.072	150	227737	4.00	ppm		-0.08
12) Fluorene-d10	8.529	176	326880	4.00	ppm		-0.08
19) Fluoranthene-d10	10.649	212	538810	4.00	ppm		-0.08
29) Benzo(a)pyrene-d12	13.312	264	392744	4.00	ppm		-0.09
System Monitoring Compounds							
3) 2-Fluorophenol	3.851	112	660178	20.77	ppm		-0.10
Spiked Amount 50.000			Recovery = 41.54%				
4) Phenol-d5	4.766	99	873631	22.22	ppm		-0.10
Spiked Amount 50.000			Recovery = 44.44%				
7) Nitrobenzene-d5	5.613	82	842458	22.28	ppm		-0.07
Spiked Amount 50.000			Recovery = 44.56%				
13) 2-Fluorobiphenyl	7.376	172	1616798	18.18	ppm		-0.08
Spiked Amount 50.000			Recovery = 36.36%				
18) 2,4,6-Tribromophenol	8.802	330	186351	23.98	ppm		-0.08
Spiked Amount 50.000			Recovery = 47.96%				
26) Terphenyl-d14	11.052	244	1528583	20.15	ppm		-0.08
Spiked Amount 50.000			Recovery = 40.30%				
Target Compounds							Qvalue
2) 1,4-dioxane	2.153	88	15873m	0.95	ppm		
5) Phenol	4.780	94	236920	5.39	ppm		98
6) bis(2-Chloroethyl)ether	4.830	93	41772	1.14	ppm		77
8) Naphthalene	6.332	128	122411	1.04	ppm		98
9) Hexachlorobutadiene	6.467	225	22150	0.96	ppm		90
10) 2-Methylnaphthalene	7.011	141	64663	1.01	ppm		93
11) 1-Methylnaphthalene	7.103	141	72261	0.99	ppm		99
14) Acenaphthylene	7.887	152	110666	1.15	ppm		99
15) Acenaphthene	8.059	153	78354	1.01	ppm		96
16) 4,6-dinitro-2-methylph...	8.613	198	73468	6.01	ppm	#	52
17) Fluorene	8.560	166	83217	0.96	ppm		80
20) Hexachlorobenzene	9.107	284	22733	0.93	ppm		99
21) Pentachlorophenol	9.306	266	74814	5.16	ppm		95
22) Phenanthrene	9.495	178	125288	1.02	ppm		98
23) Anthracene	9.546	178	122100	1.24	ppm		100
24) Fluoranthene	10.665	202	138302	0.96	ppm		99
25) Pyrene	10.884	202	146910	1.13	ppm		99
27) Benzo[a]anthracene	12.058	228	126753	1.35	ppm		100
28) Chrysene	12.094	228	129426	1.02	ppm		100
30) Benzo[b]fluoranthene	13.046	252	149247	1.09	ppm		100
31) Benzo[k]fluoranthene	13.074	252	135905	0.92	ppm		99
32) Benzo[a]pyrene	13.333	252	129853	0.86	ppm		100
33) Indeno[1,2,3-cd]pyrene	14.456	276	141332	1.28	ppm		99
34) Dibenz[a,h]anthracene	14.472	278	118107	1.05	ppm		95
35) Benzo[g,h,i]perylene	14.763	276	116152	1.12	ppm		99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77473.D
Acq On : 27 Jun 2019 10:10 am
Operator : HENNYS
Sample : cc3623-1
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 14:45:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration



Manual Integration Approval Summary

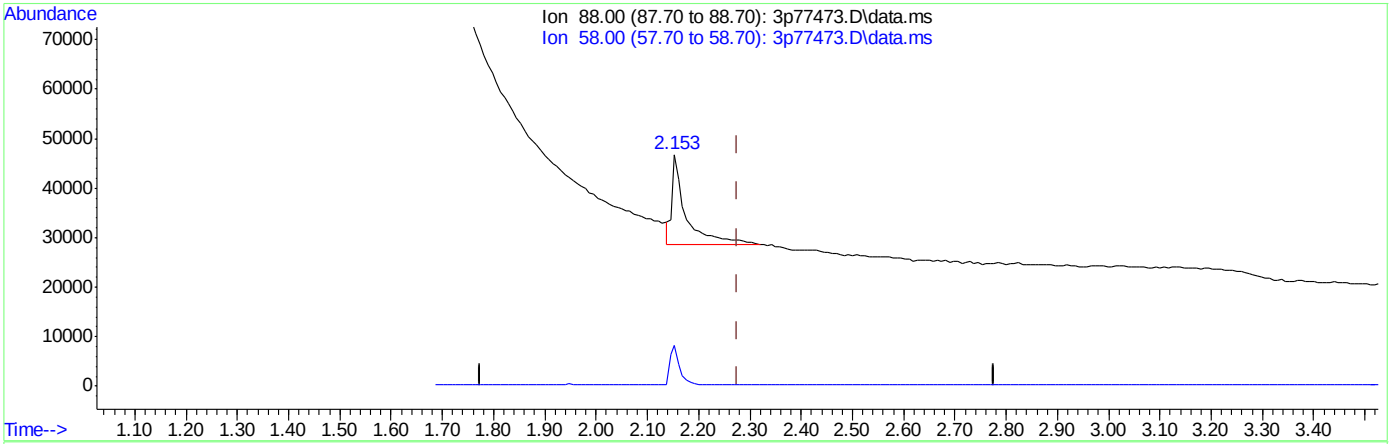
Sample Number:	E3P3631-CC3623	**Method:**	SW846 8270D BY SIM
Lab FileID:	3P77473.D	**Analyst approved:**	06/27/19 14:50 Ying Li
Injection Time:	06/27/19 10:10	**Supervisor approved:**	06/27/19 15:45 Nina Pandya

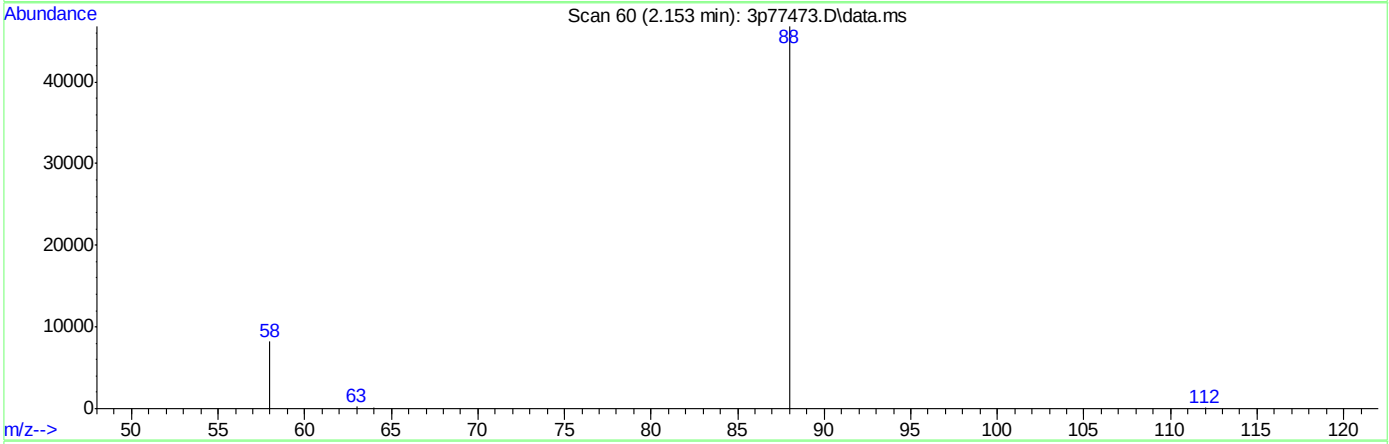
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.15	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77473.D
Acq On : 27 Jun 2019 10:10 am
Operator : HENNYS
Sample : cc3623-1
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 11:33:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration





TIC: 3p77473.D\data.ms

(2) 1,4-dioxane (t)

2.153min (-0.123) 2.03ppm

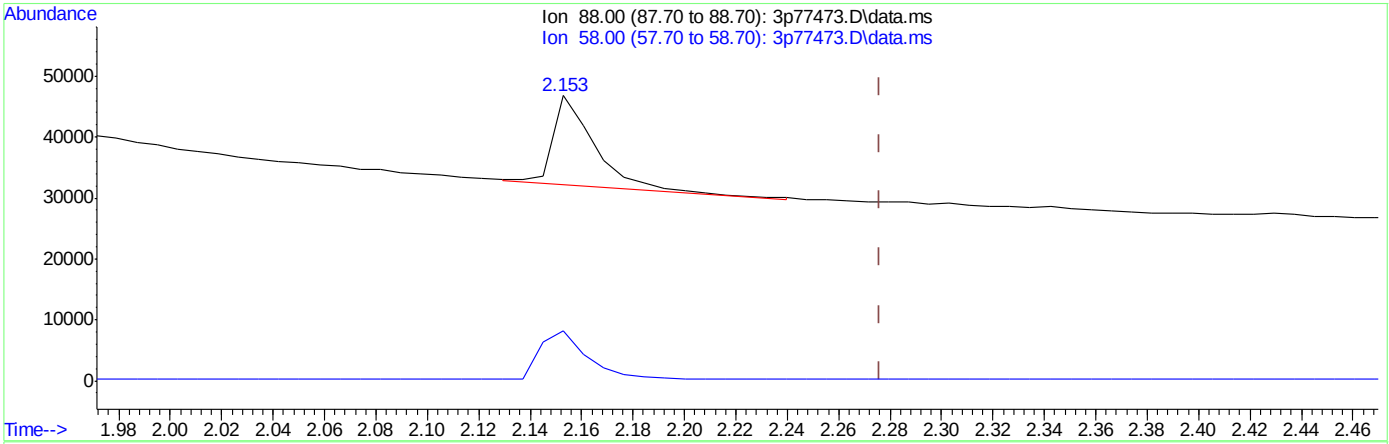
response 33903

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	50.22
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\E3P3631\
Data File : 3p77473.D
Acq On : 27 Jun 2019 10:10 am
Operator : HENNYS
Sample : cc3623-1
Misc : op21044a,e3p3631,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 14:44:35 2019
Quant Method : C:\MSDCHEM\1\METHODS\M3P3623SIM.M
Quant Title : Semi Volatile Extractables by GC/MS
QLast Update : Mon Jun 24 07:50:43 2019
Response via : Initial Calibration



TIC: 3p77473.D\data.ms

(2) 1,4-dioxane (t)

2.153min (-0.123) 0.95ppm m

response 15873

Ion	Exp%	Act%
88.00	100	100
58.00	54.00	17.59#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83369.D
Acq On : 22 Apr 2019 2:09 pm
Operator : christc2
Sample : ic3886-5.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 22 17:09:13 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	7.128	152	58666	4.00	ppm		0.00
12) Fluorene-d10	8.596	176	62702	4.00	ppm		0.00
22) Fluoranthene-d10	10.727	212	98909	4.00	ppm		0.00
28) Benzo(a)pyrene-d12	13.433	264	64137	4.00	ppm		0.00
35) 1-Methylnaphthalene-d10a	7.128	152	58810	4.00	ppm		0.00
38) Fluorene-d10a	8.596	176	62702	4.00	ppm		0.00
System Monitoring Compounds							
2) 2-Fluorophenol	3.888	112	772535	102.30	ppm		0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	204.60%#			
3) Phenol-d5	4.808	99	989911	104.15	ppm		0.00
Spiked Amount 50.000			Recovery =	208.30%			
6) Nitrobenzene-d5	5.668	82	956581	99.72	ppm		0.00
Spiked Amount 50.000			Recovery =	199.44%			
11) 2-Fluorobiphenyl	7.436	172	1774285	98.97	ppm		0.00
Spiked Amount 50.000			Recovery =	197.94%			
17) 2,4,6-Tribromophenol	8.862	330	264993	98.36	ppm		0.00
Spiked Amount 50.000			Recovery =	196.72%			
25) Terphenyl-d14	11.140	244	1315211	98.65	ppm		0.01
Spiked Amount 50.000			Recovery =	197.30%			
Target Compounds							Qvalue
4) Phenol	4.814	94	271396	26.09	ppm		68
5) bis(2-Chloroethyl)ether	4.885	93	38512	5.24	ppm		81
7) Naphthalene	6.387	128	124152	4.91	ppm		100
8) Hexachlorobutadiene	6.525	225	21767	4.97	ppm		98
9) 2-Methylnaphthalene	7.066	142	79127	5.02	ppm		100
10) Hexachlorocyclopentadiene	7.235	237	48774	10.67	ppm		95
13) Acenaphthylene	7.941	152	130552	5.11	ppm		97
14) Acenaphthene	8.115	153	81755	5.01	ppm		92
15) Dibenzofuran	8.290	168	111616	5.36	ppm		90
16) Fluorene	8.622	166	87216	4.95	ppm		99
18) Hexachlorobenzene	9.171	284	29490	4.92	ppm		90
19) Pentachlorophenol	9.357	266	83866	24.94	ppm		89
20) Phenanthrene	9.555	178	116348	4.43	ppm		99
21) Anthracene	9.605	178	119614	4.61	ppm		98
23) Fluoranthene	10.744	202	127569	4.94	ppm		99
24) Pyrene	10.964	202	133647	4.98	ppm		96
26) Benzo[a]anthracene	12.153	228	114227	5.10	ppm		96
27) Chrysene	12.188	228	107676	4.66	ppm		96
29) Benzo[b]fluoranthene	13.150	252	127872	5.63	ppm		96
30) Benzo[k]fluoranthene	13.177	252	96831	4.30	ppm		98
31) Benzo[a]pyrene	13.451	252	103950	5.25	ppm		98
32) Indeno[1,2,3-cd]pyrene	14.625	276	119796	5.18	ppm		82
33) Dibenz[a,h]anthracene	14.648	278	99062	5.19	ppm		99
34) Benzo[g,h,i]perylene	14.953	276	96459	5.19	ppm		98
36) 1,4-Dioxane	2.201	88	19275	5.74	ppm	#	34
37) 1-Methylnaphthalene	7.163	142	85992	4.93	ppm		97
39) 4,6-dinitro-2-methylph...	8.674	198	82082	31.53	ppm		75

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83369.D
Acq On : 22 Apr 2019 2:09 pm
Operator : christc2
Sample : ic3886-5.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 22 17:09:13 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

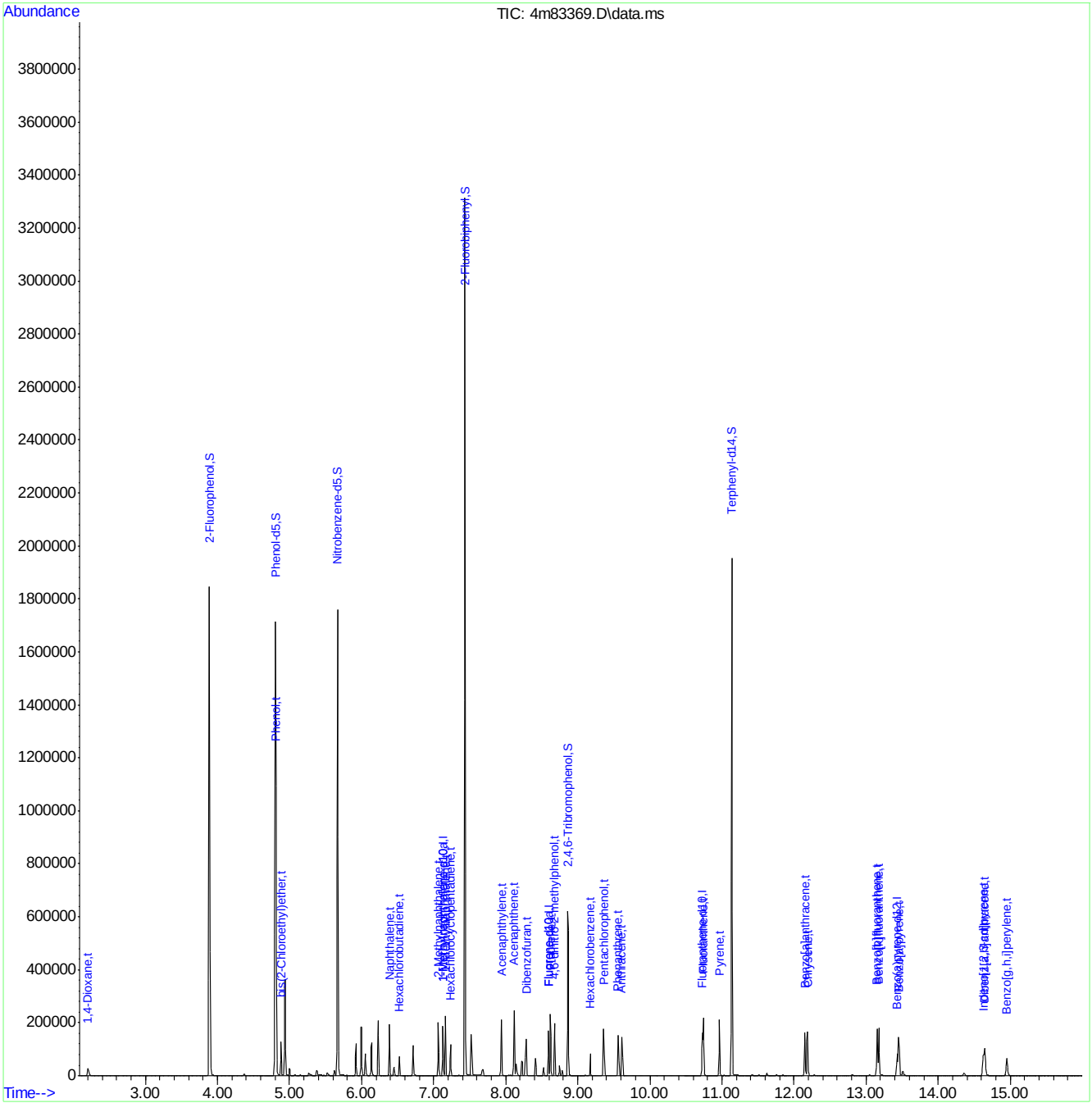
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83369.D
Acq On : 22 Apr 2019 2:09 pm
Operator : christc2
Sample : ic3886-5.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 22 17:09:13 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83370.D
Acq On : 22 Apr 2019 2:32 pm
Operator : christc2
Sample : ic3886-2.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 22 17:10:12 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	54936	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	59788	4.00	ppm	0.00
22) Fluoranthene-d10	10.727	212	95486	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.433	264	61985	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	54936	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	59788	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	371036	52.47	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	104.94%#		
3) Phenol-d5	4.801	99	468182	52.60	ppm	0.00
Spiked Amount 50.000			Recovery =	105.20%		
6) Nitrobenzene-d5	5.668	82	456215	50.79	ppm	0.00
Spiked Amount 50.000			Recovery =	101.58%		
11) 2-Fluorobiphenyl	7.433	172	851180	50.70	ppm	0.00
Spiked Amount 50.000			Recovery =	101.40%		
17) 2,4,6-Tribromophenol	8.862	330	127744	49.72	ppm	0.00
Spiked Amount 50.000			Recovery =	99.44%		
25) Terphenyl-d14	11.135	244	647817	50.33	ppm	0.00
Spiked Amount 50.000			Recovery =	100.66%		
Target Compounds						Qvalue
4) Phenol	4.814	94	127645	13.10	ppm	94
5) bis(2-Chloroethyl)ether	4.886	93	17938	2.61	ppm	95
7) Naphthalene	6.387	128	59601	2.52	ppm	100
8) Hexachlorobutadiene	6.525	225	10568	2.58	ppm	99
9) 2-Methylnaphthalene	7.066	142	37977	2.58	ppm	100
10) Hexachlorocyclopentadiene	7.235	237	22737	5.31	ppm	95
13) Acenaphthylene	7.941	152	60859	2.50	ppm	99
14) Acenaphthene	8.115	153	38910	2.50	ppm	97
15) Dibenzofuran	8.290	168	52590	2.65	ppm	97
16) Fluorene	8.622	166	42771	2.55	ppm	100
18) Hexachlorobenzene	9.171	284	14681	2.57	ppm	97
19) Pentachlorophenol	9.357	266	43046	13.43	ppm	98
20) Phenanthrene	9.555	178	61640	2.46	ppm	100
21) Anthracene	9.605	178	61481	2.48	ppm	99
23) Fluoranthene	10.744	202	62802	2.52	ppm	96
24) Pyrene	10.964	202	65318	2.52	ppm	99
26) Benzo[a]anthracene	12.144	228	54939	2.54	ppm	99
27) Chrysene	12.180	228	54701	2.45	ppm	100
29) Benzo[b]fluoranthene	13.151	252	56535	2.58	ppm	98
30) Benzo[k]fluoranthene	13.177	252	53608	2.46	ppm	99
31) Benzo[a]pyrene	13.451	252	50409	2.63	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.625	276	58223	2.61	ppm	91
33) Dibenz[a,h]anthracene	14.644	278	48361	2.62	ppm	96
34) Benzo[g,h,i]perylene	14.950	276	47212	2.63	ppm	98
36) 1,4-Dioxane	2.212	88	8365	2.67	ppm	94
37) 1-Methylnaphthalene	7.163	142	41427	2.54	ppm	98
39) 4,6-dinitro-2-methylph...	8.674	198	36599	14.74	ppm	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83370.D
Acq On : 22 Apr 2019 2:32 pm
Operator : christc2
Sample : ic3886-2.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 22 17:10:12 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

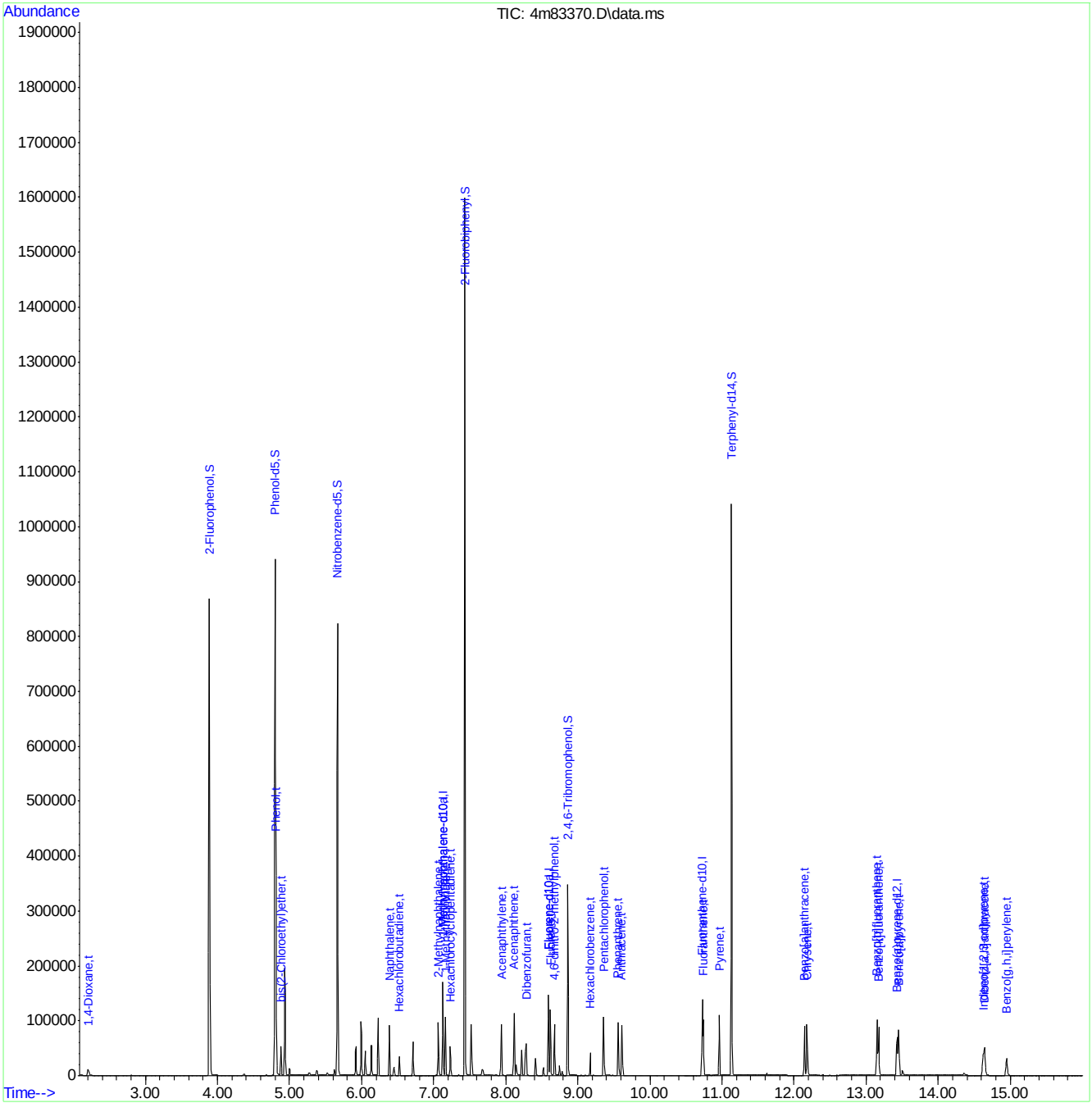
7.6.16

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83370.D
Acq On : 22 Apr 2019 2:32 pm
Operator : christc2
Sample : ic3886-2.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 22 17:10:12 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83371.D
Acq On : 22 Apr 2019 2:55 pm
Operator : christc2
Sample : icc3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 17:08:05 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	55012	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	59292	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	94643	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	62731	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	55012	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	59292	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	141874	20.03	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	40.06%		
3) Phenol-d5	4.802	99	178563	20.03	ppm	0.00
Spiked Amount 50.000			Recovery =	40.06%		
6) Nitrobenzene-d5	5.662	82	180214	20.03	ppm	0.00
Spiked Amount 50.000			Recovery =	40.06%		
11) 2-Fluorobiphenyl	7.433	172	336794	20.03	ppm	0.00
Spiked Amount 50.000			Recovery =	40.06%		
17) 2,4,6-Tribromophenol	8.862	330	50954	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
25) Terphenyl-d14	11.129	244	255136	20.00	ppm	0.00
Spiked Amount 50.000			Recovery =	40.00%		
Target Compounds						Qvalue
4) Phenol	4.815	94	48854	5.01	ppm	100
5) bis(2-Chloroethyl)ether	4.886	93	6903	1.00	ppm	100
7) Naphthalene	6.387	128	23771	1.00	ppm	100
8) Hexachlorobutadiene	6.525	225	4110	1.00	ppm	100
9) 2-Methylnaphthalene	7.066	142	14793	1.00	ppm	100
10) Hexachlorocyclopentadiene	7.232	237	8588	2.00	ppm	100
13) Acenaphthylene	7.941	152	23680	0.98	ppm	100
14) Acenaphthene	8.115	153	15422	1.00	ppm	100
15) Dibenzofuran	8.290	168	19699	1.00	ppm	100
16) Fluorene	8.622	166	16663	1.00	ppm	100
18) Hexachlorobenzene	9.171	284	5671	1.00	ppm	100
19) Pentachlorophenol	9.357	266	15899	5.00	ppm	100
20) Phenanthrene	9.555	178	24820	1.00	ppm	100
21) Anthracene	9.605	178	24556	1.00	ppm	100
23) Fluoranthene	10.738	202	24704	1.00	ppm	100
24) Pyrene	10.964	202	25673	1.00	ppm	100
26) Benzo[a]anthracene	12.144	228	21425	1.00	ppm	100
27) Chrysene	12.180	228	21234	0.96	ppm	100
29) Benzo[b]fluoranthene	13.151	252	22217	1.00	ppm	100
30) Benzo[k]fluoranthene	13.177	252	21217	0.96	ppm	99
31) Benzo[a]pyrene	13.451	252	19384	1.00	ppm	100
32) Indeno[1,2,3-cd]pyrene	14.625	276	22349	0.99	ppm	98
33) Dibenz[a,h]anthracene	14.645	278	18661	1.00	ppm	100
34) Benzo[g,h,i]perylene	14.946	276	17966	0.99	ppm	98
36) 1,4-Dioxane	2.212	88	3147	1.00	ppm	100
37) 1-Methylnaphthalene	7.163	142	16343	1.00	ppm	100
39) 4,6-dinitro-2-methylph...	8.674	198	12310	5.00	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83371.D
Acq On : 22 Apr 2019 2:55 pm
Operator : christc2
Sample : icc3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 17:08:05 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

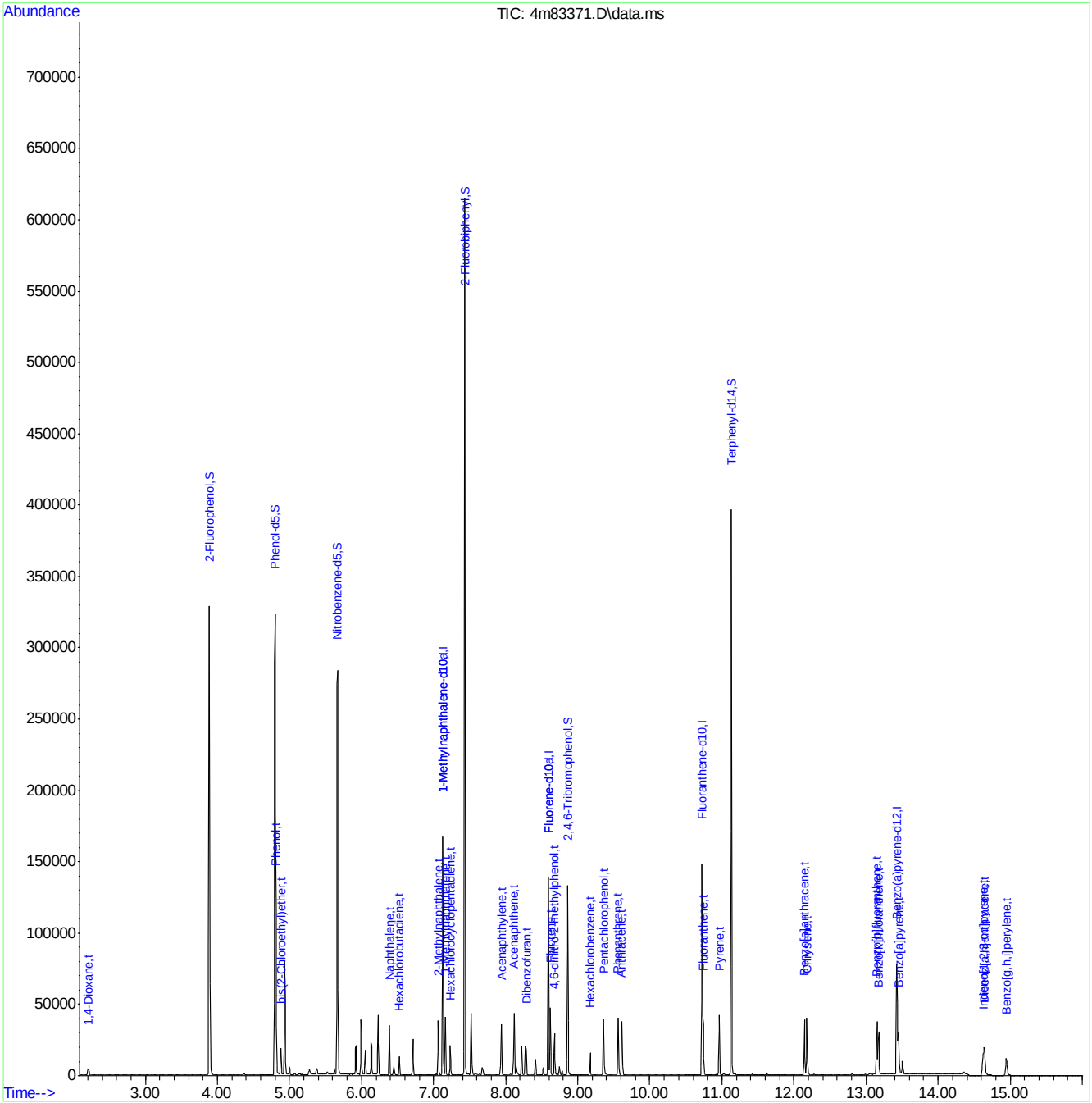
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83371.D
Acq On : 22 Apr 2019 2:55 pm
Operator : christc2
Sample : icc3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 17:08:05 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83372.D
Acq On : 22 Apr 2019 3:17 pm
Operator : christc2
Sample : ic3886-0.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 22 17:11:31 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	49934	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	55020	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	86976	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	57194	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	49934	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	55020	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	68916	10.72	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	21.44%		
3) Phenol-d5	4.802	99	86174	10.65	ppm	0.00
Spiked Amount 50.000			Recovery =	21.30%		
6) Nitrobenzene-d5	5.662	82	87242	10.69	ppm	0.00
Spiked Amount 50.000			Recovery =	21.38%		
11) 2-Fluorobiphenyl	7.433	172	162156	10.63	ppm	0.00
Spiked Amount 50.000			Recovery =	21.26%		
17) 2,4,6-Tribromophenol	8.862	330	24061	10.18	ppm	0.00
Spiked Amount 50.000			Recovery =	20.36%		
25) Terphenyl-d14	11.129	244	124933	10.66	ppm	0.00
Spiked Amount 50.000			Recovery =	21.32%		
Target Compounds						Qvalue
4) Phenol	4.808	94	23798	2.69	ppm	65
5) bis(2-Chloroethyl)ether	4.886	93	3338	0.53	ppm	99
7) Naphthalene	6.387	128	11085	0.51	ppm	99
8) Hexachlorobutadiene	6.525	225	2032	0.55	ppm	96
9) 2-Methylnaphthalene	7.066	142	7026	0.52	ppm	99
10) Hexachlorocyclopentadiene	7.232	237	3892	1.00	ppm	98
13) Acenaphthylene	7.941	152	10799	0.48	ppm	99
14) Acenaphthene	8.115	153	7101	0.50	ppm	95
15) Dibenzofuran	8.290	168	9240	0.51	ppm	99
16) Fluorene	8.622	166	7956	0.51	ppm	99
18) Hexachlorobenzene	9.171	284	2789	0.53	ppm	95
19) Pentachlorophenol	9.357	266	6859	2.32	ppm	99
20) Phenanthrene	9.555	178	11932	0.52	ppm	100
21) Anthracene	9.605	178	11680	0.51	ppm	99
23) Fluoranthene	10.738	202	11781	0.52	ppm	99
24) Pyrene	10.964	202	12156	0.52	ppm	100
26) Benzo[a]anthracene	12.144	228	10126	0.51	ppm	98
27) Chrysene	12.180	228	10215	0.50	ppm	99
29) Benzo[b]fluoranthene	13.151	252	10642	0.53	ppm	99
30) Benzo[k]fluoranthene	13.177	252	9678	0.48	ppm	98
31) Benzo[a]pyrene	13.451	252	9421	0.53	ppm	98
32) Indeno[1,2,3-cd]pyrene	14.625	276	10644	0.52	ppm	96
33) Dibenz[a,h]anthracene	14.645	278	8904	0.52	ppm	96
34) Benzo[g,h,i]perylene	14.950	276	8604	0.52	ppm	98
36) 1,4-Dioxane	2.212	88	1521	0.53	ppm	99
37) 1-Methylnaphthalene	7.163	142	7803	0.53	ppm	97
39) 4,6-dinitro-2-methylph...	8.674	198	5014	2.19	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83372.D
Acq On : 22 Apr 2019 3:17 pm
Operator : christc2
Sample : ic3886-0.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 22 17:11:31 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

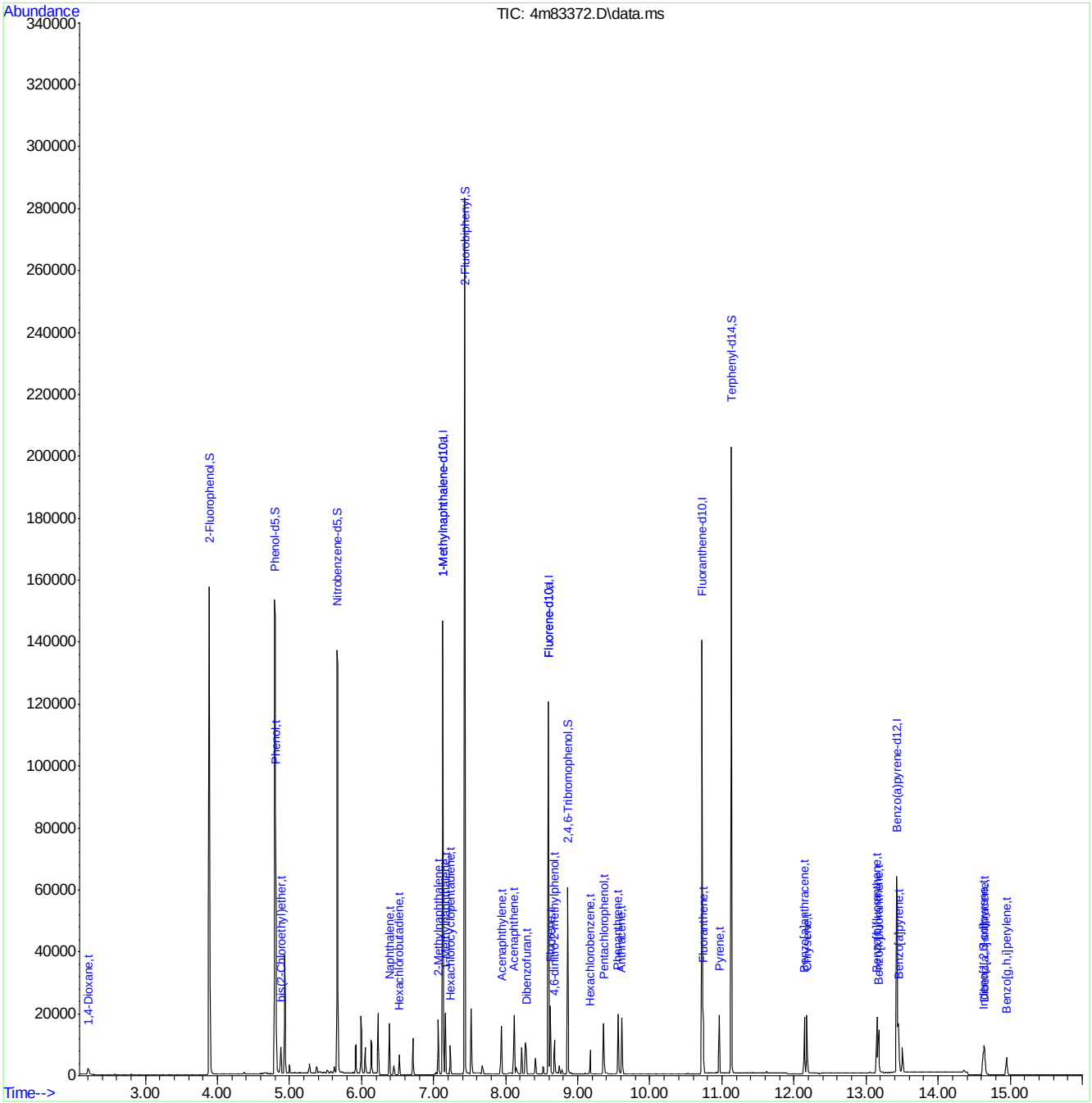
7.6.18

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83372.D
Acq On : 22 Apr 2019 3:17 pm
Operator : christc2
Sample : ic3886-0.5
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 22 17:11:31 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83373.D
Acq On : 22 Apr 2019 3:40 pm
Operator : christc2
Sample : ic3886-0.2
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 22 17:12:35 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	55805	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	61593	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	97003	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	63317	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	55805	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	61593	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	30544	4.25	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	8.50%#		
3) Phenol-d5	4.801	99	38469	4.25	ppm	0.00
Spiked Amount 50.000			Recovery =	8.50%		
6) Nitrobenzene-d5	5.668	82	39583	4.34	ppm	0.00
Spiked Amount 50.000			Recovery =	8.68%		
11) 2-Fluorobiphenyl	7.432	172	74635	4.38	ppm	0.00
Spiked Amount 50.000			Recovery =	8.76%		
17) 2,4,6-Tribromophenol	8.862	330	10772	4.07	ppm	0.00
Spiked Amount 50.000			Recovery =	8.14%		
25) Terphenyl-d14	11.129	244	55905	4.28	ppm	0.00
Spiked Amount 50.000			Recovery =	8.56%		
Target Compounds						Qvalue
4) Phenol	4.814	94	10608	1.07	ppm	97
5) bis(2-Chloroethyl)ether	4.886	93	1517	0.22	ppm	90
7) Naphthalene	6.384	128	5026	0.21	ppm	100
8) Hexachlorobutadiene	6.525	225	928	0.22	ppm	96
9) 2-Methylnaphthalene	7.066	142	3176	0.21	ppm	98
10) Hexachlorocyclopentadiene	7.232	237	1626	0.37	ppm	99
13) Acenaphthylene	7.941	152	5095	0.20	ppm	99
14) Acenaphthene	8.115	153	3291	0.21	ppm	93
15) Dibenzofuran	8.290	168	4205	0.21	ppm	100
16) Fluorene	8.622	166	3659	0.21	ppm	100
18) Hexachlorobenzene	9.171	284	1259	0.21	ppm	96
19) Pentachlorophenol	9.357	266	2794	0.85	ppm	98
20) Phenanthrene	9.555	178	5293	0.21	ppm	99
21) Anthracene	9.605	178	5343	0.21	ppm	99
23) Fluoranthene	10.738	202	5311	0.21	ppm	97
24) Pyrene	10.964	202	5424	0.21	ppm	99
26) Benzo[a]anthracene	12.144	228	4471	0.20	ppm	99
27) Chrysene	12.180	228	4464	0.20	ppm	97
29) Benzo[b]fluoranthene	13.151	252	4746	0.21	ppm	99
30) Benzo[k]fluoranthene	13.177	252	4563	0.21	ppm	98
31) Benzo[a]pyrene	13.451	252	4352	0.22	ppm	97
32) Indeno[1,2,3-cd]pyrene	14.625	276	4616	0.20	ppm	97
33) Dibenz[a,h]anthracene	14.644	278	3863	0.21	ppm	99
34) Benzo[g,h,i]perylene	14.946	276	3816	0.21	ppm	98
36) 1,4-Dioxane	2.212	88	713	0.22	ppm	66
37) 1-Methylnaphthalene	7.163	142	3501	0.21	ppm	99
39) 4,6-dinitro-2-methylph...	8.674	198	1785	0.70	ppm	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83373.D
Acq On : 22 Apr 2019 3:40 pm
Operator : christc2
Sample : ic3886-0.2
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 22 17:12:35 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

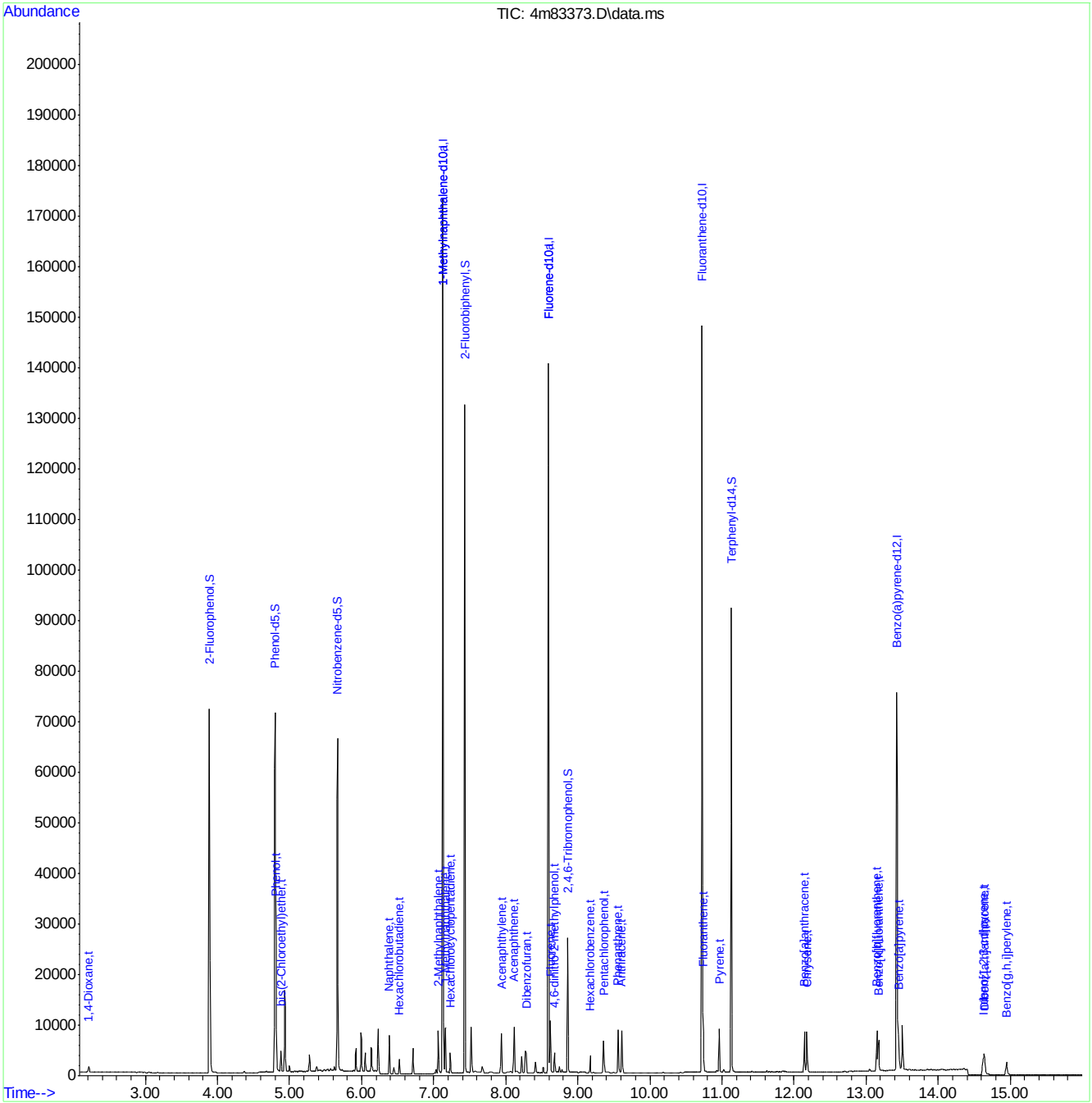
7.6.19

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83373.D
Acq On : 22 Apr 2019 3:40 pm
Operator : christc2
Sample : ic3886-0.2
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 22 17:12:35 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Kristi Schollenberger 04/23/19 16:37

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83374.D
Acq On : 22 Apr 2019 4:03 pm
Operator : christc2
Sample : ic3886-0.1
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 22 17:14:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	54174	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	59615	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	93982	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.433	264	61770	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	54174	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	59615	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	14665	2.10	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	4.20%#		
3) Phenol-d5	4.801	99	18113	2.06	ppm	0.00
Spiked Amount 50.000			Recovery =	4.12%		
6) Nitrobenzene-d5	5.668	82	18865	2.13	ppm	0.00
Spiked Amount 50.000			Recovery =	4.26%		
11) 2-Fluorobiphenyl	7.432	172	35967	2.17	ppm	0.00
Spiked Amount 50.000			Recovery =	4.34%		
17) 2,4,6-Tribromophenol	8.862	330	5052	1.97	ppm	0.00
Spiked Amount 50.000			Recovery =	3.94%		
25) Terphenyl-d14	11.129	244	26747	2.11	ppm	0.00
Spiked Amount 50.000			Recovery =	4.22%		
Target Compounds						Qvalue
4) Phenol	4.814	94	5041	0.52	ppm	93
5) bis(2-Chloroethyl)ether	4.886	93	741	0.11	ppm	97
7) Naphthalene	6.387	128	2483	0.11	ppm	100
8) Hexachlorobutadiene	6.525	225	448	0.11	ppm	96
9) 2-Methylnaphthalene	7.066	142	1541	0.11	ppm	96
10) Hexachlorocyclopentadiene	7.232	237	721	0.17	ppm	96
13) Acenaphthylene	7.941	152	2374	0.10	ppm	99
14) Acenaphthene	8.115	153	1555	0.10	ppm	88
15) Dibenzofuran	8.290	168	1994	0.10	ppm	100
16) Fluorene	8.622	166	1774	0.11	ppm	96
18) Hexachlorobenzene	9.171	284	640	0.11	ppm	99
19) Pentachlorophenol	9.357	266	1308	0.41	ppm	97
20) Phenanthrene	9.555	178	2506	0.10	ppm	99
21) Anthracene	9.605	178	2456	0.10	ppm	98
23) Fluoranthene	10.738	202	2653	0.11	ppm	100
24) Pyrene	10.964	202	2650	0.10	ppm	99
26) Benzo[a]anthracene	12.144	228	2203	0.10	ppm	100
27) Chrysene	12.180	228	2176	0.10	ppm	98
29) Benzo[b]fluoranthene	13.151	252	2266	0.10	ppm	99
30) Benzo[k]fluoranthene	13.177	252	2221	0.10	ppm	97
31) Benzo[a]pyrene	13.451	252	2327	0.12	ppm	97
32) Indeno[1,2,3-cd]pyrene	14.625	276	2263	0.10	ppm	89
33) Dibenz[a,h]anthracene	14.644	278	1886	0.10	ppm	94
34) Benzo[g,h,i]perylene	14.950	276	1848	0.10	ppm	98
36) 1,4-Dioxane	2.212	88	345m	0.11	ppm	
37) 1-Methylnaphthalene	7.163	142	1740	0.11	ppm	98
39) 4,6-dinitro-2-methylph...	8.674	198	733	0.30	ppm	91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83374.D
Acq On : 22 Apr 2019 4:03 pm
Operator : christc2
Sample : ic3886-0.1
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 22 17:14:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

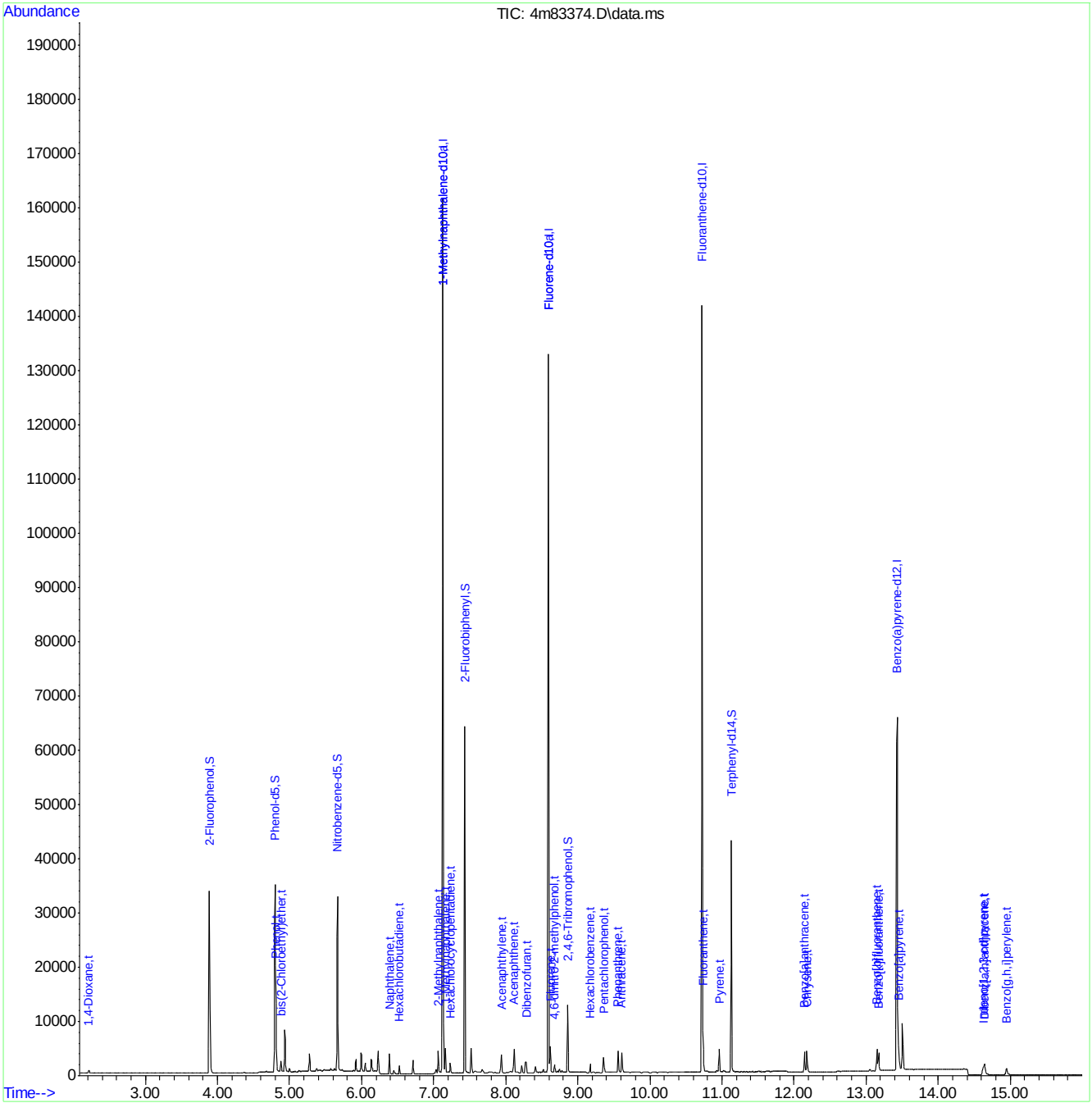
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83374.D
Acq On : 22 Apr 2019 4:03 pm
Operator : christc2
Sample : ic3886-0.1
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 22 17:14:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Manual Integration Approval Summary

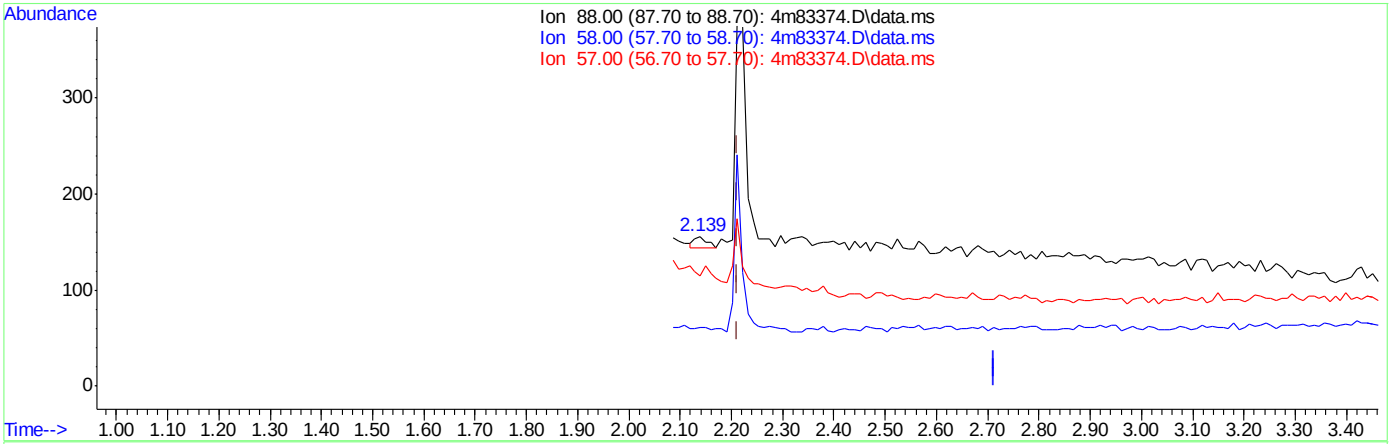
Sample Number:	E4M3886-IC3886	**Method:**	SW846 8270D BY SIM
Lab FileID:	4M83374.D	**Analyst approved:**	04/23/19 08:09 Ying Li
Injection Time:	04/22/19 16:03	**Supervisor approved:**	04/23/19 16:37 Kristi Schollenberger

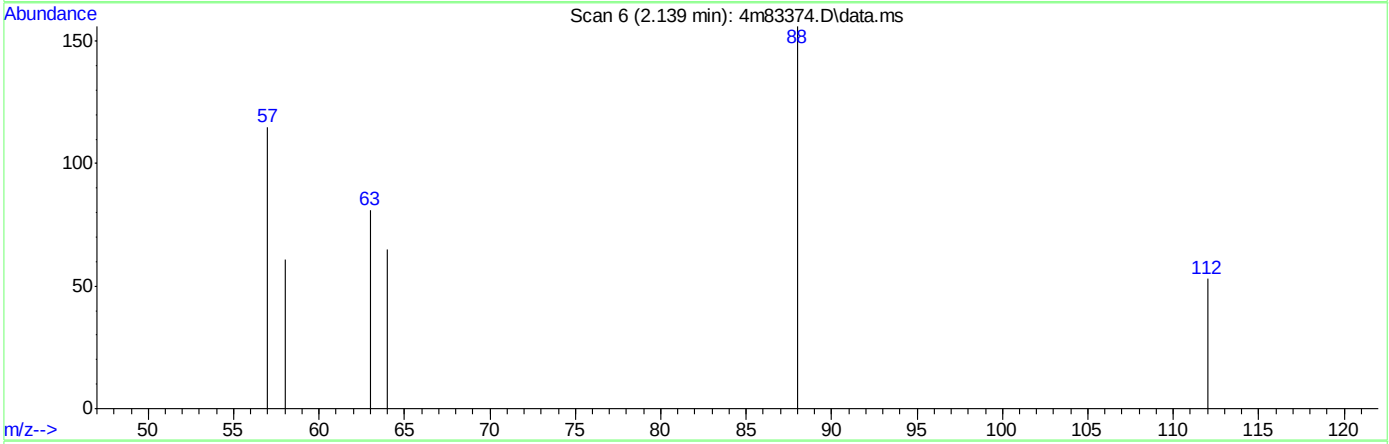
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.21	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83374.D
Acq On : 22 Apr 2019 4:03 pm
Operator : christc2
Sample : ic3886-0.1
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 22 17:13:24 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83374.D\data.ms

(36) 1,4-Dioxane (t)

2.139min (-0.073) 0.01ppm

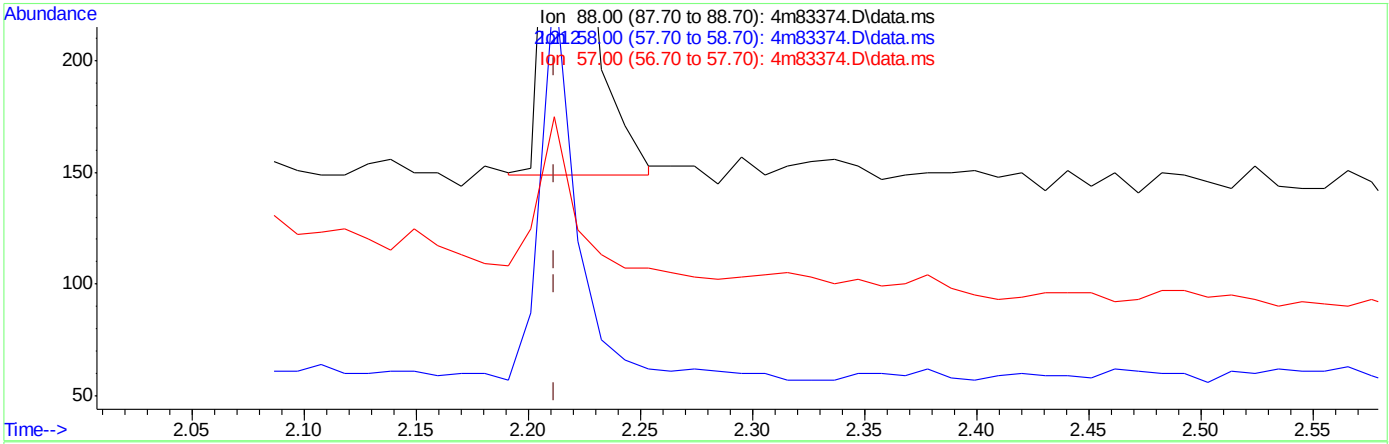
response 21

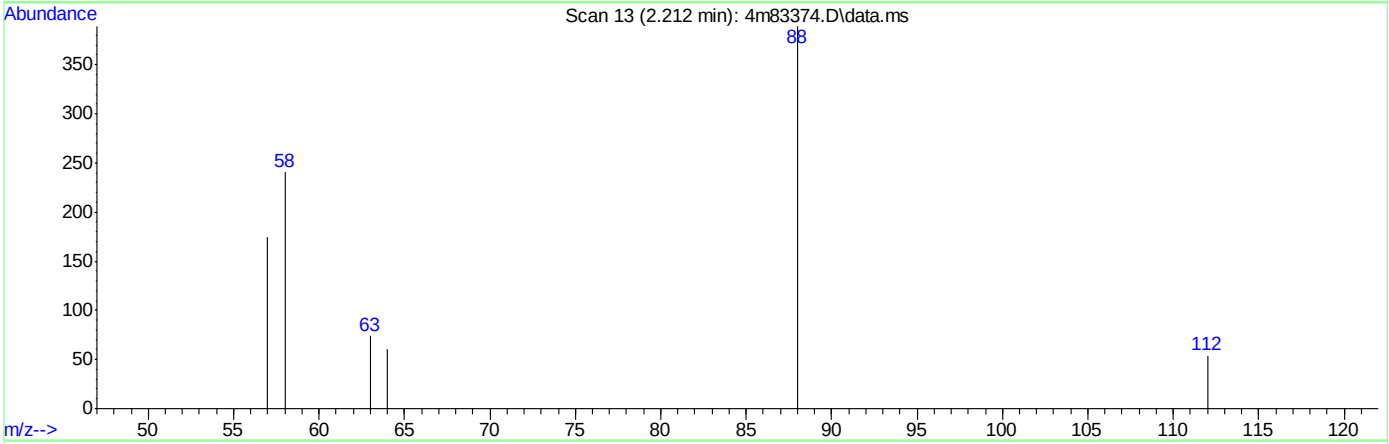
Ion	Exp%	Act%
88.00	100	100
58.00	26.40	10.53
57.00	7.80	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83374.D
Acq On : 22 Apr 2019 4:03 pm
Operator : christc2
Sample : ic3886-0.1
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 22 17:13:24 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83374.D\data.ms

(36) 1,4-Dioxane (t)

2.212min (-0.000) 0.11ppm m

response 345

Ion	Exp%	Act%
88.00	100	100
58.00	26.40	61.95#
57.00	7.80	44.99#
0.00	0.00	0.00

4M83375.D

Manual Integrations APPROVED (compounds with "m" flag)

Kristi Schollenberger 04/23/19 16:37

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83375.D
Acq On : 22 Apr 2019 4:25 pm
Operator : christc2
Sample : ic3886-0.05
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 22 17:14:54 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	54771	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	59093	4.00	ppm	0.00
22) Fluoranthene-d10	10.721	212	95173	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	61727	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	54771	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	59093	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	6808	0.97	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	1.94%#		
3) Phenol-d5	4.801	99	8594	0.97	ppm	0.00
Spiked Amount 50.000			Recovery =	1.94%		
6) Nitrobenzene-d5	5.668	82	8898	0.99	ppm	0.00
Spiked Amount 50.000			Recovery =	1.98%		
11) 2-Fluorobiphenyl	7.432	172	17273	1.03	ppm	0.00
Spiked Amount 50.000			Recovery =	2.06%		
17) 2,4,6-Tribromophenol	8.862	330	2386	0.94	ppm	0.00
Spiked Amount 50.000			Recovery =	1.88%		
25) Terphenyl-d14	11.129	244	12852	1.00	ppm	0.00
Spiked Amount 50.000			Recovery =	2.00%		
Target Compounds						Qvalue
4) Phenol	4.814	94	2384	0.25	ppm	95
5) bis(2-Chloroethyl)ether	4.885	93	342	0.05	ppm	86
7) Naphthalene	6.384	128	1217	0.05	ppm	96
8) Hexachlorobutadiene	6.525	225	214	0.05	ppm	98
9) 2-Methylnaphthalene	7.066	142	724	0.05	ppm	97
10) Hexachlorocyclopentadiene	7.235	237	344	0.08	ppm	89
13) Acenaphthylene	7.941	152	1206	0.05	ppm	99
14) Acenaphthene	8.115	153	755	0.05	ppm	89
15) Dibenzofuran	8.289	168	1011	0.05	ppm	100
16) Fluorene	8.622	166	824	0.05	ppm	98
18) Hexachlorobenzene	9.170	284	289m	0.05	ppm	
19) Pentachlorophenol	9.357	266	590	0.19	ppm	94
20) Phenanthrene	9.555	178	1187	0.05	ppm	100
21) Anthracene	9.605	178	1229	0.05	ppm	98
23) Fluoranthene	10.738	202	1355	0.05	ppm	99
24) Pyrene	10.964	202	1282	0.05	ppm	97
26) Benzo[a]anthracene	12.144	228	1053	0.05	ppm	99
27) Chrysene	12.179	228	1009	0.05	ppm	98
29) Benzo[b]fluoranthene	13.150	252	1094	0.05	ppm	95
30) Benzo[k]fluoranthene	13.177	252	1036	0.05	ppm	98
31) Benzo[a]pyrene	13.450	252	1164	0.06	ppm	98
32) Indeno[1,2,3-cd]pyrene	14.625	276	1083	0.05	ppm	88
33) Dibenz[a,h]anthracene	14.644	278	886	0.05	ppm	94
34) Benzo[g,h,i]perylene	14.949	276	878	0.05	ppm	97
36) 1,4-Dioxane	2.222	88	178	0.06	ppm	96
37) 1-Methylnaphthalene	7.159	142	822	0.05	ppm	99
39) 4,6-dinitro-2-methylph...	8.680	198	296	0.12	ppm	82

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83375.D
Acq On : 22 Apr 2019 4:25 pm
Operator : christc2
Sample : ic3886-0.05
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 22 17:14:54 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

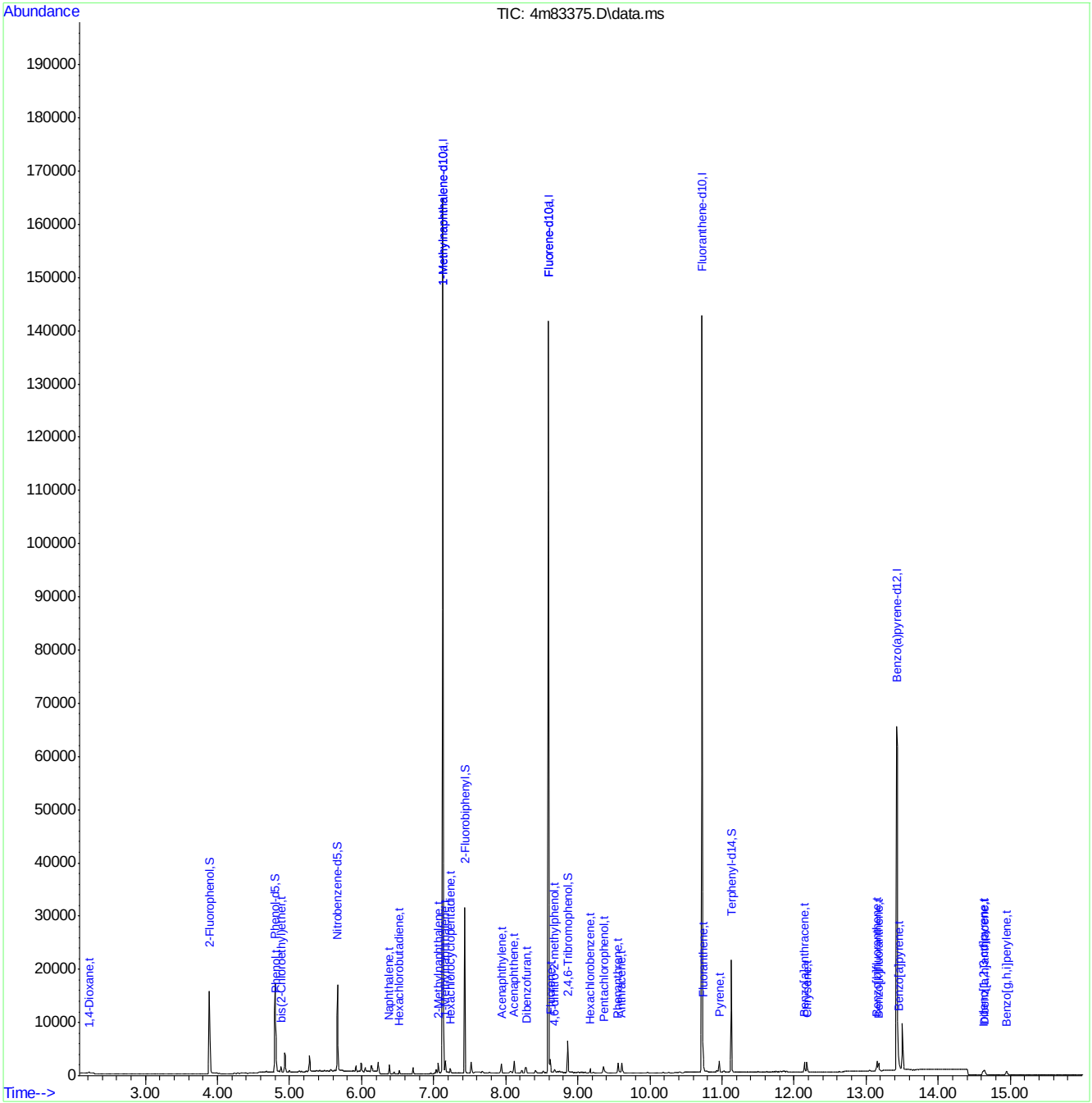
7.6.21

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83375.D
Acq On : 22 Apr 2019 4:25 pm
Operator : christc2
Sample : ic3886-0.05
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 22 17:14:54 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Manual Integration Approval Summary

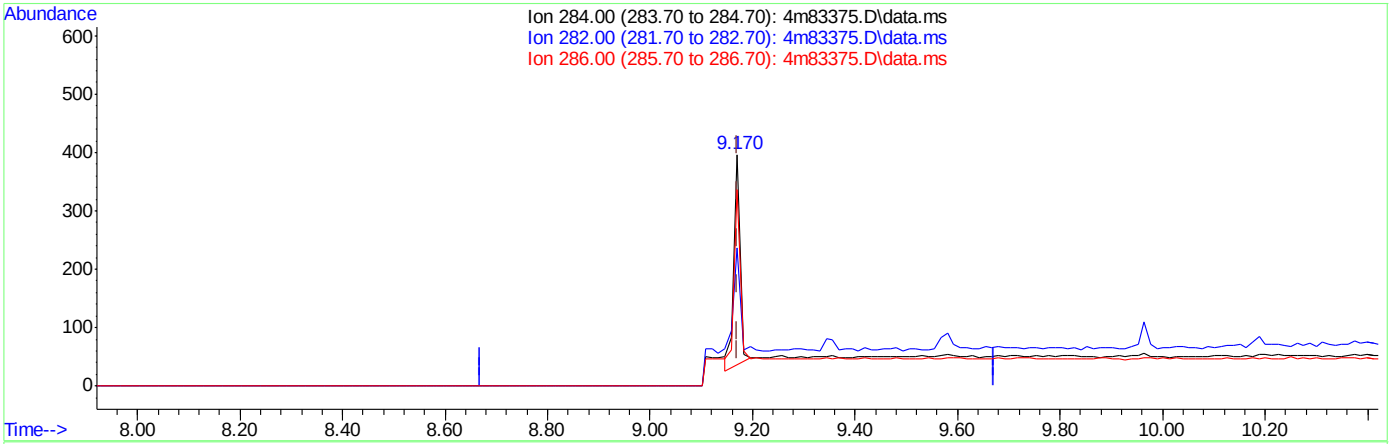
Sample Number:	E4M3886-IC3886	**Method:**	SW846 8270D BY SIM
Lab FileID:	4M83375.D	**Analyst approved:**	04/23/19 08:09 Ying Li
Injection Time:	04/22/19 16:25	**Supervisor approved:**	04/23/19 16:37 Kristi Schollenberger

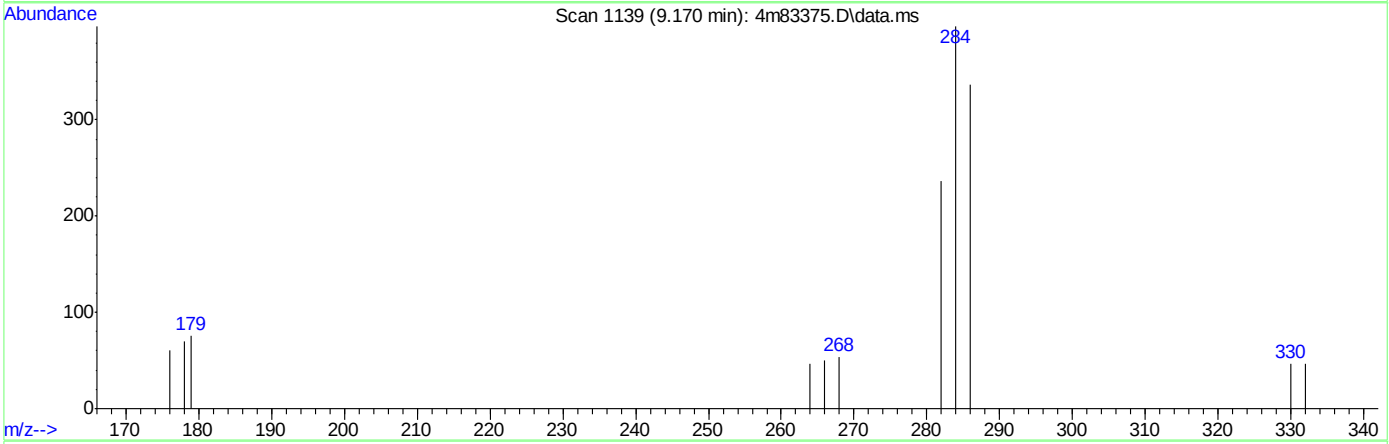
Parameter	CAS	Sig#	R.T. (min.)	Reason
Hexachlorobenzene	118-74-1		9.17	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83375.D
Acq On : 22 Apr 2019 4:25 pm
Operator : christc2
Sample : ic3886-0.05
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 22 17:14:28 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83375.D\data.ms

(18) Hexachlorobenzene (t)

9.170min (-0.000) 0.06ppm

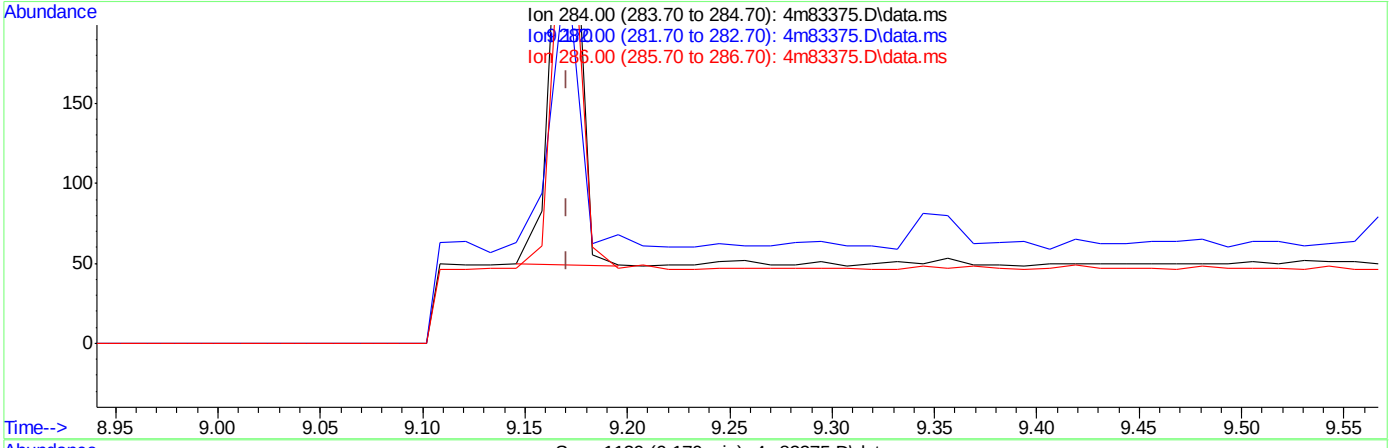
response 325

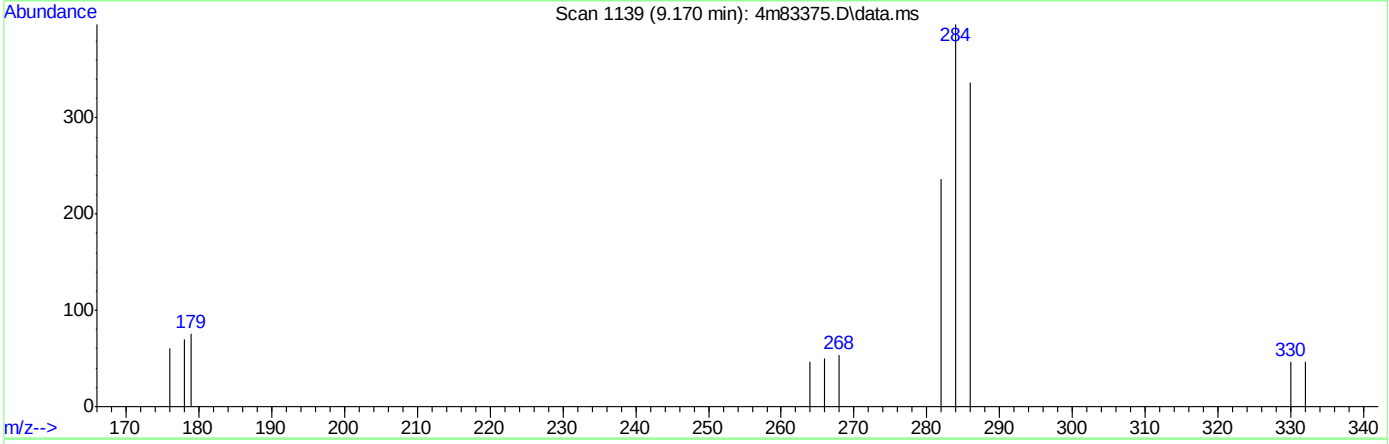
Ion	Exp%	Act%
284.00	100	100
282.00	46.50	49.06
286.00	83.00	83.45
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83375.D
Acq On : 22 Apr 2019 4:25 pm
Operator : christc2
Sample : ic3886-0.05
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 22 17:14:28 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83375.D\data.ms

(18) Hexachlorobenzene (t)

9.170min (-0.000) 0.05ppm m

response 289

Ion	Exp%	Act%
284.00	100	100
282.00	46.50	59.45
286.00	83.00	84.89
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kristi Schollenberger 04/23/19 16:37

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 23 08:11:47 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	60986	4.00	ppm	0.00
12) Fluorene-d10	8.589	176	67078	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	107924	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	69154	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	60986	4.00	ppm	0.00
38) Fluorene-d10a	8.589	176	67078	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	2981	0.38	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	0.76%#		
3) Phenol-d5	4.801	99	3713	0.38	ppm	0.00
Spiked Amount 50.000			Recovery =	0.76%		
6) Nitrobenzene-d5	5.668	82	3941	0.40	ppm	0.00
Spiked Amount 50.000			Recovery =	0.80%		
11) 2-Fluorobiphenyl	7.432	172	7591	0.41	ppm	0.00
Spiked Amount 50.000			Recovery =	0.82%		
17) 2,4,6-Tribromophenol	8.855	330	1058	0.37	ppm	0.00
Spiked Amount 50.000			Recovery =	0.74%		
25) Terphenyl-d14	11.129	244	5572	0.38	ppm	0.00
Spiked Amount 50.000			Recovery =	0.76%		
Target Compounds						Qvalue
4) Phenol	4.814	94	1075	0.10	ppm	91
5) bis(2-Chloroethyl)ether	4.886	93	161	0.02	ppm	80
7) Naphthalene	6.387	128	531	0.02	ppm	97
8) Hexachlorobutadiene	6.525	225	100	0.02	ppm	86
9) 2-Methylnaphthalene	7.066	142	353m	0.02	ppm	
10) Hexachlorocyclopentadiene	7.232	237	152	0.03	ppm	97
13) Acenaphthylene	7.941	152	532	0.02	ppm	99
14) Acenaphthene	8.115	153	327	0.02	ppm	82
15) Dibenzofuran	8.290	168	430	0.02	ppm	97
16) Fluorene	8.622	166	374	0.02	ppm	96
18) Hexachlorobenzene	9.171	284	133m	0.02	ppm	
20) Phenanthrene	9.555	178	592	0.02	ppm	98
21) Anthracene	9.605	178	564	0.02	ppm	96
23) Fluoranthene	10.738	202	554	0.02	ppm	82
24) Pyrene	10.964	202	564	0.02	ppm	96
26) Benzo[a]anthracene	12.144	228	478	0.02	ppm	96
27) Chrysene	12.180	228	459	0.02	ppm	95
29) Benzo[b]fluoranthene	13.151	252	493	0.02	ppm	97
30) Benzo[k]fluoranthene	13.177	252	469	0.02	ppm	86
31) Benzo[a]pyrene	13.451	252	450	0.02	ppm	86
32) Indeno[1,2,3-cd]pyrene	14.625	276	477	0.02	ppm	91
33) Dibenz[a,h]anthracene	14.644	278	391	0.02	ppm	86
34) Benzo[g,h,i]perylene	14.950	276	399	0.02	ppm	97
36) 1,4-Dioxane	2.222	88	73m	0.02	ppm	
37) 1-Methylnaphthalene	7.159	142	386	0.02	ppm	97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 23 08:11:47 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration

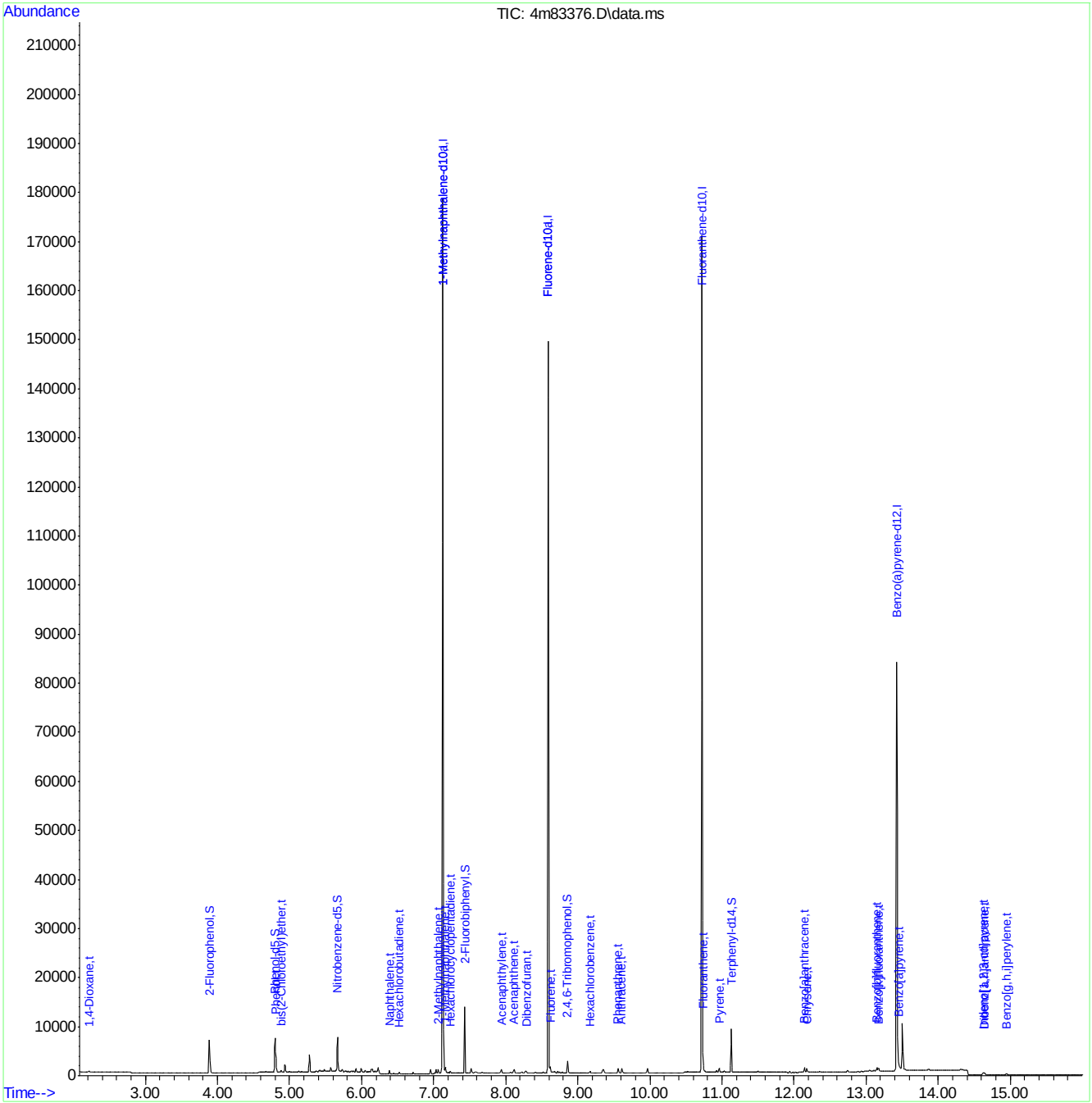
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 23 08:11:47 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration



Manual Integration Approval Summary

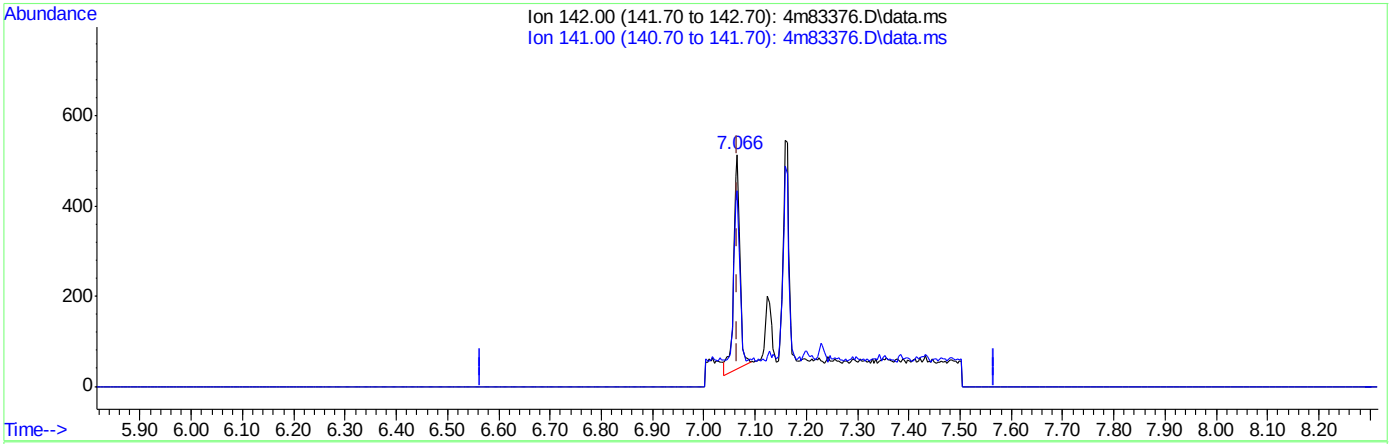
Sample Number: E4M3886-IC3886
Lab FileID: 4M83376.D
Injection Time: 04/22/19 16:48
Method: SW846 8270D BY SIM
Analyst approved: 04/23/19 08:13 Ying Li
Supervisor approved: 04/23/19 16:37 Kristi Schollenberger

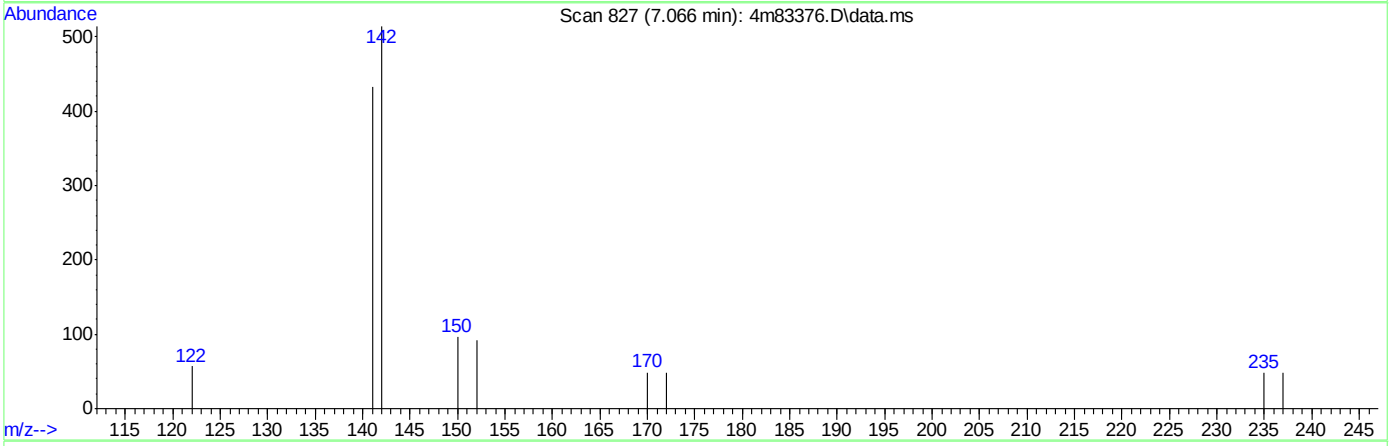
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		2.22	Poor instrument integration
2-Methylnaphthalene	91-57-6		7.07	Poor instrument integration
Hexachlorobenzene	118-74-1		9.17	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(9) 2-Methylnaphthalene (t)

7.066min (-0.000) 0.02ppm

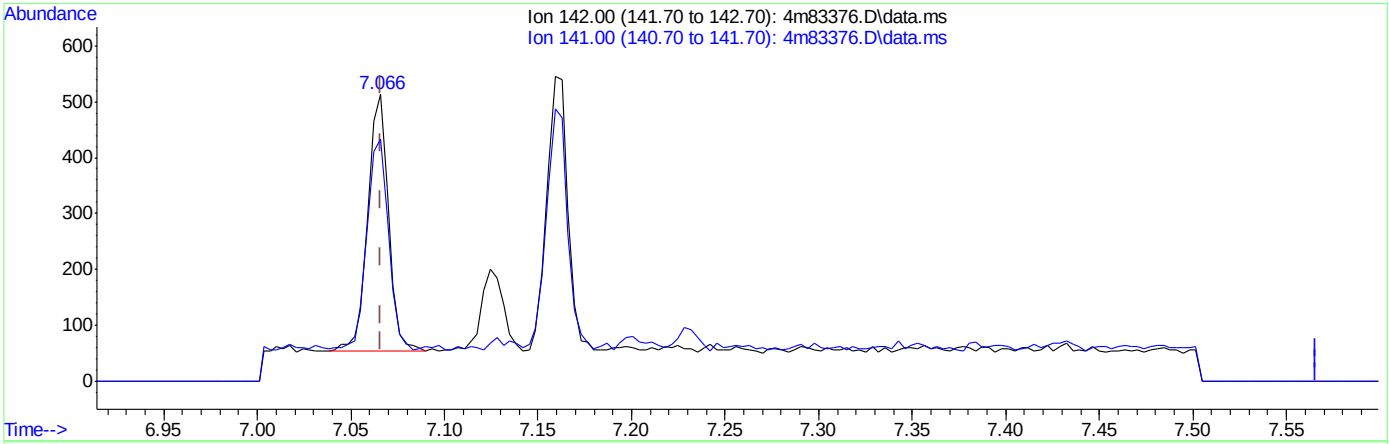
response 399

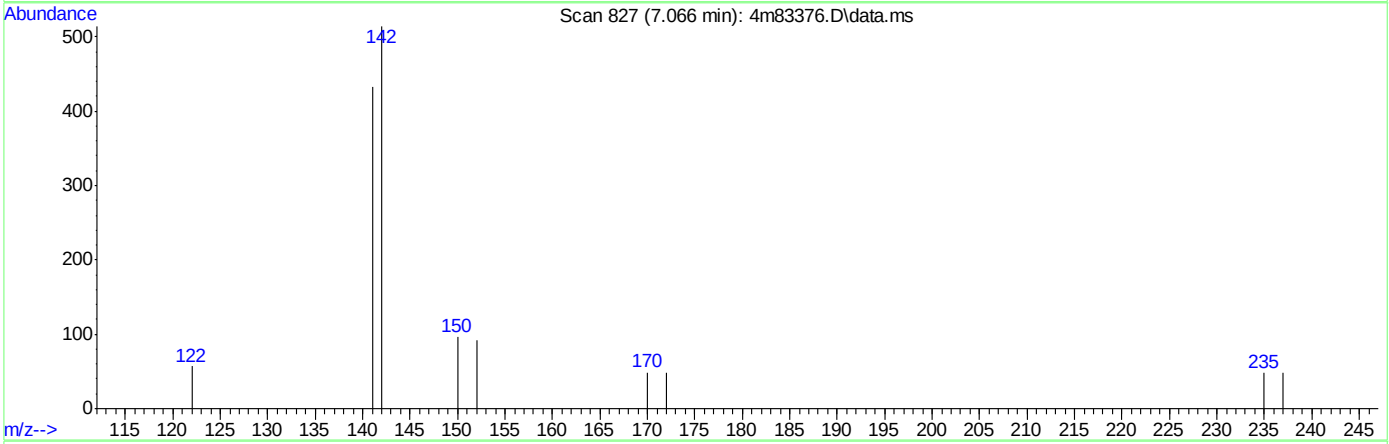
Ion	Exp%	Act%
142.00	100	100
141.00	85.70	81.11
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(9) 2-Methylnaphthalene (t)

7.066min (-0.000) 0.02ppm m

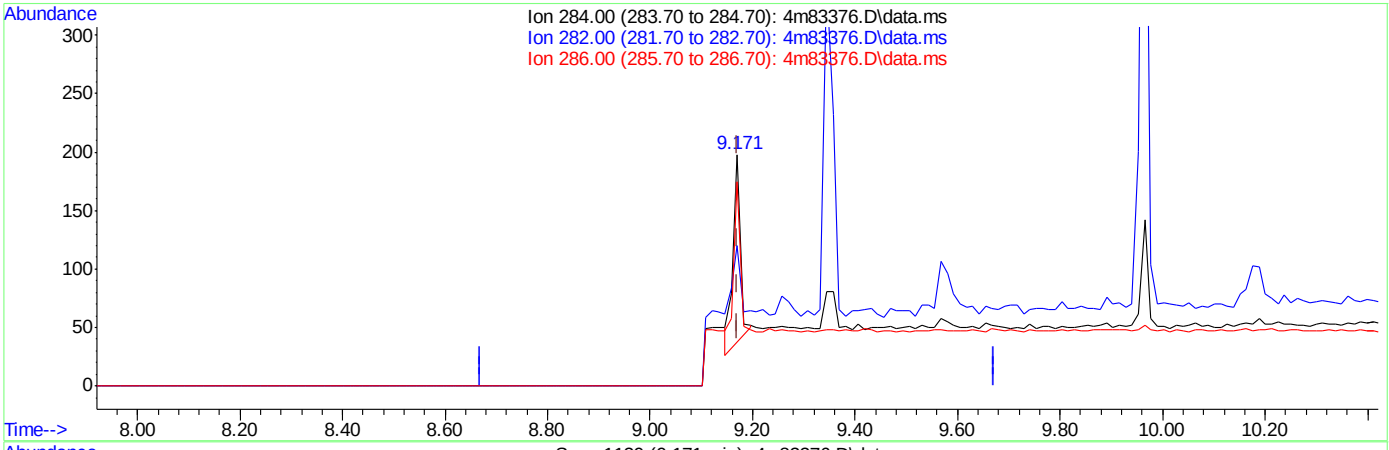
response 353

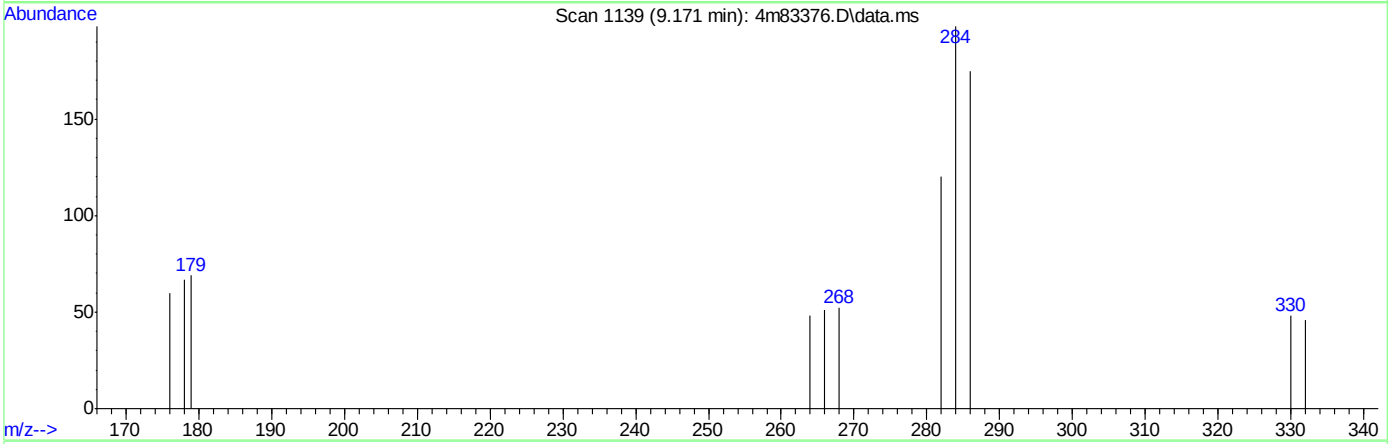
Ion	Exp%	Act%
142.00	100	100
141.00	85.70	84.24
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(18) Hexachlorobenzene (t)

9.171min (-0.000) 0.03ppm

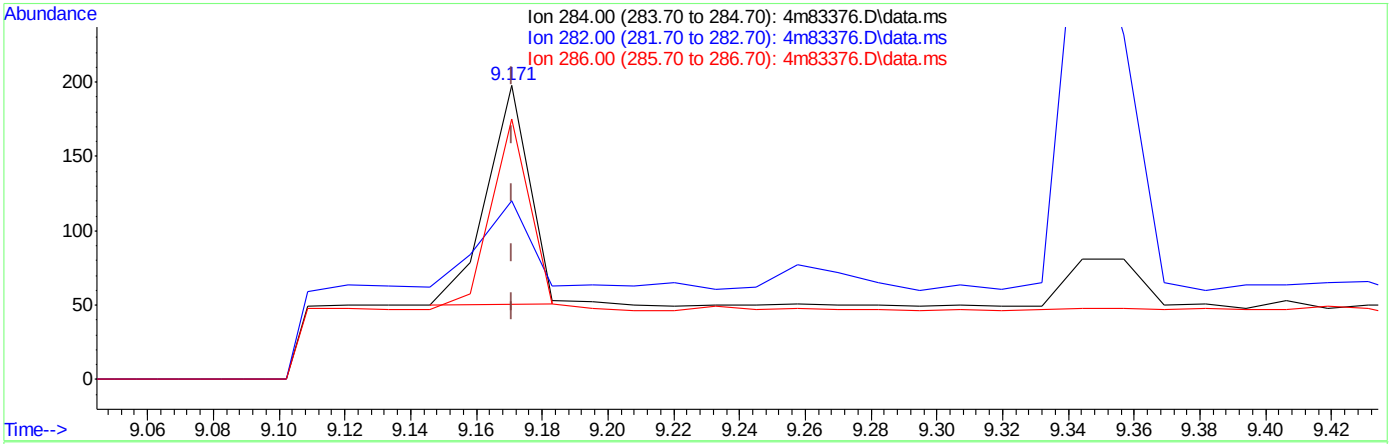
response 171

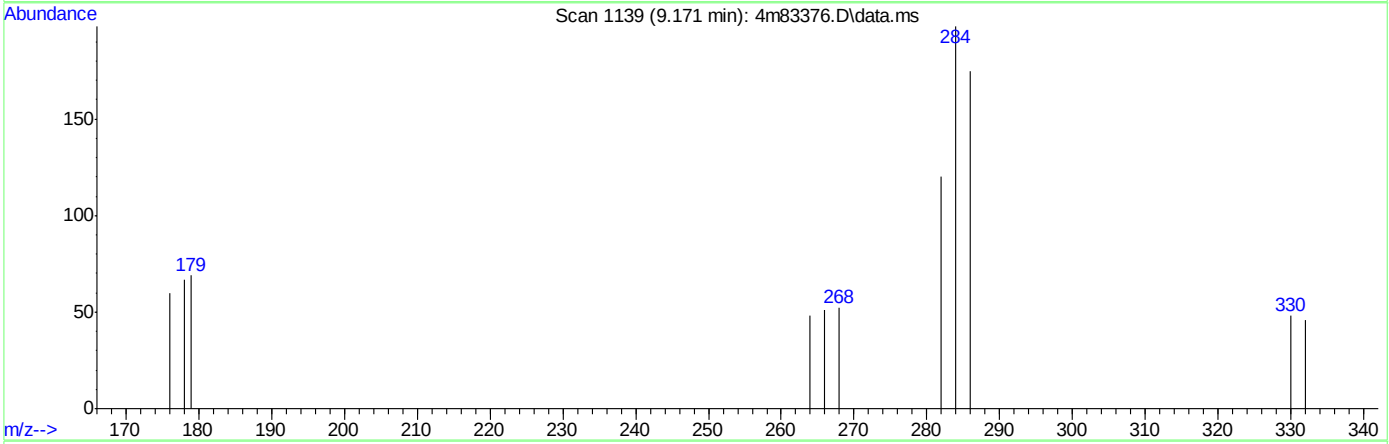
Ion	Exp%	Act%
284.00	100	100
282.00	46.50	38.78
286.00	83.00	86.73
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(18) Hexachlorobenzene (t)

9.171min (-0.000) 0.02ppm m

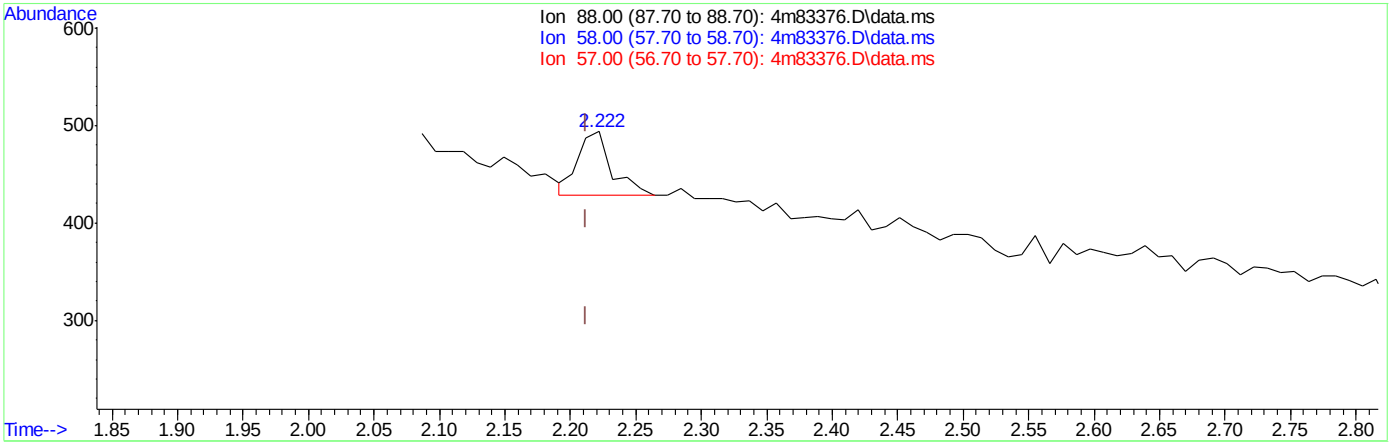
response 133

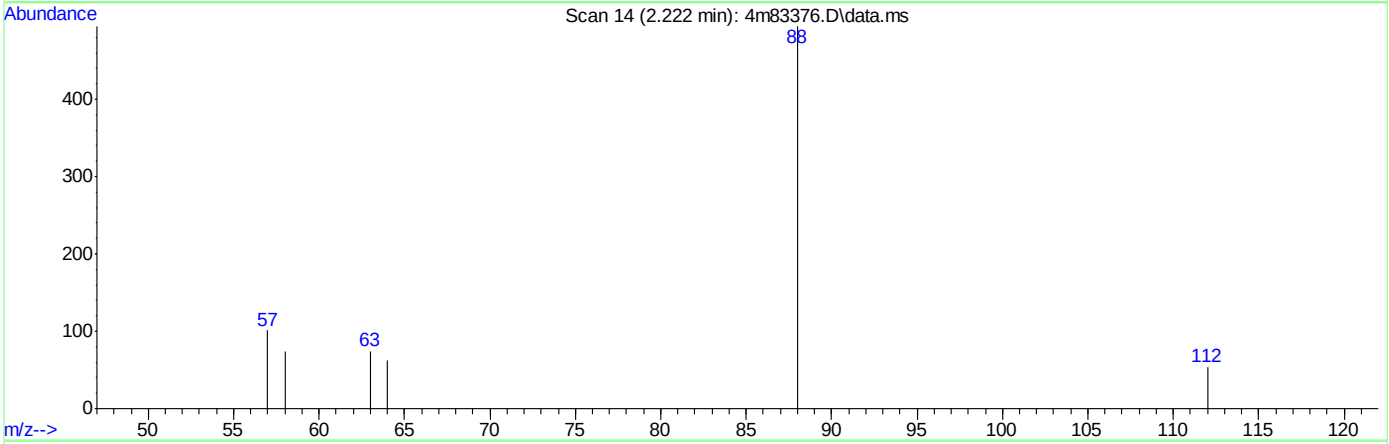
Ion	Exp%	Act%
284.00	100	100
282.00	46.50	60.61
286.00	83.00	88.38
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(36) 1,4-Dioxane (t)

2.222min (+0.010) 0.03ppm

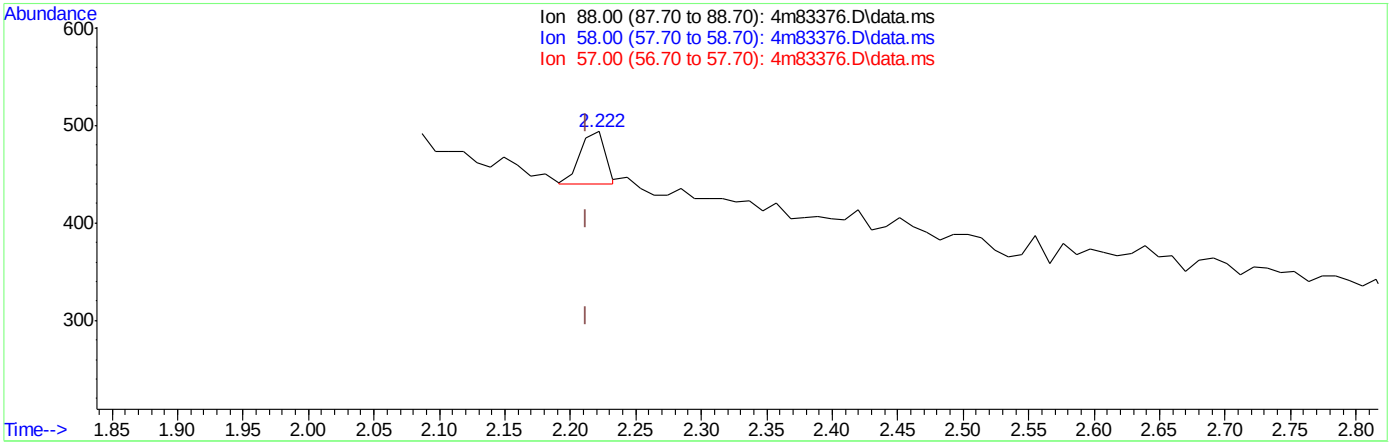
response 116

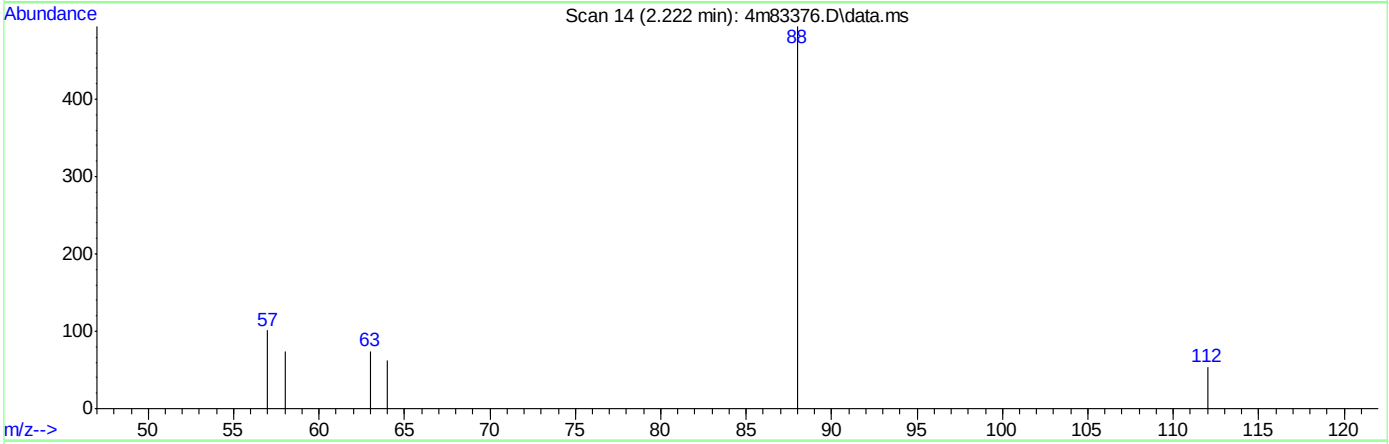
Ion	Exp%	Act%
88.00	100	100
58.00	26.40	25.42
57.00	7.80	5.93
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83376.D
Acq On : 22 Apr 2019 4:48 pm
Operator : christc2
Sample : ic3886-0.02
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 22 17:15:34 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:07:59 2019
Response via : Initial Calibration





TIC: 4m83376.D\data.ms

(36) 1,4-Dioxane (t)

2.222min (+0.010) 0.02ppm m

response 73

Ion	Exp%	Act%
88.00	100	100
58.00	26.40	14.98
57.00	7.80	20.45
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Kristi Schollenberger 04/23/19 16:37

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 08:11:32 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	54055	4.00	ppm	0.00
12) Fluorene-d10	8.596	176	58679	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	92876	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	59922	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	54055	4.00	ppm	0.00
38) Fluorene-d10a	8.596	176	58679	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.888	112	1375	0.19	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery =	0.38%#		
3) Phenol-d5	4.802	99	1657	0.19	ppm	0.00
Spiked Amount 50.000			Recovery =	0.38%		
6) Nitrobenzene-d5	5.668	82	1740	0.19	ppm	0.00
Spiked Amount 50.000			Recovery =	0.38%		
11) 2-Fluorobiphenyl	7.429	172	3440	0.20	ppm	0.00
Spiked Amount 50.000			Recovery =	0.40%		
17) 2,4,6-Tribromophenol	8.862	330	461	0.19	ppm	0.00
Spiked Amount 50.000			Recovery =	0.38%		
25) Terphenyl-d14	11.129	244	2509	0.20	ppm	0.00
Spiked Amount 50.000			Recovery =	0.40%		
Target Compounds						Qvalue
4) Phenol	4.815	94	486	0.05	ppm	95
5) bis(2-Chloroethyl)ether	4.886	93	68	0.01	ppm	92
7) Naphthalene	6.387	128	248	0.01	ppm	98
8) Hexachlorobutadiene	6.522	225	39	0.01	ppm	87
9) 2-Methylnaphthalene	7.066	142	144	0.01	ppm	97
10) Hexachlorocyclopentadiene	7.232	237	67	0.02	ppm	95
13) Acenaphthylene	7.941	152	241	0.01	ppm	99
14) Acenaphthene	8.115	153	149	0.01	ppm	87
15) Dibenzofuran	8.290	168	209	0.01	ppm	96
16) Fluorene	8.622	166	175	0.01	ppm	96
18) Hexachlorobenzene	9.171	284	57m	0.01	ppm	
20) Phenanthrene	9.555	178	256m	0.01	ppm	
21) Anthracene	9.605	178	246	0.01	ppm	95
23) Fluoranthene	10.738	202	263	0.01	ppm	76
24) Pyrene	10.959	202	276	0.01	ppm	92
26) Benzo[a]anthracene	12.145	228	223	0.01	ppm	92
27) Chrysene	12.180	228	222	0.01	ppm	96
29) Benzo[b]fluoranthene	13.151	252	242	0.01	ppm	93
30) Benzo[k]fluoranthene	13.168	252	209	0.01	ppm	95
31) Benzo[a]pyrene	13.442	252	224	0.01	ppm	92
32) Indeno[1,2,3-cd]pyrene	14.621	276	219	0.01	ppm	79
33) Dibenz[a,h]anthracene	14.645	278	185	0.01	ppm	94
34) Benzo[g,h,i]perylene	14.946	276	170	0.01	ppm	98
36) 1,4-Dioxane	2.222	88	37	0.01	ppm	85
37) 1-Methylnaphthalene	7.159	142	175	0.01	ppm	86

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 08:11:32 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration

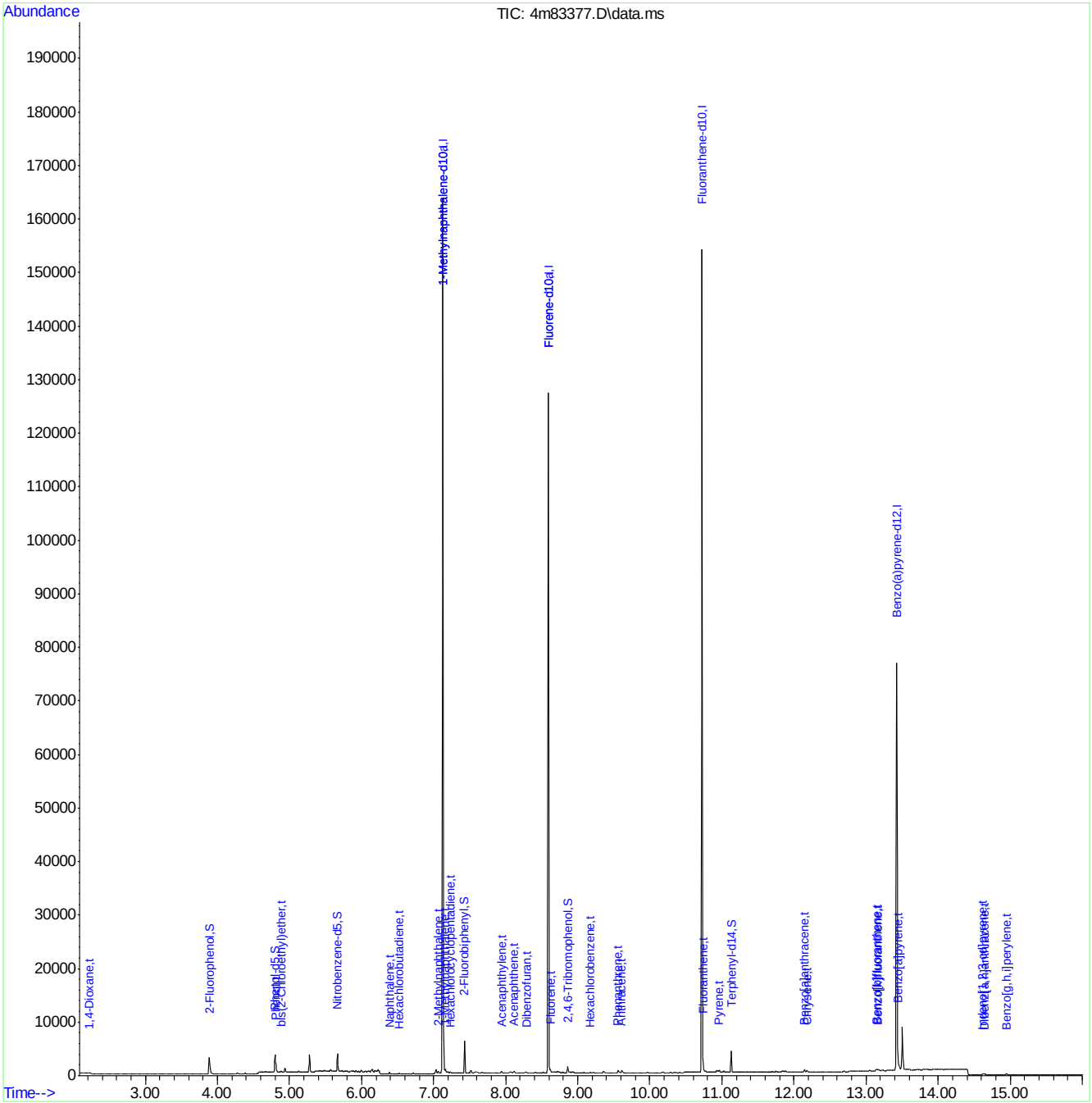
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 08:11:32 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration



Manual Integration Approval Summary

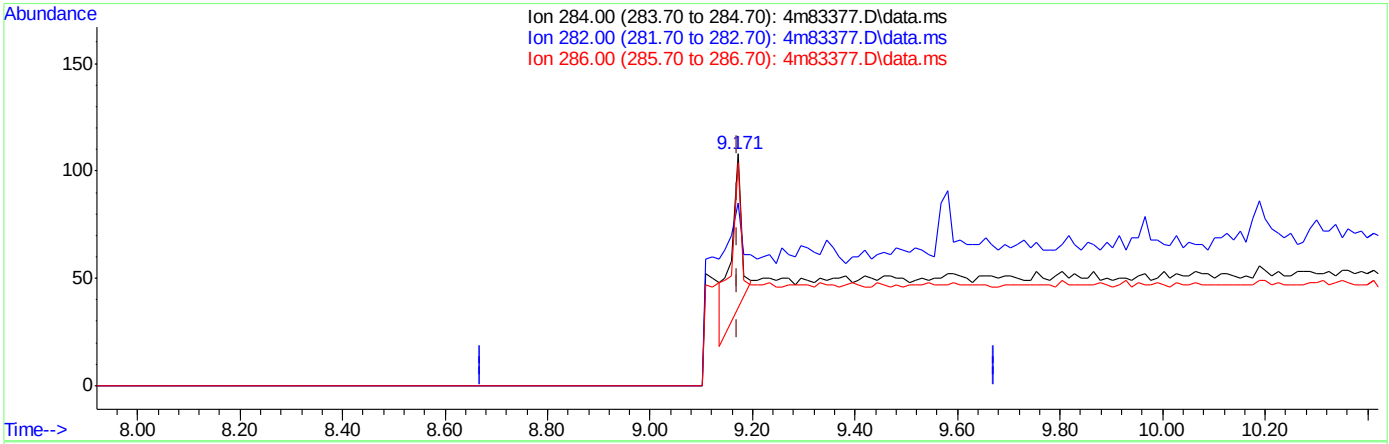
Sample Number:	E4M3886-IC3886	**Method:**	SW846 8270D BY SIM
Lab FileID:	4M83377.D	**Analyst approved:**	04/23/19 08:13 Ying Li
Injection Time:	04/22/19 17:11	**Supervisor approved:**	04/23/19 16:37 Kristi Schollenberger

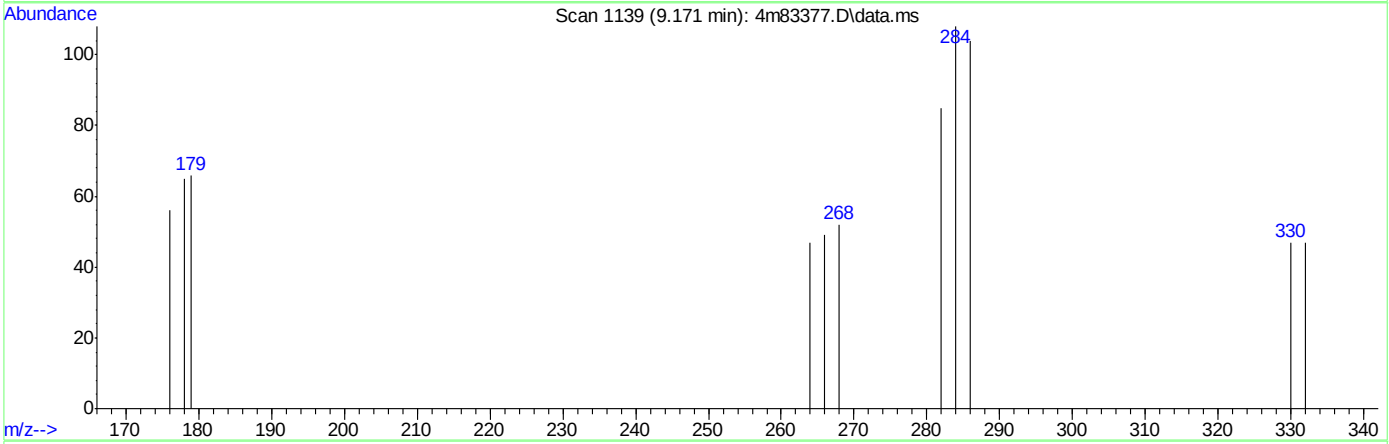
Parameter	CAS	Sig#	R.T. (min.)	Reason
Hexachlorobenzene	118-74-1		9.17	Poor instrument integration
Phenanthrene	85-01-8		9.56	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 07:47:18 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration





TIC: 4m83377.D\data.ms

(18) Hexachlorobenzene (t)

9.171min (+0.000) 0.02ppm

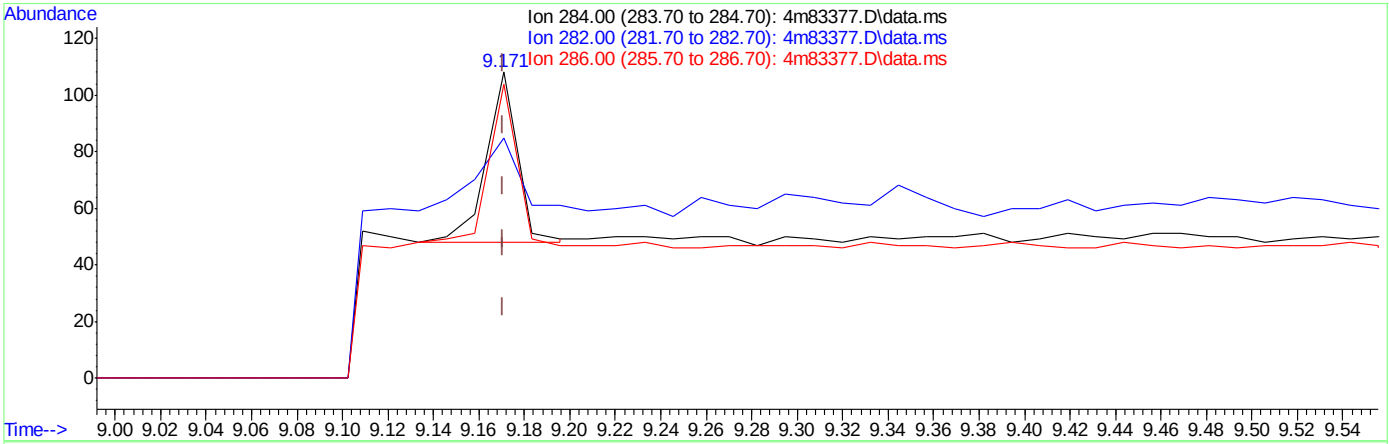
response 112

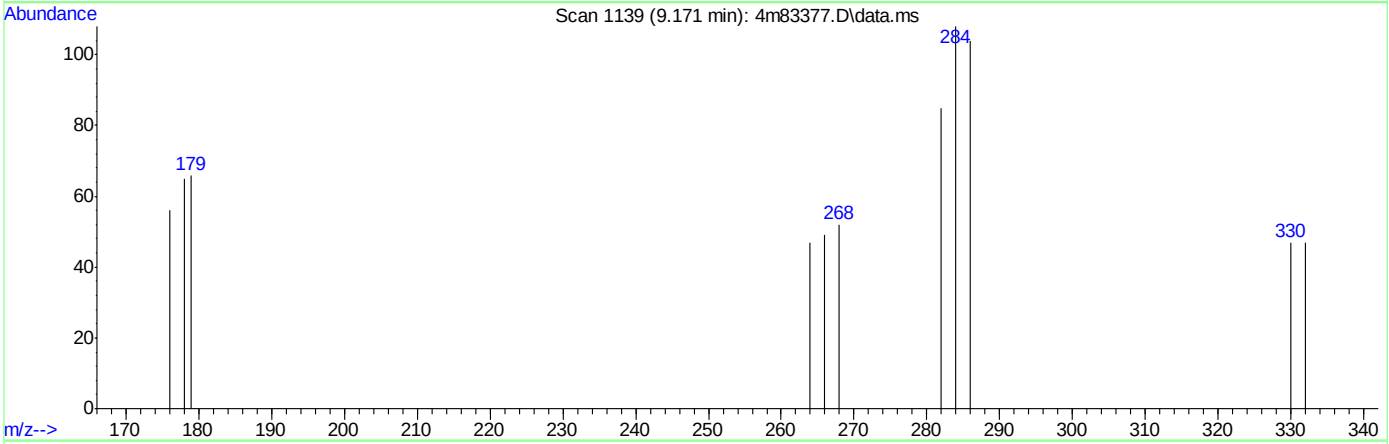
Ion	Exp%	Act%
284.00	100	100
282.00	46.50	42.02
286.00	83.00	94.96
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 07:47:18 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration





TIC: 4m83377.D\data.ms

(18) Hexachlorobenzene (t)

9.171min (+0.000) 0.01ppm m

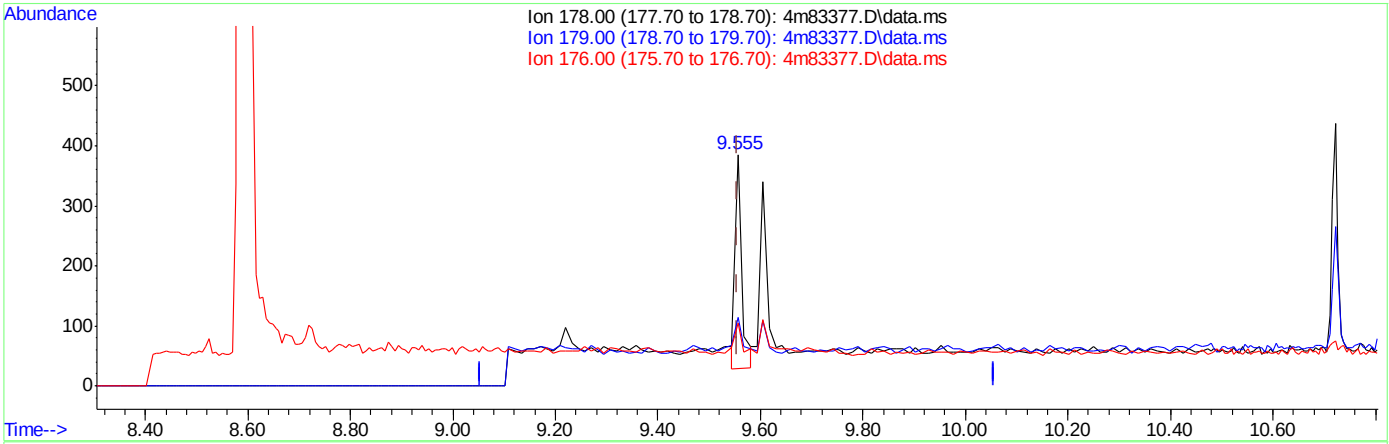
response 57

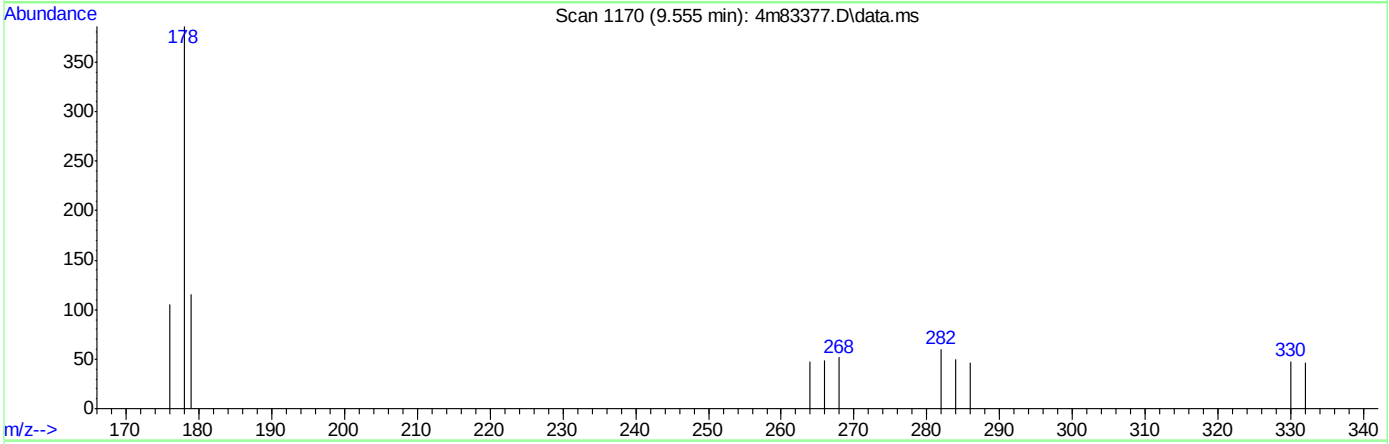
Ion	Exp%	Act%
284.00	100	100
282.00	46.50	78.70#
286.00	83.00	96.30
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 07:47:18 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration





TIC: 4m83377.D\data.ms

(20) Phenanthrene (t)

9.555min (+0.000) 0.01ppm

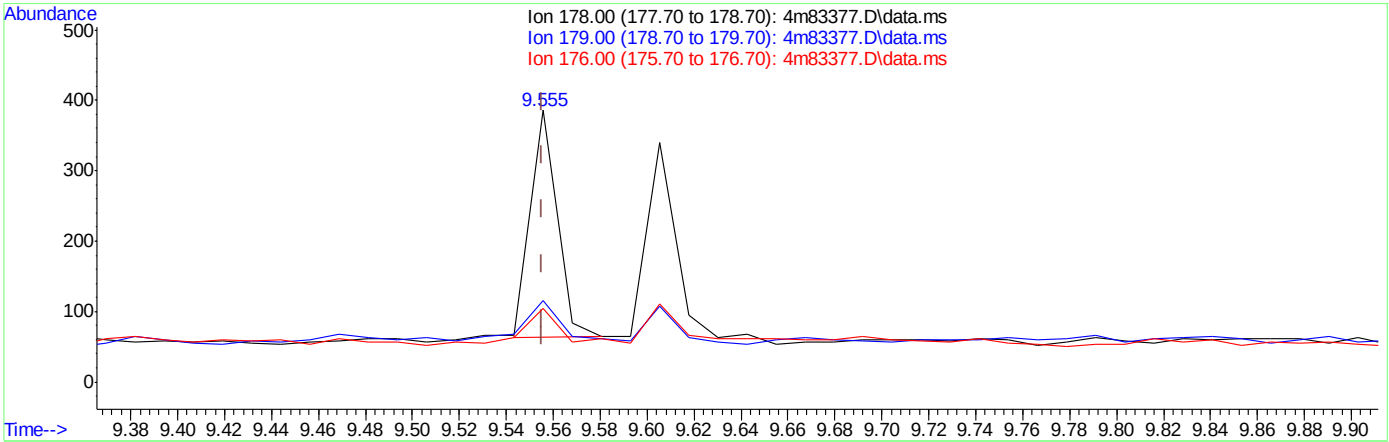
response 331

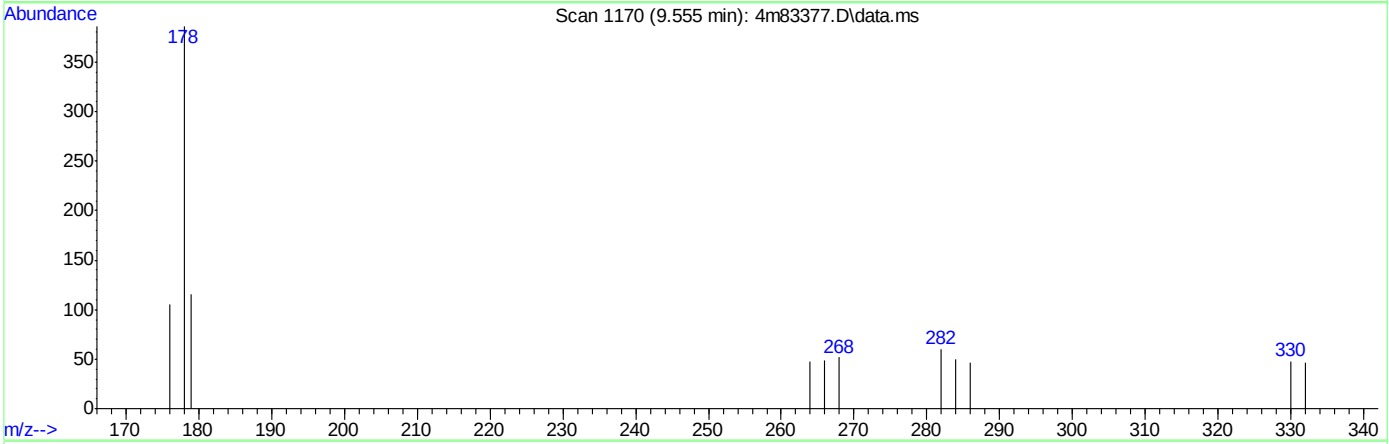
Ion	Exp%	Act%
178.00	100	100
179.00	14.60	15.91
176.00	19.40	13.42
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83377.D
Acq On : 22 Apr 2019 5:11 pm
Operator : christc2
Sample : ic3886-0.01
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 23 07:47:18 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Mon Apr 22 17:18:54 2019
Response via : Initial Calibration





TIC: 4m83377.D\data.ms

(20) Phenanthrene (t)

9.555min (+0.000) 0.01ppm m

response 256

Ion	Exp%	Act%
178.00	100	100
179.00	14.60	29.79
176.00	19.40	27.20
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83378.D
Acq On : 22 Apr 2019 5:33 pm
Operator : christc2
Sample : icv3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 23 07:54:01 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:51:50 2019
Response via : Initial Calibration

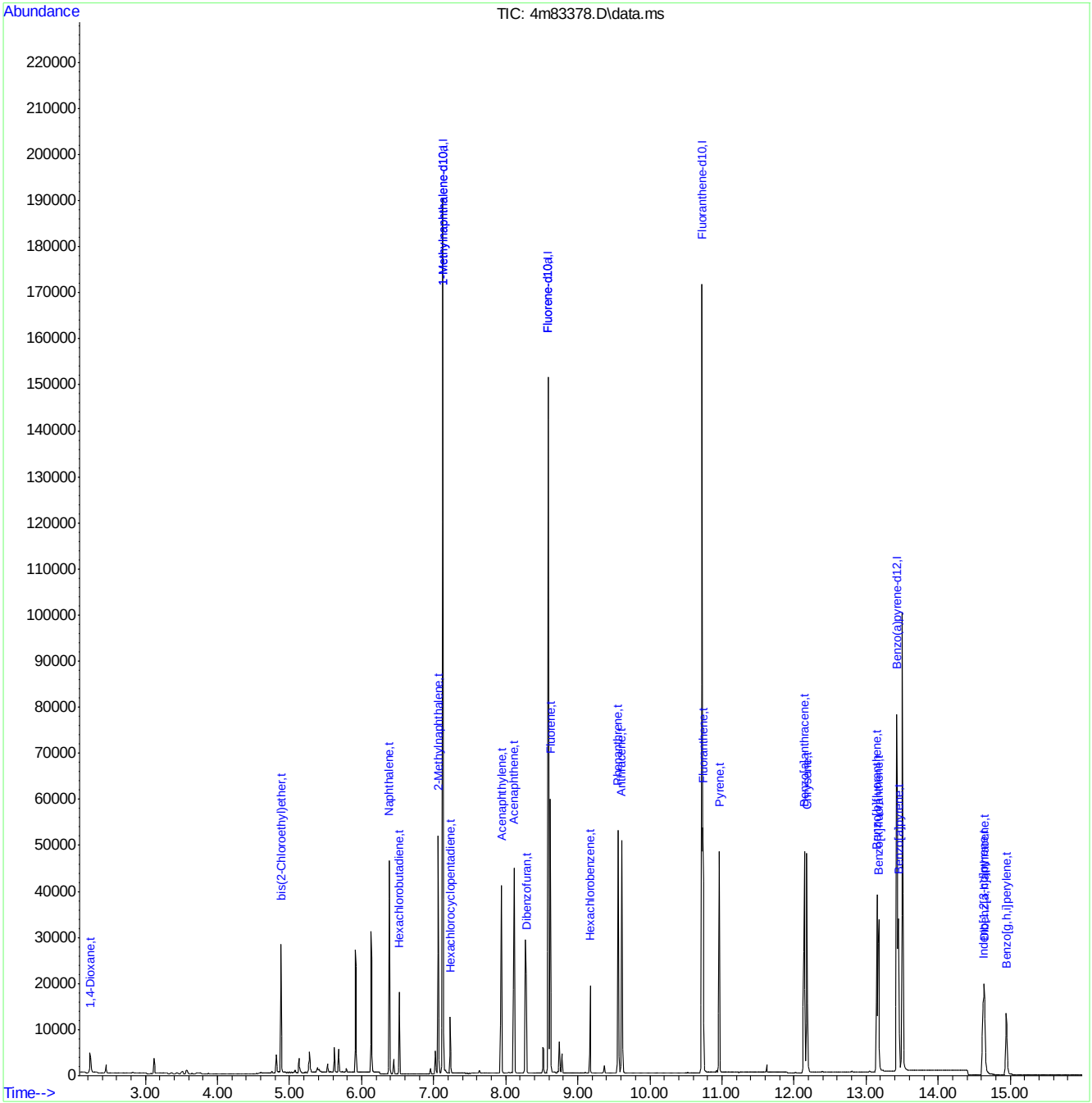
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	64320	4.00	ppm	0.00
12) Fluorene-d10	8.589	176	69534	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	108371	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	65733	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	64320	4.00	ppm	0.00
38) Fluorene-d10a	8.589	176	69534	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	0.000	112	0d	0.00	ppm	
Spiked Amount 50.000	Range 11 - 58		Recovery =	0.00%#		
3) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
6) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
11) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
17) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
5) bis(2-Chloroethyl)ether	4.885	93	9174	1.09	ppm	92
7) Naphthalene	6.384	128	31116	1.09	ppm	100
8) Hexachlorobutadiene	6.525	225	5504	1.09	ppm	99
9) 2-Methylnaphthalene	7.066	142	20523	1.16	ppm	98
10) Hexachlorocyclopentadiene	7.232	237	4816	1.04	ppm	98
13) Acenaphthylene	7.941	152	29137	1.04	ppm	98
14) Acenaphthene	8.115	153	18010	1.00	ppm	82
15) Dibenzofuran	8.290	168	26116	1.10	ppm	99
16) Fluorene	8.622	166	21821	1.09	ppm	99
18) Hexachlorobenzene	9.171	284	7176	1.04	ppm	94
20) Phenanthrene	9.555	178	32400	1.11	ppm	100
21) Anthracene	9.605	178	31647	1.10	ppm	100
23) Fluoranthene	10.738	202	31875	1.09	ppm	99
24) Pyrene	10.964	202	31731	1.06	ppm	98
26) Benzo[a]anthracene	12.144	228	25953	1.04	ppm	99
27) Chrysene	12.180	228	25811	1.06	ppm	99
29) Benzo[b]fluoranthene	13.151	252	23597	0.97	ppm	98
30) Benzo[k]fluoranthene	13.177	252	24657	1.10	ppm	100
31) Benzo[a]pyrene	13.451	252	22225	0.99	ppm	99
32) Indeno[1,2,3-cd]pyrene	14.625	276	23857	1.00	ppm	100
33) Dibenz[a,h]anthracene	14.644	278	18996	0.96	ppm	98
34) Benzo[g,h,i]perylene	14.946	276	20009	1.03	ppm	100
36) 1,4-Dioxane	2.233	88	3426	0.85	ppm #	34

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83378.D
Acq On : 22 Apr 2019 5:33 pm
Operator : christc2
Sample : icv3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

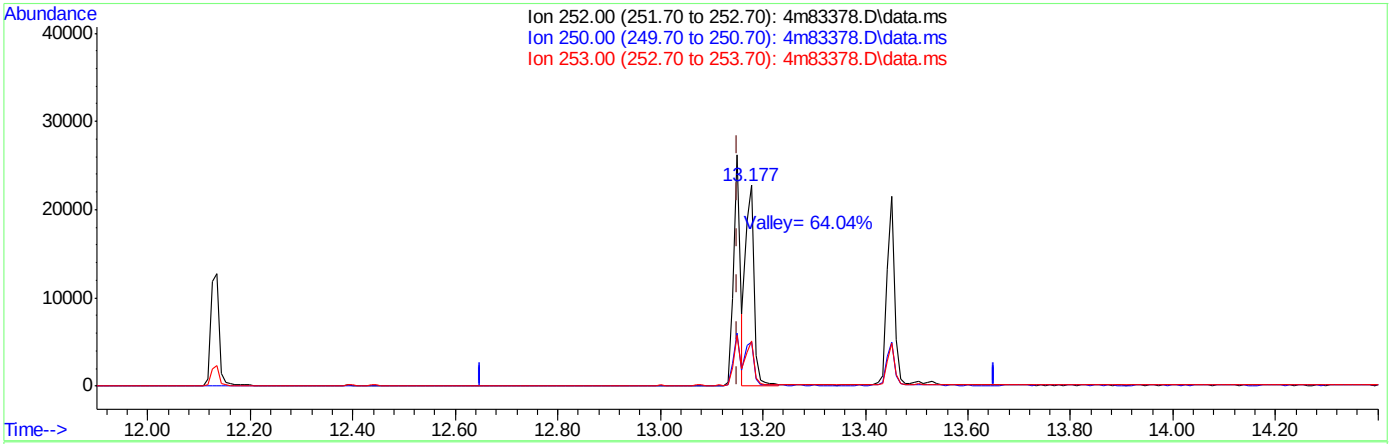
Quant Time: Apr 23 07:54:01 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:51:50 2019
Response via : Initial Calibration

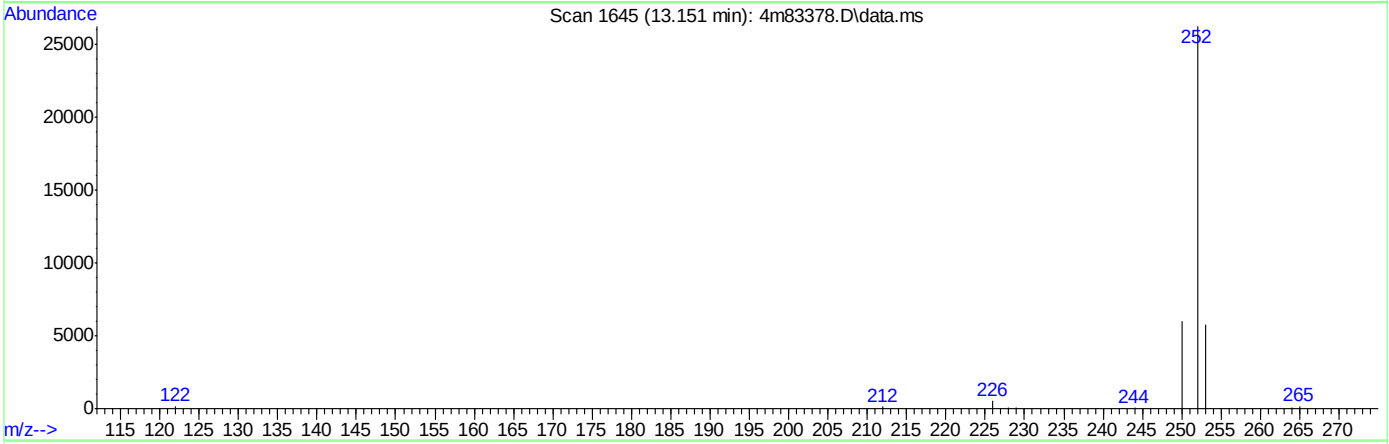


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83378.D
Acq On : 22 Apr 2019 5:33 pm
Operator : christc2
Sample : icv3886-1.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 23 07:52:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:51:50 2019
Response via : Initial Calibration





TIC: 4m83378.D\data.ms

(29) Benzo[b]fluoranthene (t)

13.151min (-0.000) 0.97ppm

response 23597

Ion	Exp%	Act%
252.00	100	100
250.00	23.80	22.81
253.00	22.30	21.55
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83379.D
Acq On : 22 Apr 2019 5:56 pm
Operator : christc2
Sample : icv3886-5.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 23 08:00:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration

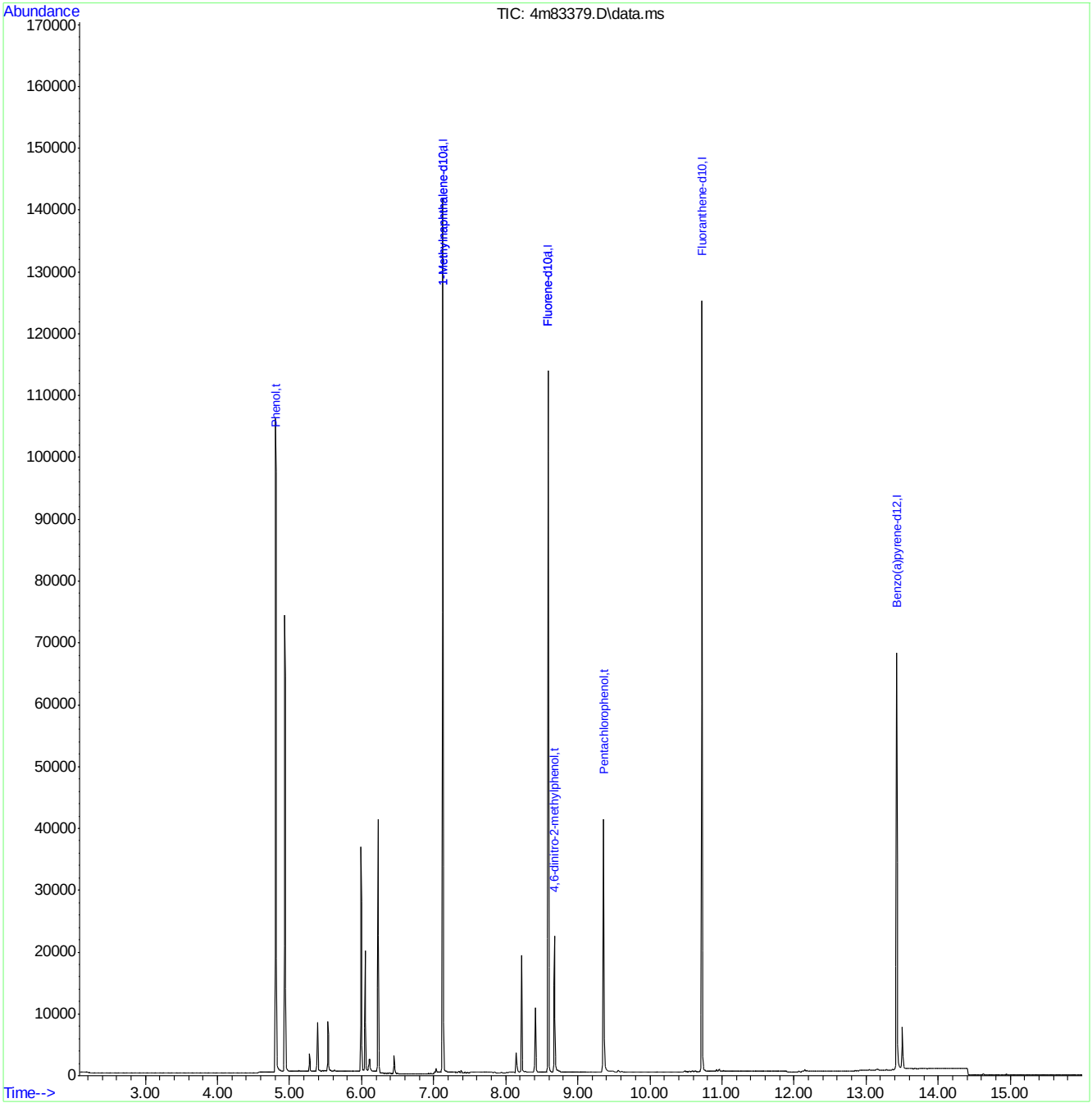
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	7.128	152	46730	4.00	ppm	0.00
12) Fluorene-d10	8.589	176	50596	4.00	ppm	0.00
22) Fluoranthene-d10	10.722	212	78982	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.424	264	52537	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	7.128	152	46730	4.00	ppm	0.00
38) Fluorene-d10a	8.589	176	50596	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	0.000	112	0d	0.00	ppm	
Spiked Amount 50.000	Range 11 - 58		Recovery =	0.00%#		
3) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
6) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
11) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
17) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
4) Phenol	4.814	94	47176	5.52	ppm	93
19) Pentachlorophenol	9.357	266	16011	6.44	ppm	94
39) 4,6-dinitro-2-methylph...	8.674	198	10533	4.76	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3886\
Data File : 4m83379.D
Acq On : 22 Apr 2019 5:56 pm
Operator : christc2
Sample : icv3886-5.0
Misc : op13576a,e4m3886,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 23 08:00:03 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85080.D
Acq On : 21 Jun 2019 9:06 am
Operator : krizhkac
Sample : cc3886-1
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 16:44:04 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration

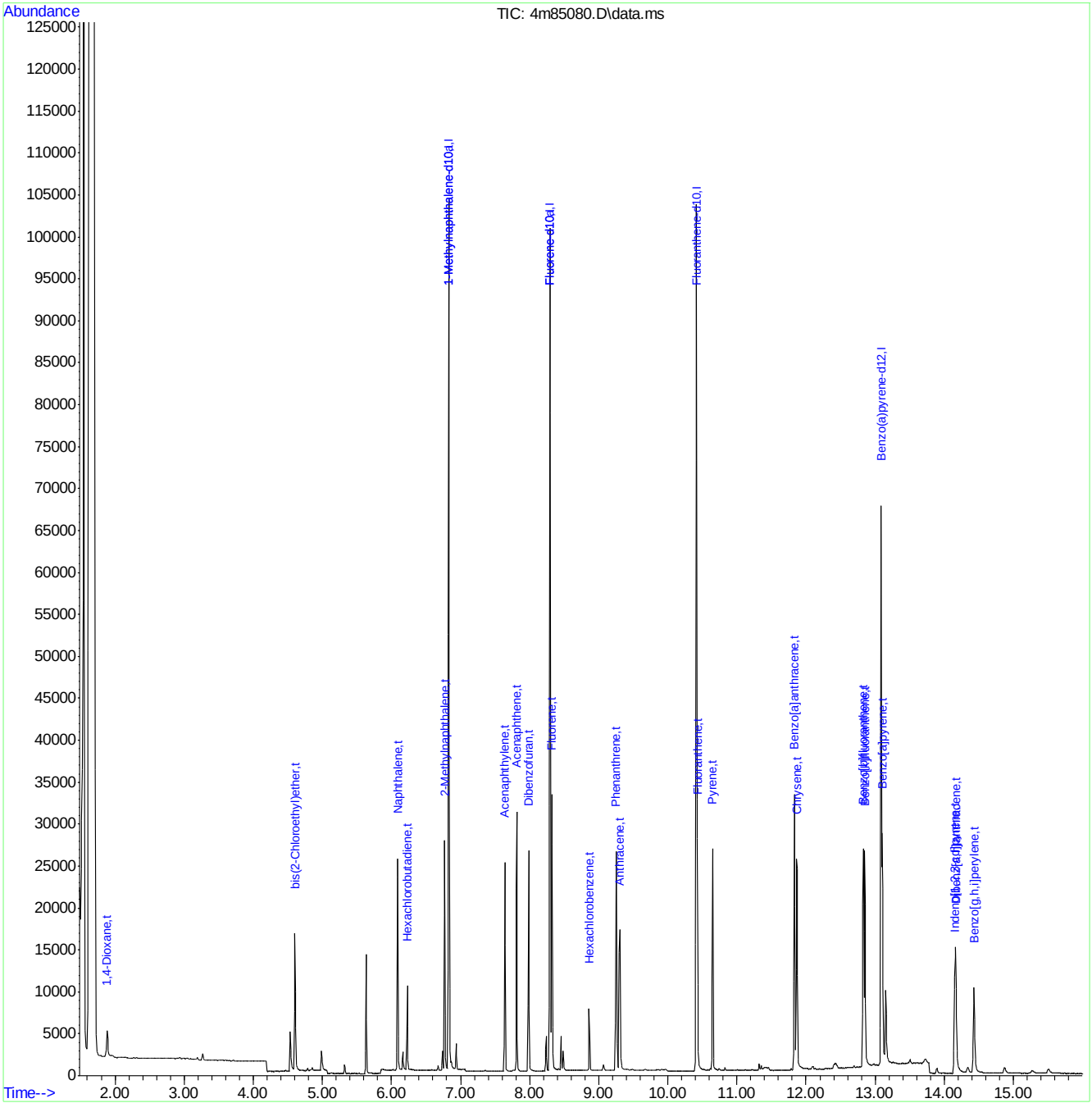
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 1-Methylnaphthalene-d10	6.829	152	37998	4.00	ppm		0.10
12) Fluorene-d10	8.294	176	40888	4.00	ppm		0.10
22) Fluoranthene-d10	10.412	212	68790	4.00	ppm		0.11
28) Benzo(a)pyrene-d12	13.087	264	53531	4.00	ppm		0.11
35) 1-Methylnaphthalene-d10a	6.829	152	37998	4.00	ppm		0.10
38) Fluorene-d10a	8.294	176	40888	4.00	ppm		0.10
System Monitoring Compounds							
2) 2-Fluorophenol	0.000	112	0	0.00	ppm		
Spiked Amount 50.000	Range 11 - 58		Recovery =	0.00%#			
3) Phenol-d5	0.000	99	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
6) Nitrobenzene-d5	0.000	82	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
11) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
17) 2,4,6-Tribromophenol	0.000	330	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
25) Terphenyl-d14	0.000	244	0d	0.00	ppm		
Spiked Amount 50.000			Recovery =	0.00%			
Target Compounds							Qvalue
5) bis(2-Chloroethyl)ether	4.603	93	6331	1.27	ppm		92
7) Naphthalene	6.091	128	19314	1.15	ppm		99
8) Hexachlorobutadiene	6.230	225	3044	1.02	ppm		94
9) 2-Methylnaphthalene	6.770	142	11508	1.10	ppm		98
13) Acenaphthylene	7.638	152	16575	1.00	ppm		99
14) Acenaphthene	7.816	153	11495	1.09	ppm		99
15) Dibenzofuran	7.985	168	15721	1.13	ppm		75
16) Fluorene	8.321	166	12501	1.06	ppm		99
18) Hexachlorobenzene	8.860	284	3256	0.80	ppm		90
20) Phenanthrene	9.252	178	17364	1.02	ppm		97
21) Anthracene	9.307	178	15422	0.91	ppm		98
23) Fluoranthene	10.430	202	19322	1.04	ppm		99
24) Pyrene	10.645	202	19512	1.03	ppm		95
26) Benzo[a]anthracene	11.833	228	16237	1.03	ppm		99
27) Chrysene	11.864	228	17562	1.13	ppm		99
29) Benzo[b]fluoranthene	12.829	252	16231	0.82	ppm		95
30) Benzo[k]fluoranthene	12.850	252	16871	0.92	ppm		97
31) Benzo[a]pyrene	13.103	252	15590	0.85	ppm		98
32) Indeno[1,2,3-cd]pyrene	14.151	276	16729	0.86	ppm		98
33) Dibenz[a,h]anthracene	14.166	278	13598	0.84	ppm		96
34) Benzo[g,h,i]perylene	14.429	276	14501	0.92	ppm		97
36) 1,4-Dioxane	1.883	88	2466	1.03	ppm	#	54

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85080.D
Acq On : 21 Jun 2019 9:06 am
Operator : krizhkac
Sample : cc3886-1
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 16:44:04 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85081.D
Acq On : 21 Jun 2019 9:41 am
Operator : krizhkac
Sample : cc3886-1
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 21 16:35:06 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration

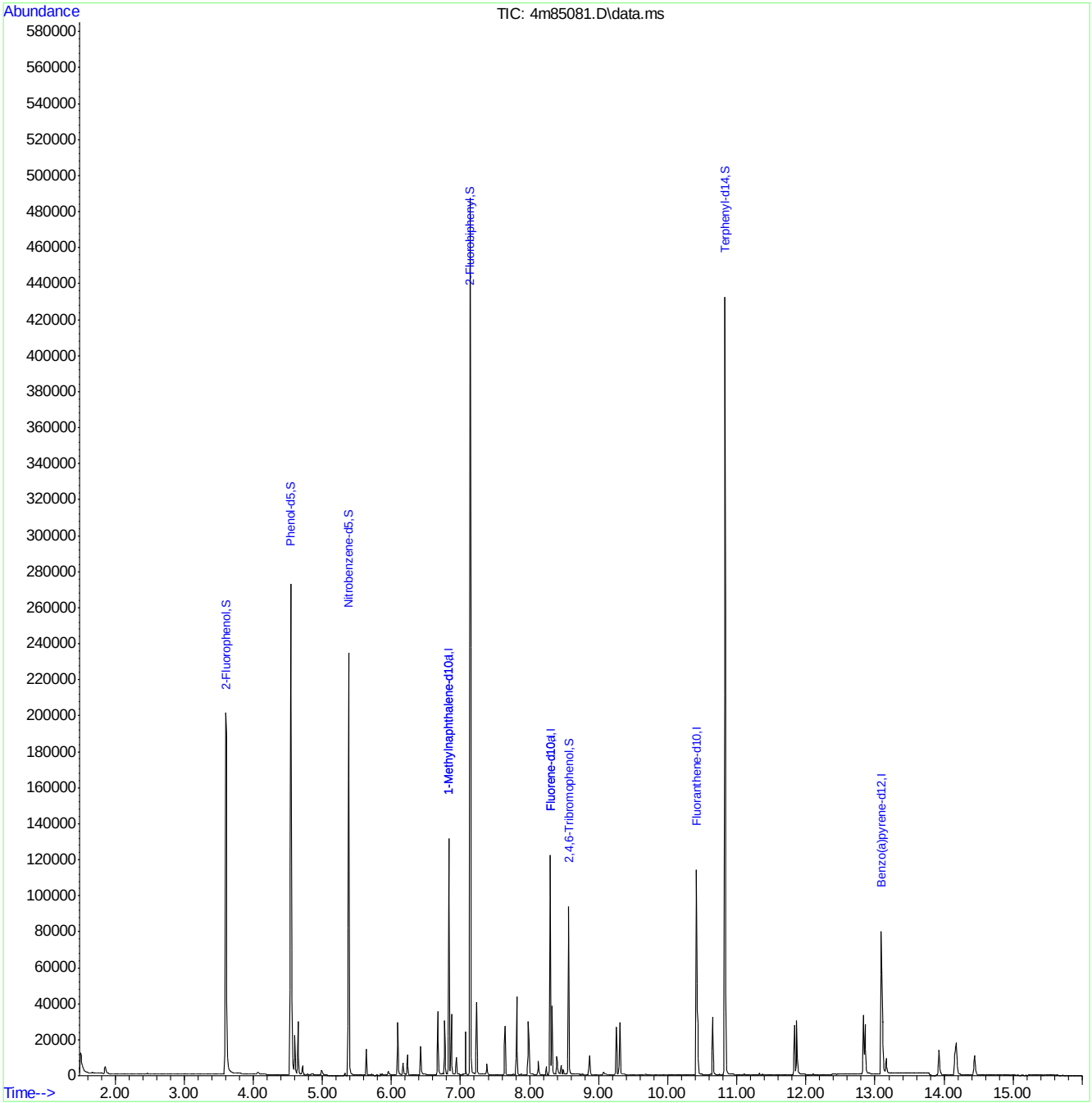
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.833	152	45210	4.00	ppm	0.00
12) Fluorene-d10	8.298	176	49406	4.00	ppm	0.10
22) Fluoranthene-d10	10.418	212	80910	4.00	ppm	0.11
28) Benzo(a)pyrene-d12	13.092	264	60144	4.00	ppm	0.11
35) 1-Methylnaphthalene-d10a	6.833	152	45210	4.00	ppm	0.10
38) Fluorene-d10a	8.298	176	49406	4.00	ppm	0.10
System Monitoring Compounds						
2) 2-Fluorophenol	3.611	112	140332	23.68	ppm	0.10
Spiked Amount 50.000	Range 11 - 58		Recovery = 47.36%			
3) Phenol-d5	4.544	99	151623	20.45	ppm	0.06
Spiked Amount 50.000			Recovery = 40.90%			
6) Nitrobenzene-d5	5.379	82	136293	18.04	ppm	0.00
Spiked Amount 50.000			Recovery = 36.08%			
11) 2-Fluorobiphenyl	7.139	172	293837	20.49	ppm	0.08
Spiked Amount 50.000			Recovery = 40.98%			
17) 2,4,6-Tribromophenol	8.566	330	35837	17.32	ppm	0.11
Spiked Amount 50.000			Recovery = 34.64%			
25) Terphenyl-d14	10.830	244	289367	26.11	ppm	0.11
Spiked Amount 50.000			Recovery = 52.22%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\E4M3947\
Data File : 4m85081.D
Acq On : 21 Jun 2019 9:41 am
Operator : krizhkac
Sample : cc3886-1
Misc : op13576a,e4m3947,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 21 16:35:06 2019
Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Tue Apr 23 07:57:48 2019
Response via : Initial Calibration



Manual Integrations APPROVED (compounds with "m" flag)
Nina Pandya
06/24/19 11:42

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85116.d
Acq On : 22 Jun 2019 12:27 am
Operator : chriss2
Sample : cc3886-0.5 Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 22:57:51 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration

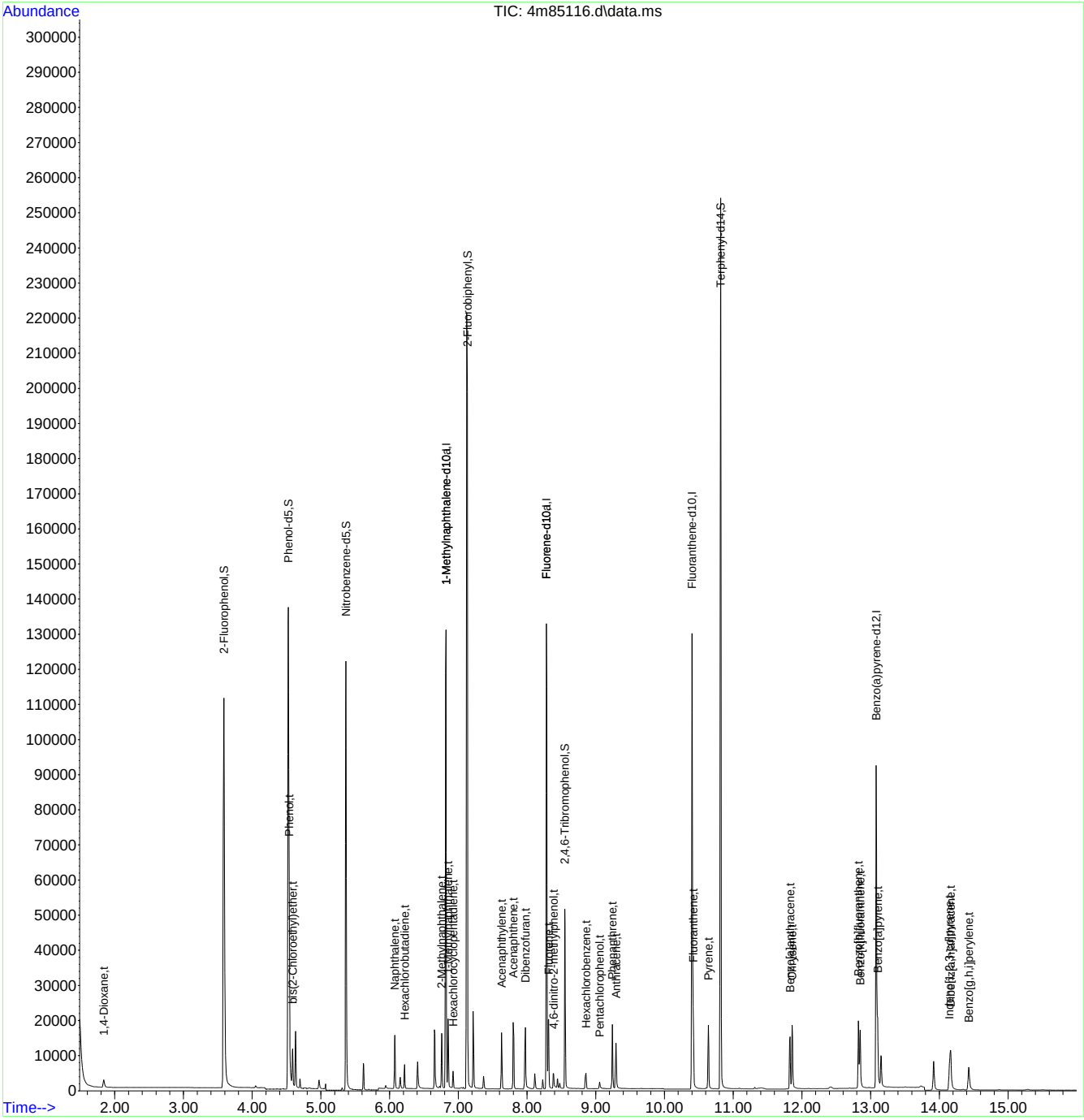
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1-Methylnaphthalene-d10	6.820	152	48291	4.00	ppm	0.00
12) Fluorene-d10	8.283	176	53749	4.00	ppm	0.00
22) Fluoranthene-d10	10.400	212	91344	4.00	ppm	0.00
28) Benzo(a)pyrene-d12	13.081	264	70756	4.00	ppm	0.00
35) 1-Methylnaphthalene-d10a	6.820	152	48291	4.00	ppm	0.00
38) Fluorene-d10a	8.283	176	53749	4.00	ppm	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	3.590	112	73884	11.67	ppm	0.00
Spiked Amount 50.000	Range 11 - 58		Recovery = 23.34%			
3) Phenol-d5	4.526	99	80482	10.16	ppm	0.00
Spiked Amount 50.000			Recovery = 20.32%			
6) Nitrobenzene-d5	5.364	82	73026	9.05	ppm	0.00
Spiked Amount 50.000			Recovery = 18.10%			
11) 2-Fluorobiphenyl	7.131	172	165881	10.83	ppm	0.00
Spiked Amount 50.000			Recovery = 21.66%			
17) 2,4,6-Tribromophenol	8.550	330	19430	8.63	ppm	0.00
Spiked Amount 50.000			Recovery = 17.26%			
25) Terphenyl-d14	10.818	244	172787	13.81	ppm	0.00
Spiked Amount 50.000			Recovery = 27.62%			
Target Compounds						Qvalue
4) Phenol	4.538	94	23838	2.70	ppm	100
5) bis(2-Chloroethyl)ether	4.588	93	3889	0.62	ppm	100
7) Naphthalene	6.077	128	11356	0.53	ppm	100
8) Hexachlorobutadiene	6.217	225	1899	0.50	ppm	100
9) 2-Methylnaphthalene	6.757	142	7081	0.53	ppm	100
10) Hexachlorocyclopentadiene	6.923	237	1931	0.56	ppm	100
13) Acenaphthylene	7.629	152	9795	0.45	ppm	100
14) Acenaphthene	7.798	153	7392	0.53	ppm	100
15) Dibenzofuran	7.976	168	10236	0.56	ppm	100
16) Fluorene	8.313	166	7821	0.51	ppm	100
18) Hexachlorobenzene	8.860	284	2165	0.41	ppm	100
19) Pentachlorophenol	9.056	266	1047	0.40	ppm	100
20) Phenanthrene	9.241	178	11601	0.52	ppm	100
21) Anthracene	9.296	178	9675	0.43	ppm	100
23) Fluoranthene	10.418	202	12662	0.51	ppm	100
24) Pyrene	10.639	202	12396	0.49	ppm	99
26) Benzo[a]anthracene	11.827	228	10213	0.49	ppm	100
27) Chrysene	11.859	228	12330	0.60	ppm	100
29) Benzo[b]fluoranthene	12.823	252	11384	0.43	ppm	100
30) Benzo[k]fluoranthene	12.850	252	12498	0.52	ppm	100
31) Benzo[a]pyrene	13.102	252	11376	0.47	ppm	100
32) Indeno[1,2,3-cd]pyrene	14.147	276	11897	0.46	ppm	100
33) Dibenz[a,h]anthracene	14.166	278	10069	0.47	ppm	100
34) Benzo[g,h,i]perylene	14.429	276	9972	0.48	ppm	100
36) 1,4-Dioxane	1.841	88	1655m	0.55	ppm	
37) 1-Methylnaphthalene	6.851	142	7967	0.53	ppm	100
39) 4,6-dinitro-2-methylph...	8.386	198	2526	1.36	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85116.d
Acq On : 22 Jun 2019 12:27 am
Operator : chriss2
Sample : cc3886-0.5 Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 22:57:51 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration



Manual Integration Approval Summary

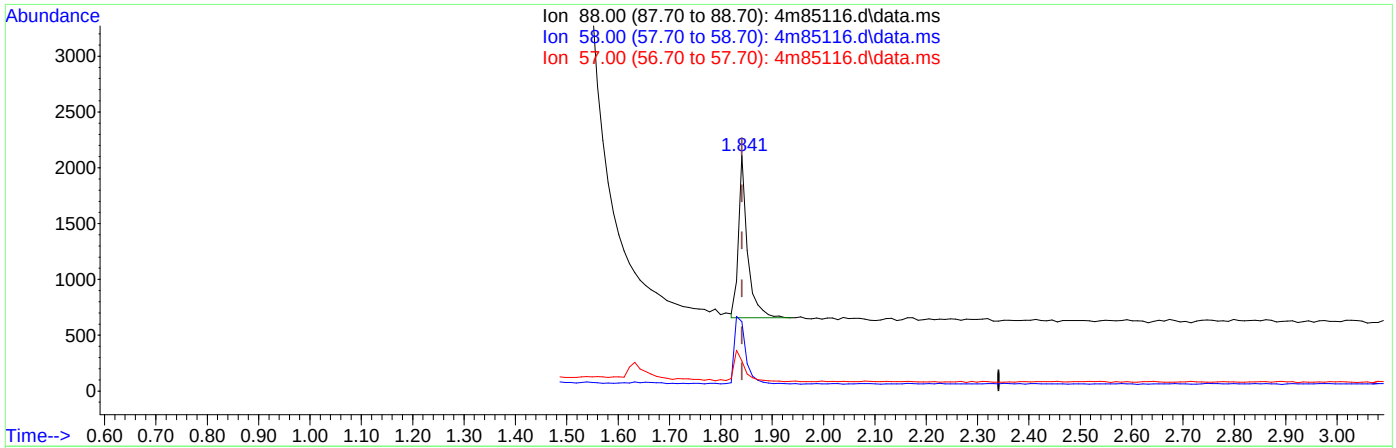
Sample Number:	E4M3948-CC3886	**Method:**	SW846 8270D BY SIM
Lab FileID:	4M85116.D	**Analyst approved:**	06/23/19 23:06 Michelle Co
Injection Time:	06/22/19 00:27	**Supervisor approved:**	06/24/19 11:42 Nina Pandya

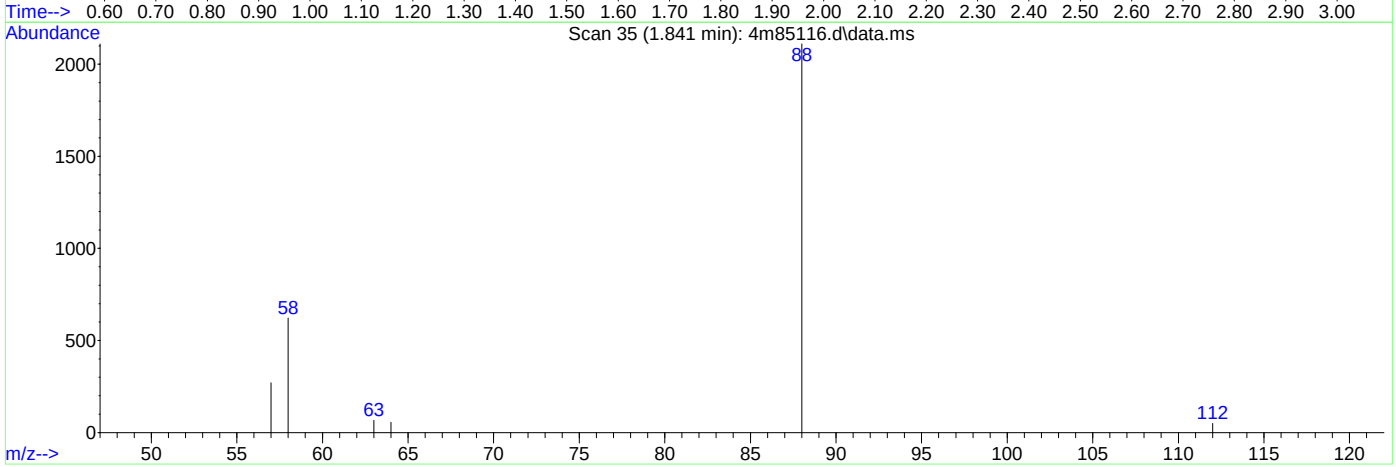
Parameter	CAS	Sig#	R.T. (min.)	Reason
1,4-Dioxane	123-91-1		1.84	Poor instrument integration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85116.d
Acq On : 22 Jun 2019 12:27 am
Operator : chriss2
Sample : cc3886-0.5 Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 22:57:05 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration





TIC: 4m85116.d\data.ms

(36) 1,4-Dioxane (t)

1.841min (0.000) 0.58ppm

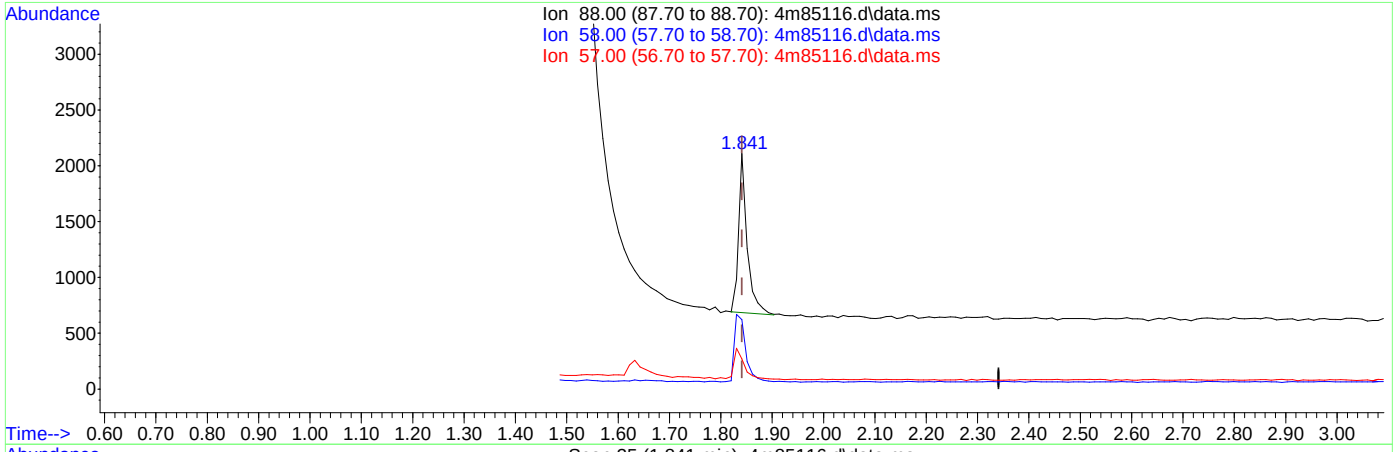
response 1769

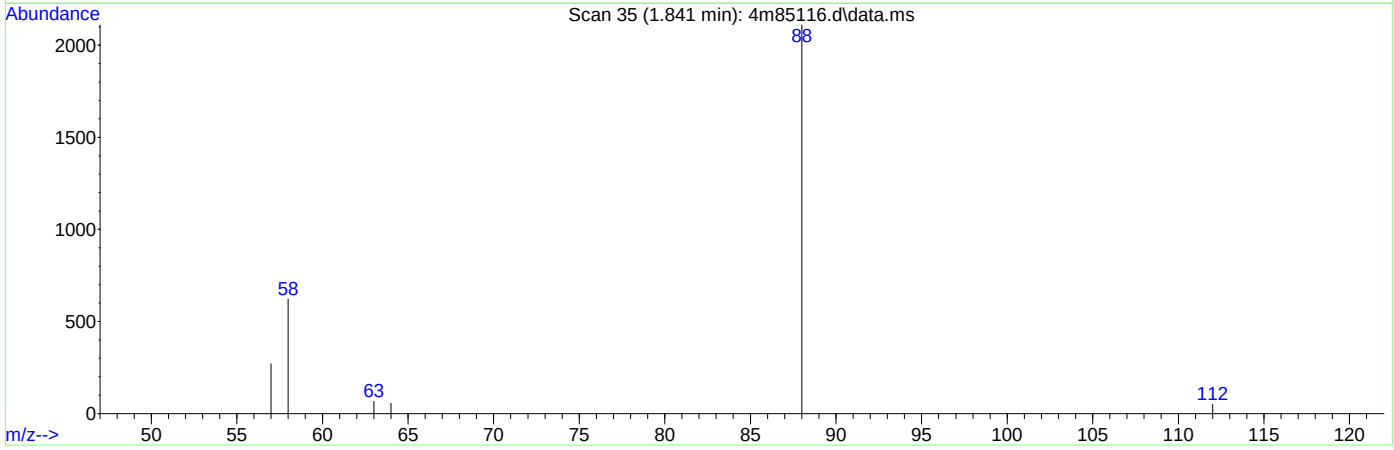
Ion	Exp%	Act%
88.00	100	100
58.00	38.50	38.54
57.00	11.90	11.87
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\michellc\e4m3948\
Data File : 4m85116.d
Acq On : 22 Jun 2019 12:27 am
Operator : chriss2
Sample : cc3886-0.5 Inst : GCMS4M
Misc : op13576a,e4m3948,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\msdchem\1\METHODS\M4M3886SIM.M
Quant Results File: M4M3886SIM.RES
Quant Time: Jun 23 22:57:05 2019
Quant Title : Semi Volatile GC/MS,zb-5 15m x .25mm x .50um
QLast Update : Sun Jun 23 22:56:49 2019
Response via : Initial Calibration





TIC: 4m85116.d\data.ms

(36) 1,4-Dioxane (t)

1.841min (0.000) 0.55ppm m

response 1655

Ion	Exp%	Act%
88.00	100	100
58.00	38.50	29.46
57.00	11.90	12.79
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137814.D
Acq On : 24 May 2019 7:43 am
Operator : chriss2
Sample : ic6787-100
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 24 11:58:53 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

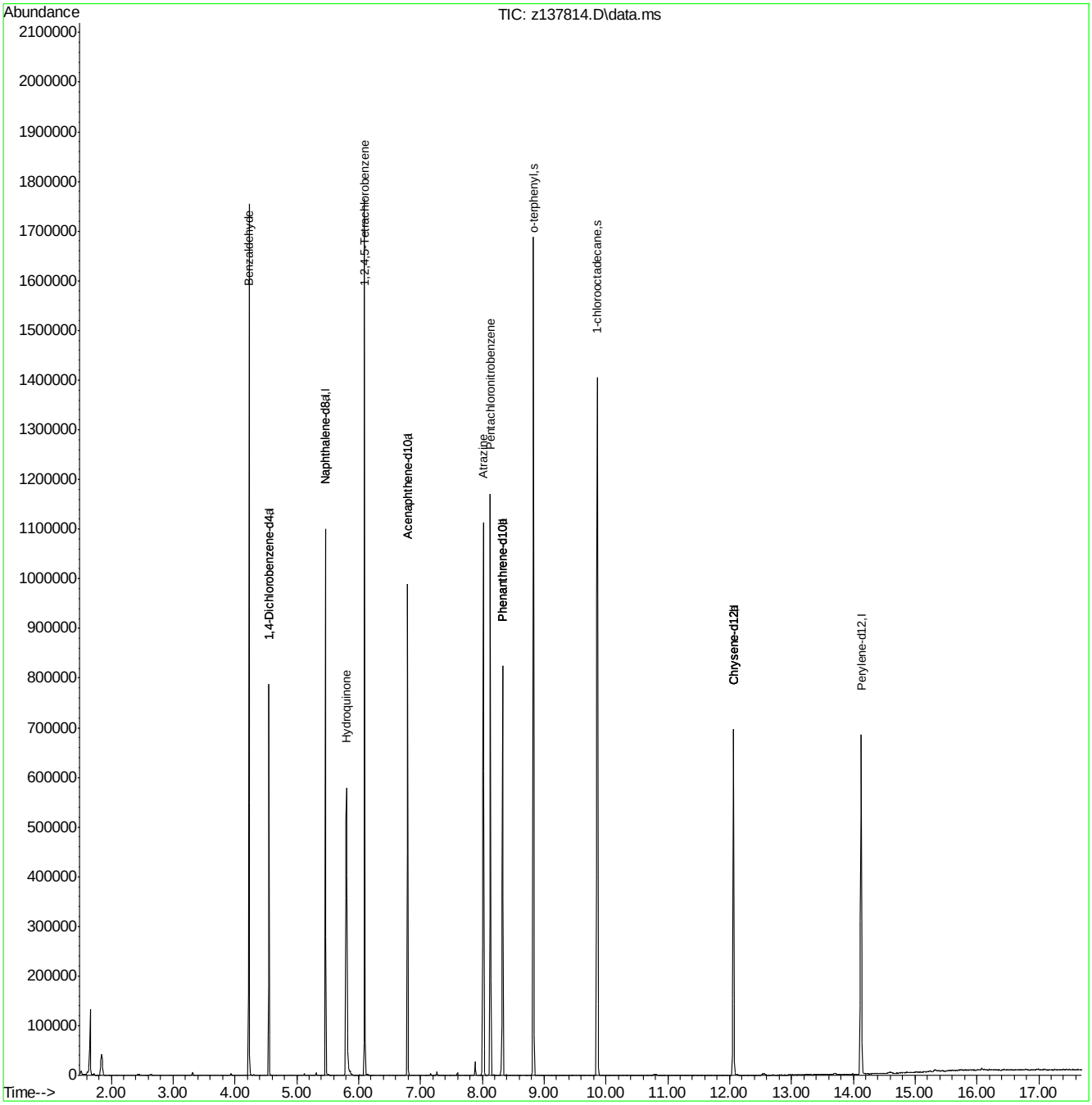
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	92163	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	324627	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	173134	40.00	ppm	0.00
69) Phenanthrene-d10	8.331	188	310794	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	284740	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	306890	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	92163	40.00	ppm	0.00
103) Phenanthrene-d10a	8.331	188	310794	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	284740	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	173134	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	324627	40.00	ppm	0.00
113) Phenanthrene-d10b	8.331	188	310794	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	284740	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
104) 1-chlorooctadecane	9.858	57	223277	95.39	ppm	0.02
Spiked Amount 50.000			Recovery = 190.78%			
105) o-terphenyl	8.833	230	366203	94.37	ppm	0.00
Spiked Amount 50.000			Recovery = 188.74%			
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	241578	94.52	ppm	96
106) Atrazine	8.021	215	71850	96.06	ppm	94
110) 1,2,4,5-Tetrachloroben...	6.097	216	221122	92.82	ppm	99
112) Hydroquinone	5.804	110	300806	99.70	ppm	99
114) Pentachloronitrobenzene	8.133	295	38827	98.53	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137814.D
Acq On : 24 May 2019 7:43 am
Operator : chriss2
Sample : ic6787-100
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 24 11:58:53 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137815.D
Acq On : 24 May 2019 8:10 am
Operator : chriss2
Sample : ic6787-80
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 24 12:01:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

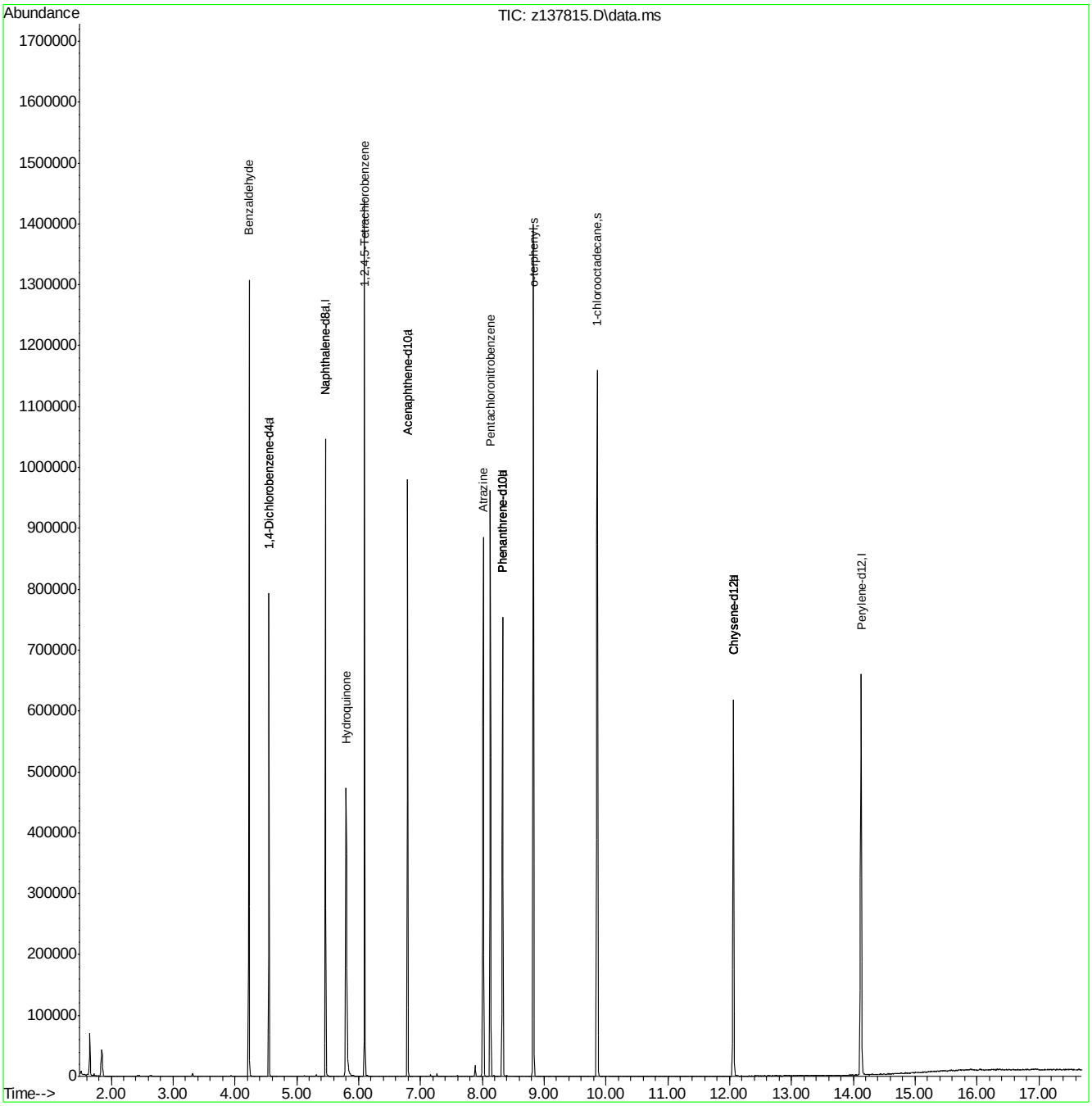
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	88964	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	309108	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	163399	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	295288	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	266756	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	287889	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	88964	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	295288	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	266756	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	163399	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	309108	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	295288	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	266756	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.858	57	176378	79.31	ppm	0.02
Spiked Amount 50.000			Recovery =	158.62%		
105) o-terphenyl	8.827	230	288601	78.28	ppm	0.00
Spiked Amount 50.000			Recovery =	156.56%		
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	192910	78.19	ppm	96
106) Atrazine	8.021	215	56991	80.19	ppm	95
110) 1,2,4,5-Tetrachloroben...	6.097	216	174850	77.77	ppm	100
112) Hydroquinone	5.798	110	235585	82.00	ppm	99
114) Pentachloronitrobenzene	8.133	295	31040	82.91	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137815.D
Acq On : 24 May 2019 8:10 am
Operator : chriss2
Sample : ic6787-80
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 24 12:01:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



MZ6786.M Fri May 24 12:01:52 2019 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137816.D
Acq On : 24 May 2019 8:37 am
Operator : chriss2
Sample : icc6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 24 11:57:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

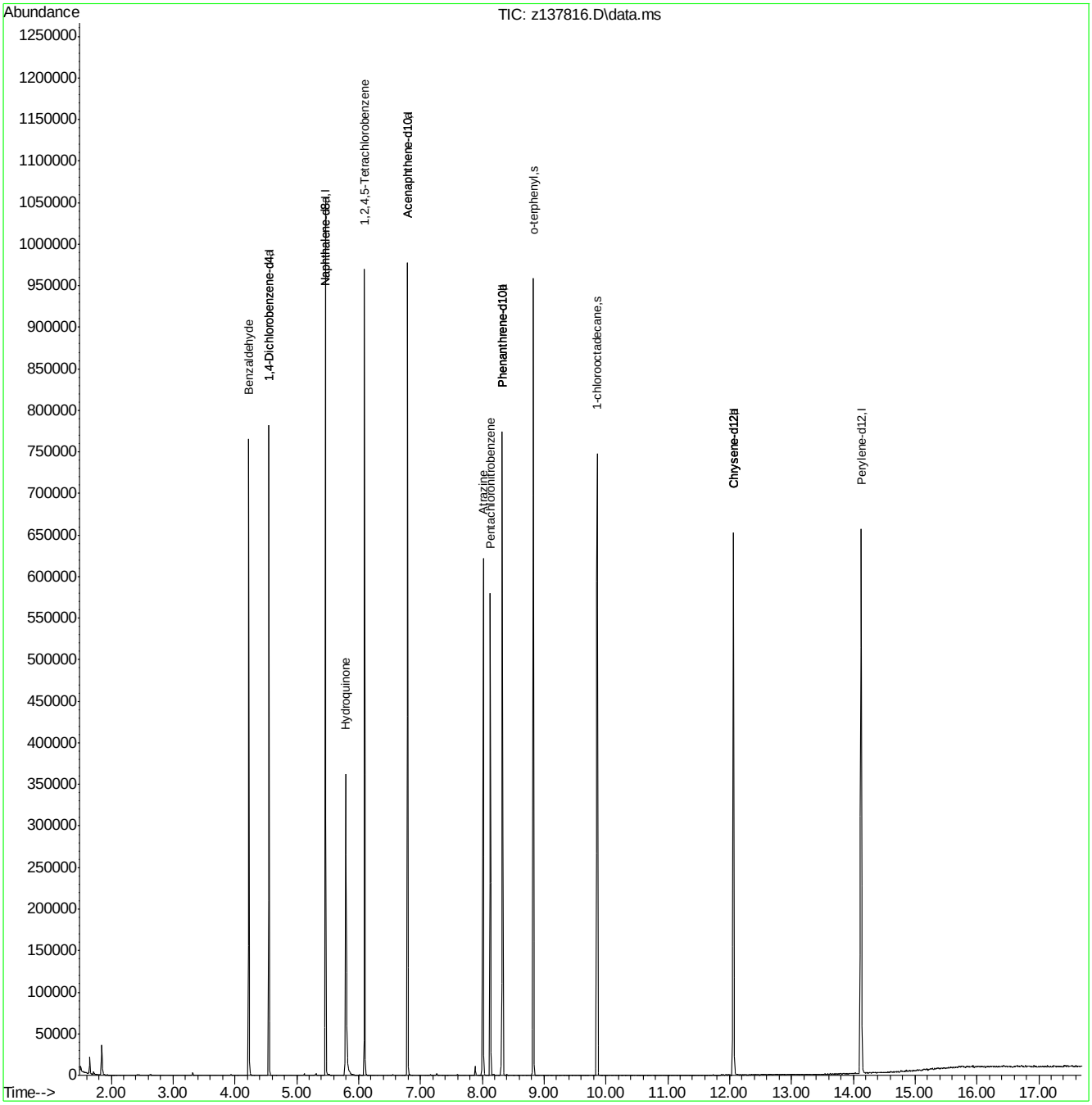
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	88725	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	314317	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	164294	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	296244	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	270529	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	295760	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	88725	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	296244	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	270529	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	164294	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	314317	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	296244	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	270529	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.858	57	111549	50.00	ppm	0.02
Spiked Amount 50.000			Recovery =	100.00%		
105) o-terphenyl	8.827	230	184940	50.00	ppm	0.00
Spiked Amount 50.000			Recovery =	100.00%		
Target Compounds						Qvalue
102) Benzaldehyde	4.222	105	123031	50.00	ppm	100
106) Atrazine	8.015	215	35649	50.00	ppm	100
110) 1,2,4,5-Tetrachloroben...	6.097	216	113037	50.00	ppm	100
112) Hydroquinone	5.793	110	146065	50.00	ppm	100
114) Pentachloronitrobenzene	8.133	295	18780	50.00	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137816.D
Acq On : 24 May 2019 8:37 am
Operator : chriss2
Sample : icc6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 24 11:57:40 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137817.D
Acq On : 24 May 2019 9:04 am
Operator : chriss2
Sample : ic6787-25
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 24 12:02:47 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

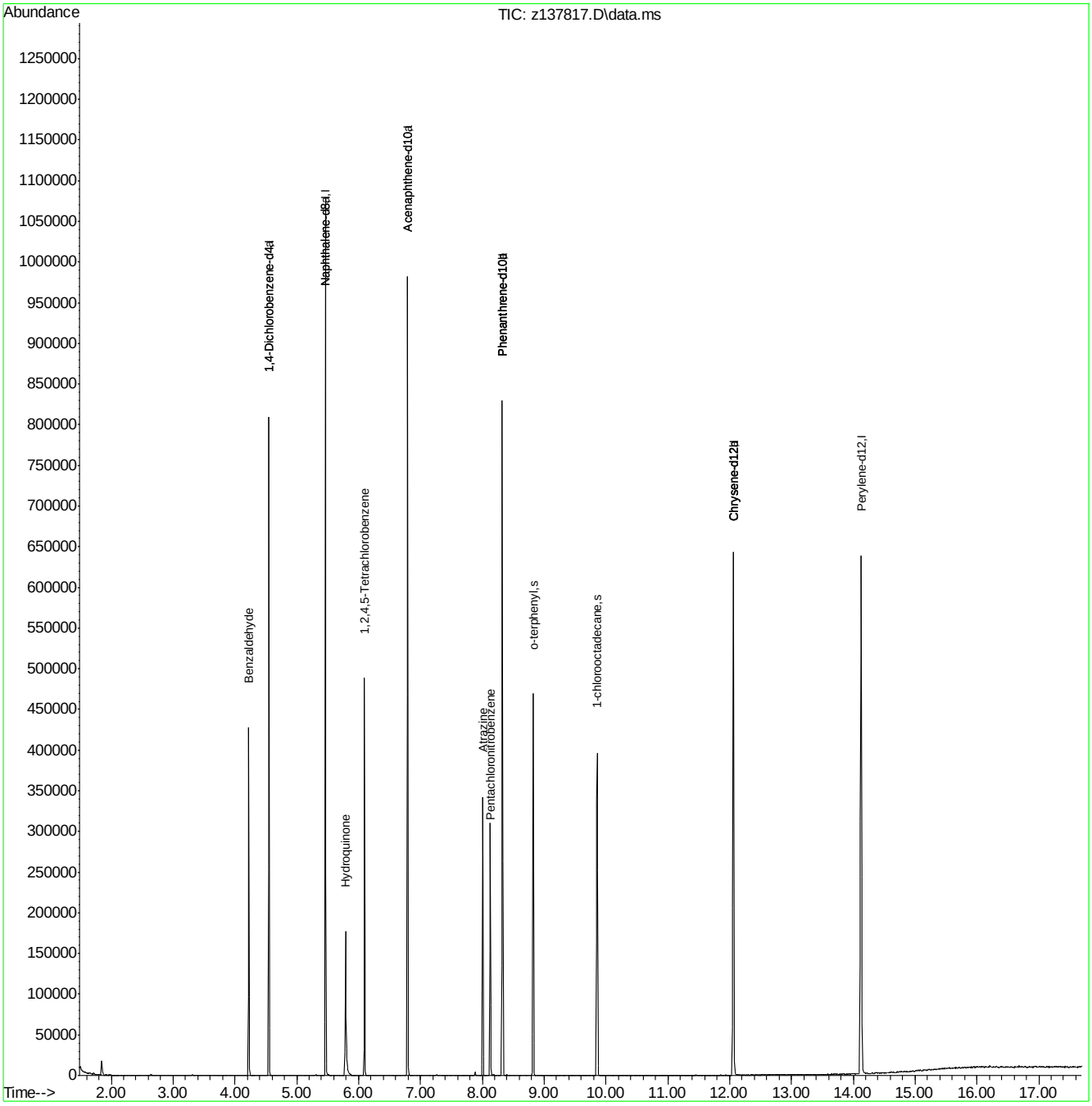
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	89715	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	319975	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	168845	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	307454	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	274956	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	296615	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	89715	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	307454	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	274956	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	168845	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	319975	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	307454	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	274956	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
104) 1-chlorooctadecane	9.858	57	58667	25.34	ppm	0.02
Spiked Amount 50.000			Recovery = 50.68%			
105) o-terphenyl	8.827	230	97737	25.46	ppm	0.00
Spiked Amount 50.000			Recovery = 50.92%			
Target Compounds						Qvalue
102) Benzaldehyde	4.222	105	63712	25.61	ppm	99
106) Atrazine	8.010	215	18344	24.79	ppm	95
110) 1,2,4,5-Tetrachloroben...	6.097	216	59906	25.78	ppm	99
112) Hydroquinone	5.793	110	73258	24.63	ppm	97
114) Pentachloronitrobenzene	8.133	295	9721	24.94	ppm	95

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137817.D
Acq On : 24 May 2019 9:04 am
Operator : chriss2
Sample : ic6787-25
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: May 24 12:02:47 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137818.D
Acq On : 24 May 2019 9:31 am
Operator : chriss2
Sample : ic6787-10
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 24 12:04:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

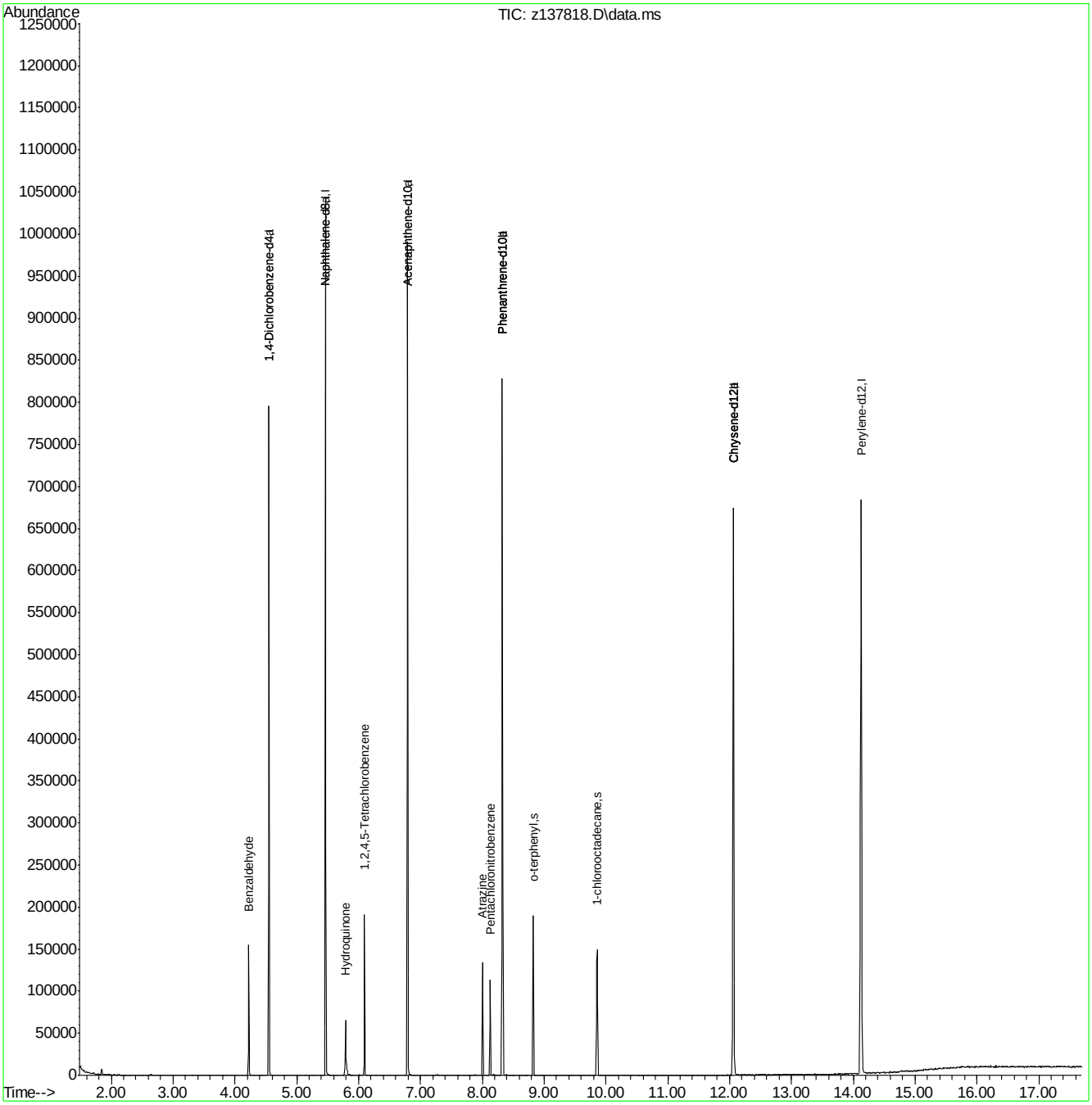
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	88383	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	310120	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	165370	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	298962	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	279498	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	311130	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	88383	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	298962	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	279498	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	165370	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	310120	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	298962	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	279498	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.858	57	23288	10.34	ppm	0.02
Spiked Amount 50.000			Recovery =	20.68%		
105) o-terphenyl	8.827	230	39428	10.56	ppm	0.00
Spiked Amount 50.000			Recovery =	21.12%		
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	24707	10.08	ppm	95
106) Atrazine	8.005	215	7133	9.91	ppm	89
110) 1,2,4,5-Tetrachloroben...	6.097	216	23852	10.48	ppm	98
112) Hydroquinone	5.787	110	26855	9.32	ppm	99
114) Pentachloronitrobenzene	8.127	295	3488	9.20	ppm	95

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137818.D
Acq On : 24 May 2019 9:31 am
Operator : chriss2
Sample : ic6787-10
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 24 12:04:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137819.D
Acq On : 24 May 2019 9:58 am
Operator : chriss2
Sample : ic6787-5
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 24 12:07:09 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

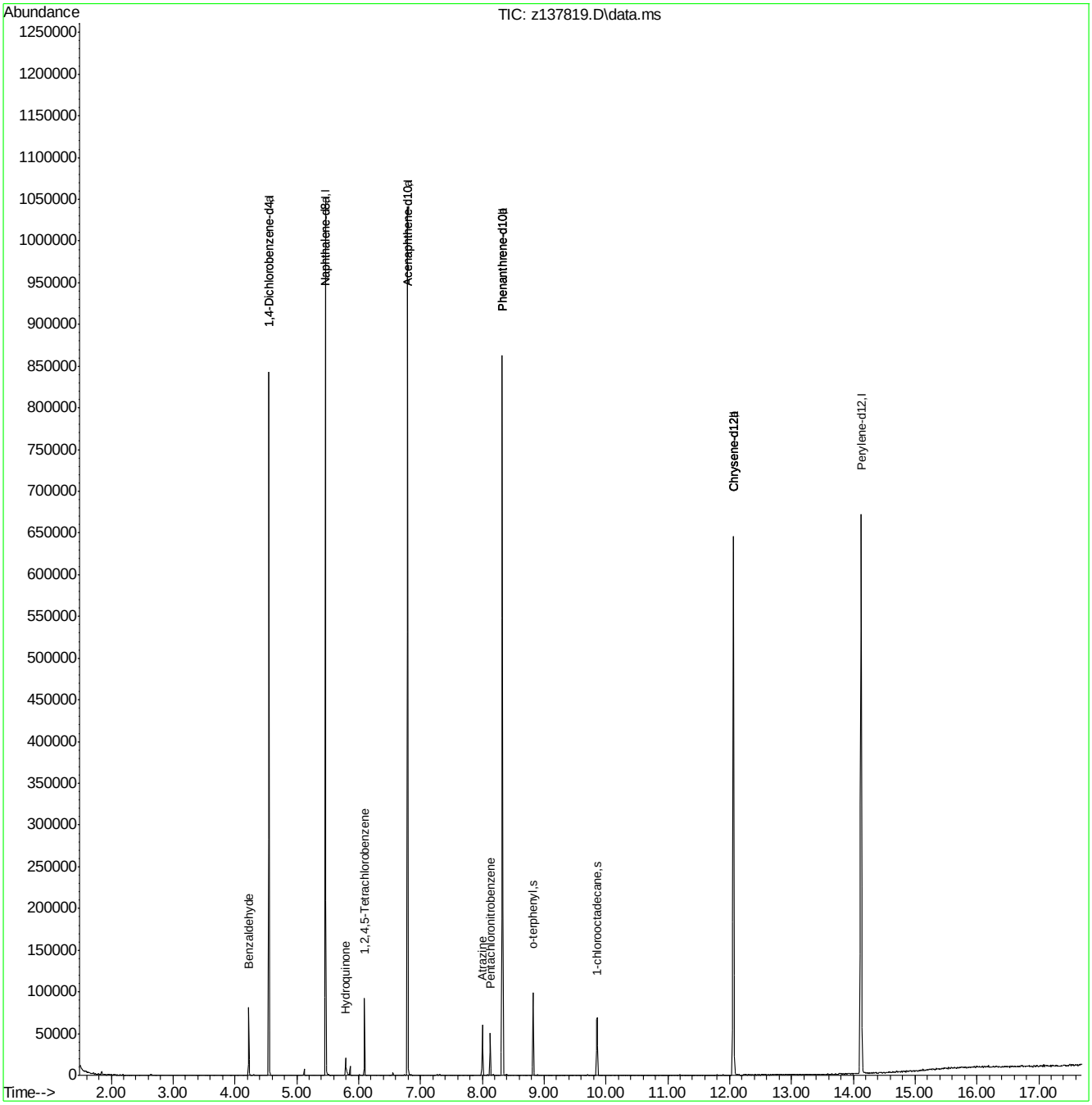
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	92347	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	328502	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	172919	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	310544	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	278681	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	299684	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	92347	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	310544	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	278681	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	172919	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	328502	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	310544	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	278681	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.853	57	11013	4.71	ppm	0.01
Spiked Amount 50.000			Recovery =	9.42%		
105) o-terphenyl	8.822	230	19627	5.06	ppm	0.00
Spiked Amount 50.000			Recovery =	10.12%		
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	13018	5.08	ppm	94
106) Atrazine	8.005	215	3446	4.61	ppm	94
110) 1,2,4,5-Tetrachloroben...	6.098	216	12394	5.21	ppm	99
112) Hydroquinone	5.793	110	12604	4.13	ppm	95
114) Pentachloronitrobenzene	8.128	295	1572	3.99	ppm	89

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137819.D
Acq On : 24 May 2019 9:58 am
Operator : chriss2
Sample : ic6787-5
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 24 12:07:09 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



MZ6786.M Fri May 24 12:07:36 2019 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137820.D
Acq On : 24 May 2019 10:25 am
Operator : chriss2
Sample : ic6787-2
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 24 12:08:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

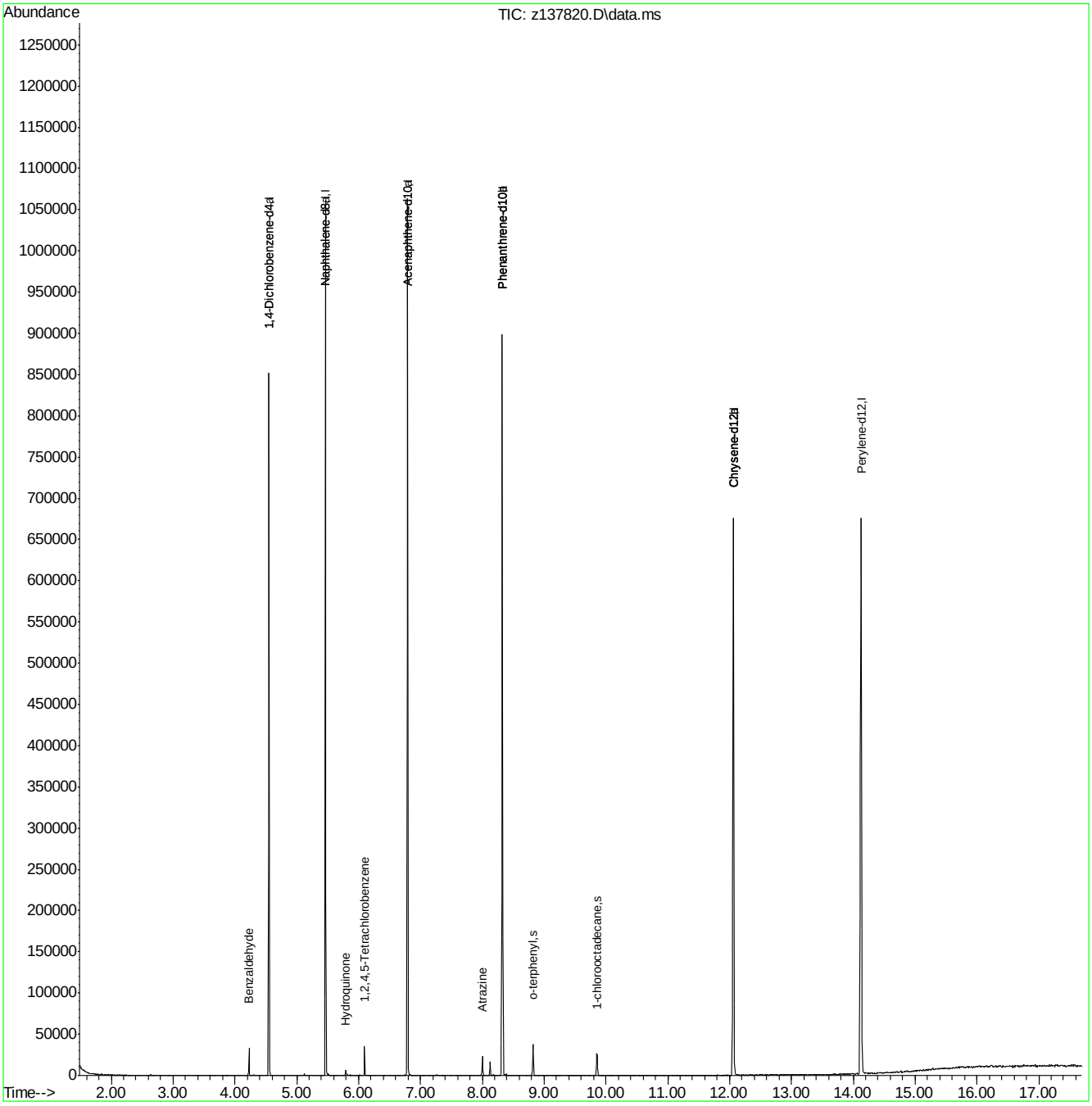
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	93154	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	334311	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	178534	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	324170	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	289607	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	307453	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	93154	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	324170	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	289607	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.792	164	178534	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	334311	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	324170	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	289607	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.853	57	4468	1.83	ppm	0.01
Spiked Amount 50.000			Recovery =	3.66%		
105) o-terphenyl	8.822	230	8361	2.07	ppm	0.00
Spiked Amount 50.000			Recovery =	4.14%		
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	4999	1.94	ppm	94
106) Atrazine	8.005	215	1483	1.90	ppm	85
110) 1,2,4,5-Tetrachloroben...	6.097	216	4958	2.02	ppm	97
112) Hydroquinone	5.793	110	4176	1.34	ppm	97

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137820.D
Acq On : 24 May 2019 10:25 am
Operator : chriss2
Sample : ic6787-2
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 24 12:08:10 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137821.D
Acq On : 24 May 2019 10:52 am
Operator : chriss2
Sample : ic6787-1
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 24 12:10:07 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration

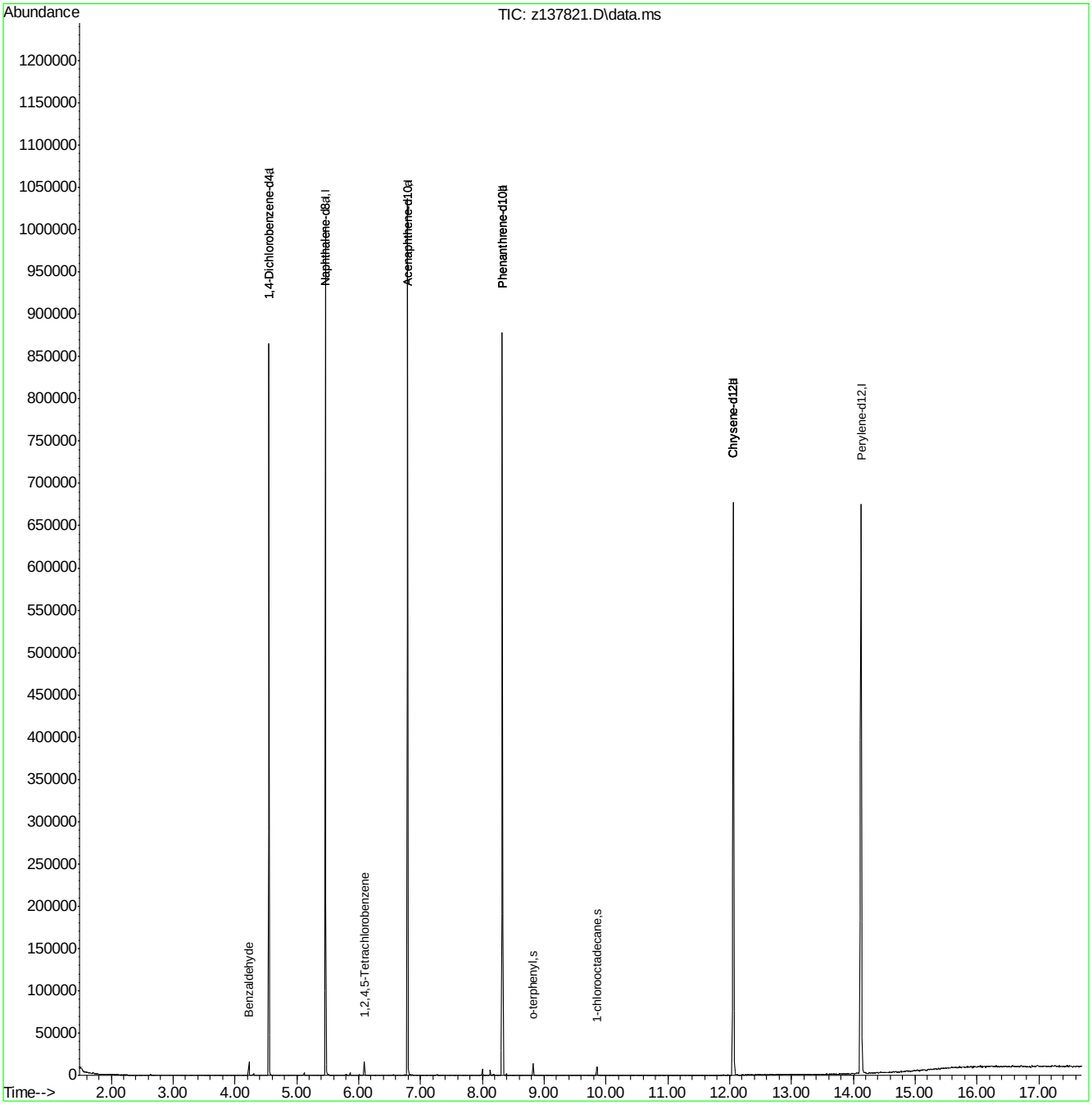
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	91770	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	323113	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	172572	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	308041	40.00	ppm	0.00
83) Chrysene-d12	12.059	240	277536	40.00	ppm	-0.02
91) Perylene-d12	14.127	264	308717	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	91770	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	308041	40.00	ppm	0.00
107) Chrysene-d12a	12.059	240	277536	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.792	164	172572	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	323113	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	308041	40.00	ppm	0.00
115) Chrysene-d12b	12.059	240	277536	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	9.853	57	1858	0.80	ppm	0.01
Spiked Amount 50.000			Recovery =	1.60%		
105) o-terphenyl	8.822	230	3661	0.95	ppm	0.00
Spiked Amount 50.000			Recovery =	1.90%		
Target Compounds						Qvalue
102) Benzaldehyde	4.228	105	2432	0.96	ppm	95
110) 1,2,4,5-Tetrachloroben...	6.097	216	2536	1.07	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137821.D
Acq On : 24 May 2019 10:52 am
Operator : chriss2
Sample : ic6787-1
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 24 12:10:07 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 11:56:53 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137822.D
Acq On : 24 May 2019 11:19 am
Operator : chriss2
Sample : icv6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: May 24 12:25:25 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 12:18:55 2019
Response via : Initial Calibration

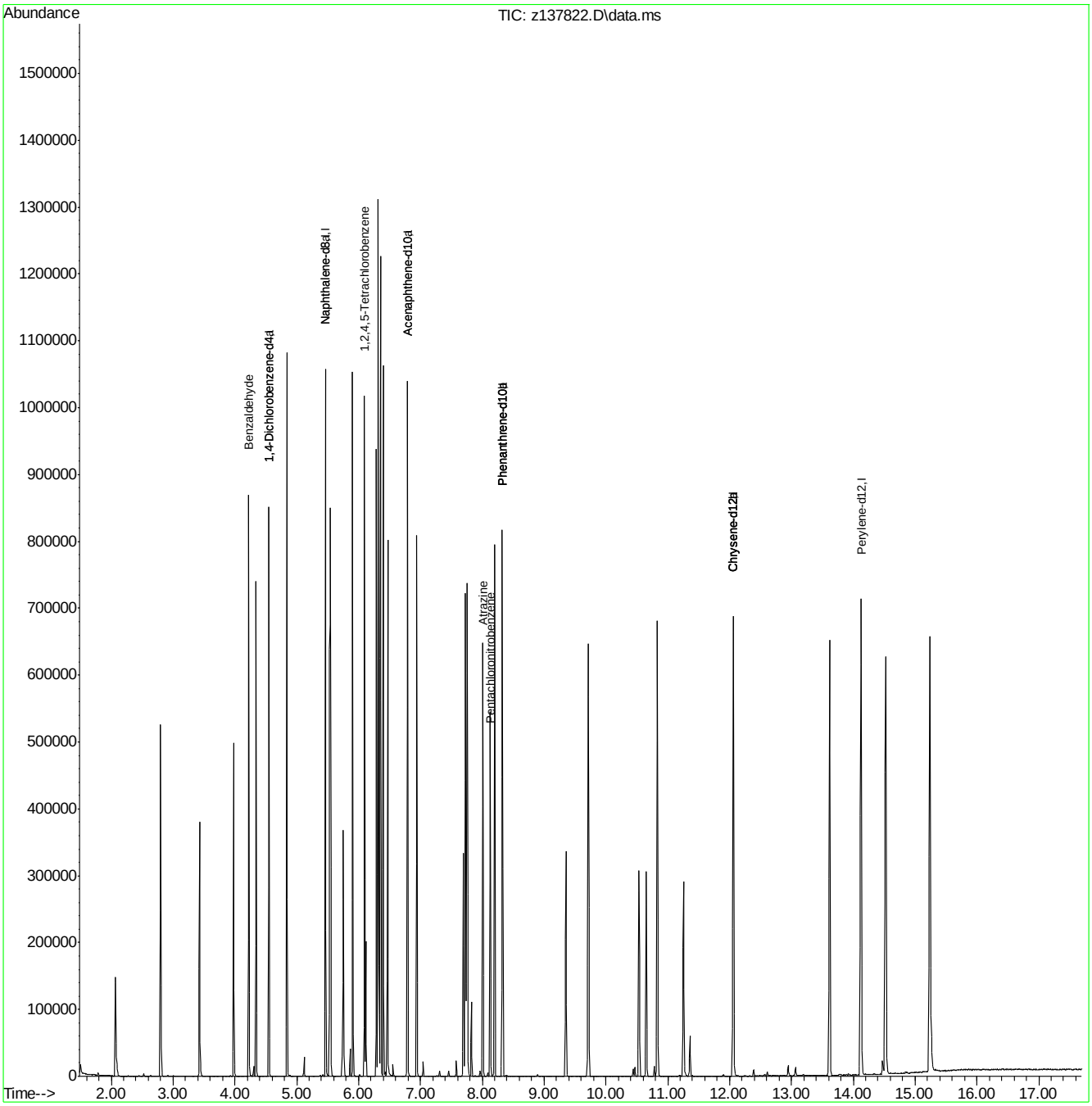
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	94395	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	332182	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	174684	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	316681	40.00	ppm	0.00
83) Chrysene-d12	12.059	240	293601	40.00	ppm	-0.02
91) Perylene-d12	14.127	264	316382	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	94395	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	316681	40.00	ppm	0.00
107) Chrysene-d12a	12.059	240	293601	40.00	ppm	0.00
109) Acenaphthene-d10a	6.792	164	174684	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	332182	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	316681	40.00	ppm	0.00
115) Chrysene-d12b	12.059	240	293601	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
102) Benzaldehyde	4.222	105	134838	52.20	ppm	99
106) Atrazine	8.015	215	40629	54.73	ppm	96
110) 1,2,4,5-Tetrachloroben...	6.097	216	120978	49.72	ppm	99
114) Pentachloronitrobenzene	8.133	295	17761	46.26	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137822.D
Acq On : 24 May 2019 11:19 am
Operator : chriss2
Sample : icv6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: May 24 12:25:25 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 12:18:55 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137823.D
Acq On : 24 May 2019 11:46 am
Operator : chriss2
Sample : icv6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 24 12:26:43 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 12:18:55 2019
Response via : Initial Calibration

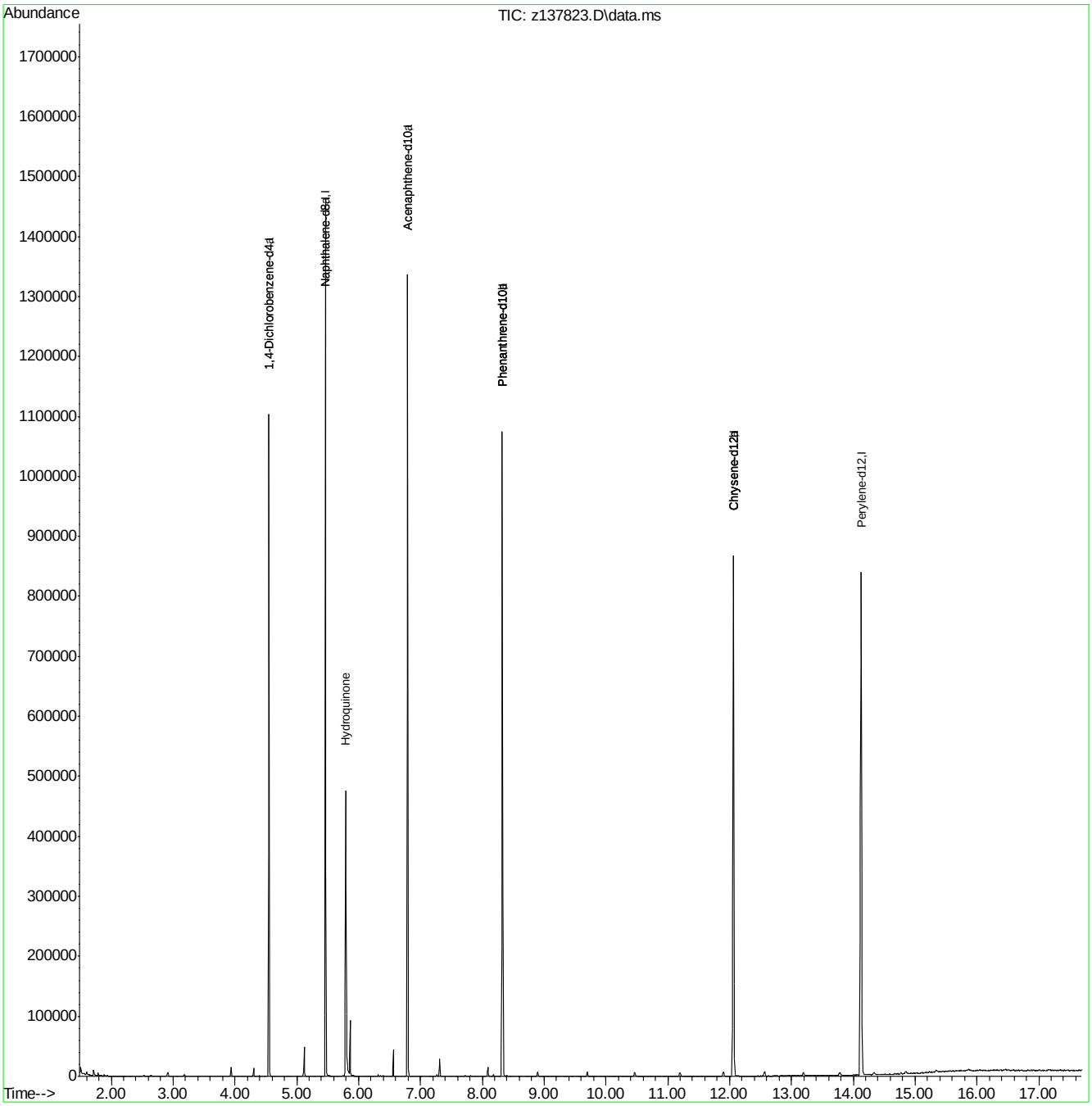
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	122100	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	454762	40.00	ppm	0.00
47) Acenaphthene-d10	6.792	164	227061	40.00	ppm	0.00
69) Phenanthrene-d10	8.325	188	405137	40.00	ppm	0.00
83) Chrysene-d12	12.065	240	364845	40.00	ppm	-0.01
91) Perylene-d12	14.127	264	403081	40.00	ppm	-0.01
101) 1,4-Dichlorobenzene-d4a	4.548	152	122100	40.00	ppm	0.00
103) Phenanthrene-d10a	8.325	188	405137	40.00	ppm	0.00
107) Chrysene-d12a	12.065	240	364845	40.00	ppm	0.00
109) Acenaphthene-d10a	6.792	164	227061	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	454762	40.00	ppm	0.00
113) Phenanthrene-d10b	8.325	188	405137	40.00	ppm	0.00
115) Chrysene-d12b	12.065	240	364845	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
112) Hydroquinone	5.793	110	204039	52.50	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6786\
Data File : z137823.D
Acq On : 24 May 2019 11:46 am
Operator : chriss2
Sample : icv6787-50
Misc : op20426,ez6787,1000,,,1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 24 12:26:43 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri May 24 12:18:55 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138700.D
Acq On : 14 Jun 2019 1:38 pm
Operator : angelar
Sample : ic6826-100
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 14 17:01:07 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

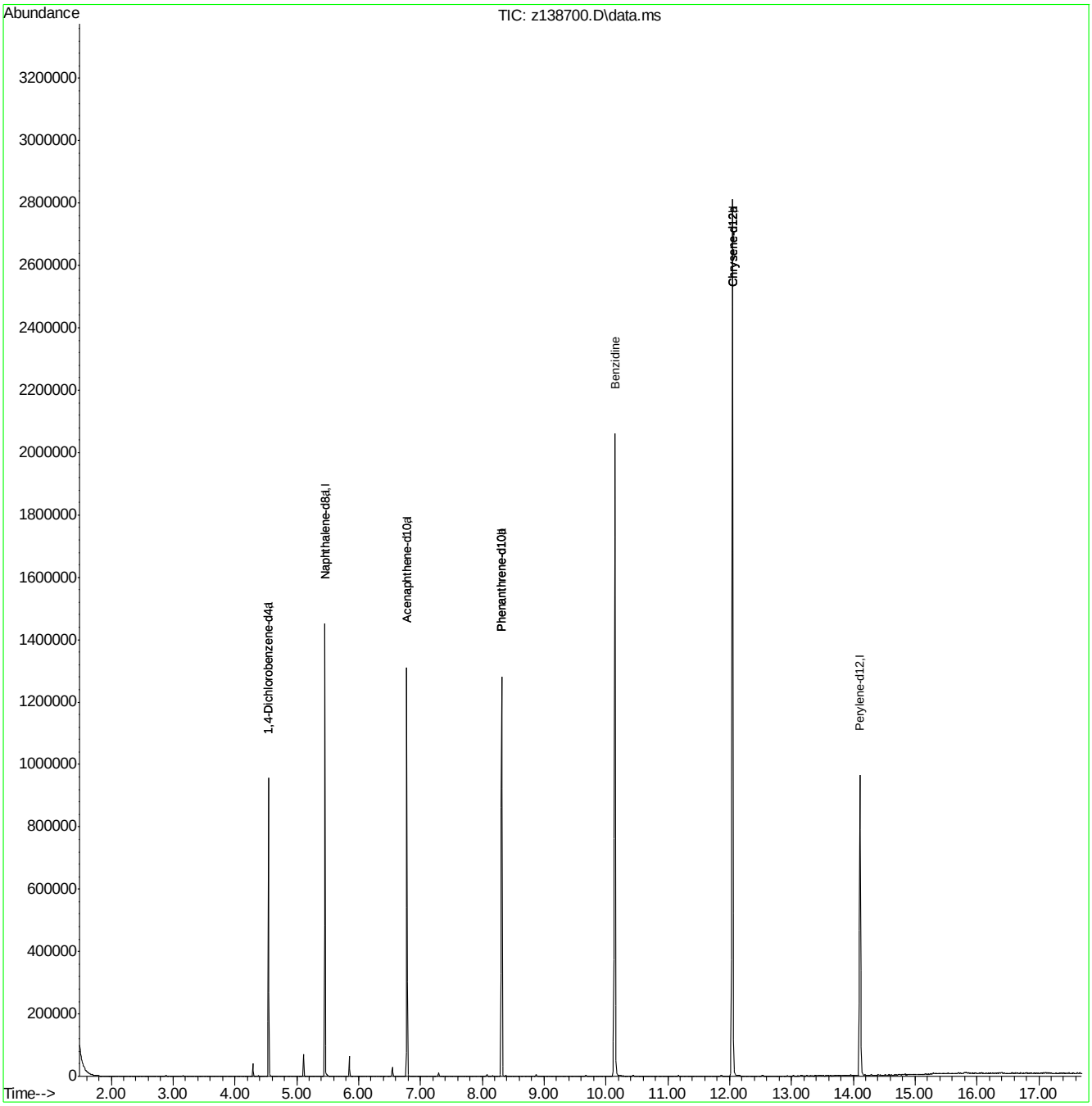
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.543	152	124429	40.00	ppm	-0.01
24) Naphthalene-d8	5.456	136	443161	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	243631	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	475297	40.00	ppm	-0.02
83) Chrysene-d12	12.049	240	438286	40.00	ppm	0.07
91) Perylene-d12	14.111	264	457565	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.543	152	124429	40.00	ppm	0.00
103) Phenanthrene-d10a	8.314	188	475297	40.00	ppm	-0.01
107) Chrysene-d12a	12.049	240	438286	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	243631	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	443161	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	475297	40.00	ppm	-0.01
115) Chrysene-d12b	12.049	240	438286	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.147	184	1018792	103.15	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138700.D
Acq On : 14 Jun 2019 1:38 pm
Operator : angelar
Sample : ic6826-100
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 14 17:01:07 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138701.D
Acq On : 14 Jun 2019 2:05 pm
Operator : angelar
Sample : ic6826-80
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 14 17:02:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

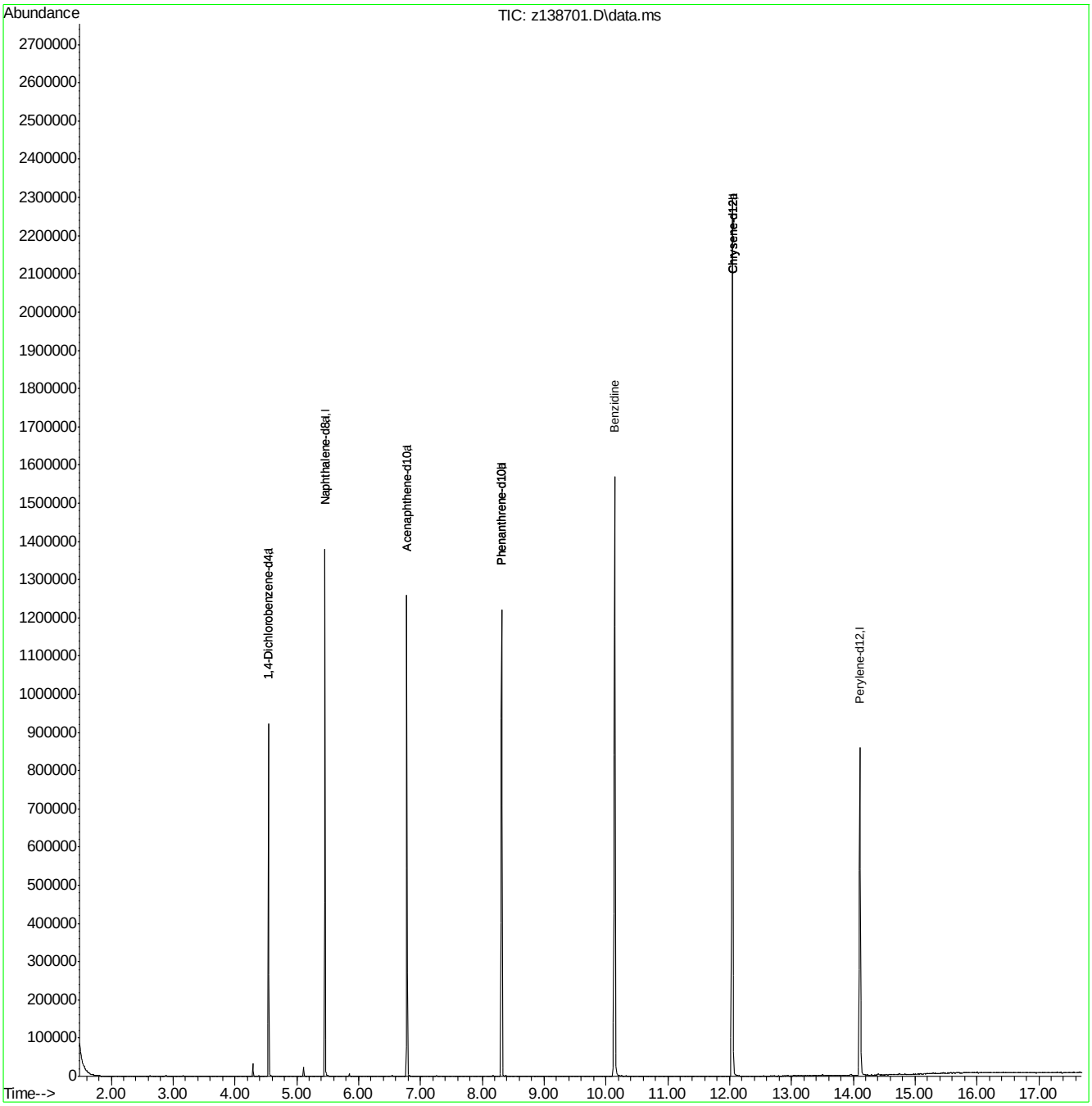
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.543	152	115141	40.00	ppm	-0.01
24) Naphthalene-d8	5.456	136	419571	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	233017	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	448825	40.00	ppm	-0.02
83) Chrysene-d12	12.049	240	409637	40.00	ppm	0.07
91) Perylene-d12	14.111	264	413794	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.543	152	115141	40.00	ppm	0.00
103) Phenanthrene-d10a	8.314	188	448825	40.00	ppm	-0.01
107) Chrysene-d12a	12.049	240	409637	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	233017	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	419571	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	448825	40.00	ppm	#-0.01
115) Chrysene-d12b	12.049	240	409637	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.141	184	758712	82.19	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138701.D
Acq On : 14 Jun 2019 2:05 pm
Operator : angelar
Sample : ic6826-80
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 14 17:02:08 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138702.D
Acq On : 14 Jun 2019 2:32 pm
Operator : angelar
Sample : icc6826-50
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 14 16:59:41 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

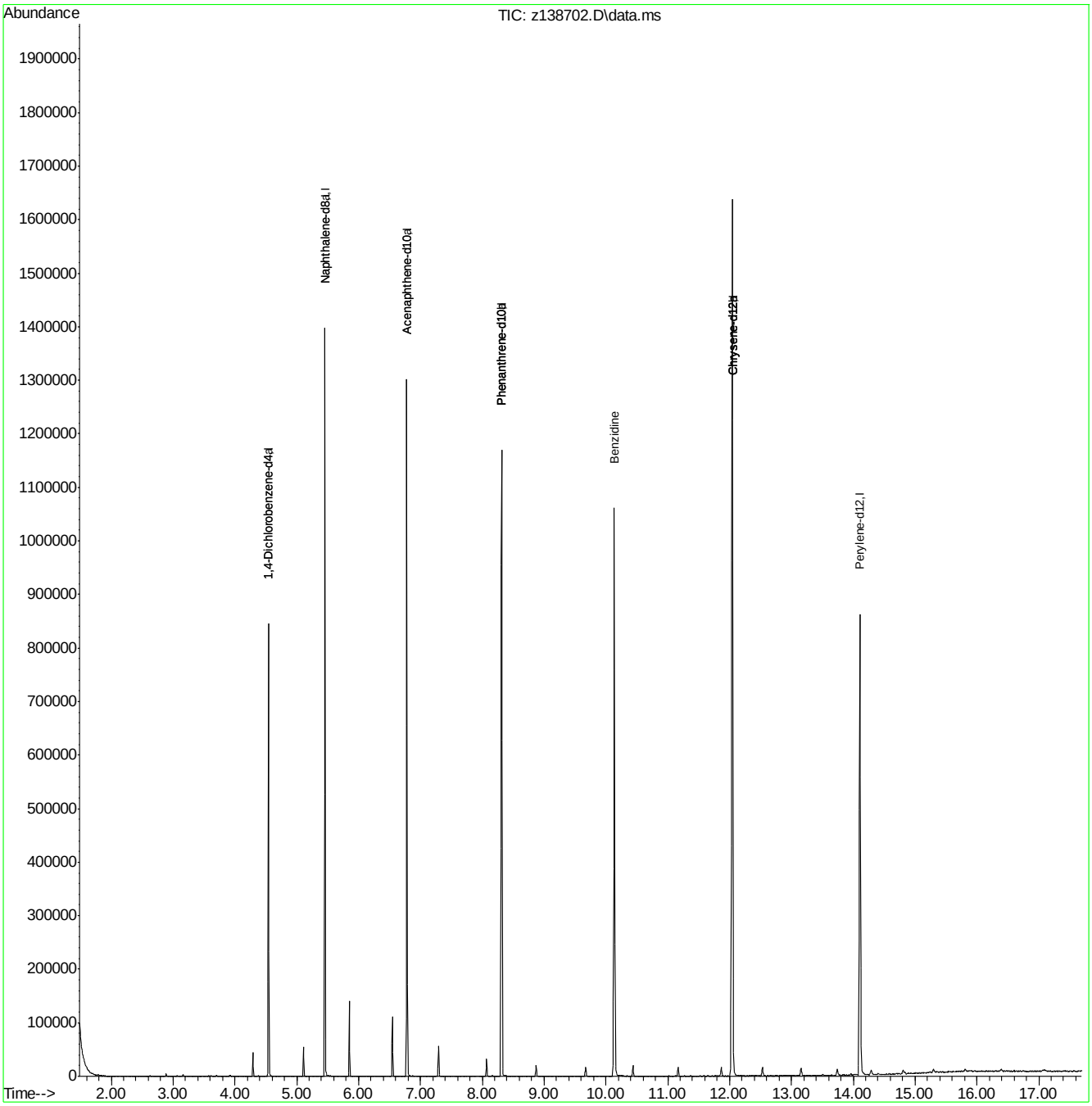
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.543	152	113831	40.00	ppm	-0.01
24) Naphthalene-d8	5.456	136	408622	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	220557	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	431657	40.00	ppm	-0.02
83) Chrysene-d12	12.049	240	405702	40.00	ppm	0.07
91) Perylene-d12	14.111	264	402524	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.543	152	113831	40.00	ppm	0.00
103) Phenanthrene-d10a	8.314	188	431657	40.00	ppm	-0.01
107) Chrysene-d12a	12.049	240	405702	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	220557	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	408622	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	431657	40.00	ppm	-0.01
115) Chrysene-d12b	12.049	240	405702	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.136	184	457106	50.00	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138702.D
Acq On : 14 Jun 2019 2:32 pm
Operator : angelar
Sample : icc6826-50
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 14 16:59:41 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138703.D
Acq On : 14 Jun 2019 2:58 pm
Operator : angelar
Sample : ic6826-25
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 14 17:02:59 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

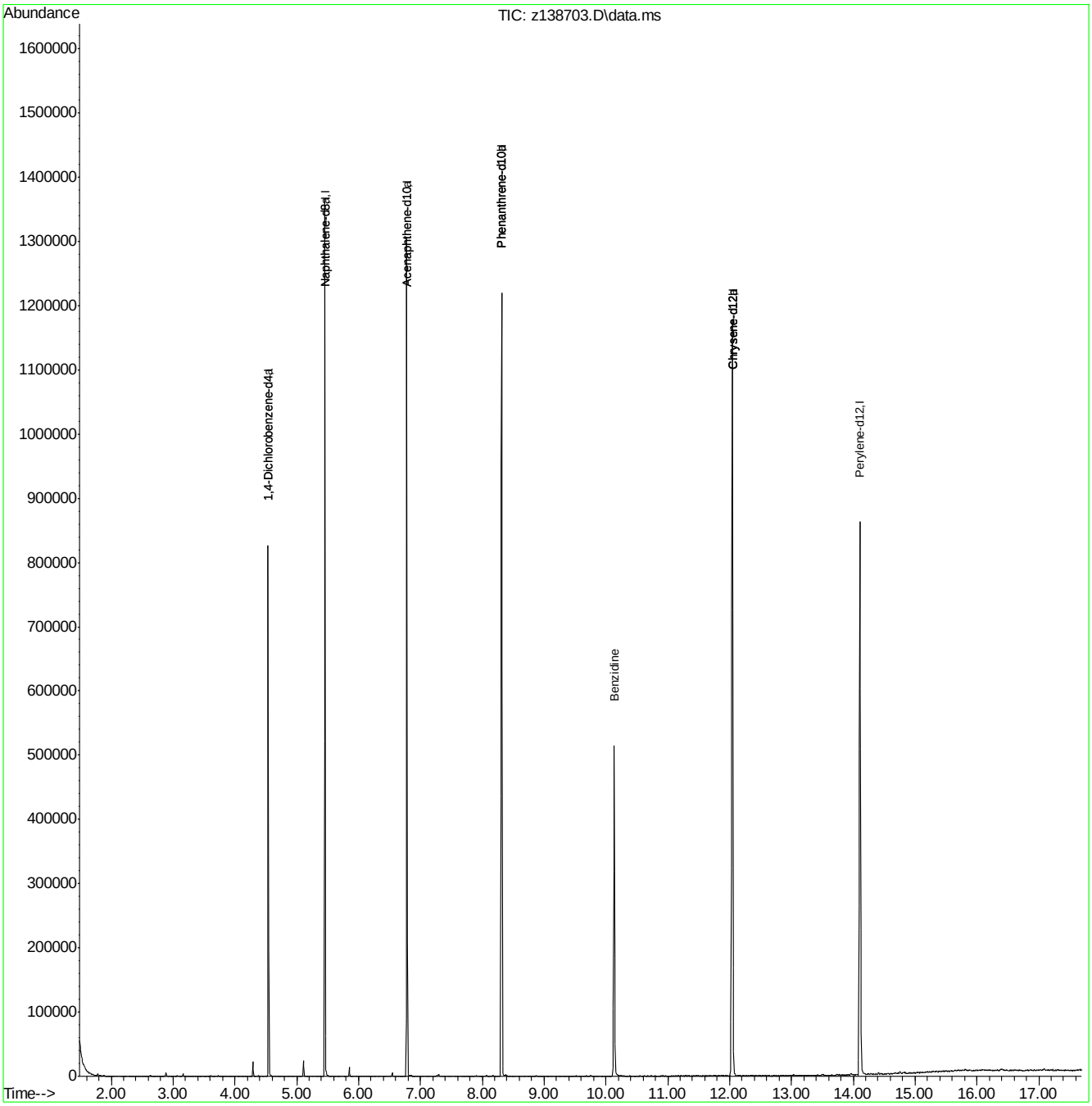
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.543	152	109220	40.00	ppm	-0.01
24) Naphthalene-d8	5.456	136	399901	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	225441	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	444702	40.00	ppm	-0.02
83) Chrysene-d12	12.049	240	426758	40.00	ppm	0.07
91) Perylene-d12	14.111	264	416178	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.543	152	109220	40.00	ppm	0.00
103) Phenanthrene-d10a	8.314	188	444702	40.00	ppm	-0.01
107) Chrysene-d12a	12.049	240	426758	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	225441	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	399901	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	444702	40.00	ppm	#-0.01
115) Chrysene-d12b	12.049	240	426758	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.131	184	222761	23.16	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138703.D
Acq On : 14 Jun 2019 2:58 pm
Operator : angelar
Sample : ic6826-25
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 14 17:02:59 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138704.D
Acq On : 14 Jun 2019 3:25 pm
Operator : angelar
Sample : ic6826-10
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 14 17:04:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

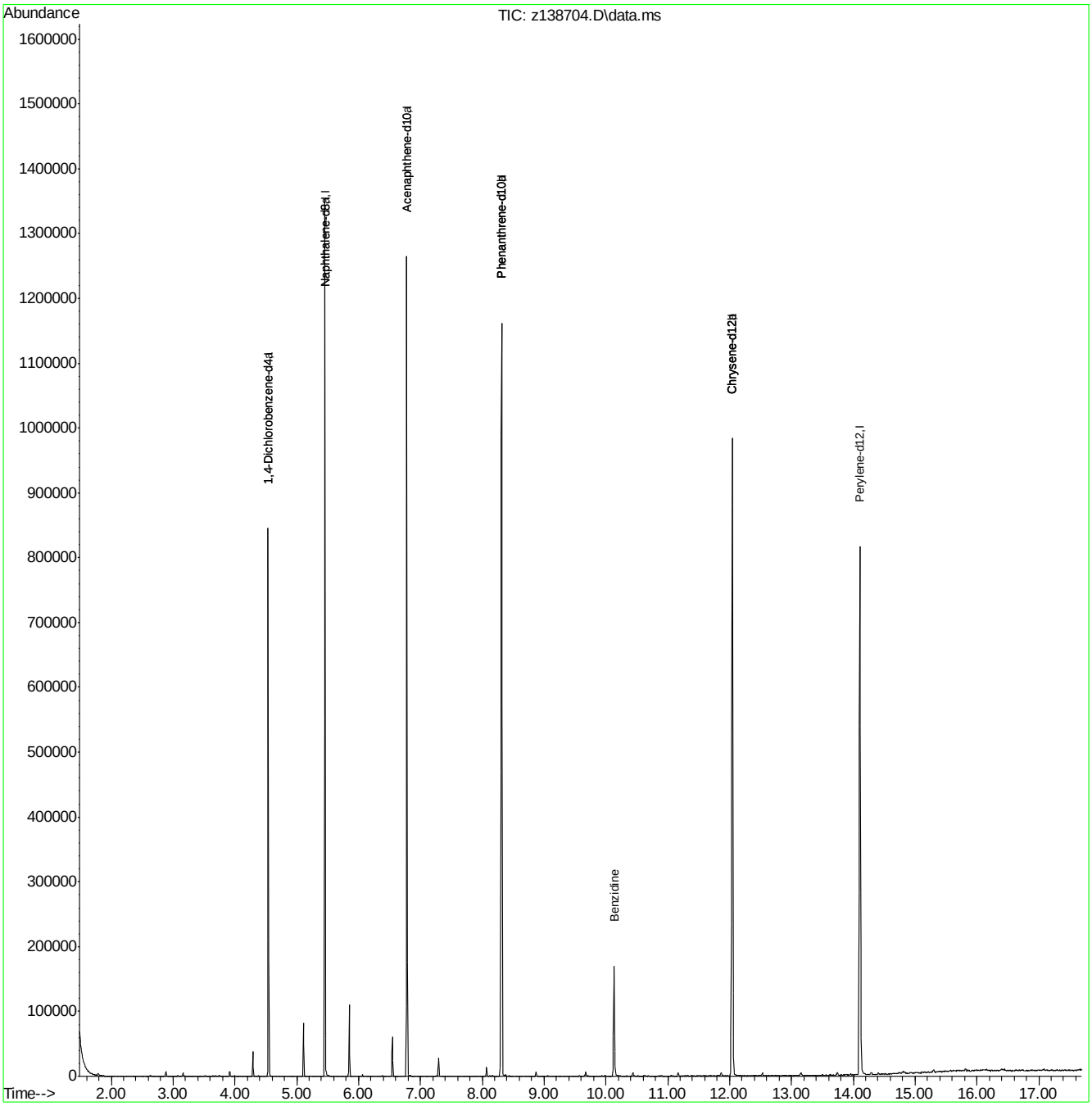
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.538	152	107224	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	392420	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	215858	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	434212	40.00	ppm	-0.02
83) Chrysene-d12	12.043	240	417367	40.00	ppm	0.06
91) Perylene-d12	14.111	264	404684	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.538	152	107224	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	434212	40.00	ppm	-0.01
107) Chrysene-d12a	12.043	240	417367	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	215858	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	392420	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	434212	40.00	ppm	#-0.01
115) Chrysene-d12b	12.043	240	417367	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.131	184	78621	8.36	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138704.D
Acq On : 14 Jun 2019 3:25 pm
Operator : angelar
Sample : ic6826-10
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 14 17:04:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138705.D
Acq On : 14 Jun 2019 3:52 pm
Operator : angelar
Sample : ic6826-5
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 14 17:05:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

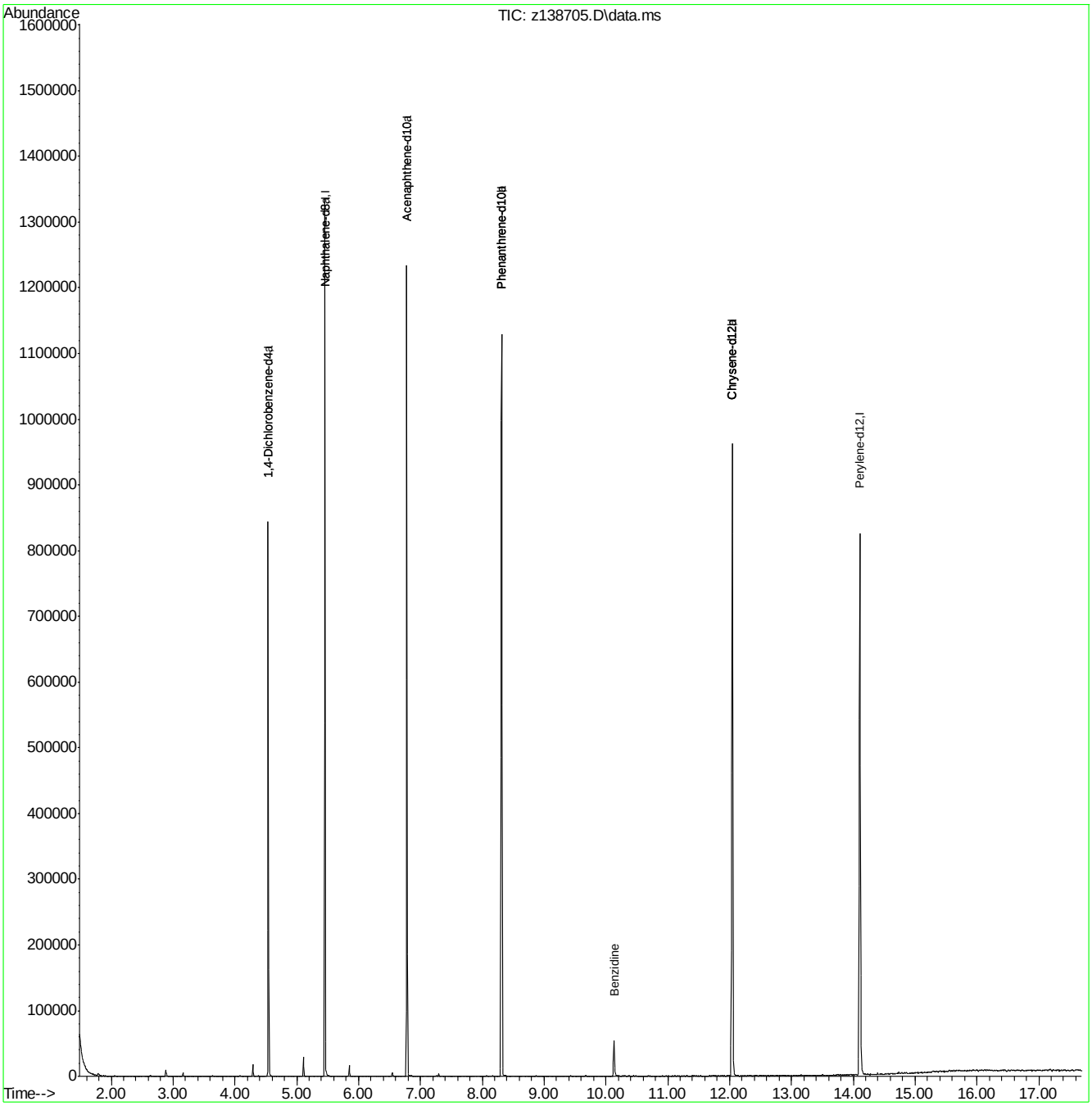
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.537	152	104915	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	380903	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	213434	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	434165	40.00	ppm	-0.02
83) Chrysene-d12	12.043	240	414638	40.00	ppm	0.06
91) Perylene-d12	14.111	264	399319	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.537	152	104915	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	434165	40.00	ppm	-0.01
107) Chrysene-d12a	12.043	240	414638	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	213434	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	380903	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	434165	40.00	ppm	#-0.01
115) Chrysene-d12b	12.043	240	414638	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.131	184	31170	3.34	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138705.D
Acq On : 14 Jun 2019 3:52 pm
Operator : angelar
Sample : ic6826-5
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 14 17:05:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



MZ6786.M Fri Jun 14 17:21:46 2019 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138706.D
Acq On : 14 Jun 2019 4:19 pm
Operator : angelar
Sample : ic6826-2
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 14 17:05:58 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

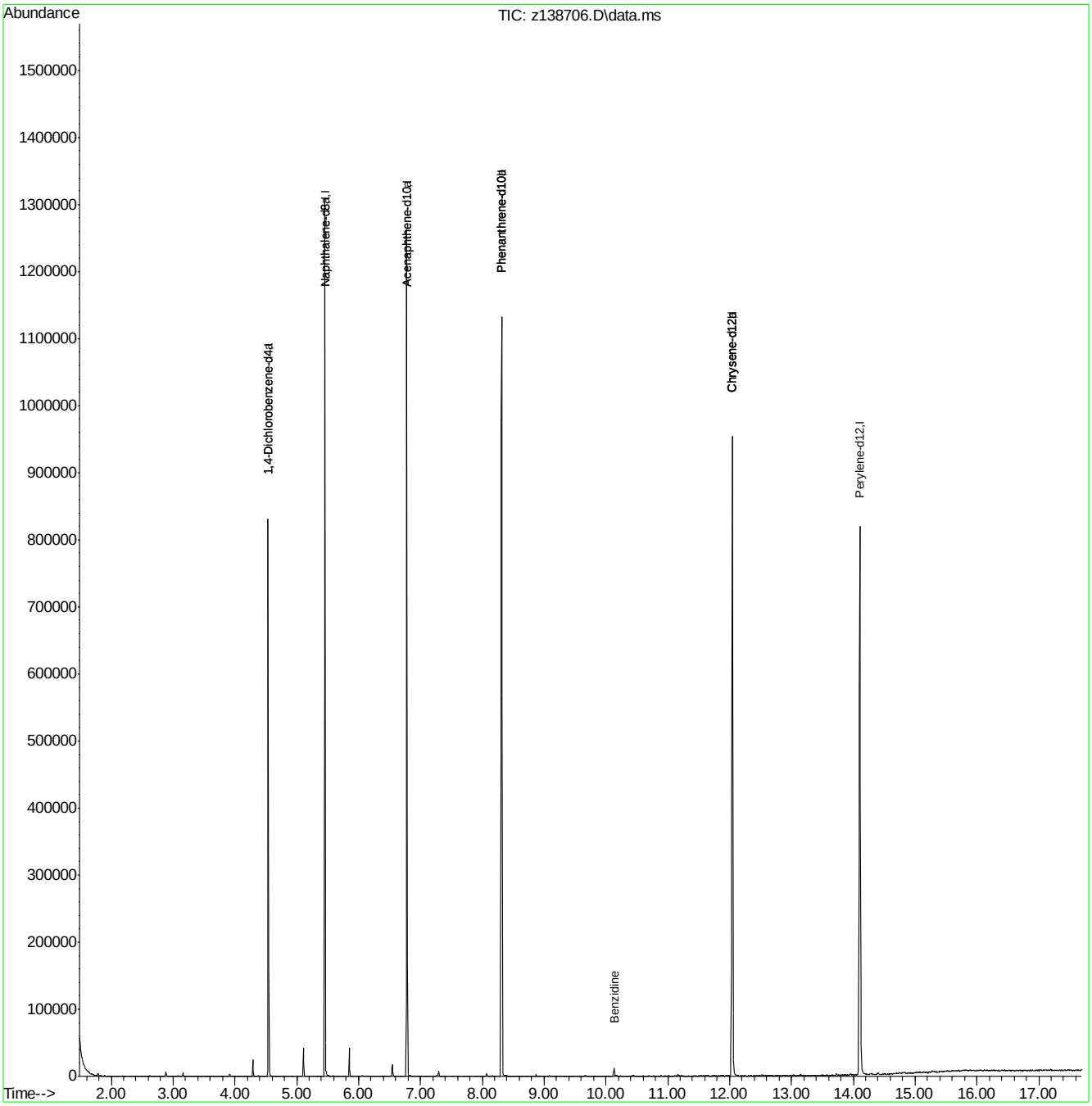
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.537	152	102894	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	380887	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	216227	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	432644	40.00	ppm	-0.02
83) Chrysene-d12	12.043	240	420064	40.00	ppm	0.06
91) Perylene-d12	14.111	264	401229	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.537	152	102894	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	432644	40.00	ppm	-0.01
107) Chrysene-d12a	12.043	240	420064	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	216227	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	380887	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	432644	40.00	ppm	#-0.01
115) Chrysene-d12b	12.043	240	420064	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.131	184	9899	1.05	ppm	95

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138706.D
Acq On : 14 Jun 2019 4:19 pm
Operator : angelar
Sample : ic6826-2
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 14 17:05:58 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138707.D
Acq On : 14 Jun 2019 4:45 pm
Operator : angelar
Sample : ic6826-1
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 14 17:07:14 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration

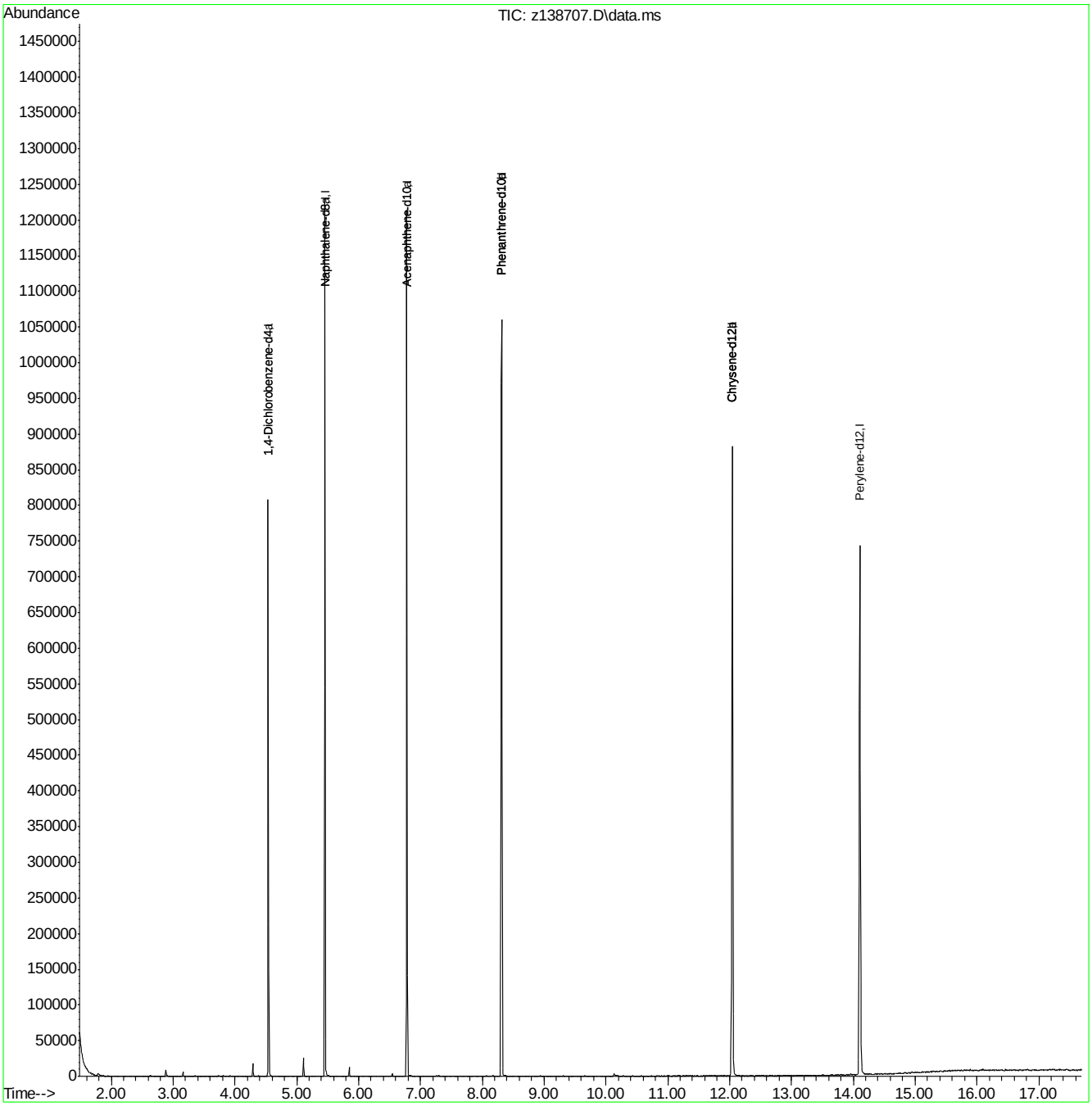
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.537	152	99419	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	359829	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	202339	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	406020	40.00	ppm	-0.02
83) Chrysene-d12	12.043	240	381533	40.00	ppm	0.06
91) Perylene-d12	14.111	264	364177	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.537	152	99419	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	406020	40.00	ppm	-0.01
107) Chrysene-d12a	12.043	240	381533	40.00	ppm	-0.02
109) Acenaphthene-d10a	6.781	164	202339	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	359829	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	406020	40.00	ppm	#-0.01
115) Chrysene-d12b	12.043	240	381533	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138707.D
Acq On : 14 Jun 2019 4:45 pm
Operator : angelar
Sample : ic6826-1
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 14 17:07:14 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 16:59:02 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138708.D
Acq On : 14 Jun 2019 5:12 pm
Operator : angelar
Sample : icv6826-50
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 14 17:31:28 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 17:20:33 2019
Response via : Initial Calibration

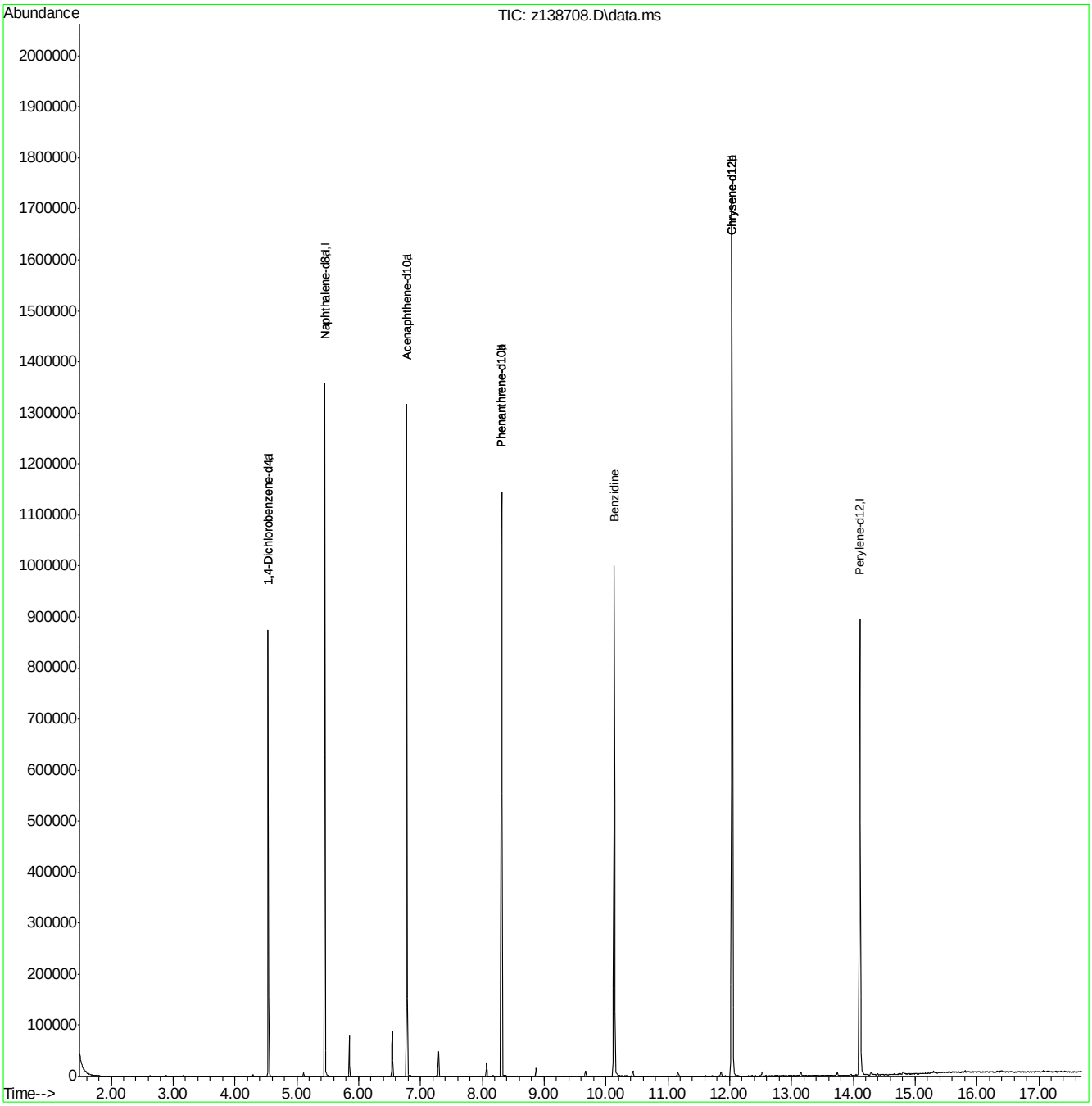
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.537	152	106480	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	393756	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	226772	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	449289	40.00	ppm	-0.02
83) Chrysene-d12	12.043	240	430559	40.00	ppm	0.06
91) Perylene-d12	14.111	264	425018	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.537	152	106480	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	449289	40.00	ppm	-0.01
107) Chrysene-d12a	12.043	240	430559	40.00	ppm	0.00
109) Acenaphthene-d10a	6.781	164	226772	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	393756	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	449289	40.00	ppm	#-0.01
115) Chrysene-d12b	12.043	240	430559	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.136	184	423435	45.26	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6826\
Data File : z138708.D
Acq On : 14 Jun 2019 5:12 pm
Operator : angelar
Sample : icv6826-50
Misc : op20426,ez6826,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 14 17:31:28 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6786.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Fri Jun 14 17:20:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138897.D
Acq On : 20 Jun 2019 12:43 am
Operator : chriss2
Sample : ic6838-100
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 20 10:26:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	72840	40.00	ppm	0.00
24) Naphthalene-d8	5.472	136	254520	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	152842	40.00	ppm	0.00
69) Phenanthrene-d10	8.336	188	271595	40.00	ppm	0.00
83) Chrysene-d12	12.086	240	274069	40.00	ppm	0.00
91) Perylene-d12	14.143	264	266518	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	72840	40.00	ppm	0.00
103) Phenanthrene-d10a	8.336	188	271595	40.00	ppm	0.00
107) Chrysene-d12a	12.086	240	274069	40.00	ppm	0.00
109) Acenaphthene-d10a	6.797	164	152842	40.00	ppm	0.00
111) Naphthalene-d8a	5.472	136	254520	40.00	ppm	0.00
113) Phenanthrene-d10b	8.336	188	271595	40.00	ppm	0.00
115) Chrysene-d12b	12.086	240	274069	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	229536	103.40	ppm	0.00
Spiked Amount 50.000			Recovery = 206.80%			
8) Phenol-d5	4.308	99	315603	104.02	ppm	0.00
Spiked Amount 50.000			Recovery = 208.04%			
25) Nitrobenzene-d5	4.959	82	288519	104.01	ppm	0.00
Spiked Amount 50.000			Recovery = 208.02%			
51) 2-Fluorobiphenyl	6.247	172	575349	100.28	ppm	0.00
Spiked Amount 50.000			Recovery = 200.56%			
73) 2,4,6-Tribromophenol	7.561	330	100714	103.87	ppm	0.00
Spiked Amount 50.000			Recovery = 207.74%			
85) Terphenyl-d14	10.531	244	645233	101.17	ppm	0.00
Spiked Amount 50.000			Recovery = 202.34%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.075	88	85790	97.04	ppm	98
3) Pyridine	2.406	79	233854	101.23	ppm	98
4) N-Nitrosodimethylamine	2.379	74	134848	100.41	ppm	97
6) Indene	4.740	116	400119	101.47	ppm	98
7) Cumene	3.960	105	635857	101.33	ppm	97
9) Phenol	4.318	94	361815	103.02	ppm	87
10) Aniline	4.313	93	389040	103.15	ppm	88
11) bis(2-Chloroethyl)ether	4.361	93	226084	100.18	ppm	98
12) 2-Chlorophenol	4.404	128	260949	102.32	ppm	96
13) Decane	4.441	43	239784	95.92	ppm	98
14) 1,3-Dichlorobenzene	4.511	146	279962	100.24	ppm	98
15) 1,4-Dichlorobenzene	4.564	146	286095	99.58	ppm	98
16) Benzyl alcohol	4.666	108	155016	102.61	ppm	99
17) 1,2-Dichlorobenzene	4.676	146	267881	101.92	ppm	99
18) Acetophenone	4.853	105	376486	101.92	ppm	98
19) 2-Methylphenol	4.751	108	238340	100.94	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138897.D
Acq On : 20 Jun 2019 12:43 am
Operator : chriss2
Sample : ic6838-100
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 20 10:26:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.756	121	71647	100.18	ppm		87
21) 3&4-Methylphenol	4.863	108	251191	101.81	ppm		99
22) n-Nitroso-di-n-propyla...	4.858	70	192759	101.12	ppm		98
23) Hexachloroethane	4.922	201	98802	97.59	ppm		96
26) Nitrobenzene	4.975	77	298155	103.86	ppm		98
27) Quinoline	5.734	129	485299	102.92	ppm		99
28) Isophorone	5.146	82	471816	101.60	ppm		100
29) 2-Nitrophenol	5.205	139	141686	104.10	ppm		82
30) 2,4-Dimethylphenol	5.237	107	272870	103.33	ppm		99
31) Benzoic Acid	5.365	105	222613	106.89	ppm		96
32) bis(2-Chloroethoxy)met...	5.296	93	276027	101.59	ppm		99
33) 2,4-Dichlorophenol	5.381	162	219232	103.84	ppm		98
34) 2,6-Dichlorophenol	5.536	162	210592	102.16	ppm		97
35) 1,3,5-Trichlorobenzene	5.211	180	248001	102.54	ppm		98
36) 1,2,4-Trichlorobenzene	5.430	180	231190	103.20	ppm		99
37) 1,2,3-Trichlorobenzene	5.590	180	231680	102.71	ppm		98
38) Naphthalene	5.488	128	734143	103.36	ppm		100
39) 4-Chloroaniline	5.531	127	315380	106.48	ppm		98
40) 2,3-Dichloroaniline	6.183	161	266142	103.21	ppm		97
41) Caprolactam	5.809	55	108534	103.24	ppm		95
42) Hexachlorobutadiene	5.574	225	139576	103.50	ppm		98
43) 4-Chloro-3-methylphenol	5.884	107	240141	103.27	ppm		96
44) 2-Methylnaphthalene	5.974	141	392516	103.14	ppm		97
45) 1-Methylnaphthalene	6.049	141	449202	103.87	ppm		98
46) Dimethylnaphthalene	6.450	156	458327	103.92	ppm		98
48) Hexachlorocyclopentadiene	6.092	237	242791	226.56	ppm		98
49) 2,4,6-Trichlorophenol	6.193	196	160131	101.57	ppm		99
50) 2,4,5-Trichlorophenol	6.226	196	168553	100.29	ppm		98
52) 2-Chloronaphthalene	6.343	162	459130	100.30	ppm		99
53) Biphenyl	6.327	154	634298	101.40	ppm		99
54) 2-Nitroaniline	6.429	65	162450	74.46	ppm		98
55) Dimethylphthalate	6.567	163	525335	98.88	ppm		100
56) Acenaphthylene	6.680	152	743867	100.72	ppm		99
57) 2,6-Dinitrotoluene	6.621	165	117827	98.78	ppm		96
58) 3-Nitroaniline	6.765	138	134056	103.24	ppm		96
59) Acenaphthene	6.829	153	484644	101.55	ppm		98
60) 2,4-Dinitrophenol	6.867	184	155733	219.11	ppm		78
61) 4-Nitrophenol	6.931	109	99078	109.18	ppm		92
62) Dibenzofuran	6.984	168	677828	104.36	ppm		97
63) 2,4-Dinitrotoluene	6.979	165	175082	104.87	ppm		95
64) 2,3,4,6-Tetrachlorophenol	7.107	232	134615	102.64	ppm		99
65) Diethylphthalate	7.198	149	588094	102.19	ppm		99
66) Fluorene	7.310	166	582138	105.71	ppm		98
67) 4-Chlorophenyl-phenyle...	7.305	204	271343	105.55	ppm		94
68) 4-Nitroaniline	7.347	138	135757	99.09	ppm		96
70) 4,6-Dinitro-2-methylph...	7.385	198	113809	111.34	ppm	#	64
71) n-Nitrosodiphenylamine	7.428	169	399845	104.97	ppm		98
72) 1,2-Diphenylhydrazine	7.470	77	621948	105.49	ppm		99
74) 4-Bromophenyl-phenylether	7.818	248	165457	105.22	ppm		92
75) Hexachlorobenzene	7.903	284	191558	105.39	ppm		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138897.D
Acq On : 20 Jun 2019 12:43 am
Operator : chriss2
Sample : ic6838-100
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 20 10:26:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76)	Pentachlorophenol	8.133	266	227848	215.97	ppm	95
77)	Phenanthrene	8.368	178	790099	105.02	ppm	99
78)	Anthracene	8.432	178	806455	105.61	ppm	99
79)	Carbazole	8.640	167	772467	107.19	ppm	99
80)	Di-n-butylphthalate	9.126	149	999196	106.66	ppm	99
81)	Fluoranthene	9.944	202	933275	108.73	ppm	98
82)	Octadecane	8.240	57	354741	104.82	ppm	97
84)	Pyrene	10.264	202	949358	99.53	ppm	99
86)	Butylbenzylphthalate	11.311	149	467057	103.48	ppm	99
87)	Benzo[a]anthracene	12.070	228	900929	101.09	ppm	99
88)	3,3'-Dichlorobenzidine	12.070	252	356076	103.12	ppm	97
89)	Chrysene	12.129	228	836996	100.08	ppm	99
90)	bis(2-Ethylhexyl)phtha...	12.241	149	603471	101.07	ppm	99
92)	Di-n-octylphthalate	13.208	149	1096033	108.49	ppm	99
93)	Benzo[b]fluoranthene	13.657	252	927908	102.77	ppm	95
94)	Benzo[k]fluoranthene	13.689	252	795897	102.66	ppm	99
95)	Benzo[a]pyrene	14.079	252	776912	101.28	ppm	99
96)	Indeno[1,2,3-cd]pyrene	15.478	276	970281	101.97	ppm	99
97)	Dibenz(a,h)acridine	15.206	279	763960	103.89	ppm	99
98)	Dibenz[a,h]anthracene	15.500	278	835747	102.30	ppm	97
99)	7,12-Dimethylbenz(a)an...	13.646	256	414489	104.95	ppm	99
100)	Benzo[g,h,i]perylene	15.804	276	743819	101.56	ppm	98

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

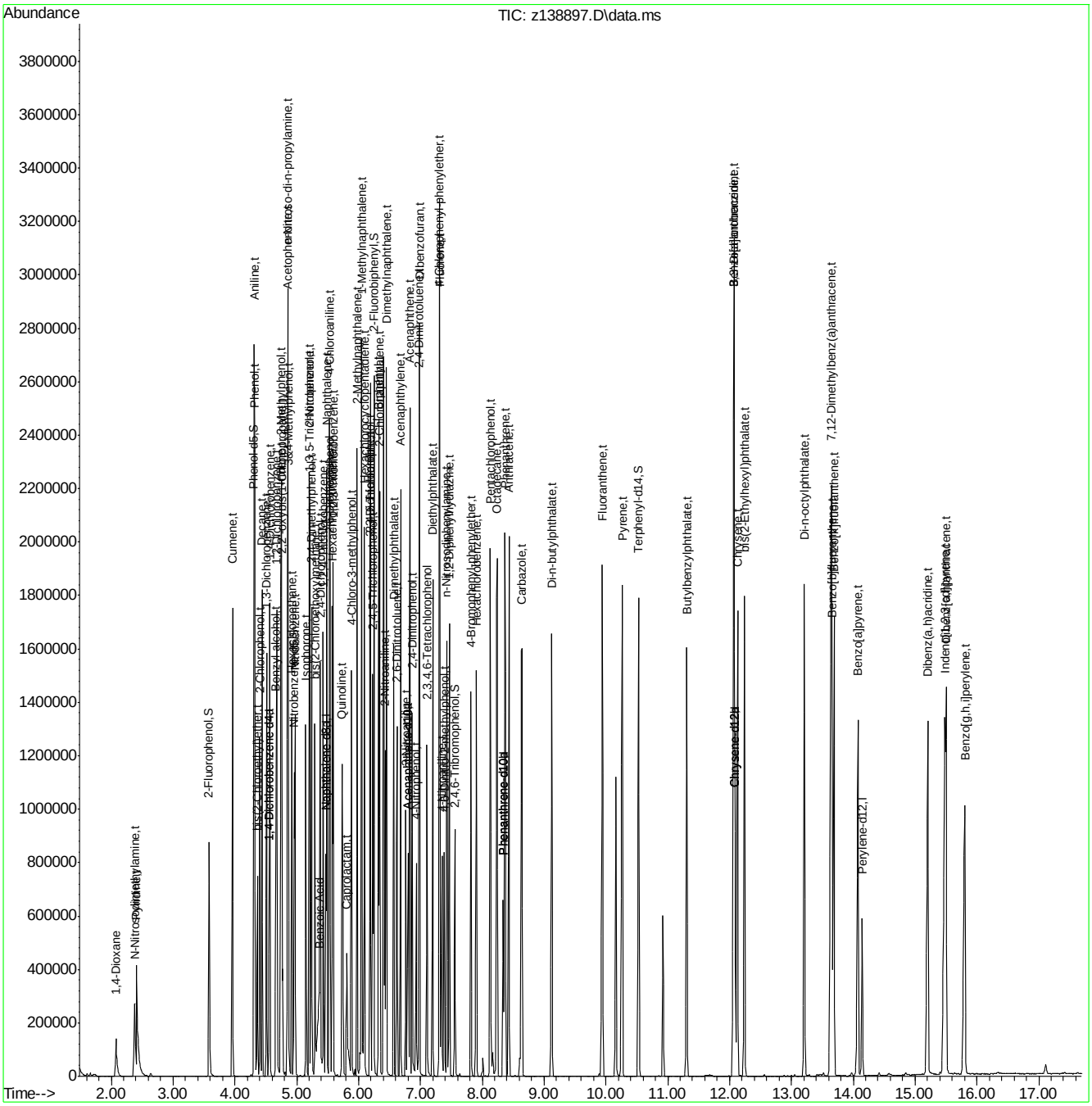
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7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138897.D
Acq On : 20 Jun 2019 12:43 am
Operator : chriss2
Sample : ic6838-100
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 20 10:26:32 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138898.D
Acq On : 20 Jun 2019 1:37 am
Operator : chriss2
Sample : ic6838-80
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 20 10:28:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	81913	40.00	ppm	0.00
24) Naphthalene-d8	5.472	136	287519	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	167034	40.00	ppm	0.00
69) Phenanthrene-d10	8.336	188	302763	40.00	ppm	0.00
83) Chrysene-d12	12.081	240	294582	40.00	ppm	0.00
91) Perylene-d12	14.143	264	289841	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	81913	40.00	ppm	0.00
103) Phenanthrene-d10a	8.336	188	302763	40.00	ppm	0.00
107) Chrysene-d12a	12.081	240	294582	40.00	ppm	0.00
109) Acenaphthene-d10a	6.797	164	167034	40.00	ppm	0.00
111) Naphthalene-d8a	5.472	136	287519	40.00	ppm	0.00
113) Phenanthrene-d10b	8.336	188	302763	40.00	ppm	0.00
115) Chrysene-d12b	12.081	240	294582	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	203172	81.38	ppm	0.00
Spiked Amount 50.000			Recovery = 162.76%			
8) Phenol-d5	4.308	99	276932	81.16	ppm	0.00
Spiked Amount 50.000			Recovery = 162.32%			
25) Nitrobenzene-d5	4.959	82	253980	81.05	ppm	0.00
Spiked Amount 50.000			Recovery = 162.10%			
51) 2-Fluorobiphenyl	6.247	172	506524	80.78	ppm	0.00
Spiked Amount 50.000			Recovery = 161.56%			
73) 2,4,6-Tribromophenol	7.556	330	87194	80.67	ppm	0.00
Spiked Amount 50.000			Recovery = 161.34%			
85) Terphenyl-d14	10.531	244	550879	80.36	ppm	0.00
Spiked Amount 50.000			Recovery = 160.72%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.075	88	78299	78.76	ppm	96
3) Pyridine	2.406	79	210067	80.86	ppm	98
4) N-Nitrosodimethylamine	2.374	74	119747	79.29	ppm	99
6) Indene	4.740	116	356150	80.32	ppm	99
7) Cumene	3.955	105	569745	80.74	ppm	99
9) Phenol	4.313	94	318479	80.63	ppm	96
10) Aniline	4.313	93	345955	81.57	ppm	94
11) bis(2-Chloroethyl)ether	4.361	93	203915	80.35	ppm	99
12) 2-Chlorophenol	4.404	128	230698	80.44	ppm	98
13) Decane	4.441	43	215373	76.61	ppm	98
14) 1,3-Dichlorobenzene	4.511	146	246300	78.42	ppm	99
15) 1,4-Dichlorobenzene	4.564	146	254178	78.67	ppm	98
16) Benzyl alcohol	4.660	108	137249	80.79	ppm	97
17) 1,2-Dichlorobenzene	4.676	146	235885	79.81	ppm	100
18) Acetophenone	4.853	105	330878	79.66	ppm	97
19) 2-Methylphenol	4.751	108	208234	78.42	ppm	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138898.D
Acq On : 20 Jun 2019 1:37 am
Operator : chriss2
Sample : ic6838-80
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 20 10:28:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.751	121	62681	77.93	ppm	98
21) 3&4-Methylphenol	4.858	108	224895	81.05	ppm	99
22) n-Nitroso-di-n-propyla...	4.853	70	169130	78.90	ppm	98
23) Hexachloroethane	4.922	201	87618	76.96	ppm	100
26) Nitrobenzene	4.970	77	261429	80.62	ppm	96
27) Quinoline	5.734	129	429741	80.68	ppm	99
28) Isophorone	5.146	82	420009	80.07	ppm	97
29) 2-Nitrophenol	5.200	139	125718	81.77	ppm	93
30) 2,4-Dimethylphenol	5.237	107	240422	80.59	ppm	98
31) Benzoic Acid	5.355	105	197277	83.85	ppm	98
32) bis(2-Chloroethoxy)met...	5.296	93	243672	79.39	ppm	99
33) 2,4-Dichlorophenol	5.376	162	191601	80.33	ppm	98
34) 2,6-Dichlorophenol	5.536	162	186400	80.05	ppm	95
35) 1,3,5-Trichlorobenzene	5.211	180	219943	80.50	ppm	97
36) 1,2,4-Trichlorobenzene	5.430	180	201932	79.79	ppm	98
37) 1,2,3-Trichlorobenzene	5.590	180	204582	80.29	ppm	99
38) Naphthalene	5.483	128	656488	81.82	ppm	98
39) 4-Chloroaniline	5.526	127	273648	81.79	ppm	96
40) 2,3-Dichloroaniline	6.183	161	234063	80.35	ppm	97
41) Caprolactam	5.804	55	96425	81.20	ppm	98
42) Hexachlorobutadiene	5.574	225	123601	81.13	ppm	97
43) 4-Chloro-3-methylphenol	5.878	107	211284	80.43	ppm	98
44) 2-Methylnaphthalene	5.975	141	348837	81.14	ppm	99
45) 1-Methylnaphthalene	6.049	141	394302	80.71	ppm	97
46) Dimethylnaphthalene	6.450	156	403321	80.95	ppm	99
48) Hexachlorocyclopentadiene	6.092	237	211263	180.39	ppm	98
49) 2,4,6-Trichlorophenol	6.194	196	142273	82.58	ppm	99
50) 2,4,5-Trichlorophenol	6.226	196	149911	81.62	ppm	98
52) 2-Chloronaphthalene	6.343	162	399100	79.78	ppm	98
53) Biphenyl	6.322	154	555629	81.28	ppm	100
54) 2-Nitroaniline	6.423	65	146519	61.45	ppm	92
55) Dimethylphthalate	6.562	163	466836	80.40	ppm	99
56) Acenaphthylene	6.680	152	654144	81.05	ppm	99
57) 2,6-Dinitrotoluene	6.621	165	103902	79.71	ppm	96
58) 3-Nitroaniline	6.765	138	116800	82.31	ppm	94
59) Acenaphthene	6.829	153	423577	81.21	ppm	99
60) 2,4-Dinitrophenol	6.867	184	132803	170.97	ppm	85
61) 4-Nitrophenol	6.925	109	84663	85.37	ppm	96
62) Dibenzofuran	6.984	168	591197	83.29	ppm	98
63) 2,4-Dinitrotoluene	6.979	165	150120	82.28	ppm	96
64) 2,3,4,6-Tetrachlorophenol	7.102	232	115604	80.65	ppm	95
65) Diethylphthalate	7.198	149	503371	80.04	ppm	100
66) Fluorene	7.310	166	502964	83.57	ppm	99
67) 4-Chlorophenyl-phenyle...	7.305	204	230491	82.04	ppm	91
68) 4-Nitroaniline	7.342	138	118695	79.27	ppm	98
70) 4,6-Dinitro-2-methylph...	7.380	198	96889	85.03	ppm	95
71) n-Nitrosodiphenylamine	7.428	169	346469	81.59	ppm	98
72) 1,2-Diphenylhydrazine	7.465	77	527912	80.32	ppm	96
74) 4-Bromophenyl-phenylether	7.818	248	140213	79.99	ppm	92
75) Hexachlorobenzene	7.903	284	164941	81.41	ppm	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138898.D
Acq On : 20 Jun 2019 1:37 am
Operator : chriss2
Sample : ic6838-80
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 20 10:28:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

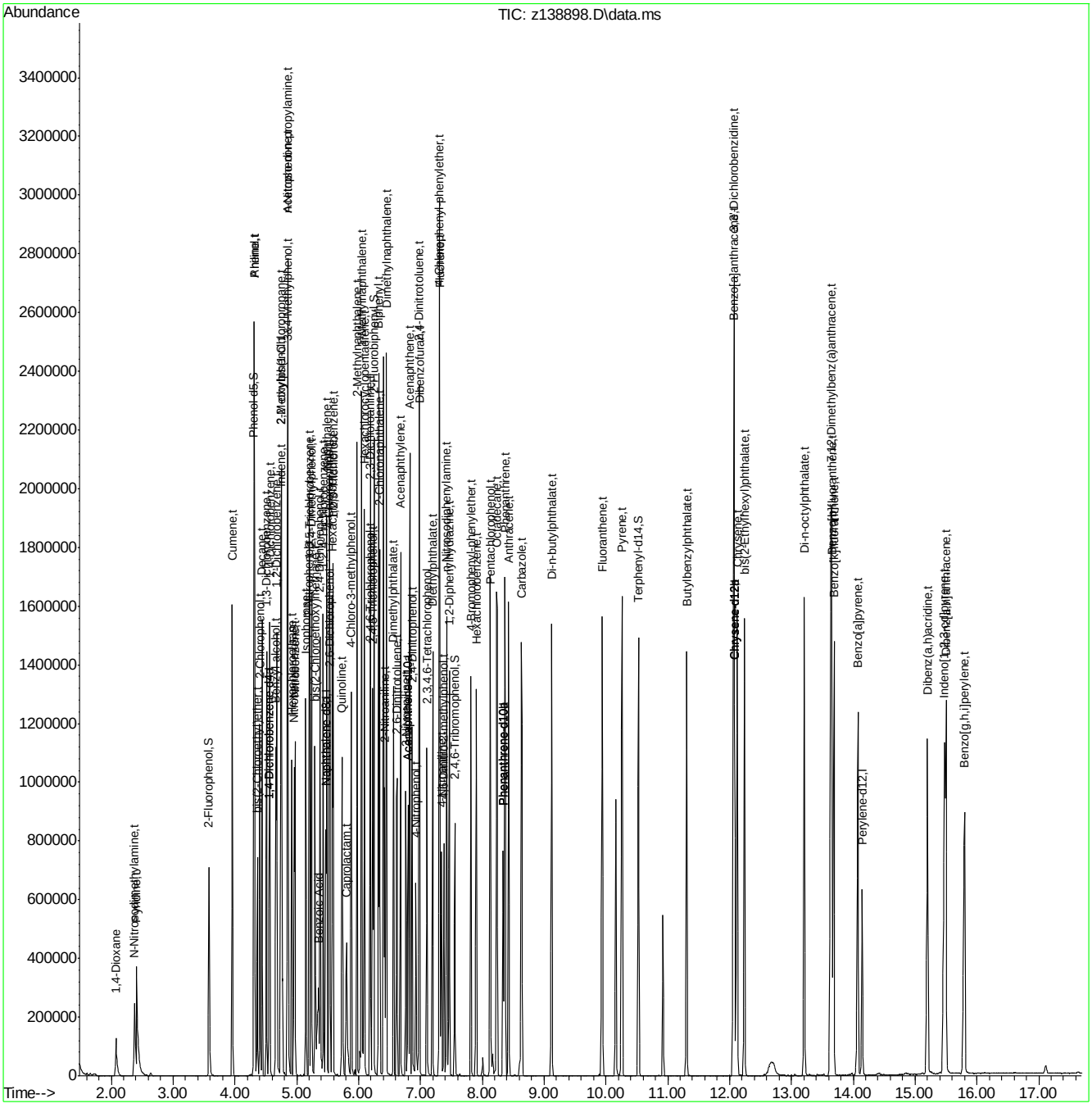
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76)	Pentachlorophenol	8.133	266	194658	165.51	ppm	98
77)	Phenanthrene	8.368	178	679904	81.07	ppm	100
78)	Anthracene	8.432	178	699171	82.13	ppm	99
79)	Carbazole	8.635	167	660242	82.19	ppm	99
80)	Di-n-butylphthalate	9.121	149	861595	82.51	ppm	100
81)	Fluoranthene	9.944	202	790094	82.57	ppm	99
82)	Octadecane	8.234	57	303926	80.56	ppm	98
84)	Pyrene	10.259	202	814856	79.48	ppm	99
86)	Butylbenzylphthalate	11.306	149	392549	80.91	ppm	95
87)	Benzo[a]anthracene	12.065	228	764841	79.84	ppm	99
88)	3,3'-Dichlorobenzidine	12.070	252	303354	81.74	ppm	98
89)	Chrysene	12.123	228	712973	79.32	ppm	99
90)	bis(2-Ethylhexyl)phtha...	12.241	149	512537	79.86	ppm	100
92)	Di-n-octylphthalate	13.208	149	924230	84.12	ppm	98
93)	Benzo[b]fluoranthene	13.651	252	804056	81.89	ppm	99
94)	Benzo[k]fluoranthene	13.689	252	664356	78.80	ppm	99
95)	Benzo[a]pyrene	14.073	252	655102	78.53	ppm	98
96)	Indeno[1,2,3-cd]pyrene	15.473	276	807934	78.08	ppm	99
97)	Dibenz(a,h)acridine	15.201	279	636123	79.55	ppm	100
98)	Dibenz[a,h]anthracene	15.500	278	694958	78.22	ppm	98
99)	7,12-Dimethylbenz(a)an...	13.646	256	356145	82.92	ppm	97
100)	Benzo[g,h,i]perylene	15.799	276	620723	77.93	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138898.D
Acq On : 20 Jun 2019 1:37 am
Operator : chriss2
Sample : ic6838-80
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 20 10:28:45 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138899.D
Acq On : 20 Jun 2019 2:04 am
Operator : chriss2
Sample : icc6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 20 10:23:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.554	152	88456	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	314818	40.00	ppm	0.00
47) Acenaphthene-d10	6.798	164	182844	40.00	ppm	0.00
69) Phenanthrene-d10	8.336	188	327456	40.00	ppm	0.00
83) Chrysene-d12	12.081	240	304291	40.00	ppm	0.00
91) Perylene-d12	14.143	264	305300	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.554	152	88456	40.00	ppm	0.00
103) Phenanthrene-d10a	8.336	188	327456	40.00	ppm	0.00
107) Chrysene-d12a	12.081	240	304291	40.00	ppm	0.00
109) Acenaphthene-d10a	6.798	164	182844	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	314818	40.00	ppm	0.00
113) Phenanthrene-d10b	8.336	188	327456	40.00	ppm	0.00
115) Chrysene-d12b	12.081	240	304291	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.582	112	134793	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
8) Phenol-d5	4.303	99	184235	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
25) Nitrobenzene-d5	4.955	82	171551	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
51) 2-Fluorobiphenyl	6.242	172	343188	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
73) 2,4,6-Tribromophenol	7.556	330	58453	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
85) Terphenyl-d14	10.527	244	354047	50.00	ppm	0.00
Spiked Amount 50.000			Recovery = 100.00%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.080	88	53678	50.00	ppm	100
3) Pyridine	2.412	79	140265	50.00	ppm	100
4) N-Nitrosodimethylamine	2.380	74	81543	50.00	ppm	100
6) Indene	4.741	116	239425	50.00	ppm	100
7) Cumene	3.956	105	381031	50.00	ppm	100
9) Phenol	4.314	94	213260	50.00	ppm	100
10) Aniline	4.314	93	229011	50.00	ppm	100
11) bis(2-Chloroethyl)ether	4.362	93	137024	50.00	ppm	100
12) 2-Chlorophenol	4.404	128	154851	50.00	ppm	100
13) Decane	4.442	43	151794	50.00	ppm	100
14) 1,3-Dichlorobenzene	4.511	146	169587	50.00	ppm	100
15) 1,4-Dichlorobenzene	4.565	146	174456	50.00	ppm	100
16) Benzyl alcohol	4.661	108	91730	50.00	ppm	100
17) 1,2-Dichlorobenzene	4.677	146	159588	50.00	ppm	100
18) Acetophenone	4.848	105	224283	50.00	ppm	100
19) 2-Methylphenol	4.752	108	143374	50.00	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138899.D
Acq On : 20 Jun 2019 2:04 am
Operator : chriss2
Sample : icc6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 20 10:23:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.752	121	43427	50.00	ppm	100
21) 3&4-Methylphenol	4.858	108	149815	50.00	ppm	100
22) n-Nitroso-di-n-propyla...	4.853	70	115748	50.00	ppm	100
23) Hexachloroethane	4.923	201	61474	50.00	ppm	100
26) Nitrobenzene	4.971	77	177539	50.00	ppm	100
27) Quinoline	5.729	129	291623	50.00	ppm	100
28) Isophorone	5.142	82	287194	50.00	ppm	100
29) 2-Nitrophenol	5.200	139	84176	50.00	ppm	100
30) 2,4-Dimethylphenol	5.232	107	163325	50.00	ppm	100
31) Benzoic Acid	5.345	105	128807	50.00	ppm	100
32) bis(2-Chloroethoxy)met...	5.291	93	168037	50.00	ppm	100
33) 2,4-Dichlorophenol	5.377	162	130576	50.00	ppm	100
34) 2,6-Dichlorophenol	5.532	162	127488	50.00	ppm	100
35) 1,3,5-Trichlorobenzene	5.206	180	149575	50.00	ppm	100
36) 1,2,4-Trichlorobenzene	5.430	180	138550	50.00	ppm	100
37) 1,2,3-Trichlorobenzene	5.590	180	139503	50.00	ppm	100
38) Naphthalene	5.483	128	439277	50.00	ppm	100
39) 4-Chloroaniline	5.526	127	183178	50.00	ppm	100
40) 2,3-Dichloroaniline	6.183	161	159480	50.00	ppm	100
41) Caprolactam	5.793	55	65014	50.00	ppm	100
42) Hexachlorobutadiene	5.574	225	83405	50.00	ppm	100
43) 4-Chloro-3-methylphenol	5.879	107	143819	50.00	ppm	100
44) 2-Methylnaphthalene	5.975	141	235356	50.00	ppm	100
45) 1-Methylnaphthalene	6.044	141	267472	50.00	ppm	100
46) Dimethylnaphthalene	6.450	156	272761	50.00	ppm	100
48) Hexachlorocyclopentadiene	6.092	237	128200	100.00	ppm	100
49) 2,4,6-Trichlorophenol	6.189	196	94301	50.00	ppm	100
50) 2,4,5-Trichlorophenol	6.221	196	100524	50.00	ppm	100
52) 2-Chloronaphthalene	6.338	162	273810	50.00	ppm	100
53) Biphenyl	6.322	154	374155	50.00	ppm	100
54) 2-Nitroaniline	6.424	65	130504	50.00	ppm	100
55) Dimethylphthalate	6.563	163	317783	50.00	ppm	100
56) Acenaphthylene	6.675	152	441746	50.00	ppm	100
57) 2,6-Dinitrotoluene	6.616	165	71347	50.00	ppm	100
58) 3-Nitroaniline	6.760	138	77671	50.00	ppm	100
59) Acenaphthene	6.824	153	285470	50.00	ppm	100
60) 2,4-Dinitrophenol	6.862	184	85026	100.00	ppm	100
61) 4-Nitrophenol	6.921	109	54278	50.00	ppm	100
62) Dibenzofuran	6.979	168	388517	50.00	ppm	100
63) 2,4-Dinitrotoluene	6.974	165	99860	50.00	ppm	100
64) 2,3,4,6-Tetrachlorophenol	7.102	232	78449	50.00	ppm	100
65) Diethylphthalate	7.193	149	344220	50.00	ppm	100
66) Fluorene	7.305	166	329396	50.00	ppm	100
67) 4-Chlorophenyl-phenyle...	7.300	204	153765	50.00	ppm	100
68) 4-Nitroaniline	7.337	138	81949	50.00	ppm	100
70) 4,6-Dinitro-2-methylph...	7.375	198	61621	50.00	ppm	100
71) n-Nitrosodiphenylamine	7.423	169	229637	50.00	ppm	100
72) 1,2-Diphenylhydrazine	7.465	77	355434	50.00	ppm	100
74) 4-Bromophenyl-phenylether	7.818	248	94792	50.00	ppm	100
75) Hexachlorobenzene	7.898	284	109569	50.00	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138899.D
Acq On : 20 Jun 2019 2:04 am
Operator : chriss2
Sample : icc6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 20 10:23:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

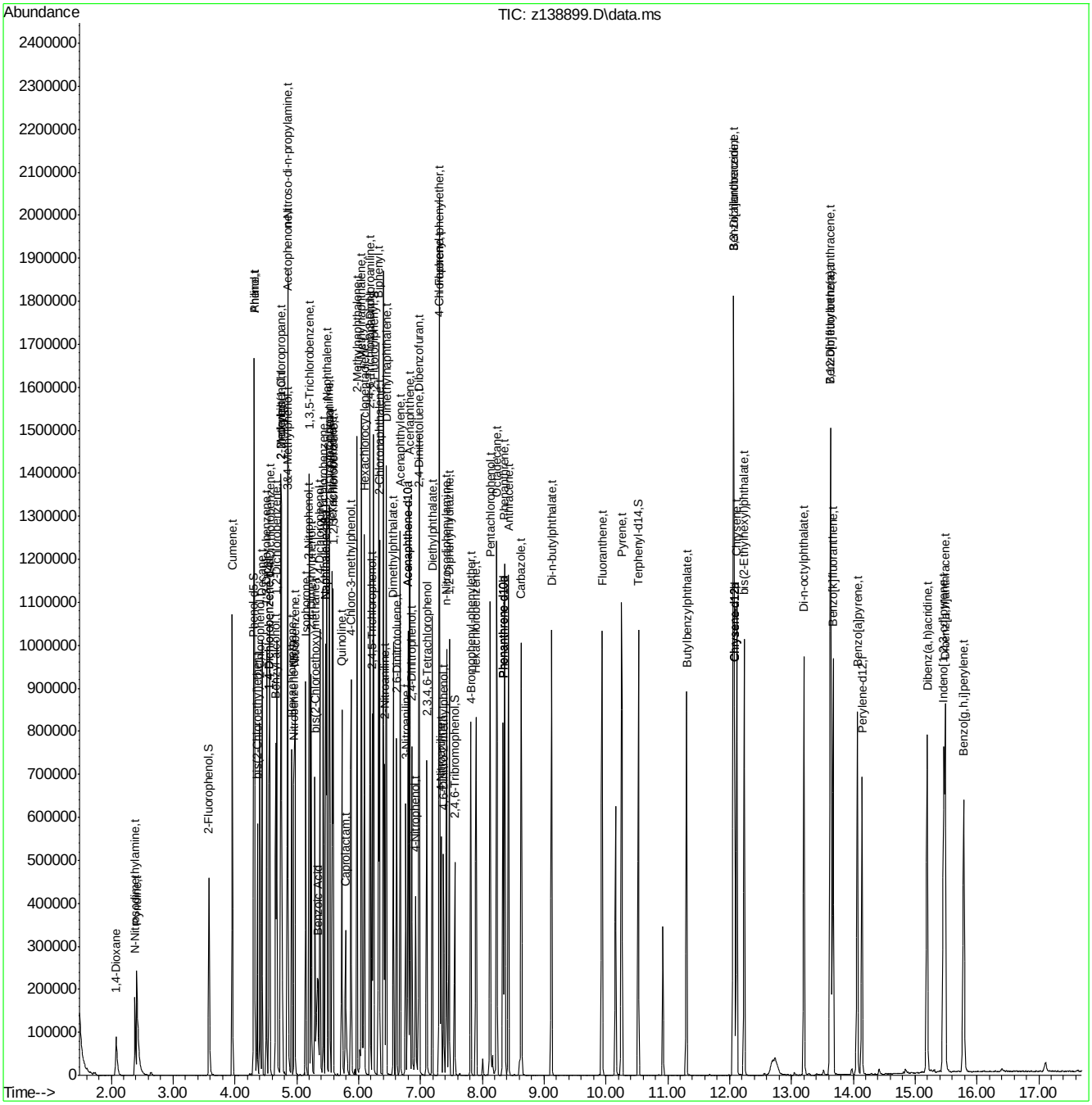
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76)	Pentachlorophenol	8.128	266	127201	100.00	ppm	100
77)	Phenanthrene	8.363	178	453549	50.00	ppm	100
78)	Anthracene	8.427	178	460346	50.00	ppm	100
79)	Carbazole	8.630	167	434438	50.00	ppm	100
80)	Di-n-butylphthalate	9.122	149	564725	50.00	ppm	100
81)	Fluoranthene	9.939	202	517457	50.00	ppm	100
82)	Octadecane	8.235	57	204027	50.00	ppm	100
84)	Pyrene	10.254	202	529502	50.00	ppm	100
86)	Butylbenzylphthalate	11.307	149	250572	50.00	ppm	100
87)	Benzo[a]anthracene	12.065	228	494744	50.00	ppm	100
88)	3,3'-Dichlorobenzidine	12.065	252	191684	50.00	ppm	100
89)	Chrysene	12.119	228	464252	50.00	ppm	100
90)	bis(2-Ethylhexyl)phtha...	12.236	149	331461	50.00	ppm	100
92)	Di-n-octylphthalate	13.203	149	578651	50.00	ppm	100
93)	Benzo[b]fluoranthene	13.636	252	517152	50.00	ppm	100
94)	Benzo[k]fluoranthene	13.678	252	444051	50.00	ppm	100
95)	Benzo[a]pyrene	14.068	252	439346	50.00	ppm	100
96)	Indeno[1,2,3-cd]pyrene	15.463	276	545001	50.00	ppm	100
97)	Dibenz(a,h)acridine	15.196	279	421166	50.00	ppm	100
98)	Dibenz[a,h]anthracene	15.489	278	467921	50.00	ppm	100
99)	7,12-Dimethylbenz(a)an...	13.636	256	226213	50.00	ppm	100
100)	Benzo[g,h,i]perylene	15.789	276	419479	50.00	ppm	100

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138899.D
Acq On : 20 Jun 2019 2:04 am
Operator : chriss2
Sample : icc6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 20 10:23:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138900.D
Acq On : 20 Jun 2019 2:31 am
Operator : chriss2
Sample : ic6838-25
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 20 10:30:37 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	79641	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	278448	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	166911	40.00	ppm	0.00
69) Phenanthrene-d10	8.336	188	294347	40.00	ppm	0.00
83) Chrysene-d12	12.075	240	279887	40.00	ppm	0.00
91) Perylene-d12	14.137	264	293108	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	79641	40.00	ppm	0.00
103) Phenanthrene-d10a	8.336	188	294347	40.00	ppm	0.00
107) Chrysene-d12a	12.075	240	279887	40.00	ppm	0.00
109) Acenaphthene-d10a	6.797	164	166911	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	278448	40.00	ppm	0.00
113) Phenanthrene-d10b	8.336	188	294347	40.00	ppm	0.00
115) Chrysene-d12b	12.075	240	279887	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	57571	23.72	ppm	0.00
Spiked Amount 50.000			Recovery = 47.44%			
8) Phenol-d5	4.302	99	79796	24.05	ppm	0.00
Spiked Amount 50.000			Recovery = 48.10%			
25) Nitrobenzene-d5	4.954	82	76508	25.21	ppm	0.00
Spiked Amount 50.000			Recovery = 50.42%			
51) 2-Fluorobiphenyl	6.242	172	151352	24.16	ppm	0.00
Spiked Amount 50.000			Recovery = 48.32%			
73) 2,4,6-Tribromophenol	7.550	330	26641	25.35	ppm	0.00
Spiked Amount 50.000			Recovery = 50.70%			
85) Terphenyl-d14	10.521	244	166018	25.49	ppm	0.00
Spiked Amount 50.000			Recovery = 50.98%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.085	88	23496	24.31	ppm	98
3) Pyridine	2.422	79	63315	25.07	ppm	96
4) N-Nitrosodimethylamine	2.385	74	35315	24.05	ppm	95
6) Indene	4.740	116	104116	24.15	ppm	99
7) Cumene	3.960	105	166061	24.20	ppm	96
9) Phenol	4.308	94	90210	23.49	ppm	95
10) Aniline	4.313	93	98767	23.95	ppm	88
11) bis(2-Chloroethyl)ether	4.361	93	60129	24.37	ppm	99
12) 2-Chlorophenol	4.404	128	67167	24.09	ppm	99
13) Decane	4.436	43	67385	24.65	ppm	94
14) 1,3-Dichlorobenzene	4.511	146	75746	24.80	ppm	99
15) 1,4-Dichlorobenzene	4.564	146	77519	24.68	ppm	99
16) Benzyl alcohol	4.660	108	39808	24.10	ppm	99
17) 1,2-Dichlorobenzene	4.676	146	70957	24.69	ppm	97
18) Acetophenone	4.847	105	97691	24.19	ppm	98
19) 2-Methylphenol	4.746	108	61708	23.90	ppm	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138900.D
Acq On : 20 Jun 2019 2:31 am
Operator : chriss2
Sample : ic6838-25
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 20 10:30:37 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.751	121	19134	24.47	ppm	91
21) 3&4-Methylphenol	4.858	108	64266	23.82	ppm	98
22) n-Nitroso-di-n-propyla...	4.847	70	50905	24.42	ppm	97
23) Hexachloroethane	4.922	201	27713	25.04	ppm	97
26) Nitrobenzene	4.970	77	78352	24.95	ppm	95
27) Quinoline	5.723	129	131157	25.42	ppm	99
28) Isophorone	5.141	82	127355	25.07	ppm	97
29) 2-Nitrophenol	5.200	139	37102	24.92	ppm	97
30) 2,4-Dimethylphenol	5.232	107	71793	24.85	ppm	97
31) Benzoic Acid	5.317	105	55187	24.22	ppm	97
32) bis(2-Chloroethoxy)met...	5.291	93	73302	24.66	ppm	100
33) 2,4-Dichlorophenol	5.376	162	58311	25.24	ppm	98
34) 2,6-Dichlorophenol	5.531	162	55804	24.74	ppm	98
35) 1,3,5-Trichlorobenzene	5.205	180	66569	25.16	ppm	98
36) 1,2,4-Trichlorobenzene	5.430	180	62255	25.40	ppm	100
37) 1,2,3-Trichlorobenzene	5.590	180	62735	25.42	ppm	97
38) Naphthalene	5.483	128	195763	25.19	ppm	99
39) 4-Chloroaniline	5.520	127	83116	25.65	ppm	97
40) 2,3-Dichloroaniline	6.183	161	69756	24.73	ppm	99
41) Caprolactam	5.771	55	29374	25.54	ppm	94
42) Hexachlorobutadiene	5.574	225	37292	25.28	ppm	98
43) 4-Chloro-3-methylphenol	5.873	107	61730	24.26	ppm	94
44) 2-Methylnaphthalene	5.974	141	105852	25.42	ppm	99
45) 1-Methylnaphthalene	6.044	141	117899	24.92	ppm	99
46) Dimethylnaphthalene	6.445	156	121013	25.08	ppm	98
48) Hexachlorocyclopentadiene	6.092	237	46230	39.50	ppm	98
49) 2,4,6-Trichlorophenol	6.188	196	41381	24.04	ppm	96
50) 2,4,5-Trichlorophenol	6.220	196	45022	24.53	ppm	99
52) 2-Chloronaphthalene	6.338	162	121886	24.38	ppm	97
53) Biphenyl	6.322	154	165804	24.27	ppm	99
54) 2-Nitroaniline	6.418	65	61032	25.62	ppm	94
55) Dimethylphthalate	6.557	163	144814	24.96	ppm	98
56) Acenaphthylene	6.674	152	199322	24.71	ppm	99
57) 2,6-Dinitrotoluene	6.610	165	31735	24.36	ppm	92
58) 3-Nitroaniline	6.760	138	34937	24.64	ppm	88
59) Acenaphthene	6.824	153	128389	24.63	ppm	93
60) 2,4-Dinitrophenol	6.856	184	35604	45.87	ppm	84
61) 4-Nitrophenol	6.920	109	23612	23.83	ppm	88
62) Dibenzofuran	6.979	168	175493	24.74	ppm	97
63) 2,4-Dinitrotoluene	6.968	165	44354	24.33	ppm	94
64) 2,3,4,6-Tetrachlorophenol	7.102	232	34787	24.29	ppm	96
65) Diethylphthalate	7.187	149	161148	25.64	ppm	99
66) Fluorene	7.305	166	147769	24.57	ppm	98
67) 4-Chlorophenyl-phenyle...	7.299	204	69209	24.65	ppm	95
68) 4-Nitroaniline	7.326	138	37748	25.23	ppm	99
70) 4,6-Dinitro-2-methylph...	7.369	198	26544	23.96	ppm	99
71) n-Nitrosodiphenylamine	7.422	169	104112	25.22	ppm	100
72) 1,2-Diphenylhydrazine	7.460	77	160048	25.05	ppm	95
74) 4-Bromophenyl-phenylether	7.812	248	44168	25.92	ppm	93
75) Hexachlorobenzene	7.898	284	49476	25.12	ppm	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138900.D
Acq On : 20 Jun 2019 2:31 am
Operator : chriss2
Sample : ic6838-25
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 20 10:30:37 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

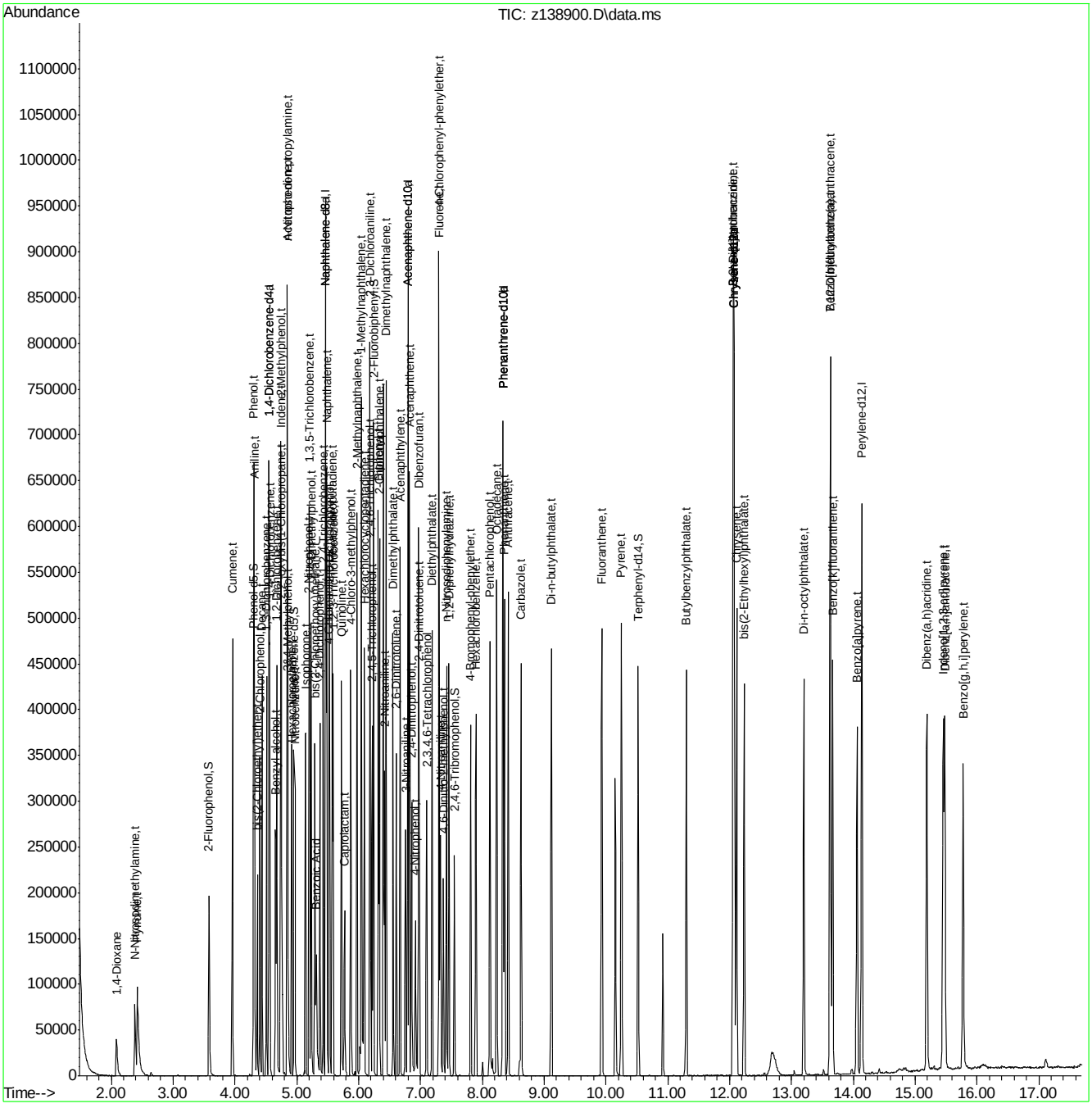
	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76)	Pentachlorophenol	8.122	266	55461	48.51	ppm	99
77)	Phenanthrene	8.362	178	205349	25.18	ppm	99
78)	Anthracene	8.421	178	214339	25.90	ppm	100
79)	Carbazole	8.630	167	199630	25.56	ppm	99
80)	Di-n-butylphthalate	9.116	149	254508	25.07	ppm	99
81)	Fluoranthene	9.933	202	231116	24.84	ppm	98
82)	Octadecane	8.234	57	91421	24.92	ppm	99
84)	Pyrene	10.248	202	242441	24.89	ppm	98
86)	Butylbenzylphthalate	11.301	149	112157	24.33	ppm	98
87)	Benzo[a]anthracene	12.059	228	224660	24.68	ppm	98
88)	3,3'-Dichlorobenzidine	12.059	252	88128	24.99	ppm	99
89)	Chrysene	12.113	228	214271	25.09	ppm	99
90)	bis(2-Ethylhexyl)phtha...	12.236	149	149873	24.58	ppm	99
92)	Di-n-octylphthalate	13.203	149	263344	23.70	ppm	99
93)	Benzo[b]fluoranthene	13.630	252	230093	23.17	ppm	99
94)	Benzo[k]fluoranthene	13.667	252	216374	25.38	ppm	98
95)	Benzo[a]pyrene	14.063	252	205089	24.31	ppm	99
96)	Indeno[1,2,3-cd]pyrene	15.457	276	253583	24.23	ppm	97
97)	Dibenz(a,h)acridine	15.190	279	197293	24.40	ppm	100
98)	Dibenz[a,h]anthracene	15.478	278	214178	23.84	ppm	98
99)	7,12-Dimethylbenz(a)an...	13.625	256	104664	24.10	ppm	99
100)	Benzo[g,h,i]perylene	15.778	276	199716	24.80	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138900.D
Acq On : 20 Jun 2019 2:31 am
Operator : chriss2
Sample : ic6838-25
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 20 10:30:37 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138901.D
Acq On : 20 Jun 2019 2:58 am
Operator : chriss2
Sample : ic6838-10
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 20 10:32:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	80912	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	294255	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	175487	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	312790	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	288286	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	301531	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	80912	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	312790	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	288286	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	175487	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	294255	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	312790	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	288286	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	22503	9.13	ppm	0.00
Spiked Amount 50.000			Recovery = 18.26%			
8) Phenol-d5	4.302	99	30952	9.18	ppm	0.00
Spiked Amount 50.000			Recovery = 18.36%			
25) Nitrobenzene-d5	4.954	82	30769	9.59	ppm	0.00
Spiked Amount 50.000			Recovery = 19.18%			
51) 2-Fluorobiphenyl	6.242	172	61926	9.40	ppm	0.00
Spiked Amount 50.000			Recovery = 18.80%			
73) 2,4,6-Tribromophenol	7.550	330	10110	9.05	ppm	0.00
Spiked Amount 50.000			Recovery = 18.10%			
85) Terphenyl-d14	10.521	244	66196	9.87	ppm	0.00
Spiked Amount 50.000			Recovery = 19.74%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.085	88	9633	9.81	ppm	92
3) Pyridine	2.433	79	23556	9.18	ppm	99
4) N-Nitrosodimethylamine	2.390	74	14148	9.48	ppm	90
6) Indene	4.740	116	41627	9.50	ppm	98
7) Cumene	3.960	105	66034	9.47	ppm	98
9) Phenol	4.308	94	36421	9.34	ppm	95
10) Aniline	4.313	93	39181	9.35	ppm	83
11) bis(2-Chloroethyl)ether	4.361	93	23560	9.40	ppm	96
12) 2-Chlorophenol	4.404	128	26458	9.34	ppm	99
13) Decane	4.436	43	25970	9.35	ppm	99
14) 1,3-Dichlorobenzene	4.511	146	30271	9.76	ppm	98
15) 1,4-Dichlorobenzene	4.564	146	31267	9.80	ppm	97
16) Benzyl alcohol	4.660	108	15302	9.12	ppm	97
17) 1,2-Dichlorobenzene	4.676	146	28690	9.83	ppm	98
18) Acetophenone	4.847	105	38784	9.45	ppm	96
19) 2-Methylphenol	4.746	108	24049	9.17	ppm	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138901.D
Acq On : 20 Jun 2019 2:58 am
Operator : chriss2
Sample : ic6838-10
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 20 10:32:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.751	121	7627	9.60	ppm		98
21) 3&4-Methylphenol	4.858	108	25446	9.28	ppm		99
22) n-Nitroso-di-n-propyla...	4.847	70	19893	9.39	ppm		97
23) Hexachloroethane	4.917	201	10744	9.55	ppm		85
26) Nitrobenzene	4.970	77	31503	9.49	ppm		95
27) Quinoline	5.723	129	51983	9.54	ppm		99
28) Isophorone	5.136	82	50094	9.33	ppm		98
29) 2-Nitrophenol	5.200	139	13835	8.79	ppm		85
30) 2,4-Dimethylphenol	5.232	107	28781	9.43	ppm		97
31) Benzoic Acid	5.296	105	19359	8.04	ppm		94
32) bis(2-Chloroethoxy)met...	5.291	93	29089	9.26	ppm		99
33) 2,4-Dichlorophenol	5.376	162	22388	9.17	ppm		96
34) 2,6-Dichlorophenol	5.531	162	22366	9.38	ppm		98
35) 1,3,5-Trichlorobenzene	5.205	180	27214	9.73	ppm		95
36) 1,2,4-Trichlorobenzene	5.430	180	25500	9.85	ppm		97
37) 1,2,3-Trichlorobenzene	5.590	180	24814	9.52	ppm		95
38) Naphthalene	5.483	128	77823	9.48	ppm		99
39) 4-Chloroaniline	5.520	127	32706	9.55	ppm		97
40) 2,3-Dichloroaniline	6.183	161	28880	9.69	ppm		94
41) Caprolactam	5.761	55	11647	9.58	ppm		99
42) Hexachlorobutadiene	5.574	225	15741	10.10	ppm		96
43) 4-Chloro-3-methylphenol	5.873	107	24304	9.04	ppm		93
44) 2-Methylnaphthalene	5.974	141	42179	9.59	ppm		97
45) 1-Methylnaphthalene	6.044	141	48632	9.73	ppm		98
46) Dimethylnaphthalene	6.445	156	48586	9.53	ppm		97
48) Hexachlorocyclopentadiene	6.092	237	12843	10.44	ppm		96
49) 2,4,6-Trichlorophenol	6.188	196	16847	9.31	ppm		97
50) 2,4,5-Trichlorophenol	6.220	196	17904	9.28	ppm		95
52) 2-Chloronaphthalene	6.338	162	49505	9.42	ppm		96
53) Biphenyl	6.316	154	67300	9.37	ppm		97
54) 2-Nitroaniline	6.418	65	23693	9.46	ppm		97
55) Dimethylphthalate	6.557	163	57918	9.49	ppm		98
56) Acenaphthylene	6.674	152	80420	9.48	ppm		99
57) 2,6-Dinitrotoluene	6.610	165	12809	9.35	ppm		97
58) 3-Nitroaniline	6.754	138	14115	9.47	ppm		82
59) Acenaphthene	6.824	153	52059	9.50	ppm		95
60) 2,4-Dinitrophenol	6.856	184	10309	12.63	ppm	#	79
61) 4-Nitrophenol	6.920	109	8679	8.33	ppm		89
62) Dibenzofuran	6.979	168	71349	9.57	ppm		98
63) 2,4-Dinitrotoluene	6.968	165	17626	9.20	ppm		98
64) 2,3,4,6-Tetrachlorophenol	7.096	232	13045	8.66	ppm		95
65) Diethylphthalate	7.187	149	73729	11.16	ppm		99
66) Fluorene	7.305	166	59180	9.36	ppm		99
67) 4-Chlorophenyl-phenyle...	7.299	204	28001	9.49	ppm		93
68) 4-Nitroaniline	7.321	138	15166	9.64	ppm		98
70) 4,6-Dinitro-2-methylph...	7.369	198	8872	7.54	ppm		97
71) n-Nitrosodiphenylamine	7.417	169	42935	9.79	ppm		98
72) 1,2-Diphenylhydrazine	7.460	77	63776	9.39	ppm		97
74) 4-Bromophenyl-phenylether	7.812	248	17456	9.64	ppm		94
75) Hexachlorobenzene	7.898	284	20676	9.88	ppm		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138901.D
Acq On : 20 Jun 2019 2:58 am
Operator : chriss2
Sample : ic6838-10
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 20 10:32:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76) Pentachlorophenol	8.122	266	20124	16.56	ppm	96
77) Phenanthrene	8.357	178	83418	9.63	ppm	98
78) Anthracene	8.421	178	84930	9.66	ppm	99
79) Carbazole	8.624	167	80539	9.70	ppm	99
80) Di-n-butylphthalate	9.116	149	102489	9.50	ppm	99
81) Fluoranthene	9.933	202	91549	9.26	ppm	100
82) Octadecane	8.229	57	36162	9.28	ppm	99
84) Pyrene	10.248	202	95916	9.56	ppm	98
86) Butylbenzylphthalate	11.295	149	44181	9.31	ppm	97
87) Benzo[a]anthracene	12.054	228	89302	9.53	ppm	97
88) 3,3'-Dichlorobenzidine	12.054	252	34373	9.46	ppm	97
89) Chrysene	12.107	228	87591	9.96	ppm	99
90) bis(2-Ethylhexyl)phtha...	12.230	149	59959	9.55	ppm	99
92) Di-n-octylphthalate	13.197	149	105416	9.22	ppm	99
93) Benzo[b]fluoranthene	13.625	252	92219	9.03	ppm	98
94) Benzo[k]fluoranthene	13.662	252	86111	9.82	ppm	99
95) Benzo[a]pyrene	14.057	252	80558	9.28	ppm	98
96) Indeno[1,2,3-cd]pyrene	15.446	276	97365	9.04	ppm	98
97) Dibenz(a,h)acridine	15.185	279	74784	8.99	ppm	99
98) Dibenz[a,h]anthracene	15.473	278	82530	8.93	ppm	97
99) 7,12-Dimethylbenz(a)an...	13.619	256	41221	9.22	ppm	97
100) Benzo[g,h,i]perylene	15.772	276	74478	8.99	ppm	96

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

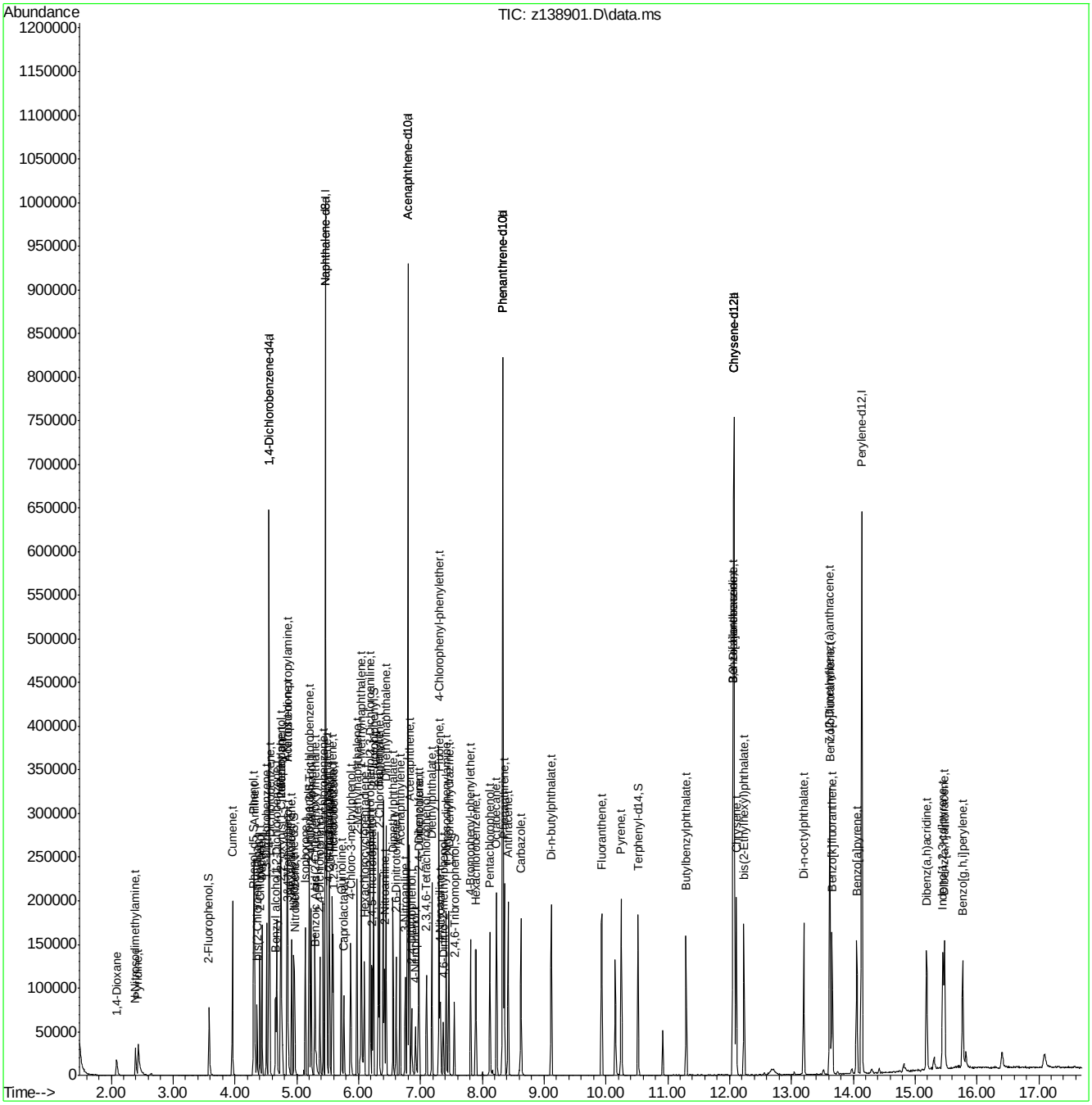
7.6.52

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138901.D
Acq On : 20 Jun 2019 2:58 am
Operator : chriss2
Sample : ic6838-10
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 20 10:32:31 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138902.D
Acq On : 20 Jun 2019 3:25 am
Operator : chriss2
Sample : ic6838-5
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 20 10:34:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	80727	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	291321	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	172317	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	306449	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	276813	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	291396	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	80727	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	306449	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	276813	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	172317	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	291321	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	306449	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	276813	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	10937	4.45	ppm	0.00
Spiked Amount 50.000			Recovery = 8.90%			
8) Phenol-d5	4.302	99	14952	4.45	ppm	0.00
Spiked Amount 50.000			Recovery = 8.90%			
25) Nitrobenzene-d5	4.954	82	14781	4.66	ppm	0.00
Spiked Amount 50.000			Recovery = 9.32%			
51) 2-Fluorobiphenyl	6.242	172	30136	4.66	ppm	0.00
Spiked Amount 50.000			Recovery = 9.32%			
73) 2,4,6-Tribromophenol	7.550	330	4443	4.06	ppm	0.00
Spiked Amount 50.000			Recovery = 8.12%			
85) Terphenyl-d14	10.521	244	30780	4.78	ppm	0.00
Spiked Amount 50.000			Recovery = 9.56%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.085	88	4387	4.48	ppm	98
3) Pyridine	2.443	79	11237	4.39	ppm	97
4) N-Nitrosodimethylamine	2.395	74	6746	4.53	ppm	92
6) Indene	4.740	116	21357	4.89	ppm	95
7) Cumene	3.960	105	33018	4.75	ppm	97
9) Phenol	4.313	94	17190	4.42	ppm	85
10) Aniline	4.313	93	20140	4.82	ppm	85
11) bis(2-Chloroethyl)ether	4.361	93	11695	4.68	ppm	95
12) 2-Chlorophenol	4.404	128	13436	4.75	ppm	97
13) Decane	4.436	43	13412	4.84	ppm	96
14) 1,3-Dichlorobenzene	4.511	146	14569	4.71	ppm	94
15) 1,4-Dichlorobenzene	4.564	146	15584	4.89	ppm	99
16) Benzyl alcohol	4.660	108	7224	4.31	ppm	96
17) 1,2-Dichlorobenzene	4.676	146	14406	4.95	ppm	96
18) Acetophenone	4.847	105	19062	4.66	ppm	90
19) 2-Methylphenol	4.746	108	12503	4.78	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138902.D
Acq On : 20 Jun 2019 3:25 am
Operator : chriss2
Sample : ic6838-5
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 20 10:34:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.751	121	3758	4.74	ppm	91
21) 3&4-Methylphenol	4.858	108	12340	4.51	ppm	92
22) n-Nitroso-di-n-propyla...	4.847	70	9575	4.53	ppm	98
23) Hexachloroethane	4.922	201	5534	4.93	ppm	95
26) Nitrobenzene	4.970	77	15807	4.81	ppm	94
27) Quinoline	5.718	129	26048	4.83	ppm	96
28) Isophorone	5.136	82	24263	4.56	ppm	99
29) 2-Nitrophenol	5.200	139	7302	4.69	ppm	89
30) 2,4-Dimethylphenol	5.232	107	13295	4.40	ppm	90
31) Benzoic Acid	5.291	105	8151	3.42	ppm	94
32) bis(2-Chloroethoxy)met...	5.291	93	14099	4.53	ppm	98
33) 2,4-Dichlorophenol	5.376	162	11021	4.56	ppm	96
34) 2,6-Dichlorophenol	5.531	162	11082	4.70	ppm	97
35) 1,3,5-Trichlorobenzene	5.205	180	13319	4.81	ppm	98
36) 1,2,4-Trichlorobenzene	5.430	180	12451	4.86	ppm	98
37) 1,2,3-Trichlorobenzene	5.590	180	12553	4.86	ppm	96
38) Naphthalene	5.483	128	40035	4.92	ppm	97
39) 4-Chloroaniline	5.520	127	15903	4.69	ppm	99
40) 2,3-Dichloroaniline	6.183	161	13601	4.61	ppm	95
41) Caprolactam	5.755	55	5632	4.68	ppm	93
42) Hexachlorobutadiene	5.574	225	7450	4.83	ppm	95
43) 4-Chloro-3-methylphenol	5.873	107	12116	4.55	ppm	95
44) 2-Methylnaphthalene	5.974	141	20933	4.81	ppm	97
45) 1-Methylnaphthalene	6.044	141	24559	4.96	ppm	94
46) Dimethylnaphthalene	6.445	156	24413	4.84	ppm	97
48) Hexachlorocyclopentadiene	6.092	237	4303	3.56	ppm	93
49) 2,4,6-Trichlorophenol	6.183	196	7908	4.45	ppm	93
50) 2,4,5-Trichlorophenol	6.220	196	8661	4.57	ppm	93
52) 2-Chloronaphthalene	6.338	162	24449	4.74	ppm	94
53) Biphenyl	6.316	154	32976	4.68	ppm	98
54) 2-Nitroaniline	6.418	65	11782	4.79	ppm	97
55) Dimethylphthalate	6.557	163	28925	4.83	ppm	98
56) Acenaphthylene	6.674	152	39144	4.70	ppm	99
57) 2,6-Dinitrotoluene	6.610	165	6105	4.54	ppm	96
58) 3-Nitroaniline	6.754	138	6889	4.71	ppm	89
59) Acenaphthene	6.824	153	25710	4.78	ppm	93
60) 2,4-Dinitrophenol	6.861	184	3772	4.71	ppm	86
61) 4-Nitrophenol	6.920	109	3678	3.60	ppm	91
62) Dibenzofuran	6.979	168	36244	4.95	ppm	94
63) 2,4-Dinitrotoluene	6.968	165	8373	4.45	ppm	100
64) 2,3,4,6-Tetrachlorophenol	7.102	232	6042	4.09	ppm	98
65) Diethylphthalate	7.182	149	43060	6.64	ppm	98
66) Fluorene	7.305	166	29299	4.72	ppm	98
67) 4-Chlorophenyl-phenyle...	7.299	204	14192	4.90	ppm	92
68) 4-Nitroaniline	7.321	138	7368	4.77	ppm	94
70) 4,6-Dinitro-2-methylph...	7.369	198	3492	3.03	ppm	94
71) n-Nitrosodiphenylamine	7.417	169	20991	4.88	ppm	97
72) 1,2-Diphenylhydrazine	7.460	77	30941	4.65	ppm	98
74) 4-Bromophenyl-phenylether	7.812	248	8158	4.60	ppm	99
75) Hexachlorobenzene	7.892	284	10392	5.07	ppm	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138902.D
Acq On : 20 Jun 2019 3:25 am
Operator : chriss2
Sample : ic6838-5
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 20 10:34:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

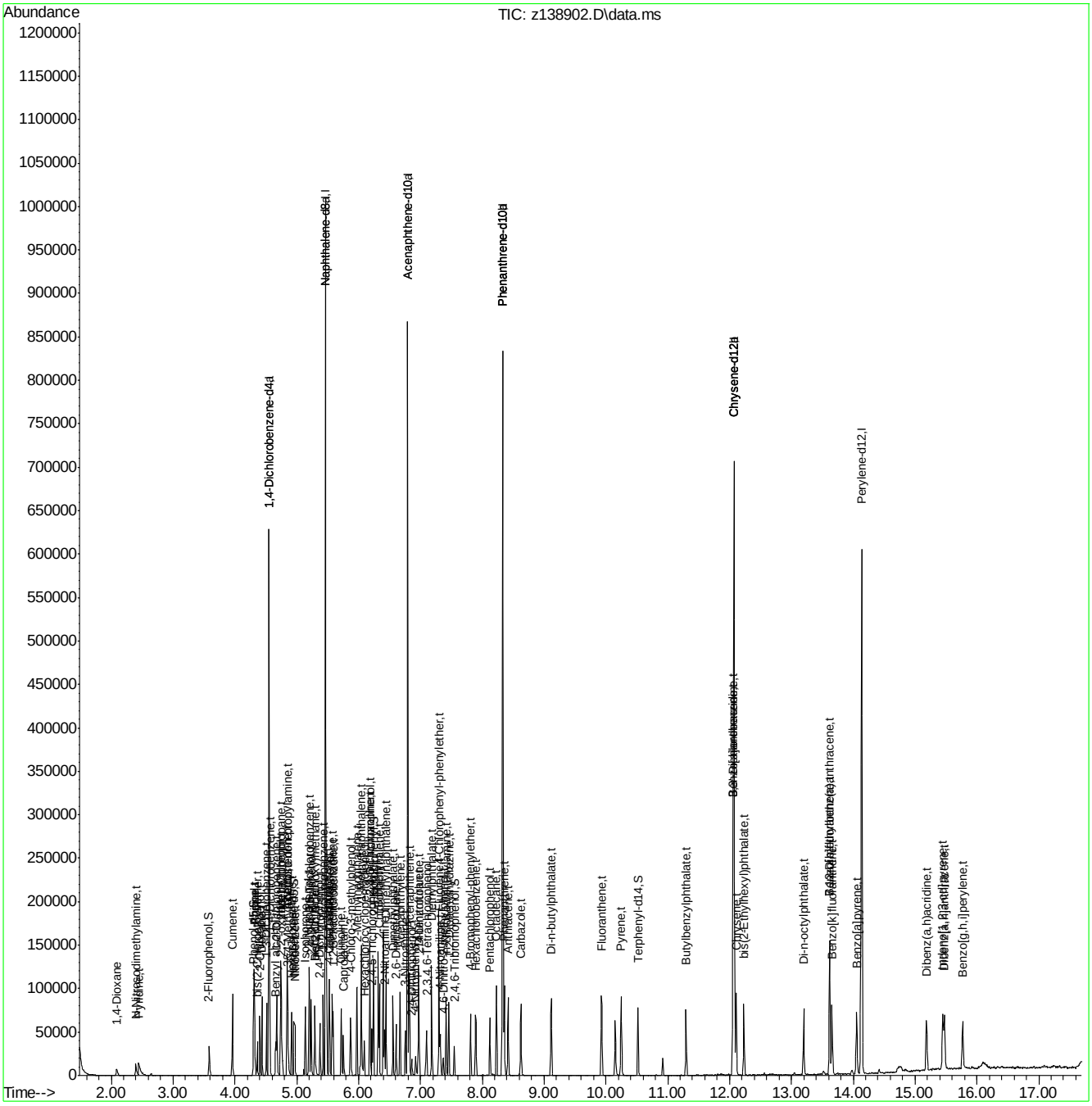
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76) Pentachlorophenol	8.122	266	8303	6.97	ppm	95
77) Phenanthrene	8.357	178	41965	4.94	ppm	98
78) Anthracene	8.416	178	42255	4.90	ppm	99
79) Carbazole	8.624	167	39406	4.85	ppm	99
80) Di-n-butylphthalate	9.116	149	49280	4.66	ppm	99
81) Fluoranthene	9.928	202	45056	4.65	ppm	96
82) Octadecane	8.229	57	17418	4.56	ppm	98
84) Pyrene	10.248	202	48081	4.99	ppm	98
86) Butylbenzylphthalate	11.295	149	20929	4.59	ppm	97
87) Benzo[a]anthracene	12.054	228	44435	4.94	ppm	98
88) 3,3'-Dichlorobenzidine	12.054	252	16333	4.68	ppm	90
89) Chrysene	12.107	228	43409	5.14	ppm	98
90) bis(2-Ethylhexyl)phtha...	12.230	149	27134	4.50	ppm	98
92) Di-n-octylphthalate	13.197	149	45722	4.14	ppm	99
93) Benzo[b]fluoranthene	13.619	252	44043	4.46	ppm	99
94) Benzo[k]fluoranthene	13.657	252	41186	4.86	ppm	96
95) Benzo[a]pyrene	14.052	252	39165	4.67	ppm	98
96) Indeno[1,2,3-cd]pyrene	15.446	276	45596	4.38	ppm	96
97) Dibenz(a,h)acridine	15.185	279	33987	4.23	ppm	99
98) Dibenz[a,h]anthracene	15.473	278	37921	4.25	ppm	98
99) 7,12-Dimethylbenz(a)an...	13.619	256	19965	4.62	ppm	95
100) Benzo[g,h,i]perylene	15.772	276	35787	4.47	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138902.D
Acq On : 20 Jun 2019 3:25 am
Operator : chriss2
Sample : ic6838-5
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 20 10:34:03 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Z138903.D

Manual Integrations APPROVED (compounds with "m" flag)

Nina Pandya 06/21/19 09:40

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:37:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.548	152	82565	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	298065	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	178379	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	317729	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	291335	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	315313	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.548	152	82565	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	317729	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	291335	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	178379	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	298065	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	317729	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	291335	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.587	112	3684	1.46	ppm	0.00
Spiked Amount 50.000			Recovery = 2.92%			
8) Phenol-d5	4.302	99	5686	1.65	ppm	0.00
Spiked Amount 50.000			Recovery = 3.30%			
25) Nitrobenzene-d5	4.954	82	5747	1.77	ppm	0.00
Spiked Amount 50.000			Recovery = 3.54%			
51) 2-Fluorobiphenyl	6.242	172	12114	1.81	ppm	0.00
Spiked Amount 50.000			Recovery = 3.62%			
73) 2,4,6-Tribromophenol	7.550	330	1925	1.70	ppm	0.00
Spiked Amount 50.000			Recovery = 3.40%			
85) Terphenyl-d14	10.521	244	13043	1.92	ppm	0.00
Spiked Amount 50.000			Recovery = 3.84%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.091	88	1951	1.95	ppm	95
3) Pyridine	2.465	79	4593	1.75	ppm	99
4) N-Nitrosodimethylamine	2.401	74	2320	1.52	ppm	92
6) Indene	4.740	116	8348	1.87	ppm	99
7) Cumene	3.960	105	13497	1.90	ppm	94
9) Phenol	4.313	94	6657	1.67	ppm	88
10) Aniline	4.313	93	7848	1.84	ppm	92
11) bis(2-Chloroethyl)ether	4.361	93	5068	1.98	ppm	85
12) 2-Chlorophenol	4.404	128	5122	1.77	ppm	99
13) Decane	4.436	43	5402	1.91	ppm	94
14) 1,3-Dichlorobenzene	4.511	146	6325	2.00	ppm	98
15) 1,4-Dichlorobenzene	4.564	146	6706	2.06	ppm	98
16) Benzyl alcohol	4.660	108	2544m	1.49	ppm	
17) 1,2-Dichlorobenzene	4.676	146	5655	1.90	ppm	92
18) Acetophenone	4.847	105	7614	1.82	ppm	93
19) 2-Methylphenol	4.746	108	4633	1.73	ppm	90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:37:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
20) 2,2'-oxybis(1-Chloropr...	4.756	121	1438	1.77	ppm	#	67
21) 3&4-Methylphenol	4.858	108	4888	1.75	ppm		98
22) n-Nitroso-di-n-propyla...	4.847	70	3571	1.65	ppm		94
23) Hexachloroethane	4.917	201	2201	1.92	ppm		79
26) Nitrobenzene	4.970	77	6354	1.89	ppm		96
27) Quinoline	5.723	129	10125	1.83	ppm		97
28) Isophorone	5.136	82	9904	1.82	ppm		96
29) 2-Nitrophenol	5.200	139	2403	1.51	ppm		79
30) 2,4-Dimethylphenol	5.232	107	5354	1.73	ppm		93
31) Benzoic Acid	5.291	105	2520	1.03	ppm	#	79
32) bis(2-Chloroethoxy)met...	5.291	93	5619	1.77	ppm		98
33) 2,4-Dichlorophenol	5.376	162	4279	1.73	ppm		97
34) 2,6-Dichlorophenol	5.531	162	4214	1.75	ppm		95
35) 1,3,5-Trichlorobenzene	5.205	180	5444	1.92	ppm		94
36) 1,2,4-Trichlorobenzene	5.430	180	5230	1.99	ppm		97
37) 1,2,3-Trichlorobenzene	5.585	180	4804	1.82	ppm		95
38) Naphthalene	5.483	128	16728	2.01	ppm		96
39) 4-Chloroaniline	5.526	127	6171	1.78	ppm		96
40) 2,3-Dichloroaniline	6.183	161	5676	1.88	ppm		94
41) Caprolactam	5.755	55	2109	1.71	ppm		85
42) Hexachlorobutadiene	5.574	225	3036	1.92	ppm		93
43) 4-Chloro-3-methylphenol	5.873	107	4879	1.79	ppm		96
44) 2-Methylnaphthalene	5.974	141	8699	1.95	ppm		98
45) 1-Methylnaphthalene	6.044	141	10204	2.01	ppm		97
46) Dimethylnaphthalene	6.445	156	10029	1.94	ppm		97
49) 2,4,6-Trichlorophenol	6.188	196	3238	1.76	ppm		99
50) 2,4,5-Trichlorophenol	6.220	196	3387	1.73	ppm		92
52) 2-Chloronaphthalene	6.338	162	10845	2.03	ppm		92
53) Biphenyl	6.316	154	13679	1.87	ppm		99
54) 2-Nitroaniline	6.418	65	3162	1.24	ppm		83
55) Dimethylphthalate	6.557	163	12418	2.00	ppm		99
56) Acenaphthylene	6.674	152	16661	1.93	ppm		96
57) 2,6-Dinitrotoluene	6.610	165	2368	1.70	ppm		91
58) 3-Nitroaniline	6.760	138	2235	1.47	ppm		93
59) Acenaphthene	6.824	153	10870	1.95	ppm		95
60) 2,4-Dinitrophenol	6.861	184	675m	0.81	ppm		
61) 4-Nitrophenol	6.925	109	1371	1.29	ppm	#	63
62) Dibenzofuran	6.979	168	14536	1.92	ppm		98
63) 2,4-Dinitrotoluene	6.968	165	3156	1.62	ppm		99
64) 2,3,4,6-Tetrachlorophenol	7.102	232	2218	1.45	ppm		89
65) Diethylphthalate	7.182	149	25930	3.86	ppm		98
66) Fluorene	7.299	166	12047	1.87	ppm		90
67) 4-Chlorophenyl-phenyle...	7.299	204	5960	1.99	ppm		93
68) 4-Nitroaniline	7.321	138	2361	1.48	ppm		92
71) n-Nitrosodiphenylamine	7.417	169	8351	1.87	ppm		96
72) 1,2-Diphenylhydrazine	7.460	77	12779	1.85	ppm		97
74) 4-Bromophenyl-phenylether	7.812	248	3450	1.88	ppm		88
75) Hexachlorobenzene	7.898	284	4439	2.09	ppm		84
76) Pentachlorophenol	8.122	266	3129	2.54	ppm		91
77) Phenanthrene	8.357	178	18094	2.06	ppm		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:37:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
78) Anthracene	8.421	178	17298	1.94	ppm	100
79) Carbazole	8.624	167	16254	1.93	ppm	98
80) Di-n-butylphthalate	9.116	149	20533	1.87	ppm	97
81) Fluoranthene	9.933	202	18188	1.81	ppm	99
82) Octadecane	8.229	57	7105	1.79	ppm	95
84) Pyrene	10.248	202	19734	1.95	ppm	96
86) Butylbenzylphthalate	11.295	149	8319	1.73	ppm	97
87) Benzo[a]anthracene	12.054	228	18674	1.97	ppm	95
88) 3,3'-Dichlorobenzidine	12.054	252	5801	1.58	ppm	95
89) Chrysene	12.107	228	17257	1.94	ppm	98
90) bis(2-Ethylhexyl)phtha...	12.236	149	11114	1.75	ppm	98
92) Di-n-octylphthalate	13.197	149	18282	1.53	ppm	100
93) Benzo[b]fluoranthene	13.619	252	19286	1.81	ppm	97
94) Benzo[k]fluoranthene	13.657	252	17578	1.92	ppm	98
95) Benzo[a]pyrene	14.052	252	15960	1.76	ppm	96
96) Indeno[1,2,3-cd]pyrene	15.446	276	19378	1.72	ppm	96
97) Dibenz(a,h)acridine	15.185	279	14718	1.69	ppm	95
98) Dibenz[a,h]anthracene	15.473	278	16849	1.74	ppm	98
99) 7,12-Dimethylbenz(a)an...	13.619	256	7634	1.63	ppm	97
100) Benzo[g,h,i]perylene	15.767	276	15412	1.78	ppm	99

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

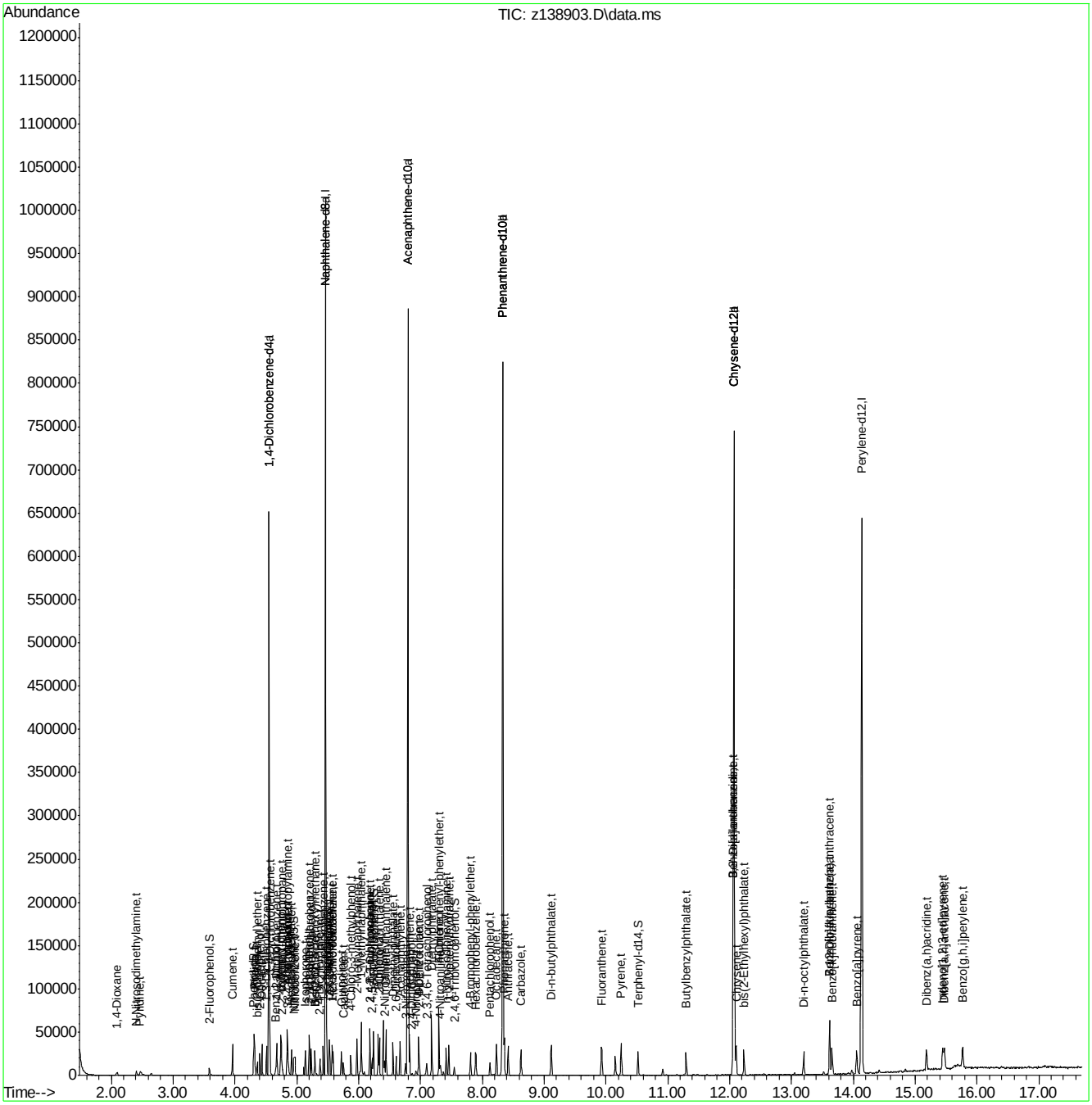
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7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:37:50 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



MZ6838.M Thu Jun 20 12:27:49 2019 Page: 4

Manual Integration Approval Summary

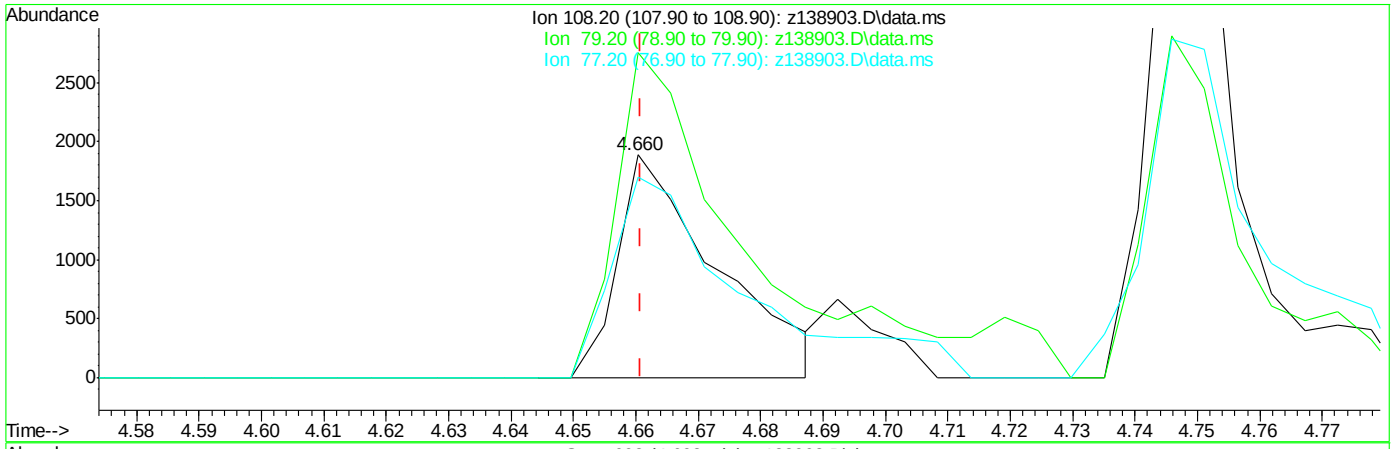
Sample Number:	EZ6838-IC6838	**Method:**	SW846 8270D
Lab FileID:	Z138903.D	**Analyst approved:**	06/20/19 12:32 Ying Li
Injection Time:	06/20/19 03:52	**Supervisor approved:**	06/21/19 09:40 Nina Pandya

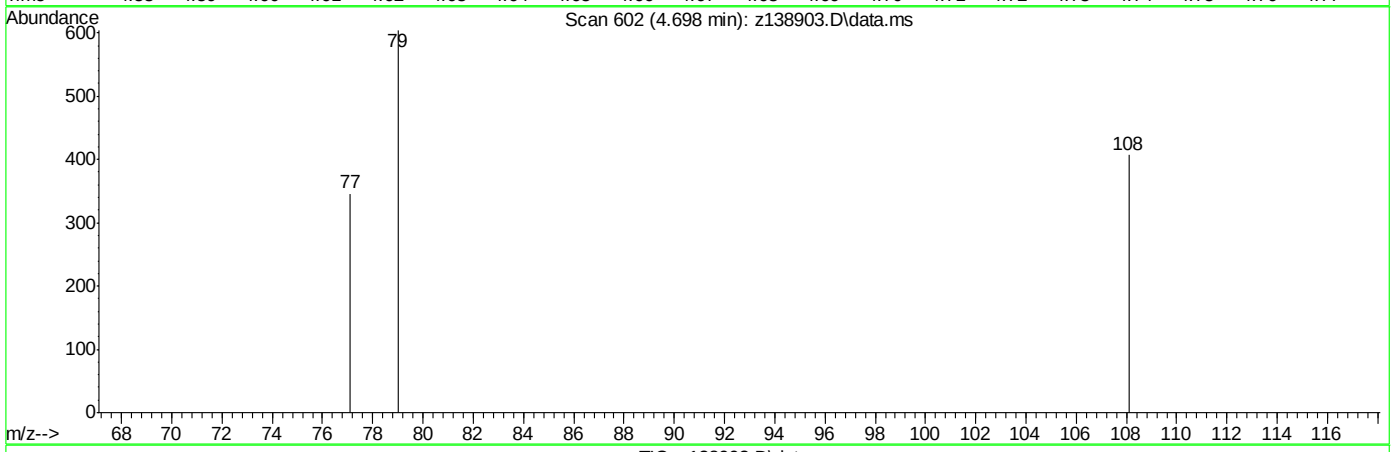
Parameter	CAS	Sig#	R.T. (min.)	Reason
Benzyl Alcohol	100-51-6		4.66	Missed peak
2,4-Dinitrophenol	51-28-5		6.86	Missed peak

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:34:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration





TIC: z138903.D\data.ms

(16) Benzyl alcohol (t)

4.660min (-0.000) 1.23ppm

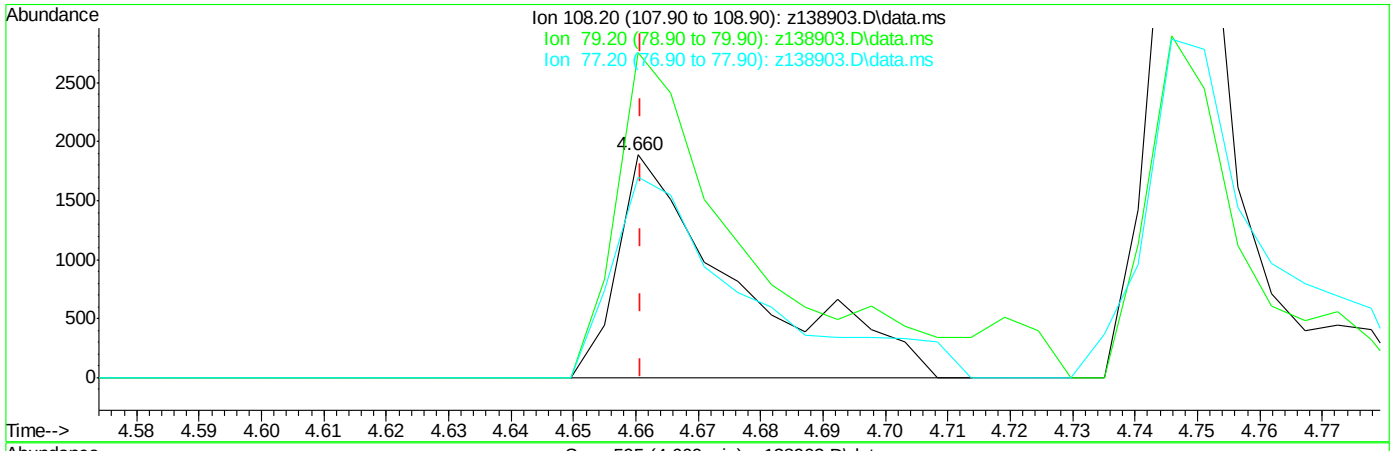
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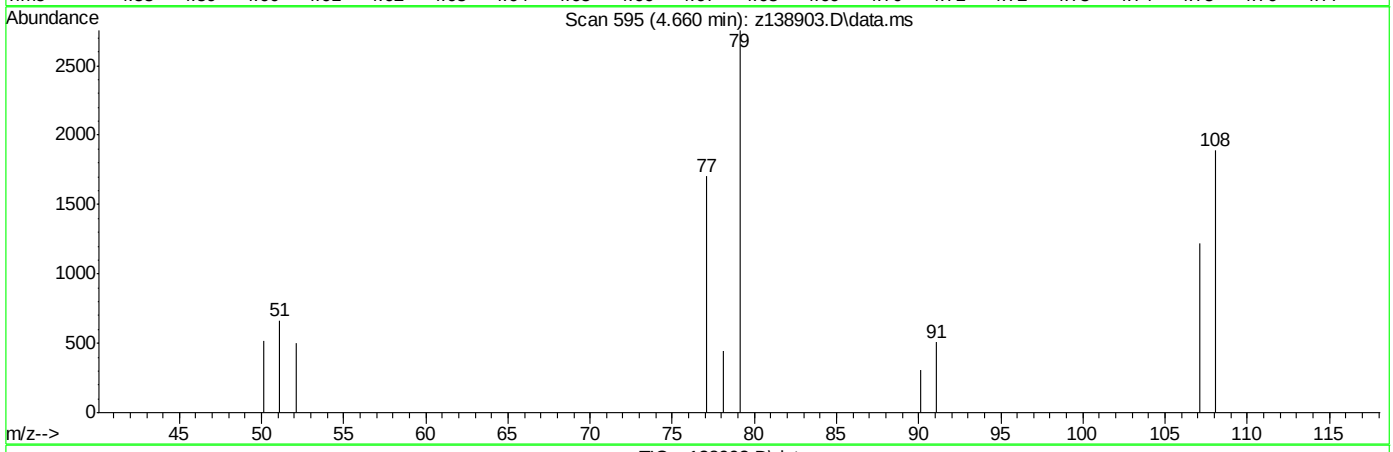
Ion	Exp%	Act%
108.20	100	100
79.20	140.80	144.94
77.20	91.30	89.76
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:34:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration





TIC: z138903.D\data.ms

(16) Benzyl alcohol (t)

4.660min (-0.000) 1.49ppm m

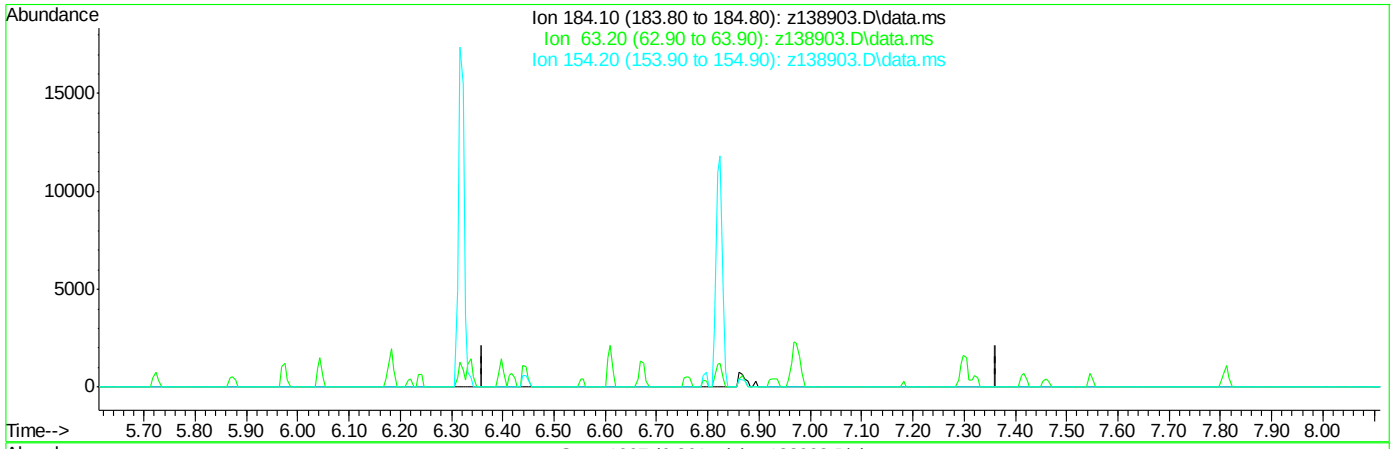
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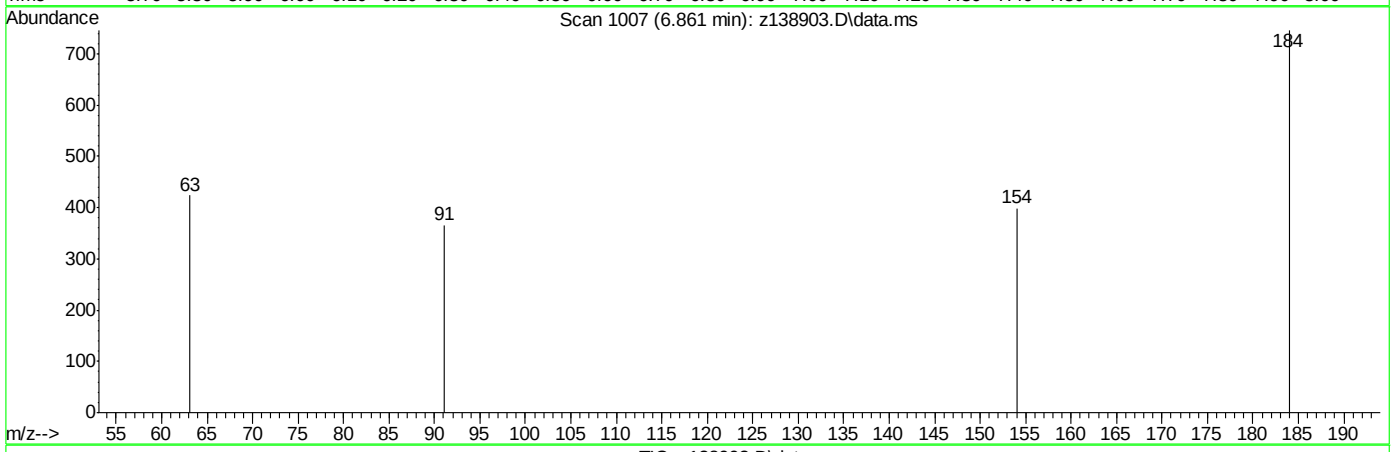
Ion	Exp%	Act%
108.20	100	100
79.20	140.80	146.00
77.20	91.30	90.14
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:34:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration





TIC: z138903.D\data.ms

(60) 2,4-Dinitrophenol (t)

6.862min (-6.862) 0.00ppm

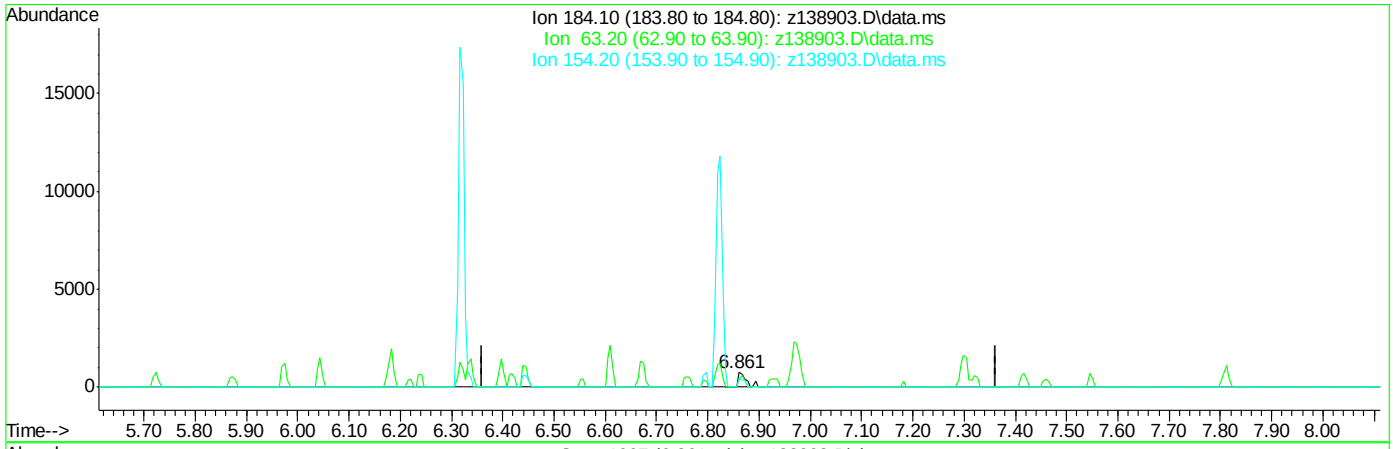
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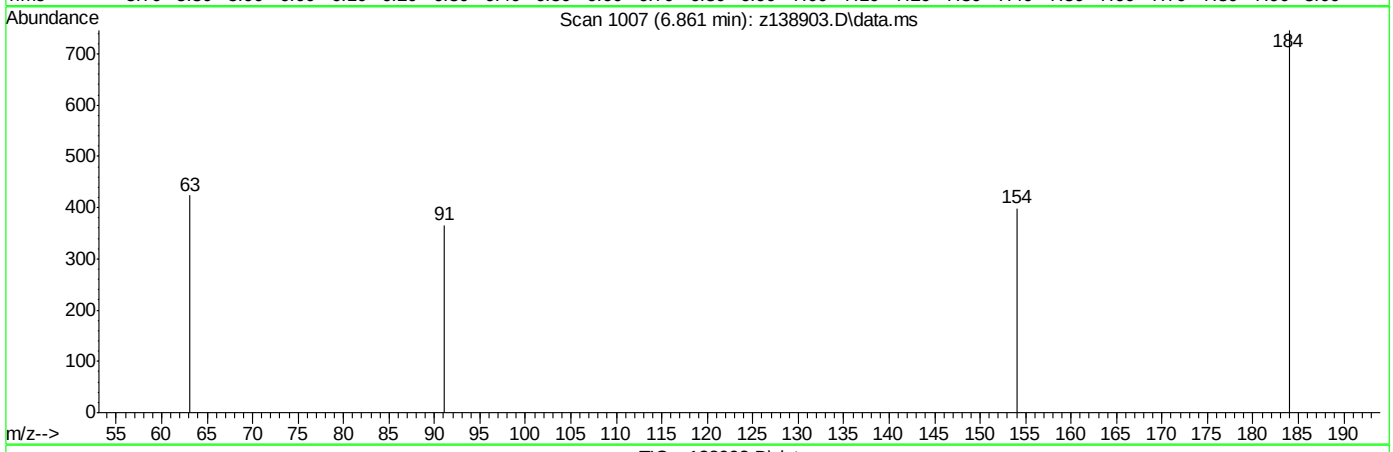
Ion	Exp%	Act%
184.10	100	0.00
63.20	74.20	0.00#
154.20	23.60	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138903.D
Acq On : 20 Jun 2019 3:52 am
Operator : chriss2
Sample : ic6838-2
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 20 10:34:16 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration





TIC: z138903.D\data.ms

(60) 2,4-Dinitrophenol (t)

6.861min (-0.001) 0.81ppm m

response 675

Ion	Exp%	Act%
184.10	100	100
63.20	74.20	56.84
154.20	23.60	53.49
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138904.D
Acq On : 20 Jun 2019 4:19 am
Operator : chriss2
Sample : ic6838-1
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 20 10:42:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.554	152	81578	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	295968	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	178928	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	313534	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	282388	40.00	ppm	-0.01
91) Perylene-d12	14.138	264	304391	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.554	152	81578	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	313534	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	282388	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	178928	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	295968	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	313534	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	282388	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.587	112	1755	0.71	ppm	0.00
Spiked Amount 50.000			Recovery = 1.42%			
8) Phenol-d5	4.308	99	2690	0.79	ppm	0.00
Spiked Amount 50.000			Recovery = 1.58%			
25) Nitrobenzene-d5	4.960	82	2616	0.81	ppm	0.00
Spiked Amount 50.000			Recovery = 1.62%			
51) 2-Fluorobiphenyl	6.242	172	6488	0.97	ppm	0.00
Spiked Amount 50.000			Recovery = 1.94%			
73) 2,4,6-Tribromophenol	7.551	330	665	0.59	ppm	0.00
Spiked Amount 50.000			Recovery = 1.18%			
85) Terphenyl-d14	10.521	244	5813	0.88	ppm	0.00
Spiked Amount 50.000			Recovery = 1.76%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.096	88	615	0.62	ppm	# 82
3) Pyridine	2.491	79	1599	0.62	ppm	77
4) N-Nitrosodimethylamine	2.411	74	1030	0.68	ppm	85
6) Indene	4.740	116	3808	0.86	ppm	87
7) Cumene	3.961	105	6358	0.90	ppm	99
9) Phenol	4.313	94	3305	0.84	ppm	95
10) Aniline	4.318	93	3605	0.85	ppm	94
11) bis(2-Chloroethyl)ether	4.361	93	2213	0.88	ppm	94
12) 2-Chlorophenol	4.409	128	2329	0.82	ppm	95
13) Decane	4.436	43	2840	1.01	ppm	84
14) 1,3-Dichlorobenzene	4.511	146	2919	0.93	ppm	95
15) 1,4-Dichlorobenzene	4.564	146	3103	0.96	ppm	96
16) Benzyl alcohol	4.666	108	838	0.50	ppm	# 53
17) 1,2-Dichlorobenzene	4.676	146	2488	0.85	ppm	94
18) Acetophenone	4.847	105	3091	0.75	ppm	91
19) 2-Methylphenol	4.751	108	2054	0.78	ppm	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138904.D
Acq On : 20 Jun 2019 4:19 am
Operator : chriss2
Sample : ic6838-1
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 20 10:42:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
21) 3&4-Methylphenol	4.863	108	2209	0.80	ppm		89
22) n-Nitroso-di-n-propyla...	4.847	70	1713	0.80	ppm		86
23) Hexachloroethane	4.917	201	1105	0.97	ppm		81
26) Nitrobenzene	4.970	77	2865	0.86	ppm		98
27) Quinoline	5.723	129	4462	0.81	ppm		99
28) Isophorone	5.141	82	4613	0.85	ppm		91
29) 2-Nitrophenol	5.200	139	1135	0.72	ppm		83
30) 2,4-Dimethylphenol	5.232	107	2437	0.79	ppm		92
32) bis(2-Chloroethoxy)met...	5.291	93	2492	0.79	ppm		99
33) 2,4-Dichlorophenol	5.382	162	1852	0.75	ppm		82
34) 2,6-Dichlorophenol	5.531	162	1803	0.75	ppm		98
35) 1,3,5-Trichlorobenzene	5.205	180	2516	0.89	ppm		93
36) 1,2,4-Trichlorobenzene	5.430	180	2319	0.89	ppm		98
37) 1,2,3-Trichlorobenzene	5.590	180	2443	0.93	ppm		95
38) Naphthalene	5.483	128	8311	1.01	ppm		97
39) 4-Chloroaniline	5.526	127	2633	0.76	ppm		87
40) 2,3-Dichloroaniline	6.183	161	2464	0.82	ppm		96
41) Caprolactam	5.756	55	842	0.69	ppm		82
42) Hexachlorobutadiene	5.574	225	1393	0.89	ppm		88
43) 4-Chloro-3-methylphenol	5.873	107	1885	0.70	ppm		98
44) 2-Methylnaphthalene	5.975	141	3711	0.84	ppm		93
45) 1-Methylnaphthalene	6.044	141	4535	0.90	ppm		96
46) Dimethylnaphthalene	6.445	156	4727	0.92	ppm		94
49) 2,4,6-Trichlorophenol	6.188	196	1459	0.79	ppm		81
50) 2,4,5-Trichlorophenol	6.220	196	1444	0.73	ppm		87
52) 2-Chloronaphthalene	6.338	162	4648	0.87	ppm		96
53) Biphenyl	6.316	154	6393	0.87	ppm		97
54) 2-Nitroaniline	6.418	65	1441	0.56	ppm		80
55) Dimethylphthalate	6.557	163	5546	0.89	ppm		98
56) Acenaphthylene	6.674	152	6962	0.81	ppm		99
57) 2,6-Dinitrotoluene	6.610	165	787	0.56	ppm		71
58) 3-Nitroaniline	6.760	138	1059	0.70	ppm		96
59) Acenaphthene	6.819	153	4791	0.86	ppm		92
62) Dibenzofuran	6.979	168	6586	0.87	ppm		97
63) 2,4-Dinitrotoluene	6.974	165	1263	0.65	ppm	#	52
64) 2,3,4,6-Tetrachlorophenol	7.102	232	990	0.64	ppm		90
65) Diethylphthalate	7.182	149	18680	2.77	ppm		99
66) Fluorene	7.305	166	5473	0.85	ppm		93
67) 4-Chlorophenyl-phenyle...	7.299	204	2855	0.95	ppm		83
68) 4-Nitroaniline	7.326	138	942	0.59	ppm		90
71) n-Nitrosodiphenylamine	7.417	169	4005	0.91	ppm		97
72) 1,2-Diphenylhydrazine	7.460	77	5883	0.86	ppm		95
74) 4-Bromophenyl-phenylether	7.818	248	1325	0.73	ppm		82
75) Hexachlorobenzene	7.892	284	1933	0.92	ppm		91
76) Pentachlorophenol	8.122	266	1185	0.97	ppm		93
77) Phenanthrene	8.357	178	8949	1.03	ppm		96
78) Anthracene	8.421	178	8442	0.96	ppm		99
79) Carbazole	8.624	167	7391	0.89	ppm		92
80) Di-n-butylphthalate	9.116	149	10090	0.93	ppm		99
81) Fluoranthene	9.933	202	8579	0.87	ppm		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138904.D
Acq On : 20 Jun 2019 4:19 am
Operator : chriss2
Sample : ic6838-1
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 20 10:42:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
82) Octadecane	8.229	57	2924	0.75	ppm	96
84) Pyrene	10.248	202	9423	0.96	ppm	95
86) Butylbenzylphthalate	11.301	149	3820	0.82	ppm	96
87) Benzo[a]anthracene	12.054	228	9621	1.05	ppm	95
88) 3,3'-Dichlorobenzidine	12.059	252	2680	0.75	ppm	93
89) Chrysene	12.107	228	8312	0.96	ppm	93
90) bis(2-Ethylhexyl)phtha...	12.230	149	5022	0.82	ppm	94
92) Di-n-octylphthalate	13.197	149	8026	0.70	ppm	96
93) Benzo[b]fluoranthene	13.619	252	9252	0.90	ppm	99
94) Benzo[k]fluoranthene	13.657	252	8256	0.93	ppm	90
95) Benzo[a]pyrene	14.052	252	7852	0.90	ppm	96
96) Indeno[1,2,3-cd]pyrene	15.446	276	8961	0.82	ppm	88
97) Dibenz(a,h)acridine	15.185	279	6807	0.81	ppm	98
98) Dibenz[a,h]anthracene	15.473	278	7929	0.85	ppm	98
99) 7,12-Dimethylbenz(a)an...	13.619	256	3394	0.75	ppm	90
100) Benzo[g,h,i]perylene	15.767	276	7029	0.84	ppm	92

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

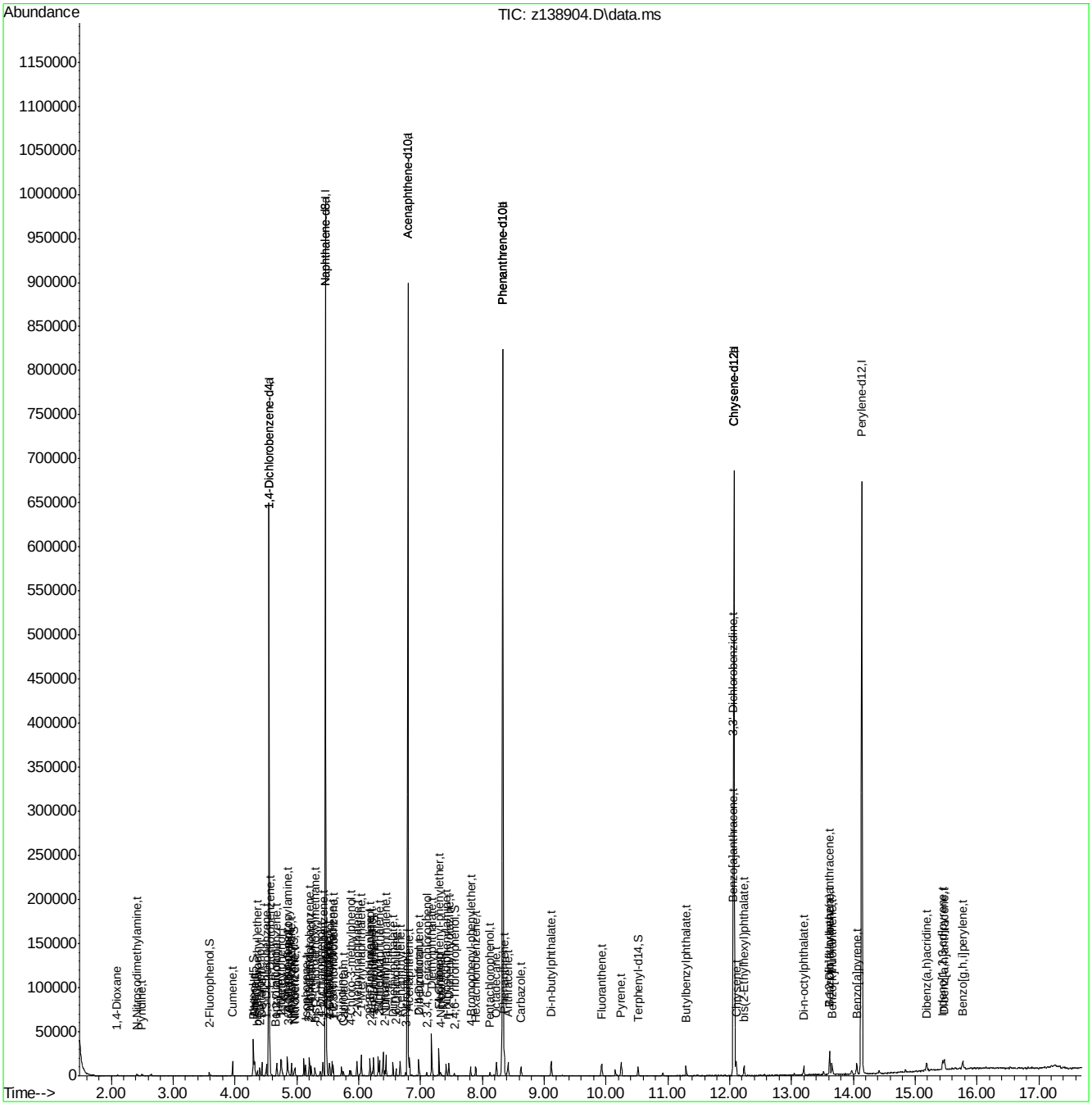
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7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138904.D
Acq On : 20 Jun 2019 4:19 am
Operator : chriss2
Sample : ic6838-1
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 20 10:42:54 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 10:22:18 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138905.D
Acq On : 20 Jun 2019 4:46 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 20 11:33:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.554	152	94977	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	329671	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	176079	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	319361	40.00	ppm	0.00
83) Chrysene-d12	12.075	240	283765	40.00	ppm	0.00
91) Perylene-d12	14.137	264	230402	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.554	152	94977	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	319361	40.00	ppm	0.00
107) Chrysene-d12a	12.075	240	283765	40.00	ppm	0.00
109) Acenaphthene-d10a	6.797	164	176079	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	329671	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	319361	40.00	ppm	0.00
115) Chrysene-d12b	12.075	240	283765	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
4) N-Nitrosodimethylamine	2.395	74	73183	46.06	ppm	97
11) bis(2-Chloroethyl)ether	4.356	93	137004	48.23	ppm	94
14) 1,3-Dichlorobenzene	4.511	146	166624	46.78	ppm	99
15) 1,4-Dichlorobenzene	4.564	146	175754	47.40	ppm	98
17) 1,2-Dichlorobenzene	4.676	146	161207	48.43	ppm	98
20) 2,2'-oxybis(1-Chloropr...	4.751	121	49289	54.81	ppm	96
22) n-Nitroso-di-n-propyla...	4.847	70	111462	48.16	ppm	98
23) Hexachloroethane	4.922	201	60404	46.84	ppm	94
26) Nitrobenzene	4.970	77	172754	47.90	ppm	96
28) Isophorone	5.136	82	292874	51.05	ppm	100
32) bis(2-Chloroethoxy)met...	5.291	93	167643	50.82	ppm	100
36) 1,2,4-Trichlorobenzene	5.430	180	135555	47.38	ppm	99
38) Naphthalene	5.483	128	453504	49.24	ppm	99
42) Hexachlorobutadiene	5.574	225	86276	50.11	ppm	97
52) 2-Chloronaphthalene	6.338	162	262404	51.38	ppm	100
55) Dimethylphthalate	6.562	163	300964	50.43	ppm	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138905.D
Acq On : 20 Jun 2019 4:46 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 20 11:33:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration

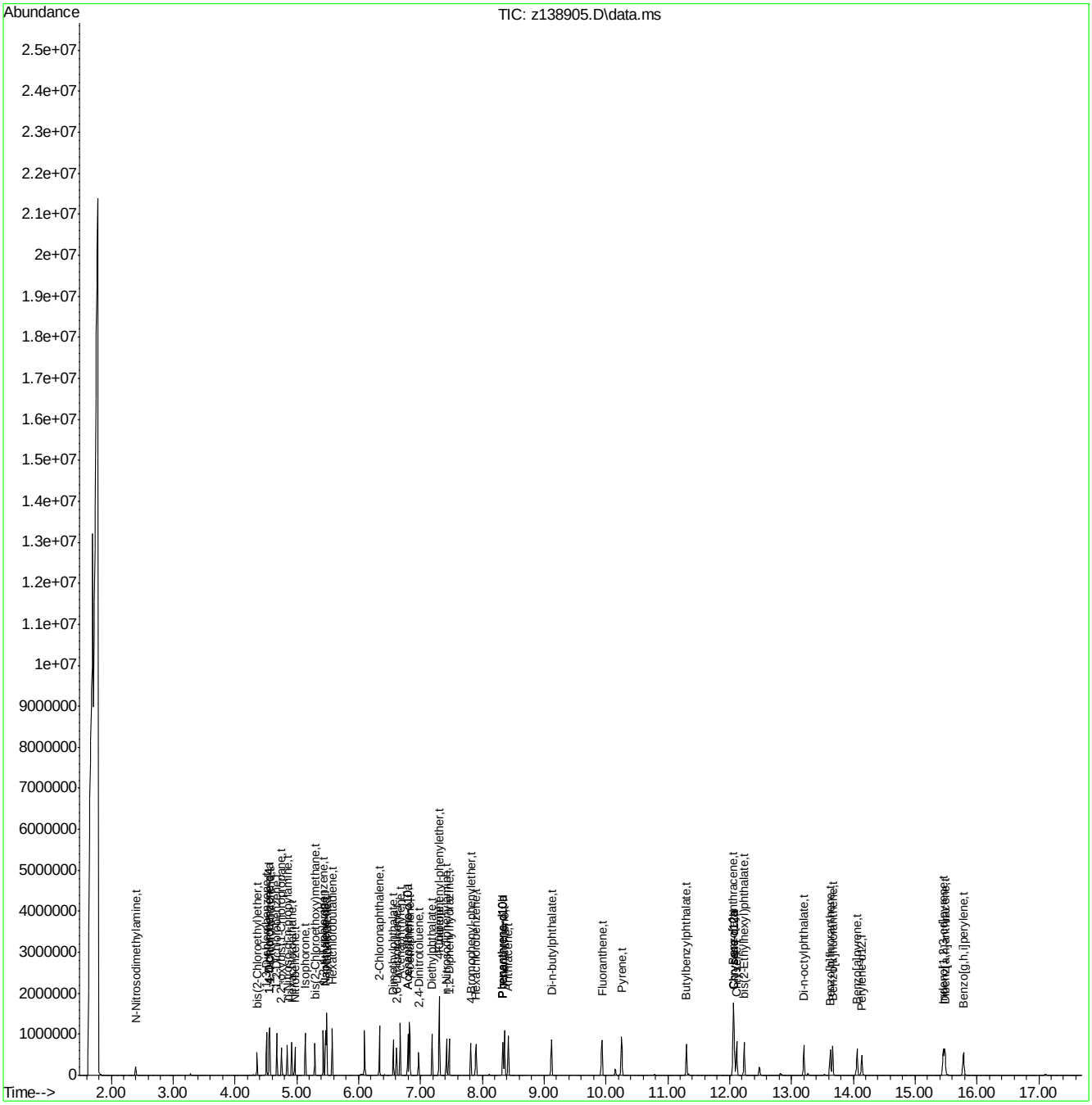
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
56) Acenaphthylene	6.674	152	422707	51.83	ppm	100
57) 2,6-Dinitrotoluene	6.616	165	65258	52.65	ppm	99
59) Acenaphthene	6.824	153	267677	50.22	ppm	94
63) 2,4-Dinitrotoluene	6.968	165	81928	46.58	ppm	91
65) Diethylphthalate	7.187	149	313085	47.41	ppm	99
66) Fluorene	7.305	166	308740	50.23	ppm	98
67) 4-Chlorophenyl-phenyle...	7.299	204	144183	49.07	ppm	97
71) n-Nitrosodiphenylamine	7.422	169	207034	46.92	ppm	99
72) 1,2-Diphenylhydrazine	7.465	77	334954	50.06	ppm	96
74) 4-Bromophenyl-phenylether	7.818	248	85499	48.42	ppm	98
75) Hexachlorobenzene	7.898	284	97805	45.52	ppm	99
77) Phenanthrene	8.363	178	411933	46.10	ppm	99
78) Anthracene	8.421	178	408205	45.51	ppm	99
80) Di-n-butylphthalate	9.121	149	477782	44.19	ppm	99
81) Fluoranthene	9.938	202	434698	44.51	ppm	100
84) Pyrene	10.254	202	445450	45.85	ppm	98
86) Butylbenzylphthalate	11.301	149	199250	45.14	ppm	96
87) Benzo[a]anthracene	12.059	228	386344	42.03	ppm	98
89) Chrysene	12.113	228	364866	42.38	ppm	99
90) bis(2-Ethylhexyl)phtha...	12.236	149	257061	44.13	ppm	99
92) Di-n-octylphthalate	13.203	149	424680	53.32	ppm	99
93) Benzo[b]fluoranthene	13.630	252	339407	45.93	ppm	94
94) Benzo[k]fluoranthene	13.667	252	341441	51.78	ppm	99
95) Benzo[a]pyrene	14.063	252	322268	51.12	ppm	99
96) Indeno[1,2,3-cd]pyrene	15.457	276	436345	57.11	ppm	99
98) Dibenz[a,h]anthracene	15.484	278	353595	54.00	ppm	99
100) Benzo[g,h,i]perylene	15.783	276	351624	59.21	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138905.D
Acq On : 20 Jun 2019 4:46 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 20 11:33:24 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration



SGS JC89788

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138906.D
Acq On : 20 Jun 2019 5:13 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 20 11:39:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	105624	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	434727	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	212858	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	370975	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	301645	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	275069	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	105624	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	370975	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	301645	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	212858	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	434727	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	370975	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	301645	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.096	88	58771	49.57	ppm	95
6) Indene	4.740	116	305843	55.51	ppm	99
7) Cumene	3.961	105	439736	49.94	ppm	98
13) Decane	4.441	43	170441	48.39	ppm	100
18) Acetophenone	4.842	105	250113	49.71	ppm	96
27) Quinoline	5.718	129	341145	43.99	ppm	99
40) 2,3-Dichloroaniline	6.183	161	161920	38.31	ppm	99
41) Caprolactam	5.766	55	67740	40.19	ppm	97
45) 1-Methylnaphthalene	6.044	141	289813	39.64	ppm	98
46) Dimethylnaphthalene	6.445	156	304249	41.07	ppm	97
48) Hexachlorocyclopentadiene	6.092	237	62057	48.49	ppm	98
53) Biphenyl	6.322	154	417639	49.92	ppm	100
82) Octadecane	8.234	57	228548	52.47	ppm	99
99) 7,12-Dimethylbenz(a)an...	13.619	256	114486	30.09	ppm	100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138906.D
Acq On : 20 Jun 2019 5:13 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 20 11:39:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration

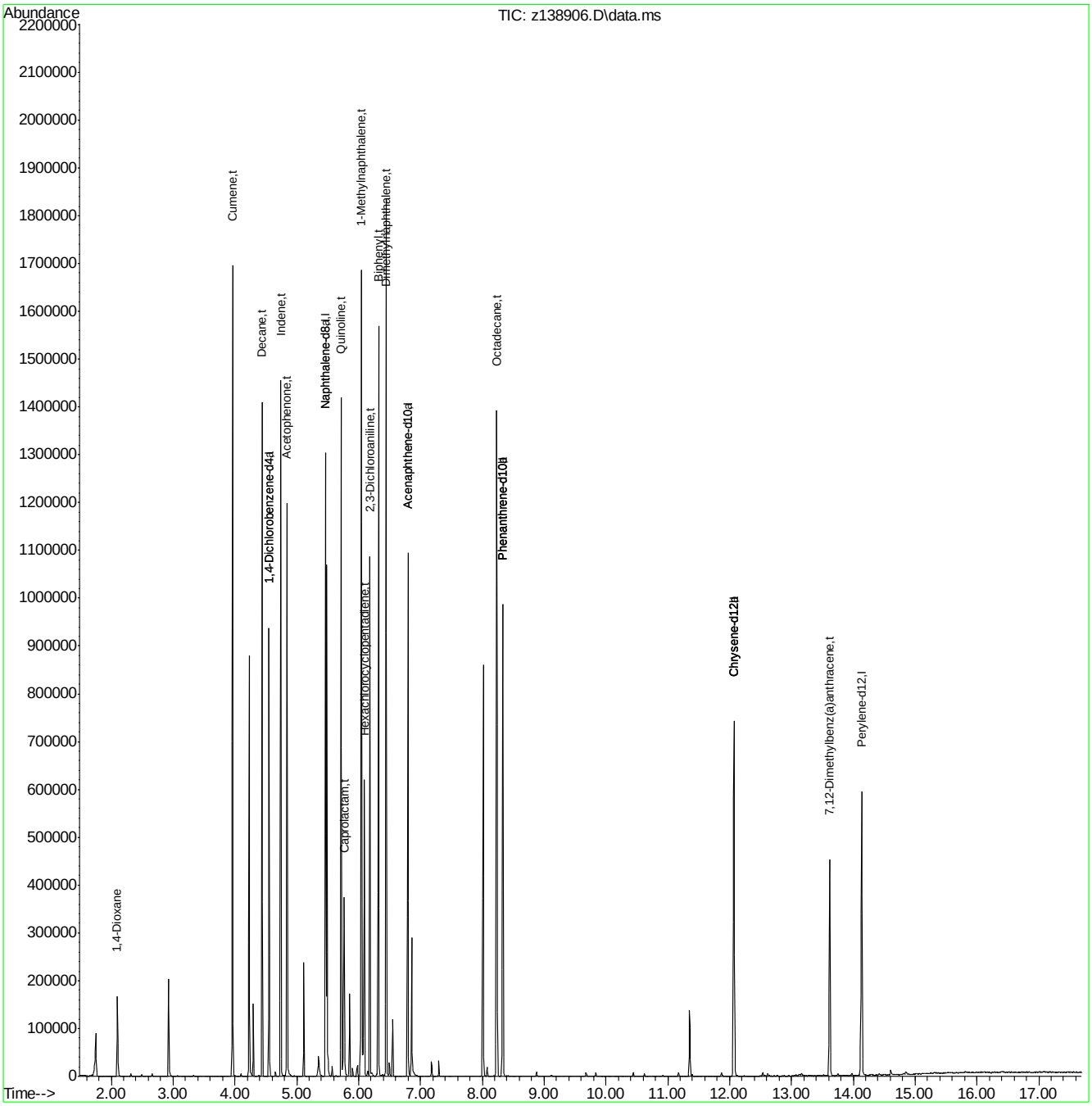
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138906.D
Acq On : 20 Jun 2019 5:13 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 20 11:39:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:23:00 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138907.D
Acq On : 20 Jun 2019 5:40 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 20 11:44:30 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:40:41 2019
Response via : Initial Calibration

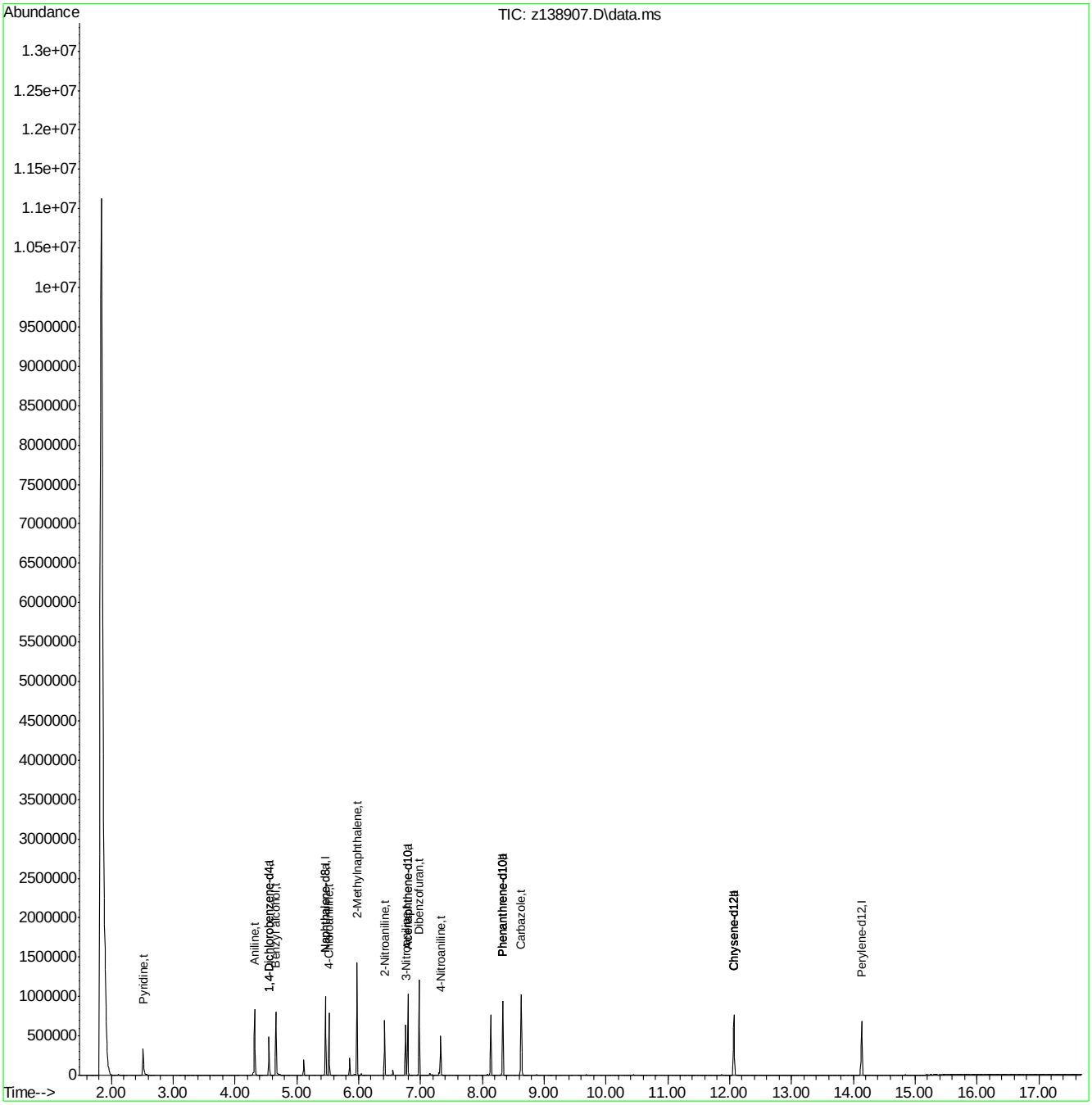
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	76341	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	320342	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	193588	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	361498	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	310965	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	318797	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	76341	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	361498	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	310965	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	193588	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	320342	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	361498	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	310965	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
3) Pyridine	2.513	79	134207	57.93	ppm	96
10) Aniline	4.318	93	214512	56.53	ppm	# 55
16) Benzyl alcohol	4.660	108	97660	66.25	ppm	95
39) 4-Chloroaniline	5.520	127	175953	49.29	ppm	97
44) 2-Methylnaphthalene	5.975	141	238472	51.08	ppm	99
54) 2-Nitroaniline	6.418	65	93336	39.00	ppm	92
58) 3-Nitroaniline	6.760	138	76770	50.68	ppm	90
62) Dibenzofuran	6.979	168	401487	49.76	ppm	97
68) 4-Nitroaniline	7.331	138	77403	46.97	ppm	100
79) Carbazole	8.630	167	460358	48.52	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138907.D
Acq On : 20 Jun 2019 5:40 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 20 11:44:30 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:40:41 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138908.D
Acq On : 20 Jun 2019 6:07 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 20 12:08:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:05:16 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.554	152	125119	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	441637	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	243354	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	430759	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	340700	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	302265	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.554	152	125119	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	430759	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	340700	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	243354	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	441637	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	430759	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	340700	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
9) Phenol	4.313	94	268453	47.65	ppm	# 66
12) 2-Chlorophenol	4.404	128	225509	54.34	ppm	98
19) 2-Methylphenol	4.746	108	195619	51.72	ppm	98
21) 3&4-Methylphenol	4.858	108	207665	52.35	ppm	98
29) 2-Nitrophenol	5.200	139	113622	52.38	ppm	88
30) 2,4-Dimethylphenol	5.232	107	186982	43.43	ppm	97
31) Benzoic Acid	5.349	105	159589	47.54	ppm	100
33) 2,4-Dichlorophenol	5.376	162	178975	52.10	ppm	98
34) 2,6-Dichlorophenol	5.531	162	178413	53.10	ppm	98
43) 4-Chloro-3-methylphenol	5.868	107	193642	51.77	ppm	99
49) 2,4,6-Trichlorophenol	6.183	196	133008	56.52	ppm	99
50) 2,4,5-Trichlorophenol	6.215	196	139181	55.90	ppm	96
60) 2,4-Dinitrophenol	6.856	184	56232	53.79	ppm	# 76
61) 4-Nitrophenol	6.920	109	74298	54.47	ppm	92
64) 2,3,4,6-Tetrachlorophenol	7.102	232	112328	60.96	ppm	99
70) 4,6-Dinitro-2-methylph...	7.369	198	79756	49.17	ppm	94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138908.D
Acq On : 20 Jun 2019 6:07 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 20 12:08:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:05:16 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
76) Pentachlorophenol	8.122	266	77823	49.35	ppm	98

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

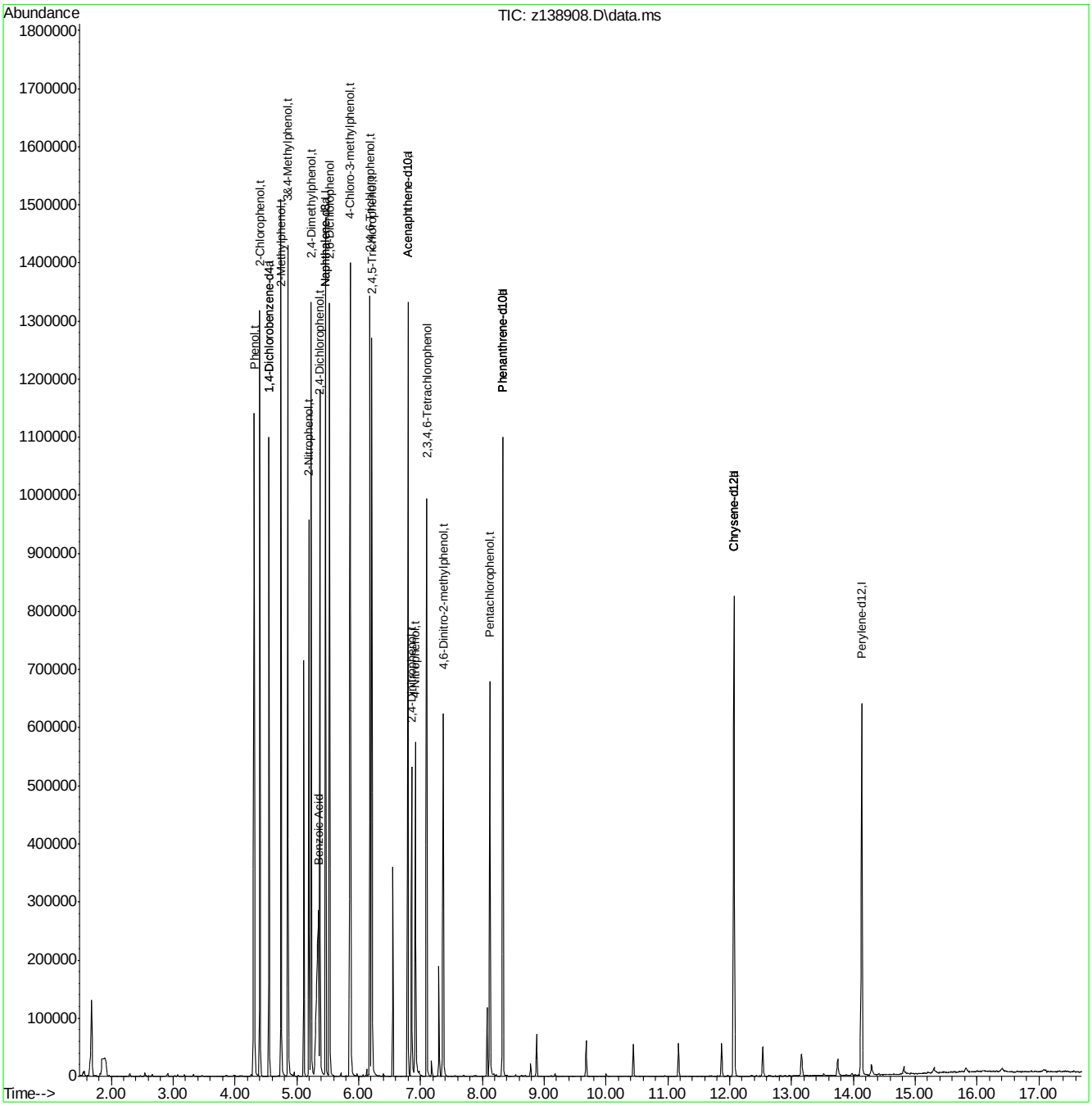
7.6.59

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138908.D
Acq On : 20 Jun 2019 6:07 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 20 12:08:12 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:05:16 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138909.D
Acq On : 20 Jun 2019 6:34 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 20 12:01:53 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:59:05 2019
Response via : Initial Calibration

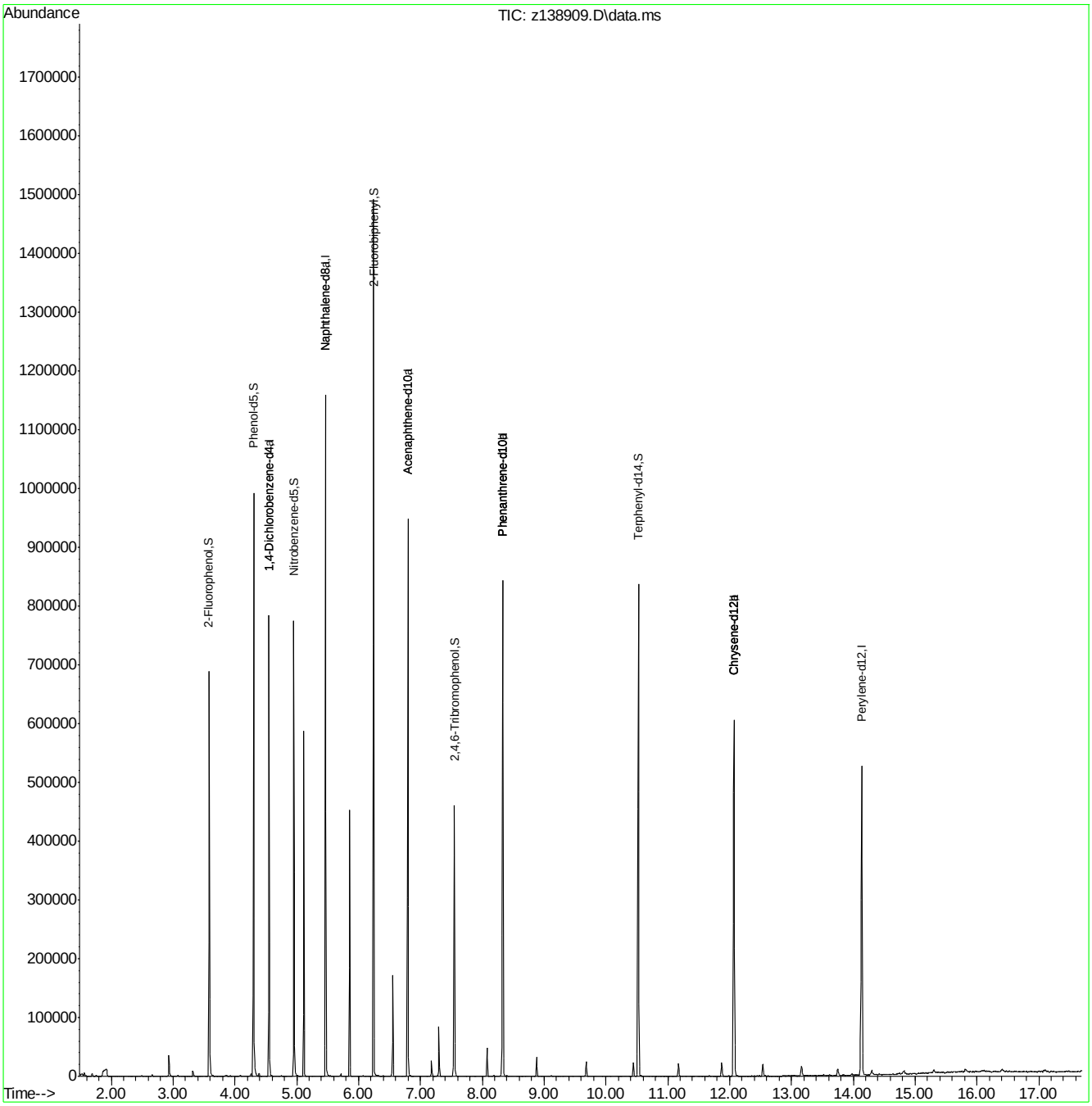
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.553	152	90792	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	338486	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	183355	40.00	ppm	0.00
69) Phenanthrene-d10	8.330	188	321210	40.00	ppm	0.00
83) Chrysene-d12	12.070	240	247577	40.00	ppm	-0.01
91) Perylene-d12	14.137	264	254984	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.553	152	90792	40.00	ppm	0.00
103) Phenanthrene-d10a	8.330	188	321210	40.00	ppm	0.00
107) Chrysene-d12a	12.070	240	247577	40.00	ppm	-0.01
109) Acenaphthene-d10a	6.797	164	183355	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	338486	40.00	ppm	0.00
113) Phenanthrene-d10b	8.330	188	321210	40.00	ppm	0.00
115) Chrysene-d12b	12.070	240	247577	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	136556	54.53	ppm	0.00
Spiked Amount 50.000			Recovery = 109.06%			
8) Phenol-d5	4.302	99	177064	50.32	ppm	0.00
Spiked Amount 50.000			Recovery = 100.64%			
25) Nitrobenzene-d5	4.954	82	171098	48.52	ppm	0.00
Spiked Amount 50.000			Recovery = 97.04%			
51) 2-Fluorobiphenyl	6.242	172	325551	49.01	ppm	0.00
Spiked Amount 50.000			Recovery = 98.02%			
73) 2,4,6-Tribromophenol	7.550	330	52480	48.34	ppm	0.00
Spiked Amount 50.000			Recovery = 96.68%			
85) Terphenyl-d14	10.526	244	330458	58.64	ppm	0.00
Spiked Amount 50.000			Recovery = 117.28%			
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138909.D
Acq On : 20 Jun 2019 6:34 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 20 12:01:53 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:59:05 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138910.D
Acq On : 20 Jun 2019 7:01 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 20 11:57:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:40:41 2019
Response via : Initial Calibration

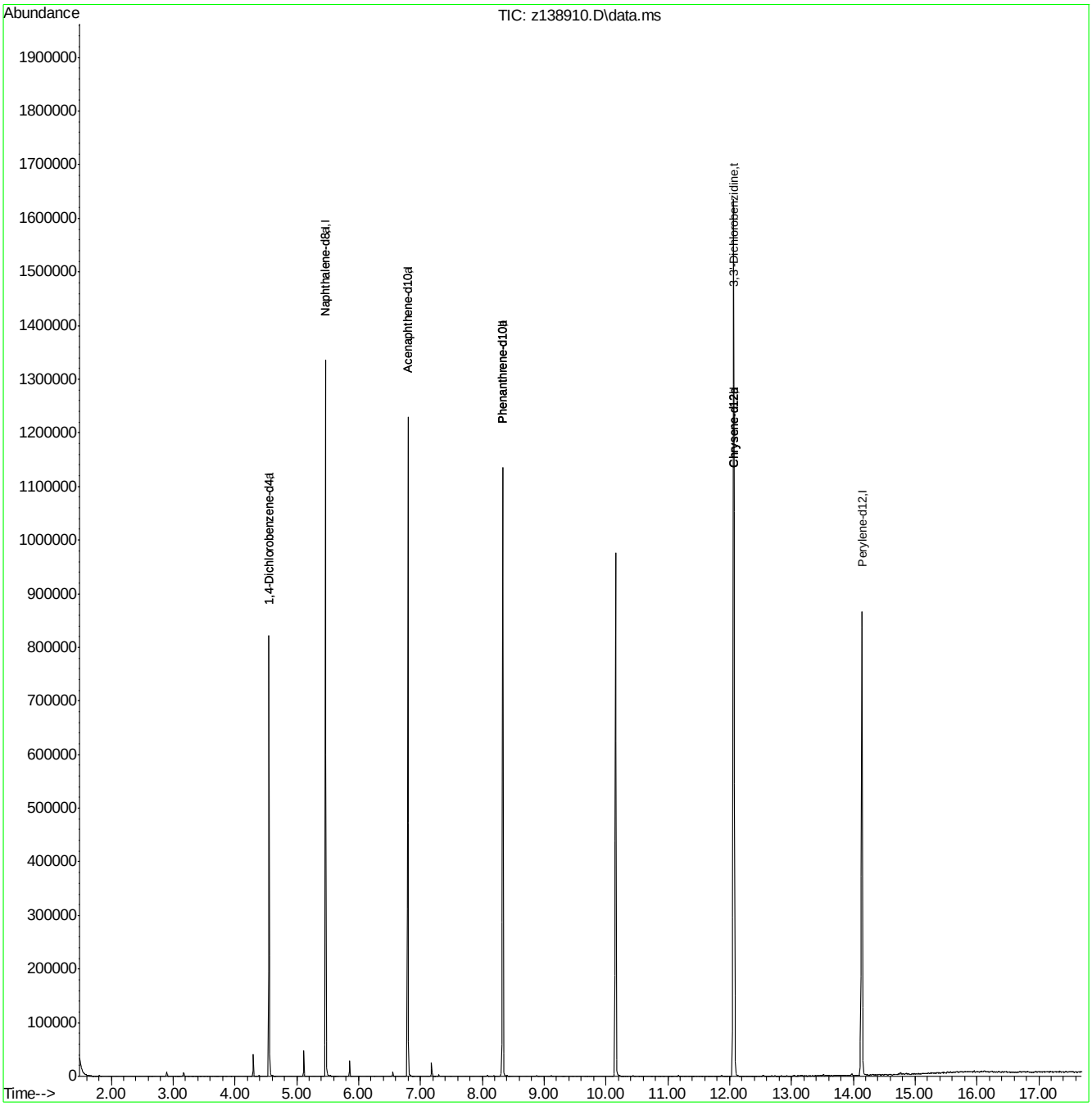
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.554	152	107795	40.00	ppm	0.00
24) Naphthalene-d8	5.467	136	386201	40.00	ppm	0.00
47) Acenaphthene-d10	6.797	164	219560	40.00	ppm	0.00
69) Phenanthrene-d10	8.331	188	432114	40.00	ppm	0.00
83) Chrysene-d12	12.076	240	432191	40.00	ppm	0.00
91) Perylene-d12	14.143	264	436313	40.00	ppm	0.00
101) 1,4-Dichlorobenzene-d4a	4.554	152	107795	40.00	ppm	0.00
103) Phenanthrene-d10a	8.331	188	432114	40.00	ppm	0.00
107) Chrysene-d12a	12.076	240	432191	40.00	ppm	0.00
109) Acenaphthene-d10a	6.797	164	219560	40.00	ppm	0.00
111) Naphthalene-d8a	5.467	136	386201	40.00	ppm	0.00
113) Phenanthrene-d10b	8.331	188	432114	40.00	ppm	0.00
115) Chrysene-d12b	12.076	240	432191	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
88) 3,3'-Dichlorobenzidine	12.065	252	238152	46.78	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\ez6838\
Data File : z138910.D
Acq On : 20 Jun 2019 7:01 am
Operator : chriss2
Sample : icv6838-50
Misc : op20426,ez6838,1000,,,1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 20 11:57:19 2019
Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 11:40:41 2019
Response via : Initial Calibration



MZ6838.M Thu Jun 20 12:28:03 2019 Page: 2

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138956.d
Acq On : 21 Jun 2019 1:32 pm
Operator : angelar
Sample : cc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:31:53 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.538	152	64518	40.00	ppm	-0.02
24) Naphthalene-d8	5.451	136	247175	40.00	ppm	-0.02
47) Acenaphthene-d10	6.781	164	137853	40.00	ppm	-0.02
69) Phenanthrene-d10	8.315	188	277461	40.00	ppm	-0.02
83) Chrysene-d12	12.054	240	284816	40.00	ppm	-0.03
91) Perylene-d12	14.116	264	261963	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.538	152	64518	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.315	188	277461	40.00	ppm	-0.01
107) Chrysene-d12a	12.054	240	284816	40.00	ppm	0.00
109) Acenaphthene-d10a	6.781	164	137853	40.00	ppm	-0.01
111) Naphthalene-d8a	5.451	136	247175	40.00	ppm	-0.02
113) Phenanthrene-d10b	8.315	188	277461	40.00	ppm	#-0.01
115) Chrysene-d12b	12.054	240	284816	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	3.576	112	74805	42.04	ppm	0.00
Spiked Amount 50.000			Recovery = 84.08%			
8) Phenol-d5	4.297	99	123087	49.23	ppm	0.00
Spiked Amount 50.000			Recovery = 98.46%			
25) Nitrobenzene-d5	4.938	82	141298	54.87	ppm	-0.02
Spiked Amount 50.000			Recovery = 109.74%			
51) 2-Fluorobiphenyl	6.226	172	288153	57.69	ppm	-0.02
Spiked Amount 50.000			Recovery = 115.38%			
73) 2,4,6-Tribromophenol	7.535	330	43355	46.23	ppm	-0.02
Spiked Amount 50.000			Recovery = 92.46%			
85) Terphenyl-d14	10.499	244	337589	52.08	ppm	-0.03
Spiked Amount 50.000			Recovery = 104.16%			
104) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	2.080	88	41947	57.93	ppm	96
3) Pyridine	2.497	79	115203	58.84	ppm	98
4) N-Nitrosodimethylamine	2.529	74	66515	61.63	ppm	98
9) Phenol	4.308	94	145837	50.20	ppm	75
10) Aniline	4.297	93	152436	47.54	ppm #	65
11) bis(2-Chloroethyl)ether	4.345	93	96003	49.76	ppm	95
12) 2-Chlorophenol	4.393	128	101719	47.54	ppm	97
14) 1,3-Dichlorobenzene	4.495	146	114538	47.34	ppm	99
15) 1,4-Dichlorobenzene	4.548	146	117560	46.67	ppm	99
16) Benzyl alcohol	4.644	108	68706	55.15	ppm	92
17) 1,2-Dichlorobenzene	4.660	146	112662	49.82	ppm	99
18) Acetophenone	4.831	105	151560	49.31	ppm	98
19) 2-Methylphenol	4.741	108	100168	51.36	ppm	100
20) 2,2'-oxybis(1-Chloropr...	4.735	121	33023	54.06	ppm #	84
21) 3&4-Methylphenol	4.853	108	101341	49.54	ppm	89
22) n-Nitroso-di-n-propyla...	4.837	70	81831	52.05	ppm	96
23) Hexachloroethane	4.906	201	43968	50.19	ppm	96
26) Nitrobenzene	4.954	77	128062	47.36	ppm	97
28) Isophorone	5.125	82	219880	51.12	ppm	99
29) 2-Nitrophenol	5.184	139	55483	45.70	ppm	89
30) 2,4-Dimethylphenol	5.227	107	119500	49.59	ppm	94
32) bis(2-Chloroethoxy)met...	5.280	93	121714	49.21	ppm	98
33) 2,4-Dichlorophenol	5.366	162	92051	47.88	ppm	99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138956.d
Acq On : 21 Jun 2019 1:32 pm
Operator : angelar
Sample : cc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:31:53 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

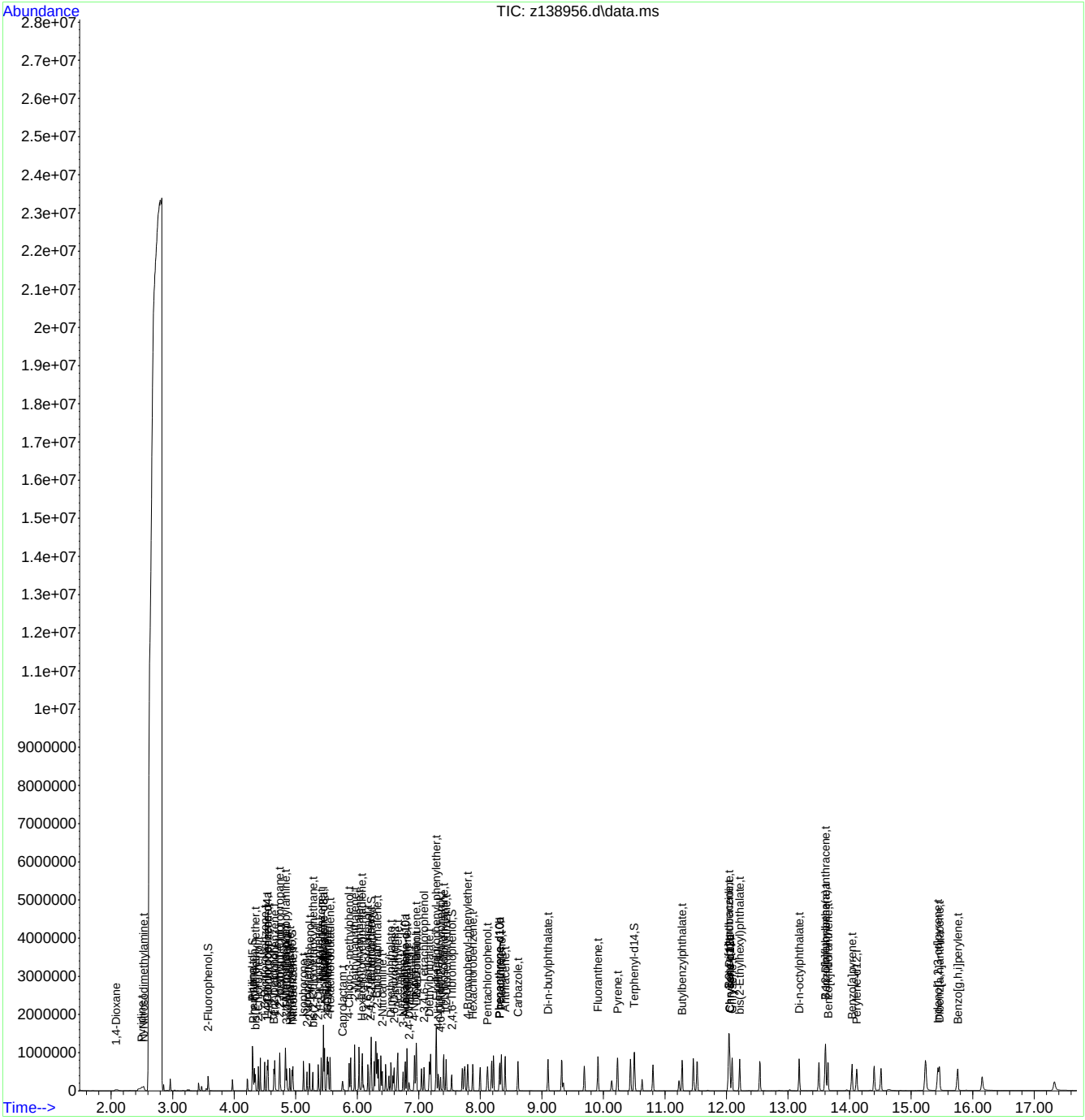
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
34) 2,6-Dichlorophenol	5.521	162	87671	46.62	ppm	96
36) 1,2,4-Trichlorobenzene	5.414	180	102731	47.89	ppm	99
38) Naphthalene	5.467	128	321436	46.55	ppm	99
39) 4-Chloroaniline	5.510	127	131957	47.91	ppm	99
41) Caprolactam	5.761	55	48787	50.91	ppm	95
42) Hexachlorobutadiene	5.558	225	62267	48.24	ppm	98
43) 4-Chloro-3-methylphenol	5.868	107	104419	49.88	ppm	95
44) 2-Methylnaphthalene	5.959	141	192432	53.42	ppm	99
45) 1-Methylnaphthalene	6.028	141	188366	45.31	ppm	98
48) Hexachlorocyclopentadiene	6.076	237	41915	50.11	ppm	96
49) 2,4,6-Trichlorophenol	6.172	196	68089	51.08	ppm	99
50) 2,4,5-Trichlorophenol	6.215	196	75039	53.20	ppm	100
52) 2-Chloronaphthalene	6.322	162	222385	55.62	ppm	98
53) Biphenyl	6.306	154	268111	49.48	ppm	99
54) 2-Nitroaniline	6.407	65	70572	41.41	ppm	99
55) Dimethylphthalate	6.546	163	236511	50.62	ppm	99
56) Acenaphthylene	6.658	152	330508	51.76	ppm	100
57) 2,6-Dinitrotoluene	6.600	165	54602	56.27	ppm	98
58) 3-Nitroaniline	6.744	138	58652	54.37	ppm	95
59) Acenaphthene	6.808	153	214799	51.48	ppm	95
60) 2,4-Dinitrophenol	6.845	184	28251	48.45	ppm	87
61) 4-Nitrophenol	6.926	109	49359	63.88	ppm	88
62) Dibenzofuran	6.963	168	303195	52.77	ppm	96
63) 2,4-Dinitrotoluene	6.958	165	78287	56.85	ppm	94
64) 2,3,4,6-Tetrachlorophenol	7.086	232	65096	62.37	ppm	97
65) Diethylphthalate	7.171	149	263936	51.05	ppm	100
66) Fluorene	7.289	166	248770	51.70	ppm	99
67) 4-Chlorophenyl-phenyle...	7.283	204	118539	51.53	ppm	91
68) 4-Nitroaniline	7.316	138	61442	52.36	ppm	97
70) 4,6-Dinitro-2-methylph...	7.353	198	41057	40.25	ppm	96
71) n-Nitrosodiphenylamine	7.406	169	210618	54.94	ppm	100
72) 1,2-Diphenylhydrazine	7.444	77	283332	48.74	ppm	97
74) 4-Bromophenyl-phenylether	7.796	248	73298	47.78	ppm	95
75) Hexachlorobenzene	7.876	284	83792	44.89	ppm	100
76) Pentachlorophenol	8.111	266	37289	37.44	ppm	98
77) Phenanthrene	8.341	178	361964	46.62	ppm	99
78) Anthracene	8.405	178	373072	47.88	ppm	99
79) Carbazole	8.614	167	341992	46.96	ppm	99
80) Di-n-butylphthalate	9.100	149	448020	47.69	ppm	99
81) Fluoranthene	9.912	202	415828	49.01	ppm	98
84) Pyrene	10.227	202	431347	44.23	ppm	99
86) Butylbenzylphthalate	11.279	149	209244	47.23	ppm	94
87) Benzo[a]anthracene	12.038	228	397004	43.03	ppm	98
88) 3,3'-Dichlorobenzidine	12.043	252	146568	43.69	ppm	99
89) Chrysene	12.091	228	367275	42.50	ppm	99
90) bis(2-Ethylhexyl)phtha...	12.214	149	266338	45.55	ppm	99
92) Di-n-octylphthalate	13.181	149	466991	51.57	ppm	99
93) Benzo[b]fluoranthene	13.609	252	384013	45.71	ppm	99
94) Benzo[k]fluoranthene	13.651	252	344401	45.94	ppm	100
95) Benzo[a]pyrene	14.041	252	348320	48.60	ppm	98
96) Indeno[1,2,3-cd]pyrene	15.436	276	407577	46.91	ppm	98
98) Dibenz[a,h]anthracene	15.462	278	347112	46.62	ppm	99
99) 7,12-Dimethylbenz(a)an...	13.609	256	169977	46.92	ppm	99
100) Benzo[g,h,i]perylene	15.756	276	348852	51.66	ppm	98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138956.d
Acq On : 21 Jun 2019 1:32 pm
Operator : angelar
Sample : cc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:31:53 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138957.d
Acq On : 21 Jun 2019 1:59 pm
Operator : angelar
Sample : cc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:37:40 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

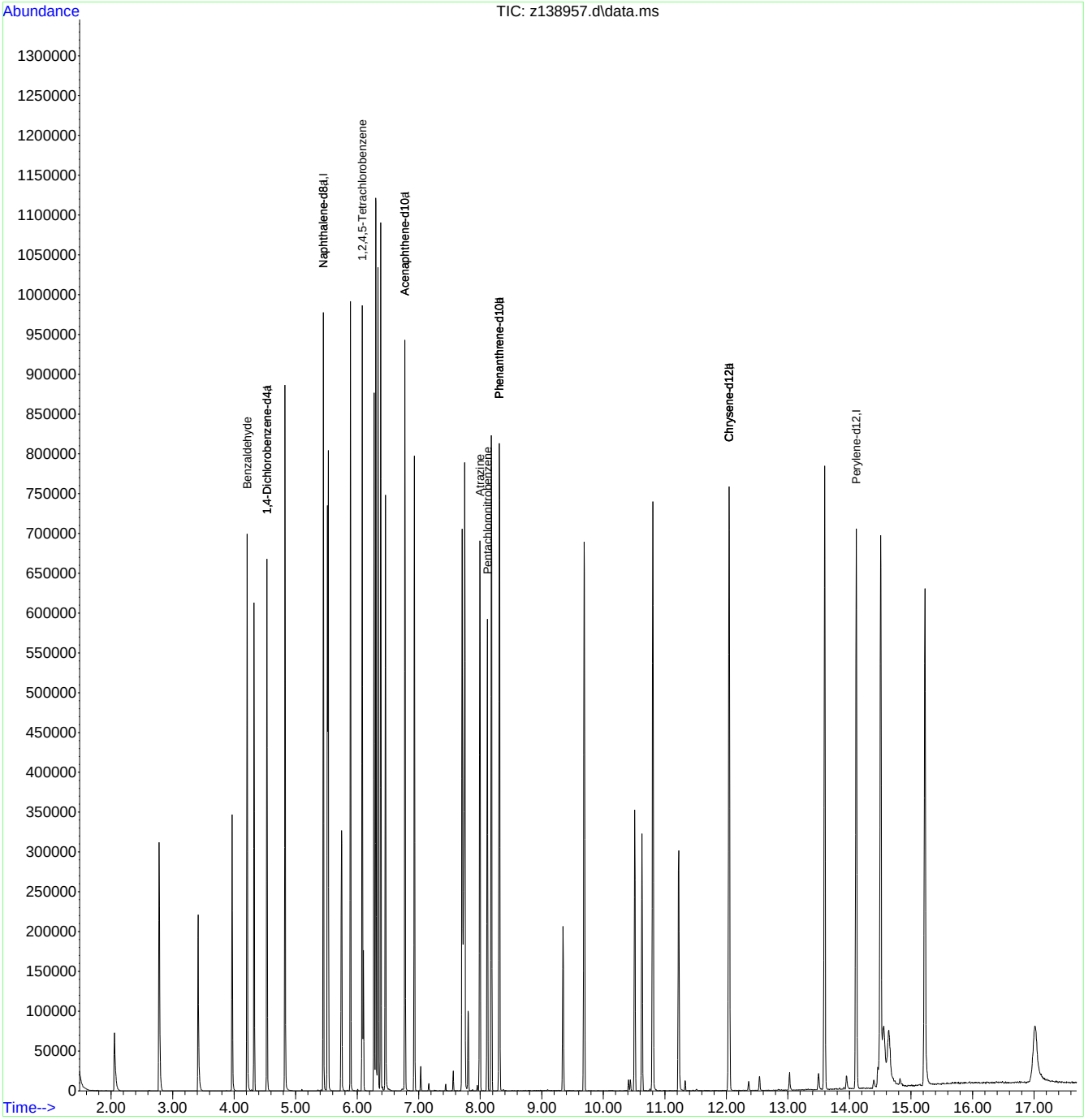
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.532	152	75978	40.00	ppm	-0.02
24) Naphthalene-d8	5.451	136	281821	40.00	ppm	-0.02
47) Acenaphthene-d10	6.776	164	157199	40.00	ppm	-0.02
69) Phenanthrene-d10	8.309	188	320220	40.00	ppm	-0.03
83) Chrysene-d12	12.043	240	335317	40.00	ppm	-0.04
91) Perylene-d12	14.111	264	327581	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.532	152	75978	40.00	ppm	-0.02
103) Phenanthrene-d10a	8.309	188	320220	40.00	ppm	-0.02
107) Chrysene-d12a	12.043	240	335317	40.00	ppm	0.00
109) Acenaphthene-d10a	6.776	164	157199	40.00	ppm	-0.02
111) Naphthalene-d8a	5.451	136	281821	40.00	ppm	-0.02
113) Phenanthrene-d10b	8.309	188	320220	40.00	ppm	#-0.02
115) Chrysene-d12b	12.043	240	335317	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
102) Benzaldehyde	4.212	105	100006	48.10	ppm	95
106) Atrazine	7.994	215	43143	57.47	ppm	97
110) 1,2,4,5-Tetrachloroben...	6.081	216	117662	53.73	ppm	99
114) Pentachloronitrobenzene	8.117	295	17061	43.94	ppm	91

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138957.d
Acq On : 21 Jun 2019 1:59 pm
Operator : angelar
Sample : cc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:37:40 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138958.d
Acq On : 21 Jun 2019 2:25 pm
Operator : angelar
Sample : cc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:37:26 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

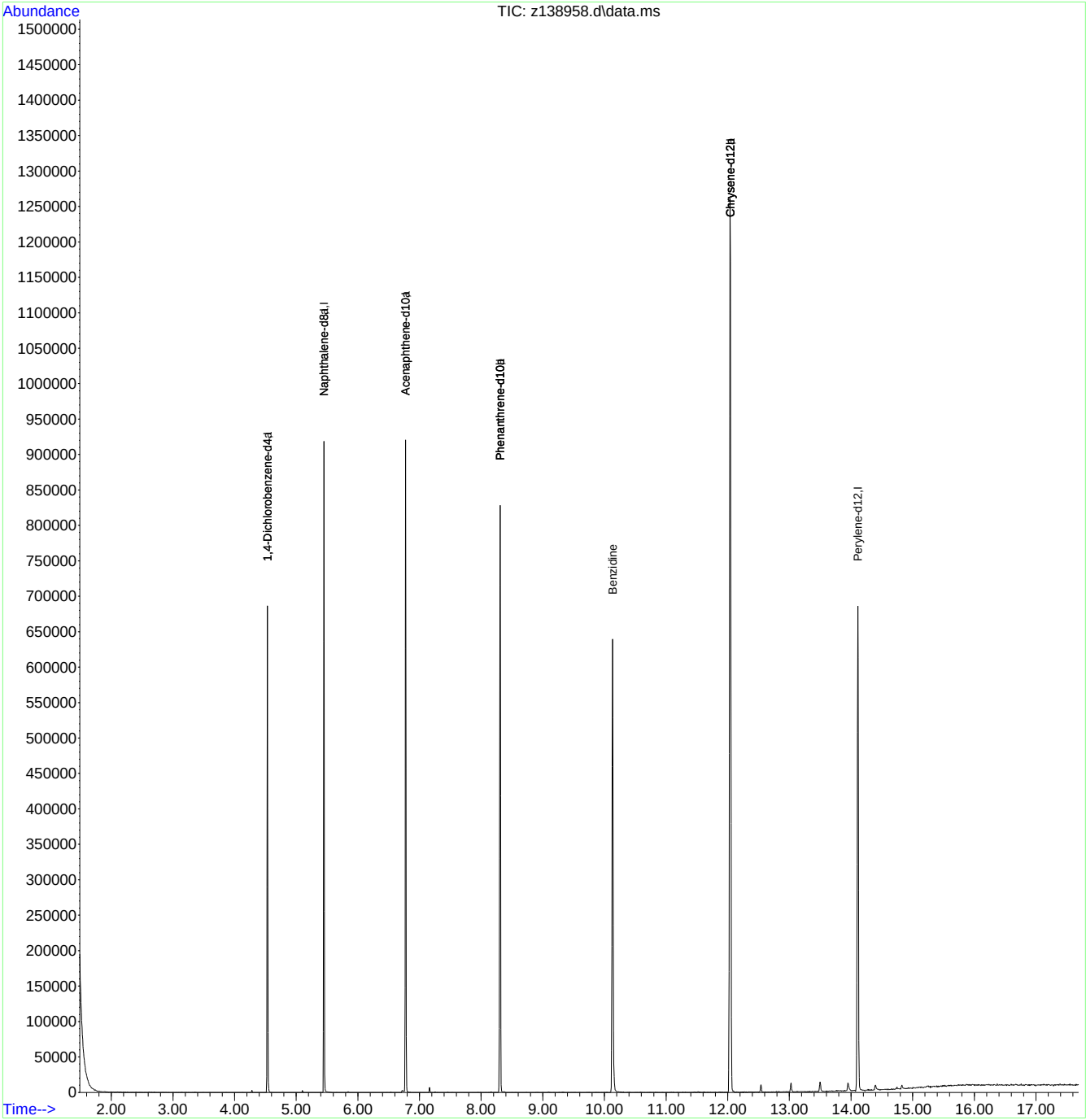
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.532	152	77805	40.00	ppm	-0.02
24) Naphthalene-d8	5.451	136	279261	40.00	ppm	-0.02
47) Acenaphthene-d10	6.776	164	155712	40.00	ppm	-0.02
69) Phenanthrene-d10	8.309	188	310960	40.00	ppm	-0.03
83) Chrysene-d12	12.043	240	324935	40.00	ppm	-0.04
91) Perylene-d12	14.111	264	331815	40.00	ppm	-0.03
101) 1,4-Dichlorobenzene-d4a	4.532	152	77805	40.00	ppm	-0.02
103) Phenanthrene-d10a	8.309	188	310960	40.00	ppm	-0.02
107) Chrysene-d12a	12.043	240	324935	40.00	ppm	0.00
109) Acenaphthene-d10a	6.776	164	155712	40.00	ppm	-0.02
111) Naphthalene-d8a	5.451	136	279261	40.00	ppm	-0.02
113) Phenanthrene-d10b	8.309	188	310960	40.00	ppm	#-0.02
115) Chrysene-d12b	12.043	240	324935	40.00	ppb	-0.02
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.131	184	298545	42.28	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138958.d
Acq On : 21 Jun 2019 2:25 pm
Operator : angelar
Sample : cc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:37:26 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138975.d
Acq On : 21 Jun 2019 10:01 pm
Operator : angelar
Sample : ecc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:34:15 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.537	152	60058	40.00	ppm	-0.02
24) Naphthalene-d8	5.456	136	229926	40.00	ppm	-0.01
47) Acenaphthene-d10	6.781	164	127449	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	251085	40.00	ppm	-0.02
83) Chrysene-d12	12.059	240	228580	40.00	ppm	-0.02
91) Perylene-d12	14.127	264	216371	40.00	ppm	-0.02
101) 1,4-Dichlorobenzene-d4a	4.537	152	60058	40.00	ppm	-0.01
103) Phenanthrene-d10a	8.314	188	251085	40.00	ppm	-0.01
107) Chrysene-d12a	12.059	240	228580	40.00	ppm	0.01
109) Acenaphthene-d10a	6.781	164	127449	40.00	ppm	-0.01
111) Naphthalene-d8a	5.456	136	229926	40.00	ppm	-0.01
113) Phenanthrene-d10b	8.314	188	251085	40.00	ppm	#-0.01
115) Chrysene-d12b	12.059	240	228580	40.00	ppb	0.00
System Monitoring Compounds						
5) 2-Fluorophenol	3.581	112	68303	41.24	ppm	0.00
Spiked Amount 50.000			Recovery =	82.48%		
8) Phenol-d5	4.302	99	114289	49.10	ppm	0.00
Spiked Amount 50.000			Recovery =	98.20%		
25) Nitrobenzene-d5	4.943	82	133534	55.74	ppm	-0.01
Spiked Amount 50.000			Recovery =	111.48%		
51) 2-Fluorobiphenyl	6.231	172	274918	59.54	ppm	-0.01
Spiked Amount 50.000			Recovery =	119.08%		
73) 2,4,6-Tribromophenol	7.540	330	39228	46.22	ppm	-0.02
Spiked Amount 50.000			Recovery =	92.44%		
85) Terphenyl-d14	10.505	244	290290	55.80	ppm	-0.02
Spiked Amount 50.000			Recovery =	111.60%		
104) 1-chlorooctadecane	0.000	57	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	2.091	88	34992	51.91	ppm	97
3) Pyridine	2.507	79	98964	54.30	ppm	98
4) N-Nitrosodimethylamine	2.539	74	56599	56.33	ppm	96
9) Phenol	4.308	94	137715	50.92	ppm	87
10) Aniline	4.297	93	139936	46.88	ppm #	62
11) bis(2-Chloroethyl)ether	4.345	93	89294	49.72	ppm	92
12) 2-Chlorophenol	4.393	128	96284	48.34	ppm	91
14) 1,3-Dichlorobenzene	4.495	146	105551	46.87	ppm	96
15) 1,4-Dichlorobenzene	4.548	146	110031	46.92	ppm	97
16) Benzyl alcohol	4.650	108	65350	56.35	ppm	94
17) 1,2-Dichlorobenzene	4.660	146	103478	49.16	ppm	98
18) Acetophenone	4.831	105	143399	50.12	ppm	98
19) 2-Methylphenol	4.746	108	90407	49.80	ppm	99
20) 2,2'-oxybis(1-Chloropr...	4.740	121	31565	55.51	ppm	98
21) 3&4-Methylphenol	4.853	108	95283	50.04	ppm	91
22) n-Nitroso-di-n-propyla...	4.837	70	78226	53.45	ppm	91
23) Hexachloroethane	4.906	201	40310	49.44	ppm	98
26) Nitrobenzene	4.954	77	122915	48.87	ppm	96
28) Isophorone	5.130	82	205800	51.43	ppm	96
29) 2-Nitrophenol	5.184	139	51573	45.67	ppm	85
30) 2,4-Dimethylphenol	5.227	107	112773	50.31	ppm	99
32) bis(2-Chloroethoxy)met...	5.280	93	114077	49.58	ppm	99
33) 2,4-Dichlorophenol	5.371	162	86942	48.61	ppm	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138975.d
Acq On : 21 Jun 2019 10:01 pm
Operator : angelar
Sample : ecc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:34:15 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

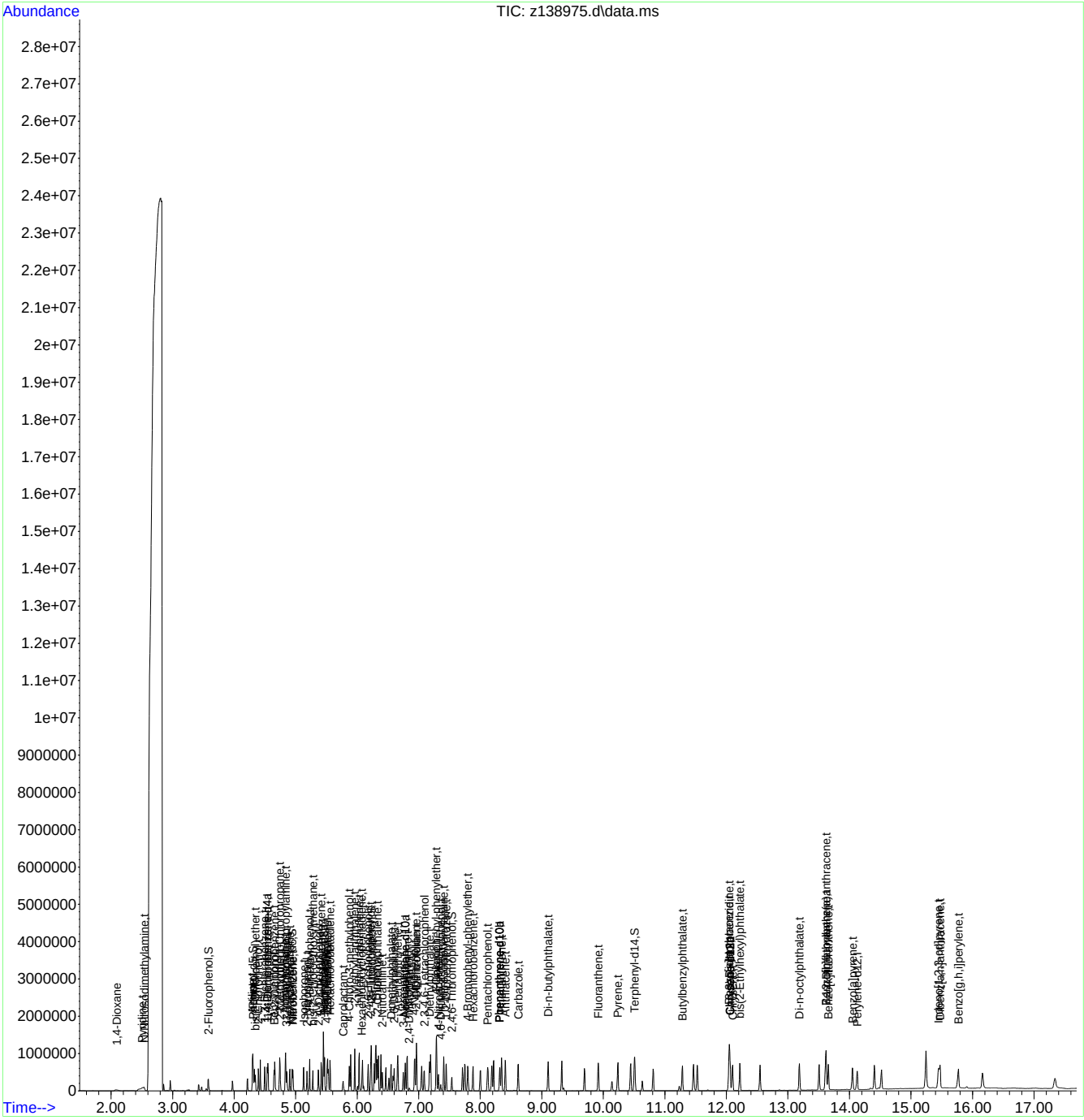
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
34) 2,6-Dichlorophenol	5.520	162	82308	47.05	ppm		99
36) 1,2,4-Trichlorobenzene	5.414	180	93527	46.87	ppm		97
38) Naphthalene	5.472	128	303316	47.22	ppm		99
39) 4-Chloroaniline	5.510	127	121596	47.46	ppm		95
41) Caprolactam	5.771	55	45350	50.88	ppm		97
42) Hexachlorobutadiene	5.558	225	58618	48.82	ppm		99
43) 4-Chloro-3-methylphenol	5.873	107	99055	50.87	ppm		99
44) 2-Methylnaphthalene	5.958	141	179809	53.66	ppm		98
45) 1-Methylnaphthalene	6.033	141	179142	46.33	ppm		97
48) Hexachlorocyclopentadiene	6.076	237	17044	27.61	ppm		95
49) 2,4,6-Trichlorophenol	6.178	196	64411	52.26	ppm		99
50) 2,4,5-Trichlorophenol	6.220	196	69419	53.24	ppm		99
52) 2-Chloronaphthalene	6.327	162	193868	52.45	ppm		96
53) Biphenyl	6.306	154	252527	50.41	ppm		100
54) 2-Nitroaniline	6.407	65	70362	44.66	ppm		92
55) Dimethylphthalate	6.551	163	221453	51.27	ppm		100
56) Acenaphthylene	6.658	152	307211	52.04	ppm		99
57) 2,6-Dinitrotoluene	6.600	165	50922	56.76	ppm		86
58) 3-Nitroaniline	6.749	138	55027	55.17	ppm		96
59) Acenaphthene	6.813	153	199904	51.82	ppm		95
60) 2,4-Dinitrophenol	6.845	184	9384	20.98	ppm	#	67
61) 4-Nitrophenol	6.931	109	49245	68.94	ppm		77
62) Dibenzofuran	6.963	168	287716	54.17	ppm		100
63) 2,4-Dinitrotoluene	6.957	165	73825	57.99	ppm		93
64) 2,3,4,6-Tetrachlorophenol	7.091	232	60801	63.01	ppm		97
65) Diethylphthalate	7.176	149	239951	50.20	ppm		100
66) Fluorene	7.289	166	232663	52.30	ppm		100
67) 4-Chlorophenyl-phenyle...	7.283	204	108265	50.91	ppm		99
68) 4-Nitroaniline	7.321	138	56106	51.72	ppm		91
70) 4,6-Dinitro-2-methylph...	7.358	198	18753	21.84	ppm		98
71) n-Nitrosodiphenylamine	7.406	169	196563	56.66	ppm		99
72) 1,2-Diphenylhydrazine	7.449	77	266648	50.69	ppm		99
74) 4-Bromophenyl-phenylether	7.796	248	66006	47.55	ppm		90
75) Hexachlorobenzene	7.882	284	77718	46.01	ppm		98
76) Pentachlorophenol	8.117	266	37488	41.30	ppm		96
77) Phenanthrene	8.346	178	333124	47.42	ppm		99
78) Anthracene	8.411	178	342140	48.52	ppm		99
79) Carbazole	8.619	167	311818	47.31	ppm		99
80) Di-n-butylphthalate	9.105	149	407981	47.99	ppm		99
81) Fluoranthene	9.917	202	359495	46.82	ppm		98
84) Pyrene	10.238	202	365694	46.73	ppm		96
86) Butylbenzylphthalate	11.285	149	173794	48.88	ppm		93
87) Benzo[a]anthracene	12.043	228	321809	43.46	ppm		99
88) 3,3'-Dichlorobenzidine	12.049	252	113174	42.04	ppm		99
89) Chrysene	12.102	228	292430	42.17	ppm		97
90) bis(2-Ethylhexyl)phtha...	12.220	149	231623	49.36	ppm		98
92) Di-n-octylphthalate	13.187	149	407457	54.48	ppm		99
93) Benzo[b]fluoranthene	13.619	252	328309	47.31	ppm		100
94) Benzo[k]fluoranthene	13.657	252	286582	46.28	ppm		98
95) Benzo[a]pyrene	14.052	252	289718	48.94	ppm		98
96) Indeno[1,2,3-cd]pyrene	15.446	276	361191	50.34	ppm		100
98) Dibenz[a,h]anthracene	15.473	278	306474	49.84	ppm		99
99) 7,12-Dimethylbenz(a)an...	13.619	256	141827	47.39	ppm		98
100) Benzo[g,h,i]perylene	15.772	276	303587	54.43	ppm		98

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138975.d
Acq On : 21 Jun 2019 10:01 pm
Operator : angelar
Sample : ecc6838-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 2 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:34:15 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138976.d
Acq On : 21 Jun 2019 10:27 pm
Operator : angelar
Sample : ecc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:46:29 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

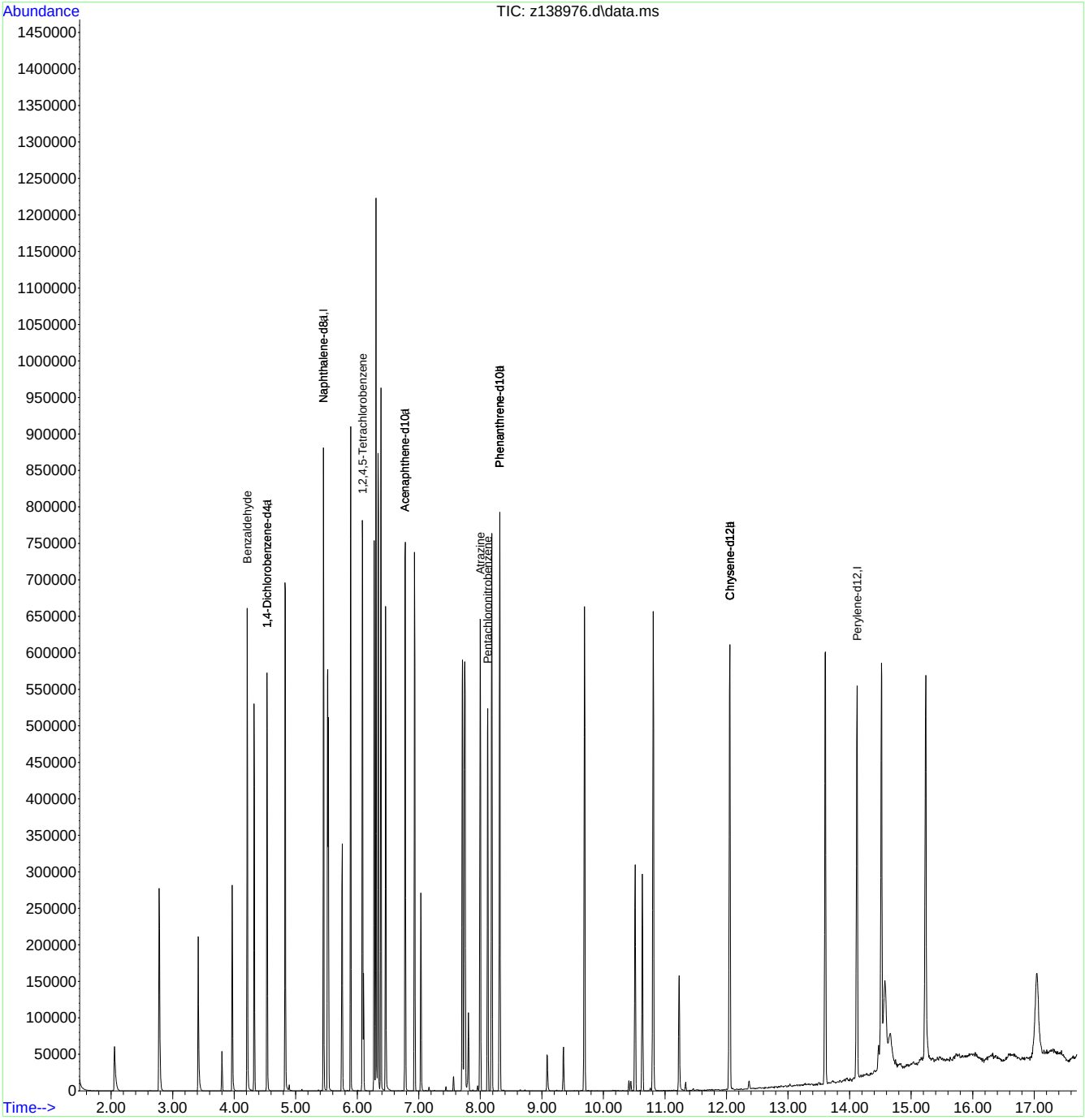
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.532	152	69385	40.00	ppm	-0.02
24) Naphthalene-d8	5.451	136	255797	40.00	ppm	-0.02
47) Acenaphthene-d10	6.776	164	143450	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	290256	40.00	ppm	-0.02
83) Chrysene-d12	12.054	240	259717	40.00	ppm	-0.03
91) Perylene-d12	14.121	264	238073	40.00	ppm	-0.02
101) 1,4-Dichlorobenzene-d4a	4.532	152	69385	40.00	ppm	-0.02
103) Phenanthrene-d10a	8.314	188	290256	40.00	ppm	-0.01
107) Chrysene-d12a	12.054	240	259717	40.00	ppm	0.00
109) Acenaphthene-d10a	6.776	164	143450	40.00	ppm	-0.02
111) Naphthalene-d8a	5.451	136	255797	40.00	ppm	-0.02
113) Phenanthrene-d10b	8.314	188	290256	40.00	ppm	#-0.01
115) Chrysene-d12b	12.054	240	259717	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
102) Benzaldehyde	4.212	105	91348	48.11	ppm	94
106) Atrazine	7.999	215	38246	56.21	ppm	95
110) 1,2,4,5-Tetrachloroben...	6.087	216	110056	55.08	ppm	99
114) Pentachloronitrobenzene	8.122	295	15076	42.84	ppm	92

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138976.d
Acq On : 21 Jun 2019 10:27 pm
Operator : angelar
Sample : ecc6787-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:46:29 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138977.d
Acq On : 21 Jun 2019 10:54 pm
Operator : angelar
Sample : ecc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:47:25 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration

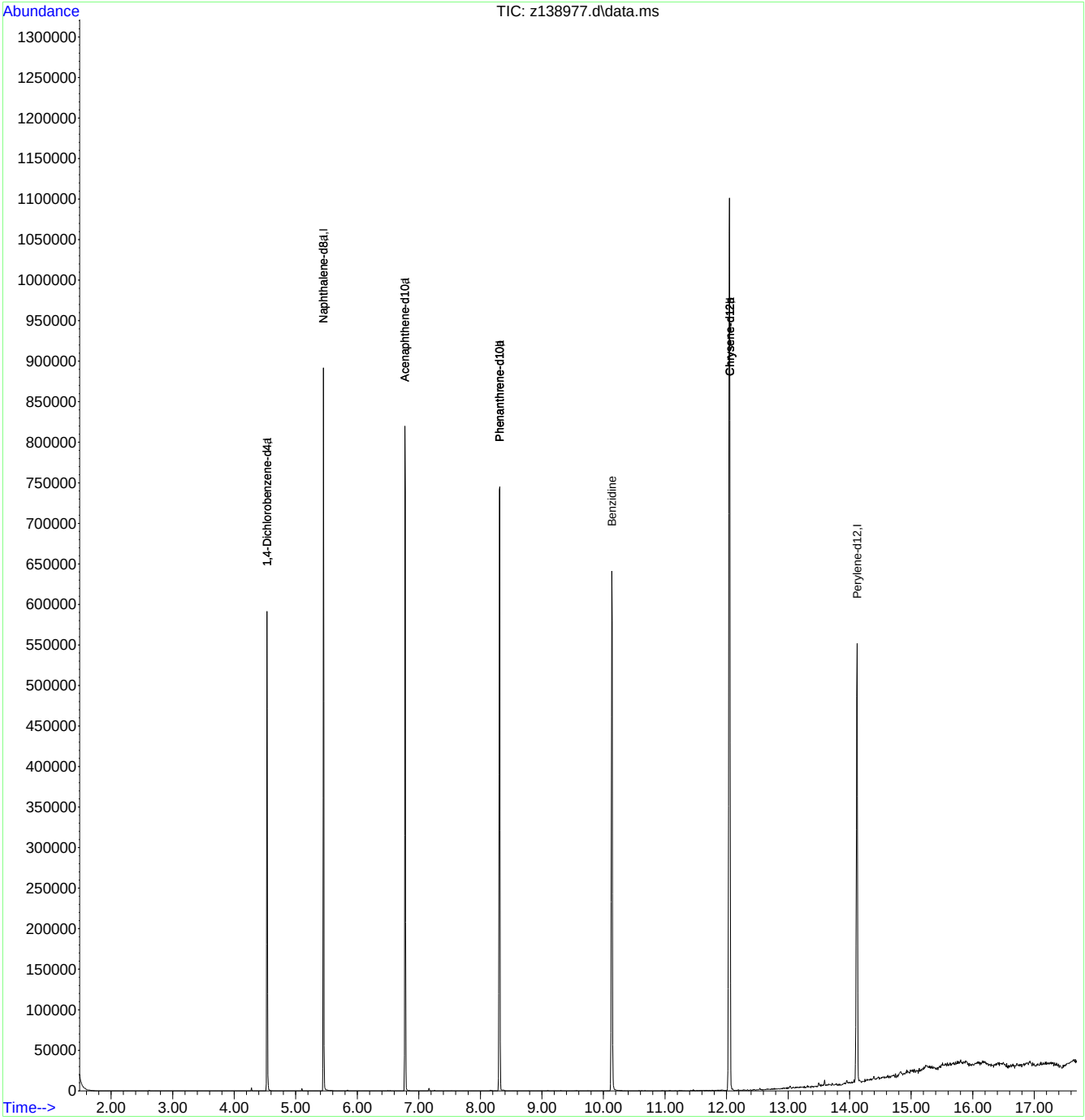
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	4.532	152	70008	40.00	ppm	-0.02
24) Naphthalene-d8	5.451	136	264247	40.00	ppm	-0.02
47) Acenaphthene-d10	6.776	164	147814	40.00	ppm	-0.02
69) Phenanthrene-d10	8.314	188	296069	40.00	ppm	-0.02
83) Chrysene-d12	12.054	240	279771	40.00	ppm	-0.03
91) Perylene-d12	14.121	264	244855	40.00	ppm	-0.02
101) 1,4-Dichlorobenzene-d4a	4.532	152	70008	40.00	ppm	-0.02
103) Phenanthrene-d10a	8.314	188	296069	40.00	ppm	-0.01
107) Chrysene-d12a	12.054	240	279771	40.00	ppm	0.00
109) Acenaphthene-d10a	6.776	164	147814	40.00	ppm	-0.02
111) Naphthalene-d8a	5.451	136	264247	40.00	ppm	-0.02
113) Phenanthrene-d10b	8.314	188	296069	40.00	ppm	#-0.01
115) Chrysene-d12b	12.054	240	279771	40.00	ppb	-0.01
System Monitoring Compounds						
5) 2-Fluorophenol	0.000	112	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
8) Phenol-d5	0.000	99	0d	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
25) Nitrobenzene-d5	0.000	82	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
51) 2-Fluorobiphenyl	0.000	172	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
73) 2,4,6-Tribromophenol	0.000	330	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
85) Terphenyl-d14	0.000	244	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
104) 1-chlorooctadecane	0.000	57	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
105) o-terphenyl	0.000	230	0	0.00	ppm	
Spiked Amount 50.000			Recovery =	0.00%		
Target Compounds						Qvalue
108) Benzidine	10.136	184	293816	48.33	ppm	99

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

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\michellc\ez6841\
Data File : z138977.d
Acq On : 21 Jun 2019 10:54 pm
Operator : angelar
Sample : ecc6826-50 Inst : GCMSZ
Misc : op20426,ez6841,1000,,,1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Method : C:\MSDCHEM\1\METHODS\MZ6838.M
Quant Results File: MZ6838.RES
Quant Time: Jun 24 02:47:25 2019
Quant Title : Semi Volatile GC/MS, ZB-5MS 15m x .25mm x .25um
QLast Update : Thu Jun 20 12:53:06 2019
Response via : Initial Calibration



GCMS Semi Volatile Run Log

Instrument ID: GCMS3P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	SIM ISTD	sv192573-13	40ppm
sim	sv192573-11a	5ppm	dcm\fisher	192221	---
sim	sv192573-11b	2.5ppm	sim	sv192573-11h	0.02ppm
sim	sv192573-11k	1ppm	sim	sv192573-11i	0.01ppm
sim	sv192573-11m	0.5ppm	Acid 2nd	op192336-101	5ppm
sim	sv192573-11e	0.2ppm	BSIM	op192336-74	1ppm
sim	sv192573-11f	0.1ppm			
sim	sv192573-11g	0.05ppm			

Column	l ms 30m x 0.25mm x 0.	Initial Calib Date	6/16/19	Sequence Loaded By:	chriss2	Quant Method/s	M3P3623SIM
Batch ID	E3P3623	Analysis Date	6/21/2019	Data Processed By:	ying li	Injection Volume	1.0ul
Approved By:	KRISTIS	Approved Date	4/2019 12:58:12 I				

☐ SW846 8270 D

☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77283	DFTPP				1					not using	dirty spectra, rerun
3P	77284	DFTPP				1					ok	3:40am
3P	77285	IC3623-5		SIM		2					ok	
3P	77286	IC3623-2.5				3					ok	
3P	77287	ICC3623-1				4					ok	
3P	77288	IC3623-0.5				5					ok	
3P	77289	IC3623-0.2				6					ok	
3P	77290	IC3623-0.1				7					ok	
3P	77291	IC3623-0.05				8					ok	
3P	77292	IC3623-0.02				9					ok	

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77293	IC3623-0.01				10					ok	
3P	77294	ICV3623-5		Acid 2nd		11					ok	
3P	77295	ICV3623-1		BSIM		12					ok	8:00am

GCMS Semi Volatile Run Log

Instrument ID: GCMS3P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	SIM ISTD	sv192573-76	40ppm
sim	sv192573-11a	1ppm	dcm\fisher	193291	---

Column	l ms 30m x 0.25mm x 0.	Initial Calib Date	6/16/19	Sequence Loaded By:	angelar	Quant Method/s	M3P3623SIM
Batch ID	E3P3624	Analysis Date	6/21/2019	Data Processed By:	DIPAP	Injection Volume	1.0ul
Approved By:	NINAP	Approved Date	5/2019 11:19:09 /				

☐ SW846 8270 D
☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77296	DFTPP				1					not using	443 low,
3P	77297	DFTPP				1					ok	4:10pm
3P	77298	CC3623-1				2					ok	
	77299	OP21127A-MB1	OP21127A	B8270SIM14DIOX,B8270SIMPAH	AQ	3			high	low	re-inject	re-inject, I/S OUT
3P	77300	OP21127A-BS12	OP21127A	B8270SIM14DIOX,B8270SIMPAH	AQ	4				#4low	re-inject	recoveries out & low ISTD
3P	77301	OP21127A-BSD12	OP21127A	B8270SIM14DIOX,B8270SIMPAH	AQ	5			x	x	ok	
3P	77302	OP21044A-MB1	OP21044A	B8270SIM14DIOX	AQ	6			x	x	ok	
3P	77303	OP21044A-BS12	OP21044A	B8270SIM14DIOX	AQ	7			x	x	ok	
	77304	OP20969A-MB1	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	8		X	x	x	ok	
	77305	OP20969A-BS12	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	9		X	x	x	ok	

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77306	JC89897-6	OP21127A	B8270SIM14DIOX	AQ	10			x	x	ok	
3P	77307	JC90112-6	OP21127A	B8270SIM14DIOX	AQ	11			x	x	ok/dl	
3P	77308	JC90112-7	OP21127A	B8270SIM14DIOX	AQ	12			x	x	ok/dl	
3P	77309	JC90112-8	OP21127A	B8270SIM14DIOX	AQ	13			x	x	ok/dl	
3P	77310	JC90124-2	OP21127A	B8270SIM14DIOX	AQ	14			x	x	ok	
3P	77311	JC90124-3	OP21127A	B8270SIM14DIOX	AQ	15			x	x	ok	
3P	77312	JC90124-4	OP21127A	B8270SIM14DIOX	AQ	16			x	x	ok	
3P	77313	JC90124-5	OP21127A	B8270SIM14DIOX	AQ	17			x	x	ok	
	77314	JC89799-3	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	18		X	x	x	ok	dl from full scan
	77315	JC89799-4	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	19		X	x	x	ok	dl from full scan
	77316	JC89799-5	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	20		X	x	x	ok	
	77317	JC89799-6	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	21		X	x	x	ok	
	77318	JC89799-7	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	22		X	x	x	ok	
	77319	JC89799-8	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	23		X	x	x	ok	
	77320	JC89799-9	OP21044A	AB8270SIMNJ,BSIM+14DIOX	AQ	24		X	x	x	ok	
	77321	JC89514-1	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	25		X	x	x	ok	
	77322	JC89514-8	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	26		X	x	x	ok	
	77323	JC89514-9	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	27		X	x	x	ok	
	77324	JC89514-10	OP20969A	AB8270SIMNJ,BSIM+14DIOX	AQ	28		X	x	high	rr	high ISTD, rr 5X

GCMS Semi Volatile Run Log

Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
77325	JC90157-4	OP21127A	B8270SIMPAH	AQ	29			x	x	ok/rx	
77326	JC90157-3	OP21127A	B8270SIMPAH	AQ	30	5		low	x	rr	diluted due to viscosity rr 5X further
77327	JC90157-5	OP21127A	B8270SIMPAH	AQ	31	5		x	x	ok/rx	2.26am

GCMS Semi Volatile Run Log

Instrument ID: GCMS3P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	SIM ISTD	sv192573-76	40ppm
sim	sv192573-11k	1.0ppm	dcm\fisher	193219	---
sim verif	sv192573-11g	0.05ppm			

Column	ll ms 30m x 0.25mm x 0.	Initial Calib Date	6/16/19	Sequence Loaded By:	chriss2	Quant Method/s	M3P3623SIM
Batch ID	E3P3626	Analysis Date	6/24/2019	Data Processed By:	DIPAP	Injection Volume	1.0ul
Approved By:	KRISTIS	Approved Date	27/2019 6:16:16 F				

☐ SW846 8270 D
☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77344	DFTPP				1					nu	syringe clogged, clean/rerun
3P	77345	DFTPP				1					ok	10:00pm
3P	77346	CC3623-1				2					nu	compounds out of window, adjust scan windows
3P	77347	CC3623-1				2					ok	21 low
3P	77348	SIM VERIF				3				x	ok	
	77349	OP21117A-MB1	OP21117A		AQ	4		X	x	x	ok	1,4-Diox is above MDL
	77350	OP21117A-BS12	OP21117A		AQ	5		X	x	x	ok	
	77351	OP21117A-BSD12	OP21117A		AQ	6		X	x	x	ok	
	77352	OP21144A-MB1	OP21144A	AB8270SIMNJ,B8270SIM14DIOX, BSIM+14DIOX	AQ	7		X	x	x	ok	
	77353	OP21144A-BS12	OP21144A	AB8270SIMNJ,B8270SIM14DIOX, BSIM+14DIOX	AQ	8		X	x	x	ok	

GCMS Semi Volatile Run Log

	Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
	77354	OP21144A-BSD12	OP21144A	AB8270SIMNJ,B8270SIM14DIOX,BSIM+14DIOX	AQ	9		X	x	x	ok	
	77355	OP21174A-MB1	OP21174A	AB8270SIMNJ,B8270SIMNJ,B8270SIMXH,BSIM+14DIOX	AQ	10		X	x	x	ok	
	77356	OP21174A-BS12	OP21174A	AB8270SIMNJ,B8270SIMNJ,B8270SIMXH,BSIM+14DIOX	AQ	11		X	x	x	ok	
	77357	OP21174A-BSD12	OP21174A	AB8270SIMNJ,B8270SIMNJ,B8270SIMXH,BSIM+14DIOX	AQ	12		X	x	x	ok	
	77358	OP21175A-MB1	OP21175A	B8270SIM14DIOX,B8270SIMNJ,BSIM+14DIOX	AQ	13		X	x	x	ok	
	77359	OP21175A-BS12	OP21175A	B8270SIM14DIOX,B8270SIMNJ,BSIM+14DIOX	AQ	14		X	x	x	ok	
	77360	OP21175A-BSD12	OP21175A	B8270SIM14DIOX,B8270SIMNJ,BSIM+14DIOX	AQ	15		X	x	x	ok	
	77361	JC90314-4	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	16		X	x	x	ok	
	77362	JC90314-5	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	17		X	x	x	ok	
	77363	JC90314-6	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	18		X	x	x	ok	
	77364	JC90314-7	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	19		X	x	x	ok	
	77365	JC90314-8	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	20		X	x	x	ok	
3P	77366	JC90314-10	OP21175A	B8270SIMNJ,BSIM+14DIOX	AQ	21		X	x	x	ok	
	77367	JC90314-1	OP21174A	B8270SIMNJ,BSIM+14DIOX	AQ	22		X	x	x	ok	
	77368	JC90314-2	OP21174A	B8270SIMNJ,BSIM+14DIOX	AQ	23		X	x	x	ok	
	77369	JC90314-3	OP21174A	B8270SIMNJ,BSIM+14DIOX	AQ	24		X	x	x	ok	
	77370	JC90314-9	OP21174A	B8270SIMNJ,BSIM+14DIOX	AQ	25		X	x	x	ok	
3P	77371	JC90197-1	OP21144A	B8270SIM14DIOX	AQ	26			x	x	ok	
	77372	JC90127-12	OP21117A	AB8270SIMNJ,BSIM+14DIOX	AQ	27		X	x	x	ok	1,4-Diox=B

GCMS Semi Volatile Run Log

Data File	Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
77373	JC90092-2	OP21117A	AB8270SIMNJ,BSIM+14DIOX	AQ	28		X	x	x	ok	1,4-Diox=B
77374	JC90071-1	OP21117A	AB8270SIMNJAO,BSIM+14DIOX	AQ	29		X	x	x	ok	1,4-Diox=B 8.39am

GCMS Semi Volatile Run Log

Instrument ID: GCMS3P

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	SIM ISTD	sv192573-76	40ppm
sim	sv192573-11j	1ppm	dcm\fisher	191110	---

Column	il ms 30m x 0.25mm x 0.	Initial Calib Date	6/16/19	Sequence Loaded By:	hennys	Quant Method/s	M3P3623SIM
Batch ID	E3P3631	Analysis Date	6/27/2019	Data Processed By:		Injection Volume	1.0ul
Approved By:		Approved Date					

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Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P 77472	DFTPP				1					ok	
3P 77473	CC3623-1				2					ok	
3P 77474	OP21127A-MB1				3					not needed	
3P 77475	OP21127A-BS12				4					not needed	
3P 77476	OP21176A-MB1				5			y	y	ok	
3P 77477	OP21176A-BS12				6			y	y	ok	
3P 77478	OP21176A-MSA				7			y	y	ok	
3P 77479	OP21176A-MSDA				8			y	y	ok	
3P 77480	OP21044A-MS				9			y	y	ok	
3P 77481	OP21044A-MSD				10			y	y	ok	

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
3P	77482	JC90462-14	OP21176A	B8270SIM14DIOX	AQ	11			y	y	ok	
3P	77483	JC90462-15	OP21176A	B8270SIM14DIOX	AQ	12						
3P	77484	JC90313-13	OP21176	AB8270NJTCL20+	AQ	13		X				
3P	77485	JC90313-14	OP21176	AB8270NJTCL20+	AQ	14		X				
3P	77486	JC90313-15	OP21176	AB8270NJTCL20+	AQ	15		X				
3P	77487	JC90313-16	OP21176	AB8270NJTCL20+	AQ	16		X				
3P	77488	JC90313-17	OP21176	AB8270NJTCL20+	AQ	17		X				
3P	77489	JC90313-18	OP21176	AB8270NJTCL20+	AQ	18		X				
3P	77490	JC90313-19	OP21176	AB8270NJTCL20+	AQ	19		X				
3P	77491	JC90313-20	OP21176	AB8270NJTCL20+	AQ	20		X				
3P	77492	JC90313-21	OP21176	AB8270NJTCL20+	AQ	21		X				
3P	77493	JC90391-1	OP21176	AB8270SL	AQ	22						
3P	77494	JC90464-1	OP21176	B8270NJTCL20+	AQ	23		X				
3P	77495	JC90464-2	OP21176	B8270NJTCL20+	AQ	24		X				
3P	77496	JC90464-3	OP21176	B8270NJTCL20+	AQ	25		X				
3P	77497	JC89897-6	OP21127A	B8270SIM14DIOX	AQ	26						for screening only
3P	77498	JC90112-6	OP21127A	B8270SIM14DIOX	AQ	27						for screening only
3P	77499	JC90112-7	OP21127A	B8270SIM14DIOX	AQ	28						for screening only
3P	77500	JC90112-8	OP21127A	B8270SIM14DIOX	AQ	29						for screening only

GCMS Semi Volatile Run Log

Instrument ID: GCMS4M

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv182535-77	50ppm	ISTD	sv182535-76	400ppm
sim	sv182535-11m	0.5ppm	DCM/fisher	190729	---
sim verf	sv182535-11g	0.05ppm			

Column	S plus 30.x0.25mmIDx0	Initial Calib Date	4/19/2019	Sequence Loaded By:	christc2	Quant Method/s	M4M3886SIM
Batch ID	E4M3886	Analysis Date	4/22/2019	Data Processed By:		Injection Volume	1 ul
Approved By:	KRISTIS	Approved Date	25/2019 4:59:54 F				

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☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	83366	DFTPP				1					not using	bad injection
4M	83367	DFTPP				1					not using	run method error, rr
4M	83368	DFTPP				1					ok	1:43pm
4M	83369	IC3886-5.0				2					ok	sv192573-11a
4M	83370	IC3886-2.5				3					ok	sv192573-11b
4M	83371	ICC3886-1.0				4					ok	sv192573-11c
4M	83372	IC3886-0.5				5					ok	sv192573-11m
4M	83373	IC3886-0.2				6					ok	sv192573-11e
4M	83374	IC3886-0.1				7					ok	sv192573-11f
4M	83375	IC3886-0.05				8					ok	sv192573-11g

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	83376	IC3886-0.02				9					ok	sv192573-11h
4M	83377	IC3886-0.01				10					ok	sv192573-11i
4M	83378	ICV3886-1.0		bsim		11					ok	op192336-74
4M	83379	ICV3886-5.0		acid 2nd		12					ok	op19-2336-101 5:56pm

GCMS Semi Volatile Run Log

Instrument ID: GCMS4M

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	ISTD	sv192573-59	400ppm
bsim	sv192335-95	1ppm	DCM/fisher	192221	---
sim	sv192573-11j	1ppm			
sim ver	sv192573-11g	0.05ppm			

Column	1S plus 30.x0.25mmIDx0.	Initial Calib Date	4/19/2019	Sequence Loaded By:	krizhkac	Quant Method/s	M4M3886SIM
Batch ID	E4M3947	Analysis Date	6/21/2019	Data Processed By:	mich	Injection Volume	1 ul
Approved By:	KRISTIS	Approved Date	24/2019 2:49:59 F				

☐ SW846 8270 D

☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	85079	DFTPP				1					ok	8:51 am
4M	85080	CC3886-1		bsim		2					ok	
4M	85081	CC3886-1				3					ok	
4M	85082	SIM VER				4					ok	
4M	85083	OP21024A-MB1	OP21024A	B8270SIMPAH+2MNAP	AQ	5		X	y	y	OK	
4M	85084	OP21024A-BS1	OP21024A	B8270SIMPAH+2MNAP	AQ	6		X	y	y	OK	
4M	85085	OP21024A-BSD	OP21024A	B8270SIMPAH+2MNAP	AQ	7		X	y	y	OK	
4M	85086	OP21044A-MB1	OP21044A	B8270SIM14DIOX	AQ	8			HIGH	y	OK	
4M	85087	OP21044A-BS12	OP21044A	B8270SIM14DIOX	AQ	9			HIGH	y	OK	
	85088	JC89818-1	OP21044	B8270MNAP	AQ	10			y	y	OK	

GCMS Semi Volatile Run Log

	Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
	85089	JC89818-5	OP21044	B8270MNAP	AQ	11			y	y	OK	
4M	85090	OP21044A-MSA	OP21044A	B8270SIM14DIOX	AQ	12			y	y	OK	
4M	85091a	OP21044A-MSDA	OP21044A	B8270SIM14DIOX	AQ	13			HIGH	y	OK	front inlet temperature shut off, rerun as a file
4M	85092a	JC89788-3	OP21044A	B8270SIM14DIOX	AQ	14			y	y	OK	front inlet temperature shut off again, rerun as a file
4M	85093	JC89501-1	OP20938A	B625SIMPAH	AQ	15	100		y	y	OK	dilution for matrix rr overcal
4M	85094	JC89501-1	OP20938A	B625SIMPAH	AQ	16	10		y	y	OK	dilution for matrix
4M	85095	JC89776-1	OP21024A	B8270SIMPAH+2MNAP	AQ	17		X	y	y	OK	rr overcal mb hit
4M	85096	JC89776-2	OP21024A	B8270SIMPAH+2MNAP	AQ	18		X	y	y	OK	rr overcal mb hit
4M	85097	JC89776-3	OP21024A	B8270SIMPAH+2MNAP	AQ	19		X	y	y	OK	mb hit
4M	85098	JC89776-4	OP21024A	B8270SIMPAH+2MNAP	AQ	20		X	y	y	OK	rr overcal mb hit
4M	85099	JC89776-5	OP21024A	B8270SIMPAH+2MNAP	AQ	21		X	y	y	OK	mb hit
4M	85100	JC89776-6	OP21024A	B8270SIMPAH+2MNAP	AQ	22		X	y	y	OK	mb hit
4M	85101	JC89776-7	OP21024A	B8270SIMPAH+2MNAP	AQ	23		X	y	y	OK	mb hit
4M	85102	JC89776-8	OP21024A	B8270SIMPAH+2MNAP	AQ	24		X	y	y	OK	mb hit
4M	85103	JC89776-9	OP21024A	B8270SIMPAH+2MNAP	AQ	25		X	y	y	OK	mb hit
4M	85104	JC89776-10	OP21024A	B8270SIMPAH+2MNAP	AQ	26		X	y	y	OK	mb hit 830 pm
4M	85105	JC89776-11	OP21024A	B8270SIMPAH+2MNAP	AQ	27		X			NO	out of tune
4M	85106	JC89778-1	OP21024A	B8270SIMPAH+2MNAP	AQ	28		X			NO	out of tune
4M	85107	JC89778-2	OP21024A	B8270SIMPAH+2MNAP	AQ	29		X			NO	out of tune

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	85108	JC89778-3	OP21024A	B8270SIMPAH+2MNAP	AQ	30		X			NO	out of tune
4M	85109	JC89788-4	OP21044A	B8270SIM14DIOX	AQ	31					NO	out of tune
4M	85110	JC89788-1	OP21044A	B8270SIM14DIOX	AQ	32					NO	out of tune
4M	85111	JC89788-2	OP21044A	B8270SIM14DIOX	AQ	33					NO	out of tune
4M	85112	JC89907-2	OP21092A	B8270SIM14DIOX	AQ	34	2		y	high	ok	ran after 4m85092
4M	85113	JC89907-2	OP21092A	B8270SIM14DIOX	AQ	1	5		y	y	ok	ran after 4m85112/not using

GCMS Semi Volatile Run Log

Instrument ID: GCMS4M

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
dftpp	sv192573-52	50ppm	ISTD	sv192573-59	400ppm
			DCM/fisher	192221	---
sim	sv192573-11n	0.5ppm			
sim ver	sv192573-11g	0.05ppm			

Column	S plus 30.x0.25mmIDx0	Initial Calib Date	4/19/2019	Sequence Loaded By:	chriss2	Quant Method/s	M4M3886SIM
Batch ID	E4M3948	Analysis Date	6/22/2019	Data Processed By:	mich	Injection Volume	1 ul
Approved By:	NINAP	Approved Date	4/2019 12:21:30 I				

☑ SW846 8270 D
☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	84114	DFTPP				1					N	no vial rerun
4M	84115	DFTPP				2					ok	12:12am
4M	84116	CC3886-0.5				3					ok	
4M	84117	SIM VERIF				4					ok	
	84118	OP21117A-MB1	OP21117A		AQ	5		X	HIGH	y	ok	
	84119	OP21117A-BS12	OP21117A		AQ	6		X	HIGH	y	ok	
	84120	OP21117A-BSD12	OP21117A		AQ	7		X	HIGH	y	ok	
4M	84121	OP20974A-MB1	OP20974A	B8270SIMPAH+2MNAP	AQ	8		X	y	y	ok	
4M	84122	OP20974A-BS1	OP20974A	B8270SIMPAH+2MNAP	AQ	9	50	X	y	y	ok	
4M	84123	OP20974A-BSD	OP20974A	B8270SIMPAH+2MNAP	AQ	10	50	X	y	y	ok	

JC89788

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	84124	JC89615-1	OP20974A	B8270SIMPAH+2MNAP	AQ	11		X	y	y	ok	
4M	84125	JC89616-1	OP20974A	B8270SIMPAH+2MNAP	AQ	12		X	y	y	ok	
4M	84126	JC89616-2	OP20974A	B8270SIMPAH+2MNAP	AQ	13		X	y	y	ok	
4M	84127	JC89778-1	OP21024A	B8270SIMPAH+2MNAP	AQ	14		X	y	y	ok	
4M	84128	JC89778-2	OP21024A	B8270SIMPAH+2MNAP	AQ	15		X	y	y	ok	
4M	84129	JC89778-3	OP21024A	B8270SIMPAH+2MNAP	AQ	16		X	y	y	ok	
4M	84130	JC89788-4	OP21044A	B8270SIM14DIOX	AQ	17			y	y	ok	
4M	84131	JC89788-1	OP21044A	B8270SIM14DIOX	AQ	18			y	y	ok	
4M	84132	JC89788-2	OP21044A	B8270SIM14DIOX	AQ	19			y	y	ok	
4M	84133	JC89788-5	OP21117A	B8270SIM14DIOX	AQ	20			y	y	ok	
4M	84134	JC89788-6	OP21117A	B8270SIM14DIOX	AQ	21			y	y	ok	
4M	84136	JC90107-2	OP21117A	B8270SIM14DIOX	AQ	22			y	y	ok	rr overcal
4M	84137	JC90112-1	OP21117A	B8270SIM14DIOX	AQ	23			y	y	ok	rr overcal
4M	84138	JC90112-2	OP21117A	B8270SIM14DIOX	AQ	24			y	y	ok	rr overcal
4M	84139	JC90112-3	OP21117A	B8270SIM14DIOX	AQ	25			y	y	ok	rr overcal
4M	84140	JC90112-4	OP21117A	B8270SIM14DIOX	AQ	26			y	y	ok	rr overcal
4M	84141	JC90112-5	OP21117A	B8270SIM14DIOX	AQ	27			y	y	ok	rr overcal
4M	84142	JC90096-9	OP21117A	B8270SIM14DIOX	AQ	28			y	y	ok	
4M	84143	JC90096-11	OP21117A	B8270SIM14DIOX	AQ	29			y	y	ok	

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
4M	84144	JC90096-10	OP21117A	B8270SIM14DIOX	AQ	30			y	y	ok	
4M	84145	JC90108-5	OP21117A	B8270SIMPALO	AQ	31			y	y	ok	1050 am
4M	84135	JC90107-1	OP21117A	B8270SIM14DIOX	AQ	0			Y	Y	OK	rr overcal

GCMS Semi Volatile Run Log

Instrument ID: GCMSZ

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
DFTPP	sv182535-77	50ppm	DCM/fisher	192851	---
TCL42	sv192573-55a	100ppm	ISTD	CL13166	4000ppm
TCL42	sv192573-55b	80ppm	TCL42	sv192573-55i	1ppm
TCL42	sv192573-55c	50ppm	Ap9 Mix #2	sv192573-8	50ppm
TCL42	sv192573-55d	25ppm	HQ 2nd	sv182490-103b	50ppm
TCL42	sv192573-55e	10ppm	BN1	OP192336-70	50Pppm
TCL42	sv192573-55g	5ppm	BN1	sv192336-100	50ppm
TCL42	sv192573-55h	2ppm			

Column	6silms30mx0.25mmx0.25i	Initial Calib Date	5/24/2019	Sequence Loaded By:	chriss2	Quant Method/s	MZ6786
Batch ID	EZ6787	Analysis Date	5/24/2019	Data Processed By:	ying li	Injection Volume	1ul
Approved By:	WAHIEDB	Approved Date	30/2019 6:07:44 F				

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☑ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z	137813	DFTPP				1					ok	7:29am
Z	137814	IC6787-100				16					ok	
Z	137815	IC6787-80				17					ok	
Z	137816	ICC6787-50				18					ok	
Z	137817	IC6787-25				19					ok	
Z	137818	IC6787-10				20					ok	
Z	137819	IC6787-5				21					ok	
Z	137820	IC6787-2				22					ok	
Z	137821	IC6787-1				23					ok	
Z	137822	ICV6787-50		AP9 Mix #2		24					ok	

GCMS Semi Volatile Run Log

Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z 137823	ICV6787-50		HQ 2nd		25					ok	
Z 137824	ICV6786-50		BN1		1					NG	op192336-70
Z 137825	ICV6786-50		BN1		2					ok	sv192336-100 12:49pm

GCMS Semi Volatile Run Log

Instrument ID: GCMSZ

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
DFTPP	sv182535-77	50ppm	DCM/fisher	192221	---
BZD	sv192573-51a	100ppm	ISTD	CL13166	4000ppm
BZD	sv192573-51b	80ppm	BZD	sv192573-51i	1ppm
BZD	sv192573-51c	50ppm	BZD 3rd	sv192573-25	50ppm
BZD	sv192573-51d	25ppm			
BZD	sv192573-51e	10ppm			
BZD	sv192573-51g	5ppm			
BZD	sv192573-51h	2ppm			

Column	silms30mx0.25mmx0.25	Initial Calib Date	4/25/2019	Sequence Loaded By:	angelar	Quant Method/s	MZ6786
Batch ID	EZ6826	Analysis Date	6/14/2019	Data Processed By:		Injection Volume	1ul
Approved By:	KRISTIS	Approved Date	21/2019 1:00:05 F				

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☑ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z	138699	DFTPP				1					ok	1:24pm
Z	138700	IC6826-100		BZD		2					ok	
Z	138701	IC6826-80				3					ok	
Z	138702	ICC6826-50				4					ok	
Z	138703	IC6826-25				5					ok	
Z	138704	IC6826-10				6					ok	
Z	138705	IC6826-5				7					ok	
Z	138706	IC6826-2				8					ok	
Z	138707	IC6826-1				9					ok	
Z	138708	ICV6826-50		bzd 3rd		10					ok	5:12pm

GCMS Semi Volatile Run Log

Instrument ID: GCMSZ

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
DFTPP	sv192573-52	50ppm	DCM/fisher	192221	---
BNA	sv192573-75	100ppm	ISTD	CL13166	4000ppm
BNA	sv192573-75	80ppm	BNA	sv192573-75	1ppm
BNA	sv192573-75	50ppm	BN1	op192336-122	50ppm
BNA	sv192573-75	25ppm	BN2	op192336-72	50ppm
BNA	sv192573-75	10ppm	Aniline	op192336-85	50ppm
BNA	sv192573-75	5ppm	Acid	op192336-47	50ppm
BNA	sv192573-75	2ppm	ABN Surr	op192336-76	50ppm

Column	silms30mx0.25mmx0.25	Initial Calib Date	6/20/2019	Sequence Loaded By:	chriss2	Quant Method/s	MZ6838
Batch ID	EZ6838	Analysis Date	6/20/2019	Data Processed By:	ying li	Injection Volume	1ul
Approved By:	KRISTIS	Approved Date	1/2019 12:58:22 I				

☑ SW846 8270 D
☑ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z	138896	DFTPP				1					ok	12:23am
Z	138897	IC6838-100		BNA		2					ok	
Z	138898	IC6838-80				3					ok	
Z	138899	ICC6838-50				4					ok	
Z	138900	IC6838-25				5					ok	
Z	138901	IC6838-10				6					ok	
Z	138902	IC6838-5				7					ok	
Z	138903	IC6838-2				8					ok	
Z	138904	IC6838-1				9					ok	
Z	138905	ICV6838-50		BN1		10					ok	

GCMS Semi Volatile Run Log

Data File		Sample ID	OP Batch ID	Test	MTX	A L S	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z	138906	ICV6838-50		BN2		11					ok	99# low
Z	138907	ICV6838-50		Aniline		12					ok	benzyl alcohol high
Z	138908	ICV6838-50		Acid		13					ok	
Z	138909	ICV6838-50		ABN Surr		14					ok	
Z	138910	ICV6838-50		Bzd 3rd		15					ok	sv192573-25 7:01am

GCMS Semi Volatile Run Log

Instrument ID: GCMSZ

Standard / Reagent	Lot #	Concentration	Standard / Reagent	Lot #	Concentration
DFTPP	sv192573-52	50ppm	DCM/fisher	193291	---
BNA 625.1	sv192573-29b	50ppm	ISTD	CL13615	4000ppm
TCL42 625.1	sv192573-30b	50ppm			
BZD 625.1	sv192573-28b	50ppm			
BNA ver	sv192573-78m	2ppm			

Column	silms30mx0.25mmx0.25	Initial Calib Date	6/20/2019	Sequence Loaded By:	angelar	Quant Method/s	MZ6838
Batch ID	EZ6841	Analysis Date	6/21/2019	Data Processed By:	mich	Injection Volume	1ul
Approved By:	NINAP	Approved Date	24/2019 9:30:53 A				

☐ SW846 8270 D

☐ EPA 625

Data File		Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
Z	138954	DFTPP				1					ok	12:50pm
Z	138955	CC6638-50		bna 625.1		2					not using	some acids low, rr different lot number
Z	138956	CC6638-50		bna 625.1		2					ok	sv192573-27a; 76 low
Z	138957	CC6787-50		tcl42 625.1		3					ok	
Z	138958	CC6826-50		bzd 625.1		4					ok	
Z	138959	BNA 2PPM VER				5					ok	
Z	138960	OP20994-MB1	OP20994	B8270PAH	SO	6			y	y	ok	
	138961	OP21117-MB1	OP21117	AB8270NJTCL20+,AB8270TCL20+	AQ	7		X	y	y	ok	
	138962	OP21117-BS1	OP21117	AB8270NJTCL20+,AB8270TCL20+	AQ	8		X	y	y	ok	
	138963	OP21117-BSD	OP21117	AB8270NJTCL20+,AB8270TCL20+	AQ	9		X	y	y	ok	

GCMS Semi Volatile Run Log

	Data File	Sample ID	OP Batch ID	Test	MTX	ALS	Dil	L+	Surr OK?	IS OK?	Data OK?	Comment
	138964	OP21060-MB1	OP21060	AB8270TCL20+,B8270BAPYRN,B8270PAH	SO	10		X	y	y	ok	
Z	138965	JC85400-23	OP21117	B8270PAH	AQ	11			y	y	ok	
Z	138966	JC90028-10	OP21117	AB8270TCL20	AQ	12			y	y	ok	
Z	138967	JC90031-1	OP21117	AB8270TCL20+	AQ	13		X	no	y	ok	
Z	138968	JC90083-1	OP21117	AB8270TCL20+	AQ	14		X	y	y	ok	
	138969	JC90127-12	OP21117	AB8270NJTCL20+	AQ	15		X	y	y	ok	
	138970	JC90092-2	OP21117	AB8270NJTCL20+	AQ	16		X	y	y	ok	
	138971	JC89685-1	OP21044	B8270NBNZ,BMS+ANILINE	AQ	17	5	X	y	y	ok	
	138972	JC90071-1	OP21117	AB8270NJTCL20+	AQ	18		X	y	y	ok	rr overcal
Z	138973	JC89576-1	OP20994	B8270PAH	SO	19	5		y	y	ok	
Z	138974	JC89878-10	OP21060	B8270BAPYRN	SO	20			y	y	ok	
Z	138975	ECC6638-50		bna 625.1		2					ok	
Z	138976	ECC6787-50		tcl42 625.1		3					ok	
Z	138977	ECC6826-50		bzd 625.1		4					ok	1054

LOGBOOK ID:

ABN Aqueous Extraction Logbook

Date Started: 6/17/19 Time Started: 7:30AM

Date Finished: 6/17/19 Time Finished: 14.00

Extract Method (CHECK OFF "√" /DO NOT CIRCLE):

Separatory Funnel: SW846 3510C/CLP/other ✓ 3510C SIM

Continuous Liquid Liquid: SW846 3520C/CLP/other

BATCH # MSOP21044 RACK# Orange

Set-up by:	VP, HC
Extracted by:	VP, HC
Concentrated by:	VP, HC
Final Vol. Top-up:	LJ
Vialed by:	LJ
Supervisor Review:	6/17/19

Equipment/ Range	ID	Observed Temp (°C)	Correction Factor (°C)	Corrected Temp (°C)	Pressure/ Flowrate
Buchi (65-71°C)					
Buchi Chiller					
Waterbath (70-80°C)	56	76,76	0,-2	76,74	OK
Waterbath Chiller (GP04)	F3	4	—	—	2
NEVAP (32-38°C, LPM)	4	35	—	—	10

SURROGATE	LOT #	CONC (ppm)	AMT (mL)
ABN	192336-137	50	1.0
ABN DOD SIM			

WITNESS SIGN: HC SPIKE SIGN: VP

MATRIX SPIKE	LOT #	CONC (ppm)	AMT (mL)
Acid	192336-136	50	Acid: 1.0
Acid (for SIM)			A(SIM): 0.1
Base #1	192336-122	50	1.0
Base #2	192336-94	50	1.0
Anilines	192336138	50	1.0
BSIM	19233417	1.0	1.0

WITNESS SIGN: HC SPIKE SIGN: VP

SOLVENT	LOT #	BRAND	AMT (mL)
METH CHLOR	192851	Fisher	60X6

REAGENT	LOT #	BATCH #	BRAND
NaOH	184388		Fisher
H2SO4	28100732		Ricca
Sodium Sulfate	185474	6-6-19A	Fisher
Glass Wool	04410		lab
Filter Paper			
pH strips	217518		Hydrion

Special Client Spike Instructions

QC ID# for Special Spike	Amt to Spike	Spike ID	Lot #	Conc.	Amt. Spiked

WITNESS SIGN: SPIKE SIGN

Manager/Supervisor/Team Lead Approval:

SPECIAL PROCESSING INSTRUCTIONS

Rx Reason:

Spiking:

Weights/Volumes:

Required MS/MSD: JC89793-3

Final Volume:

Other:

	Sample #	Analysis Type	Sample Bottle #	Sample Description	Sample Volume (mL)	pH Adjust(mL) H2SO4	pH Adjust(mL) >11 NaOH	Final Extract Color	Final Extract Vol(mL)	Misc. GPC Cleanup	Misc. Comments
	MB1	ABN		DIH2O	1000	1	4	Clear	1.0		
	BS1	|		DIH2O	1000	1	4	Yellow	1.0		
	JC89793-3 MS	|		DIH2O	1000	1	4	Yellow	1.0		
	MSD	|		DIH2O	1000	1	4	Yellow	1.0		
	BS12	SIM		DIH2O	1000	1	4	LYellow	1.0		
	JC89788-3 MSA	|		Clear	1000	1	4	LYellow	1.0		
	MSDA	|		Clear	1000	1	4	L yellow	1.0		
	BS										
	MS										
	MSD										
1	JC89799-3	ABN	1	gray	1000	1	4	Yellow	1.0		
2	-2-4	|	1	H.yellow	1000	1	4	LYellow	1.0		
3	-3-5	|	2	yellow	1000	1	4	Yellow	1.0		
4	JC89793-3	|	8	H.yellow	1000	1	4	LYellow	1.0		
5	JC89818-1	|	1	Clear	1000	1	4	Clear	1.0		
6	-5	|	1	Yellow	1000	1	4	LYellow	1.0		
7	JC89685-1	|	1	Clear	1000	1	4	Clear	1.0		
8	-2	|	1	Clear	1000	1	4	Clear	1.0		
9	-3	|	1	Clear	1000	1	4	Clear	1.0		
10	-4	|	1	Clear	980	1	4	Clear	1.0		
11	JC89788-1	|	2	Clear	1000	1	4	Clear	1.0		
12	-2	|	1	Clear	1000	1	4	Clear	1.0		
13	-3	|	1	Clear	1000	1	4	Clear	1.0		
14	-4	|	1	Clear	1000	1	4	Clear	1.0		
15	JC85400-21	|	2	Clear	100	1	4	Clear	1.0	Δ	
16	-22	|	4	Clear	100	1	4	Clear	1.0	Δ	
17	JC89799-6	|	1	Clear	1000	1	4	Clear	1.0		
18	-7	|	1	Clear	1000	1	4	Clear	1.0		
19	-8	|	2	Clear	1000	1	4	Clear	1.0		
20	-9	|	2	Yellow	1000	1	4	LYellow	1.0		

Comments: QC Samples (MS, MSD, LINK and/or DUP, Link) Confirmed by:

Δ JC85400-21 & JC85400-22 use 100 mL Sample

Δ Crush Blank

SGS

Form: OP022A-12

Rev Date: 8/2/17

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ABN Aqueous Extraction Logbook

LOGBOOK ID:

Date Started: 6/21/19 Time Started: 6:00 PM

Date Finished: 6/21/19 Time Finished: 10:40

Extract Method (CHECK OFF "√" /DO NOT CIRCLE):

Separatory Funnel: SW846 3510C/CLP/other ✓ 3510C SIM _____

Continuous Liquid Liquid: SW846 3520C/CLP/other _____

BATCH # MS 0021117	RACK# Green
Set-up by:	LJT
Extracted by:	AR, HC
Concentrated by:	AR, HC
Final Vol. Top-up:	VP
Vialed by:	HC, VP
Supervisor Review:	6/21/19

Equipment/ Range	ID	Observed Temp (°C)	Correction Factor (°C)	Corrected Temp (°C)	Pressure/ Flowrate
Buchi (65-71°C)					
Buchi Chiller					
Waterbath (70-80°C)	5:6	74.75	0.1	75.76	OK
Waterbath Chiller (GPM)	E3	4	—	—	2
NEVAP (32-35°C, LPM)	4	35	—	—	10

SURROGATE	LOT #	CONC (ppm)	AMT (mL)
ABN	192336137	50	1.0
ABN DOD SIM			

WITNESS SIGN: SPIKE SIGN:

MATRIX SPIKE	LOT #	CONC (ppm)	AMT (mL)
Acid	192336136	50	Acid: 1.0
Acid (for SIM)			A(SIM): 0.1
Base #1	192336122	50	1.0
Base #2	192336134	50	1.0
Anilines	192336138	50	1.0
BSIM	192336147	1	1.0

WITNESS SIGN: SPIKE SIGN:

SOLVENT	LOT #	BRAND	AMT (mL)
METH CHLOR	193291	Fisher	60X6

REAGENT	LOT #	BATCH #	BRAND
NaOH	188954		Fisher Kirkland
H2SO4	2810732		
Sodium Sulfate	183474	6:10:19A	Fisher Lab
Glass Wool	05T04		
Filter Paper			Hydrion
pH strips	217518		

Special Client Spike Instructions

QC ID# for Special Spike	Amt to Spike	Spike ID	Lot #	Conc.	Amt. Spiked

WITNESS SIGN: SPIKE SIGN:

Manager/Supervisor/Team Lead Approval:

SPECIAL PROCESSING INSTRUCTIONS

Rx Reason:

Spiking:

Weights/Volumes:

Required MS/MSD:

Final Volume:

Other:

	Sample #	Analysis Type	Sample Bottle #	Sample Description	Sample Volume (mL)	pH Adjust(mL) <2 H2SO4	pH Adjust(mL) >11 NaOH	Final Extract Color	Final Extract Vol(mL)	Misc. GPC Cleanup	Comments
	MB1	ABN		DI H2O	1000	1	4	clear	1.0		
	BS1	|		DI H2O	1000	1	4	yellow	1.0		
	~~BSD MS~~	|		DI H2O	1000	1	4	yllow	1.0		
	MSD	|									
	BS12	SIM		DI H2O	1000	1	4	clear	1.0		
	~~BSD12 MS~~	1		DI H2O	1000	1	4	clear	1.0		
	MSD										
	BS										
	MS										
	MSD										
1	JC90096-9	ABN	2	TAN	1050	1	4	clear	1.0		
2	-10	|	2	Hyellow	1050	1	4	brown	1.0		
3	-11	|	1	clear	950	1	4	clear	1.0		
4	JC90031-1	|	3	Brown	1000	1	4	clear	1.0		
5	JC90071-1	|	1	CLEAR	1050	1	4	brown	1.0		
6	JC90083-1	|	4	clear	1050	1	4	clear	1.0		
7	JC90092-2	|	2	Hyellow	1050	1	4	clear	1.0		
8	JC90078-10	|	1	yellow	1040	1	4	clear	1.0		
9	JC90~~12~~-12	|	2	yellow	1040	1	4	clear	1.0		
10	JC89788-5	|	2	yellow	1040	1	4	clear	1.0		
11	-6	|	1	yellow	1020	1	4	clear	1.0		
12	JC90108-5	|	1	yellow	1050	1	4	brown	1.0		
13	JC85400-23	|	4	Clear	100	1	4	clear	1.0		Δ
14	JC90107-1	|	1	yellow	1000	1	4	clear	1.0		
15	-2	|	1	yellow	980	1	4	clear	1.0		
16	JC90112-1	|	1	Brown	970	1	4	clear	1.0		
17	-2	|	1	Brown	940	1	4	clear	1.0		
18	-3	|	1	Brown	960	1	4	clear	1.0		
19	-4	|	1	Brown	980	1	4	clear	1.0		
20	-5	|	1	BROWN	960	1	4	clear	1.0		

Comments: QC Samples (MS, MSD, LINK and/or DUP, Link) Confirmed by:

Δ JC85400-23 use 100 mL due to Crash blank

SGS
Form: OP022A-12
Rev Date: 8/2/17

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ATTACHMENT 3

Data Usability Summary Reports

DATA USABILITY SUMMARY REPORT

For

FORMER SIGNORE INC

WATER SAMPLES

PFAS
SDG Nos. FA65213
Sampling Date: September 11 & 14, 2019

Submitted to:

GZA GeoEnvironmental Inc.
300 Pearl Street,
Suite 700
Buffalo, NY 14202

Prepared by:
Environmental Occupational & Public Health Consultants Inc. (EOPHC)
Environmental Data Validation Inc. (EDV, Inc.)
1326 Orangewood Ave
Pittsburgh, PA 15216
(412) 341-5281

DATA USABILITY SUMMARY REPORT
Organics and Inorganics
USEPA REGION II

Site: Former Signore Inc. SDGs #: FA65213

Client: GZA GeoEnvironmental, Inc Date: September 30, 2019

Laboratory: Alpha Analytical Reviewer: L. Wright.

Sample Identification Table

Client Sample ID	Laboratory ID	Matrix	PFAS
EW-4.5-2019	FA65213-1	Aqueous	X
EW-4S-2019	FA65213-2	Aqueous	X
EW-5S-2019	FA65213-3	Aqueous	X
EW-5S-2019	FA65213-3D	Aqueous	X
EW-5S-2019	FA65213-3S	Aqueous	X
EW-1.25R-2019	FA65213-4	Aqueous	X
PFAS-DUPLICATE	FA65213-5	Aqueous	X
PFAS-FIELD BLANK	FA65213-6	Aqueous	X
PFAS-RINSATE	FA65213-7	Aqueous	X
EW-4.5-2019	FA65213-8	Aqueous	X

These data packages contained eight (8) aqueous samples, one (1) field blank and one (1) trip blank samples. The samples were analyzed via USEPA Method 537. The adherence of laboratory analytical performance to these methods' analytical specifications was evaluated during the data validation process. The data package was evaluated for its usability as defined by the Guidance for the Development of Data Usability Summary Reports (DER-10, 11/09). USEPA Region II standard operating procedures were used as guidance documents. According to the NYSDEC Guidance for the Development of Data Usability Summary Reports, the following QC data were evaluated: blanks, instrument tunings, calibration standards, calibration verifications, laboratory controls, surrogate recoveries, spike recoveries, and sample data. All QC data were within quality control limits, except the following issues:

Cover letter, Narrative and Data Reporting Forms (Form 1s): The deficiencies noted in the case narrative that affect data usability have been discussed in applicable sections. Data that have no impact on data usability are not discussed.

Chain of Custody (COC): All samples were present.

Preservation: Preservation was acceptable.

Holding Time: Holding time criterion of 14 days was not met for one sample and resulted in the following qualification;

Sample ID	Compound	Qualifier
FA65213-5	Perfluorobutanoic acid Perfluoropentanoic acid Perfluorohexanoic acid Perfluoroheptanoic acid Perfluorooctanoic acid Perfluorononanoic acid Perfluorodecanoic acid Perfluoroundecanoic acid Perfluorododecanoic acid Perfluorotridecanoic acid Perfluorotetradecanoic acid Perfluorobutanesulfonic acid Perfluorohexanesulfonic acid Perfluoroheptanesulfonic acid Perfluorooctanesulfonic acid Perfluorodecanesulfonic acid PFOSA MeFOSAA EtFOSAA 6:2 Fluorotelomer sulfonate 8:2 Fluorotelomer sulfonate	UJ

Blanks Quality Control: Results were acceptable.

Calibration Quality Control: The calibration was acceptable.

Laboratory Control Sample (LCS): The following were qualified;

Sample ID	Compound	Qualifier
FA65213-1 FA65213-2 FA65213-3 FA65213-6 FA65213-7 FA65213-8	Perfluorodecanesulfonic acid	UJ

Surrogates: Recoveries were acceptable.

Internal Standards: All results were acceptable.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD): Organic data were not qualified based on MS/MSD data alone. The results are acceptable.

Compound Quantitation: Quantitations were acceptable. Results reported above the method detection limit (MDL) but below the reporting limit (RL) are considered estimated (J).

Additional Comments: Some Form 1s and case narratives are reporting criteria out of QC limits. If data were impacted due to the deficiency, it is discussed in the DUSR and appropriate qualifier(s) applied. Therefore all discussions in the DUSR relate to all conditions that affected data usability. When there are multiple analyses, the validator presents the best run (Attachment A).

Data usability: Data qualified with the "UJ" qualifier are to be used cautiously as they are estimated data with some quality control issues. Data qualified with the "J" qualifier are to be used cautiously as they are estimated data with some quality control issues. Data qualified with the "R" qualifier are not usable due to severe quality control issues. Data qualified with the "U" qualifier are usable at the reporting limit.

ATTACHMENT A

FORM 1s

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-4.5-2019		
Lab Sample ID:	FA65213-1	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31231.D	1	06/23/19 22:54	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	~~ND~~ UJ	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-4.5-2019		
Lab Sample ID:	FA65213-1	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	106%		30-140%
	13C5-PFPeA	111%		40-140%
	13C5-PFHxA	114%		50-150%
	13C4-PFHpA	120%		50-150%
	13C8-PFOA	129%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	105%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	75%		50-150%
	13C2-PFTeDA	65%		40-150%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	104%		30-140%
	d3-MeFOSAA	85%		50-150%
	13C2-6:2FTS	144%		50-150%
	13C2-8:2FTS	106%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-4S-2019		
Lab Sample ID:	FA65213-2	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31232.D	1	06/23/19 23:09	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	2.40	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	~~ND~~	4.0	1.0	ng/l	UJ
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-4S-2019		
Lab Sample ID:	FA65213-2	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		30-140%
	13C5-PFPeA	98%		40-140%
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	109%		50-150%
	13C8-PFOA	119%		50-150%
	13C9-PFNA	125%		50-150%
	13C6-PFDA	112%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	66%		40-150%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	91%		30-140%
	d3-MeFOSAA	90%		50-150%
	13C2-6:2FTS	135%		50-150%
	13C2-8:2FTS	119%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-5S-2019		
Lab Sample ID:	FA65213-3	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31233.D	1	06/23/19 23:24	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	4.29	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	~~ND~~ UJ	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-5S-2019		
Lab Sample ID:	FA65213-3	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		30-140%
	13C5-PFPeA	102%		40-140%
	13C5-PFHxA	104%		50-150%
	13C4-PFHpA	112%		50-150%
	13C8-PFOA	121%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	111%		50-150%
	13C7-PFUnDA	82%		50-150%
	13C2-PFDoDA	73%		50-150%
	13C2-PFTeDA	56%		40-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	100%		30-140%
	d3-MeFOSAA	86%		50-150%
	13C2-6:2FTS	136%		50-150%
	13C2-8:2FTS	120%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	EW-1.25R-2019		
Lab Sample ID:	FA65213-4	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31503.D	1	06/27/19 04:51	NG	06/26/19 07:30	OP75639	S2Q501
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	5.71	8.0	2.0	ng/l	J
2706-90-3	Perfluoropentanoic acid	1.69	4.0	1.5	ng/l	J
307-24-4	Perfluorohexanoic acid	1.22	4.0	1.0	ng/l	J
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	1.69	2.0	1.0	ng/l	J
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EW-1.25R-2019		
Lab Sample ID:	FA65213-4	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		30-140%
	13C5-PFPeA	96%		40-140%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	124%		50-150%
	13C9-PFNA	128%		50-150%
	13C6-PFDA	115%		50-150%
	13C7-PFUnDA	102%		50-150%
	13C2-PFDoDA	97%		50-150%
	13C2-PFTeDA	58%		40-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	80%		30-140%
	d3-MeFOSAA	106%		50-150%
	13C2-6:2FTS	144%		50-150%
	13C2-8:2FTS	122%		50-150%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-DUPLICATE		
Lab Sample ID:	FA65213-5	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31504.D	1	06/27/19 05:06	NG	06/26/19 07:30	OP75639	S2Q501
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result		RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	ND	UJ	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND		4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND		4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND		2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND		2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND		2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND		4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND		4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND		4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND		4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND		4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	ND		2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND		2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND		4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND		2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid	ND		4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	ND	UJ	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	ND	UJ	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND		20	4.0	ng/l	
FLUOROTELOMER SULFONATES							
27619-97-2	6:2 Fluorotelomer sulfonate	ND		8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND		8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-DUPLICATE		
Lab Sample ID:	FA65213-5	**Date Sampled:**	06/11/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	105%		30-140%
	13C5-PFPeA	111%		40-140%
	13C5-PFHxA	114%		50-150%
	13C4-PFHpA	121%		50-150%
	13C8-PFOA	129%		50-150%
	13C9-PFNA	126%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	98%		50-150%
	13C2-PFDoDA	97%		50-150%
	13C2-PFTeDA	67%		40-150%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	97%		30-140%
	d3-MeFOSAA	103%		50-150%
	13C2-6:2FTS	146%		50-150%
	13C2-8:2FTS	110%		50-150%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-FIELD BLANK		
Lab Sample ID:	FA65213-6	**Date Sampled:**	06/11/19
Matrix:	AQ - Field Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31240.D	1	06/24/19 01:08	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result		RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	ND		8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND		4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND		4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND		2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND		2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND		2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND		4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND		4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND		4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND		4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND		4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	ND		2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND		2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND		4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND		2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	~~ND~~	UJ	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	ND		4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	ND		20	4.0	ng/l	
2991-50-6	EtFOSAA	ND		20	4.0	ng/l	
FLUOROTELOMER SULFONATES							
27619-97-2	6:2 Fluorotelomer sulfonate	ND		8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND		8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-FIELD BLANK		
Lab Sample ID:	FA65213-6	**Date Sampled:**	06/11/19
Matrix:	AQ - Field Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	104%		30-140%
	13C5-PFPeA	107%		40-140%
	13C5-PFHxA	106%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	121%		50-150%
	13C9-PFNA	124%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	86%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	73%		40-150%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	94%		30-140%
	d3-MeFOSAA	89%		50-150%
	13C2-6:2FTS	135%		50-150%
	13C2-8:2FTS	101%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-RINSATE		
Lab Sample ID:	FA65213-7	**Date Sampled:**	06/11/19
Matrix:	AQ - Equipment Blank	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31241.D	1	06/24/19 01:22	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	~~ND~~ UJ	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-RINSATE		
Lab Sample ID:	FA65213-7	**Date Sampled:**	06/11/19
Matrix:	AQ - Equipment Blank	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		30-140%
	13C5-PFPeA	100%		40-140%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	110%		50-150%
	13C8-PFOA	118%		50-150%
	13C9-PFNA	127%		50-150%
	13C6-PFDA	114%		50-150%
	13C7-PFUnDA	88%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	65%		40-150%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	104%		30-140%
	d3-MeFOSAA	92%		50-150%
	13C2-6:2FTS	133%		50-150%
	13C2-8:2FTS	118%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	PFAS-TRIP BLANK		
Lab Sample ID:	FA65213-8	**Date Sampled:**	06/11/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q31242.D	1	06/24/19 01:37	NG	06/21/19 13:50	OP75580	S2Q499
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

PFAS List

CAS No.	Compound	Result	RL	MDL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS						
375-22-4	Perfluorobutanoic acid	ND	8.0	2.0	ng/l	
2706-90-3	Perfluoropentanoic acid	ND	4.0	1.5	ng/l	
307-24-4	Perfluorohexanoic acid	ND	4.0	1.0	ng/l	
375-85-9	Perfluoroheptanoic acid	ND	2.0	1.0	ng/l	
335-67-1	Perfluorooctanoic acid	ND	2.0	1.0	ng/l	
375-95-1	Perfluorononanoic acid	ND	2.0	1.0	ng/l	
335-76-2	Perfluorodecanoic acid	ND	4.0	1.0	ng/l	
2058-94-8	Perfluoroundecanoic acid	ND	4.0	1.0	ng/l	
307-55-1	Perfluorododecanoic acid	ND	4.0	1.5	ng/l	
72629-94-8	Perfluorotridecanoic acid	ND	4.0	1.0	ng/l	
376-06-7	Perfluorotetradecanoic acid	ND	4.0	1.0	ng/l	
PERFLUOROALKYLSULFONATES						
375-73-5	Perfluorobutanesulfonic acid	ND	2.0	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	ND	2.0	1.0	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	4.0	1.0	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	2.0	1.5	ng/l	
335-77-3	Perfluorodecanesulfonic acid [a]	ND UJ	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDES						
754-91-6	PFOSA	ND	4.0	1.0	ng/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS						
2355-31-9	MeFOSAA	ND	20	4.0	ng/l	
2991-50-6	EtFOSAA	ND	20	4.0	ng/l	
FLUOROTELOMER SULFONATES						
27619-97-2	6:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	8.0	2.0	ng/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PFAS-TRIP BLANK		
Lab Sample ID:	FA65213-8	**Date Sampled:**	06/11/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	06/15/19
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	Former Signore Inc; Ellicottville, NY		

PFAS List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		30-140%
	13C5-PFPeA	102%		40-140%
	13C5-PFHxA	104%		50-150%
	13C4-PFHpA	111%		50-150%
	13C8-PFOA	119%		50-150%
	13C9-PFNA	124%		50-150%
	13C6-PFDA	112%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	88%		50-150%
	13C2-PFTeDA	70%		40-150%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	98%		30-140%
	d3-MeFOSAA	97%		50-150%
	13C2-6:2FTS	133%		50-150%
	13C2-8:2FTS	118%		50-150%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

ATTACHMENT B

CASE NARRATIVE & COC

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: GZA Geo Environmental **Job No:** FA65213

Site: Former Signore Inc; Ellicottville, NY **Report Date** 6/27/2019 5:18:13

6 Sample(s), 1 Trip Blank(s) and 1 Field Blank(s) were collected between 06/11/2019 and 06/14/2019 and were received at SGS North America Inc - Orlando on 06/15/2019 properly preserved, at 1.3 Deg. C and intact. These Samples received an SGS Orlando job number of FA65213. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: AQ **Batch ID:** OP75580

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA65213-3MS, FA65213-3MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Blank Spike Recovery(s) for Perfluorodecanesulfonic acid are outside control limits.

Matrix Spike Recovery(s) for Perfluorodecanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Perfluorodecanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

FA65213-1 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-2 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-3 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-6 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-7 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

FA65213-8 for Perfluorodecanesulfonic acid: Associated BS recovery outside control limits.

Matrix: AQ **Batch ID:** OP75639

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) JC90114-2MS were used as the QC samples indicated.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Ariel Hartney, Client Services *(Signature on File)*

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

FA65213

SGS - ORLANDO JOB # :

PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: GSA
Address: 300 Pearl St. Suite 700
City: Buffalo State: NY Zip: 14202
Project Contact: Thomas Bohlen Email: thomas.bohlen@gza.com
Phone #: 716-844-7050
Sampler(s) Name(s) (Printed)
Sampler 1: T. Bohlen Sampler 2:

Project Information

Project Name: Signore
Street
City Ellicottville State NY
Project #
Fax #
Client Purchase Order #

Analytical Information

PFAS - see WO

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	PFAS
1	EW-4.5-2019	6/11/19	1320	TB	GW											X
2	MW-4S-2019		1530													X
3	MW-5S-2019MS/MSD		1430													X
4	EW-1.25R-2019	6/14/19	930													X
5	PFAS-Duplicate	-	-	TB	GW											X
6	PFAS Field Blank	6/11/19	1407													X
7	PFAS ~~Water~~ Rinsate	6/11/19	1200													X
8	PFAS Trip Blank	6/14/19	1015													X

Turnaround Time (Business days)

10 Day (Business)
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Approved By: / Date: SAD
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [x] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [x] EDD's - NYSDEC

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Thomas Bohlen/GZA	6/14/19 1545	FED EX	3 FF		4 6/15/19 900
5	Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 1.3

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (1) Rev 031318

5.1 5

FA65213: Chain of Custody
Page 1 of 2

DATA USABILITY SUMMARY REPORT

For

FORMER SIGNORE INC
WATER SAMPLES

SVOA
SDG No: JC89788
Sampling Dates: June 11 & 14, 2019

Submitted to:

GZA GeoEnvironmental Inc.
300 Pearl Street,
Suite 700
Buffalo, NY 14202

Prepared by:
Environmental Occupational & Public Health Consultants Inc. (EOPHC, Inc.)
Environmental Data Validation Inc (EDV, Inc.)
1326 Orangewood Ave
Pittsburgh, PA 15216
(412) 341-5281

September 30, 2019

DATA USABILITY SUMMARY REPORT
Semi-volatiles
USEPA REGION II

Site: Former Signore

SDG #: JC89788

Client: GZA GeoEnvironmental, Inc.

Date: September 30, 2019

Laboratory: Alpha Analytical

Reviewer: L. Wright

Sample Identification Table

Client Sample ID	Laboratory ID	Matrix	SVOCs
EW-4.5-2019	JC89788-1	Aqueous	X
MW-5S-2019	JC89788-2	Aqueous	X
MW-4S-2019	JC89788-3	Aqueous	X
MW-4S-2019MSD	JC89788-3D	Aqueous	X
MW-4S-2019MS	JC89788-3S	Aqueous	X
1,4-DIOXANE RINSATE	JC89788-4	Aqueous	X
EW-1.25R-2019	JC89788-5	Aqueous	X
EW-4.5-2019	JC89788-6	Aqueous	X

The data package contained six aqueous samples, one Field blank and one Trip blank. The samples were analyzed via Method SW-846 8260C, 8270D & 8270D-SIM, 8082A 6010C, 8015D (modified), 7471B and 7470A. The adherence of laboratory analytical performance to this method's analytical specifications was evaluated during the data validation process. The data package was evaluated for its usability as defined by the Guidance for the Development of Data Usability Summary Reports (DER-10, 11/09). USEPA Region II checklists were used as guidance documents. According to the NYSDEC Guidance for the Development of Data Usability Summary Reports, the following QC data were evaluated: blanks, instrument tunings, calibration standards, calibration verifications, laboratory controls, surrogate recoveries, spike recoveries, and sample data. All QC data were within quality control limits, except the following issues:

Cover letter, Narrative and Data Reporting Forms (Form 1s): All criteria were met. The deficiencies noted in the case narrative that affect data quality have been discussed in applicable sections.

Chain of Custody (COC): All were present.

Holding Time: Holding times were within acceptable criterion for all samples and analyses.

Blanks Quality Control: Blanks are acceptable.

Calibration Quality Control: The results were acceptable.

Laboratory Control Sample (LCS): Results were acceptable.

Surrogates: The results were acceptable.

Matrix Spike: The results were acceptable.

Matrix Duplicate: The results were acceptable.

Internal Standards: The internal standards did not report any deficiencies and are acceptable.

Field Duplicate: A field duplicate pair was listed. RPDs are calculated when the same compounds in both samples report detects. No RPDs were calculated as there were no detects.

Compound Quantitation: Quantitation was acceptable.

Additional Comments: None

Data usability: Data qualified with the "UJ" qualifier are to be used cautiously as they are estimated data with some quality control issues. Data qualified with the "J" qualifier are to be used cautiously as they are estimated data with some quality control issues. Data qualified with the "R" qualifier are not usable due to severe quality control issues. Data qualified with the "U" qualifier are usable as there are no quality control issues.

ATTACHMENT A

FORM 1s

SGS North America Inc.

Report of Analysis

Client Sample ID: EW-4.5-2019
Lab Sample ID: JC89788-1
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/12/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85131.D	1	06/22/19 05:56	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		29-124%
321-60-8	2-Fluorobiphenyl	82%		23-122%
1718-51-0	Terphenyl-d14	61%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: MW-5S-2019
Lab Sample ID: JC89788-2
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/12/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85132.D	1	06/22/19 06:17	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67%		29-124%
321-60-8	2-Fluorobiphenyl	81%		23-122%
1718-51-0	Terphenyl-d14	84%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: MW-4S-2019
Lab Sample ID: JC89788-3
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/12/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85092A.D	1	06/21/19 15:39	KC	06/17/19 07:30	OP21044A	E4M3947
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		29-124%
321-60-8	2-Fluorobiphenyl	71%		23-122%
1718-51-0	Terphenyl-d14	82%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: 1,4-DIOXANE RINSATE
Lab Sample ID: JC89788-4
Matrix: AQ - Equipment Blank
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/11/19
Date Received: 06/12/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85130.D	1	06/22/19 05:35	CS	06/17/19 07:30	OP21044A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.10	0.049	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		29-124%
321-60-8	2-Fluorobiphenyl	83%		23-122%
1718-51-0	Terphenyl-d14	104%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: EW-1.25R-2019
Lab Sample ID: JC89788-5
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Former Signore, Ellicottville, NY

Date Sampled: 06/14/19
Date Received: 06/15/19
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85133.D	1	06/22/19 06:38	CS	06/21/19 06:00	OP21117A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.096	0.047	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	82%		29-124%
321-60-8	2-Fluorobiphenyl	99%		23-122%
1718-51-0	Terphenyl-d14	124%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	1,4-DIOXANE DUPLICATE		
Lab Sample ID:	JC89788-6	**Date Sampled:**	06/14/19
Matrix:	AQ - Ground Water	**Date Received:**	06/15/19
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Former Signore, Ellicottville, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M85134.D	1	06/22/19 06:59	CS	06/21/19 06:00	OP21117A	E4M3948
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.098	0.048	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		29-124%
321-60-8	2-Fluorobiphenyl	76%		23-122%
1718-51-0	Terphenyl-d14	121%		22-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

ATTACHMENT B

CASE NARRATIVE & COC

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	GZA Geo Environmental	**Job No**	JC89788
Site:	Former Signore, Ellicottville, NY	**Report Date**	6/27/2019 5:58:04 PM

Between 06/12/2019 and 06/15/2019, 6 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC89788 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Semi-volatiles By Method SW846 8270D BY SIM

Matrix: AQ **Batch ID:** OP21044A

- All samples were extracted within the recommended method holding time.
- Sample(s) JC89788-3MS, JC89788-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- OP21044A-MB1 for Terphenyl-d14: Outside of in house control limits.

Matrix: AQ **Batch ID:** OP21117A

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- OP21117A-MB1 for Terphenyl-d14: Outside of control limits.
- OP21117A-BS12 for Terphenyl-d14: Outside of control limits.
- OP21117A-BSD12 for Terphenyl-d14: Outside of control limits.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

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Page 1 of 1

FED-EX Tracking # 1019 2801 4194
Bottle Order Control #
SGS Quote #
SGS Job # JC89788

Client / Reporting Information

Company Name: GZA
Street Address: 300 Pearl St. Suite 700
City: Buffalo State: NY Zip: 14086
Project Contact: Tammy McCloskey E-mail:
Phone #
Sampler(s) Name(s): T. Bohlen 716 844-7159 Phone #

Project Information

Project Name: Signore
Street: Ellicottville, NY
Project # ~~36867.20~~
Client Purchase Order #
Project Manager: T. Bohlen

Billing Information (if different from Report to)
Company Name: Same
Street Address
City State Zip
Attention: T. Bohlen

Requested Analysis

1,4 Dioxane - SIMS
↳ see W.O.

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
1	EW-4.5-2019		6/11/19	1000	TB	G	GW	2									X
2	MW-5S-2019			1430				2									X
3	MW-4S-2019MS/MSD			1530				6									X
4	1,4-Dioxane Rinsate		6/11/19	1210	TB	G	GW	2									X

Turn Around Time (Business Days)

Approved By (SGS PM): / Date: ~~KG 6/14~~

- [ ] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment ~~KG~~ 2A
Label Verification

All data available via Labtrak
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format
- [ ] DOD-QSMS

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

1 Relinquished by: Thomas Bohlen	Date / Time: 6/11/19/	1 Received By: Fedex	2 Relinquished By: Fedex	Date / Time: 6/12/19 9:20	2 Received By:
3 Relinquished by:	Date / Time:	3 Received By:	4 Relinquished By:	Date / Time:	4 Received By:
5 Relinquished by:	Date / Time:	5 Received By:	Custody Seal #	Intact / Not Intact	Preserved where applicable / Absent / Therm. ID:	On Ice ✓	Cooler Temp. °C 2.7 IR

APPENDIX B

PHOTOGRAPH LOG



Photo 1 – View of Site looking to northwest.



Photo 2 – Center of Site looking to southwest



Photo 3 – East side of Site looking south.



Photo 4 – East portion of Site looking north.



Photo 5 – Site looking to northwest

APPENDIX C

SITE MANAGEMENT FORM

Former Signore Site,Ellicottville, NY
BCP Site No.: C905034
Site Management Form

SITE DETAILS						
Site No.: C905034	Site Name: Former Signore, Inc.					
Site Address: 55-57- Jefferson St., Ellicottville, NY						
PERSON PERFORMING INSPECTION						
Name: Jim Richert	Email: James.Richert@GZA.com					
Company: GZA	Phone Number: 716/844-7048					
Others Present: None						
INSPECTION DATE AND SITE CONDITIONS						
Inspection Date: October 27, 2019	Inspection Time: 12:15 PM					
Weather Conditions: Overcast, Temp ~ 50 degrees F.						
REASON FOR SITE INSPECTION						
Type of Inspection: ☑ Annual Inspection ☐ Routine Maintenance Inspection ☐ Non-Routine Inspection						
Inspection after a Severe Condition that could effect Site controls ☐ Yes ☑ No						
Describe severe condition triggering inspection: NA						
VERIFICATION OF SITE DETAILS						
Current Site Owner: Iskalo Ellicottville Holdings LLC						
Current Site Operator: Iskalo Ellicottville Holdings LLC						
Describe Current Site Use (*check all that apply*)						
☐ Industrial		☐ Commercial		☐ Residential	☑ Other	Vacant, awaiting redevelopment
Briefly describe observed site uses:						
Site remains vacant and awaits redevelopment. No physical changes observed since the November 1, 2018 annual inspection.						
Note any additional pertinent information to Verification of Site Details (use additional pages if necessary.						
DESCRIPTION OF ENGINEERING CONTROLS						
Are the Engineering Controls still in place: NA ☐ Yes ☐ No						
If No, explain:						
Is the Site Management Plan still in place: ☑ Yes ☐ No						
If No, explain:						
AREAS IN NEED OF REPAIR OR MAINTENANCE						
Area discussed in this section must be shown on a figure and have photographic documentation.						
None						
INTRUSIVE ACTIVITIES PERFORMED AT SITE DURING INSPECTION PERIOD						
Location:	Date:					
Description of activities being performed:						
None observed and none reported by Site owner/operator						
Are Site records being properly generated and maintained: ☑ Yes ☐ No						
Provide a summary of recordkeeping review and adeuacy:						
ADDITIONAL NOTES & COMMENTS						
None						
INSPECTION CERTIFICATION						
I hereby certify that the information included in this report is complete and accurate to the best of my knowledge						
Inspector Signature: Jim Richert	Date: ___October 27, 2019					

APPENDIX D

POST-INJECTION AND SITE-WIDE GROUNDWATER MONITORING REPORTS (JUNE 2019)

Proactive by Design



JUNE 2019
ANNUAL GROUNDWATER MONITORING REPORT
Former Signore Inc.
55-57 Jefferson Street
Ellicottville, New York 14731

September 20, 2019
File No. 21.0056491.80



PREPARED FOR:
Iskalo Ellicottville Holdings LLC
Williamsville, New York

GZA GeoEnvironmental of New York
300 Pearl Street, Suite 700 | Buffalo, New York 14202
716-685-2300

31 Offices Nationwide
www.gza.com

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VIA EMAIL

September 20, 2019
File No. 21.0056491.80

Mr. David Chiazza
Iskalo Ellicottville Holdings LLC
Harbinger Square
5166 Main Street
Williamsville, New York 14221
email: dchiazza@iskalo.com

Re: June 2019 Annual Groundwater Monitoring Report
Former Signore, Inc. Facility
55-57 Jefferson Street
Ellicottville, New York 14731

Dear David:

GZA GeoEnvironmental of New York (GZA) is pleased to submit this annual groundwater monitoring report to Iskalo Ellicottville Holdings LLC (Iskalo). This report summarizes the analytical results of the sampling event conducted in June 2019 at the above referenced Site. The annual groundwater monitoring was performed as required by New York State Department of Environmental Conservation (NYSDEC) as specified in the Record of Decision (ROD) dated January 1992. Based upon the work conducted and the rate of chlorinated VOC (volatile organic compound) reduction observed, NYSDEC approved modification of the ROD to allow for a reduced frequency of groundwater monitoring from semi-annual to annual in fall 2017.

This report provides the analytical results of the ROD-required monitoring (12 wells sampled). The analytical results of the groundwater sampling provide useful information for documentation of concentrations of VOCs present in the on-Site groundwater as well as the areal extent of these constituents. Both on-site and off-site monitoring wells have been sampled since 1994. Comparison of over 20 years of groundwater data confirms that concentrations of tetrachloroethene (PCE) and trichloroethene (TCE) and their breakdown products cis-1,2-dichloroethene (cis-DCE) and vinyl chloride (VC) continue to decline with less exceedances of NYSDEC Class GA groundwater standards observed.

As discussed further in the attached report, GZA recommends reducing the monitoring frequency to biennial. If approved by NYSDEC, the next sampling event will be conducted in June 2021.

Should you have any questions or require additional information following your review, please contact Tom Bohlen at 716-844-7050.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Thomas Bohlen, P.G.
Project Manager

Karen Kinsella, Ph.D.
Senior Technical Specialist

Bart A. Klettke, P.E.
Principal

cc: Jaspal Walia, P.E., NYSDEC

Chad Staniszewski, P.E., NYSDEC

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1.0 INTRODUCTION

In accordance with our proposal dated May 8, 2019, GZA GeoEnvironmental of New York (GZA) collected groundwater samples at eight on-Site and four off-site monitoring wells associated with the Former Signore, Inc. facility located at 55-57 Jefferson Street, Ellicottville, New York (Site). The sampling was performed on June 11 through June 13, 2019. A Locus Plan and Site Plan are attached as Figure 1 and Figure 2, respectively.

1.1 BACKGROUND AND SITE HISTORY

The Former Signore Inc. Site is currently listed as a Class 4 Site on the New York State Department of Environmental Conservation (NYSDEC), Inactive Hazardous Waste Site (IHWS) registry (Site #905023). As part of the Record of Decision (ROD) dated January 1992 issued by NYSDEC, 12 monitoring wells were to be sampled on a semi-annual basis. The former owner, Signore Inc., ceased sampling of these wells in October 2006.

In October 2007, GZA completed a Phase II ESA at the Site as part of due diligence services for Iskalo. During the Phase II activities, VOC contamination was identified in on-Site soil and groundwater. Three areas of concern (AOC) were identified where VOC concentrations in soil were greater than the NYSDEC Unrestricted Soil Cleanup Objectives (6 NYCRR Part 375[1] criteria).

Iskalo Ellicottville Holdings LLC (Iskalo) took ownership of the property in October 2007 and has conducted the semi-annual sampling activities since April 2009. The Site was accepted into the NYSDEC Brownfield Cleanup Program (BCP) as Site # C905034 in January 2011.

In late 2011, AOC-1 and the majority of AOC-2 were addressed under a NYSDEC-approved IRM work plan. VOC-impacted soils and underground storage tanks were removed for proper off-Site disposal. A portion of AOC-2 and AOC-3 were located beneath the former building during the time of the first IRM, which has since been demolished.

A Supplemental Remedial Investigation (SRI) was completed between January 2012 and January 2013. The activities included the following.

- Off-site soil vapor intrusion assessment of nine homes;
- Completion of 10 on-site test pits;
- Completion of 21 on-site soil probes;
- Collection and analysis of four on-site surface soil samples;
- Collection and analysis of 21 soil samples from the 21 soil probes; and
- Collection of 19 groundwater samples from the 14 new microwells installed as part of the SRI, and 5 existing wells.

[1] 6 New York Code Rules and Regulation (6 NYCRR) Part 375 Environmental Remediation Programs, effective December 14, 2006 (Part 375).

The magnitude and areal extent of groundwater contamination was further defined within the Signore BCP Site boundaries, during the SRI activities.

The remaining portion of AOC-2 and AOC-3 were addressed in summer 2013 as part of a 2nd IRM. Impacted soils at these locations were removed for off-site landfill disposal. A groundwater pilot test was also implemented as part of the 2nd IRM. The pilot test consisted of the injection of an electron donor compound (EDC) material that was mixed with water. A total of 2,500 pounds of EDC material was injected, 2,000 pounds in the vicinity of SP-3 and 500 pounds at SP-32.

The EDC material enhances the anaerobic breakdown of the "parent" chlorinated compounds present at the Site (TCE, PCE and TCA) via reductive dechlorination to the "daughter" breakdown products (cis-dichloroethene (cis-DCE) and vinyl chloride (VC)), which degrade under both anaerobic and aerobic conditions.

The groundwater pilot test work plan included two post-injection sampling events:

1) 1st event: not more than 3 months (Fall 2013) after the pilot test injections; and
2) 2nd event: 9 to 12 months (late Spring 2014) after the pilot test injections.

Groundwater samples were collected from six locations (EW-1.25, SP-32, SP-37, SP-38, SP-43, and SP-45) in conjunction with the October 2013 and June 2014 semi-annual groundwater sampling events. The results from the first to second pilot sampling events were as follows.

- There was a decrease in parent compound concentrations at three of the six sampling locations: EW-1.25, SP-37, and SP-43.

- There was an increase in parent compound concentrations at the other three of six locations: SP-32, SP-38 and SP-45. The slight increase in concentration was not a concern at that time and may have been due to sample variability for this particular sampling event.

- Results of the groundwater pilot test supported the use of a similar but larger scale in-situ injection program for Site groundwater remediation. A Remedial Action Work Plan, detailing the groundwater remedial program, was prepared and submitted to NYSDEC. NYSDEC approved the RAWP and the groundwater remedial injections were initiated on July 6, 2015.

The July 2015 remedial injection material consisted of Organic Carbon Electron Donor Substrate (OCEDS). The program consisted of the injection of approximately 7,000 pounds of OC material into groundwater over an approximately 12,000 ft^2 oval-shaped area of the Site. The OC material was composed of food-, feed-, and agricultural- grade additives consisting of an aqueous solution of approximately 53% lactose, 40% inactive brewer's yeast or yeast extract, 4% sodium bicarbonate, and 3% trace nutrients (inorganic nitrate, phosphate, potassium, and vitamin B12) by mass. The following materials were mixed into an injectable slurry and injected into the subsurface groundwater, per each five injection locations (10 injections):

- Lactose: 264 pounds
- MicroBlend® Yeast Extract: 20 pounds
- Sensient® Yeast Extract: 143 pounds
- Sodium bicarbonate: 21 pounds
- Miracle-Gro®: 14 pounds

The additive slurry was injected in a grid pattern encompassing 70 injection locations. The 70 injection locations were spaced approximately 20 feet apart. One hundred pounds of OC material and 70 gallons of water were injected at each location. The slurry was injected in two intervals below the groundwater table at each location, for a total of 50 pounds of OC material and 35 gallons of water per interval. The deep injection was completed first at each location, at approximately 10 feet below the groundwater table. Groundwater levels were measured on-site in the morning prior to the start of injections and were utilized to determine injection depths across the Site as groundwater levels varied across the area of injections. The deep injection occurred at ~18-20 feet below ground surface (ft. bgs). The direct push soil probe rod was then brought up approximately five feet, and the shallow injection was completed.
Post-injection groundwater sampling events were conducted in August and October 2015, June and October 2016, July 2017, June 2018, and in June 2019 to assess the efficacy of the OCEDS injections in promoting continued natural attenuation of cVOCs at the Site. The efficacy of the remedy is being managed and reported under the NYSDEC BCP.

Reductive dechlorination is the biologically- or chemically- mediated replacement of chlorine (as chloride) on a chlorinated organic compound with elemental hydrogen, in the presence of a suitable electron donor. This causes transformation of the chlorinated VOC (cVOC) to a less chlorinated product. An electron donor is a substance capable of supplying electrons during oxidation-reduction reactions. In biological reductive dechlorination, microorganisms obtain energy by transferring electrons from electron donors to electron acceptors. Electron donors are chemically-reduced materials such as the OCEDS. Electron acceptors include oxygen, nitrate, ferric iron, sulfate, and cVOCs. Biological reductive dechlorination of cVOCs typically occurs sequentially from PCE to TCE, TCE to DCE, DCE to VC, VC to ethene, ethene to ethane, and ethane to carbon dioxide and water. Suitability for continued reductive dechlorination can be assessed by measuring groundwater biogeochemical parameters, including dissolved oxygen (DO), oxidation-reduction potential (ORP), reduced iron and manganese, methane, total organic carbon (TOC), nitrate, and sulfate, as well as PCE and TCE degradation products DCE, VC, ethene, ethane, and chloride. In the first few months following injection of an organic carbon additive, groundwater concentrations of PCE and TCE can increase, as their solubility is improved by additive fermentation products. The increased solubility makes the PCE and TCE more available to cVOC-degrading microorganisms, and is typically followed by decreasing PCE and TCE accompanied by an increase in degradation products DCE, VC, ethene, and ethane as bioremediation proceeds.

The analytical results of the groundwater sampling provide useful information for documentation of concentrations of cVOCs present in the on-Site groundwater. Groundwater cVOC concentrations measured at 47 months post-OCEDS injection (June 2019) follow trends typical for this stage of enhanced reductive dechlorination. As cVOC concentrations decline, biodegradation typically slows down due to less contact between cVOCs and dechlorination bacteria. Also, as PCE and TCE concentrations approach class GA criteria (i.e., PCE and TCE concentrations become a few micrograms per liter (µg/L)), concentrations of their degradation products DCE and VC are likely to be below laboratory detection limits. At this time, almost four years after the Organic Carbon Electron Donor Substrate (OCEDS) injections, groundwater biogeochemical conditions at the Site are generally

less conducive to reductive dechlorination; however, DCE is above laboratory detection limits in monitoring wells that still contain PCE and/or TCE above the class GA groundwater criteria of 5 µg/L. With the exception of replacement well EW-1.25R (replacement described below), located downgradient of the OCEDC injection area, TOC concentrations in groundwater are low. This is expected, as the OCEDS additive, by design, provides organic carbon for indigenous bacteria to consume while reducing electron acceptors that compete with cVOCs. Biomass generated by bacterial growth cycles provides a sustainable source of organic carbon, helping to maintain reductive dechlorination at the soil-porewater interface as the injected OCEDS is consumed. In GZA's opinion, groundwater concentrations of cVOCs will continue to decline over time. Monitoring will continue to document the dechlorination process.

2.0 PURPOSE AND SCOPE OF WORK

Groundwater samples were collected from the 12 monitoring wells to assess current conditions and provide an opinion regarding volatile organic compound (VOC) concentrations. The following was completed:

- Coordinated with Alpha Analytical located in Westborough, Massachusetts prior to commencement of field activities to obtain the analytical sample containers.
- Collected groundwater samples from each of the 12 monitoring wells for chemical analysis of VOCs via EPA Method 8260 Target Compound List (TCL).
- Prepared this report, which summarizes the data collected during this sampling event and compares the data to NYSDEC Class GA groundwater standards and historical data.

This report presents GZA's field observations, results, and opinions and is subject to the limitations presented in Appendix A and modifications if subsequent information is developed by GZA or another party.

3.0 FIELD METHODS

This section describes the field activities of GZA's groundwater sampling event.

3.1 GROUND WATER SAMPLING PROCEDURES

Equipment Cleaning

Prior to GZA's arrival on-Site, the sampling equipment (water level indicator, water quality meter and flow-through cell) were cleaned by rinsing with potable water, washing with a solution of laboratory detergent (Alconox®) and potable water, and rinsing with de-ionized water.

New, disposable polyethylene tubing (for placement down into the well and connecting to the water quality meter) and silicone tubing (for the peristaltic pump head) was used for groundwater sampling at each location. A variable speed peristaltic pump was used to purge groundwater from most monitoring wells. Groundwater

remained within the polyethylene and silicone tubing and did not come in contact with the pump. Therefore, the tubing and pump did not require decontamination between sample locations.

Equipment Calibration

A water quality meter and organic vapor meter (OVM) were used during groundwater monitoring. Prior to use each day, the calibration of the water quality meter and OVM were checked to verify that the equipment was in working order.

Monitoring & Purging Methodologies

An OVM, equipped with photoionization detector (PID) and a 10.6 eV ultraviolet lamp, was used to screen for volatile organics in air at the top of the well riser immediately following the removal of each monitoring well riser cap. OVM readings were recorded on each respective monitoring well field sampling log. OVM readings were non-detect and no odors were noted at the top of each of the 12 monitoring wells sampled.

The purging and water quality measurements were completed using two different types of pumps depending on the depth to water surface measured at the well location.

Nine of the 12 monitoring wells had water surface depths less than 20 feet below top of well riser, (wells EW-1.25, EW-1.5, EW-2.5, EW-4.5, MW-1I, MW-2I, MW-4S, MW-5S, and MW-9I). These wells were sampled using a Geotech® Geopump II peristaltic pump. Wells IRM-1 and IRM-2I had water surface depths greater than 20 feet below top of well riser and were sampled using a Proactive® Monsoon down-hole centrifugal pump. The below grade portion of the Town Well was not accessible. This well is discussed in the next section.

Prior to initiation of each well purge event, a static water level was measured from the top of the monitoring well riser and recorded on the monitoring well sampling log. At each monitoring well location, (with the exception of Town Well) new polyethylene tubing was lowered into the monitoring well and positioned with the bottom of the tubing at the approximate vertical center of the well screen. Well construction information was taken from the monitoring well logs previously generated by others. Following the sampling efforts, GZA measured and documented the depth of each monitoring well, which were consistent with the information provided on the existing monitoring well logs.

The peristaltic pump/centrifugal pump was started and operated at a flow rate that minimized draw-down of the water column within the well. The first set of water quality readings were collected when the flow-through cell was full and water began to flow out. Once a constant head was established, the pumping flow rate was not altered. Sampling flow rates were kept consistent with purging/monitoring flow rates. Readings were recorded on well development forms in the field, once a constant head had been established. Readings were continuously recorded every five minutes, until water quality readings stabilized for three successive readings, which generally consisted of ± 0.1 for pH, ±3% for conductivity, ± 10 mV for oxidation reduction potential (ORP) and ± 10% for turbidity and dissolved oxygen (DO). Copies of the well purging forms are included in Appendix B.

Groundwater samples were collected for lab analysis once a constant head was established, the water quality readings had stabilized and/or at least one well volume was removed. The polyethylene tubing from the pump to the water quality meter was disconnected and used to fill the appropriate groundwater sample containers provided by the laboratory. Groundwater collected for analysis did not enter the flow-through cell.

After the appropriate sample containers were filled, the pump was shut off and the tubing was removed from the monitoring well and pump-head. The tubing was then disposed as a solid waste. The flow-through cell and water quality meter were rinsed with de-ionized water prior to use at each well. Water generated during the purging/monitoring and equipment decontamination was placed on the ground in the vicinity of the monitoring well from which it was generated.

EW-1.25 Decommissioning and Reinstallation

GZA notes significant sediment accumulated in well EW-1.25 as observed during the June 2018 sampling event, with the top of sediment measured at 14.79 feet below top of riser. The depth to top of sediment was sounded with a weighted tape measure. The sediment was observed to be hard/consolidated. GZA made significant unsuccessful efforts to purge the accumulated sediment from the well with the available on-site equipment (peristaltic pump). EW-1.25 was screened from approximately 15 to 25 feet below top of riser; therefore, groundwater sampled in June 2018 from EW-1.25 may not have represented of the formation, as the screened interval was buried by accumulated sediment.

GZA and our subcontractor, Earth Dimensions, Inc. (EDI) mobilized to the Site in fall 2018 in an effort to re-develop/clear the accumulated sediment from EW-1.25. The well re-development effort was conducted via water-jetting using rigid tremie piping and a pump to flush the accumulated hard sediment. Re-development/sediment flushing efforts were unsuccessful, as the rigid tremie pipe sounded hard on the top of the obstruction in the well. Minimal amounts of material were recovered from the well from the flushing effort. These recovered sediments were observed to be coarse grained and are assumed to represent the formation. The screen associated with well EW-1.25 apparently failed, making it a non-viable sampling location/well.

Based upon these observations, NYSDEC required decommissioning of well EW-1.25 and reinstallation of a comparably screened proximate well. GZA and EDI mobilized to the Site on May 20, 2019. Well EW-1.25 was decommissioned via tremie grouting from the bottom of well to the top of well riser. The associated road box was removed and the resulting void space was filled with concrete to the ground surface. Replacement monitoring well EW-1.25R was installed approximately 10 feet north of the original well EW-1.25 and was comparably screened from approximately 15 to 25 ft. bgs. GZA returned to the Site on June 11, 2019 for the annual sampling event and well EW-1.25R was developed until stabilization of water quality parameters. Approximately 41 gallons (approximately 18 well volumes) were purged from the well during redevelopment. The well was subsequently sampled on June 14, 2019.

MW-1I Re-Development

Approximately seven feet of accumulated sediment were observed via sounding at well MW-1I in fall 2018. EDI successfully purged the accumulated sediment from MW-1I (via water jetting and rigid tremie piping) and repaired the riser pipe and associated road box. Well MW-1I was redeveloped in fall 2018 following sediment flush/surficial repairs. Approximately 60 gallons were purged from the well until stabilization of water quality parameters. The well was subsequently sampled on June 13, 2019.

Town Well

The Town Well sample was collected from a spigot within the pump house shed at the well location, as the subsurface portion of this well is not accessible. The spigot was turned on to allow approximately five gallons of water to discharge into a graduated 5-gallon bucket, which was emptied into a floor drain within the shed. The flow-through cell was filled with water directly from the spigot for water quality readings. The sample was collected from the spigot after approximately five gallons were purged and water quality readings were recorded.

3.2 GROUNDWATER DATA COLLECTION

GZA collected groundwater samples from the eight on-site monitoring wells (MW-2I, MW-5S, MW-9I, MW-1I, MW-4S, EW-1.25R, EW-1.5, and EW-2.5) and four off-site monitoring wells (EW-4.5, IRM-1, IRM-2I and the Town Well). In addition, a duplicate sample (from MW-1I), and matrix spike/matrix spike duplicate (MS/MSD) sample (from EW-2.5) were collected.

The following table shows the volume of water purged and the number of well volumes removed from the respective wells after a constant head was established. Constant head was not applicable at the Town Well location, as the well was not sampled using low-flow methodologies.

Monitoring Well ID	Volume Purged (gallons)	Well Volumes (#)
EW-1.25R	3.0	1.21
EW-1.5	2.3	0.35
EW-2.5	3.6	0.59
EW-4.5	2.7	0.49
MW-1I	2.1	0.39
MW-2I	2.1	0.37
MW-4S	1.0	0.66
MW-5S	1.5	0.92
MW-9I	1.1	0.17
IRM-1	13.5	3.03
IRM-2I	13.2	2.99
Town Well	5.0	NA

Prior to sampling, static groundwater level measurements were recorded from the top of riser at the 11 accessible monitoring wells (see table below). Monitoring well reference point elevation data were available from previous reports completed by others. Depth to groundwater was measured at each well prior to purging. The measured groundwater elevations collected during the June 2019 sampling event are shown on Figure 2. Based on the available information, groundwater flow is generally in a south to southeasterly direction, consistent with previous monitoring events.

Monitoring Well Location	Top of Riser Elevation (ft. AMSL)	Depth to Groundwater (ft.)	Groundwater Elevation (ft. AMSL)
EW-1.25R	154.04	9.83	1524.21
EW-1.5	1533.92	9.8	1524.12
EW-2.5	1533.92	12.41	1521.51
EW-4.5	1535.65	16.09	1519.56
MW-1I	1531.79	9.91	1521.88
MW-2I	1540.87	14.37	1526.50
MW-4S	1535.42	7.72	1527.70
MW-5S	1534.16	7.49	1526.67
MW-9I	1532.30	10.16	1522.14
IRM-1	1534.75	22.66	1512.09
IRM-2I	1535.99	22.92	1513.07

4.0 ANALYTICAL LABORATORY TESTING

Twelve groundwater samples, one duplicate sample (MW-1I), one matrix spike/matrix spike duplicate (EW-2.5), and one trip blank, were submitted for analytical testing. The samples were packed in an ice-filled cooler and, following typical chain-of-custody procedures, sent to Alpha Analytical in Westborough, Massachusetts. Table 1 presents a summary of the samples collected, dates of sample collection, and analyses completed.

5.0 ANALYTICAL TEST RESULTS

Discussion of the laboratory results for the groundwater samples is presented below. The laboratory report is provided in Appendix D and summarized on Table 2. Analytical data that were available from January 1989 to June 2019 (specifically trichloroethene (TCE) and tetrachloroethene (PCE)) are summarized on Table 3. These data are also provided graphically, per well location, in Appendix C.

The analytical test results for the groundwater samples were compared to NYSDEC Class GA standards presented in the Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, errata January 1999 and amended April 2000.

The analytical data generated as part of the annual monitoring program (the 12 wells) have also been provided to NYSDEC electronically for their Environmental Information Management System (EIMS). The data was provided in a standardized electronic data deliverable (EDD) format that uses the database software application EQuIS™ (EQuIS) from EarthSoft® Inc. The laboratory data and required information were imported into the EQuIS Data Processor (EDP) and submitted to NYSDEC.

5.1 ON SITE WELLS

- EW-1.25R: Five VOCs were detected above method detection limits, but below their respective NYSDEC Class GA (groundwater) criteria. GZA notes cis-DCE (57 µg/L) and TCE (35 µg/L) were detected above their respective Class GA criteria of 5 µg/L when sampled in July 2017; and analyte concentrations were below MDLs in June 2018. As discussed, above significant sediment had accumulated in the original EW-1.25 well at the time of June 2018 sampling event, with the top of sediment measured at 14.79 feet below top of riser. EW-1.25 was screened from approximately 15 to 25 feet below top of riser; therefore, groundwater sampled during the June 2018 event may not have been representative of the formation, as the screened interval was buried by accumulated sediment. Replacement monitoring well EW-1.25R was installed approximately 10 feet north of the original well EW-1.25 and was comparably screened from approximately 15 to 25 ft. bgs.

  Since the groundwater sampling was reinitiated in 2009, there has been a general downward trend of total VOC concentrations detected at this location. EW-1.25 total VOC mass was similar in June 2016 and July 2017 (86 and 97 µg/L, respectively), with a more significant decrease in VOC mass observed in June 2019 (11 µg/L) at EW-1.25R.

- EW-1.5: One VOC (acetone) was detected above method detection limits but below its respective Class GA Criteria. Since 2009, there has been a slight general downward trend of total VOC concentrations detected at this location.

- EW-2.5: One VOC (acetone) was detected above method detection limits but below its respective Class GA Criteria. Historically, the VOC results have been either below method detection limits and/or the Class GA criteria since 2002.

- MW-1I: Four VOCs were detected above method detection limits but below their respective Class GA Criteria. Since 2009, there has been a downward trend of VOC concentrations detected at this location and the results have generally been at or below the Class GA criteria since 1996, with the exception of a slight increase in VOC concentrations since the OCEDC injections. As PCE/TCE degradation product cis-DCE is still being produced at this location, we anticipate that VOC concentrations will continue to decline in this well over time.

- MW-2I: One VOC (acetone) was detected above method detection limits. Historically, the results have been either below method detection limits or the Class GA criteria since 1994.

- MW-4S: Two VOCs were detected above method detection limits but below their respective Class GA Criteria. Historically, the results have been either below method detection limits and/or the Class GA criteria since 1998.

- MW-5S: Four VOCs were detected above method detection limits but below their respective Class GA Criteria. Since 2009, there has been a downward trend of VOC concentrations detected at this location.

  MW-5S is approximately 30 feet southeast and downgradient of AOC-2 and AOC-3 which were addressed as part of IRM activities in 2011 and 2013.

- MW-9I: Three VOCs, (Acetone, PCE, and TCE) were detected above method detection limits but below their respective NYSDEC Class GA criteria. VOCs have been below Class GA criteria and indicating a downward trend since sampling was reinitiated in 2009.

5.2 OFF SITE WELLS

- EW-4.5: TCE was detected at its NYSDEC Class GA criteria of 5.0 µg/L. Three other VOCs were detected above MDLs but below their respective Class GA Criteria. The VOC concentrations detected this round are generally consistent with previous samples collected since 2004.

- IRM-1: Three VOCs were detected above method detection limits but below their respective Class GA criteria. Historically, TCE and PCE concentrations have been below the Class GA criteria since 1996.

- IRM-2I: Three VOCs were detected above method detection limits but below their respective Class GA criteria. Historically, TCE and PCE concentrations have been below the Class GA criteria since 1996.

- Town Well: Four VOCs were detected above method detection limits but below their respective Class GA criteria. Historically, TCE and PCE concentrations have had downward trends since 1990 and both have been below the Class GA criteria since 1993.

6.0 SUMMARY

A summary of GZAs findings follows:

- Static groundwater level measurements indicate that groundwater flows toward the south/southeast, consistent with previous monitoring events.

- VOCs were not detected at concentrations above NYSDEC Class GA criteria in the groundwater samples collected from the on-site or off-site wells.

- A general downward trend in VOC concentrations since 2009 is noted in monitoring wells EW-1.25/EW-1.25R, EW-1.5, MW-5S and MW-9I.

- In general, the concentrations of VOCs at monitoring wells EW-2.5, EW-4.5, MW-2I, MW-4S, and MW-9I have predominantly been below NYSDEC Class GA criteria.

- Off-site monitoring well results for locations IRM-1, IRM-2 and the Town Well, have consistently been non-detect or at concentrations below Class GA criteria since 1994.

Groundwater monitoring has been conducted semi-annually/annually for over 20 years. The body of data collected since remedial injections indicate that reductive dechlorination is continuing to reduce the CVOC concentrations as intended, and that a slow and steady overall trend of CVOC reduction has been established. None of the 12 wells monitored have CVOCs at concentrations greater than the Class GA groundwater standards. GZA recommends biennial monitoring. The next annual groundwater monitoring event is anticipated to occur in June 2021.

TABLES

TABLE 1
June 2019 Analytical Testing Program Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Location	Date Collected	Screened Interval (ft bgs)	VOCs EPA Method 8260-TCL
Groundwater Samples			
EW-1.25R	6/13/2019	15-25	X
EW-1.5	6/11/2019	40-50	X
EW-2.5 (MS/MSD)	6/13/2019	40-50	X
EW-4.5	6/11/2019	40-50	X
MW-1I	6/13/2019	30-50	X
MW-2I	6/13/2019	29-49	X
MW-4S	6/11/2019	7-17	X
MW-5S	6/11/2019	7.5-17.5	X
MW-9I	6/13/2019	29.5-49.5	X
IRM-1	6/12/2019	40-50	X
IRM-2I	6/12/2019	40-50	X
TOWN WELL	6/11/2019	40-50	X
GW Duplicate (MW-1I)	6/13/2019	30-50	X

Notes:
1. ft bgs = feet below ground surface
2. VOCs = Volatile Organic Compounds; TCL = Target Compound List
3. EPA = Environmental Protection Agency
4. MS/MSD = Matrix Spike/Matrix Spike Duplicate

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	EW-1.25 / EW-1.25R (from June 2019)																	
		4/23/09	10/22/09	6/3/10	4/14/11	10/14/11	5/9/12	10/31/12	6/25/13	10/16/13	6/10/14	10/14/14	6/4/15	10/21/15	6/15/16	10/25/16	7/13/17	6/21/18	6/14/19
Volatile Organic Compounds - EPA Method 8260 TCL (ug/L)																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	3.8	2.3 J	<1.5	<1.5	<5.0	6.8
2-Butanone	50	<	<	<	<	4.2J	< 5	< 5	< 5	< 5	< 5	< 2	<2	<2	<2	<2	<2	<5.0	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	0.77J	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	0.88 J
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.18 J
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Carbon disulfide	NV	<	<	1.4	<	1.2	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	1.8 J	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	NT
Vinyl Chloride	2	9.7	9.1	8.4	6.3	6	3.8	16	4.6	5	2.4	4.7	2.6	3.3	3.2	6.6	<1	<1	<
1,1-Dichloroethene	5*	<	0.88	0.85	.86J	<	< 1	1.4	< 1	< 1	< 1	0.34 J	0.25 J	0.36 J	0.24 J	0.48 J	0.39 J	<1	<
1,1-Dichloroethane	5	8.6	8.7	6.0	6.1	6.7	4.8	5.9	4.1	4.1	2.9	3.8	3	4.2	2.9	3.9	3.0	<1	1.1 J
trans-1, 2-Dichloroethene	5	<	0.92	0.66	.91J	.81J	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	0.79 J	<1	<1	<
cis-1,2-Dichloroethene	5	60	69	39	45	44	32	98	31	32	23	32	29	44	28	98	57	<1	2.1 J
1,1,1-Trichloroethane	5	1.5	0.82	0.65	.78J	.64J	< 1	2	< 1	< 1	< 1	0.80 J	<1	<1	<1	0.70 J	<1	<1	<
Trichloroethene	5	88	90	73	56	90	59	1.7	51	59	41	54	47	58	47	0.27 J	35	<1	<
Tetrachloroethene	5	7.5	5.6	5.6	4.2	8.3	5.9	< 1	3.3	3.8	3.6	5.0	3.1	1.8	3.1	<1	0.73	<1	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	<1	<
Total VOCs		175.3	185.0	135.6	120.15	161.85	105.50	125.00	94.77	103.90	72.90	100.64	84.95	115.46	86.74	110.74	97.92		11.06

Parameter	Class GA Criteria	MW-4S																	
		4/23/09	10/22/09	6/2/10	4/14/11	10/13/11	5/10/12	10/31/12	6/25/13	10/15/13	6/6/14	10/15/14	6/3/15	10/21/15	6/15/16	10/25/16	7/12/17	6/20/18	6/11/19
Volatile Organic Compounds - EPA Method 8260 TCL (ug/L)																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	2.3 J	<	<	<	< 5	3.0 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	<2	<2	<2	<2	<2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	1.2 J
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Carbon Disulfide	NV	<	<	1.3	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1,1-Trichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	< 1	<
Trichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	< 1	<
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	0.36 J	0.22 J	0.32 J	0.18 J	<1	<1	< 1	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs				1.3								0.36	0.22	2.62	0.18				4.20

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	EW-1.5																	
		4/23/09	10/22/09	6/2/10	4/14/11	10/14/11	5/9/12	10/31/12	6/25/13	10/16/13	6/9/14	10/14/14	6/2/15	10/21/15	6/14/16	10/25/16	7/11/17	6/19/18	6/13/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	1.5 J	< 1.5	< 1.5	< 1.5	<5.0	3.0 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	<5.0	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Carbon disulfide	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
cis-1,2-Dichloroethene	5	2.1	4.6	2.2	3.3	1.7	2.1	2.9	1.3	< 1	1.6	2.7	2.0 J	2.1 J	1.6 J	1.2 J	1.3 J	<1	<
1,1,1-Trichloroethane	5	4.1	2.7	1.9	2.6	1.3	1.7	< 1	1.2	< 1	< 1	1.4 J	1.2 J	1.2 J	<1	0.90 J	1.2 J	<1	<
Trichloroethene	5	18	20	14	19	9.5	13.0	9.0	8.4	3.9	10	13	13	11	6.4	10	10	<1	<
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	0.22 J	0.20 J	0.22 J	<1	0.24 J	0.23 J	<1	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	<1	<
Total VOCs		24.2	27.3	18.1	24.9	12.5	16.8	11.9	10.9	3.9	11.6	17.32	16.30	16.02	8.00	12.34	12.73		3.00

Parameter	Class GA Criteria	MW-5S																	
		4/23/09	10/22/09	6/3/10	4/14/11	10/13/11	5/9/12	10/31/12	6/25/13	10/15/13	6/6/14	10/14/14	6/2/15	10/22/15	6/15/16	10/24/16	7/12/17	6/20/18	6/11/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	4 J	3.4 J	<1.5	<	< 5	1.6 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	<2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	0.99J	< 1	< 1	< 1	< 1	< 1	1.2 J	<1	<1	< 1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Carbon Disulfide	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	<
cis-1,2-Dichloroethene	5	<	<	<	.72J	<	0.9J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 1	0.75 J
1,1,1-Trichloroethane	5	3.4	3.1	1.7	.61J	2.9	0.59J	< 1	0.52J	2.0	< 1	0.94 J	<1	<1	<1	<1	<1	< 1	<
Trichloroethene	5	30.0	22.0	14.0	12.0	15.0	17.0	3.1	6.9	8.1	2.7	4.0	0.75	1.60	2.70	0.72	<1	4.3	3.4
Tetrachloroethene	5	5.6	3.3	2.2	13.0	4.4	9.5	2.6	3.5	3.9	4.6	3.7	3.8	5.8	4.9	3.8	<1	6.1 CH	4.8
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs		39.0	28.4	17.9	26.3	22.3	27.7	5.7	11.9	14.0	7.3	8.64	4.55	11.40	12.20	4.52		10.40	10.55

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	EW-2.5																	
		4/23/09	10/22/09	6/2/10	4/13/11	10/13/11	5/9/12	11/1/12	6/26/13	10/17/13	6/9/14	10/15/14	6/2/15	10/21/15	6/14/16	10/24/16	7/11/17	6/19/18	6/13/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	2.4 J	1.7 J	<1.5	<1.5	<5.0	2.3 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	<5.0	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	1.4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Carbon disulfide	NV	<	<	<	0.94 J	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1,1-Trichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Trichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Naphthalene	10	<	<	<	1.3	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	<1	<
Total VOCs					2.2				1.4					2.4	1.7				2.30

Parameter	Class GA Criteria	MW-9I																	
		4/23/09	10/22/09	6/2/10	4/14/11	10/13/11	5/9/12	11/1/12	6/25/13	10/15/13	6/9/14	10/15/14	6/3/15	10/22/15	6/14/16	10/24/16	7/11/17	6/20/18	6/13/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	2.7 J	1.6 J	<1.5	<1.5	< 5	1.9 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Carbon Disulfide	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1,1-Trichloroethane	5	2.2	1.6	0.9	1.4	1.4	0.89J	1.3	0.84J	< 1	< 1	0.85 J	0.72 J	0.73 J	<1	<1	<1	< 1	<
Trichloroethene	5	4.6	4.5	2.9	3.6	3.7	2.7	3.1	2.4	3.4	2.3	3.0	2.7	3.0	1.5	2.4	2.4	3.2	2.2
Tetrachloroethene	5	1.0	0.86	0.6	1.0	0.8	< 1	< 1	< 1	< 1	0.99J	0.82	0.72	0.96	0.34 J	0.71	0.73	1.1 CH	0.7
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs		7.8	7.0	4.4	6.0	5.9	3.6	4.4	3.2	3.4	3.29	4.67	4.27	7.39	3.44	3.11	3.13	4.30	4.80

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	EW-4.5																	
		4/23/09	10/22/09	6/3/10	4/13/11	10/14/11	5/10/12	11/1/12	6/26/13	10/16/13	6/9/14	10/14/14	6/2/15	10/21/15	6/14/16	10/24/16	7/11/17	6/19/18	6/11/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<	4.1 J	<1.5	<1.5	< 5	3 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	2.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.73 J
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Carbon disulfide	NV	<	<	<	.63J	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	0.83J	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
cis-1,2-Dichloroethene	5	<	0.72	<	1.2	.51J	0.61J	< 1	0.76J	< 1	< 1	< 1	< 1	< 1	< 1	0.81 J	<1	<1	<
1,1,1-Trichloroethane	5	2.5	1.3	0.97	1.9	1.3	1.2	1.2	1.1	< 1	< 1	0.76 J	0.77 J	<1	<1	<1	<1	<1	<
Trichloroethene	5	8.0	7.9	5.5	10	6.9	7.6	7.0	6.8	5.8	5.0	5.4	5.4	3.9	4.6	4.6	1.6	1.1	5
Tetrachloroethene	5	2.0	1.7	1.1	2.5	1.5	1.5	1.6	1.6	1.4	1.7	1.5	1.7	1.2	1.3	1.6	0.76	< 1	1.50
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs		12.5	11.6	7.6	16.2	10.2	10.9	9.8	13.6	7.2	6.7	7.66	7.86	5.10	10.00	7.01	2.36	1.10	10.23

Parameter	Class GA Criteria	IRM-1																	
		4/23/09	10/22/09	6/3/10	4/13/11	10/14/11	5/10/12	11/1/12	6/26/13	10/16/13	6/6/14	10/14/14	6/2/15	10/21/15	6/14/16	10/24/16	7/11/17	6/19/18	6/12/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<	3.0 J	<1.5	<1.5	< 5	2.1 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	1.4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Carbon Disulfide	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	0.66J	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1,1-Trichloroethane	5	<	<	<	0.54J	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Trichloroethene	5	<	<	<	0.69J	.52J	< 1	< 1	0.52J	< 1	< 1	0.34 J	0.35 J	0.38 J	0.32 J	0.36 J	0.33 J	< 1	0.35 J
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.25 J	<1	0.23 J	0.19 J	< 1	0.2 J
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs					1.23	0.52			2.58			0.34	0.35	0.63	3.32	0.59	0.52		2.65

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	MW-1I																	
		4/23/09	10/22/09	6/2/10	4/14/11	10/14/11	5/9/12	10/5/12	6/25/13	10/15/13	6/9/14	10/15/14	6/2/15	10/22/15	6/14/16	10/25/16	7/11/17	6/20/18	6/13/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<.1.5	<.1.5	<.1.5	1.9 J	<5.0	4.5 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	<5.0	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	1.4
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	0.26 J
Chloromethane	NV	<	<	0.62	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	0.85 J
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Carbon disulfide	NV	<	<	<	<	1.1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	0.53 J	<1	<1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
1,1-Dichloroethane	5	4.7	4.7	3.5	3.4	3.8	2.8	2.6	2.0	2.1	1.6	2.3 J	1.9 J	2.5	1.7 J	1.2 J	<1	1.1 L2	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
cis-1,2-Dichloroethene	5	4.2	5.7	2.2	2.5	2.2	1.2	3.1	2.9	1.8	< 1	1.8 J	0.87 J	0.80 J	1.6 J	7.1	<1	3.3	<
1,1,1-Trichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<
Trichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	2.8	2	<1	3	11	<1	15	<
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	2.4	1.3	<1	1.9	7.1	<1	11.6 CH	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	<1	<
Total VOCs		8.9	10.4	6.3	5.9	7.1	4.0	5.7	4.9	3.9	1.6	9.0	6.1	3.3	8.2	26.9	1.9	31.0	7.01

Parameter	Class GA Criteria	IRM-2I																	
		4/23/09	10/22/09	6/3/10	4/13/11	10/14/11	5/10/12	11/1/12	6/26/13	10/16/13	6/6/14	10/14/14	6/2/15	10/21/15	6/14/16	10/24/16	7/11/17	6/19/18	6/12/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<1.5	2.9 J	<1.5	<1.5	< 5	2.7 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	< 2	< 2	< 2	< 2	< 2	< 5	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloromethane	NV	<	<	0.56	<	<	< 1	< 1	0.59J	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Carbon Disulfide	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
1,1,1-Trichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<
Trichloroethene	5	<	0.89	0.85	.88J	.86J	0.74J	0.60J	0.72J	< 1	< 1	0.60	0.60	0.63	0.59	0.59	0.58	< 1	0.56
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	0.20 J	<1	0.28 J	<1	0.26 J	0.20 J	< 1	0.18 J
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs			0.9	1.4	0.88	0.86	0.74	0.60	1.30			0.80	0.60	0.91	3.49	0.85	0.78		3.44

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 2
June 2019 Groundwater Analytical Testing Results Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Parameter	Class GA Criteria	MW-2I																	
		4/23/09	10/22/09	6/3/10	4/13/11	10/13/11	5/9/12	10/31/12	6/25/13	10/15/13	6/6/14	10/14/14	6/3/15	10/22/15	6/15/16	10/24/16	7/11/17	6/20/18	6/13/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<1.5	<1.5	<1.5	<1.5	<5.0	2.1 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	<2	<2	<2	<2	<2	<5.0	<
Bromodichloromethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Dibromochloromethane	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Chloromethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Chloroform	7	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Benzene	1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	50	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Carbon disulfide	NV	<	<	12.0	0.90J	1.3	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
1,1-Dichloroethene	5*	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
1,1-Dichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
trans-1, 2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
cis-1,2-Dichloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
1,1,1-Trichloroethane	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Trichloroethene	5	<	<	<	<	<	0.83J	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<
Tetrachloroethene	5	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	<1	<1	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	<1	<
Total VOCs				12.0	0.9	1.3	0.83												2.10

Parameter	Class GA Criteria	TOWN WELL																	
		4/23/09	10/22/09	6/2/10	4/13/11	10/14/11	5/10/12	11/1/12	6/26/13	10/16/13	6/9/14	10/14/14	6/2/15	10/22/15	6/14/16	10/24/16	7/12/17	6/19/18	6/11/19
Volatile Organic Compounds - EPA Method 8260																			
Methylene chloride	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	
Acetone	50	<	<	<	<	<	<	<	<	<	<	<	<	<1.5	2.4 J	<1.5	<1.5	< 5	2.6 J
2-Butanone	50	<	<	<	<	<	< 5	< 5	< 5	< 5	< 5	< 2	<2	<2	<2	<2	<2	< 5	<
Bromodichloromethane	5	<	<	<	.53J	1.4	0.67J	0.96J	< 1	< 1	< 1	< 1	0.52	0.27 J	0.45 J	0.53	<1	< 1	0.5
Dibromochloromethane	50	<	<	<	1.2	1.7	1.2	< 1	< 1	< 1	< 1	< 1	0.99	0.54	3	0.97	<1	1.3	0.73
Chloromethane	NV	<	NT	0.56	<	<	< 1	< 1	1.3	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Chloroform	7	<	NT	0.62	<	1.1	< 1	0.82J	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Bromoform	50	<	NT	0.51	1.7	1.4	0.88J	1.6	< 1	< 1	< 1	< 1	1.2 J	<1	1.3 J	1.3 J	<1	< 1	<
Carbon Disulfide	NV	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Iodomethane	NV	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	NT	<
Vinyl Chloride	2	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1-Dichloroethene	5*	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1-Dichloroethane	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
trans-1, 2-Dichloroethene	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
cis-1,2-Dichloroethene	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
1,1,1-Trichloroethane	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<1	<1	<1	< 1	<
Trichloroethene	5	<	NT	<	0.69J	0.55J	< 1	0.58J	0.63J	< 1	< 1	0.45 J	0.48 J	0.44 J	0.45 J	0.50	0.37	< 1	0.32 J
Tetrachloroethene	5	<	NT	<	<	<	< 1	< 1	< 1	< 1	< 1	<1	<1	0.24 J	<1	0.23 J	<1	< 1	<
Naphthalene	10	<	<	<	<	<	< 1	< 1	< 1	< 1	< 1	NT	NT	NT	NT	NT	NT	< 1	<
Total VOCs				1.69	4.12	6.15	2.75	3.96	1.93			0.45	3.19	1.49	7.60	3.53	0.37	1.30	4.15

Notes:
1. Compounds detected in one or more samples are presented on this table.
2. Analytical testing completed by Alpha Analytical.
3. NYSDEC Class GA criteria obtained from Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1998, January 1999 errata sheet, and April 2000 addendum. * Guidance value (not a standard) for 1,1-Dichloroethene = 0.07 ug/L as per the January 1999 update.
4. ug/L = part per billion (ppb).
5. < indicates compound was not detected; < 1 indicates compound was not detected above its respective reporting limit.
6. Shading indicates exceedance of Class GA Criteria.
7. NT = not tested.
8. NV = no value.
9. Results shown for MW-1I for the June 2019 sampling event are the higher results from it or its respective duplicate.
10. Lab qualifiers: CH = continuing calibration outside of lab acceptance limits; results may be biased high. J = estimated concentration. L2 = analyte recovery in the control sample was below quality control limits; results may be biased low. Qualifiers for detected compounds only shown.

TABLE 3
Historical Analytical Data Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Well I.D.	Analyte	Sample Date 6/14/2019	Sample Date 6/20/2018	Sample Date 7/11/2017	Sample Date 10/25/2016	Sample Date 6/15/2016	Sample Date 10/21/2015	Sample Date 6/2/2015	Sample Date 10/14/2014	Sample Date 6/6/2014	Sample Date 10/15/2013	Sample Date 6/25/2013	Sample Date 10/31/2012	Sample Date 5/10/2012	Sample Date 10/13/2011	Sample Date 4/13/2011
EW-1.25	PCE	<	<	0.7	<	3.1	1.8	3.1	5	3.6	3.8	3.3	2	<	0.64J	0.78J
	TCE	<	<	35	0.27 J	47	58	47	54	41	59	51	1.7	59	90	56
EW-1.5	PCE	<	<	0.23 J	0.24 J	<	0.22 J	0.2 J	0.22 J	<	<	<	<	1.7	1.3	2.6
	TCE	<	<	10	10	6.4	11	13	13	10	3.9	8.4	9	13	9.5	19
EW-2.5	PCE	<	<	<	<	<	<	<	<	<	<	<	<	<	0	0
	TCE	<	<	<	<	<	<	<	<	<	<	<	<	<	0	0
EW-3.5	PCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
EW-4.5	PCE	1.5	<	0.8 J	1.6	1.3	1.2	1.7	1.5	1.7	1.4	1.6	1.2	1.2	1.3	1.9
	TCE	5	1.1	1.6	4.6	4.6	3.9	5.4	5.4	5	5.8	6.8	7	7.6	6.9	10
MW-1I	PCE	<	11.6	<	7.1	1.9	<	1.3	2.4	<	<	<	<	<	<	<
	TCE	<	15	<	11	3	<	2	2.8	<	<	<	<	<	<	<
MW-2I	PCE	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
	TCE	<	<	<	<	<	<	<	<	<	<	<	<	0.83J	<	<
MW-9I	PCE	0.7	1.1	0.73	0.71	0.34J	1	0.72	0.82	0.99	<	<	1.3	0.89J	1.4	1.4
	TCE	2.2	3.2	2.4	2.4	1.5	3	2.7	3	2.3	3.4	2.4	3.1	2.7	3.7	3.6
MW-4S	PCE	<	<	<	<	0.18J	0.32	0.22 J	0.36 J	<	<	<	<	<	<	<
	TCE	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
MW-5S	PCE	4.8	6.1	<	0.38	4.9	5.8	3.8	3.7	4.6	3.9	3.5	2.6	0.59J	2.9	.61J
	TCE	3.4	4.3	<	0.72	2.7	1.6	0.75	4	2.7	8.1	6.9	3.1	17	15	12
IRM-1	PCE	0.2 J	<	0.19 J	0.23 J	<	0.25 J	<	<	<	<	<	<	<	<	.54J
	TCE	0.35 J	<	0.33 J	0.36 J	0.32J	0.38 J	0.35 J	0.34 J	<	<	0.52J	<	<	.52J	.69J
IRM-2I	PCE	0.18 J	<	0.20 J	0.26 J	<	0.28 J	<	0.2 J	<	<	<	<	<	<	<
	TCE	0.56	<	0.58	0.59	0.59	0.63	0.6	0.6	<	<	0.72J	0.60J	0.74J	.86J	.88J
MAIN SCHOOL WELL	PCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOWN WELL	PCE	<	<	<	0.23 J	<	0.24 J	<	<	<	<	<	<	<	<	<
	TCE	0.32 J	<	0.37	0.5	0.45J	0.44 J	0.48 J	0.45 J	<	<	0.63J	0.58J	<	.55J	.69J

Notes:
1. NT = Not Tested.
2. < = not detected above method detection limits.
3. Values shown are in ug/L (part per billion (ppb)).
4. Shading indicates exceedance of its respective Class GA Criteria (5 ppb) for both PCE and TCE).

* - Historical data provided date of 10/21/2004 - However, based on historical sampling trend, sample was likely from April 2005 (sample date unknown).

TABLE 3
Historical Analytical Data Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Well I.D.	Analyte	Sample Date 6/2/2010	Sample Date 10/22/2009	Sample Date 4/23/2009	Sample Date 10/2/2007	Sample Date 10/30/2006	Sample Date 4/25/2006	Sample Date 11/14/2005	Sample Date 4/1/2005*	Sample Date 10/21/2004	Sample Date 4/29/2004	Sample Date 10/16/2003	Sample Date 4/11/2003	Sample Date 10/23/2002	Sample Date 4/12/2002
EW-1.25	PCE	0.65	0.82	1.5	<	1.5	<	1.6	2	2	6.3	3	11	4	3
	TCE	73	90	88	5.1	45.1	66	27.9	66.9	31	53	22	110	40	30
EW-1.5	PCE	1.9	2.7	4.1	NT	3.1	3	2.9	5	6	<	5	<	4	2
	TCE	14	20	18	NT	16.7	18	15.6	25.3	28	1	20	<	13	6
EW-2.5	PCE	0	0	0	NT	<	<	<	<	<	<	<	<	<	<
	TCE	0	0	0	NT	<	<	<	<	<	<	<	<	<	<
EW-3.5	PCE	NT	NT	NT	NT	<	5	<	1.2	<	6	<	2	<	4
	TCE	NT	NT	NT	NT	<	NT	<	NT	<	NT	0.8	NT	1	NT
EW-4.5	PCE	0.97	1.3	2.5	NT	1.5	NT	1.2	NT	2	NT	2	NT	<	NT
	TCE	5.5	7.9	8	NT	5.9	NT	4.6	NT	5	NT	3	NT	<	NT
MW-1I	PCE	<	<	<	<	<	<	<	<	<	5.1	<	<	<	<
	TCE	<	<	<	<	<	<	<	<	<	NT	0.6	NT	<	<
MW-2I	PCE	<	<	<	NT	<	NT	<	NT	<	NT	<	NT	<	NT
	TCE	<	<	<	NT	<	NT	<	NT	<	28	1	<	1	NT
MW-9I	PCE	0.9	1.6	2.2	1.1	1.4	NT	1.5	NT	2	NT	3	NT	2	NT
	TCE	2.9	4.5	4.6	3.8	3.5	NT	3.3	NT	3	NT	5	NT	3	NT
MW-4S	PCE	<	<	<	<	<	NT	<	NT	<	NT	<	NT	<	NT
	TCE	<	<	<	<	<	NT	<	NT	<	NT	<	NT	<	NT
MW-5S	PCE	1.7	3.1	3.4	4.8	2.3	NT	4.1	NT	10	NT	10	NT	10	NT
	TCE	14	22	30	19	30.5	NT	1	NT	26	NT	29	NT	26	NT
IRM-1	PCE	<	<	<	NT	<	NT	<	NT	0.5	NT	<	NT	<	NT
	TCE	<	<	<	NT	<	NT	<	NT	0.7	NT	0.7	NT	1	NT
IRM-2I	PCE	<	<	<	NT	<	<	<	<	0.5	<	<	<	NT	<
	TCE	0.85	0.89	<	NT	1.2	<	0.71	1	1	<	<	<	NT	2
MAIN SCHOOL WELL	PCE	NT	NT	NT	NT	<	NT	<	NT	<	NT	<	NT	<	NT
	TCE	NT	NT	NT	NT	<	NT	<	NT	<	NT	<	NT	<	NT
TOWN WELL	PCE	<	NT	<	NT	<	<	<	<	<	<	<	<	<	<
	TCE	<	NT	<	NT	0.52	<	0.62	0.8	0.9	0.9	1	<	1	1

Notes:
1. NT = Not Tested.
2. < = not detected above method detection limits.
3. Values shown are in ug/L (part per billion (ppb)).
4. Shading indicates exceedance of its respective Class GA Criteria (5 ppb) for both PCE and TCE).
* - Historical data provided date of 10/21/2004 - However, based on historical sampling trend, sample was likely from April 2005 (sample date unknown).

TABLE 3
Historical Analytical Data Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Well I.D.	Analyte	Sample Date 11/9/2001	Sample Date 4/27/2001	Sample Date 10/25/2000	Sample Date 5/30/2000	Sample Date 10/15/1999	Sample Date 4/27/1999	Sample Date 11/5/1998	Sample Date 4/16/1998	Sample Date 10/30/1997	Sample Date 4/8/1997	Sample Date 10/17/1996	Sample Date 4/16/1996	Sample Date 2/8/1996	Sample Date 10/13/1994
EW-1.25	PCE	4	3	3	2	32	ND	8	6	5	5	14	39	26	23
	TCE	11	39	35	31	25	55	63	66	120	78	78	86	83	100
EW-1.5	PCE	<	3	3	2	3	2	1	4	2	3	7	9	10	16
	TCE	<	8	7	4	6	6	6	8	8	10	10	10	9	10
EW-2.5	PCE	<	<	<	<	<	<	<	NT	<	<	<	<	<	<
	TCE	6	<	<	<	<	<	<	NT	<	<	<	2	<	<
EW-3.5	PCE	<	8	<	2	<	2	<	3	<	4	<	NT	<	<
	TCE	2	NT	2	NT	2	NT	1	NT	2	NT	1	NT	4	1
EW-4.5	PCE	<	NT	<	NT	<	NT	<	NT	<	NT	<	NT	<	<
	TCE	<	NT	<	NT	<	NT	<	NT	<	NT	1	NT	2	2
MW-1I	PCE	<	<	<	<	<	NT	<	NT	<	<	<	<	1	<
	TCE	<	<	<	<	<	NT	<	1	<	3	4	2	12	17
MW-2I	PCE	<	NT	NT	NT	<	NT	<	NT	<	NT	<	NT	<	2
	TCE	<	NT	<	NT	<	NT	<	NT	<	NT	<	NT	<	NT
MW-9I	PCE	<	NT	2	NT	<	NT	<	NT	NT	NT	NT	NT	4	3
	TCE	2	NT	3	NT	<	NT	2	NT	3	NT	2	NT	5	6
MW-4S	PCE	<	NT	<	NT	<	NT	<	NT	25	NT	30	NT	2	<
	TCE	<	NT	1	NT	<	NT	<	NT	<	NT	71	NT	2	2
MW-5S	PCE	8	NT	12	NT	12	NT	19	NT	<	NT	<	NT	50	NT
	TCE	21	NT	30	NT	18	NT	36	NT	80	NT	3	NT	63	NT
IRM-1	PCE	<	NT	<	NT	<	<	<	NT	<	NT	<	NT	4	1
	TCE	NT	NT	1	NT	<	<	<	NT	2	NT	2	NT	5	4
IRM-2I	PCE	NT	<	<	<	<	<	<	NT	<	<	<	2	2	2
	TCE	<	2	2	1	<	<	<	2	2	3	2	4	4	4
MAIN SCHOOL WELL	PCE	NT	NT	NT	NT	<	NT	<	NT	<	NT	<	<	1	<
	TCE	NT	NT	NT	NT	<	NT	<	NT	<	NT	<	1	2	1
TOWN WELL	PCE	<	<	<	<	<	<	<	NT	<	<	<	1	2	1
	TCE	<	2	2	1	<	<	<	2	2	3	1	3	4	4

Notes:
1. NT = Not Tested.
2. < = not detected above method detection limits.
3. Values shown are in ug/L (part per billion (ppb)).
4. Shading indicates exceedance of its respective Class GA Criteria (5 ppb) for both PCE and TCE).

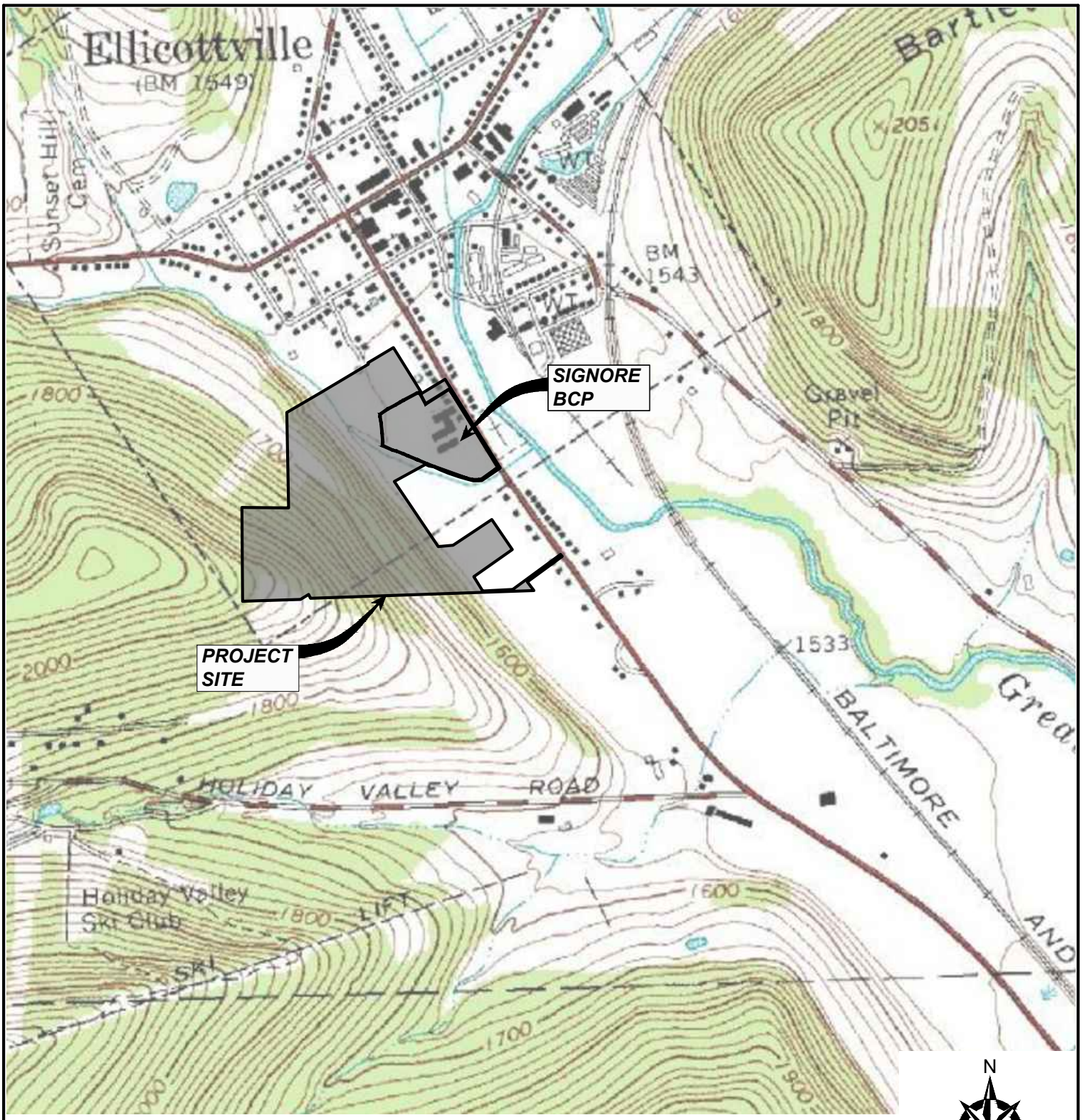
* - Historical data provided date of 10/21/2004 - However, based on historical sampling trend, sample was likely from April 2005 (sample date unknown).

TABLE 3
Historical Analytical Data Summary
Former Signore Facility
55-57 Jefferson Street
Ellicottville, New York

Well I.D.	Analyte	Sample Date 7/11/1994	Sample Date 4/26/1994	Sample Date 2/14/1994	Sample Date 11/1/1993	Sample Date 7/13/1993	Sample Date 4/26/1993	Sample Date 1/26/1993	Sample Date 12/21/1992	Sample Date 1/7/1992	Sample Date 6/11/1991	Sample Date 6/28/1990	Sample Date 12/5/1990	Sample Date 6/25/1990	Sample Date 1/15/1989
EW-1.25	PCE	NT	NT	NT	7	NT	NT	NT	140	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	6	NT	NT	NT	67	NT	NT	NT	NT	NT	NT
EW-1.5	PCE	<	3	2	<	<	9	<	14	NT	NT	NT	NT	NT	NT
	TCE	1	2	2	<	<	7	<	7	NT	NT	NT	NT	NT	NT
EW-2.5	PCE	NT	NT	NT	<	NT	NT	NT	<	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	<	NT	NT	NT	2	NT	NT	NT	NT	NT	NT
EW-3.5	PCE	NT	NT	NT	<	NT	NT	NT	<	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	<	NT	NT	NT	<	NT	NT	NT	NT	NT	NT
EW-4.5	PCE	<	<	<	<	<	<	2	4	NT	NT	NT	NT	NT	NT
	TCE	<	<	<	2	<	2	<	8	NT	NT	NT	NT	NT	NT
MW-1I	PCE	<	<	<	<	<	1	1	2	NT	NT	6	NT	NT	19
	TCE	2	5	5	1	6	36	54	66	NT	NT	55	NT	NT	110
MW-2I	PCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
	TCE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MW-9I	PCE	NT	2	NT	3	NT	<	NT	<	NT	NT	10	NT	NT	<
	TCE	NT	4	NT	7	NT	3	NT	<	NT	NT	28	NT	NT	20
MW-4S	PCE	NT	NT	NT	2	NT	NT	NT	2	NT	NT	10	NT	NT	15
	TCE	NT	NT	NT	4	NT	NT	NT	1	NT	NT	27	NT	NT	53
MW-5S	PCE	NT	NT	NT	<	NT	NT	NT	<	NT	NT	99	NT	NT	<
	TCE	NT	NT	NT	6	NT	NT	NT	74	NT	NT	100	NT	NT	150
IRM-1	PCE	4	2	3	5	4	3	4	5	NT	NT	4	NT	NT	NT
	TCE	5	4	5	6	5	5	6	5	NT	NT	6	NT	NT	NT
IRM-2I	PCE	2	2	2	3	2	2	3	3	NT	NT	5	NT	NT	NT
	TCE	5	4	5	6	4	4	5	4	NT	NT	9	NT	NT	NT
MAIN SCHOOL WELL	PCE	NT	<	NT	<	NT	<	NT	0.6	1	0.8	NT	<	<	NT
	TCE	NT	1.5	NT	2	NT	1	NT	1.9	3	1.7	NT	2.2	2	NT
TOWN WELL	PCE	NT	2	NT	1	2	NT	NT	3.5	4	5	NT	5	NT	NT
	TCE	NT	4.6	NT	5	4	NT	NT	6.1	7	6.3	NT	8	NT	NT

Notes:
1. NT = Not Tested.
2. < = not detected above method detection limits.
3. Values shown are in ug/L (part per billion (ppb)).
4. Shading indicates exceedance of its respective Class GA Criteria (5 ppb) for both PCE and TCE).
* - Historical data provided date of 10/21/2004 - However, based on historical sampling trend, sample was likely from April 2005 (sample date unknown).

FIGURES



NOTE:
BASE MAP ADAPTED FROM U.S.G.S. TOPOGRAPHIC MAPS DOWNLOADED FROM http://msrmaps.com

0 500 1000 2000
SCALE IN FEET

N
W E
S



NO.	ISSUE/DESCRIPTION	BY	DATE

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PREPARED FOR:
ISKALO ELLICOTTVILLE HOLDINGS, LLC

FORMER SIGNORE FACILITY
55 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

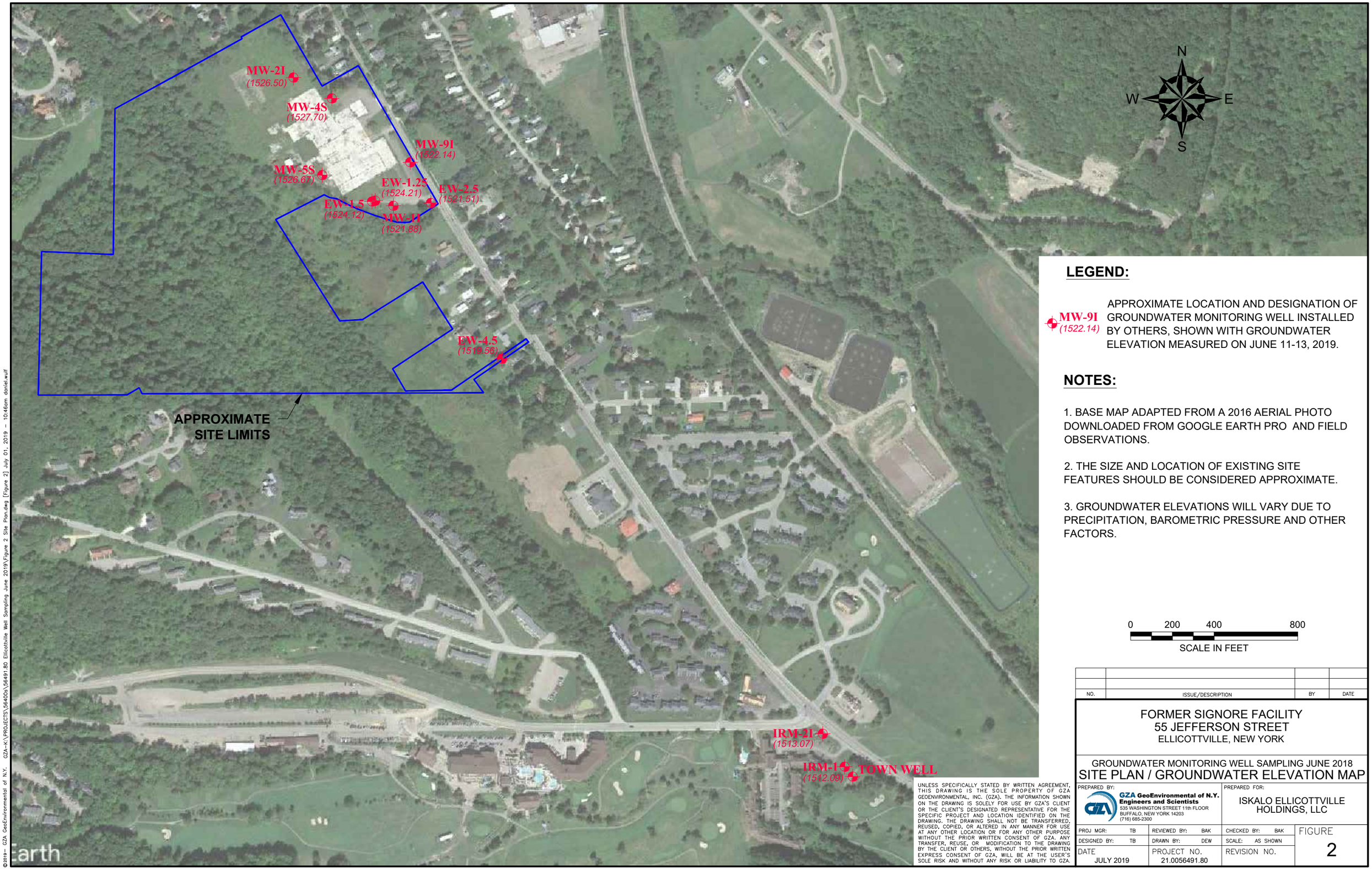
GROUNDWATER MONITORING WELL SAMPLING JUNE 2019

LOCUS PLAN

FIGURE
1

PROJ MGR:	TB	REVIEWED BY:	BAK	CHECKED BY:	BAK	DATE	PROJECT NO.	REVISION NO.
DESIGNED BY:	TB	DRAWN BY:	DEW	SCALE:	AS SHOWN	JULY 2019	21.0056491.80	

© 2019 – GZA GeoEnvironmental of N.Y. GZA–K:\PROJECTS\56400s\56491.80 Ellicottville Well Sampling June 2019\Figure 1 Locus Plan.dwg [Figure 1] July 01, 2019 – 10:46am daniel.wulf



LEGEND:

MW-9I (1522.14) — APPROXIMATE LOCATION AND DESIGNATION OF GROUNDWATER MONITORING WELL INSTALLED BY OTHERS, SHOWN WITH GROUNDWATER ELEVATION MEASURED ON JUNE 11-13, 2019.

NOTES:

1. BASE MAP ADAPTED FROM A 2016 AERIAL PHOTO DOWNLOADED FROM GOOGLE EARTH PRO AND FIELD OBSERVATIONS.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

3. GROUNDWATER ELEVATIONS WILL VARY DUE TO PRECIPITATION, BAROMETRIC PRESSURE AND OTHER FACTORS.

0 200 400 800

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

FORMER SIGNORE FACILITY
55 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

GROUNDWATER MONITORING WELL SAMPLING JUNE 2018
SITE PLAN / GROUNDWATER ELEVATION MAP

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PREPARED BY:
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PREPARED FOR:
ISKALO ELLICOTTVILLE HOLDINGS, LLC

PROJ MGR: TB	REVIEWED BY: BAK	CHECKED BY: BAK	FIGURE 2
DESIGNED BY: TB	DRAWN BY: DEW	SCALE: AS SHOWN	
DATE JULY 2019	PROJECT NO. 21.0056491.80	REVISION NO.	

©2019 – GZA GeoEnvironmental of N.Y. G:\ZA–K:\PROJECTS\56400s\56491.80 Ellicottville Well Sampling June 2019\Figure 2 Site Plan.dwg [Figure 2] July 01, 2019 – 10:46am daniel.wulf

APPENDIX A

LIMITATIONS

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

APPENDIX B

WELL DEVELOPMENT FORMS

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**MW-1 I**	Ground Surface Elevation:	Riser/Screen Material: PVC
Installation Date:	2/87	Protective Casing Elevation: 1531.93 ft.	Top of Screen Depth: 30 ft.
Installed By:	Rochester Drilling Co.	Monitoring Point Elevation: 1531.79 ft.	Bottom of Screen Depth: 50 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
9.79	6.87	0.14	16.7	10.36	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: MW-1 I
Interior Observations	Conductivity +/- 3%	Sample Time:
	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 1.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/13/19	1246	9.95	0	7.64	0.747	9.8	26.98	CL	1.53	127.5	Depth of Water: 9.91
	1251		0.8	7.42	0.445	9.8	9.65	↓	0.53	117.9	Length of Water Column:
	1256		1.3	7.40	0.445	9.9	8.79		0.48	63.5	Depth of Well:
	1301		2.1	7.40	0.445	9.8	10.20		0.44	2.2	Sheen Observed: Y (N)
											DNAPL Observed: Y (N)
											Did Well Go Dry: Y (N)
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):

Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**MW-2 I**	Ground Surface Elevation:	Riser/Screen Material: PVC
Installation Date:	2/87	Protective Casing Elevation: 1540.97 ft.	Top of Screen Depth: 29 ft.
Installed By:	Rochester Drilling Co.	Monitoring Point Elevation: 1540.87 ft.	Bottom of Screen Depth: 49 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
14.61	7.44	0.593	12	1.91	Clear

Notes:

Field Observations

Exterior Observations: Lock rusted - cut

Interior Observations

Signs of Damage/Tampering:

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Parameters +/-		Sampling Information
pH	+/- 0.1	Sample ID: MW-2 I
Conductivity	+/- 3%	Sample Time:
Temperature	+/- 10%	# of Sample Containers:
Turbidity	+/- 10%	Duplicate Sample ID:
ORP	+/- 10mV	Sample Analysis: VOCs 8260
DO	+/- 10%	

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
1/13/19	859	14.37	0	6.72	0.238	9.9	8.64	CL	7.21	102.7	Depth of Water: 14.37
	904		0.3	6.40	0.233	9.5	5.59		6.22	110.5	Length of Water Column:
	909		0.9	6.41	0.234	9.5	13.52		6.41	113.8	Depth of Well:
	914		1.5	7.35	0.565	9.7	6.10		4.15	100.4	Sheen Observed: Y (N)
	919		2.1	7.37	0.564	9.7	5.13		4.14	100.1	DNAPL Observed: Y (N)
											Did Well Go Dry: Y (N)
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**MW-4 S**	Ground Surface Elevation:	Riser/Screen Material: PVC
Installation Date:	11/86	Protective Casing Elevation: 1535.47 ft.	Top of Screen Depth: 7 ft.
Installed By:	Rochester Drilling Co.	Monitoring Point Elevation: 1535.42 ft.	Bottom of Screen Depth: 17 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
7.91	6.1	0.28	16.7	1.36	Clear

Notes:

Field Observations

Exterior Observations:

Interior Observations

Signs of Damage/Tampering:

Parameters +/-		Sampling Information
pH	+/- 0.1	Sample ID: MW-4S
Conductivity	+/- 3%	Sample Time:
Temperature	+/- 10%	# of Sample Containers:
Turbidity	+/- 10%	Duplicate Sample ID:
ORP	+/- 10mV	Sample Analysis: VOCs 8260
DO	+/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/11/19	1500	7.89	0	6.66	0.269	11.7	4.57	clear	5.54	157.1	Depth of Water: 7.72
	1505	9.94	0.5	6.40	0.263	11.4	3.22		4.03	163.7	Length of Water Column:
	1510		0.75	6.37	0.265	11.4	2.32		4.03	168.0	Depth of Well:
	1515		1.0	6.35	0.265	11.2	2.34		4.07	171.5	Sheen Observed: Y N
											DNAPL Observed: Y N
											Did Well Go Dry: Y N
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**MW-5 S**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	11/86	Protective Casing Elevation:	1534.35 ft.	Top of Screen Depth:	7.5 ft.
Installed By:	Rochester Drilling Co.	Monitoring Point Elevation:	1534.16 ft.	Bottom of Screen Depth:	17.5 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
8.96	7.97	0.595	13.9	3.12	Clear

Notes:

Field Observations

Exterior Observations:

Interior Observations

Signs of Damage/Tampering:

Parameters +/-		Sampling Information
pH	+/- 0.1	Sample ID: MW-5S
Conductivity	+/- 3%	Sample Time:
Temperature	+/- 10%	# of Sample Containers:
Turbidity	+/- 10%	Duplicate Sample ID:
ORP	+/- 10mV	Sample Analysis: VOCs 8260
DO	+/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/11/19	1400	7.52	0	7.04	0.315	10.8	8.93	clear	6.10	130.9	Depth of Water: 7.49
	1405		0.5	6.88	0.309	10.9	3.69		5.91	132.7	Length of Water Column:
	1410		1.0	6.86	0.310	10.9	5.98		5.97	137.1	Depth of Well:
	1415	↓	1.5	6.84	0.311	10.9	7.68	↓	5.60	142.6	Sheen Observed: Y N
											DNAPL Observed: Y N
											Did Well Go Dry: Y N
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**MW-9 I**	Ground Surface Elevation:	Riser/Screen Material: PVC
Installation Date:	1/87	Protective Casing Elevation: 1532.69 ft.	Top of Screen Depth: 29.5 ft.
Installed By:	Rochester Drilling Co.	Monitoring Point Elevation: 1532.3 ft.	Bottom of Screen Depth: 49.5 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
10.23	7.54	0.618	13.5	6.37	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: MW-9 I
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/13/19	1016	10.20	0	7.72	0.621	10.4	17.57	CL	3.95	16.5	Depth of Water: 10.16
	1021	10.20	0.3	7.48	0.616	10.3	20.83	↓	2.82	88.2	Length of Water Column:
	1026	↓	1.1	7.48	0.616	10.4	26.85	↓	2.73	87.1	Depth of Well:
											Sheen Observed: Y (N)
											DNAPL Observed: Y (N)
											Did Well Go Dry: Y (N)
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**EW-1.25** R	Ground Surface Elevation: ~~1532.29~~	Riser/Screen Material: Steel/Stainless Steel
Installation Date:	5/2019	Protective Casing Elevation: ~~1532.29 ft.~~	Top of Screen Depth: 15 ft.
Installed By:	EDI	Monitoring Point Elevation: ~~1531.96 ft.~~ 1534.04	Bottom of Screen Depth: 25 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
9.51	6.77	0.65	14.7	13.13	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: EW-1.25
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes (6/11/19 6/14/19)
6/11/19 6/11/19	945		0	8.49	0.579	11.9	655	L.Br.	2.18	-362.7	Depth of Water: 9.83 / 9.98
	1027		31	6.96	0.595	10.6	3040	"	3.46	-183.2	Length of Water Column:
	1040		41	7.10	0.569	11.5	2740	"	4.50	-133.8	Depth of Well: 23.89
											Sheen Observed: Y (N)
6/14/19	814	10.04	0	7.02	0.768	10.3	18.69		4.06	-102.0	DNAPL Observed: Y (N)
	850	10.09	1.0	6.88	0.706	9.8	80.15		0.41	-129.9	Did Well Go Dry: Y (N)
	901	10.04	2.2	6.91	0.650	9.8	62.09		0.23	-137.4	Other: 2.3 gal
	906		3.0	6.91	0.633	9.8	69.11		0.18	-140.1	

Devel.

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**EW-1.5**	Ground Surface Elevation: 1531.45		Riser/Screen Material: Steel/Stainless Steel	
Installation Date:	7/90	Protective Casing Elevation: 1534.32 ft.		Top of Screen Depth: 40 ft.	
Installed By:	Empire Soils	Monitoring Point Elevation: 1533.92 ft.		Bottom of Screen Depth: 50 ft.	
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
10.09	7.49	0.575	14.1	6.51	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: EW-1.5
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/13/19	1400	10.00	0	11.86	1.088	10.4	7.19	CL	1.01	-3.6	Depth of Water: 9.80
	1410		0.8	11.98	1.112	10.3	13.66		0.32	-77.3	Length of Water Column:
	1415		1.0	11.98	1.102	10.5	44.16		0.17	-100.2	Depth of Well:
	1425		1.6	12.00	1.085	10.6	45.12		0.11	-131.3	Sheen Observed: Y (N)
	1430		2.0	12.01	1.079	10.6	45.13		0.10	-143.7	DNAPL Observed: Y (N)
	1435		2.3	12.02	1.064	10.6	43.10		0.08	-153.4	Did Well Go Dry: Y (N)
											Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):

Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**EW-2.5**	Ground Surface Elevation: 1531.45		Riser/Screen Material: Steel/Stainless Steel	
Installation Date:	7/90	Protective Casing Elevation: 1534.32 ft.		Top of Screen Depth: 40 ft.	
Installed By:	Empire Soils	Monitoring Point Elevation: 1533.92 ft.		Bottom of Screen Depth: 50 ft.	
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
12.42	7.54	0.629	14	5.06	Clear

Notes:

Field Observations		Parameters +/-		Sampling Information
Exterior Observations:	Lock rusted - cut	pH	+/- 0.1	Sample ID: EW-2.5
		Conductivity	+/- 3%	Sample Time:
Interior Observations		Temperature	+/- 10%	# of Sample Containers:
		Turbidity	+/- 10%	Duplicate Sample ID:
		ORP	+/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:		DO	+/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/13/19	926	12.45	0	9.40	0.213	9.9	5.44	CL	1.57	50.8	Depth of Water ~~12.37~~ 12.41
	931		0.5	9.63	0.208	9.9	7.00		0.35	-1.9	Length of Water Column:
	936		1.1	9.61	0.209	9.9	6.05		0.15	-38.7	Depth of Well:
	941		1.9	9.56	0.214	10.0	6.99		0.11	-190.7	Sheen Observed: Y (N)
	946		2.4	7.93	0.615	10.2	9.06		2.14	-82.7	DNAPL Observed: Y (N)
	951		3.1	7.55	0.636	10.2	9.15		2.60	-2.5	Did Well Go Dry: Y (N)
	956		3.6	7.54	0.640	10.2	9.10		2.68	7.1	Other:

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**EW-4.5**	Ground Surface Elevation:	1533.55	Riser/Screen Material:	Steel/Stainless Steel
Installation Date:	7/90	Protective Casing Elevation:	1535.97 ft.	Top of Screen Depth:	40 ft.
Installed By:	Empire Soils	Monitoring Point Elevation:	1535.65 ft.	Bottom of Screen Depth:	50 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
16.21	7.99	0.581	13.7	9.12	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: EW-4.5
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/no) | Well Cap (yes/no) | Surface Seal Intact (yes/no) | PID Measurement: 0.0 | Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/11/19	1142	16.15	0	7.80	0.532	10.8	131.32	Lt Br.	1.66	115.3	Depth of Water: 16.09
	1147	16.15	0.2	7.78	0.569	10.4	72.10		0.26	50.7	Length of Water Column:
	1152		0.9	7.59	0.592	10.4	65.51		0.65	-163.6	Depth of Well:
	1157		1.6	7.57	0.596	10.5	46.12		1.20	-120.0	Sheen Observed: Y N
	1202		2.0	7.56	0.598	10.5	41.41		1.42	-103.1	DNAPL Observed: Y N
	1207		2.25	7.56	0.599	10.5	36.12		1.47	-88.4	Did Well Go Dry: Y N
	1212		2.5	7.56	0.599	10.5	28.36		1.51	-85.4	Other:
	1217		2.7	7.56	0.598	10.5	24.41		1.54	-82.3	

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):
Installation Log Available (yes/**no**/attached)

Summary

Monitoring Well :	**IRM-1**	Ground Surface Elevation:		Riser/Screen Material:	Steel/Stainless Steel
Installation Date:	1990	Protective Casing Elevation:		Top of Screen Depth:	40 ft.
Installed By:	Empire Soils	Monitoring Point Elevation:	1534.75 ft.	Bottom of Screen Depth:	50 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
22.32	7.48	0.652	11.1	8.72	Clear

Notes:

Field Observations				Parameters +/-		Sampling Information
Exterior Observations: Lock rusted - cut				pH	+/- 0.1	Sample ID: IRM-1
				Conductivity	+/- 3%	Sample Time:
Interior Observations				Temperature	+/- 10%	# of Sample Containers:
				Turbidity	+/- 10%	Duplicate Sample ID:
				ORP	+/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:				DO	+/- 10%	
Locked (yes/no)	Well Cap (yes/no)	Surface Seal Intact (yes/no)	PID Measurement: 0.0	Odors: none		

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/12/19	1006	22.41	0	7.76	0.592	11.5	118.5	Br	3.02	-1.35	Depth of Water: 22.66
	1010	↓	4.5	7.62	0.648	11.2	59.53	CL	2.65	-6.4 J	Length of Water Column:
	1014		9.0	7.56	0.644	11.1	11.13	L	2.04	-20.4	Depth of Well:
	1019		13.5	7.66	0.648	11.1	9.19	L	3.94	-35.8	Sheen Observed: Y (N)
											DNAPL Observed: Y (N)
											Did Well Go Dry: Y (N)
											Other: 4.5-gal well vol.

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):
Installation Log Available (yes/**no**/attached)

Summary

Monitoring Well :	**IRM-2 I**	Ground Surface Elevation:	Riser/Screen Material: Steel/Stainless Steel
Installation Date:	1990	Protective Casing Elevation:	Top of Screen Depth: 40 ft.
Installed By:	Empire Soils	Monitoring Point Elevation: 1535.99 ft.	Bottom of Screen Depth: 50 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
22.62	7.84	0.547	10.9	22.8	

Notes:

Field Observations		Parameters +/-		Sampling Information
Exterior Observations:	Rusted - lock cut	pH	+/- 0.1	Sample ID: IRM-2 I
		Conductivity	+/- 3%	Sample Time:
Interior Observations		Temperature	+/- 10%	# of Sample Containers:
		Turbidity	+/- 10%	Duplicate Sample ID:
		ORP	+/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:		DO	+/- 10%	

Locked (yes/no) Well Cap (yes/no) Surface Seal Intact (yes/no) PID Measurement: 0.0 Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/6/2019	922	22.69	0	10.73	0.308	13.3	134.9	BC.	1.92	64.4	Depth of Water: 22.92
	926		4.4	8.33	0.545	11.8	18.3	↓	2.10	96.5	Length of Water Column:
	930		8.8	7.84	0.562	11.3	24.3	C	2.92	95.1	Depth of Well:
	935		13.2	7.87	0.543	11.4	12.2	↓	2.90	94.9	Sheen Observed: Y (N)
											DNAPL Observed: Y (N)
											Did Well Go Dry: Y (N)
											Other: 4.4 gal well vol.

File: 21.0056491.80

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (yes/**no**/attached):
Installation Log Available (yes/**no**/attached)

Summary

Monitoring Well :	**Town Well**	Ground Surface Elevation:	Riser/Screen Material: Steel/Stainless Steel
Installation Date:	1982	Protective Casing Elevation:	Top of Screen Depth: 41.5 ft.
Installed By:		Monitoring Point Elevation:	Bottom of Screen Depth: 51.5 ft.
		Elevation Datum:	

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color
NA	7.32	0.566	16.2	2.02	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: TOWN WELL
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

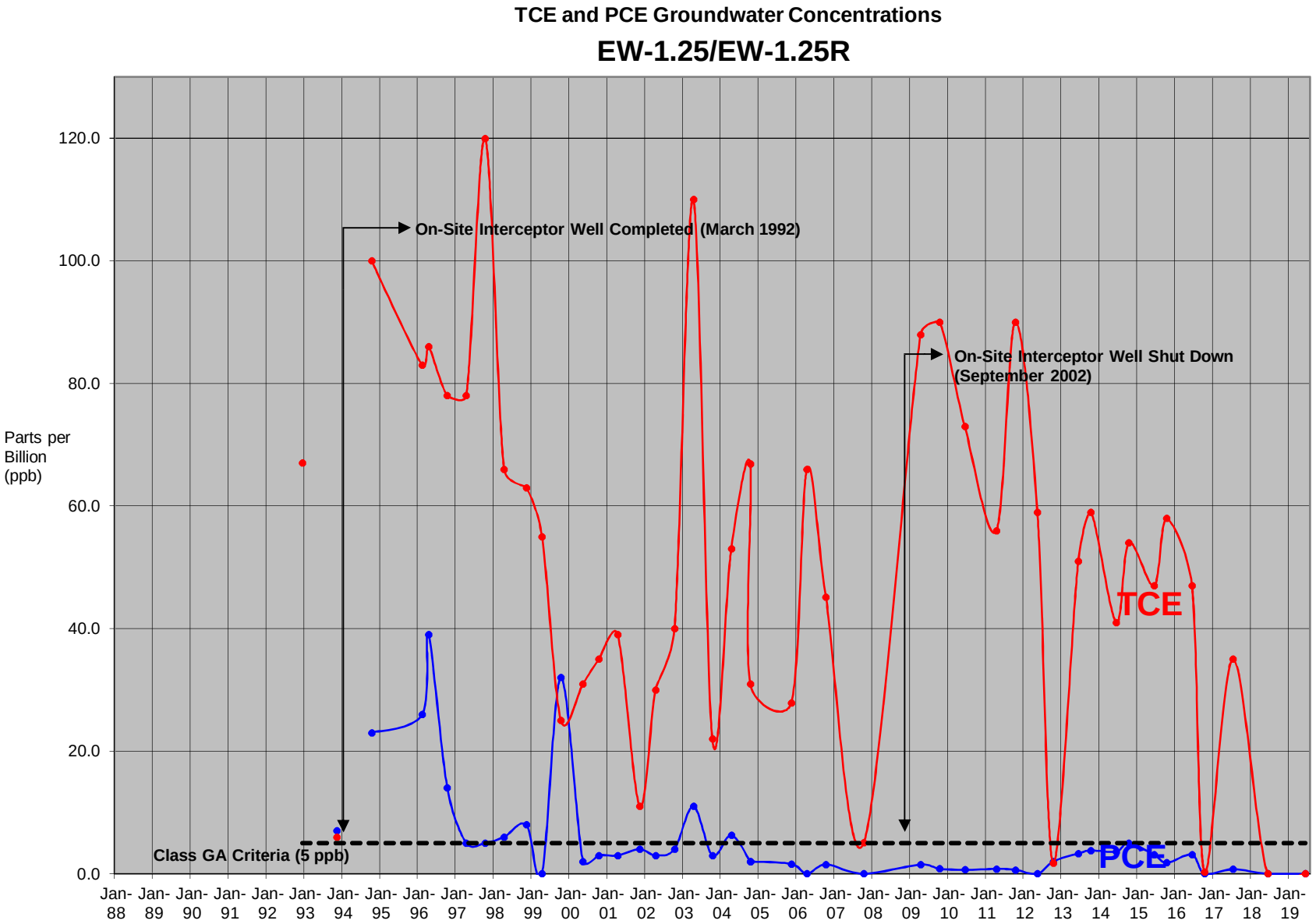
Locked (yes/no)	Well Cap (yes/no)	Surface Seal Intact (yes/no)	PID Measurement:	Odors:

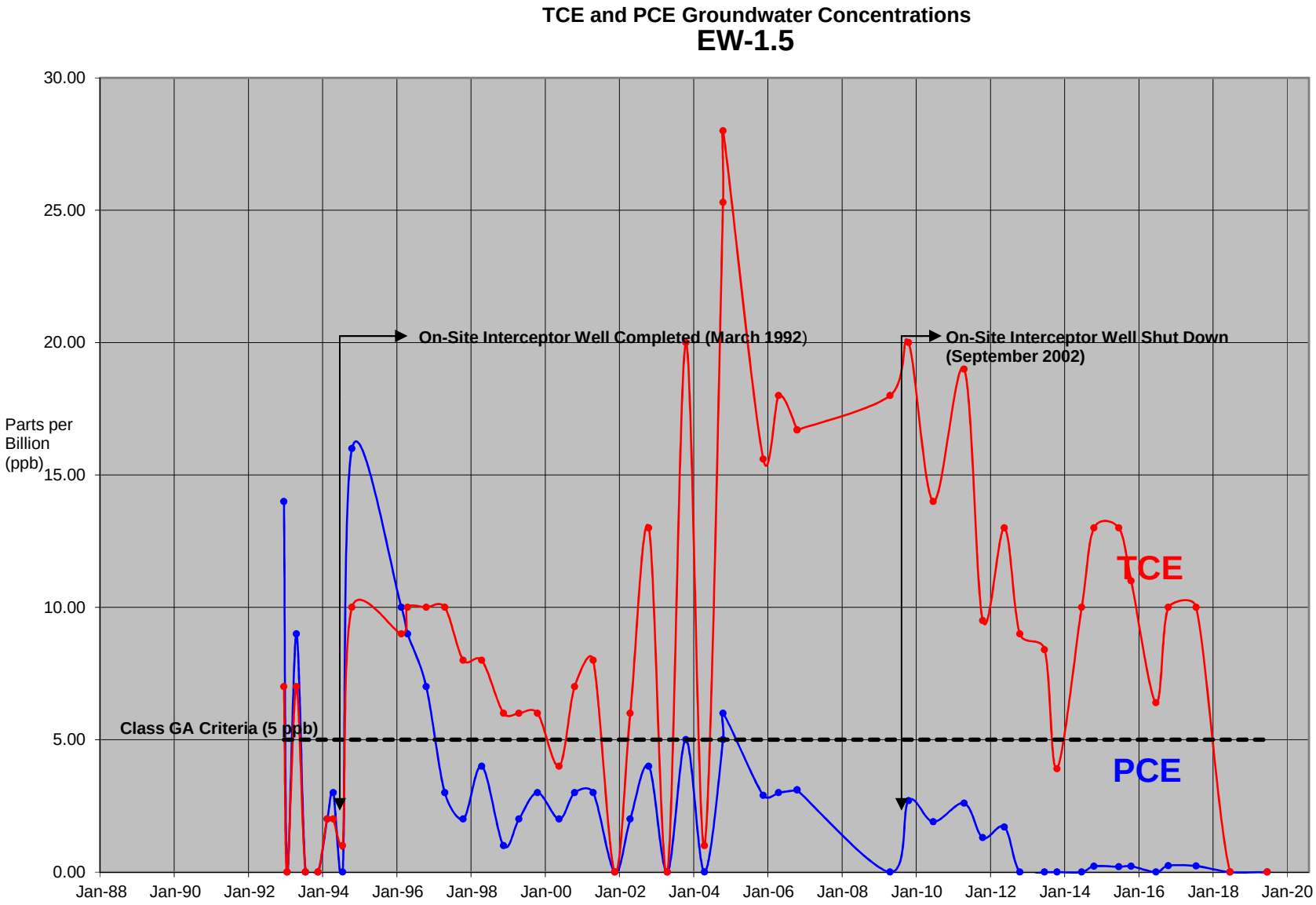
Well Quality Data

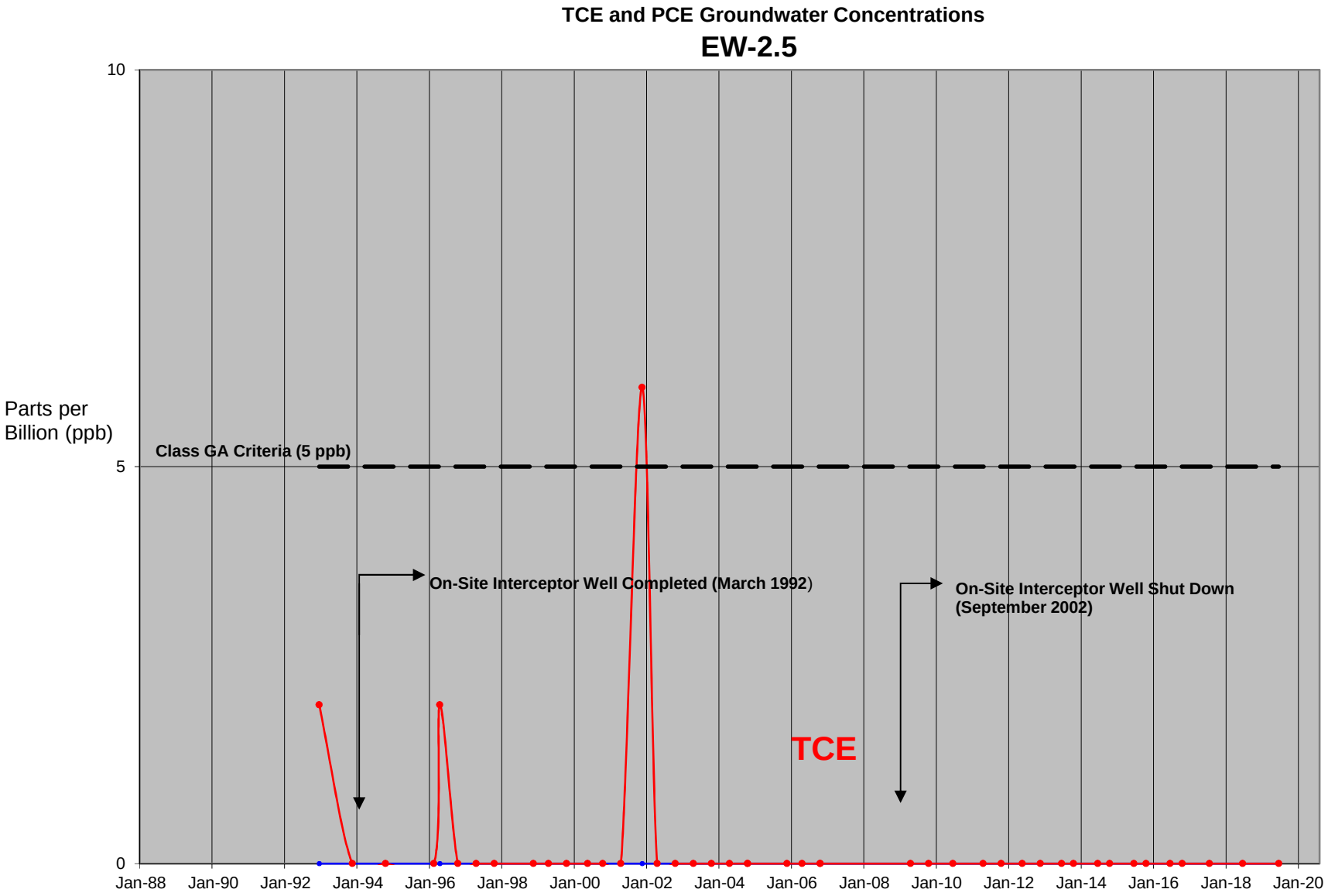
Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (°C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/11/19	950	-	5	7.21	0.582	15.1	1.91	Cl.	0.91	398.2	Depth of Water:
	~~1028~~		~~31~~	~~6.91~~							Length of Water Column:
											Depth of Well:
											Sheen Observed: Y N
											DNAPL Observed: Y N
											Did Well Go Dry: Y N
											Other: VOC 8260 @ 1010

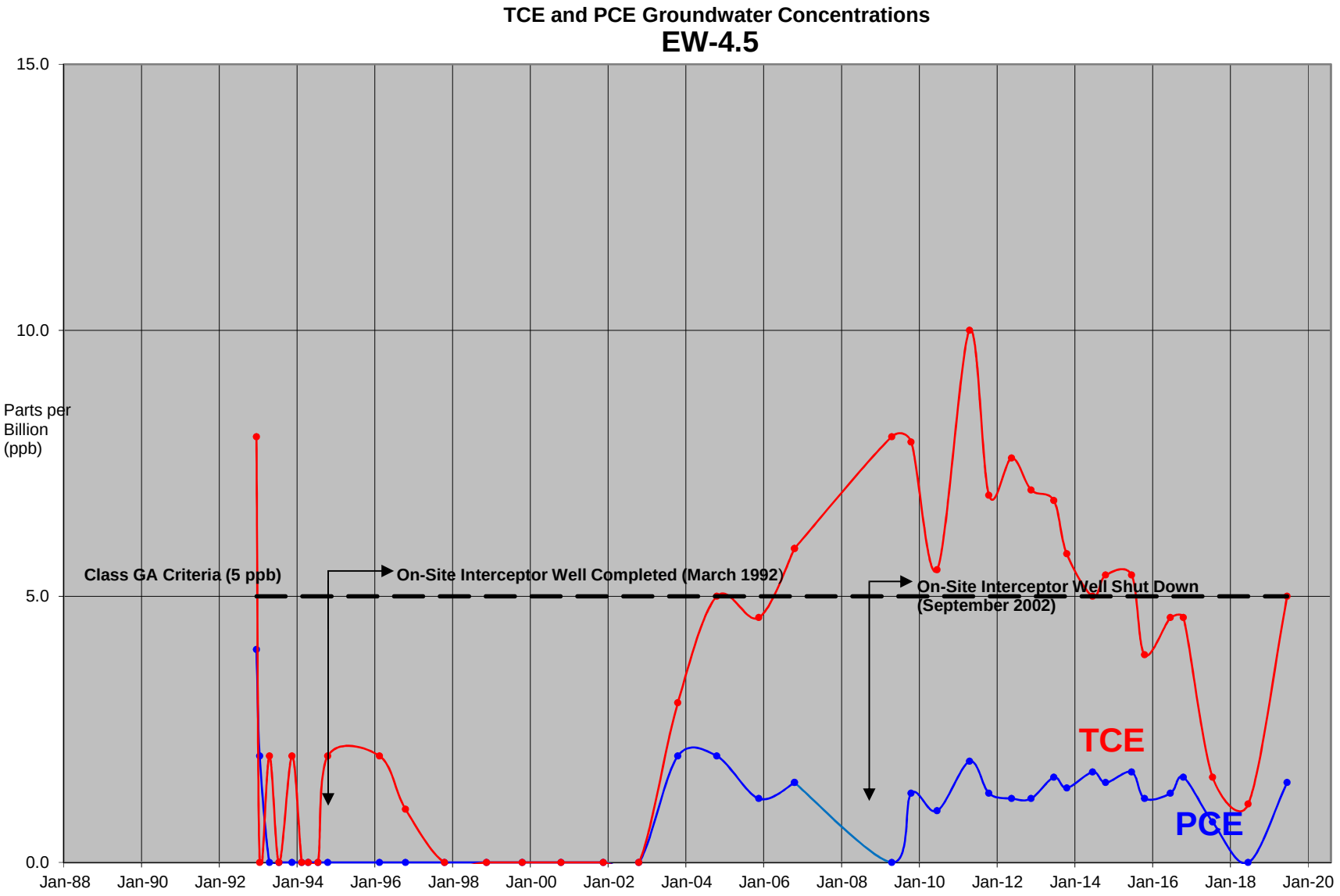
APPENDIX C

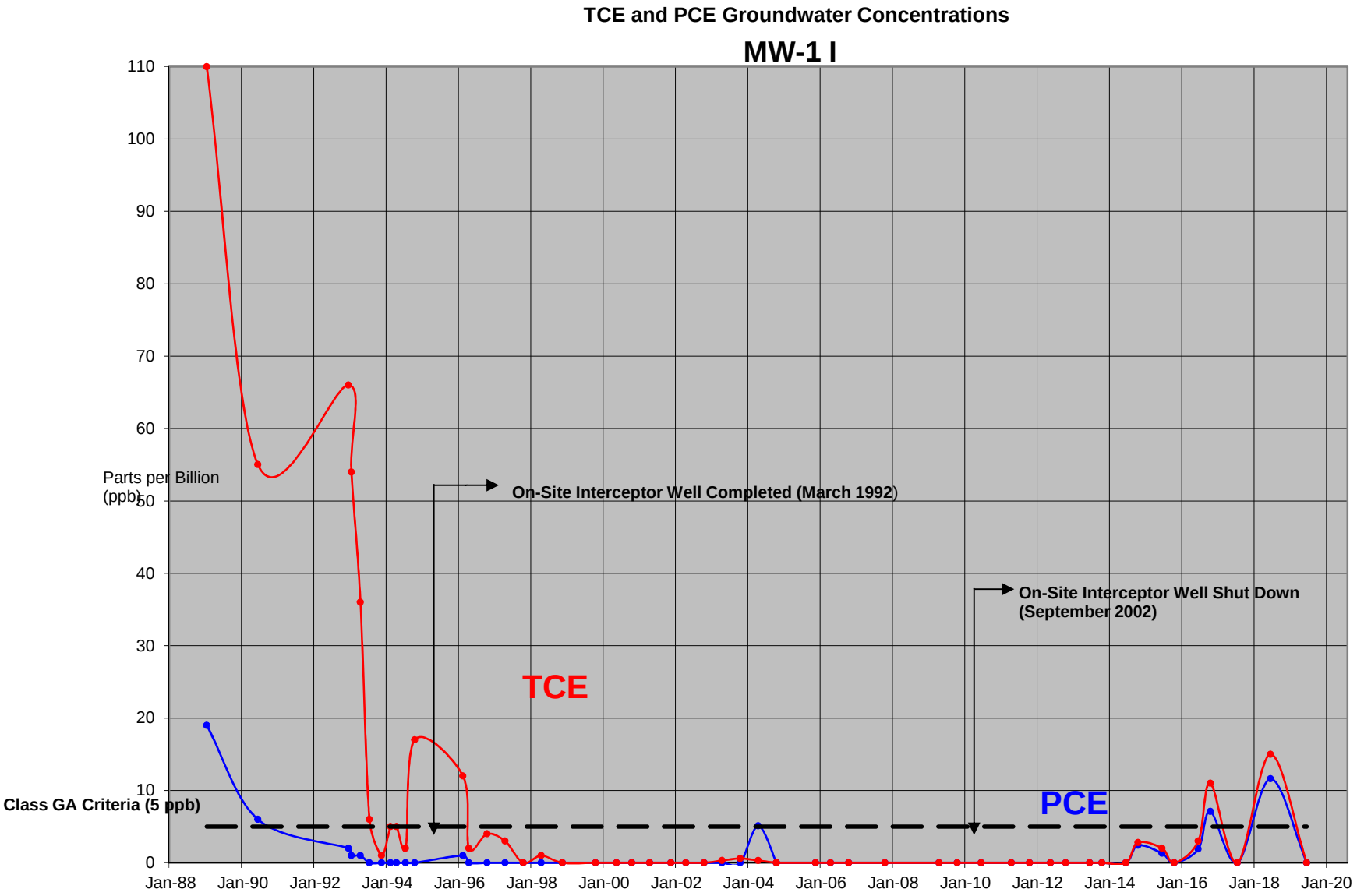
TCE AND PCE CONCENTRATION GRAPHS


TCE and PCE Groundwater Concentrations
EW-1.25/EW-1.25R
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Parts per Billion (ppb)
On-Site Interceptor Well Completed (March 1992)
On-Site Interceptor Well Shut Down (September 2002)
TCE
PCE
Class GA Criteria (5 ppb)
Jan-88
Jan-89
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19


TCE and PCE Groundwater Concentrations
EW-1.5
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Parts per Billion (ppb)
On-Site Interceptor Well Completed (March 1992)
On-Site Interceptor Well Shut Down (September 2002)
Class GA Criteria (5 ppb)
TCE
PCE
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20

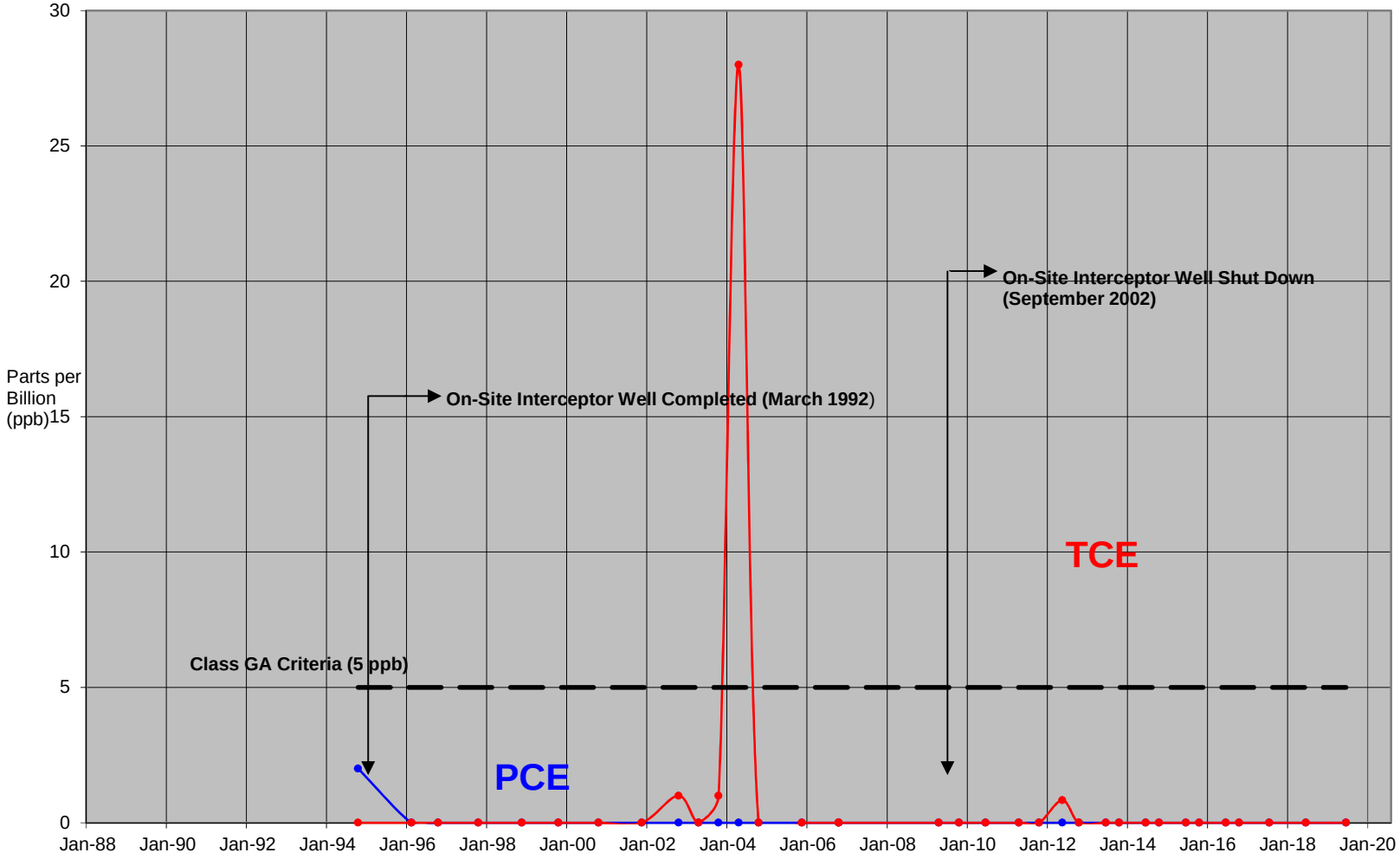

TCE and PCE Groundwater Concentrations
EW-2.5
Parts per Billion (ppb)
10
5
0
Class GA Criteria (5 ppb)
On-Site Interceptor Well Completed (March 1992)
On-Site Interceptor Well Shut Down (September 2002)
TCE
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20


TCE and PCE Groundwater Concentrations
EW-4.5
15.0
10.0
5.0
0.0
Parts per Billion (ppb)
Class GA Criteria (5 ppb)
On-Site Interceptor Well Completed (March 1992)
On-Site Interceptor Well Shut Down (September 2002)
TCE
PCE
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20


TCE and PCE Groundwater Concentrations
MW-1 I
Parts per Billion (ppb)
110
100
90
80
70
60
50
40
30
20
10
0
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20
On-Site Interceptor Well Completed (March 1992)
On-Site Interceptor Well Shut Down (September 2002)
TCE
PCE
Class GA Criteria (5 ppb)

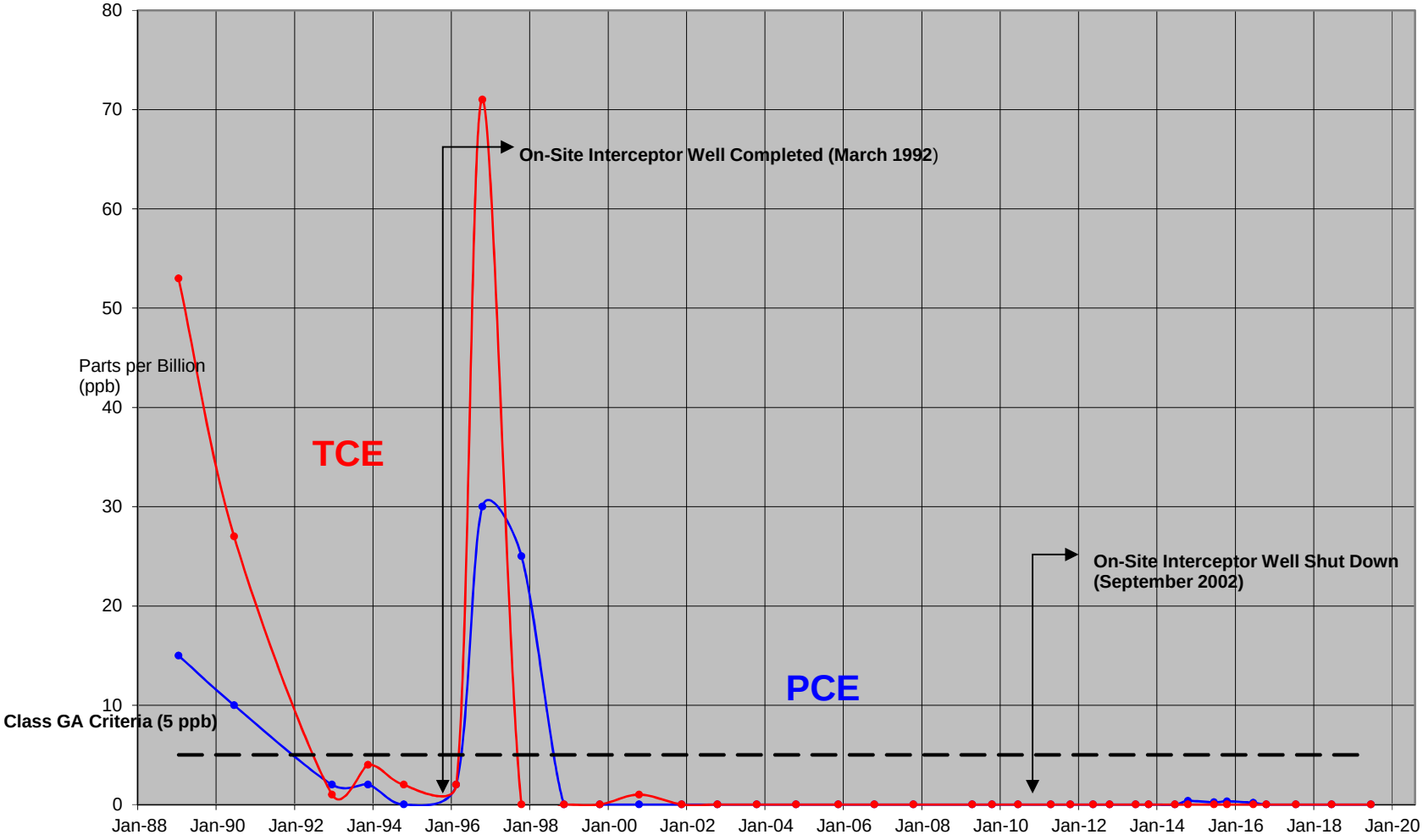
TCE and PCE Groundwater Concentrations

MW-2 I



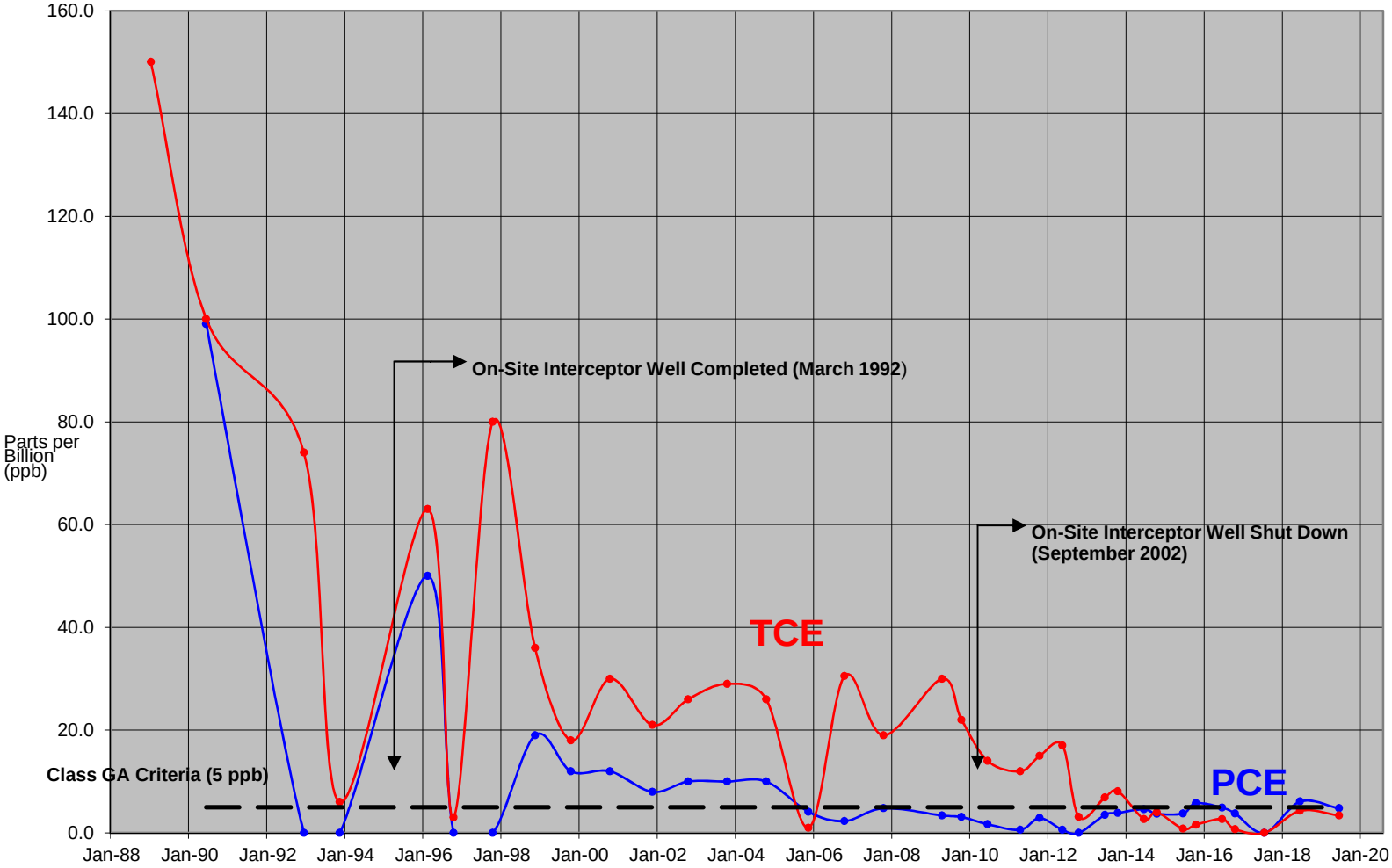
TCE and PCE Groundwater Concentrations

MW-4S



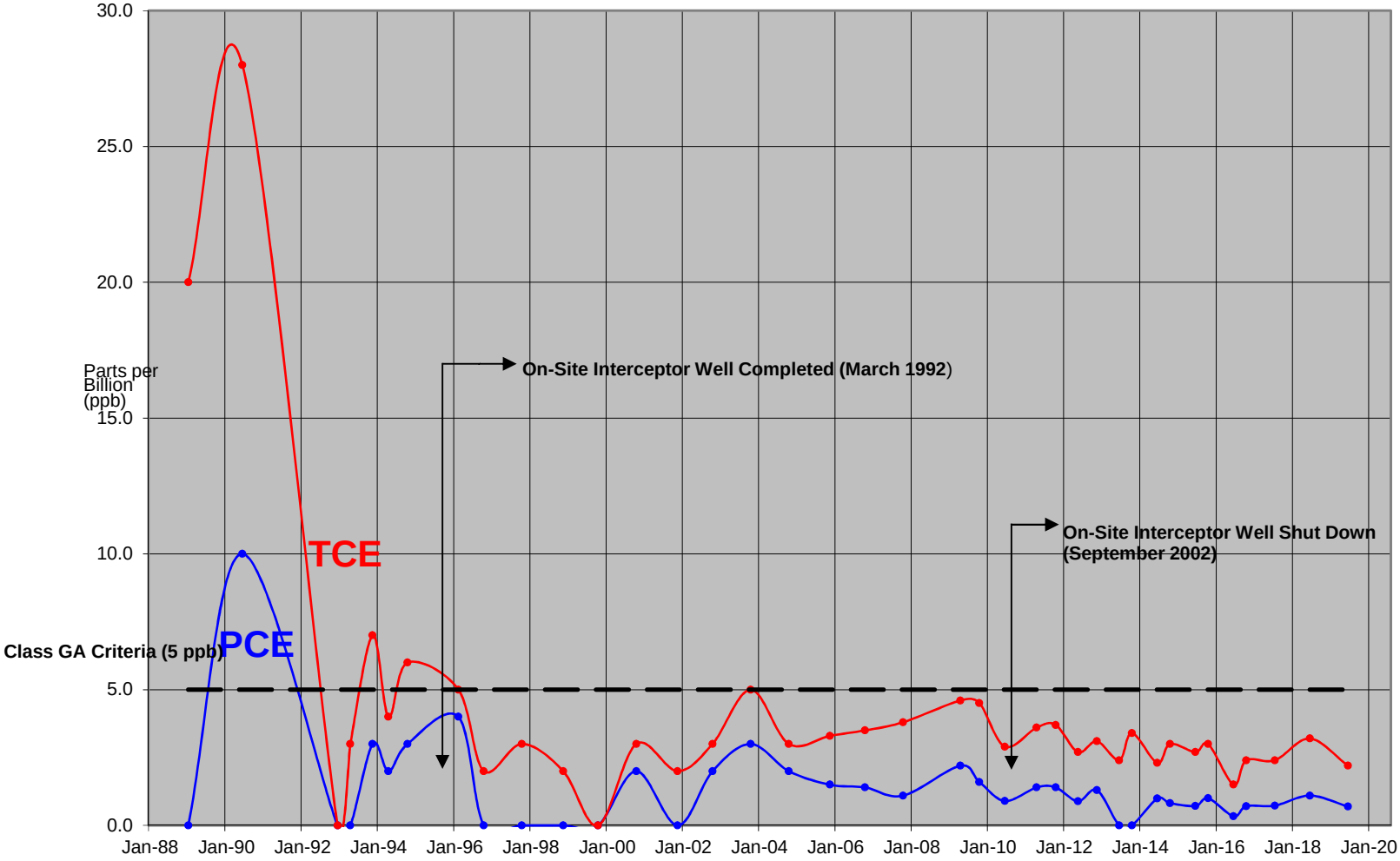
TCE and PCE Groundwater Concentrations

MW-5S



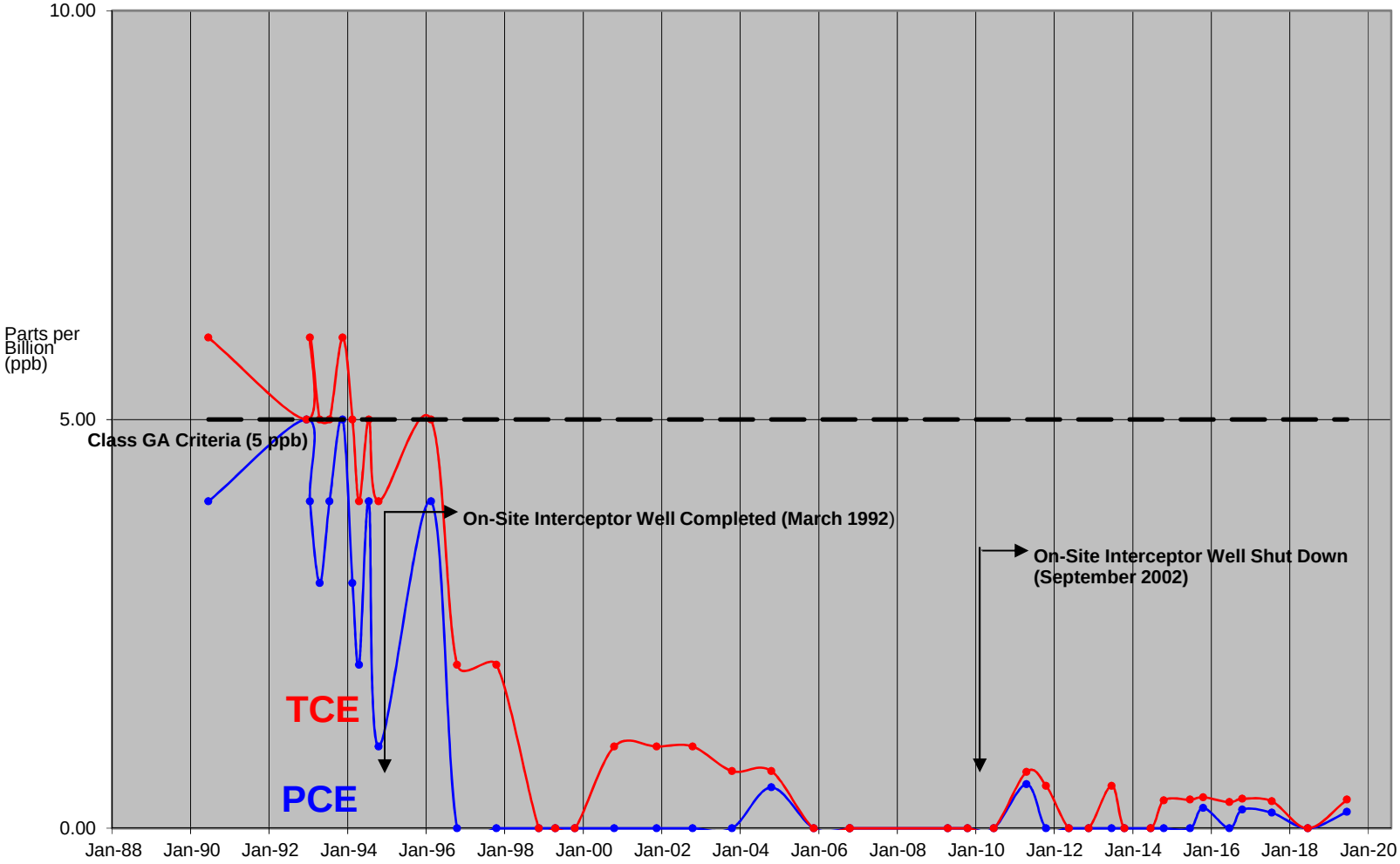
TCE and PCE Groundwater Concentrations

MW-9 I



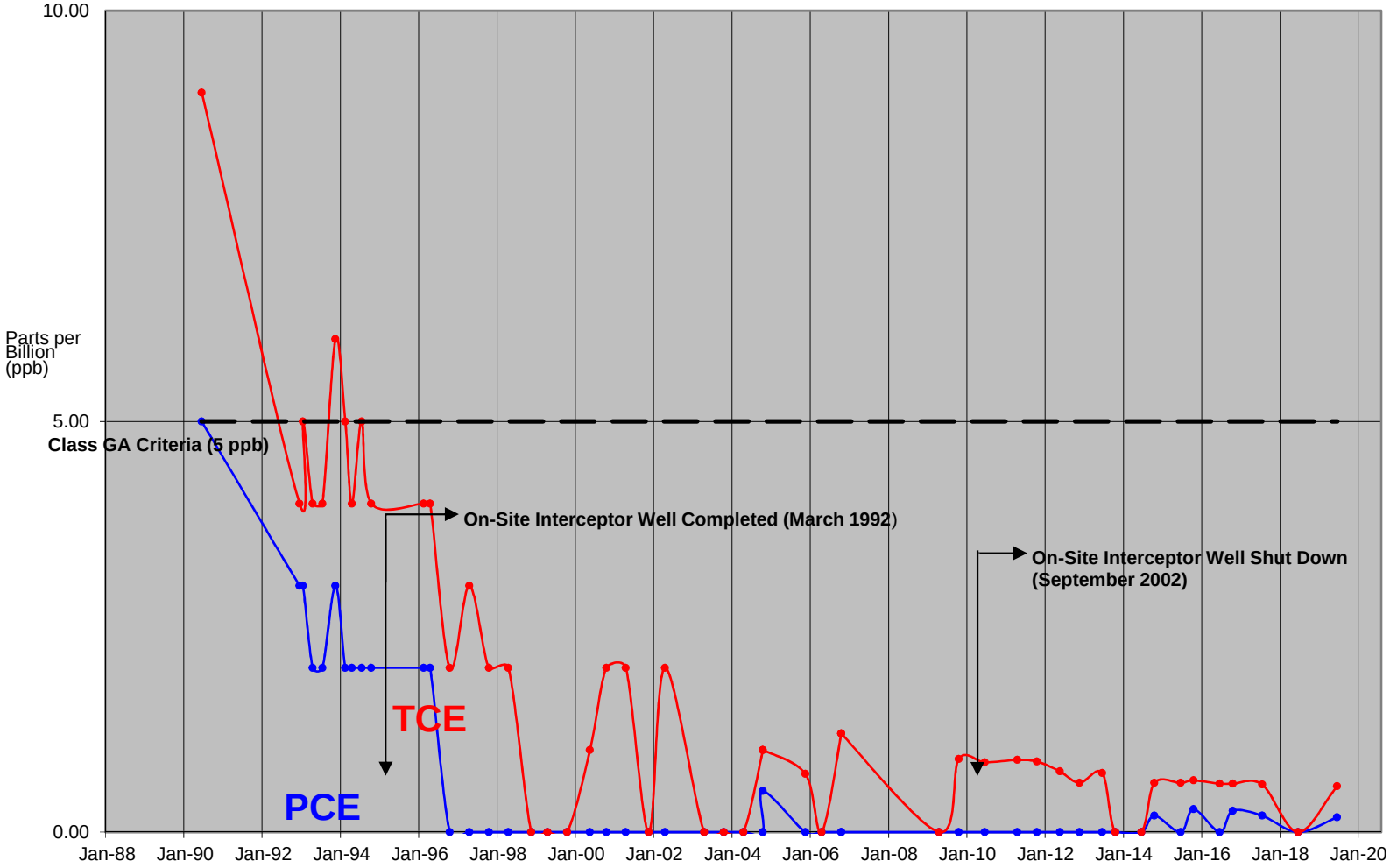
TCE and PCE Groundwater Concentrations

IRM-1



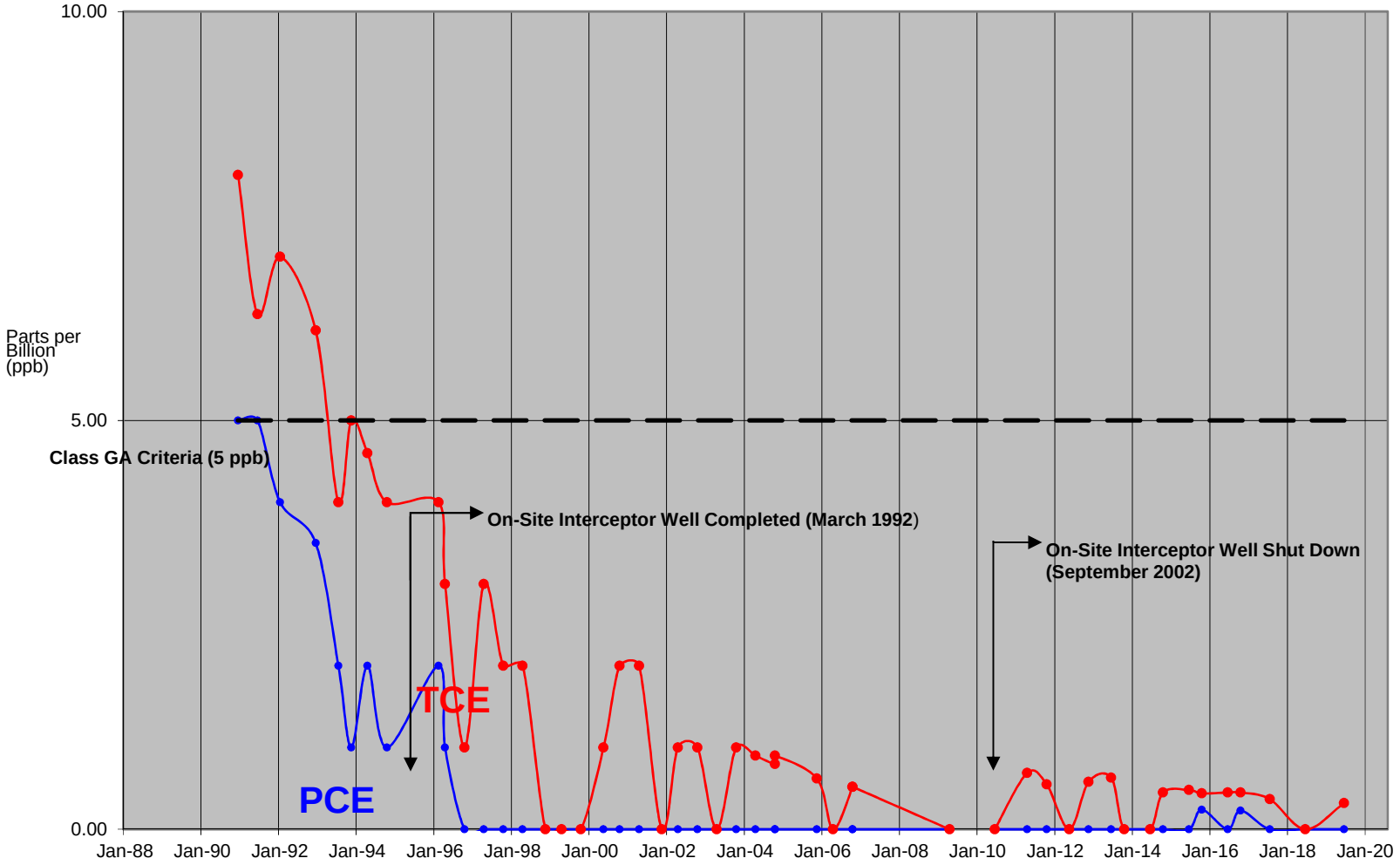
TCE and PCE Groundwater Concentrations

IRM-2 I



TCE and PCE Groundwater Concentrations

TOWN WELL



APPENDIX D

ANALYTICAL TEST RESULTS

ANALYTICAL REPORT

Lab Number:	L1925967
Client:	GZA GeoEnvironmental 300 Pearl Street Suit 700 Buffalo, NY 14202
ATTN:	Thomas Bohlen
Phone:	(716) 844-7050
Project Name:	SIGNORE POST-INJECTION
Project Number:	SIGNORE POST-INJECT
Report Date:	06/21/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1925967-01	EW-1.25R-2019	WATER	ELLICOTTVILLE, NY	06/14/19 09:30	06/14/19

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Amita Naik

Title: Technical Director/Representative Date: 06/21/19

ORGANICS

VOLATILES

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925967-01
Client ID: EW-1.25R-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 09:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 16:38
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	1.1	J	ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.18	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.88	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925967-01 Date Collected: 06/14/19 09:30

Client ID: EW-1.25R-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	2.1	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	6.8		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	105		70-130

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST-INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925967

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	100		110		70-130	10		20
Dibromochloromethane	98		100		63-130	2		20
1,1,2-Trichloroethane	96		100		70-130	4		20
Tetrachloroethene	98		98		70-130	0		20
Chlorobenzene	97		100		75-130	3		20
Trichlorofluoromethane	98		97		62-150	1		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	99		100		67-130	1		20
trans-1,3-Dichloropropene	98		100		70-130	2		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	91		98		54-136	7		20
1,1,2,2-Tetrachloroethane	94		96		67-130	2		20
Benzene	110		110		70-130	0		20
Toluene	96		100		70-130	4		20
Ethylbenzene	96		99		70-130	3		20
Chloromethane	91		92		64-130	1		20
Bromomethane	110		99		39-139	11		20
Vinyl chloride	95		93		55-140	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
Chloroethane	99		94		55-138	5		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		110		70-130	10		20
1,2-Dichlorobenzene	93		99		70-130	6		20
1,3-Dichlorobenzene	96		100		70-130	4		20
1,4-Dichlorobenzene	94		97		70-130	3		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Styrene	95		100		70-130	5		20
Dichlorodifluoromethane	93		94		36-147	1		20
Acetone	130		120		58-148	8		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	110		120		63-138	9		20
4-Methyl-2-pentanone	93		100		59-130	7		20
2-Hexanone	95		98		57-130	3		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	96		100		70-130	4		20
1,2-Dibromo-3-chloropropane	89		96		41-144	8		20
Isopropylbenzene	97		100		70-130	3		20
1,2,3-Trichlorobenzene	91		95		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
1,2,4-Trichlorobenzene	95		97		70-130	2		20
Methyl Acetate	110		110		70-130	0		20
Cyclohexane	95		98		70-130	3		20
1,4-Dioxane	162		152		56-162	6		20
Freon-113	100		98		70-130	2		20
Methyl cyclohexane	89		93		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		100		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	103		100		70-130

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L1925967-01A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925967-01B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925967-01C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 6/15/19

ALPHA Job #: L1925967

Client Information
Client: GZA
Address: 300 Pearl St. Suite 700, Buffalo, NY
Phone: 716-844-7050
Fax:
Email: thomas.bohlen@gza.com

Project Information
Project Name: Signore Post-Injection
Project Location: Ellicottville, NY
Project #
(Use Project name as Project #) ☒
Project Manager: T. Bohlen
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File) → NY
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 TCL	Total Bottle	Sample Specific Comments
25967-01	EW-1.25R-2019	6/14/19	930	GW	AS	X		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Thomas Bohlen	6/14/19 1330	AS NYL	14 June 2019 1330
AS for NYL	14 June 2019 1530		6/15/19 0128

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1925969
Client:	GZA GeoEnvironmental 300 Pearl Street Suit 700 Buffalo, NY 14202
ATTN:	Thomas Bohlen
Phone:	(716) 844-7050
Project Name:	SIGNORE ANNUAL
Project Number:	SIGNORE ANNUAL
Report Date:	06/21/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL

Lab Number: L1925969
Report Date: 06/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1925969-01	TOWNWELL-2019	WATER	ELLICOTTVILLE, NY	06/11/19 10:00	06/14/19
L1925969-02	EW-4.5-2019	WATER	ELLICOTTVILLE, NY	06/11/19 12:20	06/14/19
L1925969-03	MW-4S-2019	WATER	ELLICOTTVILLE, NY	06/11/19 15:30	06/14/19
L1925969-04	MW-5S-2019	WATER	ELLICOTTVILLE, NY	06/11/19 14:30	06/14/19
L1925969-05	IRM-1-2019	WATER	ELLICOTTVILLE, NY	06/12/19 10:20	06/14/19
L1925969-06	IRM-2-2019	WATER	ELLICOTTVILLE, NY	06/12/19 09:40	06/14/19
L1925969-07	MW-2I-2019	WATER	ELLICOTTVILLE, NY	06/13/19 09:20	06/14/19
L1925969-08	EW-2.5-2019	WATER	ELLICOTTVILLE, NY	06/13/19 09:50	06/14/19
L1925969-09	EW-1.5-2019	WATER	ELLICOTTVILLE, NY	06/13/19 14:45	06/14/19
L1925969-10	MW-9I-2019	WATER	ELLICOTTVILLE, NY	06/13/19 10:30	06/14/19
L1925969-11	MW-1I-2019	WATER	ELLICOTTVILLE, NY	06/13/19 13:15	06/14/19
L1925969-12	GW-DUPLICATE-2019	WATER	ELLICOTTVILLE, NY	06/13/19 00:00	06/14/19
L1925969-13	TRIP BLANK	WATER	ELLICOTTVILLE, NY	06/13/19 00:00	06/14/19

Project Name:	SIGNORE ANNUAL	**Lab Number:**	L1925969
Project Number:	SIGNORE ANNUAL	**Report Date:**	06/21/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SIGNORE ANNUAL	**Lab Number:**	L1925969
Project Number:	SIGNORE ANNUAL	**Report Date:**	06/21/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1925969-01: The collection date and time on the chain of custody was 11-JUN-19 10:00; however, the collection date/time on the container label was 11-JUN-19 10:10. At the client's request, the collection date/time is reported as 11-JUN-19 10:00.

L1925969-06: The sample identified as "IRM-2-2019" on the chain of custody was identified as "IRM-2I" on the container label. At the client's request, the sample is reported as "IRM-2-2019".

L1925969-11: The collection date and time on the chain of custody was 13-JUN-19 13:15; however, the collection date/time on the container label was 13-JUN-19 13:20. At the client's request, the collection date/time is reported as 13-JUN-19 13:15.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Amita Naik

Title: Technical Director/Representative Date: 06/21/19

ORGANICS

VOLATILES

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-01
Client ID: TOWNWELL-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/11/19 10:00
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 15:17
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	0.73		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	0.50		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.32	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-01 Date Collected: 06/11/19 10:00

Client ID: TOWNWELL-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.6	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	91		70-130

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-02
Client ID: EW-4.5-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/11/19 12:20
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 15:46
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	1.5		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.73	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	5.0		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-02 Date Collected: 06/11/19 12:20

Client ID: EW-4.5-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	91		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-03
Client ID: MW-4S-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/11/19 15:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 16:14
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	1.2	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-03 Date Collected: 06/11/19 15:30

Client ID: MW-4S-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	92		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-04
Client ID: MW-5S-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/11/19 14:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 16:43
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	4.8		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	3.4		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-04 Date Collected: 06/11/19 14:30

Client ID: MW-5S-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	0.75	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	1.6	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	92		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-05
Client ID: IRM-1-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/12/19 10:20
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.20	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.35	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-05 Date Collected: 06/12/19 10:20

Client ID: IRM-1-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.1	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	103		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-06
Client ID: IRM-2-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/12/19 09:40
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:28
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.18	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.56		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-06 Date Collected: 06/12/19 09:40

Client ID: IRM-2-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.7	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-07
Client ID: MW-2I-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/13/19 09:20
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:56
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-07 Date Collected: 06/13/19 09:20

Client ID: MW-2I-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.1	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-08
Client ID: EW-2.5-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/13/19 09:50
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 22:24
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-08 Date Collected: 06/13/19 09:50

Client ID: EW-2.5-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.3	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	106		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-09
Client ID: EW-1.5-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/13/19 14:45
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 22:53
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-09 Date Collected: 06/13/19 14:45

Client ID: EW-1.5-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: SIGNORE ANNUAL
Lab Number: L1925969
Project Number: SIGNORE ANNUAL
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-10
Client ID: MW-9I-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/13/19 10:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 23:21
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.70		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	2.2		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-10 Date Collected: 06/13/19 10:30

Client ID: MW-9I-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	1.9	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	106		70-130

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-11
Client ID: MW-1I-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/13/19 13:15
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 23:49
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	10		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	0.26	J	ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	1.4		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.85	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-11 Date Collected: 06/13/19 13:15

Client ID: MW-1I-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.5	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	109		70-130

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-12
Client ID: GW-DUPLICATE-2019
Sample Location: ELLICOTTVILLE, NY
Date Collected: 06/13/19 00:00
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 00:17
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	11		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	0.25	J	ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	1.3		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-12 Date Collected: 06/13/19 00:00

Client ID: GW-DUPLICATE-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.4	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	105		70-130

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-13
Client ID: TRIP BLANK
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/13/19 00:00
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 00:45
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925969-13 Date Collected: 06/13/19 00:00

Client ID: TRIP BLANK Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 11:01
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1250654-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 11:01
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1250654-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 11:01
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1250654-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	91		70-130

Project Name: SIGNORE ANNUAL **Lab Number:** L1925969

Project Number: SIGNORE ANNUAL **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 20:24
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-13 Batch: WG1251011-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 20:24
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-13 Batch: WG1251011-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL
Lab Number: L1925969
Report Date: 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 20:24
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05-13 Batch: WG1251011-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1250654-3 WG1250654-4								
Methylene chloride	92		92		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	97		94		63-132	3		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	88		89		63-130	1		20
1,1,2-Trichloroethane	100		110		70-130	10		20
Tetrachloroethene	92		89		70-130	3		20
Chlorobenzene	100		97		75-130	3		20
Trichlorofluoromethane	93		88		62-150	6		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	100		97		67-130	3		20
Bromodichloromethane	99		100		67-130	1		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	81		86		54-136	6		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	110		100		70-130	10		20
Chloromethane	65		66		64-130	2		20
Bromomethane	41		**35**	Q	39-139	16		20
Vinyl chloride	96		89		55-140	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1250654-3 WG1250654-4								
Chloroethane	110		100		55-138	10		20
1,1-Dichloroethene	90		86		61-145	5		20
trans-1,2-Dichloroethene	94		89		70-130	5		20
Trichloroethene	100		99		70-130	1		20
1,2-Dichlorobenzene	96		96		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	100		100		63-130	0		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	97		94		70-130	3		20
Styrene	95		95		70-130	0		20
Dichlorodifluoromethane	73		67		36-147	9		20
Acetone	110		110		58-148	0		20
Carbon disulfide	93		89		51-130	4		20
2-Butanone	110		120		63-138	9		20
4-Methyl-2-pentanone	100		100		59-130	0		20
2-Hexanone	120		120		57-130	0		20
Bromochloromethane	94		91		70-130	3		20
1,2-Dibromoethane	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	66		71		41-144	7		20
Isopropylbenzene	120		120		70-130	0		20
1,2,3-Trichlorobenzene	73		77		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1250654-3 WG1250654-4								
1,2,4-Trichlorobenzene	82		84		70-130	2		20
Methyl Acetate	110		110		70-130	0		20
Cyclohexane	120		110		70-130	9		20
1,4-Dioxane	86		76		56-162	12		20
Freon-113	94		88		70-130	7		20
Methyl cyclohexane	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		113		70-130
Toluene-d8	105		104		70-130
4-Bromofluorobenzene	109		110		70-130
Dibromofluoromethane	94		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 Batch: WG1251011-3 WG1251011-4								
Methylene chloride	100		96		70-130	4		20
1,1-Dichloroethane	99		99		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		98		63-132	2		20
1,2-Dichloropropane	99		97		70-130	2		20
Dibromochloromethane	96		90		63-130	6		20
1,1,2-Trichloroethane	92		88		70-130	4		20
Tetrachloroethene	94		87		70-130	8		20
Chlorobenzene	94		89		75-130	5		20
Trichlorofluoromethane	94		89		62-150	5		20
1,2-Dichloroethane	99		99		70-130	0		20
1,1,1-Trichloroethane	100		95		67-130	5		20
Bromodichloromethane	100		96		67-130	4		20
trans-1,3-Dichloropropene	90		88		70-130	2		20
cis-1,3-Dichloropropene	98		94		70-130	4		20
Bromoform	90		88		54-136	2		20
1,1,2,2-Tetrachloroethane	91		86		67-130	6		20
Benzene	100		100		70-130	0		20
Toluene	93		86		70-130	8		20
Ethylbenzene	93		87		70-130	7		20
Chloromethane	91		85		64-130	7		20
Bromomethane	78		82		39-139	5		20
Vinyl chloride	92		84		55-140	9		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 Batch: WG1251011-3 WG1251011-4								
Chloroethane	92		85		55-138	8		20
1,1-Dichloroethene	97		95		61-145	2		20
trans-1,2-Dichloroethene	100		97		70-130	3		20
Trichloroethene	100		97		70-130	3		20
1,2-Dichlorobenzene	90		88		70-130	2		20
1,3-Dichlorobenzene	94		88		70-130	7		20
1,4-Dichlorobenzene	90		88		70-130	2		20
Methyl tert butyl ether	89		95		63-130	7		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	100		98		70-130	2		20
Styrene	90		85		70-130	6		20
Dichlorodifluoromethane	95		85		36-147	11		20
Acetone	120		120		58-148	0		20
Carbon disulfide	98		92		51-130	6		20
2-Butanone	100		91		63-138	9		20
4-Methyl-2-pentanone	90		85		59-130	6		20
2-Hexanone	87		87		57-130	0		20
Bromochloromethane	110		100		70-130	10		20
1,2-Dibromoethane	90		91		70-130	1		20
1,2-Dibromo-3-chloropropane	89		84		41-144	6		20
Isopropylbenzene	94		90		70-130	4		20
1,2,3-Trichlorobenzene	88		85		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 Batch: WG1251011-3 WG1251011-4								
1,2,4-Trichlorobenzene	90		89		70-130	1		20
Methyl Acetate	100		96		70-130	4		20
Cyclohexane	98		90		70-130	9		20
1,4-Dioxane	148		142		56-162	4		20
Freon-113	95		91		70-130	4		20
Methyl cyclohexane	90		85		70-130	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		101		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	103		104		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL

Lab Number: L1925969
Report Date: 06/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 QC Batch ID: WG1251011-6 WG1251011-7 QC Sample: L1925969-08 Client ID: EW-2.5-2019												
Methylene chloride	ND	10	12	120		13	130		70-130	8		20
1,1-Dichloroethane	ND	10	13	130		13	130		70-130	0		20
Chloroform	ND	10	13	130		13	130		70-130	0		20
Carbon tetrachloride	ND	10	14	**140**	Q	14	**140**	Q	63-132	0		20
1,2-Dichloropropane	ND	10	12	120		13	130		70-130	8		20
Dibromochloromethane	ND	10	11	110		12	120		63-130	9		20
1,1,2-Trichloroethane	ND	10	11	110		12	120		70-130	9		20
Tetrachloroethene	ND	10	11	110		12	120		70-130	9		20
Chlorobenzene	ND	10	11	110		11	110		75-130	0		20
Trichlorofluoromethane	ND	10	13	130		13	130		62-150	0		20
1,2-Dichloroethane	ND	10	13	130		13	130		70-130	0		20
1,1,1-Trichloroethane	ND	10	14	**140**	Q	14	**140**	Q	67-130	0		20
Bromodichloromethane	ND	10	12	120		13	130		67-130	8		20
trans-1,3-Dichloropropene	ND	10	10	100		11	110		70-130	10		20
cis-1,3-Dichloropropene	ND	10	12	120		12	120		70-130	0		20
Bromoform	ND	10	10	100		11	110		54-136	10		20
1,1,2,2-Tetrachloroethane	ND	10	11	110		11	110		67-130	0		20
Benzene	ND	10	13	130		13	130		70-130	0		20
Toluene	ND	10	11	110		11	110		70-130	0		20
Ethylbenzene	ND	10	11	110		11	110		70-130	0		20
Chloromethane	ND	10	12	120		14	**140**	Q	64-130	15		20
Bromomethane	ND	10	7.4	74		9.8	98		39-139	**28**	Q	20
Vinyl chloride	ND	10	12	120		13	130		55-140	8		20

Matrix Spike Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL

Lab Number: L1925969
Report Date: 06/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 QC Batch ID: WG1251011-6 WG1251011-7 QC Sample: L1925969-08 Client ID: EW-2.5-2019												
Chloroethane	ND	10	12	120		13	130		55-138	8		20
1,1-Dichloroethene	ND	10	13	130		14	140		61-145	7		20
trans-1,2-Dichloroethene	ND	10	13	130		13	130		70-130	0		20
Trichloroethene	ND	10	13	130		13	130		70-130	0		20
1,2-Dichlorobenzene	ND	10	11	110		11	110		70-130	0		20
1,3-Dichlorobenzene	ND	10	11	110		11	110		70-130	0		20
1,4-Dichlorobenzene	ND	10	10	100		11	110		70-130	10		20
Methyl tert butyl ether	ND	10	10	100		10	100		63-130	0		20
p/m-Xylene	ND	20	22	110		22	110		70-130	0		20
o-Xylene	ND	20	22	110		23	115		70-130	4		20
cis-1,2-Dichloroethene	ND	10	13	130		14	**140**	Q	70-130	7		20
Styrene	ND	20	21	105		22	110		70-130	5		20
Dichlorodifluoromethane	ND	10	12	120		13	130		36-147	8		20
Acetone	2.3J	10	21	**210**	Q	22	**220**	Q	58-148	5		20
Carbon disulfide	ND	10	13	130		13	130		51-130	0		20
2-Butanone	ND	10	13	130		14	**140**	Q	63-138	7		20
4-Methyl-2-pentanone	ND	10	12	120		12	120		59-130	0		20
2-Hexanone	ND	10	11	110		12	120		57-130	9		20
Bromochloromethane	ND	10	14	**140**	Q	14	**140**	Q	70-130	0		20
1,2-Dibromoethane	ND	10	11	110		12	120		70-130	9		20
1,2-Dibromo-3-chloropropane	ND	10	11	110		11	110		41-144	0		20
Isopropylbenzene	ND	10	11	110		11	110		70-130	0		20
1,2,3-Trichlorobenzene	ND	10	10	100		11	110		70-130	10		20

Matrix Spike Analysis

Batch Quality Control

Project Name: SIGNORE ANNUAL

Project Number: SIGNORE ANNUAL

Lab Number: L1925969

Report Date: 06/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05-13 QC Batch ID: WG1251011-6 WG1251011-7 QC Sample: L1925969-08 Client ID: EW-2.5-2019												
1,2,4-Trichlorobenzene	ND	10	11	110		11	110		70-130	0		20
Methyl Acetate	ND	10	12	120		12	120		70-130	0		20
Cyclohexane	ND	10	13	130		13	130		70-130	0		20
1,4-Dioxane	ND	500	970	**194**	Q	970	**194**	Q	56-162	0		20
Freon-113	ND	10	13	130		13	130		70-130	0		20
Methyl cyclohexane	ND	10	12	120		12	120		70-130	0		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		105		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	103		104		70-130
Toluene-d8	94		94		70-130

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL

Lab Number: L1925969
Report Date: 06/21/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1925969-01A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-01B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-01C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-02A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-02B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-02C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-03A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-03B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-03C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-04A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-04B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-04C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-05A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-05B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-05C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-06A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-06B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-06C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-07A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-07B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-07C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08A1	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: SIGNORE ANNUAL
Project Number: SIGNORE ANNUAL

Lab Number: L1925969
Report Date: 06/21/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1925969-08A2	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08B1	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08B2	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08C1	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-08C2	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-09A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-09B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-09C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-10A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-10B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-10C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-11A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-11B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-11C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-12A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-12B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-12C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-13A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925969-13B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	SIGNORE ANNUAL	**Lab Number:**	L1925969
Project Number:	SIGNORE ANNUAL	**Report Date:**	06/21/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE ANNUAL	**Lab Number:**	L1925969
Project Number:	SIGNORE ANNUAL	**Report Date:**	06/21/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE ANNUAL	**Lab Number:**	L1925969
Project Number:	SIGNORE ANNUAL	**Report Date:**	06/21/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 1 of 2

Date Rec'd in Lab: 6/15/19

ALPHA Job #: L1925969

Client Information
Client: GZA
Address: 300 Pearl St. Suite 100
Buffalo, NY 14202
Phone: 716 844-7050
Fax:
Email: thomas.bohlen@gza.com

Project Information
Project Name: Sigmoe Annual
Project Location: Ellicottville, NY
Project #
(Use Project name as Project #) ☒
Project Manager: T. Bohlen
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File) NY
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

8260 TCL

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments
25969 - 01	Townwell-2019	6/11/19	1000	GW	AS	
-02	EW-4.5-2019		1220			
-03	MW-4S-2019		1530			
-04	MW-5S-2019		1430			
-05	IRM-1-2019	6/12/19	1020			
-06	IRM-2-2019		940			
-07	MW-2I-2019	6/13/19	920			
-08	EW-2.5-2019 MS/MSD		950			
-09	EW-1.5-2019		1445			
-10	MW-9I-2019		1030			

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Thomas Bohlen	6/14/19 1530	[illegible] MK	14 Jun 2019 1530
[illegible] MK	14 Jun 2019 1530	[illegible]	6/15/19 01:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 2 of 2

Date Rec'd in Lab: 6/15/19

ALPHA Job #: L1925969

Client Information
Client: GZA
Address: 300 Pearl St. Suite 700, Buffalo, NY
Phone: 716 844-7050
Fax:
Email: thomas.bohlen@gza.com

Project Information
Project Name: Signore Annual
Project Location: Ellicottville, NY
Project #
(Use Project name as Project #)
Project Manager: T. Bohlen
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File) NY
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

8260 TCL

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 TCL	Sample Specific Comments
25969-11	MW-1I-2019	6/13/19	1315	GW	TB	X	
-12	GW-Duplicate-2019	↓	—	↓	↓	X	
-13	Trip Blank	—	—	—	—	X	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

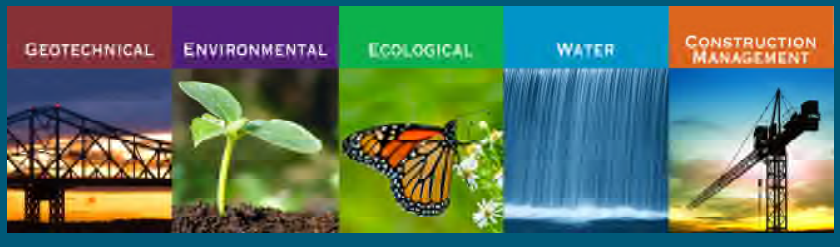
Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type													
Preservative													

Relinquished By:	Date/Time	Received By:	Date/Time
Thomas Bohlen	6/14/19 1530	DAL	6/14/2019 1530
DAL	6/14/2019 1550		6/19/19 0120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)



GZA GeoEnvironmental, Inc.

Proactive by Design



JUNE 2019
POST-INJECTION GROUNDWATER MONITORING DATA REPORT
Former Signore Inc.
55-57 Jefferson Street
Ellicottville, New York 14731

September 20, 2019
File No. 21.0056367.65



PREPARED FOR:
Iskalo Ellicottville Holdings LLC
Williamsville, New York

GZA GeoEnvironmental of New York
300 Pearl Street, Suite 700 | Buffalo, New York 14202
716-685-2300

32 Offices Nationwide
www.gza.com

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CONSTRUCTION MANAGEMENT

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Buffalo, NY 14202
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F: 716.248.1472
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VIA EMAIL

September 20, 2019
File No. 21.0056367.65

Mr. David Chiazza
Iskalo Ellicottville Holdings LLC
Harbinger Square
5166 Main Street
Williamsville, New York 14221
dchiazza@iskalo.com

Re: June 2019 Post-Injection Groundwater Monitoring Data Report
Former Signore, Inc.
55-57 Jefferson Street
Ellicottville, New York 14731 (Site)
NYSDEC Site No. C905034

Dear David:

GZA GeoEnvironmental of New York (GZA) is pleased to submit this post-injection groundwater monitoring data report to Iskalo Ellicottville Holdings LLC (Client). This report presents the analytical results of a sampling event conducted on June 13 and 14, 2019 at the above referenced Site. The post-injection groundwater monitoring was conducted as required by the New York State Department of Environmental Conservation (NYSDEC), as specified in the Decision Document for Brownfield Cleanup Program (BCP) Site No. C905034 (July 2015). The post-injection monitoring was conducted in conjunction with the annual groundwater monitoring of 12 other wells that has been performed since 1992 as required by NYSDEC and specified in the Record of Decision (ROD) dated January 1992.

Details of the remedial injection program and the first (August 2015) round of post-injection monitoring were provided in the Final Engineering Report for the Site (October 2015). Per the Site Management Plan (SMP), post-injection groundwater monitoring was conducted semi-annually, with the July 2019 sampling event being the sixth post-injection monitoring event. The body of data collected since remedial injections indicated that reductive dechlorination was continuing to reduce the chlorinated volatile organic compound (cVOC) concentrations as intended and that a slow and steady overall trend of cVOC reduction has been established.

Considering the above findings and the rate of cVOC reduction observed, NYSDEC approved modification of the SMP to allow for a reduced frequency of post-injection groundwater monitoring from semi-annual to annual in fall 2017.

This data report provides Site figures, well development forms, an analytical data summary table, graphs of pre- and post- injection concentrations of cVOCs in groundwater, and the laboratory data report for the seven wells sampled.

The analytical results of the groundwater sampling provide useful information for documentation of concentrations of cVOCs present in the on-Site groundwater. Groundwater cVOC concentrations measured at 47 months post-OCEDS injection (June 2019) follow trends typical for this stage of enhanced reductive dechlorination. As cVOC concentrations decline, biodegradation typically slows down due to less contact between cVOCs and dechlorination bacteria. Also, as PCE and TCE concentrations approach class GA criteria (i.e., PCE and TCE concentrations become a few micrograms per liter (µg/L)), concentrations of their degradation products DCE and VC are likely to be below laboratory detection limits. At this time, almost four years after the Organic Carbon Electron Donor Substrate (OCEDS) injections, groundwater biogeochemical conditions at the Site are generally less conducive to reductive dechlorination; however, DCE is above laboratory detection limits in monitoring wells that still contain PCE and/or TCE above the class GA groundwater criteria of 5 µg/L. With the exception of replacement well EW-1.25R (replacement described below), located downgradient of the OCEDC injection area, TOC concentrations in groundwater are low. This is expected, as the OCEDS additive, by design, provides organic carbon for indigenous bacteria to consume while reducing electron acceptors that compete with cVOCs. Biomass generated by bacterial growth cycles provides a sustainable source of organic carbon, helping to maintain reductive dechlorination at the soil-porewater interface as the injected OCEDS is consumed. In GZA's opinion, groundwater concentrations of cVOCs will continue to decline over time. Monitoring will continue to document the dechlorination process.

GZA notes significant sediment accumulated in well EW-1.25 as observed during the June 2018 sampling event, with the top of sediment measured at 14.79 feet below top of riser. The depth to top of sediment was sounded with a weighted tape measure. The sediment was observed to be hard/consolidated. GZA made significant unsuccessful efforts to purge the accumulated sediment from the well with the available on-site equipment (peristaltic pump). EW-1.25 was screened from approximately 15 to 25 feet below top of riser; therefore, groundwater sampled in June 2018 from EW-1.25 may not have represented of the formation, as the screened interval was buried by accumulated sediment.

GZA and our subcontractor, Earth Dimensions, Inc. (EDI) mobilized to the Site in fall 2018 in an effort to re-develop/clear the accumulated sediment from EW-1.25. The well re-development effort was conducted via water-jetting using rigid tremie piping and a pump to flush the accumulated hard sediment. Re-development/sediment flushing efforts were unsuccessful, as the rigid tremie pipe sounded hard on the top of the obstruction in the well. Minimal amounts of material were recovered from the well from the flushing effort. These recovered sediments were observed to be coarse grained and are assumed to represent the formation. The screen associated with well EW-1.25 apparently failed, making it a non-viable sampling location/well.

Based upon these observations, NYSDEC required decommissioning of well EW-1.25 and reinstallation of a comparably screened proximate well. GZA and EDI mobilized to the Site on May 20, 2019. Well EW-1.25 was decommissioned via tremie grouting from the bottom of well to the top of well riser. The associated road box was removed and the resulting void space was filled with concrete to the ground surface. Replacement monitoring well EW-1.25R was installed approximately 10 feet north of the original well EW-1.25 and was comparably screened from approximately 15 to 25 ft. bgs. GZA returned to the Site on June 11, 2019 for the annual sampling event and well EW-1.25R was developed until stabilization of water quality parameters. Approximately 41 gallons (approximately 18 well volumes) were purged from the well during redevelopment. The well was subsequently sampled on June 14, 2019.

As outlined in our 2018 reporting to NYSDEC, we recommended cessation of the post-injection groundwater monitoring, and a reduction of annual ROD required sampling (submitted under separate cover) from annual to biennial.

Should you have any questions or require additional information following your review, please contact Thomas Bohlen at 716-844-7050.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Thomas Bohlen, P.G.
Project Manager

Karen Kinsella, Ph.D.
Senior Technical Specialist

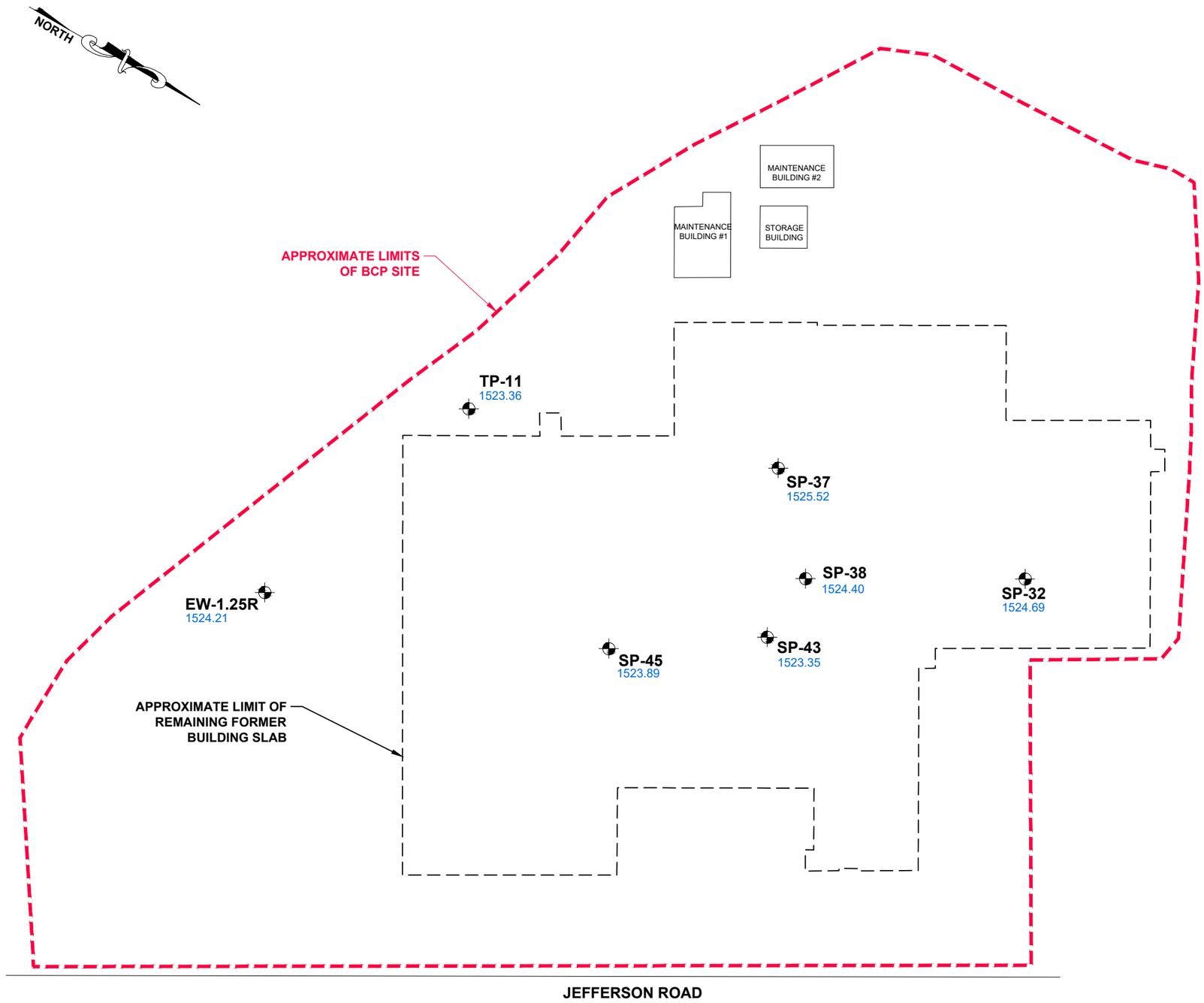
Bart A. Klettke, P.E.
Principal

cc: Jaspal Walia, P.E., NYSDEC
Chad Staniszewski, P.E., NYSDEC

ATTACHMENTS

FIGURE 1	MICROWELL GROUNDWATER ELEVATION CONTOUR PLAN
FIGURE 2	LOCATION OF ORGANIC CARBON ELECTRON DONOR SUBSTRATE INJECTIONS
ATTACHMENT A	LIMITATIONS
ATTACHMENT B	WELL DEVELOPMENT FORMS
ATTACHMENT C	GROUNDWATER ANALYTICAL RESULTS SUMMARY
ATTACHMENT D	CONCENTRATIONS OF CVOC PARENT MATERIAL AND DAUGHTER PRODUCTS MEASURED IN GROUNDWATER
ATTACHMENT E	LABORATORY REPORT

FIGURES



LEGEND:

SP-37 1525.52 APPROXIMATE LOCATION AND DESIGNATION OF 1" MICROWELL.GROUNDWATER ELEVATION MEASURED ON JUNE 11 & 14, 2019.

NOTES:

1. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 40 80 160

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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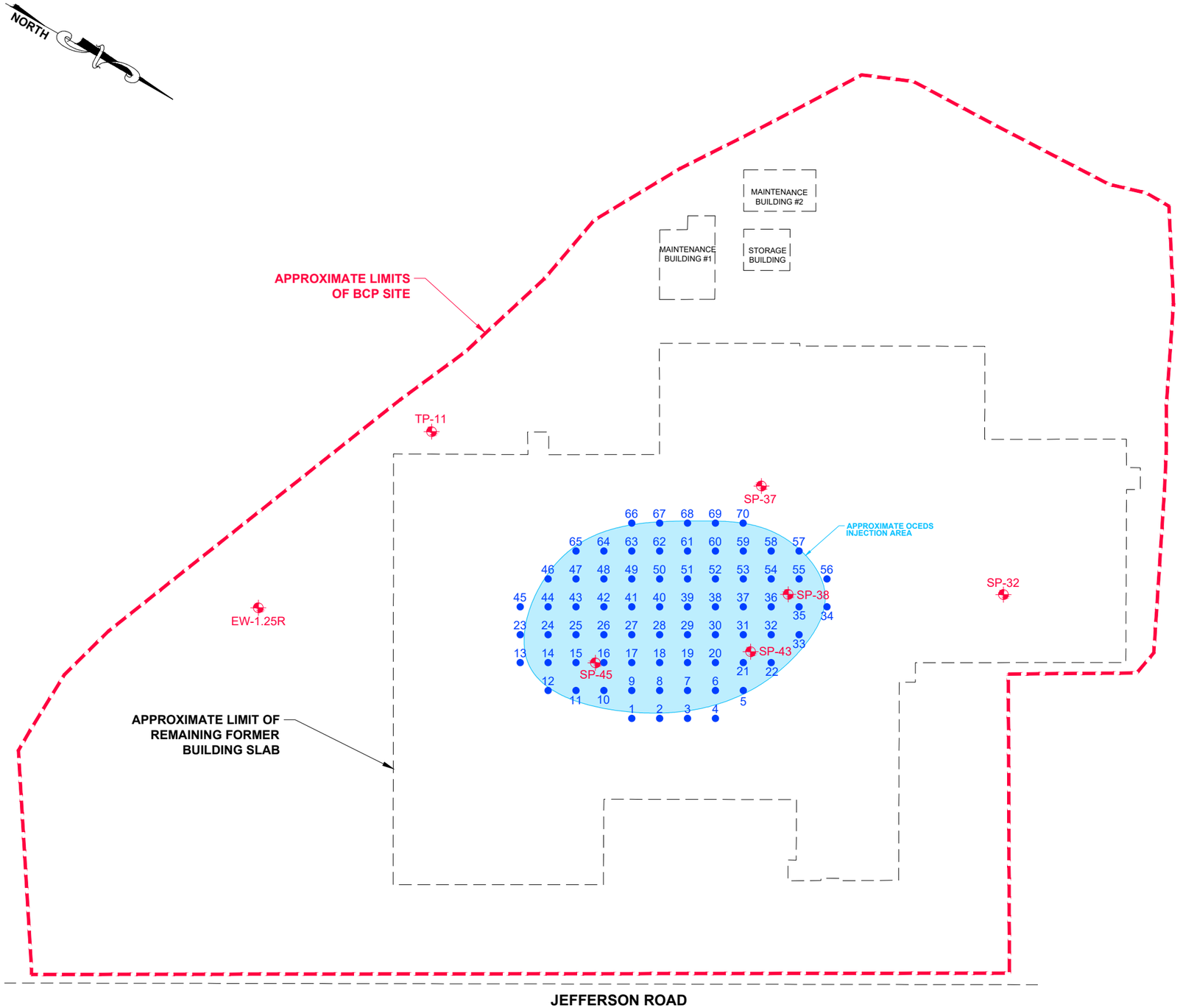
FORMER SIGNORE FACILITY
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK
BROWNFIELD CLEANUP PROGRAM SITE NO. C905034

JUNE 2019 POST-INJECTION GROUNDWATER MONITORING REPORT, MICROWELL GROUNDWATER ELEVATION CONTOUR PLAN

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		ISKALO ELLICOTTVILLE HOLDINGS, LLC	
PROJ MGR: TB	REVIEWED BY: BAK	CHECKED BY: BAK	FIGURE 1
DESIGNED BY: TB	DRAWN BY: DEW	SCALE: 1" = 80'	
DATE: JULY 2019	PROJECT NO. 21.0056367.65	REVISION NO.	

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GZA-K:\PROJECTS\56300s\56367.65 Signor Ellicottville Post Injection\Figure 1.dwg [Figure 1] July 08, 2019 - 11:03am daniel.wulf



LEGEND:

1 ● ORGANIC CARBON ELECTRON DONOR SUBSTRATE (OCEDS) INJECTION POINT

SP-37 APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELLS ASSOCIATED WITH OCEDS INJECTIONS

NOTES:

1. BASE MAP ADAPTED FROM A 2006 AERIAL PHOTOGRAPH DOWNLOADED FROM www.cattco.org/real_property/parcel_ news.asp AND FIELD OBSERVATIONS.

2. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

0 40 80 160

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

FORMER SIGNORE FACILITY
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK
BROWNFIELD CLEANUP PROGRAM SITE NO. C905034

JUNE 2019 POST-INJECTION GROUNDWATER MONITORING REPORT, LOCATION OF ORGANIC CARBON ELECTRON DONOR SUBSTRATE INJECTIONS

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		ISKALO ELLICOTTVILLE HOLDINGS, LLC	
PROJ MGR: TB	REVIEWED BY: BAK	CHECKED BY: BAK	FIGURE
DESIGNED BY: TB	DRAWN BY: DEW	SCALE: 1" = 60'	2
DATE: JULY 2019	PROJECT NO. 21.0056367.65	REVISION NO.	

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GZA-K:\PROJECTS\56300s\56367.65 Signor Ellicottville Post Injection\Figure 2.dwg [Figure 2] July 08, 2019 - 11:04am daniel.wulf

ATTACHMENT A

LIMITATIONS

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

ATTACHMENT B

WELL DEVELOPMENT FORMS

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**EW-1.25R**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	5/2019	Protective Casing Elevation:		Top of Screen Depth:	15 ft.
Installed By:	EDI	Monitoring Point Elevation:	1534.04 ft.	Bottom of Screen Depth:	25 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
9.51	6.77	0.65	14.7	13.13	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: EW-1.25
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement:	0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/11/2019	945		0	8.49	0.579	11.9	655	Lt. Brown	2.18	-362.7	Depth of Water: 9.83 (6/11) / 9.98 (6/14)
	1027		31	6.96	0.575	10.6	3040	Lt. Brown	3.46	-183.2	Length of Water Column:
	1040		41	7.1	0.569	11.5	2740	Lt. Brown	4.5	-133.8	Depth of Well:
											Sheen Observed: Y **N**
6/14/2019	841	10.04	0	7.02	0.768	10.3	18.69	Lt. Brown	4.06	-102	DNAPL Observed: Y **N**
	850	10.04	1	6.88	0.706	9.8	80.15	Lt. Brown	0.41	-129.9	Did Well Go Dry: Y **N**
	901	10.04	2.2	6.91	0.650	9.8	62.09	Lt. Brown	0.23	-137.4	Other: Well developed on 6/11/19
	906	10.04	3	6.91	0.633	9.8	69.11	Lt. Brown	0.18	-140.1	Well sampled on 6/14/19

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**SP-32**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	9/27/2012	Protective Casing Elevation:		Top of Screen Depth:	9 ft.
Installed By:	TREC	Monitoring Point Elevation	1533.52	Bottom of Screen Depth:	19 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
7.14	5.93	0.133	18.6	5.02	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID:
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/14/2019	957	8.87	0	7.06	0.136	12.7	12.15	Clear	7.49	109.9	Depth of Water: 8.83
	1002		0.2	6.37	0.121	12.3	13.21		6.01	140.6	Length of Water Column:
	1007		0.5	6.31	0.122	12.2	14.21		5.68	147.7	Depth of Well:
	1012		0.8	6.3	0.122	12.2	17.51		5.59	150.8	Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other:

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**SP-37**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	9/27/2012	Protective Casing Elevation:		Top of Screen Depth:	9 ft.
Installed By:	TREC	Monitoring Point Elevation	1533.36	Bottom of Screen Depth:	19 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
6.49	6.08	0.19	18.4	10.32	Clear

Notes:

Field Observations		Parameters +/-		Sampling Information
Exterior Observations:		pH	+/- 0.1	Sample ID:
		Conductivity	+/- 3%	Sample Time:
Interior Observations		Temperature	+/- 10%	# of Sample Containers:
		Turbidity	+/- 10%	Duplicate Sample ID:
		ORP	+/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:		DO	+/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: None

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/14/2019	1034	7.88	0	6.33	0.167	12.1	2.83	Clear	4.02	142.7	Depth of Water: 7.84
	1039		0.2	6.26	0.167	12	2.65		3.2	146.8	Length of Water Column:
	1046		0.6	6.25	0.166	11.9	4.51		3.07	150.2	Depth of Well:
	1051		0.9	6.25	0.166	11.9	6.12		3.05	151.5	Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other:

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**SP-38**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	9/27/2012	Protective Casing Elevation:		Top of Screen Depth:	9 ft.
Installed By:	TREC	Monitoring Point Elevation:	1533.52	Bottom of Screen Depth:	19 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
7.2	6.85	0.416	16.7	5.88	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID:
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/14/2019	1113	8.3	0	6.83	0.396	11.5	134.91	Clear	3.95	127.9	Depth of Water: 8.12
	1120		0.3	6.83	0.399	11.4	143.1		3.79	129.5	Length of Water Column:
	1125		0.5	6.89	0.398	11.3	180.22		2.32	125.2	Depth of Well:
											Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other: Black flecks observed in purge
											water

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**SP-43**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	10/1/2012	Protective Casing Elevation:		Top of Screen Depth:	10 ft.
Installed By:	TREC	Monitoring Point Elevation	1533.42	Bottom of Screen Depth:	20 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
7.89	6.12	0.183	20.5	4.72	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID:
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/14/2019	1147	10.1	0	6.51	0.125	14	35.96	Clear	3.92	135.9	Depth of Water: 10.07
	1152		0.6	6.32	0.124	13.9	23.35		3.71	146.5	Length of Water Column:
	1157		1.2	6.32	0.126	13.8	18.24		3.57	141.8	Depth of Well:
	1202		1.9	6.32	0.127	13.8	16.25		3.52	153.9	Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other:

File: 21.0056367.65

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**SP-45**	Ground Surface Elevation:		Riser/Screen Material:	PVC
Installation Date:	10/1/2012	Protective Casing Elevation:		Top of Screen Depth:	9.2 ft.
Installed By:	TREC	Monitoring Point Elevation	1533.43	Bottom of Screen Depth:	19.2 ft.
		Elevation Datum:			

Previous Field measurement Information Available (yes/**no**/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
9.05	6.84	0.37	17.5	6.27	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID:
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	MNA PARAMETERS

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/14/2019	1226	16.36	0	7.33	0.35	14.1	97.73	Lt. Brown	5.84	13.78	Depth of Water: 9.54
	1231		0.3	7.22	0.34	14.1	28.52	Clear	4.13	132.9	Length of Water Column:
	1236		0.4	7.23	0.337	14.1	15.2		3.9	130	Depth of Well:
	1241		0.5	7.23	0.336	14	12.48		3.85	128.4	Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other:

File: 21.0056367.64

FORMER SIGNORE, INC. FACILITY
WELL DEVELOPMENT FORM
55-57 JEFFERSON STREET
ELLICOTTVILLE, NEW YORK

Historic Information

Boring Log Available (**yes**/no/attached):
Installation Log Available (**yes**/no/attached)

Summary

Monitoring Well :	**TP-11**	Ground Surface Elevation:		Riser/Screen Material: PVC	
Installation Date:		Protective Casing Elevation:		Top of Screen Depth:	
Installed By:	Trec Environmental	Monitoring Point Elevation: 1532.98 ft.		Bottom of Screen Depth:	
		Elevation Datum:			

Previous Field measurement Information Available (**yes**/no/attached)

Ranges of Previous Field Measurements

Depth to Water (ft)	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color
9.42	6.69	0.393	16.7	4.97	Clear

Notes:

Field Observations	Parameters +/-	Sampling Information
Exterior Observations:	pH +/- 0.1	Sample ID: TP-11
	Conductivity +/- 3%	Sample Time:
Interior Observations	Temperature +/- 10%	# of Sample Containers:
	Turbidity +/- 10%	Duplicate Sample ID:
	ORP +/- 10mV	Sample Analysis: VOCs 8260
Signs of Damage/Tampering:	DO +/- 10%	

Locked (yes/**no**)	Well Cap (**yes**/no)	Surface Seal Intact (**yes**/no)	PID Measurement: 0.0 ppm	Odors: none

Well Quality Data

Date	Time	Depth to Water ft bgs	Cumulative Volume Purged	pH (Standard Units)	Specific Conductance (uMhos/cm)	Temperature (^{o}C)	Turbidity (NTU)	Color	Dissolved Oxygen	Oxygen Reduction Potential	Notes
6/13/2019	1048	9.69	0	7.25	0.459	9.5	39.37	Clear	6.12	115.6	Depth of Water: 9.62
	1053		0.2	7.04	0.445	8.8	7.93		4.26	119.2	Length of Water Column:
	1058		0.8	7.05	0.447	8.8	3.12		4.15	121.3	Depth of Well:
	1103		1.4	7.06	0.447	8.8	1.84		4.12	122	Sheen Observed: Y **N**
											DNAPL Observed: Y **N**
											Did Well Go Dry: Y **N**
											Other:

ATTACHMENT C

GROUNDWATER ANALYTICAL RESULTS SUMMARY

Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	EW-1.25 6/25/2013	Q	EW-1.25 10/16/2013	Q	EW-1.25 6/10/2014	Q	EW-1.25 6/4/2015	Q	EW-1.25 8/21/2015	Q	EW-1.25 10/21/2015	Q	EW-1.25 6/15/2016	Q	EW-1.25 10/25/2016	Q	EW-1.25 7/13/2017	Q	EW-1.25 6/21/2018	Q	EW-1.25R 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-846, 8260B (ug/L)																							
Acetone	50	<		<		<		<		<		3.8	J	2.3	J	<		<		<		6.8	
Benzene	1	<		<		<		<		<		<		<		<		<		<		0.18	J
Carbon disulfide	NV	<		<		<		<		<		<		<		<		1.8		<		<	
Chloromethane	NV	0.77	J	<		<		<		<		<		<		<		<		<		0.88	J
1,1-Dichloroethane	5	4.1		4.1		2.9		3		2.6		4.2		2.9		3.9		3.0		<		1.1	J
1,1-Dichloroethene	5	<		<		<		0.25	J	0.19	J	0.36	J	0.24	J	0.48	J	0.39	J	<		<	
Vinyl chloride	2	4.6		5		2.4		2.6		<		3.3		3.2		6.6		<		<		<	
2-Butanone	50	<		<		<		<		<		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	31		32		23		29		28		44		28		98		57		<		2.1	J
Toluene	5	<		<		<		<		<		<		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		0.82	J	<		<		0.7	J	<		<		<	
Tetrachloroethene	5	3.3		3.8		3.6		<		1.4		1.8		3.1		<		<		<		<	
Trichloroethene	5	51		59		41		47		42		58		47		0.27	J	35		<		<	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		0.79	J	<		<		<	
Total VOCs		94.77		103.9		72.9		81.85		75.01		115.46		86.74		110.74		97.19				11.06	
Field Parameters																							
Temperature (Deg. C)	NV	13		13.5		10.4		9.1		13.1		13.4		12.4		13		14.9		12.1		9.8	
Specific Conductance (mS/cm)	NV	0.7		0.68		0.7		0.757		0.67		0.68		0.653		0.612		0.65		0.629		0.633	
Dissolved Oxygen (mg/L)	NV	0.05		0.18		0.06		0.17		0.12		0.22		0.29		0.23		0.13		0.65		0.18	
Oxygen Reduction Potential (mv)	NV	-88.5		-99.3		-91.2		-130.5		-86.2		-91.6		161.4		-125.1		-169.9		-54.1		-140.1	
pH (std. units)	NV	7.35		6.85		6.78		6.73		6.77		6.89		6.79		6.87		6.77		6.12		6.91	
Turbidity (NTUs)	NV	9.12		3.31		11.71		7.7		14.2		10.7		20.1		11.87		13.13		21.5		69.11	
Inorganics (ug/L)																							
Iron	300	NS		1,000		14,000		14,000		11,500		11,900		27,300		10,500		<		27,000	M1	6,600	M1
Manganese	NV	NS		1,300		1,600		1,482		1,265		1,465		1,453		1,354		1,256		3,060		1,392	
Miscellaneous Water Quality Parameters																							
Methane (ug/L)	NV	NS		1,000		170		237		218		190		244		130		130		NT		1,110	
Ethane (ug/L)	NV	NS		<		<		<		<		<		<		<		<		NT		6.85	
Ethene (ug/L)	NV	NS		1.7		<		<		0.535		<		0.558		0.55		0.55		NT		2.82	
Total Organic Carbon (mg/L)	NV	NS		<		<		2.07		2.47		1.92		2.26		1.56		1.84		21.0		7.97	
Chloride (mg/L)	250	NS		66	B	69		62		57		56		49		45		47		48.2	M1	14.1	
Nitrate (mg/L)	10	NS		<		<		0.015	J	0.020	J	<		<		0.029	J	<		<		<	
Nitrite (mg/L)	1	NS		<		<		NS		NS		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	NS		7.6		7.4	B	12.8		10.3		10.5		10.2		11.7		8.86		<		10.3	

Notes:
1. Only compounds detected in one or more of the groundwater samples are presented in this table.
2. "<" indicates compound was not detected above the method detection limit.
3. Analytical testing completed by TestAmerica, Alpha Analytical and Pace Analytical.
4. Criteria is a guidance value.
5. Laboratory qualifiers: B = compound was found in the blank and sample; J = result is less than the RL but greater than or equal to the MDL and the concentration is an approximation; * - LCS or LCSD exceeds the control limits; D = value shown is result of dilution analysis; E = value above quantitation range. M1 = Matrix spike recover exceeded QC limits. Batch accepted based on laboratory LCS recovery. CH = continuing calibration for this compound is outside of laboratory acceptance limits; results may be biased high.
6. mg/L = parts per million; ug/L = parts per billion
7. NYSDEC Class GA Groundwater Criteria as promulgated in 6 NYCRR 703; Table 1 in Technical and Operational Guidance Series (1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, dated October 1993; revised June 1998; errata dated January 1999; addendum dated April 2000.
8. NV = no value; NS = Not sampled.
9. Sum of Nitrate/Nitrite Class GA Criteria = 10 mg/L (no exceedances)
10. Shaded concentrations exceed Class GA criteria.

Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	SP-32 10/3/2012	Q	SP-32 10/17/2013	Q	SP-32 6/10/2014	Q	SP-32 6/4/2015	Q	SP-32 8/21/2015	Q	SP-32 10/22/2015	Q	SP-32 6/15/2016	Q	SP-32 10/25/2016	Q	SP-32 7/12/2017	Q	SP-32 6/21/2018	Q	SP-32 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-84																							
Acetone	50	<		240	D	<		<		<		<		2.8	J	<		<		<		4.8	J
Benzene	1	<		<		<		<		<		<		<		<		<		<		<	
Carbon disulfide	NV	<		<		<		<		<		<		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		0.18	J	0.23	J	<		<		<		<		<		<	
2-Butanone	50	<		45		<		<		<		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	<		26		11		4.5		4.7		2.7		3.3		<		<		<		<	
Toluene	5	<		<		<		<		<		<		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
Tetrachloroethene	5	2.1		<		<		0.25	J	0.46	J	0.62		0.44	J	0.42	J	0.32	J	<		0.2	J
Trichloroethene	5	120		3.4		6.4		5.8		6.5		6.7		14		1.2		0.85		4.4		0.41	J
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Total VOCs		122.1		314.4		17.4		10.73		11.89		10.02		20.54		1.62		1.17		4.4		0.43	
Field Parameters																							
Temperature (Deg. C)	NV	13.2		16.5		13.1		11.0		17.7		16.6		15.8		15.1		18.6		13.2		12.2	
Specific Conductance (mS/cm)	NV	0.418		0.65		0.392		0.326		0.272		0.223		0.232		0.181		0.133		0.144		0.122	
Dissolved Oxygen (mg/L)	NV	4.92		0.18		0.12		0.15		0.16		0.48		0.53		1.67		2.29		0.76		5.59	
Oxygen Reduction Potential (mv)	NV	50.3		-95.3		-21.9		104.4		57.7		169.9		236.7		153		41.9		181.2		150.8	
pH (std. units)	NV	7.23		6.45		6.48		6.28		6.34		6.25		6.22		6.0		5.9		5.96		6.30	
Turbidity (NTUs)	NV	35		6.76		4.95		0.6		7.15		4.42		7.6		4.96		5.02		2.8		17.51	
Inorganics (ug/L)																							
Iron	300	NS		3,480		16,000		339		246		206		541		66		<		<		NS	
Manganese	NV	NS		24,600		19,000		6,468		8,331		2,897		2,668		1,144		12		<		NS	
Miscellaneous Water Quality Parameters																							
Methane (ug/L)	NV	NS		120		660		725		932		208		205		3.31		0.55	J	<		NS	
Ethane (ug/L)	NV	NS		<		<		0.659		0.841		<		<		<		<		<		NS	
Ethene (ug/L)	NV	NS		1.7		<		<		<		<		<		<		<		<		NS	
Total Organic Carbon (mg/L)	NV	NS		51		<		1.35		1.7		1.02		1.45		0.87		1.08		<		NS	
Chloride (mg/L)	250	NS		5	B	3.1		3.46		3.12		2.83		2.72		1.59		0.861		<		NS	
Nitrate (mg/L)	10	NS		<		<		1.92		0.93		4.2		3.9		4.8		1.4		1		NS	
Nitrite (mg/L)	1	NS		<		<		NS		NS		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	NS		4.9	J	14	B	14.6		16.8		16.1		16.3		14.4		13.8		15.9		NS	

Notes:
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4. Criteria is a guidance value.
5. Laboratory qualifiers: B = compound was found in the blank and sample; J = result is less than the RL but greater than or equal to the MDL and the concentration is an approximation; * - LCS or LCSD exceeds the control limits; D = value shown is result of dilution analysis; E = value above quantitation range. M1 = Matrix spike recover exceeded QC limits. Batch accepted based on laboratory LCS recovery. CH = continuing calibration for this compound is outside of laboratory acceptance limits; results may be biased high.
6. mg/L = parts per million; ug/L = parts per billion
7. NYSDEC Class GA Groundwater Criteria as promulgated in 6 NYCRR 703; Table 1 in Technical and Operational Guidance Series (1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, dated October 1993; revised June 1998; errata dated January 1999; addendum dated April 2000.
8. NV = no value; NS = Not sampled.
9. Sum of Nitrate/Nitrite Class GA Criteria = 10 mg/L (no exceedances)
10. Shaded concentrations exceed Class GA criteria.

Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	SP-37 10/5/2012	Q	SP-37 10/17/2013	Q	SP-37 6/10/2014	Q	SP-37 6/4/2015	Q	SP-37 8/21/2015	Q	SP-37 10/23/2015	Q	SP-37 6/16/2016	Q	SP-37 10/26/2016	Q	SP-37 7/12/2017	Q	SP-37 6/21/2018	Q	SP-37 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-84																							
Acetone	50	<		<		<		<		<		<		2.6	J	<		<		<		5.5	
Benzene	1	<		<		<		<		<		<		<		<		<		<		<	
Carbon disulfide	NV	<		<		<		<		<		<		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		<		<		0.21	J	0.42	J	<		<		<		<	
2-Butanone	50	<		<		<		<		<		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	1.8		7.3		0.99	J	3.4		9.9		9.4		6.7		12		2.7		1.9		3.6	
Toluene	5	<		<		<		<		<		<		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		0.82	J	<		<		<		<		<		<	
Tetrachloroethene	5	9.6		24		13		18		15		26		14		17		12		13.2		10	
Trichloroethene	5	13		20		7.2		10		11		19		13		14		7.8		10.9		12	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Total VOCs		24.4		51.3		27.2		31.4		36.72		54.61		36.72		43		22.5		26		31.1	
Field Parameters																							
Temperature (Deg. C)	NV	13.5		17		11.9		10		17		15.3		13.3		14.2		18.4		12.1		11.9	
Specific Conductance (mS/cm)	NV	0.452		0.535		0.305		0.449		0.432		0.396		0.291		0.246		0.19		0.184		0.166	
Dissolved Oxygen (mg/L)	NV	0.28		0.2		0.58		0.68		0.07		0.13		0.29		0.55		0.86		2.53		3.05	
Oxygen Reduction Potential (mv)	NV	-122.4		74.8		107.7		117.6		16.1		82.8		306.5		130.2		6.7		180.1		151.5	
pH (std. units)	NV	6.6		6.39		6.28		6.12		6.28		6.3		6.03		5.99		6.08		5.94		6.25	
Turbidity (NTUs)	NV	2.5		9.35		12.5		1.4		5.27		2.3		5.93		5.02		10.37		0.9		6.12	
Inorganics (ug/L)																							
Iron	300	NS		61.7	B	900		81.4		409		66		85		56		<		<		NS	
Manganese	NV	NS		336		150		1,021		6,015		2,035		1,137		1,445		73		<		NS	
Miscellaneous Water Quality Parameters																							
Methane (ug/L)	NV	NS		26		2.5		28		108		67.4		47.2		<		<		<		NS	
Ethane (ug/L)	NV	NS		<		<		<		<		<		<		<		<		<		NS	
Ethene (ug/L)	NV	NS		<		<		<		<		<		<		<		<		<		NS	
Total Organic Carbon (mg/L)	NV	NS		4	J	2.8	J	2.51		4.75		2.62		2.47		2.21		1.93		1.5	M1	NT	
Chloride (mg/L)	250	NS		12	B	3.8		28.8		16.4		14.7		7.11		5.79		2.64		2.4		NS	
Nitrate (mg/L)	10	NS		4.8		5.2		2.98		0.04		0.27		1.40		3.20		1.30		0.79		NS	
Nitrite (mg/L)	1	NS		<		<		NS		NS		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	NS		36		24	B	23.3		18		21.1		18.3		21		14.3		13.9		9.78	

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Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	SP-38 10/4/2012	Q	SP-38 10/17/2013	Q	SP-38 6/10/2014	Q	SP-38 8/21/2015	Q	SP-38 10/23/2015	Q	SP-38 6/15/2016	Q	SP-38 10/26/2016	Q	SP-38 7/12/2017	Q	SP-38 6/21/2018	Q	SP-38 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-84																					
Acetone	50	<		<		<		<		<		1.6	J	<		<		<		<	
Benzene	1	<		<		<		<		<		<		<		<		<		<	
Carbon disulfide	NV	<		<		<		1.8	J	1.9		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethane	5	<		<		<		2	J	1.9	J	<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		<		22		0.39	J	4.0		4.2		<		<	
2-Butanone	50	<		<		<		26		2.1	J	<		<		<		<		<	
cis-1,2-Dichloroethene	5	<		1.5		1.2		46		0.82	J	<		<		<		<		<	
Toluene	5	<		<		<		<		1	J	<		<		<		<		<	
1,1,1-Trichloroethane	5	2.4		<		<		0.86	J	<		<		<		<		<		<	
Tetrachloroethene	5	5		<		5.2		0.22	J	0.37	J	0.28	J	0.48	J	0.2	J	<		<	
Trichloroethene	5	17		7.8		19		0.45	J	0.29	J	5.5	J	8.2		6.5		5.8		<	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		<		<		<	
Total VOCs		24.4		9.3		25.4		77.33		30.38		7.77		12.68		10.9		5.8			
Field Parameters																					
Temperature (Deg. C)	NV	13.1		15.2		11.6		15.2		15.1		16.1		14.8		16.7		11.7		11.3	
Specific Conductance (mS/cm)	NV	0.437		0.412		0.437		1.03		0.69		0.419		0.443		0.416		0.404		0.398	
Dissolved Oxygen (mg/L)	NV	3.25		2.88		4.65		0.07		0.11		1.32		0.23		0.72		2.11		2.32	
Oxygen Reduction Potential (mv)	NV	31.7		103.5		136		-124.2		-172.7		241.8		-22.5		-79.6		150.8		125.2	
pH (std. units)	NV	6.81		6.72		6.72		7.1		7.39		6.59		6.75		6.85		6.56		6.89	
Turbidity (NTUs)	NV	27.4		2.12		19.2		12.3		2.12		6.39		7.69		5.88		21.5		180.22	
Inorganics (ug/L)																					
Iron	300	<		<		1,500		5,660		3,040		352		811		<		<		NS	
Manganese	NV	5,100		41.1	B	180		24,820		12,680		2762		9031		1,827		23		NS	
Miscellaneous Water Quality Parameters																					
Methane (ug/L)	NV	<		20		1.1		807.0		636.0		3.9		13.7		10.1		4.4		NS	
Ethane (ug/L)	NV	NM		<		<		<		2.57		<		0.633		<		<		NS	
Ethene (ug/L)	NV	NM		<		<		3.45		4.56		<		2.04		0.652		<		NS	
Total Organic Carbon (mg/L)	NV	<		<		<		86.9		2.22		1.21		1.32		1.05		<		NS	
Chloride (mg/L)	250	31		40	B	34		29		27.1		36.1		27.7		22.6		32		NS	
Nitrate (mg/L)	10	4.7		1.4		3.3		0.0	J	<		0.6		0.24		0.24		0.37		NS	
Nitrite (mg/L)	1					<		<		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	23		11		13	B	0.063	J	5.99		11.5		16.1		13.8		11.7		NS	

Notes:
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4. Criteria is a guidance value.
5. Laboratory qualifiers: B = compound was found in the blank and sample; J = result is less than the RL but greater than or equal to the MDL and the concentration is an approximation; * - LCS or LCSD exceeds the control limits; D = value shown is result of dilution analysis; E = value above quantitation range. M1 = Matrix spike recover exceeded QC limits. Batch accepted based on laboratory LCS recovery. CH = continuing calibration for this compound is outside of laboratory acceptance limits; results may be biased high.
6. mg/L = parts per million; ug/L = parts per billion
7. NYSDEC Class GA Groundwater Criteria as promulgated in 6 NYCRR 703; Table 1 in Technical and Operational Guidance Series (1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, dated October 1993; revised June 1998; errata dated January 1999; addendum dated April 2000.
8. NV = no value; NS = Not sampled.
9. Sum of Nitrate/Nitrite Class GA Criteria = 10 mg/L (no exceedances)
10. Shaded concentrations exceed Class GA criteria.

Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	SP-43 10/4/2012	Q	SP-43 10/17/2013	Q	SP-43 6/10/2014	Q	SP-43 6/4/2015	Q	SP-43 8/21/2015	Q	SP-43 10/23/2015	Q	SP-43 6/16/2016	Q	SP-43 10/26/2016	Q	SP-43 7/12/2017	Q	SP-43 6/21/2018	Q	SP-43 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-84																							
Acetone	50	<		53		<		<		<		<		1.9	J	<		<		<		5.4	
Benzene	1	<		<		<		<		<		<		<		<		<				<	
Carbon disulfide	NV	<		1.3		<		<		<		<		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<		<		<		<		0.92	J
1,1-Dichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		<		0.48	J	6.6		<		<		<		<		<	
2-Butanone	50	<		84		<		<		21		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	<		5.4		3.9		1.1	J	9.4		9.2		4.6		2.1	J	<		<		<	
Toluene	5	<		<		<		<		<		84.0		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
Tetrachloroethene	5	93		24		14		14		10		17		7.7		11.0		6.9		7.4	CH	4.0	
Trichloroethene	5	5.2		2.6		<		0.72		2.20		8.30		0.71		0.70		0.24	J	<		0.58	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Total VOCs		98.2		170.3		17.9		15.82		43.08		125.10		14.91		13.80		7.14		7.40		9.40	
Field Parameters																							
Temperature (Deg. C)	NV	14.1		18.4		13		12.2		16.6		15.9		14.6		14.2		20.5		15.6		13.8	
Specific Conductance (mS/cm)	NV	0.445		0.513		0.304		0.773		0.66		0.68		0.237		0.224		0.183		0.151		0.127	
Dissolved Oxygen (mg/L)	NV	1.48		0.22		0.23		1.1		0.12		0.12		1.23		1.96		1.96		1.73		3.52	
Oxygen Reduction Potential (mv)	NV	44.2		-39.3		149		175.8		-15.1		-88.2		310.9		184.3		12.4		156.6		153.9	
pH (std. units)	NV	6.55		5.88		6.13		5.82		6.31		6.83		5.87		6.02		6.12		6.11		6.32	
Turbidity (NTUs)	NV	39.8		4.04		18		0.2		31.7		4.26		6.7		3.12		4.72		1.8		16.25	
Inorganics (ug/L)																							
Iron	300	NS		6,150		7,100		54		5,780		6,220		127		114		<		<		NS	
Manganese	NV	NS		5,510		1,600		1,254		8,919		10,240		171.8		190.4		5.4		10.4		NS	
Miscellaneous Water Quality Parameters																							
Methane (ug/L)	NV	NS		16		12		0.756	J	2,490.000		6,520.000		0.612		<		0.619	J	<		NS	
Ethane (ug/L)	NV	NS		2.4		<		<		<		<		<		<		<		<		NS	
Ethene (ug/L)	NV	NS		3.7		<		<		<		2.13		<		<		<		<		NS	
Total Organic Carbon (mg/L)	NV	NS		80		<		1.84		28.8		3.62		2.09		1.91		1.58		1.1		NS	
Chloride (mg/L)	250	NS		6.3	B	2.2		136.0		62.2		40.0		12.2		9.6		4.1		2.6		NS	
Nitrate (mg/L)	10	NS		0.36		8.30		8.65		0.59		0.21		2.10		4.10		3.70		1.60		NS	
Nitrite (mg/L)	1	NS		<		0.042	J	NS		NS		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	NS		12		25	B	19.8		18.3		13.3		22		21.4		14.7		14.1		NS	

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Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

Sample Location Sample Date	Class GA Criteria	SP-45 10/4/2012	Q	SP-45 10/17/2013	Q	SP-45 6/10/2014	Q	SP-45 6/4/2015	Q	SP-45 8/21/2015	Q	SP-45 10/23/2015	Q	SP-45 6/16/2016	Q	SP-45 10/26/2016	Q	SP-45 7/13/2017	Q	SP-45 6/21/2018	Q	SP-45 6/14/2019	Q
Volatile Organic Compounds - EPA Method SW-84																							
Acetone	50	<		<		<		<		<		<		1.5	J	<		<		<		4.1	
Benzene	1	<		<		<		<		<		<		<		<		<		<		<	
Carbon disulfide	NV	<		<		<		<		<		<		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		<		<		6.3		5.5		7.5		1.7		<		<	
2-Butanone	50	<		<		<		<		<		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	6.8		1.1		1.9		2.9		1.4	J	5.7		3.7		13		2.0	J	1.4		1.3	J
Toluene	5	<		<		<		<		<		<		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		<		<		<		<		<		<		<	
Tetrachloroethene	5	260	D	69		130		160		16		45		16		170		45		18.7		17	
Trichloroethene	5	13		3.6		6.4		8.5		1.5		7.5		7.2		53		10		5.4		4.6	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<		<		<		<		<	
Total VOCs		283.0		73.7		138.3		171.4		18.9		171.4		33.9		243.5		58.7		25.5		27.0	
Field Parameters																							
Temperature (Deg. C)	NV	14.6		17.8		16.5		14		19.1		15.8		15.2		15.8		15.8		13.3		14	
Specific Conductance (mS/cm)	NV	0.543		0.363		0.391		0.584		0.6		0.62		0.503		0.442		0.442		0.391		0.336	
Dissolved Oxygen (mg/L)	NV	1.07		5.21		3.02		3.58		0.09		0.07		0.5		0.06		0.06		2.72		3.85	
Oxygen Reduction Potential (mv)	NV	-29.5		88.3		143.1		73.3		-62.7		-61.7		250.7		-8.7		-8.7		88.2		128.4	
pH (std. units)	NV	6.48		6.83		6.71		6.71		7.05		7.05		6.91		6.66		6.66		6.89		7.23	
Turbidity (NTUs)	NV	3.95		2.3		3.17		0.5		14.91		5.06		11.25		17.2		17.2		5.5		12.48	
Inorganics (ug/L)																							
Iron	300	NS		32.1	B	170	J	27.2	J	45	J	1,260		197		386		<		<		NS	
Manganese	NV	NS		<		<		1.93		296.4		3,510		1447		1,340		240		332		NS	
Miscellaneous Water Quality Parameters																							
Methane (ug/L)	NV	NS		14		1.1		0.762	J	96.9		958		1500		3610		1760		8.1		NS	
Ethane (ug/L)	NV	NS		<		<		<		<		<		1.18		2.47		1.0		<		NS	
Ethene (ug/L)	NV	NS		<		<		<		<		1.08		2.59		3.36		0.77		<		NS	
Total Organic Carbon (mg/L)	NV	NS		<		<		1.64		3.93		1.86		1.69		1.49		1.23		<		1.06	
Chloride (mg/L)	250	NS		5.1	B	4.2		35.0		9.4		17.3		15.4		12.6		3.2		6.8		NS	
Nitrate (mg/L)	10	NS		6		5.2		2.68		1.2		1.9		0.39		0.72		0.79		0.35		NS	
Nitrite (mg/L)	1	NS		<		<		NS		NS		NS		NS		NS		NS		<		NS	
Sulfate (mg/L)	250	NS		39		33	B	32.7		43.4		22.4		24		23.8		19.1		16.8		12.1	

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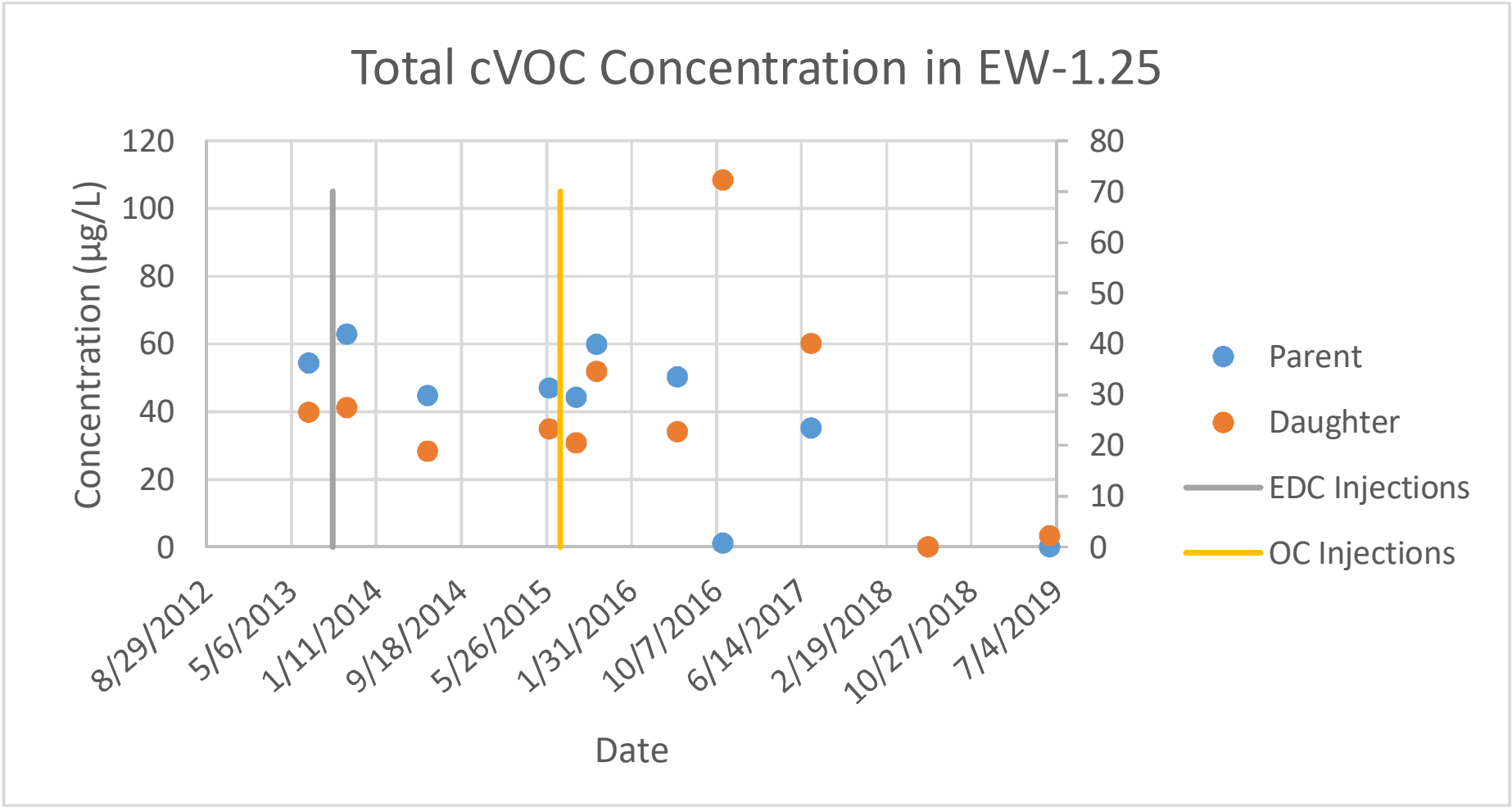
Attachment C
June 2019 Post-Injection Groundwater Analytical Results Summary
Former Signore Facility
Ellicottville, New York
BCP Site No. C905034

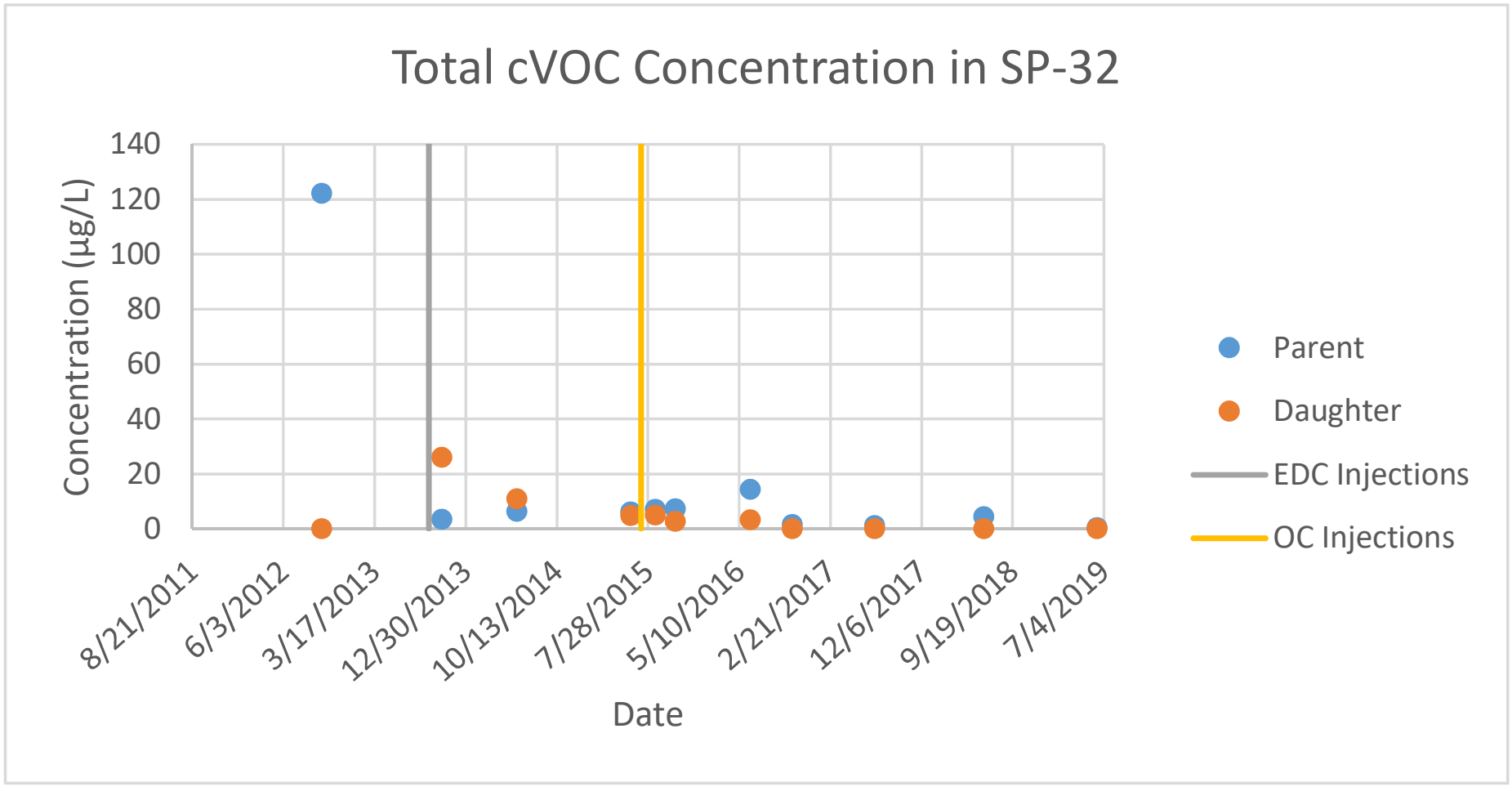
Sample Location Sample Date	Class GA Criteria	TP-11 6/3/2015	Q	TP-11 10/22/2015	Q	TP-11 6/16/2016	Q	TP-11 10/25/2016	Q	TP-11 7/12/2017	Q	TP-11 6/20/2018	Q	TP-11 6/13/2019	Q
Volatile Organic Compounds - EPA Method SW-84															
Acetone	50	<		<		2	J	<		<		<		2.5	J
Benzene	1	<		<		<		<		<		<		<	
Carbon disulfide	NV	<		<		<		<		<		<		<	
Chloromethane	NV	<		<		<		<		<		<		<	
1,1-Dichloroethane	5	<		<		<		<		<		<		<	
1,1-Dichloroethene	5	<		<		<		<		<		<		<	
Vinyl chloride	2	<		<		<		<		<		<		<	
2-Butanone	50	<		<		<		<		<		<		<	
cis-1,2-Dichloroethene	5	19		12		18		13		8.1		12.4		9.7	
Toluene	5	<		<		<		<		<		<		<	
1,1,1-Trichloroethane	5	<		<		<		<		<		<		<	
Tetrachloroethene	5	0.58		1.5		0.53		1.2		0.25	J	<		0.49	J
Trichloroethene	5	88		74		77		58		40		66.7		41	
trans-1,2-dichloroethene	5	<		<		<		<		<		<		<	
Total VOCs		107.58		87.50		97.53		72.20		48.35		79.10		53.69	
Field Parameters															
Temperature (Deg. C)	NV	17.5		14.4		12.4		13.4		16.9		9.5		8.8	
Specific Conductance (mS/cm)	NV	0.37		0.535		0.493		0.504		0.393		0.464		0.447	
Dissolved Oxygen (mg/L)	NV	0.11		1.57		2.84		2.24		2.06		4.83		4.12	
Oxygen Reduction Potential (mv)	NV	-23.6		90.7		267.4		77.7		6.6		101.7		122	
pH (std. units)	NV	6.84		7.04		6.9		6.8		6.69		6.81		7.06	
Turbidity (NTUs)	NV	6.27		1.87		7.69		9.67		4.97		0.3		1.84	
Inorganics (ug/L)															
Iron	300	NS		NS		NS		NS		NS		NS		NS	
Manganese	NV	NS		NS		NS		NS		NS		NS		NS	
Miscellaneous Water Quality Parameters															
Methane (ug/L)	NV	NS		NS		NS		NS		NS		NS		NS	
Ethane (ug/L)	NV	NS		NS		NS		NS		NS		NS		NS	
Ethene (ug/L)	NV	NS		NS		NS		NS		NS		NS		NS	
Total Organic Carbon (mg/L)	NV	NS		NS		NS		NS		NS		NS		NS	
Chloride (mg/L)	250	NS		NS		NS		NS		NS		NS		NS	
Nitrate (mg/L)	10	NS		NS		NS		NS		NS		NS		NS	
Nitrite (mg/L)	1	NS		NS		NS		NS		NS		NS		NS	
Sulfate (mg/L)	250	NS		NS		NS		NS		NS		NS		NS	

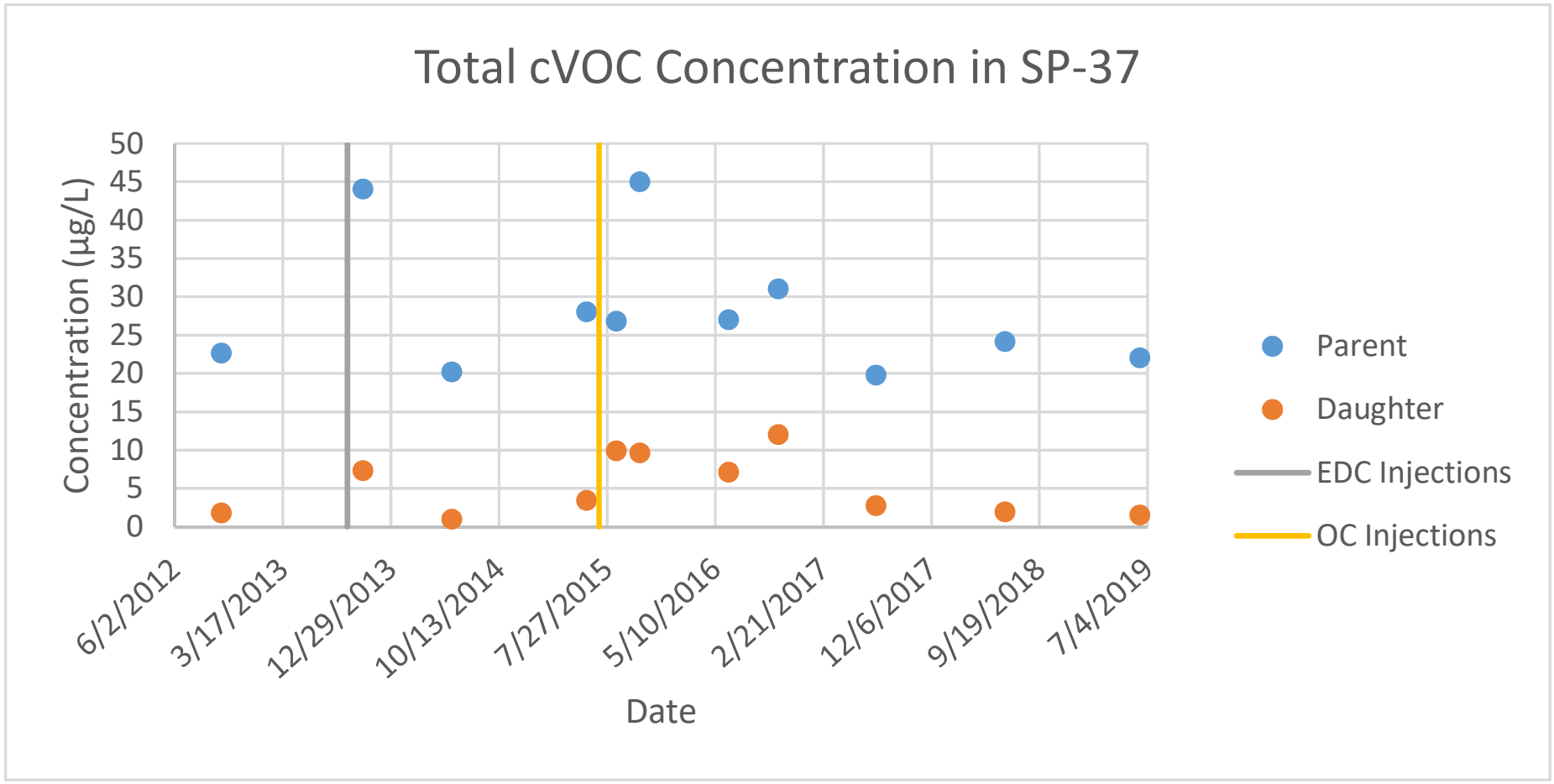
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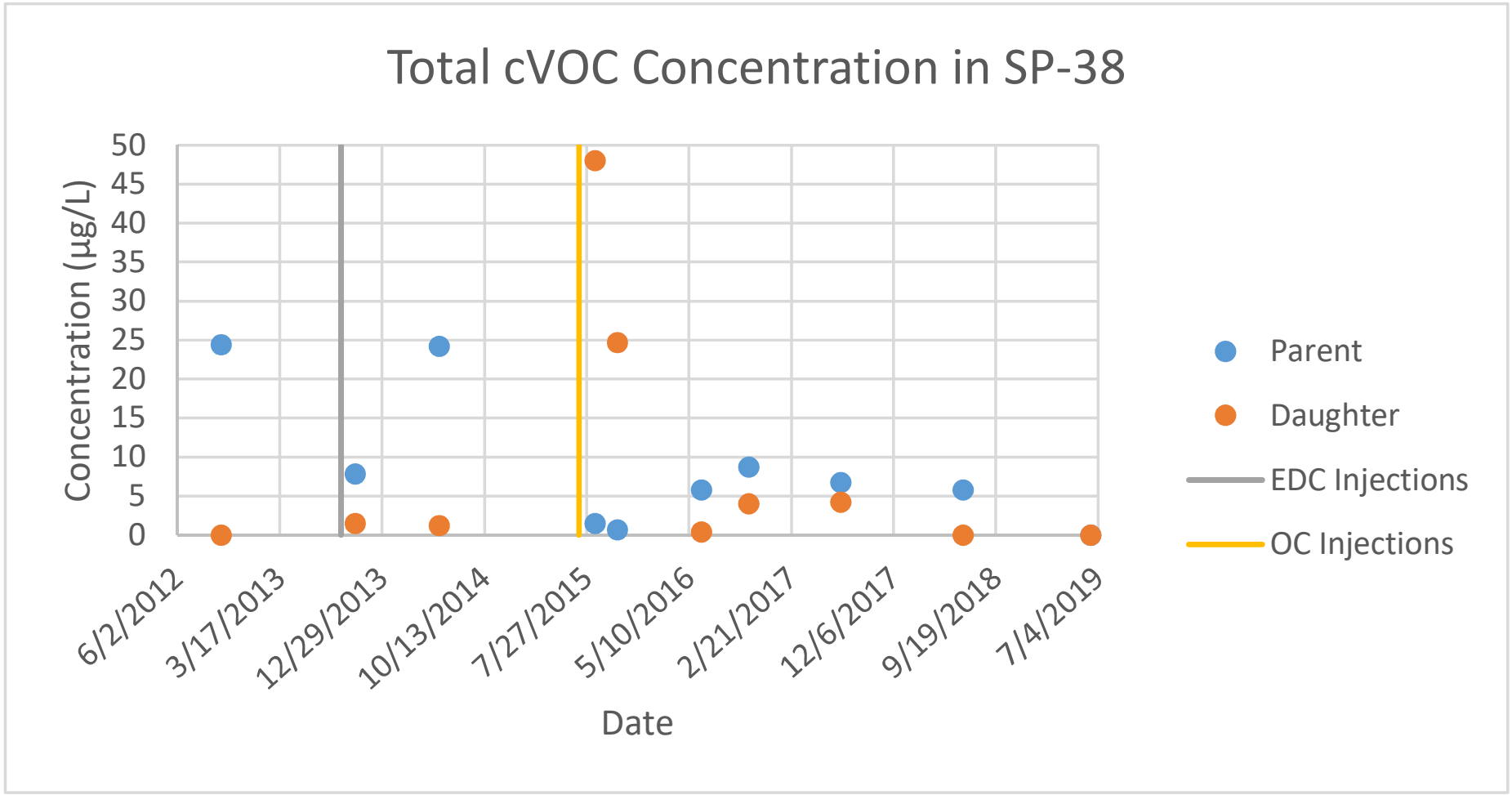
ATTACHMENT D

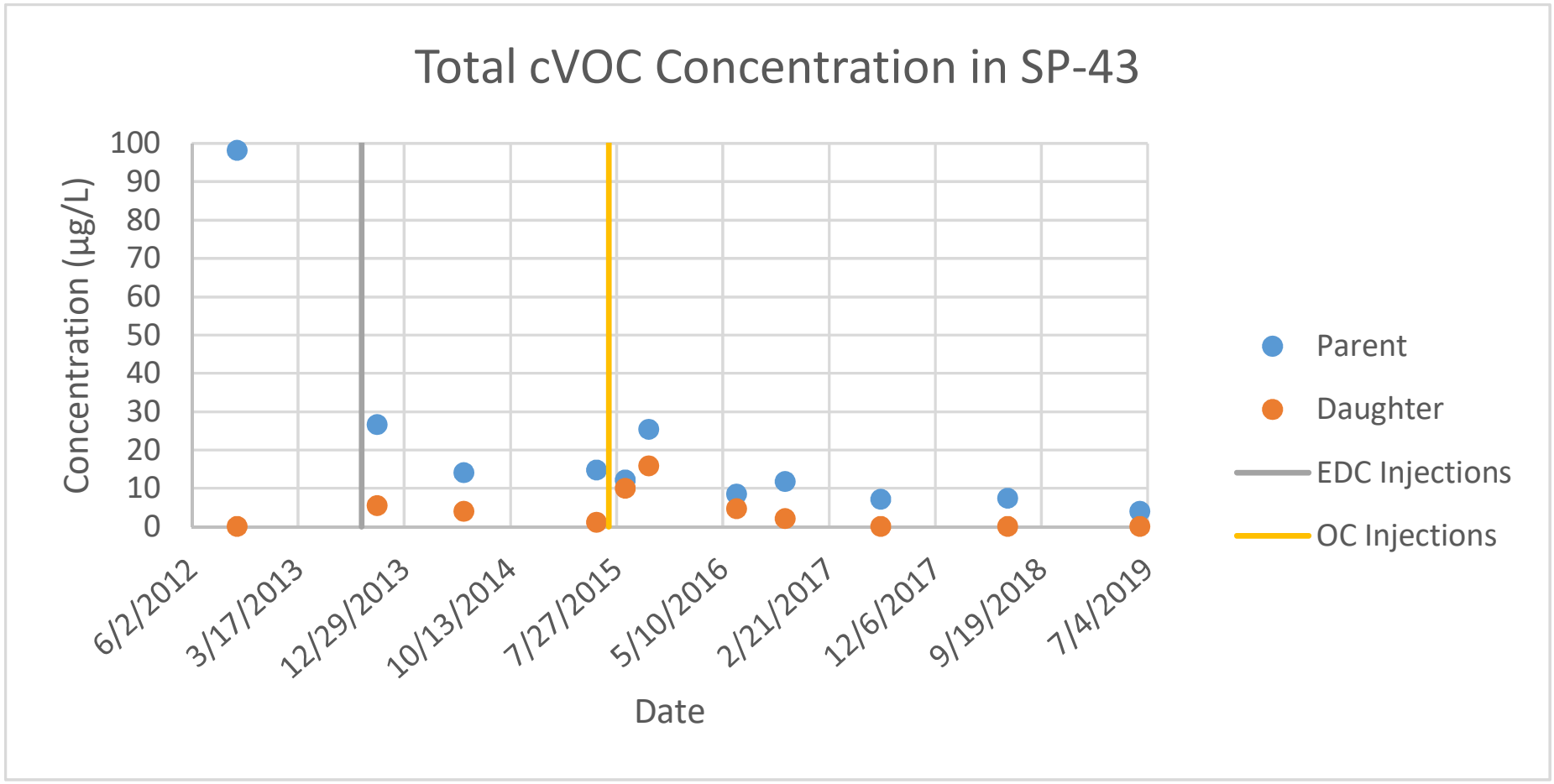
CONCENTRATIONS OF CVOC PARENT MATERIAL AND DAUGHTER PRODUCTS IN GROUNDWATER

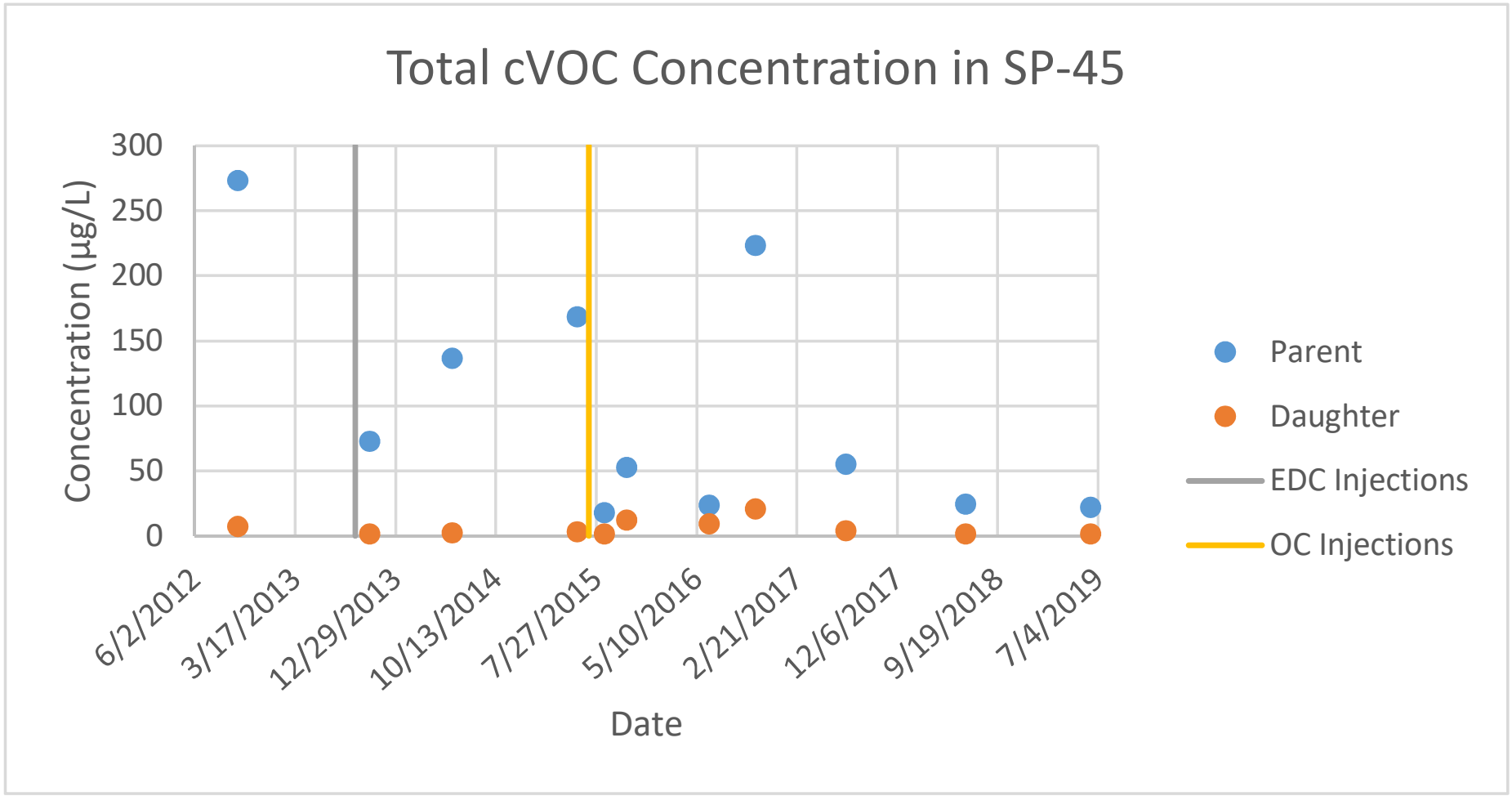

Total cVOC Concentration in EW-1.25
Concentration (µg/L)
120
100
80
60
40
20
0
80
70
60
50
40
30
20
10
0
8/29/2012
5/6/2013
1/11/2014
9/18/2014
5/26/2015
1/31/2016
10/7/2016
6/14/2017
2/19/2018
10/27/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections

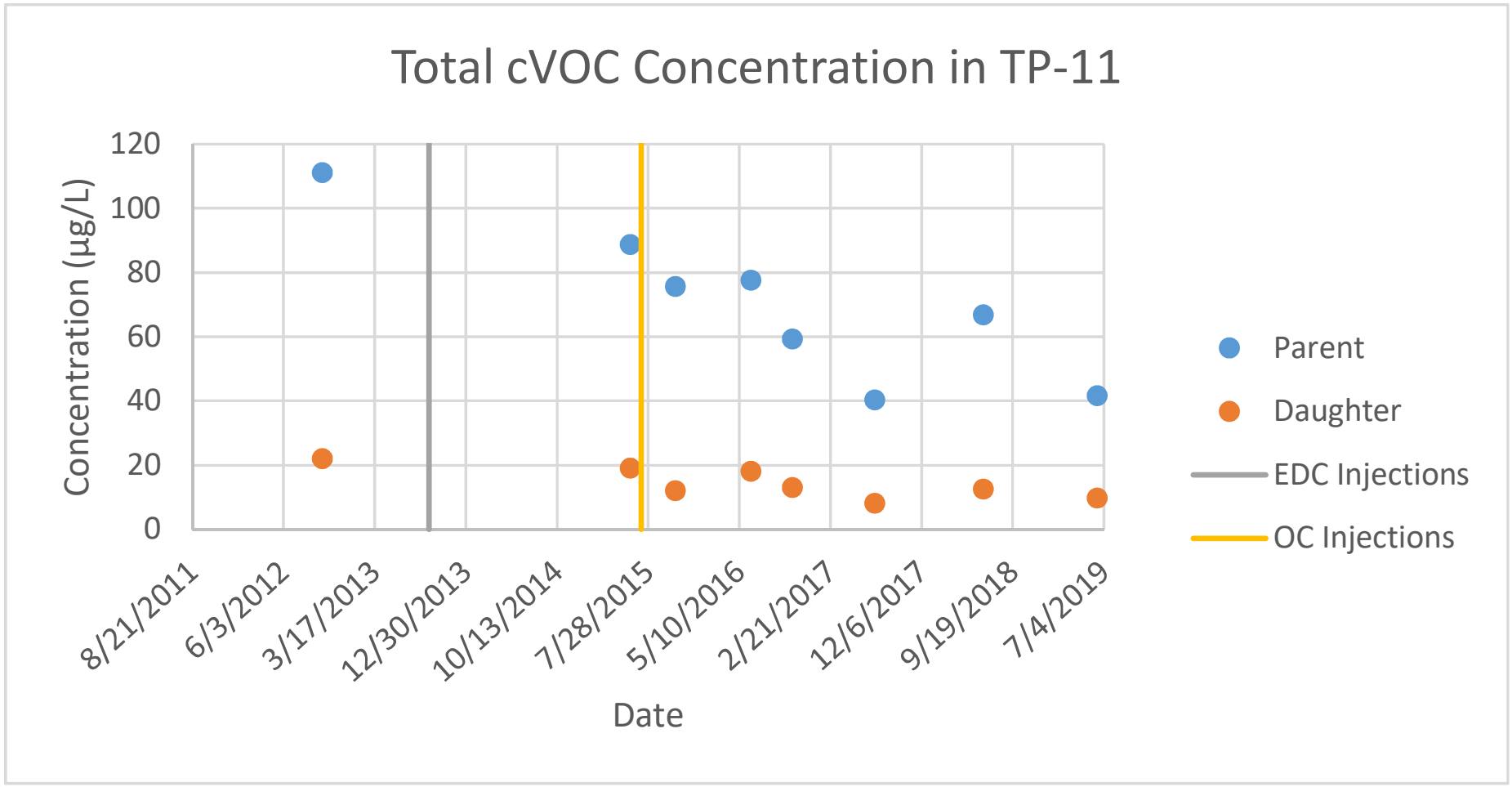

Total cVOC Concentration in SP-32
Concentration (µg/L)
140
120
100
80
60
40
20
0
8/21/2011
6/3/2012
3/17/2013
12/30/2013
10/13/2014
7/28/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections


Total cVOC Concentration in SP-37
Concentration (µg/L)
50
45
40
35
30
25
20
15
10
5
0
6/2/2012
3/17/2013
12/29/2013
10/13/2014
7/27/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections


Total cVOC Concentration in SP-38
Concentration (µg/L)
50
45
40
35
30
25
20
15
10
5
0
6/2/2012
3/17/2013
12/29/2013
10/13/2014
7/27/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections


Total cVOC Concentration in SP-43
Concentration (µg/L)
100
90
80
70
60
50
40
30
20
10
0
6/2/2012
3/17/2013
12/29/2013
10/13/2014
7/27/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections


Total cVOC Concentration in SP-45
Concentration (µg/L)
300
250
200
150
100
50
0
6/2/2012
3/17/2013
12/29/2013
10/13/2014
7/27/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections


Total cVOC Concentration in TP-11
Concentration (µg/L)
120
100
80
60
40
20
0
8/21/2011
6/3/2012
3/17/2013
12/30/2013
10/13/2014
7/28/2015
5/10/2016
2/21/2017
12/6/2017
9/19/2018
7/4/2019
Date
Parent
Daughter
EDC Injections
OC Injections

ATTACHMENT E

LABORATORY REPORT

ANALYTICAL REPORT

Lab Number:	L1925967
Client:	GZA GeoEnvironmental 300 Pearl Street Suit 700 Buffalo, NY 14202
ATTN:	Thomas Bohlen
Phone:	(716) 844-7050
Project Name:	SIGNORE POST-INJECTION
Project Number:	SIGNORE POST-INJECT
Report Date:	06/21/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1925967-01	EW-1.25R-2019	WATER	ELLICOTTVILLE, NY	06/14/19 09:30	06/14/19

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Amita Naik

Title: Technical Director/Representative Date: 06/21/19

ORGANICS

VOLATILES

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925967-01
Client ID: EW-1.25R-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 09:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/19/19 16:38
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	1.1	J	ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.18	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.88	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

SAMPLE RESULTS

Lab ID: L1925967-01 Date Collected: 06/14/19 09:30

Client ID: EW-1.25R-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	2.1	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	6.8		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	105		70-130

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: SIGNORE POST-INJECTION **Lab Number:** L1925967

Project Number: SIGNORE POST-INJECT **Report Date:** 06/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 08:24
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1250404-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST-INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925967

Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	100		110		70-130	10		20
Dibromochloromethane	98		100		63-130	2		20
1,1,2-Trichloroethane	96		100		70-130	4		20
Tetrachloroethene	98		98		70-130	0		20
Chlorobenzene	97		100		75-130	3		20
Trichlorofluoromethane	98		97		62-150	1		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	99		100		67-130	1		20
trans-1,3-Dichloropropene	98		100		70-130	2		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	91		98		54-136	7		20
1,1,2,2-Tetrachloroethane	94		96		67-130	2		20
Benzene	110		110		70-130	0		20
Toluene	96		100		70-130	4		20
Ethylbenzene	96		99		70-130	3		20
Chloromethane	91		92		64-130	1		20
Bromomethane	110		99		39-139	11		20
Vinyl chloride	95		93		55-140	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
Chloroethane	99		94		55-138	5		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		110		70-130	10		20
1,2-Dichlorobenzene	93		99		70-130	6		20
1,3-Dichlorobenzene	96		100		70-130	4		20
1,4-Dichlorobenzene	94		97		70-130	3		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Styrene	95		100		70-130	5		20
Dichlorodifluoromethane	93		94		36-147	1		20
Acetone	130		120		58-148	8		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	110		120		63-138	9		20
4-Methyl-2-pentanone	93		100		59-130	7		20
2-Hexanone	95		98		57-130	3		20
Bromochloromethane	110		110		70-130	0		20
1,2-Dibromoethane	96		100		70-130	4		20
1,2-Dibromo-3-chloropropane	89		96		41-144	8		20
Isopropylbenzene	97		100		70-130	3		20
1,2,3-Trichlorobenzene	91		95		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1250404-3 WG1250404-4								
1,2,4-Trichlorobenzene	95		97		70-130	2		20
Methyl Acetate	110		110		70-130	0		20
Cyclohexane	95		98		70-130	3		20
1,4-Dioxane	162		152		56-162	6		20
Freon-113	100		98		70-130	2		20
Methyl cyclohexane	89		93		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	97		100		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	100		100		70-130
Dibromofluoromethane	103		100		70-130

Project Name: SIGNORE POST-INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925967
Report Date: 06/21/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L1925967-01A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925967-01B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)
L1925967-01C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST-INJECTION	**Lab Number:**	L1925967
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/21/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 6/15/19

ALPHA Job #: L1925967

Client Information
Client: GZA
Address: 300 Pearl St. Suite 700, Buffalo, NY
Phone: 716-844-7050
Fax:
Email: thomas.bohlen@gza.com

Project Information
Project Name: Signore Post-Injection
Project Location: Ellicottville, NY
Project #
(Use Project name as Project #) ☒
Project Manager: T. Bohlen
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File) → NY
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 TCL	Total Bottle	Sample Specific Comments
25967-01	EW-1.25R-2019	6/14/19	930	GW	AS	X		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Thomas Bohlen	6/14/19 1330	AS NYL	14 June 2019 1330
AS for NYL	14 June 2019 1530		6/15/19 0128

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1925968
Client:	GZA GeoEnvironmental 300 Pearl Street Suit 700 Buffalo, NY 14202
ATTN:	Thomas Bohlen
Phone:	(716) 844-7050
Project Name:	SIGNORE POST INJECTION
Project Number:	SIGNORE POST-INJECT
Report Date:	06/26/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1925968-01	EW-1.25R-2019	WATER	ELLICOTTVILLE, NY	06/14/19 09:30	06/14/19
L1925968-02	SP-32-2019	WATER	ELLICOTTVILLE, NY	06/14/19 10:30	06/14/19
L1925968-03	SP-37-2019	WATER	ELLICOTTVILLE, NY	06/14/19 11:00	06/14/19
L1925968-04	SP-38-2019	WATER	ELLICOTTVILLE, NY	06/14/19 11:30	06/14/19
L1925968-05	SP-43-2019	WATER	ELLICOTTVILLE, NY	06/14/19 12:15	06/14/19
L1925968-06	SP-45-2019	WATER	ELLICOTTVILLE, NY	06/14/19 12:40	06/14/19
L1925968-07	TP-11-2019	WATER	ELLICOTTVILLE, NY	06/13/19 11:15	06/14/19

Project Name:	SIGNORE POST INJECTION	**Lab Number:**	L1925968
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/26/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SIGNORE POST INJECTION	**Lab Number:**	L1925968
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/26/19

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1925968-03: A sample identified as "SP-37-2019" was listed on the Chain of Custody, but a container for TOC was not received. This was verified by the client.

Anions by Ion Chromatography

The WG1251867-3 MS recovery, performed on L1925968-01, is outside the acceptance criteria for chloride (88%); however, the associated LCS recovery is within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 06/26/19

ORGANICS

VOLATILES

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-01
Client ID: EW-1.25R-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 09:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 06/17/19 12:37
Analyst: JT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	1110		ug/l	1.00	1.00	1	A
Ethene	2.82		ug/l	0.500	0.500	1	A
Ethane	6.85		ug/l	0.500	0.500	1	A

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-02
Client ID: SP-32-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 10:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 02:44
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.20	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.41	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-02 Date Collected: 06/14/19 10:30

Client ID: SP-32-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.8	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	83		70-130
Dibromofluoromethane	113		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-03
Client ID: SP-37-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 11:00
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 03:10
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	10		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	12		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-03 Date Collected: 06/14/19 11:00

Client ID: SP-37-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	3.6		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.5		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	113		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-04
Client ID: SP-38-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 11:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 03:35
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-04 Date Collected: 06/14/19 11:30

Client ID: SP-38-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	114		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-05
Client ID: SP-43-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 12:15
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 04:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	4.0		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	0.92	J	ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	0.58		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-05 Date Collected: 06/14/19 12:15

Client ID: SP-43-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.4		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	114		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-06
Client ID: SP-45-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 12:40
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 04:25
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	17		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	4.6		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-06 Date Collected: 06/14/19 12:40

Client ID: SP-45-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.3	J	ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.1	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	83		70-130
Dibromofluoromethane	114		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-07
Client ID: TP-11-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/13/19 11:15
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/20/19 04:50
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.49	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	41		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-07 Date Collected: 06/13/19 11:15

Client ID: TP-11-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	9.7		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.5	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	114		70-130

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 117,-
Analytical Date: 06/17/19 10:46
Analyst: JT

Parameter	Result	Qualifier	Units	RL	MDL	
Dissolved Gases by GC - Mansfield Lab for sample(s): 01 Batch: WG1249433-3						
Methane	ND		ug/l	1.00	1.00	A
Ethene	ND		ug/l	0.500	0.500	A
Ethane	ND		ug/l	0.500	0.500	A

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:03
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-07 Batch: WG1250993-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:03
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-07 Batch: WG1250993-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/19/19 21:03
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-07 Batch: WG1250993-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Dissolved Gases by GC - Mansfield Lab Associated sample(s): 01 Batch: WG1249433-2									
Methane	107		-		80-120	-		25	A
Ethene	111		-		80-120	-		25	A
Ethane	113		-		80-120	-		25	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-07 Batch: WG1250993-3 WG1250993-4								
Methylene chloride	100		97		70-130	3		20
1,1-Dichloroethane	94		92		70-130	2		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		97		63-132	3		20
1,2-Dichloropropane	91		89		70-130	2		20
Dibromochloromethane	99		99		63-130	0		20
1,1,2-Trichloroethane	96		96		70-130	0		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	100		100		75-130	0		20
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		96		67-130	4		20
Bromodichloromethane	97		94		67-130	3		20
trans-1,3-Dichloropropene	87		87		70-130	0		20
cis-1,3-Dichloropropene	92		89		70-130	3		20
Bromoform	84		80		54-136	5		20
1,1,2,2-Tetrachloroethane	88		84		67-130	5		20
Benzene	95		93		70-130	2		20
Toluene	95		94		70-130	1		20
Ethylbenzene	94		94		70-130	0		20
Chloromethane	73		71		64-130	3		20
Bromomethane	82		85		39-139	4		20
Vinyl chloride	84		81		55-140	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-07 Batch: WG1250993-3 WG1250993-4								
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	98		94		61-145	4		20
trans-1,2-Dichloroethene	100		96		70-130	4		20
Trichloroethene	96		95		70-130	1		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	95		92		63-130	3		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	85		80		36-147	6		20
Acetone	100		96		58-148	4		20
Carbon disulfide	84		80		51-130	5		20
2-Butanone	96		92		63-138	4		20
4-Methyl-2-pentanone	84		80		59-130	5		20
2-Hexanone	74		72		57-130	3		20
Bromochloromethane	120		120		70-130	0		20
1,2-Dibromoethane	100		99		70-130	1		20
1,2-Dibromo-3-chloropropane	88		82		41-144	7		20
Isopropylbenzene	92		89		70-130	3		20
1,2,3-Trichlorobenzene	97		90		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-07 Batch: WG1250993-3 WG1250993-4								
1,2,4-Trichlorobenzene	98		95		70-130	3		20
Methyl Acetate	98		92		70-130	6		20
Cyclohexane	84		80		70-130	5		20
1,4-Dioxane	158		132		56-162	18		20
Freon-113	98		93		70-130	5		20
Methyl cyclohexane	90		84		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		106		70-130
Toluene-d8	98		100		70-130
4-Bromofluorobenzene	86		86		70-130
Dibromofluoromethane	109		109		70-130

METALS

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-01 Date Collected: 06/14/19 09:30

Client ID: EW-1.25R-2019 Date Received: 06/14/19

Sample Location: ELLICOTTVILLE, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Iron, Dissolved	6.60		mg/l	0.0500	0.0191	1	06/22/19 10:50	06/24/19 16:27	EPA 3005A	1,6020B	AM
Manganese, Dissolved	1.392		mg/l	0.00100	0.00044	1	06/22/19 10:50	06/24/19 16:27	EPA 3005A	1,6020B	AM

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1251653-1										
Iron, Dissolved	ND		mg/l	0.0500	0.0191	1	06/22/19 10:50	06/24/19 16:01	1,6020B	AM
Manganese, Dissolved	ND		mg/l	0.00100	0.00044	1	06/22/19 10:50	06/24/19 16:01	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1251653-2								
Iron, Dissolved	93		-		80-120	-		
Manganese, Dissolved	100		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1251653-3 QC Sample: L1924776-01 Client ID: MS Sample												
Iron, Dissolved	0.050J	1	0.974	97		-	-		75-125	-		20
Manganese, Dissolved	0.0012	0.5	0.4922	98		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-01
Client ID: EW-1.25R-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 09:30
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Nitrate	ND		mg/l	0.10	0.033	1	-	06/15/19 23:43	44,353.2	CW
Total Organic Carbon	7.97		mg/l	0.500	0.114	1	-	06/16/19 13:19	121,5310C	AG
Anions by Ion Chromatography - Westborough Lab										
Chloride	14.1		mg/l	0.500	0.083	1	-	06/22/19 11:11	44,300.0	JT
Sulfate	10.3		mg/l	1.00	0.160	1	-	06/22/19 11:11	44,300.0	JT

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-03
Client ID: SP-37-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 11:00
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Sulfate	9.78		mg/l	1.00	0.160	1	-	06/22/19 12:07	44,300.0	JT

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

SAMPLE RESULTS

Lab ID: L1925968-06
Client ID: SP-45-2019
Sample Location: ELLICOTTVILLE, NY

Date Collected: 06/14/19 12:40
Date Received: 06/14/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Total Organic Carbon	1.06		mg/l	0.500	0.114	1	-	06/16/19 13:19	121,5310C	AG
Anions by Ion Chromatography - Westborough Lab										
Sulfate	12.1		mg/l	1.00	0.160	1	-	06/22/19 12:17	44,300.0	JT

Project Name: SIGNORE POST INJECTION **Lab Number:** L1925968

Project Number: SIGNORE POST-INJECT **Report Date:** 06/26/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,06 Batch: WG1249182-1										
Total Organic Carbon	ND		mg/l	0.500	0.114	1	-	06/16/19 13:19	121,5310C	AG
Anions by Ion Chromatography - Westborough Lab for sample(s): 01,03,06 Batch: WG1251867-1										
Chloride	ND		mg/l	0.500	0.083	1	-	06/22/19 11:39	44,300.0	JT
Sulfate	ND		mg/l	1.00	0.160	1	-	06/22/19 11:39	44,300.0	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1253417-1										
Nitrogen, Nitrate	ND		mg/l	0.10	0.033	1	-	06/15/19 22:56	44,353.2	CW

Lab Control Sample Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,06 Batch: WG1249182-2								
Total Organic Carbon	104		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03,06 Batch: WG1251867-2								
Chloride	100		-		90-110	-		
Sulfate	103		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1253417-2								
Nitrogen, Nitrate	106		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,06 QC Batch ID: WG1249182-4 QC Sample: L1925970-03 Client ID: MS Sample												
Total Organic Carbon	2.27	8	10.1	98		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03,06 QC Batch ID: WG1251867-3 QC Sample: L1925968-01 Client ID: EW-1.25R-2019												
Chloride	14.1	4	17.5	**88**	Q	-	-		90-110	-		18
Sulfate	10.3	8	18.2	99		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1253417-4 QC Sample: L1900006-140 Client ID: MS Sample												
Nitrogen, Nitrate	0.72	4	4.7	100		-	-		83-113	-		6

Lab Duplicate Analysis

Batch Quality Control

Project Name: SIGNORE POST INJECTION

Project Number: SIGNORE POST-INJECT

Lab Number: L1925968

Report Date: 06/26/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,06 QC Batch ID: WG1249182-3 QC Sample: L1925970-02 Client ID: DUP Sample						
Total Organic Carbon	2.41	2.64	mg/l	9		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03,06 QC Batch ID: WG1251867-4 QC Sample: L1925968-01 Client ID: EW-1.25R-2019						
Chloride	14.1	14.0	mg/l	1		18
Sulfate	10.3	10.2	mg/l	1		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1253417-3 QC Sample: L1900006-140 Client ID: DUP Sample						
Nitrogen, Nitrate	0.72	0.71	mg/l	1		6

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1925968-01D	Vial H2SO4 preserved	A	NA		4.8	Y	Absent		TOC-5310(28)
L1925968-01E	Vial H2SO4 preserved	A	NA		4.8	Y	Absent		TOC-5310(28)
L1925968-01F	20ml Vial HCl preserved	A	NA		4.8	Y	Absent		DISSGAS(14)
L1925968-01G	20ml Vial HCl preserved	A	NA		4.8	Y	Absent		DISSGAS(14)
L1925968-01H	Plastic 250ml unpreserved	A	7	7	4.8	Y	Absent		-
L1925968-01I	Plastic 250ml unpreserved	A	7	7	4.8	Y	Absent		SO4-300(28),CL-300(28),NO3-353(2)
L1925968-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		4.8	Y	Absent		MN-6020S(180),FE-6020S(180)
L1925968-02A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-02B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-02C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-03A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-03B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-03C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-03I	Plastic 250ml unpreserved	A	7	7	4.8	Y	Absent		SO4-300(28)
L1925968-04A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-04B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-04C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-05A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-05B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-05C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-06A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-06B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-06C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: SIGNORE POST INJECTION
Project Number: SIGNORE POST-INJECT

Lab Number: L1925968
Report Date: 06/26/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1925968-06D	Vial H2SO4 preserved	A	NA		4.8	Y	Absent		TOC-5310(28)
L1925968-06E	Vial H2SO4 preserved	A	NA		4.8	Y	Absent		TOC-5310(28)
L1925968-06I	Plastic 250ml unpreserved	A	7	7	4.8	Y	Absent		SO4-300(28)
L1925968-07A	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-07B	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)
L1925968-07C	Vial HCl preserved	A	NA		4.8	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	SIGNORE POST INJECTION	**Lab Number:**	L1925968
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/26/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST INJECTION	**Lab Number:**	L1925968
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/26/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SIGNORE POST INJECTION	**Lab Number:**	L1925968
Project Number:	SIGNORE POST-INJECT	**Report Date:**	06/26/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

117 Technical Guidance for the Natural Attenuation Indicators: Methane, Ethane, and Ethene, EPA-NE, Revision 1, February 21, 2002 and Sample Preparation & Calculations for Dissolved Gas Analysis in Water Samples using a GC Headspace Equilibration Technique, EPA RSKSOP-175, Revision 2, May 2004.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 6/15/19

ALPHA Job # L1925968

Client Information
Client: GZA
Address: 300 Pearl St Suite 700 Buffalo, NY
Phone: 716-844-7050
Fax:
Email: thomas.bohlen@gza.com

Project Information
Project Name: Signore Post Injection
Project Location: Ellicottville, NY
Project #
(Use Project name as Project #) ☒
Project Manager: T. Bohlen
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File) NY
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 TCL	RSK 175 Methane Ethane Ethene	TOC	EPA 300 SO4 CL NO3	EPA 300 SO4	Dissolved Iron Manganese	Lab Filter	Total Bottle	Sample Specific Comments
25968-01	EW-1,2,5R-2019	6/14/19	930	GW	TB		X	X	X		X	X		
-02	SP-32-2019		1030			X		X						
-03	SP-37-2019		1100			X		X		X				
-04	SP-38-2019		1130			X								
-05	SP-43-2019		1215			X								
-06	SP-45-2019		1240			X		X		X				
-07	TP-11-2019	6/13/19	1115	GW	TB	X								

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

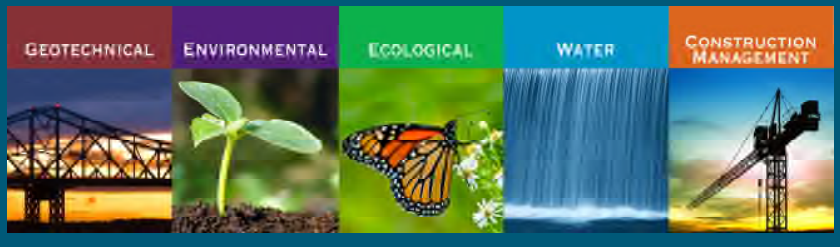
Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Thomas Bohlen	6/14/19 1530	[illegible]	14 June 2019 1530
[illegible]	14 June 2019 1530	[illegible]	6/15/19 0820

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)



GZA GeoEnvironmental, Inc.

APPENDIX E

IC/EC CERTIFICATION FORM

Enclosure 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C905034

Site Name Former Signore, Inc.

Site Address: 55 Jefferson Street Zip Code: 14731
City/Town: Ellicottville
County: Cattaraugus
Site Acreage: 8.430

Reporting Period: March 12, 2019 to March 12, 2020

	YES	NO
1. Is the information above correct?	X	
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?		X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?		X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?		X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Restricted-Residential, Commercial, and Industrial	X	
7. Are all ICs/ECs in place and functioning as designed?	X	

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

Box 2A

	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	X

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	X	☐

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C905034

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
55.43-1-3.1	Iskalo Ellicottville Holdings, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan IC/EC Plan

i) Prohibition of use of groundwater.
ii) Site use restrictions.
iii) Implementation of the Site Management Plan.

Box 4

Description of Engineering Controls

None Required

Not Applicable/No EC's

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C905034

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I David Chiazza (print name) at Iskalo Development Corp located at 5166 Main St., Williamsville, NY (print business address)

am certifying as Managar for Owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

4-6-2020
Date



GZA GeoEnvironmental, Inc.